

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.	B-2950	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
32773.1.1	BRZ-1222(2)	P.E.	
32773.2.1	BRZ-1222(2)	ROW & UT	
32773.3.2	BRZ-1222(2)	CONF	

CONTENTS

LINE	STATION	PLAN	PROFILE	X-SECT
-L-	12+50 TO 42+13	4-6	7-9	10-22
-DRV-	10+00 TO 14+59	4,5	9	11-17

ROADWAY
SUBSURFACE INVESTIGATION

PROJ. REFERENCE NO. 32773.1.1 I.D. NO. B-2950 F.A. PROJ. BRZ-1222 (2)
COUNTY CURRITUCK
PROJECT DESCRIPTION BRIDGE NO. 4 ON SR 1222 (TULLS CREEK ROAD) OVER TULLS CREEK

INVENTORY-REVISED

CAUTION NOTICE

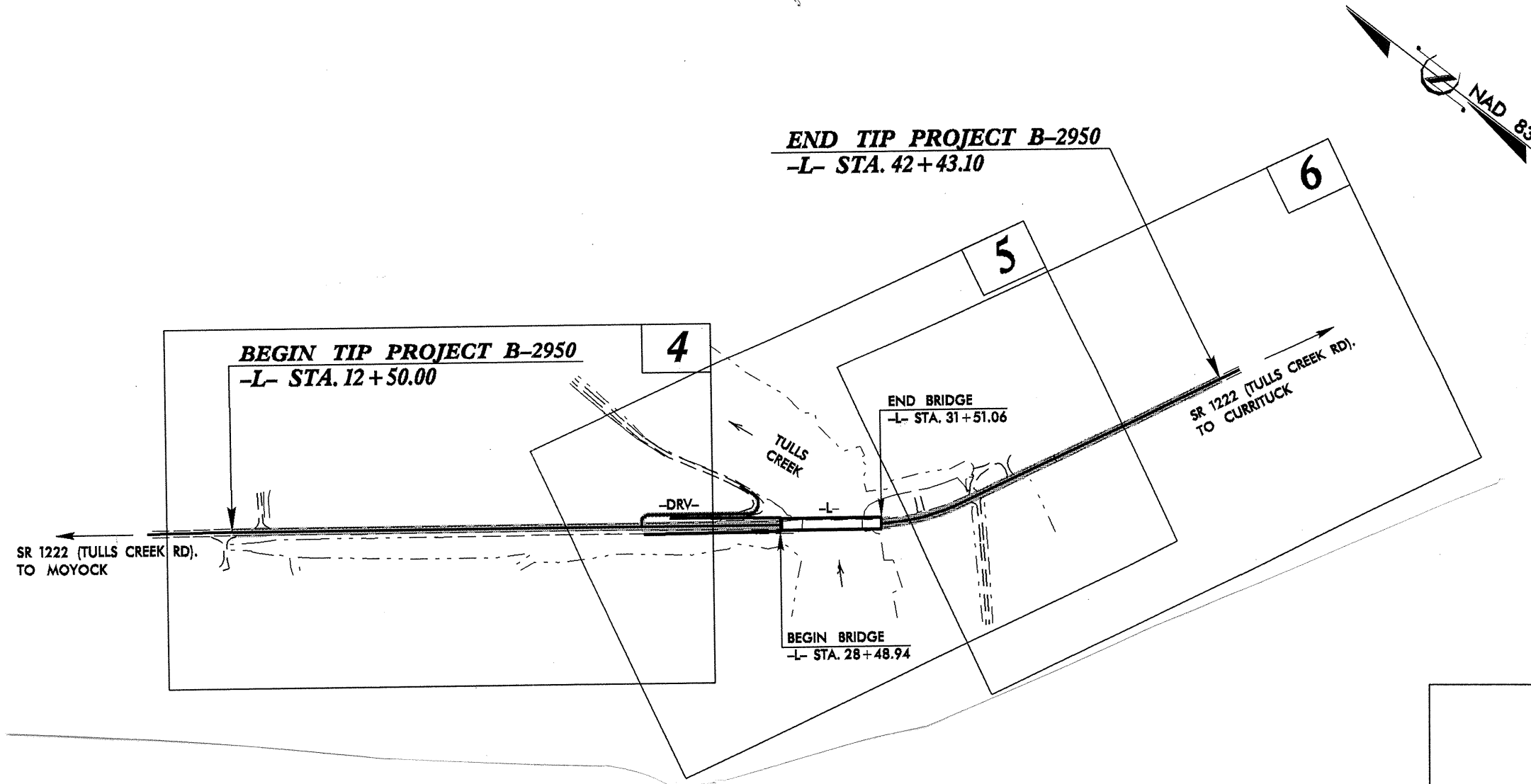
THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING, AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES, AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING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

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

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

ID: B-2950

CONTRACT: C201641



PERSONNEL

FMW

RLE

LWD

ELD

WNC

JEB

JAH

MACTEC PERSONEL

INVESTIGATED BY F. M. WESCOTT

CHECKED BY D. N. ARGENBRIGHT

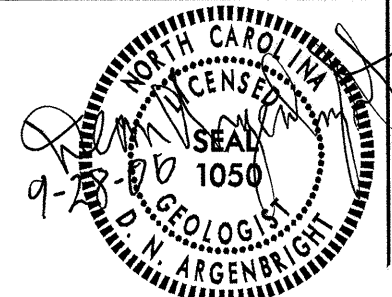
SUBMITTED BY D. N. ARGENBRIGHT

DATE SEPTEMBER 2006

DRAWN BY: C. M. KENT

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

PROJECT REFERENCE NO. 32773.IJ (B-2950)	SHEET NO. 2
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SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION		GRADATION		ROCK DESCRIPTION		TERMS AND DEFINITIONS					
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 (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: <i>VERY STIFF, GRAY, SILTY CLAY, MOST WITH INTERBEDDED FINE SAND LAYERS, HIGH PLASTIC, A-7-6</i>		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.		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:		ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER. AQUIFER - A WATER BEARING FORMATION OR STRATA. ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, AS SHALE, SLATE, ETC. ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE. CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. CORE RECOVERY (REC) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK. DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL. DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM PARENT MATERIAL. FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. FORMATION (FM) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD. JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED. LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT. LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS. MOTTLED (MOT) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS, MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE. PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM. RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. ROCK QUALITY DESIGNATION (ROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. SAPROLITE (SAP) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS IN OR BPF OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. STRATA CORE RECOVERY (SREC) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SROD) - 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.					
SOIL LEGEND AND AASHTO CLASSIFICATION		MINERALOGICAL COMPOSITION		WEATHERING		ROCK HARDNESS					
GENERAL CLASS. GRANULAR MATERIALS (<= 35% PASSING #200) SILT-CLAY MATERIALS (> 35% PASSING #200) ORGANIC MATERIALS		MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE.		FRESH ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE. VERY SLIGHT (V SL.) ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN, CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER HAMMER BLOWS IF OF A CRYSTALLINE NATURE. SLIGHT (SL.) ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO 1 INCH. OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR CRYSTALS ARE DULL AND DISCOLORED. CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS. MODERATE (MOD.) SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLAY. ROCK HAS DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED WITH FRESH ROCK. MODERATELY SEVERE (MOD. SEV.) ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK. ROCK GIVES "CLUNK" SOUND WHEN STRUCK. IF TESTED, WOULD YIELD SPT REFUSAL. SEVERE (SEV.) ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND EVIDENT BUT REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. IF TESTED, YIELDS SPT N VALUES > 100 BPF. VERY SEVERE (V SEV.) ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS ARE DISCERNIBLE BUT THE MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE SUCH THAT ONLY MINOR VESTIGES OF THE ORIGINAL ROCK FABRIC REMAIN. IF TESTED, YIELDS SPT N VALUES < 100 BPF. COMPLETE ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.		SLIGHTLY COMPRESSIBLE LIQUID LIMIT LESS THAN 31 MODERATELY COMPRESSIBLE LIQUID LIMIT EQUAL TO 31-50 HIGHLY COMPRESSIBLE LIQUID LIMIT GREATER THAN 50		FRESH VERY SLIGHT (V SL.) SLIGHT (SL.) MODERATE (MOD.) MODERATELY SEVERE (MOD. SEV.) SEVERE (SEV.) VERY SEVERE (V SEV.) COMPLETE		VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK. HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN. MODERATELY HARD CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS. MEDIUM HARD CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PIECES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK. SOFT CAN BE GROVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE. VERY SOFT CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 INCH OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY FINGER NAIL.	
CONSISTENCY OR DENSENESS		GROUND WATER		MISCELLANEOUS SYMBOLS		TEXTURE OR GRAIN SIZE					
PRIMARY SOIL TYPE COMPACTNESS OR CONSISTENCY RANGE OF STANDARD PENETRATION RESISTANCE (N-VALUE) RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/FT ²)		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		ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION SOIL SYMBOL ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT INFERRED SOIL BOUNDARY INFERRED ROCK LINE ALLUVIAL SOIL BOUNDARY DIP & DIP DIRECTION OF ROCK STRUCTURES SOUNDING ROD		U.S. STD. SIEVE SIZE OPENING (MM) 4 10 40 60 200 270 0.075 0.053					
GENERAL GRANULAR MATERIAL (NON-COHESIVE) VERY LOOSE, LOOSE, MEDIUM DENSE, DENSE, VERY DENSE		ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION SOIL SYMBOL ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT INFERRED SOIL BOUNDARY INFERRED ROCK LINE ALLUVIAL SOIL BOUNDARY DIP & DIP DIRECTION OF ROCK STRUCTURES SOUNDING ROD		ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION SOIL SYMBOL ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT INFERRED SOIL BOUNDARY INFERRED ROCK LINE ALLUVIAL SOIL BOUNDARY DIP & DIP DIRECTION OF ROCK STRUCTURES SOUNDING ROD		U.S. STD. SIEVE SIZE OPENING (MM) 4 10 40 60 200 270 0.075 0.053					
GENERAL SILT-CLAY MATERIAL (COHESIVE) SOFT, MEDIUM STIFF, STIFF, VERY STIFF, HARD		ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION SOIL SYMBOL ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT INFERRED SOIL BOUNDARY INFERRED ROCK LINE ALLUVIAL SOIL BOUNDARY DIP & DIP DIRECTION OF ROCK STRUCTURES SOUNDING ROD		ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION SOIL SYMBOL ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT INFERRED SOIL BOUNDARY INFERRED ROCK LINE ALLUVIAL SOIL BOUNDARY DIP & DIP DIRECTION OF ROCK STRUCTURES SOUNDING ROD		U.S. STD. SIEVE SIZE OPENING (MM) 4 10 40 60 200 270 0.075 0.053					
SOIL MOISTURE - CORRELATION OF TERMS		ABBREVIATIONS		EQUIPMENT USED ON SUBJECT PROJECT		FRACATURE SPACING					
SOIL MOISTURE SCALE (ATTERBERG LIMITS) FIELD MOISTURE DESCRIPTION GUIDE FOR FIELD MOISTURE DESCRIPTION		AR - AUGER REFUSAL BT - BORING TERMINATED CL - CLAY CPT - CONE PENETRATION TEST CSE - COARSE DMT - DILATOMETER TEST DPT - DYNAMIC PENETRATION TEST e - VOID RATIO F - FINE FOSS - FOSSILIFEROUS FRAC. - FRACTURED, FRACTURES FRAGS. - FRAGMENTS HL - HIGHLY MED. - MEDIUM MICA - MICACEOUS MOD. - MODERATELY NP - NON PLASTIC ORG. - ORGANIC PMT - PRESSUREMETER TEST SAP. - SAPROLITIC SD. - SAND, SANDY SL. - SILT, SILTY SLI. - SLIGHTLY TCR - TRICONE REFUSAL		DRILL UNITS: <input type="checkbox"/> MOBILE B- <input type="checkbox"/> BK-51 <input type="checkbox"/> CME-45C <input checked="" type="checkbox"/> CME-550 <input type="checkbox"/> PORTABLE HOIST <input checked="" type="checkbox"/> CME 45		VERY WIDE MORE THAN 10 FEET WIDE 3 TO 10 FEET MODERATELY CLOSE 1 TO 3 FEET CLOSE 0.16 TO 1 FEET VERY CLOSE LESS THAN 0.16 FEET					
LL - LIQUID LIMIT PL - PLASTIC LIMIT OM - OPTIMUM MOISTURE SL - SHRINKAGE LIMIT		DRILL UNITS: <input type="checkbox"/> MOBILE B- <input type="checkbox"/> BK-51 <input type="checkbox"/> CME-45C <input checked="" type="checkbox"/> CME-550 <input type="checkbox"/> PORTABLE HOIST <input checked="" type="checkbox"/> CME 45		ADVANCING TOOLS: <input checked="" type="checkbox"/> CLAY BITS <input type="checkbox"/> 6" CONTINUOUS FLIGHT AUGER <input type="checkbox"/> 8" HOLLOW AUGERS <input checked="" type="checkbox"/> HARD FACED FINGER BITS <input type="checkbox"/> TUNG-CARBIDE INSERTS <input checked="" type="checkbox"/> CASING w/ ADVANCER <input checked="" type="checkbox"/> TRICONE 3", 4" STEEL TEETH <input type="checkbox"/> TRICONE " " TUNG-CARB. <input type="checkbox"/> CORE BIT		VERY WIDE MORE THAN 10 FEET WIDE 3 TO 10 FEET MODERATELY CLOSE 1 TO 3 FEET CLOSE 0.16 TO 1 FEET VERY CLOSE LESS THAN 0.16 FEET					
PLASTICITY		HAMMER TYPE:		BEDDING		INDURATION					
NONPLASTIC 0-5 LOW PLASTICITY 6-15 MED. PLASTICITY 16-25 HIGH PLASTICITY 26 OR MORE		<input checked="" type="checkbox"/> AUTOMATIC <input checked="" type="checkbox"/> MANUAL		VERY THICKLY BEDDED > 4 FEET THICKLY BEDDED 1.5 - 4 FEET THINLY BEDDED 0.16 - 1.5 FEET VERY THINLY BEDDED 0.03 - 0.16 FEET THICKLY LAMINATED 0.008 - 0.03 FEET THINLY LAMINATED < 0.008 FEET		FRIABLE RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE. MODERATELY INDURATED GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER. INDURATED GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER. EXTREMELY INDURATED SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.					
COLOR		HAND TOOLS:		BENCH MARK: ELEVATION: _____ FT.							
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.		<input checked="" type="checkbox"/> POST HOLE DIGGER <input checked="" type="checkbox"/> HAND AUGER <input type="checkbox"/> SOUNDING ROD <input type="checkbox"/> VANE SHEAR TEST		NOTES:							

09/08/09

See Sheet 1-A For Index of Sheets

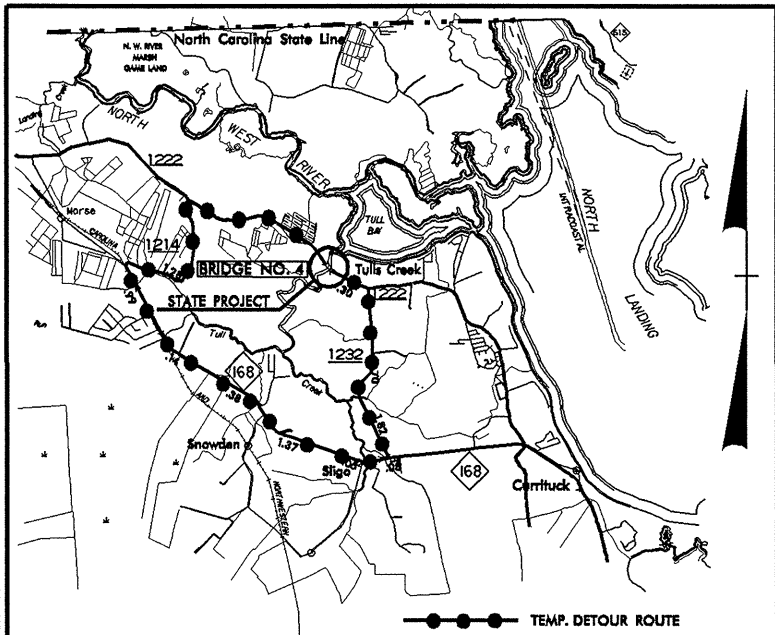
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CURRITUCK COUNTY

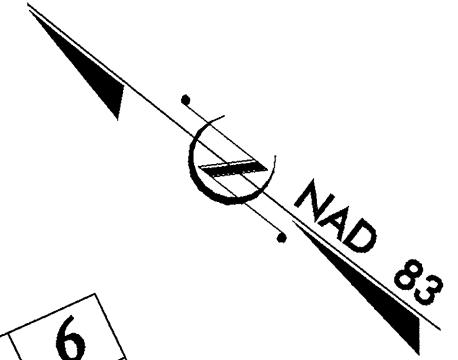
LOCATION: BRIDGE NO. 4 OVER TULLS CREEK
ON SR 1222 (TULLS CREEK ROAD)

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-2950	2A	22
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
32773.1.1	BRZ-1222(2)	P.E.	

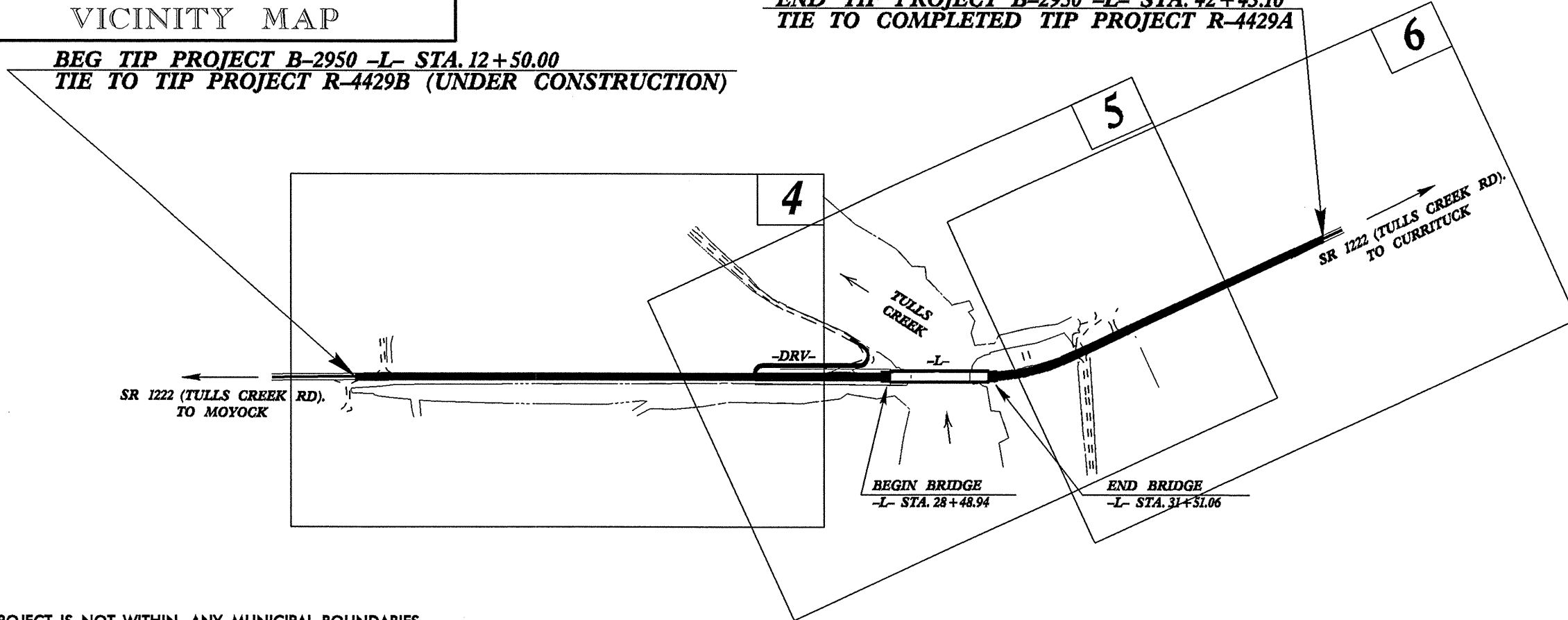


VICINITY MAP



BEG TIP PROJECT B-2950 -L- STA. 12+50.00
TIE TO TIP PROJECT R-4429B (UNDER CONSTRUCTION)

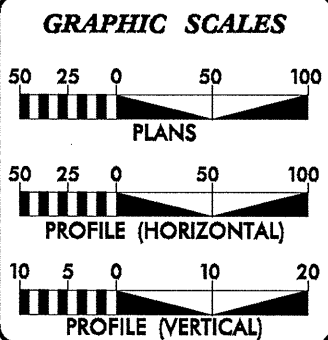
END TIP PROJECT B-2950 -L- STA. 42+43.10
TIE TO COMPLETED TIP PROJECT R-4429A



1. THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.
 2. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY _____.
- ★ DESIGN EXCEPTIONS REQUIRED FOR MIN. HORIZONTAL CURVE RADIUS (610').

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

CONTRACT:



DESIGN DATA

ADT 2006 =	4224
ADT 2026 =	8304
DHV =	14%
D =	60%
T =	5% *
V =	50 MPH *
RURAL COLLECTOR	
* TTST 2% + DUAL 3%	

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-2950 =	0.510 MI
LENGTH STRUCTURE TIP PROJECT B-2950 =	0.057 MI
TOTAL LENGTH TIP PROJECT B-2950 =	0.567 MI

Prepared In the Office of:

DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

2002 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE: JUNE 16, 2006	GARY LOVERING, PE PROJECT ENGINEER
LETTING DATE: JUNE 19, 2007	ANTHONY C. WEST PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

September 12, 2006

STATE PROJECT: 32773.1.1 B-2950
F. A. PROJECT: BRZ-1222 (2)
COUNTY: Currituck
DESCRIPTION: Bridge No. 4 on SR 1222 (Tulls Creek Rd.) over Tulls Creek
SUBJECT: Geotechnical Report – Revised Inventory

Due to the redesigning of the proposed bridge and approaches the Inventory report submitted September 12, 2002 should be disregarded. However, data collect during that investigation as well as a Corridor Study submitted February 24, 2000 and two investigations performed by Mactec Engineering in September and October of 2003 were used in this report. This report supercedes all previously submitted reports.

Project Description

The proposed project is located on SR 1222 at the existing bridge over Tulls Creek approximately 5± miles east of Moyock. Based on the current plans, the roadway portion of the project will primarily consist of constructing the approaches for the replacement structure which includes some minor widening of the SR 1222 embankment along the existing alignment. The investigation of subsurface conditions was confined to the corridor of proposed new construction.

The following base lines were investigated for this project:

<u>Line</u>	<u>Station</u>
-L-	12+50 to 43+13
-DRV-	10+00 to 14+49

Areas of Special Geotechnical Interest

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

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>
-L-	12+50 to 28+50
-DRV-	10+00 to 14+49

- 2) Typically, the entire project exhibits a high water table or the potential for ground water related construction problems.

Physiography and Geology

The project corridor is located in the Tidewater region of the Lower Coastal Plain Physiographic Province. The geology of the area generally consists of Quaternary age surficial sediments underlain by marine deposits possibly belonging to the Pliocene age Yorktown Formation. Topography along the project is nearly flat. Elevations along the project range from -13± feet along the bed of Tulls Creek to 11± feet above sea level on the existing roadway embankment. The project is drained by canals and ditches which flow into Tulls Creek. Surface drainage along the entire project is poor.

Ground Water

Ground water data was collected primarily from January 2000 to August 2002 during above average rainfall conditions. Typically, ground water levels were measured at an elevation of 2 feet above sea level to -1± foot below sea level. The entire project is subject to flooding during hurricanes and other severe storms.

Soils

Soils occurring along the project are derived from marine and fluvial sediments deposited in the geologic past. Based on origin and occurrence, soils encountered during this investigation are separated into four major categories. The categories are alluvium, upland soils, marine deposits and roadway embankments.

Alluvium was encountered along the northwest approach from the beginning of the project to station 28+50±. Typically the alluvium consists of 1± to 26± feet of very soft organic silt (A-5) and peat or organic clay (A-7-5). Vane Shear Tests taken in the organic soils show typical shear strengths of 80 to 450 psf in the upper 8 to 10 feet and 450 to 870 psf in the cohesive soils. The organic and moisture contents of tested samples range from 7 to 22 and 107 to 226 percent, respectively. One undisturbed (Shelby Tube) sample (ST-5) was taken during the original inventory investigation submitted on September 12, 2002. In addition, four Shelby tube samples (ST-1 through ST-4) were taken during the Corridor Study submitted February 24, 2000 are also included in this investigation.

Upland soils are present along the southeast approach from station 31+50± to the end of the project. Typically the upland soils consist of 2 to 4 feet of soft sandy clay (A-6) and sandy silt (A-4). The silt and clay soils exhibit fair to poor engineering properties and present potential subgrade problems due to a soft consistency and relatively high tested moisture content of 25± percent.

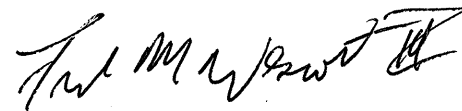
Deposits of marine origin (possibly Yorktown Formation) underlie the surficial upland soils and alluvial deposits at typical depths of 2± to 4± feet in the upland areas and 2± to 26± feet in the marshy flood plain areas. Typically the marine sediments consist of alternating layers of very loose to very dense sands (A-2-4, A-3) and very soft to very stiff silty clay (A-7-6).

Embankments are man-made fills built during construction of the existing SR 1222 roadway. The existing approach embankment soils are typically 1 to 6 feet thick and consist of mixed silty sand (A-2-4) and sandy silt (A-4). The embankment material exhibits fair to good engineering properties.

Undisturbed Samples

<u>Sample</u>	<u>Old Station(±)</u>	<u>New Station(±)</u>	<u>Depth(ft.)</u>	<u>Tests</u>
ST-1	21+00, 65' RT	17+32, 12' RT	7.0-9.0	Triaxial Cu & Consolidation
ST-2	27+00, CL	24+32, 50' LT	0.5-2.5	Triaxial Cu & Consolidation
ST-3	28+00, CL	25+32, 50' LT	5.0-7.0	Triaxial Cu & Consolidation
ST-4	28+00, CL	25+32, 50' LT	10.0-12.0	Triaxial Cu & Consolidation
ST-5	23+00, 20' RT	20+32, 30' LT	3.0-5.0	Consolidation

Prepared by,



Fred M. Wescott III
Project Geological Engineer

EARTHWORK BALANCE SHEET

Volumes in Cubic Yards

PROJECT: B-2950

COUNTY Currituck

DATE: February 12, 2007

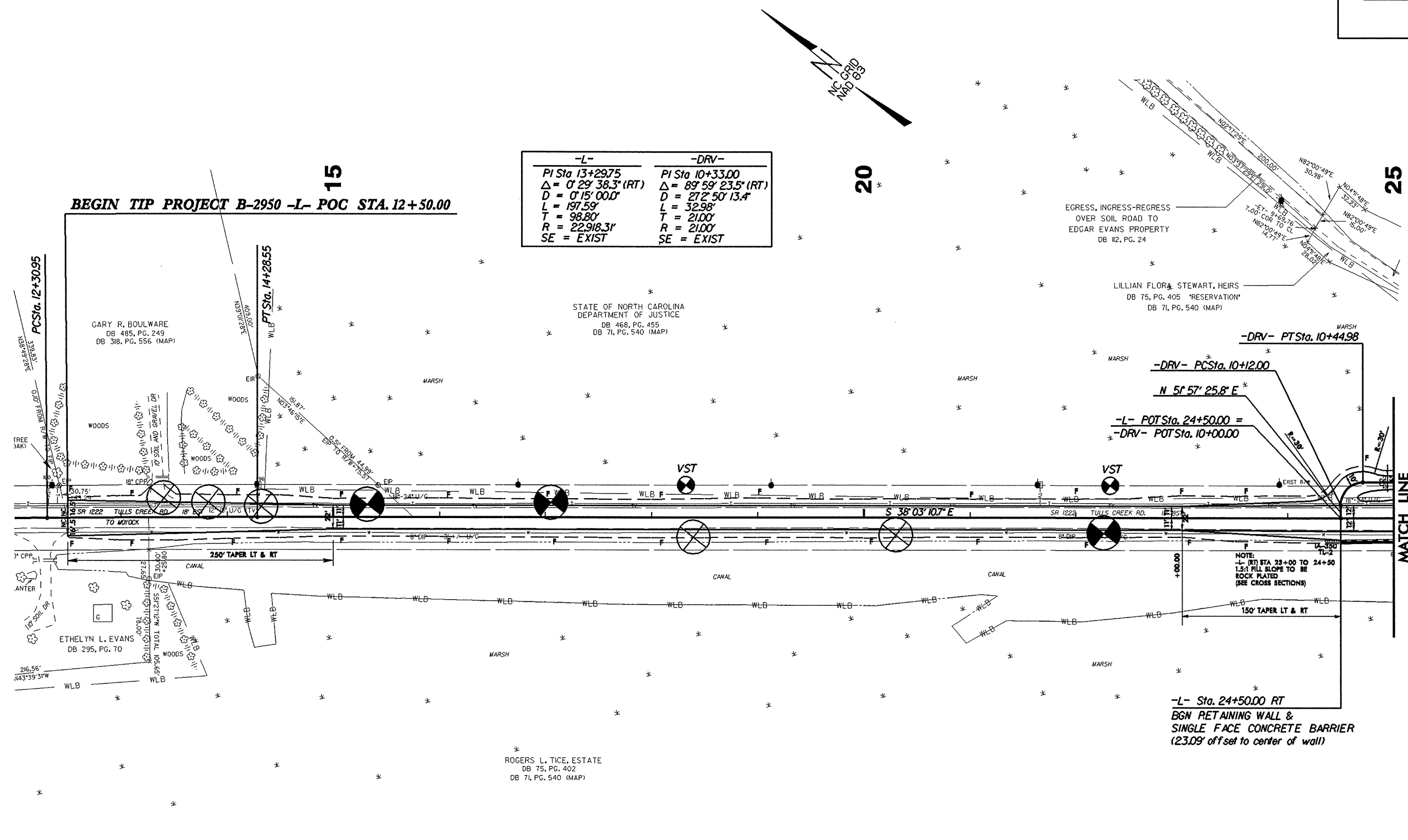
SHEET 3-B

LINE	STATION	STATION	TOTAL EXCAV. (UNCL.)	ROCK EXCAV.	UNDERCUT	UNSUIT. EXCAV.	SUITABLE EXCAV.	TOTAL EMB.	ROCK EMB.	EARTH EMB.	EMBANK. +30%	BORROW	UNSUIT. WASTE	TOTAL WASTE	*LIGHT WEIGHT FILL (CY)
-L-															
Summary No. 1															
	Sta 12+50 to 24+50 (begin wall)		118			118		161		161	209	209	118	118	
Summary No. 1 Subtotal			118			118		161		161	209	209	118	118	
Summary No. 2 *															
	Sta 24+50 (begin wall) to 28+60 (end retaining wall)				3612								3612	3612	*4725
Summary No. 2 Subtotal					3612								3612	3612	*4725
Summary No. 3															
	Sta 31+51.06 (end bridge) to 42+43.10		1004		1373	1004		4369		4369	5680	5680	2377	2377	
Summary No. 3 Subtotal			1004		1373	1004		4369		4369	5680	5680	2377	2377	
-DRV1-															
Summary No. 4															
	Sta 10+16 to 13+75		25			25		155		155	202	202	25	25	
Summary No. 4 Subtotal			25			25		155		155	202	202	25	25	
-DRV2-															
Summary No. 5															
	Sta 10+20 to 11+29.57		7			7		123		123	160	160	7	7	
Summary No. 5 Subtotal			7			7		123		123	160	160	7	7	
Total			1154		4985	1154		4808		4808	6251	6251	6139	6139	
Additional Undercut					500			500		500	650	650	500	500	
Project Totals			1154		5485	1154		5308		5308	6901	6901	6639	6639	
5% to replace topsoil on borrow pits												345			
Grand Totals			1154		5485	1154		5308		5308	6901	7246		6639	*4725
Say			1160		5500							7250		6650	*4750
*Light weight aggregate quantity includes backfill for undercut.															

"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."

PROJECT REFERENCE NO.		SHEET NO.	
B-2950		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			

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P.S. = PAVED SHOULDER
 FOR -L- & -DRV- PROFILES SEE SHEET 7 & 8
 DESIGN EXCEPTION REQUIRED FOR MIN. HORIZONTAL CURVE RADIUS (610').

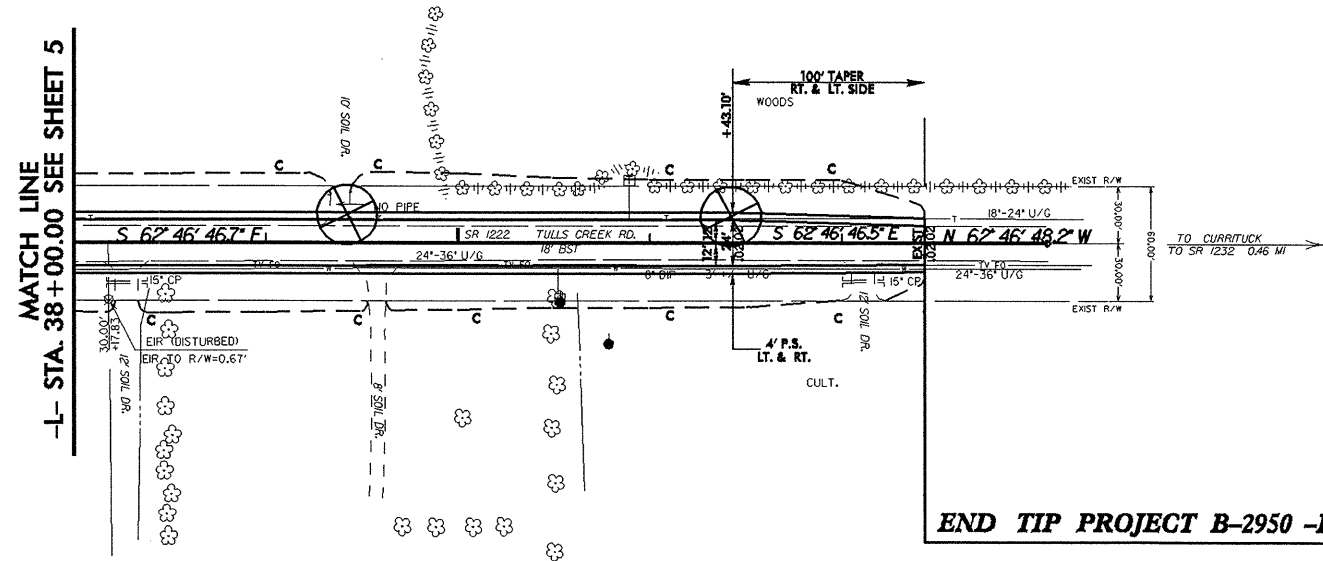
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RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>			
INCOMPLETE PLANS <small>DO NOT USE FOR R/W ACQUISITION</small>			

40



E. F. HUMPHRIES, JR.
 DB 115, PG. 627
 DB 70, PG. 364
 WILL BK. 8, PG. 299
 WILL BK. 7, PG. 278

MATCH LINE
 -L- STA. 38+00.00 SEE SHEET 5



END TIP PROJECT B-2950 -L- STA. 42+43.10

7

LESTER INTERPRISES, INC
 DB 170, PG. 765
 DB 102, PG. 350 (MAP)
 DB 142, PG. 58 (MAP)

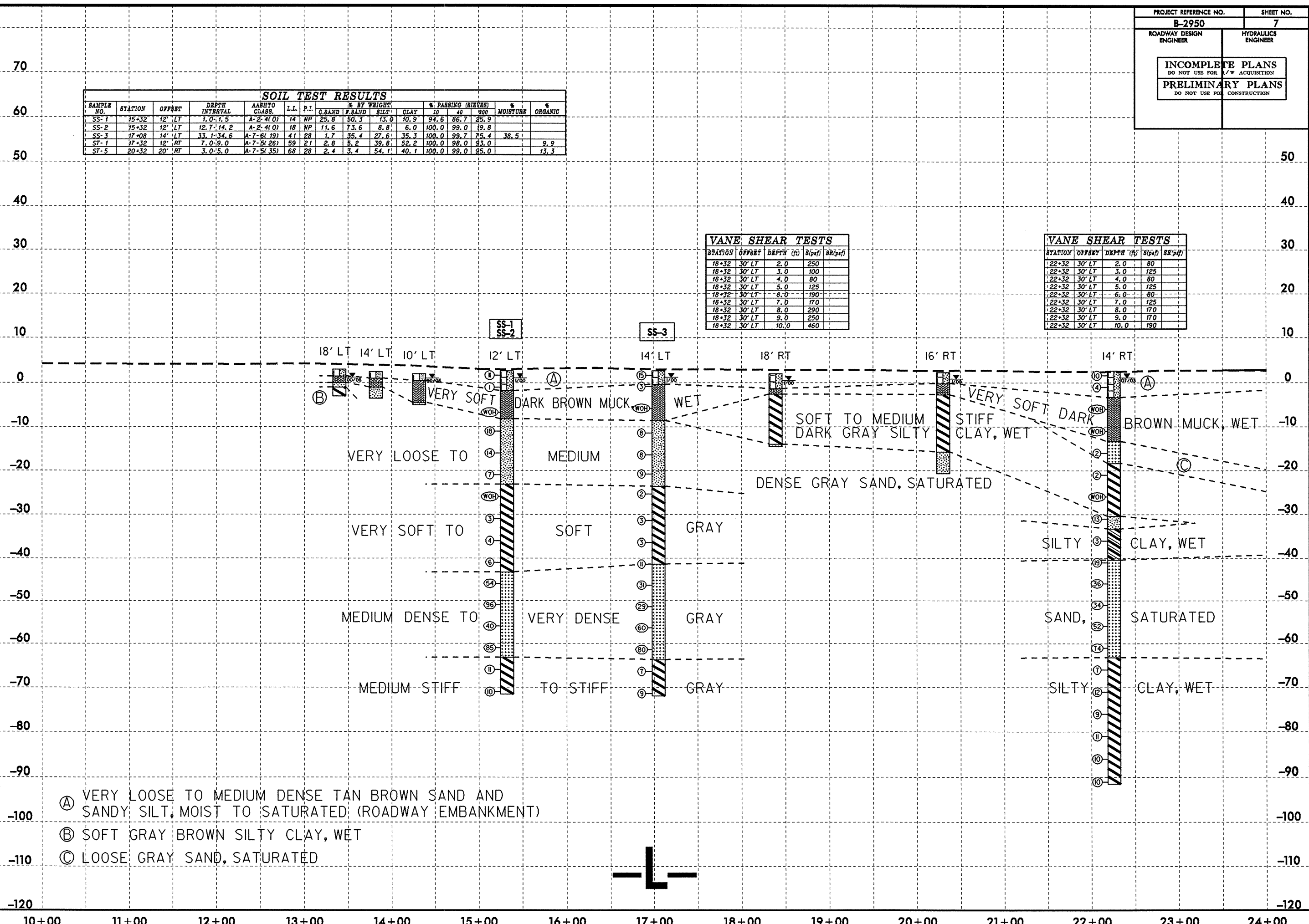
ELMER M. WALKER
 DB 112, PG. 540
 DB 352, PG. 666

NOTE: UTILITY WORK LABELED INSIDE SHAPES COMPLETED IN PROJECT R-4429A
 P.S. = PAVED SHOULDER
 FOR -L- PROFILE SEE SHEETS 7 & 8
 + DESIGN EXCEPTION REQUIRED FOR MIN. HORIZONTAL CURVE RADIUS (610').

SOIL TEST RESULTS														
SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	ASBESTO CLASS.	L.L.	P.I.	% BY WEIGHT			% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	NO	40	200		
SS-1	15+32	12' LT	1.0'-1.5	A-2-4(1)	14	WP	25.8	50.3	13.0	10.9	94.6	86.7	25.9	
SS-2	15+32	12' LT	12.7'-14.2	A-2-4(1)	18	WP	11.6	73.6	8.8	6.0	100.0	99.0	19.8	
SS-3	17+08	14' LT	33.1'-34.6	A-7-6(19)	41	28	1.7	35.4	27.6	35.3	100.0	99.7	75.4	38.5
ST-1	17+32	12' RT	7.0'-9.0	A-7-5(26)	59	21	2.8	5.2	39.8	52.2	100.0	98.0	93.0	9.9
ST-5	20+32	20' RT	3.0'-5.0	A-7-5(35)	68	28	2.4	3.4	54.1	40.1	100.0	99.0	95.0	13.3

VANE SHEAR TESTS				
STATION	OFFSET	DEPTH (ft)	S(psf)	SR(psf)
18+32	30' LT	2.0	250	
18+32	30' LT	3.0	100	
18+32	30' LT	4.0	80	
18+32	30' LT	5.0	125	
18+32	30' LT	6.0	190	
18+32	30' LT	7.0	170	
18+32	30' LT	8.0	290	
18+32	30' LT	9.0	250	
18+32	30' LT	10.0	460	

VANE SHEAR TESTS				
STATION	OFFSET	DEPTH (ft)	S(psf)	SR(psf)
22+32	30' LT	2.0	80	
22+32	30' LT	3.0	125	
22+32	30' LT	4.0	80	
22+32	30' LT	5.0	125	
22+32	30' LT	6.0	80	
22+32	30' LT	7.0	125	
22+32	30' LT	8.0	170	
22+32	30' LT	9.0	170	
22+32	30' LT	10.0	190	



- Ⓐ VERY LOOSE TO MEDIUM DENSE TAN BROWN SAND AND SANDY SILT, MOIST TO SATURATED (ROADWAY EMBANKMENT)
- Ⓑ SOFT GRAY BROWN SILTY CLAY, WET
- Ⓒ LOOSE GRAY SAND, SATURATED

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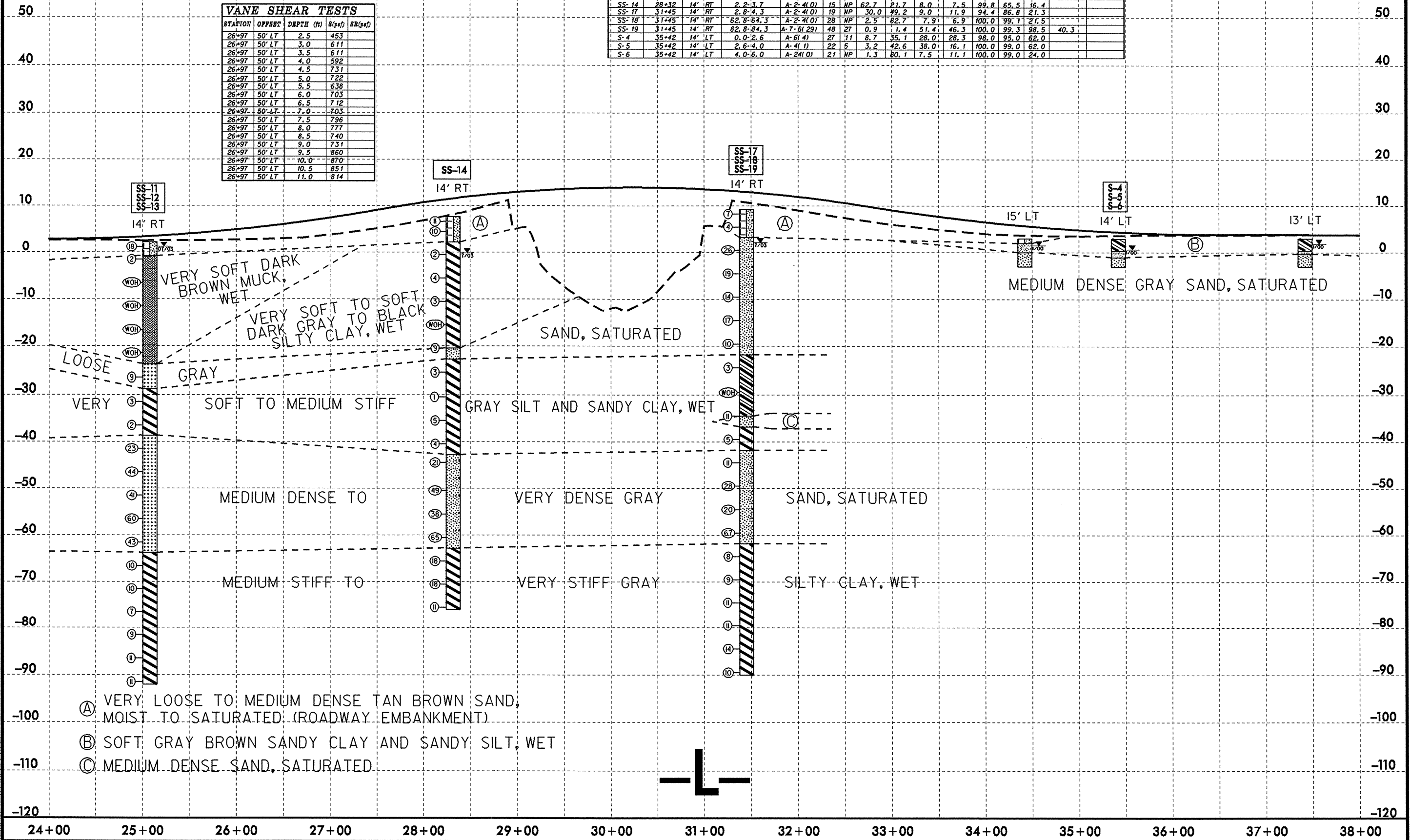
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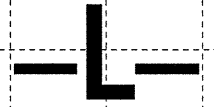
PROJECT REFERENCE NO. B-2950	SHEET NO. 8
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT			% PASSING (SIEVES)			% MOISTURE	% ORGANIC	
							C.SAND	F.SAND	SILT	10	40	200			
ST-2	24+32	50' LT	0.5-2.5	A-7-6(20)	73	12	10.5	16.4	48.9	34.2	100.0	92.0	86.0		
SS-11	25+08	14' RT	37.7-39.2	A-7-6(22)	47	21	0.3	10.6	41.1	48	100.0	99.9	93.3	43.8	
SS-12	25+08	14' RT	52.7-54.2	A-3(0)	21	NP	73.6	22.7	1.4	2.3	99.9	89.2	4.5		
SS-13	25+08	14' RT	72.7-74.2	A-7-6(33)	52	30	1.3	1.3	51.0	46.4	100.0	99.2	98.1	42.3	
ST-3	25+32	50' LT	5.0-7.0	A-7-5(4)	47	17	26.2	14.1	35.6	24.1	74.0	64.0	45.0	9.2	
ST-4	25+32	50' LT	10.0-12.0	A-7-6(13)	45	18	5.4	23.7	34.6	36.2	100.0	97.0	73.0	7.0	
SS-14	28+32	14' RT	2.2-3.7	A-2-4(0)	15	NP	62.7	21.7	8.0	7.5	99.8	65.5	16.4		
SS-17	31+45	14' RT	2.8-4.3	A-2-4(0)	19	NP	30.0	49.2	9.0	11.9	94.4	86.8	21.3		
SS-18	31+45	14' RT	62.8-64.3	A-2-4(0)	28	NP	2.5	82.7	7.9	6.9	100.0	99.1	21.5		
SS-19	31+45	14' RT	82.8-84.3	A-7-6(29)	48	27	0.9	1.4	51.4	46.3	100.0	99.3	98.5	40.3	
S-4	35+42	14' LT	0.0-2.6	A-6(4)	27	11	8.7	35.1	28.0	28.3	98.0	95.0	62.0		
S-5	35+42	14' LT	2.6-4.0	A-4(1)	22	5	3.2	42.6	38.0	16.1	100.0	99.0	62.0		
S-6	35+42	14' LT	4.0-6.0	A-24(0)	21	NP	1.3	80.1	7.5	11.1	100.0	99.0	24.0		

VANE SHEAR TESTS				
STATION	OFFSET	DEPTH (ft)	S(psf)	BR(psf)
26+97	50' LT	2.5	453	
26+97	50' LT	3.0	611	
26+97	50' LT	3.5	611	
26+97	50' LT	4.0	592	
26+97	50' LT	4.5	731	
26+97	50' LT	5.0	722	
26+97	50' LT	5.5	638	
26+97	50' LT	6.0	703	
26+97	50' LT	6.5	712	
26+97	50' LT	7.0	703	
26+97	50' LT	7.5	796	
26+97	50' LT	8.0	777	
26+97	50' LT	8.5	740	
26+97	50' LT	9.0	731	
26+97	50' LT	9.5	860	
26+97	50' LT	10.0	870	
26+97	50' LT	10.5	851	
26+97	50' LT	11.0	814	

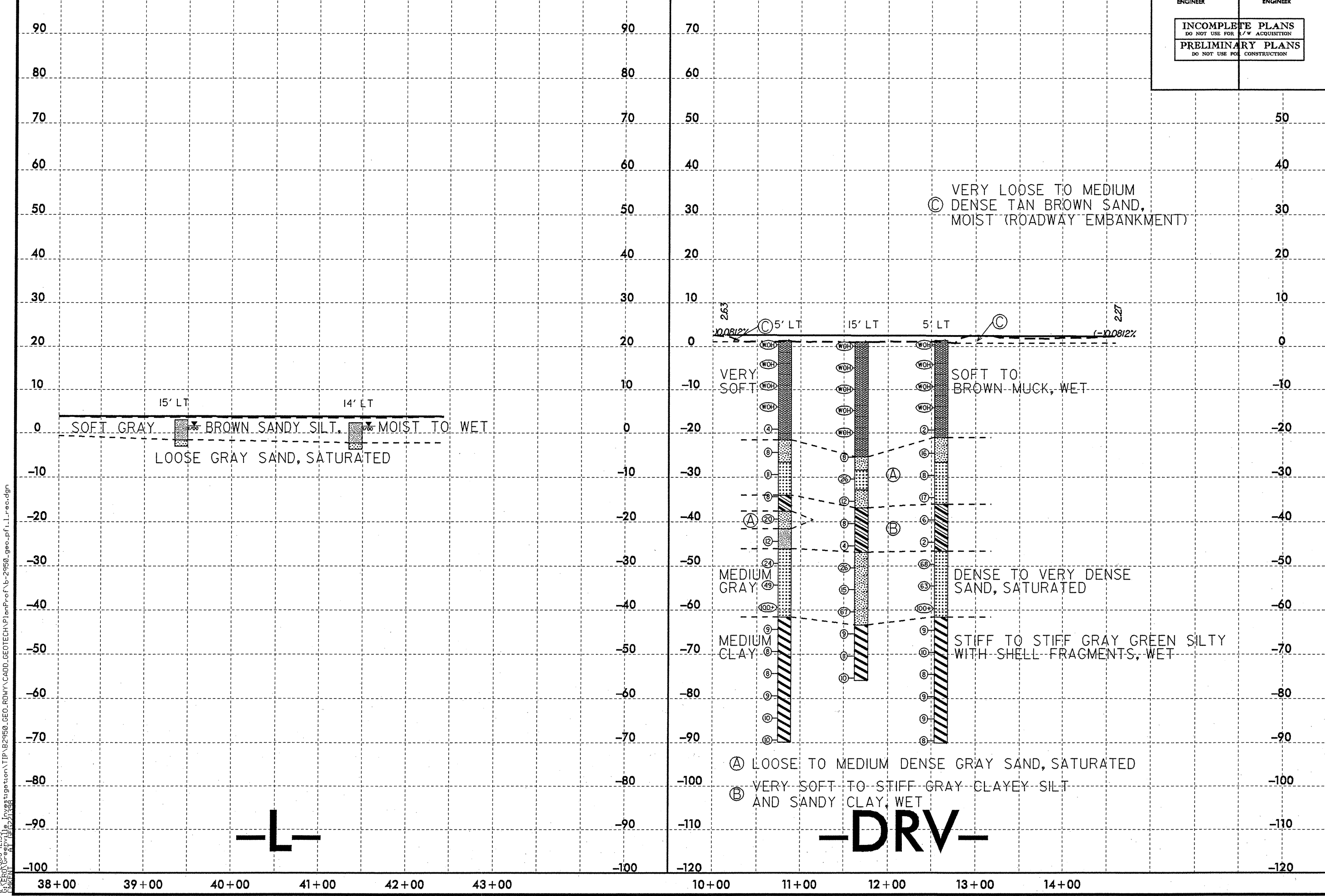


- Ⓐ VERY LOOSE TO MEDIUM DENSE TAN BROWN SAND, MOIST TO SATURATED (ROADWAY EMBANKMENT)
- Ⓑ SOFT GRAY BROWN SANDY CLAY AND SANDY SILT, WET
- Ⓒ MEDIUM DENSE SAND, SATURATED



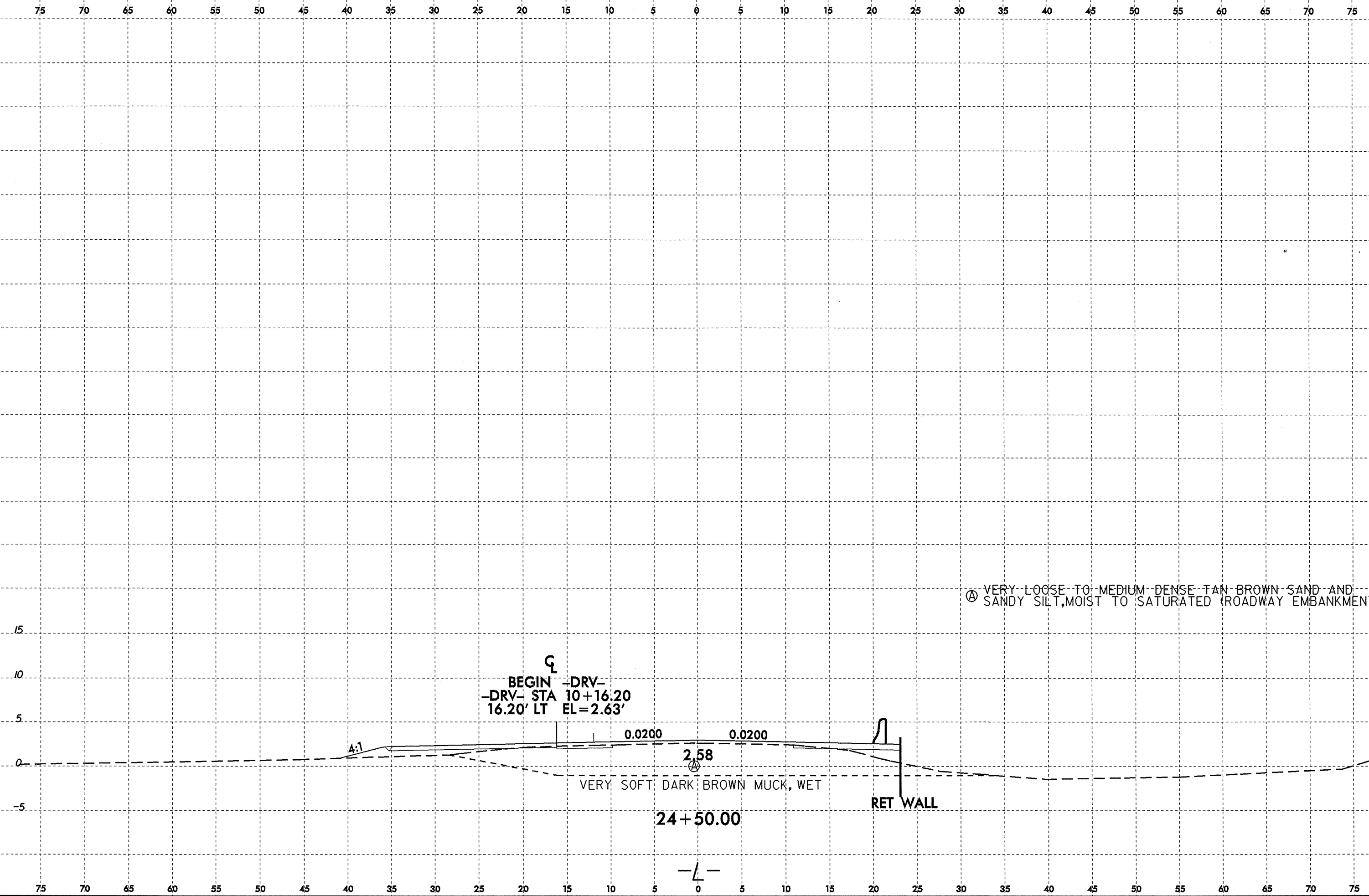
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ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

5/14/99



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CL
BEGIN -DRY-
-DRY- STA 10+16.20
16.20' LT EL=2.63'

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2.58
VERY SOFT DARK BROWN MUCK, WET

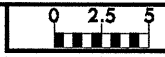
RET WALL

Ⓐ VERY LOOSE TO MEDIUM DENSE TAN BROWN SAND AND SANDY SILT, MOIST TO SATURATED (ROADWAY EMBANKMENT)

24+50.00

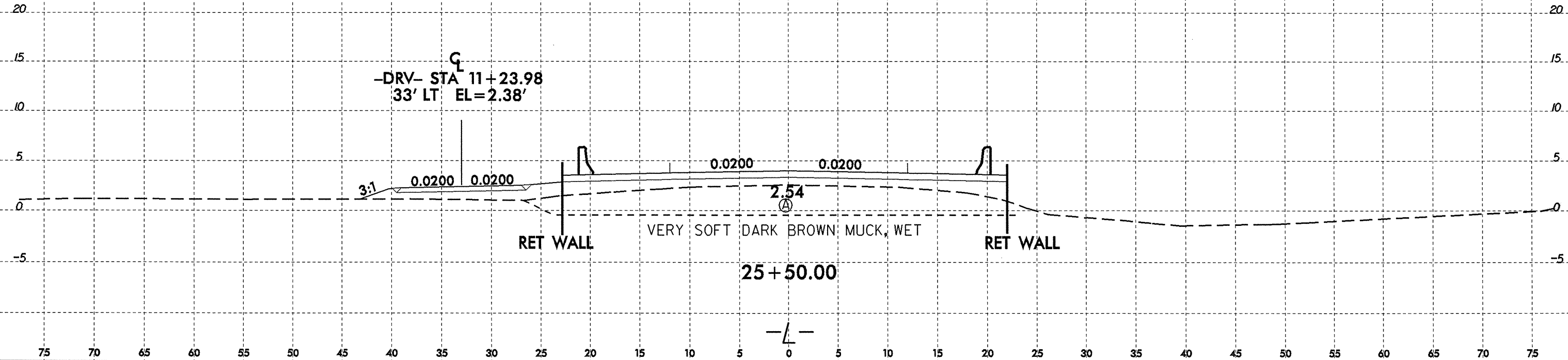
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PROJ. REFERENCE NO.	SHEET NO.
B-2950	12

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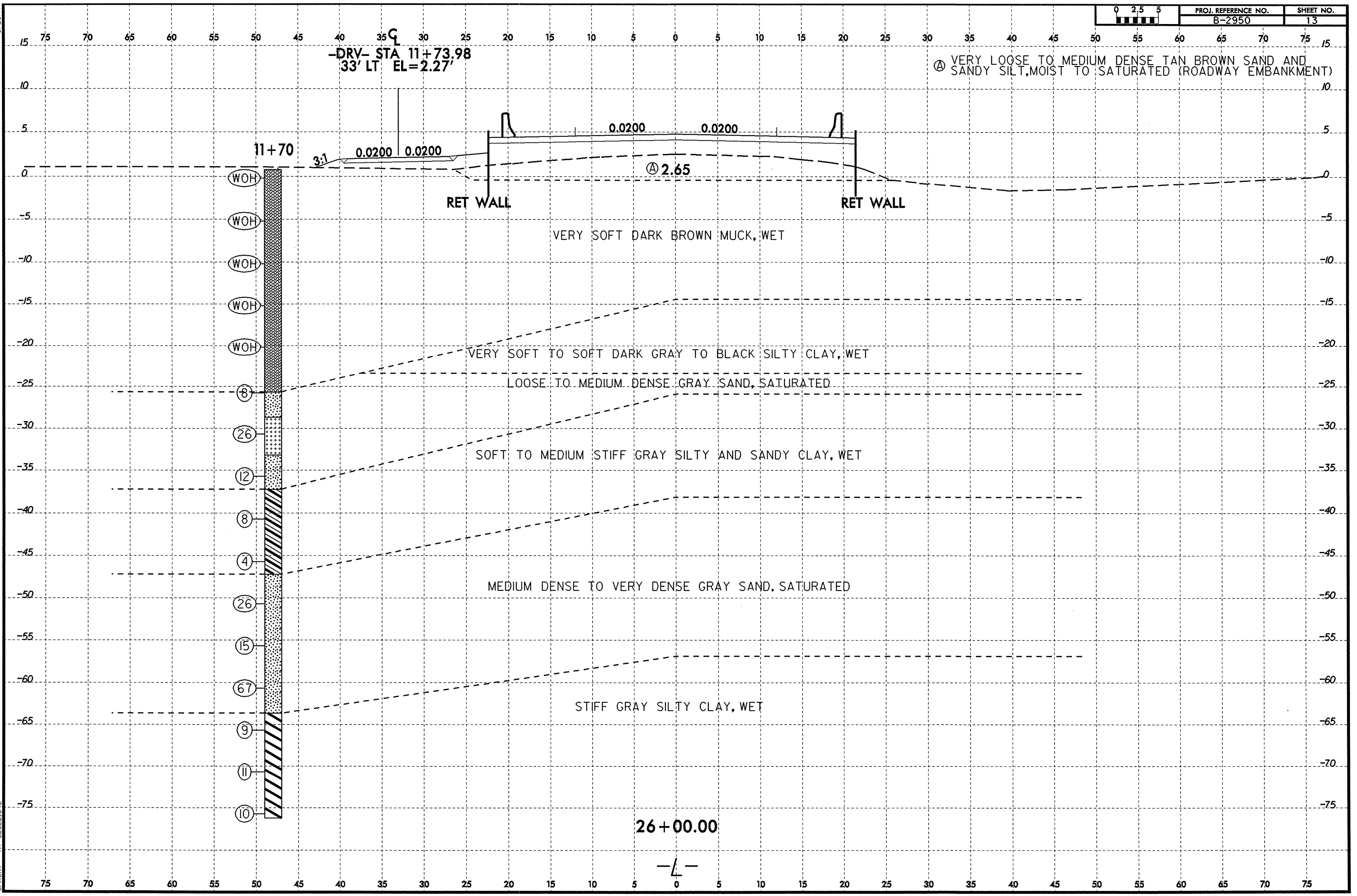


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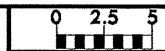
-DRV- STA 11+73.98
33' LT EL=2.27'

⊕ VERY LOOSE TO MEDIUM DENSE TAN BROWN SAND AND SANDY SILT, MOIST TO SATURATED (ROADWAY EMBANKMENT)



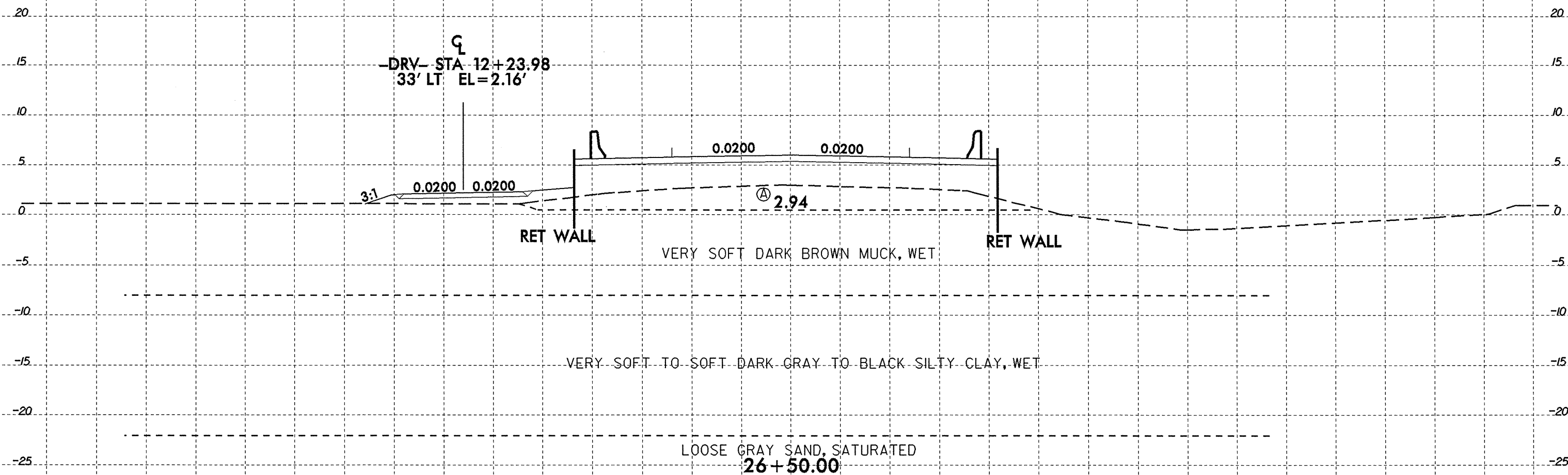
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PROJ. REFERENCE NO. B-2950 SHEET NO. 14

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DRV STA 12+23.98
33' LT EL=2.16'

RET WALL

VERY SOFT DARK BROWN MUCK, WET

RET WALL

VERY SOFT TO SOFT DARK GRAY TO BLACK SILTY CLAY, WET

LOOSE GRAY SAND, SATURATED

VERY LOOSE TO MEDIUM DENSE TAN BROWN SAND AND SANDY SILT, MOIST TO SATURATED (ROADWAY EMBANKMENT)

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3:1 0.0200 0.0200

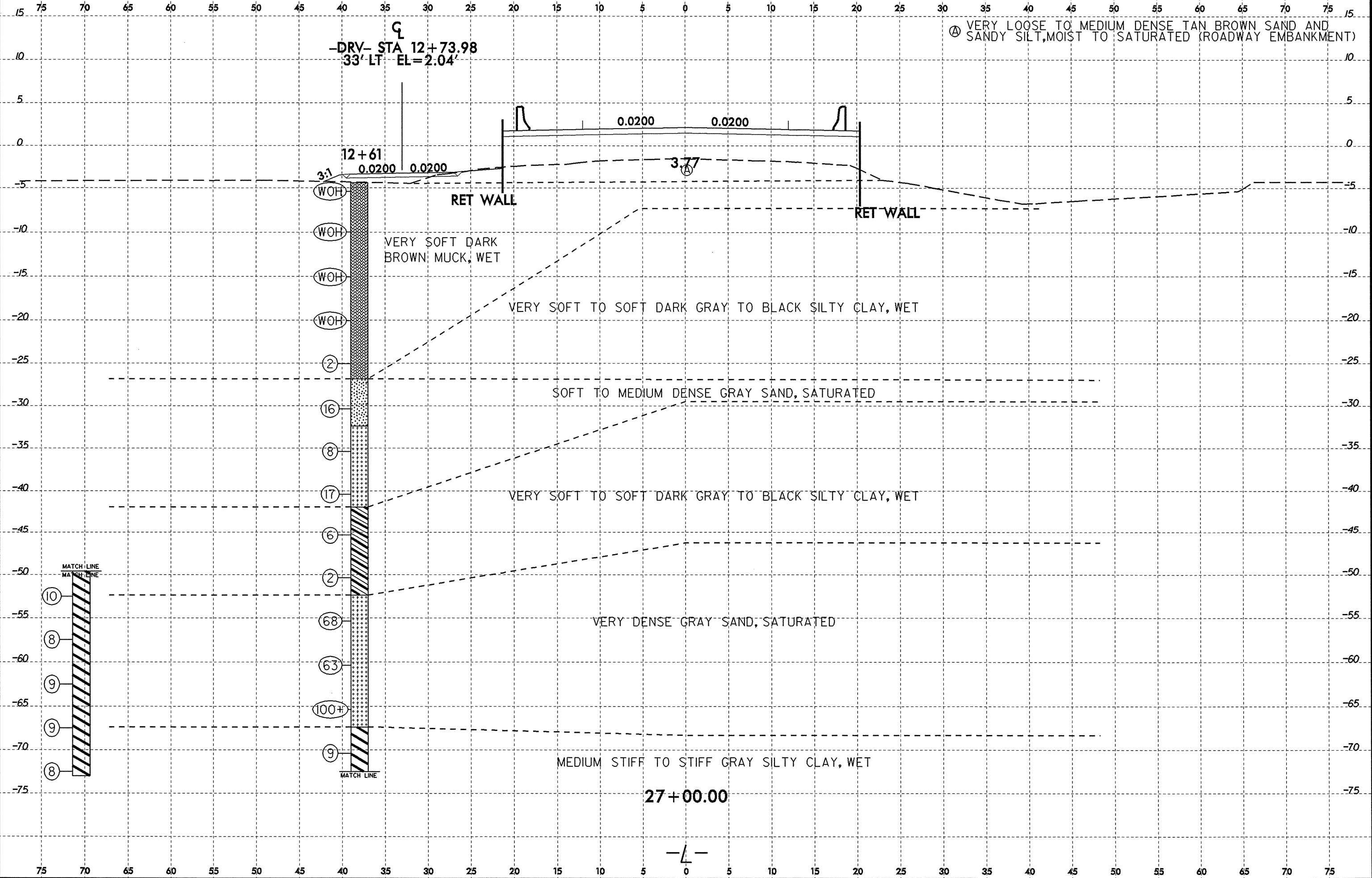
2.94

26+50.00

-4-

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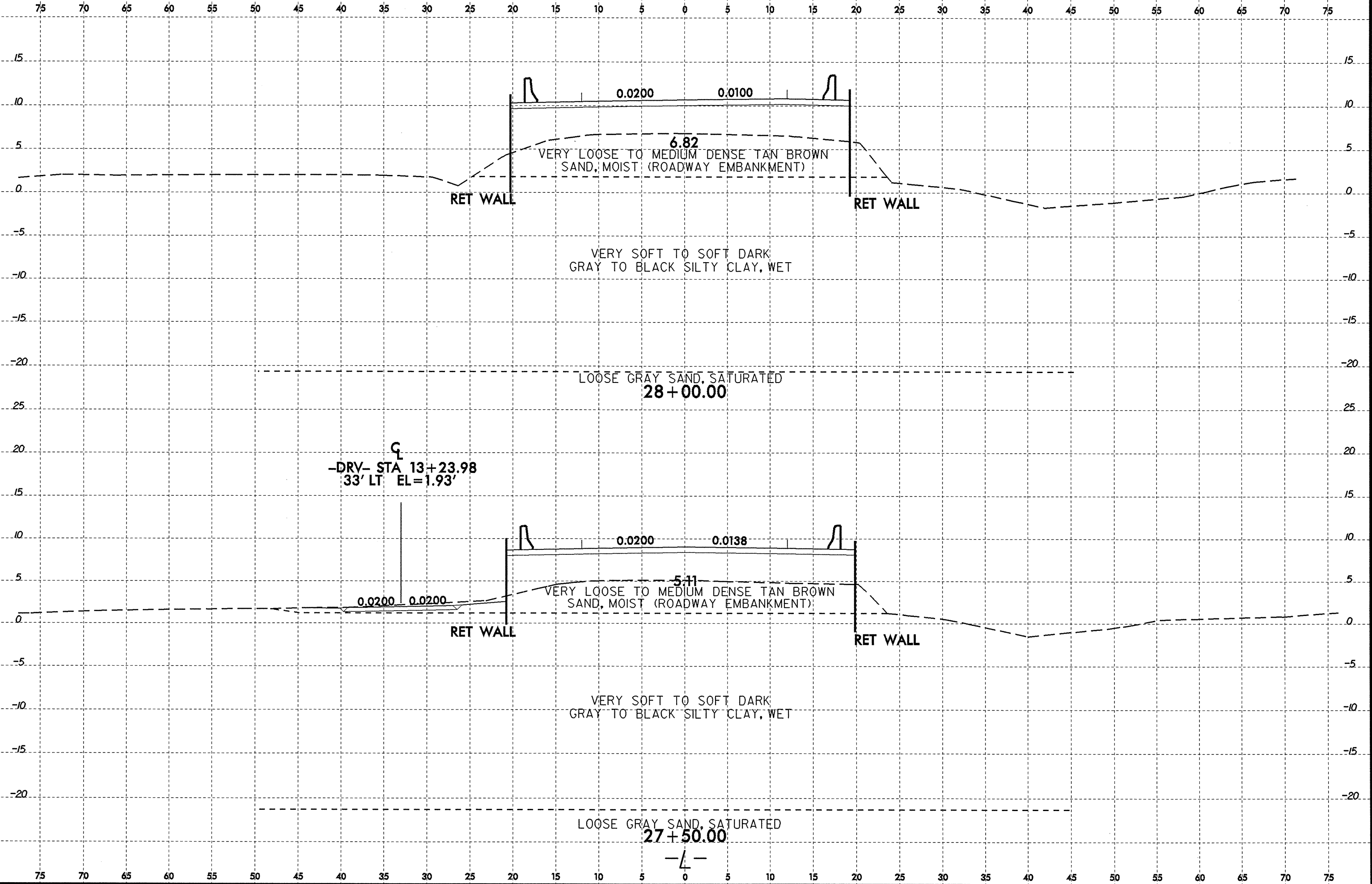
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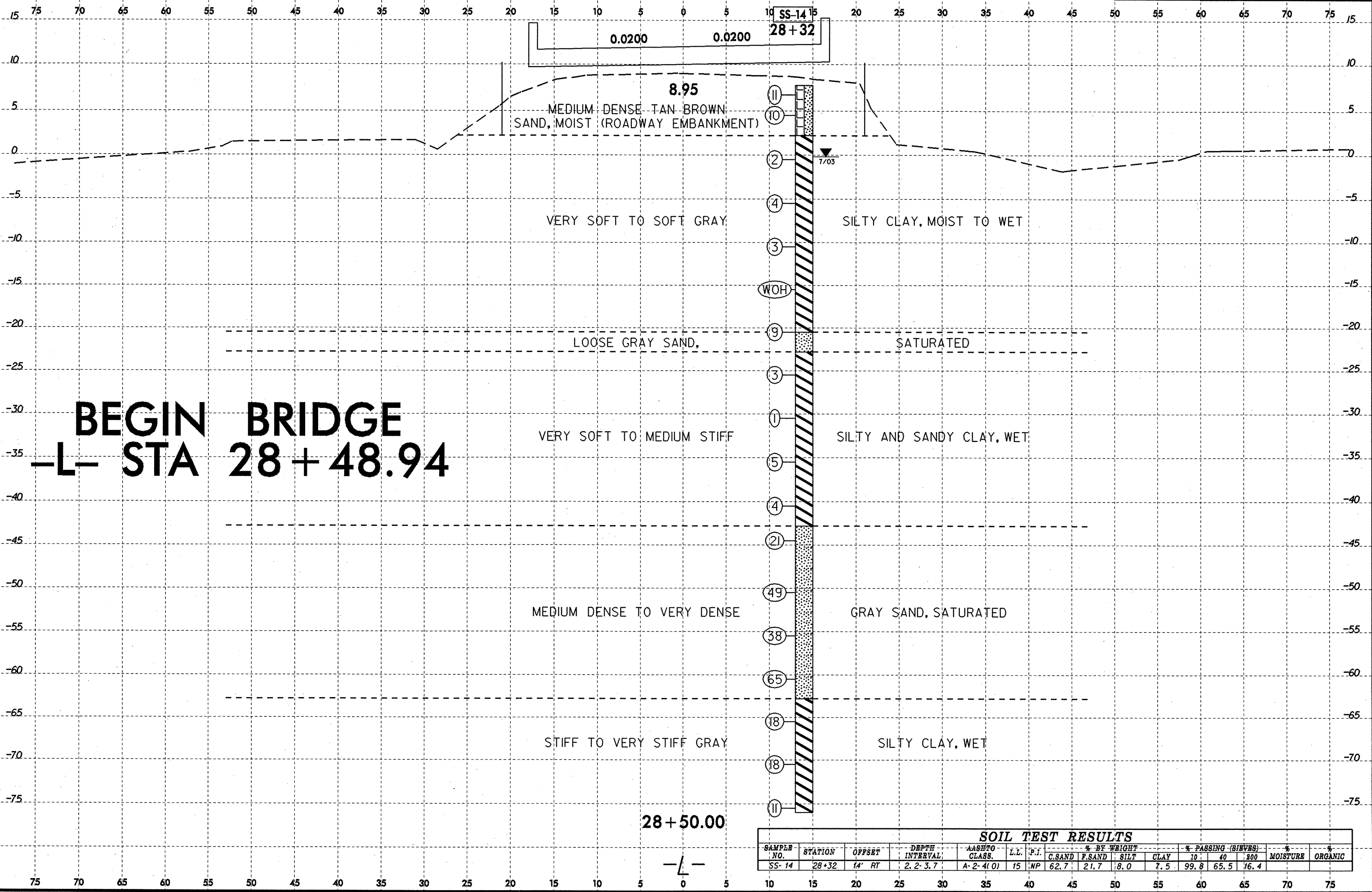
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8/23/99



BEGIN BRIDGE
-L- STA 28 + 48.94

0.0200 0.0200 28 + 32
 8.95
 MEDIUM DENSE TAN BROWN SAND, MOIST (ROADWAY EMBANKMENT)

VERY SOFT TO SOFT GRAY

SILTY CLAY, MOIST TO WET

LOOSE GRAY SAND,

SATURATED

VERY SOFT TO MEDIUM STIFF

SILTY AND SANDY CLAY, WET

MEDIUM DENSE TO VERY DENSE

GRAY SAND, SATURATED

STIFF TO VERY STIFF GRAY

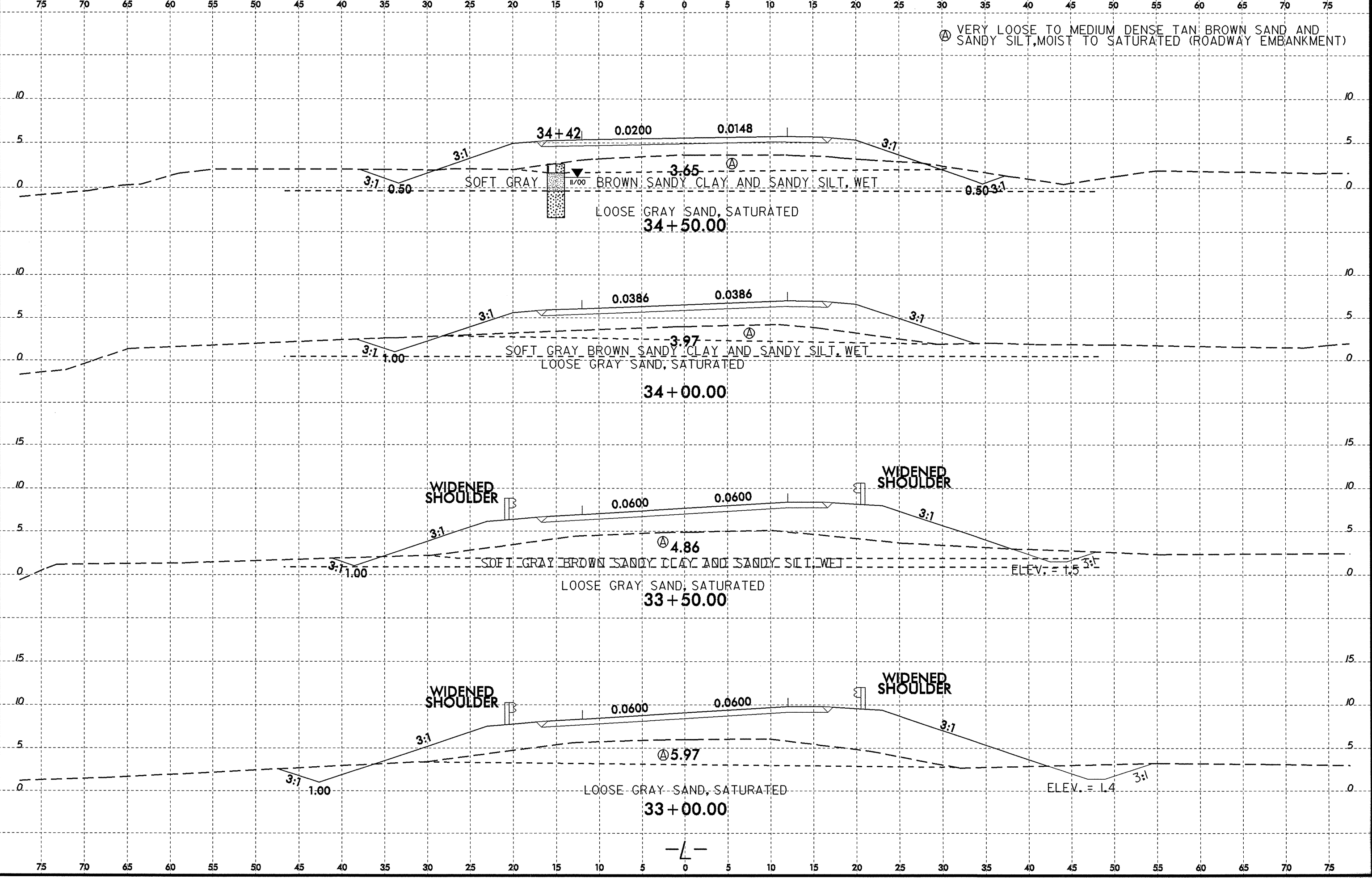
SILTY CLAY, WET

28 + 50.00

SOIL TEST RESULTS															
SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE ORGANIC	
							C.SAND	F.SAND	SILT	CLAY	10	40	200	MOISTURE	ORGANIC
SS-14	28+32	14' RT	2.2-3.7	A-2-4(0)	15	NP	62.7	21.7	8.0	7.5	99.8	65.5	16.4		

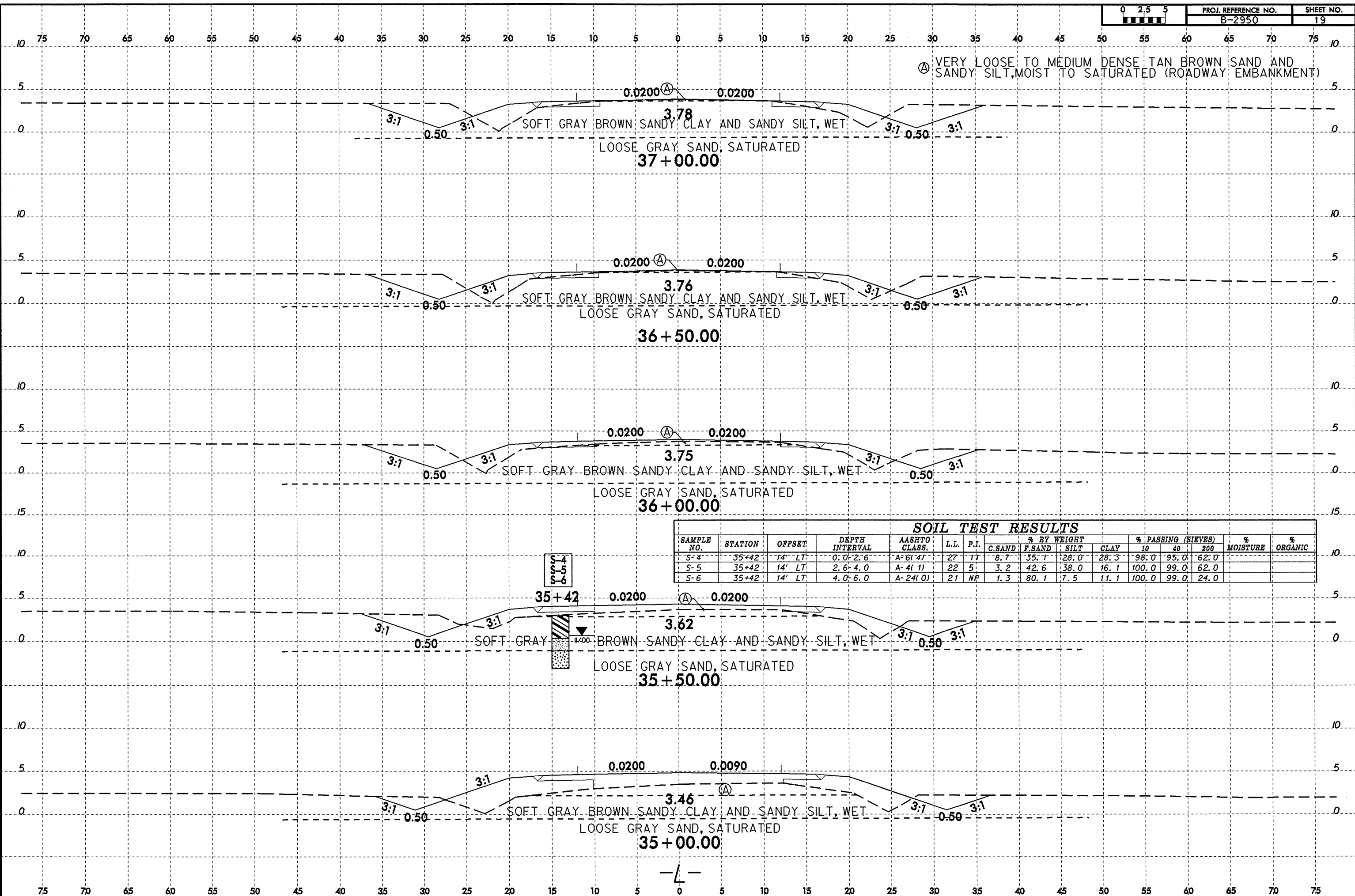
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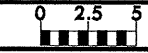
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SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-4	35+42	14' LT	0.0-2.6	A-6(4)	27	17	8.7	35.1	28.0	28.3	98.0	95.0	62.0		
S-5	35+42	14' LT	2.6-4.0	A-4(1)	22	5	3.2	42.6	38.0	16.1	100.0	99.0	62.0		
S-6	35+42	14' LT	4.0-6.0	A-24(0)	21	NP	1.3	80.1	7.5	11.1	100.0	99.0	24.0		

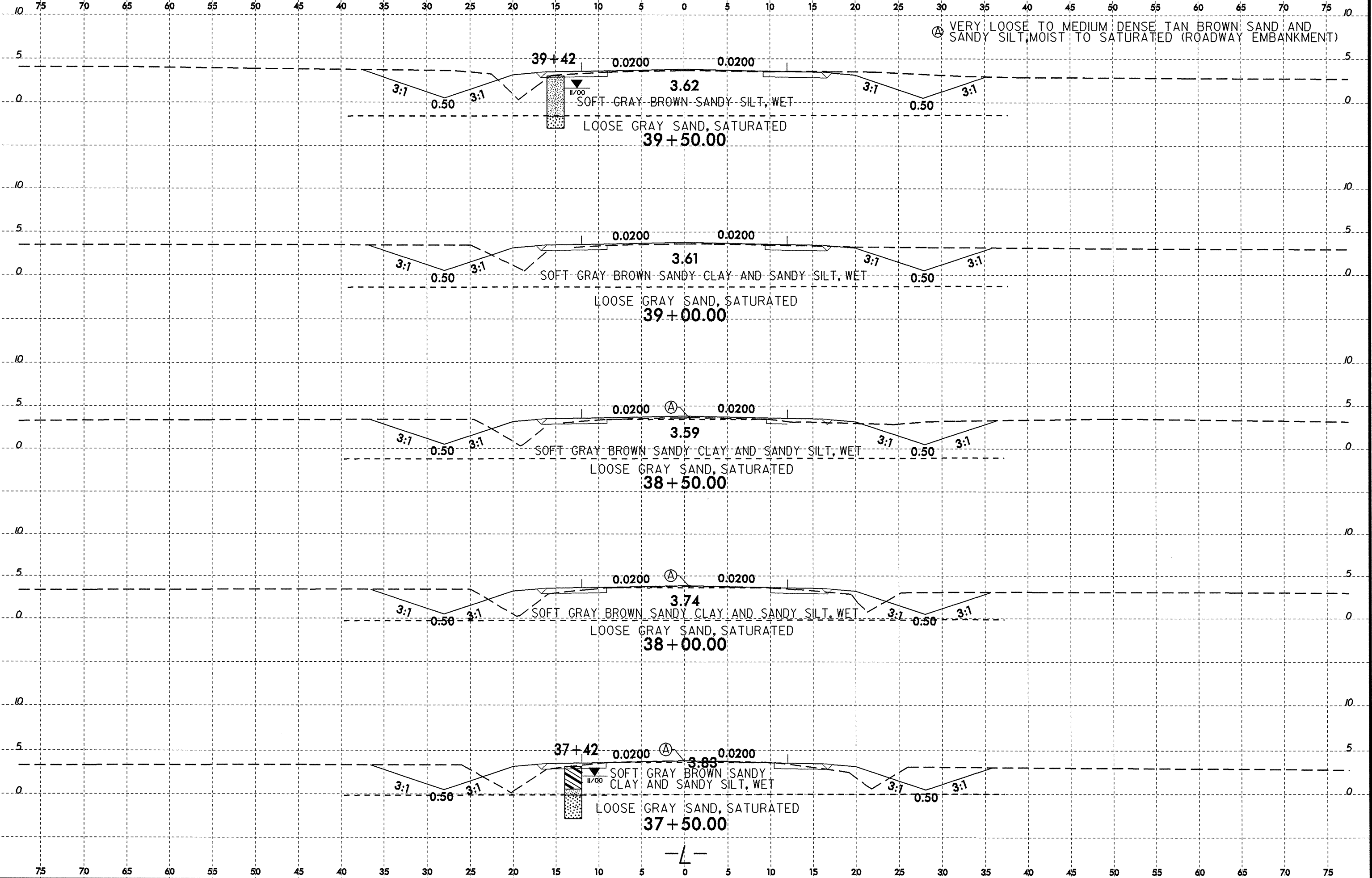
-L-

8/23/99



PROJ. REFERENCE NO. B-2950 SHEET NO. 20

Ⓐ VERY LOOSE TO MEDIUM DENSE TAN BROWN SAND AND SANDY SILT, MOIST TO SATURATED (ROADWAY EMBANKMENT)



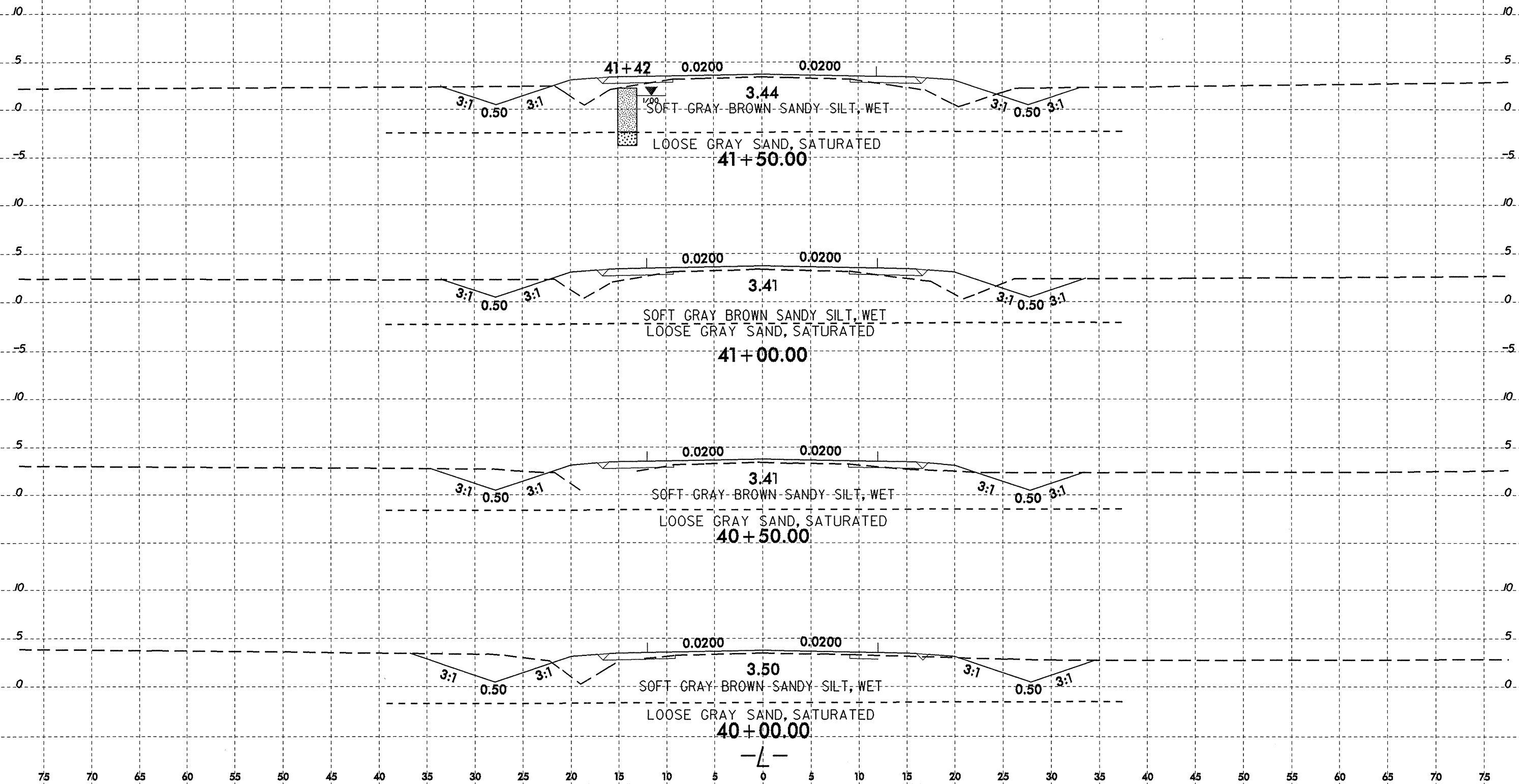
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PROJ. REFERENCE NO.	SHEET NO.
B-2950	21

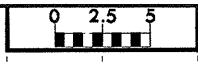
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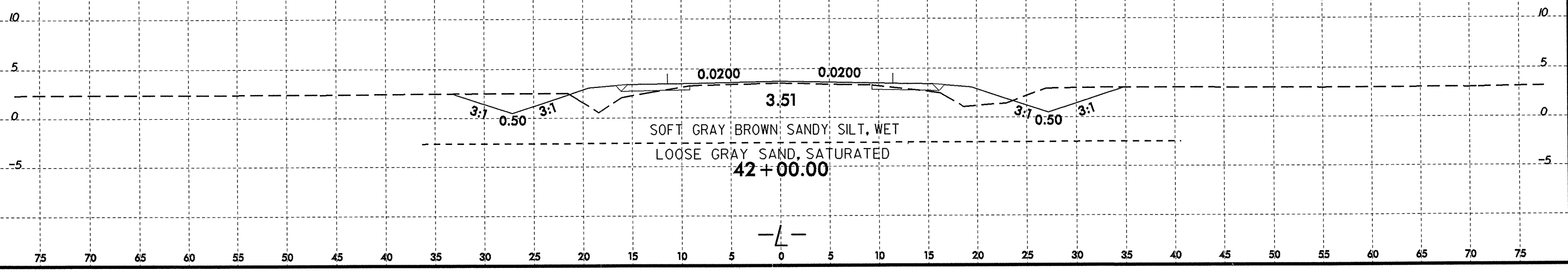
8/23/99



PROJ. REFERENCE NO.	SHEET NO.
B-2950	22

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END TIP PROJECT B-2950 -L- STA 42+43



12-SEP-2006 11:03
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