PROJECT: 42370

REFERENCE: U-5108

SEE SHEET 3 FOR PLAN SHEET LAYOUT AT TIME OF INVESTIGATION

CONTENTS

LINE	STATION	PLAN	PROFILE
-L-	10+00 to 94+55	4-10	-
-LI-	10+00 to 20+10.59	10,11	-
-Y-	10+00 to 13+17.95	4	-
-YI-	10+00 to 12+27	10	-
-Y2-	10+00 to 11+04.60	10	-
-Y3-	10+00 to 11+12.63	10	-
-Y4-	10+00 to 11+11.04	11	-
-Y5-	10+00 to 11+71.64	11	-
-Y6-	10+00 to 25+59.95	11,12	-
-RABA-	10+00 to 12+32.91	11,11A	-
-RABB-	10+00 to 11+47.75	11,11A	-
-RABC-	10+00 to 12+41.61	11,11A	-
-RABD-	10+00 to 13+14.22	11,11A	-

CROSS SECTIONS

LINE	STATION	SHEETS
-L-	26+50 to 94+50	13-55
-LI-	10+00 to 20+10.59	56-61
-Y6-	10+00 to 25+50	62-70
-RABA-	10+00 to 12+25	71-73
-RABB-	10+00 to 11+25	74-76
-RABC-	10+00 to 12+25	77-79
-RABD-	10+00 to 13+00	80-83

APPENDICES

APPENDIX	TITLE	SHEETS
A	LABORATORY TEST RESULTS	84-85

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

ROADWAY SUBSURFACE INVESTIGATION

COUNTY *MECKLENBURG*

PROJECT DESCRIPTION *NORTHCROSS DRIVE EXTENSION FROM EXISTING END OF NORTHCROSS DRIVE TO WESTMORELAND DRIVE*

INVENTORY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-5108	1	

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

P.M. WEAVER

C.R. PASTRANA

D.M. NANCE

B.R. LONG

HPC

HDR

INVESTIGATED BY *ESP Associates, Inc.*

DRAWN BY *C.R. PASTRANA*

CHECKED BY *P.M. WEAVER*

SUBMITTED BY *ESP Associates, Inc.*

DATE *November 2023*

ESP ASSOCIATES, INC.
7011 ALBERT PICK RD
SUITE E
GREENSBORO, NC 27409
FIRM # C-0587
WWW.ESPASSOCIATES.COM

NORTH CAROLINA PROFESSIONAL SEAL 051684 ENGINEER MICHAEL S. UKMER

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U-5108	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:
- [X] CME-45C
- [ ] CME-55
- [X] CME-550
- [ ] VANE SHEAR TEST
- [ ] PORTABLE HOIST
- [X] D-50
- [ ] _____

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.
- [X] CORE BIT
- [ ] _____

HAMMER TYPE:
- [X] AUTOMATIC [ ] MANUAL

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

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: FILE "u5108_ls.tin.tin" WAS USED TO DETERMINE GROUND ELEVATION AT BORINGS

ELEVATION: FEET

NOTES:

F.I.A.D. = FILLED IMMEDIATELY AFTER DRILLING

DATE: 8-15-14

PROJECT REFERENCE NO.	SHEET NO.
U-5108	2A

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

SUPPLEMENTAL LEGEND, GEOLOGICAL STRENGTH INDEX (GSI) TABLES FROM AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

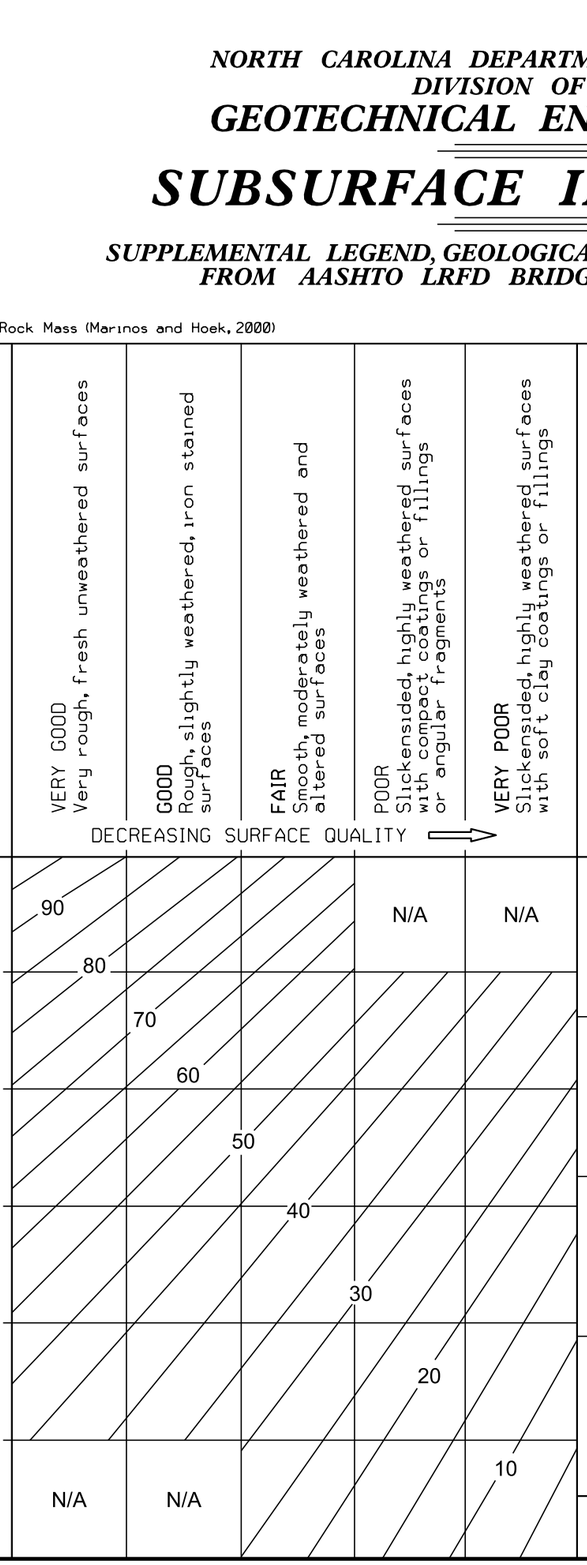
AASHTO LRFD Figure 10.4.6.4-1 — Determination of GSI for Jointed Rock Mass (Marinos and Hoek, 2000)

GEOLOGICAL STRENGTH INDEX (GSI) FOR JOINTED ROCKS (Hoek and Marinos, 2000)

From the lithology, structure and surface conditions of the discontinuities, estimate the average value of GSI. Do not try to be too precise. Quoting a range from 33 to 37 is more realistic than stating that GSI = 35. Note that the table does not apply to structurally controlled failures. Where weak planar structural planes are present in an unfavorable orientation with respect to the excavation face, these will dominate the rock mass behaviour. The shear strength of surfaces in rocks that are prone to deterioration as a result of changes in moisture content will be reduced if water is present. When working with rocks in the fair to very poor categories, a shift to the right may be made for wet conditions. Water pressure is dealt with by effective stress analysis.

STRUCTURE

- INTACT OR MASSIVE - intact rock specimens or massive in situ rock with few widely spaced discontinuities
- BLOCKY - well interlocked undisturbed rock mass consisting of cubical blocks formed by three intersecting discontinuity sets
- VERY BLOCKY - interlocked, partially disturbed mass with multi-faceted angular blocks formed by 4 or more joint sets
- BLOCKY/DISTURBED/SEAMY - folded with angular blocks formed by many intersecting discontinuity sets. Persistence of bedding planes or schistosity
- DISINTEGRATED - poorly interlocked, heavily broken rock mass with mixture of angular and rounded rock pieces
- LAMINATED/SHEARED - Lack of blockiness due to close spacing of weak schistosity or shear planes

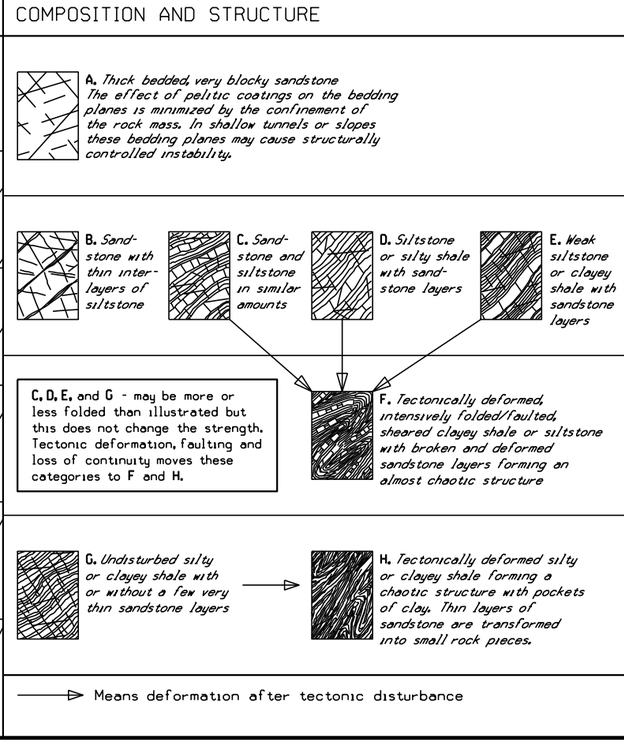


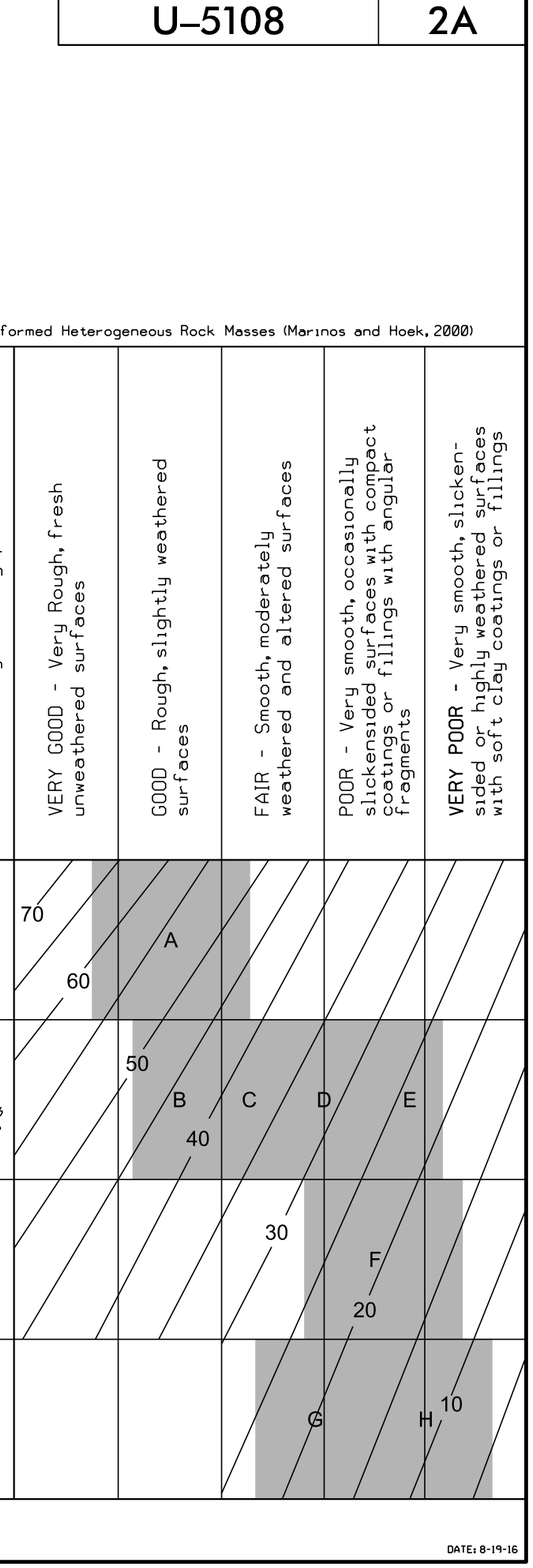
AASHTO LRFD Figure 10.4.6.4-2 — Determination of GSI for Tectonically Deformed Heterogeneous Rock Masses (Marinos and Hoek, 2000)

GSI FOR HETEROGENEOUS ROCK MASSES SUCH AS FLYSCH (Marinos. P and Hoek E., 2000)

From a description of the lithology, structure and surface conditions (particularly of the bedding planes), choose a box in the chart. Locate the position in the box that corresponds to the condition of the discontinuities and estimate the average value of GSI from the contours. Do not attempt to be too precise. Quoting a range from 33 to 37 is more realistic than giving GSI = 35. Note that the Hoek-Brown criterion does not apply to structurally controlled failures. Where unfavourably oriented continuous weak planar discontinuities are present, these will dominate the behaviour of the rock mass. The strength of some rock masses is reduced by the presence of groundwater and this can be allowed for by a slight shift to the right in the columns for fair, poor and very poor conditions. Water pressure does not change the value of GSI and it is dealt with by using effective stress analysis.

COMPOSITION AND STRUCTURE





DATE: 8-19-16

09/08/99

TIP PROJECT: U-5108

CONTRACT:

$FILE$

$DATE$

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

MECKLENBURG COUNTY

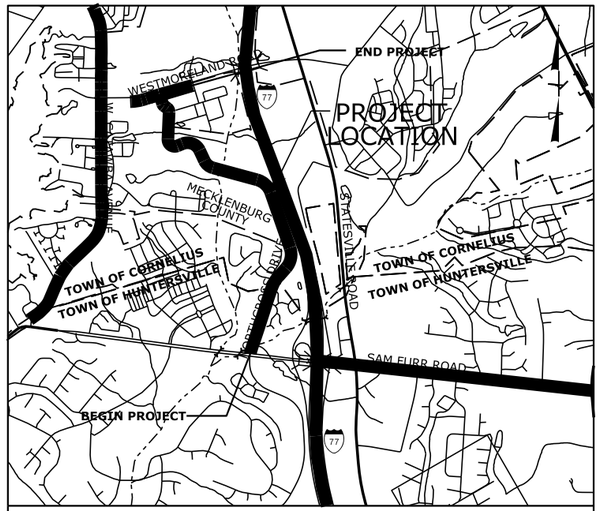
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-5108	3	90

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
42370.1.1		PE
42370.2.2	STBGDA-1001(078)	RW & UTIL.
42370.3.3	STBGDA-1001(078)	CONST.

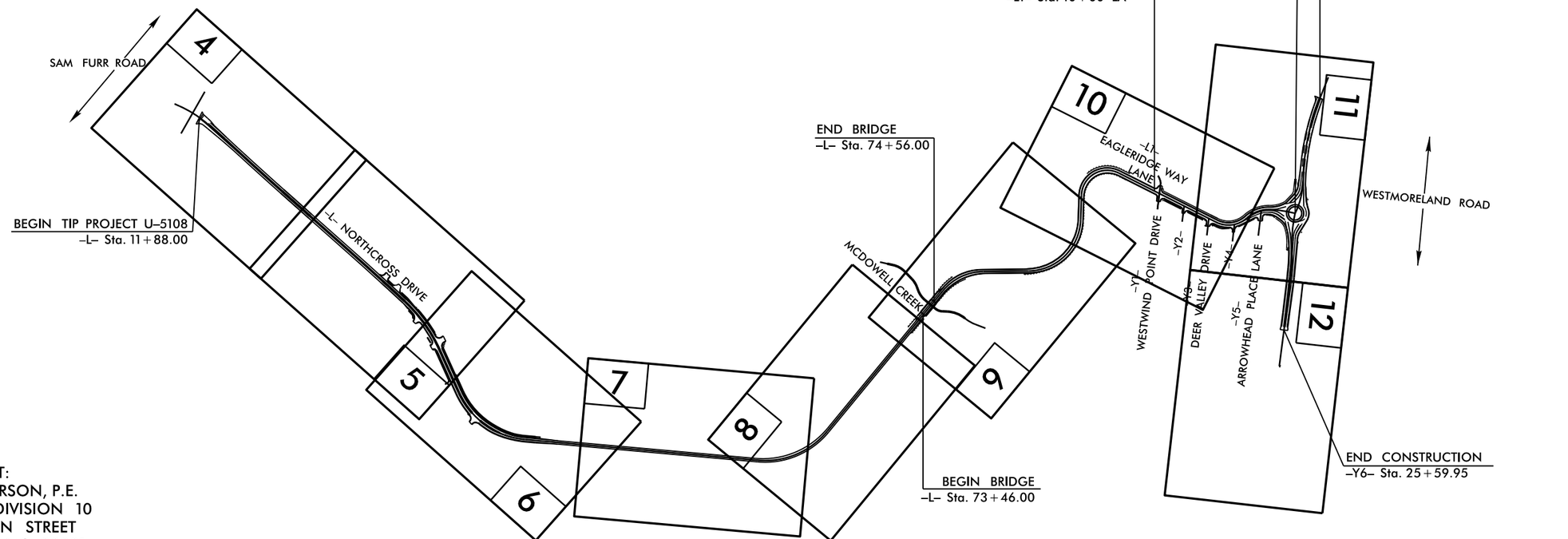
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

LOCATION: *NORTHCROSS DRIVE EXTENSION FROM END OF NORTHCROSS DRIVE TO WESTMORELAND ROAD*

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



VICINITY MAP



RW PLANS

NCDOT CONTACT:
SEAN EPPERSON, P.E.
NCDOT – DIVISION 10
716 W. MAIN STREET
ALBEMARLE, NC 28001

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY NCDOT METHOD III
THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF CORNELIUS AND HUNTERSVILLE

GRAPHIC SCALES

PLANS: 50 25 0 50 100

PROFILE (HORIZONTAL): 50 25 0 50 100

PROFILE (VERTICAL): 10 5 0 10 20

DESIGN DATA

ADT 2022 = 9900 VPD
ADT 2040 = 16800 VPD
K = 10%
D = 70%
T = 4%*
V = 25 – 40 MPH

FUNCTIONAL CLASSIFICATION: URBAN MAJOR COLLECTOR

* 1% TTST 3% DUAL
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-5108 = 1.736 MILES
LENGTH STRUCTURE TIP PROJECT U-5108 = 0.021 MILES
TOTAL LENGTH TIP PROJECT U-5108 = 1.757 MILES

PLANS PREPARED FOR THE NCDOT BY:

Kimley»Horn ©2019
200 South Tryon, Suite 200
Charlotte, North Carolina 28202
NC License #F-0102

2019 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JUNE 19, 2019

LETTING DATE:
JUNE 16, 2020

TONY SPACEK, P.E.
PROJECT ENGINEER

BRANDON MURR, EIT
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: *P.E.*

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION

November 10, 2023

STATE PROJECT: 42370.1.1 (U-5108)
COUNTY: Mecklenburg
DESCRIPTION: Northcross Drive Extension from end of Northcross Drive to Westmoreland Drive
SUBJECT: Geotechnical Inventory

Project Description

This proposed project is located in Cornelius, North Carolina and has a total project length of approximately 2 miles. The project begins at -L- Station 11+88 (the intersection of Northcross Drive and Sam Furr Road) and the proposed construction and improvements to the project corridor consists of the following:

- -L- Station 11+88 to -L- Station 27+65: milling and resurfacing of the existing roadway with no grade changes.
- -L- Station 27+65 to -L- Station 94+55: the construction of a new, two-lane roadway on a new location
- -L- Station 36+00 to -L- Station 43+50: the construction of a noise wall (-NB3-) varying between 23.5 feet and 29.0 feet left of -L-
- -L- Station 73+46 to -L- Station 74+46: the construction of a single-span bridge over McDowell Creek
- -L- Station 94+55: the project ties into the existing Eagleridge Way Lane (-L1-)
- -L1- (Eagleridge Way Lane) Station 10+00 to -L1- Station 20+10.59: widening and realignment of -L1- plus the construction of a multi-use path on the left side of the roadway and the addition of a roundabout at the intersection of -L1- and -Y6- (Westmoreland Drive)
- -L- Station 91+70(±): the installation of a 60-inch RCP-IV drainage pipe for the drainage feature at the bottom of the proposed embankment
- -Y6- Station 10+00 to -Y6 Station 25+59.95: widening of -Y6- and the construction of the roundabout mentioned in the bullet above

The project area is primarily consist of and single-family homes and businesses on the south end of the project and of single-family homes on the north end of the project. The middle portion of the project where the new roadway construction will be performed consists mainly of farmland. Intersections along the project includes Sam Furr Road (-Y-), Westwind Point Drive (-Y1-), -Y2-, Deer Valley Drive (-Y3-), -Y4-, Arrowhead Place Lane (-Y5-), and Westmoreland Drive (-Y6-).

It is our understanding that two Transco gas lines are present between approximately -L- Stations 46+50 and 48+00. The tops of the gas lines are reportedly approximately 5 feet below the existing groundline.

Proposed maximum project embankments heights are approximately 27 feet, while proposed maximum cut depths are approximately 5 feet.

This geotechnical investigation was confined to the areas of proposed construction.

Initial site scoping and the beginning of boring layout was performed on November 1, 2018. The field bridge/roadway investigation was performed from November 5 through 16, 2018 through and on December 17, 2018. ESP returned to the site on October 22, 2019 to layout the borings for the noise wall investigation, and performed the noise wall investigation on November 16, 2019. Standard Penetration Test borings were advanced with a D-50 drill machine equipped with an automatic hammer. Rock Coring was required at End Bent 1 of the bridge with a CME 45 drill machine using NQ-size coring equipment. Hand auger borings were also performed at selected locations. Representative soil samples were collected for visual classification in the field and for laboratory analyses.

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

Alignment	Station
-L-	26+50 to 94+55.00
-L1-	10+00 to 20+10.59
-Y6-	10+00 to 25+59.95
-RABA-	10+00 to 12+32.91
-RABB-	10+00 to 11+47.75
-RABC-	10+00 to 12+41.61
-RABD-	10+00 to 13+14.22

Physiography and Geography

The project corridor is located in the Kings Mountain Belt of the Piedmont physiographic province. “The Kings Mountain Belt includes metasedimentary sequences with interlayered quartzite, metaconglomerate, marble, and schists derived from both sedimentary and volcanic protoliths” (*The Geology of the Carolinas*, Horton and Zullo, 1991). Rocks of the Kings Mountain Belt are intensely deformed and it is dominated by steeply dipping units striking northeast to north-northeast. The age of the rocks are Paleozoic to late Proterozoic, and the deformation on the leading edge of the Carolina terrane as it collided with North America may be recorded in the deformation of the rocks in the Kings Mountain Belt. Rock was encountered during this investigation in the borings performed for the bridge (-L- Stations 73+46 to 74+52), and in the boring at -L- Station 43+00. The rock encountered consisted of metamorphosed quartz diorite.

The topography along the project corridor generally consist of gently rolling hills. The proposed roadway along Northcross Drive (-L-) and Eagleridge Way Lane (-L1-) generally slopes up from the south to north with elevations ranging from approximately 704 feet (MSL) to approximately 777 feet (MSL), while the proposed roadway along Westmoreland Drive (-Y6-) generally slopes down from the west to east with elevations ranging from approximately 787 feet (MSL) to approximately 768 feet (MSL). Swampy areas are present in the vicinity of the proposed bridge over McDowell Creek and immediately adjacent to the drainage feature at approximately -L- Station 91+70.

Soil Properties

Soils encountered within this project area have been divided into four categories: alluvial deposits, artificial fill, residual soils, and weathered rock.

Asphalt pavement (either existing roadway or drive/parking areas) was present at the existing ground surface at the following borings: RWAL1-1, RWAL1-2, RWAL1-3, RWAL1-4, and L_4000. The asphalt encountered within these borings ranges in thickness from 1 inch to 1 foot. The pavement design investigation performed by the NCDOT for this project indicates that the asphalt pavement within the existing Northcross Drive roadway ranges from 1.75 to 5.5 inches in thickness with base stone thicknesses ranging from 2.5 to 8 inches, while the asphalt pavement within the existing Eagleridge Way Lane roadway ranges from 2.75 to 4 inches in thickness with base stone thicknesses ranging from 6.5 to 7 inches.

Surficial organic soils were encountered in all of the Borings for this project with the exception of the RWAL1 borings, L_4000, L_4100, L_4800 to L_5900, the four borings performed for the bridge (EB1-A, EB1-B, EB2-A, and EB2-B), and Y6_1772. The thickness of the topsoil encountered ranged from approximately 2 inches to approximately 10 inches with the average topsoil thickness being approximately 5 inches.

Soils identified as alluvial deposits were encountered in the borings drilled for the bridge (EB1-A, EB1-B, EB2-A, and EB2-B), and in borings L_7550 and L_9175. The alluvial deposits range in depth from approximately 3 feet to approximately 20 feet below the existing ground surface and were generally classified as soft, sandy silt (A-4), sandy clay (A-6), and silty clay (A-7), and as very loose to loose, silty sand (A-2-4). Standard Penetration Test (SPT) blow counts within the alluvium ranged from 2 to 8 blows per foot (bpf).

Material identified as artificial fill was encountered in boring RWAL1-5. Artificial fill is fill material placed outside of the roadway embankment by entities other than the NCDOT and thus without the quality and compaction controls inherent in roadway embankment construction. The artificial fill extended to a depth of approximately 1 foot below the existing ground surface and sampled as a gravel and topsoil mix.

Residual soils were encountered in all borings drilled for this project with the exception of borings EB1-A, EB2-B, Y6_1450RT, Y6_2100, Y6_2300LT, Y6_2300RT, and Y6_2500. The residual soils generally classified as very loose to very dense, silty sand (A-2-4) and moderately plastic clayey sand (A-2-7), and as soft to hard, sandy silt (A-4), clayey silt (A-5), sandy clay (A-6), and silty clay (A-7-5 and A-7-6). The majority of the residual soils encountered were silty clays ranging from slightly to highly plastic. SPT blow counts within the residual soil ranged from 2 to 94 bpf. All borings with the exception of L_4300, L_7250, EB1-A, EB1-B, EB2-A, EB2-B, L-7550, and L_9175 were terminated within residual soils.

Weathered rock is defined as material that has weathered from the parent bedrock and that exhibits SPT N values greater than 100 blows per foot but less than 60 blows per 0.1 foot. The weathered rock on this project is Metamorphosed Quartz Diorite and was encountered directly underlying alluvial material or underlying the residual soil at depths ranging from approximately 3 feet to approximately 39 feet below the existing ground surface. Borings L_7250, L_7550, and L_9175 were terminated within weathered rock.

Rock Properties

Crystalline rock was encountered either directly underlying the alluvium in boring EB1-A, directly underlying the residual soil in borings L_4300, EB2-A, and EB2-B, and underlying the weathered rock in boring EB1-B. The depths to the top of the crystalline rock ranged from approximately 6 feet to approximately 24 feet below the existing ground surface. The crystalline rock classifies as Metamorphosed Quartz Diorite. The crystalline rock cored in borings EB1-A and EB1-B had recovery (REC) values ranging from 94 percent to 100 percent, Rock Quality Designation (RQD) values ranging from 94 percent to 100 percent, and Geological Strength Index (GSI) values ranging from 70 to 100 indicating very good quality rock. Borings L_4300, EB1-A, EB1-B, EB2-A, and EB2-B were terminated on or in crystalline rock.

Groundwater Properties

Ground water data was collected in November and December, 2018. Ground water depths ranged from approximately 2 to 12 feet below the existing ground surface, and groundwater elevations ranged from approximately 703 to approximately 733 feet above sea level.

Areas of Special Geotechnical Interest

1) The following areas sections were found to contain potentially (or existing) unstable slope conditions:

Alignment	Station(±)	Offset(±)
-L-	74+56 to 75+75	70’ lt. to 27’ lt. & 23’ rt. to 56’ rt.

2) The following sections contain soft, cohesive soils which have the potential to cause embankment/subgrade and/or slope stability problems during construction:

Alignment	Station(±)
-L-	53+25 to 54+75
-L-	90+75 to 93+25
-Y6-	13+75 to 16+00
-RABB-	10+00 to 10+60
-RABC-	10+00 to 10+60

3) The following sections contain soils with greater than 4 percent organic content (including topsoil greater than 4 inches thick) which have the potential to cause embankment/subgrade and or slope stability problems during construction:

Alignment	Station(±)
-L-	29+75 to 30+75
-L-	33+75 to 39+25
-L-	41+75 to 43+75
-L-	44+75 to 47+25
-L-	59+75 to 73+25
-L-	74+75 to 94+55
-L1-	14+50 to 18+50
-Y6-	10+00 to 16+00
-RABB-	10+00 to 10+60
-RABC-	10+60 to 12+41.61
-RABD-	12+10 to 13+14.22
-Y6-	20+50 to 25+59.95

4) The following sections contain high plasticity soils which have the potential to cause embankment/subgrade and or slope stability problems during construction:

Alignment	Station(±)
-L-	26+00 to 43+75
-L-	47+25 to 72+25
-L-	77+75 to 82+75
-L-	93+25 to 94+55
-L1-	10+00 to 20+10.59
-RABA-	10+00 to 11+35
-RABB-	10+60 to 11+47.75
-RABC-	10+60 to 12+41.61
-RABD-	10+00 to 12+10

5) The following sections contain wet to saturated soils which have the potential to cause embankment/subgrade and or slope stability problems during construction:

Alignment	Station(±)
-L-	44+75 to 47+25
-L-	73+25 to 77+75
-L-	90+75 to 91+75

6) The following section contains groundwater within 6 feet of the proposed grade:

Alignment	Station(±)
-L-	76+25 to 77+75

7) The following section contains artificial fill material. Artificial fill is fill material placed outside of the roadway embankment by entities other than the NCDOT and thus without the quality and compaction controls inherent in roadway embankment construction. The artificial fill encountered extended to a depth of approximately 1 foot below the existing ground surface:

Alignment	Station to Station (±)	Offset (±)
-L-	32+75 to 33+25	12’ LT to +49’ LT

Water Wells

Water wells were not identified within the project boundaries during the site investigation for this project. Should any water wells be found within the proposed right of way limits on this project, they should be sealed in accordance with the North Carolina Department of Transportation Standard Specification, Section 205, “Sealing Abandoned Wells”.

REVISIONS

-L-

PI Sta 10+85.56	PI Sta 12+02.12	PI Sta 15+34.50	PI Sta 17+38.96
Δ = 7° 30' 20.3" (RT)	Δ = 10° 17' 12.9" (RT)	Δ = 0° 42' 54.7" (RT)	Δ = 1° 02' 14.5" (LT)
D = 7° 38' 22.0"	D = 7° 38' 22.0"	D = 1° 31' 40.4"	D = 0° 17' 11.3"
L = 98.25'	L = 134.66'	L = 46.81'	L = 362.10'
T = 49.19'	T = 67.51'	T = 23.40'	T = 181.06'
R = 750.00'	R = 750.00'	R = 3,750.00'	R = 20,000.00'
SE = MATCH EXIST.	SE = MATCH EXIST.	SE = MATCH EXIST.	SE = MATCH EXIST.
RO = MATCH EXIST.	RO = MATCH EXIST.	RO = MATCH EXIST.	RO = MATCH EXIST.

~~FOR -L- PROFILE, SEE SHEET 13~~

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NC LICENSE #F-0102
200 SOUTH TRYON, SUITE 200
CHARLOTTE, N.C. 28202

RIGHT-OF-WAY REV.

CONST. REV.

NC GRID
NAD 83 NA 2011

PROJECT REFERENCE NO.	SHEET NO.
U-5108	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-Y- POT Sta. 10+00.00

-L- POT Sta. 10+00.00

-L- PCC Sta. 11+34.61 =
-Y- POT Sta. 11+62.29

-L- PT Sta. 12+69.27

-L- PC Sta. 15+11.10

-L- PT Sta. 19+20.01

15+00

20+00

865' LT TURN LANE

100' TAPER

EXIST

EXIST

EXIST

EXIST

N 18° 24' 01.2" E

66'

11'
10'
11'

5'

-L- NORTHCROSS DRIVE

N 18° 04' 41.4" E

11'
10'
11'

50'

N 0° 36' 27.9" E

-Y- NC 73 (SAM FURR ROAD)

S 83° 53' 05.3" E

-L- PC Sta. 10+36.36

-Y- POT Sta. 13+17.95

-L- PRC Sta. 15+57.91

BEGIN TIP PROJECT U-5108
BEGIN CONSTRUCTION
-L- POC Sta. 11+88.00
BEGIN MILLING AND RESURFACING

MATCHLINE -L- STA 21+50 (SHEET 5)

2022 ADT / 2040 ADT	-Y- NC 73 (SAM FURR ROAD)			
	DHV = 9% DIR = 55% TTST = 1% DUAL = 2%	43,000 / 64,500	DHV = 10% DIR = 70% TTST = 1% DUAL = 3%	
-L- NORTHCROSS DRIVE DHV = 9% DIR = 55% TTST = 1% DUAL = 2%	14,000 / 15,900	5,000 / 6,100	1900 / 3200	9,900 / 16,800
		6,900 / 7,400	4,000 / 4,600	-L- NORTHCROSS DRIVE
	47,000 / 67,200	DHV = 8% DIR = 55% TTST = 1% DUAL = 2%		
	-Y- NC 73 (SAM FURR ROAD)			

$DATE$
$FILE$

PROJECT REFERENCE NO.	SHEET NO.
U-5108	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Kimley»Horn

NC LICENSE #F-0102
200 SOUTH TRYON, SUITE 200
CHARLOTTE, N.C. 28202

RIGHT-OF-WAY REV.

CONST. REV.

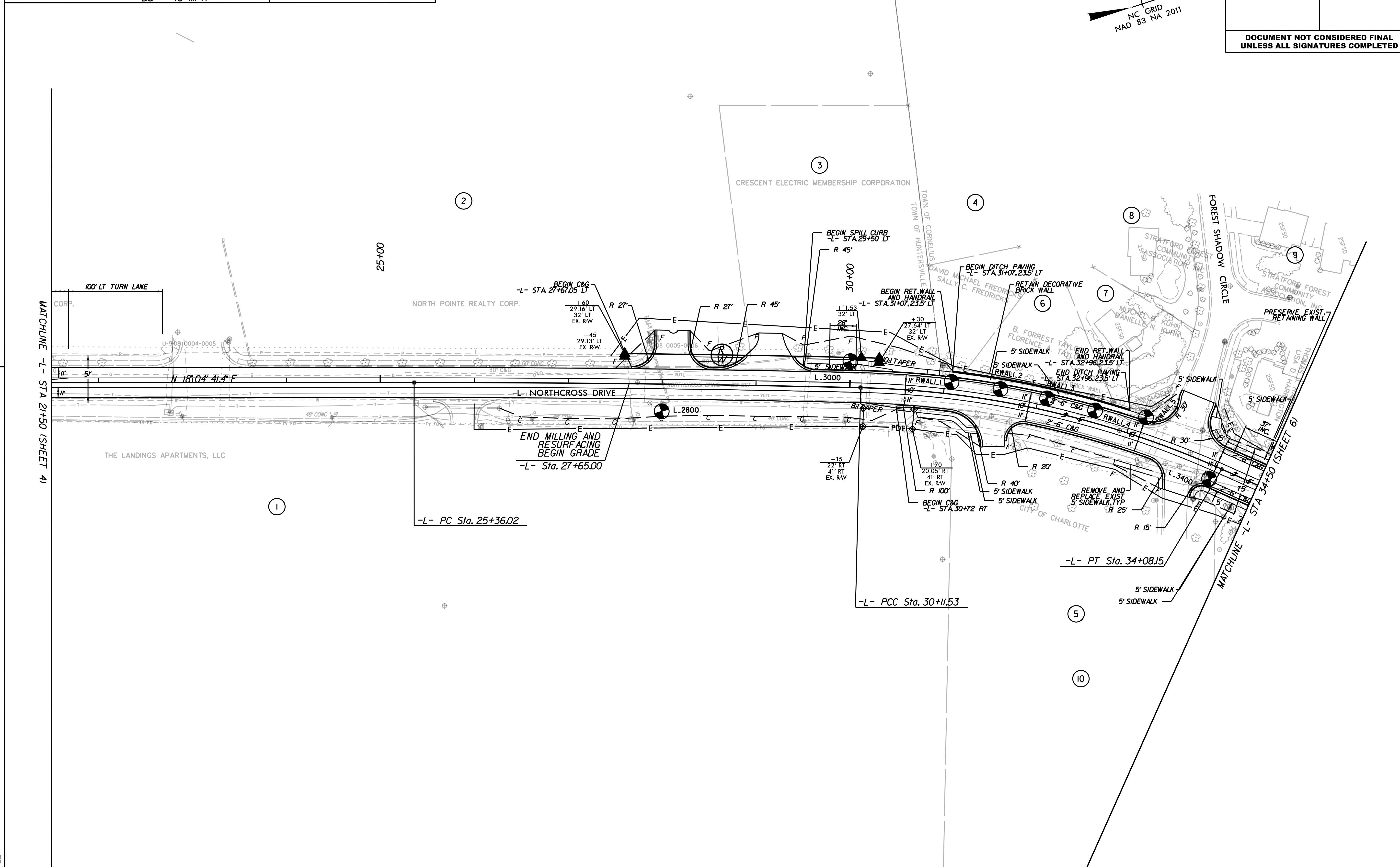
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS

-L-

PI Sta 27+73.78	PI Sta 32+12.48
Δ = 1° 21' 44.0" (RT)	Δ = 22° 43' 29.1" (RT)
D = 0° 17' 11.3"	D = 5° 43' 46.5"
L = 475.51'	L = 396.62'
T = 237.77'	T = 200.95'
R = 20,000.00'	R = 1,000.00'
SE = MATCH EXIST.	SE = 3.4%
RO = MATCH EXIST.	RO = 94'
	DS = 40 MPH

~~FOR -L- PROFILE, SEE SHEET 13~~



$DATE$
$FILE$

-L-	
PI Sta 40+28.98 △ = 60° 35' 59.4" (LT) D = 10° 44' 58.8" L = 563.74' T = 311.46' R = 533.00' SE = 4% RO = 112' DS = 40 MPH	~~FOR -L- PROFILE, SEE SHEET 14~~

PAVEMENT REMOVAL

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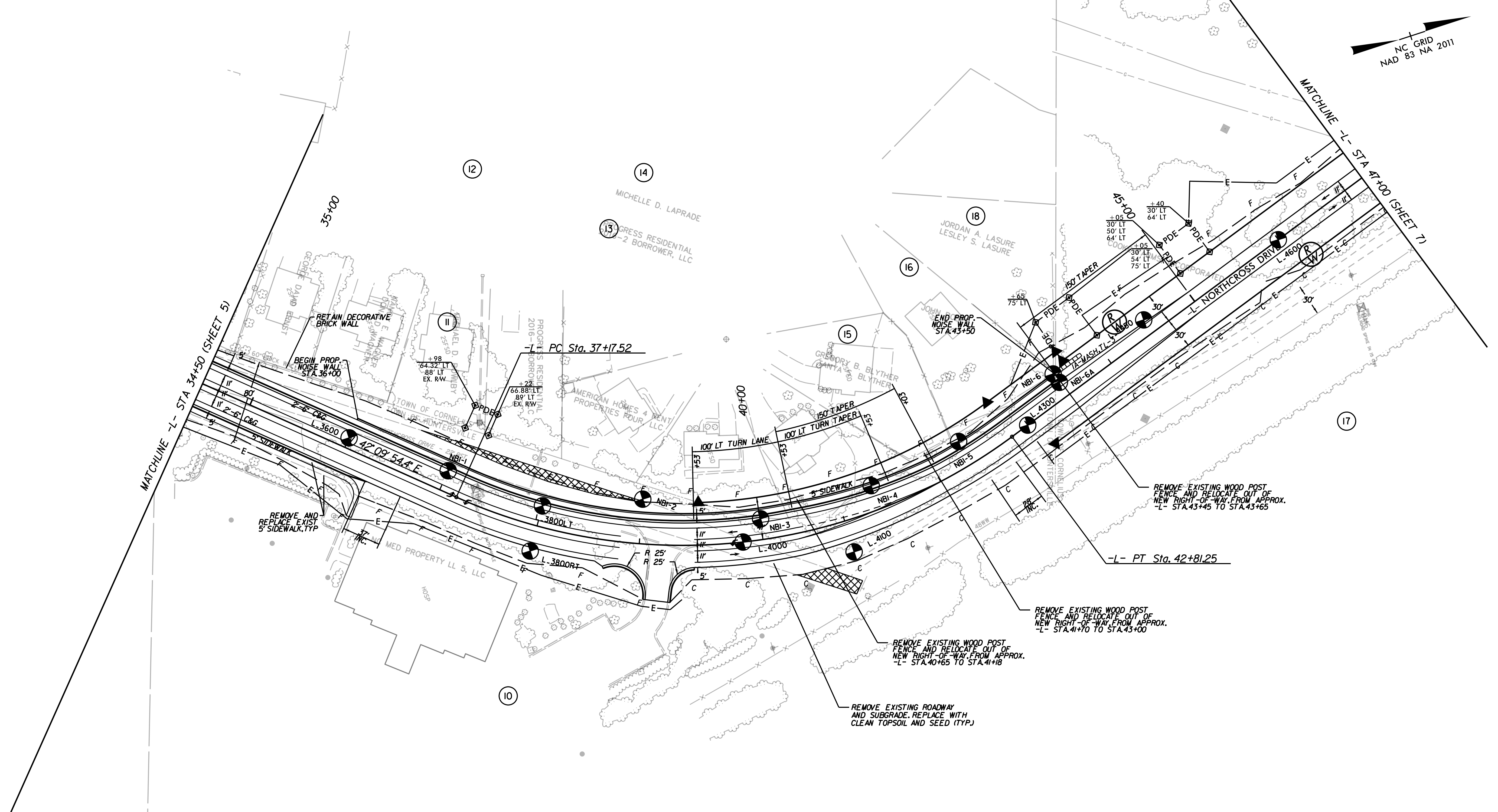
200 SOUTH TRYON, SUITE 200
CHARLOTTE, N.C. 28202

RIGHT-OF-WAY REV.
CONST. REV.

PROJECT REFERENCE NO.	SHEET NO.
U-5108	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS



$DATE$
$FILE$

-L-
PI Sta 61+08.65
△ = 55° 36' 10.2" (LT)
D = 10° 44' 58.8"
L = 517.25'
T = 281.04'
R = 533.00'
SE = 4%
RO = 112'
DS = 40 MPH

~~FOR -L- PROFILE, SEE SHEET 14~~

REVISIONS

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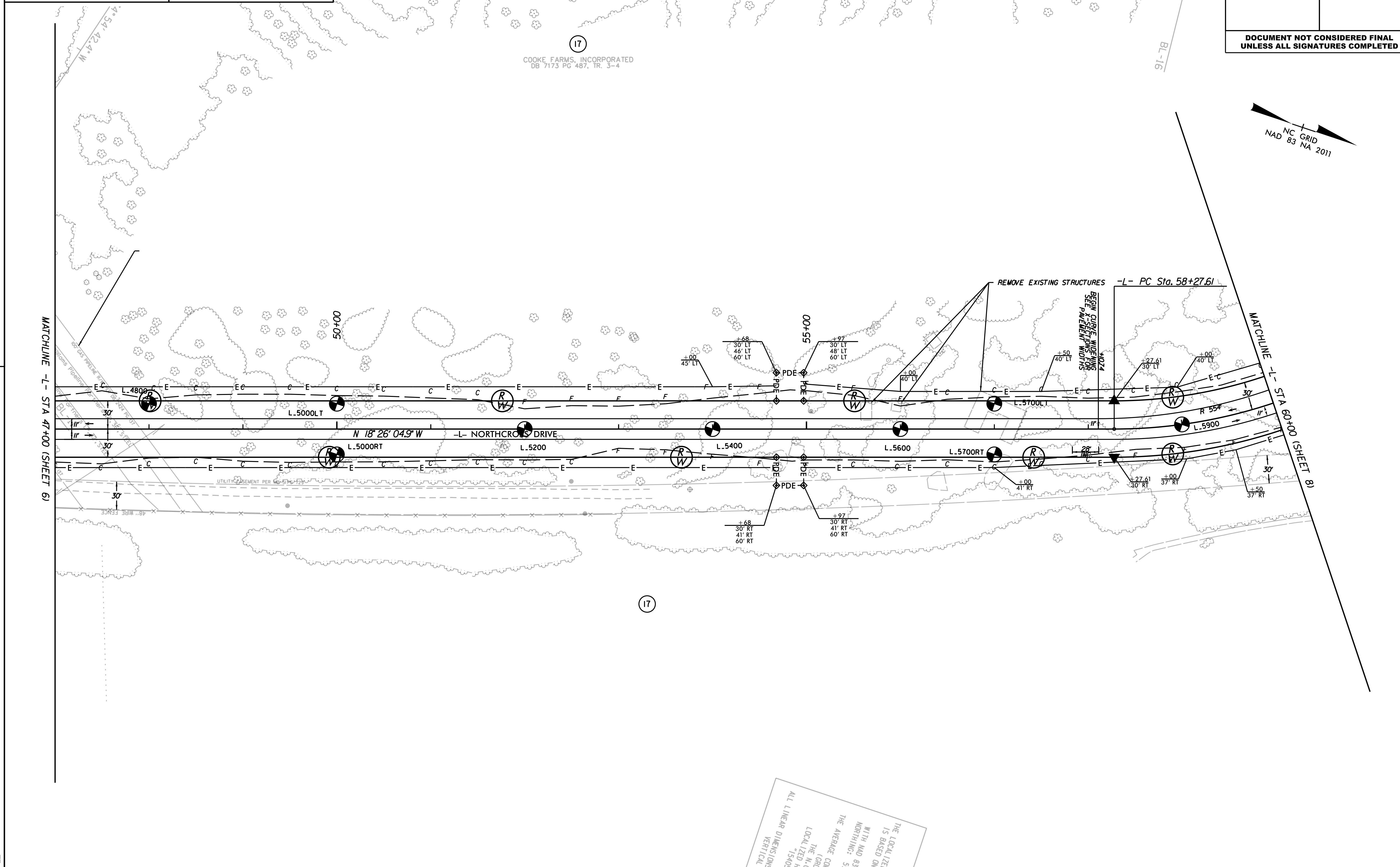
200 SOUTH TRYON, SUITE 200
CHARLOTTE, N.C. 28202

RIGHT-OF-WAY REV.

CONST. REV.

PROJECT REFERENCE NO.	SHEET NO.
U-5108	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



$DATE$
$FILE$

-L-
PI Sta 61+08.65
Δ = 55° 36' 10.2" (LT)
D = 10° 44' 58.8"
L = 517.25'
T = 281.04'
R = 533.00'
SE = 4%
RO = 112'
DS = 40 MPH

~~FOR -L- PROFILE, SEE SHEET 15~~

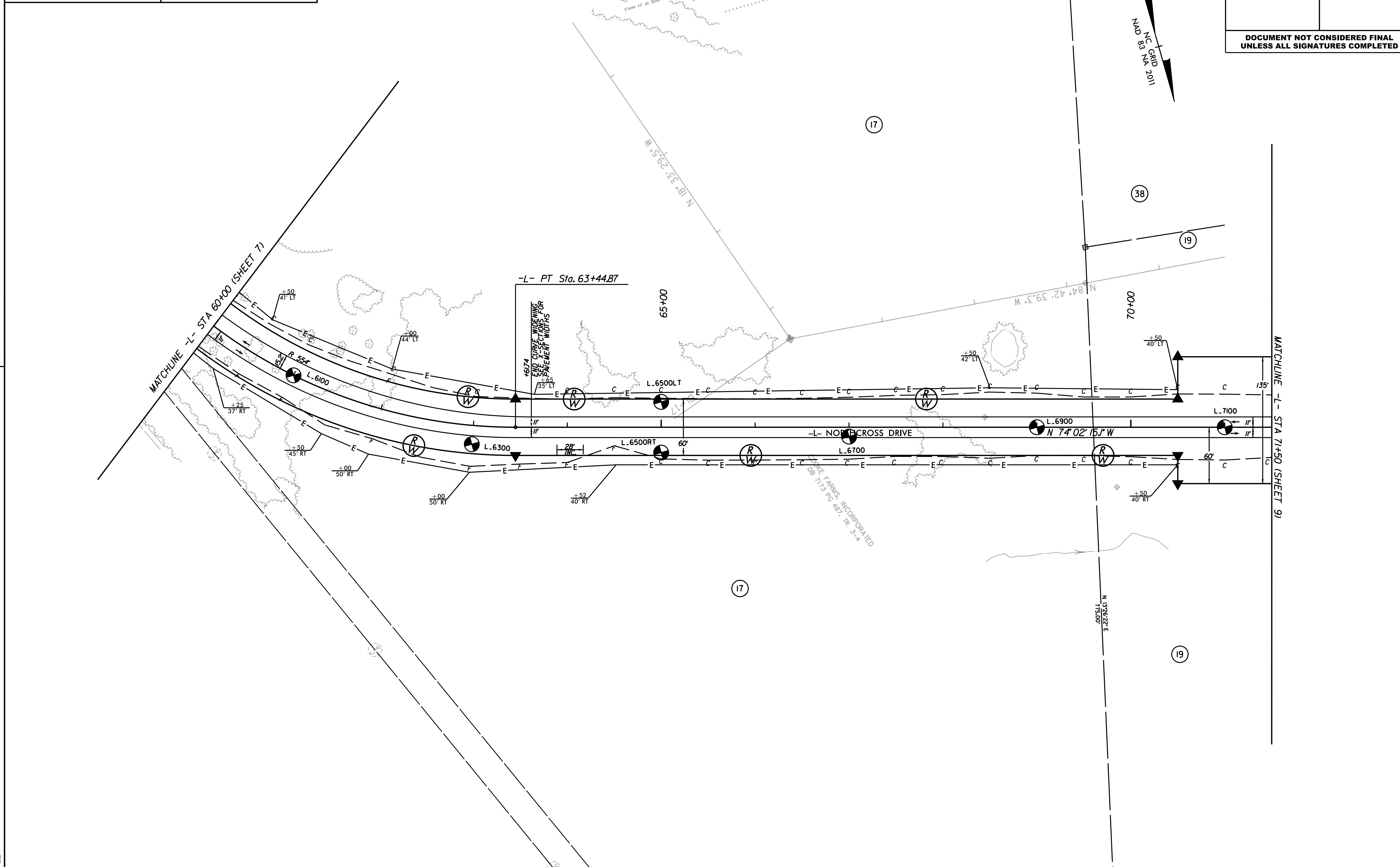
Kimley»Horn
NC LICENSE #F-0102
200 SOUTH TRYON, SUITE 200
CHARLOTTE, N.C. 28202

RIGHT-OF-WAY REV.
CONST. REV.

PROJECT REFERENCE NO.	SHEET NO.
U-5108	8
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS



$DATE$
$FILE$

PROJECT REFERENCE NO.	SHEET NO.
U-5108	9
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Kimley»Horn
NC LICENSE #F-0102
200 SOUTH TRYON, SUITE 200
CHARLOTTE, N.C. 28202

RIGHT-OF-WAY REV.
CONST. REV.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS

-L-

PI Sta 77+10.59	PI Sta 84+87.20
△ = 49° 48′ 21.7″ (RT)	△ = 87° 27′ 55.6″ (LT)
D = 16° 22′ 12.8″	D = 16° 22′ 12.8″
L = 304.25′	L = 534.30′
T = 162.49′	T = 334.85′
R = 350.00′	R = 350.00′
SE = 2%	SE = 2%
RO = 56′	RO = 56′
DS = 30 MPH	DS = 30 MPH

~~FOR -L- PROFILE, SEE SHEET 15 AND 16~~

~~FOR GW-L- PROFILE, SEE SHEET 18~~

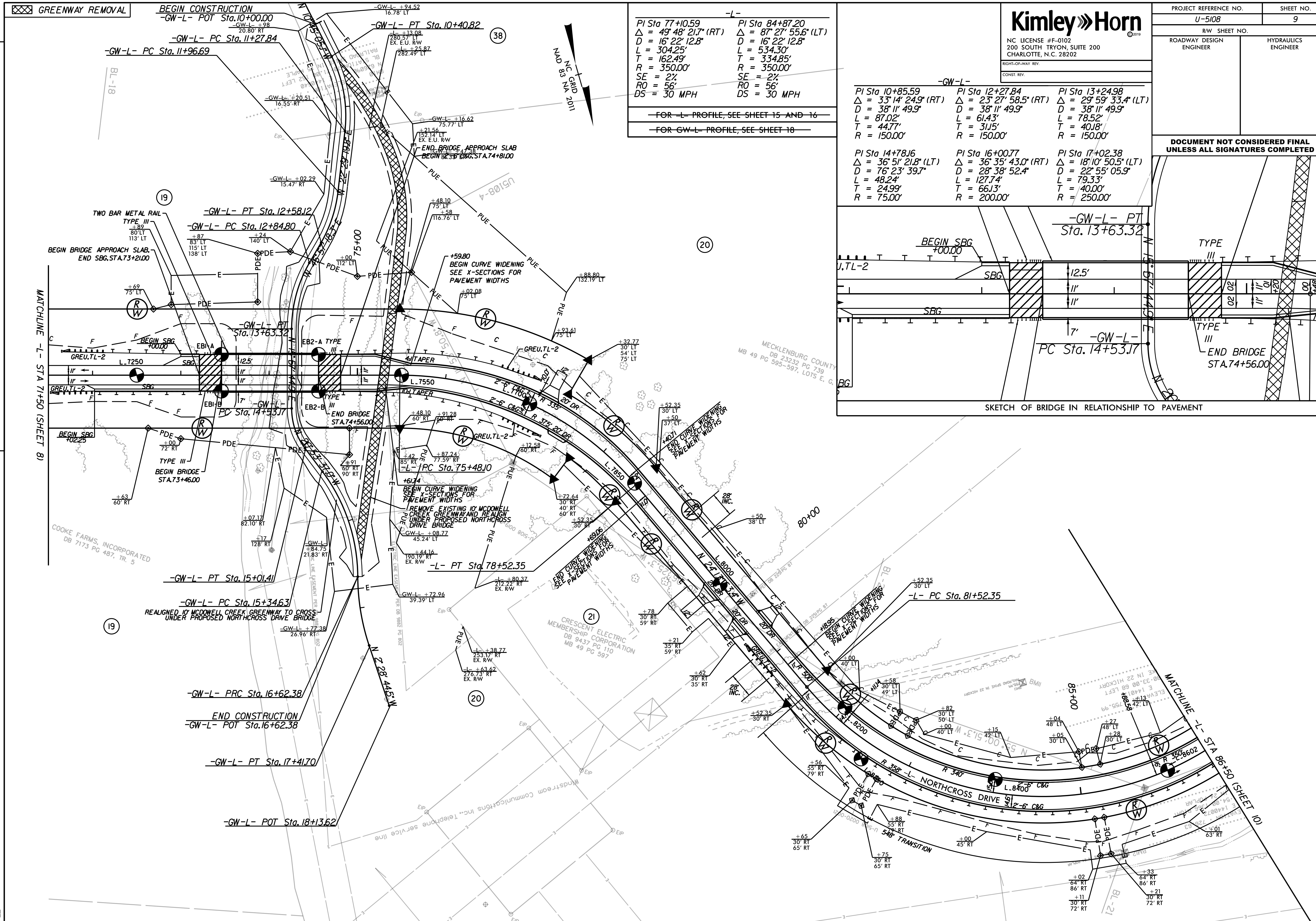
-GW-L-

PI Sta 10+85.59	PI Sta 12+27.84	PI Sta 13+24.98
△ = 33° 14′ 24.9″ (RT)	△ = 23° 27′ 58.5″ (RT)	△ = 29° 59′ 33.4″ (LT)
D = 38° 11′ 49.9″	D = 38° 11′ 49.9″	D = 38° 11′ 49.9″
L = 87.02′	L = 61.43′	L = 78.52′
T = 44.77′	T = 31.15′	T = 40.18′
R = 150.00′	R = 150.00′	R = 150.00′

PI Sta 14+78.16	PI Sta 16+00.77	PI Sta 17+02.38
△ = 36° 51′ 21.8″ (LT)	△ = 36° 35′ 43.0″ (RT)	△ = 18° 10′ 50.5″ (LT)
D = 76° 23′ 39.7″	D = 28° 38′ 52.4″	D = 22° 55′ 05.9″
L = 48.24′	L = 127.74′	L = 79.33′
T = 24.99′	T = 66.13′	T = 40.00′
R = 75.00′	R = 200.00′	R = 250.00′

-GW-L- PT
Sta. 13+63.32
BEGIN SBG
+00.00
TYPE III
SBG
12.5′
11′
11′
7′
-GW-L-
PC Sta. 14+53.17
TYPE III
END BRIDGE
STA.74+56.00

SKETCH OF BRIDGE IN RELATIONSHIP TO PAVEMENT



$DATE$
$FILE$

-L-	-L1-	-Y1-	-Y1-
PI Sta 91+15.66	PI Sta 15+81.77	PI Sta 10+16.68	PI Sta 10+46.56
△ = 114° 56′ 03.7″ (RT)	△ = 69° 12′ 48.7″ (LT)	△ = 8° 28′ 49.9″ (RT)	△ = 27° 05′ 58.4″ (RT)
D = 33° 42′ 12.2″	D = 31° 49′ 51.6″	D = 25° 27′ 53.2″	D = 104° 10′ 26.9″
L = 341.02′	L = 217.44′	L = 33.30′	L = 26.01′
T = 266.51′	T = 124.21′	T = 16.68′	T = 13.25′
R = 170.00′	R = 180.00′	R = 225.00′	R = 55.00′
SE = 4%	SE = NC	SE = NC	SE = NC
RO = 56′	RO = NONE	RO = NONE	RO = NONE
DS = 25 MPH	DS = 20 MPH		

~~FOR -L- PROFILE, SEE SHEET 16~~
~~FOR -L1- PROFILE, SEE SHEET 16~~

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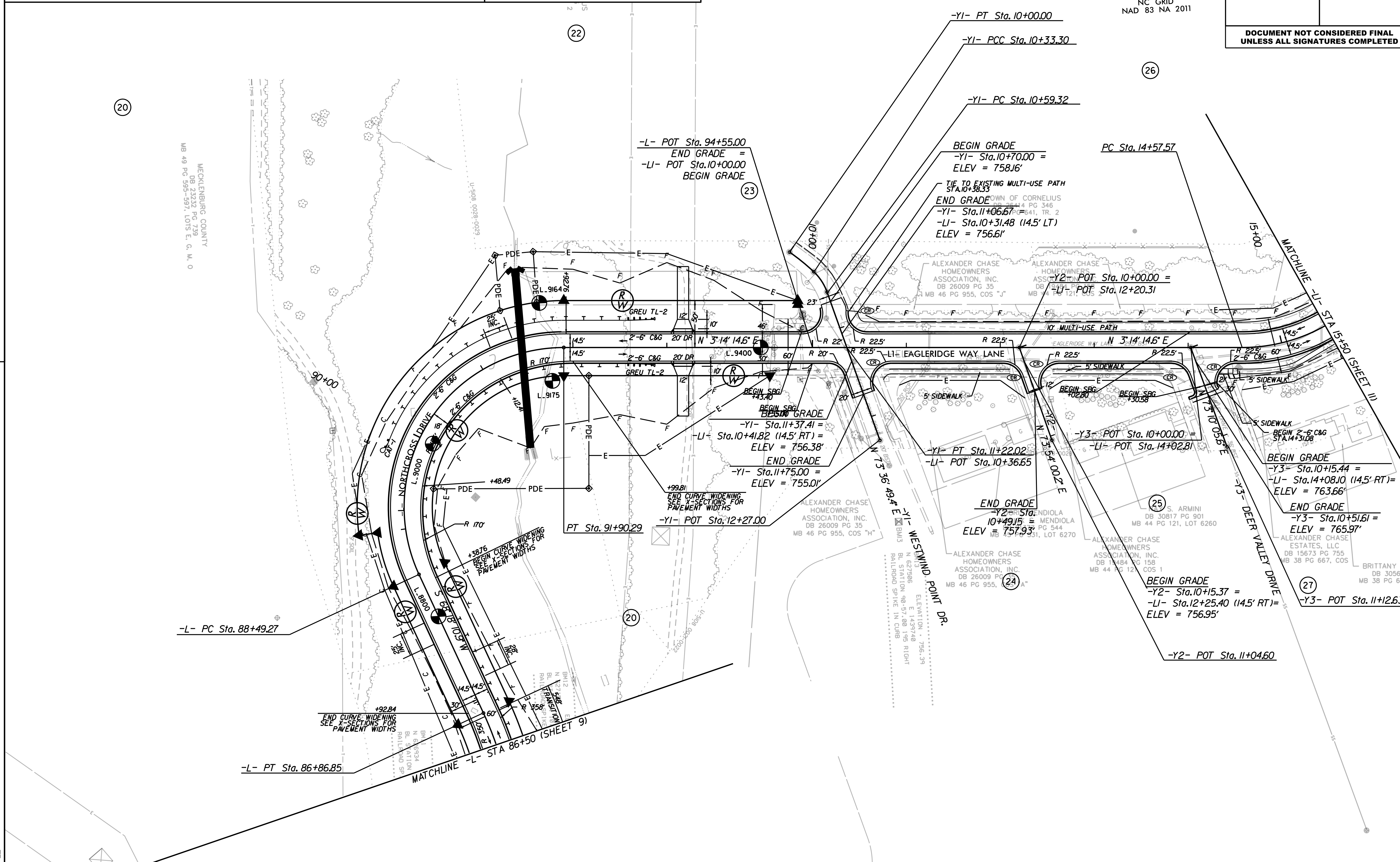
200 SOUTH TRYON, SUITE 200
CHARLOTTE, N.C. 28202

RIGHT-OF-WAY REV.
CONST. REV.

PROJECT REFERENCE NO.	SHEET NO.
U-5108	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS



$DATE$
$FILE$

-L1-

PI Sta 15+81.77	PI Sta 17+67.02	PI Sta 19+29.95
Δ = 69° 12' 48.7" (LT)	Δ = 46° 20' 24.1" (RT)	Δ = 10° 04' 12.5" (RT)
D = 31° 49' 51.6"	D = 26° 38' 57.1"	D = 6° 13' 40.1"
L = 217.44'	L = 173.89'	L = 161.70'
T = 124.21'	T = 92.02'	T = 81.06'
R = 180.00'	R = 215.00'	R = 920.00'
SE = NC	SE = NC	SE = NC
RO = NONE	RO = NONE	RO = NONE
DS = 20 MPH	DS = 20 MPH	DS = 20 MPH

-Y6-

PI Sta 12+85.45	PI Sta 16+74.96	PI Sta 19+15.56
Δ = 20° 43' 41.1" (LT)	Δ = 25° 18' 12.4" (RT)	Δ = 15° 39' 38.4" (LT)
D = 3° 41' 47.4"	D = 11° 27' 33.0"	D = 5° 58' 05.9"
L = 560.75'	L = 220.81'	L = 262.40'
T = 283.47'	T = 112.24'	T = 132.02'
R = 1,550.00'	R = 500.00'	R = 960.00'
SE = 6.2%	SE = NC	SE = NC
RO = 223	RO = NONE	RO = NONE
DS = 50 MPH	DS = 20 MPH	DS = 20 MPH

~~FOR -Y6- PROFILE, SEE SHEET 17~~

RAB DETAIL, SEE SHEET 11B

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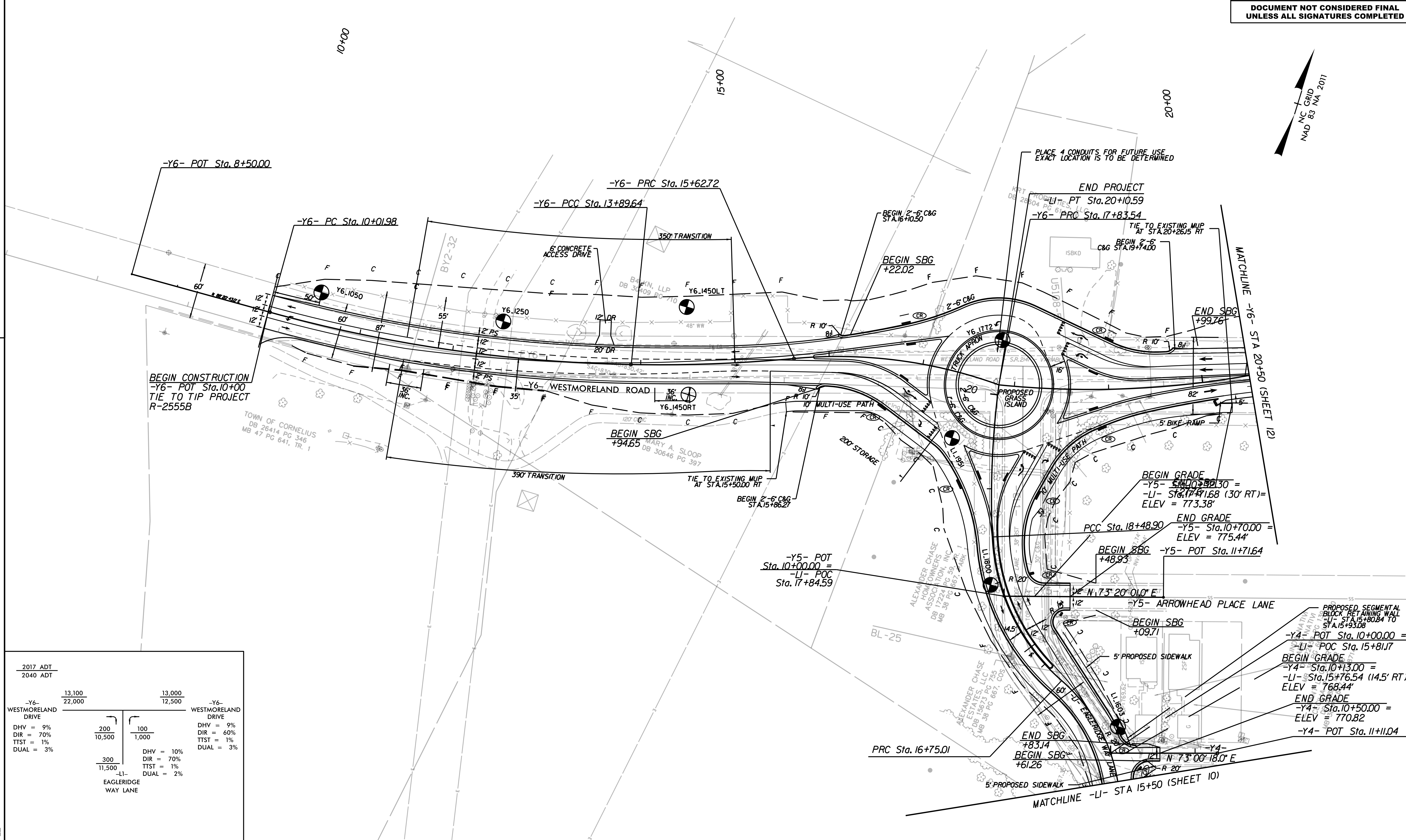
NC LICENSE #F-0102
200 SOUTH TRYON, SUITE 200
CHARLOTTE, N.C. 28202
RIGHT-OF-WAY REV.
CONST. REV.

PROJECT REFERENCE NO.	SHEET NO.
U-5108	11
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS



10+00
15+00
20+00
NC GRID NAD 83 NA 2011
-Y6- POT Sta. 8+50.00
-Y6- PC Sta. 10+01.98
-Y6- PCC Sta. 13+89.64
-Y6- PRC Sta. 15+62.72
350' TRANSITION
6' CONCRETE ACCESS DRIVE
BEGIN 2'-6" C&G STA.16+10.50
BEGIN SBG +22.02
PLACE 4 CONDUITS FOR FUTURE USE EXACT LOCATION IS TO BE DETERMINED
END PROJECT
-L1- PT Sta. 20+10.59
-Y6- PRC Sta. 17+83.54
TIE TO EXISTING MUP AT STA.20+26.15 RT
BEGIN 2'-6" C&G STA.19+74.00
MATCHLINE -Y6- STA 20+50 (SHEET 12)
END SBG +99.76
BEGIN CONSTRUCTION
-Y6- POT Sta.10+00
TIE TO TIP PROJECT R-2555B
-Y6- WESTMORELAND ROAD
10' MULTI-USE PATH
PROPOSED GRASS ISLAND
TRUCK APRON
BEGIN SBG +94.65
390' TRANSITION
TIE TO EXISTING MUP AT STA.15+50.00 RT
BEGIN 2'-6" C&G STA.15+86.27
200' STORAGE
5' BIKE RAMP
BEGIN GRADE
-L1- Sta.17+71.68 (30' RT)=
ELEV = 773.38'
END GRADE
-Y5- Sta.10+70.00 =
ELEV = 775.44'
PCC Sta. 18+48.90
BEGIN SBG +48.93
-Y5- POT Sta. 11+71.64
-Y5- POT
Sta. 10+00.00 =
-L1- POC
Sta. 17+84.59
N 73° 20' 01.0" E
-Y5- ARROWHEAD PLACE LANE
BEGIN SBG +09.71
PROPOSED SEGMENTAL BLOCK RETAINING WALL -L1- STA.15+80.84 TO STA.15+93.08
-Y4- POT Sta. 10+00.00 =
-L1- POC Sta. 15+81.17
BEGIN GRADE
-Y4- Sta.10+13.00 =
-L1- Sta.15+76.54 (14.5' RT)=
ELEV = 768.44'
END GRADE
-Y4- Sta.10+50.00 =
ELEV = 770.82
-Y4- POT Sta. 11+11.04
5' PROPOSED SIDEWALK
N 73° 00' 18.0" E
PRC Sta. 16+75.01
END SBG +83.14
BEGIN SBG +61.26
MATCHLINE -L1- STA 15+50 (SHEET 10)
-L1- EAGLERIDGE WAY LANE
TOWN OF CORNELIUS DB 26414 PG 346 MB 47 PG 641, TR. 1
MARY A. SLOOP DB 30646 PG 397
ALEXANDER CHASE HOMEOWNERS ASSOCIATION, INC.
ALEXANDER CHASE ESTATES, LLC
BL-25
BY2-32
2017 ADT
2040 ADT
-Y6- WESTMORELAND DRIVE
13,100
22,000
13,000
12,500
DHV = 9%
DIR = 70%
TTST = 1%
DUAL = 3%
DHV = 9%
DIR = 60%
TTST = 1%
DUAL = 3%
200
10,500
100
1,000
300
11,500
DHV = 10%
DIR = 70%
TTST = 1%
DUAL = 2%
-L1- EAGLERIDGE WAY LANE

$DATE$
$FILE$

ROUNDABOUT GEOMETRY SHEET

PROJECT REFERENCE NO.	SHEET NO.
U-5108	11A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Kimley»Horn
NC LICENSE #F-0102
200 SOUTH TRYON, SUITE 200
CHARLOTTE, N.C. 28202

RIGHT-OF-WAY REV.

CONST. REV.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS

-RABB-
PI Sta 10+42.11
△ = 4° 49' 21.5" (LT)
D = 5° 43' 46.5"
L = 84.17'
T = 42.11'
R = 1,000.00'

-RABB-
PI Sta 11+16.08
△ = 12° 08' 33.8" (LT)
D = 19° 05' 54.9"
L = 63.58'
T = 31.91'
R = 300.00'

-RABA-
PI Sta 11+15.80
△ = 27° 38' 35.8" (LT)
D = 52° 05' 13.5"
L = 53.07'
T = 27.06'
R = 110.00'

-RABA-
PI Sta 11+45.10
△ = 0° 09' 03.6" (RT)
D = 2° 17' 30.6"
L = 6.59'
T = 3.29'
R = 2,500.00'

-RABA-
PI Sta 11+80.60
△ = 0° 16' 04.5" (LT)
D = 0° 24' 57.5"
L = 64.40'
T = 32.20'
R = 13,773.61'

-RABC-
PI Sta 10+03.42
△ = 3° 33' 39.3" (RT)
D = 52° 05' 13.5"
L = 6.84'
T = 3.42'
R = 110.00'

-RABC-
PI Sta 10+36.04
△ = 29° 43' 58.9" (RT)
D = 52° 05' 13.5"
L = 57.08'
T = 29.20'
R = 110.00'

-RABC-
PI Sta 11+38.09
△ = 17° 17' 56.3" (RT)
D = 114° 35' 29.6"
L = 15.10'
T = 7.61'
R = 50.00'

-RABC-
PI Sta 11+94.54
△ = 27° 30' 43.9" (RT)
D = 28° 38' 52.4"
L = 96.04'
T = 48.96'
R = 200.00'

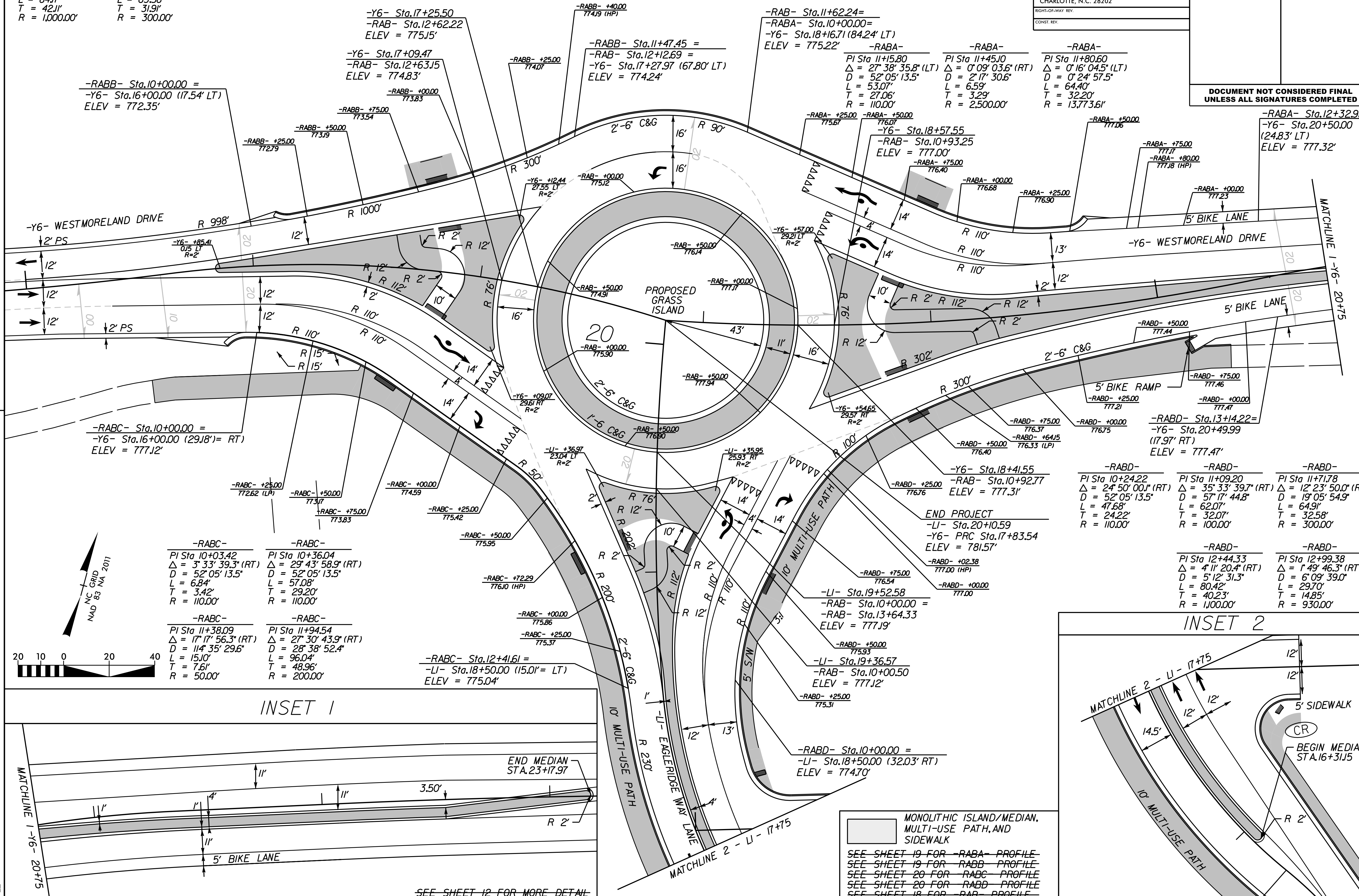
-RABD-
PI Sta 10+24.22
△ = 24° 50' 00.1" (RT)
D = 52° 05' 13.5"
L = 47.68'
T = 24.22'
R = 110.00'

-RABD-
PI Sta 11+09.20
△ = 35° 33' 39.7" (RT)
D = 57° 17' 44.8"
L = 62.07'
T = 32.07'
R = 100.00'

-RABD-
PI Sta 11+71.78
△ = 12° 23' 50.0" (RT)
D = 19° 05' 54.9"
L = 64.91'
T = 32.58'
R = 300.00'

-RABD-
PI Sta 12+44.33
△ = 4° 11' 20.4" (RT)
D = 5° 12' 31.3"
L = 80.42'
T = 40.23'
R = 1,100.00'

-RABD-
PI Sta 12+99.38
△ = 1° 49' 46.3" (RT)
D = 6° 09' 39.0"
L = 29.70'
T = 14.85'
R = 930.00'



MONOLITHIC ISLAND/MEDIAN, MULTI-USE PATH, AND SIDEWALK

~~SEE SHEET 12 FOR MORE DETAIL~~

~~SEE SHEET 19 FOR -RABA- PROFILE~~
~~SEE SHEET 19 FOR -RABB- PROFILE~~
~~SEE SHEET 20 FOR -RABC- PROFILE~~
~~SEE SHEET 20 FOR -RABD- PROFILE~~
~~SEE SHEET 18 FOR -RAB- PROFILE~~

$DATE$
$FILE$

REVISIONS

-Y6-

PI Sta 20+90.34	PI Sta 22+56.02
△ = 9°13' 52.1" (RT)	△ = 1° 35' 37.1" (RT)
D = 10° 25' 02.7"	D = 1° 38' 13.3"
L = 88.61'	L = 97.35'
T = 44.40'	T = 48.68'
R = 550.00'	R = 3,500.00'
SE = NC	SE = MATCH EXIST.
RO = NONE	RO = MATCH EXIST.
DS = 20 MPH	

~~FOR -Y6- PROFILE, SEE SHEET 17~~

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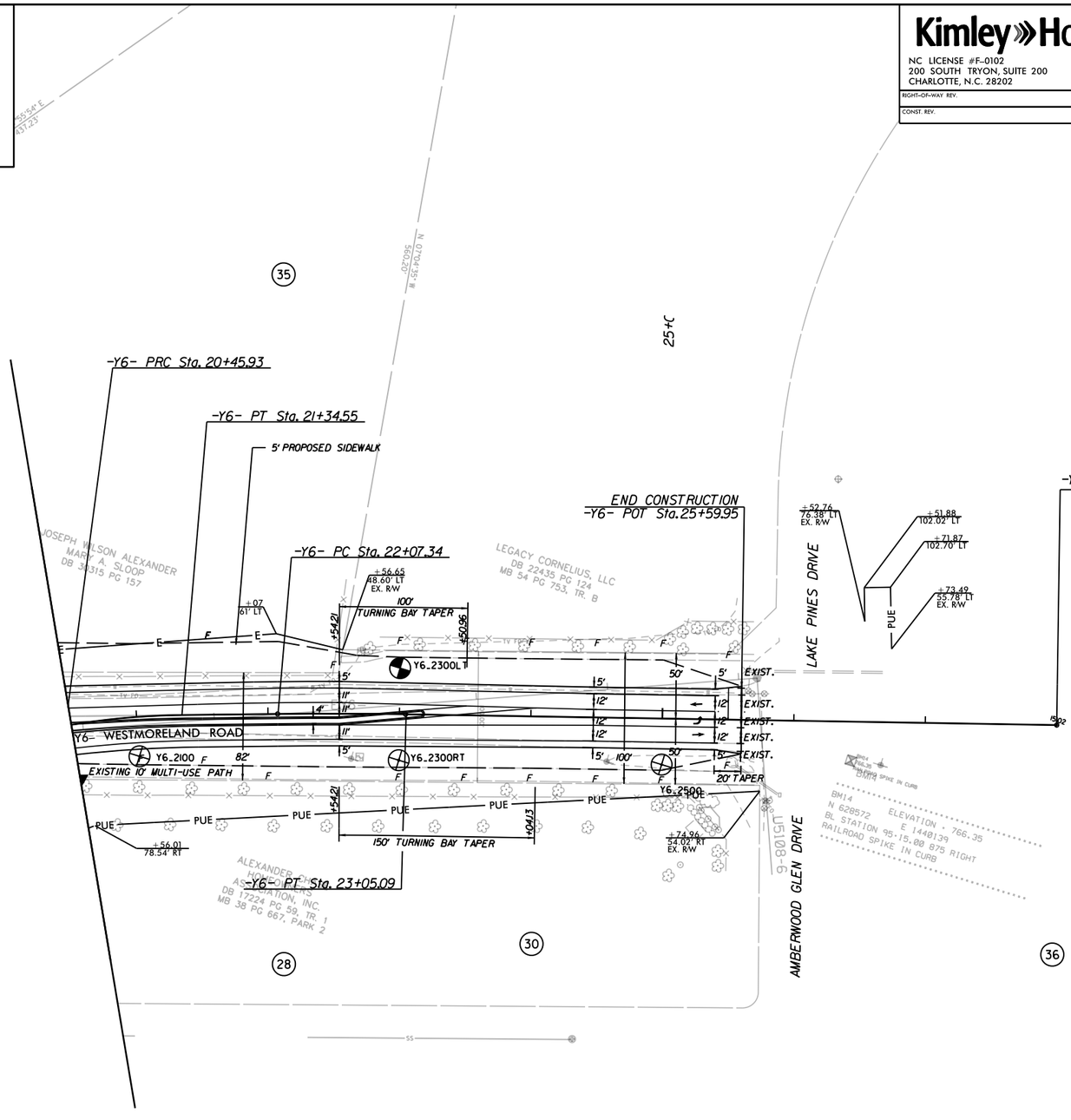
200 SOUTH TRYON, SUITE 200
CHARLOTTE, N.C. 28202

RIGHT-OF-WAY REV.

CONST. REV.

PROJECT REFERENCE NO.	SHEET NO.
U-5108	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



$DATE$
$FILE$

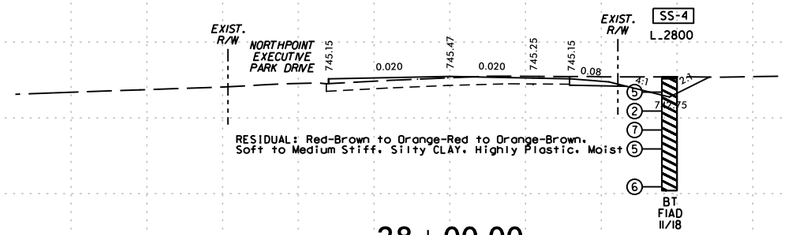
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	13

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

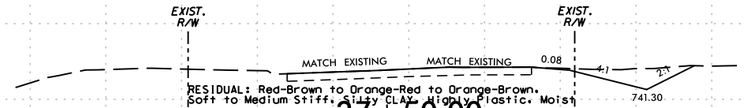
770 760 750 740 730 720

SOIL TEST RESULTS

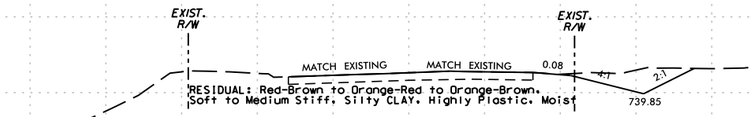
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
SS-4	29' RT	28+00	1.0-2.5	A-7-5(35)	75	41	15	11	14	60	100	91	77	31.0	-



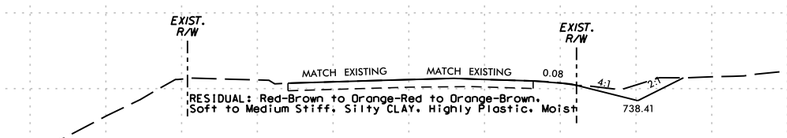
28+00.00



27+50.00



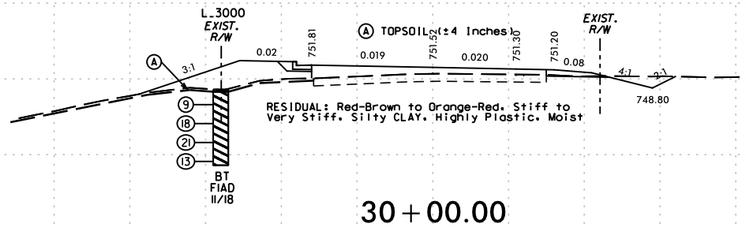
27+00.00



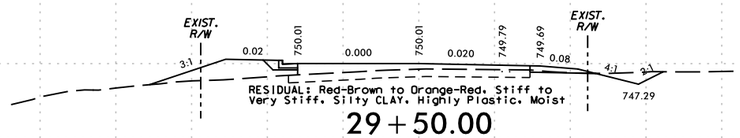
26+50.00

NOTE: End Grade -L- STA. 94+55
Begin Milling and Resurfacing -LI- STA. 10+00
-L- STA. 94+55 = -LI- STA. 10+00

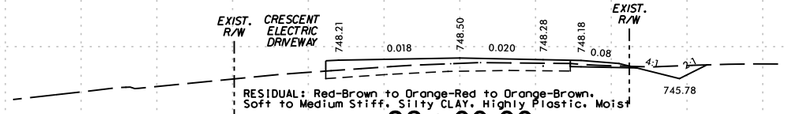
—L—



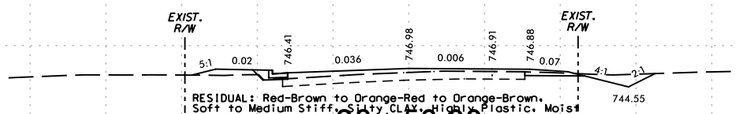
30+00.00



29+50.00



29+00.00



28+50.00

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	15

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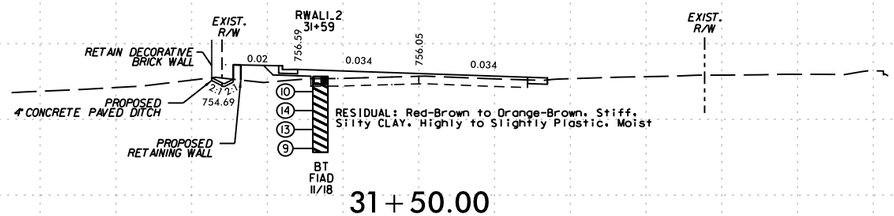
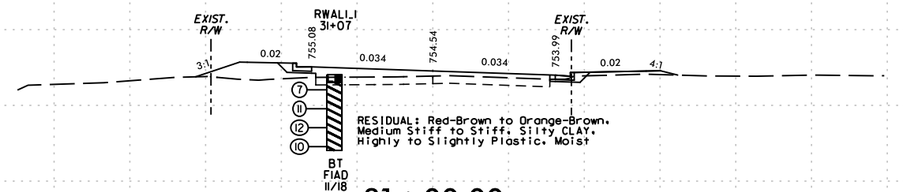
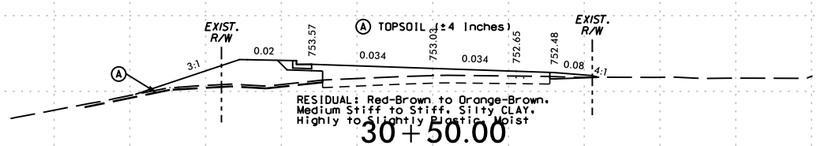
770 760 750 740



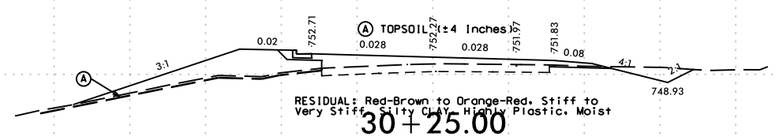
31 + 50.00



31 + 00.00



30 + 50.00



30 + 25.00

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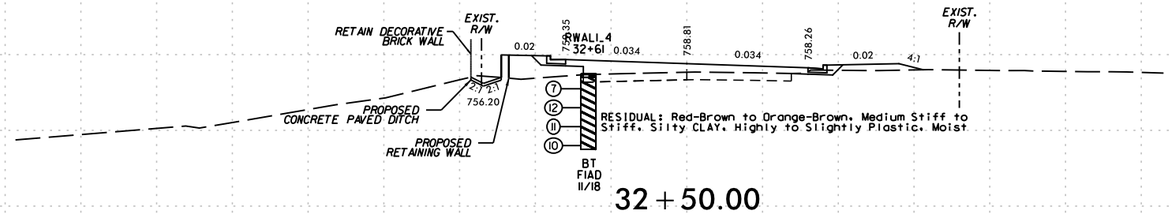
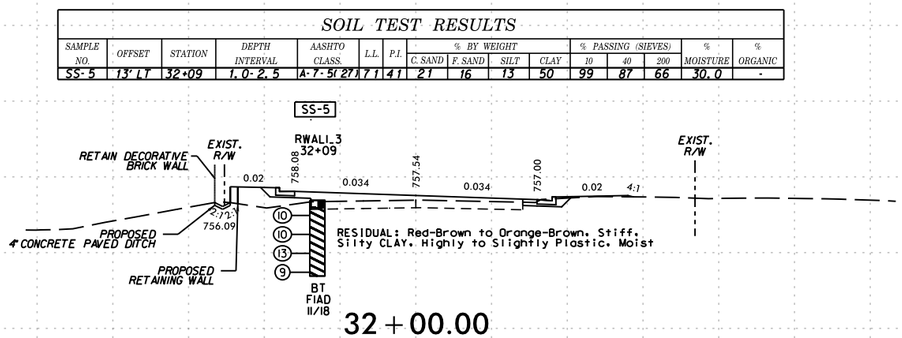
780 770 760 750 740 790 780 770 760 750 740



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	13' LT	32+09	1.0-2.5	A-7-5(27)	71	41	21	16	13	50	99	87	66	30.0	-



0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	17

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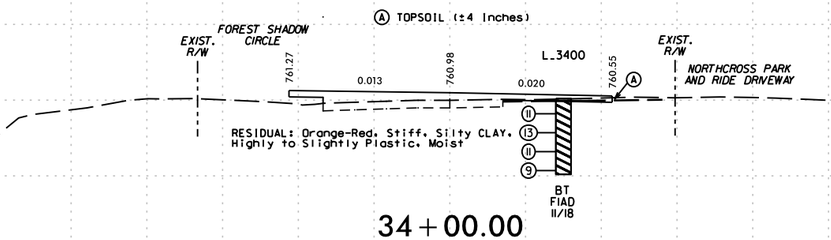
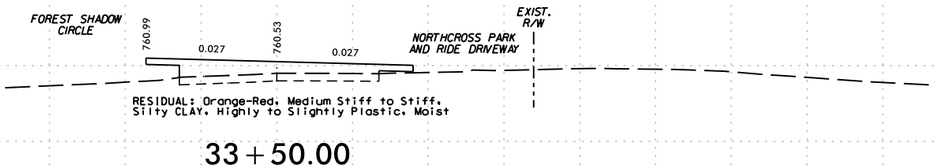
780 770 760 750 740



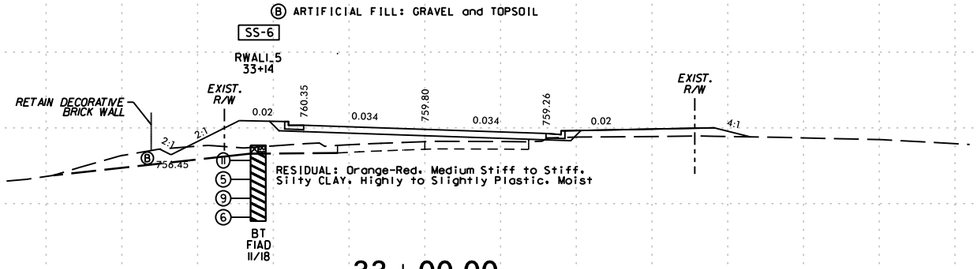
34 + 00.00



33 + 50.00

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE	% ORGANIC
SS-6	22' LT	33+14	8.5-10.0	A-7-5(7)	53	12	26	20	9	45	100	82	59	33.3	-

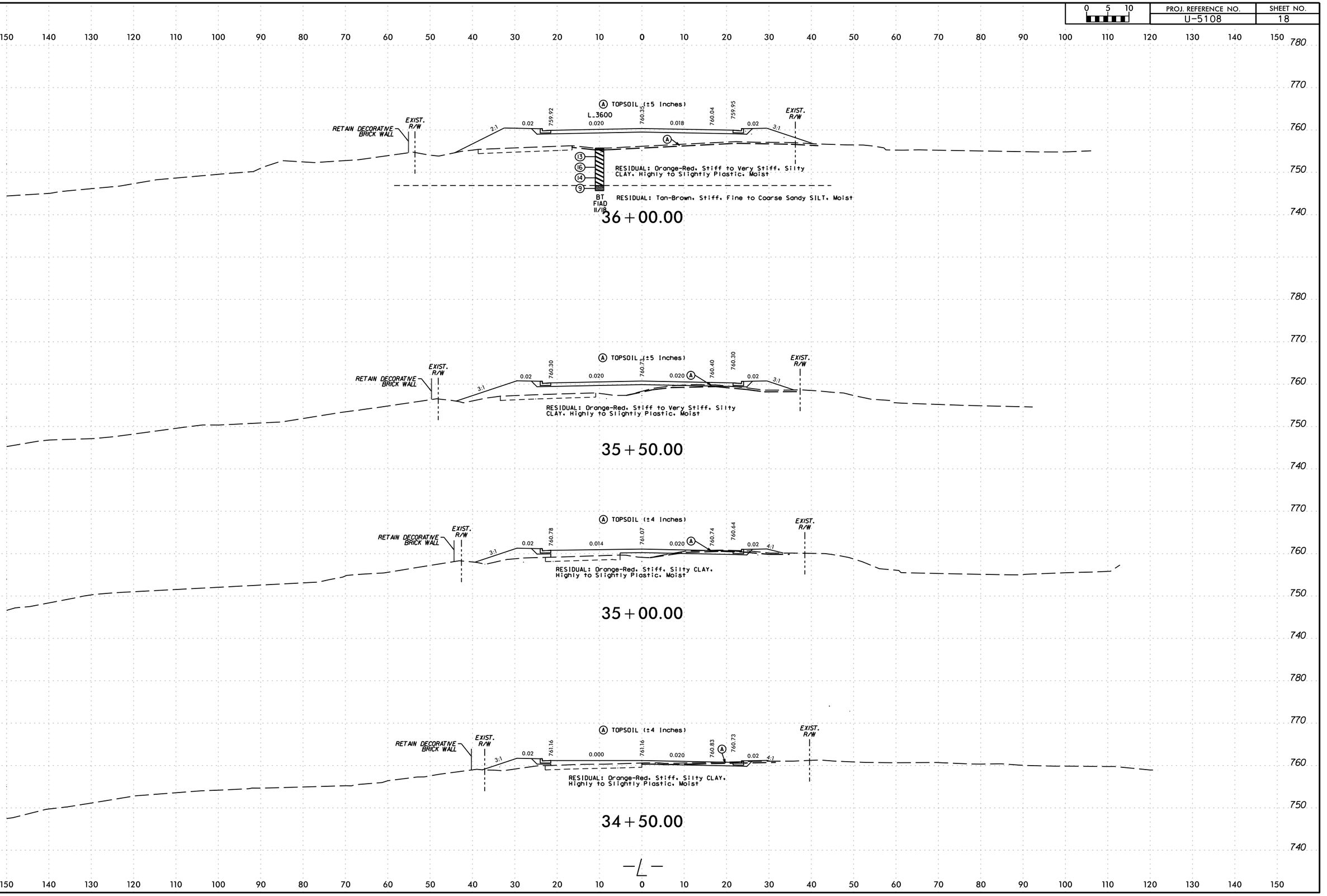


33 + 00.00

810 800 790 780 770 760 750 740

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

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	18



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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	19

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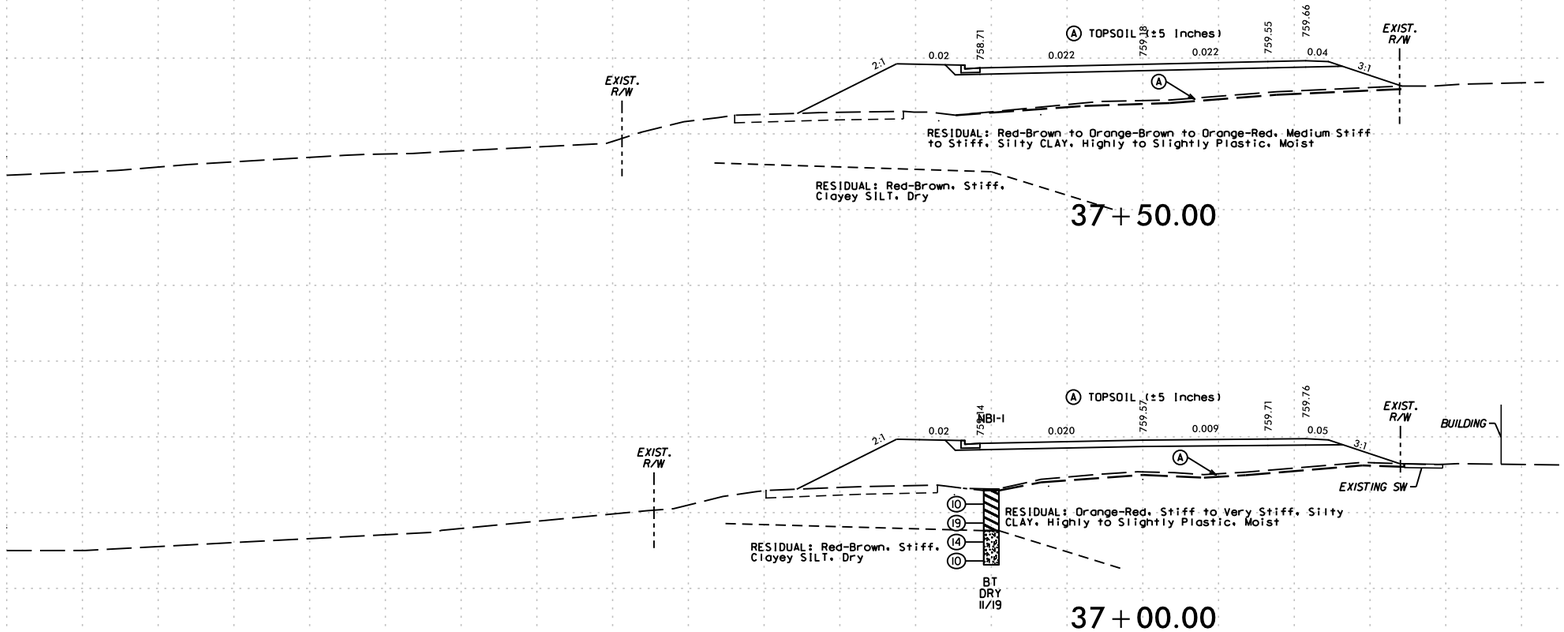
770 760 750 740 730



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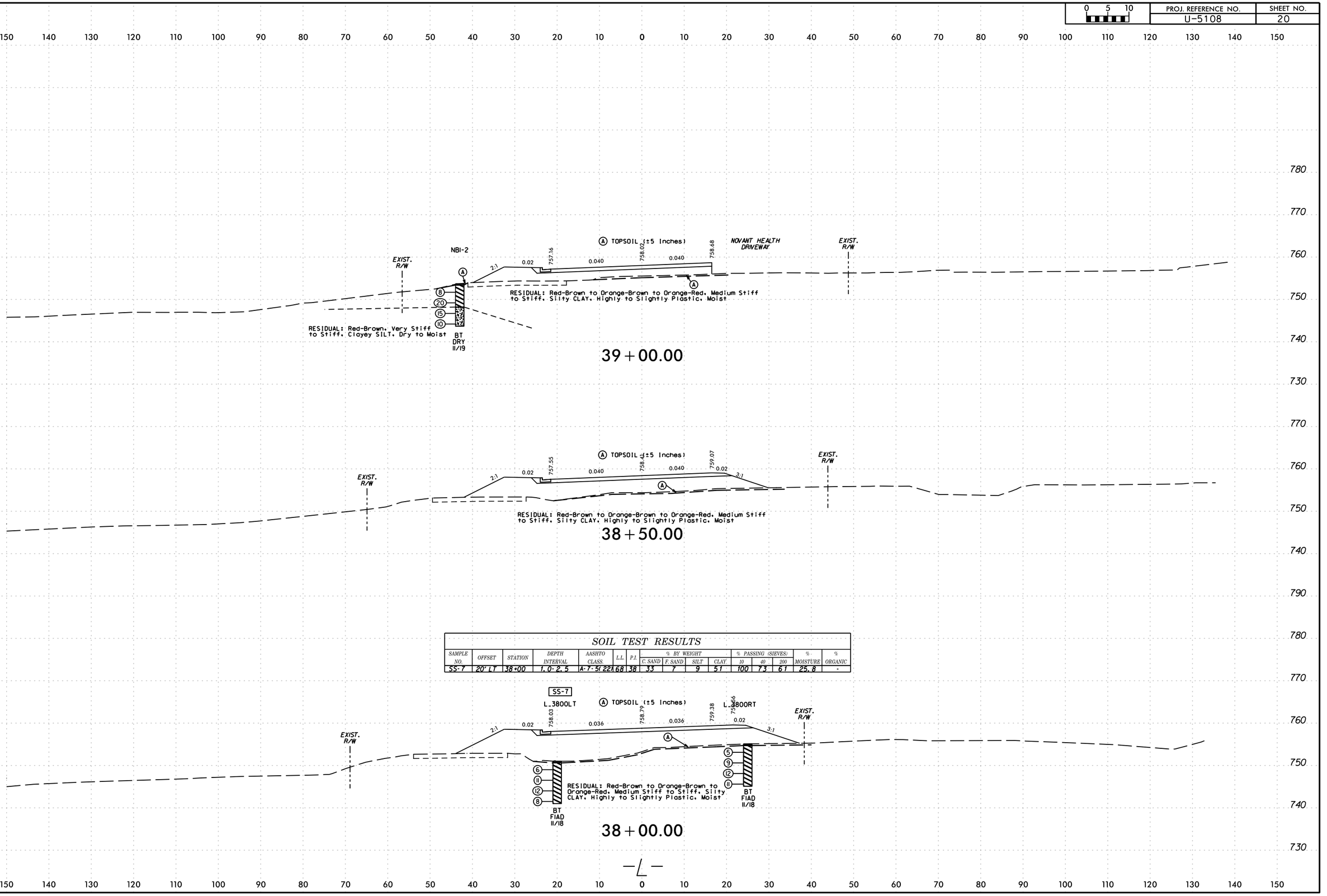
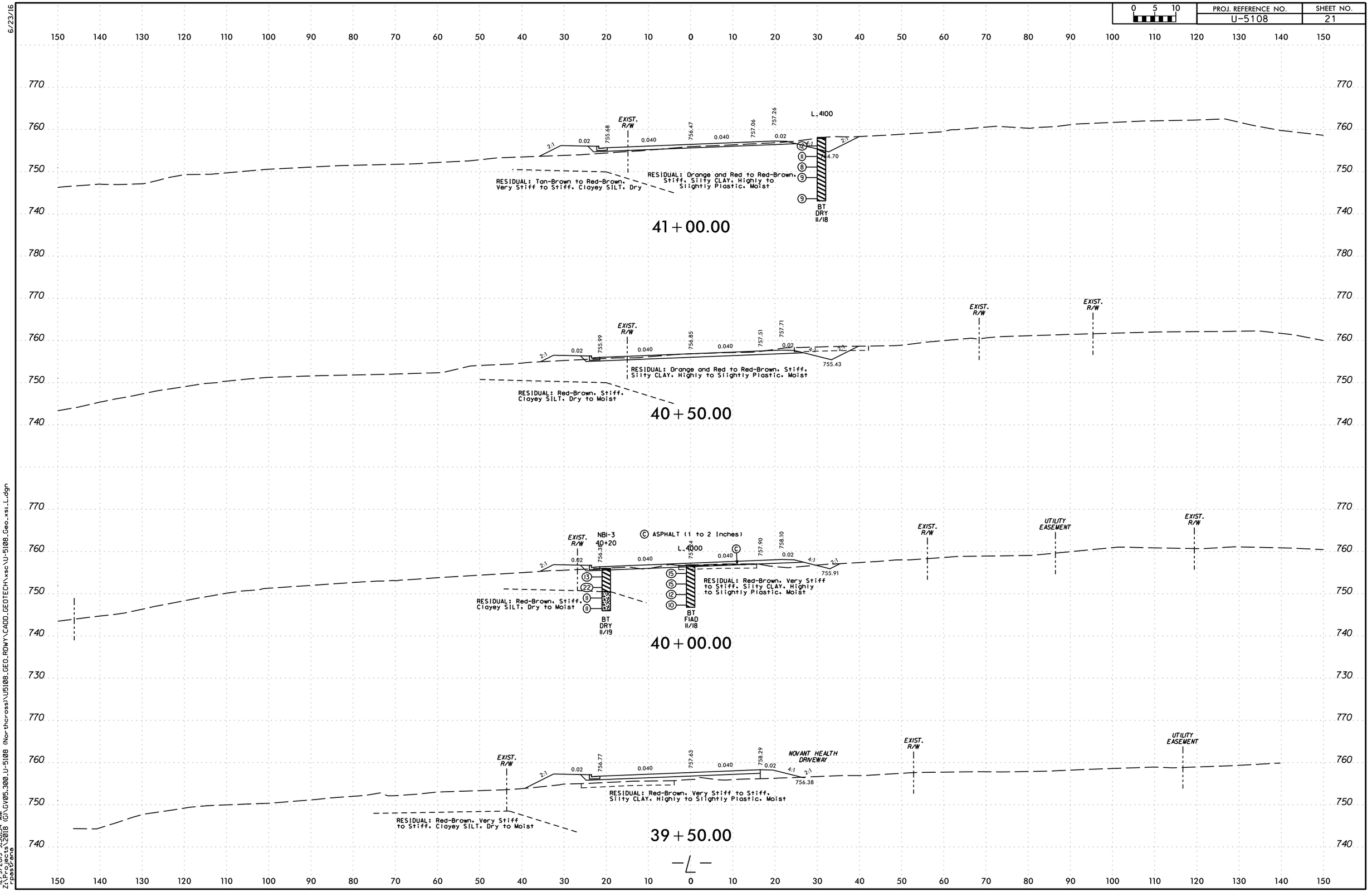
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	20



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-7	20' LT	38+00	1.0-2.5	A-7-5(22)	68	38	33	7	9	51	100	73	61	25.8	-

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	21



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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	22

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

780 770 760 750 740

NBI-5
42+35

EXIST. R/W

(A) TOPSOIL (±4 Inches)

0.02 754.69 (A) 0.038 755.30 0.038 755.72 0.02 755.91 4:1 2:1 752.52

(G) (13) (15) (44) (5)

RESIDUAL: Red-Brown to Orange and Brown. Stiff to Hard. Silty CLAY. Highly to Slightly Plastic. With Rock Fragments Below 5.4'. Moist

RESIDUAL: Tan-Brown to Red-Brown. Medium Stiff. Clayey SILT. Moist to Wet (5)

42 + 50.00

(A) TOPSOIL (±4 Inches)

(G) ARTIFICIAL FILL: Red-Brown to Tan. Stiff. Silty CLAY. Trace Gravel. Dry
Note: Blow count influenced by gravel

EXIST. R/W

0.02 755.05 0.040 755.69 0.04 (A) 756.13 0.02 756.33 4:1 2:1 753.25

(G)

RESIDUAL: Orange and Brown. Very Stiff. Silty CLAY. Highly Plastic. Moist

RESIDUAL: Tan-Brown to Red-Brown. Medium Stiff. Clayey SILT. Moist to Wet

42 + 00.00

NBI-4
41+36

(G) ARTIFICIAL FILL: Red-Brown to Tan. Stiff. Silty CLAY. Trace Gravel. Dry
Note: Blow count influenced by gravel

EXIST. R/W

0.02 755.36 0.040 756.08 0.040 756.59 0.02 756.79 4:1 2:1 753.98

(G) (14) (16) (17) (13)

RESIDUAL: Orange and Red to Red-Brown. Stiff. Silty CLAY. Highly to Slightly Plastic. Moist

RESIDUAL: Tan-Brown to Red-Brown. Very Stiff to Stiff. Clayey SILT. Dry

BT DRY 11/19

41 + 50.00

730

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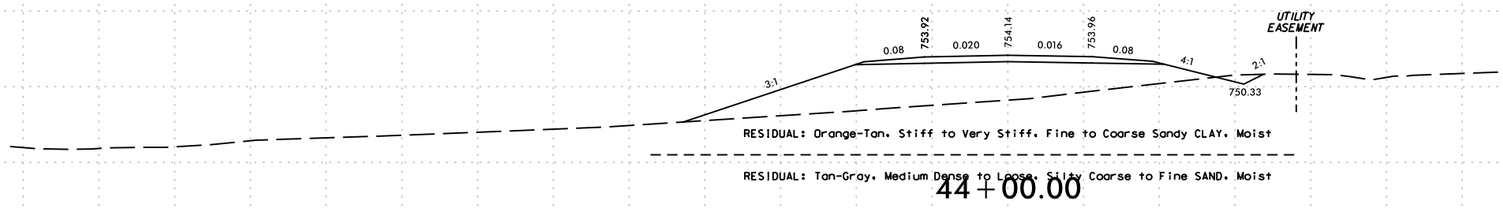
0 5 10

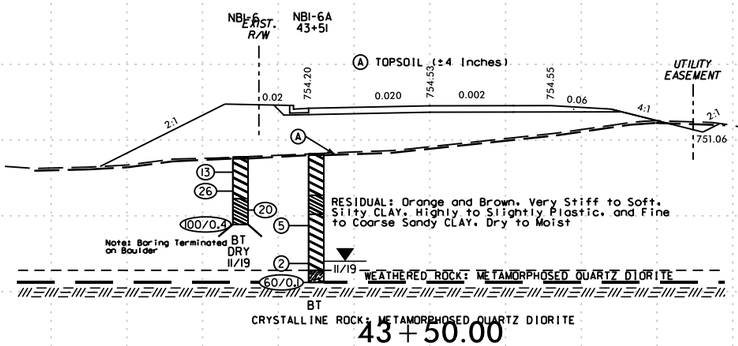
PROJ. REFERENCE NO.	SHEET NO.
U-5108	23

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

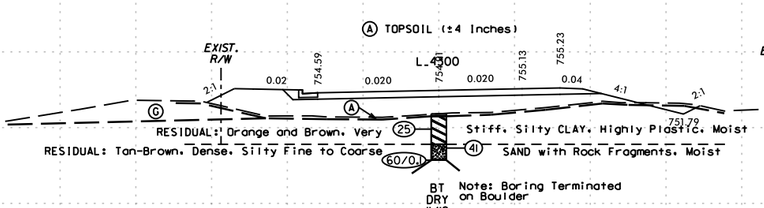
770 760 750 740 730 780 770 760 750 740 730 720 770 760 750 740 730



44+00.00



43+50.00

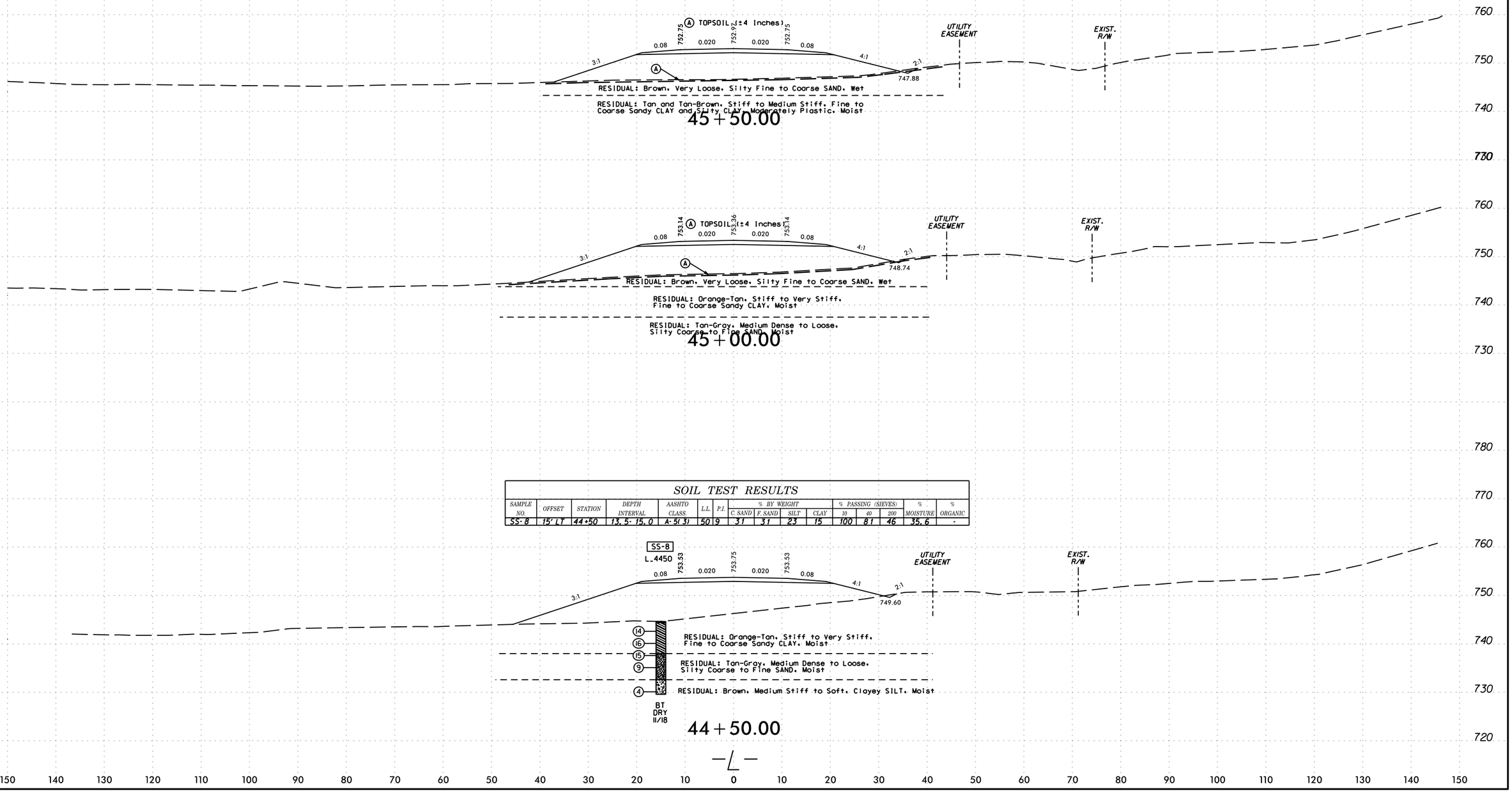


43+00.00

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	24

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

760 750 740 730 780 770 760 750 740 730 720



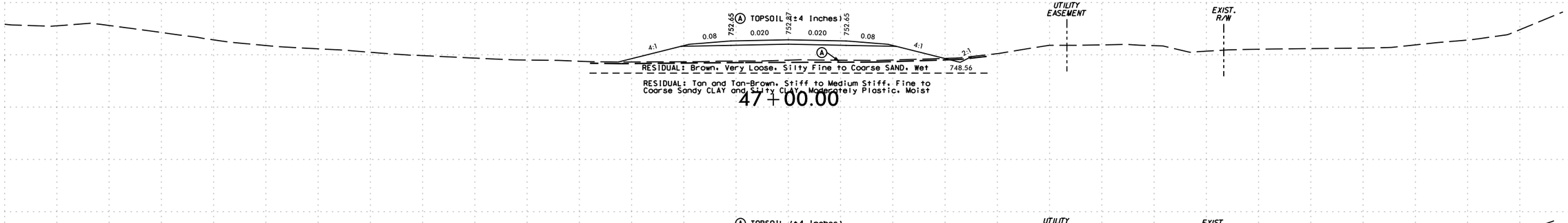
SOIL TEST RESULTS

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-8	15' LT	44+50	13.5-15.0	A-5(3)	50	9	31	31	23	15	100	81	46	35.6	-

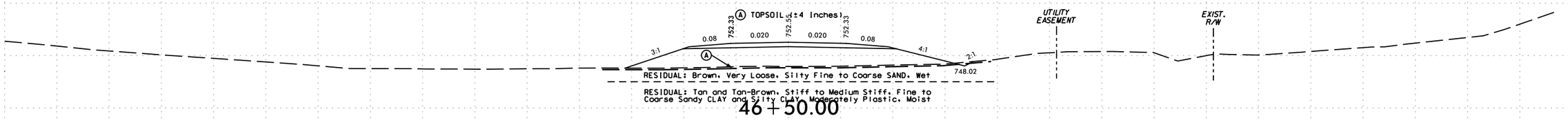
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	25

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

780 770 760 750 740



47+00.00



46+50.00

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-9	CL	46+00	1.0-2.5	A-2-4(0)	23	9	49	21	13	17	100	67	33	15.6	-

46+00.00

730

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	26

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

770 760 750

UTILITY EASEMENT

EXIST. R/W

2:1 4:1 0.08 757.78 0.020 758.00 0.020 757.78 0.08 4:1 2:1

755.15 755.14

RESIDUAL: Red-Brown to Orange-Tan, Stiff to Very Stiff, Silty CLAY, Highly to Slightly Plastic, Moist

49+00.00

770 760 750 780

UTILITY EASEMENT

EXIST. R/W

2:1 4:1 0.08 755.94 0.020 756.16 0.020 755.94 0.08 4:1 2:1

753.38 753.60

RESIDUAL: Red-Brown and Tan, Medium Stiff to Very Stiff, Silty CLAY, Highly to Slightly Plastic, Moist

48+50.00

770 760 750 740 730

L_4600

UTILITY EASEMENT

EXIST. R/W

2:1 4:1 0.08 754.45 0.020 754.67 0.020 754.45 0.08 4:1 2:1

10 15 17 11 6

752.10

BT DRY 11/18

RESIDUAL: Red-Brown and Tan, Medium Stiff to Very Stiff, Silty CLAY, Highly to Slightly Plastic, Moist

48+00.00

770 760 750 740

(D) RESIDUAL: Brown, Very Loose, Silty Fine to Coarse SAND, Wet

UTILITY EASEMENT

EXIST. R/W

4:1 0.08 753.36 0.020 753.58 0.020 753.36 0.08 4:1 2:1

(D) 749.10

RESIDUAL: Red-Brown and Tan, Medium Stiff to Very Stiff, Silty CLAY, Highly to Slightly Plastic, Moist

47+50.00

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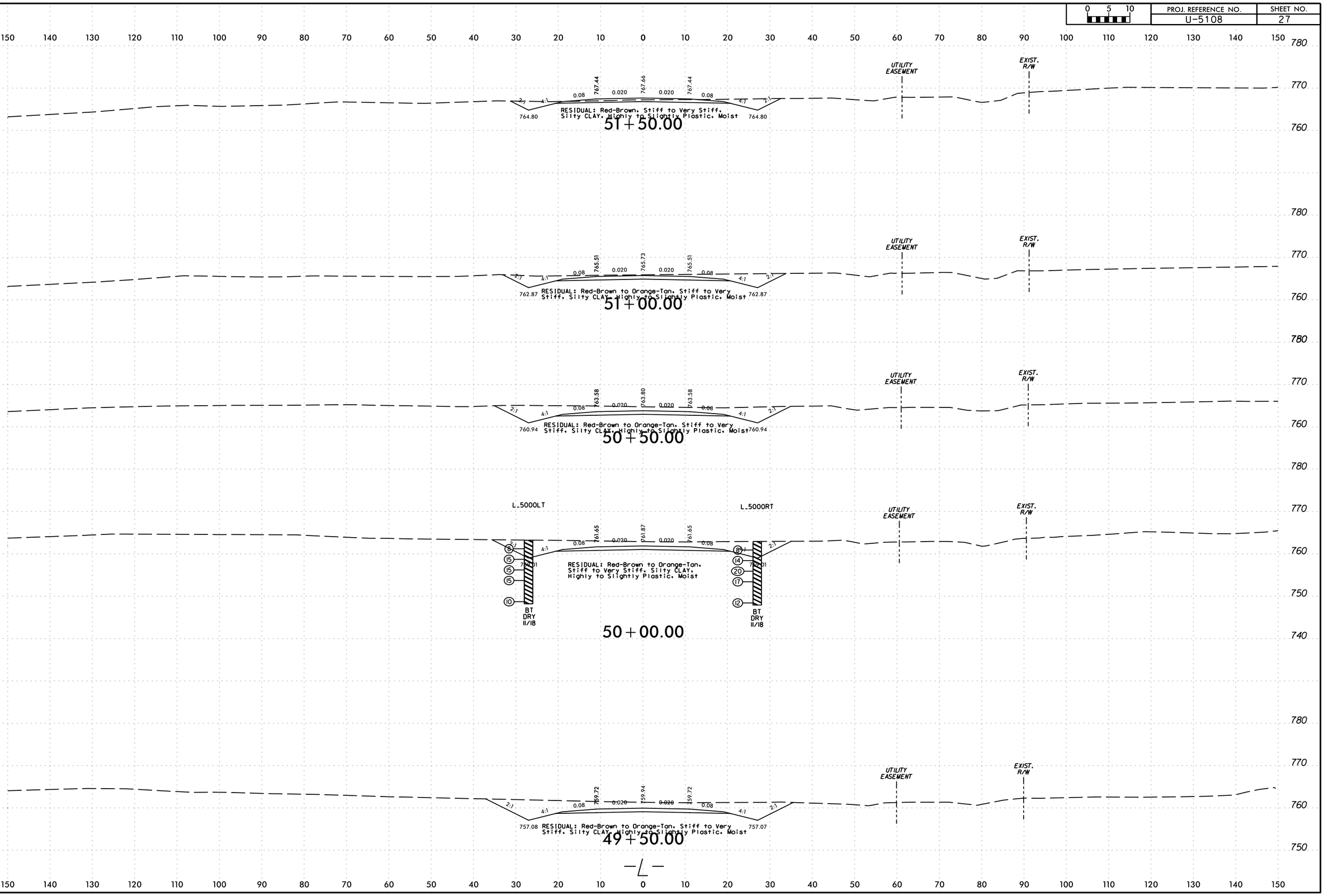
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	27



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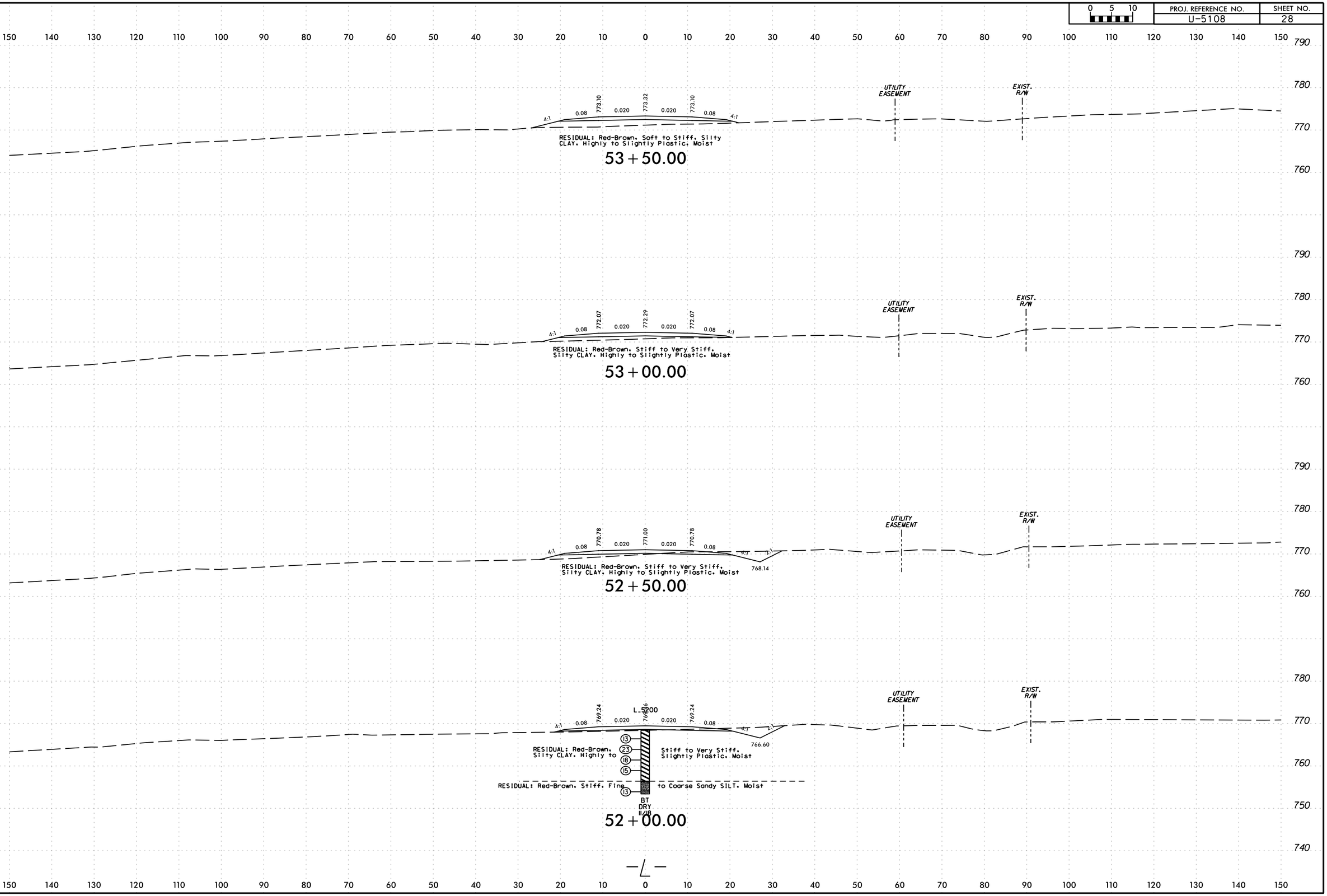
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	28



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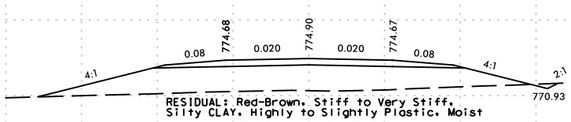
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	29

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

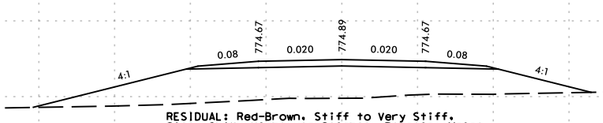
790 780 770 760



RESIDUAL: Red-Brown, Stiff to Very Stiff, Silty CLAY, Highly to Slightly Plastic, Moist

55+50.00

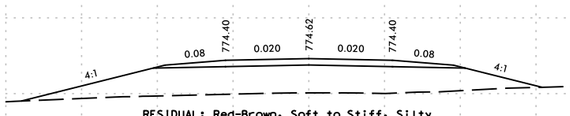
790 780 770 760



RESIDUAL: Red-Brown, Stiff to Very Stiff, Silty CLAY, Highly to Slightly Plastic, Moist

55+00.00

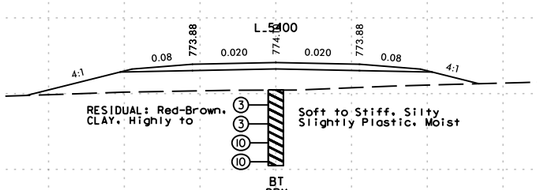
790 780 770 760



RESIDUAL: Red-Brown, Soft to Stiff, Silty CLAY, Highly to Slightly Plastic, Moist

54+50.00

790 780 770 760 750



54+00.00

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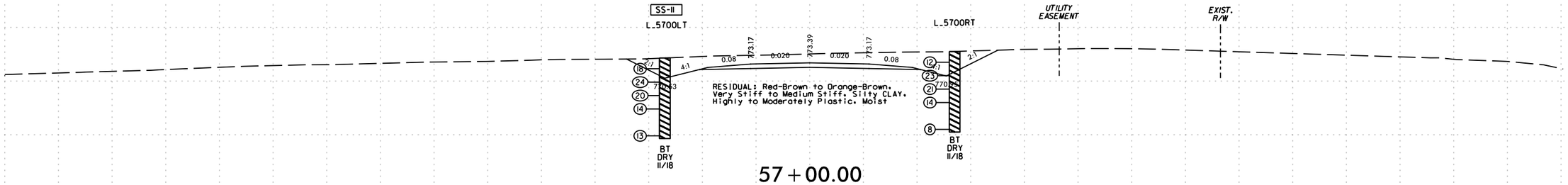
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	30

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

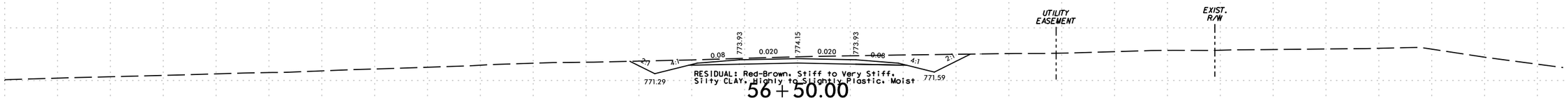
800 790 780 770 760 750

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-11	27' LT	57+00	13.5-15.0	A-7-5(11)	62	22	29	19	28	24	100	80	56	17.9	-



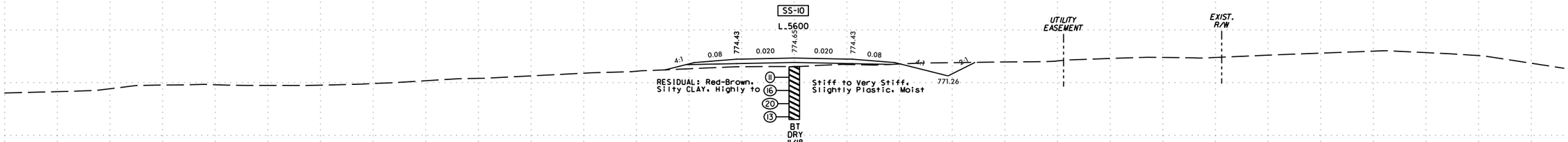
57+00.00



56+50.00

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
SS-10	CL	56+00	3.5-5.0	A-7-5(11)	63	21	30	18	23	29	100	80	55	28.3	-



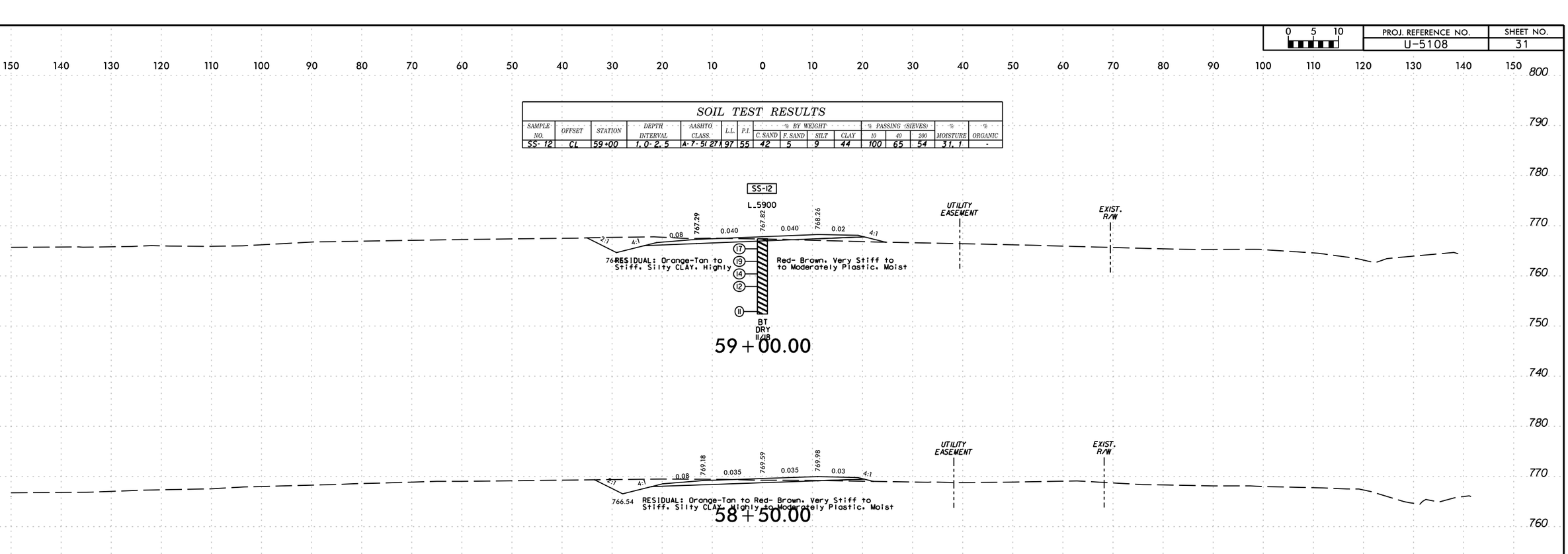
56+00.00

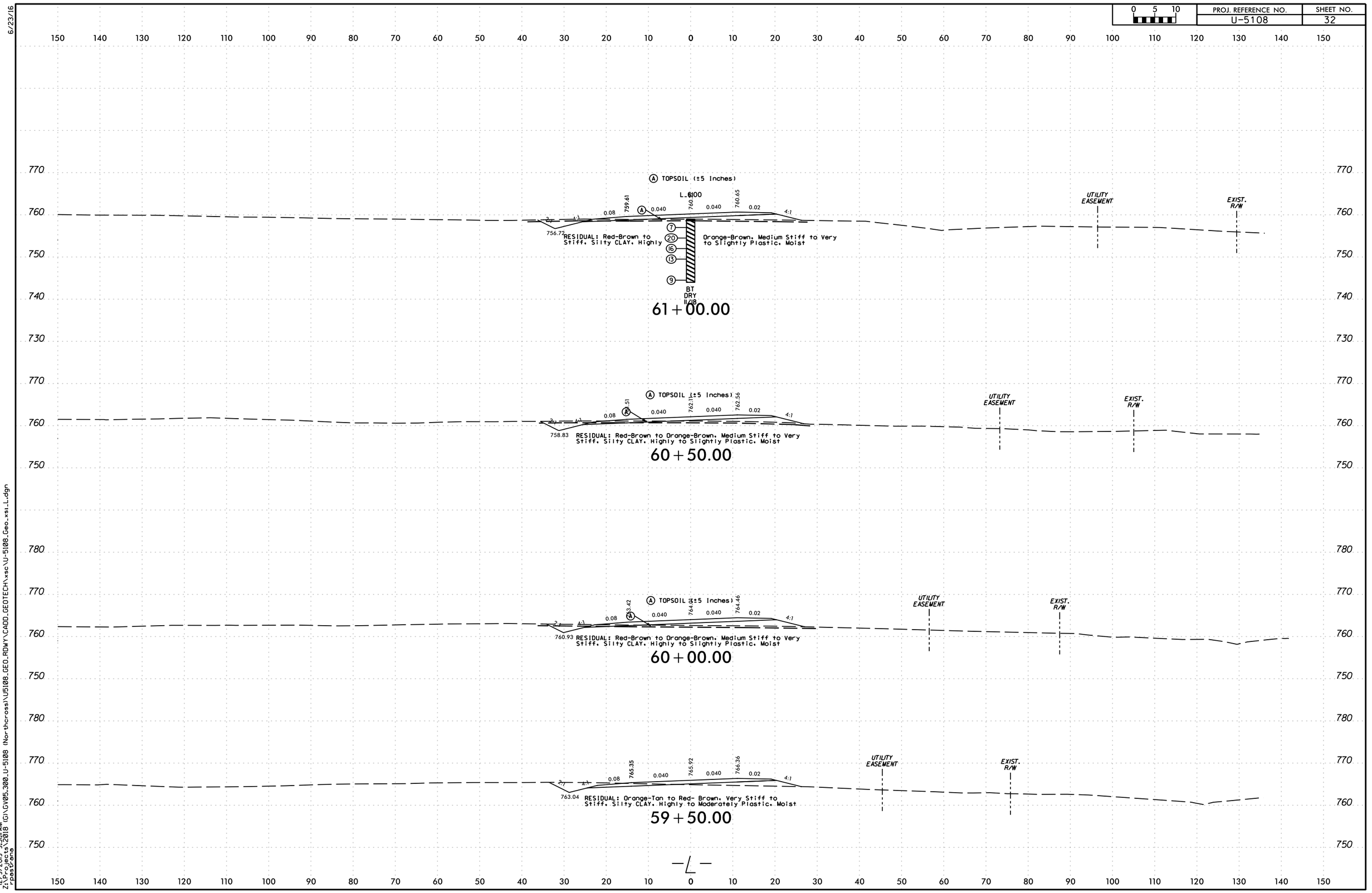
—L—

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	31

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-12	CL	59+00	1.0-2.5	A-7-5(27)	97	55	42	5	9	44	100	65	54	31.1	-





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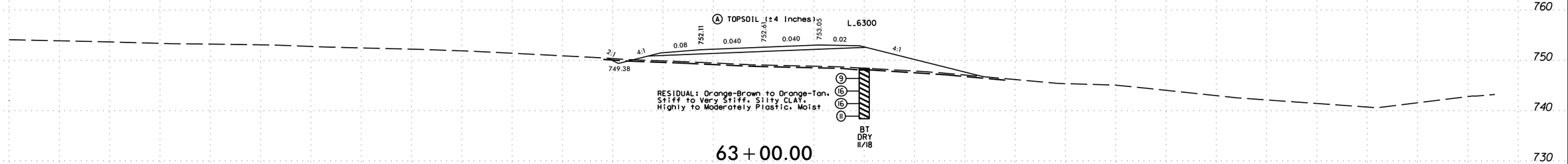
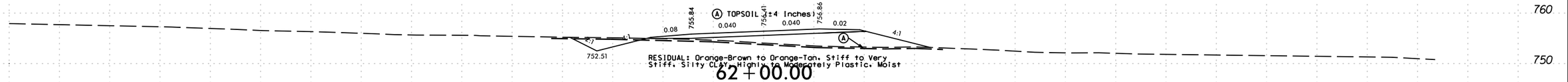
6/23/16

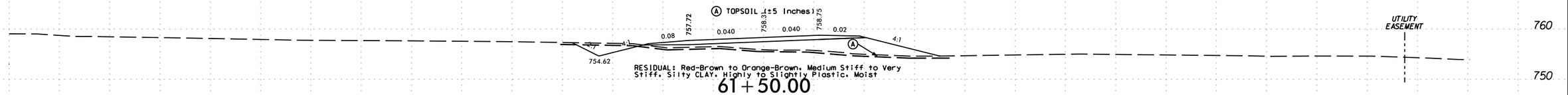
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	33

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

760 750 740 730 770 760 750 740 770 760 750 740 770 760 750 740







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rpostrano

6/23/16

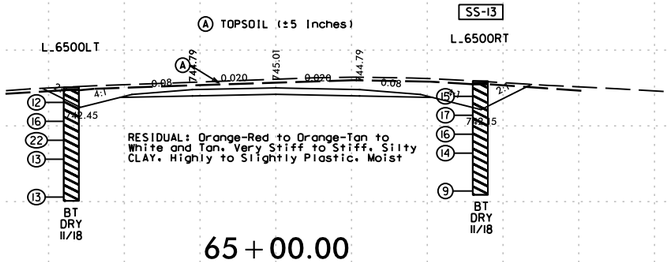
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	34

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

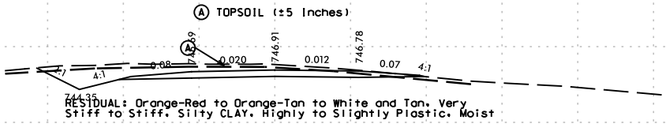
770 760 750 740 730 720

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-13	27' RT	65+00	8.5-10.0	A-7-5(9)	51	18	28	21	28	23	99	79	56	15.8	-



65+00.00



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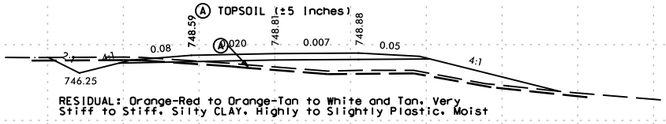

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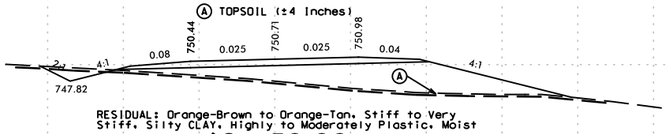

63+50.00

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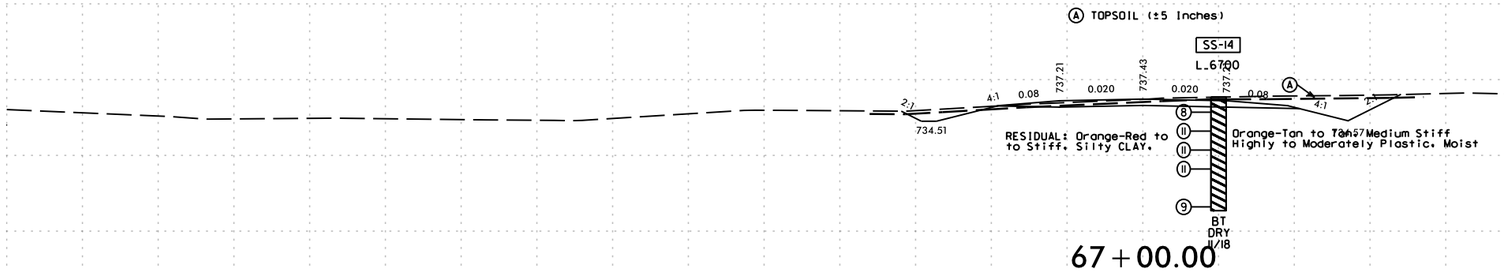
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	35

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

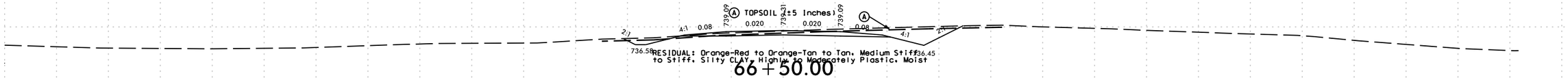
770 760 750 740 730 720 710

SOIL TEST RESULTS

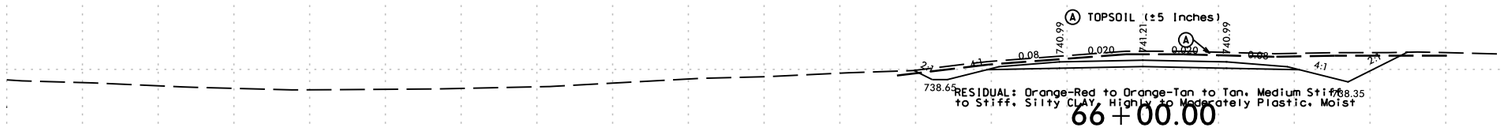
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	% BY WEIGHT F. SAND	% BY WEIGHT SILT	% BY WEIGHT CLAY	% PASSING (SIEVES) 10	% PASSING (SIEVES) 40	% PASSING (SIEVES) 200	% MOISTURE	% ORGANIC
SS-14	10' RT	67+00	1.0-2.5	A-7-5(24)	63	33	21	10	14	55	100	84	77	30.7	-



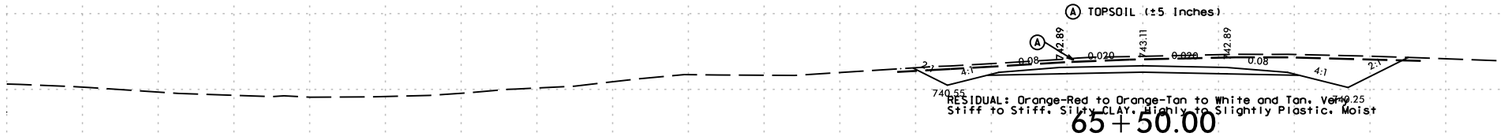
67+00.00



66+50.00



66+00.00



65+50.00

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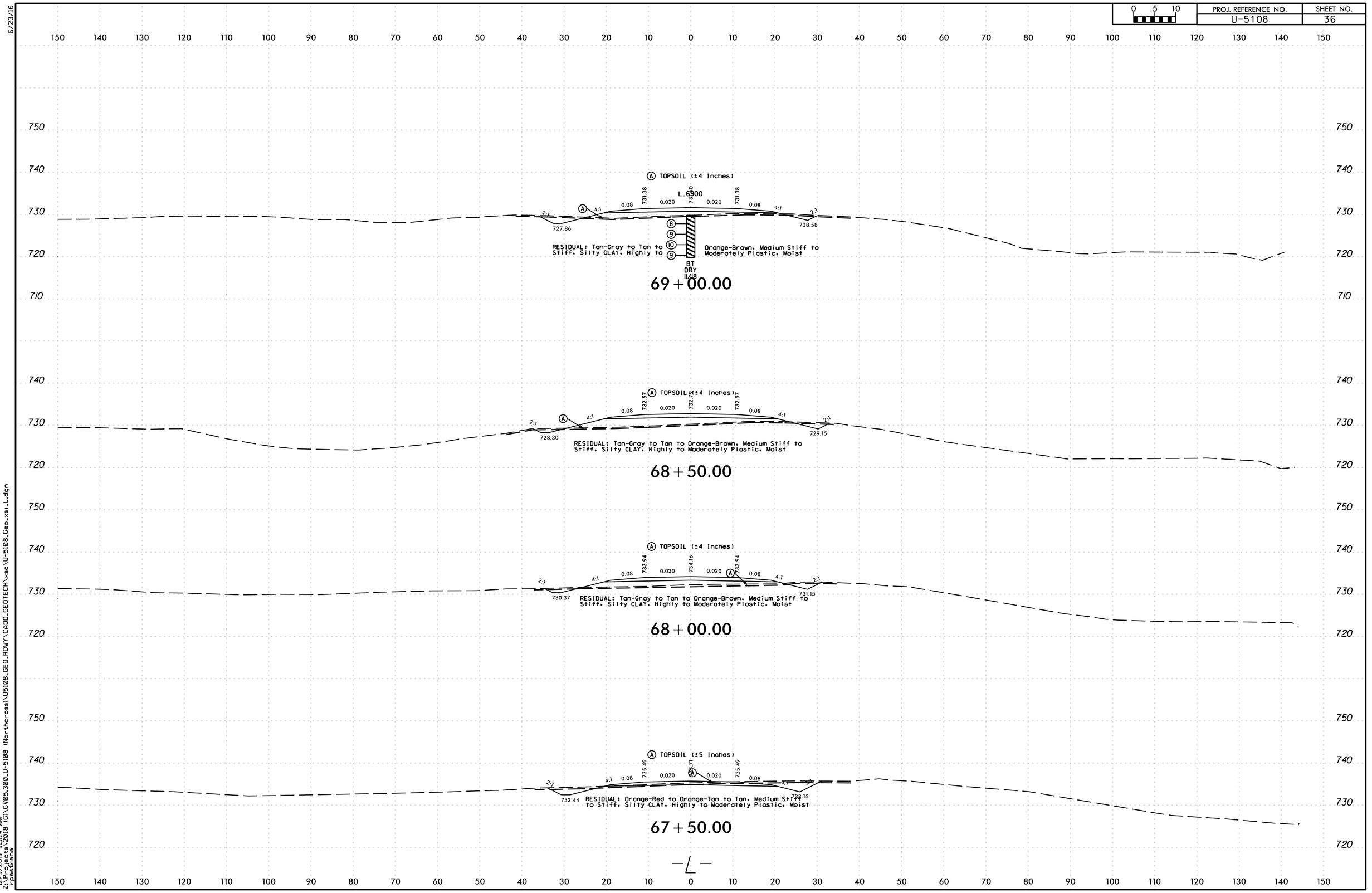

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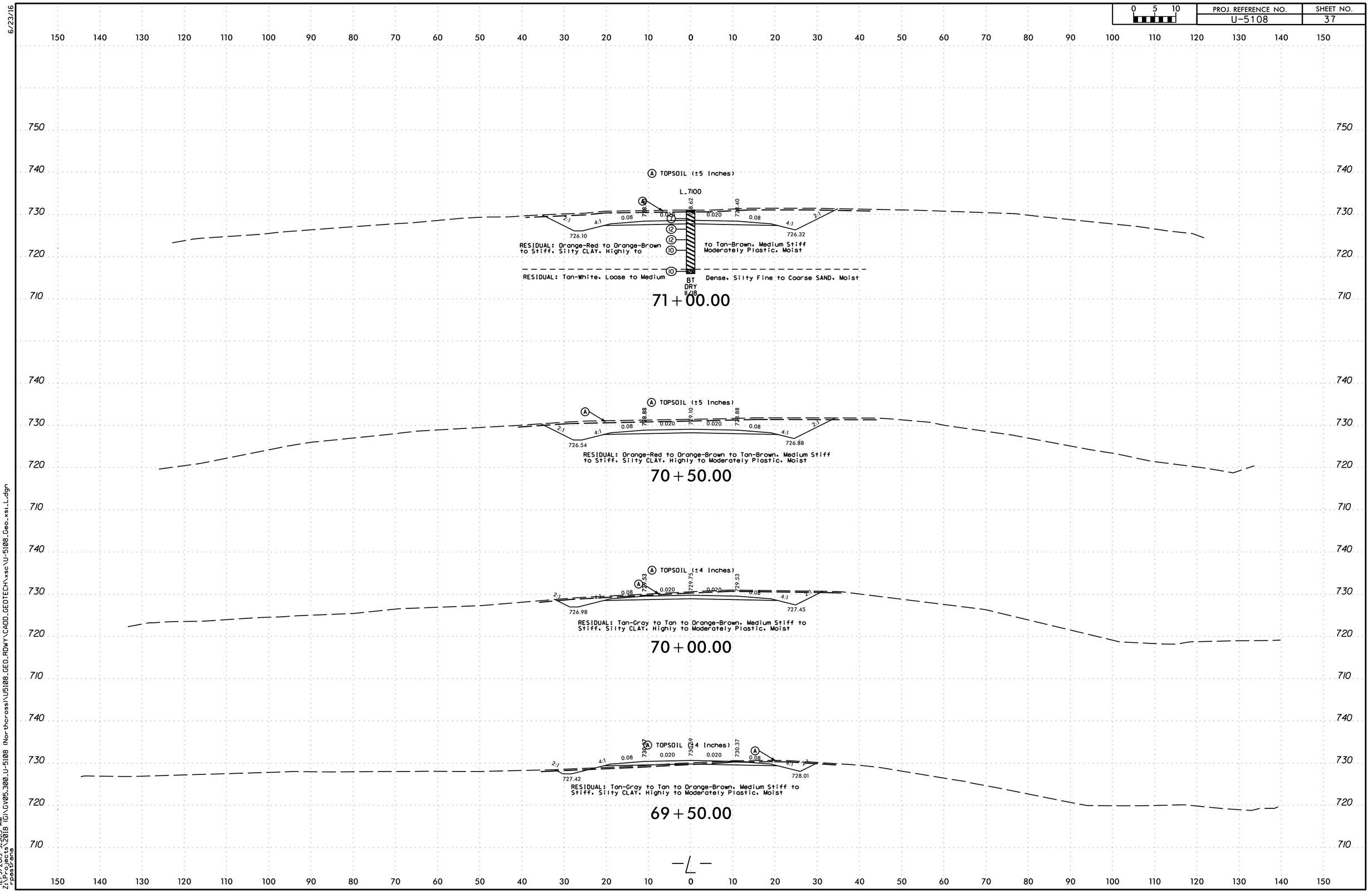
rpastrana

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	37



0 5 10

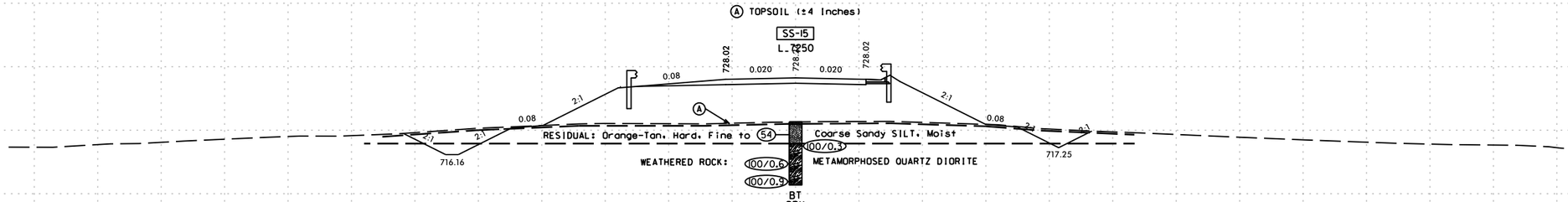
PROJ. REFERENCE NO.	SHEET NO.
U-5108	38

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

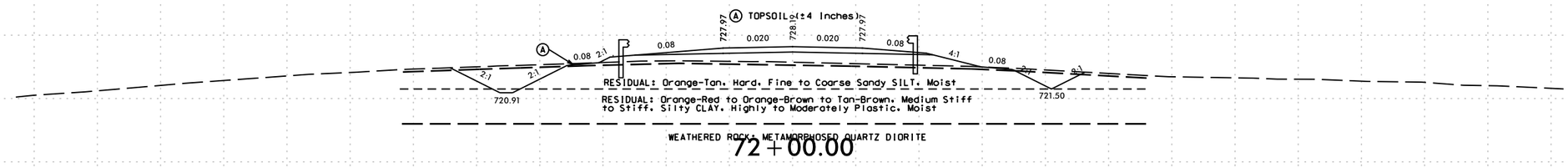
760 750 740 730 720 710 700 750 740 730 720 710 750 740 730 720

SOIL TEST RESULTS

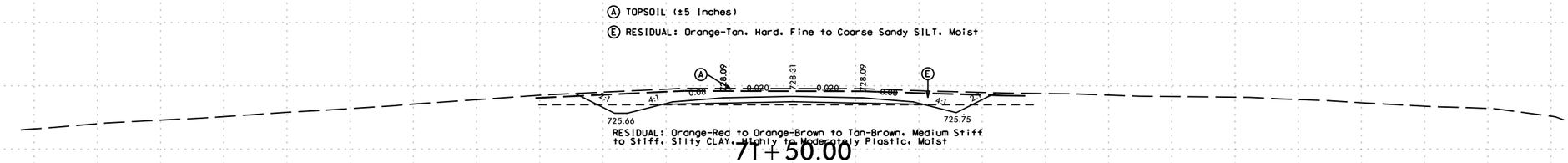
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE	% ORGANIC
SS-15	CL	72+50	1.0-2.5	A-4(0)	NP	NP	36	32	21	11	96	72	37	15.8	-



72+50.00



72+00.00



71+50.00

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rpastrana

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	39

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

740 730 720 710 700 690 750 740 730 720 710 700 690 680 740 730 720 710 700

729.46

0.020 0.020

Note: See U-5108 Bridge Inventory Report: Brige over McDowell Creek dated January 2019 for more detailed subsurface information

74+00.00

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES): 10	40	200	% MOISTURE	% ORGANIC
SS-1	24' LT	73+46	3.5-5.0	A-2-4(0)	NP	NP	61	26	5	8	99	57	16	22.3	-

728.88

0.020 0.020

SS-1
EBI-A 73+46
EBI-B 73+46

709.15

RESIDUAL: Gray, Very Loose, Silty Fine to Coarse SAND, Moist to Wet

100/0.4
60/0.0
60/0.0

WEATHERED ROCK: METAMORPHOSED QUARTZ DIORITE

CRYSTALLINE ROCK: METAMORPHOSED QUARTZ DIORITE

BT DRY 11/18

BT DRY 11/18

73+50.00

A TOPSOIL (±4 Inches)

728.04 728.47 728.15

0.020 0.020

0.08

711.41

RESIDUAL: Orange-Tan, Hard, Fine to Coarse Sandy SILT, Moist

WEATHERED ROCK: METAMORPHOSED QUARTZ DIORITE

CRYSTALLINE ROCK: METAMORPHOSED QUARTZ DIORITE

73+00.00

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	40

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

740 730 720 710 700 690 680

Ⓐ TOPSOIL (±6 Inches)

0.02 0.02

3:1 3:1

ALLUVIAL: Brown to Gray-Tan to Gray-Brown, Very Loose, Silty Coarse to Fine SAND,Wet to Moist

RESIDUAL: Tan, Gray, White and Brown, Soft to Medium Stiff, Coarse to Fine Sandy SILT, Moist

RESIDUAL: White and Brown, Dense to Very Dense, Silty Coarse to Fine SAND, Moist

WEATHERED ROCK: METAMORPHOSED QUARTZ DIORITE

74+57.00

760 750 740 730 720 710 700 690 680

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-2	24' LT	74+56	8.7- 10.2	A-4(1)	31	7	19	41	21	19	100	93	49	36.6	-
SS-3	18' RT	74+56	8.7- 10.2	A-7-6(6)	41	20	28	28	17	27	95	80	47	26.2	-

730.22

0.020 0.020

SS-2
EB2-A
74+56

SS-3
EB2-B
74+56

ALLUVIAL: Tan to Orange-Tan to Gray, Very Loose to Loose, Silty Coarse to Fine SAND.
④ 11/18 Moist to Wet ③ 11/18
② ③ ALLUVIAL: Brown, Soft, Silty CLAY, Trace Roots, Saturated
ALLUVIAL: Blue-Gray. ⑧ Soft, Coarse to Fine Sandy SILT, Moist ⑦
ALLUVIAL: Tan, Loose ⑭ to Medium Dense, Silty Fine to Coarse SAND, Moist ⑰
Residual: Tan and Brown, Silty Fine to Coarse SAND. ⑭ Medium Dense, Moist RESIDUAL: Orange-Brown, Very Sandy SILT, Moist ⑰ Stiff to Stiff, Fine to Coarse
60/0.0 BT 60/0.0 BT

CRYSTALLINE ROCK: METAMORPHOSED QUARTZ DIORITE

74+50.00

760 750 740 730 720 710 700 690 680

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

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	41

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

750 740 730 720 710 700 690 680 670

Ⓐ TOPSOIL (±6 Inches)

L_7550

0.02 | 732.29 | 0.001 | 732.28 | 0.020 | 732.05 | 0.02

3:1 3:1

0.08 | 2% | 2% | 708.12

ALLUVIAL: Brown to Gray-Tan to Gray-Brown.	2 2 3 3	Very Loose. Silty Coarse to Fine SAND.Wet to Moist
RESIDUAL: Tan. Gray. White and Brown. Soft	5	to Medium Stiff. Coarse to Fine Sandy SILT. Moist
RESIDUAL: White and Brown. Dense to Very	35 60 100/0.9	Dense. Silty Coarse to Fine SAND. Moist
WEATHERED ROCK:	BT	METAMORPHOSED QUARTZ DIORITE

11/18

DRY

11/18

75+50.00

Ⓐ TOPSOIL (±6 Inches)

0.02 | 730.79 | 0.017 | 731.16 | 0.020 | 730.84 | 0.02

3:1 3:1

0.08 | 2% | 2% | 707.87

ALLUVIAL: Brown to Gray-Tan to Gray-Brown. Very Loose. Silty Coarse to Fine SAND.Wet to Moist

RESIDUAL: Tan. Gray. White and Brown. Soft to Medium Stiff. Coarse to Fine Sandy SILT. Moist

RESIDUAL: White and Brown. Dense to Very Dense. Silty Coarse to Fine SAND. Moist

WEATHERED ROCK: METAMORPHOSED QUARTZ DIORITE

75+00.00

—/—

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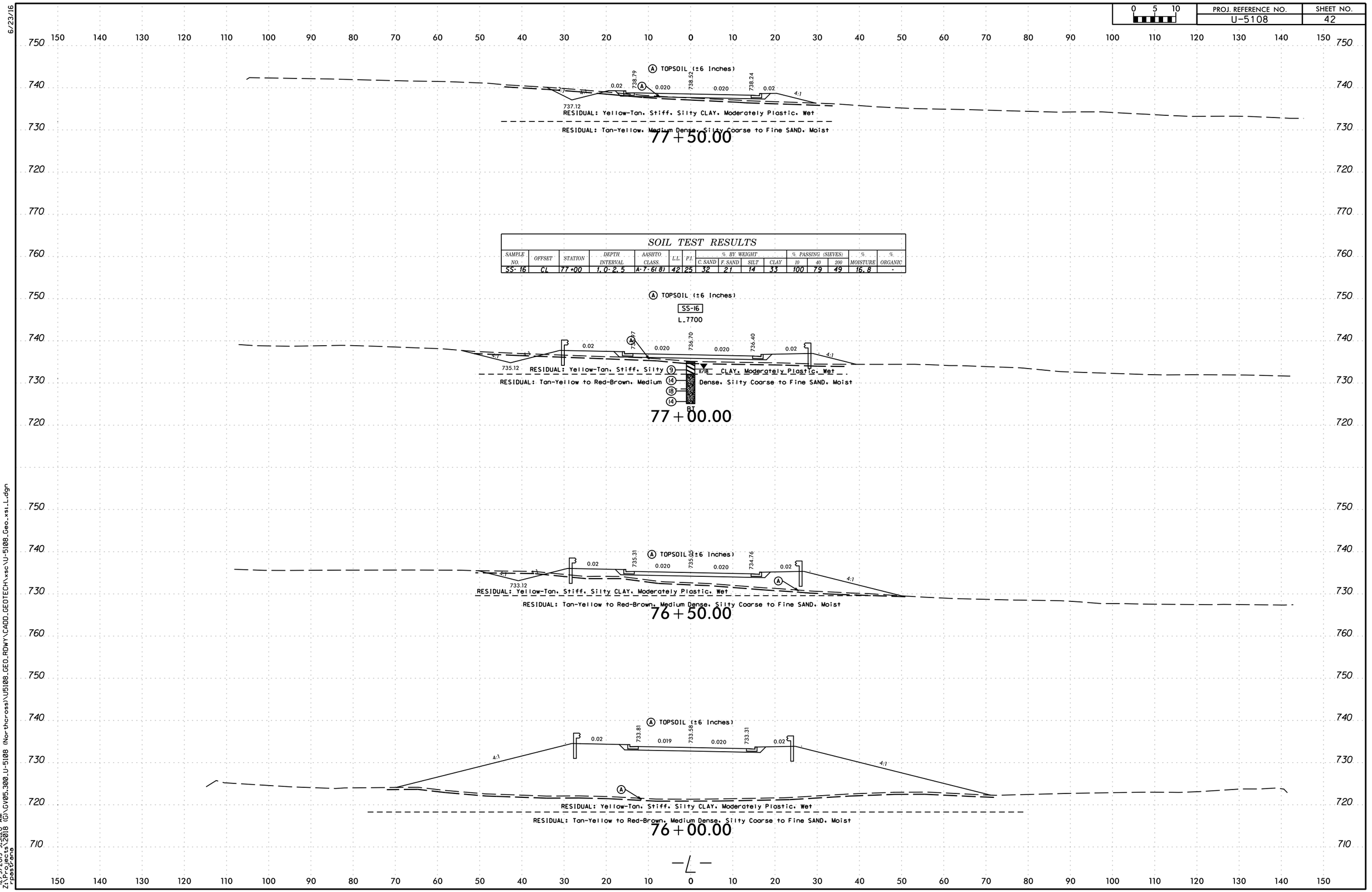
rpastrana

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	42



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-16	CL	77+00	1.0-2.5	A-7-6(8)	42	25	32	21	14	33	100	79	49	16.8	-

12/9/2019 9:31:20 AM
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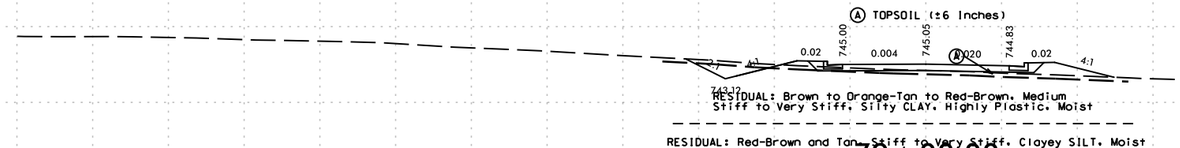
rpastrana

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	43

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

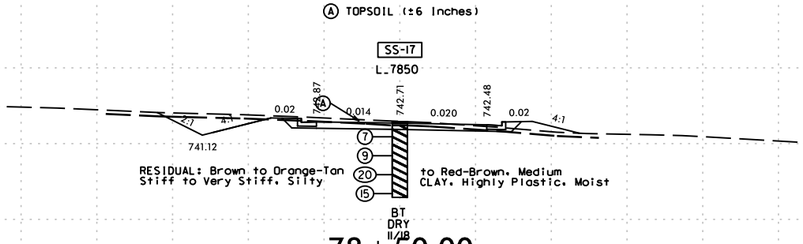
760 750 740 730 780 770 720



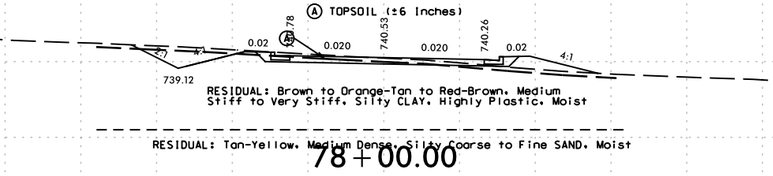
79+00.00

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-17	CL	78+50	3.5-5.0	A-7-6(12)	54	30	33	18	11	38	99	76	53	22.5	-



78+50.00



78+00.00

—L—

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	44

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

760 750 740

Ⓐ TOPSOIL (±6 Inches)

750.93 751.15 751.08

2:1 4:1 0.02 0.020 Ⓐ 0.006 0.02 2:1

750.83

RESIDUAL: Red-Brown, Medium Stiff to Stiff, Silty CLAY, Highly Plastic, Moist

RESIDUAL: Red-Brown and Tan, Stiff to Very Stiff, Clayey SILT, Moist

81+00.00

760 750 740

Ⓐ TOPSOIL (±6 Inches)

750.49 750.71 750.49

2:1 4:1 0.02 Ⓐ 0.020 0.020 0.02 4:1

749.12 RESIDUAL: Red-Brown, Medium Stiff to Stiff, Silty CLAY, Highly Plastic, Moist

RESIDUAL: Red-Brown and Tan, Stiff to Very Stiff, Clayey SILT, Moist

80+50.00

760 750 740 730

Ⓐ TOPSOIL (±6 Inches)

L-8000

749.22 749.46 749.22

2:1 4:1 0.02 Ⓐ 0.020 0.020 0.02 4:1

747.12 RESIDUAL: Red-Brown, Stiff, Silty CLAY. (8) (14) (11) (15) Medium Stiff to Highly Plastic, Moist

RESIDUAL: Red-Brown and Tan, Stiff to Very Stiff, Clayey SILT, Moist

BT DRY II/28

80+00.00

760 750 740 730

Ⓐ TOPSOIL (±6 Inches)

747.19 747.41 747.19

2:1 4:1 0.02 Ⓐ 0.020 0.020 0.02 4:1

745.12 RESIDUAL: Red-Brown, Medium Stiff to Stiff, Silty CLAY, Highly Plastic, Moist

RESIDUAL: Red-Brown and Tan, Stiff to Very Stiff, Clayey SILT, Moist

79+50.00

—L—

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

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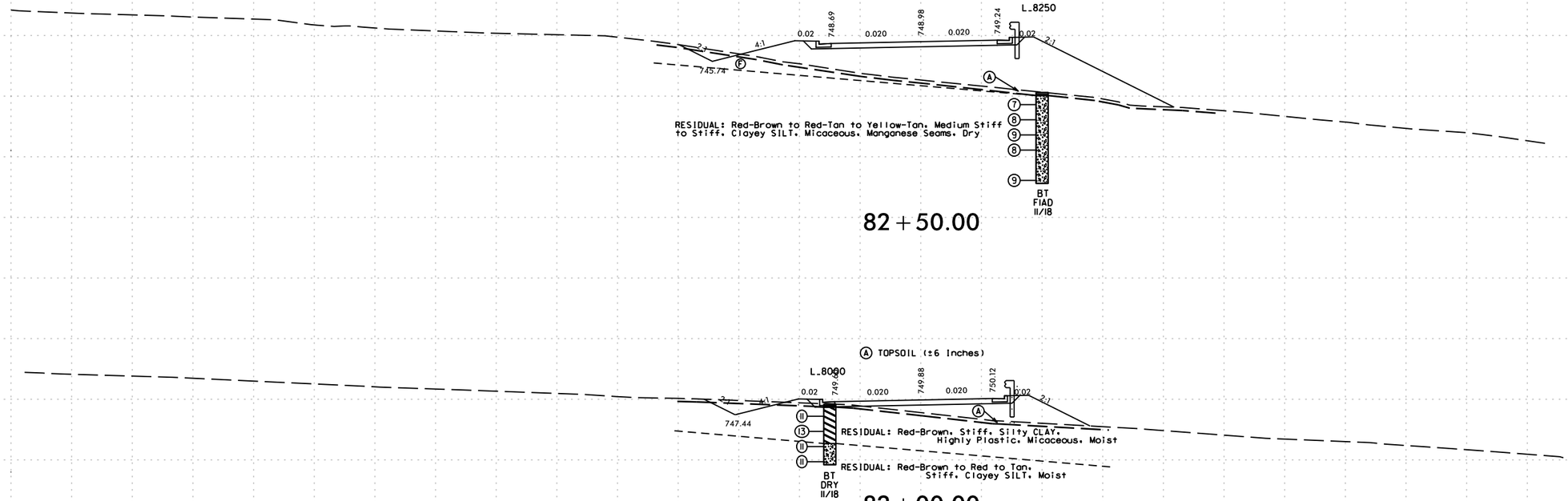
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	45

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

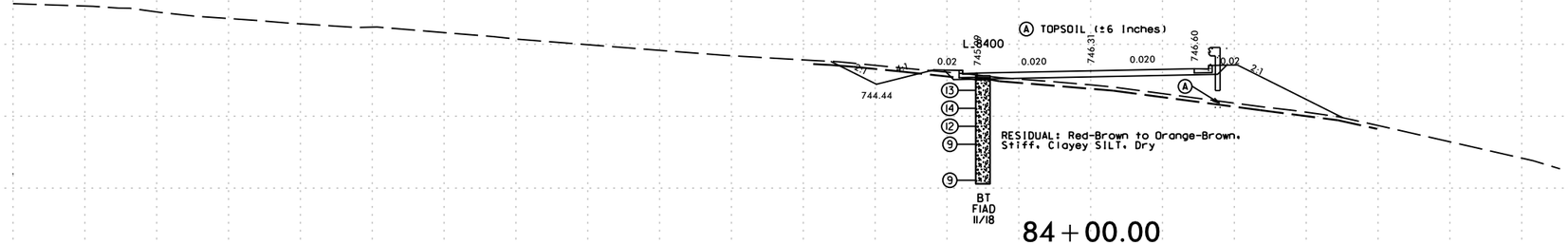
790 780 770 760 750 740 730 720 770 760 750 740 730

SOIL TEST RESULTS

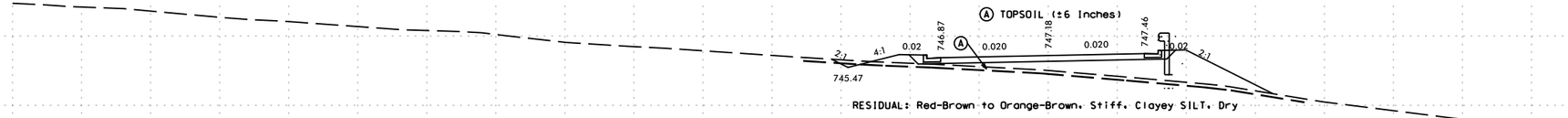
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS	L.L.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
SS-18	20' RT	82+50	3.5-5.0	A-5(3)	51	10	36	21	20	23	100	75	48	27.5	-
SS-19	20' RT	82+50	8.5-10.0	A-5(1)	52	9	37	28	22	13	100	75	42	21.2	-



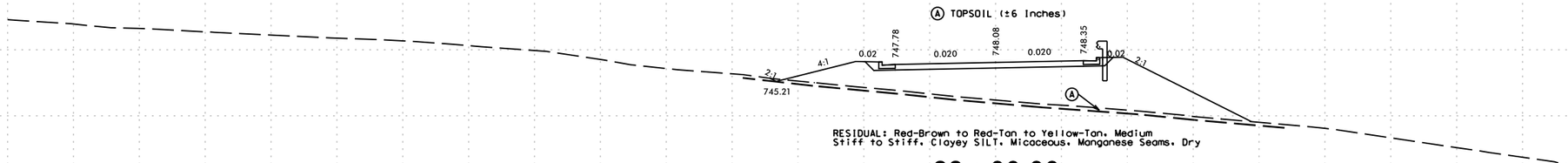
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	46



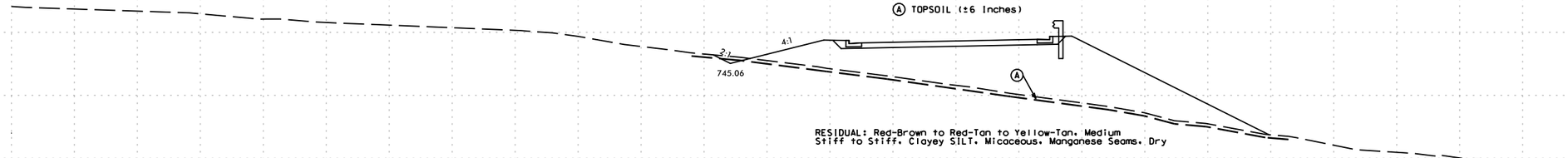
84 + 00.00



83 + 50.00



83 + 00.00



82 + 70.00

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6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	47

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

760 750 740 730 720

Ⓐ TOPSOIL (±6 Inches)

745.45

RESIDUAL: Red-Brown. Medium Stiff to Stiff. Clayey SILT. Micaceous. Dry to Moist

85+15.84

760 750 740 730 720

Ⓐ TOPSOIL (±6 Inches)

0.02 745.12 0.020 745.44 0.020 745.74 0.02

2:1 4:1 2:1

743.44

RESIDUAL: Red-Brown to Orange-Brown. Stiff. Clayey SILT. Dry

85+00.00

760 750 740 730 720

Ⓐ TOPSOIL (±6 Inches)

0.02 745.39 0.020 745.71 0.020 746.00 0.02

2:1 4:1 2:1

743.94

RESIDUAL: Red-Brown to Orange-Brown. Stiff. Clayey SILT. Dry

84+50.00

760 750 740 730

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

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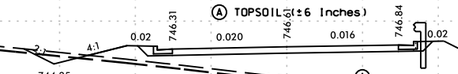
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	48

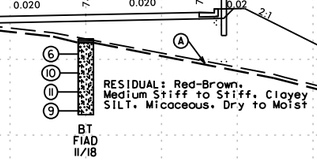
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

760 750 740 730 720



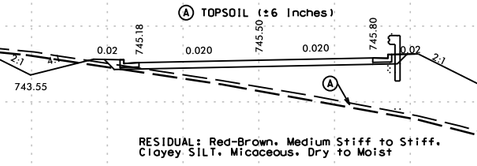
RESIDUAL: Red-Brown, Medium Stiff to Stiff, Clayey SILT, Micaceous, Dry to Moist

86 + 50.00



RESIDUAL: Red-Brown, Medium Stiff to Stiff, Clayey SILT, Micaceous, Dry to Moist

86 + 00.00



RESIDUAL: Red-Brown, Medium Stiff to Stiff, Clayey SILT, Micaceous, Dry to Moist

85 + 50.00

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

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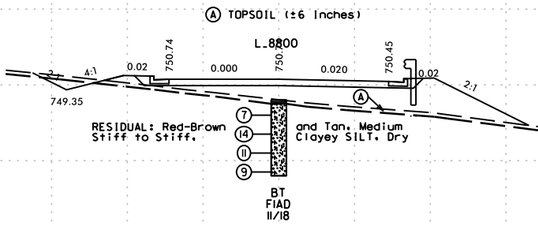
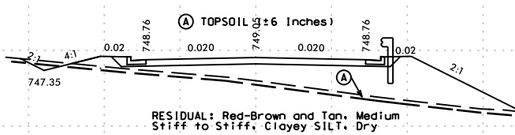
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	49

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

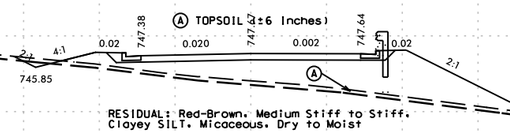
770 760 750 740 730 720



88 + 00.00



87 + 50.00



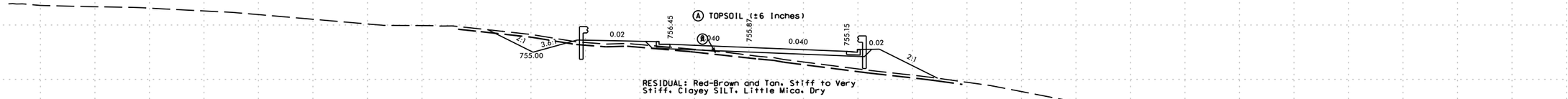
87 + 00.00

6/23/16

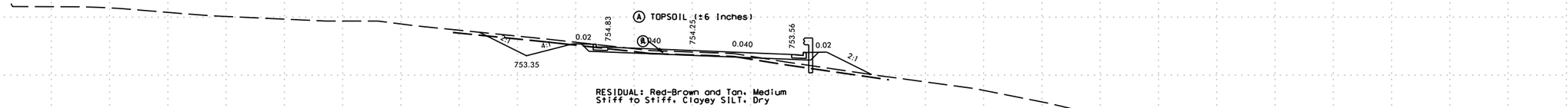
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	50

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

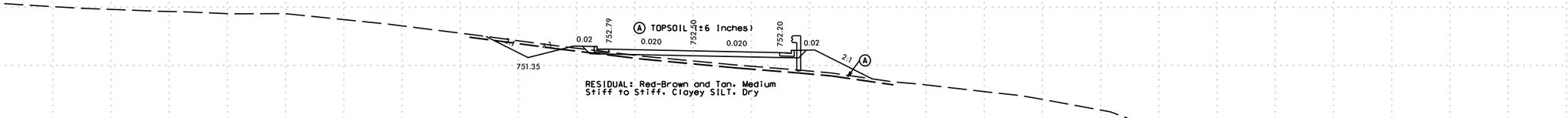
770 760 750 740 730 720



89 + 50.00



89 + 00.00



88 + 50.00

—L—

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rpastrana

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	51

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

780 770 760 750 740 730 720 710

Ⓐ TOPSOIL (±6 Inches)
Ⓒ ALLUVIAL: Dark-Brown, Fine to Coarse Sandy CLAY, Moderately to Trace Organics, Wet

759.69 759.17 758.54
0.02 0.036 0.036 0.02
2:1 2:1

RESIDUAL: Red-Brown and Tan, Stiff to Very Stiff, Clayey SILT, Little Mica, Dry

RESIDUAL: Gray to White to Gray-Brown to Brown, Soft to Very Stiff, Silty CLAY, Moderately to Slightly Plastic, Some Mica and Manganese, Moist

91+00.00

770 760 750 740 730 720

Ⓐ TOPSOIL (±6 Inches)

758.91 758.51 757.76
0.02 0.040 0.040 0.02
2:1 2:1

RESIDUAL: Red-Brown and Tan, Stiff to Very Stiff, Clayey SILT, Little Mica, Dry

90+50.00

770 760 750 740 730 720

Ⓐ TOPSOIL (±6 Inches)

L_9000

757.81 757.23 756.31
0.02 0.040 0.040 0.02
2:1 3.3:1 2:1
756.65

RESIDUAL: Red-Brown and Tan, Stiff to Very Stiff, Clayey SILT, Little Mica, Dry

11 20 16 13

BT
FIAD
11/18

90+00.00

—L—

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

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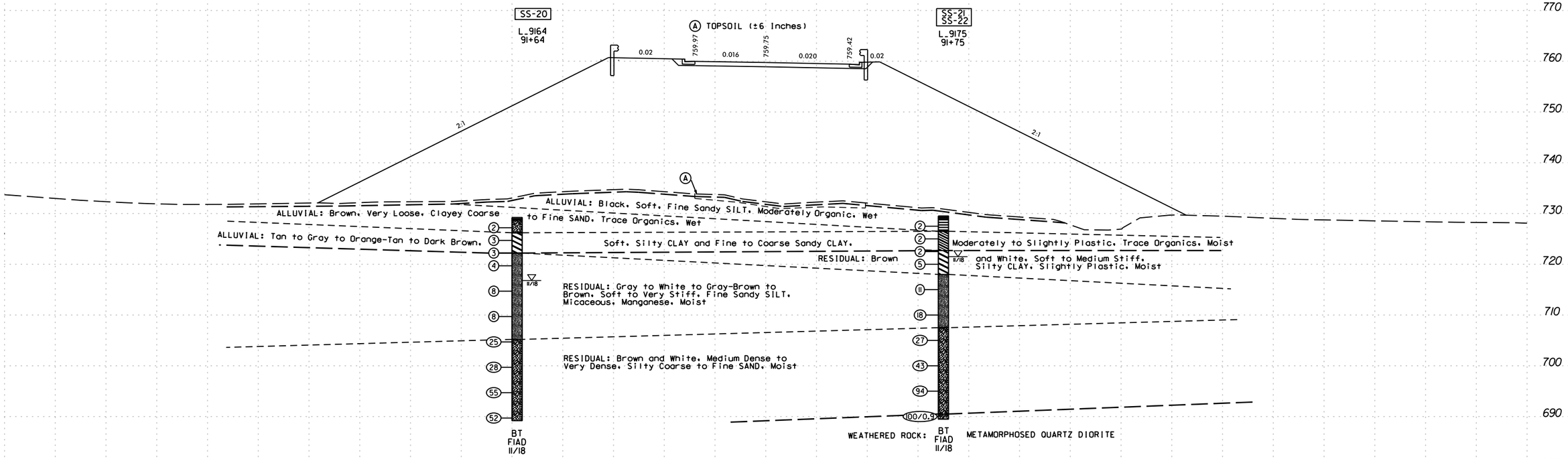
rpestrano

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	52

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-20	49' LT	91+64	3.5-5.0	A-7-6(7)	48	19	36	16	20	28	99	72	51	23.8	-
SS-21	35' RT	91+75	3.5-5.0	A-6(1)	36	14	40	26	16	18	99	71	37	27.7	4.2
SS-22	35' RT	91+75	8.5-10.0	A-7-5(2)	42	12	33	30	24	13	99	77	42	29.3	-



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rpostarno

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	53

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

770 760 750 740 730 720

Ⓐ TOPSOIL (±6 Inches)

0.02 759.83 0.020 760.12 0.020 759.83 0.02

3:1 3:1

RESIDUAL: Gray to White to Gray-Brown to Brown, Soft to Very Stiff, Fine Sandy SILT, Micaceous, Manganese, Moist

92+50.00

770 760 750 740 730 720

Ⓐ TOPSOIL (±6 Inches)

0.02 760.01 0.004 760.06 0.020 759.77 0.02

2:1 2:1

RESIDUAL: Gray to White to Gray-Brown to Brown, Soft to Very Stiff, Fine Sandy SILT, Micaceous, Manganese, Moist

710 700 690

RESIDUAL: Brown and White, Medium Dense to Very Dense, Silty Coarse to Fine SAND, Moist

WEATHERED ROCK: METAMORPHOSED QUARTZ DIORITE

92+00.00

680

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

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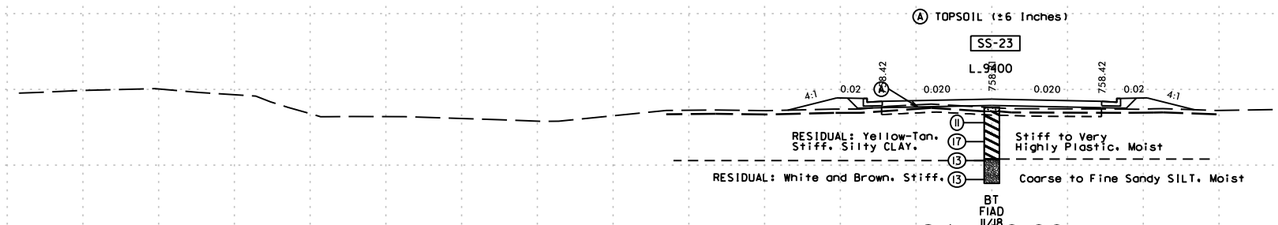
rpastrana

6/23/16

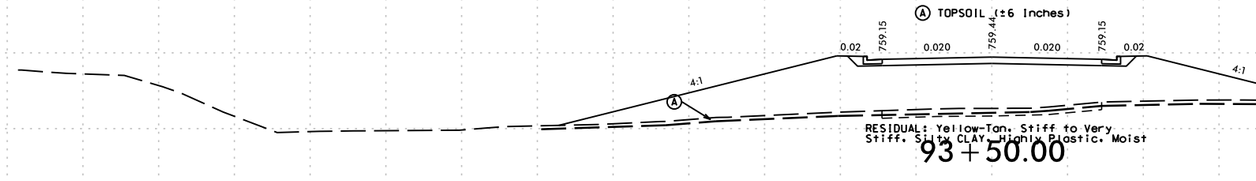
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	54

SOIL TEST RESULTS

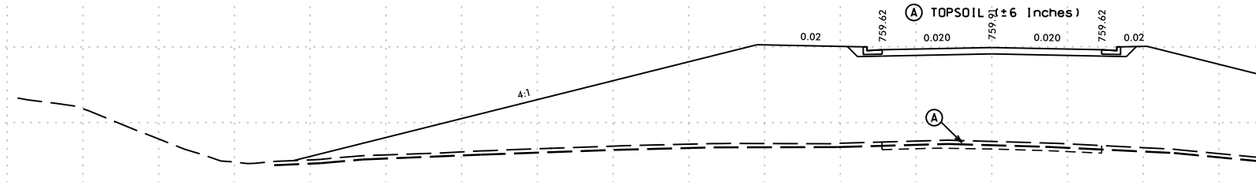
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
SS-23	CL	94+00	3.5-5.0	A-7-6(7)	48	27	41	17	7	35	100	70	44	11.2	-



94+00.00



93+50.00



93+00.00

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rpastrana

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	55

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

780
770
760
750
740

TOPSOIL (±6 Inches)

15.4 (A) 0.02 757.43 0.020 757.43 0.020 (A) 757.43 0.02 8.23:1

RESIDUAL: Yellow-Tan, Stiff to Very Stiff, Silty CLAY, Highly Plastic, Moist

RESIDUAL: White and Brown, Stiff, Coarse to Fine Sandy SILT, Moist

94+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

12/9/2019 9:31:31 AM
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rpastrana

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	56

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

780
770
760
750
740

4:1 0.02 0.02

RESIDUAL: Tan and Red-Brown, Stiff , Silty CLAY, Highly Plastic, Moist

RESIDUAL: White and Red-Brown, Stiff, Fine Sandy SILT, Micaceous with Manganese, Moist

11+00.00

780
770
760
750
740

RESIDUAL: Tan and Red-Brown, Stiff , Silty CLAY, Highly Plastic, Moist

RESIDUAL: White and Red-Brown, Stiff, Fine Sandy SILT, Micaceous with Manganese, Moist

10+50.00

780
770
760
750
740
730

0.00 0.06

RESIDUAL: Tan and Red-Brown, Stiff , Silty CLAY, Highly Plastic, Moist

RESIDUAL: White and Red-Brown, Stiff, Fine Sandy SILT, Micaceous with Manganese, Moist

10+00.00

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

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rpastrana

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	57

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

790 780 770 760 750 740

EXIST. R/W

4:1 0.02

RESIDUAL: Tan and Red-Brown, Stiff , Silty CLAY, Highly Plastic, Moist

RESIDUAL: White and Red-Brown, Stiff, Fine Sandy SILT, Micaceous with Manganese, Moist

12+50.00

EXIST. R/W

4:1 0.02 0.02

RESIDUAL: Tan and Red-Brown, Stiff , Silty CLAY, Highly Plastic, Moist

RESIDUAL: White and Red-Brown, Stiff, Fine Sandy SILT, Micaceous with Manganese, Moist

12+00.00

EXIST. R/W

4:1 0.02 0.02

RESIDUAL: Tan and Red-Brown, Stiff , Silty CLAY, Highly Plastic, Moist

RESIDUAL: White and Red-Brown, Stiff, Fine Sandy SILT, Micaceous with Manganese, Moist

11+50.00

12/6/2019 10:16:59 AM
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rpastrana

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	58

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

790
780
770
760
750

EXIST. R/W

A:1 0.02

RESIDUAL: Tan and Red-Brown, Stiff , Silty CLAY, Highly Plastic, Moist

RESIDUAL: White and Red-Brown, Stiff, Fine Sandy SILT, Micaceous with Manganese, Moist

14+00.00

EXIST. R/W

A:1 0.02 0.02

RESIDUAL: Tan and Red-Brown, Stiff , Silty CLAY, Highly Plastic, Moist

RESIDUAL: White and Red-Brown, Stiff, Fine Sandy SILT, Micaceous with Manganese, Moist

13+50.00

EXIST. R/W

A:1 0.02 0.02

RESIDUAL: Tan and Red-Brown, Stiff , Silty CLAY, Highly Plastic, Moist

RESIDUAL: White and Red-Brown, Stiff, Fine Sandy SILT, Micaceous with Manganese, Moist

13+00.00

6/23/16

12/6/2019 10:16:59 AM
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rpastrana

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	59

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

780 770 760 750

EXIST. R/W

(A) TOPSOIL (±6 Inches)

LI_1603 16+03

4:1 0.02 (A) 0.02 4:1

(12) (13) (9) (11)

RESIDUAL: Tan and Red-Brown, Stiff, Silty CLAY, Highly Plastic, Moist

RESIDUAL: White and Red-Brown, Stiff, Fine Sandy SILT, Micaceous with Manganese, Moist

BT FIAD 11/18

16+00.00

EXIST. R/W

(A) TOPSOIL (±6 Inches)

4:1 0.02 (A) 0.02 4:1

RESIDUAL: Tan and Red-Brown, Stiff, Silty CLAY, Highly Plastic, Moist

RESIDUAL: White and Red-Brown, Stiff, Fine Sandy SILT, Micaceous with Manganese, Moist

15+50.00

(A) TOPSOIL (±6 Inches)

4:1 0.02 (A) 0.02 4:1

RESIDUAL: Tan and Red-Brown, Stiff, Silty CLAY, Highly Plastic, Moist

RESIDUAL: White and Red-Brown, Stiff, Fine Sandy SILT, Micaceous with Manganese, Moist

15+00.00

EXIST. R/W

(A) TOPSOIL (±6 Inches)

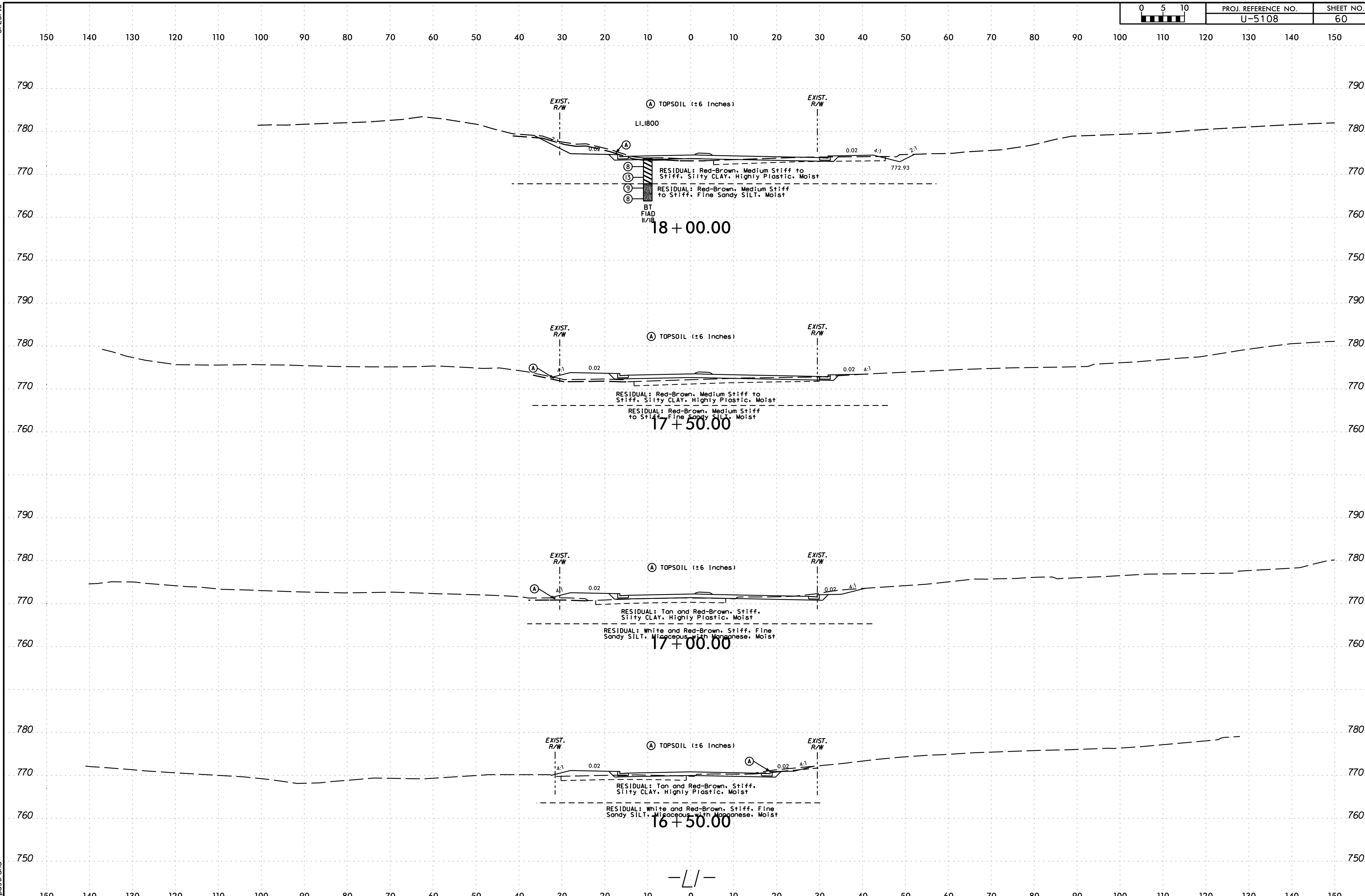
4:1 0.02 (A) 0.02 4:1

RESIDUAL: Tan and Red-Brown, Stiff, Silty CLAY, Highly Plastic, Moist

RESIDUAL: White and Red-Brown, Stiff, Fine Sandy SILT, Micaceous with Manganese, Moist

14+50.00

PROJ. REFERENCE NO.	SHEET NO.
U-5108	60



6/23/16

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rpastrana

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	61

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

800 790 780 770 760

EXIST. R/W

EXIST. R/W

RESIDUAL: Red-Brown, Stiff, Silty CLAY, Highly Plastic, Moist

775.99

RESIDUAL: Red-Brown, Stiff, Fine Sandy SILT, Moist

20+00.00

EXIST. R/W

EXIST. R/W

LI_1951
19+51

(11) (14) (14) (11)

RESIDUAL: Red-Brown, Stiff, Silty CLAY, Highly Plastic, Moist

776.60

RESIDUAL: Red-Brown, Stiff, Fine Sandy SILT, Moist

BT
FIAD
11/18

19+50.00

EXIST. R/W

RESIDUAL: Red-Brown, Medium Stiff to Stiff, Silty CLAY, Highly Plastic, Moist

776.19

RESIDUAL: Red-Brown, Medium Stiff to Stiff, Fine Sandy SILT, Moist

19+00.00

(A) TOPSOIL (±6 Inches)

2:1

(A)

0.02

0.02

4:1

2:1

773.94

RESIDUAL: Red-Brown, Medium Stiff to Stiff, Silty CLAY, Highly Plastic, Moist

775.27

RESIDUAL: Red-Brown, Medium Stiff to Stiff, Fine Sandy SILT, Moist

18+50.00

12/6/2019 10:17:00 AM
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rpastrana

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	62

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

800 790 780 770

Ⓐ TOPSOIL (±7 Inches)

EXIST. R/W

Ⓐ

4:1

0.08

2:1

778.45

0.01

4:1

EXIST. R/W

RESIDUAL: Yellow-Tan to Red-Brown with White, Medium Stiff to Very Stiff, Moderately Plastic, Silty CLAY, Moist, and Coarse to Fine Sandy CLAY with Manganese Seams, Moist

11+50.00

800 790 780 770

Ⓐ TOPSOIL (±8 Inches)

EXIST. R/W

Ⓐ

0.08

4:1

2:1

780.31

0.03

4:1

EXIST. R/W

RESIDUAL: Yellow-Tan to Red-Brown with White, Medium Stiff to Very Stiff, Moderately Plastic, Silty CLAY, Moist, and Coarse to Fine Sandy CLAY with Manganese Seams, Moist

11+00.00

800 790 780 770 760

Y6_I050

EXIST. R/W

Ⓐ TOPSOIL (±9 Inches)

EXIST. R/W

Ⓐ

0.08

0.05

4:1

Ⓢ 5
Ⓢ 15
Ⓢ 24
Ⓢ 17
Ⓢ 11

BT
FIAD
11/18

RESIDUAL: Yellow-Tan to Red-Brown with White, Medium Stiff to Very Stiff, Moderately Plastic, Silty CLAY, Moist, and Coarse to Fine Sandy CLAY with Manganese Seams, Moist

10+50.00

800 790 780

EXIST. R/W

EXIST. R/W

10+00.00

-Y6-

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

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rpastrana

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	63

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

790 780 770 760 810 800

Ⓐ TOPSOIL (±6 Inches)

EXIST. R/W

0.08

4:1

0.00

4:1

2:1

772.90

RESIDUAL: Yellow-Tan to Red-Brown, Stiff to Very Stiff, Silty CLAY, Moderately Plastic, Little Mica, Moist

RESIDUAL: Tan and Brown, Very Loose to Medium Dense, Coarse to Fine SAND, and Moderately Plastic, Clayey Coarse to Fine SAND, Moist

RESIDUAL: Yellow-Tan to Red-Brown with White, Stiff to Medium Stiff, Coarse to Fine Sandy SILT, Micaceous, Manganese Seams, Moist

13 + 00.00

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
SS-25	37' LT	12+50	3.5-5.0	A-7-6(4)	44	23	46	17	11	26	99	64	39	14.3	-

Ⓐ TOPSOIL (±6 Inches)

SS-25

Y6_1250

EXIST. R/W

0.08

4:1

0.00

4:1

2:1

10 16 11 9 7

BT FIAD 11/18

RESIDUAL: Yellow-Tan to Red-Brown, Stiff to Very Stiff, Silty CLAY, Moderately Plastic, Little Mica, Moist

RESIDUAL: Yellow-Tan to Red-Brown with White, Stiff to Medium Stiff, Coarse to Fine Sandy SILT, Micaceous, Manganese Seams, Moist

12 + 50.00

Ⓐ TOPSOIL (±6 Inches)

EXIST. R/W

0.08

4:1

0.01

4:1

2:1

776.60

RESIDUAL: Yellow-Tan to Red-Brown, Stiff to Very Stiff, Silty CLAY, Moderately Plastic, Little Mica, Moist

RESIDUAL: Yellow-Tan to Red-Brown with White, Stiff to Medium Stiff, Coarse to Fine Sandy SILT, Micaceous, Manganese Seams, Moist

12 + 00.00

-Y6-

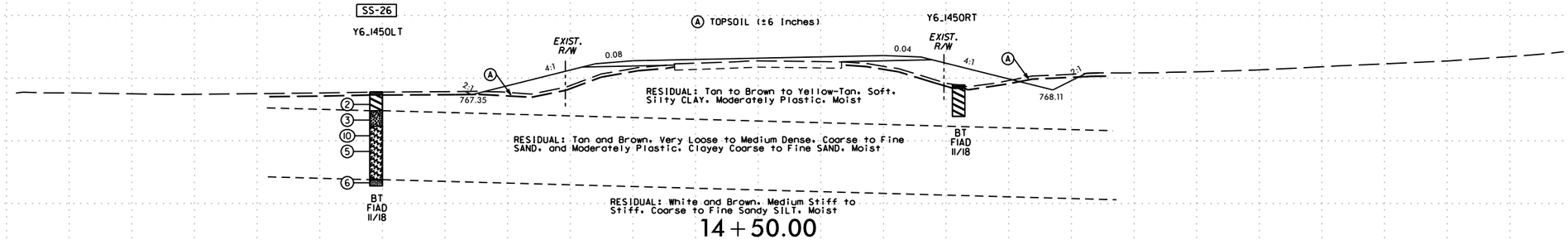
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	64

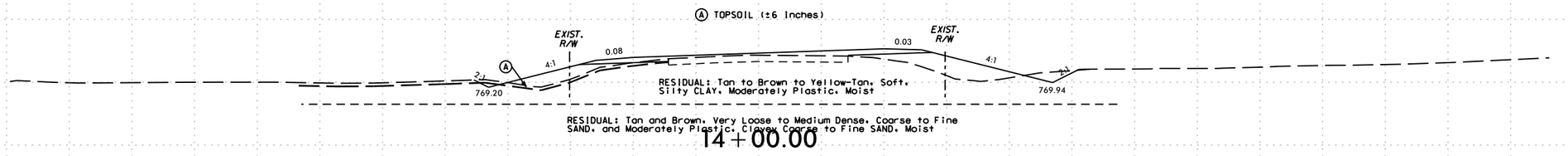
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

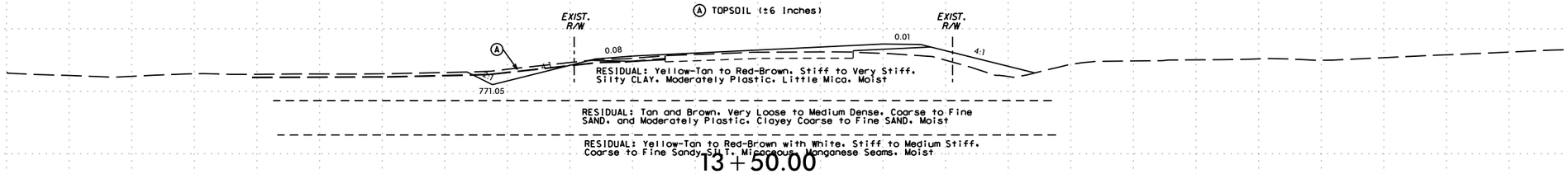
800 790 780 770 760 750

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-26	61' LT	14+50	8.5-10.0	A-2-7(2)	41	24	50	20	10	20	99	63	32	15.0	-







-Y6-

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	65

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

790 780 770 760

EXIST. R/W

EXIST. R/W

PROP. R/W

RESIDUAL: Red-Brown. Stiff. Silty CLAY. Moist

RESIDUAL: Red-Brown to Tan. Stiff to Medium Stiff. Coarse to Fine Sandy SILT. Little Mica. Moist

16+50.00

780 770 760

RESIDUAL: Red-Brown. Stiff. Silty CLAY. Moist

RESIDUAL: Red-Brown to Tan. Stiff to Medium Stiff. Coarse to Fine Sandy SILT. Little Mica. Moist

16+00.00

800 790 780 770 760

Ⓐ TOPSOIL (±6 Inches)

EXIST. R/W

EXIST. R/W

0.08

0.07

4:1

4:1

2:1

766.20

770.56

RESIDUAL: Tan to Brown to Yellow-Tan. Soft. Silty CLAY. Moderately Plastic. Moist

RESIDUAL: Tan and Brown. Very Loose to Medium Dense. Coarse to Fine SAND. and Moderately Plastic. Clayey Coarse to Fine SAND. Moist

15+50.00

780 770 760

Ⓐ TOPSOIL (±6 Inches)

EXIST. R/W

EXIST. R/W

0.08

0.05

4:1

4:1

2:1

766.45

768.24

RESIDUAL: Tan to Brown to Yellow-Tan. Soft. Silty CLAY. Moderately Plastic. Moist

RESIDUAL: Tan and Brown. Very Loose to Medium Dense. Coarse to Fine SAND. and Moderately Plastic. Clayey Coarse to Fine SAND. Moist

15+00.00

-Y6-

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

12/6/2019 10:17:02 AM
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rpastrana

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	66

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

800
790
780
770
760

EXIST. R/W

EAGLERIDGE WAY LANE

RESIDUAL: Red-Brown, Stiff, Silty CLAY, Moist

RESIDUAL: Red-Brown to Tan, Stiff to Medium Stiff, Coarse to Fine Sandy SILT, Little Mica, Moist

18+00.00

790
780
770
760
800

EXIST. R/W

Y6_1772
17+72

14
14
10
7

BT
FIAD
11/18

EXIST. R/W

RESIDUAL: Red-Brown, Stiff, Silty CLAY, Moist

RESIDUAL: Red-Brown to Tan, Stiff to Medium Stiff, Coarse to Fine Sandy SILT, Little Mica, Moist

17+50.00

790
780
770
760

EXIST. R/W

EXIST. R/W

RESIDUAL: Red-Brown, Stiff, Silty CLAY, Moist

RESIDUAL: Red-Brown to Tan, Stiff to Medium Stiff, Coarse to Fine Sandy SILT, Little Mica, Moist

17+00.00

-Y6-

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

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rpastrana

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	67

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

800
790
780
770
760

EXIST. R/W

RESIDUAL: Red-Brown, Medium Stiff to Stiff, Silty CLAY, Moderately Plastic, Moist

RESIDUAL: Red-Brown to Yellow-Tan, Very Stiff to Stiff, Coarse to Fine Sandy SILT, Moist

19+50.00

EXIST. R/W

RESIDUAL: Red-Brown, Stiff, Silty CLAY, Moist

RESIDUAL: Red-Brown to Tan, Stiff to Medium Stiff, Coarse to Fine Sandy SILT, Little Mica, Moist

19+00.00

EXIST. R/W

EAGLERIDGE WAY LANE

RESIDUAL: Red-Brown, Stiff, Silty CLAY, Moist

RESIDUAL: Red-Brown to Tan, Stiff to Medium Stiff, Coarse to Fine Sandy SILT, Little Mica, Moist

18+50.00

-Y6-

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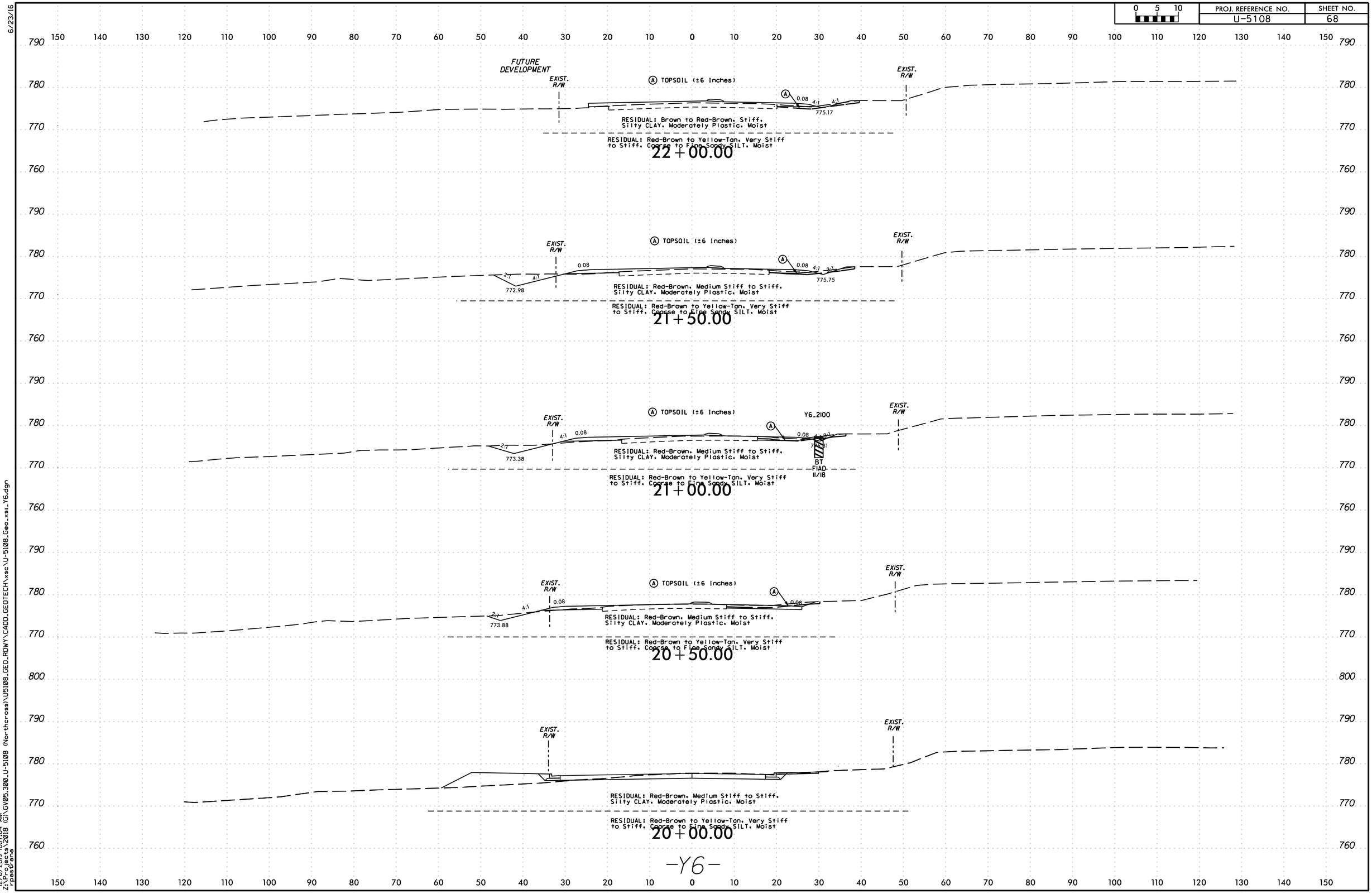

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6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	69

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

790 780 770 760

EXIST. R/W

(A) TOPSOIL (±6 Inches)

0.08 4:1 2:1 768.67

0.08 4:1 3:1 770.61

RESIDUAL: Brown to Red-Brown, Stiff, Silty CLAY, Moderately Plastic, Moist

RESIDUAL: Red-Brown to Yellow-Tan, Very Stiff to Stiff, Coarse to Fine Sandy SILT, Moist

24+00.00

EXIST. R/W

790 780 770 760

EXIST. R/W

(A) TOPSOIL (±6 Inches)

0.08 4:1 2:1 769.93

0.08 4:1 3:1 771.77

RESIDUAL: Brown to Red-Brown, Stiff, Silty CLAY, Moderately Plastic, Moist

RESIDUAL: Red-Brown to Yellow-Tan, Very Stiff to Stiff, Coarse to Fine Sandy SILT, Moist

23+50.00

EXIST. R/W

790 780 770 760 750

EXIST. R/W

Y6_2300LT

(A) TOPSOIL (±6 Inches)

Y6_2300RT

0.08 4:1 2:1

(N=22) (15) (14) (13)

BT FIAD II/18

0.08 4:1 4:1 773.24

BT FIAD II/18

RESIDUAL: Brown to Red-Brown, Stiff, Silty CLAY, Moderately Plastic, Moist

RESIDUAL: Red-Brown to Yellow-Tan, Very Stiff to Stiff, Coarse to Fine Sandy SILT, Moist

23+00.00

EXIST. R/W

790 780 770 760 750

FUTURE DEVELOPMENT

EXIST. R/W

(A) TOPSOIL (±6 Inches)

0.08 4:1 4:1 774.23

EXIST. R/W

RESIDUAL: Brown to Red-Brown, Stiff, Silty CLAY, Moderately Plastic, Moist

RESIDUAL: Red-Brown to Yellow-Tan, Very Stiff to Stiff, Coarse to Fine Sandy SILT, Moist

22+50.00

-Y6-

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

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6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	70

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

780 770 760 750

EXIST. R/W

Ⓐ TOPSOIL (±6 Inches)

2:1 0.08 4:1 0.08 4:1

RESIDUAL: Red-Brown to Orange, Medium Stiff to Stiff, Silty CLAY, Moderately Plastic, Moist

RESIDUAL: Red-Brown to Yellow-Tan, Very Stiff to Stiff, Coarse to Fine Sandy SILT, Moist

25+50.00

EXIST. R/W

Ⓐ TOPSOIL (±6 Inches)

Y6_2500

2:1 765.98 4:1 0.08 0.08 4:1 4:1 768.19

RESIDUAL: Red-Brown to Orange, Medium Stiff to Stiff, Silty CLAY, Moderately Plastic, Moist

RESIDUAL: Red-Brown to Yellow-Tan, Very Stiff to Stiff, Coarse to Fine Sandy SILT, Moist

BT FIAD 11/18

25+00.00

EXIST. R/W

Ⓐ TOPSOIL (±6 Inches)

2:1 767.36 4:1 0.08 0.08 4:1 2:1 769.25

RESIDUAL: Red-Brown to Orange, Medium Stiff to Stiff, Silty CLAY, Moderately Plastic, Moist

RESIDUAL: Red-Brown to Yellow-Tan, Very Stiff to Stiff, Coarse to Fine Sandy SILT, Moist

24+50.00

-Y6-

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6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	71

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

790
780
770
760

RESIDUAL: Red-Brown, Stiff, Silty CLAY.
Highly to Moderately Plastic, Moist

RESIDUAL: Red-Brown to Yellow-Tan to Tan, Stiff to Medium Stiff,
Coarse to Fine Sandy SILT, Micaceous with Manganese Seams, Moist

10+75.00

790
780
770

RESIDUAL: Red-Brown, Stiff, Silty CLAY.
Highly to Moderately Plastic, Moist

RESIDUAL: Red-Brown to Yellow-Tan to Tan, Stiff to Medium Stiff,
Coarse to Fine Sandy SILT, Micaceous with Manganese Seams, Moist

10+50.00

800
790
780
770

RESIDUAL: Red-Brown, Stiff, Silty CLAY.
Highly to Moderately Plastic, Moist

RESIDUAL: Red-Brown to Yellow-Tan to Tan, Stiff to Medium Stiff,
Coarse to Fine Sandy SILT, Micaceous with Manganese Seams, Moist

10+25.00

760
790
780
770

Y6_I772

RESIDUAL: Red-Brown, Stiff, Silty CLAY, Highly to Moderately Plastic, Moist (14)

(14)

RESIDUAL: Red-Brown to Yellow-Tan to Tan, Stiff to Medium Stiff, (10)
Coarse to Fine Sandy SILT, Micaceous with Manganese Seams, Moist (7)

BT
FIAD
11/18

10+00.00

760
750

-RABA-

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

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rossfons

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	72

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

790
780
770
760

RESIDUAL: Red-Brown, Medium Stiff to Stiff, Silty CLAY, Moderately Plastic, Moist

RESIDUAL: Red-Brown to Yellow-Tan to Tan, Very Stiff to Stiff, Coarse to Fine Sandy SILT, Moist

11+75.00

790
780
770
760

RESIDUAL: Red-Brown, Medium Stiff to Stiff, Silty CLAY, Moderately Plastic, Moist

RESIDUAL: Red-Brown to Yellow-Tan to Tan, Very Stiff to Stiff, Coarse to Fine Sandy SILT, Moist

11+50.00

800
790
780
770
760

RESIDUAL: Red-Brown, Stiff, Silty CLAY, Highly to Moderately Plastic, Moist

RESIDUAL: Red-Brown to Yellow-Tan to Tan, Stiff to Medium Stiff, Coarse to Fine Sandy SILT, Micaceous with Manganese Seams, Moist

11+25.00

790
780
770
760

RESIDUAL: Red-Brown, Stiff, Silty CLAY, Highly to Moderately Plastic, Moist

RESIDUAL: Red-Brown to Yellow-Tan to Tan, Stiff to Medium Stiff, Coarse to Fine Sandy SILT, Micaceous with Manganese Seams, Moist

11+00.00

-RABA-

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

6/23/16

0 5 10

PROJ. REFERENCE NO.	SHEET NO.
U-5108	73

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

800
790
780
770
760

RESIDUAL: Red-Brown. Medium Stiff to Stiff. Silty CLAY. Moderately Plastic. Moist

RESIDUAL: Red-Brown to Yellow-Tan to Tan. Very Stiff to Stiff. Coarse to Fine Sandy SILT. Moist

12+25.00

RESIDUAL: Red-Brown. Medium Stiff to Stiff. Silty CLAY. Moderately Plastic. Moist

RESIDUAL: Red-Brown to Yellow-Tan to Tan. Very Stiff to Stiff. Coarse to Fine Sandy SILT. Moist

12+00.00

-RABA-

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6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	74

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

790 780 770 760 750

Ⓐ TOPSOIL (±5 Inches)

Ⓕ RESIDUAL: Tan-Brown to Brown to Yellow-Tan, Soft, Silty CLAY, Moderately Plastic, Moist

RESIDUAL: Red-Brown to Yellow-Tan to Tan, Stiff to Medium Stiff, Coarse to Fine Sandy SILT, Micaceous with Manganese Seams, Moist

RESIDUAL: Tan and Brown, Very Loose to Medium Dense, Coarse to Fine SAND, and Moderately Plastic, Clayey Coarse to Fine SAND, Moist

10+31.00

Ⓐ TOPSOIL (±6 Inches)

Ⓕ RESIDUAL: Tan-Brown to Brown to Yellow-Tan, Soft, Silty CLAY, Moderately Plastic, Moist

RESIDUAL: Red-Brown to Yellow-Tan to Tan, Stiff to Medium Stiff, Coarse to Fine Sandy SILT, Micaceous with Manganese Seams, Moist

RESIDUAL: Tan and Brown, Very Loose to Medium Dense, Coarse to Fine SAND, and Moderately Plastic, Clayey Coarse to Fine SAND, Moist

10+25.00

Ⓐ TOPSOIL (±6 Inches)

Ⓕ RESIDUAL: Tan-Brown to Brown to Yellow-Tan, Soft, Silty CLAY, Moderately Plastic, Moist

RESIDUAL: Red-Brown to Yellow-Tan to Tan, Stiff to Medium Stiff, Coarse to Fine Sandy SILT, Micaceous with Manganese Seams, Moist

RESIDUAL: Tan and Brown, Very Loose to Medium Dense, Coarse to Fine SAND, and Moderately Plastic, Clayey Coarse to Fine SAND, Moist

10+00.00

-RABB-

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6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	75

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

800 790 780 770 760

RESIDUAL: Red-Brown. Stiff. Silty CLAY.
Highly to Moderately Plastic. Moist

RESIDUAL: Red-Brown to Yellow-Tan to Tan. Stiff to Medium Stiff.
Coarse to Fine Sandy SILT. Micaceous with Manganese Seams. Moist

11+00.00

Ⓕ RESIDUAL: Red-Brown. Stiff. Silty CLAY.
Highly to Moderately Plastic. Moist

Ⓕ

RESIDUAL: Red-Brown to Yellow-Tan to Tan. Stiff to Medium Stiff.
Coarse to Fine Sandy SILT. Micaceous with Manganese Seams. Moist

10+75.00

Ⓐ TOPSOIL (±4 Inches)

Ⓕ RESIDUAL: Tan-Brown to Brown to Yellow-Tan.
Soft. Silty CLAY. Moderately Plastic. Moist

Ⓐ Ⓕ

RESIDUAL: Red-Brown to Yellow-Tan to Tan. Stiff to Medium Stiff.
Coarse to Fine Sandy SILT. Micaceous with Manganese Seams. Moist

RESIDUAL: Tan and Brown. Very Loose to Medium Dense. Coarse to Fine
SAND. and Moderately Plastic. Clayey Coarse to Fine SAND. Moist

10+50.00

-RABB-

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6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	76

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

790
780
770
760

RESIDUAL: Red-Brown. Stiff. Silty CLAY.
Highly to Moderately Plastic. Moist

RESIDUAL: Red-Brown to Yellow-Tan to Tan. Stiff to Medium Stiff.
Coarse to Fine Sandy Silt. Micaceous with Manganese Seams. Moist

11+25.00

-RABB-

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

790
780
770
760

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6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	77

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

800
790
780
770
760

Ⓐ TOPSOIL (±4 Inches)

RESIDUAL: Red-Brown, Stiff, Silty CLAY, Highly to Moderately Plastic, Moist

RESIDUAL: Red-Brown to Yellow-Tan to Tan, Stiff to Medium Stiff, Coarse to Fine Sandy SILT, Micaceous with Manganese Seams, Moist

10+75.00

RESIDUAL: Tan-Brown to Brown to Yellow-Tan, Soft, Silty CLAY, Moderately Plastic, Moist

RESIDUAL: Red-Brown to Yellow-Tan to Tan, Stiff to Medium Stiff, Coarse to Fine Sandy SILT, Micaceous with Manganese Seams, Moist

10+50.00

Ⓕ RESIDUAL: Tan-Brown to Brown to Yellow-Tan, Soft, Silty CLAY, Moderately Plastic, Moist

RESIDUAL: Red-Brown to Yellow-Tan to Tan, Stiff to Medium Stiff, Coarse to Fine Sandy SILT, Micaceous with Manganese Seams, Moist

10+25.00

Ⓕ RESIDUAL: Tan-Brown to Brown to Yellow-Tan, Soft, Silty CLAY, Moderately Plastic, Moist

RESIDUAL: Red-Brown to Yellow-Tan to Tan, Stiff to Medium Stiff, Coarse to Fine Sandy SILT, Micaceous with Manganese Seams, Moist

RESIDUAL: Tan and Brown, Very Loose to Medium Dense, Coarse to Fine SAND, and Moderately Plastic, Clayey Coarse to Fine SAND, Moist

10+00.00

740
750

-RABC-

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

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6/23/16

NOTE: END -RABC- AT STA. 12+41.61
-RABC- STA. 12+41.61 = -LI- STA. 18+50/-RABD- STA. 10+00

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	78

NOTE: END -RABC- AT STA. 12+41.61
-RABC- STA. 12+41.61 = -LI- STA. 18+50/-RABD- STA. 10+00

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

790 780 770 760 810 800 790 780 770 760

Ⓐ TOPSOIL (±6 Inches)

RESIDUAL: Red-Brown, Stiff, Silty CLAY.
Highly to Moderately Plastic, Moist

RESIDUAL: Red-Brown to Yellow-Tan to Tan, Stiff to Medium Stiff,
Coarse to Fine Sandy SILT, Micaceous with Manganese Seams, Moist

11+75.00

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
SS-24	44' LT	19+51	1.0-2.5	A-7-5(22)	75	35	28	11	17	44	99	77	63	28.5	-

* NOTE: STATION AND OFFSET REFER TO -L1- ALIGNMENT

Ⓐ TOPSOIL (±6 Inches)

SS-24
LI 1951
11+39

(11) (14) (14) (11)

RESIDUAL: Red-Brown, Stiff, Silty CLAY.
Highly to Moderately Plastic, Moist

RESIDUAL: Red-Brown to Yellow-Tan to Tan,
Stiff to Medium Stiff, Coarse to Fine Sandy
SILT, Micaceous with Manganese Seams, Moist

BT
FIAD
11/18

11+50.00

Ⓐ TOPSOIL (±6 Inches)

RESIDUAL: Red-Brown, Stiff, Silty CLAY.
Highly to Moderately Plastic, Moist

RESIDUAL: Red-Brown to Yellow-Tan to Tan, Stiff to Medium Stiff,
Coarse to Fine Sandy SILT, Micaceous with Manganese Seams, Moist

11+25.00

Ⓐ TOPSOIL (±5 Inches)

RESIDUAL: Red-Brown, Stiff, Silty CLAY.
Highly to Moderately Plastic, Moist

RESIDUAL: Red-Brown to Yellow-Tan to Tan, Stiff to Medium Stiff,
Coarse to Fine Sandy SILT, Micaceous with Manganese Seams, Moist

11+00.00

-RABC-

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

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6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	79

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

800
790
780
770
760

Ⓐ TOPSOIL (±6 Inches)

RESIDUAL: Red-Brown, Medium Stiff to Stiff, Silty CLAY, Highly Plastic, Moist

RESIDUAL: Red-Brown, Medium Stiff to Stiff, Fine Sandy SILT, Moist

12+25.00

Ⓐ TOPSOIL (±6 Inches)

RESIDUAL: Red-Brown, Medium Stiff to Stiff, Silty CLAY, Highly Plastic, Moist

RESIDUAL: Red-Brown, Medium Stiff to Stiff, Fine Sandy SILT, Moist

12+00.00

-RABC-

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6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	80

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

800
790
780
770
760

RESIDUAL: Red-Brown. Stiff. Silty CLAY.
Highly to Moderately Plastic. Moist

775.66

RESIDUAL: Red-Brown to Yellow-Tan to Tan. Stiff to Medium Stiff.
Coarse to Fine Sandy SILT. Micaceous with Manganese Seams. Moist

10+75.00

790
780
770
760

RESIDUAL: Red-Brown. Stiff. Silty CLAY.
Highly to Moderately Plastic. Moist

775.05

RESIDUAL: Red-Brown to Yellow-Tan to Tan. Stiff to Medium Stiff.
Coarse to Fine Sandy SILT. Micaceous with Manganese Seams. Moist

10+50.00

790
780
770
760

RESIDUAL: Red-Brown. Medium Stiff to
Stiff. Silty CLAY. Highly Plastic. Moist

774.44

RESIDUAL: Red-Brown. Medium Stiff
to Stiff. Fine Sandy SILT. Moist

10+25.00

790
780
770
760
750

RESIDUAL: Red-Brown. Medium Stiff to
Stiff. Silty CLAY. Highly Plastic. Moist

773.82

RESIDUAL: Red-Brown. Medium Stiff
to Stiff. Fine Sandy SILT. Moist

10+00.00

-RABD-

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

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rpastrana

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	81

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

790
780
770
760

RESIDUAL: Red-Brown, Stiff, Silty CLAY.
Highly to Moderately Plastic, Moist

RESIDUAL: Red-Brown to Yellow-Tan to Tan, Stiff to Medium Stiff.
Coarse to Fine Sandy SILT, Micaceous with Manganese Seams, Moist

11+75.00

RESIDUAL: Red-Brown, Stiff, Silty CLAY.
Highly to Moderately Plastic, Moist

RESIDUAL: Red-Brown to Yellow-Tan to Tan, Stiff to Medium Stiff.
Coarse to Fine Sandy SILT, Micaceous with Manganese Seams, Moist

11+50.00

RESIDUAL: Red-Brown, Stiff, Silty CLAY.
Highly to Moderately , Moist

RESIDUAL: Red-Brown to Yellow-Tan to Tan, Stiff to Medium Stiff.
Coarse to Fine Sandy SILT, Micaceous with Manganese Seams, Moist

11+25.00

RESIDUAL: Red-Brown, Stiff, Silty CLAY.
Highly to Moderately Plastic, Moist

RESIDUAL: Red-Brown to Yellow-Tan to Tan, Stiff to Medium Stiff.
Coarse to Fine Sandy SILT, Micaceous with Manganese Seams, Moist

11+00.00

-RABD-

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

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rpastrana

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	82

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

790
780
770
760

Ⓐ TOPSOIL (±6 Inches)

RESIDUAL: Red-Brown, Medium Stiff to Stiff, Silty CLAY, Moderately Plastic, Moist

RESIDUAL: Red-Brown to Yellow-Tan to Tan, Very Stiff to Stiff, Coarse to Fine Sandy SILT, Moist

12+75.00

790
780
770
760

Ⓐ TOPSOIL (±6 Inches)

RESIDUAL: Red-Brown, Medium Stiff to Stiff, Silty CLAY, Moderately Plastic, Moist

RESIDUAL: Red-Brown to Yellow-Tan to Tan, Very Stiff to Stiff, Coarse to Fine Sandy SILT, Moist

12+50.00

790
780
770
760

Ⓐ TOPSOIL (±5 Inches)

RESIDUAL: Red-Brown, Medium Stiff to Stiff, Silty CLAY, Moderately Plastic, Moist

RESIDUAL: Red-Brown to Yellow-Tan to Tan, Very Stiff to Stiff, Coarse to Fine Sandy SILT, Moist

12+25.00

800
790
780
770
760

RESIDUAL: Red-Brown, Stiff, Silty CLAY, Highly to Moderately Plastic, Moist

RESIDUAL: Red-Brown to Yellow-Tan to Tan, Stiff to Medium Stiff, Coarse to Fine Sandy SILT, Micaceous with Manganese Seams, Moist

12+00.00

-RABD-

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

12/6/2019 10:17:09 AM
Z:\Projects\2018 (G)\GV05.300.U-5108 (Northcross)\U5108.GEO.RDWY\CADD_GEOTECH\xsc\U-5108.Geo_xsl_RABD.dgn
rpestrano

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-5108	83

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

790
780
770
760

Ⓐ TOPSOIL (±6 Inches)

RESIDUAL: Red-Brown, Medium Stiff to Stiff, Silty CLAY, Moderately Plastic, Moist

RESIDUAL: Red-Brown to Yellow-Tan to Tan, Very Stiff to Stiff, Coarse to Fine Sandy SILT, Moist

13+00.00

-RABD-

790
780
770
760

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

12/6/2019 10:17:09 AM
Z:\Projects\2018 (G)\GV05.300.U-5108 (Northcross)\U5108.GEO.RDWY\CADD_GEOTECH\xsc\U-5108_Geo_xsi_RABD.dgn
rpastrana

PROJECT REFERENCE NO.	SHEET NO.
U–5108	84

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

APPENDIX A
LABORATORY TEST RESULTS

REFERENCE: U–5108

PROJECT: 42370

ESP
ESP ASSOCIATES, INC.
7011 ALBERT PICK RD
SUITE E
GREENSBORO, NC 27409
FIRM # C-0587
WWW.ESPASSOCIATES.COM

SOILS LABORATORY TESTS RESULTS

WBS NO.: 42370.1.1

TIP NO.: U-5108

COUNTY: Mecklenburg

SITE DESCRIPTION: Northcross Drive Extension From End of Northcross Drive to Westmoreland Drive

BORING NO.	SAMPLE NO.	BORING LOCATION	DEPTH INTERVAL (FT)	AASHTO CLASS	N	L.L	P.I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
								CSE. SAND	F. SAND	SILT	CLAY	10	40	200		
EB1-A	SS-1	-L- STA. 73+46, 24' LT	3.5-5.0	A-2-4 (0)	2	NP	NP	61	26	5	8	99	57	16	22.3	-
EB2-A	SS-2	-L- STA. 74+56, 24' LT	8.7-10.2	A-4 (1)	2	31	7	19	41	21	19	100	93	49	36.6	-
EB2-B	SS-3	-L- STA. 74+56, 18' RT	8.7-10.2	A-7-6 (6)	3	41	20	28	28	17	27	95	80	47	26.2	-
L_2800	SS-4	-L-STA. 28+00, 29' RT	1.0-2.5	A-7-5 (35)	5	75	41	15	11	14	60	100	91	77	31.0	-
RWAL1-3	SS-5	-L- STA. 32+09, 13' LT	1.0-2.5	A-7-5 (27)	7	71	41	21	16	13	50	99	87	66	30.0	-
RWAL1-5	SS-6	-L- STA. 33+14, 22' LT	8.5-10.0	A-7-5 (7)	10	53	12	26	20	9	45	100	82	59	33.3	-
L_3800LT	SS-7	-L- STA. 38+00, 20' LT	1.0-2.5	A-7-5 (22)	6	68	38	33	7	9	51	100	73	61	25.8	-
L_4450	SS-8	-L- STA. 44+50, 15' LT	13.5-15.0	A-5 (3)	4	50	9	31	31	23	15	100	81	46	35.6	-
L_4600	SS-9	-L- STA. 46+00, CL	1.0-2.5	A-2-4 (0)	3	23	9	49	21	13	17	100	67	33	15.6	-
L_5600	SS-10	-L- STA. 56+00, CL	3.5-5.0	A-7-5 (11)	16	63	21	30	18	23	29	100	80	55	28.3	-
L_5700LT	SS-11	-L- STA. 57+00, 27' LT	13.5-15.0	A-7-5 (11)	13	62	22	29	19	28	24	100	80	56	17.9	-
L_5900	SS-12	-L- STA. 59+00, CL	1.0-2.5	A-7-5 (27)	17	97	55	42	5	9	44	100	65	54	31.1	-
L_6500RT	SS-13	-L- STA. 65+00, 27' RT	8.5-10.0	A-7-5 (9)	14	51	18	28	21	28	23	99	79	56	15.8	-
L_6700	SS-14	-L- STA. 67+00, 10' RT	1.0-2.5	A-7-5 (24)	8	63	33	21	10	14	55	100	84	71	30.7	-
L_7250	SS-15	-L- STA. 72+50, CL	1.0-2.5	A-4 (0)	54	NP	NP	36	32	21	11	96	72	37	15.8	-
L_7700	SS-16	-L- STA. 77+00, CL	1.0-2.5	A-7-6 (8)	9	42	25	32	21	14	33	100	79	49	16.8	-
L_7850	SS-17	-L- STA. 78+50, CL	3.5-5.0	A-7-6 (12)	9	54	30	33	18	11	38	99	76	53	22.5	-
L_8250	SS-18	-L- STA. 82+50, 20' RT	3.5-5.0	A-5 (3)	8	51	10	36	21	20	23	100	75	48	27.8	-
L_8250	SS-19	-L- STA. 82+50, 20' RT	8.5-10.0	A-5 (1)	8	52	9	37	28	22	13	100	75	42	21.2	-
L_9164	SS-20	-L- STA. 91+64, 49' LT	3.5-5.0	A-7-6 (7)	3	48	19	36	16	20	28	99	72	51	23.8	-
L_9175	SS-21	-L- STA. 91+75, 35' RT	3.5-5.0	A-6 (1)	2	36	14	40	26	16	18	99	71	37	27.7	4.2
L_9175	SS-22	-L- STA. 91+75, 35' RT	8.5-10.0	A-7-5 (2)	5	42	12	33	30	24	13	99	77	42	29.3	-
L_9400	SS-23	-L- STA. 94+00, CL	3.5-5.0	A-7-6 (7)	17	48	27	41	17	7	35	100	70	44	11.2	-
L1_1951	SS-24	-L1- STA. 19+51, 44' LT	1.0-2.5	A-7-5 (22)	11	75	35	28	11	17	44	99	77	63	28.5	-
Y6_1250	SS-25	-Y6- STA. 12+50, 37' LT	3.5-5.0	A-7-6 (4)	16	44	23	46	17	11	26	99	64	39	14.3	-
Y6_1450LT	SS-26	-Y6- STA. 14+50, 61' LT	8.5-10.0	A-2-7 (2)	5	41	24	50	20	10	20	99	63	32	15.0	-

Signed: 

NCDOT Certification No. 129-04-0411