CONTRACT: C201829

ID: U-3447

NOTE: SEE SHEET 1A FOR PLAN SHEET LAYOUT AT TIME OF INVESTIGATION

CONTENTS

LINE	STATION	SHEET NUMBERS PLAN	PROFILE	XSECT
-L-	10+73 TO 66+87	4-8	10-12	14-19
-Y-	10+00 TO 17+04.96	4	12	
-Y1-	10+00 TO 21+21.12	9	13	
-Y2-	10+00 TO 13+23	9	13	
-Y3-	10+86.10 TO 11+88.92	8	13	

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

ROADWAY SUBSURFACE INVESTIGATION

PROJ. REFERENCE NO. 34948.1.1 (U-3447) F.A. PROJ. STP - 51(2)

COUNTY MECKLENBURG

PROJECT DESCRIPTION NC 51 ROCKHILL - PINEVILLE RD FROM THE SC STATE LINE TO SR 3645 (DOWNS CIRCLE)

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3447	1	19

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34948.1.1	STP-51(2)	PE
34948.2.1	STP-51(2)	R/W, UTIL
34948.3.1	STP-51(27)	CONSTR.

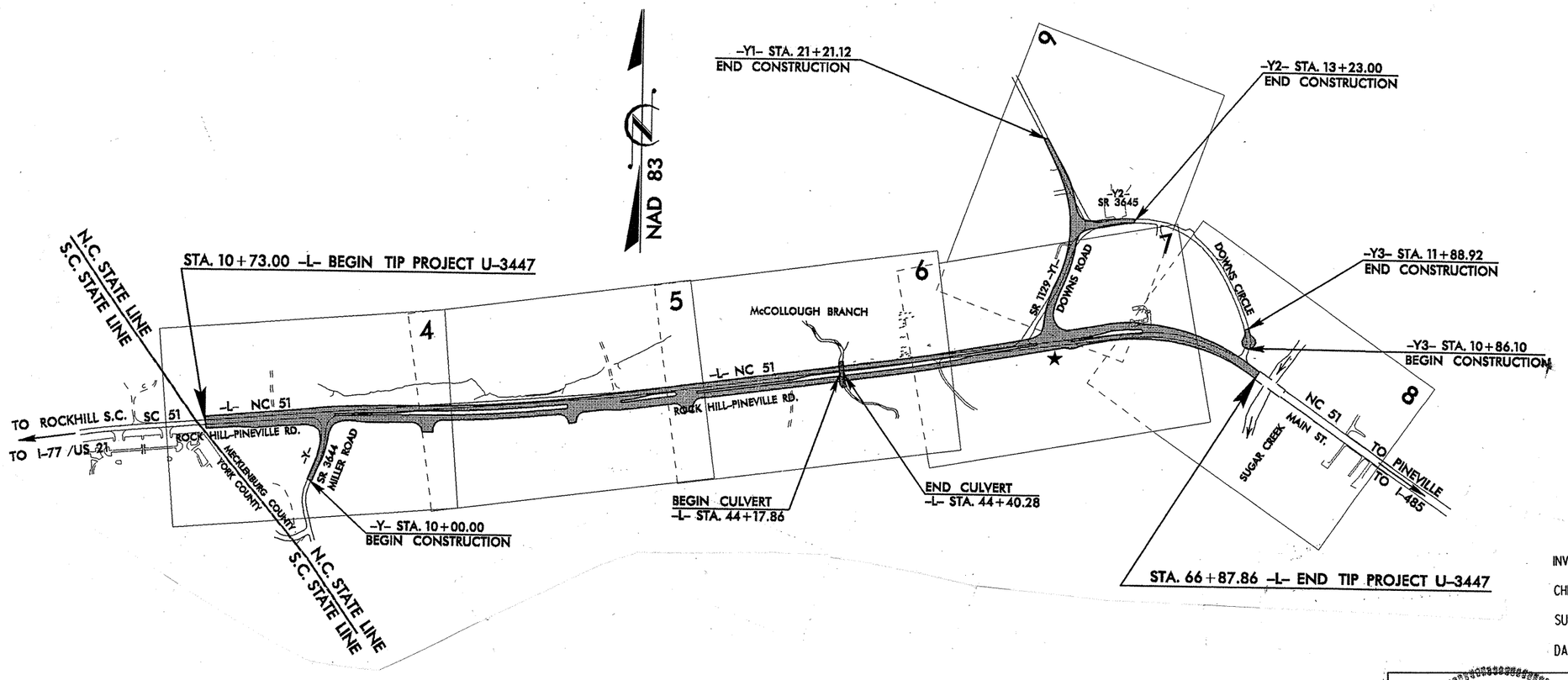
CAUTION NOTICE

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

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

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE, OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON 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.

INVENTORY



PERSONNEL

J.K. STICKNEY

C.L. SMITH

K. WISE

INVESTIGATED BY J.E. BEVERLY

CHECKED BY C.B. LITTLE

SUBMITTED BY C.B. LITTLE

DATE SEPTEMBER 2005

NORTH CAROLINA LICENSED SEAL 11044 GEOLOGIST CLINTON B. LITTLE

DRAWN BY: J.E. BEVERLY

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.

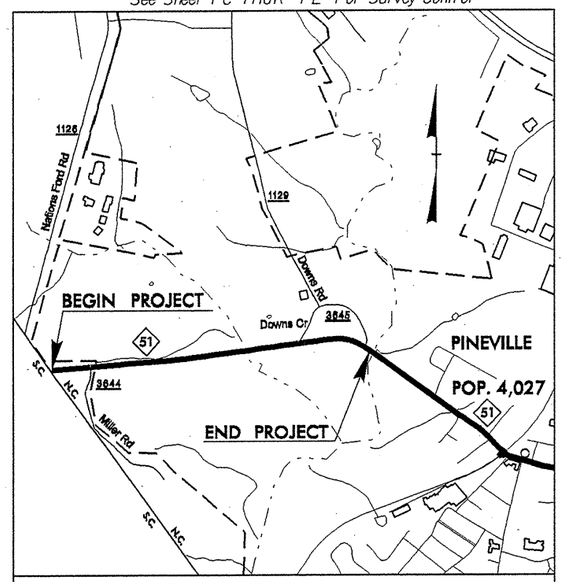
NOTE - BY HAVING REQUESTED THIS INFORMATION THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

09/08/99

TIP PROJECT: U-3447

CONTRACT:

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols
See Sheet 1-C THUR 1-E For Survey Control



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

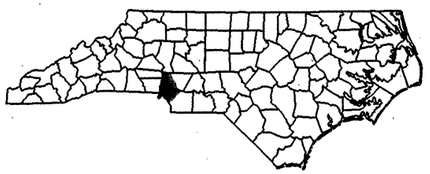
MECKLENBURG COUNTY

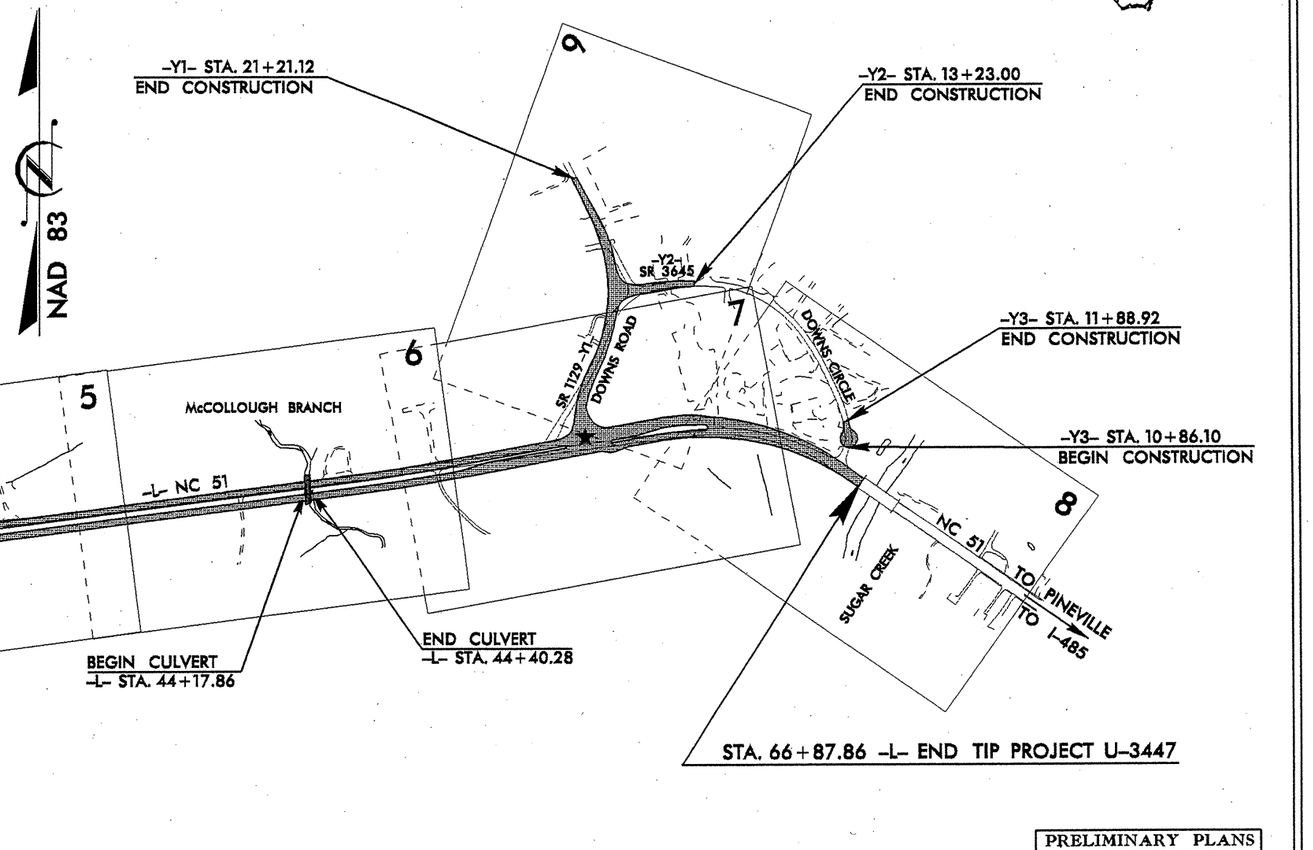
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3447	1A	19

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34948.1.1	STP-51(2)	P.E.

LOCATION: *NC 51, ROCKHILL – PINEVILLE RD FROM THE SC STATE LINE TO SR 3645 (DOWNS CIRCLE)*

TYPE OF WORK: *GRADING, DRAINAGE, PAVING, RESURFACING, GUARDRAIL, SIGNAL, UTILITIES, AND CULVERT*

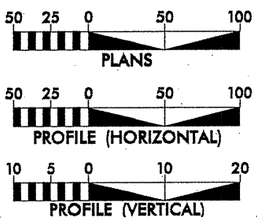




PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

THIS PROJECT IS TOTALLY WITHIN THE PINEVILLE MUNICIPAL BOUNDARY THIS IS NOT A CONTROL OF ACCESS PROJECT. ★ PROPOSED SIGNAL CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

GRAPHIC SCALES



DESIGN DATA

ADT 2004 = 19300
ADT 2025 = 35900
DHV = 9 %
D = 60%
T = 3 % *
V = 50 MPH
* TTST 1% DUAL 2%
CLASS = COLLECTOR

PROJECT LENGTH

LENGTH ROADWAY T.I.P. PROJECT U-3447 = 1.059 MI
LENGTH STRUCTURE T.I.P. PROJECT U-3447 = 0.004 MI
TOTAL LENGTH OF T.I.P. PROJECT U-3447 = 1.063 MI

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

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: SEPTEMBER 16, 2005

LETTING DATE: JANUARY 18, 2009

JASON MOORE, PE
PROJECT ENGINEER

KEVIN E. MOORE, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE DESIGN ENGINEER P.E.

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR DATE

03-SEP-2005 10:55
c:\projects\u-3447\roadway\proj\u3447_rdy_tsh.dgn
Beverly AT GEH22405

PROJECT REFERENCE NO.	SHEET NO.
34948.1.1 (U-3447)	2

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION

SOIL IS CONSIDERED TO BE THE UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER, AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO STANDARD PENETRATION TEST (AASHTO T206, ASTM D-1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. 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 #40 #200	50 MX 30 MX 15 MX	50 MX 25 MX	51 MN 10 MX	35 MX	35 MX	35 MX	35 MX	36 MN	36 MN	36 MN	36 MN	GRANULAR SOILS	SILT-CLAY SOILS	MUCK, PEAT
LIQUID LIMIT	6 MX		NP	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

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

CONSISTENCY OR DENSENESS

PRIMARY SOIL TYPE	COMPACTNESS OR CONSISTENCY	RANGE OF STANDARD PENETRATION RESISTENCE (N-VALUE)	RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/FT²)
GENERALLY GRANULAR MATERIAL (NON-COHESIVE)	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 (COHESIVE)	VERY SOFT	<2	<0.25
	SOFT	2 TO 4	0.25 TO 0.50
	MEDIUM STIFF	4 TO 8	0.5 TO 1.0
	STIFF	8 TO 15	1 TO 2
	VERY STIFF	15 TO 30	2 TO 4
	HARD	>30	>4

TEXTURE OR GRAIN SIZE

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

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

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

SOIL MOISTURE - CORRELATION OF TERMS

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

PLASTICITY

	PLASTICITY INDEX (PI)	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, YELLOW-BROWN, BLUE-GRAY). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.

GRADATION

WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE.
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 IS DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.

MINERALOGICAL COMPOSITION

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

COMPRESSIBILITY

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

PERCENTAGE OF MATERIAL

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

GROUND WATER

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

MISCELLANEOUS SYMBOLS

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

SAMPLE DESIGNATIONS

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

ABBREVIATIONS

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

EQUIPMENT USED ON SUBJECT PROJECT

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

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

HAMMER TYPE:
- ☒ AUTOMATIC ☐ MANUAL

CORE SIZE:
- ☐ -B_____
- ☐ -N_____
- ☐ -H_____

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

ROCK DESCRIPTION

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

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

WEATHERING

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

ROCK HARDNESS

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

FRACTURE SPACING

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

BEDDING

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

INDURATION

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

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

TERMS AND DEFINITIONS

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

AQUIFER - A WATER BEARING FORMATION OR STRATA.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

BENCH MARK:

ELEVATION: _____ FT.

NOTES:

REVISED 03/07/05

Sheet 2A

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

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

LYNDO TIPPETT
SECRETARY

September 29, 2005

STATE PROJECT: 34948.1.1 (U-3447)
F.A. PROJECT: STP – 51(2)
COUNTY: Mecklenburg
DESCRIPTION: NC 51 (Rockhill – Pineville Rd.) from the SC State Line to SR 3645 (Downs Circle)

SUBJECT: Geotechnical Report - Inventory

This report presents the findings of the Geotechnical Investigation for the proposed widening of NC 51 (Rockhill – Pineville Rd.). Stations encompassed on this project are from -L- 10+73 to 66+87.86. The project begins at the South Carolina State Line and proceeds in a easterly direction to the city of Pineville.

The geotechnical field investigation for this project was conducted during the months of August and September of 2005. An ATV mounted CME 550X drill machine with automatic drop hammer was utilized to perform test borings along the proposed -L- alignment. No boring data was obtained along connecting -Y- lines primarily due to the presence of utilities and residential structures. Soil descriptions related to -Y- lines were determined from both visual inspection and interpretation of -L- line boring data. The following survey lines are addressed in this inventory report:

Line	Station
-L-	10+73 – 66+87.86
-Y-	10+00 – 17+04.96
-Y1-	10+00 – 21+21.12
-Y2-	10+00 – 13+23
-Y3-	10+86.10 – 11+88.92

Areas of Special Geotechnical Interest:

1. *Groundwater:*

With only one exception, groundwater was limited to floodplain areas. It should however be noted that many boreholes were filled immediately after drilling due to the presence of livestock. Thus a number

of 24-hour water reading were not obtained. Also noted was surface water to the area right of -L- station 59+00 – 64+00.

2. *Rock:*

In only a few instances were hard rock noted during the course of this investigation. Rock was visually noted along the ground surface in the cut slopes left and right of -L- stations 51+00 to 53+00. Rock in this area appears as both outcrops and boulders. Rock in these cut slopes is weathered out in places as evidenced by 3 borings preformed left of -L- stations 51+80 to 53+00. While rock protrudes from the ground surface in much of this area our 3 boring locations managed to penetrate 10+ feet before encountering hard rock. Only 4 boring locations achieved auger refusal on hard rock along the entire length of the project. The only locations where rock was encountered at or above grade were at the afore mentioned cut slopes.

3. *High PI Soils:* (PI's Greater than 26)

There are a few areas where high PI clays exist along the project corridor. Of the six holes that high PI clay soils were sampled from the PI range varied from 27 – 47. The following areas along alignment -L- were determined to contain High PI clays:

Station Range	Depth Interval (feet)	High PI Range (27+)
28+50 – 31+50	0.0 – 5.0	30
37+50 – 42+10	0.0 – 5.0	41 – 47
49+50 – 55+00	0.0 – 7.0	29
62+00 – 66+50	0.0 – 4.5	27

4. *Alluvial Soils / Wet Areas:*

There were a few areas containing alluvial soils along the project corridor. Most of these areas result from adjacent streams, creeks, drainage features and low-lying areas. Alluvial soils seem to be comprised of soft sandy silty clay (A-6, A-7-6). The following is a list of areas that are known to contain soft alluvial soils.

Line	Station Range
-L-	42+00 – 49+80 (Creek and floodplain)
-L-	59+00 – 64+00 (Mostly RT of -L-)

Physiography/Geology:

The project area is located in southern Mecklenburg County beginning at the SC State line and ending in Pineville, NC. Area topography is flat to gently rolling with gently sloping stream and drainage features bisecting the project. The project is surrounded by open fields, sparse wooded areas and some residential development. Elevation range within the project area is approximately 530 to 620 feet.

Geologically this site is part of the Charlotte Belt and is underlain by Cenezoic age meta-granitic rock and/or Paleozoic age meta-mafic rock.

Soil Properties:

1. *Residual Soils:*
These soils are derived from in place weathering of parent materials. They occur in a variety of consistencies, classifications, and stratigraphic sequences. Residual soils are further subdivided into clays, silts, and sands.

Clays consist primarily of stiff to hard red-tan-brown and gray sandy silty clay, or silty sandy clay in the AASHTO classifications of A-7-5, A-7-6, and A-6. Clay soils appear well drained with a plasticity index ranging from 11 to 47. Corresponding liquid limit ranges are between 37 and 69.

Silts were encountered only as subsoils and occur only as an A-4 AASHTO Classification. They are best described as stiff to very stiff tan-gray-brown clayey sandy silt.

Sands encountered on the project were of the A-2-4 AASHTO Classification and occur as both near surface soils and subsoils. Sands generally consist of medium dense to dense tan-gary-brown silty sand.

2. *Alluvial Soils:*

Alluvial soils originate from water transportation and deposition in a floodplain environment. These deposits seem to be relatively shallow with typical depths of 5 feet or less. Based on boring data alluvial soils were found to be very soft to soft brown-gray sandy silty clay (A-7-6, A-6).

3. *Fill Soils:*

No borings were performed in any fill materials. Roadway fill soils are present beneath NC 51 and its connecting -Y- lines but traffic and utilities made boring in and adjacent to the roadway unfeasible. The existing road (NC 51) and its connectors appear in generally good condition.

Rock Properties:

Rock is defined as that material which refuses penetration of power augers and / or achieves SPT refusal. Only four borings achieved auger refusal on hard rock during the course of this investigation. Of these four borings two that are 50' left of -L- station 52+00 to 53+50 encountered rock at or above proposed grade. Hard rock type may be meta-granite or meta-mafic in composition.

Culvert at McCullough Branch (-L- Sta. 44+29):

A larger 3 barrel 3@7'x11' RCBC is proposed at -L- station 44+29 to replace the existing 3 barrel culvert built back in 1929. The proposed centerline invert elevation for the new culvert is 527.99 feet.

To determine subsurface soil conditions for construction purposes, a boring was performed adjacent to the culvert 30 feet right of -L- station 44+07. Our boring encountered 4 feet of soft alluvial silty sandy clay (A-6) overlying a thin layer of weathered rock before auger refusal was achieved on hard rock at elevation 531.8'. Some rock, although weathered in appearance, was noted in the creek channel on the downstream side of the existing culvert. The existing channel bed is degrading and is lower in elevation (below elevation 530') than the existing culverts concrete slab at both its inlet and exit point. Some debris was noted on the up stream side of the culvert.

Sheet 2B

Wells:

During the course of this investigation no wells were noted within the construction corridor. It is however possible that wells are present which went undetected.

Respectfully Submitted,

J.E. Beverly

J.E. Beverly, Project Geologist

TRMeadows AT RD09S03b

COMPUTED BY: TRM 6/11/07
CHECKED BY: KEM 7/6/07

PROJECT NO. :	U-3447	SHEET No.	3

EARTHWORK BALANCE SHEET

IN CUBIC YARDS

LOCATION	UNCLASS. EXCAV.	ROCK EXCAV.	UNDERCUT EXCAV.	UNSUITABLE EARTH EXCAVATION	SUITABLE EARTH EXCAVATION	TOTAL EMB'T	EARTH EMB'T	ROCK EMB'T	EMB'T + % 20	BORROW	SELECT BORROW	ROCK WASTE	SUITABLE WASTE	UNSUITABLE WASTE	TOTAL WASTE
-L LT- 10+73.00 TO 40+50.00	697	0	468	33	664	7104	7104	0	8525	7861	0	0	0	501	501
-L RT- 10+73.00 TO 40+50.00	8341	0	1859	36	8305	5241	5241	0	6289	0	0	0	2016	1895	3911
-Y- 10+00.00 TO 13+23.37	387	0	0	0	387	331	331	0	397	10	0	0	0	0	0
SUBTOTALS NO 1	9425	0	2327	69	9356	12676	12676	0	15211	7871	0	0	2016	2396	4412
-L LT- 40+50.00 TO 44+33.00	24	0	266	10	14	1015	1015	0	1218	1204	0	0	0	276	276
-L LT- 44+33.00 TO 66+87.86	2537	1245	0	0	1292	17763	16518	1245	21067	18530	0	0	0	0	0
-L RT- 40+50.00 TO 44+33.00	2	0	801	2	0	5318	5318	0	6382	6382	0	0	0	803	803
-L RT- 44+33.00 TO 66+87.86	2803	1428	0	0	1375	19376	17948	1428	22966	20163	0	0	0	0	0
-Y1- 10+38.12 TO 21+21.12	434	0	0	0	434	3999	3999	0	4799	4365	0	0	0	0	0
-Y2- 10+18.13 TO 13+23.00	71	0	0	0	71	572	572	0	686	615	0	0	0	0	0
-Y3- 10+86.10 TO 11+88.92	0	0	0	0	0	131	131	0	157	157	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTALS NO 2	5871	2673	1067	12	3186	48174	45501	2673	57275	51416	0	0	0	1079	1079
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTALS NO 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PROJECT SUBTOTALS	15296	2673	3394	81	12542	60850	58177	2673	72486	59287	0	0	2016	3475	5491
LOSS DUE TO CLEAR. & GRUB	-800				-800					800			0		0
ADDITIONAL UNDERCUT EXCAV.			9450	0	0	9450	9450	0	11340	11340	0		7800	1650	9450
	0				0	0	0	0	0	0					
							0		0	0					
									0	0					
										0					
WASTE IN LIEU OF BORROW										-9816			-9816		-9816
SHOULDER CONSTRUCTION							320		384	384					
										0					
PROJECT TOTALS	14496	2673	12844	81	11742	70300	67947	2673	84210	61995	0	0	0	5125	5125
REPLACE TOP SOIL BOR. PITS										3100					
GRAND TOTALS	14496		12844			70300	67947	2673	84210	65095	0	0	0	5125	5125
SAY	14500		12900							65100	0				

PAVEMENT STRUCTURE VOLUME :	3,662	CUBIC YARDS	
DRAINAGE DITCH EXCAVATION :	600	CUBIC YARDS	
SELECT GRANULAR MATERIAL	5,000	CUBIC YARDS	(Contingency Item)
CL. IV SUBGRADE STAB.	3,150	CUBIC YARDS	(Contingency Item)

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

8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
U-3447	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L-
PI Sta 18+80.62
Δ = 4° 45' 09.5" (RT)
D = 1° 08' 45.3"
L = 414.75'
T = 207.49'
R = 5,000.00'
SE = 0.02

NAD 83

10+00 15+00 20+00

-L- POT Sta. 10+73.00
BEGIN PROJECT U-3447
BEGIN CONSTRUCTION

-L- POT Sta. 10+00.00

-L- PCSta. 16+73.13

-Y- POT Sta. 13+60.81
-L- POT Sta. 17+04.96

-BL-10 PINC 24+38.02=
-L- STA. 22+01.44, 43.74' LT

JAMES ROSS MILLER, JR.
DB 2286 PG 210

JAMES ROSS MILLER, JR.
DB 2286 PG 210

NORTH CAROLINA STATE LINE
SOUTH CAROLINA STATE LINE

REMOVE AND RESET FENCE

BEG. 2'6' C&G LT&RT
-L- STA. 10+73.00

275' TRANSITION

330' FULL LANE

100' TAPER

48" INC. TYP.

2'6' C&G

42" WW & ISBW

48" WW & ISBW

48" SSBW

N 85° 26' 47.8" E

NC 51 ROCK HILL-PINEVILLE RD 24' BST

S 86° 14' 53.3" E

N 86° 04' 28.7" E

N 16° 58' 54.2" E

EXISTING R/W

6' BST CURB

-BL- PINC 12+77.81=
USGS "45 EGB"
-L- STA 10+46.47, 27.42' RT

REBEKAH B. MILLER
DB 1606 PG 202

-Y- PT Sta. 12+32.82

-Y- PCSta. 10+86.22

END 2'6' C&G LT&RT
-Y- STA. 12+26.66

REMOVE AND RESET FENCE

-L- PRCSta. 20+87.87

CHARLES STEPHEN MILLER, etal
DB 0479 PG 250

JOHN S. MILLER FAMILY LP
DB 8880 PG 462

-BY- POT 5+00.00
-BL-9 PINC 19+68.83 =
-BY- POT 5+00.00
-L- STA. 17+37.89, 35.57' RT
-Y- STA. 13+32.24, 38.14' RT

-Y- POT Sta. 10+00.00
BEGIN CONSTRUCTION

CHARLES STEPHEN MILLER
DB 4883 PG 816

-BY-19 PINC 8+58.81

BM #2
-BY- STATION 9+46
21' LEFT
ELEVATION=621.45'

-Y-
PI Sta 11+60.05
Δ = 16° 47' 58.4" (LT)
D = 11° 27' 33.0"
L = 146.60'
T = 73.83'
R = 500.00'
SE = 0.04

2004/2025 AVERAGE DAILY TRAFFIC

17600 / 32600		17500 / 32500
NC 51		-L-
200 / 300		100 / 200
	300 / 500	

-Y- MILLER RD
(SR 3644)

MATCH LINE SEE SHEET 5 -L- STA. 23+00.00

SEE SHEET 10 FOR -L- PROFILE
SEE SHEET 12 FOR -Y- PROFILE

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jeverlu AT GEH21405

PROJECT REFERENCE NO.	SHEET NO.
U-3447	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

-L-
PI Sta 26+26.04
Δ = 7° 41' 49.3" (LT)
D = 0° 42' 58.3"
L = 1,074.71'
T = 538.16'
R = 8,000.00'
SE = 0.02

NAD 83

JAMES ROSS MILLER, JR.
DB 2286 PG 210

JAMES ROSS MILLER, JR.
DB 2286 PG 210

25+00

30+00

35+00

-L- PT Sta. 31+62.58

BM #3
-BL- STATION 35+39
193' LEFT
ELEVATION=549.94'

-L- STA. 23+00.00

MATCH LINE SEE SHEET 4 -L- STA. 23+00.00

REMOVE AND RESET FENCE

REMOVE AND RESET FENCE

REMOVE AND RESET FENCE

REMOVE AND RESET FENCE

2'6" C&G

2'6" C&G

2'6" C&G

2'6" C&G

48" SSBW

48" SSBW

48" SSBW

48" SSBW

48" SSBW

EXISTING R/W

GRAU 350

N 87° 25' 58.9" E

N 80° 57' 06.6" E

N 82° 30' 08.6" E

48" INC. TYP.

-BL-11 PINC 34+74.41=
-L- STA. 32+41.55, 12.01' LT

MATCH LINE SEE SHEET 6 -L- STA. 36+00.00

JOHN S. MILLER FAMILY LP
DB 8880 PG 462

JOHN S. MILLER FAMILY LP
DB 8880 PG 462

SEE SHEET 10 FOR -L- PROFILE

7-SEP-2005 09:15
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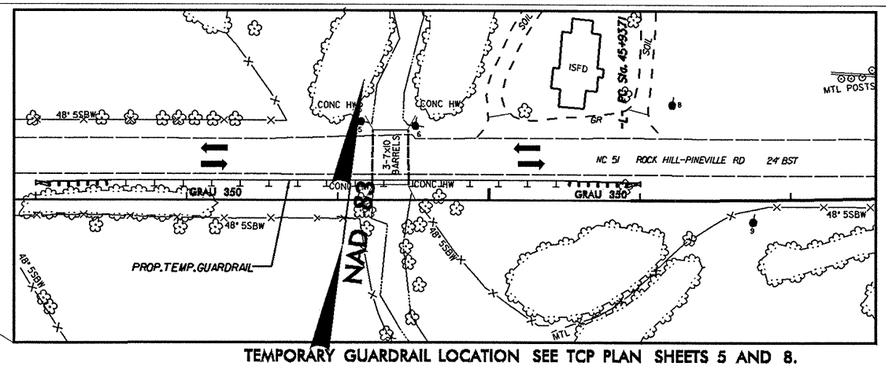
javerlu AT GEH21405

PROJECT REFERENCE NO.	SHEET NO.
U-3447	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS



TEMPORARY GUARDRAIL LOCATION SEE TCP PLAN SHEETS 5 AND 8.

-L-
PI Sta 47+85.56
Δ = 2° 44' 51.0" (LT)
D = 0° 42' 58.3"
L = 383.62'
T = 191.85'
R = 8,000.00'
SE = 0.02

-BL-12 PINC 47+40.01 =
-L- STA. 45+06.69, 46.13' LT

BM #4
-BL- STATION 47+73
187' LEFT
ELEVATION=539.10'

-L- PC Sta. 45+93.71

MATCH LINE SEE SHEET 5 -L- STA. 36+00.00

MATCH LINE SEE SHEET 7 -L- STA. 49+00.00

JAMES ROSS MILLER, JR.
DB 2286 PG 210

BEBCO, LLC
DB 12560 PG 340

INLOC COMPANY
DB 3257 PG 001

McCULLOUGH LAND, LLC
DB 2143 PG 438

McCULLOUGH LAND, LLC
DB 2143 PG 438

MARIANNA M. RAUGH, ET. AL
DB 4902 PG 051

REMOVE AND RESET FENCE

REMOVE AND RESET FENCE

SANITARY SEWER R/W

SEE SHEET 11 FOR -L- PROFILE

-L- STA 44+65 RT - STA 46+80 RT

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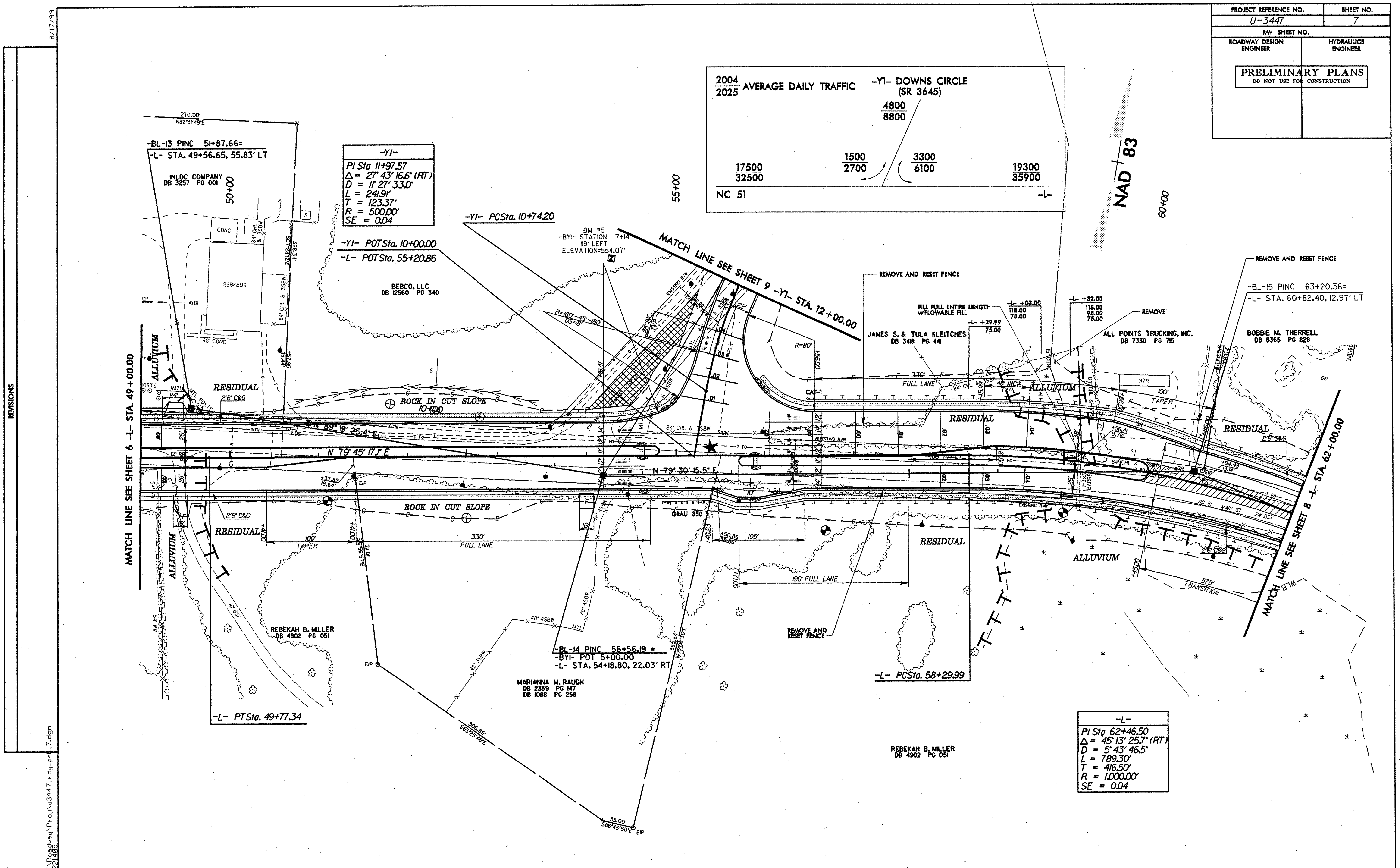
$user$

PROJECT REFERENCE NO.	SHEET NO.
U-3447	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

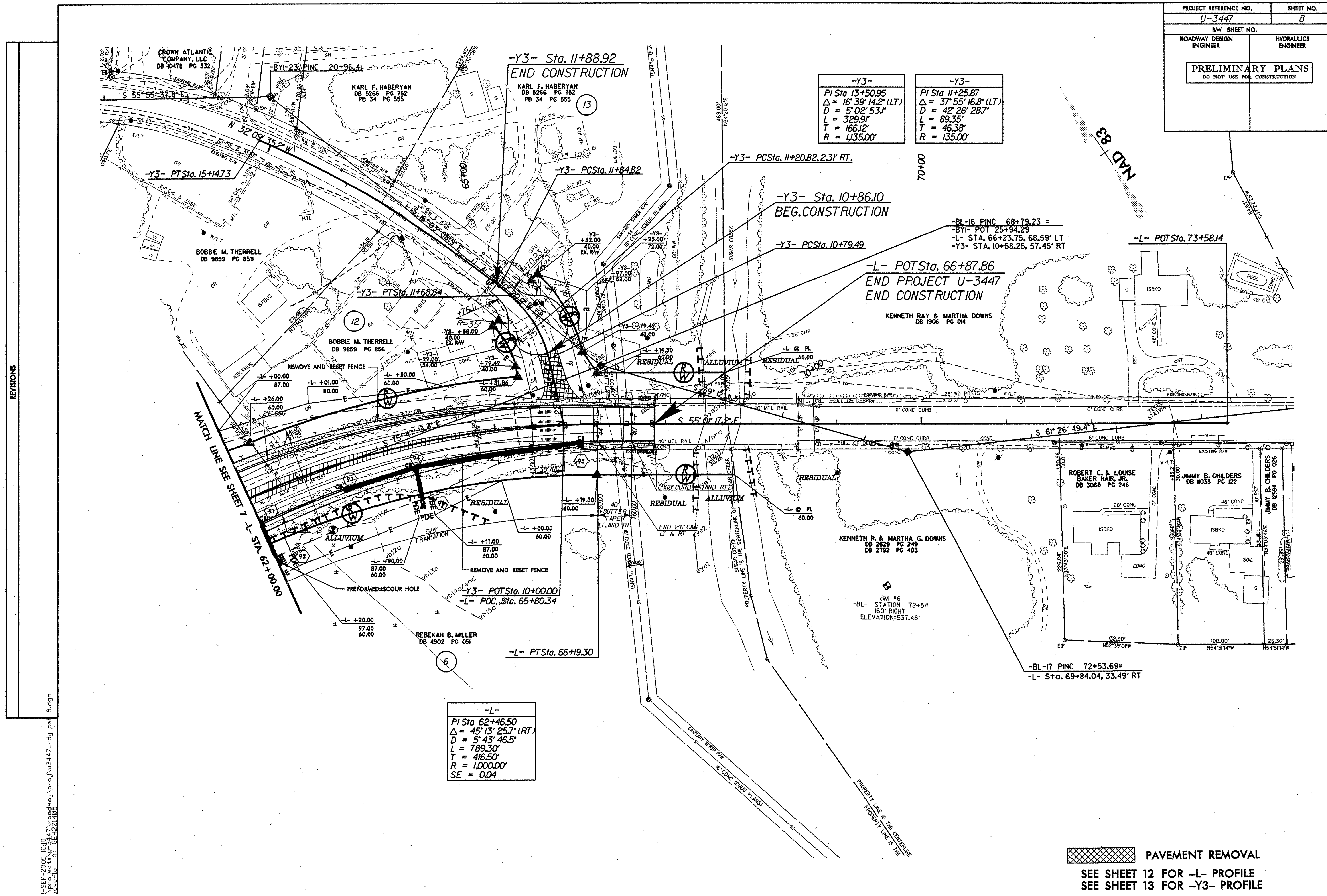


★ TRAFFIC SIGNAL

PAVEMENT REMOVAL

SEE SHEET 13 FOR -Y1- PROFILE

SEE SHEET 11 FOR -L- PROFILE


PROJECT REFERENCE NO.
U-3447
SHEET NO.
8
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
-Y3-
PI Sta 13+50.95
Δ = 16° 39' 14.2" (LT)
D = 5° 02' 53.1"
L = 329.91'
T = 166.12'
R = 1,135.00'
-Y3-
PI Sta 11+25.87
Δ = 37° 55' 16.8" (LT)
D = 42° 26' 28.7"
L = 89.35'
T = 46.38'
R = 135.00'
-L-
PI Sta 62+46.50
Δ = 45° 13' 25.7" (RT)
D = 5° 43' 46.5"
L = 789.30'
T = 416.50'
R = 1,000.00'
SE = 0.04
NAD 83
-Y3- Sta. 11+88.92
END CONSTRUCTION
-Y3- PCSta. 11+84.82
-Y3- PTSta. 15+14.73
-Y3- PTSta. 11+68.84
-Y3- PCSta. 11+20.82, 2.31' RT.
-Y3- Sta. 10+86.10
BEG.CONSTRUCTION
-Y3- PCSta. 10+79.49
-BL-16 PINC 68+79.23 =
-BYI- POT 25+94.29
-L- STA. 66+23.75, 68.59' LT
-Y3- STA. 10+58.25, 57.45' RT
-L- POTSta. 66+87.86
END PROJECT U-3447
END CONSTRUCTION
-L- POTSta. 73+58.14
-BYI-23 PINC 20+96.41
CROWN ATLANTIC COMPANY, LLC
DB 10478 PG 332
KARL F. HABERYAN
DB 5266 PG 752
PB 34 PG 555
BOBBIE M. THERRELL
DB 9859 PG 859
BOBBIE M. THERRELL
DB 9859 PG 856
KENNETH RAY & MARTHA DOWNS
DB 1906 PG 014
KENNETH R. & MARTHA G. DOWNS
DB 2629 PG 249
DB 2792 PG 403
ROBERT C. & LOUISE BAKER HAIR, JR.
DB 3068 PG 246
JIMMY B. CHILDERS
DB 11033 PG 122
JIMMY B. CHILDERS
DB 12594 PG 026
REBEKAH B. MILLER
DB 4902 PG 051
S 55° 55' 37.8" E
N 32° 09' 35.2" W
S 55° 01' 17.2" E
S 61° 26' 49.4" E
REMOVE AND RESET FENCE
MATCH LINE SEE SHEET 7 -L- STA. 62+00.00
PREFORMED SCOUR HOLE
-Y3- POTSta. 10+00.00
-L- POC Sta. 65+80.34
-L- PTSta. 66+19.30
BM #6
-BL- STATION 72+54
160' RIGHT
ELEVATION=537.48'
-BL-17 PINC 72+53.69=
-L- Sta. 69+84.04, 33.49' RT
RESIDUAL
ALLUVIUM
SUGAR CREEK
PROPERTY LINE IS THE CENTERLINE
SANITARY SEWER R/W
18" CONC (CMUD PLANS)
6' CONC CURB
40' MTL RAIL
515' TRANSITION
40' GUTTER TAPER LT. AND RT.
END 2'6" C&G LT & RT
65+00
70+00
PAVEMENT REMOVAL
SEE SHEET 12 FOR -L- PROFILE
SEE SHEET 13 FOR -Y3- PROFILE
REVISIONS
3-SEP-2005 10:10
\projects\u-3447\roadway\proj\u3447_rdy_psh_8.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-3447	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/99

REVISIONS

-Y1-
PI Sta 11+97.57
Δ = 27° 43' 16.6" (RT)
D = 11° 27' 33.0"
L = 241.91'
T = 123.37'
R = 500.00'
SE = 0.04

-Y1-
PI Sta 16+62.70
Δ = 55° 24' 37.1" (LT)
D = 8° 40' 52.2"
L = 638.28'
T = 346.58'
R = 660.00'
SE = 0.04

-Y2- POT Sta. 10+00.00
-Y1- POC Sta. 16+30.69

-Y1- POT Sta. 23+79.71

-Y1- POT Sta. 21+21.12
END CONSTRUCTION

NAD 83

-BY2-24 PINC 8+91.32
-Y1- STA. 21+13.80, 23.44' RT

-Y1- PT Sta. 19+54.39

-BY1-21 PINC 12+31.04 =
-BY2- POT 13+50.56
-Y1- STA. 16+62.79, 32.89' RT
-Y2- STA. 10+37.06, 28.72' LT

-Y2- PC Sta. 12+10.72

-Y2- POC Sta. 13+23.00
END CONSTRUCTION

-Y2- PT Sta. 13+90.32

-BY1-22 PINC 16+80.94

-Y2-
PI Sta 13+00.92
Δ = 13° 06' 30.4" (RT)
D = 7° 17' 55.8"
L = 179.60'
T = 90.19'
R = 785.00'

-Y1- PRC Sta. 13+16.11

MATCH LINE SEE SHEET 7 -Y1- STA. 12+00.00

REMOVE AND RESET FENCE

END C&G LT
-Y1- Sta. 19+18.64

END C&G RT
-Y1- Sta. 18+96.96

END C&G LT & RT
-Y2- Sta. 12+13.00

INTERNATIONAL STEEL ERECTORS, INC.
DB 2882 PG 457

BILLY F. STEGALL, JR.
DB 9869 PG 541

SHANNON D. & CINDY D. COBB
DB 9345 PG 295

BOBBY WAYNE STONE
DB 3822 PG 784

BOBBY WAYNE STONE
DB 1568 PG 482

BEBCO, LLC
DB 12560 PG 340

MARJORIE M. DARNELL
DB 10490 PG 503

WILLIAM H. PEELER
DB 6423 PG 173

GERALD H. RHYNE
DB 11600 PG 688

GERALD H. RHYNE
DB 12653 PG 420

JAMES S. & TULA KLEITCHES
DB 3418 PG 441

ALL POINTS TRUCKING, INC.
DB 7330 PG 715

ALL POINTS TRUCKING, INC.
DB 7330 PG 715

STEPHEN PAUL & TERRILYNN MCGIRT
DB 6139 PG 484
PB 23 PG 387

2004
2025 AVERAGE DAILY TRAFFIC

000/000 (SR 1129)
000/000 -Y1- DOWNS RD
000/000
000/000
000/000 -Y2- DOWNS CIRCLE (SR 3645)

PAVEMENT REMOVAL

SEE SHEET 13 FOR -Y1- PROFILE
SEE SHEET 13 FOR -Y2- PROFILE

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5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-3447	10
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

Proj. Sample No.		SS-1	SS-2	SS-3	SS-4	SS-5	SS-6	SS-7
Retained #4 Sieve	%	–	–	–	–	–	–	–
Passing #10 Sieve	%	100	100	100	100	100	100	100
Passing #40 Sieve	%	88	87	83	84	91	84	80
Passing #200 Sieve	%	52	51	25	50	48	51	53
Coarse Sand Ret – #60	%	20.8	22.9	32.6	22.7	22.5	32.3	28.3
Fine Sand Ret – #270	%	34.2	34.6	51.6	34.0	36.5	18.8	27.5
Silt 0.05 – 0.005 mm	%	28.3	25.8	10.6	26.7	30.6	26.0	25.4
Clay <0.005 mm	%	16.7	16.7	5.2	16.7	10.4	22.9	18.8
L. L.		38	37	25	38	31	47	41
P. I.		12	11	NP	11	3	18	5
AASHTO Classification		A-6(4)	A-6(3)	A-2-4(0)	A-6(3)	A-4(0)	A-7-6(7)	A-5(2)
Station		11+25	11+25	14+20	17+93	17+93	21+00	21+00
OFFSET		50 RT	50 RT	30 RT	50 RT	50 RT	56 RT	56 RT
ALIGNMENT		L	L	L	L	L	L	L
Depth (Ft)		4.20	9.20	4.10	4.70	9.70	4.70	14.70
	to	5.20	10.20	5.10	5.70	10.70	5.70	15.70

BEGIN GRADE
-L- STA. 10+73.00
ELEV. = 620.47

621.99

SS-1
SS-2
11+25
50 RT

(-)11.215%

(-)11.9965%

SS-3
14+20
30 RT

PI = 13+06.00
EL = 617.87
VC = 200
K = 229, V = 65

-L- 17+04.98
-Y- 13+60.81

SS-4
SS-5
17+93
50 RT

PI = 21+55.00
EL = 600.90
VC = 350
K = 97, V = 75

SS-6
SS-7
21+00
56 RT

(-)11.9965%

(-)15.62167%

0.0725

RESIDUAL - STIFF TO HARD TAN-BROWN SILTY SANDY CLAY, DRY TO MOIST

RESIDUAL - DENSE BROWN-GRAY SILTY SAND, DRY

RESIDUAL - VERY STIFF TAN-BROWN SILTY SANDY CLAY, MOIST

VERY STIFF TAN-GRAY SANDY SILT, DRY

RESIDUAL - STIFF RED-BROWN MICACEOUS SILTY SANDY CLAY, MOIST

STIFF GRAY-WHITE CLAYEY SANDY SILT

DRY 8-05

N.M.

SEE SHEET 4 FOR PLAN VIEW

Proj. Sample No.		SS-8	SS-9	SS-10	SS-11	SS-12	SS-13	SS-14	SS-15
Retained #4 Sieve	%	–	–	1	–	–	–	–	–
Passing #10 Sieve	%	100	100	96	98	99	100	100	95
Passing #40 Sieve	%	86	77	80	87	71	94	88	75
Passing #200 Sieve	%	60	29	26	61	27	64	56	26
Coarse Sand Ret – #60	%	21.5	39.9	35.0	20.0	40.6	12.5	21.7	39.1
Fine Sand Ret – #270	%	22.5	37.0	45.2	26.5	37.3	30.8	30.0	40.9
Silt 0.05 – 0.005 mm	%	20.6	12.7	12.5	18.1	13.8	33.8	29.6	13.8
Clay <0.005 mm	%	35.4	10.4	7.3	35.4	8.3	22.9	18.8	6.3
L. L.		45	31	27	50	30	56	37	30
P. I.		19	NP	NP	31	NP	17	7	NP
AASHTO Classification		A-7-6(10)	A-2-4(0)	A-2-4(0)	A-7-6(16)	A-2-4(0)	A-7-5(12)	A-4(3)	A-2-4(0)
Station		24+08	24+08	27+00	30+00	30+00	32+80	32+80	35+80
OFFSET		41 RT	41 RT	35 T	52 RT	52 RT	38 RT	38 RT	47 RT
ALIGNMENT		L	L	L	L	L	L	L	L
Depth (Ft)		4.50	9.50	4.50	4.00	9.00	4.50	9.50	4.50
	to	5.50	10.50	5.50	5.00	10.00	5.50	10.50	5.50

592.70

PI = 27+10.00
EL = 569.70
VC = 420
K = 102, V = 50

SS-8
SS-9
24+08
41 RT

SS-10
27+00
35 RT

SS-11
SS-12
30+00
52 RT

SS-13
SS-14
32+80
38 RT

PI = 34+00.00
EL = 559.30
VC = 550
K = 1134, V = 80

SS-15
35+80
47 RT

(-)1.5072%

(-)1.9921%

RESIDUAL - STIFF RED-BROWN SILTY SANDY CLAY, MOIST

MEDIUM DENSE TAN-WHITE MICACEOUS SILTY SAND, DRY

RESIDUAL - DENSE TAN-BROWN MICACEOUS SILTY SAND, MOIST

WEATHERED ROCK

RESIDUAL - STIFF TAN-GRAY SILTY SANDY CLAY, HIGH PL, MOIST

MEDIUM DENSE TAN-BLACK SILTY SAND, MOIST

RESIDUAL - STIFF RED-BROWN MICACEOUS SANDY SILTY CLAY, MOIST

STIFF GRAY-BROWN CLAYEY SANDY SILT, MOIST

RESIDUAL - MEDIUM DENSE TAN-GRAY SILTY SAND, MOIST

DRY @ 0HR

SEE SHEET 5 FOR PLAN VIEW

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5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-3447	11
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

CULVERT HYDRAULIC DATA

DESIGN DISCHARGE	=	CFS
DESIGN FREQUENCY	=	YRS
DESIGN HW ELEVATION	=	FT
BASE DISCHARGE	=	CFS
BASE FREQUENCY	=	YRS
BASE HW ELEVATION	=	FT
OVERTOPPING DISCHARGE	=	CFS
OVERTOPPING FREQUENCY	=	YRS
OVERTOPPING ELEVATION	=	FT

PI = 40+35.00
EL = 546.65'
VC = 165'
K = 98, V = 50

PI = 45+25.00
EL = 545.15'
VC = 150'
K = 422, V = 80

SS-16
38+80
44 RT

SS-17
SS-18
41+88
40 RT

SS-19
44+07
30 RT

RESIDUAL - MEDIUM DENSE TAN-GRAY SILTY SAND, MOIST

(-)1.992%

(-)0.306%

RESIDUAL - STIFF TAN-YELLOW SANDY SILTY CLAY, HIGH PI MOIST

AR HARD ROCK

DRY @ 0HR

VERY STIFF TAN-GRAY CLAYEY SANDY SILT, MOIST

DRY @ 0HR

ALLUVIUM - SOFT BROWN SILTY SANDY CLAY, MOIST

AR HARD ROCK

DRY

(-)0.306%

(-)0.665%

ALLUVIUM - SOFT BROWN SILTY SANDY CLAY, MOIST

542.81

BM #4
-L- STA. 45+31.15
229.75' LT
ELEVATION = 539.10'

SEE SHEET 6 FOR PLAN VIEW

PROFILE 50' LEFT

S-26
S-27

51+80
60 LT

52+30
52 LT

52+80
45 LT

WEATHERED ROCK

AR
DRY

AR CRYSTALLINE ROCK
DRY

AR
DRY

(A) RESIDUAL - STIFF RED-BROWN SANDY SILTY CLAY, HIGH PI, MOIST

Proj. Sample No.		SS-16	SS-17	SS-18	SS-19	SS-20	SS-21	SS-22	SS-23	S-26	S-27
Retained #4 Sieve	%	-	2	-	2	-	-	-	-	-	-
Passing #10 Sieve	%	100	95	100	98	99	96	100	100	100	100
Passing #40 Sieve	%	97	79	81	77	85	87	77	94	98	98
Passing #200 Sieve	%	79	58	46	46	70	52	21	81	88	84
Coarse Sand Ret - #60	%	5.8	23.5	31.3	30.8	19.0	19.8	42.5	9.8	4.4	4.8
Fine Sand Ret - #270	%	20.6	18.3	32.1	26.2	13.8	32.5	42.6	12.1	13.1	15.4
Silt 0.05 - 0.005 mm	%	31.9	14.4	24.2	19.0	25.6	31.0	8.6	30.2	32.5	31.9
Clay <0.005 mm	%	41.7	43.8	12.5	25.0	41.7	16.7	6.3	47.9	50.0	47.9
L. L.		69	69	38	36	57	32	24	50	70	72
P. I.		41	47	8	18	29	3	NP	24	39	35
AASHTO Classification		A-7-6(35)	A-7-6(24)	A-4(1)	A-6(4)	A-7-6(20)	A-4(0)	A-2-4(0)	A-7-6(21)	A-7-6(40)	A-7-5(35)
Station		38+80	41+88	41+88	44+07	51+10	51+10	56+68	59+42	52+30	52+30
OFFSET		44 RT	41 RT	40 RT	30 RT	50 RT	50 RT	90 RT	60 RT	52 LT	52 LT
ALIGNMENT		L	L	L	L	L	L	L	L	L	L
Depth (Ft)		4.40	4.50	9.50	3.10	4.40	9.40	5.00	0.50	0.00	5.00
	to	5.40	5.50	10.50	3.60	5.40	10.40	6.00	1.50	5.00	9.00

-L- 55+20.86
-Y1- 10+00.00

542.81

SS-20
SS-21
51+10
50 RT

(-)0.665%

(+)0.3000%

ALLUVIUM - SOFT BROWN SILTY SANDY CLAY, MOIST

RESIDUAL - STIFF TAN-BLACK SANDY SILTY CLAY, HIGH PI, MOIST

STIFF BROWN-GRAY CLAYEY SANDY SILT, MOIST

DRY

PROFILE 70' RIGHT

52+65
70 RT

RESIDUAL - STIFF TAN-BROWN SANDY SILTY CLAY, HIGH PI, MOIST

WEATHERED ROCK LAYERED WITH VERY DENSE SAND

DRY

(+)0.3000%

(-)0.301 5%

SS-22
56+68
85 RT

RESIDUAL - DENSE TO VERY DENSE GRAY-WHITE SAND, MOIST

WEATHERED ROCK

542.51

SS-23
59+42
60 RT

RESIDUAL - STIFF TAN-BLACK SANDY SILTY CLAY, MOIST

(A) ALLUVIUM - SOFT GRAY SANDY SILTY CLAY, MOIST TO WET

(B) WEATHERED ROCK

SEE SHEET 7 FOR PLAN VIEW

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5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-3447	12
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

Proj. Sample No.		SS-24	SS-25
Retained #4 Sieve	%	–	–
Passing #10 Sieve	%	100	100
Passing #40 Sieve	%	93	92
Passing #200 Sieve	%	80	46
Coarse Sand Ret – #60	%	11.0	20.4
Fine Sand Ret – #270	%	10.4	38.8
Silt 0.05 – 0.005 mm	%	24.4	20.0
Clay <0.005 mm	%	54.2	20.8
L. L.		54	44
P. I.		27	21
AASHTO Classification		A-7-6(23)	A-7-6(6)
Station		62+80	62+80
OFFSET		72 RT	72 RT
ALIGNMENT		L	L
Depth (Ft)		0.50	4.60
	to	1.50	5.60

-L-

END GRADE
-L- STA 66+87.00
ELEV. = 544.36

-L- 65+80.34
-Y- 10+00.00

541.57

(-)0.3015%

(+)0.3013%

SUGAR CREEK

SS-24
SS-25

RESIDUAL - STIFF TAN-BLACK SANDY SILTY CLAY, HIGH PI, MOIST

ALLUVIUM - VERY SOFT GRAY SILTY CLAY, HIGH PI, MOIST TO WET

62+80
72 RT

SS-26

ALLUVIUM - VERY SOFT GRAY SILTY CLAY, HIGH PI, MOIST TO WET

~~RESIDUAL - MEDIUM STIFF TO STIFF BROWN-GRAY SILTY SANDY CLAY, MOIST~~

SEE SHEET 8 FOR PLAN VIEW

-Y-

BEGIN GRADE
-Y- STA 10+00.00
ELEV. = 620.42

END GRADE
-Y- STA 13+23.57
ELEV. = 609.28

(-)0.9200%

(-)5.7032%

(-)12.6394%

PI = 11+25.00
EL = 619.27
VC = 170'
K = 36, V = 35

PI = 12+80.00
EL = 610.43
VC = 85'
K = 28, V = 25

SEE SHEET 4 FOR PLAN VIEW

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-3447	13
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y1-

BM #5
-Y1- STA. 11+74.83
143.81' LT.
ELEVATION = 554.07'

PI = 13+70.00
EL = 539.20'
VC = 150'
K = 151, V = 60

BEGIN GRADE
-Y1- STA. 10+38.12
ELEV. = 543.47

PI = 16+70.00
EL = 537.70'
VC = 200'
K = 69, V = 40

END GRADE
-Y1- STA. 21+21.12
ELEV. = 540.93

(-)1.2866%
(-)0.2963%
(-)0.6667%
(+)2.2400%
(-)1.1783%

RESIDUAL - STIFF TO HARD TAN-BROWN SILTY SANDY CLAY, MOIST

-Y1- 16+30.17
-Y2- 10+00.00

PI = 15+05.00
EL = 538.80'
VC = 100'
K = 270, V = 70

PI = 19+20.00
EL = 543.30'
VC = 160'
K = 47, V = 40

SEE SHEET 7 AND 9 FOR PLAN VIEW

550 540 530 520 510 500 490

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

-Y2-

BEGIN GRADE
-Y2- STA. 10+18.13
ELEV. = 538.92

END GRADE
-Y2- STA. 13+23.00
ELEV. = 537.98

(-)0.8865%
(+)0.3041%

RESIDUAL - STIFF TAN-BLACK SILTY SANDY CLAY, MOIST

PI = 11+75.00
EL = 537.53
VC = 170'
K = 143, V = 60

SEE SHEET 9 FOR PLAN VIEW

550 540 530 520 510 500

10 11 12 13

-Y3-

BEGIN MINIMAL RESURFACING
-Y3- STA. 10+86.10
ELEV. = 543.33

PI = 11+33.00
EL = 542.25
VC = 42
K = 29, V = 25

END MINIMAL RESURFACING
-Y3- STA. 11+88.92
ELEV. = 541.77

(-)2.3028%
(-)0.8584%

RESIDUAL - STIFF TAN-BLACK SILTY SANDY CLAY, MOIST

SEE SHEET 8 FOR PLAN VIEW

550 540 530 520 510 500

10 11 12 13 14 15

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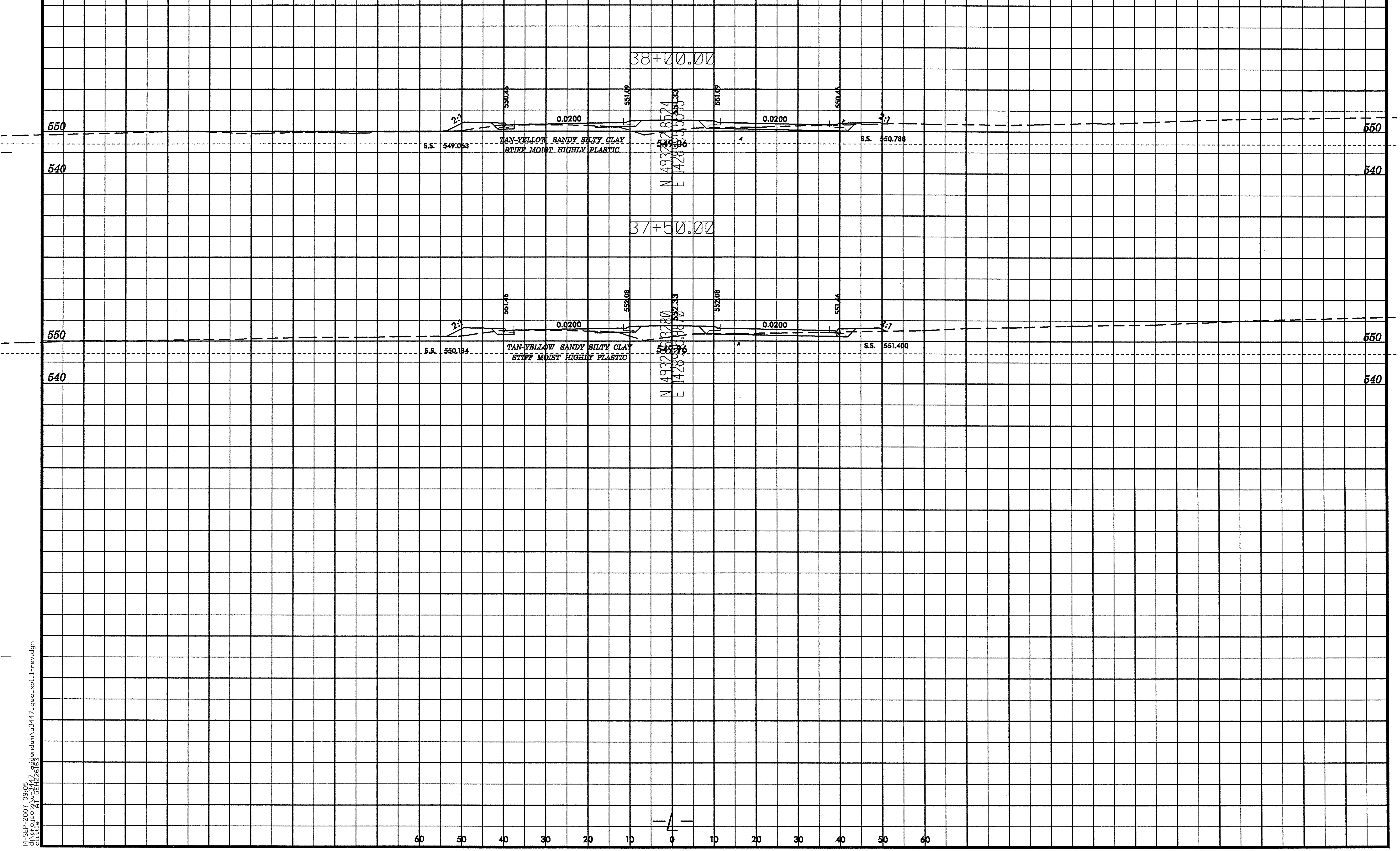
PROJ. REFERENCE NO.	SHEET NO.
U-3447	14



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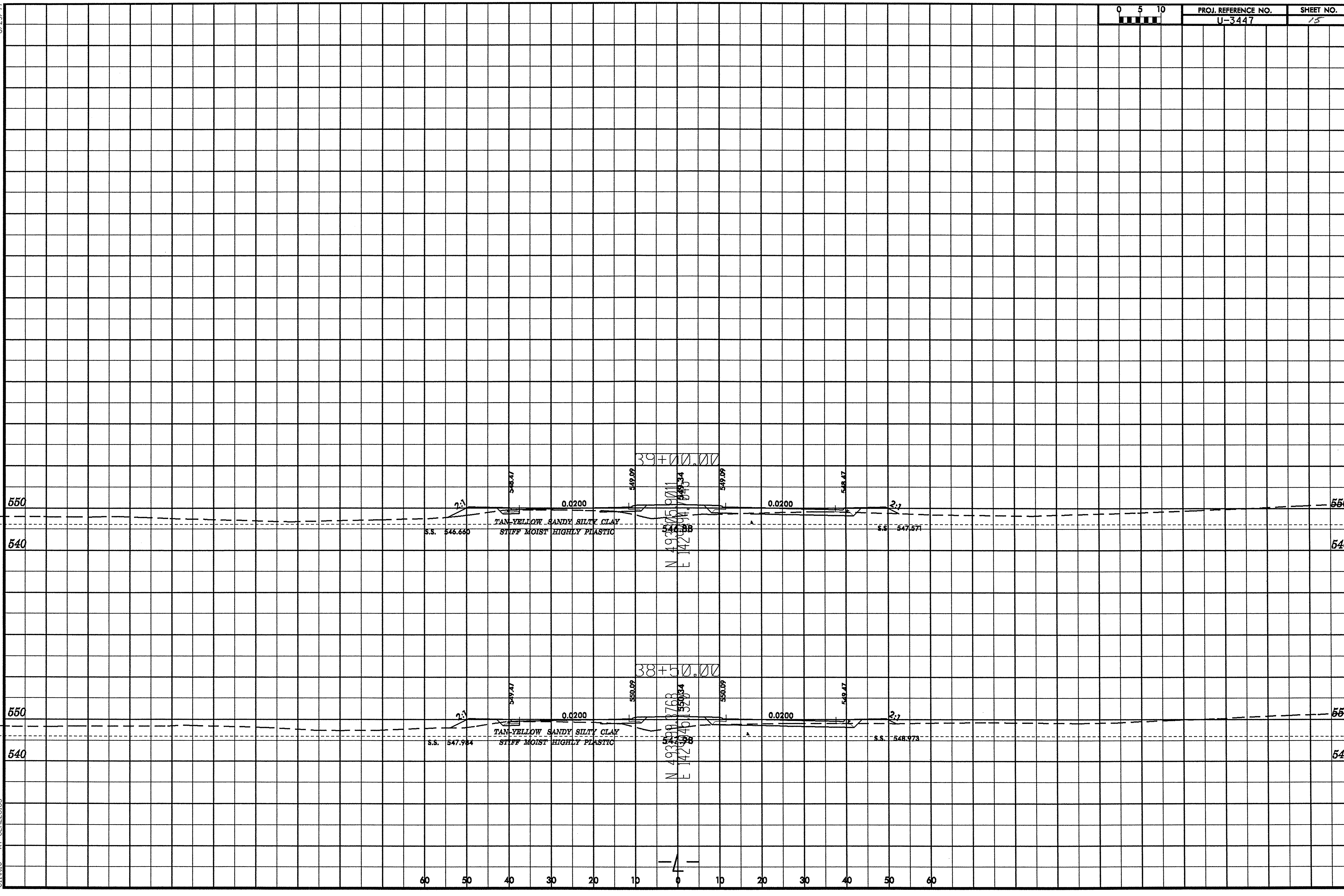

8/23/99

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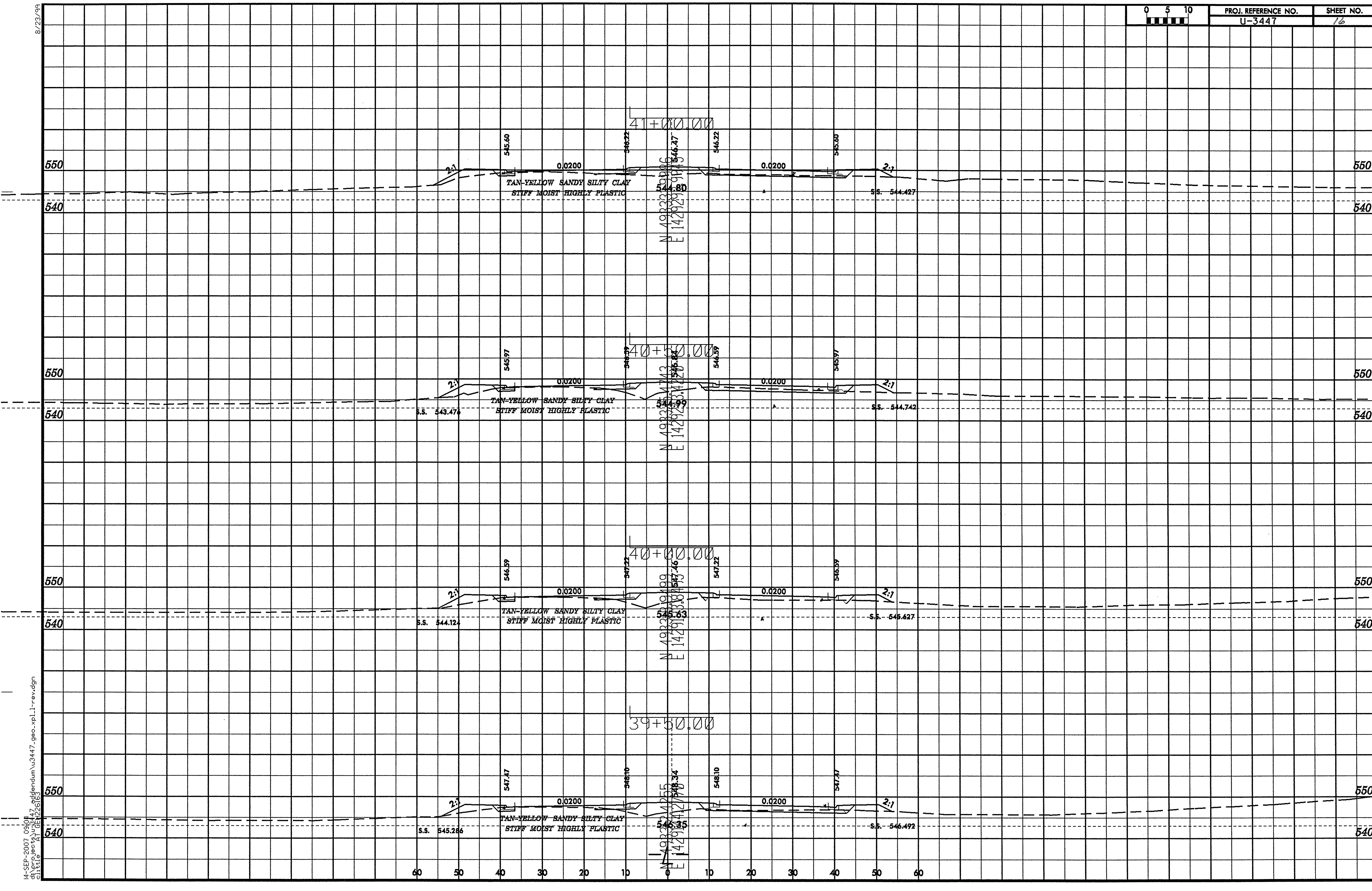
8/23/99
0 5 10
PROJ. REFERENCE NO.
U-3447
SHEET NO.
16
41+00.00
40+50.00
40+00.00
39+50.00
550
540
2:1
0.0200
TAN-YELLOW SANDY SILTY CLAY
STIFF MOIST HIGHLY PLASTIC
545.60
546.22
546.37
544.80
S.S. 544.427
545.97
546.59
546.84
544.99
S.S. 543.476
S.S. 544.742
547.22
547.46
545.63
S.S. 544.124
S.S. 545.627
547.47
548.10
548.34
546.35
S.S. 545.286
S.S. 546.492
60
50
40
30
20
10
0
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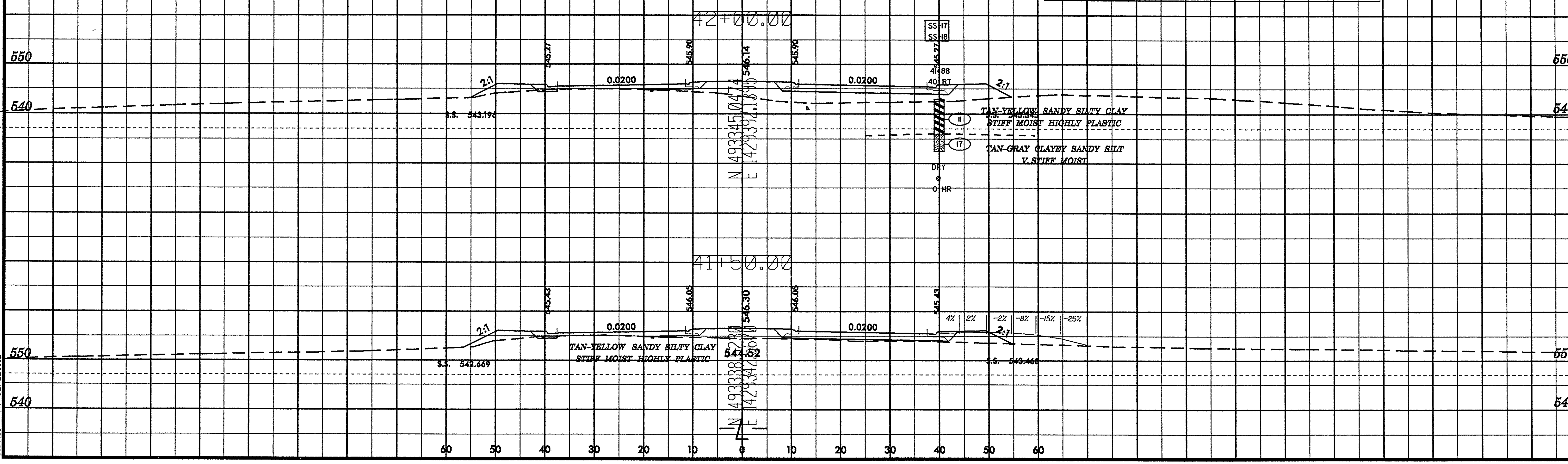
cittle AT GE1226163

0 5 10

Proj. Sample No.		SS-17	SS-18
Retained #4 Sieve	%	2	–
Passing #10 Sieve	%	95	100
Passing #40 Sieve	%	79	81
Passing #200 Sieve	%	58	46
Coarse Sand Ret – #60	%	23.5	31.3
Fine Sand Ret – #270	%	18.3	32.1
Silt 0.05 – 0.005 mm	%	14.4	24.2
Clay <0.005 mm	%	43.8	12.5
L. L.		69	38
P. I.		47	8
AASHTO Classification		A-7-6(24)	A-4(1)
Station		41 +88	41 +88
OFFSET		41 RT	40 RT
ALIGNMENT		L	L
Depth (Ft)		4.50	9.50
	to	5.50	10.50



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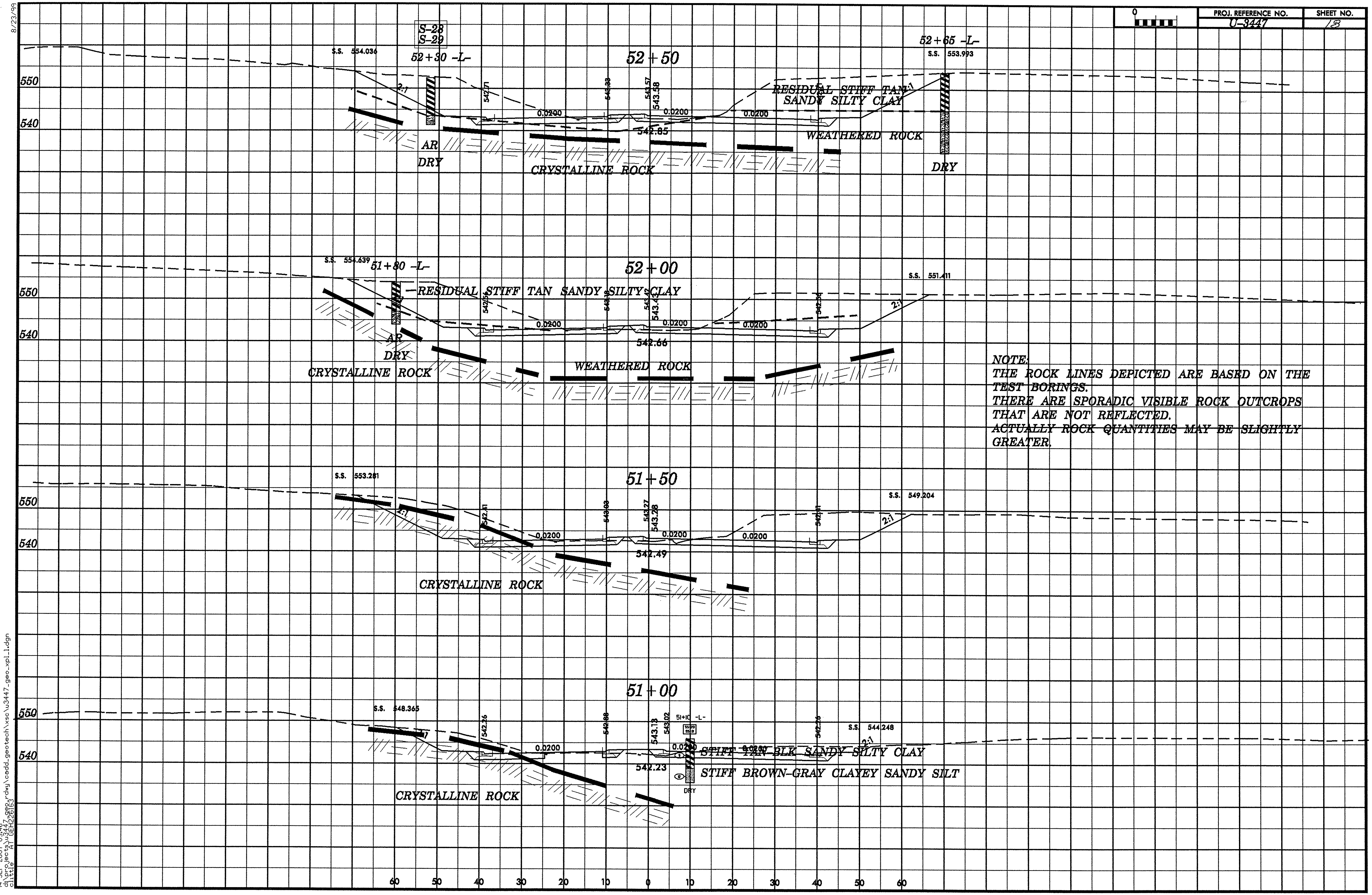
PROJ. REFERENCE NO.
U-3447
SHEET NO.
13
S-28
S-29
52+30 -L-
52+50
52+65 -L-
S.S. 554.036
S.S. 553.993
550
540
RESIDUAL STIFF TAN SANDY SILTY CLAY
WEATHERED ROCK
CRYSTALLINE ROCK
AR
DRY
DRY
0.0200
542.85
52+00
51+80 -L-
S.S. 554.639
S.S. 551.411
RESIDUAL STIFF TAN SANDY SILTY CLAY
542.66
WEATHERED ROCK
CRYSTALLINE ROCK
AR
DRY
NOTE:
THE ROCK LINES DEPICTED ARE BASED ON THE TEST BORINGS.
THERE ARE SPORADIC VISIBLE ROCK OUTCROPS THAT ARE NOT REFLECTED.
ACTUALLY ROCK QUANTITIES MAY BE SLIGHTLY GREATER.
51+50
S.S. 553.281
S.S. 549.204
542.49
CRYSTALLINE ROCK
51+00
S.S. 548.365
S.S. 544.248
51+10 -L-
STIFF TAN-BLK SANDY SILTY CLAY
STIFF BROWN-GRAY CLAYEY SANDY SILT
542.23
DRY
CRYSTALLINE ROCK
60 50 40 30 20 10 0 10 20 30 40 50 60
8/23/99
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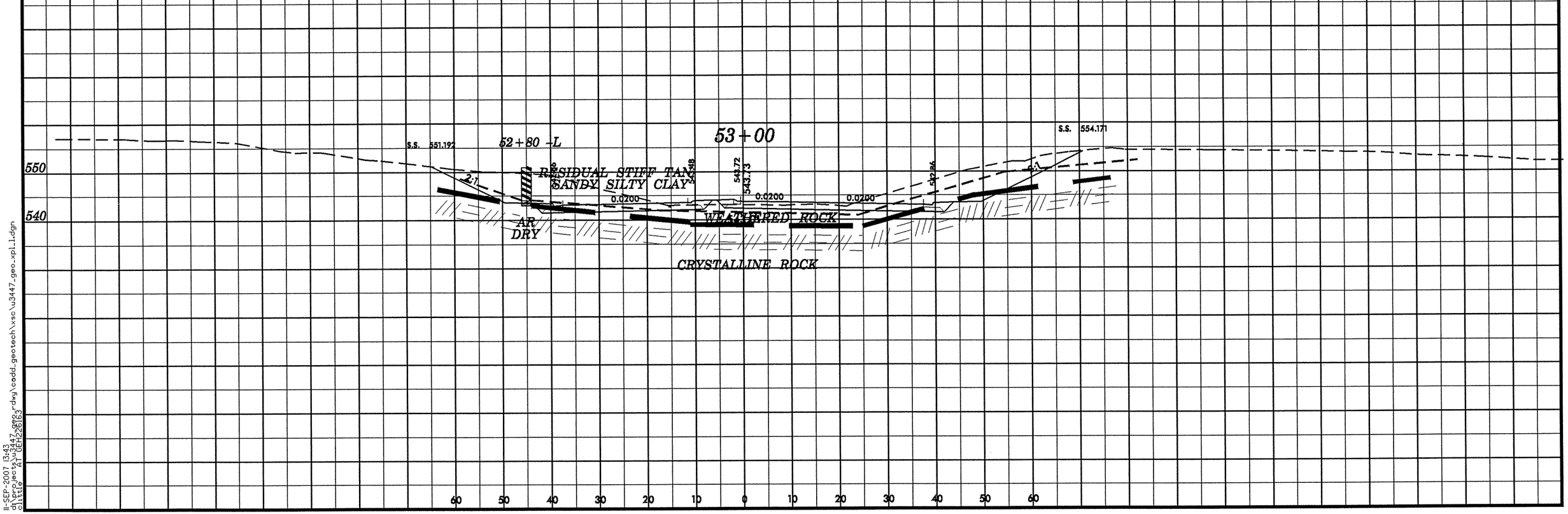
8/23/99

PROJ. REFERENCE NO.	SHEET NO.
U-3447	19



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