ID: R-2510A

PROJECT: C201736

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2510A	1	45

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
34440.1.1	MAF-75-3(26)	P.E.
34440.2.2	MAF-75-3(26)	R/W & UTIL.
34440.3.2	NHF-17(61)	CONST.

CONTENTS

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

GEOTECHNICAL UNIT

SUBSURFACE INVESTIGATION

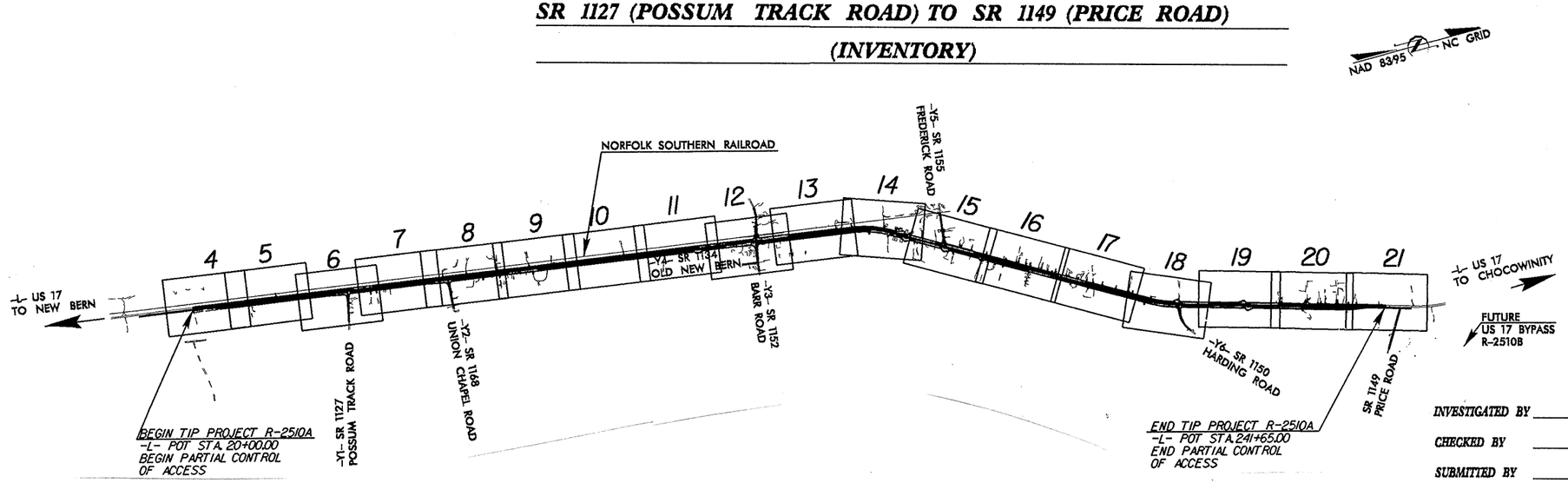
STATE PROJECT 34440.1.1 I.D. NO. R-2510A

F.A. PROJECT MAF-75-3(26)

COUNTY BEAUFORT

DESCRIPTION US 17 FROM SOUTH OF SR 1127 (POSSUM TRACK ROAD) TO SR 1149 (PRICE ROAD) (INVENTORY)

NAD 83/95 NC GRID



INVESTIGATED BY JRM

CHECKED BY JRM JRM

SUBMITTED BY RRW RRW

DATE JULY, 2004

PERSONNEL MMH, LWD, RES, KBQ, WNC, JLS

DRAWN BY: JRM

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.

NORTH CAROLINA LICENSED SEAL 254 GEOLOGIST ROBERT RAY WHITE

SEAL

Rob Ray White

SIGNATURE

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. THE VARIOUS FIELD BORING LOGS, ROCK CORES, AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N. C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL UNIT @ (919) 250-4088. NEITHER THE SUBSURFACE PLANS AND REPORTS, NOR THE FIELD BORING LOGS, ROCK CORES, OR SOIL TEST DATA IS PART OF THE CONTRACT.

GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU (IN-PLACE) TEST DATA CAN BE 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.

ID	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
R-2510A	34440.1.1	2	45

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 PER FOOT ACCORDING TO STANDARD PENETRATION TEST (AASHTO T206, ASTM D-1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM AND BASIC DESCRIPTIONS GENERALLY SHALL INCLUDE: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. EXAMPLE:

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		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-7-6 > L.L. - 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 LOOSE MEDIUM DENSE DENSE VERY DENSE	<4 4 TO 10 10 TO 30 30 TO 50 >50	N/A
GENERALLY SILT-CLAY MATERIAL (COHESIVE)	VERY SOFT SOFT MEDIUM STIFF STIFF VERY STIFF HARD	<2 2 TO 4 4 TO 8 8 TO 15 15 TO 30 >30	<0.25 0.25 TO 0.5 0.5 TO 1 1 TO 2 2 TO 4 >4

TEXTURE OR GRAIN SIZE

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

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

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

SOIL MOISTURE - CORRELATION OF TERMS

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

PERCENTAGE OF MATERIAL

ORGANIC MATERIAL	GRANULAR SOILS	SILT- CLAY SOILS
TRACE OF ORGANIC MATTER	2 - 3%	3 - 5%
LITTLE ORGANIC MATTER	3 - 5%	5 - 12%
MODERATELY ORGANIC	5 - 10%	12 - 20%
HIGHLY ORGANIC	>10%	>20%

OTHER MATERIAL	
TRACE	1 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
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 SEEPAGE

MISCELLANEOUS SYMBOLS

- ROADWAY EMBANKMENT WITH SOIL DESCRIPTION
- SOIL SYMBOL
- ARTIFICIAL FILL OTHER THAN ROADWAY EMBANKMENTS
- INFERRED SOIL BOUNDARIES
- 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 - CBR 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
MED. - MEDIUM
PMT - PRESSUREMETER TEST
SD. - SAND, SANDY
SL. - SILT, SILTY
SLI. - SLIGHTLY
TCR - TRICONE REFUSAL
γ - UNIT WEIGHT
γ_d - DRY UNIT WEIGHT
W - MOISTURE CONTENT
V. - VERY
VST - VANE SHEAR TEST

EQUIPMENT USED ON SUBJECT PROJECT

DRILL UNITS:
- ☐ MOBILE B-47
- ■ CME-458
- ☐ 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 WHEN TESTED, WOULD YIELD SPT REFUSAL. AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 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 FOLOWS:

WEATHERED ROCK (WR)	NON-COASTAL PLAIN MATERIAL THAT YIELDS SPT N VALUES > 100 BLOWS PER FOOT.
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 ROCKS 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 GEOLOGISTS 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 GEOLOGISTS 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 GEOLOGISTS 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 WHICH HAVE BEEN TRANSPORTED BY WATER.

AQUIFER - A WATER BEARING FORMATION OR STRATA.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, WHICH HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE 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 B.P.F.) 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 LESS THAN 0.1 FOOT PENETRATION WITH 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 (S.R.Q.D.) - A MEASURE OF ROCK QUALITY DESCRIBED BY: TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 10 CENTIMETERS DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE.

TOPSOIL (T.S.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.

BENCH MARK:

NOTES:

—APPROXIMATE ALLUVIAL SOIL LIMITS

REVISED 09/15/00

EARTHWORK BALANCE SHEET

R-2510A

REV. DATE: 10/29/2007 REV. BY: BJM

COUNTY: BEAUFORT DATE 2/19/2007 BY: MAL

LINE	STATION	STATION	EXCAVATION TOTAL UNCLASS.	EXCAVATION ROCK	EXCAVATION UNDERCUT	EXCAVATION UNSUIT. UNCLASS.	EXCAVATION SUITABLE UNCLASS.	EMBANKMENT TOTAL	EMBANKMENT ROCK	EMBANKMENT EARTH	EMBANKMENT EMB. +25%	BORROW	WASTE ROCK	WASTE SUITABLE	WASTE UNSUIT.	WASTE TOTAL
-L- (incl'd detour)	20+00.00	52+00.00	6,662			3,997	2,665	8,420		8,420	10,525	7,860			3,997	3,997
-L- (future grading)	20+00.00	26+50.00	12			7	5	1,699		1,699	2,124	2,119			7	7
-Y1-	10+47.00	13+50.00	546			328	218	413		413	516	298			328	328
	SUMMARY 1 SUBTOTAL:		7,220			4,332	2,888	10,532		10,532	13,165	10,277			4,332	4,332
-L-	52+00.00	84+00.00	8,997		584	5,398	3,599	7,200		7,200	9,000	5,401			5,982	5,982
-Y2-	10+47.00	13+00.00	197			118	79	105		105	131	52			118	118
	SUMMARY 2 SUBTOTAL:		9,194		584	5,516	3,678	7,305		7,305	9,131	5,453			6,100	6,100
-L-	84+00.00	116+00.00	7,173		39	4,304	2,869	12,571		12,571	15,714	12,845			4,343	4,343
-L- (Xover1 Install)	105+92.05	113+51.42						201		201	251	251				
-L- (Xover1 Rem.)	105+92.05	113+51.42	201				201							201		201
	SUMMARY 3 SUBTOTAL:		7,374		39	4,304	3,070	12,772		12,772	15,965	13,096		201	4,343	4,544
-L-	116+00.00	148+00.00	10,159		343	6,095	4,064	4,860		4,860	6,075	2,011			6,438	6,438
-Y3-	12+50.00	15+86.00	270			162	108	35		35	44			64	162	226
-Y3-	16+80.00	21+00.00	1,214			728	486	271		271	339			147	728	875
	SUMMARY 4 SUBTOTAL:		11,643		343	6,986	4,657	5,166		5,166	6,458	2,011		211	7,329	7,540
-L-	148+00.00	180+00.00	16,254		7,875	9,752	6,502	10,669		10,669	13,336	6,834			17,627	17,627
-Y5-	13+00.00	15+85.00	178			107	71	185		185	231	160			107	107
	SUMMARY 5 SUBTOTAL:		16,432		7,875	9,859	6,573	10,854		10,854	13,567	6,994			17,734	17,734
-L-	180+00.00	212+00.00	13,338		11,711	8,003	5,335	15,112		15,112	18,890	13,555			19,714	19,714
-Y6-	10+47.00	13+00.00	166			100	66	519		519	649	583			100	100
	SUMMARY 6 SUBTOTAL:		13,504		11,711	8,102	5,402	15,631		15,631	19,539	14,137			19,813	19,813
-L- (incl'd detour)	212+00.00	241+65.00	17,381		10,351	10,429	6,952	19,670		19,670	24,588	17,636			20,780	20,780
-L- (Xover2 Install)	216+80.00	222+88.41						30		30	38	38				
-L- (Xover2 Rem.)	216+80.00	222+88.41	30			18	12							12	18	30
	SUMMARY 7 SUBTOTAL:		17,411		10,351	10,447	6,964	19,700		19,700	24,626	17,674		12	20,798	20,810
	PROJECT SUBTOTAL:		**82,778**		**30,903**	**49,546**	**33,232**	**81,960**		**81,960**	**102,451**	**69,643**		**424**	**80,449**	**80,873**
	EARTH WASTE TO REPLACE BORROW											-424		-424		-424
	EST. SHOULDER MATERIAL							45,100		45,100	56,375	56,375				
	ADDITIONAL UNDERCUT (SHALLOW UNDERCUT)				9,750			9,750		9,750	12,188	12,188			9,750	9,750
	ADDITIONAL UNDERCUT (CONTINGENCY)				5,500			5,500		5,500	6,875	6,875			5,500	5,500
CLASS III, TYPE 2 SELECT MATERIAL IN LIEU OF BORROW (SHALLOW UNDERCUT)								-9,750				-12,188				
CLASS III, TYPE 2 SELECT MATERIAL IN LIEU OF BORROW (UNDERCUT)								-30,903				-38,629				
CLASS III, TYPE 2 SELECT MATERIAL IN LIEU OF BORROW (CONTINGENCY)								-5,500				-6,875				
	PROJECT TOTALS:		**82,778**		**46,153**	**49,546**	**33,232**	**96,157**		**142,310**	**177,889**	**86,965**			**95,699**	**95,699**
	EST. 5% FOR REPLACING TOPSOIL ON BORROW PIT											4,348				
	GRAND TOTAL:		**82,778**		**46,153**							**91,314**				
	SAY:		**84,500**		**47,000**							**93,000**				
EARTHWORK TOTALS FOR ALTERNATE PAVEMENT DESIGN																
	PROJECT SUBTOTAL:		**82,778**		**30,903**	**49,546**	**33,232**	**81,960**		**81,960**	**102,451**	**69,643**		**424**	**80,449**	**80,873**
	ADJUSTMENT FOR ALTERNATE PAVEMENT DESIGN		-3,300			-1,980	-1,320	13,000			16,250	16,250		-1,320	-1,980	-3,300
	EARTH WASTE TO REPLACE BORROW											-424		-424		-424
	EST. SHOULDER MATERIAL							45,100		45,100	56,375	56,375				
	ADDITIONAL UNDERCUT (SHALLOW UNDERCUT)				9,750			9,750		9,750	12,188	12,188			9,750	9,750
	ADDITIONAL UNDERCUT (CONTINGENCY)				5,500			5,500		5,500	6,875	6,875			5,500	5,500
CLASS III, TYPE 2 SELECT MATERIAL IN LIEU OF BORROW (SHALLOW UNDERCUT)								-9,750				-12,188				
CLASS III, TYPE 2 SELECT MATERIAL IN LIEU OF BORROW (UNDERCUT)								-30,903				-38,629				
CLASS III, TYPE 2 SELECT MATERIAL IN LIEU OF BORROW (CONTINGENCY)								-5,500				-6,875				
	PROJECT TOTALS:		**79,478**		**46,153**	**47,566**	**31,912**	**109,157**		**142,310**	**194,139**	**103,215**		**-1,320**	**93,719**	**92,399**
	EST. 5% FOR REPLACING TOPSOIL ON BORROW PIT											5,161				
	GRAND TOTAL:		**79,478**		**46,153**							**108,376**				
	SAY:		**81,000**		**47,000**							**110,500**				

Note: 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.

ADDITIONAL CALCULATED QUANTITIES:	
DDE	5130 CY
CONTINGENCY QUANTITIES	
EST. FABRIC FOR SOIL STABILIZATION	31,000 SY

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

July 12, 2004

STATE PROJECT: 34440.1.1 R-2510A
FEDERAL PROJECT: MAF-75-3 (26)
COUNTY: Beaufort

DESCRIPTION: US 17 from South of SR 1127 (Possum Track Road) to South of SR 1149 (Price Road)

SUBJECT: Geotechnical Report – Inventory

Project Description

The proposed project is located south of Chocowinity beginning just south of SR 1127 and extends 4.4± miles north to just south of SR 1149 and generally consists of widening existing US 17 from a two lane roadway to a four lane divided highway. Based on the current plans, the project will consist of re-paving the existing roadway and the construction of a new two-lane facility accommodating northbound US 17. The northern terminus of the project ties in with R-2510B. The investigation of subsurface conditions was confined to the corridor or proposed new construction.

The following base lines were investigated for this project:

Line	Station (±)
-L-	10+00 to 241+65
-DET1-	10+00 to 18+58
-DET2-	10+00 to 18+58
-Y1-	10+00 to 13+00
-Y2-	10+00 to 13+00
-Y3-	10+00 to 22+00
-Y6-	10+80 to 13+00

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
GEOTECHNICAL ENGINEERING UNIT
1589 MAIL SERVICE CENTER
RALEIGH NC 27699-1589

TELEPHONE: 919-250-4088
FAX: 919-250-4237

WEBSITE: WWW.DOH.DOT.STATE.NC.US

LOCATION:
CENTURY CENTER COMPLEX
ENTRANCE B-2
1020 BIRCH RIDGE DRIVE
RALEIGH NC

Areas of Special Geotechnical Interest

1) The majority of the project was found to exhibit seasonal high ground water, or the potential for ground water related construction problems.

2) The following sections are underlain by very soft to medium stiff flood plain and/or pocosin silt, clay and organic soils:

Line	Station (±)
-L-	57+15 to 57+85
-L-	73+75 to 76+75
-L-	85+40 to 89+10
-L-	92+25 to 93+00
-L-	102+50 to 106+50
-L-	117+50 to 120+00
-L-	158+40 to 164+35
-L-	223+25 to 226+45
-L-	230+70 to 232+82

3) The following sections contain cohesive soil with medium to high plasticity indices and greater than 50% passing #200 sieve:

Line	Station (±)
-L-	166+00 to 221+60
-L-	226+45 to 230+50
-L-	223+76 to 240+25

Physiography and Geology

The project corridor is located in Beaufort County along existing US 17 within the Coastal Plain Physiographic Province. Topography along the project is very gently sloping with poor surface drainage. Ground elevations along the project range from 24.0 feet along the bed of a tributary to Chocowinity Creek to 62.8 feet above sea level.

Drainage is confined to the Chocowinity Creek drainage basin. Surface water flows to the east within ditches and three tributaries. Two of the tributaries cross the project at -L- stations 57+20 and 224+65, and the third crosses US 17 just to the north of the end of the project. Small pocosin areas exist along the middle portion of the project.

The geology of this region consists of soils of the Yorktown Formation, and Recent alluvial and pocosin sediments. Alluvial and pocosin sediments are characterized by organic soils and discontinuous sand, silt, and clay layers. Soils of the Yorktown Formation consist primarily of clay and sand.

Ground Water

Ground water data was collected primarily from November 2003 through April 2004 during which period the area experienced normal precipitation conditions. It was noted that high ground water conditions are present through a majority of the project during the winter months. Water levels along the upland and/or pocosin areas range on average from near the ground surface to 3.5' feet below natural ground during the wet season and ≥3.5' below the ground surface during the remainder of the year.

Soils

Soils encountered during this investigation are separated into four major categories based on origin. These categories include alluvial soils, Yorktown Formation, roadway embankment, and artificial fill.

Alluvial soils were encountered in the flood plains of the tributaries of Chocowinity Creek and pocosin-like areas listed under the "Areas of Special Geotechnical Interest" section and range from 1.0 to 7.0 feet thick. These recent soils consist of soft muck and organic silt and sand (A-4, A-2-4), very soft sandy silt (A-4, A-5), silty clay (A-7-5), and loose silty sand (A-2-4). Typically, the organic sediments contain 11.2 to 26.5 percent organic material, moisture content of up to 180 percent, and exhibit poor engineering properties. Vane Shear Test data show shear strength values of the alluvial organic sediments ranging from 111 psf to 2004 psf with a majority of the test values being between 500 psf and 1200 psf. The organic and cohesive sediments have the potential for subgrade failure due to the relatively poor engineering properties. Undercutting of the alluvial soils may be required to provide a suitable base for embankment along the new alignment.

Soils of the Yorktown Formation generally consist of very soft to medium stiff silty and sandy clay (A-6, A-7-6), sandy silt (A-4), and very loose to very dense silty sand and fine to coarse sand (A-3, A-2-4). The granular soils (A-2-4, A-3) comprise the majority of surficial soils along the project from -L- station 10+00 to 158+50 and exhibit good engineering properties. The cohesive soils of the Yorktown Formation comprise the majority of surficial soils along the project from -L- station 166+00 to 241+65. These soils exhibit moderate to poor engineering characteristics with low to high plasticity indices (Plasticity Index values ranging from 12 to 37) and greater than 50 percent passing the #200 sieve.

Roadway embankment constructed for US 17 exists along the entire project. The embankment consists primarily of loose to medium dense silty sand and soft to medium stiff sandy silt (A-2-4, A-4). Thickness of the embankment material ranges from 1.0 to 8.0 feet, and has good to excellent engineering properties. Artificial fill is present along the project as drive-way and lot backfill material and consists of silty sand and silty sand with gravel (A-2-4, A-1-a/b). The artificial fill appears to have fair to good engineering qualities and is not expected to present a problem.

Respectfully submitted,

John R. McCray,
Transportation Engineering Geologist III

5/14/99

SEE SHEET 23 FOR -L- PROFILE
SEE SHEET 34 FOR -DETI- PROFILE
ALL DRIVEWAYS ARE 12' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NAD 8395

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	4
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
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Carter::Burgess
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5811 Glenwood Avenue, Suite 300
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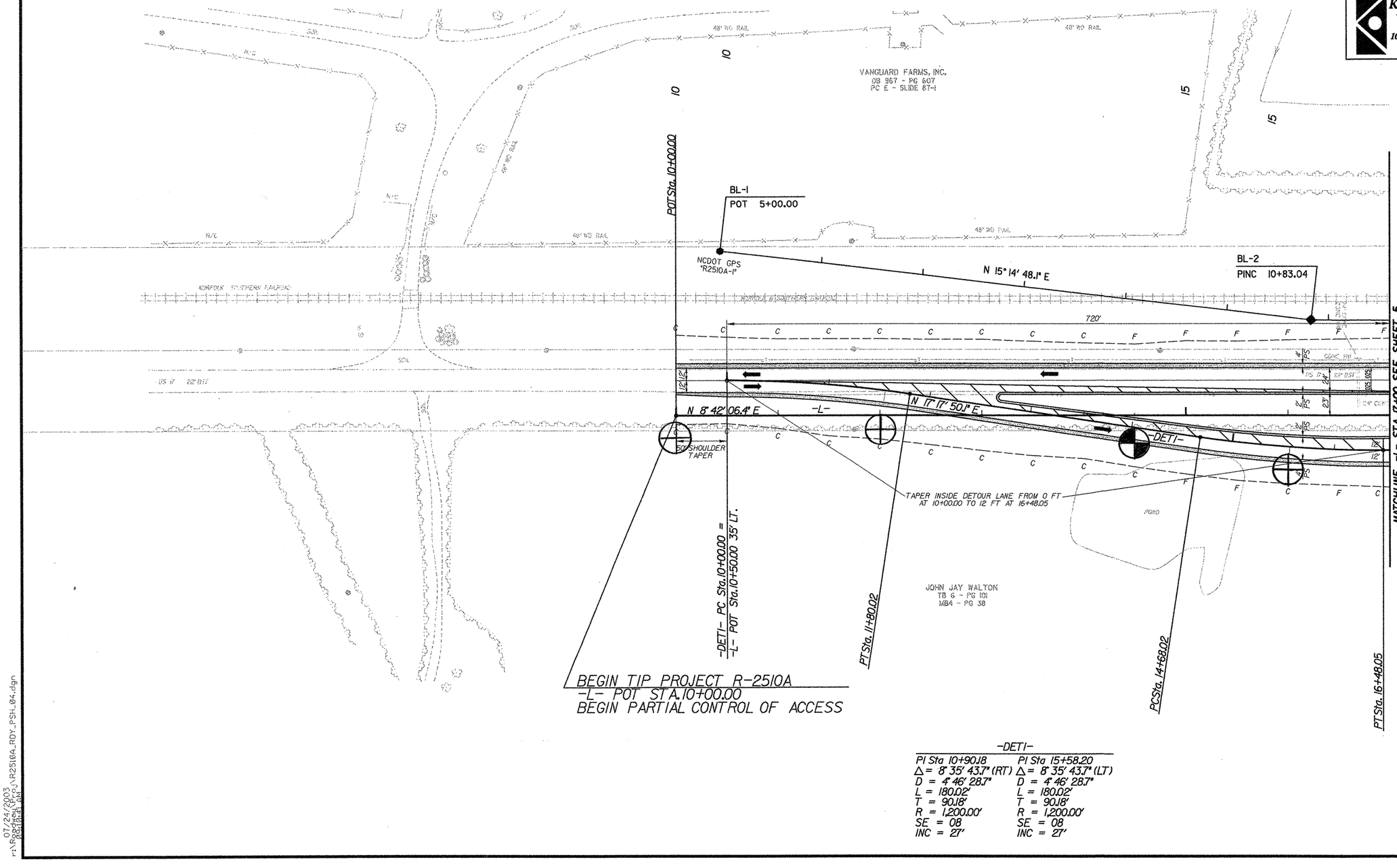

-DETI-

PI Sta 10+90.18	PI Sta 15+58.20
Δ = 8° 35' 43.7" (RT)	Δ = 8° 35' 43.7" (LT)
D = 4° 46' 28.7"	D = 4° 46' 28.7"
L = 180.02'	L = 180.02'
T = 90.18'	T = 90.18'
R = 1,200.00'	R = 1,200.00'
SE = 08	SE = 08
INC = 27'	INC = 27'

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5/14/99

SEE SHEET 23 FOR -L- PROFILE
SEE SHEET 34 FOR -DETI- PROFILE
ALL DRIVEWAYS ARE 12' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NAD 83/95

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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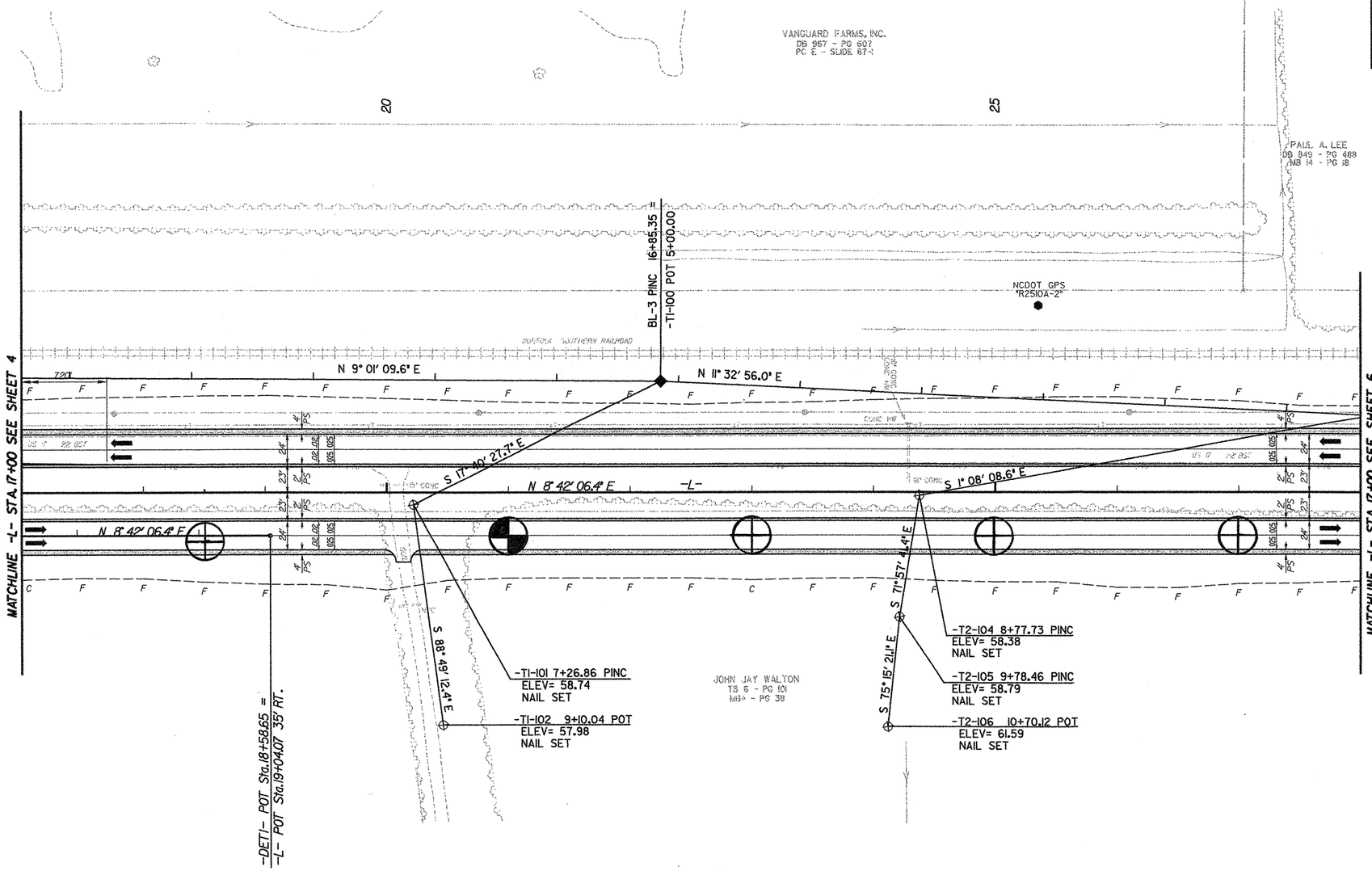

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5/14/99

SEE SHEET 24 FOR -L- PROFILE
ALL DRIVEWAYS ARE 12' WIDE WITH
10' RADII UNLESS OTHERWISE NOTED

NAD 83/95

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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30

35

40

PAUL A. LEE
DB 845 - PG 488
MS 14 - PG 18

W/C

S

SFD
ABAND

S
ASAND

BL-4 PINC 22+70.78=
-T2-103 POT 5+00.00

BL-5
PINC 28+48.54

BL-6
PINC 33+65.12

NORFOLK SOUTHERN RAILROAD

BM
-BL- STA. 29+93.73
66.03' LEFT
ELEV= 62.48'

N 9° 15' 00.8" E

N 8° 31' 34.5" E

N 8° 20' 03.8" E

N 8° 42' 06.4" E -L-

MATCHLINE -L- STA. 28+00 SEE SHEET 5

MATCHLINE -L- STA. 40+00 SEE SHEET 7

US 17 EB BYP

US 17 EB BYP

8" CONC

8" CONC

JOHN JAY WALTON
TB 6 - PG 101
MB4 - PG 38

REBECCA S. DAY
DB 1131 - PG 164

JAMES A. POLLARD, et ux
DB 505 - PG 392

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PROJECT REFERENCE NO.	SHEET NO.
R-2510A	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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SEE SHEET 24 FOR -L- PROFILE
SEE SHEET 33 FOR -Y1- PROFILE
ALL DRIVEWAYS ARE 12' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NAD 83/95

40 45 50

WEYERHAEUSER COMPANY
DB 1082 - PG 35
TB 11 - PG 375
MB 14 -PG 18

JAMES A. POLLARO, et ux
DB 509 - PG 392

MATCHLINE -L- STA. 40+00 SEE SHEET 6

MATCHLINE -L- STA. 50+60 SEE SHEET 8

BL-7
PINC 38+66.81

BL-8 PINC 43+57.12 =
BY1-43 POT 5+00.00

NORFOLK SOUTHERN RAILROAD

N 8° 20' 03.8" E

N 14° 54' 30.0" E

-L- N 8° 42' 06.4" E

N 8° 31' 06.9" E

150'

103'

300'

+60.00

+75.41

+76.16

US 17 BR REST

EXIST R/W

SONJA P. LANE
DB 1152 - PG 433
DB 626 - PG 43

LINDA AVERY ROWE
DB 1094 - PG 777

RICHARD D. PEED, JR., et al
DB 1152 - PG 436
DB 626 - PG 43

RANDY K. TYLER, et ux
DB 898 - PG 184
DB 740 - PG453

MARK S. PEED
DB 1152 - PG 439
DB 626 - PG 43

FRANK R. KLINGENSMITH
DB 1051 - PG 89
DB 945 - PG 306

-L- POT Sta. 48+54.77 =
-Y1- POT Sta. 10+00.00

-Y1- POT Sta. 13+00.00
END CONSTRUCTION

S 77° 13' 46.0" E

S 12° 18' 00.90" E

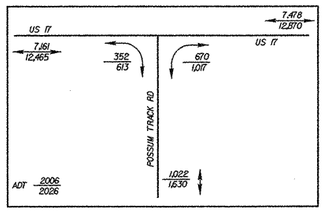
POSSUM TRACK RD

N82°46'35"E 180.24'

N82°46'35"E 187.03'

N82°46'35"E 194.55'

N08°42'46"E 208.90'



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5/14/99

SEE SHEET 25 FOR -L- PROFILE
ALL DRIVEWAYS ARE 12' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NAD 83/95

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	8
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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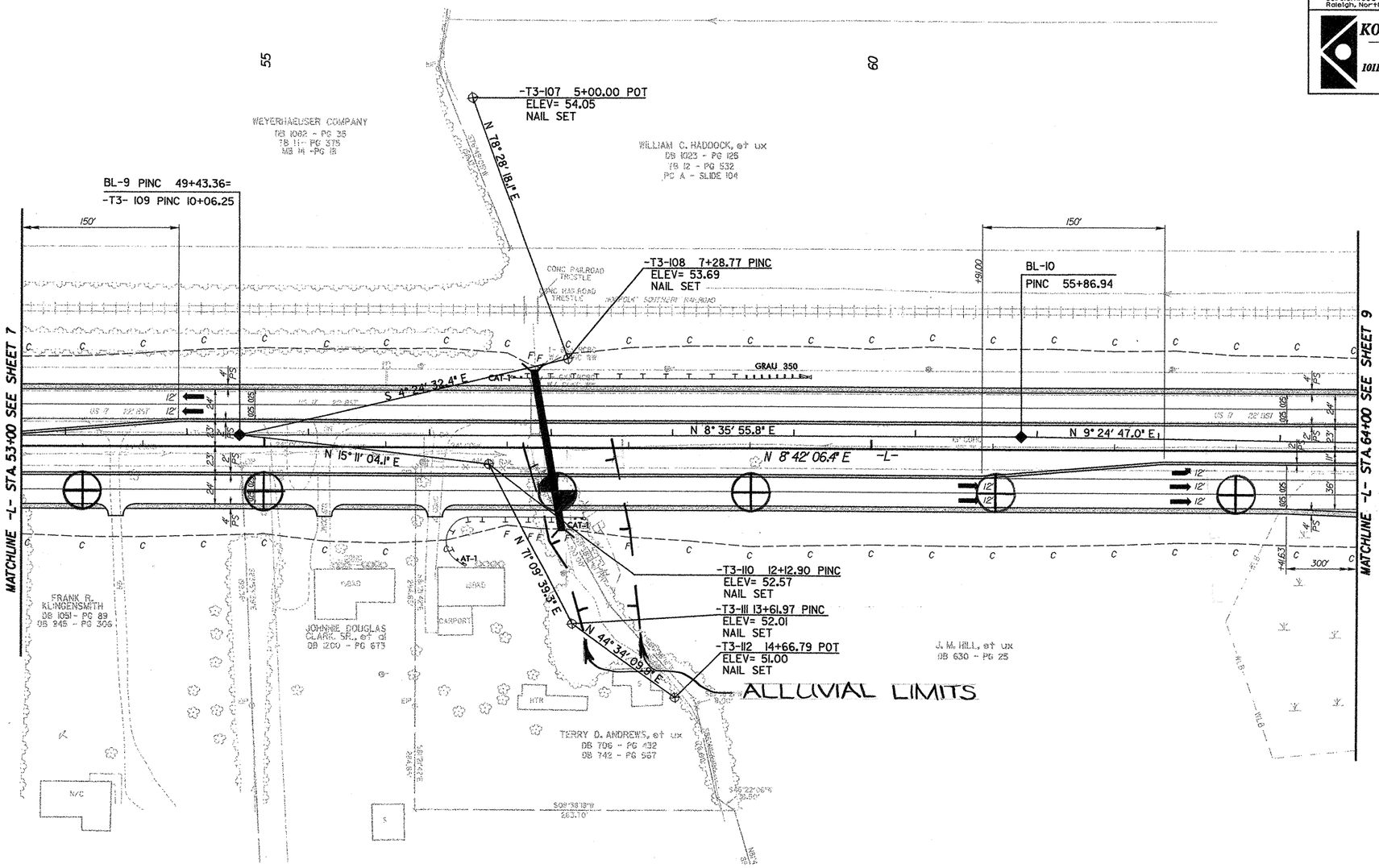

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PROJECT REFERENCE NO.	SHEET NO.
R-2510A	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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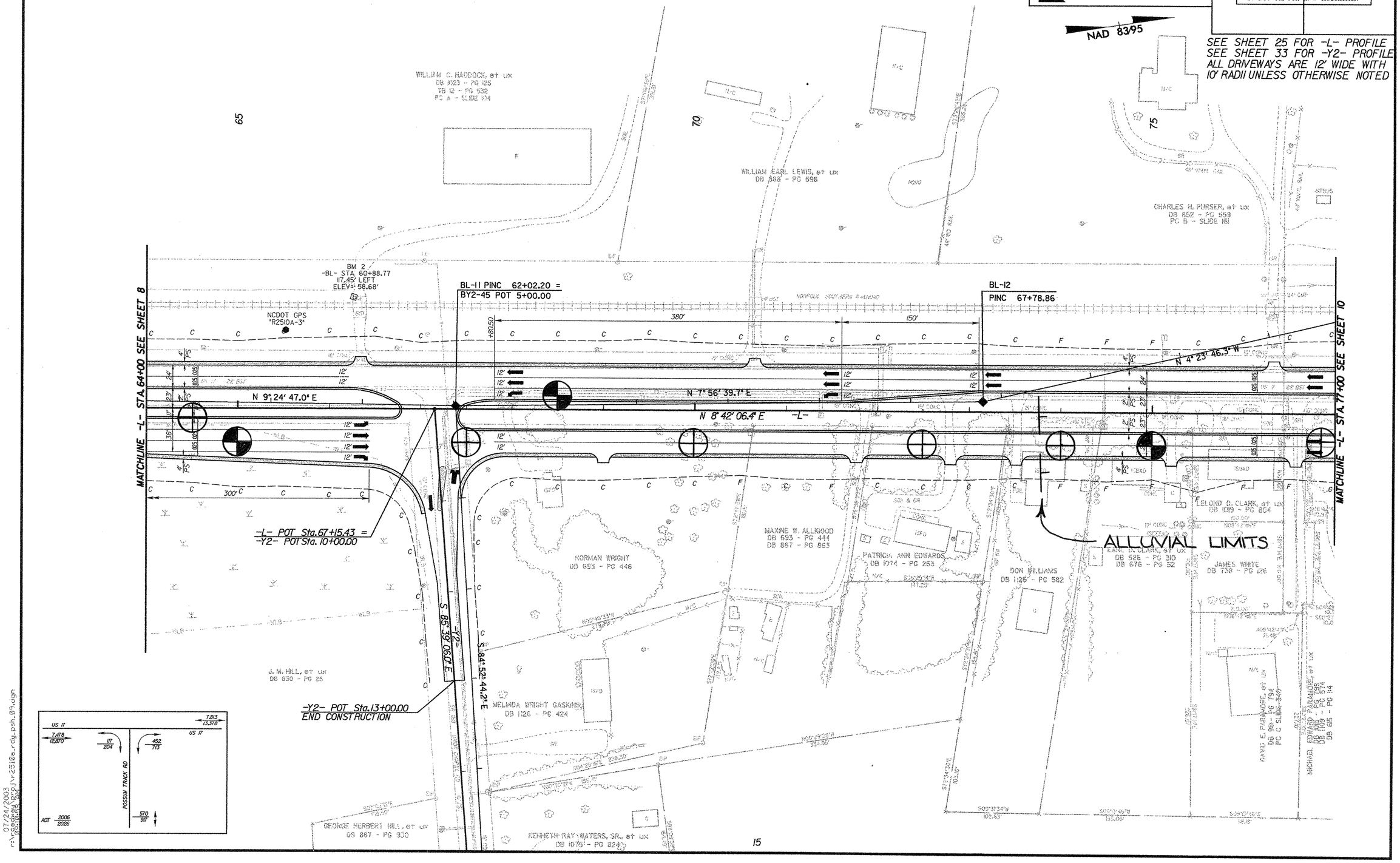
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

NAD 83/95

SEE SHEET 25 FOR -L- PROFILE
SEE SHEET 33 FOR -Y2- PROFILE
ALL DRIVEWAYS ARE 12' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED



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SEE SHEET 26 FOR -L- PROFILE
ALL DRIVEWAYS ARE 12' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NAD 83/95

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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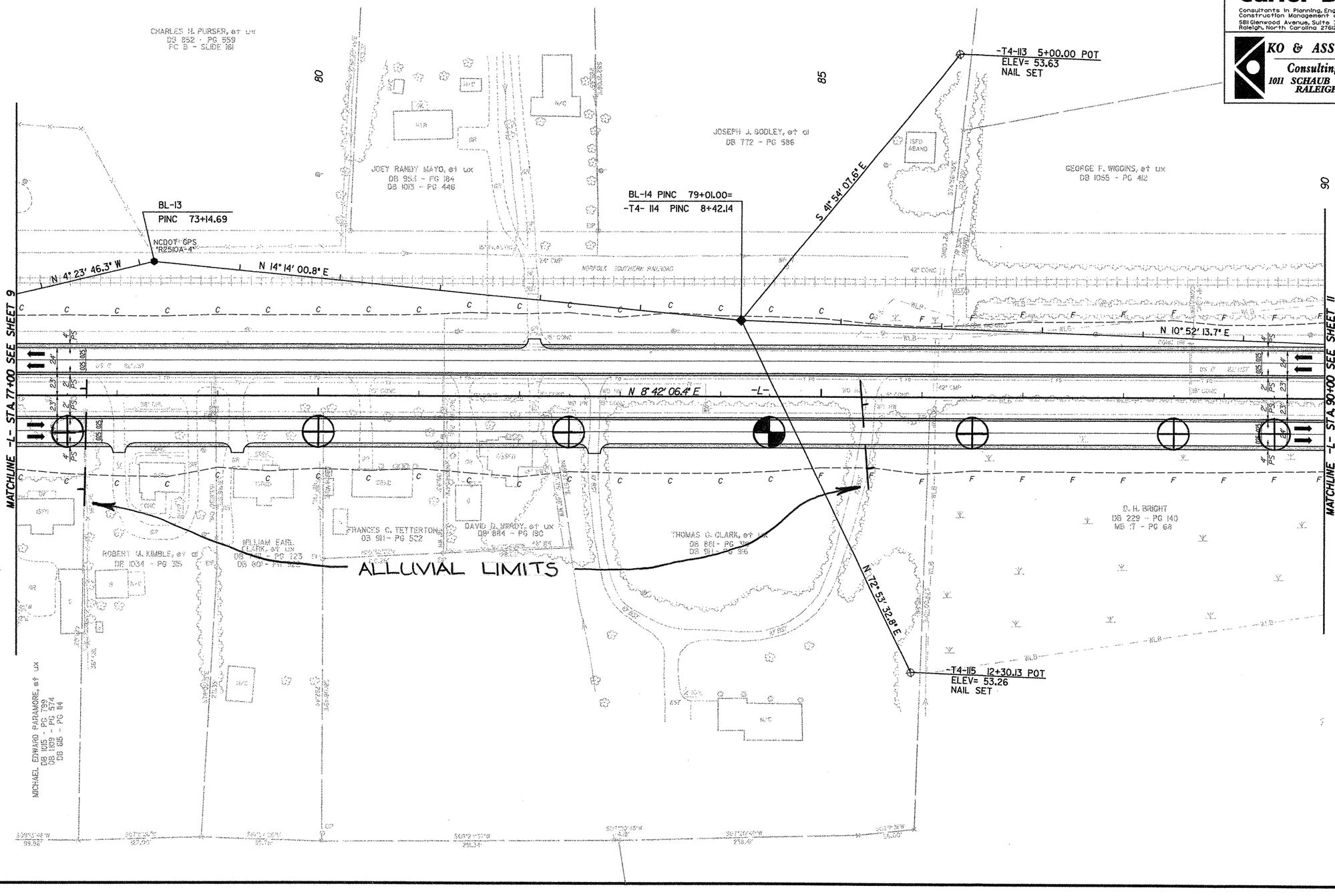

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SEE SHEET 26 FOR -L- PROFILE
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PROJECT REFERENCE NO.	SHEET NO.
R-2510A	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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NAD 83/95

90 95 100

GEORGE F. WIGGINS, et ux
DB 1055 - PG 412

JOHNNIE M. SMITH, et ux
DB 976 - PG 343
PC E - SLIDE 98-7

-T5-116 5+00.00 POT
ELEV= 51.54
NAIL SET

BL-15
PINC 84+90.90

BL-16
PINC 90+84.65

BL-17 PINC 96+76.84=
-T5- 119 POT 12+35.95

BM 3
-BL- STA 94+41.67
62.50' LEFT
ELEV= 54.67

SOUTHERN RAILROAD

N 8° 33' 12.5" E

N 7° 36' 05.9" E

N 9° 37' 47.6" E

-L- N 8° 42' 06.4" E

N 88° 18' 34.4" E

N 86° 22' 12.6" E

N 36° 42' 14.1" W

-T5-117 6+51.63 PINC
ELEV= 52.53
NAIL SET

-T5-118 8+50.49 PINC
ELEV= 53.36
NAIL SET

ALLUVIAL LIMITS

D. H. BRIGHT
DB 229 - PG 140
MB 17 - PG 68

ADDIE ELIZABETH F. GALLOWAY
DB 78 - PG 734

DB 94 - PG 234
JACKSON ARLEY E. NEEKS, ET UX

MATCHLINE -L- STA. 90+00 SEE SHEET 10

MATCHLINE -L- STA. 103+00 SEE SHEET 12

07/24/2003
r:\roadway\proj\r-2510a_rdy_psh_11.dgn
User: mwe

5/14/99

SEE SHEET 27 FOR -L- PROFILE
ALL DRIVEWAYS ARE 12' WIDE WITH
10' RADII UNLESS OTHERWISE NOTED

NAD 83/95

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

Carter-Burgess
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Consulting Engineers
1011 SCHAUB DR., SUITE #202
RALEIGH, N.C. 27606

105 110 115

JOHNNIE M. SMITH, et ux
DB 976 - PG 343
PC F - SLIDE 98-7

BL-18
PINC 102+57.71

BL-19
PINC 107+73.77

NORFOLK SOUTHERN RAILROAD

N 9° 37' 47.6" E

N 9° 02' 22.4" E

N 8° 43' 03.8" E

N 8° 42' 06.4" E -L-

MATCHLINE -L- STA. 103+00 SEE SHEET 11

MATCHLINE -L- STA. 116+00 SEE SHEET 13

ALLUVIAL LIMITS

POND

ADDIE ELIZABETH F. GALLOWAY
DB 711 - PG 734

ANNIE MAE FURLOUGH
DB 711 - PG 737

MAUDE ELIZABETH WHITEHURST
DB 502 - PG 537

ARLEY E. MEEKS, et ux
DB 914 - PG 251

D. H. BRIGHT
DB 223 - PG 140
MB 17 - PG 68

07/24/2003
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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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DO NOT USE FOR R/W ACQUISITION

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RALEIGH, N.C. 27606

SEE SHEET 27 FOR -L- PROFILE
SEE SHEET 33 FOR -Y3- PROFILE
ALL DRIVEWAYS ARE 12' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NAD 83/95

INSET

PCSta. 10+00.00
BEG. CONSTRUCTION

-Y3-
PI Sta 11+14.71
Δ = 21° 38' 46.6" (RT)
D = 9° 32' 57.5"
L = 226.68'
T = 114.71'
R = 600.00'
SE = 08
INC = 23.75'

345' TAPER
418' TAPER

JOYCE CAMPBELL BAKER
DB 1186 - PG 502
DB 977 - PG 147
DB 981 - PG 338
DB 1026 - PG 126

R. GUY MAYO, JR., et ux
DB 976 - PG 346

STEVEN MARK BUCK
DB 977 - PG 48

MATCHLINE -Y3- STA.12+00 SEE THIS SHEET

MATCHLINE -Y3- STA.12+00 SEE INSET

PT Sta. 12+26.68

STEVEN MARK BUCK
DB 977 - PG 48

J. M. SMITH, et ux
DB 1827 - PG 412
WILL 92-E-34

JOHNNIE M. SMITH, et ux
DB 976 - PG 345

R. GUY MAYO, JR., et ux
DB 976 - PG 346
PC E - SLIDE 98-7

345' TAPER
418' TAPER
625' FULL
125

-Y3- S 74° 49' 56.2" E S 74° 47' 53.7" E

-L- POT Sta. 124+13.56 =
-Y3- POT Sta. 16+33.04

BM 4
-BL- STA. 118+81.81
82.65' LEFT
ELEV= 64.97

BL-21 PINC 118+79.36 =
BY3-48 PINC 111+05.10

MATCHLINE -L- STA. 116+00 SEE SHEET 12

MATCHLINE -L- STA. 129+00 SEE SHEET 14

BL-20
PINC 112+93.41

N 8° 43' 03.8" E

N 6° 41' 29.6" E

150-50-150
5.0 QS

NCOS
HADDOCK

N 10° 45' 25.8" E

N 8° 42' 06.4" E

NORFOLK SOUTHERN RAILROAD

VST

ALLUVIAL LIMITS

MAUDE ELIZABETH WHITEHURST
DB 502 - PG 537

MAUDE N. WHITEHURST
DB 502 - PG 534
WS 68-E-68

TOMMY WHITEHURST, et ux
DB 920 - PG 228

PCSta. 16+56.77

-Y3-
PI Sta 17+75.34
Δ = 7° 32' 16.8" (LT)
D = 3° 10' 59.2"
L = 236.81'
T = 118.58'
R = 1,800.00'
SE = 055
INC = 27.27'

ARLEY EUGENE MEEKS, et ux
DB 800 - PG 320
DB 923 - PG 547
DB 928 - PG 896

ANTHONY DWAYNE BUCK
DB 932 - PG 503

TRAVIS EARL HUDSON, et ux
DB 914 - PG 155
PC E - SLIDE 3-4

PT Sta. 18+93.58

TRAVIS EARL HUDSON, et ux
DB 914 - PG 155
PC E - SLIDE 3-4

BY4-51 POT 7+50.20

BY4-52 POT 5+00.00
BY3-49 PINC 15+41.10

-Y3- POT Sta. 20+34.39 =
-Y4- POT Sta. 10+00.00

S 4° 33' 04.1" W

S 10° 00' 46.0" W

S 77° 43' 40.9" E

S 85° 03' 49.0" E

-Y3-

411' TAPER LT. LAND AT.

-Y4-

SR 1134 (OLD NEW BERN RD) 22' BST

POT Sta. 13+00.00

WILLIAM R. HARDING, et ux
DB 781 - PG 178
DB 6415 - PG 549

LUCY B. TAYLOR
DB 85 - PG 257

WILLIAM R. HARDING
DB 908 - PG 239

JACOB F. ROWE, JR., et ux
DB 967 - PG 697

POT Sta. 22+00.00
END CONSTRUCTION

BARR RD — ADT 2006 / 2026
1574 / 2,443
7,813 / 13,378
111 / 204
1257 / 2039
9,370 / 15711
US 17 — US 17
335 / 509
752 / 1,013
1287 / 1722
BARR RD

07/24/2003
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5/14/99

SEE SHEET 28 FOR -L- PROFILE
ALL DRIVEWAYS ARE 12' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NAD 8395

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

Carter::Burgess
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Raleigh, North Carolina 27612

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RALEIGH, N.C. 27606

MATCHLINE -L- STA. 129+00 SEE SHEET 13

MATCHLINE -L- STA. 141+00 SEE SHEET 13

BL-22
PINC 124+61.40

BL-23
PINC 130+39.97

N 7° 28' 31.3" E

N 7° 26' 25.4" E

N 8° 42' 06.4" E -L-

R. GUY MAYO, JR., et ux
DB 976 - PG 346
PC E - SLIDE 38-7

CAROLINA POWER & LIGHT COMPANY
DB 633 - PG 501

CITY OF WASHINGTON
DB 88 - PG 191

TRAVIS EARL HUDSON, et ux
DB 914 - PG 105
PC E - SLIDE 2-4

JOHNNIE R. JACKSON, et ux
DB 986 - PG 906

TRAVIS EARL HUDSON, et ux
DB 914 - PG 105

TRAVIS EARL HUDSON, et ux
DB 914 - PG 105
PC E - SLIDE 2-4

EUGENE H. YOW, JR.
DB 998 - PG 160

CHAD D. CLAYTON, et ux
DB 1052 - PG 955

J. J. COOK, et ux
DB 434 - PG 79
DB 354 - PG 636

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PROJECT REFERENCE NO.	SHEET NO.
R-2510A	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

SEE SHEET 28 FOR -L- PROFILE
ALL DRIVEWAYS ARE 12' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NAD 83/95

RODNEY LAMONT ALBRITTON
DB 1109 - PG 414

TIMOTHY C. MORDECAI
DB 1094 - PG 113
PC E - SLIDE 87-3

JOHN ALBRITTON
DB 1025 - PG 441

CAROLINA POWER & LIGHT COMPANY
DB 633 - PG 601

CHARLES R. SPEIGHT, et ux
DB 971 - PG 947
PC E - SLIDE 87-3

WILLIAM L. HULSLANDER, et ux
DB 1062 - PG 631
PC E - SLIDE 20-9

DB 911 PG 942
PC E - SLIDE 87-3
KATHLEEN W. WHITFIELD

BL-24
PINC 136+05.90

BL-25
PINC 141+61.05

BL-26 PINC 147+90.17
T6-120 POT 5+00.00

BM 5
BL- STA 136+67.19
55.70' LEFT
ELEV= 55.88'

N 15° 22' 44.1" E

N 35° 23' 08.7" E

N 30° 53' 10.5" E

-L-

MATCHLINE -L- STA. 141+00 SEE SHEET 14

MATCHLINE -L- STA. 141+00 SEE SHEET 16

TSSta. 141+04.78

SCSta. 142+33.78

CSSta. 148+01.73

STSta. 149+90.73

J. J. COOK, et ux
DB 434 - PG 79
DB 354 - PG 636

NCGS "FLEMING"

JOHN W. KOLIBABEK, et ux
DB 1000 - PG 634

JAMES R. ATWELL, et ux
DB 1000 - PG 85

JOSEPH W. KOLIBABEK
DB 988 - PG 329

KENNETH A. WILLIAMS, et ux
DB 1174 - PG 641

JAMES KENNEDY GIBBS
DB 1128 - PG 15

-L-		
PIs Sta 142+30.80	PI Sta 145+49.46	PIs Sta 148+64.75
θs = 3° 00' 28.9"	Δ = 16° 10' 06.3" (RT)	θs = 3° 00' 28.9"
Ls = 189.00'	D = 3° 10' 59.2"	Ls = 189.00'
LT = 126.02'	L = 507.95	LT = 126.02'
ST = 63.02'	T = 255.67'	ST = 63.02'
	R = 1,800.00'	
	SE = 0%	
	INC = 27'	

07/24/2003
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SEE SHEET 29 FOR -L- PROFILE
SEE SHEET 34 FOR -Y5- PROFILE
ALL DRIVEWAYS ARE 12' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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NAD 83/95

-Y5- POT Sta.13+00.00
BEGIN CONSTRUCTION

S 82° 05' 24.9" E

S 81° 47' 35.0" E -Y5-

-T7-123 5+00.00 POT
ELEV= 48.80
NAIL SET

S 36° 46' 35.3" E

-L- POT Sta. 159+26.94 =
-Y5- POT Sta. 16+35.83

BL-27 PINC 154+16.79 =
BY5-54 POT 11+13.18

BL-28 PINC 161+11.66 =
-T7-126 POT 14+16.76

150-50-150
3.0 OS

150-35-150
3.0 OS

N 30° 44' 34.8" E

N 31° 54' 36.4" E

N 30° 53' 10.5" E -L-

MATCHLINE -L- STA.153+00 SEE SHEET 15

MATCHLINE -L- STA.167+00 SEE SHEET 17

-T6-121 8+02.99 PINC
ELEV= 46.43
NAIL SET

S 79° 34' 23.8" E

-T6-122 9+56.42 POT
ELEV= 46.98
NAIL SET

-T7-124 7+64.35 PINC
ELEV= 49.06
NAIL SET

N 84° 59' 05.1" E

N 16° 24' 02.9" W

-T7-125 10+75.65 PINC
ELEV= 46.39
NAIL SET

ALLUVIAL LIMITS

JOHN M. ELLIOTT
DB 886 - PG 198

LINDA B. EDWARDS, et vir
DB 858 - PG 198

BENNIE HERMAN STARRIE, JR., et al
DB 1129 - PG 836

ICELEEN S. WHITFIELD
DB 1971 - PG 342
PC E - SL.98-87-3

CHARLES R. SPEIGHT, et ux
DB 967 - PG 721

BETTIE J. STARRIE
DB 1052 - PG 147

WILLIAM L. HUGHES, JR., et ux
DB 2402 - PG 651
PC J - SLIDE 26-5

SAM JASPER BOYD, JR., et ux
DB 972 - PG 40

CARRIE M. TURNER, et vir
DB 1165 - PG 710

DANNY SMITH
DB 868 - PG 805

HARRIET CHAPMAN
DB 30 - PG 347

BOBBY GENE WEATHINGTON
DB 1300 - PG 259

MICHAEL MIZELL, et ux
DB 1019 - PG 107

BILLY RAY BEASLEY
DB 1114 - PG 597

FRANCES TETTERTON
DB 974 - PG 953

ROY MITCHELL CLARK, et ux
DB 1220 - PG 646

BETSY ROSE HADDOCK
DB 847 - PG 361

BILLY J. HADDOCK, et ux
DB 847 - PG 359

BETSY H. LEWIS
DB 1051 - PG 523

EDMUND N. LEE, JR., et ux
DB 1168 - PG 473
DB 967 - PG 458

KENNETH A. WILLIAMS, et ux
DB 1174 - PG 54

RONALD LEE HUSS
DB 1138 - PG 405

WILLIAM R. CHWANG, et ux
DB 1054 - PG 45

NCDOT CPS
'R2510A-5'

FREDERICK RD

US 17

US 17

1157 / 1939 — ADT 2006 / 2026

235 / 409

922 / 1530

9,370 / 15,717

10,057 / 16,839

07/24/2003
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5/14/99

SEE SHEET 29 FOR -L- PROFILE
ALL DRIVEWAYS ARE 12' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NAD 83/95

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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RALEIGH, N.C. 27606

MATCHLINE -L- STA. 167+00 SEE SHEET 16

MATCHLINE -L- STA. 181+00 SEE SHEET 18

170

175

JULIETTE BUCK SYKES
DB 942 - PG 380

DALTON RAY BUCK, ET UX
DB 1033 - PG 453

HARNETT CHAPMAN
DB 536 - PG 347

EDWARD A. BUCK, ET UX
DB 492 - PG 185

GEORGE A. BUCK, ET UX
DB 1171 - PG 126
PC E - SLIDE 54-1

EDWARD A. BUCK, ET UX
DB 492 - PG 185

WENDY ANN BUCK
DB 1144 - PG 316

DALTON RAY BUCK, ET UX
DB 1033 - PG 453
MB 14 - PG 91

JULIETTE BUCK SYKES
DB 942 - PG 380
PC E - SLIDE 54-1

ALBEN THOMAS LOKEY, JR., ET UX
DB 1001 - PG 835

JOYCE D. BRIGHT
DB 1536 - PG 94

CHARLES L. TOLER, JR.
DB 1213 - PG 660

DALTON R. BUCK, SR.
DB 1043 - PG 493

WALTER GAVIN BUCK
DB 1139 - PG 885

CEMETERY

BL-29 PINC 167+17.37=
-T8-127 POT 5+00.00

BL-30
PINC 173+17.44

N 32° 17' 03.2" E

N 29° 24' 28.4" E

N 31° 37' 24.1" E

N 41° 39' 26.9" E

N 30° 53' 10.5" E

-L-

NCDOT GPS
"R2510A-6"

-T8-128 6+75.41 PINC
ELEV= 45.01
NAIL SET

S 68° 02' 52.9" E

-T8-129 8+62.55 POT
ELEV= 44.79
NAIL SET

ALLUVIAL LIMITS

PATTIE LEE WOODARD
DB 1021 - PG 560

BETSY ROSE HADDOCK
DB 847 - PG 384

BETSY ALLENS
DB 1011 - PG 323

MARTY THOMAS BUCK
DB 942 - PG 378

EDWARD A. BUCK, ET UX
DB 492 - PG 185

EDMUND V. LEE, JR., ET UX
DB 1165 - PG 73
DB 907 - PG 631

DONNA KAY MORGAN
DB 907 - PG 625

RANDY EUGENE SMITH, ET UX
DB 892 - PG 375

WALTER GLAVIN BUCK
DB 942 - PG 382
PC E - SLIDE 54-1

07/24/2003
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5/14/09

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RALEIGH, N.C. 27606

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	18
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

NAD 83/95

SEE SHEET 30 FOR -L- PROFILE
ALL DRIVEWAYS ARE 12' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

MATCHLINE -L- STA. 181+00 SEE SHEET 17

MATCHLINE -L- STA. 195+00 SEE SHEET 19

-T9-130 5+00.00 POT
ELEV= 45.84
NAIL SET

-T9-131 7+24.14 PINC
ELEV= 44.61
NAIL SET

-T9-132 PINC 10+47.38

BL-31 PINC 179+23.54=

BL-32
PINC 185+25.34

-T9-133 12+03.42 PINC
ELEV= 43.55
NAIL SET

-T9-134 15+18.78 POT
ELEV= 42.03
NAIL SET

S 81° 27' 30.5" E

S 15° 27' 07.3" W

S 14° 37' 03.7" E

N 31° 37' 24.1" E

N 30° 10' 34.1" E

N 33° 29' 42.9" E

N 30° 53' 10.5" E

N 31° 15' 21.0" E

-L-

185

190

195

DALTON RAY BUCK, ET UX
DB 1032 - PG 465

IRVIN RAY ARNOLD, ET UX
DB 580 - PG 101

JOYCE D. BRIGHT
DB 553 - PG 84

JAMES ARLEY BUCK, ET UX
DB 508 - PG 371

DOUGLAS BRANCH, ET UX
DB 531 - PG 256

BARBARA HARDY BARR
DB 820 - PG 776
MB 14 - PG 49

MARK WAYNE OSNOE
DB 1035 - PG 833

ERMA LEE COOKE, ET VIR
DB 511 - PG 524
DB 530 - PG 279

HENRY BUCK
DB 1198 - PG 330
MB 14 - PG 62

TERRY L. PATRICK
DB 1005 - PG 334
PC A SLIDE 84

JOHN W. RICE, ET UX
DB 833 - PG 177
MB 14 - PG 59

CARL DOUGLAS BRANCH, JR., ET UX
DB 1105 - PG 206
DB 1222 - PG 312
MB 14 - PG 43

CHARLES L. TOLER, JR.
DB 181 - PG 280

SALLIE BLOUNT TOLER
DB 341 - PG 552

GUY HARDING LOLLIS
DB 384 - PG 392

EDWARD A. BUCK, ET UX
DB 495 - PG 185

BM 7
-BL- STA 189+13.17
299.07' RT
ELEV= 49.20'

07/24/2003
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SEE SHEET 30 FOR -L- PROFILE
SEE SHEET 34 FOR -Y6- PROFILE
ALL DRIVEWAYS ARE 12' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NAD 8395

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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RALEIGH, N.C. 27606

MATCHLINE -L- STA. 195+00 SEE SHEET 18

MATCHLINE -L- STA. 208+00 SEE SHEET 20

TSSta. 197+29.76

SCSta. 199+18.76

CSSta. 201+80.12

STSta. 203+69.12

BL-33
PINC 192+09.98

BL-34 PINC 198+18.78 =
BY6-55 POT 5+00.00

N 30° 53' 10.5" E

N 26° 40' 17.9" E

N 16° 33' 10.2" E

S 77° 37' 06.3" E

PCSta. 10+98.68

-L- POS Sta. 203+56.76 =
-Y6- POT Sta. 10+00.00

S 89° 15' 13.1" E

BY6-56 PINC 7+19.39

PTSta. 15+21.55

POTSta. 15+64.91

-Y6- POT Sta. 13+00.00
END CONSTRUCTION

N 60° 34' 04.8" E

N 52° 56' 08.2" E

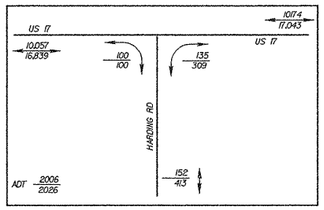
BY6-57 POT 11+46.56

TERRY T. PATRICK
DB 1095 - PG 834
PC A SLIDE 84
PC C SLIDE 391
PC E SLIDE 85-B

GUY HARDING HOLLIS
DB 314 - PG 392

POND

HOUSE



-L-

PIs Sta 198+55.77	PI Sta 200+49.67	PIs Sta 202+43.14
Θs = 3° 00' 28.9"	Δ = 8° 19' 10.0" (LT)	Θs = 3° 00' 28.9"
Ls = 189.00'	D = 3° 10' 59.2"	Ls = 189.00'
LT = 126.02'	L = 261.36	LT = 126.02'
ST = 63.02'	T = 130.91'	ST = 63.02'
	R = 1,800.00'	
	SE = 07	
	INC = 27'	

-Y6-

PI Sta 13+24.30
Δ = 49° 26' 44.7" (LT)
D = 11° 41' 34.9"
L = 422.87'
T = 225.61'
R = 490.00'
SE = 08
INC = 18

07/24/2003
n:\design\projects\r2510a_rdy.rsh.19.dgn

5/14/99

SEE SHEET 31 FOR -L- PROFILE
ALL DRIVEWAYS ARE 12' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NAD 83/95

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	20
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

Carter::Burgess
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Raleigh, North Carolina 27612

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RALEIGH, N.C. 27606

210

215

220

TERRY T. PATRICK
DB 1095 - PG 834
PC A SLIDE 84

BL-37 PINC 216+05.71
-T10-137 PINC 10+34.92

BL-35
PINC 204+13.04

BL-36
PINC 210+01.48

MATCHLINE -L- STA 208+00 SEE SHEET 19

MATCHLINE -L- STA 221+00 SEE SHEET 21

N 16° 30' 53.1" E

N 16° 33' 02.7" E -L-

N 15° 31' 37.1" E

150'

TERRY T. PATRICK
DB 1095 - PG 834
PC A SLIDE 84

BM 8
-BL- STA 213+62.32
227.96' RIGHT
ELEV= 33.81'

07/24/2003
r:\projects\2510a\roadway\r-2510a_rdy_pss_20.dgn
preliminary

5/14/99

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RALEIGH, N.C. 27606

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

SEE SHEET 31 FOR -L- PROFILE
SEE SHEET 35 FOR -DET2- PROFILE
ALL DRIVEWAYS ARE 12' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NAD 83/95

MATCHLINE -L- STA. 221+00 SEE SHEET 20

MATCHLINE -L- STA. 235+00 SEE SHEET 21

-T10-135 5+00.00 POT
ELEV= 27.93
NAIL SET

N 72° 52' 58.5" E

-T10-136 7+25.41 PINC
ELEV= 26.85
NAIL SET

S 5° 08' 48.2" W

N 16° 24' 27"

N 23° 35' 21.2" E

-T10-138 14+16.07 PINC
ELEV= 27.55
NAIL SET

S 67° 56' 48.8" E

-T10-139 15+62.62 PINC
ELEV= 27.30
NAIL SET

BL-38
PINC 222+20.46

N 10° 53' 40.3" E

N 16° 33' 02.7" E

-L-

BL-39
PINC 228+45.22

N 23° 51' 28.0" E

-DET2- N 16° 33' 02.7" E

720'

150'

ALLUVIAL LIMITS

-DET2- POT Sta.10+00.00
-L- POT Sta.232+10.94 35' RT.

PCSta. 12+10.60

TERRY T. PATRICK
DB 1095 - PG 934
PC A, SLIDE 82

ENGLEWOOD C. FELTON
PB 55E - PG 46
PC E - SLIDE 65-2

MARVIN J. HARRIS FAMILY TRUST
DB 981 - PG 963
PC E - SLIDE 65-2

LOIS ANN GRAY O'NEAL

JIMMY EARL HAWKINS, ET UX

LAUREL CREEK ET UX
DB 1065 - PG 863
PC E - SLIDE 65-2

CHESTER CRAIG SPRUILL
DB 1276 - PG 1
PC E - SLIDE 65-2

RAYMOND J. HARRIS
DB 952 - PG 855
PC E - SLIDE 65-2

STEVEN MABLE
DB 1716 - PG 89

FRANK RESPESS
DB 638 - PG 706
MB 1990-2

JASON C. SHEPPARD
DB 1142 - PG 469
MB 14 - PG 52

SCOTT ROBERT BATEMAN, ET UX
DB 1144 - PG 216
PC E - SLIDE 90-7

-DET2-

PI Sta 13+00.78	PI Sta 17+68.80
Δ = 8° 35' 43.7" (LT)	Δ = 8° 35' 43.7" (RT)
D = 4° 46' 28.7"	D = 4° 46' 28.7"
L = 180.02'	L = 180.02'
T = 90.18'	T = 90.18'
R = 1,200.00'	R = 1,200.00'
SE = 08	SE = 08
INC = 27'	INC = 27'

07/24/2003
r:\roadway\proj\r2510a_rdy_psh_21.dgn

5/14/99

SEE SHEET 32 FOR -L- PROFILE
SEE SHEET 35 FOR -DET2- PROFILE
ALL DRIVEWAYS ARE 12' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

NAD 83/95

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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MATCHLINE -L- STA. 235+00 SEE SHEET 21

JOHN E. TAYLOR
DB 1987 - PG 432
PC E - SLIDE 22

SCOTT ROBERT BATEMAN, ET UX
DB 1144 - PG 38
PC E - SLIDE 99-7

RICHARD D. REED, JR., ET UX
DB 2328 - PG 643
PC E - SLIDE 97-8

ALICE ANN W. HURST
DB 528 - PG 556

W. BERNARD WINFIELD
DB 500 - PG 971
MB 1 - PG 52
PC E - PG 54-2

200'

BL-40
PINC 234+23.24

N 23° 51' 28.0" E

-DET2- N 7° 57' 19.0" E

TAPER INSIDE LANE FROM 12 FT AT 12+10.60 TO 0 FT AT 18+58.65

PI Sta 13+90.62

PCSta 16+78.62

-DET2- PT Sta 18+58.65 =
-L- POT STA 240+65.00 35' LT.

100' SHOULDER TAPER

END TIP PROJECT R-2510A
-L- POT STA 241+65.00
END PARTIAL CONTROL OF ACCESS

ALLUVIAL LIMITS

BL-41 PINC 239+92.71 =
BY7-58 POT 5+00.00

N 9° 24' 11.4" E

N 16° 33' 02.7" E -L-

N 20° 51' 14.7" E

S 59° 08' 23.7" E

POT Sta. 246+44.18

BM 9
STA. 241+89.15
81.86' LEFT
ELEV= 40.94'

-DET2-

PI Sta 13+00.78	PI Sta 17+68.80
Δ = 8° 35' 43.7" (LT)	Δ = 8° 35' 43.7" (RT)
D = 4° 46' 28.7"	D = 4° 46' 28.7"
L = 180.02'	L = 180.02'
T = 90.18'	T = 90.18'
R = 1,200.00'	R = 1,200.00'
SE = 08	SE = 08
INC = 27'	INC = 27'

07/24/2003
r:\projects\r-2510a\r-2510a_rdy_psh_22.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	23

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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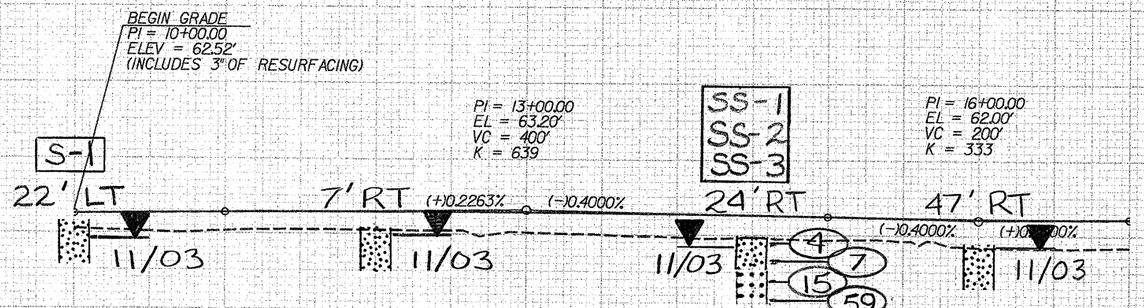
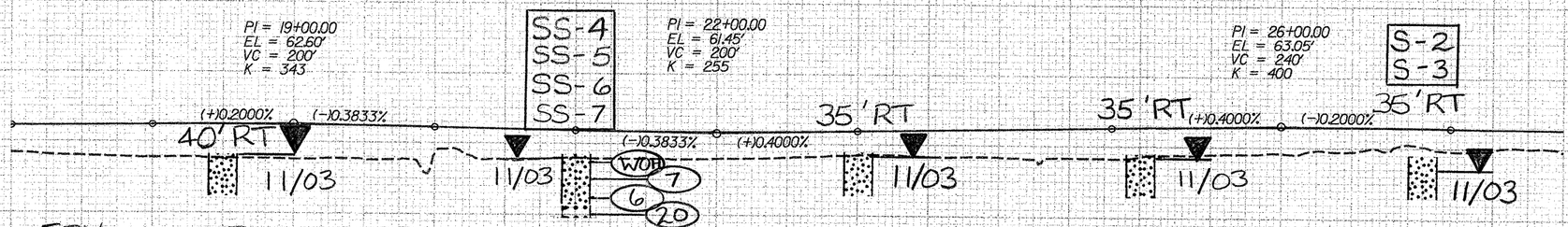


LOOSE TO VERY DENSE GRAY TO BROWN SILTY SAND AND SAND, WET TO SATURATED (YORKTOWN FORMATION)

Soil Sample Test Results

SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE	% ORGANIC
S-1	10+00	22' LT	1.0-3.5	A-2-4(0)	25	NP	14.5	58.5	12.8	14.1	100	98	29		
SS-1	14+50	24' RT	2.5-4.0	A-2-4(0)	16	NP	18.1	56.9	17	8	100	95	26		
SS-2	14+50	24' RT	5.0-6.0	A-3(0)	29	NP	25.6	68	3.3	3	100	99	7		
SS-3	14+50	24' RT	7.5-9.0	A-3(0)	27	NP	18.6	77.2	2.2	2	100	90	5		
SS-4	21+00	35' RT	1.0-1.5	A-2-4(0)	22	NP	12.9	60.3	10.8	16.1	100	97	28		
SS-5	21+00	35' RT	2.5-4.0	A-2-4(0)	20	NP	12.3	64.9	8.7	14.1	100	97	24		
SS-6	21+00	35' RT	5.0-6.5	A-2-4(0)	24	NP	10.7	75.8	5.5	8	100	98	14		
SS-7	21+00	35' RT	7.5-9.0	A-3(0)	27	NP	24	72.9	3.1	0	100	93	4		
S-2	27+00	35' RT	1.0-3.0	A-2-4(0)	17	NP	17.7	64.9	7.4	10.1	100	97	18		
S-3	27+00	35' RT	3.0-6.0	A-2-4(0)	30	NP	24.6	63.7	6.7	5	100	93	13		

SEE SHEET 5 FOR -L- PLAN



VERY LOOSE TO MEDIUM DENSE GRAY TO BROWN SILTY SAND AND SAND, WET TO SATURATED (YORKTOWN FORMATION)

5/28/99

SEE SHEET 6 FOR -L- PLAN

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	24

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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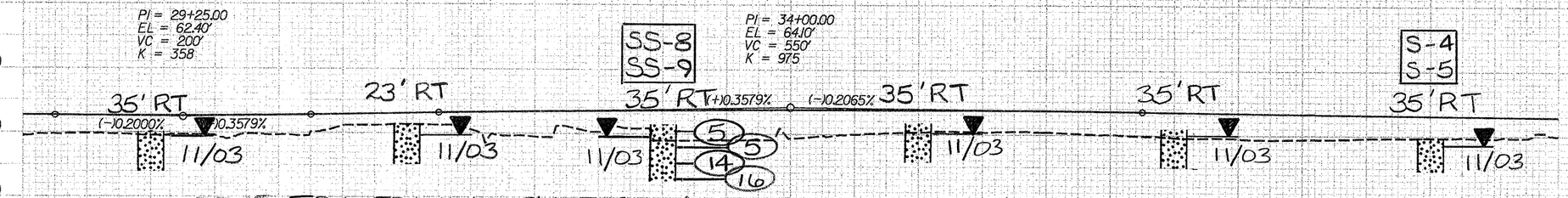
RALEIGH, N.C. 27606

SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE	% ORGANIC
SS-8	33+00	35' RT	2.5-4.0	A-2-4(0)	28	NP	19.2	65.5	8.2	7	100	97	17		
SS-9	33+00	35' RT	7.5-9.0	A-2-4(0)	29	NP	14.1	75.8	5.1	5	100	97	11		
S-4	39+00	35' RT	1.0-2.0	A-2-4(0)	17	NP	19.6	63.1	5.2	12.1	100	96	18		
S-5	39+00	35' RT	2.0-6.0	A-2-4(0)	16	NP	20.8	56.3	8.8	14.1	100	96	24		



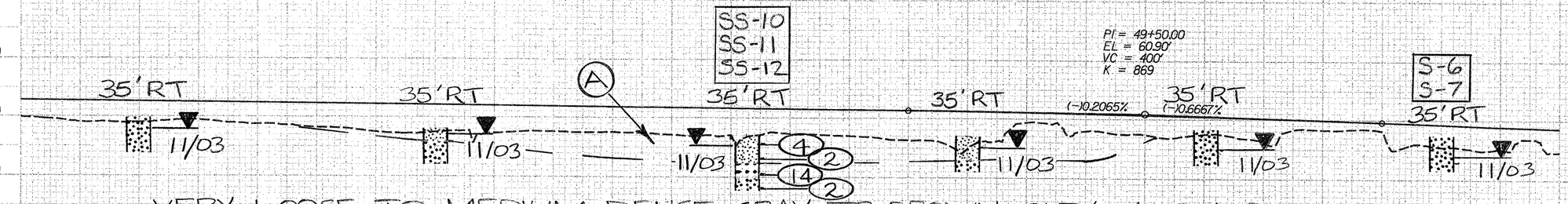
LOOSE TO MEDIUM DENSE GRAY TO BROWN SILTY SAND, WET TO SATURATED (YORKTOWN FORMATION)

BENCHMARK # 1 EL = 62.48'
RR SPIKE ON BST RR CROSSING
66.03' LT OF -BL- STA 29+93.73
122.83' LT OF -L- STA 35+32.56

28 29 30 31 32 33 34 35 36 37 38 39 40

SEE SHEET 7 FOR -L- PLAN

(A) SOFT GRAY TO BROWN SANDY SILT, MOIST TO WET (YORKTOWN FORMATION)



VERY LOOSE TO MEDIUM DENSE GRAY TO BROWN SILTY SAND AND SAND, WET TO SATURATED (YORKTOWN FORMATION)

SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE	% ORGANIC
SS-10	46+13	35' RT	1.0-1.5	A-4(0)	24	NP	25.7	38.6	23.6	12.1	100	88	37		
SS-11	46+13	35' RT	5.0-6.5	A-3(0)	29	NP	19.1	74.6	3.3	3	100	89	7		
SS-12	46+13	35' RT	8.0-9.0	A-2-4(0)	24	NP	0.6	67.3	12	20.1	100	100	34		
S-6	52+00	35' RT	1.0-6.0	A-2-4(0)	23	NP	20.6	66.3	6.1	7.1	100	95	14		
S-7	52+00	35' RT	2.0-6.0	A-2-4(0)	15	NP	21.4	59.1	7.4	12.1	100	94	20		

40 41 42 43 44 45 46 47 48 49 50 51 52 53

07/24/2003
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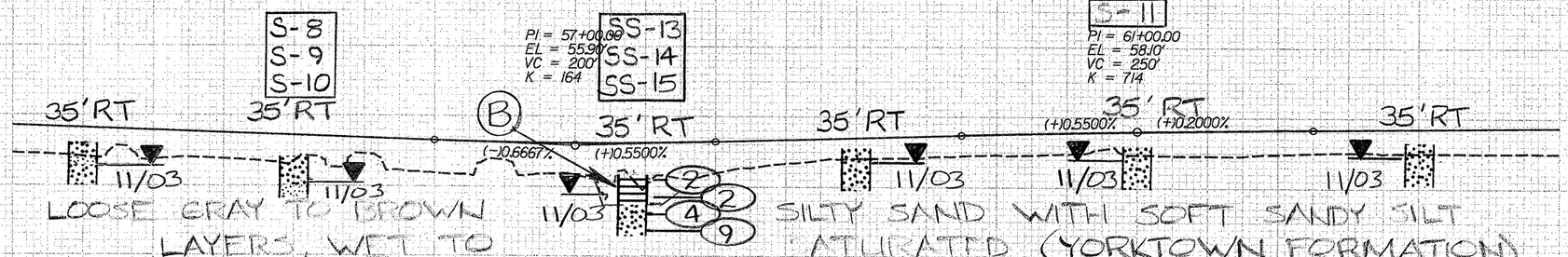
SEE SHEET 8 FOR -L- PLAN

(B) SOFT BROWN ORGANIC SANDY SILT, MOIST TO WET (ALLUVIUM)

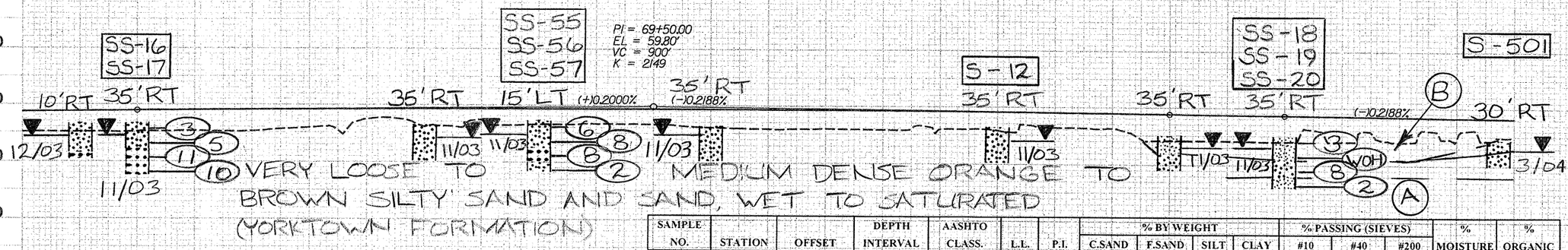
SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE	% ORGANIC
S-8	55+00	35' RT	1.0-4.0	A-4(1)	31	8	5.7	50.3	19.9	24.2	100	99	46		
S-9	55+00	35' RT	4.0-5.5	A-4(1)	24	9	6.1	51.9	11.8	30.3	100	99	44		
S-10	55+00	35' RT	5.5-6.0	A-2-4(0)	18	NP	6.9	62	9	22.2	100	98	33		
SS-13	57+41	35' RT	1.0-1.5	A-5(4)	44	10	8	42.2	25.6	24.1	100	98	52		13.9
SS-14	57+41	35' RT	5.0-6.5	A-2-4(0)	19	NP	19.8	68	6.1	6	100	94	14		
S-11	61+00	35' RT	1.0-6.0	A-2-4(0)	18	NP	10.9	68.7	6.3	14.1	100	98	22		



SEE SHEET 9 FOR -L- PLAN

(A) SOFT GRAY SANDY SILT, WET (YORKTOWN FORMATION)

(B) VERY SOFT TO SOFT BROWN SANDY SILT, MOIST TO WET (RECENT)



SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE	% ORGANIC
SS-16	65+00	35' RT	2.5-4.0	A-2-4(0)	16	NP	13.8	62.2	6.9	17.1	100	96	25		
SS-17	65+00	35' RT	4.0-9.0	A-3(0)	25	NP	0.9	89.6	4.4	5	100	100	10		
SS-55	68+50	15' LT	2.5-4.0	A-2-4(0)	17	NP	30.3	55.4	2.2	12	100	93	15		
SS-56	68+50	15' LT	5.0-6.5	A-3(0)	29	NP	18.2	78.5	2.3	1	100	93	4		
SS-57	68+50	15' LT	7.5-9.0	A-2-4(0)	23	NP	3.2	82.1	4.6	10	100	99	16		
S-12	72+50	35' RT	1.0-6.0	A-2-4(0)	15	NP	21	66.8	4.1	8.1	100	96	13		
SS-18	75+00	35' RT	1.0-1.5	A-4(0)	30	NP	7.6	48.9	27.4	16	100	98	45		
SS-19	75+00	35' RT	5.0-6.5	A-2-4(0)	19	NP	5.8	71	9.1	14	100	99	25		
SS-20	75+00	35' RT	7.5-9.0	A-4(5)	27	10	0.8	33.5	27.6	38.1	100	100	71		
S-501	76+85	30' RT	0.5-4.5	A-2-4(0)	20	NP	14.3	67	12.7	6	100	94	20		1.8

BENCHMARK # 2 EL = 58.68'
RR SPIKE ON BST RR CROSSING
117.45' LT OF -BL- STA 60+88.77
122.39' LT OF -L- STA 66+26.33

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	25

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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RALEIGH, N.C. 27606

5/28/03

SEE SHEET 10 FOR -L- PLAN

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	26

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
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RALEIGH, N.C. 27606

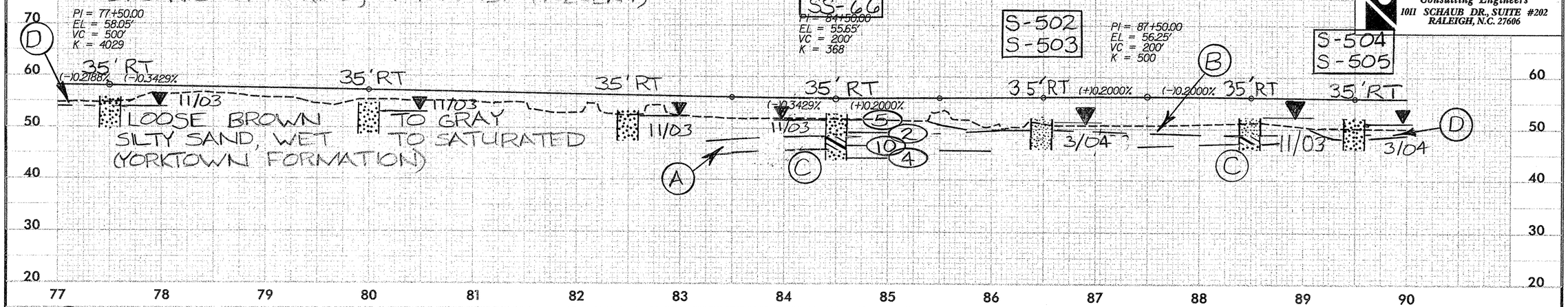
(A) MEDIUM STIFF TO STIFF BROWN TAN SANDY CLAY, WET (YORKTOWN FORMATION)

(B) SOFT DARK BROWN SANDY SILT WITH ORGANIC MATERIAL, WET (RECENT)

(C) LOOSE TAN SILTY SAND, SATURATED (YORKTOWN FORMATION)

(D) LOOSE BROWN SILTY SAND WITH LITTLE ORGANIC MATERIAL, SATURATED (RECENT)

SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE	% ORGANIC
SS-64	84+50	35' RT	2.5-4.0	A-2-4(0)	23	7	18.9	61	8	12	100	94	20		
SS-65	84+50	35' RT	5.0-6.5	A-6(3)	31	15	8.6	46.2	9	36.1	100	97	46		
SS-66	84+50	35' RT	7.5-9.0	A-2-4(0)	22	NP	21.9	65.9	2.2	10	100	93	13		
S-502	86+50	35' RT	1.0-2.5	A-4(5)	39	9	6	36.6	45.3	12.1	100	98	61		11.2
S-503	86+50	35' RT	2.5-6.0	A-4(3)	25	10	6.2	36.2	33.4	24.1	100	98	61		
S-504	89+50	35' RT	1.0-4.0	A-2-4(0)	25	NP	18.3	52.5	21.1	8	100	94	31		4.1
S-505	89+50	35' RT	4.0-6.0	A-2-4(0)	16	NP	19.7	58.6	13.7	8	100	95	24		

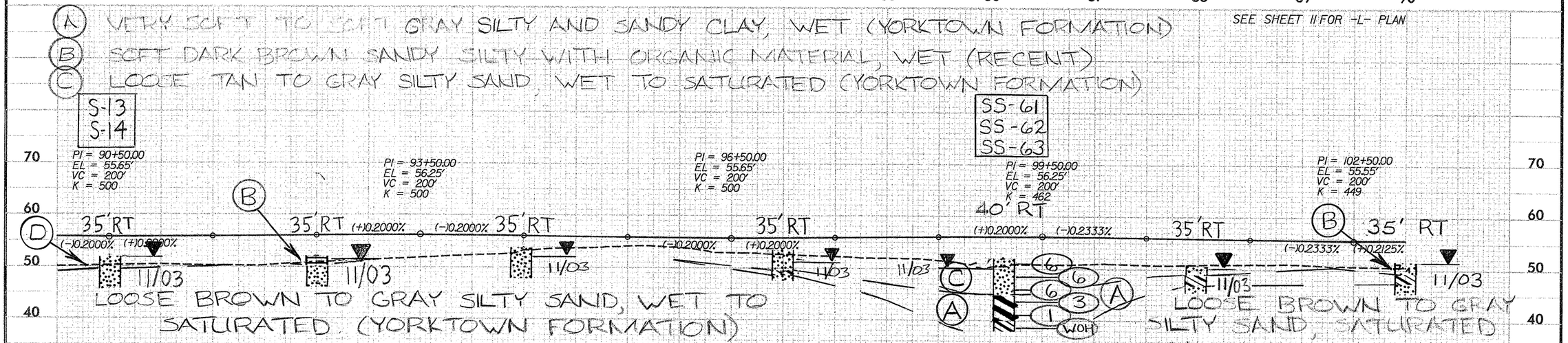


(A) VERY SOFT TO SOFT GRAY SILTY AND SANDY CLAY, WET (YORKTOWN FORMATION)

(B) SOFT DARK BROWN SANDY SILTY WITH ORGANIC MATERIAL, WET (RECENT)

(C) LOOSE TAN TO GRAY SILTY SAND, WET TO SATURATED (YORKTOWN FORMATION)

SEE SHEET 11 FOR -L- PLAN



(D) LOOSE GRAY SILTY SAND WITH TRACE ORGANIC MATERIAL, SATURATED (RECENT)

SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE	% ORGANIC
S-13	90+50	35' RT	1.0-3.5	A-2-4(0)	24	7	6.8	60.7	12.4	20.1	100	98	35		
S-14	90+50	35'RT	3.5-6.0	A-2-4(0)	21	3	7.8	65.6	7.4	19.1	100	98	28		
SS-61	99+12	40' RT	2.5-4.0	A-2-4(0)	15	NP	14.9	51.8	21.3	12	100	96	34		
SS-62	99+12	40' RT	7.5-9.0	A-7-6(15)	42	23	11.6	19.3	24.9	44.2	100	95	72		
SS-63	99+12	40' RT	12.5-14.0	A-6(6)	27	14	6.8	30.7	34.3	28.1	100	99	64		

BENCHMARK # 3 EL = 54.67'
RR SPIKE ON BST RR CROSSING
62.50' LT OF -BL- STA 94+41.67
123.77' LT OF -L- STA 99+60.57

07/24/2003
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5/28/99

(A) SOFT GRAY SANDY CLAY, WET (YORKTOWN FORMATION)

(B) SOFT GRAY-BROWN SANDY SILT WITH TRACE ORGANIC MATERIAL, WET (RECENT)

(C) LOOSE GRAY-TAN SILTY SAND, SATURATED (YORKTOWN FORMATION)

SEE SHEET 12 FOR -L- PLAN

SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE	% ORGANIC
S-514	104+50	35' RT	1.0-2.0	A-4(0)	39	NP	19.5	38.6	31.8	10.1	100	93	43		11.8
S-515	104+50	35' RT	2.0-6.0	A-2-4(0)	25	9	25.6	42.5	15.9	16.1	100	92	33		
S-15	105+50	35' RT	1.0-3.5	A-5(3)	45	9	15.9	36.6	29.4	18.1	100	95	49		
S-16	105+50	35' RT	3.5-4.0	A-6(1)	25	11	19.7	39.4	10.8	30.2	100	94	43		
S-17	105+50	35' RT	4.5-6.0	A-6(6)	34	21	15.7	37.8	8.3	38.2	100	95	48		
S-509	107+50	50' RT	0.5-4.0	A-2-4(0)	19	NP	24.1	53.5	12.3	10.1	100	93	23		
SS-21	111+00	35' RT	2.5-4.0	A-2-4(0)	18	NP	27.1	55.2	11.7	6	100	92	18		
SS-22	111+00	35' RT	5.7-6.5	A-2-4(0)	20	NP	1.3	65.4	10.2	23.1	100	100	35		
SS-23	111+00	35' RT	7.5-9.0	A-3(0)	23	NP	1.3	95.2	1.5	2	100	100	4		
S-18	116+00	13' RT	0.5-1.5	A-2-4(0)	18	NP	30.9	41.1	8.9	19.1	100	92	29		
S-19	116+00	13' RT	1.5-5.0	A-2-4(0)	19	NP	32.5	41.4	9	17.1	100	92	27		
S-20	116+00	13' RT	5.0-6.0	A-2-4(0)	19	NP	30.6	53.6	2.7	13.1	100	92	18		

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RALEIGH, N.C. 27606

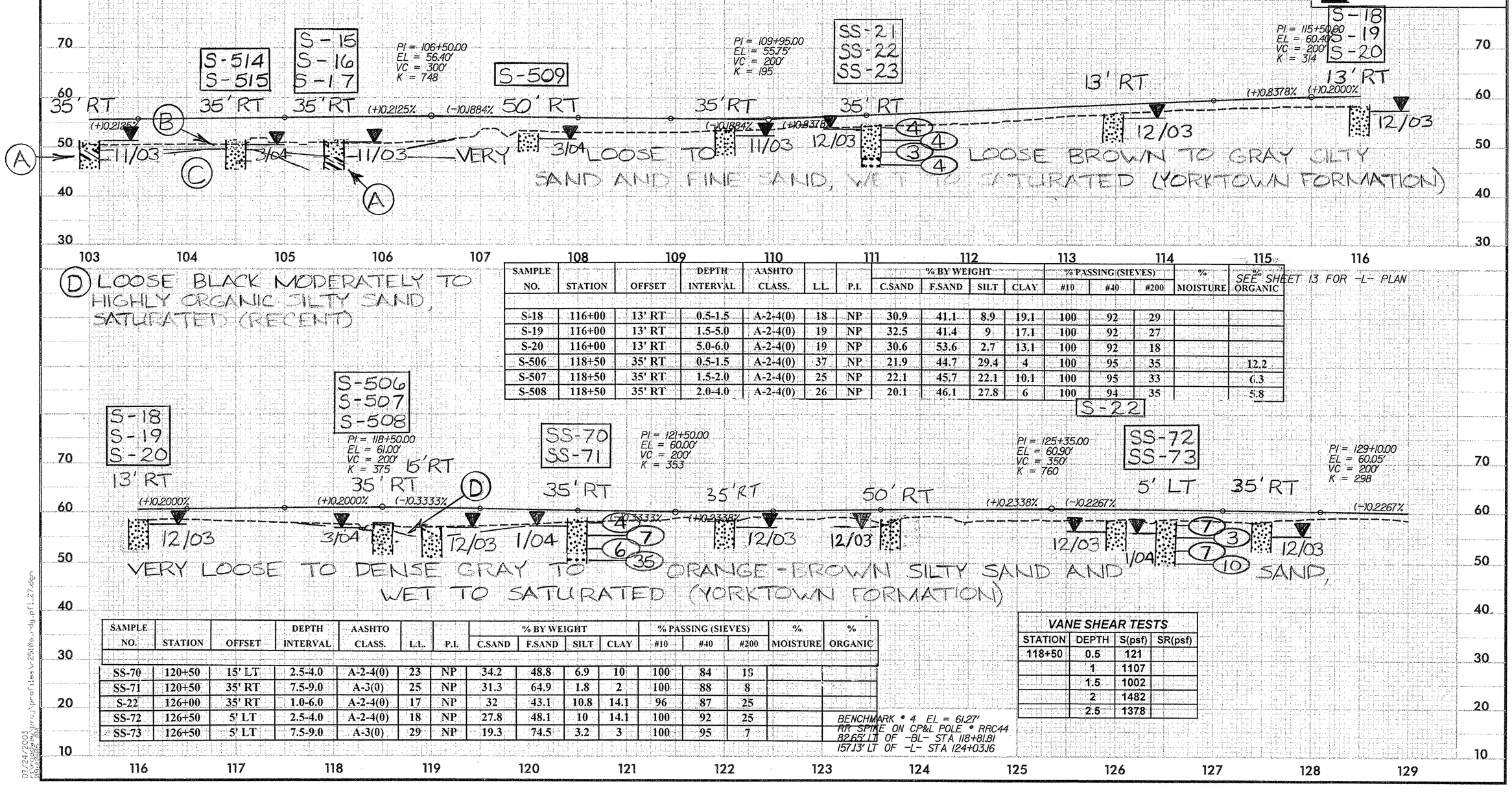
PROJECT REFERENCE NO.	SHEET NO.
R-2510A	27

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION



(D) LOOSE BLACK MODERATELY TO HIGHLY ORGANIC SILTY SAND, SATURATED (RECENT)

SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE	% ORGANIC
S-18	116+00	13' RT	0.5-1.5	A-2-4(0)	18	NP	30.9	41.1	8.9	19.1	100	92	29		
S-19	116+00	13' RT	1.5-5.0	A-2-4(0)	19	NP	32.5	41.4	9	17.1	100	92	27		
S-20	116+00	13' RT	5.0-6.0	A-2-4(0)	19	NP	30.6	53.6	2.7	13.1	100	92	18		
S-506	118+50	35' RT	0.5-1.5	A-2-4(0)	37	NP	21.9	44.7	29.4	4	100	95	35		12.2
S-507	118+50	35' RT	1.5-2.0	A-2-4(0)	25	NP	22.1	45.7	22.1	10.1	100	95	33		6.3
S-508	118+50	35' RT	2.0-4.0	A-2-4(0)	26	NP	20.1	46.1	27.8	6	100	94	35		5.8

SEE SHEET 13 FOR -L- PLAN

SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE	% ORGANIC
SS-70	120+50	15' LT	2.5-4.0	A-2-4(0)	23	NP	34.2	48.8	6.9	10	100	84	18		
SS-71	120+50	35' RT	7.5-9.0	A-3(0)	25	NP	31.3	64.9	1.8	2	100	88	8		
S-22	126+00	35' RT	1.0-6.0	A-2-4(0)	17	NP	32	43.1	10.8	14.1	96	87	25		
SS-72	126+50	5' LT	2.5-4.0	A-2-4(0)	18	NP	27.8	48.1	10	14.1	100	92	25		
SS-73	126+50	5' LT	7.5-9.0	A-3(0)	29	NP	19.3	74.5	3.2	3	100	95	7		

BENCHMARK # 4 EL = 61.27'
RR SPIKE ON CP&L POLE # RRC44
82.65' LT OF -BL- STA 118+81.81
157.13' LT OF -L- STA 124+03.16

VANE SHEAR TESTS

STATION	DEPTH	S(psf)	SR(psf)
118+50	0.5	121	
	1	1107	
	1.5	1002	
	2	1482	
	2.5	1378	

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SEE SHEET 14 FOR -L- PLAN

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	28
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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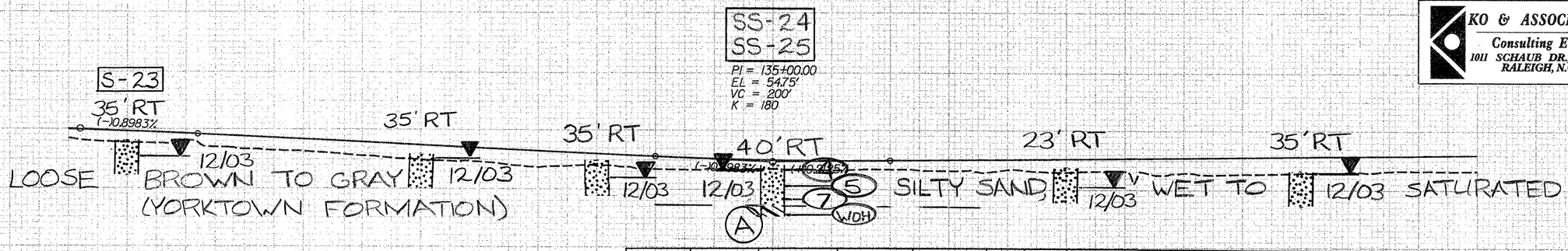
Ⓐ VERY SOFT GRAY FINE SANDY CLAY, WET (YORKTOWN FORMATION)

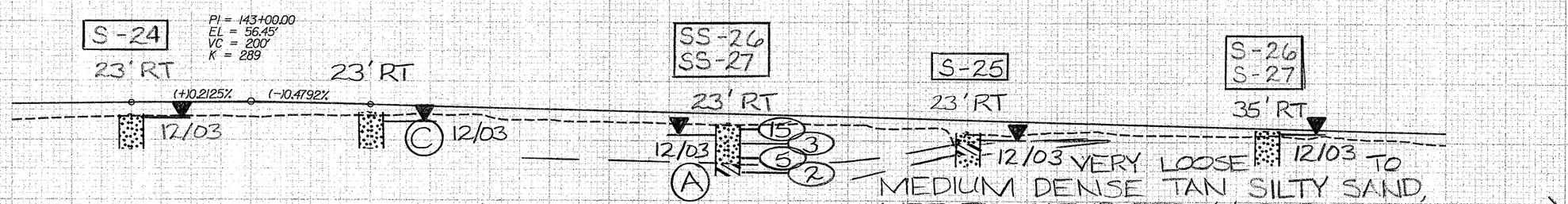


SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE	% ORGANIC
S-23	129+50	35' RT	1.0-6.0	A-2-4(0)	15	NP	24.7	52	8.2	15.1	100	96	24		
SS-24	135+00	40' RT	2.5-4.0	A-2-4(0)	17	NP	31	52.8	6.1	10.1	100	95	17		
SS-25	135+00	40' RT	7.5-9.0	A-6(13)	35	19	2.4	28	25.3	44.3	100	100	76		

SEE SHEET 15 FOR -L- PLAN

Ⓐ VERY SOFT GRAY SANDY CLAY, WET (YORKTOWN FORMATION)

Ⓒ VERY LOOSE TO LOOSE BROWN TO GRAY SILTY SAND, WET TO SATURATED (YORKTOWN FORMATION)



SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE	% ORGANIC
S-24	142+00	23' RT	1.0-6.0	A-2-4(0)	16	NP	30.1	41.7	9.1	19.1	100	92	30		
SS-26	147+00	23' RT	2.5-4.0	A-2-4(0)	22	NP	38.2	39.7	6	16.1	100	88	23		
SS-27	147+00	23' RT	7.5-9.0	A-6(16)	38	25	0.4	31.6	25.7	42.3	100	100	73		
S-25	149+00	23' RT	2.0-4.0	A-6(1)	23	16	30.3	34.6	9.9	25.1	100	92	36		
S-26	151+50	35' RT	1.0-3.5	A-2-4(0)	18	3	35.5	40.2	5.2	19.1	100	92	25		
S-27	151+50	35' RT	3.5-6.0	A-2-4(0)	20	6	39.6	33.4	7.9	19.1	100	91	30		

BENCHMARK # 5 EL = 55.88'
RR SPIKE ON BST RR CROSSING
55.70' LT OF -BL- STA 136+57.19
128.16' LT OF -L- STA 141+80.00

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SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE	% ORGANIC
S-28	153+50	47' RT	3.0-6.0	A-6(9)	38	23	11.2	34.5	14.1	40.2	100	98	56		
SS-74	155+86	35' RT	2.5-4.0	A-2-4(0)	30	3	17.9	55.6	8.4	18.1	100	94	28		
SS-75	155+86	35' RT	5.0-6.5	A-6(6)	29	16	0.6	42.2	31.1	26.1	100	100	60		
SS-76	155+86	35' RT	10-11.5	A-7-6(22)	44	23	2.2	11.4	54.2	32.1	100	98	90		
S-29	159+50	35' RT	1.0-1.5	A-4(0)	17	NP	15.5	47.6	22.9	14.1	100	96	43		
S-30	159+50	35' RT	1.5-5.0	A-6(9)	29	19	9.4	32.1	24.3	34.1	100	98	64	21.3	
S-31	159+50	35' RT	5.0-6.0	A-2-4(0)	20	2	11	60.1	9.7	19.1	100	97	32		
S-32	161+00	35' RT	1.5-4.0	A-6(4)	28	12	13.5	32.7	21.7	32.1	100	96	59		

(B) SOFT TAN-BROWN SANDY SILT WITH TRACE ORGANIC MATERIAL, MOIST (ALLUVIUM)

(C) VERY LOOSE TO LOOSE SILTY SAND, MOIST TO SATURATED (YORKTOWN FORMATION)

SS-74
SS-75
SS-76

PI = 156+25.00
EL = 50.10'
VC = 200'
K = 277

S-28

S-29
S-30
S-31

S-32
PI = 161+00.00
EL = 51.25'
VC = 550'
K = 1173

SS-28
SS-29
SS-30
SS-31

47' RT (C) 35' RT 35' RT (B) 35' RT 35' RT 40' RT (B) 23' RT

(-)0.4792% (+)0.2421% (+)0.2421% (-)0.2267%

12/03 12/03 12/03 12/03 12/03 12/03 12/03

2 5 3 WOH WOH WOH 3 5 10 WOH

VERY SOFT TO MEDIUM STIFF ORANGE-TAN TO GRAY SANDY TO SILTY CLAY WITH LOOSE SILTY SAND LAYERS, WET TO SATURATED (YORKTOWN FORMATION)

SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE	% ORGANIC
SS-28	162+50	40' RT	1.0-1.5	A-4(0)	19	NP	14.6	48.3	17.9	19.1	100	99	44		
SS-29	162+50	40' RT	2.5-4.0	A-6(2)	29	13	13.9	47.5	7.4	31.2	100	98	45		
SS-30	162+50	40' RT	5.0-6.5	A-2-4(0)	22	NP	1.3	83.8	4.8	10.1	100	100	17		
SS-31	162+50	40' RT	7.5-9.0	A-6(5)	29	12	13.5	39.5	21.4	26.2	100	100	63		

BENCHMARK # 6 EL = 55.14'
USCGS MONUMENT D 26
598.45' LT OF -BL- STA 151+47.01
609.31' LT OF -L- STA 156+34.02

153 154 155 156 157 158 159 160 161 162 163 164 165 166 167

SEE SHEET 17 FOR -L- PLAN

(D) LOOSE BROWN-TAN SILTY SAND, WET (ALLUVIUM)

SS-32
SS-33
SS-34

S-33
PI = 168+50.00
EL = 49.55'
VC = 200'
K = 708

S-34

PI = 174+00.00
EL = 46.75'
VC = 200'
K = 233

PI = 179+00.00
EL = 48.50'
VC = 200'
K = 257

35' RT 35' RT 35' RT (D) 35' RT (D) 35' RT 35' RT

(-)0.2267% (-)0.5091% (-)0.5091% (+)0.3500% (+)0.3500% (-)0.4286%

12/03 12/03 12/03 12/03 12/03 12/03

5 3 WOH WOH WOH

VERY SOFT TO SOFT ORANGE-TAN TO GRAY SILTY TO SANDY CLAY AND FINE SANDY SILT WITH LOOSE SILTY SAND LAYERS, WET TO SATURATED (YORKTOWN FORMATION)

SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE	% ORGANIC
S-33	167+50	35' RT	1.0-5.0	A-7-6(15)	43	30	10.4	36.7	16.7	36.1	100	99	61	23.8	
S-34	170+00	35' RT	5.0-6.0	A-2-4(0)	25	NP	3.6	84.1	3.2	9	100	100	14		
SS-32	173+65	35' RT	2.5-4.0	A-6(7)	33	18	6.8	44.1	16.8	32.2	100	99	57		
SS-33	173+65	35' RT	7.5-9.0	A-6(16)	38	21	1	22.6	44.2	32.2	100	100	80		
SS-34	173+65	35' RT	12.5-14.0	A-4(0)	24	NP	1.6	20.9	53.3	24.2	100	99	84	48.3	

167 168 169 170 171 172 173 174 175 176 177 178 179 180 181

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	29

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

PRELIMINARY PLANS
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RALEIGH, N.C. 27606

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SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE	% ORGANIC
SS-35	181+50	35' RT	2.5-4.0	A-6(4)	28	12	3.8	47.7	16.2	32.2	100	99	59		
SS-36	181+50	35' RT	7.5-9.0	A-2-4(0)	24	NP	6.6	75.1	4.1	14.1	100	98	19		
S-35	184+00	35' RT	1.0-1.50	A-7-6(15)	43	27	4	43.2	16.7	36.1	100	99	64		
S-36	184+00	35' RT	3.0-4.0	A-4(0)	27	8	8.8	60.3	9.7	21.1	100	99	36		
S-37	184+00	35' RT	4.0-5.0	A-2-4(0)	20	NP	2	81.4	1.5	15.1	100	100	19		
S-38	184+00	35' RT	5.5-6.0	A-6(6)	37	20	0.2	52.5	12.1	35.1	100	100	49	43	
SS-37	193+00	35' RT	2.5-4.0	A-7-6(14)	43	24	1.8	39.3	16.6	42.3	100	100	66		
SS-38	193+00	35' RT	7.5-9.0	A-2-4(0)	23	NP	0.9	72.7	4.2	22.2	100	100	29		

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RALEIGH, N.C. 27606

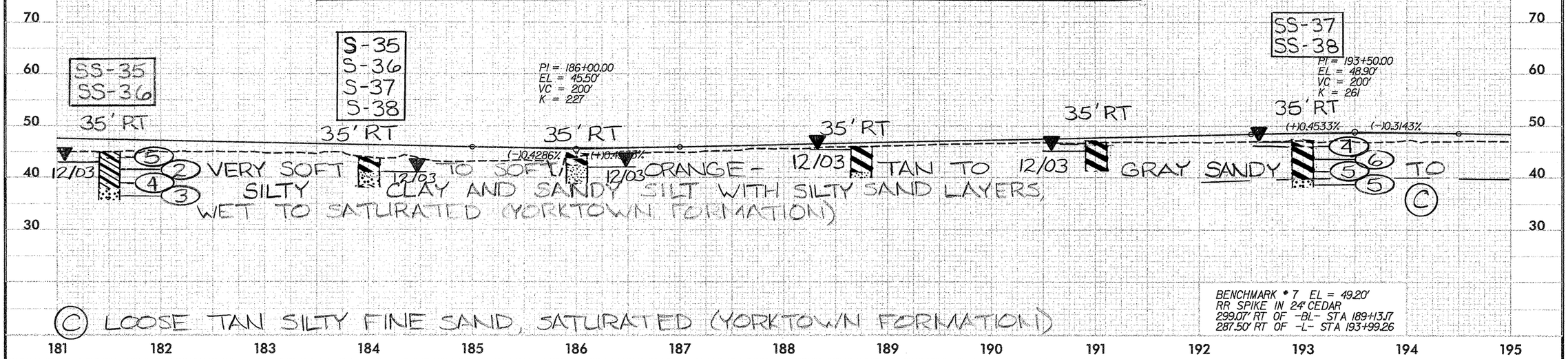
PROJECT REFERENCE NO.	SHEET NO.
R-2510A	30

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

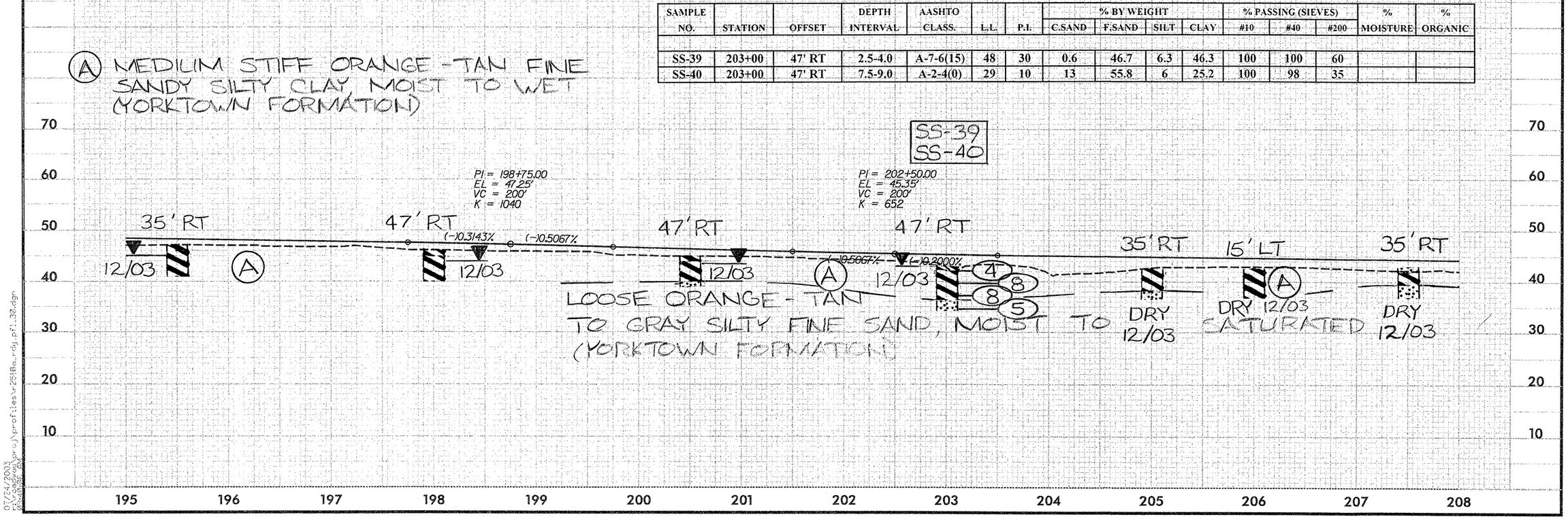
SEE SHEET 18 FOR -L- PLAN



BENCHMARK # 7 EL = 49.20'
RR SPIKE IN 24" CEDAR
299.07' RT OF -BL- STA 189+13.17
287.50' RT OF -L- STA 193+99.26

SEE SHEET 19 FOR -L- PLAN

SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE	% ORGANIC
SS-39	203+00	47' RT	2.5-4.0	A-7-6(15)	48	30	0.6	46.7	6.3	46.3	100	100	60		
SS-40	203+00	47' RT	7.5-9.0	A-2-4(0)	29	10	13	55.8	6	25.2	100	98	35		



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5/28/99

SEE SHEET 20 FOR -L- PLAN

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	31
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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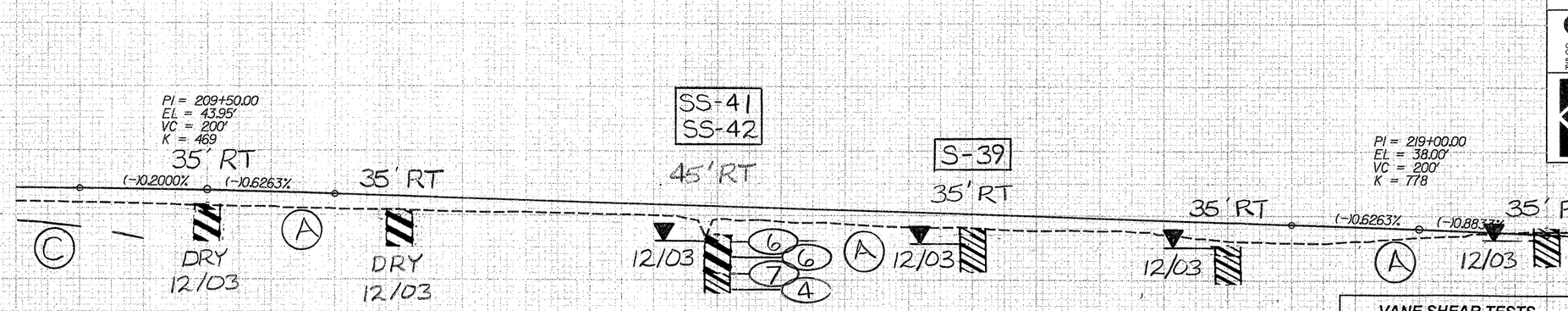
RALEIGH, NC 27606

Ⓐ MEDIUM STIFF ORANGE-TAN TO GRAY SILTY TO SANDY CLAY, MOIST TO WET (YORKTOWN FORMATION)

Ⓒ LOOSE ORANGE-TAN TO GRAY SILTY FINE SAND, SATURATED (YORKTOWN FORMATION)



SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE	% ORGANIC
SS-41	213+00	45' RT	2.4-4.0	A-7-6(12)	43	30	2.6	51.4	10.8	35.2	100	98	54		
SS-42	213+00	45' RT	7.5-9.0	A-6(5)	36	19	1.7	56.7	8.4	33.2	100	99	47		
S-39	215+50	35' RT	1.0-1.5	A-6(9)	35	19	0.8	44.6	16.5	38.2	100	100	63		

VANE SHEAR TESTS

STATION	DEPTH	S(psf)	SR(psf)
224+00	0.5	919	
	1	1545	
	1.5	1295	
	2	626	
	2.5	397	
	3	543	
	3.5	1086	

BENCHMARK # 8 EL = 33.81'
RR SPIKE 15" GUM
227.96' RT OF -BL- STA 213+62.32
218.31' RT OF -L- STA 218+55.55

VANE SHEAR TESTS

STATION	DEPTH	S(psf)	SR(psf)
224+50	0.5	313	
	1	111	40
	1.5	564	
	2	647	
	2.5	710	
	3	585	30
	3.5	606	
	4	848	
	4.5	1253	20
	5	1148	
	5.5	814	
224+81	0.5	1065	
	1	647	10
	1.5	1044	
	2	1128	
	2.5	1169	0
	3	1190	

SEE SHEET 21 FOR -L- PLAN

Ⓐ MEDIUM STIFF ORANGE-TAN TO GRAY SILTY TO SANDY CLAY, MOIST TO WET (YORKTOWN FORMATION)

Ⓑ VERY SOFT TO SOFT BROWN SILTY CLAY, MODERATELY ORGANIC, WET (RECENT)

SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE	% ORGANIC
S-40	222+00	35' RT	1.0-2.5	A-2-4(0)	12	NP	10.1	64.7	14.2	11	100	99	31		
SS-43	224+54	30' RT	2.5-4.0	A-7-5(15)	56	21	5	30	26.7	38.3	100	97	68		15.8
SS-44	224+54	30' RT	5.0-6.5	A-2-4(0)	22	NP	3.2	73.7	15	8.1	100	100	33		
SS-45	224+54	30' RT	7.5-9.0	A-3(0)	21	NP	48.2	48.3	1.4	2	99	80	5		
SS-46	229+50	39' RT	2.5-4.0	A-7-6(13)	53	37	10.3	42.1	7.4	40.3	100	99	50		
SS-47	229+50	39' RT	7.5-9.0	A-2-4(0)	22	NP	27.4	51.7	5.8	15.1	100	91	23		

VANE SHEAR TESTS

STATION	DEPTH	S(psf)	SR(psf)
231+40	0.5	2004	
	1	1503	
	1.5	1002	
	2	1253	

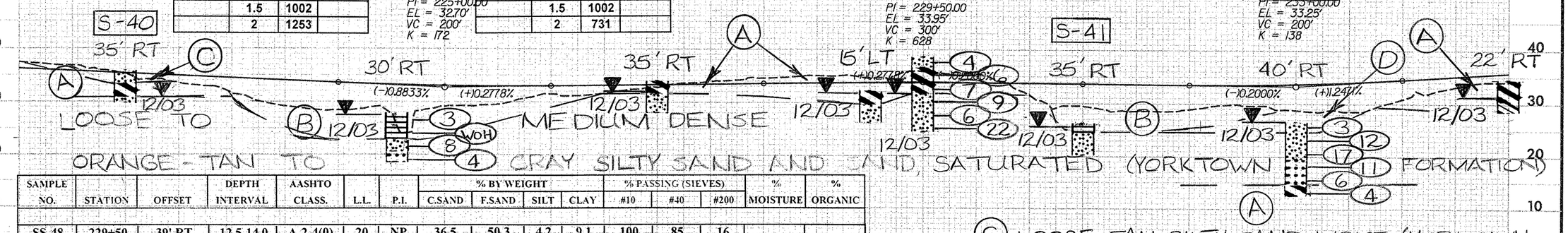
SS-43
SS-44
SS-45
PI = 225+00.00
EL = 32.70'
VC = 200'
K = 172

VANE SHEAR TESTS

STATION	DEPTH	S(psf)	SR(psf)
233+30	0.5	418	
	1	1044	
	1.5	1002	
	2	731	

SS-46
SS-47
SS-48
39' RT
PI = 229+50.00
EL = 33.95'
VC = 300'
K = 628

SS-49
SS-50
SS-51
PI = 233+00.00
EL = 33.25'
VC = 200'
K = 138



ORANGE-TAN TO GRAY SILTY SAND AND SAND, SATURATED (YORKTOWN FORMATION)

SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE	% ORGANIC
SS-48	229+50	39' RT	12.5-14.0	A-2-4(0)	20	NP	36.5	50.3	4.2	9.1	100	85	16		
S-41	231+00	35' RT	1.5-6.0	A-2-4(0)	14	NP	19.6	61.2	9.1	10	100	97	22		
SS-49	233+00	40' RT	2.5-4.0	A-2-4(0)	18	NP	34	56.9	3	6	100	90	11		
SS-50	233+00	40' RT	7.5-9.0	A-3(0)	20	NP	50.2	42.3	3.5	4	100	79	9		
SS-51	233+00	40' RT	12.5-14.0	A-7-6(18)	46	27	6.8	25.4	23.5	44.3	100	98	71		

Ⓒ LOOSE TAN SILTY SAND, MOIST (YORKTOWN FORMATION)

Ⓓ VERY LOOSE BROWN SILTY SAND WITH TRACE ORGANIC MATERIAL, SATURATED (RECENT)

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SEE SHEET 22 FOR -L- PLAN

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	32

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

Carter-Burgess
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5811 Glenwood Avenue, Suite 300
Raleigh, North Carolina 27612

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Consulting Engineers
1011 SCHAUB DR., SUITE #202
RALEIGH, N.C. 27606

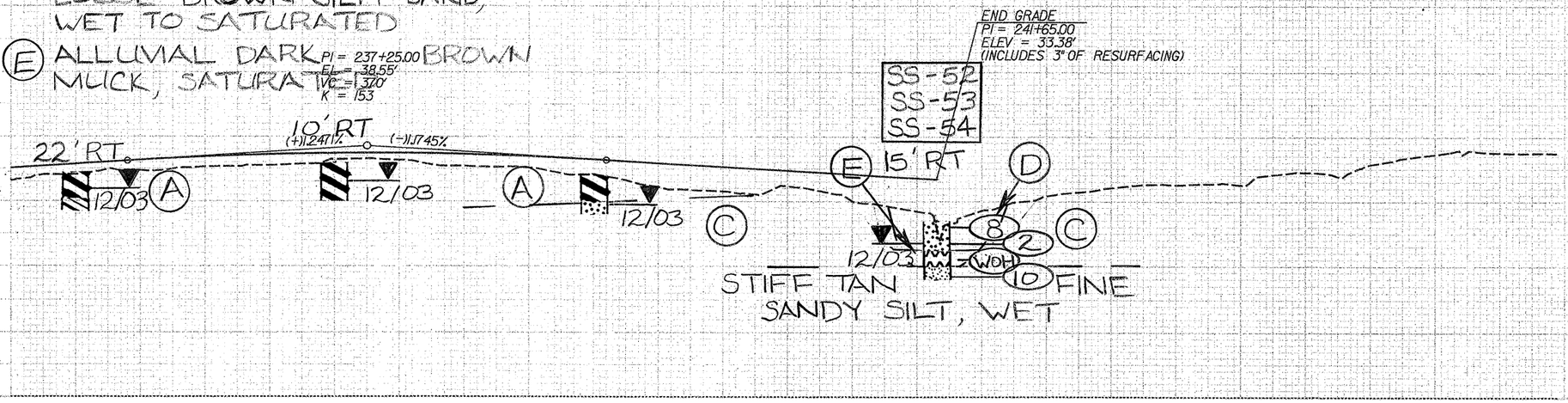
(A) MEDIUM STIFF ORANGE-TAN SANDY TO SILTY CLAY, MOIST TO WET (YORKTOWN FORMATION)

(C) MEDIUM DENSE ORANGE-TAN SILTY SAND, SATURATED (YORKTOWN FORMATION)

(D) ALLUVIAL VERY LOOSE TO LOOSE BROWN SILTY SAND, WET TO SATURATED

(E) ALLUVIAL DARK BROWN MUCK, SATURATED

SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE	% ORGANIC
SS-52	241+65	15' RT	2.5-4.0	A-2-4(0)	19	NP	12	64.7	13.3	10.1	100	97	31		
SS-53	241+65	15' RT	5.0-6.5	A-5(6)	62	NP	10.1	18.5	41.2	30.2	100	93	74	180	26.5
SS-54	241+65	15' RT	7.5-9.0	A-4(0)	13	NP	4.5	72.2	16.2	7	100	99	37		



70 60 50 40 30 20 10 0

235 236 237 238 239 240 241 242 243 244 245 246 247

BENCHMARK # 9 EL = 40.94'
RR SPIKE IN 42" OAK
81.86' LT OF -BL- STA 241+89.15

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SEE SHEET 7 FOR -Y1- PLAN

SEE SHEET 9 FOR -Y2- PLAN

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	33

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

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RALEIGH, N.C. 27606

Ⓐ SOFT GRAY TO BROWN SANDY SILT, MOIST TO WET (YORKTOWN FORMATION)

Ⓒ LOOSE TAN SILTY SAND, SATURATED (YORKTOWN FORMATION)

-Y1-

BEGIN GRADE
STA. 10+47.12 -Y1- =
STA. 48+51.43 -L-, 47.00' RT
EL = 60.74

PI = 11+00.00
EL = 59.42'
VC = 100'
K = 44

END GRADE
STA. 13+00.00
EL = 58.97'
(INCLUDES 2.5" OF RESURFACING)

53' RT 6104 (+)2.4938% (-)0.2256%

Ⓐ 11/03 Ⓒ

-Y2-

BEGIN GRADE
STA. 10+47.14 -Y2- =
STA. 67+19.01 -L-, 47.00' RT
EL = 58.93'

PI = 11+00.00
EL = 57.55'
VC = 100'
K = 36

END GRADE
STA. 13+00.00 -Y2-
EL = 57.95'
(INCLUDES 2.5" OF RESURFACING)

31' LT 5923 (+)2.6107% (+)0.2000%

11/03 LOOSE TAN-BROWN SILTY SAND, WET TO SATURATED (YORKTOWN FORMATION)

SEE SHEET 13 FOR -Y3- PLAN

Ⓕ LOOSE BROWN SILTY SAND, MOIST (ROADWAY EMBANKMENT)

PI = 15+09.47 EL = 60.42' (+)0.2000% (+)0.0000%
PI = 15+11.47 EL = 60.42' (+)0.0000% (-)0.2016%
PI = 15+16.43 EL = 60.41' (-)0.2016% (+)0.0000%
PI = 15+18.43 EL = 60.41' (+)0.0000% (-)2.7638%
PI = 15+22.41 EL = 60.30' (-)2.7638% (+)0.0000%
PI = 15+24.41 EL = 60.30' (+)0.0000% (-)2.0121%
PI = 15+29.38 EL = 60.20' (-)2.0121% (+)0.0000%

PI = 15+31.38 EL = 60.20' (+)0.0000% (+)0.2024%
PI = 15+85.74 EL = 60.31' (+)0.2024% (+)2.4027%
PI = 15+97.81 EL = 60.60' (+)2.4027% (-)2.4834%
PI = 16+09.89 EL = 60.30' (-)2.4834% (-)2.4835%
PI = 16+33.25 EL = 59.72' VC = 40' K = 8 (-)2.4835% (+)2.4855%
PI = 16+56.19 EL = 60.29' (+)2.4855% (+)2.4855%
PI = 16+68.26 EL = 60.59' (+)2.4855% (-)2.4876%
PI = 16+80.32 EL = 60.29' (-)2.4876% (-)2.4876%

BEGIN GRADE
STA. 10+00.00 -Y3-
ELEV = 57.95'
(INCLUDES 2.5" OF RESURFACING)

PI = 11+55.00
EL = 59.20'
VC = 150'
K = 37.9

PI = 14+00.00
EL = 60.20'
VC = 150'
K = 71.9

PI = 17+60.00
EL = 58.31'
VC = 150'
K = 54

PI = 19+55.00
EL = 58.88'
VC = 240'
K = 105

END GRADE
STA. 22+00.00 -Y3-
ELEV = 53.98'
(INCLUDES 2.5" OF RESURFACING)

(+)0.8045% (+)0.4086% 15' LT 3104 (+)0.4086% (+)0.2000% 20' LT 3104 (+)0.2000% (-)0.1676% 25' RT 12/03 (+)0.2934% (-)2.0016% 16' RT 3104

LOOSE BROWN-TAN SILTY SAND WET TO SATURATED (YORKTOWN FORMATION)

-Y3-

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PROJECT REFERENCE NO.	SHEET NO.
R-2510A	34

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
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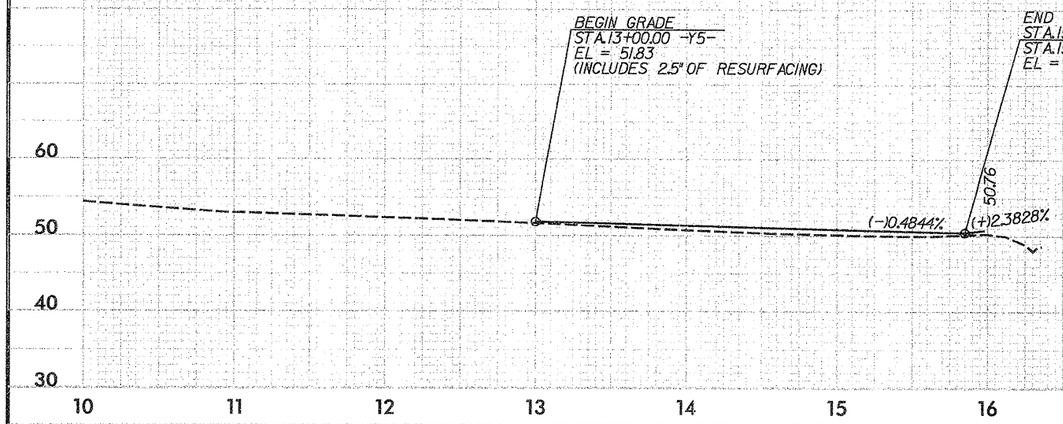
Consulting Engineers
1011 SCHAUB DR., SUITE #202
RALEIGH, N.C. 27606

SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE	% ORGANIC
SS-39	203+00	47' RT	2.5-4.0	A-7-6(15)	48	30	0.6	46.7	6.3	46.3	100	100	60		
SS-40	203+00	47' RT	7.5-9.0	A-2-4(0)	29	10	13	55.8	6	25.2	100	98	35		

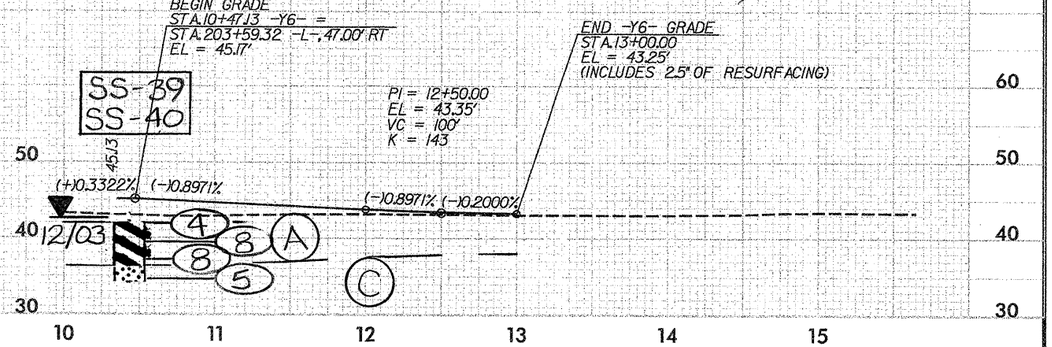
-Y5-



-Y6-

(A) MEDIUM STIFF TAN SANDY SILTY CLAY, WET (YORKTOWN FORMATION)

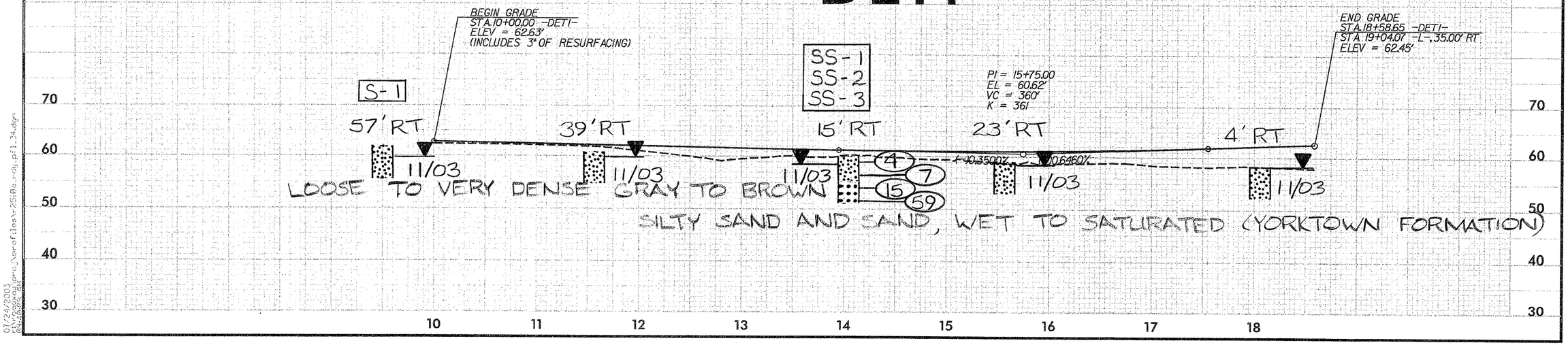
(C) LOOSE GRAY SILTY FINE SAND, SATURATED (YORKTOWN FORMATION)



SEE SHEET 4 & 5 FOR -L- PLAN

SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE	% ORGANIC
S-1	10+00	22' LT	1.0-3.5	A-2-4(0)	25	NP	14.5	58.5	12.8	14.1	100	98	29		
SS-1	14+50	24' RT	2.5-4.0	A-2-4(0)	16	NP	18.1	56.9	17	8	100	95	26		
SS-2	14+50	24' RT	5.0-6.0	A-3(0)	29	NP	25.6	68	3.3	3	100	99	7		
SS-3	14+50	24' RT	7.5-9.0	A-3(0)	27	NP	18.6	77.2	2.2	2	100	90	5		

-DET1-



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SEE SHEET 21 & 22 FOR -L- PLAN

SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE	% ORGANIC
SS-49	233+00	40' RT	2.5-4.0	A-2-4(0)	18	NP	34	56.9	3	6	100	90	11		
SS-50	233+00	40' RT	7.5-9.0	A-3(0)	20	NP	50.2	42.3	3.5	4	100	79	9		
SS-51	233+00	40' RT	12.5-14.0	A-7-6(18)	46	27	6.8	25.4	23.5	44.3	100	98	71		

PROJECT REFERENCE NO.	SHEET NO.
R-2510A	35
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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INCOMPLETE PLANS
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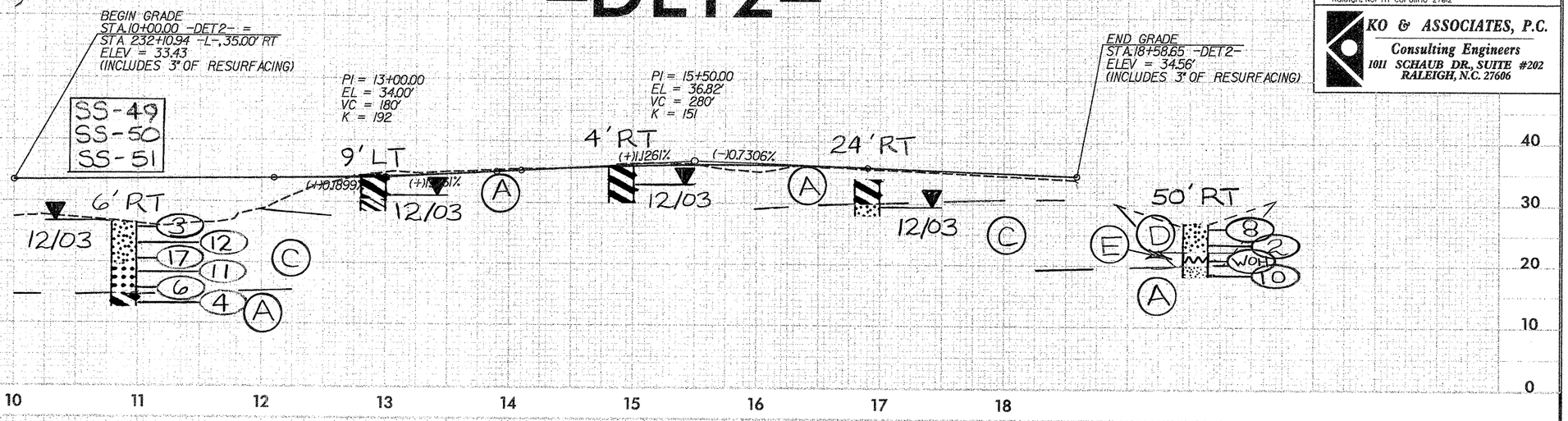
RALEIGH, N.C. 27606

Ⓐ MEDIUM STIFF ORANGE-TAN SANDY TO SILTY CLAY AND FINE SANDY SILT, MOIST TO WET (YORKTOWN FORMATION)

Ⓒ MEDIUM DENSE ORANGE-TAN TO GRAY SILTY SAND AND SAND, SATURATED (YORKTOWN FORMATION)

-DET2-



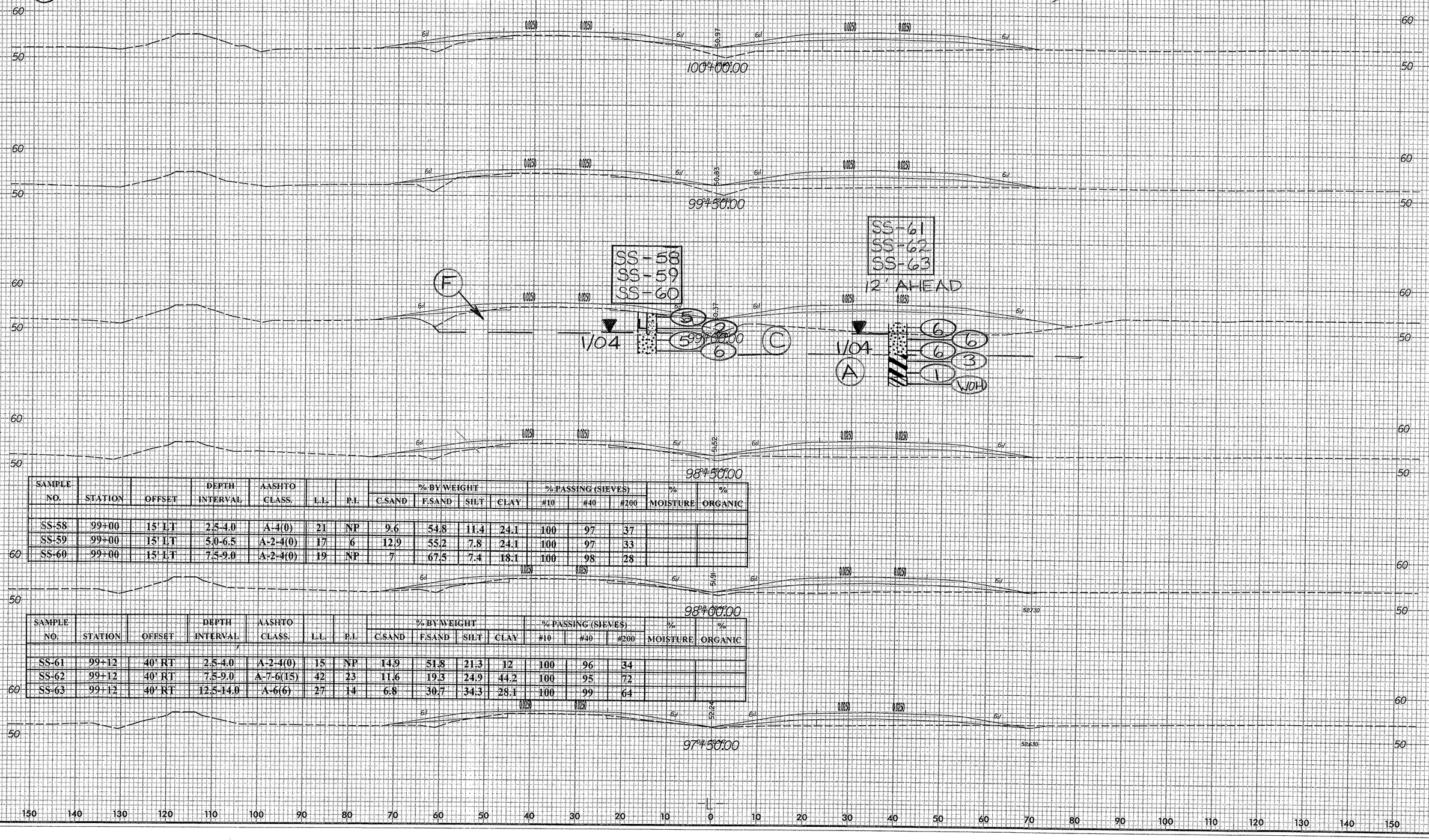
Ⓓ VERY LOOSE TO LOOSE BROWN SILTY SAND, WET TO SATURATED (ALLUVIUM)

Ⓔ VERY SOFT DARK BROWN MUCK, SATURATED (ALLUVIUM)

8/23/99

0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	36

(A) VERY SOFT TO SOFT GRAY SILTY AND SANDY CLAY, WET (YORKTOWN FORMATION)
(C) LOOSE GRAY-BROWN SILTY SAND, SATURATED (YORKTOWN FORMATION)
(F) LOOSE BROWN SILTY SAND AND SOFT SANDY SILT, MOIST TO WET (ROADWAY FILL)



SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE	% ORGANIC
SS-58	99+00	15' LT	2.5-4.0	A-4(0)	21	NP	9.6	54.8	11.4	24.1	100	97	37		
SS-59	99+00	15' LT	5.0-6.5	A-2-4(0)	17	6	12.9	55.2	7.8	24.1	100	97	33		
SS-60	99+00	15' LT	7.5-9.0	A-2-4(0)	19	NP	7	67.5	7.4	18.1	100	98	28		

SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE	% ORGANIC
SS-61	99+12	40' RT	2.5-4.0	A-2-4(0)	15	NP	14.9	51.8	21.3	12	100	96	34		
SS-62	99+12	40' RT	7.5-9.0	A-7-6(15)	42	23	11.6	19.3	24.9	44.2	100	95	72		
SS-63	99+12	40' RT	12.5-14.0	A-6(6)	27	14	6.8	30.7	34.3	28.1	100	99	64		

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0	10	PROJ. REFERENCE NO.	SHEET NO.
		R-2510A	37

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

Ⓒ LOOSE TO DENSE ORANGE-TAN SILTY SAND AND FINE SAND, WET TO SATURATED (YORKTOWN FORMATION)

Ⓓ LOOSE BLACK MODERATELY TO HIGHLY ORGANIC SILTY SAND, SATURATED (RECENT)

Ⓕ LOOSE TAN SILTY SAND, MOIST (ROADWAY FILL)

SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE	% ORGANIC
SS-67	120+50	15' LT	2.5-4.0	A-2-4(0)	19	NP	28.9	48.6	10.4	12	100	92	23		
SS-68	120+50	15' LT	5.0-6.5	A-3(0)	28	NP	28.7	65.2	3.1	3	100	90	7		
SS-69	120+50	15' LT	7.5-9.0	A-3(0)	26	NP	30.5	65	2.5	2	100	91	5		
SS-70	120+50	15' LT	2.5-4.0	A-2-4(0)	23	NP	34.2	48.8	6.9	10	100	84	18		
SS-71	120+50	35' RT	7.5-9.0	A-3(0)	25	NP	31.3	64.9	1.8	2	100	88	8		

DP. 121+00.00

SS-67
SS-68
SS-69

7 4 11 40

SS-70
SS-71

4 7 6 35

DP. 120+50.00

1/04

SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE	% ORGANIC
S-506	118+50	35' RT	0.5-1.5	A-2-4(0)	37	NP	21.9	44.7	29.4	4	100	95	35		12.2
S-507	118+50	35' RT	1.5-2.0	A-2-4(0)	25	NP	22.1	45.7	22.1	10.1	100	95	33		6.3
S-508	118+50	35' RT	2.0-4.0	A-2-4(0)	26	NP	20.1	46.1	27.8	6	100	94	35		5.8

DP. 120+00.00

DP. 119+50.00

LOOSE BROWN SILTY SAND, SATURATED (YORKTOWN FORMATION)

DP. 119+00.00

12/03

S-506
S-507
S-508

LOOSE BROWN SILTY SAND, SATURATED (YORKTOWN FORMATION)

DP. 118+50.00

3/04

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

(F) LOOSE TAN SILTY SAND, MOIST (ROADWAY FILL)

16' BACK
LOOSE TO MEDIUM DENSE TAN SILTY SAND, MOIST TO SATURATED (YORKTOWN FORMATION)
12/03
3/04
124+00.00

20' AHEAD
LOOSE TO MEDIUM DENSE TAN SILTY SAND, MOIST TO SATURATED (YORKTOWN FORMATION)
12/03
123+50.00

123+00.00

122+50.00

(F)
LOOSE BROWN SILTY SAND, MOIST TO SATURATED (YORKTOWN FORMATION)
2/03
122+00.00

121+50.00

8/23/99

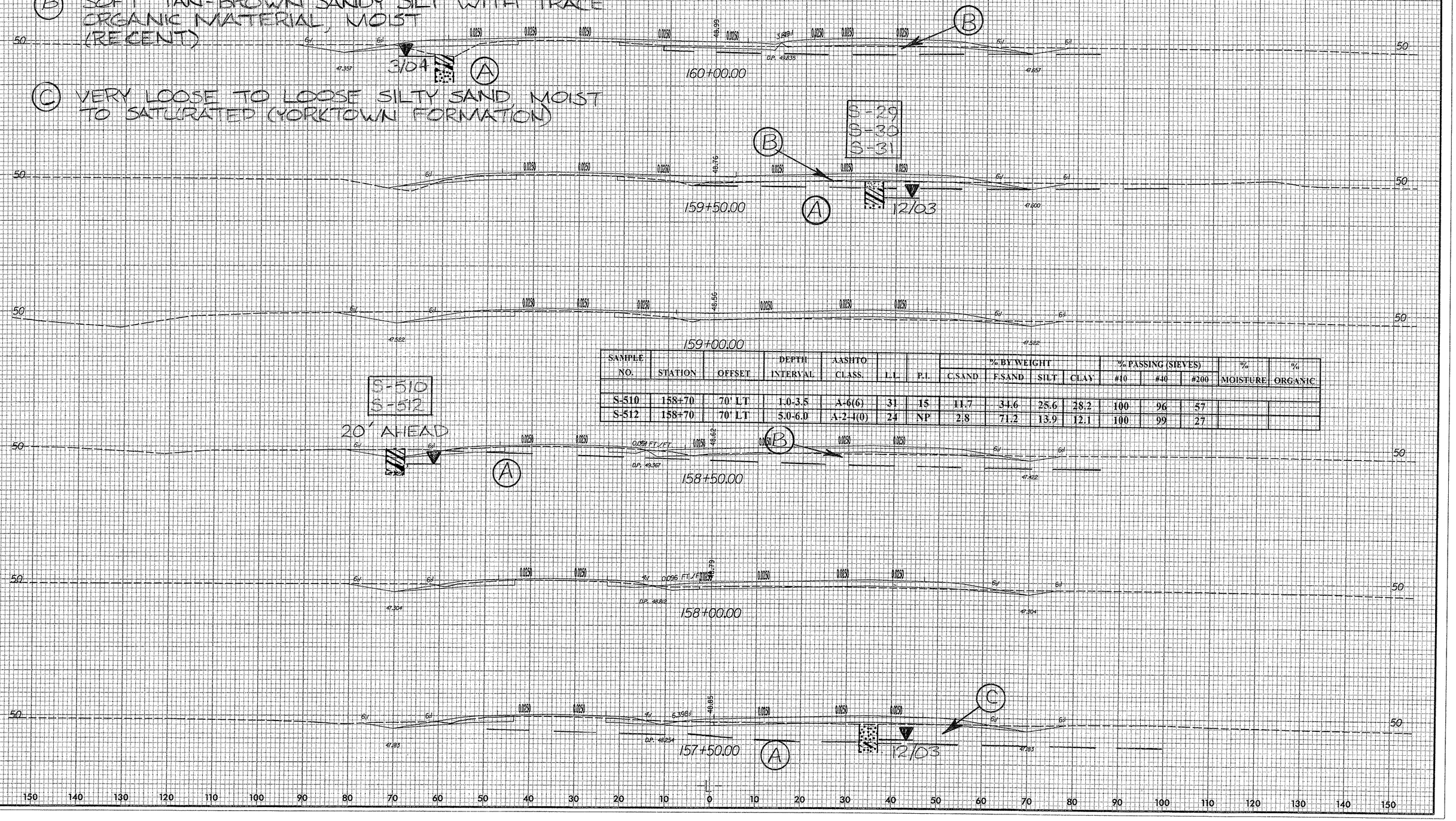
0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	39

(A) VERY SOFT TO MEDIUM STIFF ORANGE-TAN TO GRAY SANDY TO SILTY CLAY WITH LOOSE SILTY SAND LAYERS, WET TO SATURATED (YORKTOWN FORMATION)

(B) SOFT TAN-BROWN SANDY SILT WITH TRACE ORGANIC MATTERIAL, MOIST (RECENT)

(C) VERY LOOSE TO LOOSE SILTY SAND, MOIST TO SATURATED (YORKTOWN FORMATION)

SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE	% ORGANIC
S-29	159+50	35' RT	1.0-1.5	A-4(0)	17	NP	15.5	47.6	22.9	14.1	100	96	43		
S-30	159+50	35' RT	1.5-5.0	A-6(9)	29	19	9.4	32.1	24.3	34.1	100	98	64	21.3	
S-31	159+50	35' RT	5.0-6.0	A-2-4(0)	20	2	11	60.1	9.7	19.1	100	97	32		



SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE	% ORGANIC
S-510	158+70	70' LT	1.0-3.5	A-6(6)	31	15	11.7	34.6	25.6	28.2	100	96	57		
S-512	158+70	70' LT	5.0-6.0	A-2-4(0)	24	NP	2.8	71.2	13.9	12.1	100	99	27		

8/23/99

0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	40

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

Ⓐ MEDIUM STIFF ORANGE-TAN FINE SANDY SILTY CLAY, MOIST TO WET (YORKTOWN FORMATION)

50 / 40

4.62% 6:1 4.30 0.0025 0.0025 4:1 0.008 FT./FT. 44.28 D.P. 43.760 0.0025 0.0025 0.0025 6:1 43.855

202+00.00

50 / 40

3.95% 6:1 4.17 0.0100 0.0100 4:1 0.037 FT./FT. 44.69 D.P. 44.027 0.0100 0.0100 0.0100 6:1 44.037

201+50.00

50 / 40

3.99% 6:1 4.270 0.0100 0.0100 4:1 0.037 FT./FT. 44.69 D.P. 44.380 0.0100 0.0100 0.0100 6:1 44.290

201+00.00

50 / 40

3.72% 6:1 4.23 0.0100 0.0100 4:1 0.037 FT./FT. 44.94 D.P. 44.633 0.0100 0.0100 0.0100 6:1 44.543

Ⓐ 12/03

200+50.00 LOOSE TAN SILTY FINE SAND, SATURATED (YORKTOWN FORMATION)

50 / 40

Ⓐ 4.74% 6:1 4.27 DRY 05104 0.0100 0.0100 4:1 0.037 FT./FT. 45.16 D.P. 44.881 0.0100 0.0100 0.0100 6:1 44.797

200+00.00

50 / 40

4.24% 6:1 4.287 0.0100 0.0100 4:1 0.037 FT./FT. 45.81 D.P. 45.137 0.0100 0.0100 0.0100 6:1 45.047

199+50.00

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

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8/23/99

0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	41

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

40

MEDIUM STIFF ORANGE-TAN TO GRAY SILTY CLAY, MOIST (YORKTOWN FORMATION)

DRY
05/04

DRY
12/03

6:1 0.025 0.025 6:1 6:1 0.025 0.025 6:1

40.382 40.379

211+00.00

40

6:1 6:1 0.025 0.025 6:1 6:1 0.025 0.025 6:1 6:1

40.104 40.695 40.104

210+50.00

40

6:1 6:1 0.025 0.025 6:1 6:1 0.025 0.025 6:1 6:1

40.350 4.13 40.350

210+00.00

40

6:1 6:1 0.025 0.025 6:1 6:1 0.025 0.025 6:1 6:1

40.823 4.44 40.829

209+50.00

40

6:1 6:1 0.025 0.025 0.025 6:1 6:1 0.025 0.025 6:1 6:1

40.803 4.75 5.767 40.803

209+00.00

40

6:1 6:1 0.025 0.025 0.025 6:1 6:1 0.025 0.025 6:1 6:1

40.930 4.94 5.490 40.930

208+50.00

40

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

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0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	42

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

40 30

MEDIUM STIFF ORANGE-TAN TO GRAY SILTY TO SANDY CLAY MOIST TO WET (YORKTOWN FORMATION)

DRY 05/04 — 12/03

37.54 — 220+00.00 — 37.24 — 219+50.00 — 36.93 — 219+00.00

40 30

MEDIUM STIFF ORANGE-TAN TO GRAY SILTY TO SANDY CLAY, MOIST TO WET (YORKTOWN FORMATION)

12/03

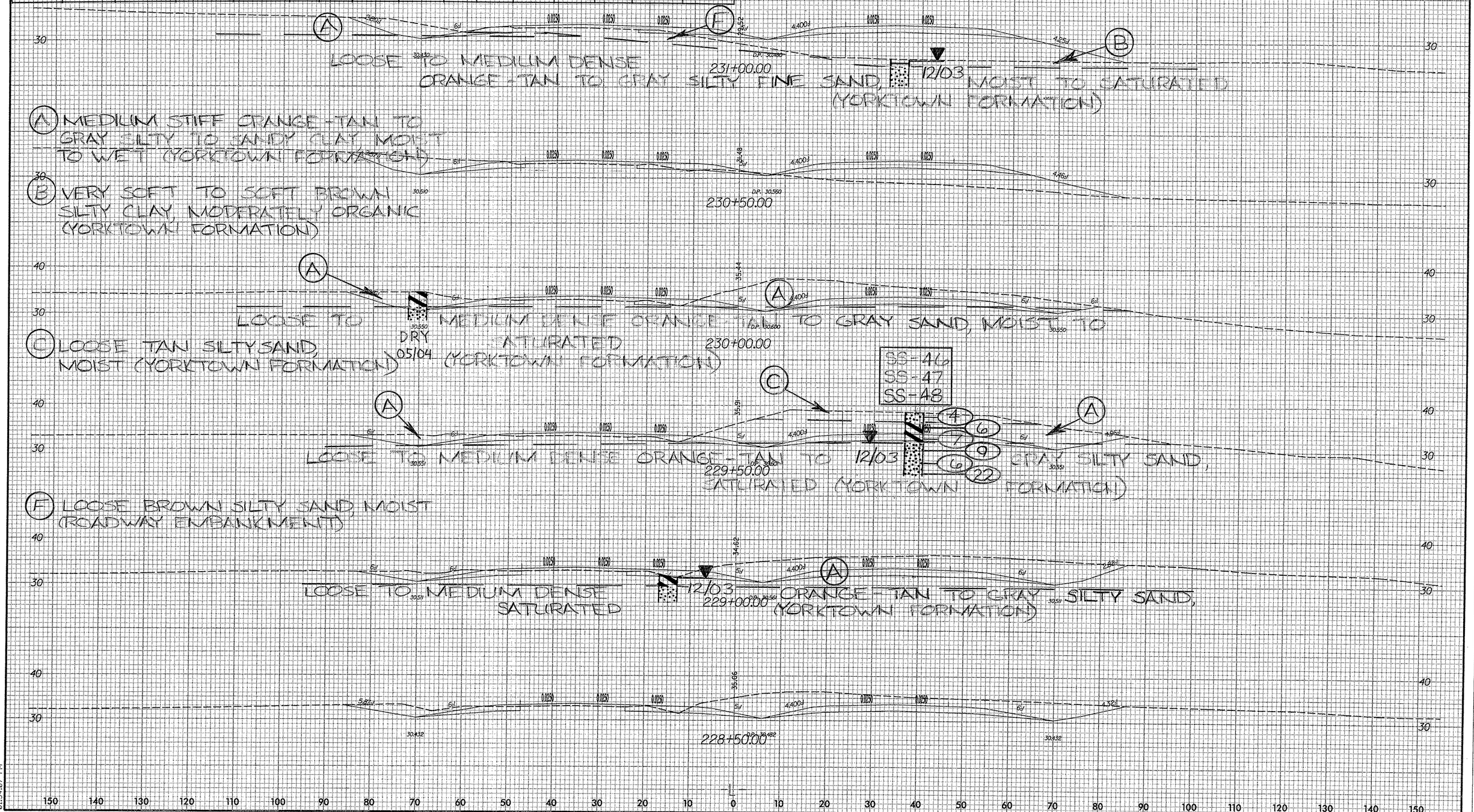
36.01 — 218+50.00 — 35.75 — 218+00.00 — 36.04 — 217+50.00

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

8/23/99

PROJ. REFERENCE NO.	SHEET NO.
R-2510A	43

SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE	% ORGANIC
SS-46	229+50	39' RT	2.5-4.0	A-7-6(13)	53	37	10.3	42.1	7.4	40.3	100	99	50		
SS-47	229+50	39' RT	7.5-9.0	A-2-4(0)	22	NP	27.4	51.7	5.8	15.1	100	91	23		
SS-48	229+50	39' RT	12.5-14.0	A-2-4(0)	20	NP	36.5	50.3	4.2	9.1	100	85	16		
S-41	231+00	35' RT	1.5-6.0	A-2-4(0)	14	NP	19.6	61.2	9.1	10	100	97	22		



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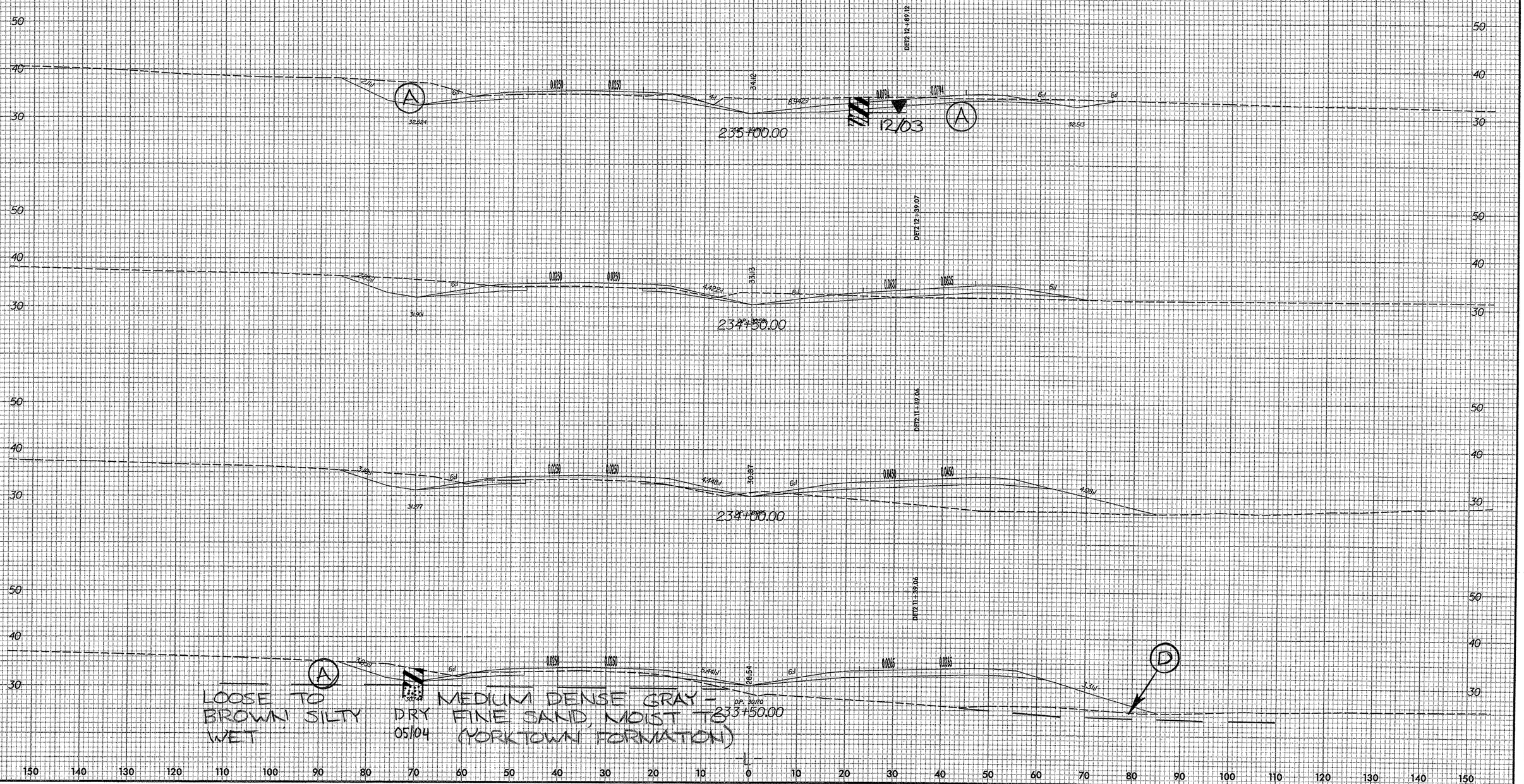
8/23/99

0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	44

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

(A) MEDIUM STIFF ORANGE-TAN TO GRAY SILTY TO SANDY CLAY, MOIST TO WET (YORKTOWN FORMATION)

(D) VERY LOOSE BROWN SILTY SAND WITH TRACE ORGANIC MATERIAL, SATURATED (RECENT)



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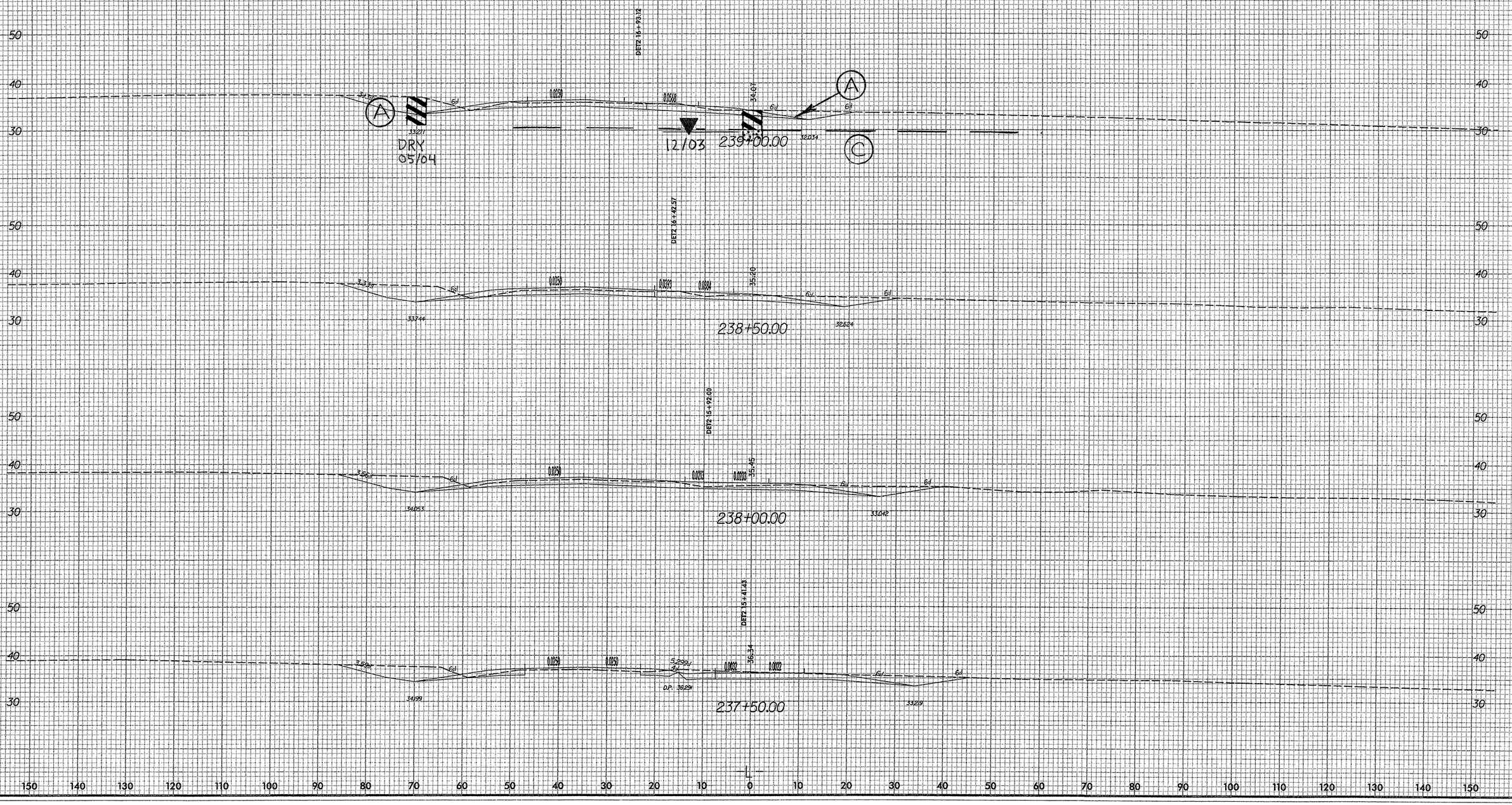
0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2510A	45

(A) MEDIUM STIFF ORANGE-TAN SILTY CLAY, MOIST TO WET (YORKTOWN FORMATION)

(C) MEDIUM DENSE ORANGE-TAN SILTY SAND, MOIST TO SATURATED (YORKTOWN FORMATION)



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