

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.	R-3826	1	68
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34553.1.1	STP-125(1)	P.E. RAW & UTIL.	

CONTENTS

LINE	STATION	PLAN	PROFILE
-L-	12+00 TO 149+00	4-13	16-20
-Y-	18+00 TO 32+50	5,14	21
-YI-	14+00 TO 25+75	9,15	22
-Y2-	10+00 TO 16+00	13	23

**ROADWAY
SUBSURFACE INVESTIGATION**

PROJ. REFERENCE NO. 34553.1.1 (R-3826) F.A. PROJ. STP-125(1)

COUNTY MARTIN

PROJECT DESCRIPTION NC 125 (WILLIAMSTON BYPASS) FROM
SR 1182 (EAST COLLEGE ROAD) TO NC 125 NORTHWEST OF
WILLIAMSTON

INVENTORY

CROSS SECTIONS

LINE	STATION	SHEET
-L-	12+00 TO 31+50	24-31
-L-	33+00 TO 62+50	32-42
-L-	67+50 TO 89+50	43-50
-L-	132+00 TO 133+50	51-52
-L-	138+00 TO 144+50	53-55
-Y-	22+50 TO 35+00	56-60
-YI-	14+00 TO 25+75	61-68

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) 707-6850. 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, OR THE INTERPRETATIONS MADE, OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THIS PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE OFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

PERSONNEL

JRS

RES

JME

INVESTIGATED BY J.L. STONE

CHECKED BY D.N. ARGENBRIGHT

SUBMITTED BY D.N. ARGENBRIGHT

DATE October 2012



CONTRACT: ID: R-3826

DRAWN BY: JL STONE

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

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





NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

PROJECT REFERENCE NO. R-3826	SHEET NO. 2
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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 (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: <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. ANGULARITY OF GRAINS THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: <u>ANGULAR</u> , <u>SUBANGULAR</u> , <u>SUBROUNDED</u> , OR <u>ROUNDED</u> .		HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT IF TESTED, WOULD YIELD SPT REFUSAL. AN INFERRED ROCK LINE INDICATES THE LEVEL, AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. IN NON-COASTAL PLAIN MATERIAL, THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:  WEATHERED ROCK (WR)  CRYSTALLINE ROCK (CR)  NON-CRYSTALLINE ROCK (NCR)  COASTAL PLAIN SEDIMENTARY ROCK (CP)		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, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, AS SHALE, SLATE, ETC. 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. FISSELE - 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 (RQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS 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.		COMPRESSION SLIGHTLY COMPRESSIBLE LIQUID LIMIT LESS THAN 31 MODERATELY COMPRESSIBLE LIQUID LIMIT EQUAL TO 31-50 HIGHLY COMPRESSIBLE LIQUID LIMIT GREATER THAN 50		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 GROUDED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PEICES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK. SOFT CAN BE GROUDED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE. VERY SOFT CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 INCH OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY FINGERNAIL.	
PERCENTAGE OF MATERIAL		GROUND WATER		MISCELLANEOUS SYMBOLS		ABBREVIATIONS			
ORGANIC MATERIAL GRANULAR SOILS SILT - CLAY SOILS OTHER MATERIAL TRACE OF ORGANIC MATTER 2 - 3% 3 - 5% TRACE 1 - 10% LITTLE ORGANIC MATTER 3 - 5% 5 - 12% LITTLE 10 - 20% MODERATELY ORGANIC 5 - 10% 12 - 20% SOME 20 - 35% HIGHLY ORGANIC >10% >20% HIGHLY 35% AND ABOVE		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		SPT DPT DMT VST PMT TEST BORING AUGER BORING CORE BORING MONITORING WELL PIEZOMETER INSTALLATION SLOPE INDICATOR INSTALLATION CONE PENETROMETER TEST SOUNDING ROD			
CONSISTENCY OR DENSENESS		TEXTURE OR GRAIN SIZE		EQUIPMENT USED ON SUBJECT PROJECT		INDURATION			
PRIMARY SOIL TYPE COMPACTNESS OR CONSISTENCY RANGE OF STANDARD PENETRATION RESISTANCE (N-VALUE) RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TDNS/F ²)		U.S. STD. SIEVE SIZE OPENING (MM) 4 10 40 60 200 270 4.75 2.00 0.42 0.25 0.075 0.053		DRILL UNITS: MOBILE B- BK-51 CME-45C CME-550 PORTABLE HOIST		FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF THE MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC. FRIABLE RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE. MODERATELY INDURATED GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER. INDURATED GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER. EXTREMELY INDURATED SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.			
GENERALLY GRANULAR MATERIAL (NON-COHESIVE) VERY LOOSE LOOSE MEDIUM DENSE DENSE VERY DENSE		GENERALLY SILT-CLAY MATERIAL (COHESIVE) VERY SOFT SOFT MEDIUM STIFF STIFF VERY STIFF HARD		ADVANCING TOOLS: CLAY BITS 6" CONTINUOUS FLIGHT AUGER 8" HOLLOW AUGERS HARD FACED FINGER BITS TUNG-CARBIDE INSERTS CASING W/ ADVANCER TRICONE 2 15/16" STEEL TEETH TRICONE TUNG-CARB. CORE BIT		FRACTURE SPACING TERM SPACING TERM THICKNESS VERY WIDE MORE THAN 10 FEET VERY THICKLY BEDDED > 4 FEET WIDE 3 TO 10 FEET THICKLY BEDDED 1.5 - 4 FEET MODERATELY CLOSE 1 TO 3 FEET THINLY BEDDED 0.16 - 1.5 FEET CLOSE 0.16 TO 1 FEET VERY THINLY BEDDED 0.03 - 0.16 FEET VERY CLOSE LESS THAN 0.16 FEET THICKLY LAMINATED 0.008 - 0.03 FEET THINLY LAMINATED < 0.008 FEET			
SOIL MOISTURE - CORRELATION OF TERMS		PLASTICITY		FRAC TURE SPACING		BEDDING			
SOIL MOISTURE SCALE (ATTERBERG LIMITS) FIELD MOISTURE DESCRIPTION GUIDE FOR FIELD MOISTURE DESCRIPTION		NONPLASTIC LOW PLASTICITY MED. PLASTICITY HIGH PLASTICITY PLASTICITY INDEX (PI) DRY STRENGTH VERY LOW SLIGHT MEDIUM HIGH		HAMMER TYPE: AUTOMATIC MANUAL CORE SIZE: B N H HAND TOOLS: POST HOLE DIGGER HAND AUGER SOUNDING ROD VANE SHEAR TEST		BENCH MARK: ELEVATION: FT. NOTES: APPROXIMATE LIMIT OF ORGANIC SOILS			
LL LIQUID LIMIT PLASTIC RANGE (PI) PL PLASTIC LIMIT OM OPTIMUM MOISTURE SL SHRINKAGE LIMIT		SATURATED - (SAT.) USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE WET - (W) SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE MOIST - (M) SOLID; AT OR NEAR OPTIMUM MOISTURE DRY - (D) REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE		CLAY BITS 6" CONTINUOUS FLIGHT AUGER 8" HOLLOW AUGERS HARD FACED FINGER BITS TUNG-CARBIDE INSERTS CASING W/ ADVANCER TRICONE 2 15/16" STEEL TEETH TRICONE TUNG-CARB. CORE BIT		INDURATION FRIABLE MODERATELY INDURATED INDURATED EXTREMELY INDURATED			

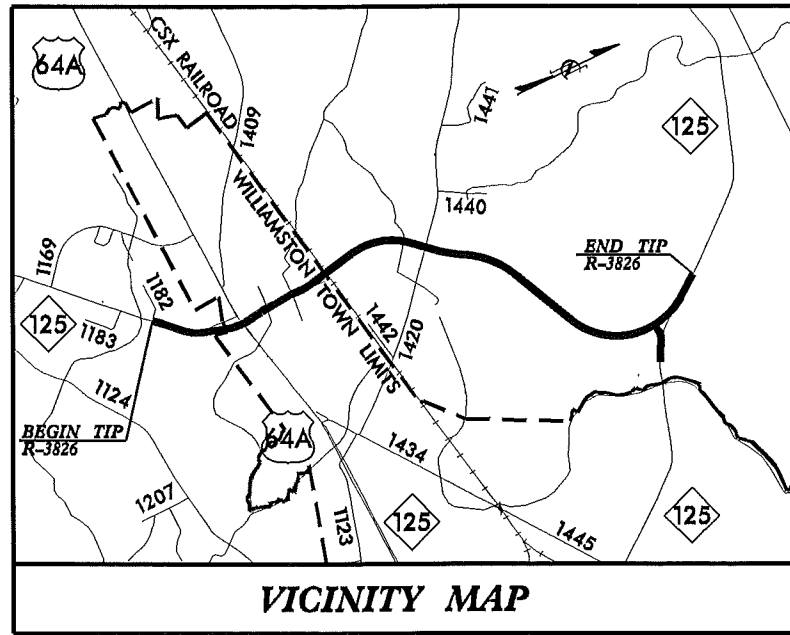
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N.C.	R-3826	2A	68
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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

MARTIN COUNTY

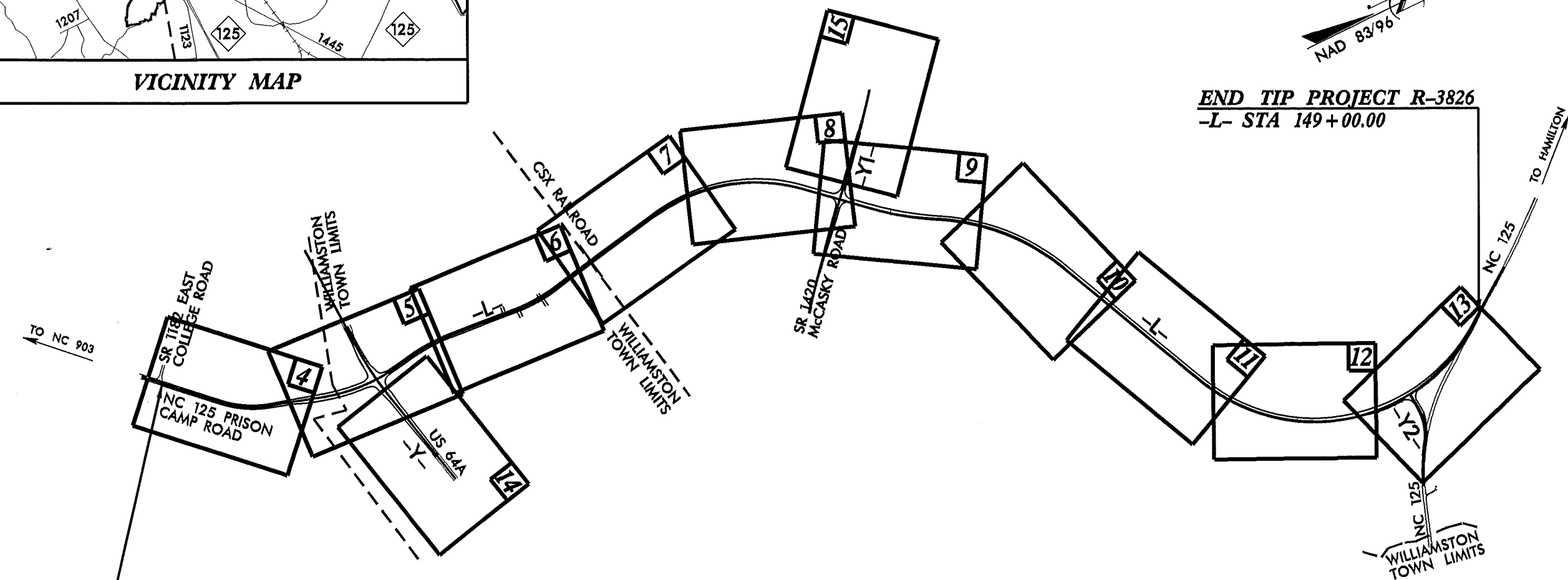
LOCATION: NC 125 WILLIAMSTON BYPASS FROM SR 1182
(EAST COLLEGE ROAD) TO NC 125 NORTHWEST
OF WILLIAMSTON

TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND CULVERT

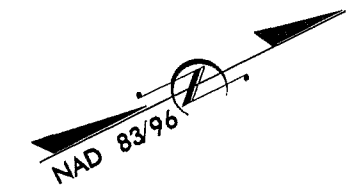


VICINITY MAP

TIP PROJECT: R-3826



END TIP PROJECT R-3826
-L- STA 149+00.00

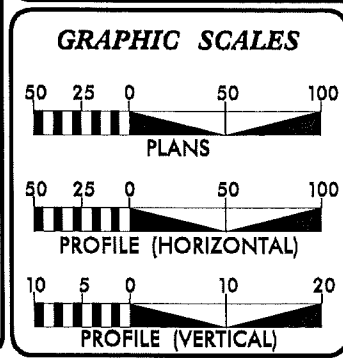


BEGIN TIP PROJECT R-3826
-L- STA 12+00.00

- NOTE:
- 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 TOWN OF WILLIAMSTON.
 - THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON PLANS.

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

CONTRACT:



DESIGN DATA

ADT 2015 =	7020
ADT 2035 =	11500
DHV =	60 %
D =	11 %
T =	11 % *
V =	60 MPH
* TTST =	4% DUAL 7%
FUNC CLASS =	MAJOR COLLECTOR REGIONAL TIER

PROJECT LENGTH

TOTAL PROJECT LENGTH TIP R-3826 = 2.595 MI.

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: APRIL 16, 2013

LETTING DATE: APRIL 21, 2015

GARY LOYERING, PE
PROJECT ENGINEER

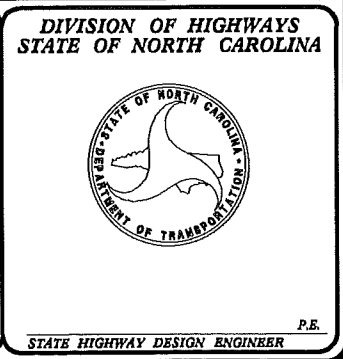
ANTHONY C. WEST
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

SIGNATURE: _____ P.E.



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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

October 15, 2012

STATE PROJECT: 34553.1.1 (R-3826)
F.A. PROJECT: STP-125(1)
COUNTY: Martin
DESCRIPTION: NC 125 (Williamston Bypass) from SR 1182 (College Rd.) to NC 125 North of Williamston

SUBJECT: Geotechnical Inventory Report

Project Description

This project begins along existing NC 125 at the NC 125/College Rd. intersection, just south of the city of Williamston, and extends generally northward approximately 2.6 miles, ending along existing NC 125 north of Williamston. This geotechnical investigation was confined to the areas of proposed construction.

Fieldwork was conducted in January and February of 2012. SPT and hand auger borings were completed along and at various offsets throughout the project corridor. Representative soil samples were collected for visual classification in the field and for laboratory analysis by the Materials and Tests Unit.

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

<u>Line</u>	<u>Station(±)</u>
-L-	12+00 to 149+00
-Y-	18+00 to 32+50
-Y1-	14+00 to 25+75
-Y2-	10+00 to 16+00

Areas of Special Geotechnical Interest

- 1) The entire project was found to exhibit seasonal high ground water.
- 2) All but the following sections contain cohesive soils which have the potential to cause embankment/subgrade and or slope stability problems during construction.

<u>Line</u>	<u>Station(±)</u>
-L-	128+80 to 137+52
-L-	145+90 to 149+00
-Y2-	11+40 to 16+00

- 3) The following sections contain organic soils that have the potential to cause embankment/subgrade and or slope stability problems during construction.

<u>Line</u>	<u>Station(±)</u>
-L-	131+70 to 133+30

Physiography and Geology

This project corridor is located within the Coastal Plain Physiographic Province. Topography along the project is nearly flat to gently sloping. Natural ground elevations ranged from 24± to 80± feet above sea level.

Surficial soils in this area are generally classified as undivided coastal plain sediments and are underlain by formational soils belonging to the Yorktown Formations.

Ground Water

Ground water data was collected from December 2011 through March 2012, during a time of normal precipitation. Ground water elevations ranged from 23± to 77± feet above sea level.

Soils

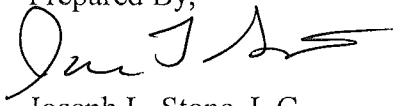
Soils encountered within this project area have been divided into three categories, undivided coastal plain soils, formational soils, and roadway embankment.

Soils identified as undivided coastal plain are composed of 1± to 24± feet of very loose to dense sand and clayey sand (A-2-6, A-2-4), with 3± to 10± feet of very soft to stiff sandy clay

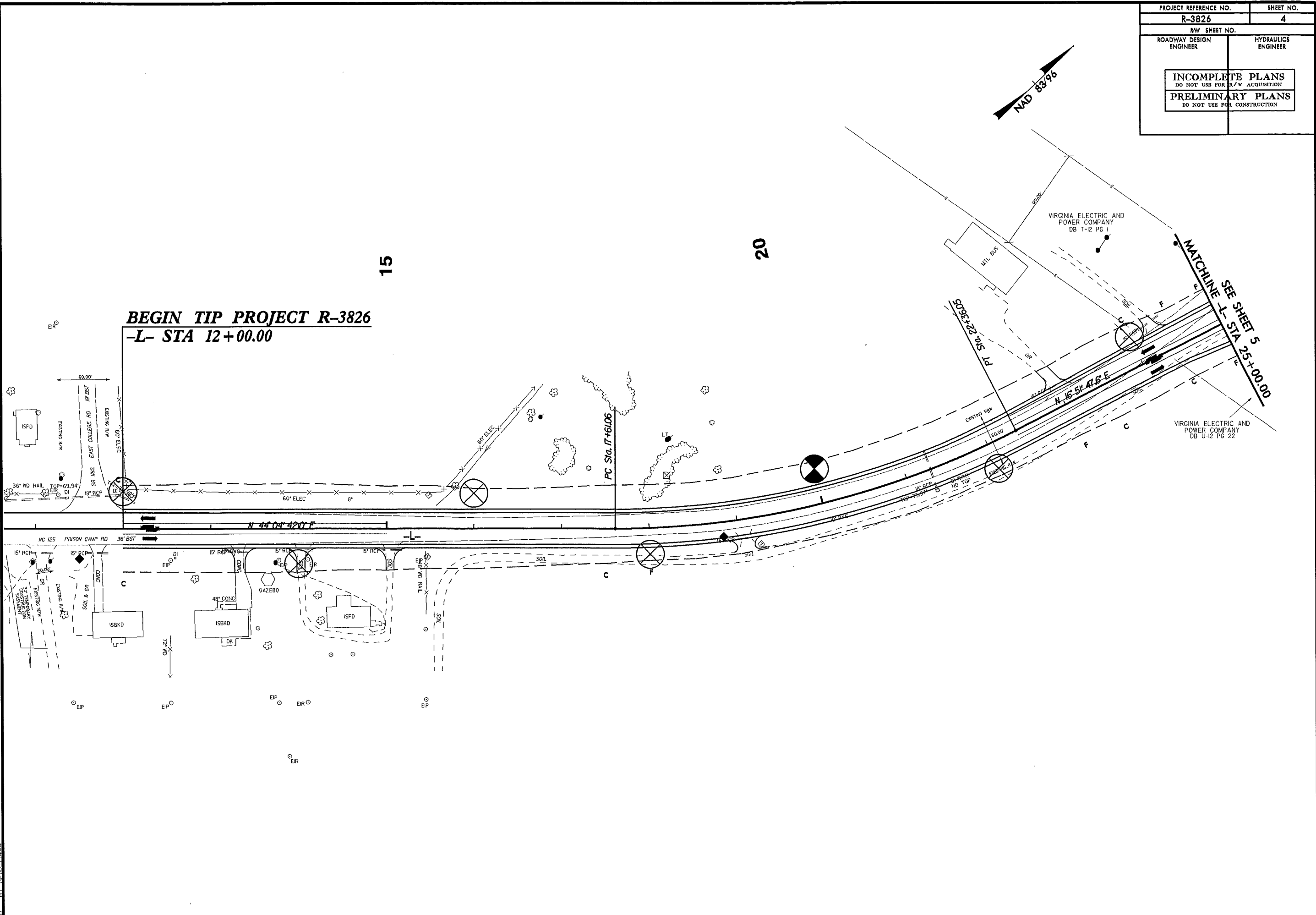
(A-6, A-7-6) and 2± to 11 feet of very soft to stiff sandy and clayey silt (A-4). Moisture samples taken within these cohesive units returned a natural moisture content from 18% to 25%. Surficial organic soils were also identified. These soils were typically 1± to 5± feet thick and composed of very soft silts (A-4, A-5). Organic samples taken within these soils returned an organic percentage of 14%.

Formational soils belonging to the Yorktown Formation were also encountered. They were found to be composed of 18± feet of very loose to medium dense sand (A-2-4) underlain by medium stiff gray silty clay (A-7-6).

Roadway embankment soils were found along the existing NC 125 corridor and associated intersecting roads. Where encountered it was composed of 1± feet of loose sand (A-2-4) and 1± feet of stiff sandy silt (A-4).

Prepared By,

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

PROJECT REFERENCE NO. R-3826	SHEET NO. 4
NW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



BEGIN TIP PROJECT R-3826
-L- STA 12+00.00

15

20

MATCHLINE - L- STA 25+00.00
SEE SHEET 5

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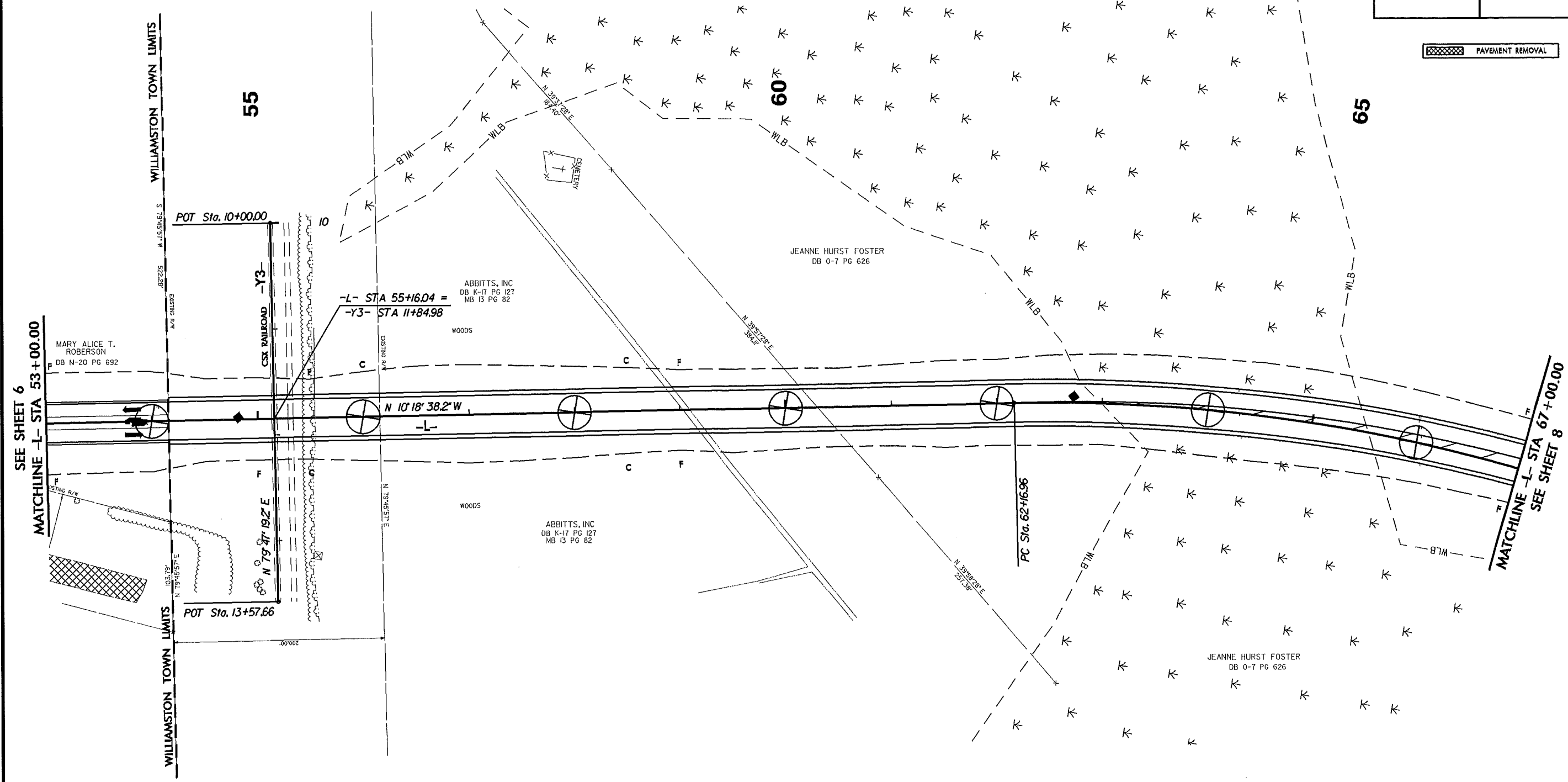
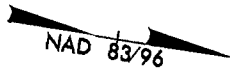
DESIGN REVISION 0409/12: CHANGE IN PROPOSED LANE LOCATION RELATIVE TO -L- CENTERLINE,
 -L- STA 62+16.96 TO -L- STA 89+65.57

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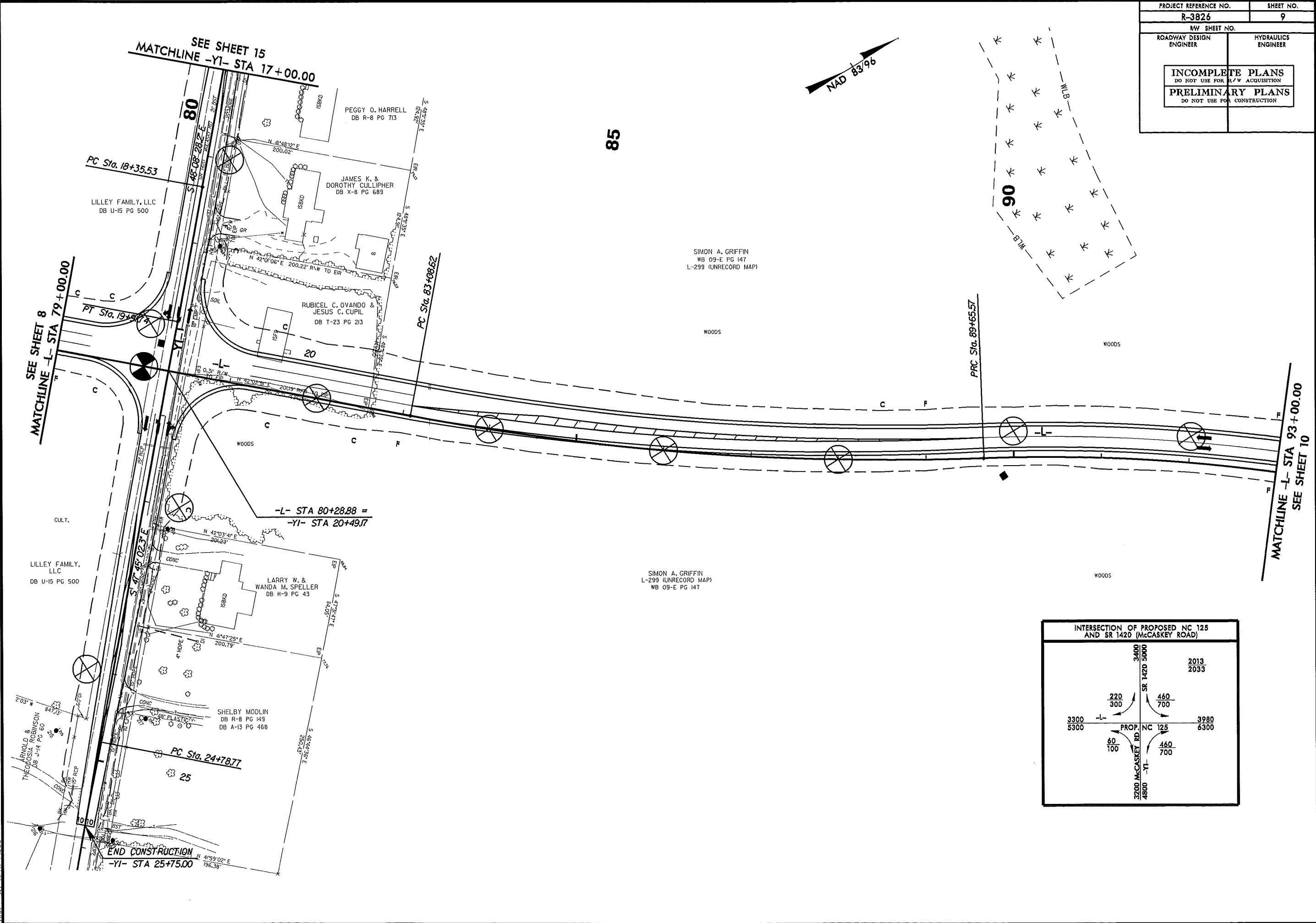
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REV SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

 PAVEMENT REMOVAL

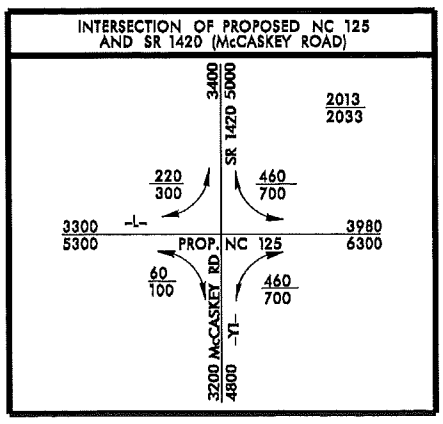


DESIGN REVISION 04/09/12: CHANGE IN PROPOSED LANE LOCATION RELATIVE TO -L- CENTERLINE,
 -L- STA 62+16.96 TO -L- STA 89+65.57

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PROJECT REFERENCE NO.		SHEET NO.	
R-3826		9	
M.V. SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			



85

90

-L- STA 80+28.88 =
 -YI- STA 20+49.17

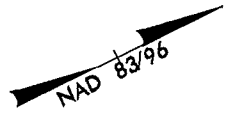
SEE SHEET 8
 MATCHLINE -L- STA 79+00.00

SEE SHEET 15
 MATCHLINE -YI- STA 17+00.00

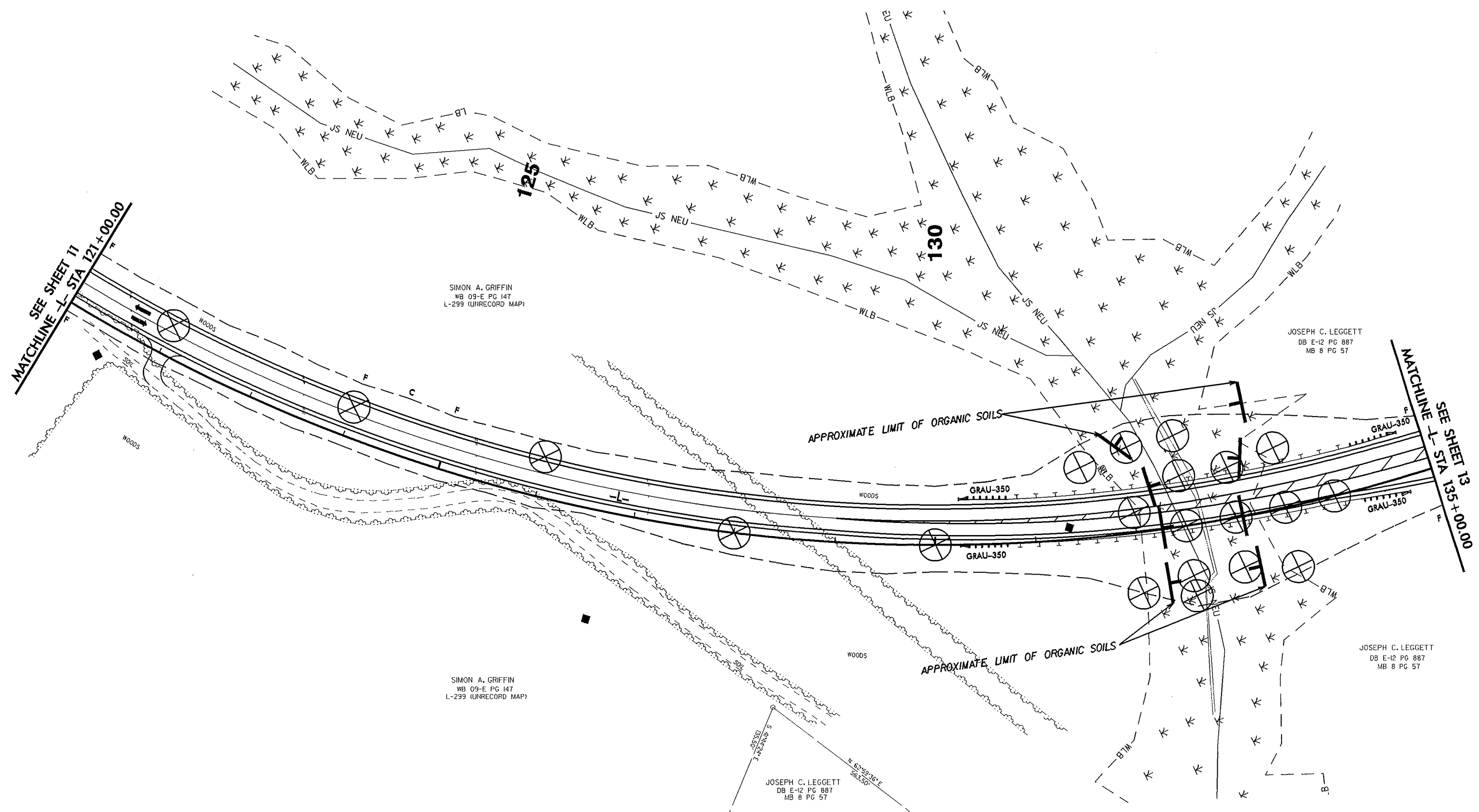
MATCHLINE -L- STA 93+00.00
 SEE SHEET 10

END CONSTRUCTION
 -YI- STA 25+75.00

PROJECT REFERENCE NO.	SHEET NO.
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INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



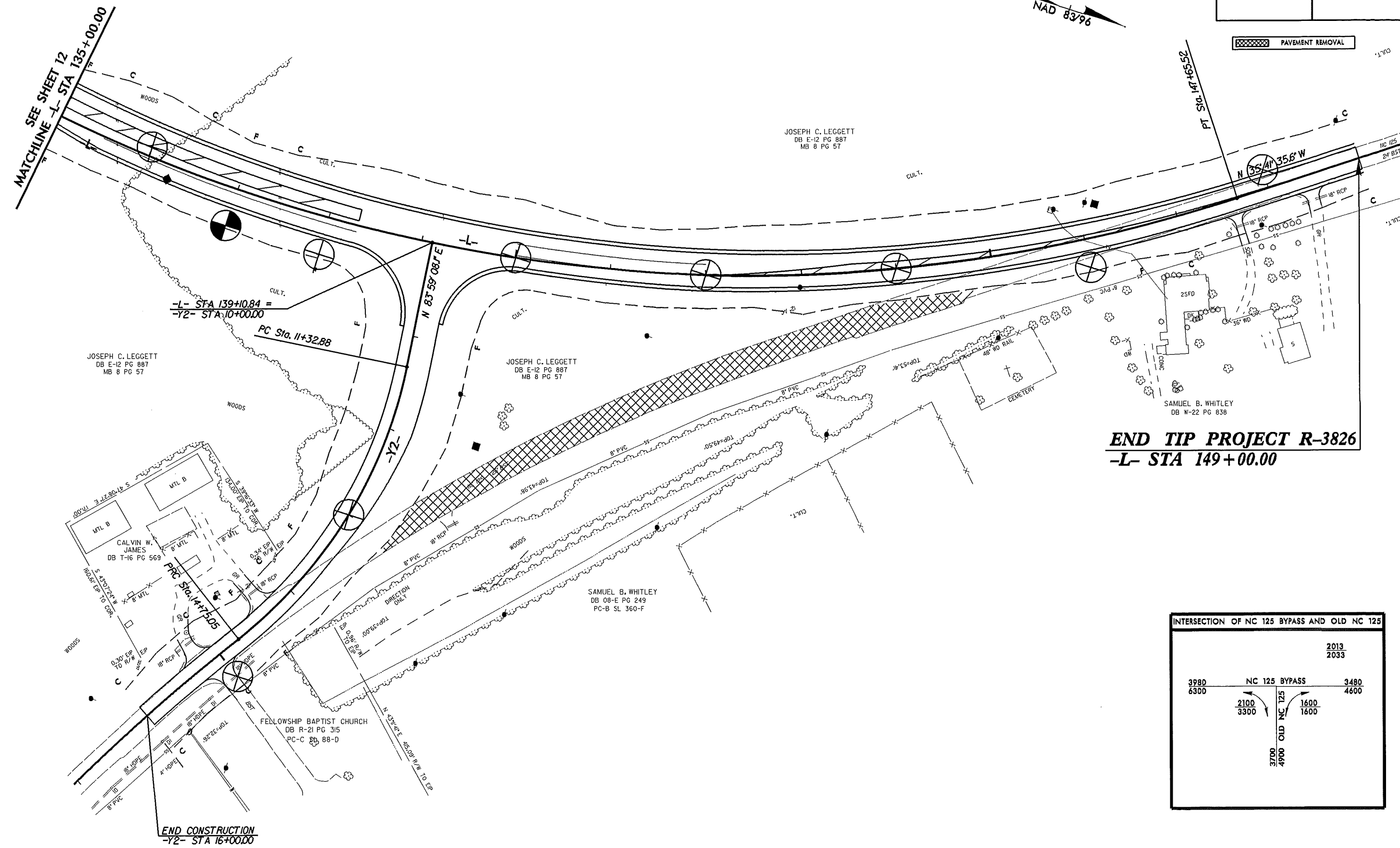
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 -L- STA 129+00.00 TO -L- STA 149+00.00



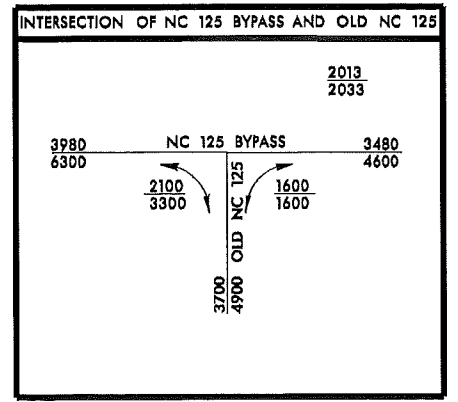
DESIGN REVISION 04/09/12: CHANGE IN PROPOSED LANE LOCATION RELATIVE TO -L- CENTERLINE,
 -L- STA 129+00.00 TO -L- STA 149+00.00

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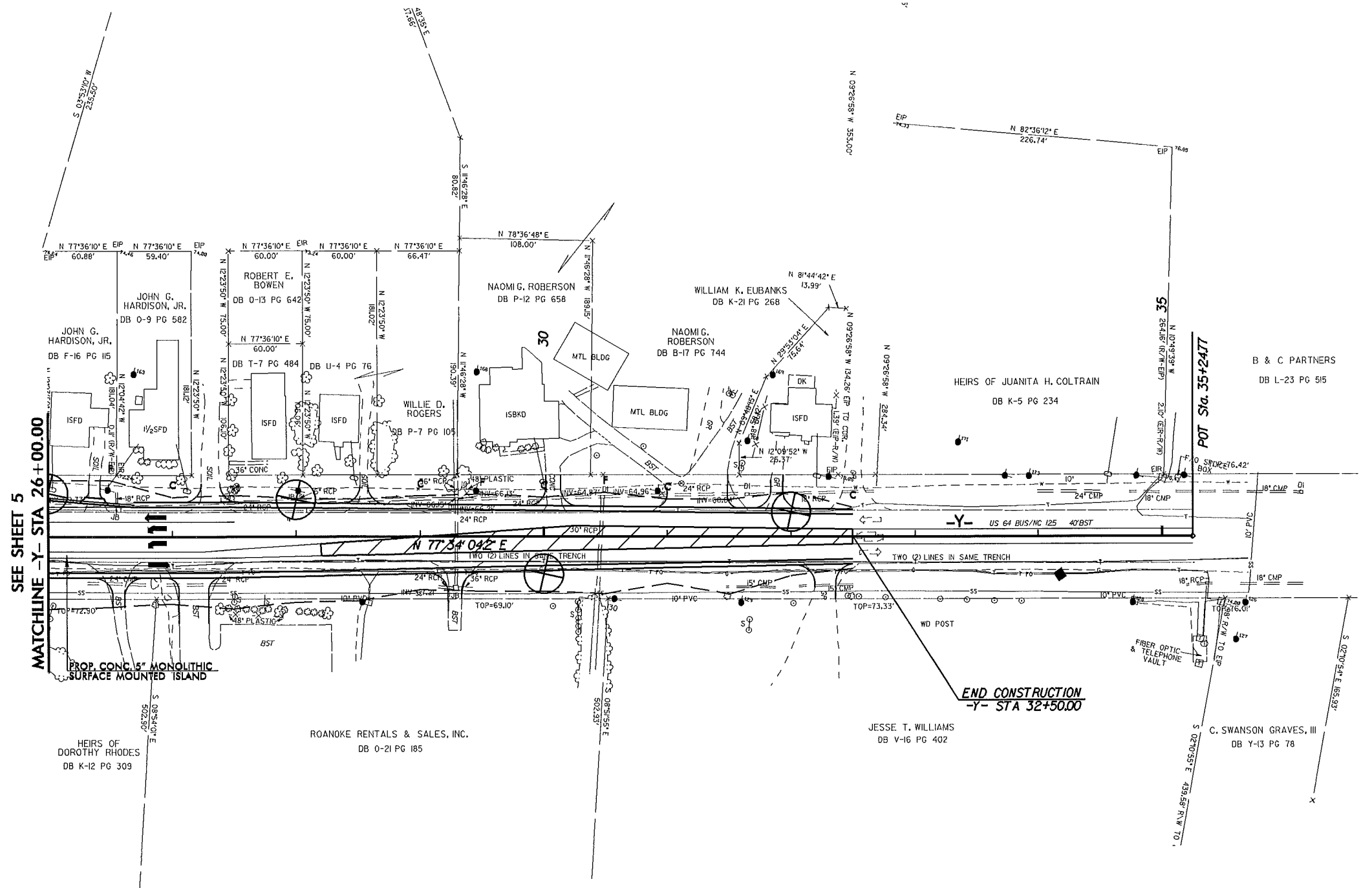
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INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



END TIP PROJECT R-3826
-L- STA 149+00.00



PROJECT REFERENCE NO.	SHEET NO.
R-3826	14
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



SEE SHEET 5
MATCHLINE -Y- STA 26+00.00

END CONSTRUCTION
-Y- STA 32+50.00

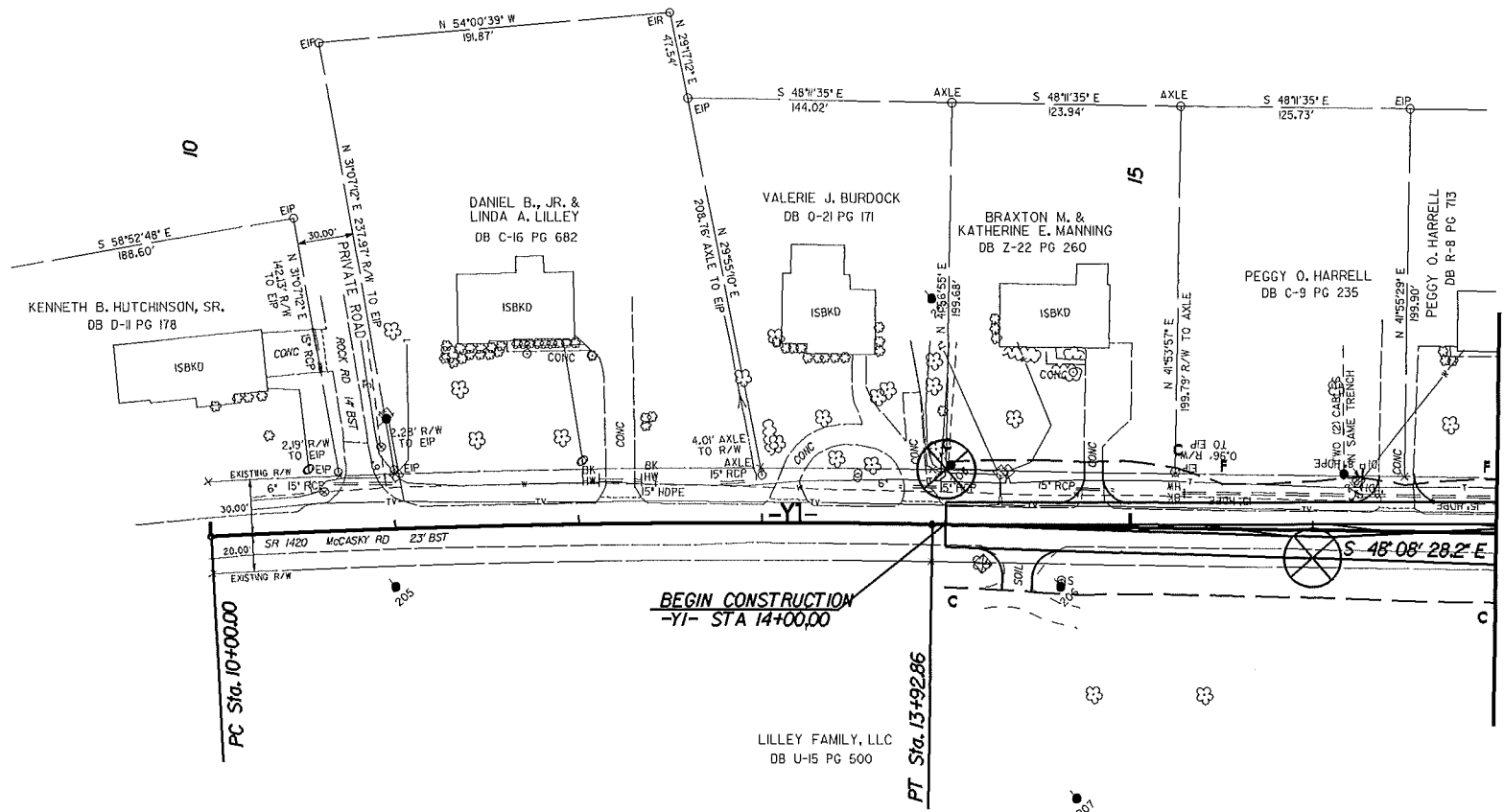
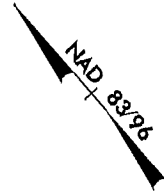
POT Sta. 35+24.77

JOHN G. HARDISON, JR. DB F-16 PG 115
 JOHN G. HARDISON, JR. DB O-9 PG 582
 ROBERT E. BOWEN DB O-13 PG 642
 NAOMI G. ROBERSON DB P-12 PG 658
 WILLIAM K. EUBANKS DB K-21 PG 268
 NAOMI G. ROBERSON DB B-17 PG 144
 WILLIE D. ROGERS DB P-7 PG 105
 HEIRS OF JUANITA H. COLTRAIN DB K-5 PG 234
 B & C PARTNERS DB L-23 PG 515
 HEIRS OF DOROTHY RHODES DB K-12 PG 309
 ROANOKE RENTALS & SALES, INC. DB O-21 PG 185
 JESSE T. WILLIAMS DB V-16 PG 402
 C. SWANSON GRAVES, III DB Y-13 PG 78

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

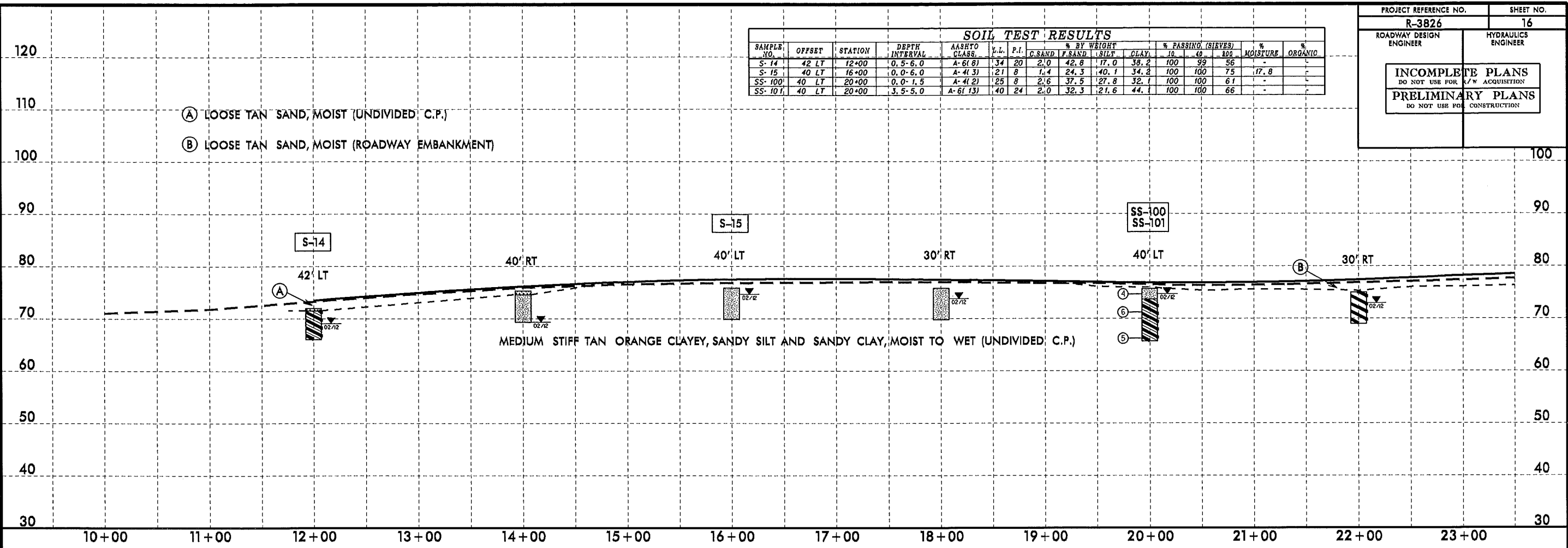


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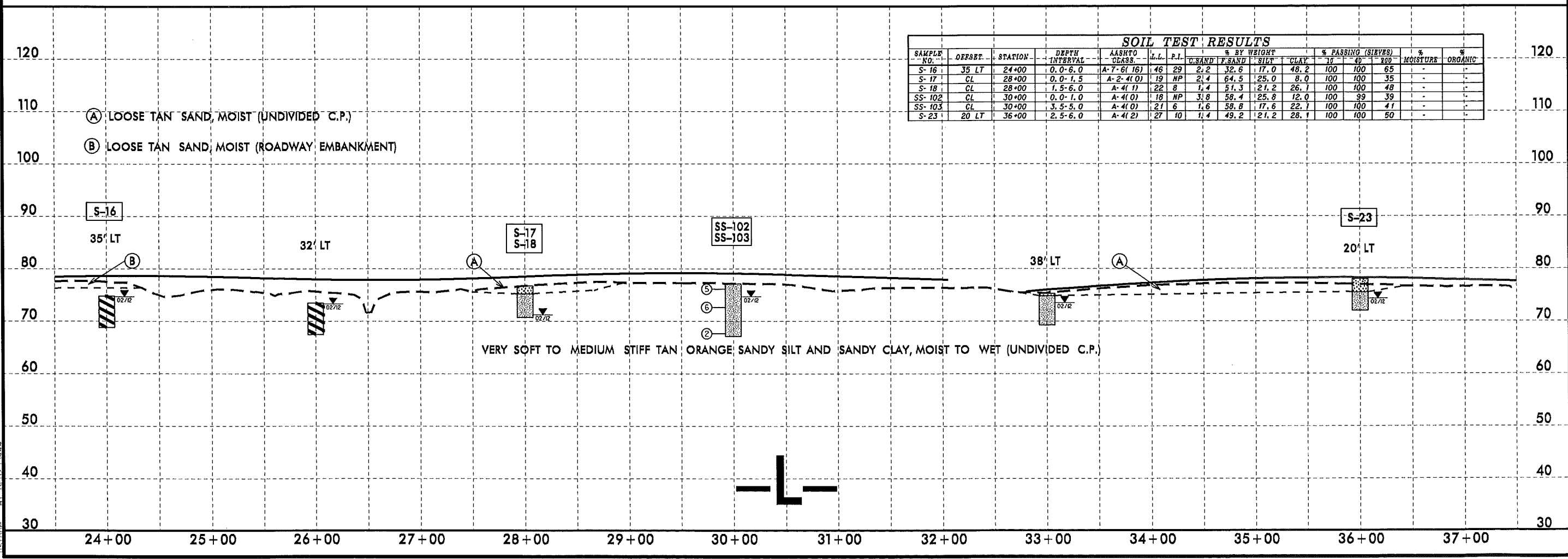
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R-3826	16
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

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	100		
S-14	42 LT	12+00	0.5-6.0	A-6(8)	34	20	2.0	42.8	17.0	38.2	100	99	56	-	-
S-15	40 LT	16+00	0.0-6.0	A-4(3)	21	8	1.4	24.3	40.1	34.2	100	100	75	17.8	-
SS-100	40 LT	20+00	0.0-1.5	A-4(2)	25	8	2.6	37.5	27.8	32.1	100	100	61	-	-
SS-101	40 LT	20+00	3.5-5.0	A-6(13)	40	24	2.0	32.3	21.6	44.1	100	100	66	-	-

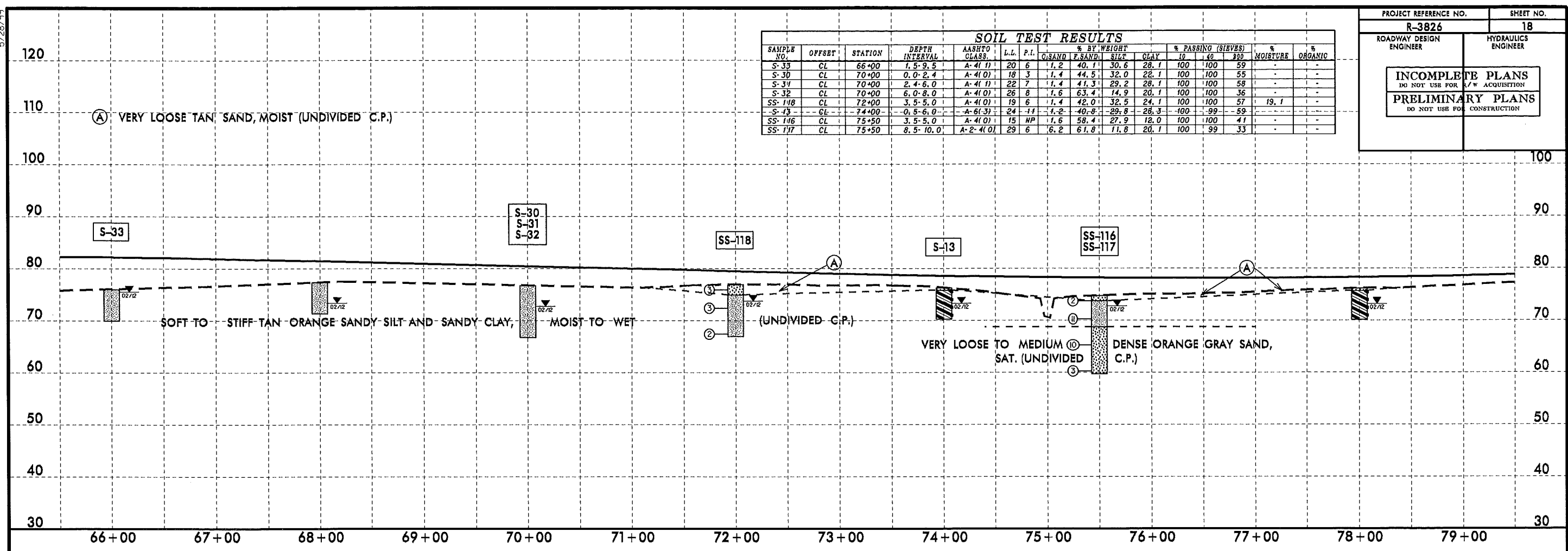


SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	100		
S-16	35 LT	24+00	0.0-6.0	A-7-6(16)	46	29	2.2	32.6	17.0	48.2	100	100	65	-	-
S-17	CL	28+00	0.0-1.5	A-2-4(1)	19	NP	2.4	64.5	25.0	8.0	100	100	35	-	-
S-18	CL	28+00	1.5-6.0	A-4(1)	22	8	1.4	51.3	21.2	26.1	100	100	48	-	-
SS-102	CL	30+00	0.0-1.0	A-4(1)	18	NP	3.8	58.4	25.8	12.0	100	99	39	-	-
SS-103	CL	30+00	3.5-5.0	A-4(1)	21	6	1.6	58.8	17.6	22.1	100	100	41	-	-
S-23	20 LT	36+00	2.5-6.0	A-4(2)	27	10	1.4	49.2	21.2	28.1	100	100	50	-	-

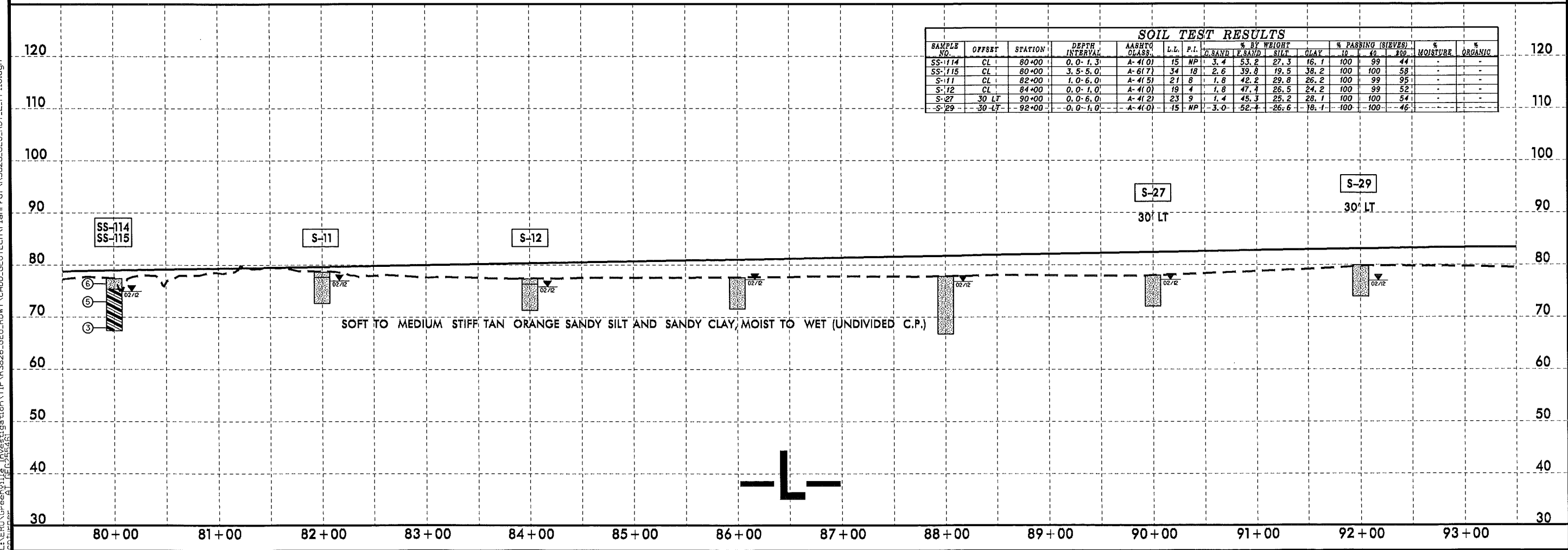


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SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT			% PASSING (SIEVES)			% MOISTURE	% ORGANIC	
							SAND	F. SAND	SILT	#10	#40	#200			
S-33	CL	66+00	1.5-9.5	A-4(1)	20	6	1.2	40.1	30.6	28.1	100	100	59	-	-
S-30	CL	70+00	0.0-2.4	A-4(0)	18	3	1.4	44.5	32.0	22.1	100	100	55	-	-
S-31	CL	70+00	2.4-6.0	A-4(1)	22	7	1.4	41.3	29.2	28.1	100	100	58	-	-
S-32	CL	70+00	6.0-8.0	A-4(0)	26	8	1.6	63.4	14.9	20.1	100	100	36	-	-
SS-118	CL	72+00	3.5-5.0	A-4(0)	19	6	1.4	42.0	32.5	24.1	100	100	57	19.1	-
S-13	CL	74+00	0.5-6.0	A-6(3)	24	11	1.2	40.8	28.8	28.3	100	99	59	-	-
SS-116	CL	75+00	3.5-5.0	A-4(0)	15	NP	1.6	58.4	27.9	12.0	100	100	41	-	-
SS-117	CL	75+00	8.5-10.0	A-2-4(0)	29	6	6.2	61.8	11.8	20.1	100	99	33	-	-

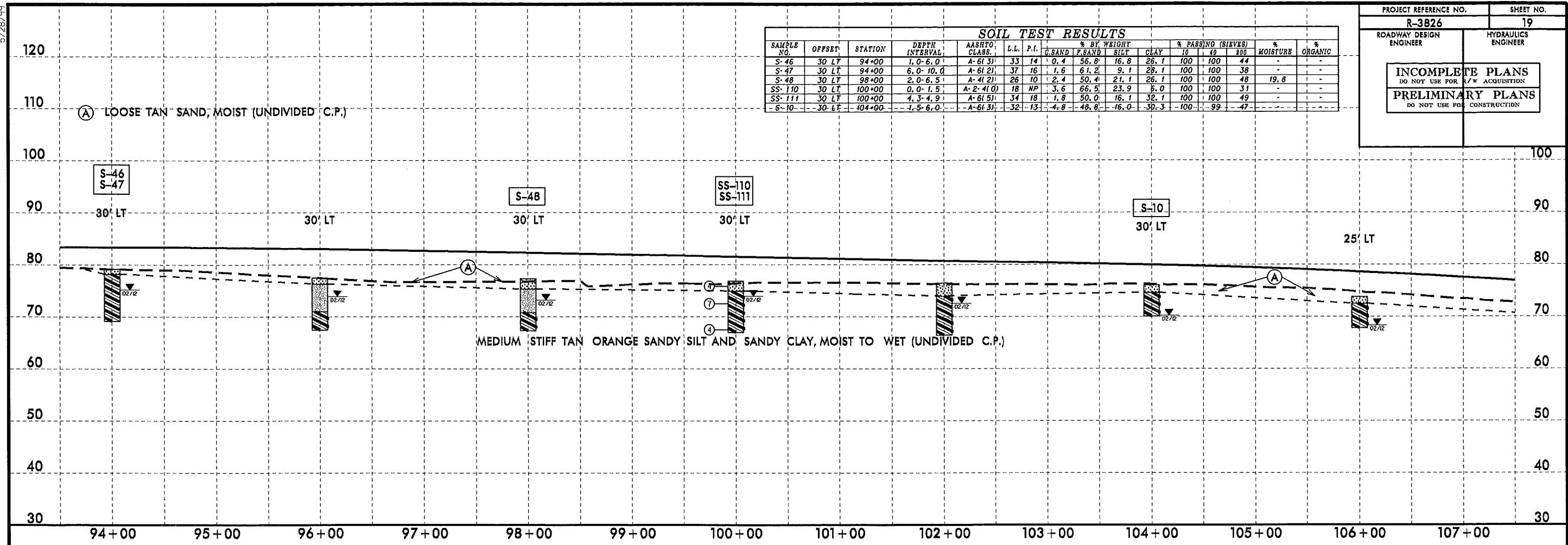


SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT			% PASSING (SIEVES)			% MOISTURE	% ORGANIC	
							SAND	F. SAND	SILT	#10	#40	#200			
SS-114	CL	80+00	0.0-1.3	A-4(0)	15	NP	3.4	53.2	27.3	16.1	100	99	44	-	-
SS-115	CL	80+00	3.5-5.0	A-6(7)	34	18	2.6	39.8	19.5	36.2	100	100	58	-	-
S-111	CL	82+00	1.0-6.0	A-4(5)	21	8	1.8	42.2	29.8	26.2	100	99	95	-	-
S-112	CL	84+00	0.0-1.0	A-4(0)	19	4	1.8	47.4	26.5	24.2	100	99	52	-	-
S-27	30 LT	90+00	0.0-6.0	A-4(2)	23	9	1.4	45.3	25.2	28.1	100	100	54	-	-
S-29	-30 LT	92+00	0.0-1.0	A-4(0)	15	NP	3.0	52.4	26.6	16.1	100	100	46	-	-

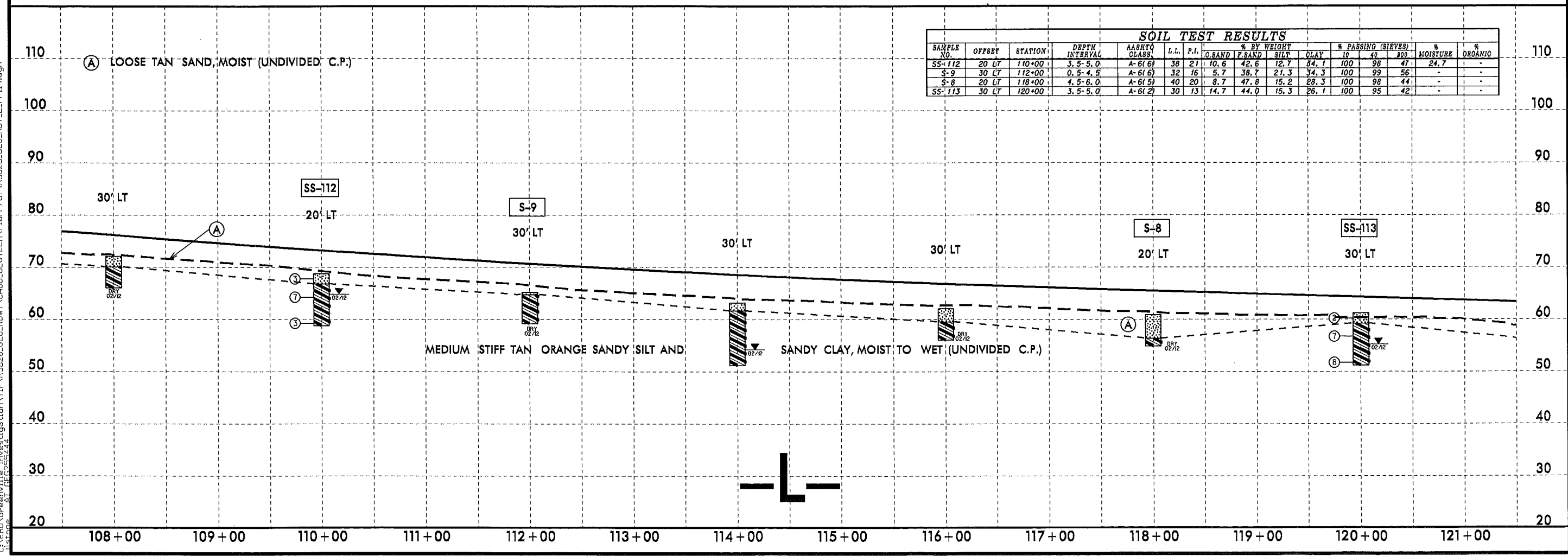


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SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	100		
S-46	30' LT	94+00	1.0-6.0	A-6(3)	33	14	0.4	56.8	16.8	26.1	100	100	44	-	-
S-47	30' LT	94+00	6.0-10.0	A-6(2)	37	16	1.6	61.2	9.1	28.1	100	100	38	-	-
S-48	30' LT	98+00	2.0-6.5	A-4(2)	26	10	2.4	50.4	21.1	26.1	100	100	48	19.8	-
SS-110	30' LT	100+00	0.0-1.5	A-2(4)	18	NP	3.6	66.5	23.9	8.0	100	100	31	-	-
SS-111	30' LT	100+00	4.3-4.9	A-6(5)	34	18	1.8	50.0	18.1	32.1	100	100	49	-	-
S-10	30' LT	104+00	1.5-6.0	A-6(3)	32	13	4.8	48.8	16.0	30.3	100	99	47	-	-

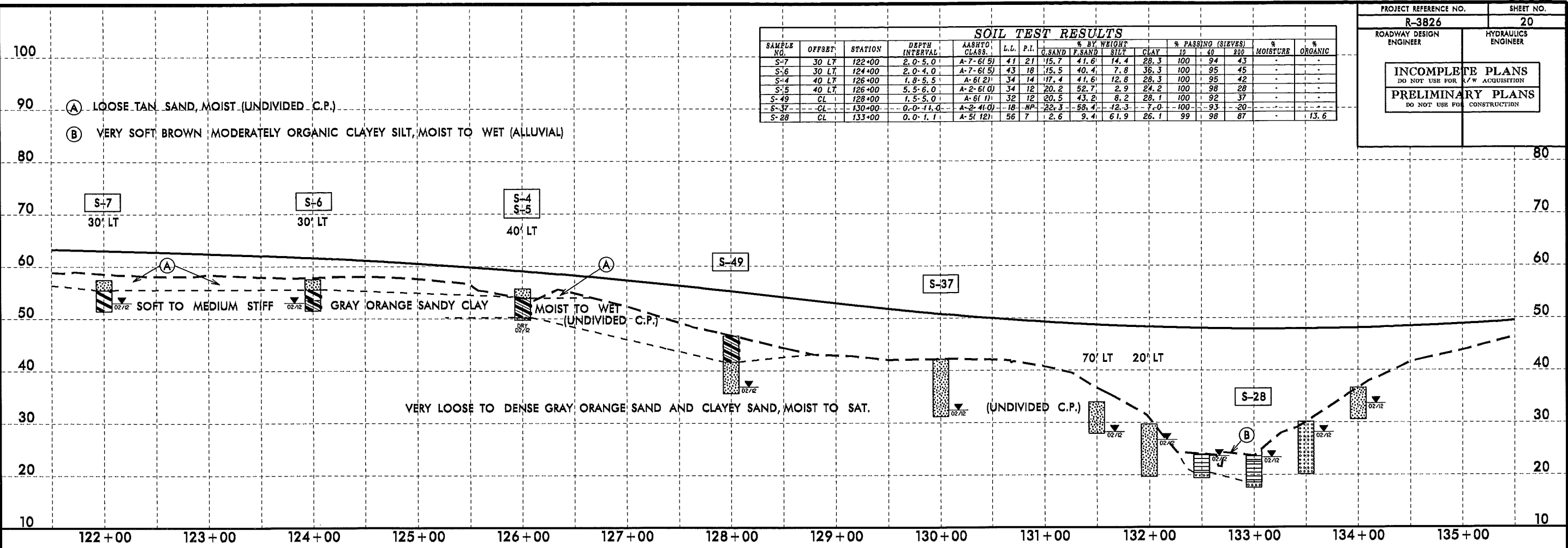


SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	100		
SS-112	20' LT	110+00	3.5-5.0	A-6(6)	38	21	10.6	42.6	12.7	84.1	100	98	47	24.7	-
S-9	30' LT	112+00	0.5-4.5	A-6(6)	32	16	5.7	38.7	21.3	34.3	100	99	56	-	-
S-8	20' LT	118+00	4.5-6.0	A-6(5)	40	20	8.7	47.8	15.2	28.3	100	98	44	-	-
SS-113	30' LT	120+00	3.5-5.0	A-6(2)	30	13	14.7	44.0	15.3	26.1	100	95	42	-	-

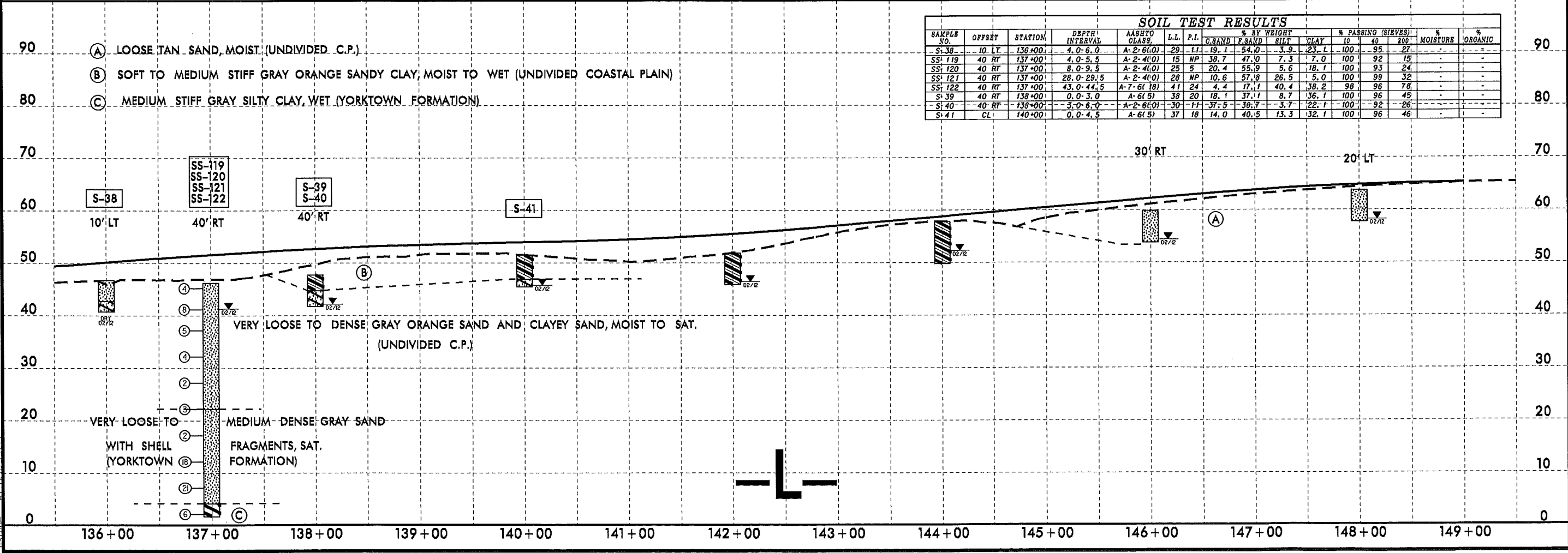


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 Station 81 112544

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
S-7	30' LT	122+00	2.0-5.0'	A-7-61(5)	41	21	15.7	41.6	14.4	28.3	100	94	43	-	-
S-6	30' LT	124+00	2.0-4.0'	A-7-61(5)	43	18	15.5	40.4	7.8	36.3	100	95	45	-	-
S-4	40' LT	126+00	1.8-5.5'	A-6(2)	34	14	17.4	41.6	12.8	28.3	100	95	42	-	-
S-5	40' LT	126+00	5.5-6.0'	A-2-61(0)	34	12	20.2	52.7	2.9	24.2	100	98	28	-	-
S-49	CL	128+00	1.5-5.0'	A-6(1)	32	12	20.5	43.2	6.2	28.1	100	92	37	-	-
S-37	CL	130+00	0.0-1.0'	A-2-41(0)	18	NP	22.3	58.4	12.3	7.0	100	93	29	-	-
S-28	CL	133+00	0.0-1.1'	A-5(12)	56	7	2.6	9.4	61.9	26.1	99	98	87	-	13.6



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
S-38	10' LT	136+00	4.0-6.0'	A-2-61(0)	29	11	19.1	54.0	3.9	23.1	100	95	27	-	-
SS-119	40' RT	137+00	4.0-5.5'	A-2-41(0)	15	NP	38.7	47.0	7.3	7.0	100	92	15	-	-
SS-120	40' RT	137+00	8.0-9.5'	A-2-41(0)	25	5	20.4	55.9	5.6	18.1	100	93	24	-	-
SS-121	40' RT	137+00	28.0-29.5'	A-2-41(0)	28	NP	10.6	57.8	26.5	5.0	100	99	32	-	-
SS-122	40' RT	137+00	43.0-44.5'	A-7-61(8)	41	24	4.4	17.1	40.4	38.2	98	96	78	-	-
S-39	40' RT	138+00	0.0-3.0'	A-6(5)	38	20	18.1	37.1	8.7	36.1	100	96	45	-	-
S-40	40' RT	138+00	3.0-6.0'	A-2-61(0)	30	11	37.5	38.7	3.7	22.1	100	92	26	-	-
S-41	CL	140+00	0.0-4.5'	A-6(5)	37	18	14.0	40.5	13.3	32.1	100	96	46	-	-



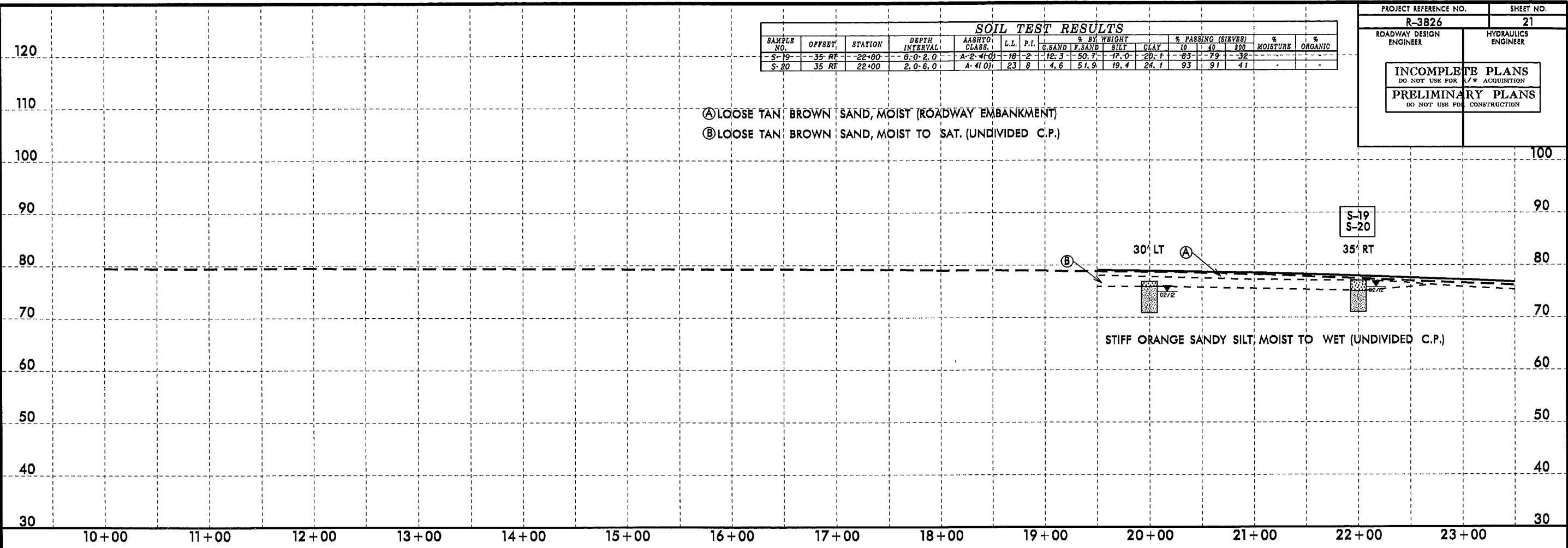
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5/28/99

PROJECT REFERENCE NO. R-3826	SHEET NO. 21
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

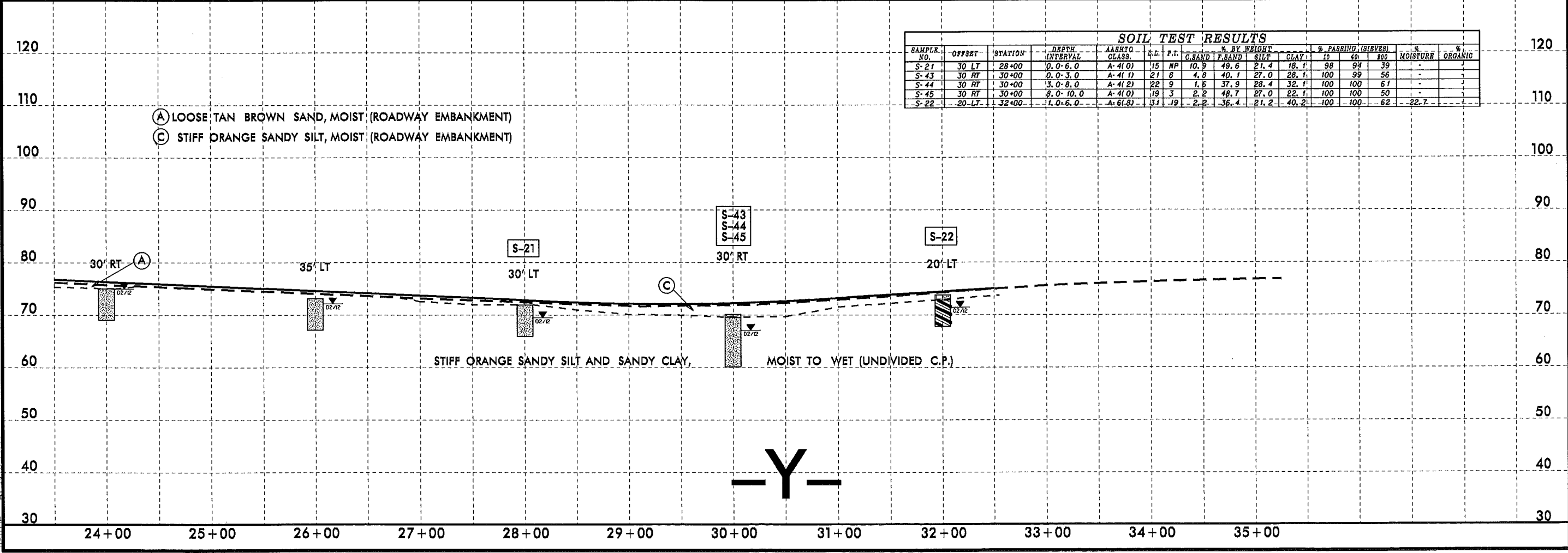
SOIL TEST RESULTS														
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT			% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							G. SAND	F. SAND	SILT	10	40	200		
S-19	35 RT	22+00	0.0-2.0	A-2-4(0)	18	2	12.3	50.7	17.0	20.1	83	79	32	-
S-20	35 RT	22+00	2.0-6.0	A-4(0)	23	8	4.6	51.9	19.4	24.1	93	91	41	-

- Ⓐ LOOSE TAN BROWN SAND, MOIST (ROADWAY EMBANKMENT)
- Ⓑ LOOSE TAN BROWN SAND, MOIST TO SAT. (UNDIVIDED C.P.)



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	15	40	200		
S-21	30 LT	28+00	0.0-6.0	A-4(0)	15	NP	10.9	49.6	21.4	18.1	98	94	39	-
S-43	30 RT	30+00	0.0-3.0	A-4(1)	21	8	4.8	40.1	27.0	28.1	100	99	56	-
S-44	30 RT	30+00	3.0-8.0	A-4(2)	22	9	1.6	37.9	28.4	32.1	100	100	61	-
S-45	30 RT	30+00	8.0-10.0	A-4(0)	19	3	2.2	48.7	27.0	22.1	100	100	50	-
S-22	20 LT	32+00	1.0-6.0	A-6(0)	31	19	2.2	36.4	21.2	40.2	100	100	62	22.7

- Ⓐ LOOSE TAN BROWN SAND, MOIST (ROADWAY EMBANKMENT)
- Ⓒ STIFF ORANGE SANDY SILT, MOIST (ROADWAY EMBANKMENT)

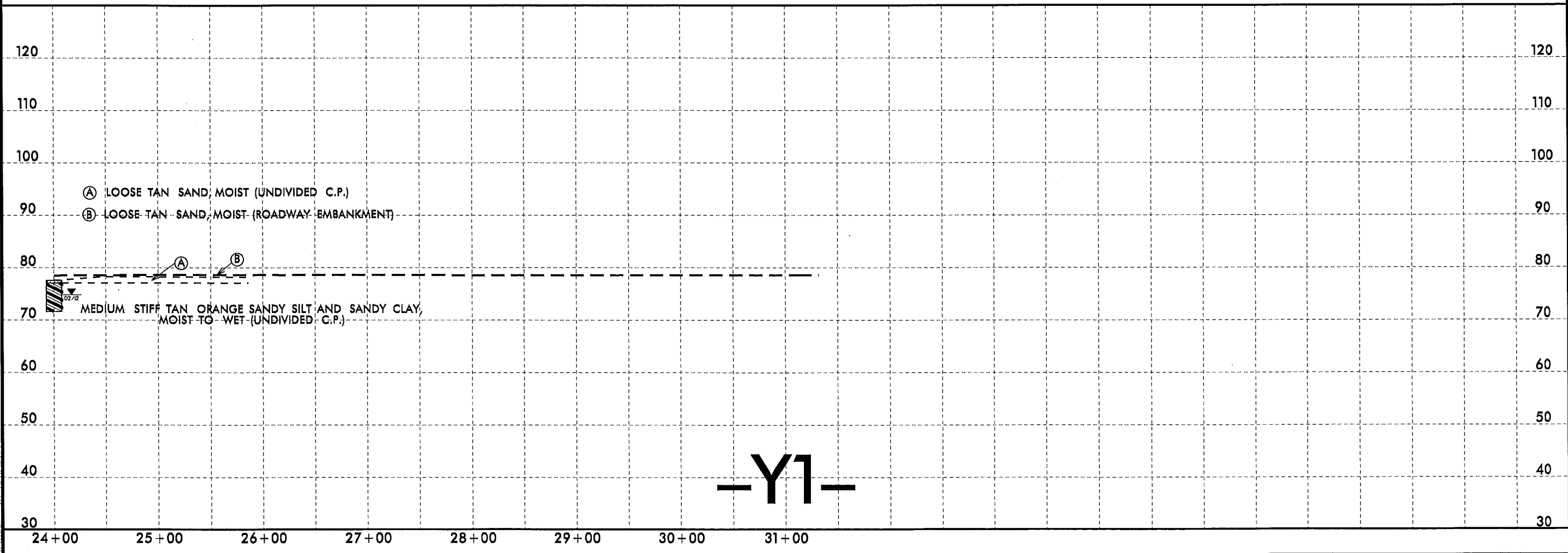
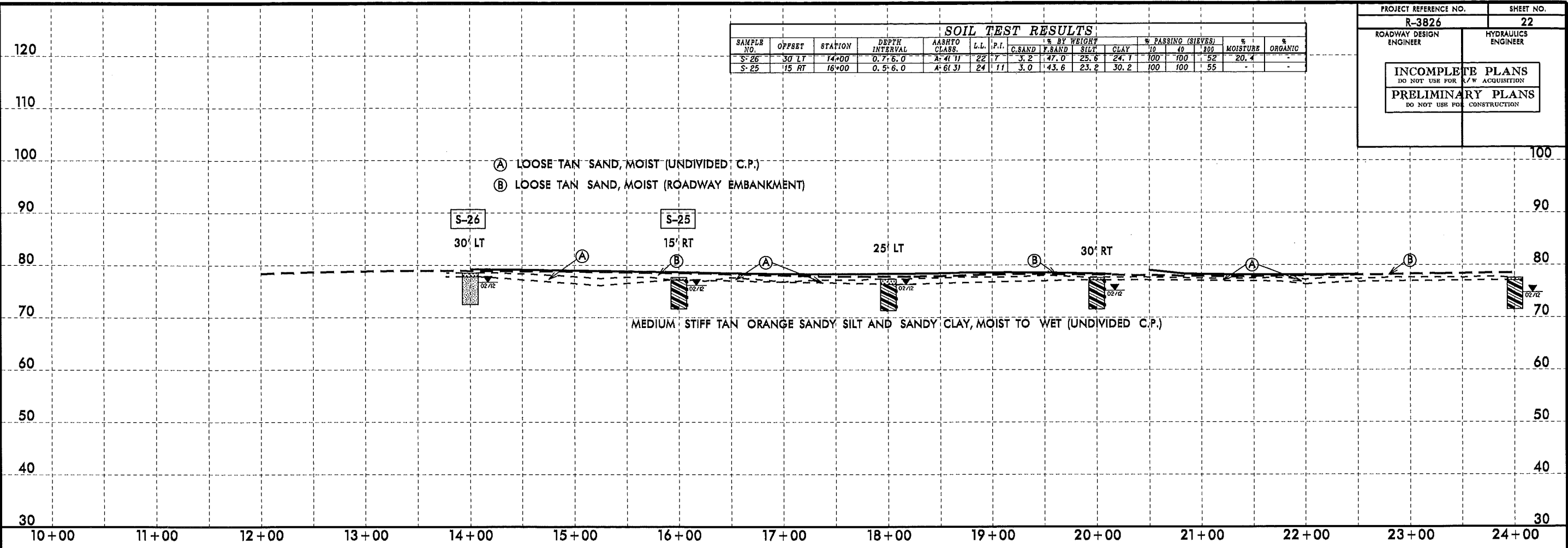


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PROJECT REFERENCE NO.		SHEET NO.	
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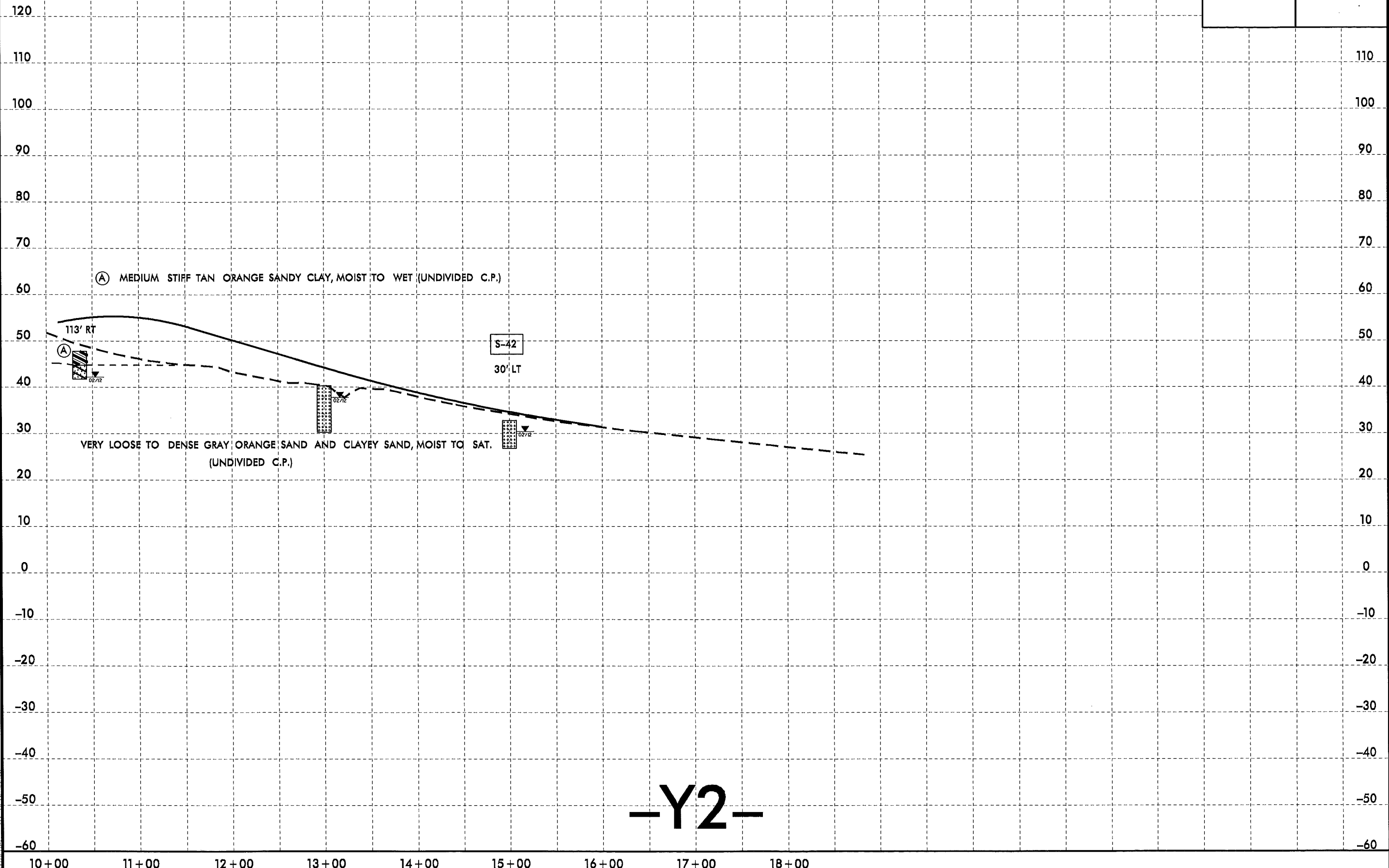
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SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)		% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	#10	#40		
S-26	30' LT	14+00	0.7'-6.0	A-1(1)	22	7	3.2	47.0	25.6	24.1	100	100	52	20.4
S-25	15' RT	16+00	0.5'-6.0	A-6(3)	24	11	3.0	43.6	23.2	30.2	100	100	55	-



-Y1-

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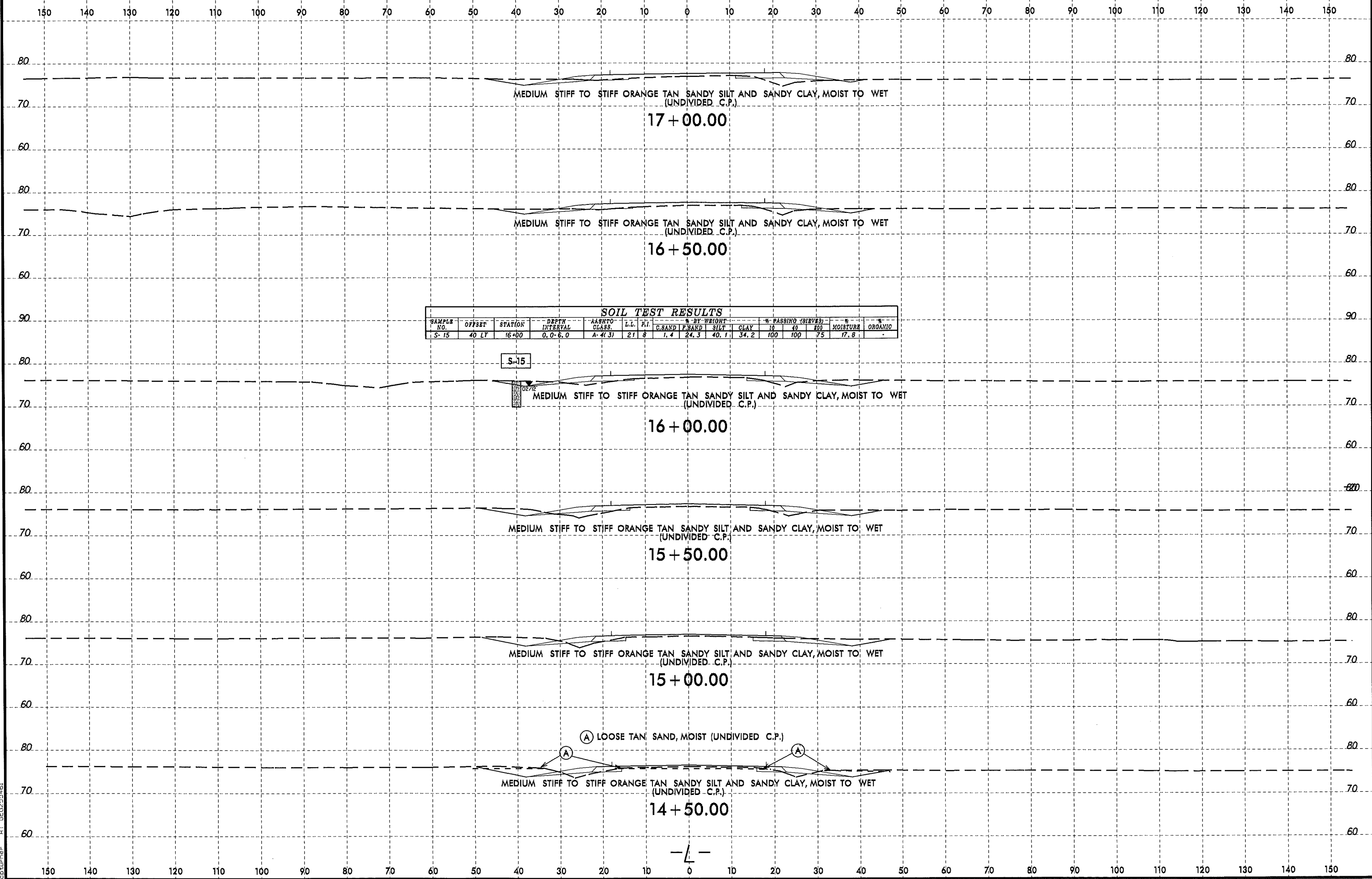
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							C. SAND	F. SAND	SILT		10	60	200		
S-42	30' LT	15+00	0.0-6.0	A-3(0)	17	NP	65.6	25.5	1.9	7.0	100	75	9	-	-



-Y2-

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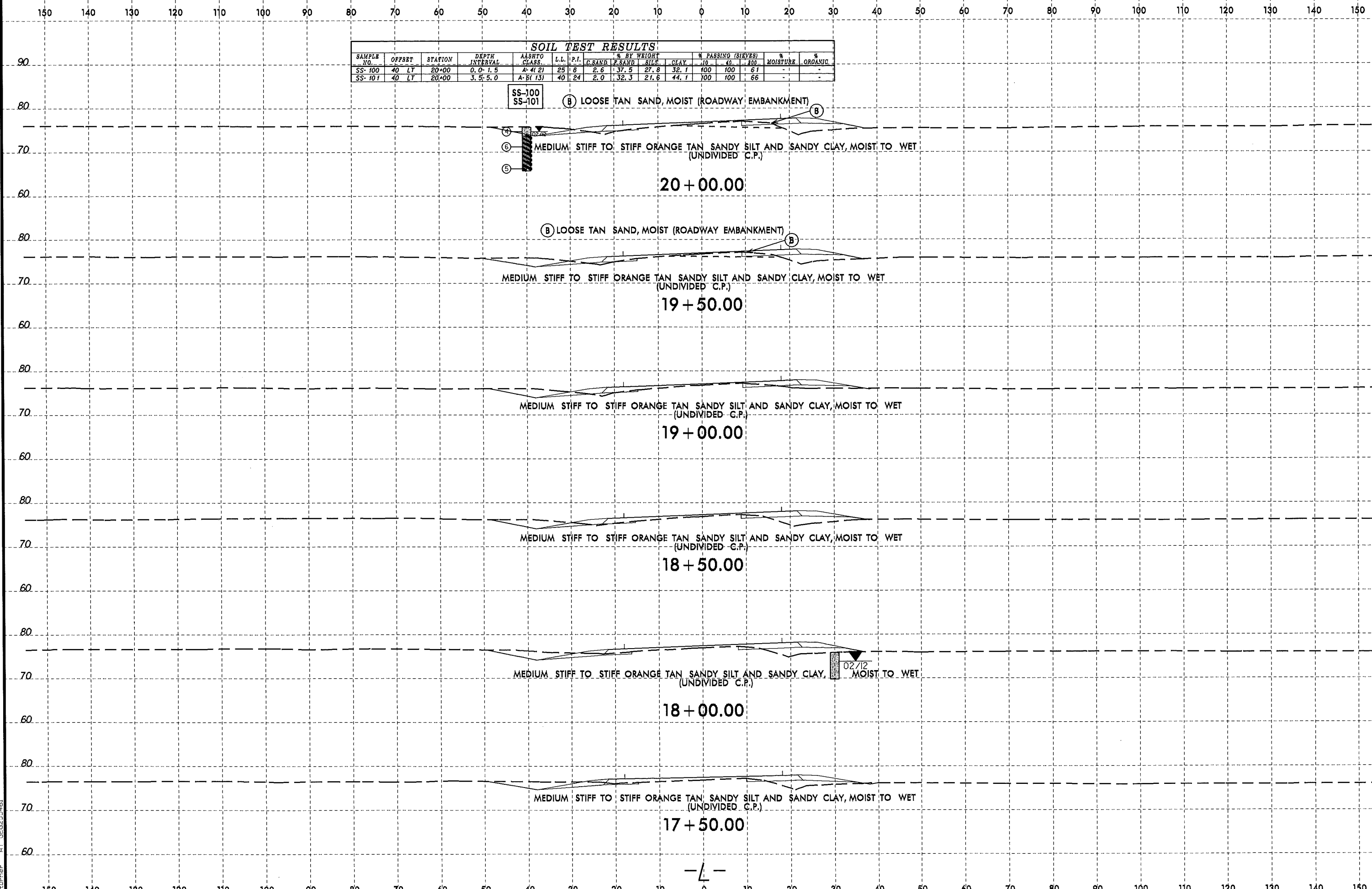
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							SAND	FINE SAND	SILT	CLAY	10	40		
S-15	40 LT	16+00	0.0-6.0	A-4(3)	21	8	1.4	24.3	40.1	34.2	100	100	75	17.8

S-15

(A) LOOSE TAN SAND, MOIST (UNDIVIDED C.P.)

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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-100	40 LT	20+00	0.0-1.5	A-1(2)	25	8	2.6	37.5	27.8	32.1	100	100	61	-	-
SS-101	40 LT	20+00	3.5-5.0	A-1(13)	40	24	2.0	32.3	21.6	44.1	100	100	66	-	-

SS-100
 SS-101
 (B) LOOSE TAN SAND, MOIST (ROADWAY EMBANKMENT)
 (E) MEDIUM STIFF TO STIFF ORANGE TAN SANDY SILT AND SANDY CLAY, MOIST TO WET (UNDIVIDED C.P.)

(B) LOOSE TAN SAND, MOIST (ROADWAY EMBANKMENT)
 MEDIUM STIFF TO STIFF ORANGE TAN SANDY SILT AND SANDY CLAY, MOIST TO WET (UNDIVIDED C.P.)

MEDIUM STIFF TO STIFF ORANGE TAN SANDY SILT AND SANDY CLAY, MOIST TO WET (UNDIVIDED C.P.)

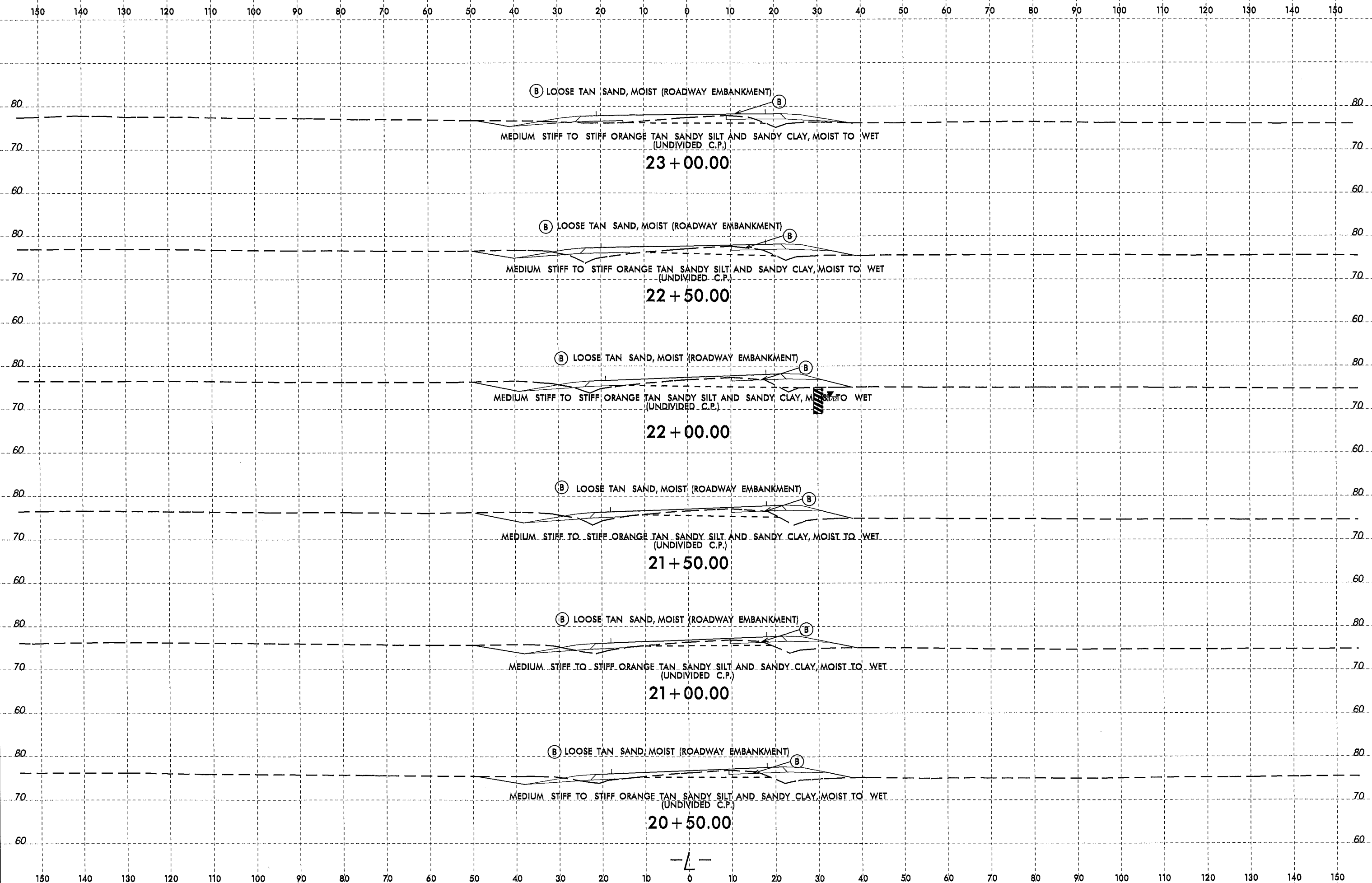
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MEDIUM STIFF TO STIFF ORANGE TAN SANDY SILT AND SANDY CLAY, MOIST TO WET (UNDIVIDED C.P.)
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MEDIUM STIFF TO STIFF ORANGE TAN SANDY SILT AND SANDY CLAY, MOIST TO WET (UNDIVIDED C.P.)

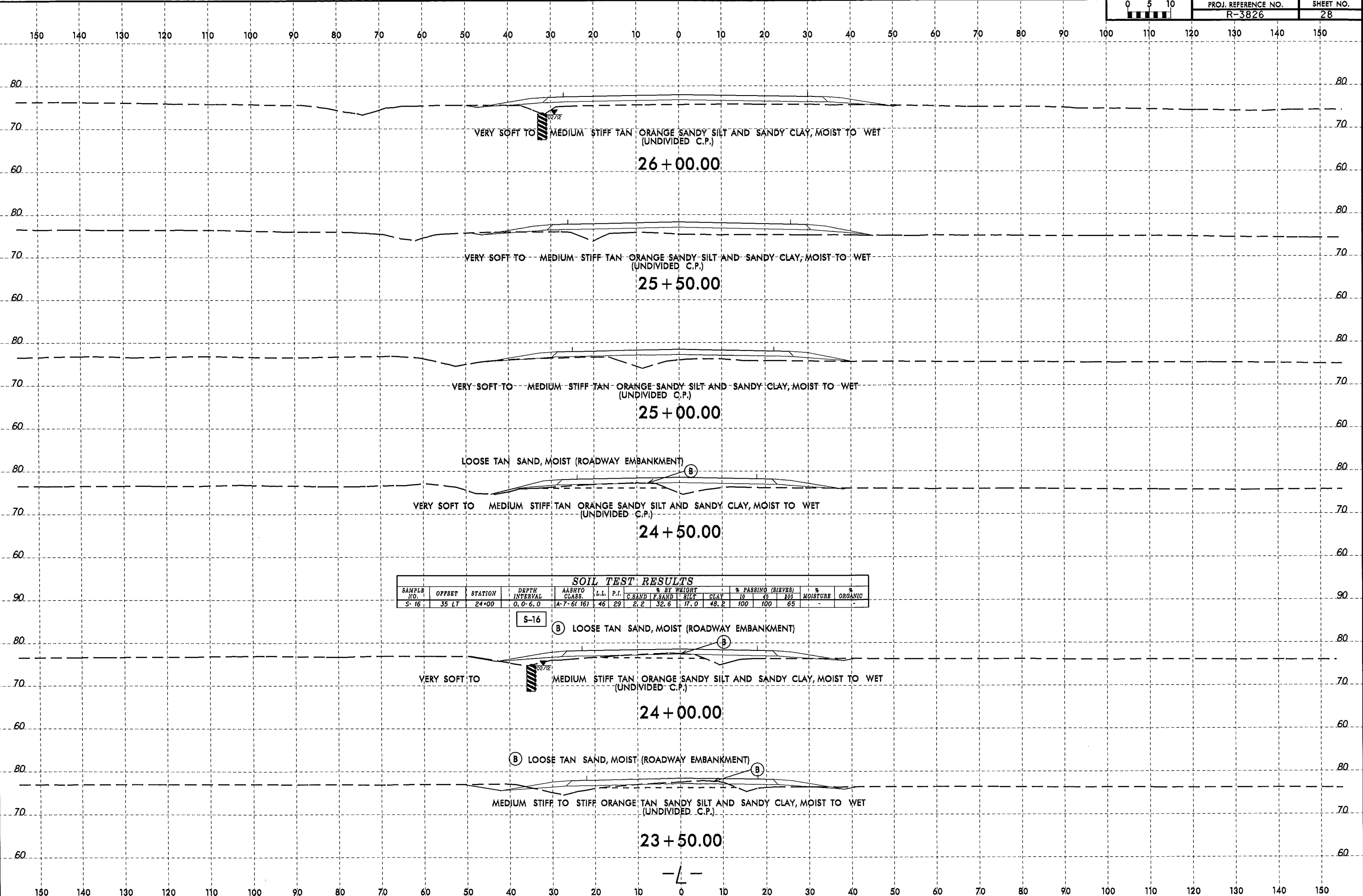
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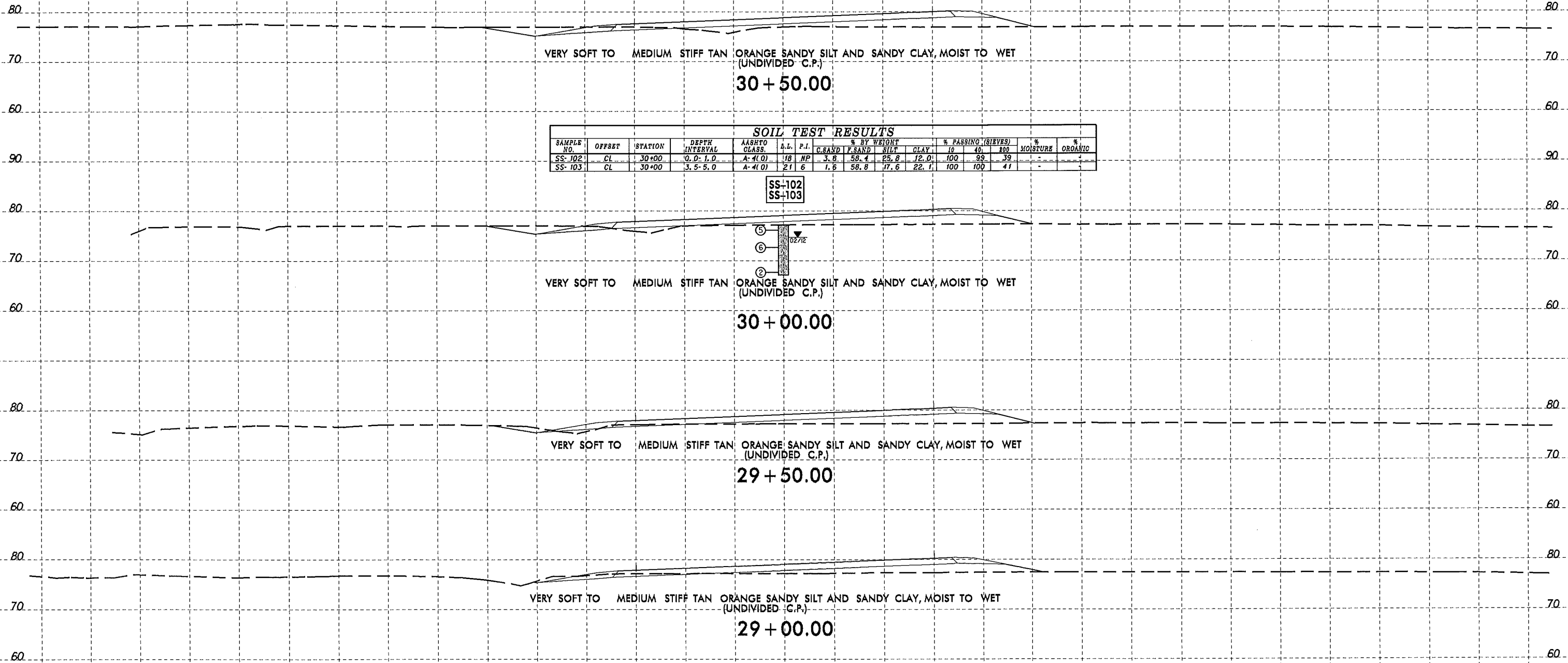


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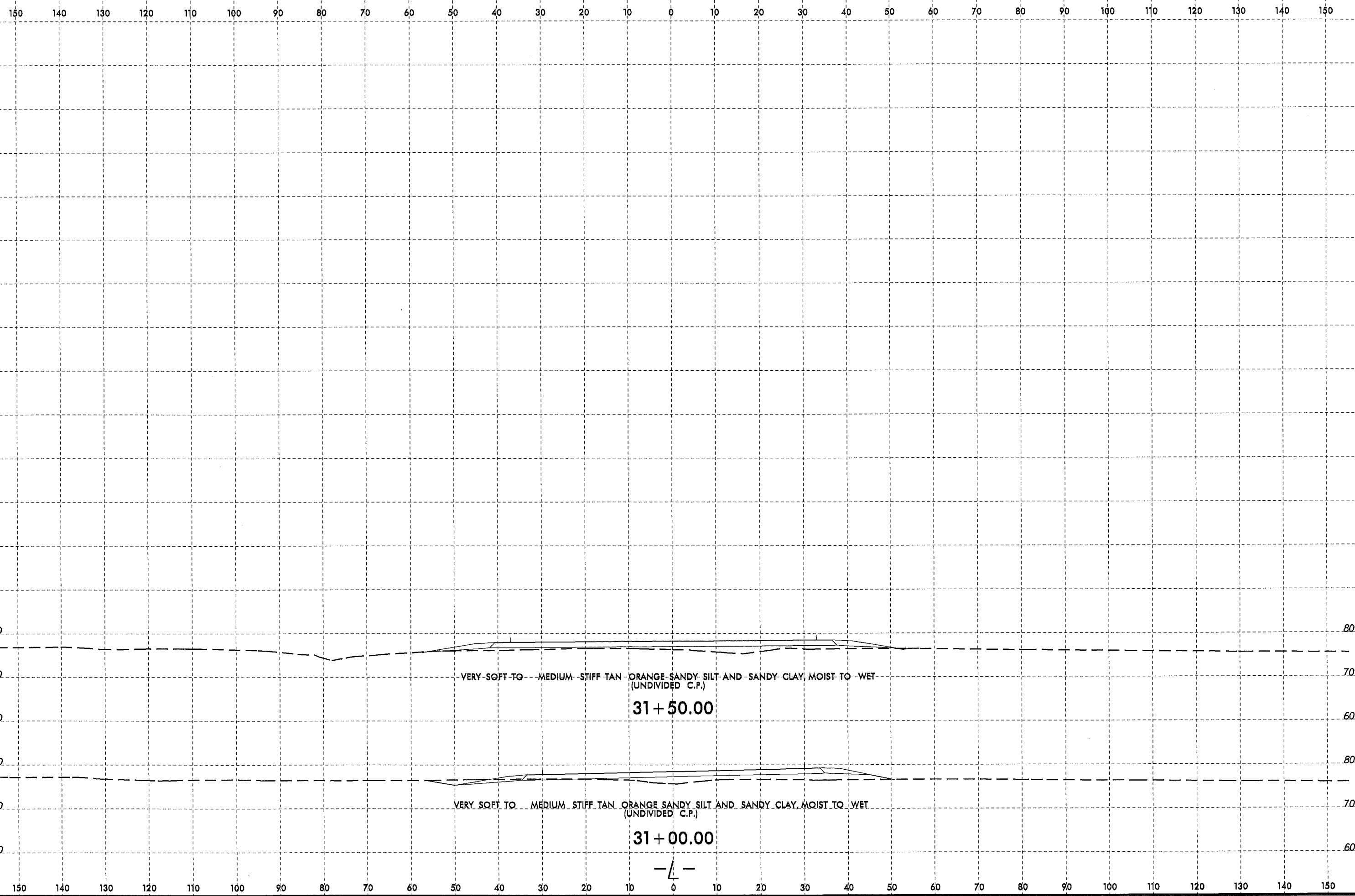


SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-102	CL	30+00	0.0-1.0	A-1(0)	18	NP	3.8	58.4	25.8	12.0	100	99	39	-	-
SS-103	CL	30+00	3.5-5.0	A-1(0)	21	6	1.6	58.8	17.6	22.1	100	100	41	-	-

SS-102
SS-103

⑤
⑥
②

8/23/99



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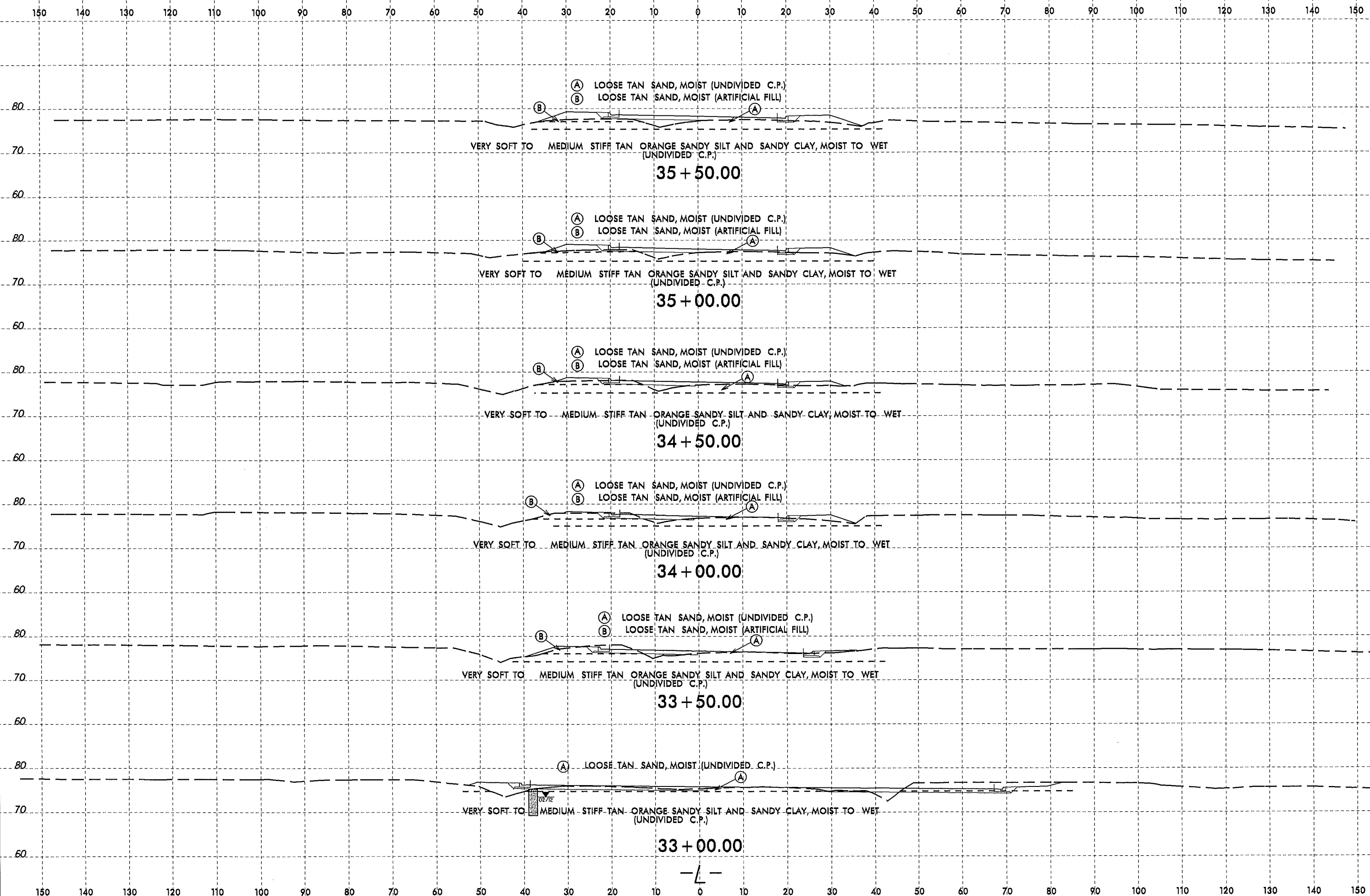
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VERY SOFT TO MEDIUM STIFF TAN ORANGE SANDY SILT AND SANDY CLAY, MOIST TO WET (UNDIVIDED C.P.)

31 + 00.00

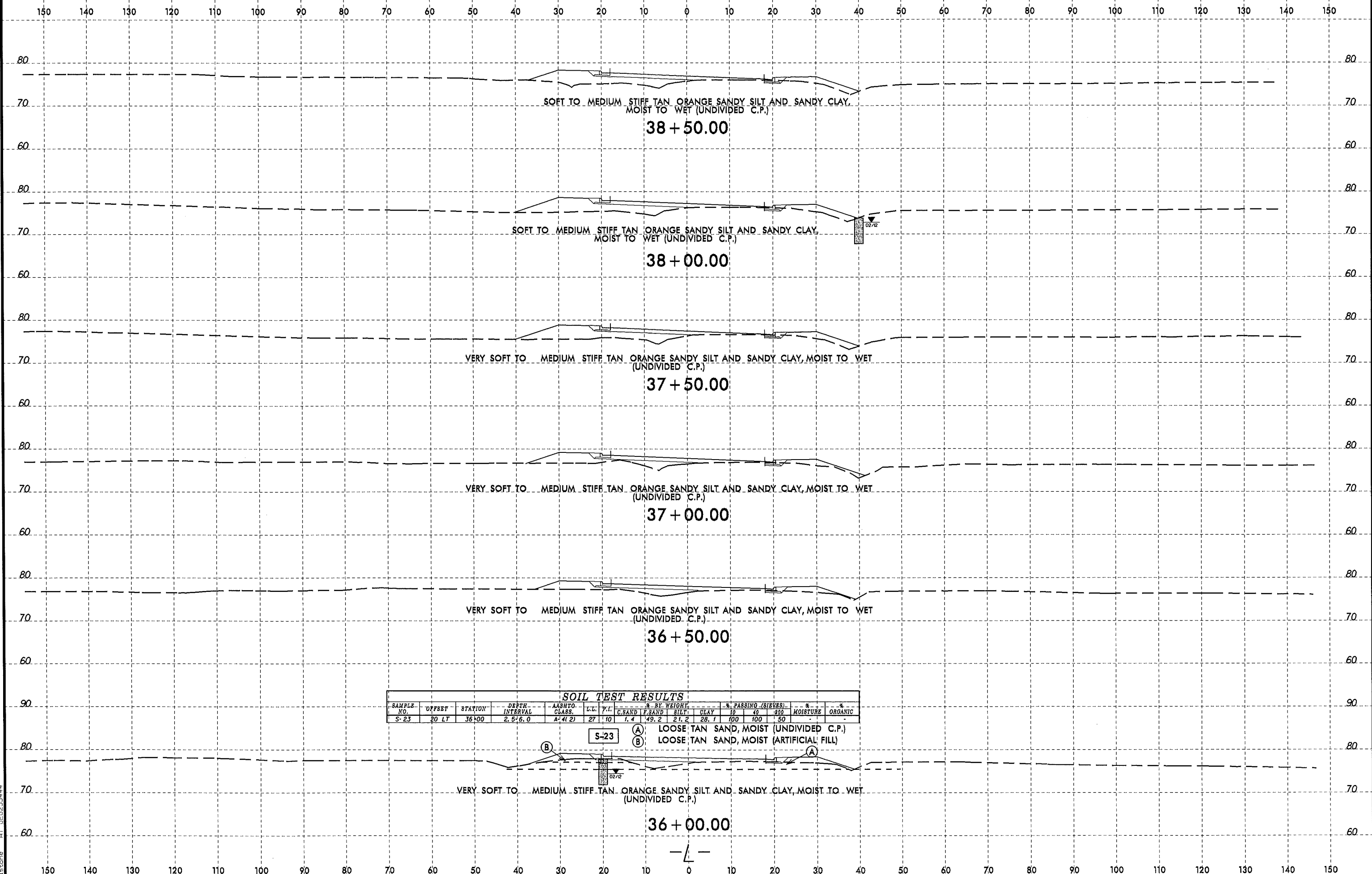
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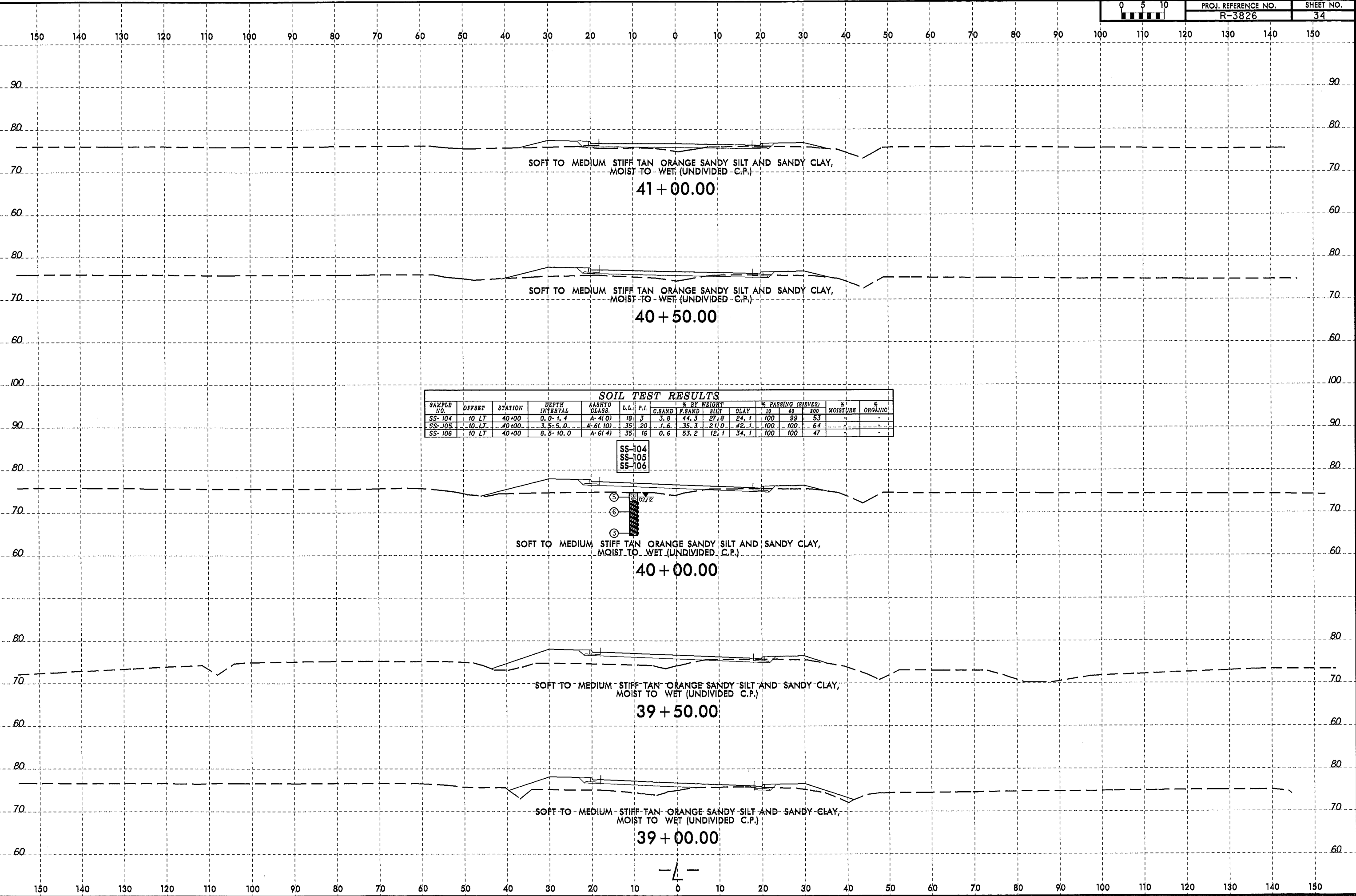
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SOIL TEST RESULTS														
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.	% BY WEIGHT			% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							G. SAND	F. SAND	SILT	10	40	200		
S-23	20 LT	36+00	2.5'-6.0'	A-4(2)	27	10	1.4	49.2	21.2	28.1	100	100	50	

- (A) LOOSE TAN SAND, MOIST (UNDIVIDED C.P.)
- (B) LOOSE TAN SAND, MOIST (ARTIFICIAL FILL)

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SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							G.SAND	F.SAND	SILT	CLAY	#10	#40	#100		
SS-104	10 LT	40+00	0.0-1.4	A-4(0)	18	3	3.8	44.3	27.8	24.1	100	99	53	-	-
SS-105	10 LT	40+00	3.5-5.0	A-6(10)	35	20	1.6	35.3	21.0	42.7	100	100	64	-	-
SS-106	10 LT	40+00	8.5-10.0	A-6(4)	35	16	0.6	53.2	12.1	34.1	100	100	47	-	-

SS-104
 SS-105
 SS-106

SOFT TO MEDIUM STIFF TAN ORANGE SANDY SILT AND SANDY CLAY,
MOIST TO WET (UNDIVIDED - C.P.)

41 + 00.00

SOFT TO MEDIUM STIFF TAN ORANGE SANDY SILT AND SANDY CLAY,
MOIST TO WET (UNDIVIDED - C.P.)

40 + 50.00

SOFT TO MEDIUM STIFF TAN ORANGE SANDY SILT AND SANDY CLAY,
MOIST TO WET (UNDIVIDED - C.P.)

40 + 00.00

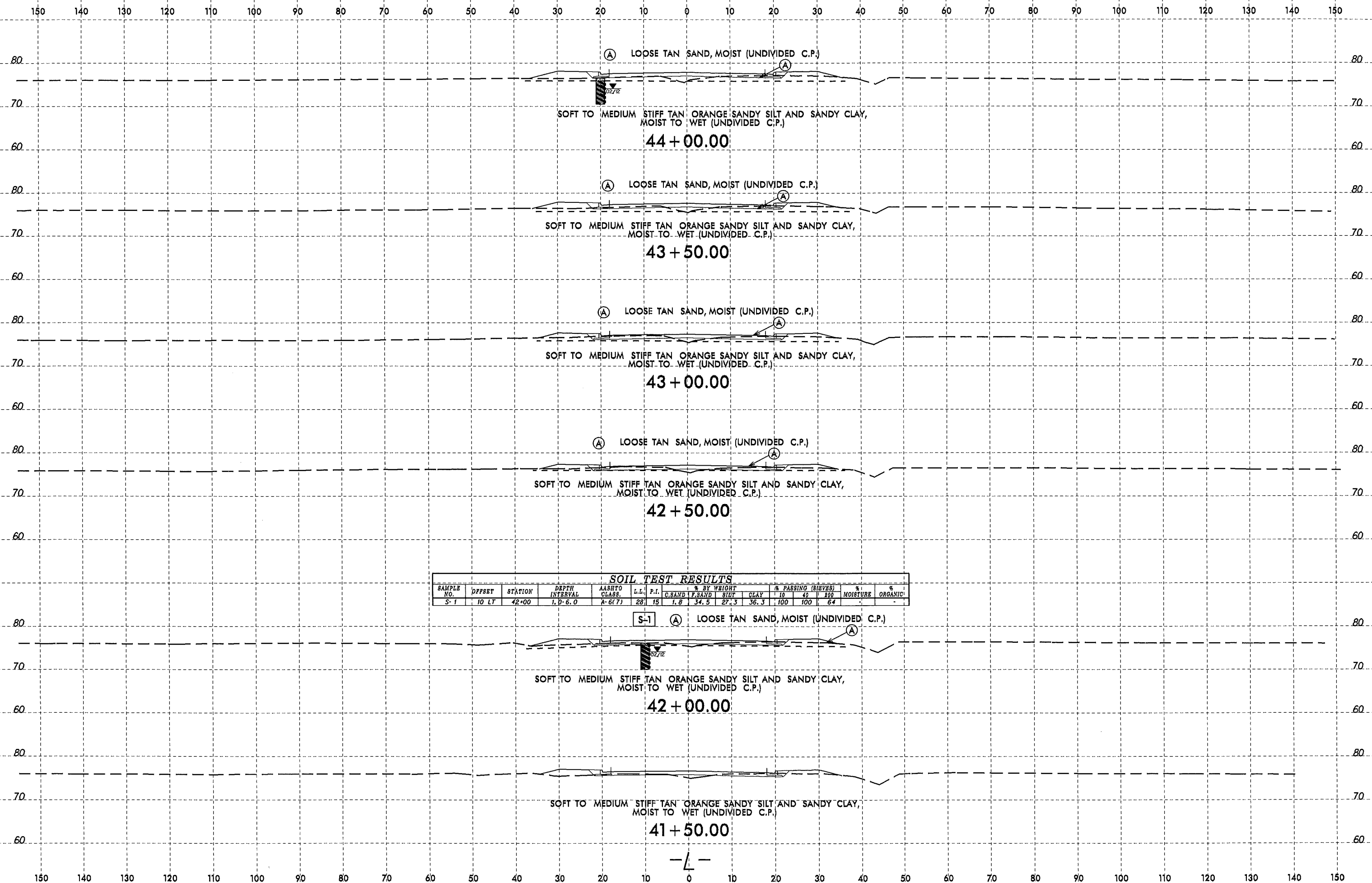
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MOIST TO WET (UNDIVIDED C.P.)

39 + 50.00

SOFT TO MEDIUM STIFF TAN ORANGE SANDY SILT AND SANDY CLAY,
MOIST TO WET (UNDIVIDED C.P.)

39 + 00.00

-L-



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	10	40	200		
S-1	10 LT	42+00	1.0-8.0	A-6(7)	28	15	1.8	34.5	27.3	36.3	100	100	64	-

29 MAY 2012 12:16
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SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% SAND	% FINE SAND	% SILT	% CLAY	% PASSING (SIEVES)			% MOISTURE	% ORGANIC
											10	40	100		
S-24	45 FT	46+50	0.5'-6.0'	A-6(7)	28	14	1.4	32.0	26.4	40.2	100	100	67	-	-

- (A) LOOSE TAN SAND, MOIST (UNDIVIDED C.P.)
- (B) LOOSE TAN SAND, MOIST (ROADWAY EMBANKMENT.)

SOFT TO MEDIUM STIFF TAN ORANGE SANDY SILT AND SANDY CLAY,
MOIST TO WET (UNDIVIDED C.P.)

46 + 50.00

- (A) LOOSE TAN SAND, MOIST (UNDIVIDED C.P.)
- (B) LOOSE TAN SAND, MOIST (ROADWAY EMBANKMENT.)

SOFT TO MEDIUM STIFF TAN ORANGE SANDY SILT AND SANDY CLAY,
MOIST TO WET (UNDIVIDED C.P.)

46 + 00.00

- (A) LOOSE TAN SAND, MOIST (UNDIVIDED C.P.)
- (B) LOOSE TAN SAND, MOIST (ROADWAY EMBANKMENT.)

SOFT TO MEDIUM STIFF TAN ORANGE SANDY SILT AND SANDY CLAY,
MOIST TO WET (UNDIVIDED C.P.)

45 + 50.00

- (A) LOOSE TAN SAND, MOIST (UNDIVIDED C.P.)
- (B) LOOSE TAN SAND, MOIST (ROADWAY EMBANKMENT.)

SOFT TO MEDIUM STIFF TAN ORANGE SANDY SILT AND SANDY CLAY,
MOIST TO WET (UNDIVIDED C.P.)

45 + 00.00

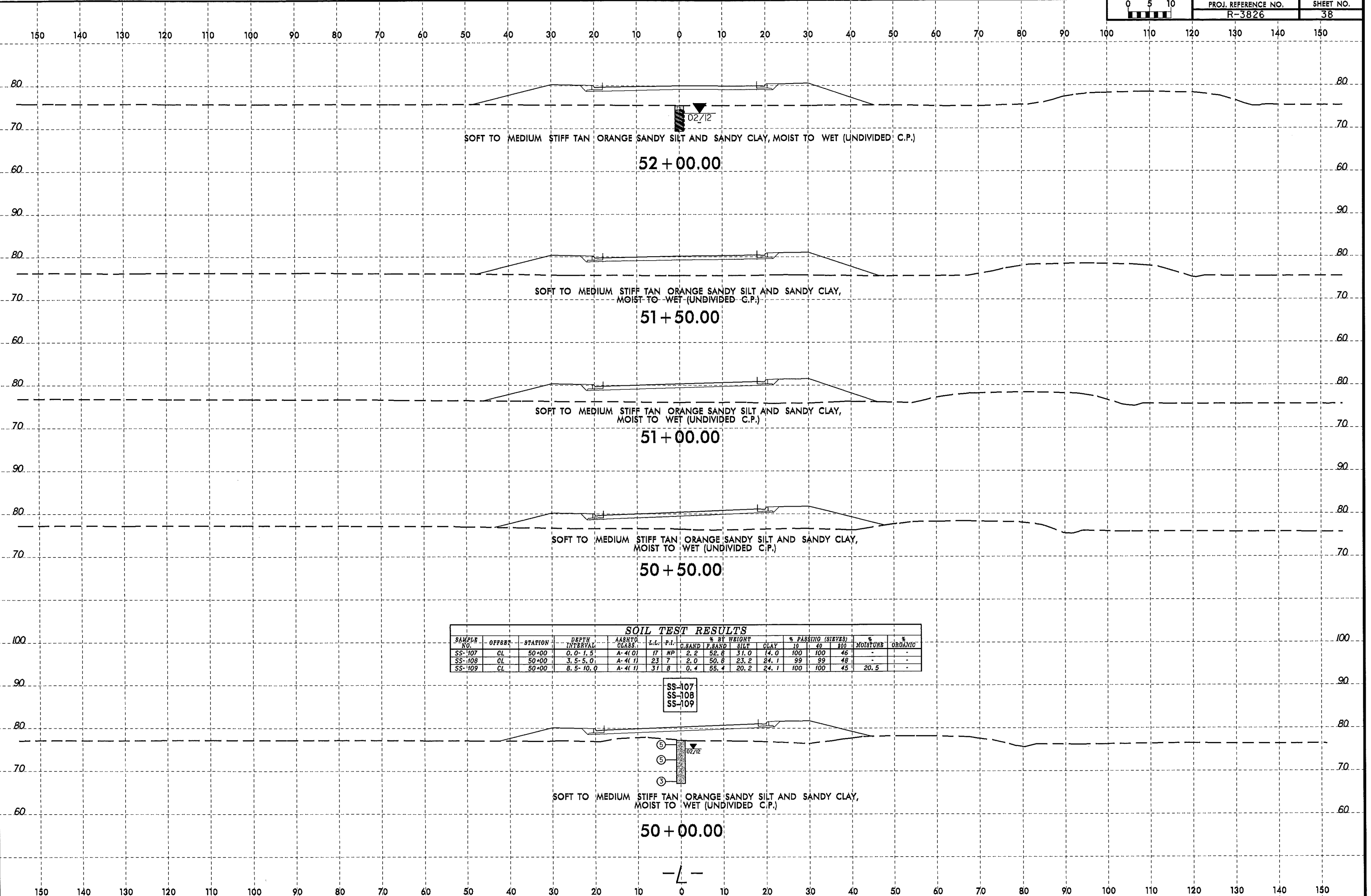
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- (B) LOOSE TAN SAND, MOIST (ROADWAY EMBANKMENT.)

SOFT TO MEDIUM STIFF TAN ORANGE SANDY SILT AND SANDY CLAY,
MOIST TO WET (UNDIVIDED C.P.)

44 + 50.00

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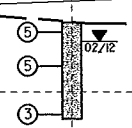
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SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-107	CL	50+00	0.0 - 1.5'	A-4(0)	17	NP	2.2	52.8	31.0	14.0	100	100	46	-	-
SS-108	CL	50+00	3.5 - 5.0'	A-4(1)	23	7	2.0	50.8	23.2	24.1	99	99	48	-	-
SS-109	CL	50+00	8.5 - 10.0'	A-4(1)	31	8	0.4	55.4	20.2	24.1	100	100	45	20.5	-

SS-107
 SS-108
 SS-109

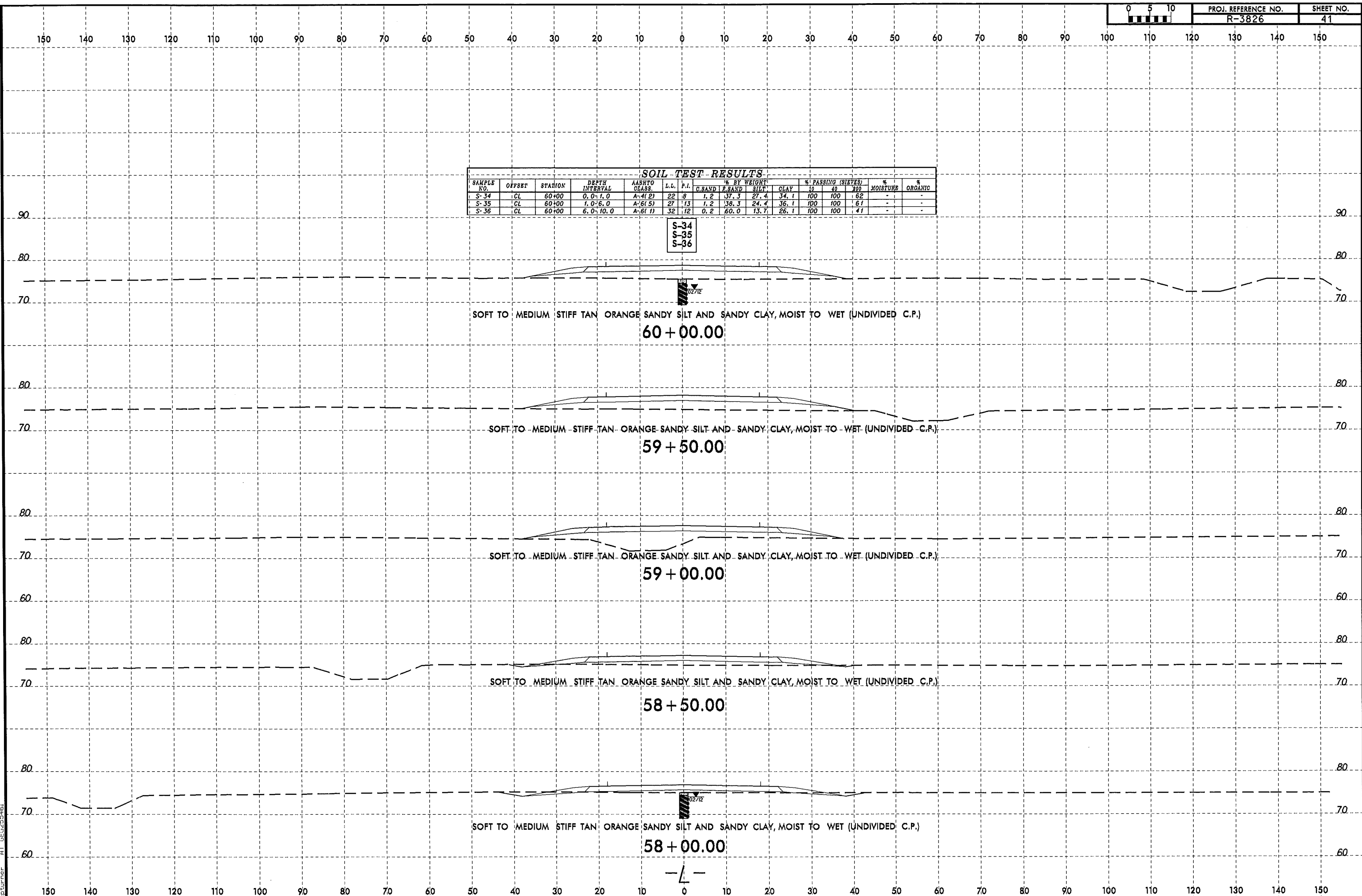


SOFT TO MEDIUM STIFF TAN ORANGE SANDY SILT AND SANDY CLAY, MOIST TO WET (UNDIVIDED C.P.)

50 + 00.00

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SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT			% PASSING (SIEVES)			% MOISTURE	% ORGANIC	
							C.SAND	F.SAND	SILT	10	40	200			
S-34	CL	60+00	0.0-1.0	A-4(2)	22	8	1.2	37.3	27.4	34.1	100	100	62	-	-
S-35	CL	60+00	1.0-6.0	A-6(5)	27	13	1.2	38.3	24.4	36.1	100	100	61	-	-
S-36	CL	60+00	6.0-10.0	A-6(1)	32	12	0.2	60.0	13.7	26.1	100	100	41	-	-

S-34
 S-35
 S-36

SOFT TO MEDIUM STIFF TAN ORANGE SANDY SILT AND SANDY CLAY, MOIST TO WET (UNDIVIDED C.P.)

60 + 00.00

SOFT TO MEDIUM STIFF TAN ORANGE SANDY SILT AND SANDY CLAY, MOIST TO WET (UNDIVIDED C.P.)

59 + 50.00

SOFT TO MEDIUM STIFF TAN ORANGE SANDY SILT AND SANDY CLAY, MOIST TO WET (UNDIVIDED C.P.)

59 + 00.00

SOFT TO MEDIUM STIFF TAN ORANGE SANDY SILT AND SANDY CLAY, MOIST TO WET (UNDIVIDED C.P.)

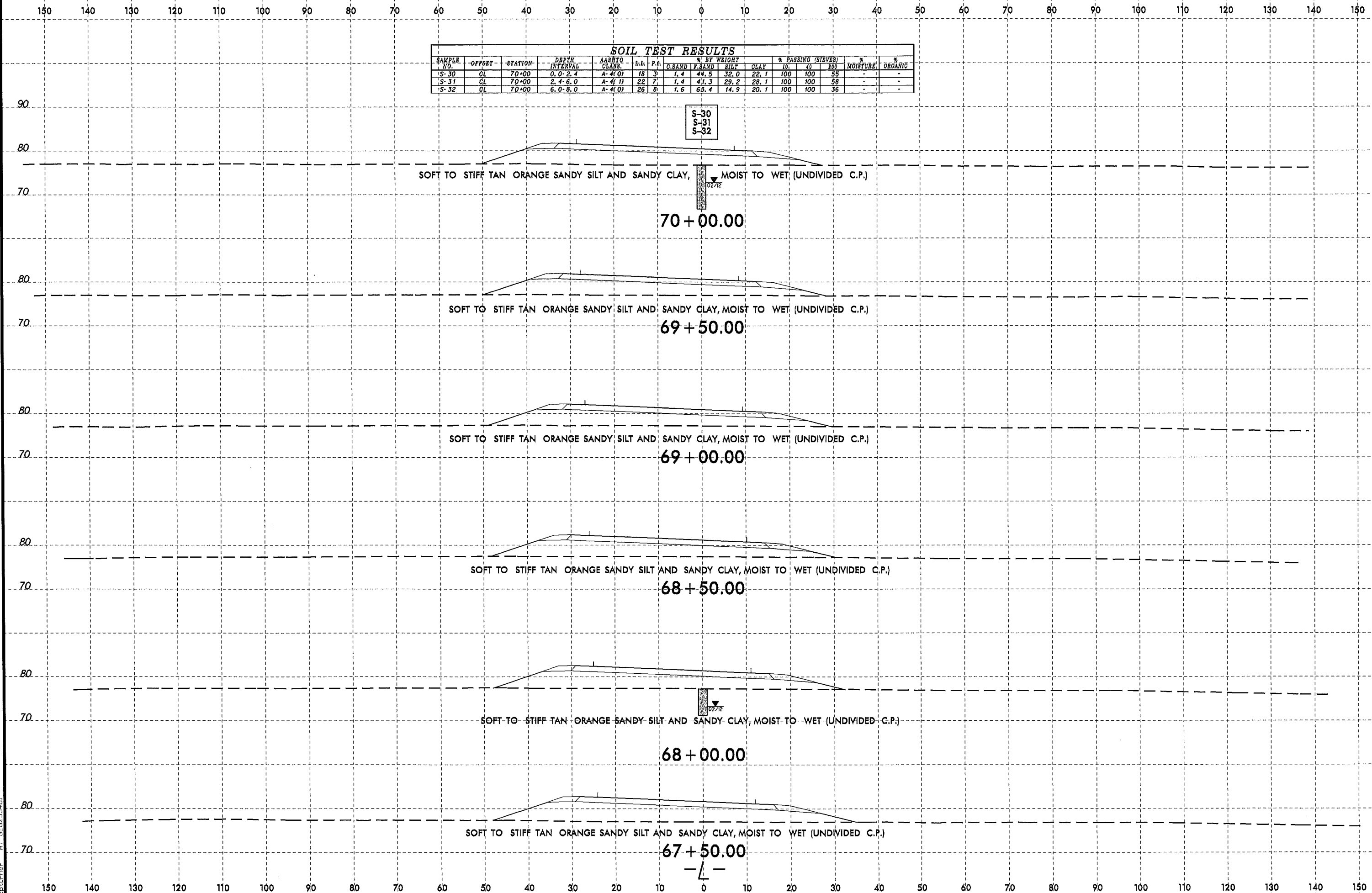
58 + 50.00

SOFT TO MEDIUM STIFF TAN ORANGE SANDY SILT AND SANDY CLAY, MOIST TO WET (UNDIVIDED C.P.)

58 + 00.00

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 Author: jg
 Date: 5/23/12



SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.F.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-30	OL	70+00	0.0-2.4	A-4(0)	18	3	1.4	44.5	32.0	22.1	100	100	55	-	-
S-31	CL	70+00	2.4-6.0	A-4(1)	22	7	1.4	41.3	29.2	28.1	100	100	58	-	-
S-32	OL	70+00	6.0-8.0	A-4(0)	26	8	1.6	65.4	14.9	20.1	100	100	36	-	-

S-30
S-31
S-32

SOFT TO STIFF TAN ORANGE SANDY SILT AND SANDY CLAY, MOIST TO WET (UNDIVIDED C.P.)

70 + 00.00

SOFT TO STIFF TAN ORANGE SANDY SILT AND SANDY CLAY, MOIST TO WET (UNDIVIDED C.P.)

69 + 50.00

SOFT TO STIFF TAN ORANGE SANDY SILT AND SANDY CLAY, MOIST TO WET (UNDIVIDED C.P.)

69 + 00.00

SOFT TO STIFF TAN ORANGE SANDY SILT AND SANDY CLAY, MOIST TO WET (UNDIVIDED C.P.)

68 + 50.00

SOFT TO STIFF TAN ORANGE SANDY SILT AND SANDY CLAY, MOIST TO WET (UNDIVIDED C.P.)

68 + 00.00

SOFT TO STIFF TAN ORANGE SANDY SILT AND SANDY CLAY, MOIST TO WET (UNDIVIDED C.P.)

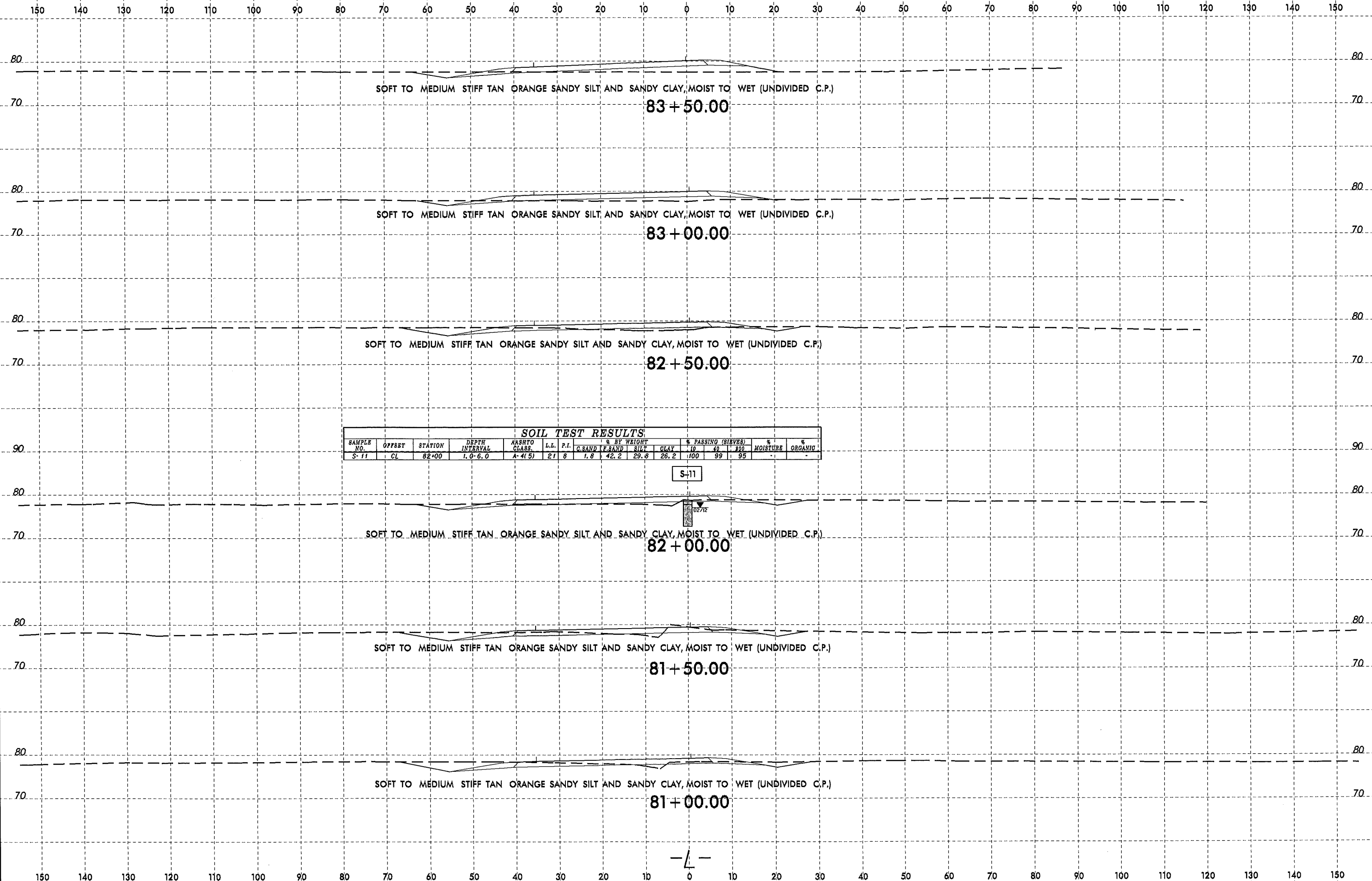
67 + 50.00

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PROJ. REFERENCE NO.
R-3826

SHEET NO.
48



SOIL TEST RESULTS

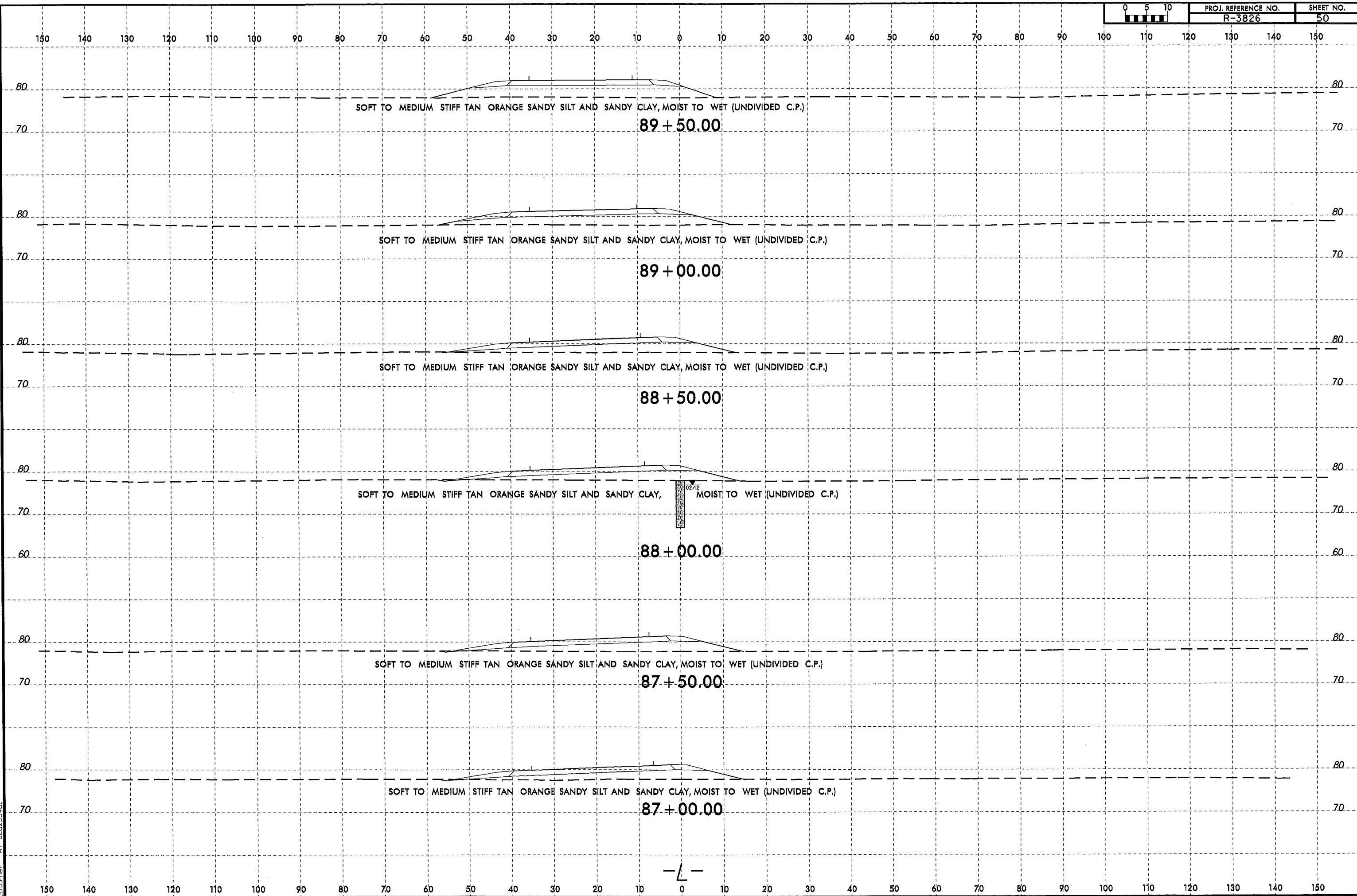
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	ASHTO CLASS.	L.L.	P.I.	% BY WEIGHT			% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							SAND	SILT	CLAY	#10	#40	#200		
S-11	CL	82+00	1.0-6.0	A-4(5)	21	8	1.8	42.2	29.8	26.2	100	99	95	-

S-11



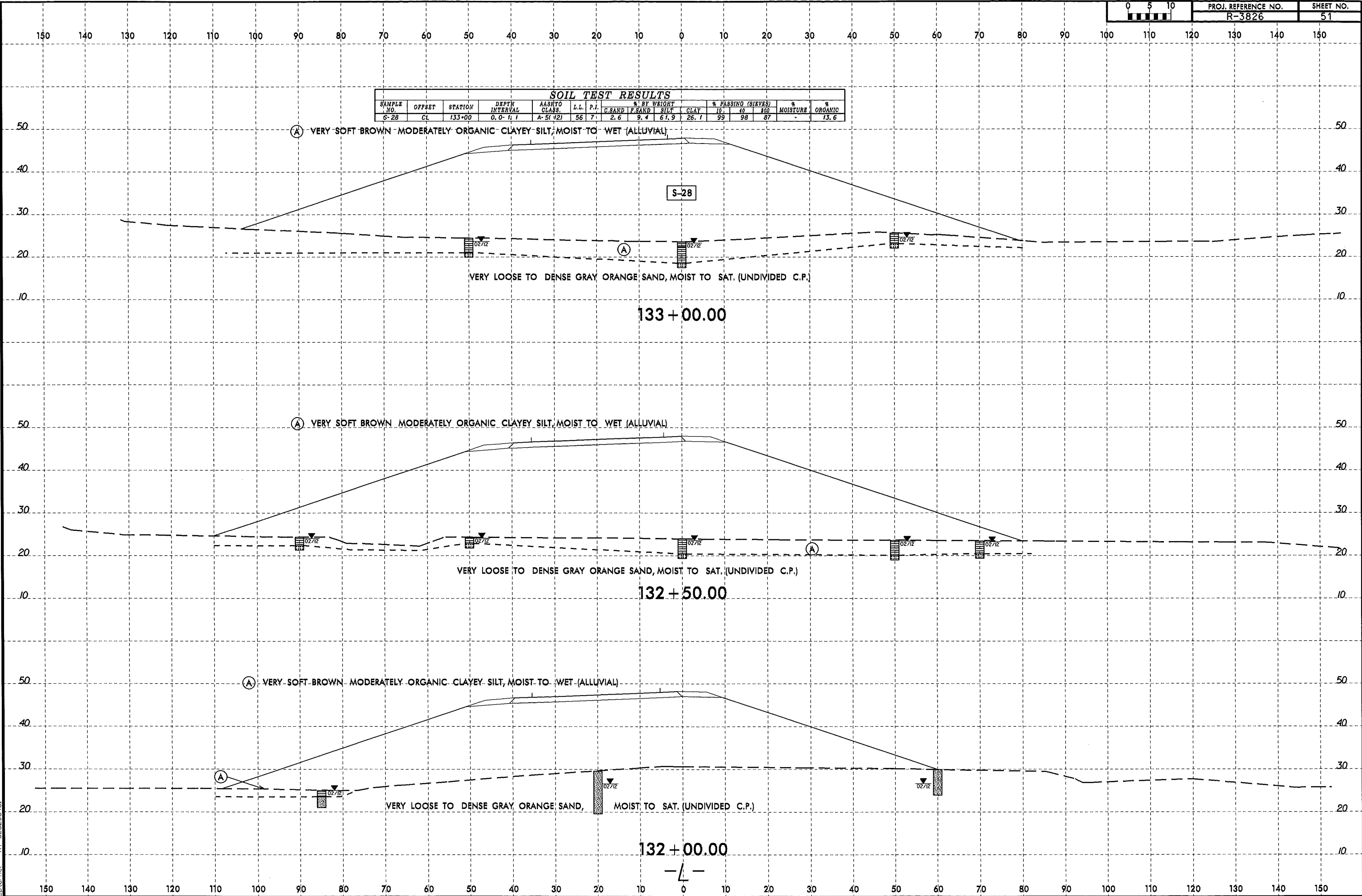
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8/23/99

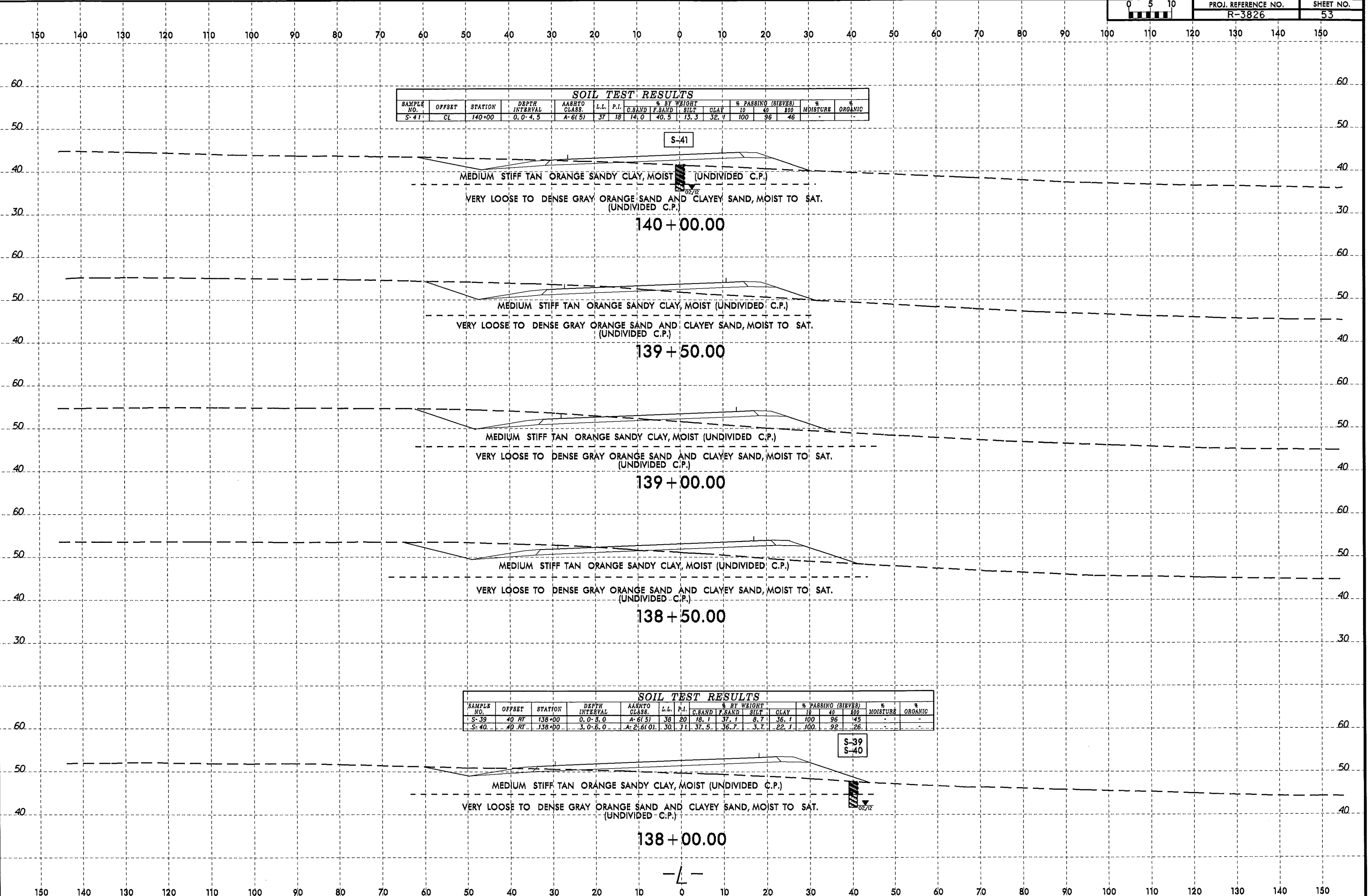


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SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	100		
S-41	CL	140+00	0.0-4.5	A-6(5)	37	18	14.0	40.5	13.3	32.7	100	96	46	-	-

S-41

MEDIUM STIFF TAN ORANGE SANDY CLAY, MOIST (UNDIVIDED C.P.)
 VERY LOOSE TO DENSE GRAY ORANGE SAND AND CLAYEY SAND, MOIST TO SAT. (UNDIVIDED C.P.)

140 + 00.00

MEDIUM STIFF TAN ORANGE SANDY CLAY, MOIST (UNDIVIDED C.P.)
 VERY LOOSE TO DENSE GRAY ORANGE SAND AND CLAYEY SAND, MOIST TO SAT. (UNDIVIDED C.P.)

139 + 50.00

MEDIUM STIFF TAN ORANGE SANDY CLAY, MOIST (UNDIVIDED C.P.)
 VERY LOOSE TO DENSE GRAY ORANGE SAND AND CLAYEY SAND, MOIST TO SAT. (UNDIVIDED C.P.)

139 + 00.00

MEDIUM STIFF TAN ORANGE SANDY CLAY, MOIST (UNDIVIDED C.P.)
 VERY LOOSE TO DENSE GRAY ORANGE SAND AND CLAYEY SAND, MOIST TO SAT. (UNDIVIDED C.P.)

138 + 50.00

SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	100		
S-39	40 RT	138+00	0.0-5.0	A-6(5)	36	20	18.1	37.1	8.7	36.1	100	96	45	-	-
S-40	40 RT	138+00	3.0-5.0	A-2(6)01	30	11	37.5	36.7	3.7	22.1	100	92	26	-	-

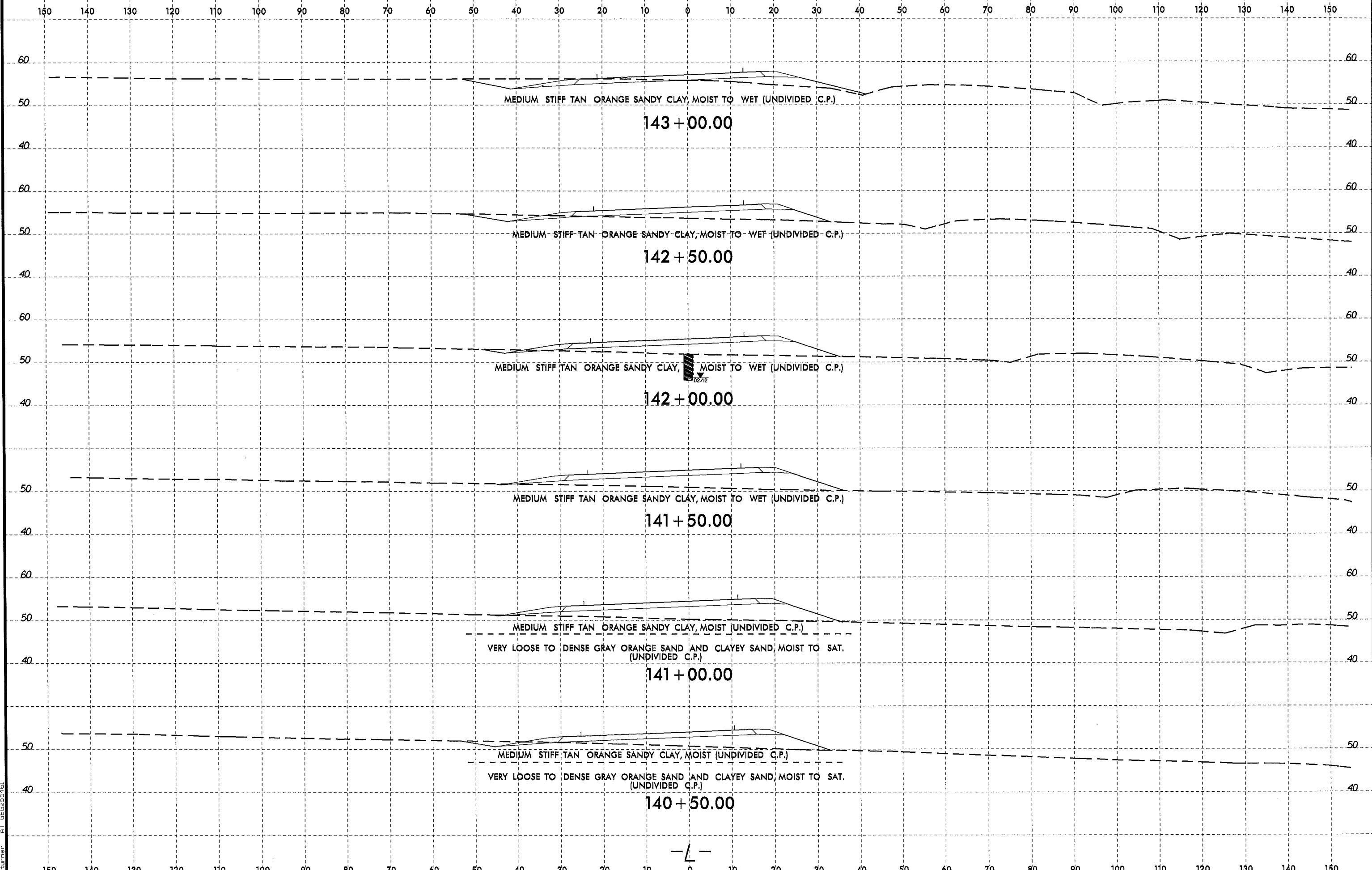
S-39
S-40

MEDIUM STIFF TAN ORANGE SANDY CLAY, MOIST (UNDIVIDED C.P.)
 VERY LOOSE TO DENSE GRAY ORANGE SAND AND CLAYEY SAND, MOIST TO SAT. (UNDIVIDED C.P.)

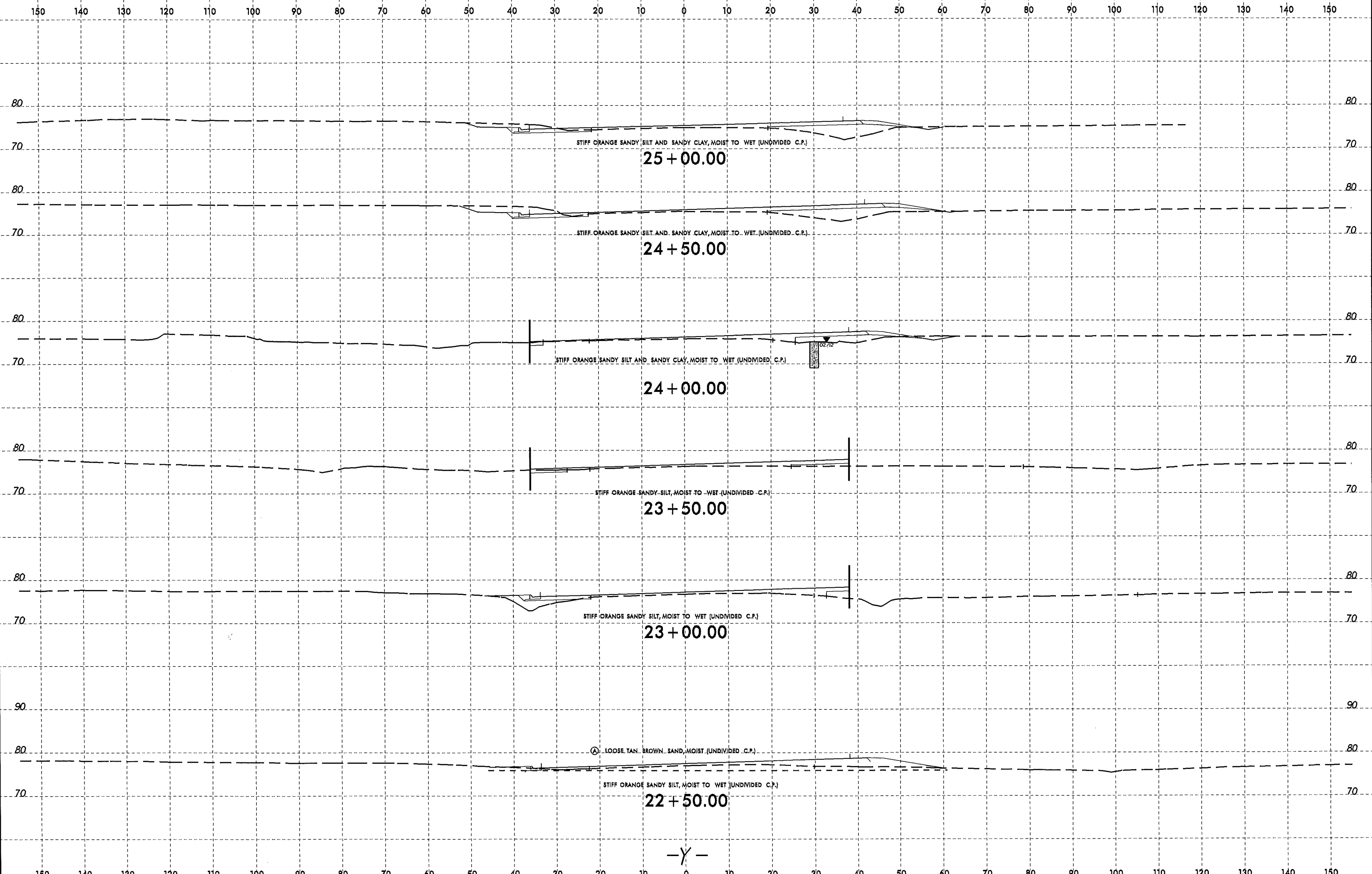
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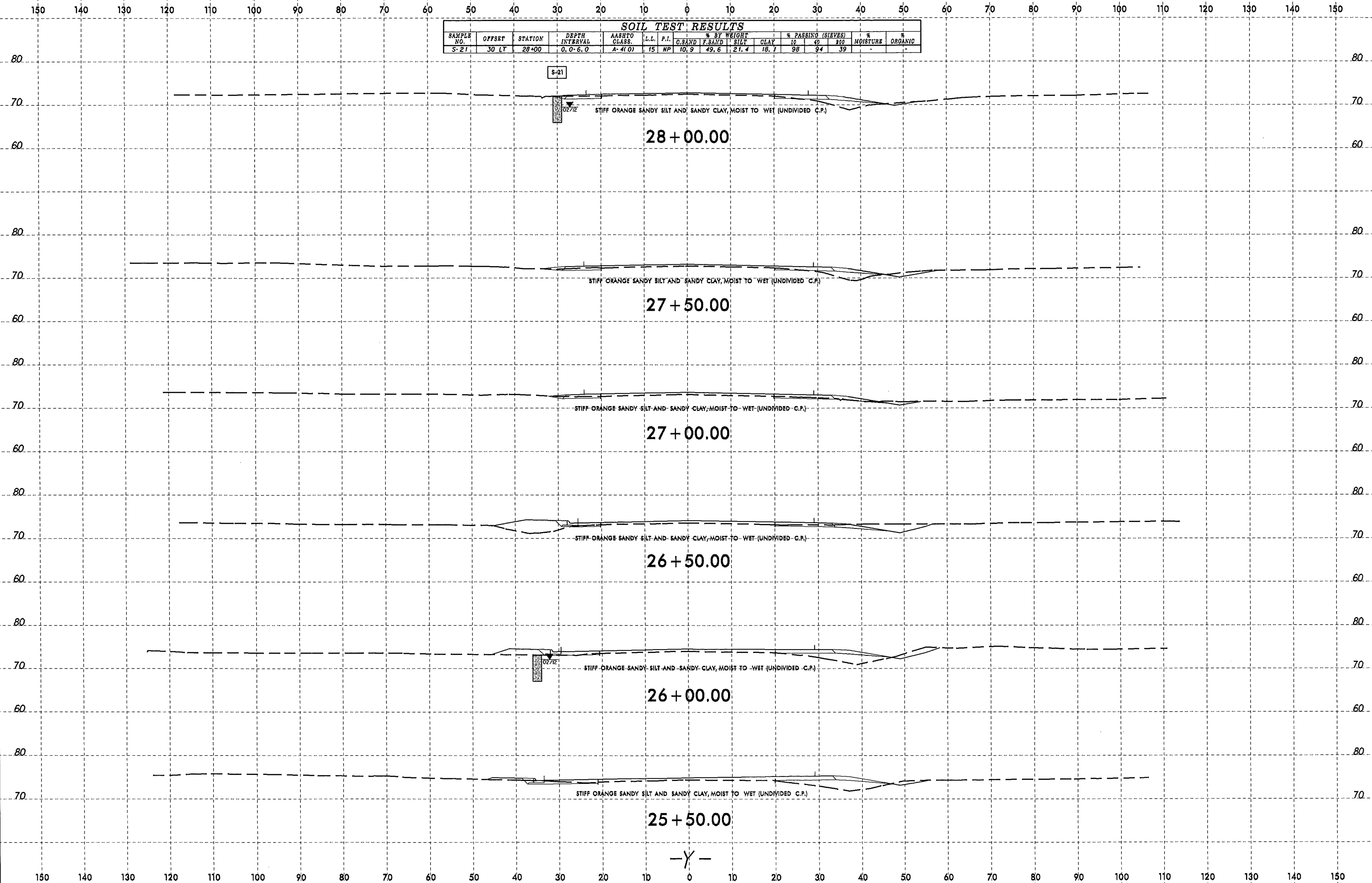


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SOIL TEST RESULTS													
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					L.L.	P.I.	C.SAND	F.SAND	SILT	CLAY			#10
S-21	30 LT	28+00	0.0-6.0	A-4(0)	15	NP	10.9	49.6	21.4	18.7	98	94	39



S-21

02712

STIFF ORANGE SANDY SILT AND SANDY CLAY, MOIST TO WET (UNDIVIDED C.P.)

28 + 00.00

STIFF ORANGE SANDY SILT AND SANDY CLAY, MOIST TO WET (UNDIVIDED C.P.)

27 + 50.00

STIFF ORANGE SANDY SILT AND SANDY CLAY, MOIST TO WET (UNDIVIDED C.P.)

27 + 00.00

STIFF ORANGE SANDY SILT AND SANDY CLAY, MOIST TO WET (UNDIVIDED C.P.)

26 + 50.00

02712

STIFF ORANGE SANDY SILT AND SANDY CLAY, MOIST TO WET (UNDIVIDED C.P.)

26 + 00.00

STIFF ORANGE SANDY SILT AND SANDY CLAY, MOIST TO WET (UNDIVIDED C.P.)

25 + 50.00

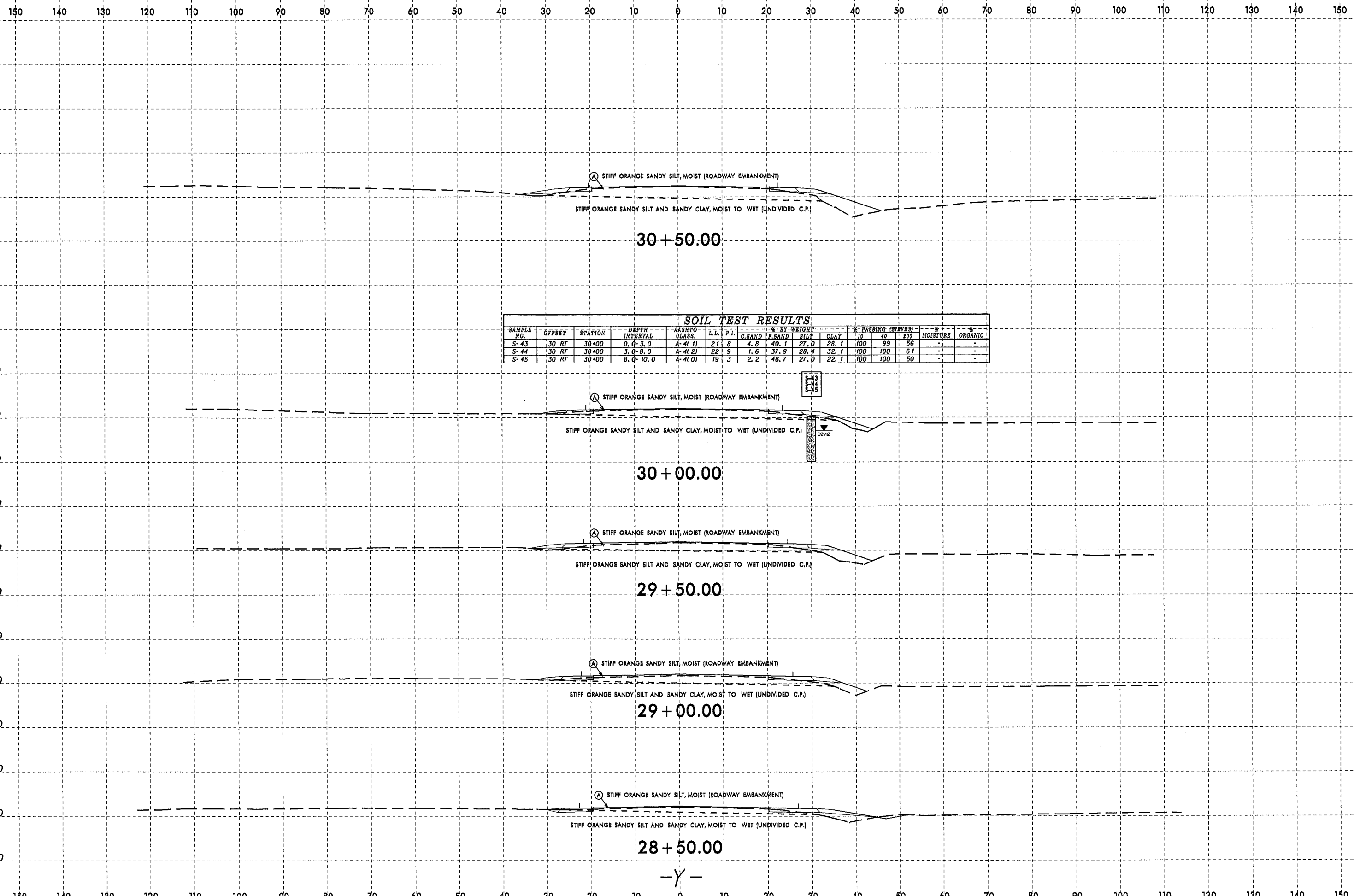
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PROJ. REFERENCE NO.
R-3826

SHEET NO.
58

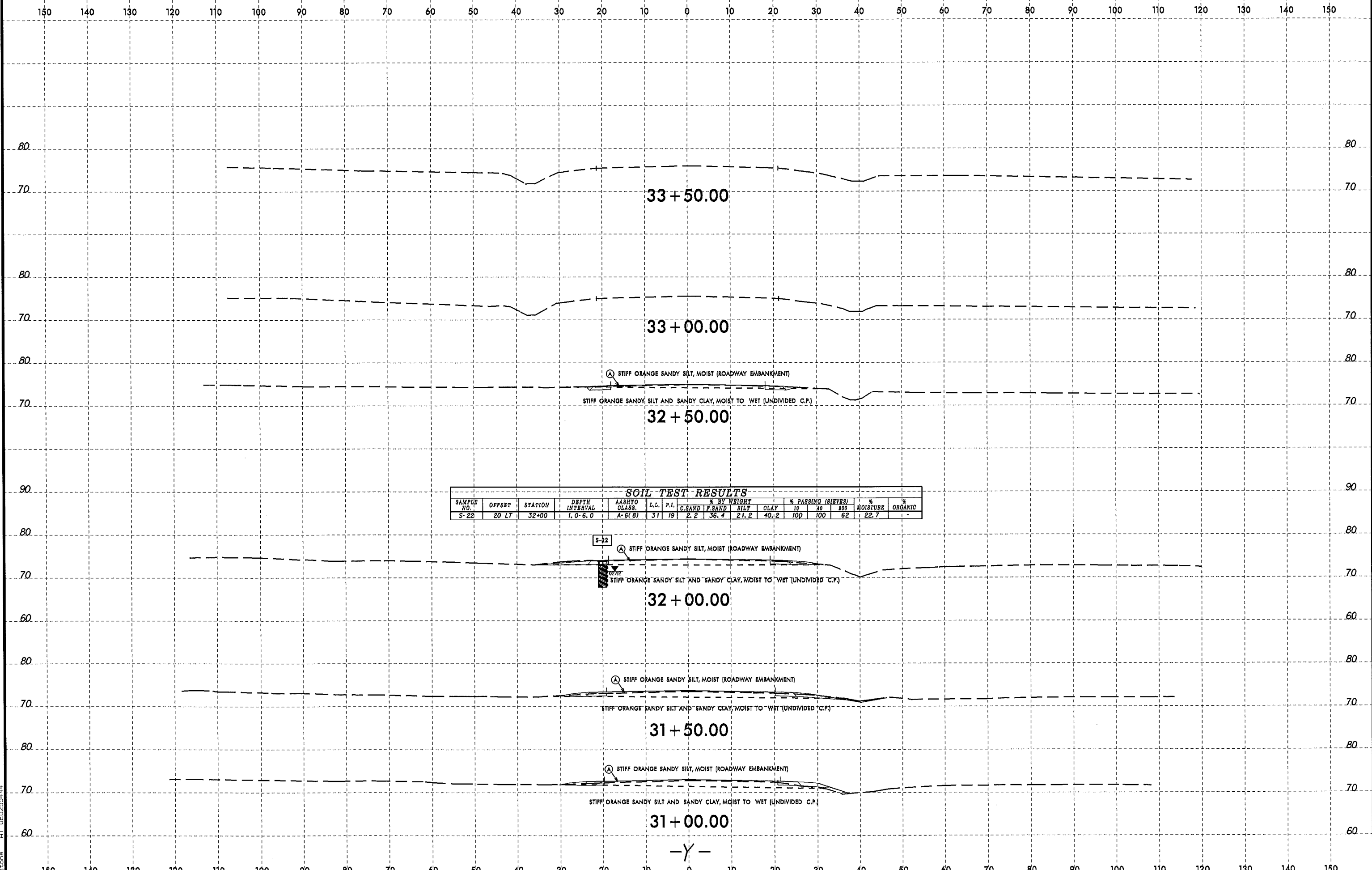


SOIL TEST RESULTS

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							C.BAND	F.SAND	SILT	10	40	60		
S-43	30 RT	30+00	0'-3'-0"	A-1(1)	21	8	4.8	40.1	27.0	28.1	100	99	56	-
S-44	30 RT	30+00	3'-0"-8'-0"	A-1(2)	22	9	1.6	37.9	29.4	32.1	100	100	61	-
S-45	30 RT	30+00	8'-0"-10'-0"	A-1(1)	19	3	2.2	46.7	27.0	22.1	100	100	50	-

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SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-22	20 LT	32+00	1.0-6.0	A-6(8)	31	19	2.2	36.4	21.2	40.2	100	100	62	22.7	-

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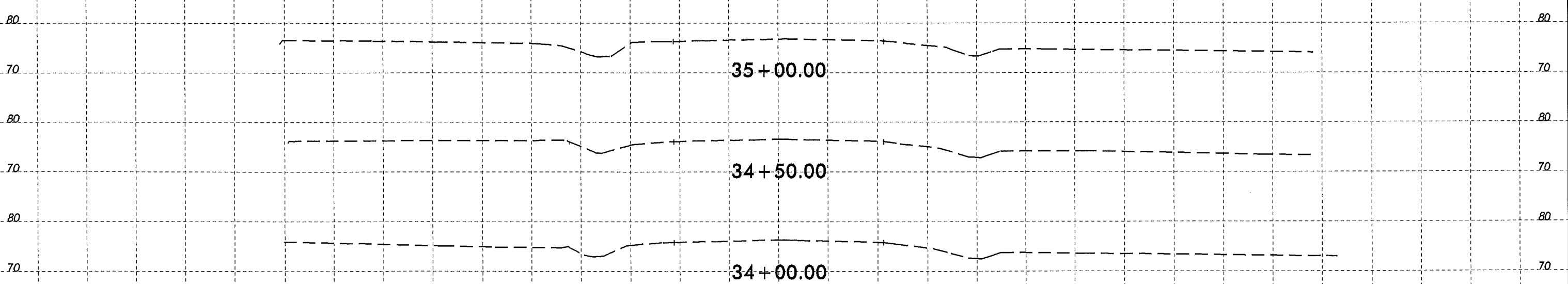
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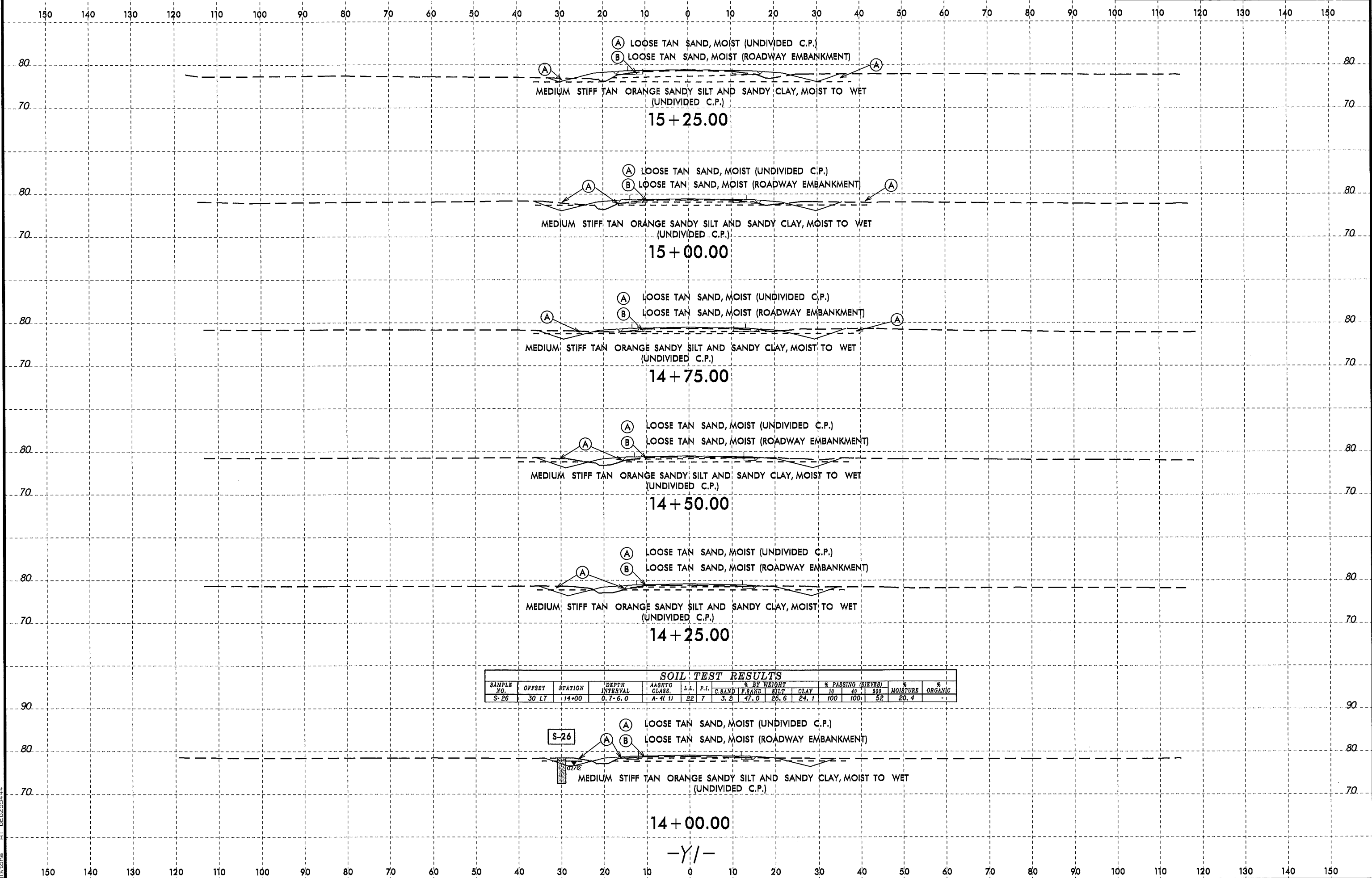


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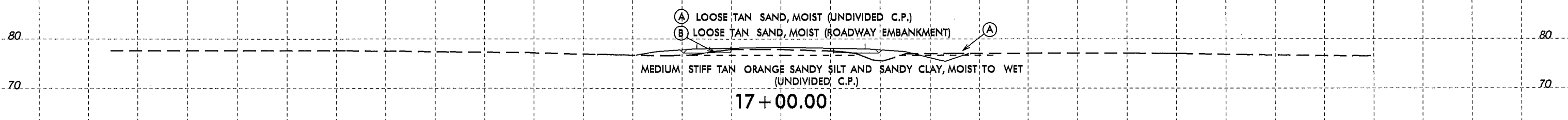
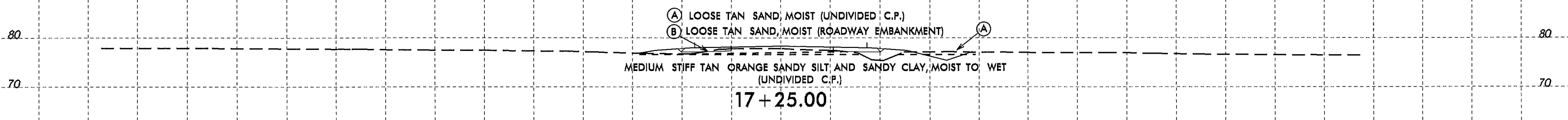
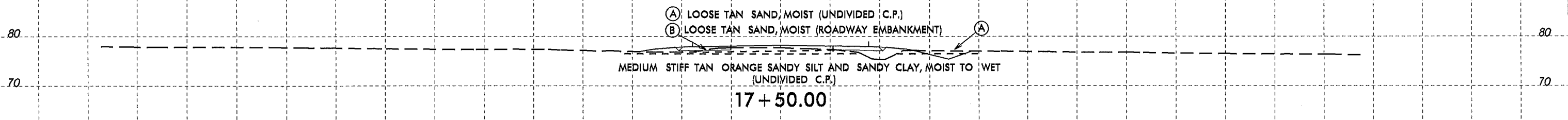
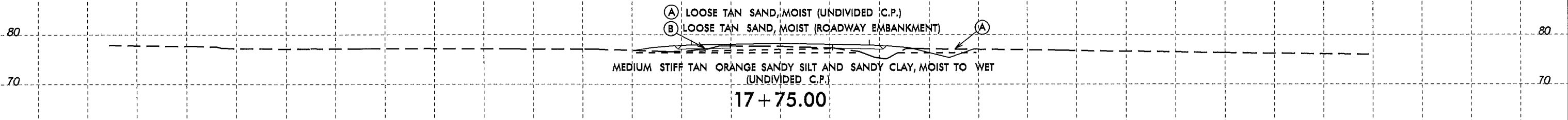
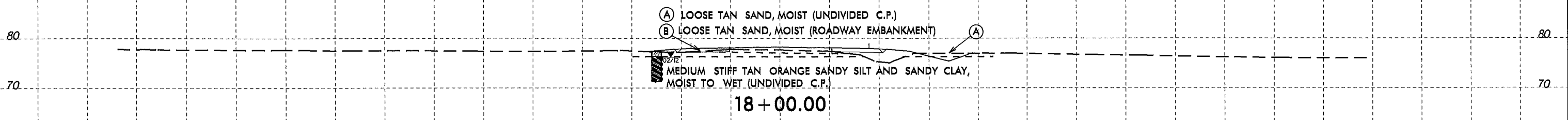
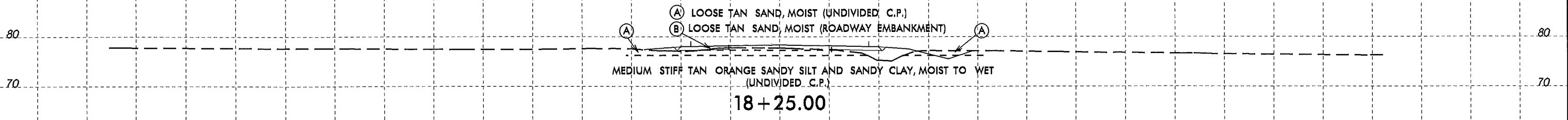


SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							G.SAND	F.SAND	SILT	CLAY	10	40	200		
S-26	30 LT	14+00	0.7-6.0	A-4(1)	22	7	3.2	47.0	26.6	24.1	100	100	52	20.4	-

S-26

-Y/-

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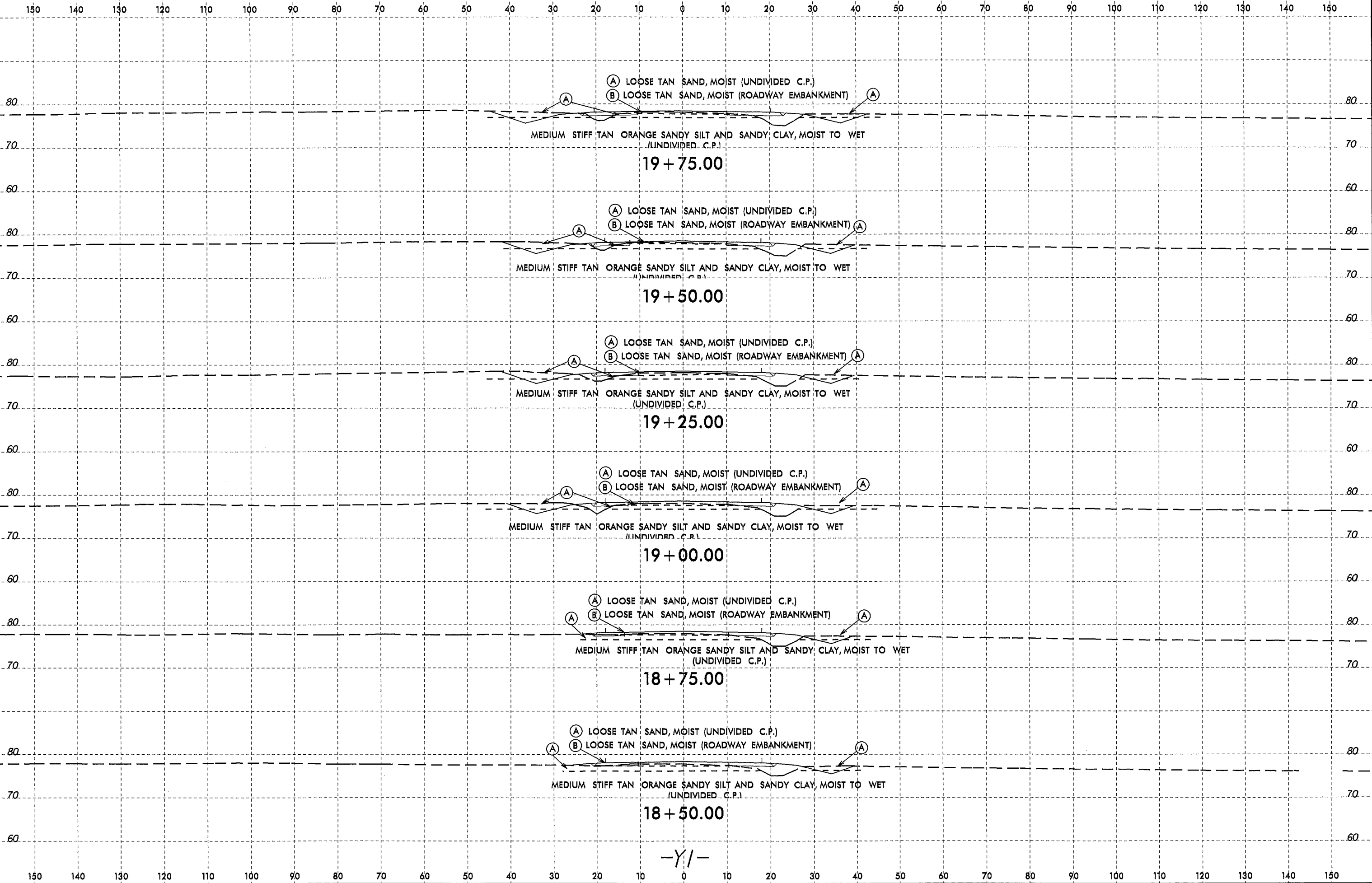
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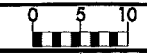
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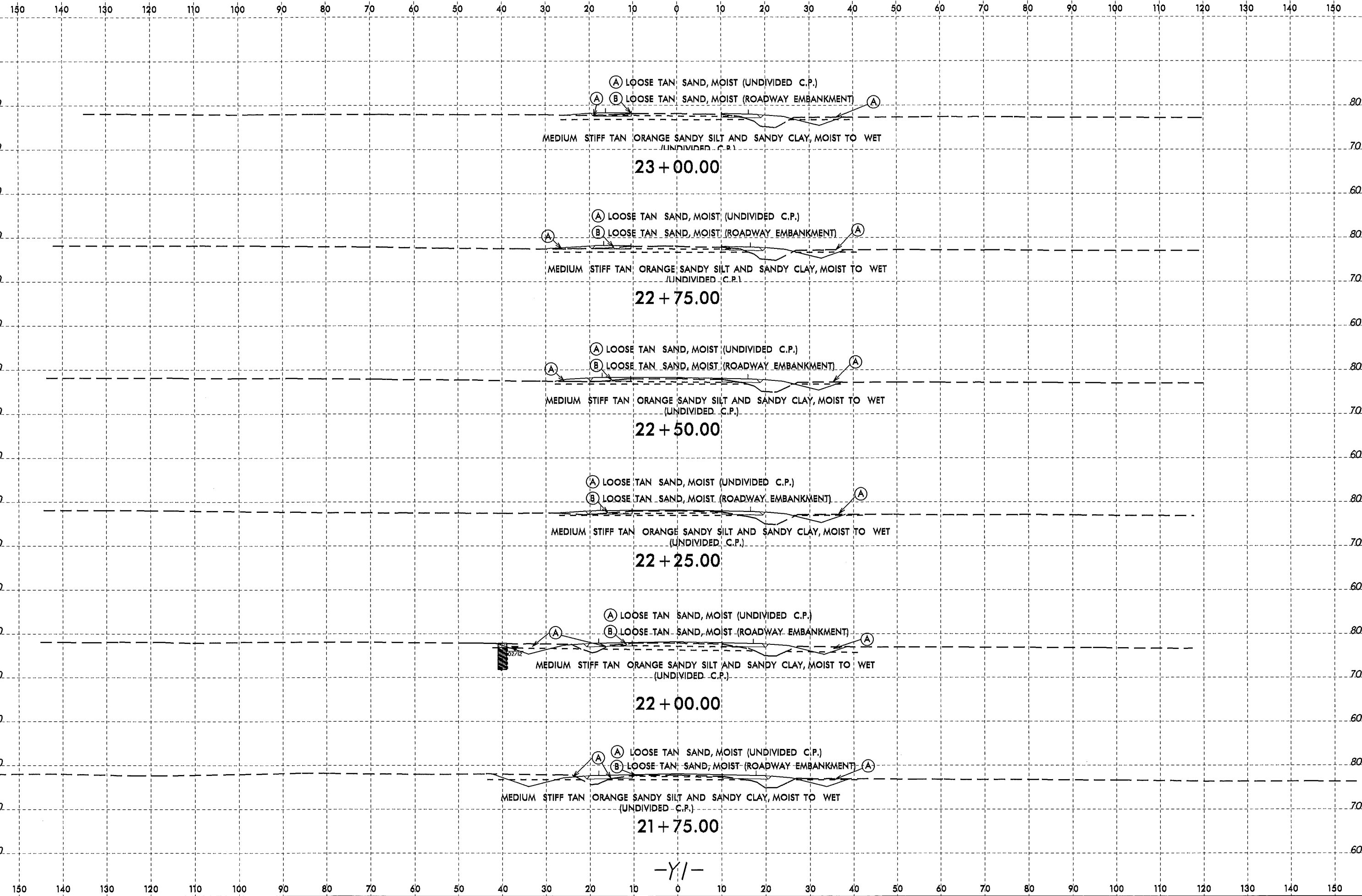
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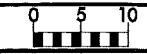
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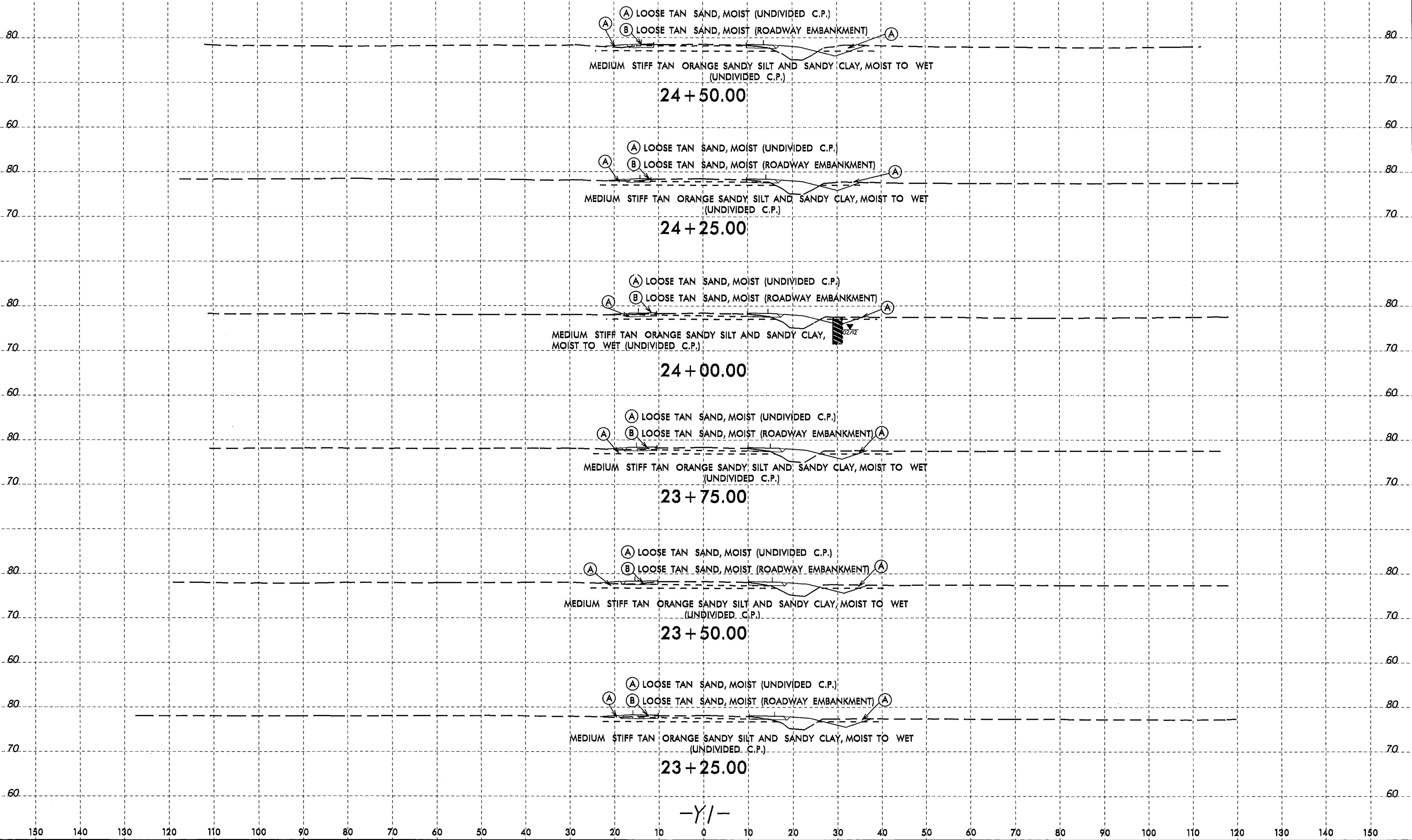
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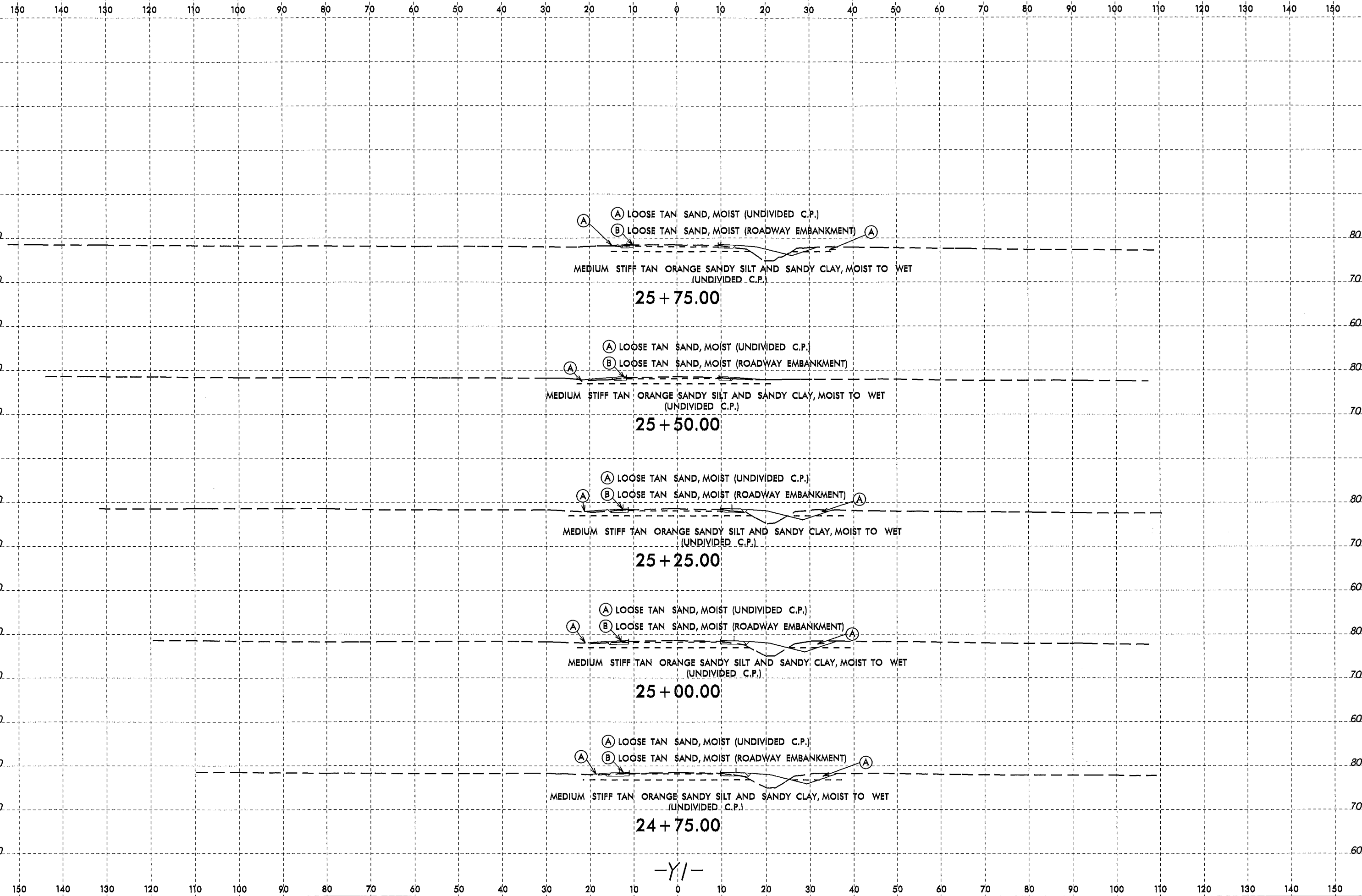
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