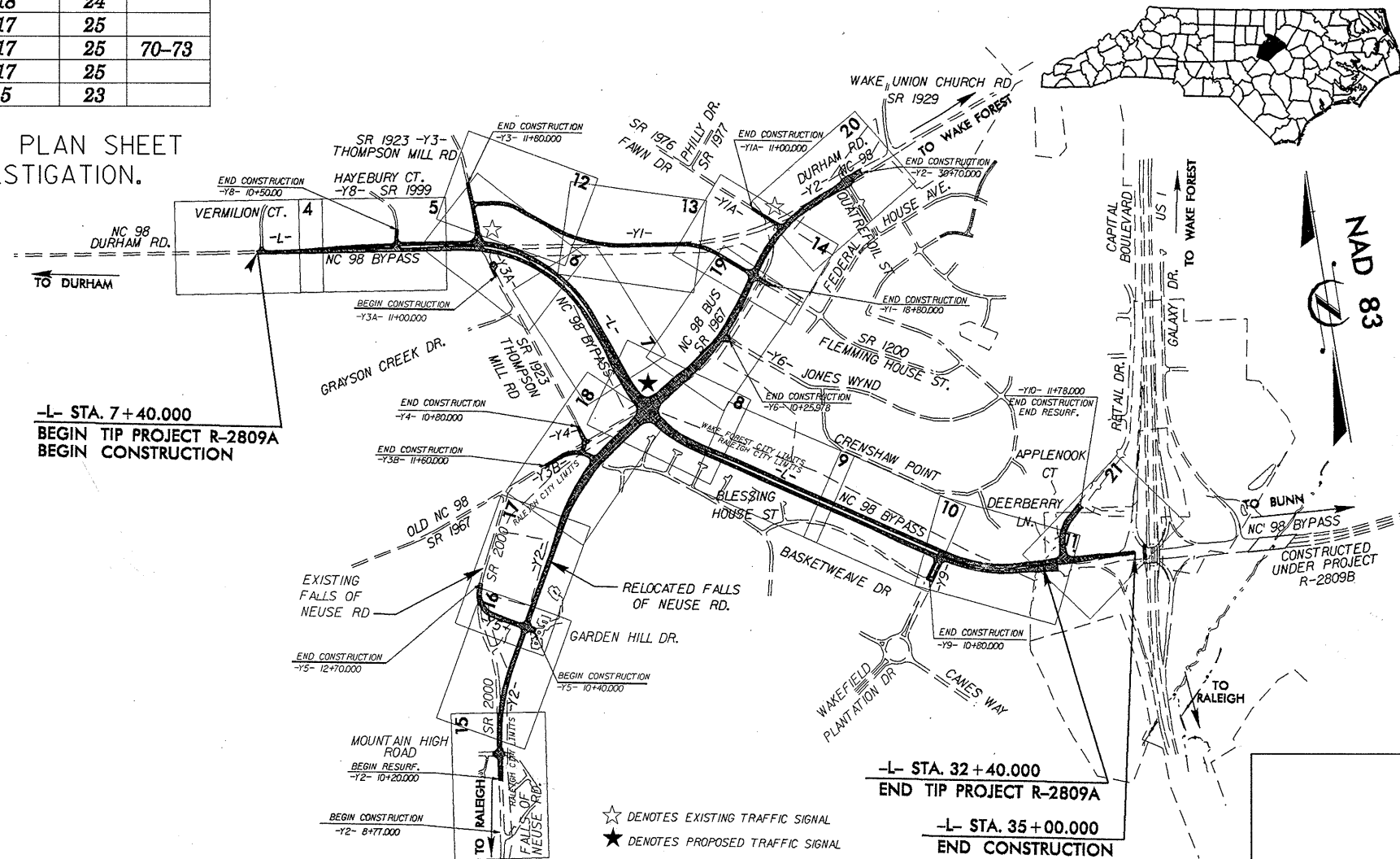


CONTRACT: C201737 ID: R-2809A

CONTENTS:	LINE	STATION	SHEET NUMBERS		
			PLAN	PROFILE	X-SECTS.
	-L-	7+40 to 12+60	4-6	21	
		12+60 to 13+40	6	21	28-30
		13+40 to 19+00	6-7	21	
		19+00 to 19+60	7-8	21	31-32
		19+60 to 20+80	8	21,22	
		20+80 to 22+00	8	22	33-35
		22+00 to 25+00	8,9	22	
		25+00 to 32+00	9-11	22	36-52
		32+00 to 32+40	11	22	
	-LTRANS-	7+40 to 11+00	4,5	23	
	-DR1-	10+00 to 10+51	14	25	
	-Y1-	10+00 to 12+80	12	24	53-58
		12+80 to 19+07	12-14	24	
	-Y1A-	10+00 to 11+66	14	25	
	-Y2-	10+20 to 18+40	15-18	26	
		18+40 to 22+40	8,18	26,27	59-65
		22+40 to 27+60	8,14,19	27	
		27+60 to 29+00	14,20	27	66-69
		29+00 to 30+74	20	27	
	-Y3-	10+00 to 12+49	6,12	23	
	-Y3A-	11+00 to 11+89	6	23	
	-Y3B-	10+00 to 12+64	18	25	
	-Y4-	10+00 to 11+01	18	24	
	-Y5-	10+00 to 10+20	17	25	
		10+20 to 11+80	17	25	70-73
		11+80 to 13+68	17	25	
	-Y8-	10+00 to 10+51	5	23	

NOTE: REFER TO SHEET 2A FOR PLAN SHEET LAYOUT AT TIME OF INVESTIGATION.



DRAWN BY: W. D. FIELDS, J. L. PEDRO, T. T. WALKER

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N.C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

NOTE - 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.

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

ROADWAY SUBSURFACE INVESTIGATION

STATE PROJ. 34503.1.1 I.D. R-2809A F.A. PROJ. STP-98(1)
 COUNTY WAKE
 PROJECT DESCRIPTION NC 98 (WAKE FOREST BYPASS)
FROM WEST OR SR 1923 (THOMPSON MILL ROAD)
TO WEST OF US 1 (CAPITAL BLVD.)

INVENTORY

METRIC

ALL DIMENSIONS IN THESE PLANS ARE IN METERS OR MILLIMETERS UNLESS OTHERWISE SHOWN

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2809A	1	73
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34503.1.1	STP-98(1)	PE	
34503.2.5	STP-98(2)	RW & UTIL	
34503.3.7	STP-98(23)	CONST.	

CAUTION NOTICE

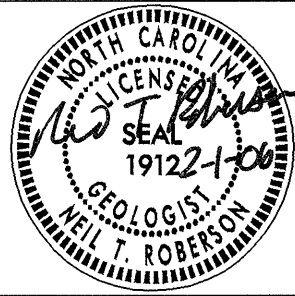
THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION FOR WHICH IT IS BASED WAS MADE FOR THE PURPOSE OF STUDY, PLANNING AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES, AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N.C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL UNIT @ (919) 250-4088. NEITHER THE SUBSURFACE PLANS AND REPORTS, NOR THE FIELD BORING LOGS, ROCK CORES, OR SOIL TEST DATA IS 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 RELED 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 THIS 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.

- PERSONNEL
- J. L. PEDRO
 - F. COX
 - E. RIVERA
 - H. R. CONLEY
 - M. L. REEDER

INVESTIGATED BY J. L. PEDRO
 CHECKED BY N.T. ROBERSON
 SUBMITTED BY N. T. ROBERSON
 DATE FEBRUARY 2006



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS
GEOTECHNICAL UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

ID	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
R-2809A	34503.II	2	73



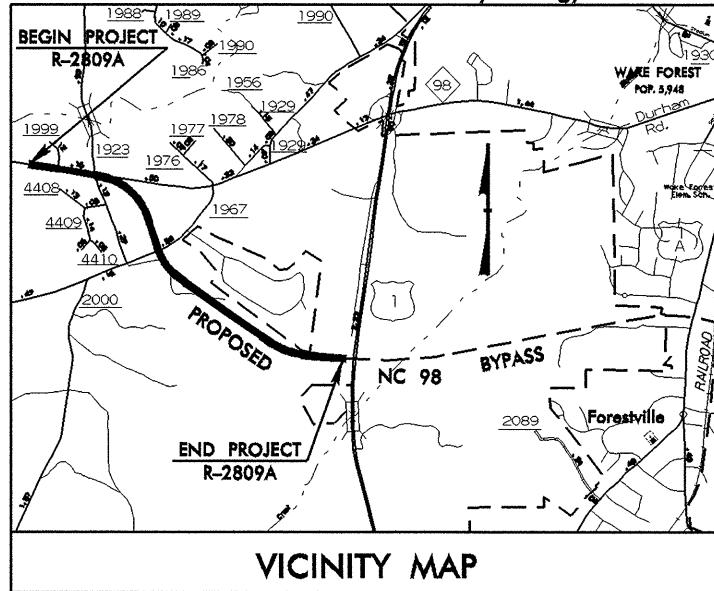
SOIL DESCRIPTION		GRADATION		ROCK DESCRIPTION		TERMS AND DEFINITIONS																																																																									
<p>SOIL IS CONSIDERED TO BE THE UNCONSOLIDATED, SEMI-CONSOLIDATED OR WEATHERED EARTH MATERIALS WHICH CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER, AND WHICH YIELDS LESS THAN 100 BLOWS PER 30 cm ACCORDING TO STANDARD PENETRATION TEST (AASHTO T206, ASTM D-1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM AND BASIC DESCRIPTIONS GENERALLY SHALL INCLUDE: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. EXAMPLE:</p> <p>VERY STIFF, GRAY SANDY CLAY, MOST WITH INTERBEDDED FINE SAND LAYERS, HEAVY PLASTIC, A-7-6</p>		<p>WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE UNIFORM - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE (ALSO POORLY GRADED). GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLES OF TWO OR MORE SIZES.</p> <p>ANGULARITY OF GRAINS</p> <p>THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS ARE DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.</p>		<p>HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT WHEN TESTED, WOULD YIELD SPT REFUSAL. 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 2.5 cm PER 50 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:</p> <p>WEATHERED ROCK (WR)</p> <p>CRYSTALLINE ROCK (CR)</p> <p>NON-CRYSTALLINE ROCK (NCR)</p> <p>COASTAL PLAIN SEDIMENTARY ROCK (CP)</p>		<p>ALLUVIUM (ALLUV.) - SOILS WHICH 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, AS SHALE, SLATE, ETC. ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE. CALCAREOUS (CALC.) - SOILS WHICH 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 (F.P.) - 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 SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. ROCK QUALITY DESIGNATION (R.Q.D.) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 10 CENTIMETERS DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. SAPROLITE (SAP.) - RESIDUAL SOIL WHICH 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, WHICH HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRODUCED 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) OF A 63.5 kg HAMMER FALLING 0.76 METERS REQUIRED TO PRODUCE A PENETRATION OF 30 cm INTO SOIL WITH A 5 cm OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS LESS THAN 2.5 cm PENETRATION WITH 50 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 (S.R.Q.D.) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 10 CENTIMETERS DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. TOPSOIL (T.S.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.</p>																																																																									
SOIL LEGEND AND AASHTO CLASSIFICATION		MINERALOGICAL COMPOSITION		WEATHERING																																																																											
<table border="1"> <tr> <th>GENERAL CLASS.</th> <th colspan="3">GRANULAR MATERIALS (<35% PASSING #200)</th> <th colspan="3">SILT-CLAY MATERIALS (>35% PASSING #200)</th> <th>ORGANIC MATERIALS</th> </tr> <tr> <th>GROUP CLASS.</th> <th>A-1</th> <th>A-3</th> <th>A-2</th> <th>A-4</th> <th>A-5</th> <th>A-6</th> <th>A-7</th> </tr> <tr> <th>SYMBOL</th> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <th>% PASSING</th> <td>50 MX</td> <td>30 MX50</td> <td>10 MX10</td> <td>10 MX10</td> <td>10 MX10</td> <td>10 MX10</td> <td>10 MX10</td> </tr> <tr> <th>LIQUID LIMIT</th> <td>6 MX</td> <td>N.P.</td> <td>40 MX41 MN</td> <td>40 MX41 MN</td> <td>40 MX41 MN</td> <td>40 MX41 MN</td> <td>40 MX41 MN</td> </tr> <tr> <th>PLASTIC INDEX</th> <td>0</td> <td>0</td> <td>0</td> <td>4 MX</td> <td>8 MX</td> <td>12 MX16</td> <td>16 MX20</td> </tr> <tr> <th>GROUP INDEX</th> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <th>USUAL TYPES OF MAJOR MATERIALS</th> <td>STONE FRAGS, GRAVEL AND SAND</td> <td>FINE SAND</td> <td>SILTY OR CLAYEY GRAVEL AND SAND</td> <td>SILTY SOILS</td> <td>CLAYEY SOILS</td> <td>GRANULAR SOILS</td> <td>SILT-CLAY SOILS</td> </tr> <tr> <th>GEN. RATING AS A SUBGRADE</th> <td colspan="3">EXCELLENT TO GOOD</td> <td colspan="2">FAIR TO POOR</td> <td>POOR</td> <td>UNSATISFACTORY</td> </tr> </table> <p>P.I. OF A-7-5 ≤ L.L. - 30 ; P.I. OF A-7-6 > L.L. - 30</p>		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	SYMBOL								% PASSING	50 MX	30 MX50	10 MX10	10 MX10	10 MX10	10 MX10	10 MX10	LIQUID LIMIT	6 MX	N.P.	40 MX41 MN	40 MX41 MN	40 MX41 MN	40 MX41 MN	40 MX41 MN	PLASTIC INDEX	0	0	0	4 MX	8 MX	12 MX16	16 MX20	GROUP INDEX	0	0	0	0	0	0	0	USUAL TYPES OF MAJOR MATERIALS	STONE FRAGS, GRAVEL AND SAND	FINE SAND	SILTY OR CLAYEY GRAVEL AND SAND	SILTY SOILS	CLAYEY SOILS	GRANULAR SOILS	SILT-CLAY SOILS	GEN. RATING AS A SUBGRADE	EXCELLENT TO GOOD			FAIR TO POOR		POOR	UNSATISFACTORY	<p>MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE.</p> <p>COMPRESSIBILITY</p> <p>SLIGHTLY COMPRESSIBLE MODERATELY COMPRESSIBLE HIGHLY COMPRESSIBLE</p> <p>LIQUID LIMIT LESS THAN 30 LIQUID LIMIT 31-50 LIQUID LIMIT GREATER THAN 50</p>		<p>FRESH VERY SLIGHT (V. SL.) SLIGHT (SL.) MODERATE (MOD.) MODERATELY SEVERE (MOD. SEV.) SEVERE (SEV.) VERY SEVERE (V. SEV.) COMPLETE</p>			
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9/28/05

R-2809A

CONTRACT:

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbology



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

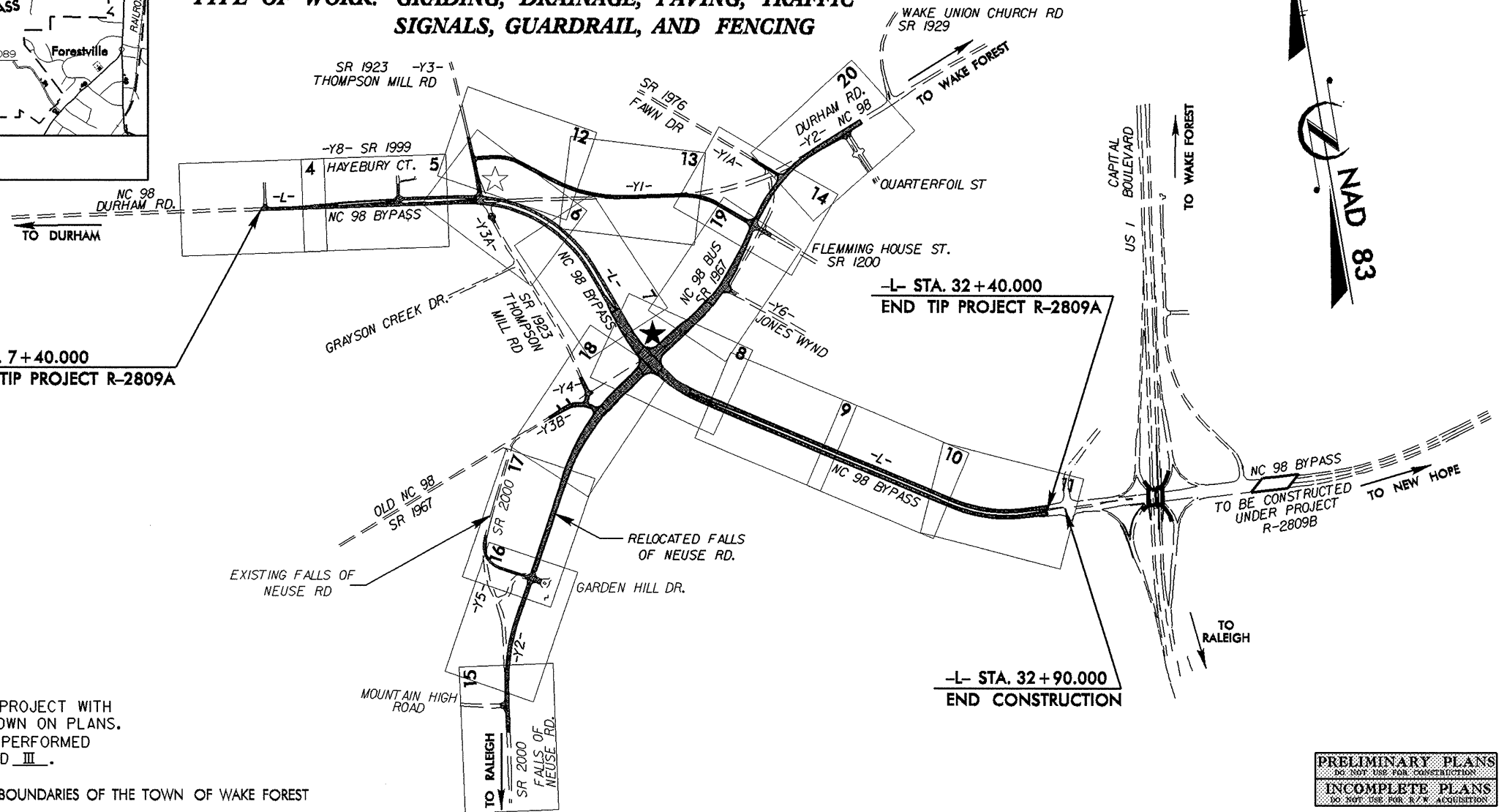
WAKE COUNTY

LOCATION: NC 98 (WAKE FOREST BYPASS) FROM WEST OF SR 1923 (THOMPSON MILL ROAD) TO WEST OF US 1 (CAPITAL BLVD.)
TYPE OF WORK: GRADING, DRAINAGE, PAVING, TRAFFIC SIGNALS, GUARDRAIL, AND FENCING



ALL DIMENSIONS IN THESE PLANS ARE IN METERS OR MILLIMETERS UNLESS OTHERWISE SHOWN

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2809A	2A	73
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34503.1.1	STP-98(1)	PE	
34503.2.1	STP-98(2)	RW	



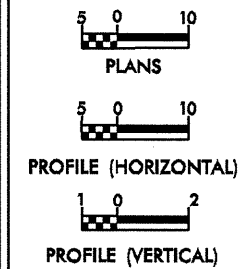
- ☆ DENOTES UPGRADING EXIST. TRAFFIC SIGNAL
- ★ DENOTES PROPOSED TRAFFIC SIGNAL

THIS IS A PARTIAL CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON PLANS. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

A PORTION OF THIS PROJECT FALLS WITHIN THE BOUNDARIES OF THE TOWN OF WAKE FOREST

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

GRAPHIC SCALES



DESIGN DATA

ADT 2000 = 19,800
ADT 2025 = 35,000
DHV = 10 %
D = 60 %
T = 6 % *
V = 100 km/h
* (TTST 2% & DUAL 4%)

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2809A = 2.500 km
TOTAL LENGTH OF TIP PROJECT R-2809A = 2.500 km

Prepared In the Office of:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh, NC 27610

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: MAY 16, 2005

LETTING DATE: OCTOBER 17, 2006

JASON MOORE, PE
PROJECT ENGINEER

KEVIN E. MOORE, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

ROADWAY DESIGN ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

Michael F. Easley
GOVERNOR

P.O. BOX 25201, RALEIGH, N.C. 27611-5201

Lyndo Tippet
SECRETARY

February 1, 2006

STATE PROJECT: 34503.1.1 (R-2809A)
FEDERAL PROJECT: STP-98(1)
COUNTY: Wake

DESCRIPTION: NC 98 (Wake Forest Bypass) from west of SR 1923 (Thompson Mill Road) to west of US 1 (Capital Boulevard)

SUBJECT: Geotechnical Report – Inventory

Project Description

This westernmost portion of the Wake Forest Bypass project consists of a new four lane roadway (-L-), which will tie into the existing NC 98 (Durham Road) approximately 2.7 kilometers west of US 1 (Capital Boulevard). The project begins 0.6 kilometers west of the intersection of NC 98 and Thompson Mill Road (SR 1923), and ends just west of the US 1 at R-2809B (currently under construction). The project includes an intersection with NC 98 Bypass (-L-) and Falls of the Neuse Road (-Y2-) and also upgrades to several SR routes. Some of the State Roads (all Y lines) are being re-aligned to accommodate the relocation of -Y2-. A noise wall is to be constructed left of -L- from 30+60 to 31+80. The project is approximately 2.5 kilometers in length.

The geotechnical field investigation was conducted from March to July 2005. A track-mounted D-50 drill and an ATV-mounted CME-550 with automatic hammers were used during the investigation. Standard Penetration Tests were performed in selected borings and additional borings were advanced using continuous flight augers. Representative soil samples were collected for visual classification in the field and for laboratory analysis by the Materials and Tests Unit.

The following alignments, totaling 6.8 kilometers, were investigated. Subsurface soil profiles, or cross-sections, of these alignments are included in this report.

<u>Line</u>	<u>Station</u>
-L-	7+40 to 32+40
-Y1-	10+00 to 19+07
-Y1A-	10+00 to 11+66
-Y2-	10+20 to 30+74

-Y3-	10+00 to 12+49
-Y3A-	11+00 to 11+89
-Y3B-	10+00 to 12+64
-Y4-	10+00 to 11+01
-Y5-	10+14 to 13+68

Areas of Special Geotechnical Interest

1) Highly Plastic Clay Soils: Areas containing highly plastic (PI>25) clay soils are noted below:

<u>Alignment</u>	<u>Station</u>	<u>Offset(m)</u>
-L-	12+20	12 LT
-L-	15+20	20 RT
-L-	18+90 to 19+50	RT
-L-	20+70 to 21+70	CL
-L-	22+95 to 24+10	CL
-L-	25+75 to 26+90	CL
-L-	27+50 to 29+45	CL
-Y1-	10+70 to 11+90	CL
-Y1-	17+00	7.5 LT
-Y2-	12+00 to 13+30	CL
-Y2-	15+00	CL
-Y2-	15+65 to 16+68	CL
-Y2-	17+60	CL
-Y2-	18+90 to 19+30	CL
-Y2-	20+50 to 21+30	CL
-Y2-	23+30 to 25+85	CL
-Y2-	28+20 to 29+00	RT
-Y3B-	10+70	19 RT
-Y5-	10+85 to 11+48	CL
-Y5-	11+50	CL
-Y5-	11+80	CL

A discussion of these highly plastic clay soils is located below in the section titled “Soil Properties”.

2) Water Wells: No water wells were found within the proposed construction limits on the project. However, one well was located within 1 meter of the proposed construction limits at the following location:

<u>Alignment</u>	<u>Station</u>	<u>Offset(m)</u>
-Y1A-	10+60	9.5 RT

Physiography and Geology

The project is located southwest of the town of Wake Forest, within the Piedmont Physiographic Province. Residual soils are derived from the underlying Raleigh Belt bedrock. The bedrock in this area is composed

of injected granite gneiss and lineated, felsic, mica schist and gneiss. The project corridor includes areas of dense woods and scattered homes. Several subdivisions occur towards the town limits of Wake Forest and at the beginning of Falls of the Neuse Road (-Y2-).

Soil Properties

Soils encountered during this investigation are separated into four categories based on origin, roadway embankment, artificial fill, alluvial, and residual soils.

Roadway Embankment Soils: Roadway embankment soils were encountered in small amounts associated with several existing roadways on the project. Most of the embankment soils occur where the relocated lines tie back into the existing roadways. Roadway embankment soils are present on -L-, -Y1-, -Y2-, -Y3-, -Y3B-, -Y4-, and -Y5-. The embankment soils in these areas primarily consist of red-orange and brown, medium stiff to stiff, dry to moist, sandy and silty clay (A-6 and A-7).

Artificial Fill Soils: An area of artificial fill soil is present at the end of -Y2-, from right of 27+60 to 28+50 (see Plan Sheets No. 14, 20) where a gravel driveway leading to a utility easement has been constructed. The fill soils consist of loose gravel and very stiff, silty clay (A-7-6) with some asphalt debris.

Alluvial Soils: Alluvial soils are present in several small creeks throughout the project. Alluvial soils are 2.0 meters thick or less, consisting of stiff to very stiff, silty and sandy clay (A-7-5 and A-6) (see Plan Sheet Nos. 17 and Profile Sheet No. 26).

Residual Soils: Residual soils are derived from the in-place weathering of the underlying bedrock. They consist primarily of tan, brown, red, and orange, medium stiff to very stiff, dry to moist, sandy and silty clay (A-6 and A-7). Most of the residual, silty clays on the project have plasticity indices from 15 to 35, generally decreasing with depth. Residual, highly plastic "cap" clays occur at the ground surface over several areas of the project. Areas containing highly plastic soils (plasticity indices greater than 25) are listed above in the section "Areas of Special Geotechnical Interest". Lesser amounts of tan, orange and brown, stiff, dry to moist, sandy silt (A-4 and A-5) and tan, pink, and orange, loose to medium dense, dry to moist, silty sand and sand (A-2-4 and A-2-5) are also present. Most of the residual soils exhibit a saprolitic texture, and mica contents for these soils generally range from moderate to abundant amounts.

Rock Properties

Weathered rock: Weathered rock is encountered in seven borings on -L-, -Y1-, and -Y3- (see Profile Sheet No. 21-24 and Cross Section Sheet No. 28, 37, 43, 47, 51, and 53) near the center and at the end of the project. The weathered rock consists of severely weathered granite with coarse-grained mica, which is derived from the underlying bedrock. Weathered rock grades into crystalline rock (see Profile Sheet No. 24).

Crystalline rock: Injected granite gneiss and lineated, felsic, mica schist and gneiss of the Raleigh Belt underlies the project area. Areas of crystalline rock yielding auger refusal occurred at -Y1- 10+25, CL and 11+40, 8m RT.

Noise Wall

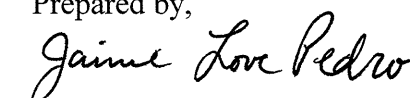
A noise wall will be constructed left of -L- Sta. 30+60 to 31+80 (see Plan Sheet No. 11 and Cross Section Sheet No. 49-51). Residual soils and weathered rock were encountered at the wall location.

The soils primarily consist of orange-brown and tan-pink, loose to medium dense, dry, saprolitic, silty sand and sand (A-2-4 and A-2-5); and tan-pink and orange, stiff, dry, micaceous, saprolitic, sandy silt (A-5). Other soil present is red-orange, stiff, moist, silty clay (A-7-5). Weathered rock occurs at a depth of 2.1 meters at 31+60, 25 LT. Groundwater was not encountered in the noise wall borings.

Groundwater

Groundwater was encountered in less than 10% of the borings throughout the project, and generally occurs at depths greater than 5.0 meters. The borings where groundwater was encountered were located near streambeds in the low-lying areas. All creeks were dry at the time of the investigation.

Prepared by,



Jaime Love Pedro
Engineering Geologist

UNDISTURBED SAMPLES

Undisturbed "Shelby" tube samples were taken at the following locations to provide data regarding in situ soil strength.

<u>Sample No.</u>	<u>Location</u>	<u>Depth (m)</u>	<u>Test</u>
ST-1	28+40, 40m LT, -L-	4.40 - 4.90	Triaxial CU

BULK SAMPLES

The following bulk samples were taken for tests to determine the engineering properties of the soil.

<u>Sample No.</u>	<u>Location</u>	<u>Depth (m)</u>	<u>Test</u>
RT-1	13+40, 32m RT, -L-	4.50 - 9.50	Recompacted Triaxial CU
CBR-1	13+40, 32m RT, -L-	4.50 - 9.50	California Bearing Ratio



EARTHWORK BALANCE SHEET IN CUBIC METERS

LOCATION	UNCLASSIFIED EXCAVATION	ROCK EXCAVATION	UNDERCUT EXCAVATION	UNSUITABLE EARTH EXCAVATION	SUITABLE EARTH EXCAVATION	TOTAL EMB'T	EARTH EMBANKMENT	ROCK EMB'T	EMB'T + % 20	BORROW	SELECT BORROW	ROCK WASTE	SUITABLE WASTE	UNSUITABLE WASTE	TOTAL WASTE
L (LT) 7+40.000 TO 13+60.000	88	0	0	0	88	37331	37331	0	44797	44709	0	0	0	0	0
L (RT) 7+40.000 TO 13+60.000	2709	0	0	0	2709	3750	3750	0	4500	1791	0	0	0	0	0
L 13+60.000 TO 15+60.000	8572	0	0	0	8572	8039	8039	0	9647	1075	0	0	0	0	0
Y8 10+20.000 TO 10+50.000	29	0	0	0	29	42	42	0	50	21	0	0	0	0	0
Y3 10+00.000 TO 12+40.000	54	0	0	0	54	5441	5441	0	6529	6475	0	0	0	0	0
Y1 10+00.000 TO 18+40.000	8853	0	0	3953	4900	21446	21446	0	25735	20835	0	0	0	3953	3953
Y1 18+40.000 TO 19+00.000	19	0	0	0	19	242	242	0	290	271	0	0	0	0	0
Y3A 11+00.000 TO 11+50.000	719	0	0	0	719	7	7	0	8	0	0	0	711	0	711
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTALS NO 1	21043	0	0	3953	17090	76298	76298	0	91556	75177	0	0	711	3953	4664
L 15+60.000 TO 24+00.000	19193	0	1072	6694	12499	86551	86551	0	103861	91362	0	0	0	7766	7766
Y2 (LT.) 8+60.000 TO 12+00.000	324	0	0	0	324	163	163	0	196	0	0	0	128	0	128
Y2 (RT.) 8+60.000 TO 12+00.000	775	0	0	0	775	15	15	0	18	0	0	0	757	0	757
Y2 12+00.000 TO 21+40.000	33297	0	2436	1767	31530	17284	17284	0	20741	0	0	0	10789	4203	14992
Y 21+80.000 TO 28+60.000	16494	0	0	0	16494	16506	16506	0	19807	3313	0	0	0	0	0
Y2 (LT.) 28+60.000 TO 30+73.920	26	0	0	0	26	135	135	0	162	136	0	0	0	0	0
Y2 (RT.) 28+60.000 TO 30+73.920	101	0	0	0	101	132	132	0	158	57	0	0	0	0	0
Y5 10+20.000 TO 10+60.000	121	0	0	0	121	23	23	0	28	0	0	0	93	0	93
Y5 10+80.000 TO 12+70.000	1975	0	152	1688	287	1179	1179	0	1415	1128	0	0	0	1840	1840
Y3B 10+20.000 TO 11+60.000	1393	0	0	0	1393	178	178	0	214	0	0	0	1179	0	1179
Y4 10+04.500 TO 10+80.000	559	0	0	0	559	39	39	0	47	0	0	0	512	0	512
Y6 10+15.000 TO 10+25.000	3	0	0	0	3	5	5	0	6	3	0	0	0	0	0
Y1A 10+20.000 TO 11+00.000	87	0	0	0	87	390	390	0	468	381	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTALS NO 2	74348	0	3660	10149	64199	122600	122600	0	147121	96380	0	0	13458	13809	27267
L 24+00.000 TO 32+60.000	146169	34	0	41013	105122	7626	7592	34	9144	0	0	0	96012	41013	137025
L 23+80 TO 31+40 (EARTH BERM)	0	0	0	0	0	24667	24667	0	29600	29600	0	0	0	0	0
Y9 10+25.000 TO 10+70.000	1501	0	0	77	1424	8	8	0	10	0	0	0	1414	77	1491
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL NO 3	147670	34	0	41090	106546	32301	32267	34	38754	29600	0	0	97426	41090	138516
-L- (LT) 84+64 (R-2809C SUPPLEMENTAL WORK)	0	0	0	0	0	100	100	0	120	120	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL NO 4	0	0	0	0	0	100	100	0	120	120	0	0	0	0	0
PROJECT SUBTOTALS	243061	34	3660	55192	187835	231299	231265	34	277551	201277	0	0	111595	58852	170447
LOSS DUE TO CLEAR. & GRUB	-7700				-7700					7700			0		0
ADDITIONAL UNDERCUT EXCAV.			10050	0	0	10050	10050	0	12060	12060	0		0	10050	10050
EST. FOR DRIVEWAYS	100				100	0	0	0	0	0			100		100
EST. FOR PAV'T REMOVAL						1570	1570	0	1884	1884					
ROCK TO REPLACE BORROW							0	0	0	0		0			
ADJUST FOR ROCK WASTE									0	0					
WASTE IN LIEU OF BORROW										-111695			-111695		-111695
SHOULDER CONSTRUCTION							11100		11100	11100					
LESS SELECT GRANULAR MAT'L									0	0					
ROADSIDE ENVIRONMENTAL	0						270		324	324					
PROJECT TOTALS	235461	34	13710	55192	180235	242919	254255	34	302919	122650	0	0	0	68902	68902
REPLACE TOP SOIL BOR. PITS										6133					
GRAND TOTALS	235461		13710							128783	0				
SAY	235500		13800							128800	0				

PAVEMENT STRUCTURE VOLUME :	20,727	CUBIC METERS
DRAINAGE DITCH EXCAVATION :	3,420	CUBIC METERS
SHOULDER BORROW:	0	CUBIC METERS
UNDERCUT EXCAVATION	0	CUBIC METERS (Contingency Item)

EARTHWORK QUANTITIES ARE CALCULATED BY THE ROADWAY DESIGN UNIT. THESE EARTHWORK QUANTITIES ARE BASED IN PART ON SUBSURFACE DATA PROVIDED BY THE GEOTECHNICAL ENGINEERING UNIT.

COMPUTED BY: HLE DATE: 8/1/07
 CHECKED BY: TRM DATE: 8/6/07



PROJECT NO. R-2809A
 ALTERNATE 2
 SHEET NO. 3C OF 73

EARTHWORK BALANCE SHEET IN CUBIC METERS

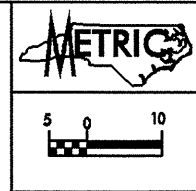
LOCATION	UNCLASSIFIED EXCAVATION	ROCK EXCAVATION	UNDERCUT EXCAVATION	UNSUITABLE EARTH EXCAVATION	SUITABLE EARTH EXCAVATION	TOTAL EMB'T	EARTH EMBANKMENT	ROCK EMB'T	EMB'T + % 20	BORROW	SELECT BORROW	ROCK WASTE	SUITABLE WASTE	UNSUITABLE WASTE	TOTAL WASTE
L (LT) 7+40.000 TO 13+60.000	88	0	0	0	88	38015	38015	0	45618	45530	0	0	0	0	0
L (RT) 7+40.000 TO 13+60.000	2701	0	0	0	2701	3789	3789	0	4547	1846	0	0	0	0	0
L 13+60.000 TO 15+60.000	8208	0	0	0	8208	8572	8572	0	10286	2078	0	0	0	0	0
Y8 10+20.000 TO 10+50.000	29	0	0	0	29	42	42	0	50	21	0	0	0	0	0
Y3 10+00.000 TO 12+40.000	54	0	0	0	54	5441	5441	0	6529	6475	0	0	0	0	0
Y1 10+00.000 TO 18+40.000	8264	0	0	3953	4311	22536	22536	0	27043	22732	0	0	0	3953	3953
Y1 18+40.000 TO 19+00.000	16	0	0	0	16	273	273	0	328	312	0	0	0	0	0
Y3A 11+00.000 TO 11+50.000	719	0	0	0	719	7	7	0	8	0	0	0	711	0	711
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTALS NO 1	20079	0	0	3953	16126	78675	78675	0	94409	78994	0	0	711	3953	4664
L 15+60.000 TO 24+00.000	17991	0	1040	6506	11485	89125	89125	0	106950	95465	0	0	0	7546	7546
Y2 (LT.) 8+60.000 TO 12+00.000	264	0	0	0	264	152	152	0	182	0	0	0	82	0	82
Y2 (RT.) 8+60.000 TO 12+00.000	441	0	0	0	441	16	16	0	19	0	0	0	422	0	422
Y2 12+00.000 TO 21+40.000	31478	0	2401	1324	30154	18162	18162	0	21794	0	0	0	8360	3725	12085
Y 21+80.000 TO 28+60.000	15465	0	0	0	15465	17647	17647	0	21176	5711	0	0	0	0	0
Y2 (LT.) 28+60.000 TO 30+73.920	7	0	0	0	7	184	184	0	221	214	0	0	0	0	0
Y2 (RT.) 28+60.000 TO 30+73.920	44	0	0	0	44	160	160	0	192	148	0	0	0	0	0
Y5 10+20.000 TO 10+60.000	121	0	0	0	121	23	23	0	28	0	0	0	93	0	93
Y5 10+80.000 TO 12+70.000	1975	0	152	1688	287	1179	1179	0	1415	1128	0	0	0	1840	1840
Y3B 10+20.000 TO 11+60.000	1393	0	0	0	1393	178	178	0	214	0	0	0	1179	0	1179
Y4 10+04.500 TO 10+80.000	559	0	0	0	559	39	39	0	47	0	0	0	512	0	512
Y6 10+15.000 TO 10+25.000	3	0	0	0	3	5	5	0	6	3	0	0	0	0	0
Y1A 10+20.000 TO 11+00.000	87	0	0	0	87	390	390	0	468	381	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTALS NO 2	69828	0	3593	9518	60310	127260	127260	0	152712	103050	0	0	10648	13111	23759
L 24+00.000 TO 32+60.000	143352	34	0	41025	102293	8152	8118	34	9776	0	0	0	92551	41025	133576
L 23+80 TO 31+40 (EARTH BERM)	0	0	0	0	0	24667	24667	0	29600	29600	0	0	0	0	0
Y9 10+25.000 TO 10+70.000	1382	0	0	77	1305	8	8	0	10	0	0	0	1295	77	1372
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL NO 3	144734	34	0	41102	103598	32827	32793	34	39386	29600	0	0	93846	41102	134948
-L- (LT) 84+64 (R-2809C SUPPLEMENTAL WORK)	0	0	0	0	0	100	100	0	120	120	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL NO 4	0	0	0	0	0	100	100	0	120	120	0	0	0	0	0
PROJECT SUBTOTALS	234641	34	3593	54573	180034	238862	238828	34	286627	211764	0	0	105205	58166	163371
LOSS DUE TO CLEAR. & GRUB	-7700				-7700					7700			0		0
ADDITIONAL UNDERCUT EXCAV.			10050	0	0	10050	10050	0	12060	12060	0		0	10050	10050
EST. FOR DRIVEWAYS	100				100	0	0	0	0	0			100		100
EST. FOR PAV'T REMOVAL						1570	1570	0	1884	1884					
ROCK TO REPLACE BORROW							0	0	0	0		0			
ADJUST FOR ROCK WASTE									0	0					
WASTE IN LIEU OF BORROW										-105305			-105305		-105305
SHOULDER CONSTRUCTION							4500		4500	4500					
LESS SELECT GRANURAL MAT'L									0	0					
ROADSIDE ENVIRONMENTAL	0						270		324	324					
PROJECT TOTALS	227041	34	13643	54573	172434	250482	255218	34	305395	132927	0	0	0	68216	68216
REPLACE TOP SOIL BOR. PITS										6646					
GRAND TOTALS	227041		13643							139573	0				
SAY	227100		13700							139600	0				

PAVEMENT STRUCTURE VOLUME :	13,103	CUBIC METERS
DRAINAGE DITCH EXCAVATION :	3,420	CUBIC METERS
SHOULDER BORROW:	0	CUBIC METERS
UNDERCUT EXCAVATION	0	CUBIC METERS

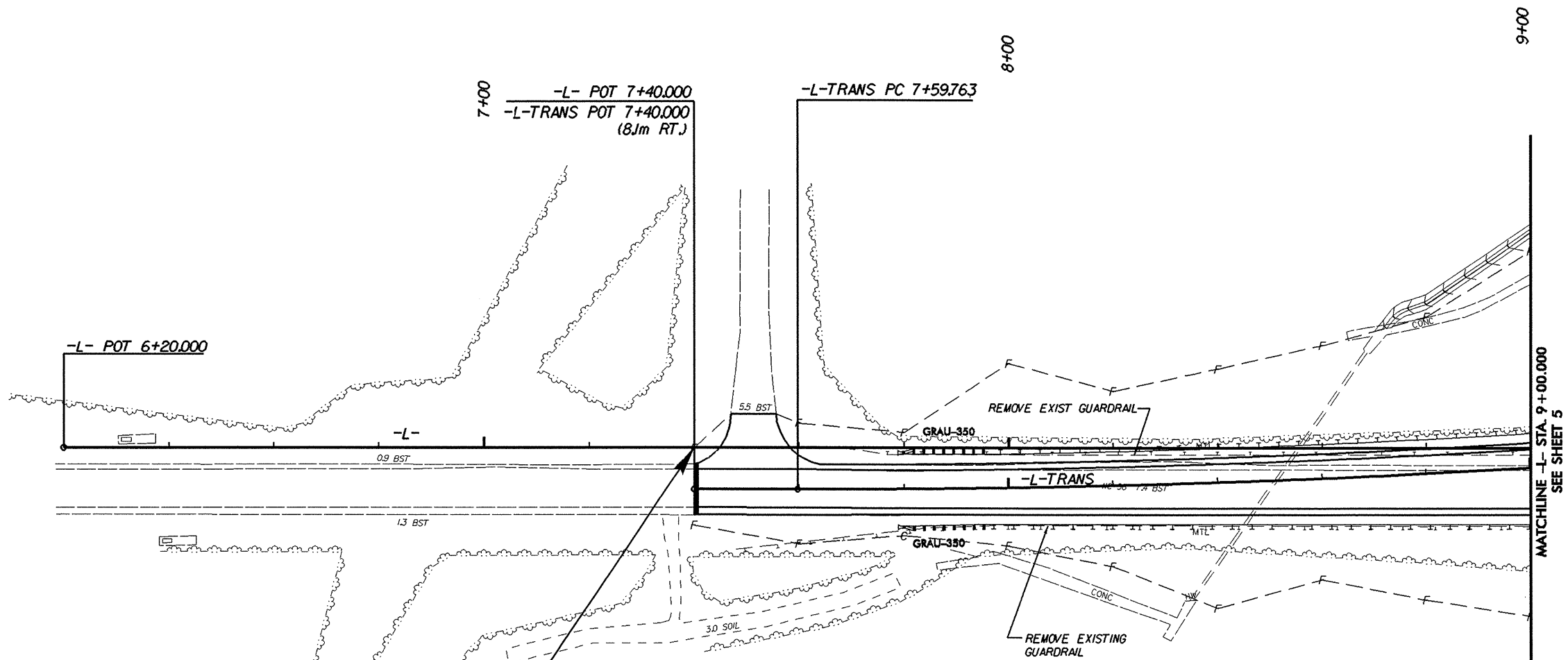
(Contingency Item)

EARTHWORK QUANTITIES ARE CALCULATED BY THE ROADWAY DESIGN UNIT. THESE EARTHWORK QUANTITIES ARE BASED IN PART ON SUBSURFACE DATA PROVIDED BY THE GEOTECHNICAL ENGINEERING UNIT.

8/17/88

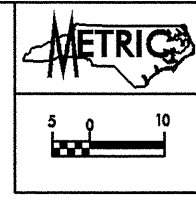


PROJECT REFERENCE NO.	SHEET NO.
R-2809A	4

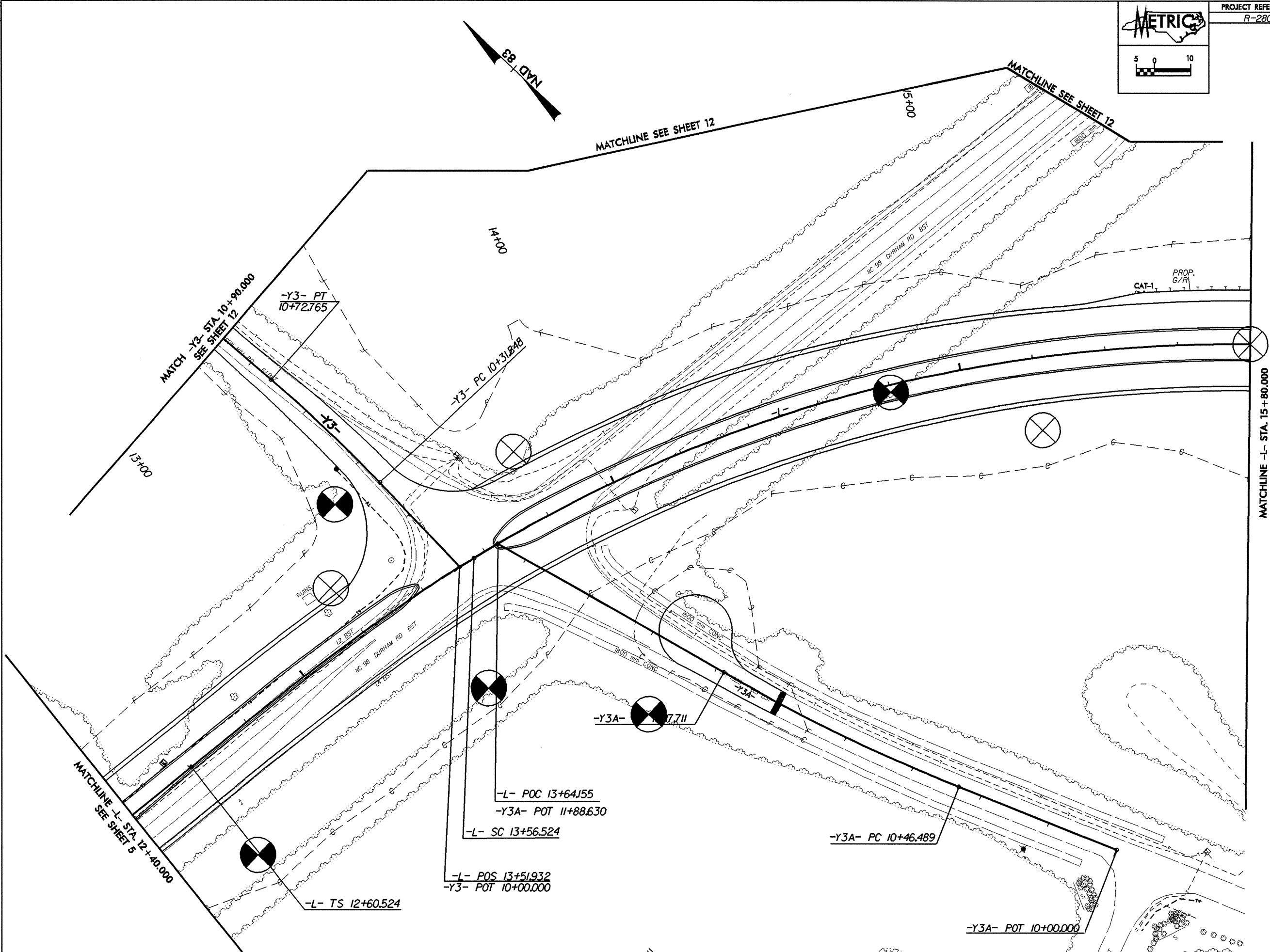
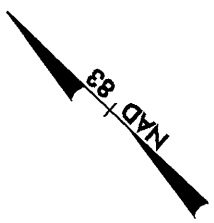


STA. 7+40.000 -L- BEGIN STATE PROJECT R-2809A
BEGIN CONSTRUCTION

8/17/24



PROJECT REFERENCE NO. R-2809A	SHEET NO. 6
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MATCH -Y3- STA 10+90.000
SEE SHEET 12

MATCHLINE SEE SHEET 12

MATCHLINE SEE SHEET 12

MATCHLINE -L- STA 12+40.000
SEE SHEET 5

MATCHLINE -L- STA 15+80.000
SEE SHEET 7

-Y3- PT
10+72.765

-Y3- PC 10+31.848

-L- POC 13+64.155
-Y3A- POT 11+88.630

-L- SC 13+56.524

-L- POS 13+51.932
-Y3- POT 10+00.000

-L- TS 12+60.524

-Y3A- POT 11+77.711

-Y3A- PC 10+46.489

-Y3A- POT 10+00.000

RUINS

12 BST
NC 98 DURHAM RD BST
14 BST

NC 98 DURHAM RD BST

PROP.
G/R

CAT-1

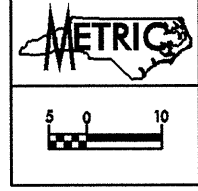
1800 mm CONC

1800 mm CONC

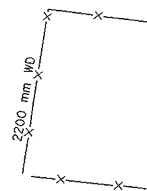
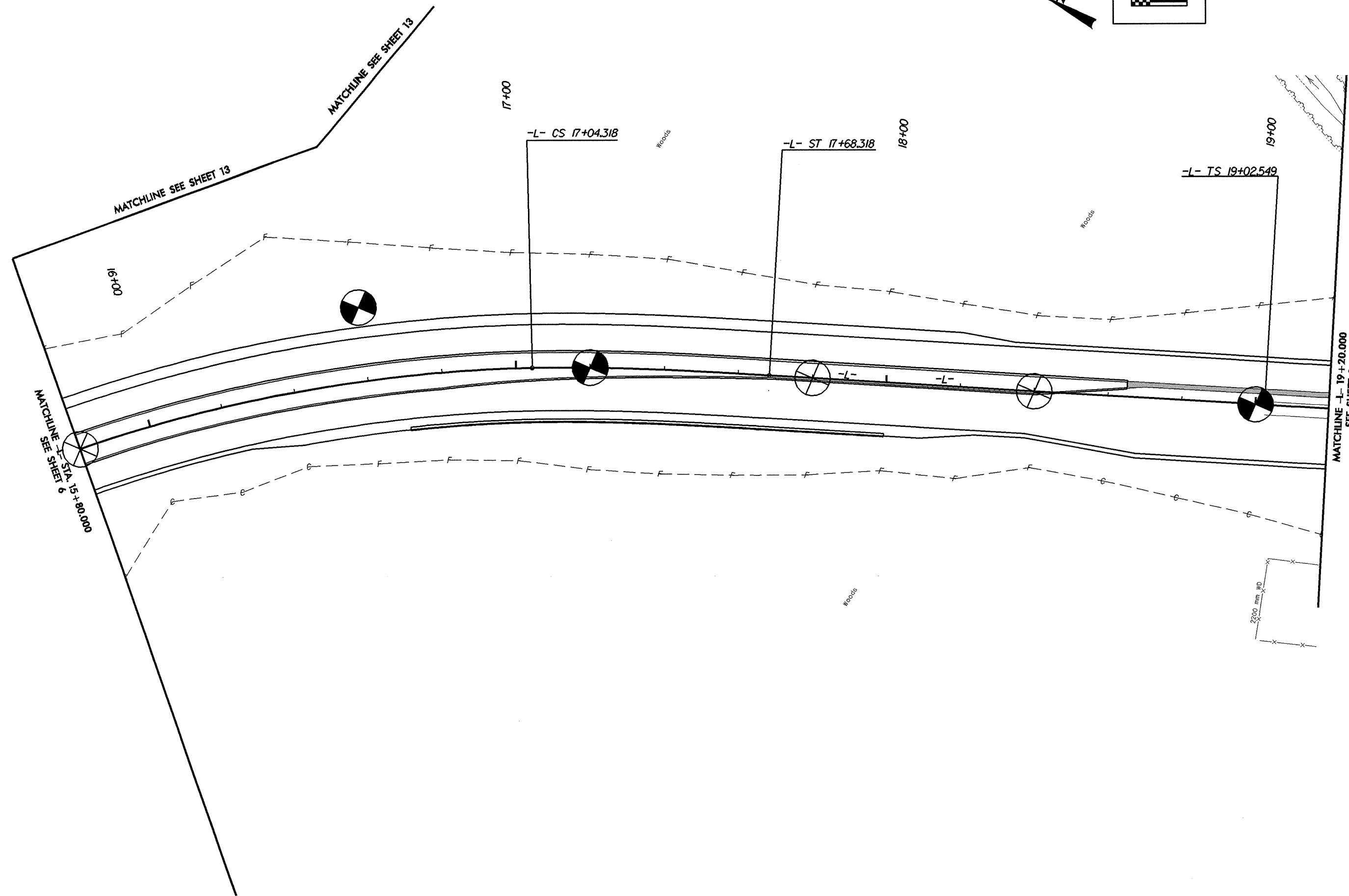
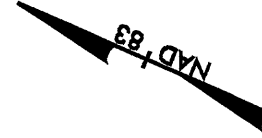
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8/11/98

edf:tdh AT CEJ221486



PROJECT REFERENCE NO.	SHEET NO.
R-2809A	7
R/W SHEET NO.	

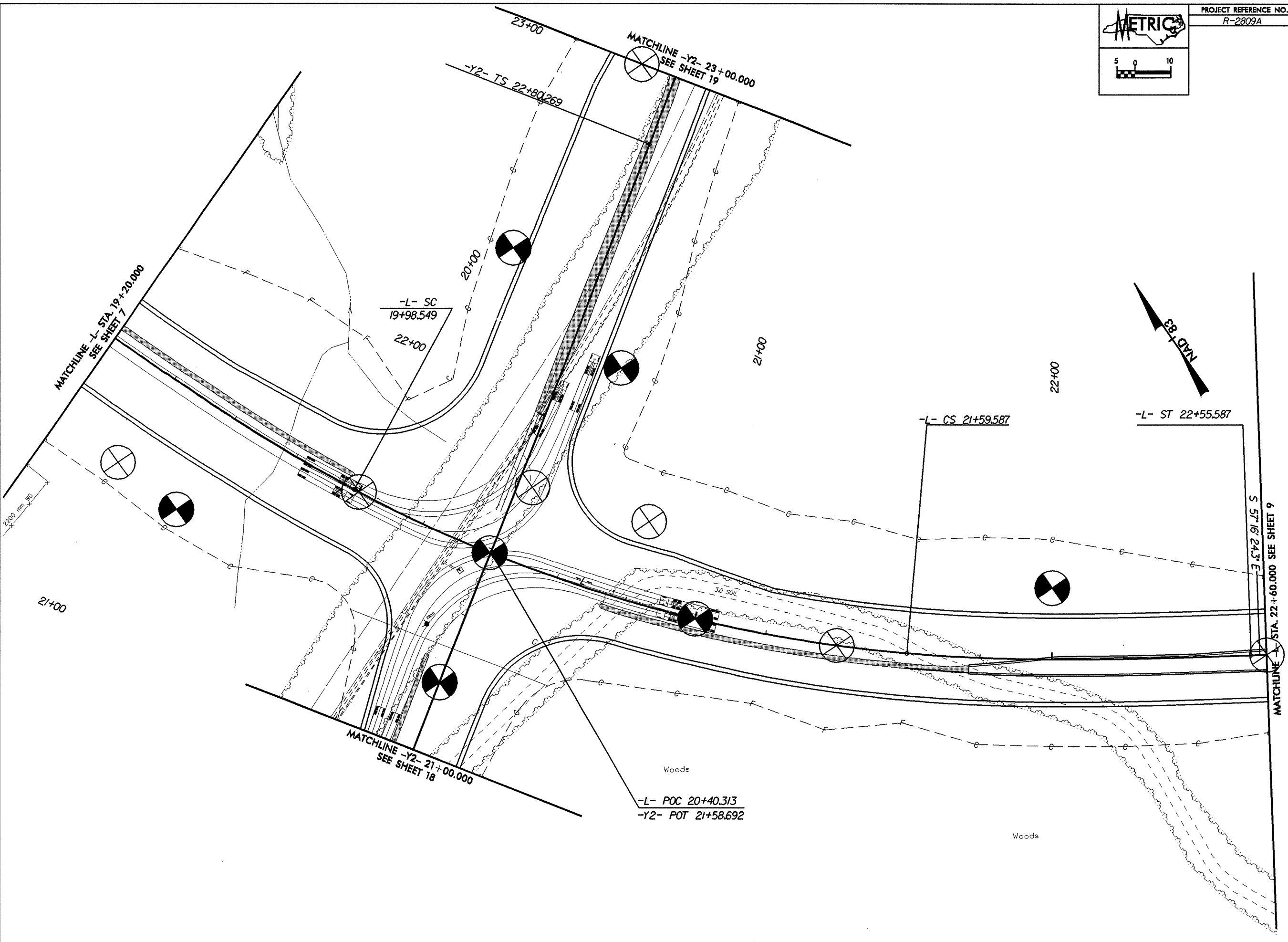


8/17/98

METRIC

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PROJECT REFERENCE NO.	SHEET NO.
R-2809A	8



8/17/98

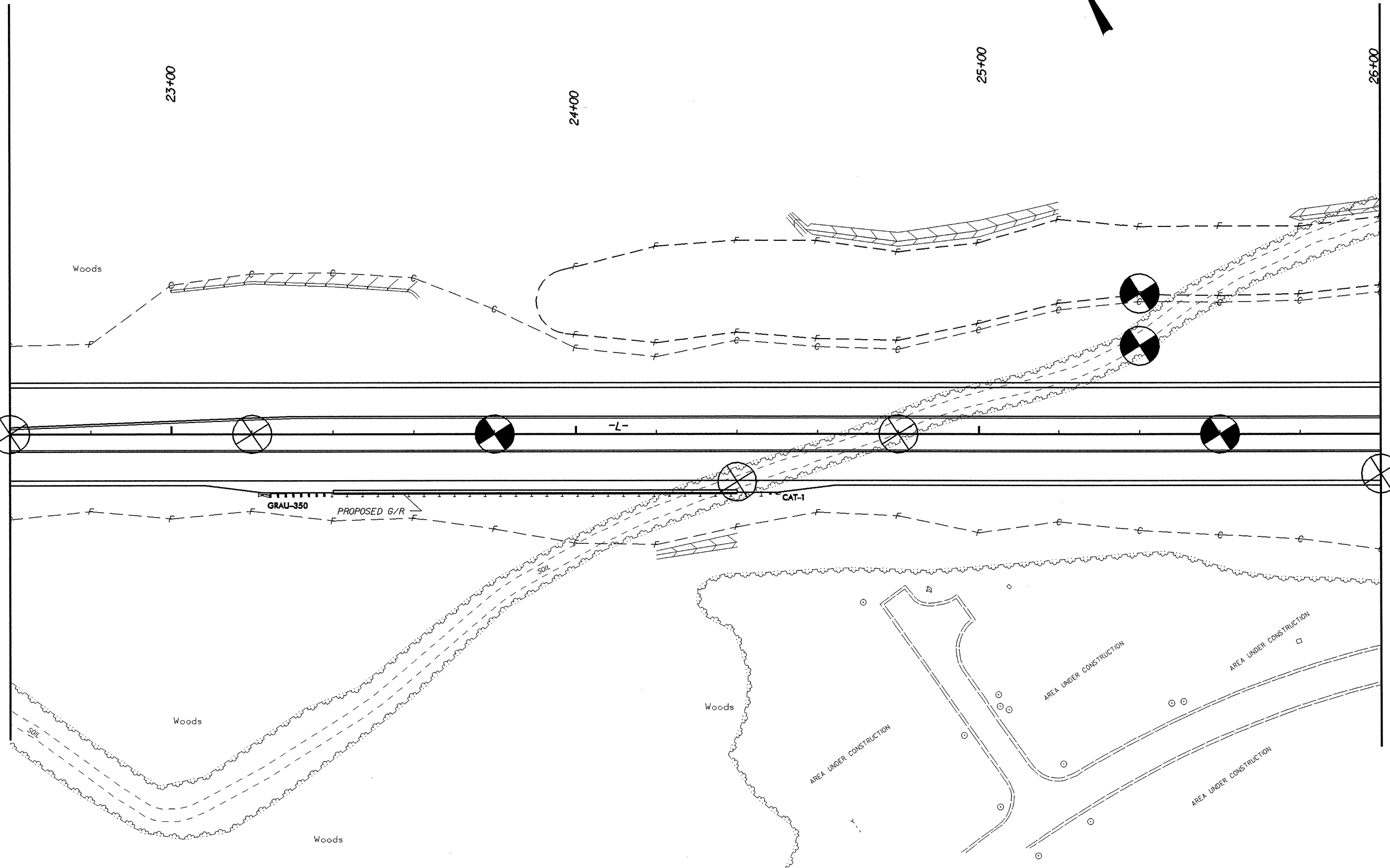
METRIC

5 0 10

PROJECT REFERENCE NO.	SHEET NO.
R-2809A	9
R/W SHEET NO.	

MATCHLINE -L- STA. 22+60.000
SHEET 8

MATCHLINE -L- STA. 26+00.000
SHEET 10



23+00

24+00

25+00

26+00

Woods

Woods

Woods

Woods

AREA UNDER CONSTRUCTION

AREA UNDER CONSTRUCTION

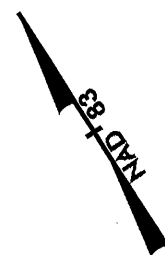
AREA UNDER CONSTRUCTION

AREA UNDER CONSTRUCTION

GRAU-350

PROPOSED G/R

CAT-1

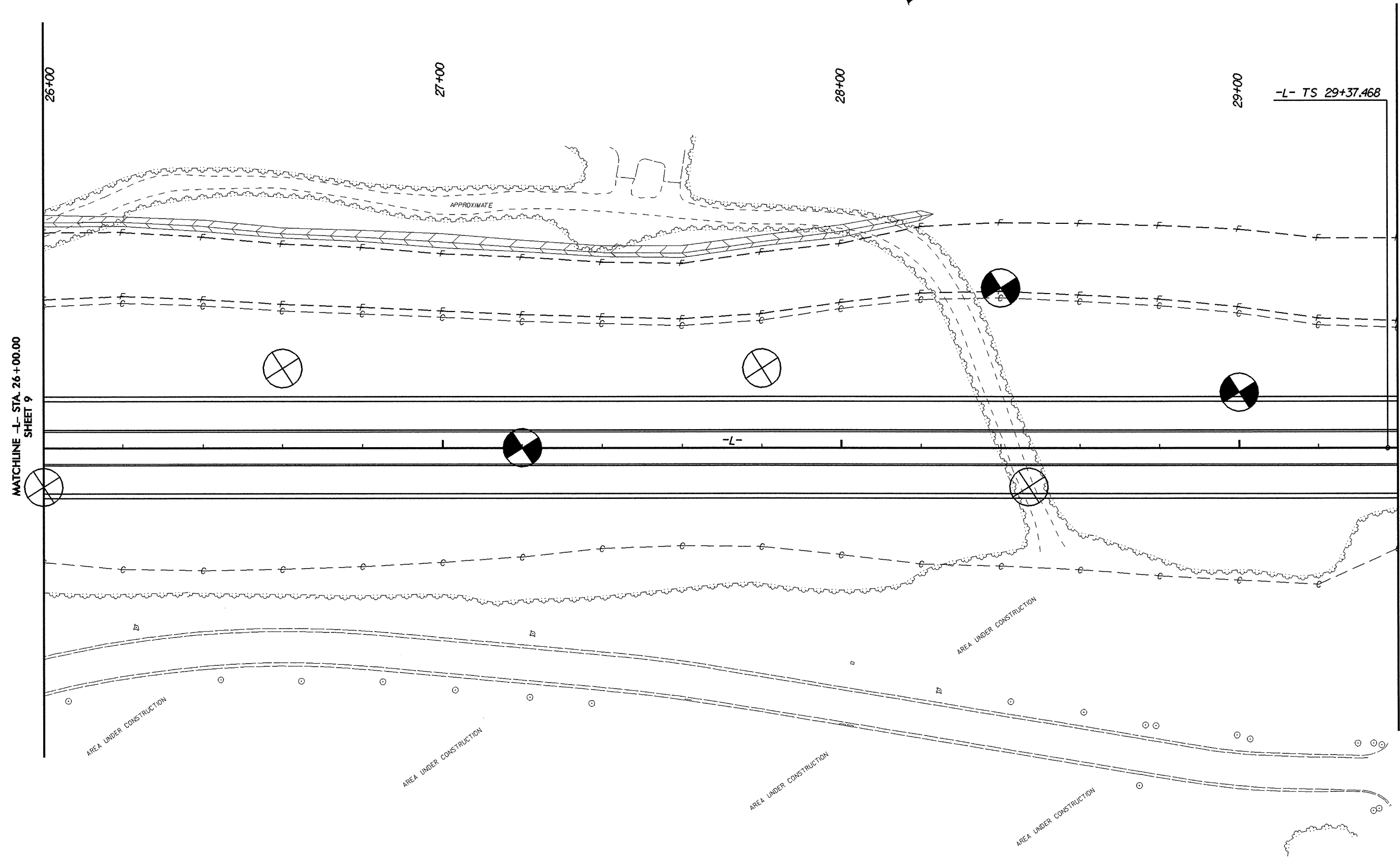
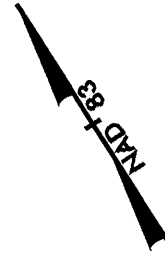


8/17/98

METRIC

5 0 10

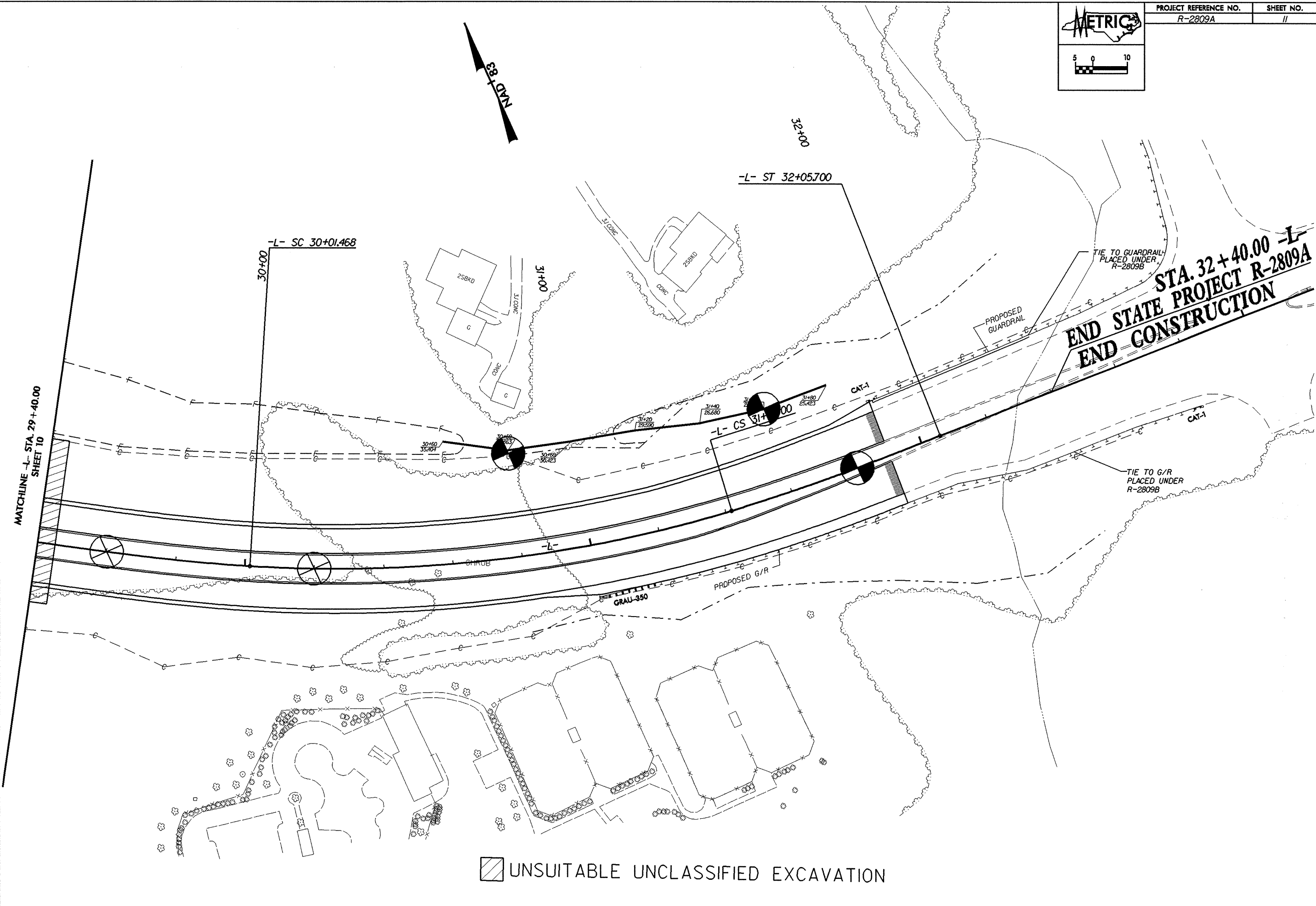
PROJECT REFERENCE NO.	SHEET NO.
R-2809A	10
R/W SHEET NO.	



MATCHLINE -L- STA. 29+40.00 SHEET 11

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-2809A	11



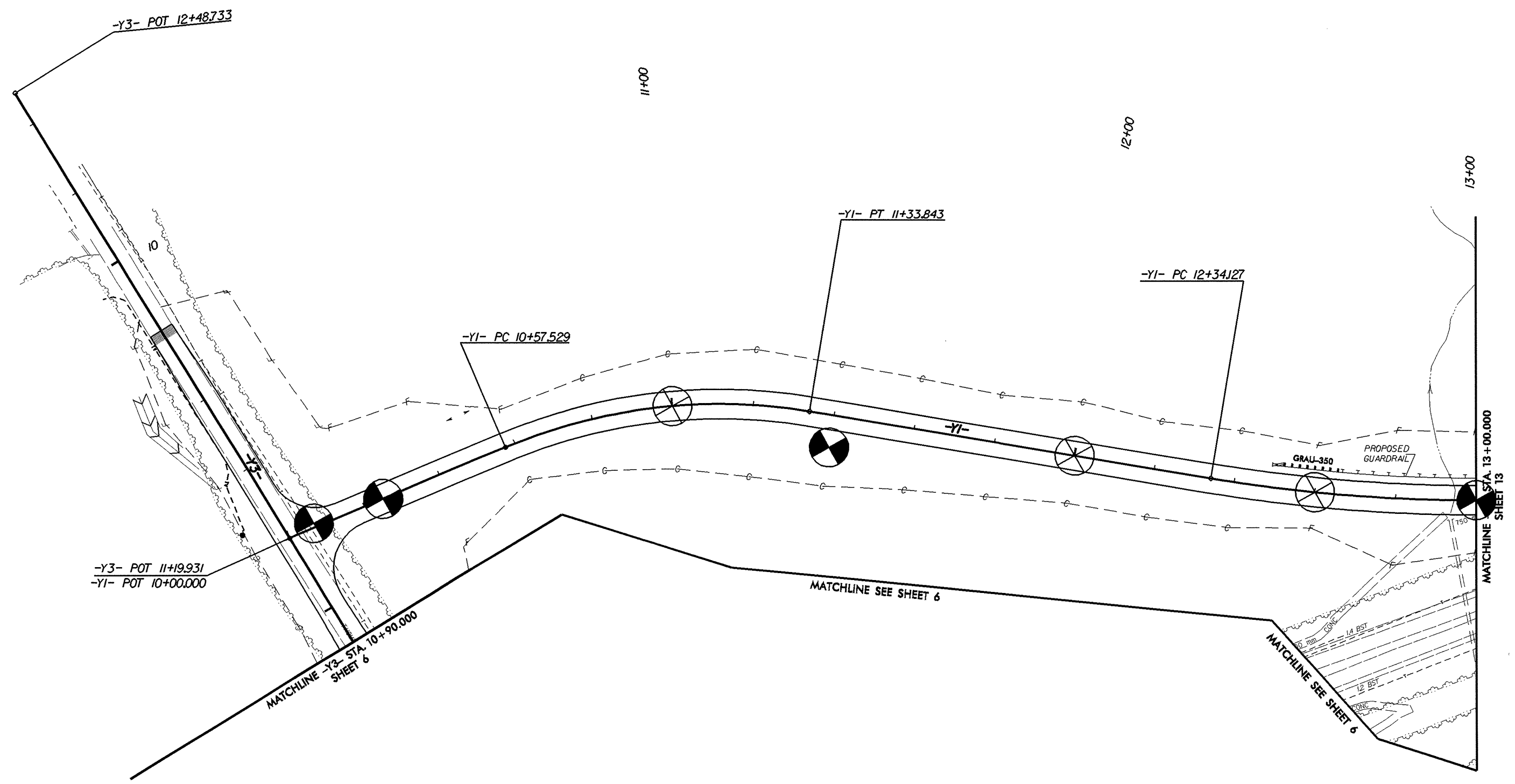
UNSUITABLE UNCLASSIFIED EXCAVATION

8/17/98

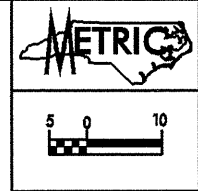
METRIC

5 0 10

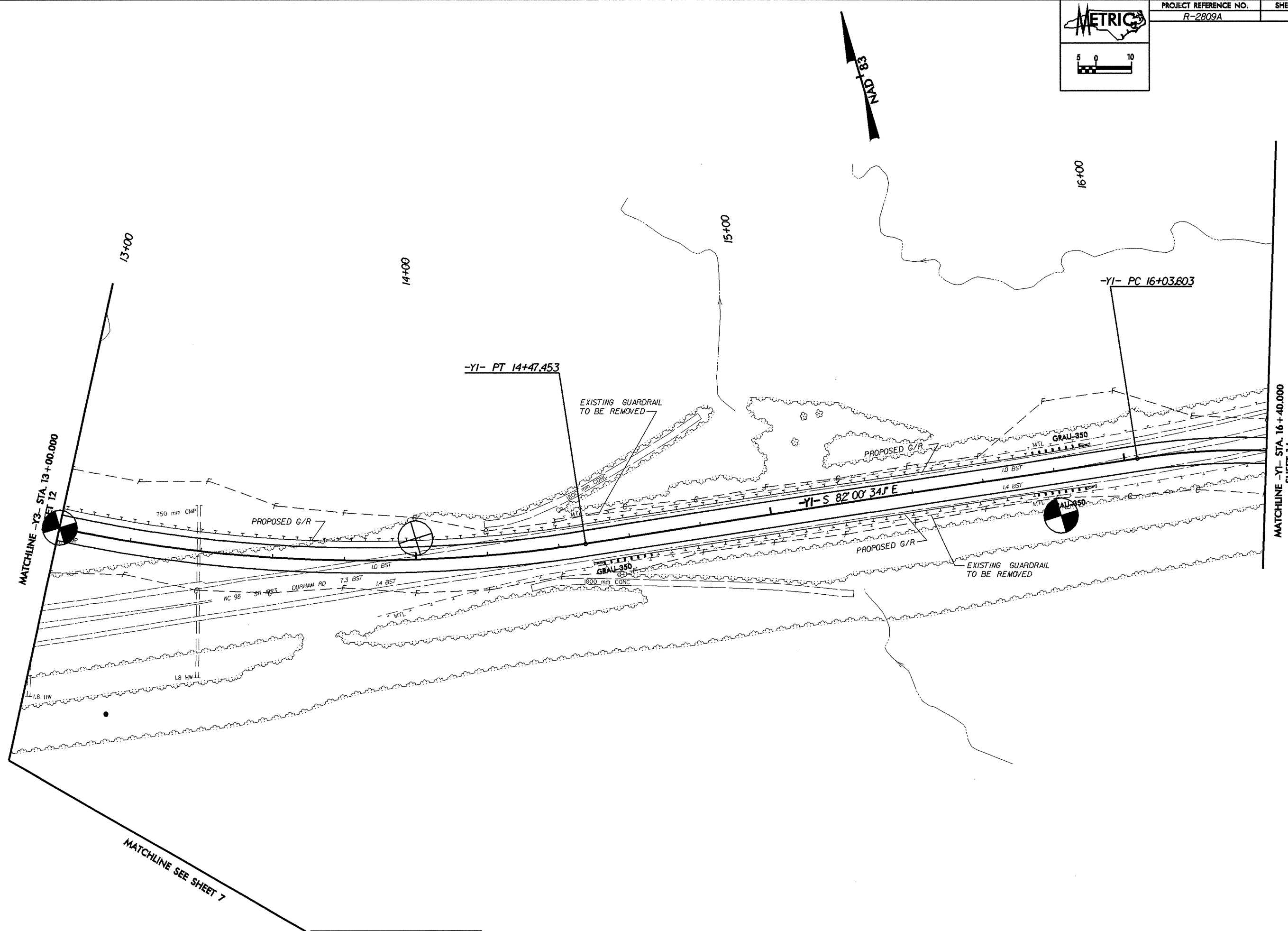
PROJECT REFERENCE NO.	SHEET NO.
R-2809A	12



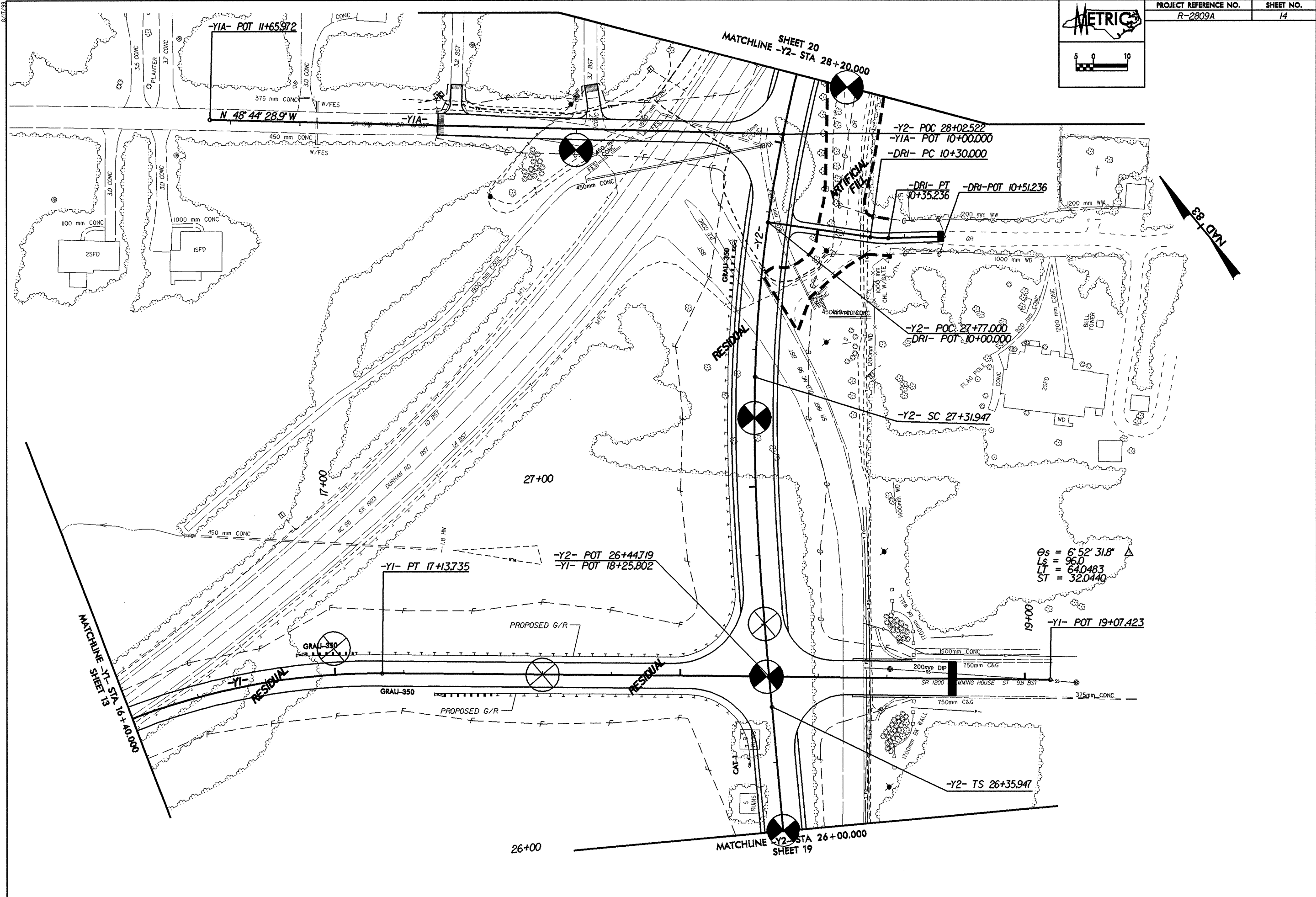
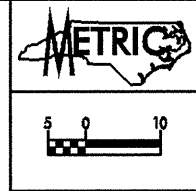
8/11/98



PROJECT REFERENCE NO. R-2809A	SHEET NO. 13
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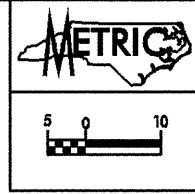
MATCHLINE SEE SHEET 7



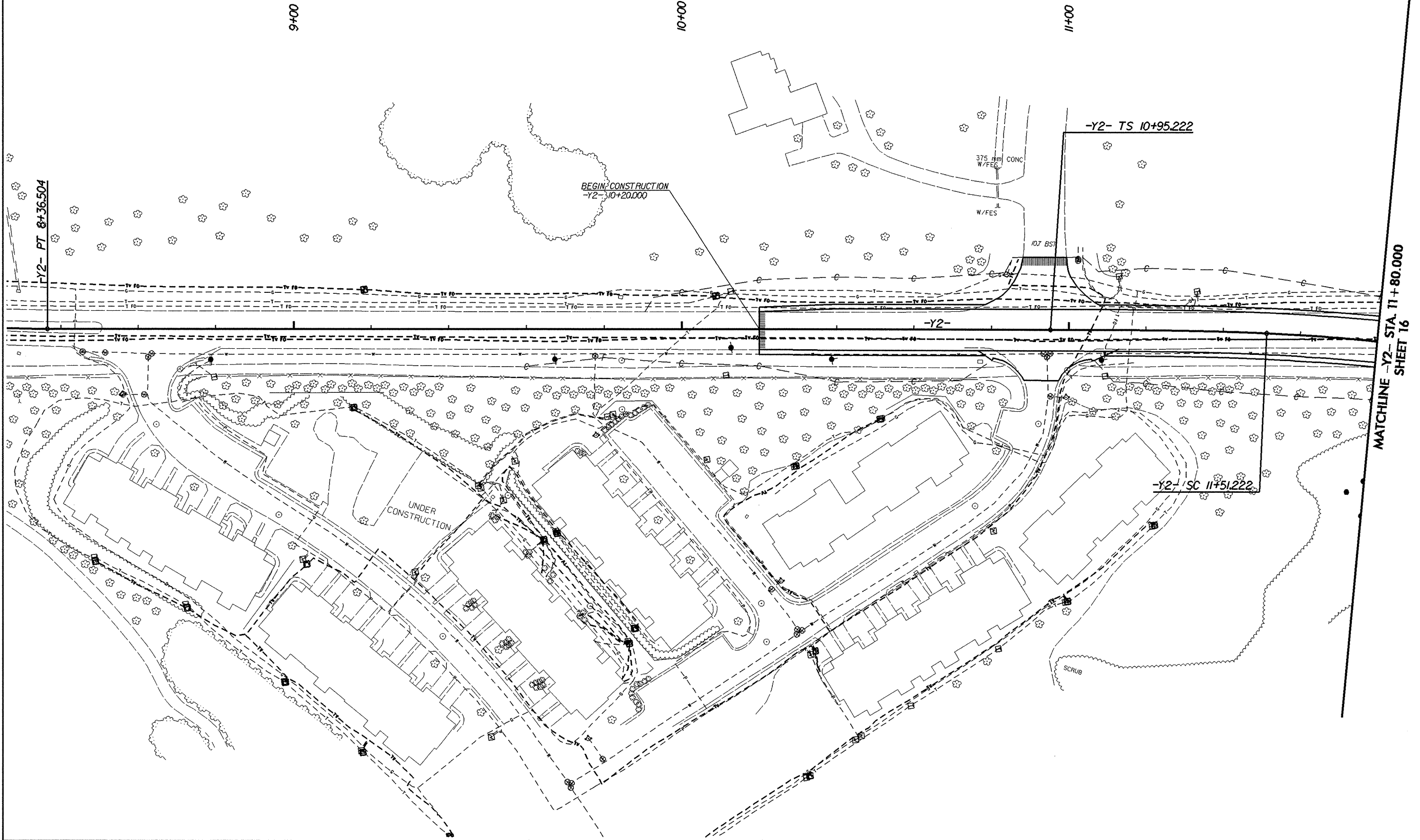
$\theta_s = 6' 52' 31.8'' \Delta$
 $L_s = 96.0$
 $LT = 64.0483$
 $ST = 32.0440$

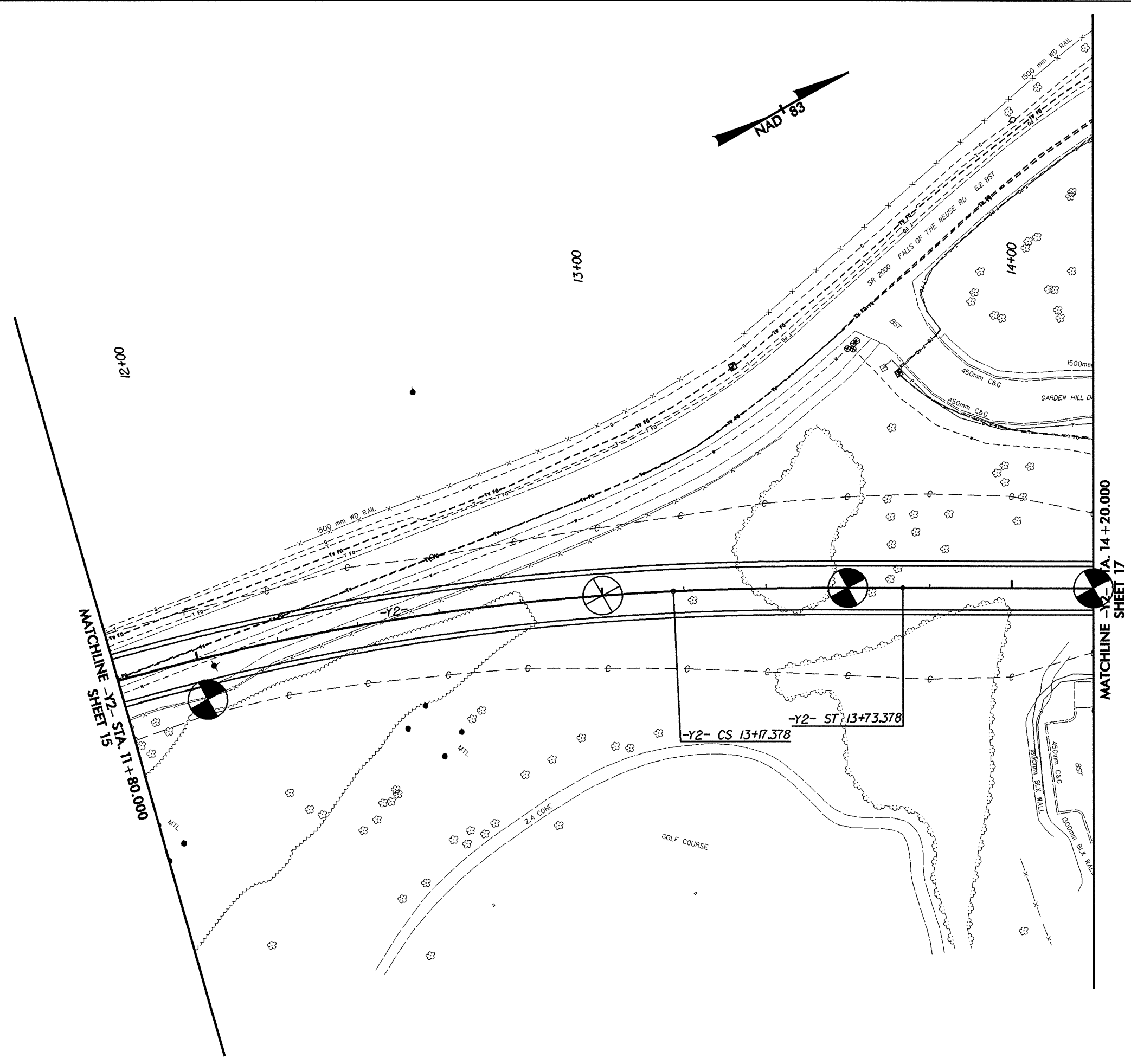
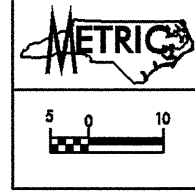
8/17/99

8/17/99

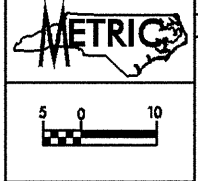


PROJECT REFERENCE NO. R-2809A SHEET NO. 15





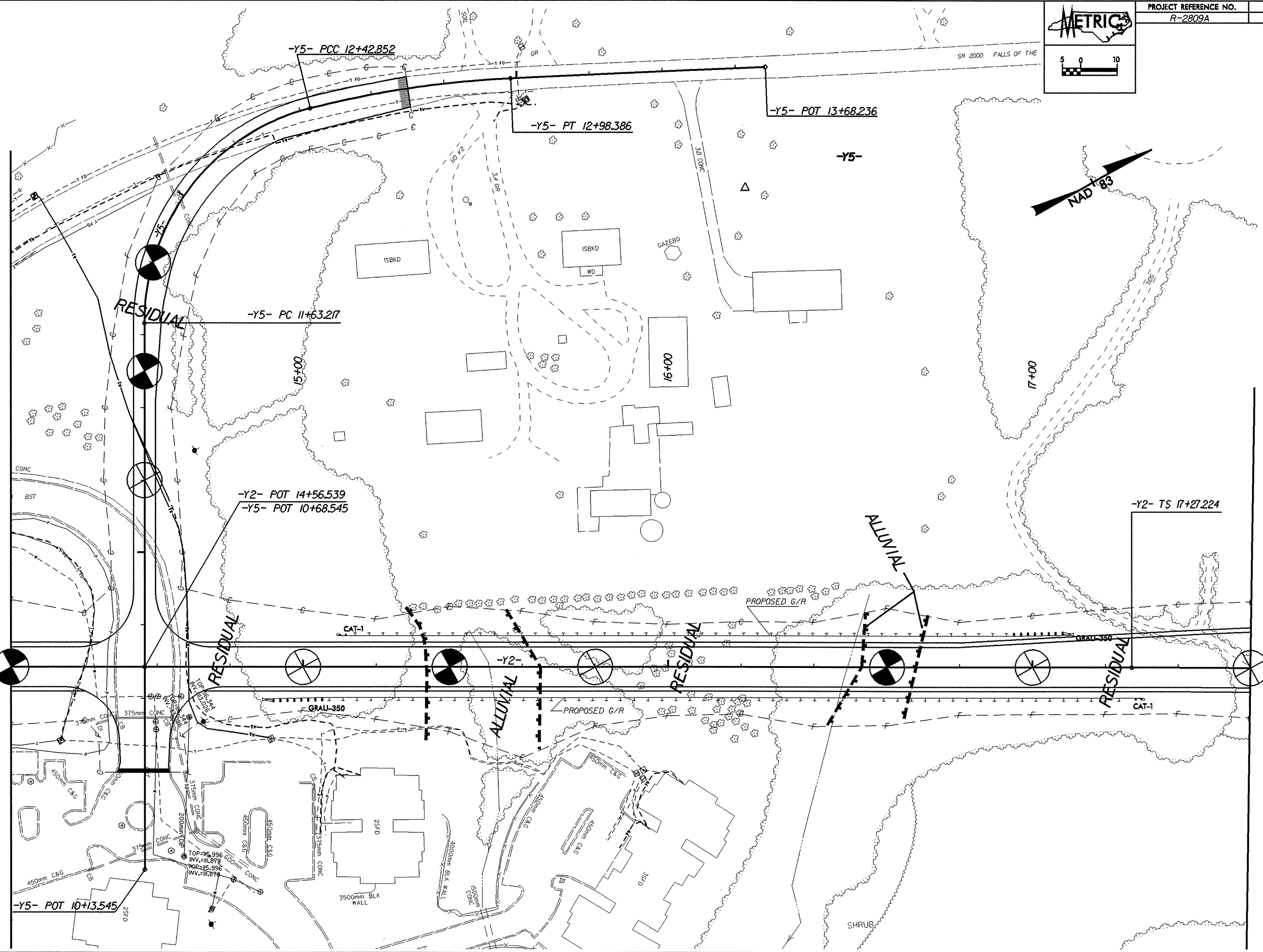
8/17/99



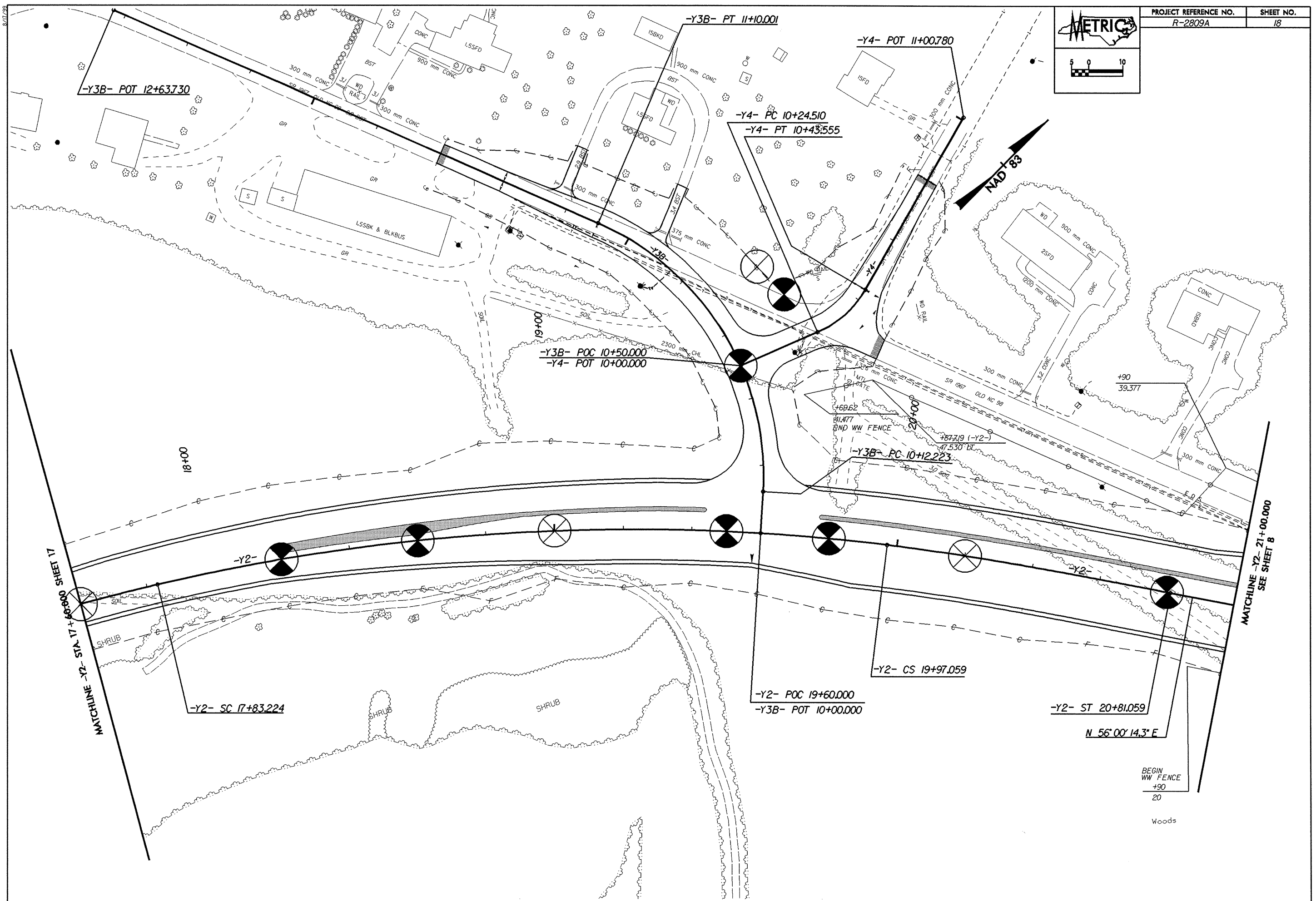
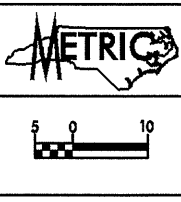
PROJECT REFERENCE NO.	SHEET NO.
R-2809A	17

MATCHLINE -Y2- STA. 14+20.000
SHEET 16

MATCHLINE -Y2- STA. 17+60.000
SHEET 18



8/17/88



-Y3B- POT 12+63.730

-Y3B- PT 11+10.001

-Y4- POT 11+00.780

-Y4- PC 10+24.510

-Y4- PT 10+43.555

-Y3B- POC 10+50.000

-Y4- POT 10+00.000

-Y3B- PC 10+12.223

-Y2-

-Y2- CS 19+97.059

-Y2- POC 19+60.000

-Y3B- POT 10+00.000

-Y2- ST 20+81.059

N 56° 00' 14.3" E

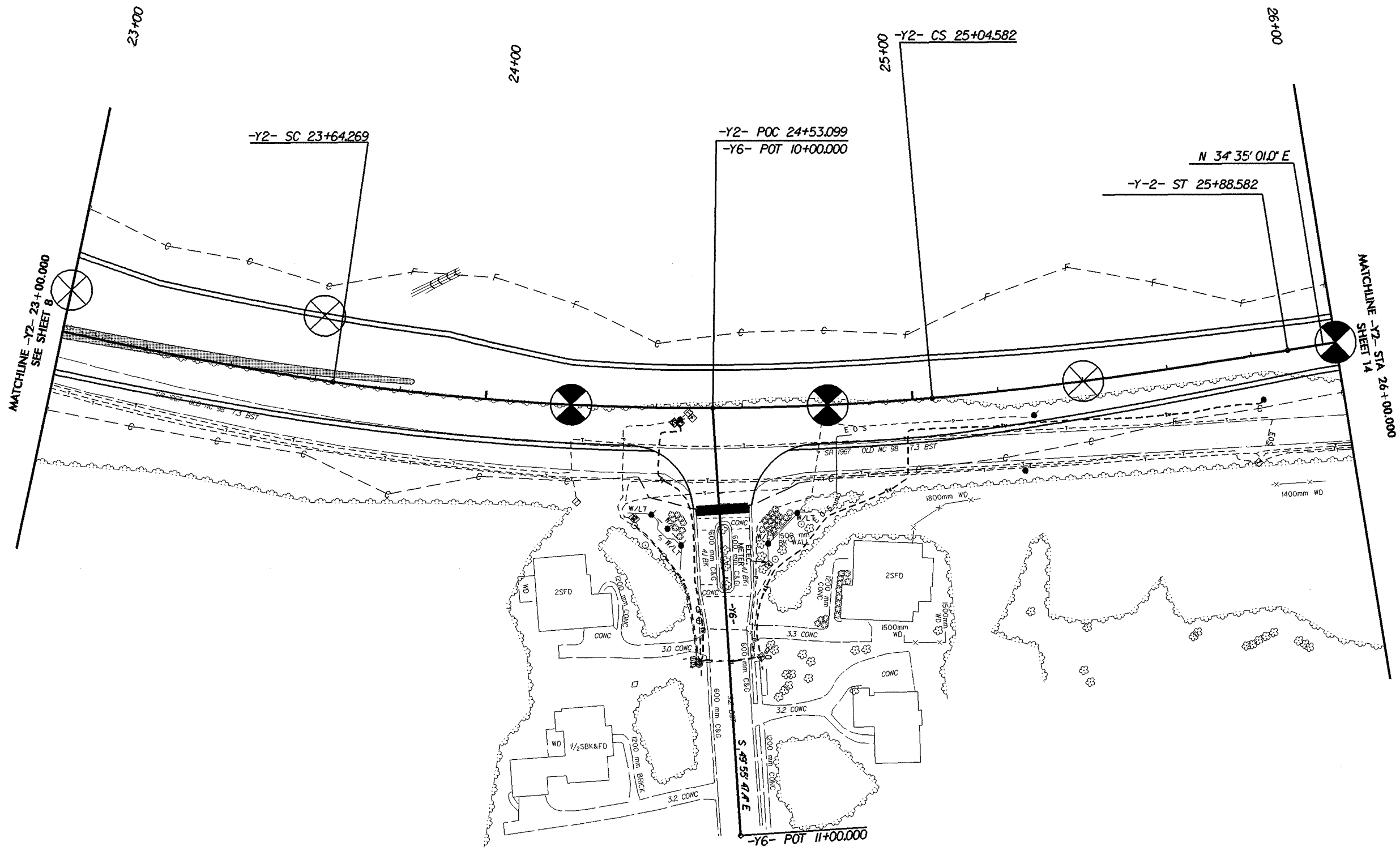
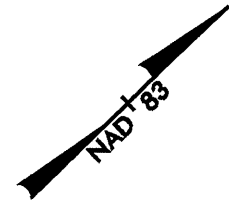
BEGIN
WW FENCE
+90
20

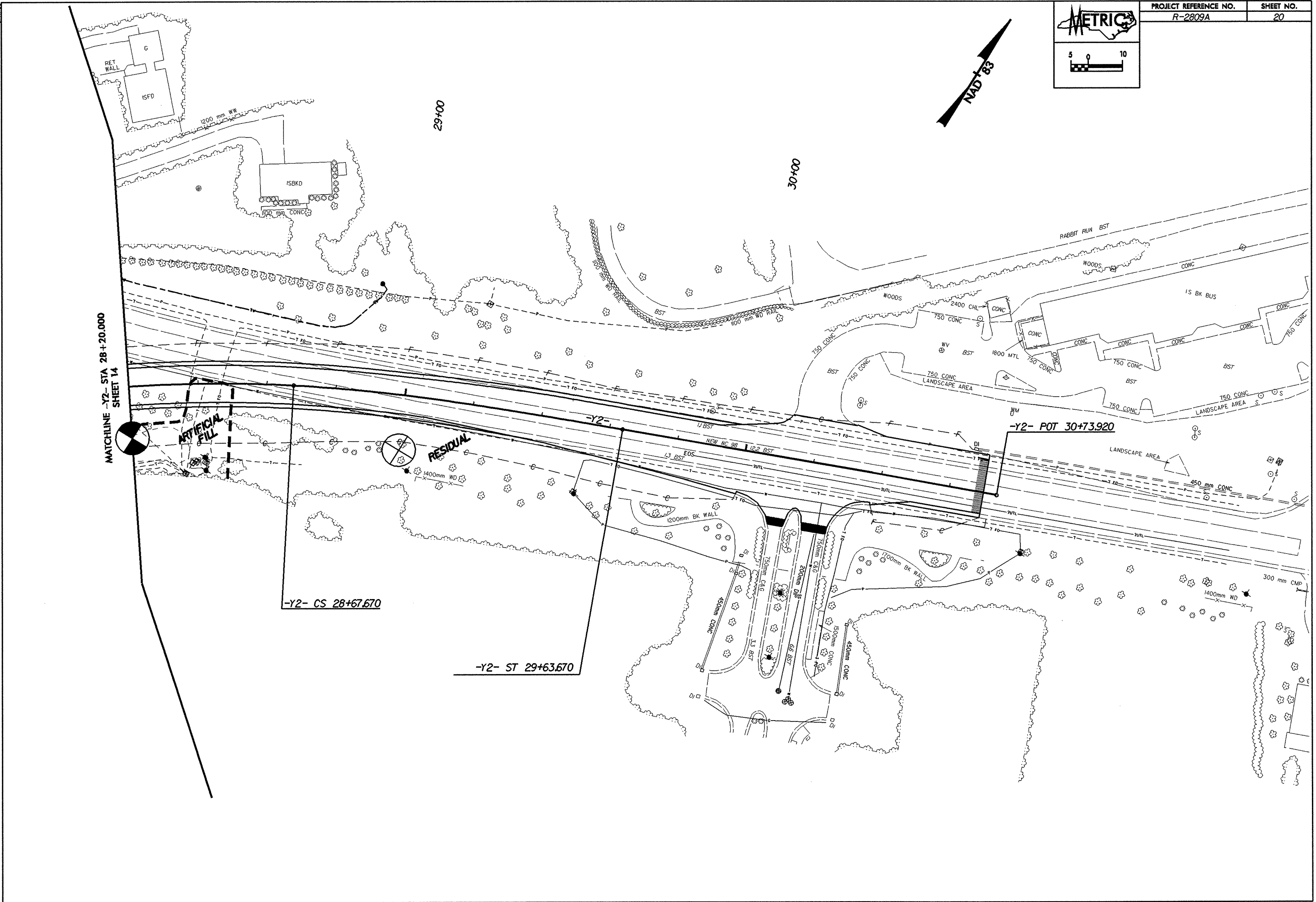
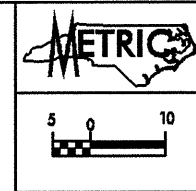
Woods

MATCHLINE -Y2- STA 17+40.000 SHEET 17

MATCHLINE -Y2- 21+00.000
SEE SHEET 8

5 0 10





MATCHLINE -Y2- STA 28+20.000
SHEET 14

ARTIFICIAL FILL

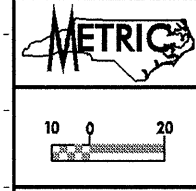
RESIDUAL

-Y2- CS 28+67.670

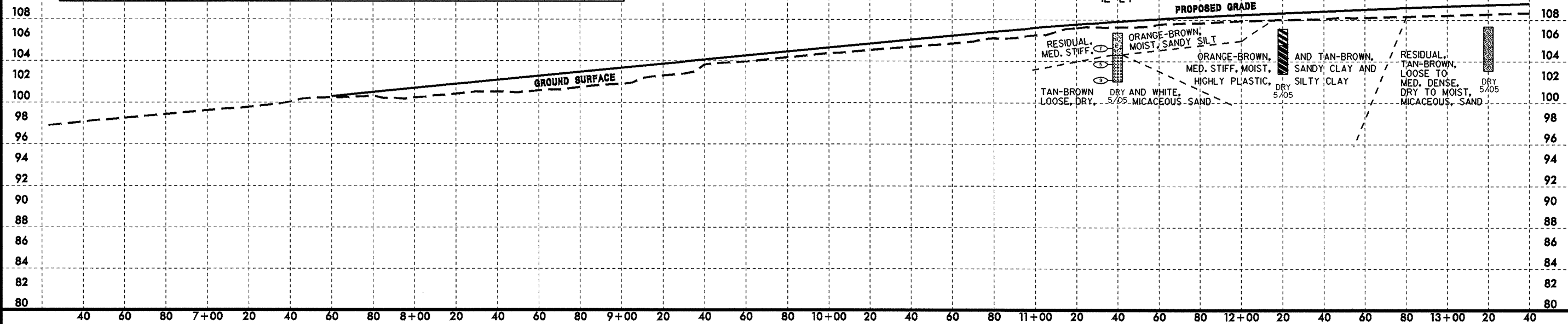
-Y2- ST 29+63.670

-Y2- POT 30+73.920

8/17/95

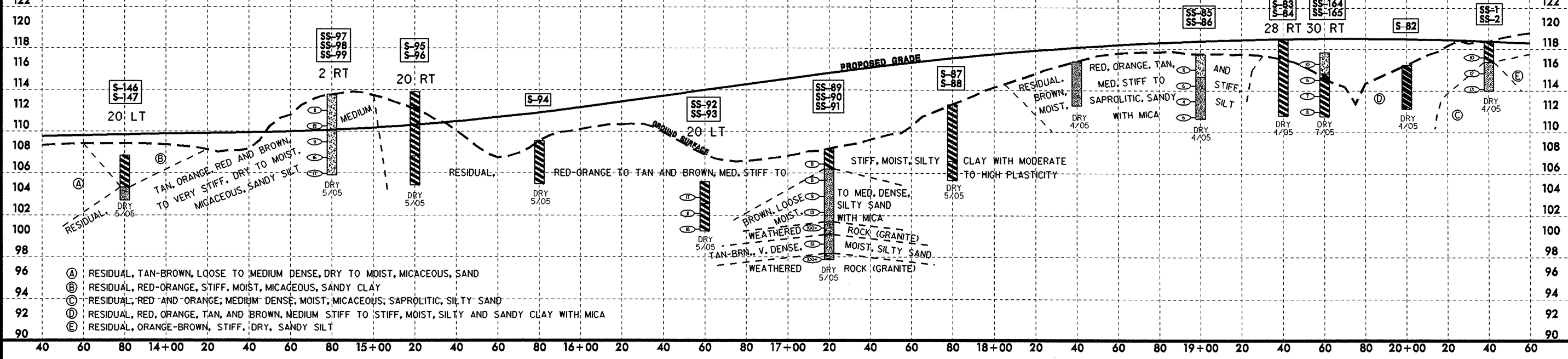


SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT			% PASSING (SIEVES)			%	%	
							C. SAND	F. SAND	SILT	CLAY	10	40			200
SS-149	12 LT	11+40	1.17-1.62	A-5(0)	41	NP	27.1	44.4	12.2	16.3	100	91	36	-	-
SS-150	12 LT	11+40	2.69-3.14	A-1-B(0)	31	3	45.4	27.1	13.2	14.3	62	41	20	-	-
S-151	12 LT	12+20	0.50-1.00	A-7-6(13)	45	28	12.6	27.1	13.4	46.8	94	91	59	-	-
S-152	12 LT	12+20	2.00-2.50	A-6(7)	40	14	10.8	30.1	20.4	38.7	100	97	62	-	-
S-153	12 LT	12+20	3.00-4.00	A-6(5)	34	12	7.9	39.5	22.0	30.5	100	98	58	-	-
S-148	15 LT	13+20	2.00-2.50	A-2-4(0)	38	9	36.0	21.0	18.5	24.4	70	51	33	-	-



SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT			% PASSING (SIEVES)			%	%	
							C. SAND	F. SAND	SILT	CLAY	10	40			200
S-146	20 LT	13+80	0.50-1.00	A-7-6(13)	50	25	19.1	17.7	12.2	50.9	90	80	59	-	-
S-147	20 LT	13+80	3.50-4.00	A-4(3)	37	10	21.1	26.2	18.4	34.2	93	86	53	-	-
SS-97	2 RT	14+80	1.26-1.71	A-5(4)	47	9	18.7	43.5	19.4	28.3	98	95	54	-	-
SS-98	2 RT	14+80	4.30-4.75	A-5(0)	47	NP	15.0	45.5	23.3	16.2	100	96	46	-	-
SS-99	2 RT	14+80	7.34-7.79	A-5(4)	41	10	16.3	44.7	26.7	22.3	98	96	53	-	-
S-95	20 RT	15+20	0.50-1.25	A-7-5(32)	77	31	14.3	12.0	7.9	72.9	98	96	81	-	-
S-96	20 RT	15+20	7.00-8.00	A-7-5(7)	49	13	6.5	42.5	22.7	28.3	100	98	57	-	-
S-94	CL	15+80	0.50-1.00	A-7-5(17)	63	20	4.3	29.1	18.0	48.6	100	99	72	-	-
SS-92	20 LT	16+60	1.17-1.62	A-7-6(6)	42	17	14.2	32.2	13.2	40.5	90	82	52	-	-
SS-93	20 LT	16+60	2.69-3.14	A-7-6(8)	43	14	6.5	36.6	20.4	36.4	100	97	64	-	-
SS-89	CL	17+20	1.17-1.62	A-7-6(6)	41	19	13.8	40.5	9.3	36.4	98	93	49	-	-
SS-90	CL	17+20	2.69-3.14	A-2-5(0)	47	NP	12.6	66.0	13.4	8.1	100	99	28	-	-
SS-91	CL	17+20	5.88-6.18	A-2-4(0)	36	NP	17.8	61.1	13.0	8.1	100	97	26	-	-

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT			% PASSING (SIEVES)			%	%	
							C. SAND	F. SAND	SILT	CLAY	10	40			200
S-87	CL	17+80	3.00-4.00	A-7-5(11)	62	18	5.9	39.3	22.5	32.4	97	94	60	-	-
S-88	CL	17+80	6.00-7.00	A-7-5(5)	45	12	5.5	49.0	19.2	26.3	100	99	53	-	-
SS-85	CL	19+00	1.16-1.61	A-5(11)	61	10	3.6	30.6	23.3	42.5	100	100	72	-	-
SS-86	CL	19+00	2.68-3.13	A-4(3)	40	7	6.1	42.3	31.4	18.2	100	97	57	-	-
S-83	28 RT	19+40	0.50-1.00	A-7-5(46)	84	43	3.2	9.3	16.4	70.9	98	96	87	-	-
S-84	28 RT	19+40	6.00-7.00	A-7-5(17)	56	20	2.0	26.3	26.9	44.5	100	99	75	-	-
SS-164	30 RT	19+60	1.11-1.56	A-5(1)	60	2	21.9	33.4	24.4	20.3	96	88	46	-	-
SS-165	30 RT	19+60	2.63-3.08	A-7-5(12)	56	14	6.1	34.7	41.0	18.2	100	98	69	-	-
S-82	CL	20+00	1.50-2.00	A-6(5)	40	16	26.3	13.0	24.3	36.4	79	62	50	-	-
SS-1	CL	20+40	1.22-1.67	A-7-5(12)	61	21	12.5	33.4	22.0	32.2	100	98	59	-	-
SS-2	CL	20+40	2.74-3.19	A-2-5(0)	51	NP	13.3	63.5	13.2	10.1	100	99	28	-	-



- (A) RESIDUAL, TAN-BROWN, LOOSE TO MEDIUM DENSE, DRY TO MOIST, MICACEOUS SAND
- (B) RESIDUAL, RED-ORANGE, STIFF, MOIST, MICACEOUS, SANDY CLAY
- (C) RESIDUAL, RED AND ORANGE, MEDIUM DENSE, MOIST, MICACEOUS, SAPROLITIC, SILTY SAND
- (D) RESIDUAL, RED, ORANGE, TAN, AND BROWN, MEDIUM STIFF TO STIFF, MOIST, SILTY AND SANDY CLAY WITH MICA
- (E) RESIDUAL, ORANGE-BROWN, STIFF, DRY, SANDY SILT

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SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT			% PASSING (SIEVES)			MOISTURE	ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40		
S-17	CL	24+80	0.50-1.00	A-7-5(19)	62	24	12.9	19.9	27.0	40.2	100	94	71	-
SS-162	CL	25+60	1.26-1.71	A-7-5(19)	63	21	7.9	24.3	29.3	38.5	100	98	74	-
SS-163	CL	25+60	2.78-3.23	A-5(0)	49	NP	18.0	36.5	27.3	18.2	91	83	48	-
S-21	10 RT	26+00	0.50-1.00	A-7-5(38)	75	38	7.2	11.1	17.4	64.3	100	96	84	-
S-22	10 RT	26+00	3.00-4.00	A-7-5(20)	63	23	8.4	22.9	34.5	34.2	100	98	73	-
S-23	10 RT	26+00	7.50-8.00	A-7-5(23)	65	27	6.8	23.5	35.5	34.2	100	98	74	-
S-24	20 LT	26+60	1.00-2.00	A-7-5(36)	76	48	12.3	14.1	17.4	62.3	96	89	72	-
S-25	20 LT	26+60	6.00-7.00	A-7-5(3)	47	11	28.5	28.5	22.8	20.1	100	90	46	-

PROJECT REFERENCE NO. **R-2809A**

ROADWAY DESIGN ENGINEER

SHEET NO. **22**

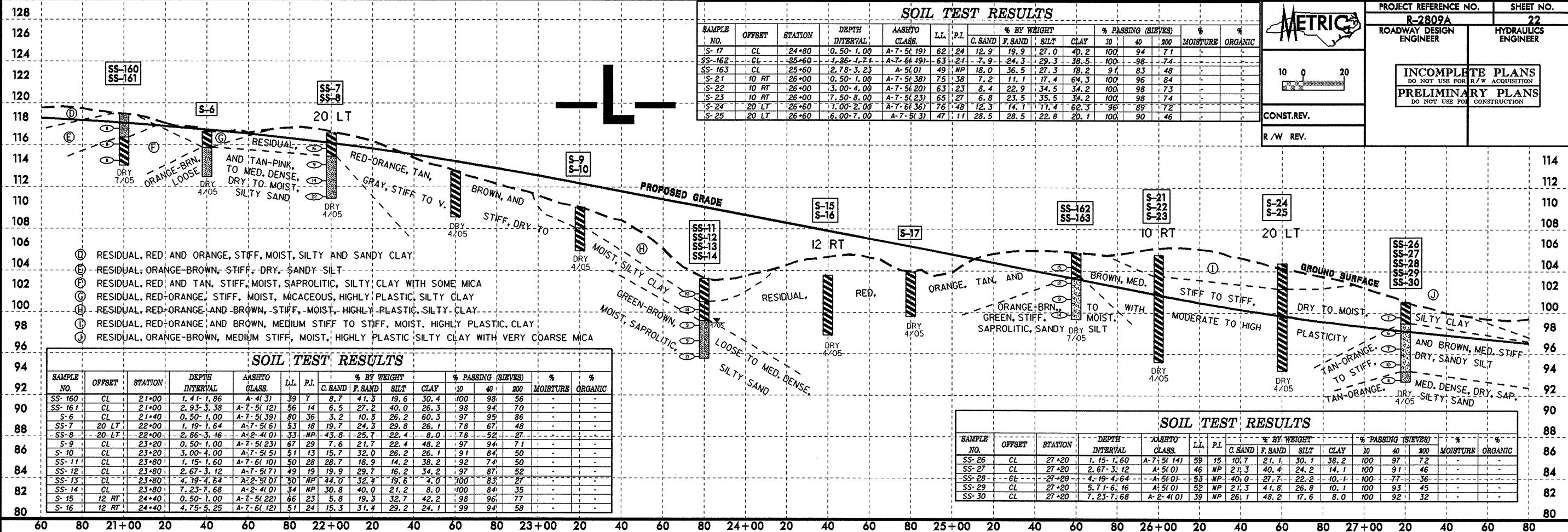
HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST. REV.

R/W REV.

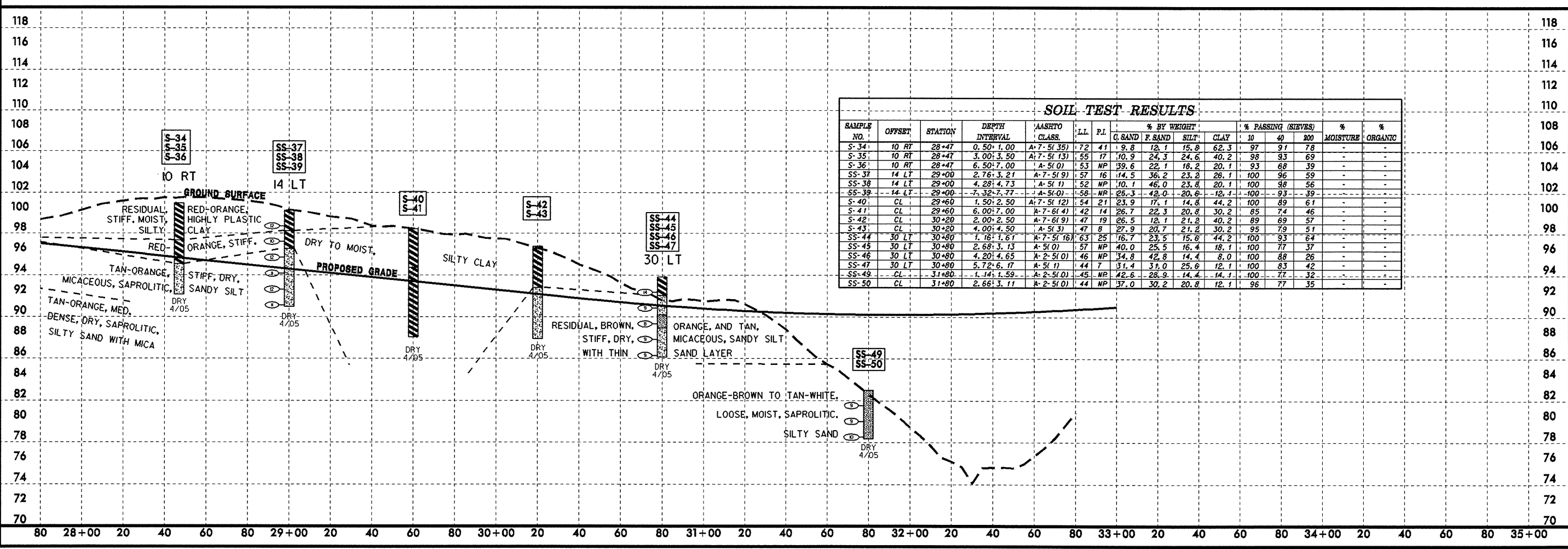


SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT			% PASSING (SIEVES)			MOISTURE	ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40		
SS-160	CL	21+00	1.41-1.86	A-4(3)	39	7	8.7	41.3	19.6	30.4	100	98	56	-
SS-161	CL	21+00	2.93-3.38	A-7-5(12)	56	14	6.5	27.2	40.0	26.3	98	94	70	-
S-6	CL	21+40	0.50-1.00	A-7-5(39)	80	36	3.2	10.3	26.2	60.3	97	95	86	-
SS-7	20 LT	22+00	1.19-1.64	A-7-5(6)	53	18	19.7	24.3	29.8	26.1	78	67	48	-
SS-8	20 LT	22+00	2.86-3.16	A-2-4(0)	33	NP	43.8	25.7	22.4	8.0	78	52	27	-
S-9	CL	23+20	0.50-1.00	A-7-5(23)	67	29	7.6	21.7	22.4	48.2	97	94	71	-
S-10	CL	23+20	3.00-4.00	A-7-5(5)	51	13	15.7	32.0	26.2	26.1	91	84	50	-
SS-11	CL	23+80	1.15-1.60	A-7-5(10)	50	28	28.7	18.9	14.2	38.2	92	74	50	-
SS-12	CL	23+80	2.67-3.12	A-7-5(7)	49	19	19.9	29.7	16.2	34.2	97	87	52	-
SS-13	CL	23+80	4.19-4.64	A-2-5(0)	50	NP	44.0	32.4	19.6	4.0	100	83	27	-
SS-14	CL	23+80	7.23-7.68	A-2-4(0)	34	NP	30.8	40.0	21.2	8.0	100	84	35	-
S-15	12 RT	24+40	0.50-1.00	A-7-5(22)	66	23	5.8	19.3	32.7	42.2	98	96	77	-
S-16	12 RT	24+40	4.75-5.25	A-7-5(12)	51	24	15.3	31.4	29.2	24.1	99	94	58	-

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT			% PASSING (SIEVES)			MOISTURE	ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40		
SS-26	CL	27+20	1.15-1.60	A-7-5(14)	59	15	10.7	21.1	30.1	38.2	100	97	72	-
SS-27	CL	27+20	2.67-3.12	A-5(0)	46	NP	21.3	40.4	24.2	14.1	100	91	46	-
SS-28	CL	27+20	4.19-4.64	A-5(0)	53	NP	40.0	27.7	22.2	10.1	100	77	36	-
SS-29	CL	27+20	5.77-6.16	A-5(0)	52	NP	21.3	41.8	26.8	10.1	100	93	45	-
SS-30	CL	27+20	7.23-7.68	A-2-4(0)	39	NP	26.1	48.2	17.6	8.0	100	92	32	-

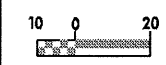


SOIL TEST RESULTS

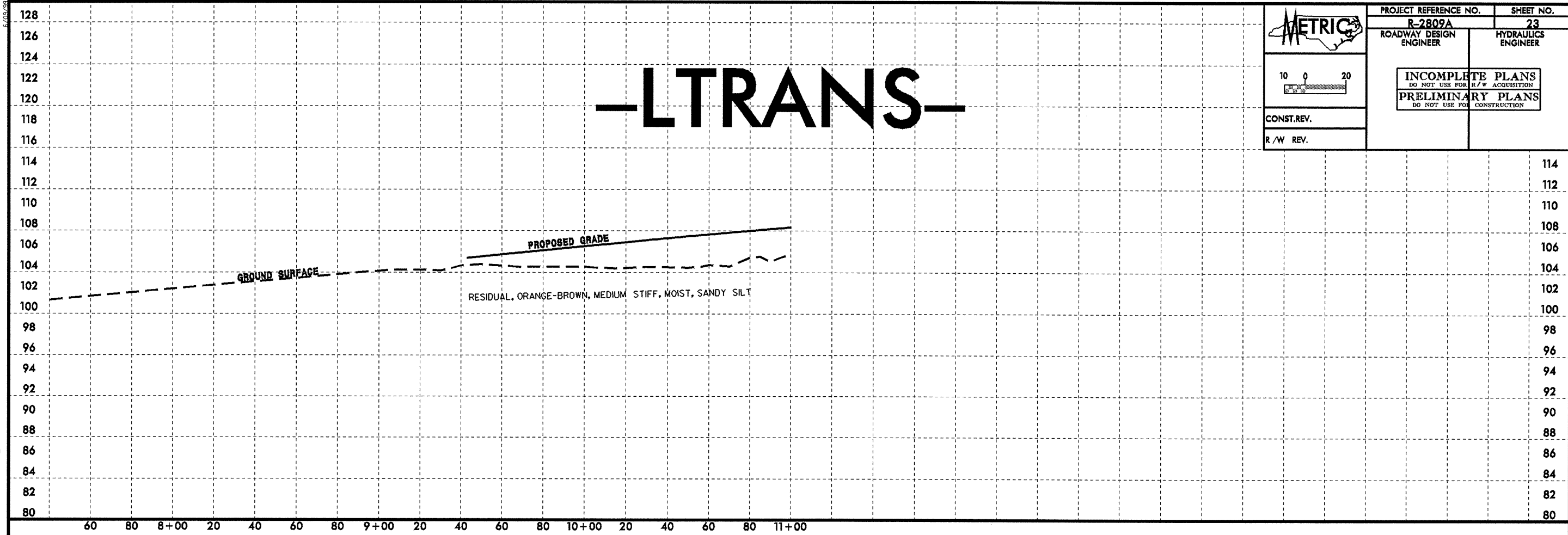
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT			% PASSING (SIEVES)			MOISTURE	ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40		
S-34	10 RT	28+47	0.50-1.00	A-7-5(35)	72	41	9.8	12.1	15.8	62.3	97	91	78	-
S-35	10 RT	28+47	3.00-3.50	A-7-5(13)	55	17	10.9	24.3	24.6	40.2	98	93	69	-
S-36	10 RT	28+47	6.50-7.00	A-5(0)	53	NP	39.6	22.1	18.2	20.1	93	88	39	-
SS-37	14 LT	29+00	2.76-3.21	A-7-5(9)	57	16	14.5	36.2	23.2	28.1	100	96	59	-
SS-38	14 LT	29+00	4.28-4.73	A-5(0)	52	NP	10.1	46.0	23.8	20.1	100	98	56	-
SS-39	14 LT	29+00	7.32-7.77	A-5(0)	58	NP	25.3	42.0	20.6	12.1	100	93	39	-
S-40	CL	29+60	1.50-2.50	A-7-5(12)	54	21	23.9	17.1	14.8	44.2	100	89	61	-
S-41	CL	29+60	6.00-7.00	A-7-5(4)	42	14	26.7	22.3	20.8	30.2	85	74	46	-
S-42	CL	30+20	2.00-2.50	A-7-5(9)	47	19	26.5	18.1	21.2	40.2	89	69	57	-
S-43	CL	30+20	4.00-4.50	A-5(3)	47	8	27.9	20.7	21.2	30.2	95	79	51	-
SS-44	30 LT	30+80	1.16-1.61	A-7-5(18)	63	25	16.7	23.5	15.8	44.2	100	93	64	-
SS-45	30 LT	30+80	2.68-3.13	A-5(0)	57	NP	40.0	25.5	16.4	18.1	100	77	37	-
SS-46	30 LT	30+80	4.20-4.65	A-2-5(0)	46	NP	34.8	42.8	14.4	8.0	100	88	26	-
SS-47	30 LT	30+80	5.72-6.17	A-5(1)	44	7	31.4	31.0	25.6	12.1	100	83	42	-
SS-49	CL	31+80	1.14-1.59	A-2-5(0)	45	NP	42.6	28.9	14.4	14.1	100	77	32	-
SS-50	CL	31+80	2.66-3.11	A-2-5(0)	44	NP	37.0	30.2	20.8	12.1	96	77	35	-



PROJECT REFERENCE NO.	SHEET NO.
R-2809A	23
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
CONST.REV.	
R/W REV.	



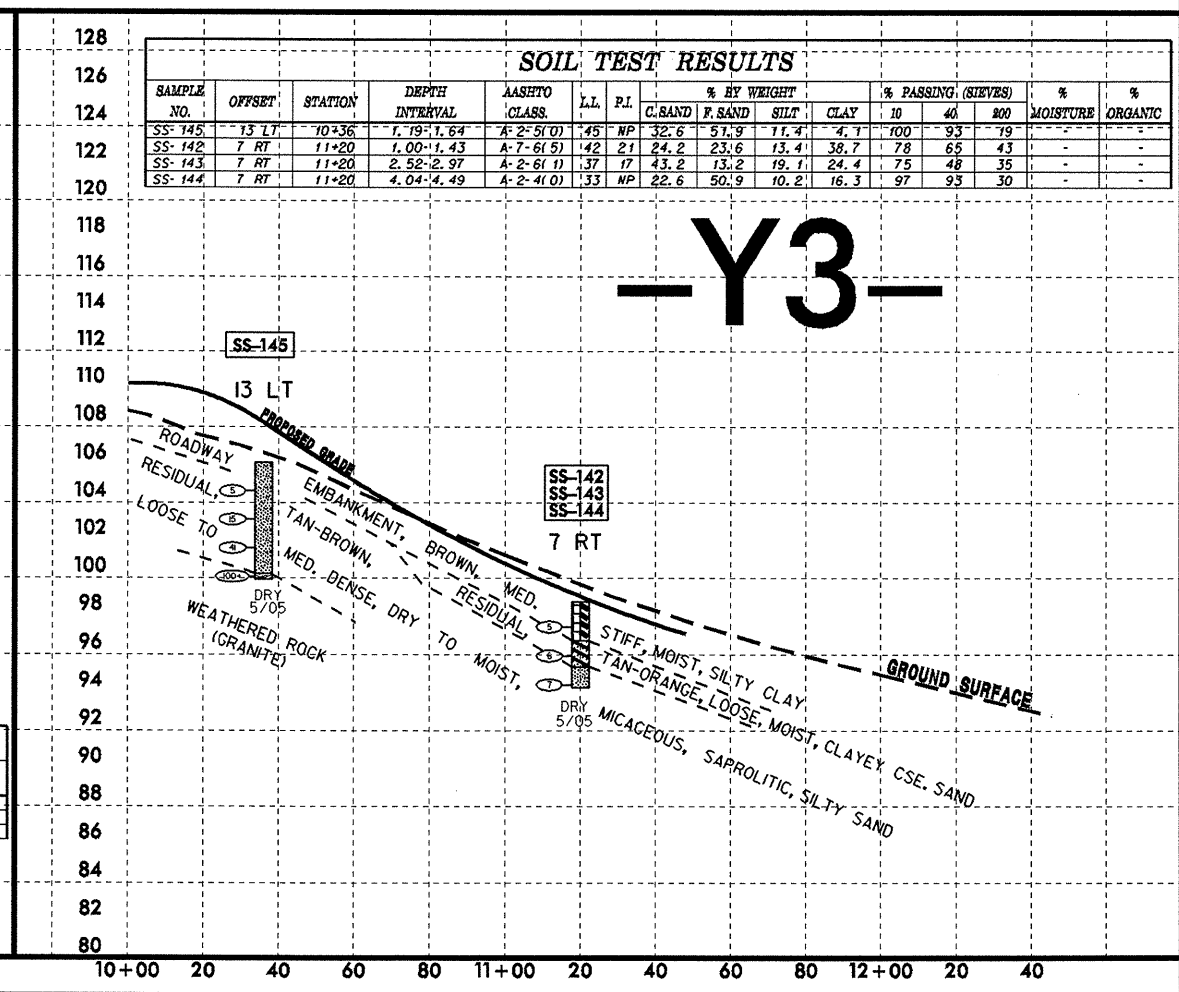
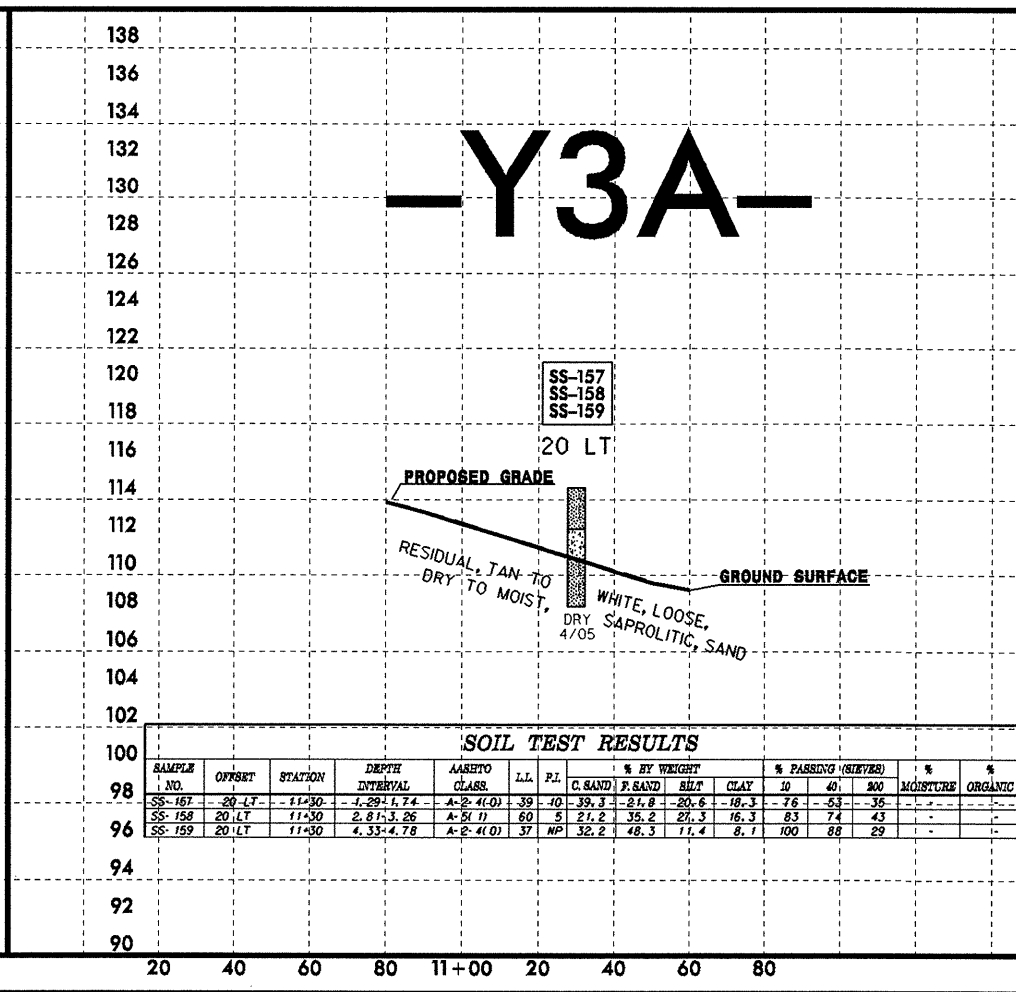
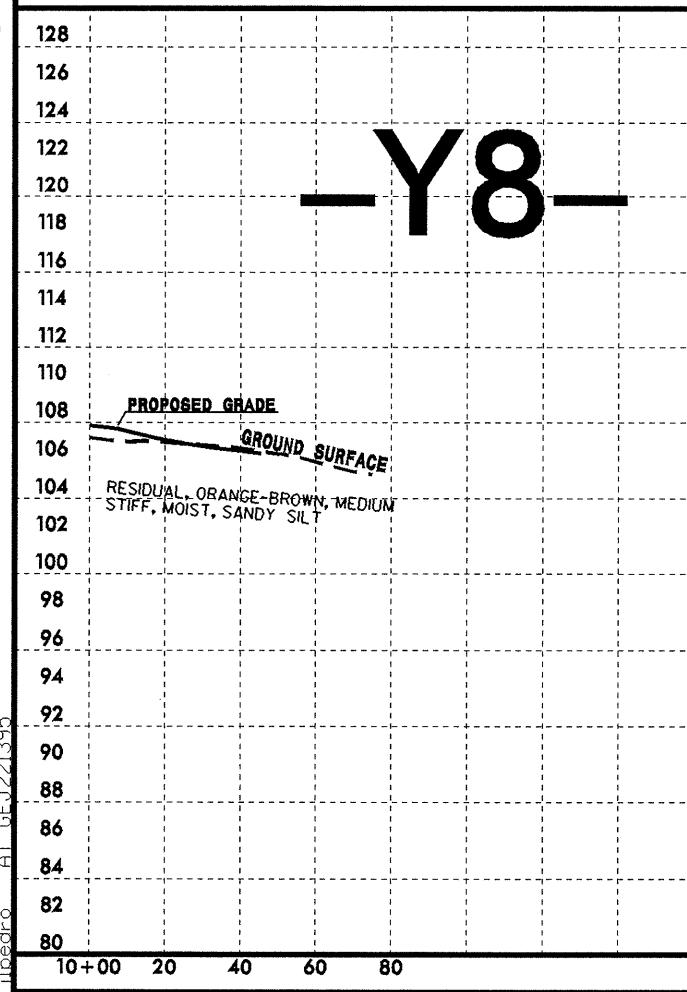
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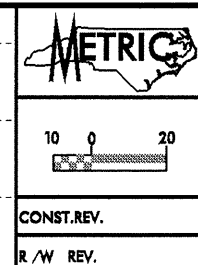
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SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-145	13 LT	10+36	1.19-1.64	A-2-5(0)	45	NP	32.6	51.9	11.4	4.1	100	93	19	-	-
SS-142	7 RT	11+20	1.00-1.43	A-7-6(5)	42	21	24.2	23.6	13.4	38.7	78	65	43	-	-
SS-143	7 RT	11+20	2.52-2.97	A-2-6(1)	37	17	43.2	13.2	19.1	24.4	75	48	35	-	-
SS-144	7 RT	11+20	4.04-4.49	A-2-4(0)	33	NP	22.6	50.9	10.2	16.3	97	93	30	-	-

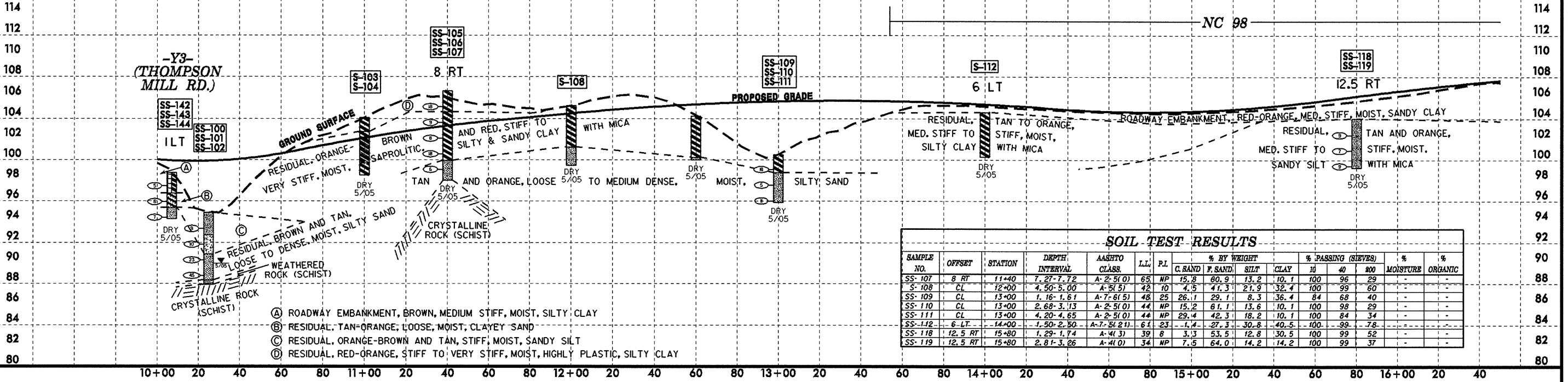
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-167	20 LT	11+30	1.29-1.74	A-2-4(0)	39	10	39.3	21.8	20.6	18.3	76	53	36	-	-
SS-158	20 LT	11+30	2.81-3.26	A-2-4(0)	60	5	21.2	35.2	27.3	16.3	83	74	43	-	-
SS-159	20 LT	11+30	4.33-4.78	A-2-4(0)	37	NP	32.2	48.3	11.4	8.1	100	88	29	-	-

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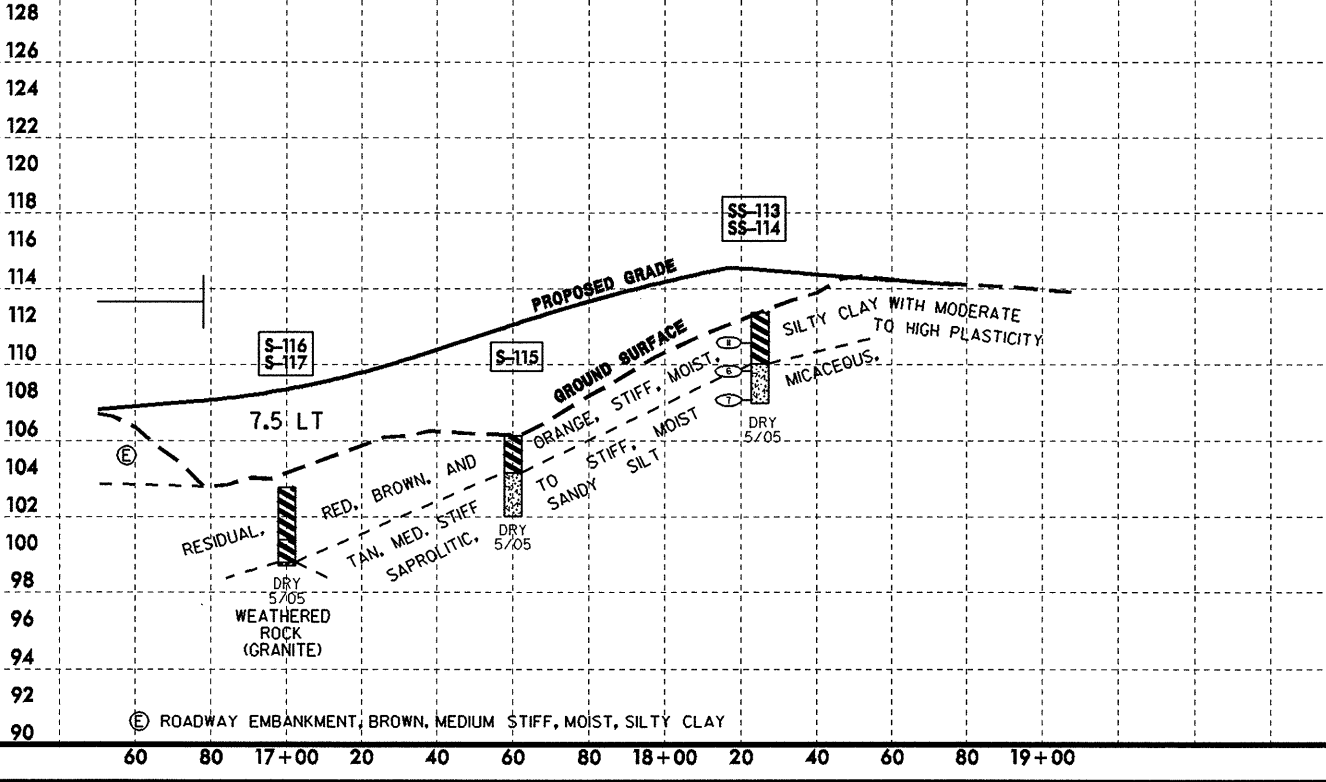
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-142	1 LT	10+07	1.00-1.43	A-7-6(5)	42	21	24.2	23.6	13.4	38.7	78	65	43	-	-
SS-143	1 LT	10+07	2.52-2.97	A-2-6(1)	37	17	43.2	13.2	19.1	24.4	75	48	35	-	-
SS-144	1 LT	10+07	4.04-4.49	A-2-4(0)	33	NP	22.6	50.9	10.2	16.3	97	93	30	-	-
SS-100	CL	10+25	1.22-1.67	A-4(1)	40	10	21.3	41.3	5.1	32.4	95	93	39	-	-
SS-101	CL	10+25	2.74-3.19	A-5(0)	50	NP	13.6	56.7	19.6	10.1	97	95	37	-	-
SS-102	CL	10+25	4.26-4.71	A-2-4(0)	39	NP	18.8	63.4	17.7	6.1	88	84	21	-	-
S-103	CL	11+00	2.00-2.50	A-6(3)	33	14	16.0	39.5	14.2	30.4	95	91	46	-	-
S-104	CL	11+00	4.50-5.00	A-7-6(9)	44	17	7.1	34.8	25.7	32.4	96	94	61	-	-
SS-105	8 RT	11+40	1.19-1.64	A-7-5(37)	83	40	4.3	20.6	12.3	62.8	100	98	78	-	-
SS-106	8 RT	11+40	2.71-3.16	A-7-5(14)	67	19	4.7	38.3	20.6	36.4	100	100	63	-	-

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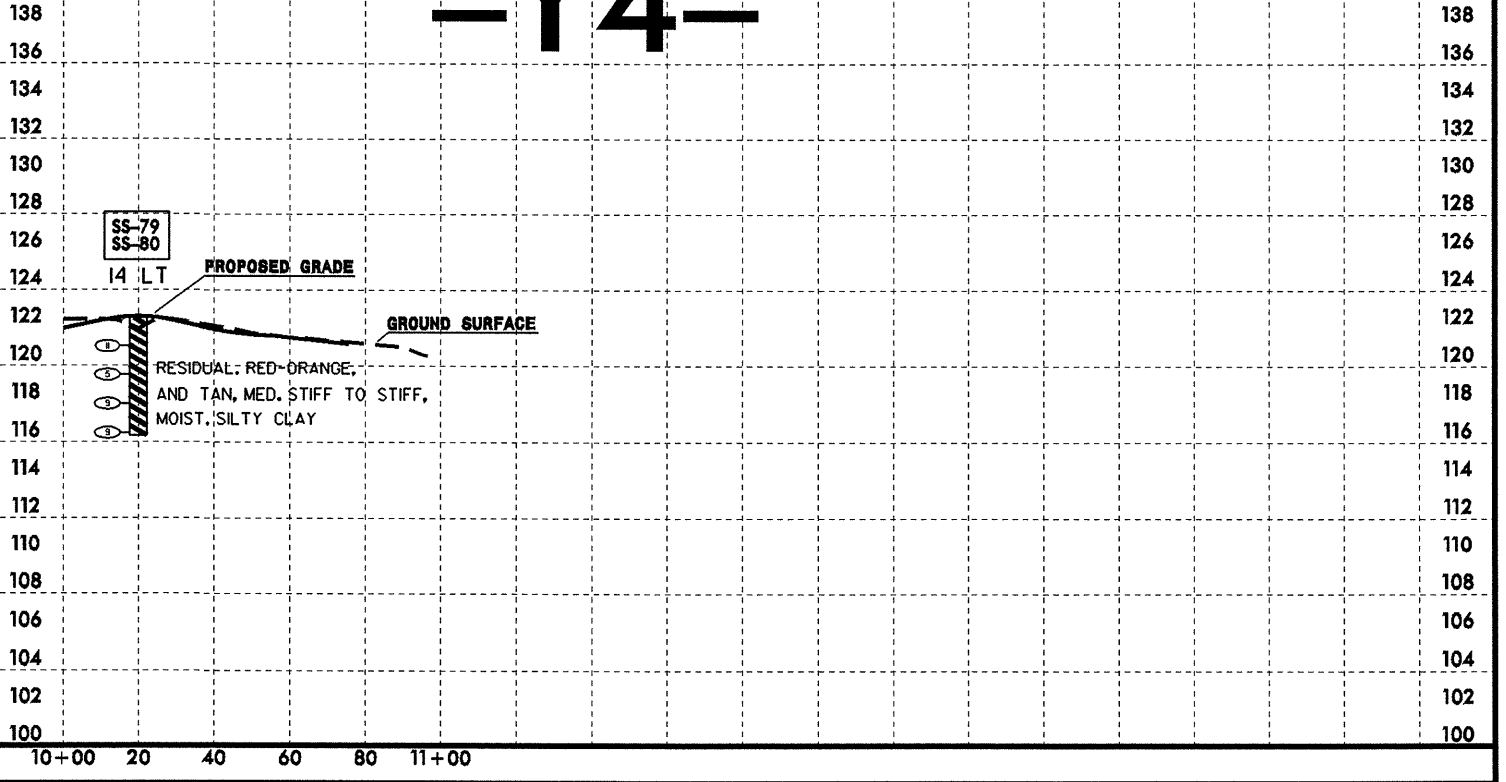
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-107	8 RT	11+40	1.27-1.72	A-2-5(0)	65	NP	15.8	60.9	13.2	10.1	100	96	29	-	-
S-108	CL	12+00	4.50-5.00	A-5(5)	42	10	4.5	41.3	21.9	32.4	100	99	60	-	-
SS-109	CL	13+00	1.16-1.61	A-7-6(5)	48	25	26.1	29.1	8.3	36.4	84	68	40	-	-
SS-110	CL	13+00	2.68-3.13	A-2-5(0)	44	NP	15.2	61.1	13.6	10.1	100	98	29	-	-
SS-111	CL	13+00	4.20-4.65	A-2-5(0)	44	NP	29.4	42.3	18.2	10.1	100	84	34	-	-
SS-112	6 LT	14+00	1.50-2.50	A-7-5(21)	61	23	1.4	27.3	30.8	40.5	100	99	78	-	-
SS-118	12.5 RT	15+80	1.29-1.74	A-4(3)	39	8	3.3	53.5	12.8	30.5	100	99	52	-	-
SS-119	12.5 RT	15+80	2.81-3.26	A-4(0)	34	NP	7.5	64.0	14.2	14.2	100	99	37	-	-

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-116	7.5 LT	17+00	0.50-1.00	A-7-6(12)	59	32	27.4	14.0	9.8	48.8	82	64	50	-	-
S-117	7.5 LT	17+00	3.00-3.50	A-7-6(3)	42	15	29.1	25.2	15.2	30.5	79	63	44	-	-
S-115	CL	17+60	0.50-1.00	A-7-6(9)	50	25	22.6	24.2	8.5	44.7	87	73	49	-	-
SS-113	CL	18+25	1.28-1.73	A-7-5(12)	62	16	11.2	36.8	19.5	32.5	100	96	65	-	-
SS-114	CL	18+25	2.80-3.25	A-5(0)	47	NP	20.1	50.8	14.8	14.2	100	93	36	-	-



SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-79	14 LT	10+20	1.19-1.64	A-7-5(10)	54	15	6.7	36.4	24.5	32.4	100	99	63	-	-
SS-80	14 LT	10+20	5.75-6.20	A-7-5(12)	68	14	6.1	36.4	39.3	18.2	100	98	65	-	-

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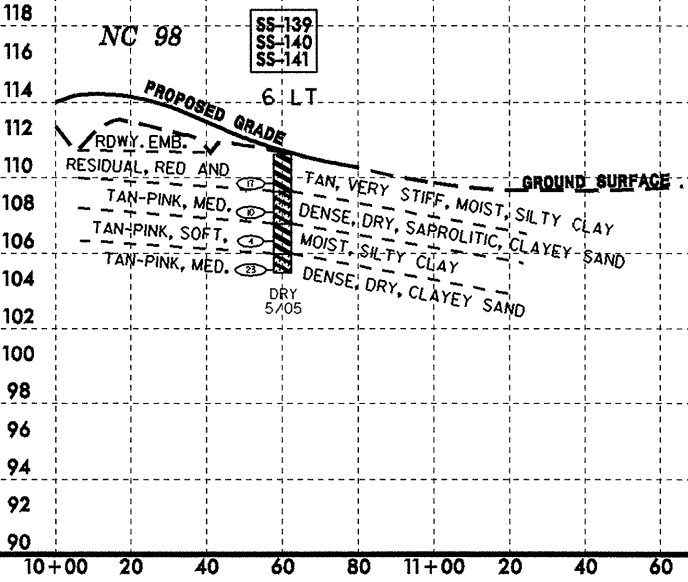
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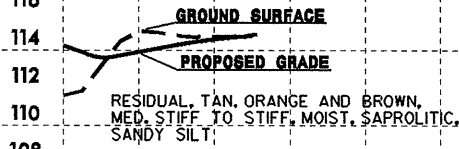
PROJECT REFERENCE NO.	R-2809A	SHEET NO.	25
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION		PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

-Y1A-

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			%	%
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-139	6 LT	10+50	1.27-1.72	A-7-6(5)	44	21	29.3	18.5	21.6	30.5	80	62	44	-	-
SS-140	6 LT	10+50	2.79-3.24	A-2-6(1)	36	15	45.4	18.7	16.1	20.4	82	52	33	-	-
SS-141	6 LT	10+50	4.37-4.76	A-7-6(4)	42	14	24.4	16.3	30.8	28.5	74	60	46	-	-



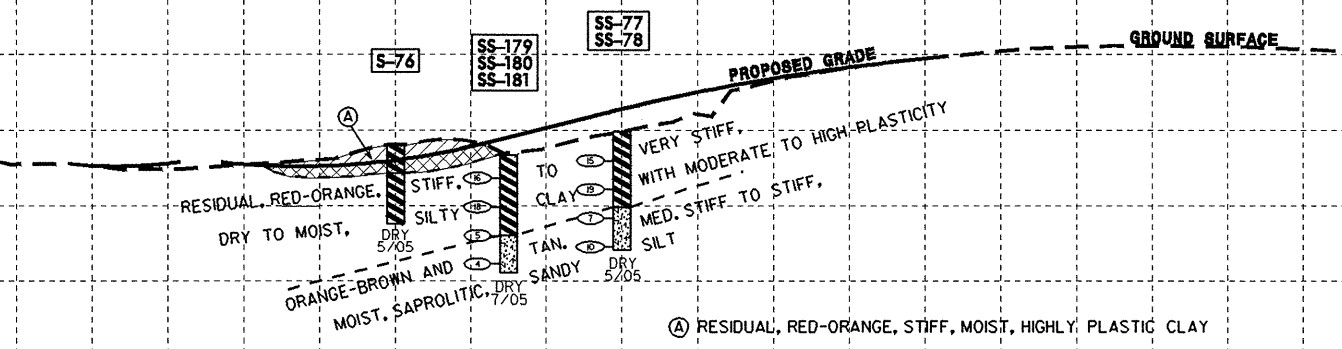
-DR1-



-Y5-

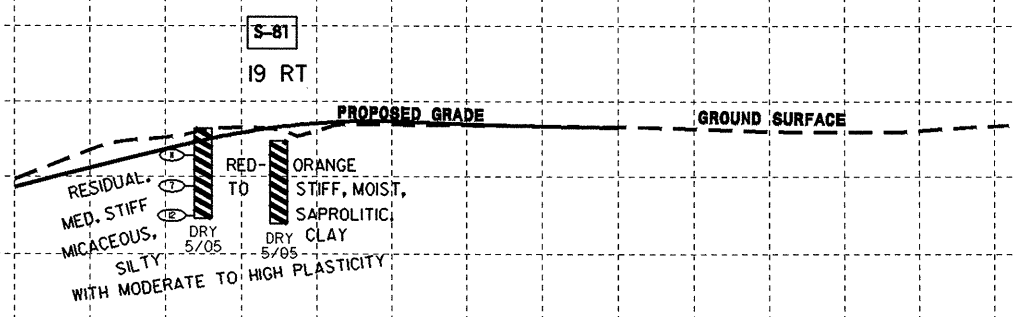
UNSATURABLE UNCLASSIFIED EXCAVATION

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SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			%	%
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-76	CL	11+20	0.50-1.00	A-7-5(53)	96	61	7.1	12.1	16.0	64.8	95	91	78	-	-
SS-179	CL	11+50	1.22-1.67	A-7-5(16)	55	21	9.5	18.8	12.9	58.8	99	94	72	-	-
SS-180	CL	11+50	2.74-3.19	A-7-5(23)	69	28	5.5	26.1	26.0	42.6	97	94	71	-	-
SS-181	CL	11+50	4.26-4.71	A-5(0)	48	NP	12.4	47.8	23.6	16.2	100	97	46	-	-
SS-77	CL	11+80	1.24-1.69	A-7-5(20)	57	26	9.5	20.9	11.1	58.7	100	95	72	-	-
SS-78	CL	11+80	4.28-4.73	A-5(0)	42	NP	8.9	54.7	24.3	12.1	100	98	44	-	-

-Y3B-



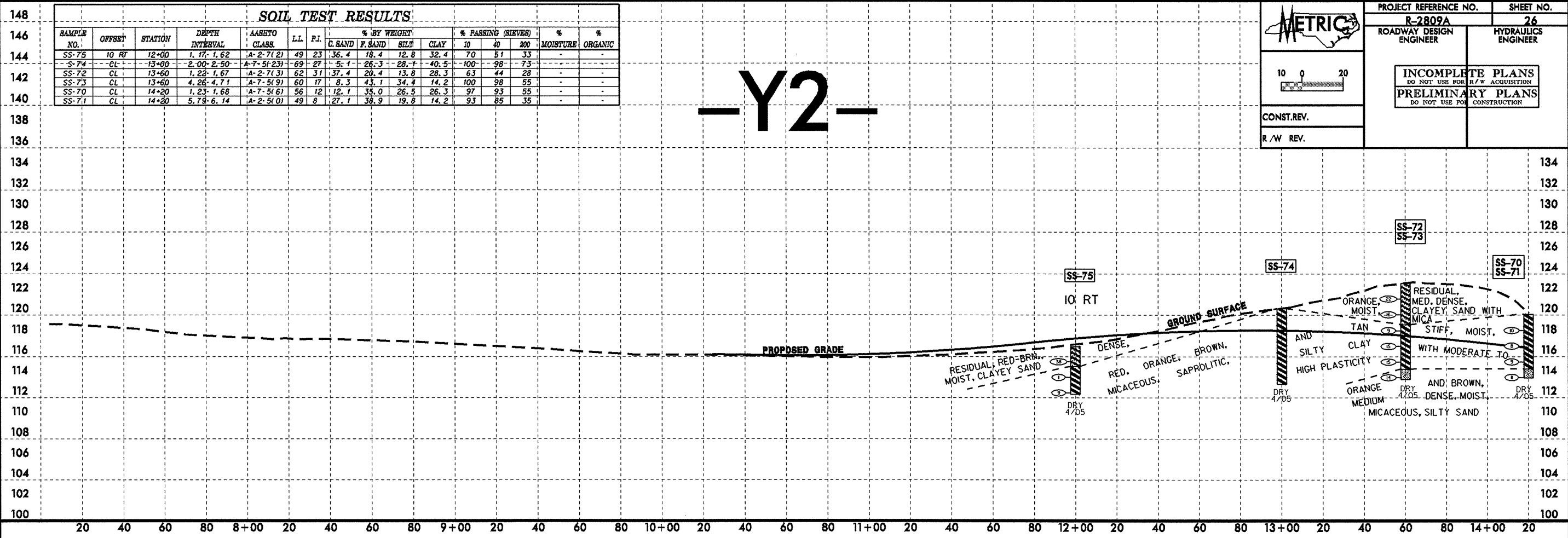
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			%	%
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-81	19 RT	10+70	1.00-2.00	A-7-5(28)	75	33	6.1	18.6	26.7	48.6	94	91	73	-	-

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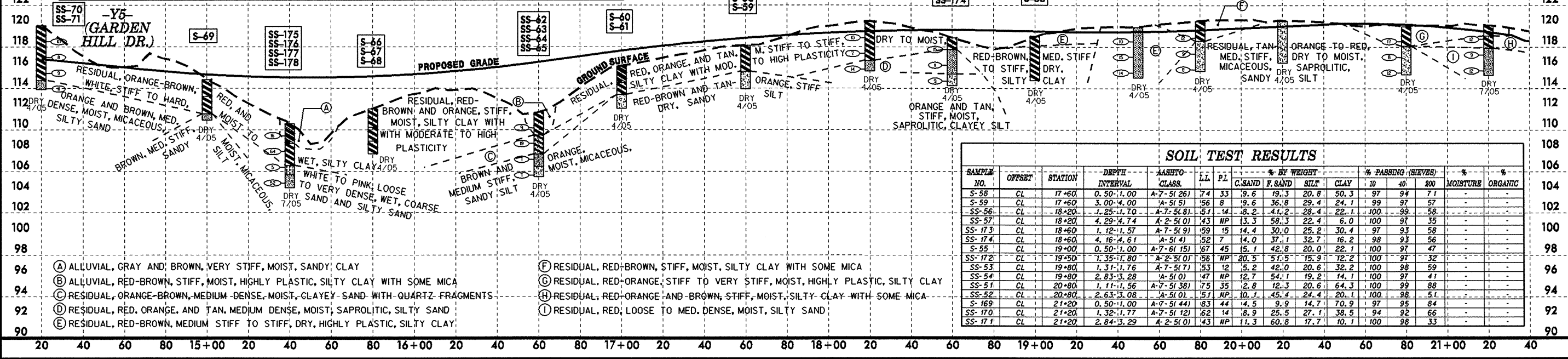
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R/W REV.

PROJECT REFERENCE NO. R-2809A	SHEET NO. 26
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

-Y2-



SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			%	%
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-69	CL	15+00	2.00-3.00	A-7-5(14)	60	19	7.8	29.7	30.3	32.2	98	94	66	-	-
SS-175	CL	15+40	1.14-1.69	A-6(2)	30	13	24.7	32.2	10.6	32.4	90	76	40	-	-
SS-176	CL	15+40	2.66-3.11	A-7-6(7)	50	23	20.3	14.8	26.4	38.5	69	59	47	-	-
SS-177	CL	15+40	4.18-4.63	A-1-B(0)	24	NP	66.3	17.2	8.4	8.1	72	32	14	-	-
SS-178	CL	15+40	5.70-6.15	A-2-4(0)	37	5	30.4	14.8	28.5	26.3	60	45	35	-	-
S-66	CL	15+80	0.58-1.00	A-7-6(33)	69	42	6.6	19.7	9.3	64.3	100	97	75	-	-
S-67	CL	15+80	2.00-2.50	A-7-6(9)	53	32	22.1	30.2	11.6	36.2	87	74	44	-	-
S-68	CL	15+80	3.50-4.00	A-7-6(4)	69	49	5.4	17.7	28.6	48.2	100	98	80	-	-
SS-62	CL	16+60	1.19-1.64	A-7-5(37)	76	42	7.8	14.5	19.4	58.3	99	95	79	-	-
SS-63	CL	16+60	2.71-3.00	A-2-7(2)	58	26	39.2	19.5	9.1	32.2	58	41	25	-	-
SS-64	CL	16+60	4.23-4.68	A-4(0)	40	NP	13.7	49.2	27.0	10.1	99	96	41	-	-
SS-65	CL	16+60	5.75-6.05	A-5(0)	48	NP	13.9	48.4	27.6	10.1	92	89	40	46.5	-
S-60	CL	17+00	0.50-1.00	A-6(6)	40	17	30.6	16.1	23.2	30.2	88	67	51	-	-
S-61	CL	17+00	2.00-2.50	A-7-6(3)	43	18	40.0	12.5	21.4	26.1	80	53	40	-	-



SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			%	%
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-58	CL	17+60	0.50-1.00	A-7-5(26)	74	33	9.6	19.3	20.8	50.3	97	94	71	-	-
S-59	CL	17+60	3.00-4.00	A-5(5)	56	8	19.6	36.8	29.4	24.1	99	97	57	-	-
SS-56	CL	18+20	1.25-1.70	A-7-5(8)	51	14	8.2	41.2	28.4	22.1	100	99	58	-	-
SS-57	CL	18+20	4.29-4.74	A-2-5(0)	43	NP	13.3	58.3	22.4	6.0	100	97	35	-	-
SS-173	CL	18+60	1.12-1.57	A-7-5(9)	59	15	14.4	30.0	25.2	30.4	97	93	58	-	-
SS-174	CL	18+60	4.16-4.61	A-5(4)	52	7	14.0	37.1	32.7	16.2	98	93	56	-	-
S-55	CL	19+00	0.50-1.00	A-7-6(15)	67	45	15.1	42.8	20.0	22.1	100	97	47	-	-
SS-172	CL	19+50	1.35-1.80	A-2-5(0)	56	NP	20.5	51.5	15.9	12.2	100	97	32	-	-
SS-53	CL	19+80	1.31-1.76	A-7-5(7)	53	12	5.2	42.0	20.6	32.2	100	98	59	-	-
SS-54	CL	19+80	2.83-3.28	A-5(0)	47	NP	12.7	54.1	19.2	14.1	100	97	41	-	-
SS-51	CL	20+80	1.11-1.56	A-7-5(38)	75	35	12.8	12.3	20.6	64.3	100	99	88	-	-
SS-52	CL	20+80	2.63-3.08	A-5(0)	51	NP	10.1	45.4	24.4	20.1	100	98	51	-	-
S-169	CL	21+20	0.50-1.00	A-7-5(44)	83	44	4.5	9.9	14.7	70.9	97	95	84	-	-
SS-170	CL	21+20	1.32-1.77	A-7-5(12)	62	14	18.9	25.5	27.1	38.5	94	92	66	-	-
SS-171	CL	21+20	2.84-3.29	A-2-5(0)	43	NP	11.3	60.8	17.7	10.1	100	98	33	-	-

- (A) ALLUVIAL, GRAY AND BROWN, VERY STIFF, MOIST, SANDY CLAY
- (B) ALLUVIAL, RED-BROWN, STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY WITH SOME MICA
- (C) RESIDUAL, ORANGE-BROWN, MEDIUM-DENSE, MOIST, CLAYEY SAND WITH QUARTZ FRAGMENTS
- (D) RESIDUAL, RED, ORANGE, AND TAN, MEDIUM DENSE, MOIST, SAPROLITIC, SILTY SAND
- (E) RESIDUAL, RED-BROWN, MEDIUM STIFF TO STIFF, DRY, HIGHLY PLASTIC, SILTY CLAY
- (F) RESIDUAL, RED-BROWN, STIFF, MOIST, SILTY CLAY WITH SOME MICA
- (G) RESIDUAL, RED-ORANGE, STIFF TO VERY STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY
- (H) RESIDUAL, RED-ORANGE AND BROWN, STIFF, MOIST, SILTY CLAY WITH SOME MICA
- (I) RESIDUAL, RED, LOOSE TO MED. DENSE, MOIST, SILTY SAND

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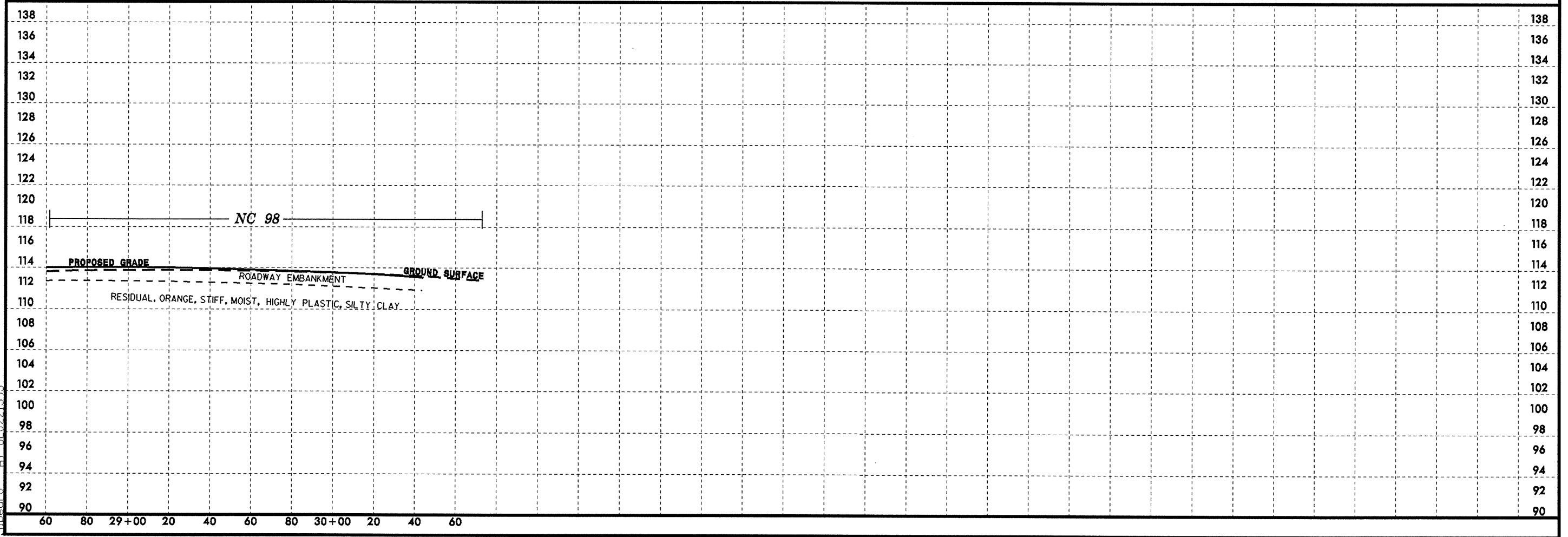
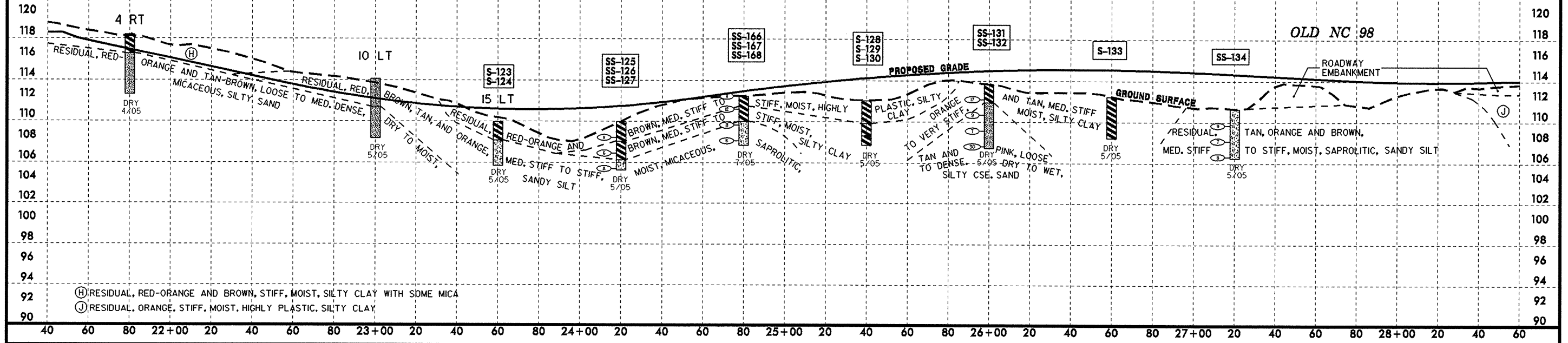
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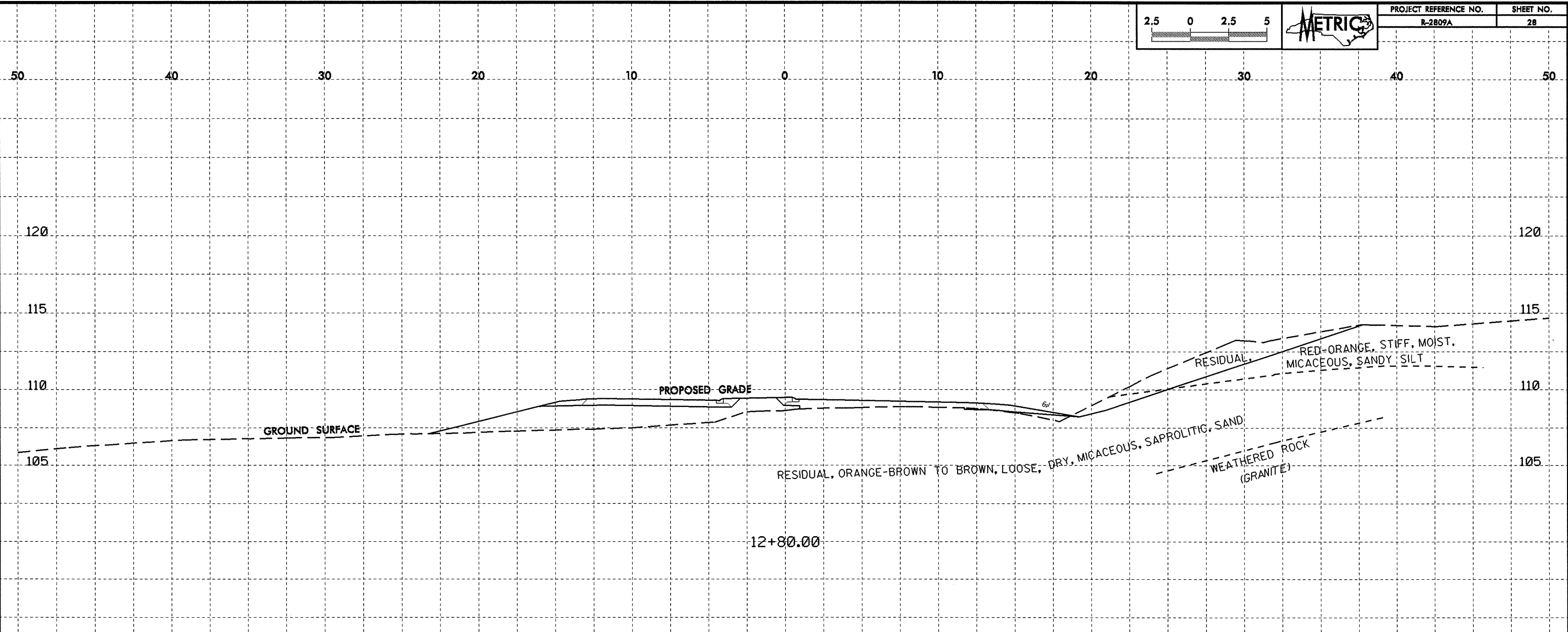
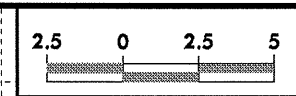
PROJECT REFERENCE NO. R-2809A	SHEET NO. 27
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS <small>DO NOT USE FOR R/W ACQUISITION</small>	
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>	

-Y2-

SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							G. SAND	F. SAND	SILT	CLAY	10	40	200		
S-123	15 LT	23+60	0.50' 1.00'	A-7-5(28)	73	33	7.3	20.3	13.4	58.9	98	94	74	-	-
S-124	15 LT	23+60	2.00' 2.50'	A-5(0)	49	NP	9.3	48.2	14.0	28.5	96	93	47	-	-
SS-125	CL	24+20	1.22' 1.67'	A-7-5(38)	91	39	4.5	22.6	16.1	56.9	100	98	78	-	-
SS-126	CL	24+20	2.74' 3.19'	A-7-5(6)	59	12	10.0	44.7	18.9	26.4	100	98	53	-	-
SS-127	CL	24+20	4.26' 4.71'	A-5(2)	61	8	11.6	52.4	19.7	16.3	94	91	42	-	-
SS-166	CL	24+80	0.00' 0.45'	A-7-5(19)	62	31	15.2	20.1	10.0	54.7	93	85	63	-	-
SS-167	CL	24+80	1.28' 1.73'	A-7-5(22)	67	28	6.3	26.3	26.8	40.5	97	94	71	-	-
SS-168	CL	24+80	2.80' 3.25'	A-5(0)	57	NP	16.2	46.4	25.2	12.2	87	79	38	-	-
S-128	CL	25+40	0.50' 1.00'	A-7-5(31)	81	48	20.5	14.2	9.3	58.9	91	76	65	-	-
S-129	CL	25+40	1.75' 2.50'	A-7-6(6)	45	22	29.1	16.5	15.9	38.6	77	59	45	-	-
S-130	CL	25+40	3.50' 4.00'	A-7-5(3)	48	11	30.9	18.9	19.7	30.5	90	70	48	-	-
SS-131	CL	26+00	1.18' 1.63'	A-7-6(9)	48	20	27.4	14.6	17.3	40.7	92	71	57	-	-
SS-132	CL	26+00	2.70' 3.15'	A-2-4(0)	31	5	53.3	19.9	14.6	12.2	92	53	28	-	-
S-133	CL	26+60	1.50' 2.00'	A-7-5(19)	70	25	10.8	26.8	19.7	42.7	100	95	67	-	-
SS-134	CL	27+20	1.27' 1.72'	A-5(5)	51	5	8.3	35.0	28.3	28.5	100	98	62	-	-



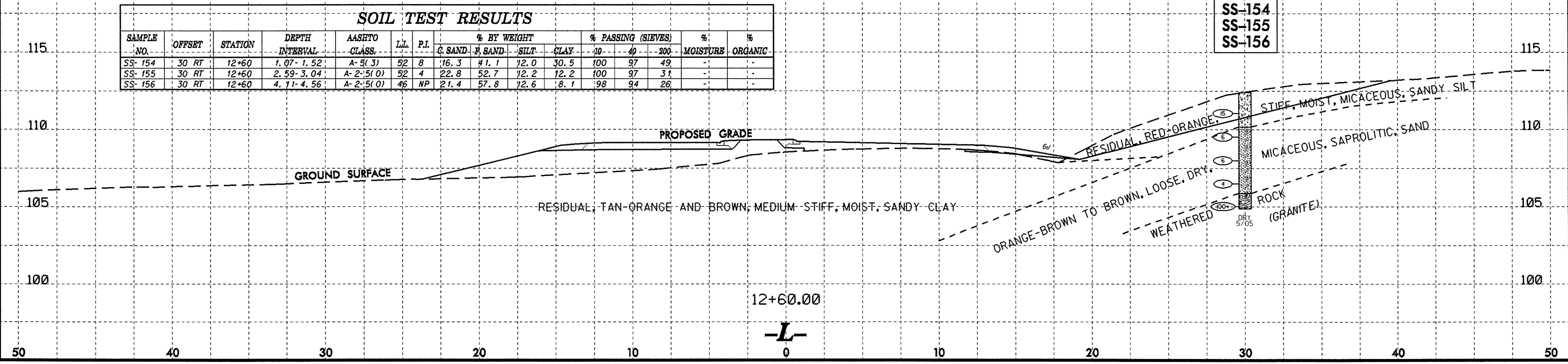
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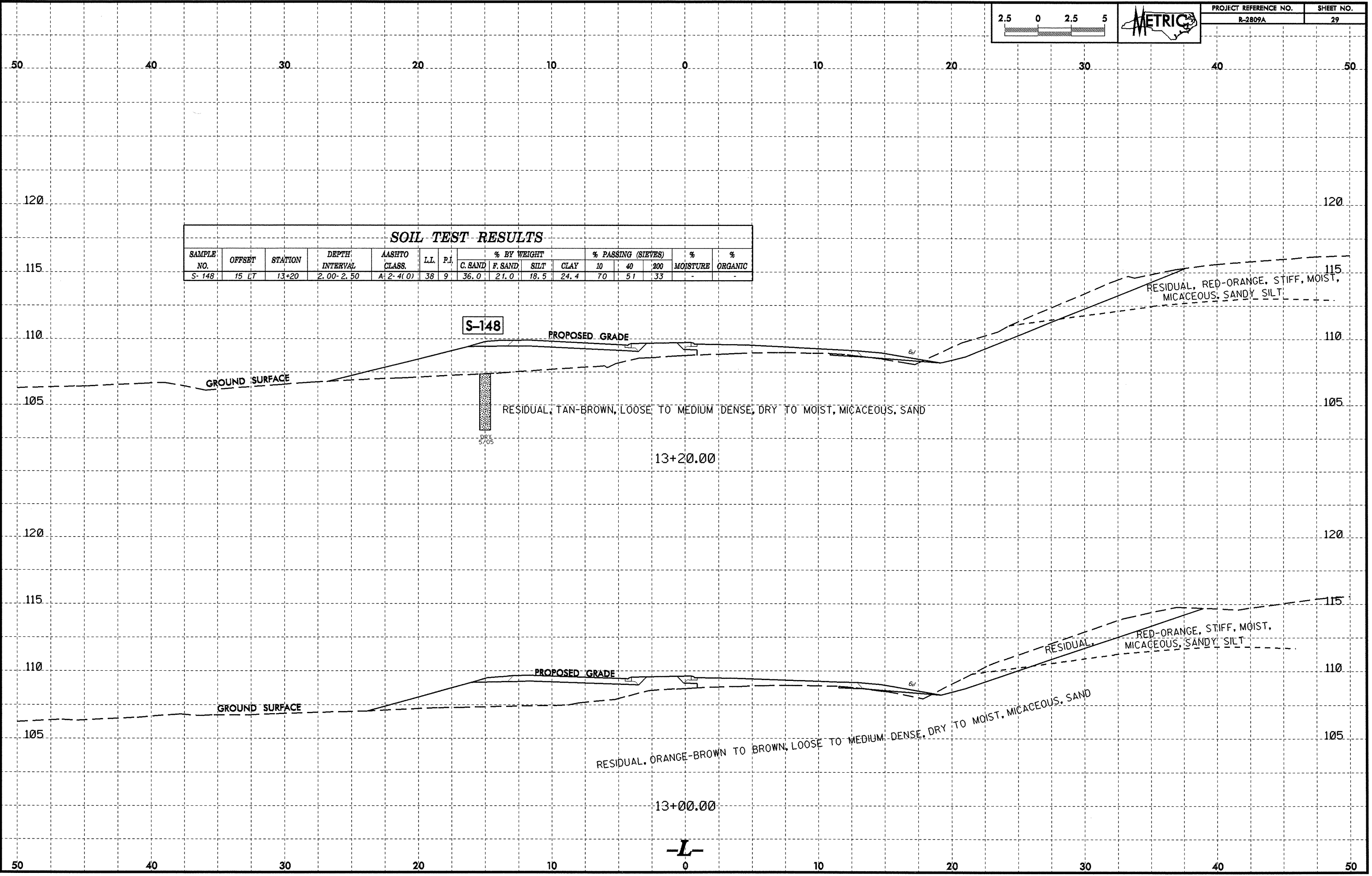
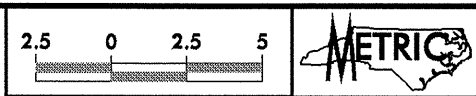
SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			%	%
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-154	30 RT	12+60	1.07-1.52	A-5(3)	52	8	16.3	41.1	12.0	30.5	100	97	49	-	-
SS-155	30 RT	12+60	2.59-3.04	A-2.5(0)	52	4	22.8	52.7	12.2	12.2	100	97	31	-	-
SS-156	30 RT	12+60	4.11-4.56	A-2.5(0)	46	NP	21.4	57.8	12.6	8.1	98	94	26	-	-

SS-154
SS-155
SS-156



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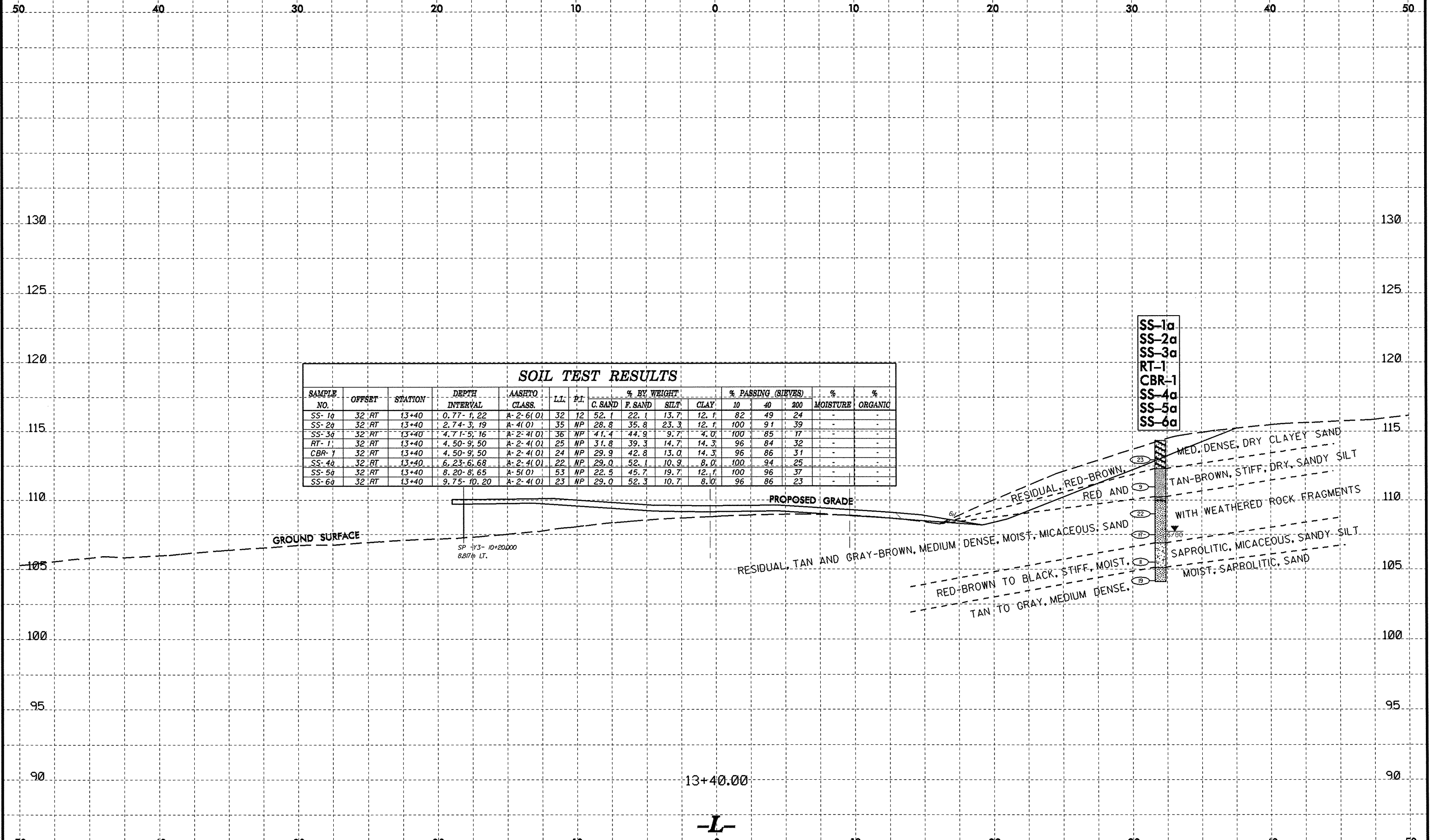


SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-148	15 LT	13+20	2.00-2.50	A-2-4(0)	38	9	36.0	21.0	18.5	24.4	70	51	33	-	-

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SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.I.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-1a	32 RT	13+40	0.77-1; 22	A-2-6(O)	32	12	52.1	22.1	13.7	12.1	82	49	24	-	-
SS-2a	32 RT	13+40	2.74-3; 19	A-4(O)	35	NP	28.8	35.8	23.3	12.1	100	91	39	-	-
SS-3a	32 RT	13+40	4.71-5; 16	A-2-4(O)	36	NP	41.4	44.9	9.7	4.0	100	85	17	-	-
RT-1	32 RT	13+40	4.50-9; 50	A-2-4(O)	25	NP	31.8	39.3	14.7	14.3	96	84	32	-	-
CBR-1	32 RT	13+40	4.50-9; 50	A-2-4(O)	24	NP	29.9	42.8	13.0	14.3	96	86	31	-	-
SS-4a	32 RT	13+40	6.23-6; 68	A-2-4(O)	22	NP	29.0	52.1	10.9	8.0	100	94	25	-	-
SS-5a	32 RT	13+40	8.20-8; 65	A-5(O)	53	NP	22.5	45.7	19.7	12.1	100	96	37	-	-
SS-6a	32 RT	13+40	9.75-10; 20	A-2-4(O)	23	NP	29.0	52.3	10.7	8.0	96	86	23	-	-

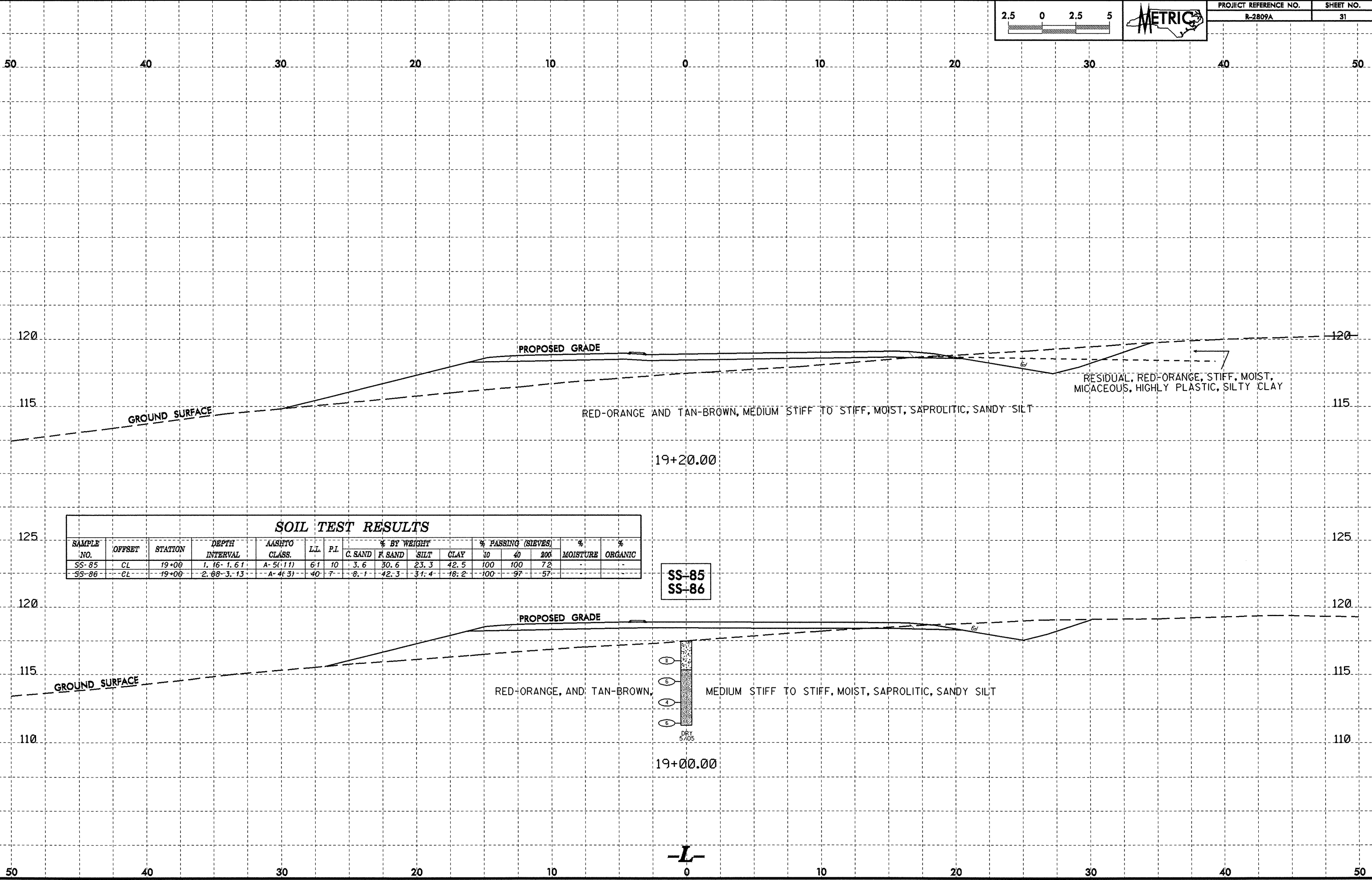
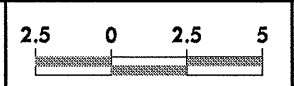
SS-1a
 SS-2a
 SS-3a
 RT-1
 CBR-1
 SS-4a
 SS-5a
 SS-6a

SP 43-10+20,000
 8.87 lb LT.

13+40.00

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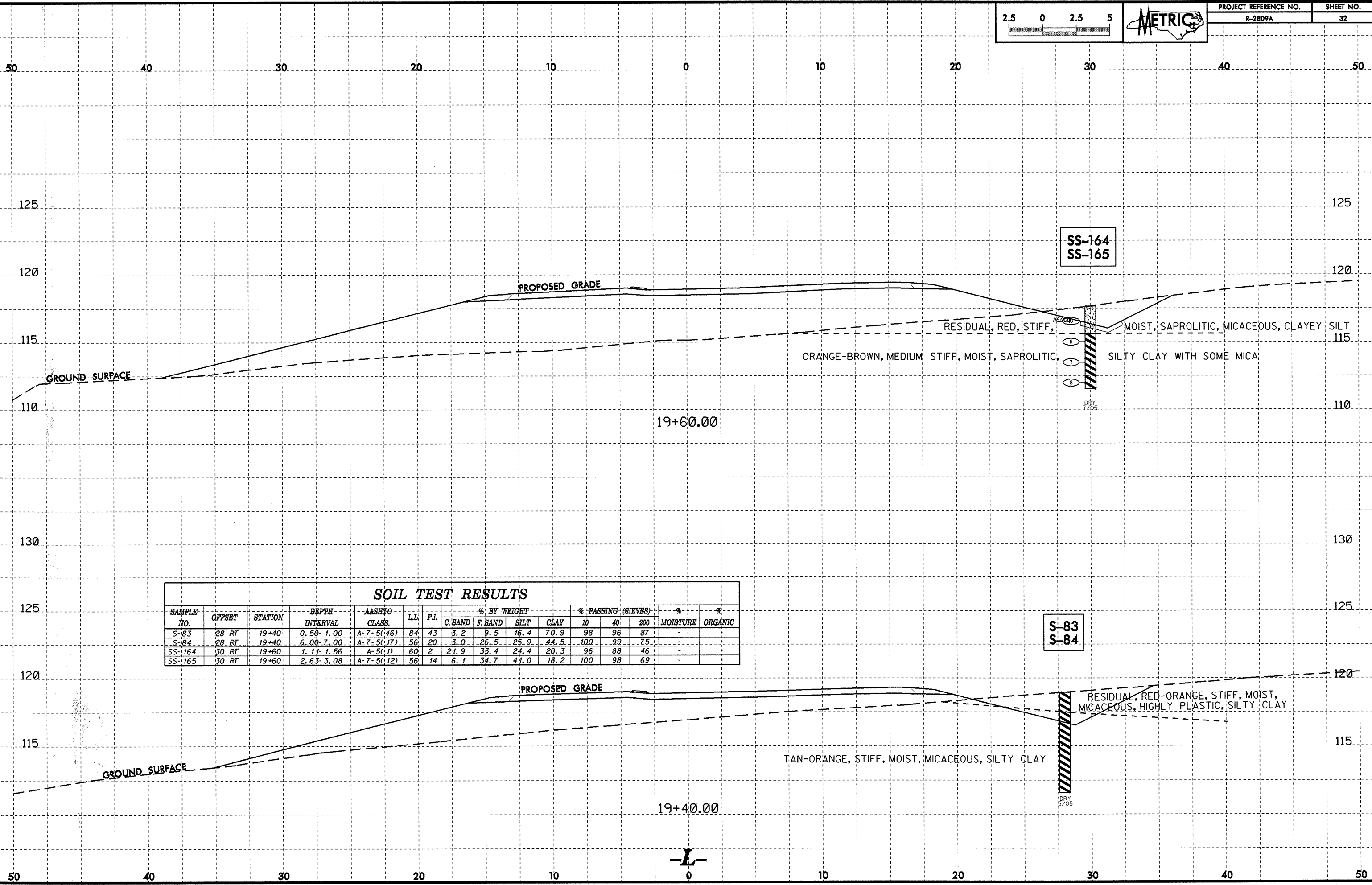
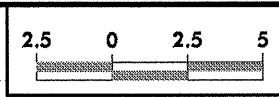
SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE ORGANIC	
							G. SAND	F. SAND	SILT	CLAY	40	40	200	MOISTURE	ORGANIC
SS-85	CL	19+00	1.16-1.61	A-5(11)	61	10	3.6	50.6	23.3	42.5	100	100	72	-	-
SS-86	CL	19+00	2.68-3.13	A-4(3)	40	7	8.1	42.3	31.4	18.2	100	97	57	-	-

SS-85
SS-86

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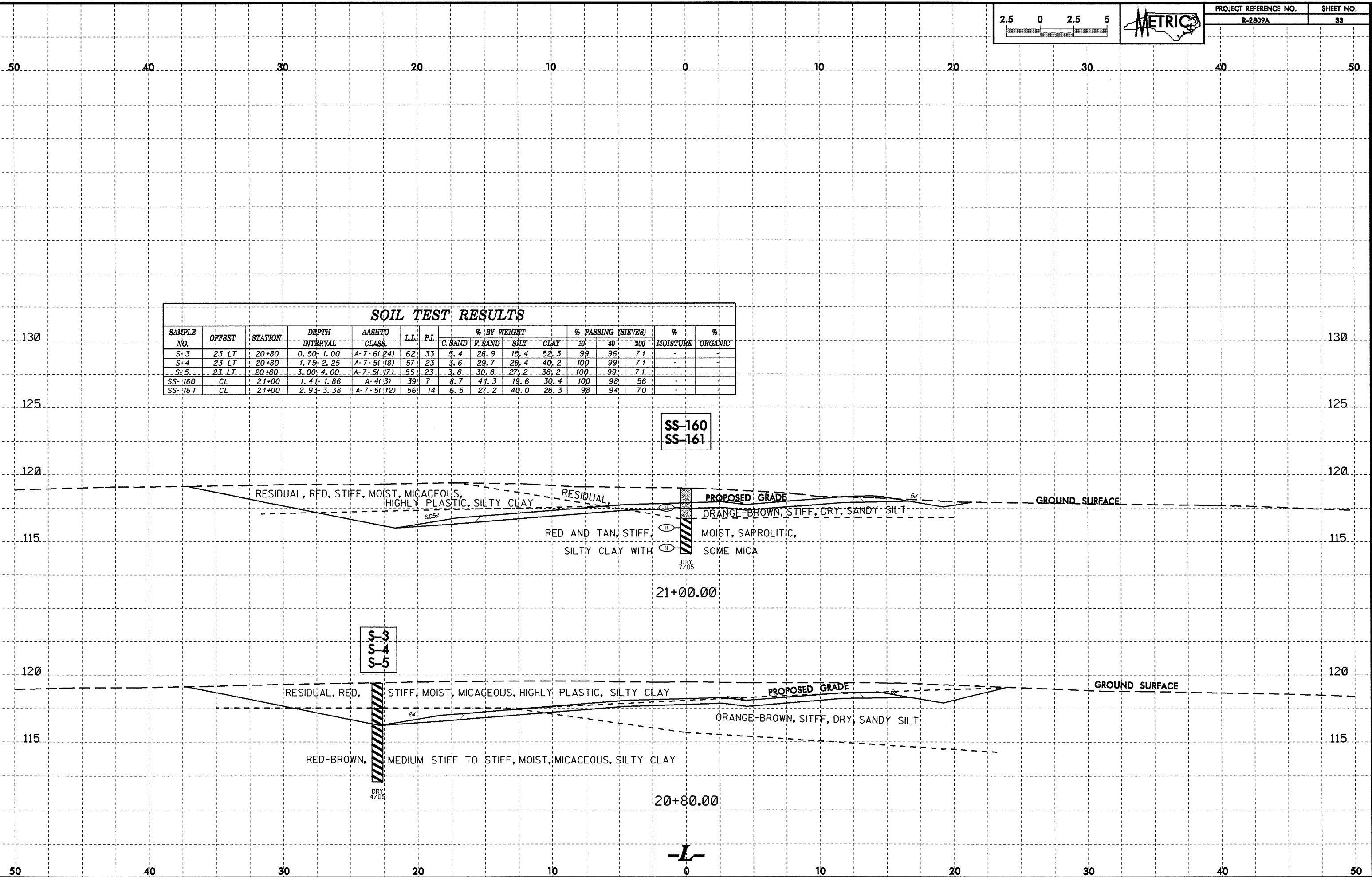


SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. BAND	SILT	CLAY	10	40	200		
S-83	28 RT	19+40	0.50-1.00	A-7-5(46)	84	43	3.2	9.5	16.4	70.9	98	96	87	-	-
S-84	28 RT	19+40	6.00-7.00	A-7-5(17)	56	20	3.0	26.5	25.9	44.5	100	99	75	-	-
SS-164	30 RT	19+60	1.11-1.56	A-5(1)	60	2	21.9	33.4	24.4	20.3	96	88	46	-	-
SS-165	30 RT	19+60	2.63-3.08	A-7-5(12)	56	14	6.1	34.7	47.0	18.2	100	98	69	-	-

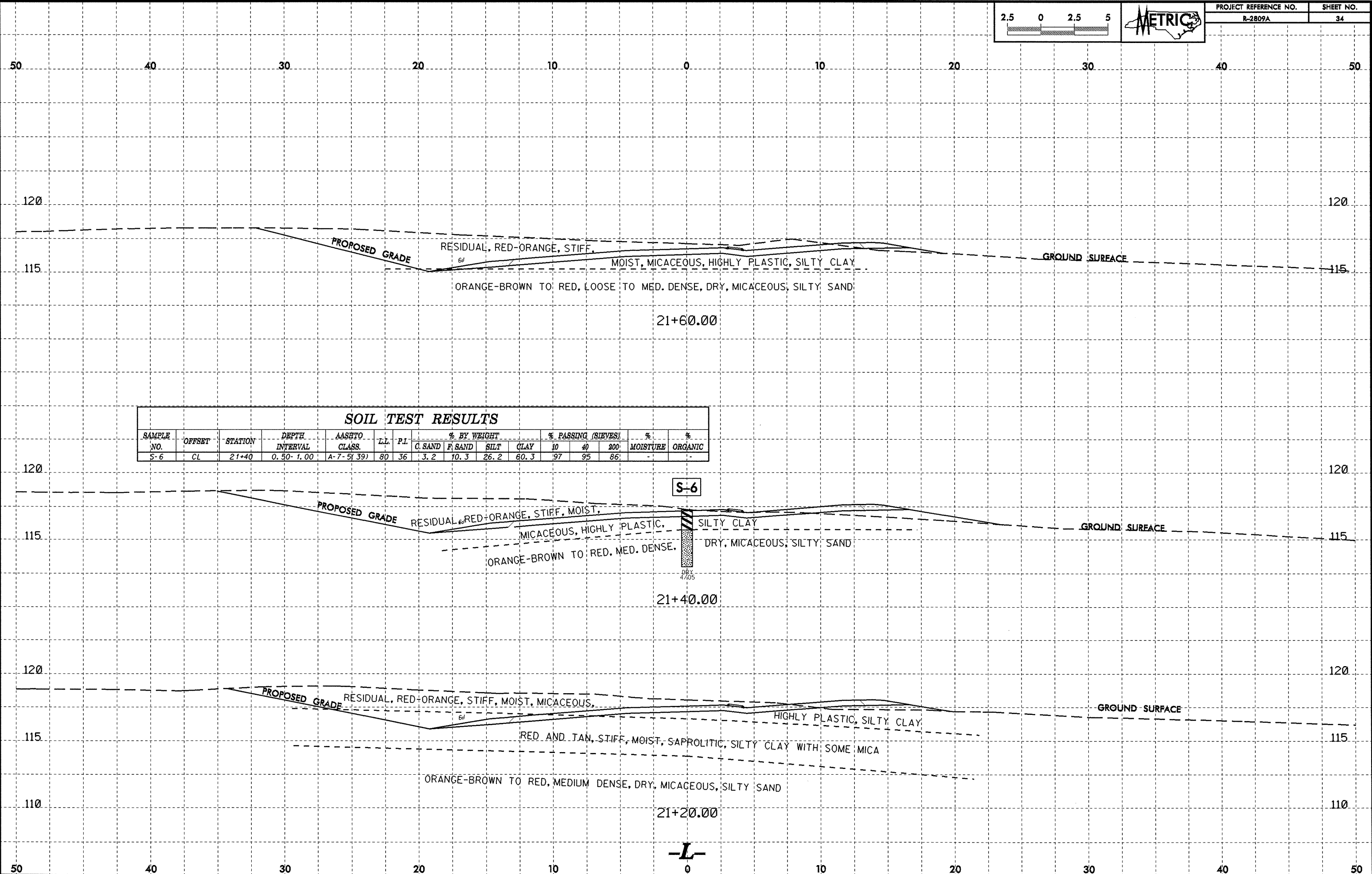
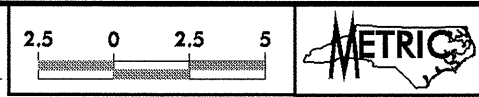
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SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-3	23 LT	20+80	0.50-1.00	A-7-6(24)	62	33	5.4	26.9	15.4	52.3	99	96	71	-	-
S-4	23 LT	20+80	1.75-2.25	A-7-5(18)	57	23	3.6	29.7	26.4	40.2	100	99	71	-	-
S-5	23 LT	20+80	3.00-4.00	A-7-5(17)	55	23	3.8	30.8	27.2	38.2	100	99	71	-	-
SS-160	CL	21+00	1.41-1.86	A-4(3)	39	7	8.7	41.3	19.6	30.4	100	98	56	-	-
SS-161	CL	21+00	2.93-3.38	A-7-5(12)	56	14	6.5	27.2	40.0	26.3	98	94	70	-	-



10/26/09
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SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	#10	#40	#200		
S-6	CL	21+40	0.50-1.00	A-7-5(39)	80	36	3.2	10.3	26.2	60.3	97	95	86	-	-

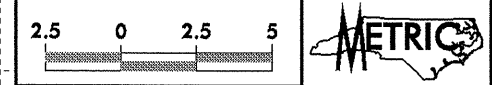
S-6

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21+20.00

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23 JAN 2006 16:01
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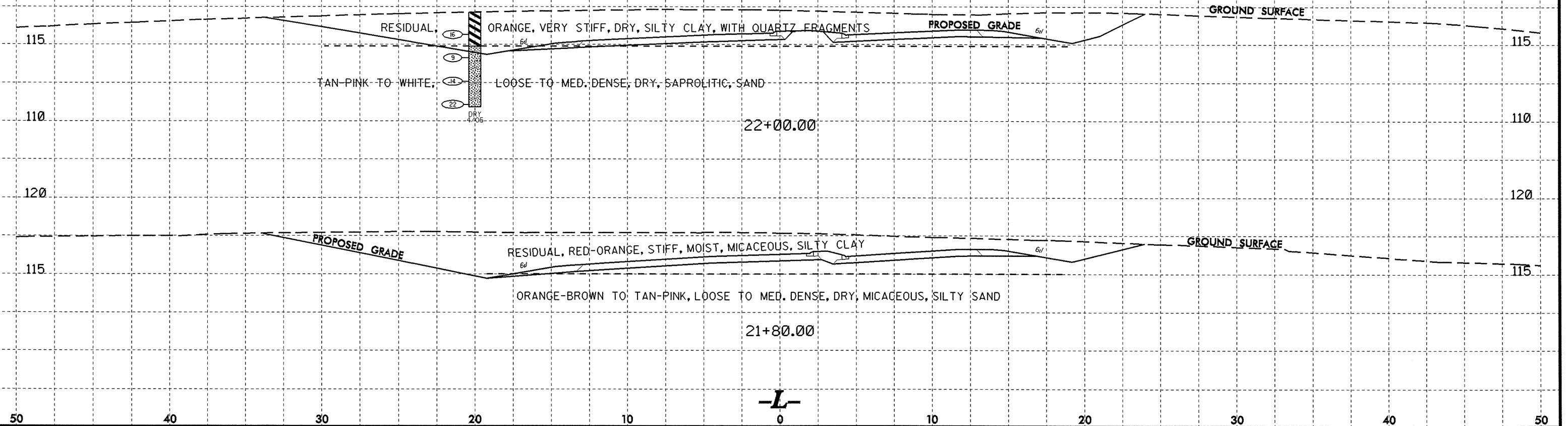


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SOIL TEST RESULTS

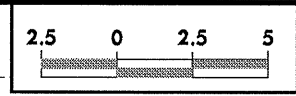
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							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-7	20 LT	22+00	1.19-1.64	A-7-5(6)	53	18	19.7	24.3	29.8	26.1	78	67	48	-	-
SS-8	20 LT	22+00	2.86-3.16	A-2-4(0)	33	NP	43.8	25.7	22.4	8.0	78	52	27	-	-

SS-7
SS-8

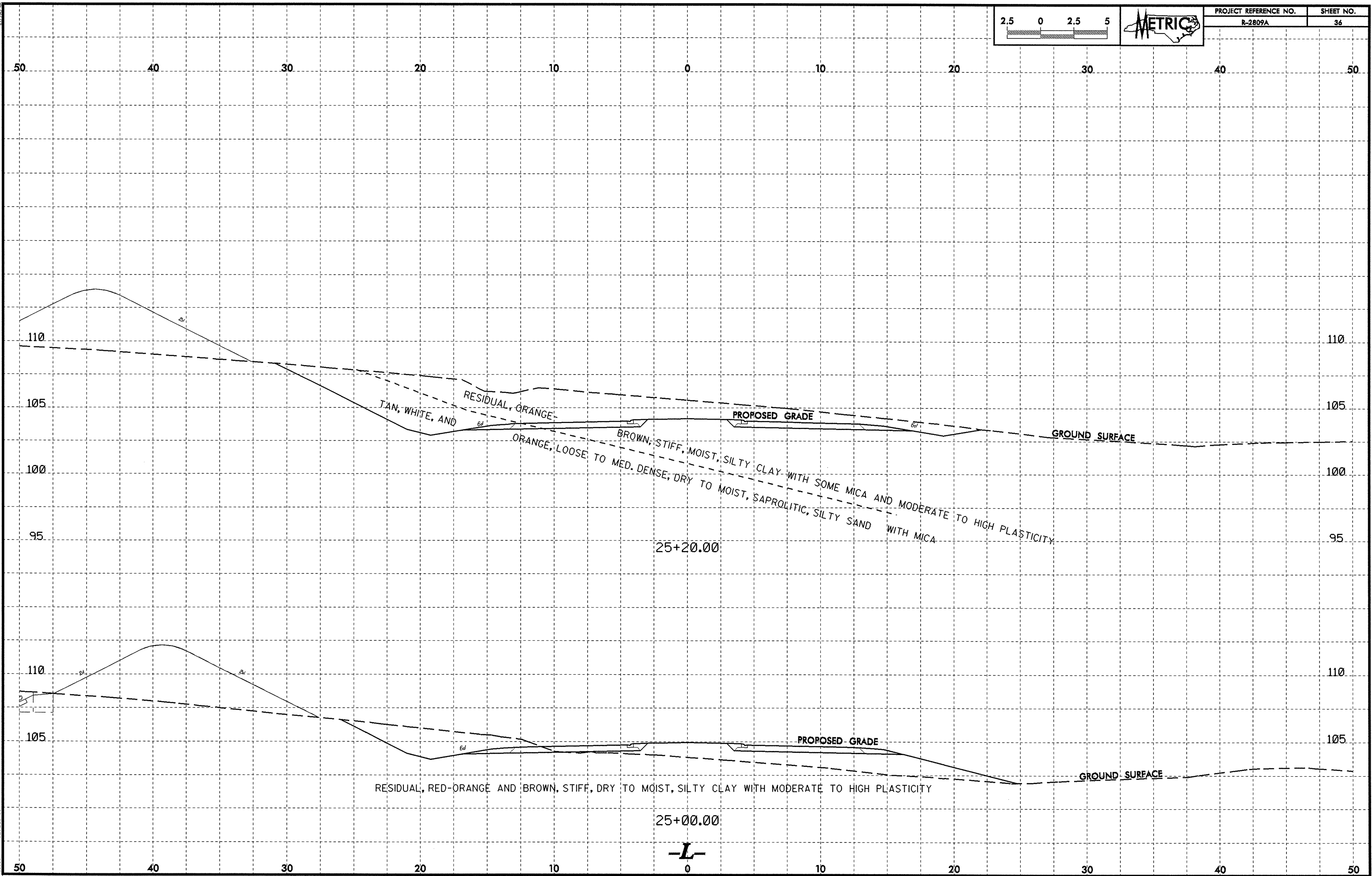


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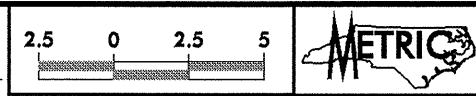
10/26/08



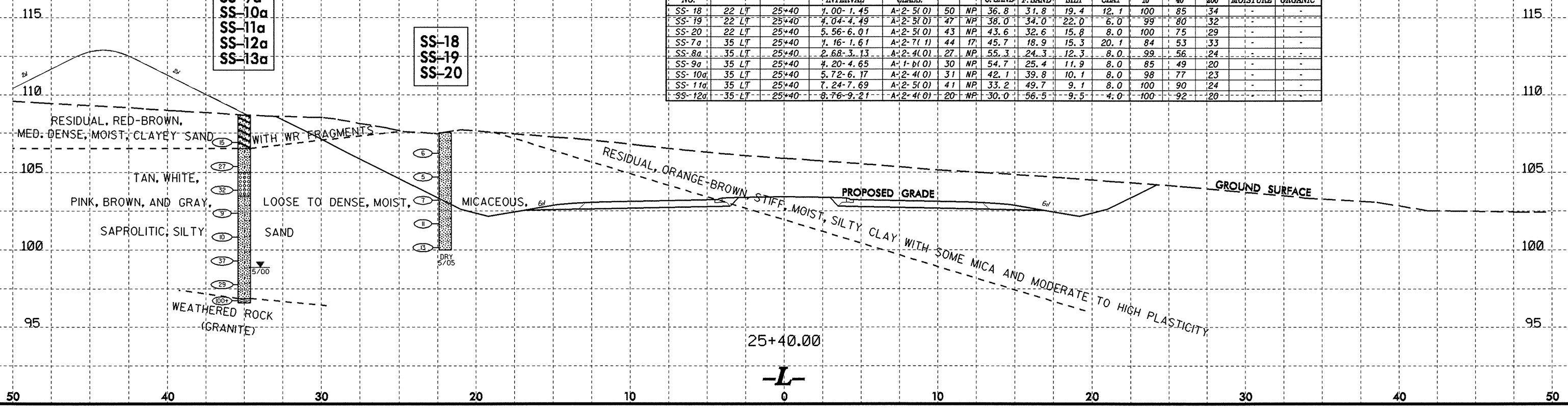
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R-2809A	36



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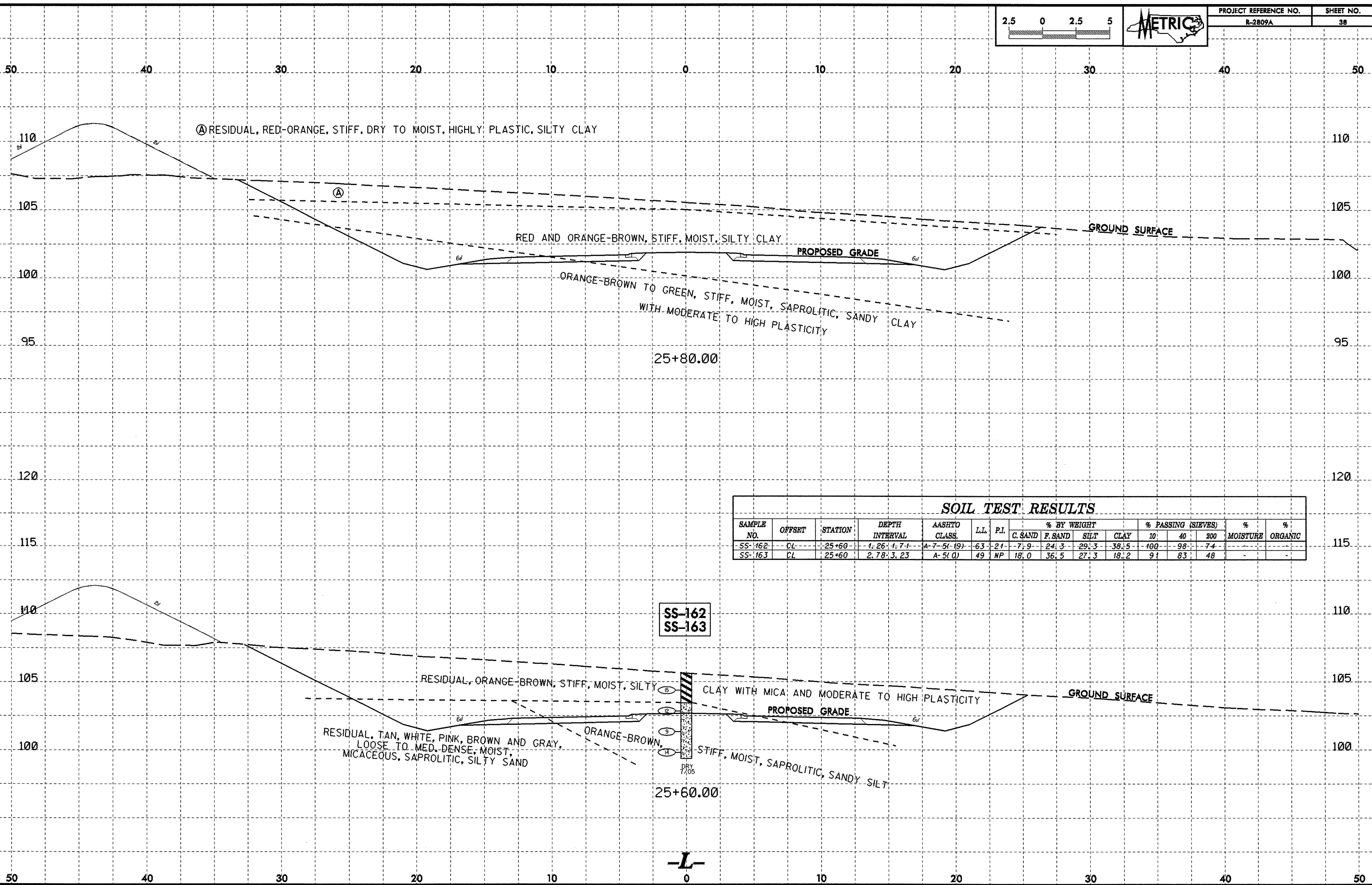
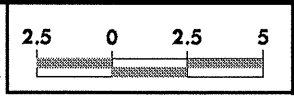


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SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PI	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-18	22 LT	25+40	1.00-1.45	A-2-5(0)	50	NP	36.8	31.8	19.4	12.1	100	85	34	-	-
SS-19	22 LT	25+40	4.04-4.49	A-2-5(0)	47	NP	38.0	34.0	22.0	6.0	99	80	32	-	-
SS-20	22 LT	25+40	5.56-6.01	A-2-5(0)	43	NP	43.6	32.6	15.8	8.0	100	75	29	-	-
SS-7a	35 LT	25+40	1.16-1.61	A-2-7(1)	44	17	45.7	18.9	15.3	20.1	84	53	33	-	-
SS-8a	35 LT	25+40	2.68-3.13	A-2-4(0)	27	NP	55.3	24.3	12.3	8.0	99	56	24	-	-
SS-9a	35 LT	25+40	4.20-4.65	A-1-b(0)	30	NP	54.7	25.4	11.9	8.0	85	49	20	-	-
SS-10a	35 LT	25+40	5.72-6.17	A-2-4(0)	31	NP	42.1	39.8	10.1	8.0	98	77	23	-	-
SS-11a	35 LT	25+40	7.24-7.69	A-2-5(0)	41	NP	33.2	49.7	9.1	8.0	100	90	24	-	-
SS-12a	35 LT	25+40	8.76-9.21	A-2-4(0)	20	NP	30.0	56.5	9.5	4.0	100	92	20	-	-

3/1/2006 11:51 AM ROWY\CADD\GEOTECH\c-r-2809a_ges-1_x.sxd
 10/26/08



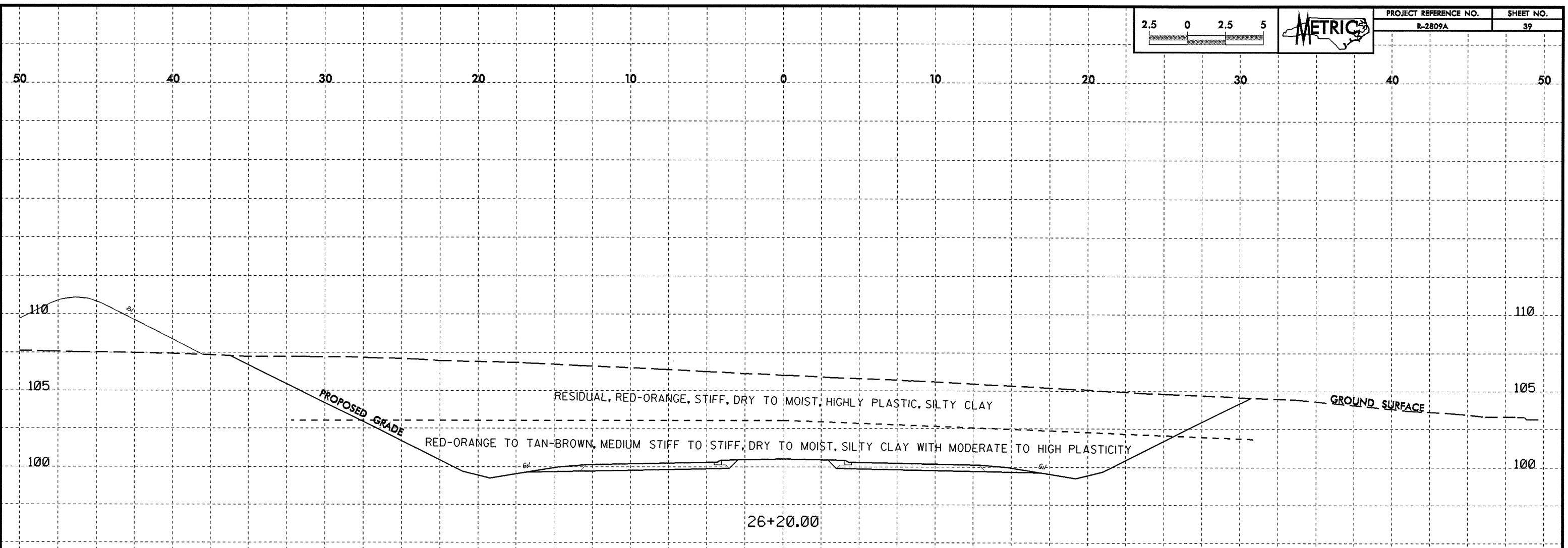
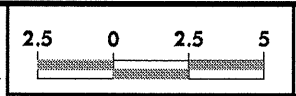
SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC		
							C. SAND	F. SAND	SILT	CLAY	10'	40	200				
SS-162	CL	25+60	1.26-1.71	A-7-5(19)	63	21	7	9	24	3	29	3	38	5	100	98	74
SS-163	CL	25+60	2.78-3.23	A-5(0)	49	NP	18	0	36	5	27	3	18	2	91	83	48

SS-162
SS-163

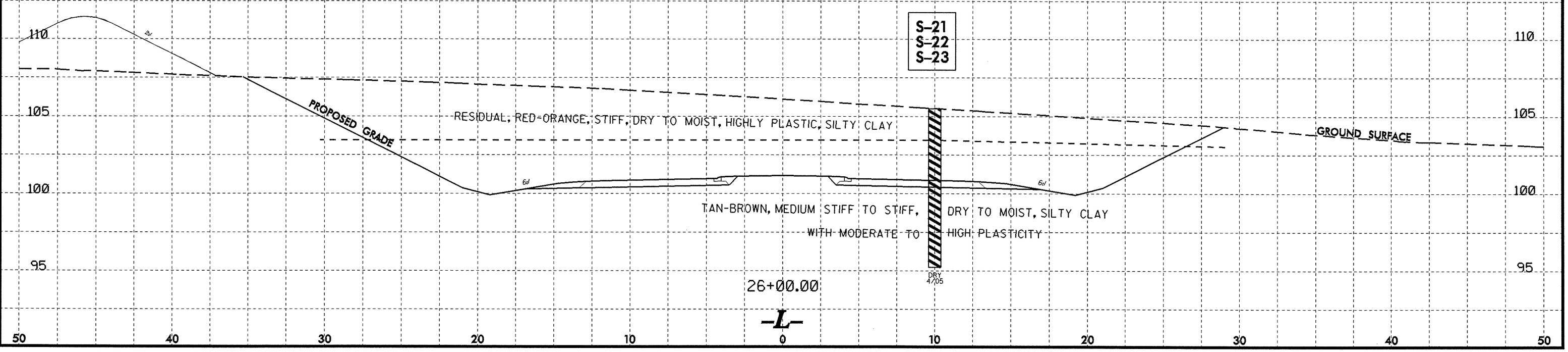
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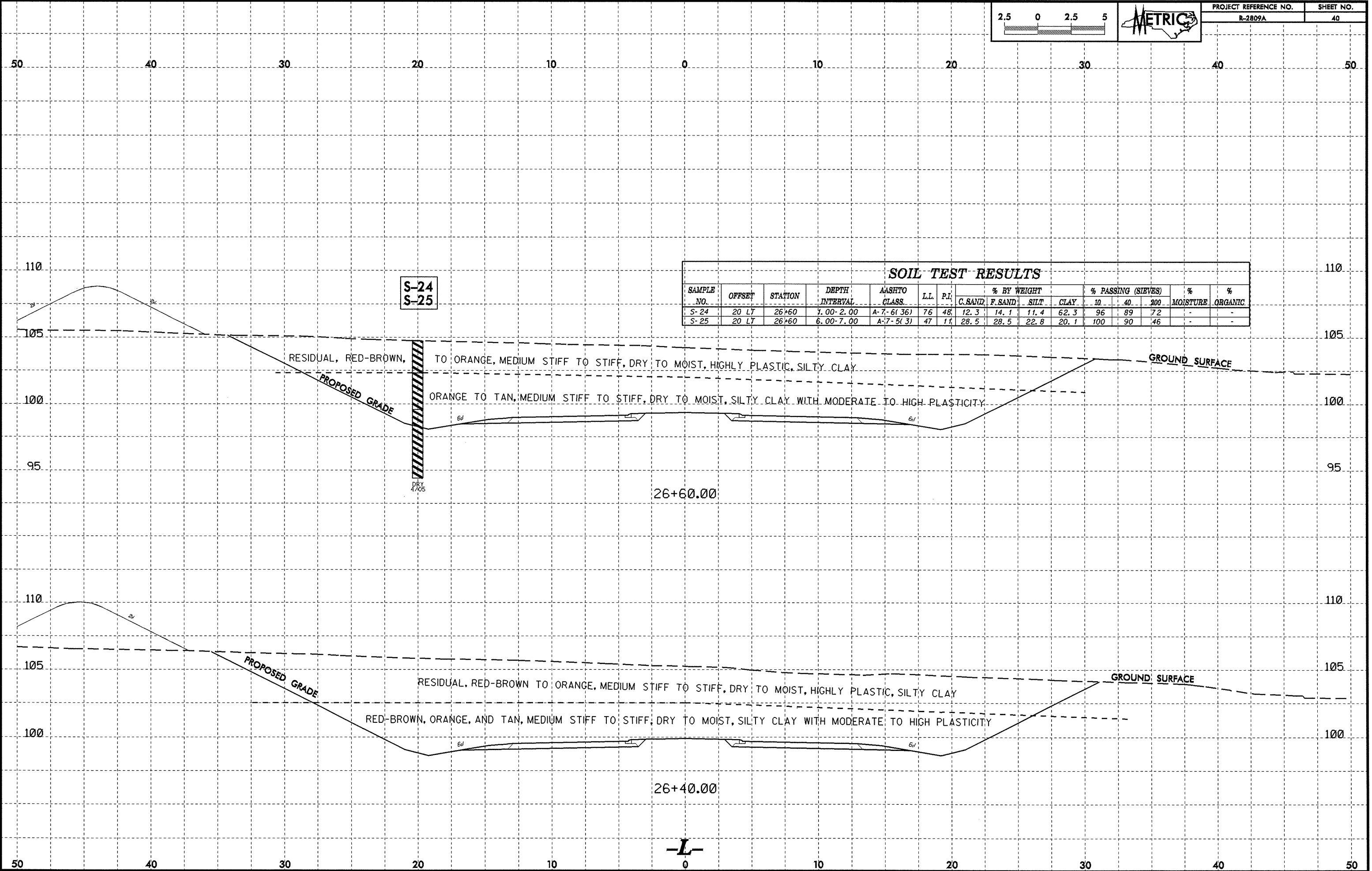
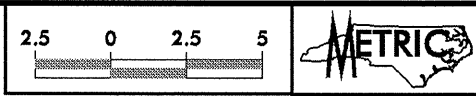


SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PI	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-21	10 RT	26+00	0.50-1.00	A-7-5(38)	75	38	7.2	11.1	17.4	64.3	100	96	84	-	-
S-22	10 RT	26+00	3.00-4.00	A-7-5(20)	63	23	8.4	22.9	34.5	34.2	100	98	73	-	-
S-23	10 RT	26+00	7.50-8.00	A-7-5(23)	65	27	6.8	23.5	35.5	34.2	100	98	74	-	-



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 AT 08/22/06



SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PI	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							G. SAND	F. SAND	SILT	CLAY	10	40	200		
S-24	20 LT	26+60	7.00-7.00	A-7-6(36)	76	48	12.3	14.1	11.4	62.3	96	89	72	-	-
S-25	20 LT	26+60	6.00-7.00	A-7-5(3)	47	11	28.5	28.5	22.8	20.1	100	90	46	-	-

RESIDUAL, RED-BROWN, TO ORANGE, MEDIUM STIFF TO STIFF, DRY TO MOIST, HIGHLY PLASTIC, SILTY CLAY

ORANGE TO TAN, MEDIUM STIFF TO STIFF, DRY TO MOIST, SILTY CLAY WITH MODERATE TO HIGH PLASTICITY

PROPOSED GRADE

GROUND SURFACE

RESIDUAL, RED-BROWN TO ORANGE, MEDIUM STIFF TO STIFF, DRY TO MOIST, HIGHLY PLASTIC, SILTY CLAY

RED-BROWN, ORANGE, AND TAN, MEDIUM STIFF TO STIFF, DRY TO MOIST, SILTY CLAY WITH MODERATE TO HIGH PLASTICITY

PROPOSED GRADE

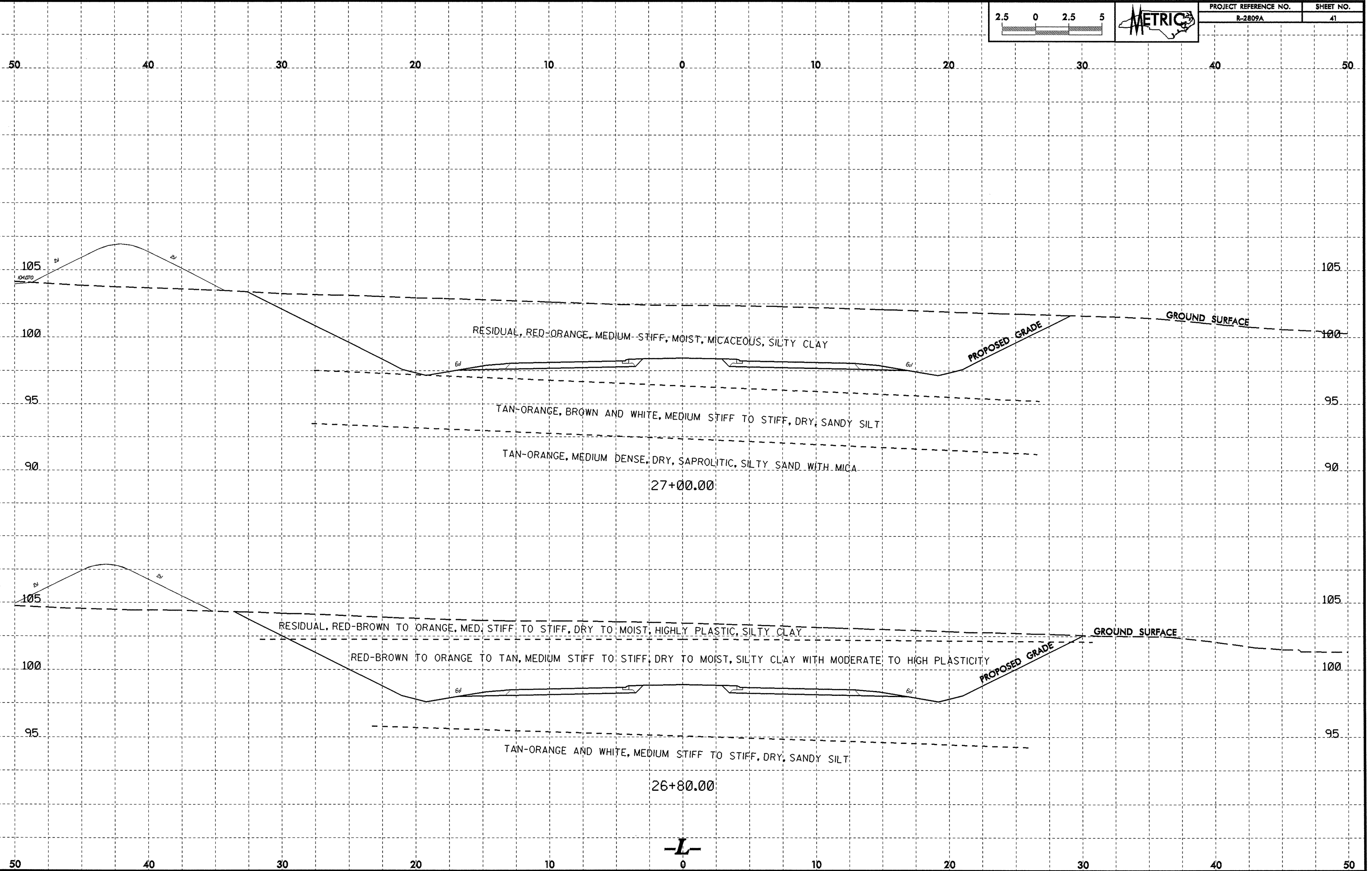
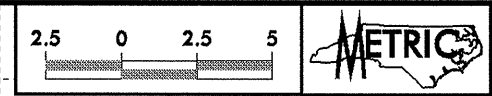
GROUND SURFACE

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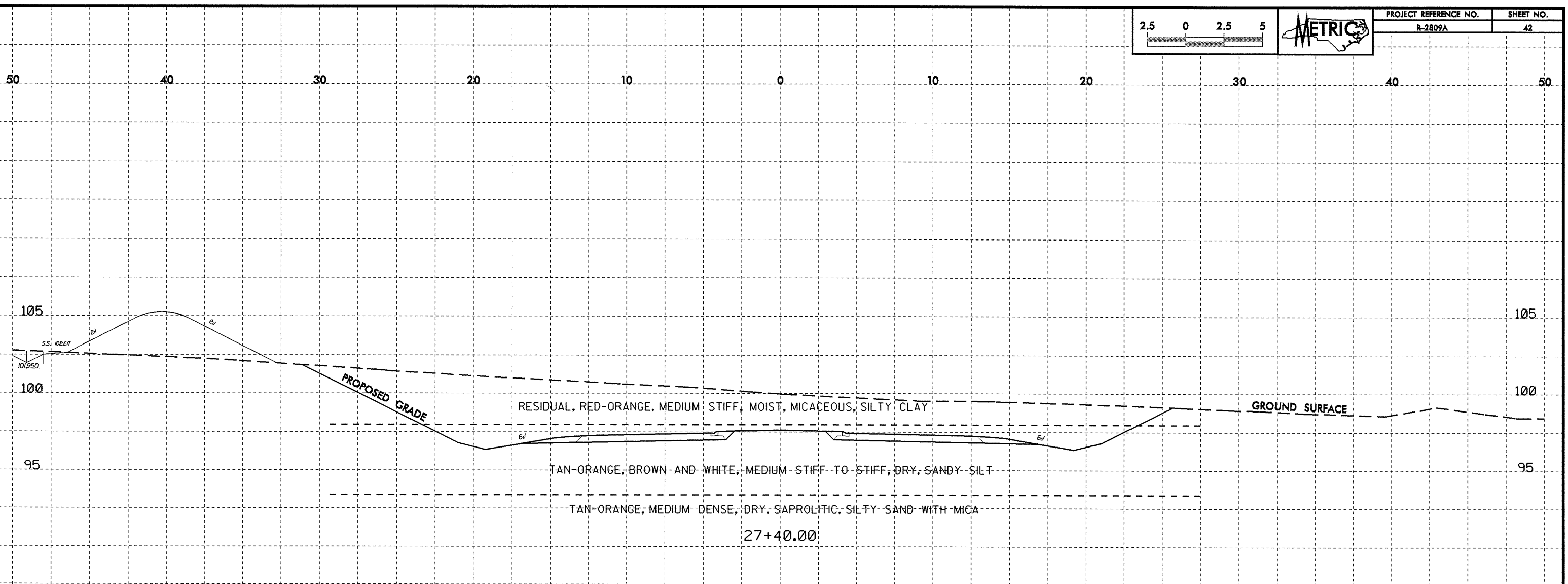
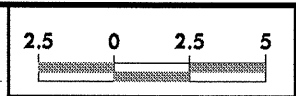
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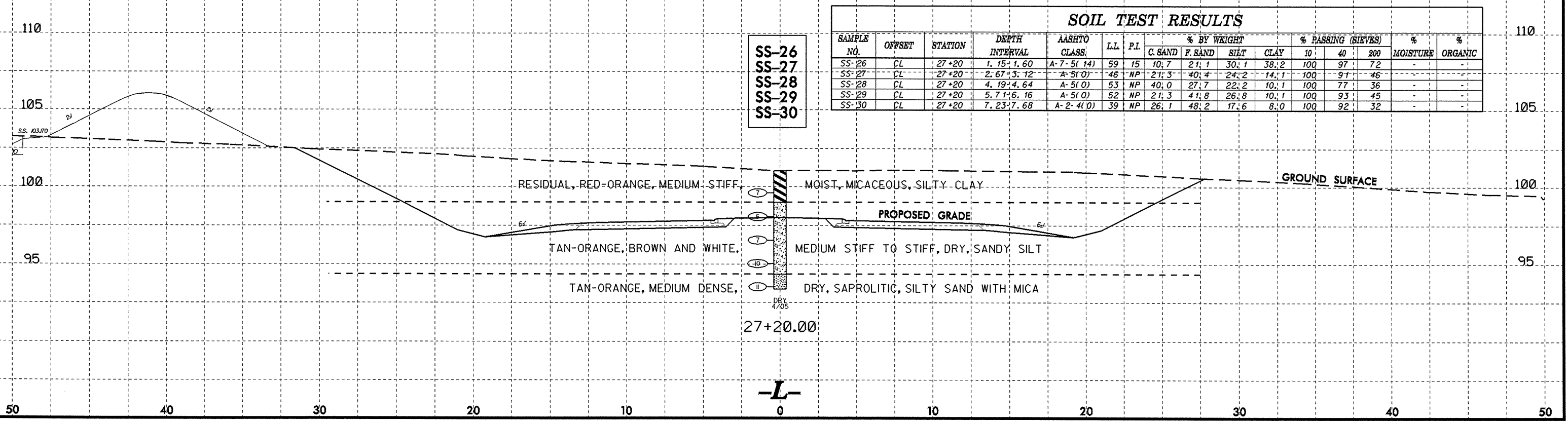


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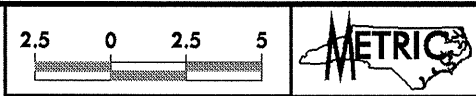


- SS-26
- SS-27
- SS-28
- SS-29
- SS-30

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C SAND	F SAND	SILT	CLAY	10	40	200		
SS-26	CL	27+20	1.15-1.60	A-7-5(14)	59	15	10.7	21.1	30.1	38.2	100	97	72	-	-
SS-27	CL	27+20	2.67-3.12	A-5(0)	46	NP	21.3	40.4	24.2	14.1	100	91	46	-	-
SS-28	CL	27+20	4.19-4.64	A-5(0)	53	NP	40.0	27.7	22.2	10.1	100	77	36	-	-
SS-29	CL	27+20	5.71-6.16	A-5(0)	52	NP	21.3	41.8	26.8	10.1	100	93	45	-	-
SS-30	CL	27+20	7.23-7.68	A-2-4(0)	39	NP	26.1	48.2	17.6	8.0	100	92	32	-	-

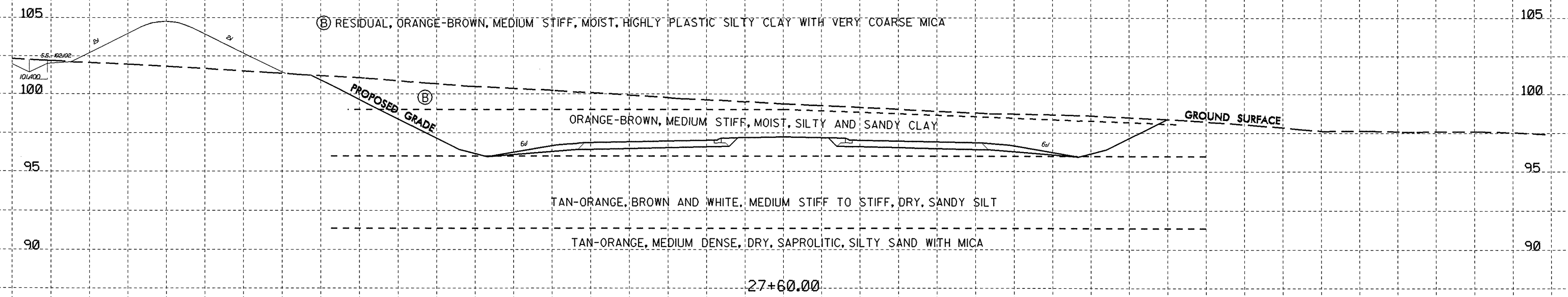
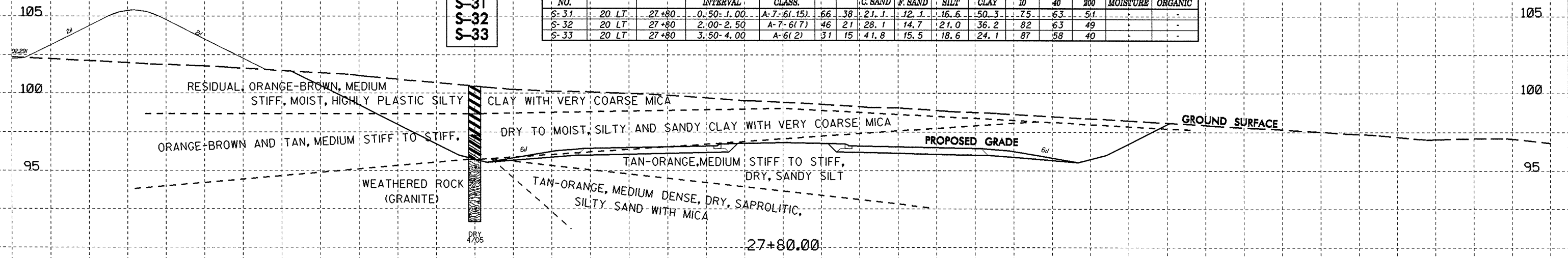


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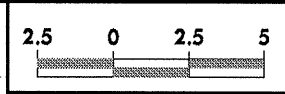
SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-31	20 LT.	27+80	0.150-1.00	A-7-6(15)	66	38	21.1	12.1	16.6	50.3	75	63	51	-	-
S-32	20 LT.	27+80	2.00-2.50	A-7-6(7)	46	21	28.1	14.7	21.0	36.2	82	63	49	-	-
S-33	20 LT.	27+80	3.50-4.00	A-6(2)	31	15	41.8	15.5	18.6	24.1	87	58	40	-	-

S-31
S-32
S-33

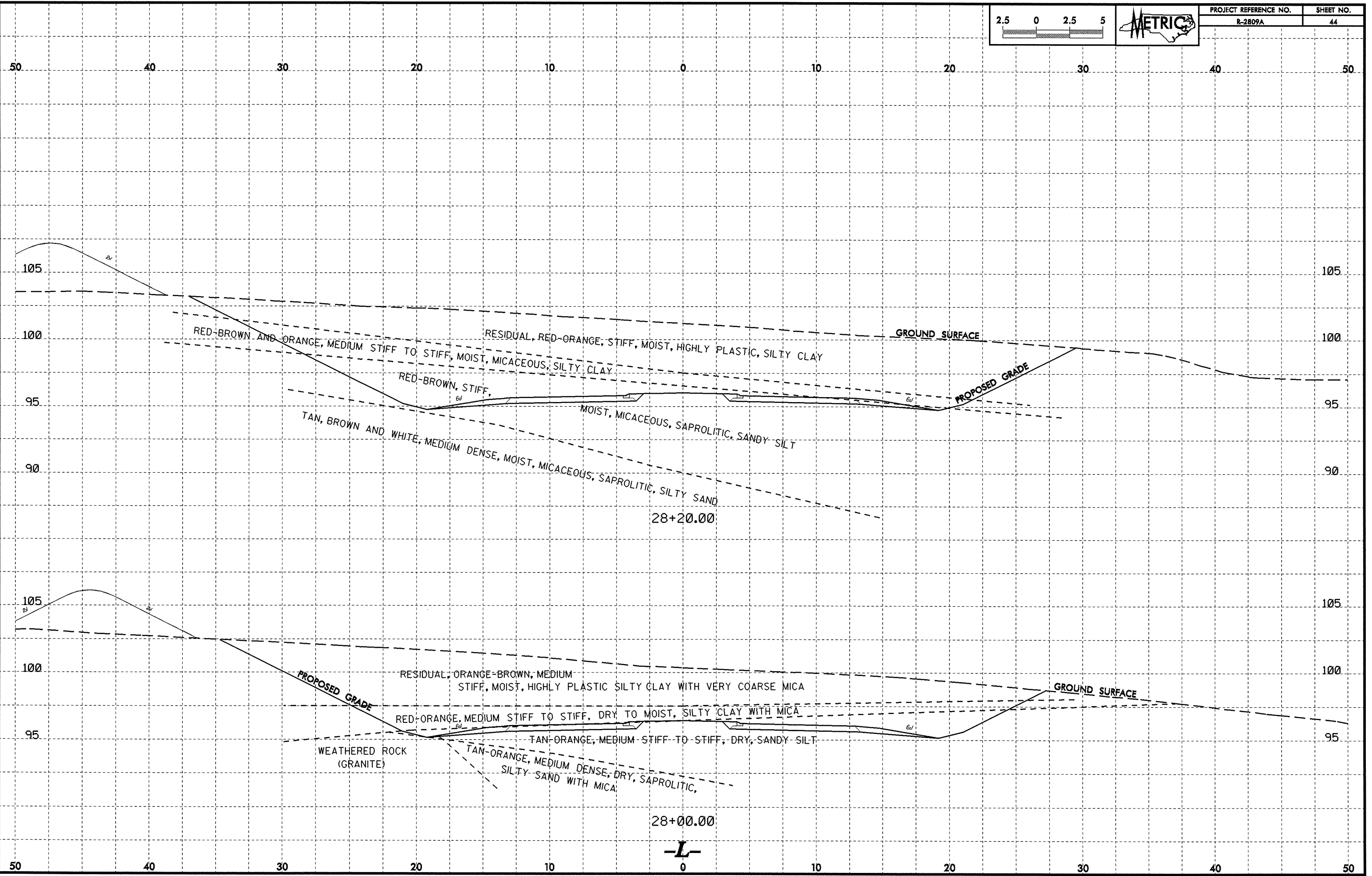


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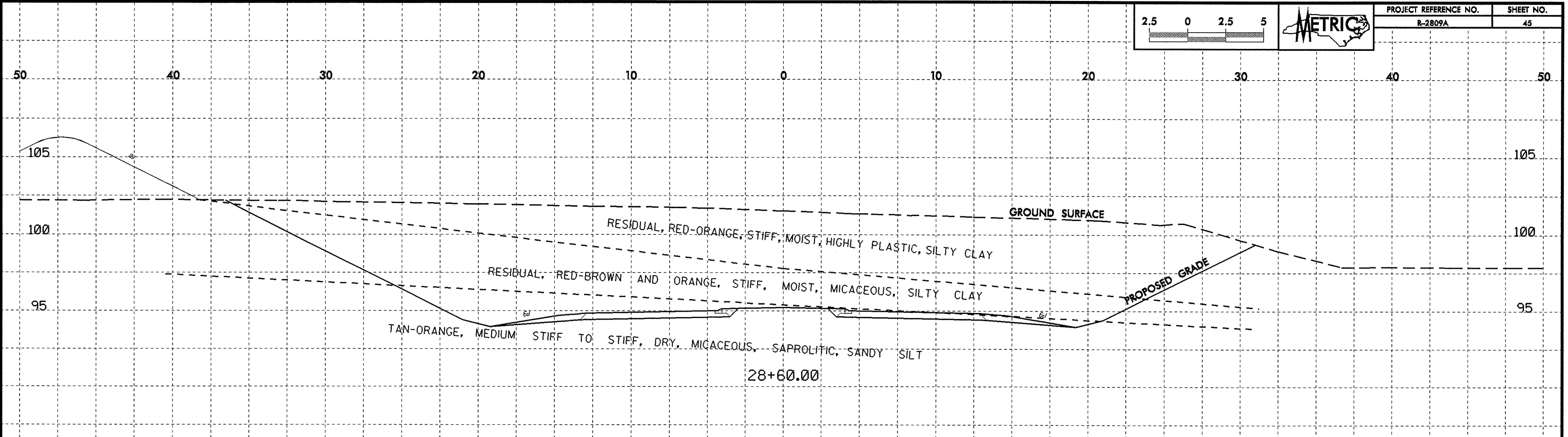
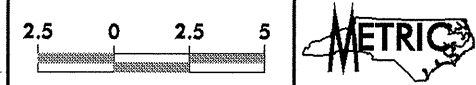
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PROJECT REFERENCE NO.	SHEET NO.
R-2809A	44



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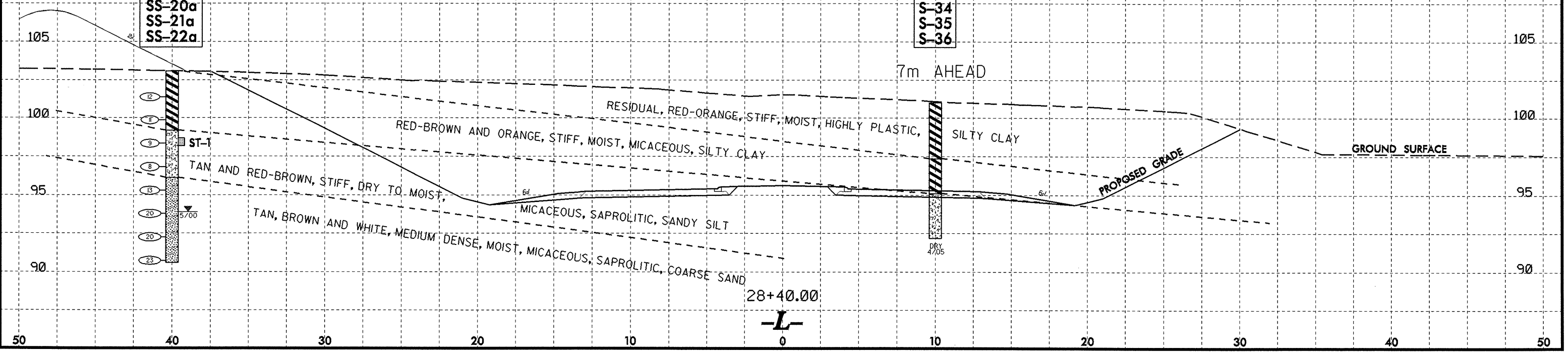


SOIL TEST RESULTS

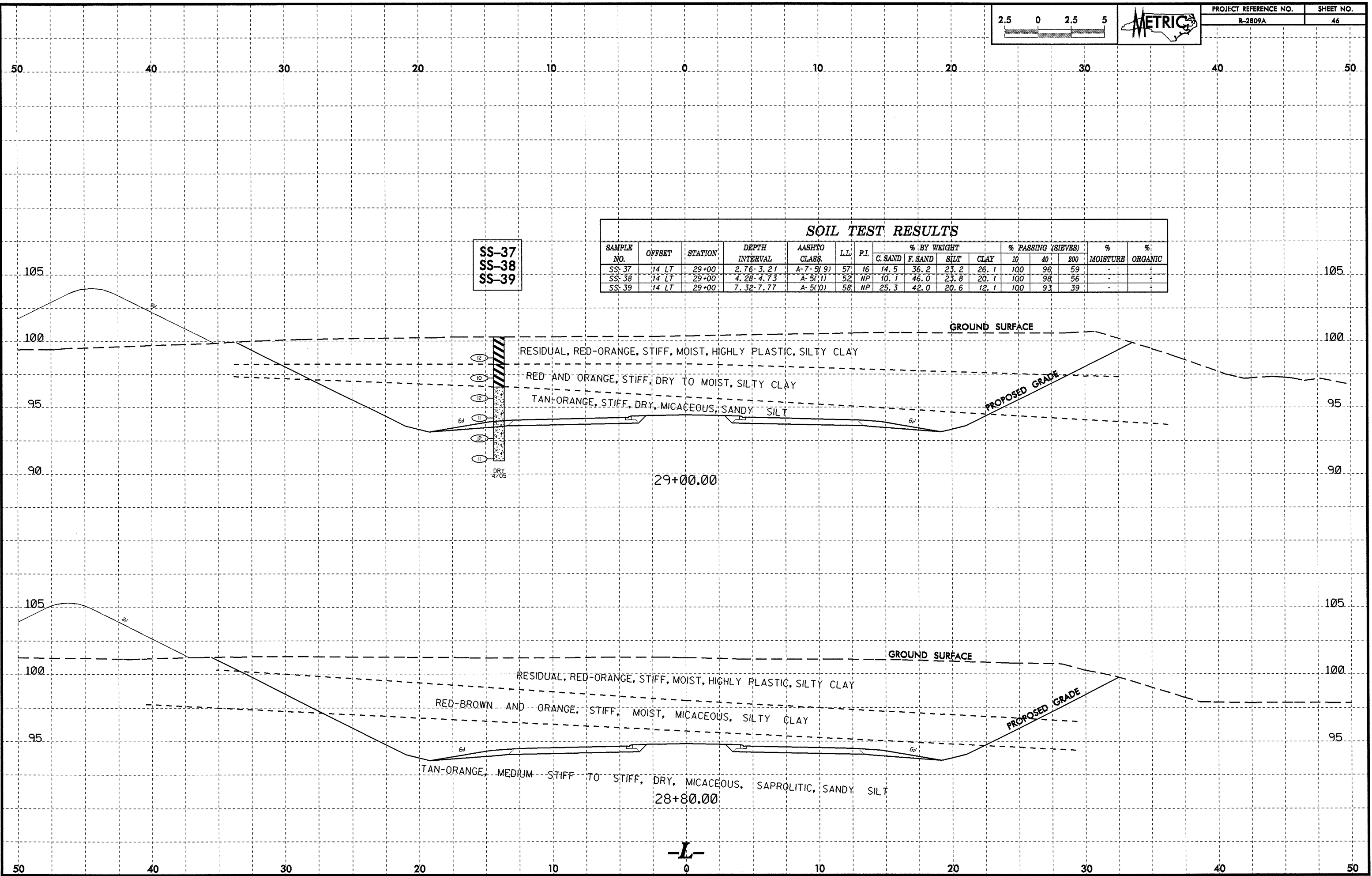
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-15a	40 LT	28+40	1.40-1.85	A-7-5(13)	56	13	10.5	19.1	30.2	40.2	100	96	74	-	-
SS-16a	40 LT	28+40	2.92-3.37	A-7-5(4)	55	13	27.0	33.8	17.1	22.1	100	87	46	-	-
SS-17a	40 LT	28+40	4.44-4.99	A-5(1)	50	NP	16.2	38.6	33.1	12.1	100	95	52	-	-
ST-1	40 LT	28+40	4.40-4.90	A-5(2)	55	NP	17.4	32.1	36.4	14.1	100	96	55	-	-
SS-18a	40 LT	28+40	5.96-6.41	A-5(2)	53	NP	18.2	28.3	41.4	12.1	100	94	57	-	-
SS-19a	40 LT	28+40	7.48-7.93	A-2-5(0)	51	NP	50.7	23.6	21.6	4.0	97	69	27	-	-
SS-20a	40 LT	28+40	9.00-9.45	A-2-4(0)	39	NP	57.8	24.8	13.3	4.0	91	53	19	-	-
SS-21a	40 LT	28+40	10.52-10.97	A-2-5(0)	39	NP	46.5	32.5	17.0	4.0	97	72	23	-	-
SS-22a	40 LT	28+40	12.04-12.49	A-2-5(0)	50	NP	34.3	37.0	24.6	4.0	100	84	33	-	-
S-34	10 RT	28+47	0.50-1.00	A-7-5(35)	72	41	9.8	12.1	15.8	62.3	97	91	78	-	-
S-35	10 RT	28+47	3.00-3.50	A-7-5(13)	55	17	10.9	24.3	24.6	40.2	98	93	69	-	-
S-36	10 RT	28+47	6.50-7.00	A-5(0)	53	NP	39.6	22.1	18.2	20.1	95	68	39	-	-

- SS-15a
- SS-16a
- SS-17a
- ST-1
- SS-18a
- SS-19a
- SS-20a
- SS-21a
- SS-22a

- S-34
- S-35
- S-36



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SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-37	14 LT	29+00	2.76-3.21	A-7-5(9)	57	16	14.5	36.2	23.2	26.1	100	96	59	-	-
SS-38	14 LT	29+00	4.28-4.73	A-5(11)	52	NP	10.1	46.0	23.8	20.1	100	98	56	-	-
SS-39	14 LT	29+00	7.32-7.77	A-5(10)	58	NP	25.3	42.0	20.6	12.1	100	93	39	-	-

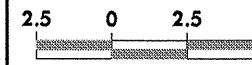
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SS-39

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28+80.00

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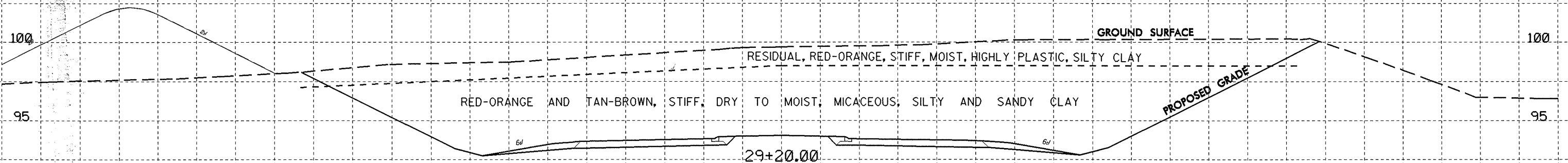
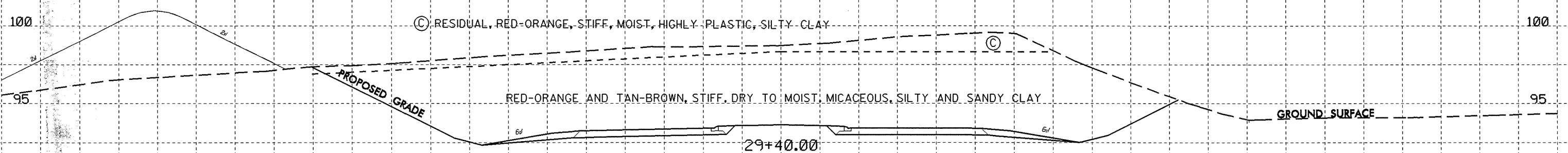
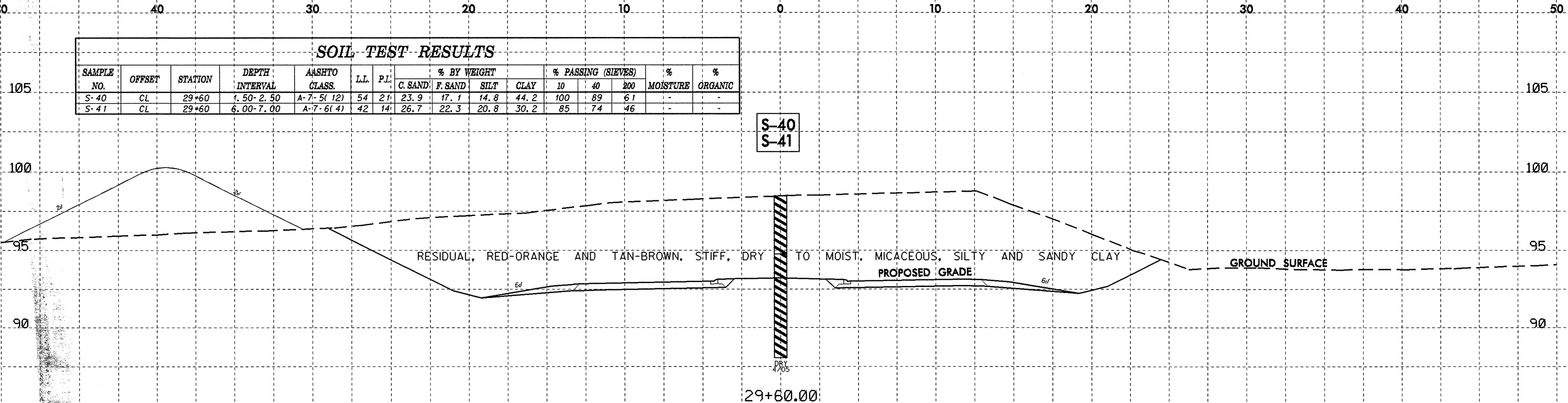


PROJECT REFERENCE NO. R-2809A SHEET NO. 47

SOIL TEST RESULTS

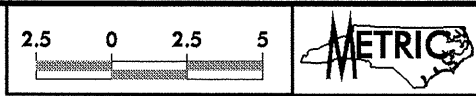
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-40	CL	29+60	1.50-2.50	A-7-5(12)	54	21	23.9	17.1	14.8	44.2	100	89	61	-	-
S-41	CL	29+60	6.00-7.00	A-7-6(4)	42	14	26.7	22.3	20.8	30.2	85	74	46	-	-

S-40
S-41



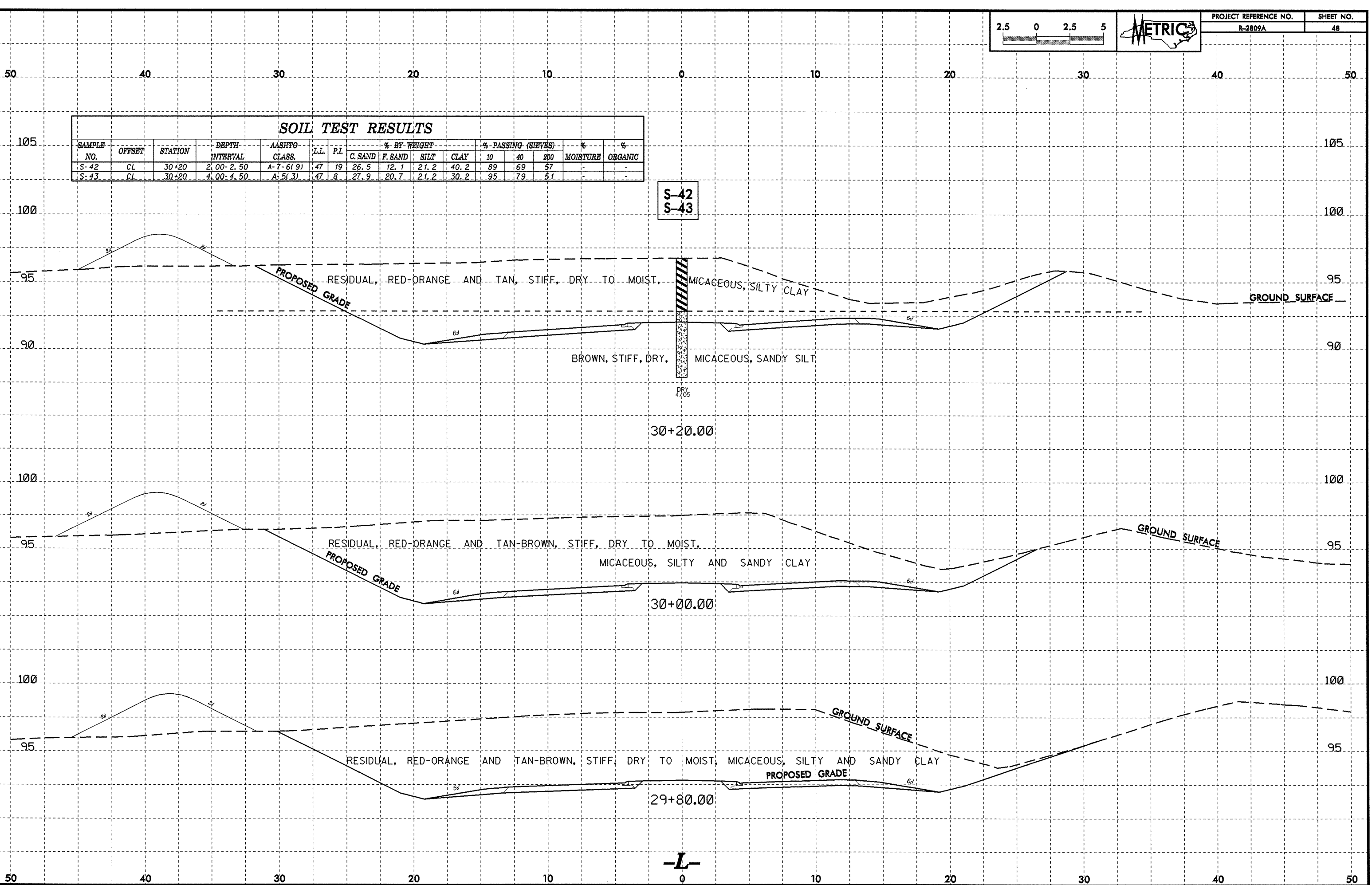
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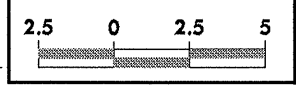
SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							G. SAND	F. SAND	SILT	CLAY	10	40	200		
S-42	CL	30+20	2.00-2.50	A-7-6(9)	47	19	26.5	12.1	21.2	40.2	89	69	57	-	-
S-43	CL	30+20	4.00-4.50	A-5(3)	47	8	27.9	20.7	21.2	30.2	95	79	51	-	-

S-42
S-43



-L-

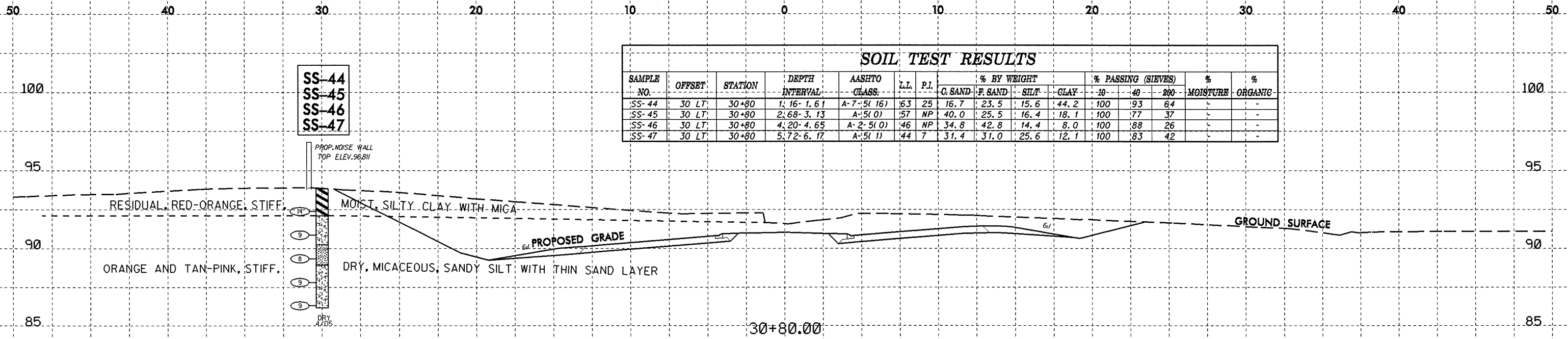
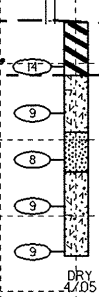
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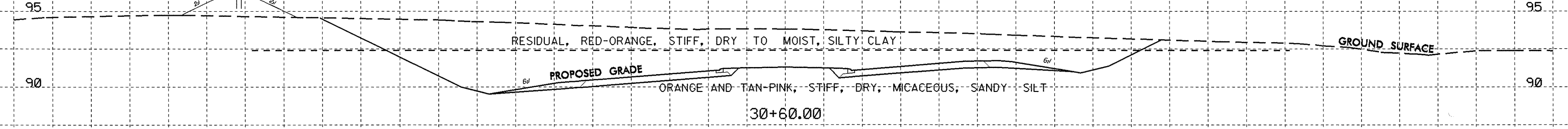
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	-10-	-40-	-200-		
SS-44	30 LT	30+80	1.16-1.61	A-7-5(16)	63	25	16.7	23.5	15.6	44.2	100	93	64	-	-
SS-45	30 LT	30+80	2.68-3.13	A-5(0)	57	NP	40.0	25.5	16.4	18.1	100	77	37	-	-
SS-46	30 LT	30+80	4.20-4.65	A-2-5(0)	46	NP	34.8	42.8	14.4	8.0	100	88	26	-	-
SS-47	30 LT	30+80	5.72-6.17	A-5(1)	44	7	31.4	31.0	25.6	12.1	100	83	42	-	-

SS-44
SS-45
SS-46
SS-47

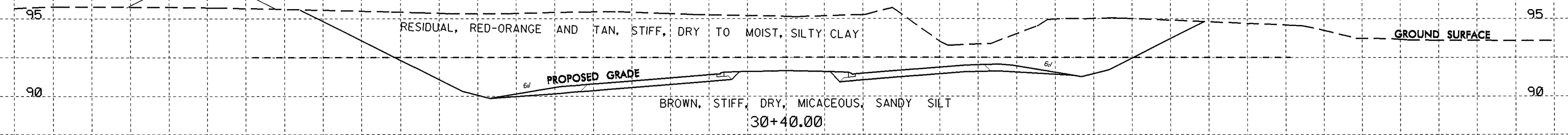
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TOP ELEV. 96.811



PROP. NOISE WALL
TOP ELEV. 97.090



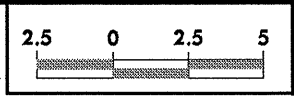
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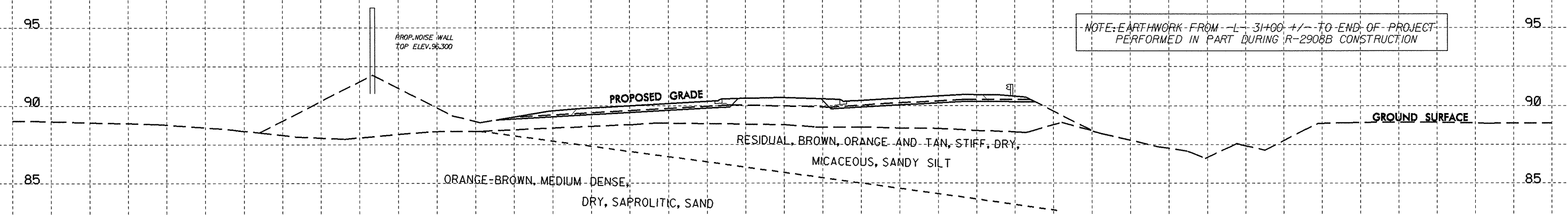
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10/26/08

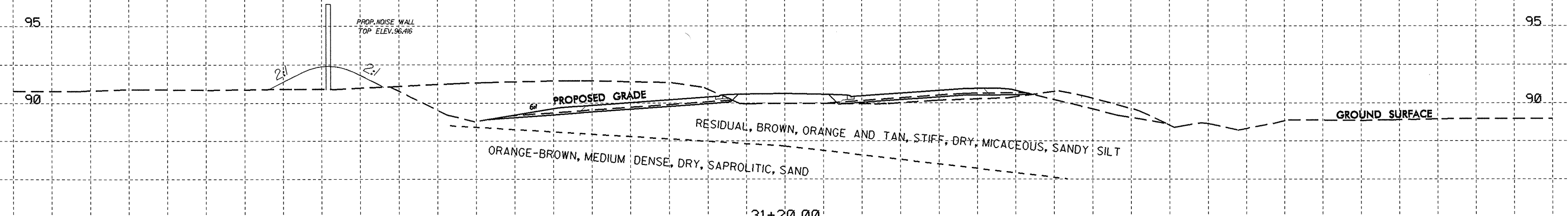


PROJECT REFERENCE NO.	SHEET NO.
R-2809A	50

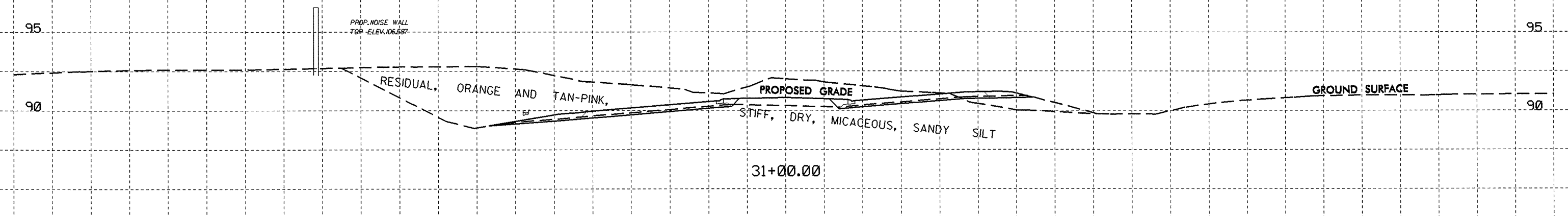
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31+20.00

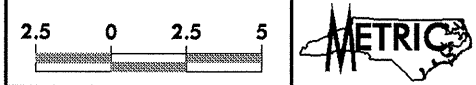


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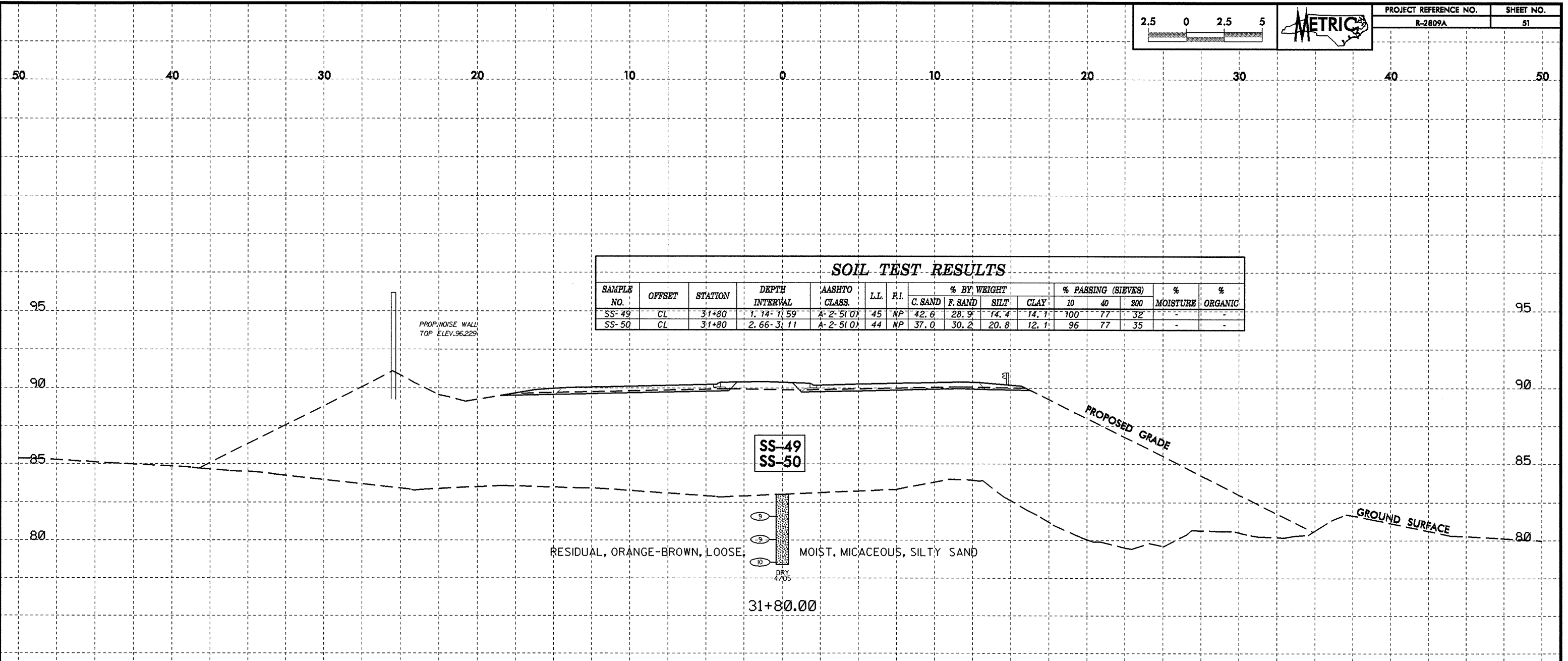
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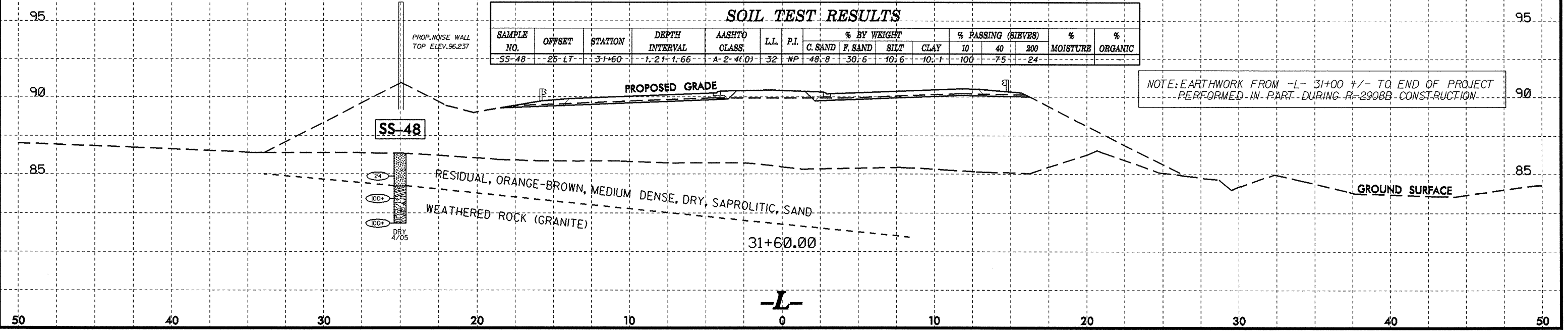
SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-49	CL	31+80	1.74-1.59	A-2-5(0)	45	NP	42.6	28.9	14.4	14.1	100	77	32	-	-
SS-50	CL	31+80	2.66-3.11	A-2-5(0)	44	NP	37.0	30.2	20.8	12.1	96	77	35	-	-



SOIL TEST RESULTS

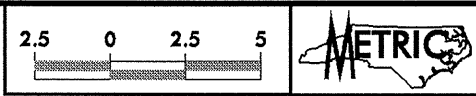
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							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-48	25-LT	31+60	1.21-1.66	A-2-4(0)	32	NP	48.8	30.6	10.6	10.1	100	75	24	-	-



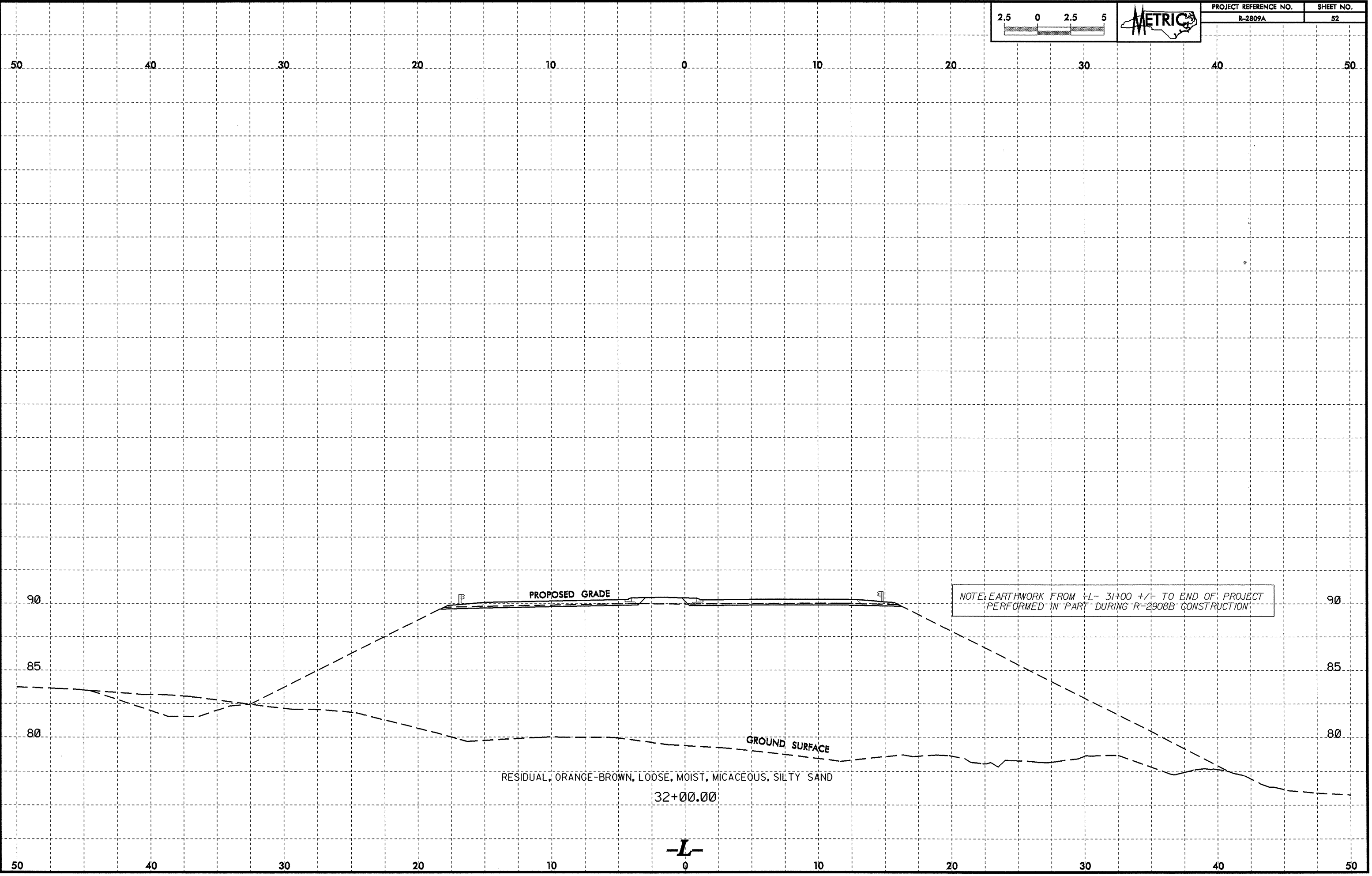
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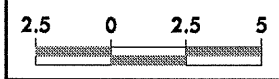
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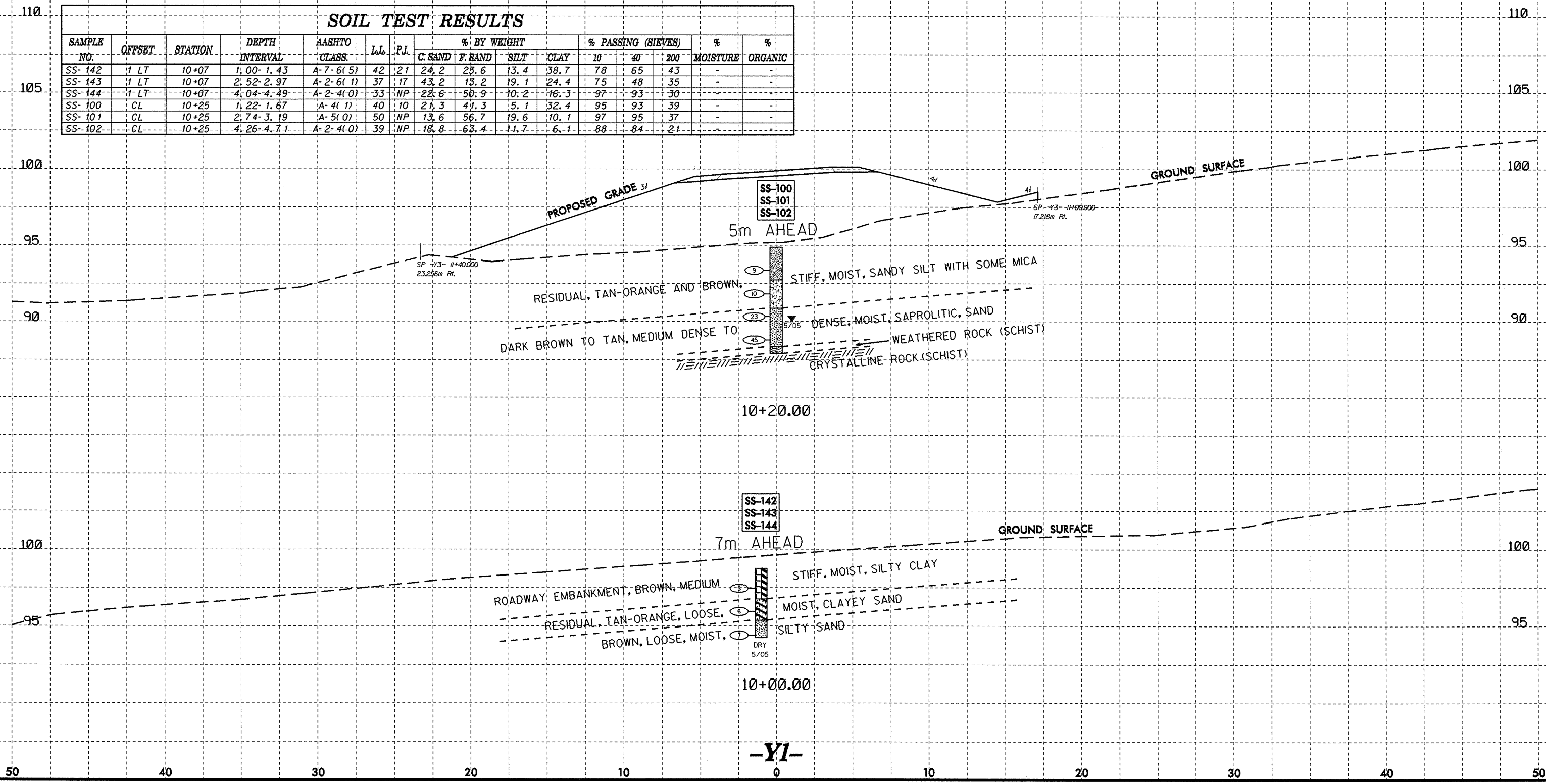




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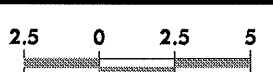
SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PI	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-142	1 LT	10+07	1.00-1.43	A-7-6(5)	42	21	24.2	23.6	13.4	38.7	78	65	43	-	-
SS-143	1 LT	10+07	2.52-2.97	A-2-6(1)	37	17	43.2	13.2	19.1	24.4	75	48	35	-	-
SS-144	1 LT	10+07	4.04-4.49	A-2-4(0)	33	NP	22.6	50.9	10.2	16.3	97	93	30	-	-
SS-100	CL	10+25	1.22-1.67	A-4(1)	40	10	21.3	41.3	5.1	32.4	95	93	39	-	-
SS-101	CL	10+25	2.74-3.19	A-5(0)	50	NP	13.6	56.7	19.6	10.1	97	95	37	-	-
SS-102	CL	10+25	4.26-4.71	A-2-4(0)	39	NP	18.8	63.4	11.7	6.1	88	84	21	-	-



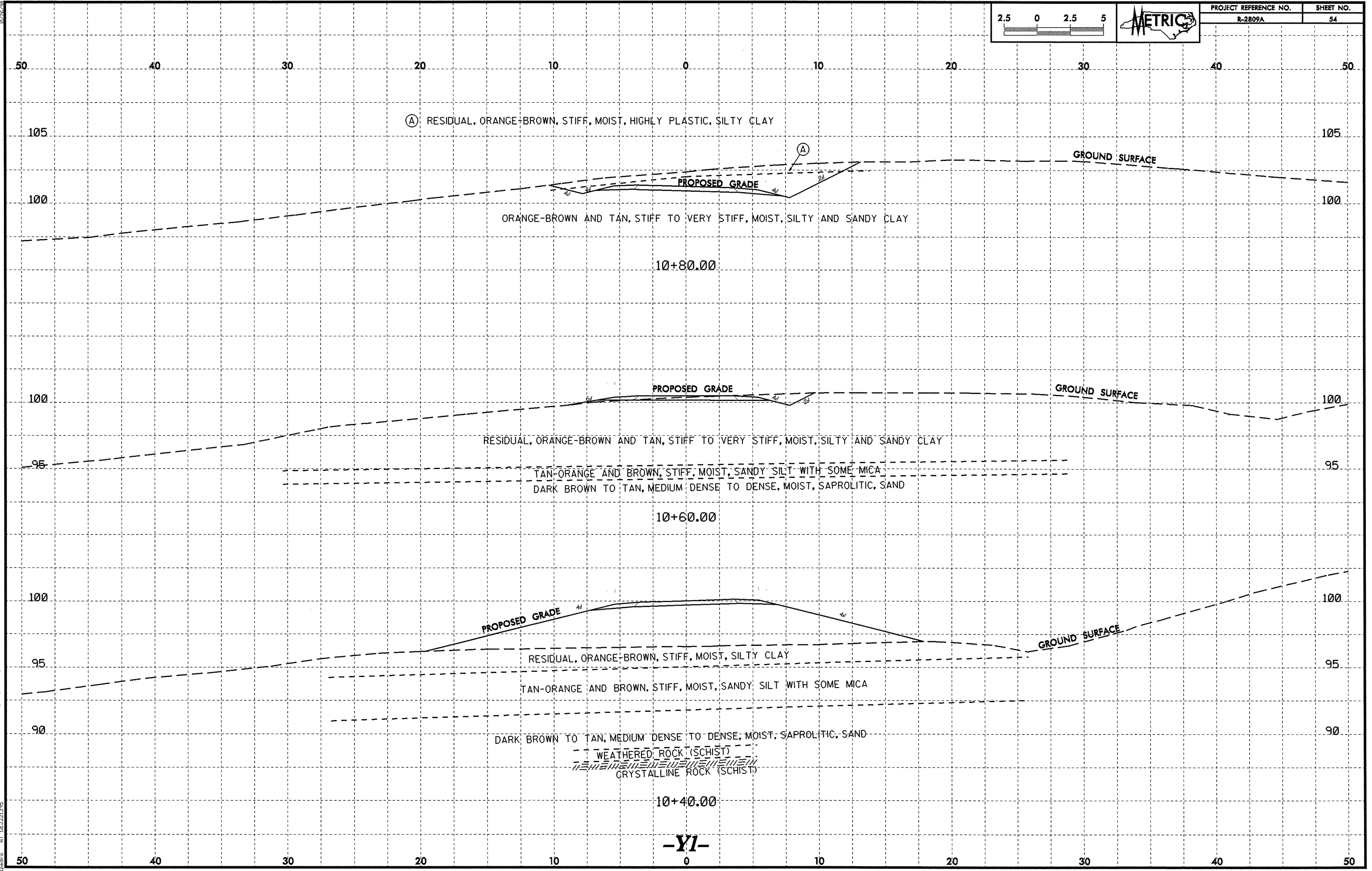
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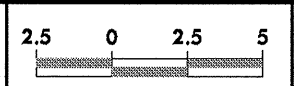
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SHEET NO.
54

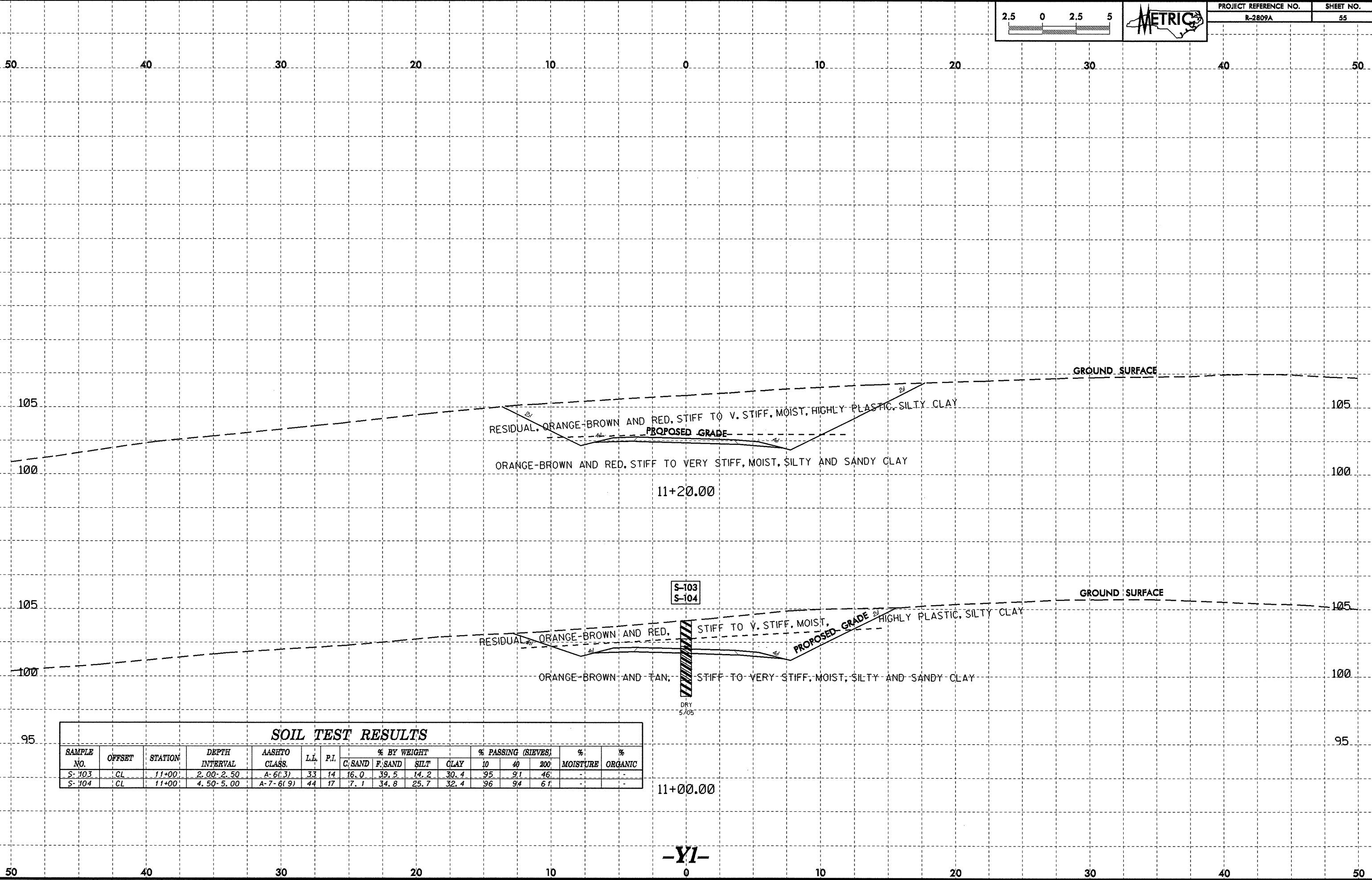


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11/26/08
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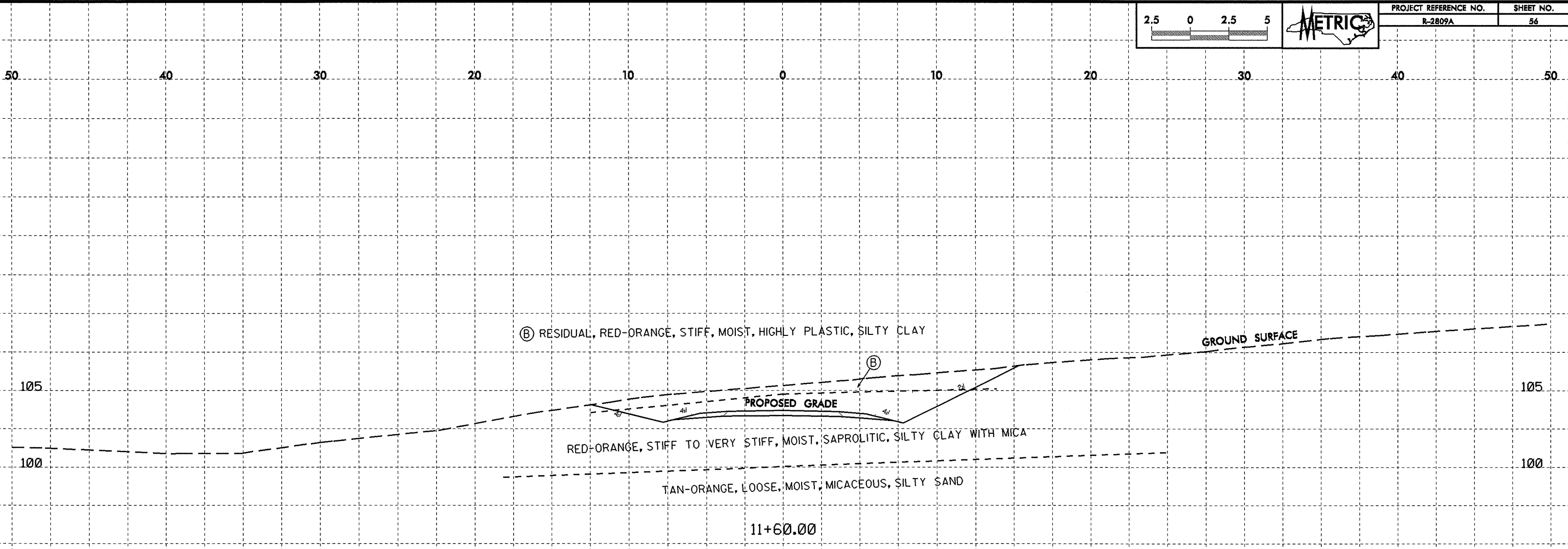
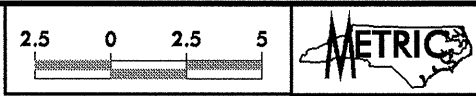


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R-2809A	55



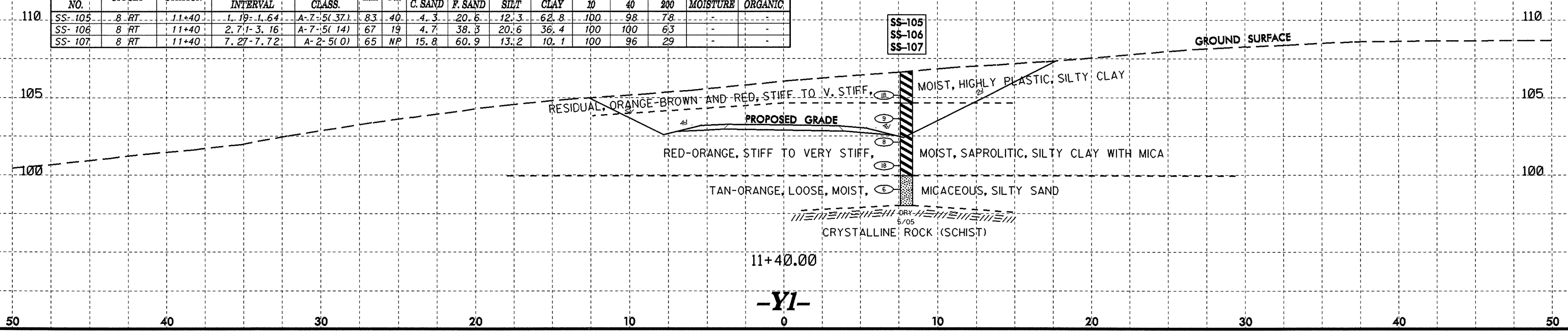
SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-103	CL	11+00	2.00-2.50	A-6(3)	33	14	16.0	39.5	14.2	30.4	95	91	46	-	-
S-104	CL	11+00	4.50-5.00	A-7-6(9)	44	17	7.1	34.8	25.7	32.4	96	94	61	-	-

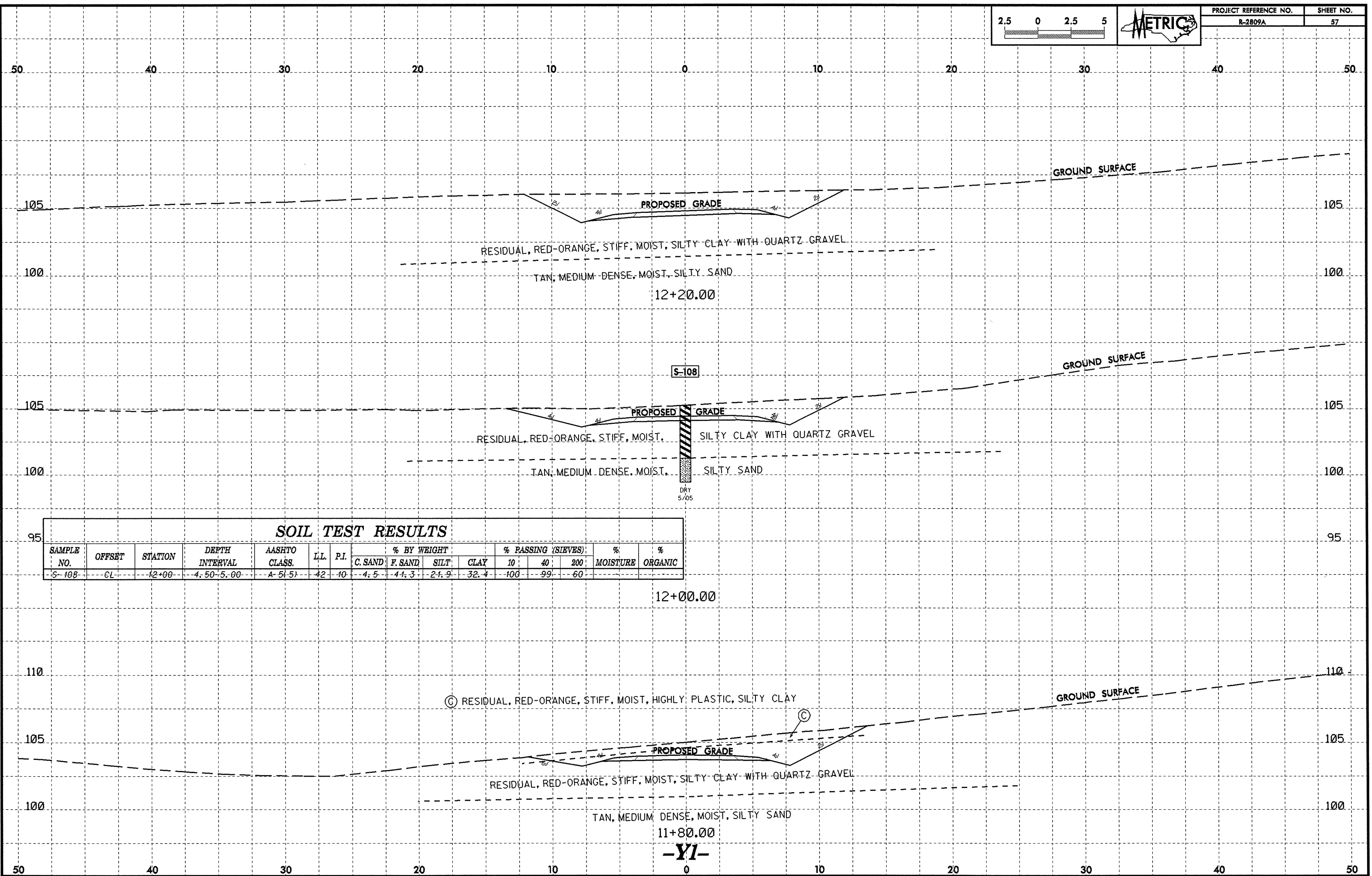
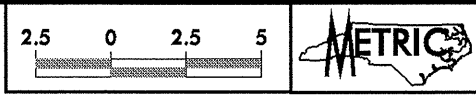


SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PI	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							G. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-105	8 RT	11+40	1.19-1.64	A-7-5(37)	83	40	4.3	20.6	12.3	62.8	100	98	78	-	-
SS-106	8 RT	11+40	2.71-3.16	A-7-5(14)	67	19	4.7	38.3	20.6	36.4	100	100	63	-	-
SS-107	8 RT	11+40	7.27-7.72	A-2-5(0)	65	NP	15.8	60.9	13.2	10.1	100	96	29	-	-



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SOIL TEST RESULTS

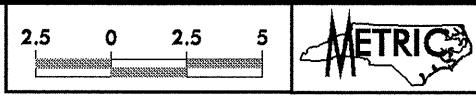
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							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-108	CL	12+00	4.50-5.00	A-5(5)	42	10	4.5	44.3	24.9	32.4	100	99	60		

12+00.00

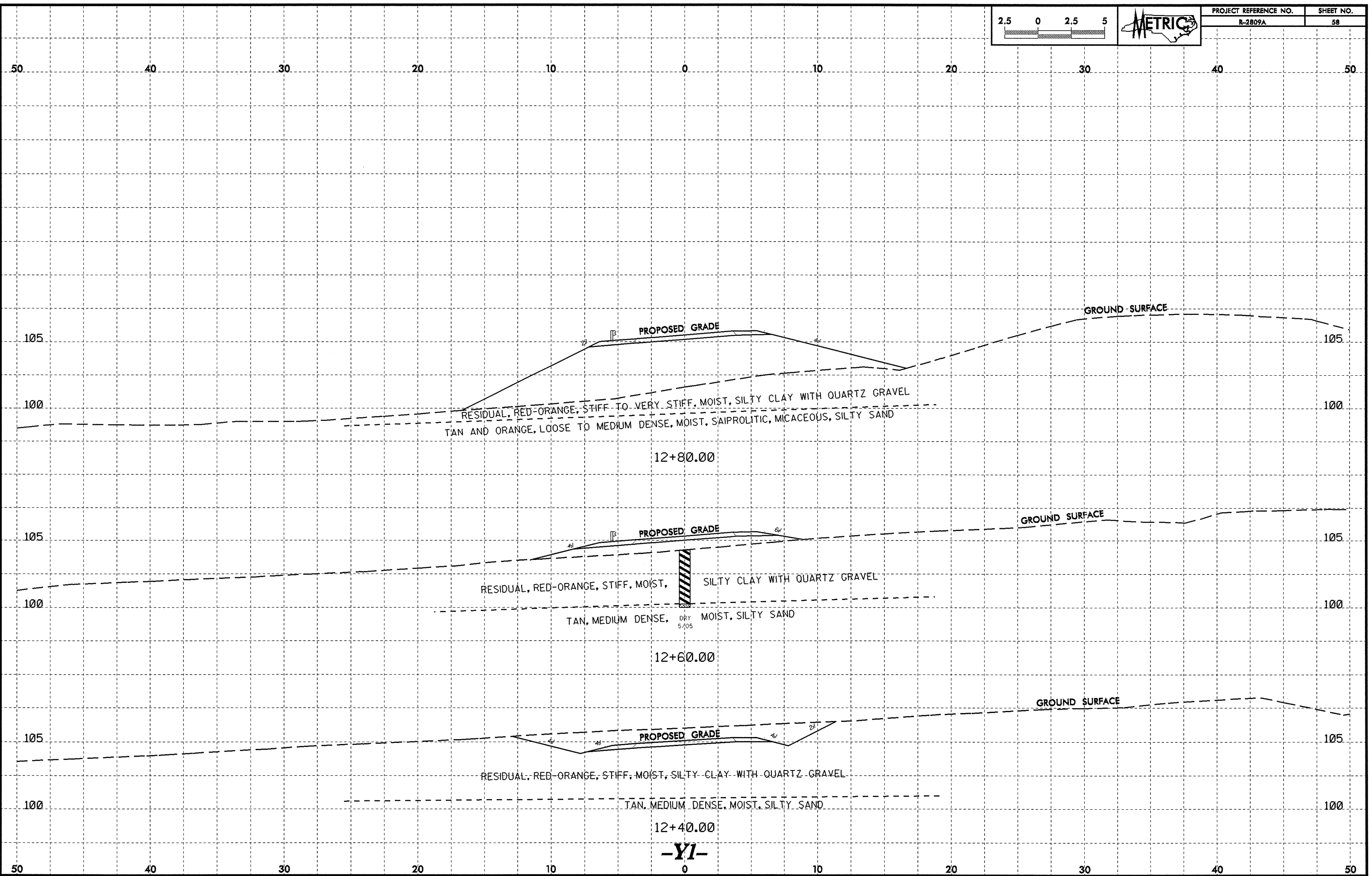
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10/26/09
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 AT 02:21:08



PROJECT REFERENCE NO.	SHEET NO.
R-2809A	58



PROPOSED GRADE

GROUND SURFACE

RESIDUAL, RED-ORANGE, STIFF TO VERY STIFF, MOIST, SILTY CLAY WITH QUARTZ GRAVEL
 TAN AND ORANGE, LOOSE TO MEDIUM DENSE, MOIST, SAIPROLITIC, MICACEOUS, SILTY SAND

12+80.00

PROPOSED GRADE

GROUND SURFACE

RESIDUAL, RED-ORANGE, STIFF, MOIST,
 TAN, MEDIUM DENSE, DRY 5/05
 SILTY CLAY WITH QUARTZ GRAVEL
 MOIST, SILTY SAND

12+60.00

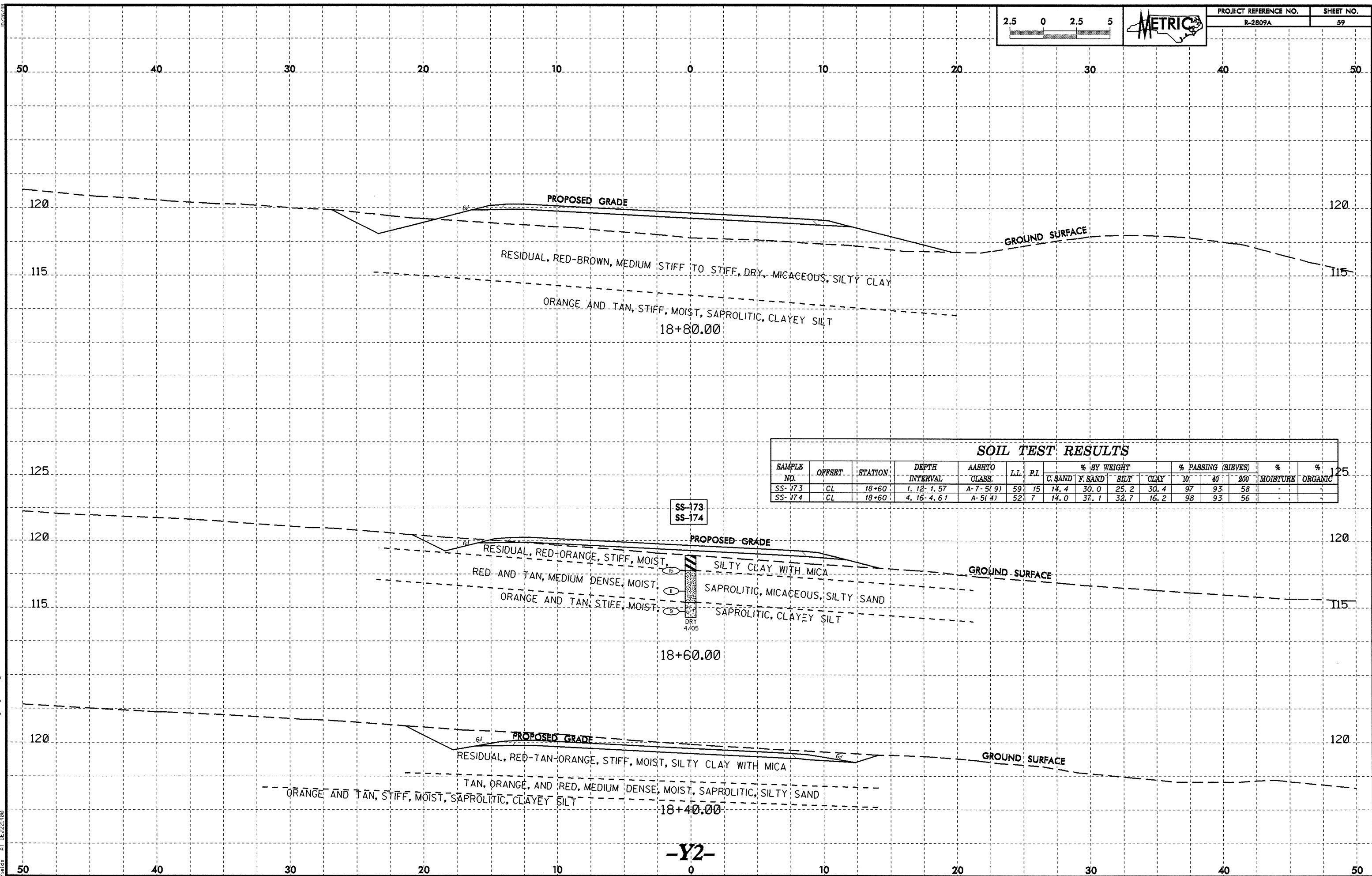
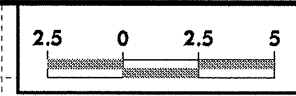
PROPOSED GRADE

GROUND SURFACE

RESIDUAL, RED-ORANGE, STIFF, MOIST, SILTY CLAY WITH QUARTZ GRAVEL
 TAN, MEDIUM DENSE, MOIST, SILTY SAND

12+40.00

-Y1-



SOIL TEST RESULTS

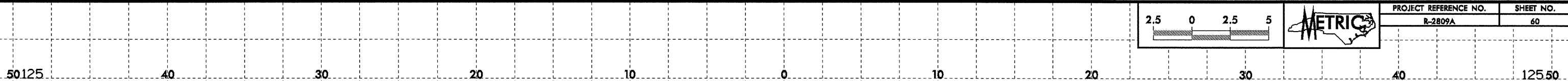
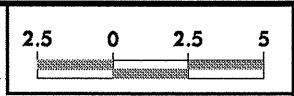
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							C SAND	F SAND	SILT	CLAY	10	40	200		
SS-173	CL	18+60	1.12-1.57	A-7-5(9)	59	15	14.4	30.0	25.2	30.4	97	93	58	-	-
SS-174	CL	18+60	4.16-4.61	A-5(4)	52	7	14.0	37.1	32.7	16.2	98	93	56	-	-

SS-173
SS-174

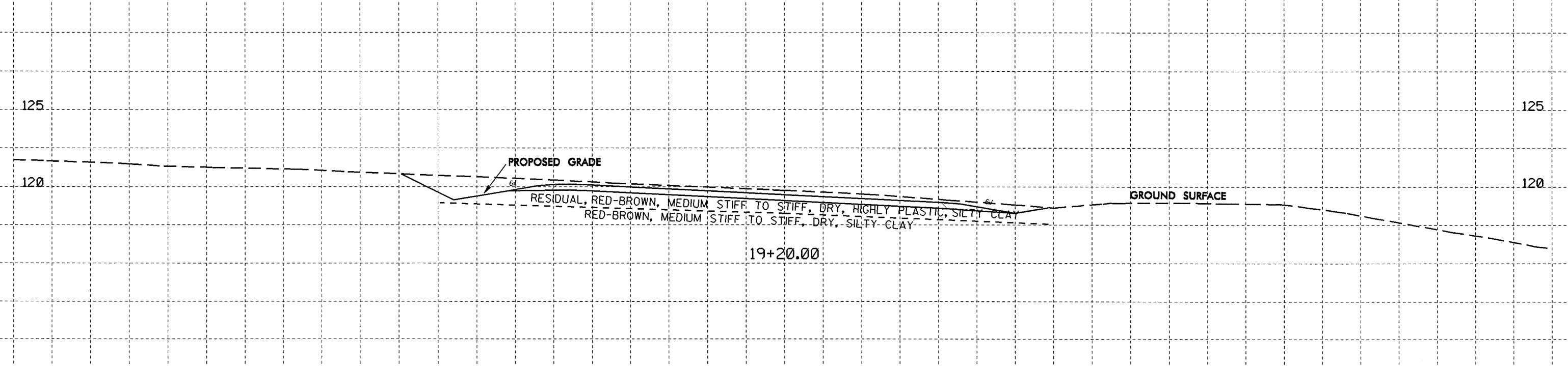
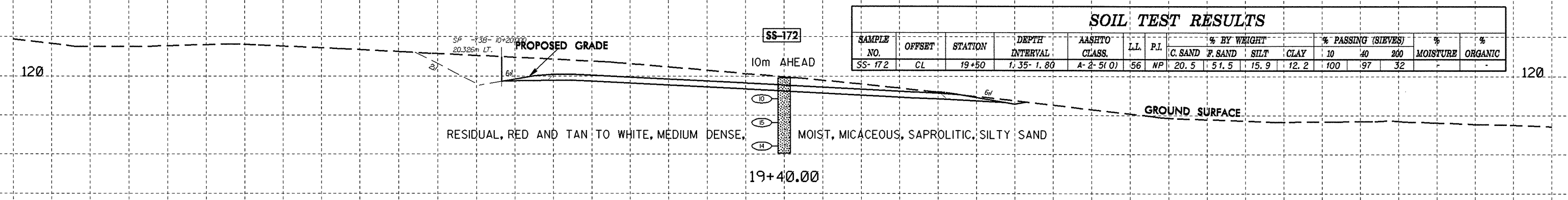
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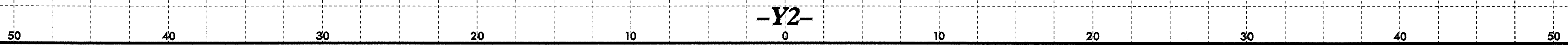
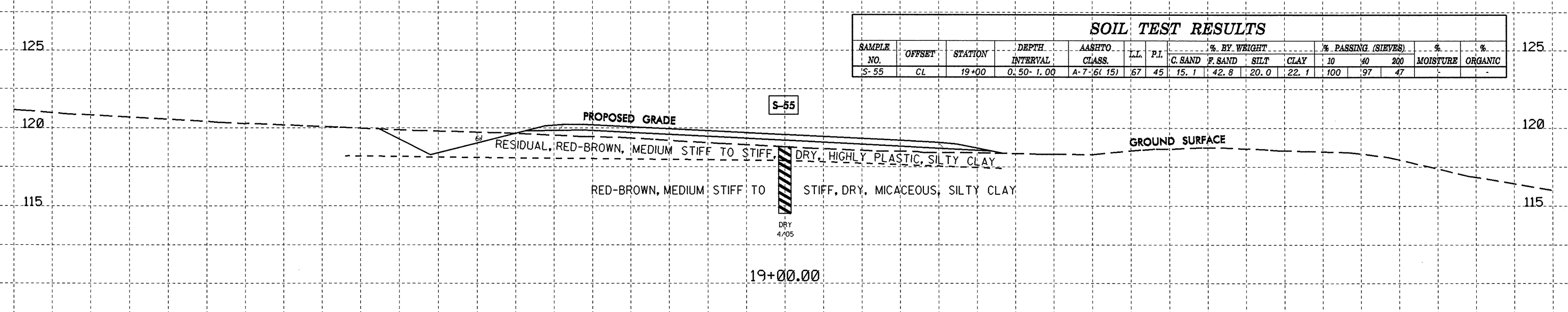
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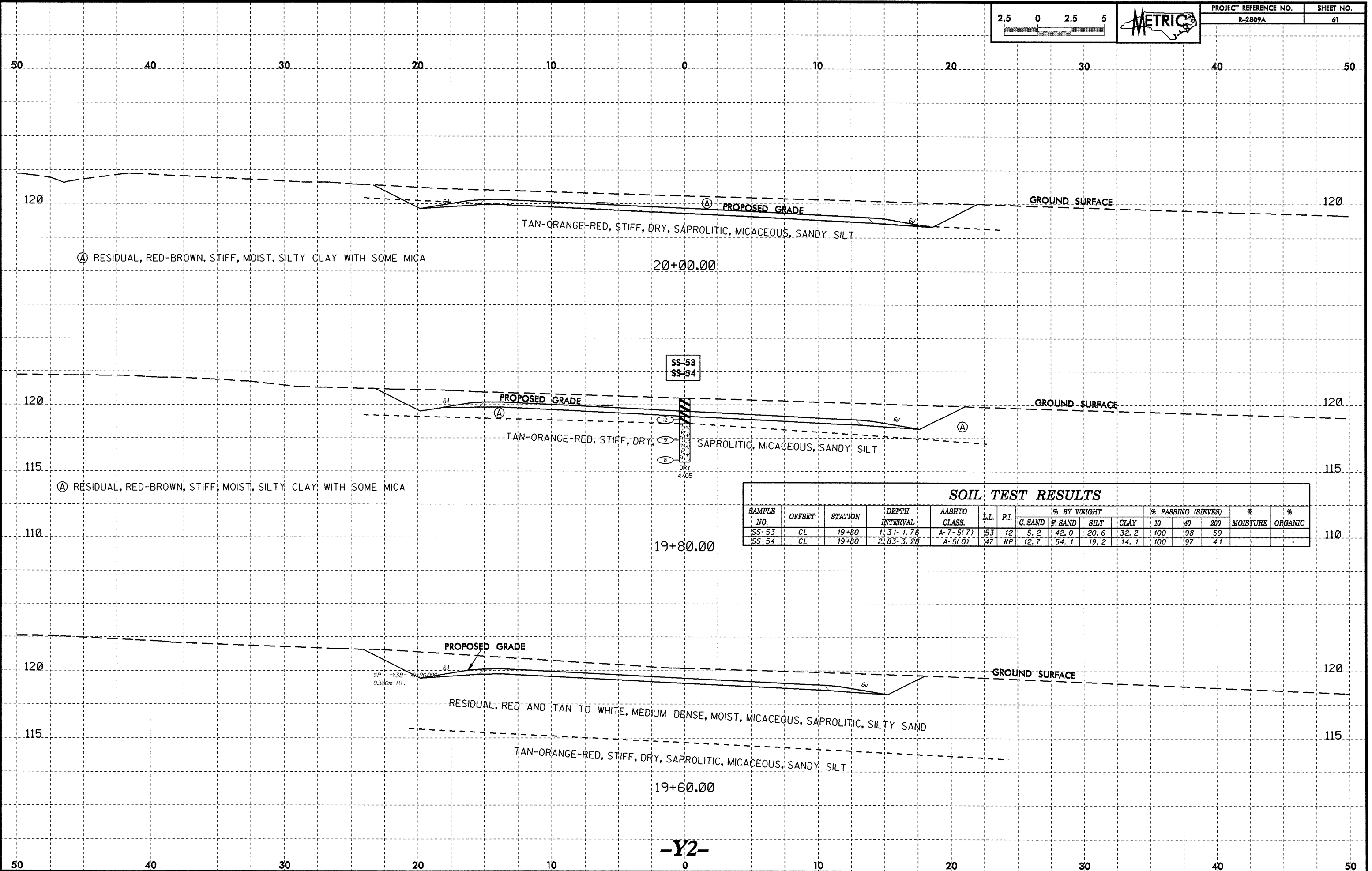
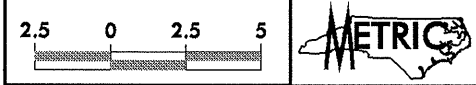
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-172	CL	19+50	1.35- 1.80	A-2-5(0)	56	NP	20.5	51.5	15.9	12.2	100	97	32	-	-



SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-55	CL	19+00	0.50- 1.00	A-7-6(15)	67	45	15.1	42.8	20.0	22.1	100	97	47	-	-

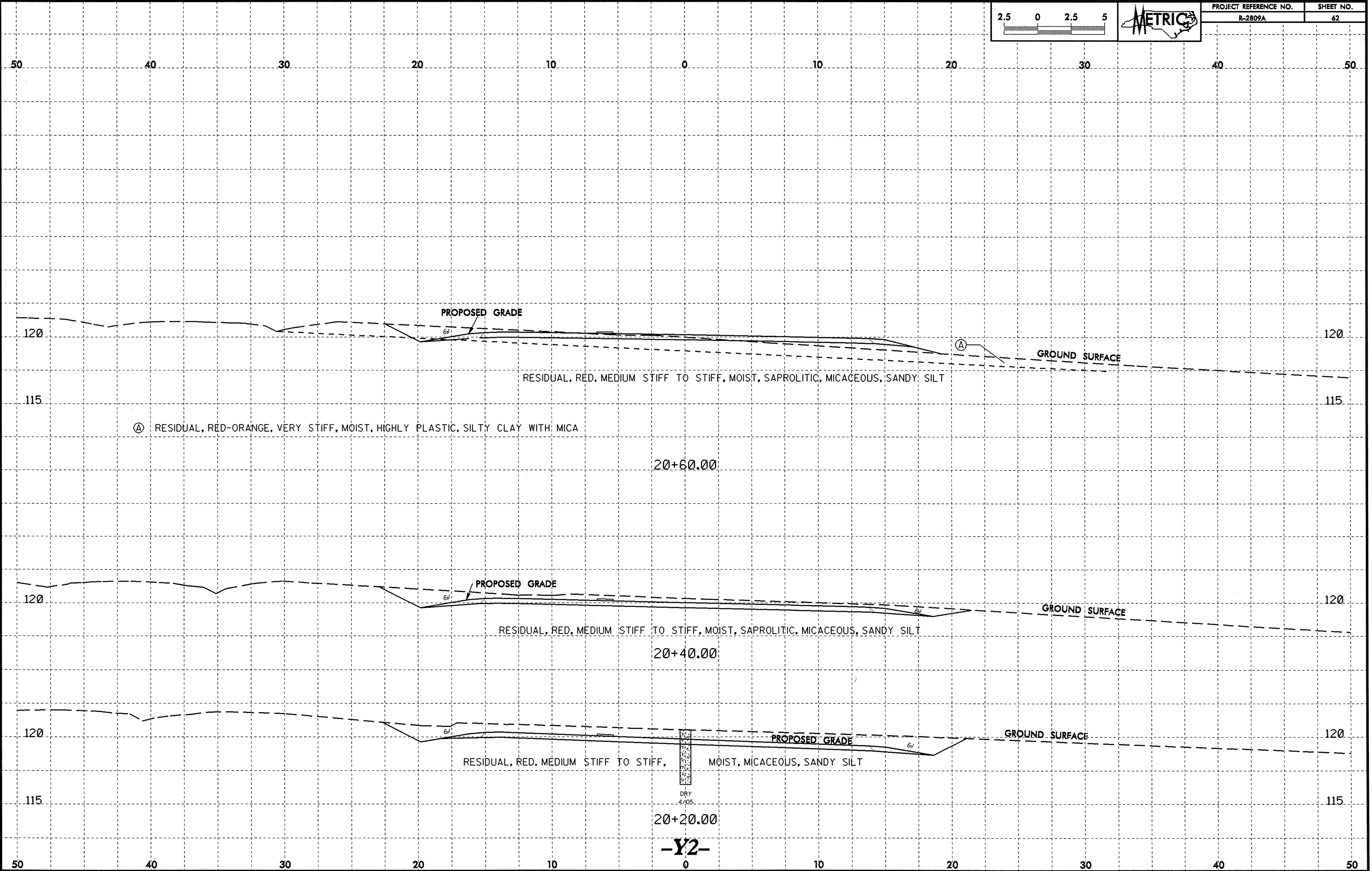
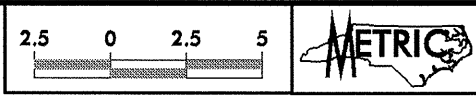


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SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-53	CL	19+80	1.31-1.76	A-7-5(7)	53	12	5.2	42.0	20.6	32.2	100	98	99	-	-
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Ⓐ RESIDUAL, RED-ORANGE, VERY STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY WITH MICA

20+60.00

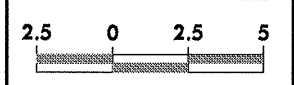
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20+20.00

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 AT 05/22/2008

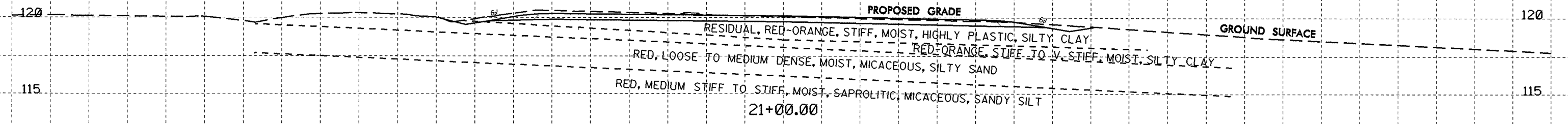
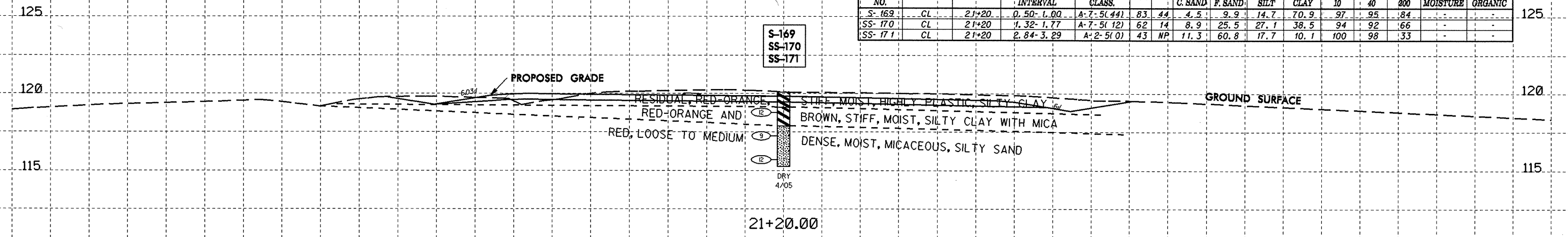
10/26/08



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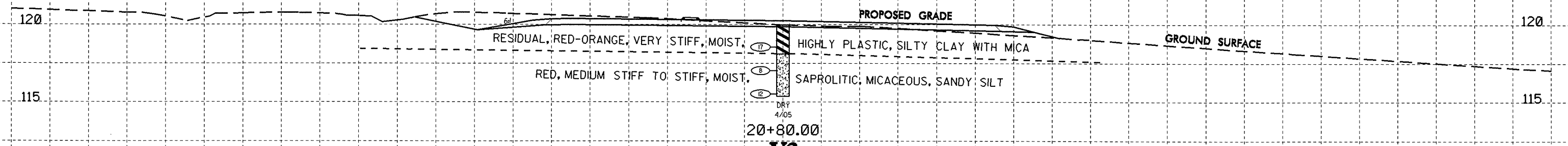
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PI	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-169	CL	21+20	0.50-1.00	A-7-5(44)	83	44	4.5	9.9	14.7	70.9	97	95	84	-	-
SS-170	CL	21+20	1.32-1.77	A-7-5(12)	62	14	8.9	25.5	27.1	38.5	94	92	66	-	-
SS-171	CL	21+20	2.84-3.29	A-2-5(0)	43	NP	11.3	60.8	17.7	10.1	100	98	33	-	-

S-169
SS-170
SS-171



SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PI	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-51	CL	20+80	1.11-1.56	A-7-5(38)	75	35	2.8	12.3	20.6	64.3	100	99	88	-	-
SS-52	CL	20+80	2.63-3.08	A-5(0)	51	NP	10.1	45.4	24.4	20.1	100	98	51	-	-

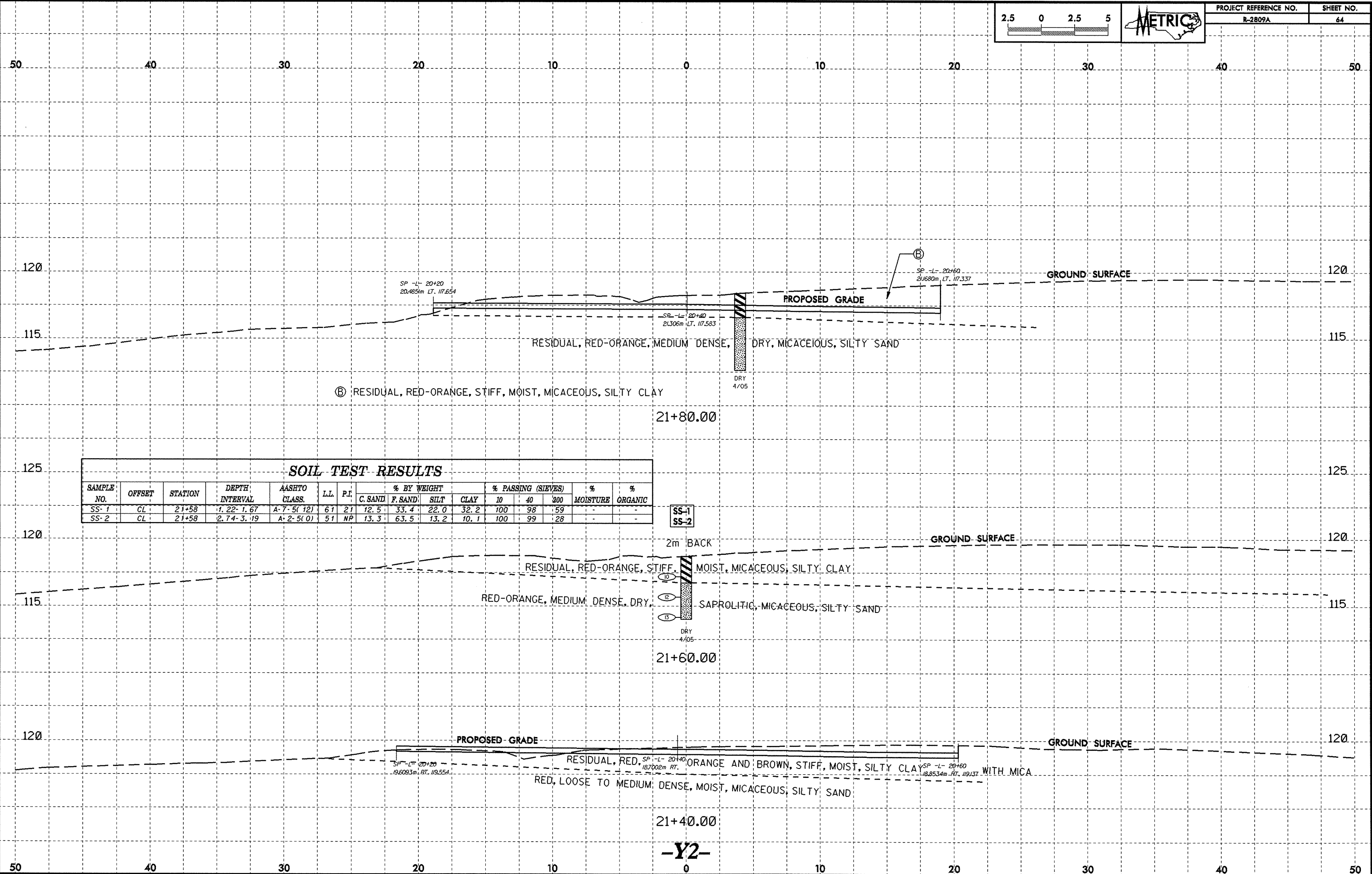
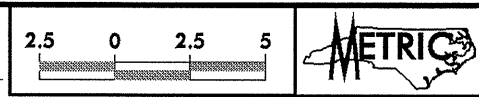
SS-51
SS-52



-Y2-

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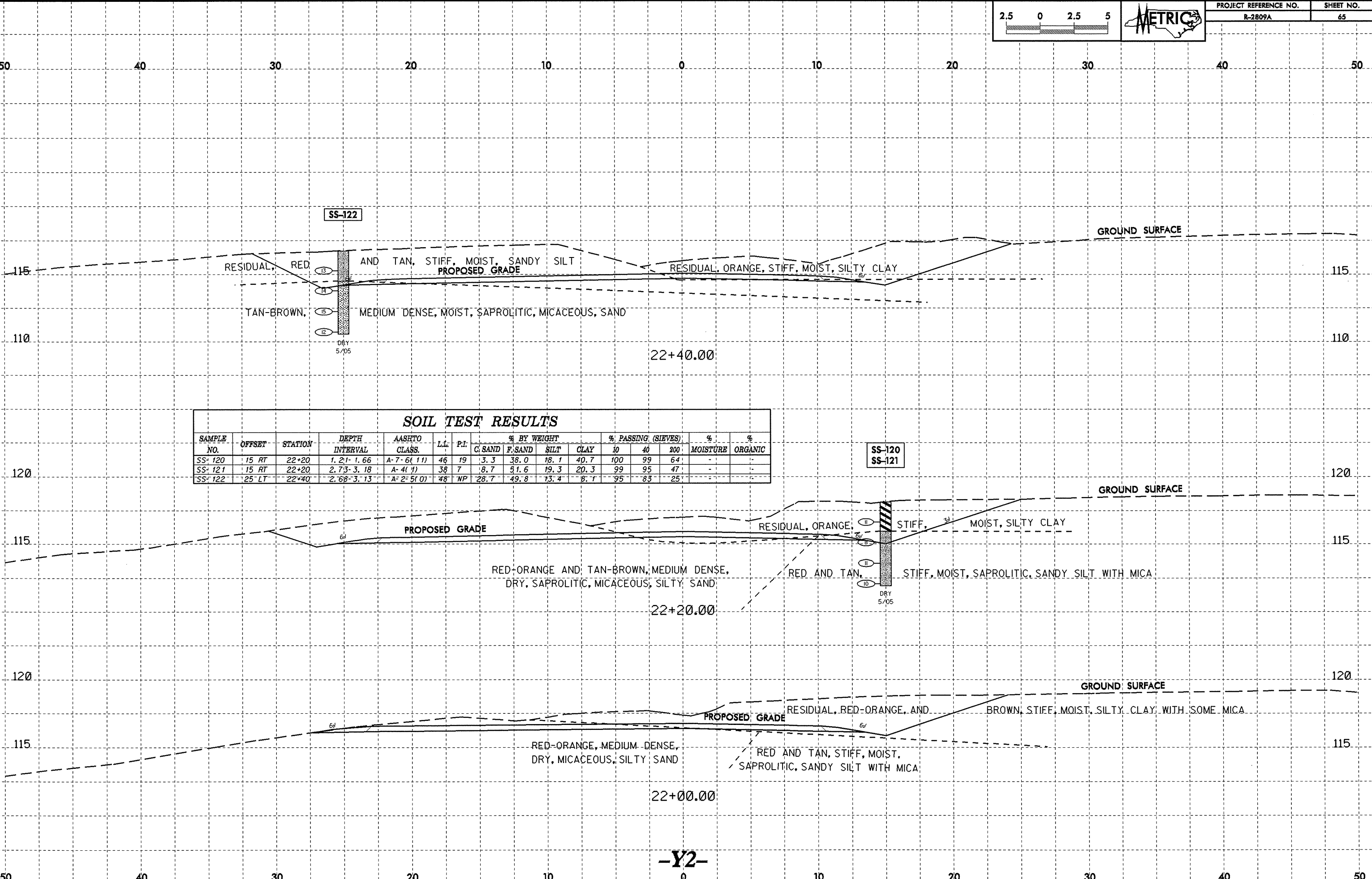
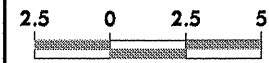
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SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-1	CL	21+58	1.22-1.67	A-7-5(12)	61	21	12.5	33.4	22.0	32.2	100	98	59	-	-
SS-2	CL	21+58	2.74-3.19	A-2-5(0)	51	NP	13.3	63.5	13.2	10.1	100	99	28	-	-

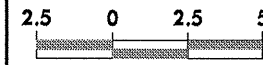
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SOIL TEST RESULTS

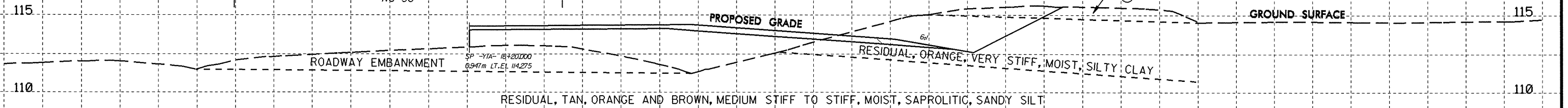
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							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-120	15 RT	22+20	1.21-1.66	A-7-6(11)	46	19	3.3	38.0	18.1	40.7	100	99	64	-	-
SS-121	15 RT	22+20	2.73-3.18	A-4(1)	38	7	8.7	51.6	19.3	20.3	99	95	47	-	-
SS-122	25 LT	22+40	2.68-3.13	A-2-5(1)	48	NP	28.7	49.8	13.4	8.1	95	83	25	-	-

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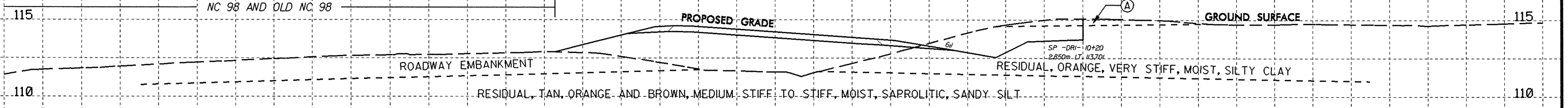


PROJECT REFERENCE NO.	SHEET NO.
R-2809A	66

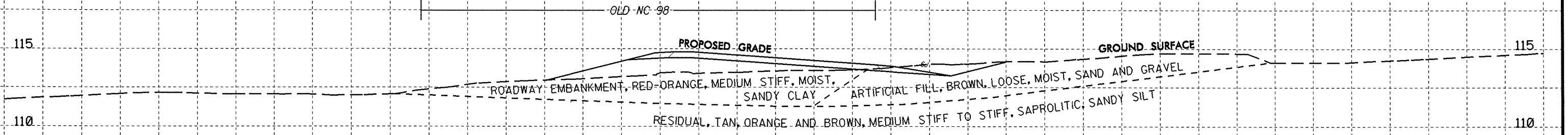
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(A) ARTIFICIAL FILL, RED-BROWN, VERY STIFF, MOIST, SILTY CLAY WITH TOP LAYER OF GRAVEL AND ASPHALT PIECES
28+00.00



(A) ARTIFICIAL FILL, RED-BROWN, VERY STIFF, MOIST, SILTY CLAY WITH TOP LAYER OF GRAVEL AND ASPHALT PIECES
27+80.00

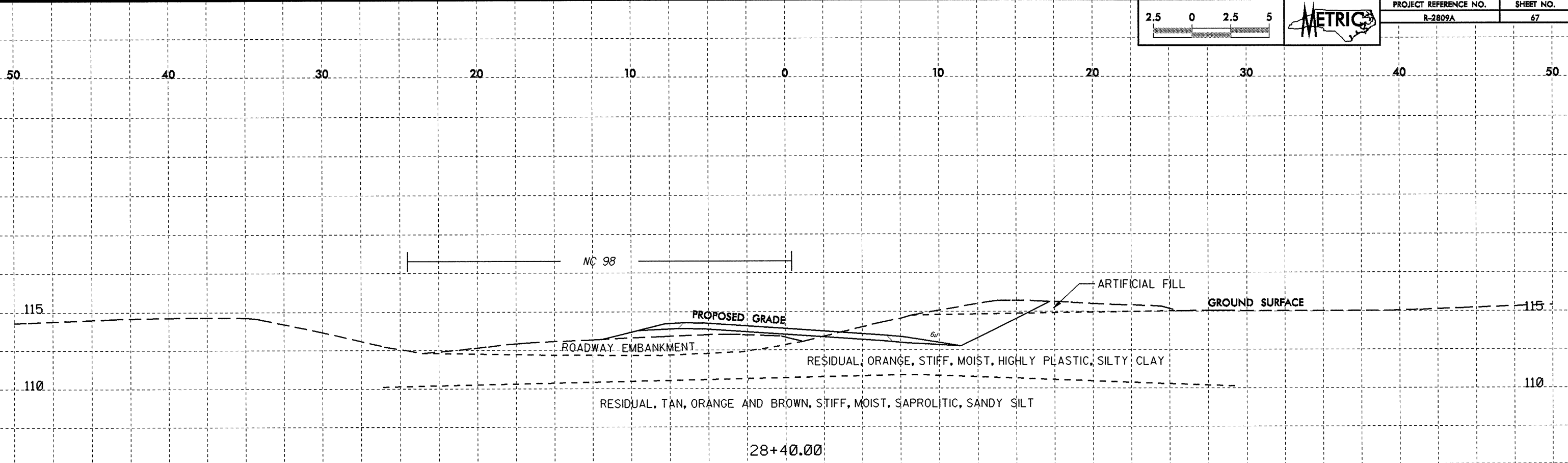
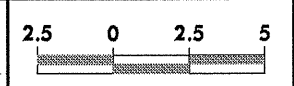


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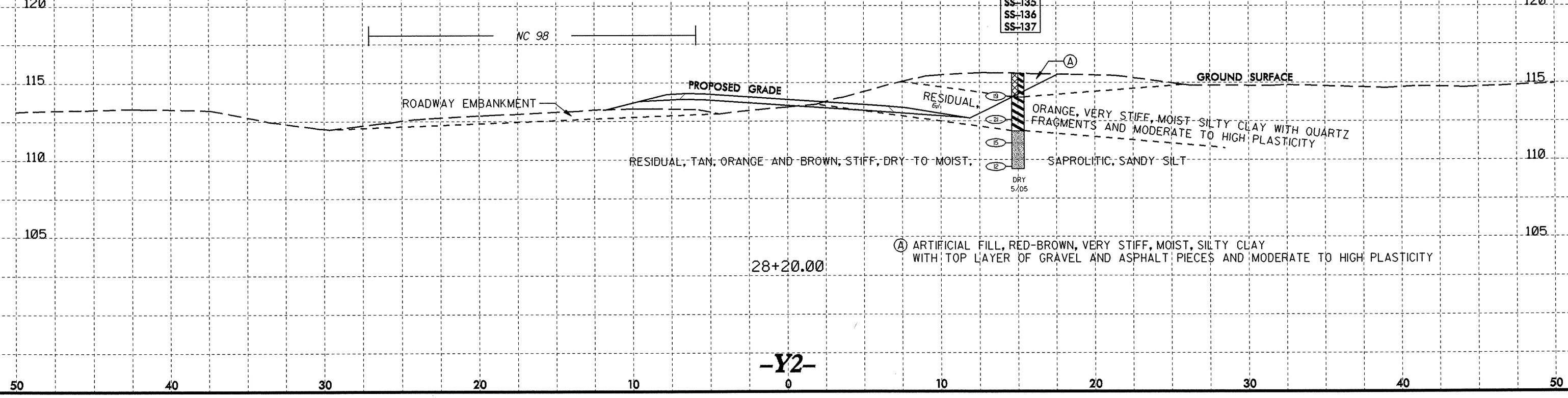
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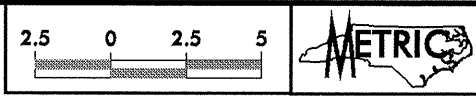
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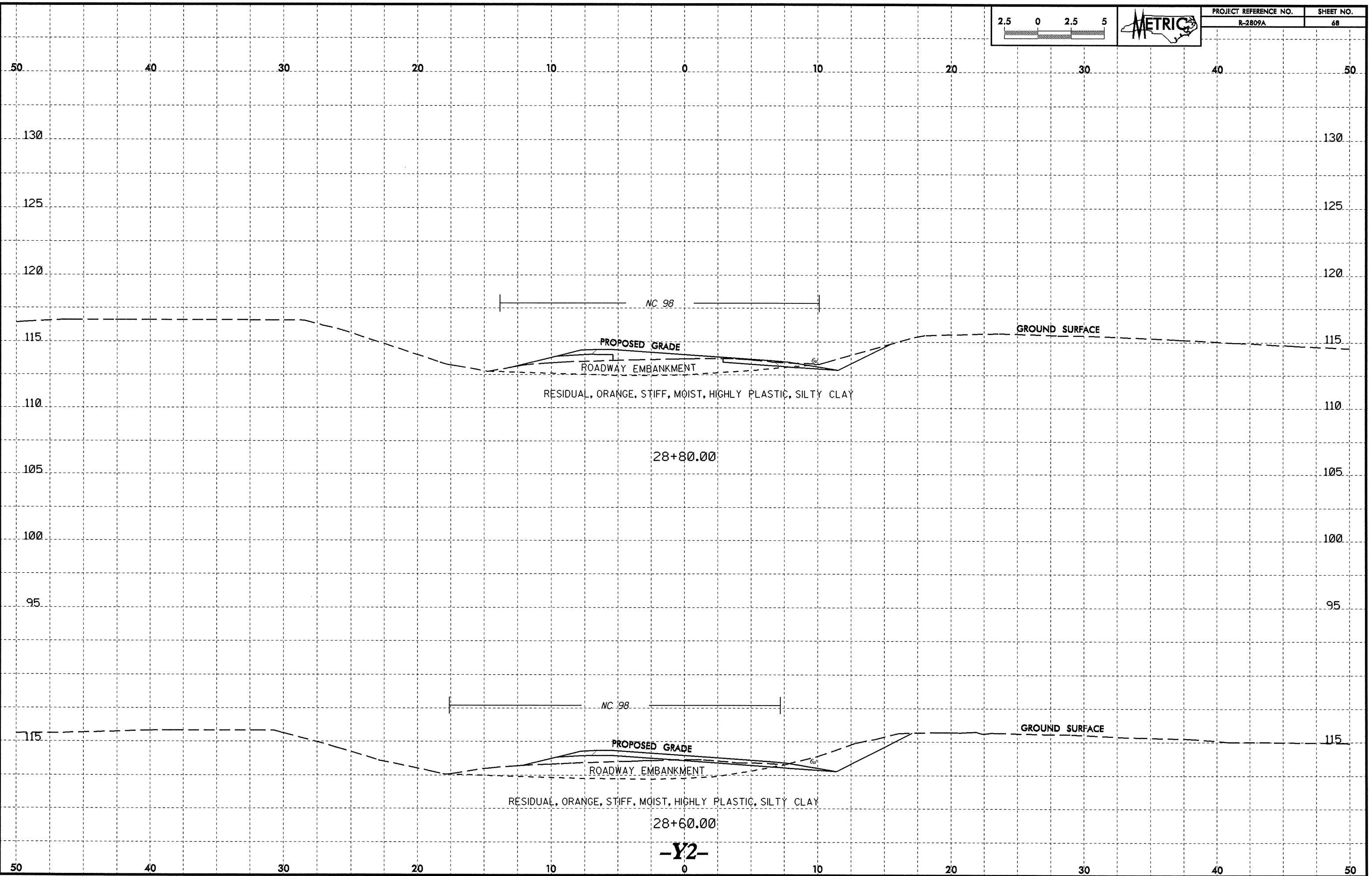
SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-135	15 RT	28+20	1.18-1.63	A-7-6(14)	51	31	17.9	23.6	9.6	48.9	93	82	57	-	-
SS-136	15 RT	28+20	2.70-3.15	A-7-5(25)	64	28	6.5	16.1	20.4	57.0	95	91	78	-	-
SS-137	15 RT	28+20	4.22-4.67	A-4(0)	34	3	24.4	36.9	18.3	20.4	94	80	42	-	-



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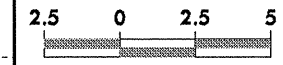


PROJECT REFERENCE NO.	SHEET NO.
R-2809A	68

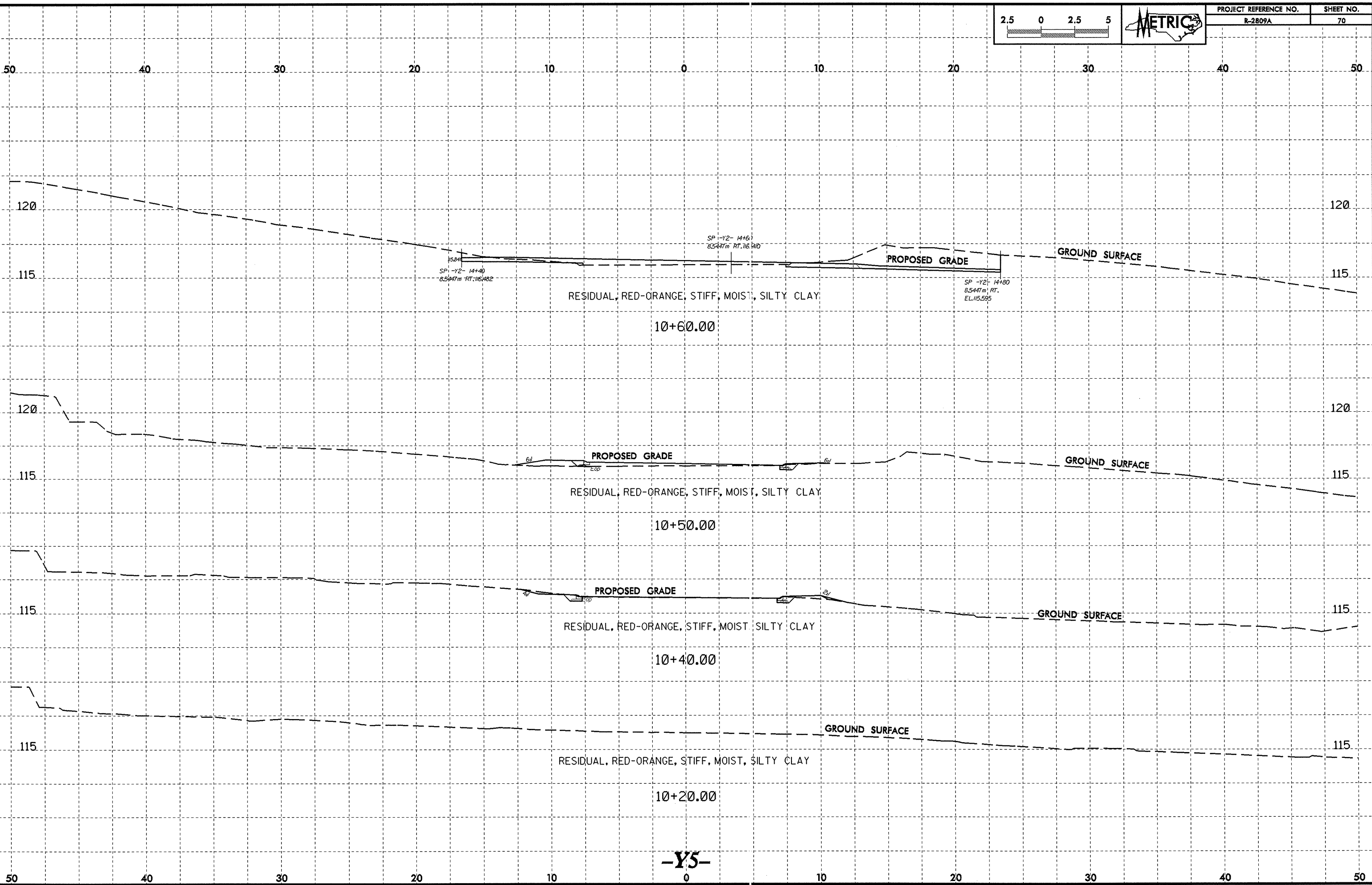


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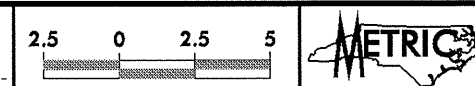
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R-2809A	70



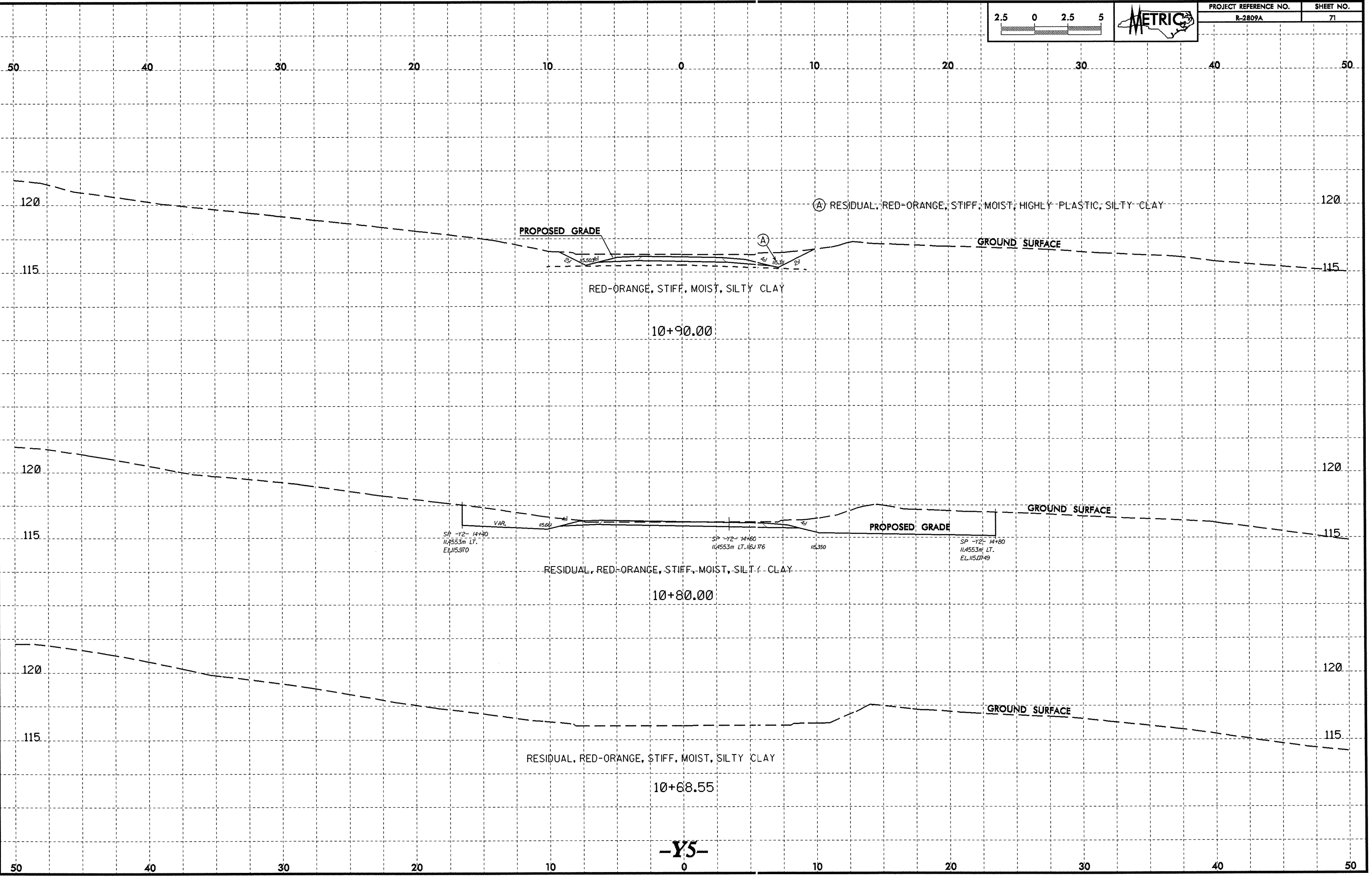
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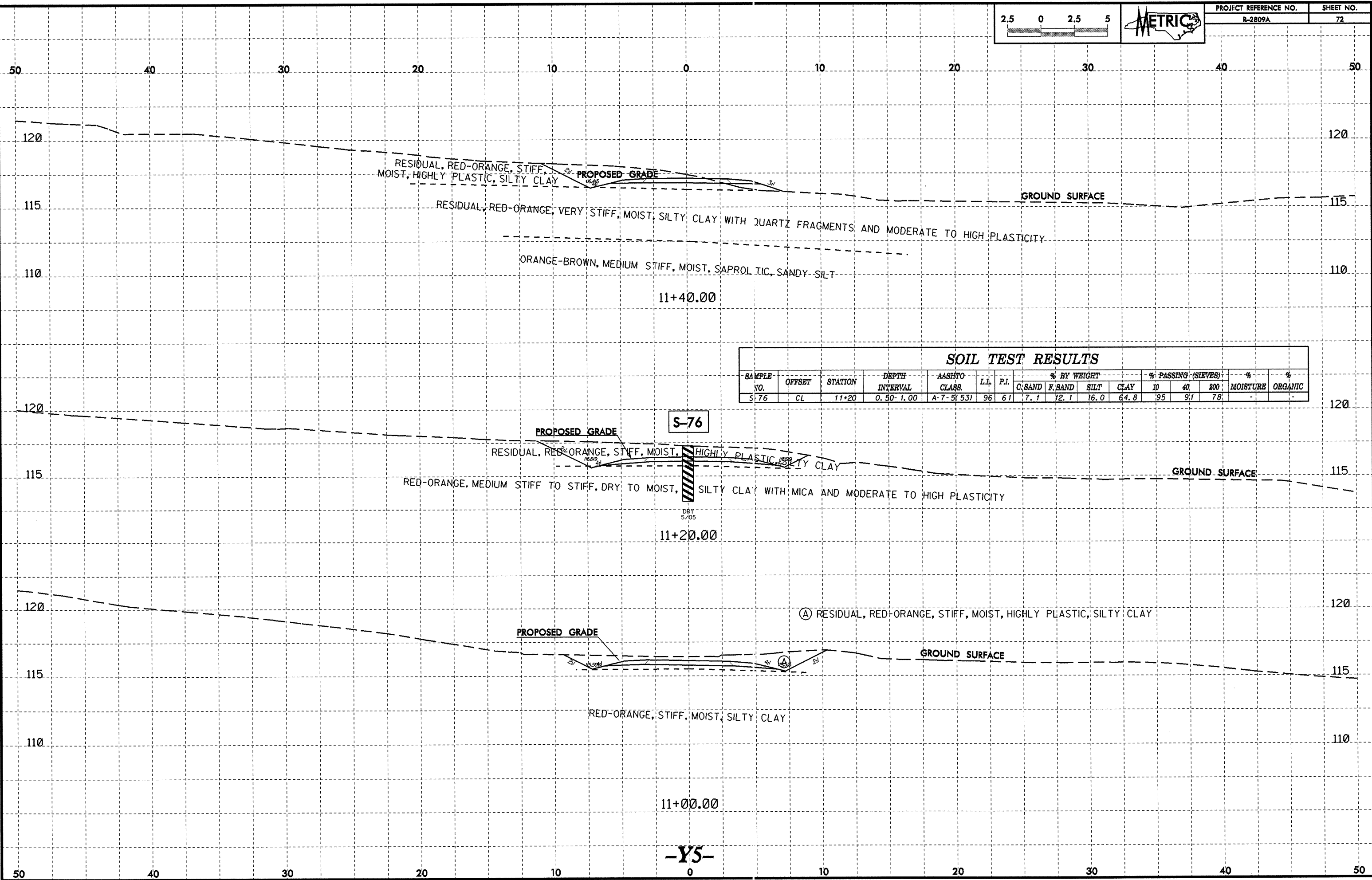
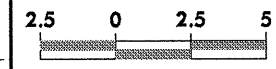
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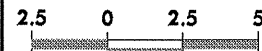


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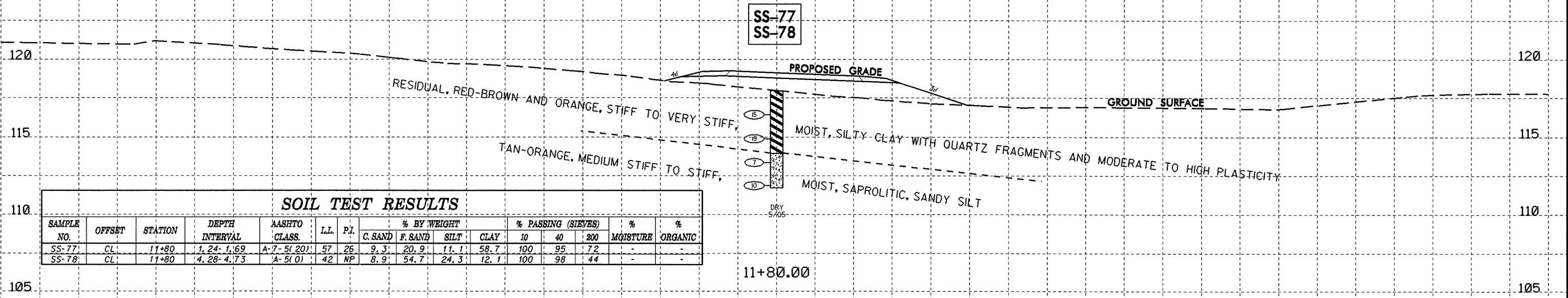




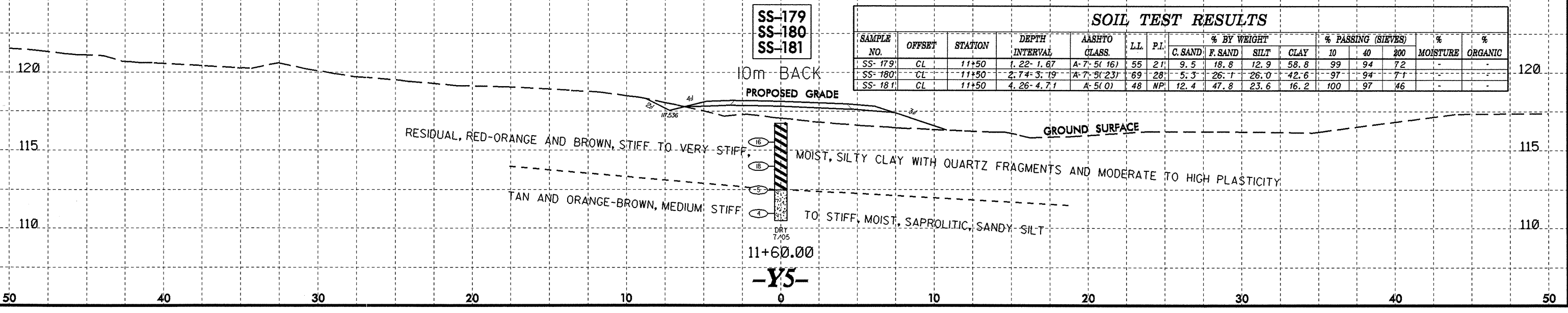
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SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-77	CL	11+80	1.24-1.69	A-7-5(20)	57	26	9.3	20.9	11.1	58.7	100	95	72	-	-
SS-78	CL	11+80	4.28-4.73	A-5(0)	42	NP	8.9	54.7	24.3	12.1	100	98	44	-	-



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-179	CL	11+50	1.22-1.67	A-7-5(16)	55	21	9.5	18.8	12.9	58.8	99	94	72	-	-
SS-180	CL	11+50	2.74-3.19	A-7-5(23)	69	28	5.3	26.7	26.0	42.6	97	94	71	-	-
SS-181	CL	11+50	4.26-4.71	A-5(0)	48	NP	12.4	47.8	23.6	16.2	100	97	46	-	-

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