STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

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GOVERNOR

DIVISION OF HIGHWAYS
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GARLAND B. GARRETT JR.
SECRETARY

January 6, 1998

STATE PROJECT: 6.499002T (R-2413C)
FEDERAL PROJECT: N/A
COUNTY: Guilford and Rockingham

DESCRIPTION: NC 68 Connector - US 220 from South of Haw River to the Intersection of US 220 and Existing NC 68

SUBJECT: Geotechnical Report - Inventory

The project is located in northern Guilford and southern Rockingham Counties. US 220 is to be upgraded to a four-lane facility from south of the Haw River to NC 68. The total length of the project is 8.16 kilometers. Construction will include two reinforced concrete box culverts and five structures.

A field reconnaissance and subsurface investigation was conducted from November 1996 to May 1997 utilizing CME-45B, and CME-550 drill machines. Subsurface data was obtained by hand, solid, and hollow stem auger borings, with the use of Standard Penetration Tests at select locations. Soil samples were submitted for laboratory analysis by the Materials and Tests Unit.

Subsurface information is provided for the following alignments.

Line	Station
-LRev1-	13+50 - 19+09
-LRev-	18+20 - 97+10
-SB US 220 Ramp-	8+99 - 19+02
-NB US 220 Ramp-	9+95 - 15+78
-Y20-	10+00 - 28+75
-Y21-	10+00 - 18+69
-Y23-	8+83 - 17+67
-Ramp A- @ US 158	10+00 - 15+36

Line	Station
-Ramp B- @ US 158	10+00 - 14+51
-Ramp C- @ US 158	10+00 - 14+40
-Ramp D- @ US 158	10+00 - 14+33
-Y24-	10+00 - 13+42
-Y25-	10+00 - 14+18
-Ramp A- @ NC 65	10+00 - 14+77
-Ramp B- @ NC 65	10+00 - 14+25
-Ramp C- @ NC 65	10+00 - 14+13
-Ramp D- @ NC 65	10+00 - 14+88

All other alignments were investigated and no subsurface profiles were deemed necessary.

AREAS OF SPECIAL GEOTECHNICAL INTEREST

1) Hard rock
Hard rock is present above or within two meters of proposed grade at the following locations.

Line	Station
-LRev-	31+15 - 32+42
-LRev-	52+52 - 54+25
-SB US 220 Ramp-	16+98 - 17+30
-Ramp B- @ US 158	13+34 - 14+34
-Y20-	14+45 - 15+55

2) Highly Plastic Soils
Highly plastic soils with plastic indices of 35 or greater are present within construction limits at the following locations:

Line	Station
-SB US 220 Ramp-	14+25 - 15+10
-Y20-	27+20 - 28+72
-Ramp B- @ NC 65	11+90 - 14+19

3) Groundwater
Groundwater is present above or within two meters of proposed grade at the following locations.

Line	Station
-LRev-	18+00 - 19+00
-LRev-	32+80 - 35+80

Line	Station
-LRev-	50+00 - 50+80
-Y20-	10+00 - 11+20
-Ramp B- @ US 158	13+00 - 14+40
-Ramp D- @ US 158	13+00 - 14+33
-Y25-	10+00 - 11+00

4) Soft Alluvial Soils

Soft saturated unstable alluvial soils are present within construction limits at the following locations. The ground surface is soft and unstable under heavy equipment and may result in construction problems.

Line	Station
-LRev-	22+80 - 23+90 *
-LRev-	24+70 - 25+30
SB US 220 Ramp	10+18 - 11+30

* Note - This segment includes NB US 220 Ramp 15+27 - 15+78

5) Water Wells

Water wells are present within construction limits and/or proposed right of way at the following locations.

Line	Station	Offset
-LRev1-	15+80	32 m LT
-LRev-	33+36	12 m RT
-LRev-	34+82	15 m LT
-LRev-	35+26	22 m LT
-LRev-	60+76	15 m RT
-LRev-	65+35	11 m RT
-Ramp B- @ NC 65	11+43	6 m LT
-Y10Rev-	10+00	29 m RT
-Y20-	10+76	15 m LT

6) Artificial Fill

Artificial fill soils are present within construction limits at Ramp B at US 158 Station 12+30-13+00. The approximate limits of this material are delineated on the plan and profile sheets.

7) Trash and Debris

Numerous tires are located on the ground surface within proposed right of way along Ramp B at US 158 Station 12+00 to 13+00.

PHYSIOGRAPHY AND GEOLOGY

The topography of the area is gently rolling to hilly, with a maximum relief of 54 meters and a greatest local relief of 53 meters. Drainage along the project is collected into two river basins, the Dan River basin, north of NC 65, which drains to the north-northeast, and the Haw River basin, south of NC 65, which drains to the east-northeast. Drainage along the southern part of the project is relatively poor, causing water to collect in the relatively low and flat Troublesome Creek and Haw River flood plains. Drainage along the northern portion of the project is good. Along the project, drainage is structurally controlled by the northeast strike of the bedrock foliation.

Geologically, the project is underlain by schists and gneisses of the Milton Belt and a granitic intrusion of the Charlotte Belt. Most prominent on the project, is intrusive igneous granitic rock. The bedrock is covered by saprolite and other residuum, and a substantial alluvial deposit in the flood plain of the Haw River.

SOIL PROPERTIES

Residual soils on the project consist predominantly of yellow to brown-gray sandy silt and silt (A-4, A-5), and silty sand (A-2-4). Silty to sandy clay and clay (A-6, A-7), and clayey sand and sand (A-2-6 and A-1-b) are also locally present. Cap or surface clays extend to an average depth of approximately one meter but are absent in some areas. These clays vary in plasticity, with plastic indices from 12 to 41. Subsoils are saprolitic and slightly micaceous. Soil densities for silts and clays range from medium stiff to hard, and for sands, loose to very dense. Natural moisture contents of residual soils vary from 16% to 35%. The majority of soils encountered during construction will have moisture contents slightly greater than the optimum of 20%. Natural moistures of the soils vary with the season, depth of bedrock, and permeability.

Alluvial soils are present along several alignments at the following locations. The approximate lateral alluvial limits are drawn on the plans.

Line	Station
-LRev-	22+75 - 25+30
-LRev-	56+38 - 56+76
-LRev-	76+77 - 77+02
-SB US 220 Ramp-	10+18 - 11+67
-NB US 220 Ramp-	15+27 - 15+78
-Y25-	10+58 - 10+89

The Haw River flood plain is intersected by -LRev-, SB US 220 and NB US 220 Ramps. The flood plain is up to 255 meters wide with alluvial deposits up to 3 to 4 meters in thickness. The alluvial soils consist of interlayered saturated loose sand (A-2-4), soft sandy silt (A-4, A-5) and clay (A-7, A-6). The liquid limits of the cohesive soils range from 37 to 42 indicating these soils are moderately compressible. The ground surface, in

most areas of this flood plain, is soft and unstable under heavy equipment and may result in construction problems. The alluvium overlies very stiff and dense residuum.

Troublesome Creek and other tributaries are intersected by -LRev- and -Y25-. The flood plains are approximately 30 meters wide with alluvial deposits up to 1.5 meters in thickness. The alluvium consists of silty sand (A-2-4) and sandy silt (A-4). These soils are underlain by hard rock (granite).

Alluvium is also present along the tributary of Jacob's Creek north of NC 65. The loose alluvial sand (A-2-4) and soft silt (A-4) is less than 1 meter thick and overlies hard rock (granite).

Roadway embankment soils are present along fill sections of the existing roads and are comprised of material derived from the local residuum. An abandoned road intersects -LRev- Station 22+00, and 26+00, and SB US 220 Ramp Station 10+40 - 12+00. This embankment material consists of soft, non-compacted brown sandy silt (A-4). The soil is "clean", it contains minimal to no debris. Some construction debris (broken asphalt and concrete) and household debris (asphalt shingles, old appliances...) is present at the ground surface along the abandoned road.

Artificial fill is present along Ramp B at US 158, Station 12+30 to 13+00. This soil fill is comprised of medium stiff, red-brown sandy clay (A-7-5, A-6). The soil is very similar to the surrounding residual soils and was likely placed during prior roadway construction activities. This artificial fill material is relatively "clean", it contains minimal to no debris. Numerous tires (household debris) are present at the ground surface within the proposed right of way.

ROCK PROPERTIES

The project traverses two distinct geologic belts. The first two-thirds of the project (-LRev- Station 18+20 - 60+00) is within the Charlotte Belt. This granitic rock of the Charlotte Belt is believed to be associated with the Churchland Pluton. The pluton creates a prominent ridge that is relatively resistant to erosion. The light gray to tan granite is composed of quartz, feldspars and biotite. Rock structure is generally massive and has a medium to coarse grained porphyritic texture.

Soft weathered and hard rock encountered along the project is a tan to gray granite. In the relatively upper-lying areas, the granite is present at depths of 6 to 10 meters. In the relatively low-lying and flood plain areas, the rock is present at shallow depths of 1 to 4 meters. The granite tends to weather to boulders. Numerous boulders, which vary in diameter from 1 to 4 meters, are present at the ground surface and within the residual soils. Hard rock boulders are most prevalent just north of the Haw River (-LRev- Station 29+00 -33+00).

The latter section of the project (-LRev- Station 60+00 - 97+10) is in the Milton Belt. This segment of the project is underlain by metamorphic rock, gneiss and schist. The rocks of the Milton Belt are less resistant to erosion and are overlain by a thicker cover of residuum. For this reason, very little rock was encountered in this segment. This section of the project also contains small local granitic intrusions.

GROUNDWATER

Groundwater was encountered intermittently through out the project. The water table is at shallow depths in all the relatively low-lying and flood plain areas of the project. In the upper-lying cut section at -LRev- Station 53+00, groundwater was encountered at shallow depths just above the hard rock. Very little groundwater was encountered in the latter segment of the project, beyond -LRev- Station 65+00.

GEOTECHNICAL DESCRIPTIVE ANALYSIS

This project will not be divided into segments for detailed descriptive purposes. Specific areas and details have been addressed where conditions necessitate.

Respectfully Submitted,

Robin Russell Held

Robin Russell Held
Project Geologist

STATE PROJECT NO.	SHEET NO.	TOTAL S
6.499002T (R-2413C)	1	82

ID. NO. R-2413C

PROJECT: 6.499002T

CONTENTS:

LINE	STATION	SHEET NO.: PLAN	PROFILE	X-SECT.
-LRev1-	13+50 – 19+09	3–5	29	
-LRev-	18+20 – 97+10	3–23	30–41	62–68
-SBUS220RP-	8+99 – 19+02	5–6	42–43	69–72
-NBUS220RP-	9+95 – 15+78	5	44	
-Y20-	10+00 – 28+75	7–10, 25, 28	45–47	75–78
-Y21-	10+00 – 18+69	27	48–49	
-Y23-	8+83 – 17+67	4–5	50–51	
-RPA- @US158	10+00 – 15+36	11–12	52	
-RPB- @US158	10+00 – 14+51	11	53	73–74
-RPC- @US158	10+00 – 14+40	11	54	
-RPD- @US158	10+00 – 14+33	11–12	55	
-Y24-	10+00 – 13+42	26	60	
-Y25-	10+00 – 14+18	14	61	
-RPA- @NC65	10+00 – 14+77	17–18	56	
-RPB- @NC65	10+00 – 14+25	16–17	57	79–82
-RPC- @NC65	10+00 – 14+13	16–17	58	
-RPD- @NC65	10+00 – 14+88	17	59	

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

SUBSURFACE INVESTIGATION

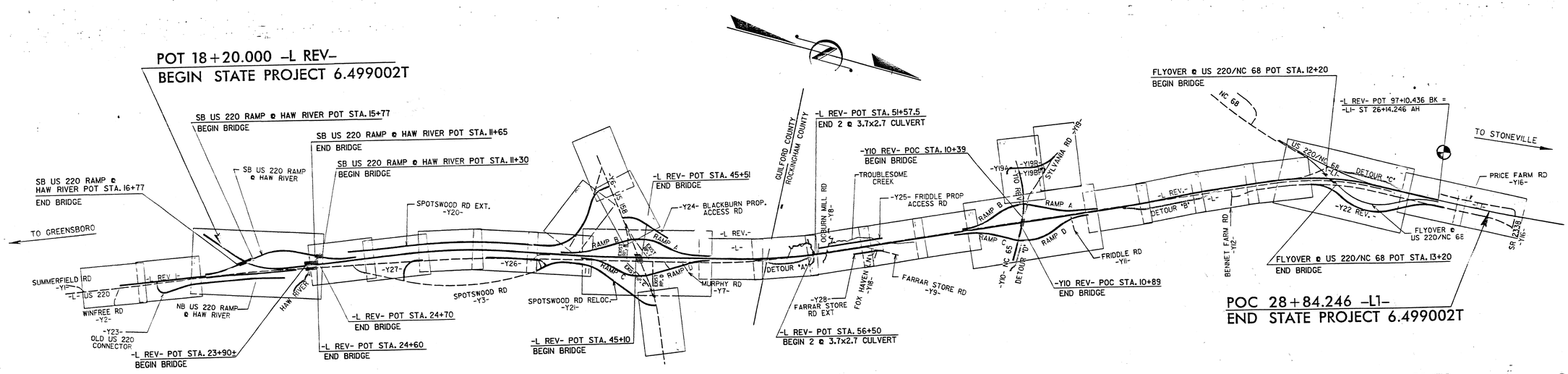
STATE PROJECT 6.499002T ID.No. R-2413C

F.A. PROJECT N/A

COUNTY GUILFORD & ROCKINGHAM

DESCRIPTION NC 68 CONNECTOR - US 220 FROM SOUTH OF HAW RIVER TO THE INTERSECTION OF US 220 AND EXISTING NC 68.

-INVENTORY-



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SEAL

Richard S. Johnson
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STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
6.499002T (R-2418C)	2	82

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION

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 ACCORDING TO STANDARD PENETRATION TEST (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: *VERY STIFF, GRAY SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6.*

SOIL LEGEND AND AASHTO CLASSIFICATION

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

P.I. OF A-7-5 ≤ L.L. - 30 ; P.I. OF A-7-5 > L.L. - 30

CONSISTENCY OR DENSENESS

PRIMARY SOIL TYPE	COMPACTNESS OR CONSISTENCY	RANGE OF STANDARD PENETRATION RESISTENCE N-VALUE	RANGE OF UNCONFINED COMPRESSIVE STRENGTH (kN/m^2)
GENERALLY GRANULAR MATERIAL	VERY LOOSE	<4	N/A
	LOOSE	4 TO 10	
	MEDIUM DENSE	10 TO 30	
	DENSE	30 TO 50	
	VERY DENSE	>50	
GENERALLY SILT-CLAY MATERIAL	VERY SOFT	<2	<25
	SOFT	2 TO 4	25 TO 50
	MEDIUM STIFF	4 TO 8	50 TO 100
	STIFF	8 TO 15	100 TO 200
	VERY STIFF	15 TO 30	200 TO 400
	HARD	>30	>400

TEXTURE OR GRAIN SIZE

U.S. STD. SIEVE SIZE	4	10	40	60	200	270
OPENING (mm)	4.76	2.0	0.42	0.25	0.075	0.053

BOULDER	COBBLE	GRAVEL	COARSE SAND	MEDIUM SAND	FINE SAND	SILT	CLAY

GRAIN SIZE	mm	305	75	2	0.6	0.425	0.2	0.075	0.002
	IN	12	3						

SOIL MOISTURE - CORRELATION OF TERMS

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

PLASTICITY

	PLASTICITY INDEX	DRY STRENGTH
NONPLASTIC	0-5	VERY LOW
LOW PLASTICITY	6-15	SLIGHT
MED. PLASTICITY	16-25	MEDIUM
HIGH PLASTICITY	26 OR MORE	HIGH

COLOR

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

GRADATION

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.

ANGULARITY OF GRAINS

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

MINERALOGICAL COMPOSITION

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

COMPRESSIBILITY

SLIGHTLY COMPRESSIBLE	LIQUID LIMIT LESS THAN 30
MODERATELY COMPRESSIBLE	LIQUID LIMIT 31-50
HIGHLY COMPRESSIBLE	LIQUID LIMIT GREATER THAN 50

ROCK DESCRIPTION

IN THE BROADEST MEANING, HARD ROCK IS CONSIDERED THAT INDURATED EARTH MATERIAL WHICH CANNOT BE SAMPLED BY CONVENTIONAL SOIL SAMPLING TOOLS OR TECHNIQUES. THE BOUNDARY BETWEEN SOIL AND ROCK IS ARBITRARY. TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF 'WEATHERED ROCK'. FOR THE PURPOSE OF THIS INVESTIGATION, THESE MATERIALS ARE DIVIDED AS FOLLOWS: NOTE: THIS IS NOT APPLICABLE TO NON-INDURATED COASTAL PLAIN SAND AND CLAY DEPOSITS.

WEATHERED ROCK (WR)		SOFT WEATHERED ROCK(SWR)	MATERIAL THAT CAN BE PENETRATED WITH SOME DIFFICULTY USING POWER AUGERS OR YIELDS SPT VALUES > 100 BLOWS BUT < SPT REFUSAL.
		HARD WEATHERED ROCK(HWR)	MATERIAL THAT CAN BE PENETRATED WITH GREAT DIFFICULTYY USING POWER AUGERS OR YIELDS SPT REFUSAL.*
HARD ROCK (HR)	CORED ROCK	INFERRED ROCK LINE**	MATERIAL, EXCEPT BOULDERS, THAT CANNOT BE PENETRATED BY POWER AUGERS, EXCEPT IN THIN LEDGES, AND REQUIRES ROCK CORING TOOLS FOR OBTAINING A SAMPLE.

*SPT REFUSAL ≧ 25 mm OF PENETRATION PER 50 BLOWS.

**AN INFERRED ROCK LINE INDICATES THE ESTIMATED BOUNDARY OF HARD ROCK AS JUDGED BY THE ENGINEERING GEOLOGIST. A FULL DESCRIPTION OF ROCK IS GIVEN INCLUDING:

CORE RECOVERY (REC.)-TOTAL LENGTH OF ROCK RECOVERED IN THE CORE BARREL DIVIDED

ROCK QUALITY DESIGNATION (RQD)-TOTAL LENGTH OF SOUND ROCK SEGMENTS RECOVERED THAT ARE LONGER THAN OR EQUAL TO 100 mm DIVIDED BY THE TOTAL LENGTH OF THE CORE RUN EXPRESSED AS A PERCENTAGE.

GROUNDWATER

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

MISCELLANEOUS SYMBOLS AND ABBREVIATIONS

- ROADWAY EMBANKMENT WITH SOIL DESCRIPTION
- SOIL SYMBOL
- ARTIFICIAL FILL OTHER THAN ROADWAY EMBANKMENTS MAY BE SHOWN WITH SOIL SYMBOL
- INFERRED SOIL BOUNDARIES
- ALLUVIAL/RESIDUAL BOUNDARIES
- 25° DIP DIRECTION AND DIP OF STRUCTURE
- APPARENT DIP (NORMAL TO_____)
- SPT / DPT / VST TEST BORING
- AUGER BORING
- CORE BORING
- MW MONITORING WELL
- PIEZOMETER INSTALLATION
- SLOPE INDICATOR INSTALLATION
- SPT N-COUNT

SAMPLE DESIGNATIONS
S- BULK SAMPLE
SS- SPLIT SPOON SAMPLE
ST- SHELBY TUBE SAMPLE
● SOUNDING ROD

EQUIPMENT USED ON SUBJECT PROJECT

DRILL UNITS:
- ☐ MOBILE B
- ☐ BK-51
- ☒ CME-45
- ☒ CME-550
- ☐ PORTABLE HOIST
- ☐ OTHER _____
- ☐ OTHER _____

AUGER TOOLS:
- ☒ 6" (152 mm) CONTINUOUS FLIGHT
- ☒ 8" (203 mm) HOLLOW AUGERS
- ☐ HARD FACED FINGER BITS
- ☒ TUNG. - CARBIDE INSERTS
- ☐ CLAY BITS

OTHER:

CORE BORING TOOLS:
- ☐ -AX ☐ -BX ☐ -NX

HAND TOOLS:
- ☐ POST HOLE DIGGER
- ☒ HAND AUGER
- ☐ SOUNDING ROD
- ☐ VANE SHEAR TEST

TERMS AND DEFINITIONS

ALLUVIUM (ALLUV.) - SOILS WHICH HAVE BEEN TRANSPORTED BY WATER.
APPARENT DIP - THE DIP OF ROCK STRATA NOT PERPENDICULAR TO STRIKE.
AQUIFER - A WATER BEARING FORMATION OR STRATA.
AUGER REFUSAL (A.R.) - POINT AT WHICH POWER AUGERS WILL NOT PENETRATE.
BEDDED - SOIL OR ROCK LYING IN A POSITION ESSENTIALLY PARALLEL.
BEDROCK - ROCK OF RELATIVELY GREAT THICKNESS AND EXTENT IN ITS ORIGINAL LOCATION.
CALCAREOUS (CALC.) - SOILS WHICH CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE.
COHESIVE SOIL - A SOIL THAT WHEN UNCONFINED HAS CONSIDERABLE DRY STRENGTH AND SIGNIFICANT COHESION WHEN SUBMERGED.
COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE.
CORE RECOVERY (% REC.) - TOTAL LENGTH OF ALL ROCK DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.
COQUINA - A ROCK TYPE COMPOSED ESSENTIALLY OF MARINE SHELLS CEMENTED BY CALCIUM CARBONATE.
DIKE - IGNEOUS ROCK INTRUSION WHICH IS NARROW COMPARED WITH ITS OTHER DIMENSIONS.
DIP - THE ANGLE BETWEEN A BEDDING PLANE, JOINT PLANE OR FAULT PLANE AND THE HORIZONTAL. MEASURED PERPENDICULAR TO THE STRIKE.
DUMPS - UNCOVERED DEPOSITS OF WASTE MATERIAL SUCH AS WOOD, MASONRY DEBRIS OR GARBAGE.
FAULT - A BREAK IN THE CONTINUITY OF A BODY OF ROCK, ATTENDED BY A MOVEMENT ON EITHER OR BOTH SIDES OF THE BREAK.
FINES - PORTIONS OF A SOIL FINER THAN NO. 200 U.S. STANDARD SIEVE.
FISSILITY OR FISSILE - A PROPERTY OF SPLITTING EASILY ALONG CLOSELY SPACED PARALLEL PLANES.
FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM PARENT MATERIAL.
FLOODPLAIN - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM.
FORMATION - A MAPPABLE UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD.
FRACTURE - A CRACK LARGE ENOUGH TO BE VISIBLE TO THE UNAIDED EYE.
FRIABLE - EASY TO BREAK OR CRUMBLE.
GRANULAR MATERIAL - SOIL THAT WHEN UNCONFINED HAS LITTLE OR NO DRY STRENGTH AND HAS LITTLE OR NO COHESION WHEN SUBMERGED.
GROUNDWATER (G.W.) - WATER THAT IS FREE TO MOVE THROUGH SOIL MASS UNDER THE INFLUENCE OF GRAVITY.
GROUNDWATER LEVEL - LEVEL OF WATER WITH RESPECT TO EXISTING GROUND SURFACE.
HARDPAN - A GENERAL TERM USED TO DESCRIBE A HARD CEMENTED SOIL LAYER WHICH DOES NOT SOFTEN WHEN WET.
INDURATED - EARTH MATERIAL HARDENED BY HEAT, PRESSURE OR CEMENTATION.
INTERBEDDED - ALTERNATING LENSES OR LAYERS OF SOIL AND/OR ROCK MATERIALS.
JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED.
LAMINATED - VERY THIN ALTERNATING LAYERS LESS THAN 25 mm.
LAYER - SUBJECT MATERIAL GREATER THAN 25 mm IN THICKNESS.
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.
MARL - A NON-INDURATED, CALCAREOUS DEPOSIT OF CLAYS, SILTS AND SANDS, OFTEN CONTAINING SHELLS.
MICACEOUS SOIL (MIC.) - A SOIL OR ROCK TYPE CONTAINING AN APPRECIABLE AMOUNT OF MICA.
MUCK (MK.) - A HIGHLY ORGANIC SOIL OF VERY SOFT CONSISTENCY, GENERALLY FOUND ON TIDAL FLATS, LAKE OR STREAM FLOODPLAINS.
PEAT (PT) - A FIBROUS MASS OF ORGANIC MATTER IN VARIOUS STAGES OF DECOMPOSITION.
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 - SEE LEGEND
ROCK QUALITY DESIGNATION (R.Q.D.) - A MEASURE OF ROCK QUALITY DESCRIBED BY: TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 100 mm DIVIDED BY THE TOTAL LENGTH OF CORE RUN EXPRESSED AS A PERCENTAGE.
SANITARY LANDFILLS - COMPACTED AND/OR COVERED LAYERS OF SOIL AND WASTE PRODUCTS.
SAPROLITE (SAP.) - RESIDUAL SOIL WHICH RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK.
SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLAIN.
SILL - AN IGNEOUS SHEET OF INTRUSIVE ROCK WHOSE THICKNESS IS SLIGHT COMPARED TO ITS LATERAL EXTENT.
SOME - PRESENCE OF 5% TO 30% OF SUBJECT MATERIAL.
STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N) OF A 140 POUND (63.5 kg) HAMMER FALLING 0.76 m REQUIRED TO PRODUCE A PENETRATION OF 300 mm INTO SOIL WITH A 51mm OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL- PENETRATION RESISTANCE OF LESS THAN 25 mm WITH 50 BLOWS.
STRIKE - THE DIRECTION OR BEARING OF A HORIZONTAL LINE IN THE PLANE OF AN INCLINED STRATUM, JOINT, FAULT OR OTHER STRUCTURAL PLANE.
SUBGRADE - THE SOIL PREPARED TO SUPPORT A STRUCTURE OR A PAVEMENT SYSTEM.
TOPSOIL (T.S.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.
TRACE - PRESENCE OF LESS THAN 5% OF SUBJECT MATERIAL.

ABBREVIATIONS

BLDR. - BOULDER
CL. - CLAY
COB. - COBBLE
CSE. - COARSE
EST. - ESTIMATED
F. - FINE
FOSS. - FOSSILIFEROUS
FRAC. - FRACTURED
GR. - GRAVEL
L.L. - LIQUID LIMIT
MED. - MEDIUM
W - MOISTURE CONTENT
MOT. - MOTTLED
OM - OPTIMUM MOISTURE
ORG. - ORGANIC
P.L. - PLASTIC LIMIT
P.I. - PLASTICITY INDEX
n - POROSITY
SD. - SAND
SAT. - SATURATED
SL. - SILT, SILTY
SLI. - SLIGHTLY
G_s - SPECIFIC GRAVITY
qu - UNCONFINED COMPRESSIVE STRENGTH
γ - UNIT WEIGHT (WET UNIT WEIGHT)
γ_d - DRY UNIT WEIGHT
$\gamma_{SAT.}$ - SATURATED UNIT WEIGHT
e - VOID RATIO
V. - VERY

CAUTION NOTICE :

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WAS MADE FOR THE PURPOSE OF STUDY, PLANNING AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. SOME DATA OBTAINED MAY BE OMITTED FROM THIS RELEASE.

ADDITIONAL INFORMATION MAY BE AVAILABLE, INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:

FIELD BORING LOGS
ROCK CORES
SOIL & ROCK TEST DATA
SUBSURFACE REPORT

THIS INFORMATION MAY BE VIEWED BY APPOINTMENT 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 RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE OR OPTIONS 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.

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IT IS 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.

NOTES:

REVISED 1-31-95 (METRIC)

DATUM DESCRIPTION

The Localized Coordinates used on this project are based on the State Plane Coordinates of traverse station "U2413-1" established by NCGS.

The NAD 83 State Plane Coordinates of "U2413-1" are:

Northing: 273,885.6884 (m) Easting: 527,985.5894 (m)

The Combined Grid Factor used on this project (ground to grid) is: 0.9999891

The bearing and ground distance from -L- POT Station 10+00.000 to U2413-1 is:

N 15-25-20 W 34.015 m

The bearing and ground distance from -L1- POT Station 34+00.000 to U2413-1 is:

S 17-25-54 E 9,545.583 m

All distances shown are in horizontal ground meters.

METRIC	PROJECT REFERENCE NO.	SHEET NO.
5 0 10	R-2413C	3
CONST. REV.	HIGHWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
R/W REV.		

FILE: c:\projects\guilford\plans\revi-1.dgn
DATE: 30-Jul-96 13:12

TAFT C. HOLBROOK
DB 1535 PG 114
7.422 Ha
DEED

EVERETT C. BARHAM
DB 1841 PG 680
6.959 Ha
DMD

JACK SHEPHERD
DB 3421 PG 1939
6.975 Ha
DMD

ANTOINNE, ELIE & TOUFIC SIMAAN
DB 3495 PG 1137
8.352 Ha
DMD

ALLAN G. MARSHALL
DB 3982 PG 1499
5824 SM
DMD

ANNABELLE GRAVLEY
DB 3397 PG 38
8210 SM
PLAT

RANDY GRAVLEY
PB 38 PG 98
4197 SM
PLAT

SUMMERFIELD BAPTIST CHURCH
DB 2732 PG 119
1.492 Ha
DMD
GR

DENNIS BORING
DB 3870 PG 327
41.269 Ha
DEED

-L- POT 13+46.037
-Y2- POT 10+00.000

-L REV. 1- POT 13+50.000 *
-L- POT 13+50.000
16.2m LT
BEGIN CONSTRUCTION

-L REV. 1- PI 14+01.372
N 20° 41' 22.9" W

-L- PC 13+51.547

-L- PT 14+51.194

-Y2- PC 10+72.267

-Y2- PT 11+14.226

BM. #2

MATCH LINE STA. 15+00 -L- REV. 1 SHEET 4

-Y2- CURVE DATA
PI STA. 10+93.882
Δ = 33°41'28.08" LT
L = 41.976
T = 21.615
R = 71.386

~~-L-~~
~~PI STA 14+01.372~~
~~Δ = 00°59'00.22" LT~~
~~L = 99.647~~
~~T = 49.825~~
~~R = 5805.750~~

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	4
HIGHWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC 5 0 10

CONST.REV.

R/W REV.

FILE: c:\projects\guilford\plans\revi-2.dgn
DATE: 23-Jan-97 11:51

-L-
PI STA 21+97.042
Δ = 03°23'43.87" RT
L = 313.753
T = 156.922
R = 5294.250

-Y23- OLD US 220 CONNECTOR
PI Sta 9+71.904 Δ = 102°13'02" (LT) L = 80.281 T = 55.786 R = 45.000
PI Sta 11+58.746 Δ = 12°34'48" (RT) L = 128.444 T = 64.481 R = 585.000

16+00 17+00 18+00

ANTOINNE, ELIE & TOUFIC SIMAAN
DB 3495 PG 1137
8.352 Ha
DMD

ROBERT D. BATTIN
DB 3632 PG 1110
4.783 Ha
PLAT

ROBERT D. BATTIN
DB 3554 PG 209
1.639 Ha
PLAT

JWL INVESTMENTS, INC.
DB 3813 PG 975
3432 SM
DMD

DENNIS BORING
DB 3870 PG 327
41.269 Ha
DEED

EMI, INC.
DB 3160 PG 656
3.977 Ha
DEED

-Y23- POT 8+83.165 •
-L REVI- POT 15+94.000

-Y23- PC 9+16.118

-Y23- PT 9+96.399

-L REV 1- 17+00
BEGIN 40 TAPER

-L REV 1- 17+30
END 40 TAPER

-L REV 1- 17+15
BEGIN 50 TAPER

-L REV 1- 17+65
END 50 TAPER

BERM DRAINAGE OUTLET

105-375mm RCP

6-400mm CMP W/ ELBOW

34-600mm RCP

60-375mm RCP

21-375mm RCP

26-450mm RCP

2.7 TONS CLASS 'B' RIPRAP 8.4 S.M. OF F.F.

2 TONS CLASS 'B' RIPRAP 5.0 S.M. OF F.F.

4.5 TONS CLASS 'B' RIPRAP 11.7 S.M. OF F.F.

N 32°54'24.6" W

N 20°41'29" W

N 21°40'23" W 242.069

N 21°40'23" W 127.382

N 21°40'23" W 117.471

N 21°40'23" W 59.384

N 12°00'57" W 202.939

PC 10+94.265

BM. #3

MATCH LINE STA. 15+00 -L-REV. 1 SHEET 3

MATCH LINE STA. 18+50 -L-REV. 1 SHEET 5

FOR -L-REV. 1 PROFILE SEE SHEET

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

METRIC	PROJ. REFERENCE NO.	SHEET NO.
5 0 10	R-2413C	5
CONST.REV.	HIGHWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
R/W REV.		

TCE incorporated together and planned with Pittsburgh
Date: 9-Aug-96 GM

-L-
PI STA 21+91.042
Δ = 03°23'43.87" RT
D = 3°30'53"
L = 335.553
T = 167.832
R = 1629.650

-L REV.
PIs STA 19+60.830 PI STA 21+01.450 PIs STA 22+37.759
θs = 8° 48' 53.2" Δ = 23° 07' 13.9" (LT) θs = 8° 48' 53.2"
Ls = 140.000 L = 853.626 Ls = 140.000
SΤ = 46.772 T = 93.069 ST = 46.772
LT = 93.449 R = 410.000 LT = 93.449
SE = .10

NB US 220 RAMP
PI STA 0+41.96 PI STA 14+33.32
Δ = 2° 15' 39" (RT) Δ = 2° 56' 04.2" (LT)
L = 197.298 L = 258.968
T = 98.662 T = 129.523
R = 5,000.000 R = 5,000.000
SE = .14 SE = .14

-Y23- OLD US 220 CONNECTOR
PI STA 10+72.14 PI STA 13+74.69
Δ = 12° 34' 41.2" (RT) Δ = 5° 09' 56.2" (RT)
L = 439.443 L = 157.175
T = 64.481 T = 78.641
R = 585.000 R = 1,750.000
SE = .05 SE = .02

SB US 220 RAMP
PI STA 9+02.4 PI ST 10 0.203 PIs STA 10+59.594
θs = 5° 29' 46.1" Δ = 6° 18' 16.3" (RT) θs = 3° 29' 42.2"
Ls = 6.000 L = 7.126 Ls = 6.000
SΤ = 20.34 T = 10.21 ST = 20.34
LT = 40.675 R = 500.0 LT = 40.675
SE = .04

PIs STA 13+58.4 PI STA M 5.596 PIs STA M 19+85.838
θs = 4° 59' 34.5" Δ = 21° 05' 58.5" (LT) θs = 4° 59' 34.5"
Ls = 6.000 L = 184.23 Ls = 6.000
SΤ = 20.348 T = 93.15 ST = 20.348
LT = 40.683 R = 500.0 LT = 40.683
SE = .07

PIs STA 17+85.176 PI STA M 3.675 PIs STA M 24+03.012
θs = 4° 59' 34.7" Δ = 5° 54' 32" (RT) θs = 4° 59' 34.5"
Ls = 6.000 L = 30.3 Ls = 6.000
SΤ = 20.348 T = 18.08 ST = 20.348
LT = 40.683 R = 150.0 LT = 40.683
SE = .01

-L REV.: POT 18+20.000
BEGIN STATE PROJECT R-2413C
BEGIN CONSTRUCTION

N 19° 21' 32.2" E

-L REV.: TS 18+67.281

SUNNER PLACE
A PARTNERSHIP
DB 1853, PG 703
63.000 AC
DEED

ROBERT D. BATTIN
DB 3534, PG 208
LOT 10
SEC. 10
PLAT

SB US 220 RAMP CS 19+00.000

SB US 220 RAMP

-L REV.: POS 20+06.118 +
SB US 220 RAMP POT 16+25.813

-L REV.: SC 20+07.381

S 35° 35' 25.7" E

SB US 220 RAMP TS 17+47.381

SB US 220 RAMP CS 18+47.24

SB US 220 RAMP CS 18+05.503

SB US 220 RAMP ST 19+02.724

-L REV.: POT 19+09.803

15 M BUS

N 20° 41' 22.9" W

NB US 220 RAMP POT 9+95.486

-L REV. 1 POT 19+09.803
10.600m RT

NB US 220 RAMP PC 10+41.824

N 20° 36' 36.8" W

-Y23- PT 13+36.107

-Y23- PC 12+07.660

DB 3510, PG 656
3.977 HA
DEED

JERRY W. FRIDDLE
DB 415, PG 603
&
DB 605, PG
DMD

-Y23- PT 14+05.550

-L REV.: CS 21+30.987

SB US 220 RAMP CS 21+00.000

SB US 220 RAMP PC 12+39.122

NB US 220 RAMP PC 13+04.008

N 15° 26' 43.8" W

-L- PI 23+53.674

-Y23- PT 16+53.705

MICHAEL J. ANDREWS
DB 2137, PG 800
8.806 HA
DEED

-Y23- POT 17+67.177
END CONSTRUCTION

N 15° 09' 40.8"

RESIDUUM

ALLUVIUM

-L REV.: ST 23+30.987

N 21° 23' 47.8" W

NB US 220 RAMP PT 15+62.597

NB US 220 RAMP POT 15+78.214
-L REV.: ST 23+30.987
17.800m RT

BEGIN BRIDGE
STA 23+90.1

HAW RIVER

PAUL SEWARD
DB 3324, PG 1446
61.351 HA
DEED

SB US 220 RAMP SC 13+40.032

SB US 220 RAMP TS 12+79.932

S 5° 26' E

-L REV.: SHEET 6

MATCH LINE STA. 24+50

MATCH LINE STA. 18+50 -L REV.: SHEET 4

BM. #4

BM. #5

EXIST. R/W

CONC

FOR SB US 220 RAMP PROFILE SEE SHEETS

FOR -Y23- OLD US 220 CONN PROFILE SEE SHEETS

FOR NB US 220 RAMP PROFILE SEE SHEET

FOR -L- REV. PROFILE SEE SHEET

FOR -L- REV. 1 PROFILE SEE SHEET

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

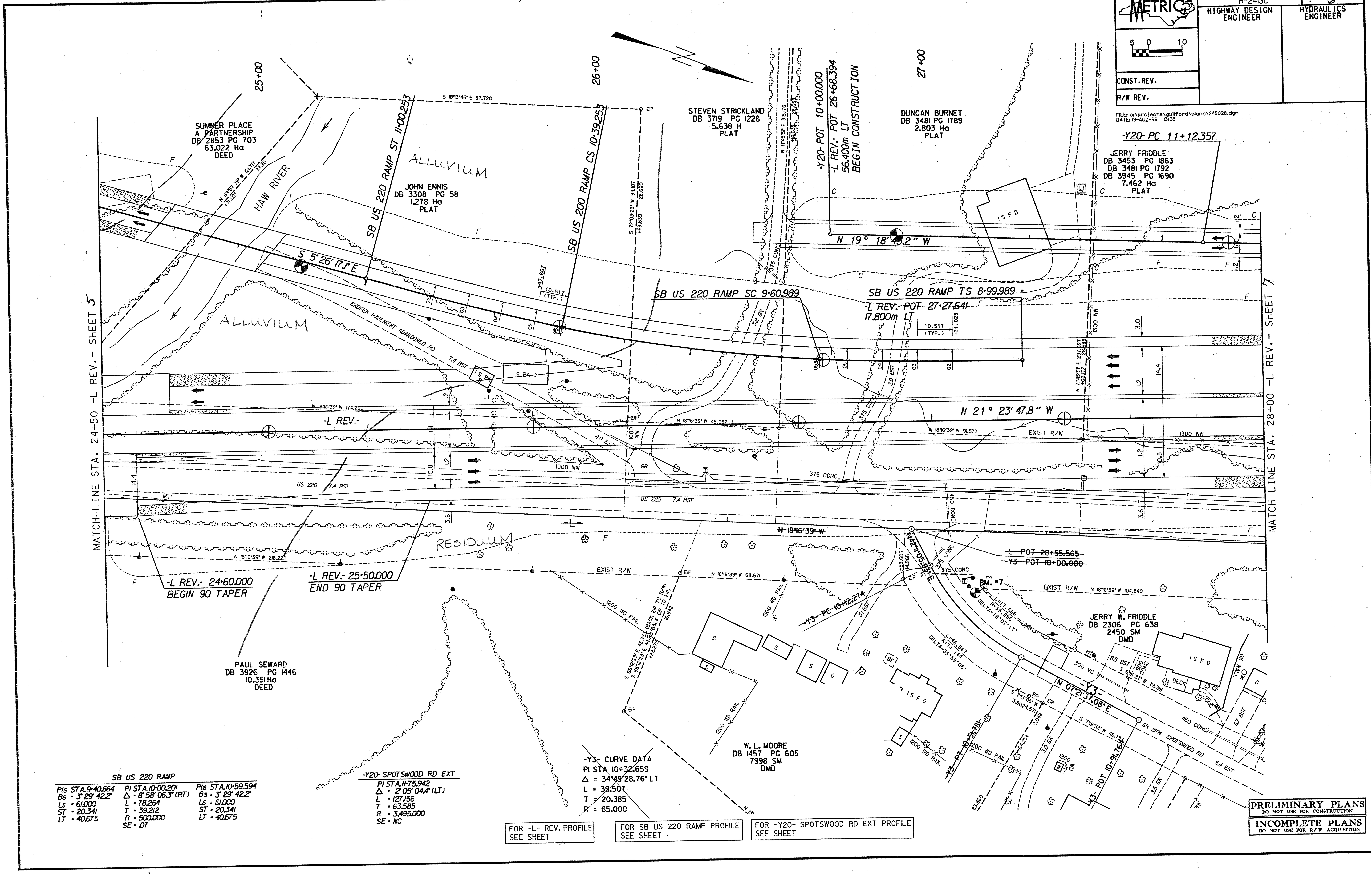
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

LOCATION:

TIP NO.: COUNTY:

DESIGNED BY: DATE:

CHECKED BY: DATE:



PROJECT REFERENCE NO.
R-2413C
SHEET NO.
6
METRIC
HIGHWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
5 0 10
CONST. REV.
R/W REV.
FILE: c:\projects\guilford\plans\245028.dgn
DATE: 19-Aug-96 13:03
MATCH LINE STA. 24+50 -L REV.- SHEET 5
MATCH LINE STA. 28+00 -L REV.- SHEET 7
25+00
26+00
27+00
SUMNER PLACE
A PARTNERSHIP
DB 2853 PG 703
63.022 Ha
DEED
HAW RIVER
JOHN ENNIS
DB 3308 PG 58
1.278 Ha
PLAT
ALLUVIUM
ALLUVIUM
RESIDUUM
SB US 220 RAMP ST 11+00.253
SB US 200 RAMP CS 10+39.253
S 18°13'45" E 97.720
S 72°03'29" W 94.107
STEVEN STRICKLAND
DB 3719 PG 1228
5.638 H
PLAT
N 71°45'51" E 315.176
-Y20- POT 10+00.000
-L REV.- POT 26+68.394
56.400m LT
BEGIN CONSTRUCTION
DUNCAN BURNET
DB 3481 PG 1789
2.803 Ha
PLAT
-Y20- PC 11+12.357
JERRY FRIDDLE
DB 3453 PG 1863
DB 3481 PG 1792
DB 3945 PG 1690
7.462 Ha
PLAT
ISFD
N 19° 18' 45.2" W
S 5° 26' 17.5" E
BROKEN PAVEMENT ABANDONED RD
7.4 BST
SB US 220 RAMP SC 9+60.989
SB US 220 RAMP TS 8+99.989
-L REV.- POT 27+27.641
17.800m LT
10.517 (TYP.)
375 CONC
3.2 GR
3.0 BST
1300 WW
N 71°45'51" E 297.597
N 21° 23' 47.8" W
N 18°16'39" W 174.290
-L REV.-
N 18°16'39" W 45.652
N 18°16'39" W 91.533
EXIST R/W
1000 WW
4.0 BST
GR
US 220 7.4 BST
MTL
-L-
N 18°16'39" W
N 18°16'39" W 218.222
-L REV.- 24+60.000
BEGIN 90 TAPER
-L REV.- 25+50.000
END 90 TAPER
PAUL SEWARD
DB 3926 PG 1446
10.351 Ha
DEED
EXIST R/W
N 18°16'39" W 68.671
1200 WD RAIL
1500 WD RAIL
S 88°12'23" E 43.753 (BACK EIP TO R/W)
S 88°12'23" E 44.921 (BACK EIP TO EIP)
-Y3- PC 10+12.274
3.1 BST
-L- POT 28+55.565
-Y3- POT 10+00.000
450 CONC
N 42°11'05.83" E
BM. #7
L=17.666 R=55.856 DELTA=18°07'17"
L=46.567 R=74.144 DELTA=35°59'08"
EXIST R/W
N 18°16'39" W 104.840
JERRY W. FRIDDLE
DB 2306 PG 638
2450 SM
DMD
ISFD
DECK
BK WALL
300 VC
8.5 BST
900 CONC
S 6°16'27" W 79.318
N 07°21'37.08" E
-Y3-
S 7°13'05" W 3.802
S 7°19'32" W 48.733
SR 2104 SPOTSWOOD RD
5.4 BST
6.7 BST
3.5 GR
3.0 GR
-Y3- PT 10+51.781
-Y3- POT 10+91.764
W. L. MOORE
DB 1457 PG 605
7998 SM
DMD
SB US 220 RAMP
PIs STA 9+40.664
θs = 3° 29' 42.2"
Ls = 61.000
ST = 20.341
LT = 40.675
PI STA 10+00.201
Δ = 8° 58' 06.3" (RT)
L = 78.264
T = 39.212
R = 500.000
SE = .07
PIs STA 10+59.594
θs = 3° 29' 42.2"
Ls = 61.000
ST = 20.341
LT = 40.675
-Y20- SPOTSWOOD RD EXT
PI STA 11+75.942
Δ = 2° 05' 04.4" (LT)
L = 127.156
T = 63.585
R = 3,495.000
SE = NC
-Y3- CURVE DATA
PI STA 10+32.659
Δ = 34°49'28.76" LT
L = 39.507
T = 20.385
R = 65.000
FOR -L- REV. PROFILE SEE SHEET
FOR SB US 220 RAMP PROFILE SEE SHEET
FOR -Y20- SPOTSWOOD RD EXT PROFILE SEE SHEET
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	7
HIGHWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CONST. REV.

R/W REV.

FILE: c:\projects\guilford\plans\283150.dgn
DATE: 7-Aug-96 07:55

MATCH LINE STA. 28+00 -L REV.- SHEET 6

MATCH LINE STA. 31+50 -L REV.- SHEET 8

12+00 | 13+00 | 29+00 | 30+00 | 31+00

-Y20- PT 12+39.513

-Y20- PC 13+91.403

N 21° 23' 47.8" W -Y20-

JERRY FRIDDLE
DB 3453 PG 1863
DB 3481 PG 1792
DB 3945 PG 1690
7.462 Ha
PLAT

DAVID F. WYRICK SR.
DB 3409 PG 347
DB 3638 PG 924
4.178 Ha
PLAT

-L REV.- 29+98.000
END 90 TAPER

-L REV.- 29+08.000
BEGIN 90 TAPER

-L REV.- SC 30+87.521

-L REV.
N 21° 23' 47.8" W

-L REV.- TS 30+26.521

-Y27- POT 10+00.000

-Y27- PC 10+39.546

S 18° 16' 39.1" E

N 18°16'39" W

-Y27- PT 11+76.047

-Y27- POT 12+07.056

N 74°49'24.9"E

MATCH LINE LEFT

MATCH LINE RIGHT

ED. F VALENTINE
DB 2096 PG 510
2610 SM
DMD

J. ROY MOORE
DB 171 PG 554
4685 SM
DMD

GLEN S. HUDSON

ELROY KINGTON
DB 3048 PG 350
5235 SM
DMD

ELROY KINGTON
DB 1842 PG 129
5133 SM
DMD

EXIST. R/W

1300 WW

1200 WD RAIL

1600 WD RAIL

1200 CHL

900 CONC

450 CONC

375 CMP

375 VC

300 CONC

I S BK D

I S BK D & F D

BM. #8 N 18°16'39" W 137.693

S 18°16'39" E 274.587

S 0°24'19" W 146.710

S 6°16'28" W 44.615

N 74°49'24" E 31.409

N 74°49'23" E 25.407

N 74°49'25" E 36.078

-Y27-
PI STA 11+24.802
Δ = 86° 53' 56.0" (LT)
L = 136.501
T = 85.256
R = 90.000
SE =

-Y20- SPOTSWOOD RD EXT
PI Sta 11+75.942
Δ = 2° 05' 04.4" (LT)
L = 127.156
T = 63.585
R = 3,495.000
SE = NC

PI Sta 17+21.54
Δ = 10° 46' 47.1" (RT)
L = 657.557
T = 329.752
R = 3,495.000
SE = NC

FOR -L-REV. PROFILE SEE SHEETS

FOR -Y20- SPOTSWOOD RD EXT PROFILE SEE SHEET

SR 2104 SPOTSWOOD RD

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

METRIC	PROJECT REFERENCE NO.	SHEET NO.
5 0 10	R-2413C	
CONST. REV.	HIGHWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
R/W REV.		

FILE: c:\projects\guilford\plans\315035.dgn
DATE: 30-JUL-96 20:00

MATCH LINE STA. 31+50 -L REV.- SHEET 7

MATCH LINE STA. 35+00 -L REV.- SHEET 9

-L REV.-
PI Sta 30+67.188
Bs = 0° 30' 00.0"
Ls = 61.000
ST = 20.333
LT = 40.667

PI Sta 33+86.528
Δ = 9° 46' 47.3" (RT)
L = 596.561
T = 299.007
R = 3,495.000
SE = RC

-Y20 SPOTSWOOD ROAD EXT
PI Sta 17+21.54
Δ = 10° 46' 47.1" (RT)
L = 657.557
T = 329.752
R = 3,495.000
SE = NC

-L-
PI STA 36+22.986
Δ = 04°52'17.70" RT
L = 564.929
T = 282.635
R = 6644.250

DAVID F. WYRICK SR.
DB 3409 PG 347
DB 3638 PG 924
4.178 Ha
PLAT

RALEIGH W. ELLISON JR.
DB 3429 PG 67
1.862 Ha
PLAT

ANDREW L. MURRAY
DB 3912 PG 70
1.907 Ha
PLAT

RALEIGH W. ELLISON
DB 1590 PG 683
21.034 Ha
DEED

PHILLIP M. BARROW
DB 2796 PG 953
2527 SM
DMD

ELROY KINGTON
DB 1842 PG 129
5133 SM
DMD

HAROLD L. VERNON
DB 2394 PG 703
2569 SM
DMD

JERRY W. FRIDDLE
DB 3383 PG 345
9700 SM
PLAT

PATRICIA F. OWENS
DB 3471 PG 1979
2836 SM
DMD

DENISE F. WALKER
DB 4014 PG 42
4094 SM
DMD

BEARL D. VICK
DB 3769 PG 818
5578 SM
DMD

HAROLD L. GOOCH
JAMES R. STOUT
MATTHEW J. OCEHSLI
DB 3675 PG 2002
4763 SM
DMD

PROPANE TANK

RUINS

POOL

BM. #9

US 220 73.BST

EXIST. R/W

FOR -L-REV. PROFILE
SEE SHEET

FOR -Y20- SPOTSWOOD RD EXT PROFILE
SEE SHEETS

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	
HIGHWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

5 0 10

CONST. REV.

R/W REV.

FILE: c:\projects\guilford\plans\353850.dgn
DATE: 14-Aug-96 11:57

-L REV.-

PI Sta 30+67.188	PI Sta 33+86.528	PI Sta 37+04.415
Bs = 0° 30' 00.0"	Δ = 9° 46' 47.3" (RT)	Bs = 0° 30' 00.0"
Ls = 61.000	L = 596.561	Ls = 61.000
ST = 20.333	T = 299.007	ST = 20.333
LT = 40.667	R = 3,495.000	LT = 40.667
	SE = RC	

-Y-20 SPOTSWOOD ROAD EXT
PI Sta 17+21.54
Δ = 10° 46' 47.1" (RT)
L = 657.557
T = 329.752
R = 3,495.000
SE = NC

-Y26-
PI STA 11+38.536
Δ = 4° 32' 23.4" (RT)
L = 276.927
T = 138.536
R = 3,495.000
SE = NC

-L-
PI STA 36+22.986
Δ = 04°52'17.70" RT
L = 564.829
T = 282.635
R = 6644.250

RALEIGH W. ELLISON
DB 1590 PG 683
21.034 Ha
DEED

WALTER COMBS
DB 1730 PG 626
DB 1347 PG 402
DB 1401 PG 19
38.257 Ha
DEED

-Y20- PT 20+48.959

-Y20- TS 21+41.098

N 87°26'21" W 294.039

N, 10° 37' 00.5" W

-L REV.- ST 37+45.082

-L REV.- CS 36+84.082

-L REV.

N 10° 37' 00.5" W

N 13°24'22" W 20.415

N 13°24'22" W 106.838

DELTA=3°06'29"
R=6672.960
L=361.975

DELTA=1°17'57"
R=6627.240
L=150.268

DELTA=0°32'00"
R=6627.240
L=61.700

-Y26- PC 10+00.000

-Y26- PT 12+76.927

-L PT 39+05.281

N 13°24'21" W 15.456

N 13°24'21" W 90.461

N 16°30'22" W 50.961

N 43°20'05" W 41.684

S 88°40'28" W 41.621 (BACK EIP TO EIP)
S 88°40'28" W 41.358 (BACK EIP TO R/W)
41.235

S 69°57'02" W 23.035

S 85°20'[illegible]

BM. #10

3 GAS PUMPS
CONC
3 GAS PUMPS U/MTL CANOPY
CONC

HAROLD L. GOOCH
JAMES R. STOUT
MATTHEW J. OCEHSLI
DB 3675 PG 2002
4763 SM
DMD

WILLIAM BUFFKIN
JAMES R. STOUT
DB 3667 PG 568
1.175 Ha
DMD

BOBBY R. JAMES
DB 2543 PG 940
1542 SM
1 S BLK BUS
DMD

JASPER O. LESTER
DB 1537 PG 674
6640 SM
DEED

LINDELL R. STRICKLAND
DB 2338 PG 425
3264 SM
DMD

CHARLIE BULLARD
DB 3837 PG 1556
3428 SM
DMD

1 S BK D
2 S BK D
2 S F D
PROPANE TANK
DECK

MATCH LINE STA. 35+00 -L REV.- SHEET 8

MATCH LINE STA. 38+50 -L REV.- SHEET 10

FOR -L-REV. PROFILE SEE SHEETS

FOR -Y20- SPOTSWOOD RD EXT PROFILE SEE SHEET

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	10
HIGHWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST. REV.	
R/W REV.	

5 0 10

FILE: c:\projects\guilford\plans\385042.dgn
DATE: 14-Aug-96 15:01

-Y-20 SPOTSWOOD ROAD EXT

Pls Sta 22+87.979	Pi Sta 24+12.321	Pls Sta 25+23.713
θs = 7° 13' 27.3"	Δ = 49° 05' 33.0" (LT)	θs = 7° 13' 27.3"
Ls = 58.000	L = 197.070	Ls = 58.000
ST = 19.363	T = 105.041	ST = 19.363
LT = 38.699	R = 230.000	LT = 38.699
	SE = .08	
	CW = 1.1m	

RAMP B

Pls Sta 10+30.669	Pi Sta 11+24.237	Pls Sta 12+16.886
θs = 2° 15' 09.6"	Δ = 15° 14' 05.4" (LT)	θs = 2° 15' 09.6"
Ls = 46.000	L = 155.550	Ls = 46.000
ST = 15.336	T = 78.237	ST = 15.336
LT = 30.669	R = 585.000	LT = 30.669
	SE = .05	

-Y21- SPOTSWOOD RD. REL.

Pls Sta 10+68.830	Pi Sta 11+33.884	Pls Sta 11+97.990
θs = 6° 38' 46.7"	Δ = 20° 44' 24.4" (RT)	θs = 6° 38' 46.7"
Ls = 58.000	L = 90.496	Ls = 58.000
ST = 19.358	T = 45.749	ST = 19.358
LT = 38.694	R = 250.000	LT = 38.694
	SE = .08	
	CW = 1.1m	

Pls Sta 13+36.504	Pi Sta 14+36.057	Pls Sta 15+32.699
θs = 4° 15' 22.5"	Δ = 26° 26' 34.0" (RT)	θs = 4° 15' 22.5"
Ls = 52.000	L = 161.530	Ls = 52.000
ST = 17.342	T = 82.230	ST = 17.342
LT = 34.677	R = 350.000	LT = 34.677
	SE = .07	
	CW = 0.9m	

-L REV.-

Pi Sta 42+18.604
Δ = 3° 04' 45.8" (LT)
L = 375.681
T = 187.886
R = 6,990.000
SE = NC

-Y26-

Pi STA 13+62.264
Δ = 60° 07' 54.7" (RT)
L = 52.475
T = 28.944
R = 50.000
SE =

MATCH LINE STA. 24+00 -Y20- SHEET 29

MATCH LINE STA. 38+50 -L REV.- SHEET 9

MATCH LINE STA. 42+00 -L REV.- SHEET 11

WALTER COMBS
DB 1730 PG 626
DB 1347 PG 402
DB 1401 PG 19
38.257 Ha
DEED

OAKBURN ASSOC.
A LMT. PARTNERSHIP
DB 3193 PG 692
64.750 Ha.
DEED

JAMES F. LESTER
DB 3649 PG 2044
5.258 Ha
DMD

LLOYD A. NOAH
DB 2389 PG 37
167.1 SM
DMD

CHARLIE BULLARD
DB 3837 PG 1556
3428 SM
DMD

WILEY A. SYKES JR.
TRUMAN B. DOGGETT
DB 2993 PG 605
47.858 Ha
DEED

-Y20- TS 22+49.280

-Y20 SC 23+07.280

-Y20-

-Y4- PT 10+85.205

-Y4- PC 10+53.237

-Y4- POT 10+00.000

-Y5- PC 10+45.455

-Y5- PT 10+75.237

-Y5- POT 10+95.476

-Y21- TS 10+30.136

-Y21- POT 10+00.000
BEGIN CONSTRUCTION

-Y26- PC 13+33.319

-Y26- PT 13+85.794

-Y26- POT 13+96.529

-Y21- POS 10+67.222

-Y21- CS 11+78.631

-Y21- SC 10+86.36

-Y21- TS 13+01.827

-Y21- ST 12+36.631

RP B TS 10+00.000 •
-L REV.- PC 40+30.719
14.200m LT

RP B SC 10+46.000

RP C POT 10+00.000 •
-L REV.- POT 41+60.000
14.200m RT
Δ = 3° 21'

RP C TS 10+31.307

-L REV.-

RAMP B

EXIST R/W

SOUTHERN BELL

DUKE POWER R/W

450 CONC

1200 CHL

375 CMP

SR 2104 SPOTSWOOD RD

TREE

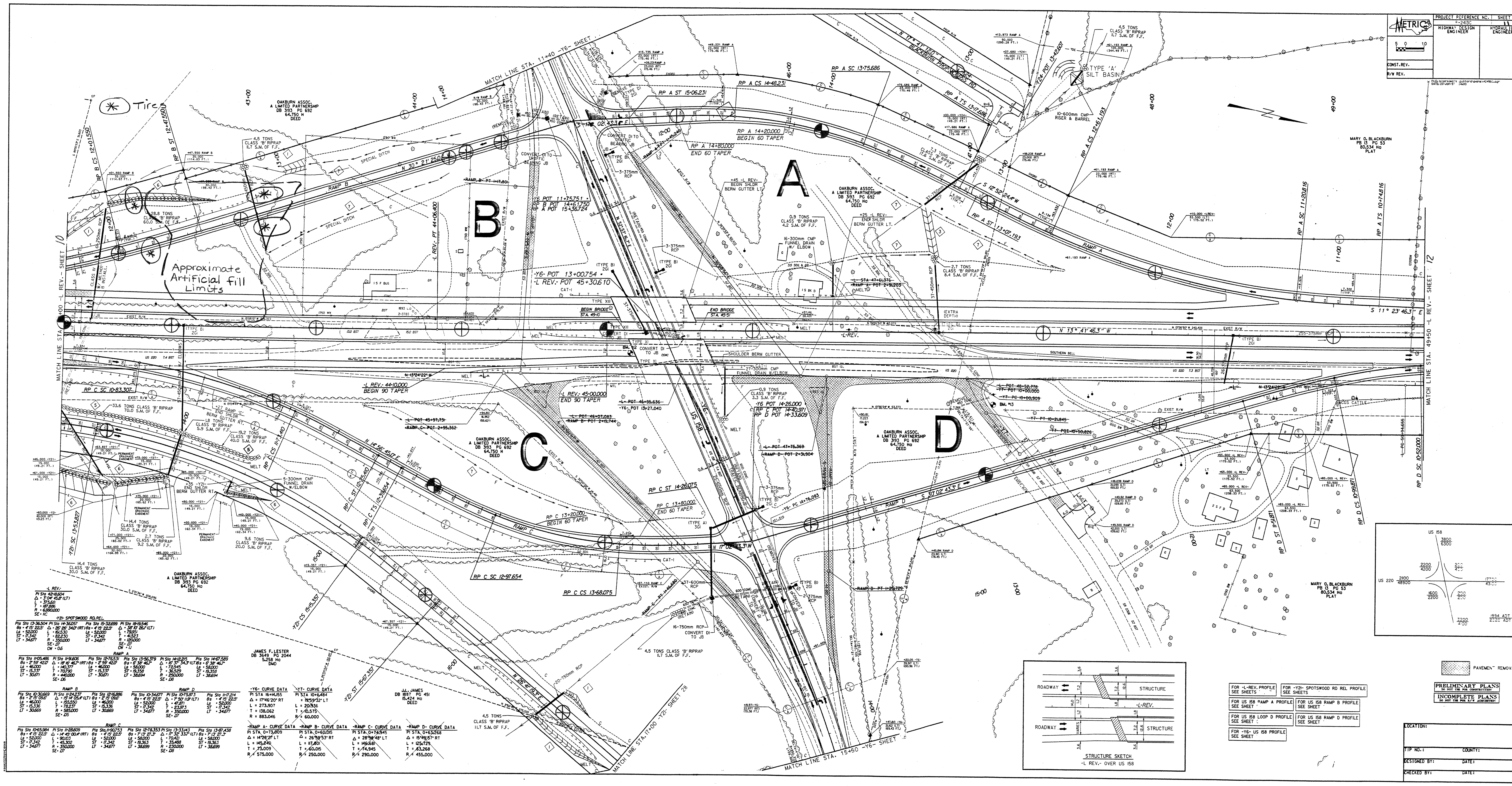
BM. #11

FOR -L-REV PROFILE SEE SHEET	FOR -Y20- SPOTSWOOD RD EXT PROFILE SEE SHEET
FOR US 158 RAMP B PROFILE SEE SHEET	FOR -Y21- SPOTSWOOD RD REL PROFILE SEE SHEET

-Y5- CURVE DATA	-Y4- CURVE DATA
Pi STA 10+63.884	Pi STA 10+63.929
Δ = 85°19'07" RT	Δ = 40°42'11" LT
L = 29.782	L = 30.968
T = 18.429	T = 16.692
R = 20.000	R = 45.000

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION



METRIC
PROJECT REFERENCE NO.
SHEET NO.
HIGHWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
CONST. REV.
R/W REV.
MATCH LINE STA. 11+40 -Y6- SHEET
Tire
Approximate Artificial fill Limits
A
B
C
D
OAKBURN ASSOC. A LIMITED PARTNERSHIP DB 393 PG 692 64,750 Ha DEED
MARY O. BLACKBURN PB 13 PG 53 80,534 Ha PLAT
JAMES F. LESTER DB 349 PG 2044 5,258 Ha DWO
RP A CS 14+48.231
RP A SC 13+75.686
RP A ST 15+06.231
RP A 14+20.000 BEGIN 60 TAPER
RP A 14+80.000 END 60 TAPER
RP A ST 13+07.193
RP A SC 11+20.816
RP A TS 10+74.816
TYPE 'A' SILT BASIN
10-600mm CMP RISER & BARREL
SPECIAL DITCH
RAMP B
RAMP A
RAMP C
RAMP D
-L REV.-
-Y6- POT 11+75.751
-Y6- POT 13+00.754
-L REV.- POT 45+30.610
BEGIN BRIDGE STA. 45+10
END BRIDGE STA. 45+51
N 13° 43' 46.3" W
S 11° 23' 46.3" E
MATCH LINE STA. 49+50 -L REV.- SHEET 12
SHOULDER BERM GUTTER
SOUTHERN BELL
-L REV.- 44+10.000 BEGIN 90 TAPER
-L REV.- 45+00.000 END 90 TAPER
-Y6- POT 14+26.000
RP C POT 14+40.971
RP D POT 14+33.609
RP C 13+20.000 BEGIN 60 TAPER
RP C 13+80.000 END 60 TAPER
RP C ST 14+26.075
RP C SC 12+97.654
RP C CS 13+68.075
RP C SC 10+83.502
RP D SC 10+52.000
RP D ST 14+51.871
6-300mm CMP FUNNEL DRAIN W/ ELBOW
16-300mm CMP FUNNEL DRAIN W/ ELBOW
16-750mm RCP CONVERT DI TO JB
37-600mm RCP
4.5 TONS CLASS 'B' RIPRAP ILT S.M. OF F.F.
14.4 TONS CLASS 'B' RIPRAP 30.0 S.M. OF F.F.
US 158
US 220
1994 ADT
MATCH LINE STA. 15+50 -Y6- SHEET
MATCH LINE STA. 17+00 -Y2I- SHEET 28
STRUCTURE SKETCH -L REV.- OVER US 158
ROADWAY
STRUCTURE
PAVEMENT REMOVAL
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION
FOR -L-REV. PROFILE SEE SHEETS
FOR -Y2I- SPOTSWOOD RD REL PROFILE SEE SHEET
FOR US 158 RAMP A PROFILE SEE SHEET
FOR US 158 RAMP B PROFILE SEE SHEET
FOR US 158 LOOP D PROFILE SEE SHEET
FOR US 158 RAMP D PROFILE SEE SHEET
FOR -Y6- US 158 PROFILE SEE SHEET
LOCATION:
TIP NO.:
COUNTY:
DESIGNED BY:
DATE:
CHECKED BY:
DATE:

METRIC	PROJECT REFERENCE NO.	SHEET NO.
5 0 10	R-2413C	12
CONST. REV.	HIGHWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
R/W REV.		

FILE: c:\projects\guilford\plans\495053.dgn
DATE: 12-Aug-96 09:19

50+00

51+00

52+00

RP A POT 10+00.000 -L REV.- POT 50+00.000 14.200m LT Δ = 2°18'

-L REV.- TS 51+20.236

-L REV.- SC 51+81.236

MARY O. BLACKBURN
PB 13 PG 53
80.534 Ha
PLAT

MATCH LINE STA. 49+50 -L REV.- SHEET 11

MATCH LINE STA. 53+00 -L REV.- SHEET 13

RAMP A
S 11° 23' 46.3" E

EXIST R/W

-L-REV.
N 13° 41' 46.3" W

RAMP D

1200 BW

1200BW

30 SOIL

750 ELEC

GATE

450 CONC

100.00 CONC

7.324 (TYP.)

30.5 (TYP.)

N 13° 24' 22" W

-L REV.- 51+80.000
BEGIN 90 TAPER

-L REV.- 52+70.000
END 90 TAPER

DELTA=10°14'49"
R=3627.040
L=648.670

DELTA=3°55'44"
R=3672.760
L=251.848

DELTA=0°42'36"
R=3672.760
L=45.511

BM. #14

1000 WW

ISFD

S

B

W

1.5 DR

T-1 BST

1800 MTL GATE

65.00 CONC

S 37°48'E 1800.059
45.311

+52.415 N 67°48' E 85.329
41.516

RP D TS 10+00.000 -L REV.- POT 50+00.147 14.200m RT

MARY O. BLACKBURN
PB 13 PG 53
80.534 Ha
PLAT

ALEXANDER C. HUNT
PB 100 PG 140
65.665 Ha
PLAT

ABANDONED RD

-L REV.-
PI Sta 51+60.902
θs = 0° 30' 00.0"
Ls = 61.000
ST = 20.333
LT = 40.667

-L REV.-
PI Sta 54+54.971
Δ = 8° 57' 24.3" (LT)
L = 546.355
T = 273.735
R = 3,495.000
SE = RC

-L-
PI STA 54+22.429
Δ = 10°14'48.98" LT
L = 653.805
T = 327.776
R = 3655.750

FOR -L-REV. PROFILE SEE SHEETS 37, 38

FOR US 158 RAMP A PROFILE SEE SHEET 58

FOR US 158 RAMP D PROFILE SEE SHEET 60

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

METRIC 5 0 10	PROJECT REFERENCE NO. R-2413C	SHEET NO. 13
CONST. REV.	HIGHWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
R/W REV.		

FILE: c:\projects\guilford\plans\535650.dgn
DATE: 23-Jan-97 15:36

MARY O. BLACKBURN
PB 13 PG 53
80.534 Ha
PLAT

GUILFORD COUNTY
ROCKINGHAM COUNTY

54+00 55+00 56+00

TROUBLESOME CREEK

+30 -LREV-
53.500 (LT)
(175.52 FT.)

0.9 TONS
CLASS 'B' RIPRAP
4.2 S.M. OF F.F.

ALLUVIUM

-L- PT 57+48.460

N 23°39'10" W 91.804

4.5 TONS
CLASS 'B' RIPRAP
13.4 S.M. OF F.F.

10.0 TONS
CLASS 'B' RIPRAP
23.4 S.M. OF F.F.

+50 -L REV-
BEGIN SHLDR
BERM GUTTER LT.

10-300 CMP
FUNNEL DRAIN
W/ ELBOW

(TYPE B)
2GI

22-375mm RCP

EXIST R/W

(TYPE A)
2GI
(EXTRA DEPTH)

44-750mm RCP

2-900mm RCP

MELT

SOUTHERN BELL

COLLAR

22-750mm RCP

RESIDUUM

160-750mm RCP

US 220 7.3 BST

-L REV-

US 220

SOIL CONC

(REMOVE) 2.0 CONC

600 CONC

+50 -L REV-
BEGIN SHLDR
BERM GUTTER RT.

17-375mm RCP

BM. #15

15-900mm RCP

HEADWALL

MATCH LINE STA. 53+00 -L REV.- SHEET 12

MATCH LINE STA. 56+50 -L REV.- SHEET 14

NCGS LINE

DELTA=5°36'29"
R=3672.760
L=359.488

DETOUR "A"

TEMPORARY SLOPE STAKE LINE

(TEMPORARY)
26-450mm CMP

N 20° 44' 04" W

ABANDONED RD

40 BST

(FLAT GRATE)
2GI
14-400 CMP
W/ ELBOW

1.8 TONS
CLASS 'B' RIPRAP
8.4 S.M. OF F.F.

+30 -LREV-
53.500 (RT)
(175.52 FT.)

DET. "A" PRC 10+91.316

DET. "A" PRT 11+91.194

DET. "A" PC 12+44.807

DET. "A" PRC 13+26.179

11+00 12+00 13+00

+00.000 -L REV-
53.500
(175.52 FT.)

+00.000 -L REV-
58.000
(190.29 FT.)

+70.000 -L REV-
53.500
(175.52 FT.)

+70.000 -L REV-
58.000
(190.29 FT.)

+20.000 -L REV-
53.500
(175.52 FT.)

+15.000 -L REV-
65.000
(213.25 FT.)

+50.000 -L REV-
65.000
(213.25 FT.)

TCE

MARY O. BLACKBURN
PB 13 PG 53
80.534 Ha
PLAT
(190.29 FT.)

PAUL A. MIDDLETON
DB 745 PG 985
8.976 Ha
TAX MAP

PAVEMENT REMOVAL

DETOUR "A"

PI Sta 10+46.241	PI Sta 11+42.020	PI Sta 12+85.904	PI Sta 13+64.196
Δ = 22° 15' 50" (RT)	Δ = 24° 21' 05" (LT)	Δ = 19° 50' 22" (LT)	Δ = 18° 22' 45" (RT)
L = 91.316	L = 99.878	L = 81.372	L = 75.382
T = 46.241	T = 50.705	T = 41.097	T = 38.018
R = 235.000	R = 235.000	R = 235.000	R = 235.000
SE = .04	SE = .04	SE = .04	SE = .04

-L-

PI STA 54+22.429
Δ = 10°14'48.98" LT
L = 653.805
T = 327.776
R = 3655.750

-L REV.-

Pis Sta 51+60.902	Pi Sta 54+54.971	Pis Sta 57+47.924
θs = 0° 30' 00.0"	Δ = 8° 57' 24.3" (LT)	θs = 0° 30' 00.0"
Ls = 61.000	L = 546.355	Ls = 61.000
ST = 20.333	T = 273.735	ST = 20.333
LT = 40.667	R = 3,495.000	LT = 40.667
	SE = RC	

FOR DETOUR "A" PROFILE SEE SHEET

FOR -L-REV. PROFILE SEE SHEET

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	14
HIGHWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

5 0 10

CONST. REV.

R/W REV.

FILE: c:\projects\guilford\plans\565060.dgn
DATE: 22-Jan-97 20:37

-Y25- POT 10+00.000
-Y8- POT 10+28.979
-Y8- POT 10+00.000
-Y8-
-Y25-
-Y28-
-L- POT 61+47.629
-Y5- POT 10+00.000
-Y28- POT 11+93.100
DET. "A" PT 14+01.561
-L REV.- CS 57+27.591
-L REV.- ST 57+88.591

MATCH LINE STA. 56+50 -L REV.- SHEET 13

MATCH LINE STA. 60+00 -L REV.- SHEET 15

MARY O. BLACKBURN
PB 13 PG 53
80.534 Ha
PLAT

DAVID L. BOLLING
DB 388 PG 152
2840 SM
DMD

PAUL A. MIDDLETON
DB 661 PG 318
2.289 Ha
DMD

DANIEL F. FRIDDLE
DB 342 PG 43
22.367 Ha
TAX MAP

J. RICHARD OZMENT
DB 608 PG 426
1.133 H
DMD

PAUL A. MIDDLETON
DB 733 PG 985
1268 SM
DMD

PAUL A. MIDDLETON
DB 745 PG 985
8.976 Ha
TAX MAP

JERRY LEE KNIGHT
DB 793 PG 1542
4319 SM
DMD

JAMES E. KALLAM
DB 833 PG 2043
2.197 Ha
DMD

N 23° 39' 10.6" W
FRIDDLE PROP. ACCESS RD

FARRAR STORE RD EXT

US 220 7.4 BST

SR 1100 OSBURN MILL RD 6.4 BST

EXIST. R/W

ALLUV.

RESIDUUM

14.5 TONS CLASS 'B' RIPRAP 11.7 S.M. OF F.F.

0.9 TONS CLASS 'B' RIPRAP 4.2 S.M. OF F.F.

1.8 TONS CLASS 'B' RIPRAP 8.4 S.M. OF F.F.

0.9 TONS CLASS 'B' RIPRAP 4.2 S.M. OF F.F.

10-300mm CMP FUNNEL DRAIN W/ ELBOW

12-300mm CMP FUNNEL DRAIN W/ ELBOW

130 - 375mm RCP

22-375mm RCP

43-400mm RCP

19-600mm RCP

2-2.0 x 1.5 CONC

600 CONC

450 CONC

900 CONC LT

200 CONC

I S BK D

I S F D

I S F BUS

U/G TANK

-L REV.-
+13.243 -L REV-
107.029 (LT)
(35.04 FT.)
+58.987 -L REV-
73.563 (LT)
(24.35 FT.)
+88.591 -L REV-
53.500
(175.52 FT.)
+86.065 -L REV-
53.500 (LT)
(175.52 FT.)
+80.000 -L REV-
24.000 (LT)
(78.74 FT.)
+55.352 -L REV-
53.567 (LT)
(175.74 FT.)
+55.000 -L REV-
53.500
(175.52 FT.)
+70.000 -L REV
53.500 (RT)
(175.52 FT.)
+00.000 -L REV
53.500 (RT)
(175.52 FT.)
+40.000 -L REV-
53.500
(175.52 FT.)
+27.591 -L REV-
53.500
(175.52 FT.)
+88.591 -L REV-
53.500
(175.52 FT.)
+90.000 -L REV-
24.000 (RT)
(78.74 FT.)
+90.000 -L REV-
53.500 (RT)
(175.52 FT.)
+71.385
+51.037
16.514
(54.18')
+30 -L REV-
END SHLDR
BERM GUTTER LT.
+70 -L REV-
END SHLDR
BERM GUTTER RT.

-Y9- CURVE DATA
PI STA 10+25.276
Δ = 08°41'15" LT
L = 20.469
T = 10.254
R = 135.000

-L REV.-
PI Sta 54+54.971
Δ = 8° 57' 24.3" (LT)
L = 546.355
T = 273.735
R = 3,495.000
SE = RC

PI Sta 57+47.924
θs = 0° 30' 00.0"
Ls = 61.000
ST = 20.333
LT = 40.667

DETOUR "A"
PI Sta 13+64.196
Δ = 18° 22' 44.8" (RT)
L = 75.382
T = 38.018
R = 235.000
SE = .07

FOR DETOUR "A" PROFILE SEE SHEET

FOR -L-REV. PROFILE SEE SHEETS ,

FOR -Y28- FARRAR STORE RD EXT PROFILE SEE SHEET

FOR -Y25- FRIDDLE PROP. ACCESS RD PROFILE SEE SHEET

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	15
HIGHWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC 5 0 10

CONST. REV.

R/W REV.

FILE: c:\projects\guilford\plans\606350.dgn
DATE: 22-Jan-97 13:42

MATCH LINE STA. 60+00 -L REV.- SHEET 14

MATCH LINE STA. 63+50 -L REV.- SHEET 16

J. RICHARD OZMENT
DB 608 PG 426
LI33 H
DMD

DANIEL F. FRIDDLE
DB 342 PG 43
22.367 Ha
TAX MAP

GARY LEE HENDREN
DB 879 PG 309
6687 SM
DMD

DALLAS E. GWYNN JR.
ROBERT S. GWYNN
ANDREW H. GWYNN
DB 843 PG 407
918 SM
DMD

JAMES E. KALLAM
DB 833 PG 2043
2.197 Ha
DMD

JUANITA MORTON
DB 726 PG 222
1.82 Ha
DEED

DURA B. GOURLEY
MARY L. GOURLEY
DB 685 PG 718
5.579 Ha
TAX MAP

-Y25- POT 14+18.699

-Y28- PT 10+38.968

-Y28- PC 10+00.000 LA

-Y18- POT 11+21.238 LB

-Y18- POT 10+00.000 =
-Y9- POT 11+44.057

-Y9- POT 12+83.084

-Y9- CURVE DATA
PI STA 10+25.276
Δ = 08°41'15" LT
L = 20.469
T = 10.254
R = 135.000

-Y28-
PI Sta. 10+19.734
Δ = 22°19'36.6" (LT)
L = 38.968
T = 19.734
R = 100.000
SE = .08

10.0 TONS CLASS 'B' RIPRAP 23.4 S.M. OF F.F.

1.8 TONS CLASS 'B' RIPRAP 5.9 S.M. OF F.F.

4-900mm RCP

20-375mm RCP

27-900mm RCP

192-450mm RCP

190-375mm RCP

17-600mm RCP

10-375mm PC

HEADWALL

COLLAR

N 23° 39' 10.6" W

FRIDDLE PROP. ACCESS RD

FARRAR STORE RD EXT

SR 2340 FARRAR STORE RD

US 220 7.5 BST

EXIST. R/W

-L REV.-

FOR -Y28- FARRAR STORE RD EXT PROFILE SEE SHEET

FOR -L- REV. PROFILE SEE SHEET

FOR -Y25- FRIDDLE PROP ACCESS RD PROFILE SEE SHEET

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

METRIC	PROJECT REFERENCE NO.	SHEET NO.
5 0 10	R-2413C	16
CONST. REV.	HIGHWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
R/W REV.		

FILE: a:\projects\guilford\plans\635067.dgn
DATE: 14-Aug-96 15:28

64+00 65+00 66+00

GARY LEE HENDREN
DB 879 PG 309
6687 SM
DMD

DURA B. GOURLEY
MARY L. GOURLEY
DB 685 PG 718
5.579 Ha
TAX MAP

BENJAMIIN SMITH
E. AUSTIN FRIDDLE
DB 661 PG 988
63.253 Ha
TAX MAP

DURA B. GOURLEY
MARY L. GOURLEY
DB 685 PG 718
5.579 Ha
TAX MAP

DURA GOURLEY
LOUISE GOURLEY
DB 696 PG 575
2.768 Ha
TAX MAP

ROBERT G. YATES
DB 775 PG 2184
DB 854 PG 289
6383 SM
DMD

MATCH LINE STA. 63+50 -L REV.- SHEET 15

MATCH LINE STA. 67+00 -L REV.- SHEET 17

-L REV.- 64+50.000
END 90 TAPER

-L REV.- 63+60.000
BEGIN 90 TAPER

N 23°39'11" W 223.528

N 2°33'35" E 202.285
+92.735 64.998

S 89°57'07" E 81.02 OLD BACK CURB TO BACK
S 89°57'07" E 81.02 BACK CURB TO R/W

3.600 BW
34.807
+97.382

EXIST R/W

US 220 7.5 BST

-L REV.- N 23° 39' 10.6" W

N 23°39'11" W 234.614

N 23°39'10" W

N 23°39'10" W 91.857

RAMP C N 21° 21' 10.6" W

RAMP B

RP B TS 10+00.000 •
-L REV.- POT 66+30.000
14.200m LT

RP B SC 10+52.000

RP C POT 10+00.000 •
-L REV.- POT 65+70.602
14.200m RT
Δ = 2° 18'

RP C TS 10+81.070

RP C SC 11+27.070

S 89°23'54" E 140.056
140.156

N 316.45 E 24.896

BM. #17
224.879

375 CONC

600 CMP

1800 CMP

1800 CHL

300 D

CONC HW

GATE

CONC

EIP

EOP

W/LT

GR

I S F D

RAMP B

PIs Sta 10+34.677	PI Sta 11+11.013
Bs = 4° 15' 22.5"	Δ = 19° 08' 28.2" (LT)
Ls = 52.000	L = 116.927
ST = 17.342	T = 59.013
LT = 34.677	R = 350.000
	SE = .07

RAMP C

PIs Sta 11+11.743	PI Sta 11+81.683
Bs = 2° 59' 42.0"	Δ = 14° 09' 00.8" (RT)
Ls = 46.000	L = 108.666
ST = 15.337	T = 54.611
LT = 30.671	R = 440.000
	SE = .06

FOR -L-REV. PROFILE SEE SHEETS ,

FOR NC 65 RAMP B PROFILE SEE SHEET

FOR NC 65 RAMP C PROFILE SEE SHEET

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

METRIC	PROJECT REFERENCE NO.	SHEET NO.
5 9 10	P-2452	1
CONST. REV.	HIGHWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
R/W REV.		

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MATCH LINE STA. 9+10 -Y10 REV.- SHEET 30

MATCH LINE STA. 67+00 -L REV.- SHEET 16

MATCH LINE STA. 74+50 -L REV.- SHEET 18

BENJAMIN SMITH
E. AUSTIN FRIDDLE
DB 661 PG 988
63.253 HA
TAX MAP

MITCHELL L. PURYEAR
D.B. 824, P. 643
0.380 HA
DEED

JOSEPH T. LONDON
DB 823 PG 264
8136 SM
DWD

W. MOOREFIELD
DB 410 PG 687
3934 SM
DWD

ROBERT O. YATES
DB 775 PG 268
DB 854 PG 289
6383 SM
DWD

EDWARD A. FRIDDLE JR.
DB 707 PG 955
7606 SM
DWD

RAMP A
RAMP B
RAMP C
RAMP D

-Y10 REV.- STA. 9+20.000
END 90 TAPER

-Y10 REV.- POC 9+44.697 +
RAMP A POT 14+77.265
RAMP B POT 14+25.005

-Y10 REV.- POT 11+83.246 +
RAMP C POT 14+13.060
RAMP D POT 14+88.795

-Y10 REV.- STA. 12+20.000
BEGIN 60 TAPER

-Y10 REV.- STA. 12+89.804
END 60 TAPER
END CONSTRUCTION

-Y10 REV.- POC 10+65.063 +
-L REV.- 70+09.401

-Y10 REV.- POT 13-25.886

-Y10 REV.- POT 11+58.796

-Y10 REV.- POT 11+33.481

-Y10 REV.- ST 11+58.796

-Y10 REV.- PC 11+60.737

-Y10 REV.- PT 9+66.486

-Y10 REV.- POT 12+21.359 BK
-Y10 POT 13+31.143 AH

-Y10 REV.CS 11+00.756

RP B CS 13+26.364
RP B ST 13+84.364
RP B CS 11+58.607
RP B ST 12+20.207
RP C CS 12+50.39
RP C ST 11+67.98
RP A CS 12+41.051
RP A ST 12+87.051
RP A SC 11+73.402
RP A TS 11+27.402
RP D CS 13+97.605
RP D ST 14+55.605
RP D SC 10+52.000
RP D TS 10+27.000
RP D CS 10+00.000 +
-L REV.- 74+34.942
14.200m RT

-L- POT 71+74.752
-Y10- PNC 9+47.990

POT 74+35.688
-Y6- POT 10+00.000

-Y6- POT 10+55.435

BM. #8
BM. #9

N 28° 50' 29.3" W
N 5° 18' 23.9" W
N 1° 12' 45.8" W
S 4° 41' 06.4" E
S 16° 19' 45.8" E
S 19° 32' 10.6" E
S 58° 18'
N 23° 39' 40" W
N 23° 59' 10.5" W

RAMP A

P.I. Sta. 11+58.073	P.I. Sta. 12+07.494	P.I. Sta. 12+56.788
I.A. = 8° 58' 42.0"	Δ. = 8° 57' 40.2" (RT)	I.A. = 8° 58' 42.0"
Ls = 40.000	L = 80.045	Ls = 40.000
ST = 15.537	T = 34.092	ST = 15.537
LT = 30.671	R = 440.000	LT = 30.671
	SE = .06	

P.I. Sta. 11+17.009	P.I. Sta. 11+67.009	P.I. Sta. 12+16.425
I.A. = 6° 03' 24.4"	Δ. = 6° 03' 24.4" (RT)	I.A. = 6° 03' 24.4"
Ls = 50.000	L = 100.000	Ls = 50.000
ST = 18.689	T = 49.991	ST = 18.689
LT = 37.136	R = 945.000	LT = 37.136
	SE = .06	

P.I. Sta. 9+22.925	P.I. Sta. 10+24.425	P.I. Sta. 10+49.050
I.A. = 90° 00' 54.2" (RT)	I.A. = 6° 03' 24.4"	Δ. = 0° 47' 03.0" (RT)
L = 157.079	L = 100.000	L = 66.666
T = 100.000	T = 49.991	T = 33.333
R = 100.000	R = 945.000	R = 5000.000
SE = .06		SE =

RAMP B

P.I. Sta. 0+34.627	P.I. Sta. 1+00.3	P.I. Sta. 11+86.269
I.A. = 6° 03' 24.5"	Δ. = 16° 08' 28.2" (LT)	I.A. = 6° 03' 22.3"
Ls = 50.000	L = 33.537	Ls = 50.000
ST = 21.342	T = 16.943	ST = 21.342
LT = 34.677	R = 150.000	LT = 34.671
	SE = .07	

P.I. Sta. 11+67.036	P.I. Sta. 12+06.396	P.I. Sta. 12+45.722
I.A. = 6° 38' 46.2"	Δ. = 37° 01' 20.8" (RT)	I.A. = 6° 38' 46.2"
Ls = 54.000	L = 40.052	Ls = 54.000
ST = 19.736	T = 20.674	ST = 19.736
LT = 38.694	R = 250.000	LT = 38.694
	SE = .07	

RAMP C

P.I. Sta. 0+13.743	P.I. Sta. 0+63.743	P.I. Sta. 0+30.075
I.A. = 2° 59' 42.2"	Δ. = 19° 59' 00.8" (RT)	I.A. = 2° 59' 42.2"
Ls = 40.000	L = 100.666	Ls = 40.000
ST = 15.539	T = 50.801	ST = 15.539
LT = 30.671	R = 440.000	LT = 30.671
	SE = .06	

RAMP D

P.I. Sta. 0+34.677	P.I. Sta. 1+14.153	P.I. Sta. 1+93.359
I.A. = 6° 03' 22.5"	Δ. = 30° 8' 41.2" (LT)	I.A. = 6° 03' 22.5"
Ls = 52.000	L = 213.624	Ls = 52.000
ST = 21.742	T = 109.574	ST = 21.742
LT = 34.677	R = 150.000	LT = 34.677
	SE = .07	

P.I. Sta. 11+73.868	P.I. Sta. 12+48.532	P.I. Sta. 14+16.961
I.A. = 6° 38' 46.2"	Δ. = 23° 41' 51.8" (RT)	I.A. = 6° 38' 46.2"
Ls = 54.000	L = 99.481	Ls = 54.000
ST = 19.736	T = 50.407	ST = 19.736
LT = 38.694	R = 250.000	LT = 38.694
	SE = .08	

-Y10- CURVE DATA

P.I. Sta. 9+30.984	
Δ. = 32° 02' 09" (RT)	
L = 72.984	
T = 37.468	
R = 130.000	

-Y10 REV:

P.I. Sta. 11+83.246	P.I. Sta. 12+13.060	P.I. Sta. 12+88.795
I.A. = 6° 03' 24.4"	Δ. = 90° 00' 54.2" (RT)	I.A. = 6° 03' 24.4"
Ls = 50.000	L = 157.079	Ls = 50.000
ST = 18.689	T = 100.000	ST = 18.689
LT = 37.136	R = 100.000	LT = 37.136
	SE = .06	

P.I. Sta. 11+60.737	P.I. Sta. 12+21.359 BK	P.I. Sta. 13+31.143 AH
I.A. = 6° 03' 24.4"	Δ. = 90° 00' 54.2" (RT)	I.A. = 6° 03' 24.4"
Ls = 50.000	L = 157.079	Ls = 50.000
ST = 18.689	T = 100.000	ST = 18.689
LT = 37.136	R = 100.000	LT = 37.136
	SE = .06	

P.I. Sta. 11+58.796	P.I. Sta. 11+83.481	P.I. Sta. 12+08.796
I.A. = 6° 03' 24.4"	Δ. = 90° 00' 54.2" (RT)	I.A. = 6° 03' 24.4"
Ls = 50.000	L = 157.079	Ls = 50.000
ST = 18.689	T = 100.000	ST = 18.689
LT = 37.136	R = 100.000	LT = 37.136
	SE = .06	

P.I. Sta. 11+00.756	P.I. Sta. 11+50.756	P.I. Sta. 12+00.756
I.A. = 6° 03' 24.4"	Δ. = 90° 00' 54.2" (RT)	I.A. = 6° 03' 24.4"
Ls = 50.000	L = 157.079	Ls = 50.000
ST = 18.689	T = 100.000	ST = 18.689
LT = 37.136	R = 100.000	LT = 37.136
	SE = .06	

P.I. Sta. 9+66.486	P.I. Sta. 10+16.486	P.I. Sta. 10+66.486
I.A. = 6° 03' 24.4"	Δ. = 90° 00' 54.2" (RT)	I.A. = 6° 03' 24.4"
Ls = 50.000	L = 157.079	Ls = 50.000
ST = 18.689	T = 100.000	ST = 18.689
LT = 37.136	R = 100.000	LT = 37.136
	SE = .06	

P.I. Sta. 9+47.990	P.I. Sta. 9+97.990	P.I. Sta. 10+47.990
I.A. = 6° 03' 24.4"	Δ. = 90° 00' 54.2" (RT)	I.A. = 6° 03' 24.4"
Ls = 50.000	L = 157.079	Ls = 50.000
ST = 18.689	T = 100.000	ST = 18.689
LT = 37.136	R = 100.000	LT = 37.136
	SE = .06	

P.I. Sta. 9+33.481	P.I. Sta. 9+83.481	P.I. Sta. 10+33.481
I.A. = 6° 03' 24.4"	Δ. = 90° 00' 54.2" (RT)	I.A. = 6° 03' 24.4"
Ls = 50.000	L = 157.079	Ls = 50.000
ST = 18.689	T = 100.000	ST = 18.689
LT = 37.136	R = 100.000	LT = 37.136
	SE = .06	

P.I. Sta. 9+10.756	P.I. Sta. 9+60.756	P.I. Sta. 10+10.756
I.A. = 6° 03' 24.4"	Δ. = 90° 00' 54.2" (RT)	I.A. = 6° 03' 24.4"
Ls = 50.000	L = 157.079	Ls = 50.000
ST = 18.689	T = 100.000	ST = 18.689
LT = 37.136	R = 100.000	LT = 37.136
	SE = .06	

P.I. Sta. 9+26.425	P.I. Sta. 9+76.425	P.I. Sta. 10+26.425
I.A. = 6° 03' 24.4"	Δ. = 90° 00' 54.2" (RT)	I.A. = 6° 03' 24.4"
Ls = 50.000	L = 157.079	Ls = 50.000
ST = 18.689	T = 100.000	ST = 18.689
LT = 37.136	R = 100.000	LT = 37.136
	SE = .06	

P.I. Sta. 9+49.050	P.I. Sta. 9+99.716	P.I. Sta. 10+49.050
I.A. = 0° 47' 03.0" (RT)	Δ. = 90° 00' 54.2" (RT)	I.A. = 0° 47' 03.0" (RT)
Ls = 66.666	L = 157.079	Ls = 66.666
ST = 33.333	T = 100.000	ST = 33.333
LT = 66.666	R = 100.000	LT = 66.666
	SE = .06	

P.I. Sta. 9+22.925	P.I. Sta. 9+72.925	P.I. Sta. 10+22.925
I.A. = 90° 00' 54.2" (RT)	I.A. = 6° 03' 24.4"	I.A. = 6° 03' 24.4"
L = 157.079	L = 100.000	Ls = 50.000
T = 100.000	T = 49.991	ST = 18.689
R = 100.000	R = 945.000	LT = 37.136
SE = .06		

P.I. Sta. 11+17.009	P.I. Sta. 11+67.009	P.I. Sta. 12+16.425
I.A. = 6° 03' 24.4"	Δ. = 6° 03' 24.4" (RT)	I.A. = 6° 03' 24.4"
Ls = 50.000	L = 100.000	Ls = 50.000
ST = 18.689	T = 49.991	ST = 18.689
LT = 37.136	R = 945.000	LT = 37.136
	SE = .06	

P.I. Sta. 11+58.073	P.I. Sta. 12+07.494	P.I. Sta. 12+56.788
I.A. = 8° 58' 42.0"	Δ. = 8° 57' 40.2" (RT)	I.A. = 8° 58' 42.0"
Ls = 40.000	L = 80.045	Ls = 40.000
ST = 15.537	T = 34.092	ST = 15.537
LT = 30.671	R = 440.000	LT = 30.671
	SE = .06	

P.I. Sta. 11+86.269	P.I. Sta. 12+06.396	P.I. Sta. 12+45.722
I.A. = 6° 03' 22.3"	Δ. = 37° 01' 20.8" (RT)	I.A. = 6° 38' 46.2"
Ls = 52.000	L = 40.052	Ls = 54.000
ST = 21.342	T = 20.674	ST = 19.736
LT = 34.671	R = 250.000	LT = 38.694
	SE = .07	

P.I. Sta. 11+67.036	P.I. Sta. 12+06.396	P.I. Sta. 12+45.722
I.A. = 6° 38' 46.2"	Δ. = 37° 01' 20.8" (RT)	I.A. = 6° 38' 46.2"
Ls = 54.000	L = 40.052	Ls = 54.000
ST = 19.736	T = 20.674	ST = 19.736
LT = 38.694	R = 250.000	LT = 38.694
	SE = .07	

P.I. Sta. 0+13.743	P.I. Sta. 0+63.743	P.I. Sta. 0+30.075
I.A. = 2° 59' 42.2"	Δ. = 19° 59' 00.8" (RT)	I.A. = 2° 59' 42.2"
Ls = 40.000	L = 100.666	Ls = 40.000
ST = 15.539	T = 50.801	ST = 15.539
LT = 30.671	R = 440.000	LT = 30.671
	SE = .06	

P.I. Sta. 0+34.677	P.I. Sta. 1+14.153	P.I. Sta. 1+93.359
I.A. = 6° 03' 22.5"	Δ. = 30° 8' 41.2" (LT)	I.A. = 6° 03' 22.5"
Ls = 52.000	L = 213.624	Ls = 52.000
ST = 21.742	T = 109.574	ST = 21.742
LT = 34.677	R = 150.000	LT = 34.677
	SE = .07	

P.I. Sta. 11+73.868	P.I. Sta. 12+48.532	P.I. Sta. 14+16.961
I.A. = 6° 38' 46.2"	Δ. = 23° 41' 51.8" (RT)	I.A. = 6° 38' 46.2"
Ls = 54.000	L = 99.481	Ls = 54.000
ST = 19.736	T = 50.407	ST = 19.736
LT = 38.694	R = 250.000	LT = 38.694
	SE = .08	

FOR -L-REV. PROFILE SEE SHEETS ,	FOR -Y10- NC 65 PROFILE SEE SHEET
FOR NC 65 RAMP A PROFILE SEE SHEET	FOR NC 65 RAMP B PROFILE SEE SHEET
FOR NC 65 RAMP C PROFILE SEE SHEET	FOR NC 65 RAMP D PROFILE SEE SHEET

PAVEMENT REMOVAL

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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

METRIC	PROJECT REFERENCE NO.	SHEET NO.
5 0 10	R-2413C	18
CONST. REV.	HIGHWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
R/W REV.		

FILE: c:\projects\guilford\plans\745078.dgn
DATE: 23-Jan-97 15:49

MATCH LINE STA. 74+50 -L REV.- SHEET 17

MATCH LINE STA. 78+00 -L REV.- SHEET 19

75+00 76+00 77+00

BENJAMIN SMITH
E. AUSTIN FRIDDLE
DB 561 PG 988
63.253 Ha
TAX MAP

RP A POT 10+00.000 -
-L REV.- POT 75+00.000
14.200m LT
Δ = 4° 07'

N 23°39'10" W 859.852

+30 -L REV-
BEGIN SHLDR
BERM GUTTER LT.

+58.641 -L REV-
53.500
(175.52 FT.)

2.0 TONS
CLASS 'B' RIPRAP
10.0 S.M. OF F.F.

EXIST R/W

0.9 TONS
CLASS 'B' RIPRAP
4.2 S.M. OF F.F.

10-300mm CMP
FUNNEL DRAIN
W/ ELBOW

36.0 TONS
CLASS 'B' RIPRAP
75.0 S.M. OF F.F.

0.9 TONS
CLASS 'B' RIPRAP
3.3 S.M. OF F.F.

ENDWALL

+50 -L REV-
END SHLDR
BERM GUTTER LT.

S 19° 32' 10.6" E

CAT

COLLAR

10-1350mm RCP

4-900mm RCP

5-300mm CMP
FUNNEL DRAIN
W/ ELBOW

(TYPE B)
2GI

MELT

22-375mm RCP

ALLUVIUM

US 220 7.3 BST

(TYPE A)(EXTRA 2GI DEPTH)

-L REV.-

N 23°39'10" W

75-750mm RCP

(SPECIAL DITCH) 45-375mm RCP

(TYPE A) (EXTRA 2GI DEPTH)

(TYPE B)
2GI

29-375mm RCP

180-750mm RCP

450 Conc (REMOVE)

24-375mm RCP

DETOUR "B"

33-900mm CMP
W/ ELBOW

TEMPORARY SLOPE STAKE LINE

EXIST. R/W

N 23°39'10" W 73.324

BM. #20

17.101
(55.81')

-L REV.- STA. 76+15.000
BEGIN 90 TAPER

-L REV.- STA. 77+05.000
END 90 TAPER

DET. "B" PC 10+00.000

26-375mm RCP

(TYPE B)
2GI

I S BK D

CONC

DECK

RESIDUUM

TEMPORARY SLOPE STAKE LINE

(TEMP)
20-450mm CMP

+50 -L REV-
BEGIN SHLDR
BERM GUTTER RT.

29.9 TONS
CLASS I RIPRAP
51.8 S.M. OF F.F.

10.0 TONS
CLASS 'B' RIPRAP
23.4 S.M. OF F.F.

2.7 TONS
CLASS 'B' RIPRAP
8.4 S.M. OF F.F.

+75 -L REV-
END SHLDR
BERM GUTTER RT.

-L REV.- PC 75+58.641

+58.641 -L REV-
53.500
(175.52 FT.)

S 66°32'55" W 70.274

EDWARD A. FRIDDLE
DB 779 PG 1809
5161 SM
DMD

N 66°33'28" E 70.506 (BACK EIP TO R/W)
N 66°32'24" E 70.006 (BACK EIP TO EIP)

S 23°28'18" E 73.313

EIP

DET. "B" PRC 10+80.098

BENJAMIN SMITH
E. AUSTIN FRIDDLE
DB 661 PG 988
63.253 Ha
TAX MAP

-L REV.-
PI Sta 77+51.91
Δ = 3° 09' 20.9" (LT)
L = 385.004
T = 192.550
R = 6,990.000
SE = NC

DETOUR "B"
PI Sta 10+40.441
Δ = 19° 31' 44" (RT)
L = 80.098
T = 40.441
R = 235.000
SE = .04

PI Sta 11+23.367
Δ = 20° 51' 55" (LT)
L = 85.579
T = 43.269
R = 235.000
SE = .04

FOR -L-REV. PROFILE SEE SHEET	FOR NC 65 RAMP A PROFILE SEE SHEET	FOR DETOUR "B" PROFILE SEE SHEET

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

METRIC	PROJECT REFERENCE NO.	SHEET NO.
5 0 10	R-2413C	
	HIGHWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST. REV.		
R/W REV.		

FILE: c:\projects\guilford\plans\78850.dgn
DATE: 23-Jan-97 16:03

79+00 | 80+00 | 81+00

MATCH LINE STA. 78+00 -L REV.- SHEET 18

MATCH LINE STA. 81+50 -L REV.- SHEET 20

BENJAMIN SMITH
E. AUSTIN FRIDDLE
DB 661 PG 988
63.253 Ha
TAX MAP

S 15°43'31" W 492.731

WALDO H. KNIGHT
FB 499 PG 532
PB 7 PG 137
60.439 Ha
PLAT

-L REV.- PRC 79+43.644

+43.644 -L REV-
53.500
(175.52 FT.)

+22.523
43.802
(143.7ft)

S 15°43'31" W 34.977

1.8 TONS CLASS 'B' RIPRAP
5.9 S.M. OF F.F.

EXIST R/W

EXIST. R/W

20-375mm RCP

(TYPE B)
2GI

12-750mm RCP

COLLAR

24-375mm RCP

(REMOVE)
375 CONC

28.7m
94.2'

45.72m
150'

750 CONC
(RETAIN)

US 220

(TYPE B)
2GI

24-375mm RCP

N 23°39'40" W

750 CONC

COLLAR

3-750mm RCP

CAT-I

EXIST R/W MELT

TEMPORARY SLOPE
STAKE LINE

3-300mm CMP
FUNNEL DRAIN
W/ ELBOW 0.9 TONS
CLASS 'B' RIPRAP
4.2 S.M. OF F.F.

BM. #21

+75 -L REV-
BEGIN SHLDR
BERM GUTTER RT.

7.3 TONS
CLASS 'B' RIPRAP
17.6 S.M. OF F.F.

(TEMP)

+70 -L REV-
END SHLDR
BERM GUTTER RT.

BM. #22

EXIST R/W

DETOUR "B" N 25° 47' 52" W

TEMPORARY SLOPE STAKE LINE

(TEMPORARY)
32-800mm CMP

13+00

12+00

+80.000 -L REV-
53.500
(175.52 FT.)

+95 -LREV-
53.500 (RT)
(175.52 FT.)

+43.644 -LREV-
53.500 (RT)
(175.52 FT.)

(TEMP)

+60.000 -LREV-
53.500 (RT)
(175.52 FT.)

+60 -LREV-
58.000 (RT)
(190.29 FT.)

9.5
(TYP.)

7.3 TONS
CLASS 'B' RIPRAP
17.6 S.M. OF F.F.

+95 -LREV-
65.000 (RT)
(213.25 FT.)

+43.644 -LREV-
65.000 (RT)
(213.25 FT.)

TYPE 'A'
SILT BASIN

S 15°43'31" W
+44.03
92.686
39.422

TREE

14+00

BENJAMIN SMITH
E. AUSTIN FRIDDLE
DB 661 PG 988
63.253 Ha
TAX MAP

WALDO H. KNIGHT
FB 499 PG 532
PB 7 PG 137
60.439 Ha
PLAT

S 83°05'25" E 88.669

DET. "B" PT 11+65.677

DET. "B" PC 14+81.056

10-375mm CMP
BARREL & RISER

1.8 TONS CLASS 'B' RIPRAP
5.9 S.M. OF F.F.

+80.000 -L REV-
127.000
(416.67 FT.)

+43.644 -L REV-
127.000
(416.67 FT.)

TDE | TDE | TDE

-L REV.-

PI Sta 77+51.91	PI Sta 81+36.195
Δ = 3°09'20.9" (LT)	Δ = 3°09'20.9" (RT)
L = 385.004	L = 385.004
T = 192.550	T = 192.550
R = 6,990.000	R = 6,990.000
SE = NC	SE = NC

DETOUR "B"

PI Sta 10+40.441	PI Sta 11+23.367	PI Sta 15+20.979	PI Sta 16+05.724
Δ = 19°31'44" (RT)	Δ = 20°51'55" (LT)	Δ = 19°16'59" (LT)	Δ = 21°57'08" (RT)
L = 80.098	L = 85.579	L = 79.090	L = 90.038
T = 40.441	T = 43.269	T = 39.923	T = 45.578
R = 235.000	R = 235.000	R = 235.000	R = 235.000
SE = .04	SE = .04	SE = .04	SE = .04

FOR -L-REV. PROFILE SEE SHEETS

FOR DETOUR 'B' PROFILE SEE SHEET

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

METRIC	PROJECT REFERENCE NO.	SHEET NO.
5 0 10	R-2413C	20
CONST. REV.	HIGHWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
R/W REV.		

FILE: c:\projects\guilford\plans\815085.dgn
DATE: 23-Jan-97 16:08

82+00 83+00 84+00

MATCH LINE STA. 81+50 -L-REV. SHEET 19

MATCH LINE STA. 85+00 -L-REV. SHEET 21

WALDO H. KNIGHT
FB 499 PG 532
PB 7 PG 137
60.439 Ha
PLAT

WILLIAM E. NEAL
DB 730 PG 382
6.563 Ha
DMD

RGY, INC.
DB 838 PG 307
1.249 Ha
DMD

WALDO H. KNIGHT
FB 499 PG 532
PB 7 PG 137
60.439 Ha
PLAT

TIMOTHY M. DAVIS
DB 815 PG 1869
1.643 Ha
DMD

-L REV.- PT 83+28.648

+28.548 -L REV-
53.500
(175.52 FT.)

+30 -L REV-
BEGIN SHLDR
BERM GUTTER LT.

+37.694
43.346
(142.21')

+05.771
52.703
(172.91')

+28.548 -L REV-
53.500
(175.52 FT.)

+80.246 -L REV-
33.211 (RT)
(108.96 FT.)

+60 -L REV-
53.500 (RT)
(175.52 FT.)

+60 -L REV
58.000 (RT)
(190.29 FT.)

+50.00 -L REV-
53.500 (RT)
(175.52 FT.)

+99.149
60.356
(198.02')

+12.229
56.543
(185.5')

+17.215 -L-
71.764
(235.45')

91.8 TONS
CLASS I RIPRAP
120.0 S.M. OF F.F.

0.9 TONS
CLASS 'B' RIPRAP
4.2 S.M. OF F.F.

2.7 TONS
CLASS 'B' RIPRAP
9.2 S.M. OF F.F.

45.9 TONS
CLASS I RIPRAP
60.0 S.M. OF F.F.

11-400mm CMP
W/ ELBOW

0.9 TONS
CLASS 'B' RIPRAP
4.2 S.M. OF F.F.

107.0 TONS
CLASS I RIPRAP
140.0 S.M. OF F.F.

12.0 TONS
CLASS 'B' RIPRAP
25.0 S.M. OF F.F.

1.8 TONS
CLASS 'B' RIPRAP
5.9 S.M. OF F.F.

EST. 8.5 TONS
CLASS 'B' RIPRAP
EST. 36.0 S.M. OF F.F.

4-600mm RCP

41-400 CMP
W/ ELBOWS

2-1200mm CMP

18-300mm CMP
FUNNEL DRAIN
W/ ELBOW

12-300mm CMP
FUNNEL DRAIN
W/ ELBOW

17-375mm RCP

36-400 CMP
W/ ELBOWS

COLLAR

HEADWALL

6.2 CONC HW
(REMOVE)

1500 WW
(REMOVE)

2-1200 CMP
(RETAIN)

600 CONC
(RETAIN)

(TYPE B)
2GI MELT

(TYPE B)
2GI

(FLAT GRATE) 2GI

EXIST R/W

-L REV.-

N 23° 39' 10.6" W

N 23°39'10" W 338.596

TEMPORARY SLOPE STAKE LINE

DETOUR "B"

60-400mm CMP
(TEMP)

EXIST R/W

DET. "B" PRC 15+60.146

DET. "B" PT 16+50.184

-Y12- PC 10+04.905

-Y12- PT 10+45.682

50 GR

BM. #23

H TR

DECK

1450 CONC

80 BST

87 BST

850 CONC

MTL

SR 2806 BENNETT FARM RD

8.5 BST

(RETAIN)
375 CONC

EXIST. R/W
N 24°20'05" W 65.000

S 23°27'26" E 42.184

S 39°54'17" E 13.624

N 52°46'28" W 20.090

80 GR

I S BK D

EXIST R/W

S 23°27'26" E 30.304

N 24°20'05" W 70.964

S 23°27'26" E 37.381

-Y12- CURVE DATA
PI STA 10+25.327
Δ = 08°01'37" RT
L = 40.776
T = 20.422
R = 291.063

-L REV.-
PI Sta 81+36.95
Δ = 3°09'20.9" (RT)
L = 385.004
T = 192.550
R = 6,990.000
SE = NC

DETOUR "B"
PI Sta 15+20.979
Δ = 15°16'59" (LT)
L = 79.090
T = 39.923
R = 235.000
SE = .04

PI Sta 16+05.724
Δ = 21°57'08" (RT)
L = 90.038
T = 45.578
R = 235.000
SE = .04

PAVEMENT REMOVAL

FOR -L-REV. PROFILE SEE SHEET

FOR DETOUR "B" PROFILE SEE SHEET

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

METRIC

5 0 10

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	21

HIGHWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

CONST. REV.

R/W REV.

FILE: a:\projects\guilford\plans\858850.dgn
DATE: 31-JUL-96 00:44

RGY. INC.
DB 838 PG 307
1.249 Ha
DMD

JACK C. KNIGHT
DB 843 PG 2172
6688 SM
DMD

FRED W. DAVIS
DB 725 PG 81
5963 SM
DMD

TIMOTHY DAVIS
DB 801 PG 671
2667 SM
DMD

TIMOTHY M. DAVIS
DB 815 PG 1869
1.643 Ha
DMD

AVERY LEON WOOD JR.
DB 815 PG 192
4201 SM
DMD

MATCH LINE STA. 85+00 -L REV.- SHEET 20

MATCH LINE STA. 88+50 -L REV.- SHEET 22

-L REV.- TS 86+01.807

-L REV.- SC 86+62.807

-L- STA 89+20.00
-Y13- POT 0+00 116.45 LT

-Y13- PC 0+46.133

86+00

87+00

S 68°04'32" W 19.759
104.735
21.882

N 68°47'39.80" E 88.71
67.636
21.756

N 32°55' E 39.740

N 2°09'06" E 122.206
+0.886 -Y13-
58.379

N 70°16'26" E 47.028
53.423
52.391

S 37°28'05" E 75.319

S 23°35'45" E 48.688

S 23°35'45" E 12.190

N 23°29'10" W 75.693

N 9°52'17" W 83.288

S 0°35'23" E 88.956

N 23° 39' 10.6" W

N 23°39'10" W

N 26°35'45" W

US 220

US 220 5.4 BST

SR 2806 BENNETT FARM RD 6.5 BST

SR 2806 BENNETT FARM RD 6.6 BST

SR 2805 ROCKWOOD DR 7.9 BST

EXIST R/W

EXIST. R/W

1500 WW

1200 WW

850 CONC

450 CMP

MTL

CONC

DECK

1 S BK D

S2.5 GR

375 CONC

38 CONC

1200 CONC

EIP

CB

BM. #24

+80.148
52.391
(171.89')

+40.398
52.641
(172.71')

+29.436
52.998
(173.62')

+64.040
53.754
(176.36')

+65.733
37.359
(123.57')

+88.557
38.732
(127.07')

+27.553
38.702
(126.98')

+54.412
56.687
(185.98')

+35.454
37.514
(123.08')

+12.304
52.072
(170.84')

-Y13- CURVE DATA
PI STA 1+20.794
Δ = 14°50'07" LT
L = 148.488
T = 74.661
R = 573.481

-L-
PIs STA 88+01.760
Θs = 00°59'14" RT
L = 60.000
U = 40.001
V = 20.001

-L REV.-

PIs Sta 86+42.474	PI Sta 89+69.082	PIs Sta 92+89.487
Bs = 1°00'13.5"	Δ = 19°57'16.9" (RT)	Bs = 1°00'13.5"
Ls = 61.000	L = 606.347	Ls = 61.000
ST = 20.334	T = 306.275	ST = 20.334
LT = 40.667	R = 1741.000	LT = 40.667
	SE = 0.04	

FOR -L-REV. PROFILE
SEE SHEETS ,

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	22
HIGHWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

CONST. REV.

R/W REV.

FILE: c:\projects\guilford\plans\885095.dgn
DATE: 19-Aug-96 13:23

-L-

Pls STA 88+01.760	PI STA 91+28.554	Pls STA 94+49.093
Θs = 00°59'14" RT	Δ = 19°59'15.16" RT	Θs = 00°59'14" RT
L = 60.000	L = 607.335	L = 60.000
U = 40.001	T = 306.785	U = 40.001
V = 20.001	R = 1740.972	V = 20.001

-L1-/NC 68 WB RAMP

PI STA 16+78.796	Pls STA 19+24.684	PI STA 20+97.122	Pls STA 22+68.748
Δ = 05-26-19.22 LT	Θs = 01°00'40" LT	Δ = 10°14'52.79" LT	Θs = 01°00'40" LT
L = 327.232	L = 60.000	L = 304.064	L = 60.000
T = 163.739	U = 40.001	T = 152.439	U = 40.001
R = 3447.3533	V = 20.001	R = 1700.000	V = 20.001

-Y13- CURVE DATA

PI STA 1+20.794
Δ = 14°50'07" LT
L = 148.488
T = 74.661
R = 573.481

-Y22-REV. SR 2806

PI Sta 11+01.146	PI Sta 13+93.508
Δ = 44°03'18.0" (RT)	Δ = 54°54'12.7" (LT)
L = 192.226	L = 335.387
T = 101.146	T = 181.824
R = 250.000	R = 350.000
SE = .08	SE = .07 (SEE PLANS)
CW = 0.6m	CW = 0.6m

-L REV.-

Pls Sta 86+42.474	PI Sta 89+69.082	Pls Sta 92+89.487
θs = 1°00'13.5"	Δ = 19°57'16.9" (RT)	θs = 1°00'13.5"
Ls = 61.000	L = 606.341	Ls = 61.000
ST = 20.334	T = 306.272	ST = 20.334
LT = 40.667	R = 1741.000	LT = 40.667
	SE = .04	

FLYOVER @ US 220/NC 68

Pls Sta 10+30.671	PI Sta 10+77.499	Pls Sta 11+24.228
θs = 2°59'42.0"	Δ = 8°11'22.0" (RT)	θs = 2°59'42.0"
Ls = 46.000	L = 62.890	Ls = 46.000
ST = 15.337	T = 31.499	ST = 15.337
LT = 30.671	R = 440.000	LT = 30.671
	SE = .06	
Pls Sta 13+89.145	PI Sta 15+56.445	Pls Sta 17+07.195
θs = 4°15'22.5"	Δ = 46°23'26.3" (LT)	θs = 4°15'22.5"
Ls = 52.000	L = 283.384	Ls = 52.000
ST = 17.342	T = 149.976	ST = 17.342
LT = 34.677	R = 350.000	LT = 34.677
	SE = .07	
Pls Sta 18+06.369	PI Sta 18+97.042	Pls Sta 19+86.275
θs = 2°59'42.0"	Δ = 19°26'01.3" (RT)	θs = 2°59'42.0"
Ls = 46.000	L = 149.240	Ls = 46.000
ST = 15.337	T = 75.344	ST = 15.337
LT = 30.671	R = 440.000	LT = 30.671
	SE = .06	

FOR -L1-/NC 68 PROFILE PROFILE SEE SHEET

FOR -L-REV. PROFILE SEE SHEETS

FOR FLYOVER PROFILE SEE SHEETS

FOR -Y22-REV. SR 2806 PROFILE SEE SHEET

PAVEMENT REMOVAL

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	23
HIGHWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC 5 0 10

CONST. REV.

R/W REV.

FILE: c:\projects\guilford\plans\95-x.dgn
DATE: 15-Aug-96 09:03

N

BRADLEY S. DENSON
DB 665 PG 890
3089 SM
DMD

JESSIE PRICE ESTATE
C/O DAVID J. PRICE
WB 88E PG 462
17.996 Ha
TAX MAP

WILLIAM B. BENNETT
DB 651 PG 515
1.163 Ha
DMD

REGIONAL TRUCK & EQUIPMENT CO., INC.
DB 861 PG 2104
3424 SM
DMD

TOUFIC SIMAAN
ANTOINE SIMAAN
ELIE SIMAAN
DB 847 PG 2295
22.144 Ha
DEED

ELIZABETH M. FOLGER
DB 701 PG 292
125.453 Ha
DEED

DAVID BENNETT
DB 467 PG 91
39.922 Ha
DEED

MATCH LINE STA. 95+00 -L REV.- SHEET 22

MATCH LINE STA. 27+50 -L1- SHEET 24

-L REV.- POT Sta. 97+10.436 BK
-L1- ST Sta. 26+14.246 AH

FLYOVER @ US 220/NC 68 ST 20+16.938
-L REV.- POT STA 97+10.436
11.700m RT

FLYOVER SC 18+21.698

-Y22-REV. SR 2806

-Y22 REV.- PC 16+92.000

FLYOVER @ US 220/NC 68 CS 19+70.938

-Y22 REV.- PT 18+46.826

-Y22 REV.- POT 18+96.825
END CONSTRUCTION

BM. #28

BM. #29

US 220 & NC 68 SBL 8.6 BST

US 220 & NC 68 NBL 8.6 BST.

SR 2806 BENNETT FARM RD 6.2 BST

SR 2805 PRICE FARM RD 6.7 BST

EXIST R/W

1500 WW

375 CONC

450 CONC

GUY

BERIT DR 3.8 GR

QUAIL ACRES DR 6.2 BST

GR

17D GR

N 1° 41' 26.7" W

N 01°41'27" W

N 27° 06' 52.2" W

N 1° 46' 08.8" W

N 3°02'42" W 71.102

S 65°35'59" W 38.658

N 3°30'56" W 45.751

N 33°17'53" E 34.698

L=67.191
R=424.403
DELTA=9°04'16"

-Y22-REV. SR 2806
PI Sta 17+70.701
Δ = 25° 20' 43.4" (RT)
L = 154.826
T = 78.701
R = 350.000
SE = .07
CW = 0.6

FLYOVER @ US 220/NC 68

PIs Sta 18+06.369	PI Sta 18+97.042	PIs Sta 19+86.275
Bs = 2° 59' 42.0"	Δ = 19° 26' 01.3" (RT)	Bs = 2° 59' 42.0"
Ls = 46.000	L = 149.240	Ls = 46.000
ST = 15.337	T = 75.344	ST = 15.337
LT = 30.671	R = 440.000	LT = 30.671
	SE = .06	

FOR -L-REV. PROFILE SEE SHEET

FOR FLYOVER PROFILE SEE SHEET

FOR -Y22 REV- SR 2806 PROFILE SEE SHEETS ,

FOR -L1- PROFILE SEE SHEET

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

METRIC	PROJECT REFERENCE NO.	SHEET NO.
5 0 10	R-2413C	25
CONST. REV.	HIGHWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
R/W REV.		

FILE: c:\projects\guilford\plans\y6-2.dgn
DATE: 15-Aug-96 10:52

8+00 9+00 10+00 11+00

OAKBURN ASSOC.
A LIMITED PARTNERSHIP
DB 3193 PG 692
64.750 Ha
DEED

FOR -Y24- PLAN VIEW SEE SHEET 27B

-Y6- 10+80.000
BEGIN 60 TAPER LT

-Y6- 11+40.000
END 60 TAPER LT

-RAMP A- PC 0+00.000
-Y6- POT 10+68.369
5.500m RT

S 52°59'45" W 82.880

+46.316
22.964
(75.34')

RAMP A 4.7 BST

BST ISL

N 52°57'16.7" E

US 158 -Y6-

US 158 7.4 BST

-Y20- POT 28+75.841
-Y6- POT 8+08.304

N 52° 57' 16.7" E

MATCH LINE STA. 7+80 -Y6- SHEET 26

C F

N 37° 02' 43.2" W

-Y20- PT 28+27.440

+14.670
+14.107

28+00

SR 2004 SPOTSWOOD RD - 6.4 BST

N 89° 07' 58.4" W

14+00

MATCH LINE STA. 27+70 -Y20- SHEET 29

GUY

-Y6- 9+95.000
BEGIN 60 TAPER RT

-Y6- 10+55.000
END 60 TAPER RT
BEGIN 55 TAPER RT

-RAMP B- PC 0+00.000
-Y6- POT 10+87.208
7.600m RT

+46.294
15.283
(50.14')

+46.270
22.663
(74.35')

S 52°59'46" W 71.512

RAMP B 5.0 BST

-Y6- 11+10.000
END 55 TAPER RT

MATCH LINE STA. 11+50 -Y6- SHEET 12

OAKBURN ASSOC.
A LIMITED PARTNERSHIP
DB 3193 PG 692
64.750 H
DEED

PAVEMENT REMOVAL

FOR -Y20- SPOTSWOOD RD EXT PROFILE SEE SHEET 53

FOR -Y6- US 158 PROFILE SEE SHEET 56

-RAMP A- CURVE DATA
PI STA 0+73.009
Δ = 14°28'21" LT
L = 145.240
T = 73.009
R = 575.000

-RAMP B- CURVE DATA
PI STA 0+60.015
Δ = 26°59'53" RT
L = 117.801
T = 60.015
R = 250.000

-Y-20 SPOTSWOOD ROAD EXT
PI Sta 27+77.792
Δ = 5°05'15" (RT)
L = 106.997
T = 57.350
R = 120.000
SE = .07

1760 WM

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

METRIC	PROJECT REFERENCE NO.	SHEET NO.
5 0 10	R-2413C	26
	HIGHWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST. REV.		
R/W REV.		

FILE: c:\projects\guilford\plans\y6-2.dgn

-RAMP A- CURVE DATA
PI STA 0+73.009
Δ = 14°28'21" LT
L = 145.240
T = 73.009
R = 575.000

-RAMP B- CURVE DATA
PI STA 0+60.015
Δ = 26°59'53" RT
L = 117.801
T = 60.015
R = 250.000

-Y24- BLACKBURN PROP. ACCESS RD
PI Sta 10+73.543
Δ = 39°43'56.6" (RT)
L = 104.019
T = 54.199
R = 150.000
SE = .08
CW = 1.4

OAKBURN ASSOC.
A LIMITED PARTNERSHIP
DB 3193 PG 692
64.750 Ha
DEED

MATCH LINE STA. 8+50 -Y6- SHEET 26

MATCH LINE STA. 11+40 -Y6- SHEET 12

-Y24- PT 11+23.363

-Y24- PC 10+19.344

-Y24- POT 10+00.000

-Y24- BLACKBURN PROP. ACCESS RD

N 17° 41' 12.0" E

N 22° 02' 44.5" W

N, 52° 57' 16.7" E

S 52°59'45" W 82.880

S 52°59'46" W 71.512

2.7 TONS CLASS 'B' RIPRAP
8.4 S.M. OF F.F.

18-450mm RCP

19-450mm RCP

13.0 BST

BST ISLD

GUY

PAVEMENT REMOVAL

-Y6- 9+90.000
BEGIN 120 TAPER RT
BEGIN CONST.
END RESURFACING

-Y6- 10+80.000
BEGIN 60 TAPER LT
BEGIN CA

-Y6- 11+40.000
END 60 TAPER LT

-RAMP A- PC 0+00.000
-Y6- POT 10+68.369
5.500m RT

-RAMP B- PC 0+00.000
-Y6- POT 10+87.208
7.600m RT

-Y6- 11+10.000
END 120 TAPER RT

+05.000 -Y24- 15.000 (LT) (49.21FT.)
+23.363 -Y24- 15.000 (49.21 FT.)
+05.000 -Y24- 20.000 (LT) (65.62 FT.)
+95.000 -Y24- 20.000 (LT) (65.62 FT.)
+95.000 -Y24- 15.000 (LT) (49.21FT.)
+19.344 -Y24- 15.000 (49.21 FT.)
+11.785 -Y24- 15.000 (49.21 FT.)
+45.000 -Y24- 15.000 (RT) (49.21 FT.)
+28.818 -Y24- 15.000 (49.21 FT.)
+46.316 22.364 (75.34')
+46.316 15.283 (50.14')
+31.584 -Y24- 22.000 (RT) (72.18 FT.)
+80.000 -Y6- 22.940 (LT) (75.26 FT.)
+46.294 15.283 (50.14')
+46.270 22.663 (74.35')
+80.000 -Y6- 22.687 (RT) (74.43 FT.)

FOR -Y24- BLACKBURN PROP. ACCESS RD PROFILE
SEE SHEET 74

FOR -Y6- US 158 PROFILE
SEE SHEET 56

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

METRIC

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	2-T
HIGHWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CONST. REV.

R/W REV.

FILE: a:\projects\guilford\plans\y6-3.dgn
DATE: 15-Aug-96 13:54

MARY O. BLACKBURN
PB 13 PG 53
80.534 Ha
PLAT

WILLIAM R. MURPHY
DB 3839 PG 1144
1.029 Ha
DMD

-Y21- POT 18+69.019 =
-Y6- POC 16+38.866

-Y6- PT 17+04.165

-Y6- POC 17+50.000
END CONSTRUCTION

RAMP D PC 0+00.000
-Y6- POC 15+77.894
7.000m LT

RAMP C PC 0+00.000
-Y6- POC 15+68.982
5.500m RT

MATCH LINE STA. 15+50 -Y6- SHEET 12

MATCH LINE STA. 17+00 -Y21- SHEET 12

US 158

EXIST. R/W

1200 CONC

SOUTHERN BELL

-Y6- STA. 16+60.000
BEGIN 60 TAPER

-Y6- STA. 17+20.000
END 60 TAPER

-Y21- PT 17+8.975

-Y21- PC 17+78.023

ERNEST F. DANAHO
DB 2158 PG 674
1.183 Ha
DMD

J.L. JAMES
DB 1887 PG 451
15.424 Ha
DEED

ARBOR

I S BK D

I S F D

DECK

BLK WALL

CONC

W/O

375 CONC

375 CMP

450 CONC

450 CMP

1200 WW

US 158 7.4 BST

35 GR

-Y21- SPOTSWOOD RD. REL.

PI Sta 18+19.546
Δ = 38° 10' 26" (LT)
L = 79.951
T = 41.523
R = 120.000
SE = .07

-RAMP C- CURVE DATA

PI STA 0+74.945
Δ = 28°58'48" LT
L = 146.681
T = 74.945
R = 290.000

-RAMP D- CURVE DATA

PI STA 0+63.268
Δ = 15°49'57" RT
L = 125.729
T = 63.268
R = 455.000

-Y6-

PI Sta 16+14.155
Δ = 17° 46' 20" (RT)
L = 273.907
T = 138.062
R = 883.047
SE = .04

FOR -Y6- US 158 PROFILE
SEE SHEETS 56, 57

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

METRIC 5 0 10	PROJECT REFERENCE NO. R-2413C	SHEET NO. 28
CONST. REV.	HIGHWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
R/W REV.		

FILE: d:\projects\guilford\plans\y20-1.dgn
DATE: 12-Aug-96 10:56

-Y-20 SPOTSWOOD ROAD EXT

Pls Sta 22+87.979
θs = 7° 13' 27.3"
Ls = 58.000
ST = 19.363
LT = 38.699

Pl Sta 24+12.321
Δ = 49° 05' 33.0" (LT)
L = 197.070
T = 105.041
R = 230.000
SE = .08
CW = IJm

Pls Sta 25+23.713
θs = 7° 13' 27.3"
Ls = 58.000
ST = 19.363
LT = 38.699

Pl Sta 26+11.008
Δ = 13° 58' 30.2" (LT)
L = 96.832
T = 48.657
R = 396.996
SE = .07

Pl Sta 27+77.792
Δ = 51° 05' 15.7" (RT)
L = 106.997
T = 57.350
R = 120.000
SE = .07

-L REV-
Pl Sta 4+28.864
Δ = 37° 04' 49.5" (LT)
T = 187.886
R = 580.000
NC = 1°-25'-69.74"

WALTER COMBS
DB 1730 PG 626
DB 1347 PG 402
DB 1401 PG 19
38.257 Ha
DEED

25+00

26+00

27+00

2 S F D

H TR

50 GR

-Y20- PCC 25+62.350
-Y17- POT 11+62.613

-Y20- CS 25+04.350

35 GR

MATCH LINE STA. 24+00 -Y20- SHEET 11

MATCH LINE STA. 27+70 -Y20- SHEET 27

11+00

12+00

13+00

-Y20- SPOTSWOOD RD EXT

375 CONC

-Y17- POT 10+00.000

N 74° 09' 28.2" W

SR 2104 SPOTSWOOD RD 6J BST

S 88°31'39" E 976.242

N 88° 07' 58.4" W

-Y17- POT 12+13.671

-Y20- PT 26+59.182

-Y20- PC 27+20.443
-Y17- POT 13+23.589

WALTER COMBS
DB 1730 PG 626
DB 1347 PG 402
DB 1401 PG 19
38.257 Ha
DEED

N 45°55' W 43.031

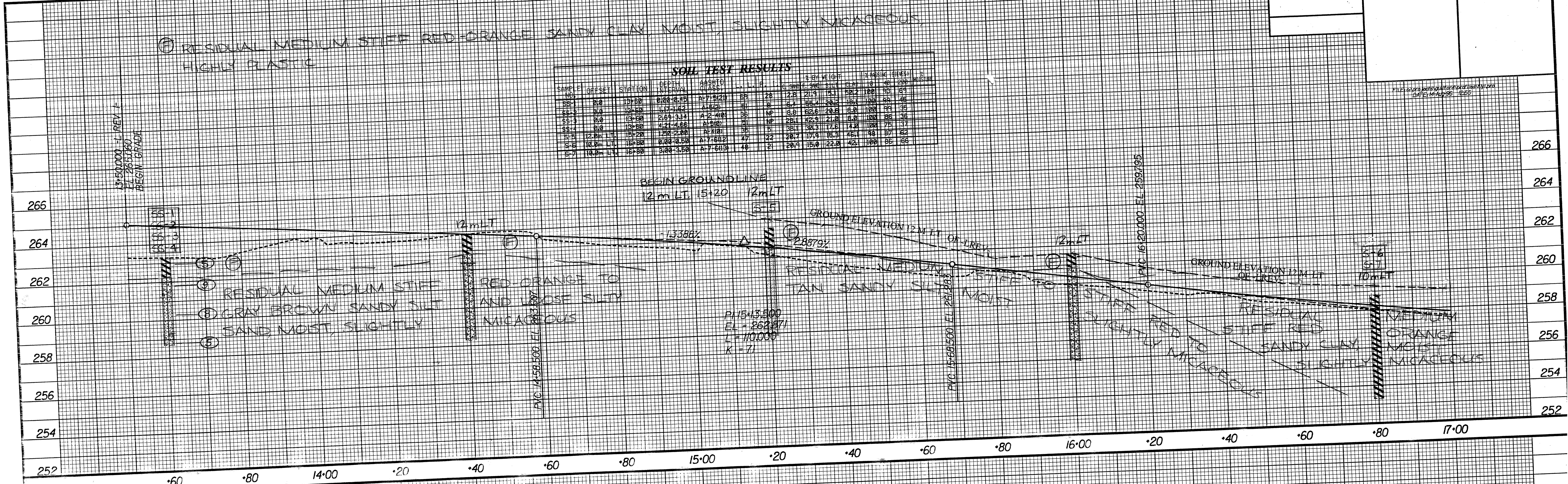
FOR -Y20- SPOTSWOOD RD EXT PROFILE
SEE SHEET 53

OAKBURN ASSOC.
A LIMITED PARTNERSHIP
DB 3193 PG 692
64.750 H
DEED

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

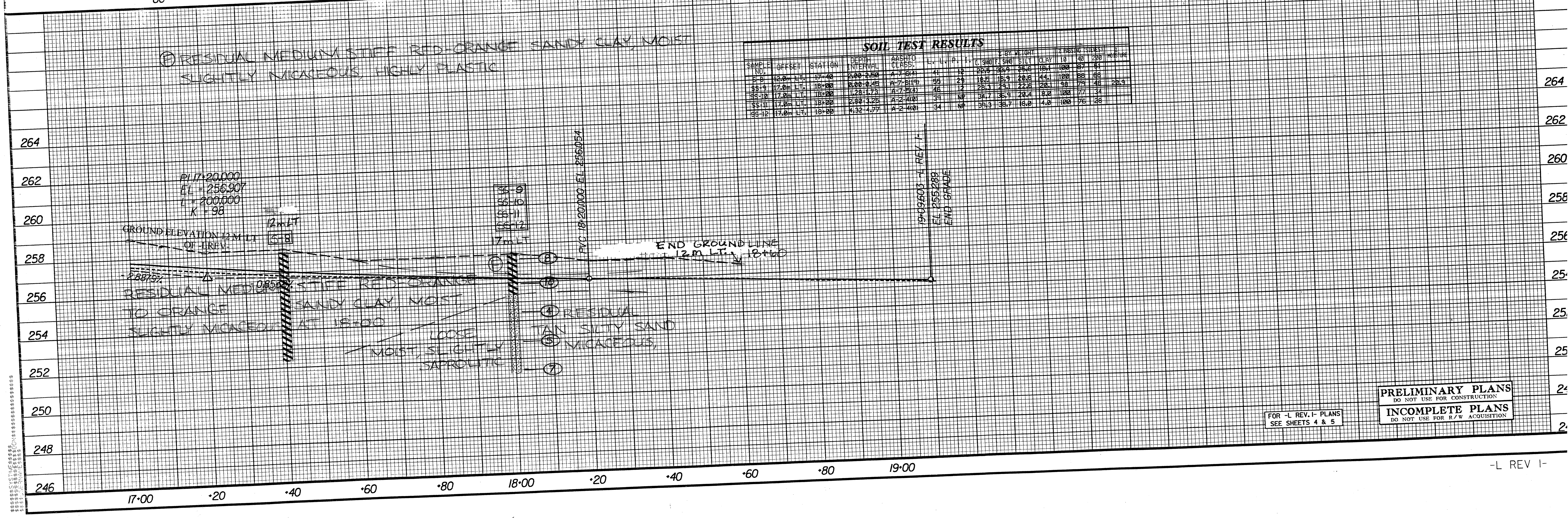
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	29



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L. L.	P. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE
SS-1	0.0	13+60	0.00-0.45	A-7-5(21)	69	28	12.8	21.9	15.1	50.2	100	93	69	
SS-2	0.0	13+60	1.17-1.62	A-5(2)	51	8	6.4	55.4	20.2	18.1	100	99	45	
SS-3	0.0	13+60	2.69-3.14	A-2-4(0)	36	NP	8.8	62.6	20.6	8.0	100	99	35	
SS-4	0.0	13+60	4.21-4.66	A-5(0)	51	NP	28.1	42.9	21.0	8.0	100	86	36	
S-5	12.0m LT.	15+20	1.50-2.00	A-4(0)	35	5	38.1	30.3	17.6	14.0	100	75	37	
S-6	10.0m LT.	16+80	0.00-0.50	A-7-6(12)	47	22	20.7	17.9	15.3	46.1	98	87	62	
S-7	10.0m LT.	16+80	3.00-3.50	A-7-6(13)	48	21	20.9	15.0	22.0	42.1	100	86	66	



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L. L.	P. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE
S-8	12.0m LT.	17+40	2.00-2.50	A-7-6(4)	41	12	22.5	33.9	25.6	18.1	100	87	51	
SS-9	17.0m LT.	18+00	0.00-0.45	A-7-6(19)	55	29	18.5	16.9	20.6	44.1	100	88	68	
SS-10	17.0m LT.	18+00	1.28-1.73	A-7-5(4)	46	12	28.3	29.1	22.6	20.1	98	79	48	20.9
SS-11	17.0m LT.	18+00	2.80-3.25	A-2-4(0)	39	NP	34.7	36.9	20.4	8.0	100	77	34	
SS-12	17.0m LT.	18+00	4.32-4.77	A-2-4(0)	34	NP	39.3	38.7	18.0	4.0	100	76	28	

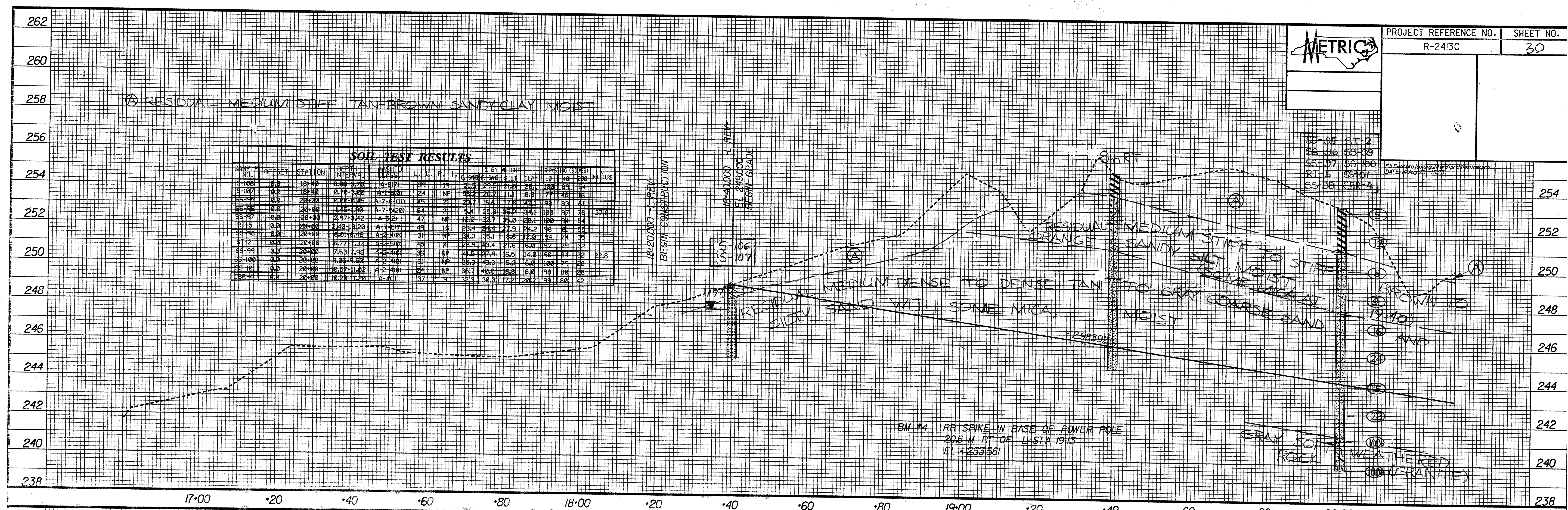
FOR -L REV. I- PLANS SEE SHEETS 4 & 5

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

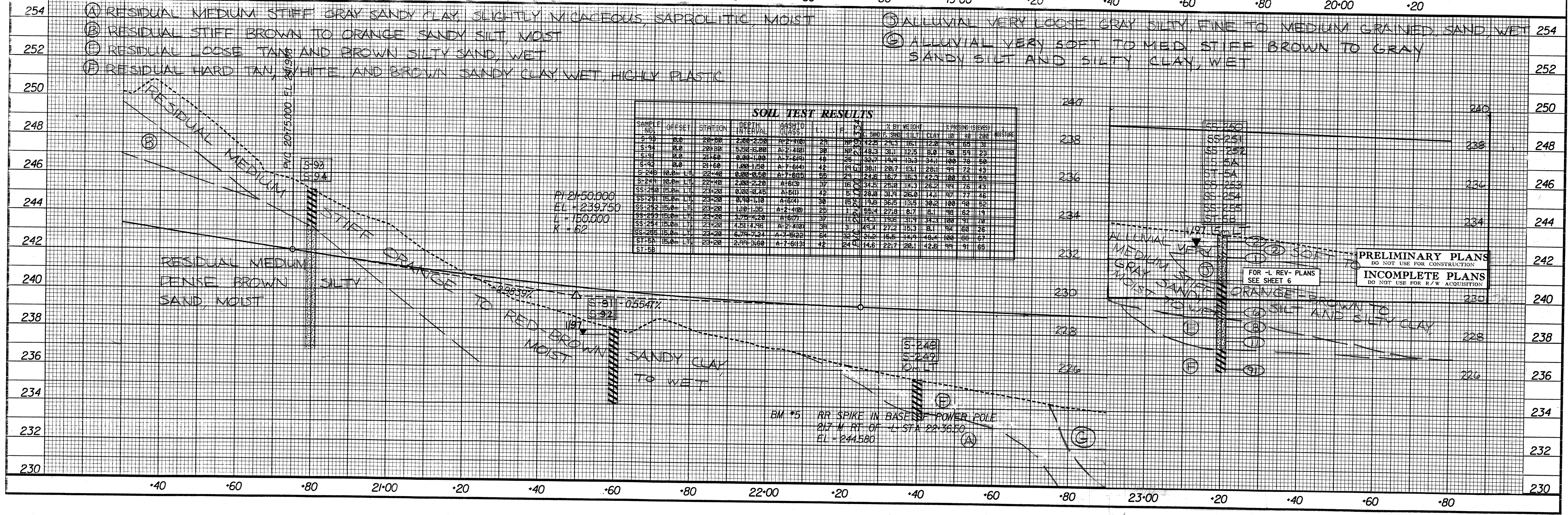
-L REV I-

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	30



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L. L.	P. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE
S-106	0.0	18+40	0.00-0.70	A-6(7)	39	19	21.5	29.5	21.0	28.1	100	89	54	
S-107	0.0	18+40	0.70-3.00	A-1-b(0)	24	NP	56.2	26.7	11.1	6.0	77	46	16	
SS-95	0.0	20+00	0.00-0.45	A-7-6-(11)	45	21	23.7	16.6	17.6	42.1	98	83	61	
SS-96	0.0	20+00	1.45-1.90	A-7-5(20)	64	21	5.4	25.3	35.2	34.1	100	97	76	37.6
SS-97	0.0	20+00	2.97-3.42	A-5(2)	47	NP	12.2	32.7	35.0	20.1	100	94	64	
RT-5	0.0	20+00	2.40-10.20	A-7-5(7)	49	16	23.4	24.4	27.9	24.2	96	81	55	
SS-98	0.0	20+00	6.01-6.46	A-2-4(0)	31	NP	34.3	35.1	18.6	12.0	94	74	35	
ST-2	0.0	20+00	6.77-7.37	A-2-5(0)	45	4	28.9	43.4	21.6	6.0	92	79	32	
SS-99	0.0	20+00	7.53-7.98	A-2-4(0)	36	NP	41.5	27.9	16.5	14.0	90	64	32	22.8
SS-100	0.0	20+00	9.05-9.50	A-2-4(0)	31	NP	35.3	43.3	15.3	6.0	100	79	28	
SS-101	0.0	20+00	10.57-11.02	A-2-4(0)	24	NP	36.7	40.5	16.8	6.0	98	80	28	
CBR-4	0.0	20+00	10.20-11.20	A-4(1)	37	9	32.3	30.3	17.2	20.2	99	80	42	



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L. L.	P. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE
S-93	0.0	20+80	2.00-2.50	A-2-4(0)	29	NP	42.5	29.3	16.1	12.0	94	65	31	
S-94	0.0	20+80	5.50-6.00	A-2-4(0)	30	NP	48.3	31.1	12.5	8.0	90	59	23	
S-91	0.0	21+60	0.00-1.00	A-7-6(9)	48	25	32.7	19.9	13.3	34.1	100	78	50	
S-92	0.0	21+60	1.00-1.50	A-7-6(4)	42	19	38.1	20.7	13.1	28.1	99	72	43	
S-248	10.0m LT.	22+40	0.00-0.50	A-7-6(15)	55	29	24.6	16.7	16.3	42.3	100	83	59	
S-249	10.0m LT.	22+40	2.00-2.20	A-6(3)	37	16	34.5	25.0	14.3	26.2	99	76	43	
SS-250	15.0m LT.	23+20	0.00-0.45	A-5(1)	42	5	28.0	31.9	26.0	14.1	97	77	46	
SS-251	15.0m LT.	23+20	0.90-1.10	A-6(4)	30	15	19.8	36.5	13.5	30.2	100	90	52	
SS-252	15.0m LT.	23+20	1.10-1.35	A-2-4(0)	25	1	55.4	27.8	8.7	8.1	98	62	19	
SS-253	15.0m LT.	23+20	3.75-4.20	A-6(7)	37	11	14.3	19.6	31.9	34.3	100	91	70	
SS-254	15.0m LT.	23+20	4.51-4.96	A-2-4(0)	39	3	49.4	27.2	15.3	8.1	94	60	26	
SS-255	15.0m LT.	23+20	6.79-7.24	A-7-5(22)	64	32	21.2	15.5	14.9	48.4	100	88	67	
ST-5A	15.0m LT.	23+20	2.99-3.60	A-7-6(13)	42	24	14.6	22.7	20.1	42.6	99	91	65	
ST-5B														

-L REV-

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	31

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DATE: 14-Aug-98 13:23

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH IN INTERVAL	AASHTO CLASS.	LL	PI	% SOIL MORTAR SAND	SILT	CLAY	% PASSING (SIEVE) #10	#40	#200	MOISTURE
S-129	0.0	25+00	0.00-0.50	A-7-6(13)	47	19	30.9	15.4	16.4	36.4	87	73	33
S-26	0.0	25+00	0.00-1.00	A-7-6(8)	45	17	32.6	19.5	20.5	28.4	88	75	41
S-27	0.0	25+00	2.50-3.00	A-7-5(12)	49	16	16.1	28.7	25.8	29.4	100	85	28
S-189	0.0	25+00	0.00-0.50	A-7-6(8)	47	19	30.9	15.4	16.4	36.4	87	73	33

PVC 24+75.000 EL 237.947

PI 26+00.000
EL = 237.254
L = 250.000
K = 62

-0.5547%

+3.4845%

PVC 27+25.000 EL 241.610

S-189

ALLUVIAL SOFT

LOOSE BROWN SILTY SAND

GRAY SILTY CLAY AND SDY SILT, WET

11/97

RESIDUAL SANDY AND

12/96

S-26
S-27

MEDIUM STIFF ORANGE TO BROWN SANDY SILTY CLAY, MOIST TO WET

BM #6
DISC STAMPED E-170 1965 IN NE WINGWALL OF BRIDGE 54 M RT OF -L- STA 25+94.14
EL = 233.273

S-129

228	230	232	234	236	238	240	242	244	246	248

·80 24·00 ·20 ·40 ·60 ·80 25·00 ·20 ·40 ·60 26·00 ·20 ·40 ·60 ·80 27·00 ·20

228	230	232	234	236	238	240	242	244	246	248	250	252	254	256

Ⓐ RESIDUAL MEDIUM STIFF RED-BROWN SANDY CLAY, MOIST

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH IN INTERVAL	AASHTO CLASS.	LL	PI	% SOIL MORTAR SAND	SILT	CLAY	% PASSING (SIEVE) #10	#40	#200	MOISTURE
S-130	0.0	27+40	0.00-0.50	A-2-4(0)	24	8	44.6	33.6	11.5	18.2	95	64	31
S-131	3.0m RT	28+40	1.50-2.00	A-7-6(6)	43	18	33.5	16.8	26.1	23.6	95	71	9
SS-1134	0.0	29+00	0.00-0.45	A-7-5(22)	55	24	4.4	16.4	28.7	50.5	100	98	18
SS-1135	0.0	29+00	1.41-1.86	A-7-5(11)	48	18	9.5	31.3	30.7	28.5	98	87	65

SS-1134
SS-1135

BROWN TO YELLOW GRANITE

12m RT

(5)

MOIST SAPROLITIC RESIDUAL MEDIUM STIFF TO STIFF RED TO YELLOW-BROWN SANDY SILT, WITH ROCK (GRANITE)

(28)

+3.4845%

(38)

TO MEDIUM STIFF RED DRY TO MOIST WEATHERED SOFT TO MEDIUM DENSE SILTY SAND TAN

AND MEDIUM DENSE SILTY SAND

RESIDUAL HARD ROCK BOULDERS (GRANITE)

S-131
3m RT

SOFT TO MEDIUM DENSE BROWN SILTY SANDY AND SILTY CLAY RESIDUAL

BM #7 RR SPIKE IN BASE OF LEANING GUY POLE
18.3 M RT OF -L- STA 28+75.50
EL = 237.467

S-130

RESIDUAL MEDIUM DENSE SAND MOIST TO WET

FOR -L REV- PLANS SEE SHEETS 6,7 & 8

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

228	230	232	234	236	238	240	242	244	246	248	250	252	254	256

·40 ·60 ·80 28·00 ·20 ·40 ·60 ·80 29·00 ·20 ·40 ·60 ·80 30·00 ·20 ·40 ·60 ·80

-L REV-

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	32

FILE: a:\proj\rcs\prof\rcs01w1.pro
DATE: 14-NOV-96 13:23

BM #8 RR SPIKE IN BASE OF 380 MM OAK
10.1 M RT OF L STA 30+89.60
EL = 247.98

SS-140
SS-141
SS-142
RT-6

S-138

(RESIDUAL SOFT TO MEDIUM STIFF RED-BROWN SANDY SILT AND MEDIUM STIFF TO STIFF TAN-GRAY CLAYEY SAND WITH GRANITE BOULDERS)

MOIST TAN WITH GRANITE BOULDERS

RESIDUAL SOFT WEATHERED TAN HARD ROCK (GRANITE)

SOFT WEATHERED (GRANITE)

TAN HARD ROCK (GRANITE)

CLAYEY SAND

BOULDERS

ROCK

SANDY CLAY

PVC 32+60.000 EL 260.969

S-143

1.97

MEDIUM STIFF RED-BROWN TO ORANGE-RED SANDY CLAY, MOIST

MEDIUM STIFF TO STIFF BROWN TO TAN SOFT WEATHERED ROCK (GRANITE)

MEDIUM STIFF TO STIFF BROWN TO RED-BROWN CLAYEY SAND, MOIST (SLIGHTLY MICACEOUS, SAPROLITIC

+3.48455

+1.90004

PI 34+00.000
EL = 265.130
Y = 240.000
X = 151

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L. L.	P. I.	% BY WEIGHT GR	SAND	SILT	CLAY	% PASSING 10	40	200	% MOISTURE
S-138	0.0	31+40	2.00-2.50	A-1-a(0)	37	8	36.2	28.7	17.0	20.2	96	78	40	
SS-140	0.0	32+20	0.00-0.45	A-1-b(0)	48	17	28.6	34.4	11.8	25.3	100	84	63	
SS-141	0.0	32+20	1.41-1.86	A-2-4(0)	33	NP	34.3	45.4	11.2	8.1	100	82	21	
SS-142	0.0	32+20	2.93-3.38	A-2-7(0)	45	12	41.6	30.5	13.8	14.1	93	67	31	
RT-6	0.0	32+20	1.41-1.86	A-2-4(0)	36	NP	43.1	41.3	4.3	10.2	93	55	27	
S-143	0.0	33+00	0.00-0.50	A-1-b(1)	43	17	38.2	19.3	18.2	38.3	97	75	56	

(RESIDUAL MEDIUM STIFF TO STIFF RED-BROWN SANDY SILT AND MEDIUM STIFF TO VERY STIFF YELLOW-BROWN CLAYEY SAND WITH GRANITE BOULDERS)

SS-144
SS-145
SS-146

S-147

(A) RESIDUAL MEDIUM STIFF RED-BROWN TO BROWN SANDY CLAY, MOIST

(A) STIFF RED BROWN TO BROWN SANDY SILT AND MEDIUM DENSE SILTY SAND, MOIST

(A) RESIDUAL STIFF RED-BROWN TO TAN SOFT WEATHERED ROCK (GRANITE)

TAN HARD ROCK (GRANITE)

PVC 35+20.000 EL 260.969

BM #9 RR SPIKE IN BASE OF 750 MM MAPLE
12.1 M RT OF L STA 35+15.40
EL = 267.405

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L. L.	P. I.	% BY WEIGHT GR	SAND	SILT	CLAY	% PASSING 10	40	200	% MOISTURE
SS-144	0.0	36+20	0.00-0.45	A-5(1)	57	16	23.0	24.2	18.6	34.2	97	83	64	
SS-145	0.0	36+20	1.21-1.66	A-7-5(7)	49	13	19.9	28.0	23.1	28.2	97	83	67	32.6
SS-146	0.0	36+20	2.73-3.18	A-5(0)	43	NP	35.2	38.2	22.5	18.1	95	72	38	
S-147	0.0	36+00	1.50-2.50	A-2-4(0)	23	NP	35.8	38	16.2	10.1	87	68	28	
S-148	0.0	37+00	0.00-0.50	A-6(5)	37	15	27.8	19.3	23.7	30.2	96	77	53	

(+) 19000%

S-148

1.97

(A) 15 MM RT

(A) RESIDUAL MEDIUM STIFF RED-BROWN SANDY SILT, MOIST

TAN HARD ROCK (GRANITE)

FOR -L REV- PLANS SEE SHEETS 8,9 & 10

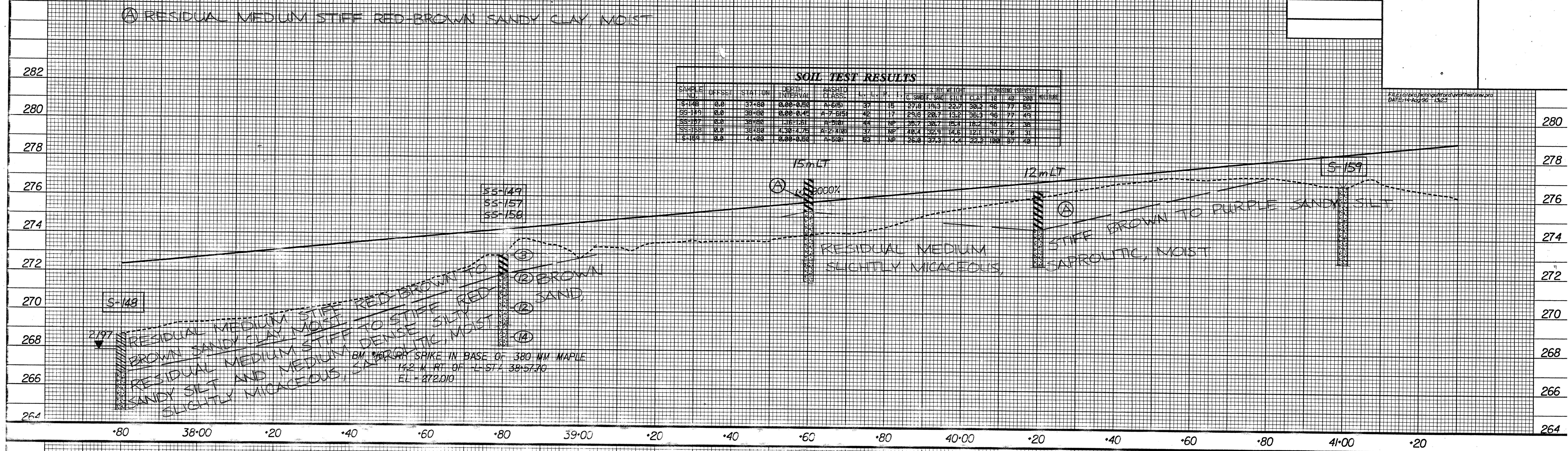
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

-L REV-

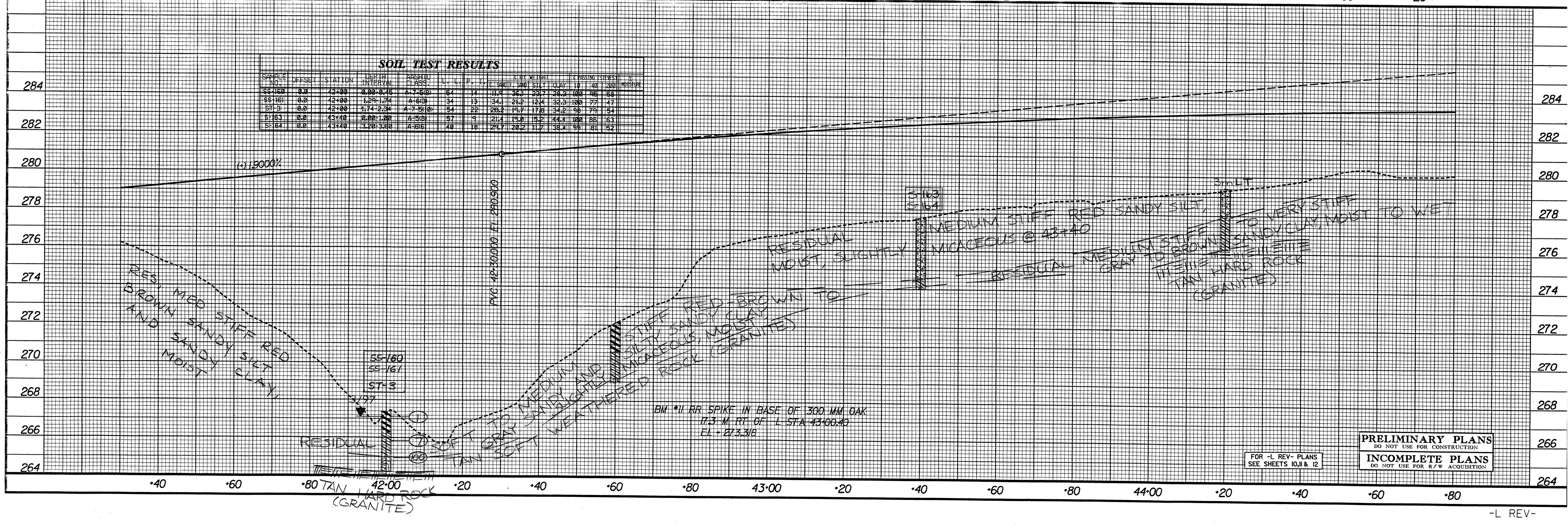
METRIC

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	33



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L. L.	P. I.	% BY WEIGHT C. SAND	% BY WEIGHT F. SAND	% BY WEIGHT SILT	% BY WEIGHT CLAY	% PASSING (SIEVES) 10	% PASSING (SIEVES) 40	% PASSING (SIEVES) 200	% MOISTURE
S-148	0.0	37+80	0.00-0.50	A-6(5)	37	15	27.8	19.3	22.7	30.2	96	77	53	
SS-149	0.0	38+80	0.00-0.45	A-7-6(5)	42	17	29.8	20.7	13.2	36.3	96	77	49	
SS-157	0.0	38+80	1.16-1.61	A-5(0)	44	NP	35.7	30.7	15.4	18.2	98	72	38	
SS-158	0.0	38+80	4.30-4.75	A-2-4(0)	37	NP	40.4	32.9	14.6	12.1	97	70	31	
S-159	0.0	41+00	0.00-0.50	A-5(0)	53	NP	26.0	37.3	14.4	22.2	100	87	40	



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L. L.	P. I.	% BY WEIGHT C. SAND	% BY WEIGHT F. SAND	% BY WEIGHT SILT	% BY WEIGHT CLAY	% PASSING (SIEVES) 10	% PASSING (SIEVES) 40	% PASSING (SIEVES) 200	% MOISTURE
SS-160	0.0	42+00	0.00-0.45	A-7-5(8)	54	14	11.9	36.1	23.7	28.3	100	95	58	
SS-161	0.0	42+00	1.29-1.74	A-6(3)	34	13	34.1	21.2	12.4	32.3	100	77	47	
ST-3	0.0	42+00	1.74-2.34	A-7-5(10)	54	22	28.2	19.7	17.8	34.2	98	79	54	
S-163	0.0	43+40	0.00-1.00	A-5(8)	57	9	21.4	19.0	15.2	44.4	100	86	63	
S-164	0.0	43+40	3.20-3.60	A-6(6)	40	18	29.7	20.2	11.7	38.4	99	81	52	

FOR -L REV- PLANS SEE SHEETS 10, 11 & 12

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

-L REV-

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	34

Ⓐ RESIDUAL VERY STIFF RED SANDY CLAY, SLIGHTLY MICACEOUS, MOIST TO WET
Ⓒ ROADWAY EMBANKMENT MEDIUM STIFF TAN TO RED-BROWN SANDY SILT, MOIST
Ⓓ TAN SOFT WEATHERED ROCK (GRANITE)

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SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH IN INTERVAL	AASHTO CLASS.	L. L.	P. I.	% OF SOIL PASSING			% PASSING US SIEVES			W MOISTURE
							GRAVEL	SAND	SILT	CLAY	10	40	200	
SS-165	0.0	45+00	0.00-0.45	A-1(0)	19	6	36.8	25.5	19.7	22.2	100	77	38	
SS-166	0.0	45+00	0.87-1.32	A-7-5(13)	54	24	24.8	18.0	16.8	40.4	100	84	69	
S-206	0.0	47+40	0.00-1.00	A-7-6(8)	45	21	32.9	14.9	11.7	40.4	99	76	63	
S-207	0.0	47+40	1.70-2.20	A-7-5(7)	73	27	18.6	23.0	19.9	44.4	100	89	81	

(+) 1.50000%
(-) 2.15000%
PI 45+30.000
EL = 286.600
L = 600.000
K = 148
SS 165
SS 166
5/97
TAN HARD ROCK (GRANITE)
RESIDUAL MEDIUM STIFF BROWN SANDY CLAY, MOIST
S 206
S 207
RESIDUAL MEDIUM STIFF YELLOW TO BROWN SANDY CLAY, MOIST
RESIDUAL MEDIUM STIFF RED-BROWN SANDY CLAY, SLIGHTLY MICACEOUS, SAPROLITIC, MOIST TO WET
HIGHLY PLASTIC
PVC 48+30.000 EL 280.150
BM #12 DISC STAMPED G 170 1965 IN SW WINGWALL OF BRIDGE 116 W LT OF L STA 46+67.50 EL = 280.720

Ⓓ TAN SOFT WEATHERED ROCK (GRANITE)

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L. L.	P. I.	% BY WEIGHT				% PASSING US SIEVES			W MOISTURE
							GRAVEL	SAND	SILT	CLAY	10	40	200	
SS-208	2.0m	LT	50+00	0.88-1.33	A-7-6(8)	49	20	27.9	22.4	11.2	38.4	98	81	62	
S-208	0.0		50+00	1.78-2.00	A-2-4(0)	35		34.9	41.0	8.5	16.2	98	80	26	

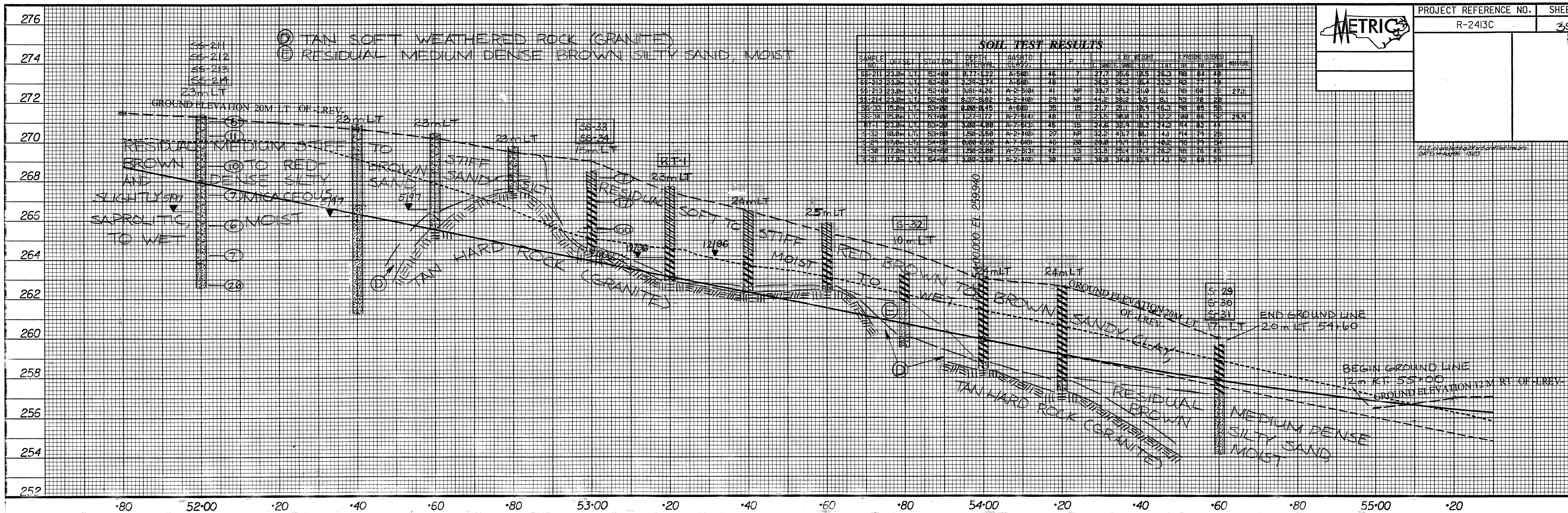
PVC 49+30.000 EL 280.150
(-) 2.12500%
(-) 4.00000%
SS 208
2m LT
PI 49+70.000
EL= 277.140
L = 280.000
K = 151
RESIDUAL MEDIUM STIFF ORANGE-BROWN TO RED-BROWN SANDY CLAY SLIGHTLY MICACEOUS, MOIST
RESIDUAL MEDIUM STIFF SANDY CLAY SLIGHTLY MICACEOUS, SAPROLITIC, MOIST TO WET, HIGHLY PLASTIC
5/97
TAN HARD ROCK (GRANITE)
RESIDUAL MEDIUM STIFF BROWN CLAY, MOIST TO WET
RESIDUAL VERY DENSE GRAY SILTY SAND, WET, SAPROLITIC
S 209
BEGIN GROUND LINE 20m LT 51+20
GROUND ELEVATION 20M LT
10m LT
RES. MED. DENSE TO DENSE BROWN SILTY SAND, MOIST TO WET
HARD ROCK (GRANITE)
PVC 51+32.00 EL 280.540
BM #13 RR SPIKE IN BASE OF POWER POLE 14.3 M RT OF -L- STA 48+67.30 EL = 279.240
BM #14 RR SPIKE IN BASE OF POWER POLE 12.0 M RT OF -L- STA 51+62.60 EL = 275.851

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

FOR -L REV- PLANS SEE SHEETS 12 & 13

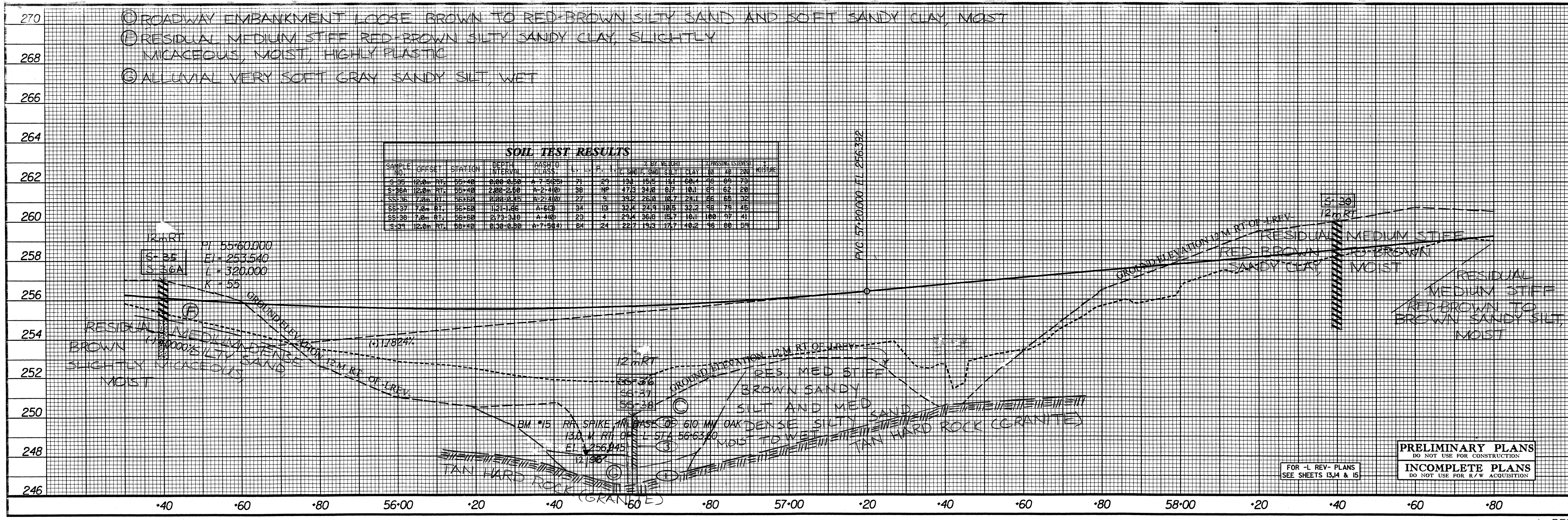
PROJECT REFERENCE NO.	SHEET NO.
R-2413C	35

METRIC



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L. L.	P. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE
SS-211	23.0m LT.	52+00	0.77-1.22	A-5(0)	46	7	27.7	35.6	10.5	26.3	98	84	40	
SS-212	23.0m LT.	52+00	2.29-2.74	A-5(0)	48	1	26.3	36.2	15.4	22.2	92	77	40	
SS-213	23.0m LT.	52+00	3.81-4.26	A-2-5(0)	41	NP	33.7	39.2	21.0	6.1	98	80	31	27.1
SS-214	23.0m LT.	52+00	8.37-8.82	A-2-4(0)	29	NP	44.2	38.2	9.5	8.1	93	70	20	
SS-33	15.0m LT.	53+00	0.00-0.45	A-6(6)	35	15	21.7	21.1	10.9	46.3	98	85	58	
SS-34	15.0m LT.	53+00	1.27-1.72	A-7-5(4)	48	11	23.5	30.0	14.3	32.2	100	86	52	29.9
RT-1	23.0m LT.	53+20	3.00-4.00	A-7-5(3)	45	15	24.6	32.9	18.2	24.2	94	82	44	
S-32	10.0m LT.	53+80	1.50-2.50	A-2-4(0)	27	NP	32.2	43.7	10.1	14.1	94	79	28	
S-29	17.0m LT.	54+60	0.00-0.50	A-7-6(8)	46	20	20.0	19.9	11.9	40.2	98	79	54	
S-30	17.0m LT.	54+60	1.50-2.00	A-7-6(3)	42	13	33.8	25.4	14.7	26.2	98	76	45	
S-31	17.0m LT.	54+60	3.00-3.50	A-2-4(0)	30	NP	38.0	34.0	13.9	14.1	92	68	29	



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L. L.	P. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE
S-35	12.0m RT.	55+40	0.00-0.50	A-7-5(25)	71	29	13.1	15.5	11.1	60.4	98	89	73	
S-36A	12.0m RT.	55+40	2.00-2.50	A-2-4(0)	38	NP	47.3	34.0	8.7	10.1	89	62	20	
SS-36	7.0m RT.	56+60	0.00-0.45	A-2-4(0)	27	9	39.2	26.0	10.7	24.1	86	65	32	
SS-37	7.0m RT.	56+60	1.21-1.66	A-6(3)	34	13	32.4	24.9	10.5	32.2	98	79	45	
SS-38	7.0m RT.	56+60	2.73-3.18	A-4(0)	23	4	29.4	36.8	15.7	18.1	100	97	41	
S-39	12.0m RT.	58+40	0.30-0.80	A-7-5(14)	64	24	22.7	19.3	17.7	40.2	96	80	59	

FOR -L REV- PLANS SEE SHEETS 13,14 & 15

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

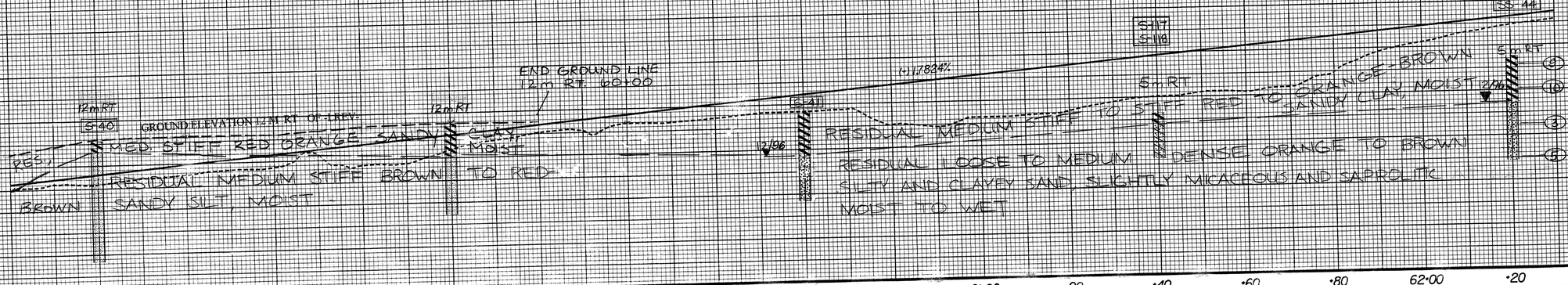
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

-L REV-

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	36

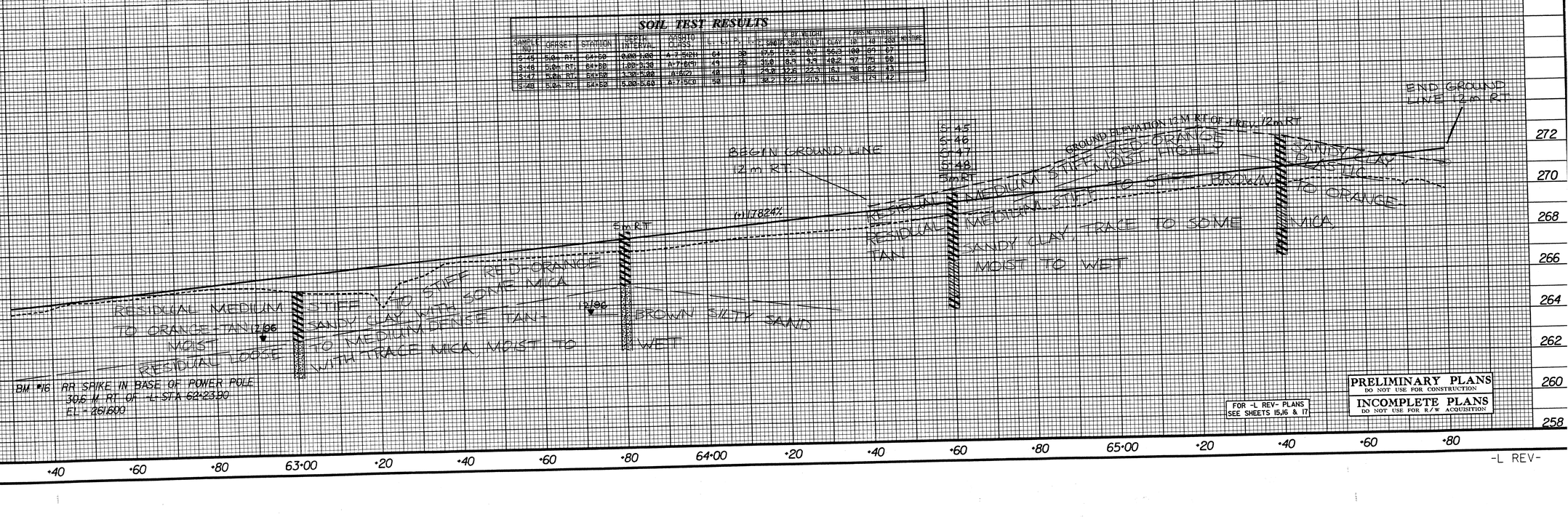
SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	M	% BY WEIGHT GRAVEL	SAND	SILT	CLAY	% PASSING U.S. SIEVE 10	40	200	% LOSS IN WASHING
S-40	12.0m RT.	59+00	1.50-2.00	A-1-[2]	39	18		38.2	30.6	13.1	20.1	57	36	15	
S-41	0.0	60+00	2.00-2.50	A-2-4(0)	26	NP		45.5	30.2	9.9	14.1	89	61	25	
S-117	5.0m RT.	61+10	0.00-0.50	A-7-6(8)	45	21		23.2	27.8	12.9	36.4	98	85	61	
S-118	5.0m RT.	61+40	0.50-1.00	A-2-6(1)	35	15		35.6	30.3	7.9	26.3	95	75	35	
SS-42	5.0m RT.	62+20	0.00-0.15	A-7-5(10)	57	20		18.3	24.5	8.9	48.3	96	86	67	
SS-43	5.0m RT.	62+20	1.12-1.57	A-7-5(5)	55	17		17.9	21.2	10.7	30.2	100	83	45	
SS-44	5.0m RT.	62+20	2.67-3.12	A-2-4(0)	37	NP		18.1	66.7	14.1	12.1	100	76	32	



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	M	% BY WEIGHT GRAVEL	SAND	SILT	CLAY	% PASSING U.S. SIEVE 10	40	200	% LOSS IN WASHING
S-45	5.0m RT.	64+50	0.00-1.00	A-7-5(21)	64	38		17.5	7.8	8.7	56.3	100	89	67	
S-46	5.0m RT.	64+50	1.00-1.38	A-7-6(9)	49	25		31.0	18.9	9.9	40.2	97	79	58	
S-47	5.0m RT.	64+50	1.38-5.00	A-6(2)	40	11		25.8	12.8	22.5	38.9	98	82	43	
S-48	5.0m RT.	64+50	5.00-5.60	A-7-5(3)	58	18		30.2	22.2	21.5	26.1	98	79	42	



FOR -L REV- PLANS
SEE SHEETS 15,16 & 17

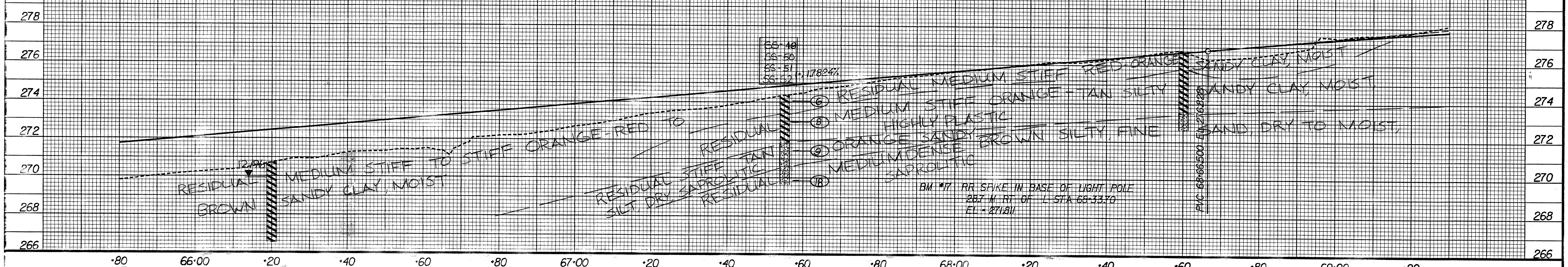
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

-L REV-

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	37

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L. L.	P. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE
SS-49	0.0	67+55	0.00-0.45	A-7-6(14)	53	24	13.3	24.3	8.0	54.3	96	87	63	
SS-50	0.0	67+55	1.13-1.58	A-7-5(32)	74	30	6.8	11.7	17.1	64.4	100	95	84	
SS-51	0.0	67+55	2.65-3.10	A-5(2)	43	7	19.5	42.3	20.1	18.1	100	89	47	
SS-52	0.0	67+55	4.17-4.62	A-2-4(0)	33	NP	34.8	42.9	16.3	6.0	76	59	22	

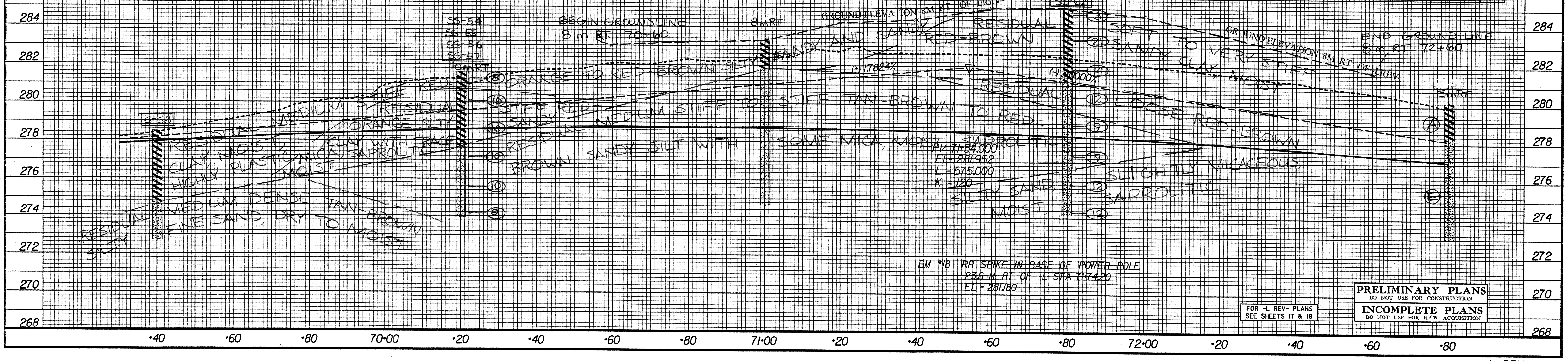


SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L. L.	P. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE
S-53	0.0	69+40	0.00-1.50	A-7-5(25)	63	29	5.2	20.5	11.9	62.4	99	96	77	
SS-54	10.0m RT.	70+20	0.00-0.45	A-7-5(26)	68	31	6.6	21.9	13.1	58.4	100	96	75	
SS-55	10.0m RT.	70+20	1.18-1.23	A-7-5(14)	65	20	2.2	45.5	22.1	30.2	100	99	63	35.2
SS-56	10.0m RT.	70+20	4.22-4.67	A-4(0)	39	NP	5.2	64.8	17.9	12.1	98	96	44	23.5
SS-57	10.0m RT.	70+20	7.26-7.71	A-4(0)	39	NP	5.4	68.8	17.7	8.0	98	95	42	
SS-58	8.0m RT.	71+80	0.00-0.45	A-7-6(11)	42	21	12.9	27.4	13.2	46.4	100	93	63	
SS-59	8.0m RT.	71+80	1.32-1.77	A-7-5(7)	55	17	14.3	41.8	13.6	30.3	99	92	50	30.7
RT-2	8.0m RT.	71+80	1.32-5.68	A-7-5(8)	58	22	11.5	47.5	18.8	22.2	100	95	49	
SS-60	8.0m RT.	71+80	4.36-4.81	A-2-5(0)	57	NP	11.1	65.2	15.6	8.1	100	96	34	
SS-61	8.0m RT.	71+80	5.88-6.33	A-5(0)	49	NP	13.7	53.9	20.3	12.1	100	95	40	18.9
CBR-1	8.0m RT.	71+80	7.40-8.40	A-5(1)	49	7	13.6	54.0	20.2	12.1	98	92	41	
SS-62	8.0m RT.	71+80	8.92-9.37	A-2-5(0)	45	NP	14.5	65.6	15.8	4.0	98	92	30	

Ⓐ RESIDUAL MEDIUM STIFF SANDY CLAY, SLIGHTLY MICACEOUS, MOIST

Ⓑ RESIDUAL LOOSE RED-BROWN SILTY SAND, SLIGHTLY MICACEOUS, MOIST



FOR -L REV- PLANS SEE SHEETS 17 & 18

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

-L REV-

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	38

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5m RT

5m RT

RESIDUAL RED-BROWN SANDY CLAY, MOIST

12.96

MEDIUM STIFF ORANGE-BROWN SILTY SAND, MOIST

P.I. 74+41.500 EL. 273.327

(-) 3.0000%

P.V.C. 75+60.000 EL. 269.772

BM #19 RR SPIKE IN BASE OF POWER POLE
18.7 M RT OF -L- STA 74+93.80
EL = 277.099

Ⓐ RESIDUAL MEDIUM STIFF YELLOW TO RED-BROWN SANDY CLAY, MOIST
Ⓔ RESIDUAL MEDIUM DENSE TAN-BROWN SILTY SAND, SLIGHTLY MICACEOUS, MOIST
Ⓕ RESIDUAL MEDIUM STIFF RED-BROWN SANDY CLAY, MOIST, HIGHLY PLASTIC
Ⓖ ALLUVIAL, SOFT BROWN SANDY SLT AND LOOSE SILTY SAND, MOIST

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT GRAVEL	SAND	SILT	CLAY	% PASSING (SIEVE) #10	#40	#200	% MOISTURE
S-115	12.0m RT.	75+80	0.00-0.50	A-1-a(0)	33	8	41.2	41.2	10.1	24.2	100	99	63	
S-116	12.0m RT.	76+00	0.50-1.00	A-2-4(0)	19	NP	31.0	46.7	8.1	14.1	87	75	23	
S-63	0.0	77+60	1.00-2.10	A-2-4(0)	30	NP	28.1	41.2	20.7	10.1	98	74	34	
S-64	22.0m	LT. 78+40	0.00-0.40	A-7-5(22)	81	28	10.1	16.6	12.8	60.5	100	94	76	
S-65	22.0m	LT. 78+40	5.50-6.70	A-2-4(0)	35	NP	49.0	34.9	7.1	8.1	94	63	24	
S-150	10.0m	LT. 79+20	0.00-0.50	A-7-6(11)	42	19	11.5	27.9	12.2	48.4	99	93	65	
S-151	10.0m	LT. 79+20	1.00-1.60	A-6(6)	28	14	16.7	36.3	14.6	34.3	98	88	63	

BEGIN GROUND LINE
12 m RT 76+40

GROUND ELEVATION 6m RT OF -L- STA 76+40 = 276.0

(-) 3.0000%

12 m RT

S-115
S-116

GROUND ELEVATION 12m RT OF -L- STA 76+40 = 267.0

TAN HARD ROCK (GRANITE)

PI 77+00.000
EL = 265.572
L = 280.000
K = 55

END GROUNDLINE
12 m RT 77+60

(-) 3.0000%

(+) 2.0652%

S-63

BM #20 RR SPIKE IN BASE OF 460 MM EACH TWIN MAPLES
14.1 M RT OF -L- STA 77+55.70
EL = 298.398

BEGIN GROUND LINE
20m LT
77+60

GROUND ELEVATION 20M LT OF -L- STA 77+60 = 283.63

RESIDUAL MEDIUM STIFF SANDY CLAY, MOIST

RESIDUAL MEDIUM DENSE TAN-BROWN SILTY SAND, MICACEOUS, MOIST, SLIGHTLY SAPROLITIC

HIGHLY PLASTIC

P.V.C. 78+40.000 EL. 283.463

S-64
S-65
22 m LT

END GROUND LINE
20m LT 78+90

ROADWAY EMBANKMENT, MED STIFF RED BROWN SANDY CLAY

S-150
S-151
15m LT

RES., BROWN

MED. STIFF RED-BROWN SANDY CLAY, MOIST

FOR -L REV- PLANS
SEE SHEETS 18,19 & 20

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

-L REV-

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	39

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DATE: 14-Aug-96 13:03

Ⓓ ROADWAY EMBANKMENT MEDIUM STIFF BROWN SANDY CLAY, MOIST

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT GRAVEL	SAND	SILT	CLAY	% PASSING SIEVES #10	#40	#200	MOISTURE
S-66	10.0m LT.	80+00	0.00-0.30	A-7-6(6)	52	23	11.9	27.4	18.3	42.4	100	97	66	
S-67	10.0m LT.	80+00	2.00-2.50	A-4(0)	39	NP	21.0	50.5	20.5	8.1	100	89	38	
SS-68	20.0m LT.	80+80	0.00-0.15	A-7-5(25)	62	29	7.1	17.8	18.6	56.5	98	92	77	
SS-69	20.0m LT.	80+80	1.35-1.80	A-7-5(9)	48	15	9.4	33.5	30.6	26.2	100	95	65	25.4
RT-3	20.0m LT.	80+80	1.00-8.00	A-7-5(5)	44	11	10.5	38.4	30.8	20.2	99	96	59	
ST-4	20.0m LT.	80+80	5.15-5.70	A-5(0)	47	NP	15.6	55.2	20.1	9.0	99	93	41	
SS-70	20.0m LT.	80+80	5.75-6.21	A-4(0)	38	NP	10.1	51.7	32.2	6.1	100	97	58	21.0
SS-71	20.0m LT.	80+80	8.85-9.40	A-4(0)	36	11	15.4	49.2	26.7	8.7	100	92	46	
CBR-2	20.0m LT.	80+80	8.00-9.00	A-7-5(6)	42	11	18.1	34.6	27.2	20.1	97	86	53	
S-72	10.0m LT.	83+20	3.00-4.00	A-7-5(8)	46	15	14.9	31.7	25.1	28.3	100	93	58	

20m LT
SS-68
SS-69
RT-3
ST-4
SS-70
SS-71
CBR-2

BEGIN GROUND LINE 20m LT 79+80

S-66
S-67
10m LT

GROUND ELEVATION 20M LT OF -LREV-

RESIDUAL STIFF RED-BROWN TO TAN-BROWN, SILTY SLIGHTLY MICACEOUS, MOIST

(-)2.06.52%

RESIDUAL MEDIUM STIFF TO STIFF RED-TAN-BROWN SANDY SILT, SAPROLITIC, MOIST

(-)1.24.45%

RESIDUAL MEDIUM STIFF RED-BROWN SANDY CLAY, SAPROLITIC

SLIGHTLY MICACEOUS

PI 80+78.000
EL = 272.389
L = 474.000
K = 124

GROUND ELEVATION 20M LT OF -LREV-

15m LT

RESIDUAL MEDIUM STIFF RED SANDY CLAY, MOIST

20m LT

HIGHLY PLASTIC BROWN SAPROLITIC SILT AND

RESIDUAL MEDIUM STIFF RED-BROWN SANDY SILT, SLIGHTLY Mmicaceous, MOIST

END GROUND LINE 20m LT 83+00

S-72
10m LT

PVC 83+16.000 EL 263.028

BM #21 RR SPIKE IN BASE OF 760 MM OAK 20.9 M RT OF -L- STA 80+38.40 EL = 269.87

BM #22 RR SPIKE IN BASE OF POWER POLE 13.8 M RT OF -L- STA 81+64.10 EL = 274.22

80+00 ·20 ·40 ·60 ·80 81+00 ·20 ·40 ·60 ·80 82+00 ·20 ·40 ·60 ·80 83+00 ·20

276 274 272 270 268 266 264 262

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT GRAVEL	SAND	SILT	CLAY	% PASSING SIEVES #10	#40	#200	MOISTURE
S-73	22.0m LT.	85+60	0.00-1.00	A-7-5(14)	51	20	8.5	26.2	27.5	38.3	100	95	70	
S-74	22.0m LT.	85+60	2.00-3.00	A-5(2)	42	8	18.3	46.6	25.0	12.1	100	95	52	

S-73
S-74
22m LT

PVC 83+93.000 EL 267.145

GROUND ELEVATION 20M LT OF -LREV-

12.5 LT

RESIDUAL MEDIUM STIFF CLAY MOIST

SANDY

RESIDUAL MEDIUM STIFF BROWN, SANDY SILT, MOIST

ORANGE

BEGIN GROUND LINE 20m LT 82+30

PI 84+90.000
EL = 265.818
L = 206.000
K = 55

8m LT

ROADWAY EMBANKMENT MEDIUM STIFF SANDY CLAY, MOIST

(-)1.84.6%

(+)1.87.05%

RED-BROWN

PVC 83+85.000 EL 267.118

5m LT

PVC 86+19.000 EL 268.275

BM #23 EXISTING NAIL 700 MM ABOVE GROUND IN POWER POLE (OLD TBM) 29.2 M RT OF -L- STA 84+91.40 EL = 270.565

·40 ·60 ·80 84·00 ·20 ·40 ·60 ·80 85·00 ·20 ·40 ·60 ·80 86·00 ·20 ·40 ·60 ·80

276 274 272 270 268 266 264 262 260 258

FOR -L REV- PLANS SEE SHEETS 20,21 & 22

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

-L REV-

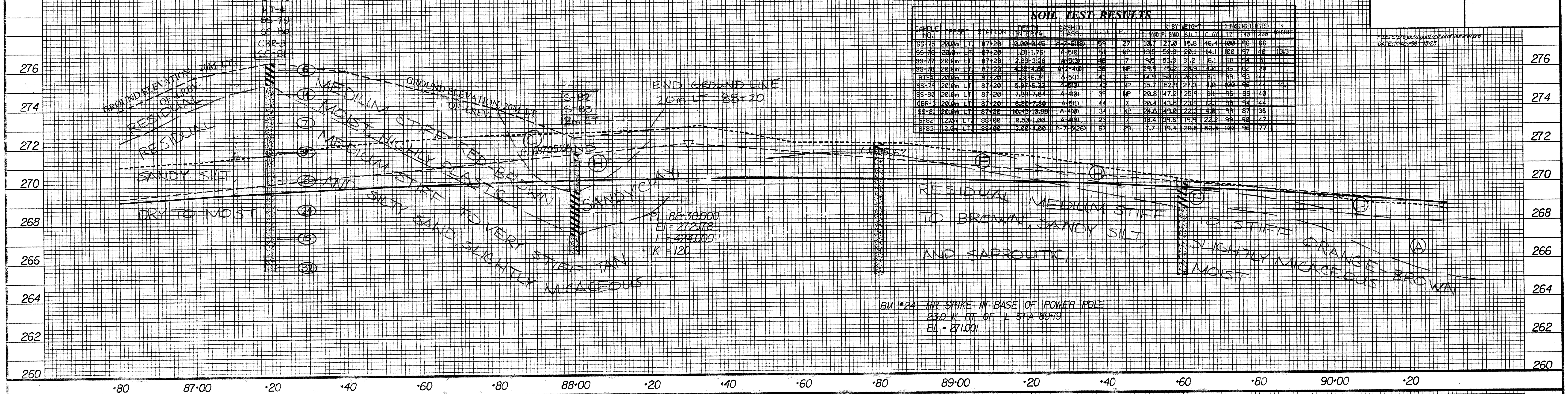
PROJECT REFERENCE NO.	SHEET NO.
R-2413C	40

METRIC

Ⓐ RESIDUAL MEDIUM STIFF RED-BROWN SANDY CLAY, MOIST
Ⓒ ROADWAY EMBANKMENT MEDIUM STIFF TAN SANDY SILT, MOIST
Ⓕ RESIDUAL MEDIUM STIFF RED-BROWN SANDY CLAY, MOIST, HIGHLY PLASTIC
Ⓗ ROADWAY EMBANKMENT MEDIUM STIFF BROWN SANDY CLAY, MOIST
Ⓘ ROADWAY EMBANKMENT MEDIUM STIFF YELLOW-BROWN SANDY CLAY, MOIST, HIGHLY PLASTIC

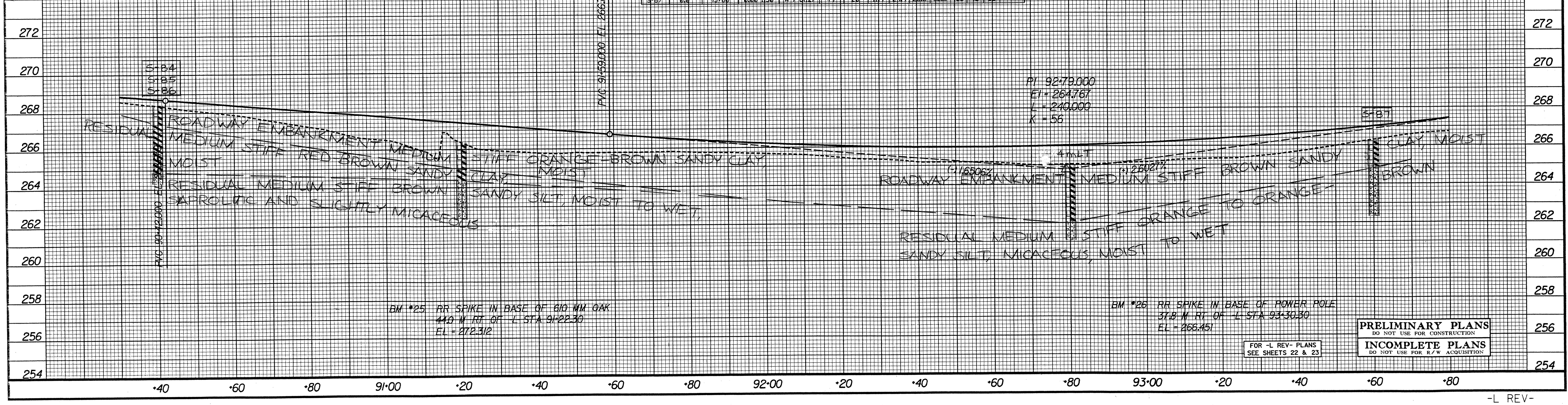
SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L. L.	P. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE
SS-75	20.0m LT.	87+20	0.00-0.45	A-7-5(18)	59	27	10.7	27.0	15.8	46.4	100	96	66	
SS-76	20.0m LT.	87+20	1.31-1.76	A-5(0)	51	NP	13.5	52.3	20.1	14.1	100	97	40	13.3
SS-77	20.0m LT.	87+20	2.83-3.28	A-5(3)	46	7	9.5	53.3	31.2	6.1	98	94	51	
SS-78	20.0m LT.	87+20	4.35-4.80	A-2-4(0)	36	NP	29.9	45.2	20.9	4.0	96	82	30	
RT-4	20.0m LT.	87+20	1.31-6.34	A-5(1)	43	6	14.9	50.7	26.3	8.1	99	93	44	
SS-79	20.0m LT.	87+20	5.87-6.32	A-5(0)	42	NP	15.7	52.9	27.3	4.0	100	96	44	16.1
SS-80	20.0m LT.	87+20	7.39-7.84	A-4(0)	39	NP	20.8	47.2	25.9	6.1	96	86	40	
CBR-3	20.0m LT.	87+20	6.80-7.80	A-5(1)	44	7	20.4	43.5	23.9	12.1	98	94	44	
SS-81	20.0m LT.	87+20	10.43-10.88	A-4(0)	34	NP	24.6	49.0	22.3	4.0	99	87	36	
S-82	12.0m LT.	88+00	0.50-1.00	A-4(0)	23	7	18.4	39.6	19.9	22.2	99	90	47	
S-83	12.0m LT.	88+00	3.00-4.00	A-7-5(26)	67	29	7.7	19.4	20.5	52.5	100	96	77	



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L. L.	P. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE
S-84	0.0	90+40	0.00-0.50	A-7-6(11)	45	18	10.1	28.5	23.1	38.3	100	96	66	
S-85	0.0	90+40	2.00-2.50	A-7-5(11)	50	20	11.3	31.9	20.5	36.3	100	96	61	
S-86	0.0	90+40	3.50-4.00	A-5(2)	44	8	20.6	41.4	25.9	12.1	100	91	45	
S-87	0.0	93+60	0.00-1.50	A-7-6(12)	49	20	11.9	29.9	28.0	30.3	100	95	63	



FOR -L REV- PLANS SEE SHEETS 22 & 23

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

-L REV-

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	41

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L. L.	P. I.	% BY WEIGHT GRAVEL	SAND	SILT	CLAY	% PASSING #10	#40	#200	MOISTURE
SS-8B	0.0	97+00	0.0@ 8.5	A-6(8)	37	18	37.5	35.3	15.9	20.2	81	70	36	
SS-8B	0.0	97+00	2.0@ 8.5	A-7-5(8)	48	18	36.9	35.7	11.2	22.2	88	87	56	
SS-9B	0.0	97+00	2.7@ 5.1	A-2-4(0)	37	NP	58.1	23.4	10.4	18.1	100	84	29	

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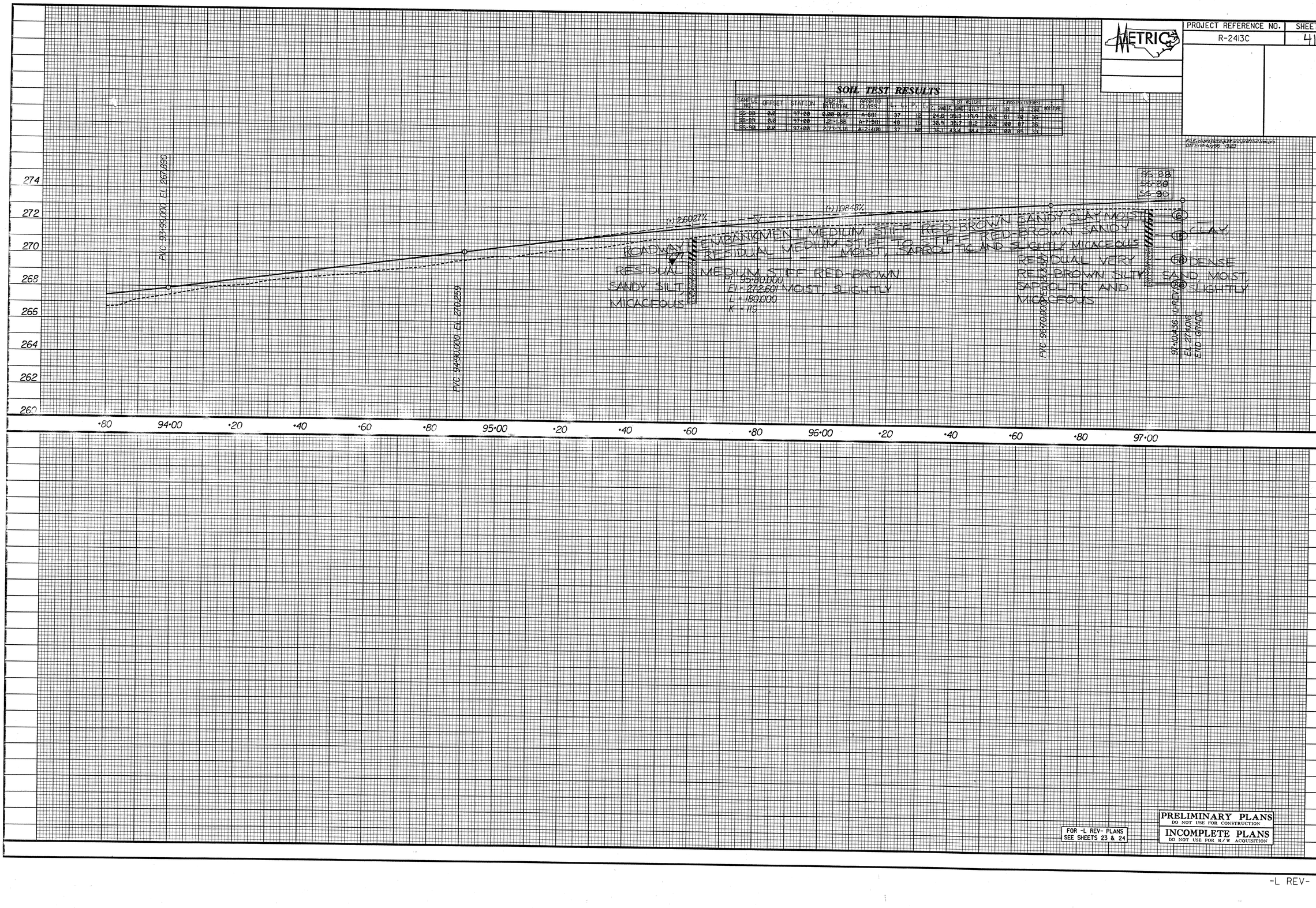

FOR -L REV- PLANS
SEE SHEETS 23 & 24

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	42

Ⓒ ROADWAY EMBANKMENT SOFT BROWN SANDY SILT MOIST
Ⓕ RESIDUAL MEDIUM STIFF BROWN SANDY CLAY MOIST, HIGHLY PLASTIC
Ⓗ ROADWAY EMBANKMENT MEDIUM STIFF RED-ORANGE SANDY CLAY, MOIST

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS	L.L.	P.I.	% BY WEIGHT GRAVEL	SAND	SILT	CLAY	% PASSING #10	#40	#200	MOISTURE
S-123	0.0	6+20	0.00-0.50	A-7-5(8)	56	30	21.2	12.5	21.4	44.9	100	84	69	
S-124	0.0	7+20	1.50-2.00	A-6(6)	35	17	20.3	16.8	13.4	49.5	98	76	54	
S-125	0.0	7+20	3.50-3.50	A-1-b(0)	22	NP	FILL	28.2	18.1	51.1	100	55	17	
SS-154	4.0m LT.	11+20	3.00-3.85	A-2-4(0)	19	NP	36.9	45.5	9.4	8.1	100	84	21	
SS-155	4.0m LT.	11+20	4.72-5.17	A-4(0)	34	6	9.9	63.3	20.7	16.1	100	85	74	
SS-156	4.0m LT.	11+20	7.76-8.21	A-1-b(0)	22	NP	60.7	24.5	6.8	8.1	92	58	16	
S-28	0.0	10+10	1.00-2.00	A-6(2)	35	14	34.8	23.5	15.9	25.2	98	74	44	

PI 11+47.000
EL = 235.786
L = 180.000
K = 33

PVC 10+57.000 EL 237.477

PVC 10+70.000 EL 236.316

PI 9+70.000
EL = 239.100
L = 80.000
K = 52

PVC 9+30.000 EL 240.163

-3.616%

-1.875%

-1.875%

-3.408%

S-123
S-124
S-125

SS-154
SS-155
SS-156
4m LT

S-28

RESIDUAL MEDIUM STIFF TO STIFF BROWN SANDY CLAY MOIST

RESIDUAL MEDIUM DENSE LIGHT BROWN TO PINK SILTY COARSE SAND MOIST TO WET, SAPROLITIC

ALLUVIAL SOFT GRAY SANDY SILT AND LOOSE TO MEDIUM DENSE GRAY SILTY SAND WET MINOR BASAL GRAVEL

ALLUVIAL MEDIUM STIFF TO STIFF SANDY CLAY WET

RESIDUAL MEDIUM STIFF LIGHT ORANGE TO GRAY SANDY CLAY, MOIST TO WET

4/97

12/97

2/97

5' SAND

Ⓓ TAN SOFT WEATHERED ROCK (GRANITE)
Ⓔ RESIDUAL MEDIUM DENSE LIGHT BROWN COARSE SAND, MOIST, SAPROLITIC

Ⓕ RESIDUAL MED. STIFF BROWN CLAY, HIGHLY PLASTIC, MOIST

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS	L.L.	P.I.	% BY WEIGHT GRAVEL	SAND	SILT	CLAY	% PASSING #10	#40	#200	MOISTURE
S-100	0.0	14+60	0.00-0.50	A-1-b(0)	25	7	37	4.0	8.2	15.5	72.2	100	98	68
S-101	0.0	14+60	8.50-11.50	A-2-6(0)	31	11	23	10.0	16.5	25.8	48.1	87	82	67
S-122	0.0	12+50	0.00-0.50	A-2-6(0)	33	13	28	15.3	17.4	26.8	50.5	98	96	86

PVC 12+50.000 EL 250.000

RESIDUAL MEDIUM STIFF RED-BROWN TO ORANGE-BROWN SANDY AND SILTY CLAY, MOIST

RESIDUAL MEDIUM DENSE LIGHT TAN SILTY SAND, MOIST

RESIDUAL MED. STIFF TO STIFF HIGHLY PLASTIC MOIST GRANITE BOULDERS WITH MINOR MEDIUM STIFF BROWN SILT MOIST, WITH MANY GRANITE BOULDERS

S-100
S-101

S-122

-3.616%

TAN HARD ROCK (GRANITE)

RESIDUAL MEDIUM STIFF BROWN SILTY CLAY WITH GRAVEL MOIST HIGHLY PLASTIC

PVC 12+37.000 EL 239.041

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

FOR SB US 220 RAMP PLANS
SEE SHEETS 6 & 7

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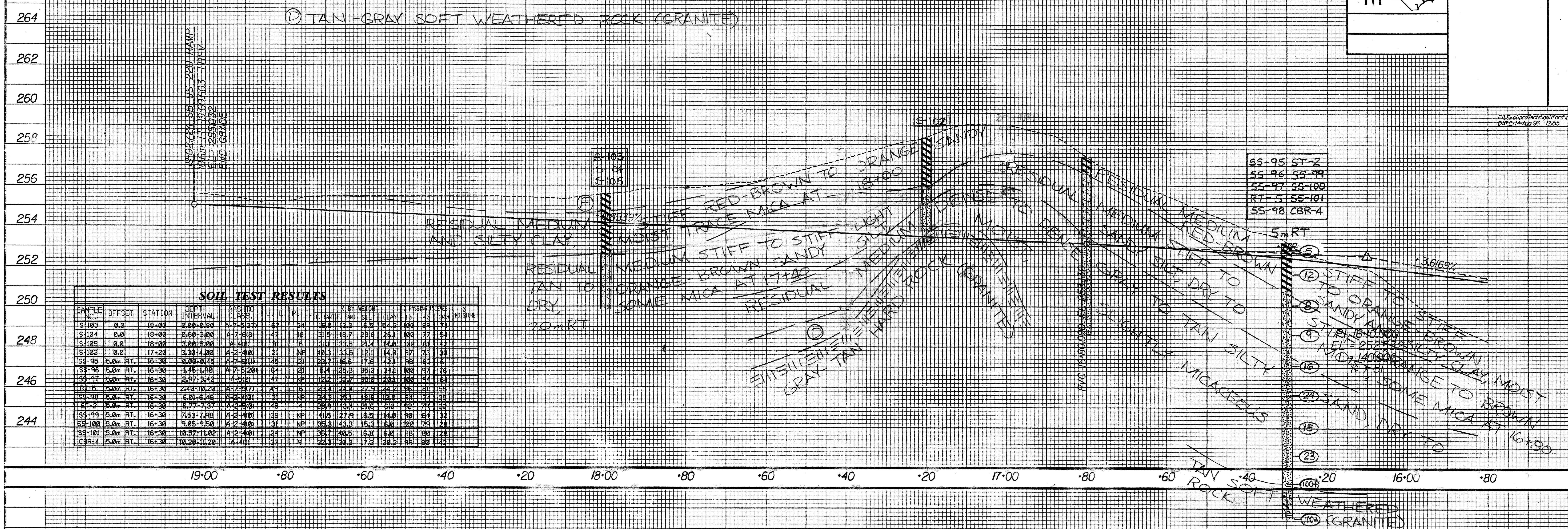
9+99.999 SB US 220 RAMP
11.80 LT. REV. STA. 27+27.641
EL = 241.486
BEGIN GRADE

SB US 220 RAMP

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	43

METRIC



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L. L.	P. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE
S-103	0.0	18+00	0.00-0.80	A-7-5(27)	67	34	16.0	13.2	16.5	54.2	100	89	74	
S-104	0.0	18+00	0.80-3.00	A-7-6(8)	47	18	31.5	18.7	23.8	26.1	100	77	54	
S-105	0.0	18+00	3.00-5.00	A-4(0)	31	5	31.1	33.5	21.4	14.0	100	81	42	
S-102	0.0	17+20	3.30-4.00	A-2-4(0)	21	NP	40.3	33.5	12.1	14.0	97	73	30	
SS-95	5.0m RT.	16+30	0.00-0.45	A-7-6(11)	45	21	23.7	16.6	17.6	42.1	98	83	61	
SS-96	5.0m RT.	16+30	1.45-1.90	A-7-5(20)	64	21	5.4	25.3	35.2	34.1	100	97	76	
SS-97	5.0m RT.	16+30	2.97-3.42	A-5(2)	47	NP	12.2	32.7	35.0	20.1	100	94	64	
RT-5	5.0m RT.	16+30	2.40-10.20	A-7-5(7)	49	16	23.4	24.4	27.9	24.2	96	81	55	
SS-98	5.0m RT.	16+30	6.01-6.46	A-2-4(0)	31	NP	34.3	35.1	18.6	12.0	94	74	35	
ST-2	5.0m RT.	16+30	6.77-7.37	A-2-5(0)	45	4	28.9	43.4	21.6	6.0	92	79	32	
SS-99	5.0m RT.	16+30	7.53-7.98	A-2-4(0)	36	NP	41.5	27.9	16.5	14.0	90	64	32	
SS-100	5.0m RT.	16+30	9.05-9.50	A-2-4(0)	31	NP	35.3	43.3	15.3	6.0	100	79	28	
SS-101	5.0m RT.	16+30	10.57-11.02	A-2-4(0)	24	NP	36.7	40.5	16.8	6.0	98	80	28	
CBR-4	5.0m RT.	16+30	10.20-11.20	A-4(1)	37	9	32.3	30.3	17.2	20.2	99	80	42	

FOR SB US 220 RAMP PLANS SEE SHEET 6

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

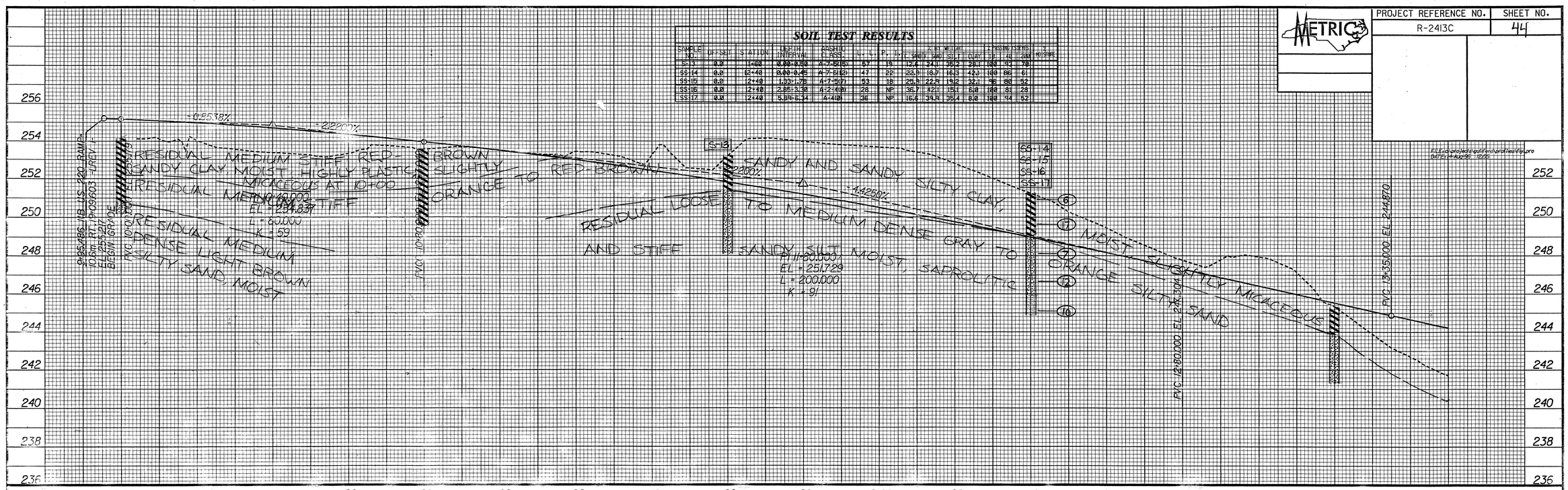
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

SB US 220 RAMP

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	44

SOIL TEST RESULTS

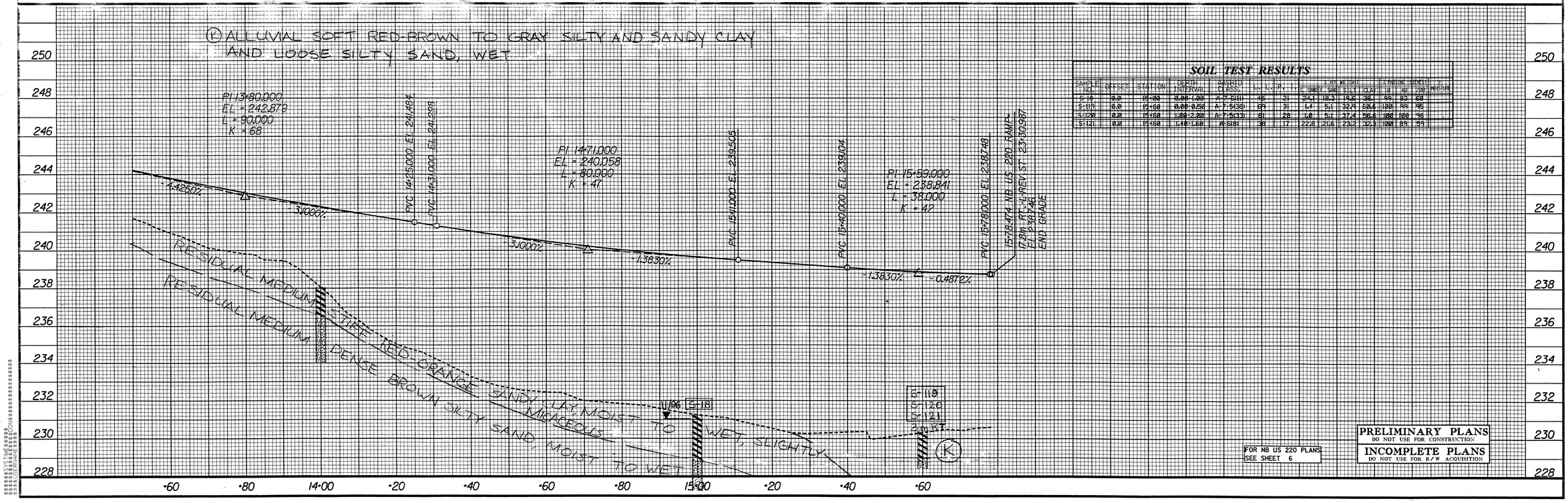
SAMPLE NO.	OFF-SET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% DRY WEIGHT GRAVEL	SAND	SILT	CLAY	% PASSING SIEVES #10	#40	#200	MOISTURE
SS-13	0.0	11+60	0.00-0.50	A-2-6(5)	67	19	12.4	24.1	36.2	28.1	100	93	78	
SS-14	0.0	12+40	0.00-0.45	A-7-6(12)	47	22	22.9	18.7	16.3	42.1	100	86	61	
SS-15	0.0	12+40	1.33-1.78	A-7-5(7)	53	18	25.9	22.9	19.2	32.1	96	80	52	
SS-16	0.0	12+40	2.85-3.30	A-2-4(0)	28	NP	36.7	42.1	15.1	6.0	100	81	28	
SS-17	0.0	12+40	5.83-6.34	A-4(0)	36	NP	16.6	39.8	36.4	8.0	100	94	52	



Ⓚ ALLUVIAL SOFT RED-BROWN TO GRAY SILTY AND SANDY CLAY AND LOOSE SILTY SAND, WET

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% DRY WEIGHT GRAVEL	SAND	SILT	CLAY	% PASSING SIEVES #10	#40	#200	MOISTURE
S-118	0.0	15+60	0.00-1.00	A-7-6(10)	46	21	24.1	18.3	19.8	38.1	98	83	68	
S-119	0.0	15+60	0.00-0.50	A-7-5(38)	69	31	1.1	5.1	32.9	60.6	100	99	95	
S-120	0.0	15+60	1.00-2.00	A-7-5(13)	61	28	1.0	5.1	37.4	56.5	100	100	96	
S-121	0.0	15+60	1.40-1.90	A-5(8)	38	17	22.8	21.5	23.2	32.5	100	89	59	



FOR NB US 220 PLANS SEE SHEET 6

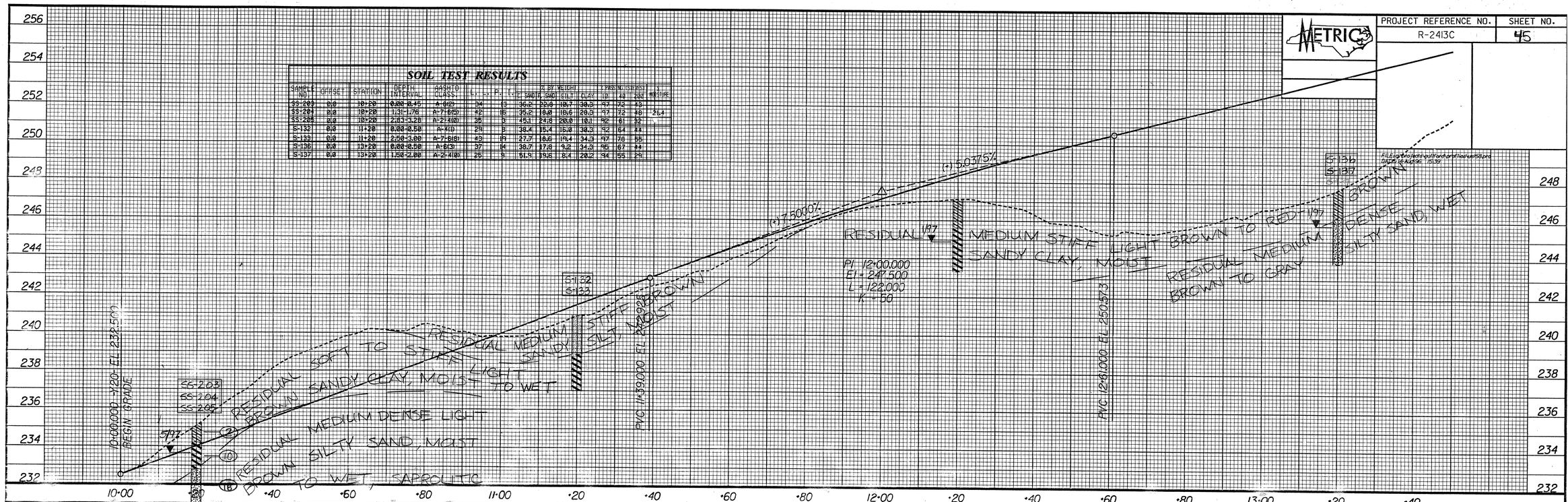
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

NB US 220 RAMP

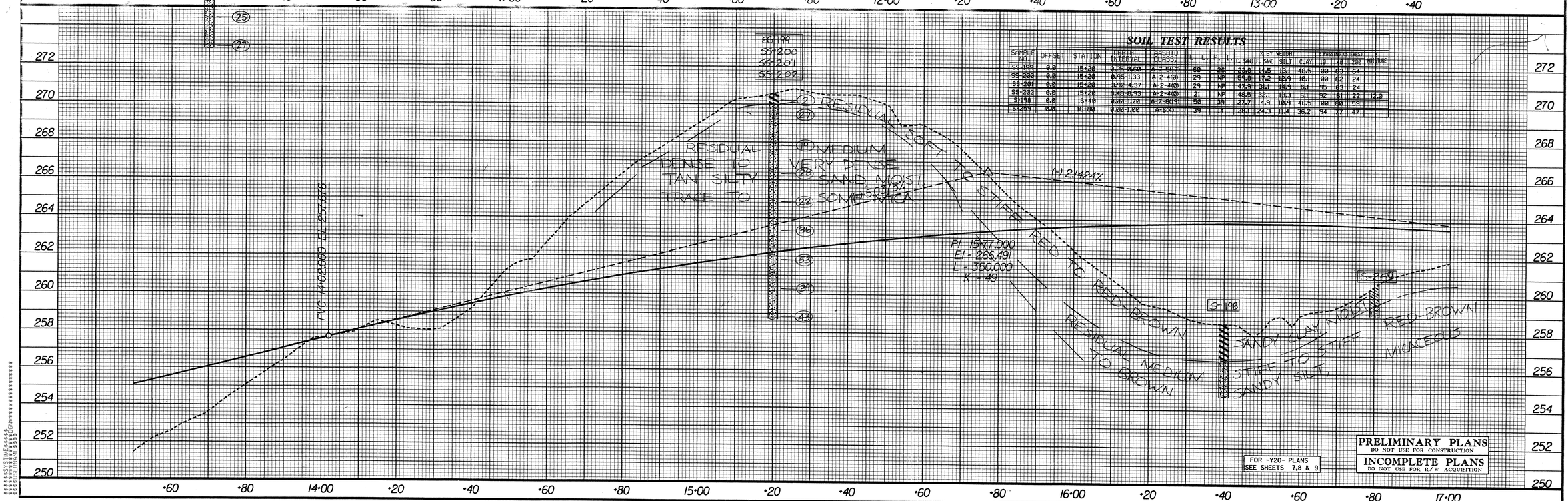
SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT GRAVEL	SAND	SILT	CLAY	% PASSING (SIEVE) #10	#40	#200	% MOISTURE
SS-203	0.0	10+20	0.00-0.45	A-6(2)	34	13	36.2	22.0	18.7	30.3	97	72	43	
SS-204	0.0	10+20	1.31-1.76	A-7-6(5)	42	16	35.2	16.8	18.5	29.5	97	72	48	21.4
SS-205	0.0	10+20	2.83-3.28	A-2-4(0)	26	3	45.1	24.6	20.0	10.1	92	61	32	
S-132	0.0	11+20	0.00-0.50	A-4(0)	29	P	38.4	15.4	16.0	30.3	92	64	44	
S-133	0.0	11+20	2.00-3.00	A-7-6(8)	43	19	27.7	16.5	19.4	34.3	97	78	55	
S-136	0.0	13+20	0.00-0.50	A-6(3)	37	14	38.7	17.6	4.2	34.5	95	67	44	
S-137	0.0	13+20	1.50-2.00	A-2-4(0)	25	5	51.5	19.6	18.4	20.2	94	55	29	



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT GRAVEL	SAND	SILT	CLAY	% PASSING (SIEVE) #10	#40	#200	% MOISTURE
SS-199	0.0	15+20	0.25-0.60	A-7-6(17)	60	28	33.8	14.8	18.4	46.5	100	93	64	
SS-200	0.0	15+20	0.95-1.33	A-2-4(0)	29	NP	54.8	17.2	12.9	10.1	100	62	24	
SS-201	0.0	15+20	2.42-2.87	A-2-4(0)	29	NP	47.9	21.1	14.9	16.1	95	63	24	
SS-202	0.0	15+20	3.93-4.13	A-2-4(0)	21	NP	48.5	22.1	15.3	14.1	92	61	22	12.0
S-198	0.0	16+40	0.00-1.70	A-7-6(19)	50	29	22.7	14.5	16.9	45.5	100	88	69	
S-254	0.0	16+80	0.00-1.00	A-6(6)	39	14	28.1	27.3	11.4	33.2	94	77	49	



FOR -Y20- PLANS SEE SHEETS 7,8 & 9

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

-Y20- SPOTSWOOD ROAD EXT.

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	46

Ⓐ RESIDUAL MEDIUM STIFF RED SANDY CLAY WITH TRACE MICA, MOIST

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% SAND	% SILT	% CLAY	% PASSING #10	% PASSING #40	% PASSING #200	MOISTURE
S-196	0.0	18+20	0.00-6.62	A-7-6(21)	58	29	18.4	19.1	13.1	54.4	100	83	28
S-197	0.0	18+20	8.70-6.68	A-5(8)	45	NP	25.5	32.7	19.8	22.2	98	86	45

PVC 17+77.500 EL 262.136

PVC 17+52.000 EL 262.712

S-196

S-197

PI 18+80.000
EL = 260.000
L = 205.000
K = 52

RESIDUAL STIFF BROWN SANDY SILT, MOIST MICACEOUS

(-) 2.14247.

(+) 4.22230%

PVC 19+82.500 EL 264.329

17+00 ·20 ·40 ·60 ·80 18+00 ·20 ·40 ·60 ·80 19+00 ·20 ·40 ·60 ·80 20+00 ·20 ·40

Ⓐ RESIDUAL MEDIUM STIFF RED-BROWN SILTY SANDY CLAY, MOIST
Ⓕ RESIDUAL VERY SOFT TO MEDIUM STIFF RED TO RED-BROWN SILTY CLAY WITH TRACE MICA, MOIST, HIGHLY PLASTIC

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% SAND	% SILT	% CLAY	% PASSING #10	% PASSING #40	% PASSING #200	MOISTURE
S-195	0.0	21+40	0.30-6.70	A-2-4(0)	28	4	44.8	21.4	15.6	18.2	83	60	36
S-257	0.0	22+40	0.00-1.00	A-6(4)	29	13	18.7	41.6	17.6	36.2	88	82	53
SS-190	0.0	23+40	0.10-0.45	A-7-5(34)	72	38	12.3	8.7	12.3	66.7	100	92	86
SS-191	0.0	23+40	0.92-1.27	A-5(6)	60	8	23.7	25.5	18.2	30.3	100	83	53
SS-192	0.0	23+40	3.34-3.74	A-5(8)	53	NP	28.8	46.8	18.2	4.1	100	92	38	27.0
SS-193	0.0	23+40	3.86-4.31	A-2-4(0)	40	NP	25.9	46.8	19.2	8.1	100	89	33
SS-194	0.0	23+40	5.38-5.83	A-2-4(0)	29	NP	45.7	40.8	8.7	8.1	91	68	16

SS-190
SS-191
SS-192
SS-193
SS-194

S-257

(-) 0.60731%

(+) 4.22230%

S-195

RESIDUAL MEDIUM DENSE TO DENSE ORANGE TAN SILTY SAND WITH TRACE MICA, MOIST

PI 22+45.000
EL = 275.414
L = 180.000
K = 50

RESIDUAL STIFF TO LOOSE TO MEDIUM DENSE TAN-GRAY MICACEOUS SANDY SILT AND SILTY SAND WITH SOME MICA, MOIST

PVC 23+36.000 EL 275.967

Ⓕ ① ⑫ ⑬ ⑩ ⑥ ⑫

PVC 21+55.000 EL 271.613

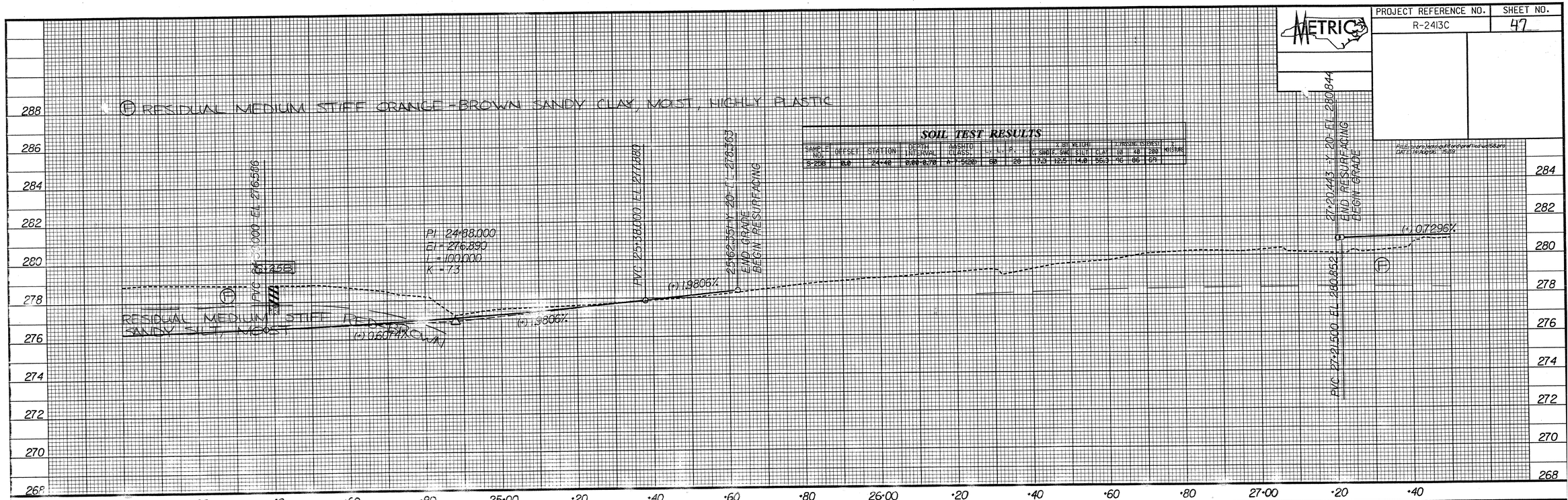
17+00 ·20 ·40 ·60 ·80 18+00 ·20 ·40 ·60 ·80 19+00 ·20 ·40 ·60 ·80 20+00 ·20 ·40 ·60 ·80 21+00 ·20 ·40 ·60 ·80 22+00 ·20 ·40 ·60 ·80 23+00 ·20 ·40 ·60 ·80 24+00

FOR -Y20- PLANS SEE SHEETS 9,10 & 11

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

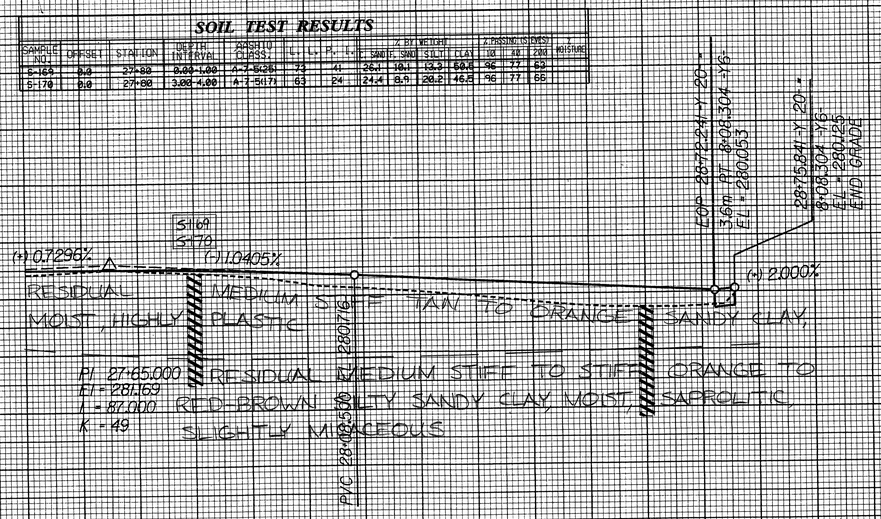
-Y20- SPOTSWOOD ROAD EXT.

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	47



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT GRAVEL	SAND	SILT	CLAY	PASSING SIEVES #10	#40	#200	MOISTURE
S-256	8.0	24+40	0.00-0.70	A-7-5(20)	60	20	17.3	12.5	14.0	56.3	96	86	69	



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT GRAVEL	SAND	SILT	CLAY	PASSING SIEVES #10	#40	#200	MOISTURE
S-164	8.0	27+88	3.00-4.00	A-7-5(26)	73	41	26.1	18.1	13.3	50.6	96	77	63	
S-178	8.0	27+88	3.00-4.00	A-7-5(17)	63	24	24.4	8.9	28.2	46.5	96	77	66	

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

FOR -Y20- PLANS
SEE SHEETS 29 & 27

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	48

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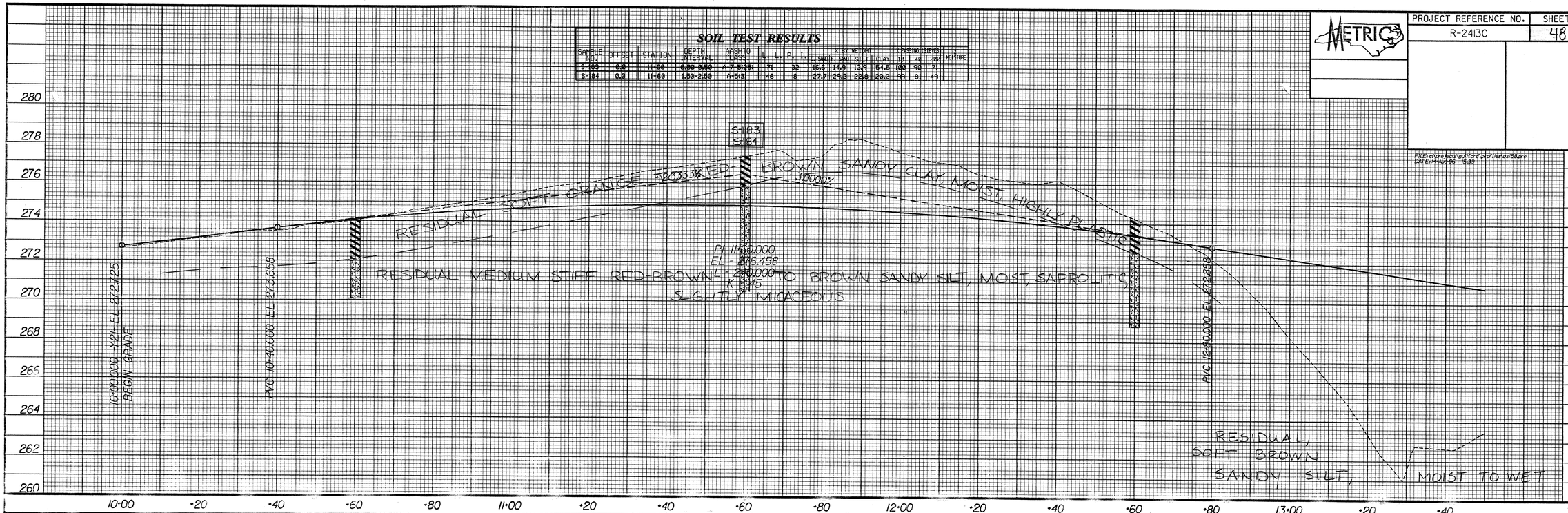
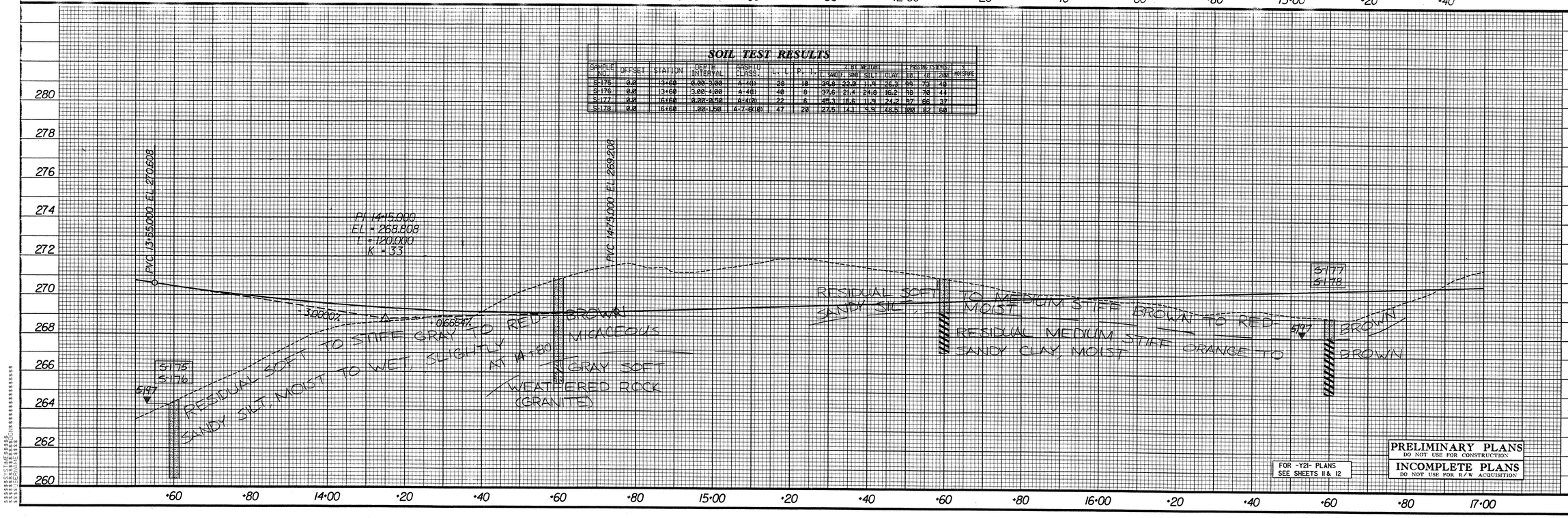
SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L. L.	P. I.	% BY WEIGHT % GRAVEL	% SAND	SILT	CLAY	% PASSING SIEVES #10	#40	#200	% MOISTURE
S-183	0.0	11+60	0.00-0.50	A-7-5(25)	71	32	16.4	14.8	13.9	54.5	100	98	91	
S-184	0.0	11+60	1.00-2.00	A-5(3)	46	8	27.7	29.3	22.6	20.2	88	81	49	



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L. L.	P. I.	% BY WEIGHT % GRAVEL	% SAND	SILT	CLAY	% PASSING SIEVES #10	#40	#200	% MOISTURE
S-175	0.0	13+60	0.00-3.00	A-1(0)	28	10	54.8	23.8	11.8	35.2	68	52	28	
S-176	0.0	13+60	3.00-4.00	A-4(0)	48	8	37.6	21.4	24.8	66.2	98	78	44	
S-177	0.0	16+60	0.00-0.50	A-4(0)	22	6	45.3	16.5	11.9	21.2	97	86	37	
S-178	0.0	16+60	.00-1.50	A-7-6(10)	47	28	27.5	14.1	9.9	48.5	100	82	60	



FOR -Y2I- PLANS
SEE SHEETS 11 & 12

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

-Y2I- SPOTSWOOD RD. RELOC.

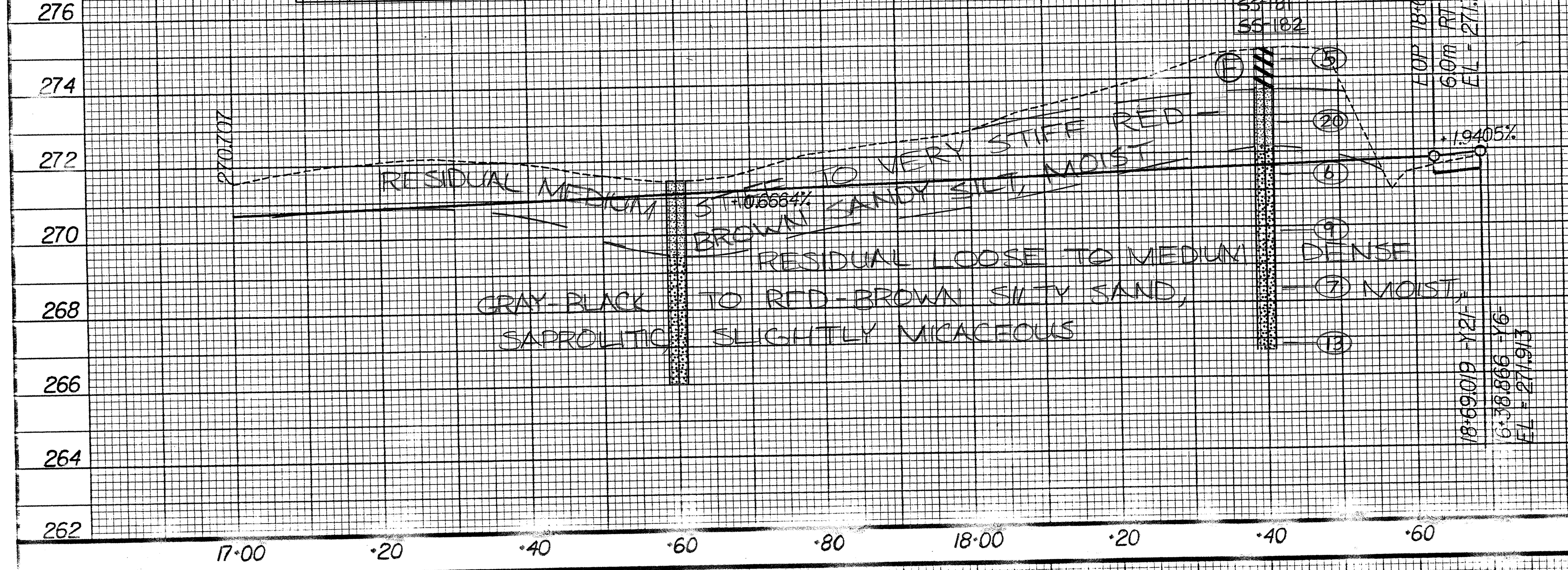
PROJECT REFERENCE NO.	SHEET NO.
R-2413C	49

METRIC

Ⓕ RESIDUAL STIFF RED-ORANGE SANDY CLAY, MOIST, HIGHLY PLASTIC

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L. L.	P. I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE
							C. SAND	F. SAND	SILT	CLAY	10	40	200	
SS-179	0.0	18+40	0.00-0.45	A-7-5(16)	57	27	21.8	16.4	9.3	52.5	100	86	63	
SS-180	0.0	18+40	1.71-2.16	A-4(0)	40	6	30.9	36.4	12.5	20.2	100	83	36	25.0
SS-181	0.0	18+40	3.13-3.58	A-2-4(0)	33	NP	43.8	34.7	9.3	12.1	100	75	24	
SS-182	0.0	18+40	4.65-5.10	A-2-5(0)	43	NP	41.8	35.8	14.3	8.1	90	66	25	24.7



FOR -Y21- PLANS SEE SHEET 28

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

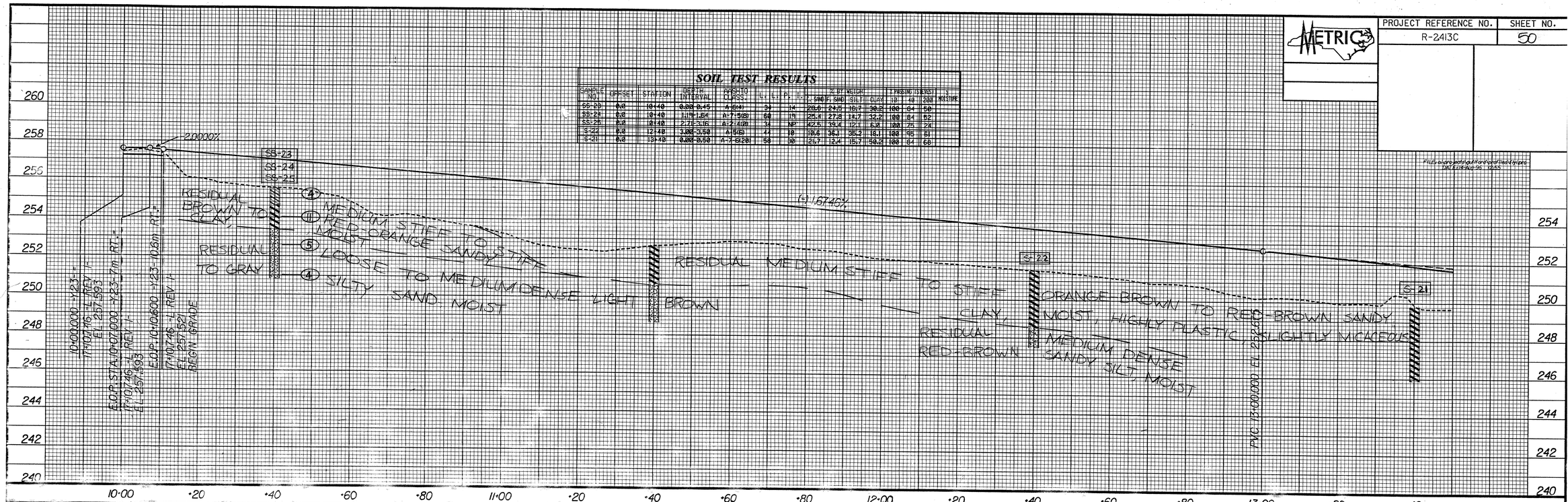
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

-Y21- SPOTSWOOD RD. RELOC.

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	50

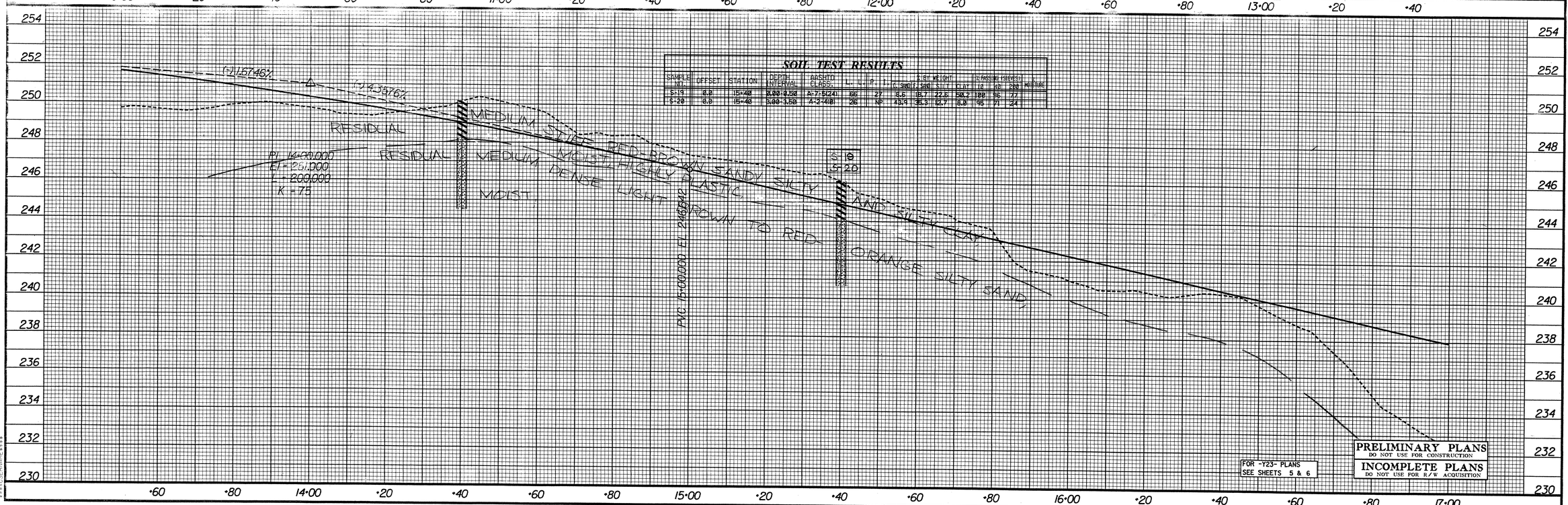
SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT G. SAND	F. SAND	SILT	CLAY	% PASSING #10	#40	#200	MOISTURE
SS-23	0.0	10+40	0.00-0.45	A-6(4)	37	14	28.6	24.5	16.7	30.2	100	84	58	
SS-24	0.0	10+40	1.17-1.84	A-7-5(8)	60	19	25.4	27.8	14.7	32.2	100	84	62	
SS-25	0.0	10+40	2.71-3.16	A-2-4(0)	34	NP	42.5	33.4	12.1	6.0	100	75	24	
S-22	0.0	12+40	3.00-3.50	A-1-b(0)	17	10	19.5	36.1	26.3	18.1	100	96	51	
S-21	0.0	13+40	0.00-0.50	A-7-6(20)	56	30	21.7	12.4	15.7	50.2	100	84	68	



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT G. SAND	F. SAND	SILT	CLAY	% PASSING #10	#40	#200	MOISTURE
S-19	0.0	15+40	0.00-0.50	A-7-6(24)	66	27	8.5	16.7	22.6	50.2	100	96	77	
S-20	0.0	15+40	3.00-3.50	A-2-4(0)	26	NP	43.9	35.3	12.7	8.0	95	71	24	



FOR -Y23- PLANS SEE SHEETS 5 & 6

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

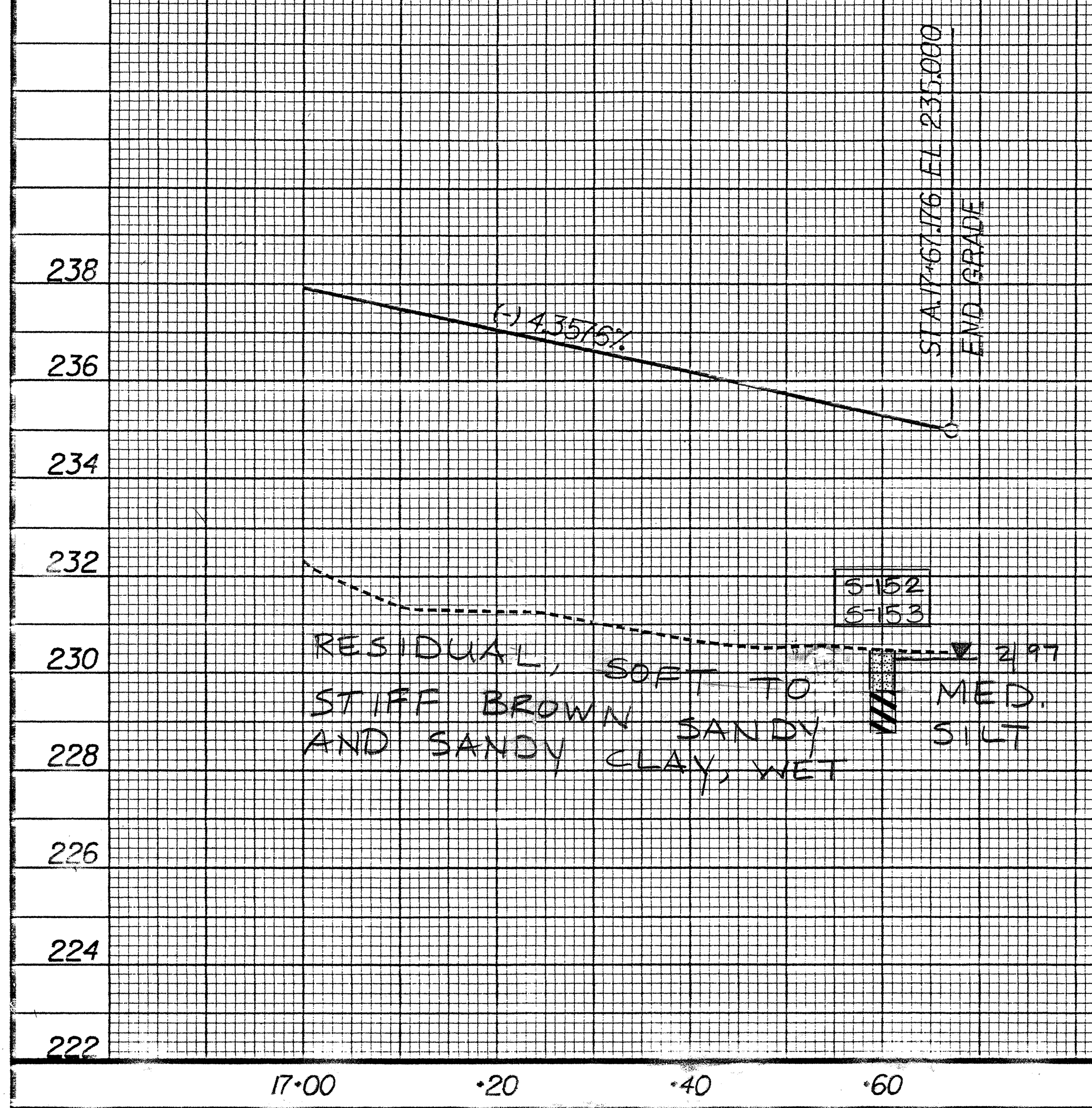
-Y23- OLD US 220 CONNECTOR

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	51

METRIC

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L. L.	P. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE
S-152	0.0	17+60	0.00-0.50	A-4(3)	31	10	23.8	23.8	22.1	30.3	100	85	56	
S-153	0.0	17+60	1.00-1.20	A-7-6(9)	51	23	35.1	15.9	14.6	34.3	100	75	51	



FOR -Y23- PLANS
SEE SHEET 6

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

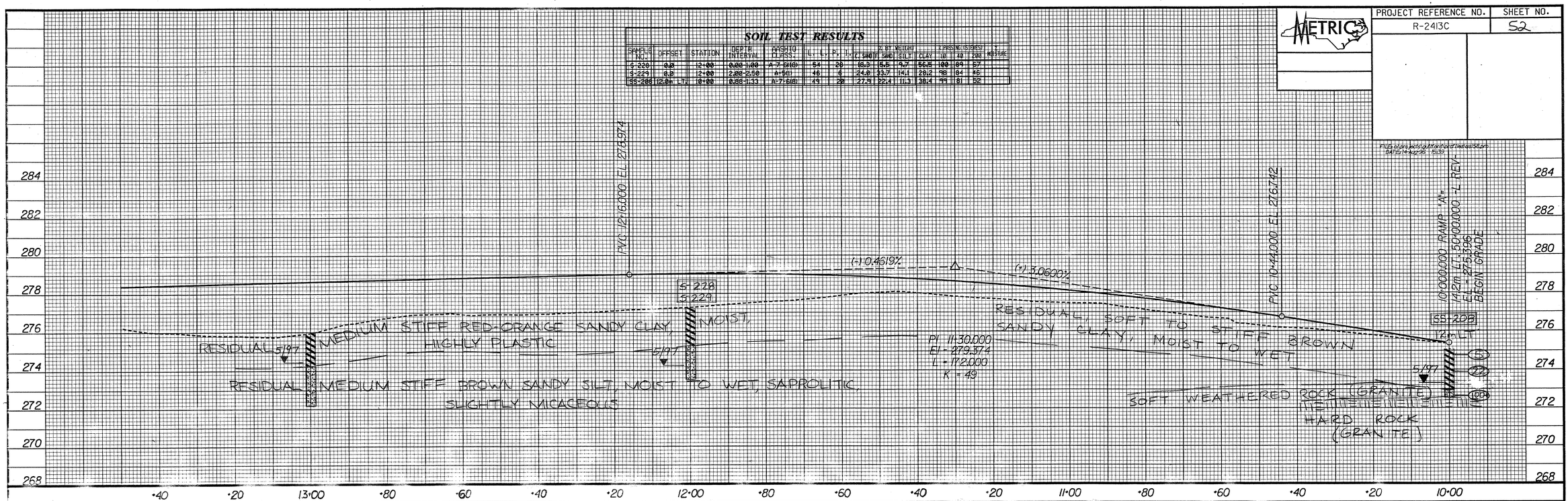
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

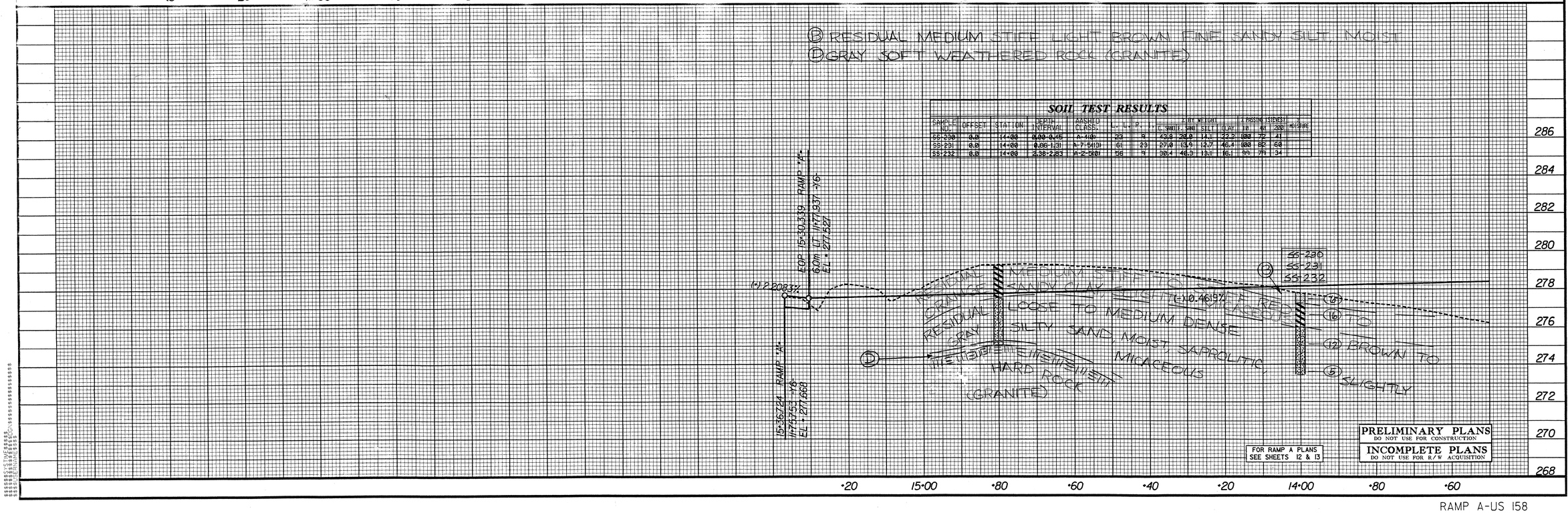
-Y23- OLD US 220 CONNECTOR

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	52

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L. L.	P. I.	% BY WEIGHT % SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE
S-228	0.0	12+00	0.00-1.00	A-7-5(10)	54	28	16.3	15.5	9.7	56.5	100	89	57
S-229	0.0	12+00	2.00-2.50	A-5(1)	46	6	24.8	33.7	14.1	28.2	98	84	46
SS-228	12.0m LT	10+00	0.88-1.33	A-7-5(8)	49	28	27.9	22.4	11.3	38.4	99	81	52





FOR RAMP A PLANS SEE SHEETS 12 & 13

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

RAMP A-US 158

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	53

Ⓜ ARTIFICIAL FILL MEDIUM STIFF RED-BROWN SANDY CLAY, SLIGHTLY MICACEOUS, MOIST

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT GRAVEL	SAND	SILT	CLAY	% PASSING #10	#40	#200	SIEVE ST. MOISTURE
S-162	8.0	12+30	0.00-1.00	A-7-5(10)	47	18	22.6	17.8	17.2	42.4	100	85	62	

PI 10+35.000
EL = 277.632
L = 20.000
K = 117

10+00.000 RAMP "B"
112m RT
EL = 276.970
BEGIN GRADE

PVC 10+25.000 EL 277.143
PVC 10+45.000 EL 277.801
PVC 10+95.000 EL 278.664
PVC 13+07.000 EL 277.835
PVC 13+05.000 EL 277.885

-1.8900%
-1.1700%
-1.7200%
-2.4622%

PI 12+00.000
EL = 280.470
L = 210.000
K = 50

RESIDUAL, MEDIUM STIFF BROWN SANDY CLAY AND SANDY SILT, MOIST

RESIDUAL MEDIUM STIFF RED-BROWN SANDY CLAY, SLIGHTLY MICACEOUS

WEATHERED ROCK (GRANITE)

S-162
9.0'

RESIDUAL SOFT ORANGE SANDY CLAY, MOIST

Ⓐ RESIDUAL MEDIUM STIFF ORANGE TO BROWN TO GRAY SANDY AND SILTY SANDY CLAY, MOIST TO WET
Ⓓ GRAY SOFT WEATHERED ROCK (GRANITE)

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT GRAVEL	SAND	SILT	CLAY	% PASSING #10	#40	#200	SIEVE ST. MOISTURE
S-167	0.0	14+00	0.00-0.50	A-7-6(15)	58	22	21.4	14.7	9.3	54.6	100	85	66	
S-168	0.0	14+00	1.70-2.30	A-6(5)	38	11	31.3	25.7	18.8	24.2	100	80	47	

PI 13+80.000
EL = 276.038
L = 146.000
K = 33

S-167
S-168

3.9'
3.9'

-2.4622%

EOP 14+53.000 EL 277.499
PVC 14+55.709 RAMP "B"
111.750m RT
EL = 277.554
(+) 1.8871%

14+61.75 RAMP "B"
111.753m RT
EL = 277.668

FOR RAMP B PLANS SEE SHEETS 11 & 12

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

RAMP B-US 158

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	54

METRIC

CONST. REV.

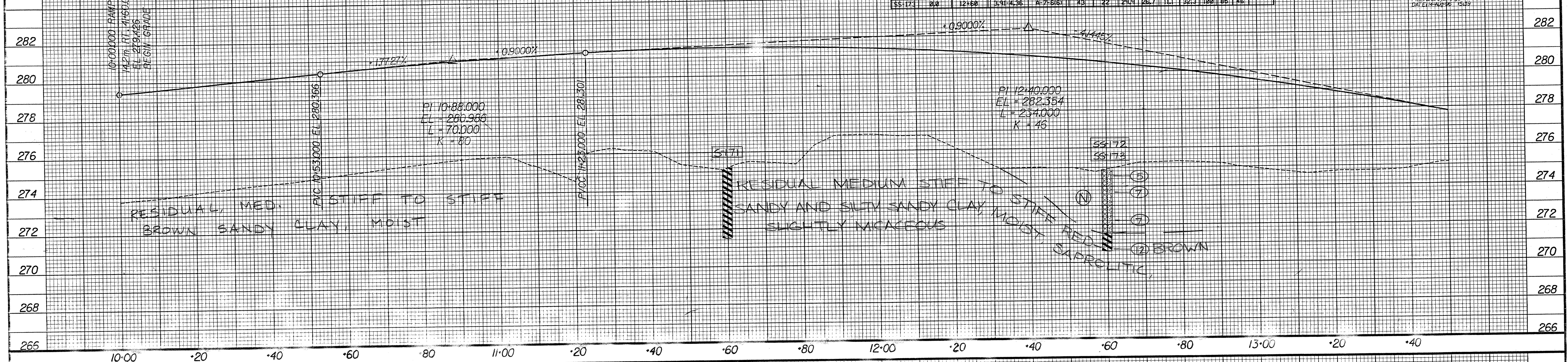
R/W REV.

HIGHWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

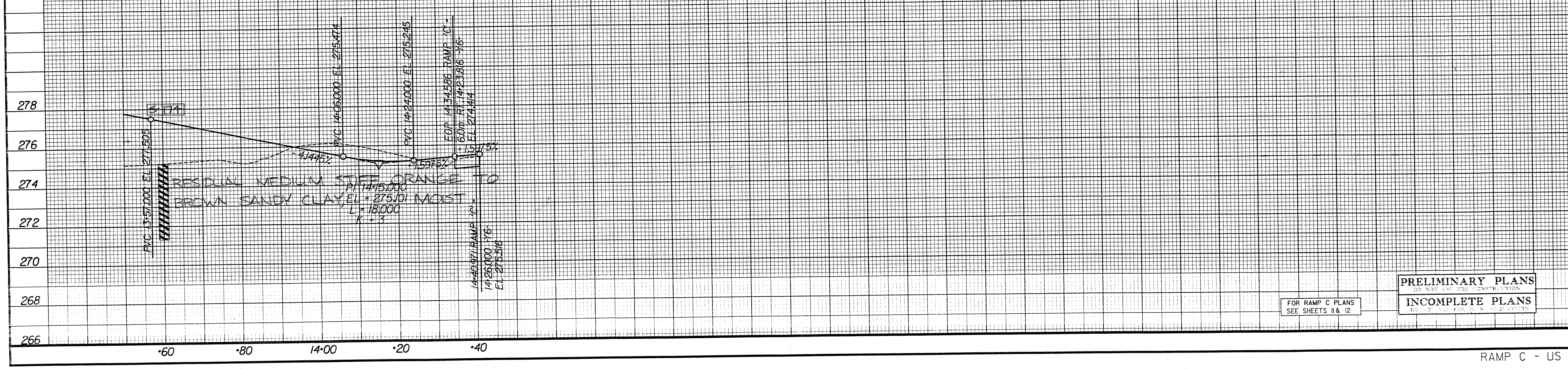
SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L. L.	P. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE
S-171	0.0	11+60	2.00-2.50	A-7-5(5)	48	12	26.1	19.0	20.6	34.3	93	76	54	
SS-172	0.0	12+60	0.00-0.45	A-2-4(0)	34	7	41.6	28.9	13.3	16.2	98	73	32	
SS-173	0.0	12+60	3.91-4.36	A-7-6(6)	43	22	29.9	26.7	11.1	32.3	100	85	46	



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L. L.	P. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE
S-174	0.0	13+60	0.00-1.00	A-7-6(17)	53	24	17.0	13.5	10.9	58.6	100	90	71	



FOR RAMP C PLANS SEE SHEETS 11 & 12

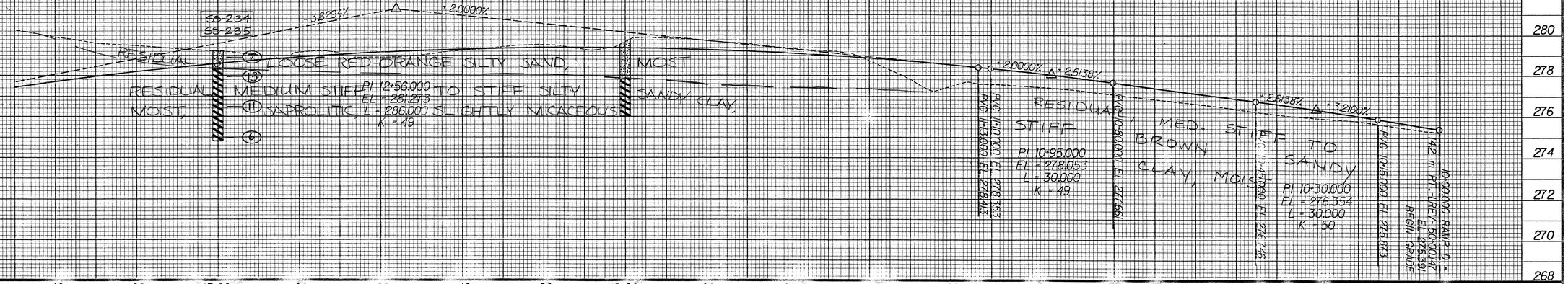
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

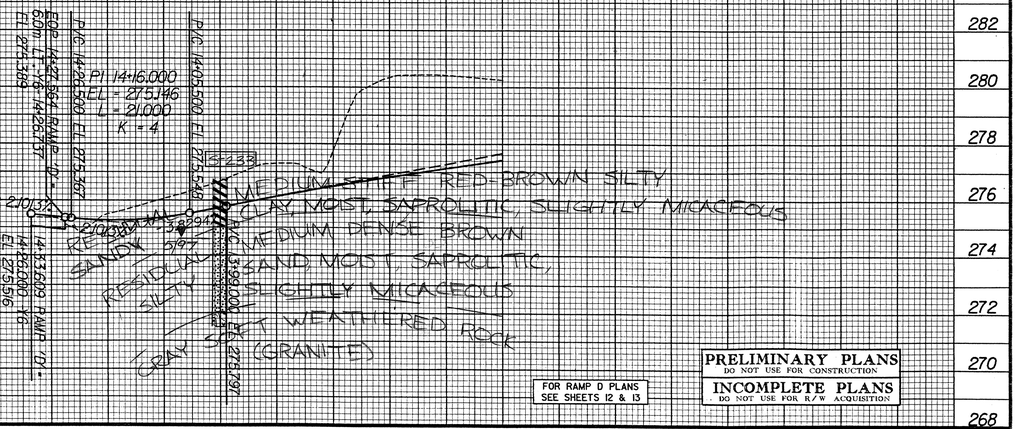
INCOMPLETE PLANS

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	55
HIGHWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
CONST. REV.	
R/W REV.	

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L. L.	P. I.	% BY WEIGHT G. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE
SS-234	0.0	13+00	0.00-0.45	A-2-4(0)	32	1	47.2	28.2	16.5	8.1	93	61	30	
SS-235	0.0	13+00	0.98-1.43	A-7-5(9)	62	15	21.8	26.4	21.6	30.2	99	86	67	25.7





FOR RAMP D PLANS SEE SHEETS 12 & 13

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	56

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT H.C.	GRAVEL	SAND	SILT	CLAY	% PASSING 10	40	200	SHRINKAGE
S-241	0.0	13+00	0.00-0.50	A-7-5(31)	73	35	7.5	17.0		17.0	58.6	100	96	78	
S-242	0.0	13+00	1.70-2.30	A-7-5(7)	57	13	11.5	37.2		21.2	30.3	98	92	58	

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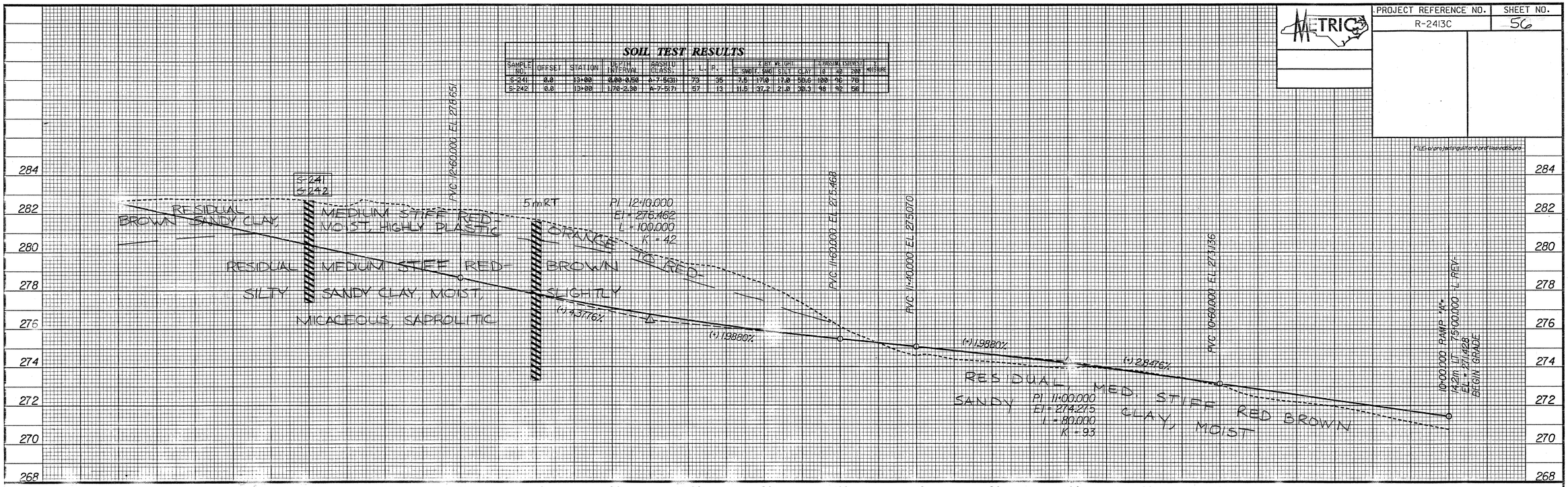

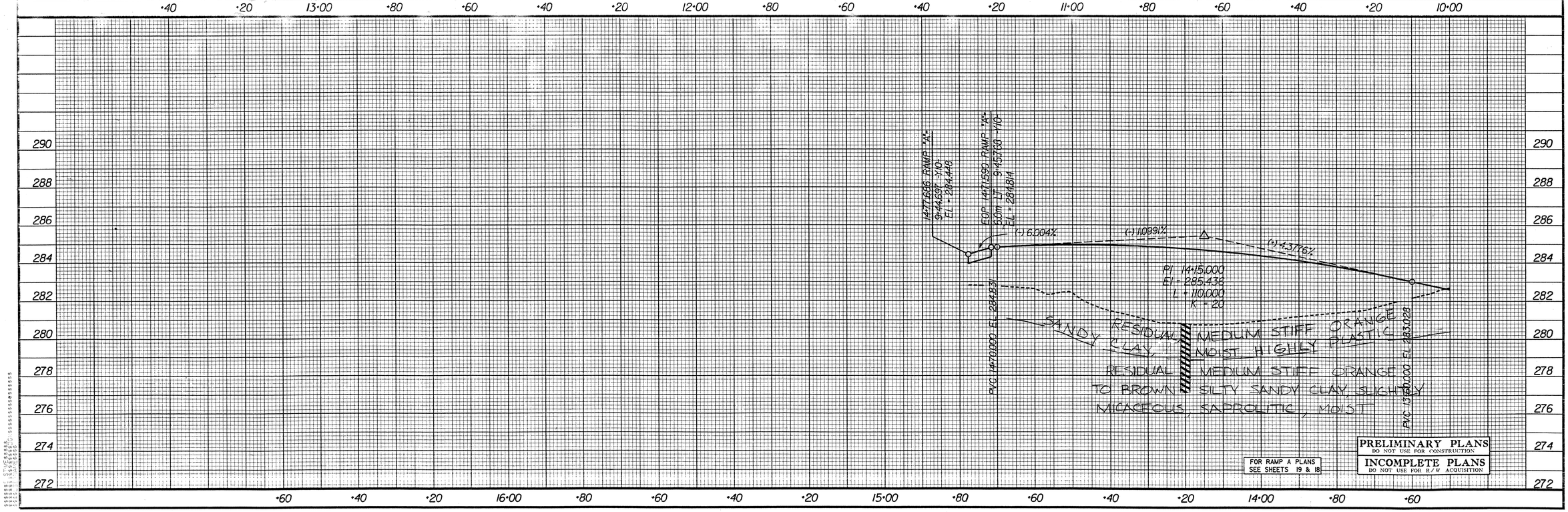

FOR RAMP A PLANS
SEE SHEETS 19 & 18

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

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	57

Ⓕ RESIDUAL MEDIUM STIFF TAN TO BROWN SANDY CLAY, MOIST, HIGHLY PLASTIC

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVE)			% MOISTURE
							G	SAND	SILT	CLAY	10	40	200	
S-246	5.0m LT.	11+40	0.00-0.50	A-4(3)	29	10	10.7	39.8	19.2	30.3	96	88	53	
S-247	5.0m LT.	11+40	1.70-2.50	A-4(0)	32	NP	11.3	51.5	19.8	18.2	90	65	44	
S-256	0.0	12+58	0.50-1.00	A-7-5(32)	75	37	19.5	9.8	11.2	59.3	100	86	73	

PVC 10+00.000 RAMP "B"
142.2m LT. 66+30.000 "L" REV.
EL = 272.468
BEGIN GRADE

PVC 10+21.000 EL 272.824

PVC 10+50.000 EL 273.581

PVC 11+00.000 EL 273.912

PI 11+50.000
EL = 274.544
L = 100.000
K = 43

PVC 12+00.000 EL 276.327

5m LT
S-246
S-247

(+) 1.780% (+) 1.263% (+) 1.263% (+) 3.566%

S-256

RESIDUAL, MED. STIFF BROWN SANDY CLAY AND SANDY SILT, MOIST

PI 10+35.000
EL = 273.091
L = 30.000
K = 58

RESIDUAL MEDIUM STIFF TO STIFF BROWN TO ORANGE SANDY SILT, SLIGHTLY MICACEOUS, SAPROLITIC, MOIST

10+00 ·20 ·40 ·60 ·80 11+00 ·20 ·40 ·60 ·80 12+00 ·20 ·40 ·60 ·80 13+00 ·20 ·40

266 268 270 272 274 276 278 280 282

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EOP 14+18.841 RAMP "B"
60m RT. 9+46.20 "10" REV.
EL = 284.125

(+) 5.223%

(+) 3.566%

RESIDUAL, MED STIFF TAN BROWN SANDY CLAY, MOIST, HIGHLY PLASTIC

14+25.025 RAMP "B"
9.44m RT. "10" REV.
EL = 284.448

·60 ·80 14+00 ·20 ·40

270 272 274 276 278 280 282 284 286 288

FOR RAMP B PLANS
SEE SHEETS 17 & 18

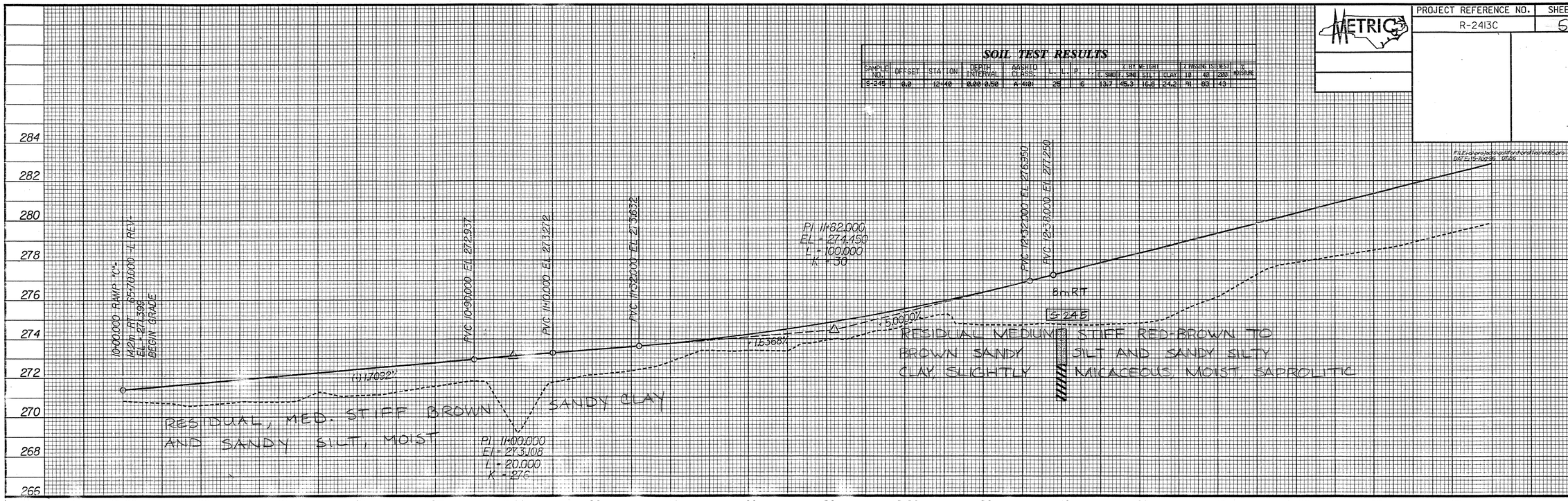
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	58

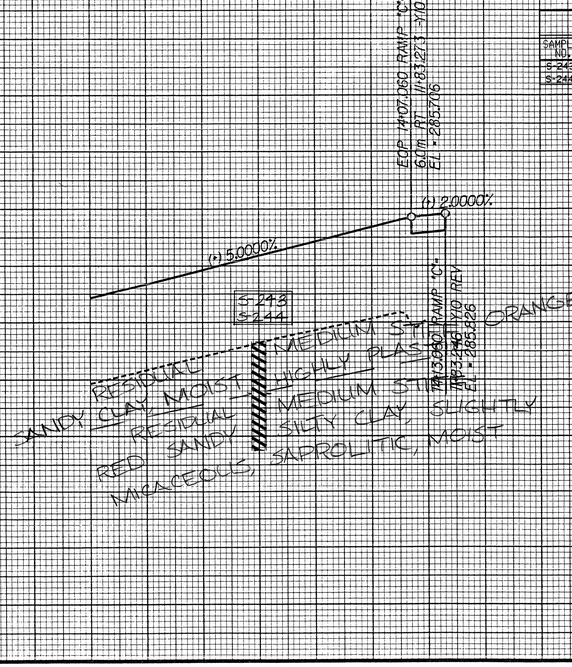
SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L. L.	P. I.	% BY WEIGHT GRAVEL	SAND	SILT	CLAY	% PASSING (SIEVE) #10	#40	#200	% MOISTURE
S-245	8.0	12+40	0.00-0.50	A-4(8)	28	6	13.7	45.3	16.8	24.2	91	83	43	



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L. L.	P. I.	% BY WEIGHT GRAVEL	SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE
S-243	0.0	13+80	0.00-1.00	A-7-5(20)	68	37	10.3	26.9	11.2	52.6	100	93	70	
S-244	0.0	13+80	2.00-2.50	A-7-5(8)	49	11	3.0	37.4	31.3	28.3	100	99	66	



FOR RAMP C PLANS
SEE SHEETS 17 & 18

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

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	59

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C SAND	F. SAND	SILT	CLAY	% PASSING 1SIEVE 10	40	200	U. MOISTURE
SS-206	0.0	12+40	0.00-0.48	A-1-b(3)	63	33	13.3	36.0	16.2	32.5	98	91	69	
SS-207	0.0	12+40	2.38-2.81	A-5(3)	56	18	14.7	46.5	20.6	18.2	100	94	47	26.9
SS-208	0.0	12+40	5.48-5.85	A-2-5(0)	45	NP	14.9	64.6	14.3	6.1	100	94	32	
SS-209	0.0	12+40	8.44-8.89	A-5(7)	50	10	11.7	36.4	27.7	24.2	100	95	62	30.8
SS-210	0.0	12+40	11.48-11.93	A-2-4(0)	32	NP	34.3	48.7	12.9	4.0	100	80	24	

SS-236
SS-237
SS-238
SS-239
SS-240

RESIDUAL MEDIUM STIFF ORANGE HIGHLY PLASTIC

RESIDUAL MEDIUM STIFF TO STIFF

LOOSE TO MEDIUM DENSE SILTY SAPROLITIC

PI 10+30.000
EI = 276.508
L = 190.000

(-) 4.80036%

(-) 0.5000%

PVC 12+20.000 EL 276.68

RED-BROWN SANDY CLAY MOIST TO PURPLE TO BROWN SANDY SILT AND SAND, MOIST, SLIGHTLY MICACEOUS

PVC 11+29.000 EL 275.703

(-) 0.5000%

(-) 2.9000%

RESIDUAL, MED STIFF BROWN SANDY CLAY AND SANDY SILT MOIST

PI 10+70.000
EI = 275.408
L = 118.000
K = 49

PVC 10+11.000
EL 273.457

10-00.0000 RAMP "D"
1422m RT 1744341.945 "Y" REV.
EL = 273.378
BEGIN GRADE

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14+88.295 RAMP "D"
1785246 RT REV.
EL = 285.824

EOM 14+81.529 RAMP "D"
60m RT 1781538 "Y" REV.
EL = 285.714

(+) 1.3009%

PVC 13+60.000 EL 279.871

RESIDUAL, MED. STIFF BROWN SANDY CLAY AND SANDY SILT, MOIST

FOR RAMP D PLANS SEE SHEET 18

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	60

METRIC

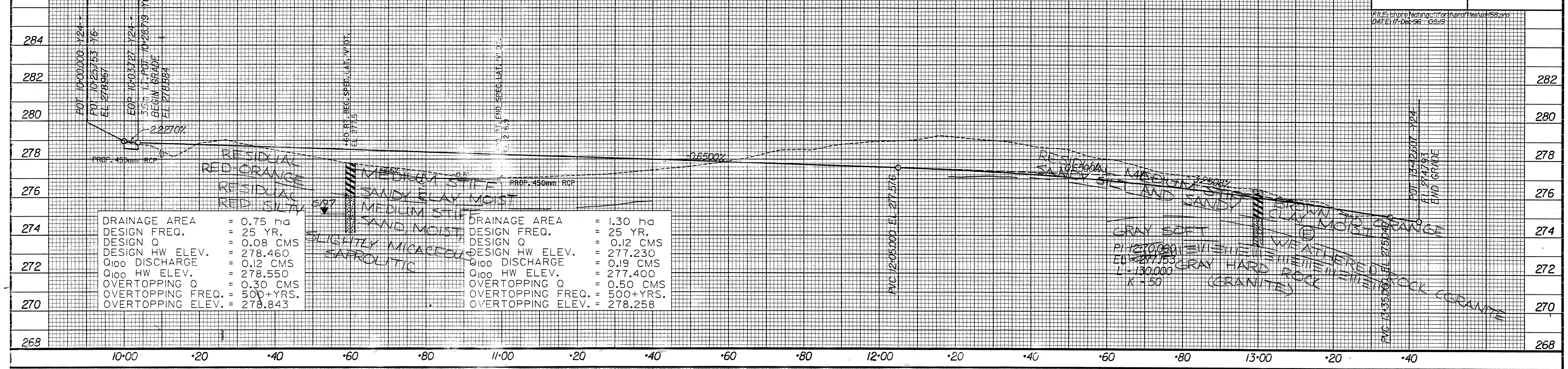
CONST. REV.

R/W REV.

HIGHWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

Ⓔ RESIDUAL MEDIUM DENSE RED TO BROWN SILTY SAND, SLIGHTLY MICACEOUS, SAPROLITIC, MOIST



DRAINAGE AREA	=	0.75 ha
DESIGN FREQ.	=	25 YR.
DESIGN Q	=	0.08 CMS
DESIGN HW ELEV.	=	278.460
Q_{100} DISCHARGE	=	0.12 CMS
Q_{100} HW ELEV.	=	278.550
OVERTOPPING Q	=	0.30 CMS
OVERTOPPING FREQ.	=	500+YRS.
OVERTOPPING ELEV.	=	278.843

DRAINAGE AREA	=	1.30 ha
DESIGN FREQ.	=	25 YR.
DESIGN Q	=	0.12 CMS
DESIGN HW ELEV.	=	277.230
Q_{100} DISCHARGE	=	0.19 CMS
Q_{100} HW ELEV.	=	277.400
OVERTOPPING Q	=	0.50 CMS
OVERTOPPING FREQ.	=	500+YRS.
OVERTOPPING ELEV.	=	278.258

FOR -Y24- PLANS SEE SHEETS 12 & 27

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

-Y24- BLACKBURN PROP. ACCESS RD.

METRIC	PROJECT REFERENCE NO.	SHEET NO.
CONST. REV.	R-2413C	6
R/W REV.	HIGHWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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(E) RESIDUAL MEDIUM DENSE BROWN SILTY SAND, SLIGHTLY MICACEOUS, SAPROLITIC

(G) ALLUVIAL LOOSE GRAY TO LIGHT ORANGE SILTY SAND, WET

DESIGN DISCHARGE	= 9.80 CMS
DESIGN FREQ.	= 50 YR.
DESIGN HW ELEV.	= 252.750
Q_{100} DISCHARGE	= 11.90 CMS
Q_{100} HW ELEV.	= 252.940
OVERTOPPING Q	= 35.00± CMS
OVERTOPPING FREQ.	= 500+YRS.
OVERTOPPING ELEV.	= 255.510

POT 10+00.000 -Y25-
EL 253.679
POT 10+21.696 -Y8-
EL 253.536
EOP 10+40.022 -Y25-
3.97% LT. POT 10+28.340 -Y8-
EL 253.496
+40 LT. BEG. SPEC. LAT. W DT.
EL = 252.185
PVC 10+52.000 EL 253.619
+65 LT. END SPEC. LAT. W DT.
EL = 252.35
PI 10+80.000
EL = 254.056
L = 55.000
K = 32
PVC 11+08.000 EL 254.759
-0.994% -0.738% +2.509% +2.509%
PROP. 2'-6"W x 1'-8" RCBC
PROP. 600mm RCP
GRAY HARD ROCK (GRANITE)
RESIDUAL, MED STIFF RED BROWN SANDY CLAY AND SANDY SILT, MOIST
PVC 13+07.00 EL 259.837
PI 13+30.000
EL = 260.333
L = 40.000
K = 55
+2.424%
PVC 13+50.000 EL 260.981
DRAINAGE AREA = 1.10 ha
DESIGN FREQ. = 25 YR.
DESIGN Q = 0.31 CMS
DESIGN HW ELEV. = 253.020
Q_{100} DISCHARGE = 0.40 CMS
Q_{100} HW ELEV. = 253.130
OVERTOPPING Q = 1.00 CMS
OVERTOPPING FREQ. = 500+YRS.
OVERTOPPING ELEV. = 254.200

FOR -Y25- PLANS SEE SHEETS 15 & 16

-Y25- FRIDDLE PROPERTY ACCESS RD.

(B) RESIDUAL SOFT TO MEDIUM STIFF ORANGE SANDY SILT, MOIST, SLIGHTLY MICACEOUS

DRAINAGE AREA	= 8.50 ha
DESIGN FREQ.	= 50 YR.
DESIGN Q	= 0.61 CMS
DESIGN HW ELEV.	= 259.780
Q_{100} DISCHARGE	= 0.74 CMS
Q_{100} HW ELEV.	= 259.850
OVERTOPPING Q	= 3.00 CMS
OVERTOPPING FREQ.	= 500+YRS.
OVERTOPPING ELEV.	= 261.861

PVC 13+50.000 EL 260.981
+55 LT. BEG. SPEC. LAT. W DT.
EL = 253.58
+80 LT. END SPEC. LAT. W DT.
EL = 253.945
+3.242%
+10 LT. END SPEC. LAT. W DT.
EL = 261.0
POT 14+18.659 -Y25-
EL 263.209
END GRADE
+5.0%
+2.5%
PROP. 900mm RCP
RESIDUAL MEDIUM STIFF LIGHT ORANGE SANDY CLAY, SLIGHTLY MICACEOUS, MOIST TO WET

DRAINAGE AREA = 8.40 ha
DESIGN FREQ. = 25 YR.
DESIGN Q = 0.46 CMS
DESIGN HW ELEV. = 261.430
Q_{100} DISCHARGE = 0.73 CMS
Q_{100} HW ELEV. = 261.820
OVERTOPPING Q = 0.95 CMS
OVERTOPPING FREQ. = 500+YRS.
OVERTOPPING ELEV. = 262.253

POT 14+21.238 -Y8- LT.
PC 10+00.000 -Y28- LA
EL 262.253
BEGIN GRADE
PROP. 600mm RCP
-0.75%
-1.565%
+1.269%
PI 10+46.000
EL = 261.533
L = 90.000
K = 32
PVC 10+00.000 EL 262.253
+0 LT. BEG. SPEC. LAT. W DT.
EL = 260.175
+40 LT. END SPEC. LAT. W DT.
EL = 260.0
PVC 10+91.00 EL 262.204
POT 11+93.100 -Y28-
EL 263.400
END GRADE

FOR -Y28- PLANS SEE SHEETS 15 & 16

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

-Y28- FARRAR STORE RD. EXT.

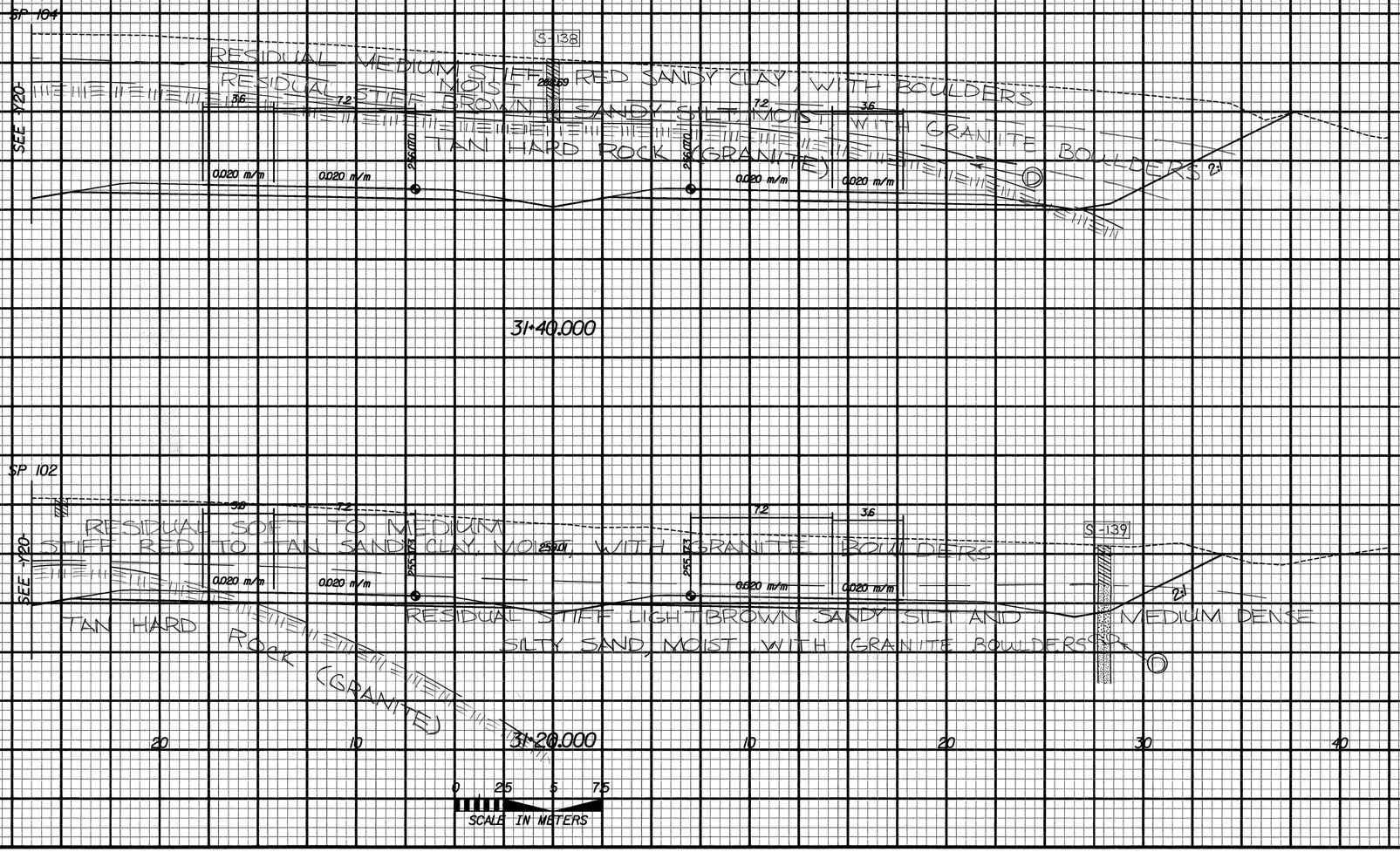
PROJECT REFERENCE NO.	SHEET NO.
R-2413C	X-62

EXC. C.M. | EMB. C.M. | UNDERCUT

(D) TAN SOFT WEATHERED ROCK (GRANITE)

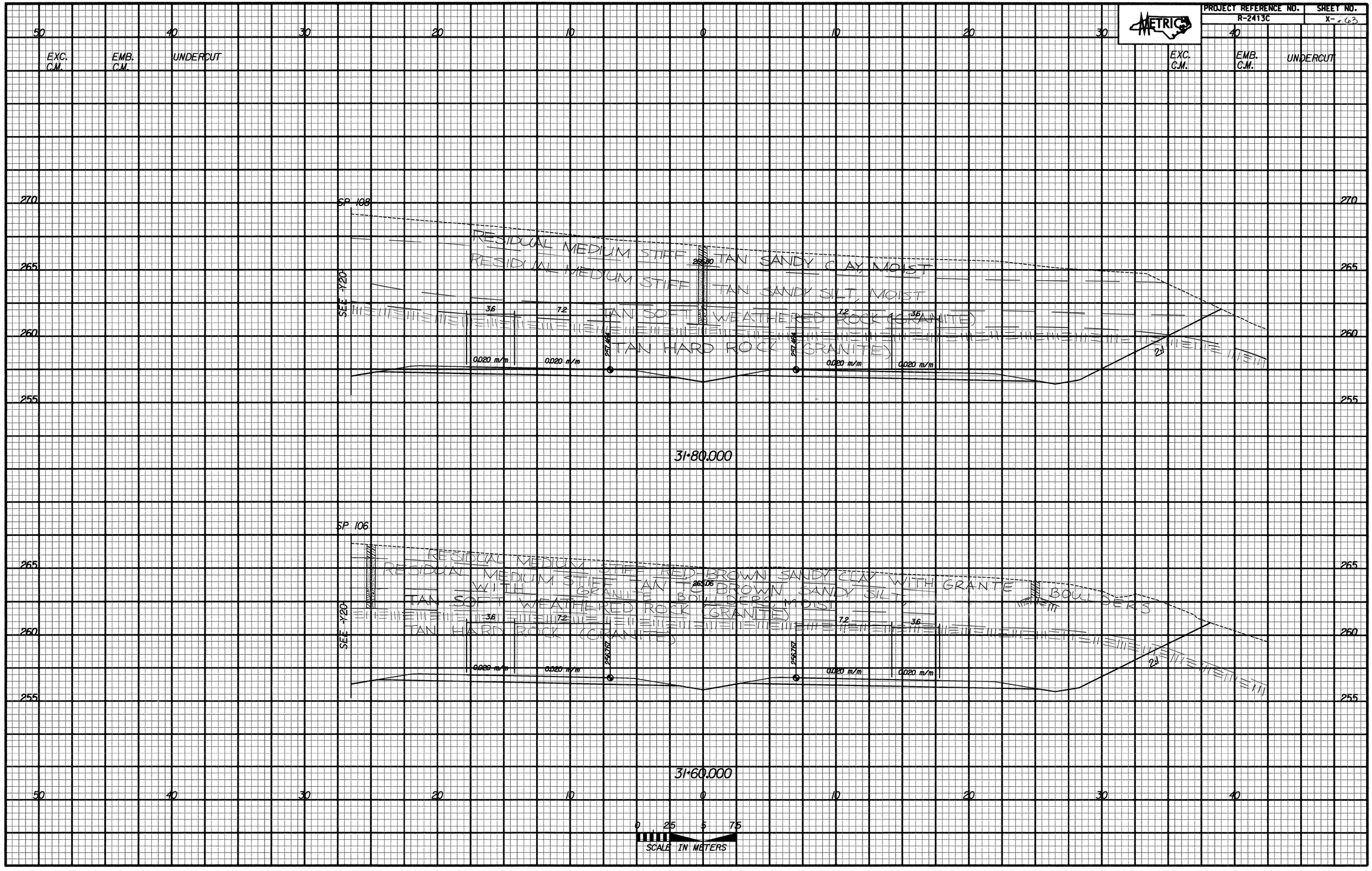
SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L. L.	P. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE
S-139	30	RT. 31+20	2.00-4.00	A-2-4(0)	29	5	49.3	24.0	11.5	16.2	96	82	29	
S-138	0	31+40	2.00-2.50	A-4(0)	37	8	36.2	26.7	17.0	20.2	96	71	40	



-L-REV.

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	X-4 (23)

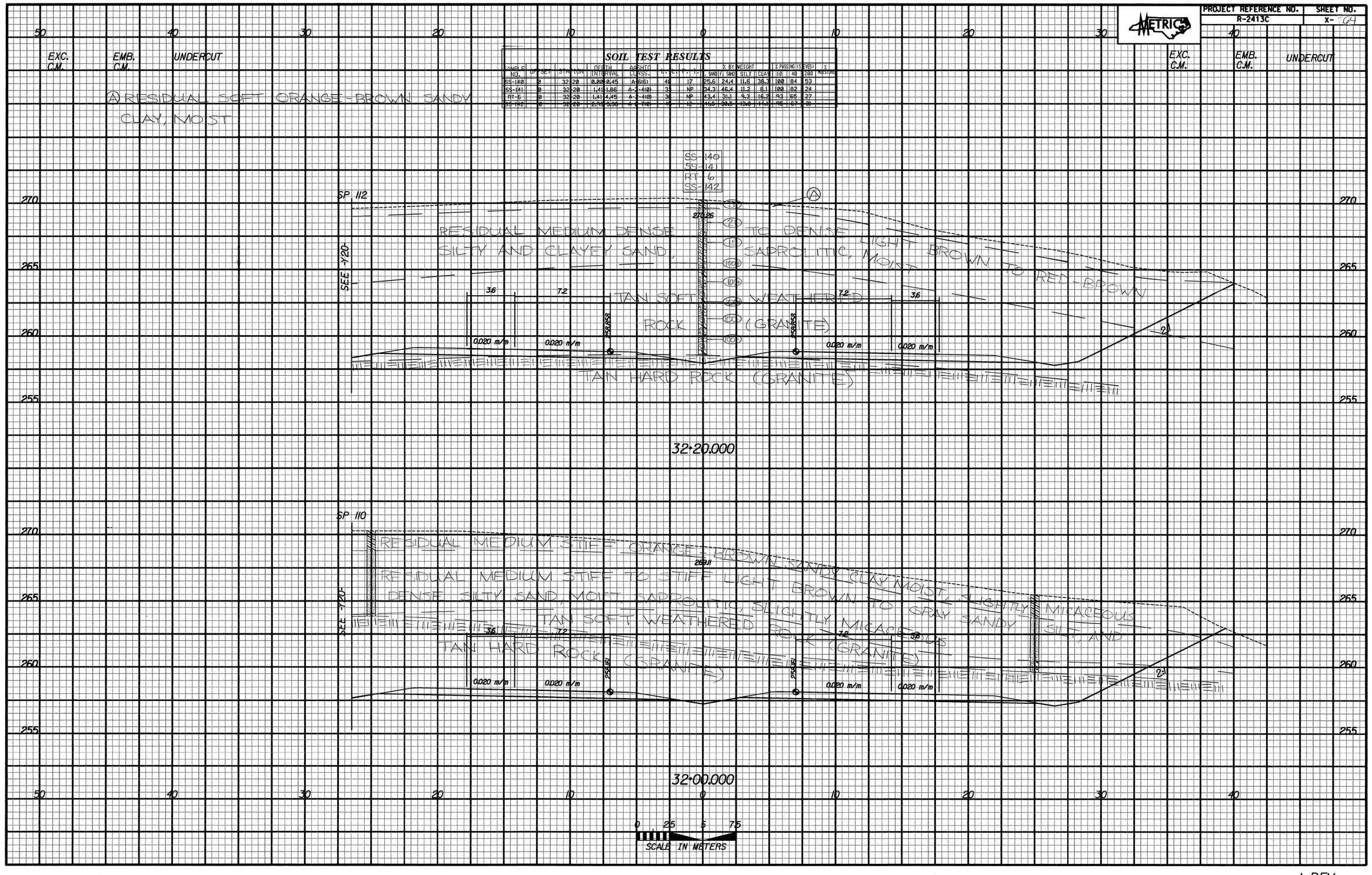


-L-REV.

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	X-564

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT GR. SAND	FI. SAND	SILT	CLAY	% PASSING (US SIEVE) 10	40	200	% MOISTURE
SS-140	0	32+20	0.00-0.45	A-6(6)	40	17	25.6	24.4	11.6	38.3	100	84	53	
SS-141	0	32+20	1.41-1.86	A-2-4(0)	33	NP	34.3	46.4	11.2	8.1	100	62	24	
RT-6	0	32+20	1.41-4.45	A-2-4(0)	34	NP	43.4	31.1	9.2	16.2	93	65	27	
SS-142	0	32+20	2.75-3.36	A-2-4(0)	37	12	46.5	30.5	13.0	10.0	96	67	28	



-L-REV.

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	X- 865

EXC. C.M. | EMB. C.M. | UNDERCUT

EXC. C.M. | EMB. C.M. | UNDERCUT

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE
S-143	0	33+88	0.00-0.50	A-7-6(7)	43	17	38.2	13.3	18.2	36.3	97	75	56	

Ⓐ RESIDUAL, MEDIUM STIFF, ORANGE-BROWN SANDY CLAY, MOIST, WITH GRANITE BOULDERS

Ⓒ RESIDUAL, MEDIUM STIFF, RED-BROWN CLAYEY SAND, SLIGHTLY MICACEOUS, SAPROLITIC, MOIST, WITH GRANITE BOULDERS

SP 116

SEE Y-20

3.6 | 7.2 | 7.2 | 3.6

0.020 m/m | 0.020 m/m | 0.020 m/m | 0.020 m/m

260.949 | 262.67 | 260.949

32+80.000

SP 116

SEE Y-20

3.6 | 7.2 | 7.2 | 3.6

0.020 m/m | 0.020 m/m | 0.020 m/m | 0.020 m/m

260.952 | 260.952

32+60.000

SP 114

S-143

RESIDUAL, MEDIUM STIFF, ORANGE-BROWN SANDY CLAY, MOIST, WITH GRANITE BOULDERS

SEE Y-20

TAN SOFT WEATHERED ROCK (GRANITE)

3.6 | 7.2 | 7.2 | 3.6

0.020 m/m | 0.020 m/m | 0.020 m/m | 0.020 m/m

259.555 | 259.555

32+40.000

0 2.5 5 7.5

SCALE IN METERS

-L-REV.

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	X- 166

EXC. C.M. | EMB. C.M. | UNDERCUT

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L. L.	P. I.	% BY WEIGHT GRAVEL	C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE
S-211	23.0 ft LT	52+00	0.77-1.22	A-3(0)	46	7	27.7	36.6	10.5	26.3	98	84	40	
S-212	23.0 ft LT	52+00	2.29-2.74	A-3(0)	48	1	26.3	36.2	15.4	22.2	92	77	40	
S-213	23.0 ft LT	52+00	3.81-4.26	A-2-5(0)	41	NP	3.7	34.2	21.0	6.1	98	80	31	27.1
S-214	23.0 ft LT	52+00	8.37-8.82	A-2-4(0)	29	NP	4.2	38.2	9.5	8.1	93	70	28	
S-210	23.0 ft LT	52+50	2.00-2.50	A-1(0)	37	4	22.2	40.6	14.9	22.2	99	88	42	

(B) RESIDUAL, MEDIUM STIFF RED-BROWN TO BROWN SANDY SILT AND MEDIUM DENSE SILTY SAND, SLIGHTLY MICACEOUS, SAPROLITIC, MOIST TO WET

(D) TAN SOFT WEATHERED ROCK (GRANITE)

S-210

52+60.000

52+40.000

52+20.000

52+00.000

RESIDUAL MEDIUM STIFF TO STIFF GRAY RED-BROWN SANDY SILT AND LOOSE TO MEDIUM DENSE SILTY SAND, SLIGHTLY MICACEOUS, SAPROLITIC, MOIST TO WET

HARD ROCK (GRANITE)

S-211
S-212
S-213
S-214

0.020 m/m

SCALE IN METERS 0 2.5 5 7.5

-L-REV.

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	X-

EXC. C.M. | EMB. C.M. | UNDERCUT

Ⓐ RESIDUAL SOFT TO VERY STIFF RED-BROWN TO BROWN SANDY CLAY, MOIST

Ⓑ RESIDUAL STIFF BROWN SANDY SILT, MOIST

Ⓓ TAN SOFT WEATHERED ROCK (GRANITE)

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L. L.	P. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING SIEVE #10	#40	#200	% MOISTURE
SS-33	15.0m LT.	53+00	0.00-0.15	A-6(8)	35	15	21.7	21.1	16.9	40.3	98	85	58	
SS-34	15.0m LT.	53+00	1.27-1.72	A-7-5(4)	48	18	23.5	30.0	14.3	32.2	100	86	62	29.9
R-1	23.0m LT.	53+20	3.00-4.60	A-7-5(3)	45	15	24.6	32.9	18.2	24.2	94	82	44	

DETOUR A
10+63.268

DETOUR A
10+42.818

DETOUR A
10+22.659

DETOUR A
10+02.602

HARD ROCK (GRANITE)

53+40.000

53+20.000

53+00.000

52+80.000

0 2.5 5 7.5
SCALE IN METERS

-L-REV.

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	X- 28

EXC. C.M. | EMB. C.M. | UNDERCUT

Ⓐ RESIDUAL MEDIUM STIFF RED-BROWN TO BROWN SANDY CLAY, MOIST

Ⓒ TAN SOFT WEATHERED ROCK (GRANITE AND GNEISS)

Ⓓ RESIDUAL MEDIUM DENSE BROWN SILTY SAND, MOIST

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	MOISTURE
S-32	60.0m LT.	53+80	1.50-2.50	A-2-4(0)	27	NP	32.2	43.7	10.1	14.1	94	78	28	

54+20.000

HARD ROCK (GRANITE)

54+00.000

HARD ROCK (GRANITE)

53+80.000

HARD ROCK (GRANITE)

53+60.000

RESIDUAL MEDIUM STIFF RED-BROWN TO BROWN SANDY CLAY, MOIST

DETOUR A
11+47.040

DETOUR A
11+26.490

DETOUR A
11+05.577

DETOUR A
10+84.216

SCALE IN METERS 0 2.5 5 7.5

-L-REV.

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	X- 69

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE
S-108	0	14+60	0.00-0.50	A-7-5(10)	73	37	4.0	8.2	15.5	72.2	100	98	90	
S-109	0	14+60	0.50-1.50	A-7-5(10)	61	29	10.0	16.5	25.0	48.4	87	82	57	

EXC. C.M. | EMB. C.M. | UNDERCUT

(E) RESIDUAL MEDIUM STIFF RED-BROWN CLAY, HIGHLY PLASTIC, MOIST

14+60.000

72

S-108
S-109

(E) 247.64

0.071 m/m

4:1

RESIDUAL MEDIUM STIFF TO STIFF RED-BROWN CLAY WITH MANY GRANITE BOULDERS, HIGHLY PLASTIC, MOIST

6:1

248.79

RESIDUAL MEDIUM STIFF BROWN SANDY SILT, MOIST

14+40.000

72

(E) 246.483

0.071 m/m

6:1

5:1

247.80

RESIDUAL

14+20.000

72

246.771

0.071 m/m

5:1

3:1

246.23

RESIDUAL

0 2.5 5 7.5

SCALE IN METERS

SB US 220 RAMP

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	X- 70

50 40 30 20 10 0 10 20 30 40

EXC. C.M. | EMB. C.M. | UNDERCUT

255 250 245 240

(D) RESIDUAL MEDIUM STIFF RED-BROWN CLAY, HIGHLY PLASTIC, MOIST

SP 47

24.00 L REV

4:1

72

24.39

.0012 m/m

24.33

4:1

3.6:1

RESIDUAL

RESIDUAL

15+20.000

72

24.68

(E)

.0036 m/m

24.28

6:1

4:1

3:1

RESIDUAL

15+00.000

72

24.96

(F)

.0059 m/m

24.27

6:1

6:1

RESIDUAL

14+80.000

50 40 30 20 10 0 10 20 30 40

0 2.5 5 7.5

SCALE IN METERS

SB US 220 RAMP

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	X- 7

EXC. C.M. | EMB. C.M. | UNDERCUT

Ⓐ RESIDUAL, MEDIUM STIFF RED-BROWN SANDY CLAY, MOIST
Ⓑ RESIDUAL, STIFF BROWN SANDY SILT, DRY
Ⓓ GRAY TAN SOFT WEATHERED ROCK (GRANITE)
Ⓔ RESIDUAL MEDIUM DENSE TO DENSE TAN SILTY SAND WITH SOME MICA, DRY TO MOIST

255 / 260

17+20.000
HARD ROCK (GRANITE)
4:1
2:1
25.00
25.30
0.020 m/m

17+00.000
HARD ROCK (GRANITE)
SP 41
19+80 ± REF.

16+80.000
RESIDUAL MEDIUM STIFF LIGHT ORANGE SANDY SILT, SOME MICA, DRY
RESIDUAL MEDIUM DENSE TO DENSE TAN SILTY SAND, SOME MICA, DRY
SP 42
19+60 ± REF.
25.00
25.30
0.020 m/m

50 40 30 20 10 0 10 20 30 40

0 2.5 5 7.5
SCALE IN METERS

SB US 220 RAMP

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	X- 724

EXC. C.M. | EMB. C.M. | UNDERCUT

Ⓐ RESIDUAL MEDIUM STIFF RED-BROWN SANDY CLAY, MOIST

Ⓑ RESIDUAL MEDIUM STIFF TO STIFF TAN TO ORANGE-BROWN SANDY SILT WITH SOME MICA, DRY TO MOIST

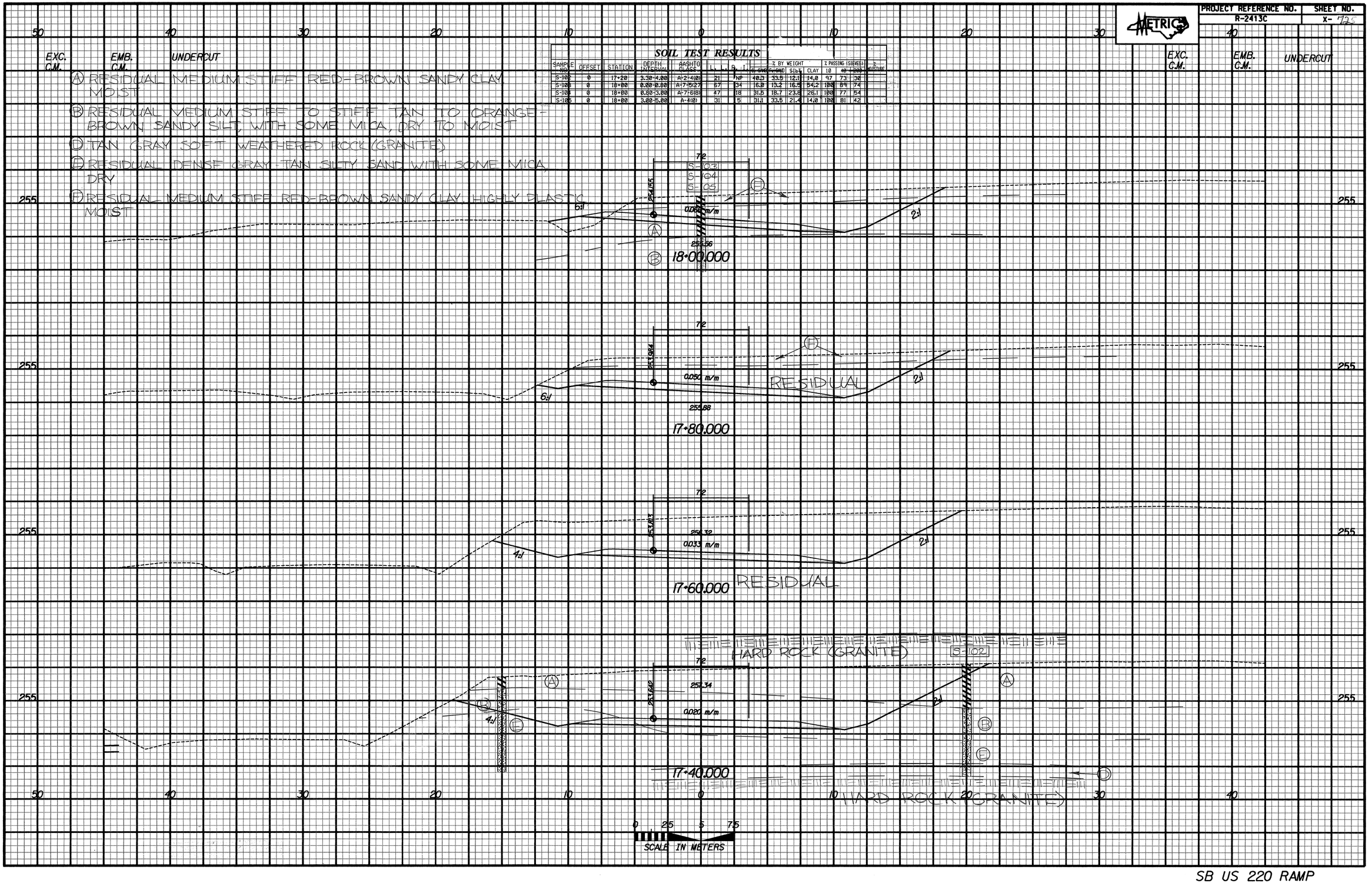
Ⓒ TAN GRAY SOFT WEATHERED ROCK (GRANITE)

Ⓓ RESIDUAL DENSE GRAY-TAN SILTY SAND WITH SOME MICA, DRY

Ⓔ RESIDUAL MEDIUM STIFF RED-BROWN SANDY CLAY, HIGHLY PLASTIC, MOIST

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS	LL	PI	% BY WEIGHT: % GRAVEL	% SAND	SILT	CLAY	% PASSING (SIEVES): #10	#40	#200	% MOISTURE
S-102	0	17+20	3.30-4.00	A-2-4(0)	21	NP	40.3	33.5	12.1	14.0	97	73	30	
S-103	0	18+00	0.00-0.80	A-7-5(27	57	34	16.0	13.2	16.5	54.2	100	89	74	
S-104	0	18+00	0.80-3.00	A-7-6(8)	47	18	31.5	18.7	23.8	26.1	100	77	54	
S-105	0	18+00	3.00-5.00	A-4(0)	31	5	31.1	33.5	21.4	14.0	100	81	42	



SB US 220 RAMP

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	X-73

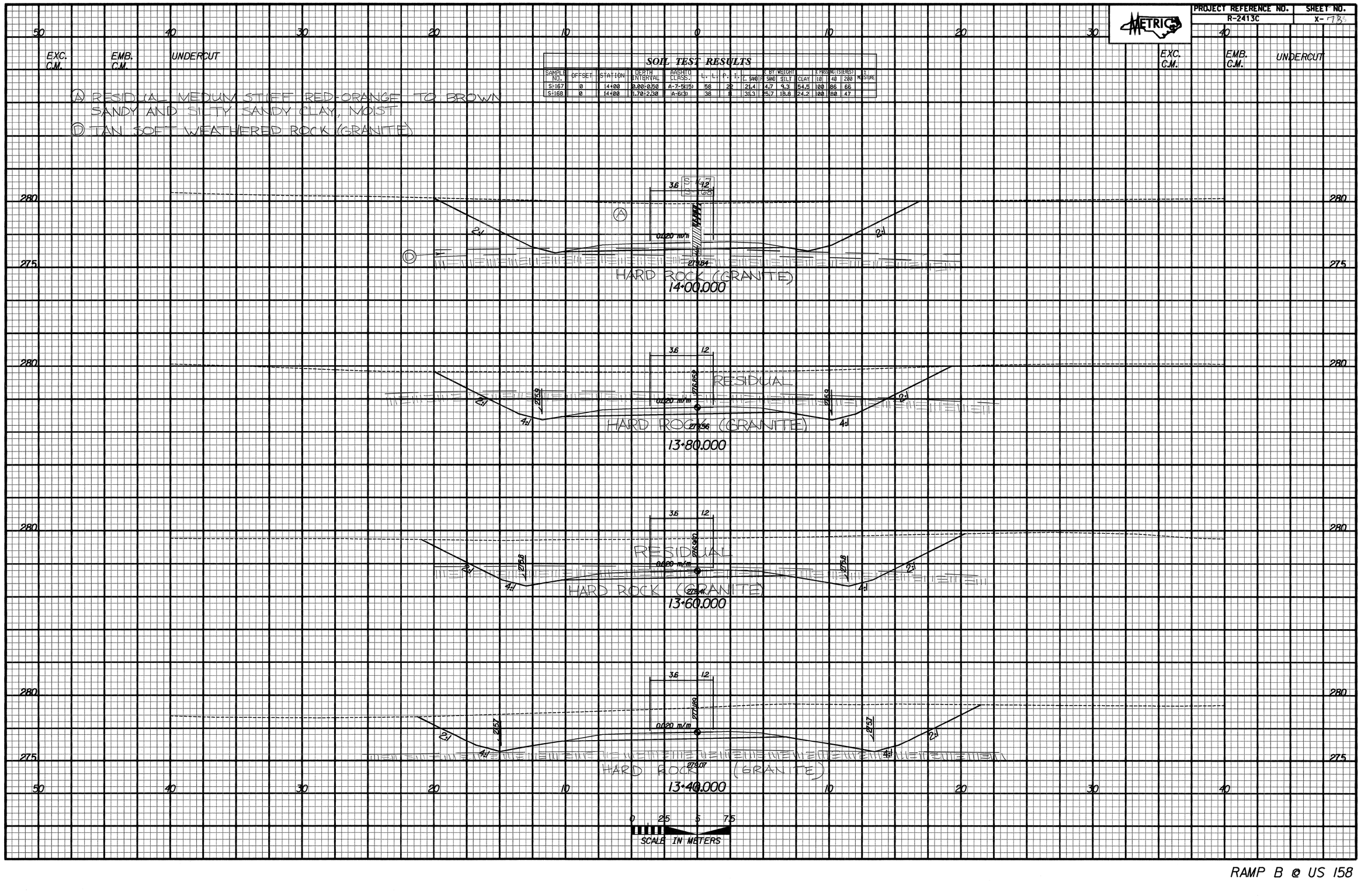
EXC. C.M. | EMB. C.M. | UNDERCUT

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L. L.	P. I.	% PASSING SIEVE #	% BY WEIGHT GRAVEL	SAND	SILT	CLAY	% PASSING SIEVE # 10	40	200	% MOISTURE
S-167	0	14+00	0.00-0.50	A-7-5(15)	58	22	21.4	4.7	9.3	54.5	100	86	66	
S-168	0	14+00	1.70-2.30	A-6(3)	38	8	31.3	25.7	18.8	24.2	100	80	47	

Ⓐ RESIDUAL MEDIUM STIFF RED-ORANGE TO BROWN SANDY AND SILTY SANDY CLAY, MOIST

Ⓓ TAN SOFT WEATHERED ROCK (GRANITE)



RAMP B @ US 158

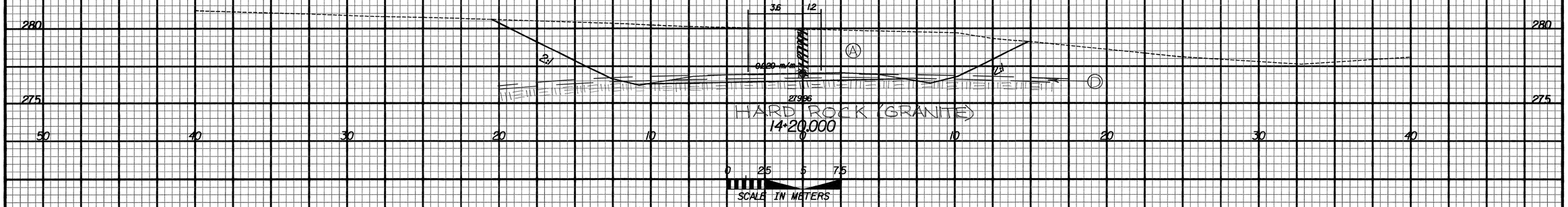
PROJECT REFERENCE NO.	SHEET NO.
R-2413C	X-174

50 40 30 20 10 0 10 20 30 40

EXC. C.M. EMB. C.M. UNDERCUT EXC. C.M. EMB. C.M. UNDERCUT

(A) RESIDUAL MEDIUM STIFF RED-ORANGE TO BROWN SANDY AND SILTY SANDY CLAY, MOIST

(D) TAN SOFT WEATHERED ROCK (GRANITE)



RAMP B @ US 158

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	X- 75

METRIC

50 40 30 20 10 0 10 20 30 40 50

EXC. C.M. | EMB. C.M. | UNDERCUT

270 265 260

SP 107

30 30

2:1

.0088 m/m .0088 m/m

266.98

15+00.000

RESIDUAL

TAN HARD ROCK (GRANITE)

SEE -L- REV.

SP 105

30 30

2:1

.0020 m/m .0020 m/m

266.32

14+80.000

RESIDUAL

4:1

TAN HARD ROCK (GRANITE)

SEE -L- REV.

SP 103

30 30

.0020 m/m .0020 m/m

266.67

14+60.000

RESIDUAL

4:1

TAN HARD ROCK (GRANITE)

SEE -L- REV.

SP 101

30 30

4:1

.0020 m/m .0020 m/m

266.19

14+40.000

RESIDUAL

4:1

SEE -L- REV.

0 2.5 5 7.5

SCALE IN METERS

-Y20- SPOTSWOOD RD.EXT.

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	X- FIG(3)

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L. L.	P. I.	% SAND	% SILT	% CLAY	% PASSING SIEVES #10	#40	#200	% MOISTURE
SS-199	0	15+20	0.25-0.68	A-7-5(17)	60	36	29.8	14.5	48.5	100	89	64	
SS-200	0	15+20	0.98-1.53	A-2-4(0)	29	NP	64.4	21.2	10.5	100	86	24	
SS-201	0	15+20	3.92-4.37	A-2-4(0)	29	NP	47.9	31.1	14.9	6.1	95	63	24
SS-202	0	15+20	8.48-8.93	A-2-4(0)	21	NP	48.5	32.1	13.3	6.1	92	61	22	12.0

50 40 30 20 10 0 10 20 30 40

EXC. C.M. EMB. C.M. UNDERCUT

Ⓐ RESIDUAL SOFT RED SANDY CLAY MOIST

SP 115

SEE -L- REV-

RESIDUAL

SP 115

SEE -L- REV-

RESIDUAL

SP 111

SEE -L- REV-

RESIDUAL

SEE -L- REV-

SP 109

RESIDUAL MEDIUM DENSE TO VERY DENSE RED-TAN TO TAN SILTY SAND, WITH TRACE TO SOME MICA, MOIST

TAN HARD ROCK (GRANITE)

TAN HARD ROCK (GRANITE)

30 30

0.020 m/m 0.020 m/m

15+80.000

15+60.000

15+40.000

15+20.000

SS-199
SS-200
SS-201
SS-202

265 270

0 2.5 5 7.5

SCALE IN METERS

-Y20- SPOTSWOOD RD.EXT.

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	X-11

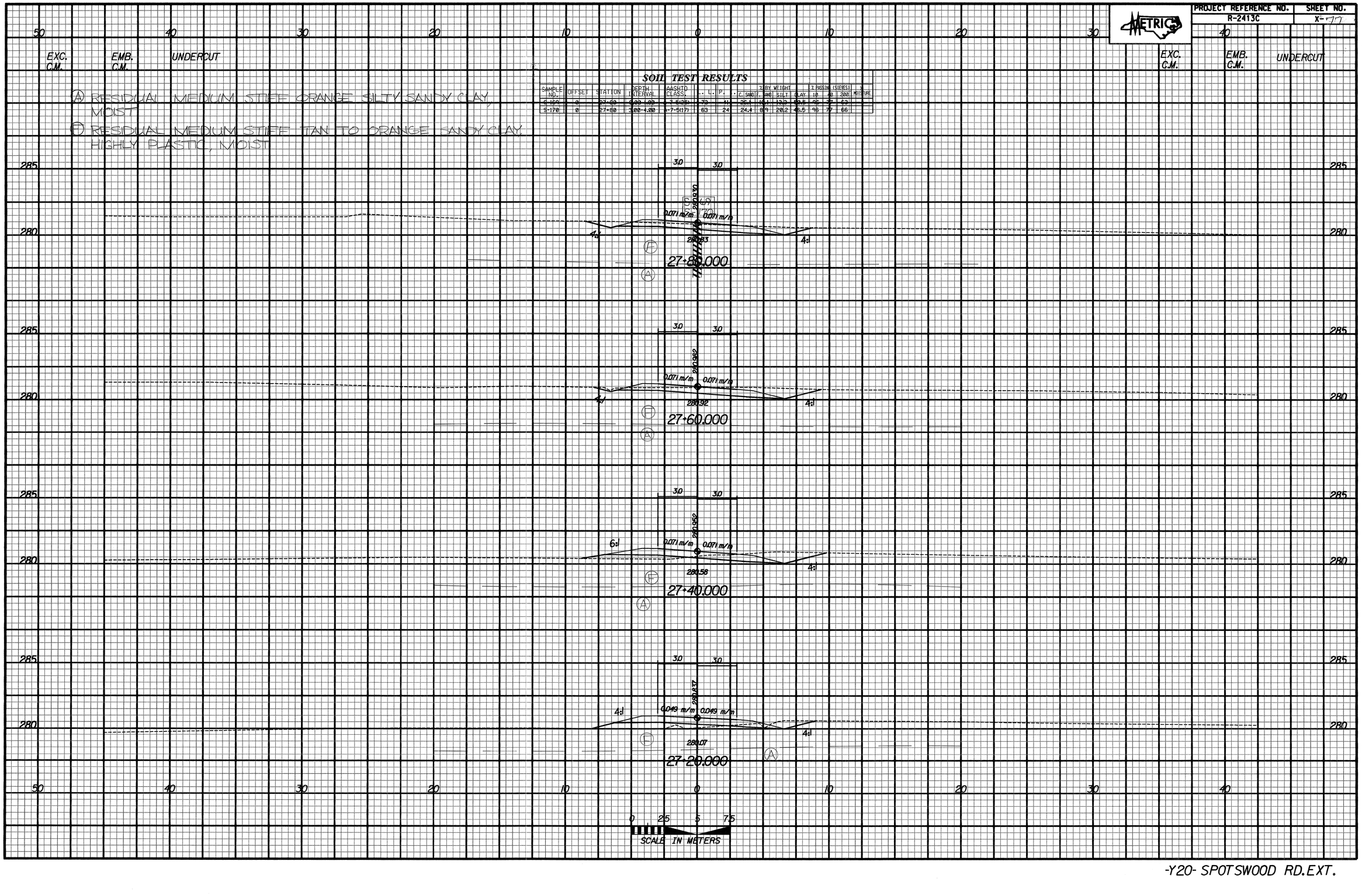
EXC. C.M. | EMB. C.M. | UNDERCUT

Ⓐ RESIDUAL MEDIUM STIFF ORANGE SILTY SANDY CLAY, MOIST

Ⓕ RESIDUAL MEDIUM STIFF TAN TO ORANGE SANDY CLAY, HIGHLY PLASTIC, MOIST

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	F. AND SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE
S-169	0	27+80	0.00-1.00	A-6(5)	39	14	36.1	44.1	13.0	99.5	96	77	63
S-170	0	27+80	3.00-4.00	A-7-5(17)	63	24	24.4	8.9	20.2	46.5	96	77	66



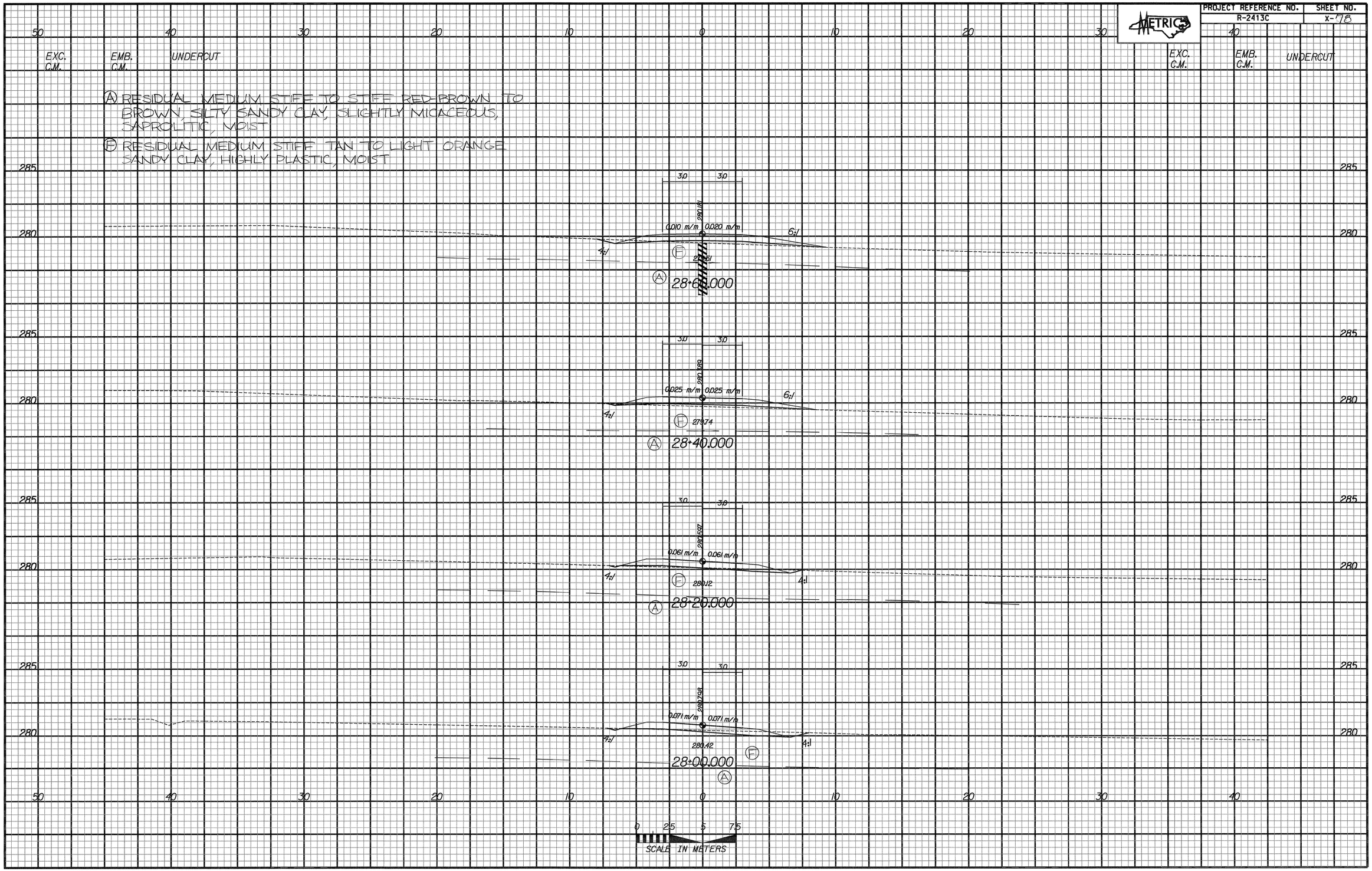
-Y20- SPOTSWOOD RD.EXT.

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	x-78

METRIC

Ⓐ RESIDUAL MEDIUM STIFF TO STIFF RED-BROWN TO BROWN, SILTY SANDY CLAY, SLIGHTLY MICACEOUS, SAPROLITIC, MOIST

Ⓕ RESIDUAL MEDIUM STIFF TAN TO LIGHT ORANGE SANDY CLAY, HIGHLY PLASTIC, MOIST



-Y20- SPOTSWOOD RD.EXT.

50 40 30 20 10 0 10 20 30 40

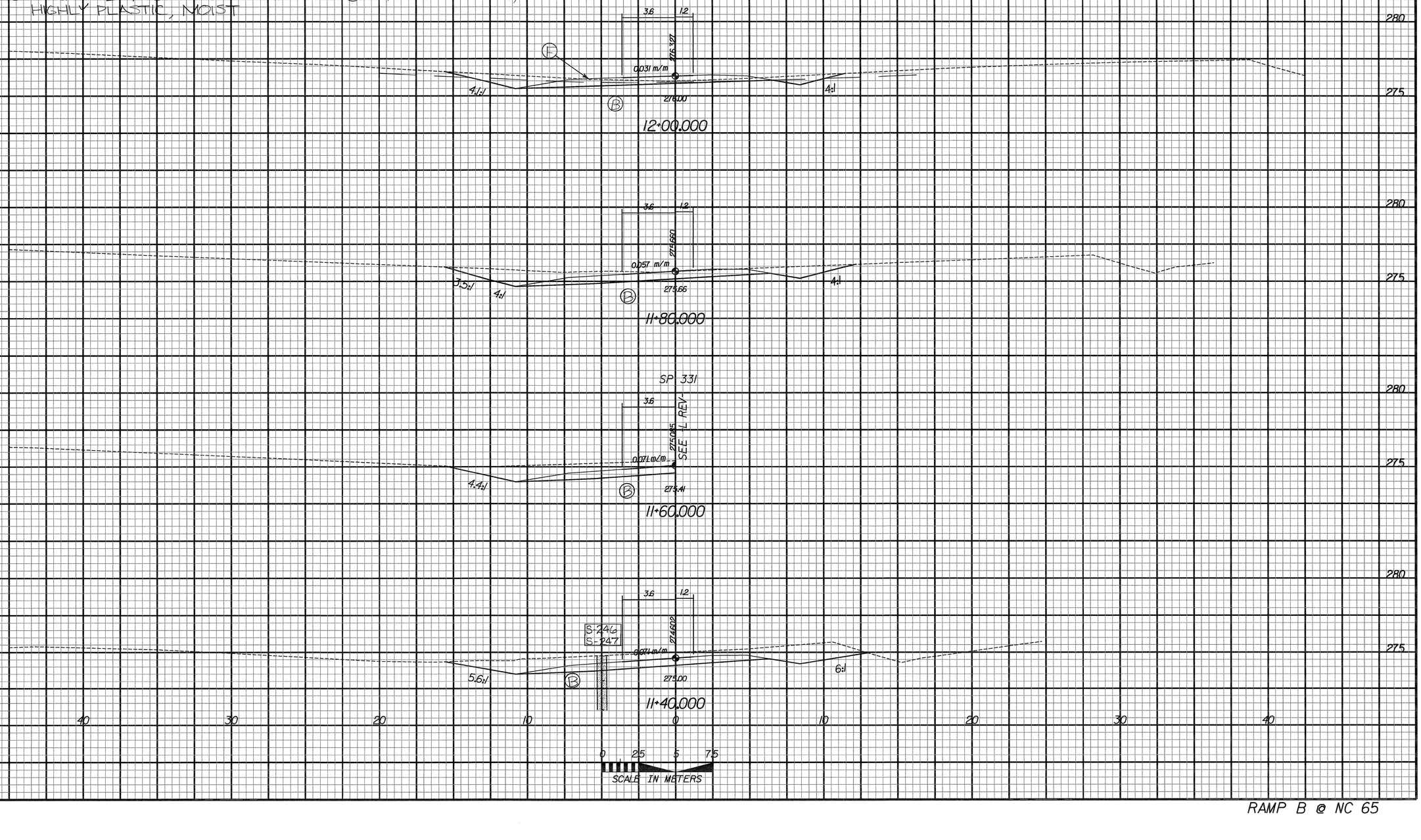
EXC. C.M. EMB. C.M. UNDERCUT

Ⓑ RESIDUAL MEDIUM STIFF TO STIFF BROWN TO ORANGE SANDY SILT, SLIGHTLY MICACEOUS SAPROLITIC, MOIST

Ⓕ RESIDUAL MEDIUM STIFF TAN TO BROWN SANDY CLAY, HIGHLY PLASTIC, MOIST

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L. L.	P. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE
S-246	5.0m LT.	11+40	0.00-0.50	A-4(2)	28	9	19.7	38.8	19.3	39.3	95	89	52	
S-247	5.0m LT.	11+40	1.70-2.50	A-4(8)	32	NP	11.3	51.5	19.0	18.2	90	85	44	



RAMP B @ NC 65

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	X- 80

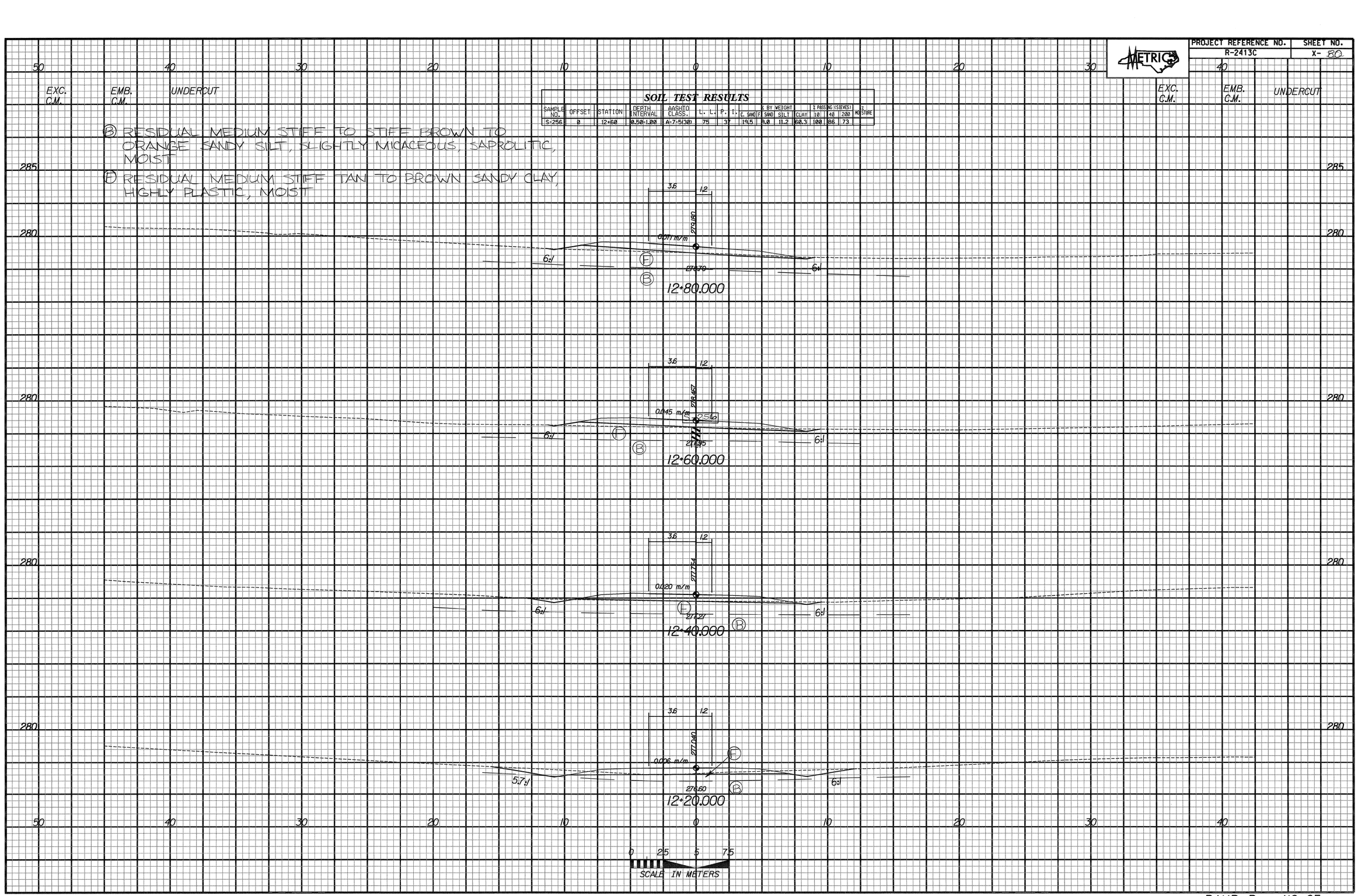
EXC. C.M. | EMB. C.M. | UNDERCUT

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L. L.	P. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE
S-256	B	12+60	0.50-1.00	A-7-5(30)	75	37	19.5	9.0	11.2	60.3	100	86	73	

Ⓑ RESIDUAL MEDIUM STIFF TO STIFF BROWN TO ORANGE SANDY SILT, SLIGHTLY MICACEOUS, SAPROLITIC, MOIST

Ⓕ RESIDUAL MEDIUM STIFF TAN TO BROWN SANDY CLAY, HIGHLY PLASTIC, MOIST



RAMP B @ NC 65

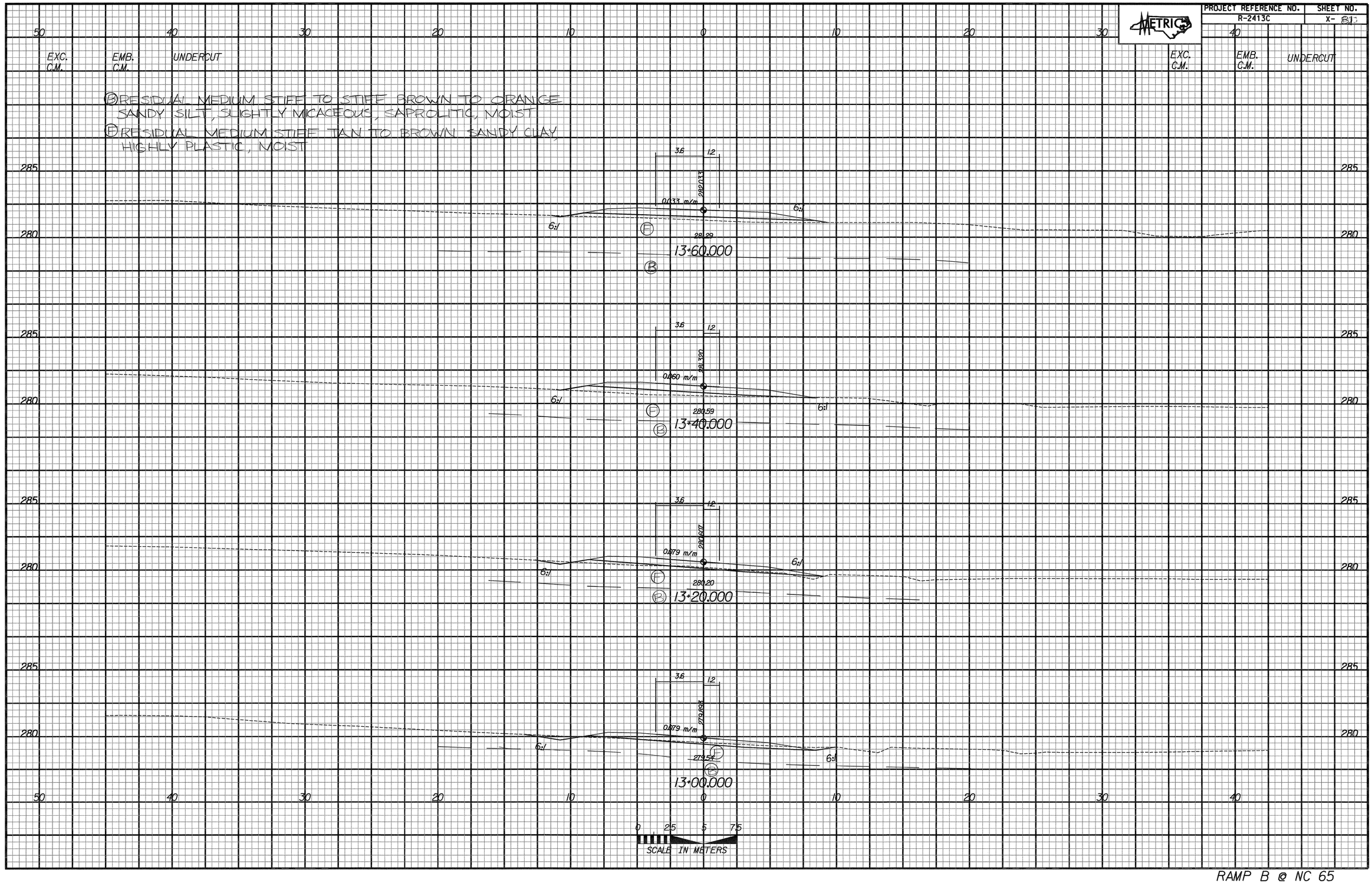
PROJECT REFERENCE NO.	SHEET NO.
R-2413C	X- 81

METRIC

EXC. C.M. | EMB. C.M. | UNDERCUT

Ⓑ RESIDUAL MEDIUM STIFF TO STIFF BROWN TO ORANGE SANDY SILT, SLIGHTLY MICACEOUS, SAPROLITIC, MOIST

Ⓕ RESIDUAL MEDIUM STIFF TAN TO BROWN SANDY CLAY, HIGHLY PLASTIC, MOIST

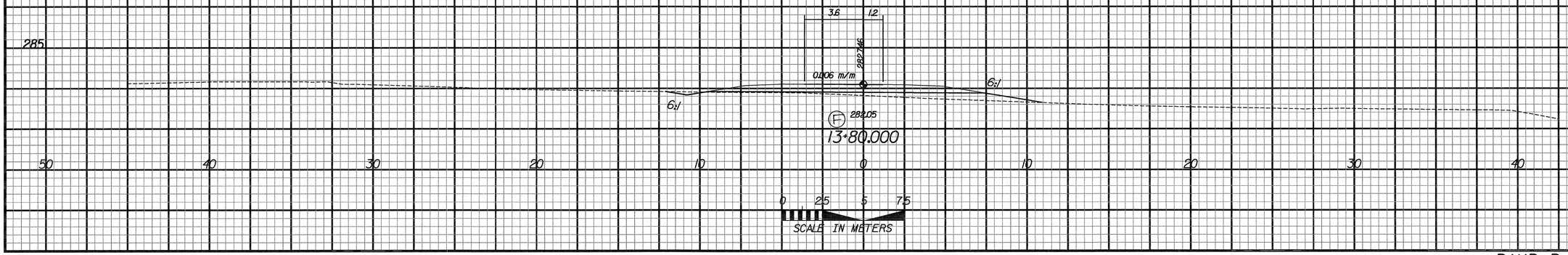


RAMP B @ NC 65

PROJECT REFERENCE NO.	SHEET NO.
R-2413C	X- 82

50	40	30	20	10	0	10	20	30	40
EXC. C.M.	EMB. C.M.	UNDERCUT					EXC. C.M.	EMB. C.M.	UNDERCUT

(F) RESIDUAL MEDIUM STIFF TAN TO BROWN SANDY CLAY, HIGHLY PLASTIC, MOIST



RAMP B @ NC 65