

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.	34528.1.1 (R-3307)	1	74
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34528.1.1	STPNHF-70(43)	P.E.	
		RAW & UTIL.	

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LINE	STATION	PLAN	PROFILE
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-L-	27+50 TO 29+00	69-70
-L-	177+00 TO 180+50	71-74

ROADWAY SUBSURFACE INVESTIGATION

PROJ. REFERENCE NO. 34528.1.1 (R-3307) F.A. PROJ. STPNHF-70(43)
 COUNTY CARTERET
 PROJECT DESCRIPTION US 70 FROM EXISTING FOUR LANES AT RADIO ISLAND TO US 70 NORTH OF SR 1429 (OLGA ROAD)

INVENTORY

CAUTION NOTICE

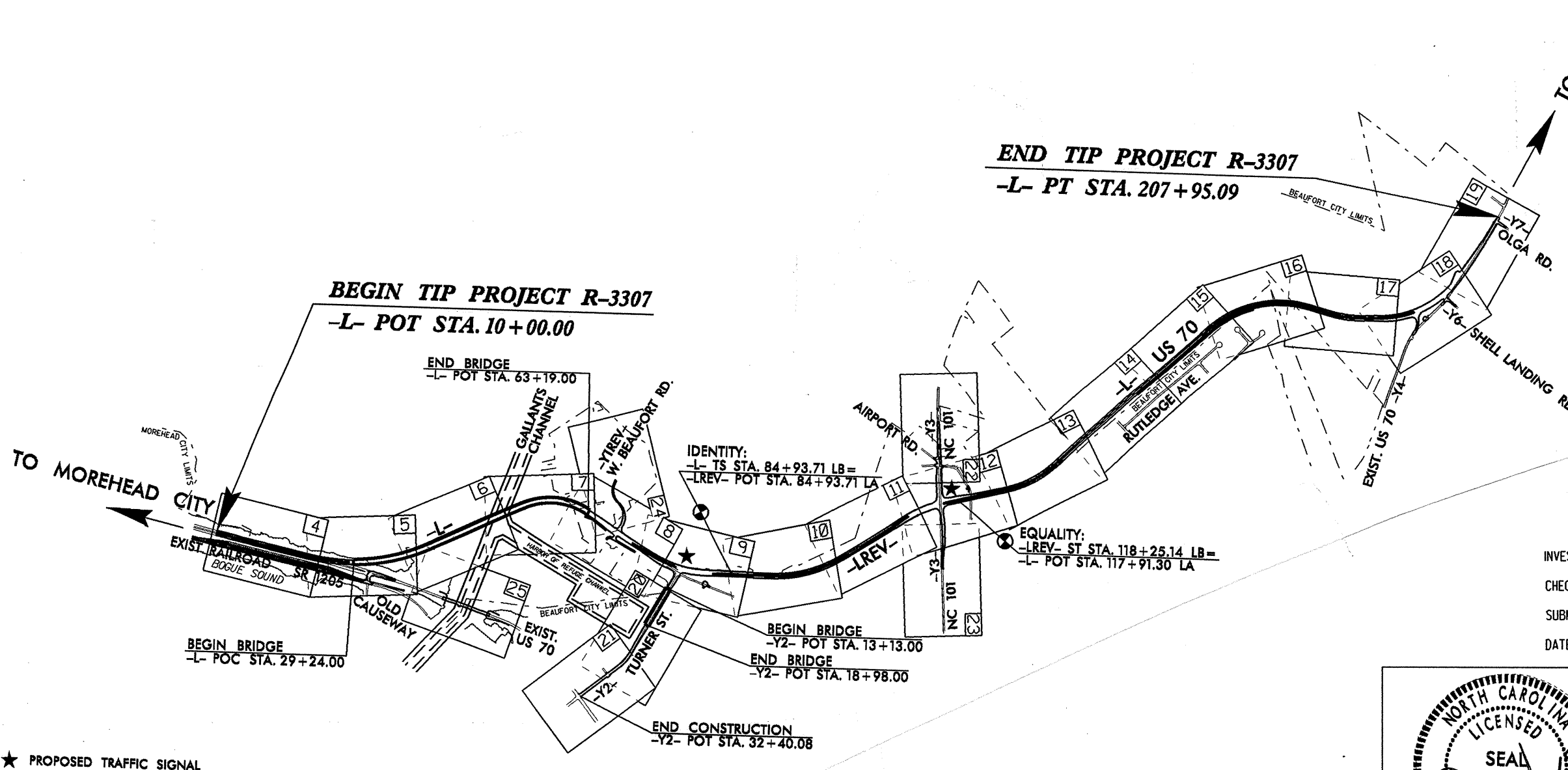
THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING, AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES, AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N. C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT 1919 250-4088. NEITHER THE SUBSURFACE PLANS AND REPORTS, NOR THE FIELD BORING LOGS, ROCK CORES, OR SOIL TEST DATA ARE PART OF THE CONTRACT.

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

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE, OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THIS PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

ID: R-3307

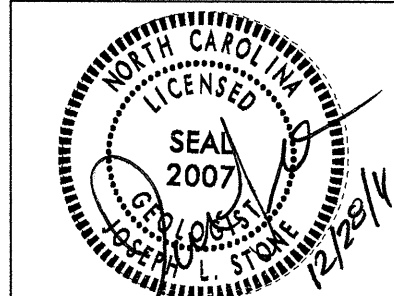
CONTRACT: C202848



PERSONNEL

CMW
TCB
JRS
RES
JME
SOME PERSONNEL

INVESTIGATED BY J.L. STONE
 CHECKED BY D.N. ARGENBRIGHT
 SUBMITTED BY D.N. ARGENBRIGHT
 DATE DECEMBER 2011



★ PROPOSED TRAFFIC SIGNAL

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

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.

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

PROJECT REFERENCE NO. R-3307 SHEET NO. 2

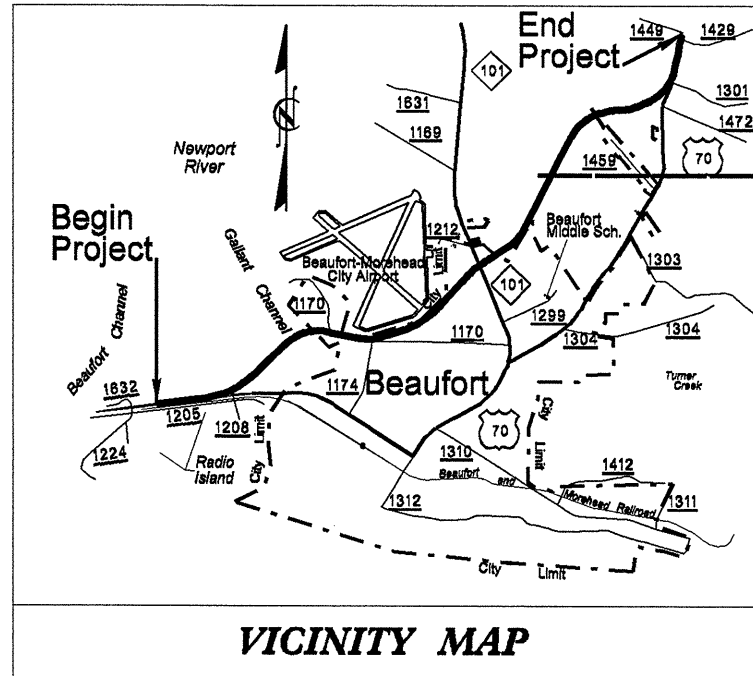
SOIL DESCRIPTION		GRADATION		ROCK DESCRIPTION		TERMS AND DEFINITIONS	
<p>SOIL IS CONSIDERED TO BE THE UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER, AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO STANDARD PENETRATION TEST (AASHTO T206, ASTM D-1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY SHALL INCLUDE: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. EXAMPLE:</p> <p>VERY STIFF, GRAY, SILTY CLAY, MOST WITH INTERBEDDED FINE SAND LAYERS, HEAVY PLASTIC, A-7-6</p>		<p>WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORM - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. (ALSO POORLY GRADED) GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLES OF TWO OR MORE SIZES.</p> <p>ANGULARITY OF GRAINS THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.</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. AQUIFER - A WATER BEARING FORMATION OR STRATA. ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, AS SHALE, SLATE, ETC. ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE. CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK. DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL. DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. FORMATION (FM) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD. JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED. LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT. LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS. MOTTLED (MOTJ) - 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 (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. ROCK QUALITY DESIGNATION (RQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. SAPROLITE (SAP) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. STRATA CORE RECOVERY (SCREC) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SRQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. TOPSOIL (TS) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.</p>	
SOIL LEGEND AND AASHTO CLASSIFICATION		MINERALOGICAL COMPOSITION		WEATHERING		ROCK HARDNESS	
<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-4, A-5, A-6, A-7</p> <p>SYMBOL</p> <p>% PASSING: 10, 40, 200</p> <p>LIQUID LIMIT PLASTIC INDEX</p> <p>GROUP INDEX</p> <p>USUAL TYPES OF MAJOR MATERIALS</p> <p>GEN. RATING AS A SUBGRADE</p>		<p>MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE.</p> <p>COMPRESSIBILITY</p> <p>PERCENTAGE OF MATERIAL</p> <p>GROUND WATER</p> <p>MISCELLANEOUS SYMBOLS</p> <p>ABBREVIATIONS</p>		<p>FRESH ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING, ROCK RINGS UNDER HAMMER IF CRYSTALLINE.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>SEVERE (SEV.) ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND EVIDENT BUT REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. IF TESTED, YIELDS SPT N VALUES > 100 BPF.</p> <p>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 REMAIN. IF TESTED, YIELDS SPT N VALUES < 100 BPF.</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>		<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. HANDS 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 GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PEICES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK.</p> <p>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.</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>	
CONSISTENCY OR DENSENESS		TEXTURE OR GRAIN SIZE		FRACTURE SPACING		BEDDING	
<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)</p> <p>GENERALLY SILT-CLAY MATERIAL (COHESIVE)</p>		<p>U.S. STD. SIEVE SIZE OPENING (MM)</p> <p>BOULDER (BLDR.) COBBLE (COB.) GRAVEL (GR.) COARSE SAND (CSE, SD.) FINE SAND (F SD.) SILT (SL.) CLAY (CL.)</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>		<p>VERY THICKLY BEDDED > 4 FEET</p> <p>THICKLY BEDDED 1.5 - 4 FEET</p> <p>THINLY 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>	
SOIL MOISTURE - CORRELATION OF TERMS		EQUIPMENT USED ON SUBJECT PROJECT		INDURATION		BENCH MARK	
<p>SOIL MOISTURE SCALE (ATTERBERG LIMITS) FIELD MOISTURE DESCRIPTION GUIDE FOR FIELD MOISTURE DESCRIPTION</p> <p>LL - LIQUID LIMIT</p> <p>PL - PLASTIC LIMIT</p> <p>OM - OPTIMUM MOISTURE</p> <p>SL - SHRINKAGE LIMIT</p>		<p>DRILL UNITS: MOBILE B-51, BK-51, CME-45C, CME-750, PORTABLE HOIST</p> <p>ADVANCING TOOLS: CLAY BITS, 6" CONTINUOUS FLIGHT AUGER, 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>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>		<p>ELEVATION: _____ FT.</p> <p>NOTES:</p> <p>APPROXIMATE LIMITS OF SURFICIAL ORGANIC DEPOSITS</p> <p>CPT BORING</p> <p>UNDIVIDED C.P. = UNDIVIDED COASTAL PLAIN</p>	
PLASTICITY		COLOR					
<p>NONPLASTIC LOW PLASTICITY, MED. PLASTICITY, HIGH PLASTICITY</p> <p>PLASTICITY INDEX (PI) DRY STRENGTH</p>		<p>DESCRIPTORS 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>					

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3307	2A	74
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34528.1.J	STPNHF-70(43)	PE	

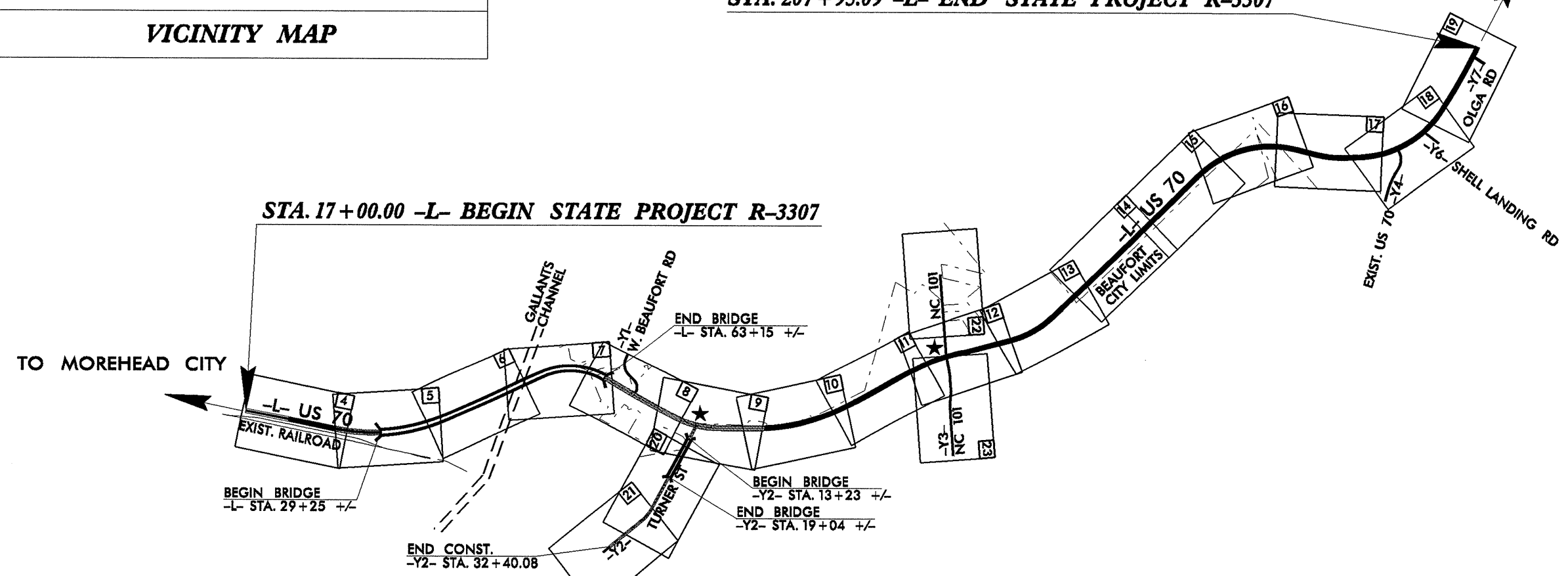
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
CARTERET COUNTY

LOCATION: US 70 FROM EXISTING FOUR LANES AT RADIO ISLAND TO US 70 NORTH OF SR 1429 (OLGA ROAD)
TYPE OF WORK: GRADING, PAVING, DRAINAGE, CURB & GUTTER SIGNALS, CULVERT AND STRUCTURES

STA. 207+95.09 -L- END STATE PROJECT R-3307



VICINITY MAP



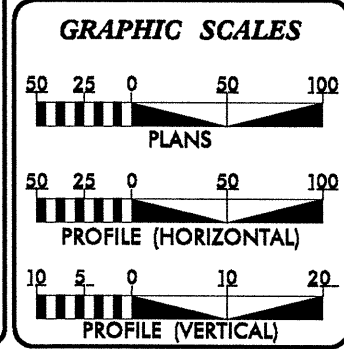
★ PROPOSED TRAFFIC SIGNAL
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD ??.
A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF BEAUFORT.
THIS IS A PARTIAL CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON THE PLANS.

** DESIGN EXCEPTION REQUIRED FOR HORIZONTAL CURVE RADIUS (50 MPH), HORIZONTAL STOPPING SIGHT DISTANCE (38 MPH), AND MAXIMUM VERTICAL GRADE (6%).

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

TIP PROJECT: R-3307

CONTRACT:



DESIGN DATA

ADT 2011	=	27620
ADT 2031	=	39389
DHV	=	11 %
D	=	60 %
T	=	5 % *
V (SHOULDER)	=	60 MPH**
V (CURB & GUTTER)	=	50 MPH
* (TTST 1% + DUAL 4) %		
FUNC. CLASS	=	ARTERIAL

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT R-3307	=	2.974 MI
LENGTH OF STRUCTURE PROJECT R-3307	=	0.642 MI
TOTAL LENGTH OF F.A. PROJECT STPNHF-70(43)	=	3.616 MI

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:	BRENDA MOORE, PE PROJECT ENGINEER
	JULY 18, 2008
LETTING DATE:	REKHA PATEL, PE PROJECT DESIGN ENGINEER
	JANUARY 18, 2011 (PROD)

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**

STATE HIGHWAY DESIGN ENGINEER P.E.

22-DEC-2011 07:25 L:\ERO\Greenville_Investigation\TIP\R3307_GEO_RDWY\CADD_GEO\TECH\Site&Sub\3307_GEO_rdwytittle&legend.dgn gpturner AT GEO253461



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR
SECRETARY

December 28, 2011

STATE PROJECT: 34528.1.1 (R-3307)
F.A. PROJECT: STPNHF-70 (43)
COUNTY: Carteret
DESCRIPTION: US 70 from Existing 4 Lanes at Radio Island to North of SR 1429 Olga Rd.

SUBJECT: Geotechnical Inventory

Project Description

The project area lies in the city of Beaufort, beginning along existing US 70 approximately 0.5 miles west of the draw bridge over Beaufort Channel and extending northeastward approximately 3.6 miles to a point approximately 64 feet north of the intersection of SR 1429 (Olga Rd.) and US 70. This geotechnical investigation was confined to the areas of proposed construction.

Fieldwork for this project was completed in May and June of 2008. SPT borings were advanced with a CME 750 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 3.6 miles were investigated. Subsurface profiles or cross sections of these alignments are included in this report.

<u>Line</u>	<u>Station(±)</u>
-L-	17+00 to 84+93
-L-	118+25 to 207+95

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

TELEPHONE: 919-707-6850
Fax: 919-250-4237
www.ncdot.gov/doh/preconstruct/highway/geotech

LOCATION:
CENTURY CENTER COMPLEX
ENTRANCE B-2
1020 BIRCH RIDGE DRIVE
RALEIGH NC 27610

<u>Line</u>	<u>Station(±)</u>
-Y1REV-	13+27 to 20+59
-Y2-	10+00 to 32+40
-Y3-	10+66 to 30+50
-Y4-	10+00 to 13+40
-Y6-	10+00 to 12+65
-Y7-	10+00 to 11+58
-DR1-	10+65 to 15+11
-DR2-	10+00 to 11+00
-DR3-	13+50 to 14+64

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-	21+55 to 29+06
-L-	63+00 to 84+93
-L-	125+20 to 128+32
-L-	131+22 to 136+86
-L-	139+39 to 144+75
-L-	165+72 to 167+20
-L-	179+65 to 180+32
-L-	183+97 to 187+00
-LREV-	84+93 to 90+92
-Y1REV-	13+27 to 20+93
-Y2-	10+00 to 22+64
-Y3-	19+75 to 21+25
-DR1-	10+65 to 15+11
-DR2-	10+46 to 10+89

- 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-	27+75 to 29+25 (Left side)
-L-	177+16 to 180+30

- 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 1± to 13± 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 May through June 2008, during a time of below normal precipitation. Ground water elevations ranged from $-1\pm$ to $9\pm$ feet above sea level.

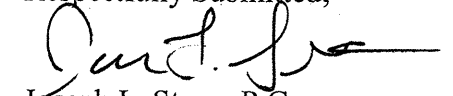
Soils

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

Soils classified as undivided coastal plain are comprised of $2\pm$ to $23\pm$ feet of very loose to very dense sand and clayey sand (A-2-4, A-3 and A-2-6), $2\pm$ to $15\pm$ feet of very soft to medium stiff sandy and clayey silt (A-4,), and $1\pm$ to $6\pm$ feet of very soft to very stiff sandy and silty clay (A-6, A-7-6). Moisture samples collected within these cohesive soils ranged from 12% to 27%. Additionally, a surficial organic deposit was also identified. The soils within this area were primarily $2\pm$ to $5\pm$ feet in thickness and comprised of very loose sand and very soft silt (A-2-4, A-4) with little to moderate organic content. Samples taken from within these units indicated organic percentages ranging from 3% to 8%. Vane shear tests completed in these areas show shear strength values ranging from 2004 psf to 4217 psf.

Soils identified as roadway embankment are comprised of $3\pm$ to $5\pm$ feet of medium dense sand (A-2-4, A-3). These soils were encountered along the existing US 70 corridor and associated intersecting roads.

Respectfully Submitted,



Joseph L. Stone, P.G.

Project Engineering Geologist

3B/74

EARTHWORK BALANCE SHEET - FINAL ESTIMATE

Volumes in Cubic Yards

PROJECT: R-3307 COUNTY: Carteret DATE: 3/7/2012 COMPILED BY: MWL SHEET OF SHEETS

STATION	STATION	EXCAVATION				EMBANKMENT				BORROW	WASTE			
		TOTAL UNCLASS.	ROCK	UNDERCUT	UNSUIT. UNCLASS.	SUITABLE UNCLASS.	TOTAL	ROCK	EARTH		EMBANK. +30%	ROCK	SUITABLE	UNSUIT.
-L- Sta. 17+00.00	-L- Sta. 29+24.00	426				426	6,484	6,484	8,429	8,003				
ADJUST FOR ROCK EMBANK (SEE SHEET 2-J)							-700	-700	-910	-910				
SUBTOTAL 1		426				426	5,784	5,784	7,519	7,093				
-L- Sta. 63+19.00	-L- Sta. 85+00.00	450				450	52,971	52,971	68,862	68,412				
-Y1REV- Sta. 13+27.88	-Y1REV- Sta. 20+35.23	28				28	3,598	3,598	4,677	4,649				
-DR2- Sta. 10+46.00	-DR2- Sta. 10+89.89						283	283	368	368				
-DR1- Sta. 10+65.26	-DR1- Sta. 15+11.47	256				256	109	109	142			114		114
SUBTOTAL 2		734				734	56,961	56,961	74,049	73,429		114		114
-L- Sta. 85+00.00	-L- Sta. 114+00.00						89,776	89,776	116,709	116,709				
-Y2- Sta. 10+53.74	-Y2- Sta. 13+13.00	116				116	10,349	10,349	13,454	13,338				
-Y2- Sta. 18+98.00	-Y2- Sta. 32+40.88	671				671	10,585	10,585	13,761	13,090				
ADJUST FOR ROCK EMBANK (SEE SHEET 2-J)							-800	-800	-1,040	-1,040				
SUBTOTAL 3		787				787	109,910	109,910	142,884	142,097				
-L- Sta. 114+00.00	-L- Sta. 143+00.00	2				2	76,696	76,696	99,705	99,703				
-Y3- Sta. 10+66.00	-Y3- Sta. 21+30.88	511				511	7,547	7,547	9,811	9,300				
-Y3- Sta. 22+24.82	-Y3- Sta. 30+50.00	356				356	1,929	1,929	2,508	2,152				
SUBTOTAL 4		869				869	86,172	86,172	112,024	111,155				
-L- Sta. 143+00.00	-L- Sta. 173+00.00	52				52	81,213	81,213	105,577	105,525				
-Y4- Sta. 10+48.00	-Y4- Sta. 13+40.00	168				168	3,055	3,055	3,972	3,804				
SUBTOTAL 5		220				220	84,268	84,268	109,549	109,329				
-L- Sta. 173+00.00	-L- Sta. 207+95.09	1,642				1,642	65,736	65,736	85,457	83,815				
-Y6- Sta. 10+36.59	-Y6- Sta. 12+35.00	157				157	1,168	1,168	1,518	1,361				
-DR3- Sta. 10+50.00	-DR3- Sta. 14+54.73	17				17	178	178	231	214				
-Y7- Sta. 10+12.05	-Y7- Sta. 11+60.29	3				3	137	137	178	175				
SUBTOTAL 6		1,819				1,819	67,219	67,219	87,384	85,565				
PROJECT SUBTOTAL		4,855				4,855	410,314	410,314	533,409	528,668		114		114
MATERIAL FOR SHOULDER CONSTRUCTION							13,800	13,800	17,940	17,940				
BORROW FOR INFILTRATION BASIN (SHEET 2-F)							555	555	722	722				
WASTE IN LIEU OF BORROW											-114		-114	-114
PROJECT TOTAL		4,855				4,855	424,669	424,669	552,071	547,216				
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT										27,361				
GRAND TOTAL		4,855				4,855	424,669	424,669	552,071	574,577				
SAY		5,000								580,000				

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.

EST. DDE = 14,000 CY

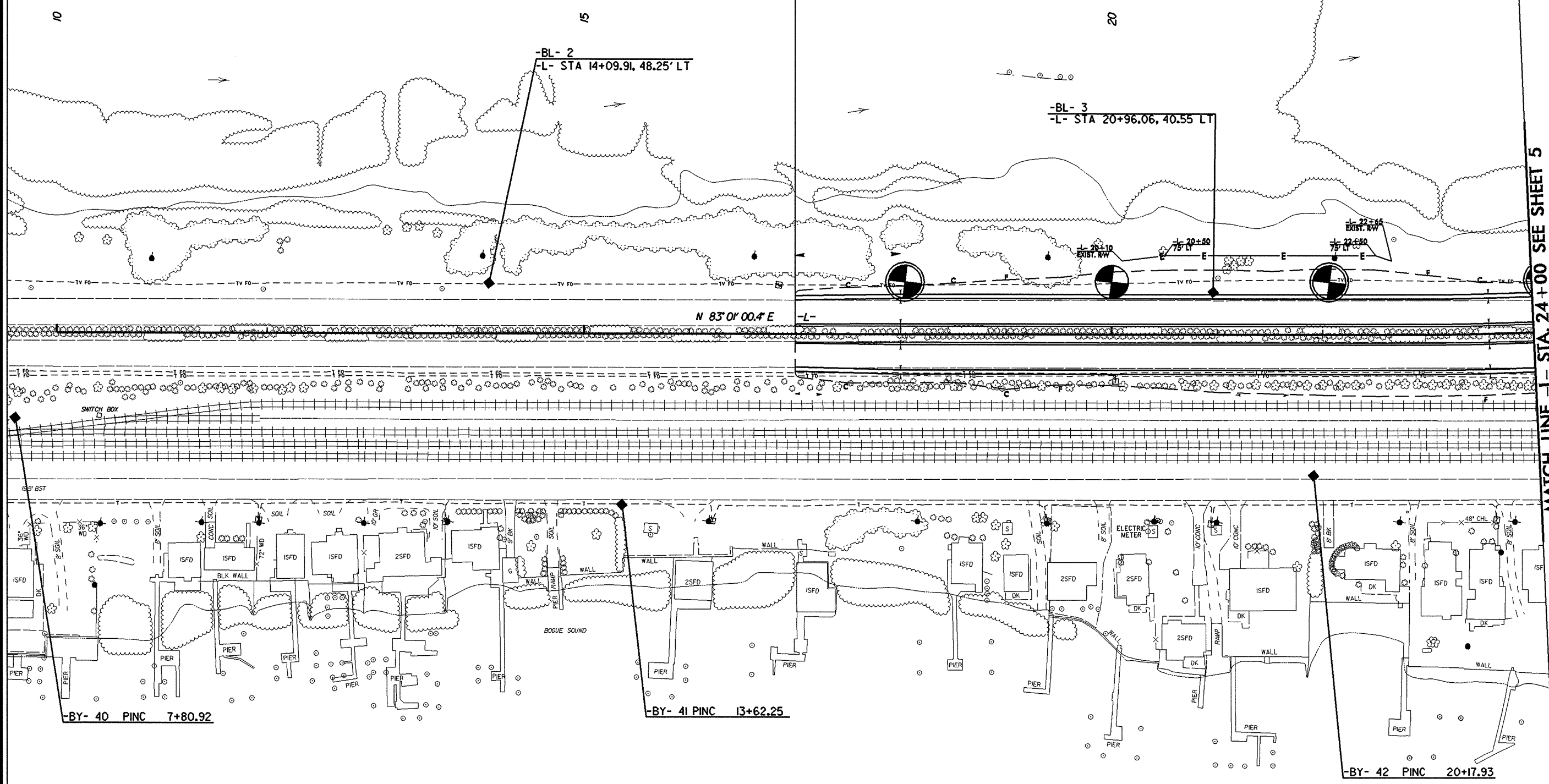
PER DIVISION REQUEST, ESTIMATED 5,000 CUBIC YARDS OF UNDERCUT TO BE USED IN THE DISCRETION OF THE RESIDENT ENGINEER.

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PROJECT REFERENCE NO. R-3307	SHEET NO. 4
NW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/CQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

FOR -L- PROFILE SEE SHEET 26

STA.17+00.00 -L- BEGIN STATE PROJECT R-3307



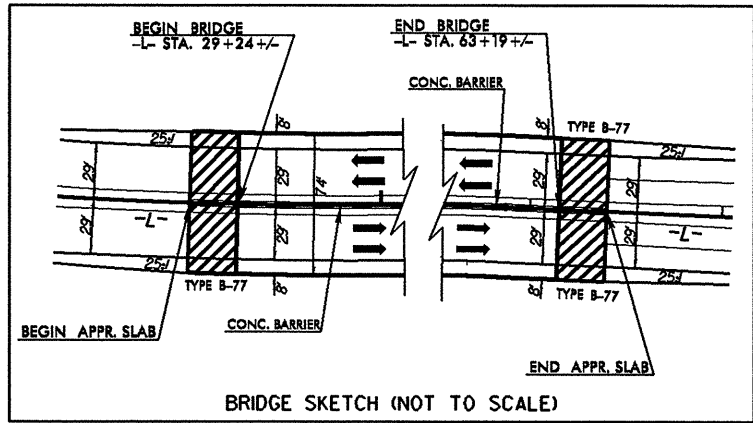
REVISIONS

MATCH LINE -L- STA. 24+00 SEE SHEET 5

8/17/99

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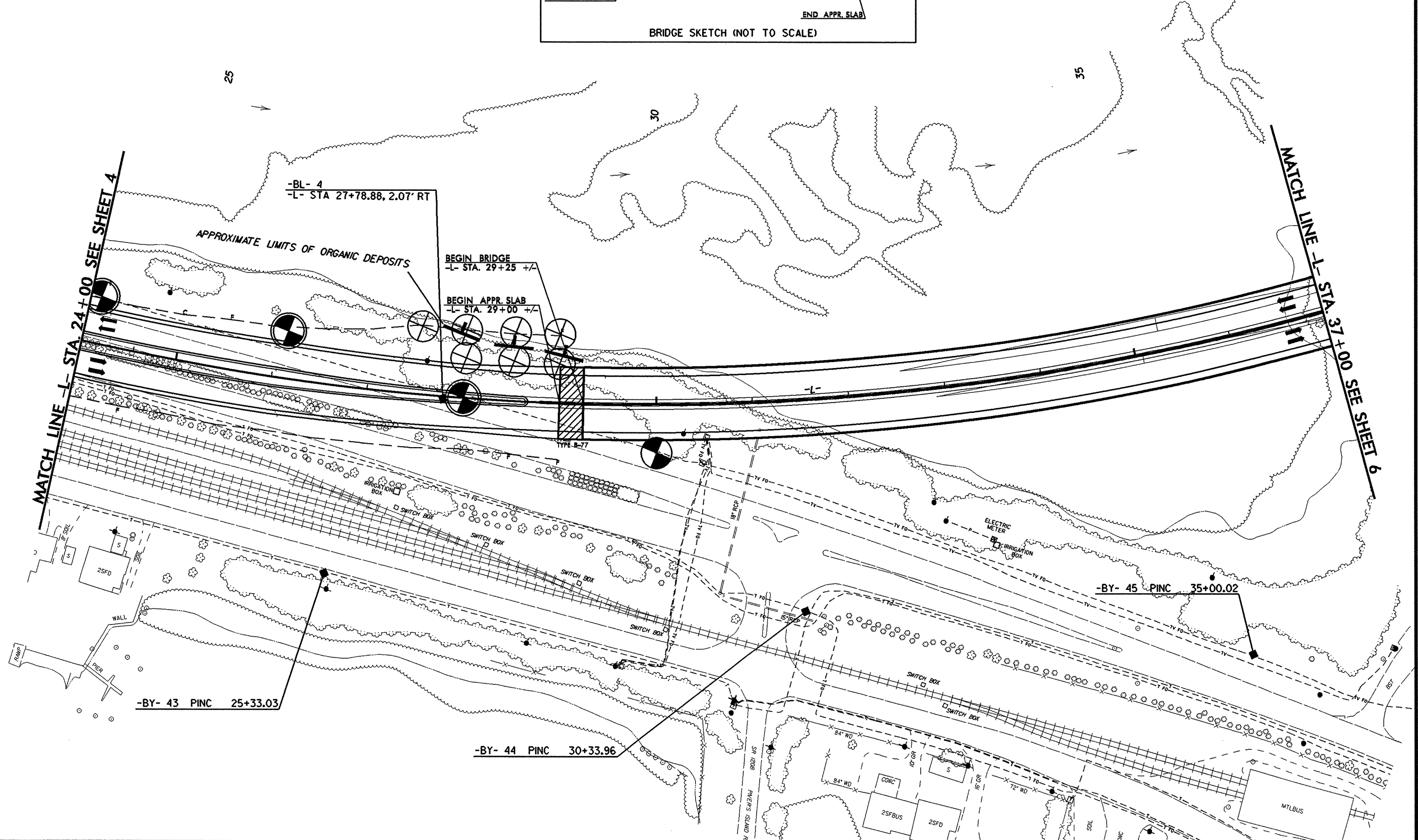
REVISIONS



PROJECT REFERENCE NO. R-3307	SHEET NO. 5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR S/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



FOR -L- PROFILE SEE SHEET 26



MATCH LINE -L- STA. 24+00 SEE SHEET 4

MATCH LINE -L- STA. 37+00 SEE SHEET 6

-BL- 4
-L- STA. 27+78.88, 2.07' RT

APPROXIMATE LIMITS OF ORGANIC DEPOSITS

-BY- 43 PINC 25+33.03

-BY- 44 PINC 30+33.96

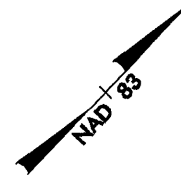
-BY- 45 PINC 35+00.02

MTL BUS

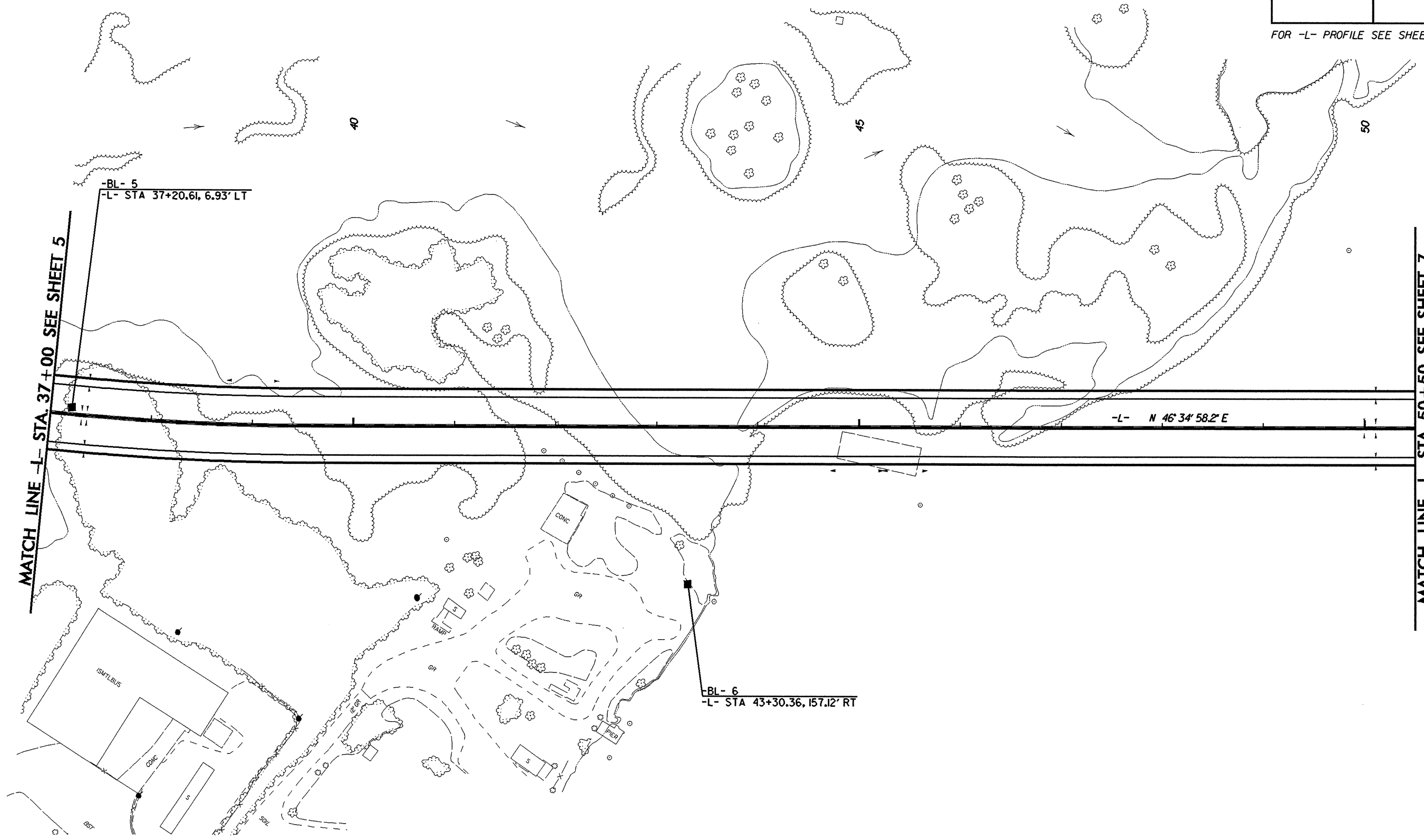
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REVISIONS

PROJECT REFERENCE NO. R-3307	SHEET NO. 6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



FOR -L- PROFILE SEE SHEET 27



MATCH LINE -L- STA. 37+00 SEE SHEET 5

MATCH LINE -L- STA. 50+50 SEE SHEET 7

-BL- 5
-L- STA 37+20.61, 6.93' LT

-BL- 6
-L- STA 43+30.36, 157.12' RT

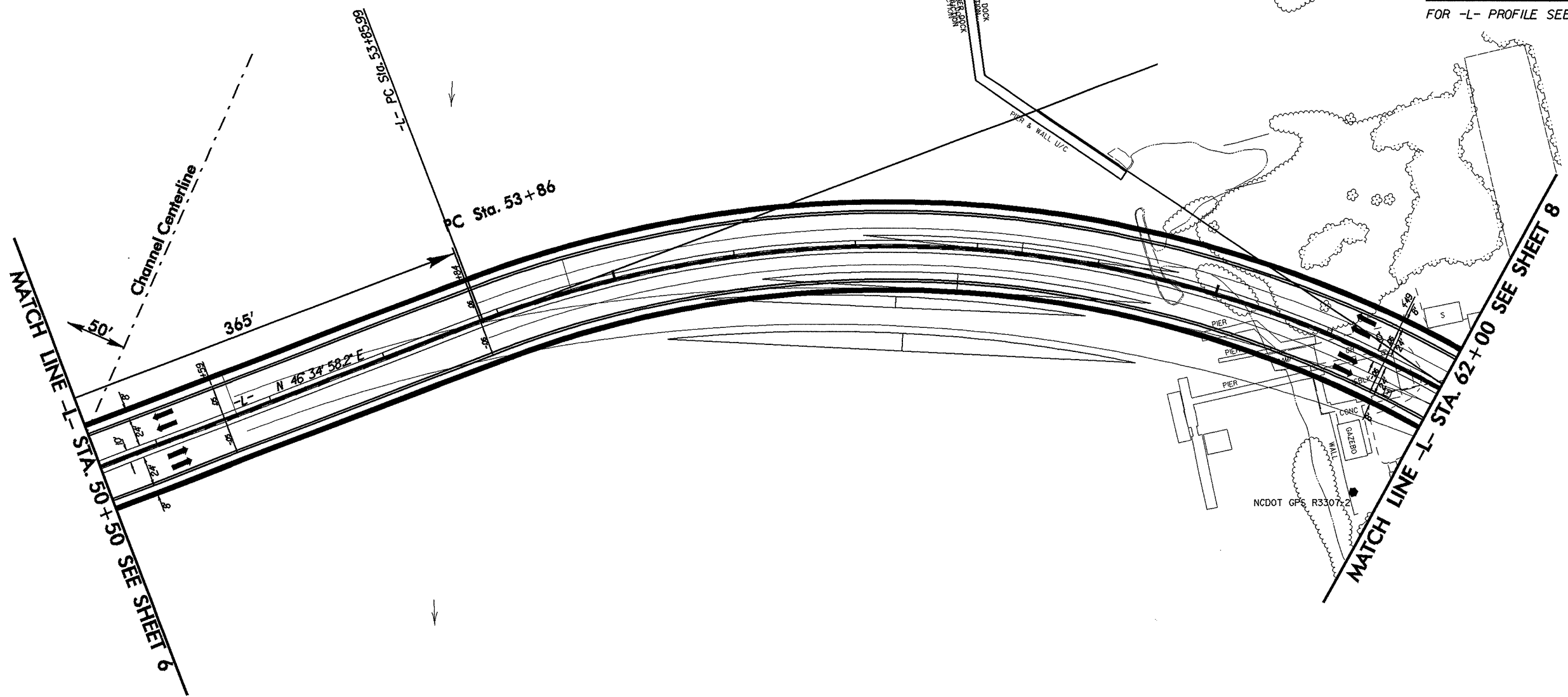
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 8/17/99

REVISIONS

PROJECT REFERENCE NO. R-3307		SHEET NO. 7	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			

FOR -L- PROFILE SEE SHEET 28

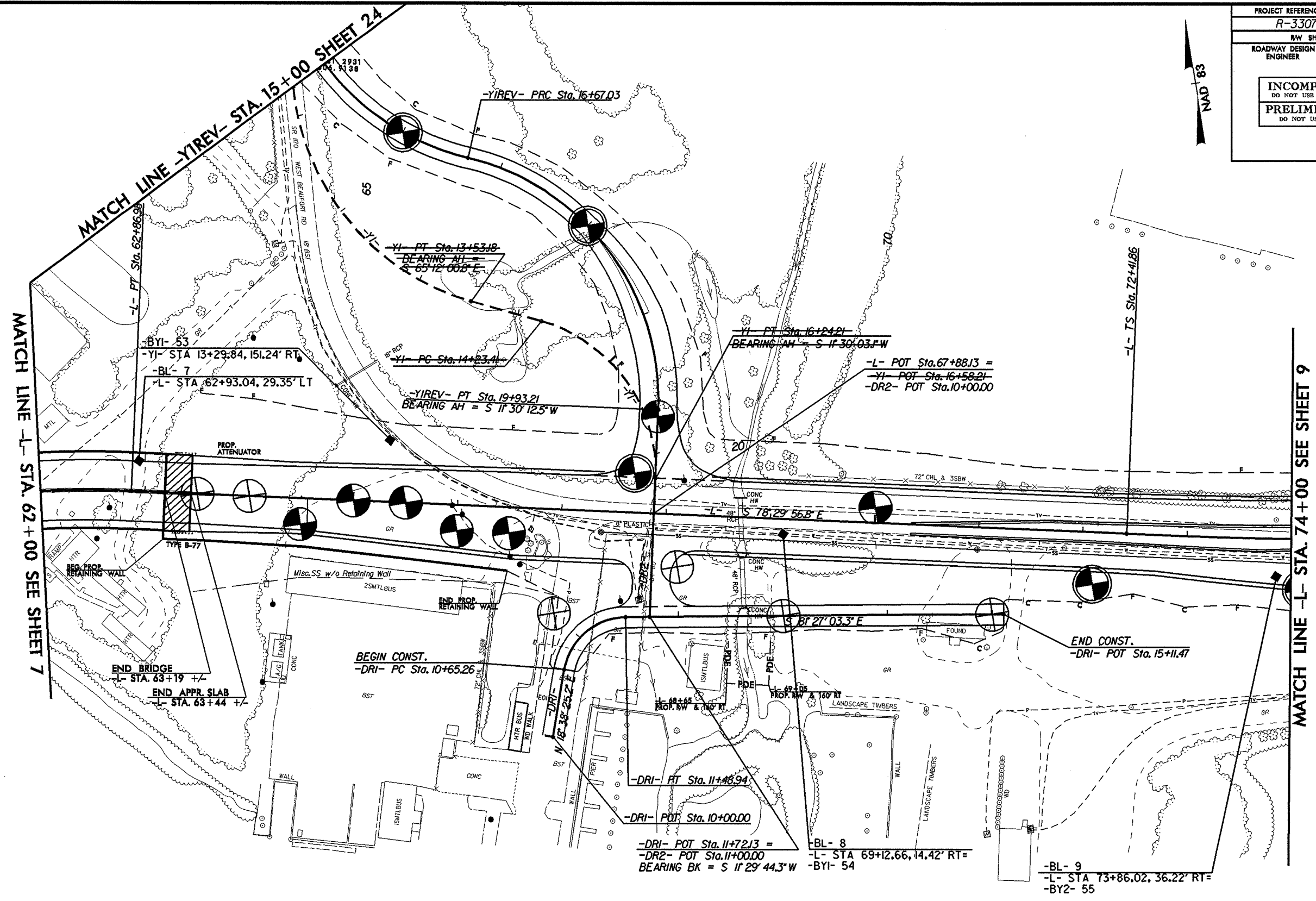


** DESIGN EXCEPTION REQUIRED FOR HORIZONTAL CURVE RADIUS (50 MPH) AND FOR HORIZONTAL STOPPING SIGHT DISTANCE (38 MPH).

8/17/99

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11/15/08 11:53 AM

PROJECT REFERENCE NO. R-3307	SHEET NO. 8
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



REVISIONS

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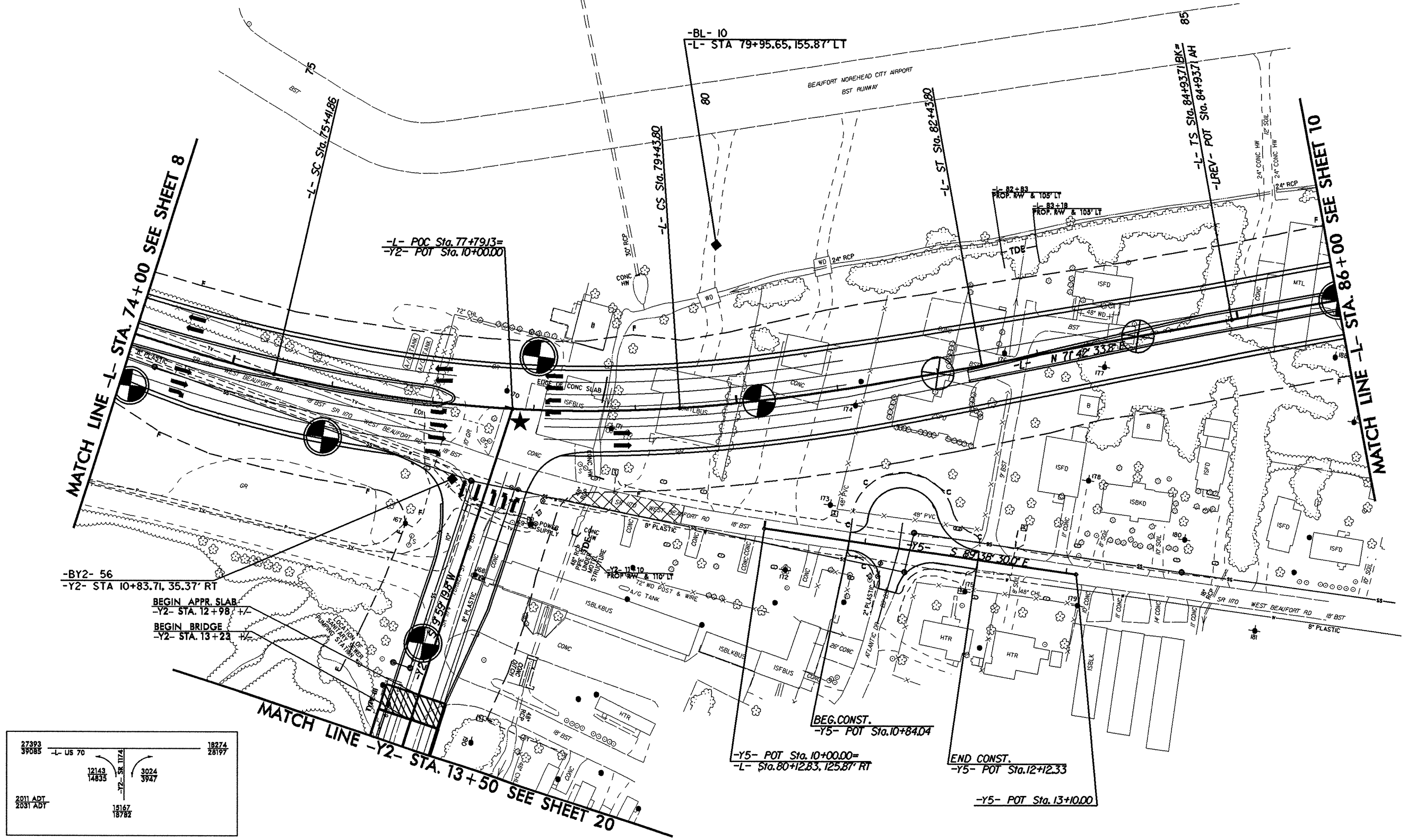
★ PROPOSED SIGNAL



PROJECT REFERENCE NO. R-3307	SHEET NO. 9
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

REVISIONS

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2011 ADT
2031 ADT



27393 39085	-L- US 70	18274 28197
12143 14835	-Y2- SR 1174	3024 3927
2011 ADT		2031 ADT
18167 18782		

BEG. CONST.
-Y5- POT Sta. 10+84.04

-Y5- POT Sta. 10+00.00=
-L- Sta. 80+12.83, 125.87' RT

END CONST.
-Y5- POT Sta. 12+12.33

-Y5- POT Sta. 13+10.00

-BY2- 56
-Y2- STA 10+83.71, 35.37' RT

BEGIN APPR SLAB
-Y2- STA. 12+98.7 +/-

BEGIN BRIDGE
-Y2- STA. 13+23.7 +/-

MATCH LINE -Y2- STA. 13+50 SEE SHEET 20

MATCH LINE -L- STA. 74+00 SEE SHEET 8

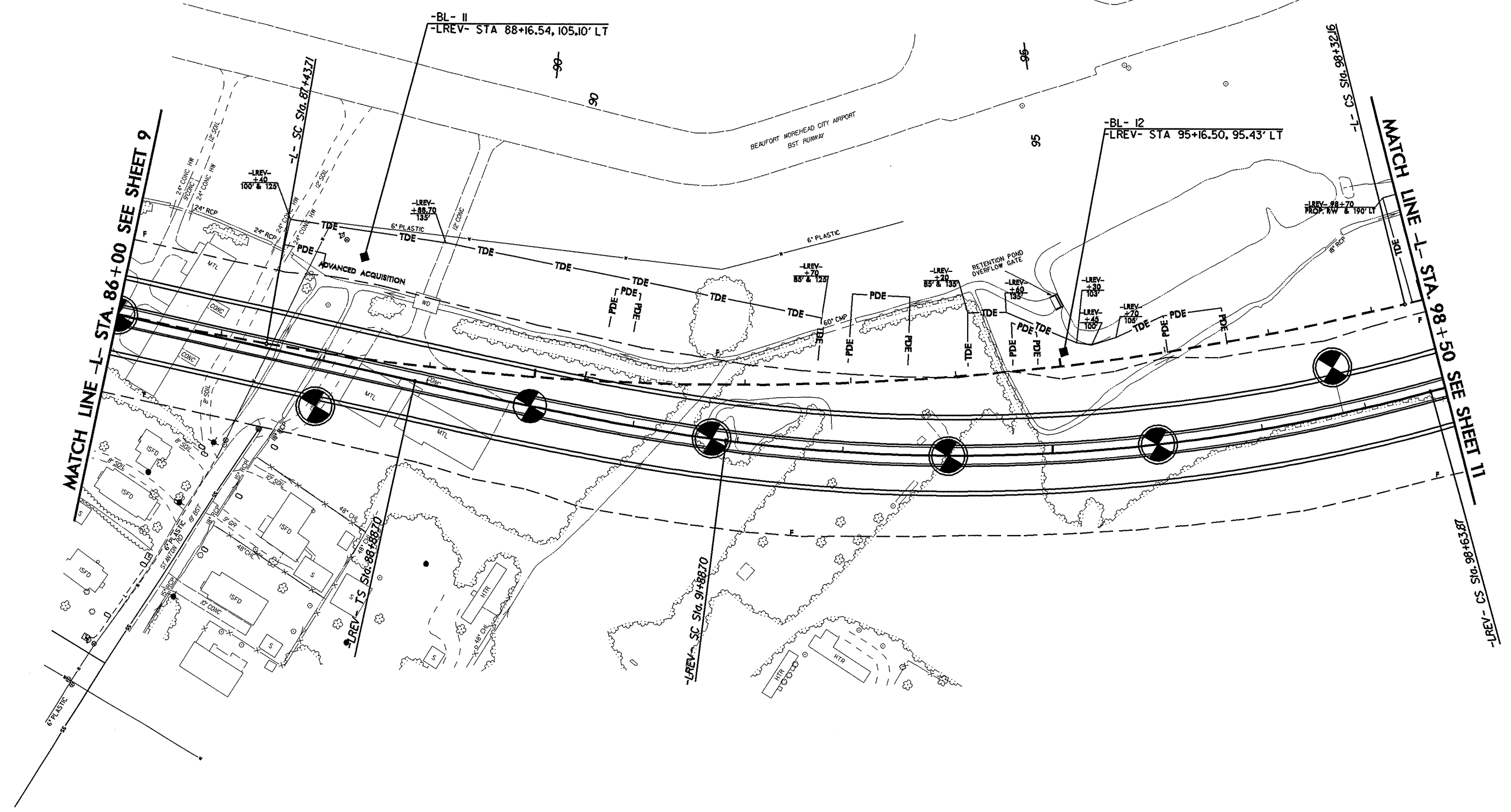
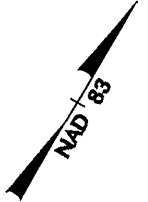
MATCH LINE -L- STA. 86+00 SEE SHEET 10

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REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-3307	10
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

FOR -LREV- PROFILE SEE SHEET 30



MATCH LINE -L- STA. 86+00 SEE SHEET 9

MATCH LINE -L- STA. 98+50 SEE SHEET 11

-BL- II
-LREV- STA 88+16.54, 105.10' LT

-BL- I2
-LREV- STA 95+16.50, 95.43' LT

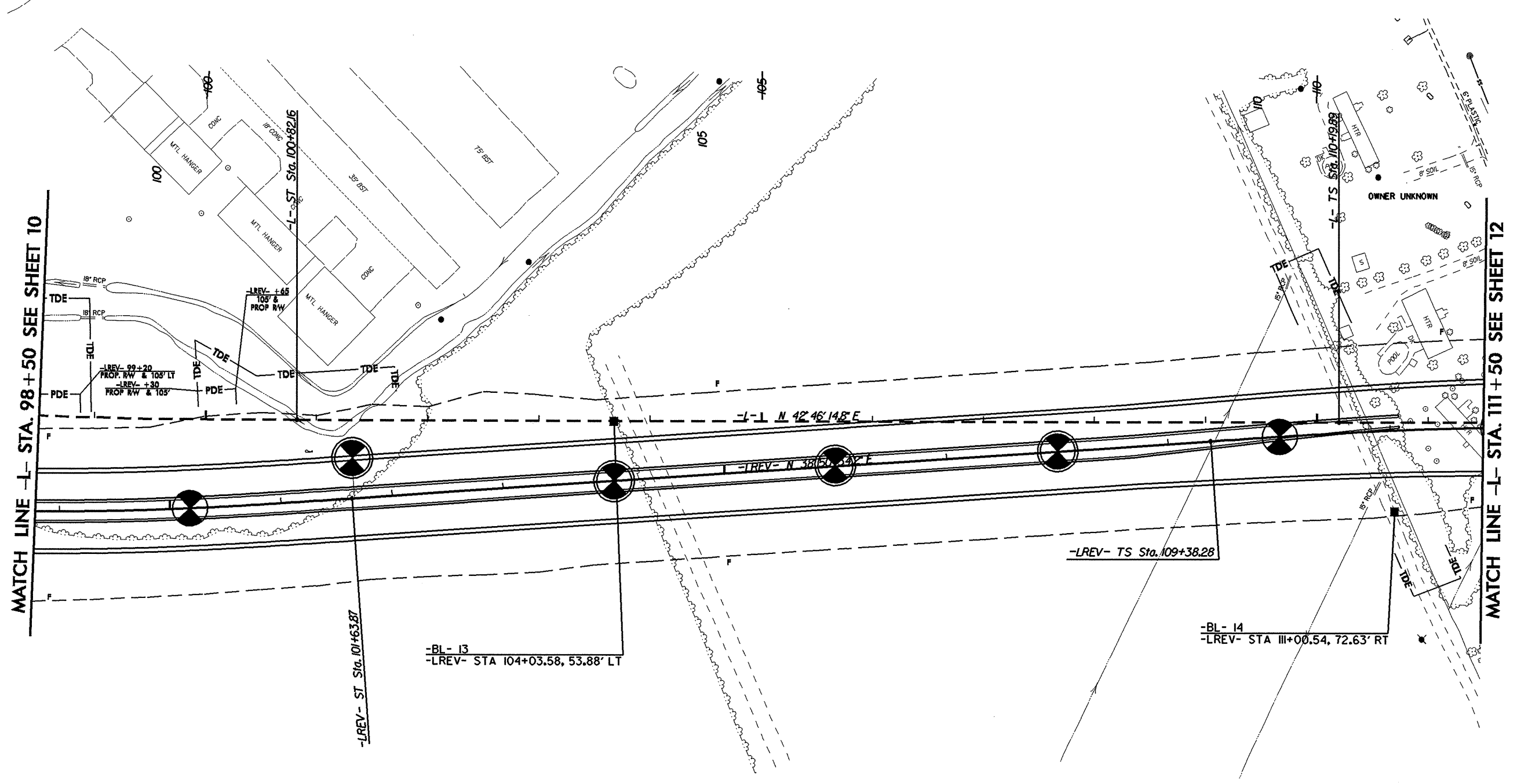
-L- SC Sta. 87+43.71
-LREV- 100' & 125'
-LREV- 88+70 135'
-LREV- 85' & 122'
-LREV- 85' & 133'
-LREV- 80' & 150'
-LREV- 80' & 103'
-LREV- 75' Sta. 88+88.70
-LREV- 75' Sta. 88+88.70
-LREV- SC Sta. 91+88.70
-LREV- 98+70 PROP. RW & 190' LY
-L- CS Sta. 98+32.16
-LREV- CS Sta. 98+32.16

8/17/99

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REVISIONS

PROJECT REFERENCE NO. R-3307	SHEET NO. II
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

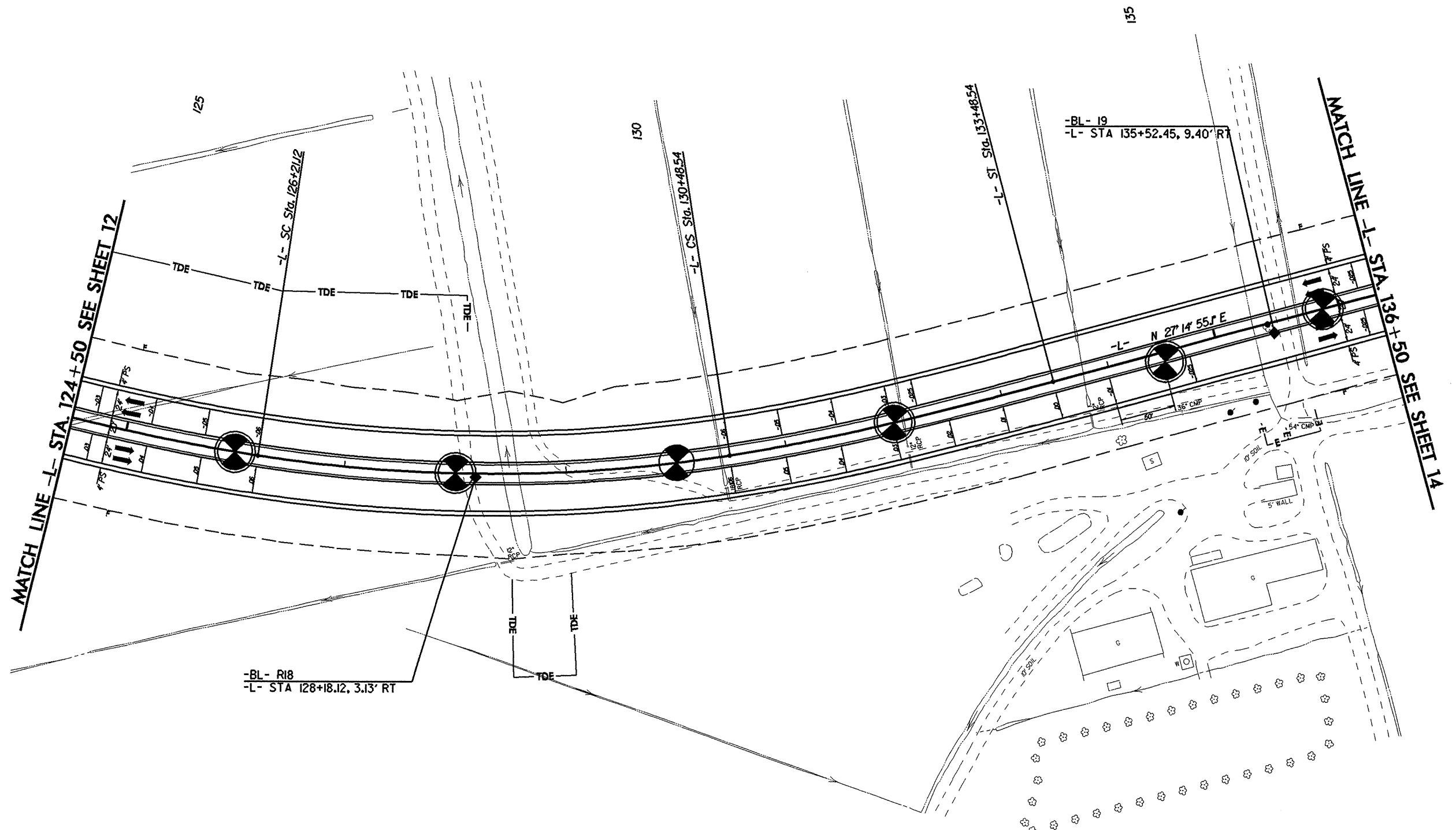
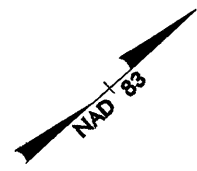


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REVISIONS

PROJECT REFERENCE NO. R-3307		SHEET NO. 13	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR E/W ACQUISITION		PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

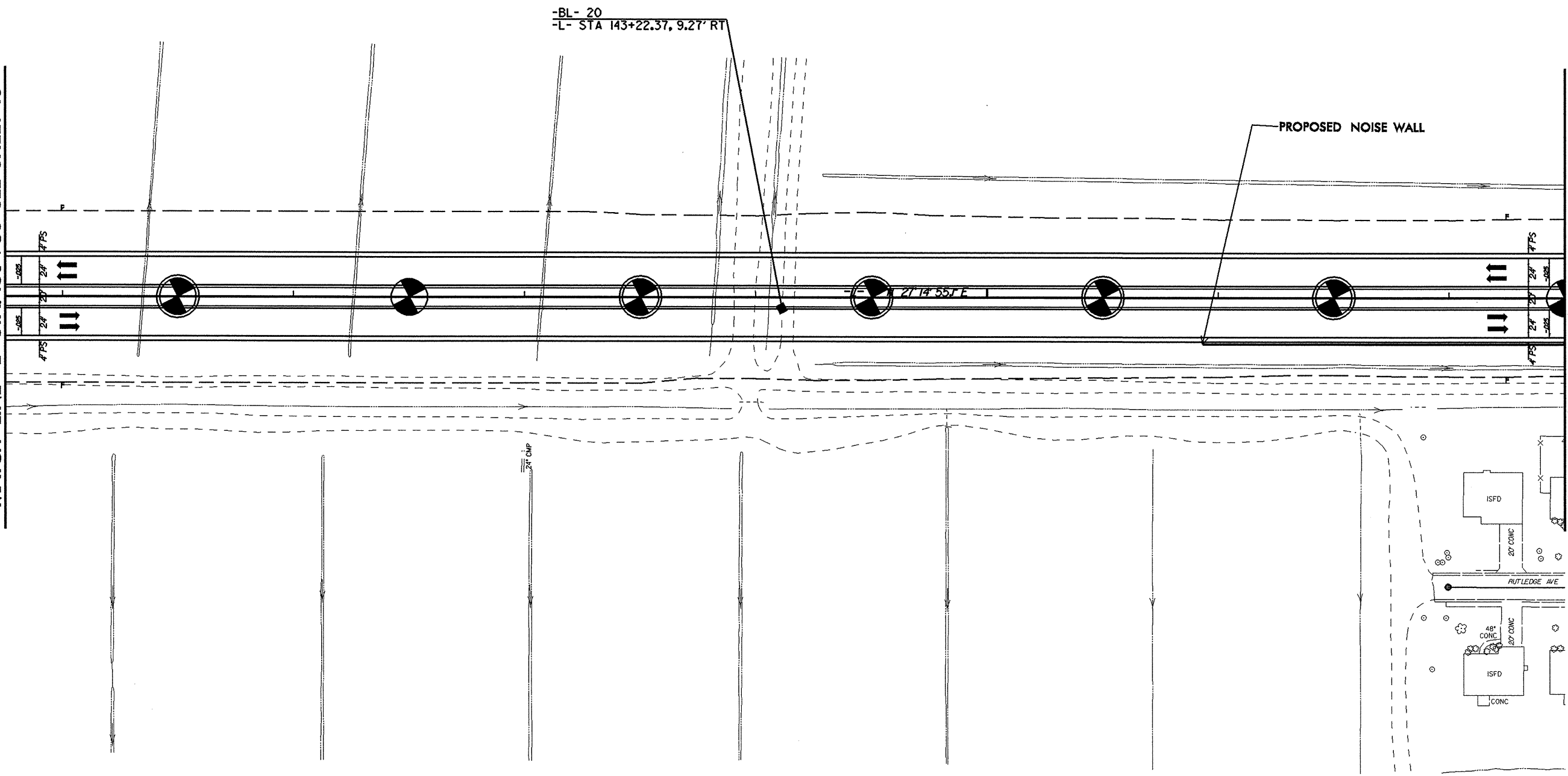


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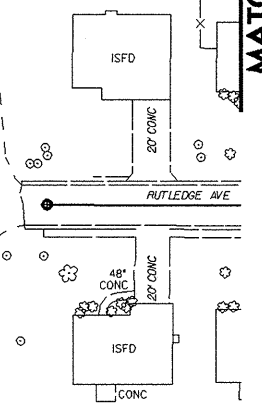
REVISIONS

MATCH LINE -L- STA. 136 + 50 SEE SHEET 13



PROJECT REFERENCE NO. R-3307	SHEET NO. 14
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

MATCH LINE -L- STA. 150 + 00 SEE SHEET 15



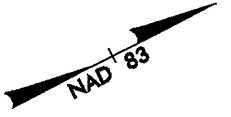
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Customer: AT 06240335

PROJECT REFERENCE NO. R-3307	SHEET NO. 15
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

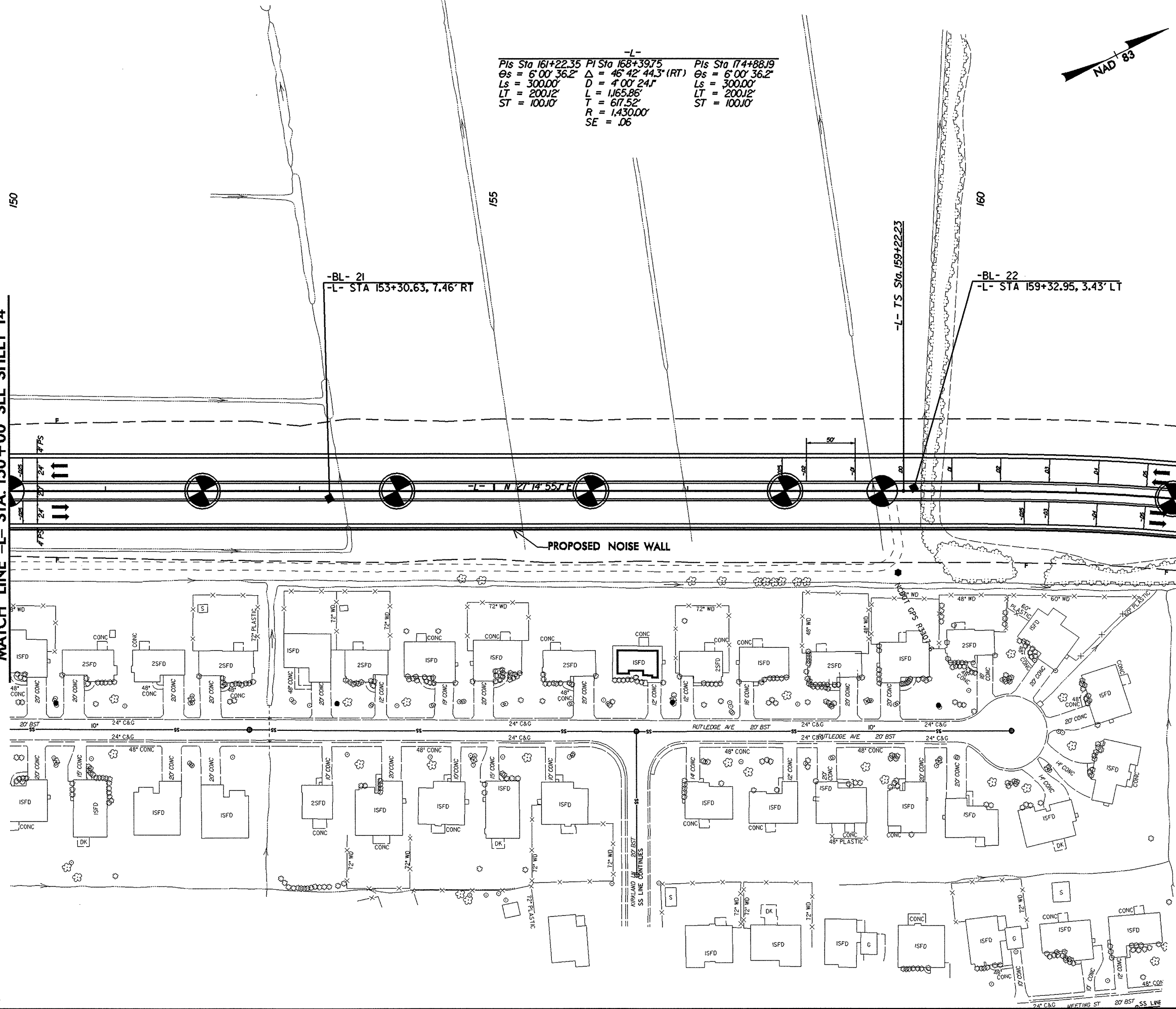
FOR -L- PROFILE SEE SHEET 32

-L-		
<i>PIs Sta 161+22.35</i>	<i>PI Sta 168+39.75</i>	<i>PIs Sta 174+88.19</i>
<i>θs = 6° 00' 36.2"</i>	<i>Δ = 46° 42' 44.3" (RT)</i>	<i>θs = 6° 00' 36.2"</i>
<i>Ls = 300.00'</i>	<i>D = 4° 00' 24.1"</i>	<i>Ls = 300.00'</i>
<i>LT = 200.12'</i>	<i>L = 1165.86'</i>	<i>LT = 200.12'</i>
<i>ST = 100.10'</i>	<i>T = 677.52'</i>	<i>ST = 100.10'</i>
	<i>R = 1430.00'</i>	
	<i>SE = .06</i>	



MATCH LINE -L- STA. 150+00 SEE SHEET 14

MATCH LINE -L- STA. 162+50 SEE SHEET 16



-BL- 21
-L- STA 153+30.63, 7.46' RT

-BL- 22
-L- STA 159+32.95, 3.43' LT

-L- TS Sta. 159+22.23

-L- SC Sta. 162+22.23

PROPOSED NOISE WALL

-L- N 27° 14' 55.7\"/>

REVISIONS

8/17/99

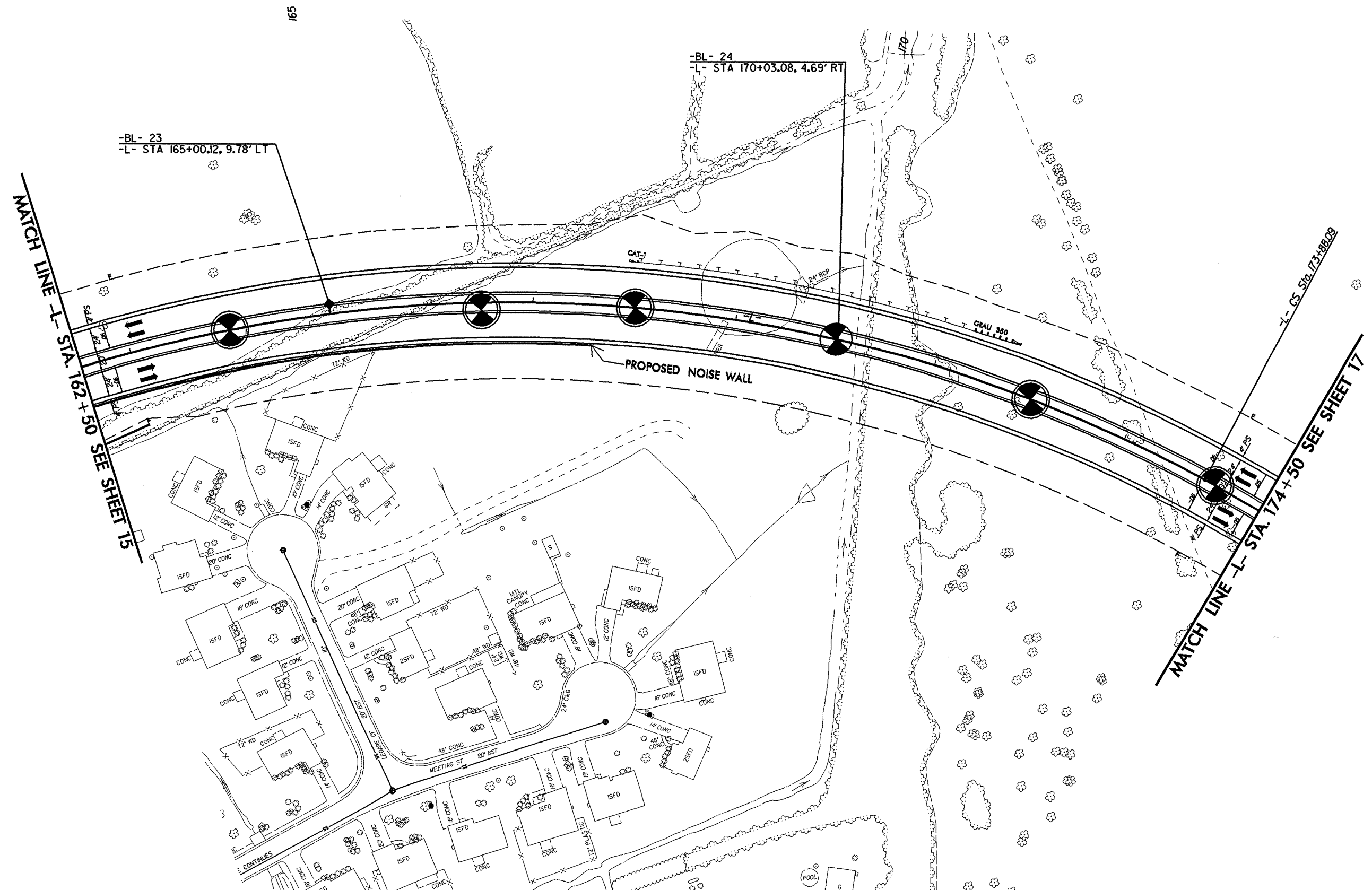
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REVISIONS

-L-

Pis Sta 161+22.35	PI Sta 168+39.75	Pis Sta 174+88.19
$\Theta_s = 6'00'38.2"$	$\Delta = 46'42'44.3" (RT)$	$\Theta_s = 6'00'36.2"$
$L_s = 300.00'$	$D = 4'00'24.1"$	$L_s = 300.00'$
$LT = 200.12'$	$L = 1165.86'$	$LT = 200.12'$
$ST = 100.10'$	$T = 617.52'$	$ST = 100.10'$
	$R = 1,430.00'$	
	$SE = .06$	

PROJECT REFERENCE NO. R-3307	SHEET NO. 16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



-BL- 23
-L- STA 165+00.12, 9.78' LT

-BL- 24
-L- STA 170+03.08, 4.69' RT

MATCH LINE -L- STA. 162+50 SEE SHEET 15

MATCH LINE -L- STA. 174+50 SEE SHEET 17

-L- CS STA. 173+88.09

8/17/99

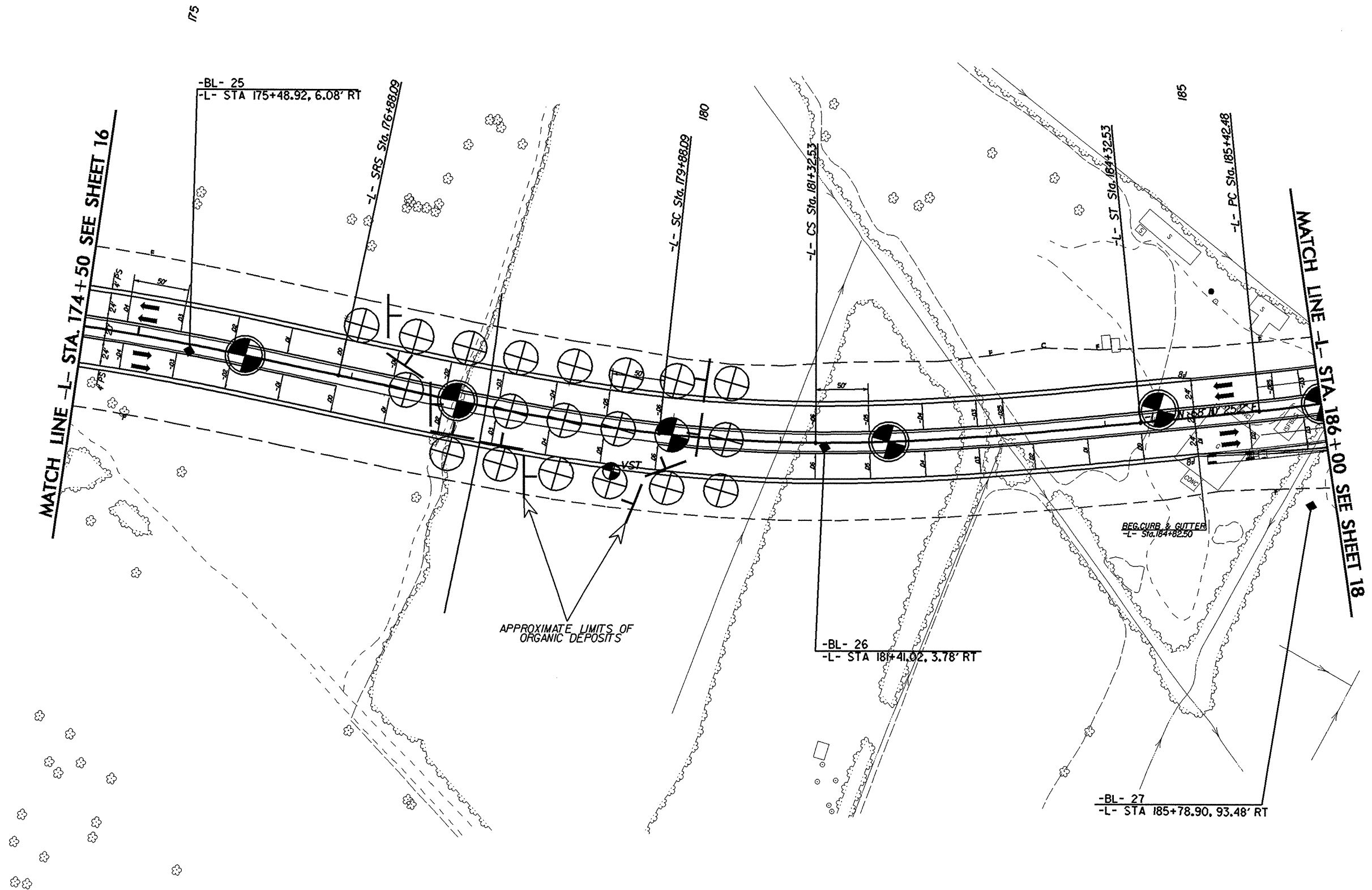
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REVISIONS

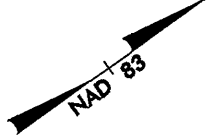
-L-				
PIs Sta 174+88.19	PIs Sta 178+88.20	PI Sta 180+60.37	PIs Sta 182+32.63	PI Sta 192+23.85
$\theta_s = 6'00'36.2''$	$\theta_s = 6'00'36.2''$	$\Delta = 5'47'14.2''$ (LT)	$\theta_s = 6'00'36.2''$	$\Delta = 54'15'09.2''$ (LT)
$L_s = 300.00'$	$L_s = 300.00'$	$D = 4'00'24.1''$	$L_s = 300.00'$	$D = 4'18'28.6''$
$LT = 200.12'$	$LT = 200.12'$	$L = 144.44'$	$LT = 200.12'$	$L = 1,259.36'$
$ST = 100.10'$	$ST = 100.10'$	$T = 72.28'$	$ST = 100.10'$	$T = 681.37'$
		$R = 1,430.00'$		$R = 1,330.00'$
		$SE = .06$		$SE = .05$



PROJECT REFERENCE NO. R-3307	SHEET NO. 17
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



PROJECT REFERENCE NO. R-3307	SHEET NO. 18
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



MATCH LINE INSERT A

MATCH LINE -L- STA 186+00 SEE SHEET 17

MATCH LINE -L- STA 197+50 SEE SHEET 19

-L-
 PI Sta 192+23.85
 $\Delta = 54^{\circ}15'09.2" (LT)$
 $D = 418'28.6"$
 $L = 1,259.36'$
 $T = 681.37'$
 $R = 1,330.00'$
 $SE = .05$

-L- POC Sta. 194+56.75 =
 -Y6- POT Sta. 10+00.00

-L- POC Sta. 190+13.13 =
 -Y4- POT Sta. 10+00.00
 BEARING AH = S 42°06'06.7" E

-BL- 28
 -L- STA 190+35.13, 11.98' LT=
 -BY4- 70 POT 5+00.00

-Y4- PC Sta. 10+51.07

-Y4- PRC Sta. 13+04.64
 END CONST.
 -Y4- POC Sta. 13+46.00

BEGIN CONST.
 -DR3- POT Sta. 13+50.00

-DR3- POT Sta. 14+64.78 =
 -Y6- POT Sta. 10+76.35

END CONST.
 -Y6- POT Sta. 12+65.00
 -Y6- POT Sta. 12+65.00

-BL- 29
 -L- STA 194+02.93, 99.98' RT

-BY4- 71
 -Y4- STA 12+13.07, 1.93' RT
 -DR3- POT Sta. 10+00.00

-Y4-
 PI Sta 11+89.97
 $\Delta = 58^{\circ}06'53.8" (RT)$
 $D = 22^{\circ}55'05.9"$
 $L = 253.57'$
 $T = 138.9'$
 $R = 250.00'$

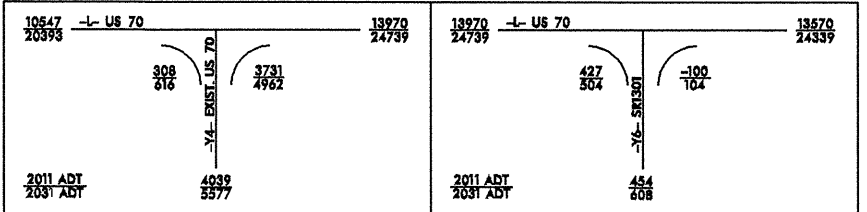
-Y4-
 PI Sta 14+47.73
 $\Delta = 18^{\circ}04'03.0" (LT)$
 $D = 6^{\circ}21'58.3"$
 $L = 283.80'$
 $T = 143.09'$
 $R = 900.00'$

-Y4- PT Sta. 15+88.44

-Y4- POT Sta. 17+83.44

-BY4- 72

MATCH LINE INSERT A



REVISIONS

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REVISIONS

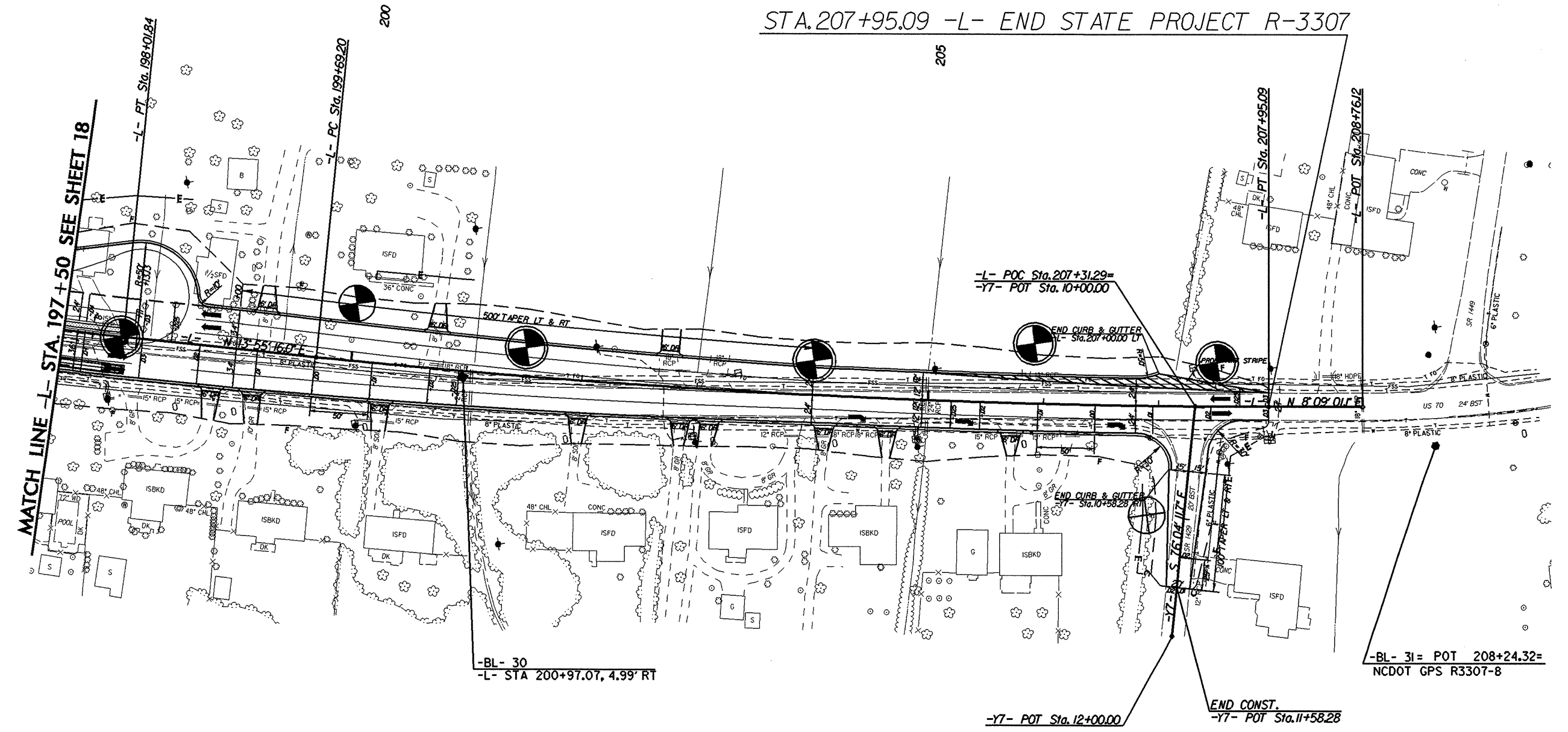
-L-

PI Sta 192+23.85	PI Sta 203+82.50
$\Delta = 54' 15" 09.2" (LT)$	$\Delta = 5' 46' 14.8" (LT)$
$D = 4' 18" 28.6"$	$D = 0' 41" 55.4"$
$L = 1,259.36'$	$L = 825.90'$
$T = 681.37'$	$T = 413.30'$
$R = 1,330.00'$	$R = 8,200.00'$
$SE = .05$	$SE = NC$



PROJECT REFERENCE NO. R-3307	SHEET NO. 19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

STA. 207+95.09 -L- END STATE PROJECT R-3307



MATCH LINE -L- STA. 197+50 SEE SHEET 18

-BL- 30
-L- STA 200+97.07, 4.99' RT

-L- POC Sta. 207+31.29=
-Y7- POT Sta. 10+00.00

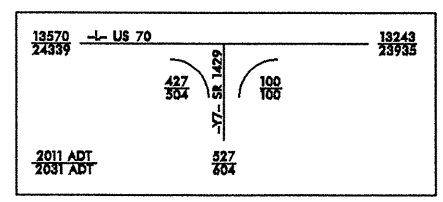
END CURB & GUTTER
-L- Sta. 207+00.00 LT

END CURB & GUTTER
-Y7- Sta. 10+58.28 RT

-Y7- POT Sta. 12+00.00

END CONST.
-Y7- POT Sta. 11+58.28

-BL- 31= POT 208+24.32=
NCDOT GPS R3307-8

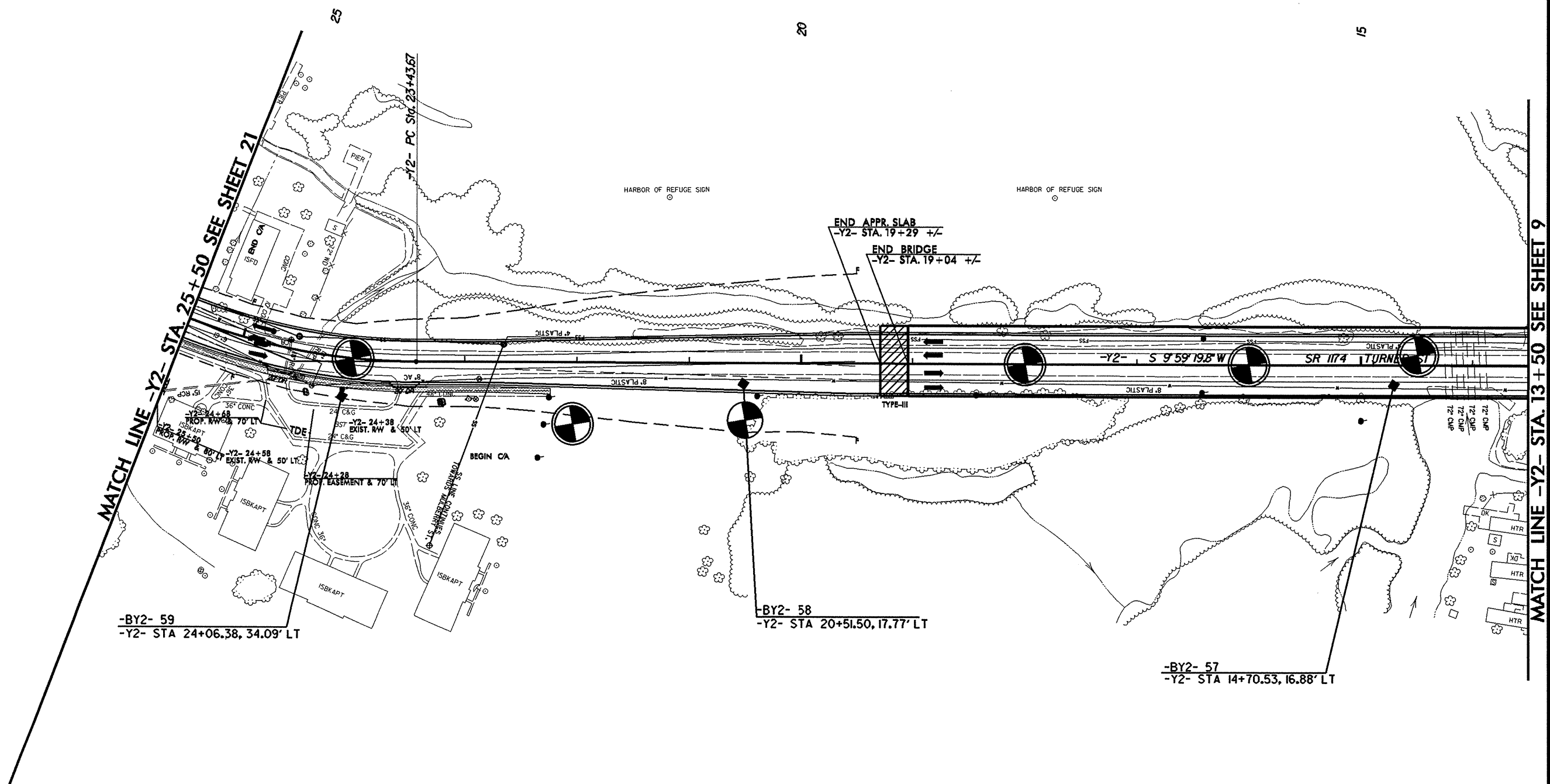
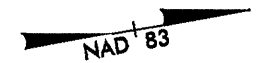


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Author: AT

REVISIONS

PROJECT REFERENCE NO. R-3307	SHEET NO. 20
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



-BY2- 59
-Y2- STA 24+06.38, 34.09' LT

-BY2- 58
-Y2- STA 20+51.50, 17.77' LT

-BY2- 57
-Y2- STA 14+70.53, 16.88' LT

MATCH LINE -Y2- STA. 13+50 SEE SHEET 9

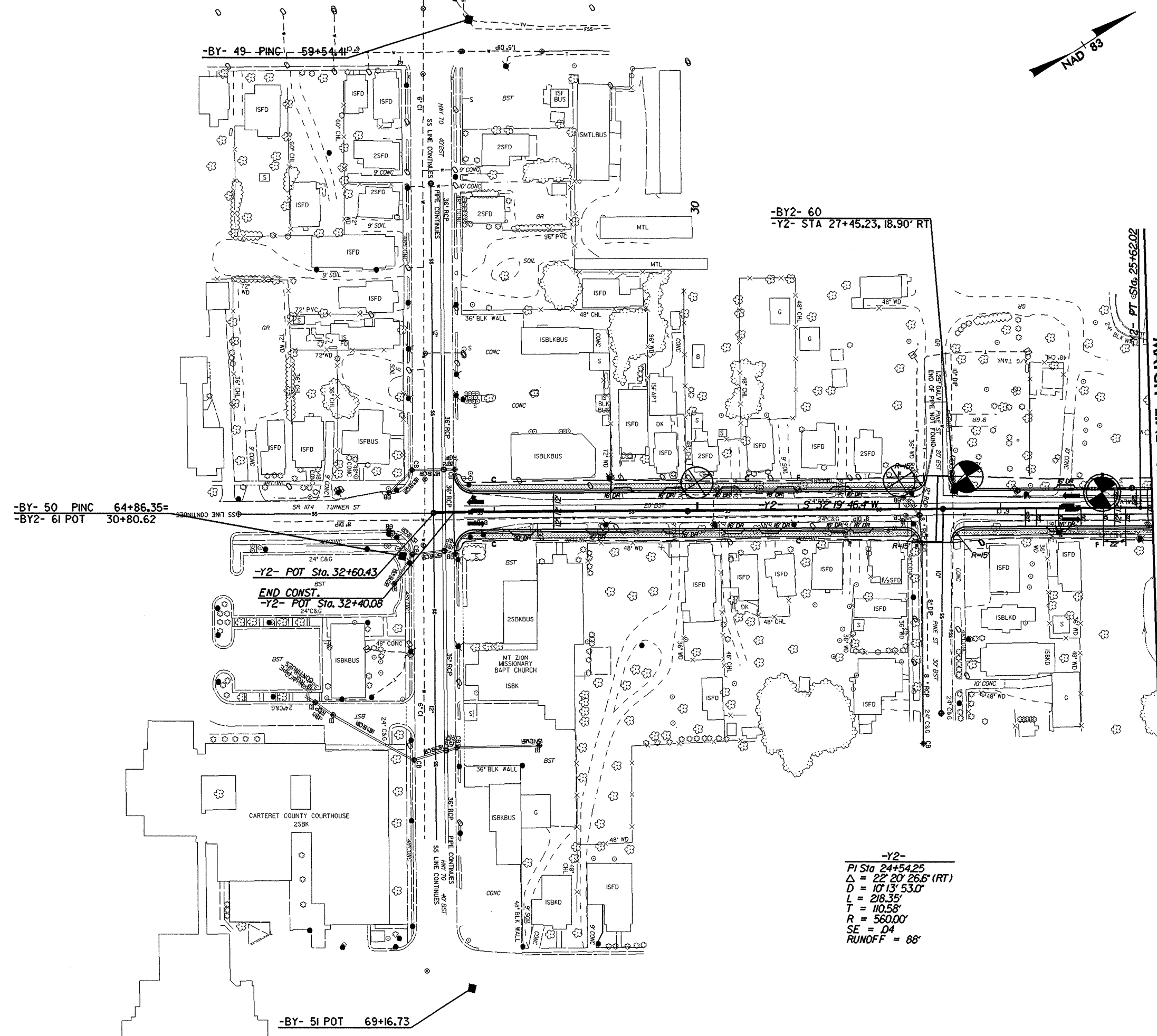
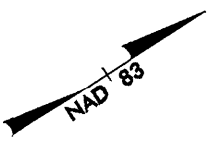
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REVISIONS

PROJECT REFERENCE NO. R-3307	SHEET NO. 21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

FOR -Y2- PROFILE SEE SHEET 36



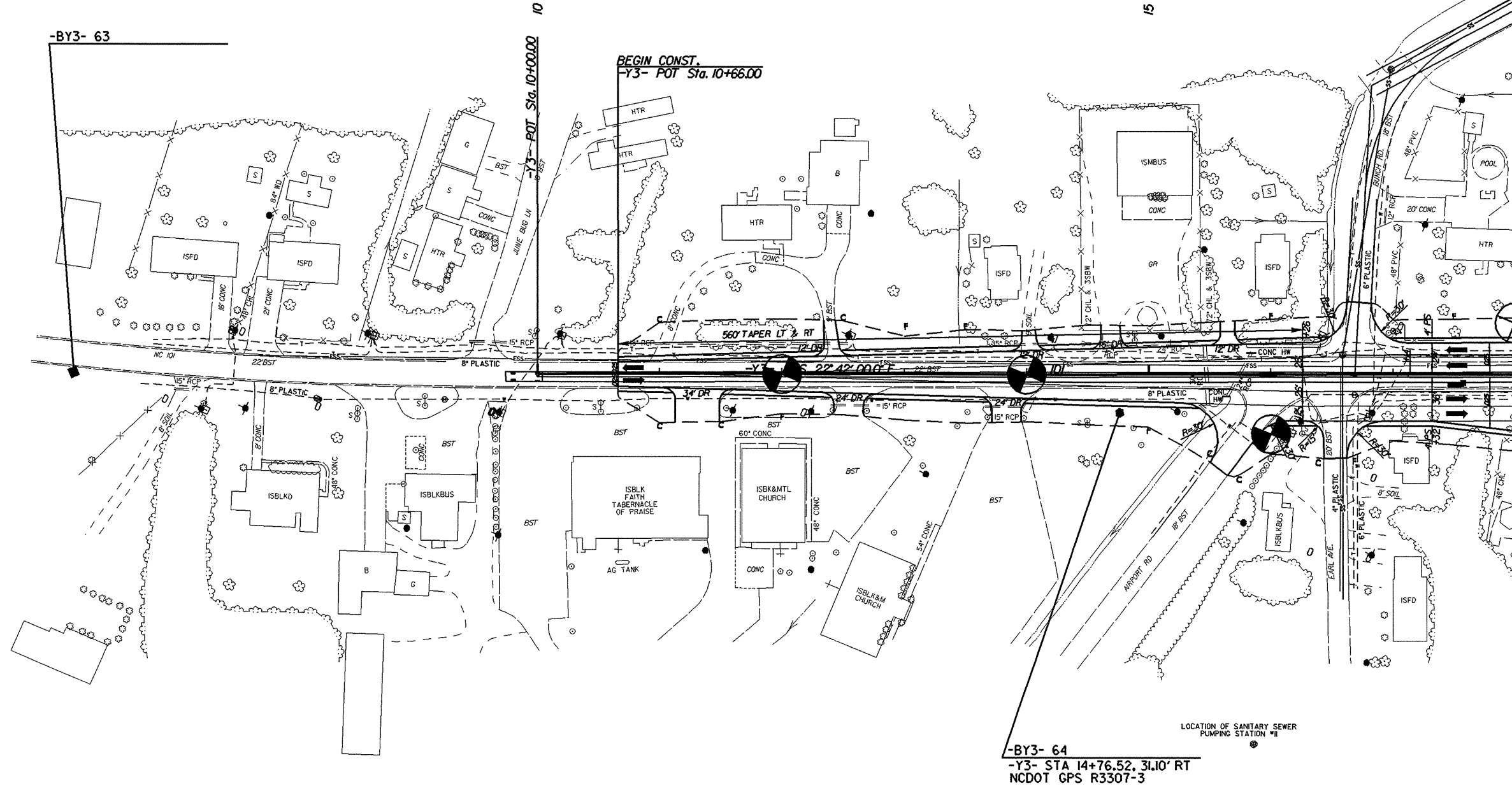
-Y2-
 PI Sta 24+54.25
 $\Delta = 22' 20'' 26.6''$ (RT)
 $D = 10' 13'' 53.0''$
 $L = 218.35'$
 $T = 110.58'$
 $R = 560.00'$
 $SE = D4$
 $RUNOFF = 88'$

MATCH LINE -Y2- STA. 25+50 SEE SHEET 20

PROJECT REFERENCE NO.		SHEET NO.	
R-3307		22	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
RW SHEET NO.		RW SHEET NO.	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION		INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION		PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



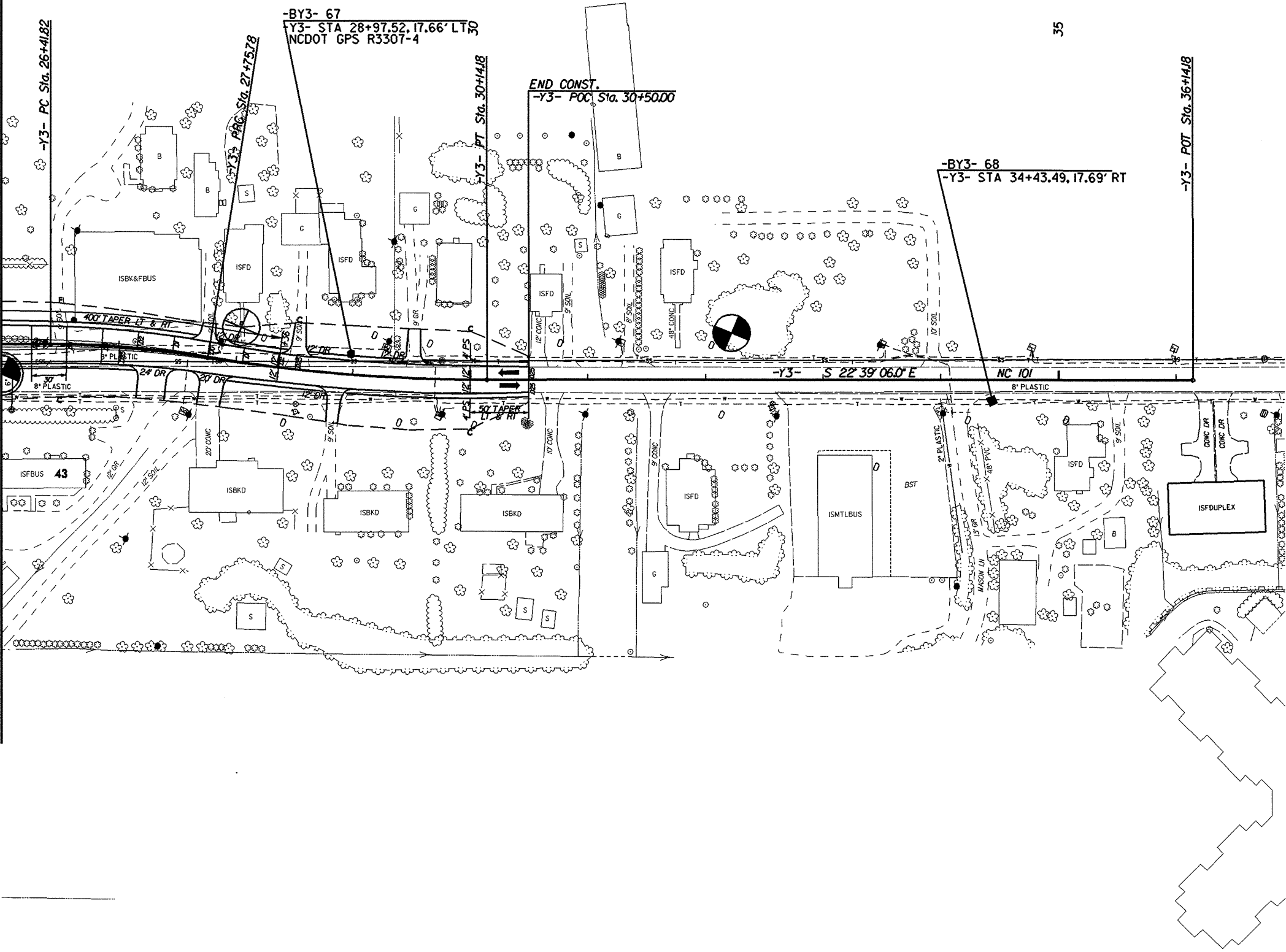
REVISIONS



MATCH LINE -Y3- STA. 18+00 SEE SHEET 12

REVISIONS

MATCH LINE -Y3- STA. 26+00 SEE SHEET 12



PROJECT REFERENCE NO. R-3307	SHEET NO. 23
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



35

-BY3- 67
Y3- STA 28+97.52, 17.66' LT;
NCDOT GPS R3307-4

END CONST.
-Y3- POC Sta. 30+50.00

-BY3- 68
Y3- STA 34+43.49, 17.69' RT

-Y3- S 22° 39' 06.0\"/>

NC 101

ISFBUS 43

ISBKD

ISBKD

ISBKD

ISFD

ISMTLBUS

BST

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ISFDUPLEX

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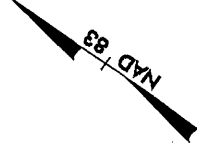
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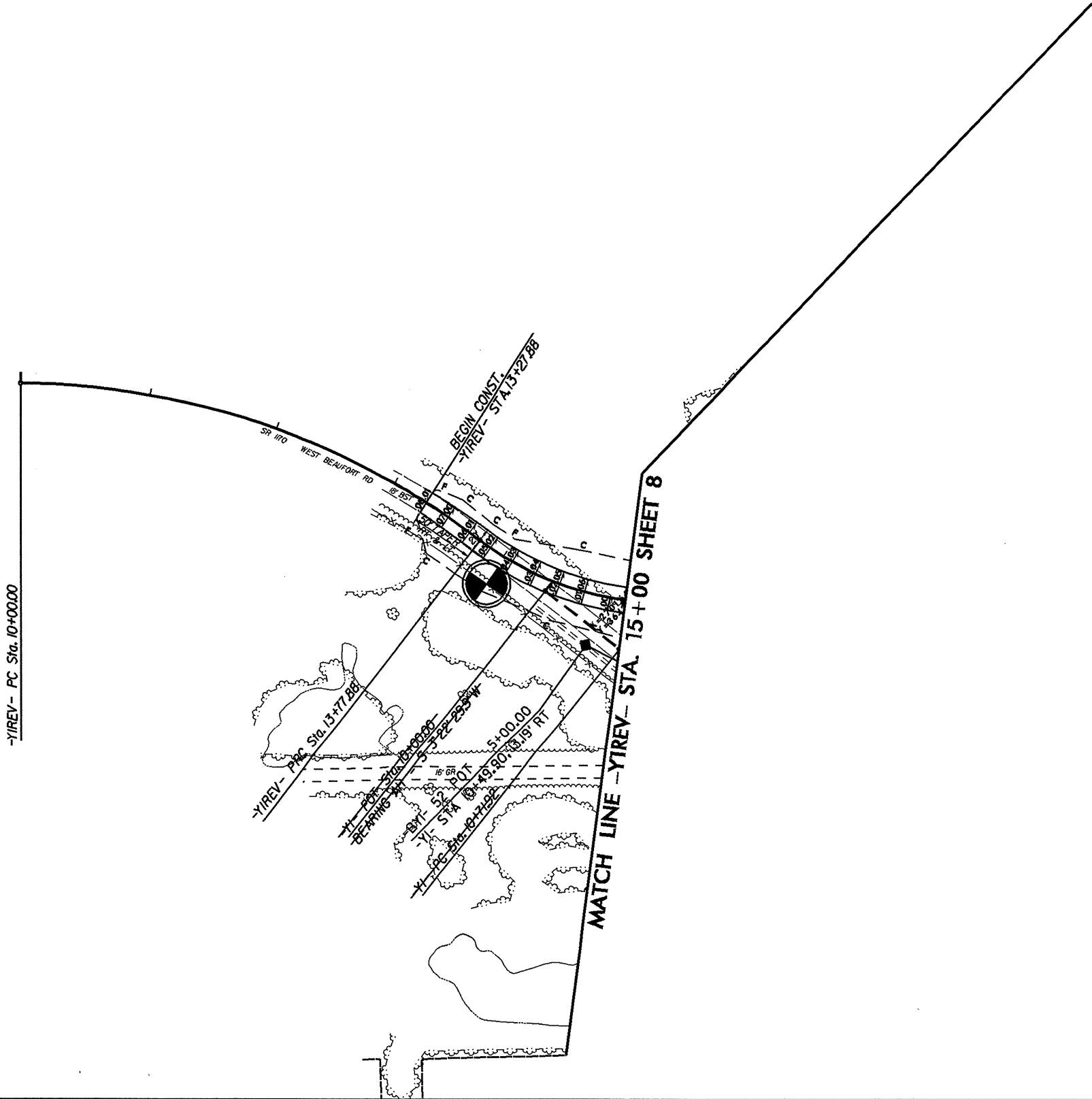
REVISIONS

-YIREV-

PI Sta 11+95.92	PI Sta 15+43.96
$\Delta = 37^{\circ} 19' 43.5" (RT)$	$\Delta = 70^{\circ} 29' 58.4" (LT)$
$D = 9^{\circ} 52' 42.9"$	$D = 24^{\circ} 22' 52.3"$
$L = 377.88'$	$L = 289.16'$
$T = 195.92'$	$T = 166.08'$
$R = 580.00'$	$R = 235.00'$

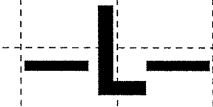
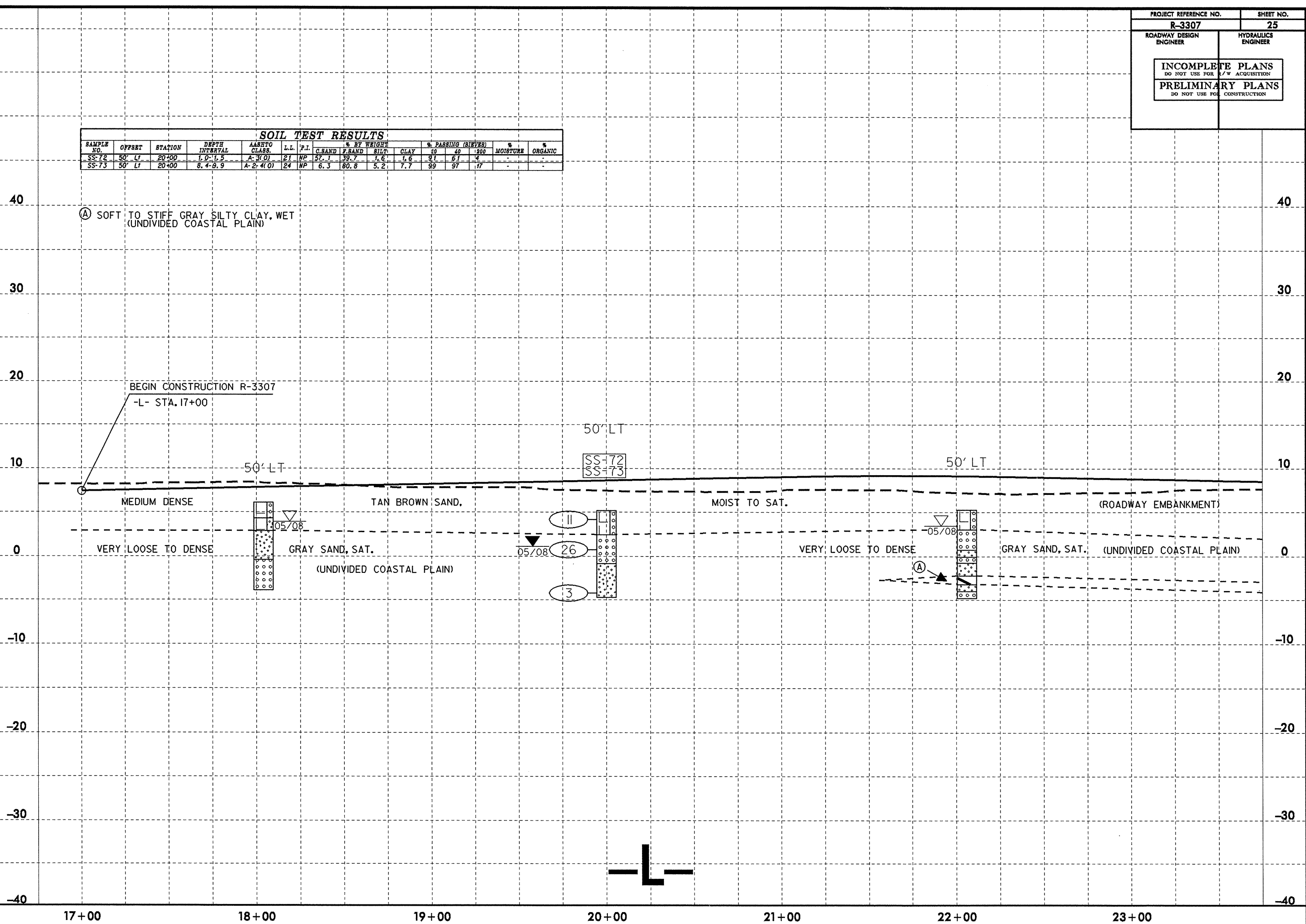


PROJECT REFERENCE NO. R-3307	SHEET NO. 24
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



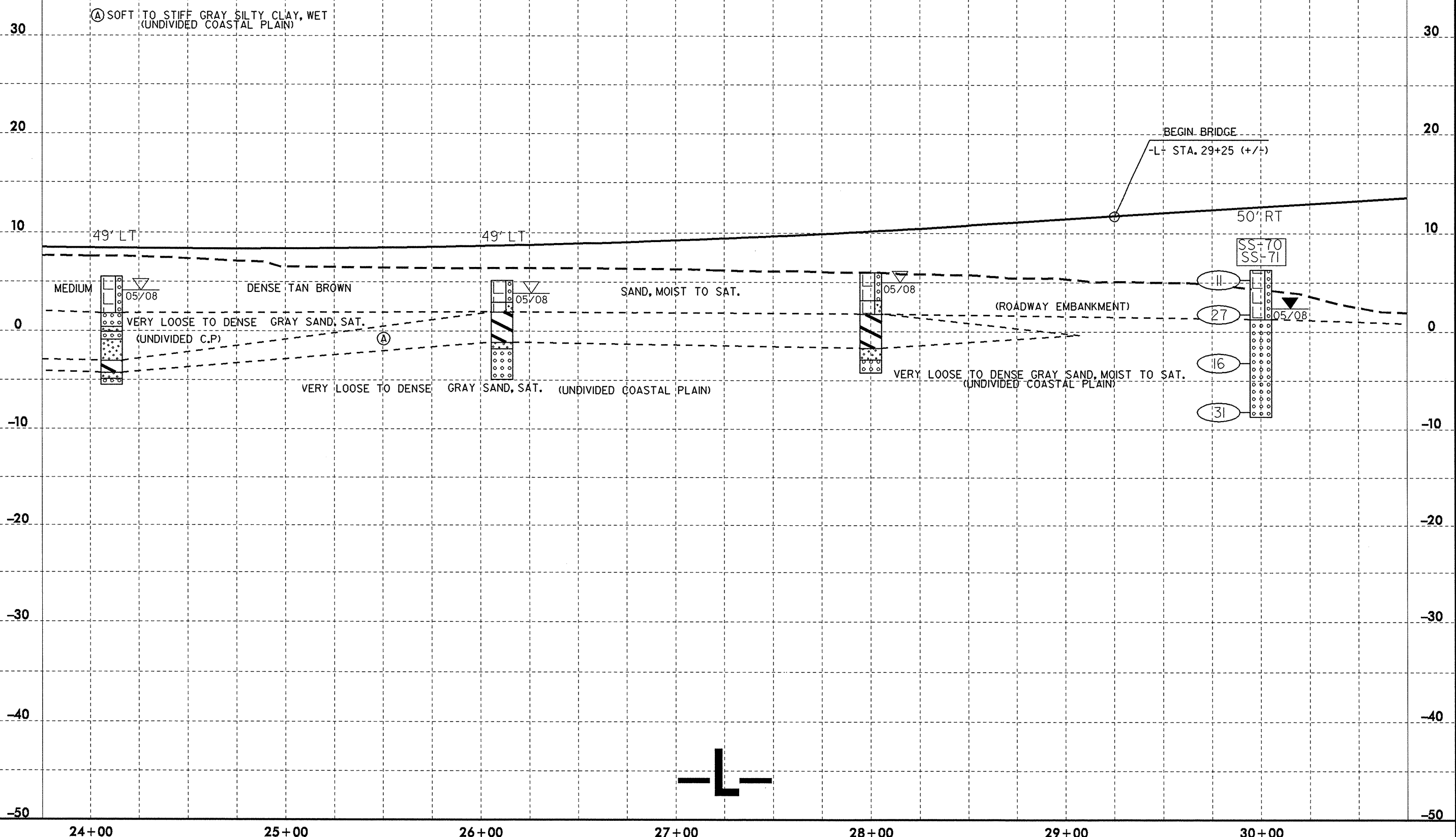
SOIL TEST RESULTS														
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASTHO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)		% MOISTURE	% ORGANIC
							G SAND	F SAND	SILT	CLAY	#10	#200		
SS-72	50' LT	20+00	1.0'-1.5'	A-3(0)	21	NP	52.1	39.7	1.6	1.6	91	61	4	-
SS-73	50' LT	20+00	8.4'-9.9'	A-2-4(0)	24	NP	6.3	80.8	5.2	7.7	99	97	17	-

5/14/99
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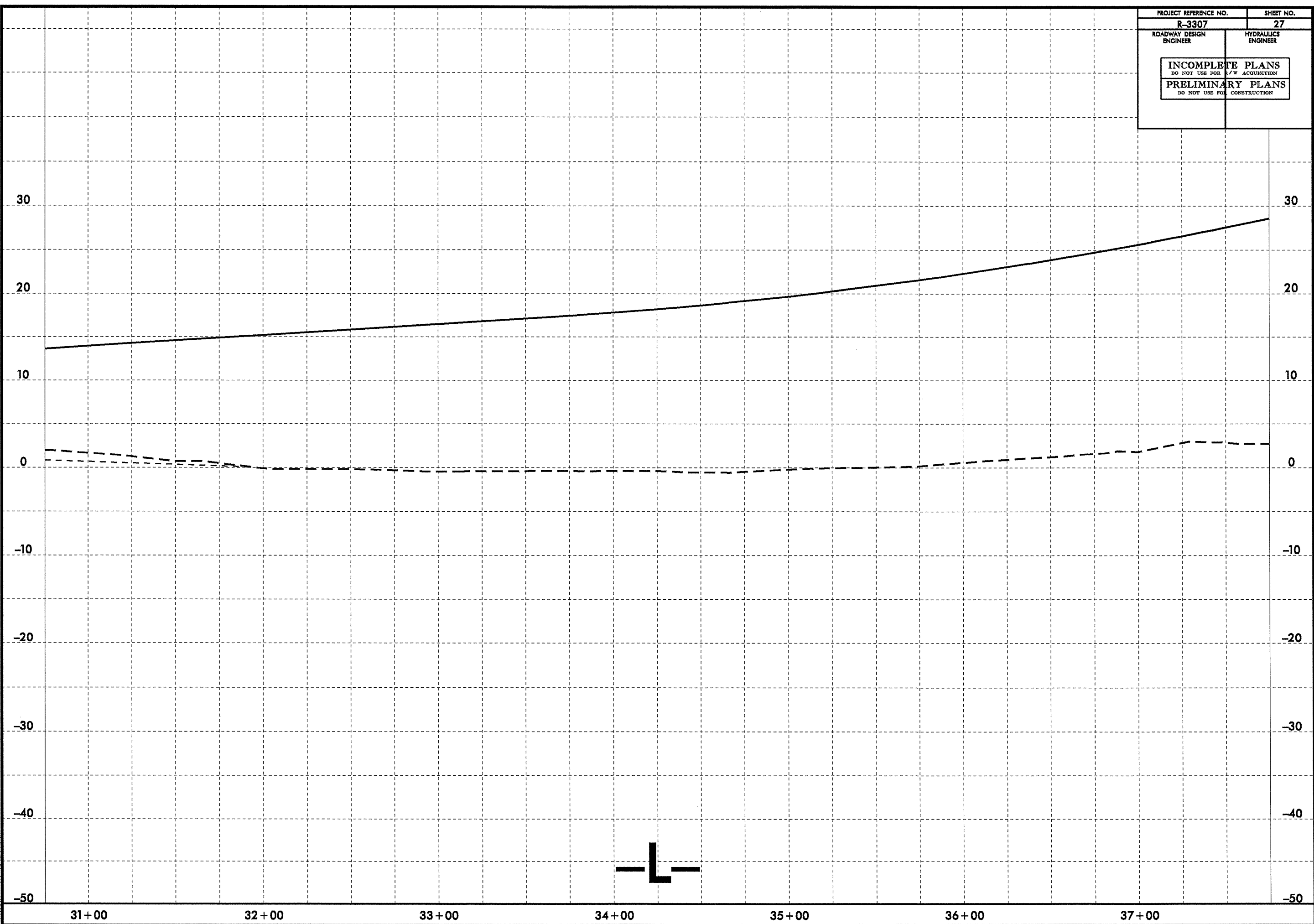
SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-70	50' RT	30+00	1.0-1.5	A-3(D)	15	MP	47.2	46.6	0.6	5.6	92	70	7	-	-
SS-71	50' RT	30+00	8.5-10.0	A-3(O)	17	MP	34.7	63.1	0.6	1.6	100	90	3	-	-



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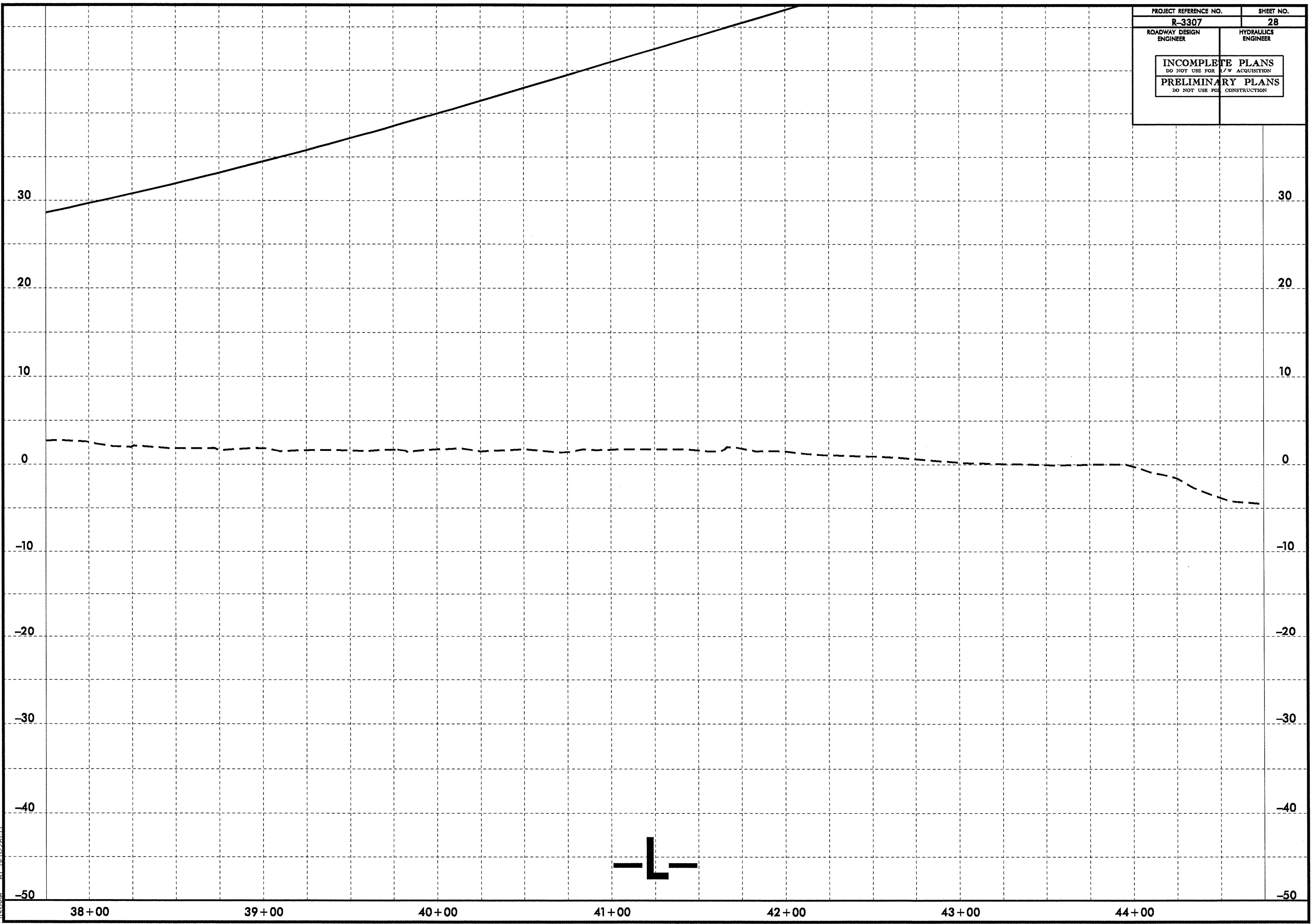
PROJECT REFERENCE NO.	SHEET NO.
R-3307	27
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

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PROJECT REFERENCE NO. R-3307	SHEET NO. 28
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



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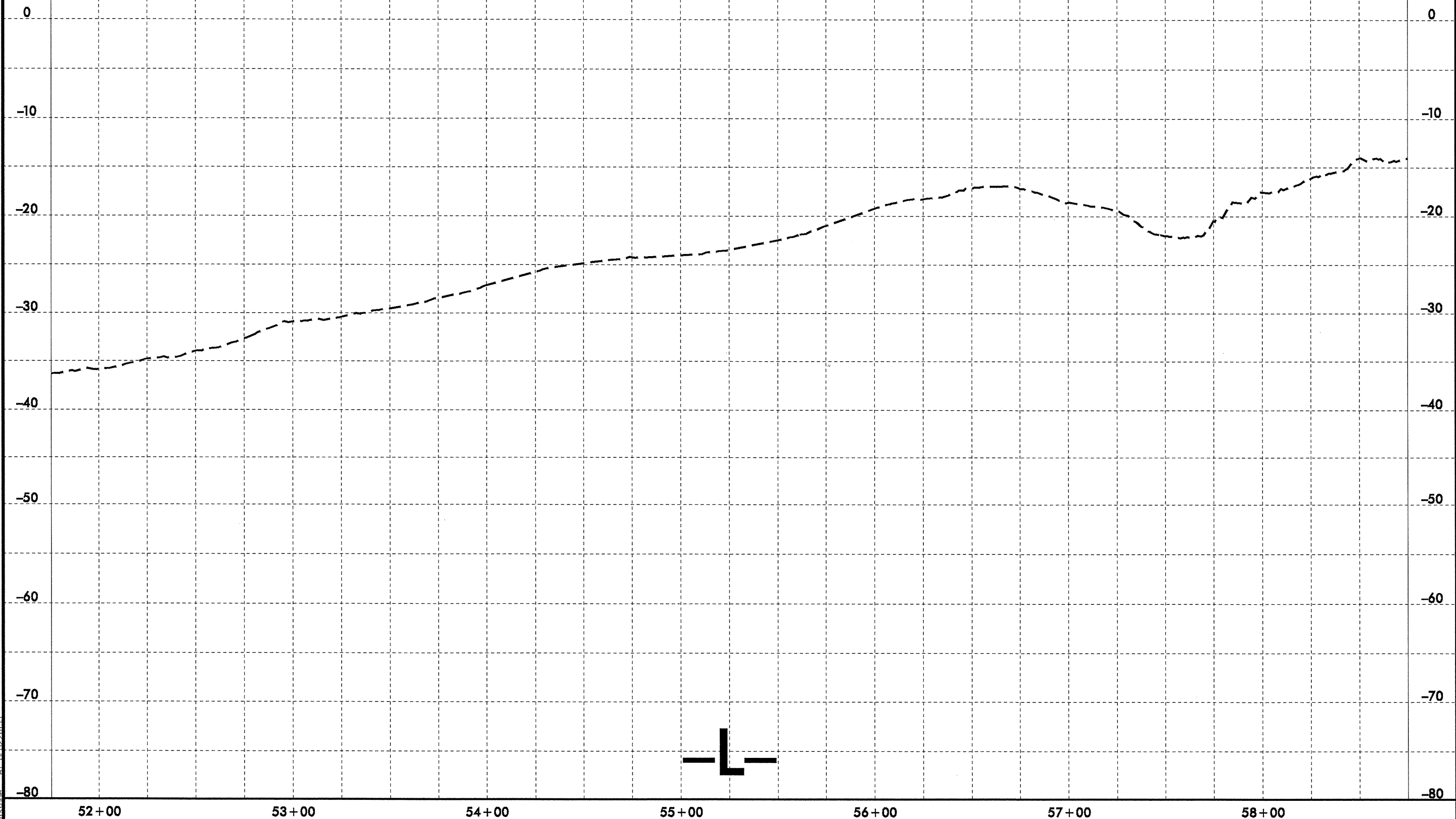
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ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



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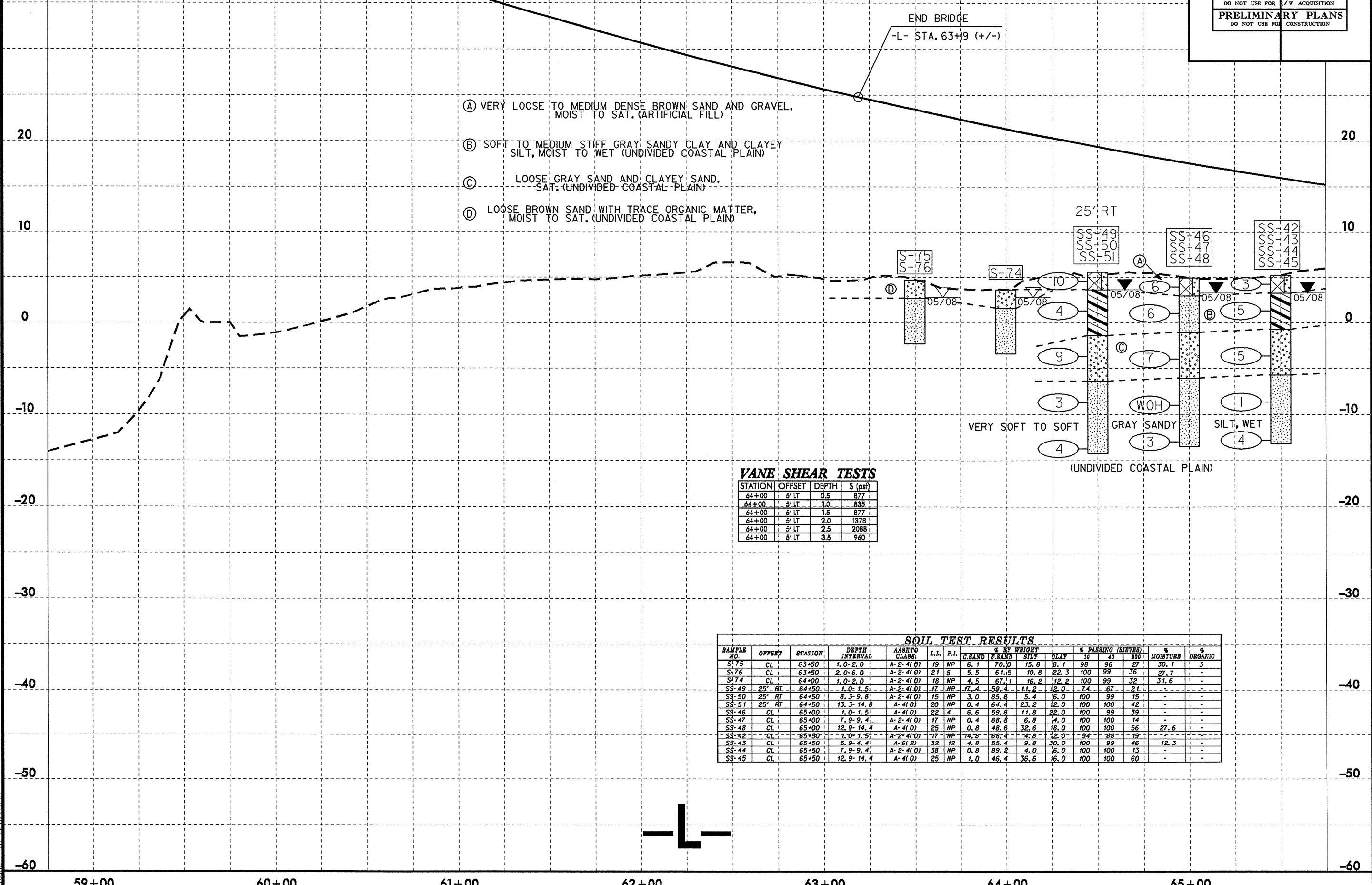
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PROJECT REFERENCE NO. R-3307	SHEET NO. 30
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



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PROJECT REFERENCE NO. R-3307	SHEET NO. 31
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



- (A) VERY LOOSE TO MEDIUM DENSE BROWN SAND AND GRAVEL, MOIST TO SAT. (ARTIFICIAL FILL)
- (B) SOFT TO MEDIUM STIFF GRAY SANDY CLAY AND CLAYEY SILT, MOIST TO WET (UNDIVIDED COASTAL PLAIN)
- (C) LOOSE GRAY SAND AND CLAYEY SAND, SAT. (UNDIVIDED COASTAL PLAIN)
- (D) LOOSE BROWN SAND WITH TRACE ORGANIC MATTER, MOIST TO SAT. (UNDIVIDED COASTAL PLAIN)

END BRIDGE
-L- STA. 63+9 (+/-)

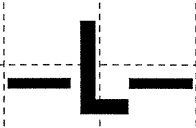
VANE SHEAR TESTS

STATION	OFFSET	DEPTH	S (psf)
64+00	5' LT	0.5	877
64+00	5' LT	1.0	835
64+00	5' LT	1.5	877
64+00	5' LT	2.0	1378
64+00	5' LT	2.5	2088
64+00	5' LT	3.5	960

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	ASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE		% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	60	W	U	
S-75	CL	63+50	1.0-2.0	A-2-4(0)	19	NP	6.1	70.0	15.8	8.1	98	96	27	30.1	3	
S-76	CL	63+50	2.0-6.0	A-2-4(0)	21	5	5.5	61.5	10.8	22.3	100	99	36	27.7	-	
S-74	CL	64+00	1.0-2.0	A-2-4(0)	18	NP	4.5	67.1	16.2	12.2	100	99	32	31.6	-	
SS-49	25' RT	64+50	1.0-1.5	A-2-4(0)	17	NP	17.4	59.4	11.2	12.0	74	67	21	-	-	
SS-50	25' RT	64+50	8.3-9.8	A-2-4(0)	15	NP	3.0	85.6	5.4	16.0	100	99	15	-	-	
SS-51	25' RT	64+50	13.3-14.8	A-4(0)	20	NP	0.4	64.4	23.2	12.0	100	100	42	-	-	
SS-46	CL	65+00	1.0-1.5	A-4(0)	22	4	6.6	59.6	11.8	22.0	100	99	39	-	-	
SS-47	CL	65+00	7.9-9.4	A-2-4(0)	17	NP	0.4	88.8	6.8	4.0	100	100	14	-	-	
SS-48	CL	65+00	12.9-14.4	A-4(0)	25	NP	0.8	48.6	32.6	18.0	100	100	56	27.6	-	
SS-42	CL	65+50	1.0-1.5	A-2-4(0)	17	NP	14.8	68.4	4.8	12.0	94	88	19	-	-	
SS-43	CL	65+50	5.9-4.4	A-6(2)	32	12	4.8	55.4	9.8	30.0	100	99	46	12.3	-	
SS-44	CL	65+50	7.9-9.4	A-2-4(0)	38	NP	0.8	89.2	4.0	6.0	100	100	13	-	-	
SS-45	CL	65+50	12.9-14.4	A-4(0)	25	NP	1.0	46.4	36.6	16.0	100	100	60	-	-	

VERY SOFT TO SOFT
GRAY SANDY SILT, WET
(UNDIVIDED COASTAL PLAIN)

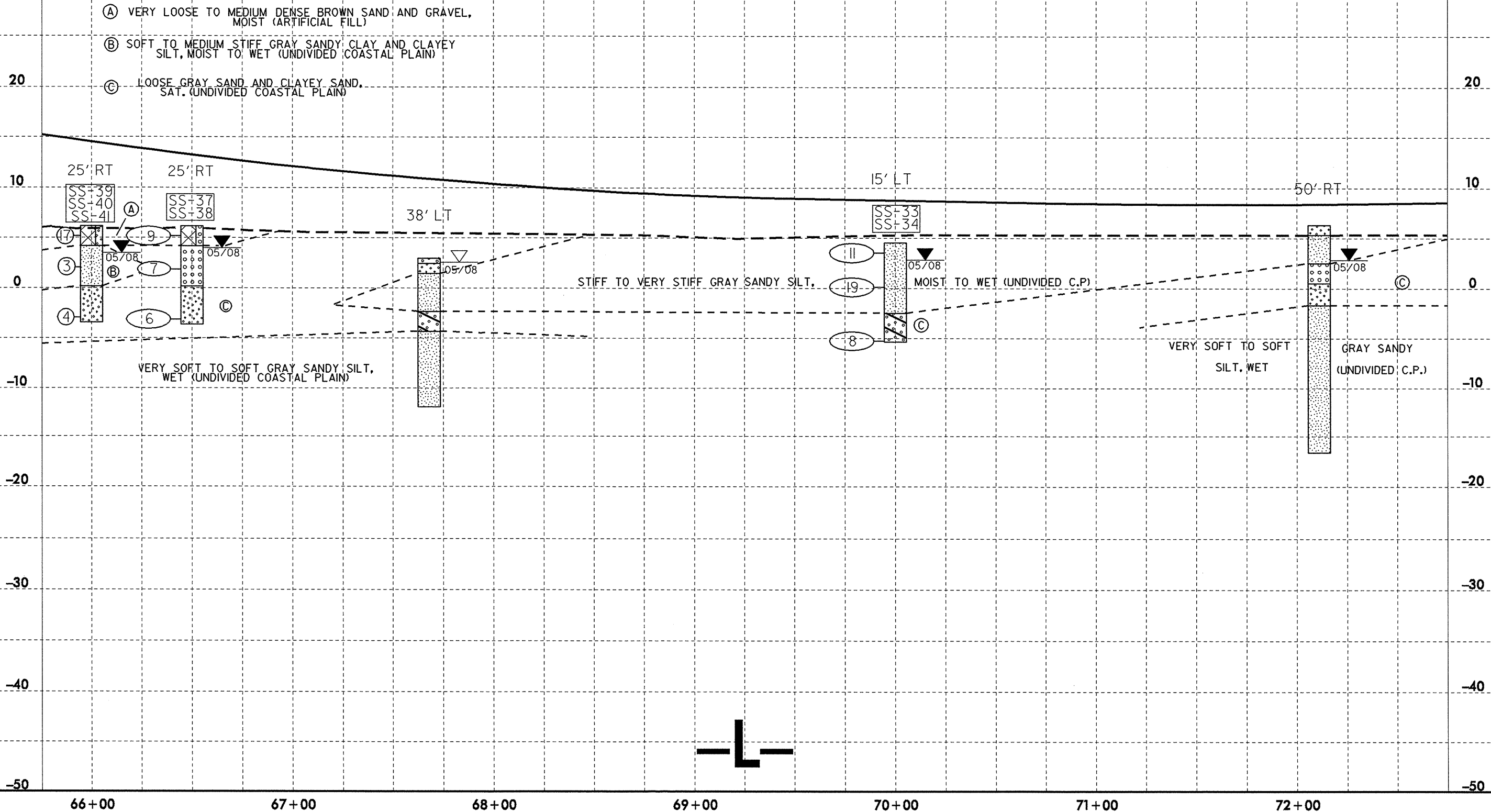


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PROJECT REFERENCE NO. R-3307	SHEET NO. 32
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

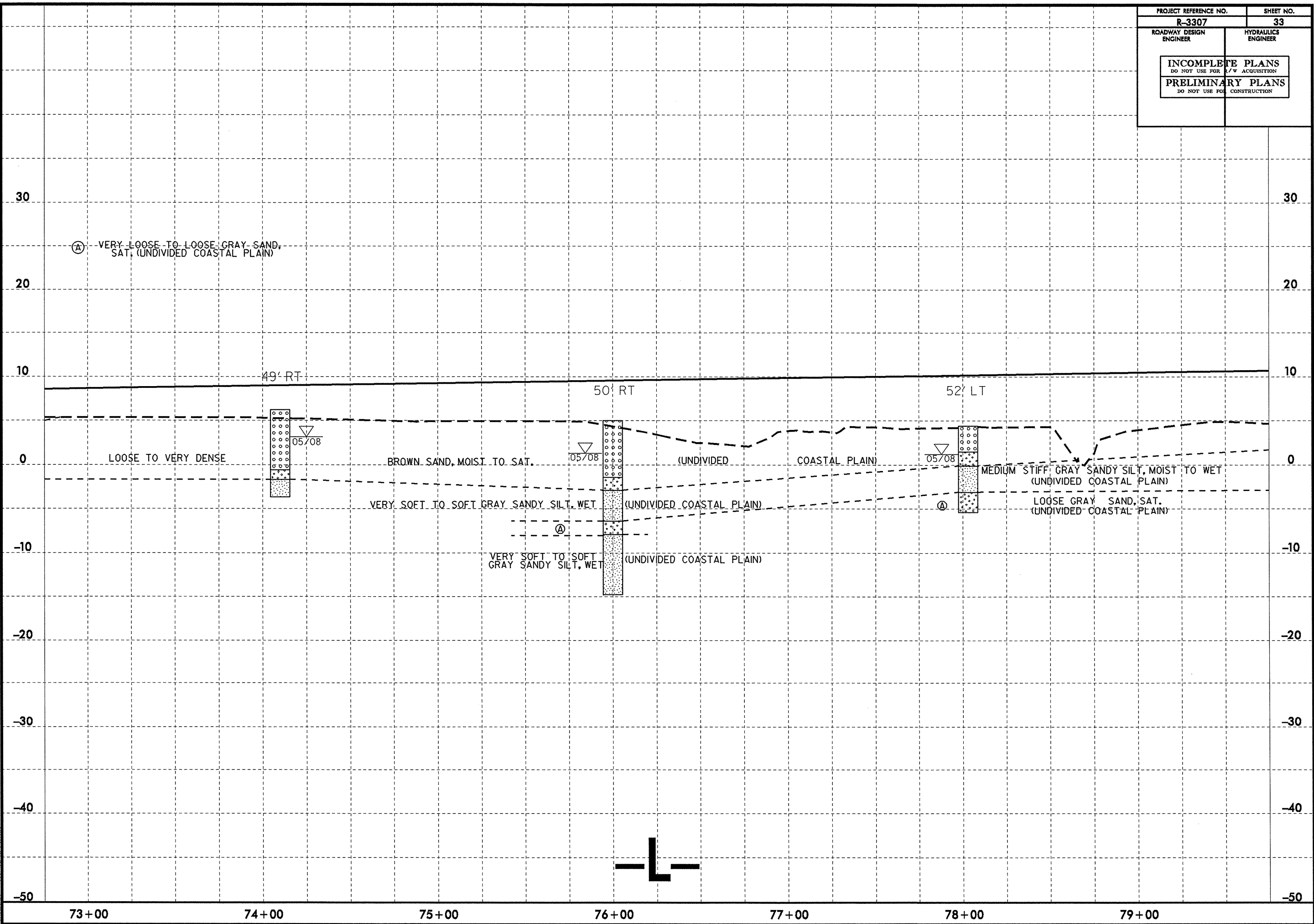
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-39	25' RT	66+00	1.0-1.5	A-2-4(0)	16	NP	19.6	58.0	10.4	12.0	73	66	19	-	-
SS-40	25' RT	66+00	3.1-4.6	A-4(0)	23	1	5.6	55.6	2.8	36.0	100	99	44	-	-
SS-41	25' RT	66+00	8.1-9.6	A-2-4(0)	19	NP	0.8	81.0	8.2	10.0	100	100	22	-	-
SS-37	25' RT	66+50	1.0-1.5	A-3(0)	16	NP	51.4	46.0	0.6	2.0	95	79	3	-	-
SS-38	25' RT	66+50	8.3-9.8	A-2-4(0)	17	NP	0.4	88.2	1.4	10.0	100	100	15	-	-
SS-33	15' LT	70+00	1.0-1.5	A-4(0)	17	NP	2.2	59.0	24.8	14.0	99	98	49	-	-
SS-34	15' LT	70+00	8.4-9.9	A-2-6(0)	30	12	21.4	62.6	0.0	16.0	100	94	18	-	-



5/14/99

PROJECT REFERENCE NO. R-3307	SHEET NO. 33
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

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Liston - AT 10/2/2003



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

49' RT

50' RT

52' LT

LOOSE TO VERY DENSE

BROWN SAND, MOIST TO SAT.

(UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF GRAY SANDY SILT, MOIST TO WET (UNDIVIDED COASTAL PLAIN)

VERY SOFT TO SOFT GRAY SANDY SILT, WET (UNDIVIDED COASTAL PLAIN)

LOOSE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

Ⓐ VERY SOFT TO SOFT GRAY SANDY SILT, WET (UNDIVIDED COASTAL PLAIN)

73+00

74+00

75+00

76+00

77+00

78+00

79+00

-50

-40

-30

-20

-10

0

10

20

30

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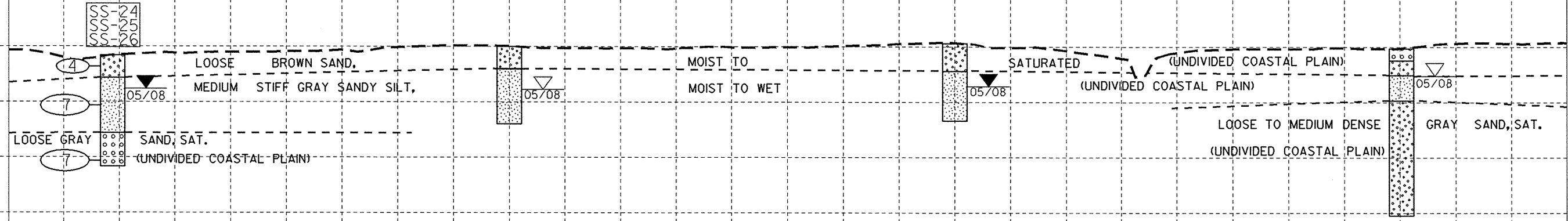
5/14/99

PROJECT REFERENCE NO. R-3307	SHEET NO. 34
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-24	CL	80+22	1.0-1.5	A-2-4(0)	26	NP	9.9	69.5	11.0	9.7	97	85	25	-	-
SS-25	CL	80+22	3.5-5.0	A-4(0)	20	NP	4.6	64.9	12.8	17.7	100	99	39	-	-
SS-26	CL	80+22	8.5-10.0	A-2-4(0)	19	NP	0.6	90.6	1.1	7.7	100	100	12	-	-

(A) SOFT TO MEDIUM STIFF TAN CLAYEY SILT
MOIST TO WET (UNDIVIDED COASTAL PLAIN)

BEGIN -LREV-
-L- STA. 84+93



-L- / -LREV-

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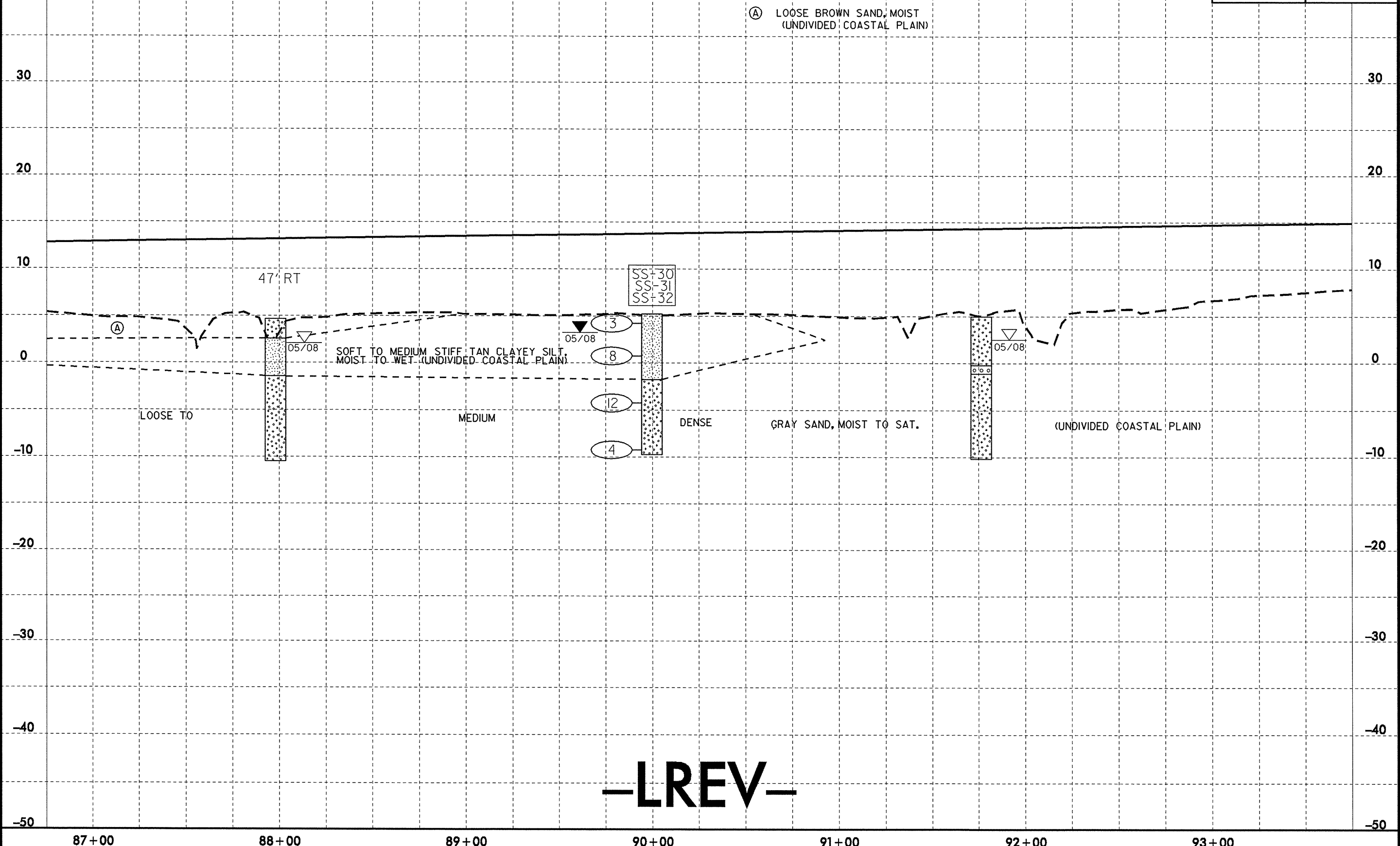
80+00 81+00 82+00 83+00 84+00 85+00 86+00

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16-JUL-2008 07:38
Summary: All 02/24/03

PROJECT REFERENCE NO. R-3307	SHEET NO. 35
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	ARTHO CLASS.	L.L.	P.L.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	100		
SS-30	CL	90+00	1.0-1.5	A-4(0)	22	MP	5.8	62.2	10.0	22.0	100	99	37	-	-
SS-31	CL	90+00	3.5-5.0	A-4(0)	23	S	5.2	61.4	5.4	28.0	100	99	38	-	-
SS-32	CL	90+00	8.5-10.0	A-2-4(0)	18	MP	0.6	82.6	6.8	10.0	100	100	22	-	-

Ⓐ LOOSE BROWN SAND, MOIST
(UNDIVIDED COASTAL PLAIN)



-LREV-

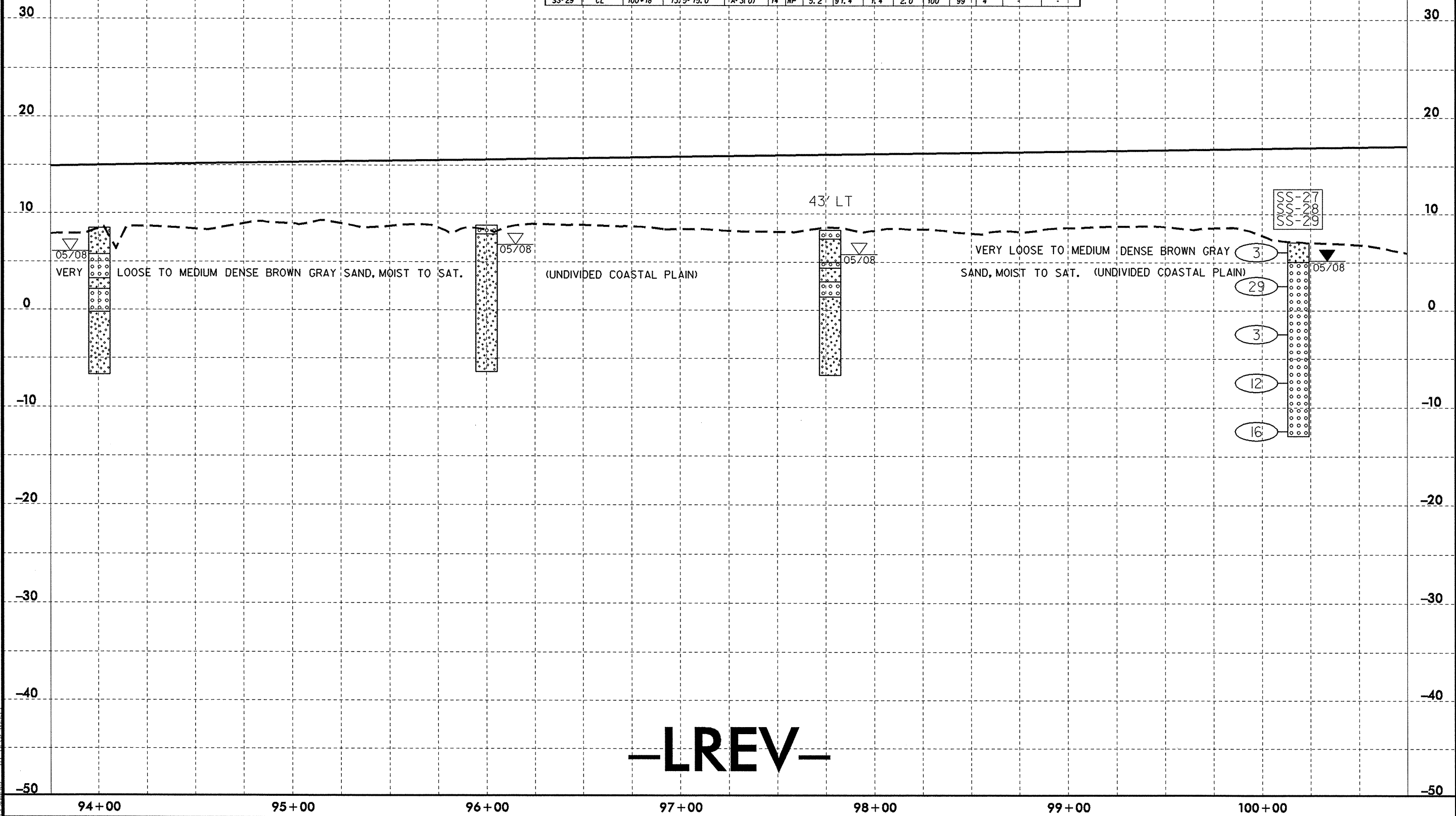
87+00 88+00 89+00 90+00 91+00 92+00 93+00

5/14/99

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PROJECT REFERENCE NO. R-3307	SHEET NO. 36
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

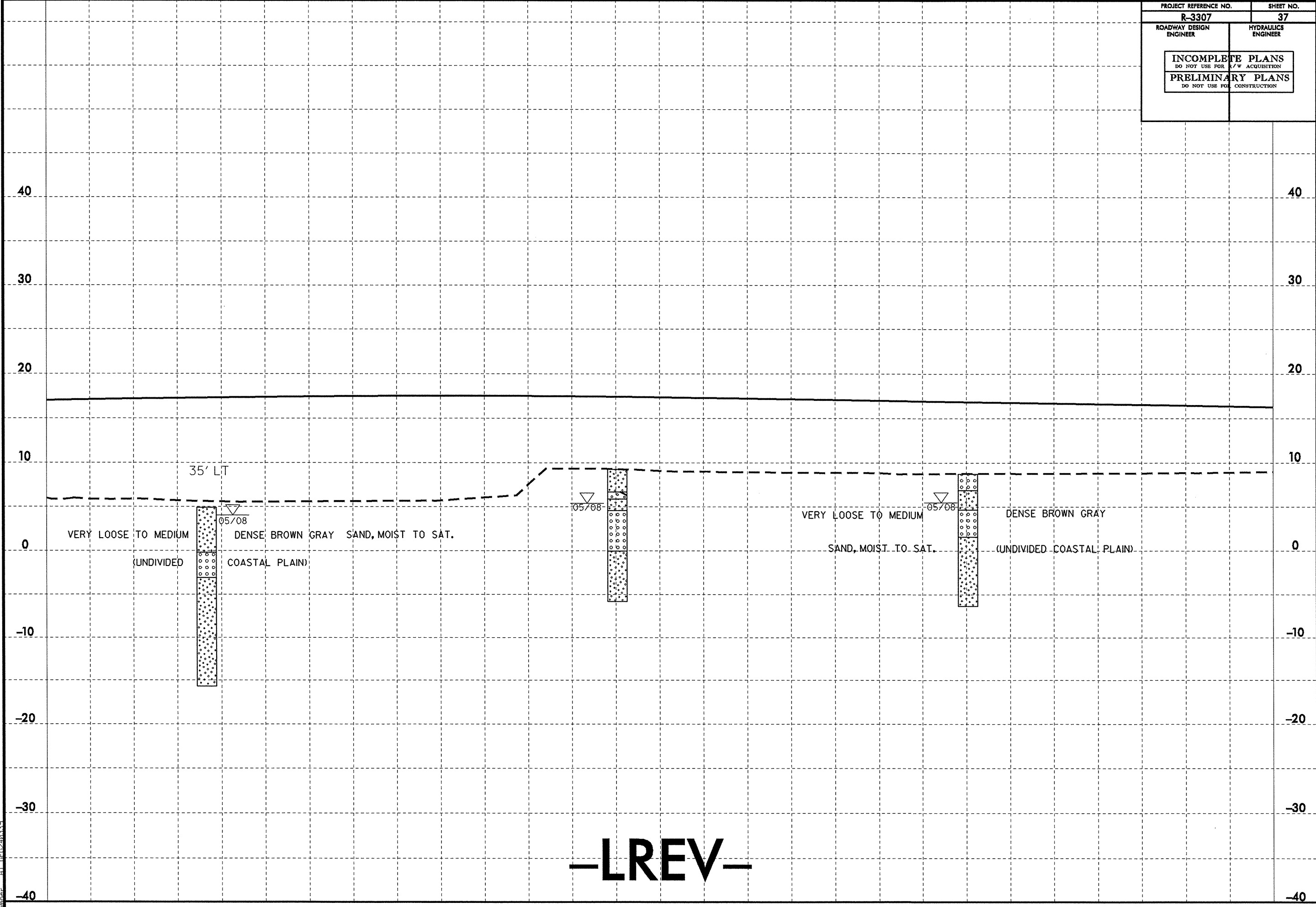
SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	100		
SS-27	CL	100+18	11.0-1.5	A-2-4(0)	20	NP	7.4	74.6	6.0	12.0	100	98	21	-	-
SS-28	CL	100+18	3.5-5.0	A-3(0)	19	NP	5.4	90.4	0.2	4.0	100	100	6	-	-
SS-29	CL	100+18	13.5-15.0	A-3(0)	14	NP	5.2	91.4	1.4	2.0	100	99	4	-	-



-LREV-

5/14/99
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PROJECT REFERENCE NO. R-3307	SHEET NO. 37
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



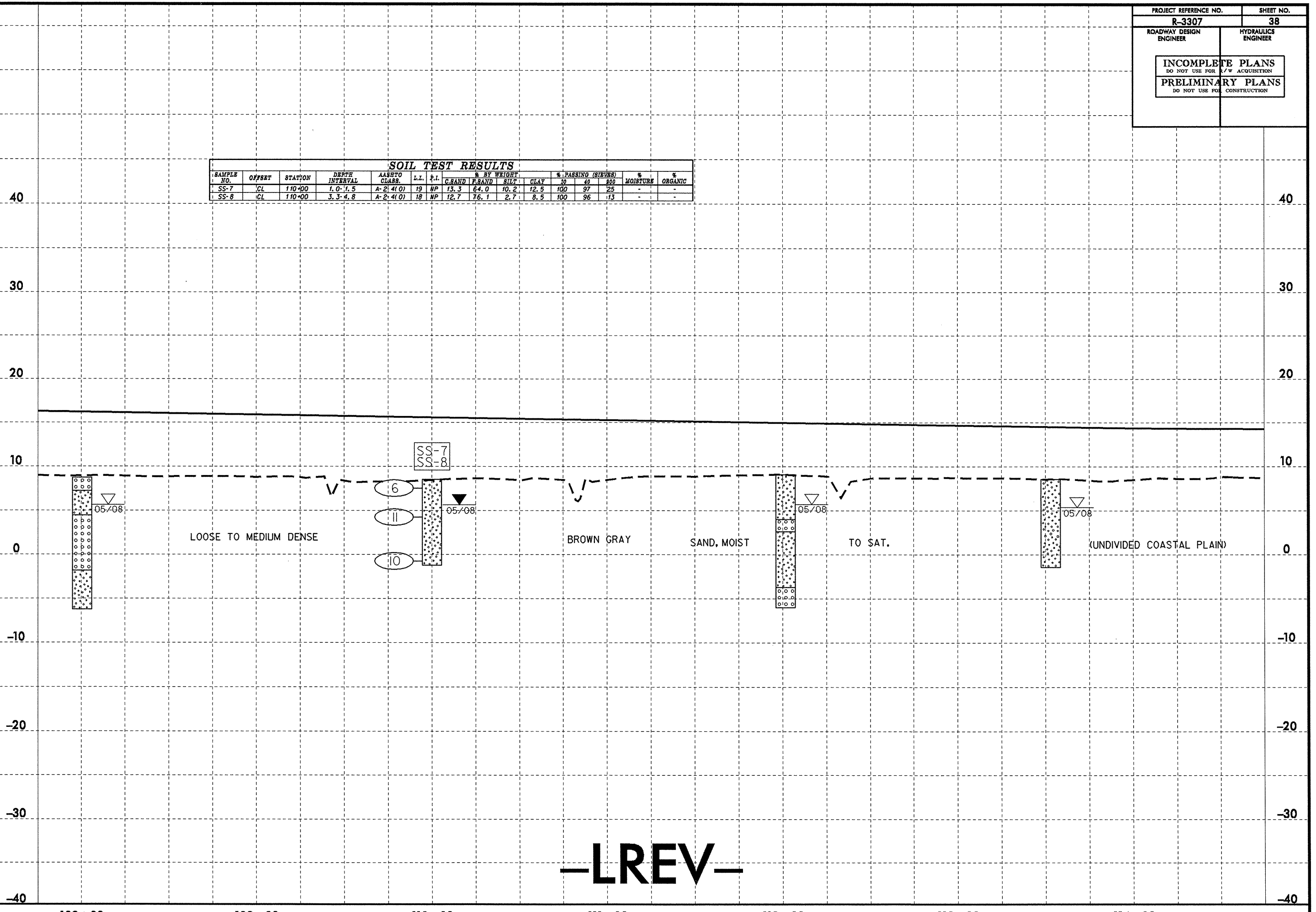
-LREV-

5/14/99

PROJECT REFERENCE NO. R-3307	SHEET NO. 38
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS <small>DO NOT USE FOR ACQUISITION</small>	
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>	

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	20	40	600		
SS-7	CL	110+00	1.0'-1.5'	A-2-4(0)	19	NP	13.3	64.0	10.2	12.5	100	97	25	-	-
SS-8	CL	110+00	3.3'-4.8'	A-2-4(0)	18	NP	12.7	76.1	2.7	8.5	100	96	13	-	-

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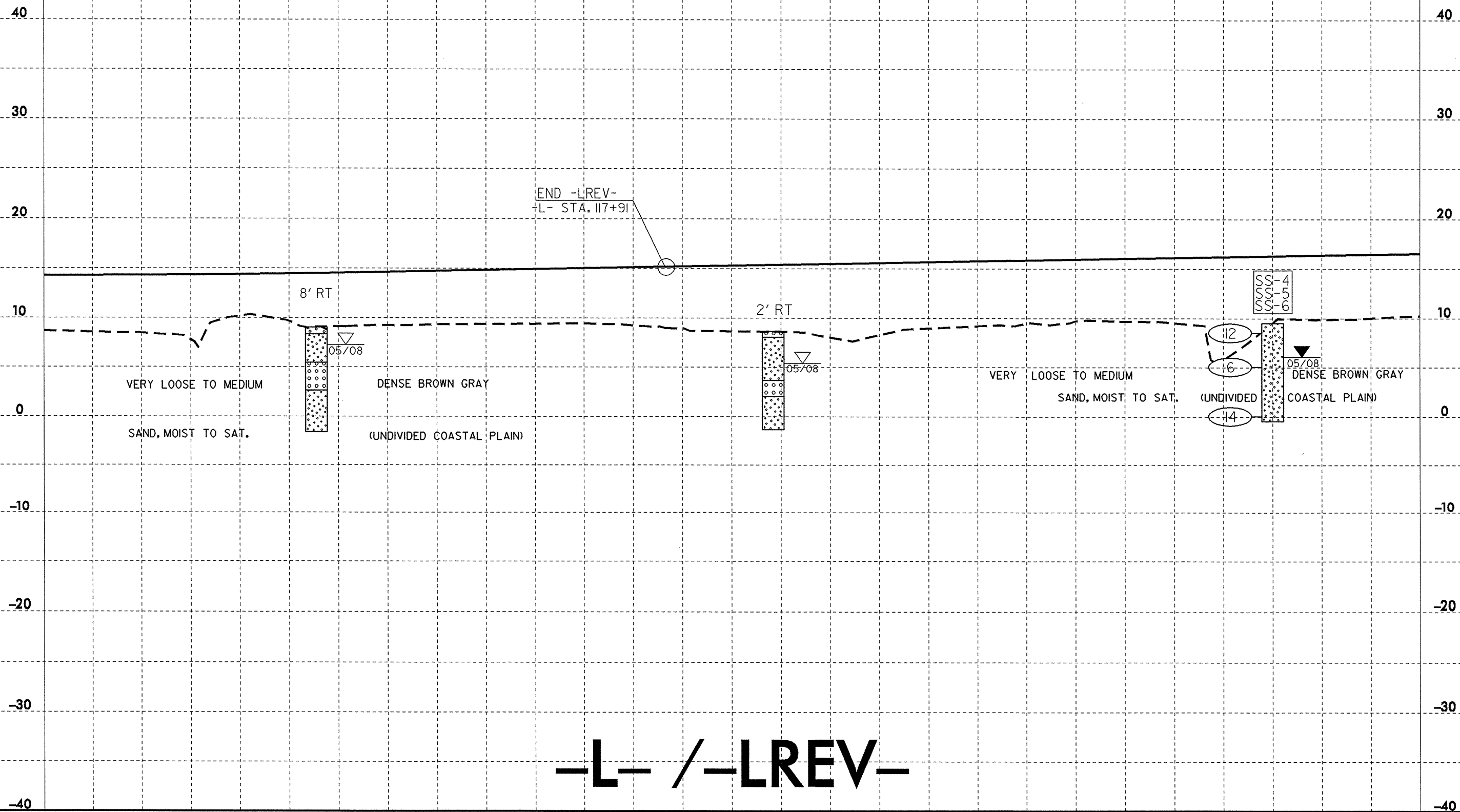
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 AT 16:02:03

PROJECT REFERENCE NO. R-3307	SHEET NO. 39
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/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	200		
SS-4	CL	121+00	1.0-1.5	A-2-4(0)	15	NP	11.3	69.5	9.2	10.1	100	98	21	-	-
SS-5	CL	121+00	3.5-5.0	A-2-4(0)	18	NP	11.7	69.7	2.5	16.1	100	97	21	-	-
SS-6	CL	121+00	8.5-10.0	A-2-4(0)	21	NP	10.8	92.0	4.7	2.4	100	100	11	-	-



-L- / -LREV-

115+00

116+00

117+00

118+00

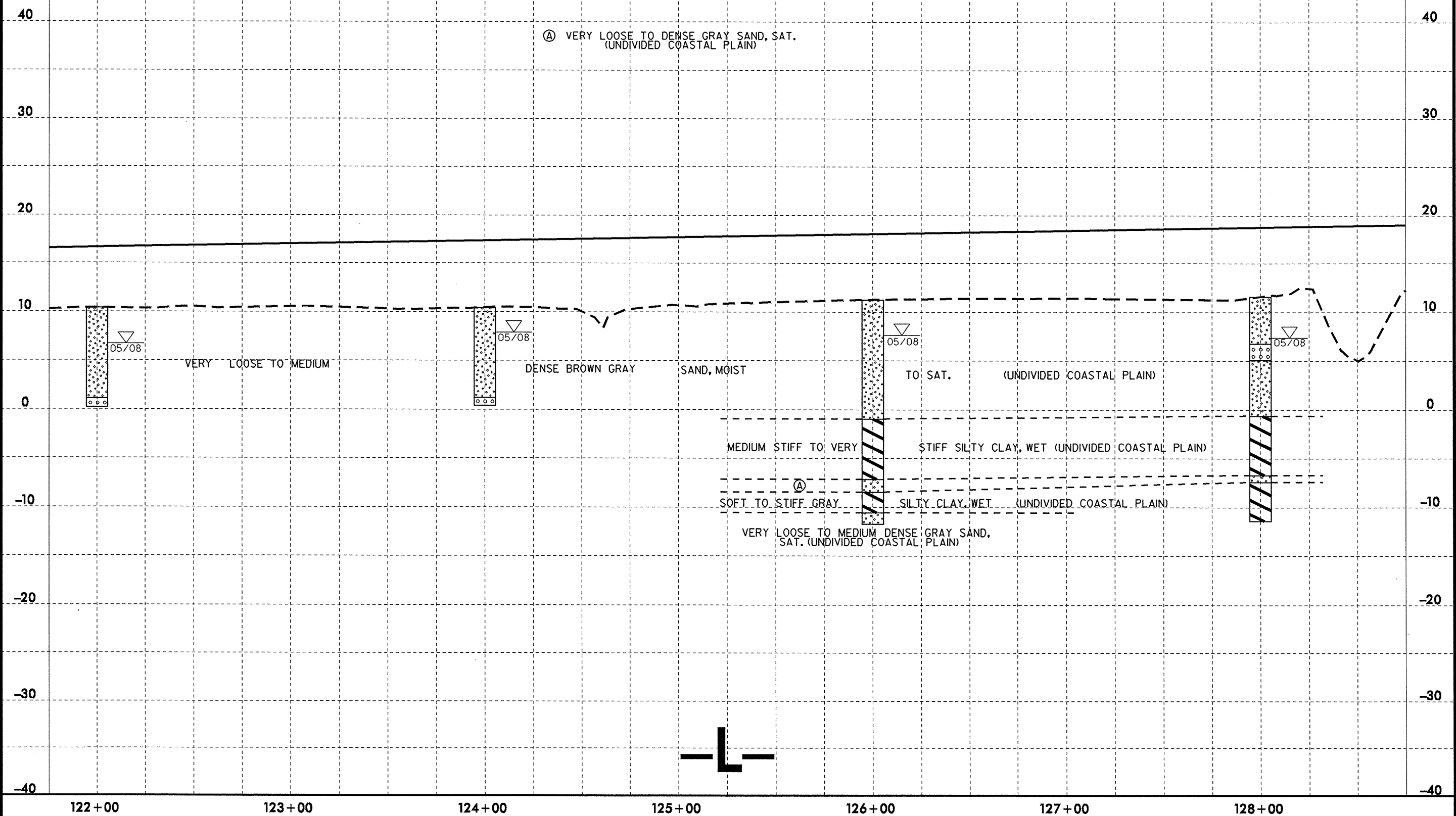
119+00

120+00

121+00

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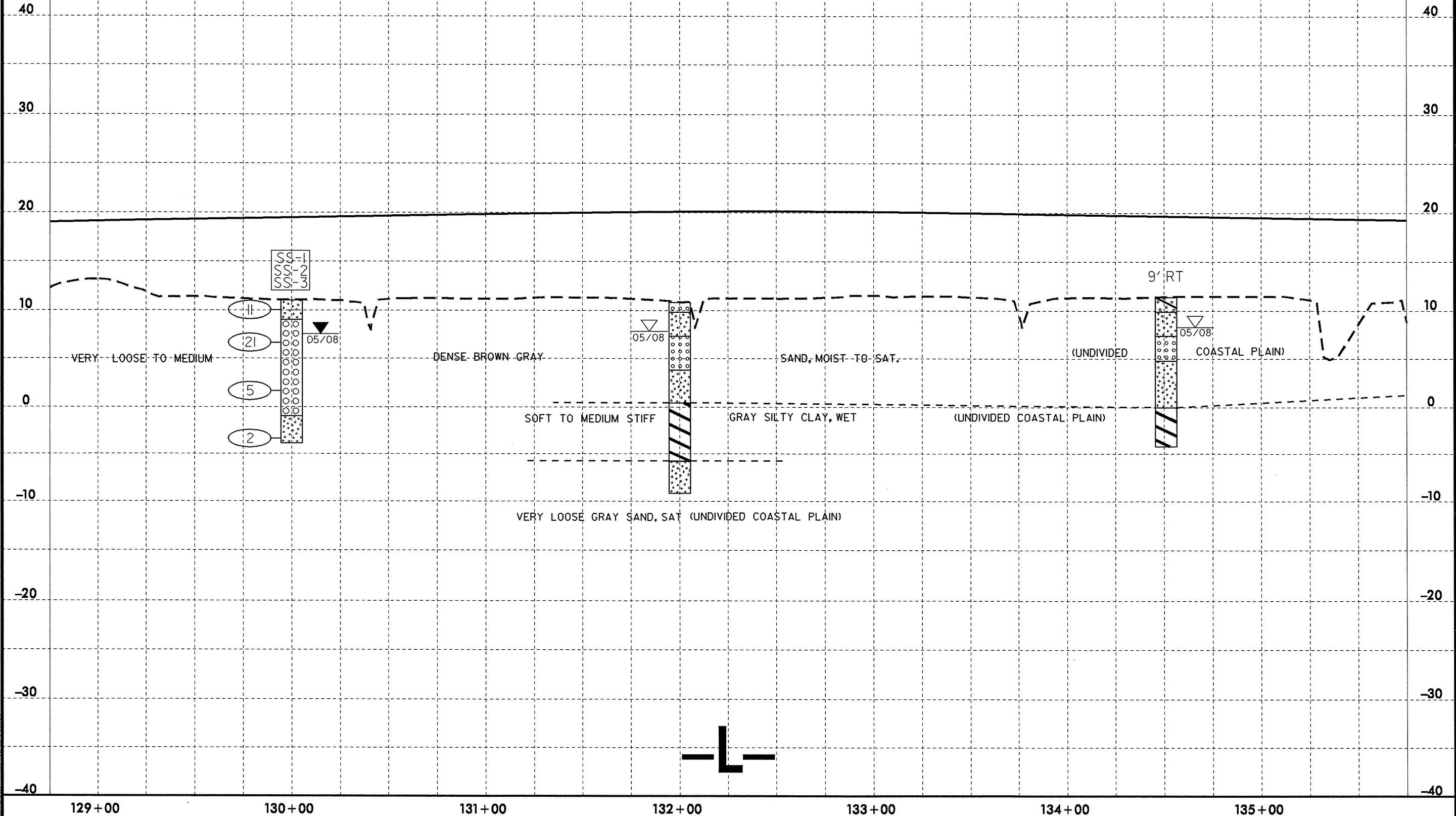
PROJECT REFERENCE NO. R-3307	SHEET NO. 40
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



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DATE AT 11:26:13

PROJECT REFERENCE NO.	SHEET NO.
R-3307	41
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

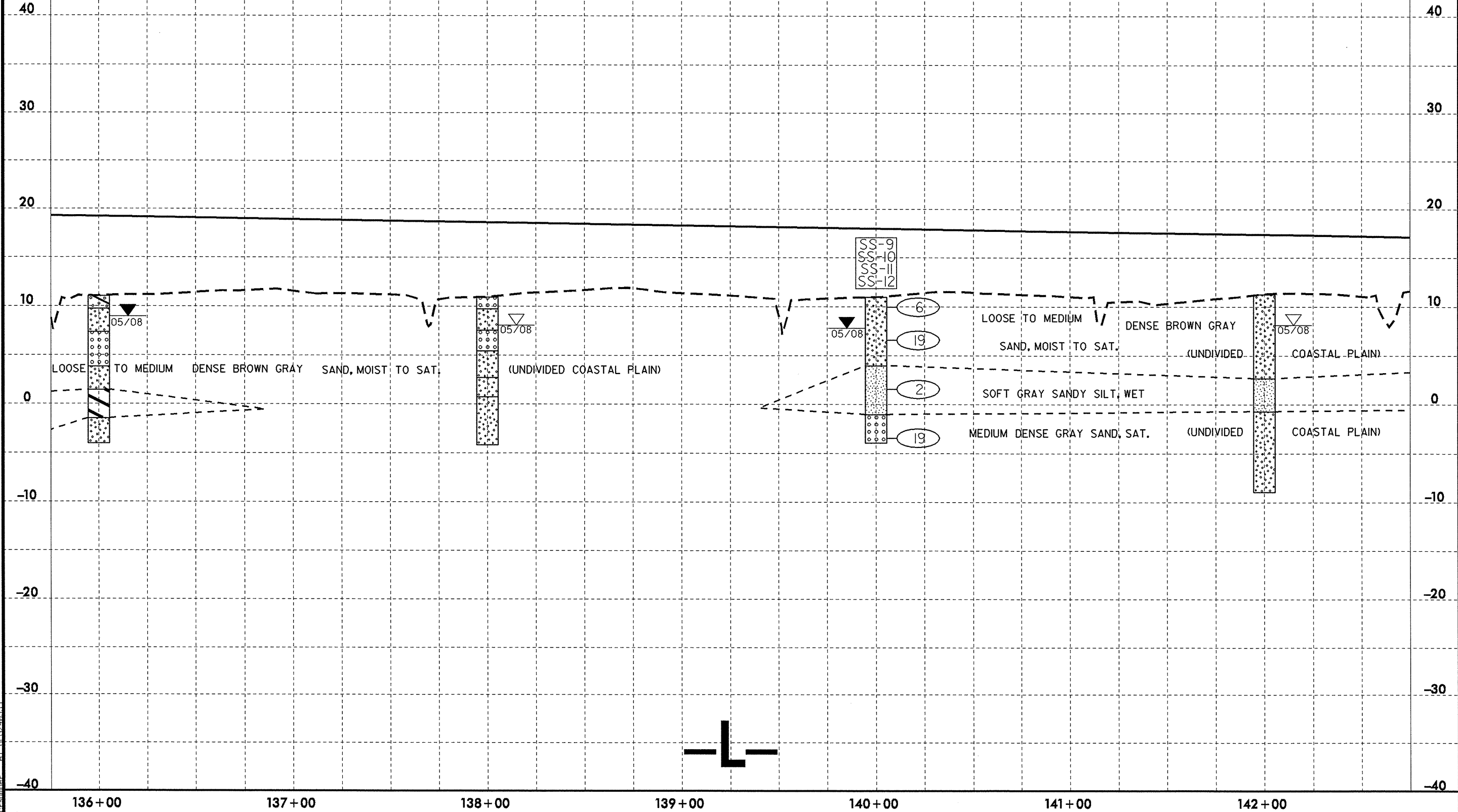
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	ASTM CLASS	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C SAND	F SAND	SILT	CLAY	10	40	100		
SS-1	CL	130+00	1.0-1.5	A-2-4(0)	19	NP	11.7	68.5	7.8	12.1	100	98	22	-	-
SS-2	CL	130+00	3.4-4.9	A-1-D(0)	21	NP	63.4	18.5	8.0	10.1	100	50	22	-	-
SS-3	CL	130+00	13.4-14.9	A-2-4(0)	21	NP	0.6	77.5	7.8	14.1	100	100	27	-	-



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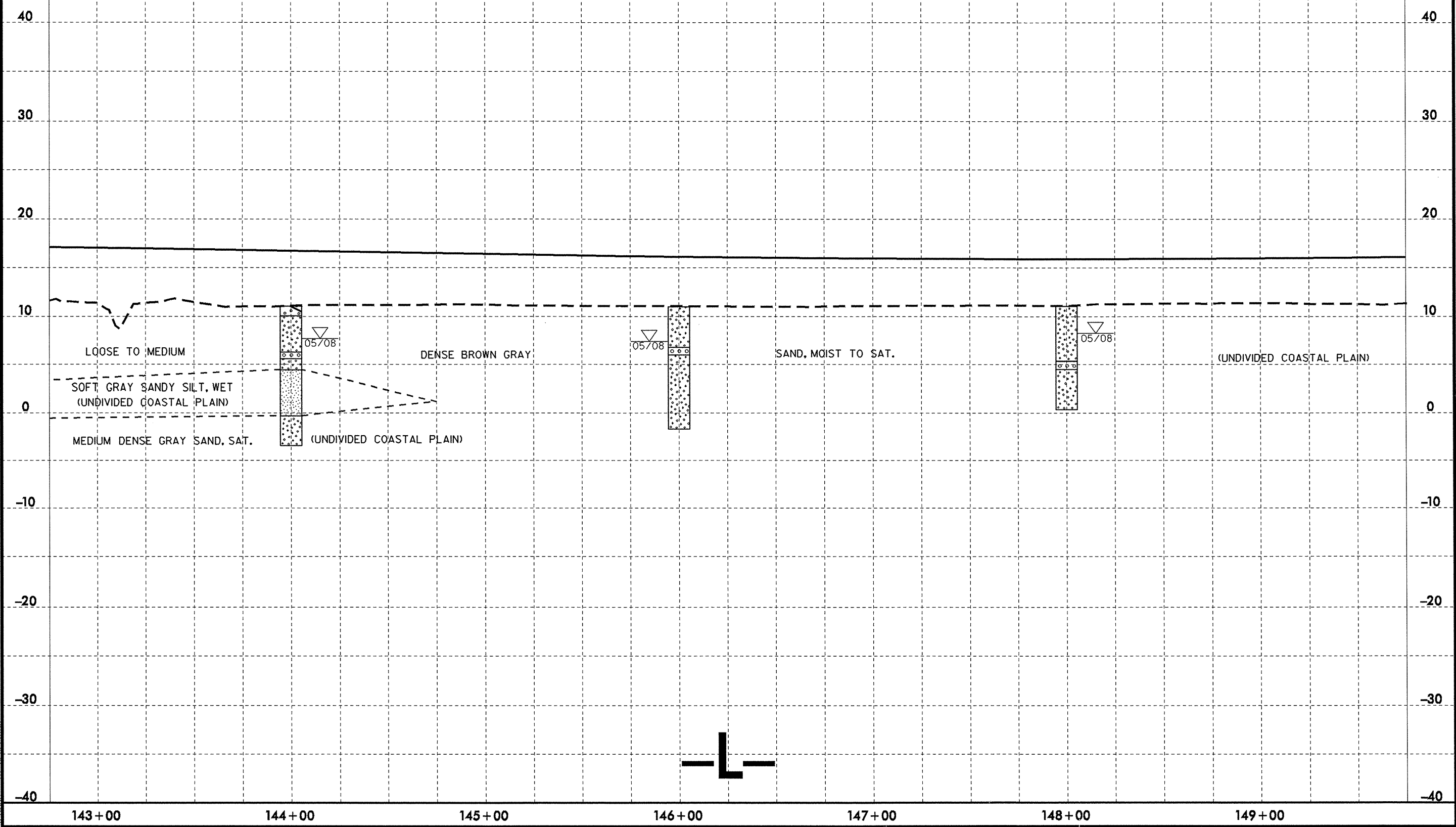
PROJECT REFERENCE NO. R-3307	SHEET NO. 42
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

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-9	CL	140+00	1.0-1.5	A-2-4(0)	19	NP	12.3	67.5	5.7	14.5	100	99	22	-	-
SS-10	CL	140+00	3.4-4.9	A-2-4(0)	17	NP	16.7	70.7	0.1	12.5	99	98	14	-	-
SS-11	CL	140+00	8.4-9.9	A-4(0)	21	NP	0.6	71.5	12.2	15.7	100	100	36	-	-
SS-12	CL	140+00	13.4-14.9	A-3(0)	22	NP	13.5	81.2	1.7	3.6	98	92	6	-	-



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History AT 08/26/03

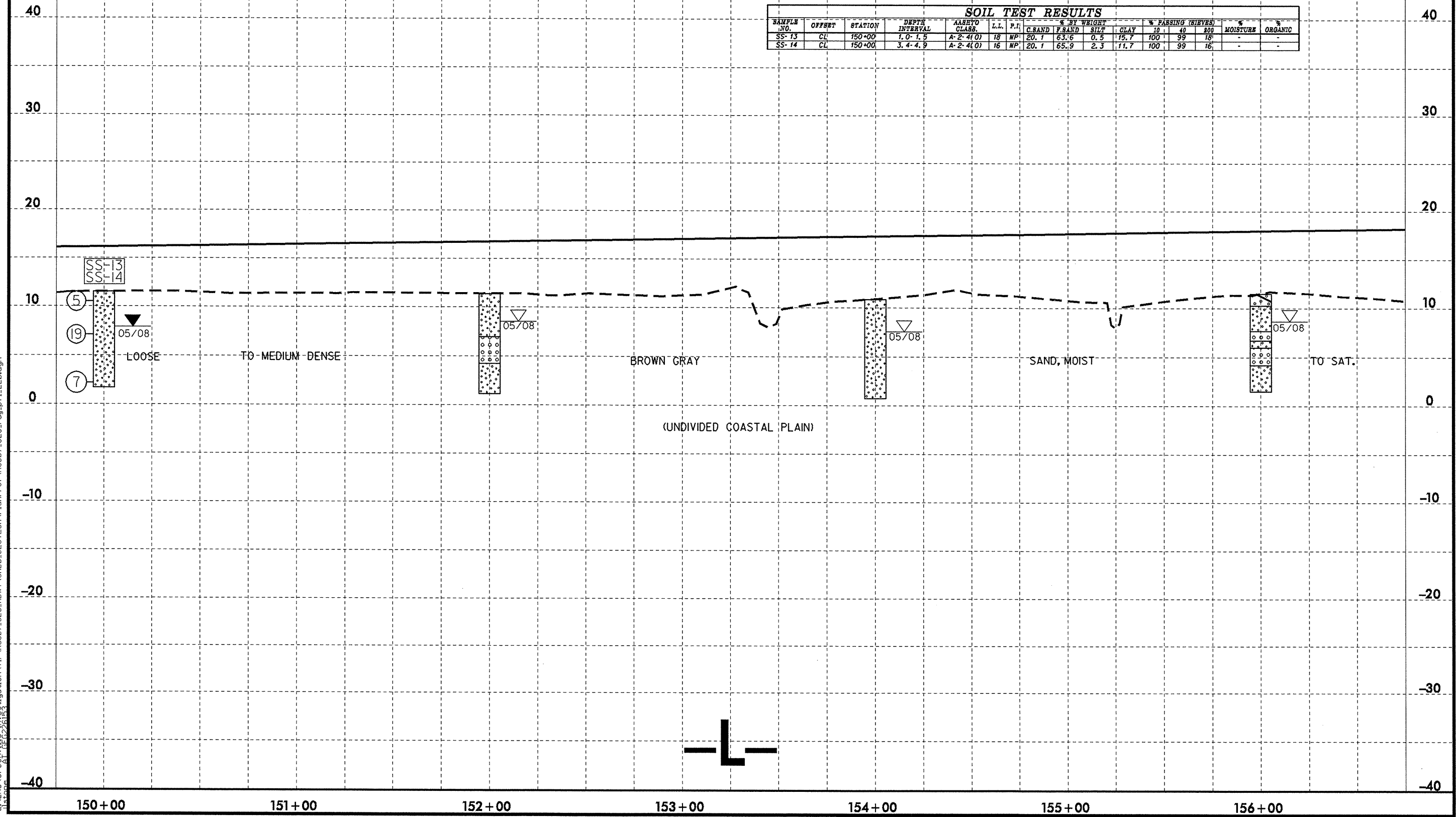
PROJECT REFERENCE NO. R-3307	SHEET NO. 43
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



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PROJECT REFERENCE NO. R-3307	SHEET NO. 44
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-13	CL	150+00	1.0-1.5	A-2-4(0)	18	NP	20.1	63.6	0.5	15.7	100	99	18	-	-
SS-14	CL	150+00	3.4-4.9	A-2-4(0)	16	NP	20.1	65.9	2.3	11.7	100	99	16	-	-



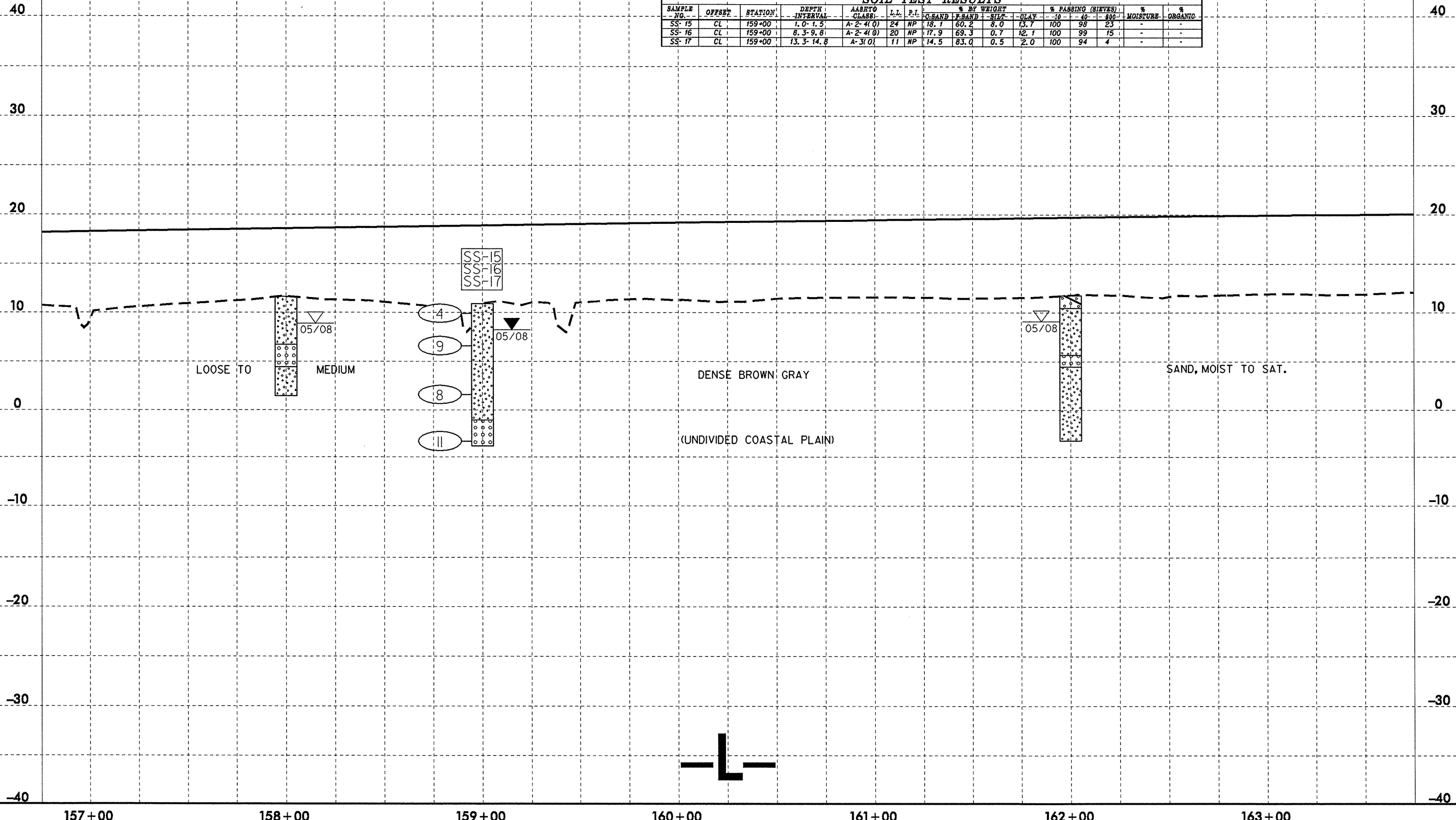
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150+00 151+00 152+00 153+00 154+00 155+00 156+00

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PROJECT REFERENCE NO. R-3307	SHEET NO. 45
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

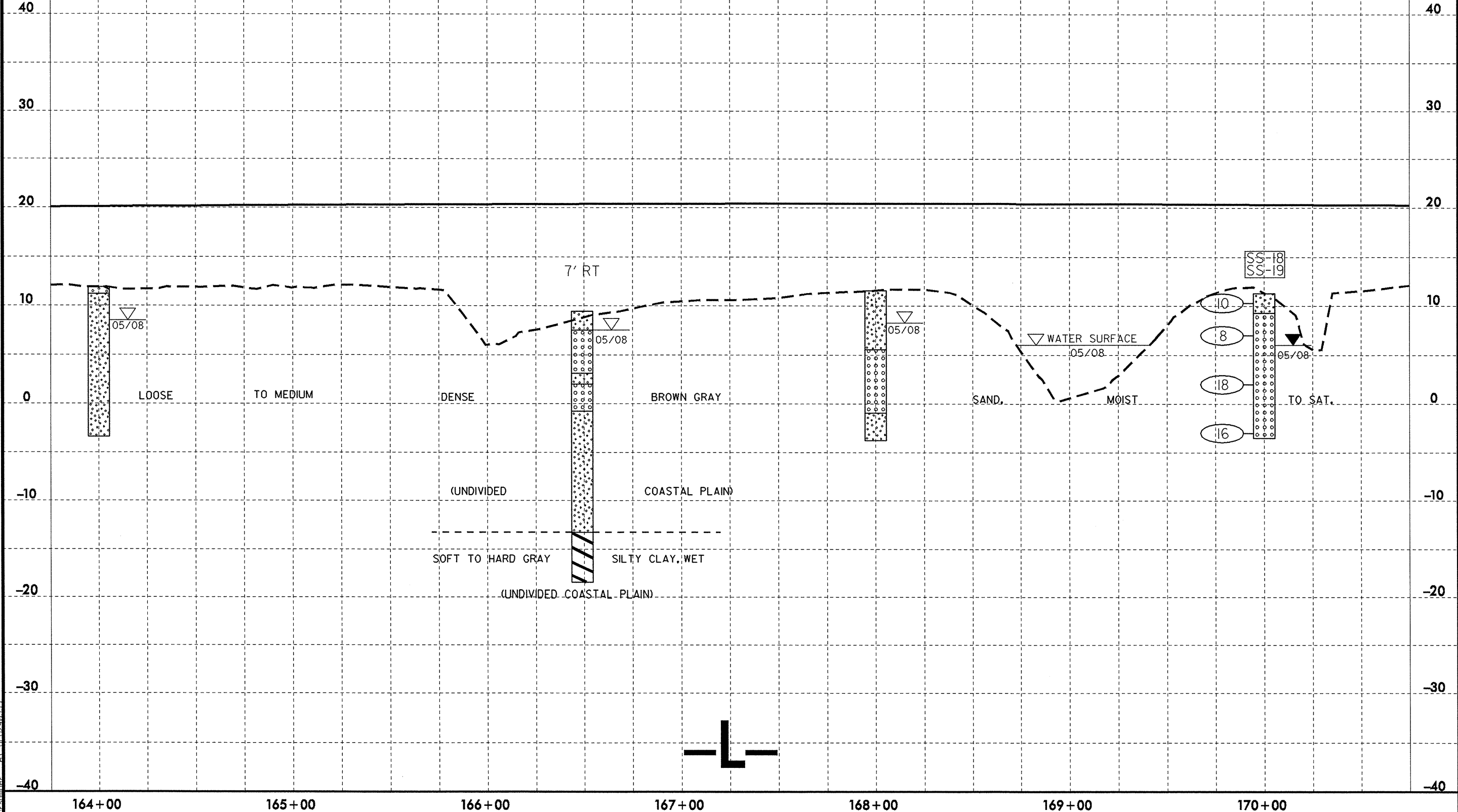
SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS	L.L.	P.L.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	-10	-40	-200		
SS-15	CL	159+00	1.0'-1.5'	A-2-4(0)	24	NP	78.1	60.2	8.0	13.7	100	98	23	-	-
SS-16	CL	159+00	8.3'-9.6'	A-2-4(0)	20	NP	17.9	69.3	0.7	12.1	100	99	15	-	-
SS-17	CL	159+00	13.3'-14.8'	A-3(0)	11	NP	14.5	83.0	0.5	2.0	100	94	4	-	-



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PROJECT REFERENCE NO. R-3307	SHEET NO. 46
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

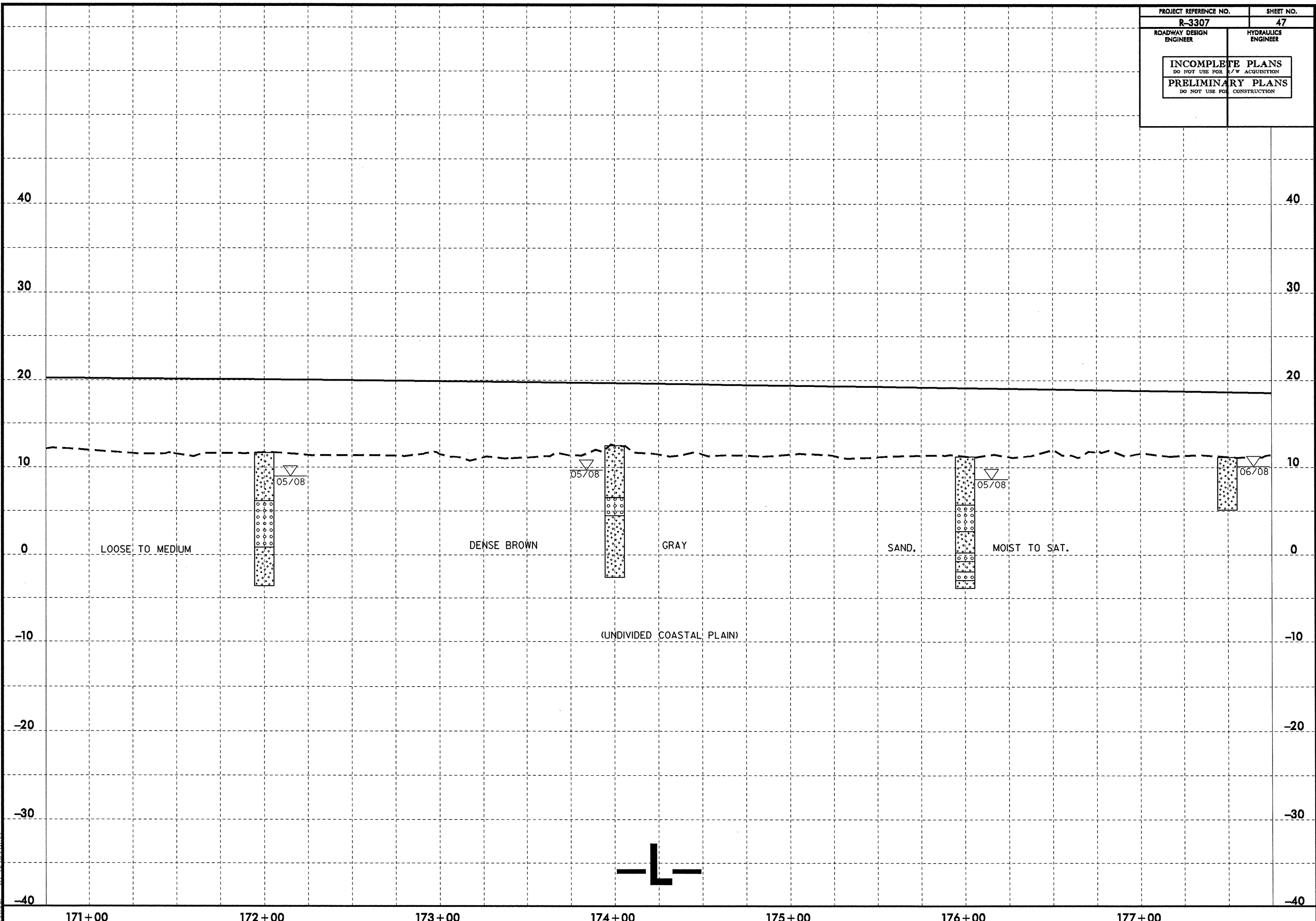
SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	ASTM CLASS	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							G.SAND	F.SAND	SILT	CLAY	#10	#40	#200		
SS-18	CL	170+00	1.0-1.5	A-2-4(0)	13	NP	17.5	64.2	8.6	9.7	100	96	21	-	-
SS-19	CL	170+00	8.5-9.8	A-3(0)	17	NP	4.2	94.7	1.1	0.0	100	100	2	-	-



164+00 165+00 166+00 167+00 168+00 169+00 170+00

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PROJECT REFERENCE NO. R-3307	SHEET NO. 47
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



171+00 172+00 173+00 174+00 175+00 176+00 177+00

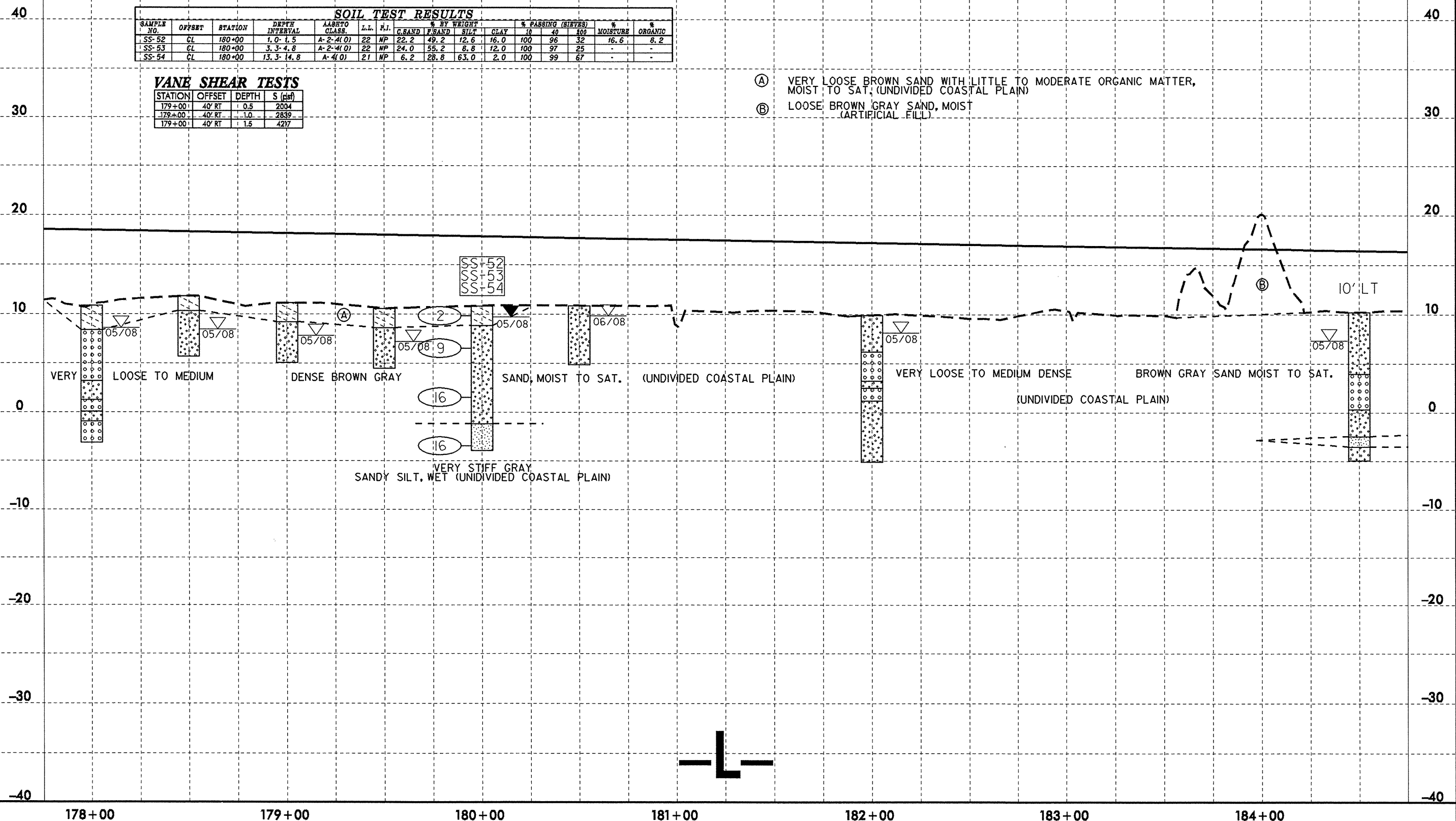
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PROJECT REFERENCE NO. R-3307	SHEET NO. 48
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASTHO CLASS.	L.L.	P.I.	% BY WEIGHT			% PASSING (SIEVES)			% MOISTURE	% ORGANIC	
							G.SAND	F.SAND	SILT	CLAY	10	40			100
SS-52	CL	180+00	1.0-1.5	A-2-A(0)	22	NP	22.2	49.2	12.6	16.0	100	96	32	16.6	8.2
SS-53	CL	180+00	3.3-4.8	A-2-A(0)	22	NP	24.0	55.2	8.8	12.0	100	97	25	-	-
SS-54	CL	180+00	13.3-14.8	A-4(0)	21	NP	6.2	28.8	63.0	2.0	100	99	67	-	-

VANE SHEAR TESTS			
STATION	OFFSET	DEPTH	S (psf)
179+00	40' RT	0.5	2004
179+00	40' RT	1.0	2839
179+00	40' RT	1.5	4217

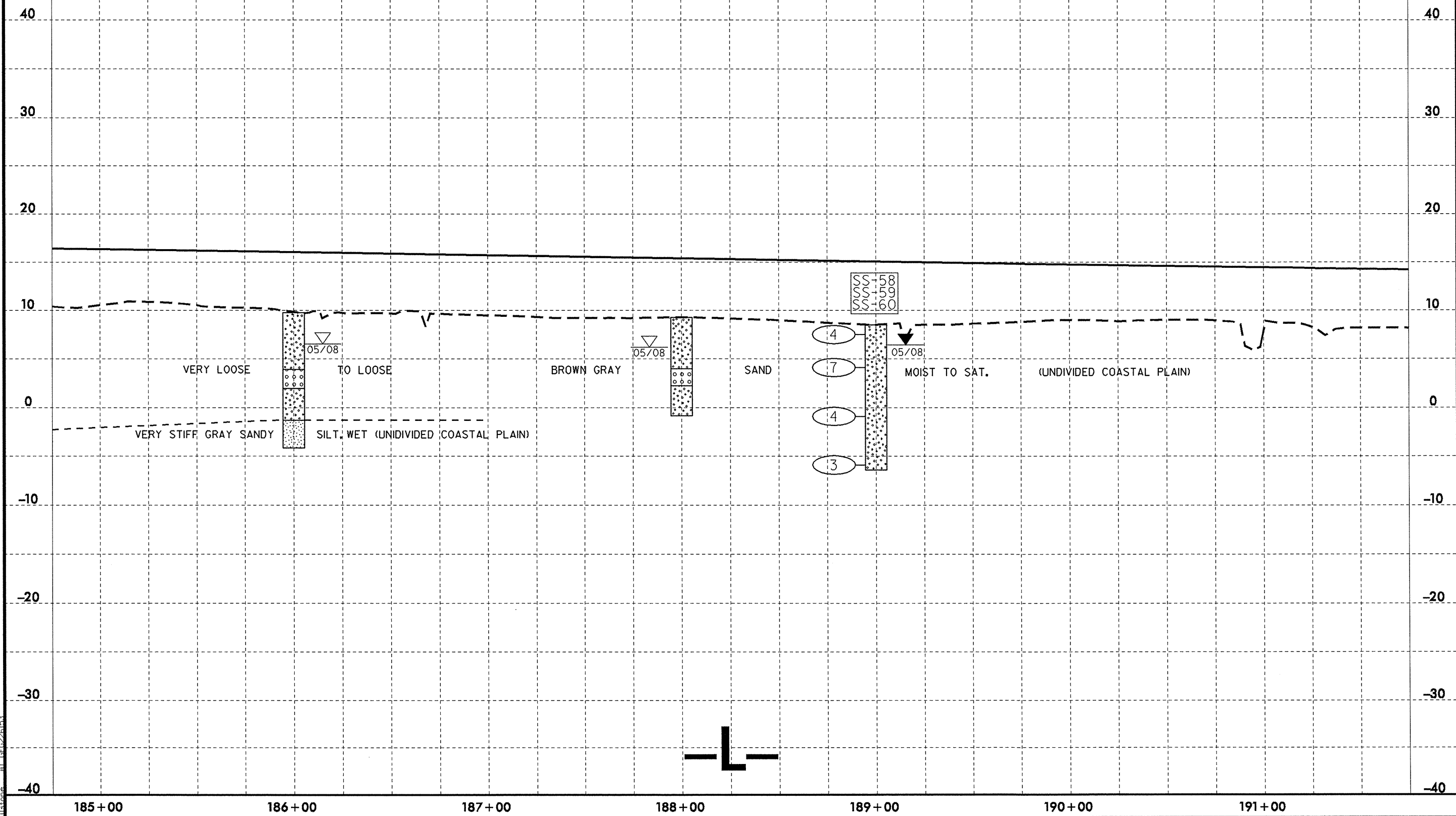
- Ⓐ VERY LOOSE BROWN SAND WITH LITTLE TO MODERATE ORGANIC MATTER, MOIST TO SAT. (UNDIVIDED COASTAL PLAIN)
- Ⓑ LOOSE BROWN GRAY SAND, MOIST (ARTIFICIAL FILL)



5/14/99
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PROJECT REFERENCE NO. R-3307	SHEET NO. 49
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

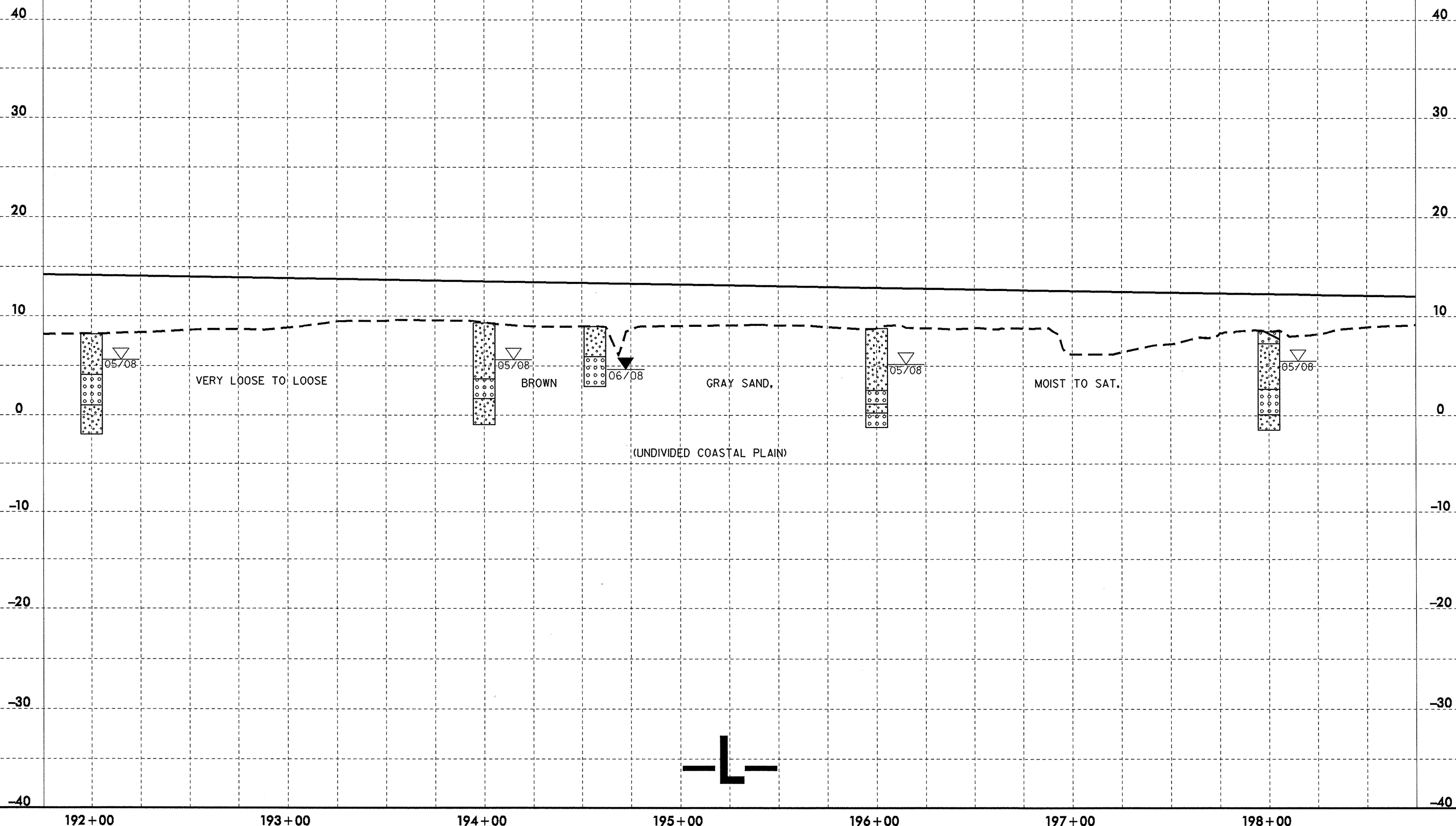
SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-58	CL	189+00	1.0-1.5	A-2-4(0)	20	NP	23.0	48.8	10.5	17.7	100	96	32	-	-
SS-59	CL	189+00	3.4-4.9	A-2-4(0)	17	NP	28.2	48.2	5.8	17.7	100	97	28	-	-
SS-60	CL	189+00	13.4-14.9	A-2-4(0)	18	NP	5.8	71.8	10.7	11.7	100	99	28	-	-



5/14/99

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11/20/08 11:53:00 AM

PROJECT REFERENCE NO. R-3307	SHEET NO. 50
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



192+00

193+00

194+00

195+00

196+00

197+00

198+00

-40

-30

-20

-10

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-40

-30

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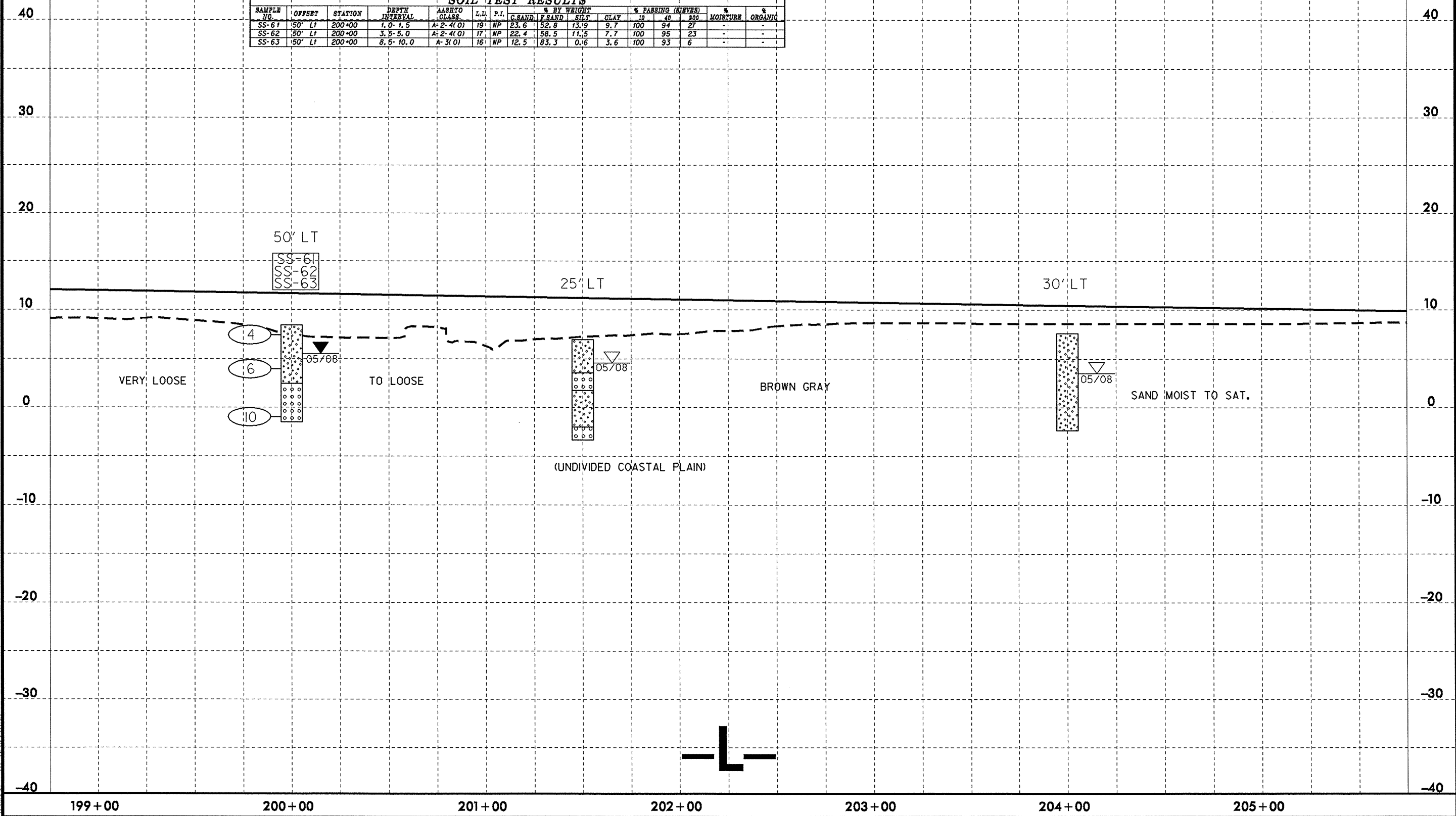
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 Plotted At: 05/08

PROJECT REFERENCE NO. R-3307	SHEET NO. 51
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	200		
SS-61	50' LT	200+00	1.0-1.5	A-2-4(O)	19	NP	23.6	52.8	13.9	9.7	100	94	27	-	-
SS-62	50' LT	200+00	3.5-5.0	A-2-4(O)	17	NP	22.4	58.5	11.5	7.7	100	95	23	-	-
SS-63	50' LT	200+00	8.5-10.0	A-3(O)	16	NP	12.5	83.3	0.6	3.6	100	93	6	-	-

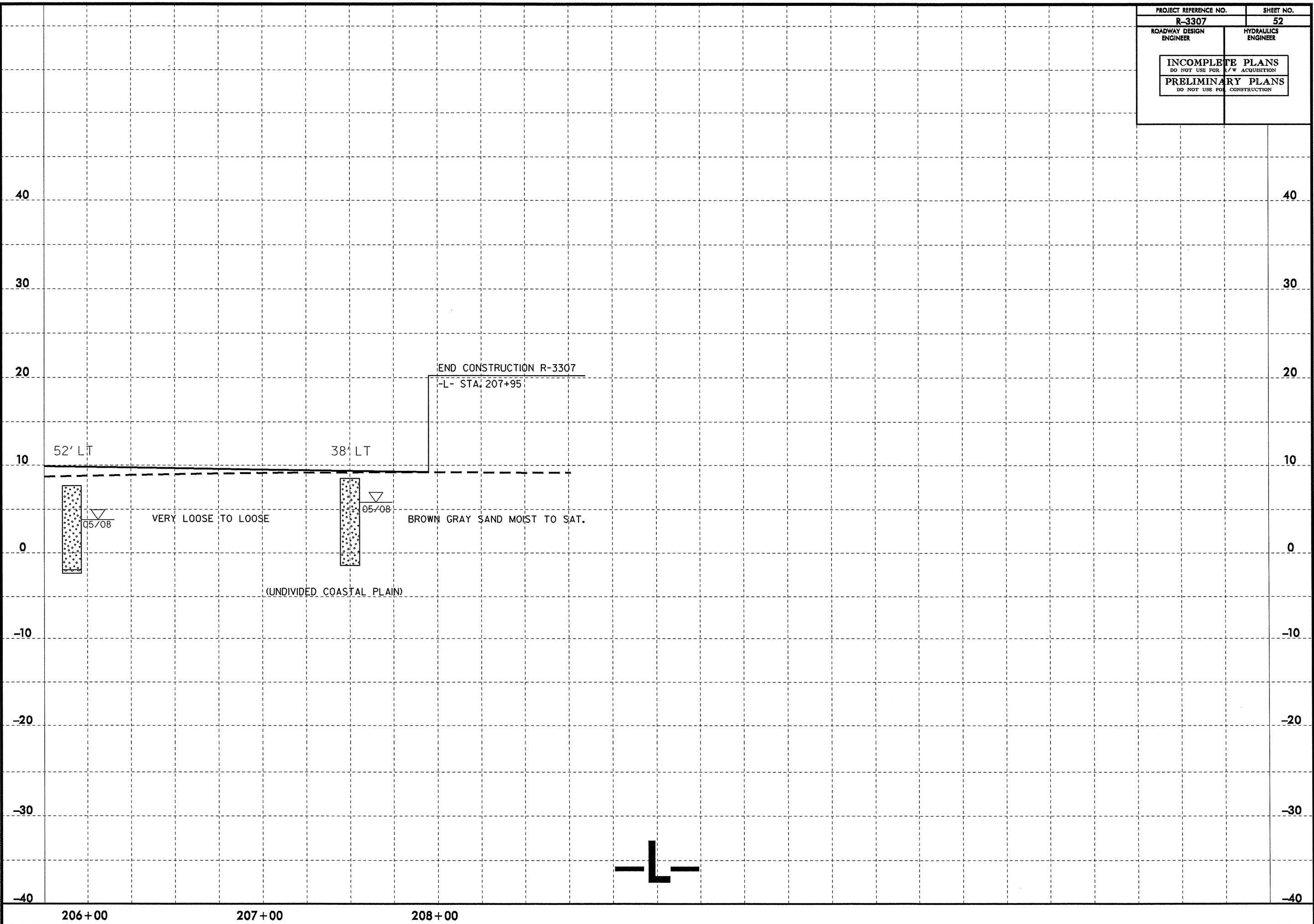


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199+00 200+00 201+00 202+00 203+00 204+00 205+00

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PROJECT REFERENCE NO. R-3307	SHEET NO. 52
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



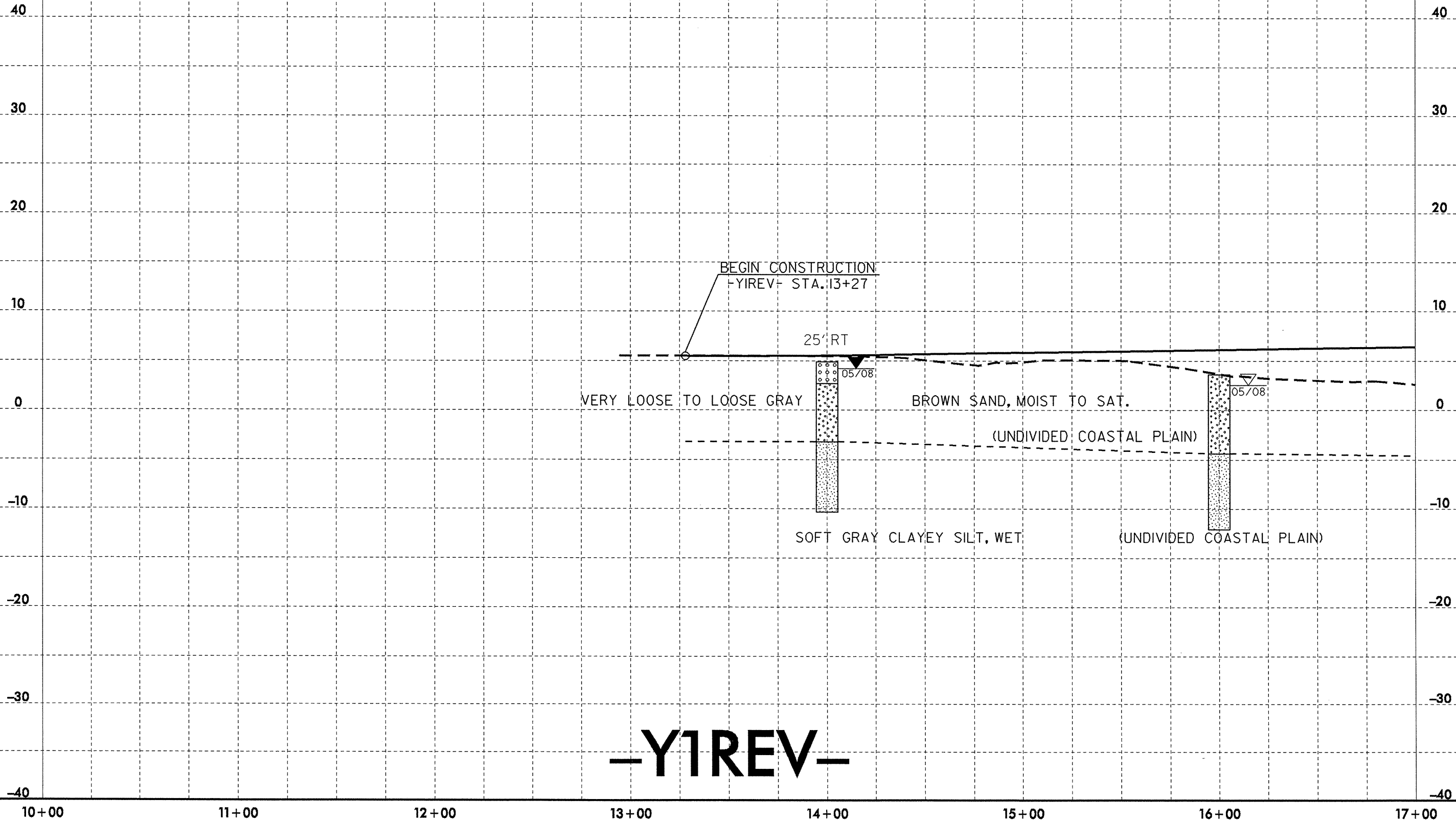
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206+00 207+00 208+00

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PROJECT REFERENCE NO. R-3307	SHEET NO. 53
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

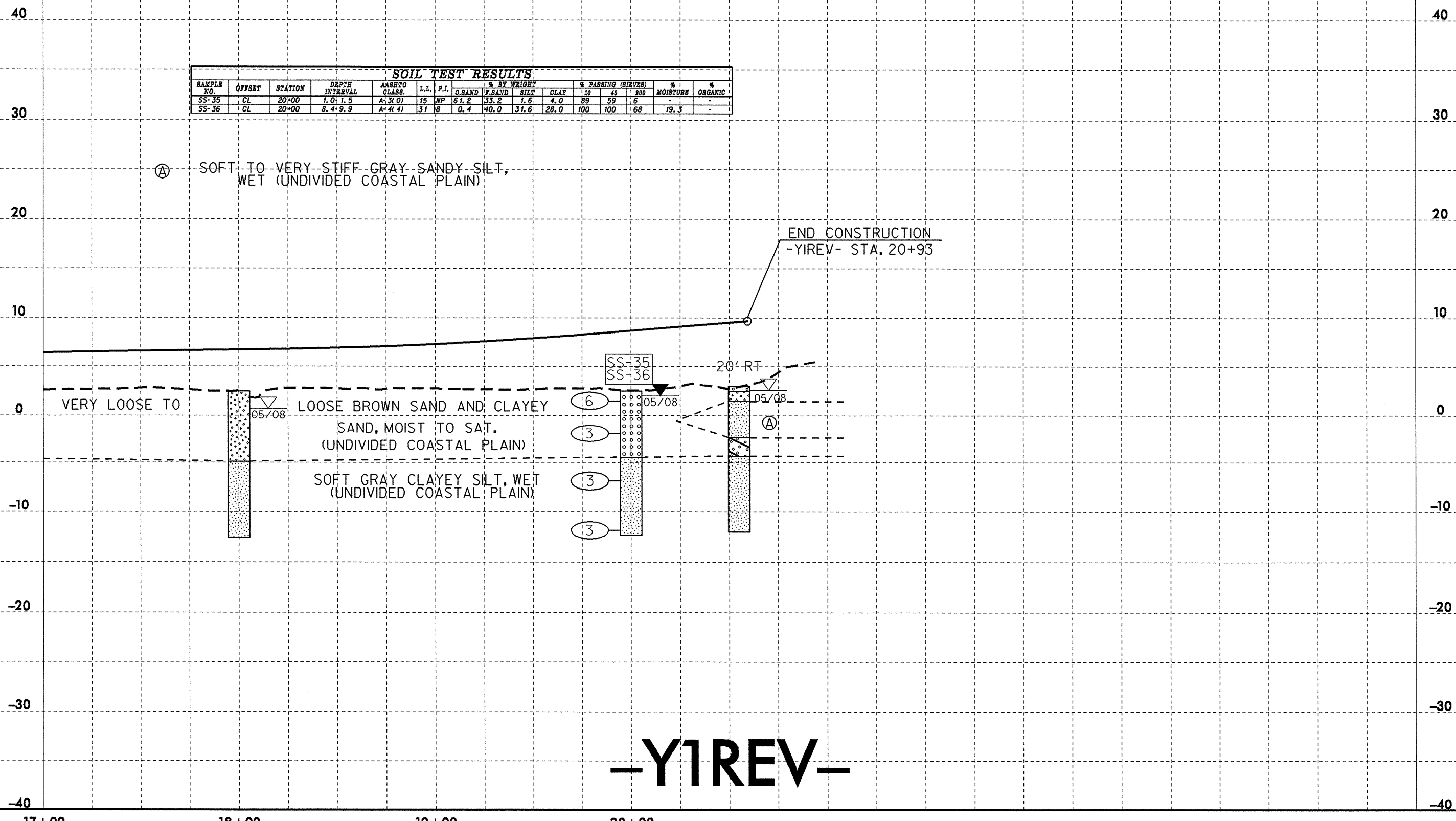


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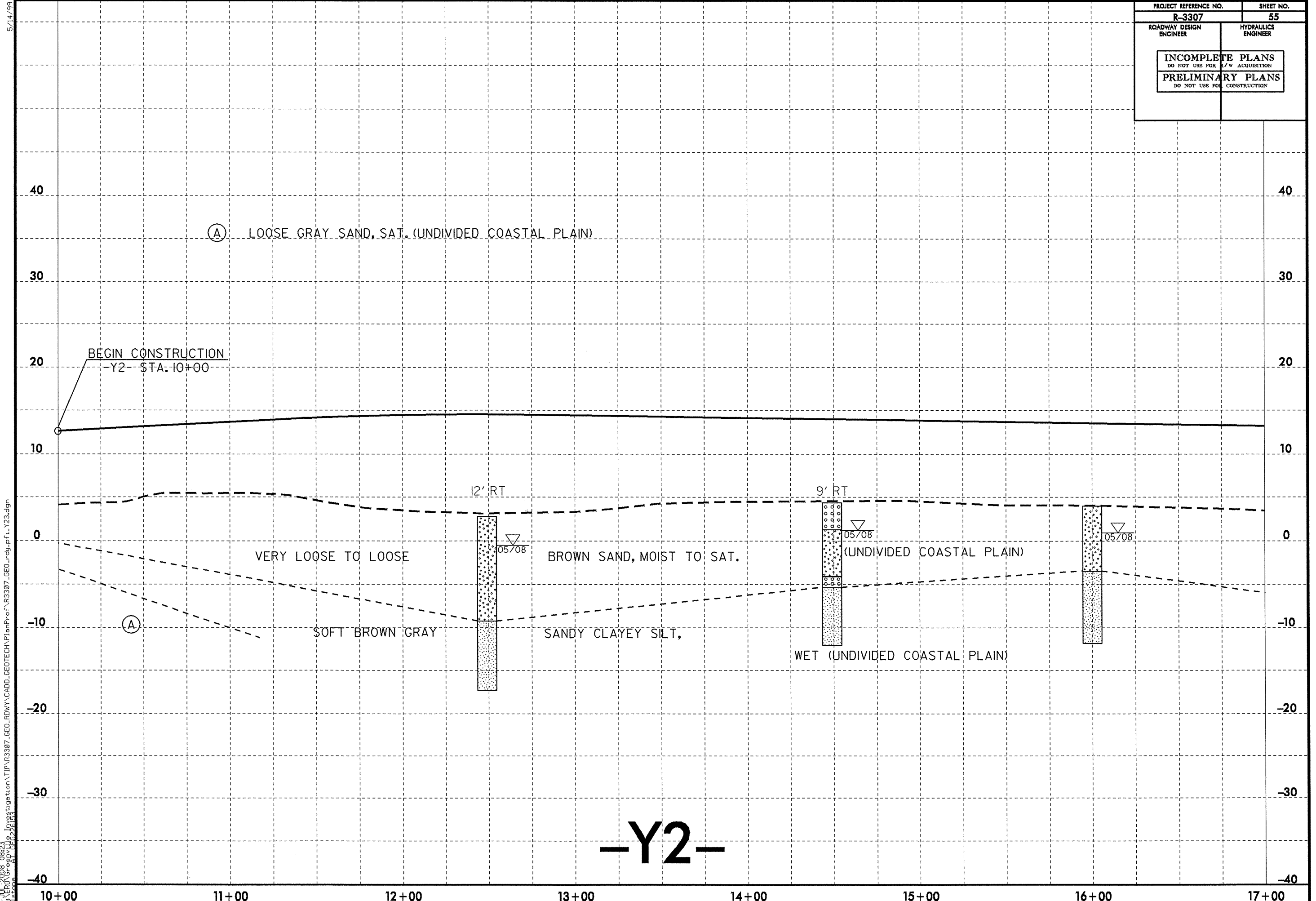
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ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	ASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-35	CL	20+00	1.0'-1.5'	A-3(0)	15	NP	61.2	33.2	1.6	4.0	89	59	6	-	
SS-36	CL	20+00	8.4'-9.9'	A-4(4)	31	S	0.4	40.0	31.6	28.0	100	100	68	19.3	



-YIREV-

PROJECT REFERENCE NO.	SHEET NO.
R-3307	55
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



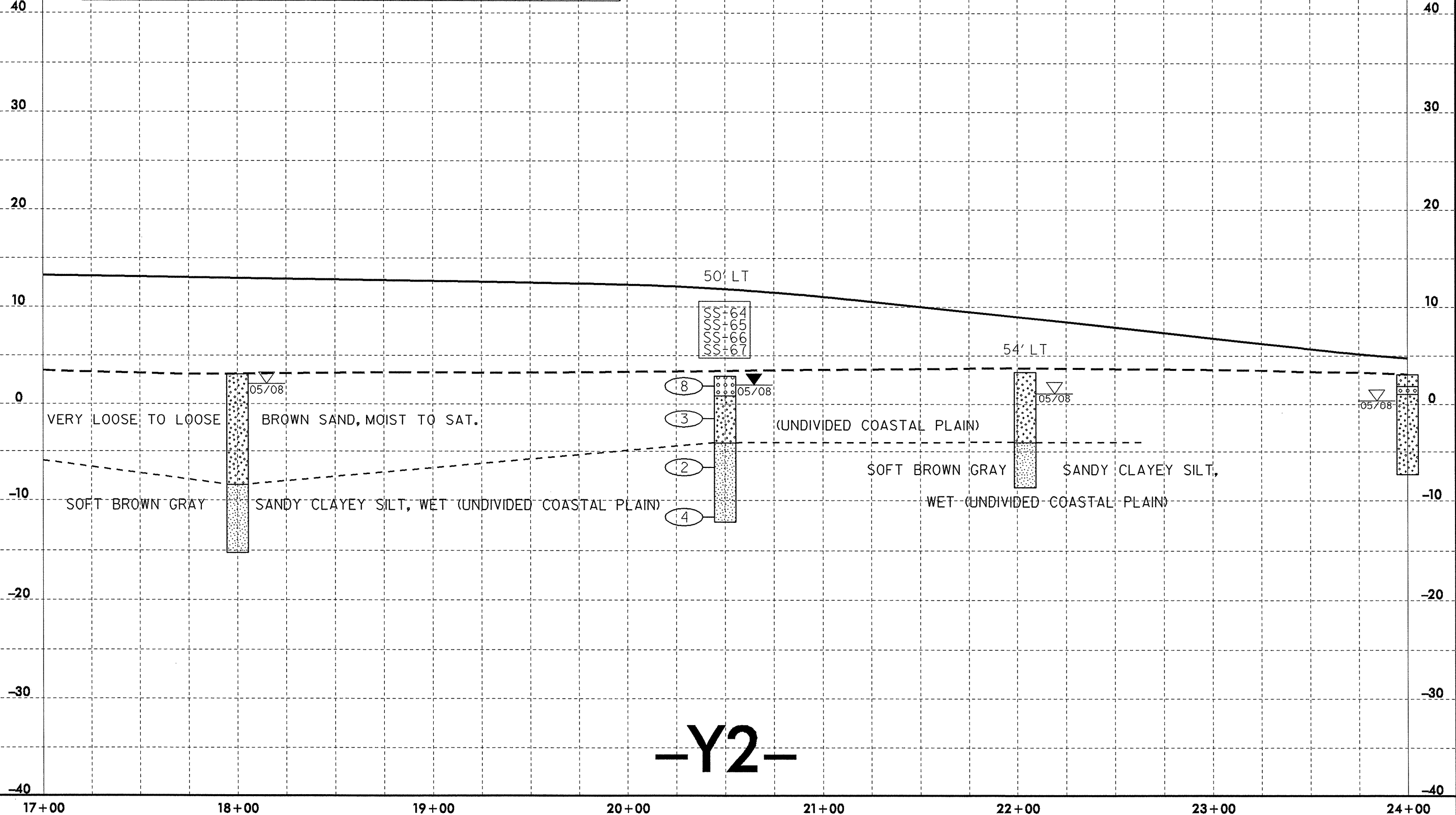
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 AT 624033

PROJECT REFERENCE NO. R-3307	SHEET NO. 56
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			200
SS-64	50' LT	20+50	1.0-1.5	A-3(0)	16	NP	27.6	66.1	0.6	5.6	88	77	7	-	-
SS-65	50' LT	20+50	3.5-5.0	A-2-4(0)	39	NP	33.5	48.2	4.6	13.7	77	60	15	-	-
SS-66	50' LT	20+50	8.5-10.0	A-4(0)	33	3	21.2	41.9	19.2	17.7	88	81	36	-	-
SS-67	50' LT	20+50	13.5-15.0	A-4(2)	26	7	1.4	44.0	24.8	29.8	100	100	60	-	-



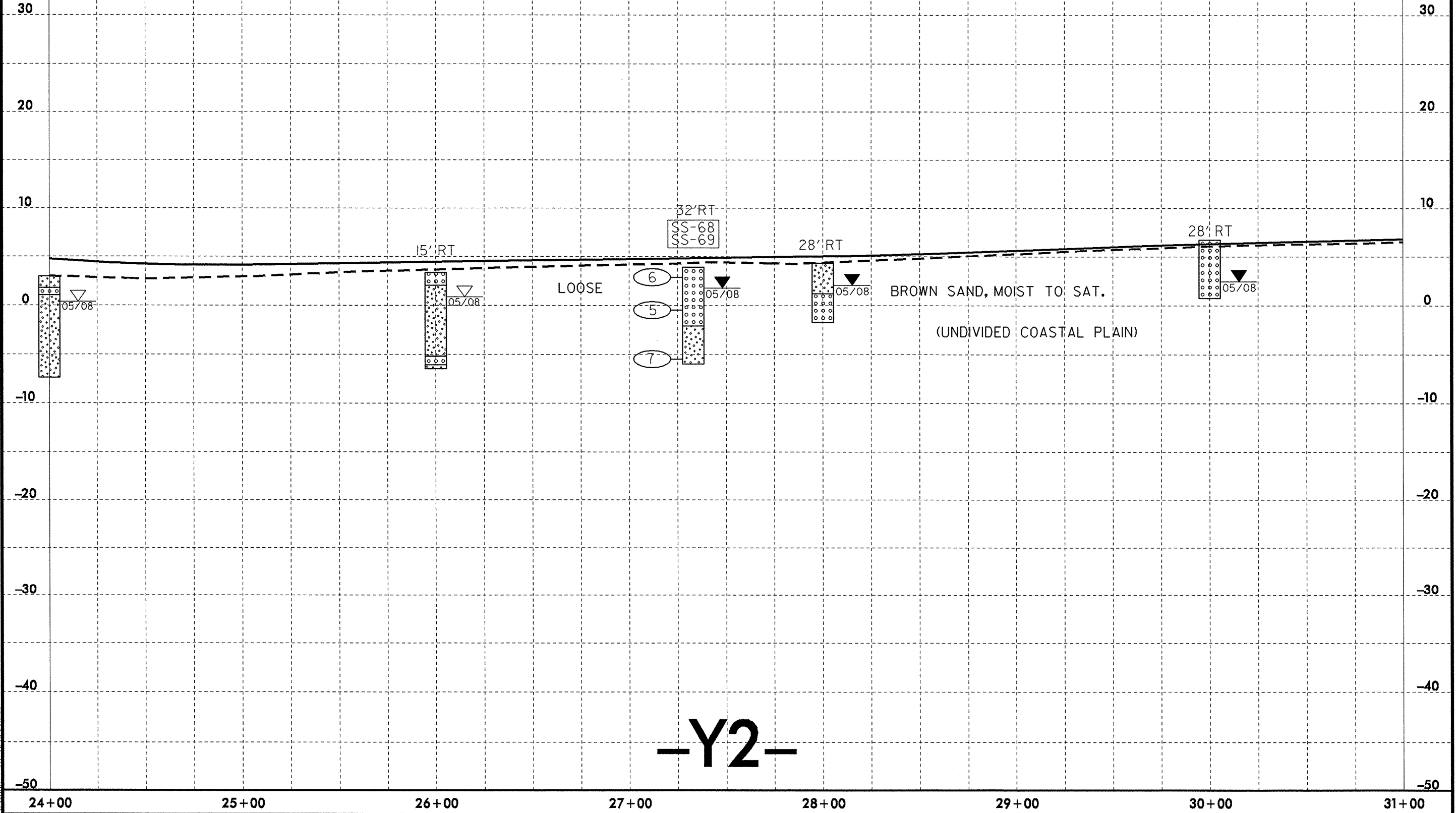
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PROJECT REFERENCE NO. R-3307	SHEET NO. 57
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	ASTM CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							G.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-68	32' RT	27+33	1.0-1.5	A-3(0)	21	NP	45.6	49.8	1.0	3.6	94	83	5	-	-
SS-69	32' RT	27+33	8.4-9.9	A-2(40)	21	5	17.3	53.0	9.9	19.8	100	96	55	-	-



-Y2-

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Station - AT 0622813

PROJECT REFERENCE NO.	SHEET NO.
R-3307	58
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/V ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

40
30
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-10
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-30
-40

31+00

32+00

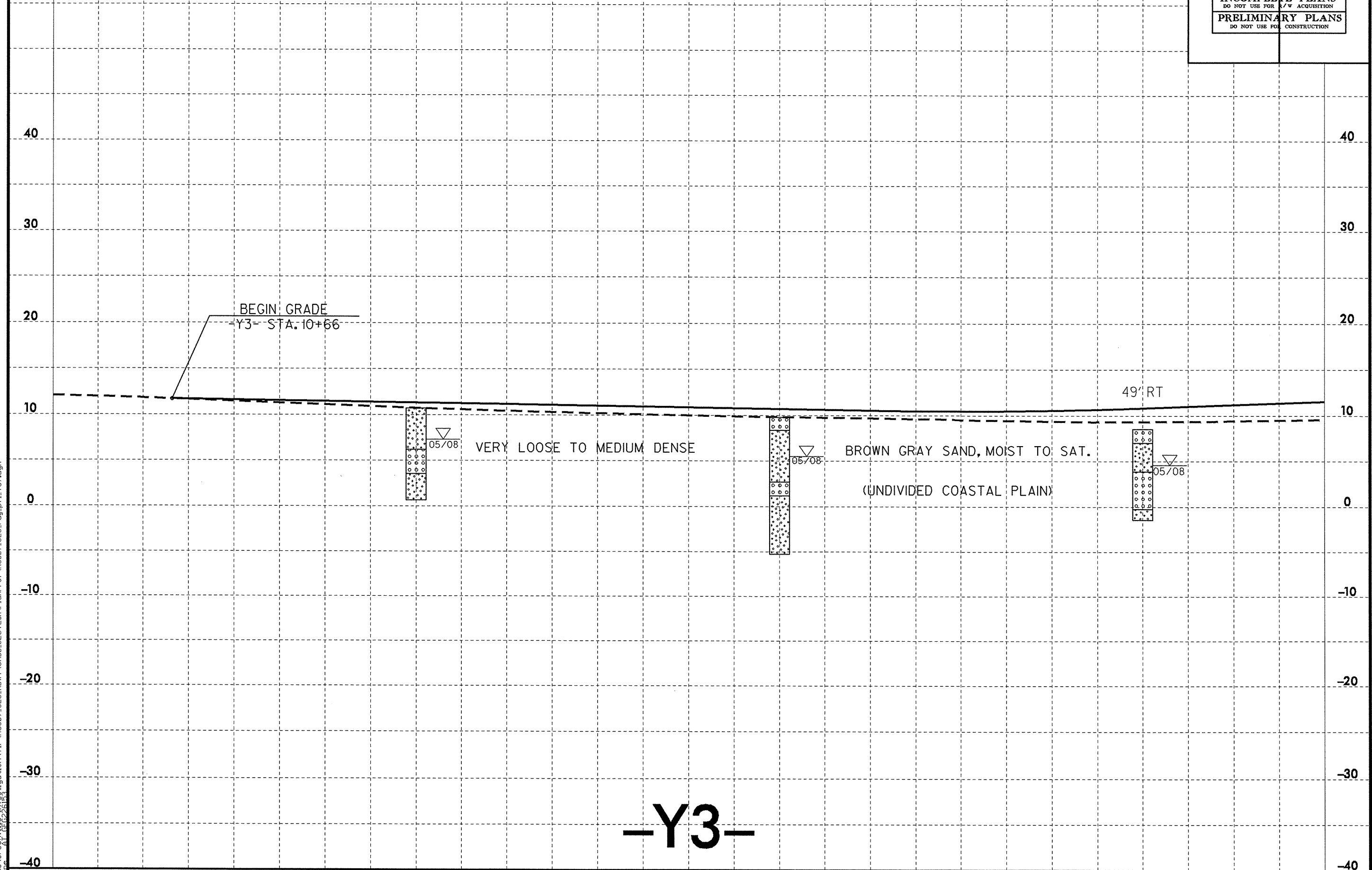
LOOSE BROWN SAND, MOIST TO SAT.
(UNDIVIDED COASTAL PLAIN)

END CONSTRUCTION
-Y2- STA. 32+40

-Y2-

PROJECT REFERENCE NO.	SHEET NO.
R-3307	59
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

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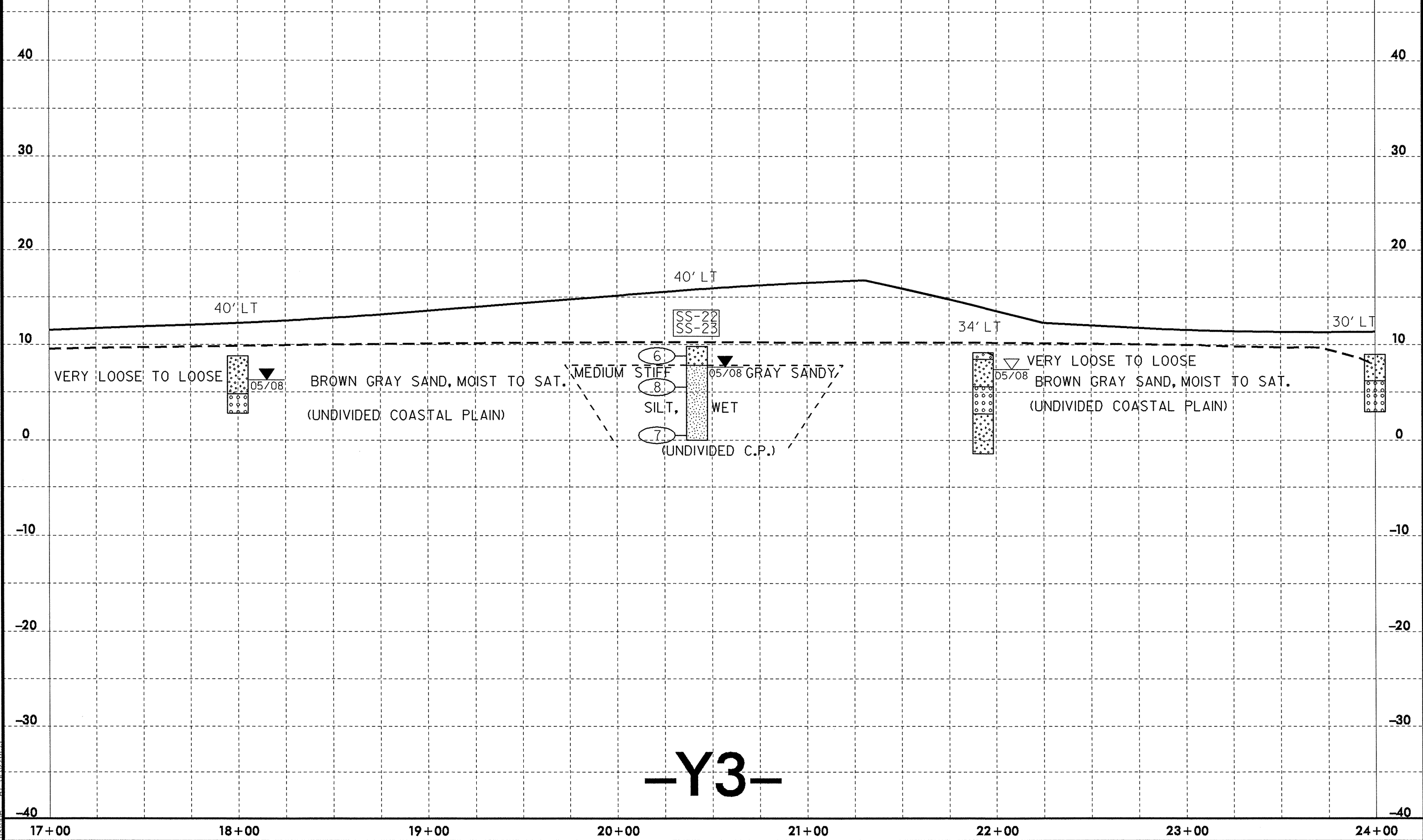


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PROJECT REFERENCE NO. R-3307	SHEET NO. 60
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

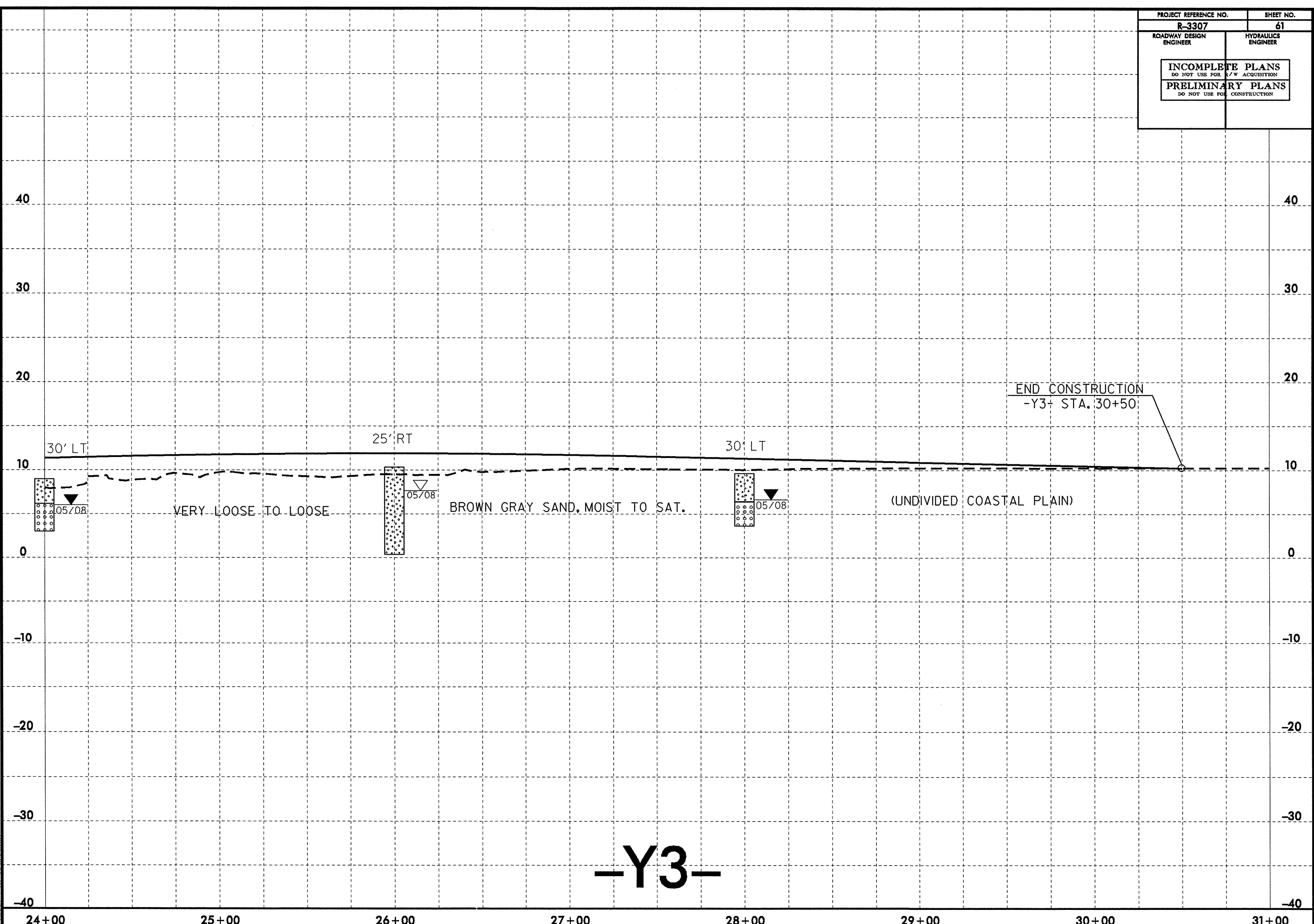
SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	ASTRO-CLASS	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			MOISTURE	% ORGANIC
							SAND	FINE SAND	SILT	CLAY	10	40	100		
SS-22	40' LT	20+42	1.0-1.5	A-2-4(0)	22	NP	34.7	68.9	4.7	11.7	100	98	18	-	-
SS-23	40' LT	20+42	3.3-6.8	A-4(0)	16	NP	12.9	67.5	3.9	15.7	100	97	38	-	-



-Y3-

5/14/99
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Station: AT 05/26/08

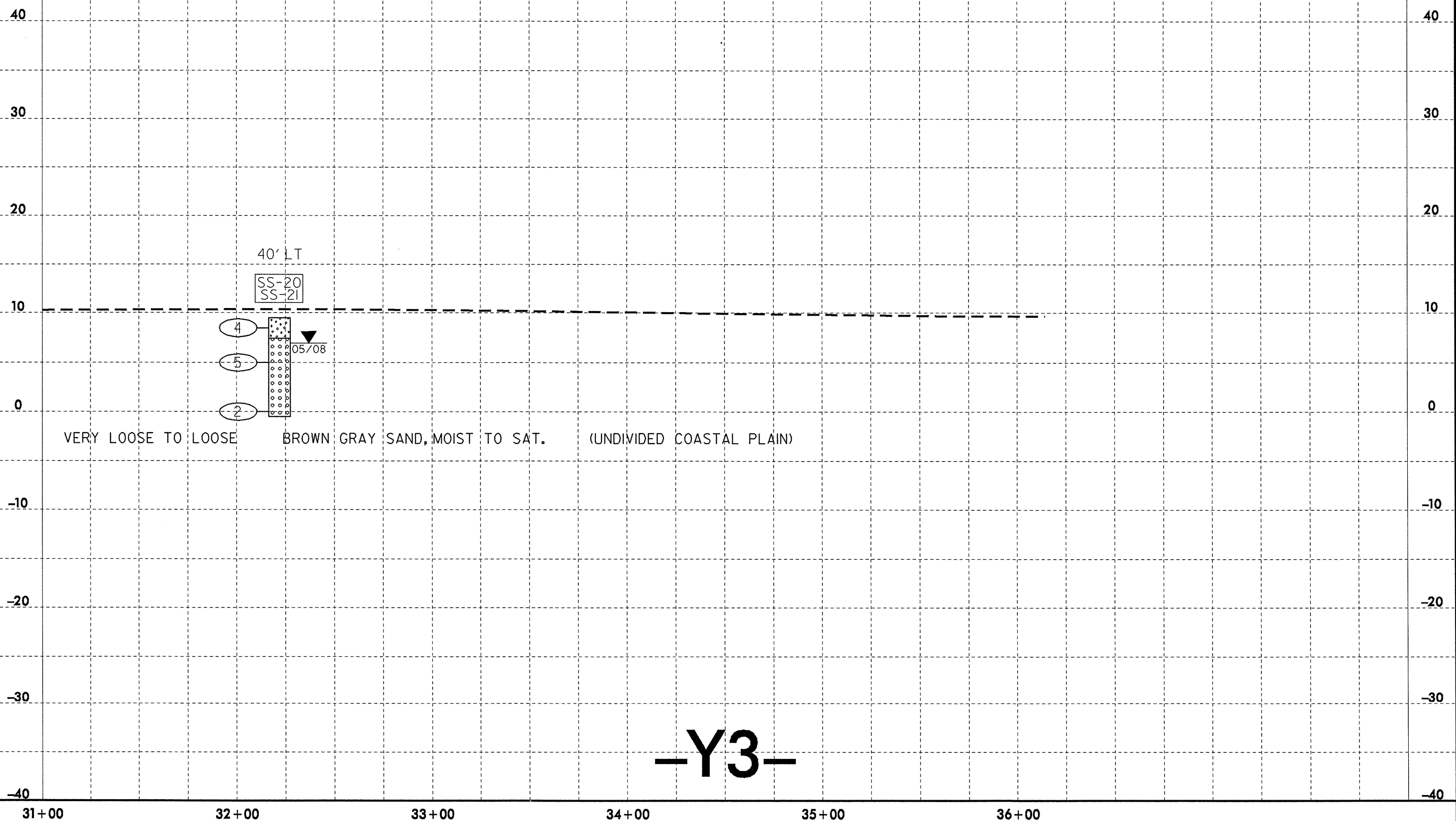
PROJECT REFERENCE NO. R-3307	SHEET NO. 61
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



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PROJECT REFERENCE NO. R-3307	SHEET NO. 62
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/C 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-20	40' LT	32+22	1.0-1.5	A-2-4(0)	24	WP	72.3	164.9	9.6	13.7	100	97	26	-	-
SS-21	40' LT	32+22	3.5-5.0	A-3(0)	21	WP	20.9	73.7	1.7	3.6	100	89	7	-	-



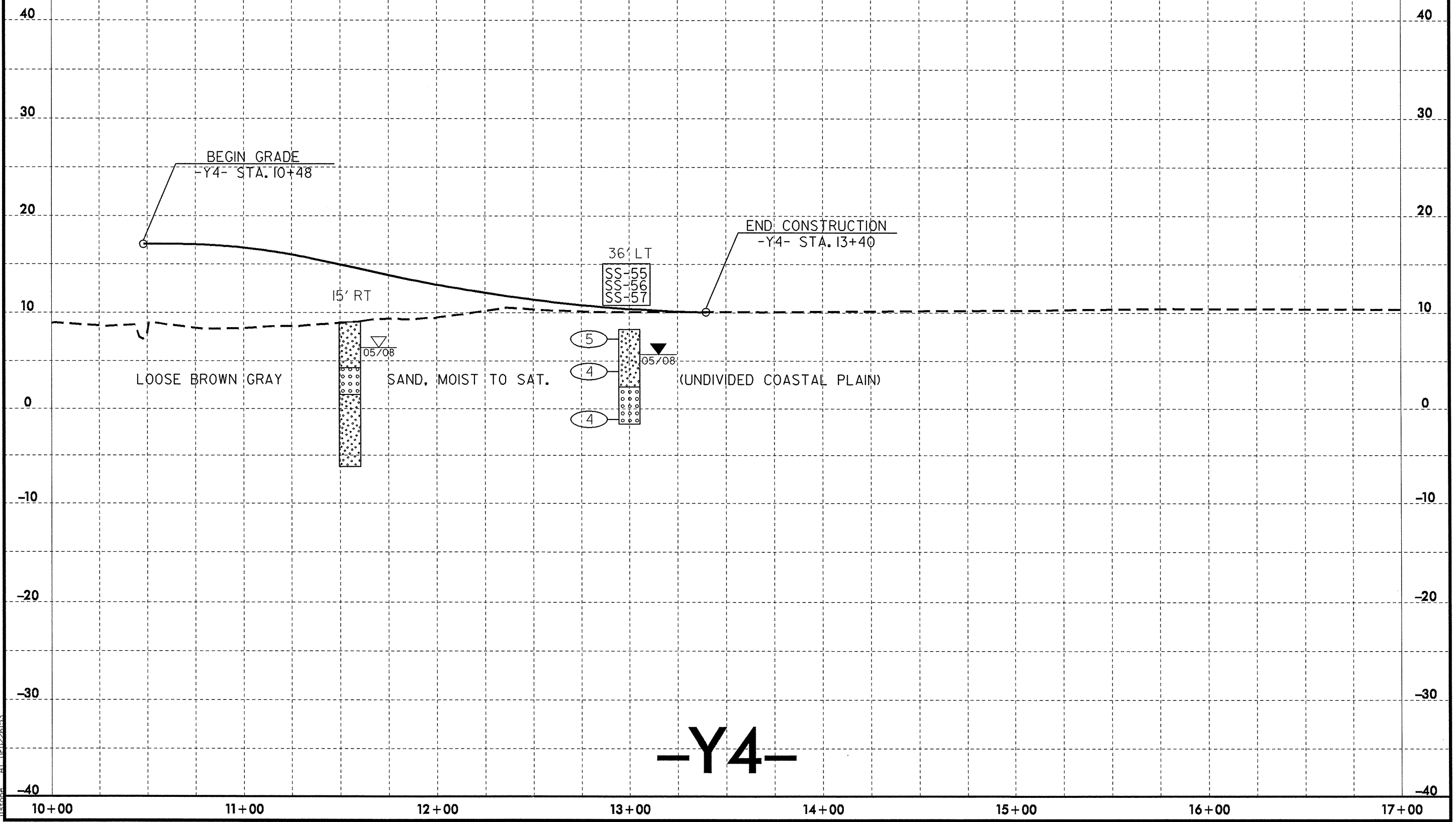
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PROJECT REFERENCE NO. R-3307	SHEET NO. 63
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

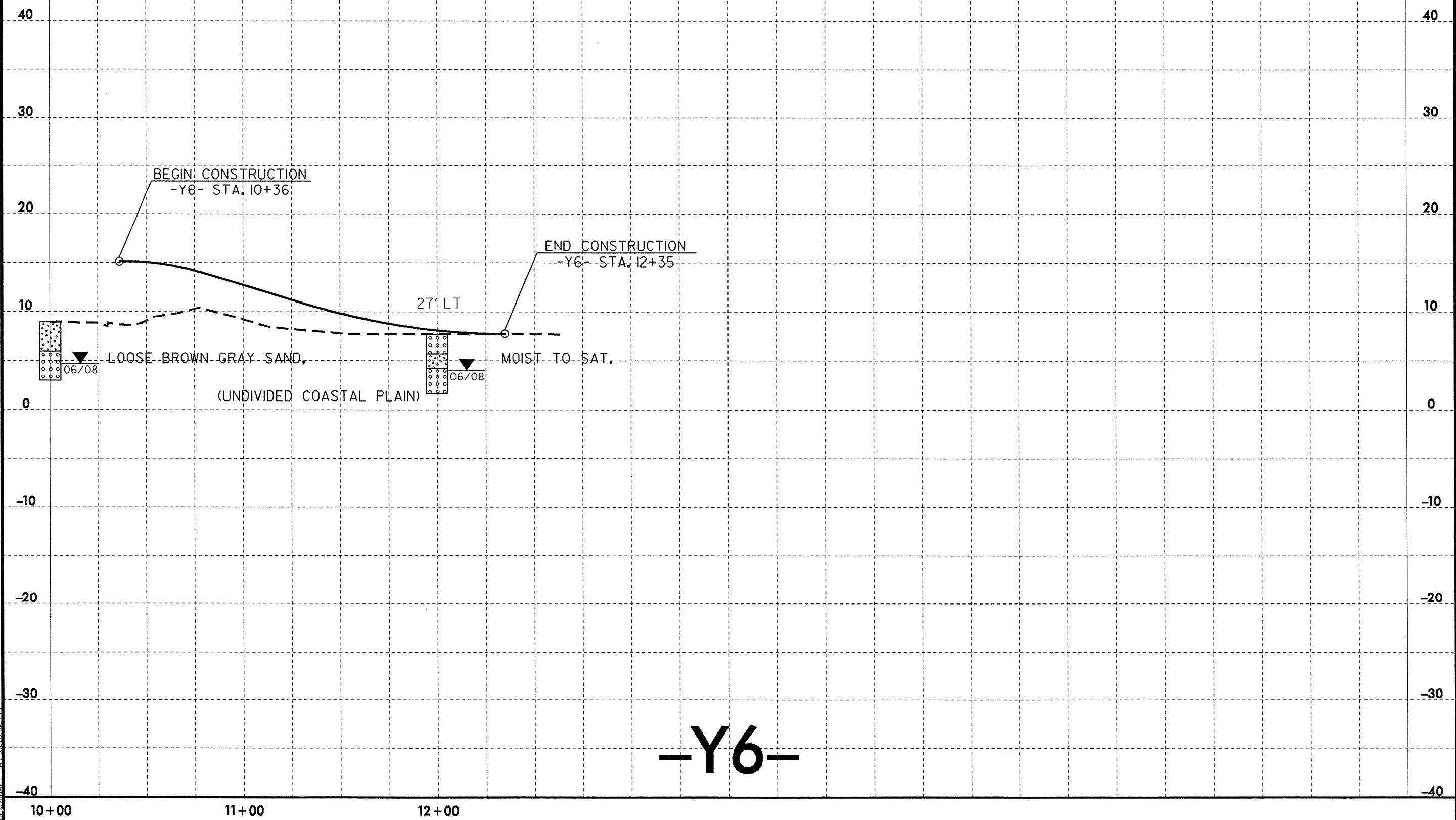
SOIL TEST RESULTS

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-55	36' Lt	13+00	1.0-1.5	A-2-4(0)	20	NP	20.0	54.2	11.8	14.0	100	96	30	-	-
SS-56	36' Lt	13+00	3.4-4.9	A-2-4(0)	20	NP	19.0	58.2	8.8	14.0	100	97	25	-	-
SS-57	36' Lt	13+00	8.4-9.9	A-3(0)	21	NP	3.4	90.6	4.0	2.0	100	99	8	-	-



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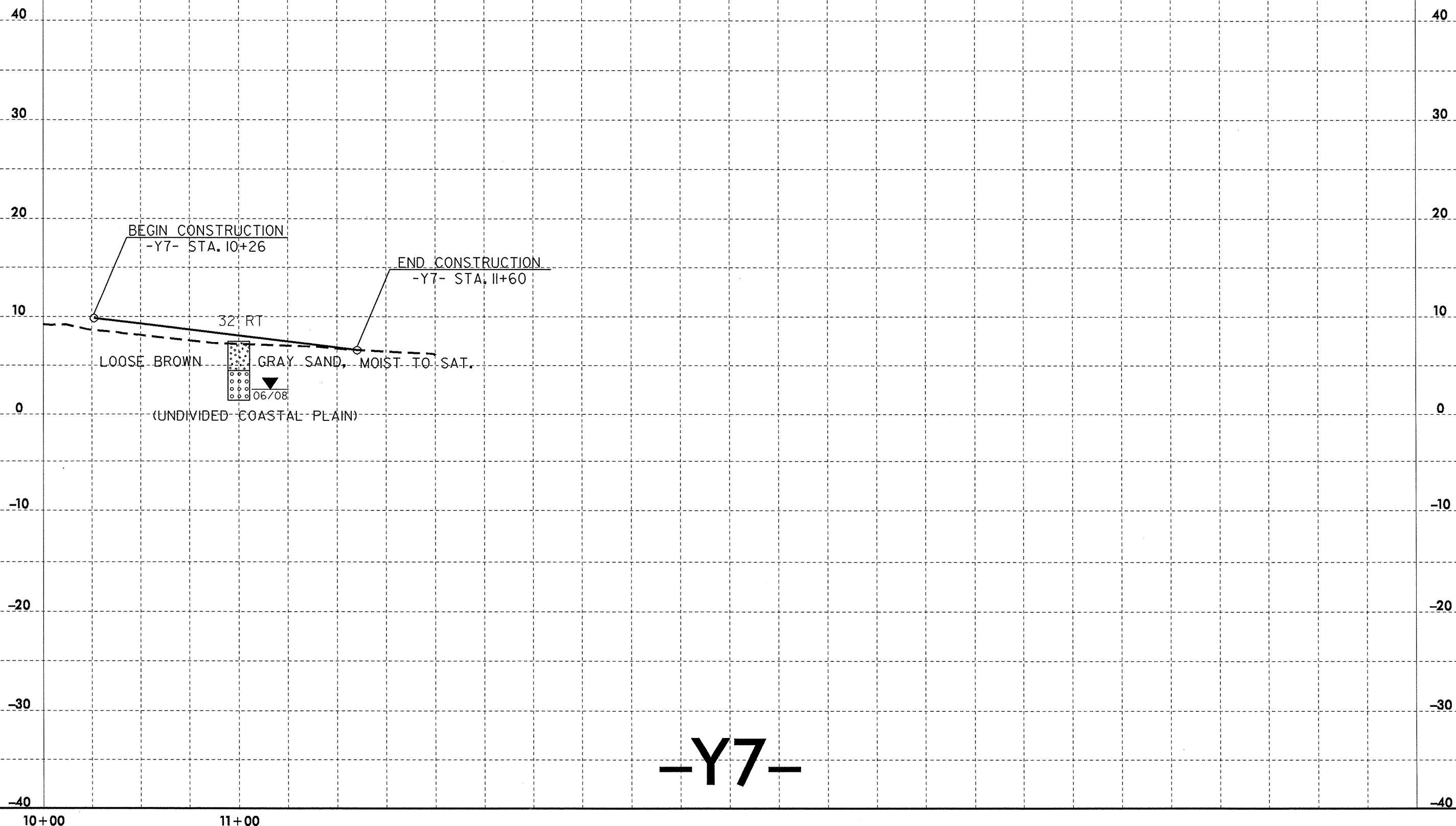
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ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



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PROJECT REFERENCE NO. R-3307	SHEET NO. 65
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



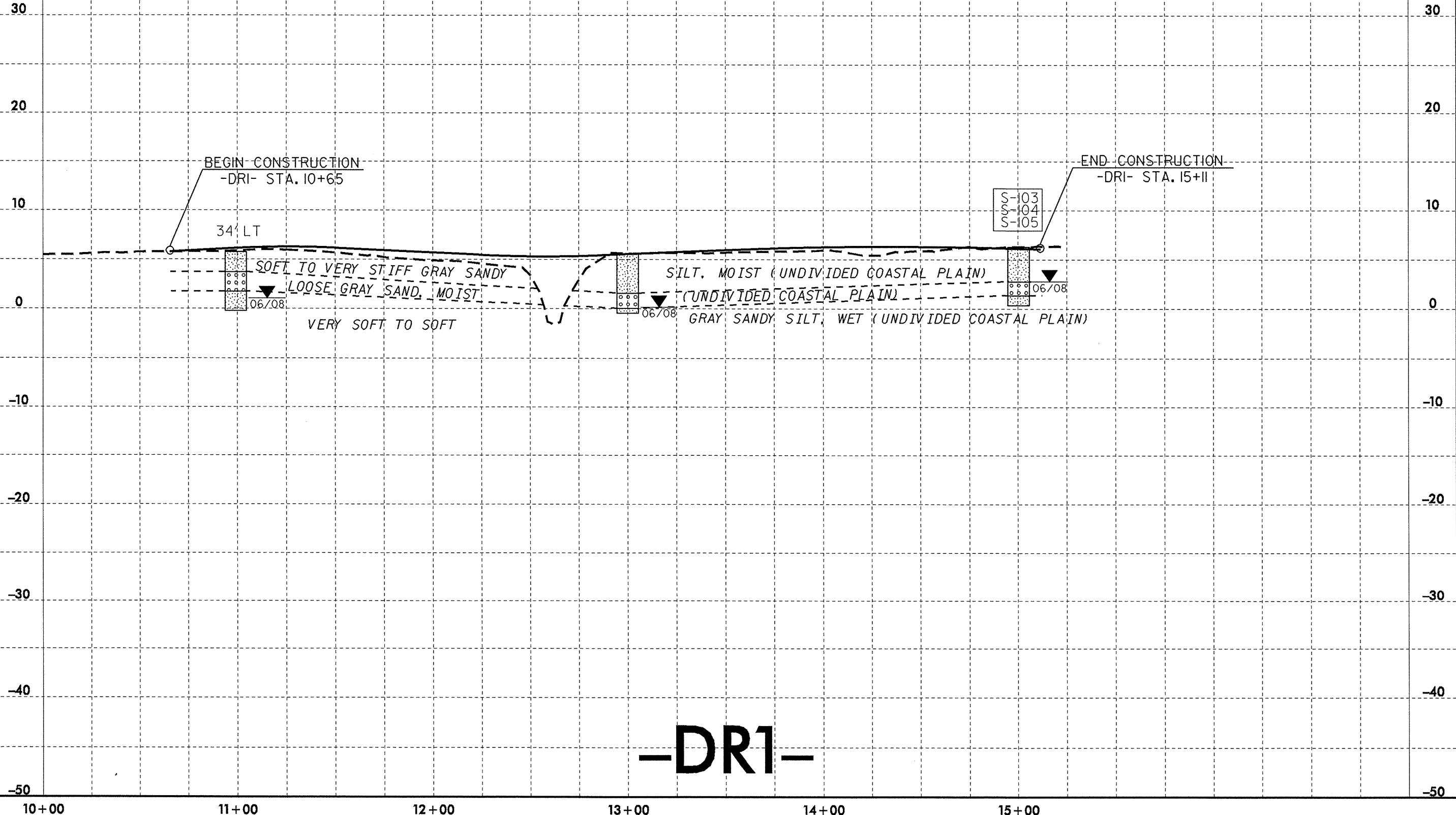
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PROJECT REFERENCE NO. R-3307	SHEET NO. 66
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

SOIL TEST RESULTS

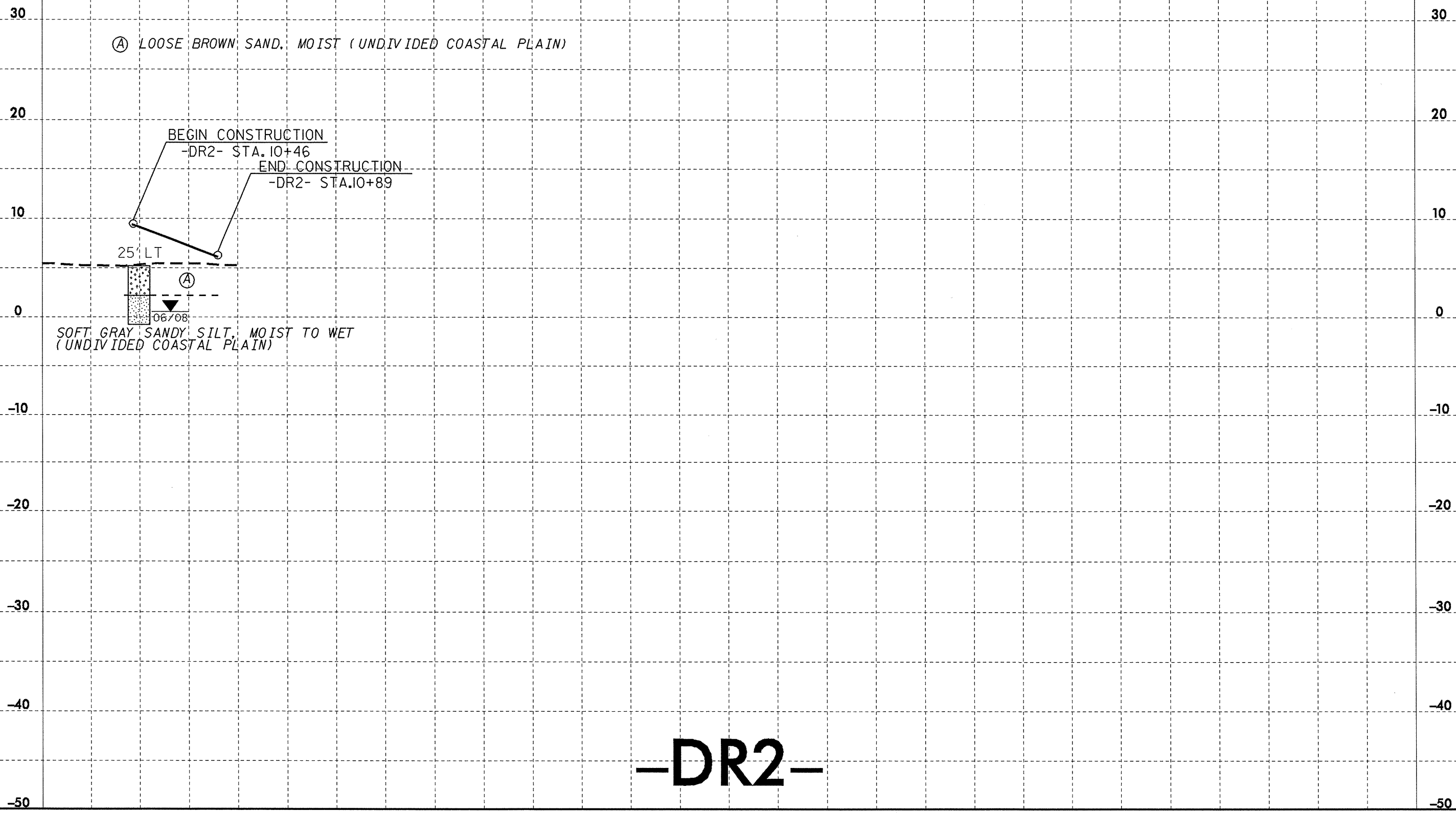
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-103	CL	15+00	1.0-3.5	A-4(0)	20	NP	16.3	51.4	16.3	16.1	98	91	38		
S-104	CL	15+00	3.5-5.0	A-3(0)	12	NP	45.6	46.6	3.8	4.0	93	71	9		
S-105	CL	15+00	5.0-6.0	A-4(0)	21	NP	11.8	56.8	17.3	14.1	93	71	9		



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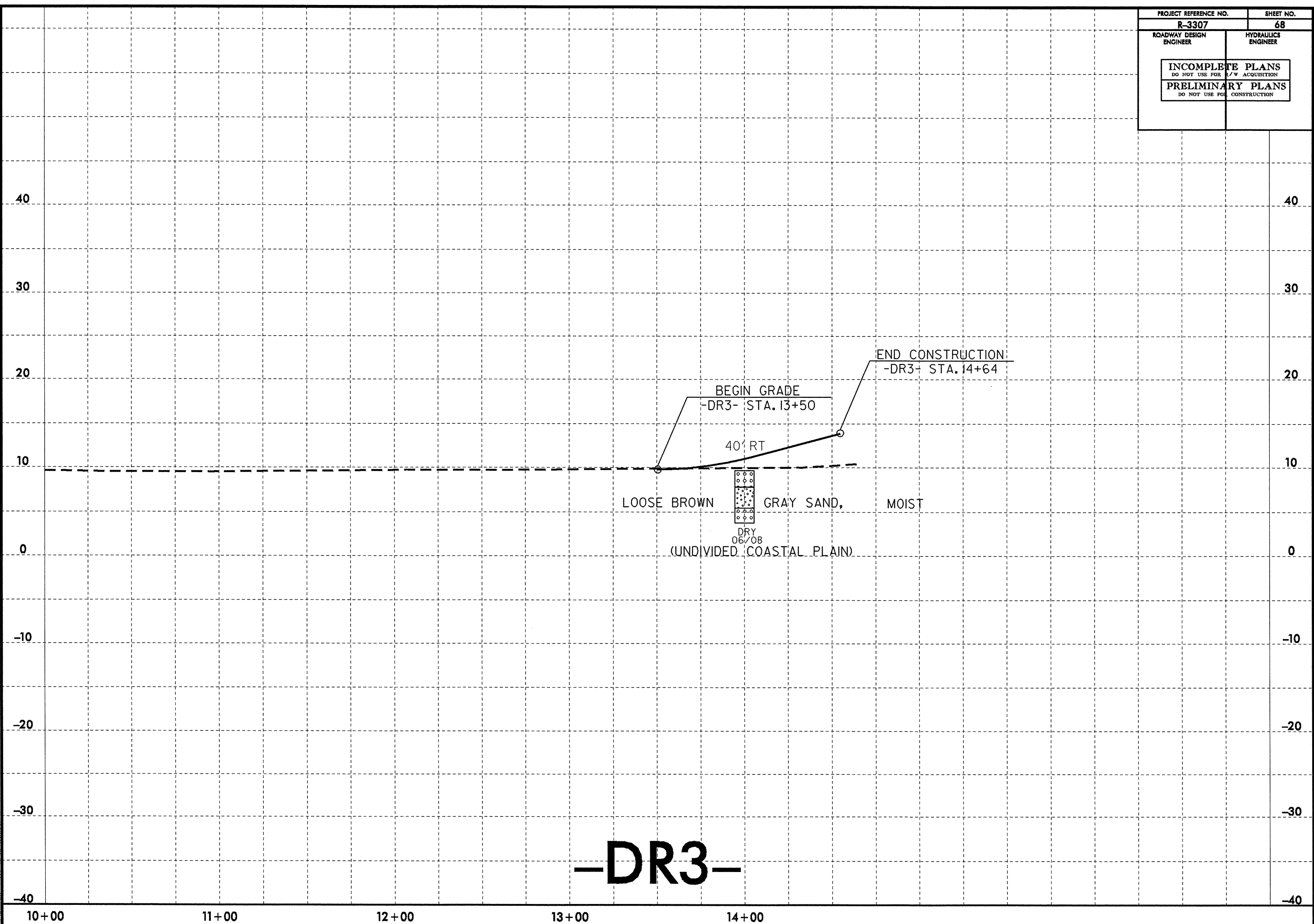
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ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



-DR2-

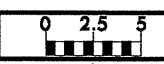
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PROJECT REFERENCE NO. R-3307	SHEET NO. 68
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



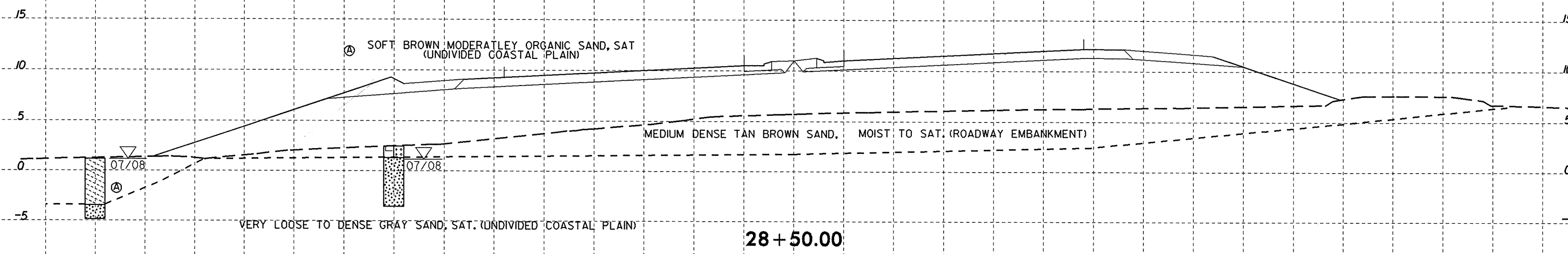
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8/23/99

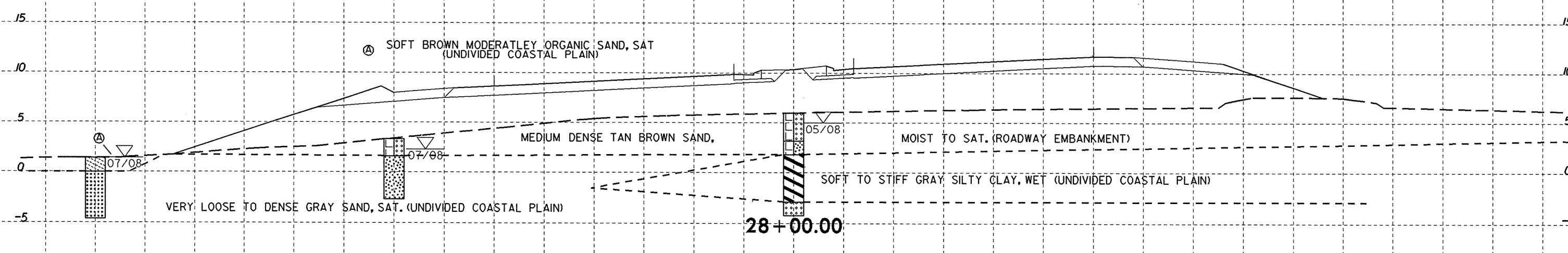


PROJ. REFERENCE NO.	SHEET NO.
R-3307	69

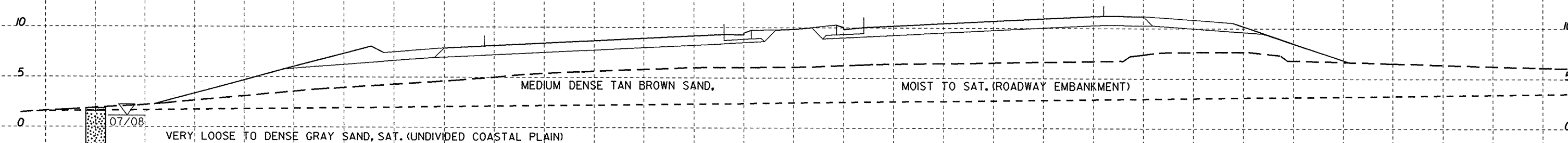
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28 + 00.00

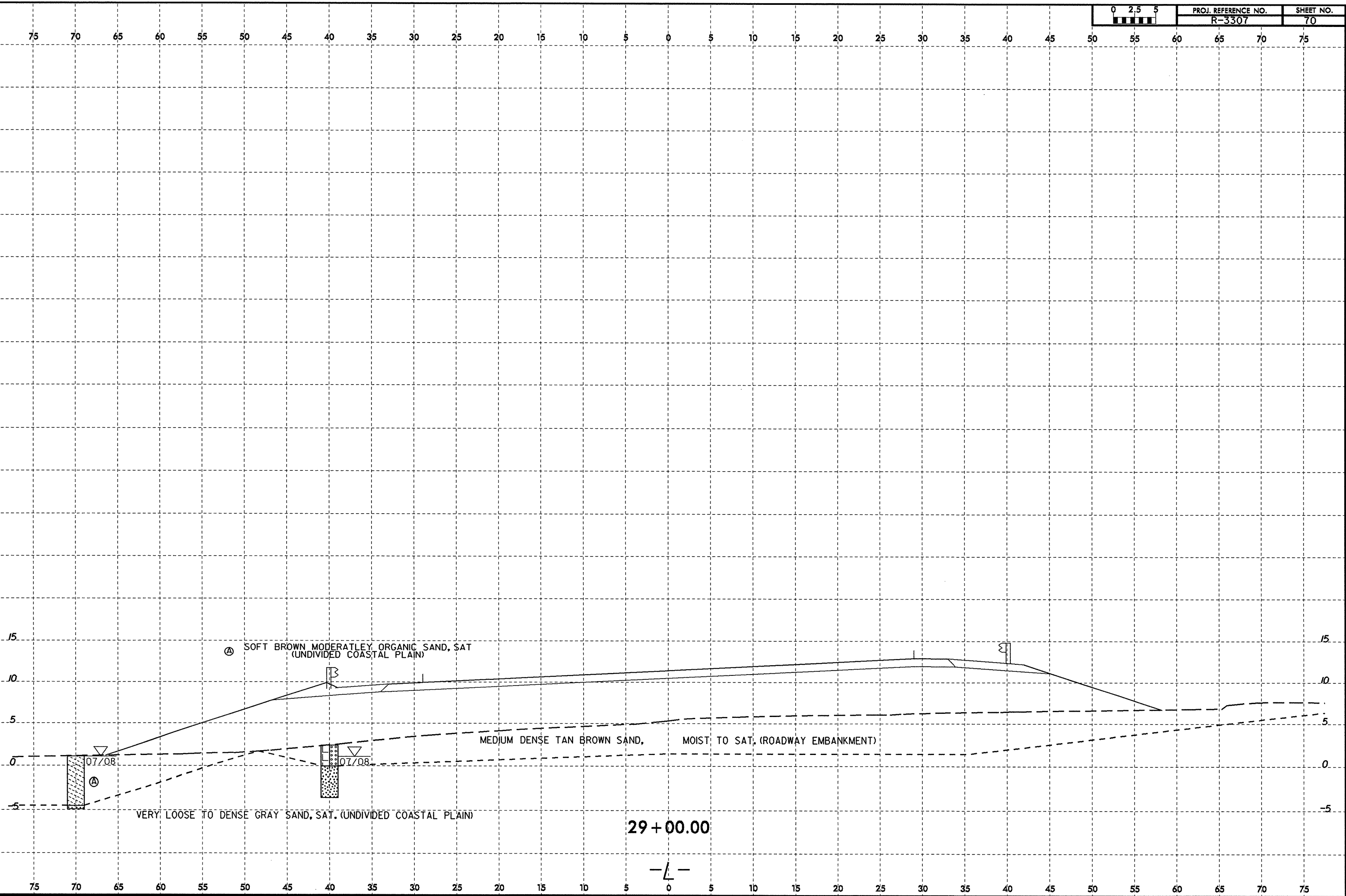


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PROJ. REFERENCE NO.
R-3307

SHEET NO.
71

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

SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-107	50 LT	177+50	1.0-4.0	A-2-4	26	5	20.0	49.9	11.8	18.2	100	97	33	38.9	6.4

(A) VERY LOOSE BROWN SAND WITH LITTLE TO MODERATE ORGANIC MATTER, MOIST TO SAT. (UNDIVIDED COASTAL PLAIN)

LOOSE TO MEDIUM DENSE BROWN GRAY SAND, MOIST TO WET (UNDIVIDED COASTAL PLAIN)

177 + 50.00

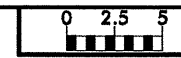
LOOSE TO MEDIUM DENSE BROWN GRAY SAND, MOIST TO WET (UNDIVIDED COASTAL PLAIN)

177 + 00.00

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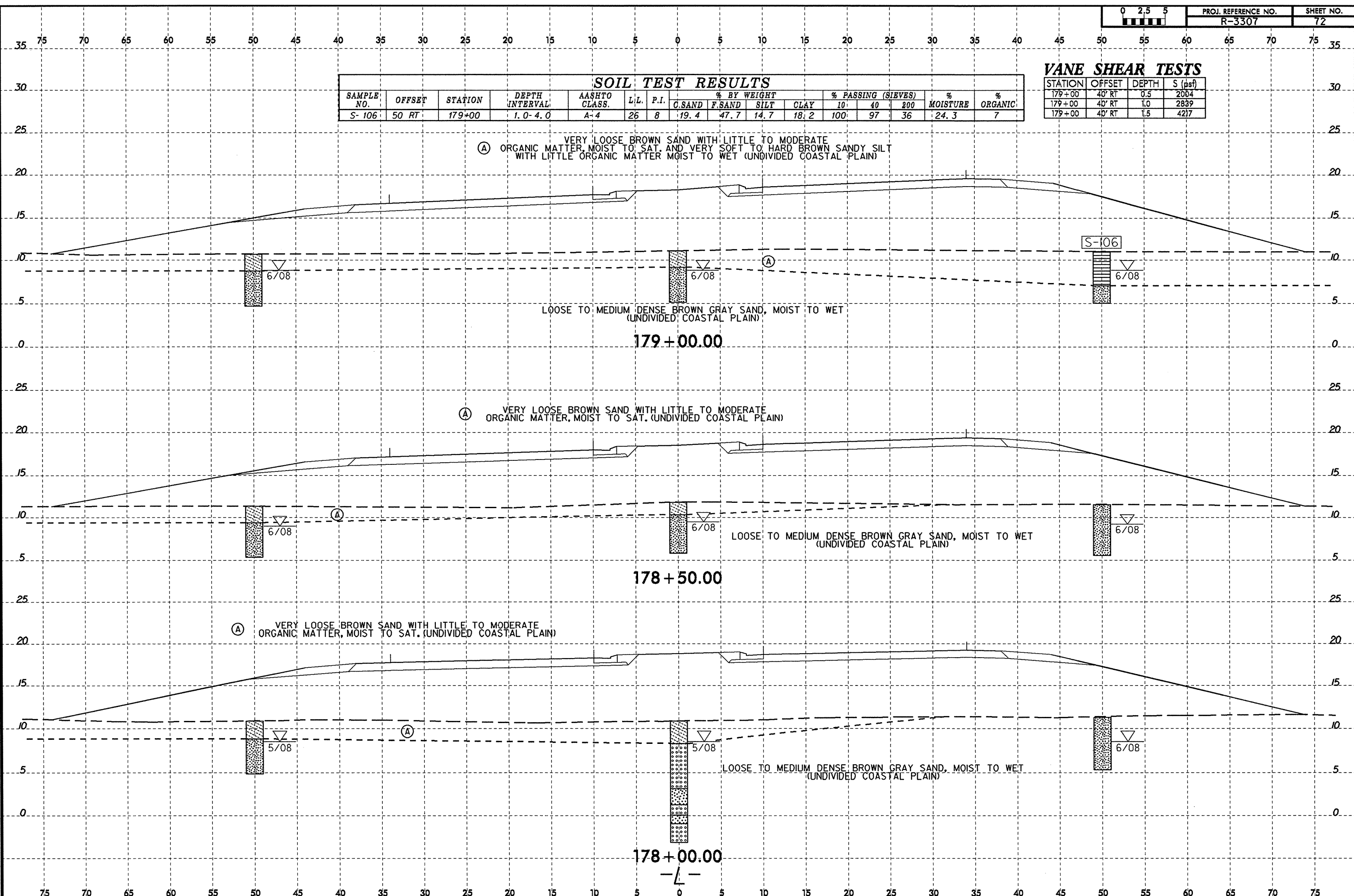
8/23/99



SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-106	50 RT	179+00	1.0-4.0	A-4	26	8	19.4	47.7	14.7	18.2	100	97	36	24.3	7

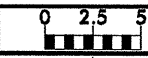
VANE SHEAR TESTS

STATION	OFFSET	DEPTH	S (psf)
179+00	40' RT	0.5	2084
179+00	40' RT	1.0	2839
179+00	40' RT	1.5	4217



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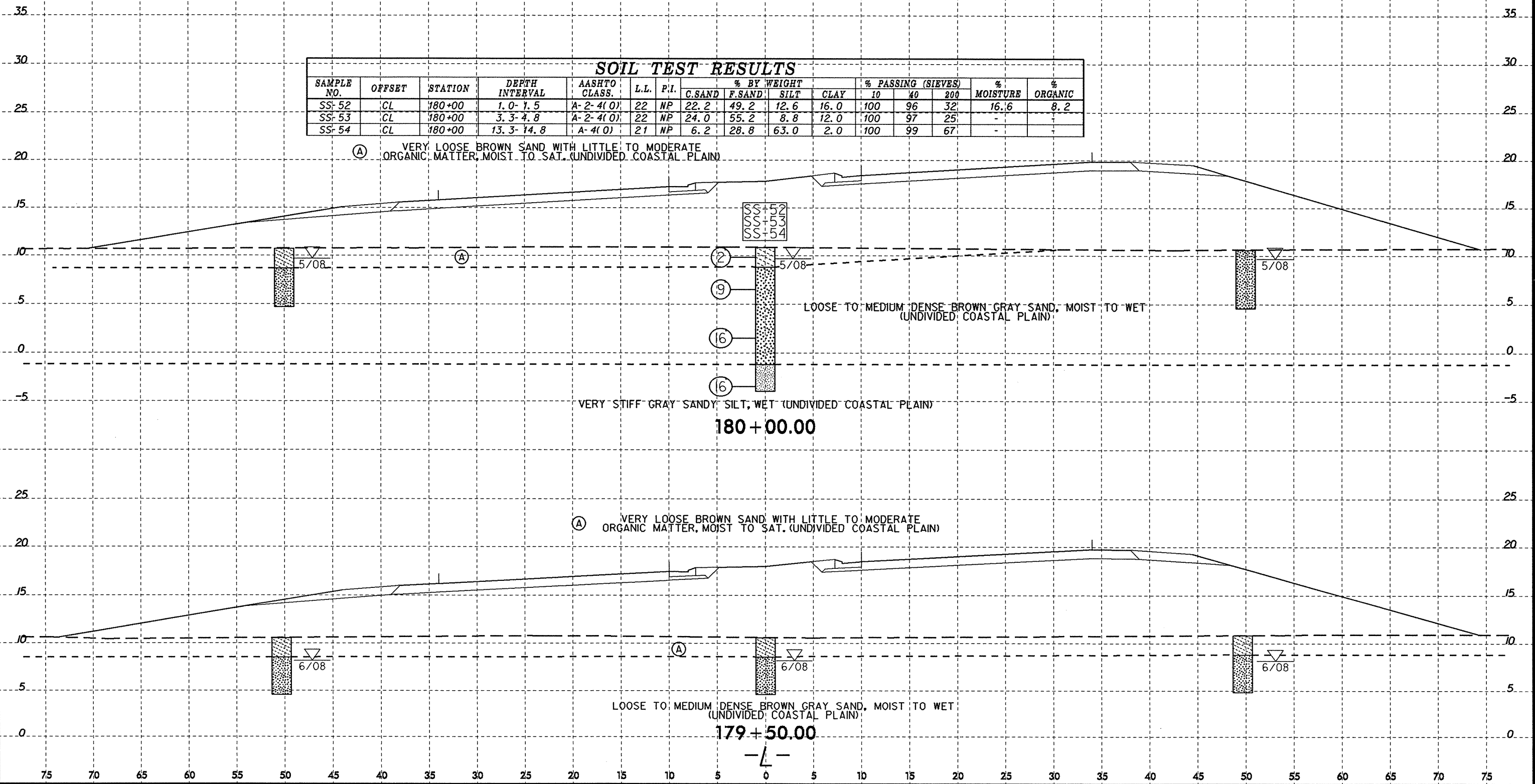
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75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

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-52	CL	180+00	1.0-1.5	A-2-4(0)	22	NP	22.2	49.2	12.6	16.0	100	96	32	16.16	8.2
SS-53	CL	180+00	3.3-4.8	A-2-4(0)	22	NP	24.0	55.2	8.8	12.0	100	97	25	-	-
SS-54	CL	180+00	13.3-14.8	A-4(0)	21	NP	6.2	28.8	63.0	2.0	100	99	67	-	-

(A) VERY LOOSE BROWN SAND WITH LITTLE TO MODERATE ORGANIC MATTER, MOIST TO SAT. (UNDIVIDED COASTAL PLAIN)



SS+SL+CL
SS+SL+CL
SS+SL+CL

(2)
(9)
(16)
(16)

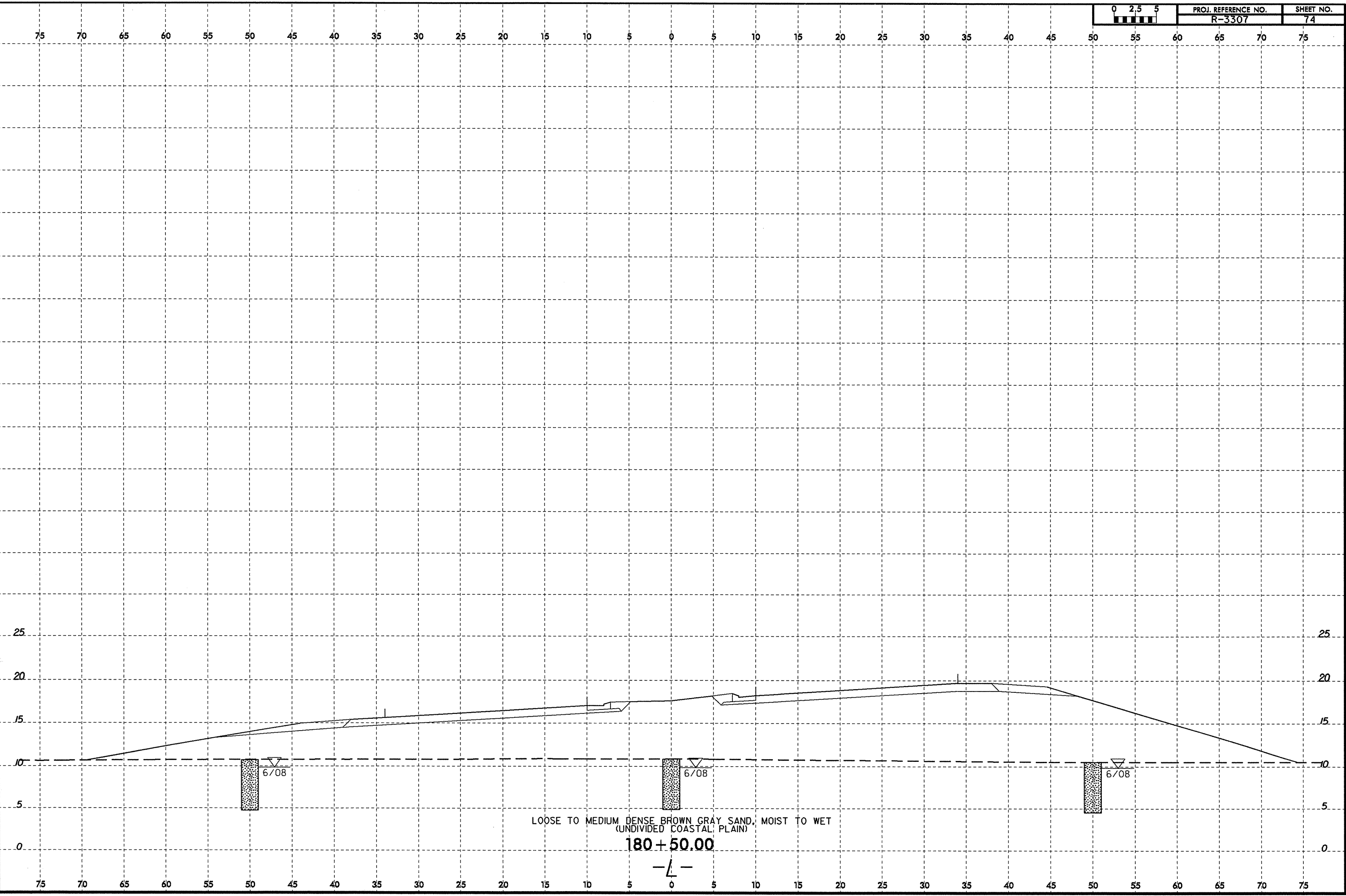
180+00.00

179+50.00

-L-

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Author: AL



LOOSE TO MEDIUM DENSE BROWN GRAY SAND, MOIST TO WET
(UNDIVIDED COASTAL PLAIN)
180+50.00