REFERENCE: R-2307B

PROJECT: 37944

SEE SHEET 3 FOR PLAN SHEET LAYOUT AT TIME OF INVESTIGATION

CONTENTS

LINE	STATION	PLAN	PROFILE
-L-	432+51.35 - 799+10	4-30	37-63
-TRAIL1-	10+00 - 29+19.09	5-6	64-65
-TRAIL2-	69+78.16 - 124+81.95	9-12	66-69
-Y-	10+11.37 - 15+80	4	70
-Y1-	10+46.19 - 13+10	9	
-Y2-	12+40 - 16+42.42	9	71
-Y3-	10+50.90 - 13+00	9	
-Y4-	13+80 - 15+99.62	10	
-Y5-	13+50 - 14+88.58	11	
-Y6-	14+00 - 15+52.65	12	
-Y7-	10+46.89 - 12+50	12	
-Y8-	10+40 - 14+27.29	12	72
-Y9-	10+90 - 13+41.55	12	
-Y10-	10+52.63 - 12+40	13	
-Y11-	10+39.50 - 11+50	14	
-Y12-	13+85 - 16+32.39	15	
-Y13-	10+44 - 13+00	15	73
-Y14-	10+41.09 - 11+50	16	
-Y15-	13+20 - 14+34.54	17	
-Y16-	11+17.51 - 25+12.66	18,31	74-75
-Y17-	10+57.50 - 32+70.42	18,32	76-77
-Y18-	11+20 - 12+51.13	18	
-Y19-	13+40 - 14+82.82	19	
-Y20-	10+57.53 - 11+51.83	20	
-Y21-	12+50 - 15+32.75	22	
-Y22-	10+81.50 - 12+22.22	22	
-Y23-	11+00.11 - 14+85	22	
-Y24-	10+40 - 10+97	22	
-Y25-	11+90 - 13+07.93	23	
-Y26-	11+71.47 - 20+04.25	24,34	
-Y26-	22+23.19 - 32+60	35	
-Y27-	10+44.01 - 11+39.73	34	
-Y28-	10+80 - 11+75.76	24	
-Y29-	15+40 - 16+97.51	25	
-Y30-	10+74.09 - 15+25	25	
-Y31RPA-	16+60 - 18+97.82	25	78
-Y31RPB-	18+00 - 22+15.53	25	79
-Y31RPC-	14+52 - 20+43.50	25	80
-Y31RPD-	15+00 - 23+05.49	25	
-Y32-	10+71.97 - 12+80	25	
-Y33-	11+70 - 13+46.52	25	81
-Y34-	10+20 - 13+01.98	26	
-Y35-	10+89.94 - 14+70	26	
-Y36-	10+87.26 - 14+50	26	82
-Y37-	11+50 - 13+40.95	26	83
-Y38-	14+60 - 15+97.38	27	
-Y39-	11+60 - 19+62.02	28,36	84
-Y40-	10+57.79 - 18+60	28,36	85
-Y41-	12+50 - 13+43.79	29	
-Y42-	10+57.50 - 11+50	29	
-Y43-	10+54.64 - 11+00	30	
-Y44-	13+39 - 14+67.81	30	

CROSS SECTIONS

LINE	STATION	SHEETS
-L-	437+00 - 447+00	86-96
-L-	491+00	97
-L-	499+00	98
-L-	505+00 - 507+00	99-101
-L-	523+50 - 529+50	102-108
-L-	532+00 - 538+50	109-114
-L-	542+00 - 550+00	115-122
-L-	555+50 - 557+00	123-124
-L-	623+50 - 625+50	125-127
-L-	640+50 - 650+50	128-135
-L-	678+00	136
-L-	704+00	137
-L-	712+00	138
-L-	714+00	139
-L-	717+00	140
-L-	726+00 - 730+00	141-146
-L-	731+00	147
-L-	735+00	148
-L-	746+50 - 750+00	149-152
-L-	753+50	153
-L-	765+00	154
-L-	772+00 - 776+50	155-158

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

ROADWAY SUBSURFACE INVESTIGATION

COUNTY *CATAWBA /IREDELL*

PROJECT DESCRIPTION *NC 150 FROM SR 1840 (GREENWOOD RD) IN CATAWBA COUNTY TO US-21 IN IREDELL COUNTY*

INVENTORY

CROSS SECTIONS (CONTINUED)

LINE	STATION	SHEETS
-Y8-	12+00 - 14+50	159-162
-Y16-	20+00 - 24+50	163-167
-Y31RPD-	16+00	168
-Y31RPD-	17+50	169
-Y40-	11+00 - 16+50	170-173

APPENDICES

APPENDIX	TITLE	SHEETS
A	CPT LOGS	175
A	DMT LOGS	176
A	DMT SUMMARY TABLE	177

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2307B	1	181

CAUTION NOTICE

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2. BY HAVING REQUESTED THIS INFORMATION, THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

PERSONNEL

B. SMITH, PG

B. WORLEY, PG

A. GROSS

M.B. MOSELEY

M.G. MOSELEY

J. MOSELEY

T. GIBBS

INVESTIGATED BY *B. SMITH, PG*

DRAWN BY *B. SMITH, PG*

CHECKED BY *B. WORLEY, PG*

SUBMITTED BY *B. SMITH, PG*

DATE *MAY, 2018*

Prepared in the Office of:

SUMMIT DESIGN AND ENGINEERING SERVICES

NC FIRM LICENSE No: P-0339 and C-487
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

NORTH CAROLINA LICENSED SEAL 2390 GEOLOGIST BRETT C. SMITH

Docusigned by:
BE61A49304C542E...

8/15/2018

SIGNATURE DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO.	SHEET NO.
R-2307B	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	- MOIST - (M)	SOLID; AT OR NEAR OPTIMUM MOISTURE
SL — SHRINKAGE LIMIT		
	- DRY - (D)	REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE

PLASTICITY

	PLASTICITY INDEX (PI)	DRY STRENGTH
NON PLASTIC	0-5	VERY LOW
SLIGHTLY PLASTIC	6-15	SLIGHT
MODERATELY PLASTIC	16-25	MEDIUM
HIGHLY PLASTIC	26 OR MORE	HIGH

COLOR

DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.

GRADATION

WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE.
UNIFORMLY GRADED - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE.
GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES OF TWO OR MORE SIZES.

ANGULARITY OF GRAINS

THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.

MINERALOGICAL COMPOSITION

MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE.

COMPRESSIBILITY

SLIGHTLY COMPRESSIBLE	LL < 31
MODERATELY COMPRESSIBLE	LL = 31 - 50
HIGHLY COMPRESSIBLE	LL > 50

PERCENTAGE OF MATERIAL

ORGANIC MATERIAL	GRANULAR SOILS	SILT - CLAY SOILS	OTHER MATERIAL	
TRACE OF ORGANIC MATTER	2 - 3%	3 - 5%	TRACE	1 - 10%
LITTLE ORGANIC MATTER	3 - 5%	5 - 12%	LITTLE	10 - 20%
MODERATELY ORGANIC	5 - 10%	12 - 20%	SOME	20 - 35%
HIGHLY ORGANIC	> 10%	> 20%	HIGHLY	35% AND ABOVE

GROUND WATER

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

MISCELLANEOUS SYMBOLS

- ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION
- SOIL SYMBOL
- ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT
- INFERRED SOIL BOUNDARY
- INFERRED ROCK LINE
- ALLUVIAL SOIL BOUNDARY
- 25/025 — DIP & DIP DIRECTION OF ROCK STRUCTURES
- SPT, DPT, DMT, VST, PMT — TEST BORING
- AUGER BORING
- CORE BORING
- MW — MONITORING WELL
- PIEZOMETER INSTALLATION
- SLOPE INDICATOR INSTALLATION
- CONE PENETROMETER TEST
- SOUNDING ROD
- TEST BORING WITH CORE
- SPT N-VALUE

RECOMMENDATION SYMBOLS

- UNDERCUT
- SHALLOW UNDERCUT
- UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE
- UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK
- UNCLASSIFIED EXCAVATION - ACCEPTABLE, BUT NOT TO BE USED IN THE TOP 3 FEET OF EMBANKMENT OR BACKFILL

ABBREVIATIONS

AR - AUGER REFUSAL
BT - BORING TERMINATED
CL. - CLAY
CPT - CONE PENETRATION TEST
CSE. - COARSE
DMT - DILATOMETER TEST
DPT - DYNAMIC PENETRATION TEST
e - VOID RATIO
F - FINE
FOSS. - FOSSILIFEROUS
FRAC. - FRACTURED, FRACTURES
FRAGS. - FRAGMENTS
HI. - HIGHLY
MED. - MEDIUM
MICA. - MICACEOUS
MOD. - MODERATELY
NP - NON PLASTIC
ORG. - ORGANIC
PMT - PRESSUREMETER TEST
SAP. - SAPROLITIC
SD. - SAND, SANDY
SL. - SILT, SILTY
SLI. - SLIGHTLY
TCR - TRICONE REFUSAL
w - MOISTURE CONTENT
V - VERY
VST - VANE SHEAR TEST
WEA. - WEATHERED
γ - UNIT WEIGHT
γ_d - DRY UNIT WEIGHT

SAMPLE ABBREVIATIONS

S - BULK
SS - SPLIT SPOON
ST - SHELBY TUBE
RS - ROCK
RT - RECOMPACTED TRIAXIAL
CBR - CALIFORNIA BEARING RATIO

EQUIPMENT USED ON SUBJECT PROJECT

DRILL UNITS:
- [ ] CME-45C
- [ ] CME-55
- [X] CME-550X
- [ ] VANE SHEAR TEST
- [ ] PORTABLE HOIST
- [X] CME-450
- [X] DIEDRICH D-50

ADVANCING TOOLS:
- [ ] CLAY BITS
- [ ] 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
- [X] 2.25" HOLLOW STEM AUGERS

HAMMER TYPE:
- [X] AUTOMATIC
- [ ] MANUAL

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

HAND TOOLS:
- [ ] POST HOLE DIGGER
- [ ] 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:

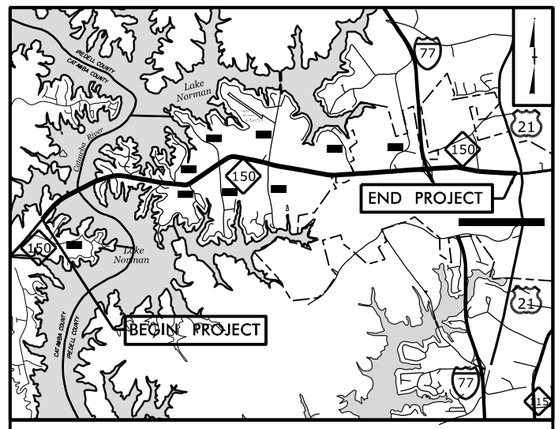
ELEVATIONS OBTAINED FROM r2307b_ls_tin.tin
(file dated 8/9/2016)

DATE: 8-15-14

09/08/99
I:\R2307B\GEO\RDWY_Inventory\REVISED_Summit\CADD_GEOTECH\PlanProf\R2307B_GEO_Inv_003.dgn
25-MAY-2018 10:37
C:\Users\brett.smith\Documents\NCDOT Projects\Active Projects\R-2307B - NC 150\R2307B_GEO_RDWY_InventoryREVISED_Summit+\CADD_GEOTECH\PlanProf\R2307B_GEO_Inv_003.dgn
$$$$USERNAME$$$$

CONTRACT: TIP PROJECTS: R–2307B & I–5717

See Sheet 1-A For Index of Sheets



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CATAWBA & IREDELL COUNTIES

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R–2307B, I–5717	3	181

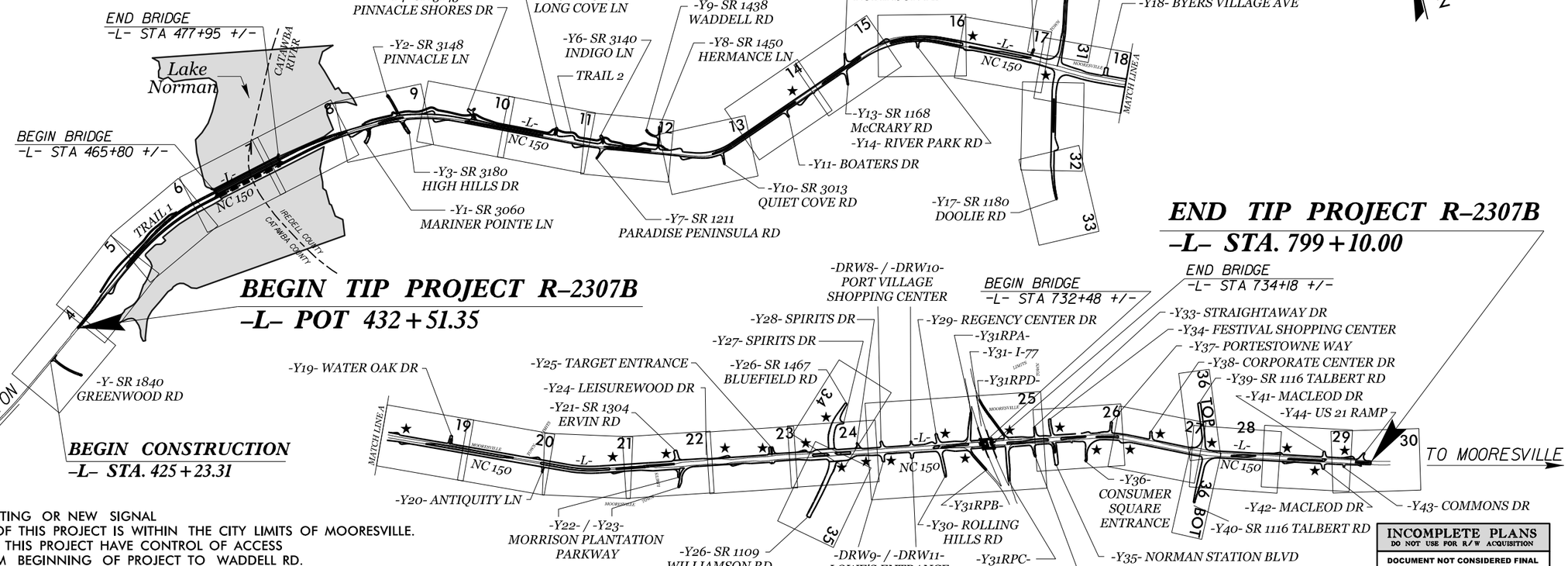
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
37944.1.FR5	STP–0150(36)	PE
50134.1.FS1	NHPP–077–1(221)37	PE

LOCATION: NC 150 FROM SR 1840 (GREENWOOD RD) IN CATAWBA COUNTY TO US 21 IN IREDELL COUNTY

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

STRUCTURE RECOMMENDATIONS
PART 2 of 2
APRIL 24, 2017

NAD 83/NSRS 2007



BEGIN TIP PROJECT R–2307B
–L– POT 432+51.35

BEGIN CONSTRUCTION
–L– STA. 425+23.31

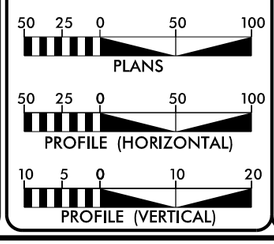
END TIP PROJECT R–2307B
–L– STA. 799+10.00

★ UPGRADE EXISTING OR NEW SIGNAL
A PORTION OF THIS PROJECT IS WITHIN THE CITY LIMITS OF MOORESVILLE.
PORTIONS OF THIS PROJECT HAVE CONTROL OF ACCESS
** 60 MPH FROM BEGINNING OF PROJECT TO WADDELL RD.
50 MPH FROM WADDELL RD TO END OF PROJECT.

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD ___.

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

GRAPHIC SCALES



DESIGN DATA

ADT 2019 = 47,900
ADT 2039 = 58,860
K = 8%
D = 55%
T = 6%*
V = **
* TTST 2%+ DUAL 4%
FUNC CLASS = PRINCIPAL ARTERIAL
STATEWIDE TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R–2307B	=	*6.681 mile +/–*
LENGTH STRUCTURES TIP PROJECT R–2307B	=	*0.262 mile +/–*
TOTAL LENGTH TIP PROJECT R–2307B	=	*6.943 mile +/–*

Prepared For:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610
By:
TGS ENGINEERS
706 HILLSBOROUGH ST
SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
AUGUST 21, 2017

LETTING DATE:
JULY 16, 2019

BURKE EVANS, PE
PROJECT ENGINEER
TRAVIS COOK, EI
PROJECT DESIGN ENGINEER
BRYAN KEY, PE
PROJECT ENGINEER
NCDOT ROADWAY DESIGN

HYDRAULICS ENGINEER
SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER
SIGNATURE: P.E.

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION

SUMMIT
DESIGN AND ENGINEERING SERVICES
919.732.3883 SUMMIT-ENGINEER.COM
504 Meadowland Drive, Hillsborough, NC 27278

November 15, 2017

WBS Number: 37944.1.FR5
TIP Number: R-2307B
ProjectID: 29808
County: Catawba/Iredell
Description: NC 150 from SR 1840 (Greenwood Rd.) in Catawba County to US-21 in Iredell County

SUBJECT: Geotechnical Report - Inventory

Project Description

State Transportation Improvement Program (STIP) Number R-2307/I-5717 is a project designed to reduce congestion and improve traffic flow along a 15 mile stretch of NC 150. This extends from the NC 16 Bypass in Catawba County to just west of the NC 150/US 21 interchange in Iredell County. The project investigated in the following report is Section B of the overall project, R-2307B. This section of the project extends 6.943 miles from SR 1840 (Greenwood Road) in Catawba County to just west of US 21 in Iredell County. The proposed project consists of 6.681 miles of roadway widening along the mostly two-lane NC 150. This will include improvements to the NC 150/I-77 interchange, and the intersection of Williamson/Bluefield roads. Roadway improvements, designed to improve traffic flow associated with the new widening, are also proposed along 42 other secondary roads that intersect with NC 150. In addition, two paved greenways totaling 1.406 miles are proposed along the north side of NC 150. Cut sections and embankment heights in the western third of the project exceed 20 feet in some places. While the eastern two thirds of the project is generally closer to existing grade with cut sections and fill heights generally under 10 feet. A bridge over Lake Norman paralleling the existing bridge, and a bridge widening over I-77 are proposed, totaling 0.262 miles in length. Numerous small retaining walls are proposed along the project corridor in order to minimize the impact of the project on local property owners and businesses.

The geotechnical investigation was conducted from May 3, 2017 to September 8, 2017, with Summit Design and Engineering Services personnel and equipment. Borings were advanced using Diedrich (D) - 50, Central Mine Equipment (CME) - 450, and Central Mine Equipment (CME) - 550X drill machines equipped with automatic hammers. Standard Penetration Tests were performed at all planned boring locations to provide subsurface information for roadbed and slope design/construction. Rock soundings were performed in areas where Crystalline Rock was encountered within 6 feet of proposed grade. Preliminary bridge borings were drilled for the proposed bridge over Lake Norman, and are included in this report. Where possible, borings were drilled to assist with foundation design of the numerous proposed retaining walls. These borings are also included in this report. Representative soil samples were collected and submitted to Summit's soils laboratory for classification and moisture content testing. Borings were left open for a minimum of 24 hours to collect groundwater data if they intercepted wet or saturated soils. They were also left open if they were deeper or drilled in less trafficked areas. Borings in higher trafficked areas, containing only dry to moist soils were filled in immediately after drilling (FIAD). In these cases, if it was deemed that the borings did not come close to or intercept groundwater, the borings were indicated as "DRY" and not "FIAD" in the following report. All investigations and reporting were performed in accordance with the NCDOT Geotechnical Engineering Unit's 2016 "Geotechnical Investigation and Recommendations Manual."

The following alignments were investigated for this project:

Alignment	Station(±)
-L-	432+51.35 - 799+10
-TRAIL1-	10+00 - 29+19.09
-TRAIL2-	69+78.16 - 124+81.95
-Y-	10+11.37 - 15+80
-Y2-	12+40 - 16+42.42
-Y8-	10+40 - 14+27.29
-Y13-	10+44 - 13+00
-Y16-	11+17.51 - 25+12.66
-Y17-	10+57.50 - 32+70.42
-Y31RPA-	16+60 - 18+97.82
-Y31RPB-	18+00 - 22+15.53
-Y31RPC-	14+52 -20+43.50
-Y31RPD-	15+00 - 23+05.49
-Y33-	11+70 - 13+46.52
-Y36-	10+87.26 - 14+50
-Y37-	11+50 - 13+40.95
-Y39-	11+60 - 19+62.02
-Y40-	10+57.79 - 18+60

Physiography and Geography

The project corridor is located in south-central North Carolina in the Piedmont Physiographic Province. Topography in the region is characterized by gently rolling, well rounded hills and long low ridges with a few hundred feet of elevation difference between the hills and valleys. In general, the topography along the project corridor would fit this description, with the exception of the highly developed eastern third of the project where urban development has altered the natural topography. Elevations within the corridor range from approximately 895 feet above sea level to approximately 675 feet above sea level. Topographic highs occur at the intersection

of Williamson/Bluefield roads and just east of Waddell road. The topographic low within the project corridor occurs at the bottom of Lake Norman, which filled in the deeper valleys in the area when it was created.

Geologically, the project area is located along the western edge of the Charlotte Belt. This belt consists of mostly igneous rocks such as granite, diorite, and gabbro that range in age from 300-500 million years old. The majority of the project corridor is underlain by a Fine-Grained Biotite Gneiss. The Biotite Gneiss is Cambrian/Late Proterozoic in age, which is approximately 540 - 900 million years old. The older Biotite Gneiss is irregularly intruded throughout much of the project corridor on both a large and small scale by younger Granitic Rock. The Granitic Rock likely represents multiple intrusive events ranging in age from Permian to Ordovician, which is approximately 245 - 500 million years old. A small area of the project corridor is underlain by Mafic Metavolcanic Rock consisting mostly of metamorphosed basaltic flows and tuffs. This unit is also older, Cambrian/Late Proterozoic, and is likely intruded by the younger Granitic Rock.

Lake Norman, created by the damming of the Catawba River, is the only major body of water within the project corridor. A few small unnamed tributaries and drainage features were encountered or observed within the project corridor during the investigation.

Soil Properties

Residual soils, derived from the weathering of rock, are the dominant soil type throughout the project corridor. In general, the residual soils follow the typical weathering profile seen throughout the piedmont. The clays, when present, are usually found closer to the ground surface. The silts and sands are typically found deeper and closer to the parent rock source. However, much like the parent rocks that they weather from, the Residual soils can vary significantly in some areas in both composition and vertical/horizontal distribution. This is due to the deformation within and intrusive relationships between the parent rock types. This causes the Residual soils developed upon them to sometimes vary in complex and irregular ways. In some areas, it can be difficult to predict both vertically and horizontally where soil contacts may occur from one boring to the next. Due to deep weathering in some areas, these contacts may actually be more gradational in nature.

Residual soils mostly consist of silty sands (A-2-4/A-2-5), sandy silts (A-4), and clayey silts (A-5). Sandy clays (A-6) and silty clays (A-7-5/A-7-6) are also prevalent throughout the project. Due to the high sand content, the clays are generally moderately plastic. A few areas within the project corridor do contain highly plastic clays and will be highlighted in the “Areas of Special Geotechnical Interest” section of this text report.

Most Residual soils throughout the project corridor are saprolitic and/or micaceous. Some areas contain minor amounts of Manganese Oxide (MnO). Manganese oxide (MnO) will generate nearly frictionless surfaces of indeterminate orientation throughout the Residual soil profile, which can lead to slope stability issues. However, no significant amounts of MnO were encountered in any of the major cut sections during the geotechnical investigation. Also, none of the existing cut slopes observed showed any evidence of stability issues.

Roadway Embankment soils from the construction of existing NC 150 and various secondary roads are present throughout the project corridor. Roadway Embankment soils were seldom encountered during the geotechnical investigation. This was mainly due to the fact that these areas often contained buried utilities, and were unable to be safely drilled or sampled.

Roadway Embankment soils are quite similar to the local Residual soils that they were sourced from. Roadway Embankment soils consist of mostly sandy silts (A-4), clayey silts (A-5), sandy clays (A-6), and silty clays (A-7-5/A-7-6). Lesser amounts of silty sands (A-2-4) and clayey sands (A-2-6/A-2-7) are present. Due to the high sand content, the clays are typically only moderately plastic. Extensive sampling of the Roadway Embankment soils was conducted during a Pavement Design Investigation in 2016. Field classifications from that final report were reviewed and largely confirmed what we sampled on a more limited basis.

Roadway Embankment soils often appear similar to the local residual soils in color, composition, and mica content. However, they often have a “reworked” appearance, and typically contain little to trace amounts of gravel and organic material.

Engineered Artificial Fill was encountered in the developed areas of the project corridor. These soils are often comprised of higher quality local residual soils that have been compacted to varying degrees in order to achieve stability for the construction activities there.

Engineered Artificial Fill soils mostly consist of sandy silts (A-4), clayey silts (A-5), sandy clays (A-6), and silty clays (A-7-5/A-7-6). Lesser amounts of silty sands (A-2-4/A-2-5) are present in some areas. Again, due to the high sand content, the clays are generally only moderately plastic. However, one area of Engineered Artificial Fill within the project corridor does contain highly plastic clays and will be highlighted in the “Areas of Special Geotechnical Interest” section of this text report.

Engineered Artificial Fill soils often appear similar to the local residual soils that they were sourced from. However, like the Roadway Embankment soils, they generally appeared “reworked,” and typically contain little to trace amounts of gravel and organic material. Coal fly ash, likely from nearby Marshall Steam Station, is believed to have been used within the Engineered Artificial Fill at two locations within the project corridor. These areas will be highlighted in the “Areas of Special Geotechnical Interest” section of this text report.

Artificial Fill is present in several areas within the project corridor. These soils are often comprised of low quality or wasted soils that are not compacted and are not properly drained.

Artificial Fill soils mostly consist of sandy clays (A-6), and silty clays (A-7-5/A-7-6), with lesser amounts of sandy silts (A-4), and clayey silts (A-5).

Artificial Fill soils contain a variety of other materials. These can be natural materials such as gravel, cobbles, boulders, and organic materials. Or they can be man-made materials such as plastics and Styrofoam. Unlike Engineered Artificial Fill, the engineering properties of these soils are generally quite poor. They also have a tendency to be poorly drained and create perched groundwater situations. Specific locations where these soils are present will be highlighted in the “Areas of Special Geotechnical Interest” section of this text report.

Alluvial soils are believed to be present in several areas within the project corridor. The deposition of fine sediments is occurring in the areas of the project corridor covered by Lake Norman. Some minor deposition of fine to coarse materials during heavy rain events is probable along a few of the unnamed tributaries and drainage features throughout the project corridor.

No Alluvial soils were actually encountered during the geotechnical investigation. The presence of Alluvial soils shown in this report is based on observations made in the field, the final survey file, and knowledge of geomorphology. Specific locations where these soils are believed to be present will be highlighted in the “Areas of Special Geotechnical Interest” section of this text report.

Rock Properties

The Fine-Grained Biotite Gneiss underlies the majority of the project corridor. This unit is very old, deeply weathered, and has likely undergone both ductile and brittle deformation. When you combine the deep weathering, compositional layering of the gneiss, and the complex folds, faults, and joints from the deformation, you can get some highly irregular weathering patterns. This is evident in several areas of the project within this unit where Weathered and/or Crystalline Rock seems to abruptly appear then disappear. In other areas, shallow Weathered Rock and/or Crystalline Rock layers are underlain by residual soils. The rock lines drawn in the following report are a best interpretation given the information available. Based on boring data within this unit, major areas of Crystalline Rock are unlikely to be encountered at or above grade. One area of Crystalline Rock 4 feet below proposed grade was encountered. Given the highly irregular weathering patterns, it should be assumed that unexpected minor areas of Crystalline Rock could be encountered in major cut sections. Given the characteristics of this unit, these areas would likely be excavated without any blasting. Most material excavated from this unit would likely not be suitable for rip rap, gravel, rock embankments etc. Residual soils developed from this unit generally consist of silty sands, sandy silts, clayey silts, sandy clays, and silty clays. They are typically saprolitic and highly micaceous. Some minor amounts of MnO occur within this unit in a few areas. For specific information on the locations of near and above grade Crystalline Rock within this unit, refer to the “Areas of Special Geotechnical Interest” section of this text report.

A small area of Mafic Metavolcanic Rock underlies the project corridor from Antiquity Lane to just west of the intersection of Williamson and Bluefield Roads. This unit is mostly composed of metamorphosed basaltic flows and tuffs. Much like the Fine-Grained Biotite Gneiss, these flows and tuffs are comparable in age and are likely heavily deformed. This unit is also deeply weathered, with no Weathered or Crystalline Rock encountered within it during the investigation. The residual soils developed from this unit tend to be more cohesive, with the majority of these soils consisting of silts and clays. They typically have lower mica content and less pronounced saprolitic texture.

Hundreds of millions of years ago, and several miles below the earth’s surface, a series of magmas intruded and expanded into the above-mentioned older units. The expansion into the surrounding rock was erratic and random, likely following fractures, faults, joints, and other weaknesses within the rock. These intrusions occurred on both a large scale where they can be measured in miles and on a small scale where they can be measured in inches. Over time this magma cooled and crystallized into what is now Granite. This Granite was encountered in many areas of the project corridor on both a large and small scale. It is much more resistant to weathering than the surrounding rocks, and even outcrops at the surface in a few locations within the project corridor. Weathered and Crystalline Rock lines associated with the Granite are generally more predictable than the Gneiss. With that said, the Granite is still subject to some irregular weathering due deformation and the complex contacts between it and the less resistant rock units surrounding it. The Granite will be a significant factor during the construction of this project. According to boring data and interpreted rock lines within this unit, Crystalline Rock will be at or above grade in several locations throughout the project corridor. Some unexpected areas of Crystalline Rock should be also anticipated in any cut sections that pass through the unit. It will likely require some blasting and will likely be suitable for rip rap, gravel, rock embankments, etc. Residual soils developed upon the Granite are generally silty sands to sandy silts. The Granite does whether to clay in a few areas. These soils are typically saprolitic and have fairly high mica content. For specific information on the locations of near and above grade Crystalline Rock within this unit, refer to the “Areas of Special Geotechnical Interest” section of this text report.

Groundwater Properties

Groundwater was rarely encountered during the geotechnical investigation. When it was encountered, it was at least 6 feet below proposed grade. In a few instances, perched water was encountered within areas of Artificial Fill, but again was at least 6 feet below proposed grade. No springs or seeps were encountered or observed during the investigation.

A visual reconnaissance for residential water wells was conducted throughout the project corridor. This was used in conjunction with the final survey file to attempt to identify water wells within the proposed construction limits of the project. Properly abandoned wells are not included in the following list. Some water well locations are well hidden, and it is possible that some wells were missed or misidentified by the final survey and/or visual reconnaissance. The following residential water wells were identified within the project corridor at the following locations:

Alignment	Station(±)	Offset
-L-	437+96	122′RT
-L-	590+49	315′LT
-L-	591+25	275′LT
-L-	640+00	146′RT
-L-	641+05	130′RT
-L-	772+51	178′RT
-Y-	13+06	34′LT
-Y-	14+85	141′RT
-Y40-	14+36	105′RT

Lake Norman is located within or adjacent to proposed right of way in the following locations: -L- 437+50 - 487+75, -L- 495+00 - 497+00, and -TRAIL2- 100+00.

Retention ponds designed to handle storm water run-off from urban areas were located adjacent to proposed right of way at the following locations: -L- 564+25 - 565+00, -L- 690+00 - 693+00, and -L- 794+00.

Areas of Special Geotechnical Interest

Plastic Soils - During the geotechnical investigation, highly plastic clays were encountered in several areas. These areas are often compositionally similar to and found within the same strata as moderately plastic clays. When appropriate, areas of highly plastic clays will be lumped in with areas of moderately plastic clays in the following exercise. More detailed information on these soils can be found in the “Soil Properties” section of this

text report. The following locations listed below show areas where moderate to highly plastic clays are present within the project corridor:

Alignment	Station(±)	Alignment	Station(±)
-L-	523+25 - 538+50	-L-	546+75 - 548+25
-L-	555+25 - 565+00	-L-	566+50 - 587+00
-L-	591+00 - 611+00	-L-	630+00 - 636+50
-L-	640+50 - 658+50	-L-	696+75 - 702+50
-L-	703+50 - 710+25	-L-	711+00 - 712+50
-L-	718+25 - 724+50	-L-	746+25 - 749+75
-L-	753+00 - 755+75	-L-	772+50 - 776+00
-TRAIL2-	97+00 - 102+00	-TRAIL2-	110+00 - 122+00
-Y40-	10+58 - 16+00		

Crystalline Rock - During the geotechnical investigation, Crystalline Rock was encountered in several areas. More detailed information on the rocks underlying the project corridor can be found in the “Rock Properties” section of this text report. The following locations listed below show areas where Crystalline Rock is above or within 6 feet of proposed grade:

Alignment	Station(±)	Alignment	Station(±)
-L-	438+75 - 439+25	-L-	542+25 - 542+75
-L-	545+25 - 545+75	-L-	546+25 - 549+25
-TRAIL2-	121+00 - 122+00	-TRAIL2-	122+50 - 124+82
-Y8-	12+25 - 14+25		

Artificial Fill - During the geotechnical investigation, areas of Artificial Fill were encountered in a few locations. These fills often contained poor soils, organic material, garbage, and in some cases perched water conditions. More information on these soils can be found in the “Soil Properties” section of this text report. The following locations listed below show areas where Artificial Fill is present within the project corridor:

Alignment	Station(±)	Alignment	Station(±)
-L-	517+00 - 519+00	-L-	555+25 - 557+00
-L-	726+50 - 729+00	-L-	767+00 - 769+00
-L-	795+75 - 796+75	-Y31RPA-	16+60 - 18+25

Soft Soils - During the geotechnical investigation, areas of soft and cohesive soils were encountered. There are soft soils within all of the soil origins present along the project corridor. The following locations listed below show areas where soft cohesive soils were encountered at or below proposed grade:

Alignment	Station(±)	Alignment	Station(±)
-L-	498+25 - 500+00	-L-	501+75 - 504+00
-L-	522+50 - 524+50	-L-	530+00 - 531+00
-L-	561+50 - 563+00	-L-	566+50 - 571+00
-L-	573+00 - 575+00	-L-	691+50 - 692+25
-L-	694+25 - 695+00	-L-	710+25 - 710+75
-L-	720+50 - 723+50	-L-	738+00 - 740+75
-L-	769+00 - 771+25	-L-	794+50 - 796+25
-TRAIL2-	92+00 - 94+75	-Y-	10+25 - 11+75
-Y37-	11+50 - 13+41		

Alluvial Soils - During the geotechnical investigation, areas of Alluvial soils were observed, but not actually encountered during drilling. Alluvial soils are typically wet to saturated, soft/loose, and can contain organic materials. The following locations listed below show areas where Alluvial soils are believed to be present within the project footprint:

Alignment	Station(±)	Alignment	Station(±)
-L-	459+00 - 465+80	-L-	477+95 - 487+80
-L-	554+27 - 554+74	-L-	755+12 - 755+37
-L-	784+31 - 784+40	-L-	793+13 - 793+53

Coal Fly Ash - During the geotechnical investigation, it is believed that coal fly ash was potentially encountered on two occasions in Engineered Artificial Fill. Coal fly ash, when at the appropriate moisture, can make a great structural fill. However, when excavated it could lead to environmental issues with its disposal. The following locations listed below show precise locations where the field professional believed coal fly ash to be present:

Alignment	Station(±)	Offset	Thickness
-L-	435+00	45’LT	12.9’
-L-	704+00	50’LT	1.2’

References

The Geology of the Carolinas, J. Wright Horton, Jr., and Victor A. Zullo

Respectfully Submitted,
Brett Smith, PG
Project Geologist
Summit Design and Engineering Services, PLLC

PROJECT REFERENCE NO.	SHEET NO.
R-2307B / I-5717	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

TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

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420 425 430

DUKE ENERGY CAROLINAS LLC
DB 2954 PG 421

DUKE ENERGY CAROLINAS LLC
DB 1620 PG 232

JETEN PROPERTIES LLC
DB 2280 PG 1480
PB 52 PG 79

JETEN PROPERTIES LLC
DB 2271PG 945

NAD 83/NSRS 2007

N 05°55'16" E
416.84'

BEGIN CONSTRUCTION
-Y- STA. 10+11.37

BEGIN CONSTRUCTION
-L- STA. 425+23.31

-L- POT Sta.425+83.82 =
-Y- POT Sta. 10+00.00

N 78°57'17" W
15.79'

N 88°47'43" W
27.23'

N 44°24'28" W
178.98'

N 37°07'58" W
425.96'

N 85°54'12" W
322.69'

WOODS

RESIDUAL

EIP AT BROKEN R/W MON

FIBER OPTIC MARKER

EXISTING R/W

ROADWAY EMBANKMENT

-L-

N 53° 20' 38.2" E

ISFD

CONC

ISBK/MTL BUS

BST

BST PA

60' CONC

ISBK BUS

16' BLK WALL

ARTIFICIAL FILL (ENGINEERED)

MATCH LINE -L- STA.434+00
SEE SHEET NO.5

S1

24" RCP

STONE R/W

EIP

BL-22

BL-23

BM#2

EXISTING DRIVEWAY WITHIN NCDOT R/W TO BE REMOVED

S 36° 39' 21.8" E

-Y- PC Sta. 11+10.97

BEGIN T.I.P. PROJECT R-2307B
-L- POT 432+51.35

-L- PC Sta. 432+51.35

HAROLD EDWIN STUTTS
DB 1206 PG 370 & 371

EVELYN GABRIEL STUTTS
DB 701PG 450

ECM R/W

S 62°46'05" E
200.72'

ANNIE & CLYDE HOLDSCLAW, HEIRS
DB 1598 PG 821

S 19°46'45" W
137.60'

S 06°25'45" W
86.89'

S 31°38'02" W
732.61'

N 19°46'02" W

MITCHELL LEWIS PARKER
DB 1066 PG 444

BY-59

WELL

ISBKD

66" CONC

16' DR.

16" CONC

-Y- PT Sta. 14+89.34

IS CAR

S

-Y- PC Sta. 15+73.16

36"x12" ROCK WALL

60" CHL KENNEL

END CONSTRUCTION
-Y- STA. 15+80.00

-Y- PT Sta. 16+55.81

S 56° 21' 51.6" E

MATTIE ROSE DEVELOPMENT INC
DB 3218 PG 1384
PB 66 PG 178

-Y?- GREENWOOD RD	2019 ADT / 2039 ADT
21,580 / 32,460	-L- NC 150
500 / 500	270 / 590
	21,340 / 32,540
770 / 1090	

CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

SEE SHEET 37 FOR -L- PROFILE
SEE SHEET 55 FOR -Y- PROFILE
SEE SHEET 2B-1 FOR CURVE DATA
SEE SHEET 2B-2 FOR INTERSECTION DETAILS

PROJECT REFERENCE NO.	SHEET NO.
R-2307B / I-5717	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/NSRS 2007

-DRW7- PT Sta. 11+49.83
-DRW7- PC Sta. 13+52.56
-DRW7- PT Sta. 15+14.97
-DRW7- POT Sta. 15+16.92
BEGIN CONSTRUCTION -TRAIL1- STA. 10+00.00
-L- PRC Sta. 439+66.05
-DRW7- PC Sta. 10+36.10
-L- POC Sta. 439+00.00 = -DRW7- POT Sta. 10+00.00
-TRAIL 1- POT Sta. 10+00.00
-TRAIL 1- PC Sta. 12+24.95
-TRAIL 1- PT Sta. 16+88.21
END CONSTRUCTION -DRW7- PT Sta. 15+16.92
-LEB- PC Sta. 38+27.52= -L- PC Sta. 439+66.05 (123.50' RT)

ALLUVIAL
RESIDUAL
ARTIFICIAL FILL (ENGINEERED)
ROADWAY EMBANKMENT

JETEN PROPERTIES LLC
DB 2280 PG 1480
PB 52 PG 79

JETEN PROPERTIES LLC
DB 2409 PG 329

DUKE ENERGY CAROLINAS LLC
DB 3009 PG 132

HAROLD EDWIN STUTTS
DB 2123 PG 1697

HAROLD EDWIN STUTTS
DB 1206 PG 370 & 371

ANNIE B. STUTTS IRREVOCABLE TRUST
DB 3139 PG 1357
MTN. ISLAND DWG
No. 835 & 835-A

BL-24
BL-25

N 38° 58' 43.9" W
N 45° 48' 58.2" E
N 26° 44' 54.8" E
N 59° 05' 15.4" E
N 47° 53' 53.7" E
N 61° 03' 11" E 536.10'
N 89° 00' 28.8" E
S 63° 24' 38" E 221.85'
S 85° 26' 32" E 264.77'
S 54° 11' 28" W 338.70'
S 14° 29' 28" W 32.40'
S 60° 42' 48" E 103.49'
N 59° 38' 37" W 93.03'

SEE SHEET 39 FOR -L- PROFILE
SEE SHEET 55 FOR -LEB- PROFILE
SEE SHEET 73 FOR -TRAIL- PROFILE
SEE SHEETS 2B-1 & 2B-2 FOR CURVE DATA

CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

MATCH LINE -L- STA.434+00 SEE SHEET NO.4
MATCH LINE -L- STA.448+00 SEE SHEET NO.6

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B / I-5717	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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-TRAIL I- PRC Sta. 22+08.39
-TRAIL I- PC Sta. 21+21.55
-L- CS Sta. 450+88.18
-L- SC Sta. 453+63.18
-TRAIL I- PRC Sta. 24+38.42
-TRAIL I- PT Sta. 26+17.77
-TRAIL I- PC Sta. 27+47.04
-TRAIL I- PRC Sta. 28+44.62
-TRAIL I- PT Sta. 29+19.09
-L- CS Sta. 460+45.32
BEGIN 4' CHAIN LINK FENCE -TRAIL I- STA 27+75

DUKE ENERGY CAROLINAS LLC
DB 1620 PG 232

ANNIE B. STUTTS IRREVOCABLE TRUST
DB 3139 PG 1357
MTN. ISLAND DWG
No. 835 & 835-A

ARTIFICIAL FILL (ENGINEERED)

ALLUVIAL

RESIDUAL

ROADWAY EMBANKMENT

BL-26

BL-27

MATCH LINE -L- STA 448+00 SEE SHEET NO.5

MATCH LINE -L- STA 462+00 SEE SHEET NO.7

-LEB- POC Sta. 47+57.14= -L- POC Sta. 448+97.49 (23.50' RT)

SEE SHEET 40 FOR -L- PROFILE
SEE SHEET 55 FOR -LEB- PROFILE
SEE SHEET 73 FOR -TRAIL- PROFILE
SEE SHEET 28B-1 FOR CURVE DATA

CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B / I-5717	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
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NAD 83/NSRS 2007

LAKE NORMAN
DUKE ENERGY CAROLINAS LLC
DB 00CO PG 2006

465 470 475

-L- ST Sta.463+95.32
-LEB- POT Sta.62+37.31 (153.00' LT)

N 82°20'08" E
13.53'

END 4' CHAIN LINK FENCE
-L- STA.465+54

BEGIN APPROACH SLAB
-L- STA 465+55 +/-

BEGIN BRIDGE
-L- STA 465+80 +/-

DUKE ENERGY CAROLINAS LLC
DB 1620 PG 232

ALLUVIAL

MATCH LINE -L- STA.462+00
SEE SHEET NO.6

70' (TYP.)

EDGE OF WATER JULY 2012

SEAT=771.05'

EXISTING R/W

TYPE 4/350

16" DIP

NC 150 RIVER HWY 24" BST

ROADWAY EMBANKMENT

SEAT=771.08'

R2307C-3

-LEB- PT Sta.61+74.72

-L-

N 76°29'44.0" E

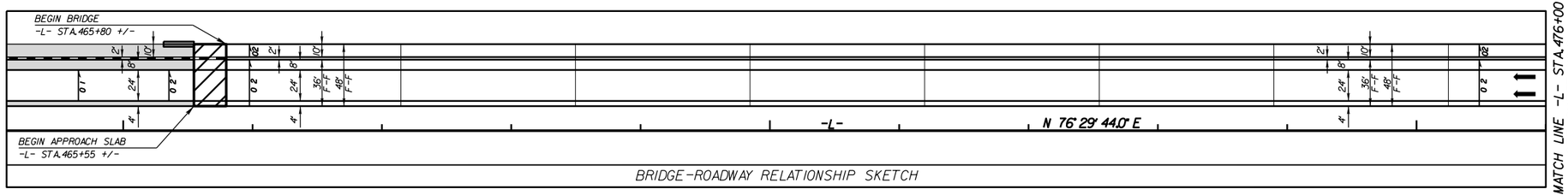
-LEB-

CONC

16" +/- INSULATED WATERLINE ATTACHED TO BRIDGE

MATCH LINE -L- STA.476+00
SEE SHEET NO.8

LAKE NORMAN
CATAWBA RIVER



BRIDGE-ROADWAY RELATIONSHIP SKETCH

SEE SHEET 39 FOR -L- PROFILE
SEE SHEETS 55 THRU 56 FOR -LEB- PROFILE
SEE SHEETS 73 & 74 FOR -TRAIL- PROFILE
SEE SHEET 2B-1 FOR CURVE DATA

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B / I-5717	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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CRYSTALLINE ROCK

ALLUVIAL

RESIDUAL

LAKE NORMAN
DUKE ENERGY CAROLINAS LLC
DB 00CO PG 2006

DUKE ENERGY CAROLINAS LLC
DB 68 PG 152
MT ISLAND FILE NO. H06

-L- TS Sta. 479+95.32=
-LEB- POT Sta. 78+37.31 (53.00' LT)

-L- SC Sta. 482+05.32

-L- CS Sta. 489+38.25

-LEB- PC Sta. 80+30.79

-LEB- CS Sta. 84+38.51

-LEB- SC Sta. 85+88.51

BEGIN 4' CHAIN LINK FENCE
-L- STA. 478+20

END APPROACH SLAB
-L- STA 478+20 +/-

END BRIDGE
-L- STA 477+95 +/-

BEGIN 1'-6" CURB
-LEB- STA. 87+15

BEGIN 1'-6" CURB
-L- STA. 488+78

BEGIN WALL 4-I
-L- STA.488+??

MATCH LINE -L- STA.476+00
SEE SHEET NO.7

MATCH LINE -L- STA.494+00
SEE SHEET NO.9

USGS "20 JAS"
ELEV= 775.72

N 76° 29' 44.0" E

SEAT=771.09'

SEAT=771.08'

TYPE B-77

FIBER OPTIC MARKER

RIP RAP

ROADWAY EMBANKMENT

EDGE OF WATER JULY 2012

EDGE OF WATER AUGUST 2003

EXISTING R/W

WOODS

48" WD RAIL

WD DOCK

WD CANOPY

R2307C-4

BL-28

JAMES RIPPY BOONE & JULIANNE KIM BOONE
DB 2235 PG 852
PB 27 PG 104

MAXEY J. ANDRESS & BARBARA ANDRESS
DB 1733 PG 1580
PB 27 PG 104

PAUL T. & BRENDA C. MASON
PB 42-1 PG 102
PB 27 PG 104

BRIDGE-ROADWAY RELATIONSHIP SKETCH

CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

SEE SHEET 40 FOR -L- PROFILE
SEE SHEETS 56 THRU 57 FOR -LEB- PROFILE
SEE SHEET 74 FOR -TRAIL- PROFILE
SEE SHEET 2B-1 FOR CURVE DATA

PROJECT REFERENCE NO.	SHEET NO.
R-2307B / 1-5717	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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NAD 83/NSRS 2007

PROPOSED PARKING SPOTS

ALLUVIAL

RIVER CITY ASSOCIATES
DB 1023 PG 804

BEGIN CONSTRUCTION
-DRW1- STA. 10+46.40

-DRW1- PC Sta. 10+36.47

-DRW1- POT Sta. 10+00.00

DUKE ENERGY CAROLINAS LLC
DB 68 PG 152
MT ISLAND FILE No. 1106

N 86°04'21.0" E

S 11°44'28.2" E

PARKING SPOTS TO BE RELOCATED

-L- ST Sta. 490+88.25

-DRW1- PC Sta. 11+94.69

-TRAIL 2- PT Sta. 70+70.53

-TRAIL 2- PRC Sta. 70+30.19

-L- POC Sta. 494+16.72 =
-Y1- POT Sta. 10+10.68

-DRW1- PT Sta. 13+08.55

-TRAIL 2- PC Sta. 69+78.16

END W.F. STA. 491+02.34
-L- STA. 490+??
END 4' CHAIN LINK FENCE
-L- STA. 491+??

S 8°02'34.8" E

RESIDUAL

PINNACLE

PROPOSED PARKING SPOTS

BM#6

ROADWAY EMBANKMENT

-LEB-

MATCH LINE -L- STA. 490+00
SEE SHEET NO.10

-DRW1- PT Sta. 10+98.15

-TRAIL 2- PT Sta. 76+38.48

-TRAIL 2- PRC Sta. 75+94.13

-TRAIL 2- PRC Sta. 75+45.86

-TRAIL 2- PRC Sta. 75+07.50

S 33°40'40" W
207.93'

-TRAIL 2- PC Sta. 73+88.74

N 80°15'18.9" E

-TRAIL 2- PC Sta. 71+16.52

-L- POC Sta. 494+13.06 =
-DRW1- PT Sta. 14+03.00

-TRAIL 2- PT Sta. 72+05.97

S 89°56'11" E
171.17'

TOWN OF MOORESVILLE
DB 1752 PG 1808
PB 47 PG 149

S 89°29'02" E

RESIDUAL

BL-30

RIVER CITY ASSOCIATES LLC
DB 1669 PG 1583

ECM R/W DISTURBED

ROADWAY EMBANKMENT

-LEB-

S 2°11'19.8" E

RESIDUAL

PINNACLE SHORES OWNERS ASSOC. INC.
DB 1555 PG 874

2014 3 IH BORROWER LP
DB 2327 PG 2380
PB 27 PG 104

NC FAMILY CARE LIVING TRUST
DB 2078 PG 670
PB 27 PG 104

-Y1- PT Sta. 10+33.50

-LEB- ST Sta. 90+08.02 =
-L- POT Sta. 491+72.95 (23.50 RT)

-LEB- CS Sta. 88+58.02

BY-41
S 74°27'53.5" W

MARINER POINTE LN

END CONSTRUCTION
-Y1- STA. 13+10.00

BY-42

ALLUVIAL

LON T. LAM & MAI H. LAM
DB 1339 PG 403
PB 27 PG 104

S 66°54'01" E
467.61'

-Y1- PT Sta. 14+14.79

LINDA JO MCNAMARA
DB 1975 PG 1284
PB 27 PG 104

S 66°24'58" E
370.54'

-Y1- POT Sta. 15+65.54

-Y2- PCC Sta. 12+02.97

BEGIN CONSTRUCTION
-Y2- STA. 12+40.00

N 33°40'40" E
172.26'

-Y2- PCC Sta. 13+25.40

S 65°32'17" E
252.69'

S 35°25'35" E
30.64'

S 82°27'47" E
27.91'

BY-45

ROADWAY EMBANKMENT

RESIDUAL

-Y2- PT Sta. 16+85.88

-L- SC Sta. 496+98.05

-L- TS Sta. 495+33.05

-Y2- PRC Sta. 12+94.92

END CONSTRUCTION
-Y2- STA. 13+00.00

BY-44

TIMOTHY W & TAMMY T WILSON
DB 1536 PG 1907
PB 31 PG 146

-Y3- PRC Sta. 12+94.92

PINNACLE SHORES OWNERS ASSOC. INC.
DB 1293 PG 1269
PB 25 PG 140

S 9°42'26.9" E

-L- POC Sta. 499+78.50 =
-Y2- POT Sta. 16+91.51

-TRAIL 2- PT Sta. 81+05.54

-L- POC Sta. 499+80.30 =
-Y3- POT Sta. 10+00.00

-TRAIL 2- PRC Sta. 78+93.21

S 88°33'14.8" E

-TRAIL 2- PC Sta. 77+50.22

RESIDUAL

ROADWAY EMBANKMENT

S 16°14'11.2" E

-Y3- PC Sta. 11+40.00

RESIDUAL

PINNACLE SHORES OWNERS ASSOC. INC.
DB 1293 PG 1269
PB 31 PG 146

N 89°41'12" E
139.50'

PINNACLE SHORES OWNERS ASSOC. INC.
DB 1906 PG 2402
PB 43 PG 144

S 13°59'55" E
125.55'

END 2'-6" C&G

PINNACLE SHORES OWNERS ASSOCIATION INC
DB 1906 PG 2402
PB 43 PG 144

N 89°41'12" E
134.76'

N 73°41'03" E
64.08'

S 00°27'32" E
62.94'

N 84°47'53" E
132.18'

N 84°47'53" E
107.26'

PINNACLE SHORES OWNERS ASSOCIATION INC
DB 1906 PG 2402
PB 43 PG 144

N 89°39'25" E
123.07'

DAIVID E & PATRICIA K TOWNSEND
DB 1591 PG 742
PB 43 PG 144

MATCH LINE -L- STA. 504+00
SEE SHEET NO.10

SEE SHEET 43 FOR -L- PROFILE
SEE SHEET 57 FOR -LEB- PROFILE
SEE SHEET 58 FOR -Y1-, -Y2- & -Y3- PROFILES
SEE SHEETS 75 & 76 FOR -TRAIL- PROFILE
SEE SHEET 2B-1 FOR CURVE DATA
SEE SHEET 2B-3 FOR INTERSECTION DETAILS

CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

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$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2307B / I-5717	10
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

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706 HILLSBOROUGH ST. SUITE 200
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$$$$USERNAME$$$$

-Y4- POT Sta. 10+00.00
-Y4- PC Sta. 10+06.48
-Y4- PT Sta. 11+01.16
-Y4- PC Sta. 14+16.47
-Y4A- POT Sta. 11+50.00
-TRAIL 2- PC Sta. 93+87.12
-TRAIL 2- PRC Sta. 83+17.59
-TRAIL 2- PC Sta. 82+12.33
-TRAIL 2- PRC Sta. 83+96.04
-TRAIL 2- PT Sta. 85+99.85
-TRAIL 2- PT Sta. 89+40.24
-TRAIL 2- PC Sta. 87+55.90
-TRAIL 2- PRC Sta. 12+07.14
-Y4- POC Sta. 14+53.04
-Y4A- POT Sta. 10+00.00
-TRAIL 2- PC Sta. 89+73.57
-TRAIL 2- PRC Sta. 90+56.79
-Y4- PT Sta. 16+18.93
-TRAIL 2- PT Sta. 91+90.87
-DRW3- PT Sta. 13+06.41
-DRW3- POT Sta. 14+01.55
-L- POT Sta. 512+61.02 = -Y4- POT Sta. 16+48.32
BL-33 -L- POT Sta. 515+70.00 = -DRW3- POT Sta. 14+01.55
BL-32
BY-47
BY-48
BEGIN CONSTRUCTION -Y4- STA. 13+80.00
END CONSTRUCTION -Y4A- STA. 10+90.00
BEGIN 4' CHAIN LINK FENCE -TRAIL 2- STA. 94+50
BEGIN WALL 10-1 -L- STA. 516+??
BEGIN 8X18 CURB -L- STA. 508+50
END 8X18 CURB -L- STA. 508+64
BEGIN 8X18 CURB -L- STA. 509+29
END 8X18 CURB -L- STA. 512+42
-L- CS Sta. 507+88.15
-L- ST Sta. 510+63.15
MATCH LINE -L- STA. 504+00 SEE SHEET NO. 9
MATCH LINE -L- STA. 516+00 SEE SHEET NO. 11

S 24°08'03.1" E
S 65°35'19" E 367.19'
S 37°41'47.5" E
N 82°22'33.8" E
S 89°26'48.9" E
S 62°55'06.8" E
S 12°44'17.0" W
S 24°27'09.8" W
S 57°07'42.2" E
S 65°32'50.2" E
N 59°57'36.2" E
N 65°57'11.8" W
N 30°33'45" E 33.19'
S 35°33'59" W 225.06'
N 09°34'27" W 49.57'
N 89°39'25" E 84.45'
N 09°13'16" W 50.49'
S 89°52'00" W 86.22'
S 46°44'59" W 322.44'
S 48°16'20" E 245.98'
S 32°09'40" E 110.01'

PINNACLE SHORES OWNERS ASSOCIATION INC DB 1293 PG 1269 PB 25 PG 142
PINNACLE SHORES OWNERS ASSOC. INC. DB 1293 PG 1269 PB 25 PG 140
PINNACLE SHORES OWNERS ASSOC. INC. DB 1399 PG 740 PB 41 PG 104
PROMENADE ON THE LAKE LLC DB 16111 PG 123 PB 41 PG 103
JACK R. WILLIAMS DB 1399 PG 740 PB 41 PG 104

ROADWAY EMBANKMENT
RESIDUAL
ARTIFICIAL FILL
ALLUVIAL
McCRARY ACCESS AREA BST PA
GR PA

CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

SEE SHEET 43 FOR -L- PROFILE
SEE SHEET 58 FOR -Y4- PROFILE
SEE SHEET 75 FOR -TRAIL- PROFILE
SEE SHEET 2B-1 FOR CURVE DATA
SEE SHEET 2B-3 FOR INTERSECTION DETAILS

PROJECT REFERENCE NO.	SHEET NO.
R-2307B / 1-5717	11
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

TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

NAD 83/NSRS 2007

ALLUVIAL

ALLUVIAL

BY-54

REX A STUMP & KIMBERLY A STUMP
DB 1189 PG 1442
PB 27 PG 98

ANGELA S & DANIEL C HARRIS
DB 2065 PG 2017
PB 27 PG 98

BY-49

JESSE JAMES THOMAS III & ROSEANN THOMAS
DB 1126 PG 765
PB 27 PG 98

PINNACLE SHORES OWNERS ASSOCIATION INC
DB 1293 PG 1269
PB 27 PG 98

PINNACLE SHORES OWNERS ASSOC. INC.
DB 1293 PG 1269
PB 25 PG 148

PINNACLE SHORES OWNERS ASSOC. INC.
DB 1293 PG 1269
PB 27 PG 98

-Y5- POT Sta. 10+00.00
-Y5- PC Sta. 10+06.07
-Y5- PT Sta. 10+77.27
-Y5- PC Sta. 11+55.00
-Y5- PT Sta. 13+05.98
-TRAIL 2- PC Sta. 104+92.06
-TRAIL 2- PRC Sta. 105+20.32
-TRAIL 2- PT Sta. 109+11.97
-TRAIL 2- PRC Sta. 108+31.32
-TRAIL 2- PC Sta. 107+34.29
-TRAIL 2- PT Sta. 106+60.50
-TRAIL 2- PT Sta. 104+34.74
-TRAIL 2- PRC Sta. 103+79.38
-TRAIL 2- PC Sta. 102+68.87
-DRW2- PC Sta. 13+28.25
-DRW2- PT Sta. 11+56.56
-DRW2- PT Sta. 13+42.15
-DRW2- POT Sta. 13+71.33
-L- POT Sta. 526+51.22 = -Y5- POT Sta. 15+30.08
-L- POT Sta. 14+32.93
-L- TS Sta. 530+23.56
PC Sta. 10+83.44

BEGIN CONSTRUCTION -Y5- STA. 13+50.00

BEGIN 4' CHAIN LINK FENCE -TRAIL 2- STA.101+35
END 4' CHAIN LINK FENCE -TRAIL 2- STA.103+00
END 4' CHAIN LINK FENCE -TRAIL 2- STA.100+60
END WALL 10-2 -L- STA.532+32

ARTIFICIAL FILL
RESIDUAL
ROADWAY EMBANKMENT

S 29° 29' 48.5" E
S 0° 21' 35.0" E
S 24° 34' 06.0" W
S 65° 25' 54.0" E
S 76° 00' 40.0" E
S 66° 37' 36.1" E
S 65° 32' 50.2" E
S 24° 27' 09.8" W
N 62° 27' 03.8" W
S 72° 24' 26.5" W

BL-34
BL-35

MATCH LINE -L- STA.530+00 SEE SHEET NO.10

MATCH LINE -L- STA.532+00 SEE SHEET NO.12

DUKE ENERGY CAROLINAS LLC
DB 968 PG 250
PB 25 PG 160
MT ISLAND FILE No. 1107

CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

SEE SHEET 44 FOR -L- PROFILE
SEE SHEET 59 FOR -Y5- PROFILE
SEE SHEETS 75 & 76 FOR -TRAIL- PROFILE
SEE SHEET 2B-1 FOR CURVE DATA
SEE SHEET 2B-4 FOR INTERSECTION DETAILS

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B / I-5717	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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CORP. LICENSE NO.: C-0275

NAD 83/NSRS 2007

DERRICK A & YVONNE W NEAL
DB 1217 PG 671
PB 27 PG 98

CARL B RENFRO
DB 1361 PG 1030
PB 27 PG 98

PINNACLE SHORES OWNERS ASSOC. INC.
DB 1293 PG 1269
PB 27 PG 98

CAROLINA WATER SERVICES INC
DB 1057 PG 744
PB 26 PG 55

LAKE LUXURY HOMES LLC
DB 2356 PG 1883
PB 63 PG 78

LAKE LUXURY HOMES LLC
DB 2356 PG 1902
PB 49 PG 20

RONNIE L. SMITH & LEE A. SMITH
DB 2084 PG 2258
PB 57 PG 80

LOUIS A. SARRO
DB 1660 PG 306
PB 31PG 145

DAVID W. & MARIA DEGENHART
DB 1697 PG 1495
PB 31PG 145

TED ROOSEVELT BOWERS JR & VERONICA BOWERS
DB 2166 PG 230
PB 31PG 145

CRAIG O ARNETT & MICHELLE D ARNETT
DB 2039 PG 138
PB 31PG 145

WOODLAND + WATERVIEW LLC
DB 1907 PG 655
PB 42 PG 131

BY-55 BY-56 BY-57 BY-50

-Y6- PC Sta. 11+36.02
-Y6- PT Sta. 12+11.89
-Y6- PC Sta. 12+20.04
-Y6- PT Sta. 12+96.29

BEGIN CONSTRUCTION -Y6- STA. 14+00.00
-Y6- PC Sta. 13+98.90
-Y6- PT Sta. 15+51.92
-Y6- POT Sta. 15+94.18

-TRAIL 2- PC Sta. 112+87.85
-TRAIL 2- PT Sta. 112+36.79
-TRAIL 2- PC Sta. 111+72.57

-TRAIL 2- PRC Sta. 114+21.59
-TRAIL 2- PT Sta. 114+90.78
-TRAIL 2- PC Sta. 116+07.60
-TRAIL 2- PRC Sta. 116+78.67
-TRAIL 2- PT Sta. 117+21.98
-TRAIL 2- PRC Sta. 120+05.08
-TRAIL 2- PC Sta. 119+41.58
-TRAIL 2- PT Sta. 121+51.93
-TRAIL 2- PRC Sta. 120+99.52

BEGIN 4' CHAIN LINK FENCE -TRAIL 2- STA.115+25
BEGIN 4' CHAIN LINK FENCE -TRAIL 2- STA.119+35

-Y9- POT Sta. 10+00.00
-Y9- PC Sta. 10+06.80
-Y8- POT Sta. 10+00.00
BEGIN CONSTRUCTION -Y9- STA. 10+90.00
BEGIN CONSTRUCTION -Y8- STA. 10+40.00
-Y9- PCC Sta. 11+42.77
-Y9- PT Sta. 12+58.64
-Y8- PC Sta. 11+06.16
-Y8- PT Sta. 11+94.50
-Y8- POT Sta. 12+23.00
-Y9- POT Sta. 13+51.74
-TRAIL 2- PC Sta. 123+19.21
-TRAIL 2- PT Sta. 124+81.95
-TRAIL 2- PRC Sta. 123+94.84

END EXPRESSWAY GUTTER -Y8- STA.11+82.64
BEGIN EXPRESSWAY GUTTER -Y8- STA.11+90.00
BEGIN EXPRESSWAY GUTTER -Y9- STA.11+90.00
END EXPRESSWAY GUTTER -Y8- STA.12+57.23

-L- POC Sta.534+76.98 = -Y6- POT Sta. 15+94.18
-L- CS Sta. 534+89.94
-L- SC Sta. 532+23.56
-Y7- PT Sta. 12+84.51
-Y7- PC Sta. 13+00.40
-Y7- PC Sta. 11+04.53
-L- POS Sta.535+16.67
-Y7- POT Sta. 10+00.00
-L- ST Sta. 536+89.94
-L- POT Sta.544+21.54 = -Y8- POT Sta. 14+68.79

TRANSITION 2'-9" C&G TO 1'-6" C&G STA.536+23.27 TO 536+89.94

END CONSTRUCTION -Y7- STA. 12+50.00

PROPOSED HSB

RESIDUAL
ROADWAY EMBANKMENT
CRYSTALLINE ROCK
CHECK SLOPES
RELOCATE ROAD?

MATCH LINE -L- STA.532+00 SEE SHEET NO.11
MATCH LINE -L- STA.546+00 SEE SHEET NO.13

CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

SEE SHEET 44 FOR -L- PROFILE
SEE SHEET 59 FOR -Y6-, -Y7-, -Y8- & -Y9- PROFILES
SEE SHEET 76 FOR -TRAIL- PROFILE
SEE SHEETS 2B-1 & 2B-2 FOR CURVE DATA
SEE SHEET 2B-4 FOR INTERSECTION DETAILS

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$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2307B / I-5717	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

RONNIE L. SMITH & LEE A. SMITH
DB 2084 PG 2258
PB 57 PG 80

JM ASSETS LP
DB 2015 PG 3577
PB 60 PG 5

RONALD D. INKENT CAMPBELL & DANIEL JINKENT CAMPBELL
DB 2362 PG 387
DB 2380 PG 397

JAMES A. KATH
NANCY J. KATH
ANTHONY W. MACASIEB
WENDY S. MACASIEB
DB 962 PG 534

LAKE NORMAN COUNTRY INC
DB 823 PG 437

DONALD F. MATTHEWS
DB 1240 PG 1086

DONALD F. & LOUNETTE L. MATTHEWS
DB 850 PG 607

MORRIS ENTERPRISES
DB 985 PG 984

LESLIE K. SUTTON
DB 999 PG 214

ALICE B. STILLWELL B&C MILLS & D. FOX
DB 1826 PG 263

HYDRAULICS LTD
DB 1276 PG 705
PB 19 PG 89

WOODLAND + WATERVIEW LLC
DB 1907 PG 655
PB 42 PG 131

QUINN MANAGEMENT LLC
DB 1879 PG 1511
PB 28 PG 169

WAYNE A. FOLGER
DB 1146 PG 1264
PB 28 PG 169

BOOSTER LLC
DB 1623 PG 2498
PB 28 PG 169

-L- PC Sta. 550+30.85
-L- POC Sta. 555+30.15 = -Y10- POT Sta. 10+00.00
-L- PT Sta. 557+24.15
-Y10- PC Sta. 12+78.26
-Y10- PT Sta. 13+17.66
-Y10- PC Sta. 13+48.49
-Y10- PT Sta. 13+99.98
-Y10- PC Sta. 14+07.26
-Y10- PT Sta. 14+79.48
-Y10- POT Sta. 15+52.00

BL-39
BL-36
BY-52
BY-53
R2307C-5

RESIDUAL
ALLUVIAL
ROADWAY EMBANKMENT
ARTIFICIAL FILL

MATCH LINE -L- STA. 546+00 SEE SHEET NO.12
MATCH LINE -L- STA. 560+00 SEE SHEET NO.14

WADDELL

NAD 83/NSRS 2007

CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

SEE SHEET 45 FOR -L- PROFILE
SEE SHEET 60 FOR -Y10- PROFILE
SEE SHEET 2B-1 FOR CURVE DATA
SEE SHEET 2B-4 FOR INTERSECTION DETAILS

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$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2307B / I-5717	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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NAD 83/NSRS 2007

JM ASSETS LP
DB 2105 PG 3577
PB 60 PG 5

JM ASSETS LP
DB 2326 PG 692

EDELWEISS NC LLC
DB 2272 PG 2444

HARRY ROBERT HUNTER JR.
DB 1064 PG 123

WILLIAM M FINLEY III & JEANNE T REVOC TR ETAL
DB 2350 PG 1633

LANCASTER FAMILY LLC
DB 2293 PG 139
PB 61 PG 111

HOME RUN MARKET PROPERTIES LLC
DB 2289 PG 110

JAI GIRIRAJ INC.
DB 2088 PG 179

LJC OF LAKE NORMAN LLC
DB 1996 PG 1723

THRASHER LLC
DB 2336 PG 1633
PB 43 PG 115

ALICE B. STILLWELL B&C MILLS & D. FOX
DB 1826 PG 263

LEONARD RETAIL PROPERTIES LLC
DB 1150 PG 636

C S PERFORMANCE INC.
DB 1283 PG 731

560 | 565 | 570

-L- POT Sta.567+96.61 =
-Y11- POT Sta. 10+00.00

-Y11- POT Sta. 11+65.05

END CONSTRUCTION
-Y11- STA. 11+50.00

R2307C-6

PROPOSED HSB

RESIDUAL

ROADWAY EMBANKMENT

PROP.10' MULTI-USE PATH

PROP.5' CONC.SIDEWALK

BL-60

MATCH LINE -L- STA.560+00
SEE SHEET NO.13

MATCH LINE -L- STA.574+00
SEE SHEET NO.15

★ UPGRADE EXISTING OR NEW SIGNAL

CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

SEE SHEET 45 FOR -L- PROFILE
SEE SHEET 60 FOR -Y11- PROFILE
SEE SHEET 2B-4 FOR INTERSECTION DETAILS

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B / I-5717	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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NAD 83 NSRS 2007

MATCH LINE -L- STA.574+00 SEE SHEET NO.14

MATCH LINE -L- STA.588+00 SEE SHEET NO.16

LANCASTER FAMILY LLC
DB 2293 PG 139
PB 61PG 111

BRYANT F LANCASTER ETAL
DB 2293 PG 1316
PB 61PG 111

BIG DADDYS PROPERTIES LLC
DB 2293 PG 1324
PB 61PG 111

JAMES W PARTIN
DB 2194 PG 829

KEITH M & STACY F WINDSOR
DB 2096 PG 2394

BEAM DISTRIBUTORS LLC
DB 1813 PG 801

SMITH & SMITH PROPERTIES INC.
DB 1790 PG 1813

C S PERFORMANCE INC.
DB 1283 PG 751

GREER FAMILY ENTERPRISES LLC
DB 1952 PG 2024

ALICE B. STILLWELL
CATHERINE T. MILLS
DAVID M. FOX
DB 18262 PG 268

HIPAR INVESTMENTS LLC
DB 1848 PG 470

GREG BIFFLE INC.
DB 1692 PG 2042
PB 52 PG 95

-Y12- PC Sta. 11+95.96
-Y12- PT Sta. 13+21.38
-DRW4- PT Sta. 11+33.94
-DRW4- POT Sta. 11+52.71
N 42° 44' 12.2" W
-L- POT Sta.580+66.47 =
-Y12- POT Sta. 16+32.39
-DRW4- PRC Sta. 10+63.28
-DRW4- PC Sta. 10+12.39
N 79° 21' 54.0" W
BL-61
S 10° 38' 06.0" W
S 7° 02' 30.6" W
BEGIN CONSTRUCTION -Y12- STA. 13+85.00
-Y12- POT Sta. 15+00.00
-DRW4- POT Sta. 10+00.00
TRANSITION 1'-6" C&G TO 2'-9" C&G
-L- STA.582+37.42 TO 582+92.42
-L- N 69° 23' 07.3" E
-Y13- PC Sta. 13+53.78
S 5° 31' 12.0" W
END CONSTRUCTION -Y13- STA. 13+00.00
-Y13- POT Sta. 15+74.77
BY-85
-Y13- PT Sta. 15+01.09
S 9° 44' 24.1" W
BY-84
-L- PC Sta. 583+84.09
-L- POT Sta.580+67.56 =
-Y13- POT Sta. 10+00.00

RESIDUAL
ROADWAY EMBANKMENT
PROP. 10' MULTI-USE PATH
PROP. 5' CONC. SIDEWALK
EXISTING R/W
ISM BUS
ISBK BUS
ISMTL BUS
MTL GATES
MTL S
ISBK BUS
ISMTL BUS
72" CHL & 35SW
72" CHL
48" RCP
24" RCP
15" RCP
12" RCP
16" WD RAIL
48" BK WALL
6" UNKNOWN TYPE
100' TAPER
445.91' TAPER
200' R
2'-6" C&G
2'-9" C&G
1'-6" C&G
30" C&G
24" DR.
26" DR.
16' DR. 15' BST
14" DR.
FIBER OPTIC MARKER
2-FLAG FLAG
1-FLAG FLAG
2 WD POSTS

-Y11- ROBINSON RD
2019 ADT
2039 ADT
850 / 1,090
200 / 200
650 / 890
24,100 / 36,580
-L- NC 150
25,130 / 38,250
300 / 300
880 / 1,280
1,180 / 1,580
-Y12- McCRARY RD

CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

SEE SHEET 46 FOR -L- PROFILE
SEE SHEET 60 FOR -Y12- & -Y13- PROFILES
SEE SHEET 2B-1 FOR CURVE DATA
SEE SHEET 2B-5 FOR INTERSECTION DETAILS

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$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2307B / I-5717	16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
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NAD 83 NSRS 2007

CYNTHIA ANNE GEORGE
DB 723 PG 786

MILLER WALLACE LLC
DB 1885 PG 523

AFLP #2 LLC+LAB INVESTMENTS
DB 1592 PG 1004

C S RENTALS OF LAKE NORMAN INC
DB 260 PG 119

DONALD S & NITA M GOODING
DB 2255 PG 1032

PEOPLES BANK
DB 1785 PG 1782
PB 52 PG 68

GREG BIFFLE INC.
DB 1690 PG 2042
PB 52 PG 95

III RIVERPARK ROAD LLC
DB 2176 PG 1018
PB 35 PG 65

CONCORD SIX LLC
DB 1798 PG 2022

590 595 600

BY-88 BY-89 BY-90

BL-62 BL-63 BL-64

WELL WELL

RESIDUAL

ROADWAY EMBANKMENT

PROP. 10' MULTI-USE PATH

PROP. 5' CONC SIDEWALK

OPEN FIELD

-L- POC Sta. 594+24.00 = -Y14- POT Sta. 10+00.00

-Y14- POT Sta. 11+76.26

-L- PT Sta. 598+29.72

TRANSITION 2'-9" C&G TO 1'-6" C&G -L- STA. 599+54.72 TO 600+30.78

END CONSTRUCTION -Y14- STA. 11+50.00

900' MEDIAN TAPER LT. & RT.

MATCH LINE -L- STA. 602+00 SEE SHEET NO. 17

MATCH LINE -L- STA. 588+00 SEE SHEET NO. 15

CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

SEE SHEET 46 FOR -L- PROFILE
SEE SHEET 60 FOR -Y14- PROFILE
SEE SHEET 2B-1 FOR CURVE DATA
SEE SHEET 2B-5 FOR INTERSECTION DETAILS
SEE SHEET 2B-X FOR BULB DETAILS

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B / I-5717	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

NAD 83/NSRS 2007

BY-91

DONALD S & NITA M GOODING
DB 2255 PG 1032

PEGGY P BROTHERTON
DB 1206 PG 1547

BEROTH OIL COMPANY
DB 1841 PG 758
PB 45 PG 105

BRIDGESTONE LLC
DB 1121 PG 805

ZIP PROPERTIES INC.
DB 1855 PG 337

ZIP PROPERTIES INC
DB 1649 PG 979

BEREA BAPTIST CHURCH
DB 832 PG 18

BEREA BAPTIST CHURCH
DB 708 PG 386

TRIANGLE REAL ESTATE OF GASTONIA INC
DB 2309 PG 1201
PB 62 PG 22

-Y15- PT Sta. 12+93.22

-Y15- PC Sta. 12+94.05

-L- PC Sta. 612+79.72

-L- POC Sta. 613+77.76 =
-Y15- POT Sta. 14+92.06

MATCH LINE -L- STA. 602+00
SEE SHEET NO. 16

MATCH LINE -L- STA. 616+00
SEE SHEET NO. 18

PROP. 10' MULTI-USE PATH

ROADWAY EMBANKMENT

RESIDUAL

★ UPGRADE EXISTING OR NEW SIGNAL

CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

SEE SHEET 47 FOR -L- PROFILE
SEE SHEET 60 FOR -Y15- PROFILE
SEE SHEETS 2B-1 & 2B-2 FOR CURVE DATA
SEE SHEET 2B-5 FOR INTERSECTION DETAILS
SEE SHEET 2B-X FOR BULB DETAILS

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B / I-5717	18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

NAD 83/NSRS 2007

MATCH LINE -Y16- STA.23+50
SEE SHEET NO.31

MATCH LINE -L- STA.616+00
SEE SHEET NO.30

MATCH LINE -Y17- STA.14+00
SEE SHEET NO.32

MATCH LINE -L- STA.630+00
SEE SHEET NO.19

-Y16- PT Sta.24+93.26

-L- PT Sta.617+69.03

-Y17- PC Sta. 10+92.10

-L- PC Sta. 620+69.03

-L- PT Sta. 625+90.38

-Y18- POT Sta. 10+00.00

-L- POT Sta.626+79.33 =
-Y18- POT Sta. 13+20.63

BEGIN CONSTRUCTION
-Y18- STA. 11+20.00

-L- STA.618+44.93 =
-Y16- STA.25+70.27

-L- STA.618+86.60 =
-Y17- STA.10+00.00

BEGIN WALL 18-L
-L- STA.623+??

END WALL 17-L
-L- STA.617+??

END WALL 18-L
-L- STA.626+??

S 32°54'20.3" W

S 22°57'13.0" W

S 69°55'07" E
274.93'

S 58°53'45" E
42.32'

S 67°17'50" E
164.86'

N 67°02'49" W
27.84'

N 64°24'27" W
271.98'

N 64°24'27" W
457.46'

S 62°12'52" E
131.02'

S 80°01'51" E
178.10'

S 23°48'08" W
203.16'

S 22°26'08" W
203.00'

S 07°57'08" W
29.23'

S 02°54'58" W
49.96'

N 22°57'11" E
69.08'

N 29°22'20" E
29.19'

N 22°57'11" E
164.75'

N 22°46'39" E
29.09'

S 81°27'24" E
6.65'

RAD=24.00'
CH BRG=N 41°02'16" W
CH DIST=21.26'

ROADWAY EMBANKMENT

RESIDUAL

ARTIFICIAL FILL (ENG.)

PROP. 5' CONC. SIDEWALK

PROP. CONC. CURB & GUTTER

PROP. CONC. DRIVEWAY

EXISTING R/W

BEROTH OIL COMPANY
DB 1841 PG 758
PB 45 PG 105

ZIP PROPERTIES INC.
DB 1752 PG 1477

ZIP PROPERTIES INC
DB 1649 PG 979

MCDONALDS REAL ESTATE CO.
DB 2005 PG 1
PB 53 PG 112

HT PERTH RD LLC
DB 1582 PG 1304
PB 53 PG 112

NC NNN FINANCIAL ASSOC LLC
& PROSPECT NC NNN LLC
DB 2288 PG 1463
PB 53 PG 112

HT PERTH RD LLC
DB 1582 PG 1304
PB 53 PG 112

BEROTH OIL COMPANY
DB 1851 PG 1755
PB 51 PG 38

CARLENE LOUISE SMITH
DB 573 PG 227
DB 1749 PG 2201

CARLENE LOUISE SMITH
DB 210 PG 94
DB 1749 PG 2204

SAM J. & BARBARA H. BAKER
DB 1612 PG 1522
DB 1756 PG 1434
PB 51 PG 146

SAM J & BARBARA H BAKER
DB 1612 PG 1522
PB 51 PG 146

SAM J. & BARBARA BAKER
DB 1797 PG 2354
DB 1756 PG 1431

BY-94

BL-67

BL-68

ISBKD

ISFD

ISF BUS

ISF BUS

WC RAMP

UPGRADE EXISTING OR NEW SIGNAL

-Y16- PERTH RD

2019 ADT	2039 ADT
11,040	13,200
25,130	38,250
4,240	5,440
5,330	5,970
450	690
3,210	4,250
28,980	42,340
5,120	6,720

-L- NC 150

-Y17- DOOLIE RD

CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

SEE SHEET 47 FOR -L- PROFILE
SEE SHEET 61 FOR -Y16- PROFILE
SEE SHEET 62 FOR -Y17- PROFILE
SEE SHEET 63 FOR -Y18- PROFILE
SEE SHEETS 2B-1 & 2B-2 FOR CURVE DATA
SEE SHEET 2B-6 FOR INTERSECTION DETAIL

8/17/99

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$$$$ISERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2307B / I-5717	19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

NAD 83 NSRS 2007

630 635 640

BYERS CREEK RESIDENTIAL LLC
DB 2110 PG 1886
PB 51 PG 38

LUCILLE S. CURTIS
DB 421 PG 95

MRS. BUBBLES LLC
DB 1980 PG 1892
PB 56 PG 141

FRANCES L. NANTZ
DB 1203 PG 1033
PB 37 PG 57

FRANCES L. NANTZ
DB 1203 PG 1033
PB 37 PG 57

-Y19- PC Sta. 10+90.64
-Y19- PT Sta. 13+28.03
BEGIN CONSTRUCTION -Y19- STA. 13+40.00
-L- POT Sta. 641+16.27 = -Y19- POT Sta. 15+40.34

N 87°41'25" W 489.00'
S 87°16'59" E 385.52'
N 87°04'32" W 78.42'
S 72°55'50" E 100.04'
N 18°03'42" E 294.54'
N 18°02'43" E 227.43'
N 18°03'14" E 238.82'
S 25°01'47.0" W

BY-96
BL-69

RESIDUAL
ROADWAY EMBANKMENT
S 66°25'44.9" E

MATCH LINE -L- STA.630+00 SEE SHEET NO.18
MATCH LINE -L- STA.644+00 SEE SHEET NO.20

HAK LLC
DB 1133 PG 459

HAK LLC
DB 1133 PG 456

SILVERMAN ENTERPRISES LLC
DB 1980 PG 2365

SAM J. & BARBARA BAKER
DB 1797 PG 2354
DB 1756 PG 1431

859 871 RIVER HIGHWAY LLC
DB 2306 PG 1717
PB 52 PG 66

833 RIVER HIGHWAY LLC
DB 2275 PG 443

859 PG 871 RIVER HIGHWAY LLC
DB 2306 PG 1717
PB 43 PG 12

R2307C-8

BY-95

N 86°04'05" W 227.37'

CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

SEE SHEET 48 FOR -L- PROFILE
SEE SHEET 63 FOR -Y19- PROFILE
SEE SHEET 2B-2 FOR CURVE DATA
SEE SHEET 2B-6 FOR INTERSECTION DETAILS
SEE SHEET 2B-X FOR BULB DETAILS

★ UPGRADE EXISTING OR NEW SIGNAL

8/17/99

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$$$$ICERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2307B / I-5717	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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PH (919) 773-8887
CORP. LICENSE NO.: C-0275

NAD 83 NSRS 2007

HGST GROUP LLC
DB 1378 PG 1071
PB 40 PG 98

FRANCES L. NANTZ
DB 1203 PG 1033
PB 37 PG 57

POLLY HAGER MOORE
DB 614 PG 824

645 650 655

N 14°24'44" W 630.99'

N 45°49'52" E 739.34'

RESIDUAL

ROADWAY EMBANKMENT

-L- STA.644+00

MATCH LINE -L- STA.644+00
SEE SHEET NO.19

-L- STA.658+00

MATCH LINE -L- STA.658+00
SEE SHEET NO.21

S 66°25'44" E

PROP. 5' CONC. SIDEWALK

ISBLK BUS

ISBK BUS

MTL FRAME W/NETTING

FIBER OPTIC MARKER

POST & FIBER OPTIC MARKER

NC 150 RIVER RD 24' BST

6" STEEL

POSSIBLE JB

BM=20

ISF BUS

BL-70

BL-71

-L- POT Sta.657+54.84 =
-Y20- POT Sta. 10+00.00

-Y20- POT Sta. 12+68.48

END CONSTRUCTION
-Y20- STA. 11+51.84

S 25°18'56.01" W
-Y20-

-EY23-

+40.00 115' LT
+75.00 100' LT
+75.00 0' LT 75' LT
+00.00 75' LT
+10.00 75' LT
+00.00 0' LT 75' LT
+35.00 0' RT 75' RT
+05.00 0' RT 75' RT
-Y20- +10.00 23.83' RT
-Y20- +95.00 26.16' LT

833 RIVER HIGHWAY LLC
DB 2275 PG 443

833 RIVER HIGHWAY LLC
DB 2275 PG 443

WILLIAM STEWART JR. &
MARCK ALEXANDER
DB 2140 PG 885

PRINCETON ASSET
MANAGEMENT LP
DB 1696 PG 1742

EVELYN LAYNETTE ROBINSON
REVOCABLE TRUST
DB 2037 PG 538

EVELYN LAYNETTE ROBINSON
REVOCABLE TRUST
DB 2037 PG 538

BEAM PROPERTIES RLLLP
DB 1902 PG 2048
PB 36 PG 134

BEAM PROPERTIES RLLLP
DB 1902 PG 2048

S 22°10'05" W 288.09'

S 2°03'55" W 837.69'

S 36°05'19" W 213.69'

S 36°12'33" W 375.29'

S 40°56'07" W 316.76'

S 40°03'13" W 525.51'

S 40°56'07" W 323.22'

S 14°33'39" E 125.69'

S 14°50'14" E 115.83'

N 53°59'28" W 370.99'

CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

SEE SHEET 48 FOR -L- PROFILE
SEE SHEET 63 FOR -Y20- PROFILE
SEE SHEET 2B-X FOR BULB DETAILS

48" WD RAIL

MTL GATES

8/17/99

24-OCT-2017 14:05
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$$$$ICEPNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2307B / I-5717	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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CORP. LICENSE NO.: C-0275

NAD 83/NSRS 2007

ROBERT H. HOWARD
DB 475 PG 431
PB 55 PG 31

ROBERT H. HOWARD
DB 372 PG 153
PB 55 PG 31

DEBORAH JOHNSON KNOX
& LARRY KNOX
DB 780 PG 804

PATRICIA W. NEEL
DB 395 PG 155

GERALD W. NEEL
BRIAN T. NEEL
& BRADLEY S. NEEL
DB 2179 PG 1271

AUSTIN STAR ENTERPRISES LLC
DB 1755 PG 588

BEAM PROPERTIES RLLLP
DB 1974 PG 698
PB 36 PG 134

INTERNATIONAL CHURCH OF
FOURSQUARE GOSPEL
DB 625 PG 886

PBR REALTY LLC
DB 2098 PG 2097
PB 42 PG 102

S & S #2 FAMILY LTD.
PARTNERSHIP
DB 1419 PG 828
PB 42 PG 102

GEORGE WINSTON MORRISON TRUST
DB 1718 PG 390
PB 55 PG 17

660 665 670

-L- PC Sta. 661+58.80

-L- PT Sta. 667+07.56

BL-72

MATCH LINE -L- STA.658+00
SEE SHEET NO.20

MATCH LINE -L- STA.672+00
SEE SHEET NO.22

RESIDUAL

ROADWAY EMBANKMENT

BY-98

★ UPGRADE EXISTING OR NEW SIGNAL

CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

SEE SHEET 49 FOR -L- PROFILE
SEE SHEET 2B-1 FOR CURVE DATA
SEE SHEET 2B-X FOR BULB DETAILS

8/17/99

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$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2307B / I-5717	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

NAD 83/NSRS 2007

8/17/99

MOORESVILLE CV LLC
DB 2099 PG 222
PB 58 PG 67

PLANTATION POINTE APARTMENTS LLC
DB 2207 PG 313
PB 60 PG 9

SAMS REAL ESTATE BUSINESS TRUST
DB 225 PG 552
PB 60 PG 58

ROBERT H. HOWARD
DB 372 PG 153
PB 55 PG 31

FOUR DRYE PROPERTIES LLC
DB 1765 PG 826
PB 45 PG 133

CROWN MOORESVILLE LLC
DB 1664 PG 1268
PB 45 PG 133

TITAN 1009 NC LLC
DB 2198 PG 222
PB 58 PG 67

BOAZ PROPERTIES LLC
DB 1866 PG 800
PB 52 PG 58

BANK OF AMERICA & ERWIN JONES
DB 1782 PG 24
PB 46 PG 128

GEORGE WINSTON MORRISON TRUST
DB 1718 PG 390
PB 55 PG 17

JESSIE B & IRIS P DAVIS
DB 2199 PG 280
PB 52 PG 58

CAROLINAZ LLC
DB 1729 PG 1742
PB 47 PG 83

THE WHITT TR
DB 2271PG 888
PB 47 PG 84

MORRISON PLANTATION LLC
DB 4734 PG 689
PB 47 PC 56

MORRISON PLANTATION MASTER ASSOC INC
DB 1850 PG 1817
PB 51PG 93

NSP MOORESVILLE RETAIL LLC
DB 2295 PG 2245
PB 61PG 93

-Y21- PC Sta. 10+89.82
-Y21- PCC Sta. 13+62.67
-Y21- PT Sta. 15+10.77
-Y22- PC Sta. 12+89.11
-Y22- PCC Sta. 14+05.73
-Y22- PT Sta. 14+72.61
-Y22- PC Sta. 11+30.19
-Y22- PT Sta. 12+28.78
-Y22- POT Sta. 15+55.22
-Y23- PC Sta. 10+00.00
-Y23- PRC Sta. 13+11.74
-Y23- PT Sta. 15+80.40
-Y24- POT Sta. 10+00.00
-L- POT Sta. 680+42.95 = -Y21- POT Sta. 16+02.25
-L- POT Sta. 680+55.66 = -Y22- POT Sta. 10+00.00
-L- POT Sta. 685+41.75 = -Y24- POT Sta. 11+66.50
-L- POT Sta. 683+11.97 = -Y23- PC Sta. 10+00.00

BEGIN CONSTRUCTION -Y21- STA. 12+50.00
-Y21- STA.12+50.00 TIE TO EXISTING 5' MONOLITHIC ISLAND
BEGIN CONSTRUCTION -Y24- STA. 10+40.00
END CONSTRUCTION -Y23- STA. 14+85.00
BEGIN WALL 6 -L- STA.676+??
END WALL 6 -L- STA.676+??
BEGIN WALL 22-I -Y21- STA.15+??
END WALL 22-I -L- STA.685+??

MATCH LINE -L- STA.672+00 SEE SHEET NO.21
MATCH LINE -L- STA.686+00 SEE SHEET NO.23

RESIDUAL
ARTIFICIAL FILL (ENG.)
ROADWAY EMBANKMENT

CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

-Y20- ERVIN RD — 2019 ADT 2039 ADT
5,000 / 5,480
33,560 / 47,320 — 850 / 1,090 — 2,470 / 2,790 — -L- NC 150
8,670 / 10,510 — 5,060 / 5,850 — 31,560 / 44,360
15,420 / 17,980
-Y21- MORRISON PLANTATION PARKWAY

SEE SHEET 49 FOR -L- PROFILE
SEE SHEET 63 FOR -Y21- PROFILE
SEE SHEET 63 FOR -Y22- PROFILE
SEE SHEET 64 FOR -Y23- PROFILE
SEE SHEET 64 FOR -Y24- PROFILE
SEE SHEET 2B-2 FOR CURVE DATA
SEE SHEET 2B-7 FOR INTERSECTION DETAILS

★ UPGRADE EXISTING OR NEW SIGNAL

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$$$$ISCFNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2307B / I-5717	23
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
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CORP. LICENSE NO.: C-0275

NAD 83 NSRS 2007

SAMS REAL ESTATE BUSINESS TRUST
DB 2215 PG 552
PB 60 PG 58

SAMS INVESTMENTS IV LLC
DB 2287 PG 2132
PB 59 PG 148

N & A OF CHARLOTTE LLC
DB 1645 PG 2413
PB 45 PG 133

DDRTC WINSLOW BAY COMMONS LLC
DB 1829 PG 206
PB 41PG 146

DDRTC WINSLOW BAY COMMONS LLC
DB 1829 PG 206
PB 41PG 146

R J ATWELL EST ETAL
DB 1878 PG 55
PB 52 PG 8

TARGET CORPORATION
DB 1810 PG 32
PB 40 PG 32

RJ ATWELL ETAL
DB 1878 PG 55
PB 34 PG 136

CFT DEVELOPMENTS LLC
DB 1810 PG 943
PB 52 PG 7

STEAK N SHAKE OPERATIONS INC.
DB 1792 PG 345
PB 52 PG 7

MOORESVILLE CROSSING LP
DB 1872 PG 2014
PB 52 PG 7

RR MNC LLC
DB 1977 PG 376
PB 52 PG 7

CLINE FAMILY TRUST
DB 1551PG 1954

-L- POT Sta.696+51.90 =
-Y25- POT Sta.13+77.43

-Y25- POT Sta.10+00.00

BEGIN CONSTRUCTION
-Y25- STA. 11+90.00

BEGIN WALL 23-1
-L- STA.687+??

END WALL 23-1
-L- STA.687+??

BEGIN WALL 23-2
-L- STA.687+??

END WALL 23-2
-L- STA.688+??

BEGIN WALL 23-3
-L- STA.689+??

END WALL 23-3
-L- STA.691+??

BEGIN WALL 23-4
-L- STA.691+??

END WALL 23-4
-L- STA.693+??

BEGIN WALL 23-5
-L- STA.694+??

END WALL 23-5
-L- STA.695+??

BEGIN 2'-6" C&G &
BEGINNING OF WORK
-L- STA.688+67

END 2'-6" C&G &
END OF WORK
-L- STA.689+08

BL-75

BL-76

RESIDUAL

ROADWAY EMBANKMENT

ARTIFICIAL FILL (ENG.)

MOORESVILLE CROSSING ENTRANCE

-Y22- TARGET ENTRANCE

2019 ADT / 2039 ADT		
8,330 / 8,970		
32,700 / 45,180	3,410 / 4,450	3,400 / 3,400
	900 / 1,380	3,080 / 3,480
		5,500 / 5,980

-L- NC 150: 34,880 / 46,240

-DR?- MOORESVILLE CROSSING ENTRANCE

CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

SEE SHEET 50 FOR -L- PROFILE
SEE SHEET 64 FOR -Y25- PROFILE
SEE SHEET 2B-7 FOR INTERSECTION DETAILS

★ UPGRADE EXISTING OR NEW SIGNAL

MATCH LINE -L- STA.686+00
SEE SHEET NO.22

MATCH LINE -L- STA.700+00
SEE SHEET NO.24

8/17/99

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$$$$ISTEFNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2307B / I-5717	24
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
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RALEIGH, NC 27603
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CORP. LICENSE NO.: C-0275

NAD 83 NSRS 2007

MATCH LINE -Y23- STA.17+50 SEE SHEET NO.34

MATCH LINE -L- STA.700+00 SEE SHEET NO.23

MATCH LINE -L- STA.711+00 SEE SHEET NO.25

MATCH LINE -Y26- STA.24+00 SEE SHEET NO.35

-Y23- BLUEFIELD RD — 2019 ADT 14,490 / 2039 ADT 15,930

-L- NC 150: 34,880 / 46,240 — 2,250 / 2,970 — 6,100 / 6,100 — 5,840 / 11,520 — 8,770 / 14,510 — 41,560 / 52,360

-Y24- WILLIAMSON RD — 20,650 / 32,890

CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

SEE SHEET 48 FOR -L- PROFILE
SEE SHEET 63 FOR -Y26- PROFILE
SEE SHEET 64 FOR -Y28- PROFILE
SEE SHEET 2B-2 FOR CURVE DATA
SEE SHEET 2B-8 FOR INTERSECTION DETAILS

★ UPGRADE EXISTING OR NEW SIGNAL

8/17/99

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REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-2307B / I-2717	2B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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TGS ENGINEERS
700 HILLSBOROUGH ST., SUITE 200
RALEIGH, NC 27603
PH (919) 773-4887
CORP. LICENSE NO. C-0275

NAD 83/NSRS 2007

A

B

C

D

CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

SEE SHEET 49 FOR -L- PROFILE
SEE SHEET 64 FOR -Y29- & -Y30- PROFILES
SEE SHEET 65 FOR -Y31- PROFILE
SEE SHEET 66 FOR -Y31RPA- -Y31RPB- -Y31RPC- & -Y31RPD- PROFILES
SEE SHEET 67 FOR -Y32- & -Y33- PROFILES
SEE SHEET 71 FOR -DRW9- PROFILE
SEE SHEET 72 FOR -DRW9- -DRW10- & -DRW11- PROFILES
SEE SHEET 28-3 FOR CURVE DATA
SEE SHEETS 2B-9 & 2B-10 FOR INTERSECTION DETAILS

-Y26- FOOD LION ENTRANCE

-Y29- REGENCY CENTER DR

-Y28- LOWE'S ENTRANCE

-Y30- ROLLING HILLS DR

-Y34- NORMAN STATION BLVD

I-77

BRIDGE-ROADWAY RELATIONSHIP SKETCH

GRAPHIC SCALE
50 25 0 50 100

PLANS

LOCATION:
TIP NO.: COUNTY:
DESIGNED BY:
CHECKED BY: DATE:

CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

SEE SHEET 50 FOR -L- PROFILE
SEE SHEET 67 FOR -Y34- &-Y35- PROFILES
SEE SHEET 68 FOR -Y36- &-Y37- PROFILES
SEE SHEET 2B-3 FOR CURVE DATA
SEE SHEET 2B-X FOR INTERSECTION DETAILS

PROJECT REFERENCE NO.	SHEET NO.
R-2307B / I-5717	26
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

TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

NAD 83/NSRS 2007

MOORESVILLE PARTNERS LIMITED
DB 886 PG 602
PB 22 PG 138

BEGIN CONSTRUCTION
-Y34- STA. 10+20.00

-Y34- POT Sta. 10+00.00

-Y34- PC Sta. 10+98.94

-L- POT 743+84.31 =
-Y35- POT Sta. 10+00.00

-Y34- PT Sta. 11+64.40

-Y34- PC Sta. 12+58.49

-Y34- PT Sta. 13+15.51

S 20°09'32.8" E

-L- POT 744+96.49 =
-Y34- POT Sta. 13+81.90

-L- POT 751+27.82 =
-Y36- POT Sta. 10+00.00

-L- PC Sta. 751+77.85

-L- POC 754+30.03 =
-Y37- POC Sta. 13+98.53

BEGIN CONSTRUCTION
-Y37- STA. 11+00.00

-Y35- PC Sta. 10+85.94

-Y35- PT Sta. 11+83.08

-Y35- PC Sta. 14+34.89

-Y36- PC Sta. 10+89.00

-Y36- PT Sta. 13+01.05

-Y36- PC Sta. 13+70.21

-Y36- PT Sta. 14+50.22

END CONSTRUCTION
-Y36- STA. 14+50.00

BEGIN CONSTRUCTION
-Y35- STA. 14+70.00

MATCH LINE -L- STA.742+00
SEE SHEET NO.25

MATCH LINE -L- STA.756+00
SEE SHEET NO.27

CNL FUNDING 2000 A LP
DB 1214 PG 125
PB 22 PG 195

NATIONSBANK OF NC
DB 926 PG 852
PB 24 PG 90

BELK CHARLOTTE, INC.
DB 808 PG 338
DB 926 PG 584
PB 22 PG 138

TRICOR MOORESVILLE LLC
DB 1509 PG 101
PB 41PG 61

BRANFUL LLC
DB 1109 PG 1857
PB 25 PG 41

BUFFALO MOORESVILLE LLC
DB 1388 PG 191
PB 23 PG 144

BUFFALO MOORESVILLE LLC
DB 1388 PG 191
PB 41 PG 61

FFC LIMITED PARTNERSHIP
DB 887 PG 1143
PB 25 PG 173

JANE MELLON BOFENKAMP & MARY F MELLON
DB 2152 PG 97

CAM LEASING CORPORATION
DB 829 PG 158
PB 22 PG 182

AUTOBELL CAR WASH INC
DB 941PG 1255

OMEGA SEAFOOD INC
DB 88PG 252
PB 22 PG 20

RESIDUAL

ALLUVIAL

ROADWAY EMBANKMENT

31-OCT-2017 12:22
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$$$$USERNAME$$$$
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2307B / 1-5717	27
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

TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
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$$$$USERNAME$$$$

NAD 83/NSRS 2007

-L- PC Sta. 767+54.97

MATCH LINE -L- STA.769+00 SEE SHEET NO.28

MATCH LINE -L- STA.765+00 SEE SHEET NO.26

-L- POT 761+37.57 = -Y38- POT Sta. 16+56.03

-L- PT Sta. 757+92.84

BEGIN CONSTRUCTION -Y38- STA. 14+60.00

-Y37- COPORATE CENTER DR

	2019 ADT	2039 ADT
	1,050	1,290
38,240	820	900
49,440	240	400
-L- NC 150		
37,660	320	400
48,940	320	400
	640	800

-Y38- CAROLINA AUTO DIRECT ENTRANCE

CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

SEE SHEET 50 FOR -L- PROFILE
SEE SHEET 68 FOR -Y38- PROFILE
SEE SHEET 2B-X FOR INTERSECTION DETAILS

PRECISION FRANCHISING INC DB 1235 PG 1650 PB 37 PG 3

PM PREFERRED PROPERTIES LP DB 1420 PG 1994 PB 37 PG 3

CISA COMMERCIAL PROP LLC DB 2264 PG 526 PB 34 PG 5

294 W PLAZA LLC DB 2307 PG 181

DHRUVIN & MARGI INC DB 2321 PG 1649 RB 856 PG 76

GRIFFIN BROTHERS AUTO CENTERS LLC DB 2097 PG 170 PB 28 PG 143

DP OF IREDELL LLC DB 1469 PG 514 PB 25 PG 179

REEL DEAL INVESTMENTS OF SALISBURY LLC DB 2313 PG 241

CPM INVESTMENTS LLC DB 1641 PG 255

LAND GROWTH LLC DB 2314 PG 90 PB 3 PG 79

CHANNELIZE/WALLS PRECISION TUNE

ARTIFICIAL FILL (ENG.)

RESIDUAL

ROADWAY EMBANKMENT

ISBK BUS

2SBK BUS

2SBLK BUS

ISMTL BUS

MTL BUS

CONC

WEST PLAZA DR

BL-150

BL-151

PROJECT REFERENCE NO.	SHEET NO.
R-2307B / I-5717	28
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
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CORP. LICENSE NO.: C-0275

MATCH LINE -Y39- STA.17+00
SEE SHEET NO.36

MATCH LINE -L- STA.769+00
SEE SHEET NO.27

MATCH LINE -L- STA.783+00
SEE SHEET NO.29

MATCH LINE -Y40- STA.14+00
SEE SHEET NO.36

-Y39- PT Sta. 19+48.08
S 13°09'03.0" W
-L- POC 770+58.95 =
-Y39- POT Sta. 20+20.04

-L- PT Sta. 773+34.12

-L- POC 770+69.27
-Y40- POT Sta. 10+00.00

Sta. 15+80.24

N 16°51'22" E
470.79'

NAD 83(NSRS 2007)

DAWN PROPERTIES LLC
DB 1754 PG 2422
PB 22 PG 142

DAWN PROPERTIES LLC
DB 1754 PG 2242
PB 26 PG 1

DAWN PROPERTIES LLC
DB 2141 PG 1204
PB 3 PG 93

DAWN PROPERTIES LLC
DB 2328 PG 879
PB 3 PG 79

DAWN PROPERTIES LLC
DB 2328 PG 872
PB 3 PG 79

JUNIPER PROPERTIES LLC
DB 2328 PG 879
PB 3 PG 79

ANNA THNGUYEN
DB 1822 PG 2407
PB 3 PG 79

BEK PROPERTIES LLC
DB 2317 PG 147
PB 3 PG 79

A W WOODS JR
DB 165 PG 20
PB 3 PG 79

RACE CITY HOLDINGS LLC
DB 2328 PG 884
PB 3 PG 79

LOYD INVESTMENTS LLC
DB 2328 PG 876
PB 3 PG 79

PLAZA ROAD DEV A LLC
DB 1332 PG 962
PB 3 PG 79

MOORESVILLE SAVINGS BANK
DB 776 PG 290
PB 3 PG 79

-Y39- TALBERT RD

2019 ADT	
2039 ADT	
7,830	
8,950	
37,660	3,270 / 3,590
48,940	2,180 / 2,580
-L- NC 150	
40,000	
52,000	
1,420 / 1,500	4,850 / 5,570
8,640	
9,840	

-Y39- TALBERT RD

CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

SEE SHEET 51 FOR -L- PROFILE
SEE SHEET 69 FOR -Y39- & -Y40- PROFILES
SEE SHEET 2B-3 FOR CURVE DATA
SEE SHEET 2B-X FOR INTERSECTION DETAILS

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B / I-5717	29
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

TGS ENGINEERS
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PH (919) 773-8887
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NAD 83/NSRS 2007

DAWN PROPERTIES LLC
DB 11754 PG 2422
PB 26 PG 1

DONALD L HORTON
DB 7171 PG 428
PB 22 PG 88

DLH FAMILY PROPERTIES LLP
DB 2226 PG 1254
PB 46 PG 80

CHRISTOPHER & KIMBERLY MEDFORD
DB 11170 PG 1775
PB 26 PG 1

BEK PROPERTIES LLC
DB 1474 PG 2280
PB 36 PG 50

AZEVEDO FAMILY REVOC TR
DB 2218 PG 751
PB 36 PG 50

MOORESVILLE COMMONS LLC
DB 1906 PG 346

-Y41- POT Sta. 10+00.00

BY-162

-Y41- S 17°03'40" W

BEGIN CONSTRUCTION
-Y45- STA. 10+50.00

BEGIN CONSTRUCTION
-Y41- STA. 12+50.00

BEGIN 8X18 CURB
-Y41- STA. 12+78.18

END 8X18 CURB
-Y41- STA. 13+22.58

-L- POT 791+07.23
-Y42- POT Sta. 10+00.00

-L- POT 791+01.70 =
-Y41- POT Sta. 14+01.30

-Y42- POT Sta. 14+25.85

-Y42- S 16°45'23.0" W

END CONSTRUCTION
-Y42- STA. 11+50.00

-L- S 73°14'52" E

ROADWAY EMBANKMENT

ARTIFICIAL FILL (ENG.)

RESIDUAL

ALLUVIAL

ISBLK BUS

MTL CANOPY OVER GAS PUMPS

BL-160

BL-161

MATCH LINE -L- STA.783+00
SEE SHEET NO.28

MATCH LINE -L- STA.793+00
SEE SHEET NO.30

-Y40- MACLEOD

2019 ADT
2039 ADT

500 / 980
39,470 / 51,310
250 / 490
250 / 490
-L- NC 150
40,640 / 52,800
1,440 / 1,600
2,600 / 3,080
4,030 / 4,670

-Y40- MACLEOD

CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

SEE SHEET 51 FOR -L- PROFILE
SEE SHEET 70 FOR -Y41- & -Y42- PROFILES
SEE SHEET 2B-X FOR INTERSECTION DETAILS

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$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2307B / I-5717	30
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

TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

CM LAND COMPANY
DB 752 PG 848
PB 21 PG 23

-Y44- POT Sta. 10+00.00
N 76°41'26" W
503.37'
-Y44- PC Sta. 10+92.90
S 40°15'35.7" W
-Y44- PRC Sta. 13+64.37
BEGIN CONSTRUCTION
-Y44- STA. 13+39.05
-L- POT 794+52.12 =
-Y43- POT Sta. 10+00.00
-Y44- PT Sta. 14+65.30
S 16°45'07.8" W
-L- PT Sta. 802+18.81
-L- POT Sta. 802+39.71
POT Sta. 15+12.76
-L- PC Sta. 799+09.69
-L- STA. 793+00
SEE SHEET NO. 30
MATCH LINE -L- STA. 793+00
SEE SHEET NO. 30
S 73°14'52" E
S 77°53'04.2" E
-Y43- PT Sta. 11+06.68
-Y43- PC Sta. 10+87.68
S 16°45'07.8" W
S 25°42'22.2" W
-Y43- POT Sta. 11+20.00
END CONSTRUCTION
-Y43- STA. 11+00.00
END T.I.P. PROJECT R-2307B
-L- POC 799+10.00
BM#33
BM#34
BL-166
NAD 83/NSRS 2007
795
800
10
CHRISTY PROPERTIES
DB 970 PG 999
THOMAS CONCRETE OF CAROLINA INC
DB 1961 PG 206
PB 5 PG 55
ISBK BUS
POND
COMMONS DRIVE
RIPRAP
ROADWAY EMBANKMENT
RESIDUAL
ARTIFICIAL FILL (ENG.)
570' MEDIAN TRANSITION
HOTBOX
IN CONDUIT
6' STEEL
60" CONC
8' DIP
18" C&G
30" C&G
24" RCP
18" RCP
15" RCP
10" HDPE
24" HDPE
25.4 BST
S 72°55'38" E
520.21'
S 57°24'19" E
398.41'

CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

SEE SHEET 52 FOR -L- PROFILE
SEE SHEET 70 FOR -Y43- & -Y44- PROFILES
SEE SHEETS 2B-1 & 2B-3 FOR CURVE DATA
SEE SHEET 2B-8 FOR INTERSECTION DETAILS

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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2307B / I-5717	31
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

TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

NAD 83/NSRS 2007

-Y16- POT Sta. 10+00.00

-Y16- PC Sta. 11+17.51

-Y16- PT Sta. 15+15.43

BEGIN CONSTRUCTION -Y16- STA. 11+17.51

S 24° 24' 44.8" W

-Y16- S 16° 48' 45.8" W

BYERS CREEK RESIDENTIAL LLC
DB 2110 PG 1886
PB 60 PG 102

BYERS CREEK RESIDENTIAL LLC
DB 2110 PG 1886
PB 54 PG 22

MCDONALDS REAL ESTATE CO.
DB 2005 PG 1
PB 53 PG 112

BEROTH OIL COMPANY
DB 1841 PG 758
PB 45 PG 105

BEGIN WALL 31-1 -Y16- STA. 20+??

END WALL 31-1 -Y16- STA. 20+??

-Y15- POT Sta. 10+00.00

-Y15- PC Sta. 11+23.50

-Y16- PC Sta. 18+61.75

S 51° 31' 57.0" W

RESIDUAL

ROADWAY EMBANKMENT

MATCH LINE -Y16- STA. 23+50
SEE SHEET NO. 18

MATCH LINE
SEE SHEET NO. 17

PEGGY P BROTHERTON
DB 1206 PG 1647

CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

SEE SHEET 58 FOR -Y15- PROFILE
SEE SHEET 59 FOR -Y16- PROFILE
SEE SHEET 2B-2 FOR CURVE DATA

8/17/99

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$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2307B / I-5717	32
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

NAD 83/NSRS 2007

-Y17- PT Sta.14+40.60

-Y17- PC Sta.26+64.73

MATCH LINE -Y17- STA.14+00 SEE SHEET NO.18

MATCH LINE -Y17- STA.27+00 SEE SHEET NO.33

SAM J & BARBARA H BAKER
DB 1662 PG 1522
PB 51 PG 146

EQUITABLE INVESTMENTS LLC
DB 1931 PG 329

CARLOS & JOANNE SIEGA REVOC INTER VIVOS TRUST
DB 2319 PG 1840

JOEL R & KELLY C SETTLE
DB RE PG 826

GREG BIFFLE INC
DB 1616 PG 1804

GREG BIFFLE INC
DB 1601 PG 0871

TRIANGLE REAL ESTATE OF GASTONIA INC
DB 2337 PG 93

PAULETTE C CHILDERS
DB 2244 PG 2009
PB 56 PG 129

K MICHAEL & MARSHA DEATON
DB 760 PG 535
PB 50 PG 16

IREDELL COUNTY
DB 1209 PG 575

RESIDUAL

ROADWAY EMBANKMENT

-Y17- S 14 49 11.5 W

CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

SEE SHEET 60 FOR -Y17- PROFILE
SEE SHEET 2B-2 FOR CURVE DATA
SEE SHEET 2B-X FOR BULB DETAILS

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B / I-5717	33
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

NAD 83/NSRS 2007

FRANCES L NANTZ HEIRS
DB 82E PG 372
BACK DB 684 PG 560

GREG BIFFLE INC
DB 1601PG 0871

MADALYN PAIGE BAKER
DB 2108 PG 739
PB 59 PG 79

MADALYN PAIGE BAKER
DB 2108 PG 739
PB 59 PG 79

IREDELL COUNTY
DB 1209 PG 575

AMJAD NAZIR &
TEHMINA AMJAD
DB 1735 PG 384
PB 44 PG 111

KIMBERLY P &
SHAUN E LAWRENCE
DB 1739 PG 976
PB 44 PG 111

PEDERSON ORGANIZATION LLC
DB 239 PG 118
PB 44 PG 111

KIMBERLY P & SHAUN E LAWRENCE
DB 1739 PG 976
PB 44 PG 111

SHEPHERDS FIRE RESCUE INC
DB 776 PG 331

MTL FIRE STATION
(LOC APPROX)

FREDERICK-DAVIS
2000 FAMILY TRUST
DB 2281 PG 600
PB 25 PG 77

-Y17- PT Sta. 32+30.21

-Y17- POT Sta. 36+21.45

-Y17- ST. Sta. 27+00

MATCH LINE -Y17- STA. 30+10.32
SEE SHEET 34

END CONSTRUCTION
-Y17- STA. 32+70.42

-Y17-
S 0°39'58.4" W

RESIDUAL

ROADWAY EMBANKMENT

CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

SEE SHEET 60 FOR -Y17- PROFILE
SEE SHEET 2B-2 FOR CURVE DATA

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$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2307B / I-5717	34
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

TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

NAD 83/NSRS 2007

CRIPPLE CREEK LLC
DB 2078 PG 947

BY-104

-Y27- POT Sta. 12+12.20

S 76° 48' 50.0" E

-Y27- PT Sta. 11+35.67

-Y26- POT Sta. 10+00.00

-Y27- PC Sta. 10+70.08

-Y26-
S 45° 40' 18.7" W

BEGIN CONSTRUCTION
-Y26- STA. 11+71.47

ROADWAY EMBANKMENT

END WALL 34-2
-Y26- STA 16+??

BEGIN WALL 34-2
-Y26- STA 16+??

MATCH LINE -Y26- STA 17+50
SEE SHEET NO. 24

END WALL 34-1
-L- STA 16+??

BY-103

S 51° 45' 39.0" E

BEGIN WALL 34-1
-Y26- STA 15+??

-Y26- PC Sta. 14+41.04

-Y26- POT Sta. 15+14.69
-Y27- POT Sta. 10+00.00

DDRTC WINSLOW BAY COMMONS LLC
DB 1829 PG 206
PB 39 PG 11

DDRTC WINSLOW BAY COMMONS LLC
DB 1829 PG 206
PB 40 PG 92

CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

SEE SHEET 63 FOR -Y26- & -Y27- PROFILES
SEE SHEET 2B-2 FOR CURVE DATA
SEE SHEET 2B-X FOR INTERSECTION DETAILS

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B / I-5717	35
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

TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

NAD 83/NSRS 2007

-Y26- PCC Sta. 24+53.85

-Y26- PT Sta. 33+34.90

END CONSTRUCTION
-Y26- STA. 32+60.00

BY-102

ROADWAY EMBANKMENT

MATCH LINE -Y26- STA. 14+00
SEE SHEET NO.24

CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

SEE SHEET 63 FOR -Y26- PROFILE
SEE SHEET 2B-2 FOR CURVE DATA

WILCOHESS LLC
DB 1515 PG 1768
PB 35 PG 132

8/17/99

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$$$$USERNAME$$$$

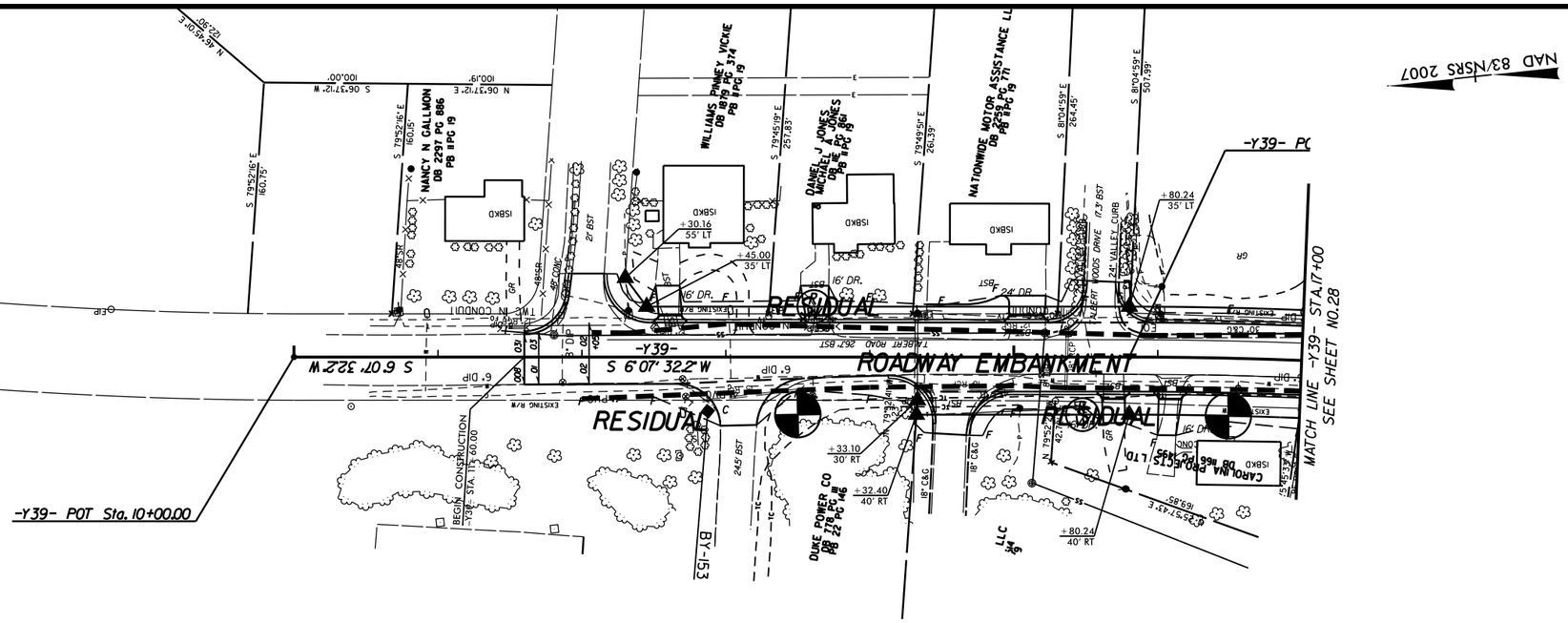
PROJECT REFERENCE NO.	SHEET NO.
R-2307B / I-5717	36
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

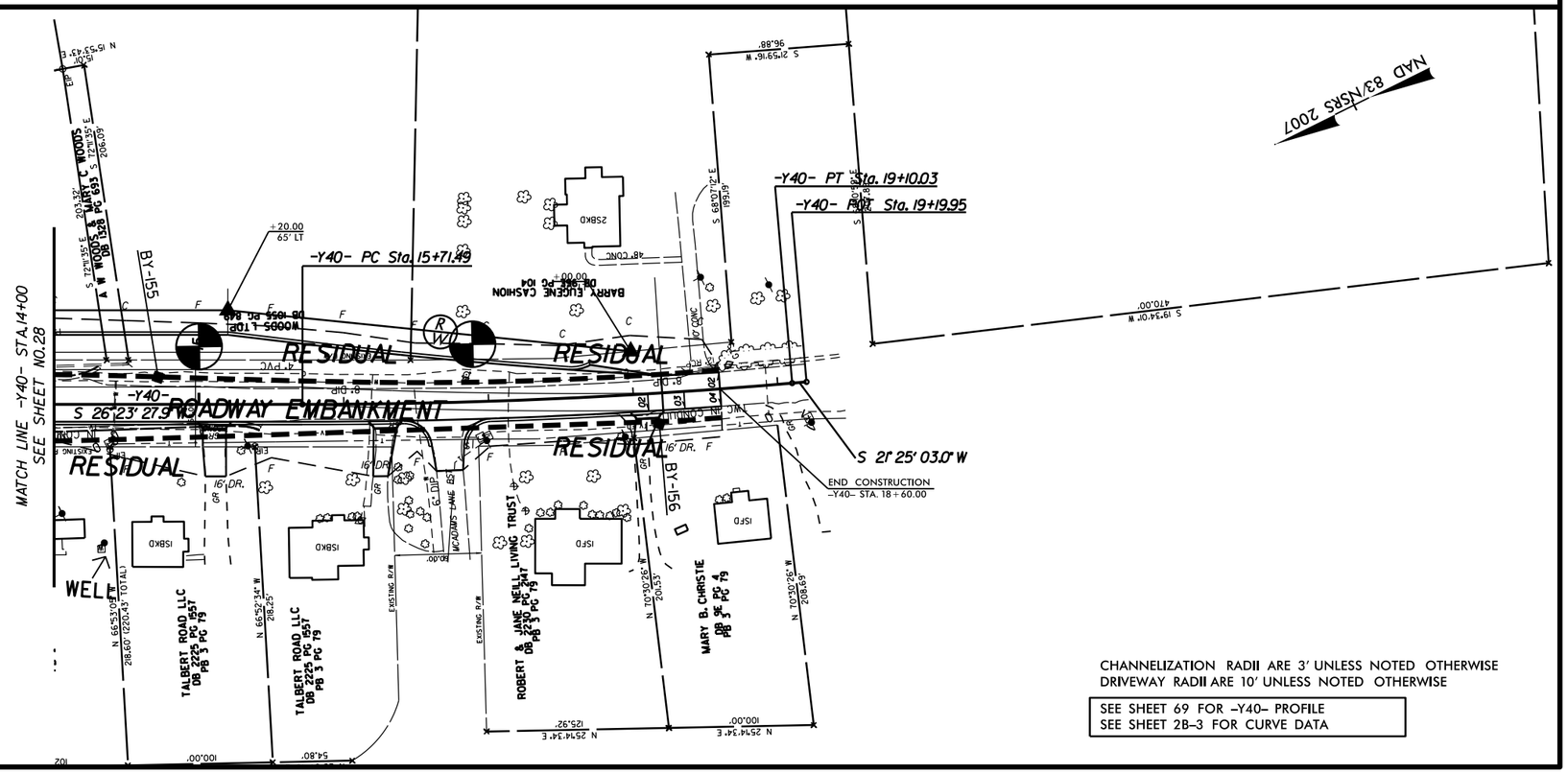
NAD 83/NSRS 2007



CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

SEE SHEET 69 FOR -Y39- PROFILE
SEE SHEET 2B-3 FOR CURVE DATA

NAD 83/NSRS 2007



CHANNELIZATION RADII ARE 3' UNLESS NOTED OTHERWISE
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

SEE SHEET 69 FOR -Y40- PROFILE
SEE SHEET 2B-3 FOR CURVE DATA

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B	37
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

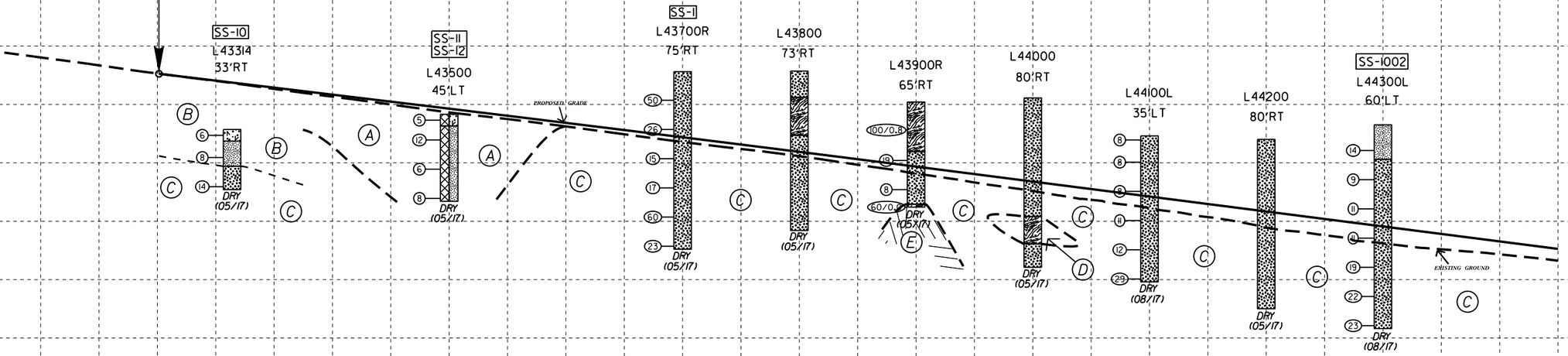
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

–L– PROFILE

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-10	33'RT	433+14	0.0' – 1.5'	A-5(3)	47	4	16.1	32.5	16.5	35.0	100	92	59	32.7	N/A
SS-11	45'LT	435+00	0.0' – 1.5'	A-5(4)	44	5	14.6	30.8	22.8	31.8	99	92	62	27.8	N/A
SS-12	45'LT	435+00	3.4' – 4.9'	A-4(0)	30	1	6.9	22.7	46.4	24.0	98	95	77	26.4	N/A
SS-1	75'RT	437+00	3.9' – 5.4'	A-2-4(0)	29	1	23.1	56.5	12.1	8.3	94	85	28	14.7	N/A
SS-1002	60'LT	443+00	3.4' – 4.9'	A-4(0)	36	1	24.1	45.3	9.6	21.1	99	89	43	16.3	N/A



(A) **ARTIFICIAL FILL (ENGINEERED):** *red-brown and dark gray, moist, medium stiff to stiff, highly sandy, clayey SILT (A-5), and fine sandy SILT (A-4) with little to some clay and trace gravel*

(B) **RESIDUAL:** *red-brown to brown, moist, medium stiff to stiff, micaceous, highly sandy, clayey SILT (A-5), and sandy SILT (A-4)*

(C) **RESIDUAL:** *brown, tan, red-brown, orange-brown, white, and gray, dry to moist, loose to medium dense, saprolitic, micaceous, silty SAND (A-2-4)*

(D) **WEATHERED ROCK:** *(Biotite Gneiss)*

(E) **CRYSTALLINE ROCK:** *(Biotite Gneiss)*

•Note: Vertical Exaggeration = 5:1
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B	38
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

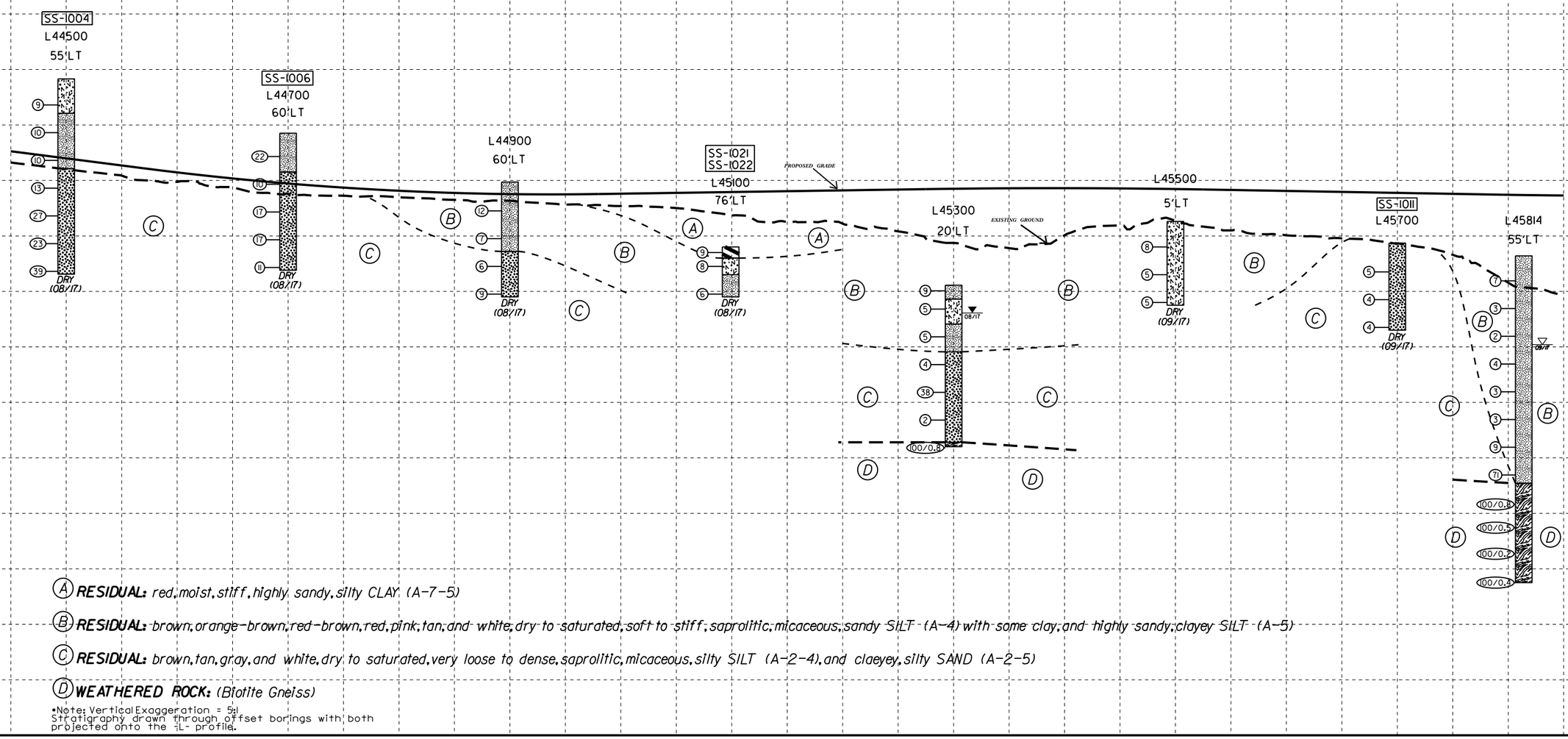
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L- PROFILE

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-1004	55'LT	445+00	3.7' - 5.2'	A-5(2)	53	3	7.6	51.3	16.3	24.7	100	97	54	17.0	N/A
SS-1006	60'LT	447+00	3.2' - 4.7'	A-4(1)	39	5	32.6	29.3	7.1	30.9	100	81	46	11.8	N/A
SS-1021	76'LT	450+99	0.0' - 1.5'	A-7-5(6)	47	13	18.7	34.6	7.5	39.2	100	92	54	27.5	N/A
SS-1022	76'LT	450+99	2.5' - 4.0'	A-5(0)	41	2	18.1	49.9	11.2	20.8	100	94	47	17.9	N/A
SS-1011	CL	457+00	4.2' - 5.7'	A-2-5(0)	41	4	14.5	62.6	11.9	11.0	93	91	33	18.1	N/A



(A) **RESIDUAL:** red, moist, stiff, highly sandy, silty CLAY (A-7-5)

(B) **RESIDUAL:** brown, orange-brown, red-brown, red, pink, tan, and white, dry to saturated, soft to stiff, saprolitic, micaceous, sandy SILT (A-4) with some clay, and highly sandy, clayey SILT (A-5)

(C) **RESIDUAL:** brown, tan, gray, and white, dry to saturated, very loose to dense, saprolitic, micaceous, silty SILT (A-2-4), and claeyey, silty SAND (A-2-5)

(D) **WEATHERED ROCK:** (Biotite Gneiss)

•Note: Vertical Exaggeration = 5:1
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B	39
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L- PROFILE

BEGIN BRIDGE
-L- STA. 465+80 +/-

PROPOSED GRADE

EXISTING GROUND

FULL POND ELEV. = 760.00'
PER DUKE ENERGY

MIN. LOW BEAM ELEV. REQUIRED = 772.00'

FULL POND ELEV. = 760.00'
PER DUKE ENERGY

870 860 850 840 830 820 810 800 790 780 770 760 750 740 730 720 710 700 690 680 670

459+00 460+00 461+00 462+00 463+00 464+00 465+00 466+00 467+00 468+00 469+00 470+00 471+00 472+00

5/14/99

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B	40
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L- PROFILE

END BRIDGE
-L- STA. 477+95 +/-

PROPOSED GRADE

EXISTING GROUND

MIN. LOW BEAM ELEV. REQUIRED = 772.00'

FULL POND ELEV. = 760.00'
PER DUKE ENERGY

870 860 850 840 830 820 810 800 790 780 770 760 750 740 730 720 710 700 690 680 670

473+00 474+00 475+00 476+00 477+00 478+00 479+00 480+00 481+00 482+00 483+00 484+00 485+00 486+00

5/14/99

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B	41
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

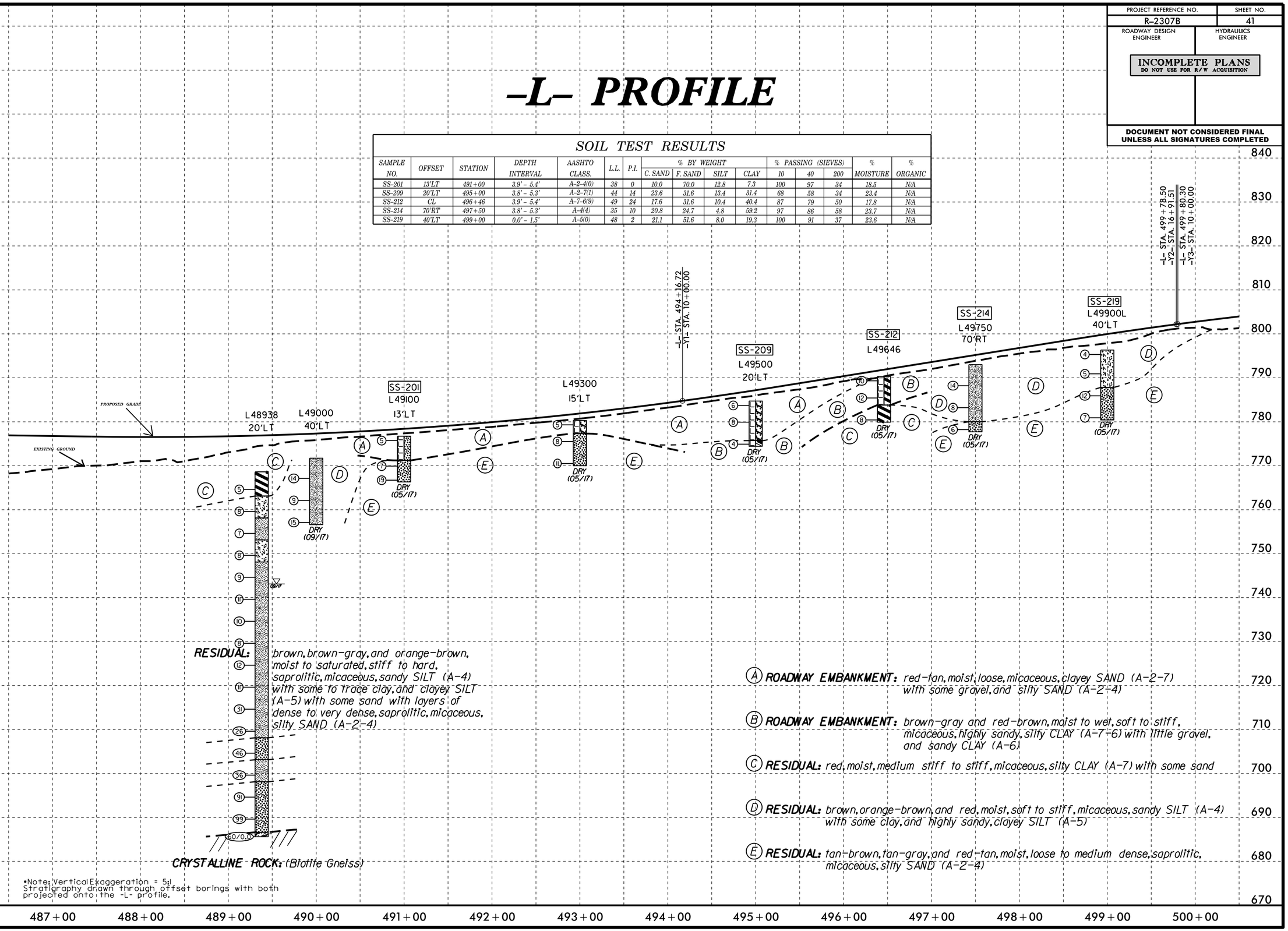
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L- PROFILE

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-201	13'LT	491+00	3.9' - 5.4'	A-2-4(0)	38	0	10.0	70.0	12.8	7.3	100	97	34	18.5	N/A
SS-209	20'LT	495+00	3.8' - 5.3'	A-2-7(1)	44	14	23.6	31.6	13.4	31.4	68	58	34	23.4	N/A
SS-212	CL	496+46	3.9' - 5.4'	A-7-6(9)	49	24	17.6	31.6	10.4	40.4	87	79	50	17.8	N/A
SS-214	70'RT	497+50	3.8' - 5.3'	A-4(4)	35	10	20.8	24.7	4.8	59.2	97	86	58	23.7	N/A
SS-219	40'LT	499+00	0.0' - 1.5'	A-5(0)	48	2	21.1	51.6	8.0	19.3	100	91	37	23.6	N/A



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PROJECT REFERENCE NO.	SHEET NO.
R–2307B	42
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

–L– PROFILE

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-226	30'LT	501+00	0.0' – 1.5'	A-2-4(0)	39	0	14.8	65.8	12.0	7.5	98	93	30	20.7	N/A
SS-229	35'LT	503+00	0.0' – 1.5'	A-5(2)	44	7	17.8	38.0	11.3	32.9	96	87	48	21.4	N/A
SS-230	35'LT	503+00	3.9' – 5.4'	A-4(0)	40	3	15.7	42.7	12.8	28.7	100	94	49	23.1	N/A
SS-107	70'LT	505+00	4.1' – 5.6'	A-4(1)	39	2	6.2	50.5	19.7	23.5	100	98	54	12.4	N/A
SS-231	30'LT	507+00	3.7' – 5.2'	A-5(2)	52	2	9.2	43.8	11.3	35.7	100	97	54	20.8	N/A
SS-232	30'LT	507+00	8.7' – 10.2'	A-5(0)	44	0	4.5	47.8	8.4	12.4	100	99	36	16.5	N/A
SS-234	20'LT	509+00	0.0' – 1.5'	A-2-4(0)	24	2	19.7	49.9	8.4	22.0	99	91	35	10.2	N/A
SS-235	20'LT	509+00	4.0' – 5.5'	A-2-4(0)	32	0	40.7	36.3	4.7	18.3	99	80	28	13.9	N/A
SS-242	40'LT	513+50	4.1' – 5.6'	A-5(2)	46	3	15.2	35.5	13.6	35.7	99	92	57	15.1	N/A

SS-226 L50100 30'LT

SS-229 SS-230 L50300 35'LT

SS-107 L50500 70'LT

SS-231 SS-232 L50700 30'LT

SS-234 SS-235 L50900 20'LT

L51100 20'LT

SS-242 L51350 40'LT

PROPOSED GRADE

EXISTING GROUND

–L– STA. 512+61.02
–Y4– STA. 716+48.32

DRY (05/17)

(A) **RESIDUAL:** red-tan, dry to moist, soft to very stiff, micaceous, highly sandy, clayey SILT (A-5), and sandy SILT (A-4) with some clay

(B) **RESIDUAL:** brown, tan-brown, red, gray, and white, dry to moist, loose to medium dense, saprolitic, micaceous, silty SAND (A-2-4) with trace to some clay

•Note: Vertical Exaggeration = 5:1
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

900 890 880 870 860 850 840 830 820 810 800 790 780 770 760 750 740 730 720 710 700

501+00 502+00 503+00 504+00 505+00 506+00 507+00 508+00 509+00 510+00 511+00 512+00 513+00 514+00

5/14/99

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B	43
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

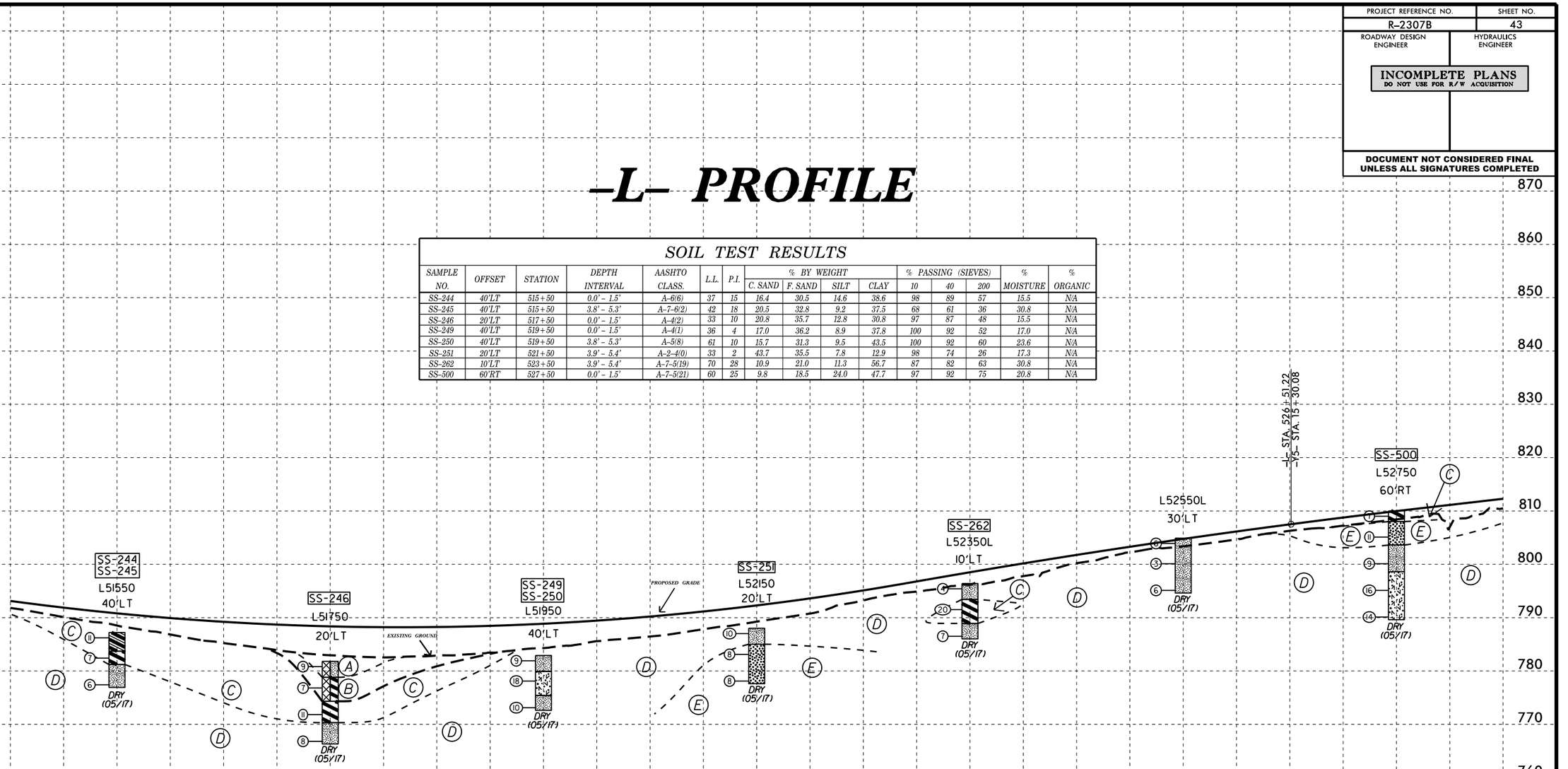
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L- PROFILE

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-244	40'LT	515+50	0.0' – 1.5'	A-6(6)	37	15	16.4	30.5	14.6	38.6	98	89	57	15.5	N/A
SS-245	40'LT	515+50	3.8' – 5.3'	A-7-6(2)	42	18	20.5	32.8	9.2	37.5	68	61	36	30.8	N/A
SS-246	20'LT	517+50	0.0' – 1.5'	A-4(2)	33	10	20.8	35.7	12.8	30.8	97	87	48	15.5	N/A
SS-249	40'LT	519+50	0.0' – 1.5'	A-4(1)	36	4	17.0	36.2	8.9	37.8	100	92	52	17.0	N/A
SS-250	40'LT	519+50	3.8' – 5.3'	A-5(8)	61	10	15.7	31.3	9.5	43.5	100	92	60	23.6	N/A
SS-251	20'LT	521+50	3.9' – 5.4'	A-2-4(0)	33	2	43.7	35.5	7.8	12.9	98	74	26	17.3	N/A
SS-262	10'LT	523+50	3.9' – 5.4'	A-7-5(19)	70	28	10.9	21.0	11.3	56.7	87	82	63	30.8	N/A
SS-500	60'RT	527+50	0.0' – 1.5'	A-7-5(21)	60	25	9.8	18.5	24.0	47.7	97	92	75	20.8	N/A



(A) **ARTIFICIAL FILL:** red-brown, moist, stiff, sandy SILT (A-4) with some clay and trace gravel

(B) **ARTIFICIAL FILL:** brown, wet, medium stiff, highly sandy, silty CLAY (A-7-6) with trace organics

(C) **RESIDUAL:** red-brown, brown, moist, medium stiff to very stiff, micaceous, sandy CLAY (A-6), highly sandy, silty CLAY (A-7-6), and highly plastic, silty CLAY (A-7-5) with some sand

(D) **RESIDUAL:** red, red-tan, red-brown, maroon, orange-brown, and white, dry to moist, soft to very stiff, micaceous, sandy SILT (A-4) with some clay, and highly sandy, clayey SILT (A-5)

(E) **RESIDUAL:** red, white, and gray, moist, loose, saprolitic, micaceous, silty SAND (A-2-4) with little clay

•Note: Vertical Exaggeration = 5:1
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B	44
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

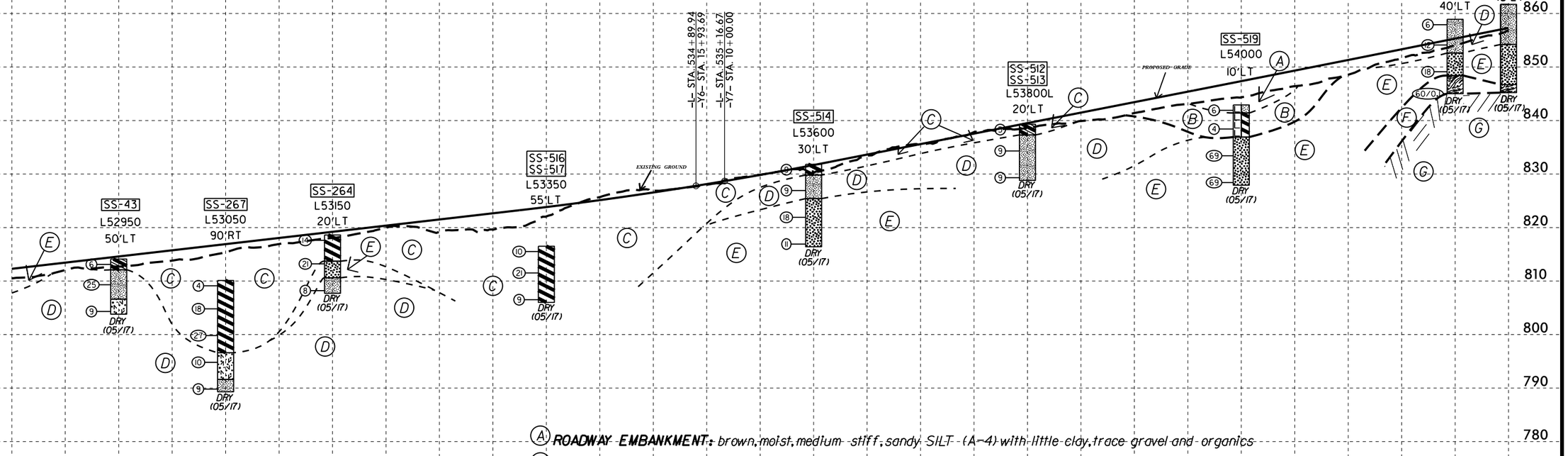
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L- PROFILE

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	50'LT	529+50	3.8' - 5.3'	A-4(0)	31	0	13.0	23.1	21.5	42.4	100	93	67	24.3	N/A
SS-267	90'RT	530+50	0.0' - 1.5'	A-7-5(6)	42	20	21.0	34.5	11.6	32.9	98	88	48	25.4	N/A
SS-264	20'LT	531+50	0.0' - 1.5'	A-7-5(19)	57	24	11.6	17.3	15.7	55.5	100	94	74	15.1	N/A
SS-516	55'LT	533+50	0.0' - 1.5'	A-7-5(33)	69	37	9.5	11.6	19.1	59.7	99	94	81	25.5	N/A
SS-517	55'LT	533+50	4.0' - 5.5'	A-7-5(11)	52	15	13.2	25.4	25.3	36.1	99	91	69	26.5	N/A
SS-514	30'LT	536+00	0.0' - 1.5'	A-7-5(25)	64	30	12.6	17.8	14.2	55.4	100	93	74	23.1	N/A
SS-512	20'LT	538+00	0.0' - 1.5'	A-6(3)	37	12	24.7	30.8	11.1	33.4	100	88	50	25.5	N/A
SS-513	20'LT	538+00	4.0' - 5.5'	A-4(1)	40	7	27.9	35.3	12.7	24.1	100	86	44	20.2	N/A
SS-519	10'LT	540+00	3.5' - 5.0'	A-7-6(7)	43	15	18.5	27.3	18.5	35.6	96	87	57	25.0	N/A



(A) **ROADWAY EMBANKMENT:** *brown, moist, medium stiff, sandy SILT (A-4) with little clay, trace gravel and organics*

(B) **ROADWAY EMBANKMENT:** *red-brown, moist, soft, highly sandy, silty CLAY (A-7-6)*

(C) **RESIDUAL:** *brown, orange-brown, red-brown, red, and white, dry to moist, soft to very stiff, sandy CLAY (A-6), highly sandy, silty CLAY (A-7-5), and highly plastic silty CLAY (A-7-5) with some sand*

(D) **RESIDUAL:** *red, red-brown, orange-brown, and tan-brown, dry to moist, medium stiff to very stiff, saprolitic, micaceous, sandy SILT (A-4) with some clay, and highly sandy, clayey SILT (A-5)*

(E) **RESIDUAL:** *orange-brown, tan-brown, gray, and white, dry to moist, medium dense to very dense, saprolitic, micaceous, silty SAND (A-2-4)*

(F) **WEATHERED ROCK:** *(Granite)*

(G) **CRYSTALLINE ROCK:** *(Granite)*

*Note: Vertical Exaggeration = 5x
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

5/14/99

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B	45
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

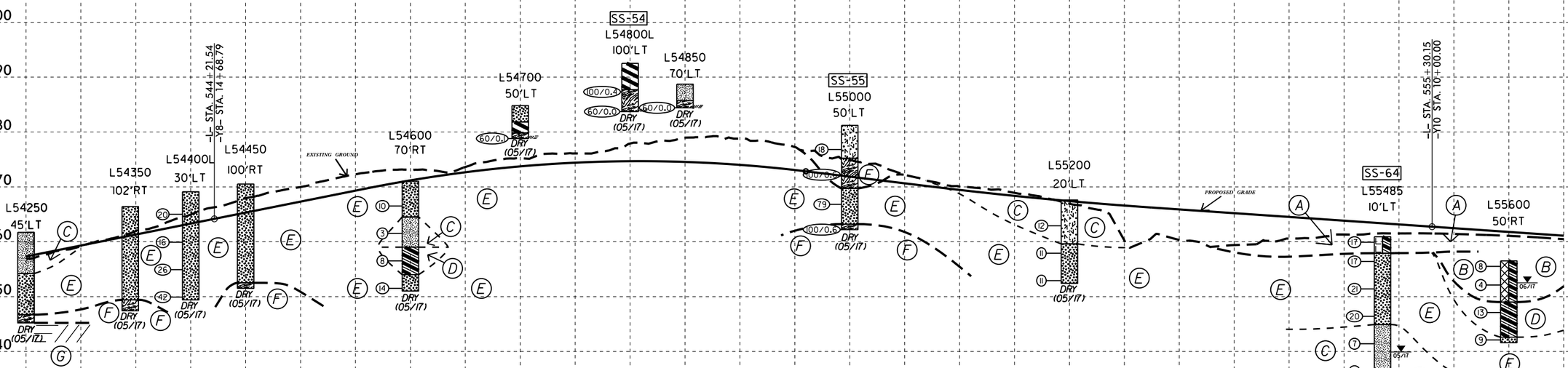
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L- PROFILE

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-54	100'LT	548+00	3.8' - 4.8'	A-7-5(36)	81	38	8.2	15.7	16.9	59.1	100	96	80	32.6	N/A
SS-55	50'LT	550+00	3.4' - 4.9'	A-5(1)	43	4	21.1	35.0	14.5	29.4	100	89	51	16.2	N/A
SS-64	10'LT	554+85	0.0' - 1.5'	A-6(4)	35	16	27.2	27.2	10.4	35.2	96	80	49	20.2	N/A



(A) **ROADWAY EMBANKMENT:** *orange-brown, moist, very stiff, sandy CLAY (A-6)*

(B) **ARTIFICIAL FILL:** *red, moist to saturated, soft to stiff, sandy CLAY (A-6) with little fragments of plastic and styrofoam*

(C) **RESIDUAL:** *orange-brown, brown, and gray-brown, dry to saturated, soft to very stiff, highly sandy, clayey SILT (A-5), and sandy SILT (A-4)*

(D) **RESIDUAL:** *orange-brown and red-brown, moist, stiff, micaceous, sandy CLAY (A-6)*

(E) **RESIDUAL:** *light brown, gray, orange-brown, and tan-brown, dry to moist, medium dense to dense, saprolitic, micaceous, silty SAND (A-2-4)*

(F) **WEATHERED ROCK:** *(Granite)*

(G) **CRYSTALLINE ROCK:** *(Granite)*

*Note: Vertical Exaggeration = 5:1
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B	46
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

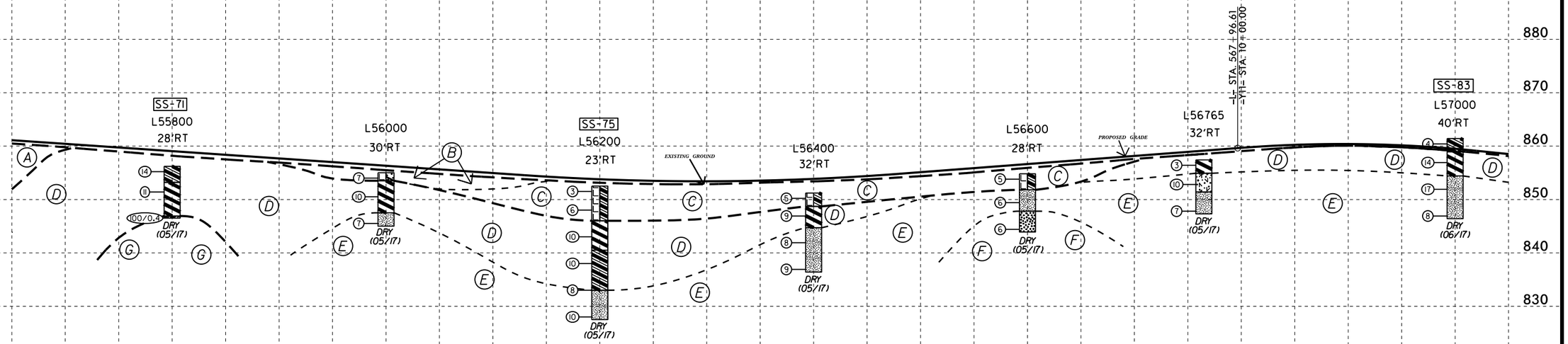
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L- PROFILE

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-71	28'RT	558+00	3.8' – 5.3'	A-7-6(10)	50	21	22.8	30.0	10.3	36.8	100	86	56	28.7	N/A
SS-75	23'RT	562+00	8.5' – 10.0'	A-7-6(14)	55	28	20.2	26.6	11.1	42.0	100	89	58	18.6	N/A
SS-83	40'RT	570+00	3.5' – 5.0'	A-7-5(19)	63	20	10.0	20.8	14.2	55.0	100	94	76	36.8	N/A



(A) **ARTIFICIAL FILL:** red, moist to saturated, soft to stiff, sandy CLAY (A-6) with little fragments of plastic and styrofoam

(B) **ROADWAY EMBANKMENT:** brown, moist, loose, clayey SAND (A-2-6)

(C) **ROADWAY EMBANKMENT:** red and brown, moist, soft to medium stiff, micaceous, sandy CLAY (A-6) with trace gravel

(D) **RESIDUAL:** red, orange-red, tan, and white, moist, soft to stiff, micaceous, moderate to highly plastic, highly sandy, silty CLAY (A-7-6), sandy CLAY (A-6), and silty CLAY (A-7-5) with some sand

(E) **RESIDUAL:** red-brown, brown, brown-gray, tan-brown, and orange, dry to moist, medium stiff to very stiff, saprolitic, micaceous, sandy SILT (A-4), and clayey SILT (A-5)

(F) **RESIDUAL:** tan, moist, loose, micaceous, silty SAND (A-2-4)

(G) **WEATHERED ROCK:** (Granite)

•Note: Vertical Exaggeration = 5:1
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

960 950 940 930 920 910 900 890 880 870 860 850 840 830 820 810 800 790 780 770 760

557+00 558+00 559+00 560+00 561+00 562+00 563+00 564+00 565+00 566+00 567+00 568+00 569+00 570+00

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B	47
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L- PROFILE

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-92	25'RT	574+00	3.6' - 5.1'	A-7-5(18)	59	26	17.0	19.9	10.6	52.5	100	89	68	23.4	N/A

-L- STA. 580+66.47
-Y12- STA. 16+32.39
-L- STA. 580+67.56
-Y13- STA. 10+00.00

L57200 30'RT — DRY (06/17)
PROPOSED GRADE
SS-92 L57400 25'RT — DRY (06/17)
L57586 45'LT — DRY (06/17)
L57830 40'LT — DRY (06/17)
L57990 50'LT — DRY (06/17)
EXISTING GROUND
L58200 50'RT — DRY (06/17)
L58400 50'RT — DRY (06/17)

(A) **RESIDUAL:** red, red-maroon, and red-orange, moist, medium stiff to very stiff, moderate to highly plastic, silty CLAY (A-7-5) with some sand, and sandy CLAY (A-6)

(B) **RESIDUAL:** red-maroon, tan-gray, and red-tan, dry to moist, medium stiff to very stiff, saprolitic, micaceous, sandy SILT (A-4), and clayey SILT (A-5)

(C) **RESIDUAL:** tan-gray, moist, loose, saprolitic, silty SAND (A-2-4)

•Note: Vertical Exaggeration = 5:1
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

960 950 940 930 920 910 900 890 880 870 860 850 840 830 820 810 800 790 780 770 760

571+00 572+00 573+00 574+00 575+00 576+00 577+00 578+00 579+00 580+00 581+00 582+00 583+00 584+00

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B	48
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

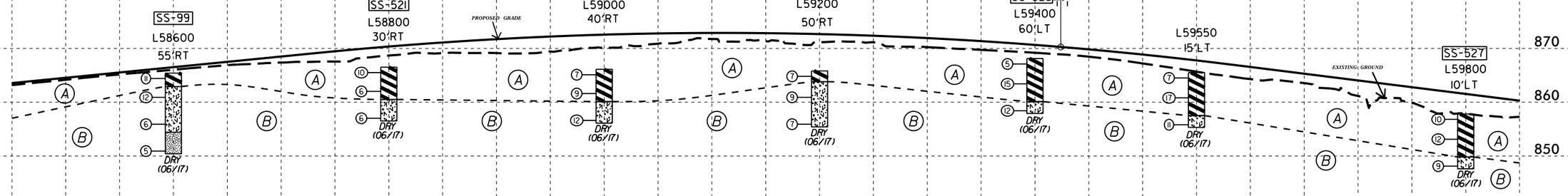
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L- PROFILE

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-99	55'RT	586+00	3.5' - 5.0'	A-5(10)	58	5	0.8	33.3	25.1	40.8	100	100	83	28.2	N/A
SS-521	30'RT	588+00	0.0' - 1.5'	A-7-5(19)	68	12	1.0	30.9	21.6	46.4	100	99	86	31.8	N/A
SS-523	50'RT	592+00	0.0' - 1.5'	A-7-5(15)	58	16	3.6	34.1	21.4	40.9	100	98	75	35.2	N/A
SS-525	60'LT	594+00	3.7' - 5.2'	A-7-5(34)	76	34	3.5	22.3	9.5	64.7	99	98	82	31.1	N/A
SS-527	10'LT	598+00	0.0' - 1.5'	A-7-5(36)	79	34	2.9	20.4	11.8	64.9	100	98	84	32.6	N/A



(A) **RESIDUAL:** red, red-brown, red-orange, and orange-brown, moist, medium stiff to very stiff, micaceous, slightly to highly plastic, silty CLAY (A-7-5) with some sand

(B) **RESIDUAL:** red, tan, maroon, red-orange, red-brown, and orange-brown, dry to moist, medium stiff to stiff, saprolitic, micaceous, clayey SILT (A-5) with some sand, and sandy SILT (A-4)

*Note: Vertical Exaggeration = 5:1
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B	49
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

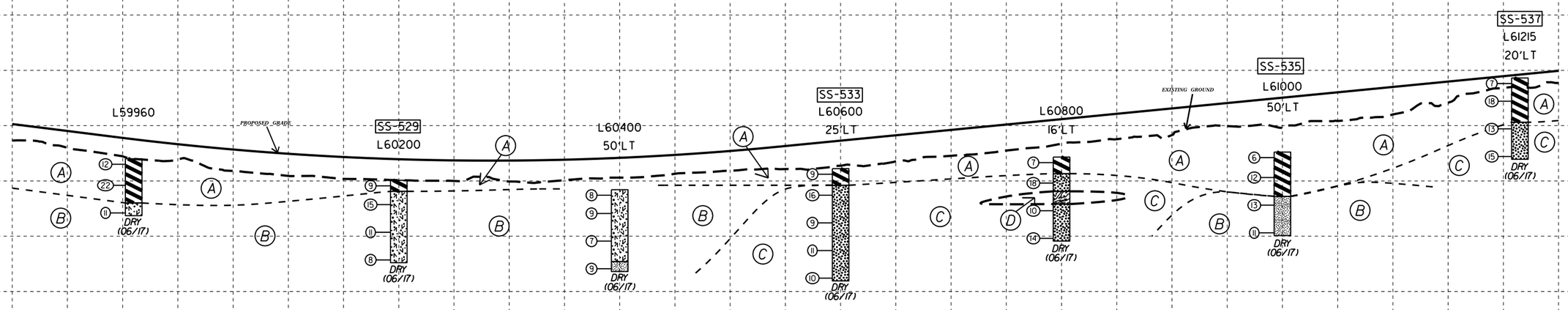
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L- PROFILE

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-529	CL	602+00	3.4' - 4.9'	A-5(7)	55	8	4.2	43.2	8.2	44.3	100	99	63	24.1	N/A
SS-533	25'LT	606+00	3.8' - 5.3'	A-2-4(0)	31	2	23.5	54.5	8.6	13.4	100	91	33	15.3	N/A
SS-535	50'LT	610+00	3.6' - 5.1'	A-7-5(10)	50	18	18.5	27.7	13.7	40.1	100	92	61	25.8	N/A
SS-537	20'LT	612+15	3.2' - 4.7'	A-7-6(4)	43	15	26.1	35.9	11.1	27.0	100	86	45	28.8	N/A



(A) **RESIDUAL:** red-brown and orange-brown, moist, medium stiff to very stiff, highly sandy, silty CLAY (A-7-5/A-7-6) with some mica

(B) **RESIDUAL:** red-brown, orange-brown, orange-tan, and gray, dry to moist, medium stiff to stiff, saprolitic, micaceous, highly sandy, clayey SILT (A-5), and sandy SILT (A-4)

(C) **RESIDUAL:** orange-tan and gray, dry, loose to medium dense, saprolitic, micaceous, silty SAND (A-2-4)

(D) **WEATHERED ROCK:** (Biotite Gneiss)

•Note: Vertical Exaggeration = 5:1
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

960 950 940 930 920 910 900 890 880 870 860 850 840 830 820 810 800 790 780 770 760

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B	50
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

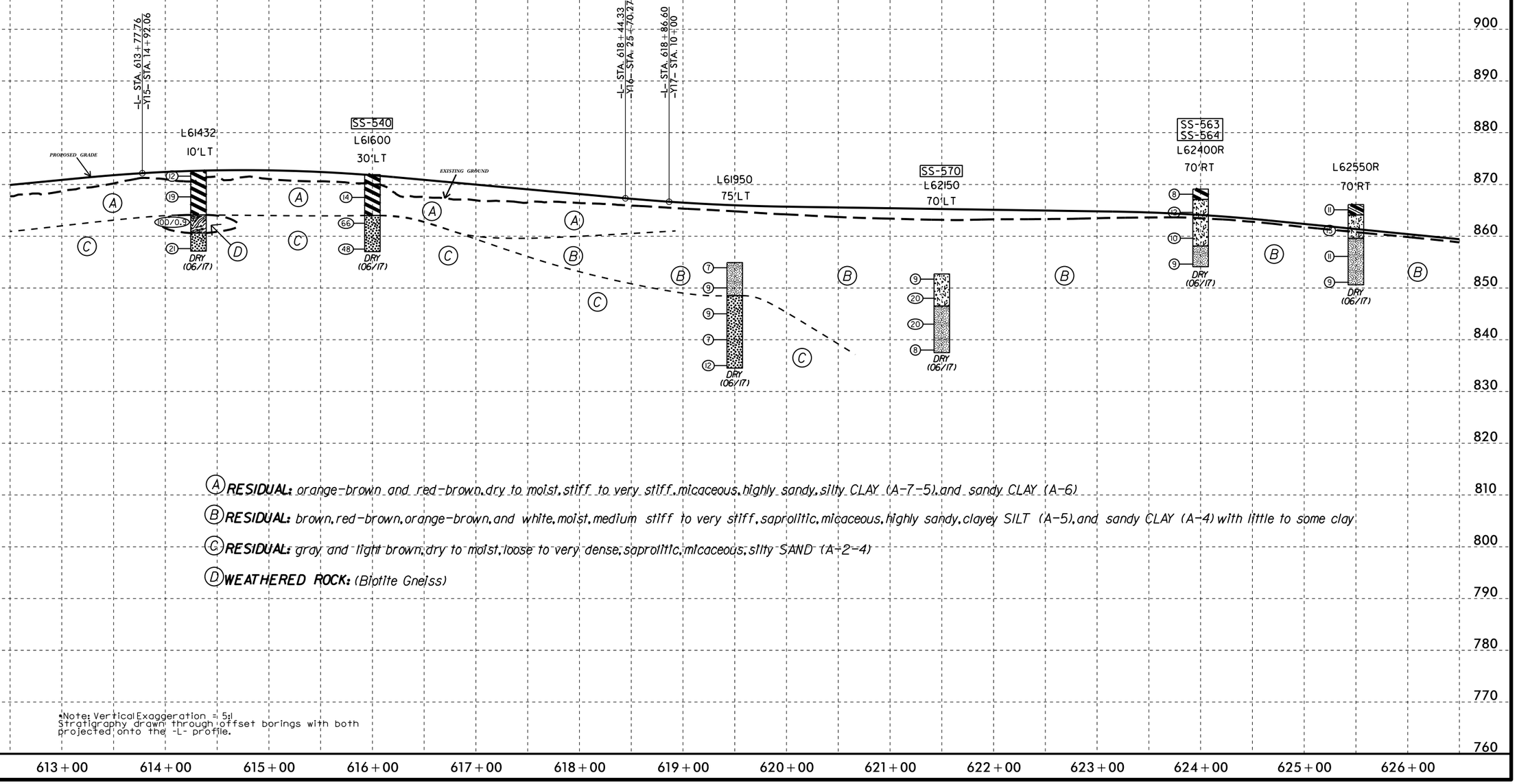
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L- PROFILE

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-540	30'LT	616+00	3.2' - 4.9'	A-7-5(6)	53	12	20.2	34.3	11.6	33.9	100	93	53	23.1	N/A
SS-570	70'LT	621+50	0.0' - 1.5'	A-5(3)	43	7	22.3	26.6	13.9	37.2	99	88	56	17.4	N/A
SS-563	70'RT	624+00	0.0' - 1.5'	A-7-5(9)	53	15	22.1	22.3	11.3	44.3	100	86	61	16.6	N/A
SS-564	70'RT	624+00	3.5' - 5.0'	A-5(0)	44	3	31.8	34.9	11.8	21.5	99	77	43	19.7	N/A



(A) **RESIDUAL:** *orange-brown and red-brown, dry to moist, stiff to very stiff, micaceous, highly sandy, silty CLAY (A-7-5), and sandy CLAY (A-6)*

(B) **RESIDUAL:** *brown, red-brown, orange-brown, and white, moist, medium stiff to very stiff, saprolitic, micaceous, highly sandy, clayey SILT (A-5), and sandy CLAY (A-4) with little to some clay*

(C) **RESIDUAL:** *gray and light brown, dry to moist, loose to very dense, saprolitic, micaceous, silty SAND (A-2-4)*

(D) **WEATHERED ROCK:** *(Biotite Gneiss)*

•Note: Vertical Exaggeration = 5:1
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B	51
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L- PROFILE

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-565	50'LT	629+50	3.5' - 5.0'	A-5(12)	59	10	6.9	27.4	20.9	44.8	98	96	74	32.5	N/A
SS-575	50'RT	633+50	3.6' - 5.1'	A-7-5(19)	61	28	16.8	18.1	12.4	52.6	98	91	67	29.6	N/A
SS-577	40'RT	635+50	3.5' - 5.0'	A-5(5)	44	7	14.5	28.6	22.3	34.5	100	94	66	26.7	N/A
SS-578	55'RT	637+50	3.6' - 5.1'	A-7-5(14)	60	13	10.2	21.1	24.4	44.3	100	95	77	27.7	N/A
SS-581	35'LT	639+50	3.8' - 5.3'	A-5(7)	54	7	19.6	24.5	15.2	40.7	100	90	65	26.5	N/A

-L- STA. 626+79.33
-Y18- STA. 13+20.63

L62750
80'LT

PROPOSED GRADE

SS-565
L62950
50'LT

L63150
45'RT

SS-575
L63350
50'RT

EXISTING GROUND

SS-577
L63550
40'RT

SS-578
L63750
55'RT

SS-581
L63950
35'LT

DRY (06/17)

(A) **RESIDUAL:** brown, red-brown, orange-brown, and red-orange, dry to moist, soft to very stiff, micaceous, sandy CLAY (A-6), and slightly to highly plastic, silty CLAY (A-7-5) with some sand

(B) **RESIDUAL:** red-brown and orange-brown, moist, stiff to very stiff, saprolitic, micaceous, clayey SILT (A-5) with some sand

*Note: Vertical Exaggeration = 5:1
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

950 940 930 920 910 900 890 880 870 860 850 840 830 820 810 800 790 780 770 760 750

627+00 628+00 629+00 630+00 631+00 632+00 633+00 634+00 635+00 636+00 637+00 638+00 639+00 640+00

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B	52
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

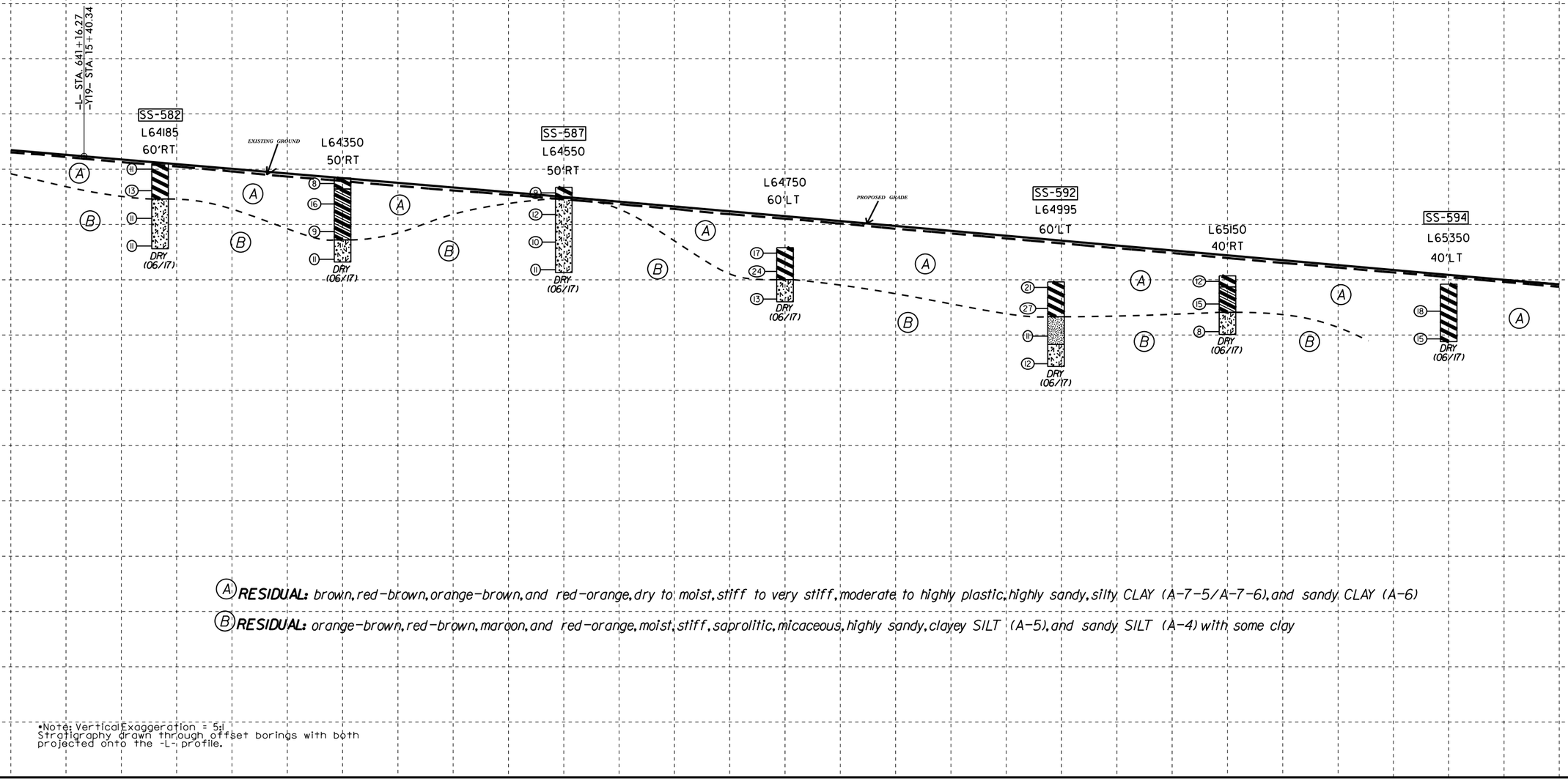
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L- PROFILE

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-582	60'RT	641+85	0.0' - 1.5'	A-7-5(18)	59	26	19.9	16.8	13.0	50.3	99	89	68	18.8	N/A
SS-587	50'RT	645+50	3.9' - 5.4'	A-5(4)	58	5	22.4	30.2	14.4	33.0	100	88	54	30.9	N/A
SS-592	60'LT	649+95	0.0' - 1.5'	A-7-6(18)	59	30	21.7	17.5	7.3	53.6	100	88	63	18.3	N/A
SS-594	40'LT	653+50	3.9' - 5.4'	A-7-5(13)	56	22	24.2	15.8	4.9	55.0	100	85	62	22.7	N/A



(A) **RESIDUAL:** *brown, red-brown, orange-brown, and red-orange, dry to moist, stiff to very stiff, moderate to highly plastic, highly sandy, silty CLAY (A-7-5/A-7-6), and sandy CLAY (A-6)*

(B) **RESIDUAL:** *orange-brown, red-brown, maroon, and red-orange, moist, stiff, saprolitic, micaceous, highly sandy, clayey SILT (A-5), and sandy SILT (A-4) with some clay*

*Note: Vertical Exaggeration = 5:1
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B	53
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

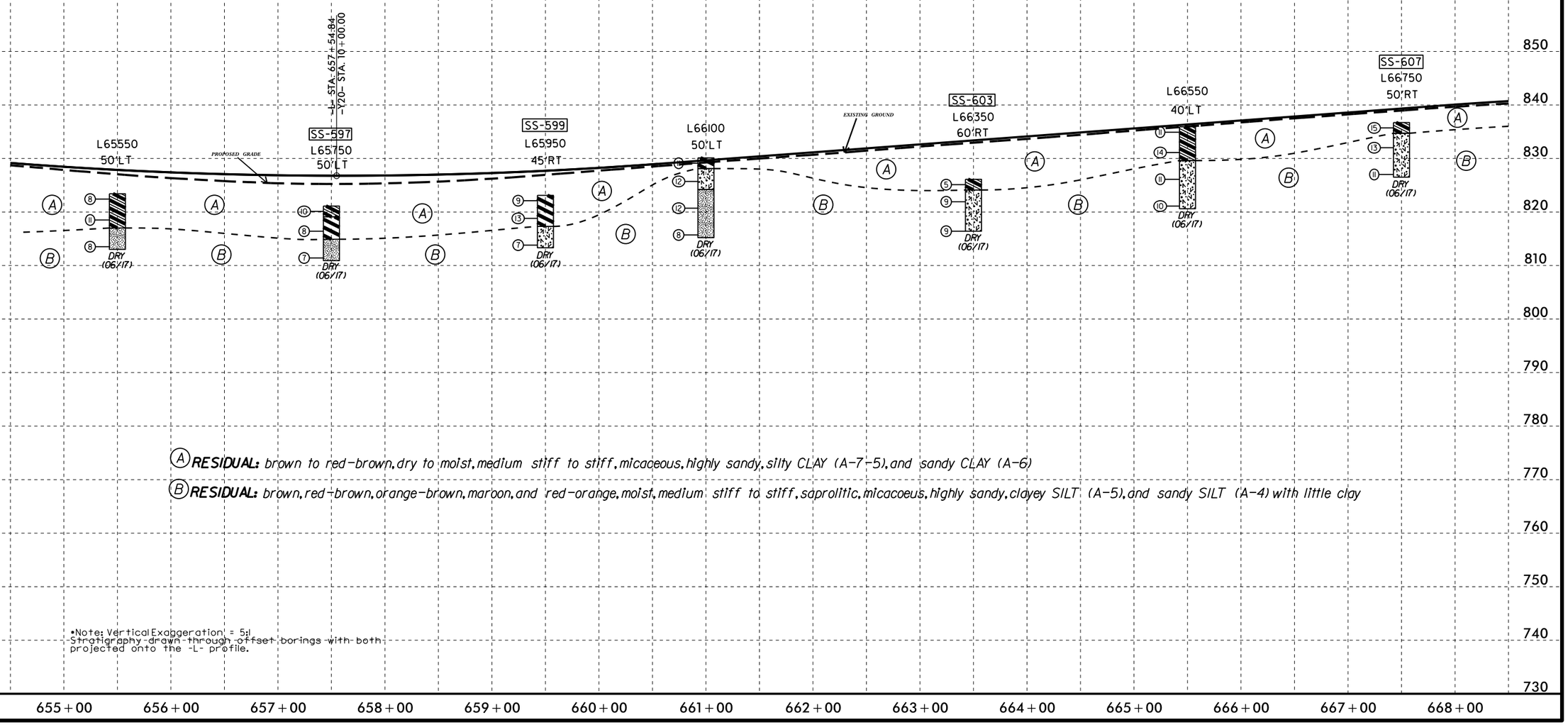
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L- PROFILE

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-597	50'LT	657+50	3.7' - 5.2'	A-7-5(16)	56	22	19.8	14.8	13.5	52.0	100	87	68	27.5	N/A
SS-599	45'RT	659+50	3.3' - 4.8'	A-7-5(10)	62	12	20.1	21.3	11.3	47.3	100	88	65	28.9	N/A
SS-603	60'RT	663+50	3.2' - 4.7'	A-5(2)	56	1	23.8	28.4	7.5	40.3	100	87	55	28.3	N/A
SS-607	50'RT	667+50	3.7' - 5.2'	A-5(2)	55	4	30.5	29.3	12.2	28.0	100	81	49	22.8	N/A



(A) **RESIDUAL:** *brown to red-brown, dry to moist, medium stiff to stiff, micaceous, highly sandy, silty CLAY (A-7-5), and sandy CLAY (A-6)*

(B) **RESIDUAL:** *brown, red-brown, orange-brown, maroon, and red-orange, moist, medium stiff to stiff, saprolitic, micaceous, highly sandy, clayey SILT (A-5), and sandy SILT (A-4) with little clay*

*Note: Vertical Exaggeration = 5:1
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B	54
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

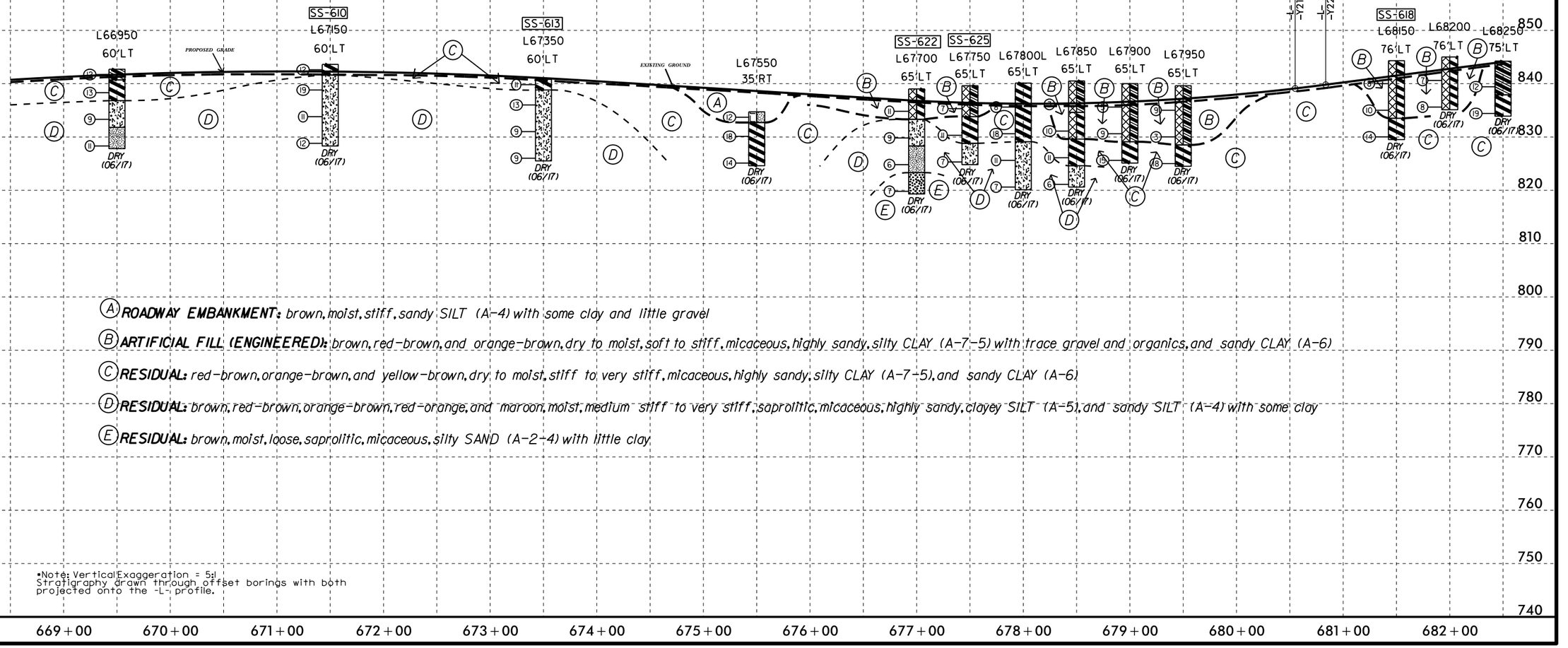
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L- PROFILE

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-610	60'LT	671+50	3.8' - 5.3'	A-5(6)	60	5	22.6	25.9	12.6	38.9	100	87	63	22.8	N/A
SS-613	60'LT	673+50	3.8' - 5.3'	A-5(4)	53	7	23.2	34.2	11.5	31.1	98	85	54	30.2	N/A
SS-622	65'LT	677+00	3.2' - 4.7'	A-7-5(5)	48	12	27.6	30.2	9.8	32.4	98	82	50	30.3	N/A
SS-625	65'LT	677+50	8.3' - 9.8'	A-7-5(10)	61	12	21.5	26.5	16.7	35.3	100	87	62	28.2	N/A
SS-618	76'LT	681+50	3.3' - 4.8'	A-7-5(11)	56	19	15.0	30.8	11.2	43.0	99	94	61	27.1	N/A



(A) **ROADWAY EMBANKMENT:** *brown, moist, stiff, sandy SILT (A-4) with some clay and little gravel*

(B) **ARTIFICIAL FILL (ENGINEERED):** *brown, red-brown, and orange-brown, dry to moist, soft to stiff, micaceous, highly sandy, silty CLAY (A-7-5) with trace gravel and organics, and sandy CLAY (A-6)*

(C) **RESIDUAL:** *red-brown, orange-brown, and yellow-brown, dry to moist, stiff to very stiff, micaceous, highly sandy, silty CLAY (A-7-5), and sandy CLAY (A-6)*

(D) **RESIDUAL:** *brown, red-brown, orange-brown, red-orange, and maroon, moist, medium stiff to very stiff, saprolitic, micaceous, highly sandy, clayey SILT (A-5), and sandy SILT (A-4) with some clay*

(E) **RESIDUAL:** *brown, moist, loose, saprolitic, micaceous, silty SAND (A-2-4) with little clay*

•Note: Vertical Exaggeration = 5:1
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B	55
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

–L– PROFILE

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-620	76'LT	683+50	3.5' - 5.0'	A-7-6(10)	50	23	21.3	26.3	8.8	43.6	100	90	56	20.0	N/A
SS-629	68'RT	686+50	3.5' - 5.0'	A-5(4)	51	8	10.9	41.2	14.9	33.0	100	97	55	29.6	N/A
SS-633	67'RT	689+63	3.2' - 4.7'	A-5(0)	49	8	22.5	46.8	16.4	14.3	100	92	38	22.2	N/A
SS-634	65'RT	693+00	3.3' - 4.8'	A-5(4)	48	7	16.4	31.4	13.4	38.8	97	89	56	26.0	N/A
SS-635	65'RT	693+00	8.3' - 9.8'	A-6(4)	38	12	23.3	28.6	14.9	33.2	100	89	53	24.7	N/A
SS-637	65'RT	695+50	3.7' - 5.2'	A-5(11)	65	10	14.0	21.2	17.2	47.6	99	90	70	30.1	N/A

–L– STA. 685+41.75
–Y23– STA. 11+66.50

–L– STA. 696+51.90
–Y25– STA. 13+77.43

EXISTING GROUND

PROPOSED GRADE

SS-620 L68350 76'LT | L68400 72'LT | L68450 70'LT | L68250 75'LT | L68292 74'LT

SS-629 L68650 68'RT | L68750 75'RT

SS-633 L68950 67'RT

L69200 65'RT | L69250 65'RT | SS-634 SS-635 L69300 65'RT | L69350 65'RT | L69450 65'RT | SS-637 L69550 65'RT

DRY (06/17)

(A) **ARTIFICIAL FILL (ENGINEERED):** brown to red-brown, moist, medium stiff, micaceous, highly sandy, clayey SILT (A-5) with trace organics and gravel

(B) **ARTIFICIAL FILL (ENGINEERED):** brown, red-brown, and orange-brown, moist, soft to stiff, sandy CLAY (A-6) with trace gravel and organics, and silty CLAY (A-7) with some sand

(C) **RESIDUAL:** brown, red-brown, orange-brown, and red-orange, dry to moist, medium stiff to very stiff, micaceous, highly sandy, silty CLAY (A-7-6), and sandy CLAY (A-6)

(D) **RESIDUAL:** brown, red-brown, orange-brown, and maroon-brown, moist, medium stiff to stiff, saprolitic, micaceous, highly sandy, clayey SILT (A-5), and sandy SILT (A-4) with some to little clay

(E) **RESIDUAL:** red-brown, moist, medium dense, saprolitic, micaceous, silty SAND (A-2-4)

*Note: Vertical Exaggeration = 5x
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

950 940 930 920 910 900 890 880 870 860 850 840 830 820 810 800 790 780 770 760 750

683+00 684+00 685+00 686+00 687+00 688+00 689+00 690+00 691+00 692+00 693+00 694+00 695+00 696+00

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B	56
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

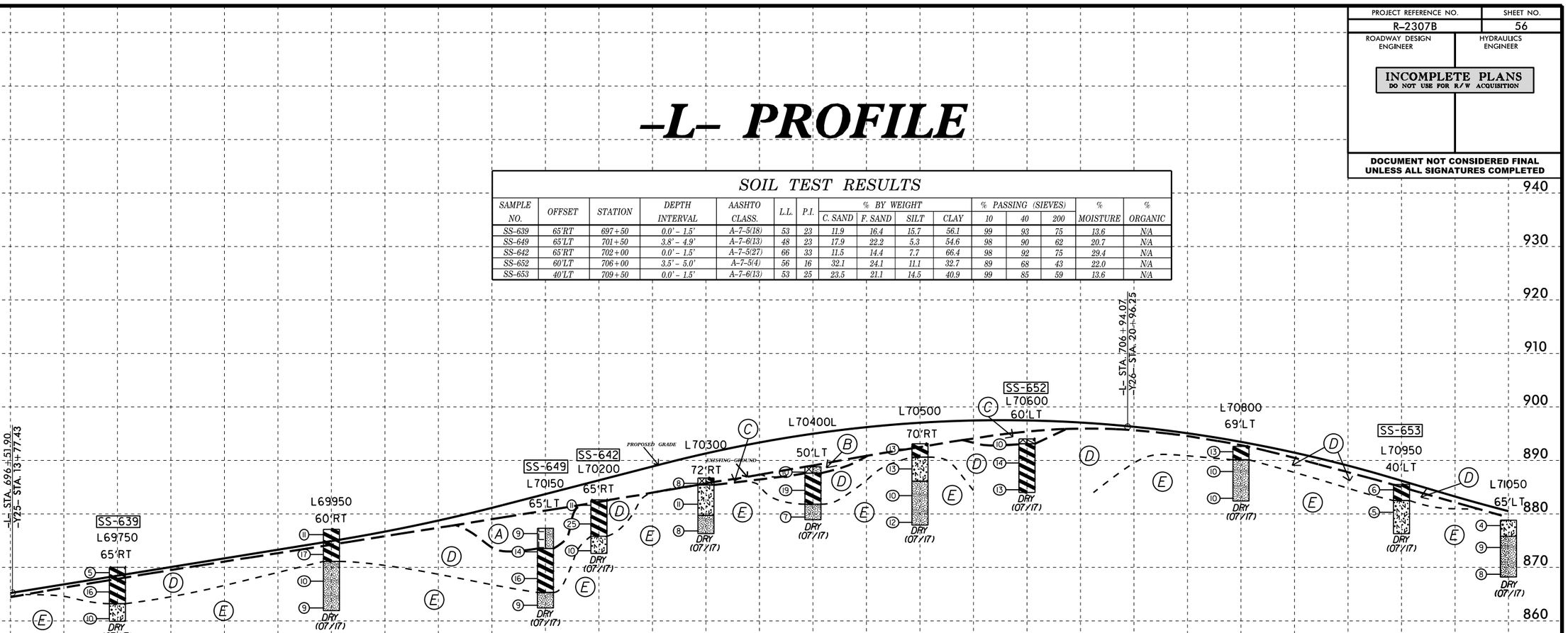
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L- PROFILE

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-639	65'RT	697+50	0.0' – 1.5'	A-7-5(18)	53	23	11.9	16.4	15.7	56.1	99	93	75	13.6	N/A
SS-649	65'LT	701+50	3.8' – 4.9'	A-7-6(13)	48	23	17.9	22.2	5.3	54.6	98	90	62	20.7	N/A
SS-642	65'RT	702+00	0.0' – 1.5'	A-7-5(27)	66	33	11.5	14.4	7.7	66.4	98	92	75	29.4	N/A
SS-652	60'LT	706+00	3.5' – 5.0'	A-7-5(4)	56	16	32.1	24.1	11.1	32.7	89	68	43	22.0	N/A
SS-653	40'LT	709+50	0.0' – 1.5'	A-7-6(13)	53	25	23.5	21.1	14.5	40.9	99	85	59	13.6	N/A



*Note: Vertical Exaggeration = 5:1
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B	57
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

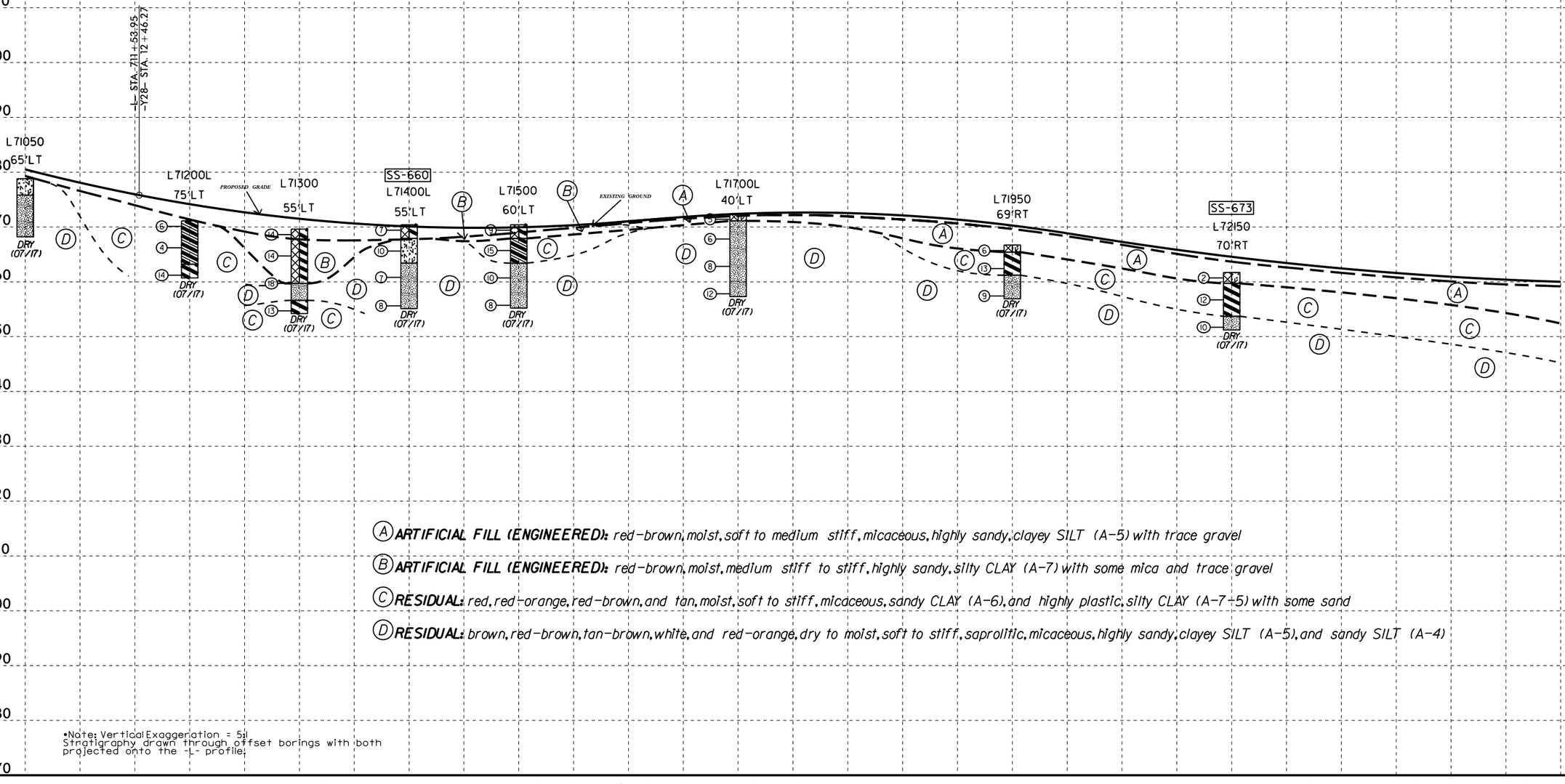
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

–L– PROFILE

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-660	55'LT	714+00	3.8' – 5.3'	A-5(0)	54	2	38.2	30.4	7.1	24.4	99	77	38	18.6	N/A
SS-673	70'RT	721+50	4.0' – 5.5'	A-7-5(23)	71	29	14.2	20.6	6.3	59.0	99	91	70	20.0	N/A



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PROJECT REFERENCE NO.	SHEET NO.
R-2307B	58
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L- PROFILE

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-674	65'RT	726+00	0.0' - 1.5'	A-4(0)	35	4	28.3	35.2	8.6	27.9	88	73	37	11.6	N/A
SS-675	110'RT	728+00	3.8' - 5.3'	A-7-5(10)	51	21	16.0	30.7	19.2	34.1	93	85	57	26.9	N/A
SS-695	95'LT	735+00	4.7' - 6.2'	A-7-6(10)	47	23	23.0	21.5	14.1	41.4	97	84	56	21.5	N/A
SS-702	55'LT	738+50	3.9' - 5.4'	A-5(10)	53	10	13.2	16.5	9.9	60.4	97	89	73	30.7	N/A

-L- STA. 725+04.31
-Y29- STA. 17+68.54

-L- STA. 725+13.15
-Y30- STA. 10+00.00

-L- POT 730+25.53 =
-Y31RPB- POT Sta. 22+83.09

-L- POT 730+40.25 =
-Y31RPA- POT Sta. 19+61.16

-L- POT 733+32.53 =
-Y31- POC Sta. 32+93.35

-L- POT 736+39.58 =
-Y31RPC- POT Sta. 21+14.34

-L- POT 737+09.56 =
-Y31RPD- POT Sta. 23+85.18

SS-674
L72600
65'RT

SS-675
L72800R
110'RT

L73100R
90'RT

SS-695
L73500L
95'LT

SS-702
L73850
55'LT

PROPOSED GRADE

EXISTING GROUND

DRY (07/17)

•Note: Vertical Exaggeration = 5:1
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

(A) **ARTIFICIAL FILL (ENGINEERED):** brown, red-brown, and red-tan, dry to moist, soft to medium stiff, micaceous, sandy SILT (A-4) with some clay, and clayey SILT (A-5)

(B) **ARTIFICIAL FILL:** red-brown, brown, and gray, moist to wet, very soft to soft, micaceous, highly sandy, silty CLAY (A-7-5) with trace boulders and oragnics, sandy CLAY (A-6), and clayey SILT (A-5)

(C) **ROADWAY EMBANKMENT:** orange-brown, red-brown, and red-orange, moist to wet, medium stiff to stiff, micaceous, clayey SILT (A-5) with some sand, and sandy SILT (A-4) with some clay

(D) **ROADWAY EMBANKMENT:** brown, wet, loose, clayey SAND (A-2-6) with trace organics

(E) **RESIDUAL:** red, gray, and tan, moist to wet, soft to stiff, highly sandy, silty CLAY (A-7-6), and sandy CLAY (A-6)

(F) **RESIDUAL:** red-brown, brown, tan, black, gray, white, and pink, moist to saturated, medium stiff to very stiff, saprolitic, micaceous, clayey SILT (A-5) with some sand, and sandy SILT (A-4) with some to trace clay

(G) **RESIDUAL:** white, brown, gray and pink, moist to saturated, medium dense, saprolitic, micaceous, silty SAND (A-2-4)

970 960 950 940 930 920 910 900 890 880 870 860 850 840 830 820 810 800 790 780 770

725+00 726+00 727+00 728+00 729+00 730+00 731+00 732+00 733+00 734+00 735+00 736+00 737+00 738+00

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B	59
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

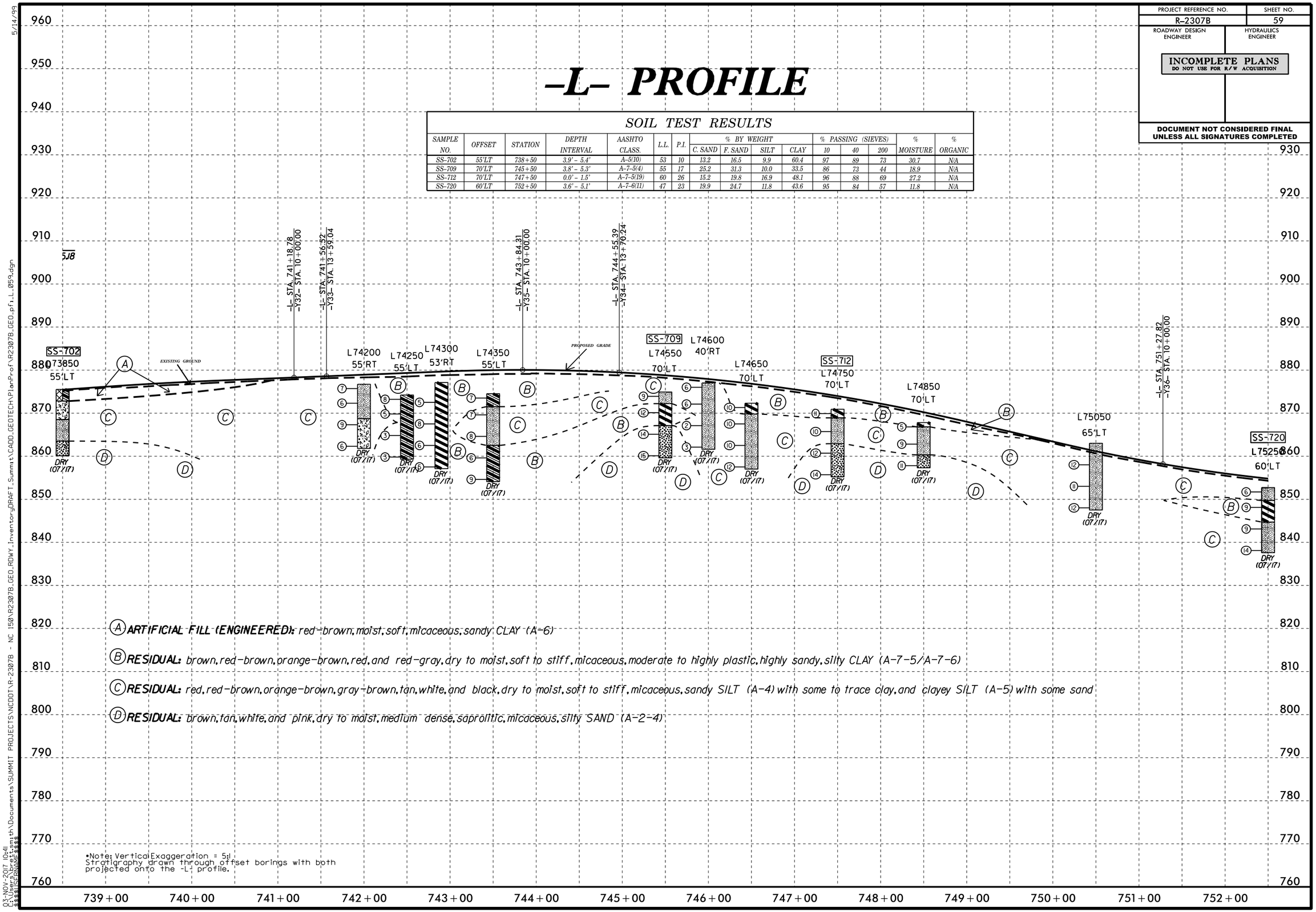
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L- PROFILE

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-702	55'LT	738+50	3.9' - 5.4'	A-5(10)	53	10	13.2	16.5	9.9	60.4	97	89	73	30.7	N/A
SS-709	70'LT	745+50	3.8' - 5.3'	A-7-5(4)	55	17	25.2	31.3	10.0	33.5	86	73	44	18.9	N/A
SS-712	70'LT	747+50	0.0' - 1.5'	A-7-5(19)	60	26	15.2	19.8	16.9	48.1	96	88	69	27.2	N/A
SS-720	60'LT	752+50	3.6' - 5.1'	A-7-6(11)	47	23	19.9	24.7	11.8	43.6	95	84	57	11.8	N/A



(A) **ARTIFICIAL FILL (ENGINEERED):** *red-brown, moist, soft, micaceous, sandy CLAY (A-6)*

(B) **RESIDUAL:** *brown, red-brown, orange-brown, red, and red-gray, dry to moist, soft to stiff, micaceous, moderate to highly plastic, highly sandy, silty CLAY (A-7-5/A-7-6)*

(C) **RESIDUAL:** *red, red-brown, orange-brown, gray-brown, tan, white, and black, dry to moist, soft to stiff, micaceous, sandy SILT (A-4) with some to trace clay, and clayey SILT (A-5) with some sand*

(D) **RESIDUAL:** *brown, tan, white, and pink, dry to moist, medium dense, saprolitic, micaceous, silty SAND (A-2-4)*

•Note: Vertical Exaggeration = 5:1
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B	60
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L- PROFILE

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-720	60'LT	752+50	3.6' - 5.1'	A-7-6(11)	47	23	19.9	24.7	11.8	43.6	95	84	57	11.8	N/A
SS-721	70'LT	753+50	3.4' - 4.9'	A-7-6(16)	60	32	18.1	23.6	6.2	52.2	93	84	58	17.7	N/A
SS-724	60'LT	760+50	3.6' - 5.1'	A-4(0)	40	6	29.7	34.4	10.2	25.7	97	84	40	17.1	N/A
SS-729	70'RT	762+00	3.6' - 5.1'	A-7-5(15)	72	16	14.1	23.3	6.9	55.7	100	95	67	35.5	N/A
SS-731	70'RT	763+00	3.2' - 4.7'	A-5(4)	53	10	27.1	21.9	11.0	40.0	92	77	50	27.5	N/A

-L- STA. 754+30.03
-Y37- STA. 13+98.53

-L- STA. 761+37.57
-Y38- STA. 16+56.03

SS-720 L75250 60'LT

SS-721 L75350L 70'LT

L75700 55'LT

L75850 55'LT

SS-724 L76050 60'LT

SS-729 L76200 70'RT

L76250 70'LT

SS-731 L76300 70'RT

L76350 45'LT

L76400 70'RT

L76500R 70'RT

L76650 70'RT

EXISTING GROUND

PROPOSED GRADE

DRY (07/17)

100/0.9'

(A) **ARTIFICIAL FILL (ENGINEERED):** brown, red-brown, and orange-brown, moist, soft to stiff, micaceous, clayey SILT (A-5) with some sand and gravel, and sandy SILT (A-4) with little clay and trace gravel

(B) **ARTIFICIAL FILL (ENGINEERED):** red-brown, moist, stiff, micaceous, highly plastic, highly sandy, silty CLAY (A-7-6) with trace gravel

(C) **RESIDUAL:** red-brown and orange-brown, dry to moist, stiff to very stiff, highly sandy, silty CLAY (A-7-5/A-7-6), and sandy CLAY (A-6)

(D) **RESIDUAL:** brown, tan-brown, red-brown, and orange-brown, dry to moist, soft to stiff, micaceous, sandy SILT (A-4) with some clay, and highly sandy, clayey SILT (A-5)

(E) **RESIDUAL:** orange-brown, and brown, moist, very loose to medium dense, saprolitic, micaceous, silty SAND (A-2-4)

•Note: Vertical Exaggeration = 5:1
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

960 950 940 930 920 910 900 890 880 870 860 850 840 830 820 810 800 790 780 770 760

753+00 754+00 755+00 756+00 757+00 758+00 759+00 760+00 761+00 762+00 763+00 764+00 765+00 766+00

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B	61
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

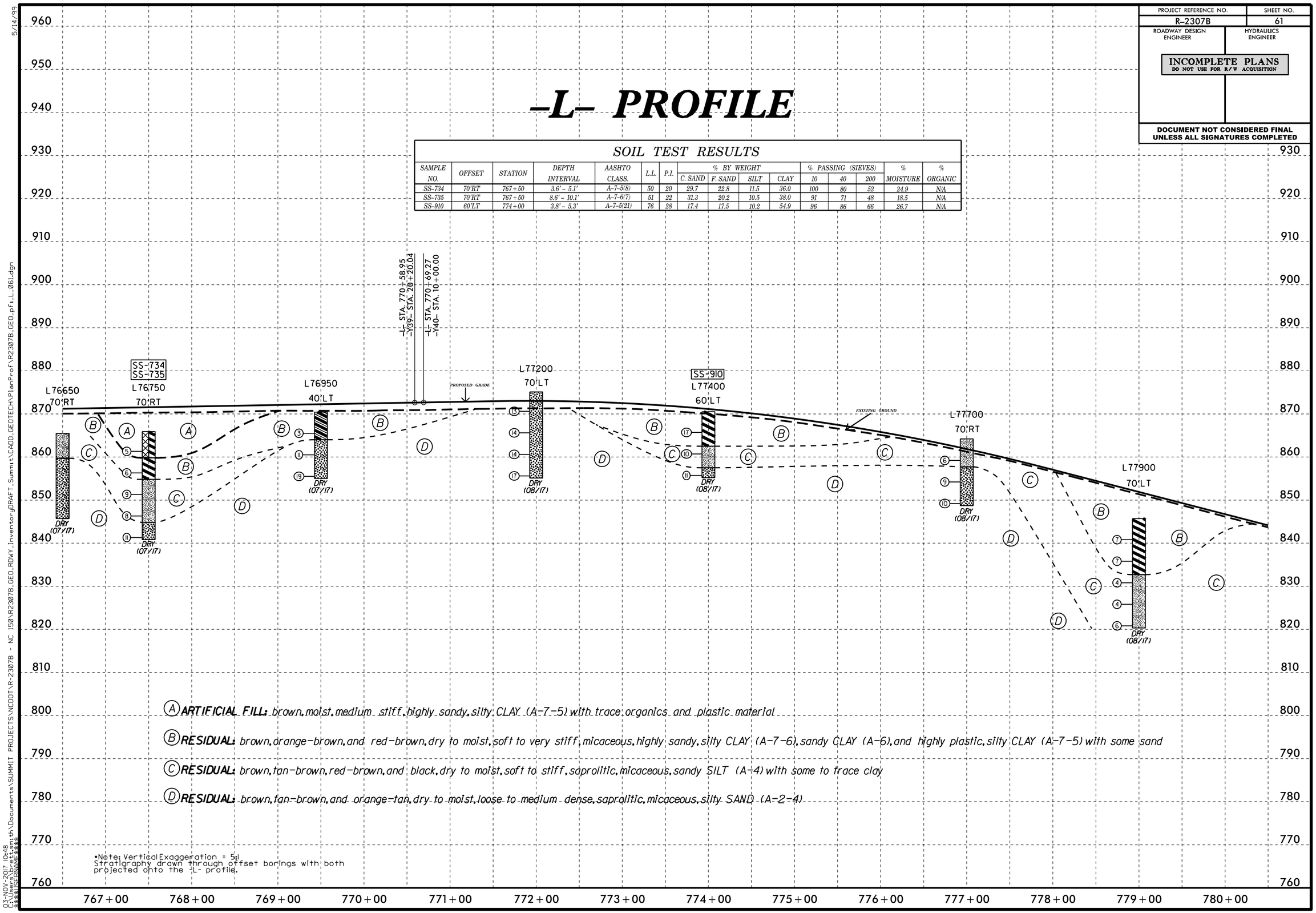
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L- PROFILE

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-734	70'RT	767+50	3.6' - 5.1'	A-7-5(8)	50	20	29.7	22.8	11.5	36.0	100	80	52	24.9	N/A
SS-735	70'RT	767+50	8.6' - 10.1'	A-7-6(7)	51	22	31.3	20.2	10.5	38.0	91	71	48	18.5	N/A
SS-910	60'LT	774+00	3.8' - 5.3'	A-7-5(21)	76	28	17.4	17.5	10.2	54.9	96	86	66	26.7	N/A



(A) **ARTIFICIAL FILL:** *brown, moist, medium stiff, highly sandy, silty CLAY (A-7-5) with trace organics and plastic material*

(B) **RESIDUAL:** *brown, orange-brown, and red-brown, dry to moist, soft to very stiff, micaceous, highly sandy, silty CLAY (A-7-6), sandy CLAY (A-6), and highly plastic, silty CLAY (A-7-5) with some sand*

(C) **RESIDUAL:** *brown, tan-brown, red-brown, and black, dry to moist, soft to stiff, saprolitic, micaceous, sandy SILT (A-4) with some to trace clay*

(D) **RESIDUAL:** *brown, tan-brown, and orange-tan, dry to moist, loose to medium dense, saprolitic, micaceous, silty SAND (A-2-4)*

•Note: Vertical Exaggeration = 5x
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B	62
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

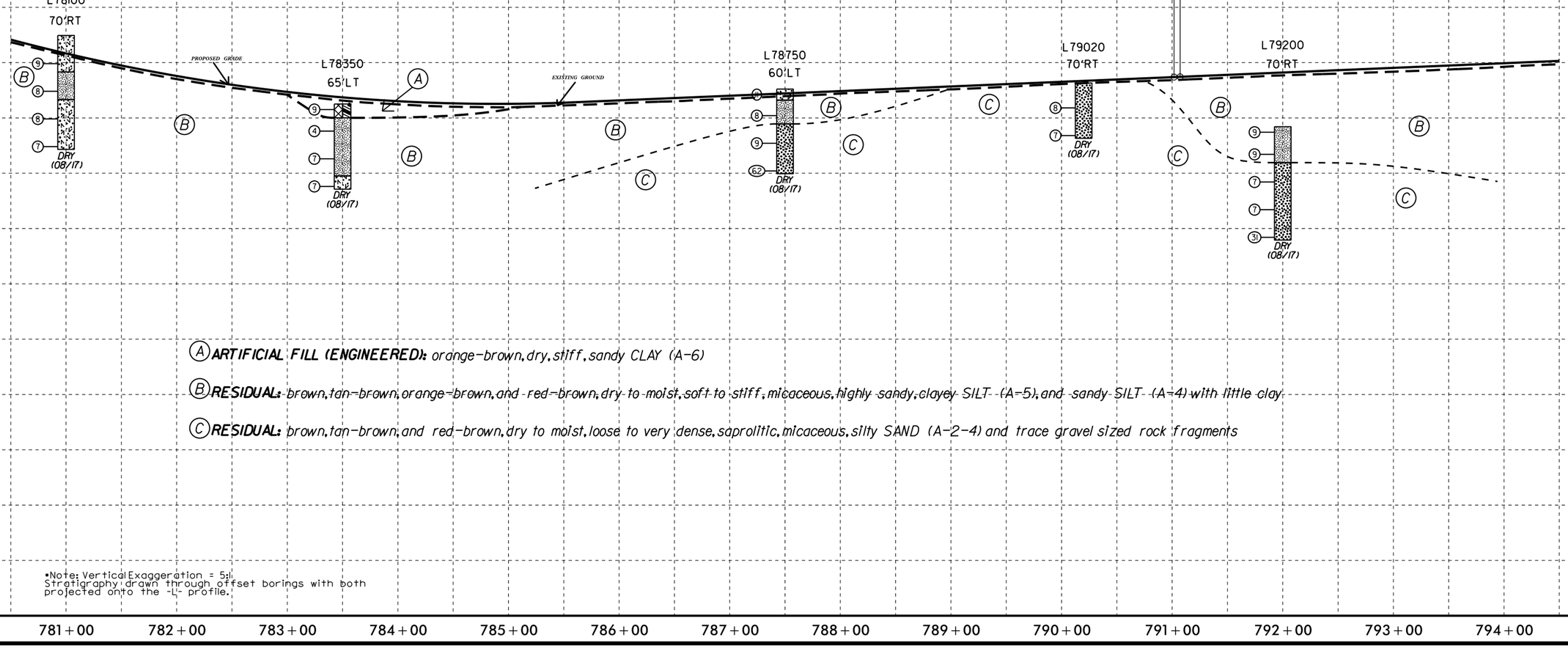
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L- PROFILE

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-916	70'RT	781+00	4.1' - 5.6'	A-5(3)	47	3	15.0	38.7	22.5	23.8	100	92	60	23.1	N/A



(A) **ARTIFICIAL FILL (ENGINEERED):** orange-brown, dry, stiff, sandy CLAY (A-6)

(B) **RESIDUAL:** brown, tan-brown, orange-brown, and red-brown, dry to moist, soft to stiff, micaceous, highly sandy, clayey SILT (A-5), and sandy SILT (A-4) with little clay

(C) **RESIDUAL:** brown, tan-brown, and red-brown, dry to moist, loose to very dense, saprolitic, micaceous, silty SAND (A-2-4) and trace gravel sized rock fragments

•Note: Vertical Exaggeration = 5:1
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-2307B	63
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

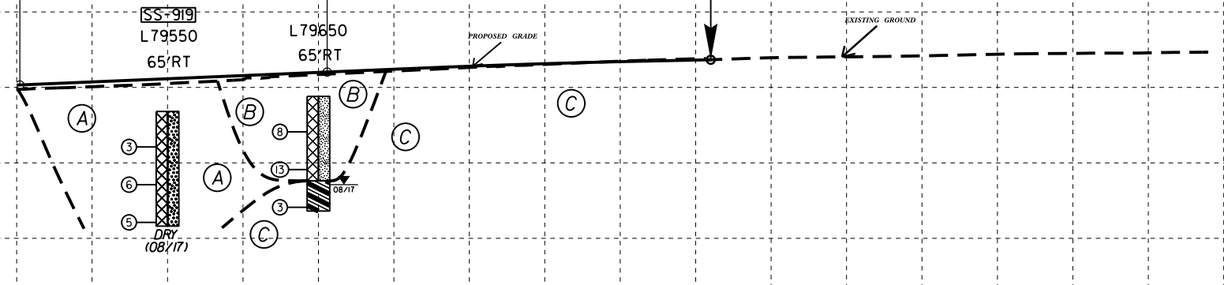
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L- PROFILE

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-919	65'RT	795+50	3.7' - 5.2'	A-2-5(0)	58	2	33.3	31.0	8.0	27.7	83	69	34	30.6	N/A



(A) **ARTIFICIAL FILL (ENGINEERED):** red-brown to brown, moist to wet, very loose to loose, micaceous, clayey, silty SAND (A-2-5) with trace gravel

(B) **ARTIFICIAL FILL:** brown, moist to wet, stiff, sandy SILT (A-4) with some clay and gravel, trace organics and plastic matter

(C) **RESIDUAL:** orange-brown, wet to saturated, soft, saprolitic, sandy CLAY (A-6)

•Note: VerticalExaggeration = 5:1
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

940 930 920 910 900 890 880 870 860 850 840 830 820 810 800 790 780 770 760 750 740

795+00 796+00 797+00 798+00 799+00 800+00 801+00 802+00

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B	64
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

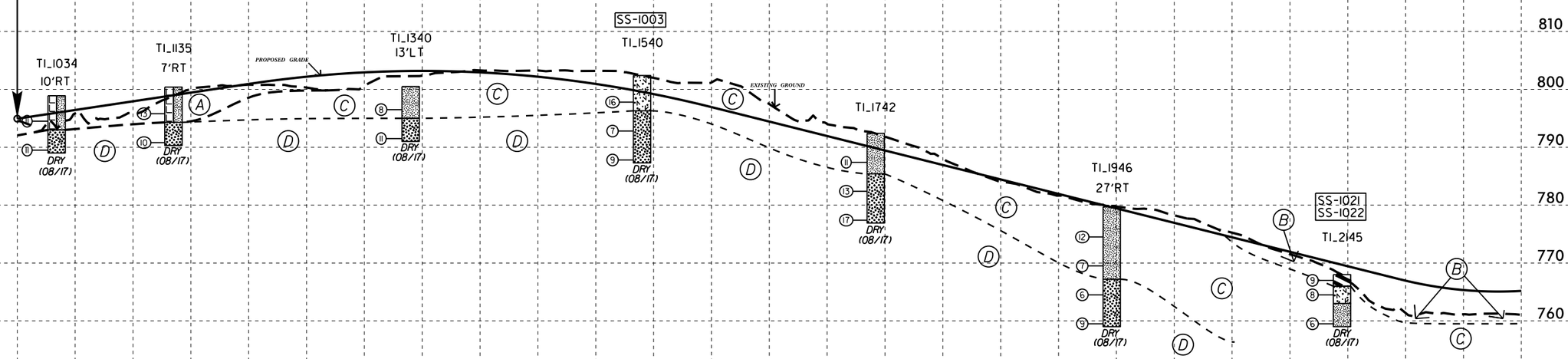
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

–TRAIL1– PROFILE

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-1003	CL	15+40	3.6' - 5.1'	A-5(0)	41	4	36.3	30.9	7.2	25.5	99	78	40	18.2	N/A
SS-1021	CL	21+45	0.0' - 1.5'	A-7-5(6)	47	13	18.7	34.6	7.5	39.2	100	92	54	27.5	N/A
SS-1022	CL	21+45	2.5' - 4.0'	A-5(0)	41	2	18.1	49.9	11.2	20.8	100	94	47	17.9	N/A



(A) **ROADWAY EMBANKMENT:** *brown, dry, stiff, sandy SILT (A-4) with little gravel*

(B) **RESIDUAL:** *red, moist, stiff, highly sandy, silty CLAY (A-7-5)*

(C) **RESIDUAL:** *brown, orange-brown, and red-brown, dry to saturated, soft to very stiff, saprolitic, micaceous, sandy SILT (A-4) with some clay, and highly sandy, clayey SILT (A-5)*

(D) **RESIDUAL:** *brown and white, dry to moist, loose to medium dense, saprolitic, micaceous, silty SAND (A-2-4)*

•Note: Vertical Exaggeration = 5:1
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

880 870 860 850 840 830 820 810 800 790 780 770 760 750 740 730 720 710 700 690 680

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 23+00

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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-2307B	65
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

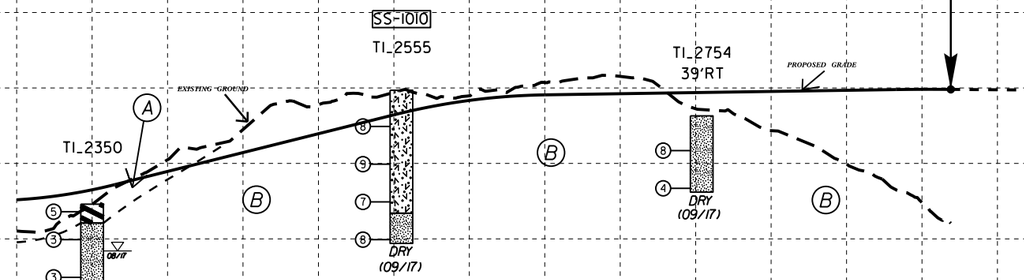
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-TRAIL1- PROFILE

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-1010	CL	25+55	3.8' - 5.3'	A-5(0)	51	3	25.0	49.2	12.0	13.8	99	84	39	16.4	N/A

END GRADE
-TRAIL 1- STA. 29+19.09
ELEV. 779.81'



(A) **RESIDUAL:** red, moist, stiff, highly sandy, silty CLAY (A-7-5)

(B) **RESIDUAL:** brown, orange-brown, and red-brown, dry to saturated, soft to very stiff, saprolitic, micaceous, sandy SILT (A-4) with some clay, and highly sandy, clayey SILT (A-5)

•Note: Vertical Exaggeration = 5:1
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

870 860 850 840 830 820 810 800 790 780 770 760 750 740 730 720 710 700 690 680 670

23+00 24+00 25+00 26+00 27+00 28+00 29+00

5/14/99

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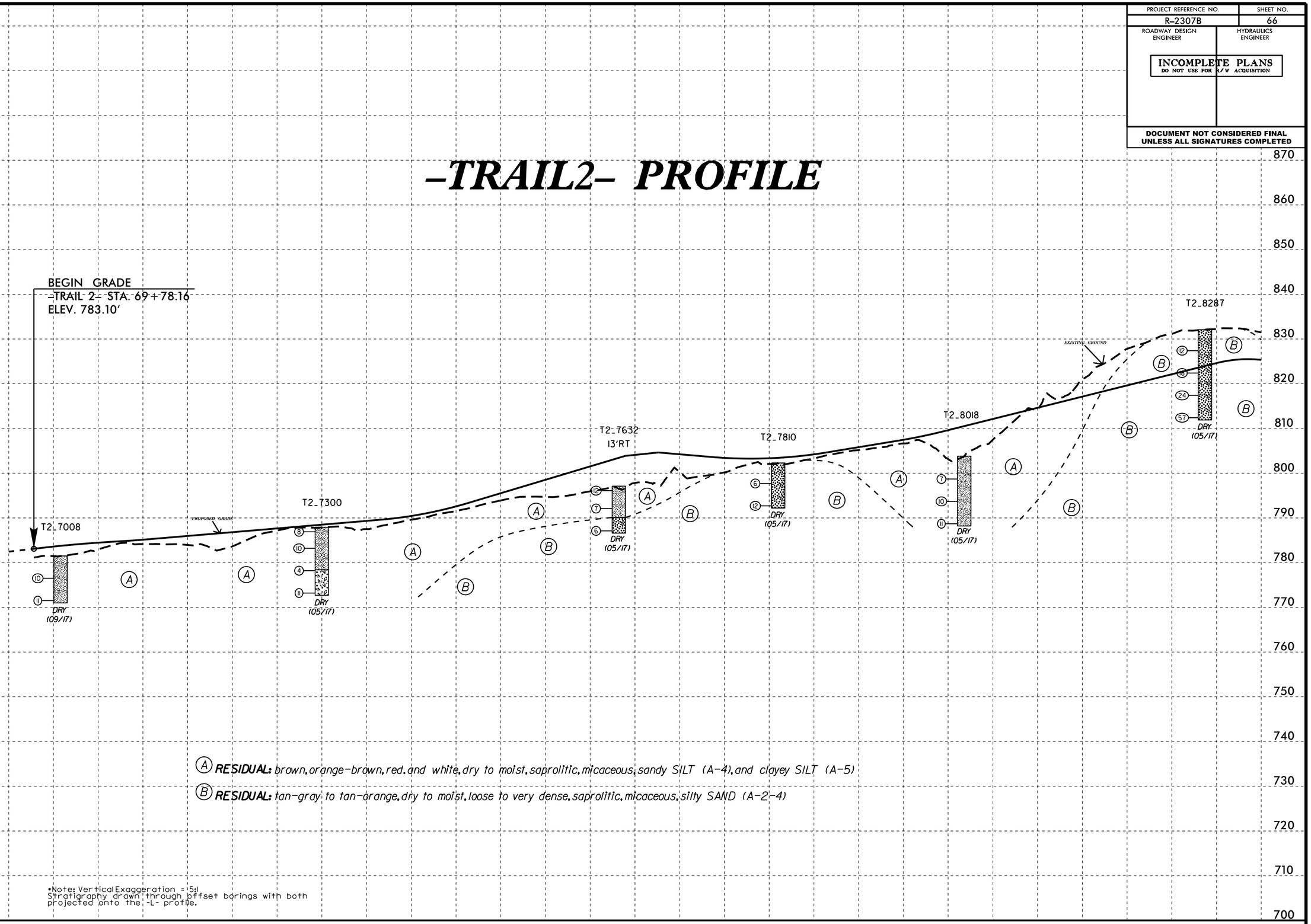
PROJECT REFERENCE NO.	SHEET NO.
R-2307B	66
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-TRAIL2- PROFILE



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PROJECT REFERENCE NO.	SHEET NO.
R-2307B	67
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

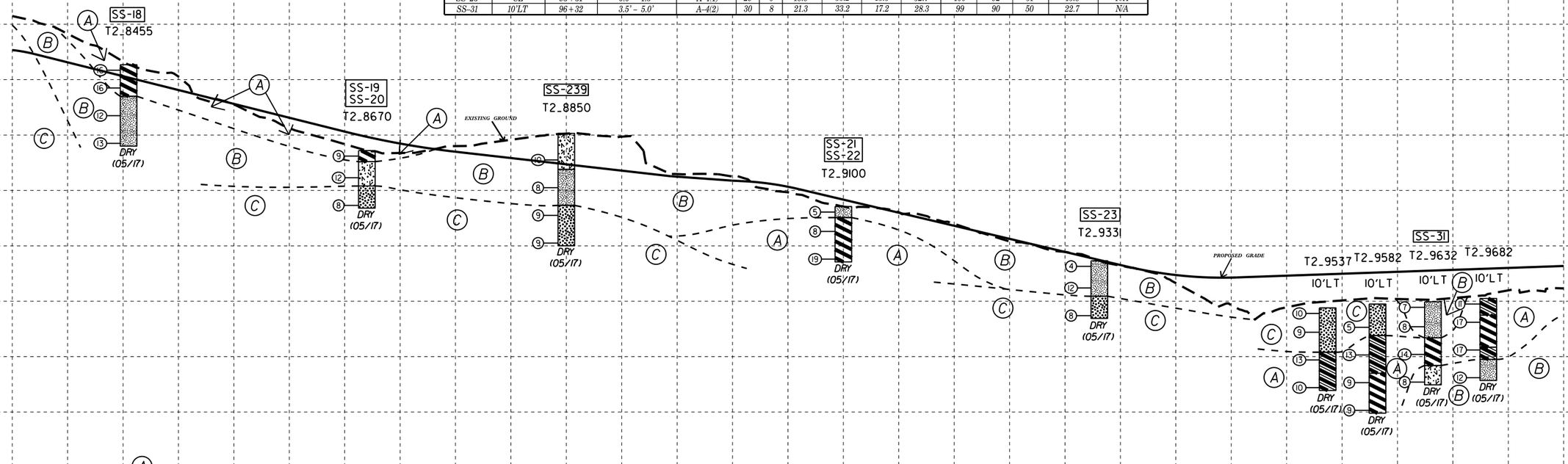
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-TRAIL2- PROFILE

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-18	CL	84+55	0.0' - 1.5'	A-7-5(12)	63	14	6.0	33.7	14.3	46.0	100	98	67	23.3	N/A
SS-19	CL	86+70	0.0' - 1.5'	A-7-5(11)	50	17	10.9	27.4	11.9	49.8	99	93	65	11.9	N/A
SS-20	CL	86+70	3.9' - 5.4'	A-5(1)	55	0	6.9	55.5	14.3	23.3	100	97	50	23.9	N/A
SS-239	CL	88+50	3.8' - 5.3'	A-5(4)	56	5	7.0	46.3	24.3	22.4	100	97	58	29.6	N/A
SS-21	CL	91+00	0.0' - 1.5'	A-4(3)	35	12	17.1	41.2	12.9	28.8	99	90	47	29.2	N/A
SS-22	CL	91+00	3.5' - 5.0'	A-7-5(10)	50	18	13.9	28.9	10.6	46.6	99	92	61	23.6	N/A
SS-23	CL	93+31	0.0' - 1.5'	A-4(1)	29	6	18.8	35.2	13.3	32.7	100	92	51	15.8	N/A
SS-31	10'LT	96+32	3.5' - 5.0'	A-4(2)	30	8	21.3	33.2	17.2	28.3	99	90	50	22.7	N/A



Ⓐ **RESIDUAL:** red-brown, orange-brown, orange, and orange-red, dry to moist, stiff to very stiff, micaceous, highly sandy, silty CLAY (A-7-5), and sandy CLAY (A-6)

Ⓑ **RESIDUAL:** red-brown, orange-brown, and tan-brown, dry to moist, soft to stiff, saprolitic, micaceous, sandy SILT (A-4) with some to little clay, and highly sandy, clayey SILT (A-5)

Ⓒ **RESIDUAL:** tan-brown to orange-brown, dry to moist, loose to medium dense, saprolitic, micaceous, silty SAND (A-2-4)

•Note: Vertical Exaggeration = 5:1
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

900 890 880 870 860 850 840 830 820 810 800 790 780 770 760 750 740 730 720 710 700

84+00 85+00 86+00 87+00 88+00 89+00 90+00 91+00 92+00 93+00 94+00 95+00 96+00 97+00

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B	68
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

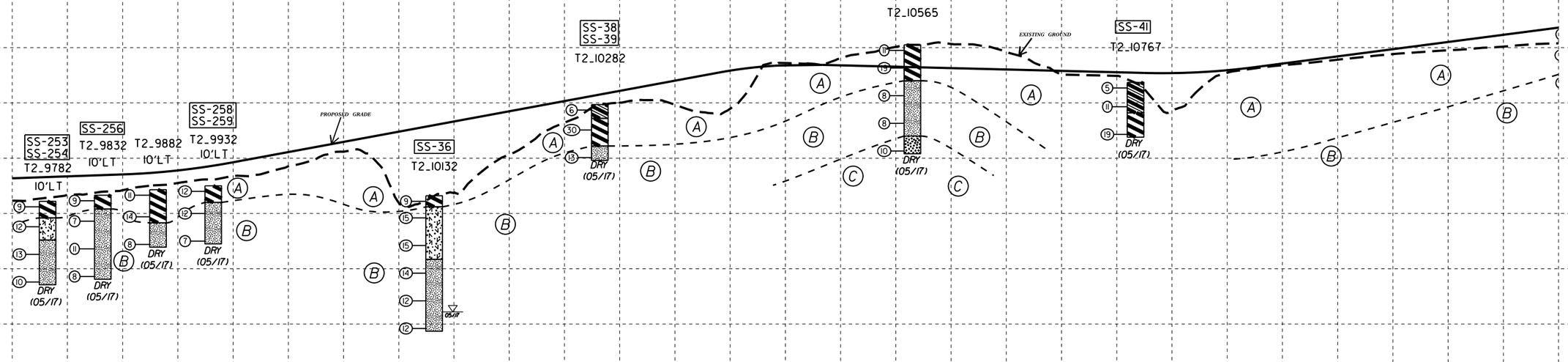
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-TRAIL2- PROFILE

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-253	10'LT	97+82	0.0' - 1.5'	A-7-6(8)	45	20	17.2	31.7	0.1	51.0	100	93	55	24.9	N/A
SS-254	10'LT	97+82	3.6' - 5.1'	A-5(0)	44	1	19.3	44.7	0.0	36.0	100	94	45	24.4	N/A
SS-256	10'LT	98+32	0.0' - 1.5'	A-7-6(13)	52	23	15.3	28.0	0.1	56.7	99	92	61	21.4	N/A
SS-258	10'LT	99+32	0.0' - 1.5'	A-7-5(25)	71	28	8.3	21.5	10.2	60.0	100	96	76	27.8	N/A
SS-259	10'LT	99+32	4.0' - 5.5'	A-4(2)	39	6	10.8	44.4	17.6	27.2	100	95	54	27.6	N/A
SS-36	CL	101+32	3.0' - 4.5'	A-5(5)	42	7	9.6	36.7	31.1	22.6	100	97	66	26.1	N/A
SS-38	CL	102+82	0.5' - 1.5'	A-6(3)	29	11	18.6	34.3	13.4	33.7	98	90	51	17.8	N/A
SS-39	CL	102+82	3.6' - 5.1'	A-7-5(20)	61	26	9.6	24.6	14.2	51.6	100	96	71	24.9	N/A
SS-41	CL	107+67	0.4' - 1.5'	A-6(4)	30	11	21.5	23.5	19.9	35.1	100	88	58	20.0	N/A



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PROJECT REFERENCE NO.	SHEET NO.
R-2307B	69
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

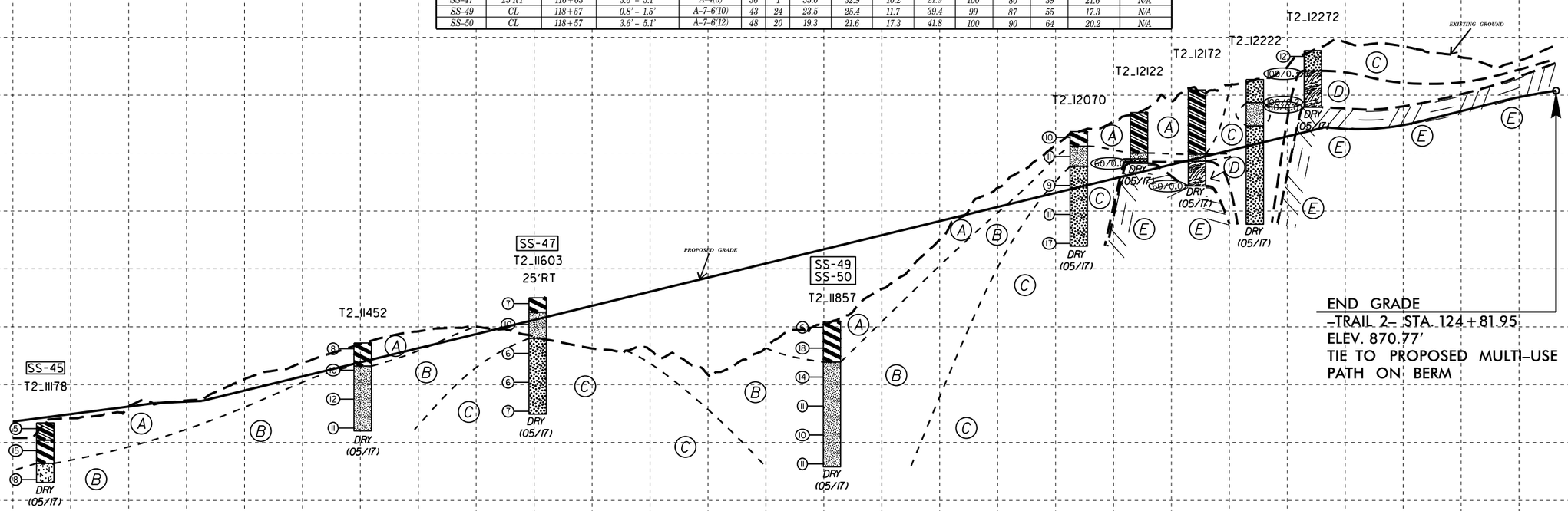
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

–TRAIL2– PROFILE

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-45	CL	111+78	3.8' – 5.3'	A-7-5(21)	59	29	13.6	17.9	14.2	54.3	100	92	72	19.8	N/A
SS-47	25'RT	116+03	3.6' – 5.1'	A-4(0)	36	1	35.0	32.9	10.2	21.9	100	80	39	21.6	N/A
SS-49	CL	118+57	0.8' – 1.5'	A-7-6(10)	43	24	23.5	25.4	11.7	39.4	99	87	55	17.3	N/A
SS-50	CL	118+57	3.6' – 5.1'	A-7-6(12)	48	20	19.3	21.6	17.3	41.8	100	90	64	20.2	N/A



Ⓐ **RESIDUAL:** *red-brown, moist, medium stiff to very stiff, highly sandy, silty CLAY (A-7-6), highly plastic, silty CLAY (A-7-5) with some sand, and sandy CLAY (A-6)*

Ⓑ **RESIDUAL:** *tan-brown, and red-tan, moist, stiff, micaceous, sandy SILT (A-4) with some clay, and clayey SILT (A-5)*

Ⓒ **RESIDUAL:** *white, dry, loose to medium dense, saprolitic, micaceous, silty SAND (A-2-4)*

Ⓓ **WEATHERED ROCK:** *(Granite)*

Ⓔ **CRYSTALLINE ROCK:** *(Granite)*

•Note: Vertical Exaggeration = 5:1
Stratigraphy drawn through offset borings with both projected onto the ℄ profile.

940 930 920 910 900 890 880 870 860 850 840 830 820 810 800 790 780 770 760 750 740

112+00 113+00 114+00 115+00 116+00 117+00 118+00 119+00 120+00 121+00 122+00 123+00 124+00

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B	70
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

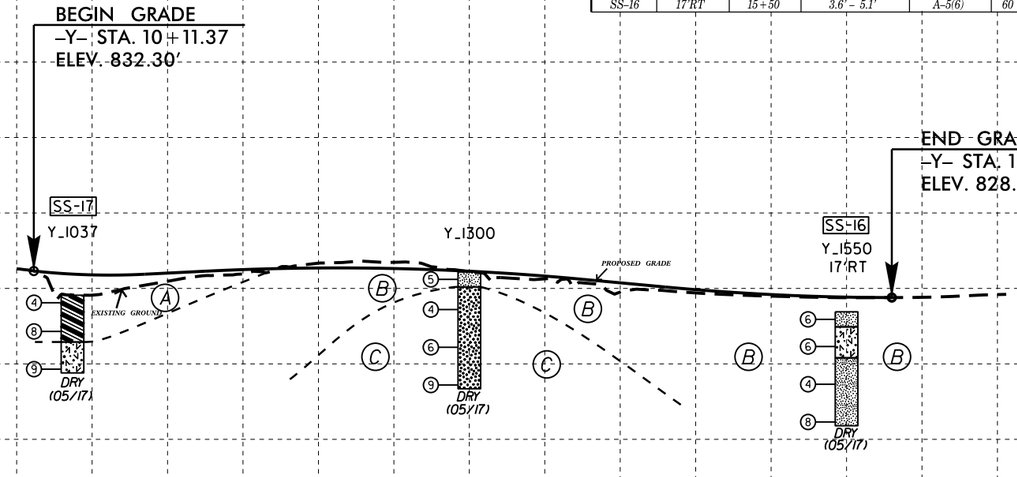
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-Y- PROFILE

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-17	CL	10+37	0.0' - 1.5'	A-6(5)	36	13	21.4	28.3	16.7	33.6	99	88	54	22.5	N/A
SS-16	17'RT	15+50	3.6' - 5.1'	A-5(6)	60	7	7.4	41.2	15.8	35.7	100	98	60	34.7	N/A



(A) **RESIDUAL:** brown to red-brown, moist, soft to stiff, sandy CLAY (A-6)

(B) **RESIDUAL:** red-brown, moist, medium stiff to stiff, clayey SILT (A-5), and sandy SILT (A-4) with some clay

(C) **RESIDUAL:** orange-brown to brown, moist, loose, saprolitic, micaceous, silty SAND (A-2-4)

*Note: Vertical Exaggeration = 5:1
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

930 920 910 900 890 880 870 860 850 840 830 820 810 800 790 780 770 760 750 740 730

10+00 11+00 12+00 13+00 14+00 15+00 16+00

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$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2307B	71
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

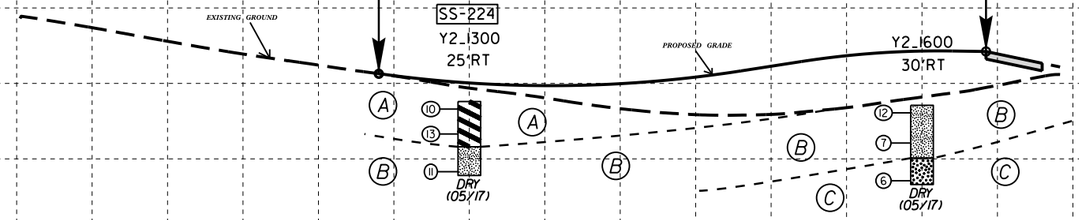
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

–Y2– PROFILE

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-224	25'RT	13+00	0.4' - 1.5'	A-7-5(22)	69	20	6.7	18.0	11.2	64.0	100	97	79	30.8	N/A



(A) **RESIDUAL:** red, moist, stiff, silty CLAY (A-7-5) with some sand

(B) **RESIDUAL:** red, maroon, tan, brown, and white, moist, medium stiff to stiff, micaceous, sandy SILT (A-4)

(C) **RESIDUAL:** tan-gray, moist, loose, micaceous, silty SAND (A-2-4)

•Note: Vertical Exaggeration = 5:1
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

900 890 880 870 860 850 840 830 820 810 800 790 780 770 760 750 740 730 720 710 700

10+00 11+00 12+00 13+00 14+00 15+00 16+00

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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-2307B	72
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

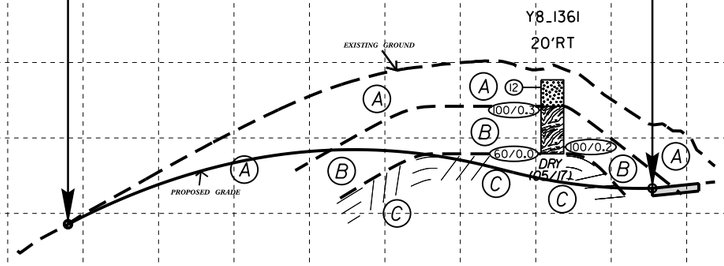
–Y8– PROFILE

960 950 940 930 920 910 900 890 880 870 860 850 840 830 820 810 800 790 780 770 760

10+00 11+00 12+00 13+00 14+00

BEGIN GRADE
–Y8– STA. 10+40.00
ELEV. 858.56'

END GRADE
–Y8– STA. 14+27.29
ELEV. 863.33'



Ⓐ **RESIDUAL:** *tan-gray, dry, medium dense, micaceous, silty SAND (A-2-4)*

Ⓑ **WEATHERED ROCK:** *(Granite)*

Ⓒ **CRYSTALLINE ROCK:** *(Granite)*

•Note: Vertical Exaggeration = 5:1
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

5/14/99

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$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R–2307B	73
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

–Y13– PROFILE

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-95	40'LT	11+00	3.6' - 5.1'	A-5(0)	51	3	33.2	33.5	8.0	25.3	97	76	42	20.1	N/A

BEGIN GRADE
–Y13– STA. 10+44.00
ELEV. 854.83'

END GRADE
–Y13– STA. 13+00.00
ELEV. 862.61'

SS-95
Y13_1100
40'LT

EXISTING GROUND

PROPOSED GRADE

DRY
(06/17)

(A) **RESIDUAL:** red, moist, stiff, micaceous, highly sandy, silty CLAY (A-7-5)

(B) **RESIDUAL:** orange-red, gray, and white, dry to moist, medium stiff to stiff, saprolitic, micaceous, highly sandy, clayey SILT (A-5), and sandy SILT (A-4)

•Note: Vertical Exaggeration = 5:1
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

960 950 940 930 920 910 900 890 880 870 860 850 840 830 820 810 800 790 780 770 760

10+00 11+00 12+00 13+00 14+00 15+00

5/14/99

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B	74
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

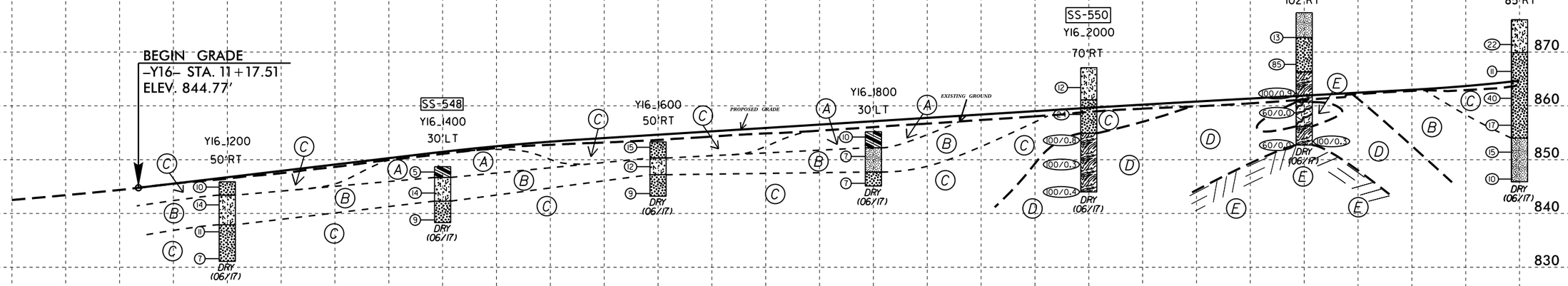
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-Y16- PROFILE

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-548	30'LT	14+00	3.9' - 5.4'	A-5(2)	49	5	23.3	34.7	10.5	31.5	100	90	49	21.4	N/A
SS-550	70'RT	20+00	2.7' - 4.2'	A-5(5)	48	7	19.0	25.9	18.1	37.0	100	92	61	23.7	N/A
SS-541	85'RT	24+00	3.6' - 5.1'	A-5(6)	60	6	19.1	33.5	9.3	38.0	100	92	61	25.8	N/A



(A) **RESIDUAL:** orange-brown, moist, medium stiff to stiff, sandy CLAY (A-6)

(B) **RESIDUAL:** orange-brown, red-brown, and tan-brown, moist, medium stiff to stiff, saprolitic, micaceous, highly sandy, clayey SILT (A-5), and sandy SILT (A-4)

(C) **RESIDUAL:** tan-brown, orange-brown, and gray-brown, dry to moist, loose to very dense, saprolitic, micaceous, silty SAND (A-2-4)

(D) **WEATHERED ROCK:** (Granite)

(E) **CRYSTALLINE ROCK:** (Granite)

*Note: Vertical Exaggeration = 5:1
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

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 23+00 24+00

960 950 940 930 920 910 900 890 880 870 860 850 840 830 820 810 800 790 780 770 760

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B	75
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

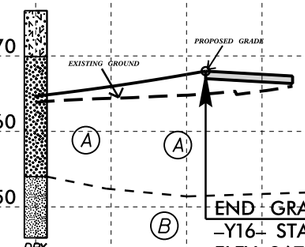
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-Y16- PROFILE

960 950 940 930 920 910 900 890 880 870 860 850 840 830 820 810 800 790 780 770 760

SS-541
Y16_2400R
85' RT



END GRADE
-Y16- STA. 25+12.66
ELEV. 867.99'

(A) **RESIDUAL:** *tan-brown, orange-brown, and gray-brown, dry to moist, loose to very dense, saprolitic, micaceous, silty SAND (A-2-4)*

(B) **RESIDUAL:** *orange-brown, red-brown, and tan-brown, moist, medium stiff to stiff, saprolitic, micaceous, highly sandy, clayey SILT (A-5), and sandy SILT (A-4)*

*Note: Vertical Exaggeration = 5:1
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

24+00 25+00

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B	76
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

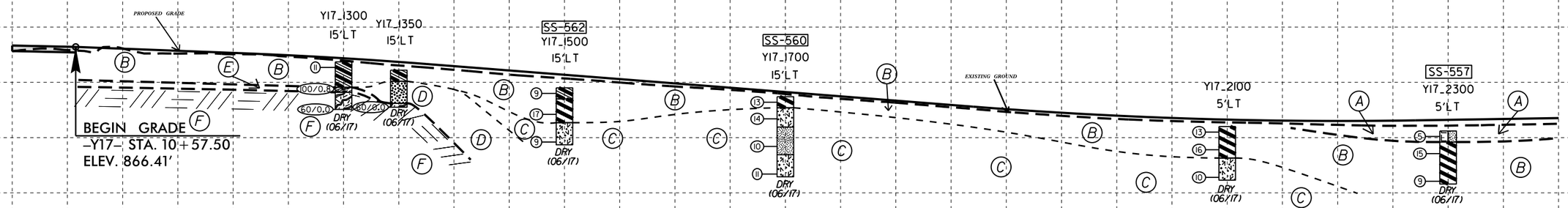
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

–Y17– PROFILE

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-562	15'LT	15+00	3.8' – 5.3'	A-7-5(9)	56	13	26.1	17.6	14.2	42.1	100	81	61	23.4	N/A
SS-560	15'LT	17+00	3.0' – 4.5'	A-5(4)	52	4	18.9	27.3	14.6	39.3	100	91	60	23.8	N/A
SS-557	5'LT	23+00	3.1' – 4.6'	A-7-5(14)	62	23	21.5	18.7	8.9	50.9	99	88	62	24.6	N/A



(A) **ROADWAY EMBANKMENT:** *red-brown, dry, medium stiff, sandy SILT (A-4) with some clay*

(B) **RESIDUAL:** *red-brown, brown, and orange-brown, dry to moist, stiff to very stiff, micaceous, sandy CLAY (A-6), and silty CLAY (A-7-5) with some sand*

(C) **RESIDUAL:** *brown, orange-brown, and red-orange, moist, stiff, saprolitic, micaceous, highly sandy, clayey SILT (A-5), and sandy SILT (A-4) with little clay*

(D) **RESIDUAL:** *orange-brown to tan-brown, moist, medium dense to very dense, saprolitic, micaceous, silty SAND (A-2-4)*

(E) **WEATHERED ROCK:** *(Granite)*

(F) **CRYSTALLINE ROCK:** *(Granite)*

•Note: Vertical Exaggeration = 5:1
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

960 950 940 930 920 910 900 890 880 870 860 850 840 830 820 810 800 790 780 770 760

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 23+00 24+00

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B	77
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

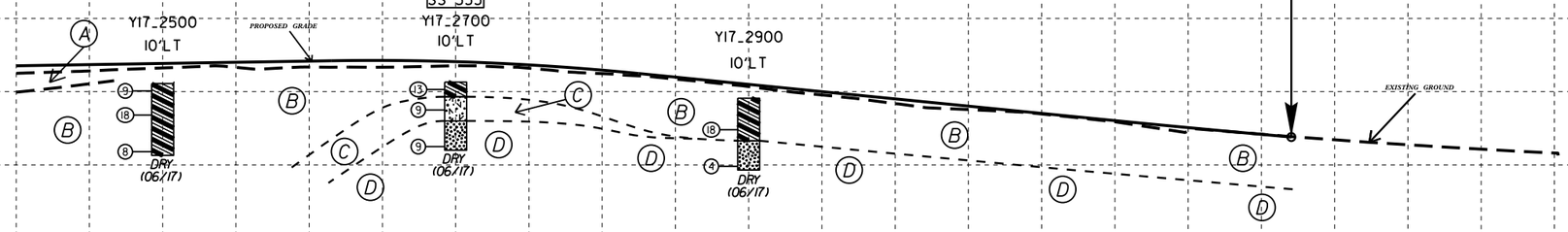
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-Y17- PROFILE

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-553	10'LT	27+00	2.8' - 4.3'	A-5(0)	42	4	33.6	26.8	16.3	23.2	99	74	46	15.0	N/A



(A) **ROADWAY EMBANKMENT:** red-brown, dry, medium stiff, sandy SILT (A-4) with some clay

(B) **RESIDUAL:** red-brown, brown, and orange-brown, dry to moist, stiff to very stiff, micaceous, sandy CLAY (A-6), and silty CLAY (A-7-5) with some sand

(C) **RESIDUAL:** brown, orange-brown, and red-orange, moist, stiff, saprolitic, micaceous, highly sandy, clayey SILT (A-5), and sandy SILT (A-4) with little clay

(D) **RESIDUAL:** orange-brown to tan-brown, moist, medium dense to very dense, saprolitic, micaceous, silty SAND (A-2-4)

*Note: Vertical Exaggeration = 5:1
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

950 940 930 920 910 900 890 880 870 860 850 840 830 820 810 800 790 780 770 760 750

24+00 25+00 26+00 27+00 28+00 29+00 30+00 31+00 32+00 33+00 34+00 35+00 36+00

5/14/99

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B	78
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

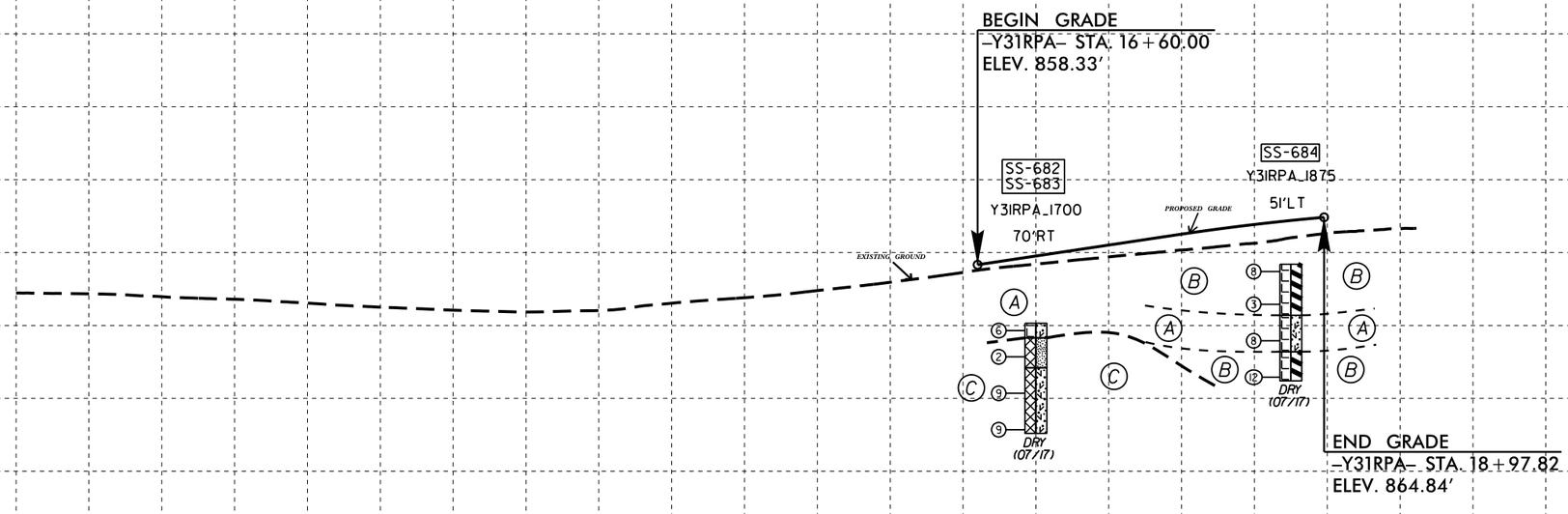
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-Y31RPA- PROFILE

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-682	70'RT	17+00	3.6' - 5.1'	A-4(0)	24	5	32.9	28.1	13.8	25.1	98	78	42	23.8	N/A
SS-683	70'RT	17+00	8.6' - 10.1'	A-5(3)	59	3	22.0	29.7	9.3	39.0	99	86	55	29.8	N/A
SS-684	51'LT	18+75	0.0' - 1.5'	A-7-5(4)	44	12	24.1	32.7	9.7	33.5	95	81	49	21.4	N/A



Ⓐ **ROADWAY EMBANKMENT:** *red-brown and orange-brown, moist, medium stiff to stiff, micaceous, clayey SILT (A-5) with some sand, trace gravel and organics*

Ⓑ **ROADWAY EMBANKMENT:** *brown to red-brown, moist, stiff, micaceous, highly sandy, silty CLAY (A-7-5) with trace organics*

Ⓒ **ARTIFICIAL FILL:** *red-brown, brown-gray, and black, moist to wet, very soft to stiff, micaceous, sandy SILT (A-4) with some clay and trace organics, and clayey SILT (A-5) with trace organics and boulders*

•Note: Vertical Exaggeration = 5:1
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

960 950 940 930 920 910 900 890 880 870 860 850 840 830 820 810 800 790 780 770 760

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PROJECT REFERENCE NO.	SHEET NO.
R-2307B	79
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

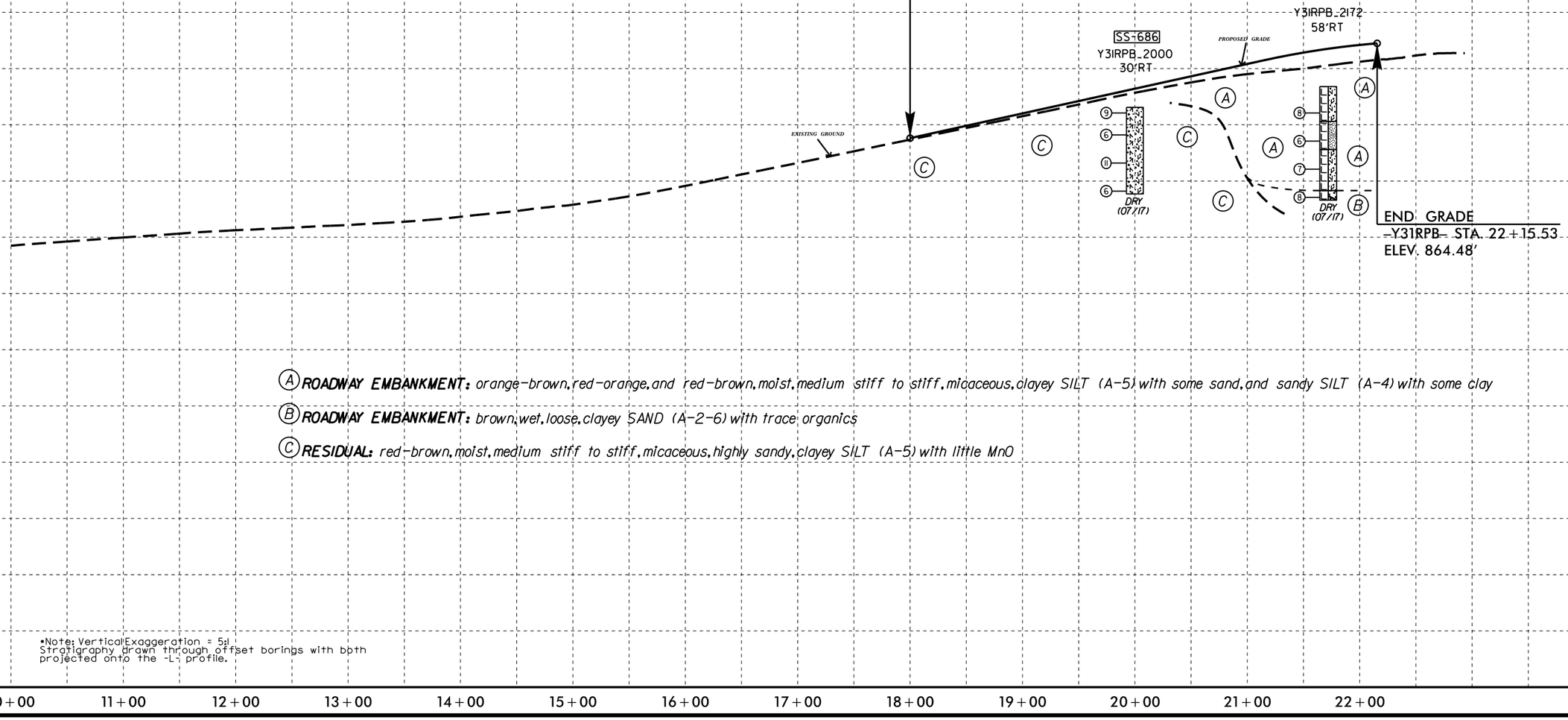
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-Y31RPB- PROFILE

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-686	30'RT	20+00	0.0' - 1.5'	A-5(5)	54	5	16.9	27.5	16.7	39.0	97	87	60	17.0	N/A



(A) **ROADWAY EMBANKMENT:** *orange-brown, red-orange, and red-brown, moist, medium stiff to stiff, micaceous, clayey SILT (A-5) with some sand, and sandy SILT (A-4) with some clay*

(B) **ROADWAY EMBANKMENT:** *brown, wet, loose, clayey SAND (A-2-6) with trace organics*

(C) **RESIDUAL:** *red-brown, moist, medium stiff to stiff, micaceous, highly sandy, clayey SILT (A-5) with little MnO*

•Note: Vertical Exaggeration = 5:1
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

5/14/99
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PROJECT REFERENCE NO.	SHEET NO.
R-2307B	80
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

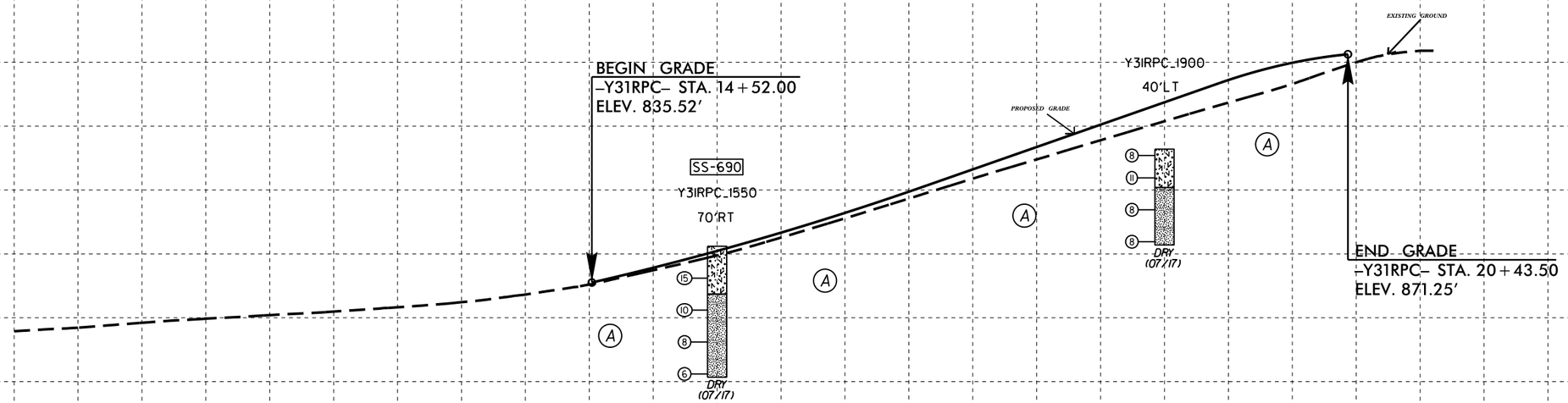
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

–Y31RPC– PROFILE

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-690	70'RT	15+50	4.0' – 5.5'	A-5(0)	51	2	11.2	56.6	13.0	19.2	100	96	45	24.8	N/A



(A) ***RESIDUAL:*** *red-brown, orange-brown, orange-red, gray, and tan, dry to moist, medium stiff to stiff, micaceous, highly sandy, clayey SILT (A-5), and sandy SILT (A-4)*

•Note: Vertical Exaggeration = 5:1
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-2307B	81
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

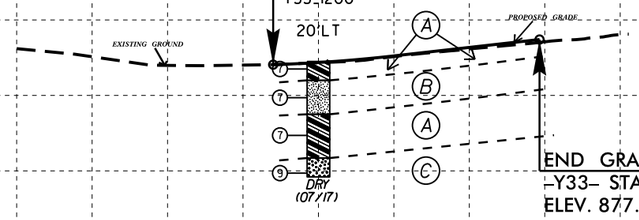
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-Y33- PROFILE

970 960 950 940 930 920 910 900 890 880 870 860 850 840 830 820 810 800 790 780 770

BEGIN GRADE
-Y33- STA. 11+70.00
ELEV. 874.08'



END GRADE
-Y33- STA. 13+46.52
ELEV. 877.41'

(A) **RESIDUAL:** *red-brown, moist, medium stiff, micaceous, sandy CLAY (A-6)*

(B) **RESIDUAL:** *red and gray, moist, medium stiff, micaceous, sandy SILT (A-4) with some clay*

(C) **RESIDUAL:** *white and brown, moist, loose, saprolitic, micacoeus, silty SAND (A-2-4)*

•Note: Vertical Exaggeration = 5:1
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

10+00 11+00 12+00 13+00 14+00

5/14/99

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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-2307B	82
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

–Y36– PROFILE

950 940 930 920 910 900 890 880 870 860 850 840 830 820 810 800 790 780 770 760 750

BEGIN GRADE
–Y36– STA. 10+87.26
ELEV. 858.75'

Y36_1100
20'RT

EXISTING GROUND

PROPOSED GRADE

(A) (5) (9) (11) DRY (07/17)

END GRADE
–Y36– STA. 14+50
ELEV. 855.27'

(A) **RESIDUAL:** *brown and black, dry to moist, loose to medium dense, saprolitic, micaceous, silty SAND (A-2-4)*

•Note: Vertical Exaggeration = 5:1
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

10+00 11+00 12+00 13+00 14+00

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R2307B_GEO_RDWY_InventoryDRAFT_Summit_Y36_082.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-2307B	83
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

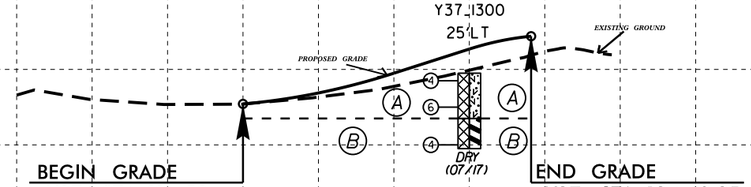
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-Y37- PROFILE

950 940 930 920 910 900 890 880 870 860 850 840 830 820 810 800 790 780 770 760 750

10+00 11+00 12+00 13+00



BEGIN GRADE
-Y37- STA. 11+50
ELEV. 845.43'

END GRADE
-Y37- STA. 13+40.95
ELEV. 854.40'

(A) ***ARTIFICIAL FILL (ENGINEERED):*** *red-brown, dry, soft to medium stiff, clayey SILT (A-5) with trace organics*

(B) ***ARTIFICIAL FILL (ENGINEERED):*** *red-brown, moist, soft, micaceous, silty CLAY (A-7) with some sand and trace organics*

•Note: Vertical Exaggeration = 5:1
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

5/14/99
03-NOV-2017 21:00
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PROJECT REFERENCE NO.	SHEET NO.
R-2307B	84
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-Y39- PROFILE

980 970 960 950 940 930 920 910 900 890 880 870 860 850 840 830 820 810 800 790 780

Y39_I350
40'RT
16 16 10 11
DRY (08/17)

Y39_I650
40'RT
15 13 10 11
DRY (08/17)

EXISTING GROUND

BEGIN GRADE
-Y39- STA. 11+60
ELEV. 885.00'

END GRADE
-Y39- STA. 19+62.02
ELEV. 870.89'

(A) **RESIDUAL:** *orange-brown, dry, stiff to very stiff, highly sandy, silty CLAY (A-7-6)*

(B) **RESIDUAL:** *orange-tan and tan-brown, dry to moist, medium dense, saprolitic, micaceous, silty SAND (A-2-4)*

•Note: Vertical Exaggeration = 5:1
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

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

5/14/99

03-NOV-2017 21:09
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PROJECT REFERENCE NO.	SHEET NO.
R-2307B	85
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

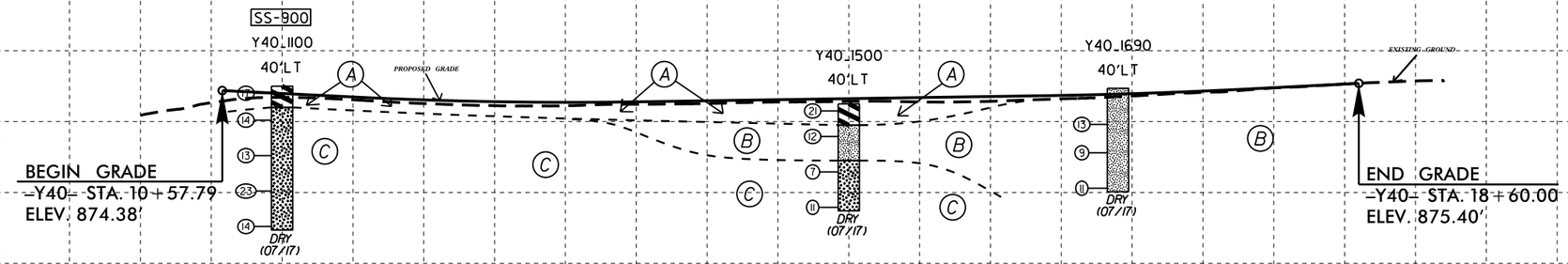
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-Y40- PROFILE

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-900	40'LT	11+00	0.0' - 1.5'	A-7-6(11)	58	31	15.7	28.9	5.4	50.0	81	74	49	19.7	N/A



(A) **RESIDUAL:** orange-brown, dry to moist, very stiff, highly plastic, highly sandy, silty CLAY (A-7-6)

(B) **RESIDUAL:** orange-brown and gray, moist, stiff, saprolitic, micaceous, sandy SILT (A-4)

(C) **RESIDUAL:** orange-brown and tan, dry, loose to medium dense, saprolitic, micaceous, silty SAND (A-2-4)

•Note: Vertical Exaggeration = 5:1
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

970 960 950 940 930 920 910 900 890 880 870 860 850 840 830 820 810 800 790 780 770

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

5/14/99
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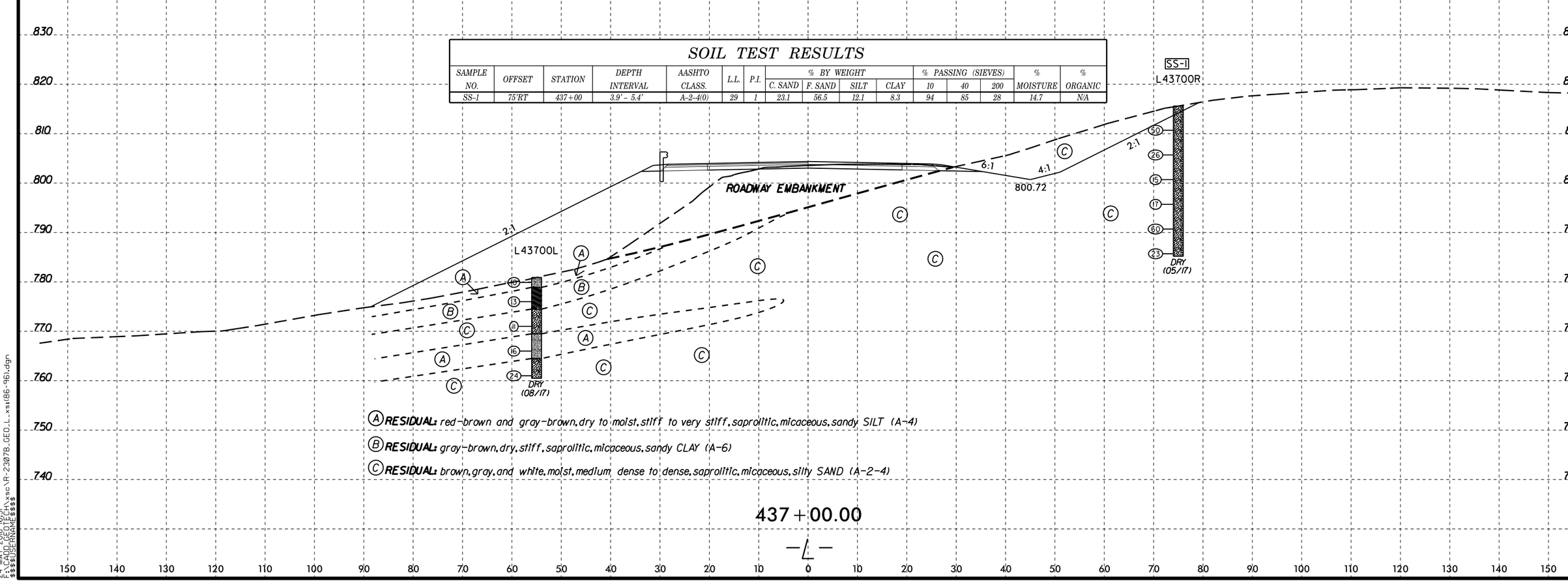
6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	86

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	75'RT	437+00	3.9' - 5.4'	A-2-4(0)	29	1	23.1	56.5	12.1	8.3	94	85	28	14.7	N/A



(A) **RESIDUAL:** red-brown and gray-brown, dry to moist, stiff to very stiff, saprolitic, micaceous, sandy SILT (A-4)

(B) **RESIDUAL:** gray-brown, dry, stiff, saprolitic, micaceous, sandy CLAY (A-6)

(C) **RESIDUAL:** brown, gray, and white, moist, medium dense to dense, saprolitic, micaceous, silty SAND (A-2-4)

437+00.00

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6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	87

L 43800

Ⓐ **WEATHERED ROCK:** (Biotite Gneiss)

ROADWAY EMBANKMENT

2:1

6:1

4:1

798.19

DRY (05/17)

Ⓑ **RESIDUAL:** brown, red-brown, and gray, moist, loose to medium dense, saprolitic, micaceous, silty SAND (A-2-4)

438+00.00

799.46

Ⓐ **RESIDUAL:** red-brown and gray-brown, dry to moist, stiff to very stiff, saprolitic, micaceous, sandy SILT (A-4)

Ⓑ **RESIDUAL:** gray-brown, dry, stiff, saprolitic, micaceous, sandy CLAY (A-6)

Ⓒ **RESIDUAL:** brown, gray, and white, moist, medium dense to dense, saprolitic, micaceous, silty SAND (A-2-4)

437+50.00

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6/23/16

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

820 810 800 790 780 770 760

L43900R

Ⓐ **WEATHERED ROCK:** (Biotite Gneiss)

6:1 6:1 **ROADWAY EMBANKMENT** 6:1 4:1 795.62

100/0.8 60/0.0 DRY (05/17)

2:1

Ⓑ **RESIDUAL:** orange-brown to tan, dry, loose to medium dense, saprolitic, micaceous, silty SAND (A-2-4)

Ⓒ **CRYSTALLINE ROCK:** (Biotite Gneiss)

439+00.00

Ⓐ **WEATHERED ROCK:** (Biotite Gneiss)

6:1 **ROADWAY EMBANKMENT** 6:1 4:1 796.91

2:1

Ⓑ **RESIDUAL:** brown, red-brown, and gray, moist, loose to medium dense, saprolitic, micaceous, silty SAND (A-2-4)

438+50.00

—L—

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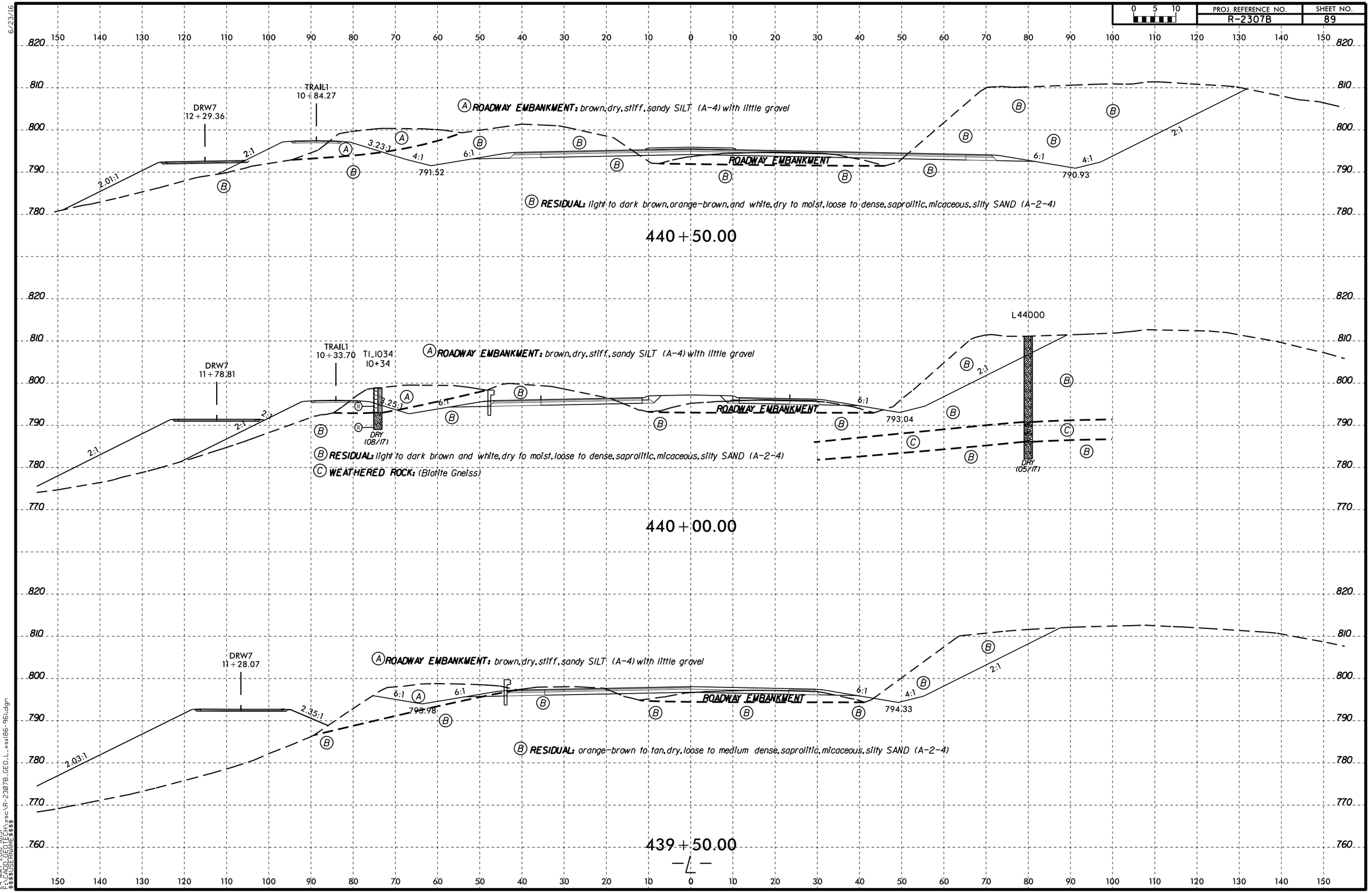
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	89



0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	90

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

830 820 810 800 790 780 770 760

Ⓐ **ROADWAY EMBANKMENT:** brown, dry, stiff, sandy SILT (A-4) with little gravel

DRW7
13+30.54

TRAIL1
11+85.54

2.02:1 2:1 2:1 4:1 6:1 4:1 2:1 6:1 4:1 2:1

788.96

788.13

ROADWAY EMBANKMENT

Ⓑ **RESIDUAL:** brown, moist, stiff, saprolitic, micaceous, sandy SILT (A-4)

Ⓒ **RESIDUAL:** brown, tan-brown, orange-brown, and white, dry to moist, loose to medium dense, saprolitic, micaceous, silty SAND (A-2-4)

441+50.00

Ⓐ **ROADWAY EMBANKMENT:** brown, dry, stiff, sandy SILT (A-4) with little gravel

DRW7
12+79.94

TRAIL1
11+34.89

TI_1135
11+35

L44100L

L44100R

2.02:1 2:1 2:1 4:1 6:1 4:1 2:1 6:1 4:1 2:1

13 10 DRY (08/17)

9 8 N 12 29 DRY (08/17)

8 14 22 35 30 17 DRY (05/17)

790.24

789.11

ROADWAY EMBANKMENT

Ⓑ **RESIDUAL:** brown, tan-brown, orange-brown, and white, dry to moist, loose to medium dense, saprolitic, micaceous, silty SAND (A-2-4)

Ⓒ **RESIDUAL:** tan, dry, very stiff to hard, micaceous, sandy SILT (A-4)

441+00.00

6/23/16

PROJ. REFERENCE NO.	SHEET NO.
R-2307B	91

0 5 10

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

830 820 810 800 790 780 770 760

Ⓐ **ROADWAY EMBANKMENT:** brown, dry, stiff, sandy SILT (A-4) with little gravel

DRW7
14+32.81

TRAIL1
12+86.88

2.03:1 2.10:1 2:1 2:1 4:1 6:1 6:1 4:1 2:1

786.40

786.21

ROADWAY EMBANKMENT

Ⓑ **RESIDUAL:** brown, moist, stiff, saprolitic, micaceous, sandy SILT (A-4)

Ⓒ **RESIDUAL:** brown, tan-brown, orange-brown, and white, dry to moist, loose to dense, saprolitic, micaceous, silty SAND (A-2-4)

442+50.00

Ⓐ **ROADWAY EMBANKMENT:** brown, dry, stiff, sandy SILT (A-4) with little gravel

DRW7
13+81.25

TRAIL1
12+36.23

L44200

2.01:1 2:1 2:1 4:1 6:1 6:1 4:1 2:1

787.68

787.18

DRY
(05/17)

ROADWAY EMBANKMENT

Ⓑ **RESIDUAL:** brown, moist, stiff, saprolitic, micaceous, sandy SILT (A-4)

Ⓒ **RESIDUAL:** brown, tan-brown, orange-brown, and white, dry to moist, loose to dense, saprolitic, micaceous, silty SAND (A-2-4)

442+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

830 820 810 800 790 780 770 760

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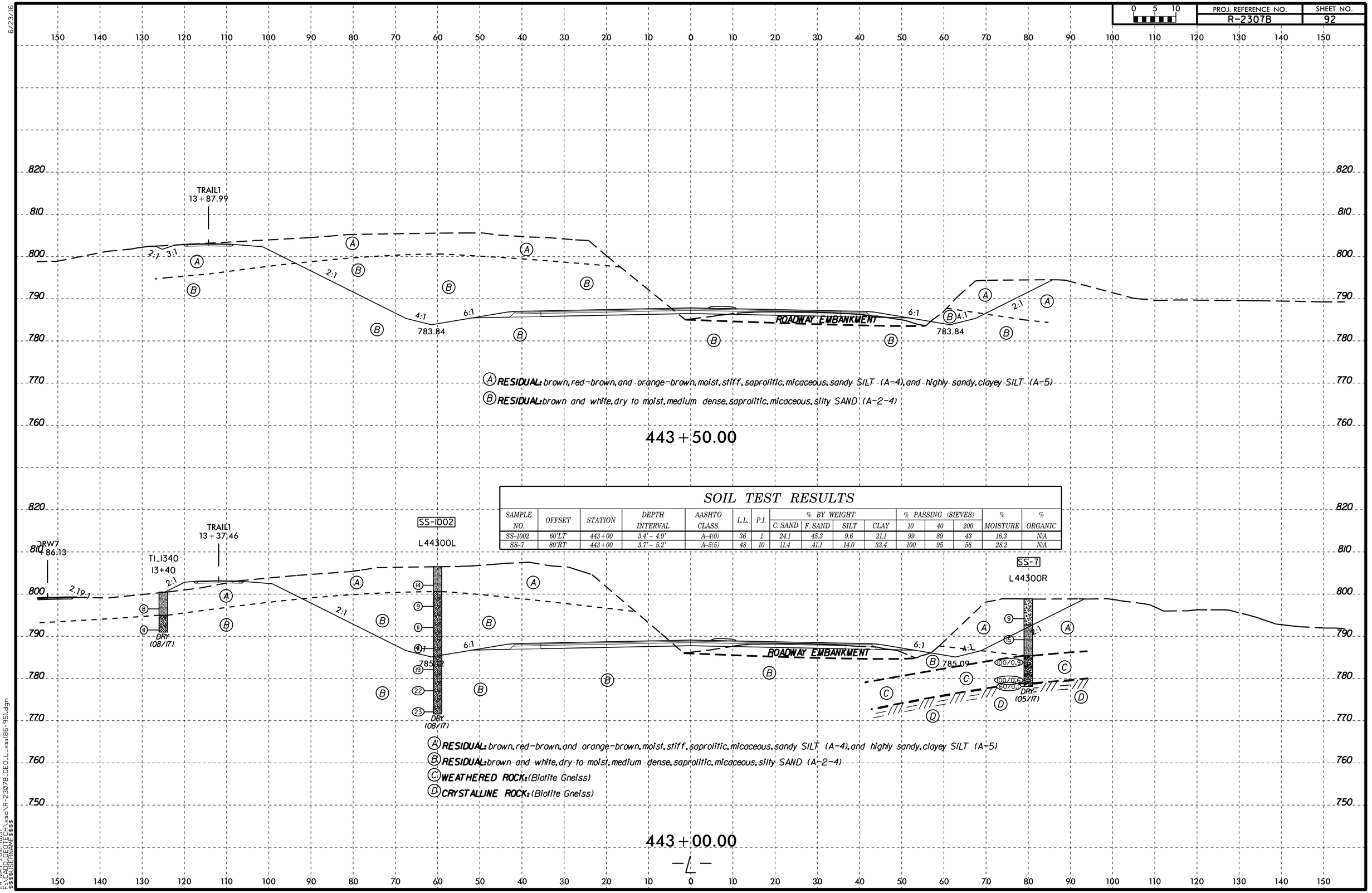
	R-2307B	92



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-1002	60'LT	443+00	3.4' - 4.9'	A-4(0)	36	1	24.1	45.3	9.6	21.1	99	89	43	16.3	N/A
SS-7	80'RT	443+00	3.7' - 5.2'	A-5(5)	48	10	11.4	41.1	14.0	33.4	100	95	56	28.2	N/A

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	93

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

820 810 800 790 780 770 760

TRAIL1
14+88.97

2:1 3:1 Ⓐ Ⓑ 2:1 Ⓐ Ⓑ 4:1 6:1 781.27 Ⓐ Ⓑ ROADWAY EMBANKMENT 6:1 4:1 Ⓐ 2:1 781.27 Ⓑ

Ⓐ **RESIDUAL:** *orange-brown to brown, moist, stiff to very stiff, saprolitic, micaceous, highly sandy, clayey SILT (A-5), and sandy SILT (A-4)*

Ⓑ **RESIDUAL:** *brown, gray, and white, moist, loose to dense, saprolitic, micaceous, silty SAND (A-2-4)*

444+50.00

TRAIL1
14+38.49

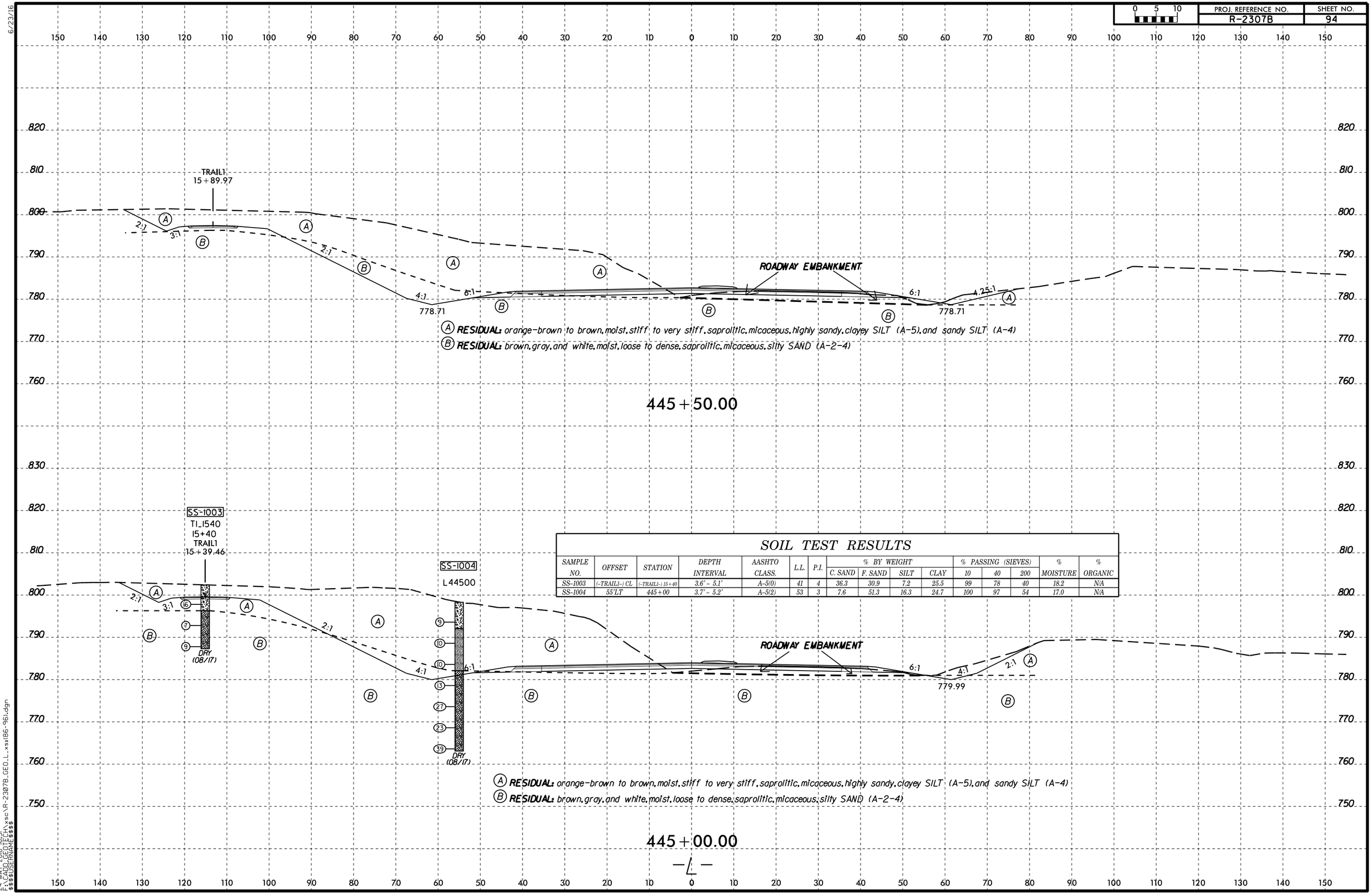
2:1 3:1 Ⓐ Ⓑ 2:1 Ⓐ Ⓑ 4:1 6:1 782.56 Ⓐ Ⓑ ROADWAY EMBANKMENT 6:1 4:1 Ⓐ 2:1 782.56 Ⓑ

Ⓐ **RESIDUAL:** *orange-brown, brown, and red-brown, moist, stiff to very stiff, saprolitic, micaceous, highly sandy, clayey SILT (A-5), and sandy SILT (A-4)*

Ⓑ **RESIDUAL:** *brown, gray, and white, moist, loose to dense, saprolitic, micaceous, silty SAND (A-2-4)*

444+00.00

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	94



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-1003	(-TRAIL1-) CL	(-TRAIL1-) 15+40	3.6' - 5.1'	A-5(0)	41	4	36.3	30.9	7.2	25.5	99	78	40	18.2	N/A
SS-1004	55'LT	445+00	3.7' - 5.2'	A-5(2)	53	3	7.6	51.3	16.3	24.7	100	97	54	17.0	N/A

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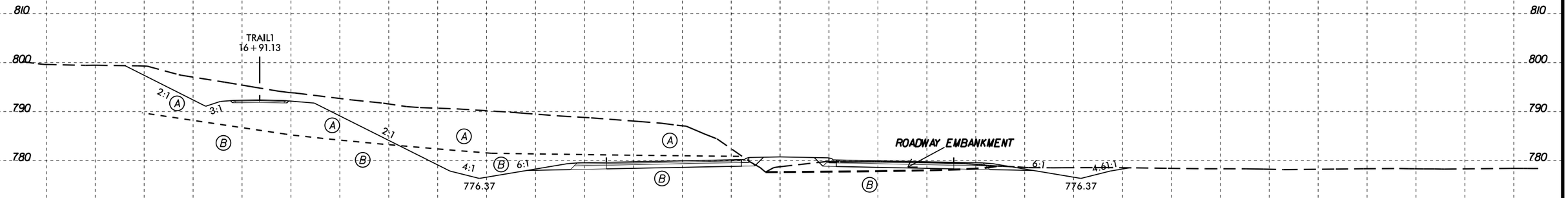
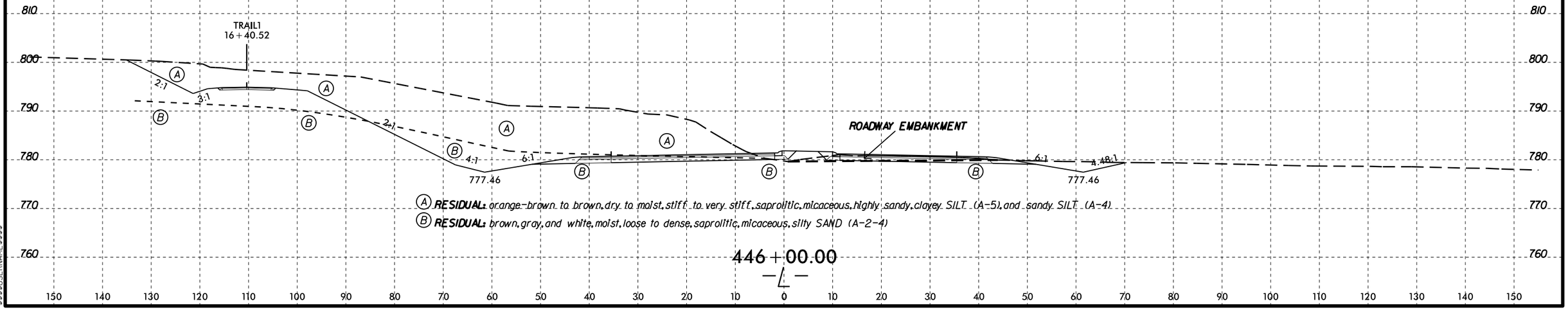
0 5 10

PROJ. REFERENCE NO.	SHEET NO.
R-2307B	95

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



446+50.00



446+00.00

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

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6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	96

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

810 800 790 780 770 760 750

TI_1742
17+42
TRAIL1
17+41.76

SS-1006
L44700

2:1 3:1 2:1 4:1 6:1 6:1 4:1

(A) (B)

11 13 17 DRY (08/17)

22 10 17 17 11 DRY (08/17)

ROADWAY EMBANKMENT

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-1006	60'LT	447+00	3.2' - 4.7'	A-4(1)	39	5	32.6	29.3	7.1	30.9	100	81	46	11.8	N/A

(A) **RESIDUAL:** tan, dry, stiff to very stiff, saprolitic, sandy SILT (A-4)

(B) **RESIDUAL:** white and tan, dry, medium dense, saprolitic, micaceous, silty SAND (A-2-4)

447+00.00

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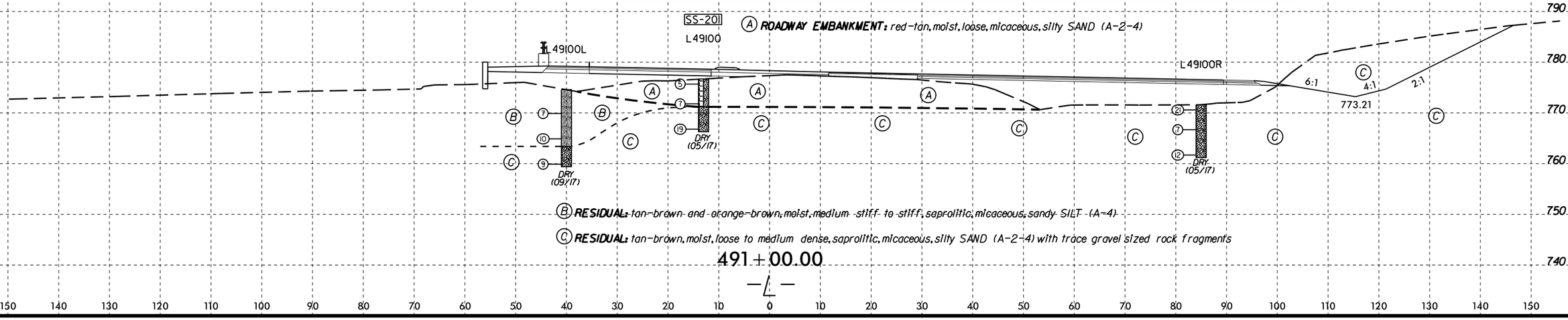
6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	97

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-201	13'LT	491+00	3.9' - 5.4'	A-2-4(0)	38	0	10.0	70.0	12.8	7.3	100	97	34	18.5	N/A



491+00.00

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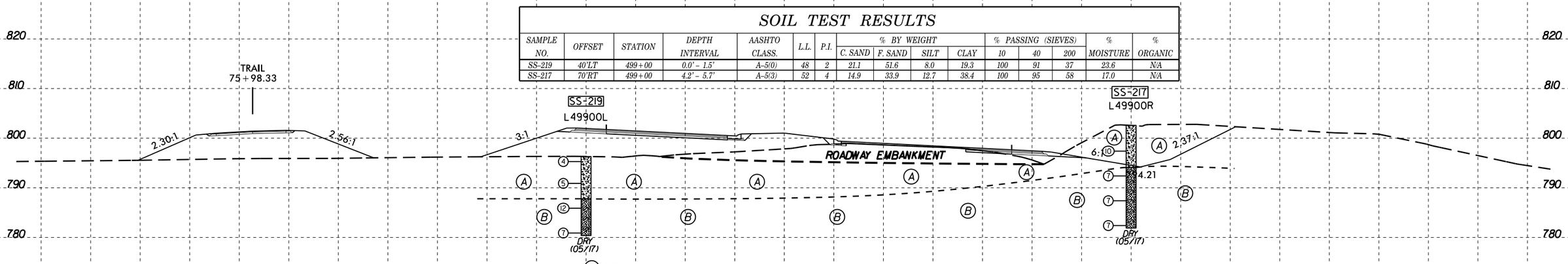
6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	98

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-219	40'LT	499+00	0.0' - 1.5'	A-5(0)	48	2	21.1	51.6	8.0	19.3	100	91	37	23.6	N/A
SS-217	70'RT	499+00	4.2' - 5.7'	A-5(3)	52	4	14.9	33.9	12.7	38.4	100	95	58	17.0	N/A



(A) **RESIDUAL:** tan-brown and orange-brown, moist, medium stiff to stiff, saprolitic, micaceous, sandy SILT (A-4)

(B) **RESIDUAL:** tan-brown, moist, loose to medium dense, saprolitic, micaceous, silty SAND (A-2-4) with trace gravel sized rock fragments

499+00.00

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	99

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

850 840 830 820 810 800 790 780

T2_8287
82+87
TRAIL
82+90.61

12 18 24 57

12:1 2.27:1 4:1 6:1

DRY (05/17)

811.24

ROADWAY EMBANKMENT

6:1 4.88:1

803.63

Ⓐ **RESIDUAL:** tan-brown, dry, stiff to very stiff, saprolitic, sandy SILT (A-4) with some to trace clay

Ⓑ **RESIDUAL:** tan to tan-orange, dry, medium dense to very dense, saprolitic, silty SAND (A-2-4)

505+50.00

TRAIL
82+37.09

2.99:1 2.09:1

820.04

4:1 6:1

811.48

SS-107
L50500

20 14 16 19 15

DRY (05/17)

ROADWAY EMBANKMENT

6:1 6:1

804.56

Ⓐ **RESIDUAL:** tan-brown, dry, stiff to very stiff, saprolitic, sandy SILT (A-4) with some to trace clay

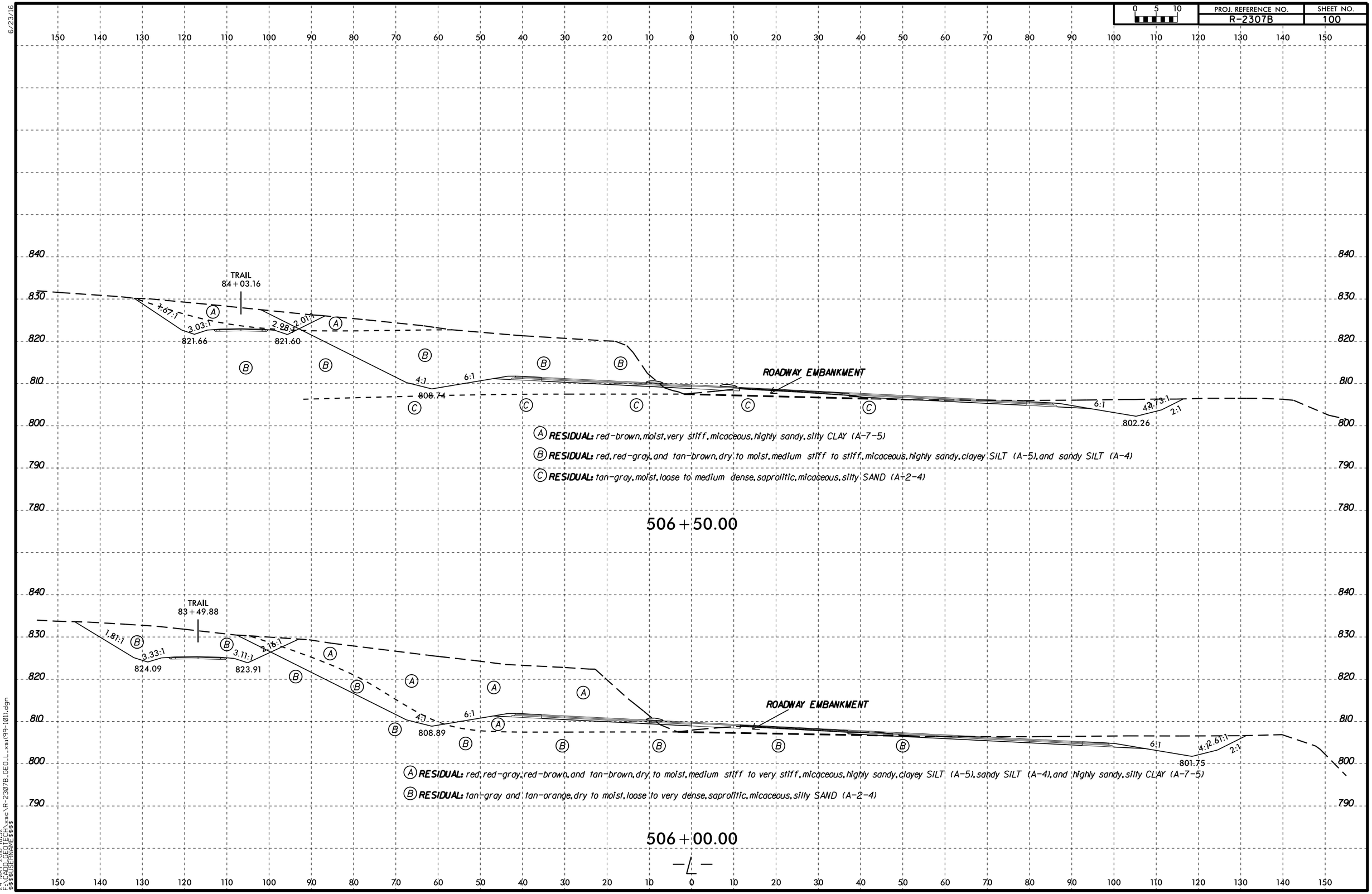
Ⓑ **RESIDUAL:** tan to tan-orange, dry, medium dense, saprolitic, silty SAND (A-2-4)

505+00.00

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-107	70'LT	505+00	4.1' - 5.6'	A-4(1)	39	2	6.2	50.5	19.7	23.5	100	98	54	12.4	N/A

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	100



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6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	101

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

850 840 830 820 810 800 790 780 770

SS-18
T2_8455
84+55
TRAIL
84+55.17

SS-231
SS-232
L50700

1.75:1 3.03:1 2.98:1 4.62:1 4:1 6:1 6:1 4.62:1

819.06 819.00 808.48 802.80

ROADWAY EMBANKMENT

DRY (05/17)

DRY (05/17)

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-18	(-TRAIL2-) CL	(-TRAIL1-) 84+55	0.0' - 1.5'	A-7-5(12)	63	14	6.0	33.7	14.3	46.0	100	98	67	23.3	N/A
SS-231	30'LT	507+00	3.7' - 5.2'	A-5(2)	53	2	9.2	43.8	11.3	35.7	100	97	54	20.8	N/A
SS-232	30'LT	507+00	8.7' - 10.2'	A-5(0)	44	0	4.5	74.8	8.4	12.4	100	99	36	16.5	N/A

(A) **RESIDUAL:** red-brown, moist, very stiff, micaceous, highly sandy, silty CLAY (A-7-5)

(B) **RESIDUAL:** red, red-gray, and tan-brown, dry to moist, medium stiff to stiff, micaceous, highly sandy, clayey SILT (A-5), and sandy SILT (A-4)

(C) **RESIDUAL:** tan-gray, moist, loose to medium dense, saprolitic, micaceous, silty SAND (A-2-4)

507+00.00

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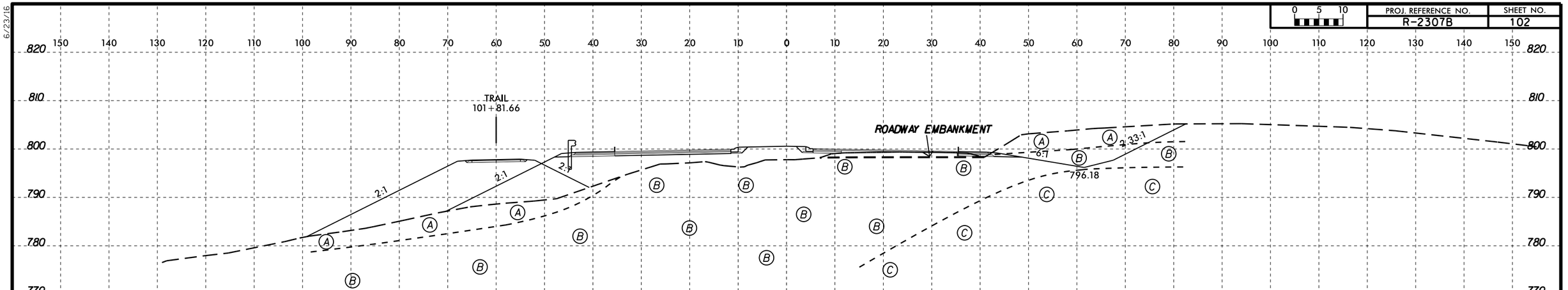
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	102



(A) **RESIDUAL:** red-brown, moist, stiff, highly sandy, silty CLAY (A-7-6) with trace gravel sized rock fragments

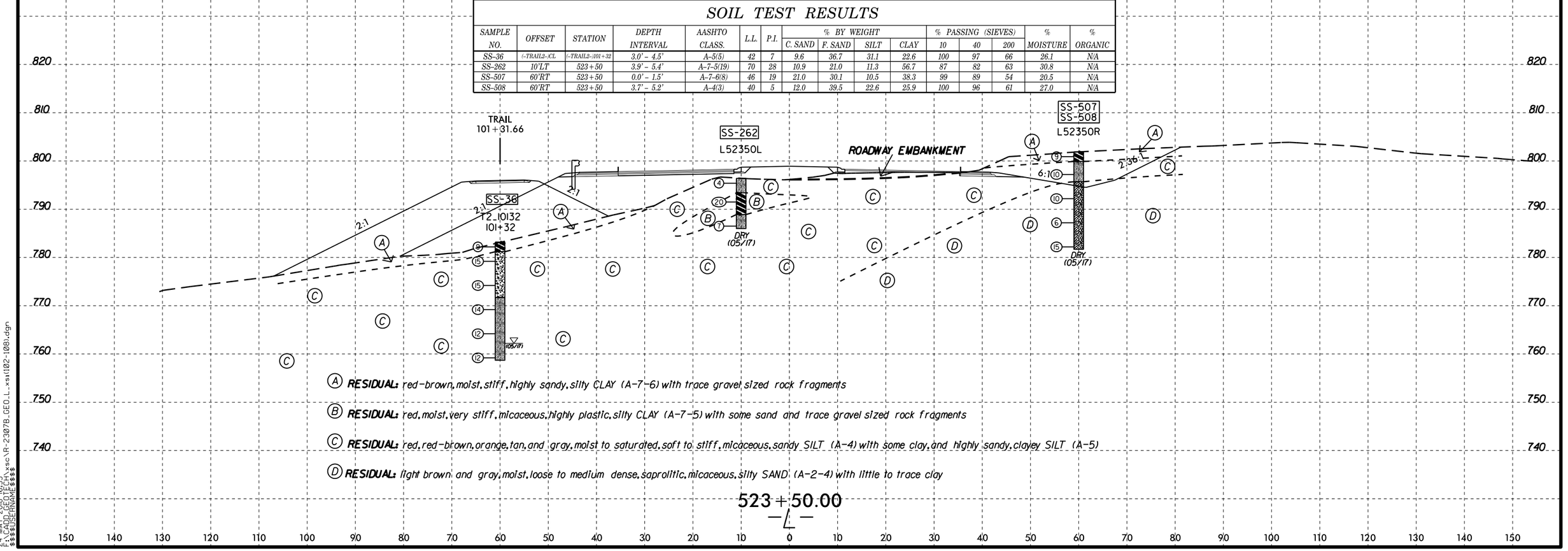
(B) **RESIDUAL:** red, red-brown, orange, tan, and gray, moist to saturated, soft to stiff, micaceous, sandy SILT (A-4) with some clay, and highly sandy, clayey SILT (A-5)

(C) **RESIDUAL:** light brown and gray, moist, loose to medium dense, saprolitic, micaceous, silty SAND (A-2-4) with little to trace clay

524+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-36	(-TRAIL2-)CL	(-TRAIL2-)101+32	3.0' - 4.5'	A-5(5)	42	7	9.6	36.7	31.1	22.6	100	97	66	26.1	N/A
SS-262	10'LT	523+50	3.9' - 5.4'	A-7-5(19)	70	28	10.9	21.0	11.3	56.7	87	82	63	30.8	N/A
SS-507	60'RT	523+50	0.0' - 1.5'	A-7-6(8)	46	19	21.0	30.1	10.5	38.3	99	89	54	20.5	N/A
SS-508	60'RT	523+50	3.7' - 5.2'	A-4(3)	40	5	12.0	39.5	22.6	25.9	100	96	61	27.0	N/A



(A) **RESIDUAL:** red-brown, moist, stiff, highly sandy, silty CLAY (A-7-6) with trace gravel sized rock fragments

(B) **RESIDUAL:** red, moist, very stiff, micaceous, highly plastic, silty CLAY (A-7-5) with some sand and trace gravel sized rock fragments

(C) **RESIDUAL:** red, red-brown, orange, tan, and gray, moist to saturated, soft to stiff, micaceous, sandy SILT (A-4) with some clay, and highly sandy, clayey SILT (A-5)

(D) **RESIDUAL:** light brown and gray, moist, loose to medium dense, saprolitic, micaceous, silty SAND (A-2-4) with little to trace clay

523+50.00

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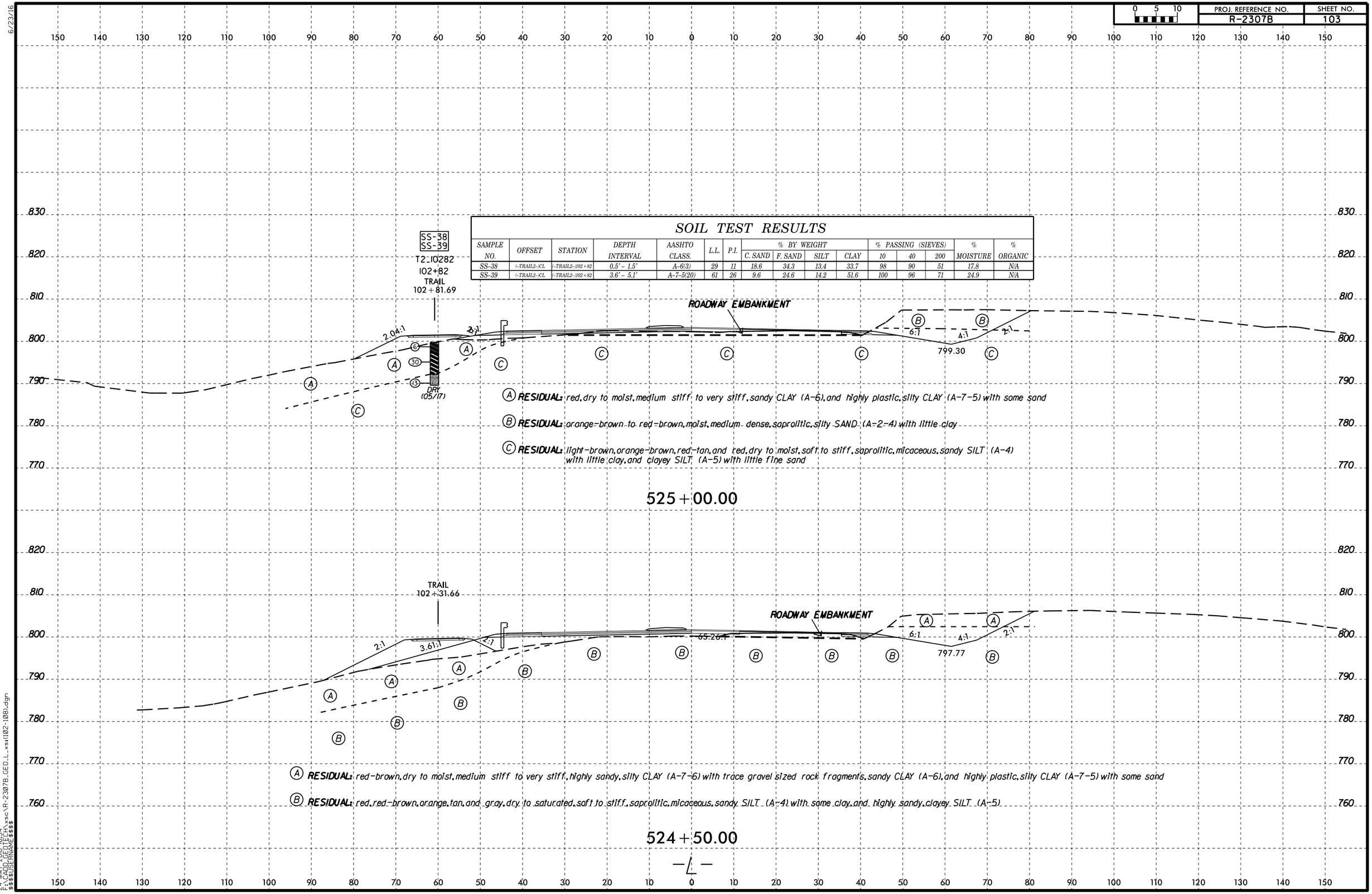
6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	103

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-38	(-TRAIL2-)CL	(-TRAIL2-)102+82	0.5' – 1.5'	A-6(3)	29	11	18.6	34.3	13.4	33.7	98	90	51	17.8	N/A
SS-39	(-TRAIL2-)CL	(-TRAIL2-)102+82	3.6' – 5.1'	A-7-5(20)	61	26	9.6	24.6	14.2	51.6	100	96	71	24.9	N/A



(A) **RESIDUAL:** red, dry to moist, medium stiff to very stiff, sandy CLAY (A-6), and highly plastic, silty CLAY (A-7-5) with some sand

(B) **RESIDUAL:** orange-brown to red-brown, moist, medium dense, saprolitic, silty SAND (A-2-4) with little clay

(C) **RESIDUAL:** light-brown, orange-brown, red-tan, and red, dry to moist, soft to stiff, saprolitic, micaceous, sandy SILT (A-4) with little clay, and clayey SILT (A-5) with little fine sand

(A) **RESIDUAL:** red-brown, dry to moist, medium stiff to very stiff, highly sandy, silty CLAY (A-7-6) with trace gravel sized rock fragments, sandy CLAY (A-6), and highly plastic, silty CLAY (A-7-5) with some sand

(B) **RESIDUAL:** red, red-brown, orange, tan, and gray, dry to saturated, soft to stiff, saprolitic, micaceous, sandy SILT (A-4) with some clay, and highly sandy, clayey SILT (A-5)

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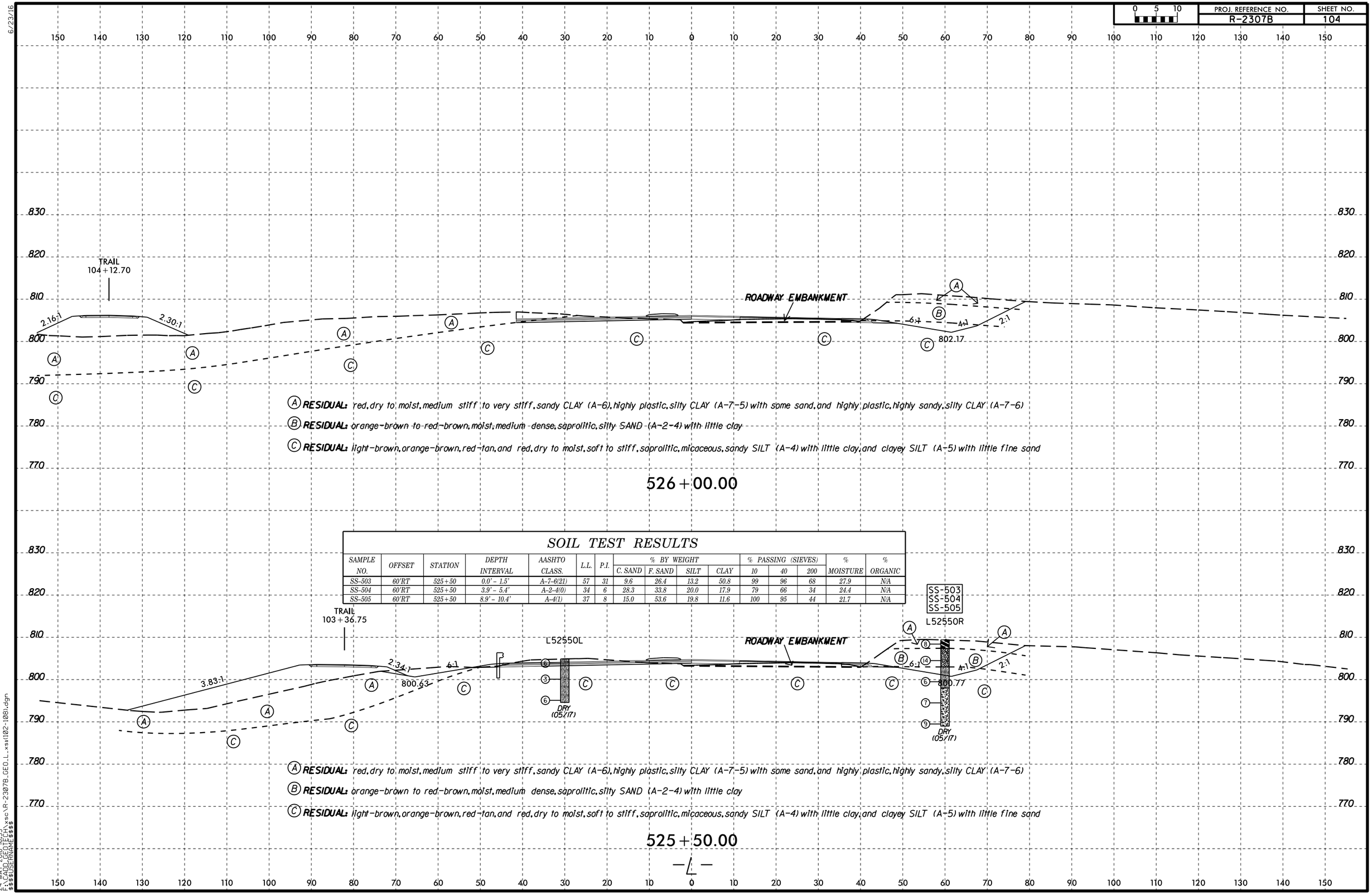
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	104



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-503	60'RT	525+50	0.0' - 1.5'	A-7-6(21)	57	31	9.6	26.4	13.2	50.8	99	96	68	27.9	N/A
SS-504	60'RT	525+50	3.9' - 5.4'	A-2-4(0)	34	6	28.3	33.8	20.0	17.9	79	66	34	24.4	N/A
SS-505	60'RT	525+50	8.9' - 10.4'	A-4(1)	37	8	15.0	53.6	19.8	11.6	100	95	44	21.7	N/A

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6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	105

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

830 820 810 800 790 780

TRAIL
105+13.57

3.07:1 3.07:1

805.39 805.37

ROADWAY EMBANKMENT

6:1 4:1 2:1

804.78

Ⓐ **RESIDUAL:** *red to red-brown, moist, medium stiff to very stiff, moderate to highly plastic, silty CLAY (A-7-5) with some sand*

Ⓑ **RESIDUAL:** *orange, white, and tan, moist, medium dense, saprolitic, silty SAND (A-2-4)*

Ⓒ **RESIDUAL:** *orange-brown, brown, white, and tan, moist, stiff to very stiff, saprolitic, sandy SILT (A-4), and clayey SILT (A-5)*

527+00.00

TRAIL
104+63.39

3:1 3:1

805.48 805.48

ROADWAY EMBANKMENT

6:1 4:1 2:1

803.51

Ⓐ **RESIDUAL:** *red, dry to moist, medium stiff to very stiff, sandy CLAY (A-6), highly plastic, silty CLAY (A-7-5) with some sand, and highly plastic, highly sandy, silty CLAY (A-7-6)*

Ⓑ **RESIDUAL:** *orange-brown to red-brown, moist, medium dense, saprolitic, silty SAND (A-2-4) with little clay*

Ⓒ **RESIDUAL:** *light-brown, orange-brown, red-tan, and red, dry to moist, soft to stiff, saprolitic, micaceous, sandy SILT (A-4) with little clay, and clayey SILT (A-5) with little fine sand*

526+50.00

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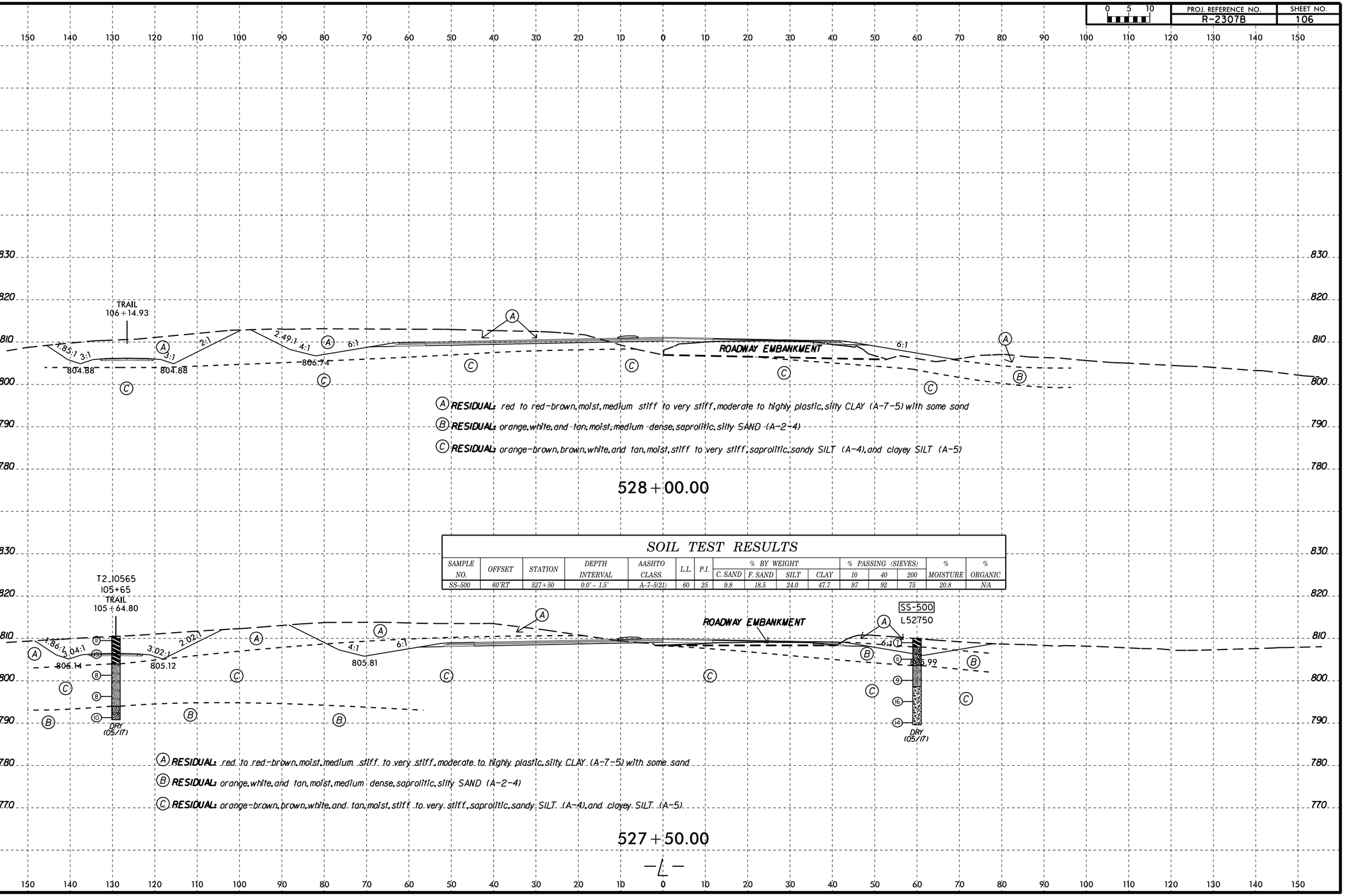
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	106



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-500	60'RT	527+50	0.0' - 1.5'	A-7-5(21)	60	25	9.8	18.5	24.0	47.7	97	92	75	20.8	N/A

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	107

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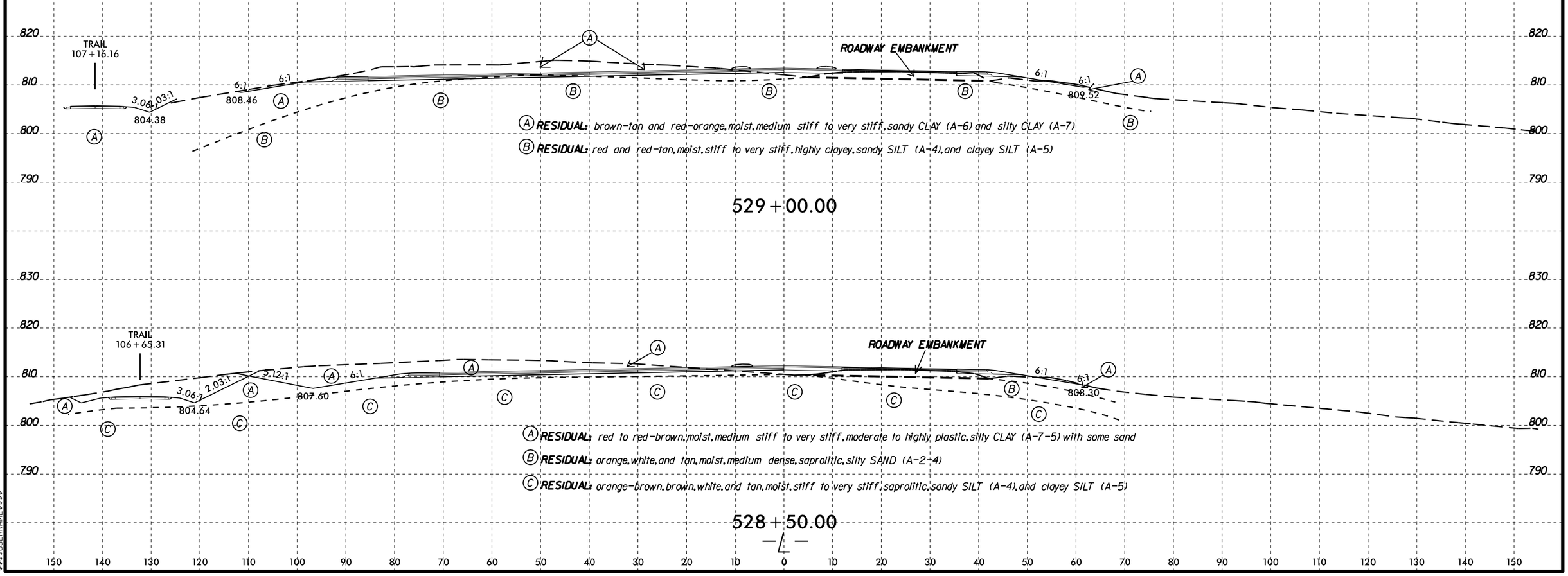

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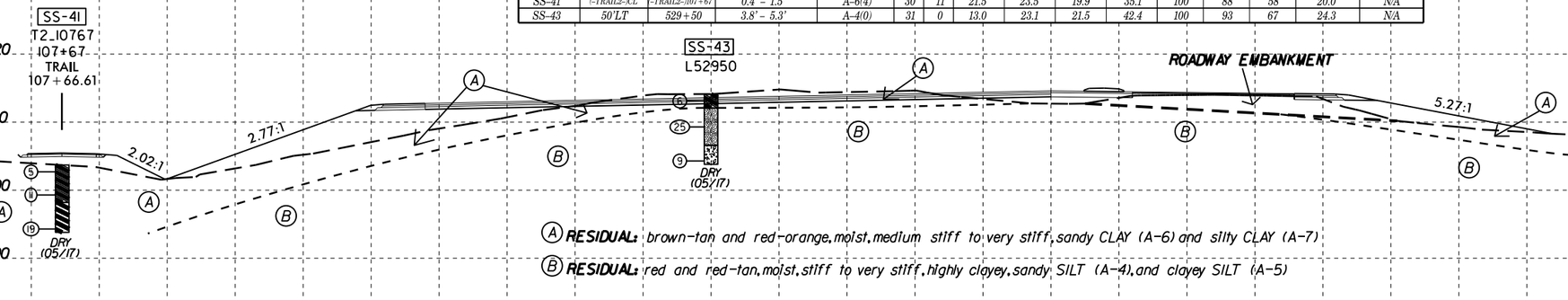
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	108

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-41	(-TRAIL2-)CL	(-TRAIL2-)107+67	0.4' – 1.5'	A-6(4)	30	11	21.5	23.5	19.9	35.1	100	88	58	20.0	N/A
SS-43	50'LT	529+50	3.8' – 5.3'	A-4(0)	31	0	13.0	23.1	21.5	42.4	100	93	67	24.3	N/A



(A) **RESIDUAL:** brown-tan and red-orange, moist, medium stiff to very stiff, sandy CLAY (A-6) and silty CLAY (A-7)

(B) **RESIDUAL:** red and red-tan, moist, stiff to very stiff, highly clayey, sandy SILT (A-4), and clayey SILT (A-5)

529+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

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	109

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

840 830 820 810 800 790 780

TRAIL
111+29.24

ROADWAY EMBANKMENT

2:1 2:1 2:91:1 17.49:1 6:1 6:1

820.85

(A) **RESIDUAL:** orange-brown, brown and red, moist, stiff to very stiff, moderate to highly plastic, silty CLAY (A-7-5) with some sand, and sandy CLAY (A-6)

(B) **RESIDUAL:** tan, moist, stiff, clayey SILT (A-5)

533+00.00

TRAIL
110+80.12

ROADWAY EMBANKMENT

2:1 2:1 3.04:1 17.29:1 6:1 6:1

819.70

(A) **RESIDUAL:** orange-brown, brown and red, moist, stiff to very stiff, moderate to highly plastic, silty CLAY (A-7-5) with some sand, and sandy CLAY (A-6)

532+50.00

TRAIL
110+30.98

ROADWAY EMBANKMENT

2:1 2:1 3.18:1 6:1

(A) **RESIDUAL:** red, dry, stiff, moderately plastic, silty CLAY (A-7-5) with some sand

(B) **RESIDUAL:** tan, dry, medium dense, silty SAND (A-2-4)

(C) **RESIDUAL:** tan-red, moist, stiff, sandy SILT (A-4)

532+00.00

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	110

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

840 830 820 810

TRAIL
112 + 89.08

2.34:1 3.56:1 4.5:1

815.56

ROADWAY EMBANKMENT

Ⓐ **RESIDUAL:** orange-brown, brown and red, moist, stiff to very stiff, moderate to highly plastic, silty CLAY (A-7-5) with some sand, and sandy CLAY (A-6)

534 + 50.00

830 820 810 800 790

TRAIL
112 + 30.06

6:1 6:1 6:1

ROADWAY EMBANKMENT

823.31

2.51:1 3.20:1

814.21

0.208

Ⓐ **RESIDUAL:** orange-brown, brown and red, moist, stiff to very stiff, moderate to highly plastic, silty CLAY (A-7-5) with some sand, and sandy CLAY (A-6)

Ⓑ **RESIDUAL:** tan, moist, stiff, clayey SILT (A-5)

534 + 00.00

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-45	(-TRAIL2-)CL	(-TRAIL2-)111+78	3.8' - 5.3'	A-7-5(21)	59	29	13.6	17.9	14.2	54.3	100	92	72	19.8	N/A
SS-516	55'LT	533+50	0.0' - 1.5'	A-7-5(33)	69	37	9.5	11.6	19.1	59.7	99	94	81	25.5	N/A
SS-517	55'LT	533+50	4.0' - 5.5'	A-7-5(11)	52	15	13.2	25.4	25.3	36.1	99	91	69	26.5	N/A

SS-45
TRAIL
111 + 78.37
T2_111+78
111+78

SS-516
SS-517
L53350

2.01:1 2:1 3.64:1 17.59:1

6:1 6:1

ROADWAY EMBANKMENT

822.02

5 15 8 DRY (05/17)

10 21 9 DRY (05/17)

Ⓐ **RESIDUAL:** orange-brown, brown and red, moist, stiff to very stiff, moderate to highly plastic, silty CLAY (A-7-5) with some sand, and sandy CLAY (A-6)

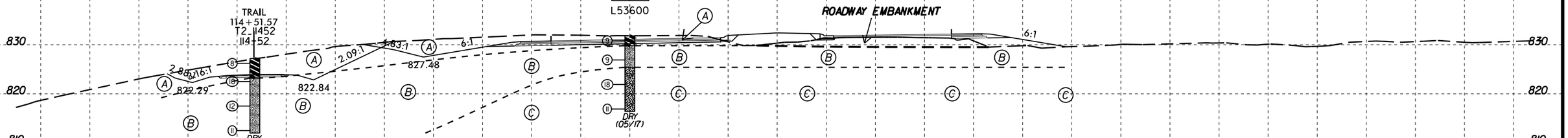
Ⓑ **RESIDUAL:** tan, moist, stiff, clayey SILT (A-5)

533 + 50.00

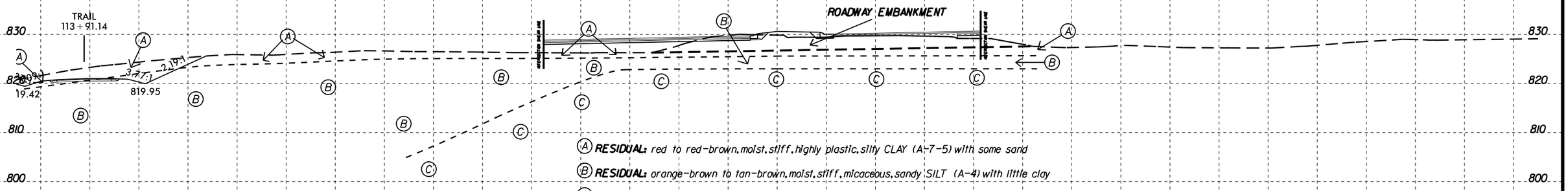
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	111

SOIL TEST RESULTS

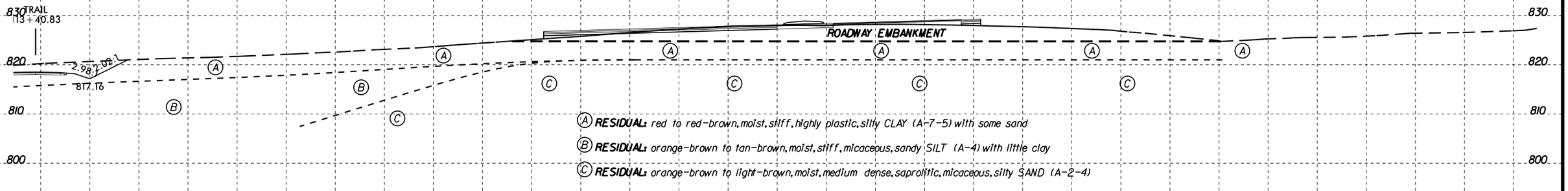
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	% BY WEIGHT F. SAND	% BY WEIGHT SILT	% BY WEIGHT CLAY	% PASSING (SIEVES) 10	% PASSING (SIEVES) 40	% PASSING (SIEVES) 200	% MOISTURE	% ORGANIC
SS-45	30'LT	536+00	0.0' - 1.5'	A-7-5(25)	64	30	12.6	17.8	14.2	55.4	100	93	74	23.1	N/A



536+00.00



535+50.00



535+00.00

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	112

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

850 840 830 820 810 800

TRAIL
115+53.03

ROADWAY EMBANKMENT

1.99:1 3.04:1 4.91:1 6:1 6:1

831.48 827.59

Ⓐ **RESIDUAL:** *red and red-brown, moist, medium stiff to stiff, sandy CLAY (A-6), and highly plastic, highly sandy, silty CLAY (A-7-6)*

Ⓑ **RESIDUAL:** *red-brown to orange-brown, and tan, moist, stiff to very stiff, saprolitic, micaceous, sandy SILT (A-4) with some to trace clay*

Ⓒ **RESIDUAL:** *gray-brown and white, dry to moist, loose, saprolitic, micaceous, silty SAND (A-2-4)*

537+00.00

TRAIL
115+02.95

ROADWAY EMBANKMENT

1.99:1 3.04:1 4.91:1 6:1 6:1

829.48 825.15 830.78

Ⓐ **RESIDUAL:** *red to red-brown, moist, stiff, highly plastic, silty CLAY (A-7-5) with some sand*

Ⓑ **RESIDUAL:** *orange-brown to tan-brown, moist, stiff, micaceous, sandy SILT (A-4) with little clay*

Ⓒ **RESIDUAL:** *orange-brown to light-brown, moist, medium dense, saprolitic, micaceous, silty SAND (A-2-4)*

536+50.00

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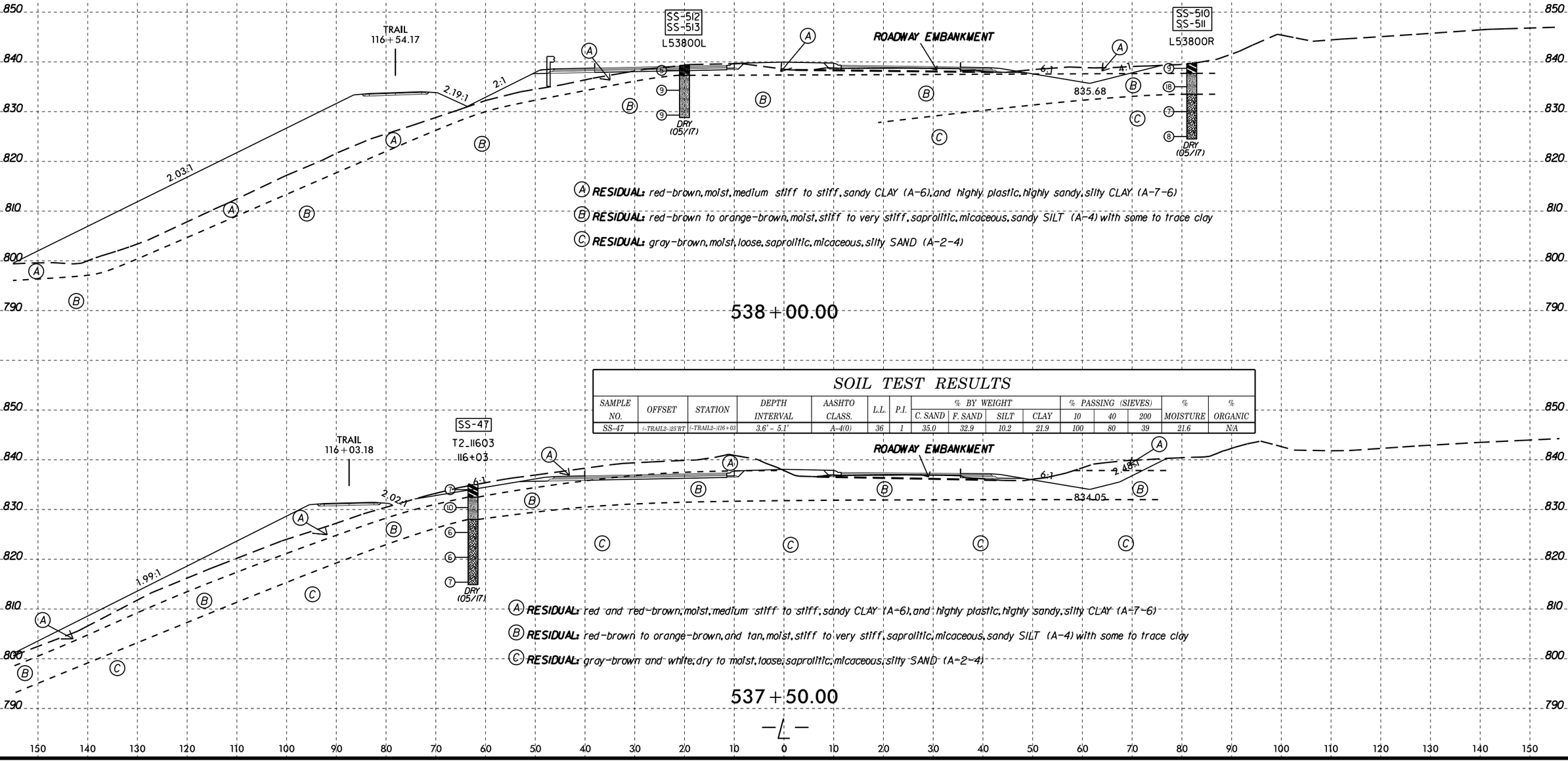
6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	113

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-510	82'RT	538+00	0.0' - 1.5'	A-7-6(13)	53	27	22.0	26.9	8.6	42.5	100	89	56	29.0	N/A
SS-511	82'RT	538+00	3.7' - 5.2'	A-4(1)	39	10	29.3	39.5	11.2	20.1	100	86	40	22.0	N/A
SS-512	20'LT	538+00	0.0' - 1.5'	A-6(3)	37	12	24.7	30.8	11.1	33.4	100	88	50	25.5	N/A
SS-513	20'LT	538+00	4.0' - 5.5'	A-4(1)	40	7	27.9	35.3	12.7	24.1	100	86	44	20.2	N/A



Ⓐ **RESIDUAL:** red-brown, moist, medium stiff to stiff, sandy CLAY (A-6), and highly plastic, highly sandy, silty CLAY (A-7-6)

Ⓑ **RESIDUAL:** red-brown to orange-brown, moist, stiff to very stiff, saprolitic, micaceous, sandy SILT (A-4) with some to trace clay

Ⓒ **RESIDUAL:** gray-brown, moist, loose, saprolitic, micaceous, silty SAND (A-2-4)

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-47	(-TRAIL2-)25'RT	(-TRAIL2-)116+03	3.6' - 5.1'	A-4(0)	36	1	35.0	32.9	10.2	21.9	100	80	39	21.6	N/A

Ⓐ **RESIDUAL:** red and red-brown, moist, medium stiff to stiff, sandy CLAY (A-6), and highly plastic, highly sandy, silty CLAY (A-7-6)

Ⓑ **RESIDUAL:** red-brown to orange-brown, and tan, moist, stiff to very stiff, saprolitic, micaceous, sandy SILT (A-4) with some to trace clay

Ⓒ **RESIDUAL:** gray-brown and white, dry to moist, loose, saprolitic, micaceous, silty SAND (A-2-4)

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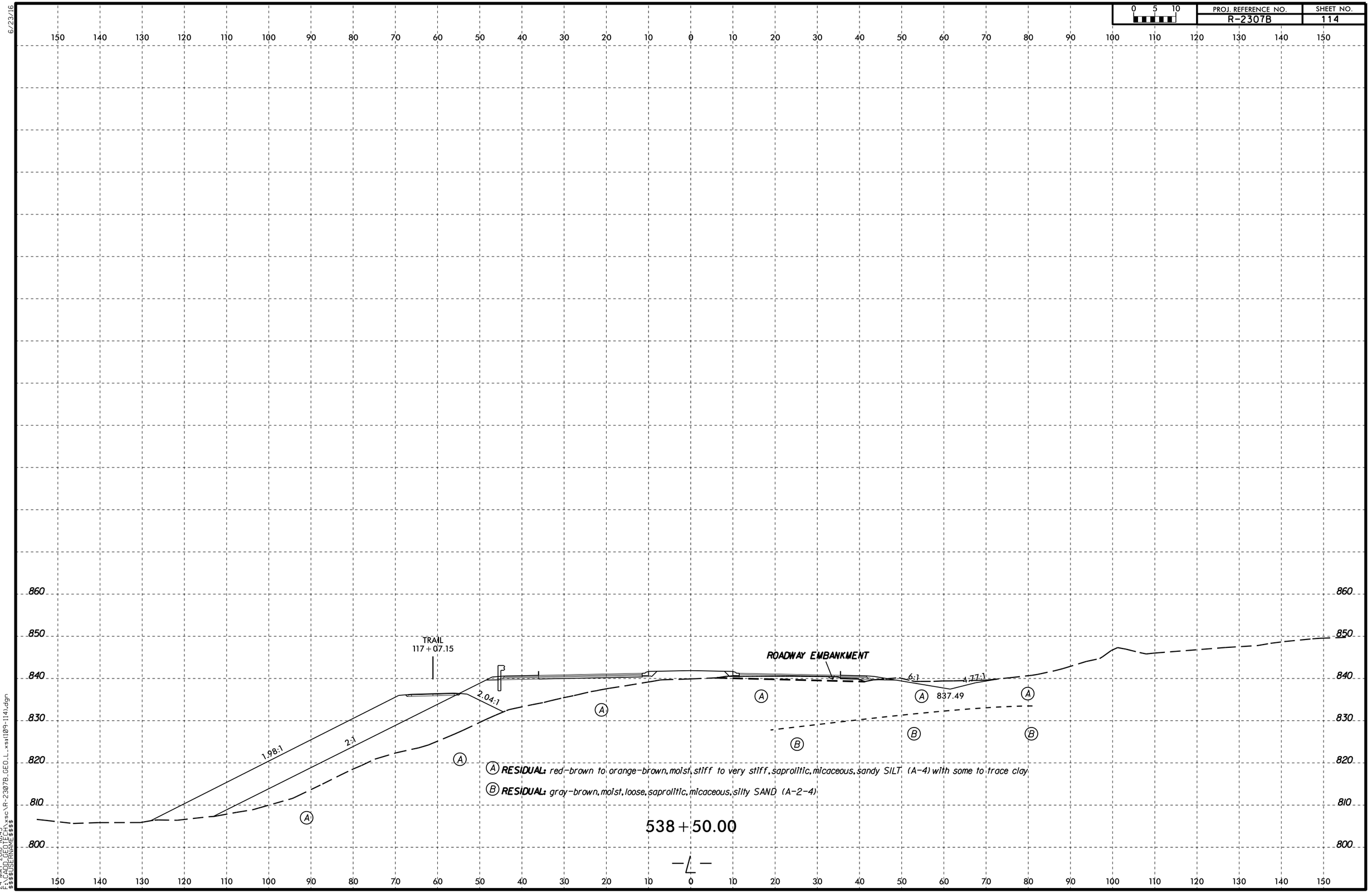
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	114



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6/23/16

PROJ. REFERENCE NO.	SHEET NO.
R-2307B	115

0 5 10

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

880 870 860 850 840 830 820 810

T2_12122
121+22
TRAIL
121+21.52

L54250

ROADWAY EMBANKMENT

1.70:1 2:1 2.26:1 6:1 6:1 4:1

855.15 855.38 853.32 853.32

60/0.0 DRY (05/17)

Ⓐ **RESIDUAL:** red to red-brown, moist, stiff, highly sandy, silty CLAY (A-7-6), and sandy CLAY (A-6)

Ⓑ **RESIDUAL:** red, orange-brown, and tan-brown, moist, medium stiff to stiff, saprolitic, micaceous, sandy SILT (A-4) with some to little clay

Ⓒ **RESIDUAL:** orange-brown, white, gray, and pink, dry to moist, loose to medium dense, saprolitic, micaceous, silty SAND (A-2-4)

Ⓓ **WEATHERED ROCK:** (Granite)

Ⓔ **CRYSTALLINE ROCK:** (Granite)

542+50.00

T2_12070
120+70
TRAIL
120+69.90

L54200

ROADWAY EMBANKMENT

1.64:1 2.98:1 1.99:1 2.27:1 6:1 6:1

852.73 852.79 851.18

60/0.0 DRY (05/17)

Ⓐ **RESIDUAL:** red, moist, stiff, highly sandy, silty CLAY (A-7-6)

Ⓑ **RESIDUAL:** red, orange-brown, and tan-brown, moist, medium stiff to stiff, saprolitic, micaceous, sandy SILT (A-4) with some to little clay

Ⓒ **RESIDUAL:** orange-brown, white, and pink, dry to moist, loose to medium dense, saprolitic, micaceous, silty SAND (A-2-4)

Ⓓ **WEATHERED ROCK:** (Granite)

Ⓔ **CRYSTALLINE ROCK:** (Granite)

542+00.00

24-MAY-2018 16:43
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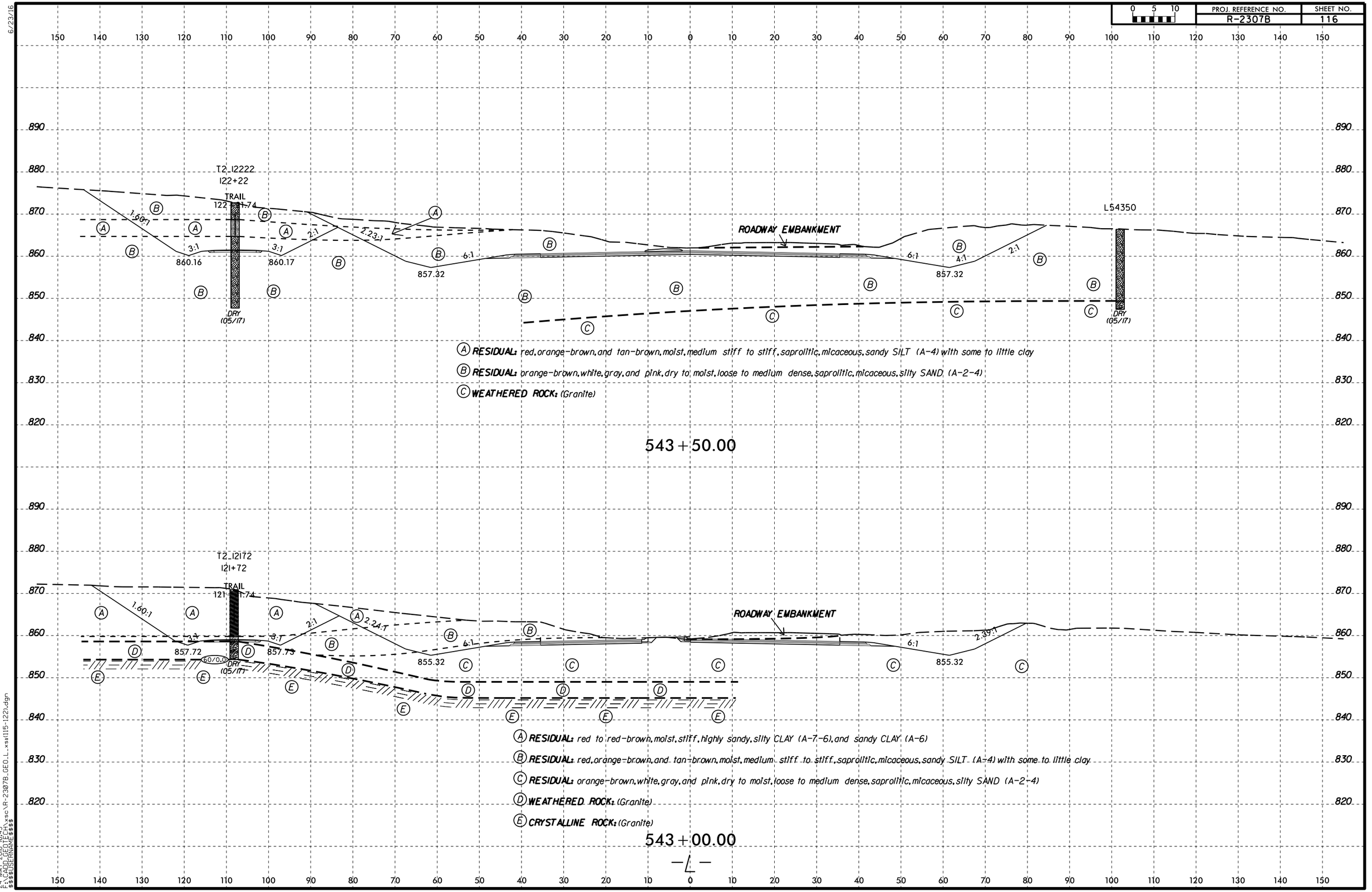
6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	116



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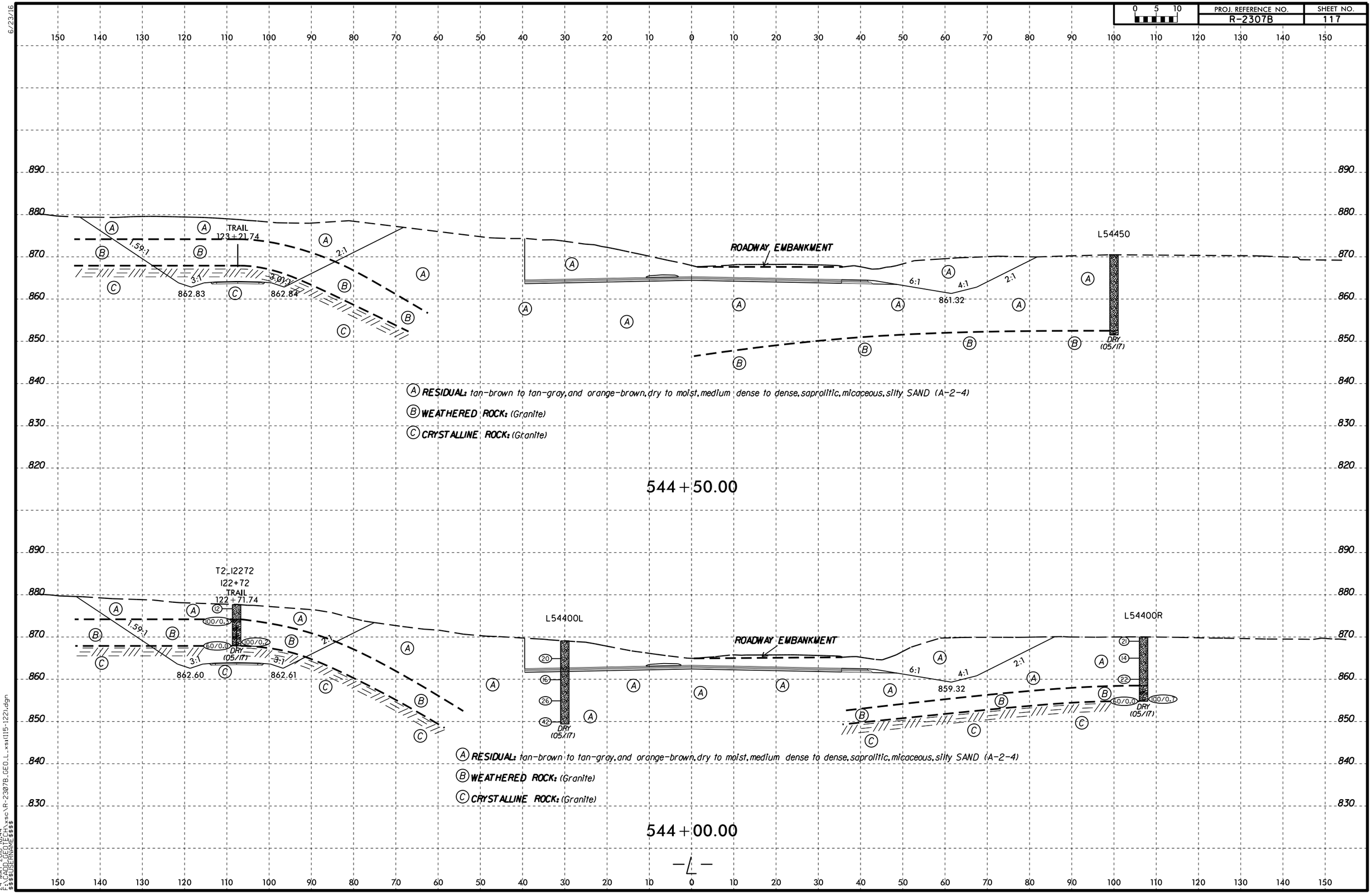
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	117



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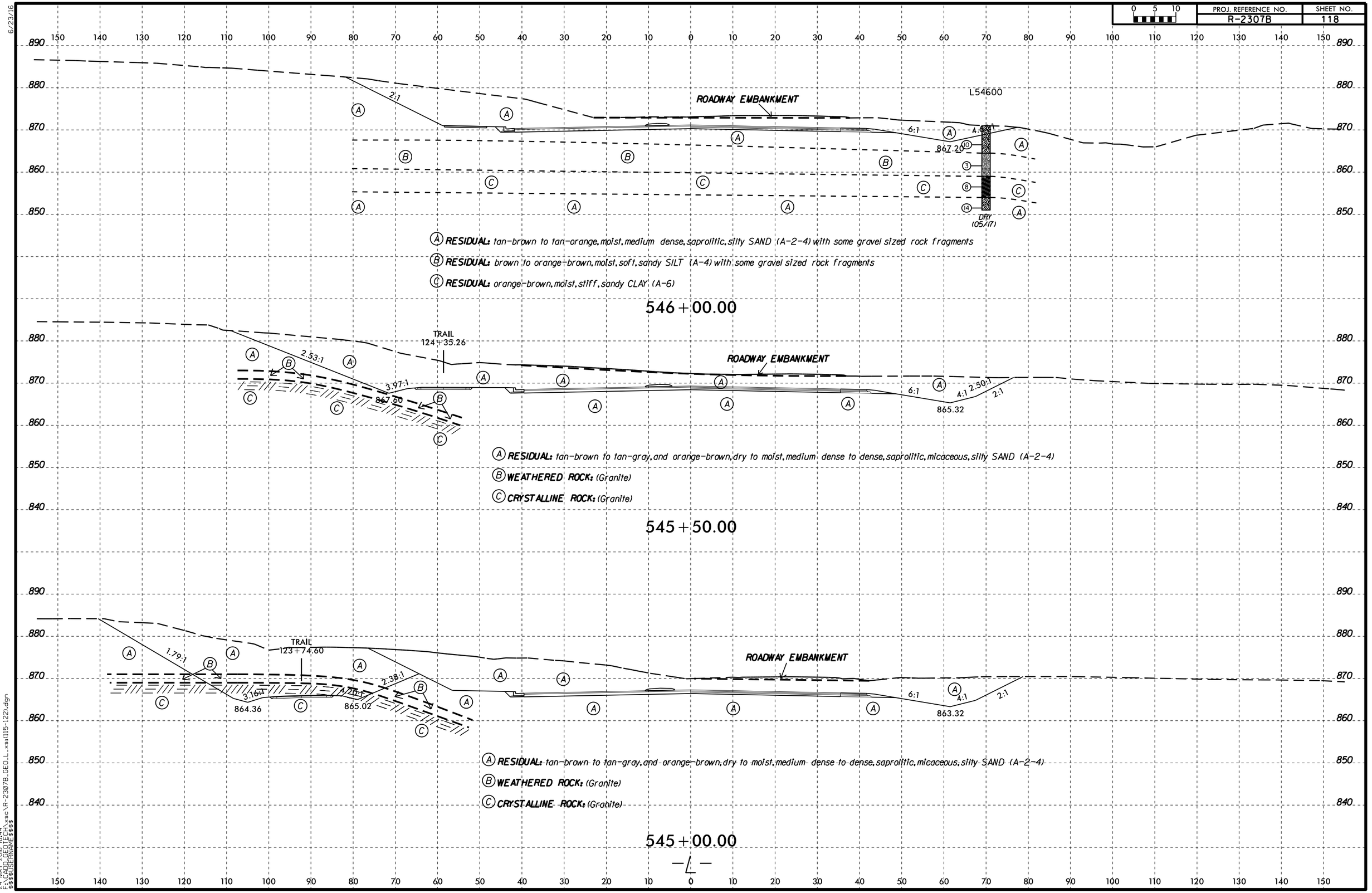
6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	118



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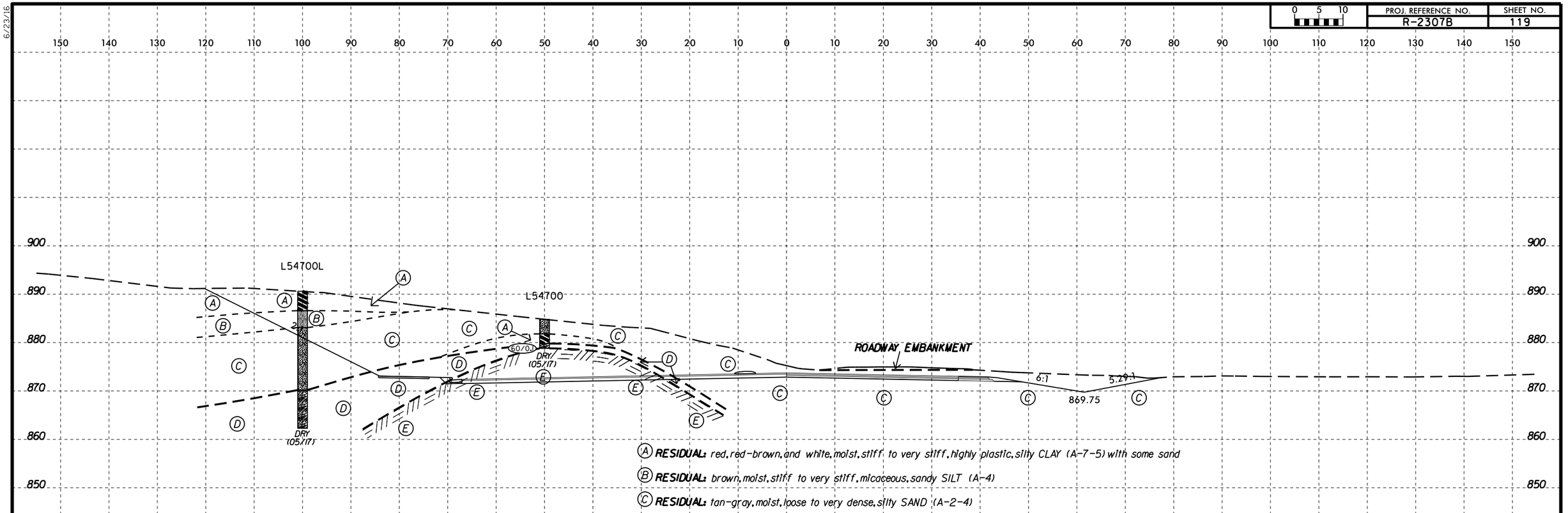
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	119



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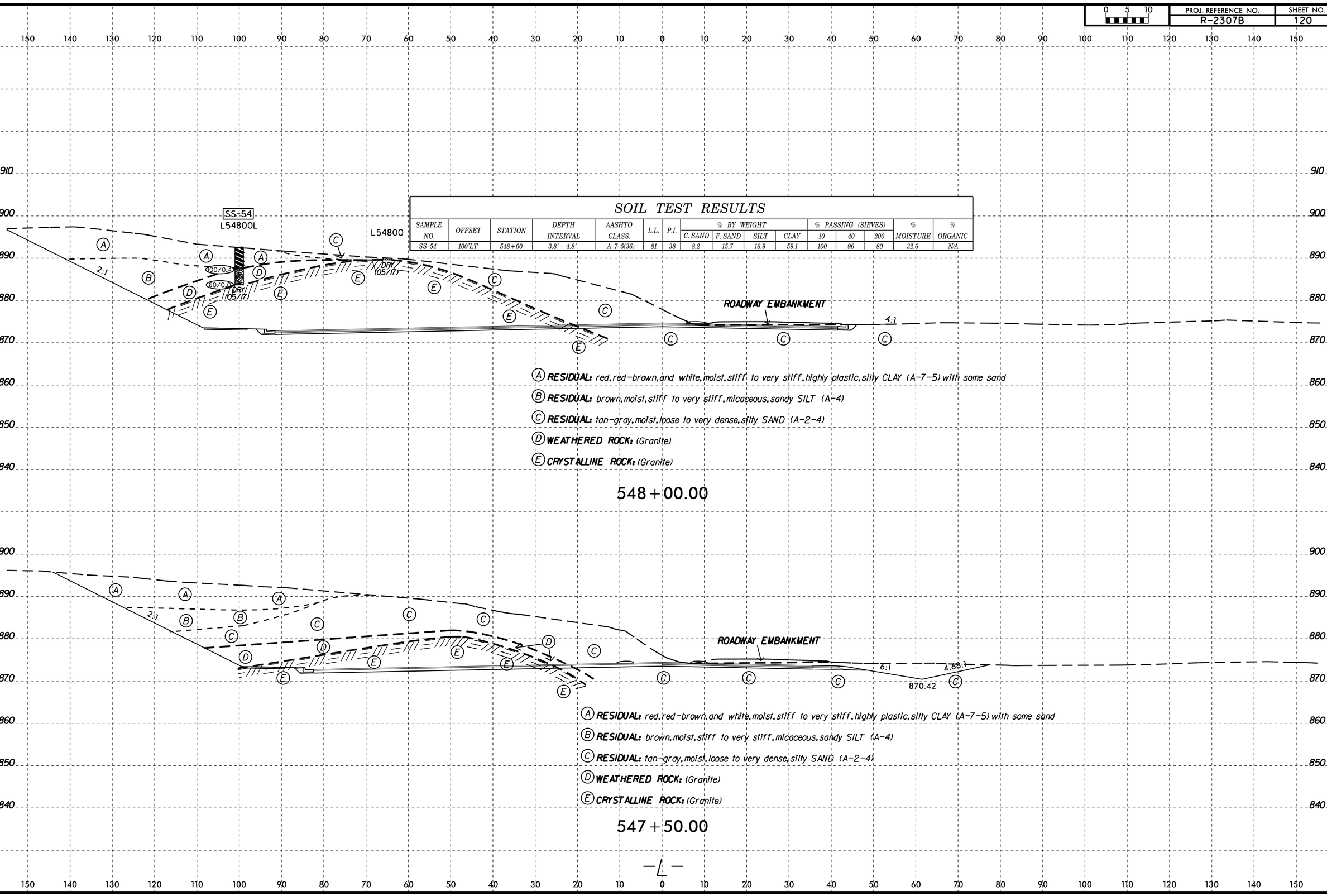
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	120

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-54	100'LT	548+00	3.8' - 4.8'	A-7-5(36)	81	38	8.2	15.7	16.9	59.1	100	96	80	32.6	N/A



(A) **RESIDUAL:** red, red-brown, and white, moist, stiff to very stiff, highly plastic, silty CLAY (A-7-5) with some sand

(B) **RESIDUAL:** brown, moist, stiff to very stiff, micaceous, sandy SILT (A-4)

(C) **RESIDUAL:** tan-gray, moist, loose to very dense, silty SAND (A-2-4)

(D) **WEATHERED ROCK:** (Granite)

(E) **CRYSTALLINE ROCK:** (Granite)

548+00.00

(A) **RESIDUAL:** red, red-brown, and white, moist, stiff to very stiff, highly plastic, silty CLAY (A-7-5) with some sand

(B) **RESIDUAL:** brown, moist, stiff to very stiff, micaceous, sandy SILT (A-4)

(C) **RESIDUAL:** tan-gray, moist, loose to very dense, silty SAND (A-2-4)

(D) **WEATHERED ROCK:** (Granite)

(E) **CRYSTALLINE ROCK:** (Granite)

547+50.00

—L—

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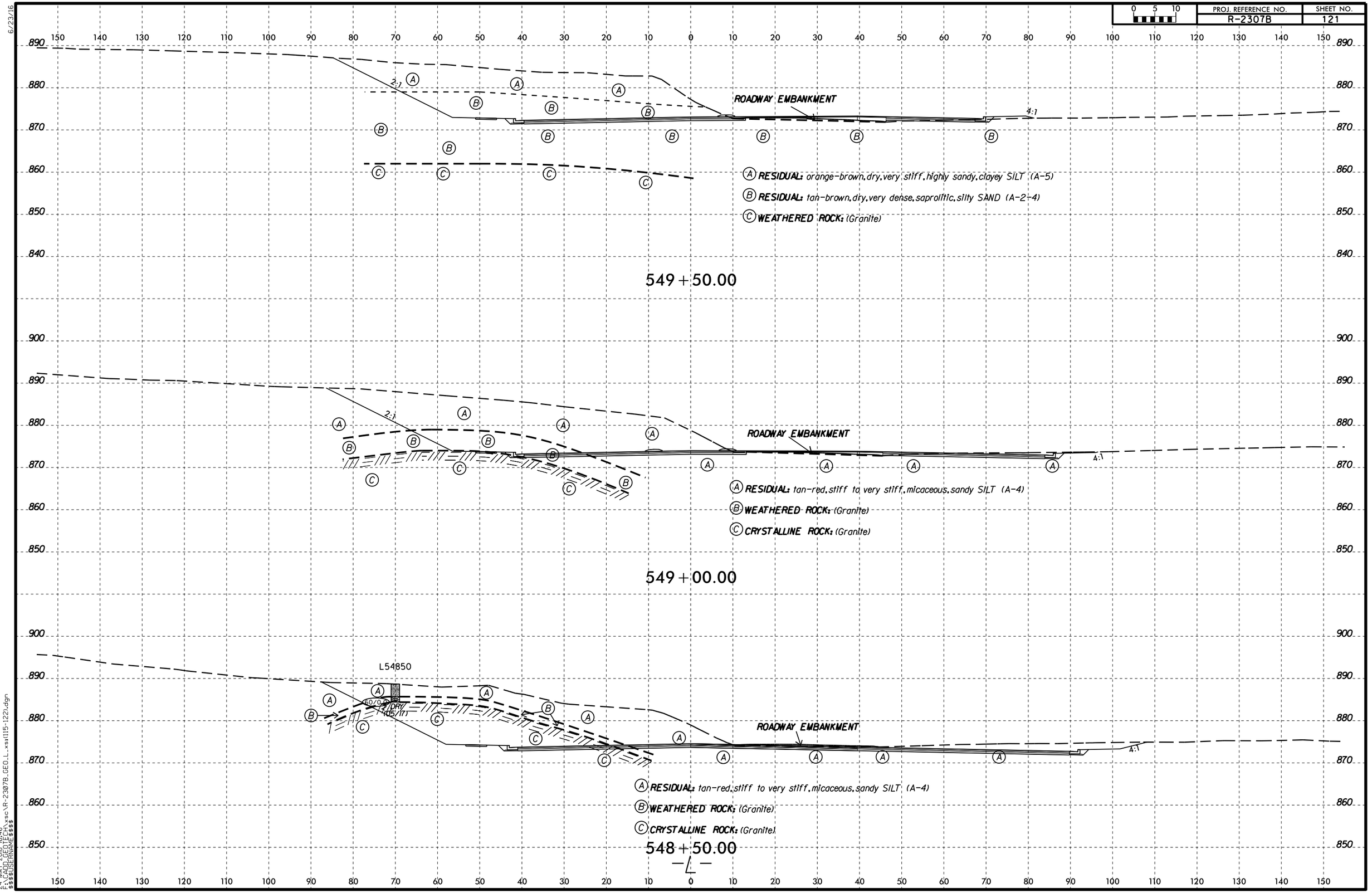
6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	121



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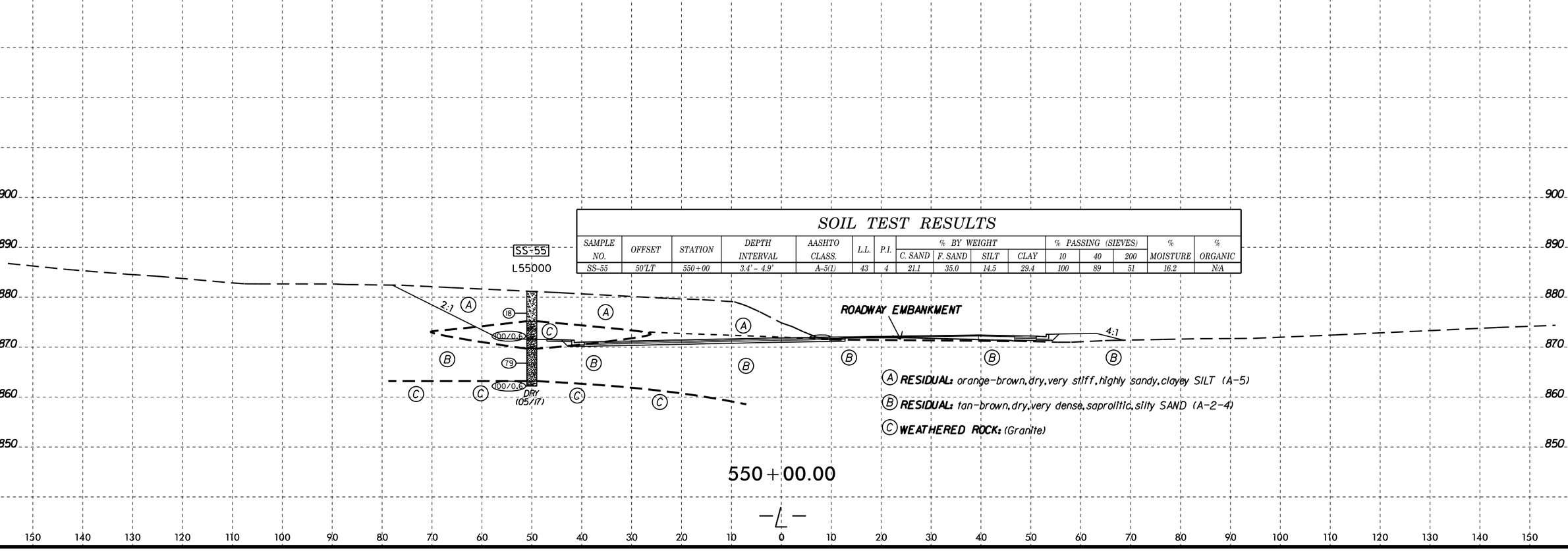
6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	122

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-55	50'LT	550+00	3.4' - 4.9'	A-5(1)	43	4	21.1	35.0	14.5	29.4	100	89	51	16.2	N/A



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6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	123

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

870 860 850 840 830

ROADWAY EMBANKMENT

3:1

(A) **ARTIFICIAL FILL:** red, moist to saturated, soft to stiff, sandy CLAY (A-6) with little fragments of plastic and styrofoam
(B) **RESIDUAL:** red-brown, moist, stiff, micaceous, sandy CLAY (A-6)
(C) **RESIDUAL:** tan-red, moist, loose, silty SAND (A-2-4)

556+50.00

ROADWAY EMBANKMENT

L55600

4:1

3:1

8 4 13 9 06/17

(A) **ARTIFICIAL FILL:** red, moist to saturated, soft to stiff, sandy CLAY (A-6) with little fragments of plastic and styrofoam
(B) **RESIDUAL:** red-brown, moist, stiff, micaceous, sandy CLAY (A-6)
(C) **RESIDUAL:** tan-red, moist, loose, silty SAND (A-2-4)

556+00.00

ROADWAY EMBANKMENT

4:1

4:1

(A) **ARTIFICIAL FILL:** red, moist to saturated, soft to stiff, sandy CLAY (A-6) with little fragments of plastic and styrofoam
(B) **RESIDUAL:** red-brown, moist, stiff, micaceous, sandy CLAY (A-6)
(C) **RESIDUAL:** tan-red, moist, loose, silty SAND (A-2-4)

555+50.00

—L—

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6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	124

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

870
860
850
840

ROADWAY EMBANKMENT

3:1

Ⓐ **RESIDUAL:** *red and tan, moist, stiff, micaceous, sandy CLAY (A-6), and highly sandy, silty CLAY (A-7-6)*

557+00.00

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

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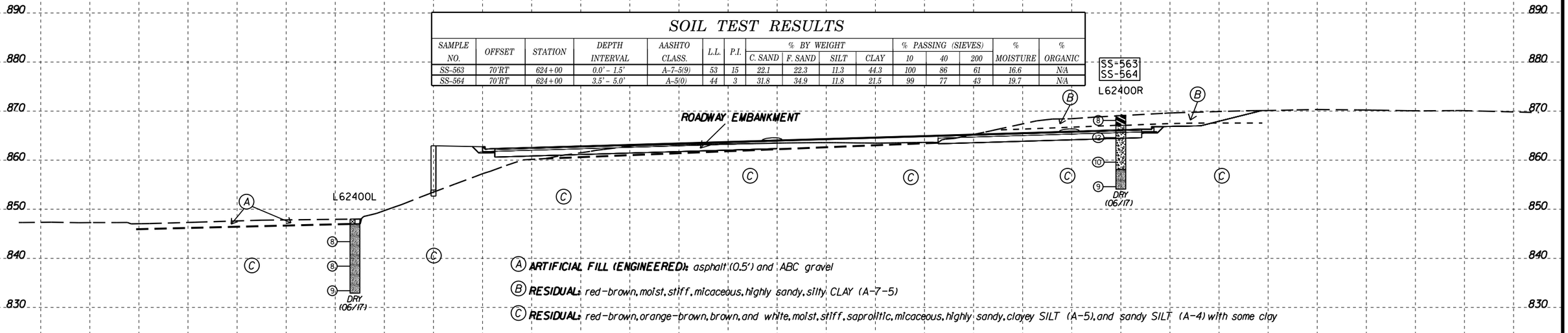
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

890 880 870 860 850 840 830 820

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-563	70'RT	624+00	0.0' - 1.5'	A-7-5(9)	53	15	22.1	22.3	11.3	44.3	100	86	61	16.6	N/A
SS-564	70'RT	624+00	3.5' - 5.0'	A-5(0)	44	3	31.8	34.9	11.8	21.5	99	77	43	19.7	N/A



(A) **ARTIFICIAL FILL (ENGINEERED):** asphalt (0.5') and ABC gravel

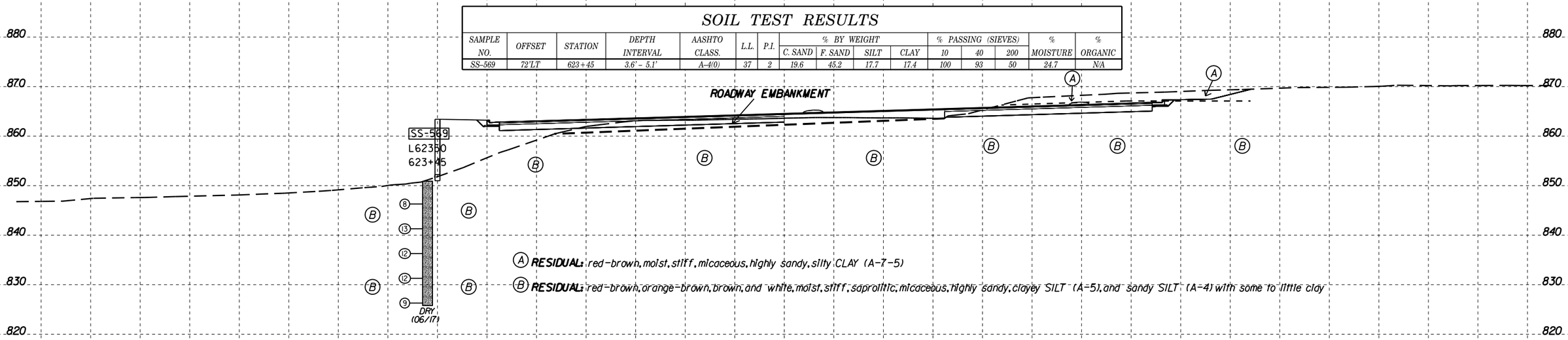
(B) **RESIDUAL:** red-brown, moist, stiff, micaceous, highly sandy, silty CLAY (A-7-5)

(C) **RESIDUAL:** red-brown, orange-brown, brown, and white, moist, stiff, saprolitic, micaceous, highly sandy, clayey SILT (A-5), and sandy SILT (A-4) with some clay

624+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-569	72'LT	623+45	3.6' - 5.1'	A-4(0)	37	2	19.6	45.2	17.7	17.4	100	93	50	24.7	N/A

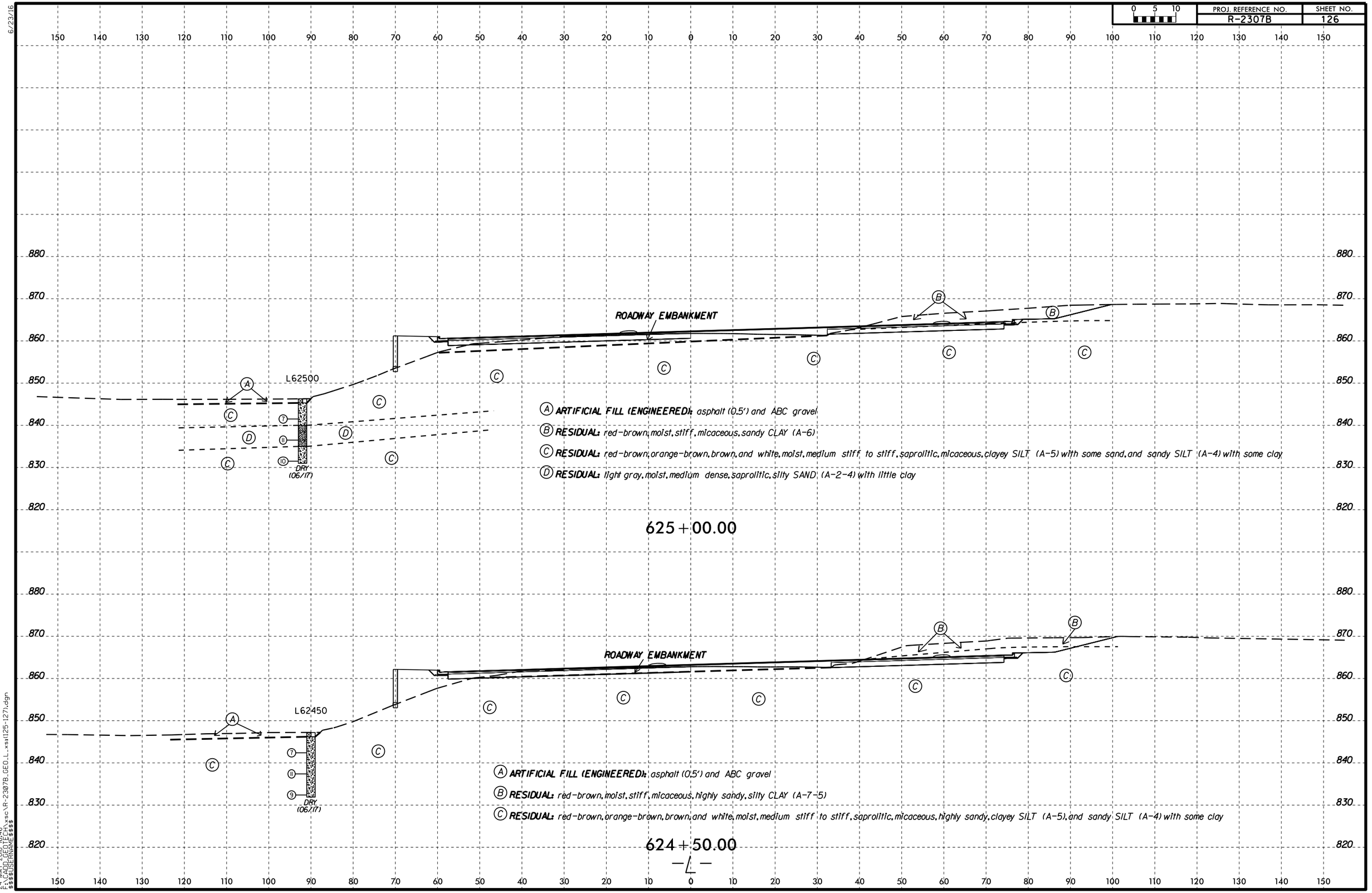


(A) **RESIDUAL:** red-brown, moist, stiff, micaceous, highly sandy, silty CLAY (A-7-5)

(B) **RESIDUAL:** red-brown, orange-brown, brown, and white, moist, stiff, saprolitic, micaceous, highly sandy, clayey SILT (A-5), and sandy SILT (A-4) with some to little clay

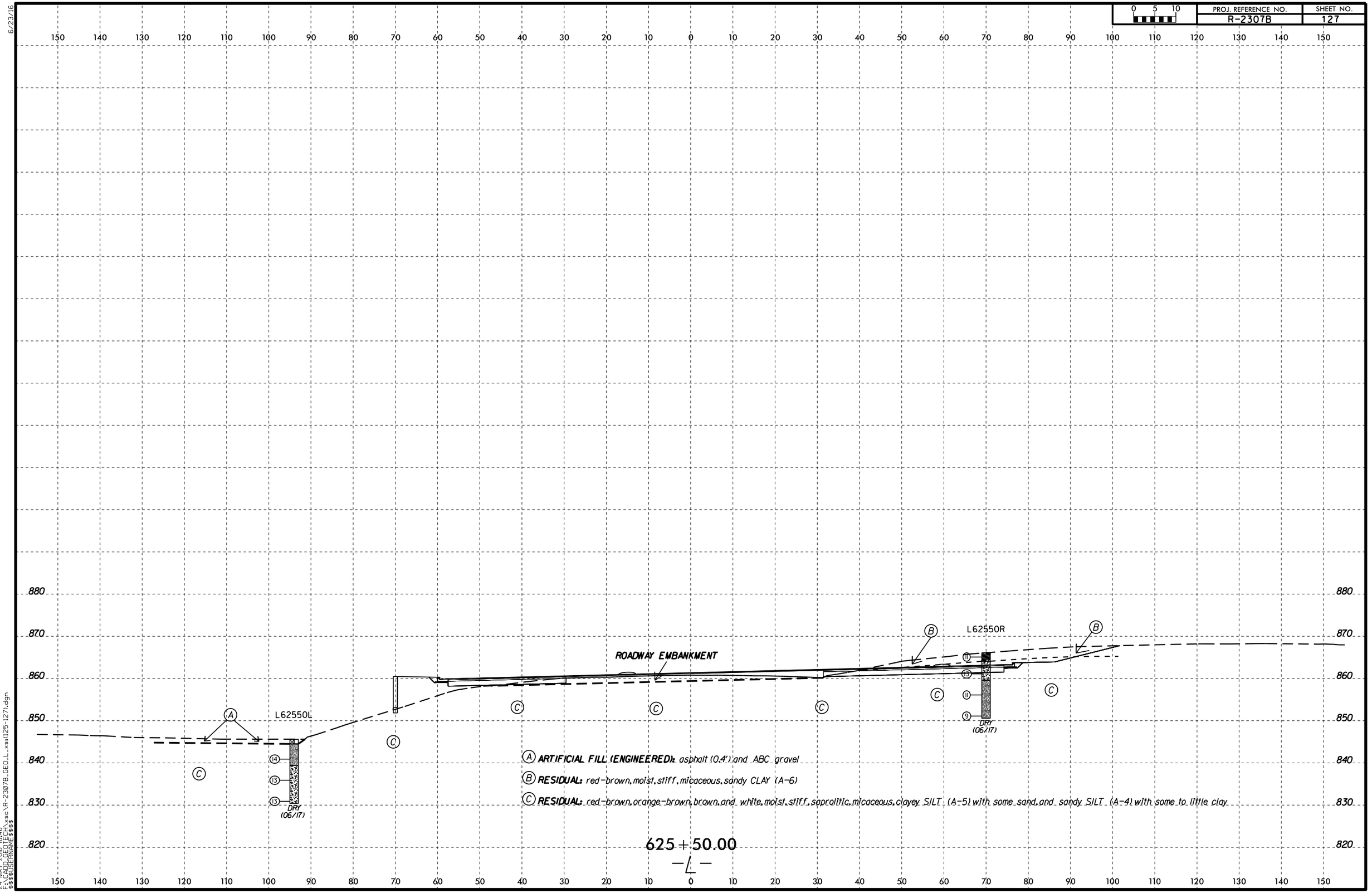
623+50.00

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	126



6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	127



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0 5 10

PROJ. REFERENCE NO.	SHEET NO.
R-2307B	128

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

860 850 840 830 820

ROADWAY EMBANKMENT

Ⓐ **RESIDUAL:** brown to red-brown, moist, stiff, micaceous, highly plastic, highly sandy, silty CLAY (A-7-5)

Ⓑ **RESIDUAL:** orange-brown to red-brown, moist, stiff, saprolitic, micaceous, clayey SILT (A-5) with some sand

641+50.00

ROADWAY EMBANKMENT

Ⓐ **RESIDUAL:** brown to red-brown, moist, stiff, micaceous, highly plastic, highly sandy, silty CLAY (A-7-5)

Ⓑ **RESIDUAL:** orange-brown to red-brown, moist, stiff, saprolitic, micaceous, clayey SILT (A-5) with some sand

641+00.00

4:1

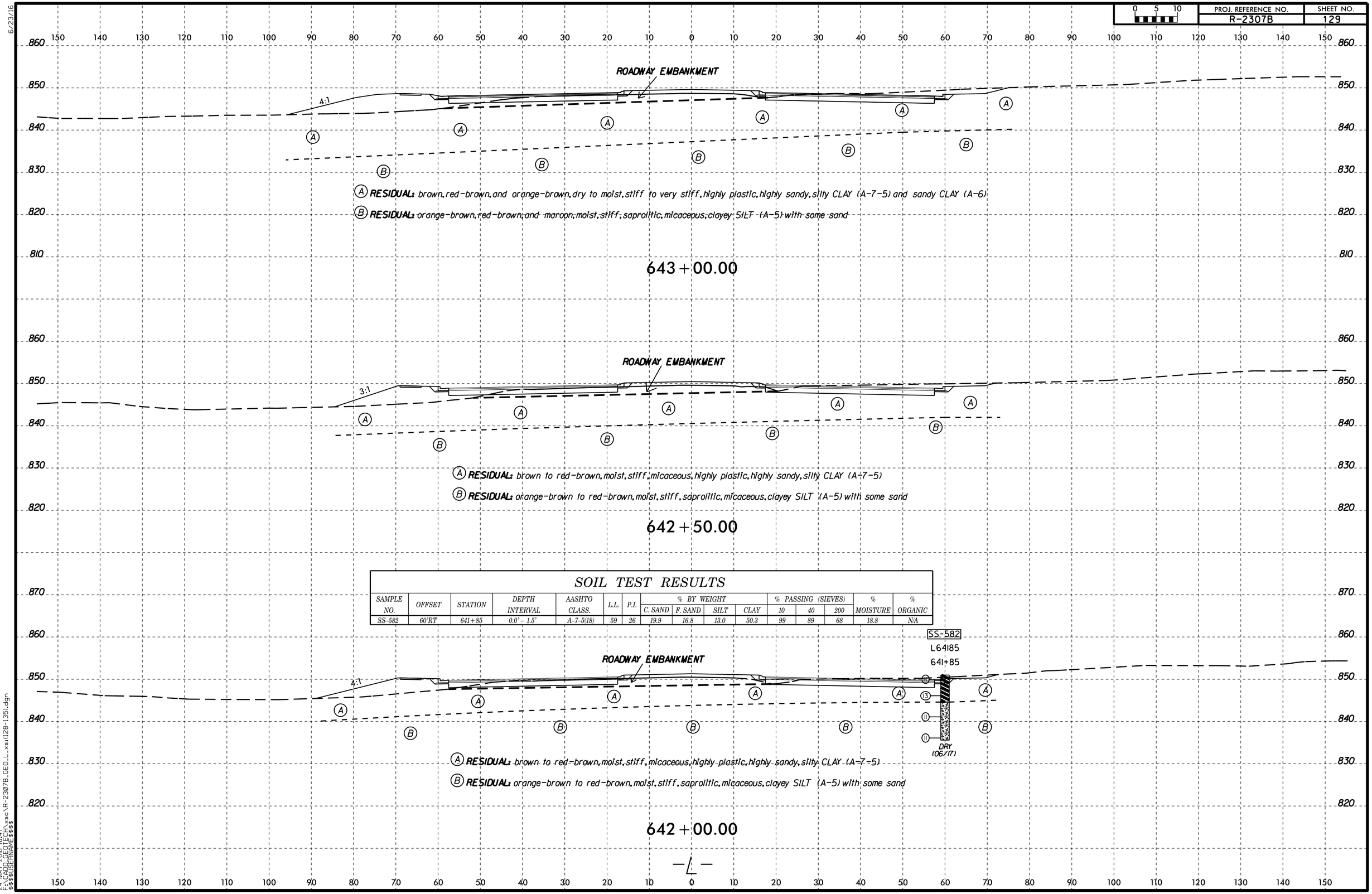
ROADWAY EMBANKMENT

Ⓐ **RESIDUAL:** red-brown, dry, stiff, sandy CLAY (A-6)

Ⓑ **RESIDUAL:** red-brown to orange-brown, moist, stiff, saprolitic, highly sandy, clayey SILT (A-5)

640+50.00

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	129



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-582	60'RT	641+85	0.0' - 1.5'	A-7-5(18)	59	26	19.9	16.8	13.0	50.3	99	89	68	18.8	N/A

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	130

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

860 850 840 830 820

ROADWAY EMBANKMENT

2:1

Ⓐ **RESIDUAL:** brown, red-brown, and orange-brown, dry to moist, stiff to very stiff, highly plastic, highly sandy, silty CLAY (A-7-5) and sandy CLAY (A-6)

Ⓑ **RESIDUAL:** red-brown to orange-brown, moist, stiff, saprolitic, micaceous, highly sandy, clayey SILT (A-5)

644+50.00

860 850 840 830 820

ROADWAY EMBANKMENT

2:1

Ⓐ **RESIDUAL:** brown, red-brown, and orange-brown, dry to moist, stiff to very stiff, highly plastic, highly sandy, silty CLAY (A-7-5) and sandy CLAY (A-6)

Ⓑ **RESIDUAL:** orange-brown and maroon, moist, stiff, saprolitic, micaceous, clayey SILT (A-5) with some sand

644+00.00

860 850 840 830 820 810

ROADWAY EMBANKMENT

L64350

2:1

DRY (06/17)

Ⓐ **RESIDUAL:** brown, red-brown, and orange-brown, dry to moist, stiff to very stiff, highly plastic, highly sandy, silty CLAY (A-7-5) and sandy CLAY (A-6)

Ⓑ **RESIDUAL:** orange-brown and maroon, moist, stiff, saprolitic, micaceous, clayey SILT (A-5) with some sand

643+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

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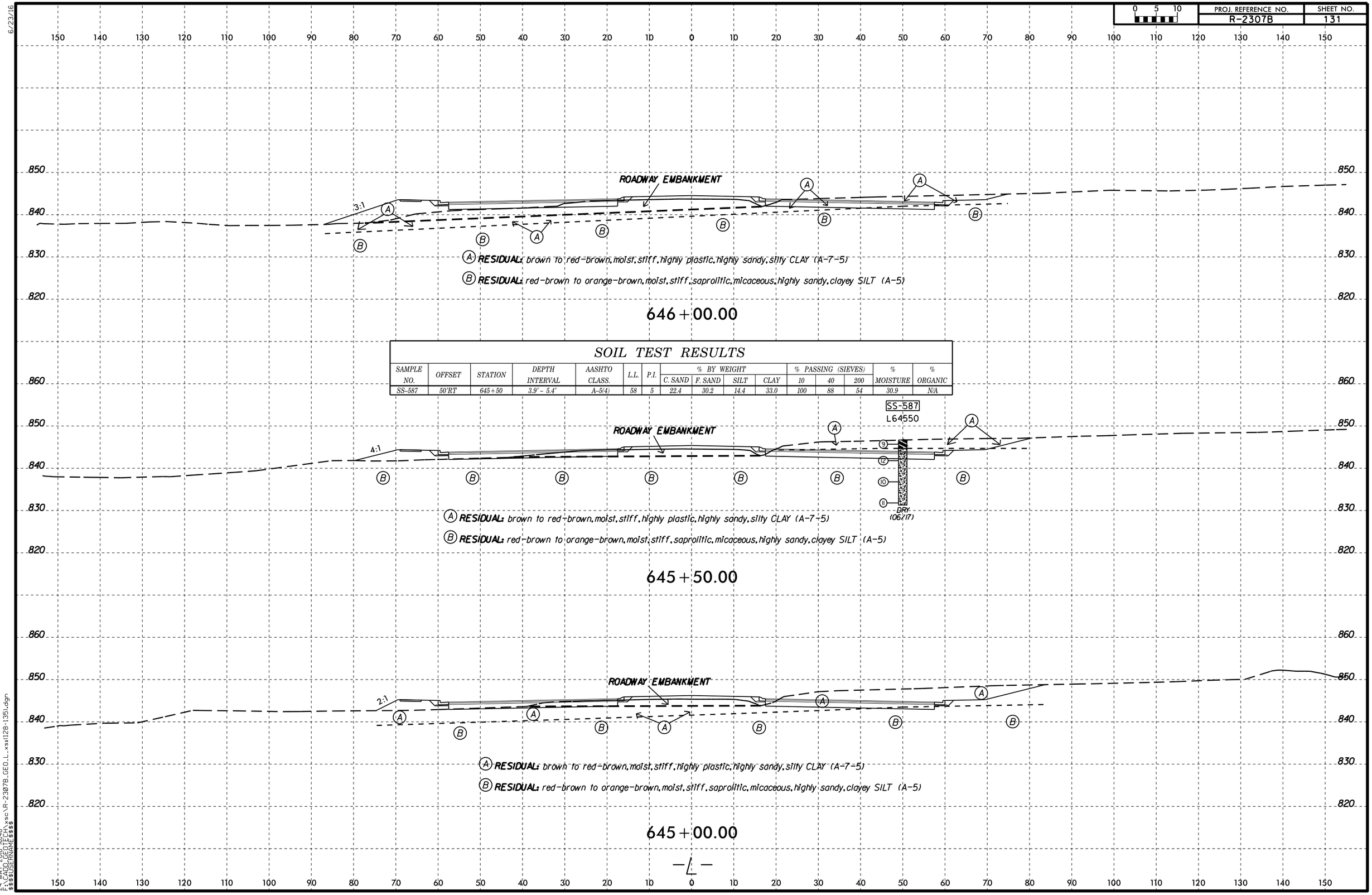
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	131



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-587	50'RT	645+50	3.9' - 5.4'	A-5(4)	58	5	22.4	30.2	14.4	33.0	100	88	54	30.9	N/A

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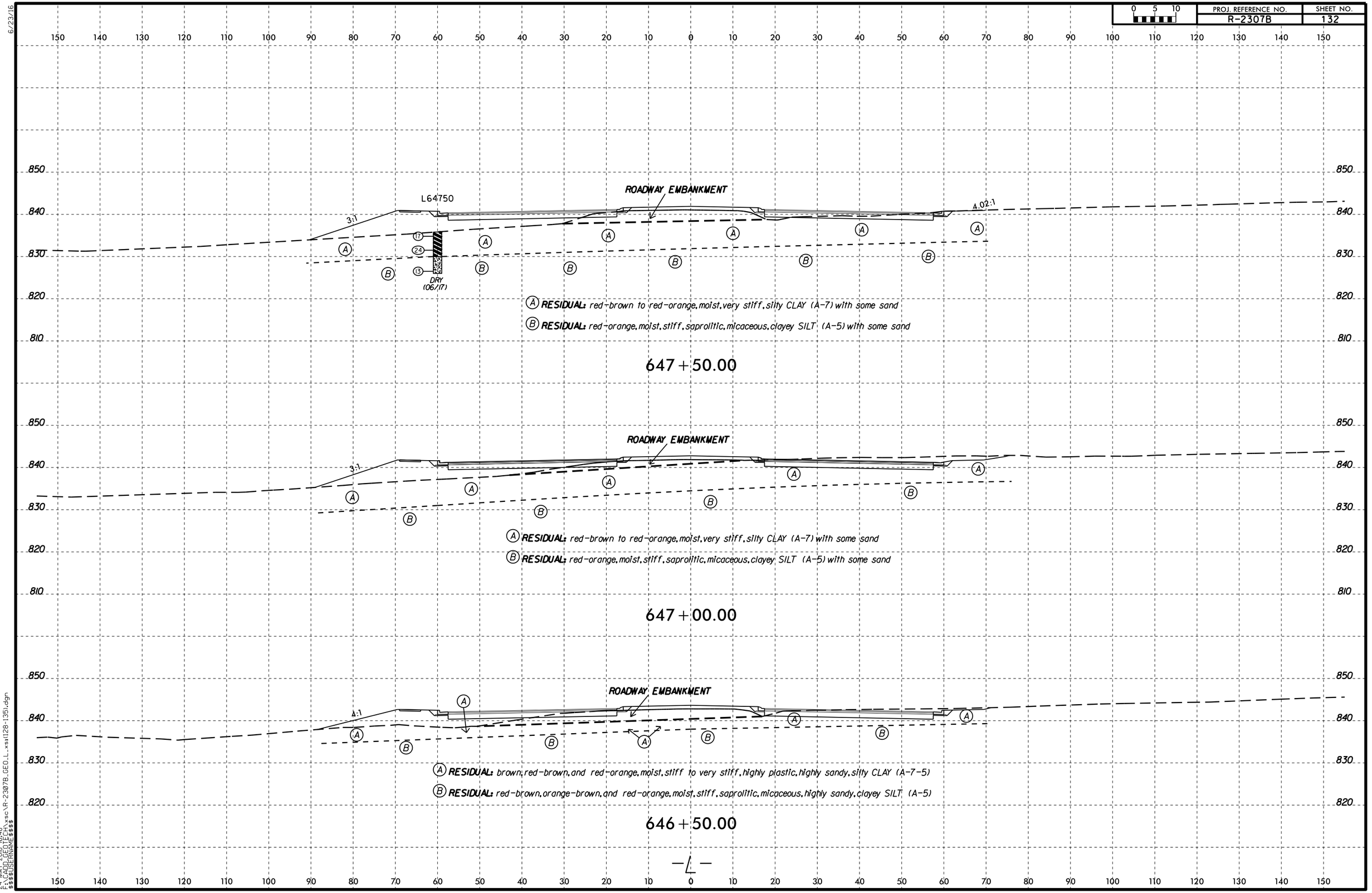
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	132



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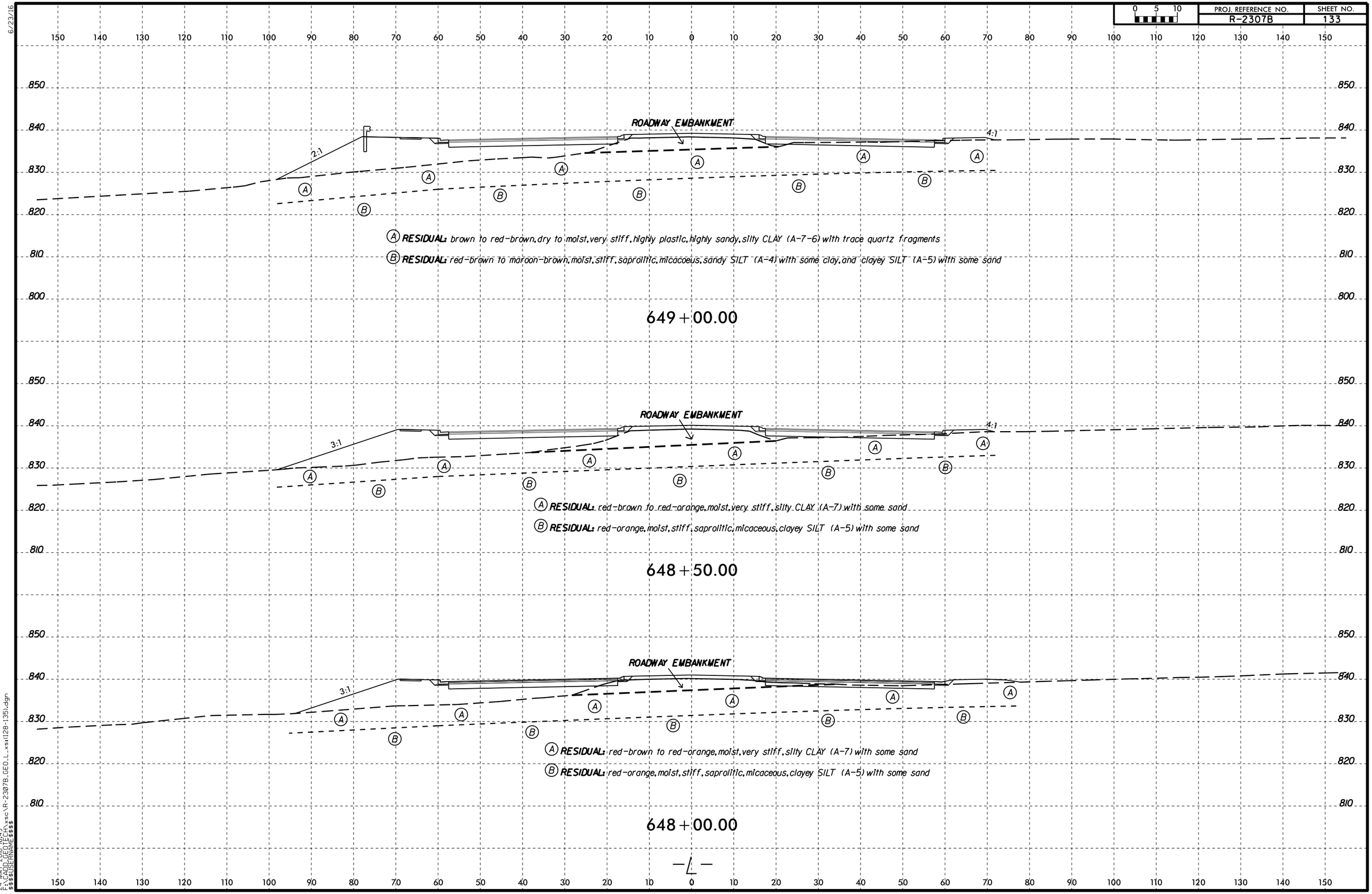
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	133



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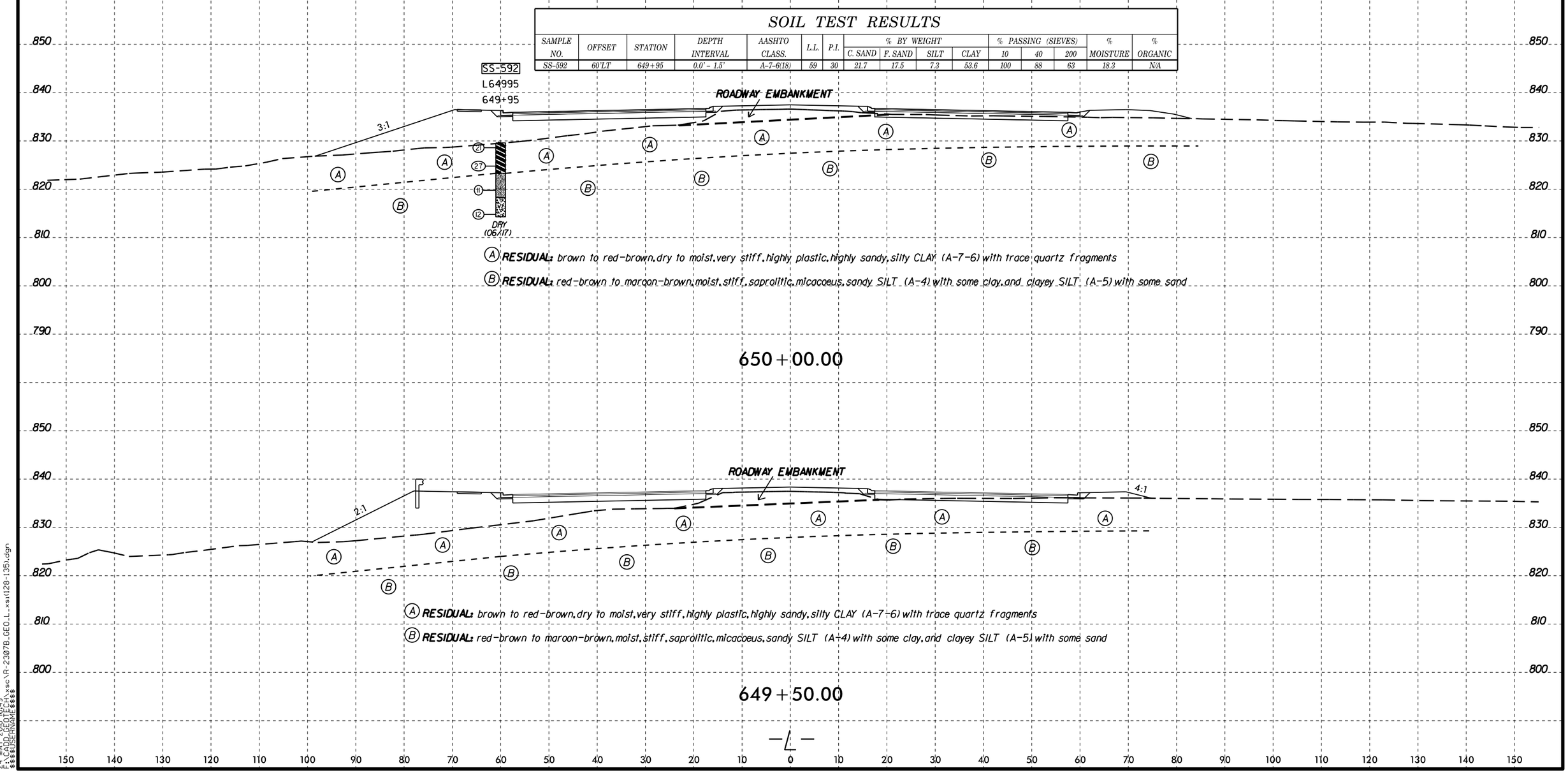
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	134

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-592	60'LT	649+95	0.0' - 1.5'	A-7-6(18)	59	30	21.7	17.5	7.3	53.6	100	88	63	18.3	N/A

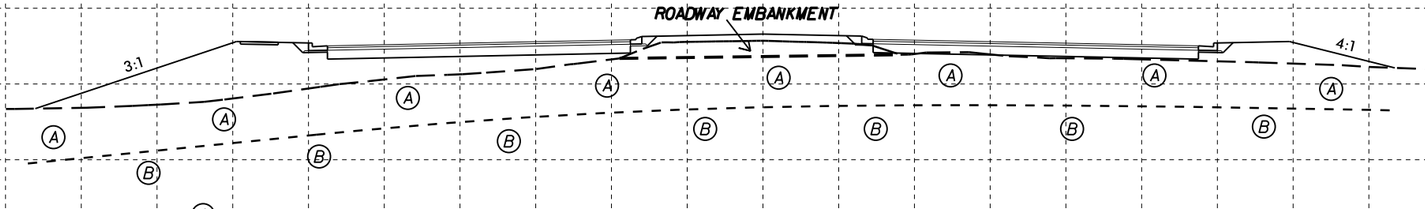


6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	135

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

850
840
830
820
810
800



(A) **RESIDUAL:** *brown to red-brown, dry to moist, very stiff, highly plastic, highly sandy, silty CLAY (A-7-6) with trace quartz fragments*

(B) **RESIDUAL:** *red-brown to maroon-brown, moist, stiff, saprolitic, micaceous, sandy SILT (A-4) with some clay, and clayey SILT (A-5) with some sand*

650+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

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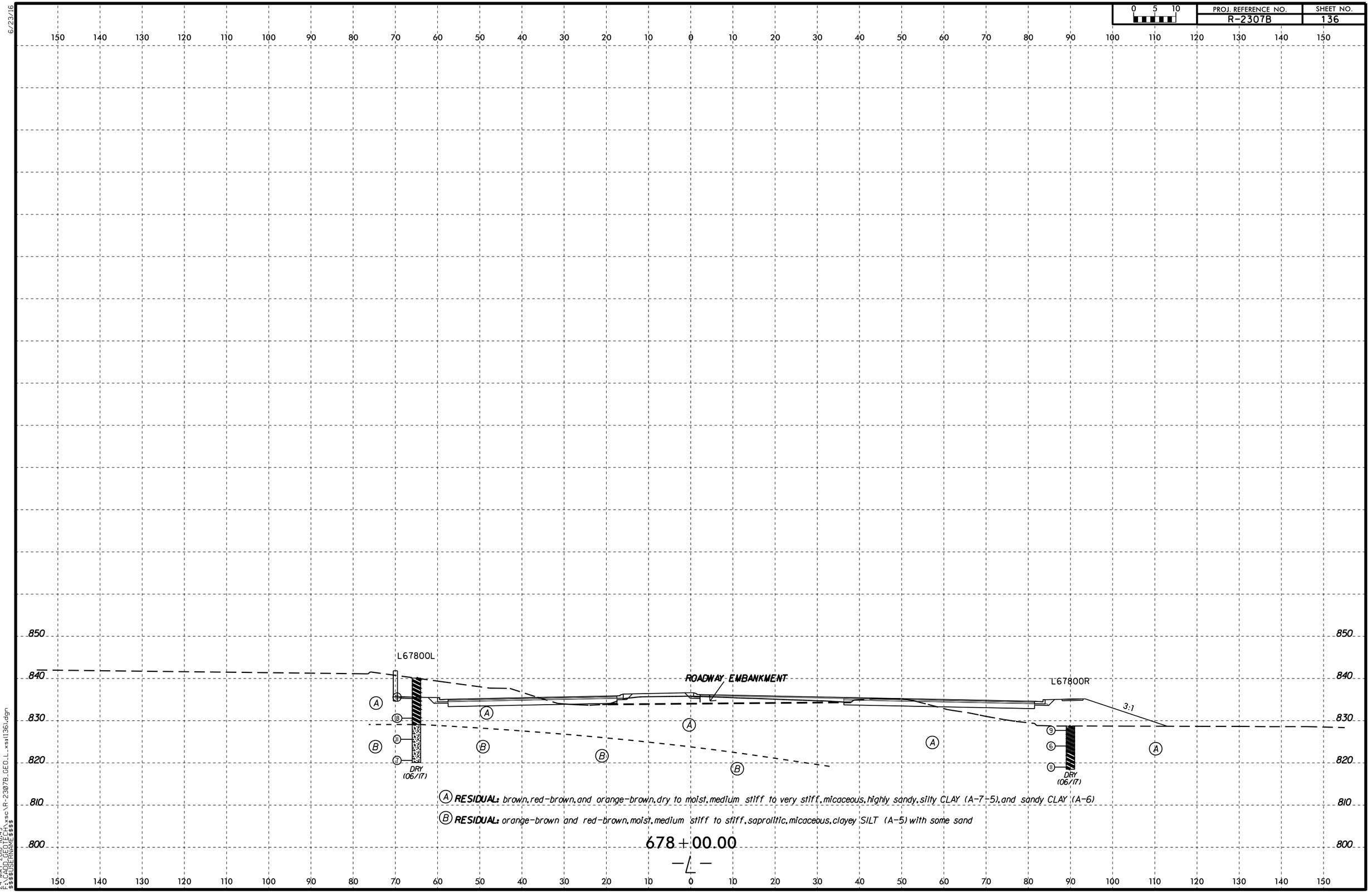
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	136



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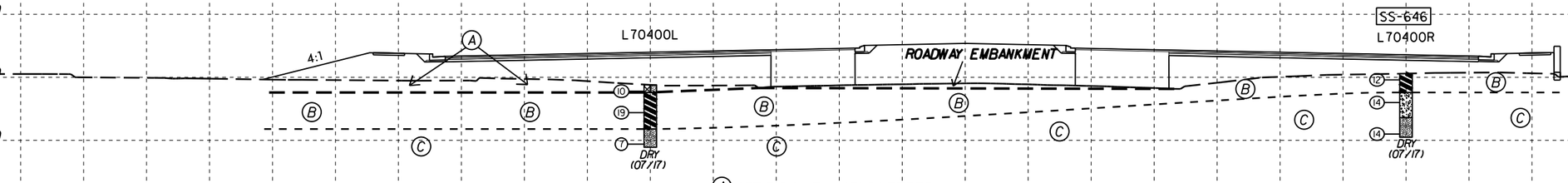
6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	137

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-646	70'RT	704+00	0.0' - 1.5'	A-7-5(23)	70	32	10.8	24.5	3.4	61.3	100	96	68	34.6	N/A



(A) **ARTIFICIAL FILL (ENGINEERED):** *black, dry, stiff, sandy SILT (A-4)*

(B) **RESIDUAL:** *red, moist, stiff to very stiff, highly plastic, silty CLAY (A-7-5) with some sand*

(C) **RESIDUAL:** *red-tan, moist, medium stiff to stiff, saprolitic, micaceous, sandy SILT (A-4), and clayey SILT (A-5)*

704+00.00

—L—

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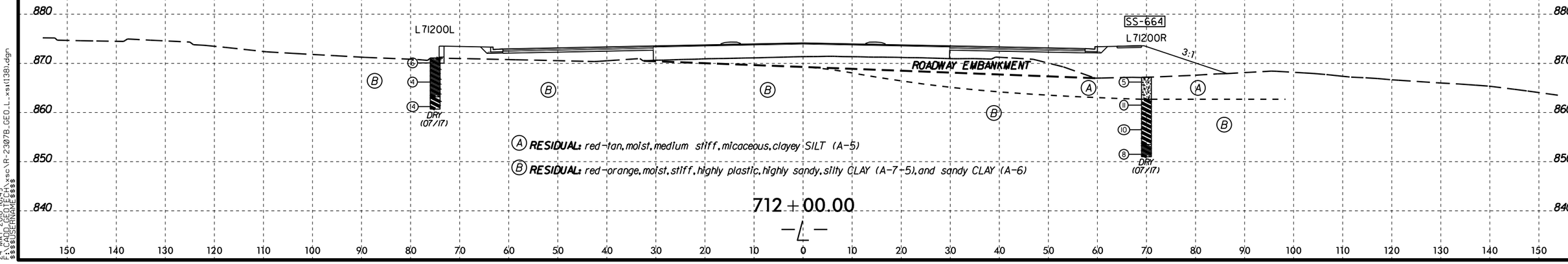
$$$$USERNAME$$$$

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	138

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-664	70'RT	712+00	4.7' - 6.2'	A-7-5(16)	64	27	22.8	18.0	8.5	50.7	98	84	61	12.4	N/A



(A) **RESIDUAL:** red-tan, moist, medium stiff, micaceous, clayey SILT (A-5)

(B) **RESIDUAL:** red-orange, moist, stiff, highly plastic, highly sandy, silty CLAY (A-7-5), and sandy CLAY (A-6)

712+00.00

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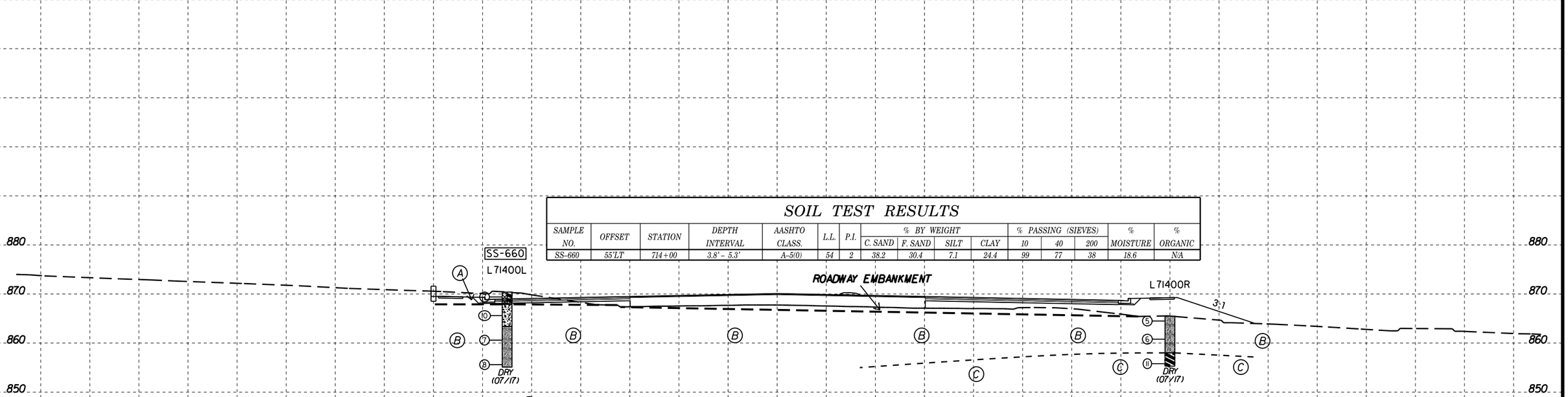
$$$$USERNAME$$$$

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	139

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-660	55'LT	714+00	3.8' - 5.3'	A-5(0)	54	2	38.2	30.4	7.1	24.4	99	77	38	18.6	N/A



(A) **ARTIFICIAL FILL (ENGINEERED):** red-brown, moist, medium stiff, highly sandy, silty CLAY (A-7) with some mica

(B) **RESIDUAL:** red-brown, brown, and white, moist, medium stiff to stiff, saprolitic, micaceous, highly sandy, clayey SILT (A-5), and sandy SILT (A-4)

(C) **RESIDUAL:** red-brown, moist, stiff, micaceous, highly sandy, silty CLAY (A-7)

714+00.00
-L-

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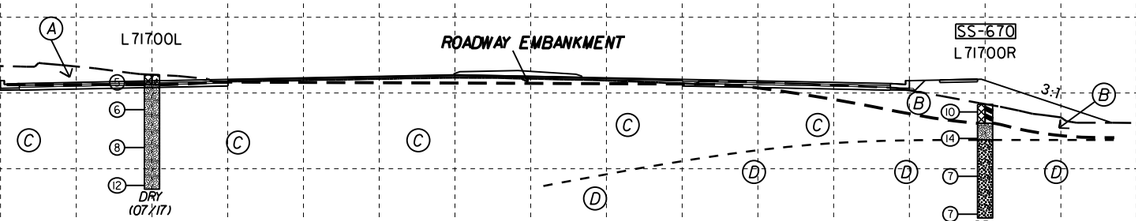
6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	140

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-670	70'RT	717+00	3.5' - 5.0'	A-4(0)	34	4	8.5	56.8	6.7	28.0	100	98	44	18.0	N/A



(A) **ARTIFICIAL FILL (ENGINEERED):** red, moist, medium stiff, micaceous, clayey SILT (A-5) with trace gravel

(B) **ARTIFICIAL FILL (ENGINEERED):** red, moist, stiff, silty CLAY (A-7)

(C) **RESIDUAL:** red-orange, brown, and white, dry to moist, medium stiff to stiff, saprolitic, micaceous, sandy SILT (A-4) with some to trace clay

(D) **RESIDUAL:** white and tan, dry, loose, saprolitic, micaceous, silty SAND (A-2-4)

717+00.00
-L-

890 880 870 860 850 840 830

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

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6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	141

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

870 860 850 840 830 820

4:1

2:1

ROADWAY EMBANKMENT

Ⓐ **ARTIFICIAL FILL (ENGINEERED):** red-brown and red-tan, dry to moist, soft to medium stiff, micaceous, sandy SILT (A-4) with some clay

Ⓑ **ARTIFICIAL FILL:** brown, red-brown, and gray, moist to saturated, very soft to stiff, micaceous, highly sandy, silty CLAY (A-7-5) with trace boulders and organics

Ⓒ **RESIDUAL:** gray and tan, wet, soft, saprolitic, sandy CLAY (A-6)

Ⓓ **RESIDUAL:** brown, gray, black, and white, moist, medium stiff to stiff, saprolitic, micaceous, sandy SILT (A-4) with some to trace clay

726+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-674	65'RT	726+00	0.0' - 1.5'	A-4(0)	35	4	28.3	35.2	8.6	27.9	88	73	37	11.6	N/A

SS-674
L 72600

2:1

3:1

ROADWAY EMBANKMENT

7
3
12
8
DRY
(07/17)

Ⓐ **ARTIFICIAL FILL (ENGINEERED):** red-brown and red-tan, dry to moist, soft to medium stiff, micaceous, sandy SILT (A-4) with some clay

Ⓑ **RESIDUAL:** red, moist, stiff, micaceous, silty CLAY (A-7)

Ⓒ **RESIDUAL:** white and brown, moist, stiff, saprolitic, micaceous, sandy SILT (A-4)

726+00.00

—L—

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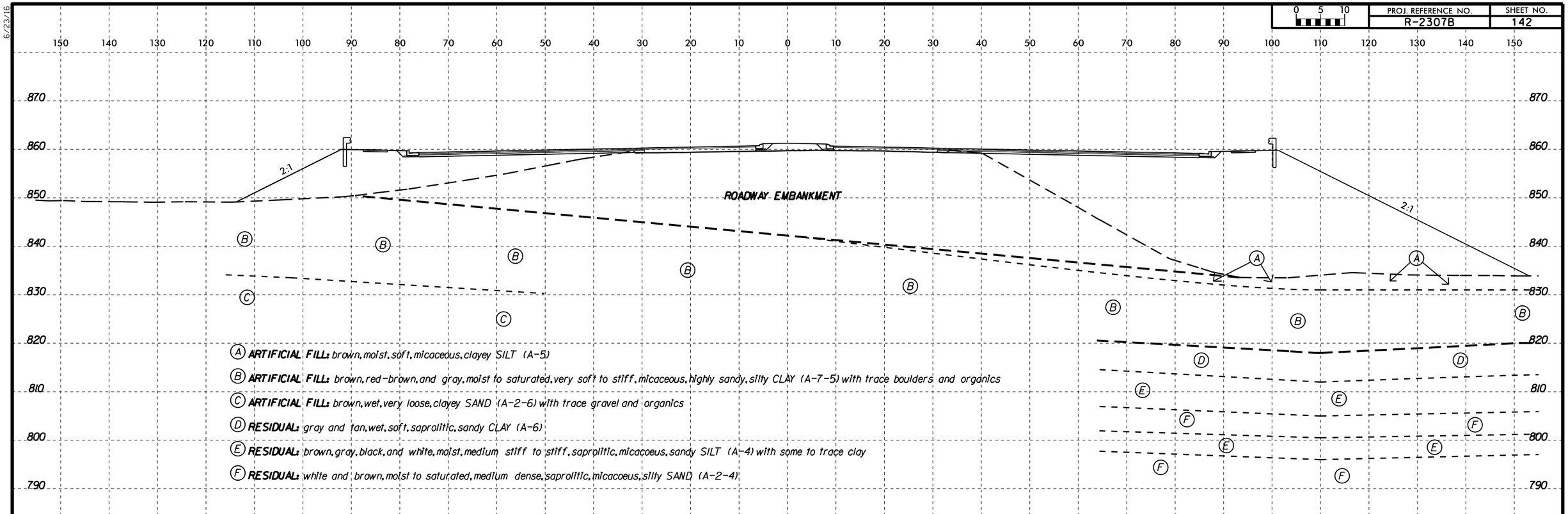
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	142



(A) **ARTIFICIAL FILL:** brown, moist, soft, micaceous, clayey SILT (A-5)

(B) **ARTIFICIAL FILL:** brown, red-brown, and gray, moist to saturated, very soft to stiff, micaceous, highly sandy, silty CLAY (A-7-5) with trace boulders and organics

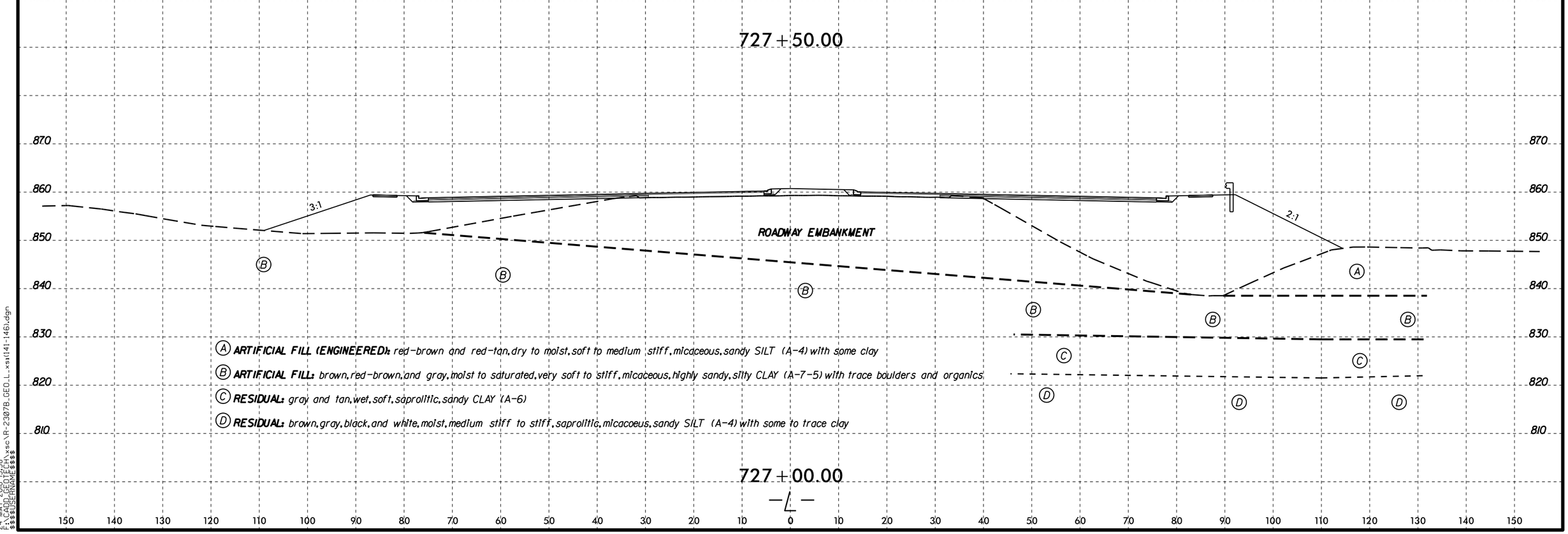
(C) **ARTIFICIAL FILL:** brown, wet, very loose, clayey SAND (A-2-6) with trace gravel and organics

(D) **RESIDUAL:** gray and tan, wet, soft, saprolitic, sandy CLAY (A-6)

(E) **RESIDUAL:** brown, gray, black, and white, moist, medium stiff to stiff, saprolitic, micaceous, sandy SILT (A-4) with some to trace clay

(F) **RESIDUAL:** white and brown, moist to saturated, medium dense, saprolitic, micaceous, silty SAND (A-2-4)

727+50.00



(A) **ARTIFICIAL FILL (ENGINEERED):** red-brown and red-tan, dry to moist, soft to medium stiff, micaceous, sandy SILT (A-4) with some clay

(B) **ARTIFICIAL FILL:** brown, red-brown, and gray, moist to saturated, very soft to stiff, micaceous, highly sandy, silty CLAY (A-7-5) with trace boulders and organics

(C) **RESIDUAL:** gray and tan, wet, soft, saprolitic, sandy CLAY (A-6)

(D) **RESIDUAL:** brown, gray, black, and white, moist, medium stiff to stiff, saprolitic, micaceous, sandy SILT (A-4) with some to trace clay

727+00.00

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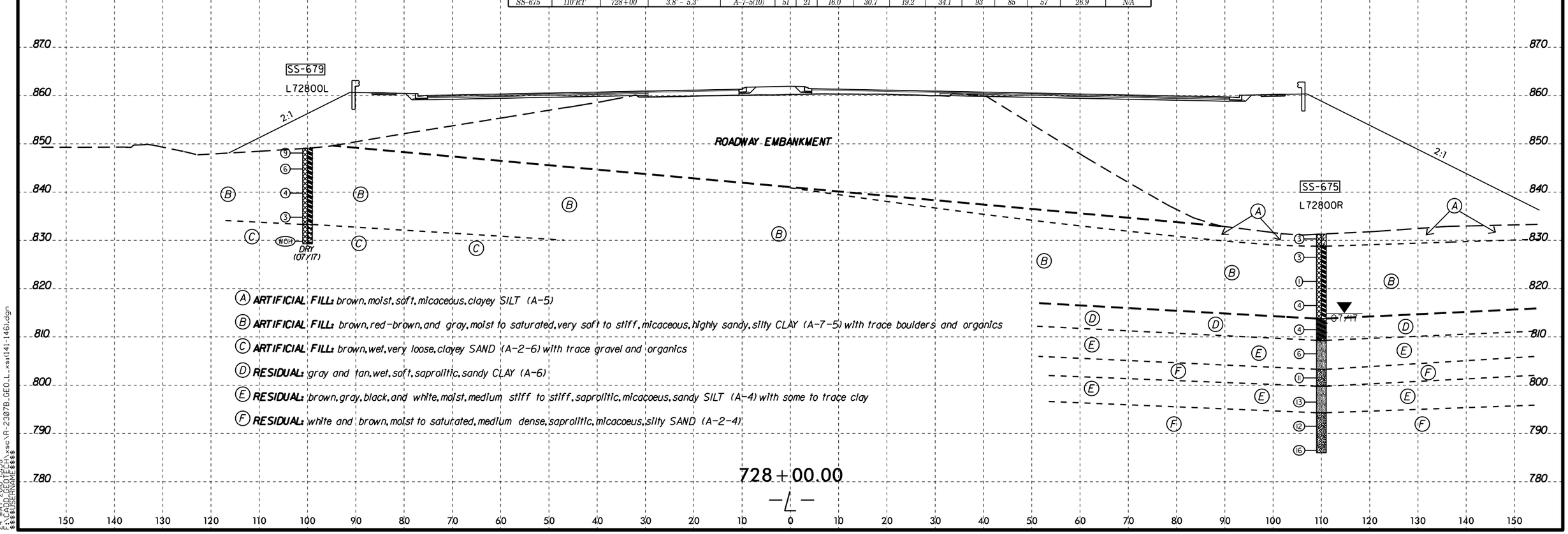
0 5 10

PROJ. REFERENCE NO.	SHEET NO.
R-2307B	143

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-679	100'LT	728+00	0.0' – 1.5'	A-7-5(7)	60	13	24.8	24.9	12.5	37.8	99	84	54	26.5	N/A
SS-675	110'RT	728+00	3.8' – 5.3'	A-7-5(10)	51	21	16.0	30.7	19.2	34.1	93	85	57	26.9	N/A



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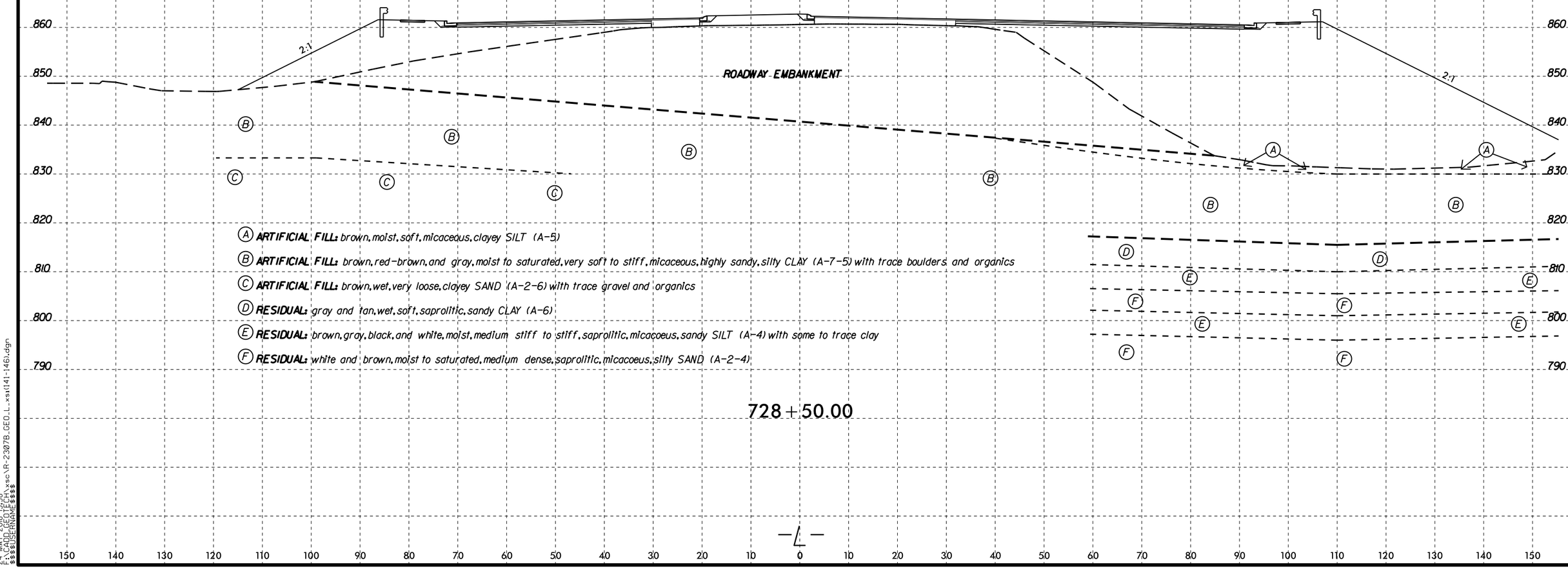
6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	144

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

870
860
850
840
830
820
810
800
790



(A) **ARTIFICIAL FILL:** brown, moist, soft, micaceous, clayey SILT (A-5)

(B) **ARTIFICIAL FILL:** brown, red-brown, and gray, moist to saturated, very soft to stiff, micaceous, highly sandy, silty CLAY (A-7-5) with trace boulders and organics

(C) **ARTIFICIAL FILL:** brown, wet, very loose, clayey SAND (A-2-6) with trace gravel and organics

(D) **RESIDUAL:** gray and tan, wet, soft, saprolitic, sandy CLAY (A-6)

(E) **RESIDUAL:** brown, gray, black, and white, moist, medium stiff to stiff, saprolitic, micaceous, sandy SILT (A-4) with some to trace clay

(F) **RESIDUAL:** white and brown, moist to saturated, medium dense, saprolitic, micaceous, silty SAND (A-2-4)

728+50.00

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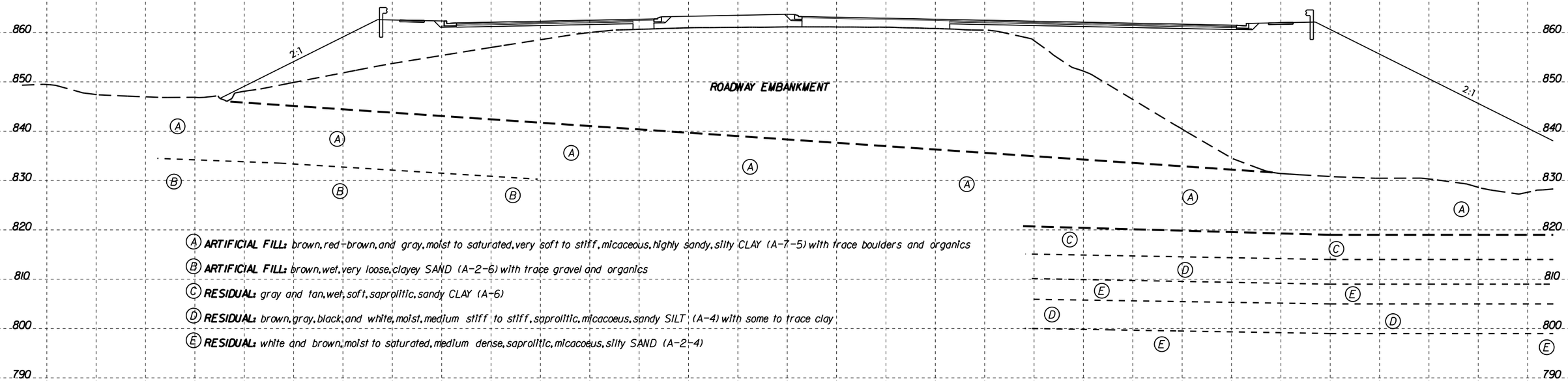
6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	145

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

870 860 850 840 830 820 810 800 790



(A) **ARTIFICIAL FILL:** brown, red-brown, and gray, moist to saturated, very soft to stiff, micaceous, highly sandy, silty CLAY (A-7-5) with trace boulders and organics

(B) **ARTIFICIAL FILL:** brown, wet, very loose, clayey SAND (A-2-6) with trace gravel and organics

(C) **RESIDUAL:** gray and tan, wet, soft, saprolitic, sandy CLAY (A-6)

(D) **RESIDUAL:** brown, gray, black, and white, moist, medium stiff to stiff, saprolitic, micacoeus, sandy SILT (A-4) with some to trace clay

(E) **RESIDUAL:** white and brown, moist to saturated, medium dense, saprolitic, micacoeus, silty SAND (A-2-4)

729+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

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6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	146

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

870
860
850
840

ROADWAY EMBANKMENT

730+00.00

870
860
850
840
830
820

ROADWAY EMBANKMENT

2:1

(A) **ARTIFICIAL FILL:** brown, red-brown, and gray, moist to saturated, very soft to stiff, micaceous, highly sandy, silty CLAY (A-7-5) with trace boulders and organics

729+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

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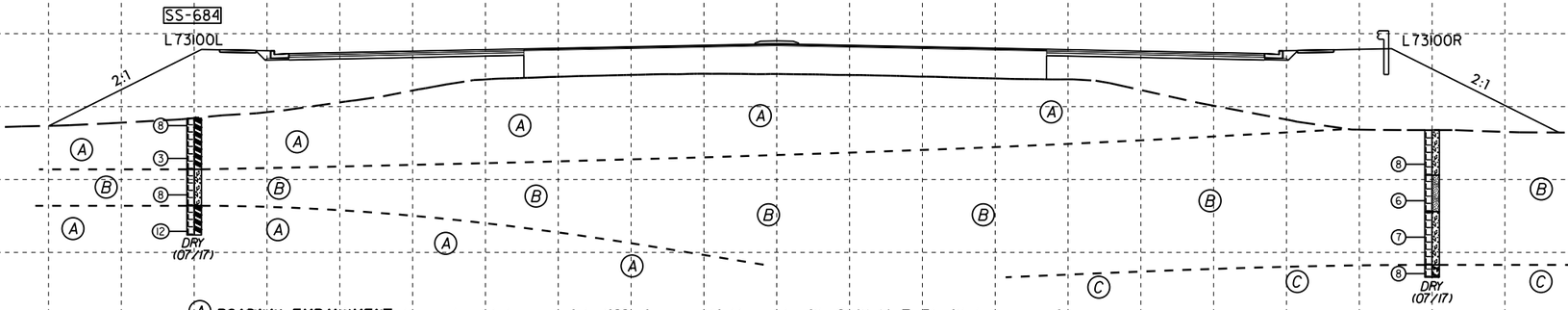
6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	147

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-684	80'LT	731+00	0.0' – 1.5'	A-7-5(4)	44	12	24.1	32.7	9.7	33.5	95	81	49	21.4	N/A



(A) **ROADWAY EMBANKMENT:** brown to red-brown, moist, stiff, micaceous, highly sandy, silty CLAY (A-7-5) with trace organics

(B) **ROADWAY EMBANKMENT:** orange-brown, red-brown, and red-orange, moist, medium stiff to stiff, micaceous, clayey SILT (A-5) with some sand, and sandy SILT (A-4) with some clay

(C) **ROADWAY EMBANKMENT:** brown, wet, loose, clayey SAND (A-2-6) with trace organics

731+00.00

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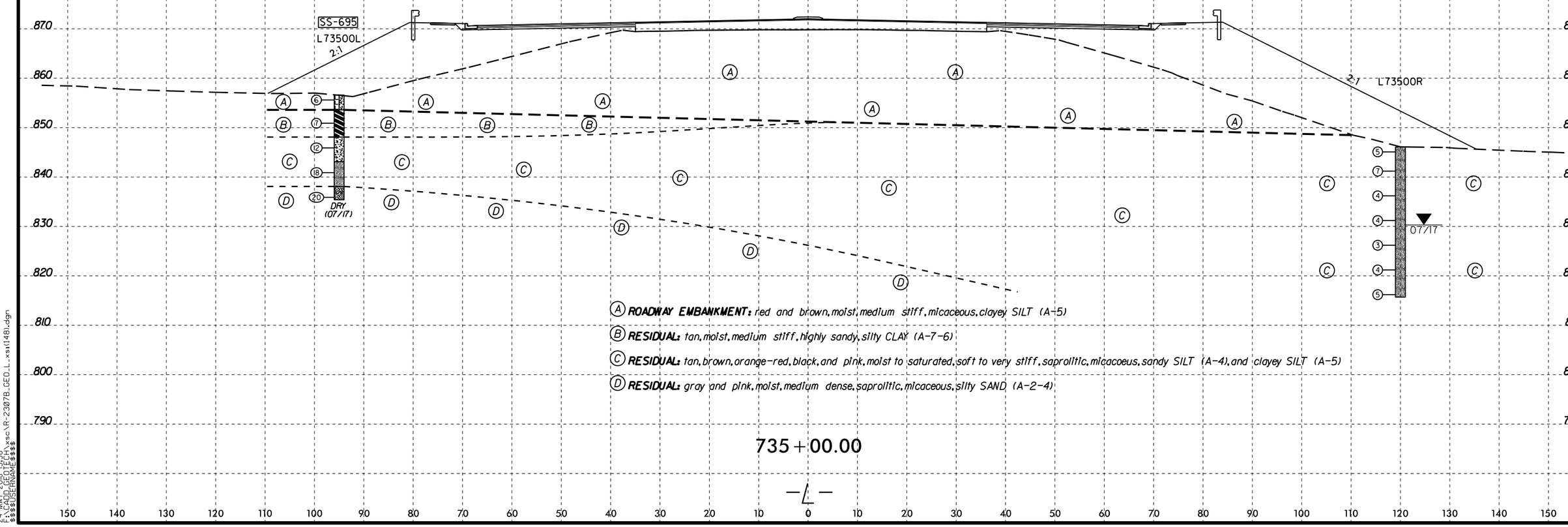
SOIL TEST RESULTS

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-695	95'LT	735+00	4.7' - 6.2'	A-7-6(10)	47	23	23.0	21.5	14.1	41.4	97	84	56	21.5	N/A



(A) **ROADWAY EMBANKMENT:** red and brown, moist, medium stiff, micaceous, clayey SILT (A-5)

(B) **RESIDUAL:** tan, moist, medium stiff, highly sandy, silty CLAY (A-7-6)

(C) **RESIDUAL:** tan, brown, orange-red, black, and pink, moist to saturated, soft to very stiff, saprolitic, micaceous, sandy SILT (A-4), and clayey SILT (A-5)

(D) **RESIDUAL:** gray and pink, moist, medium dense, saprolitic, micaceous, silty SAND (A-2-4)

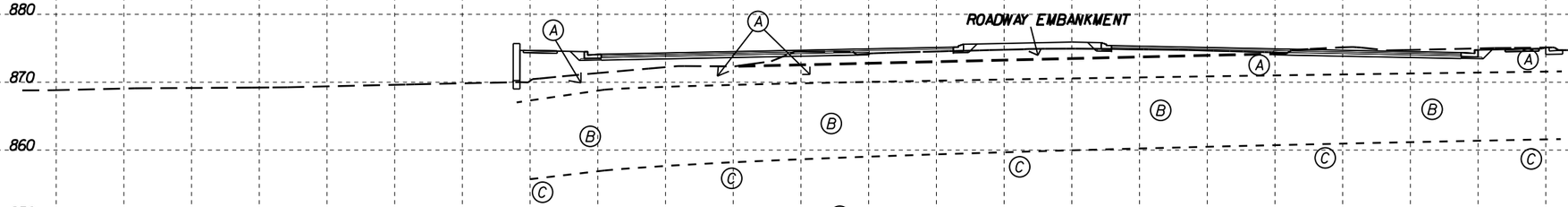
735+00.00

-L-

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	149

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

890 880 870 860 850 840 830



(A) **RESIDUAL:** red-brown, moist, stiff, micaceous, highly plastic, silty CLAY (A-7-5) with some sand

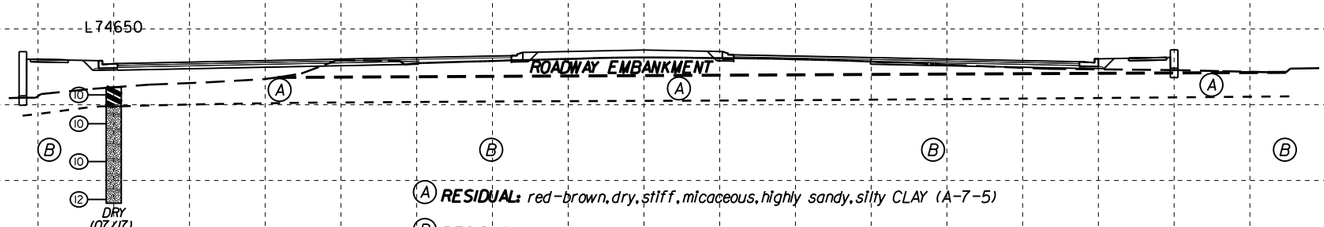
(B) **RESIDUAL:** tan, dry, stiff, saprolitic, micaceous, sandy SILT (A-4)

(C) **RESIDUAL:** tan and white, dry, medium dense, saprolitic, micaceous, silty SAND (A-2-4)

747+00.00

890 880 870 860 850

L 74650



(A) **RESIDUAL:** red-brown, dry, stiff, micaceous, highly sandy, silty CLAY (A-7-5)

(B) **RESIDUAL:** tan, dry, stiff, saprolitic, micaceous, sandy SILT (A-4)

746+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

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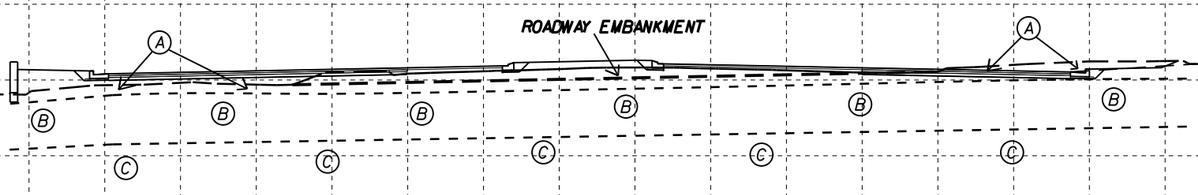
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	150

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

880 870 860 850 840



Ⓐ **RESIDUAL:** *red-brown, moist, stiff, micaceous, highly plastic, silty CLAY (A-7-5) with some sand*

Ⓑ **RESIDUAL:** *tan, dry, stiff, saprolitic, micaceous, sandy SILT (A-4)*

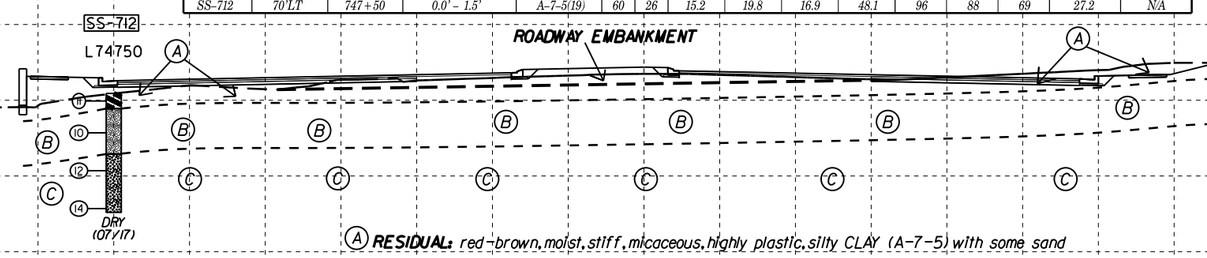
Ⓒ **RESIDUAL:** *tan and white, dry, medium dense, saprolitic, micaceous, silty SAND (A-2-4)*

748+00.00

890 880 870 860 850 840 830

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-712	70'LT	747+50	0.0' - 1.5'	A-7-5(19)	60	26	15.2	19.8	16.9	48.1	96	88	69	27.2	N/A



Ⓐ **RESIDUAL:** *red-brown, moist, stiff, micaceous, highly plastic, silty CLAY (A-7-5) with some sand*

Ⓑ **RESIDUAL:** *tan, dry, stiff, saprolitic, micaceous, sandy SILT (A-4)*

Ⓒ **RESIDUAL:** *tan and white, dry, medium dense, saprolitic, micaceous, silty SAND (A-2-4)*

747+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

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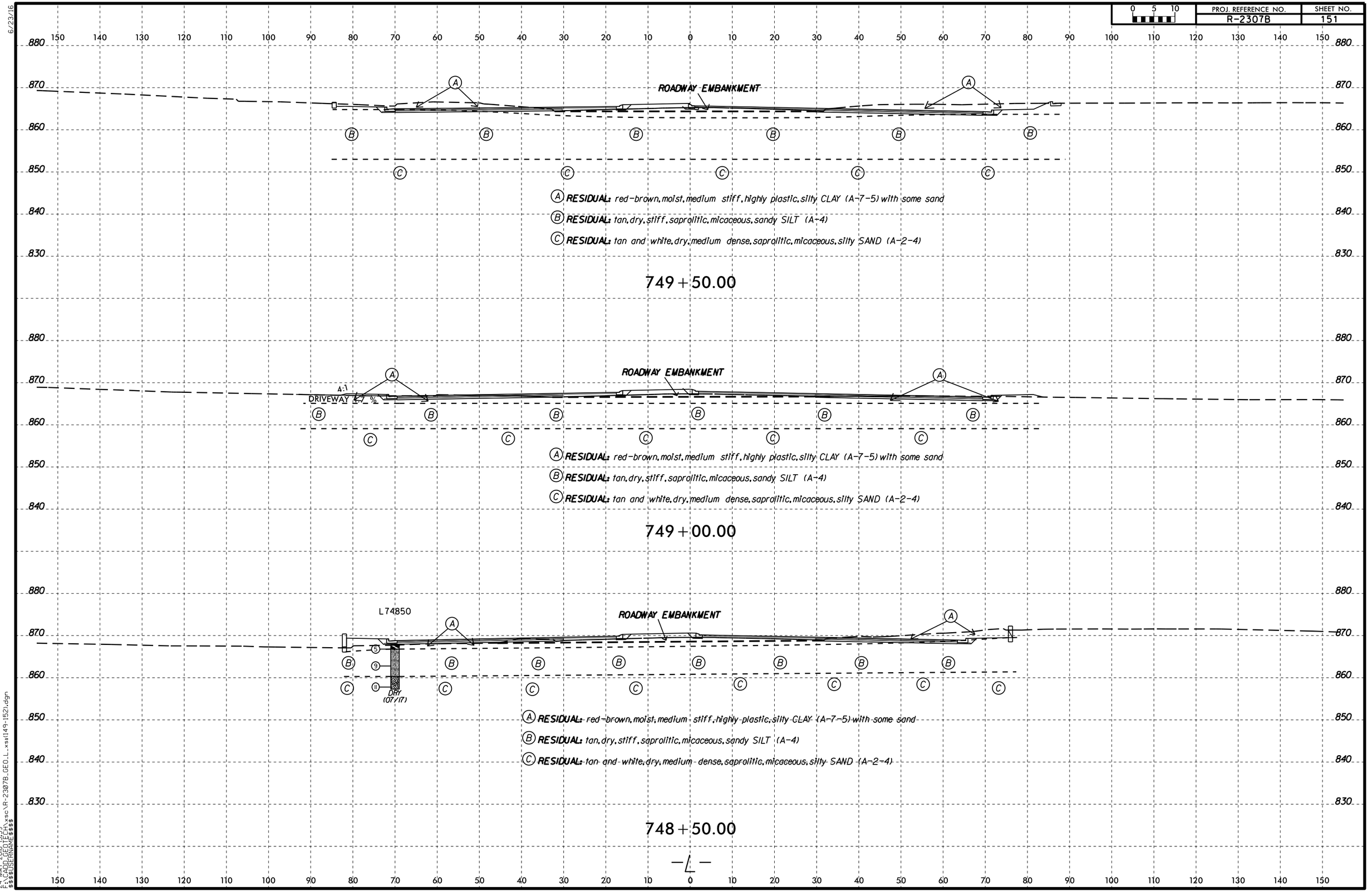
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	151



6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	152

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

870

860

850

ROADWAY EMBANKMENT

Ⓐ **RESIDUAL:** orange-tan and black, dry, stiff, saprolitic, micaceous, sandy SILT (A-4)

750+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

870

860

850

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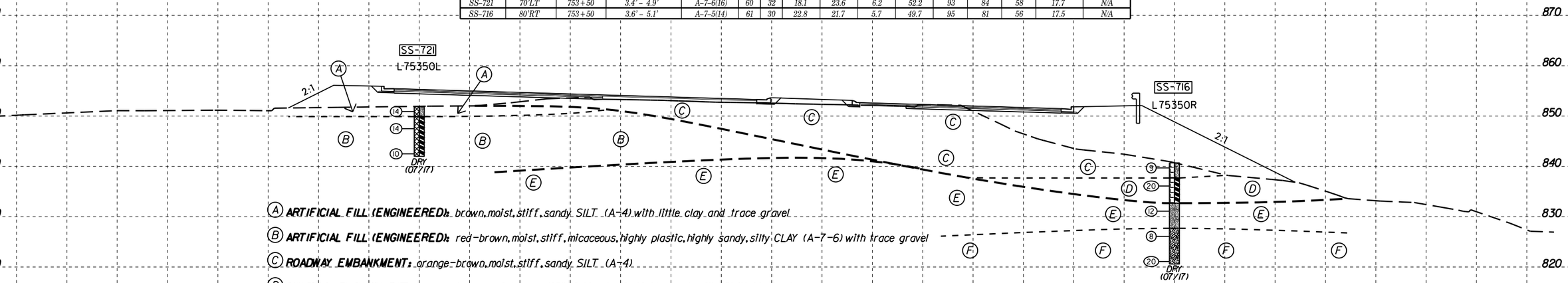
$$$$USERNAME$$$$

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	153

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-721	70'LT	753+50	3.4' - 4.9'	A-7-6(16)	60	32	18.1	23.6	6.2	52.2	93	84	58	17.7	N/A
SS-716	80'RT	753+50	3.6' - 5.1'	A-7-5(14)	61	30	22.8	21.7	5.7	49.7	95	81	56	17.5	N/A



(A) ARTIFICIAL FILL (ENGINEERED): brown, moist, stiff, sandy SILT (A-4) with little clay and trace gravel

(B) ARTIFICIAL FILL (ENGINEERED): red-brown, moist, stiff, micaceous, highly plastic, highly sandy, silty CLAY (A-7-6) with trace gravel

(C) ROADWAY EMBANKMENT: orange-brown, moist, stiff, sandy SILT (A-4)

(D) ROADWAY EMBANKMENT: orange-brown, moist, very stiff, highly plastic, highly sandy, silty CLAY (A-7-5)

(E) RESIDUAL: orange-brown, moist, stiff, micaceous, sandy SILT (A-4)

(F) RESIDUAL: brown, gray, and black, dry, loose to medium dense, saprolitic, micaceous, silty SAND (A-2-4)

753+50.00

—L—

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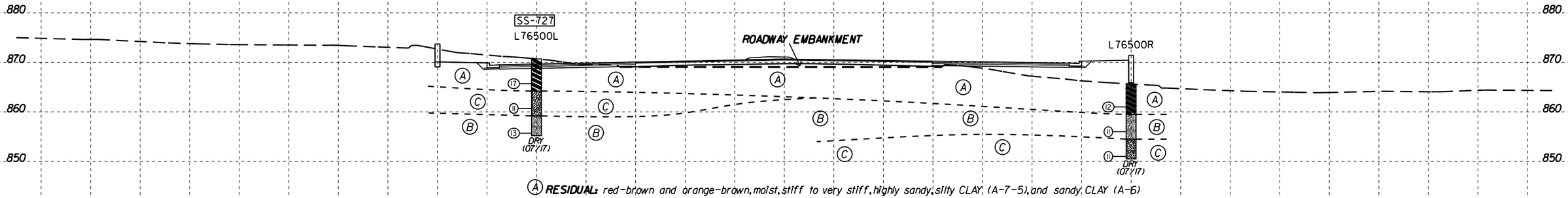
6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	154

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-727	50'LT	765+00	4.0' - 5.5'	A-7-5(4)	46	12	21.6	32.9	4.9	40.6	95	83	48	17.1	N/A



(A) **RESIDUAL:** red-brown and orange-brown, moist, stiff to very stiff, highly sandy, silty CLAY (A-7-5), and sandy CLAY (A-6)

(B) **RESIDUAL:** brown to tan-brown, moist, stiff, saprolitic, micaceous, sandy SILT (A-4)

(C) **RESIDUAL:** brown to light brown, moist, medium dense, saprolitic, micaceous, silty SAND (A-2-4)

765+00.00

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	155

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

880 870 860 850 840

ROADWAY EMBANKMENT

4:1 4:1

(A) **RESIDUAL:** orange-brown, moist, very stiff, micaceous, highly plastic, silty CLAY (A-7-5) with some sand

(B) **RESIDUAL:** tan-brown, dry, stiff, saprolitic, micaceous, sandy SILT (A-4)

(C) **RESIDUAL:** orange-tan, dry, medium dense, saprolitic, micaceous, silty SAND (A-2-4)

773+00.00

880 870 860 850

ROADWAY EMBANKMENT

(A) **RESIDUAL:** orange-brown, moist, very stiff, micaceous, highly plastic, silty CLAY (A-7-5) with some sand

(B) **RESIDUAL:** orange-tan, dry, medium dense, saprolitic, micaceous, silty SAND (A-2-4)

772+50.00

890 880 870 860 850

L77200

ROADWAY EMBANKMENT

13 14 14 17

DRY (08/17)

(A) **RESIDUAL:** orange-tan, dry, medium dense, saprolitic, micaceous, silty SAND (A-2-4)

772+00.00

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

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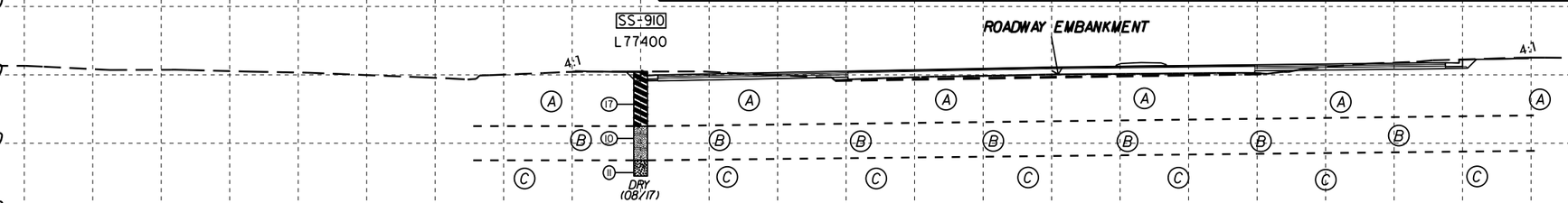
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	156

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-910	60'LT	774+00	3.8' - 5.3'	A-7-5(21)	76	28	17.4	17.5	10.2	54.9	96	86	66	26.7	N/A

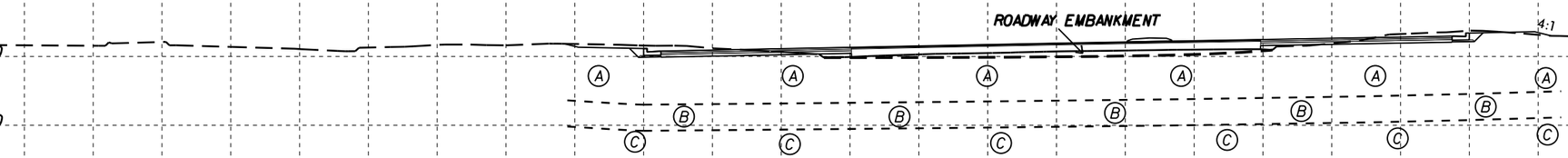


(A) **RESIDUAL:** orange-brown, moist, very stiff, micaceous, highly plastic, silty CLAY (A-7-5) with some sand

(B) **RESIDUAL:** tan-brown, dry, stiff, saprolitic, micaceous, sandy SILT (A-4)

(C) **RESIDUAL:** orange-tan, dry, medium dense, saprolitic, micaceous, silty SAND (A-2-4)

774+00.00



(A) **RESIDUAL:** orange-brown, moist, very stiff, micaceous, highly plastic, silty CLAY (A-7-5) with some sand

(B) **RESIDUAL:** tan-brown, dry, stiff, saprolitic, micaceous, sandy SILT (A-4)

(C) **RESIDUAL:** orange-tan, dry, medium dense, saprolitic, micaceous, silty SAND (A-2-4)

773+50.00

—L—

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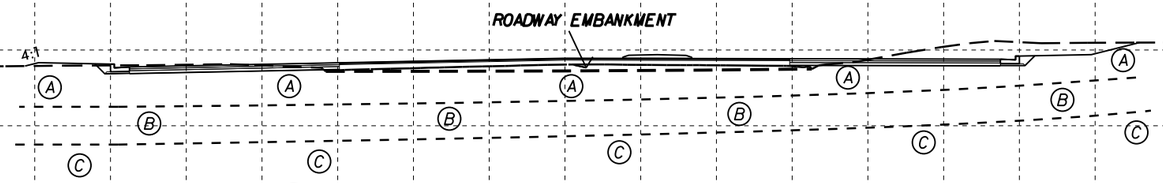
6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	157

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

880 870 860 850 840 830



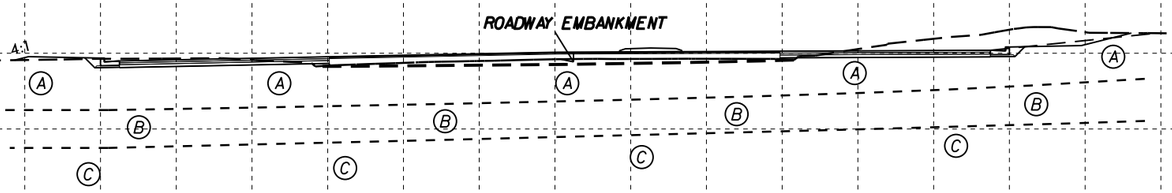
(A) **RESIDUAL:** *orange-brown, moist, very stiff, micaceous, highly plastic, silty CLAY (A-7-5) with some sand*

(B) **RESIDUAL:** *tan-brown, dry, stiff, saprolitic, micaceous, sandy SILT (A-4)*

(C) **RESIDUAL:** *orange-tan, dry, medium dense, saprolitic, micaceous, silty SAND (A-2-4)*

775+00.00

880 870 860 850 840 830



(A) **RESIDUAL:** *orange-brown, moist, very stiff, micaceous, highly plastic, silty CLAY (A-7-5) with some sand*

(B) **RESIDUAL:** *tan-brown, dry, stiff, saprolitic, micaceous, sandy SILT (A-4)*

(C) **RESIDUAL:** *orange-tan, dry, medium dense, saprolitic, micaceous, silty SAND (A-2-4)*

774+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

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6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	158

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

870 860 850

ROADWAY EMBANKMENT

4:1

(A) (A) (A) (A)

(B) (B) (B)

(A) **RESIDUAL:** red-brown, dry, medium stiff, sandy SILT (A-4) with some clay

(B) **RESIDUAL:** brown, moist, loose to medium dense, saprolitic, micaceous, silty SAND (A-2-4)

776+50.00

880 870 860 850 840

ROADWAY EMBANKMENT

4:1

(A) (A)

(B) (B) (B) (B) (B)

(C) (C) (C) (C)

(A) **RESIDUAL:** orange-brown, moist, very stiff, micaceous, highly plastic, silty CLAY (A-7-5) with some sand

(B) **RESIDUAL:** tan-brown, dry, stiff, saprolitic, micaceous, sandy SILT (A-4)

(C) **RESIDUAL:** orange-tan, dry, medium dense, saprolitic, micaceous, silty SAND (A-2-4)

776+00.00

880 870 860 850 840 830

ROADWAY EMBANKMENT

4:1 4:1

(A) (A) (A)

(B) (B) (B) (B)

(C) (C) (C) (C)

(A) **RESIDUAL:** orange-brown, moist, very stiff, micaceous, highly plastic, silty CLAY (A-7-5) with some sand

(B) **RESIDUAL:** tan-brown, dry, stiff, saprolitic, micaceous, sandy SILT (A-4)

(C) **RESIDUAL:** orange-tan, dry, medium dense, saprolitic, micaceous, silty SAND (A-2-4)

775+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

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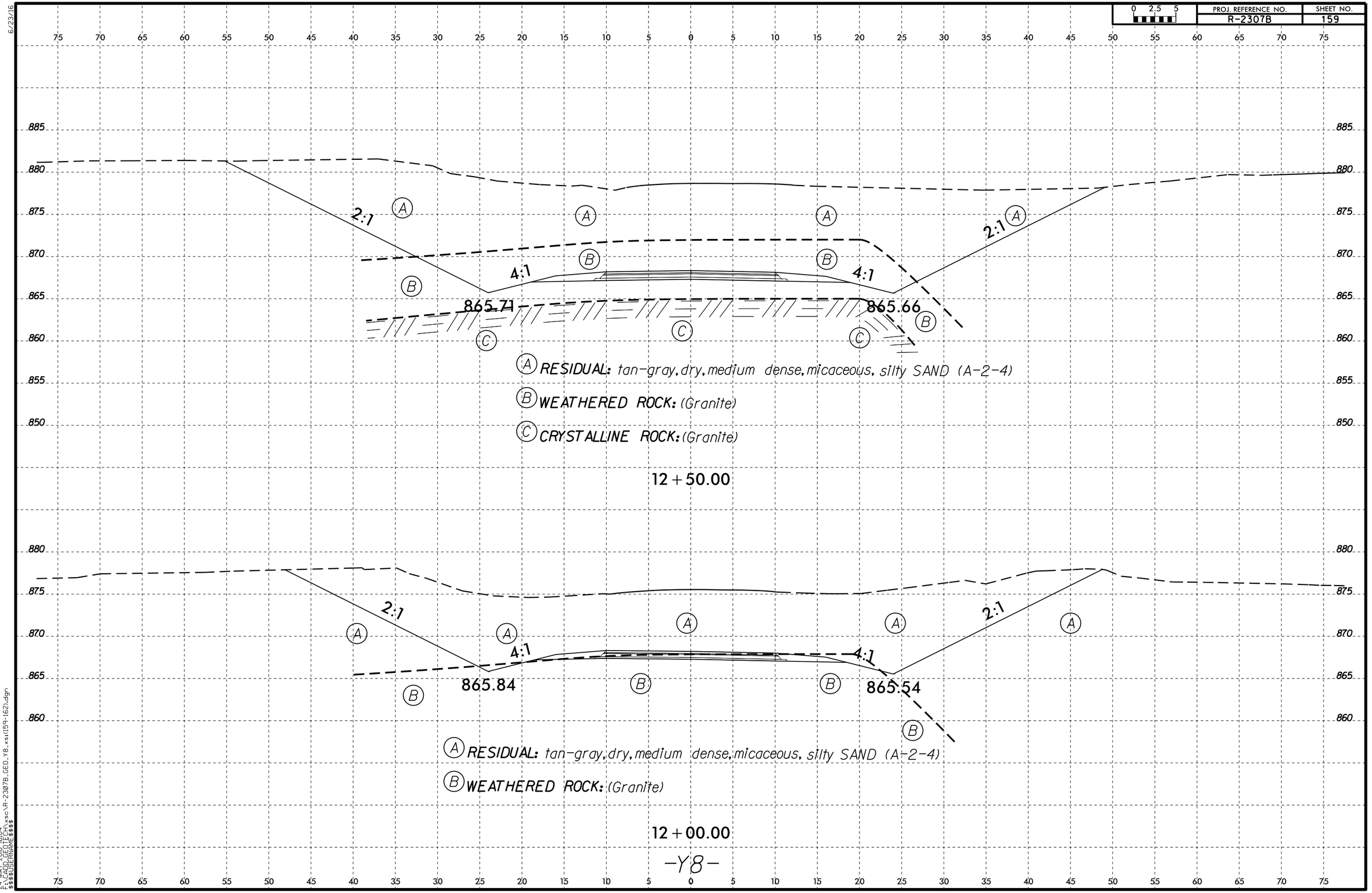
6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	159



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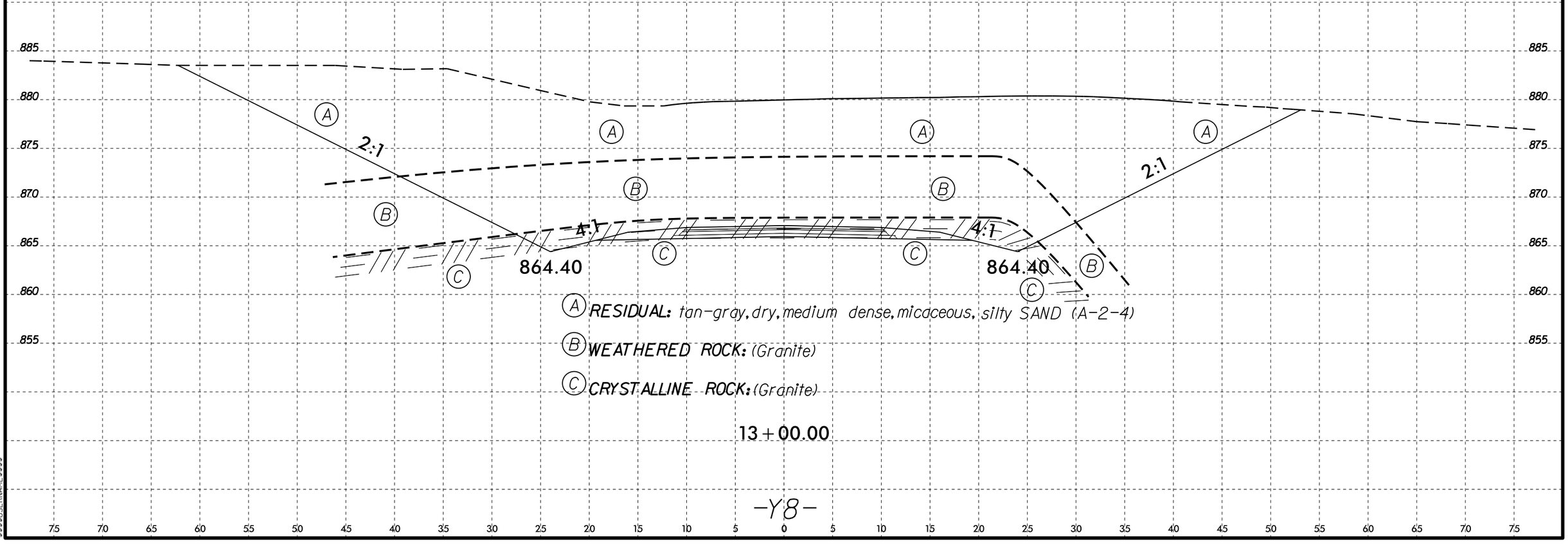
6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	160

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

885
880
875
870
865
860
855



(A) **RESIDUAL:** *tan-gray, dry, medium dense, micaceous, silty SAND (A-2-4)*

(B) **WEATHERED ROCK:** *(Granite)*

(C) **CRYSTALLINE ROCK:** *(Granite)*

13+00.00

-Y8-

24-MAY-2018 16:04
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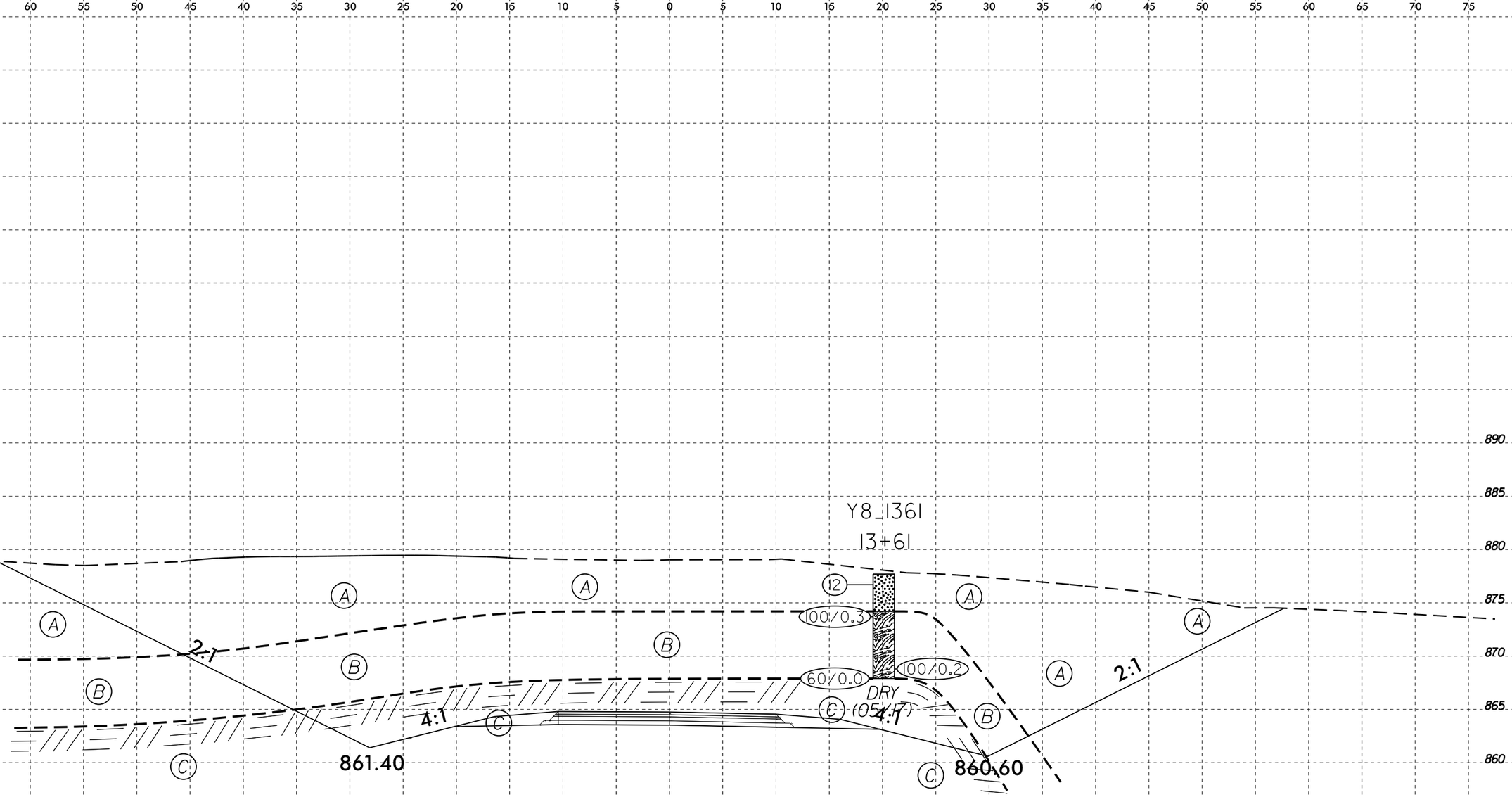
$$$$USERNAME$$$$

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	161

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

890 885 880 875 870 865 860 855 850

Y8_1361
13+61



(A) **RESIDUAL:** *tan-gray, dry, medium dense, micaceous, silty SAND (A-2-4)*

(B) **WEATHERED ROCK:** *(Granite)*

(C) **CRYSTALLINE ROCK:** *(Granite)*

13+50.00

-Y8-

24-MAY-2018 16:05
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6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	162

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

880 875 870 865 860 855 850 845

Y8_1439
14+39

20
16
26
42
DRY
(05/17)

(A) **RESIDUAL:** *tan-brown to tan-gray, dry to moist, medium dense to dense, saprolitic, micaceous, silty SAND (A-2-4)*

14+50.00

880 875 870 865 860 855 850

2:1
4:1
2:1
4:1

861.43
860.56

(A) **RESIDUAL:** *tan-gray, dry, medium dense, micaceous, silty SAND (A-2-4)*

(B) **WEATHERED ROCK:** *(Granite)*

(C) **CRYSTALLINE ROCK:** *(Granite)*

14+00.00

-Y8-

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

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	163

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

880 870 860 850 840 830

ROADWAY EMBANKMENT

Ⓐ **RESIDUAL:** orange-brown, moist, stiff, highly sandy, clayey SILT (A-5)

Ⓑ **RESIDUAL:** gray-brown, dry, medium dense, saprolitic, silty SAND (A-2-4)

Ⓒ **WEATHERED ROCK:** (Granite)

20+50.00

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-550	70'RT	20+00	2.7' - 4.2'	A-5(5)	48	7	19.0	25.9	18.1	37.0	100	92	61	23.7	N/A

SS-550
Y16_2000

2:1 20:1

ROADWAY EMBANKMENT

12 24 100/0.8 100/0.3 100/0.4

DRY (06/17)

Ⓐ **RESIDUAL:** orange-brown, moist, stiff, highly sandy, clayey SILT (A-5)

Ⓑ **RESIDUAL:** gray-brown, dry, medium dense, saprolitic, silty SAND (A-2-4)

Ⓒ **WEATHERED ROCK:** (Granite)

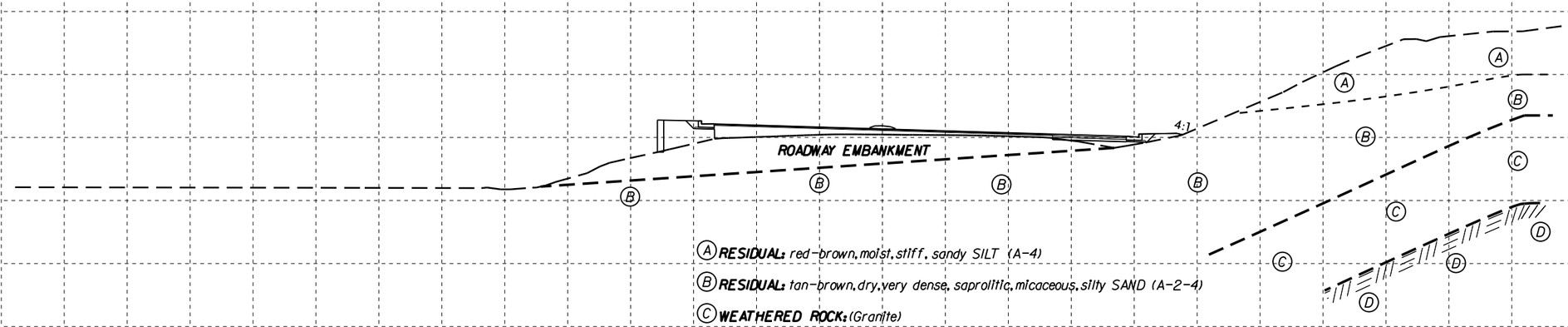
20+00.00

-Y16-

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	164

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

880 870 860 850 840 830 820



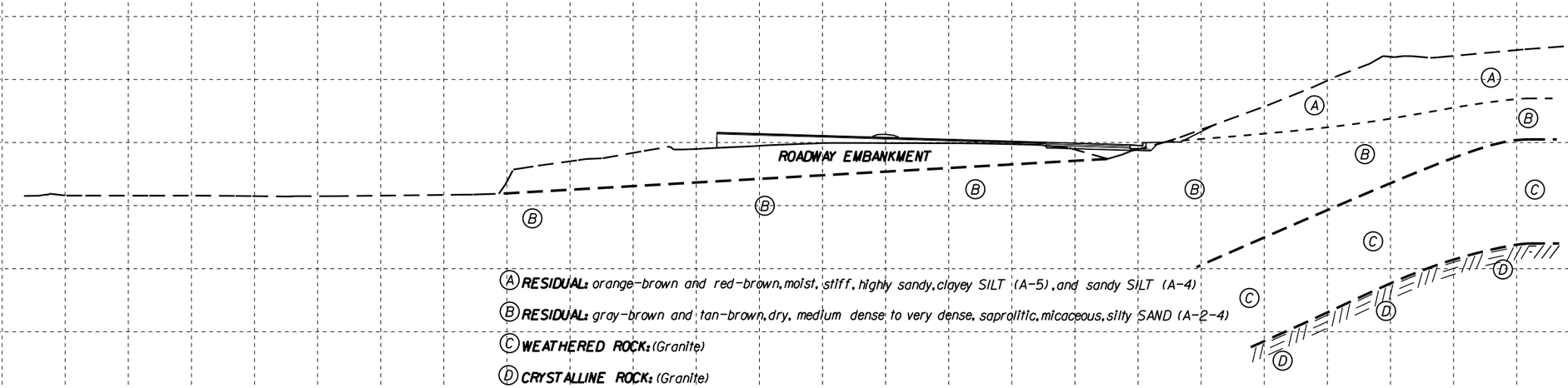
Ⓐ **RESIDUAL:** red-brown, moist, stiff, sandy SILT (A-4)

Ⓑ **RESIDUAL:** tan-brown, dry, very dense, saprolitic, micaceous, silty SAND (A-2-4)

Ⓒ **WEATHERED ROCK:** (Granite)

Ⓓ **CRYSTALLINE ROCK:** (Granite)

21+50.00



Ⓐ **RESIDUAL:** orange-brown and red-brown, moist, stiff, highly sandy, clayey SILT (A-5), and sandy SILT (A-4)

Ⓑ **RESIDUAL:** gray-brown and tan-brown, dry, medium dense to very dense, saprolitic, micaceous, silty SAND (A-2-4)

Ⓒ **WEATHERED ROCK:** (Granite)

Ⓓ **CRYSTALLINE ROCK:** (Granite)

21+00.00

-Y16-

880 870 860 850 840 830 820

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

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	165

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

890 880 870 860 850 840 830 820

4:1

ROADWAY EMBANKMENT

Ⓐ **RESIDUAL:** red-brown, moist, stiff, sandy SILT (A-4)

Ⓑ **RESIDUAL:** tan-brown, dry, very dense, saprolitic, micaceous, silty SAND (A-2-4)

Ⓒ **WEATHERED ROCK:** (Granite)

Ⓓ **CRYSTALLINE ROCK:** (Granite)

22+50.00

2:1

20:1

ROADWAY EMBANKMENT

Y16_2200

13

85

100/0.5

50/0.0

50/0.0

100/0.5

DRY (05/17)

Ⓐ **RESIDUAL:** red-brown, moist, stiff, sandy SILT (A-4)

Ⓑ **RESIDUAL:** tan-brown, dry, very dense, saprolitic, micaceous, silty SAND (A-2-4)

Ⓒ **WEATHERED ROCK:** (Granite)

Ⓓ **CRYSTALLINE ROCK:** (Granite)

22+00.00

-Y16-

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	166

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

880 870 860 850 840 830

ROADWAY EMBANKMENT

Ⓐ **RESIDUAL:** *orange-brown, moist, stiff to very stiff, saprolitic, micaceous, highly sandy, clayey SILT (A-5), and sandy SILT (A-4)*

Ⓑ **RESIDUAL:** *orange-tan, dry, loose to dense, saprolitic, micaceous, silty SAND (A-2-4)*

23+50.00

890 880 870 860 850 840 830 820

ROADWAY EMBANKMENT

Ⓐ **RESIDUAL:** *orange-brown and red-brown, moist, stiff to very stiff, saprolitic, micaceous, highly sandy, clayey SILT (A-5), and sandy SILT (A-4)*

Ⓑ **RESIDUAL:** *tan-brown and orange-tan, dry, loose to very dense, saprolitic, micaceous, silty SAND (A-2-4)*

Ⓒ **WEATHERED ROCK:** *(Granite)*

23+00.00

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

-Y16-

24-MAY-2018 16:09
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6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	167

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

880 870 860 850 840 830 890 880 870 860 850 840 830 820

ROADWAY EMBANKMENT

Ⓐ **RESIDUAL:** orange-brown, moist, stiff to very stiff, saprolitic, micaceous, highly sandy, clayey SILT (A-5), and sandy SILT (A-4)

Ⓑ **RESIDUAL:** orange-tan, dry, loose to dense, saprolitic, micaceous, silty SAND (A-2-4)

24+50.00

SS-541
Y16_2400R

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-541	85'RT	24+00	3.6' - 5.1'	A-5(6)	60	6	19.1	33.5	9.3	38.0	100	92	61	25.8	N/A

ROADWAY EMBANKMENT

Y16_2400L

6 8 11 13 DRY (06/17)

22 11 40 17 15 10 DRY (06/17)

Ⓐ **RESIDUAL:** orange-brown, moist, stiff to very stiff, saprolitic, micaceous, highly sandy, clayey SILT (A-5), and sandy SILT (A-4)

Ⓑ **RESIDUAL:** orange-tan, dry, loose to dense, saprolitic, micaceous, silty SAND (A-2-4)

24+00.00

-Y16-

24-MAY-2018 16:09
F:\CADD_GEOTECH\xsec\R-2307B_GEO_Y16_xst(163-167).dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	168

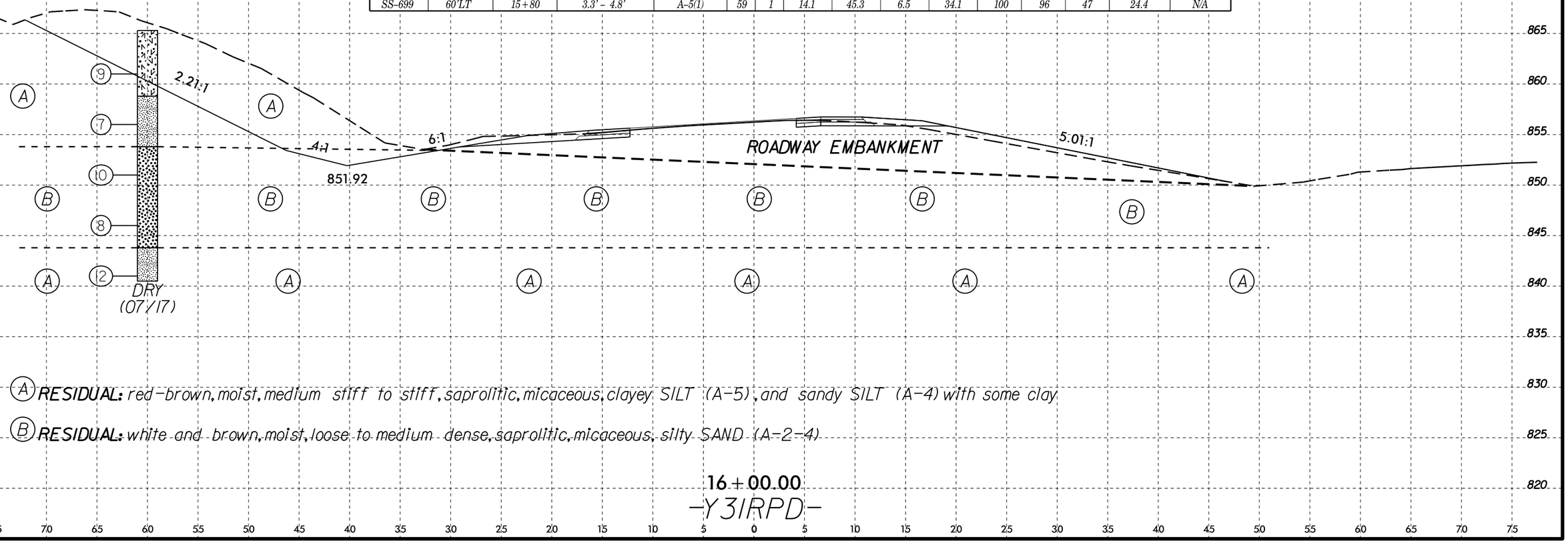
SS-699

Y31RPD_1580

15+80

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-699	60'LT	15+80	3.3' - 4.8'	A-5(1)	59	1	14.1	45.3	6.5	34.1	100	96	47	24.4	N/A



(A) **RESIDUAL:** red-brown, moist, medium stiff to stiff, saprolitic, micaceous, clayey SILT (A-5), and sandy SILT (A-4) with some clay

(B) **RESIDUAL:** white and brown, moist, loose to medium dense, saprolitic, micaceous, silty SAND (A-2-4)

16+00.00

-Y31RPD-

24-MAY-2018 16:11
F:\CADD\GEOTECH\xsc\R-2307B_GEO_Y31RPD_xs1168i.dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	169

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

880 875 870 865 860 855 850 845 840 835

Y31RPD_1750

-7 -10 -10 -12 -14

DRY
(07/17)

2.21:1

4:1

855.72

6:1

ROADWAY EMBANKMENT

5.78:1

A

A **RESIDUAL:** white and brown, dry to moist, loose to medium dense, saprolitic, micaceous, silty SAND (A-2-4)

17+50.00
-Y31RPD-

24-MAY-2018 16:11
F:\CADD_GEOTECH\xsc\R-2307B_GEO_Y31RPD_xs(169).dgn
$$$$USERNAME$$$$

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	170

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

880 870 860 850

ROADWAY EMBANKMENT

(A) **RESIDUAL:** orange-brown, moist, very stiff, highly plastic, highly sandy, silty CLAY (A-7-6)

(B) **RESIDUAL:** orange-brown and tan, dry, medium dense, saprolitic, micaceous, silty SAND (A-2-4)

12+00.00

880 870 860 850

ROADWAY EMBANKMENT

(A) **RESIDUAL:** orange-brown, moist, very stiff, highly plastic, highly sandy, silty CLAY (A-7-6)

(B) **RESIDUAL:** orange-brown and tan, dry, medium dense, saprolitic, micaceous, silty SAND (A-2-4)

11+50.00

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-900	40'LT	11+00	0.0' - 1.5'	A-7-6(11)	58	31	15.7	28.9	5.4	50.0	81	74	49	19.7	N/A

890 880 870 860 850 840 830

SS-900
Y40=1100

ROADWAY EMBANKMENT

17
14
13
23
14
DRY
(07/17)

(A) **RESIDUAL:** orange-brown, moist, very stiff, highly plastic, highly sandy, silty CLAY (A-7-6)

(B) **RESIDUAL:** orange-brown and tan, dry, medium dense, saprolitic, micaceous, silty SAND (A-2-4)

11+00.00

-Y40-

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

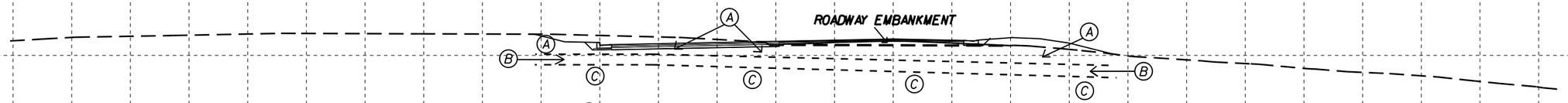
24-MAY-2018 16:14
F:\CADD\GEOTECH\xsc\R-2307B_GEO_Y40_xst170-173i.dgn
$$$$USERNAME$$$$

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	171

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

880 870 860 850 840

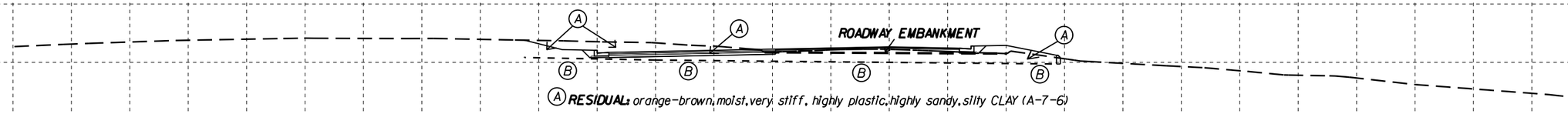


(A) **RESIDUAL:** orange-brown, moist, very stiff, highly plastic, highly sandy, silty CLAY (A-7-6)

(B) **RESIDUAL:** orange-brown, moist, stiff, micaceous, sandy SILT (A-4)

(C) **RESIDUAL:** orange-brown and tan, dry, loose to medium dense, saprolitic, micaceous, silty SAND (A-2-4)

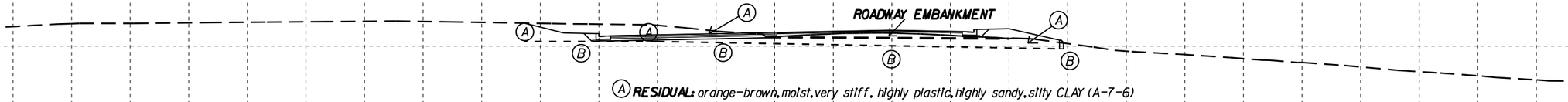
13 + 50.00



(A) **RESIDUAL:** orange-brown, moist, very stiff, highly plastic, highly sandy, silty CLAY (A-7-6)

(B) **RESIDUAL:** orange-brown and tan, dry, medium dense, saprolitic, micaceous, silty SAND (A-2-4)

13 + 00.00



(A) **RESIDUAL:** orange-brown, moist, very stiff, highly plastic, highly sandy, silty CLAY (A-7-6)

(B) **RESIDUAL:** orange-brown and tan, dry, medium dense, saprolitic, micaceous, silty SAND (A-2-4)

12 + 50.00

-Y40-

24-MAY-2018 16:14
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$$$$USERNAME$$$$

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2307B	172

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

880 870 860 850 840 830

Y40_1500

ROADWAY EMBANKMENT

DRY (OT/IT)

(A) **RESIDUAL:** orange-brown, moist, very stiff, highly plastic, highly sandy, silty CLAY (A-7-6)

(B) **RESIDUAL:** orange-brown, moist, stiff, micaceous, sandy SILT (A-4)

(C) **RESIDUAL:** orange-brown and tan, dry, loose to medium dense, saprolitic, micaceous, silty SAND (A-2-4)

15 + 00.00

880 870 860 850 840

ROADWAY EMBANKMENT

(A) **RESIDUAL:** orange-brown, moist, very stiff, highly plastic, highly sandy, silty CLAY (A-7-6)

(B) **RESIDUAL:** orange-brown, moist, stiff, micaceous, sandy SILT (A-4)

(C) **RESIDUAL:** orange-brown and tan, dry, loose to medium dense, saprolitic, micaceous, silty SAND (A-2-4)

14 + 50.00

880 870 860 850 840

ROADWAY EMBANKMENT

(A) **RESIDUAL:** orange-brown, moist, very stiff, highly plastic, highly sandy, silty CLAY (A-7-6)

(B) **RESIDUAL:** orange-brown, moist, stiff, micaceous, sandy SILT (A-4)

(C) **RESIDUAL:** orange-brown and tan, dry, loose to medium dense, saprolitic, micaceous, silty SAND (A-2-4)

14 + 00.00

-Y40-

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

24-MAY-2018 16:14
F:\CADD\GEOTECH\xsc\R-2307B_GEO_Y40_xs1(170-173).dgn
$$$$USERNAME$$$$

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

880 870 860

ROADWAY EMBANKMENT

(A) **RESIDUAL:** orange-brown and gray, moist, stiff, saprolitic, micaceous, sandy SILT (A-4)

16+50.00

880 870 860

ROADWAY EMBANKMENT

(A) **RESIDUAL:** orange-brown, moist, very stiff, highly plastic, highly sandy, silty CLAY (A-7-6)

(B) **RESIDUAL:** orange-brown, moist, stiff, micaceous, sandy SILT (A-4)

(C) **RESIDUAL:** orange-brown and tan, dry, loose to medium dense, saprolitic, micaceous, silty SAND (A-2-4)

880 870 860 850 840 830

16+00.00

880 870 860 850 840

ROADWAY EMBANKMENT

(A) **RESIDUAL:** orange-brown, moist, very stiff, highly plastic, highly sandy, silty CLAY (A-7-6)

(B) **RESIDUAL:** orange-brown, moist, stiff, micaceous, sandy SILT (A-4)

(C) **RESIDUAL:** orange-brown and tan, dry, loose to medium dense, saprolitic, micaceous, silty SAND (A-2-4)

15+50.00

-Y40-

PROJECT REFERENCE NO.	SHEET NO.
R–2307B	174

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

APPENDIX A
CPT LOGS, DMT LOGS, DMT SUMMARY TABLE

REFERENCE: R–2307B

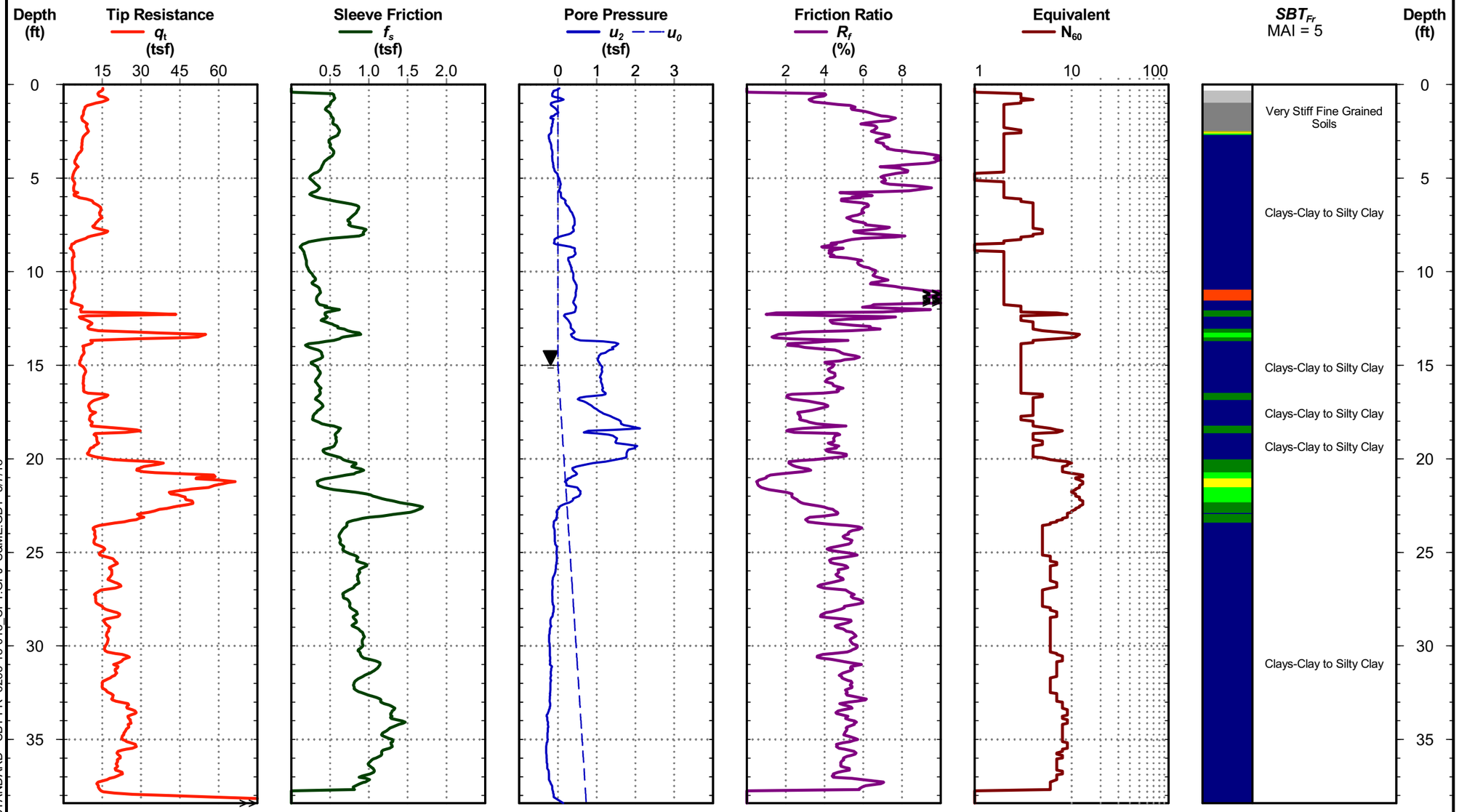
PROJECT: 37944

Prepared in the Office of:
SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: P-0339 and C-487
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

Sounding ID: 72800-CPT-1

NC 150 Lake Norman
Mooresville, North Carolina
S&ME Project No: 6235-18-018 Phase 01

Date:	May. 2, 2018	**Total Depth:**	38.4 ft
Estimated Water Depth:	15 ft	**Termination Criteria:**	Maximum Reaction Force
Rig/Operator:	Marooka/D. Watson	**Cone Size:**	1.75
Station and Offset:	727+93, 100'RT		



CPT REPORT - STANDARD - SBT FR 6235-18-018_CPT.GPJ S&ME.GDT 5/7/18

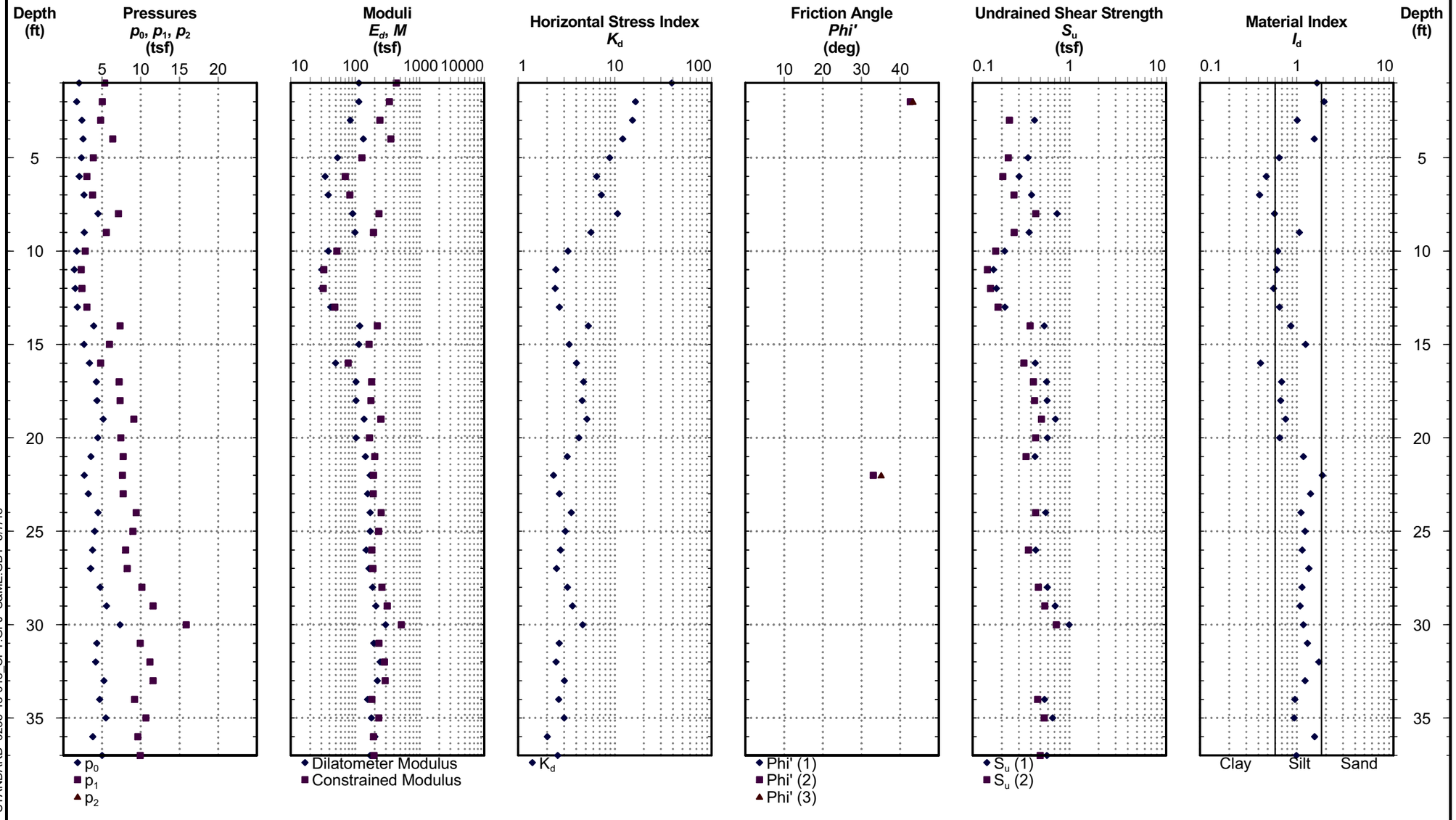
Cone Penetration Test

Electronic Filename: 72800-CPT-1(001)_PD.DAT

NC 150 Lake Norman
Mooresville, North Carolina
S&ME Project No: 6235-18-018 Phase 01

Sounding ID: 72800-DILA-1

Date: May. 2, 2018 **Total Depth:** 37.0 ft
Estimated Water Depth: 15 ft **Termination Criteria:** Maximum Reaction Force
Rig/Operator: Marooka/D. Watson **Membrane Type:** soft
Station and Offset: 727+89, 100'RT



DMT REPORT - STANDARD 6235-18-018_CPT.GPJ S&ME.GDT 5/7/18

Dilatometer Test

DILATOMETER SOUNDING SUMMARY TABLE

NCDOT TIP No: R-2307B
Job No: 6235-18-018 Phase 01
Job Name: NC 150 Lake Norman
Job Location: Mooresville, NC
Date: 5/2/2018
Sounding No: 72800-DILA-1
Ground Water Depth (ft): 15

[1] Depth Below Mudline
[2] Mayne, 1995
[3] Marchetti,1980
[4] Marchetti, 1997
[5] Campanella and Robertson, 1991
[6] Marchetti,1980
[7] Schmertman, 1981

Depth[1] (ft)	A (bar)	B (bar)	C (bar)	u_o (psf)	σ_{vo} (psf)	σ_{vo}' (psf)	Id	K_D	K_o	OCR[2]	OCR[3]	ϕ'[4] (deg)	ϕ'[5] (deg)	E_D (ksf)	s_u[6] (psf)	s_u[7] (psf)	M (ksf)
1	2	5.8	0	0	105	105	1.62	38.8	4.0	-1.0	-1.0	45.9	44.2	228.3			863.7
2	1.7	5.5	0	0	210	210	1.91	16.4	2.5	-1.0	-1.0	42.6	42.4	228.3			677.8
3	2.3	5.3	0	0	315	315	1.01	15.2	2.4	7.7	23.6			167.4	873.3	478.3	484.7
4	2.5	6.8	0	0	420	420	1.52	12.1	2.1	-1.0	-1.0	41.3	41.7	266.3			713.0
5	2.2	4.4	0	0	525	525	0.66	8.9	1.7	4.5	10.2			106.5	743.5	465.7	253.3
6	1.9	3.6	0	0	630	630	0.48	6.5	1.4	3.3	6.3			68.5	602.6	408.3	140.8
7	2.5	4.3	0	0	735	735	0.41	7.2	1.5	3.7	7.4			76.1	808.2	532.6	165.1
8	4.3	7.5	0	0	840	840	0.59	10.6	1.9	5.4	13.6			182.6	1493.4	893.9	467.3
9	2.6	6	0	0	945	945	1.06	5.7	1.3	2.9	5.1			197.8	766.5	536.8	383.3
10	1.6	3.4	0	0	1050	1050	0.64	3.3	0.8	1.7	2.2			76.1	429.0	344.6	103.5
11	1.3	2.9	0	0	1155	1155	0.62	2.5	0.7	1.3	1.4			60.9	329.0	284.0	64.8
12	1.4	3	0	0	1260	1260	0.58	2.4	0.7	1.2	1.3			60.9	351.8	304.9	63.7
13	1.7	3.6	0	0	1365	1365	0.66	2.7	0.7	1.4	1.6			83.7	430.9	364.5	96.4
14	3.8	7.7	0	0	1470	1470	0.87	5.3	1.2	2.7	4.6			235.9	1098.8	782.2	439.8
15	2.6	6.4	0	0	1575	1575	1.24	3.4	0.9	-1.0	-1.0	35.1	38.7	228.3			327.3
16	3.2	5.3	0	62.4	1680	1617.6	0.43	4.1	1.0	2.1	3.1			98.9	883.1	669.4	157.9
17	4.1	7.6	0	124.8	1785	1660.2	0.71	5.0	1.2	2.6	4.2			205.5	1159.3	836.5	370.3
18	4.2	7.7	0	187.2	1890	1702.8	0.70	5.0	1.2	2.5	4.2			205.5	1177.2	851.2	368.5
19	5	9.4	0	249.6	1995	1745.4	0.79	5.7	1.3	2.9	5.2			273.9	1435.7	1002.6	531.1
20	4.3	7.8	0	312	2100	1788	0.69	4.8	1.1	2.4	3.9			205.5	1177.3	859.6	360.3
21	3.5	8.1	0	374.4	2205	1830.6	1.24	3.7	0.9	-1.0	-1.0	35.6	38.9	289.2			439.1
22	2.7	8	0	436.8	2310	1873.2	2.00	2.6	0.7	-1.0	-1.0	33.8	37.9	342.4			429.9
23	3.2	8.1	0	499.2	2415	1915.8	1.51	3.1	0.8	-1.0	-1.0	34.7	38.4	312.0			428.4
24	4.4	9.7	0	561.6	2520	1958.4	1.18	4.3	1.0	2.2	3.3			342.4	1112.7	836.7	568.6
25	4	9.3	0	624	2625	2001	1.32	3.7	0.9	-1.0	-1.0	35.7	38.9	342.4			526.1
26	3.7	8.4	0	686.4	2730	2043.6	1.25	3.3	0.9	-1.0	-1.0	35.1	38.6	296.8			422.9
27	3.5	8.6	0	748.8	2835	2086.2	1.49	3.0	0.8	-1.0	-1.0	34.5	38.3	327.2			440.3
28	4.7	10.4	0	811.2	2940	2128.8	1.23	4.1	1.0	-1.0	-1.0	36.1	39.2	372.9			604.1
29	5.5	11.8	0	873.6	3045	2171.4	1.18	4.7	1.1	2.4	3.8			418.5	1397.1	1024.8	736.0
30	7.3	15.9	0	936	3150	2214	1.25	6.2	1.3	-1.0	-1.0	38.2	40.2	593.5			1204.1
31	4.3	10.2	0	998.4	3255	2256.6	1.46	3.4	0.9	-1.0	-1.0	35.2	38.7	388.1			563.9
32	4.2	11.4	0	1060.8	3360	2299.2	1.94	3.2	0.8	-1.0	-1.0	34.8	38.5	487.0			690.4
33	5.2	11.8	0	1123.2	3465	2341.8	1.36	4.0	1.0	-1.0	-1.0	36.0	39.1	441.4			707.7
34	4.6	9.5	0	1185.6	3570	2384.4	1.10	3.4	0.9	1.8	2.3			312.0	1033.3	820.2	449.5
35	5.4	10.9	0	1248	3675	2427	1.06	4.0	1.0	2.0	3.0			357.7	1276.5	974.8	569.5
36	3.8	9.9	0	1310.4	3780	2469.6	1.85	2.5	0.7	-1.0	-1.0	33.6	37.8	403.3			487.3
37	4.9	10.2	0	1372.8	3885	2512.2	1.15	3.4	0.9	1.7	2.3			342.4	1082.0	860.0	492.9