

NOTE: SEE SHEET 2A FOR PLAN SHEET LAYOUT AT TIME OF INVESTIGATION

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4007A	1	47
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
35008.1.1	STPNHF-17(31)	PE	
35008.3.1	STPNHF-17(63)	RW & UTILS.	
35008.2.3	STPNHF-17(102)	CONST.	

CONTENTS

LINE	STATION	PLAN	PROFILE
-L-	10+00 TO 68+30	4-8	9-13
-Y1-	11+08 TO 18+95	4	14
-Y2-	27+89 TO 60+23	5	15-17
-Y3-	10+00 TO 12+00	7	18
-Y4-	10+21 TO 11+56	7	19
-Y5-	10+07 TO 18+72	8	20
-RAMPA-	0+00 TO 13+22	5	23
-RAMPB-	0+00 TO 17+85	5	24-25
-LOOPA-	0+00 TO 7+44	5	21
-LOOPB-	0+00 TO 9+23	5	22

ROADWAY
SUBSURFACE INVESTIGATION

PROJ. REFERENCE NO. 35008.1.1 (U-4007A) F.A. PROJ. STPNHF-14(31)
COUNTY ONslow
PROJECT DESCRIPTION SR 1702 (WHITE STREET EXTENSION) FROM SR 1308 (BELL FORK ROAD) TO SR 1470 (WESTERN BOULEVARD)

CAUTION NOTICE

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

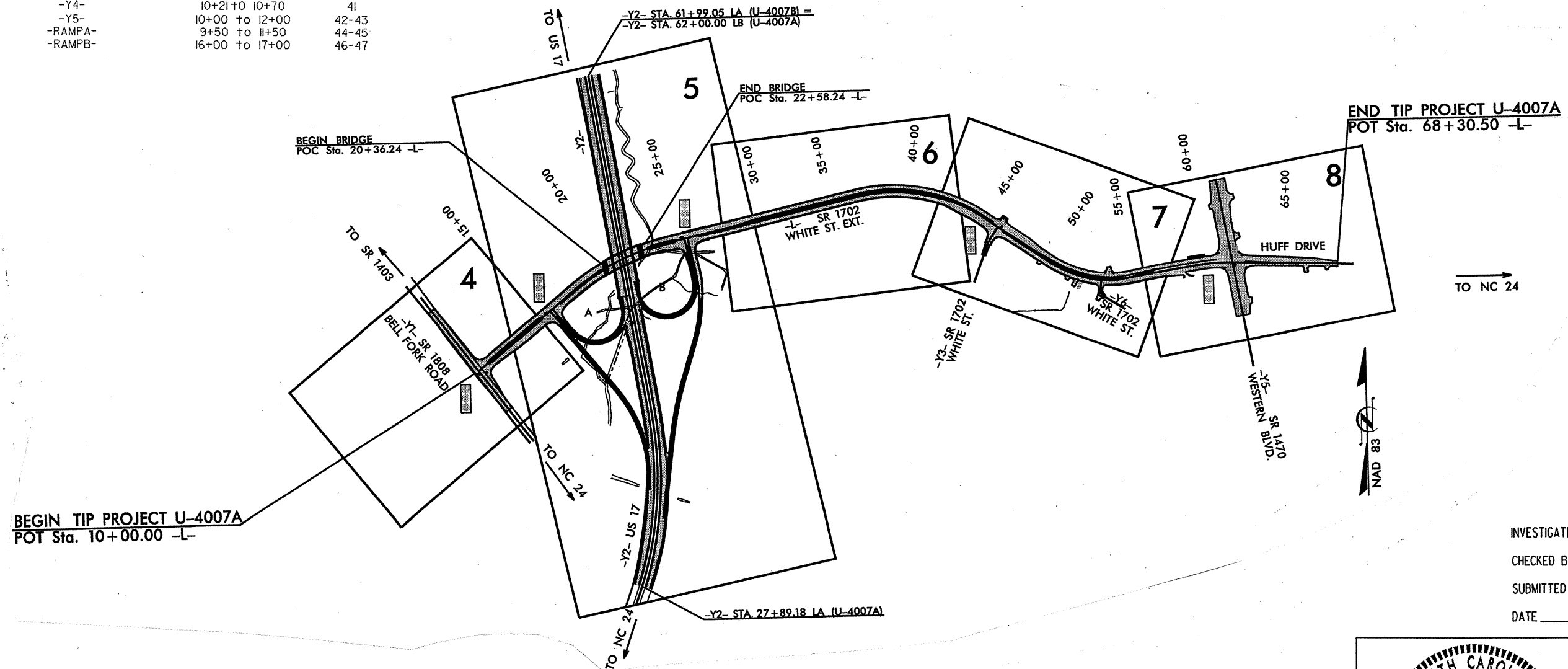
GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND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

CROSS SECTIONS

LINE	STATION	SHEET
-L-	10+50 TO 13+50	26-27
-L-	24+50 TO 25+00	27-28
-L-	34+50 TO 35+50	28-29
-L-	48+00 TO 51+00	29-30
-L-	58+00 TO 68+05	31-33
-Y1-	11+00 TO 18+50	34-40
-Y4-	10+21 TO 10+70	41
-Y5-	10+00 TO 12+00	42-43
-RAMPB-	9+50 TO 11+50	44-45
-RAMPB-	16+00 TO 17+00	46-47

INVENTORY



PERSONNEL

CMW
TCB
JRS
RES
JME
S&ME PERSONNEL

INVESTIGATED BY J.L. STONE
CHECKED BY D.N. ARGENBRIGHT
SUBMITTED BY D.N. ARGENBRIGHT
DATE NOVEMBER 2008



DRAWN BY: J.L. STONE, C.R. SUMNER, C.P. TURNER

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

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

CONTRACT: C202647 ID: U-4007A

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

PROJECT REFERENCE NO. U-4007A SHEET NO. 2

SOIL DESCRIPTION		GRADATION		ROCK DESCRIPTION		TERMS AND DEFINITIONS	
<p>SOIL IS CONSIDERED TO BE THE UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER, AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO STANDARD PENETRATION TEST (AASHTO T296, ASTM D-1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY SHALL INCLUDE: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. EXAMPLE:</p> <p align="center"><i>VERY STIFF, GRN. SAT. CLAY, MOST WITH INTERBEDDED FINE SAND LAYERS, HEAVY PLASTIC, A-7-6</i></p>		<p>WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORM - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. (ALSO POORLY GRADED) POORLY GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLES OF TWO OR MORE SIZES.</p> <p align="center">ANGULARITY OF GRAINS</p> <p>THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: <u>ANGULAR</u>, <u>SUBANGULAR</u>, <u>SUBROUNDED</u>, OR <u>ROUNDED</u>.</p>		<p>HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT IF TESTED, WOULD YIELD SPT REFUSAL. AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. IN NON-COASTAL PLAIN MATERIAL, THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:</p> <p>WEATHERED ROCK (WR) NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > 100 BLOWS PER FOOT IF TESTED.</p> <p>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.</p> <p>NON-CRYSTALLINE ROCK (NCR) FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN SEDIMENTARY ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC.</p> <p>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.</p>		<p>ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER.</p> <p>AQUIFER - A WATER BEARING FORMATION OR STRATA.</p> <p>ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND.</p> <p>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.</p> <p>ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE.</p> <p>CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE.</p> <p>COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE.</p> <p>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.</p> <p>DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK.</p> <p>DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL.</p> <p>DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH.</p> <p>FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE.</p> <p>FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES.</p> <p>FLUID - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM PARENT MATERIAL.</p> <p>FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM.</p> <p>FORMATION (FM.) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD.</p> <p>JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED.</p> <p>LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT.</p> <p>LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS.</p> <p>MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE.</p> <p>PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM.</p> <p>RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK.</p> <p>ROCK QUALITY DESIGNATION (RQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.</p> <p>SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK.</p> <p>SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRODUCED ROCKS.</p> <p>SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE.</p> <p>STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS.</p> <p>STRATA CORE RECOVERY (SREC) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE.</p> <p>STRATA ROCK QUALITY DESIGNATION (SRQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE.</p> <p>TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.</p>	
SOIL LEGEND AND AASHTO CLASSIFICATION		MINERALOGICAL COMPOSITION		WEATHERING			
<p>GENERAL CLASS. GRANULAR MATERIALS (< 35% PASSING #200) SILT-CLAY MATERIALS (> 35% PASSING #200) ORGANIC MATERIALS</p> <p>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</p> <p>SYMBOL </p> <p>% PASSING: 10, 40, 200</p> <p>LIQUID LIMIT, PLASTIC INDEX, GROUP INDEX</p> <p>USUAL TYPES OF MAJOR MATERIALS: STONE FRAGS, GRAVEL, SAND, FINE SAND, SILTY OR CLAYEY GRAVEL AND SAND, SILTY SOILS, CLAYEY SOILS</p> <p>GENERATING AS A SUBGRADE: EXCELLENT TO GOOD, FAIR TO POOR, POOR, UNSUITABLE</p> <p>PI OF A-7-5 SUBGROUP IS ≤ LL - 30; PI OF A-7-6 SUBGROUP IS > LL - 30</p>		<p>MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE.</p> <p align="center">COMPRESSIBILITY</p> <p>SLIGHTLY COMPRESSIBLE LIQUID LIMIT LESS THAN 31 MODERATELY COMPRESSIBLE LIQUID LIMIT EQUAL TO 31-50 HIGHLY COMPRESSIBLE LIQUID LIMIT GREATER THAN 50</p> <p align="center">PERCENTAGE OF MATERIAL</p> <p>ORGANIC MATERIAL GRANULAR SOILS SILT-CLAY SOILS OTHER MATERIAL</p> <p>TRACE OF ORGANIC MATTER 2 - 3% 3 - 5% TRACE 1 - 10% LITTLE ORGANIC MATTER 3 - 5% 5 - 12% LITTLE 10 - 20% MODERATELY ORGANIC 5 - 10% 12 - 20% SOME 20 - 35% HIGHLY ORGANIC >10% >20% HIGHLY 35% AND ABOVE</p> <p align="center">GROUND WATER</p> <p>WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING STATIC WATER LEVEL AFTER 24 HOURS PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA SPRING OR SEEP</p>		<p align="center">WEATHERING</p> <p>FRESH ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE.</p> <p>VERY SLIGHT 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.</p> <p>SLIGHT 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.</p> <p>MODERATE 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.</p> <p>MODERATELY SEVERE 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. <i>IF TESTED, WOULD YIELD SPT REFUSAL</i></p> <p>SEVERE ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND EVIDENT BUT REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. <i>IF TESTED, YIELDS SPT N VALUES > 100 BPF</i></p> <p>VERY SEVERE 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. <i>IF TESTED, YIELDS SPT N VALUES < 100 BPF</i></p> <p>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.</p>			
CONSISTENCY OR DENSENESS		MISCELLANEOUS SYMBOLS		ROCK HARDNESS			
<p>PRIMARY SOIL TYPE COMPACTNESS OR CONSISTENCY RANGE OF STANDARD PENETRATION RESISTANCE (N-VALUE) RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/FT²)</p> <p>GENERALLY GRANULAR MATERIAL (NON-COHESIVE) VERY LOOSE, MEDIUM DENSE, DENSE, VERY DENSE</p> <p>GENERALLY SILT-CLAY MATERIAL (COHESIVE) VERY SOFT, SOFT, MEDIUM STIFF, STIFF, VERY STIFF, HARD</p>		<p>ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION</p> <p>SOIL SYMBOL</p> <p>ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT</p> <p>INFERRED SOIL BOUNDARY</p> <p>INFERRED ROCK LINE</p> <p>ALLUVIAL SOIL BOUNDARY</p> <p>DIP & DIP DIRECTION OF ROCK STRUCTURES</p> <p>SOUNDING ROD</p> <p>SPT TEST BORING</p> <p>AUGER BORING</p> <p>CORE BORING</p> <p>MONITORING WELL</p> <p>PIEZOMETER INSTALLATION</p> <p>SLOPE INDICATOR INSTALLATION</p> <p>CBR - CALIFORNIA BEARING RATIO SAMPLE</p> <p>SPT N-VALUE</p> <p>SPT REFUSAL</p>		<p>VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.</p> <p>HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN.</p> <p>MODERATELY HARD CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS.</p> <p>MEDIUM HARD CAN BE GROUDED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PIECES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK.</p> <p>SOFT CAN BE GROUDED 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.</p> <p>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 FINGER NAIL.</p>			
TEXTURE OR GRAIN SIZE		ABBREVIATIONS		EQUIPMENT USED ON SUBJECT PROJECT		FRACTURE SPACING	
<p>U.S. STD. SIEVE SIZE OPENING (MM): 4, 10, 40, 60, 200, 270</p> <p>BOULDER (BLD.), COBBLE (COB.), GRAVEL (GR.), COARSE SAND (CSE. SD.), FINE SAND (F. SD.), SILT (SL.), CLAY (CL.)</p> <p>GRAIN SIZE: MM, IN.</p>		<p>AR - AUGER REFUSAL, BT - BORING TERMINATED, CL - CLAY, CPT - CONE PENETRATION TEST, CSE - COARSE, DMT - DILATOMETER TEST, DPT - DYNAMIC PENETRATION TEST, F - FINE, FOSS. - FOSSILIFEROUS, FRAC. - FRACTURED, FRACTURES, FRAGS. - FRAGMENTS, HI. - HIGHLY, MED. - MEDIUM, MICA - MICACEOUS, MOD. - MODERATELY, NP - NON PLASTIC, ORG. - ORGANIC, PMT - PRESSUREMETER TEST, SAP. - SAPROLITIC, SD. - SAND, SANDY, SL. - SILT, SILTY, SLL. - SLIGHTLY, TCR - TRICONE REFUSAL, W - MOISTURE CONTENT, V - VERY, VST - VANE SHEAR TEST, WEA. - WEATHERED, γ_u - UNIT WEIGHT, DRY UNIT WEIGHT</p>		<p>DRILL UNITS: MOBILE B-, BK-51, CME-45C, CME-750, PORTABLE HOIST, DIEDRICH D-50</p> <p>ADVANCING TOOLS: CLAY BITS, 6" CONTINUOUS FLIGHT AUGER, 6" HOLLOW AUGERS, HARD FACED FINGER BITS, TUNG.-CARBIDE INSERTS, CASING w/ ADVANCER, TRICONE 2 1/8" STEEL TEETH, TRICONE TUNG.-CARB., CORE BIT</p> <p>HAMMER TYPE: AUTOMATIC, MANUAL</p> <p>CORE SIZE: B, N, H</p> <p>HAND TOOLS: POST HOLE DIGGER, HAND AUGER, SOUNDING ROD, VANE SHEAR TEST</p>		<p>VERY WIDE MORE THAN 10 FEET</p> <p>WIDE 3 TO 10 FEET</p> <p>MODERATELY CLOSE 1 TO 3 FEET</p> <p>CLOSE 0.16 TO 1 FEET</p> <p>VERY CLOSE LESS THAN 0.16 FEET</p>	
SOIL MOISTURE - CORRELATION OF TERMS				BEDDING			
<p>SOIL MOISTURE SCALE (ATTERBERG LIMITS) FIELD MOISTURE DESCRIPTION GUIDE FOR FIELD MOISTURE DESCRIPTION</p> <p>LL - LIQUID LIMIT, PL - PLASTIC LIMIT, OM - OPTIMUM MOISTURE, SL - SHRINKAGE LIMIT</p> <p>- SATURATED - (SAT.) USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE</p> <p>- WET - (W) SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE</p> <p>- MOIST - (M) SOLID; AT OR NEAR OPTIMUM MOISTURE</p> <p>- DRY - (D) REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE</p>				<p>TERM THICKNESS</p> <p>VERY THICKLY BEDDED > 4 FEET</p> <p>THICKLY BEDDED 1.5 - 4 FEET</p> <p>MODERATELY BEDDED 0.16 - 1.5 FEET</p> <p>VERY THINLY BEDDED 0.03 - 0.16 FEET</p> <p>THICKLY LAMINATED 0.008 - 0.03 FEET</p> <p>THINLY LAMINATED < 0.008 FEET</p>			
PLASTICITY				INDURATION			
<p>NONPLASTIC, LOW PLASTICITY, MED. PLASTICITY, HIGH PLASTICITY</p> <p>PLASTICITY INDEX (PI) DRY STRENGTH</p> <p>VERY LOW, SLIGHT, MEDIUM, HIGH</p>				<p>FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF THE MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.</p> <p>FRIABLE RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE.</p> <p>MODERATELY INDURATED GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER.</p> <p>INDURATED GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER.</p> <p>EXTREMELY INDURATED SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.</p>			
COLOR				BENCH MARK:		ELEVATION: FT.	
<p>DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.</p>				<p>APPROXIMATE LIMITS OF SURFICIAL ORGANIC DEPOSITS</p> <p>CPT BORING</p> <p>UNDIVIDED C.P. = UNDIVIDED COASTAL PLAIN</p>		<p>NOTES:</p>	

09/08/09

See Sheet 1-A For Index of Sheets

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

ONSLOW COUNTY

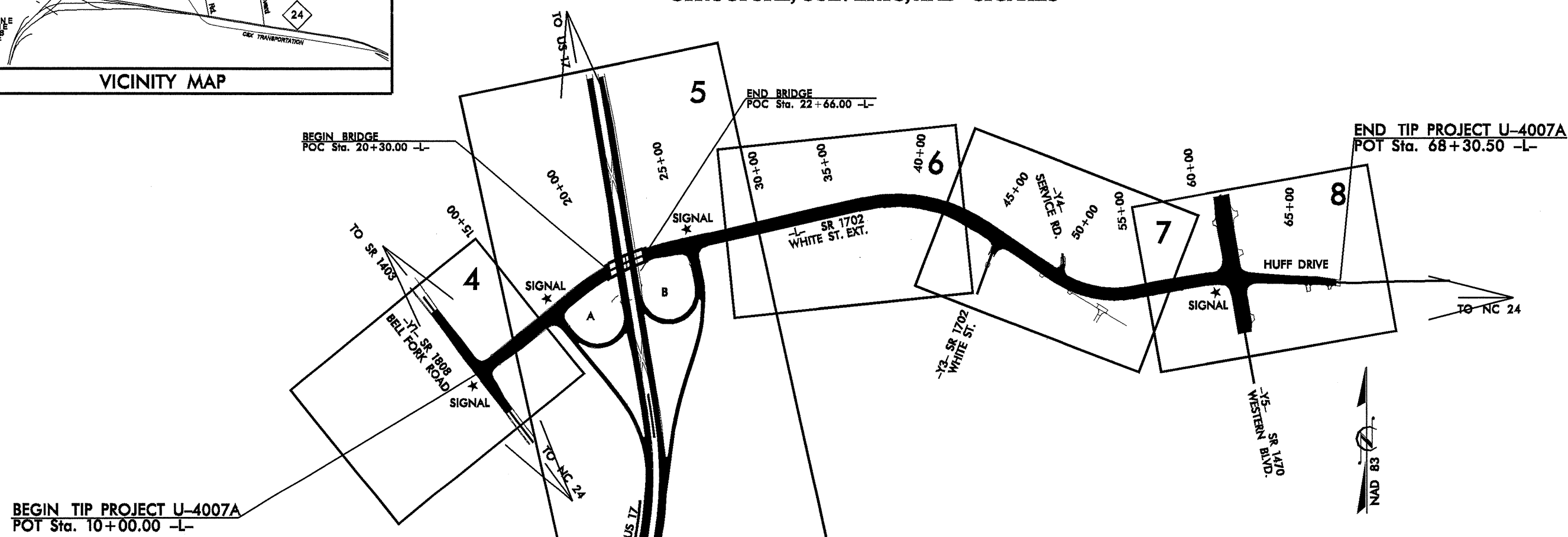
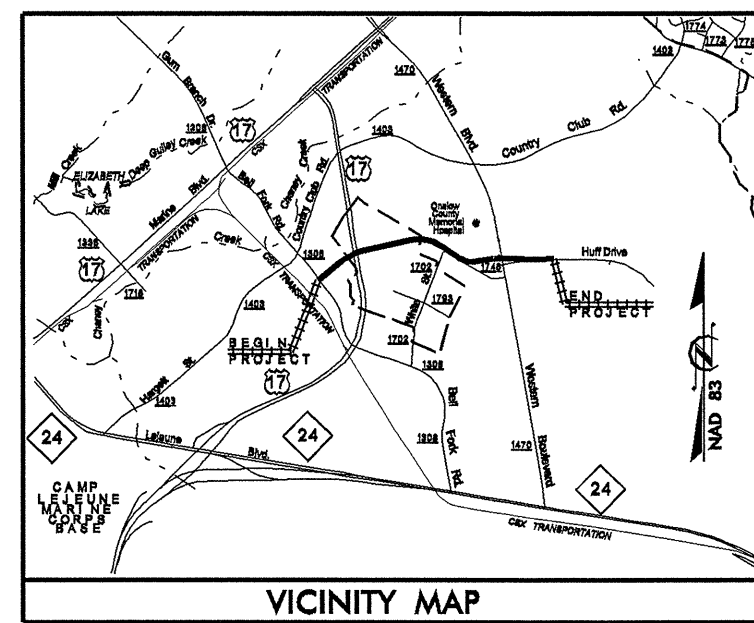
**LOCATION: SR 1702 (WHITE STREET EXTENSION) FROM SR 1808
(BELL FORK ROAD) TO SR 1470 (WESTERN BOULEVARD)**

**TYPE OF WORK: GRADING, DRAINAGE, PAVING,
STRUCTURE, CULVERTS, AND SIGNALS**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4007A	2A	47
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
35008.1.1	STPNHF-17(31)	PE	

**25% PRELIMINARY
PLAN SUBMITTAL**

TIP PROJECT: U-4007A



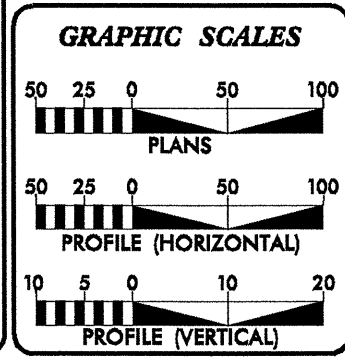
THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF JACKSONVILLE.

NCDOT CONTACT: DOUG TAYLOR, P.E., PROJECT ENGINEER - ROADWAY DESIGN

CLEARING ON THIS PROJECT SHALL BE ESTABLISHED BY METHOD III

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

CONTRACT:



DESIGN DATA

ADT 2011	=	14,500
ADT 2031	=	18,400
DHV	=	10 %
D	=	65 %
T	=	2 % *
V	=	40 MPH

* (TTST 1 % + DUAL 1 %)
URBAN MAJOR COLLECTOR

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-4007A	=	1.060 mi.
LENGTH STRUCTURE TIP PROJECT U-4007A	=	0.044 mi.
TOTAL LENGTH TIP PROJECT U-4007A	=	1.104 mi.

Prepared in the Office of:
WANG ENGINEERING COMPANY, INC.
CARY, N.C.

FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
2004 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
FEBRUARY 19, 2009

LETTING DATE:
OCTOBER 15, 2010

JAMES SI. WANG, P.E.
PROJECT ENGINEER

SCOTT L. KENNEDY
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER
SUNGATE DESIGN GROUP, PA

SIGNATURE: _____ P.E.

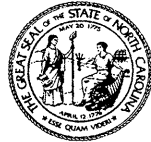
ROADWAY DESIGN ENGINEER
WANG ENGINEERING

SIGNATURE: _____ P.E.

**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**

STATE HIGHWAY DESIGN ENGINEER P.E.

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

September 5, 2008

STATE PROJECT: 35008.1.1 (U-4007A)
F.A. PROJECT: STPNHF-17 (31)
COUNTY: Onslow
DESCRIPTION: SR 1702 (White Street Ext.) from Bell Fork Rd. to Western Blvd.

SUBJECT: Geotechnical Inventory

Project Description

The project area lies in the city of Jacksonville, beginning at a point along Bell Fork Rd. approximately 940 feet south east of the intersection of Bell Fork Rd. and Country Club Rd. and extending generally eastward approximately 1.1 miles to a point approximately 650 feet east of the existing intersection of Western Blvd. and Huff Drive. This geotechnical investigation was confined to the areas of proposed construction.

Fieldwork for this project was conducted from June through August of 2008. SPT borings were advanced with a Diedrich D-50 drill machine with an automatic hammer. Cone Penetration Test borings were completed with a Vertek cone penetration machine mounted on a Diedrich ATV using a 1.75" diameter cone. Hand auger borings were also completed. Representative soil samples were collected for visual classification in the field and for laboratory analysis by the Materials and Tests Unit.

The following alignments, totaling 1.1 miles were investigated. Subsurface profiles and selected cross sections of these alignments are included in this report.

<u>Line</u>	<u>Station(±)</u>
-L-	10+00 to 68+30
-Y1-	11+08 to 18+95
-Y2-	27+89 to 60+23
-Y3-	10+00 to 12+00
-Y4-	10+21 to 11+56
-Y5-	10+07 to 18+72

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

<u>Line</u>	<u>Station(±)</u>
-RAMPA-	0+00 to 13+22
-RAMPB-	0+00 to 17+85
-LOOPA-	0+00 to 7+44
-LOOPB-	0+00 to 9+23

Areas of Special Geotechnical Interest

- 1) The following sections contain cohesive soils which have the potential to cause embankment stability and/or long term settlement problems:

<u>Line</u>	<u>Station(±)</u>
-L-	10+00 to 17+20
-L-	22+30 to 23+00
-L-	23+70 to 35+00
-L-	35+75 to 48+84
-L-	51+50 to 52+68
-L-	54+25 to 56+65
-L-	57+67 to 68+30
-Y1-	11+08 to 18+95
-Y2-	27+89 to 53+60
-Y2-	57+00 to 59+25
-Y3-	10+00 to 11+90
-Y5-	10+00 to 18+72
-RAMPA-	1+70 to 13+22
-RAMPB-	3+31 to 17+85
-LOOPA-	0+00 to 7+44
-LOOPB-	1+18 to 9+23

- 2) The following section contains organic soils, which have the potential for embankment stability and/or subgrade problems during construction.

<u>Line</u>	<u>Station(±)</u>
-L-	34+70 to 35+30
-L-	48+26 to 50+68
-Y4-	10+30 to 11+32
-LOOPA-	4+60 to 5+40
-LOOPB-	7+80 to 8+49
-RAMPA-	10+39 to 11+06
-RAMPB-	16+40 to 17+12

- 3) The entire project was found to exhibit seasonal high ground water.

Physiography and Geology

This project corridor is located within the Coastal Plain Physiographic Province. Topography along the project is nearly flat to gently sloping. Elevations ranged from 19± to 36± feet above sea level

Surficial soils in this area are generally classified as undivided coastal plain sediments.

Ground Water

Ground water data was collected from June through August 2008, during a time of below normal precipitation. Ground water elevations ranged from 22± to 34± feet above sea level.

Soils

Soils within this project area have been divided into three categories, undivided coastal plain soils, formational soils, and roadway embankment soils.

Soils classified as undivided coastal plain are comprised of 2± to 35± feet of very loose to dense sand and clayey sand (A-2-4, A-3 and A-2-6), 2± to 8± feet of very soft to stiff sandy and clayey silt (A-4,), and 1± to 12± feet of very soft to stiff sandy and silty clay (A-6, A-7-6). Moisture samples collected within these cohesive soils ranged from 15% to 31%. Additionally, surficial organic deposits were identified. These soils were primarily 3± to 8± feet in thickness and comprised of very loose sand and very soft silts and clays (A-2-4, A-4, A-6) with little to moderate organic content. Samples taken from within these units indicated organic percentages ranging from 7% to 9%. Vane shear tests completed in these areas show shear strength values ranging from 605 psf to 1670 psf.

Soils that are described as formational have been identified as belonging to the River Bend Formation. Where encountered, these deposits are composed of 7± to 14± feet of soft to moderately hard limestone and calcareous sandstone and usually is found at elevations ranging from -2 to -8 feet below sea level.

Soils identified as roadway embankment are comprised of 1± to 11± feet of medium dense to very dense sand (A-2-4, A-3). These soils were encountered along the existing US 17 Bypass corridor and associated intersecting roads.

Undisturbed Samples

Undisturbed thin wall Shelby tube samples were collected at the following locations and submitted for testing.

<u>Sample No.</u>	<u>Station</u>	<u>Depth</u>	<u>Test</u>
ST-1	-RPB- Sta. 10+00 CL	6.8-8.5	Consolidation, Triaxial CU
ST-2	-L- Sta. 25+15 CL	7.0-9.0	Consolidation, Triaxial CU

Respectfully Submitted,



Joseph L. Stone, P.G.
Project Engineering Geologist

EARTHWORK BALANCE SHEET

Volumes in Cubic Yards

PROJECT 35008.2.1

COUNTY Onslow

DATE

5/19/2011

SHEET 1 OF 1 SHEETS

LINE	STATION	STATION	EXCAVATION				EMBANKMENT				BORROW	WASTE					
			TOTAL UNCLASS.	ROCK	UNDERCUT	UNUIT. UNCLASS.	SUITABLE UNCLASS.	TOTAL	ROCK	EARTH		EMBANK. 25%	ROCK	SUITABLE	UNUIT.	TOTAL	
SUMMARY #1																	
-L-	10+50.00	20+36.24 (BEGIN BRIDGE)	1,621		2,574		1,621	55,303		55,303	69,129	67,508				2,574	2,574
-Y1-	11+08.82	18+95.01	566		1,766		566	294		294	367		199			1,766	1,965
-RAMPA-	0+00.00	13+22.05	1,182		303		1,182	18,893		18,893	23,616	22,434				303	303
-LOOPA-	0+00.00	7+08.93						3,387		3,387	4,234	4,234					
-Y2-	27+89.18 (LT)	50+00.00 (LT)	2,029				2,029	2,659		2,659	3,323	1,294					
SUBTOTALS:			5,398		4,643		5,398	80,535		80,535	100,669	95,470		199		4,643	4,842
SUMMARY #2																	
-L-	22+58.24 (END BRIDGE)	32+00.00						76,737		76,737	95,921	95,921					
-LOOPB-	0+00.00	8+88.11						7,327		7,327	9,158	9,158					
-RAMPB-	0+00.00	17+50.25			470			56,587		56,587	70,733	70,733			470	470	
-Y2-	27+89.18 (RT)	50+00.00 (RT)	1,597				1,597	10,311		10,311	12,889	11,292					
SUBTOTALS:			1,597		470		1,597	150,961		150,961	188,701	187,104				470	470
SUMMARY #3																	
-L-	32+00.00	61+71.00	3,708		2,920	133	3,575	40,667		40,667	50,834	47,259				3,053	3,053
-Y3-	10+35.50	11+75.57	44				44	73		73	92	48					
-Y5-	10+07.48 (RT)	16+54.88 (RT)	281		149		281	40		40	50		231		149	380	
-Y6-	10+64.41	11+22.94	6				6	264		264	330	324					
SUBTOTALS:			4,039		3,069	133	3,906	41,045		41,045	51,306	47,631		231		3,202	3,433
SUMMARY #4																	
-L-	61+71.00	68+05.50	1,460		482		1,460	284		284	355		1,105		482	1,587	
-Y5-	16+00 (LT)	18+72.45 (LT)	127				127	5		5	7		120			120	
SUBTOTALS:			1,587		482		1,587	290		290	362			1,225		482	1,707
TOTALS:			12,620		8,664	133	12,488	272,832		272,832	341,038	330,205		1,655		8,797	10,451
ADDITIONAL UNDERCUT					6,250										6,250	6,250	
EST. SHOULDER MATERIAL								12,130		12,130	15,163	15,163					
EARTH WASTE TO REPLACE BORROW													-1,655		-1,655		-1,655
PROJECT TOTALS:			12,620		14,914	133	12,488	284,962		284,962	356,201	343,713				15,047	15,047
EST. FOR REPLACING TOPSOIL ON BORROW PITS													17,186				17,186
GRAND TOTALS:			12,620		14,914	133	12,488	284,962		284,962	356,201	360,899				15,047	15,047
SAY:			12,800		15,100							361,400					

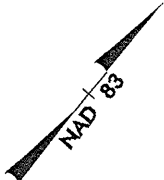
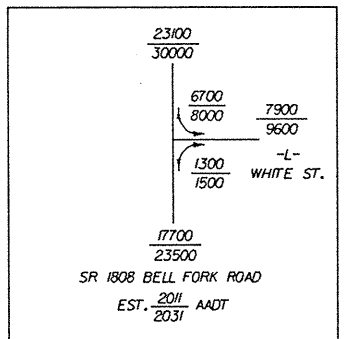
EST. SHALLOW UNDERCUT CONTINGENCY 500 CY
 CLASS IV SUBGRADE STABILIZATION 500 TONS
 SELECT GRANULAR MATERIAL, CLASS III 18,250 CY

NOTES:

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. APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED EXCAVATION, FINE GRADING, CLEARING AND GRUBBING, AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID AT THE CONTRACT LUMP SUM PRICE FOR "GRADING".

ALL UNDERCUT IS TO BE BACKFILLED WITH SELECT GRANULAR MATERIAL, CLASS III.

PROJECT REFERENCE NO. U-4007A	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



BEGIN CONSTRUCTION
-YI- POT Sta. 11+08.82

-YI- POT Sta. 10+00.00

BEGIN TIP PROJECT U-4007A
-L- POT Sta. 10+100.00
-YI- POT Sta. 15+189.48

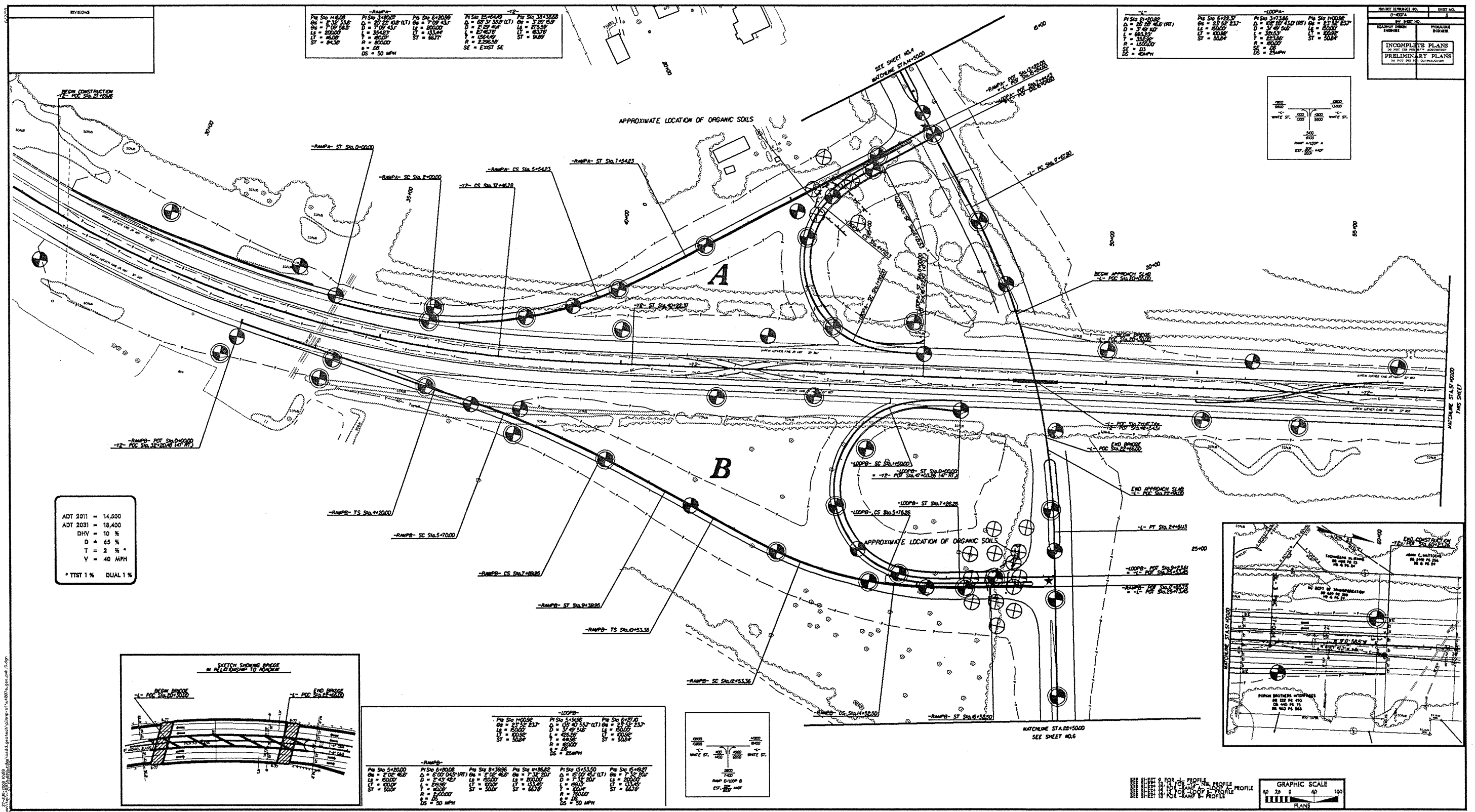
END CONSTRUCTION
-YI- POT Sta. 18+95.01

SEE SHEET 9 FOR -L- PROFILE
SEE SHEET 11 FOR -YI- PROFILE

MATCHLINE STA. 14+50.00
SEE SHEET NO. 5

REVISIONS

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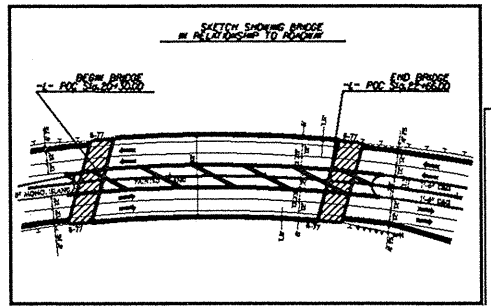


-RAMP-		-RAMP-		-RAMP-		-RAMP-	
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GA = 2.35 1/2"	GA = 2.35 1/2"	GA = 2.35 1/2"	GA = 2.35 1/2"	GA = 2.35 1/2"	GA = 2.35 1/2"	GA = 2.35 1/2"	GA = 2.35 1/2"
LA = 2000'	LA = 2000'	LA = 2000'	LA = 2000'	LA = 2000'	LA = 2000'	LA = 2000'	LA = 2000'
ST = 84.36'	ST = 84.36'	ST = 84.36'	ST = 84.36'	ST = 84.36'	ST = 84.36'	ST = 84.36'	ST = 84.36'
DS = 50 MPH							

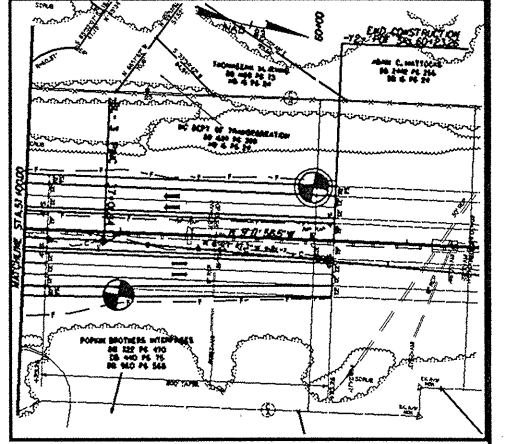
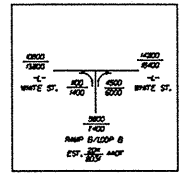
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GA = 2.35 1/2"	GA = 2.35 1/2"	GA = 2.35 1/2"	GA = 2.35 1/2"	GA = 2.35 1/2"	GA = 2.35 1/2"
LA = 2000'	LA = 2000'	LA = 2000'	LA = 2000'	LA = 2000'	LA = 2000'
ST = 84.36'	ST = 84.36'	ST = 84.36'	ST = 84.36'	ST = 84.36'	ST = 84.36'
DS = 50 MPH					

PROJECT NUMBER NO. 17-027-A
 SHEET NO. 1
 INCOMPLETE PLANS
 PRELIMINARY PLANS
 DO NOT FOR CONSTRUCTION

ADT 2011 = 14,500
 ADT 2031 = 18,400
 DHV = 10 %
 D = 65 %
 T = 2 %
 V = 40 MPH
 * TTST 1 % DUAL 1 %



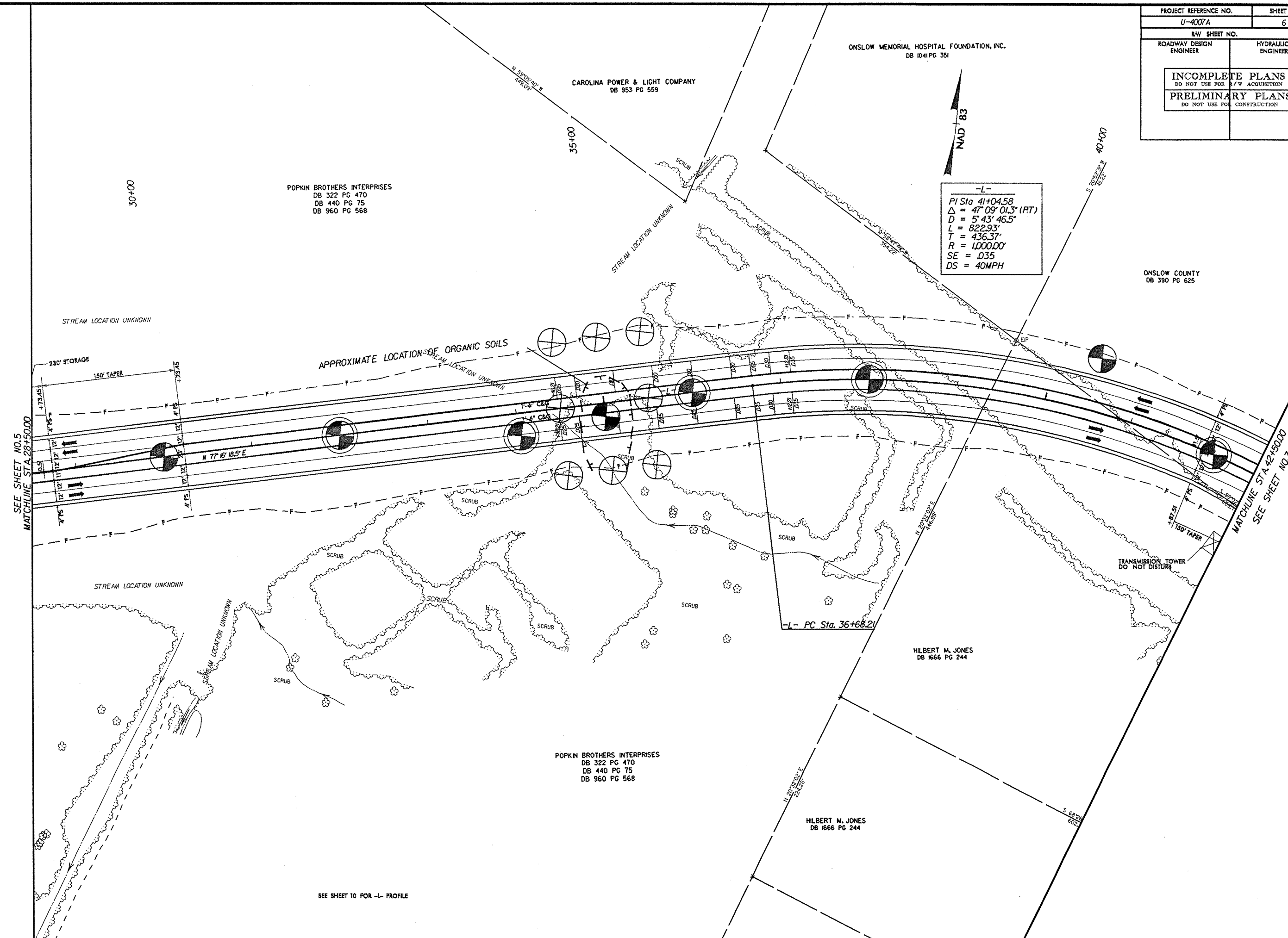
-RAMP-		-RAMP-		-RAMP-		-RAMP-	
PI Sta 5+120.0	PI Sta 6+120.0	PI Sta 7+120.0	PI Sta 8+120.0	PI Sta 9+120.0	PI Sta 10+120.0	PI Sta 11+120.0	PI Sta 12+120.0
GA = 2.35 1/2"	GA = 2.35 1/2"	GA = 2.35 1/2"	GA = 2.35 1/2"	GA = 2.35 1/2"	GA = 2.35 1/2"	GA = 2.35 1/2"	GA = 2.35 1/2"
LA = 2000'	LA = 2000'	LA = 2000'	LA = 2000'	LA = 2000'	LA = 2000'	LA = 2000'	LA = 2000'
ST = 84.36'	ST = 84.36'	ST = 84.36'	ST = 84.36'	ST = 84.36'	ST = 84.36'	ST = 84.36'	ST = 84.36'
DS = 50 MPH							



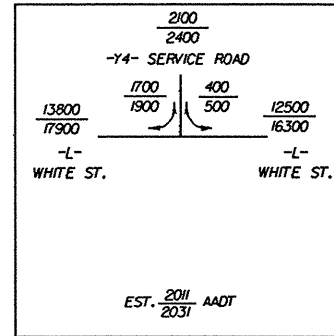
GRAPHIC SCALE
 40 20 0 40 100
 PLANS

PROJECT REFERENCE NO. U-4007A	SHEET NO. 6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

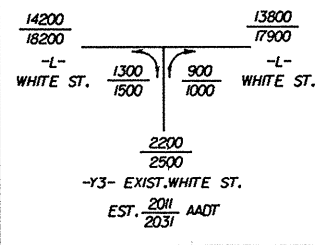
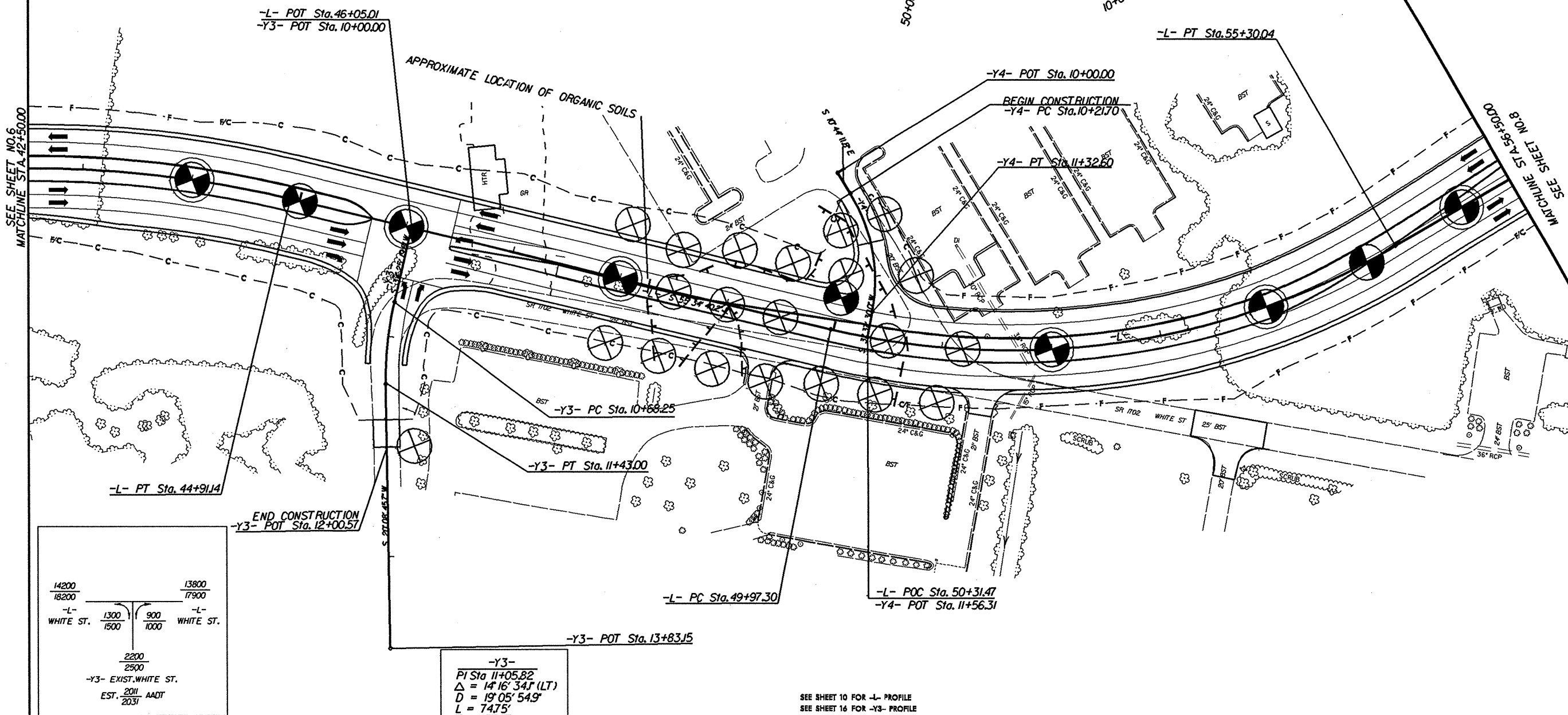
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-L-
 PI Sta 41+04.58
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 $D = 5^{\circ} 43' 46.5"$
 $L = 822.93'$
 $T = 436.37'$
 $R = 1,000.00'$
 $SE = .035$
 $DS = 40MPH$



-Y4- PI Sta 10+79.82 $\Delta = 42^{\circ} 21' 41.8" (RT)$ $D = 38^{\circ} 11' 49.9"$ $L = 110.90'$ $T = 58.12'$ $R = 150.00'$	-L- PI Sta 52+77.32 $\Delta = 43^{\circ} 36' 18.8" (LT)$ $D = 8^{\circ} 11' 06.4"$ $L = 532.74'$ $T = 280.02'$ $R = 700.00'$ $SE .04$ $DS = 40MPH$
---	--



-Y3-
 PI Sta 11+05.82
 $\Delta = 14^{\circ} 16' 34.7" (LT)$
 $D = 19^{\circ} 05' 54.9"$
 $L = 74.75'$
 $T = 37.57'$
 $R = 300.00'$

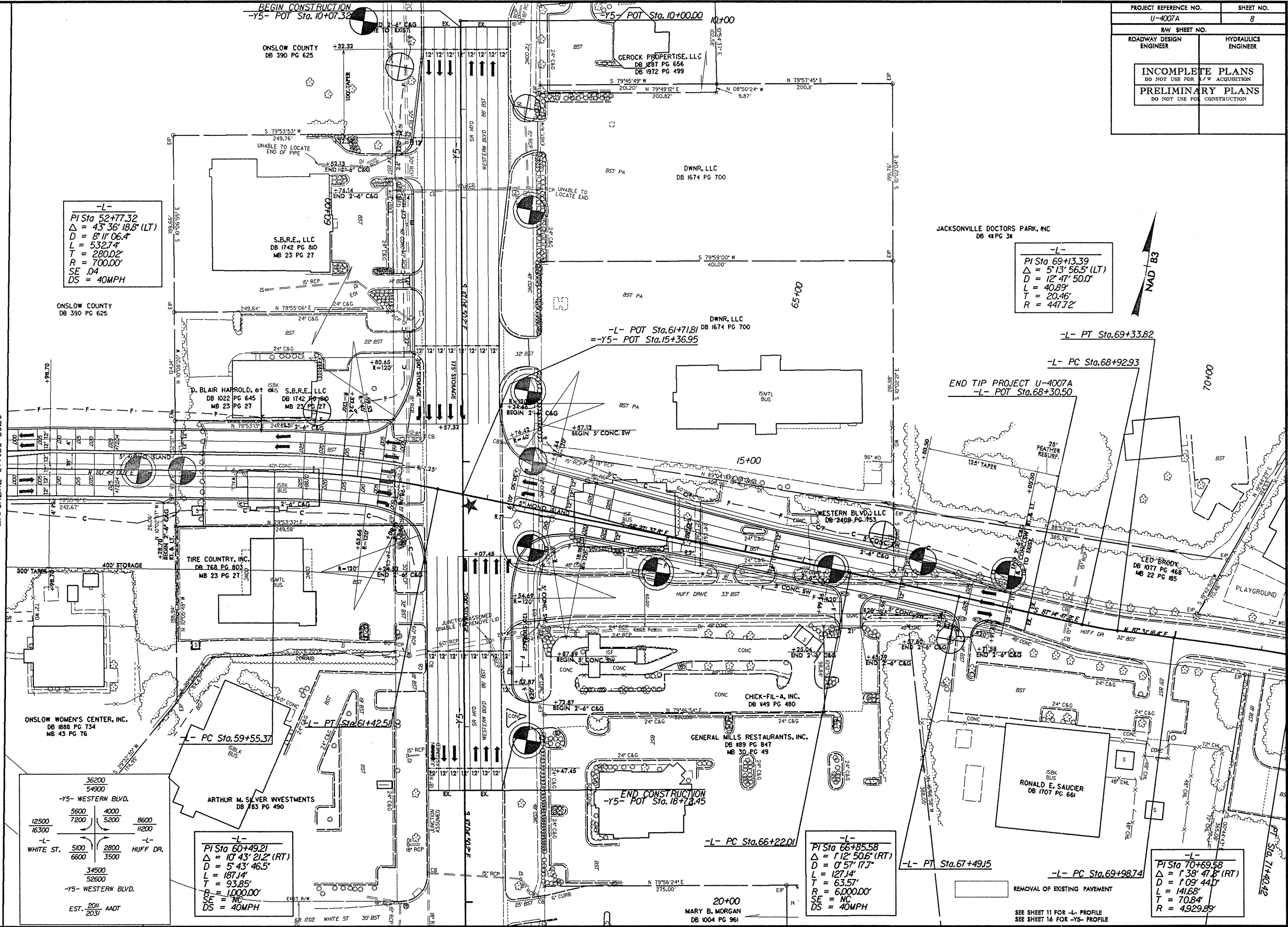
SEE SHEET 10 FOR -L- PROFILE
 SEE SHEET 16 FOR -Y3- PROFILE
 SEE SHEET 16 FOR -Y4- PROFILE

REVISIONS

8/17/99

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8/17/99
 REVISIONS
 SEE SHEET NO. 7
 MATCHLINE STA. 56+50.00
 27-AUG-2008 14:02
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-L-
 PI Sta 52+77.32
 $\Delta = 43'36''18.8''$ (LT)
 $D = 8'11''06.4''$
 $L = 532.74'$
 $T = 280.02'$
 $R = 700.00'$
 $SE = .04$
 $DS = 40MPH$

-L-
 PI Sta 69+13.39
 $\Delta = 5'13''56.5''$ (LT)
 $D = 12'47''50.0''$
 $L = 40.89'$
 $T = 20.46'$
 $R = 447.72'$

36200	54900
-Y5- WESTERN BLVD.	
12500	8600
5600	7200
4000	5200
-L- WHITE ST.	
5100	2800
6600	3500
-L- HUFF DR.	
34500	52600
-Y5- WESTERN BLVD.	
EST. 2011 AADT 2031	

-L-
 PI Sta 60+49.21
 $\Delta = 10'43''21.2''$ (RT)
 $D = 5'43''46.5''$
 $L = 187.14'$
 $T = 93.85'$
 $R = 1000.00'$
 $SE = .04$
 $DS = 40MPH$

-L-
 PI Sta 66+85.58
 $\Delta = 1'12''50.6''$ (RT)
 $D = 0'57''17.7''$
 $L = 127.14'$
 $T = 63.57'$
 $R = 6000.00'$
 $SE = .04$
 $DS = 40MPH$

-L-
 PI Sta 70+69.58
 $\Delta = 1'38''47.8''$ (RT)
 $D = 1'09''44.0''$
 $L = 141.68'$
 $T = 70.84'$
 $R = 4929.89'$

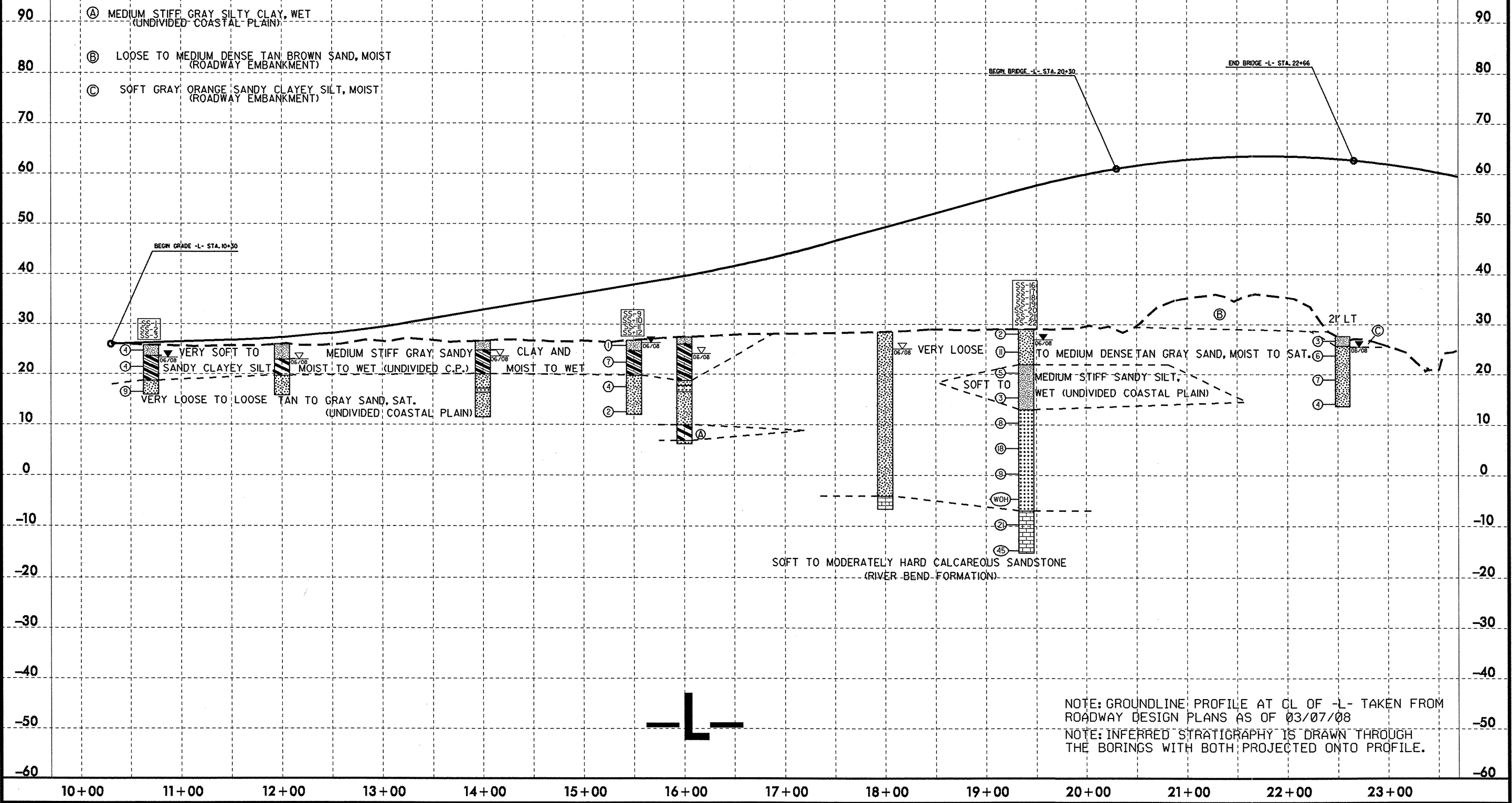
REMOVAL OF EXISTING PAVEMENT
 SEE SHEET 11 FOR -L- PROFILE
 SEE SHEET 16 FOR -Y5- PROFILE

5/14/99

PROJECT REFERENCE NO. U-4007A	SHEET NO. 9
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/CW ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

SOIL TEST RESULTS														
SAMPLER NO.	OFFSET	STATION	DEPTH INTERVAL	ASHTO CLASS.	L.L.	P.L.	% BY WEIGHT			% PASSING (SIEVES)		MOISTURE	% ORGANIC	
							G. SAND	F. SAND	CLAY	#10	#20			
SS-1	CL	10+70	0.5-1.5	A-4(5)	30	9	9.0	34.5	45.5	14.0	100	96	69	15.9
SS-2	CL	10+70	3.2-4.7	A-6(7)	27	15	7.0	25.1	35.9	32.1	89	86	68	15.9
SS-3	CL	10+70	9.2-9.7	A-2-4(0)	16	MP	46.5	42.7	4.8	6.0	98	76	12	-
SS-9	CL	15+50	0.5-1.5	A-4(2)	25	6	3.6	47.1	21.1	28.2	100	99	70	-
SS-10	CL	15+50	3.2-4.7	A-6(7)	27	13	6.2	36.4	25.2	32.2	99	97	72	-
SS-11	CL	15+50	8.7-9.7	A-2-4(0)	20	2	40.2	36.0	11.7	12.1	99	76	29	-
SS-12	CL	15+50	13.2-14.7	A-2-4(0)	25	7	49.7	32.2	6.0	12.1	96	64	19	-
SS-16	CL	19+40	0.5-1.5	A-2-4(0)	15	MP	14.3	63.0	12.7	10.1	100	96	30	-
SS-17	CL	19+40	3.5-5.0	A-2-4(0)	19	2	17.5	59.4	13.1	10.1	100	96	28	-
SS-18	CL	19+40	7.7-9.2	A-4(0)	26	2	15.1	54.9	17.9	12.1	99	93	42	-
SS-19	CL	19+40	12.7-14.2	A-2-4(0)	25	MP	41.2	40.4	10.3	8.0	93	73	18	-
SS-20	CL	19+40	17.7-19.2	A-3(0)	19	MP	24.3	69.6	0.0	6.0	100	97	7	-
SS-21	CL	19+40	27.7-29.2	A-3(0)	19	MP	5.2	68.1	0.6	6.0	100	99	9	-
SS-22	CL	19+40	37.7-39.2	A-2-4(0)	17	MP	17.3	69.6	3.0	10.1	94	88	14	-

- Ⓐ MEDIUM STIFF GRAY SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)
- Ⓑ LOOSE TO MEDIUM DENSE TAN BROWN SAND, MOIST (ROADWAY EMBANKMENT)
- Ⓒ SOFT GRAY ORANGE SANDY CLAYEY SILT, MOIST (ROADWAY EMBANKMENT)



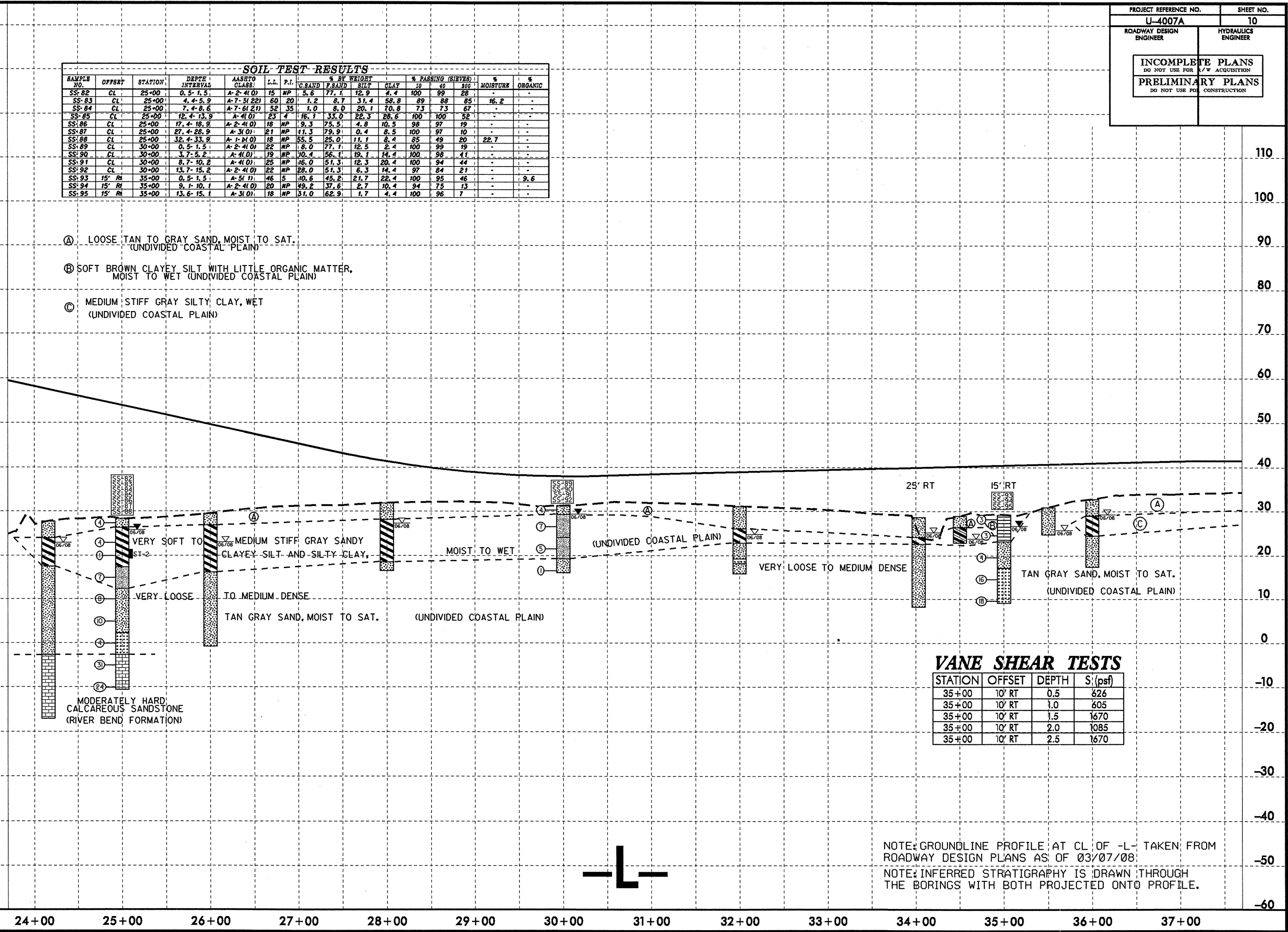
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 Plotting at 08/25/08

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							G.BAND	F.BAND	SILT	CLAY	10	40	200		
SS-82	CL	25+00	0.5-1.5	A-2-4(0)	15	NP	5.6	77.1	12.9	4.4	100	99	28	-	-
SS-83	CL	25+00	4.4-5.9	A-7-5(22)	60	20	1.2	8.7	31.4	58.8	89	88	85	16.2	-
SS-84	CL	25+00	7.4-8.6	A-7-6(21)	52	35	1.0	8.0	20.1	70.8	73	73	67	-	-
SS-85	CL	25+00	12.4-13.9	A-4(0)	25	4	16.1	33.0	22.3	28.6	100	100	52	-	-
SS-86	CL	25+00	17.4-18.9	A-2-4(0)	18	NP	9.3	75.5	4.8	10.5	98	97	19	-	-
SS-87	CL	25+00	27.4-28.9	A-3(0)	21	NP	11.3	79.9	0.4	8.5	100	97	10	-	-
SS-88	CL	25+00	32.4-33.9	A-1-M(0)	18	NP	55.5	25.0	11.1	8.2	85	49	20	22.7	-
SS-89	CL	30+00	0.5-1.5	A-2-4(0)	22	NP	8.0	77.1	12.5	2.4	100	99	19	-	-
SS-90	CL	30+00	3.7-5.2	A-4(0)	19	NP	10.4	56.1	19.1	14.4	100	98	41	-	-
SS-91	CL	30+00	8.7-10.2	A-4(0)	25	NP	16.0	51.3	12.3	20.4	100	94	44	-	-
SS-92	CL	30+00	13.7-15.2	A-2-4(0)	22	NP	28.0	51.3	6.3	14.4	97	84	21	-	-
SS-93	15' RT	35+00	0.5-1.5	A-5(1)	46	5	10.6	45.2	21.7	22.4	100	95	46	-	9.6
SS-94	15' RT	35+00	9.1-10.1	A-2-4(0)	20	NP	49.2	37.6	2.7	10.4	94	75	13	-	-
SS-95	15' RT	35+00	13.6-15.1	A-3(0)	18	NP	31.0	62.9	1.7	4.4	100	96	7	-	-

- Ⓐ LOOSE TAN TO GRAY SAND, MOIST TO SAT. (UNDIVIDED COASTAL PLAIN)
- Ⓑ SOFT BROWN CLAYEY SILT WITH LITTLE ORGANIC MATTER, MOIST TO WET (UNDIVIDED COASTAL PLAIN)
- Ⓒ MEDIUM STIFF GRAY SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)

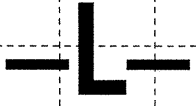
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 Station AT 06/22/08



VANE SHEAR TESTS

STATION	OFFSET	DEPTH	S _v (psf)
35+00	10' RT	0.5	626
35+00	10' RT	1.0	605
35+00	10' RT	1.5	1670
35+00	10' RT	2.0	1085
35+00	10' RT	2.5	1670

NOTE: GROUNDLINE PROFILE AT CL OF -L- TAKEN FROM ROADWAY DESIGN PLANS AS OF 03/07/08.
 NOTE: INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO PROFILE.

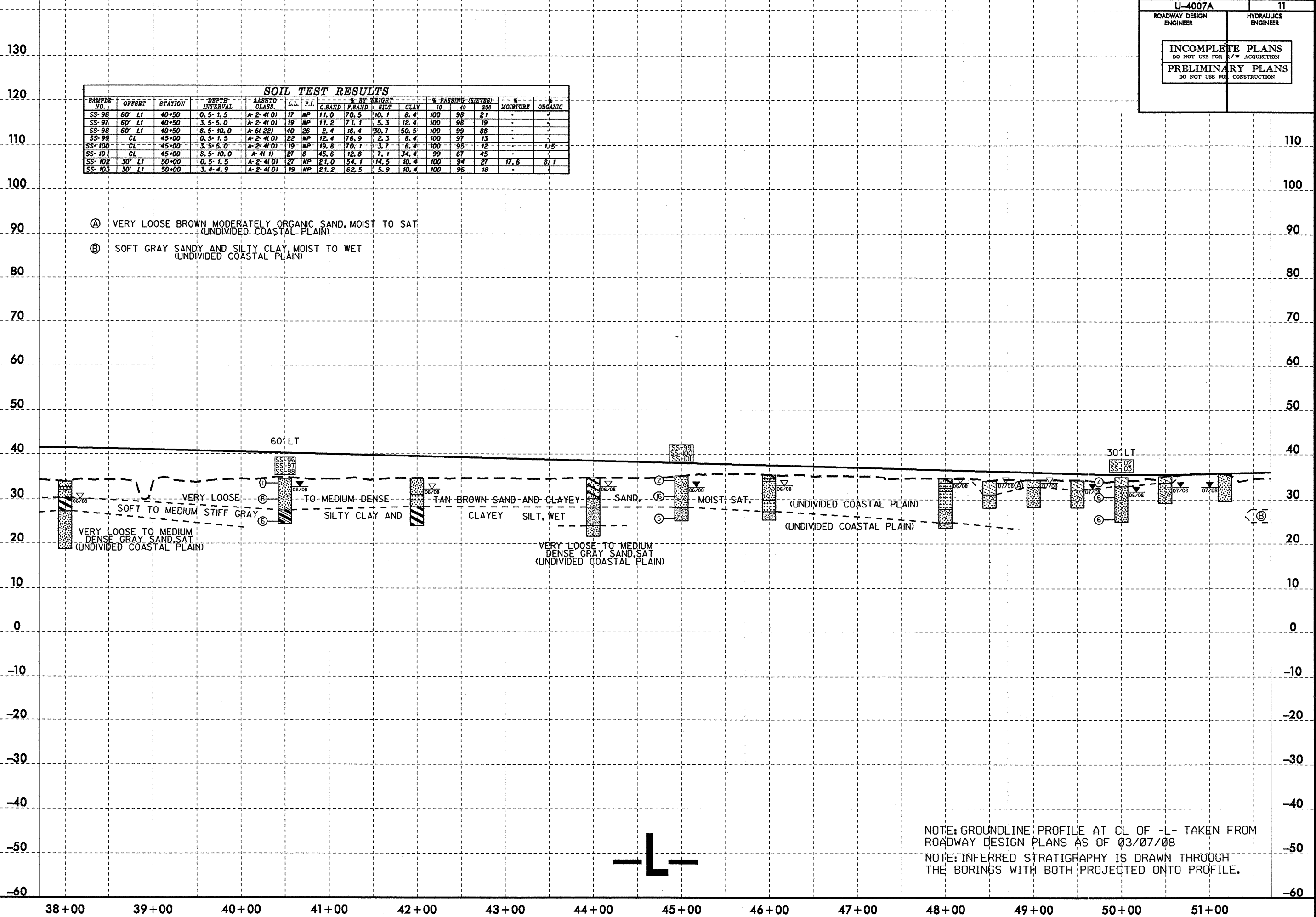


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 AT 06/22/08

PROJECT REFERENCE NO. U-4007A	SHEET NO. 11
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

SOIL TEST RESULTS														
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	ASTM CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIZES)		MOISTURE	ORGANIC
							G. SAND	F. SAND	SILT	CLAY	NO. 40	NO. 100		
SS-96	60' LT	40+50	0.5-1.5	A-2-4(0)	17	NP	11.0	70.5	10.1	8.4	100	98	21	-
SS-97	60' LT	40+50	3.5-5.0	A-2-4(0)	19	NP	11.2	71.1	5.3	12.4	100	98	19	-
SS-98	60' LT	40+50	8.5-10.0	A-6(22)	40	26	2.4	16.4	30.7	50.5	100	99	88	-
SS-99	CL	45+00	0.5-1.5	A-2-4(0)	22	NP	12.4	76.9	2.3	8.4	100	97	13	-
SS-100	CL	45+00	3.5-5.0	A-2-4(0)	19	NP	19.8	70.1	3.7	6.4	100	95	12	1.5
SS-101	CL	45+00	8.5-10.0	A-4(1)	27	8	45.6	12.8	7.1	34.4	99	67	45	-
SS-102	30' LT	50+00	0.5-1.5	A-2-4(0)	27	NP	21.0	54.1	14.5	10.4	100	94	27	17.6
SS-103	30' LT	50+00	3.4-4.9	A-2-4(0)	19	NP	21.2	62.5	5.9	10.4	100	96	18	-

- Ⓐ VERY LOOSE BROWN MODERATELY ORGANIC SAND, MOIST TO SAT (UNDIVIDED COASTAL PLAIN)
- Ⓑ SOFT GRAY SANDY AND SILTY CLAY, MOIST TO WET (UNDIVIDED COASTAL PLAIN)



NOTE: GROUNDLINE PROFILE AT CL OF -L- TAKEN FROM ROADWAY DESIGN PLANS AS OF 03/07/08
 NOTE: INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO PROFILE.

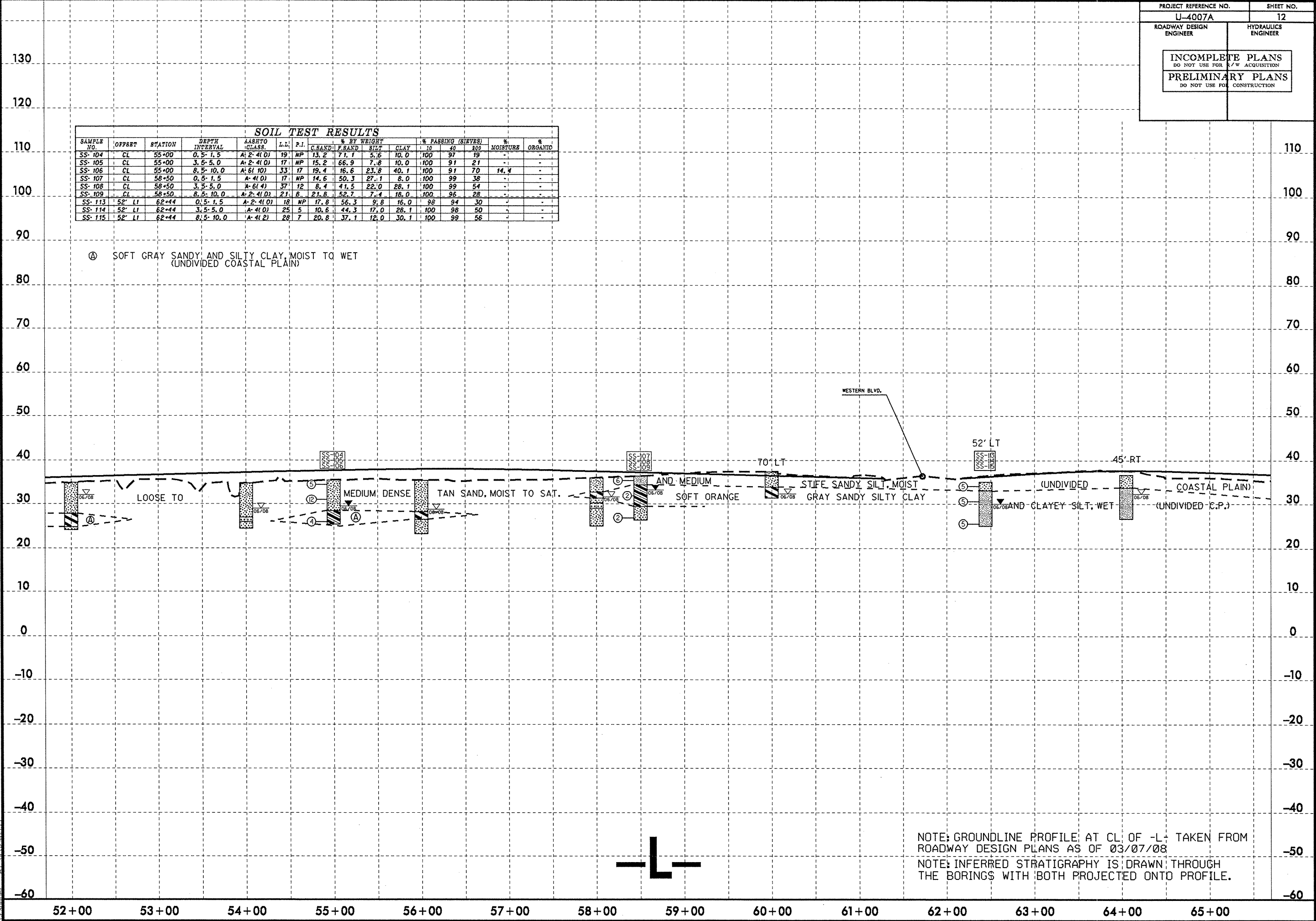
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PROJECT REFERENCE NO. U-4007A		SHEET NO. 12	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			

SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT			% PASSING (SIEVES)			% MOISTURE	% ORGANIC	
							C.SAND	F.SAND	SILT	CLAY	10	40			100
SS-104	CL	55+00	0.5-1.5	A-2-4(0)	19	NP	13.2	71.1	5.6	10.0	100	97	19	-	-
SS-105	CL	55+00	3.5-5.0	A-2-4(0)	17	NP	15.2	66.9	7.8	10.0	100	91	21	-	-
SS-106	CL	55+00	8.5-10.0	A-6(10)	33	17	19.4	16.6	23.8	40.1	100	91	70	14.4	-
SS-107	CL	58+50	0.5-1.5	A-4(0)	17	NP	14.6	50.3	27.1	8.0	100	99	38	-	-
SS-108	CL	58+50	3.5-5.0	A-6(4)	37	12	8.4	41.5	22.0	28.1	100	99	54	-	-
SS-109	CL	58+50	8.5-10.0	A-2-4(0)	21	8	21.8	52.7	7.4	18.0	100	96	28	-	-
SS-113	52' LI	62+44	0.5-1.5	A-2-4(0)	18	NP	17.8	56.3	9.8	16.0	98	94	30	-	-
SS-114	52' LI	62+44	3.5-5.0	A-4(0)	25	5	10.6	44.3	17.0	28.1	100	98	50	-	-
SS-115	52' LI	62+44	8.5-10.0	A-4(2)	28	7	20.8	37.1	12.0	30.1	100	99	56	-	-

Ⓐ SOFT GRAY SANDY AND SILTY CLAY, MOIST TO WET (UNDIVIDED COASTAL PLAIN)

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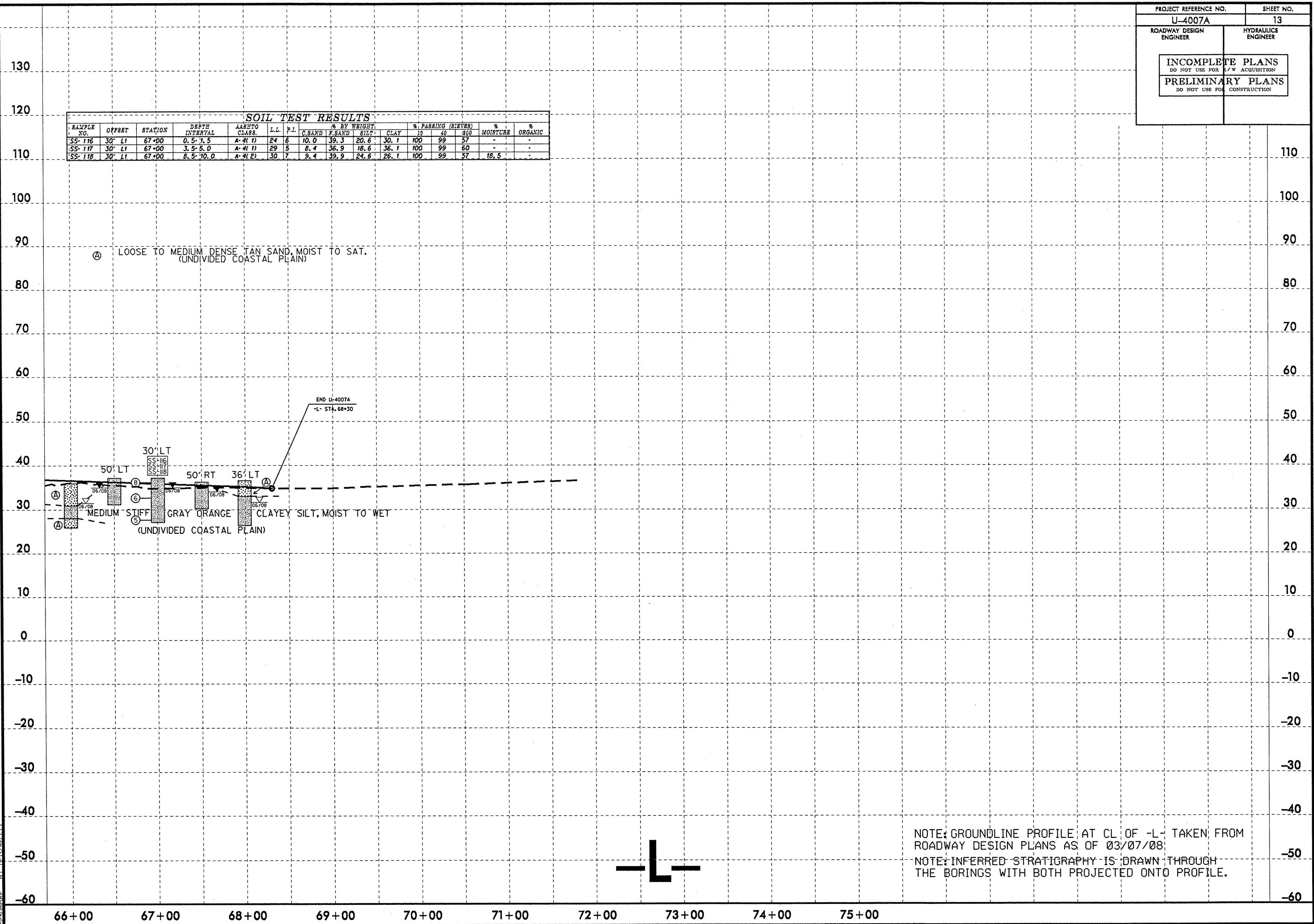


NOTE: GROUNDLINE PROFILE AT CL OF -L- TAKEN FROM ROADWAY DESIGN PLANS AS OF 03/07/08
 NOTE: INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO PROFILE.

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PROJECT REFERENCE NO. U-4007A	SHEET NO. 13
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AA&B TO CLASS.	L.L.	P.I.	% BY WEIGHT			% PASSING (SIZES)			% MOISTURE	% ORGANIC	
							C. SAND	F SAND	SILT	CLAY	10	40			200
SS-116	30' LT	67+00	0.5'-1.5'	A-#(1)	24	6	10.0	39.3	20.6	30.1	100	99	57	-	-
SS-117	30' LT	67+00	3.5'-5.0'	A-#(1)	29	5	8.4	36.9	18.6	36.1	100	99	60	-	-
SS-118	30' LT	67+00	8.5'-10.0'	A-#(2)	30	7	9.4	39.9	24.6	26.1	100	99	57	18.5	-

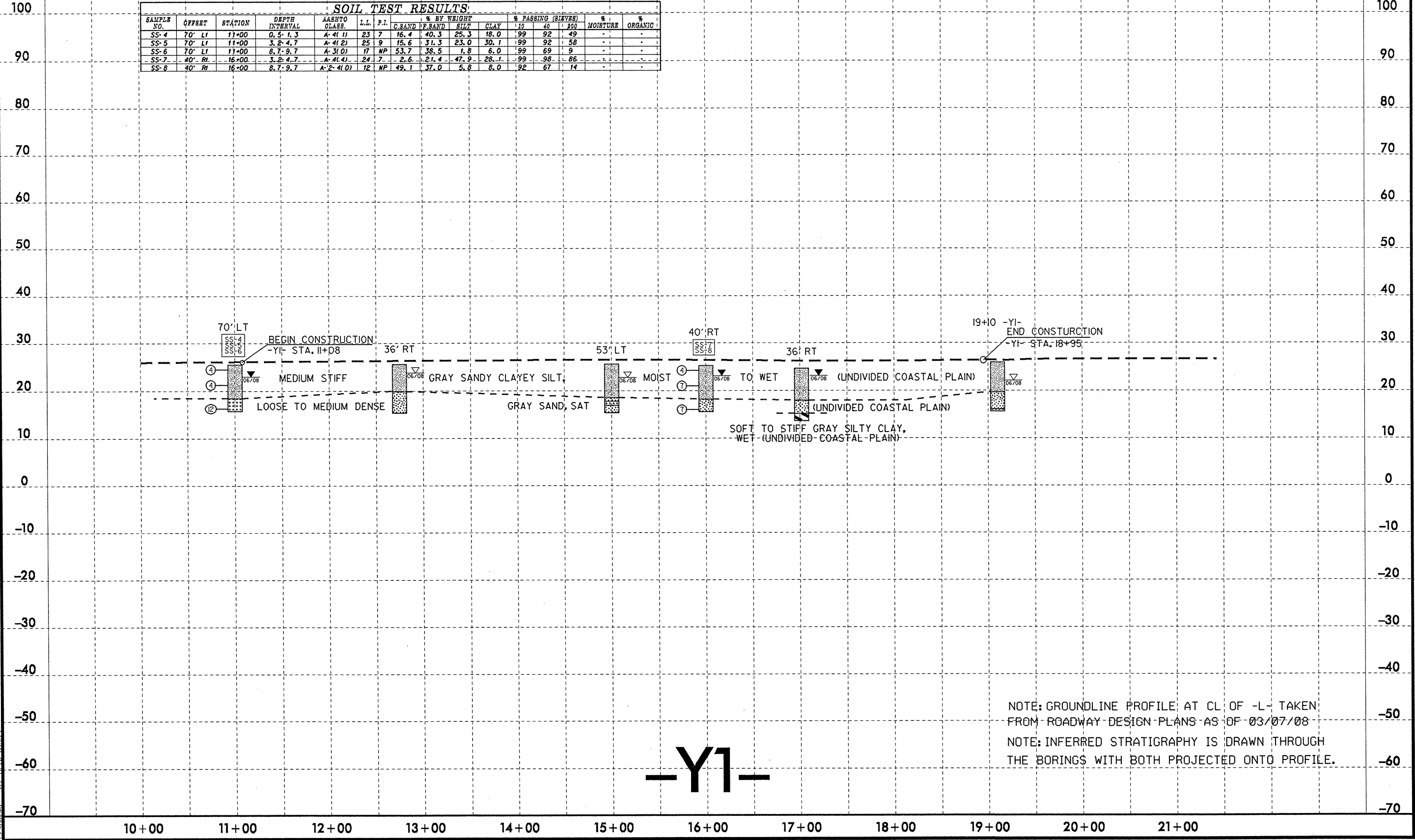


NOTE: GROUNDLINE PROFILE AT CL OF -L- TAKEN FROM ROADWAY DESIGN PLANS AS OF 03/07/08;
 NOTE: INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO PROFILE.

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 AT 06/24/08

PROJECT REFERENCE NO. U-4007A	SHEET NO. 14
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							G.SAND	F.SAND	SILT	CLAY	#10	#40	#200		
SS-4	70' LT	11+00	0.5-1.3	A-4(1)	23	7	16.4	40.3	25.3	18.0	99	92	49	-	-
SS-5	70' LT	11+00	3.2-4.7	A-4(2)	25	9	15.6	31.3	23.0	30.1	99	92	58	-	-
SS-6	70' LT	11+00	6.7-9.7	A-3(0)	17	MP	53.7	38.5	1.8	6.0	99	69	9	-	-
SS-7	40' RT	16+00	3.2-4.7	A-4(4)	24	7	2.6	21.4	47.9	28.1	99	96	86	-	-
SS-8	40' RT	16+00	6.7-9.7	A-2(0)	12	MP	49.1	37.0	5.8	8.0	92	67	14	-	-



NOTE: GROUNDLINE PROFILE AT CL OF -L- TAKEN FROM ROADWAY DESIGN PLANS AS OF 03/07/08
 NOTE: INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO PROFILE.

-Y1-

5/14/99

PROJECT REFERENCE NO.		SHEET NO.	
U-4007A		15	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION		PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-45	97' RT	28+00	0.5-1.5	A-2-4(0)	24	NP	18.1	54.9	16.6	10.5	7.3	6.8	2.4	-	-
SS-46	97' RT	28+00	3.2-4.7	A-2-4(0)	25	2	23.5	43.8	12.2	20.5	100	92	3.3	-	-
SS-47	97' RT	28+00	8.2-9.7	A-6(5)	33	16	10.7	39.6	19.2	30.6	100	96	5.4	-	-
SS-42	100' LT	33+00	0.5-1.5	A-4(0)	21	NP	11.1	52.9	17.6	18.5	100	97	4.3	-	-
SS-43	100' LT	33+00	3.2-4.7	A-5(7)	44	4	1.2	12.7	35.5	50.7	100	100	87	16.1	-
SS-44	100' LT	33+00	8.2-9.7	A-4(0)	21	NP	3.6	63.1	12.8	20.5	100	99	4.8	-	3.5

Ⓐ VERY LOOSE GRAY ORANGE SAND, MOIST TO SAT. (UNDIVIDED COASTAL PLAIN)

BEGIN RESURFACING
STA. 27+89.18

97' RT
SS-45
SS-46
SS-47

EXISTING GROUND

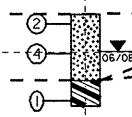
110' LT

120' RT

100' LT
SS-42
SS-43
SS-44

110' RT

LOOSE TO MEDIUM DENSE TAN BROWN SAND, MOIST (ROADWAY EMBANKMENT)



SOFT GRAY ORANGE

SANDY SILT, MOIST

UNDIVIDED (C.P.)

MEDIUM STIFF GRAY

ORANGE CLAYEY SILT AND SILTY CLAY

UNDIVIDED (C.P.)

SOFT GRAY ORANGE SANDY SILT, WET (UNDIVIDED COASTAL PLAIN)

-Y2-

NOTE: GROUNDLINE PROFILE AT CL OF -L- TAKEN FROM ROADWAY DESIGN PLANS AS OF 03/07/08

NOTE: INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO PROFILE.

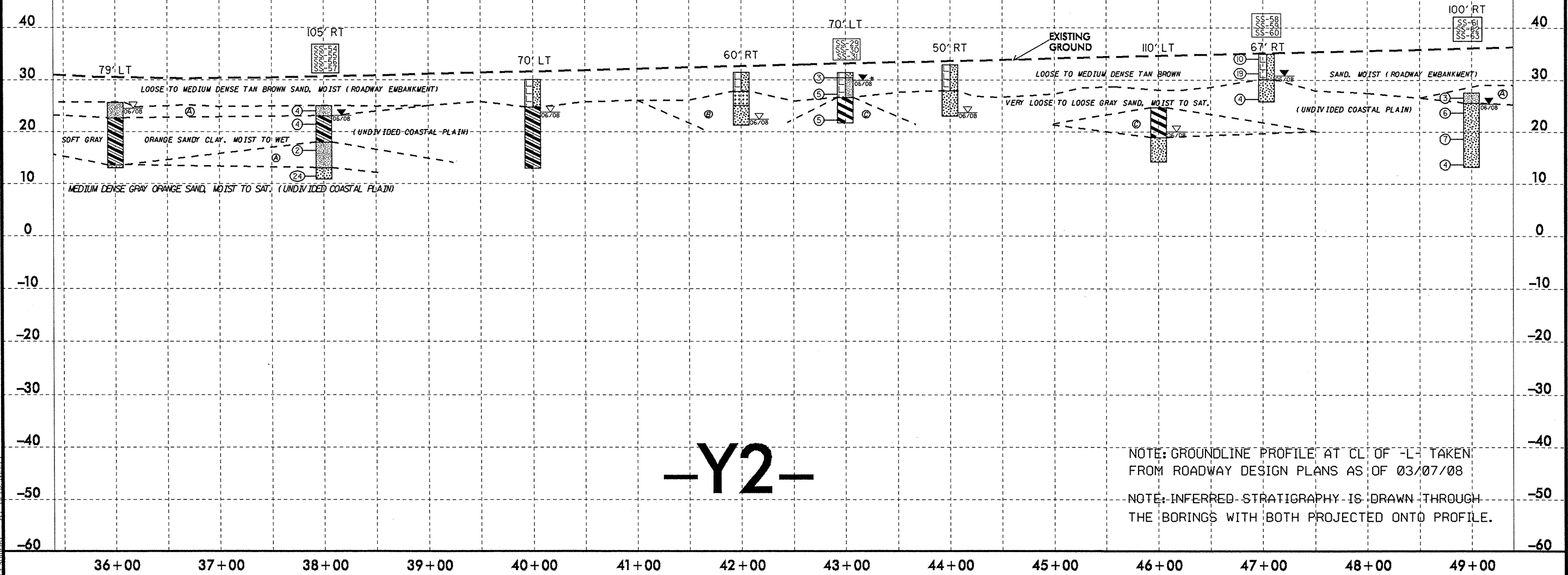
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SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT			% PASSING (SIEVES)			% MOISTURE	% ORGANIC	
							C.SAND	F.SAND	SILT	CLAY	10	40			200
SS-54	105' RT	38+00	0.5-1.5	A-4(0)	27	NP	3.4	39.2	32.9	24.5	100	98	80	-	-
SS-55	105' RT	38+00	2.6-4.1	A-6(13)	36	16	1.2	29.5	48.7	20.5	100	99	86	-	-
SS-56	105' RT	38+00	7.6-9.1	A-4(2)	26	5	7.2	35.5	28.8	26.5	100	98	68	22.4	-
SS-57	105' RT	38+00	12.6-14.1	A-2-4(0)	18	NP	30.9	59.2	1.5	8.4	100	93	12	-	-
SS-29	70' LT	43+00	0.5-1.3	A-2-4(0)	18	NP	21.9	56.2	11.4	10.4	91	84	23	-	-
SS-30	70' LT	43+00	3.2-4.7	A-4(3)	31	4	3.4	29.7	34.3	32.5	100	99	78	-	4.6
SS-31	70' LT	43+00	8.2-9.7	A-7-5(24)	55	21	1.6	9.2	20.5	68.7	100	99	91	-	-
SS-58	67' RT	47+04	0.5-1.5	A-2-4(0)	15	NP	27.5	52.2	7.9	12.4	86	75	23	-	-
SS-59	67' RT	47+04	2.8-4.3	A-2-4(0)	21	NP	40.5	44.3	4.7	10.4	87	68	19	-	-
SS-60	67' RT	47+04	7.8-9.3	A-2-4(0)	14	NP	34.9	55.0	1.7	8.4	92	80	11	-	-
SS-61	100' RT	49+00	0.5-1.5	A-4(0)	22	8	8.6	57.8	7.1	26.5	100	98	38	-	-
SS-62	100' RT	49+00	2.9-4.4	A-2-4(0)	19	7	16.2	52.2	11.1	20.5	98	92	35	-	-
SS-63	100' RT	49+00	7.9-9.4	A-2-4(0)	15	NP	29.1	51.2	7.3	12.4	98	84	23	-	-

- Ⓐ SOFT GRAY ORANGE SANDY CLAYEY SILT, MOIST (UNDIVIDED COASTAL PLAIN)
- Ⓑ VERY LOOSE TO LOOSE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)
- Ⓒ MEDIUM STIFF GRAY ORANGE SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)



NOTE: GROUNDLINE PROFILE AT CL OF -L- TAKEN FROM ROADWAY DESIGN PLANS AS OF 03/07/08

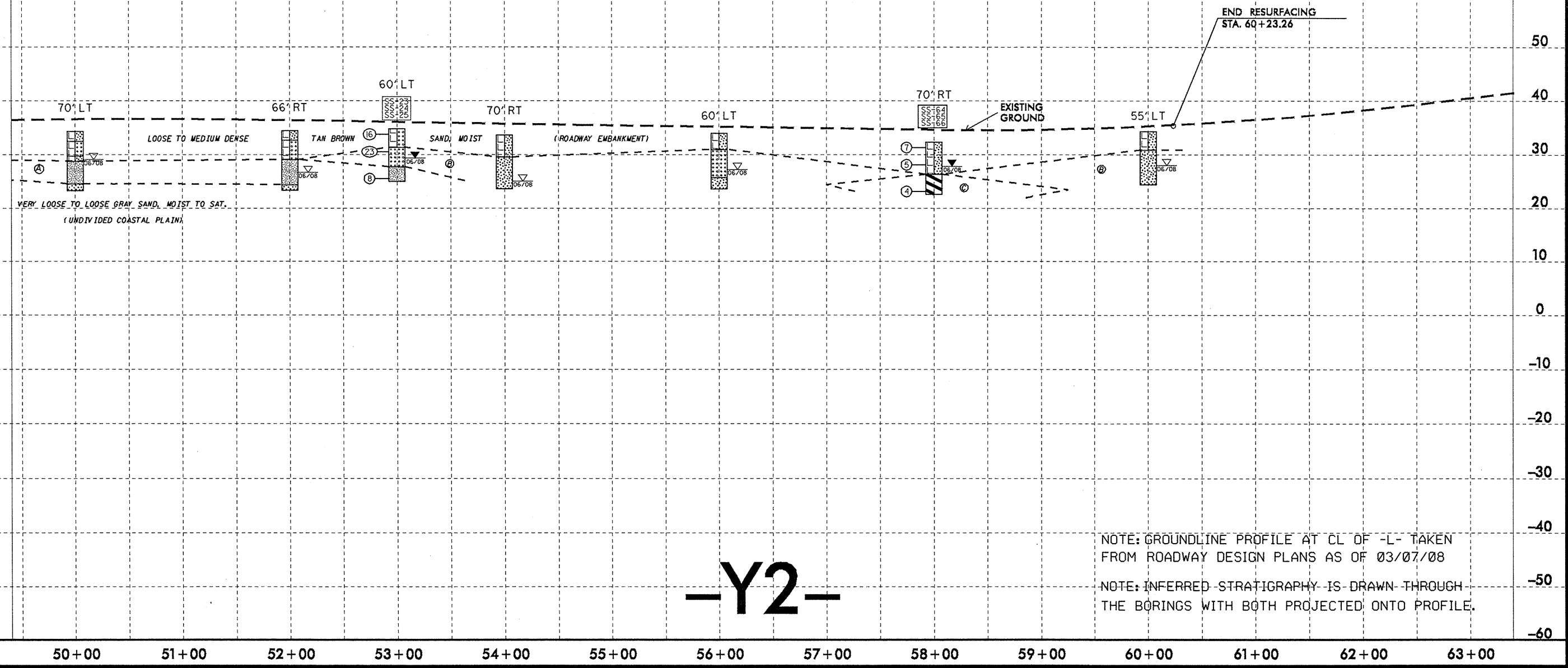
NOTE: INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO PROFILE.

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PROJECT REFERENCE NO. U-4007A	SHEET NO. 17
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-23	60' LT	53+00	0.5-1.5'	A-3(0)	19	NP	47.3	43.9	0.8	8.0	96	81	10	-	-
SS-24	60' LT	53+00	3.2-4.7'	A-3(0)	14	NP	46.8	46.8	0.0	6.4	96	86	7	-	-
SS-25	60' LT	53+00	8.2-9.7'	A-4(1)	32	8	14.3	46.4	10.8	26.5	100	95	47	13.0	-
SS-64	70' R	58+00	0.5-1.5'	A-2-4(0)	16	NP	34.5	50.4	4.7	10.4	90	76	17	-	-
SS-65	70' R	58+00	3.2-4.7'	A-2-4(0)	16	NP	49.9	36.9	2.7	10.4	90	65	14	-	-
SS-66	70' R	58+00	8.2-9.7'	A-7-6(36)	61	48	0.6	2.6	15.9	80.6	79	79	77	-	-

- Ⓐ SOFT GRAY ORANGE SANDY CLAYEY SILT, WET (UNDIVIDED COASTAL PLAIN)
- Ⓑ VERY LOOSE TO MEDIUM DENSE LOOSE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)
- Ⓒ MEDIUM STIFF GRAY ORANGE SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)



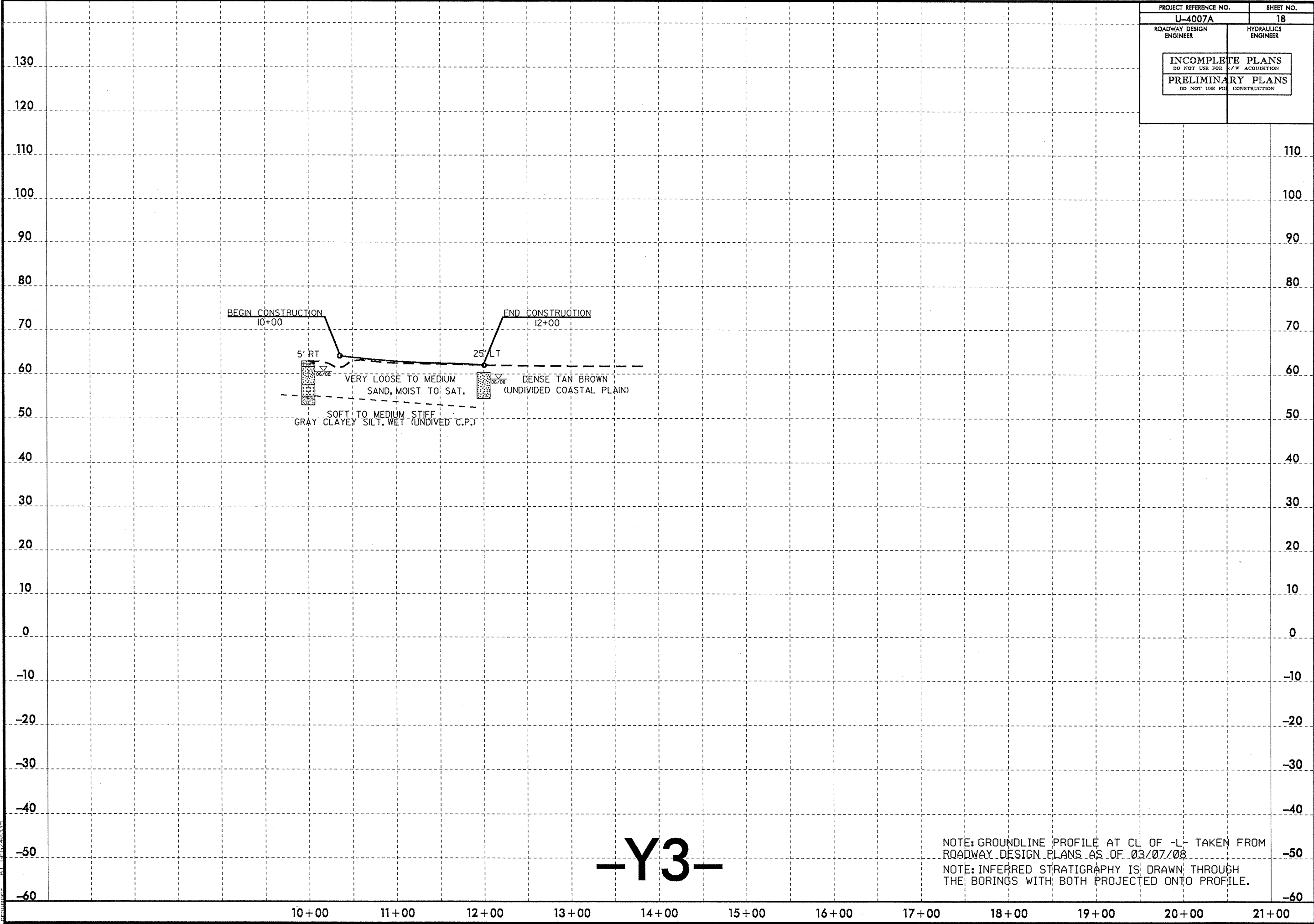
-Y2-

NOTE: GROUNDLINE PROFILE AT CL OF -L- TAKEN FROM ROADWAY DESIGN PLANS AS OF 03/07/08
 NOTE: INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO PROFILE.

5/14/99

PROJECT REFERENCE NO. U-4007A	SHEET NO. 18
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

27 AUG 2008 10:50 Investigation\TIP\4007A_GEO_RDW\CAADD_GEO\TECH\PlanProf\U4007A_GEO_rdw_rf1_Y31.dgn



-Y3-

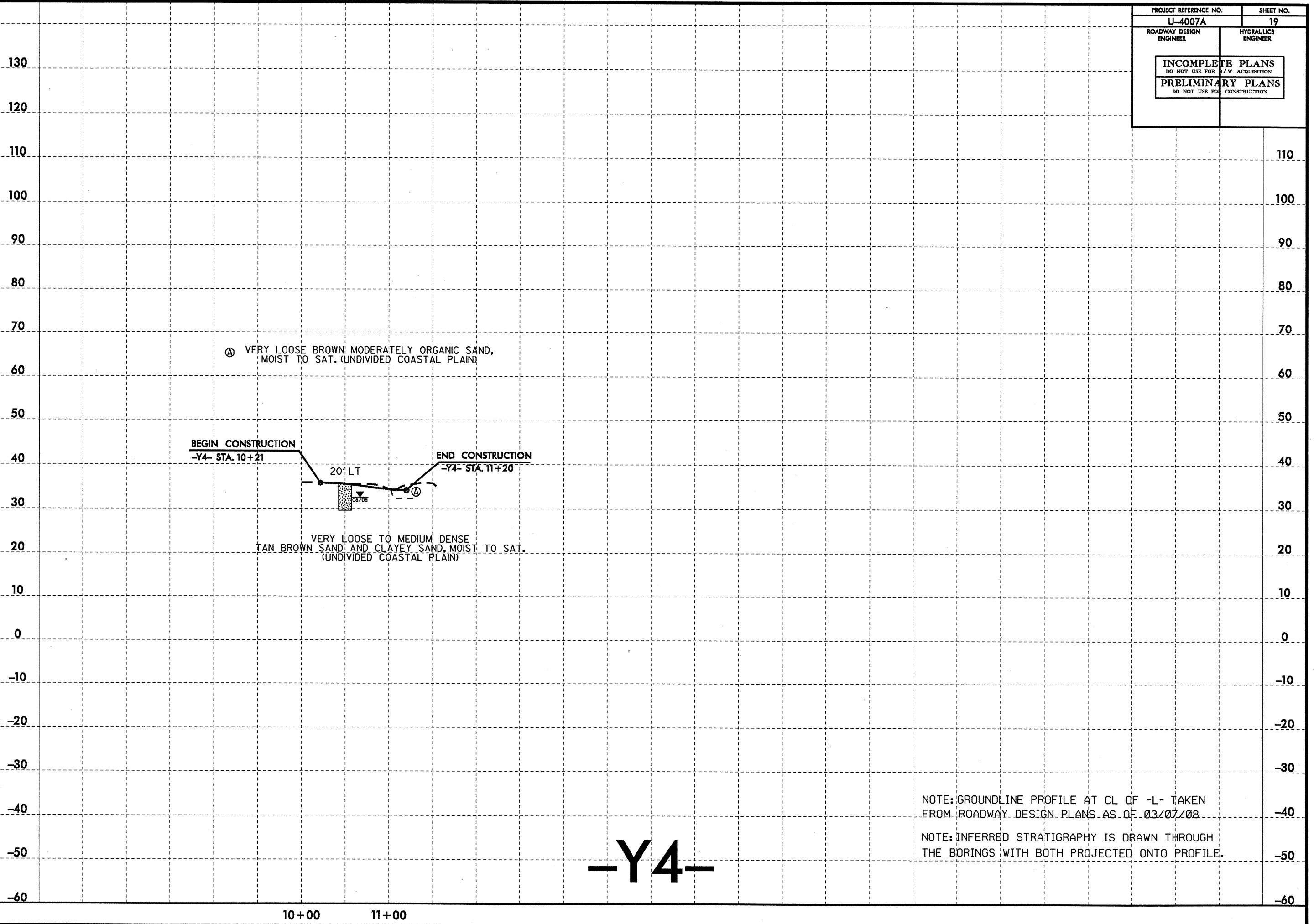
NOTE: GROUNDLINE PROFILE AT CL OF -L- TAKEN FROM ROADWAY DESIGN PLANS AS OF 03/07/08

NOTE: INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO PROFILE.

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DATE AT 06/26/08

PROJECT REFERENCE NO. U-4007A	SHEET NO. 19
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



-Y4-

NOTE: GROUNDLINE PROFILE AT CL OF -L- TAKEN FROM ROADWAY DESIGN PLANS AS OF 03/07/08

NOTE: INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO PROFILE.

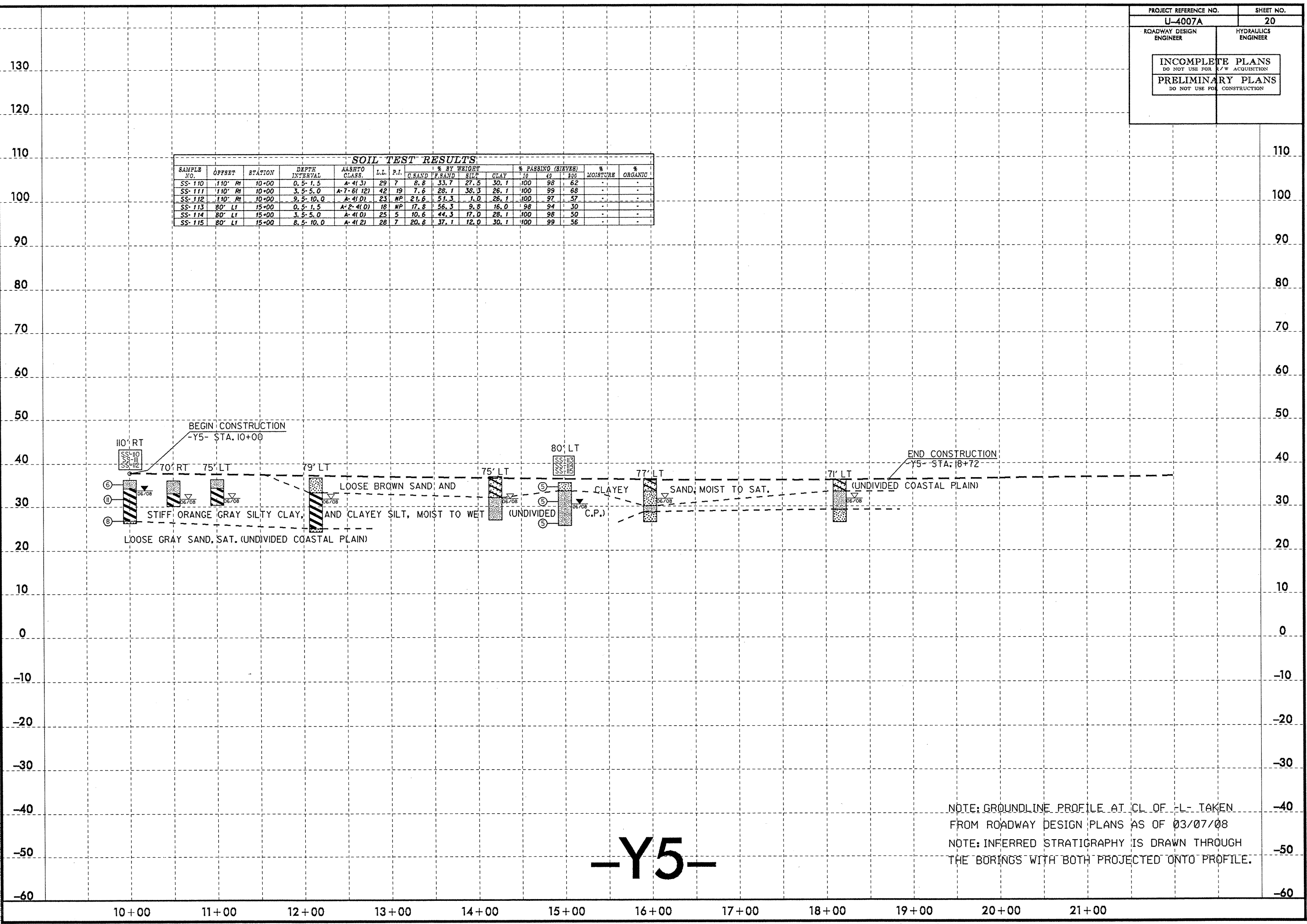
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5/14/99

PROJECT REFERENCE NO.		SHEET NO.	
U-4007A		20	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			

SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	ASHTO CLASS.	L.L.	P.I.	% BY WEIGHT			% PASSING (SIEVES)			% MOISTURE	% ORGANIC	
							G.SAND	F.SAND	SILT	10	40	200			
SS-110	110' RT	10+00	0.5-1.5	A-4(3)	29	7	8.8	33.7	27.5	30.1	100	98	62	-	-
SS-111	110' RT	10+00	3.5-5.0	A-7-6(12)	42	19	7.6	28.1	38.3	26.1	100	99	68	-	-
SS-112	110' RT	10+00	9.5-10.0	A-4(0)	23	NP	21.6	51.3	1.0	26.1	100	97	57	-	-
SS-113	80' LT	15+00	0.5-1.5	A-2-4(0)	18	NP	17.8	56.3	9.8	16.0	98	94	30	-	-
SS-114	80' LT	15+00	3.5-5.0	A-4(0)	25	5	10.6	44.3	17.0	28.1	100	98	50	-	-
SS-115	80' LT	15+00	8.5-10.0	A-4(2)	28	7	20.8	37.1	12.0	30.1	100	99	56	-	-

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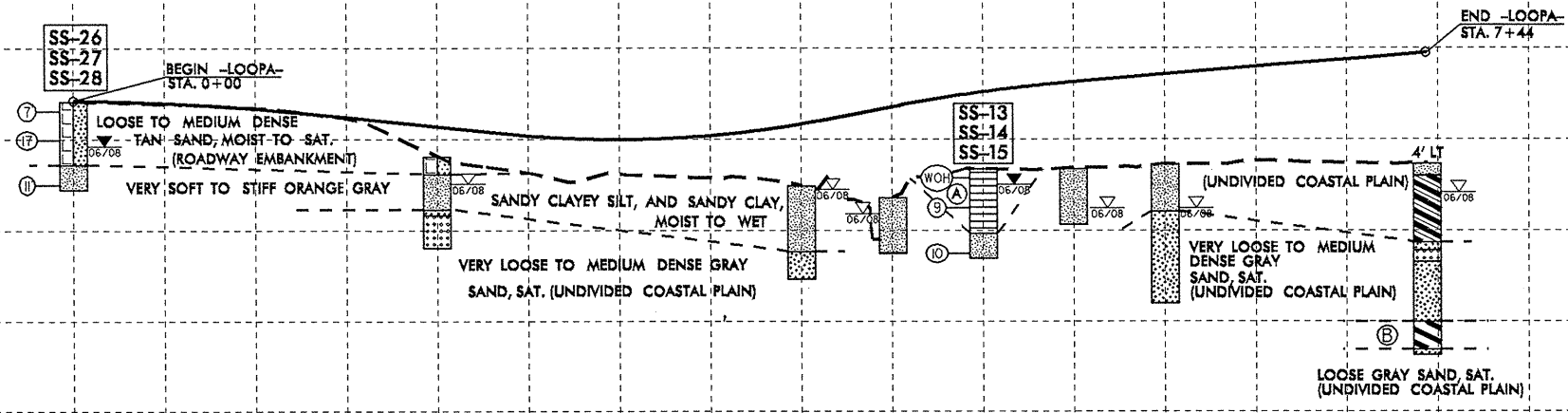


-Y5-

NOTE: GROUNDLINE PROFILE AT CL OF -L- TAKEN FROM ROADWAY DESIGN PLANS AS OF 03/07/08
 NOTE: INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO PROFILE.

SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			MOISTURE	ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-26	CL	0+00	0.5-1.5	A-2-4(0)	18	NP	43.8	45.6	4.2	6.4	92	80	12	-	-
SS-27	CL	0+00	3.2-4.7	A-2-4(0)	20	NP	34.7	52.0	6.8	6.4	91	83	14	-	-
SS-28	CL	0+00	8.2-9.7	A-4(0)	26	3	8.6	58.6	14.3	18.5	100	99	39	-	-
SS-13	CL	5+00	0.5-1.5	A-4(1)	27	5	9.9	37.0	45.1	8.0	97	93	59	22.4	8.8
SS-14	CL	5+00	3.2-4.7	A-4(0)	32	2	11.9	36.4	33.6	18.1	94	89	57	-	-
SS-15	CL	5+00	8.2-9.7	A-4(2)	22	6	5.0	42.5	28.4	24.1	100	99	71	13.0	-

- Ⓐ VERY SOFT TO STIFF BROWN SILT WITH LITTLE ORGANIC MATTER, MOIST TO WET (UNDIVIDED COASTAL PLAIN)
- Ⓑ MEDIUM STIFF GRAY SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)



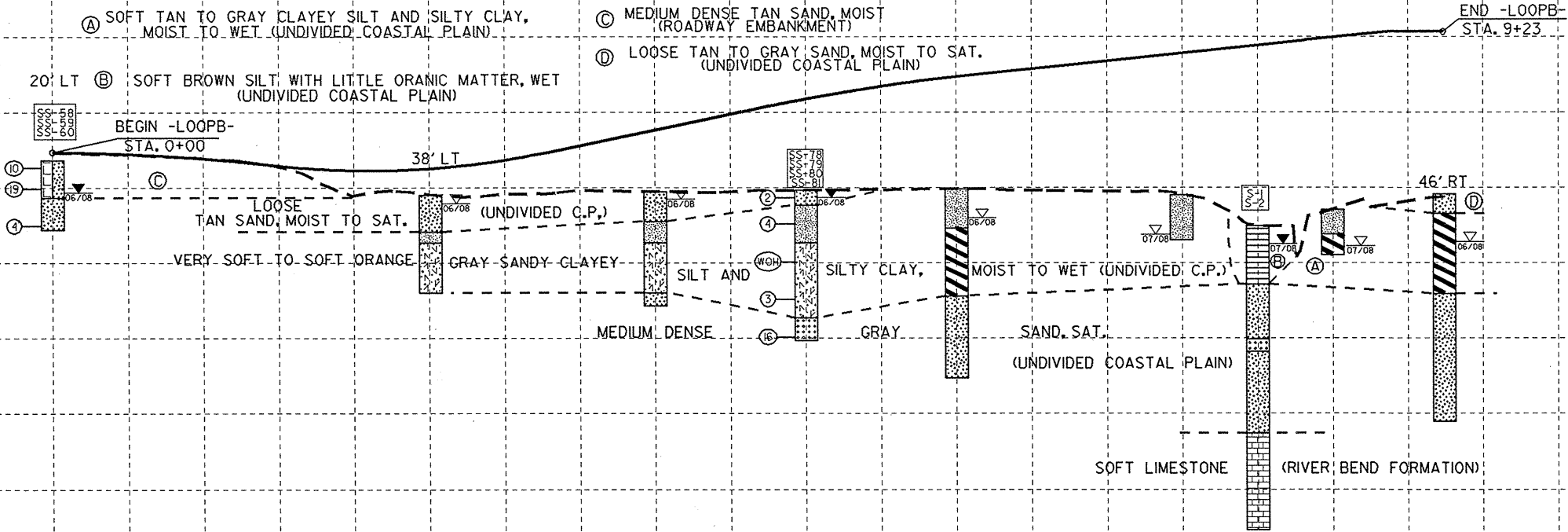
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NOTE: GROUNDLINE PROFILE AT CL OF -L- TAKEN FROM ROADWAY DESIGN PLANS AS OF 03/07/08

NOTE: INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO PROFILE.

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 AT 16:24:33

SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	100		
SS-58	20' LT	0+00	0.5-1.5	A-2-4(D)	15	NP	27.5	52.2	17.9	12.4	86	75	23	-	-
SS-59	20' LT	0+00	2.8-4.3	A-2-4(D)	21	NP	40.5	44.3	4.7	10.4	87	68	19	-	-
SS-60	20' LT	0+00	7.8-9.3	A-2-4(D)	14	NP	34.9	55.0	11.7	8.4	92	80	11	-	-
SS-78	CL	5+00	0.5-1.5	A-2-4(D)	23	NP	6.2	73.0	12.3	8.5	100	100	34	-	-
SS-79	CL	5+00	3.5-5.0	A-4(1)	22	6	2.8	59.2	19.5	18.5	100	100	56	-	-
SS-80	CL	5+00	8.5-10.0	A-5(9)	49	9	0.8	6.0	32.4	58.8	79	79	75	-	-
SS-81	CL	5+00	18.5-20.0	A-3(0)	17	NP	51.3	47.3	1.0	0.4	98	79	2	-	-
S-1	CL	8+00	0.5-1.5	A-6(6)	34	13	3.1	40.0	22.2	34.7	100	99	64	20.1	8.6
S-2	CL	8+00	1.5-6.0	A-5(7)	43	10	7.1	30.6	31.6	30.6	100	97	68	25.2	7.8



-LOOP-B-

NOTE: GROUNDLINE PROFILE AT CL OF -L- TAKEN FROM ROADWAY DESIGN PLANS AS OF 03/07/08

NOTE: INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO PROFILE.

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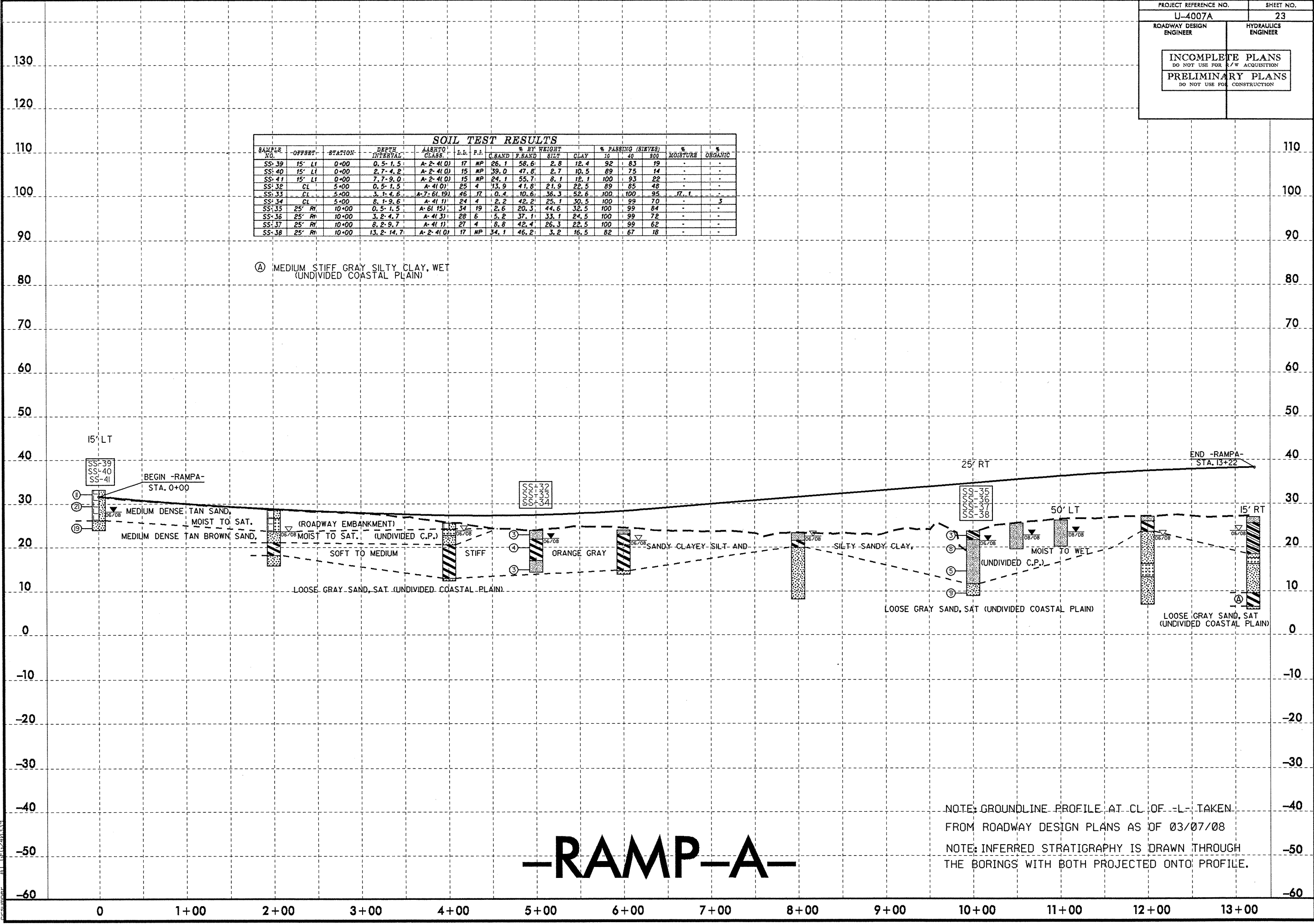
5/14/99

PROJECT REFERENCE NO. U-4007A	SHEET NO. 23
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

SOIL TEST RESULTS														
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS	L.L.	P.I.	% BY WEIGHT			% PASSING (SIEVES)		% MOISTURE	% ORGANIC	
							G.SAND	F.SAND	SILT	CLAY	10	40	800	
SS-39	15' LT	0+00	0.5-1.5	A-2-4(0)	17	NP	26.1	58.6	2.8	12.4	92	83	19	-
SS-40	15' LT	0+00	2.7-4.2	A-2-4(0)	15	NP	39.0	47.8	2.7	10.5	89	75	14	-
SS-41	15' LT	0+00	7.7-9.0	A-2-4(0)	15	NP	24.1	55.7	8.1	12.1	100	93	22	-
SS-32	CL	5+00	0.5-1.5	A-4(0)	25	4	13.9	41.8	21.9	22.5	89	85	48	-
SS-33	CL	5+00	3.1-4.6	A-7-6(19)	46	17	0.4	10.6	36.3	52.6	100	100	95	17.1
SS-34	CL	5+00	8.1-9.6	A-4(1)	24	4	2.2	42.2	25.1	30.5	100	99	70	-
SS-35	25' Rt	10+00	0.5-1.5	A-6(15)	34	19	2.6	20.3	44.6	32.5	100	99	84	-
SS-36	25' Rt	10+00	3.2-4.7	A-4(3)	28	6	5.2	37.1	33.1	24.5	100	99	72	-
SS-37	25' Rt	10+00	8.2-9.7	A-4(1)	27	4	8.8	42.4	26.3	22.5	100	99	62	-
SS-38	25' Rt	10+00	13.2-14.7	A-2-4(0)	17	NP	34.1	46.2	3.2	16.5	82	67	18	-

(A) MEDIUM STIFF GRAY SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)

27 AUG 2008 10:46 Investigator\TIP\U4007A_GEO_GEO\ROADWAY\CADD\GEO\TECH\Plan\Prof\U4007A_GEO_rdy_pf1-RAMPAL.dgn
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-RAMP-A-

NOTE: GROUNDLINE PROFILE AT CL OF -L- TAKEN FROM ROADWAY DESIGN PLANS AS OF 03/07/08

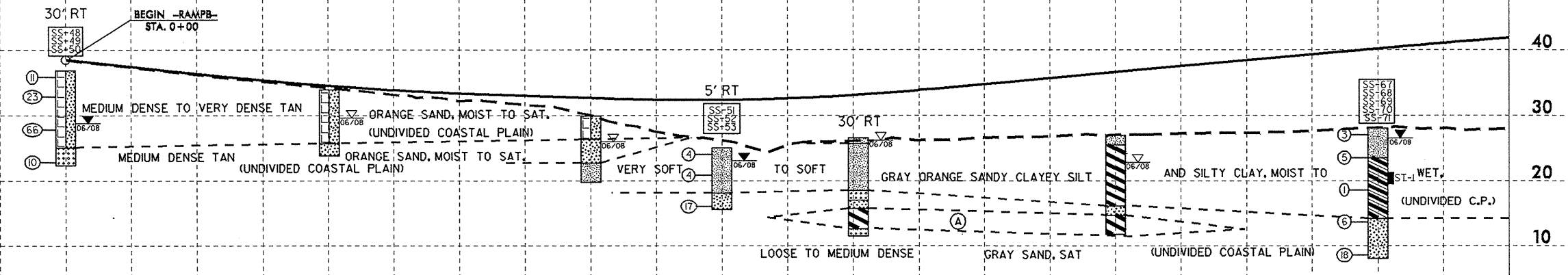
NOTE: INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO PROFILE.

5/14/99

PROJECT REFERENCE NO.		SHEET NO.	
U-4007A		24	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			

SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	ASTM CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-48	30' RT	0+00	0.5-1.5	A-2-4(D)	19	NP	33.4	48.8	5.3	12.5	89	75	21	-	-
SS-49	30' RT	0+00	2.9-4.4	A-2-4(D)	17	NP	28.5	55.7	5.3	10.5	90	79	19	-	-
SS-50	30' RT	0+00	12.9-14.4	A-3(O)	17	NP	36.2	55.9	1.5	6.4	93	78	2	-	-
SS-51	5' RT	5+00	0.5-1.5	A-4(6)	30	9	3.6	31.4	34.5	30.6	100	99	79	-	-
SS-52	5' RT	5+00	3.2-4.7	A-4(5)	36	5	2.0	25.5	35.9	36.6	100	99	83	-	-
SS-53	5' RT	5+00	8.2-9.7	A-2-4(D)	18	NP	21.1	70.4	0.11	8.4	96	88	11	-	-
SS-67	CL	10+00	0.5-1.5	A-4(O)	19	NP	14.0	60.6	14.9	10.4	100	92	36	-	-
SS-68	CL	10+00	3.5-4.8	A-6(4)	25	11	5.8	49.7	22.0	22.5	100	97	66	-	-
SS-69	CL	10+00	9.0-10.0	A-4(O)	32	NP	10.2	50.2	21.2	18.5	100	97	48	-	-
SS-70	CL	10+00	13.5-14.5	A-5(6)	47	5	2.2	15.2	26.0	56.6	82	81	71	31.2	-
SS-71	CL	10+00	18.5-20.0	A-2-4(O)	19	NP	60.2	37.1	2.3	0.4	92	57	18	-	-

(A) SOFT GRAY SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)



-RAMP-B-

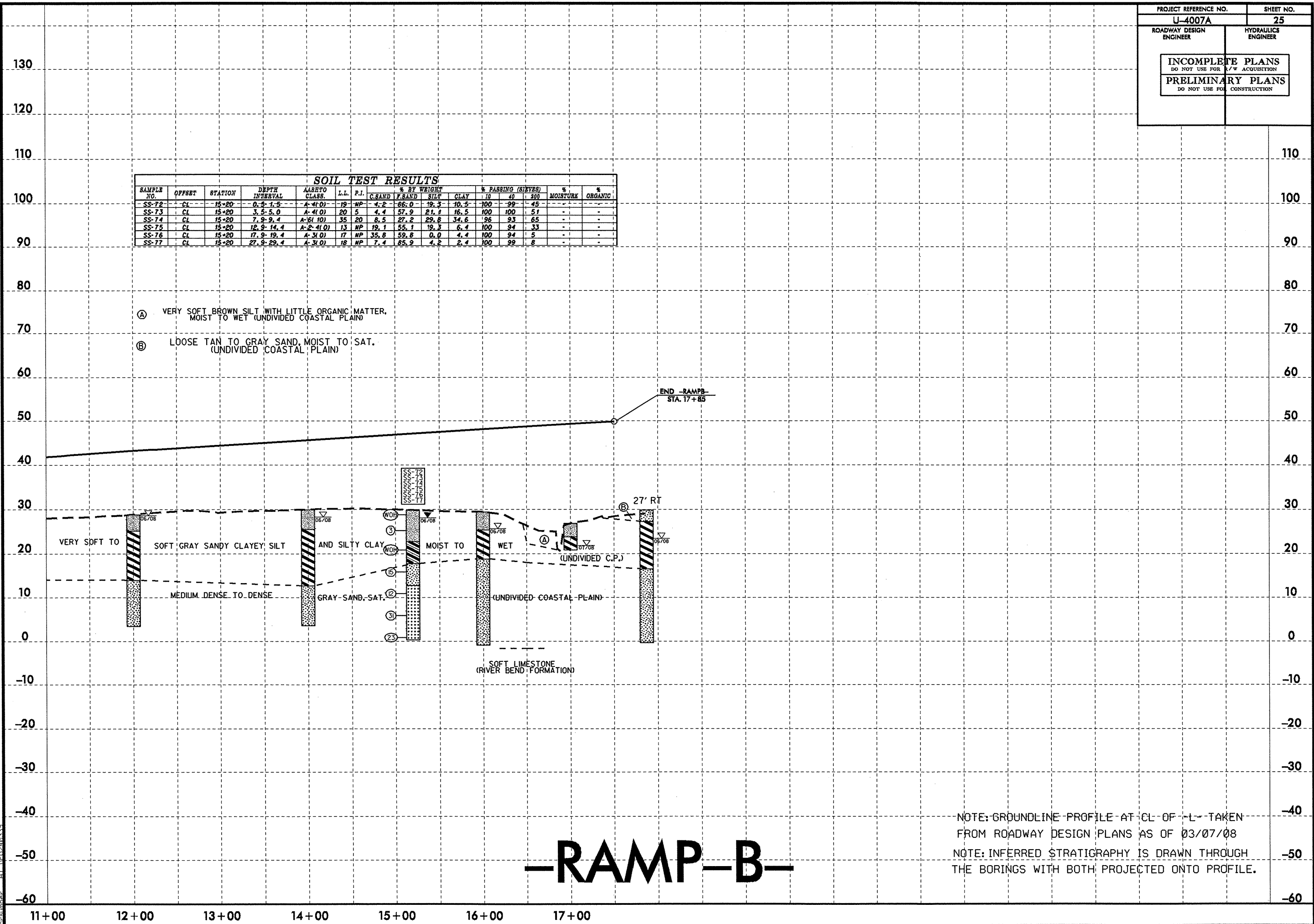
NOTE: GROUNDLINE PROFILE AT CL OF -L- TAKEN FROM ROADWAY DESIGN PLANS AS OF 03/07/08
 NOTE: INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO PROFILE.

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SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	#10	#40	#200		
SS-72	CL	15+20	0.5-1.5	A-4(0)	19	NP	4.2	86.0	19.3	10.5	100	99	45	-	-
SS-73	CL	15+20	3.5-5.0	A-4(0)	20	5	4.4	57.9	21.1	16.5	100	100	51	-	-
SS-74	CL	15+20	7.9-9.4	A-6(10)	35	20	8.5	27.2	29.8	34.6	96	93	65	-	-
SS-75	CL	15+20	12.9-14.4	A-2(40)	13	NP	19.1	55.1	19.3	6.4	100	94	33	-	-
SS-76	CL	15+20	17.9-19.4	A-3(0)	17	NP	35.8	59.8	0.0	4.4	100	94	5	-	-
SS-77	CL	15+20	27.9-29.4	A-3(0)	18	NP	7.4	85.9	4.2	2.4	100	99	8	-	-

Ⓐ VERY SOFT BROWN SILT WITH LITTLE ORGANIC MATTER, MOIST TO WET (UNDIVIDED COASTAL PLAIN)

Ⓑ LOOSE TAN TO GRAY SAND, MOIST TO SAT. (UNDIVIDED COASTAL PLAIN)



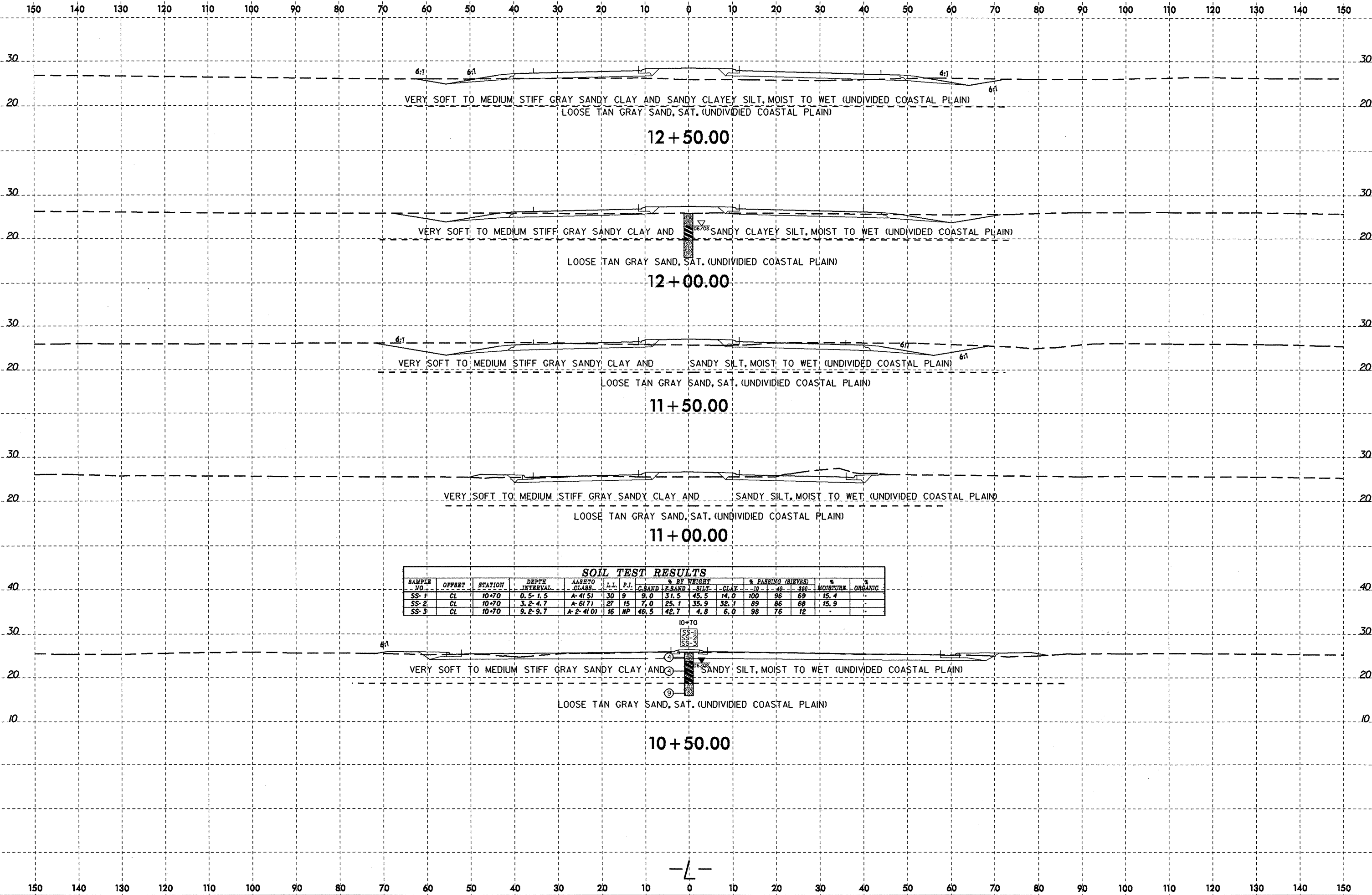
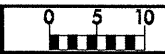
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NOTE: GROUNDLINE PROFILE AT CL OF "L" TAKEN FROM ROADWAY DESIGN PLANS AS OF 03/07/08

NOTE: INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO PROFILE.

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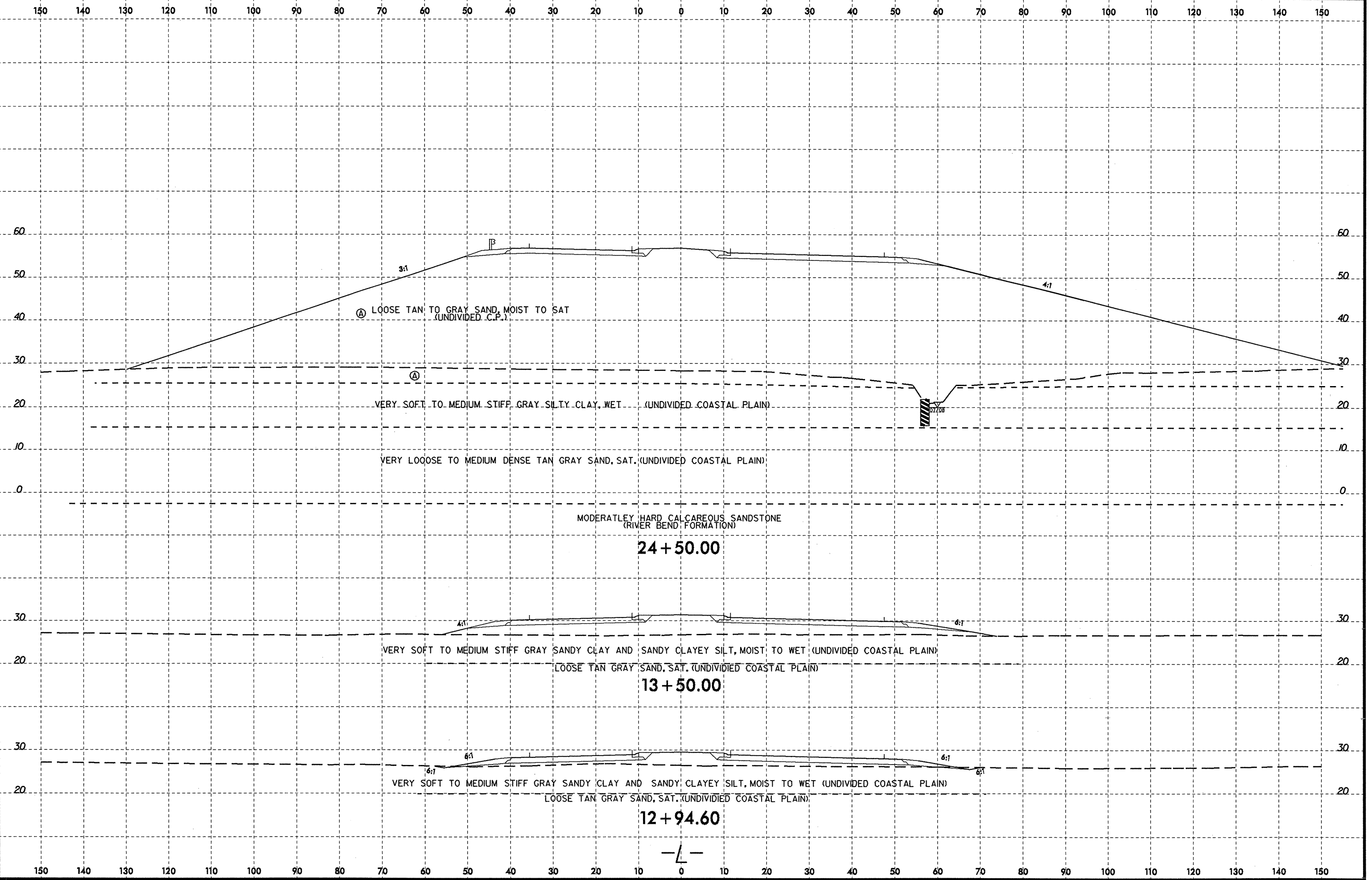
SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	ASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							G. SAND	F. SAND	SILT	CLAY	-10	-40	-200		
SS-1	CL	10+70	0.5-1.5	A-4(5)	30	9	9.0	31.5	45.5	14.0	100	96	69	15.4	-
SS-2	CL	10+70	3.2-4.7	A-6(7)	27	15	7.0	25.1	35.9	32.1	89	86	68	15.9	-
SS-3	CL	10+70	9.2-9.7	A-2(10)	16	NP	46.5	42.7	4.8	6.0	98	76	12	-	-

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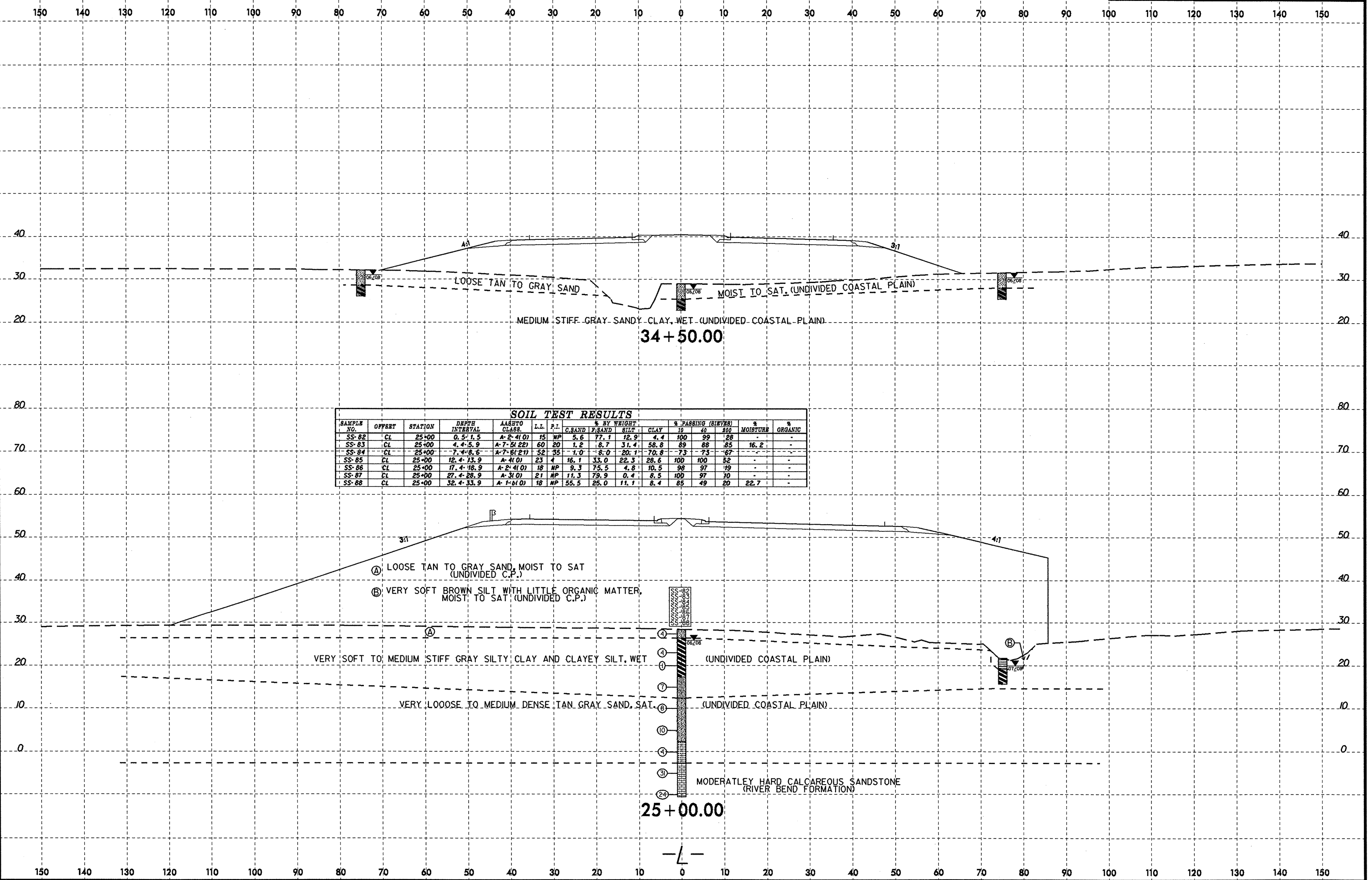
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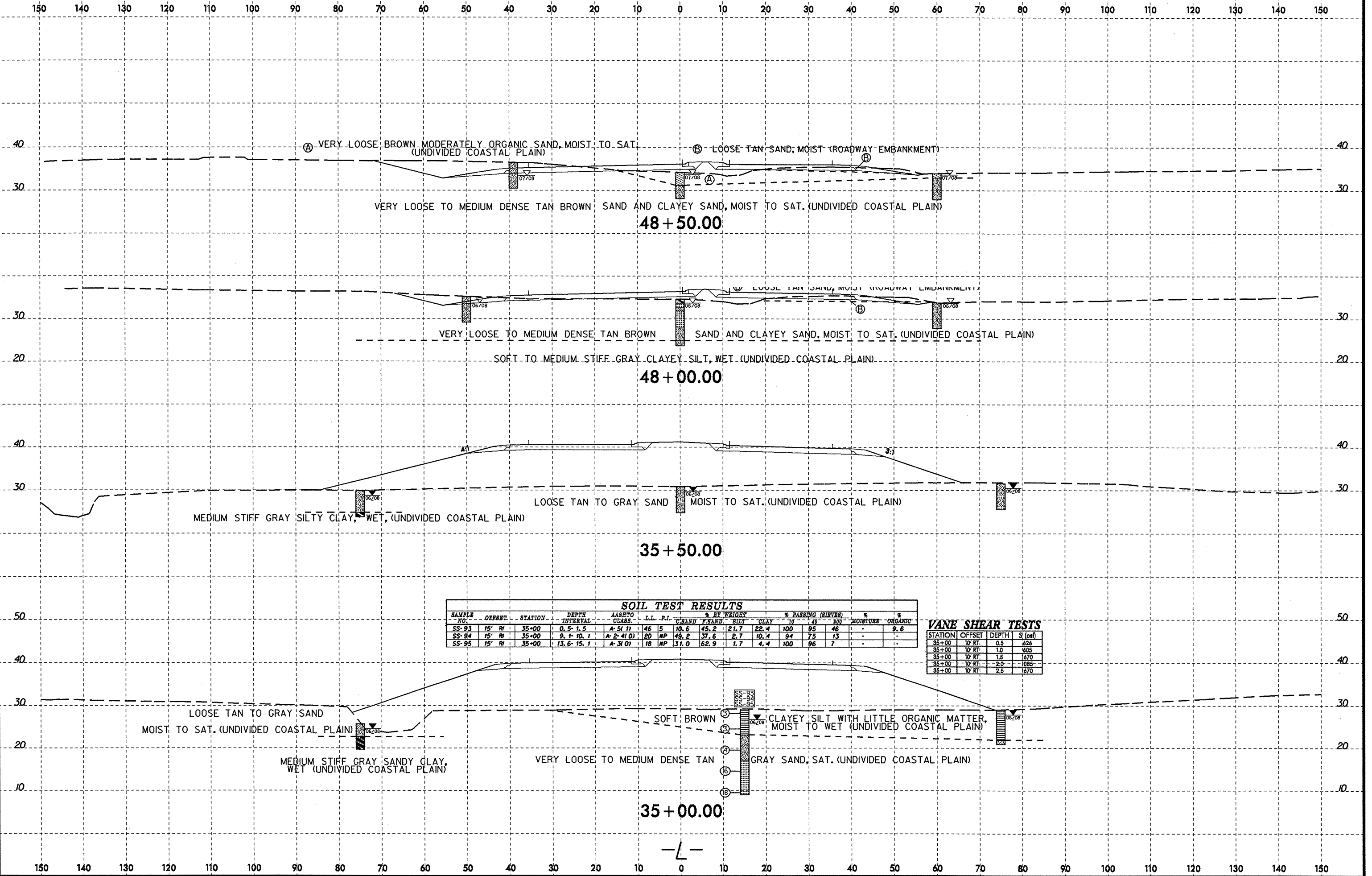
8/23/99



SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	ASTM CLASS.	L.L.	P.I.	% BY WEIGHT			% PASSING (SIEVES)			% MOISTURE	% ORGANIC	
							C. SAND	F. SAND	SILT	10	40	200			
SS-82	CL	25+00	0.5'-1.5'	A-2-4(0)	15	WP	5.6	77.1	12.9	4.4	100	99	128	-	-
SS-83	CL	25+00	4.4'-5.9'	A-7-5(22)	60	20	1.2	18.7	31.4	58.8	89	88	185	16.2	-
SS-84	CL	25+00	7.4'-8.6'	A-7-6(21)	52	35	1.0	8.0	20.1	70.8	73	67	-	-	
SS-85	CL	25+00	12.4'-13.9'	A-4(0)	23	4	16.1	33.0	22.3	28.6	100	100	52	-	-
SS-86	CL	25+00	17.4'-18.9'	A-2-4(0)	18	NP	9.3	75.5	4.8	10.5	98	97	19	-	-
SS-87	CL	25+00	27.4'-28.9'	A-3(0)	21	NP	11.3	79.9	0.4	8.5	100	97	70	-	-
SS-88	CL	25+00	32.4'-33.9'	A-1-6(0)	18	NP	55.5	25.0	11.1	8.4	85	49	20	22.7	-

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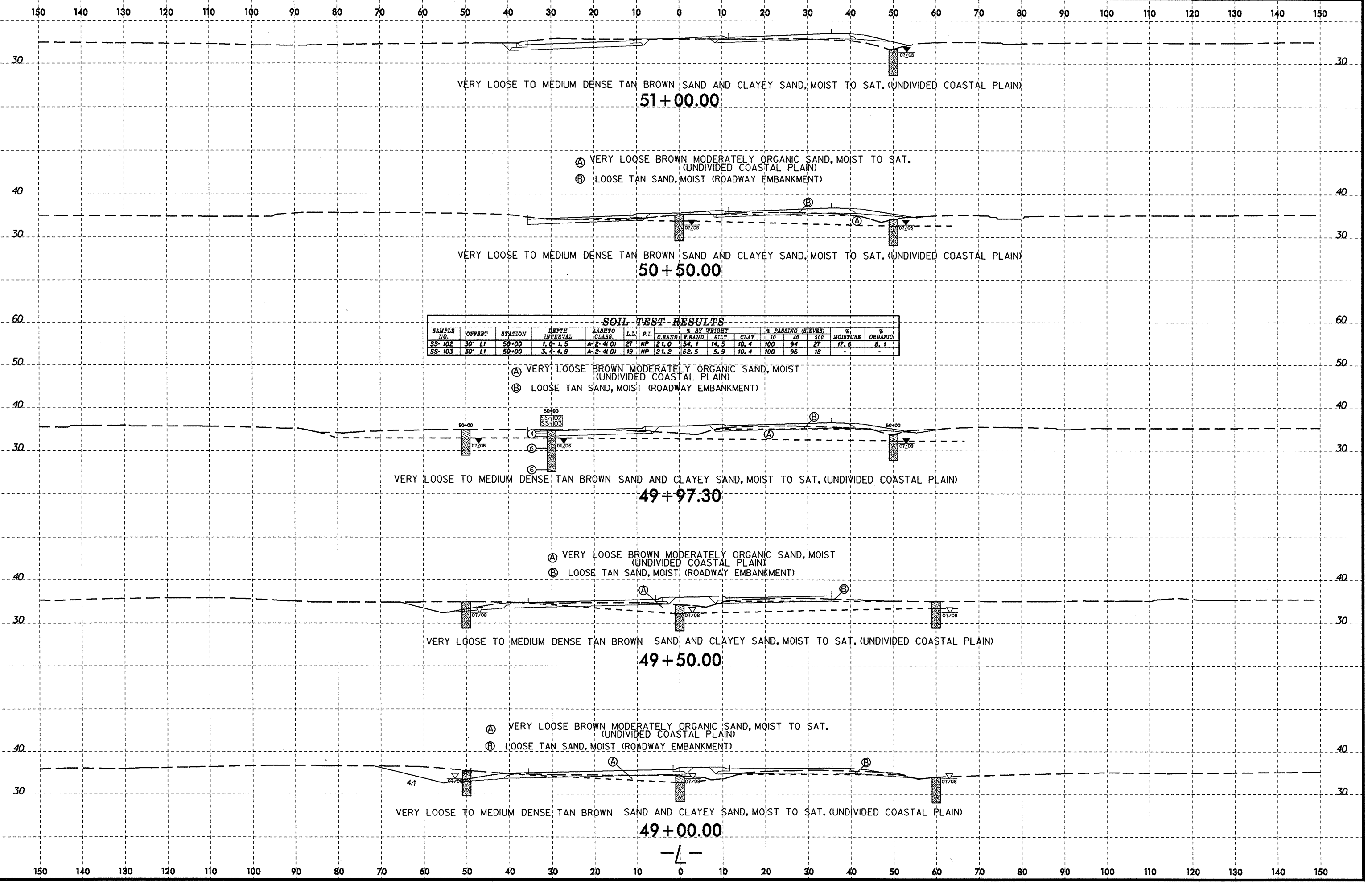


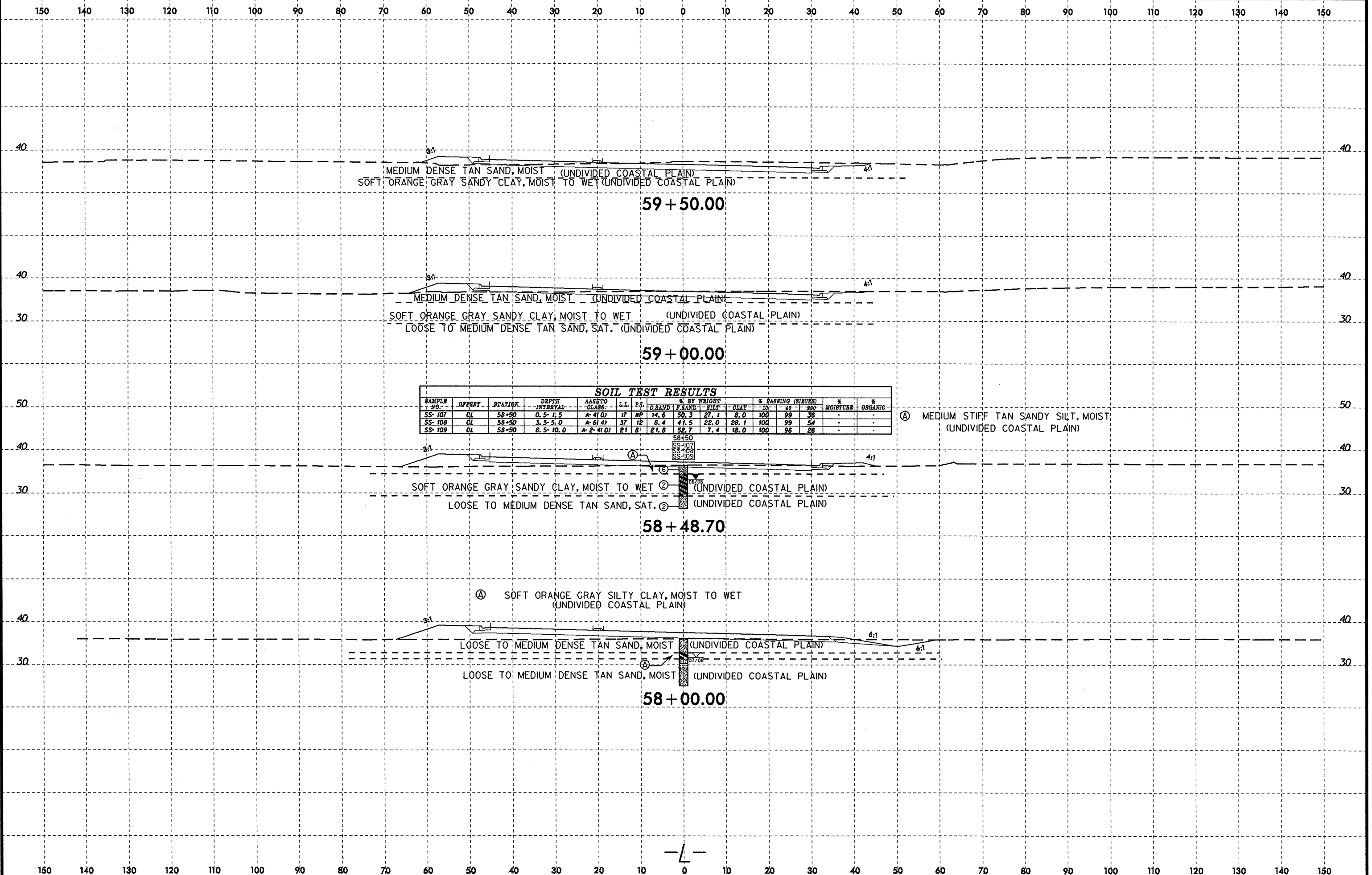
SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	ASTM TO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			MOISTURE	ORGANIC
							SAND	F.SAND	SILT	CLAY	70	40	300		
SS-93	15' R	35+00	0.5 - 1.5	A-5(1)	46	5	10.6	45.2	21.7	22.4	100	95	46	-	9.6
SS-94	15' R	35+00	9.1 - 10.1	A-2-4(1)	20	NP	49.2	37.6	2.7	10.4	94	75	13	-	-
SS-95	15' R	35+00	13.6 - 15.1	A-3(1)	18	NP	31.0	62.9	1.7	4.4	100	96	7	-	-

VANE SHEAR TESTS			
STATION	OFFSET	DEPTH	S (psf)
35+00	10' RT	0.5	626
35+00	10' RT	1.0	605
35+00	10' RT	1.5	1670
35+00	10' RT	2.0	1095
35+00	10' RT	2.6	1670

-L-

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 27-AUG-2008 11:16
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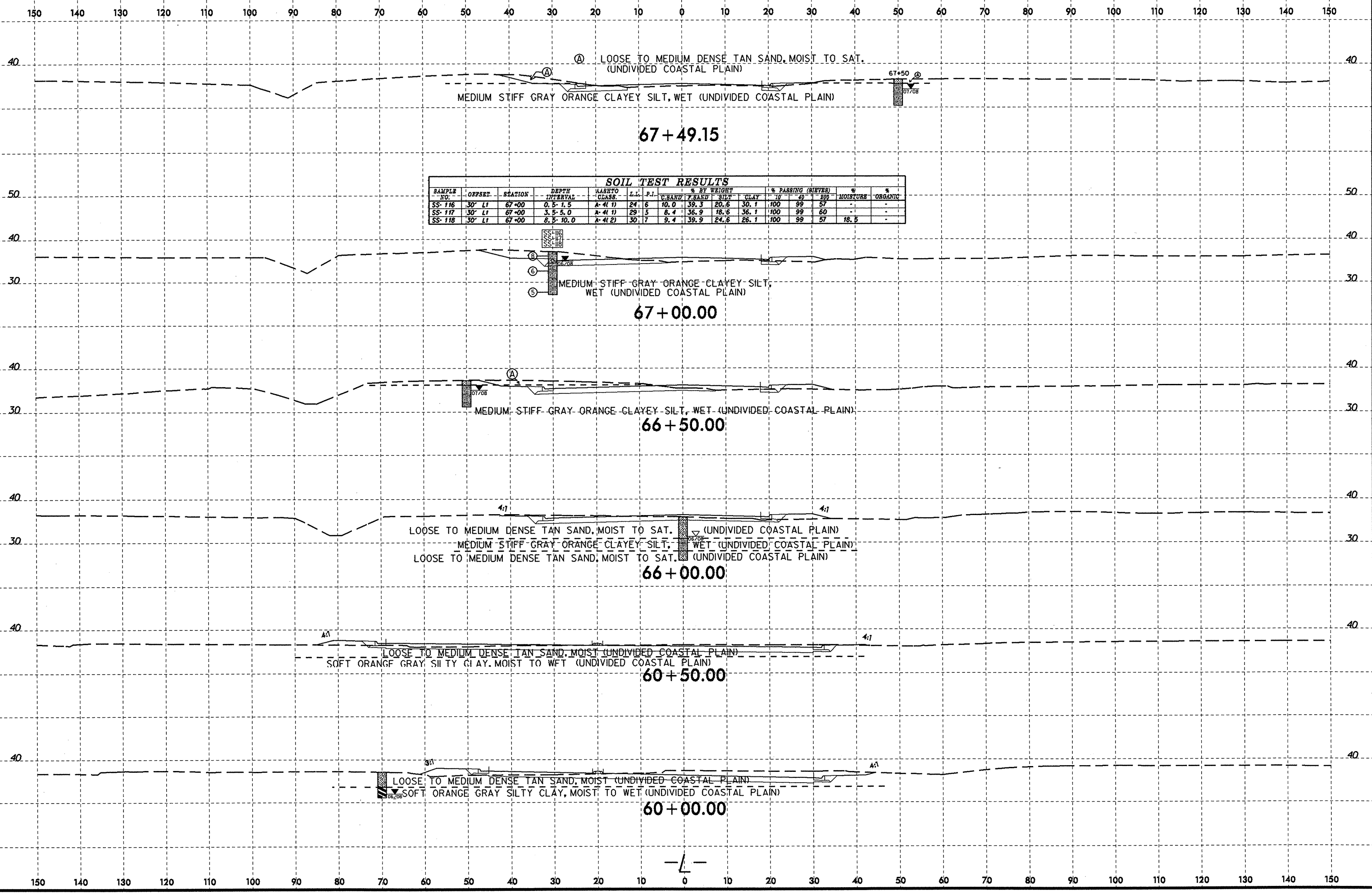
59 + 50.00

59 + 00.00

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-107	CL	58+50	0.5 - 1.5	A-1(0)	17	NP	14.6	50.3	27.1	8.0	100	99	38	-	-
SS-108	CL	58+50	3.5 - 5.0	A-6(4)	37	12	8.4	41.5	22.0	28.1	100	99	54	-	-
SS-109	CL	58+50	8.5 - 10.0	A-2(4(0))	21	8	21.8	52.7	7.4	18.0	100	96	28	-	-

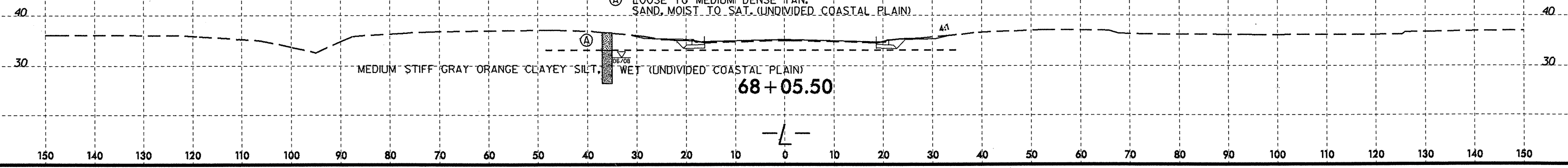
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58 + 00.00

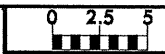




150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



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75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

35 35

30 30

25 25

MEDIUM STIFF GRAY SANDY CLAYEY SILT, MOIST TO WET (UNDIVIDED C.P.)

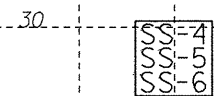
LOOSE TO MEDIUM DENSE GRAY SAND, SAT. (UNDIVIDED C.P.)

11+50.00

40 40

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-4	70' Lt	11+00	0.5-1.3	A-4(1)	23	7	16.4	40.3	25.3	18.0	99	92	49	-	-
SS-5	70' Lt	11+00	3.2-4.7	A-4(2)	25	9	15.6	31.3	23.0	30.1	99	92	58	-	-
SS-6	70' Lt	11+00	8.7-9.7	A-3(0)	17	NP	53.7	38.5	1.8	6.0	99	69	9	-	-



25 25

MEDIUM STIFF GRAY SANDY CLAYEY SILT, MOIST TO WET (UNDIVIDED C.P.)

LOOSE TO MEDIUM DENSE GRAY SAND, SAT. (UNDIVIDED C.P.)

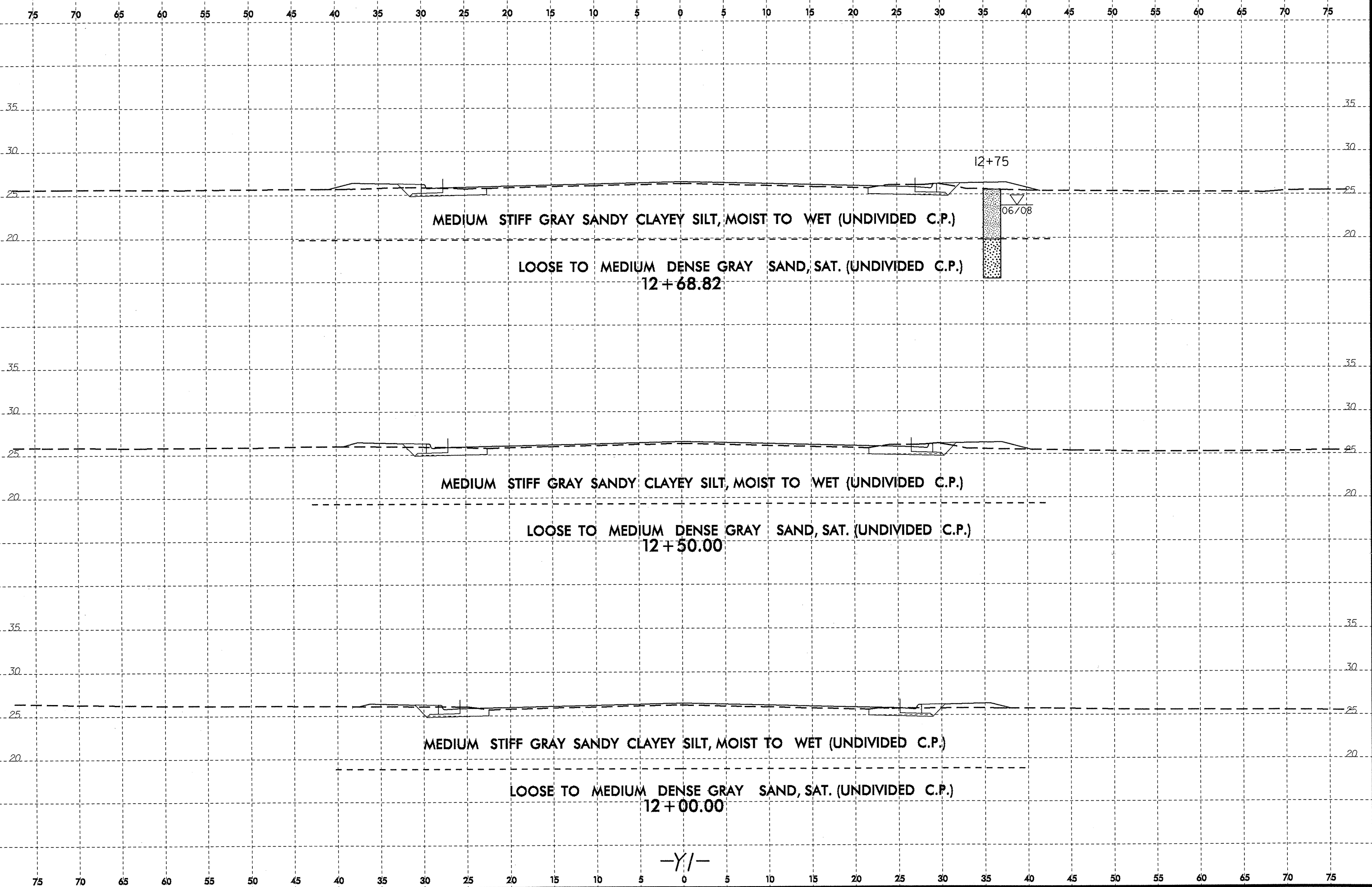
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-Y/-

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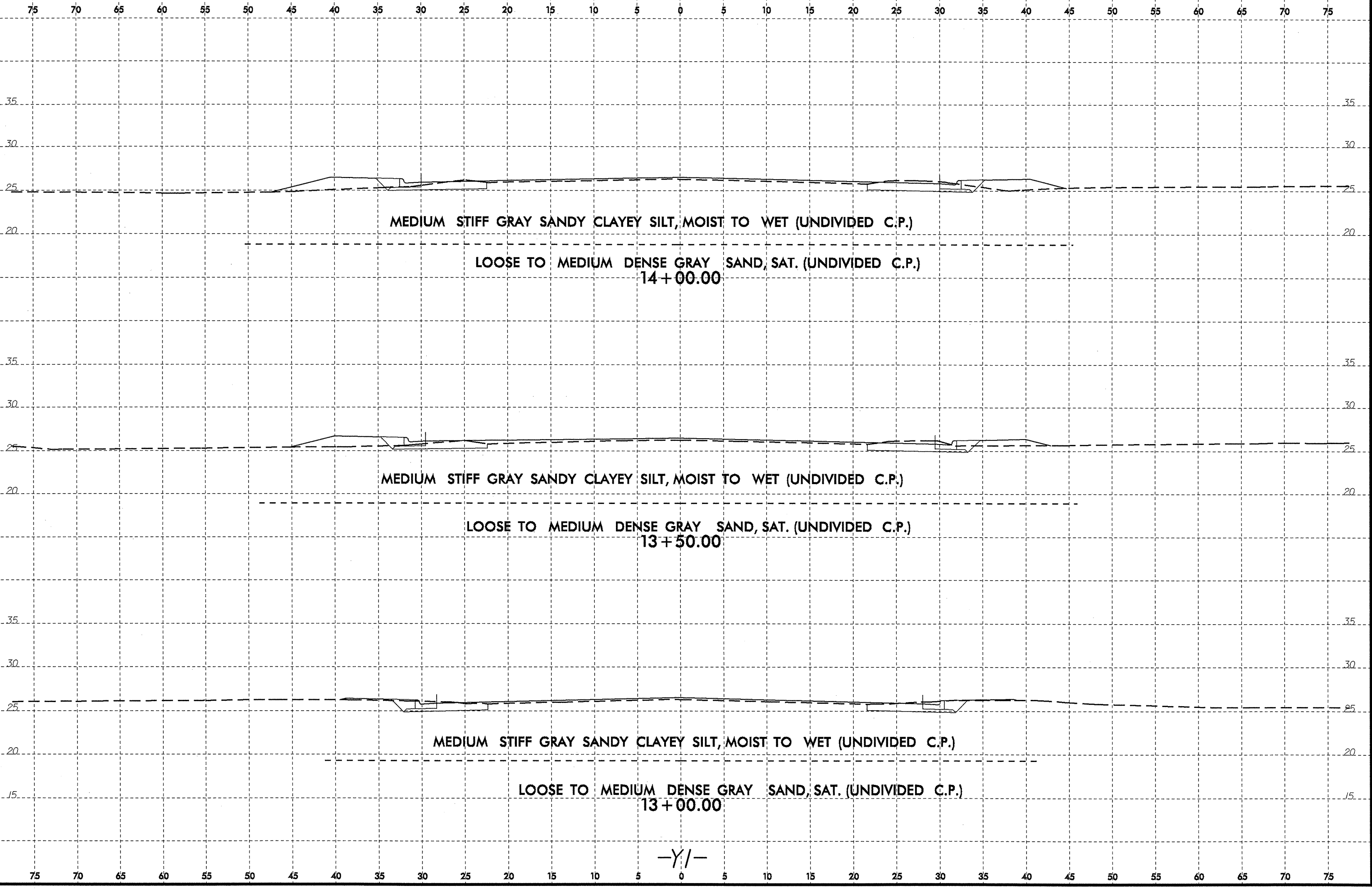
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8/23/99

0 2.5 5	PROJ. REFERENCE NO. U-4007A	SHEET NO. 36
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MEDIUM STIFF GRAY SANDY CLAYEY SILT, MOIST TO WET (UNDIVIDED C.P.)

LOOSE TO MEDIUM DENSE GRAY SAND, SAT. (UNDIVIDED C.P.)
14+00.00

MEDIUM STIFF GRAY SANDY CLAYEY SILT, MOIST TO WET (UNDIVIDED C.P.)

LOOSE TO MEDIUM DENSE GRAY SAND, SAT. (UNDIVIDED C.P.)
13+50.00

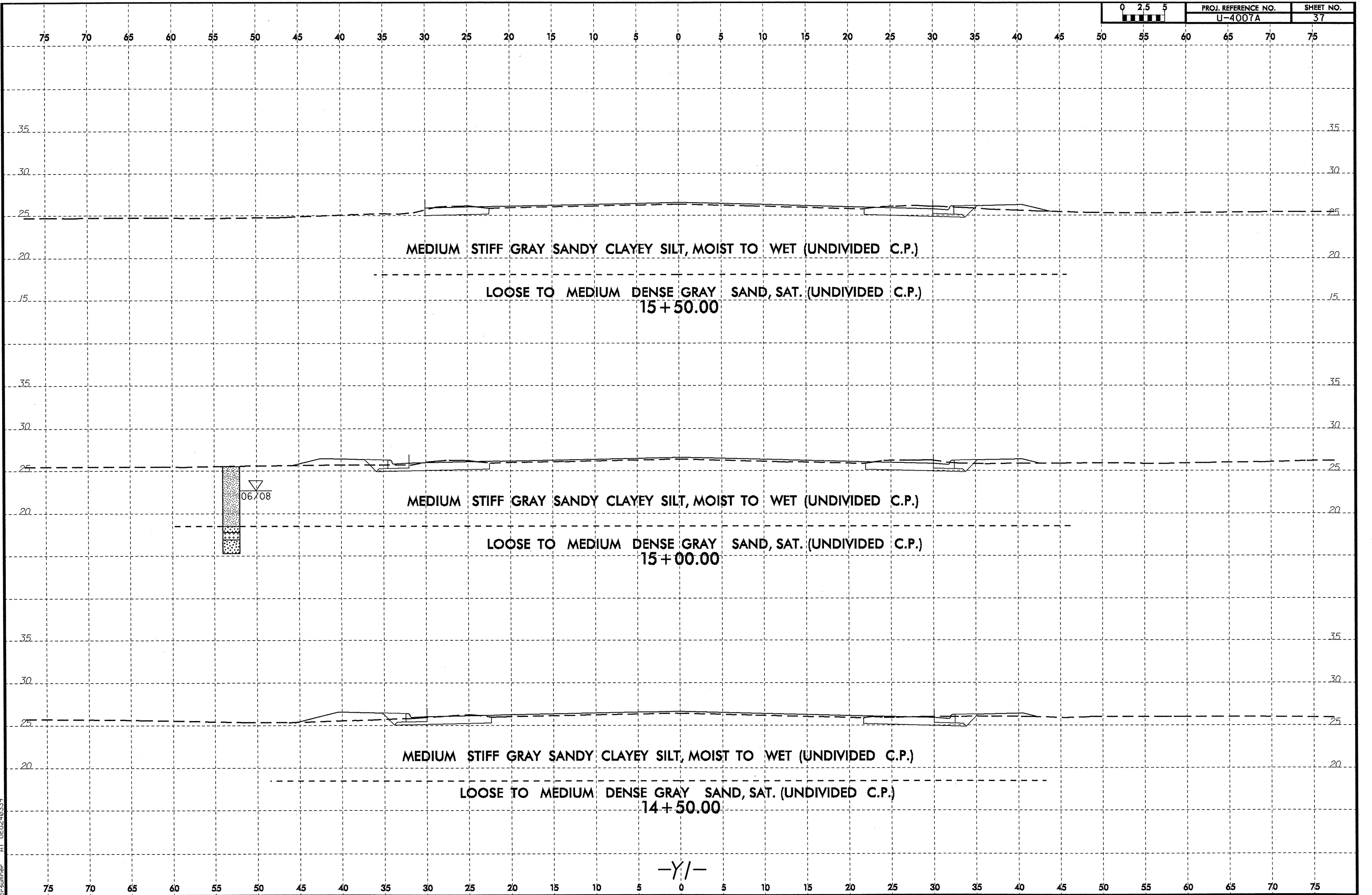
MEDIUM STIFF GRAY SANDY CLAYEY SILT, MOIST TO WET (UNDIVIDED C.P.)

LOOSE TO MEDIUM DENSE GRAY SAND, SAT. (UNDIVIDED C.P.)
13+00.00

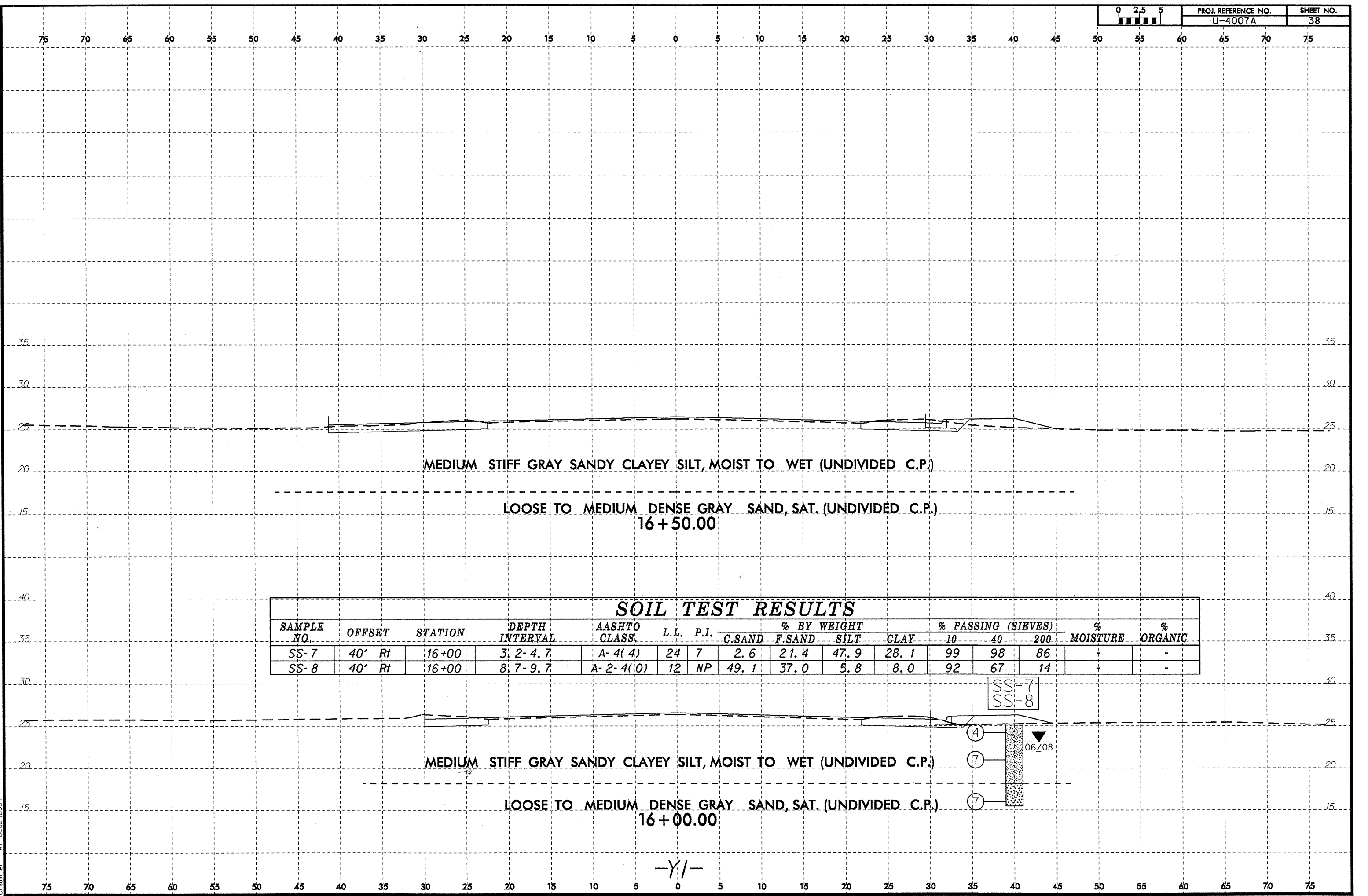
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8/23/99
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27 AUG 2008 11:48
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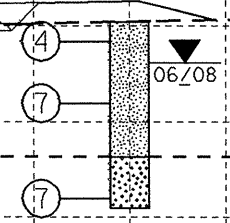
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LOOSE TO MEDIUM DENSE GRAY SAND, SAT. (UNDIVIDED C.P.)
16 + 50.00

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-7	40' Rt	16+00	3.2-4.7	A-4(4)	24	7	2.6	21.4	47.9	28.1	99	98	86		-
SS-8	40' Rt	16+00	8.7-9.7	A-2-4(0)	12	NP	49.1	37.0	5.8	8.0	92	67	14		-

SS-7
SS-8

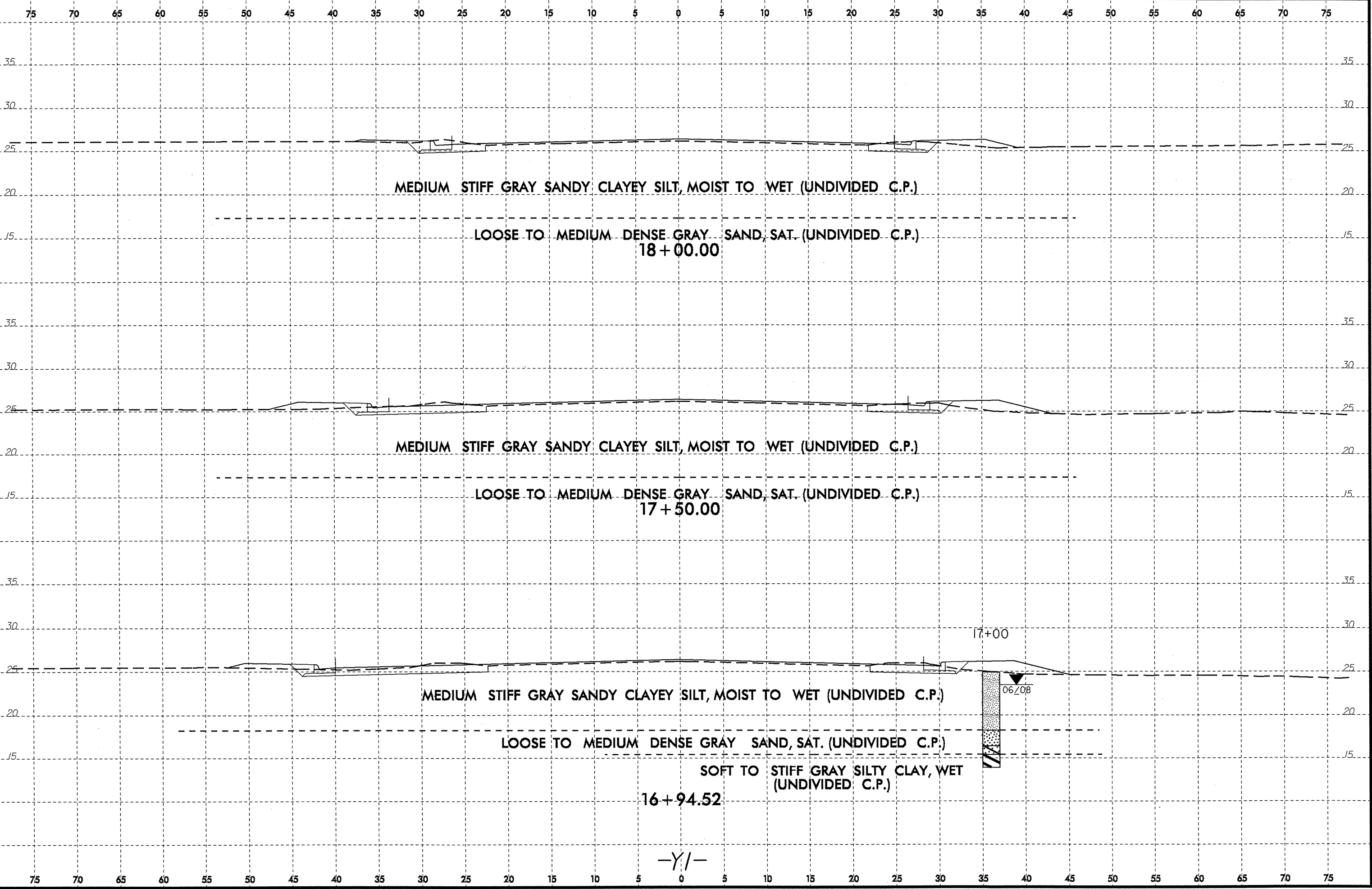


MEDIUM STIFF GRAY SANDY CLAYEY SILT, MOIST TO WET (UNDIVIDED C.P.)

LOOSE TO MEDIUM DENSE GRAY SAND, SAT. (UNDIVIDED C.P.)
16 + 00.00

-Y/-

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AT:GEO210333



MEDIUM STIFF GRAY SANDY CLAYEY SILT, MOIST TO WET (UNDIVIDED C.P.)

LOOSE TO MEDIUM DENSE GRAY SAND, SAT. (UNDIVIDED C.P.)
18+00.00

MEDIUM STIFF GRAY SANDY CLAYEY SILT, MOIST TO WET (UNDIVIDED C.P.)

LOOSE TO MEDIUM DENSE GRAY SAND, SAT. (UNDIVIDED C.P.)
17+50.00

MEDIUM STIFF GRAY SANDY CLAYEY SILT, MOIST TO WET (UNDIVIDED C.P.)

LOOSE TO MEDIUM DENSE GRAY SAND, SAT. (UNDIVIDED C.P.)

SOFT TO STIFF GRAY SILTY CLAY, WET (UNDIVIDED C.P.)
16+94.52

17+00

06/08

-Y/-

8/23/99

0 2.5 5	PROJ. REFERENCE NO. U-4007A	SHEET NO. 40
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75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

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MEDIUM STIFF GRAY SANDY CLAYEY SILT, MOIST TO WET (UNDIVIDED C.P.)

LOOSE TO MEDIUM DENSE GRAY SAND, SAT. (UNDIVIDED C.P.)

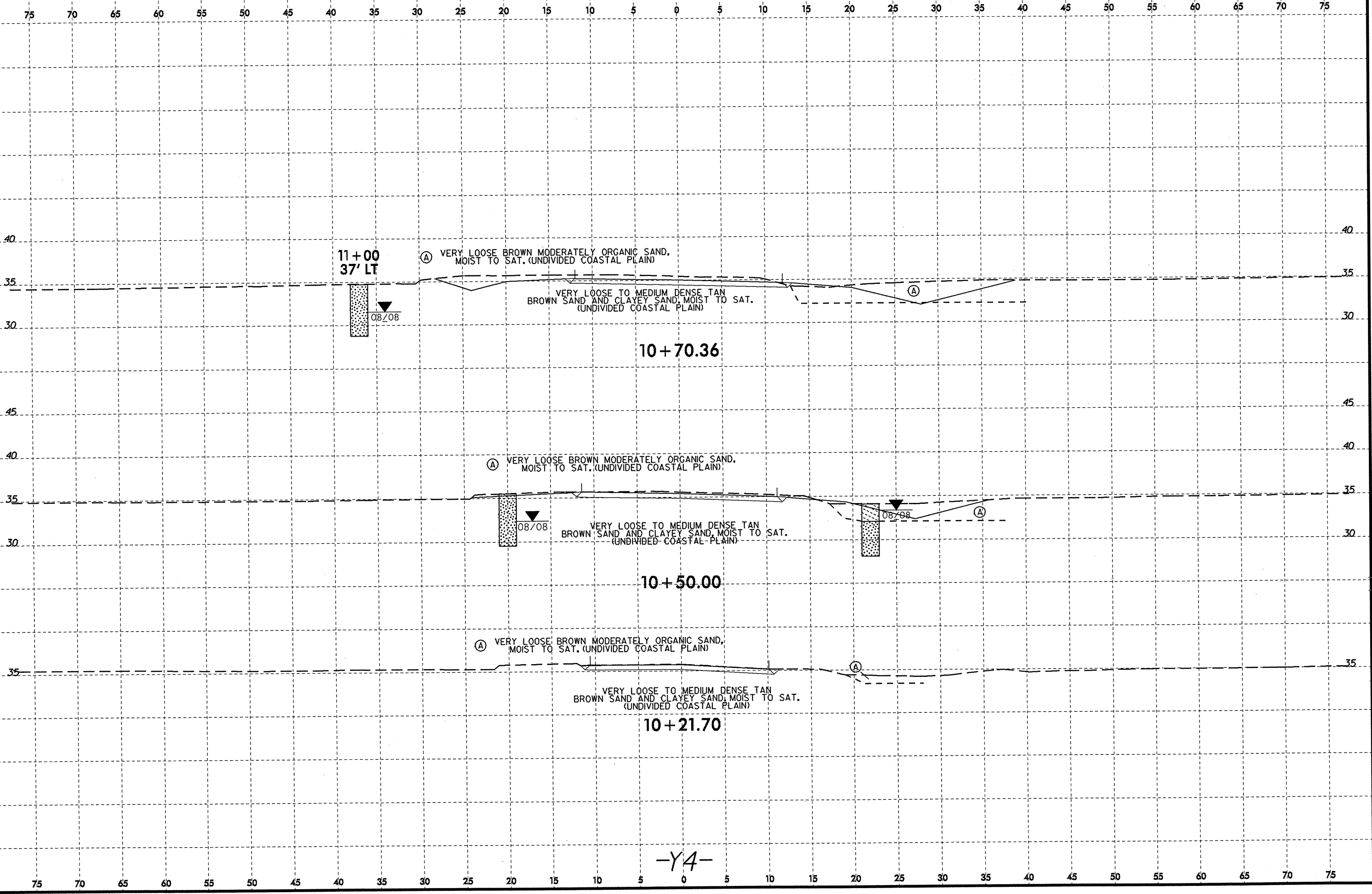
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-Y/-

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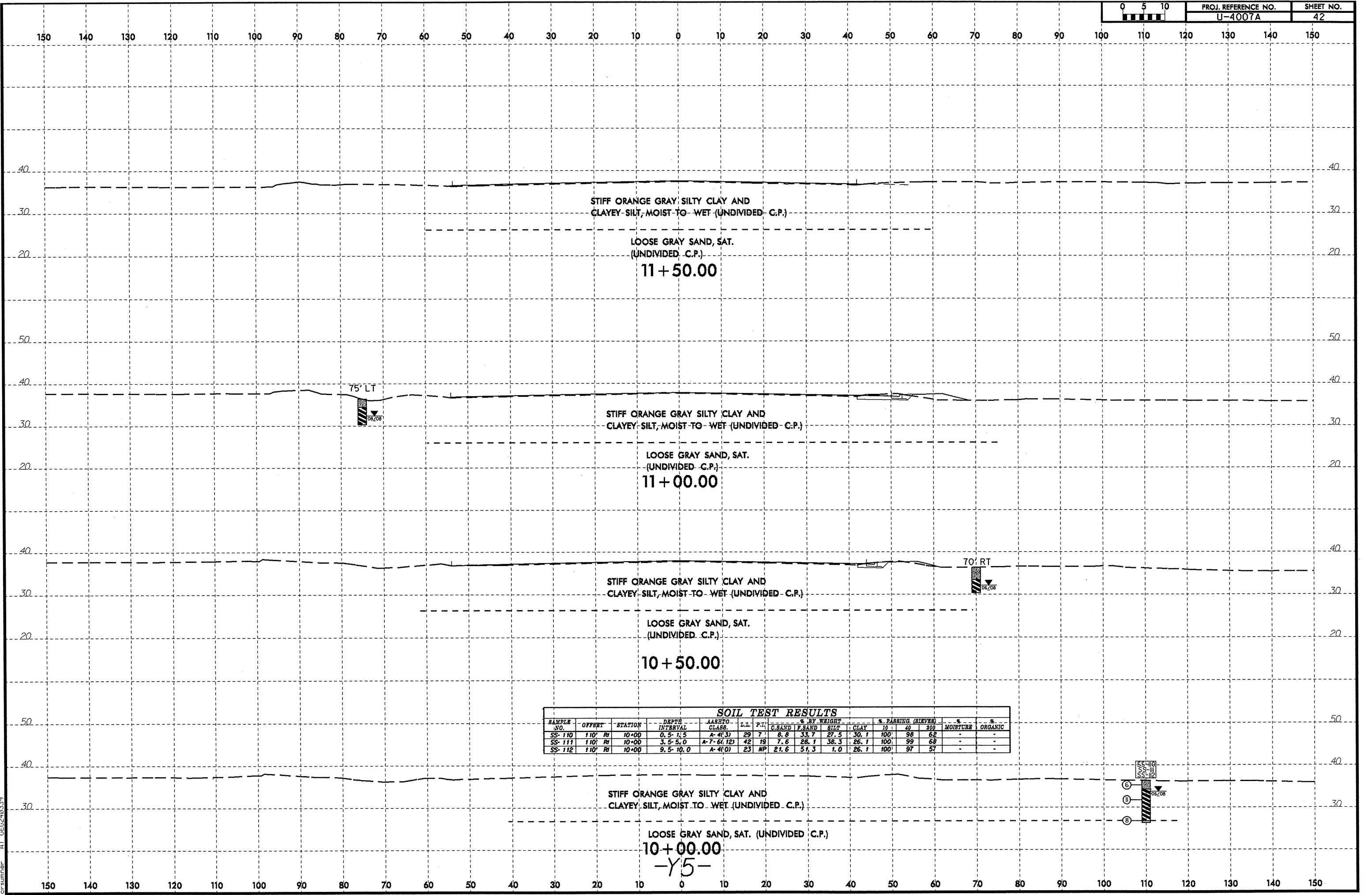
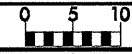
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8/23/99
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STIFF ORANGE GRAY SILTY CLAY AND CLAYEY SILT, MOIST TO WET (UNDIVIDED - C.P.)

LOOSE GRAY SAND, SAT. (UNDIVIDED - C.P.)
11 + 50.00

STIFF ORANGE GRAY SILTY CLAY AND CLAYEY SILT, MOIST TO WET (UNDIVIDED - C.P.)

LOOSE GRAY SAND, SAT. (UNDIVIDED - C.P.)
11 + 00.00

STIFF ORANGE GRAY SILTY CLAY AND CLAYEY SILT, MOIST TO WET (UNDIVIDED - C.P.)

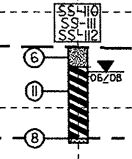
LOOSE GRAY SAND, SAT. (UNDIVIDED - C.P.)
10 + 50.00

STIFF ORANGE GRAY SILTY CLAY AND CLAYEY SILT, MOIST TO WET (UNDIVIDED - C.P.)

LOOSE GRAY SAND, SAT. (UNDIVIDED - C.P.)
10 + 00.00
-Y5-

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	LABOR CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-110	110'	R1	10+00	A-4(3)	29	7	6.8	33.7	27.5	30.1	100	98	62	-	-
SS-111	110'	R1	10+00	A-7-6(12)	42	19	7.6	28.1	38.3	26.1	100	99	68	-	-
SS-112	110'	R1	10+00	A-4(0)	23	NP	21.6	51.3	1.0	26.1	100	97	57	-	-

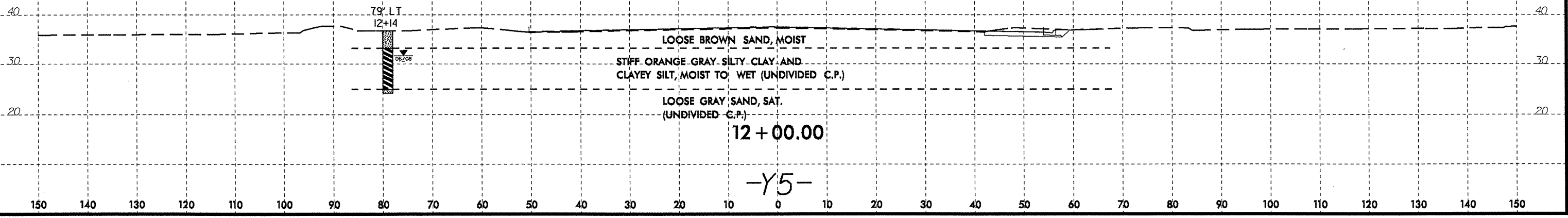


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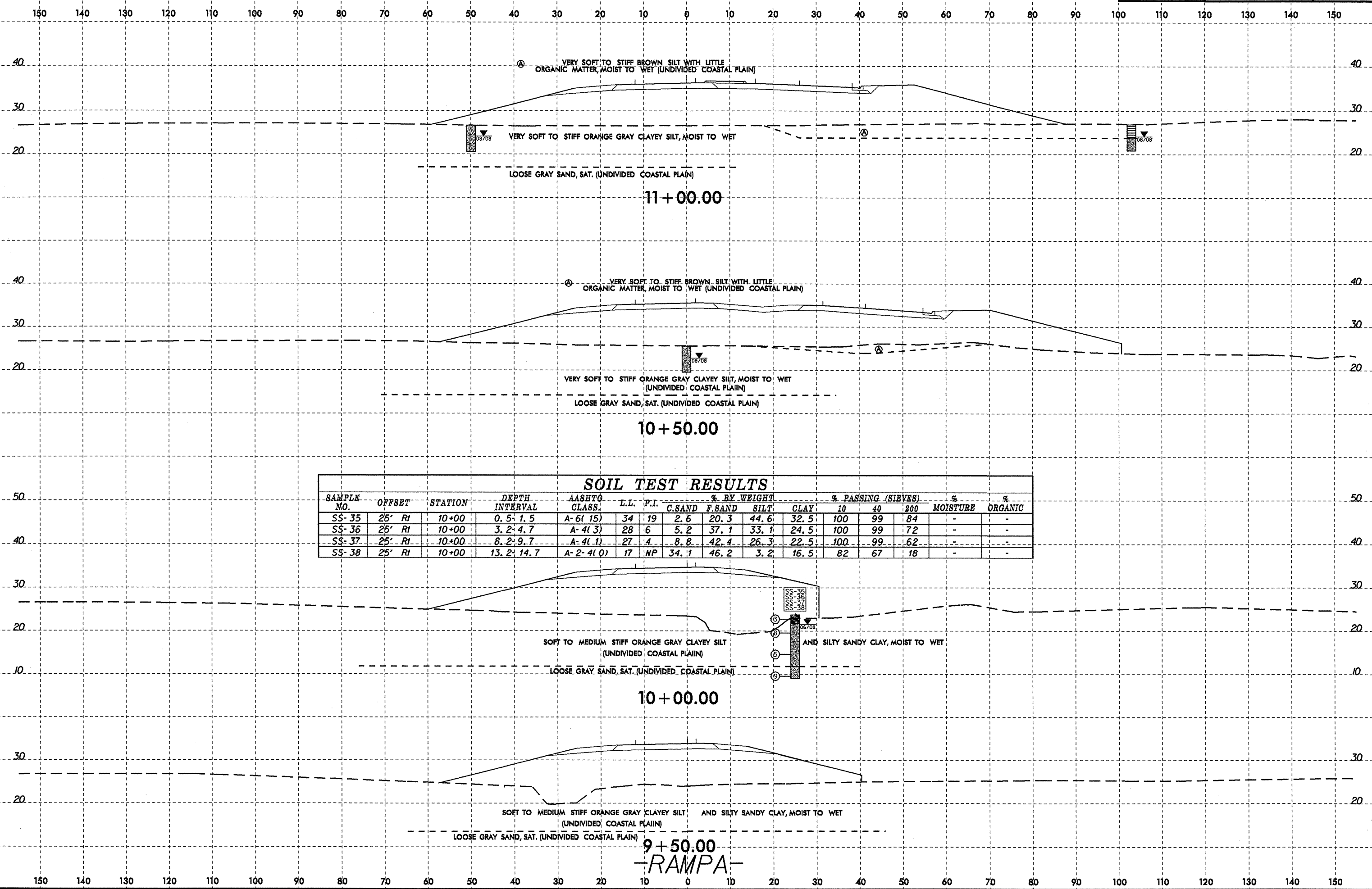


PROJ. REFERENCE NO.	SHEET NO.
U-4007A	43

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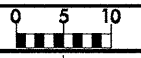


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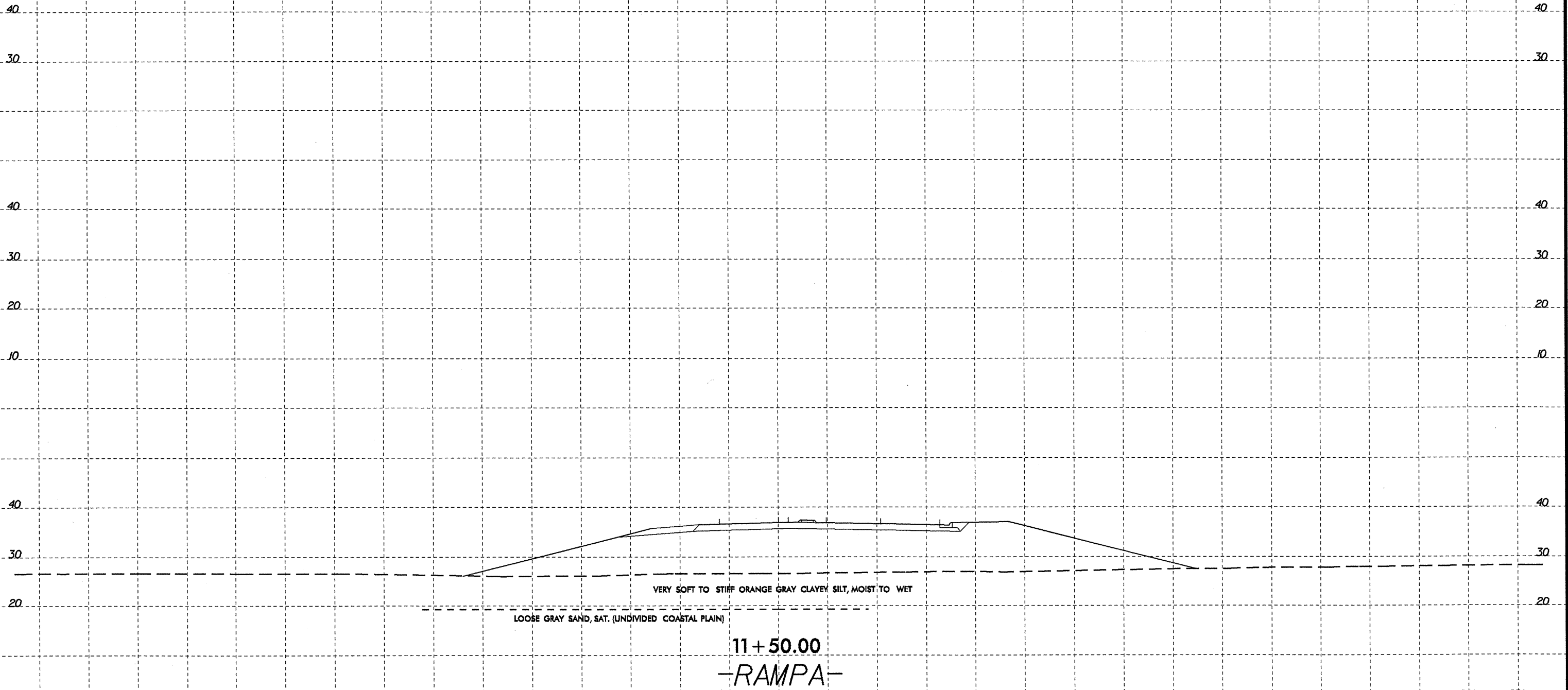
SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-35	25' Rl	10+00	0.5-1.5	A-6(15)	34	19	2.6	20.3	44.6	32.5	100	99	84	-	-
SS-36	25' Rl	10+00	3.2-4.7	A-4(3)	28	6	5.2	37.1	33.1	24.5	100	99	72	-	-
SS-37	25' Rl	10+00	8.2-9.7	A-4(1)	27	4	8.8	42.4	26.3	22.5	100	99	62	-	-
SS-38	25' Rl	10+00	13.2-14.7	A-2-4(0)	17	NP	34.1	46.2	3.2	16.5	82	67	18	-	-

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Summer 01 GEO240337



PROJ. REFERENCE NO.	SHEET NO.
U-4007A	45

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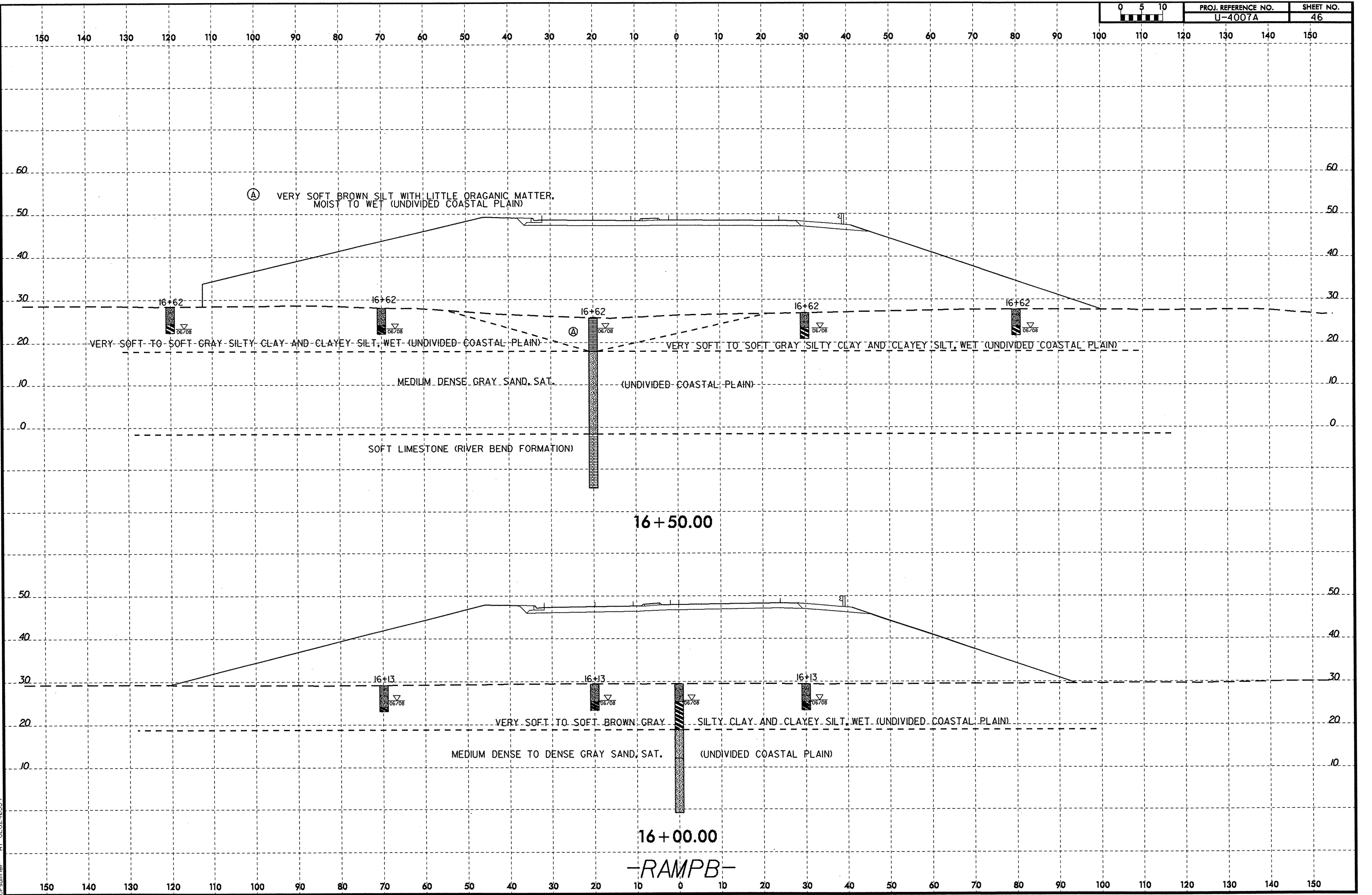
VERY SOFT TO STIFF ORANGE GRAY CLAYEY SILT, MOIST TO WET

LOOSE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

11+50.00
-RAMPA-

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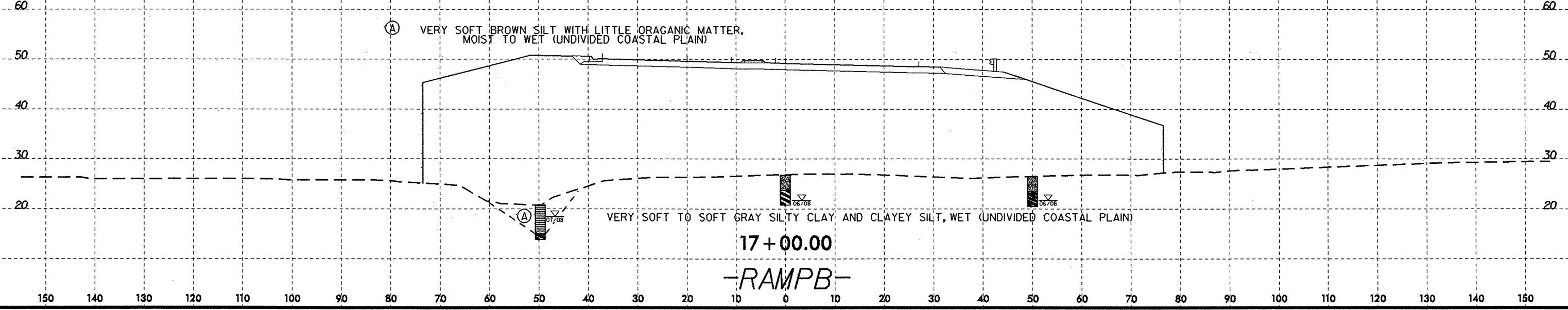
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