REFERENCE: R-2707D

PROJECT: 34497

SEE SHEET 3 FOR PLAN SHEET LAYOUT AT TIME OF INVESTIGATION

CONTENTS

LINE	STATION	PLAN	PROFILE
-L-	635+00.00 - 851+00.00	4-19	27-37
-RAMP_A-	9+71.05 - 47+52.43	18,19	38-40
-LOOPA-	9+89.36 - 38+02.84	18	41-42
-RAMP_C-	10+00.00 - 23+88.90	17,18	42
-RAMP_D-	10+00.00 - 32+50.00	18	43
-Y1-	10+00.00 - 29+30.00	6,20,21	44
-Y2-	11+00.00 - 32+23.90	8,22,23	45
-Y3-	12+00.00 - 32+01.21	13,24,25	46
-Y4-	9+90.00 - 21+06.50	18,26	47
-Y5-	32+50.00 - 40+50.90	26	48
-Y6-	8+35.00 - 9+88.00	22	49
-SRVRD_1-	10+00.00 - 25+90.92	6,7,20	50
-SRVRD_3-	12+00.00 - 22+43.31	18,19	51
-SRVRD_4-	9+78.55 - 20+20.00	17,18	51
-SRVRD_5-	10+10.00 - 22+96.49	17,17A	52
-PVTENT2-	10+00.00 - 14+20.00	13	53

CROSS SECTIONS

LINE	STATION	SHEETS
-L-	695+50.00 - 700+50.00	55-58
-L-	738+50.00 - 742+00.00	59-68
-L-	747+00.00 - 759+00.00	69-94
-L-	766+00.00 - 771+00.00	95-104
-Y2-	22+00.00 - 24+50.00	105-106
-SRVRD_4-	13+50.00 - 16+00.00	107-109
-SRVRD_5-	13+50.00 - 20+50.00	110-116

APPENDICES

APPENDIX	TITLE	SHEETS
A	LABORATORY RESULTS	117-120

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

ROADWAY SUBSURFACE INVESTIGATION

COUNTY *CLEVELAND*

PROJECT DESCRIPTION *US 74, SHELBY BYPASS FROM EAST OF NC 150 TO EXISTING US 74, WEST OF SR 2238 (LONG BRANCH ROAD)*

INVENTORY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2707D	1	125

CAUTION NOTICE

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

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

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

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

PERSONNEL

HPC

TRIGON

GOODNIGHT, D.W.

WEIS, J.M.

LANE, R.W.

INVESTIGATED BY *FALCON ENG.*

DRAWN BY *HILL, M. J.*

CHECKED BY *HUNSBERGER, W. S.*

SUBMITTED BY *FALCON ENG.*

DATE *NOVEMBER 2018*

NORTH CAROLINA PROFESSIONAL SEAL 36283 ENGINEER W. SCOTT HUNSBERGER

W. Scott Hunsberger

11/14/2018 1:53:08 PM PST

SIGNATURE DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

COG PROJECT REFERENCE NO.	SHEET NO.
R-2707D	2

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION

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

SOIL LEGEND AND AASHTO CLASSIFICATION

GENERAL CLASS.	GRANULAR MATERIALS (≤ 35% PASSING #200)							SILT-CLAY MATERIALS (> 35% PASSING #200)				ORGANIC MATERIALS		
GROUP CLASS.	A-1		A-3	A-2				A-4	A-5	A-6	A-7	A-1, A-2 A-3	A-4, A-5 A-6, A-7	
	A-1-a	A-1-b		A-2-4	A-2-5	A-2-6	A-2-7				A-7-5, A-7-6			
SYMBOL														
% PASSING #10 #40 #200	50 MX 30 MX 15 MX	50 MX 25 MX	51 MN 10 MX	35 MX	35 MX	35 MX	35 MX	36 MN	36 MN	36 MN	36 MN	GRANULAR SOILS	SILT-CLAY SOILS	MUCK, PEAT
MATERIAL PASSING #40 LL PI	— 6 MX		— NP	40 MX 10 MX	41 MN 10 MX	40 MX 11 MN	41 MN 11 MN	40 MX 10 MX	41 MN 10 MX	40 MX 11 MN	41 MN 11 MN	SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER		HIGHLY ORGANIC SOILS
GROUP INDEX	0		0	0		4 MX		8 MX	12 MX	16 MX	NO MX			
USUAL TYPES OF MAJOR MATERIALS	STONE FRAGS. GRAVEL, AND SAND		FINE SAND	SILTY OR CLAYEY GRAVEL AND SAND				SILTY SOILS		CLAYEY SOILS				
GEN. RATING AS SUBGRADE	EXCELLENT TO GOOD							FAIR TO POOR				FAIR TO POOR	POOR	UNSUITABLE

PI OF A-7-5 SUBGROUP IS ≤ LL - 30 ; PI OF A-7-6 SUBGROUP IS > LL - 30

CONSISTENCY OR DENSENESS

PRIMARY SOIL TYPE	COMPACTNESS OR CONSISTENCY	RANGE OF STANDARD PENETRATION RESISTENCE (N-VALUE)	RANGE OF UNCONFINED COMPRESSIVE STRENGTH ($TONS/FT^2$)
GENERALLY GRANULAR MATERIAL (NON-COHESIVE)	VERY LOOSE LOOSE MEDIUM DENSE DENSE VERY DENSE	< 4 4 TO 10 10 TO 30 30 TO 50 > 50	N/A
GENERALLY SILT-CLAY MATERIAL (COHESIVE)	VERY SOFT SOFT MEDIUM STIFF STIFF VERY STIFF HARD	< 2 2 TO 4 4 TO 8 8 TO 15 15 TO 30 > 30	< 0.25 0.25 TO 0.5 0.5 TO 1.0 1 TO 2 2 TO 4 > 4

TEXTURE OR GRAIN SIZE

U.S. STD. SIEVE SIZE	4	10	40	60	200	270
OPENING (MM)	4.76	2.00	0.42	0.25	0.075	0.053

BOULDER (BLDR.)	COBBLE (COB.)	GRAVEL (GR.)	COARSE SAND (CSE. SD.)	FINE SAND (F SD.)	SILT (SL.)	CLAY (CL.)

GRAIN SIZE	MM	305	75	2.0	0.25	0.05	0.005
	IN.	12	3				

SOIL MOISTURE - CORRELATION OF TERMS

SOIL MOISTURE SCALE (ATTERBERG LIMITS)	FIELD MOISTURE DESCRIPTION	GUIDE FOR FIELD MOISTURE DESCRIPTION
	- SATURATED - (SAT.)	USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE
LL — LIQUID LIMIT		
PLASTIC RANGE (PI)	- WET - (W)	SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE
PL — PLASTIC LIMIT		
OM — OPTIMUM MOISTURE SL — SHRINKAGE LIMIT	- MOIST - (M)	SOLID; AT OR NEAR OPTIMUM MOISTURE
	- DRY - (D)	REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE

PLASTICITY

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

COLOR

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

GRADATION

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

ANGULARITY OF GRAINS

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

MINERALOGICAL COMPOSITION

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

COMPRESSIBILITY

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

PERCENTAGE OF MATERIAL

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

GROUND WATER

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

MISCELLANEOUS SYMBOLS

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

RECOMMENDATION SYMBOLS

- UNDERCUT
- 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-550
- [ ] VANE SHEAR TEST
- [ ] PORTABLE HOIST
- [ ] _____
- [ ] _____

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

HAMMER TYPE:
- [X] AUTOMATIC [ ] MANUAL

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

HAND TOOLS:
- [ ] POST HOLE DIGGER
- [X] HAND AUGER
- [ ] SOUNDING ROD
- [ ] VANE SHEAR TEST
- [ ] _____

ROCK DESCRIPTION

HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT REFUSAL IF TESTED. AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS IN NON-COASTAL PLAIN MATERIAL, THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK.
ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:

WEATHERED ROCK (WR)	NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > 100 BLOWS PER FOOT IF TESTED.
CRYSTALLINE ROCK (CR)	FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC.
NON-CRYSTALLINE ROCK (NCR)	FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN SEDIMENTARY ROCK THAT WOULD YEILD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC.
COASTAL PLAIN SEDIMENTARY ROCK (CP)	COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED SHELL BEDS, ETC.

WEATHERING

FRESH	ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE.
VERY SLIGHT (V SLI.)	ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN, CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER HAMMER BLOWS IF OF A CRYSTALLINE NATURE.
SLIGHT (SLI.)	ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO 1 INCH. OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR CRYSTALS ARE DULL AND DISCOLORED. CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS.
MODERATE (MOD.)	SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLAY. ROCK HAS DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED WITH FRESH ROCK.
MODERATELY SEVERE (MOD. SEV.)	ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK. ROCK GIVES "CLUNK" SOUND WHEN STRUCK. *IF TESTED, WOULD YIELD SPT REFUSAL*
SEVERE (SEV.)	ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND EVIDENT BUT REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. *IF TESTED, WOULD YIELD SPT N VALUES > 100 BPF*
VERY SEVERE (V SEV.)	ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS ARE DISCERNIBLE BUT MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE THAT ONLY MINOR VESTIGES OF ORIGINAL ROCK FABRIC REMAIN. *IF TESTED, WOULD YIELD SPT N VALUES < 100 BPF*
COMPLETE	ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.

ROCK HARDNESS

VERY HARD	CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.
HARD	CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN.
MODERATELY HARD	CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS.
MEDIUM HARD	CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PEICES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK.
SOFT	CAN BE GROVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE.
VERY SOFT	CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 INCH OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY FINGERNAIL.

FRACTURE SPACING

TERM	SPACING
VERY WIDE	MORE THAN 10 FEET
WIDE	3 TO 10 FEET
MODERATELY CLOSE	1 TO 3 FEET
CLOSE	0.16 TO 1 FOOT
VERY CLOSE	LESS THAN 0.16 FEET

BEDDING

TERM	THICKNESS
VERY THICKLY BEDDED	4 FEET
THICKLY BEDDED	1.5 - 4 FEET
THINLY BEDDED	0.16 - 1.5 FEET
VERY THINLY BEDDED	0.03 - 0.16 FEET
THICKLY LAMINATED	0.008 - 0.03 FEET
THINLY LAMINATED	< 0.008 FEET

INDURATION

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

FRIABLE	RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE.
MODERATELY INDURATED	GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER.
INDURATED	GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER.
EXTREMELY INDURATED	SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.

TERMS AND DEFINITIONS

ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER.

AQUIFER - A WATER BEARING FORMATION OR STRATA.

ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND.

ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, SUCH AS SHALE, SLATE, ETC.

ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE.

CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE.

COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE.

CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.

DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK.

DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL.

DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH.

FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE.

FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES.

FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM PARENT MATERIAL.

FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM.

FORMATION (FM.) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD.

JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED.

LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT.

LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS.

MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE.

PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM.

RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK.

ROCK QUALITY DESIGNATION (RQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.

SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK.

SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS.

SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE.

STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS.

STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE.

STRATA ROCK QUALITY DESIGNATION (SRQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE.

TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.

BENCH MARK:
BORING ELEVATIONS TAKEN FROM R2707_ls_tnl_180309.tin
DATED 03/28/18 ELEVATION: FEET

NOTES:
FIAD - FILLED IMMEDIATELY AFTER DRILLING

DATE: 1-XX-17

TIP PROJECT: R–2707D

CONTRACT: 34497

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

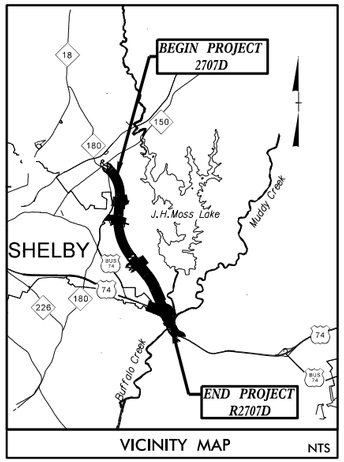
CLEVELAND COUNTY

LOCATION: US 74, SHELBY BYPASS FROM EAST OF NC 150 TO EXISTING US 74, WEST OF SR 2238 (LONG BRANCH ROAD)

TYPE OF WORK: GRADING, DRAINAGE, PAVING, & STRUCTURES

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R–2707D	2A	125

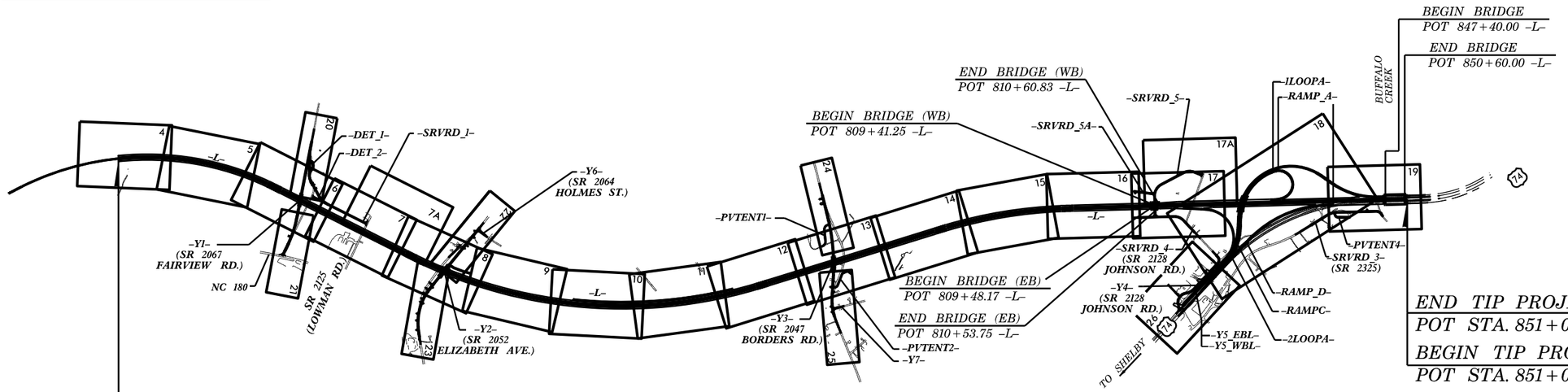
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34497.1.F56	N/A	P.E.
		R/W & UTIL



VICINITY MAP NTS

25% PLAN SUBMITTAL

NAD 83/ 95



END TIP PROJECT R–2707C
POC STA. 635+00.00 –L–

BEGIN TIP PROJECT R–2707D
POC STA. 635+00.00 –L–

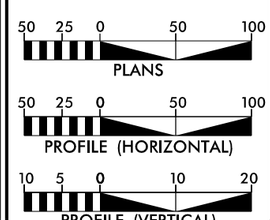
THIS PROJECT IS NOT WITHIN ANY CITY LIMITS

THIS IS A CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES

CLEARING FOR 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 = 41,600
ADT 2040 = 59,200
K = 11 %
D = 55 %
T = 15 % *
V = 70 MPH
* TTST = 10% DUAL 5%

FUNC CLASS = FREEWAY

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT R–2707D = 4.008 MI.
LENGTH OF STRUCTURE TIP PROJECT R–2707D = 0.083 MI.
TOTAL LENGTH OF TIP PROJECT R–2707D = 4.091 MI.

STRUCTURE LENGTHS BASED ON WB LANES

Stantec

PREPARED IN THE OFFICE OF:
STANTEC CONSULTING
801 Jones Franklin Road | Suite 300 | Raleigh, NC 27606
Tel. (919) 851-6866 | Fax. (919) 851-7024 | www.stantec.com
License No. F-0672

FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
FEBRUARY 2018

LETTING DATE:
FEBRUARY 19, 2019

JOSEPH T. KELVINGTON, P.E.
PROJECT ENGINEER

MICHAEL LINDGREN, P.E.
PROJECT DESIGN ENGINEER

J. B. MCSWAIN
NCDOT DIVISON 12

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

Roadway Subsurface Investigation Report - Inventory

US 74, Shelby Bypass from East of NC 150 to Existing US 74, West of SR 2238 (Long Branch Road)
Cleveland County, North Carolina
WBS: 34497.1.1 TIP: R-2707D
Falcon Project No.: G17053.00

Prepared for:
Stantec
801 Jones Franklin Road, Suite 300
Raleigh, NC 27606-3563

Submitted by:
Falcon Engineering, Inc.
1210 Trinity Road, Suite 110
Cary, North Carolina 27513
(919) 871-0800
www.falconengineers.com

November 14, 2018

WBS:	34497.1.1
TIP:	R-2707D
COUNTY:	Cleveland
DESCRIPTION:	US 74, Shelby Bypass From East of NC 150 to Existing US 74, West of SR 2238 (Long Branch Road)
SUBJECT:	Roadway Subsurface Investigation – Inventory

PROJECT DESCRIPTION

This project consists of 4.1 miles of proposed new roadway, realignment, and widening in Cleveland County. A new four lane bypass will be constructed between NC 150 and existing US 74. The bypass will include multiple ramps, service roads, and structures. Multiple side streets and attached drives will be widened, realigned, or graded at various locations.

Included in this project are three reinforced box culverts on facilitating water crossings along the mainline, eight bridge structures along and/or over the mainline, one retaining wall between –Y4– and –Y5-, and one sound wall along the mainline. Culvert borings are included in this report. Borings for bridge structures, retaining walls, and the sound wall are not included herein and will be submitted under separate cover. Various stream locations are proposed, and borings for those locations have been submitted separately.

The investigation was conducted between December 4, 2017 and May 1, 2018 in general accordance with our Proposal to Provide Geotechnical Engineering Services, dated July 12, 2017. The recommendations provided in this report are based solely on our site reconnaissance, soil test borings and laboratory test data, engineering evaluation of these data, and generally accepted soil and foundation engineering practices and principles.

A total of one hundred and seventy-six (176) Standard Penetration Test (SPT) borings and two (2) auger probes were drilled for the proposed roadway alignments and culverts. All mechanical borings were drilled using a CME-550X or Mobil B-57 ATV rig equipped with 2 ¼-inch inside diameter hollow-stem augers, and SPT testing was performed with an automatic hammer. Representative soil samples, collected with a split-barrel sampler or hand auger, were selected for laboratory testing to verify visual field classifications. In addition, bulk samples were collected for standard Proctor compaction and California Bearing Ratio (CBR) testing.

The following alignments, totaling approximately 5.64 miles were explicitly investigated. Other minor Y-lines and driveways are included on the project but improvements are not anticipated to be significant enough to warrant investigation.

Alignment	Station (ft)
-L- (Shelby Bypass)	635+00—851+00
-Y1- (Fairview Rd)	10+00.00—29+30.30
-Y2- (Elizabeth Ave)	11+00.00—32+23.90
-Y3- (Borders Rd)	12+00.00—32+00.00
-Y4- (Johnson Rd)	9+90.00—21+06.50
-Y5- (US 74)	32+50.00—40+88.00
-Y6- (Holmes St)	8+35.00—10+00.00
-RAMP_A-	9+71.05—47+52.43
-LOOPA-	9+89.36—38+02.84
-RAMP_C-	10+00.00—23+88.90
-RAMP_D-	10+00.00—32+50.00
-SRVRD_1-	10+00.00—25+90.92
-SRVRD_3-	12+00.00—22+43.31
-SRVRD_4-	9+78.55—20+20.00
-SRVRD_5-	10+10.00—22+96.49
-PVTENT2-	10+00.00—14+20.00

In many instances, multiple alignments run parallel, and a single boring may be considered relevant to two or more alignments.

AREAS OF SPECIAL GEOTECHNICAL INTEREST

I. The following locations contain highly plastic soils with plasticity indices (PI) greater than 35 within 3 feet of proposed subgrade elevations:

Alignment	Station (ft)
-L-	674+00 to 676+00
-L-	698+00 to 700+00
-Y2-	22+00 to 24+00

II. Shallow ground water was measured within the following area and may cause groundwater related stability problems during construction:

Alignment	Station (ft)
-L-	755+00

III. Alluvial soils were encountered near the following locations. The potential for shallow groundwater and wet, soft or organic soils should be anticipated at these locations:

Alignment	Station (ft)
-L-	654+14
-L-	716+89
-L-	725+00
-L-	742+00 to 744+00
-L-	777+00
-L-	797+00
-L-	805+00
-SRVRD4-	17+00

Isolated alluvial soils are likely to exist elsewhere on the site between borings in proximity to natural waterways.

IV. Artificial fill was encountered at the following locations:

Alignment	Station (ft)
-L-	675+00
-L-	727+00
-L-	833+00
-RAMP A-	34+12
-PVTENT-	6+00
-Y4-	10+14

V. Undocumented landfills material including various soils containing trash and debris was encountered at the following areas:

Alignment	Station (ft)
-L-	738+75 to 741+50
-SRVRD1-	18+75 to 20+00

PHYSIOGRAPHY AND GEOLOGY

The project site is in the Inner Piedmont Belt Physiographic Province of North Carolina. According to the ***Geologic Map of North Carolina*** (1985), the site is underlain by three major rock types in the Inner Piedmont Belt Physiographic Province. The site transitions from west to east across Biotite Gneiss and Schist (**CZbg**), Mica Schist (**CZms**) and Cherryville Granite (**Mc**). The Biotite Gneiss, Schist and Mica Schist are all of the Cambrian/Late Proterozoic Period. The intrusive Cherryville Granite is of the Mississippian subperiod.

The Biotite Gneiss and Schist (**CZbg**) is noted to consist of biotite gneiss and schist – inequigranular, with locally abundant potassic feldspar and garnet; interlayered and gradational with calc-silicate rock, sillimanite-mica schist, mica schist and amphibolite and contains small masses of granitic rock. The Mica Schist Schist (**CZms**) is noted to consist of mica schist – with garnet, staurolite, kyanite, or sillimanite occurring locally; and lenses and layers of quartz schist, micaceous quartzite, calc-silicate rock, biotite gneiss, amphibiolite and phyllite. The Cherryville Granite (**Mc**) is noted to consist of granite – massive to weakly foliated; containing pegmatites.

Existing site topography is typical of North Carolina's foothills region. The foothills region is a portion of the Western Piedmont that approaches the mountain region. Terrain is typically more rugged than the majority of the piedmont, but with less overall elevation change that the mountain region. Topography along the project is generally rolling, with steep ravines in the vicinity of streams. The existing ground surface generally grades downward in the upstation direction, with elevations ranging from a high of around 910 feet to a low of around 630 feet. Exposed bedrock is visible at various locations in stream channels and banks or in close proximity to streams, as well as in various existing roadway cuts in the vicinity of the project.

Existing land use is a mix of agriculture, residential, industrial, and commercial, with large portions of the project in undeveloped fields or wooded areas. Currently developed areas are predominantly at the eastern terminus of the project as well as near various roadway crossings and tie-ins.

SOIL PROPERTIES

A variety of soils were encountered along the project, including existing roadway embankments, artificial fill, alluvial deposits, residual soils, weathered rock and crystalline rock. Areas where soils at the ground surface are of a unique origin (i.e. not residual soils) are approximately delineated on the boring location plans based on subsurface conditions encountered in nearby borings, and various topographical, vegetative, or other visual surface features.

Topsoil and rootmat was encountered in grassy, brushy, and wooded areas ranging in thickness from 0.1 to 0.7 feet, and typically on the order of 0.4 to 0.6 feet.

Artificial Fill soils were encountered at the ground surface beneath thin layers of topsoil. These consist of 3 to 16 feet of moist to wet, very loose to very dense, silty, clayey and clean sands (A-2-4, A-2-6, A-3) and moist to wet, very soft to hard, sandy silts and sandy and silty clays (A-4, A-6, A-7).

Roadway Embankment soils were encountered at the ground surface adjacent to existing roadways. These consist of 3 to 17 feet of moist, medium stiff, sandy silt (A-4).

Alluvial soils were encountered at the ground surface near the historic floodplains of natural waterways. These soils extended to depths of up to approximately 8 feet and consist of moist to wet, soft, sandy and silty clays (A-6, A-7) and very loose to loose, silty, clayey, and clean sands (A-2-4, A-2-6, A-3) with trace amounts of organic material.

Residual soils were encountered at the ground surface, or beneath artificial fill, roadway embankments or alluvial deposits. These soils consist of dry to wet, loose to dense, clayey and silty sands (A-2-4 and A-2-6) and very soft to very stiff, sandy clay and silt, clayey silt, and silty clays (A-4, A-5, A-6, A-7).

Weathered Rock (WR) is a very hard material with properties intermediate of soil and rock. WR is classified as having an N-value of greater than 100 blows per one foot. WR encountered on the project generally consists of tan, white and gray weathered granite, gneiss or mica schist.

Crystalline Rock, in the form of granite and gneiss, was encountered beneath weathered rock or residual soils at various locations throughout the site. CR is classified as material that yields auger refusal or SPT refusal (blow count of 60/0.0 or 60/0.1 feet.)

GROUNDWATER PROPERTIES

Groundwater levels were measured at the time of boring completion, and in many cases after a waiting period of at least 24 hours. Borings drilled within and in close proximity to existing roadways, and within residential or livestock areas were backfilled immediately after completion due to safety considerations.

Groundwater levels across the site were generally deep, with the exception of areas near streams and existing low, wet areas. One existing pond was noted within the project right of way limits. The Kings Mountain Reservoir is located to the northeast of the project corridor. Ten wells were noted within the project right of way.

Two ponds were encountered at the following locations:

Alignment	Station (ft)
-L-	815+00 to 816+00 LT
-SRVRD5-	18+70 to 20+00 RT

Wells are located at the following locations:

Alignment	Station (ft)
-L-	667+63, 126 ft RT
-L-	677+78, 102 ft RT
-L-	688+88, 151 ft RT
-L-	756+96, 49 ft RT
-Y2-	22+26, 40 ft RT
-Y2-	24+48, 15 ft LT
-Y3-	25+98, 95 ft RT
-Y6-	9+12, 23 ft RT
-SRVRD1-	15+17, 22 ft LT

ADDITIONAL LABORATORY TESTING

The following bulk samples were obtained:

Sample	Location	Depth (ft)	Test
BS-1	20+00, 25' RT, -SR3-	1.0 – 11.0	California Bearing Ratio, Standard Proctor
BS-2	23+00, 40' RT, -RAMP_D-	1.0 – 10.0	California Bearing Ratio, Standard Proctor
BS-3	751+00, CL, -L-	1.0 – 10.0	California Bearing Ratio, Standard Proctor

Classification test results for bulk samples are included in the subsurface profiles and cross sections and Standard Proctor and California Bearing Ratio (CBR) data is attached in the Appendix.

CLOSING

Falcon appreciates the opportunity to have provided our geotechnical engineering services for the above referenced project. If you have any questions concerning the contents of this report or need additional information, please do not hesitate to contact our office.

FALCON ENGINEERING, INC.

Report Prepared By:

W. Scott Hunsberger, PE
Geotechnical Engineer

Report Reviewed By:

Jeremy R. Hamm, PE
Geotechnical Engineering Manager

PROJECT REFERENCE NO.	SHEET NO.
R-2707D	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

50 25 0 50 100

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "M 77"
WITH NAD 83/95 STATE PLANE GRID COORDINATES OF
NORTHING: 573127.522(ft) EASTING: 1242971.658(ft)
ELEVATION: 852.28(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99984410
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "M 77" TO -L- STATION IS

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

-L-

Pls Sta 617+78.16	PI Sta 640+73.56	Pls Sta 660+66.73
Θs = 1° 33' 45.0"	Δ = 51° 31' 25.8" (RT)	Θs = 1° 33' 45.0"
Ls = 250.00'	D = 1° 15' 00.0"	Ls = 250.00'
LT = 166.67'	L = 4,121.91'	LT = 166.67'
ST = 83.34'	T = 2,212.07'	ST = 83.34'
	R = 4,583.66'	
	SE = .05	
	DS = 70 MPH	

NC GRID NAD 83/95

NAD 83/95

630 635 640

BEGIN TIP PROJECT R-2707D
POC Sta.635+00.00 -L-

END TIP PROJECT R-2707C
POC Sta.635+00.00 -L-

LP-STA 634+50

MATCHLINE -L- STA 643+00.00 SEE SHEET 5

L_63700_50LT
L_63900_50LT
L_64100_50LT
L_64300_50LT

PDE
+60 214'

BL-141
BL-142
BL-143

RIP RAP
CONC
60" CONC
25BKO
4SBW
JS
WLB
ST
F
C
GR

BM #28
-BL- STA 603+27
3' RIGHT
ELEV.= 878.16'

REFERENCE:
—FOR -L- PROFILE, SEE SHEET NO.27

REVISIONS

02-AUG-2018 16:02
X:\Projects\2017\G17053.00 Stantec R2707D&E Shelby Bypass\R2707_NCDOT_Electronic_File_Tree\Geotech\InvestigationDesign\R2707_GEO_RDWY\CADD_GEOTECH\PlanProf\R2707D_GEO_PSH_04.dgn
Coordinate AT [all]

-L-		
PIs Sta 617+78.16	PI Sta 640+73.56	PIs Sta 660+66.73
Θs = 1° 33' 45.0"	Δ = 51° 31' 25.8" (RT)	Θs = 1° 33' 45.0"
Ls = 250.00'	D = 1° 15' 00.0"	Ls = 250.00'
LT = 166.67'	L = 4,121.91'	LT = 166.67'
ST = 83.34'	T = 2,212.07'	ST = 83.34'
	R = 4,583.66'	
	SE = .05	
	DS = 70 MPH	

PROJECT REFERENCE NO.	SHEET NO.
R-2707D	5
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

50 25 0 50 100

NAD 83/95

645 650 655

MATCH SHEET NO. 4 STA. 643+00 -L-

MATCH SHEET NO. 6 STA. 656+50 -L-

DP-STA.648+32.08

L_64300_50LT
L_64682_14LT
L_64574_64RT
L_64900_80RT
L_65100_60LT
L_65300_60LT
L_65500_60LT

BL-144 BL-145 BL-146 BL-147

ALLUVIAL

PDE ±40/260 ±40/205 ±40/150 ±90/260 ±10/205 ±10/150 ±75/150 ±75/180 ±80/150 ±80/180

REFERENCE:
FOR -L- PROFILE, SEE SHEET NO.27

REVISIONS

8/17/99

02-AUG-2018 16:07
15.2 ft x 23.3 in
Color Plot
AT (ADOT)

\\Shelby Bypass\R2707.NCDOT.Electronic_File.Tree\Geotech\InvestigationDesign\R2707_GEO_RDWY\CADD_GEOTECH\PlanProf\R2707D_GEO_PSH_05.dgn

Shelby Bypass\R2707.NCDOT.Electronic_File.Tree\Geotech\InvestigationDesign\R2707_GEO_RDWY\CADD_GEOTECH\PlanProf\R2707D_GEO_PSH_05.dgn

R-2707D&E Stantec 2707D\GI7053.00

PROJECT REFERENCE NO.	SHEET NO.
R-2707D	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

50 25 0 50 100

NAD 83/95

-L-

PIs Sta 617+78.16	PI Sta 640+73.56	PIs Sta 660+66.73
Θs = 1° 33' 45.0"	Δ = 51° 31' 25.8" (RT)	Θs = 1° 33' 45.0"
Ls = 250.00'	D = 1° 15' 00.0"	Ls = 250.00'
LT = 166.67'	L = 4,121.91	LT = 166.67'
ST = 83.34'	T = 2,212.07'	ST = 83.34'
	R = 4,583.66'	
	SE = .05	
	DS = 70 MPH	

-Y1-

PIs Sta 22+89.15	PI Sta 25+22.07	PIs Sta 27+53.96
Θs = 2° 24' 00.0"	Δ = 10° 44' 39.5" (RT)	Θs = 2° 24' 00.0"
Ls = 160.00'	D = 3° 00' 00.0"	Ls = 160.00'
LT = 106.68'	L = 358.14	LT = 106.68'
ST = 53.34'	T = 179.60'	ST = 53.34'
	R = 1,909.86'	
	SE = .04	
	DS = 35 MPH	

-SRVRD_1-

PI Sta 17+75.32
Δ = 35° 15' 10.8" (LT)
D = 14° 19' 26.2"
L = 246.11'
T = 127.09'
R = 400.00'
SE = .03
R0 = 50'
DS= 15 MPH

MATCH SHEET NO. 5
STA. 656+50 -L-

MATCH SHEET NO. 20
STA. 14+00 -SRVRD_1-

MATCH SHEET NO. 20
STA. 16+75 -Y1-

MATCH SHEET NO. 7
STA. 670+00 -L-

MATCH SHEET NO. 7
STA. 18+71.37 -SRVRD_1-

MATCH SHEET NO. 21
STA. 24+00 -Y1-

L_65700_19LT

L_65891_2RT

L_66100

L_66811_4LT

Y1_1700_10LT

SRA_1502_10LT

SRA_1700

Y1_2300_25RT

S 4° 24' 33.4" W

S 78° 44' 26.0" W

POT Sta.10+00.00
-DET_2-

PC Sta.16+48.23 -SRVRD_1-

POT Sta.665+78.41 -L- =
POT Sta.19+82.46 -Y1-

CS Sta. 659+83.39 -L-

ST Sta. 662+33.39 -L-

TS Sta. 21+82.47 -Y1-

SC Sta. 23+42.47 -Y1-

BM #29
-BY23- STA 34+56
18' RIGHT
ELEV.= 892.51'

BL-148

BL-149
BY23

BY23-407

660

665

670

REFERENCES:
FOR –L– PROFILE, SEE SHEET NO. 28
FOR –Y1– PROFILE, SEE SHEET NO. 44
FOR –SRVRD_1– PROFILE, SEE SHEET NO. 50
FOR –DET_1– PROFILE, SEE SHEET NO. 2B–1
FOR –DET_2– PROFILE, SEE SHEET NO. 2B–2

REVISIONS

02-AUG-2018 16:04
K:\Projects\2017\17053.00 Stantec R2707D&E Shelby Bypass\R2707_NCDOT_Electronic_File_Tree\Geotech\InvestigationDesign\R2707_GEO_ROWY\CADD_GEOTECH\PlanProf\R2707D_GEO_PSH_06.dgn
cadmcbride

PROJECT REFERENCE NO.	SHEET NO.
R-2707D	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

50 25 0 50 100

NAD 83/95

SHELBY ETJ LIMITS

-SRVRD_1-
PI Sta 17+75.32
Δ = 35°15' 10.8" (LT)
D = 14°19' 26.2"
L = 246.11'
T = 127.09'
R = 400.00'
SE = .03
RO = 50'
DS= 15 MPH

PT Sta. 18+94.35 -SRVRD_1- =
POT Sta.12+94.38 -DET_2-

END CONSTRUCTION
POT Sta.25+80.46 -SRVRD_1-

MATCH SHEET NO. 6
STA. 18+71.37 -SRVRD_1-

MATCH SHEET NO. 6
STA. 670+00 -L-

MATCH SHEET NO. 8
STA. 683+50 -L-

S 4°24' 33.4"W

BM #30
-BY24- STA 7+19
19' LEFT
ELEV.= 908.10'

SR 2025 LOWMAN RD

REFERENCES:
FOR -L- PROFILE, SEE SHEET NO. 28
FOR -SRVRD_1- PROFILE, SEE SHEET NO. 50

REVISIONS

8/17/99

01-AUG-2018 09:25
C:\Projects\2017\G17053.00 Stantec R2707D&E Shelby Bypass\R2707_NCDOT_Electronic_File_Tree\Geotech\Investigation\Design\R2707_GEO_RDWY\CADD_GEOTECH\PlanProf\R2707D_GEO_PSH_07.dgn
jmcgee
Standard Cell Library for Geotechnical Applications

PROJECT REFERENCE NO.	SHEET NO.
R-2707D	8
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

50 25 0 50 100

NAD 83/95

-L-

PIs Sta 686+23.97	PI Sta 716+56.80	PIs Sta 744+15.89
Θs = 0°45'00.0"	Δ = 42°26'22.0" (LT)	Θs = 0°45'00.0"
Ls = 200.00'	D = 0°45'00.0"	Ls = 200.00'
LT = 133.33'	L = 5,658.59'	LT = 133.33'
ST = 66.67'	T = 2,966.17'	ST = 66.67'
	R = 7,639.44'	
	SE = .03	
	DS = 70 MPH	

-Y2-

PIs Sta 24+11.64	PI Sta 27+60.12	PIs Sta 30+90.65
Θs = 6°30'00.0"	Δ = 35°28'11.3" (LT)	Θs = 6°30'00.0"
Ls = 200.00'	D = 6°30'00.0"	Ls = 200.00'
LT = 133.42'	L = 545.69'	LT = 133.42'
ST = 66.75'	T = 281.91'	ST = 66.75'
	R = 881.47'	
	SE = .08	
	DS = 50 MPH	

MATCH SHEET NO. 8A

MATCH SHEET NO. 7 STA. 683+50 -L-

MATCH SHEET NO. 22 STA. 15+00 -Y2-

MATCH SHEET NO. 9 STA. 697+00 -L-

MATCH SHEET NO. 23 STA. 24+00 -Y2-

TS Sta. 684+90.63 -L-

SC Sta. 686+90.63 -L-

POC Sta. 691+83.46 -L-

POT Sta. 20+16.72 -Y2-

TS Sta. 22+78.21 -Y2-

TEMPORARY CONSTRUCTION EASEMENT

L_68700

L_68827_1LT

L_68517_19RT

L_69500_75RT

L_69709_75RT

R_2300_40LT

S 4°24'33.4"W

N 72°56'34.1"W

HP-STA.684+27.38

PDE

685 690 695

REFERENCE:
FOR -L- PROFILE, SEE SHEET NO. 29
FOR -Y2- PROFILE, SEE SHEET NO. 45

REVISIONS

8/17/99

PLAN: 06-2018 09:37
User: ...
Design Services: ...
Created: ...
Shelby Bypass\R2707_NCDOT_Electronic_File_Tree\Geotech\InvestigationDesign\R2707D&E_Shelby Bypass\R2707_GEO_RDWY\CADD_GEOTECH\PlanProf\R2707D_GEO_PSH_08.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-2707D	9
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

50 25 0 50 100

NAD 83/95

-L-

PIs Sta 686+23.97	PI Sta 716+56.80	PIs Sta 744+15.89
Θs = 0° 45' 00.0"	Δ = 42° 26' 22.0" (LT)	Θs = 0° 45' 00.0"
Ls = 200.00'	D = 0° 45' 00.0"	Ls = 200.00'
LT = 133.33'	L = 5,658.59	LT = 133.33'
ST = 66.67'	T = 2,966.17'	ST = 66.67'
	R = 7,639.44'	
	SE = .03	
	DS = 70 MPH	

60' WW

SHELBY ETJ LIMITS

JUNKYARD

700

705

710

SHELBY ETJ LIMITS

JUNKYARD

JUNKYARD

JUNKYARD

SOIL

SOIL

MATCH SHEET NO. 8 STA. 697+00 -L-

MATCH SHEET NO. 10 STA. 710+50 -L-

48" WW & ISBW

48" WW & ISBW

BL-153

BL-154

L_69700_75RT

L_69900_75RT

L_70100_75RT

L_70300_75RT

L_70486_75RT

L_70700

L_70900

REFERENCE:
FOR –L– PROFILE, SEE SHEET NO. 29

REVISIONS

8/17/99

01-AUG-2018 09:33
User:cdavis
Coding Line
C:\Projects\2017\GI7053.00 Stantec R2707D&E Shelby Bypass\VR2707_NCDOT_Electronic_File_Tree\Geotech\InvestigationDesign\VR2707_GEO_RDWY\CADD_GEOTECH\PlanProf\VR2707D_GEO_PSH_09.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-2707D	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

50 25 0 50 100

NAD 83/95

-L-

PI Sta 686+23.97	PI Sta 716+56.80	PI Sta 744+15.89
Θs = 0° 45' 00.0"	Δ = 42° 26' 22.0" (LT)	Θs = 0° 45' 00.0"
Ls = 200.00'	D = 0° 45' 00.0"	Ls = 200.00'
LT = 133.33'	L = 5,658.59'	LT = 133.33'
ST = 66.67'	T = 2,966.17'	ST = 66.67'
	R = 7,639.44'	
	SE = .03	
	DS = 70 MPH	

REVISIONS

8/17/99

MATCH SHEET NO. 9 STA. 710+50 -L-

MATCH SHEET NO. 11 STA. 724+00 -L-

L_71100_75LT

L_71300

L_71582_96RT

L_71689_9RT

L_71965_84LT

L_72100_60LT

L_72300_60LT

BL-155

BL-156

BL-157

BL-158

ALLUVIAL

SHELBY ETJ LIMITS

STREAM REDESIGN PENDING

EXISTING R/W

SOIL

HTR

PDE

TDE

JS

F

C

+00.00 310'

+35.00 278'

+55.00 220'

+73.00 285'

+80 170'

+80 173'

+40 150'

BM #31
-BL- STA 682+40
58' LEFT
ELEV.= 814.22'

60" WW & 15BW

WTL GATE

84" CML & 35BW

P-STA 723+50.00

REFERENCE:
FOR –L– PROFILE, SEE SHEET NO. 30

01-AUG-2018 09:34
C:\Users\cs28017\G17053.00 Stantec R2707D&E Shelby Bypass\R2707_NCDOT_Electronic_File_Tree\Geotech\InvestigationDesign\R2707_GEO_RDWY\CADD_GEOTECH\PlanProf\R2707D_GEO_PSH_10.dgn
Corporation

PROJECT REFERENCE NO.	SHEET NO.
R-2707D	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

50 25 0 50 100

NAD 83/95

PI Sta 686+23.97
Θs = 0° 45' 00.0"
Ls = 200.00'
LT = 133.33'
ST = 66.67'

PI Sta 716+56.80
Δ = 42° 26' 22.5" (LT)
D = 0° 45' 00.0"
L = 5,658.59'
T = 2,966.17'
R = 7,639.44'
SE = .03'
DS = 70 MPH

PI Sta 744+15.89
Θs = 0° 45' 00.0"
Ls = 200.00'
LT = 133.33'
ST = 66.67'

PRESERVATION AREA

BM #32
-BY27- STA 5+84
31' LEFT
ELEV.= 800.60'

BY27-418

BY27-419

STREAM REDESIGN PENDING

STREAM REDESIGN PENDING

SHELBY ETJ LIMITS

ALLUVIAL

L_72500_60LT

L_72700

L_72880_31LT

L_73132_34LT

L_73300_70RT

L_73500_75RT

L_73700_75RT

BL-159 BY27

BL-160

BL-161

MATCH SHEET NO. 10 STA. 724+00 -L-

MATCH SHEET NO. 12 STA. 737+50 -L-

725

730

735

TEMPORARY CONSTRUCTION EASEMENT

TEMPORARY CONSTRUCTION EASEMENT

REFERENCE:
FOR –L– PROFILE, SEE SHEET NO. 30

NOTE:
ALL PIPES ARE RCP UNLESS OTHERWISE NOTED

REVISIONS

08-AUG-2018 14:55
13.1 Inches X 36.0 Inches
Color Device AT_FA001

C:\Users\VR2707_GEO_RDWY\CADD_GEOTECH\PlanProf\VR2707D_GEO_PSH_11.dgn
Shelby Bypass\VR2707_NCDOT_Electronic_File_Tree\Geotech\Investigation\Design\R
R2707D&E Stantec R2707_GI7053.00

PROJECT REFERENCE NO.	SHEET NO.
R-2707D	12
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

50 25 0 50 100

NAD 83/95

-L-

Pls Sta 686+23.97	PI Sta 716+56.80	Pls Sta 744+15.89
Θs = 0° 45' 00.0"	Δ = 42° 26' 22.0" (LT)	Θs = 0° 45' 00.0"
Ls = 200.00'	D = 0° 45' 00.0"	Ls = 200.00'
LT = 133.33'	L = 5,658.59'	LT = 133.33'
ST = 66.67'	T = 2,966.17'	ST = 66.67'
	R = 7,639.44'	
	SE = .03	
	DS = 70 MPH	

740 745 750

CS Sta. 743+49.23 -L-

ST Sta. 745+49.23 -L-

STREAM REDESIGN PENDING

BM #33
-BL- STA 709+29
3' LEFT
ELEV.= 784.14'

PDE

BL-162 BL-163 BL-164 BL-165

L_74261_78LT

ALLUVIAL

ARTIFICAL FILL

L_74100_40RT

L_73900_40RT

L_74300

L_74500

L_74700

L_74900

L_75100

L_74390_98RT

S. 39° 31' 48.6" E

48" WW & 25BW

SHELBY ETJ LIMITS

MATCH SHEET NO. 11 STA. 737+50 -L-

MATCH SHEET NO. 13 STA. 751+00 -L-

REFERENCE:
FOR -L- PROFILE, SEE SHEET NO. 31

REVISIONS

8/17/99

09-AUG-2018 14:46
C:\Projects\2017\G17053.00 Stantec R2707D&E Shelby Bypass\R2707_GEO_RDWY\CADD_GEOTECH\PlanProf\R2707D_GEO_PSH_12.dgn
Coordinate System: NAD 1983 (2011) North Carolina FIPS 3200 (Feet)

PROJECT REFERENCE NO.	SHEET NO.
R-2707D	13
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

50 25 0 50 100

NAD 83/95

REVISIONS 8/17/99

-PVTENTI-
PI Sta 6+40.93
Δ = 71° 06' 22.2" (LT)
D = 76° 23' 39.7"
L = 93.08'
T = 53.60'
R = 75.00'

-Y3-

PIs Sta 15+95.11	PI Sta 20+76.29	PIs Sta 25+52.55
θs = 1° 18' 45.0"	Δ = 15° 00' 18.8" (RT)	θs = 1° 18' 45.0"
Ls = 150.00'	D = 1° 45' 00.0"	Ls = 150.00'
LT = 100.00'	L = 857.44	LT = 100.00'
ST = 50.00'	T = 431.19'	ST = 50.00'
	R = 3,274.04'	
	SE = .04	
	DS = 50 MPH	

MATCH SHEET NO. 24 STA. 19+00 -Y3-
MATCH SHEET NO. 24 STA. 7+39.96 -PVTENTI-

PT Sta. 6+80.40 -PVTENTI-
AHD BRG N 62° 28' 37.0" E

BEGIN CONSTRUCTION
Sta. 5+65.72 -PVTENTI-

S 46° 25' 00.9" E

PVTENTI_598_13RT

PC Sta. 5+87.32
-PVTENTI-

Y3_2000

MATCH SHEET NO. 24

PRESERVATION AREA

SHELBY ETJ LIMITS

50' PERPETUAL EASEMENT FOR INGRESS & EGRESS

MATCH SHEET NO. 12 STA. 751+00 -L-

POT Sta. 756+67.45 -L- =
POC Sta. 23+21.80 -Y3-

L_75100

L_75298_9LT

L_75500

L_75900

BL-166

BY28-19

BL-167

S 39° 31' 48.6" E

L_76100

L_76300_60RT

L_76500_80RT

MATCH SHEET NO. 14 STA. 765+00 -L-

BEGIN EXPRESSWAY GUTTER +75.00

END EXPRESSWAY GUTTER +06.00

CS Sta. 25+02.55 -Y3-

Y3_2594_24RT

ST Sta. 26+52.55 -Y3-

POT Sta. 27+22.16 -Y3- =
POT Sta. 10+00.00 -PVTENT2-

S 71° 21' 16.8" W

PVTENT2_1103_11LT

PVTENT2_1299_9LT

PT Sta. 10+92.92 -PVTENT2-
AHD BRG = N 89° 41' 31.0" E

PC Sta. 10+30.38 -PVTENT2-
BK BRG = S 18° 38' 42.4" E

MATCH SHEET NO. 25
STA. 27+50 -Y3-

PT Sta. 13+23.63 -PVTENT2-
PC Sta. 13+70.86 -PVTENT2-
BK BRG = S 45° 14' 24.1" E

PT Sta. 14+13.65 -PVTENT2-

END CONSTRUCTION
POT Sta. 14+20.00 -PVTENT2-

POT Sta. 14+66.28 -PVTENT2-
BK BRG = S 16° 03' 45.0" W

PC Sta. 12+84.30 -PVTENT2-

-PVTENT2-

PI Sta 10+66.49	PI Sta 13+05.05	PI Sta 13+94.56
Δ = 71° 39' 46.5" (LT)	Δ = 45° 04' 04.2" (RT)	Δ = 61° 18' 09.7" (RT)
D = 114° 35' 29.6"	D = 114° 35' 29.6"	D = 143° 14' 22.0"
L = 62.54'	L = 39.33'	L = 42.80'
T = 36.10'	T = 20.75'	T = 23.70'
R = 50.00'	R = 50.00'	R = 40.00'

REFERENCE:
FOR –L– PROFILE, SEE SHEET NO. 32
FOR –Y3– PROFILE, SEE SHEET NO. 46
FOR –PVTENTI– & –PVTENT2– PROFILES, SEE SHEET NO. 53

PROJECT REFERENCE NO.	SHEET NO.
R-2707D	14
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

50 25 0 50 100

NAD 83/95

-L-

Pis Sta 775+20.82	PI Sta 785+37.80	Pis Sta 795+45.07
Θs = 0° 45' 00.0"	Δ = 14° 10' 54.6" (RT)	Θs = 0° 45' 00.0"
Ls = 200.00'	D = 0° 45' 00.0"	Ls = 200.00'
LT = 133.33'	L = 1890.91'	LT = 133.33'
ST = 66.67'	T = 950.31'	ST = 66.67'
	R = 7639.44'	
	SE = .03	
	DS = 70 MPH	

MATCH SHEET NO. 24

MATCH SHEET NO. 13 STA. 765+00 -L-

MATCH SHEET NO. 15 STA. 779+00 -L-

770

775

JUNKYARD

JUNKYARD

SOIL

SOIL

SOIL

SHELBY CITY LIMITS

L_76700_80LT

L_76862_31LT

L_77500_60LT

L_77900_60LT

S 39° 31' 48.6" E

L_77100

ALLUVIAL

BL-168

BL-169

BL-170

L_76800_80RT

BEGIN EXPRESSWAY GUTTER +24.00

END EXPRESSWAY GUTTER +00.00

L_77300_60RT

L_77800_60RT

BM #34
-BL- STA 741+15
5' RIGHT
ELEV.= 731.96'

TS Sta. 773+87.49 -L-

SC Sta. 775+87.49 -L-

CONC

84" BK WALL

48" BK

3SBD

EXISTING R/W

48"WW W/ISBW

45"WW

REFERENCE:
FOR –L– PROFILE, SEE SHEET NO. 33

REVISIONS

8/17/99

DATE PLOTTED: 09-AUG-2018 09:49
DIVISION: 13 - Traffic Services
DESIGN ENGINEER: AT CAROL
C:\Projects\2017\G17053.00 Stantec R2707D&E Shelby Bypass\R2707_NCDOT_Electronic_File_Tree\Geotech\Investigation\Design\R2707_GEO_RDWY\CADD_GEOTECH\PlanProf\R2707D_GEO_PSH_14.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-2707D	15
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

50 25 0 50 100

NAD 83/95

-L-

PIs Sta 775+20.82	PI Sta 785+37.80	PIs Sta 795+45.07
Θs = 0° 45' 00.0"	Δ = 14° 10' 54.5" (RT)	Θs = 0° 45' 00.0"
Ls = 200.00'	D = 0° 45' 00.0"	Ls = 200.00'
LT = 133.33'	L = 1,890.91'	LT = 133.33'
ST = 66.67'	T = 950.31'	ST = 66.67'
	R = 7,639.44'	
	SE = .03	
	DS = 70 MPH	

780 785 790

L_77900_60LT L_78100 L_78300_60LT L_78500_60LT L_78700_60LT L_78900_60LT L_79100_40LT L_79300

+00.00 160.00' +00.00 150.00' +00.00 160.00'

36" WW 36" WW & ISRW 48" WW

BL-I71 BL-I72

PDE PDE PDE

LP-STA 792+48.13

MATCH SHEET NO. 14 STA. 779+00 -L-

MATCH SHEET NO. 16 STA. 793+00 -L-

REFERENCE:
FOR –L– PROFILE, SEE SHEET NO. 34

REVISIONS

8/17/99

01-AUG-2018 09:50
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Commscope A1 (ANSI)

PROJECT REFERENCE NO.	SHEET NO.
R-2707D	16
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

50 25 0 50 100

REVISIONS 8/17/99

-L-

PIs Sta 775+20.82	PI Sta 785+37.80	PIs Sta 795+45.07
θs = 0° 45' 00.0"	Δ = 14° 10' 54.6" (RT)	θs = 0° 45' 00.0"
Ls = 200.00'	D = 0° 45' 00.0"	Ls = 200.00'
LT = 133.33'	L = 1,890.91'	LT = 133.33'
ST = 66.67'	T = 950.31'	ST = 66.67'
	R = 7,639.44'	
	SE = .03	
	DS = 70 MPH	

NAD 83/95

END OF CONSTRUCTION
POT Sta. 10+00.00

MATCH SHEET NO. 15 STA. 793+00 -L-

MATCH SHEET NO. 17 STA. 807+00 -L-

795 800 805 810

TDE TDE TDE PDE PDE PDE

+74/290 +17/277 +84/230 +35/230 +75/230 +75/175 +35/175

POT Sta. 796+78.40 -L-

CS Sta. 794+78.40 -L-

ST Sta. 796+78.40 -L-

BM #35
-BL- STA 762+27
13' LEFT -L-
ELEV.= 697.69'

ALLUVIAL

L_79300 L_79500 L_79700 L_79900 L_80500_40LT L_80700_80RT

L_80045_55RT L_80100_80RT L_80170_66RT L_80300_80RT

BL-I73 BL-I74 BL-I75

S 29°50'50" E 540.0'

+38.00/+58.83/280.00'

+38.00/+57.37/220.00'

+55.00/30.00'

+55.00/70.00'

NTE 2°29'E 928.00' REBAR-COR

SOIL

REFERENCE:
FOR –L– PROFILE, SEE SHEET NO. 34

PROJECT REFERENCE NO.	SHEET NO.
R-2707D	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

50 25 0 50 100

NAD 83/95

REVISIONS 8/17/99

MATCH SHEET NO. 16 STA. 10+50 -SRVRD_5A-

MATCH SHEET NO. 16 STA. 807+00 -L-

MATCH SHEET NO.17A STA. 16+50 -SRVRD_5-

MATCH SHEET NO. 18 STA. 820+50 -L-

MATCH SHEET NO. 18 -RAMPC-STA. 15+88.00

POT Sta. 13+48.14 -SRVRD_5A-
POC Sta. 13+75.00 -SRVRD_5-

PT Sta. 15+67.18 -SRVRD_5-

PC Sta. 13+44.98 -SRVRD_5-

S 15° 14' 49.2" E

SR5_1500

SR5_1300

S8_EB2-A

Sta. 810+00.00 -L-
Sta. 11+80.00 -SRVRD_5-

L_81500

L_81300

L_81700

L_81900

BY30-425

S 23° 50' 54.0" E

S 23° 50' 54.0" E

S 15° 45' 49.5" E

S9_EB1-A

L_80700_80RT

POT Sta. 8+14.50.00 -L-
POT Sta. 10+00.00 -RAMPC-
47.00' RT

RPC_1500

SR4_1498_14LT

SR4_1257_8LT

SR4_1700

S 23° 50' 54.0" E

POT Sta. 12+69.23 -SRVRD_4-
POT Sta. 10+00.00 -SRVRD_5-

BEGIN CONSTRUCTION
POT Sta. 9+78.55 -SRVRD_4-

PC Sta. 15+78.13 -SRVRD_4-

PT Sta. 17+46.96 -SRVRD_4-

BM #36
-BY30- STA 7+49
23' LEFT
ELEV.= 725.20'

TS Sta. 12+83.13
-RAMPC-

SC Sta. 14+83.13 -RAMPC-

END CONSTRUCTION
POT Sta. 20+20.00 -SRVRD_4-

-RAMPC-	
PIs Sta 14+16.78	PI Sta 21+60.49
Θs = 12° 12' 20.4"	Δ = 110° 33' 18.0" (RT)
Ls = 200.00'	D = 12° 12' 20.4"
LT = 133.65'	L = 905.77'
ST = 66.96'	T = 677.36'
	R = 469.42'
	SE = .08
	DS = 40 MPH

-SRVRD_4-
PI Sta 16+67.94
Δ = 48° 21' 57.1" (RT)
D = 28° 38' 52.4"
L = 168.83'
T = 89.81'
R = 200.00'
SE = .03
RO = 45°
DS = 15 MPH

-SRVRD_5-
PI Sta 14+69.12
Δ = 63° 39' 26.4" (RT)
D = 28° 38' 52.4"
L = 222.21'
T = 124.14'
R = 200.00'
SE = .03
RO = 45°
DS = 15 MPH

REFERENCE:
FOR –L– PROFILE, SEE SHEET NO. 35
FOR –SRVRD_4– PROFILE, SEE SHEET. NO. 51
FOR –SRVRD_5– PROFILE, SEE SHEET. NO. 52
FOR –SRVRD_5A– PROFILE, SEE SHEET. NO.52
FOR –RAMPC– PROFILE, SEE SHEET NO. 42

14-NOV-2018 15:46
I:\NCDOT\R2707\G\17053.00 Stantec R2707D&E Shelby Bypass\R2707_NCDOT_Electronic_File_Tree\Geotech\InvestigationDesign\R2707_GEO_RDWY\CADD_GEOTECH\PlanProf\R2707D_GEO_PSH_17.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-2707D	17A
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

50 25 0 50 100

NAD 83/95

SHELBY ETJ LIMITS

-SRVRD_5-
PI Sta 20+75.52
Δ = 50° 03' 50.7" (RT)
D = 28° 38' 52.4"
L = 174.76'
T = 93.40'
R = 200.00'
SE = .03
RO = 45°
DS = 15 MPH

PC Sta. 19+82.13 -SRVRD_5-

PT Sta. 21+56.88 -SRVRD_5-

+82.13 -SRVRD_5-
60.00'

+56.88 -SRVRD_5-
60.00'

+79.61 -SRVRD_5-
60.00'
EX R/W

EXISTING R/W
60' R/W PB 8 PG 89

UNDOCUMENTED FILL/DEBRIS

ARTIFICAL FILL

PROPOSED R/W

SR5_2100

SR5_1898_1LT

SR5_1677

S 50° 11' 27.6" E

S 0° 01' 36.5" E

GATE

BY30-424

30" CMP

24" PVC

POND W.E. 701.0'

MATCH SHEET NO. 17
STA. 16+50 -SRVRD_5-

END CONSTRUCTION
POT Sta. 22+96.49 -SRVRD_5-

MATCH SHEET NO. 17

REFERENCE:
FOR –SRVRD_5– PROFILE, SEE SHEET NO. 52

REVISIONS 8/17/99

I:\Projects\R2707_GEO_RDWY\CADD_GEOTECH\PlanProf\VR2707D_GEO_PSH_17A.dgn
Shelby Bypass\R2707_NCDOT_Electronic_File_Tree\Geotech\InvestigationDesign\R27070&E R27070&E Stantec 17\G17053.00
15-AUG-2018 16:26
User: cdavis
Pen Table: ST (ADOT)

PROJECT REFERENCE NO.	SHEET NO.
R-2707D	18

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

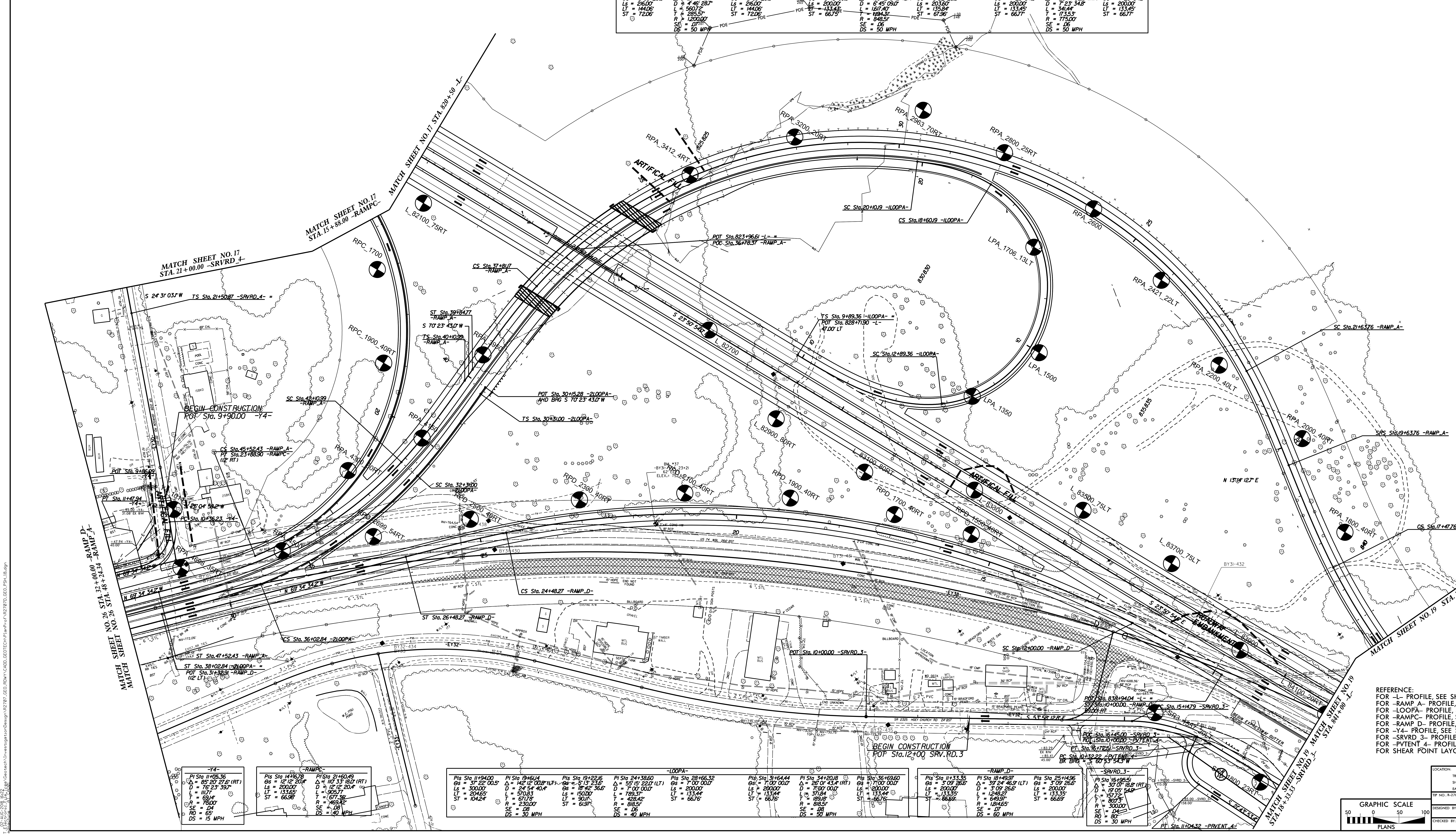
HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

-RAMP_A-

PIs Sta 18+19.82 θs = 5° 09' 23.8" Ls = 216.00' LT = 144.06' ST = 72.06'	PI Sta 14+72.62 Δ = 26° 46' 20.1" (RT) D = 4° 46' 28.7" L = 560.72' T = 285.57' R = 1,200.00' SE = .07 DS = 50 MPH	PIs Sta 11+15.11 θs = 5° 09' 23.8" Ls = 216.00' LT = 144.06' ST = 72.06'	PIs Sta 20+97.19 θs = 6° 45' 09.0" Ls = 200.00' LT = 133.43' ST = 66.75'	PI Sta 33+58.07 Δ = 109° 12' 54.9" (LT) D = 6° 45' 09.0" L = 1,617.40' T = 1,184.31' R = 848.51' SE = .06 DS = 50 MPH	PIs Sta 38+49.13 θs = 6° 52' 26.6" Ls = 203.60' LT = 135.84' ST = 67.96'	PIs Sta 46+19.20 θs = 7° 23' 34.8" Ls = 200.00' LT = 133.45' ST = 66.77'	PI Sta 43+84.53 Δ = 25° 14' 32.6" (RT) D = 7° 23' 34.8" L = 341.44' T = 173.53' R = 775.00' SE = .06 DS = 50 MPH	PIs Sta 41+44.44 θs = 7° 23' 34.8" Ls = 200.00' LT = 133.45' ST = 66.77'



-Y4-

PI Sta 11+05.36 Δ = 85° 20' 27.6" (RT) D = 76° 23' 39.7" L = 111.71' T = 69.14' R = 75.00' SE = .04 RO = 65' DS = 15 MPH

-RAMPC-

PIs Sta 14+16.78 θs = 12° 12' 20.4" Ls = 200.00' LT = 133.65' ST = 66.96'	PI Sta 21+60.49 Δ = 110° 33' 18.0" (RT) D = 12° 12' 20.4" L = 905.77 T = 677.36' R = 469.42' SE = .08 DS = 40 MPH

-LOOPA-

PIs Sta 11+94.00 θs = 37° 22' 00.5" Ls = 300.00' LT = 204.65' ST = 104.24'	PI Sta 19+61.14 Δ = 142° 12' 00.8" (LT) D = 24° 54' 40.4" L = 570.83 T = 671.78' R = 230.00' SE = .08 DS = 30 MPH	PIs Sta 19+22.16 θs = 5° 13' 23.6" θs = 18° 42' 36.6" Ls = 150.00' LT = 90.11' ST = 61.97'	PI Sta 24+38.60 Δ = 55° 15' 22.0" (LT) D = 7° 00' 00.0" L = 789.37' T = 428.42' R = 818.51' SE = .06 DS = 40 MPH	PIs Sta 28+66.32 θs = 7° 00' 00.0" Ls = 200.00' LT = 133.44' ST = 66.76'	PIs Sta 31+64.44 θs = 7° 00' 00.0" Ls = 200.00' LT = 133.44' ST = 66.76'	PI Sta 34+20.18 Δ = 26° 01' 43.4" (RT) D = 7° 00' 00.0" L = 371.84 T = 189.18' R = 818.51' SE = .08 DS = 50 MPH	PIs Sta 36+69.60 θs = 7° 00' 00.0" Ls = 200.00' LT = 133.44' ST = 66.76'

-RAMP_D-

PIs Sta 11+33.35 θs = 3° 09' 26.6" Ls = 200.00' LT = 133.35' ST = 66.69'	PI Sta 18+49.97 Δ = 39° 24' 46.9" (LT) D = 3° 09' 26.6" L = 1,248.27 T = 649.97' R = 1,814.65' SE = .07 DS = 60 MPH	PIs Sta 25+14.96 θs = 3° 09' 26.6" Ls = 200.00' LT = 133.35' ST = 66.69'

-SRVRD_3-

PI Sta 15+95.51 Δ = 30° 07' 18.8" (RT) D = 19° 05' 54.9" L = 157.72' T = 80.73' R = 300.00' SE = .04 RO = 80' DS = 30 MPH

REFERENCE:
FOR -L- PROFILE, SEE SHEET NO. 36 & 37
FOR -RAMP_A- PROFILE, SEE SHEET NO. 38, 39 & 40
FOR -LOOPA- PROFILE, SEE SHEET NO. 41 & 42
FOR -RAMPC- PROFILE, SEE SHEET NO. 42
FOR -RAMP_D- PROFILE, SEE SHEET NO. 43
FOR -Y4- PROFILE, SEE SHEET NO. 47
FOR -SRVRD_3- PROFILE, SEE SHEET NO. 51
FOR -PVTENT_4- PROFILE, SEE SHEET NO. 54
FOR SHEAR POINT LAYOUT, SEE SHEET NO. 2F

GRAPHIC SCALE
50 0 50 100
PLANS

LOCATION:
TRUMPET INTERCHANGE
SHELBY BYPASS & US-74
EAST OF SHELBY

TIP NO.: R-2707D
COUNTY: CLEVELAND

DESIGNED BY: KEITH HUDSON

CHECKED BY:
DATE:

PROJECT REFERENCE NO.	SHEET NO.
R-2707D	19
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

50 25 0 50 100

NAD 83/95

-RAMP_A-

PIs Sta 18+19.82	PI Sta 14+72.62	PIs Sta 11+15.11
θs = 5° 09' 23.8"	Δ = 26° 46' 20.1" (RT)	θs = 5° 09' 23.8"
Ls = 216.00'	D = 4° 46' 28.7"	Ls = 216.00'
LT = 144.06'	L = 560.72'	LT = 144.06'
ST = 72.06'	T = 285.57'	ST = 72.06'
	R = 1,200.00'	
	SE = .07	
	DS = 50 MPH	

-SRVRD_3-

PI Sta 23+77.25	PI Sta 24+49.57
Δ = 62° 02' 16.0" (RT)	Δ = 6° 08' 58.8" (LT)
D = 57° 17' 44.8"	D = 12° 43' 56.6"
L = 108.28'	L = 48.30'
T = 60.13'	T = 24.17'
R = 100.00'	R = 450.00'
SE = .02	SE = EXIST.
RO = 80'	RO = EXIST.
DS = 30 MPH	

MATCH SHEET NO. 18 STA. 15+80 -RAMP_A-

MATCH SHEET NO. 18 STA. 841+00 -L-

MATCH SHEET NO. 18 STA. 18+33.33 -SRVRD_3-

SC Sta.11+87.05 -RAMP_A-

POT Sta.847+14.58 -L- = ST Sta.9+71.05 -RAMP_A- 47.00' LT

END C/A & FENCE +40 LT

BEGIN C/A & FENCE +60 LT

END C/A & FENCE +40 RT

BEGIN C/A & FENCE +60 RT

SHEET 20 LIMITS

CITY OF SHELBY CORPORATE LIMITS (PB 19 PG 147)

RRA_1550

L_84300

L_84500

L_84100_20RT

SR3_2200

SR3_2000_25RT

S 23°50'54.0" E

S 23°50'54.0" E

POT Sta. 11+18 -PRVENT_4-

PC Sta. 23+17.12 -SRVRD_3-

PRC Sta. 24+25.39 -SRBRD_3-

PT Sta. 24+73.69 -SRVRD_3-

END CONSTRUCTION POT Sta. 12+80.00 -PVTENT_4-

END CONSTRUCTION POT Sta. 24+50.00 -SRVRD_3-

END TIP PROJECT R-2707D POT STA.851+00 E&WBL-L-

BEGIN TIP PROJECT R-2707E POT STA.851+00 E&WBL-L-

ROADWAY EMBANKMENT

END EXPRESSWAY GUTTER +75.00

BUFFALO CREEK

CONC BRIDGE

EXISTING R/W

POWER METER & SIGN

GATE

CHAINLINK FENCE

18" RCP

24" RCP

60" CMP

STA. 851+16.37
35.7' LEFT
ELEV.= 667.84

REFERENCE:
FOR –L– PROFILE, SEE SHEET NO. 37
FOR –RAMP_A– PROFILE, SEE SHEET NO. 38
FOR –SRVRD_3– PROFILE, SEE SHEET NO. 51
FOR –PVTENT_4– PROFILE, SEE SHEET NO. 54

REVISIONS 8/17/99

01:AUG-2018 09:54
C:\Users\cs12817\DJ7053.00 Stantec R2707D&E Shelby Bypass\R2707_GEO_RDWY\CADD_GEOTECH\PlanProf\VR2707D_GEO_PSH_19.dgn
Coordinate System: NAD 1983 (2011) North Carolina FIPS 3200 (Feet)

PROJECT REFERENCE NO.	SHEET NO.
R-2707D	20
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

50 25 0 50 100

-SRVRD_1-	
PI Sta 11+72.72	PI Sta 13+12.17
Δ = 119° 51' 36.5" (RT)	Δ = 68° 56' 18.4" (LT)
D = 57° 17' 44.8"	D = 38° 11' 49.9"
L = 209.20'	L = 180.48'
T = 172.72'	T = 102.97'
R = 100.00'	R = 150.00'
R0 = 35'	R0 = 50.00'
SE = VAR	SE = .03
DS= 15 MPH	DS = 15 MPH

NAD 83/95

SHELBY ETJ LIMITS

BEGIN CONSTRUCTION
POT Sta. 10+00.00 -Y1-

POT Sta.11+30.34 -Y1- =
PC Sta.10+00.00 -DET_1-

POT Sta.9+00.00
-DET_1-

POT Sta. 9+00.00 -Y1-

PT Sta.10+68.25
-DET_1-

PT Sta.13+89.68 -SRVRD_1- =
PT Sta.15+17.04 -DET_1-=
PC Sta.14+49.33
-DET_1-

PRC Sta.12+09.20 -SRVRD_1-

MATCH SHEET NO. 6
STA.14+00 -SRVRD_1-

PROPOSED R/W

SR1711

-EY23-

200 PR. COPPER

FAIRVIEW RD. SR 2067 17.5' BST

60' R/W
(30' EACH SIDE OF CENTERLINE)

15" RCP

7' PVC

BY23-406

INV=858.97'

INV=855.77'

18" CMP

INV=849.69'

4' CONC HW
INV=849.77'

EXISTING R/W

50'

PROPOSED R/W

200 PR. COPPER

S 78°44'26"W

2 " PL

4 " PVC

PROPOSED R/W

PC Sta. 10+00.00 -SRVRD_1- =
POT Sta. 13+15.00 -Y1-

Y1503_14RT

PROPOSED C/A

PROPOSED C/A R/W

END C/A & FENCE
LT & RT

MTL GATE

MATCH SHEET NO. 6
STA. 16+75 -Y1-

REFERENCES:
FOR –Y1– PROFILE, SEE SHEET NO. 44
FOR –SRVRD_1– PROFILE, SEE SHEET NO. 50

REVISIONS

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2707D	21
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

50 25 0 50 100

NAD 83/95

-Y1-

PIs Sta 22+89.15	PI Sta 25+22.07	PIs Sta 27+53.96
Θs = 2° 24' 00.0"	Δ = 10° 44' 39.5" (RT)	Θs = 2° 24' 00.0"
Ls = 160.00'	D = 3° 00' 00.0"	Ls = 160.00'
LT = 106.68'	L = 358.14	LT = 106.68'
ST = 53.34'	T = 179.60'	ST = 53.34'
	R = 1,909.86'	
	SE = .04	
	DS = 40 MPH	

END CONSTRUCTION
POT BST Sta. 29+30.30 -Y1-

N 85° 42' 54.6" W

POT Sta. 29+44.36 -Y1-

CS Sta. 27+00.61 -Y1-

ST Sta. 28+60.61 -Y1-

MATCH SHEET NO. 6
STA. 24+00 -Y1-

BY23-409

-EY23-

INV=891.08'

SR 2167 FAIRVIEW RD

(ABANDONED)

200' FR. COPPER

3" PVC

18" RCP

BST

FLAG POLE

CONC

MTL BUS

72' CHL

W/LT

25' BST

NC 180

BLK

BLK/MTL BUS

REFERENCES:
FOR –Y1– PROFILE, SEE SHEET NO. 44

REVISIONS

8/17/99

01-NOV-2018 09:55
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cadmacture A1 (ADD)

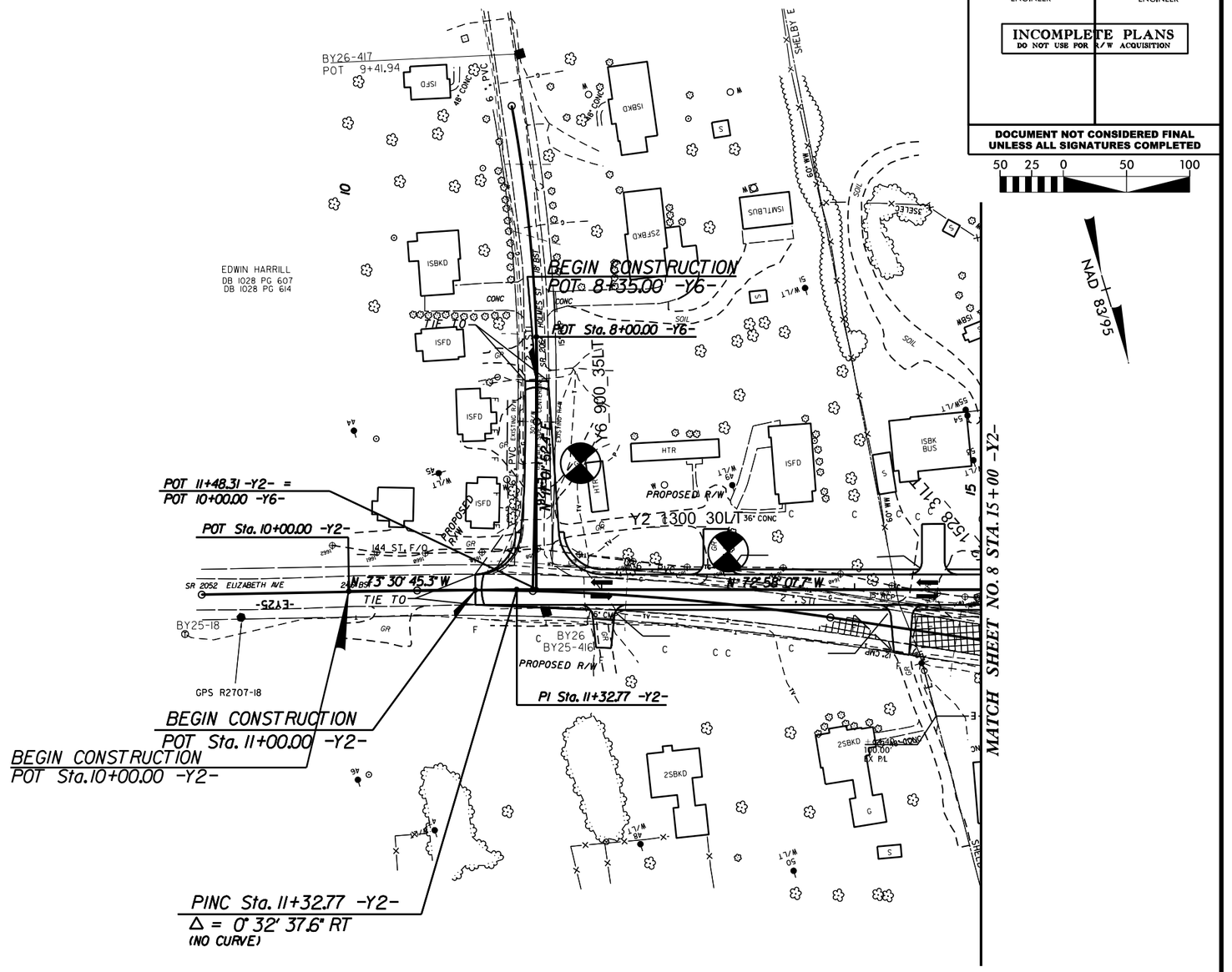
PROJECT REFERENCE NO.	SHEET NO.
R-2707D	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

50 25 0 50 100

NAD 83/95



REFERENCE:
FOR –Y2– PROFILE, SEE SHEET NO. 45
FOR –Y6– PROFILE, SEE SHEET NO. 49

REVISIONS

8/17/99

02-AUG-2018 15:26
V:\Projects\2017\G17053.00 Stantec R2707D&E Shelby Bypass\R2707_NCDOT_Electronic_File_Tree\Geotech\Investigation\Design\R2707_GEO_RDWY\CADD_GEOTECH\PlanProf\R2707D_GEO_PSH_22.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-2707D	23
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

50 25 0 50 100

-Y2-		
PIs Sta 24+11.64	PI Sta 27+60.12	PIs Sta 30+90.65
Θs = 6° 30' 00.0"	Δ = 35° 28' 11.3" (LT)	Θs = 6° 30' 00.0"
Ls = 200.00'	D = 6° 30' 00.0"	Ls = 200.00'
LT = 133.42'	L = 545.69	LT = 133.42'
ST = 66.75'	T = 281.91'	ST = 66.75'
	R = 881.47'	
	SE = .08	
	DS = 50 MPH	

NAD 83/95

MATCH SHEET NO. 8
STA. 24+00 -Y2-

SC Sta. 24+78.21 -Y2-

CS Sta. 30+23.90 -Y2-

ST Sta. 32+23.90 -Y2-

END CONSTRUCTION
ST Sta. 32+23.90 -Y2-

POT Sta. 33+46.67 -Y2-

Y2_2500_30LT

Y2_2700_30LT

BY25-413 PINC 22+51.33
-L- POC 690+05.31(619.75' RT) =
-Y2- POC 26+52.83 (49.56' RT)

BY25-414 POT 30+32.99
-L- POC 692+91.73 (1331.69' RT) =

S 56° 33' 41.0" W

REFERENCE:
FOR –Y2– PROFILE, SEE SHEET NO. 45

REVISIONS

02 AUG 2018 16:28
V:\Projects\2017\17053.00 Stantec R2707D&E Shelby Bypass\R2707_GEO_RDWY\CADD_GEOTECH\InvestigationDesign\R2707_GEO_PSH_23.dgn
Coding Line AT FA101
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2707D	24
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

50 25 0 50 100

NAD 83/95

-Y3-

Pls Sta 15+95.11	PI Sta 20+76.29	Pls Sta 25+52.55
Θs = 1° 18' 45.0"	Δ = 15° 00' 18.8" (RT)	Θs = 1° 18' 45.0"
Ls = 150.00'	D = 1° 45' 00.0"	Ls = 150.00'
LT = 100.00'	L = 857.44	LT = 100.00'
ST = 50.00'	T = 431.19'	ST = 50.00'
	R = 3,274.04'	
	SE = .04	
	DS = 50 MPH	

-PVTENT1-

PI Sta 9+34.60
Δ = 83° 31' 16.2" (RT)
D = 76° 23' 39.7"
L = 109.33'
T = 66.96'
R = 75.00'

-SRVRD_2-

PI Sta 10+90.00
Δ = 77° 31' 20.8" (RT)
D = 76° 23' 39.7"
L = 101.48'
T = 60.22'
R = 75.00'
SE = VAR
R0 = 30'
DS = 15 MPH

BEGIN CONSTRUCTION
POT Sta. 12+00.00 -Y3-

TS Sta. 14+95.10 -Y3-

POC 17+00.00 -Y3- =
POT 10+00.00 -PVTENT1- =

SC Sta. 16+45.10 -Y3-

S 34° 00' 08.9" E

PT Sta. 9+76.97
-PVTENT1-

PC Sta. 8+67.64
-PVTENT1-

S 43° 31' 11.8" W

Pls Sta. 25+52.55
Θs = 1° 18' 45.0"

Y3_1602_6LT

Y3_1800_30RT

PVTENT1_800

TEMPORARY CONSTRUCTION EASEMENT

PROPOSED R/W

PRESERVATION AREA

MATCH SHEET NO. 13 MATCH SHEET NO. 13
STA. 7+39.96 –PVTENT1– STA. 19+00 –Y3–

MATCH SHEET NO. 14

MATCH SHEET NO. 13

REFERENCE:
FOR –Y3– PROFILE, SEE SHEET NO. 46
FOR –PVTENT1– PROFILE, SEE SHEET NO. 53

REVISIONS

8/17/99

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coffin.rice
AT T1001

PROJECT REFERENCE NO.	SHEET NO.
R-2707D	25
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

50 25 0 50 100

-Y3-		
PIs Sta 29+36.10	PI Sta 31+02.49	PIs Sta 32+67.90
Θs = 7° 30' 00.0"	Δ = 14° 53' 33.8" (LT)	Θs = 3° 07' 09.6"
Ls = 200.00'	D = 7° 30' 00.0"	Ls = 200.00'
LT = 133.45'	L = 198.57	LT = 133.35'
ST = 66.78'	T = 99.85'	ST = 66.69'
	R = 763.94'	
	SE = .08	
	DS = 50 MPH	

MATCH SHEET NO. 13 STA. 27+50 -Y3-

POT Sta. 21+22.2 -Y3-
POT Sta. 10+00.00 -Y7-

SC Sta. 30+02.64 -Y3-

TS Sta. 28+02.64 -Y3-

POT STA.8+00.00 -Y7-

BEGIN CONSTRUCTION
POT STA.9+10.00 -Y7-

CS Sta. 32+01.21 -Y3-

ST Sta. 34+01.21 -Y3-

POT Sta. 35+01.21 -Y3-

POC Sta.30+78.29 -Y3-
POT Sta.10+00.00 -Y7-

END CONSTRUCTION
POC Sta.32+00.00 -Y3-

S 45° 50' 33.2" W

S 37° 03' 59.6" W

S 58° 16.6" W

Y2_2800_30FT

3013 40FT

PROPOSED R/W

BORDERS RD
SR 2047 22.3' BST

MAP 8395

BY29-423
BY28-421
BY29
BY36-439
BY36
BY28-422

REFERENCE:
FOR –Y3– PROFILE, SEE SHEET NO. 46
FOR –Y7– PROFILE, SEE SHEET NO. 49

REVISIONS

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2707D	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

50 25 0 50 100

-Y4-	
PI Sta 17+90.86	PI Sta 20+43.58
Δ = 38° 05' 14.9" (RT)	Δ = 98° 05' 14.9" (LT)
D = 22° 55' 05.9"	D = 38° 11' 49.9"
L = 166.19'	L = 256.79'
T = 86.30'	T = 172.82'
R = 250.00'	R = 150.00'
SE = .04	SE = .04
RO = 80'	RO = 80'
DS = 30 MPH	DS = 20 MPH

NAD 83/95

END GRADE
POT Sta.40+50.90 -Y5_WBL- (US 74)

END CONSTRUCTION
POT Sta. 21+06.50 -Y4-

POT Sta. 11+48.78 -PVTENT5-
BK BRG N 24° 15' 39.8" E

POT Sta. 10+00.00 -PVTENT5-
POC Sta.19+87.14 -Y4-

PRC Sta. 18+70.76 -Y4-

PC Sta. 17+04.57 -Y4-

END -RAMP_A- POT Sta.48+74.34 BK
BEGIN -Y5_WBL- POT Sta.32+50.00 AHD

PT Sta. 21+27.55 -Y4-
AHD BRG S 50° 25' 25.8" W

POT Sta. 22+05.11 -Y4-
POT Sta.41+20.00 -Y5_WBL-

POT Sta. 42+16.25 -Y5_WBL-

POT Sta. 42+23.06 -Y5_EBL-

END CONSTRUCTION
POT Sta. 40+88.00 -Y5_EBL- (US 74)

MATCH SHEET NO.18 STA. 32+00.00 -RAMP_D-
MATCH SHEET NO.18 STA. 48+24.34 -RAMP_A-
MATCH SHEET NO.18 STA. 12+00.00 -Y4-

REFERENCES:
FOR –Y4– PROFILE, SEE SHEET NO. 47
FOR –Y5– PROFILES (EBL & WBL), SEE SHEET NO. 48
FOR –RAMP_A– PROFILE, SEE SHEET NO. 40

REVISIONS 8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
R-2707D	27
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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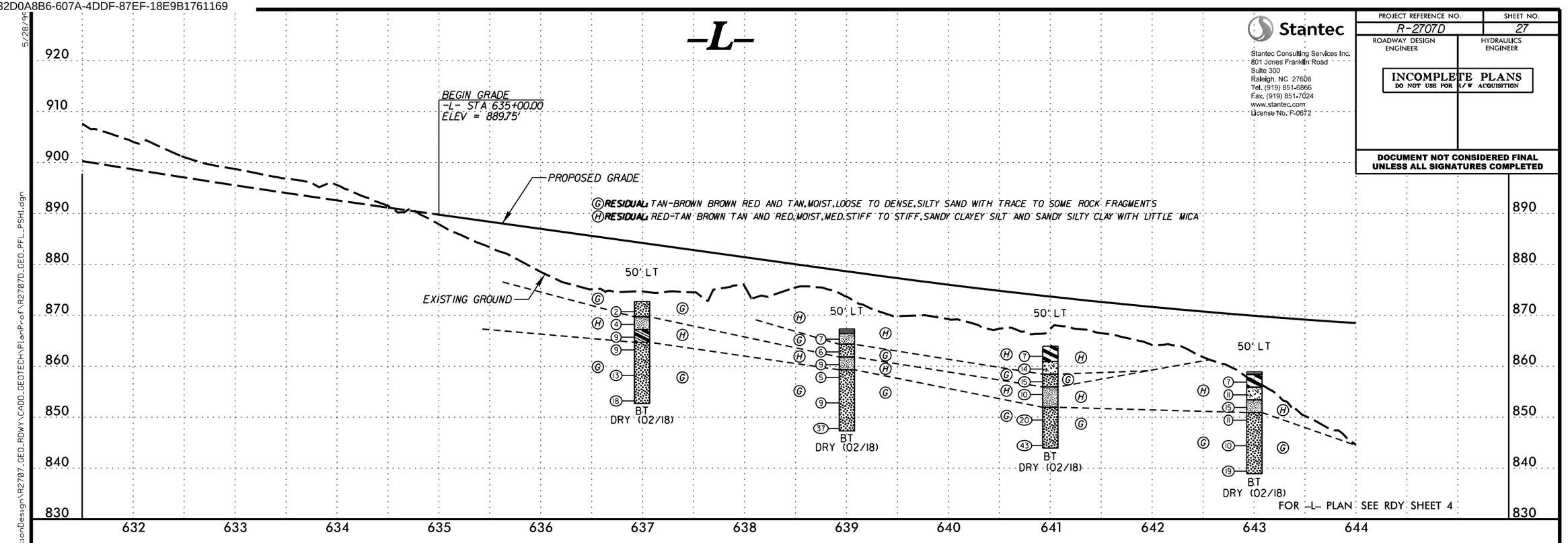

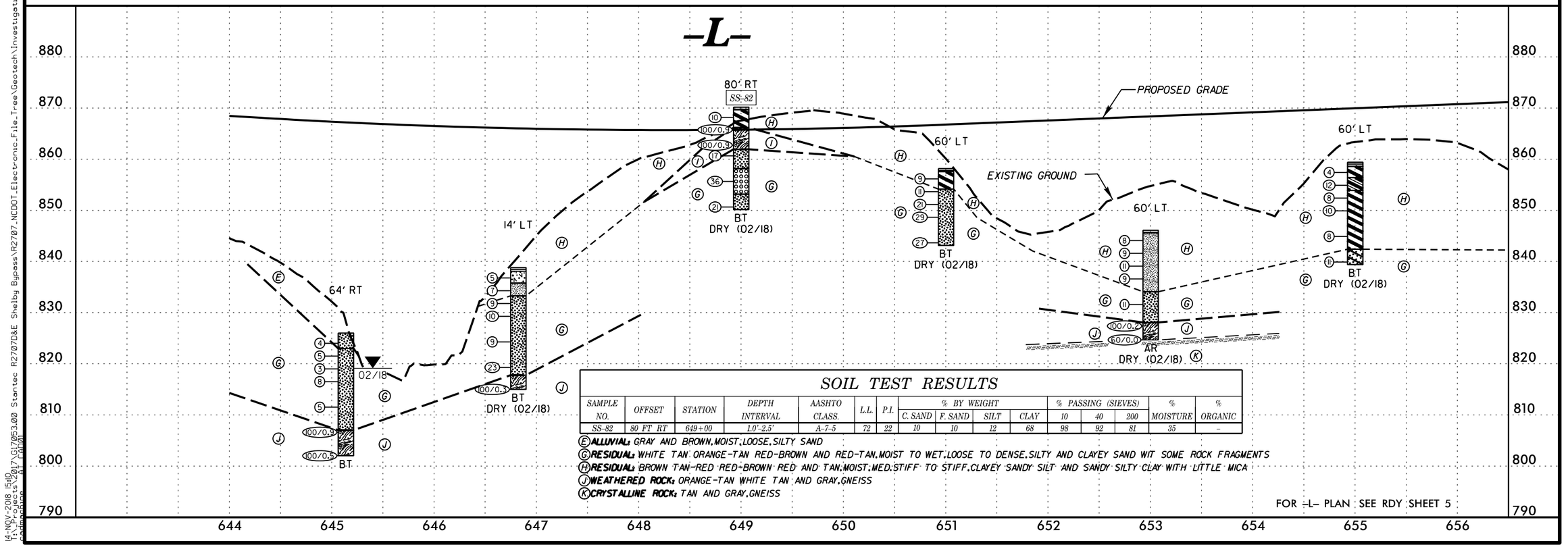

SOIL TEST RESULTS

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-82	80 FT RT	649+00	1.0'-2.5'	A-7-5	72	22	10	10	12	68	98	92	81	35	–

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PROJECT REFERENCE NO.	SHEET NO.
R-2707D	28
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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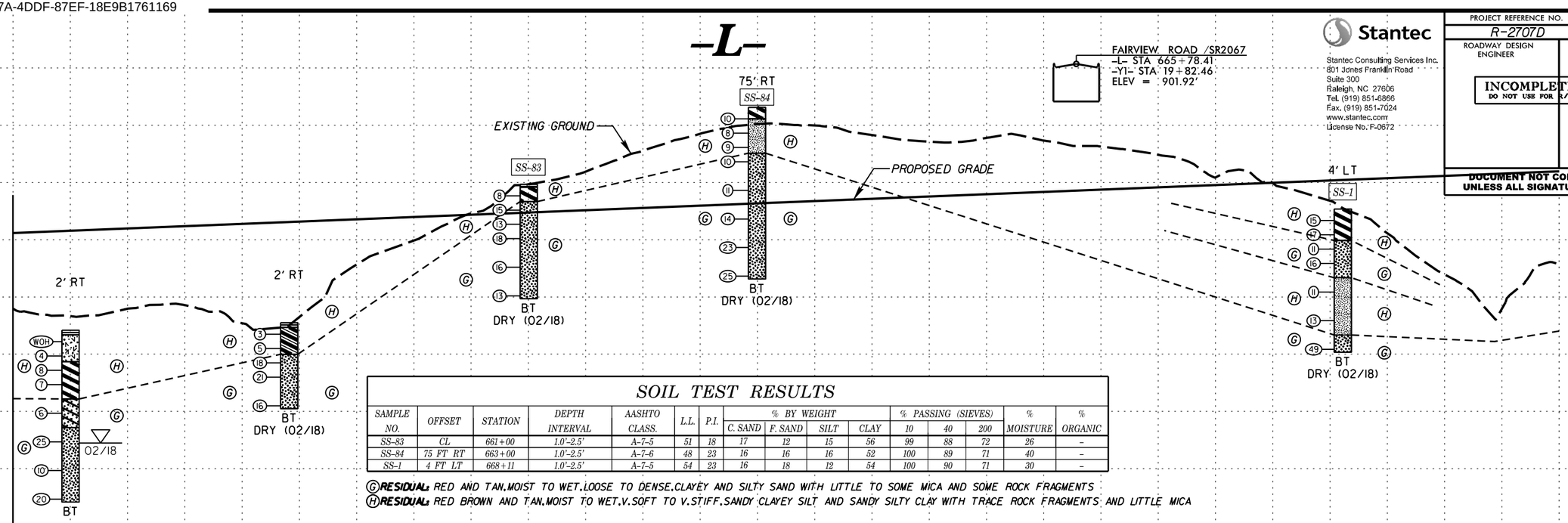
–L–

FAIRVIEW ROAD /SR2067
–L– STA 665+78.41
–Y1– STA 19+82.46
ELEV = 901.92'



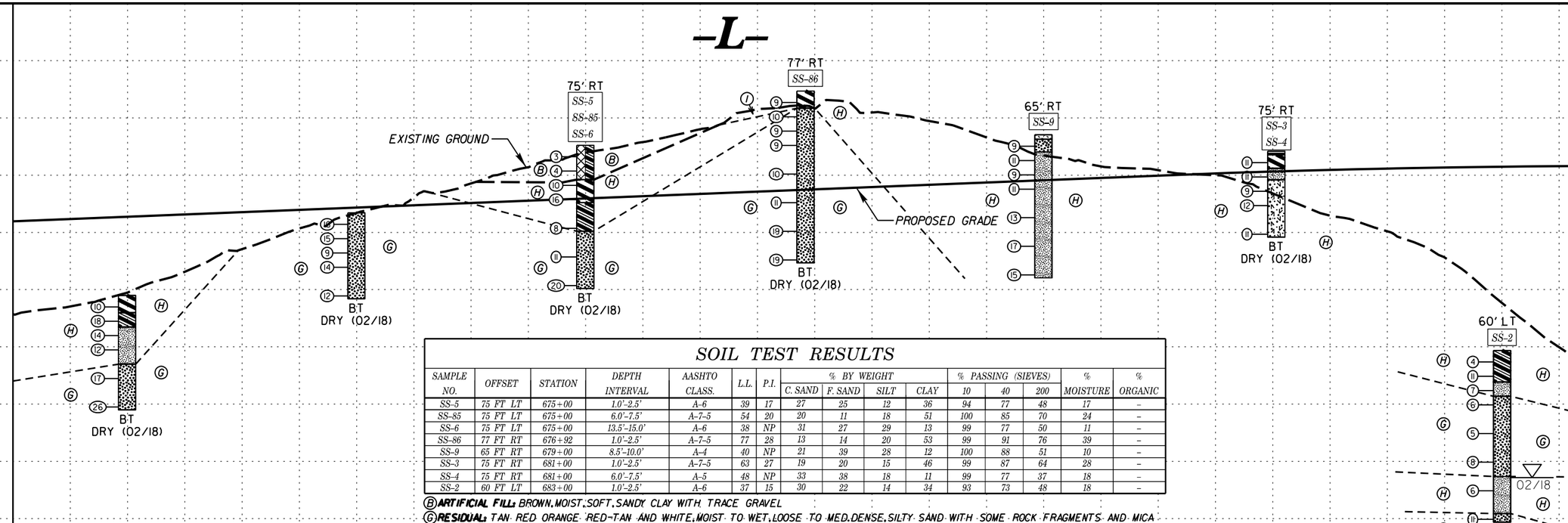
SOIL TEST RESULTS

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-83	CL	661+00	1.0'-2.5'	A-7-5	51	18	17	12	15	56	99	88	72	26	–
SS-84	75 FT RT	663+00	1.0'-2.5'	A-7-6	48	23	16	16	16	52	100	89	71	40	–
SS-1	4 FT LT	668+11	1.0'-2.5'	A-7-5	54	23	16	18	12	54	100	90	71	30	–

(G) **RESIDUAL:** RED AND TAN, MOIST TO WET, LOOSE TO DENSE, CLAYEY AND SILTY SAND WITH LITTLE TO SOME MICA AND SOME ROCK FRAGMENTS
(H) **RESIDUAL:** RED BROWN AND TAN, MOIST TO WET, V.SOFT TO V.STIFF, SANDY CLAYEY SILT AND SANDY SILTY CLAY WITH TRACE ROCK FRAGMENTS AND LITTLE MICA

FOR –L– PLAN SEE RDY SHEET 6

–L–



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-5	75 FT LT	675+00	1.0'-2.5'	A-6	39	17	27	25	12	36	94	77	48	17	–
SS-85	75 FT LT	675+00	6.0'-7.5'	A-7-5	54	20	20	11	18	51	100	85	70	24	–
SS-6	75 FT LT	675+00	13.5'-15.0'	A-6	38	NP	31	27	29	13	99	77	50	11	–
SS-86	77 FT RT	676+92	1.0'-2.5'	A-7-5	77	28	13	14	20	53	99	91	76	39	–
SS-9	65 FT RT	679+00	8.5'-10.0'	A-4	40	NP	21	39	28	12	100	88	51	10	–
SS-3	75 FT RT	681+00	1.0'-2.5'	A-7-5	63	27	19	20	15	46	99	87	64	28	–
SS-4	75 FT RT	681+00	6.0'-7.5'	A-5	48	NP	33	38	18	11	99	77	37	18	–
SS-2	60 FT LT	683+00	1.0'-2.5'	A-6	37	15	30	22	14	34	93	73	48	18	–

(B) **ARTIFICIAL FILL:** BROWN, MOIST, SOFT, SANDY CLAY WITH TRACE GRAVEL
(G) **RESIDUAL:** TAN RED ORANGE RED-TAN AND WHITE, MOIST TO WET, LOOSE TO MED. DENSE, SILTY SAND WITH SOME ROCK FRAGMENTS AND MICA
(H) **RESIDUAL:** TAN-RED WHITE BROWN TAN RED AND GRAY, MOIST TO WET, MED. STIFF TO V.STIFF, SANDY SILTY CLAY AND SILTY CLAY WITH LITTLE TO SOME MICA
(I) **RESIDUAL:** TAN-RED, MOIST, STIFF, HIGHLY PLASTIC SANDY SILTY CLAY

FOR –L– PLAN SEE RDY SHEET 7

PROJECT REFERENCE NO.	SHEET NO.
R-2707D	29
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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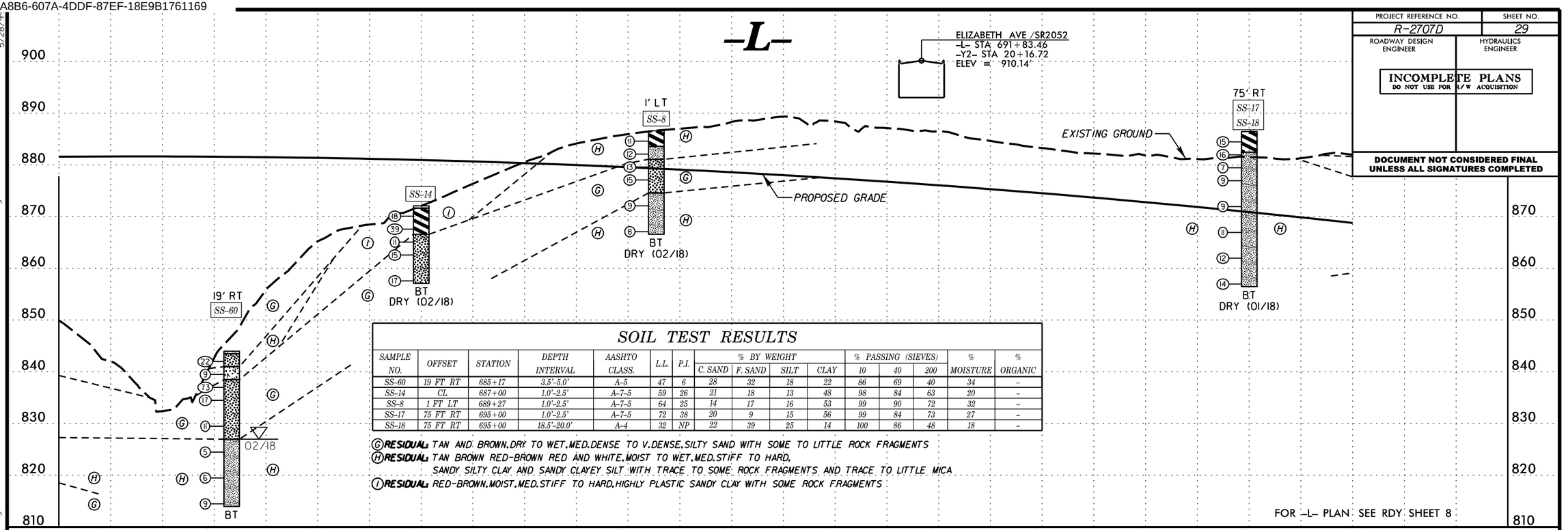
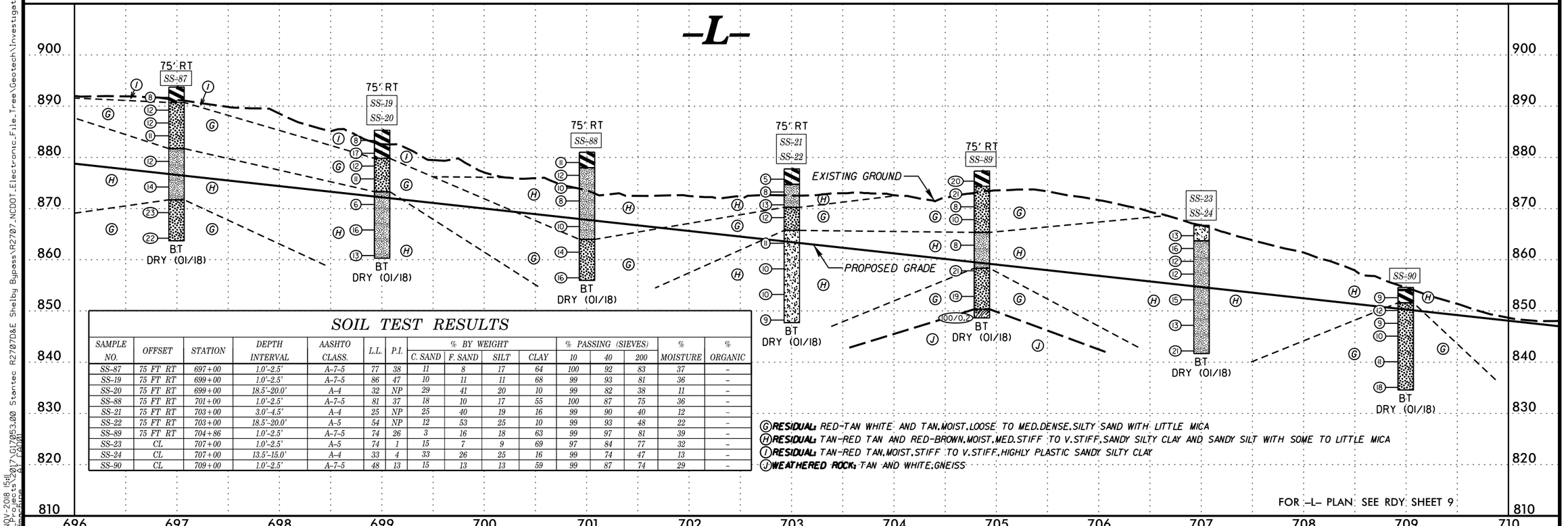


FOR -L- PLAN SEE RDY SHEET 8

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-60	19 FT RT	685+17	3.5'-5.0'	A-5	47	6	28	32	18	22	86	69	40	34	-
SS-14	CL	687+00	1.0'-2.5'	A-7-5	59	26	21	18	13	48	98	84	63	20	-
SS-8	1 FT LT	689+27	1.0'-2.5'	A-7-5	64	25	14	17	16	53	99	90	72	32	-
SS-17	75 FT RT	695+00	1.0'-2.5'	A-7-5	72	38	20	9	15	56	99	84	73	27	-
SS-18	75 FT RT	695+00	18.5'-20.0'	A-4	32	NP	22	39	25	14	100	86	48	18	-

(G) **RESIDUAL:** TAN AND BROWN, DRY TO WET, MED. DENSE TO V. DENSE, SILTY SAND WITH SOME TO LITTLE ROCK FRAGMENTS
(H) **RESIDUAL:** TAN BROWN RED-BROWN RED AND WHITE, MOIST TO WET, MED. STIFF TO HARD, SANDY SILTY CLAY AND SANDY CLAYEY SILT WITH TRACE TO SOME ROCK FRAGMENTS AND TRACE TO LITTLE MICA
(I) **RESIDUAL:** RED-BROWN, MOIST, MED. STIFF TO HARD, HIGHLY PLASTIC SANDY CLAY WITH SOME ROCK FRAGMENTS



FOR -L- PLAN SEE RDY SHEET 9

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-87	75 FT RT	697+00	1.0'-2.5'	A-7-5	77	38	11	8	17	64	100	92	83	37	-
SS-19	75 FT RT	699+00	1.0'-2.5'	A-7-5	86	47	10	11	11	68	99	93	81	36	-
SS-20	75 FT RT	699+00	18.5'-20.0'	A-4	32	NP	29	41	20	10	99	82	38	11	-
SS-88	75 FT RT	701+00	1.0'-2.5'	A-7-5	81	37	18	10	17	55	100	87	75	36	-
SS-21	75 FT RT	703+00	3.0'-4.5'	A-4	25	NP	25	40	19	16	99	90	40	12	-
SS-22	75 FT RT	703+00	18.5'-20.0'	A-5	54	NP	12	53	25	10	99	93	48	22	-
SS-89	75 FT RT	704+86	1.0'-2.5'	A-7-5	74	26	3	16	18	63	99	97	81	39	-
SS-23	CL	707+00	1.0'-2.5'	A-5	74	1	15	7	9	69	97	84	77	32	-
SS-24	CL	707+00	13.5'-15.0'	A-4	33	4	33	26	25	16	99	74	47	13	-
SS-90	CL	709+00	1.0'-2.5'	A-7-5	48	13	15	13	13	59	99	87	74	29	-

(G) **RESIDUAL:** RED-TAN WHITE AND TAN, MOIST, LOOSE TO MED. DENSE, SILTY SAND WITH LITTLE MICA
(H) **RESIDUAL:** TAN-RED TAN AND RED-BROWN, MOIST, MED. STIFF TO V. STIFF, SANDY SILTY CLAY AND SANDY SILT WITH SOME TO LITTLE MICA
(I) **RESIDUAL:** TAN-RED TAN, MOIST, STIFF TO V. STIFF, HIGHLY PLASTIC SANDY SILTY CLAY
(J) **WEATHERED ROCK:** TAN AND WHITE, GNEISS

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-25	75 FT LT	711+00	13.5'-15.0'	A-4	33	NP	32	32	24	12	90	68	39	15	–
SS-26	CL	713+00	1.0'-2.5'	A-7-5	74	31	6	7	14	73	98	94	88	40	–
SS-91	CL	713+00	3.5'-5.0'	A-7-5	77	24	5	13	14	68	99	96	85	38	–
SS-61	9' RT	716+89	6.0'-7.5'	A-7-5	49	18	23	49	20	8	96	87	36	26	–
SS-27	60 FT LT	721+00	1.0'-2.5'	A-6	32	15	19	34	17	30	95	86	50	17	–
SS-28	60 FT LT	721+00	3.5'-5.0'	A-6	38	18	28	31	14	27	96	80	44	16	–
SS-29	60 FT LT	723+00	1.0'-2.5'	A-7-6	45	25	22	22	17	39	99	85	59	21	–

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PROJECT REFERENCE NO.	SHEET NO.
R-2707D	30
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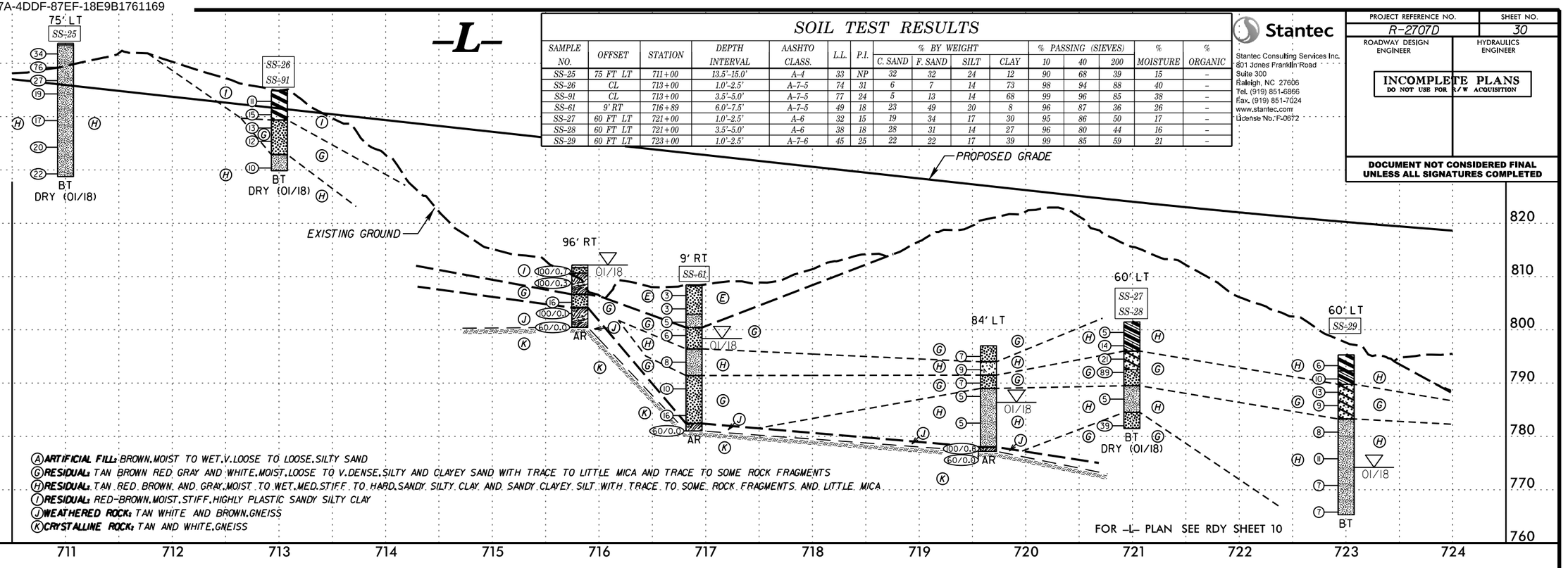
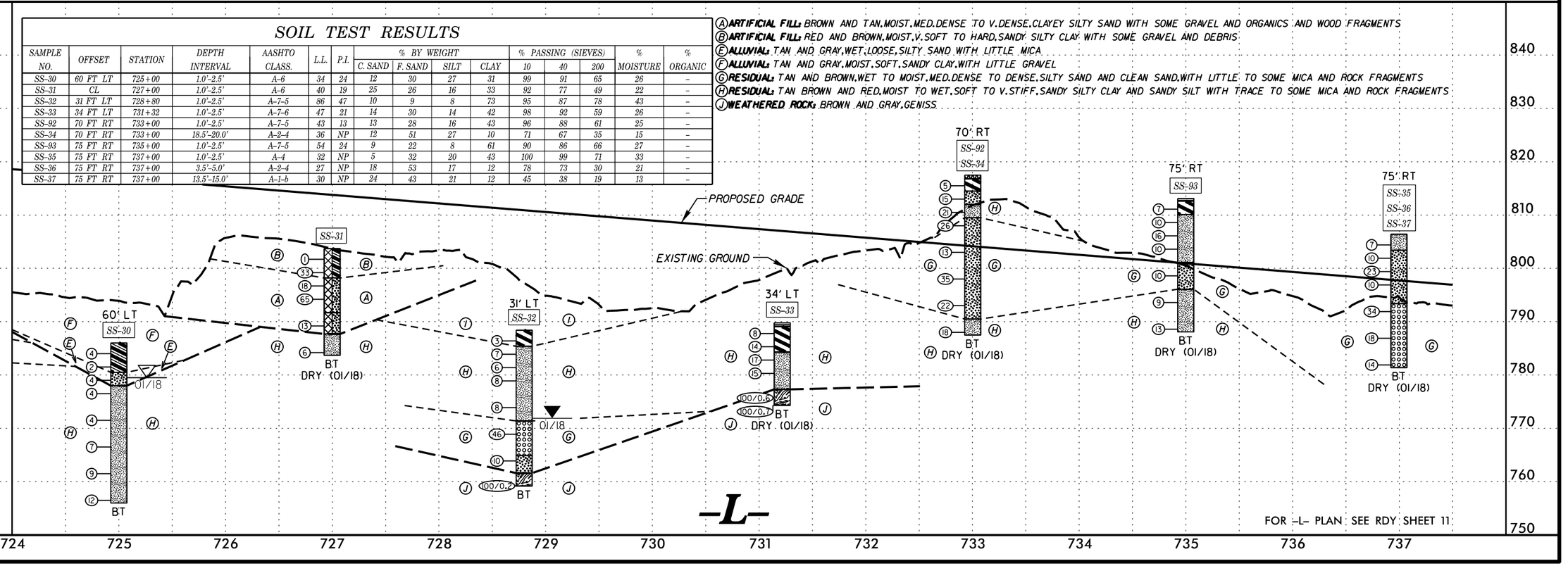


(A) **ARTIFICIAL FILL:** BROWN, MOIST TO WET, V.LOOSE TO LOOSE, SILTY SAND
(G) **RESIDUAL:** TAN BROWN RED GRAY AND WHITE, MOIST, LOOSE TO V.DENSE, SILTY AND CLAYEY SAND WITH TRACE TO LITTLE MICA AND TRACE TO SOME ROCK FRAGMENTS
(H) **RESIDUAL:** TAN RED BROWN AND GRAY, MOIST TO WET, MED.STIFF TO HARD, SANDY SILTY CLAY AND SANDY CLAYEY SILT WITH TRACE TO SOME ROCK FRAGMENTS AND LITTLE MICA
(I) **RESIDUAL:** RED-BROWN, MOIST, STIFF, HIGHLY PLASTIC SANDY SILTY CLAY
(J) **WEATHERED ROCK:** TAN WHITE AND BROWN, GNEISS
(K) **CRYSTALLINE ROCK:** TAN AND WHITE, GNEISS

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-30	60 FT LT	725+00	1.0'-2.5'	A-6	34	24	12	30	27	31	99	91	65	26	–
SS-31	CL	727+00	1.0'-2.5'	A-6	40	19	25	26	16	33	92	77	49	22	–
SS-32	31 FT LT	728+80	1.0'-2.5'	A-7-5	86	47	10	9	8	73	95	87	78	43	–
SS-33	34 FT LT	731+32	1.0'-2.5'	A-7-6	47	21	14	30	14	42	98	92	59	26	–
SS-92	70 FT RT	733+00	1.0'-2.5'	A-7-5	43	13	13	28	16	43	96	88	61	25	–
SS-34	70 FT RT	733+00	18.5'-20.0'	A-2-4	36	NP	12	51	27	10	71	67	35	15	–
SS-93	75 FT RT	735+00	1.0'-2.5'	A-7-5	54	24	9	22	8	61	90	86	66	27	–
SS-35	75 FT RT	737+00	1.0'-2.5'	A-4	32	NP	5	32	20	43	100	99	71	33	–
SS-36	75 FT RT	737+00	3.5'-5.0'	A-2-4	27	NP	18	53	17	12	78	73	30	21	–
SS-37	75 FT RT	737+00	13.5'-15.0'	A-1-b	30	NP	24	43	21	12	45	38	19	13	–

(A) **ARTIFICIAL FILL:** BROWN AND TAN, MOIST, MED.DENSE TO V.DENSE, CLAYEY SILTY SAND WITH SOME GRAVEL AND ORGANICS AND WOOD FRAGMENTS
(B) **ARTIFICIAL FILL:** RED AND BROWN, MOIST, V.SOFT TO HARD, SANDY SILTY CLAY WITH SOME GRAVEL AND DEBRIS
(E) **ALLUVIAL:** TAN AND GRAY, WET, LOOSE, SILTY SAND WITH LITTLE MICA
(F) **ALLUVIAL:** TAN AND GRAY, MOIST, SOFT, SANDY CLAY, WITH LITTLE GRAVEL
(G) **RESIDUAL:** TAN AND BROWN, WET TO MOIST, MED.DENSE TO DENSE, SILTY SAND AND CLEAN SAND, WITH LITTLE TO SOME MICA AND ROCK FRAGMENTS
(H) **RESIDUAL:** TAN BROWN AND RED, MOIST TO WET, SOFT TO V.STIFF, SANDY SILTY CLAY AND SANDY SILT WITH TRACE TO SOME MICA AND ROCK FRAGMENTS
(J) **WEATHERED ROCK:** BROWN AND GRAY, GENISS



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PROJECT REFERENCE NO.	SHEET NO.
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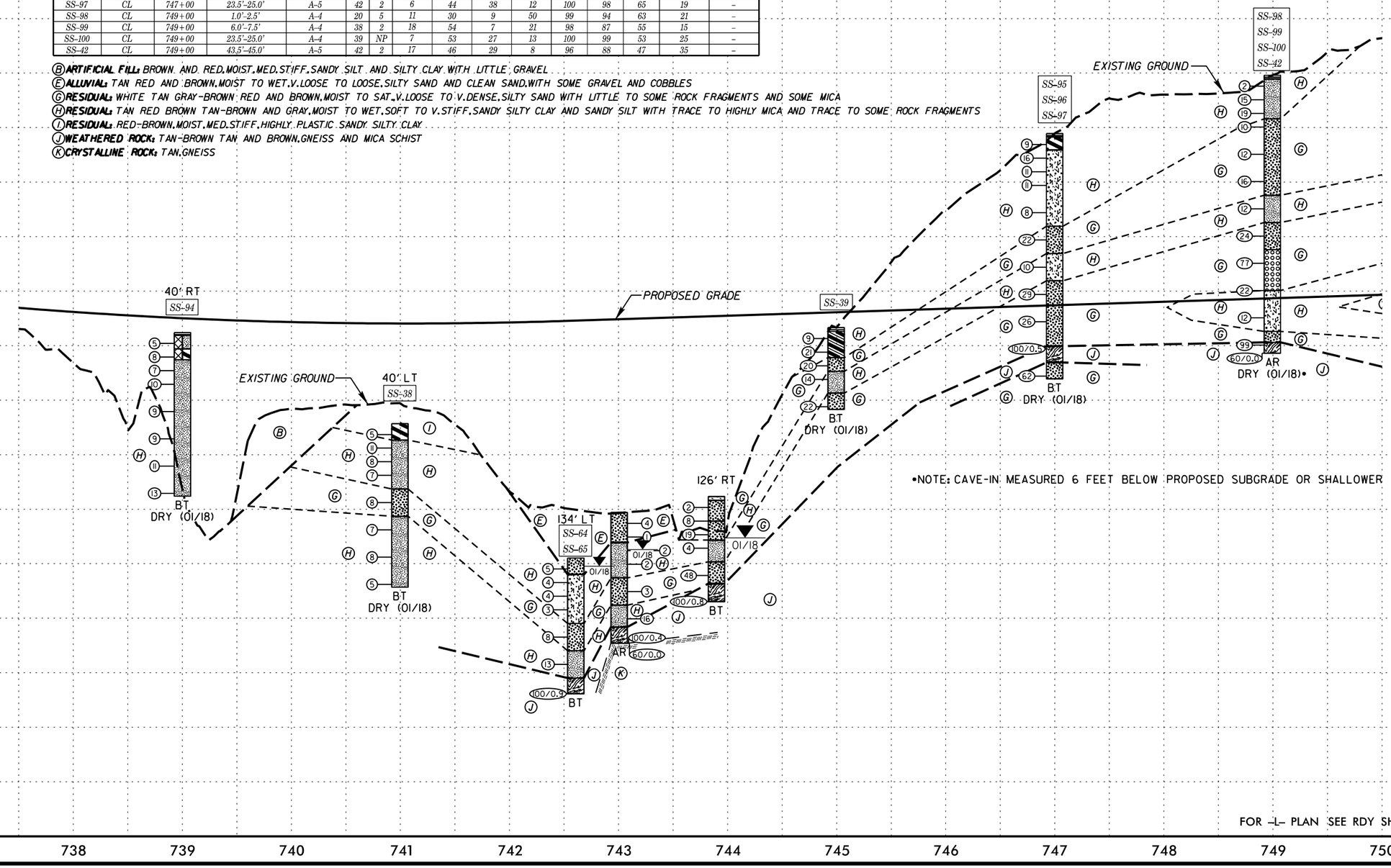
SOIL TEST RESULTS

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-94	40 FT RT	739+00	1.0'-2.5'	A-4	27	9	17	42	22	19	84	76	40	11	–
SS-38	40 FT RT	741+00	1.0'-2.5'	A-7-5	75	36	5	20	23	52	97	95	78	37	–
SS-64	134 FT LT	743+90	1.0'-2.5'	A-2-4	27	NP	57	35	6	2	86	56	9	5	–
SS-65	134 FT LT	743+90	6.0'-7.5'	A-5	48	4	14	57	9	20	98	93	40	41	–
SS-39	CL	745+00	1.0'-2.5'	A-6	37	16	27	25	10	38	75	60	40	19	–
SS-95	CL	747+00	1.0'-2.5'	A-7-5	61	22	6	27	14	53	96	94	70	34	–
SS-96	CL	747+00	8.5'-10.0'	A-5	44	6	8	51	23	18	100	98	52	18	–
SS-97	CL	747+00	23.5'-25.0'	A-5	42	2	6	44	38	12	100	98	65	19	–
SS-98	CL	749+00	1.0'-2.5'	A-4	20	5	11	30	9	50	99	94	63	21	–
SS-99	CL	749+00	6.0'-7.5'	A-4	38	2	18	54	7	21	98	87	55	15	–
SS-100	CL	749+00	23.5'-25.0'	A-4	39	NP	7	53	27	13	100	99	53	25	–
SS-42	CL	749+00	43.5'-45.0'	A-5	42	2	17	46	29	8	96	88	47	35	–

(B) **ARTIFICIAL FILL:** BROWN, AND, RED, MOIST, MED. STIFF, SANDY SILT AND SILTY CLAY WITH LITTLE GRAVEL
(E) **ALLUVIAL:** TAN RED AND BROWN, MOIST TO WET, V. LOOSE TO LOOSE, SILTY SAND AND CLEAN SAND, WITH SOME GRAVEL AND COBBLES
(G) **RESIDUAL:** WHITE TAN GRAY-BROWN RED AND BROWN, MOIST TO SAT., V. LOOSE TO V. DENSE, SILTY SAND WITH LITTLE TO SOME ROCK FRAGMENTS AND SOME MICA
(H) **RESIDUAL:** TAN RED BROWN TAN-BROWN AND GRAY, MOIST TO WET, SOFT TO V. STIFF, SANDY SILTY CLAY AND SANDY SILT WITH TRACE TO HIGHLY MICA AND TRACE TO SOME ROCK FRAGMENTS
(I) **RESIDUAL:** RED-BROWN, MOIST, MED. STIFF, HIGHLY PLASTIC SANDY SILTY CLAY
(J) **WEATHERED ROCK:** TAN-BROWN TAN AND BROWN, GNEISS AND MICA SCHIST
(K) **CRYSTALLINE ROCK:** TAN, GNEISS



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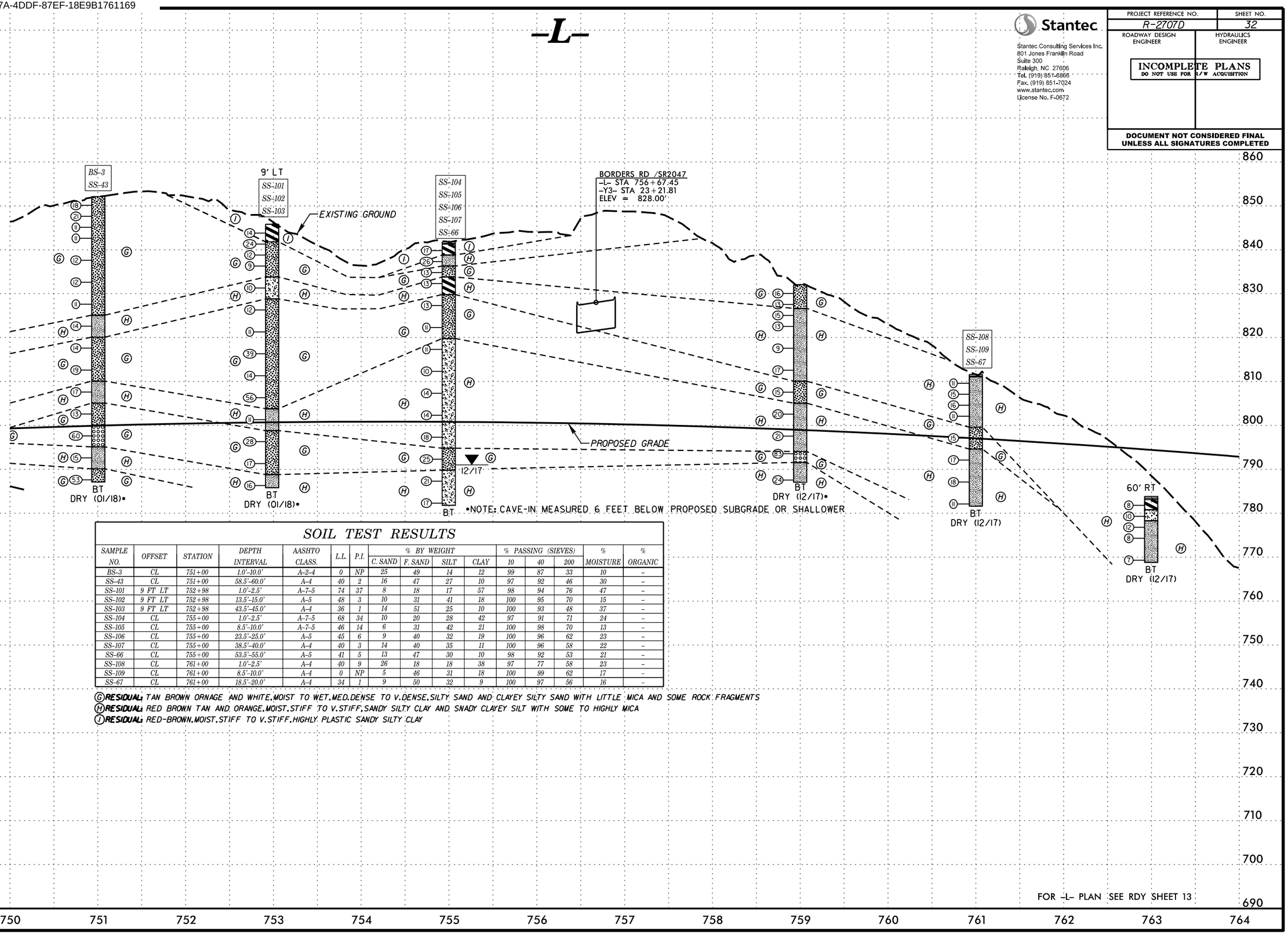

SOIL TEST RESULTS

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		
BS-3	CL	751+00	1.0'-10.0'	A-2-4	0	NP	25	49	14	12	99	87	33	10	–
SS-43	CL	751+00	58.5'-60.0'	A-4	40	2	16	47	27	10	97	92	46	30	–
SS-101	9 FT LT	752+98	1.0'-2.5'	A-7-5	74	37	8	18	17	57	98	94	76	47	–
SS-102	9 FT LT	752+98	13.5'-15.0'	A-5	48	3	10	31	41	18	100	95	70	15	–
SS-103	9 FT LT	752+98	43.5'-45.0'	A-4	36	1	14	51	25	10	100	93	48	37	–
SS-104	CL	755+00	1.0'-2.5'	A-7-5	68	34	10	20	28	42	97	91	71	24	–
SS-105	CL	755+00	8.5'-10.0'	A-7-5	46	14	6	31	42	21	100	98	70	13	–
SS-106	CL	755+00	23.5'-25.0'	A-5	45	6	9	40	32	19	100	96	62	23	–
SS-107	CL	755+00	38.5'-40.0'	A-4	40	3	14	40	35	11	100	96	58	22	–
SS-66	CL	755+00	53.5'-55.0'	A-5	41	5	13	47	30	10	98	92	53	21	–
SS-108	CL	761+00	1.0'-2.5'	A-4	40	9	26	18	18	38	97	77	58	23	–
SS-109	CL	761+00	8.5'-10.0'	A-4	0	NP	5	46	31	18	100	99	62	17	–
SS-67	CL	761+00	18.5'-20.0'	A-4	34	1	9	50	32	9	100	97	56	16	–

(G) **RESIDUAL:** TAN BROWN ORNAGE AND WHITE,MOIST TO WET,MED.DENSE TO V.DENSE,SILTY SAND AND CLAYEY SILTY SAND WITH LITTLE MICA AND SOME ROCK FRAGMENTS
(H) **RESIDUAL:** RED BROWN TAN AND ORANGE,MOIST,STIFF TO V.STIFF,SANDY SILTY CLAY AND SNADY CLAYEY SILT WITH SOME TO HIGHLY MICA
(I) **RESIDUAL:** RED-BROWN,MOIST,STIFF TO V.STIFF,HIGHLY PLASTIC SANDY SILTY CLAY

FOR -L- PLAN SEE RDY SHEET 13

5/14/99
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Administrator
Default

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PROJECT REFERENCE NO.	SHEET NO.
R-2707D	33
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L-

80' LT
SS-69

31' LT

80' RT
SS-110
SS-68

60' RT

PROPOSED GRADE

60' LT

EXISTING GROUND

60' RT

BT
DRY (12/17)

BT
DRY (12/17)

BT
DRY (03/18)•

BT
DRY (03/18)

BT
DRY (03/18)

BT
04/18

•NOTE: CAVE-IN MEASURED 6 FEET BELOW PROPOSED SUBGRADE OR SHALLOWER

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-110	80 FT RT	765+00	1.0'-2.5'	A-6	36	16	22	22	16	40	84	71	50	15	–
SS-68	80 FT RT	765+00	8.5'-10.0'	A-4	38	NP	18	36	32	14	93	83	52	18	–
SS-69	80 FT LT	767+00	48.5'-50.0'	A-4	34	3	16	56	19	9	98	94	37	16	–

(E) **ALLUVIAL:** TAN AND GRAY, MOIST, V. LOOSE, SILTY SAND WITH TRACE ORGANICS
(G) **RESIDUAL:** TAN WHITE AND BROWN, MOIST TO WET, LOOSE TO V. DENSE, SILTY SAND WITH TRACE MICA AND ORGANICS
(H) **RESIDUAL:** RED BROWN WHITE AND TAN, MOIST, SOFT TO HARD, SANDY CLAYEY SILT AND SANDY SILTY CLAY WITH TRACE GRANITE AND ORGANICS
(J) **WEATHERED ROCK:** TAN, GRANITE

FOR -L- PLAN SEE RDY SHEET 14

5/14/99
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11-NOV-2018 15:13
jcrowe
Composite

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PROJECT REFERENCE NO.	SHEET NO.
R-2707D	34
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

–L–

(G) **RESIDUAL:** TAN, RED, WHITE AND RED-TAN, MOIST TO WET, LOOSE TO V.DENSE, CLAYEY AND SILTY SAND WITH TRACE TO SOME ROCK FRAGMENTS
(H) **RESIDUAL:** TAN, RED AND BROWN, MOIST TO WET, MED.STIFF TO HARD, SANDY SILTY CLAY AND SANDY AND CLAYEY SILT WITH TRACE TO SOME ROCK FRAGMENTS
(J) **WEATHERED ROCK:** GRAY, GNEISS

PROPOSED GRADE
EXISTING GROUND

60' LT
BT
DRY (04/18)
03/18

60' LT
BT
DRY (04/18)

60' LT
BT
03/18

60' LT
BT
DRY (04/18)

60' LT
BT
05/18

40' LT
BT
DRY (04/18)

FOR –L– PLAN SEE RDY SHEET 15

55' RT
BT
DRY (04/18)

80' RT
BT
DRY (04/18)

72' RT
BT
DRY (04/18)

80' RT
BT
DRY (04/18)

40' LT
BT
04/18

05/18
BT

05/18
BT

05/18
BT

(E) **ALLUVIAL:** BROWN AND WHITE, MOIST TO WET, LOOSE, CLAYEY AND SILTY SAND, WITH SOME GRAVEL
(F) **ALLUVIAL:** BROWN AND RED-BROWN, MOIST TO WET, SOFT TO STIFF, SANDY AND SILTY CLAY
(G) **RESIDUAL:** TAN RED GRAY AND WHITE, MOIST TO SAT., LOOSE TO V.DENSE CLAYEY AND SILTY SAND WITH TRACE MICA AND SOME ROCK FRAGMENTS
(H) **RESIDUAL:** TAN WHITE RED BROWN AND GRAY, DRY TO WET, SOFT TO HARD, SANDY SND SILTY CLAY AND SANDY AND CLAYEY SILT WITH TRACE MICA AND TRACE TO SOME ROCK FRAGMENTS
(J) **WEATHERED ROCK:** TAN WHITE AND GRAY, MICA SCHIST
(K) **CRYSTALLINE ROCK:** TAN, MICA SCHIST

FOR –L– PLAN SEE RDY SHEET 16

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PROJECT REFERENCE NO.	SHEET NO.
R-2707D	35
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L-

(G) **RESIDUAL:** TAN RED BROWN AND WHITE, MOIST, LOOSE TO V.DENSE, SILTY SAND AND CLAYEY SILTY SAND WITH TRACE TO SOME ROCK FRAGMENTS AND LITTLE TO SOME MICA
(H) **RESIDUAL:** TAN, MOIST, SOFT, SILTY CLAY
(J) **WEATHERED ROCK:** ORANGE AND TAN, GRANITE AND MICA SCHIST
(K) **CRYSTALLINE ROCK:** ORANGE AND TAN, GRANITE AND MICA SCHIST

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-111	CL	819+00	13.5'-15.0'	A-2-5	43	NP	43	32	15	10	98	71	31	9	-

80' RT
BT
DRY (03/18)

END BRIDGE (WB)
STA 810+60.83
BEGIN BRIDGE (WB)
STA 809+41.25
BEGIN BRIDGE (EB)
STA 809+48.17
END BRIDGE (EB)
STA 810+53.75

-L- STA 814+50.00 =
RAMP C STA 10+00.00
ELEV = (47' RT) 738.53'

PROPOSED GRADE
EXISTING GROUND

BT
DRY (01/18)

03/18
AR

BT
DRY (12/17)

SS-111
BT
DRY (12/17)

FOR -L- PLAN SEE RDY SHEET 17

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User:cfox
Cadd Core
Plot Scale: 1" = 10'
Plot Date: 14-NOV-2018
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5/14/99

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PROJECT REFERENCE NO.	SHEET NO.
R-2707D	36
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L-

-L- STA 823+96.61 =
RAMP A STA 36+78.37
ELEV = 767.71'

-L- STA 824+28.22 =
LOOP A STA 26+92.40
ELEV = 765.49'

-L- STA 828+71.90 =
LOOP A STA 9+89.36
ELEV = (47' LT) 731.33'

75' RT
BT
DRY (01/18)

SS-112
SS-113
BT
DRY (01/18)

80' RT
SS-53
BT
DRY (01/18)

80' RT
SS-114
SS-115
BT
DRY (01/18)

SS-116
SS-52
BT
DRY (01/18)

EXISTING GROUND

PROPOSED GRADE

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-112	CL	827+00	1.0'-2.5'	A-4	39	10	46	9	19	26	90	56	41	15	-
SS-113	CL	827+00	28.5'-30.0'	A-2-4	0	NP	46	27	18	9	99	66	32	10	-
SS-53	80 FT RT	829+00	38.5'-40.0'	A-4	29	2	29	30	30	11	98	81	47	12	-
SS-114	80 FT RT	831+00	1.0'-2.5'	A-7-5	55	21	26	15	25	34	95	77	60	29	-
SS-115	80 FT RT	831+00	23.0'-25.0'	A-2-4	0	NP	47	28	17	8	98	63	29	10	-
SS-116	CL	833+00	1.0'-2.5'	A-2-7	44	11	42	20	20	18	63	43	26	19	-
SS-52	CL	833+00	23.0'-25.0'	A-2-4	32	NP	53	36	8	3	95	69	14	5	-

(A) **ARTIFICIAL FILL:** BROWN, MOIST, LOOSE, SILTY SAND, WITH SOME BRICK FRAGMENTS
(G) **RESIDUAL:** RED-TAN ORANGE GRAY TAN WHITE BROWN AND RED, DRY TO MOIST, LOOSE TO V.DENSE, SILTY SAND WITH SOME MICA
(H) **RESIDUAL:** ORANGE TAN BROWN WHITE AND RED, DRY TO MOIST, V.STIFF TO HARD, SANDY CLAYEY SILT AND SANDY CLAY WITH SOME MICA
(J) **WEATHERED ROCK:** TAN-BROWN AND TAN, MICA SCHIST AND GRANITE

FOR -L- PLAN SEE RDY SHEET 18

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PROJECT REFERENCE NO.	SHEET NO.
R-2707D	37
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

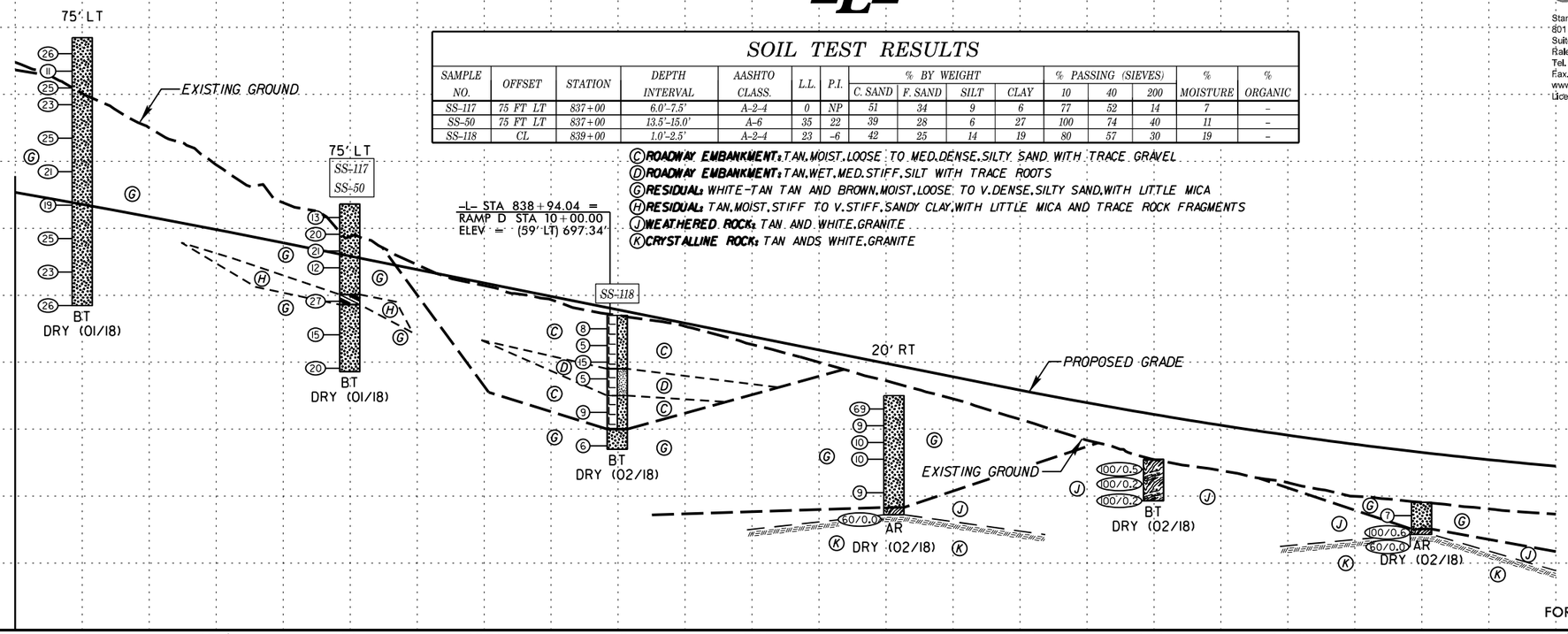
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

–L–

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-117	75 FT LT	837+00	6.0'-7.5'	A-2-4	0	NP	51	34	9	6	77	52	14	7	–
SS-50	75 FT LT	837+00	13.5'-15.0'	A-6	35	22	39	28	6	27	100	74	40	11	–
SS-118	CL	839+00	1.0'-2.5'	A-2-4	23	-6	42	25	14	19	80	57	30	19	–

(C) **ROADWAY EMBANKMENT:** TAN, MOIST, LOOSE TO MED. DENSE, SILTY SAND WITH TRACE GRAVEL
(D) **ROADWAY EMBANKMENT:** TAN, WET, MED. STIFF, SILT WITH TRACE ROOTS
(G) **RESIDUAL:** WHITE-TAN TAN AND BROWN, MOIST, LOOSE TO V. DENSE, SILTY SAND, WITH LITTLE MICA
(H) **RESIDUAL:** TAN, MOIST, STIFF TO V. STIFF, SANDY CLAY, WITH LITTLE MICA AND TRACE ROCK FRAGMENTS
(J) **WEATHERED ROCK:** TAN AND WHITE, GRANITE
(K) **CRYSTALLINE ROCK:** TAN ANDS WHITE, GRANITE



FOR –L– PLAN SEE RDY SHEET 18 & 19

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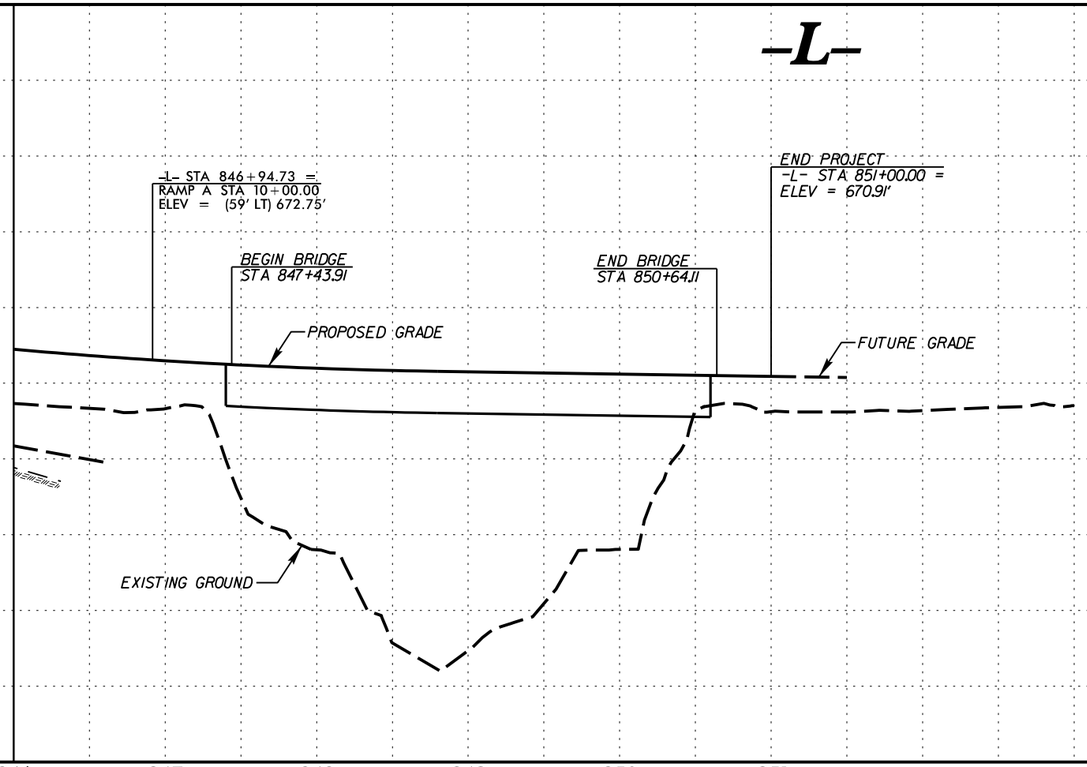

FOR –L– PLAN SEE RDY SHEET 19

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PROJECT REFERENCE NO.	SHEET NO.
R-2707D	38
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

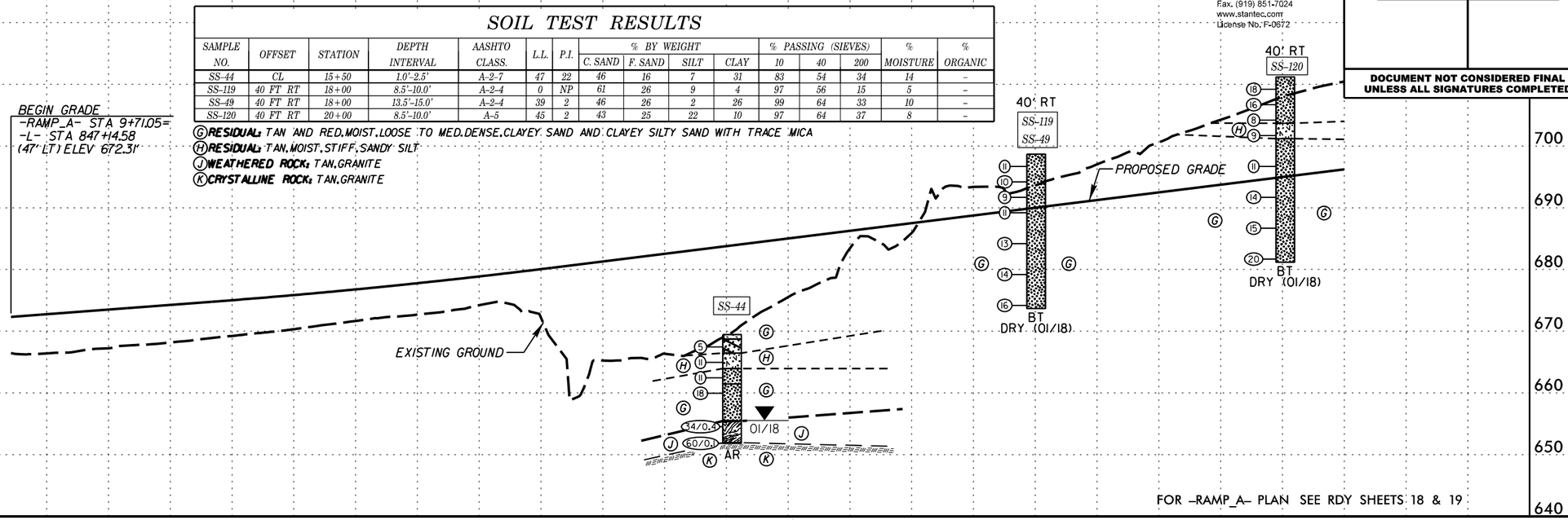
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
SS-44	CL	15+50	1.0'-2.5'	A-2-7	47	22	46	16	7	31	83	54	34	14	–
SS-119	40 FT RT	18+00	8.5'-10.0'	A-2-4	0	NP	61	26	9	4	97	56	15	5	–
SS-49	40 FT RT	18+00	13.5'-15.0'	A-2-4	39	2	46	26	2	26	99	64	33	10	–
SS-120	40 FT RT	20+00	8.5'-10.0'	A-5	45	2	43	25	22	10	97	64	37	8	–

(G) **RESIDUAL:** TAN AND RED, MOIST, LOOSE TO MED. DENSE, CLAYEY SAND AND CLAYEY SILTY SAND WITH TRACE MICA
(H) **RESIDUAL:** TAN, MOIST, STIFF, SANDY SILT
(J) **WEATHERED ROCK:** TAN, GRANITE
(K) **CRYSTALLINE ROCK:** TAN, GRANITE



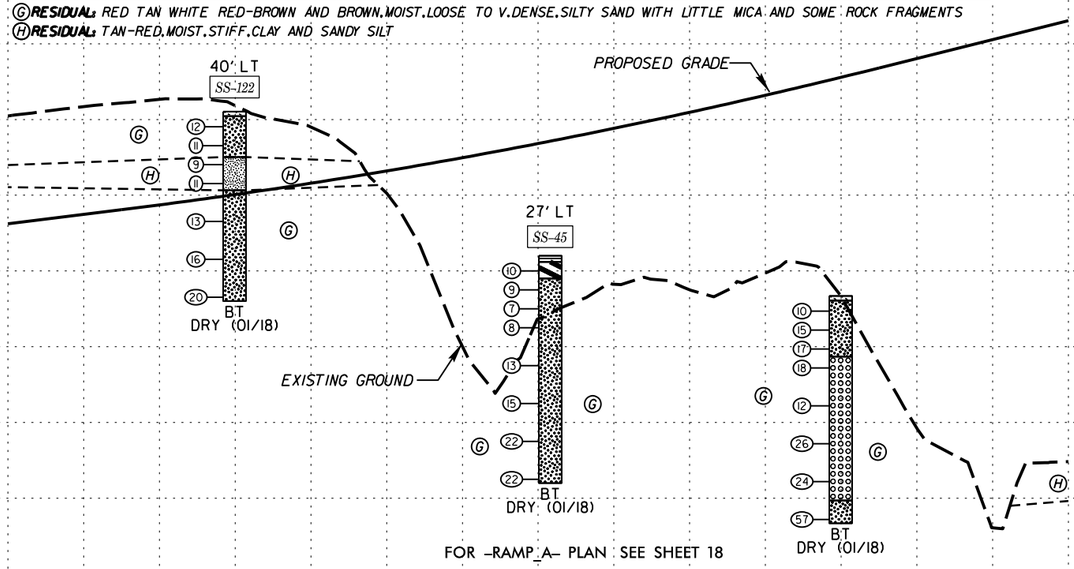
FOR –RAMP_A– PLAN SEE RDY SHEETS 18 & 19

–RAMP_A–

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-122	40 FT LT	22+00	6.0'-7.5'	A-4	0	NP	37	26	26	11	89	64	39	16	–
SS-45	27 FT LT	24+21	1.0'-2.5'	A-7-5	55	24	28	16	14	42	92	74	54	25	–

(G) **RESIDUAL:** RED TAN WHITE RED-BROWN AND BROWN, MOIST, LOOSE TO V. DENSE, SILTY SAND WITH LITTLE MICA AND SOME ROCK FRAGMENTS
(H) **RESIDUAL:** TAN-RED, MOIST, STIFF, CLAY AND SANDY SILT



FOR –RAMP_A– PLAN SEE SHEET 18

–RAMP_A–

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PROJECT REFERENCE NO.	SHEET NO.
R-2707D	39
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	% BY WEIGHT F. SAND	% BY WEIGHT SILT	% BY WEIGHT CLAY	% PASSING (SIEVES) 10	% PASSING (SIEVES) 40	% PASSING (SIEVES) 200	% MOISTURE	% ORGANIC
SS-123	25 FT RT	28+00	1.0'-2.5'	A-4	33	10	28	13	21	38	95	75	58	22	–
SS-46	70 FT RT	29+63	3.5'-5.0'	A-4	38	10	32	20	23	25	89	69	46	17	–
SS-47	4 FT RT	34+12	3.5'-5.0'	A-2-4	31	3	49	24	11	16	94	61	29	16	–

(A) **ARTIFICIAL FILL:** TAN, MOIST, LOOSE, SILTY SAND
(G) **RESIDUAL:** BROWN TAN GRAY AND WHITE, MOIST TO WET C. LOOSE TO HARD SILTY AND CLAYEY SAND WITH LITTLE ROCK FRAGMENTS AND LITTLE TO HIGHLY MICA
(H) **RESIDUAL:** TAN AND BROWN, MOIST, SOFT TO HARD, SANDY CLAY AND SILT WITH TRACE ROCK FRAGMENTS AND LITTLE MICA
(J) **WEATHERED ROCK:** TAN, GRANITE

RAMP A STA 36+78.37 =
-L- STA 823+96.61
ELEV 739.47

PROPOSED GRADE

EXISTING GROUND

25' RT SS-123 — BT — 01/18
70' RT SS-46 — BT — 01/18
20' RT — BT — 01/18
4' RT SS-47 — BT — 01/18

FOR –RAMP_A– PLAN SEE SHEET 18

–RAMP_A–

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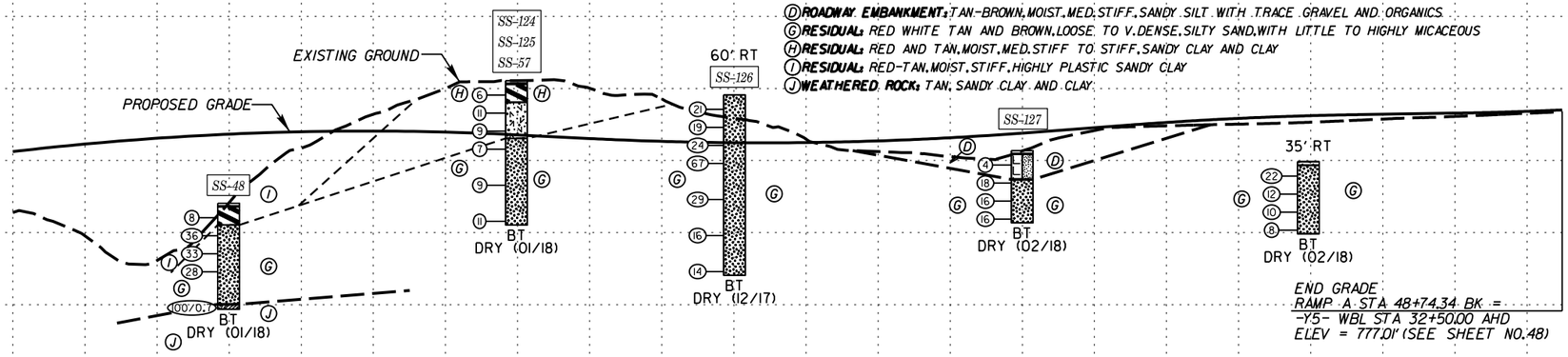
PROJECT REFERENCE NO.	SHEET NO.
R-2707D	40
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-48	CL	39+50	1.0'-2.5'	A-7-6	55	26	32	9	13	46	92	69	56	20	–
SS-124	CL	41+50	1.0'-2.5'	A-7-5	52	16	24	12	7	57	93	76	62	28	–
SS-125	CL	41+50	6.0'-7.5'	A-5	43	5	39	23	16	22	99	70	43	17	–
SS-57	CL	41+50	8.5'-10.0'	A-2-4	30	NP	48	24	20	8	95	60	31	7	–
SS-126	60' RT	43+00	6.0'-7.5'	A-2-4	35	1	44	33	16	7	94	65	27	8	–
SS-127	CL	45+00	1.0'-2.5'	A-4	26	4	36	16	14	34	74	54	37	18	–



(D) **ROADWAY EMBANKMENT:** TAN-BROWN, MOIST, MED. STIFF, SANDY SILT WITH TRACE GRAVEL AND ORGANICS
(G) **RESIDUAL:** RED WHITE TAN AND BROWN, LOOSE TO V.DENSE, SILTY SAND, WITH LITTLE TO HIGHLY MICACEOUS
(H) **RESIDUAL:** RED AND TAN, MOIST, MED. STIFF TO STIFF, SANDY CLAY AND CLAY
(I) **RESIDUAL:** RED-TAN, MOIST, STIFF, HIGHLY PLASTIC SANDY CLAY
(J) **WEATHERED ROCK:** TAN, SANDY CLAY AND CLAY

FOR –RAMP_A– PLAN SEE RDY SHEETS 18 & 26

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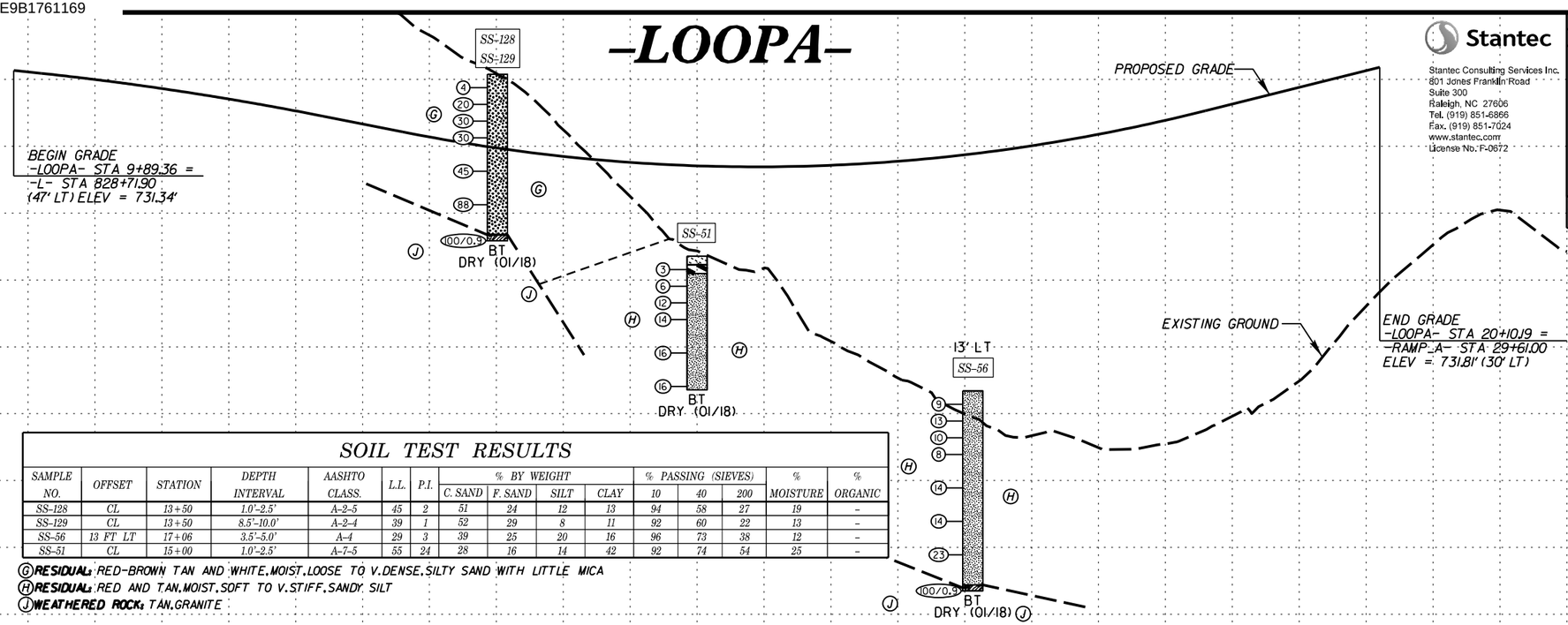
PROJECT REFERENCE NO.	SHEET NO.
R-2707D	41
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

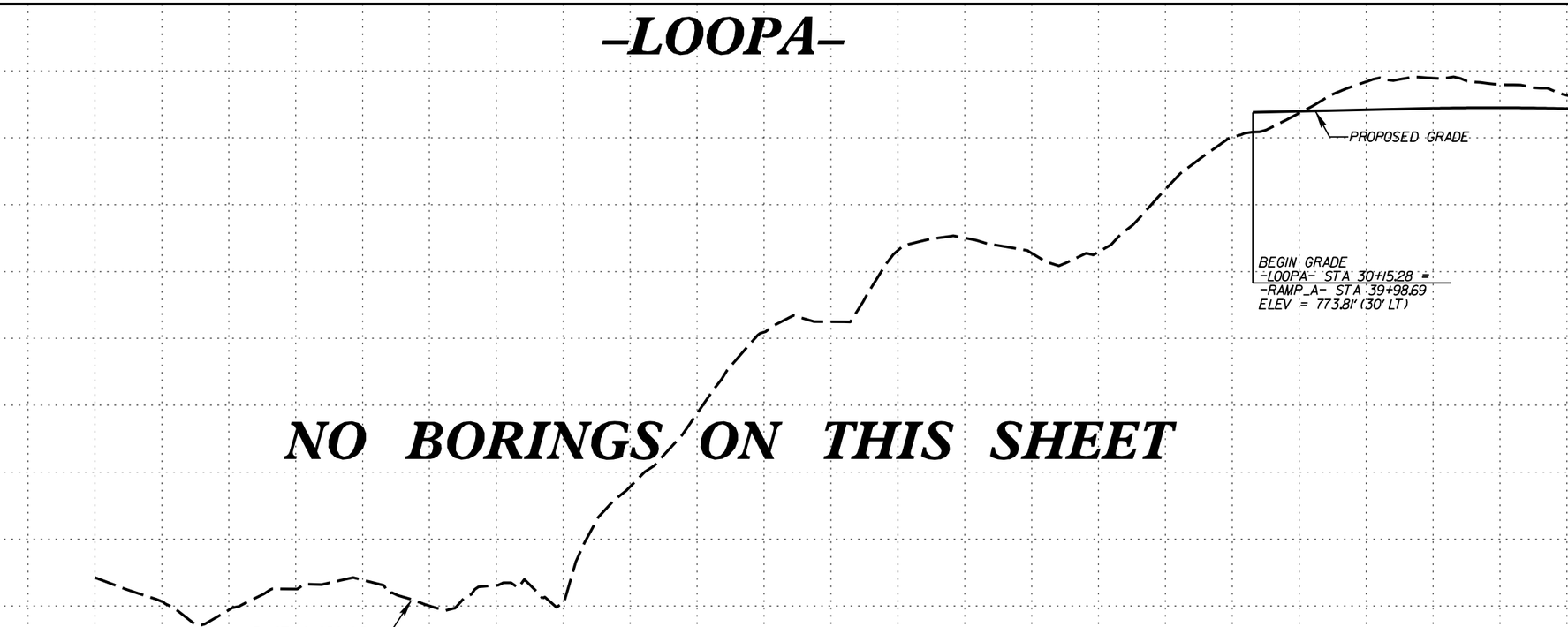


SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
SS-128	CL	13+50	1.0'-2.5'	A-2-5	45	2	51	24	12	13	94	58	27	19	–
SS-129	CL	13+50	8.5'-10.0'	A-2-4	39	1	52	29	8	11	92	60	22	13	–
SS-56	13 FT LT	17+06	3.5'-5.0'	A-4	29	3	39	25	20	16	96	73	38	12	–
SS-51	CL	15+00	1.0'-2.5'	A-7-5	55	24	28	16	14	42	92	74	54	25	–

(G) **RESIDUAL:** RED-BROWN TAN AND WHITE, MOIST, LOOSE TO V.DENSE, SILTY SAND WITH LITTLE MICA
(H) **RESIDUAL:** RED AND TAN, MOIST, SOFT TO V.STIFF, SANDY SILT
(J) **WEATHERED ROCK:** TAN, GRANITE

–LOOPA–



NO BORINGS ON THIS SHEET

–LOOPA–

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PROJECT REFERENCE NO.	SHEET NO.
R-2707D	42
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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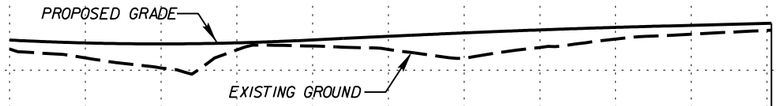
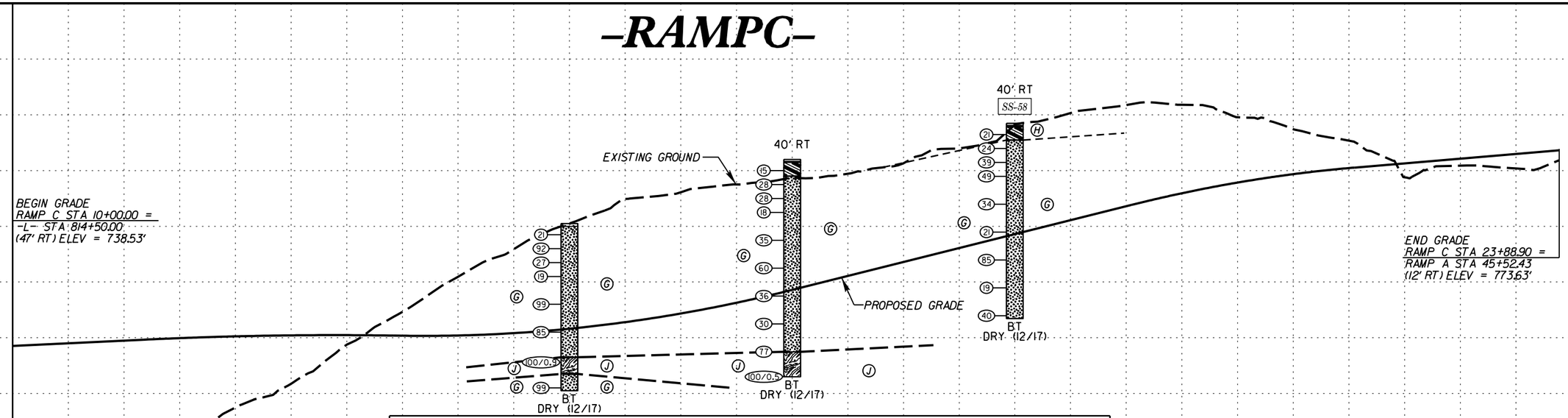


END GRADE
–LOOPA– STA 38+02.84 =
–RAMP_D– STA 31+32.91
(12' LT) ELEV = 776.19'

NO BORINGS ON THIS SHEET

FOR –LOOPA– PLAN SEE RDY SHEET 18

–RAMPC–



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-58	40 FT RT	19+00	28.5'-30.0'	A-2-4	31	1	24	47	1	28	100	93	35	16	–

(G) **RESIDUAL:** RED TAN AND BROWN, DRY TO MOIST, MED. DENSE TO V. DENSE, CLAYEY SILTY SAND AND SILTY SAND WITH LITTLE MICA
(H) **RESIDUAL:** TAN AND RED, MOIST, STIFF TO V. STIFF, SANDY CLAY
(J) **WEATHERED ROCK:** TAN AND BROWN, MICA SCHIST

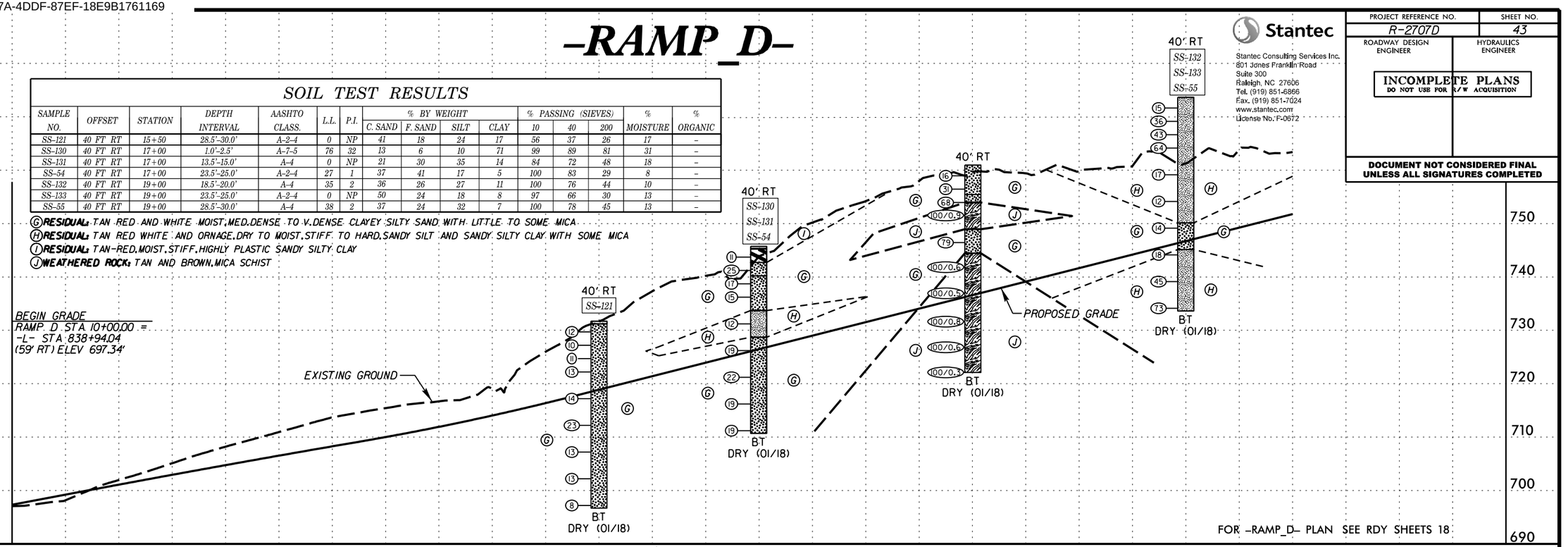
FOR –RAMPC– PLAN SEE RDY SHEETS 17 & 18

–RAMP_D–

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-121	40 FT RT	15+50	28.5'-30.0'	A-2-4	0	NP	41	18	24	17	56	37	26	17	–
SS-130	40 FT RT	17+00	1.0'-2.5'	A-7-5	76	32	13	6	10	71	99	89	81	31	–
SS-131	40 FT RT	17+00	13.5'-15.0'	A-4	0	NP	21	30	35	14	84	72	48	18	–
SS-54	40 FT RT	17+00	23.5'-25.0'	A-2-4	27	1	37	41	17	5	100	83	29	8	–
SS-132	40 FT RT	19+00	18.5'-20.0'	A-4	35	2	36	26	27	11	100	76	44	10	–
SS-133	40 FT RT	19+00	23.5'-25.0'	A-2-4	0	NP	50	24	18	8	97	66	30	13	–
SS-55	40 FT RT	19+00	28.5'-30.0'	A-4	38	2	37	24	32	7	100	78	45	13	–

(G) **RESIDUAL:** TAN RED AND WHITE MOIST, MED. DENSE TO V. DENSE CLAYEY SILTY SAND WITH LITTLE TO SOME MICA
(H) **RESIDUAL:** TAN RED WHITE AND ORNAGE, DRY TO MOIST, STIFF TO HARD, SANDY SILT AND SANDY SILTY CLAY WITH SOME MICA
(I) **RESIDUAL:** TAN-RED, MOIST, STIFF, HIGHLY PLASTIC SANDY SILTY CLAY
(J) **WEATHERED ROCK:** TAN AND BROWN, MICA SCHIST



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PROJECT REFERENCE NO.	SHEET NO.
R-2707D	43
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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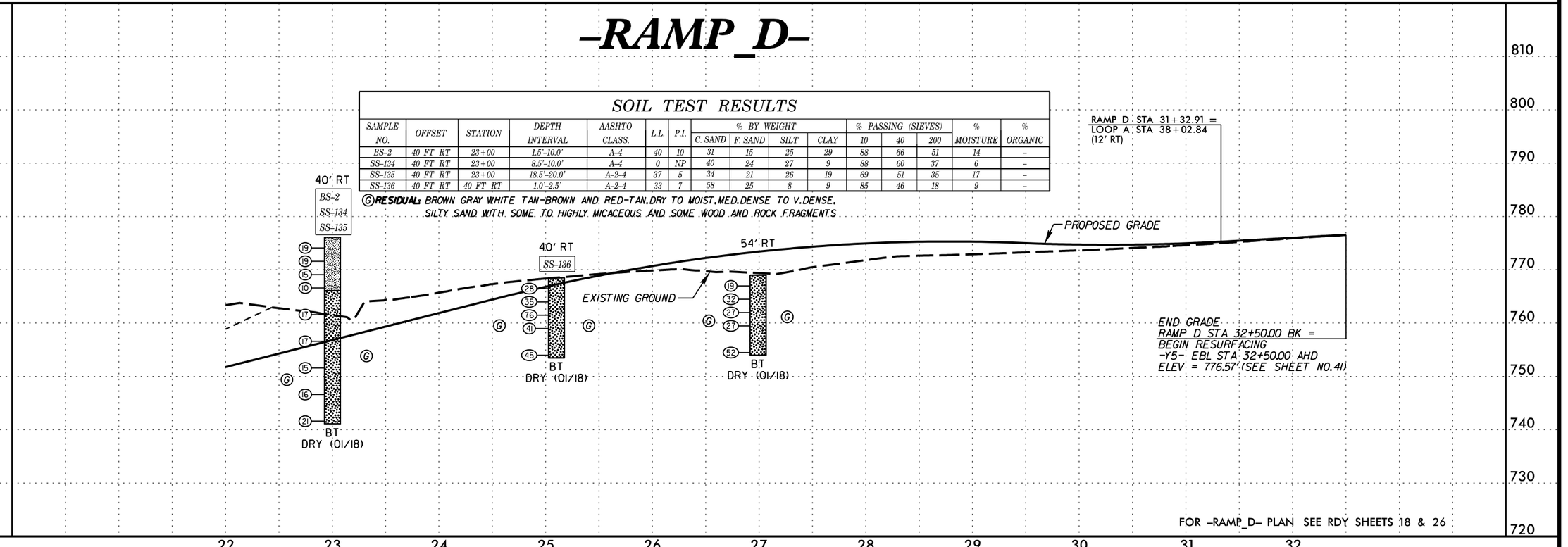
–RAMP_D–

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
BS-2	40 FT RT	23+00	1.5'-10.0'	A-4	40	10	31	15	25	29	88	66	51	14	–
SS-134	40 FT RT	23+00	8.5'-10.0'	A-4	0	NP	40	24	27	9	88	60	37	6	–
SS-135	40 FT RT	23+00	18.5'-20.0'	A-2-4	37	5	34	21	26	19	69	51	35	17	–
SS-136	40 FT RT	40 FT RT	1.0'-2.5'	A-2-4	33	7	58	25	8	9	85	46	18	9	–

(G) **RESIDUAL:** BROWN GRAY WHITE TAN-BROWN AND RED-TAN, DRY TO MOIST, MED. DENSE TO V. DENSE, SILTY SAND WITH SOME TO HIGHLY MICACEOUS AND SOME WOOD AND ROCK FRAGMENTS



-Y1-

PROJECT REFERENCE NO.	SHEET NO.
R-2707D	44
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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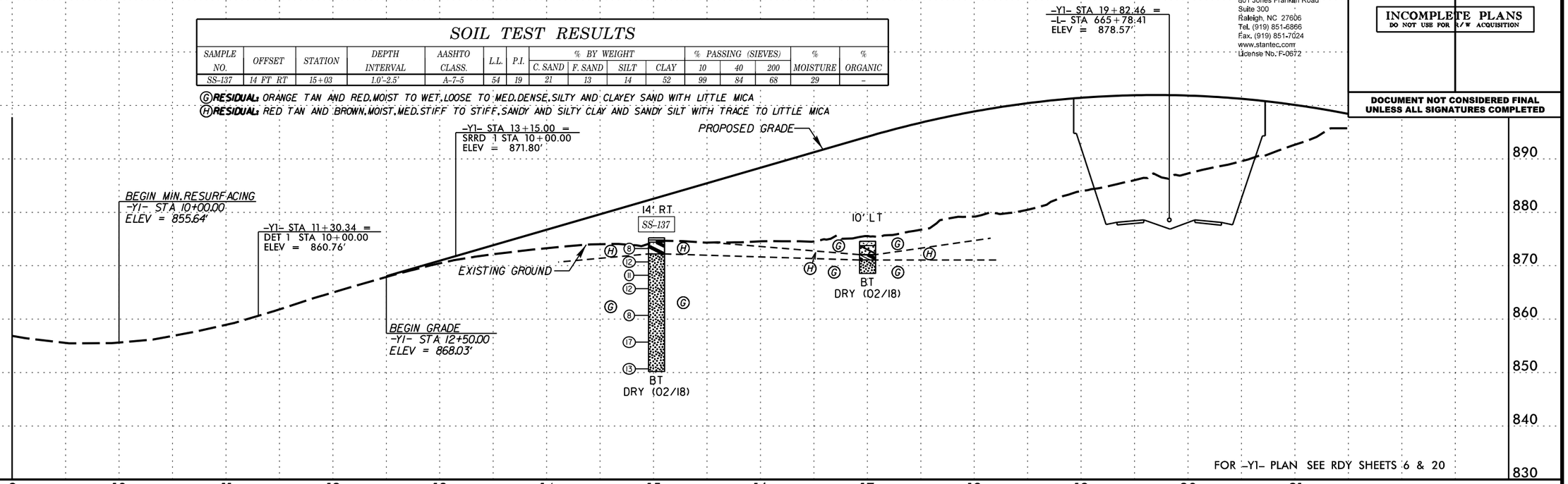
SOIL TEST RESULTS

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-137	14 FT RT	15+03	1.0'-2.5'	A-7-5	54	19	21	13	14	52	99	84	68	29	-

Ⓖ **RESIDUAL:** ORANGE TAN AND RED, MOIST TO WET, LOOSE TO MED. DENSE, SILTY AND CLAYEY SAND WITH LITTLE MICA
Ⓗ **RESIDUAL:** RED TAN AND BROWN, MOIST, MED. STIFF TO STIFF, SANDY AND SILTY CLAY AND SANDY SILT WITH TRACE TO LITTLE MICA



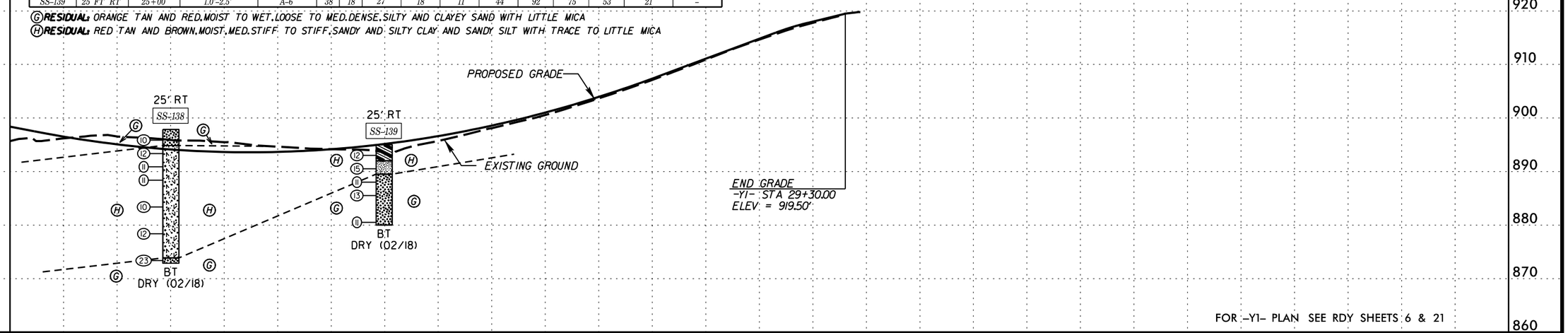
FOR -Y1- PLAN SEE RDY SHEETS 6 & 20

-Y1-

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-138	25 FT RT	23+00	3.5'-5.0'	A-5	54	NP	11	43	32	14	100	94	59	28	-
SS-139	25 FT RT	25+00	1.0'-2.5'	A-6	38	18	27	18	11	44	92	75	53	21	-

Ⓖ **RESIDUAL:** ORANGE TAN AND RED, MOIST TO WET, LOOSE TO MED. DENSE, SILTY AND CLAYEY SAND WITH LITTLE MICA
Ⓗ **RESIDUAL:** RED TAN AND BROWN, MOIST, MED. STIFF TO STIFF, SANDY AND SILTY CLAY AND SANDY SILT WITH TRACE TO LITTLE MICA



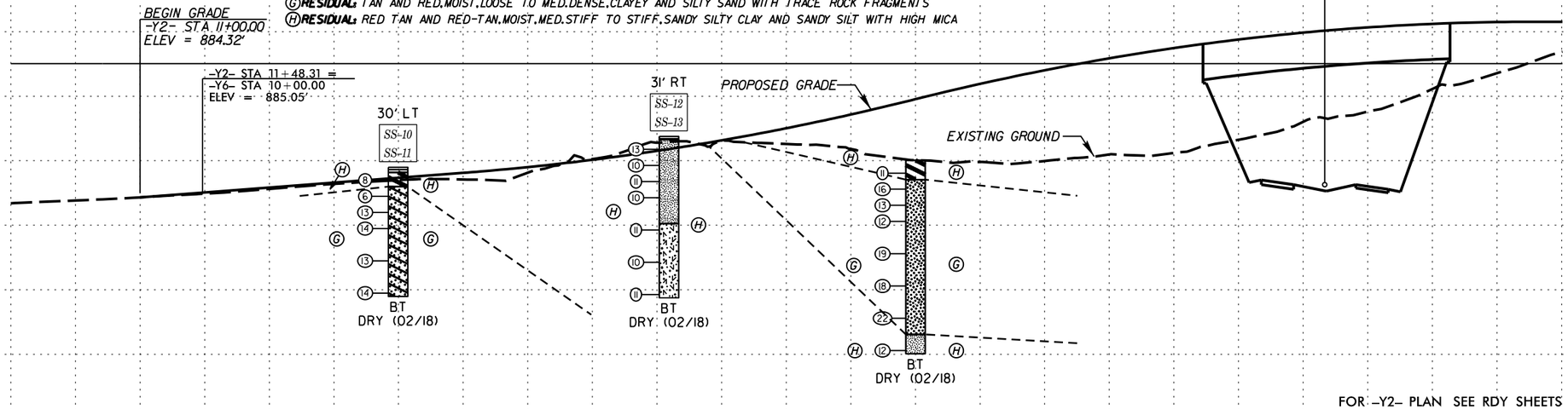
FOR -Y1- PLAN SEE RDY SHEETS 6 & 21

-Y2-

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-10	30 FT LT	13+00	1.0'-2.5'	A-7-5	60	21	4	25	23	48	100	98	79	36	–
SS-11	30 FT LT	13+00	13.5'-15.0'	A-2-6	29	NP	48	27	17	8	82	52	24	8	–
SS-12	31 FT LT	15+28	3.5'-5.0'	A-4	40	2	22	30	29	19	99	87	57	13	–
SS-13	31 FT LT	15+28	13.5'-15.0'	A-5	52	NP	13	48	28	11	99	91	52	16	–
SS-140	CL	17+00	1.0'-2.5'	A-7-5	55	22	17	10	14	59	99	87	74	27	–

(G) **RESIDUAL:** TAN AND RED, MOIST, LOOSE TO MED. DENSE, CLAYEY AND SILTY SAND WITH TRACE ROCK FRAGMENTS
(H) **RESIDUAL:** RED TAN AND RED-TAN, MOIST, MED. STIFF TO STIFF, SANDY SILTY CLAY AND SANDY SILT WITH HIGH MICA



FOR -Y2- PLAN SEE RDY SHEETS 8 & 22

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PROJECT REFERENCE NO.	SHEET NO.
R-2707D	45
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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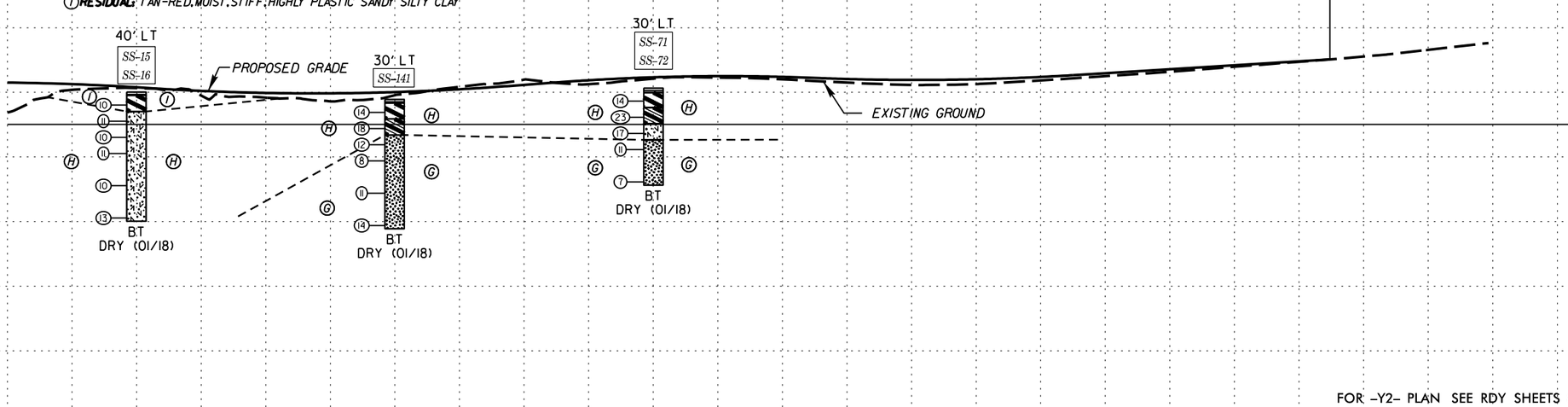
-Y2-

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-15	40 FT LT	23+00	1.0'-2.5'	A-7-5	80	38	10	9	13	68	98	91	83	34	–
SS-16	40 FT LT	23+00	6.0'-7.5'	A-5	68	NP	4	40	40	16	100	98	72	27	–
SS-141	30 FT LT	25+00	1.0'-2.5'	A-7-6	46	19	19	15	14	52	100	88	68	22	–
SS-71	30 FT LT	27+00	1.0'-2.5'	A-7-5	64	23	10	9	14	67	100	94	83	34	–
SS-72	30 FT LT	27+00	6.0'-7.5'	A-5	64	7	8	19	30	43	100	95	79	33	–

(G) **RESIDUAL:** RED-TAN AND TAN, MOIST, LOOSE TO MED. DENSE, SILTY SAND WITH LITTLE MICA
(H) **RESIDUAL:** TAN-RED RED-TAN TAN AND RED, MOIST, STIFF TO V. STIFF SANDY SILTY CLAY AND CLAYEY SILT WITH LITTLE MICA
(I) **RESIDUAL:** TAN-RED, MOIST, STIFF, HIGHLY PLASTIC SANDY SILTY CLAY



FOR -Y2- PLAN SEE RDY SHEETS 8 & 23

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PROJECT REFERENCE NO.	SHEET NO.
R-2707D	46
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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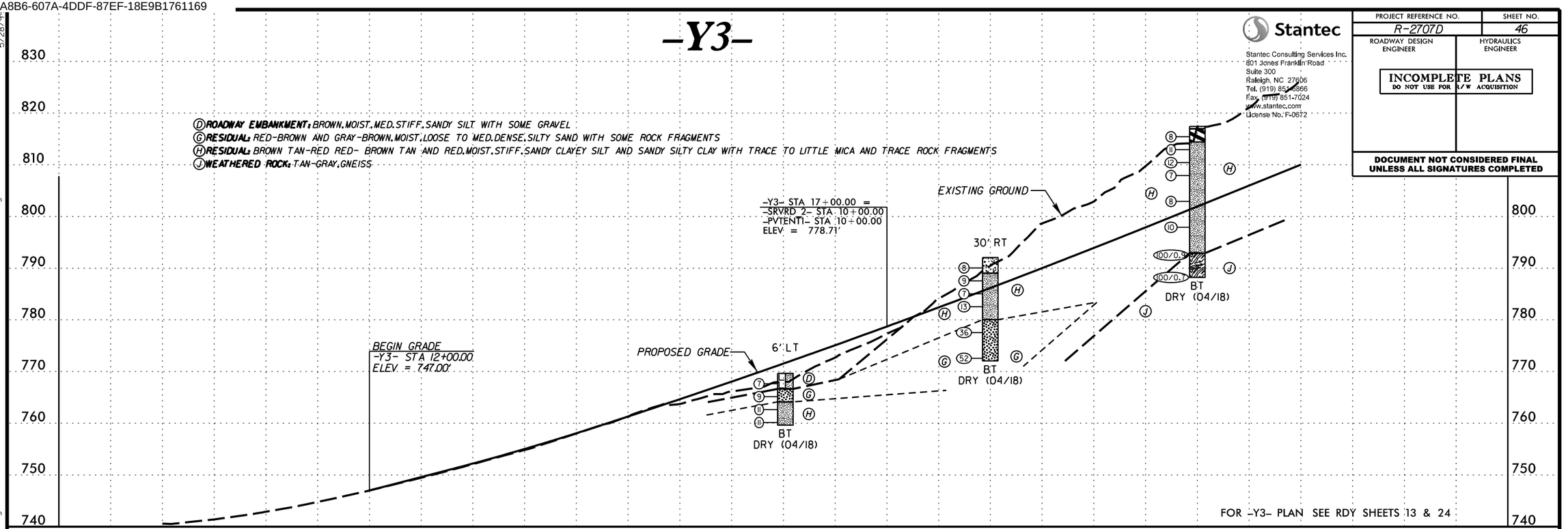
-Y3-

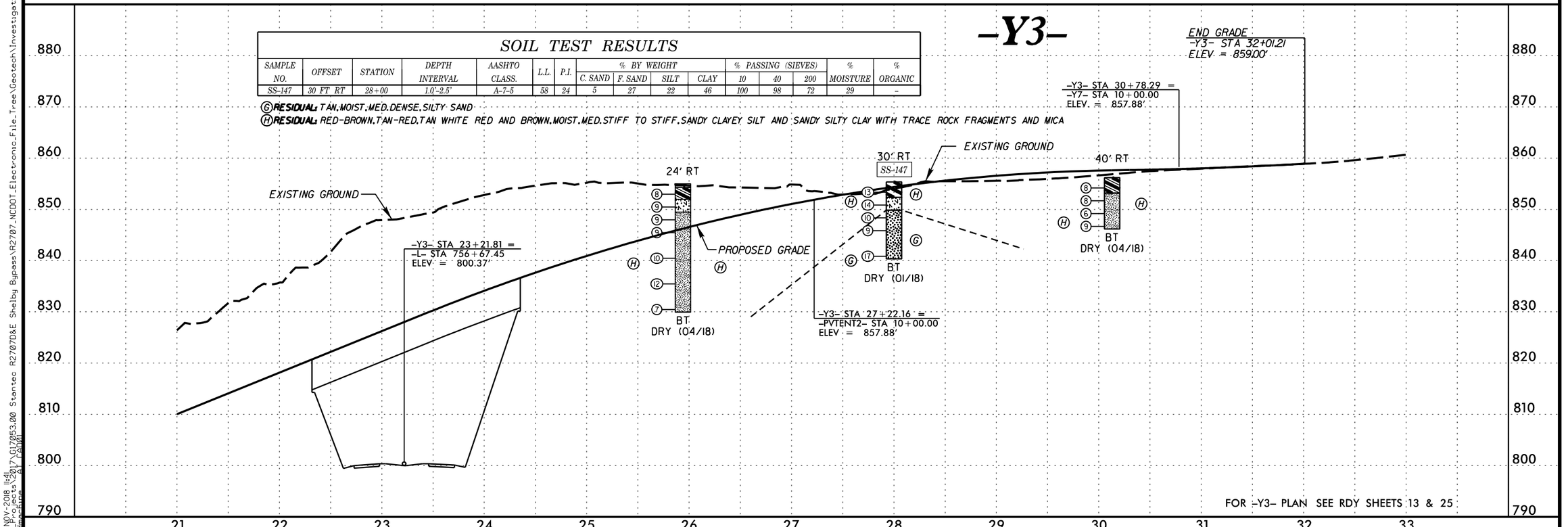
(D) **ROADWAY EMBANKMENT:** BROWN, MOIST, MED. STIFF, SANDY SILT WITH SOME GRAVEL
(G) **RESIDUAL:** RED-BROWN AND GRAY-BROWN, MOIST, LOOSE TO MED. DENSE, SILTY SAND WITH SOME ROCK FRAGMENTS
(H) **RESIDUAL:** BROWN TAN-RED RED- BROWN TAN AND RED, MOIST, STIFF, SANDY CLAYEY SILT AND SANDY SILTY CLAY WITH TRACE TO LITTLE MICA AND TRACE ROCK FRAGMENTS
(J) **WEATHERED ROCK:** TAN-GRAY, GNEISS



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-147	30 FT RT	28+00	1.0'-2.5'	A-7-5	58	24	5	27	22	46	100	98	72	29	-

(G) **RESIDUAL:** TAN, MOIST, MED. DENSE, SILTY SAND
(H) **RESIDUAL:** RED-BROWN, TAN-RED, TAN WHITE RED AND BROWN, MOIST, MED. STIFF TO STIFF, SANDY CLAYEY SILT AND SANDY SILTY CLAY WITH TRACE ROCK FRAGMENTS AND MICA



–Y4–

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PROJECT REFERENCE NO.	SHEET NO.
R-2707D	47
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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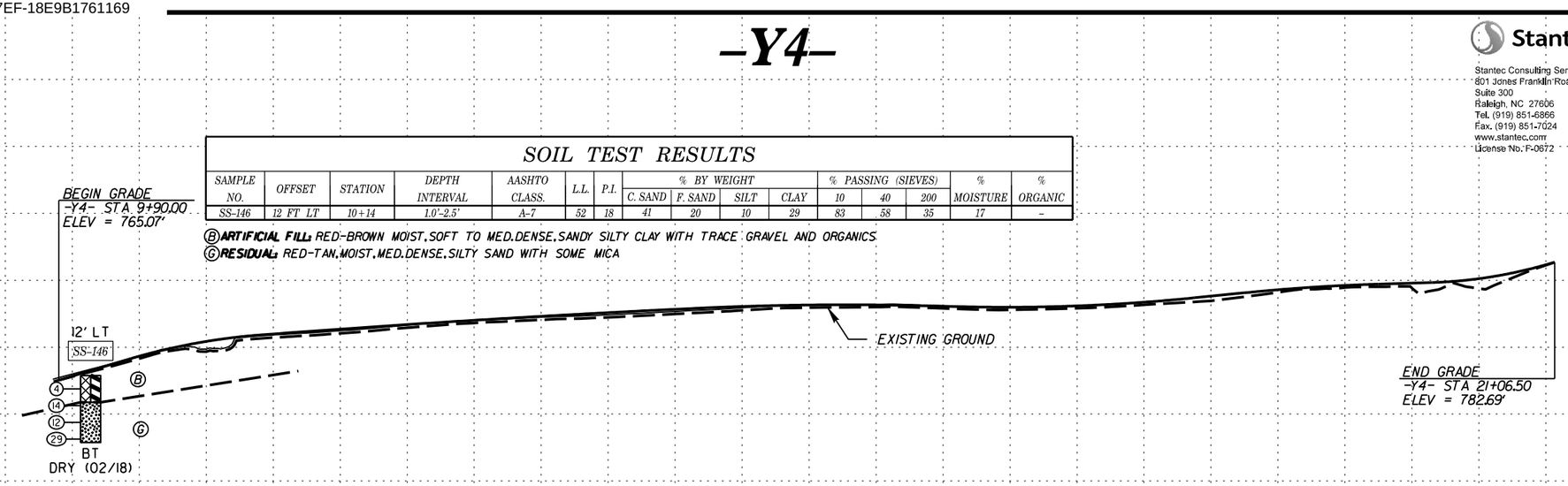
SOIL TEST RESULTS

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-146	12 FT LT	10+14	1.0'-2.5'	A-7	52	18	41	20	10	29	83	58	35	17	–

Ⓑ **ARTIFICIAL FILL:** RED-BROWN MOIST, SOFT TO MED. DENSE, SANDY SILTY CLAY WITH TRACE GRAVEL AND ORGANICS
Ⓖ **RESIDUAL:** RED-TAN, MOIST, MED. DENSE, SILTY SAND WITH SOME MICA



FOR –Y4– PLAN SEE RDY SHEETS 18 & 26

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PROJECT REFERENCE NO.	SHEET NO.
R-2707D	48
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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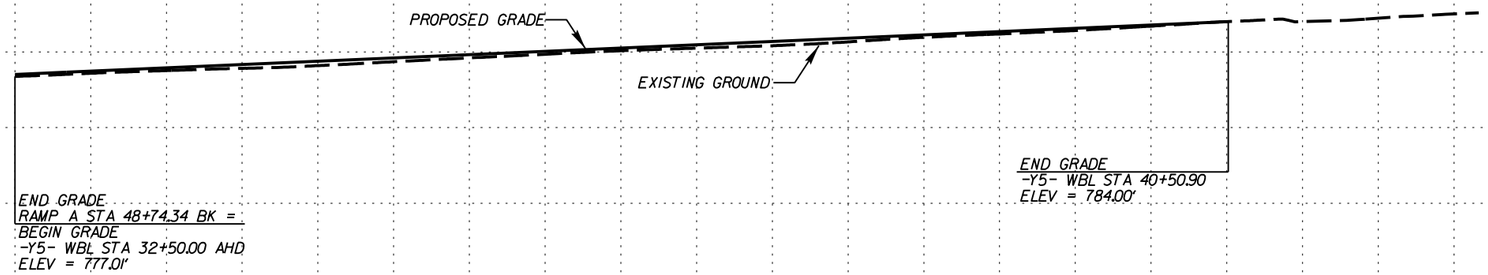
–Y5_WBL–

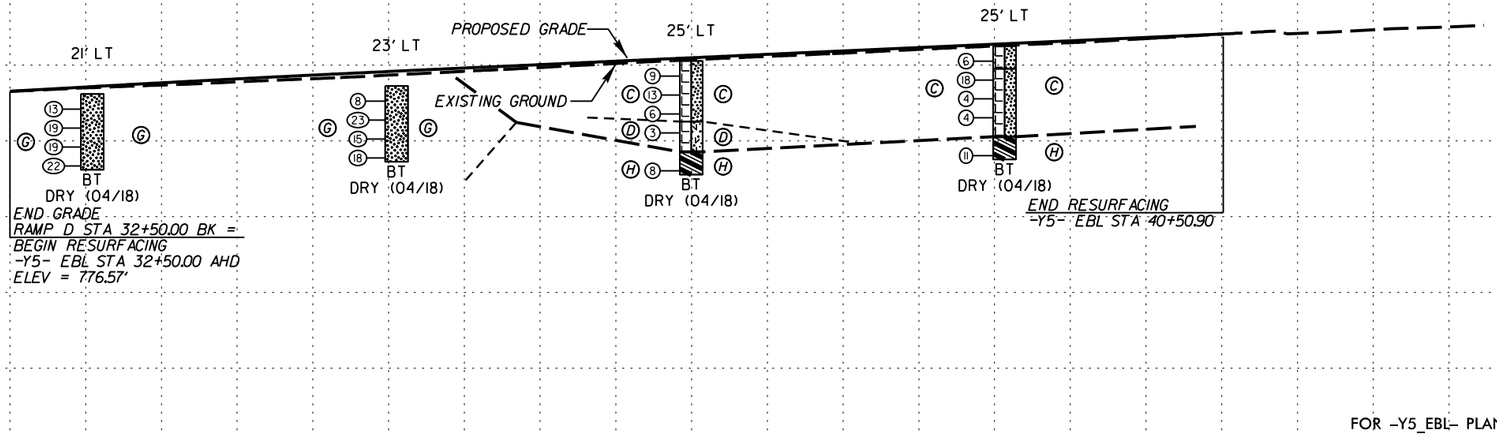


NO BORINGS ON THIS SHEET

FOR –Y5_WBL– PLAN SEE RDY SHEET 26

–Y5_EBL–

Ⓒ **ROADWAY EMBANKMENT:** RED-BROWN TAN AND BROWN, MOIST, LOOSE TO MED. DENSE, SILTY CLAYEY SAND WITH TRACE WOOD FRAGMENTS AND GRAVEL AND LITTLE MICA
Ⓓ **ROADWAY EMBANKMENT:** TAN AND GRAY, WET, SOFT, SANDY CLAYEY SILT, WITH TRACE GRAVEL AND ORGANICS
Ⓖ **RESIDUAL:** RED-TAN AND TAN, MOIST, LOOSE TO MED. DENSE, SILTY SAND WITH LITTLE MICA
Ⓗ **RESIDUAL:** RED-BROWN, MOIST, MED. STIFF TO STIFF, SANDY CLAY WITH TRACE MICA



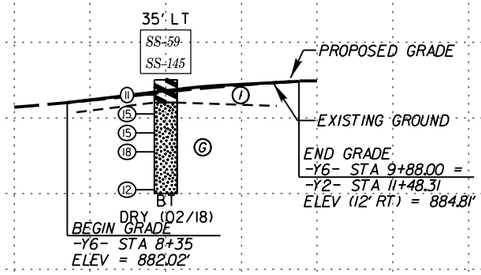
FOR –Y5_EBL– PLAN SEE RDY SHEET 26

–Y6–

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-59	35 FT LT	9+00	1.0'-2.5'	A-7-5	70	33	14	10	12	64	98	87	76	34	–
SS-145	35 FT LT	9+00	3.5'-5.0'	A-2-4	37	9	53	20	12	15	82	49	25	19	–

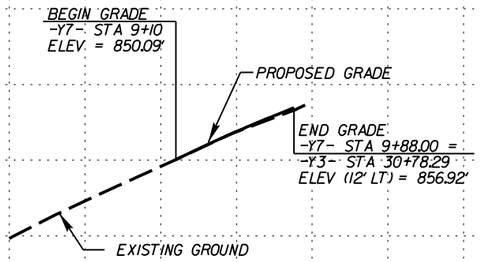
⑥ **RESIDUAL:** RED AND TAN, MOIST, MED. DENSE, SILTY SAND WITH TRACE MICA
⑦ **RESIDUAL:** TAN-RED, MOIST, STIFF, HIGHLY PLASTIC SANDY SILTY CLAY



FOR –Y6– PLAN SEE RDY SHEET 22

–Y7–

NO BORINGS ON THIS SHEET



FOR –Y7– PLAN SEE RDY SHEET 25

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PROJECT REFERENCE NO.	SHEET NO.
R-2707D	49

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

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–SRVRD_1–

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PROJECT REFERENCE NO.	SHEET NO.
R-2707D	50
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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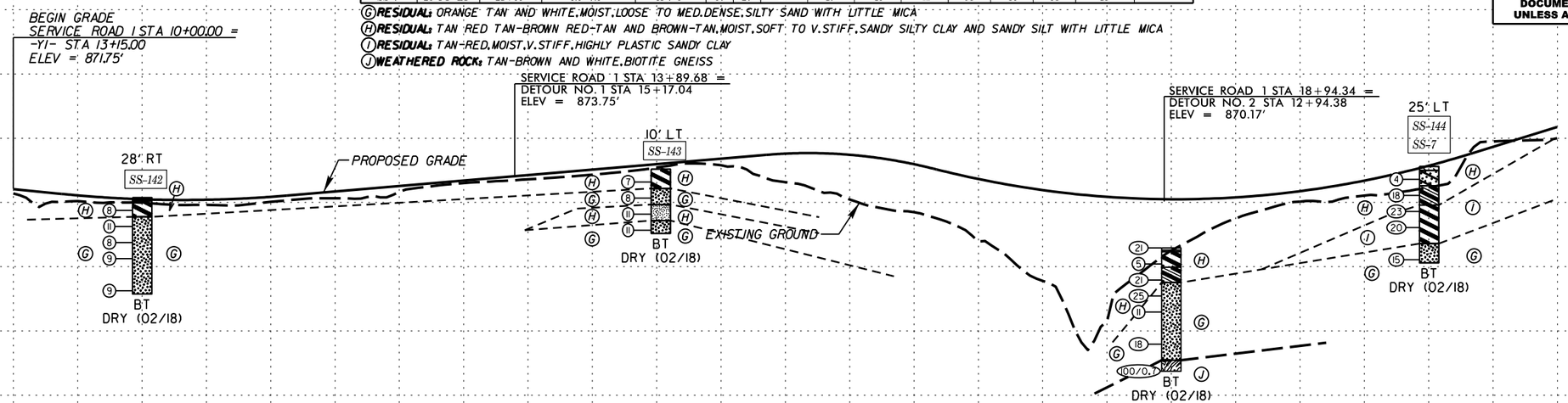
SOIL TEST RESULTS

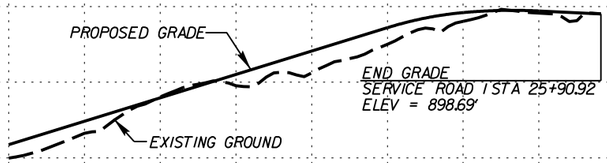
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-142	28 FT RT	11+00	1.0'-2.5'	A-7-5	61	23	12	18	17	53	100	92	76	34	–
SS-143	10 FT LT	15+02	6.0'-7.5'	A-7-6	47	19	23	17	19	41	99	80	63	33	–
SS-144	25 FT LT	21+00	3.5'-5.0'	A-6	38	15	32	16	10	42	98	76	54	22	–
SS-7	25 FT LT	21+00	6.0'-7.5'	A-7-5	57	27	26	17	15	42	98	80	58	18	–

(G) **RESIDUAL:** ORANGE TAN AND WHITE,MOIST,LOOSE TO MED.DENSE,SILTY SAND WITH LITTLE MICA
(H) **RESIDUAL:** TAN RED TAN-BROWN RED-TAN AND BROWN-TAN,MOIST,SOFT TO V.STIFF,SANDY SILTY CLAY AND SANDY SILT WITH LITTLE MICA
(I) **RESIDUAL:** TAN-RED,MOIST,V.STIFF,HIGHLY PLASTIC SANDY CLAY
(J) **WEATHERED ROCK:** TAN-BROWN AND WHITE,BIOTITE GNEISS



FOR –SRVRD_1– PLAN SEE RDY SHEETS 6, 7, & 20

–SRVRD_1–



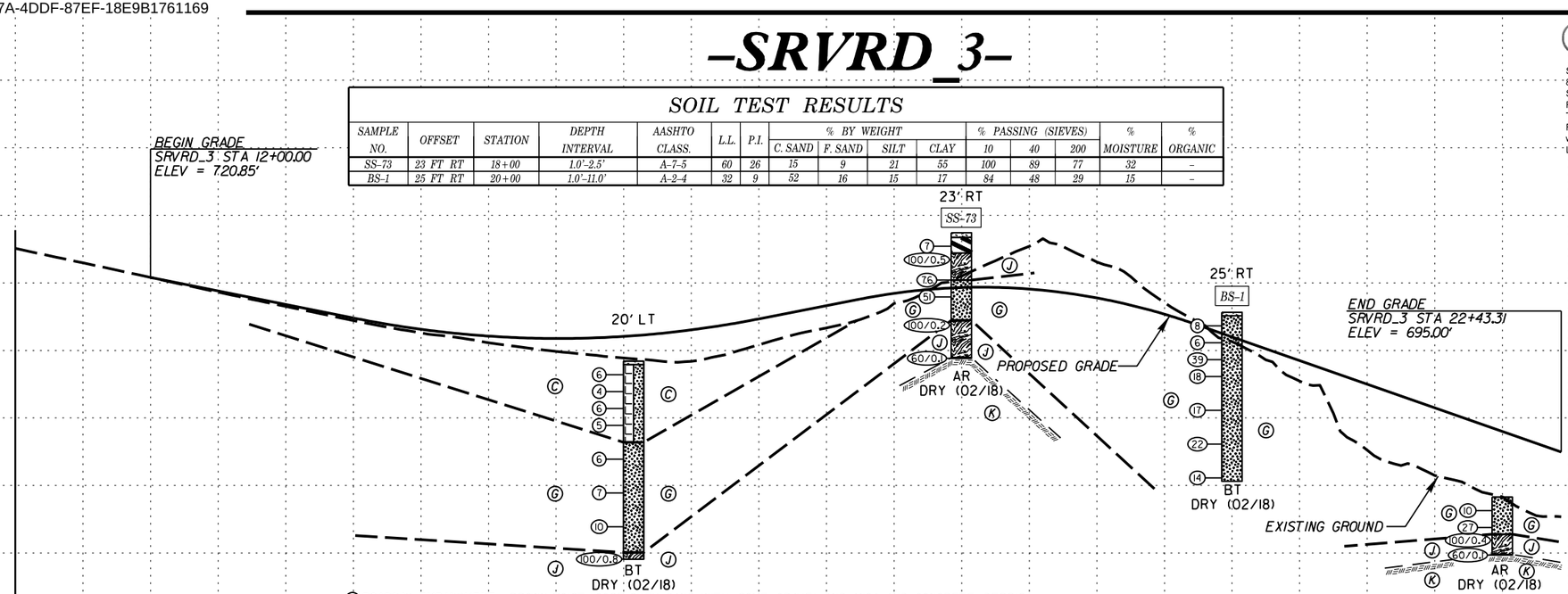
NO BORINGS ON THIS SHEET

FOR –SRVRD_1– PLAN SEE RDY SHEET 7

–SRVRD_3–

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-73	23' FT RT	18+00	1.0'-2.5'	A-7-5	60	26	15	9	21	55	100	89	77	32	–
BS-1	25' FT RT	20+00	1.0'-11.0'	A-2-4	32	9	52	16	15	17	84	48	29	15	–

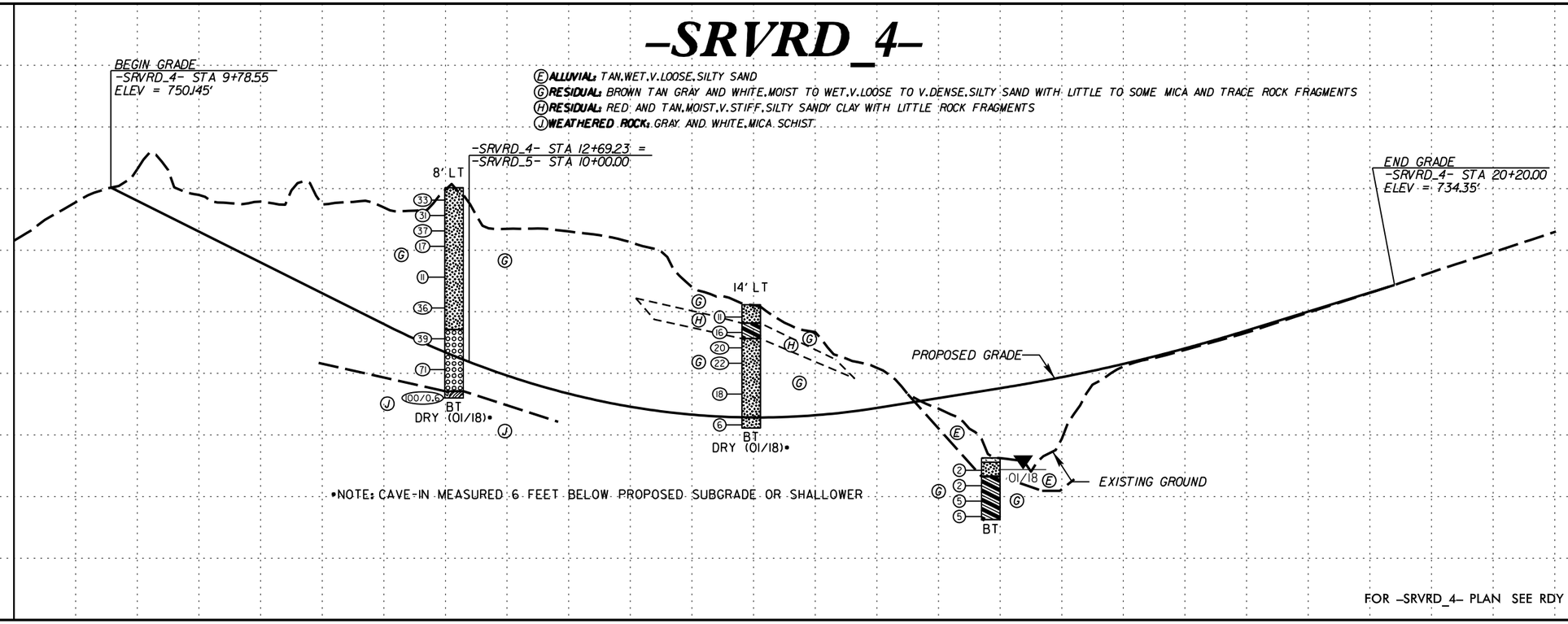


Ⓒ **ROADWAY EMBANKMENT:** BROWN, MOIST, LOOSE, SILTY SAND WITH SOME GRAVEL AND MICA AND CONCRETE DEBRIS
Ⓖ **RESIDUAL:** WHITE TAN BROWN RED-TAN AND TAN, MOIST, LOOSE TO V. DENSE, SILTY SAND WITH TRACE ROCK FRAGMENTS AND LITTLE MICA
Ⓙ **WEATHERED ROCK:** TAN AND WHITE, GRANITE
Ⓚ **CRYSTALLINE ROCK:** WHITE TAN AND GRAY, GRANITE

FOR –SRVRD_3– PLAN SEE RDY SHEETS 18 & 19

–SRVRD_4–

Ⓔ **ALLUVIAL:** TAN, WET, V. LOOSE, SILTY SAND
Ⓖ **RESIDUAL:** BROWN TAN GRAY AND WHITE, MOIST TO WET, V. LOOSE TO V. DENSE, SILTY SAND WITH LITTLE TO SOME MICA AND TRACE ROCK FRAGMENTS
Ⓗ **RESIDUAL:** RED AND TAN, MOIST, V. STIFF, SILTY SANDY CLAY WITH LITTLE ROCK FRAGMENTS
Ⓙ **WEATHERED ROCK:** GRAY AND WHITE, MICA SCHIST



•NOTE: CAVE-IN MEASURED 6 FEET BELOW PROPOSED SUBGRADE OR SHALLOWER

FOR –SRVRD_4– PLAN SEE RDY SHEETS 17 & 18

Stantec
Stantec Consulting Services Inc.
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Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No.: F-0672

PROJECT REFERENCE NO.	SHEET NO.
R-2707D	5I

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO.	SHEET NO.
R-2707D	52
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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801 Jones Franklin Road
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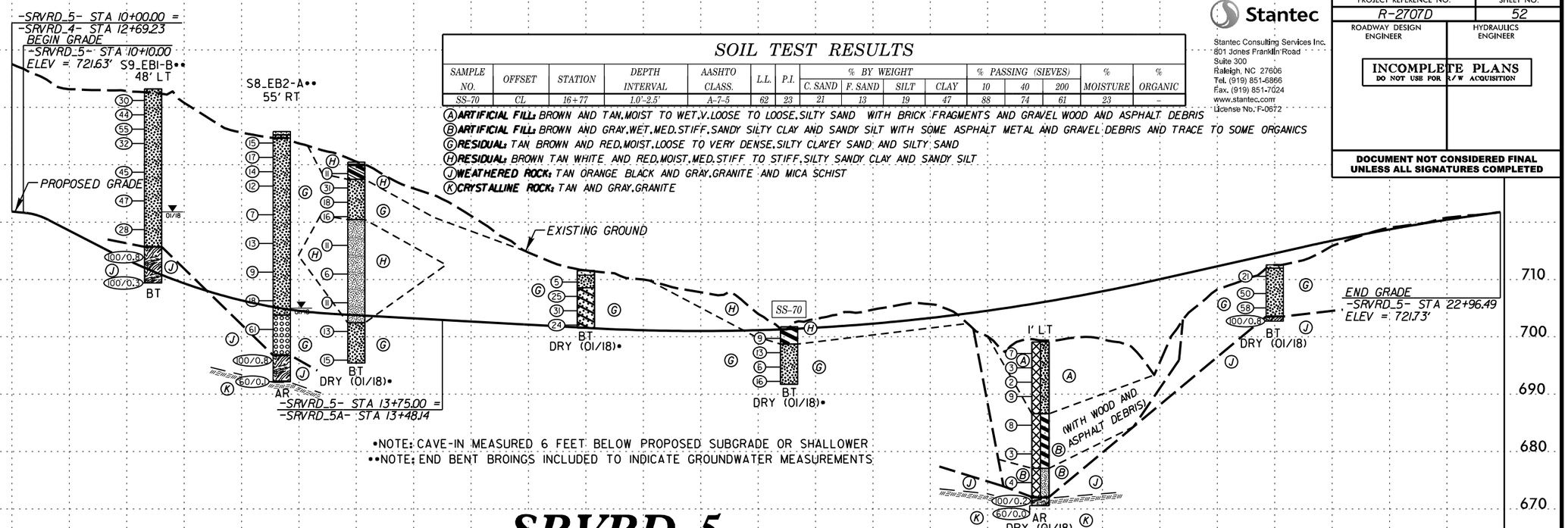
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No.: F-0672

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-70	CL	16+77	1.0'-2.5'	A-7-5	62	23	21	13	19	47	88	74	61	23	-

(A) **ARTIFICIAL FILL:** BROWN AND TAN, MOIST TO WET, V.LOOSE TO LOOSE, SILTY SAND WITH BRICK FRAGMENTS AND GRAVEL WOOD AND ASPHALT DEBRIS
(B) **ARTIFICIAL FILL:** BROWN AND GRAY, WET, MED. STIFF, SANDY SILTY CLAY AND SANDY SILT WITH SOME ASPHALT METAL AND GRAVEL DEBRIS AND TRACE TO SOME ORGANICS
(G) **RESIDUAL:** TAN BROWN AND RED, MOIST, LOOSE TO VERY DENSE, SILTY CLAYEY SAND AND SILTY SAND
(H) **RESIDUAL:** BROWN TAN WHITE AND RED, MOIST, MED. STIFF TO STIFF, SILTY SANDY CLAY AND SANDY SILT
(J) **WEATHERED ROCK:** TAN ORANGE BLACK AND GRAY, GRANITE AND MICA SCHIST
(K) **CRYSTALLINE ROCK:** TAN AND GRAY, GRANITE



•NOTE: CAVE-IN MEASURED 6 FEET BELOW PROPOSED SUBGRADE OR SHALLOWER
••NOTE: END BENT BROINGS INCLUDED TO INDICATE GROUNDWATER MEASUREMENTS

–SRVRD_5–

FOR –SRVRD_5– PLAN SEE RDY SHEETS 17 & 17A

–SRVRD_5A–

FOR –SRVRD_5A– PLAN SEE RDY SHEETS 16 & 17

–PVTENT1–

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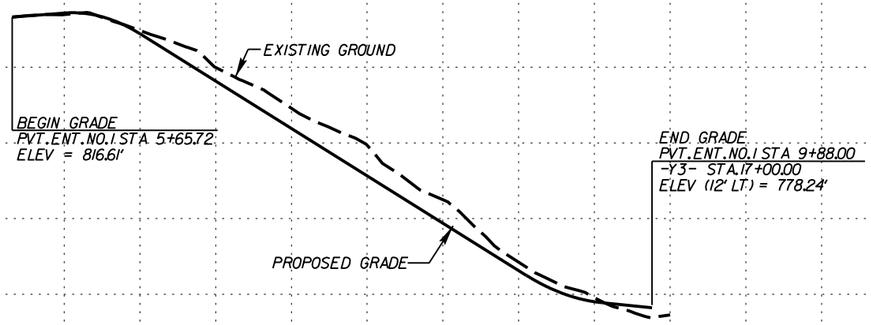
PROJECT REFERENCE NO.	SHEET NO.
R-2707D	53
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



NO BORINGS ON THIS SHEET

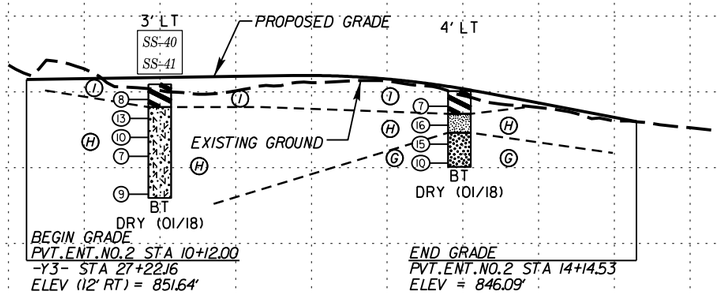
FOR –PVTENT1– PLAN SEE RDY SHEETS 13 & 24

–PVTENT2–

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-40	3 FT LT	11+00	1.0'-2.5'	A-7-5	64	27	3	14	25	58	100	98	86	35	–
SS-41	3 FT LT	11+00	3.5'-5.0'	A-5	61	9	11	16	36	37	97	89	77	33	–

(G) **RESIDUAL:** TAN, MOIST, MED. DENSE, SILTY SAND
(H) **RESIDUAL:** RED BROWN AND TAN, MOIST, MED. STIFF TO STIFF SANDY SILT AND SILTY SANDY CLAY
(I) **RESIDUAL:** RED-BROWN, MOIST, STIFF, HIGHLY PLASTIC SANDY SILTY CLAY



FOR –PVTENT2– PLAN SEE RDY SHEET 13

–PVTENT4–

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PROJECT REFERENCE NO.	SHEET NO.
R-2707D	54

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

780 770 770 760 750 740 730 720 710 700

NO BORINGS ON THIS SHEET

FOR –PVTENT4– PLAN SEE RDY SHEET 18 & 19

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

THIS SPACE INTENTIONALLY LEFT BLANK

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

910
900
890
880
870
860

Ⓗ **RESIDUAL:** TAN-RED.MOIST.MED.STIFF.SANDY SILTY CLAY

RESIDUAL: RED-TAN.MOIST.MED.DENSE.SILTY SAND

RESIDUAL: TAN.MOIST.STIFF.SANDY SILTY WITH SOME MICA

RESIDUAL: TAN.MOIST.MED.DENSE.SILTY SAND

696+00.00

910
900
890
880
870

RESIDUAL: RED TAN AND WHITE.MOIST.MED.STIFF TO STIFF.SANDY SILT WITH A LITTLE MICA

695+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

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

900 890 880 870 860

Ⓗ **RESIDUAL:** TAN-RED, MOIST, MED. STIFF, SANDY SILTY CLAY
CLAYEY TOPSOIL

RESIDUAL: RED-TAN, MOIST, MED. DENSE, SILTY SAND

RESIDUAL: TAN, MOIST, STIFF, SANDY SILTY WITH SOME MICA

RESIDUAL: TAN, MOIST, MED. DENSE, SILTY SAND

697+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-87	75 FT RT	697+00	1.0'-2.5'	A-7-5	77	38	11	8	17	64	100	92	83	37	–

CLAYEY TOPSOIL

RESIDUAL: TAN-RED, MOIST, MED. STIFF, SANDY SILTY CLAY

RESIDUAL: RED-TAN, MOIST, MED. DENSE, SILTY SAND

RESIDUAL: TAN, MOIST, STIFF, SANDY SILTY WITH SOME MICA

RESIDUAL: TAN, MOIST, MED. DENSE, SILTY SAND

SS-87
8 12 12 11 12 14 23 22
BT
DRY (01/18)

697+00.00

RESIDUAL: TAN-RED, MOIST, MED. STIFF, SANDY SILTY CLAY

CLAYEY TOPSOIL

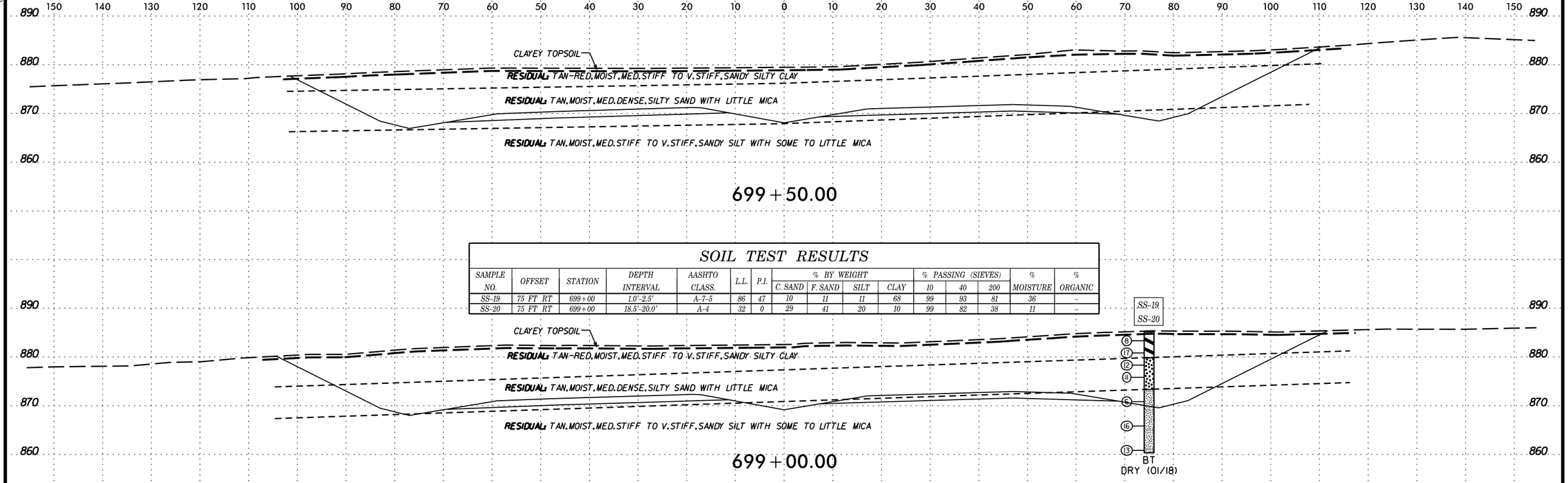
RESIDUAL: RED-TAN, MOIST, MED. DENSE, SILTY SAND

RESIDUAL: TAN, MOIST, STIFF, SANDY SILTY WITH SOME MICA

RESIDUAL: TAN, MOIST, MED. DENSE, SILTY SAND

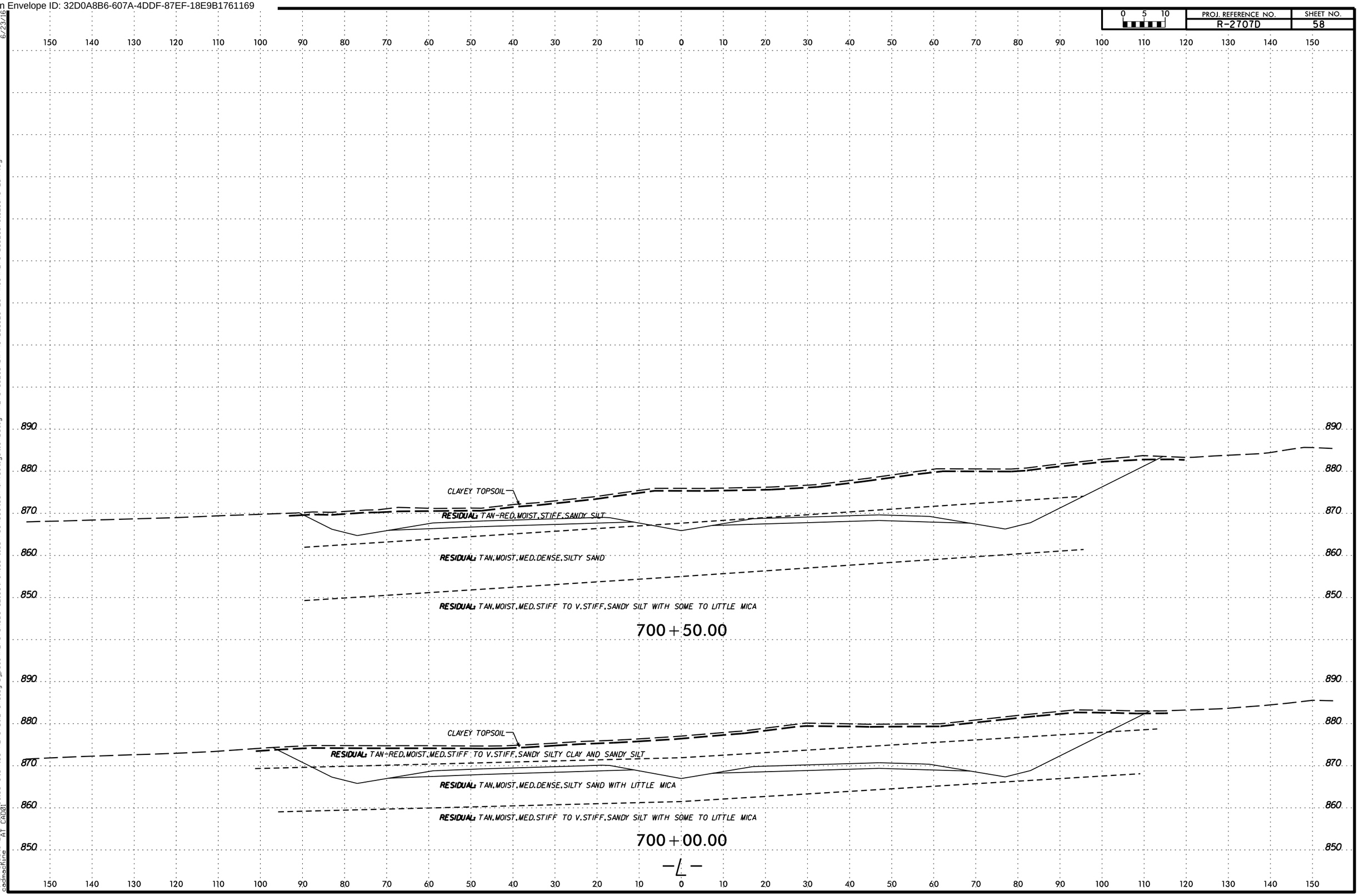
696+50.00

–L–



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-19	75 FT RT	699+00	1.0'-2.5'	A-7-5	86	47	10	11	11	68	99	93	81	36	–
SS-20	75 FT RT	699+00	18.5'-20.0'	A-4	32	0	29	41	20	10	99	82	38	11	–



0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R2707-D	59

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

820
810
800
790
780
770
760
750

RESIDUAL: TAN, MOIST, MED. STIFF TO STIFF, SANDY SILT WITH LITTLE QUARTZ FRAGMENTS AND MICA

738+50.00

—L—

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2707D	60

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

820 810 800 790 780 770 760 750

RESIDUAL: TAN, MOIST, MED. STIFF TO STIFF, SANDY SILT WITH LITTLE QUARTZ FRAGMENTS AND MICA

738+50.00

—L—

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R2707-D	61

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

800 790 780 770 760 750 740 810 800 790 780 770 760 750

Ⓑ **ARTIFICIAL FILL:** BROWN AND RED, MOIST, MED. STIFF, SANDY SILT AND SILTY CLAY WITH LITTLE GRAVEL

739+50.00

RESIDUAL: TAN, MOIST, MED. STIFF TO STIFF, SANDY SILT WITH LITTLE QUARTZ FRAGMENTS AND MICA

Ⓑ

Ⓑ

739+00.00

RESIDUAL: TAN, MOIST, MED. STIFF TO STIFF, SANDY SILT WITH LITTLE QUARTZ FRAGMENTS AND MICA

RESI.

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2707D	62

739+50.00

ARTIFICIAL FILL: BROWN AND RED, MOIST, MED. STIFF, SANDY SILT AND SILTY CLAY WITH LITTLE GRAVEL

RESIDUAL: TAN, MOIST, MED. STIFF TO STIFF, SANDY SILT WITH LITTLE QUARTZ FRAGMENTS AND MICA

739+00.00

Ⓑ **ARTIFICIAL FILL:** BROWN AND RED, MOIST, MED. STIFF, SANDY SILT AND SILTY CLAY WITH LITTLE GRAVEL

BT
DRY (01/18)

RESIDUAL: TAN, MOIST, MED. STIFF TO STIFF, SANDY SILT WITH LITTLE QUARTZ FRAGMENTS AND MICA

—L—

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

800 790 780 770 760 750 740

740+50.00

RESIDUAL: TAN RED-BROWN AND TAN-RED MOIST MED STIFF TO STIFF SANDY SILT AND SANDY SILTY CLAY WITH TRACE TO LITTLE MICA

RESIDUAL: WHITE AND TAN MOIST LOOSE SILTY SAND

RESIDUAL: TAN RED-BROWN AND TAN-RED MOIST MED STIFF TO STIFF SANDY SILT AND SANDY SILTY CLAY WITH TRACE TO LITTLE MICA

740+00.00

Ⓑ **ARTIFICIAL FILL:** BROWN AND RED MOIST MED STIFF SANDY SILT AND SILTY CLAY WITH LITTLE GRAVEL

RESIDUAL: TAN RED-BROWN AND TAN-RED MOIST MED STIFF TO STIFF SANDY SILT AND SANDY SILTY CLAY WITH TRACE TO LITTLE MICA

RESIDUAL: WHITE AND TAN MOIST LOOSE SILTY SAND

RESIDUAL: TAN RED-BROWN AND TAN-RED MOIST MED STIFF TO STIFF SANDY SILT AND SANDY SILTY CLAY WITH TRACE TO LITTLE MICA

-L-

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

800
790
780
770
760
750
740

ARTIFICIAL FILL: BROWN AND RED,MOIST,MED.STIFF,SANDY SILT AND SILTY CLAY WITH LITTLE GRAVEL

RESIDUAL: TAN RED-BROWN AND TAN-RED,MOIST,MED.STIFF TO STIFF,SANDY SILT AND SANDY SILTY CLAY WITH TRACE TO LITTLE MICA

740+50.00

Ⓑ **ARTIFICIAL FILL:** BROWN AND RED,MOIST,MED.STIFF,SANDY SILT AND SILTY CLAY WITH LITTLE GRAVEL

Ⓑ

RESIDUAL: TAN RED-BROWN AND TAN-RED,MOIST,MED.STIFF TO STIFF,SANDY SILT AND SANDY SILTY CLAY WITH TRACE TO LITTLE MICA

740+00.00

—L—

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

800 790 780 770 760 750 740

741+50.00

Ⓖ **RESIDUAL:** WHITE AND TAN, MOIST, LOOSE, SILTY SAND

Ⓗ **RESIDUAL:** TAN RED-BROWN AND TAN-RED, MOIST, MED STIFF TO STIFF, SANDY SILT AND SANDY SILTY CLAY WITH TRACE TO LITTLE MICA

741+00.00

RESIDUAL: TAN RED-BROWN AND TAN-RED, MOIST, MED STIFF TO STIFF, SANDY SILT AND SANDY SILTY CLAY WITH TRACE TO LITTLE MICA

RESIDUAL: WHITE AND TAN, MOIST, LOOSE, SILTY SAND

RESIDUAL: TAN RED-BROWN AND TAN-RED, MOIST, MED STIFF TO STIFF, SANDY SILT AND SANDY SILTY CLAY WITH TRACE TO LITTLE MICA

5 11 8 7 8 7 8 5

BT
DRY (01/18)

-L-

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2707D	66

741+50.00

Ⓑ **ARTIFICIAL FILL:** BROWN AND RED, MOIST, MED. STIFF, SANDY SILT AND SILTY CLAY WITH LITTLE GRAVEL

Ⓖ **RESIDUAL:** WHITE AND TAN, MOIST, LOOSE, SILTY SAND

RESIDUAL: TAN RED-BROWN AND TAN-RED, MOIST, MED. STIFF TO STIFF, SANDY SILT AND SANDY SILTY CLAY WITH TRACE TO LITTLE MICA

741+00.00

ARTIFICIAL FILL: BROWN AND RED, MOIST, MED. STIFF, SANDY SILT AND SILTY CLAY WITH LITTLE GRAVEL

RESIDUAL: TAN RED-BROWN AND TAN-RED, MOIST, MED. STIFF TO STIFF, SANDY SILT AND SANDY SILTY CLAY WITH TRACE TO LITTLE MICA

—L—

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R2707-D	67

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

800
790
780
770
760
750
740

RESIDUAL: TAN RED-BROWN AND TAN-RED,MOIST,MED.STIFF TO STIFF,SANDY SILT AND SANDY SILTY CLAY WITH TRACE TO LITTLE MICA

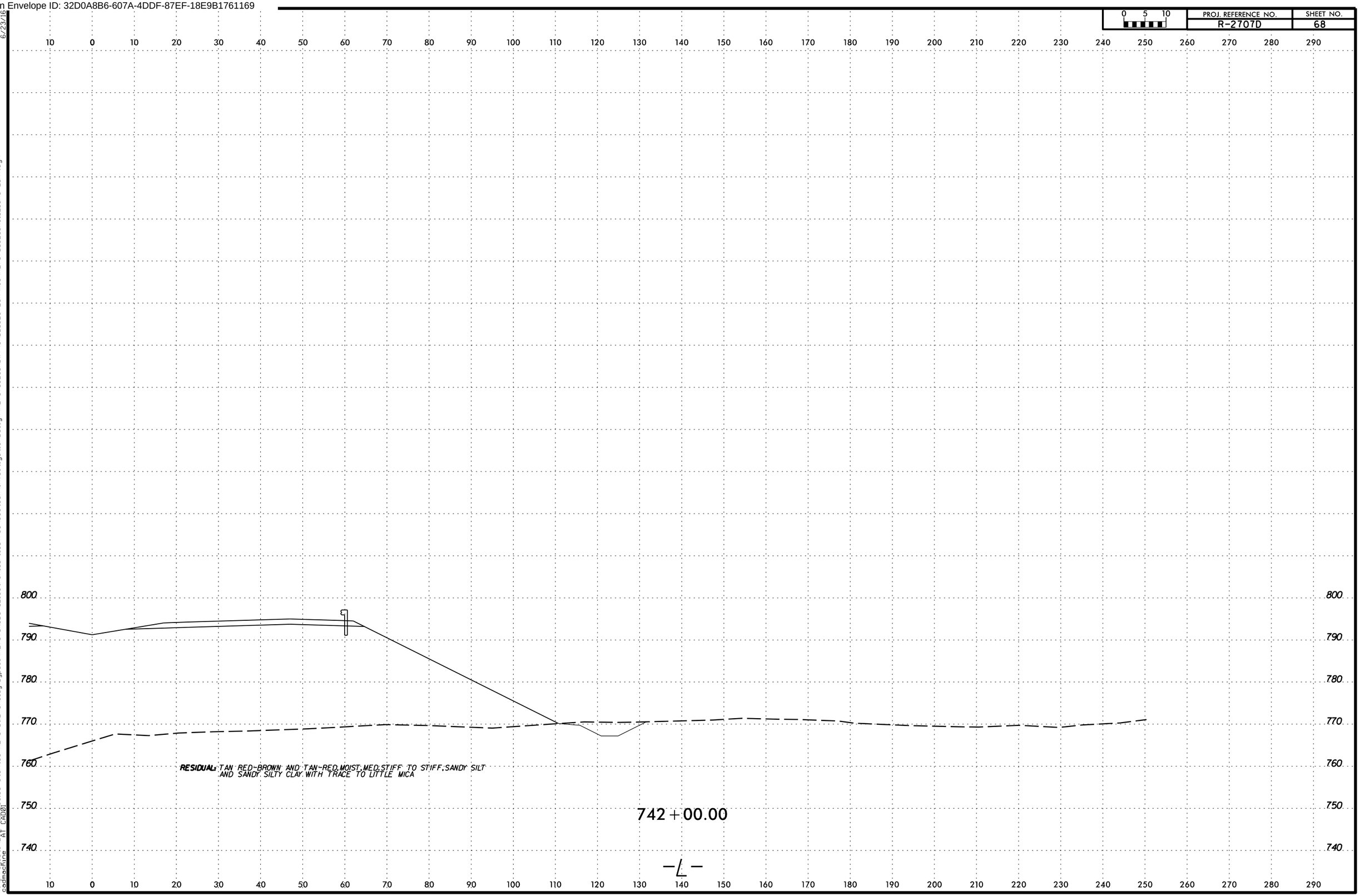
742+00.00

-L-

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

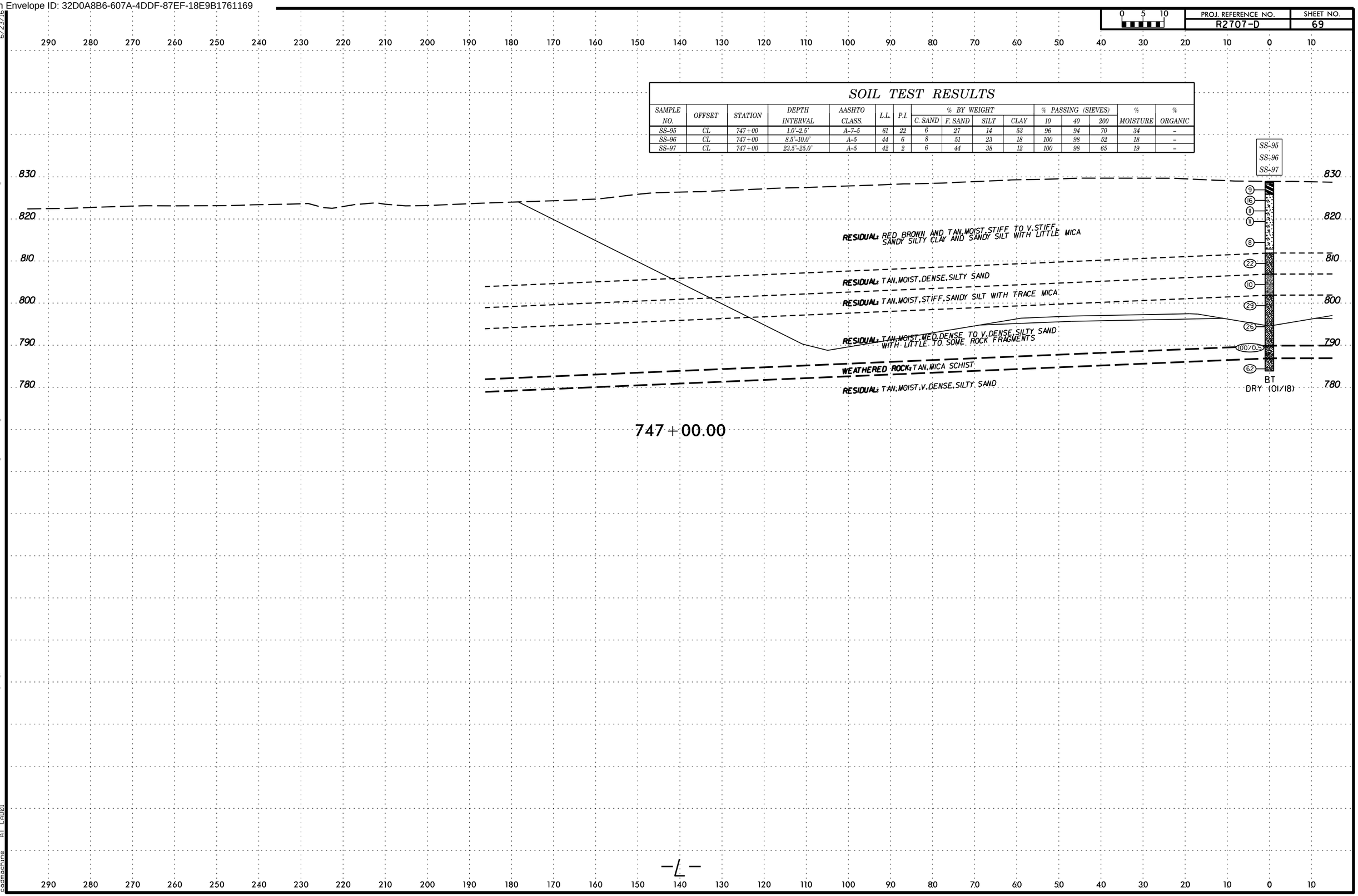
800
790
780
770
760
750
740

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2707D	68



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	CL	747+00	1.0'-2.5'	A-7-5	61	22	6	27	14	53	96	94	70	34	–
SS-96	CL	747+00	8.5'-10.0'	A-5	44	6	8	51	23	18	100	98	52	18	–
SS-97	CL	747+00	23.5'-25.0'	A-5	42	2	6	44	38	12	100	98	65	19	–



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-95	CL	747+00	1.0'-2.5'	A-7-5	61	22	6	27	14	53	96	94	70	34	–
SS-96	CL	747+00	8.5'-10.0'	A-5	44	6	8	51	23	18	100	98	52	18	–
SS-97	CL	747+00	23.5'-25.0'	A-5	42	2	6	44	38	12	100	98	65	19	–

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R2707-D	71

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

840
830
820
810
800
790
780

RESIDUAL: RED BROWN AND TAN,MOIST,STIFF TO V.STIFF, SANDY SILTY CLAY AND SANDY SILT WITH LITTLE MICA

RESIDUAL: TAN,MOIST,DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,STIFF,SANDY SILT WITH TRACE MICA

RESIDUAL: TAN,MOIST,MED.DENSE TO V.DENSE,SILTY SAND WITH LITTLE TO SOME ROCK FRAGMENTS

WEATHERED ROCK: TAN,MICA SCHIST

748+00.00

840
830
820
810
800
790
780

RESIDUAL: RED BROWN AND TAN,MOIST,STIFF TO V.STIFF, SANDY SILTY CLAY AND SANDY SILT WITH LITTLE MICA

RESIDUAL: TAN,MOIST,DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,STIFF,SANDY SILT WITH TRACE MICA

RESIDUAL: TAN,MOIST,MED.DENSE TO V.DENSE,SILTY SAND WITH LITTLE TO SOME ROCK FRAGMENTS

WEATHERED ROCK: TAN,MICA SCHIST

RESIDUAL: TAN,MOIST,V.DENSE,SILTY SAND

747+50.00

$-L-$

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2707D	72

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

840
830
820
810
800
790

RESIDUAL: RED BROWN AND TAN,MOIST,STIFF TO V.STIFF, SANDY SILTY CLAY AND SANDY SILT WITH LITTLE MICA

RESIDUAL: TAN,MOIST,DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,STIFF,SANDY SILT WITH TRACE MICA

RESIDUAL: TAN,MOIST,MED.DENSE TO V.DENSE,SILTY SAND WITH LITTLE TO SOME ROCK FRAGMENTS

WEATHERED ROCK: TAN,MICA SCHIST

3:1 s.l.

818.00

748+00.00

840
830
820
810
800
790

RESIDUAL: RED BROWN AND TAN,MOIST,STIFF TO V.STIFF, SANDY SILTY CLAY AND SANDY SILT WITH LITTLE MICA

RESIDUAL: TAN,MOIST,DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,STIFF,SANDY SILT WITH TRACE MICA

RESIDUAL: TAN,MOIST,MED.DENSE TO V.DENSE,SILTY SAND WITH LITTLE TO SOME ROCK FRAGMENTS

WEATHERED ROCK: TAN,MICA SCHIST

RESIDUAL: TAN,MOIST,V.DENSE,SILTY SAND

747+50.00

-L-

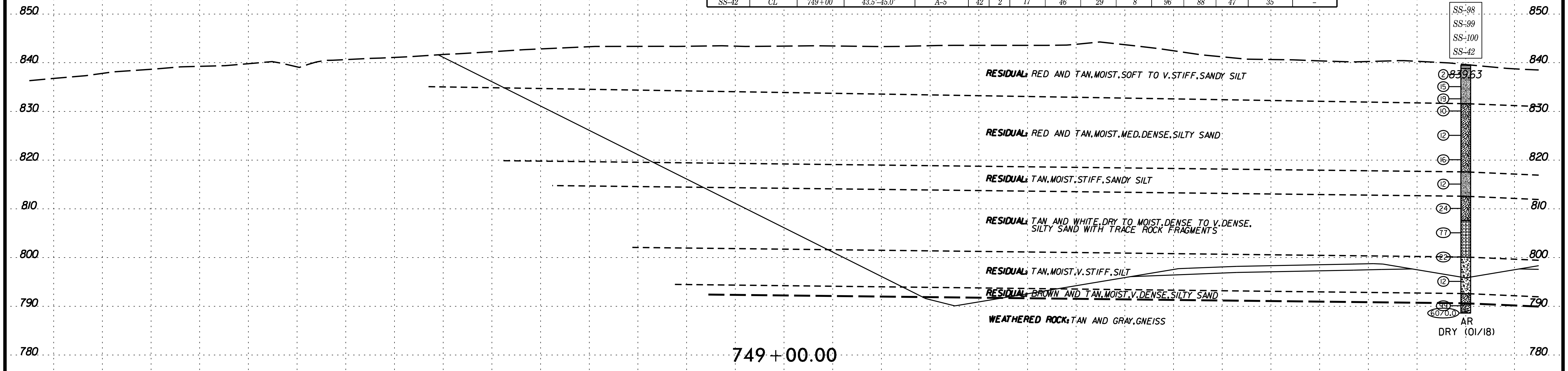
10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

PROJ. REFERENCE NO.	SHEET NO.
R2707-D	73

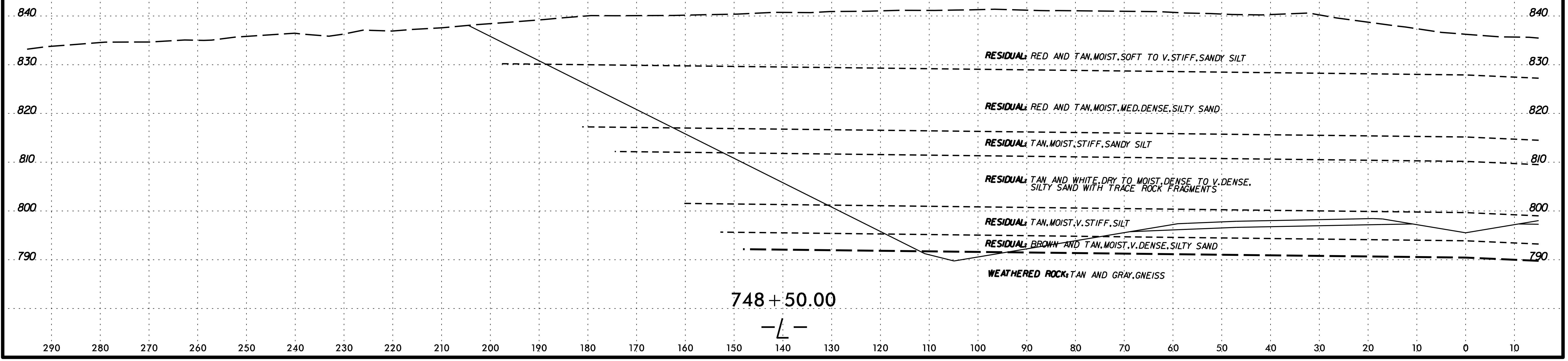
6/23/16

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-98	CL	749+00	1.0'-2.5'	A-4	20	5	11	30	9	50	99	94	63	21	-
SS-99	CL	749+00	6.0'-7.5'	A-4	38	2	18	54	7	21	98	87	55	15	-
SS-100	CL	749+00	23.5'-25.0'	A-4	39	NP	7	53	27	13	100	99	53	25	-
SS-42	CL	749+00	43.5'-45.0'	A-5	42	2	17	46	29	8	96	88	47	35	-



749+00.00



748+50.00

-L-

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T:\Projects\2017\G17053.00 Stantec R2707D&E Shelby Bypass\R2707_NCDOT_Electronic_File_Tree\Geotech\InvestigationDesign\R2707_GEO_RDWY\CADD_GEOTECH\xsc\R2707D_GEO_XSL_L_LT.dgn
cadmachine AT CAD01

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-98	CL	749+00	1.0'-2.5'	A-4	20	5	11	30	9	50	99	94	63	21	–
SS-99	CL	749+00	6.0'-7.5'	A-4	38	2	18	54	7	21	98	87	55	15	–
SS-100	CL	749+00	23.5'-25.0'	A-4	39	NP	7	53	27	13	100	99	53	25	–
SS-42	CL	749+00	43.5'-45.0'	A-5	42	2	17	46	29	8	96	88	47	35	–

SS-98
SS-99
SS-100
SS-42

2 15 19 10 12 16 12 24 77 22 12 50/0.0

AR
DRY (01/18)

RESIDUAL: RED AND TAN, MOIST, SOFT TO V.STIFF, SANDY SILT

RESIDUAL: RED AND TAN, MOIST, MED. DENSE, SILTY SAND

RESIDUAL: TAN, MOIST, STIFF, SANDY SILT

RESIDUAL: TAN AND WHITE, DRY TO MOIST, DENSE TO V. DENSE, SILTY SAND WITH TRACE ROCK FRAGMENTS

RESIDUAL: TAN, MOIST, V. STIFF, SILT

RESIDUAL: BROWN AND TAN, MOIST, V. DENSE, SILTY SAND

WEATHERED ROCK: TAN AND GRAY, GNEISS

2:1 2:1
829.00

749+00.00

RESIDUAL: RED AND TAN, MOIST, SOFT TO V.STIFF, SANDY SILT

RESIDUAL: RED AND TAN, MOIST, MED. DENSE, SILTY SAND

RESIDUAL: TAN, MOIST, STIFF, SANDY SILT

RESIDUAL: TAN AND WHITE, DRY TO MOIST, DENSE TO V. DENSE, SILTY SAND WITH TRACE ROCK FRAGMENTS

RESIDUAL: TAN, MOIST, V. STIFF, SILT

RESIDUAL: BROWN AND TAN, MOIST, V. DENSE, SILTY SAND

WEATHERED ROCK: TAN AND GRAY, GNEISS

2:1 2:1
823.50

748+50.00
-L-

840 830 820 810 800 790 780

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R2707-D	75

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

850
840
830
820
810
800
790
780

RESIDUAL: RED AND TAN,MOIST,MED.DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,STIFF,SANDY SILT

RESIDUAL: TAN AND WHITE,DRY TO MOIST,DENSE TO V.DENSE, SILTY SAND WITH TRACE ROCK FRAGMENTS

RESIDUAL: TAN,MOIST,V.STIFF,SILT

RESIDUAL: TAN,DRY TO MOIST,MED.DENSE TO V.DENSE,SILTY SAND WITH LITTLE MICA AND SOME ROCK FRAGMENTS

RESIDUAL: TAN,MOIST,V.STIFF,SILT

RESIDUAL: BROWN AND TAN,MOIST,V.DENSE,SILTY SAND

WEATHERED ROCK: TAN AND GRAY,GNEISS

750+00.00

RESIDUAL: RED AND TAN,MOIST,SOFT TO V.STIFF,SANDY SILT

RESIDUAL: RED AND TAN,MOIST,MED.DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,STIFF,SANDY SILT

RESIDUAL: TAN AND WHITE,DRY TO MOIST,DENSE TO V.DENSE, SILTY SAND WITH TRACE ROCK FRAGMENTS

RESIDUAL: TAN,MOIST,V.STIFF,SILT

RESIDUAL: BROWN AND TAN,MOIST,V.DENSE,SILTY SAND

WEATHERED ROCK: TAN AND GRAY,GNEISS

749+50.00

-L-

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

850
840
830
820
810
800
790
780

RESIDUAL: RED AND TAN,MOIST,MED.DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,STIFF,SANDY SILT

RESIDUAL: TAN AND WHITE,DRY TO MOIST,DENSE TO V.DENSE, SILTY SAND WITH TRACE ROCK FRAGMENTS

RESIDUAL: TAN,MOIST,V.STIFF,SILT

RESIDUAL: TAN,DRY TO MOIST,MED.DENSE TO V.DENSE,SILTY SAND WITH LITTLE MICA AND SOME ROCK FRAGMENTS

RESIDUAL: TAN,MOIST,V.STIFF,SILT

RESIDUAL: BROWN AND TAN,MOIST,V.DENSE,SILTY SAND

WEATHERED ROCK: TAN AND GRAY,GNEISS

750+00.00

RESIDUAL: RED AND TAN,MOIST,SOFT TO V.STIFF,SANDY SILT

RESIDUAL: RED AND TAN,MOIST,MED.DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,STIFF,SANDY SILT

RESIDUAL: TAN AND WHITE,DRY TO MOIST,DENSE TO V.DENSE, SILTY SAND WITH TRACE ROCK FRAGMENTS

RESIDUAL: TAN,MOIST,V.STIFF,SILT

RESIDUAL: BROWN AND TAN,MOIST,V.DENSE,SILTY SAND

WEATHERED ROCK: TAN AND GRAY,GNEISS

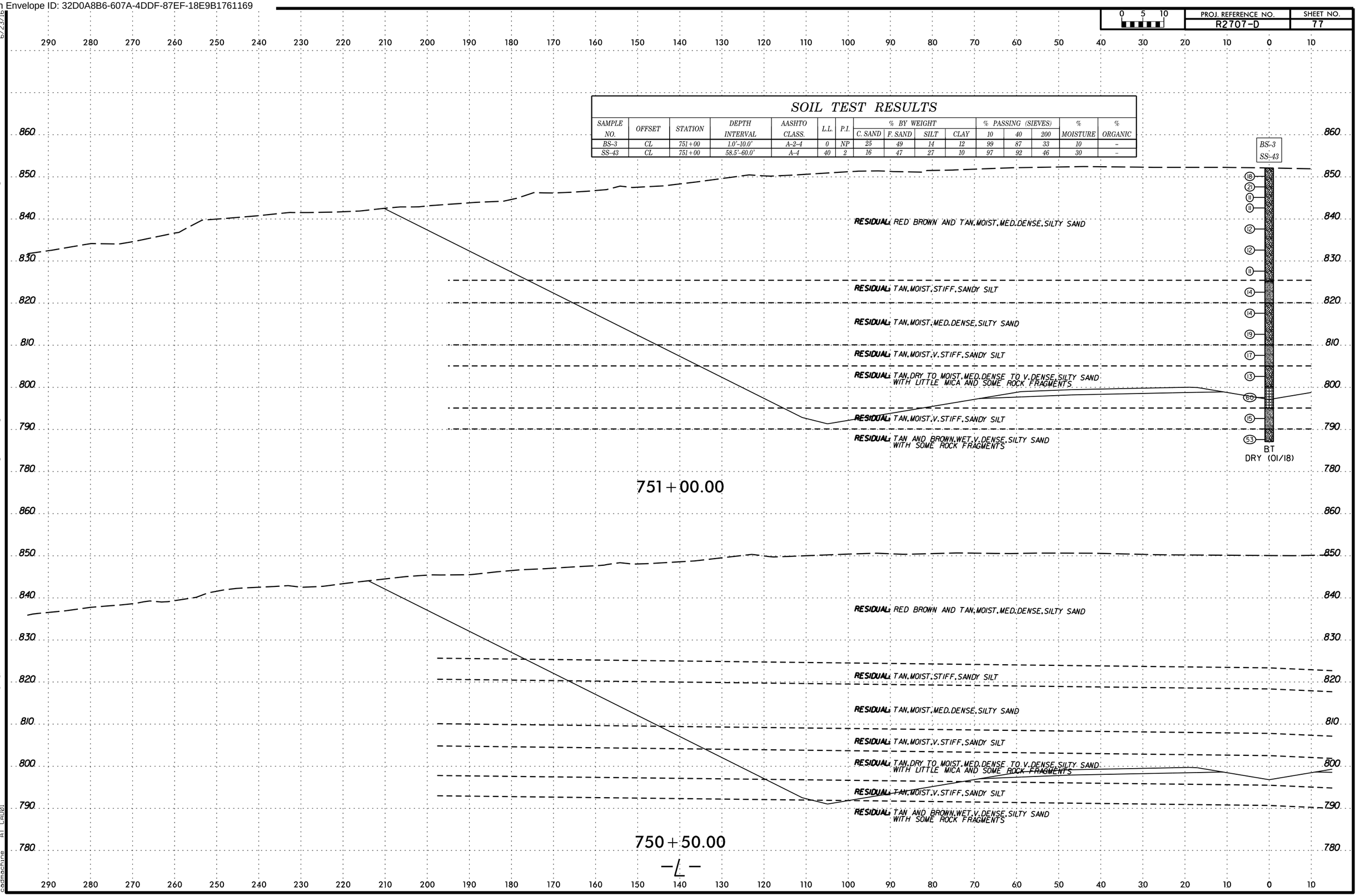
749+50.00

—L—

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

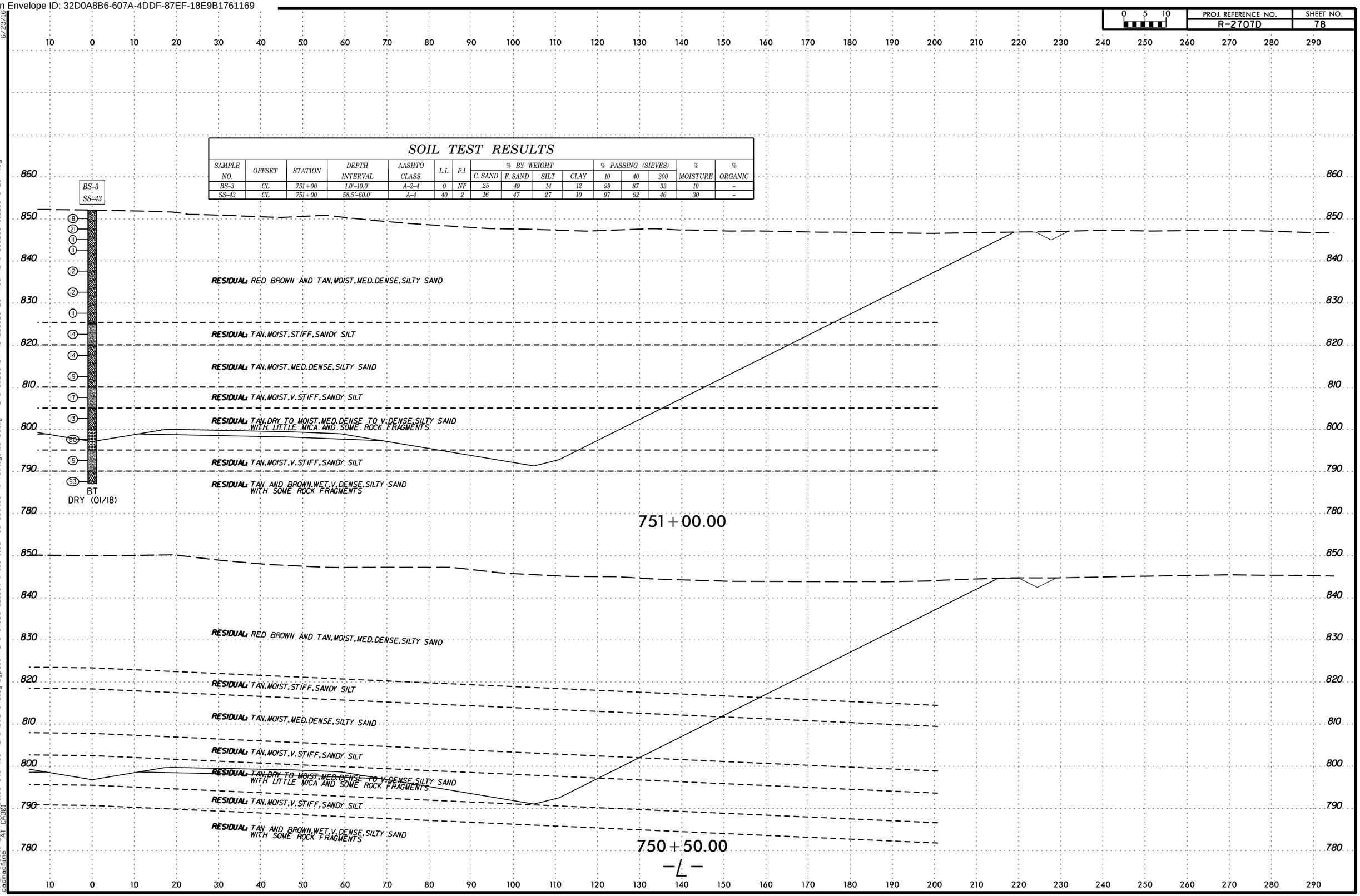
SOIL TEST RESULTS

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
BS-3	CL	751+00	1.0'-10.0'	A-2-4	0	NP	25	49	14	12	99	87	33	10	–
SS-43	CL	751+00	58.5'-60.0'	A-4	40	2	16	47	27	10	97	92	46	30	–



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
BS-3	CL	751+00	1.0'-10.0'	A-2-4	0	NP	25	49	14	12	99	87	33	10	-
SS-43	CL	751+00	58.5'-60.0'	A-4	40	2	16	47	27	10	97	92	46	30	-



0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2707D	79

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

860 850 840 830 820 810 800 790 780

RESIDUAL: RED TAN AND BROWN,MOIST,STIFF TO V.STIFF HIGHLY PLASTIC SANDY SILTY CLAY AND CLAYEY SANDY SILT

RESIDUAL: TAN,MOIST,MED.DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,STIFF,FINE SANDY SILT

RESIDUAL: TAN,MOIST,MED.DENSE,SILTY FINE SAND

RESIDUAL: TAN,MOIST,V.STIFF,FINE SANDY SILT

RESIDUAL: TAN,DRY TO MOIST,MED.DENSE TO V.DENSE, SILTY SAND WITH LITTLE MICA AND SOME ROCK FRAGMENTS

RESIDUAL: TAN,MOIST,V.STIFF,SANDY SILT

RESIDUAL: TAN AND BROWN,WET,V.DENSE,SILTY SAND WITH SOME ROCK FRAGMENTS

752+00.00

RESIDUAL: RED. BROWN. AND. TAN,MOIST,MED.DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,STIFF,SANDY SILT

RESIDUAL: TAN,MOIST,MED.DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,V.STIFF,SANDY SILT

RESIDUAL: TAN,DRY TO MOIST,MED.DENSE TO V.DENSE,SILTY SAND WITH LITTLE MICA AND SOME ROCK FRAGMENTS

RESIDUAL: TAN,MOIST,V.STIFF,SANDY SILT

RESIDUAL: TAN AND BROWN,WET,V.DENSE,SILTY SAND WITH SOME ROCK FRAGMENTS

751+50.00

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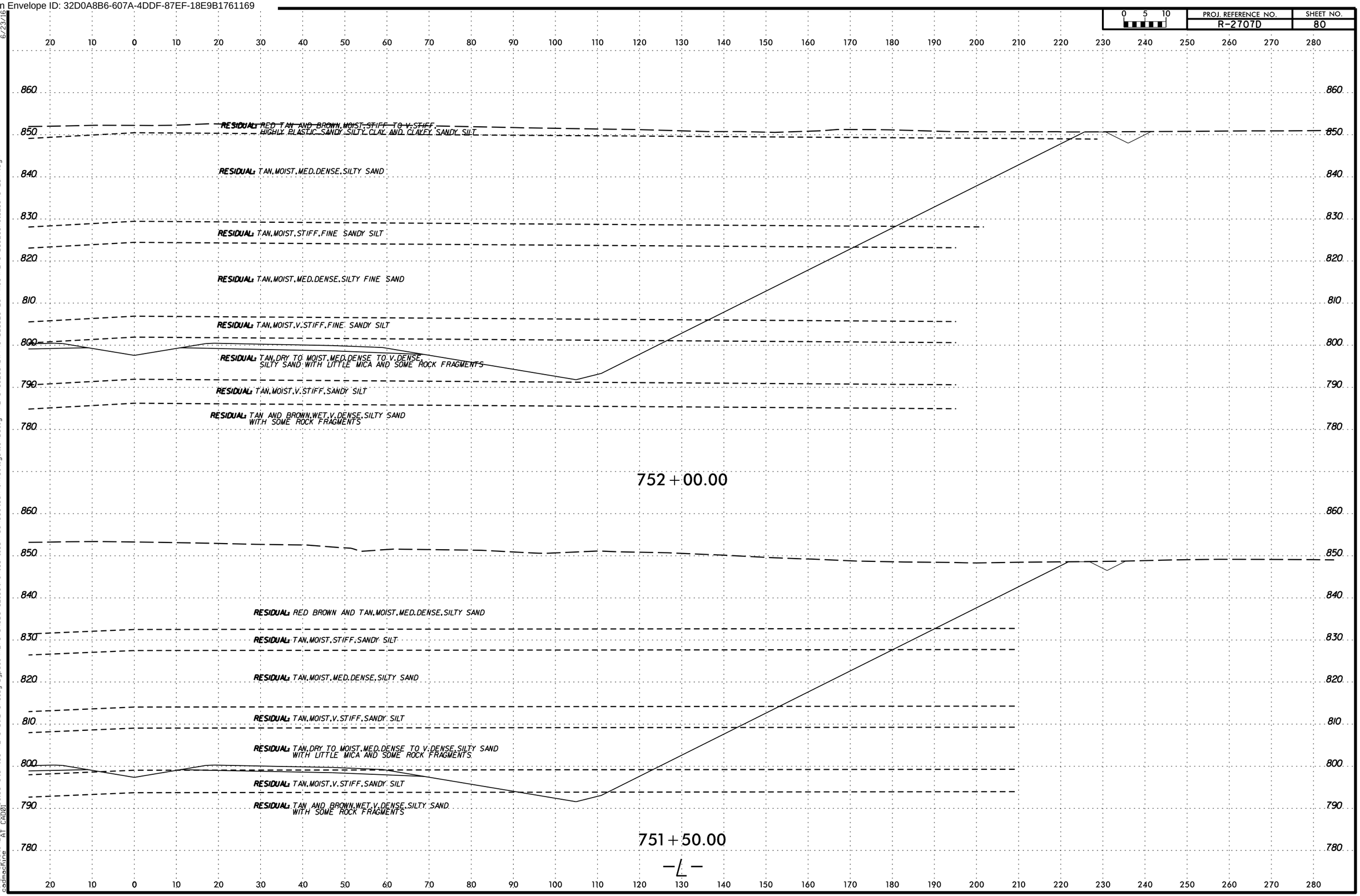
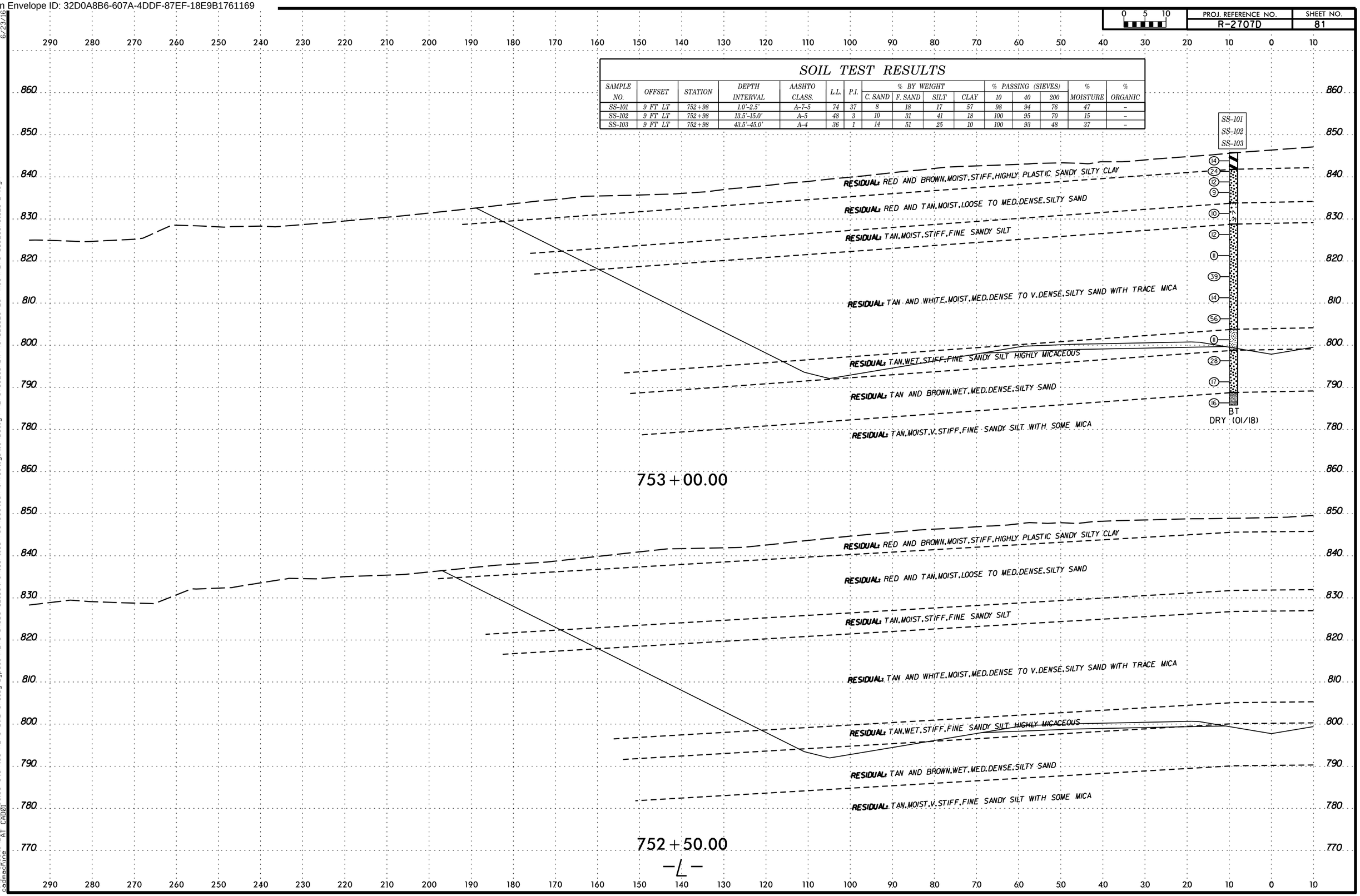
PROJ. REFERENCE NO.	SHEET NO.
R-2707D	80

0 5 10



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-101	9 FT LT	752+98	1.0'-2.5'	A-7-5	74	37	8	18	17	57	98	94	76	47	–
SS-102	9 FT LT	752+98	13.5'-15.0'	A-5	48	3	10	31	41	18	100	95	70	15	–
SS-103	9 FT LT	752+98	43.5'-45.0'	A-4	36	1	14	51	25	10	100	93	48	37	–



PROJ. REFERENCE NO.	SHEET NO.
R-2707D	82

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-101	9 FT LT	752+98	1.0'-2.5'	A-7-5	74	37	8	18	17	57	98	94	76	47	–
SS-102	9 FT LT	752+98	13.5'-15.0'	A-5	48	3	10	31	41	18	100	95	70	15	–
SS-103	9 FT LT	752+98	43.5'-45.0'	A-4	36	1	14	51	25	10	100	93	48	37	–

SS-101
SS-102
SS-103

14 24 12 9 10 12 11 39 14 56 11 28 17 16

BT
DRY (01/18)

RESIDUAL: RED AND BROWN,MOIST,STIFF,HIGHLY PLASTIC SANDY SILTY CLAY

RESIDUAL: RED AND TAN,MOIST,LOOSE TO MED.DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,STIFF,FINE SANDY SILT

RESIDUAL: TAN AND WHITE,MOIST,MED.DENSE TO V.DENSE,SILTY SAND WITH TRACE MICA

RESIDUAL: TAN,WET,STIFF,FINE SANDY SILT HIGHLY MICACEOUS

RESIDUAL: TAN AND BROWN,WET,MED.DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,V.STIFF,FINE SANDY SILT WITH SOME MICA

753+00.00

RESIDUAL: RED AND BROWN,MOIST,STIFF,SANDY SILTY CLAY

RESIDUAL: RED AND TAN,MOIST,LOOSE TO MED.DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,STIFF,FINE SANDY SILT

RESIDUAL: TAN AND WHITE,MOIST,MED.DENSE TO V.DENSE,SILTY SAND WITH TRACE MICA

RESIDUAL: TAN,WET,STIFF,FINE SANDY SILT HIGHLY MICACEOUS

RESIDUAL: TAN AND BROWN,WET,MED.DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,V.STIFF,FINE SANDY SILT WITH SOME MICA

752+50.00
—L—

20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280

860 850 840 830 820 810 800 790 780

6/23/16

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2707D	83

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

860 850 840 830 820 810 800 790 780

RESIDUAL: RED AND BROWN,MOIST,STIFF,HIGHLY PLASTIC SANDY SILTY CLAY

RESIDUAL: RED AND TAN,MOIST,LOOSE TO MED.DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,STIFF,FINE SANDY SILT

RESIDUAL: TAN AND WHITE,MOIST,MED.DENSE TO V.DENSE,SILTY SAND WITH TRACE MICA

RESIDUAL: TAN,WET,STIFF,FINE SANDY SILT HIGHLY MICACEOUS

RESIDUAL: TAN AND BROWN,WET,MED.DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,V.STIFF,FINE SANDY SILT WITH SOME MICA

754+00.00

RESIDUAL: RED AND BROWN,MOIST,STIFF,HIGHLY PLASTIC SANDY SILTY CLAY

RESIDUAL: RED AND TAN,MOIST,LOOSE TO MED.DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,STIFF,FINE SANDY SILT

RESIDUAL: TAN AND WHITE,MOIST,MED.DENSE TO V.DENSE,SILTY SAND WITH TRACE MICA

RESIDUAL: TAN,WET,STIFF,FINE SANDY SILT HIGHLY MICACEOUS

RESIDUAL: TAN AND BROWN,WET,MED.DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,V.STIFF,FINE SANDY SILT WITH SOME MICA

753+50.00

$-\mathit{L}-$

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

860 850 840 830 820 810 800 790 780 770

20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280

860 850 840 830 820 810 800 790 780

RESIDUAL: RED AND BROWN,MOIST,STIFF,HIGHLY PLASTIC SANDY SILTY CLAY

RESIDUAL: RED AND TAN,MOIST,LOOSE TO MED.DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,STIFF,FINE SANDY SILT

RESIDUAL: TAN AND WHITE,MOIST,MED.DENSE TO V.DENSE,SILTY SAND WITH TRACE MICA

RESIDUAL: TAN,WET,STIFF,FINE SANDY SILT HIGHLY MICACEOUS

RESIDUAL: TAN AND BROWN,WET,MED.DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,V.STIFF,FINE SANDY SILT WITH SOME MICA

754+00.00

RESIDUAL: RED AND BROWN,MOIST,STIFF,HIGHLY PLASTIC SANDY SILTY CLAY

RESIDUAL: RED AND TAN,MOIST,LOOSE TO MED.DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,STIFF,FINE SANDY SILT

RESIDUAL: TAN AND WHITE,MOIST,MED.DENSE TO V.DENSE,SILTY SAND WITH TRACE MICA

RESIDUAL: TAN,WET,STIFF,FINE SANDY SILT HIGHLY MICACEOUS

RESIDUAL: TAN AND BROWN,WET,MED.DENSE,SILTY SAND

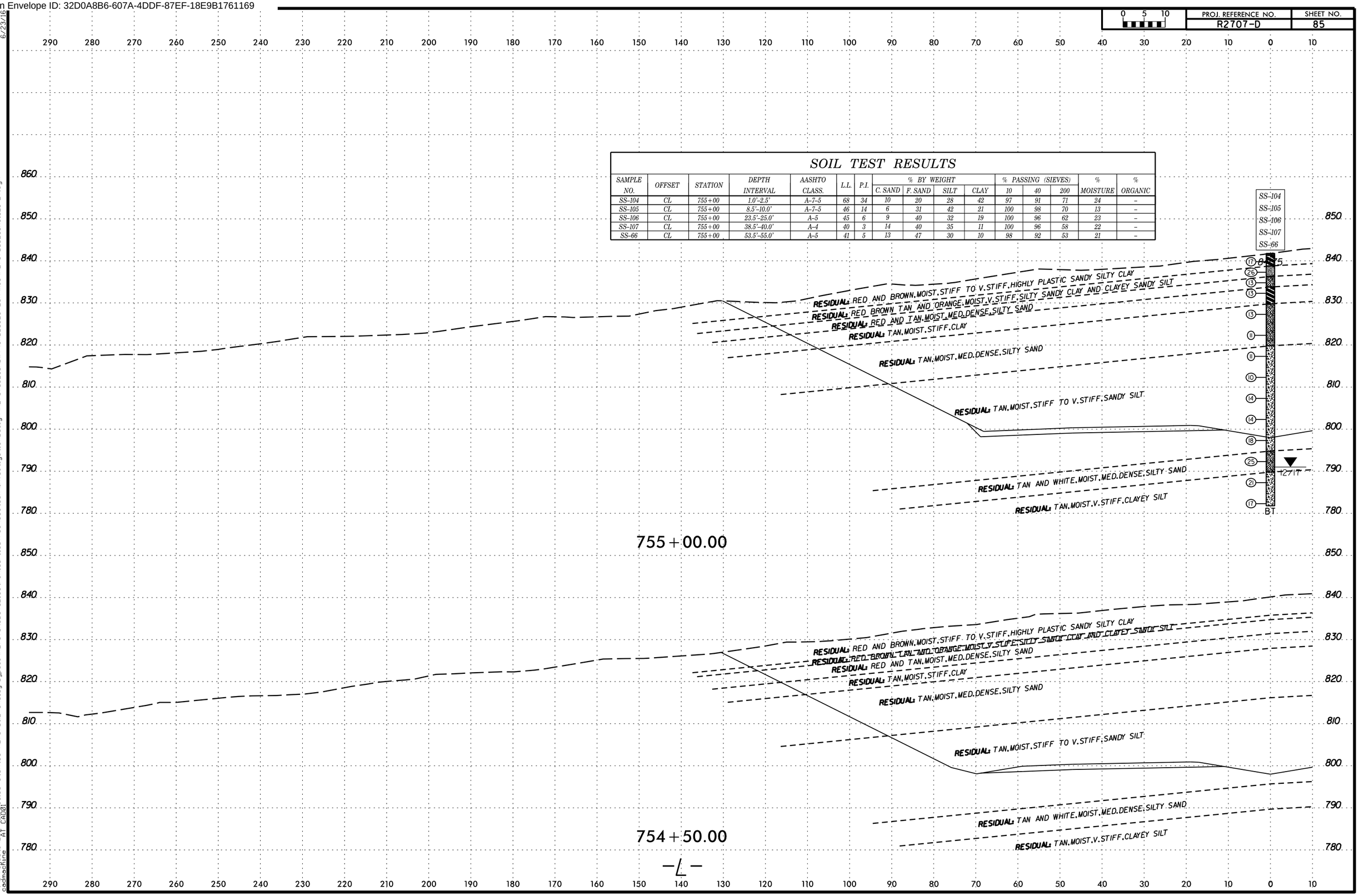
RESIDUAL: TAN,MOIST,V.STIFF,FINE SANDY SILT WITH SOME MICA

753+50.00

$-\mathit{L}-$

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-104	CL	755+00	1.0'-2.5'	A-7-5	68	34	10	20	28	42	97	91	71	24	–
SS-105	CL	755+00	8.5'-10.0'	A-7-5	46	14	6	31	42	21	100	98	70	13	–
SS-106	CL	755+00	23.5'-25.0'	A-5	45	6	9	40	32	19	100	96	62	23	–
SS-107	CL	755+00	38.5'-40.0'	A-4	40	3	14	40	35	11	100	96	58	22	–
SS-66	CL	755+00	53.5'-55.0'	A-5	41	5	13	47	30	10	98	92	53	21	–



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-104	CL	755+00	1.0'-2.5'	A-7-5	68	34	10	20	28	42	97	91	71	24	–
SS-105	CL	755+00	8.5'-10.0'	A-7-5	46	14	6	31	42	21	100	98	70	13	–
SS-106	CL	755+00	23.5'-25.0'	A-5	45	6	9	40	32	19	100	96	62	23	–
SS-107	CL	755+00	38.5'-40.0'	A-4	40	3	14	40	35	11	100	96	58	22	–
SS-66	CL	755+00	53.5'-55.0'	A-5	41	5	13	47	30	10	98	92	53	21	–

SS-104
SS-105
SS-106
SS-107
SS-66

(17) (26) (15) (13) (13) (11) (11) (10) (14) (14) (18) (25) (21) (17)

12/11

BT

RESIDUAL: RED AND BROWN, MOIST, STIFF TO V.STIFF, HIGHLY PLASTIC SANDY SILTY CLAY

RESIDUAL: RED BROWN TAN AND ORANGE, MOIST, V.STIFF, SILTY SANDY CLAY AND CLAYEY SANDY SILT

RESIDUAL: RED AND TAN, MOIST, MED.DENSE, SILTY SAND

RESIDUAL: TAN, MOIST, STIFF, CLAY

RESIDUAL: TAN, MOIST, MED.DENSE, SILTY SAND

RESIDUAL: TAN, MOIST, STIFF TO V.STIFF, SANDY SILT

RESIDUAL: TAN AND WHITE, MOIST, MED.DENSE, SILTY SAND

RESIDUAL: TAN, MOIST, V.STIFF, CLAYEY SILT

755+00.00

RESIDUAL: RED AND BROWN, MOIST, STIFF TO V.STIFF, HIGHLY PLASTIC SANDY SILTY CLAY

RESIDUAL: RED BROWN TAN AND ORANGE, MOIST, V.STIFF, SILTY SANDY CLAY AND CLAYEY SANDY SILT

RESIDUAL: RED AND TAN, MOIST, MED.DENSE, SILTY SAND

RESIDUAL: TAN, MOIST, STIFF, CLAY

RESIDUAL: TAN, MOIST, MED.DENSE, SILTY SAND

RESIDUAL: TAN, MOIST, STIFF TO V.STIFF, SANDY SILT

RESIDUAL: TAN AND WHITE, MOIST, MED.DENSE, SILTY SAND

RESIDUAL: TAN, MOIST, V.STIFF, CLAYEY SILT

754+50.00

—L—

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R2707-D	87

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

850 840 830 820 810 800 790

RESIDUAL: RED AND BROWN,MOIST,STIFF TO V.STIFF,HIGHLY PLASTIC SANDY SILTY CLAY

RESIDUAL: RED, BROWN TAN AND ORANGE,MOIST,V.STIFF,SILTY SANDY CLAY AND CLAYEY SANDY SILT

RESIDUAL: RED AND TAN,MOIST,MED.DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,STIFF,CLAY

RESIDUAL: TAN,MOIST,MED.DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,STIFF TO V.STIFF,SANDY SILT

RESIDUAL: TAN AND WHITE,MOIST,MED.DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,V.STIFF,CLAYEY SILT

756+00.00

850 840 830 820 810 800 790

RESIDUAL: RED AND BROWN,MOIST,STIFF TO V.STIFF,HIGHLY PLASTIC SANDY SILTY CLAY

RESIDUAL: RED, BROWN TAN AND ORANGE,MOIST,V.STIFF,SILTY SANDY CLAY AND CLAYEY SANDY SILT

RESIDUAL: RED AND TAN,MOIST,MED.DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,STIFF,CLAY

RESIDUAL: TAN,MOIST,MED.DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,STIFF TO V.STIFF,SANDY SILT

RESIDUAL: TAN AND WHITE,MOIST,MED.DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,V.STIFF,CLAYEY SILT

755+50.00

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

860 850 840 830 820 810 800 790

RESIDUAL: RED AND BROWN,MOIST,STIFF TO V.STIFF,HIGHLY PLASTIC SANDY SILTY CLAY

RESIDUAL: RED BROWN TAN AND ORANGE,MOIST,V.STIFF,SILTY SANDY CLAY AND CLAYEY SANDY SILT

RESIDUAL: RED AND TAN,MOIST,MED.DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,STIFF,CLAY

RESIDUAL: TAN,MOIST,MED.DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,STIFF TO V.STIFF,SANDY SILT

RESIDUAL: TAN AND WHITE,MOIST,MED.DENSE,SILTY SAND

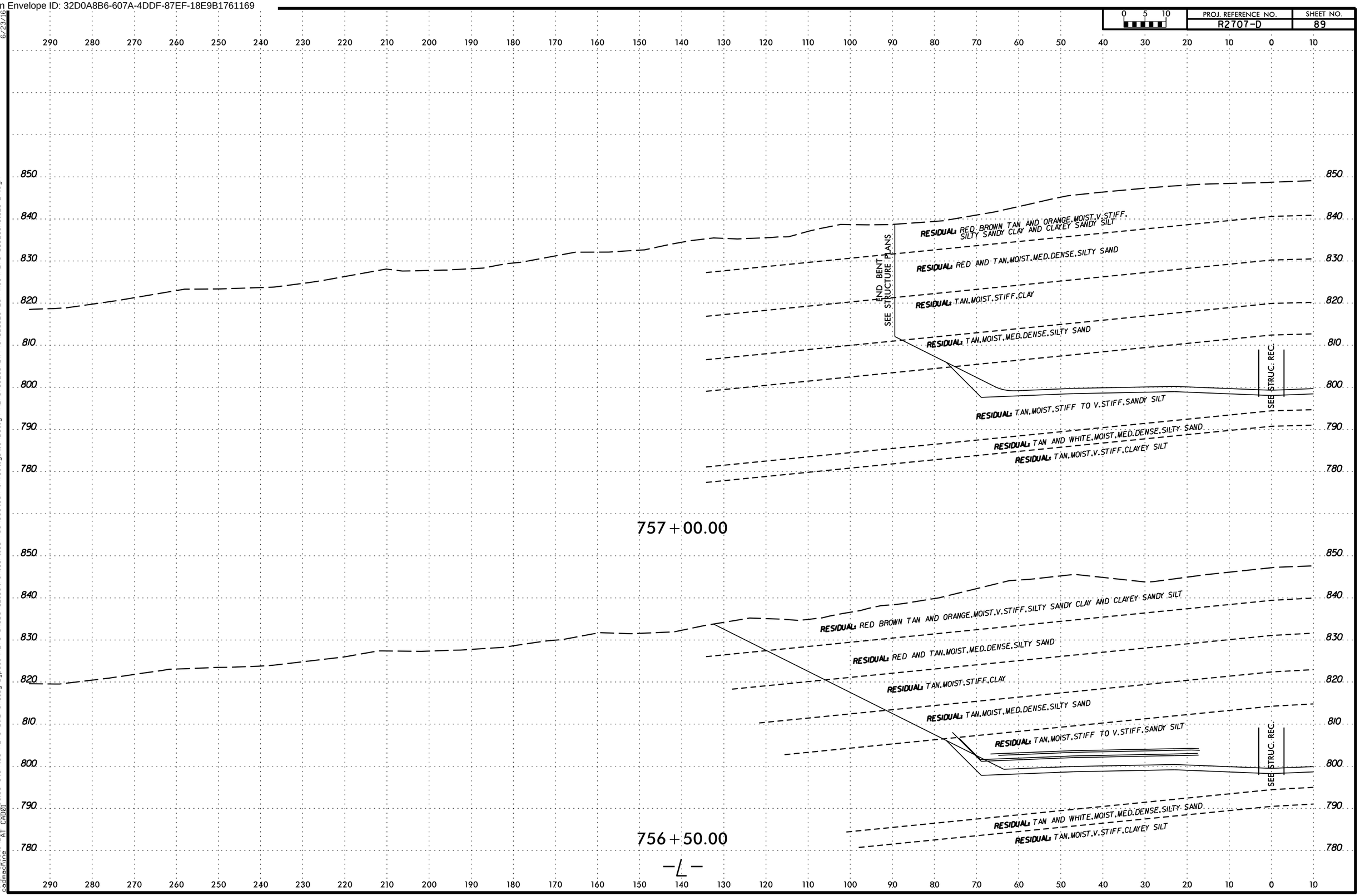
RESIDUAL: TAN,MOIST,V.STIFF,CLAYEY SILT

756+00.00

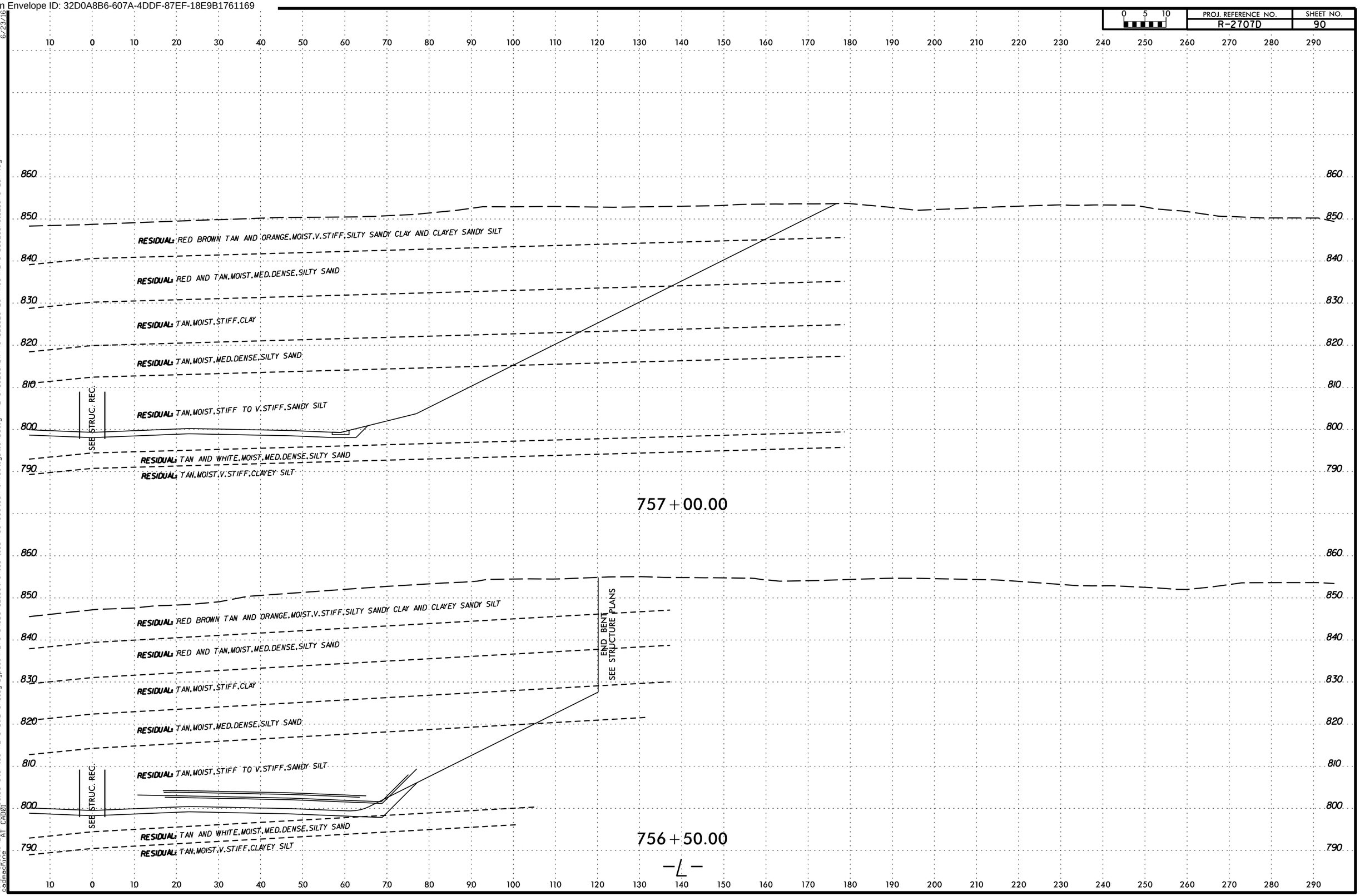
755+50.00

$-\mathit{L}-$

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R2707-D	89



0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2707D	90



PROJ. REFERENCE NO.	SHEET NO.
R2707-D	91

0 5 10

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

850 840 830 820 810 800 790

RESIDUAL: TAN RED AND ORANGE,MOIST,MED.DENSE,CLAYEY SILTY SAND

RESIDUAL: TAN,MOIST,STIFF TO V.STIFF,SANDY SILT

RESIDUAL: TAN,MOIST,MED.DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,V.STIFF,SANDY SILT

RESIDUAL: WHITE,MOIST,V.DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,MED.DENSE,SANDY SILT

758+00.00

850 840 830 820 810 800 790 780

RESIDUAL: RED BROWN TAN AND ORANGE,MOIST,V.STIFF, SILTY SANDY CLAY AND CLAYEY SANDY SILT

RESIDUAL: RED AND TAN,MOIST,MED.DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,STIFF,CLAY

RESIDUAL: TAN,MOIST,MED.DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,STIFF TO V.STIFF,SANDY SILT

RESIDUAL: TAN AND WHITE,MOIST,MED.DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,V.STIFF,CLAYEY SILT

757+50.00

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

6/23/16

01-NOV-2016 14:34
I:\Projects\2017\GI7053.00 Stantec R2707D&E Shelby Bypass\R2707_NCDOT_Electronic_File_Tree\Geotech\Investigation Design\R2707_GEO_RDWY\CADD_GEOTECH\xsc\R2707D_GEO_XSI_LL_ LT.dgn
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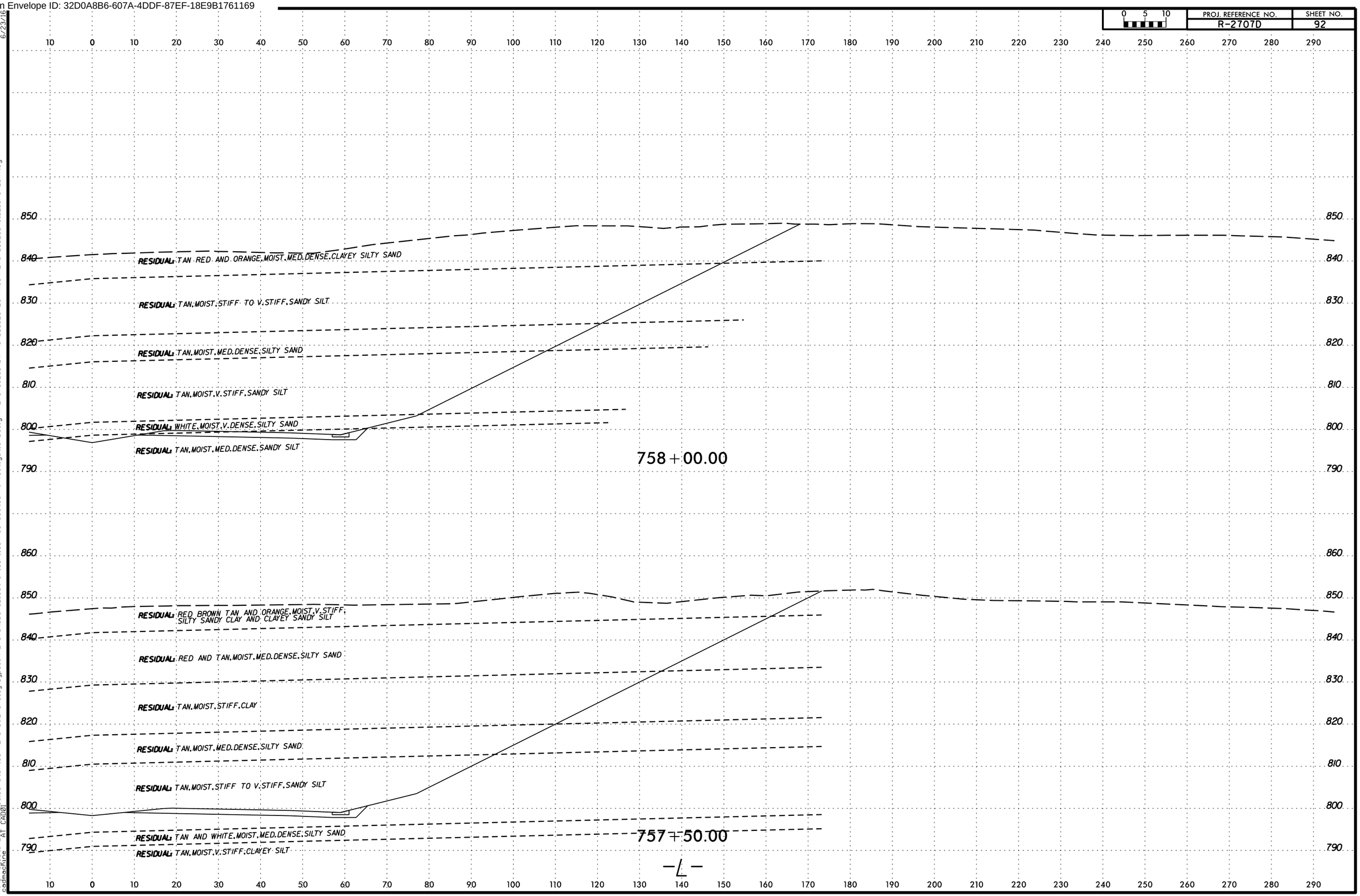
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2707D	92



0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R2707-D	93

759+00.00

758+50.00

RESIDUAL: TAN RED AND ORANGE, MOIST, MED. DENSE, CLAYEY SILTY SAND

RESIDUAL: TAN, MOIST, STIFF TO V. STIFF, SANDY SILT

RESIDUAL: TAN, MOIST, MED. DENSE, SILTY SAND

RESIDUAL: TAN, MOIST, V. STIFF, SANDY SILT

RESIDUAL: WHITE, MOIST, V. DENSE, SILTY SAND

RESIDUAL: TAN, MOIST, MED. DENSE, SANDY SILT

16 13 15 13 9 17 15 20 24 83 24

BT
DRY (12/17)

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2707D	94

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

850 840 830 820 810 800 790

(16) (13) (15) (13) (9) (17) (15) (20) (21) (83) (24)

BT
DRY (12/17)

RESIDUAL: TAN RED AND ORANGE, MOIST, MED. DENSE, CLAYEY SILTY SAND
RESIDUAL: TAN, MOIST, STIFF TO V. STIFF, SANDY SILT
RESIDUAL: TAN, MOIST, MED. DENSE, SILTY SAND
RESIDUAL: TAN, MOIST, V. STIFF, SANDY SILT
RESIDUAL: WHITE, MOIST, V. DENSE, SILTY SAND
RESIDUAL: TAN, MOIST, MED. DENSE, SANDY SILT

759+00.00

RESIDUAL: TAN RED AND ORANGE, MOIST, MED. DENSE, CLAYEY SILTY SAND
RESIDUAL: TAN, MOIST, STIFF TO V. STIFF, SANDY SILT
RESIDUAL: TAN, MOIST, MED. DENSE, SILTY SAND
RESIDUAL: TAN, MOIST, V. STIFF, SANDY SILT
RESIDUAL: WHITE, MOIST, V. DENSE, SILTY SAND
RESIDUAL: TAN, MOIST, MED. DENSE, SANDY SILT

758+50.00
-L-

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R2707-D	95

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

820
810
800
790
780
770
760

RESIDUAL: TAN AND BROWN,MOIST,MED.DENSE,SILTY SAND

RESIDUAL: TAN AND RED,MOIST,STIFF,SANDY SILT

RESIDUAL: TAN AND BROWN,MOIST,DENSE TO V.DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,V.STIFF,SANDY SILT

RESIDUAL: TAN,MOIST,V.DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,HARD,SANDY SILT

766+50.00

820
810
800
790
780
770

RESIDUAL: TAN AND BROWN,MOIST,MED.DENSE,SILTY SAND

RESIDUAL: TAN AND RED,MOIST,STIFF,SANDY SILT

RESIDUAL: TAN AND BROWN,MOIST,DENSE TO V.DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,V.STIFF,SANDY SILT

RESIDUAL: TAN,MOIST,V.DENSE,SILTY SAND

766+00.00

-L-

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

830
820
810
800
790
780
770
760

RESIDUAL: TAN AND BROWN,MOIST,MED.DENSE,SILTY SAND

RESIDUAL: TAN AND RED,MOIST,STIFF,SANDY SILT

RESIDUAL: TAN AND BROWN,MOIST,DENSE TO V.DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,V.STIFF,SANDY SILT

RESIDUAL: TAN,MOIST,V.DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,HARD,SANDY SILT

766+50.00

830
820
810
800
790
780
770

RESIDUAL: TAN AND BROWN,MOIST,MED.DENSE,SILTY SAND

RESIDUAL: TAN AND RED,MOIST,STIFF,SANDY SILT

RESIDUAL: TAN AND BROWN,MOIST,DENSE TO V.DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,V.STIFF,SANDY SILT

RESIDUAL: TAN,MOIST,V.DENSE,SILTY SAND

766+00.00

$-\mathit{L}-$

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

RESIDUAL: RED AND BROWN,MOIST,STIFF,SANDY CLAYEY SILT

RESIDUAL: TAN AND BROWN,MOIST,MED.DENSE,SILTY SAND

RESIDUAL: TAN AND RED,MOIST,STIFF,SANDY SILT

RESIDUAL: TAN AND BROWN,MOIST,DENSE TO V.DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,V.STIFF,SANDY SILT

RESIDUAL: TAN,MOIST,V.DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,HARD,SANDY SILT

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-69	80 FT LT	767+00	48.5'-50.0'	A-4	34	3	16	56	19	9	98	94	37	16	–

SS-69

11
13
12
12
12
12
12
15
98
27
21
24
52
38

BT
DRY (12/17)

767+00.00

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

840
830
820
810
800
790
780
770

RESIDUAL: RED AND BROWN, MOIST, STIFF, SANDY CLAYEY SILT

RESIDUAL: TAN AND BROWN, MOIST, MED. DENSE, SILTY SAND

RESIDUAL: TAN AND RED, MOIST, STIFF, SANDY SILT

RESIDUAL: TAN AND BROWN, MOIST, DENSE TO V. DENSE, SILTY SAND

RESIDUAL: TAN, MOIST, V. STIFF, SANDY SILT

RESIDUAL: TAN, MOIST, V. DENSE, SILTY SAND

RESIDUAL: TAN, MOIST, HARD, SANDY SILT

767+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-69	80 FT LT	767+00	48.5'-50.0'	A-4	34	3	16	56	19	9	98	94	37	16	-

840
830
820
810
800
790
780
770

RESIDUAL: TAN AND BROWN, MOIST, MED. DENSE, SILTY SAND

RESIDUAL: TAN AND RED, MOIST, STIFF, SANDY SILT

RESIDUAL: TAN AND BROWN, MOIST, DENSE TO V. DENSE, SILTY SAND

RESIDUAL: TAN, MOIST, V. STIFF, SANDY SILT

RESIDUAL: TAN, MOIST, V. DENSE, SILTY SAND

RESIDUAL: TAN, MOIST, HARD, SANDY SILT

767+00.00

-L-

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R2707-D	99

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

840 830 820 810 800 790 780 770

RESIDUAL: RED,MOIST,MED.STIFF,SANDY SILTY CLAY

RESIDUAL: TAN AND WHITE,MOIST,LOOSE TO MED.DENSE, SILTY SAND WITH TRACE MICA AND ORGANICS

RESIDUAL: TAN AND WHITE,MOIST,STIFF,SANDY SILT

RESIDUAL: TAN AND WHITE,MOIST,MED.DENSE,SILTY SAND

768+50.00

RESIDUAL: RED,MOIST,MED.STIFF,SANDY SILTY CLAY

RESIDUAL: TAN AND WHITE,MOIST,LOOSE TO MED.DENSE, SILTY SAND WITH TRACE MICA AND ORGANICS

RESIDUAL: TAN AND WHITE,MOIST,STIFF,SANDY SILT

RESIDUAL: TAN AND WHITE,MOIST,MED.DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,V.STIFF,SANDY SILT

768+00.00

—L—

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2707D	100

768+50.00

RESIDUAL: RED,MOIST,MED.STIFF,SANDY SILTY CLAY

RESIDUAL: TAN AND WHITE,MOIST,LOOSE TO MED.DENSE, SILTY SAND WITH TRACE MICA AND ORGANICS

RESIDUAL: TAN AND WHITE,MOIST,STIFF,SANDY SILT

RESIDUAL: TAN AND WHITE,MOIST,MED.DENSE,SILTY SAND

RESIDUAL: TAN,MOIST,V.STIFF,SANDY SILT

768+00.00

—L—

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R2707-D	101

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

830 820 810 800 790 780 770

RESIDUAL: RED,MOIST,MED.STIFF,SANDY SILTY CLAY

RESIDUAL: TAN AND WHITE,MOIST,LOOSE TO MED.DENSE, SILTY SAND WITH TRACE MICA AND ORGANICS

RESIDUAL: TAN AND WHITE,MOIST,STIFF,SANDY SILT

RESIDUAL: TAN AND WHITE,MOIST,MED.DENSE,SILTY SAND

769+50.00

840 830 820 810 800 790 780 770

RESIDUAL: RED,MOIST,MED.STIFF,SANDY SILTY CLAY

RESIDUAL: TAN AND WHITE,MOIST,LOOSE TO MED.DENSE, SILTY SAND WITH TRACE MICA AND ORGANICS

RESIDUAL: TAN AND WHITE,MOIST,STIFF,SANDY SILT

RESIDUAL: TAN AND WHITE,MOIST,MED.DENSE,SILTY SAND

6 8 6 6 7 11 10 14

BT
DRY (03/18)

769+00.00

−L−

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

830 820 810 800 790 780 770

RESIDUAL: RED,MOIST,MED.STIFF,SANDY SILTY CLAY

RESIDUAL: TAN AND WHITE,MOIST,LOOSE TO MED.DENSE, SILTY SAND WITH TRACE MICA AND ORGANICS

RESIDUAL: TAN AND WHITE,MOIST,STIFF,SANDY SILT

RESIDUAL: TAN AND WHITE,MOIST,MED.DENSE,SILTY SAND

769+50.00

840 830 820 810 800 790 780 770

RESIDUAL: RED,MOIST,MED.STIFF,SANDY SILTY CLAY

RESIDUAL: TAN AND WHITE,MOIST,LOOSE TO MED.DENSE, SILTY SAND WITH TRACE MICA AND ORGANICS

RESIDUAL: TAN AND WHITE,MOIST,STIFF,SANDY SILT

RESIDUAL: TAN AND WHITE,MOIST,MED.DENSE,SILTY SAND

769+00.00

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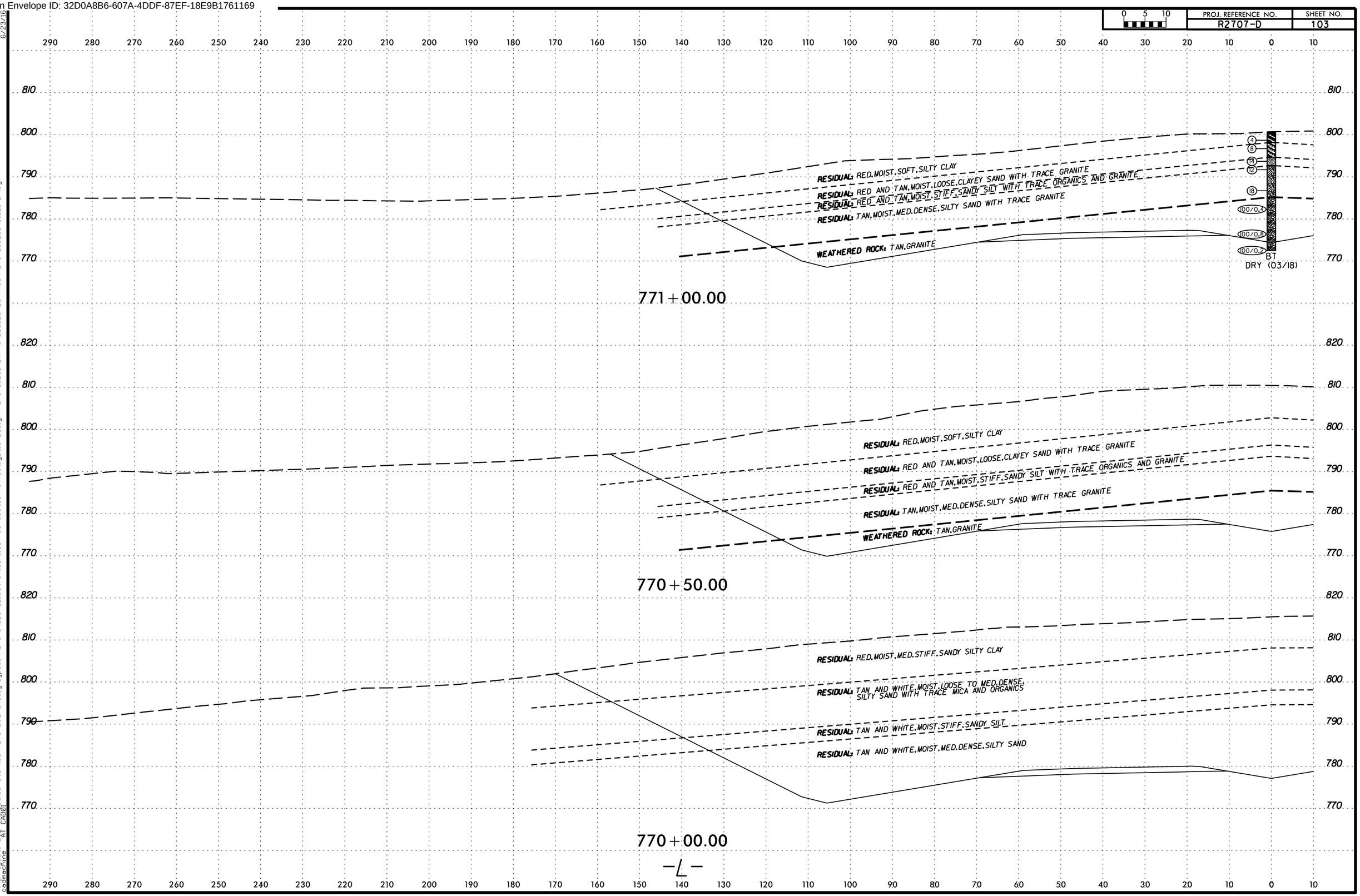
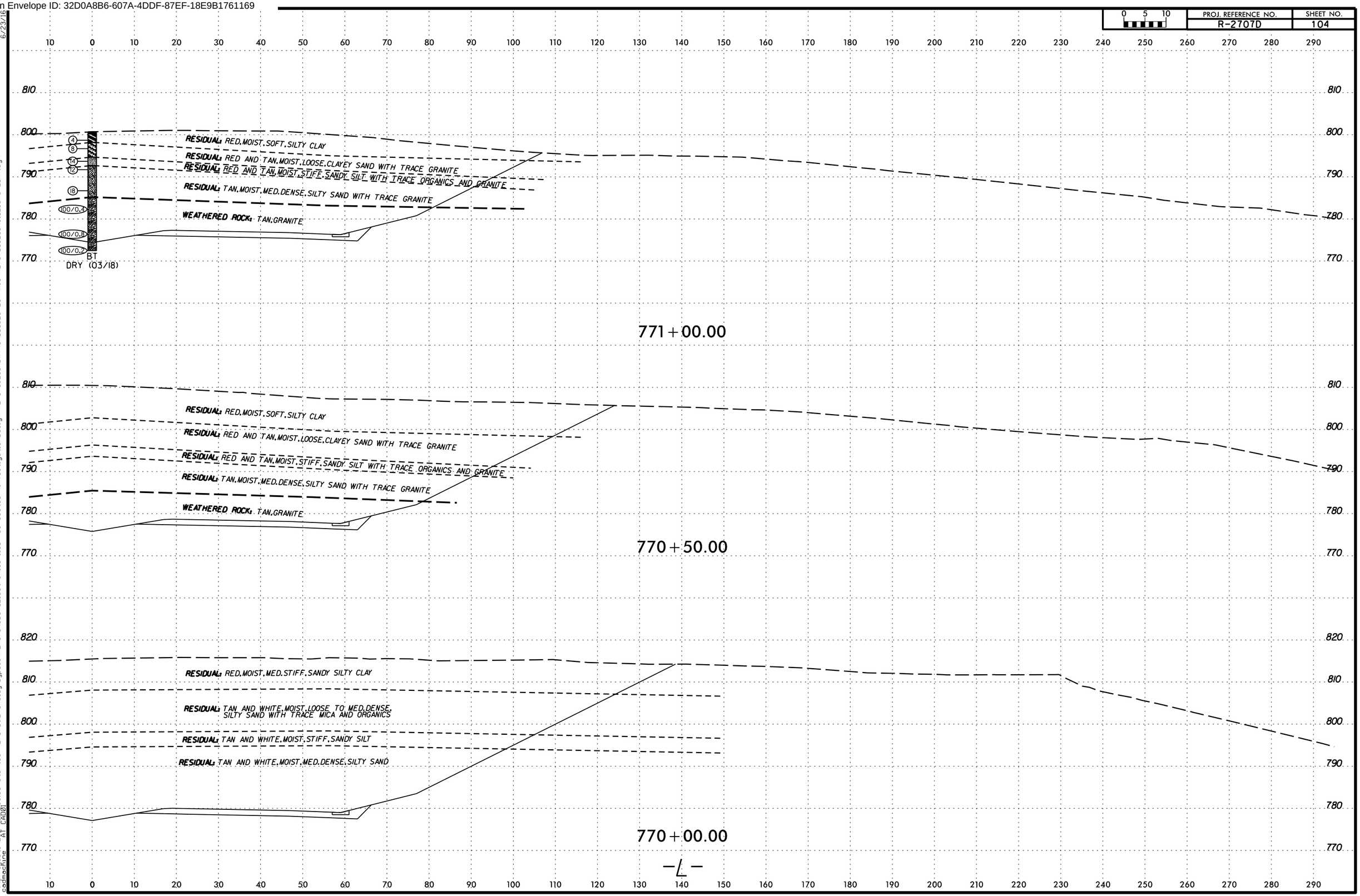
10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290





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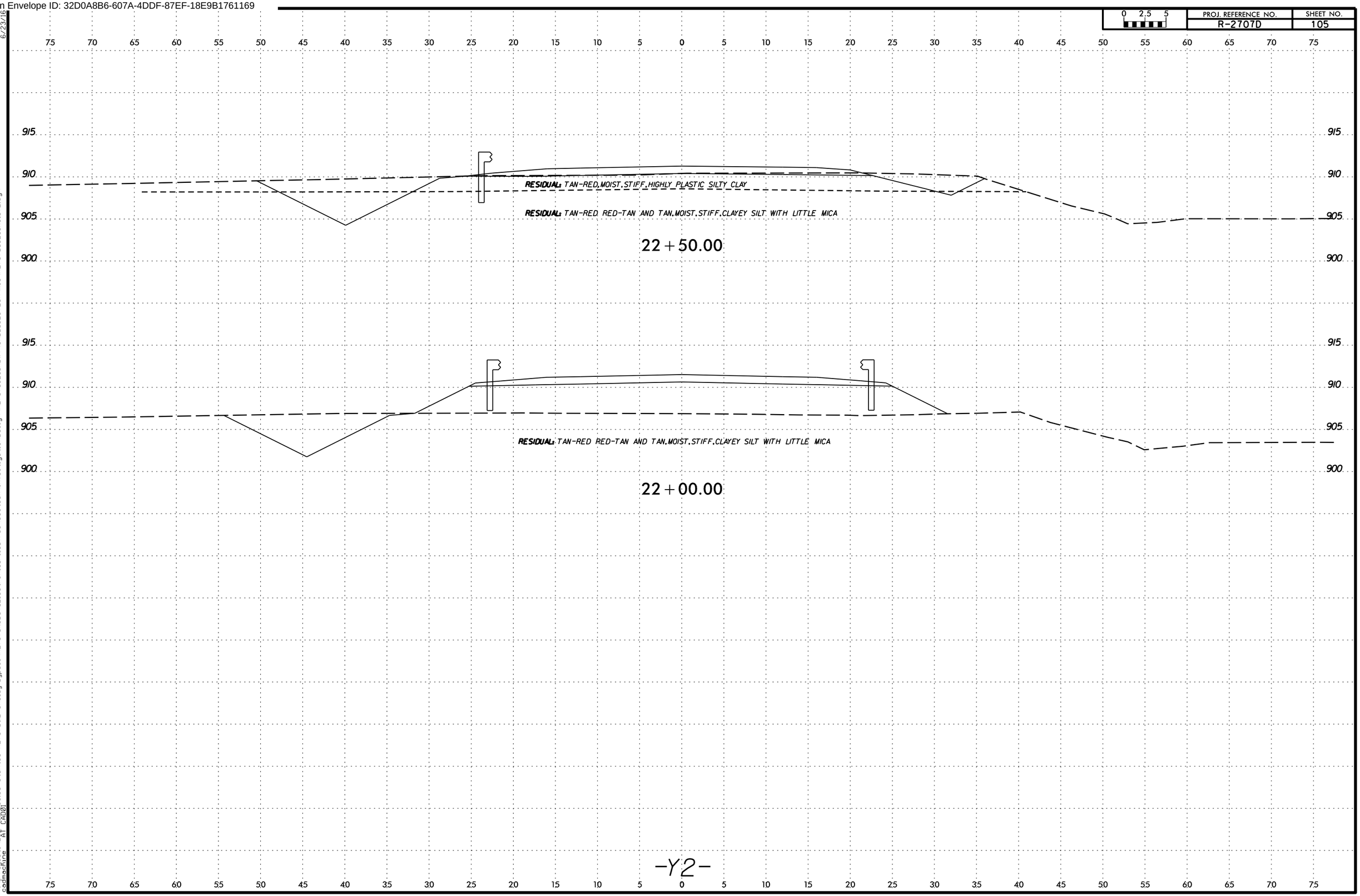
	R-2707D	105



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

910 905 900 895 910 905

RESIDUAL: RED-TAN,MOIST,STIFF TO V.STIFF,SANDY SILTY CLAY

RESIDUAL: RED-TAN AND TAN,MOIST,LOOSE TO MED.DENSE,SILTY SAND

24+50.00

RESIDUAL: TAN-RED,MOIST,STIFF,HIGHLY PLASTIC SILTY CLAY

910 905 910 905

RESIDUAL: RED-TAN,MOIST,STIFF TO V.STIFF,SANDY SILTY CLAY

RESIDUAL: RED-TAN AND TAN,MOIST,LOOSE TO MED.DENSE,SILTY SAND

24+00.00

910 905 910 905

RESIDUAL: TAN-RED,MOIST,STIFF,HIGHLY PLASTIC SILTY CLAY

RESIDUAL: TAN-RED RED-TAN AND TAN,MOIST,STIFF,CLAYEY SILT WITH LITTLE MICA

23+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-15	40 FT LT	23+00	1.0'-2.5'	A-7-5	80	38	10	9	13	68	98	91	83	34	-
SS-16	40 FT LT	23+00	6.0'-7.5'	A-5	68	NP	4	40	40	16	100	98	72	27	-

915 910 905 900 890 880 915 910 905 900 890 880

SS-15
SS-16

10 11 10 11 10 13

BT
DRY (01/18)

RESIDUAL: TAN-RED,MOIST,STIFF,HIGHLY PLASTIC SILTY CLAY

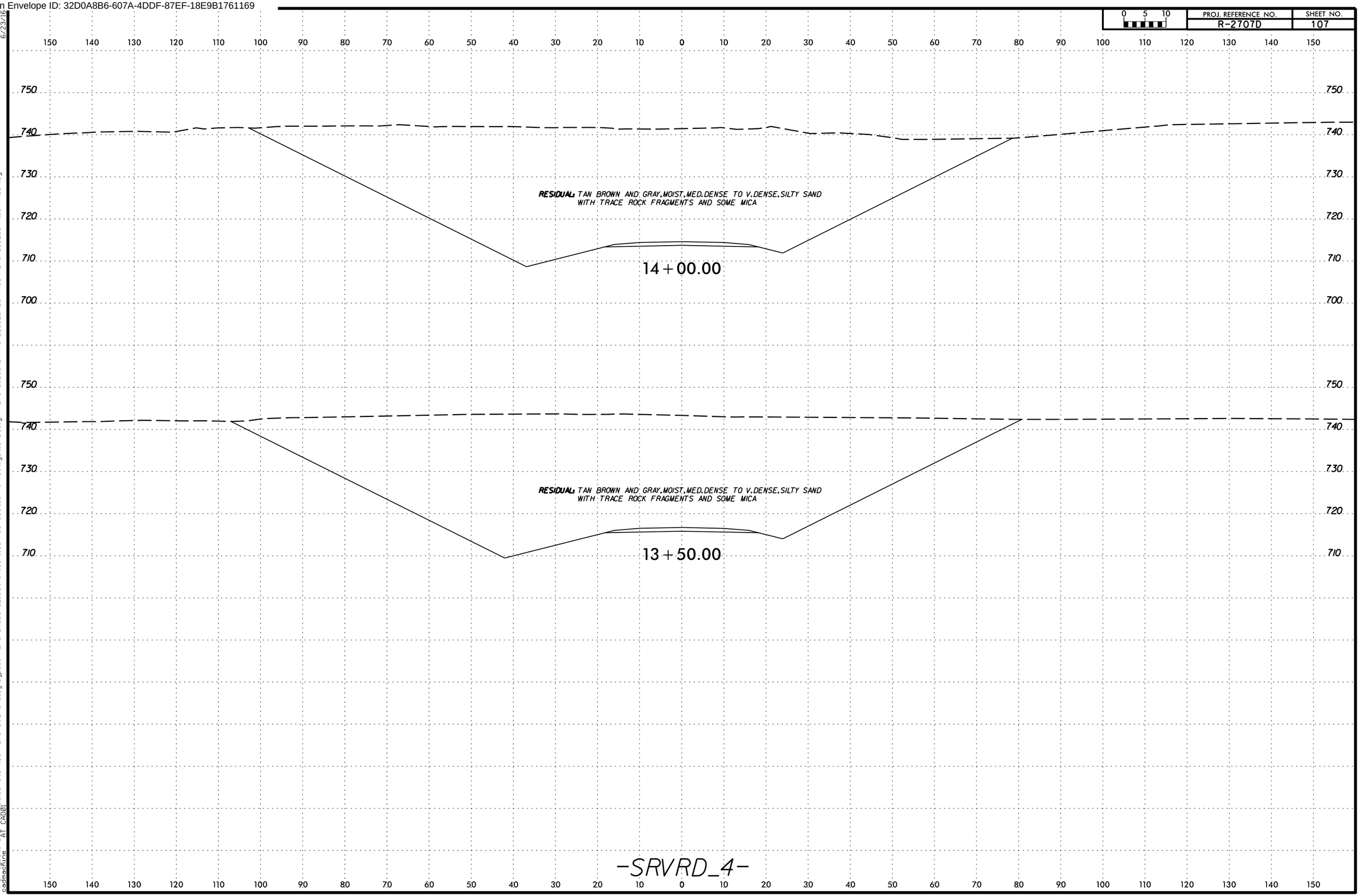
RESIDUAL: TAN-RED RED-TAN AND TAN,MOIST,STIFF,CLAYEY SILT WITH LITTLE MICA

23+00.00

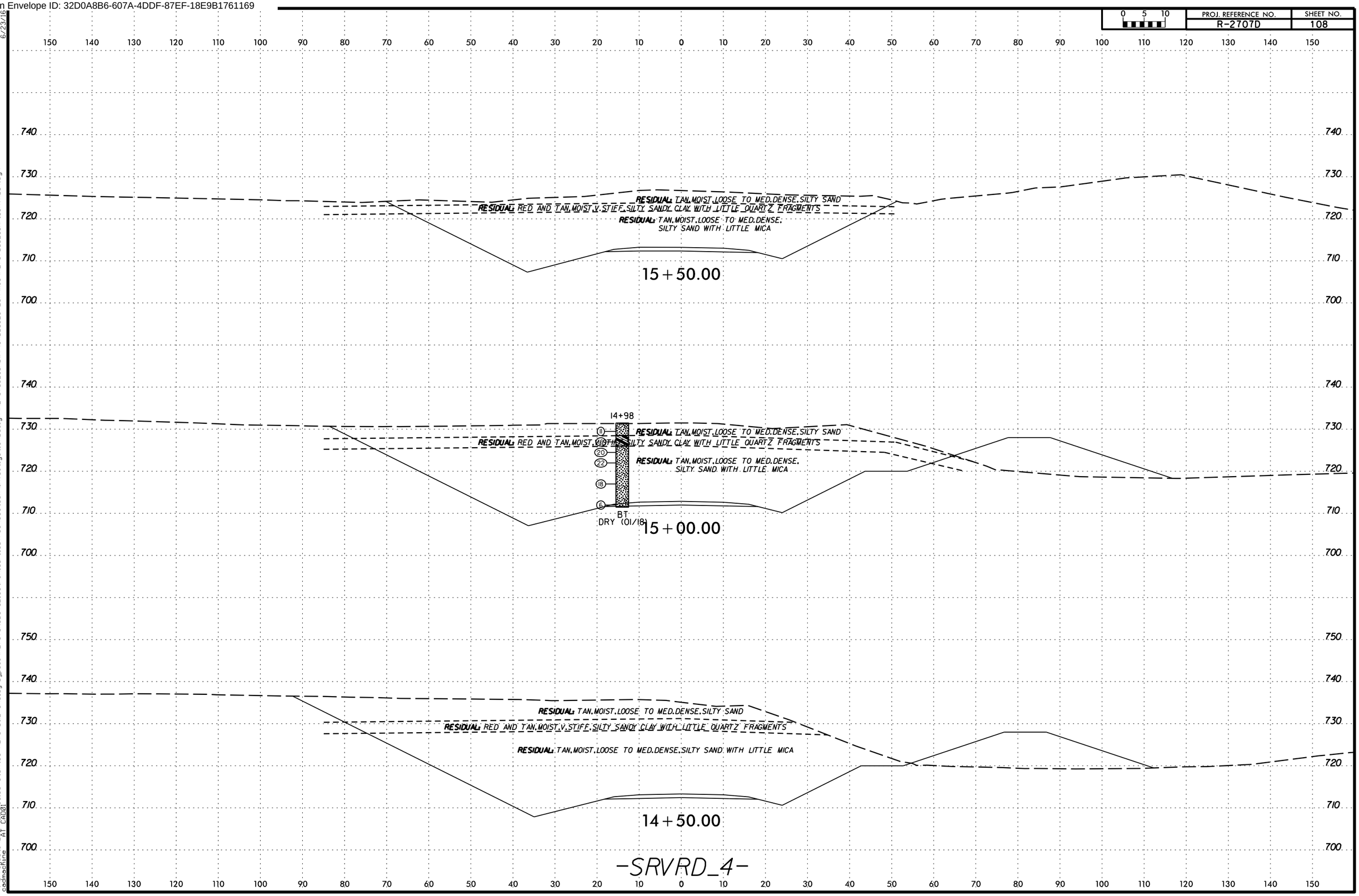
-Y2-

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

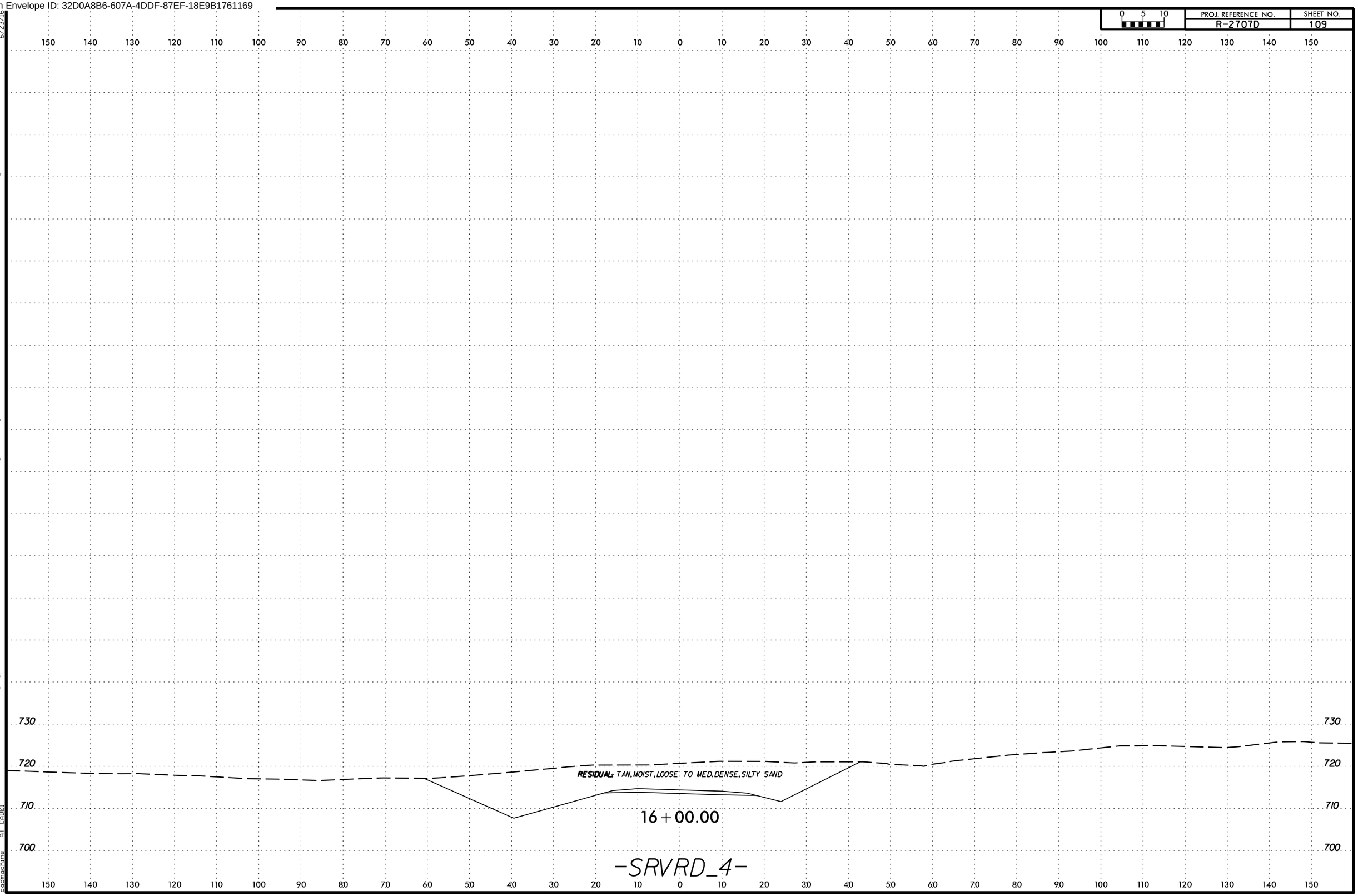
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2707D	107

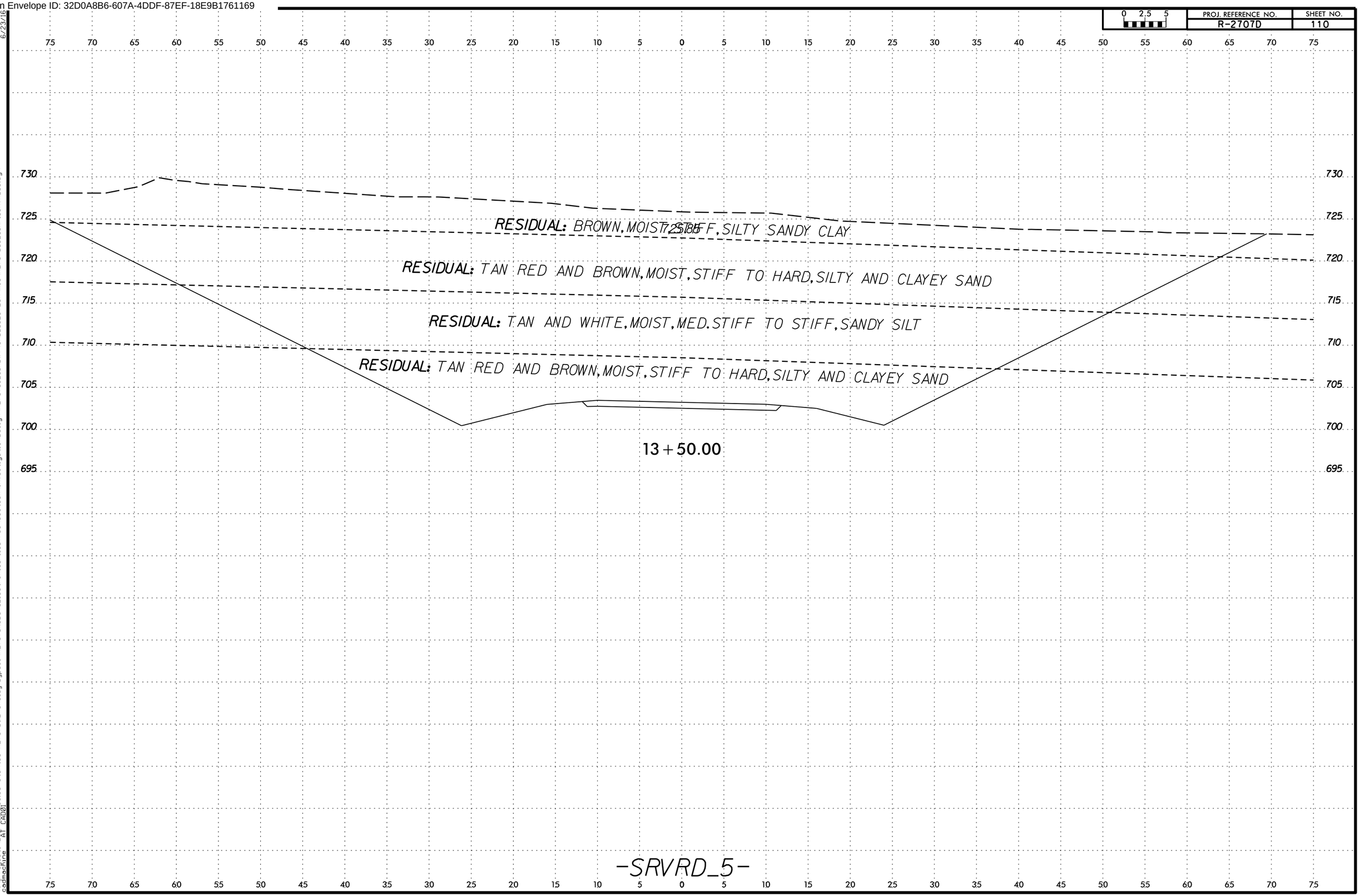


0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2707D	108



0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2707D	109





0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-2707D	111

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

725 720 715 710 705 700 695

RESIDUAL: TAN BROWN AND RED, MOIST, LOOSE TO MED. DENSE, SILTY AND CLAYEY SAND

14+50.00

RESIDUAL: BROWN, MOIST, STIFF, SILTY SANDY CLAY

RESIDUAL: TAN RED AND BROWN, MOIST, STIFF TO HARD, SILTY AND CLAYEY SAND

14+00.00

-SRVRD_5-

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

715
710
705
700
695

RESIDUAL: TAN BROWN AND RED, MOIST, LOOSE TO MED. DENSE, SILTY AND CLAYEY SAND

15+50.00

720
715
710
705
700
695

RESIDUAL: TAN BROWN AND RED, MOIST, LOOSE TO MED. DENSE, SILTY AND CLAYEY SAND

5
25
31
24

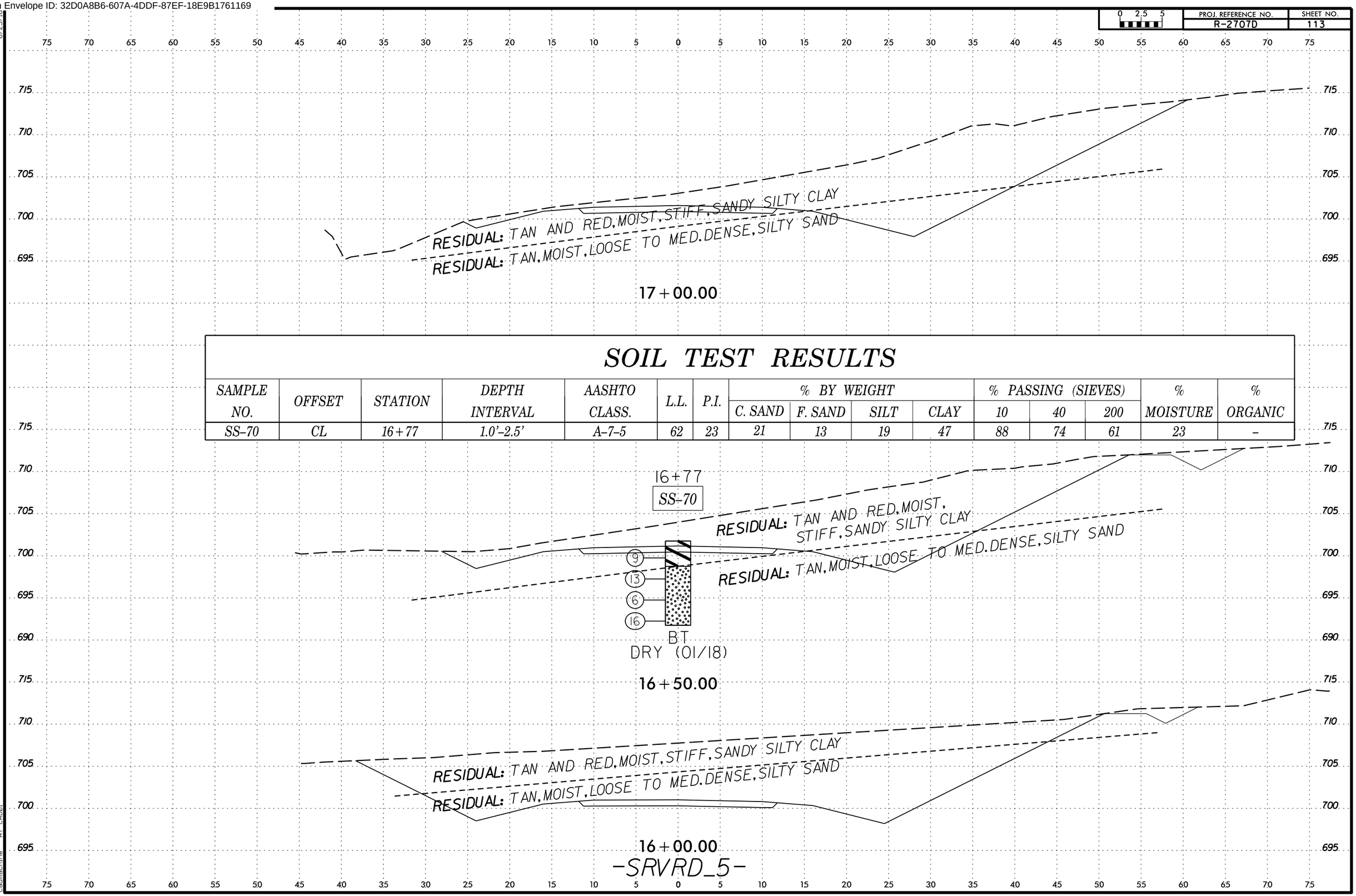
BT
DRY (01/18)

RESIDUAL: TAN BROWN AND RED, MOIST, LOOSE TO MED. DENSE, SILTY AND CLAYEY SAND

15+00.00

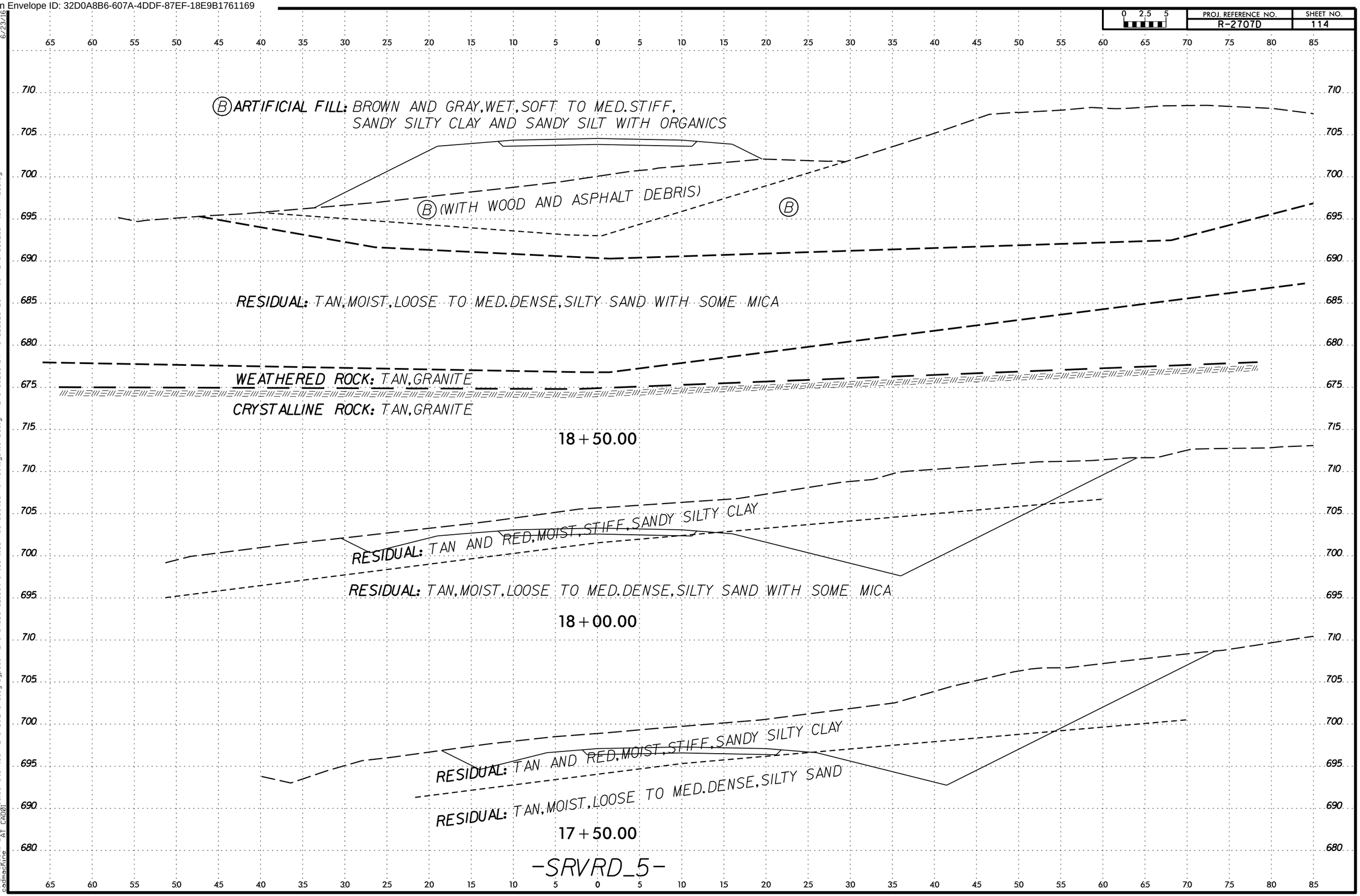
-SRVRD_5-

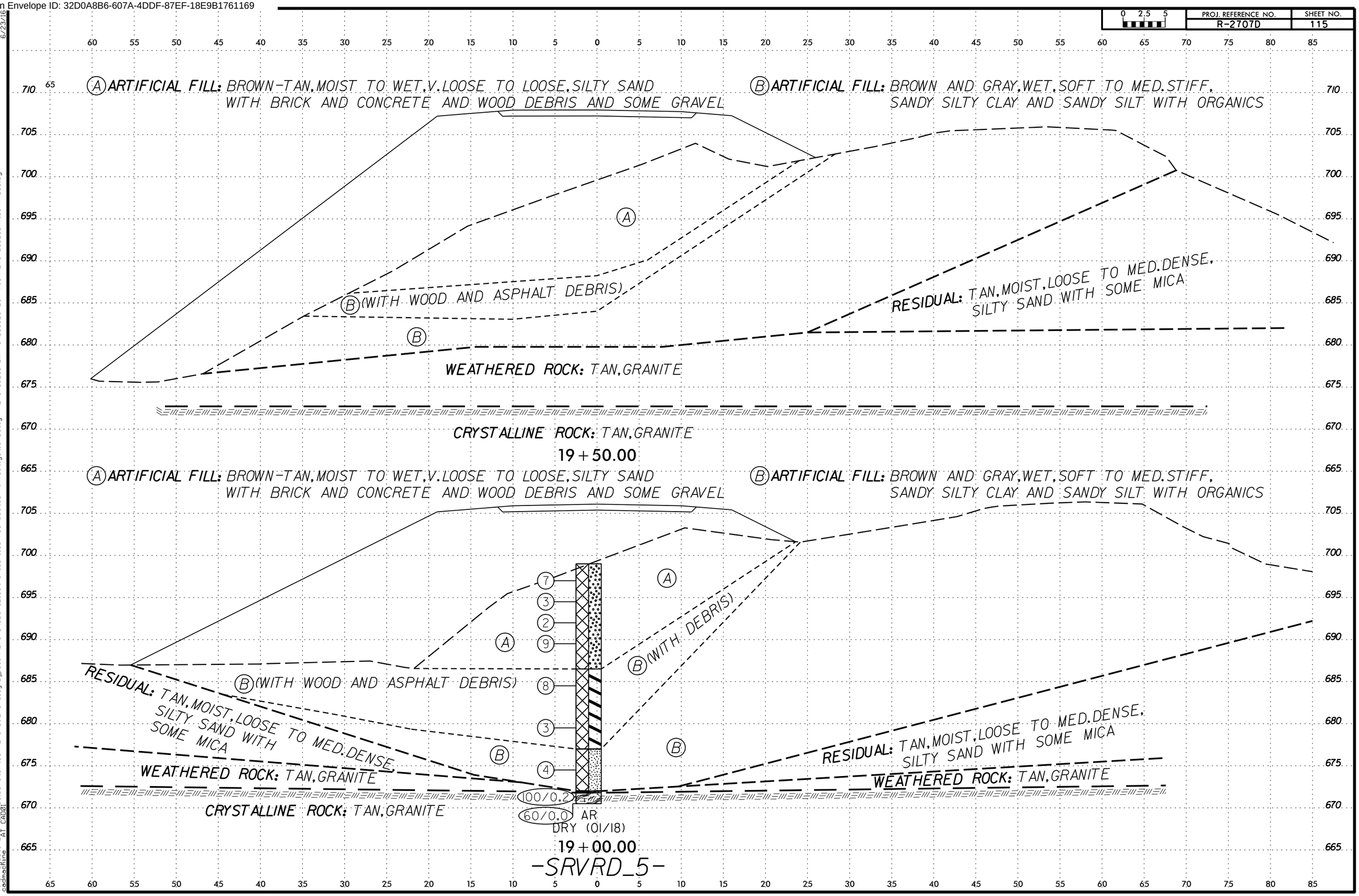
75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



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-70	CL	16+77	1.0'-2.5'	A-7-5	62	23	21	13	19	47	88	74	61	23	-





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 80 85

715
710
705
700
695
690

RESIDUAL: ORANGE-TAN AND TAN, MOIST, DENSE TO V. DENSE, SILTY SAND WITH SOME ROCK FRAGMENTS AND SOME MICA

WEATHERED ROCK: TAN, MICA SCHIST

20+50.00

Ⓑ **ARTIFICIAL FILL:** BROWN AND GRAY, WET, SOFT TO MED. STIFF, SANDY SILTY CLAY AND SANDY SILT WITH ORGANICS

Ⓑ (WITH WOOD AND ASPHALT DEBRIS)

Ⓑ

RESIDUAL: ORANGE-TAN AND TAN, MOIST, DENSE TO V. DENSE, SILTY SAND WITH SOME ROCK FRAGMENTS AND SOME MICA

WEATHERED ROCK: TAN, MICA SCHIST

20+00.00

-SRVRD_5-

PROJECT REFERENCE NO.	SHEET NO.
R–2707D	117

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

APPENDIX A
LABORATORY RESULTS

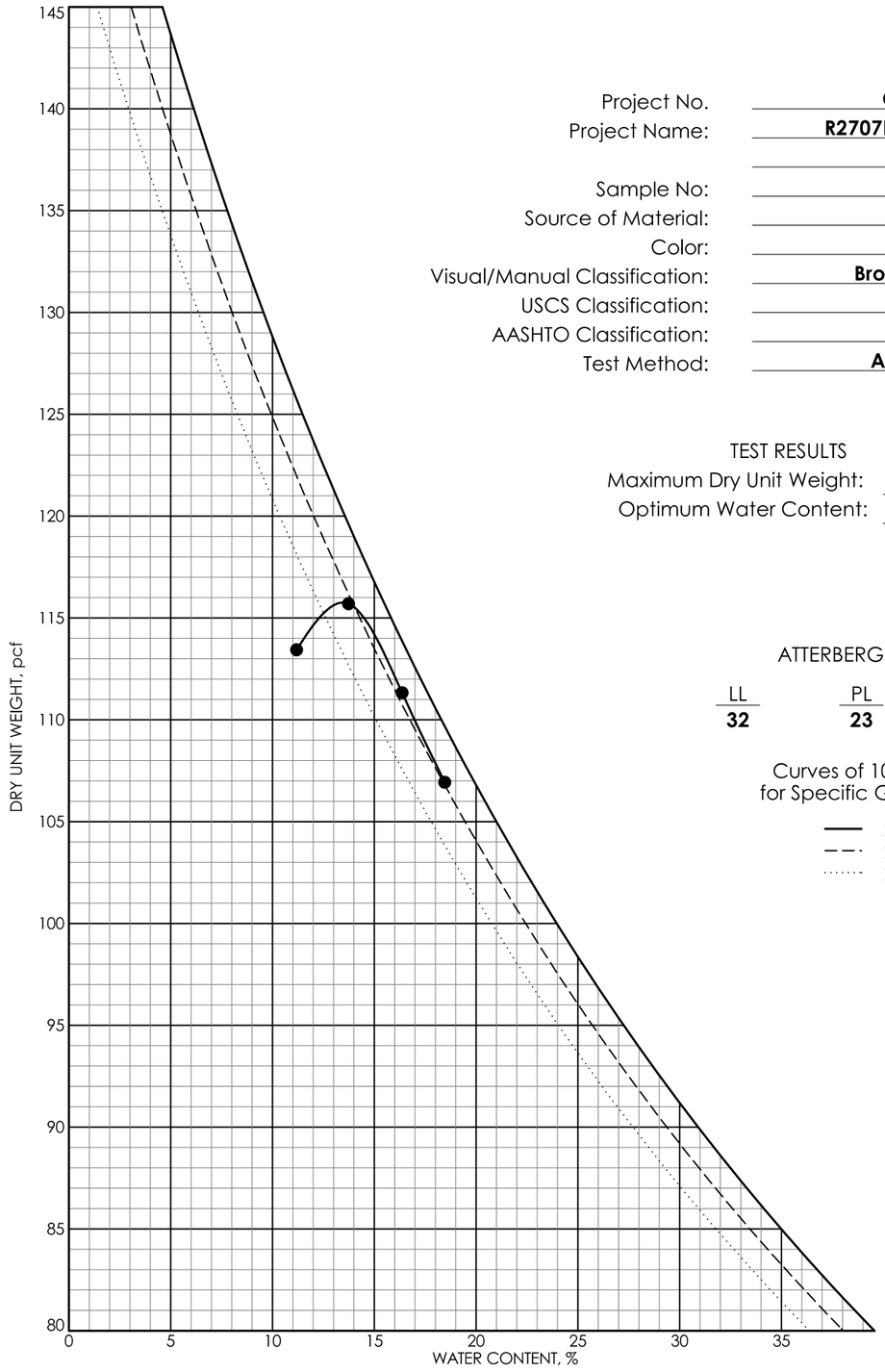
REFERENCE: R–2707D

PROJECT: 34497

FALCON ENGINEERING
1210 TRINITY ROAD, SUITE 110
CARY, NC 27513
PHONE: 919.871.0800
www.falconengineers.com

LABORATORY COMPACTION TEST RESULTS

5/20/2018



Project No.	G17053.00
Project Name:	R2707D Shelby Bypass
Sample No:	BS-1
Source of Material:	B-363
Color:	Brown
Visual/Manual Classification:	Brown Silty Sand
USCS Classification:	
AASHTO Classification:	
Test Method:	AASHTO T-99

TEST RESULTS

Maximum Dry Unit Weight: 115.8 PCF

Optimum Water Content: 13.5 %

ATTERBERG LIMITS

LL	PL	PI
32	23	9

Curves of 100% Saturation for Specific Gravity Equal to:

2.6
2.5
2.4

FALCON ENGINEERING 1210 TRINITY RD., SUITE 110, RALEIGH, NC 27607

CBR (CALIFORNIA BEARING RATIO) OF LABORATORY COMPACTED SOIL

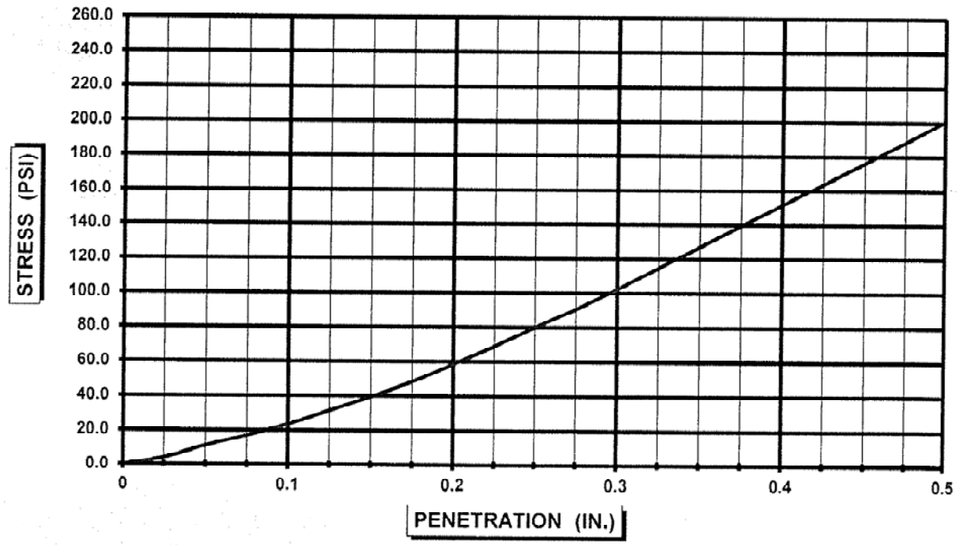
AASHTO T-193 \ ASTM D-1883

PROJECT #:	G17053.00			DATE:	5/14/2018
PROJECT NAME:		Shelby By Pass			
BORING:	B-363	SAMPLE:	Bulk1	DEPTH:	1-11'
SOIL DESCRIPTION:		Brown Silty Sand			

COMPACTION METHOD	ASTM D1883	SOAK	96 HRS.
MAXIMUM DRY DENSITY	116.2 PCF	STRAIN RATE	.05 IN / MIN.
OPTIMUM MOISTURE CONTENT	14.5%	LOAD CELL	6000
TEST DATA		SURCHARGE WEIGHT	10 lb.
DRY DENSITY	114.7 PCF	SURCHARGE PER SQUARE FOOT	51 lbs/sq.ft.
MOISTURE CONTENT	14.3%	FINAL MOISTURE CONTENT	N/A
PERCENT COMPACTION	98.7%	SWELL	0.00%

	ACTUAL	CORRECTED
CBR VALUE AT .1"	2.4	3.0
CBR VALUE AT .2"	3.9	4.5

STRESS-PENETRATION CURVE



LIQUID LIMIT	32	PLASTIC LIMIT	23	PLASTIC INDEX	9

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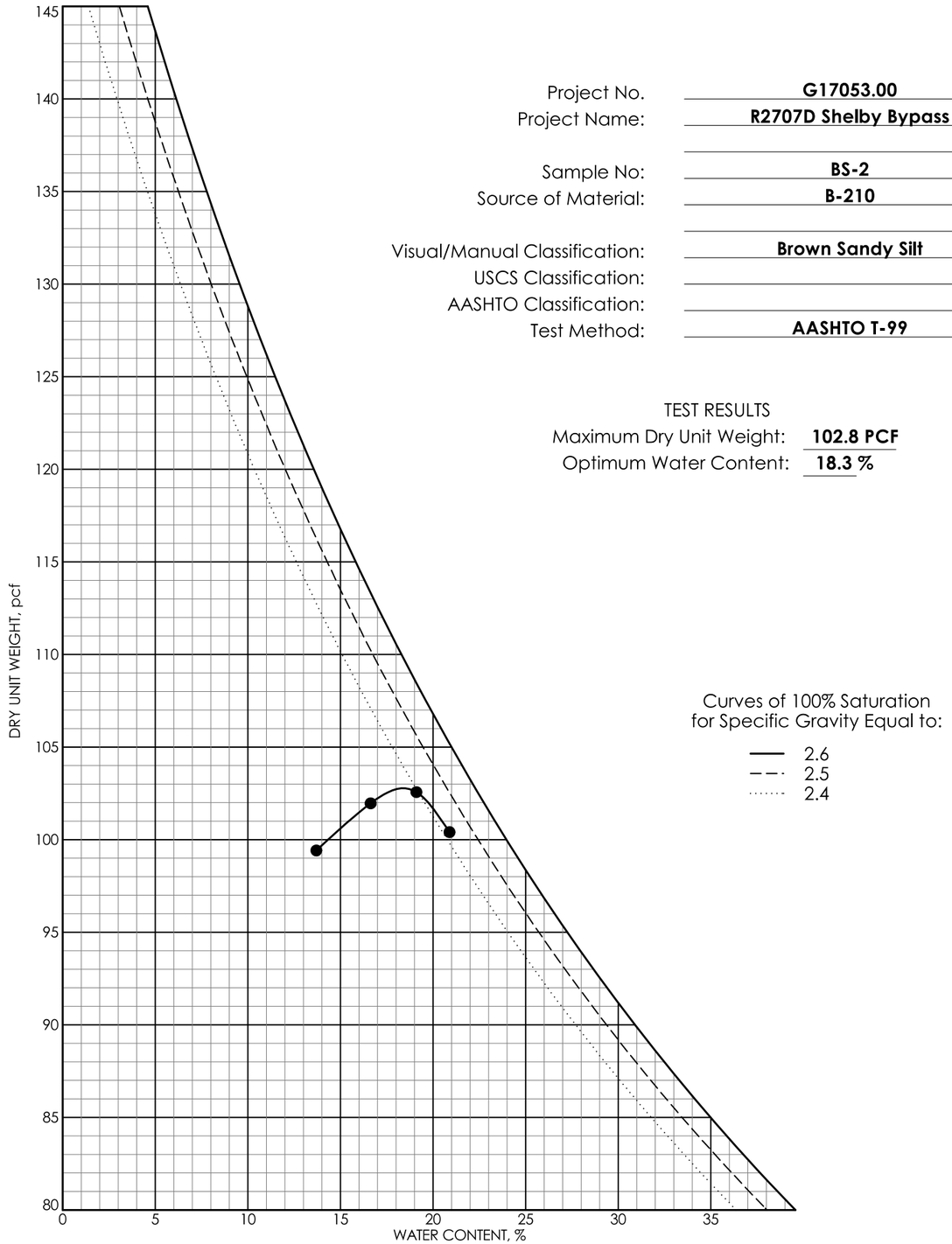
LABORATORY COMPACTION TEST RESULTS

5/20/2018



Curves of 100% Saturation for Specific Gravity Equal to:

- 2.6
- 2.5
- 2.4

Project No.	G17053.00
Project Name:	R2707D Shelby Bypass
Sample No:	BS-2
Source of Material:	B-210
Visual/Manual Classification:	Brown Sandy Silt
USCS Classification:	
AASHTO Classification:	
Test Method:	AASHTO T-99

TEST RESULTS

Maximum Dry Unit Weight: 102.8 PCF

Optimum Water Content: 18.3 %

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CBR (CALIFORNIA BEARING RATIO) OF LABORATORY COMPACTED SOIL

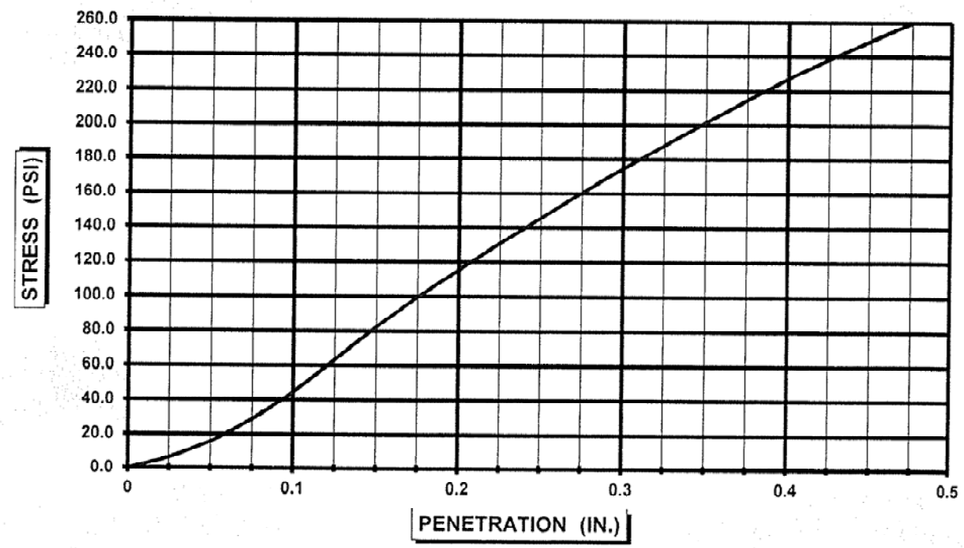
AASHTO T-193 \ ASTM D-1883

PROJECT #:	G17053.00			DATE:	5/14/2018
PROJECT NAME:		Shelby By Pass			
BORING:	B-210	SAMPLE:	Bulk-2	DEPTH:	1-10'
SOIL DESCRIPTION:		Brown Sandy Silt			

COMPACTION METHOD	ASTM D1883	SOAK	96 HRS.
MAXIMUM DRY DENSITY	103.2 PCF	STRAIN RATE	.05 IN / MIN.
OPTIMUM MOISTURE CONTENT	18.5%	LOAD CELL	6000
TEST DATA		SURCHARGE WEIGHT	10 lb.
DRY DENSITY	101.5 PCF	SURCHARGE PER SQUARE FOOT	51 lbs/sq.ft.
MOISTURE CONTENT	18.3%	FINAL MOISTURE CONTENT	N/A
PERCENT COMPACTION	98.4%	SWELL	0.00%

	ACTUAL	CORRECTED
CBR VALUE AT .1"	4.5	6.5
CBR VALUE AT .2"	7.7	9.0

STRESS-PENETRATION CURVE



LIQUID LIMIT	40	PLASTIC LIMIT	30	PLASTIC INDEX	10

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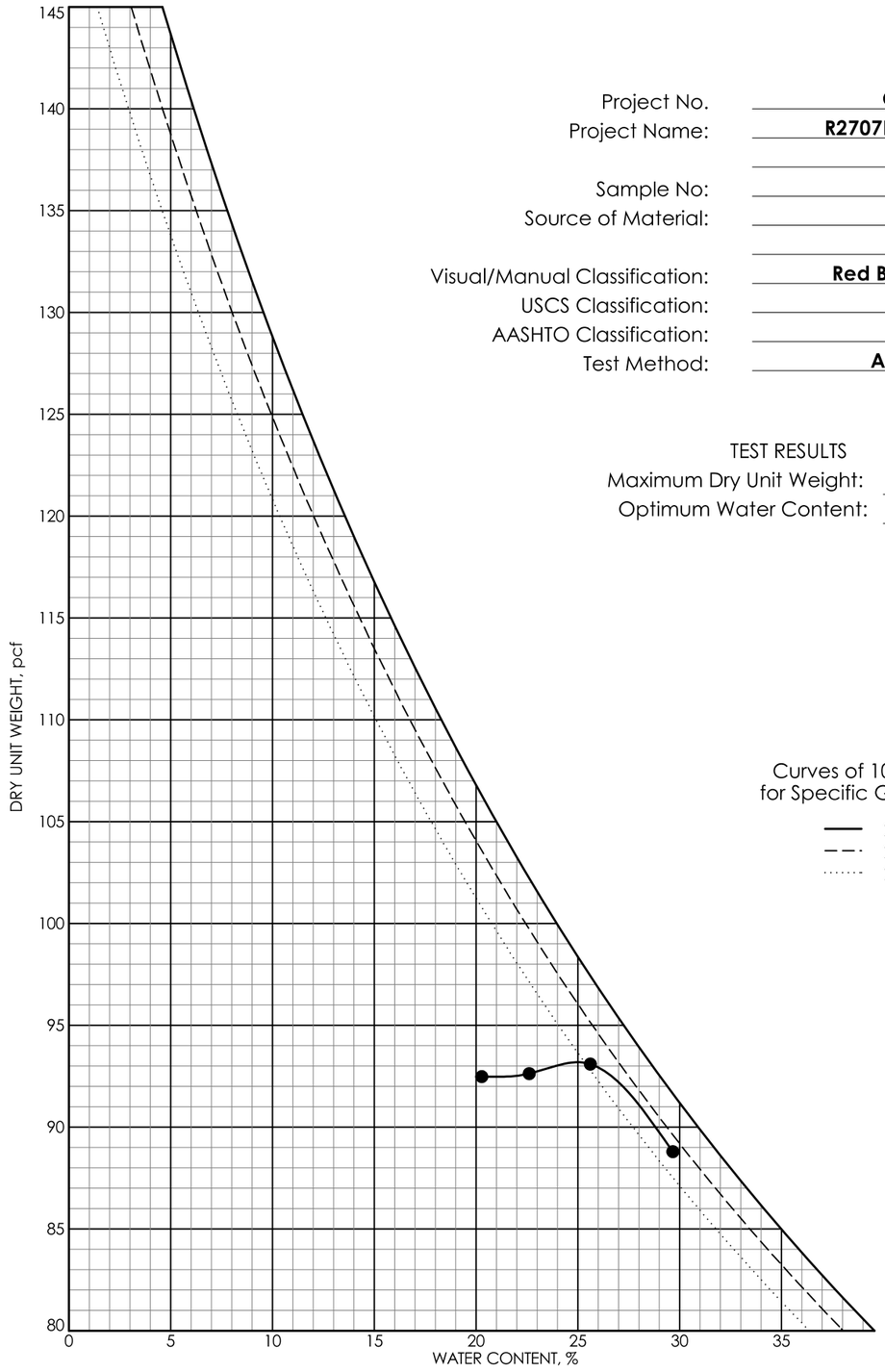
LABORATORY COMPACTION TEST RESULTS

5/20/2018



Project No. G17053.00
Project Name: R2707D Shelby Bypass

Sample No: BS-3
Source of Material: B-58

Visual/Manual Classification: Red Brown Silty Sand
USCS Classification:
AASHTO Classification:
Test Method: AASHTO T-99

TEST RESULTS
Maximum Dry Unit Weight: 93.2 PCF
Optimum Water Content: 25.0 %

Curves of 100% Saturation
for Specific Gravity Equal to:

2.6
2.5
2.4

FALCON ENGINEERING 1210 TRINITY RD., SUITE 110, RALEIGH, NC 27607

CBR (CALIFORNIA BEARING RATIO) OF LABORATORY COMPACTED SOIL

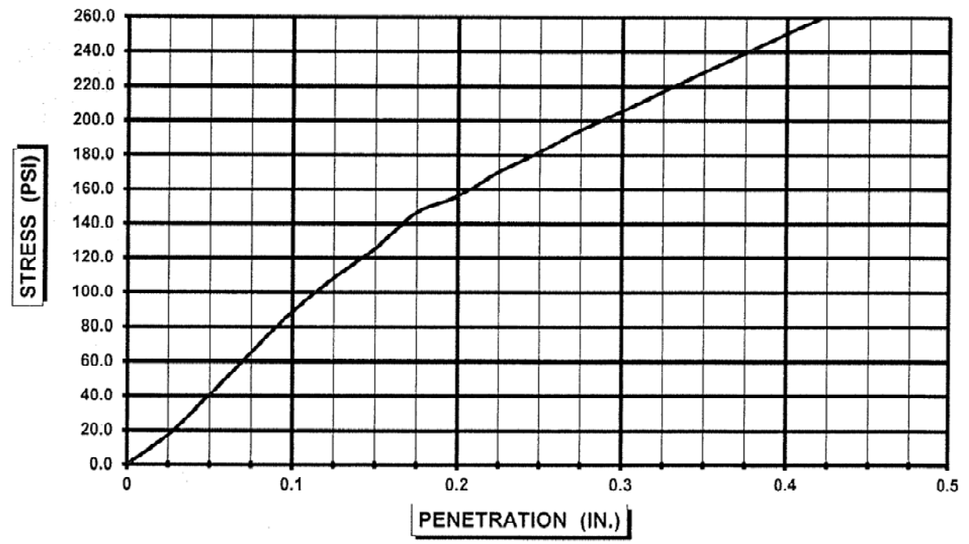
AASHTO T-193 \ ASTM D-1883

PROJECT #: G17053.00 DATE: 5/14/2018
PROJECT NAME: Shelby By Pass
BORING: B-58 SAMPLE: Bulk-3 DEPTH: 1-10'
SOIL DESCRIPTION: Red Brown Silty Sand

COMPACTION METHOD	ASTM D1883	SOAK	96 HRS.
MAXIMUM DRY DENSITY	93.5 PCF	STRAIN RATE	.05 IN / MIN.
OPTIMUM MOISTURE CONTENT	25.5%	LOAD CELL	6000
TEST DATA		SURCHARGE WEIGHT	10 lb.
DRY DENSITY	92.4 PCF	SURCHARGE PER SQUARE FOOT	51 lbs/sq.ft.
MOISTURE CONTENT	25.4%	FINAL MOISTURE CONTENT	N/A
PERCENT COMPACTION	98.8%	SWELL	0.00%

	ACTUAL	CORRECTED
CBR VALUE AT .1"	8.9	9.5
CBR VALUE AT .2"	10.4	10.6

STRESS-PENETRATION CURVE



LIQUID LIMIT	0	PLASTIC LIMIT	0	PLASTIC INDEX	NP