

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-2611	1	59
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34482.1.1	STP-1008(9)	PE	
34482.2.2	STPDA-1008(19)	RW & UTIL	
33482.3.1	STPDA-1008(22)	CONST	

CONTENTS

LINE	STATION	PLAN	PROFILE	XSECT
-L-	10+25 to 16+50	4,5	23	
-L-	16+50 to 24+00	5	23	36-43
-L-	24+00 to 163+00	5-16	23-28	
-L-	163+00 to 174+50	16,17	28,29	44-55
-L-	174+50 to 211+00	17-19	29,30	
-Y2-	14+00 to 20+30	21	31	
-Y3-	10+70 to 15+75	6	31	
-Y6-	10+24 to 16+25	22	32	
-Y10-	14+50 to 19+59	14	33	
-Y11-	10+25 to 12+50	16	33	56-58
-Y12-	25+25 to 29+40	18	34	
-Y13-	10+54 to 16+00	18	34	
-RAMP A-	20+50 to 30+76	20	35	
-RAMP B-	24+00 to 31+97	19,20	35	

ROADWAY  
SUBSURFACE INVESTIGATION

PROJ. REFERENCE NO. 34482.1.1(R-2611) F.A. PROJ. STP-1008(9)  
COUNTY GUILFORD  
PROJECT DESCRIPTION SR 1008 (WEST MARKET STREET) FROM SR 2007 (BUNKER HILL DRIVE) AT COLFAX TO NC 68 IN GREENSBORO

INVENTORY

RETAINING WALLS	STATION	PLAN	PROFILE
WALL 1	-L- 43+35 to 43+85	59	59
WALL 2	-L- 180+00 to 181+50	59	59

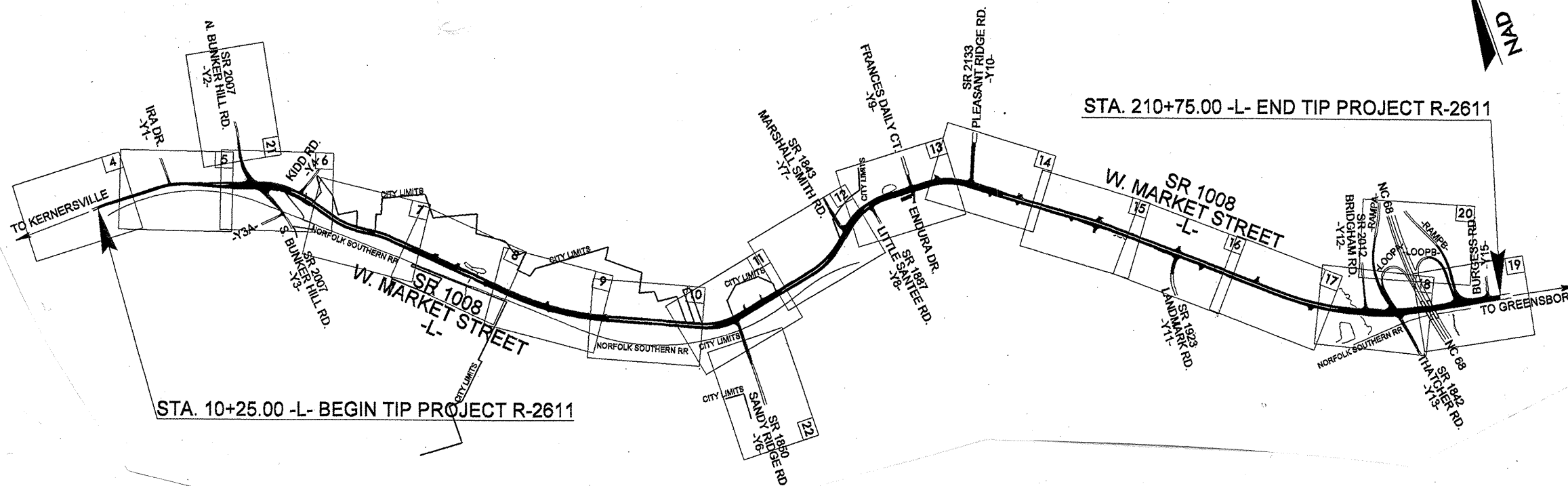
CAUTION NOTICE

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.

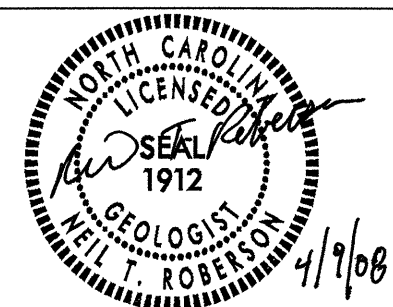
CONTRACT: C202648 ID: 34482.1.1



NCDOT PERSONNEL  
**O.B. OTI**

CONSULTANT PERSONNEL  
**TRIGON**

INVESTIGATED BY **O.B. OTI**  
CHECKED BY **N.T. ROBERSON**  
SUBMITTED BY **N.T. ROBERSON**  
DATE **MARCH 2008**



DRAWN BY: **T.T. WALKER**

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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. 34482.1J(R-2611) SHEET NO. 2

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 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 60 BLOWS 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) - NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > 100 BLOWS PER FOOT IF TESTED. CRYSTALLINE ROCK (CR) - FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC. NON-CRYSTALLINE ROCK (NCR) - FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN SEDIMENTARY ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC. COASTAL PLAIN SEDIMENTARY ROCK (CP) - COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED SHELL BEDS, ETC.		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 (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 (N OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 60 BLOWS. STRATA CORE RECOVERY (SCRC) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SRQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. TOPSOIL (TS) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.							
SOIL LEGEND AND AASHTO CLASSIFICATION		MINERALOGICAL COMPOSITION		WEATHERING		MISCELLANEOUS SYMBOLS							
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. <i>IF TESTED, WOULD YIELD SPT REFUSAL.</i> 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. <i>IF TESTED, YIELDS SPT N VALUES &gt; 100 BPF.</i> 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. <i>IF TESTED, YIELDS SPT N VALUES &lt; 100 BPF.</i> 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: 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. <i>IF TESTED, WOULD YIELD SPT REFUSAL.</i> 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. <i>IF TESTED, YIELDS SPT N VALUES &gt; 100 BPF.</i> 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. <i>IF TESTED, YIELDS SPT N VALUES &lt; 100 BPF.</i> 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.		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		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	
COMPRESSIBILITY		PERCENTAGE OF MATERIAL		GROUND WATER		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		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 HI. - HIGHLY MED. - MEDIUM MICA - MICAEOUS MOD. - MODERATELY NP - NON PLASTIC ORG. - ORGANIC PMT - PRESSUREMETER TEST SAP. - SAPROLITIC SD - SAND, SANDY SL. - SILT, SILTY SLI. - SLIGHTLY TCR - TRICONE REFUSAL w - MOISTURE CONTENT v - VERY VST - VANE SHEAR TEST WEA. - WEATHERED γ <sub>u</sub> - UNIT WEIGHT γ <sub>d</sub> - DRY UNIT WEIGHT							
GROUNDED		ANGULARITY OF GRAINS		ROCK HARDNESS		EQUIPMENT USED ON SUBJECT PROJECT							
THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.				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 FINGER NAIL.		DRILL UNITS: <input type="checkbox"/> MOBILE B- <input type="checkbox"/> BK-51 <input type="checkbox"/> CME-45C <input type="checkbox"/> CME-550 <input type="checkbox"/> PORTABLE HOIST <input type="checkbox"/> CME 45 <input type="checkbox"/>		ADVANCING TOOLS: <input type="checkbox"/> CLAY BITS <input type="checkbox"/> 6" CONTINUOUS FLIGHT AUGER <input type="checkbox"/> 8" HOLLOW AUGERS <input type="checkbox"/> HARD FACED FINGER BITS <input type="checkbox"/> TUNG.-CARBIDE INSERTS <input type="checkbox"/> CASING <input type="checkbox"/> W/ ADVANCER <input type="checkbox"/> TRICONE * STEEL TEETH <input type="checkbox"/> TRICONE * TUNG.-CARB. <input type="checkbox"/> CORE BIT <input checked="" type="checkbox"/> 6" HOLLOW AUGERS		HAMMER TYPE: <input checked="" type="checkbox"/> AUTOMATIC <input type="checkbox"/> MANUAL CORE SIZE: <input type="checkbox"/> -B- <input type="checkbox"/> -N- <input type="checkbox"/> -H- HAND TOOLS: <input type="checkbox"/> POST HOLE DIGGER <input checked="" type="checkbox"/> HAND AUGER <input type="checkbox"/> SOUNDING ROD <input type="checkbox"/> VANE SHEAR TEST <input type="checkbox"/>			
CONSISTENCY OR DENSENESS		RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/F <sup>2</sup> )		TEXTURE OR GRAIN SIZE		FRACTURE SPACING							
PRIMARY SOIL TYPE COMPACTNESS OR CONSISTENCY PENETRATION RESISTANCE (N-VALUE) RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/F <sup>2</sup> )		N/A		U.S. STD. SIEVE SIZE OPENING (MM) 4 10 40 60 200 270 4.76 2.00 0.42 0.25 0.075 0.053		TERM SPACING VERY WIDE MORE THAN 10 FEET WIDE 3 TO 10 FEET MODERATELY CLOSE 1 TO 3 FEET CLOSE 0.16 TO 1 FEET VERY CLOSE LESS THAN 0.16 FEET							
GENERAL SOIL TYPE COMPACTNESS OR CONSISTENCY PENETRATION RESISTANCE (N-VALUE) RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/F <sup>2</sup> )		N/A		BOLDER (BLDR.) COBBLE (COB.) GRAVEL (GR.) COARSE SAND (CSE, SD.) FINE SAND (F, SD.) SILT (SL.) CLAY (CL.) GRAIN SIZE MM 305 75 20 0.25 0.075 0.005 IN. 12 3		TERM THICKNESS VERY THICKLY BEDDED > 4 FEET THICKLY BEDDED 1.5 - 4 FEET THINLY BEDDED 0.16 - 1.5 FEET VERY THINLY BEDDED 0.03 - 0.16 FEET THICKLY LAMINATED 0.008 - 0.03 FEET THINLY LAMINATED < 0.008 FEET							
SOIL MOISTURE - CORRELATION OF TERMS		GUIDE FOR FIELD MOISTURE DESCRIPTION		PLASTICITY		BEDDING							
SOIL MOISTURE SCALE (ATTERBERG LIMITS) FIELD MOISTURE DESCRIPTION GUIDE FOR FIELD MOISTURE DESCRIPTION		USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE		NONPLASTIC PLASTICITY INDEX (PI) DRY STRENGTH LOW PLASTICITY 0-5 VERY LOW MED. PLASTICITY 6-15 SLIGHT HIGH PLASTICITY 16-25 MEDIUM 26 OR MORE HIGH		INDURATION FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF THE MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC. FRIABLE RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE. MODERATELY INDURATED GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER. INDURATED GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER. EXTREMELY INDURATED SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.							
COLOR		ELEVATION: FT.		NOTES:									

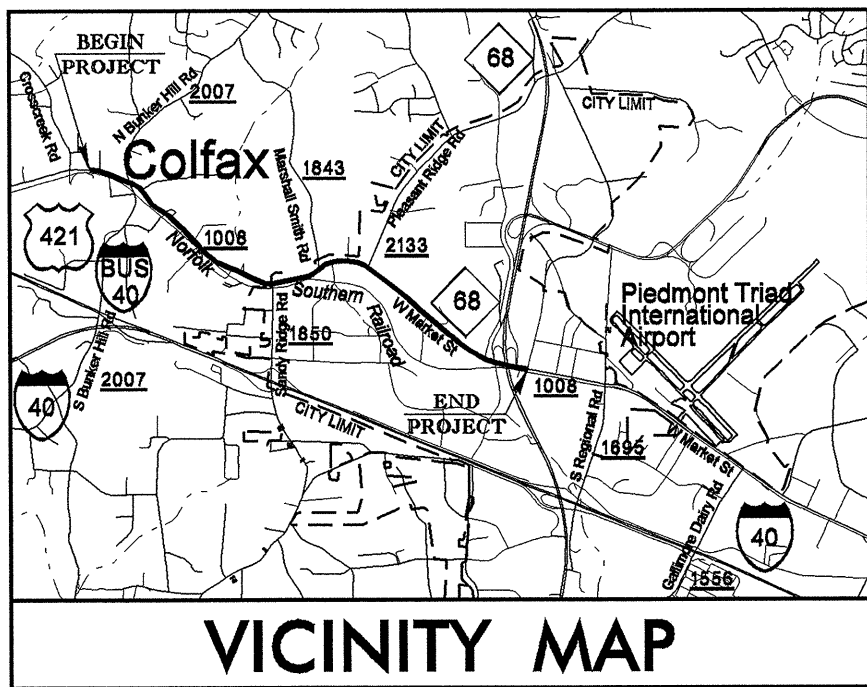
REVISED 02/23/06

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2611	2A	59
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34482.1.1	STP-1008(9)	PE	

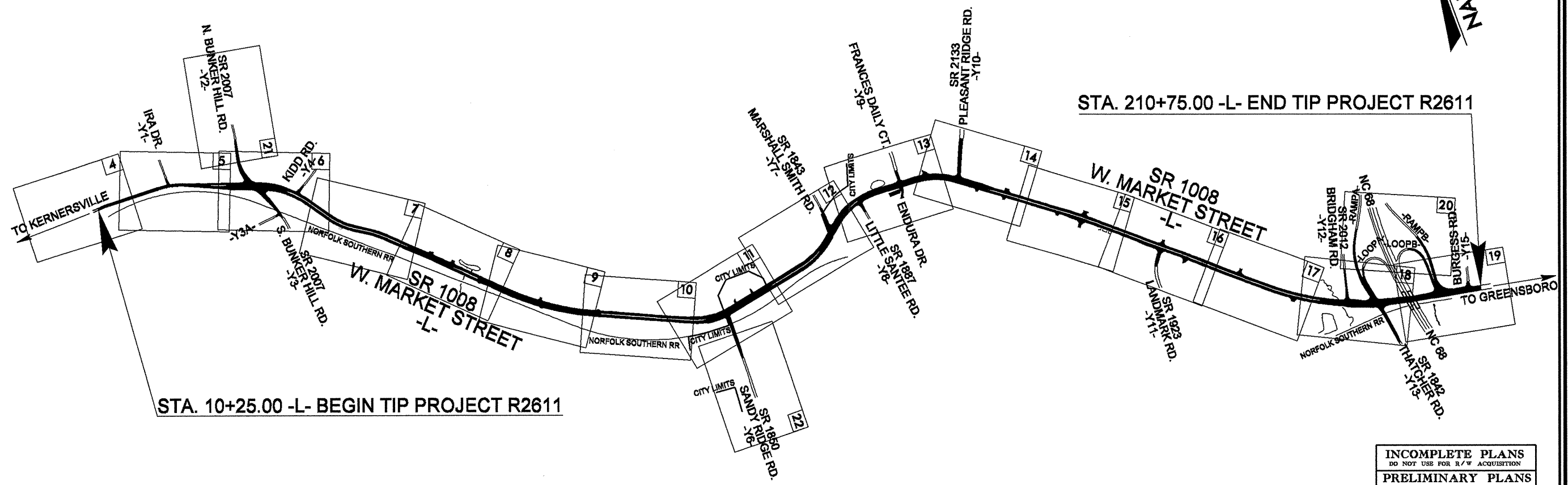
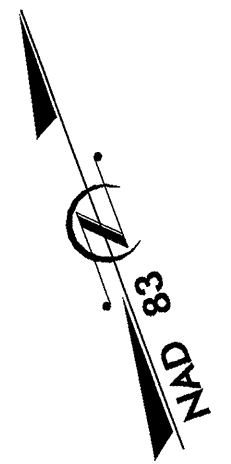
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**GUILFORD COUNTY**

**LOCATION: SR 1008 (WEST MARKET STREET) FROM SR 2007 (BUNKER HILL DRIVE) AT COLFAX TO NC 68 IN GREENSBORO**  
**TYPE OF WORK: GRADING, DRAINAGE, PAVING, CULVERT, AND RETAINING WALLS**



**VICINITY MAP**



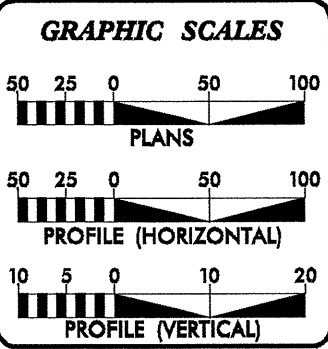
STA. 10+25.00 -L- BEGIN TIP PROJECT R2611

STA. 210+75.00 -L- END TIP PROJECT R2611

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

**TIP PROJECT: R-2611**

**CONTRACT:**



**DESIGN DATA**

ADT 2005 =	22200
ADT 2030 =	29500
DHV =	09 %
D =	55 %
T =	06 % *
V =	50 MPH
* TTST 2%	DUAL 4%

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT R-2611 = 3.797 MILES

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

2006 STANDARD SPECIFICATIONS

**RIGHT OF WAY DATE:**  
NOVEMBER 2008

**LETTING DATE:**  
NOVEMBER 2010

**HYDRAULICS ENGINEER**

SIGNATURE: \_\_\_\_\_ P.E.

**ROADWAY DESIGN ENGINEER**

SIGNATURE: \_\_\_\_\_ P.E.

**DIVISION OF HIGHWAYS**  
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER

18-MAR-2008 07:18 I:\DATA\REGISTRATION\TIP\2611\geo\_r\dwy\cadd\geotech\planprof\2611\geo\_tsh.dgn  
T. WALKER AT 05/22/05



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

Michael F. Easley  
GOVERNOR

P.O. BOX 25201, RALEIGH, N.C. 27611-5201

Lyndo Tippet  
SECRETARY

April 7, 2008

STATE PROJECT: 34482.1.1 (R-2611)  
FEDERAL PROJECT: STP-1008 (9)  
COUNTY: Guilford  
DESCRIPTION: SR 1008 (West Market Street.) from SR 2007 (Bunker Hill Dr.) at Colfax to NC 68 in Greensboro  
SUBJECT: Geotechnical Report – Inventory

**Project Description**

This project consists of widening West Market Street (SR 2007, -L-) from two lanes to four lanes and the addition of several turn lanes. The project begins just after the intersection of West Market Street (SR 2007) and Bunker Hill Drive at Colfax. The widening generally is proposed on both side of the existing roadway. The existing culvert towards the end of the project will be lengthened.

The geotechnical field investigation was conducted during January and February, 2008. Trigon Engineering was contracted to drill this project with a Geotechnical Engineering Unit geologist. Trigon used an ATV-mounted CME 45 drill machine with a manual hammer. Standard Penetration Tests were performed in selected borings and additional borings were advanced using continuous flight augers. Representative soil samples were collected for visual classification in the field and for laboratory analysis by the Materials and Tests Unit.

The following alignments, totaling 4.824 miles, were investigated. Subsurface soil profiles, or cross-sections, of these alignments are included in this report.

Line	Station		
-L-	10+25.00	to	210+75.00
-Y2-	14+00.00	to	20+00.00
-Y3-	10+75.00	to	15+75.00
-Y6-	10+23.95	to	16+25.00
-Y10-	14+50.00	to	19+50.00
-Y11-	10+25.00	to	12+50.00
-Y12-	25+25.00	to	29+50.00

-Y13-	10+50.00	to	16+00.00
-RAMPA-	20+50.00	to	30+75.00
-RAMPB-	24+00.00	to	32+00.00

**Areas of Special Geotechnical Interest**

- 1) Highly Plastic Clay Soils: Highly plastic clays with plastic indices of 35 or greater were found in the following areas:

Line	Station
-L-	16+50.00 to 24+00.00
-L-	163+00.00 to 166+75.00
-Y11-	10+50.00 to 12+25.00

**Physiography and Geology**

The project corridor lies within the Piedmont Physiographic Province. A mixture of single-family homes, apartments, churches, businesses, and wooded areas are located along the project. The terrain is slightly rolling. Geologically, the project is located within the Carolina Slate Belt. Soils are derived from the weathering of the underlying bedrock which is composed of granite, gabbro, and diorite intrusions which have been metamorphosed. These rock units are generally foliated, and trend in a northeasterly direction.

**Soil Properties**

Soils encountered at the project site include roadway embankment, alluvial sediments and residual soils.

Roadway embankment soil occurs in several locations on the project. The existing embankments are generally two to six feet in height. The soil consists primarily of tan and brown, stiff, moist, highly plastic, silty clay (AASHTO classification of A-7-5). The fill soil overlies residual soil.

Alluvial soils occur in narrow stream channel which cross the -L- alignment, and beneath the adjacent roadway embankments. The alluvial soils are approximately 3 to 6 feet thick, and consist of very soft to medium stiff, wet, sandy silt (A-4, sandy clay (A-6), and very loose, silty sand (A-2-4).

The residual soils are derived from the in-place weathering of the underlying metamorphosed granite, gabbro, and diorite bedrock. These soils are generally medium stiff to very stiff and consist of sandy clay, silty clay, clayey silt (A-6, A-7-5, A-5 and A-7-6). Significant amounts of loose to dense, moist, silty and clayey sand (A-2-4, A-2-5) are also present.

Residual, highly plastic "cap" clays occur at the ground surface over several areas of the project. Areas containing highly plastic soils (plasticity indices of greater than 35) are listed above in the section "Areas of Special Geotechnical Interest".

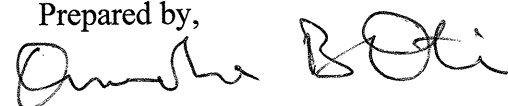
**Rock Properties**

Weathered rock and crystalline rock occur in some areas of the project. The weathered rock is derived from the underlying Carolina Slate Belt bedrock and ranges from 1 to 2 feet in thickness. The crystalline bedrock consists mostly of metamorphosed diorite.

**Groundwater**

Groundwater was encountered in some borings. When present in residual soil, groundwater was determined to be 3 to 13 feet below the ground surface. Groundwater is shallow in alluvial floodplain soils, generally occurring 2 to 3 feet below the ground surface. Based on this investigation, groundwater is not anticipated to cause problems during construction.

Prepared by,



Onuoha B. Oti  
Project Engineering Geologist.

EARTHWORK BALANCE SHEET FOR AGGREGATE BASE COURSE PAVEMENT DESIGN

Volumes in Cubic Yards

PROJECT: 34482.1.1 (R-2611)

COUNTY: Guilford

DATE: 22-Jun-11

COMPILED BY: W. T. Best

SHEET\_1 OF 3 SHEETS

STATION	STATION	EXCAVATION					EMBANKMENT				BORROW	WASTE			
		TOTAL UNCLASS.	ROCK	UNDERCUT	UNSUIT. UNCLASS.	SUITABLE UNCLASS.	TOTAL	ROCK	EARTH	EMBANK. +20%		ROCK	SUITABLE	UNSUIT.	TOTAL
Summary for used of ABC Course															
Summary No. 1															
10+00 -L- Lt	40+00 -L- Lt.	2,819			202	2,617	5,007		5,007	6,008	3,391			202	202
12+00 -Y1-	12+75 -Y1-	62				62							62		62
14+00 -Y2-	20+50 -Y2-	960				960	460	460	552				408		408
	<b>SUBTOTAL</b>	<b>3,841</b>			<b>202</b>	<b>3,639</b>	<b>5,467</b>	<b>5,467</b>	<b>6,560</b>	<b>3,391</b>			<b>470</b>	<b>202</b>	<b>672</b>
Summary No. 2															
10+00 -L- Rt.	40+00 -L- Rt.	855			230	625	2,615	2,615	3,138	2,513				230	230
10+50 -Y3-	16+00 -Y3-	154				154	455	455	546	392					9
12+50 -Y3A-	13+00 -Y3A-	13				13	3	3	4	0			9		9
13+25 -Y4-	14+25 -Y4-	49				49	41	41	49	0				230	239
	<b>SUBTOTAL</b>	<b>1,071</b>			<b>230</b>	<b>841</b>	<b>3,114</b>	<b>3,114</b>	<b>3,737</b>	<b>2,905</b>			<b>9</b>	<b>230</b>	<b>239</b>
Summary No. 3															
40+00 -L- Lt	70+00 -L- Lt.	1,878				1,878	6,001	6,001	7,201	5,323					
	<b>SUBTOTAL</b>	<b>1,878</b>				<b>1,878</b>	<b>6,001</b>	<b>6,001</b>	<b>7,201</b>	<b>5,323</b>					
Summary No. 4															
40+00 -L- Rt.	70+00 -L- Rt.	1,746				1,746	7,366	7,366	8,839	7,093					
	<b>SUBTOTAL</b>	<b>1,746</b>				<b>1,746</b>	<b>7,366</b>	<b>7,366</b>	<b>8,839</b>	<b>7,093</b>					
Summary No. 5															
70+00 -L- Lt	100+00 -L- Lt.	11,030				11,030	4,544	4,544	5,453				5,577		5,577
	<b>SUBTOTAL</b>	<b>11,030</b>				<b>11,030</b>	<b>4,544</b>	<b>4,544</b>	<b>5,453</b>				<b>5,577</b>		<b>5,577</b>
Summary No. 6															
70+00 -L- Rt.	100+00 -L- Rt.	1,010				1,010	4,935	4,935	5,922	4,912					1,834
10+50 -Y6-	19+50 -Y6-	2,218				2,218	320	320	384				1,834		1,834
	<b>SUBTOTAL</b>	<b>3,228</b>				<b>3,228</b>	<b>5,255</b>	<b>5,255</b>	<b>6,306</b>	<b>4,912</b>			<b>1,834</b>		<b>1,834</b>
Summary No. 7															
100+00 -L- Lt	130+00 -L- Lt.	5,027				5,027	5,214	5,214	6,257	1,230					
	<b>SUBTOTAL</b>	<b>5,027</b>				<b>5,027</b>	<b>5,214</b>	<b>5,214</b>	<b>6,257</b>	<b>1,230</b>					
Summary No. 8															
100+00 -L- Rt.	130+00 -L- Rt.	706				706	4,300	4,300	5,160	4,454					
	<b>SUBTOTAL</b>	<b>706</b>				<b>706</b>	<b>4,300</b>	<b>4,300</b>	<b>5,160</b>	<b>4,454</b>					
Summary No. 9															
130+00 -L- Lt	160+00 -L- Lt.	2,355				2,355	4,770	4,770	5,724	3,369					
10+00 -Y7-	14+50 -Y7-	214				214	978	978	1,174	960					24
15+25 -Y9-	16+00 -Y9-	31				31	6	6	7				24		24
14+50 -Y10-	19+00 -Y10-	399				399	379	379	455	56					
	<b>SUBTOTAL</b>	<b>2,999</b>				<b>2,999</b>	<b>6,133</b>	<b>6,133</b>	<b>7,360</b>	<b>4,384</b>			<b>24</b>		<b>24</b>

EARTHWORK BALANCE SHEET FOR ASPHALT BASE COURSE PAVEMENT DESIGN  
Volumes in Cubic Yards

PROJECT: 34482.1.1 (R-2611)

COUNTY: Guilford

DATE: 22-Jun-11

COMPILED BY: W. T. Best

SHEET 2 OF 3 SHEETS

STATION Summary for use of ABC Course	STATION	EXCAVATION					EMBANKMENT				BORROW	WASTE						
		TOTAL UNCLASS.	ROCK	UNDERCUT	UNSUIT. UNCLASS.	SUITABLE UNCLASS.	TOTAL	ROCK	EARTH	EMBANK. +20%		ROCK	SUITABLE	UNSUIT.	TOTAL			
Summary No. 10																		
130+00 -L- Rt.	160+00 -L- Rt.	627				627	3,470		3,470	4,164	3,537							
10+50 -Y8-	11+50 -Y8-	50				50	18		18	22			28					28
10+40 Endura Dr	11+20 Endura Dr	11				11	119		119	143	132							
10+20 Endura Dr1	10+80 Endura Dr	58				58	18		18	22			36					36
	<b>SUBTOTAL</b>	746				746	3,625		3,625	4,351	3,669		64					64
Summary No. 11																		
160+00 -L- Lt	190+00 -L- Lt.	13,309			1,494	11,815	7,516		7,516	9,019			2,796		1,494			4,290
	<b>SUBTOTAL</b>	13,309			1,494	11,815	7,516		7,516	9,019			2,796		1,494			4,290
Summary No. 12																		
160+00 -L- Rt.	190+00 -L- Rt.	400			121	279	4,373		4,373	5,248	4,969				121			121
10+00 -Y11-	12+50 -Y11-	64			64		220		220	264	264				64			64
	<b>SUBTOTAL</b>	464			185	279	4,593		4,593	5,512	5,233				185			185
Summary No. 13																		
190+00 -L- Lt	211+00 -L- Lt.	706				706	7,167		7,167	8,600	7,894							
25+00 -Y12-	29+00 -Y12-	39				39	141		141	169	130							
20+50 -Rp A- & Lp A-	30+50 -Rp A- & Lp A-	400				400	1,526		1,526	1,831	1,431							
14+50 -Lp B-	16+00 -Lp B-	32				32	557		557	668	636							
23+50 -Rp B- & -Lp B-	30+50 -Rp B- & -Lp B-	870				870	2,993		2,993	3,592	2,722							
12+50 -Y15-	13+25 -Y15-	13				13	9		9	11			2					2
	<b>SUBTOTAL</b>	2,060				2,060	12,393		12,393	14,872	12,813		2					2
Summary No. 14																		
190+00 -L- Rt.	211+00 -L- Rt.	259				259	4,303		4,303	5,164	4,905							
10+50 -Y13-	15+50 -Y13-	80				80	363		363	436	356							
	<b>SUBTOTAL</b>	339				339	4,666		4,666	5,599	5,260							
<b>TOTAL</b>		48,444			2,111	46,333	80,187		80,187	96,224	60,667		10,776		2,111			12,887
LOSS DUE TO CLEARING & GRUBBING		-18,900				-18,900					18,900							
EST. SHOULDER MATERIAL							2,219		2,219	2,663	2,663							
ADDITIONAL UNDERCUT																		
*WASTE IN LIEU OF BORROW											-10,776		-10,776					-10,776
<b>PROJECT TOTAL</b>		29,544			2,111	27,433	82,406		82,406	98,887	71,454		0		2,111			2,111
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT											3,573							
<b>GRAND TOTAL</b>		29,544			2,111	27,433	82,406		82,406	98,887	75,027		0		2,111			2,111
<b>SAY</b>		29,650									75,100							

NOTE: EARTHWORK QUANTITIES ARE CALCULATED BY THE ROADWAY DESIGN UNIT. THESE EARTHWORK QUANTITIES ARE BASED IN PART ON SUBSURFACE DATA PROVIDED BY THE GEOTECHNICAL ENGINEERING UNIT.

ADDITIONAL SHALLOW UNDERCUT CONTINGENCY 500 CY

EST. SHALLOW UNDERCUT BY STATIONS 16,500 CY

TOTAL SHALLOW UNDERCUT 17,000 CY

CLASS IV SUBGRADE STABILIZATION 45,700 Tons

ADDITIONAL UNDERCUT CONTINGENCY 915 CY

EARTHWORK BALANCE SHEET FOR ASPHALT BASE COURSE PAVEMENT DESIGN  
Volumes in Cubic Yards

PROJECT: 34482.1.1 (R-2611)

COUNTY: Guilford

DATE: 22-Jun-11

COMPILED BY: W. T. Best

SHEET 3 OF 3 SHEETS

STATION Summary for use of ABC Course	STATION	EXCAVATION					EMBANKMENT				BORROW	WASTE			
		TOTAL UNCLASS.	ROCK	UNDERCUT	UNSUIT. UNCLASS.	SUITABLE UNCLASS.	TOTAL	ROCK	EARTH	EMBANK. +20%		ROCK	SUITABLE	UNSUIT.	TOTAL
<b>TOTAL</b>		48,444			2,111	46,333	80,187		80,187	96,224	60,667		10,776	2,111	12,887
ADJ FOR ALT PAV'T DESIGN		-2,162				-2,162	3,760		3,760	4,512	3,734		-2,940		-2,940
LOSS DUE TO CLEARING & GRUBBING		-18,900				-18,900					18,900				
EST. SHOULDER MATERIAL							2,219		2,219	2,663	2,663				
ADDITIONAL UNDERCUT															
*WASTE IN LIEU OF BORROW											-7,836		-7,836		-7,836
<b>PROJECT TOTAL</b>		27,382			2,111	25,271	86,166		86,166	103,399	78,128		0	2,111	2,111
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT											3,906				
<b>GRAND TOTAL</b>		27,382			2,111	25,271	86,166		86,166	103,399	82,034		0	2,111	2,111
<b>SAY</b>		27,500									82,100				

NOTE: EARTHWORK QUANTITIES ARE CALCULATED BY THE ROADWAY DESIGN UNIT. THESE EARTHWORK QUANTITIES ARE BASED IN PART ON SUBSURFACE DATA PROVIDED BY THE GEOTECHNICAL ENGINEERING UNIT.

ADDITIONAL SHALLOW UNDERCUT CONTINGENCY 500 CY

EST. SHALLOW UNDERCUT BY STATIONS 16,202 CY

TOTAL SHALLOW UNDERCUT 16,710 CY

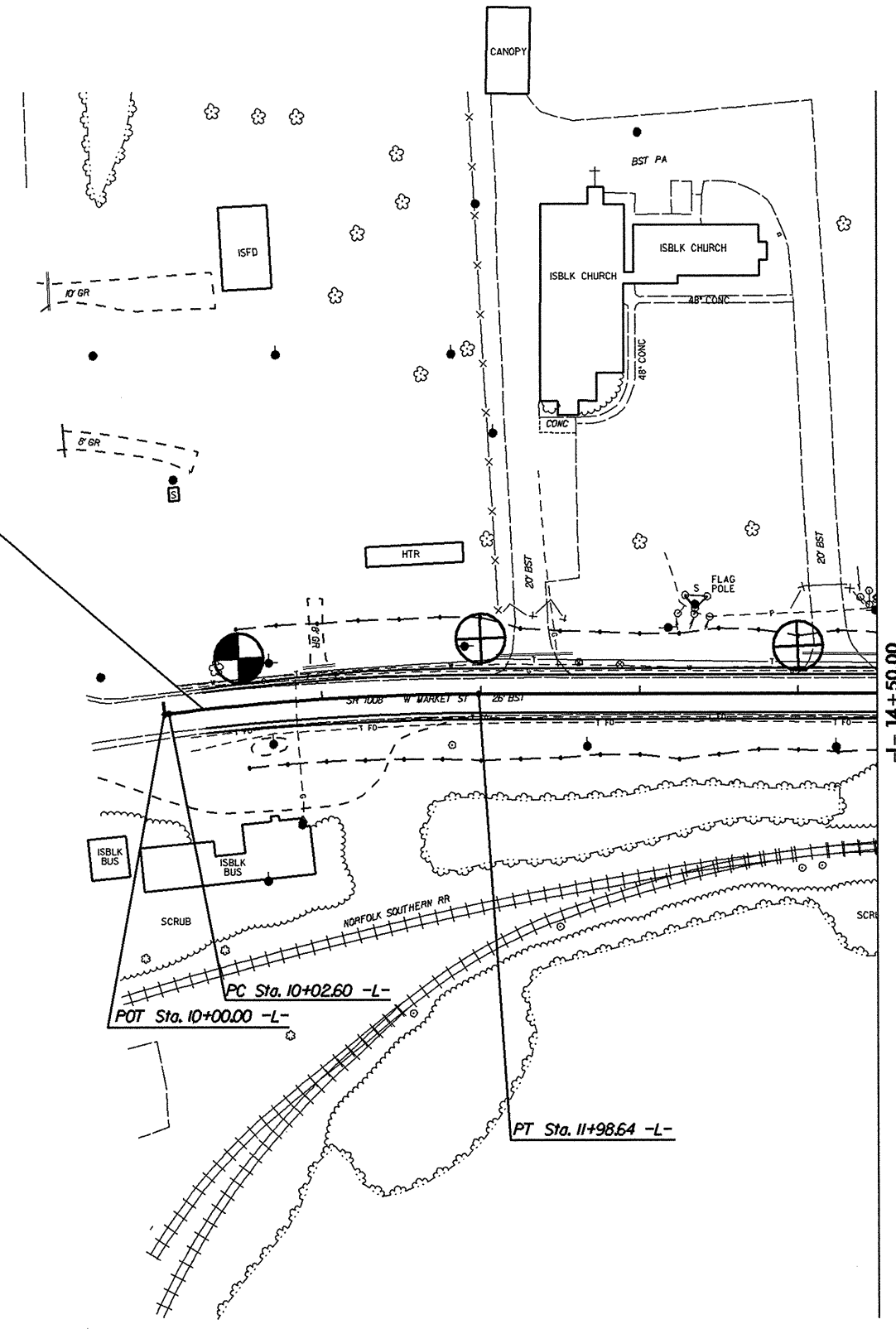
CLASS IV SUBGRADE STABILIZATION 44,500 Tons

ADDITIONAL UNDERCUT CONTINGENCY 915 CY



FOR PROFILE OF LINE -L- SEE SHEET 23

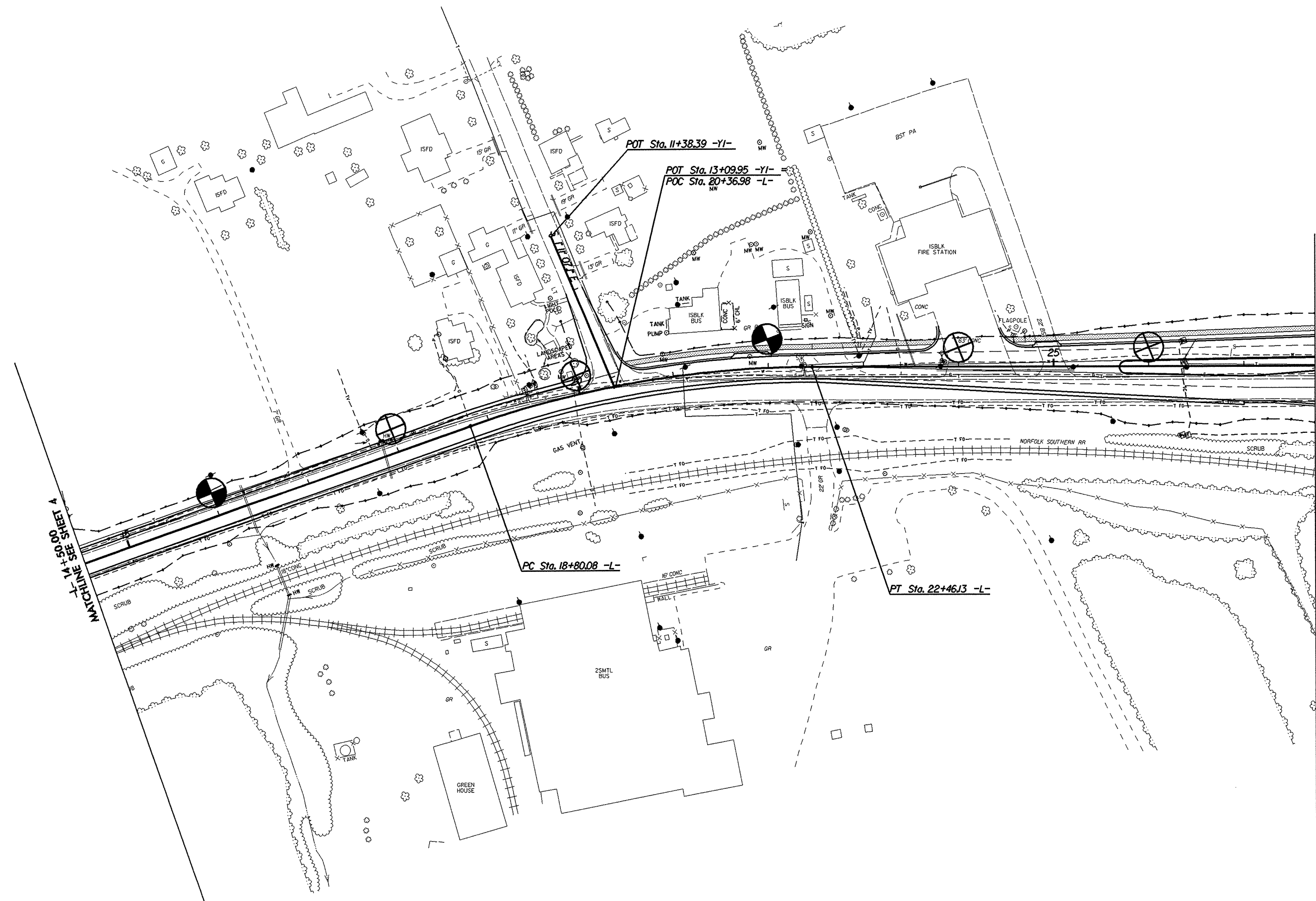
STA. 10+25.00 -L- BEGIN TIP PROJECT R-2611



-L- 14+50.00  
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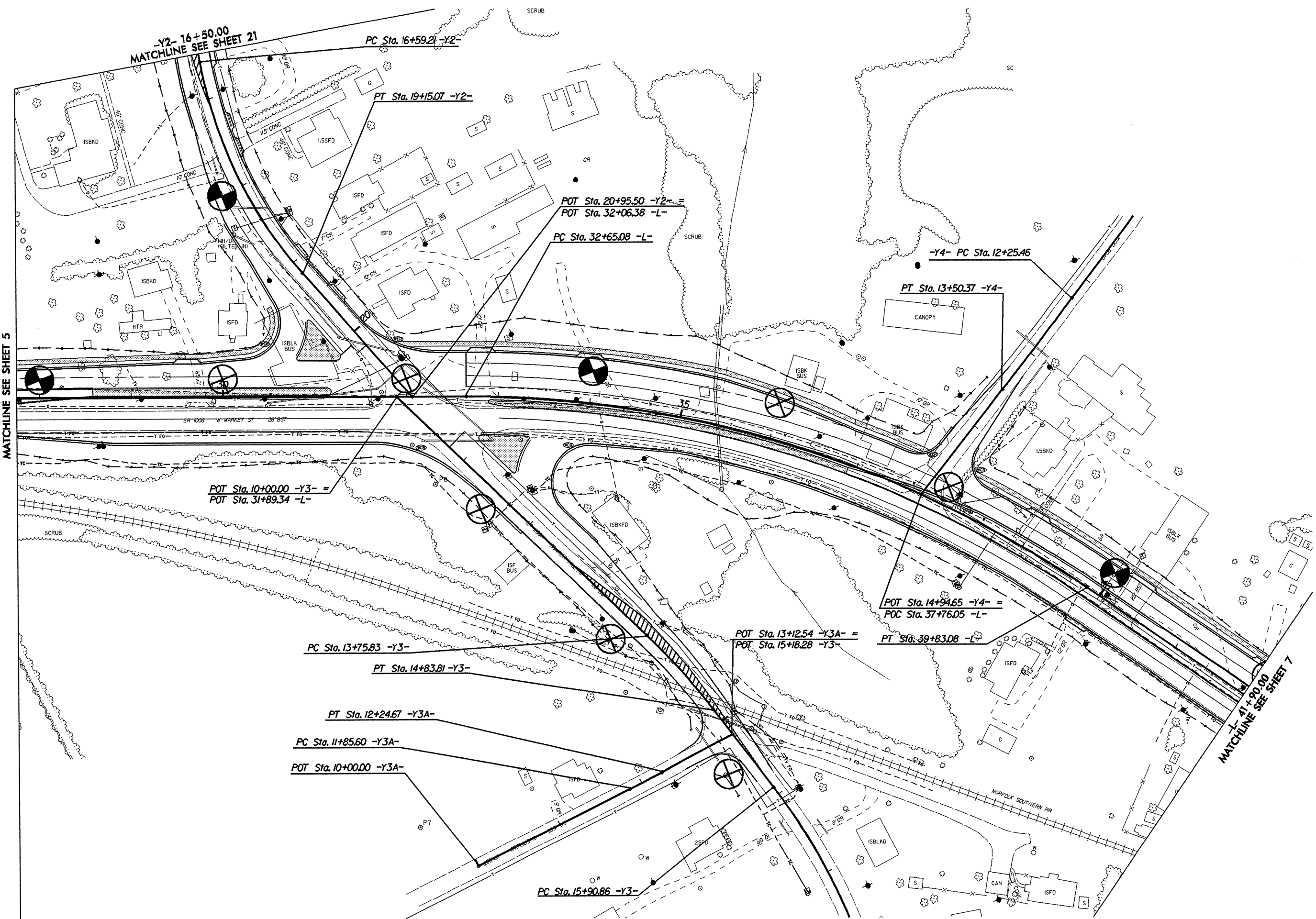


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27+75.00  
MATCHLINE SEE SHEET 6

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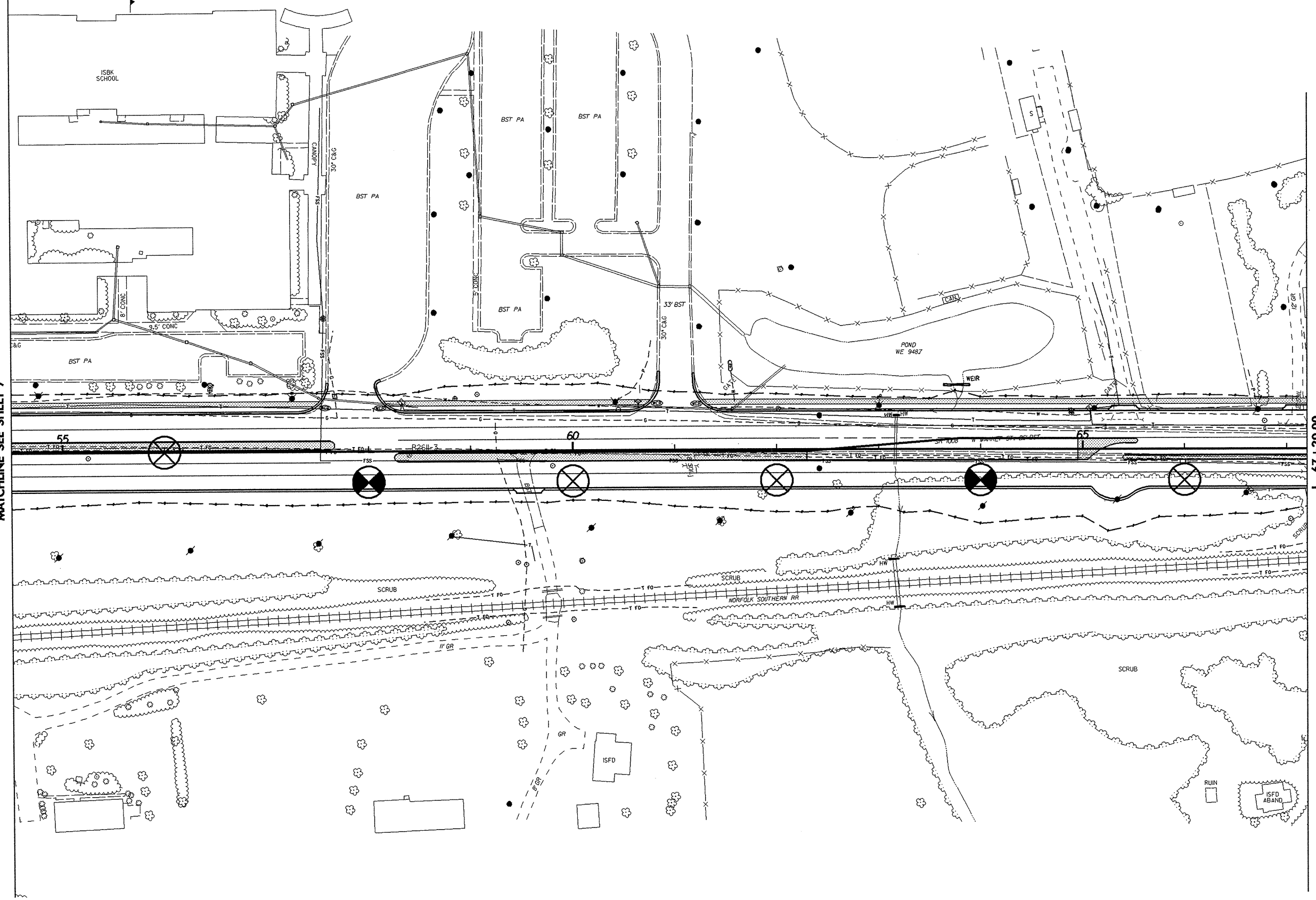




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— 67+20.00  
 MATCHLINE SEE SHEET 9





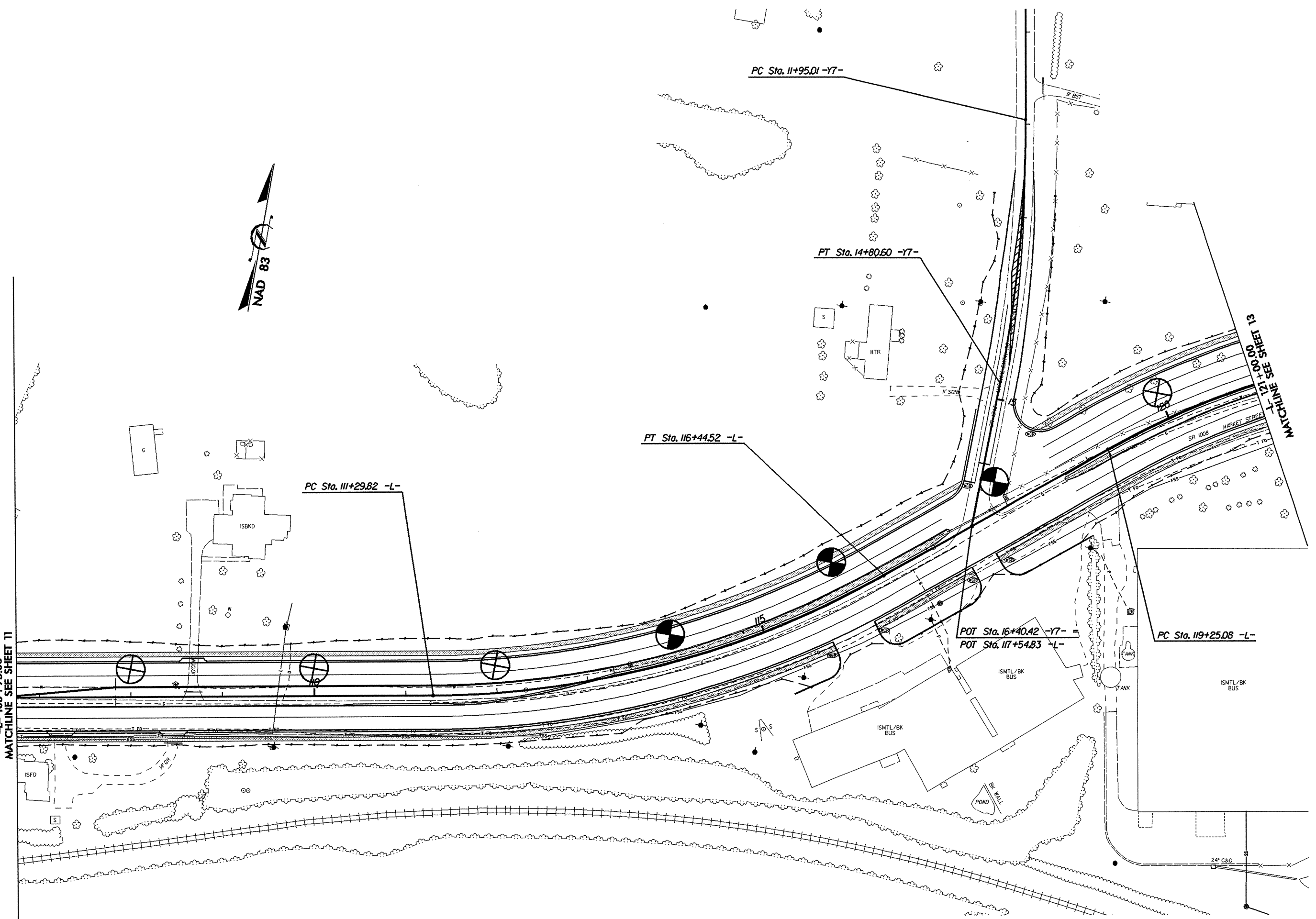




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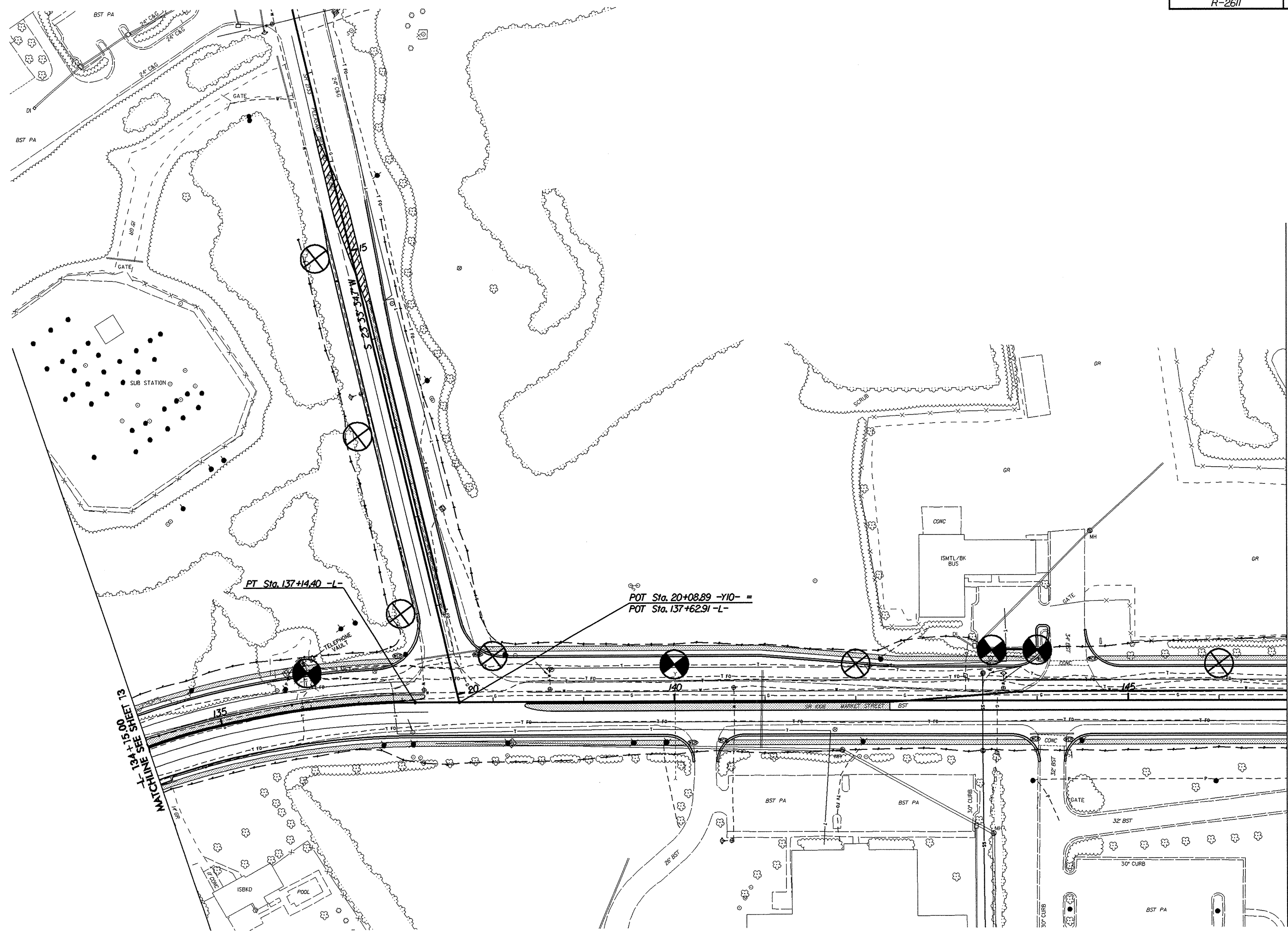
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113  
 SEE SHEET 11  
 SEE SHEET 12



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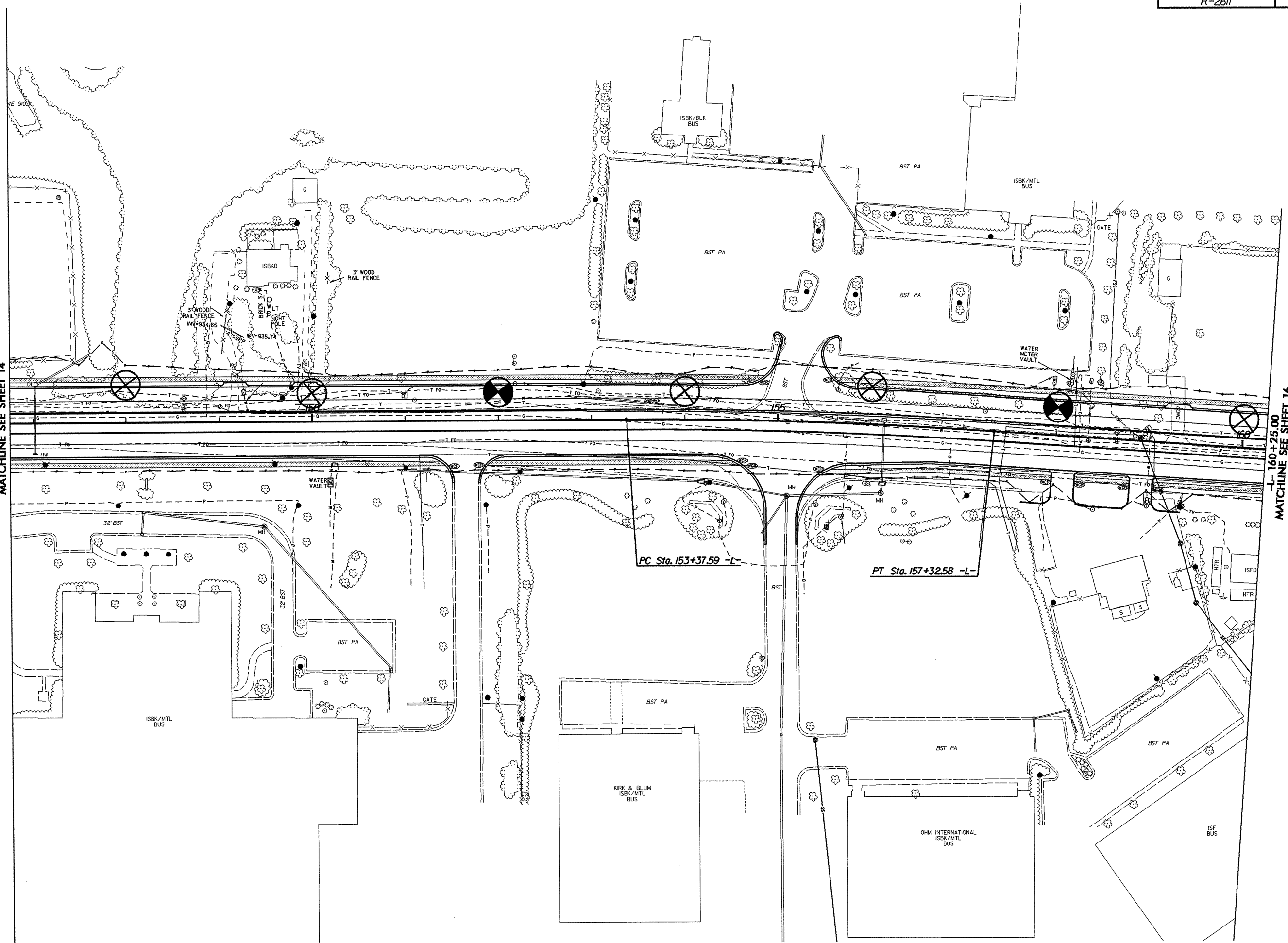
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8/17/99

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-L- 160+25.00  
 MATCHLINE SEE SHEET 16





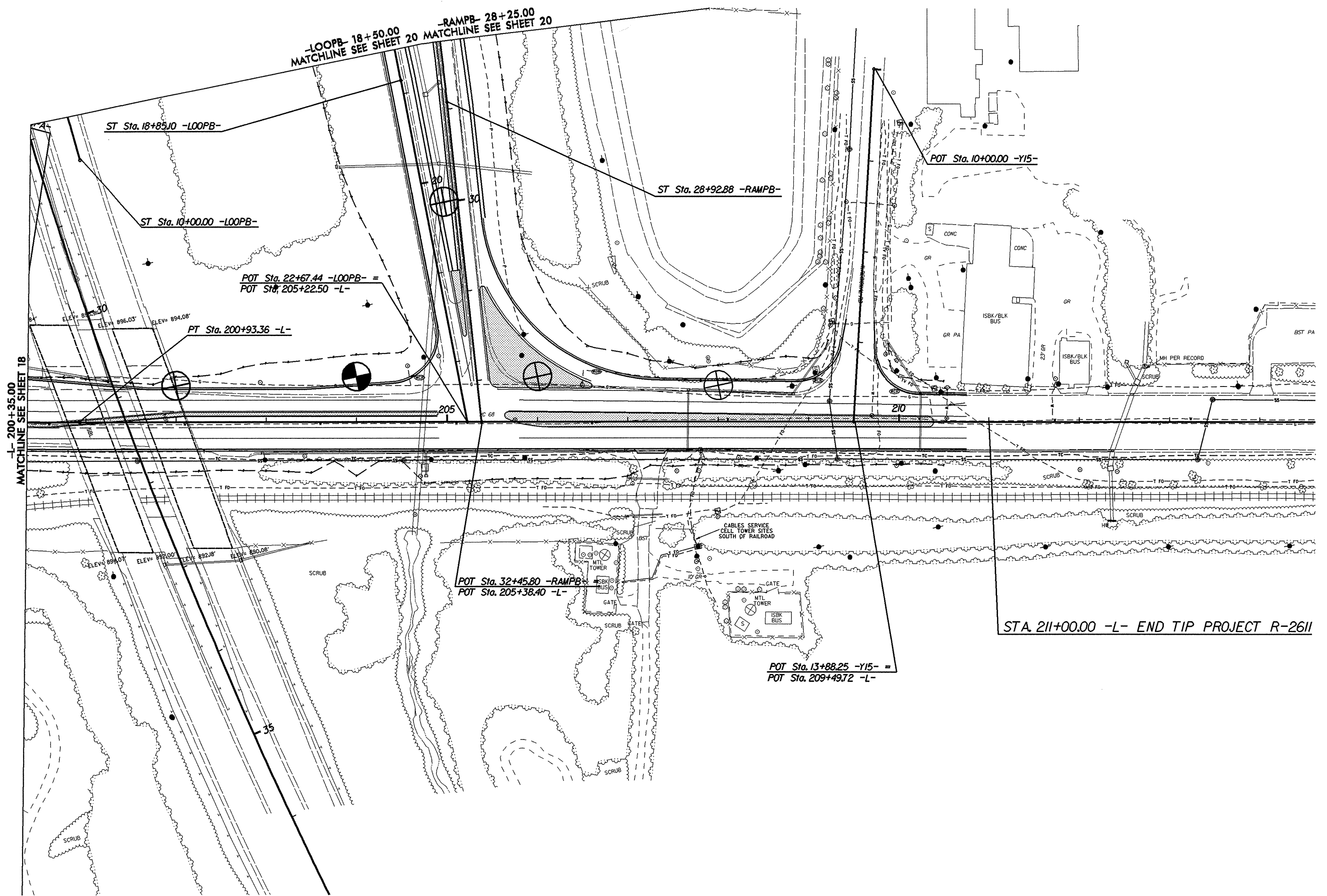




8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
R-2611	19





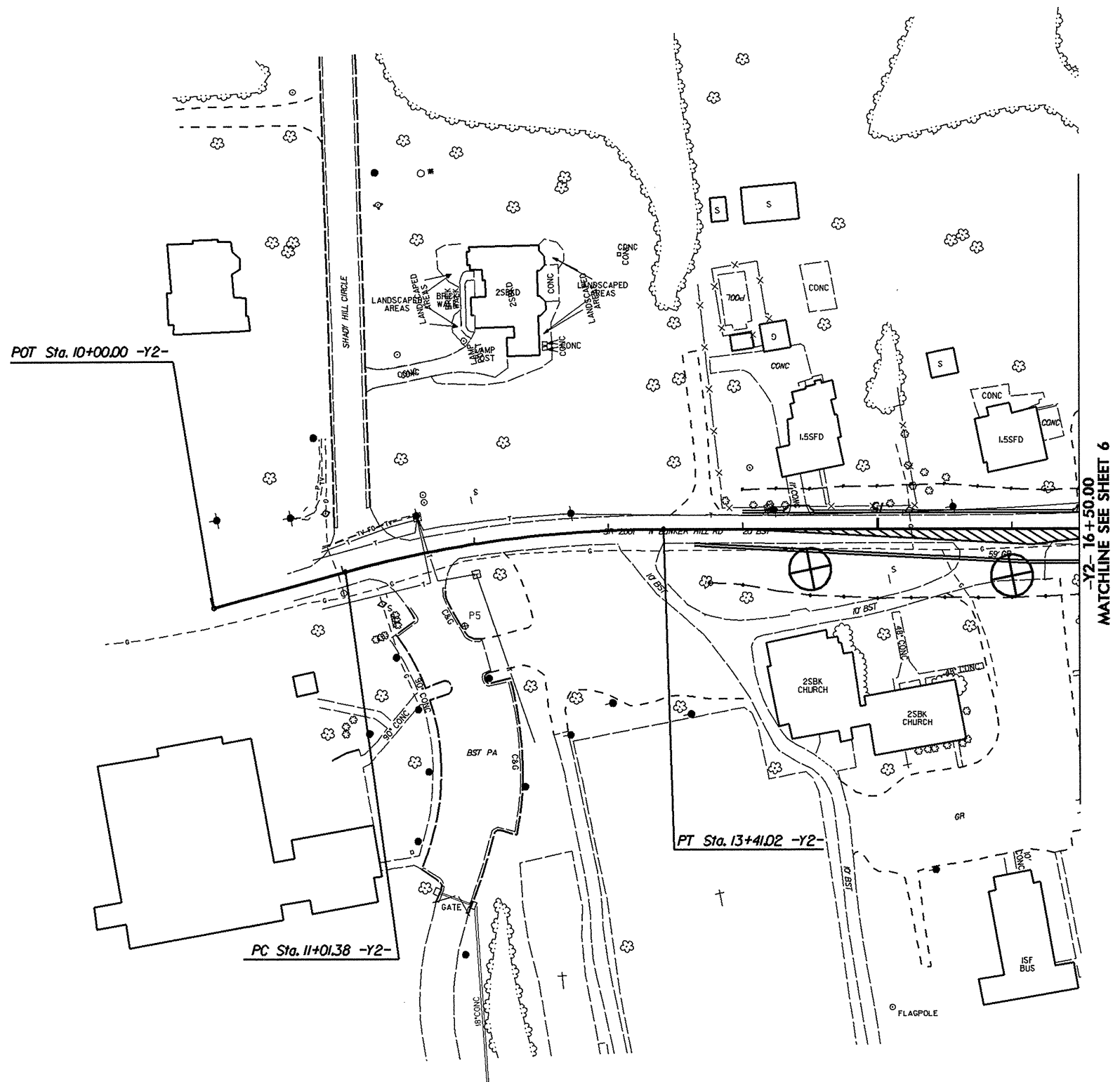


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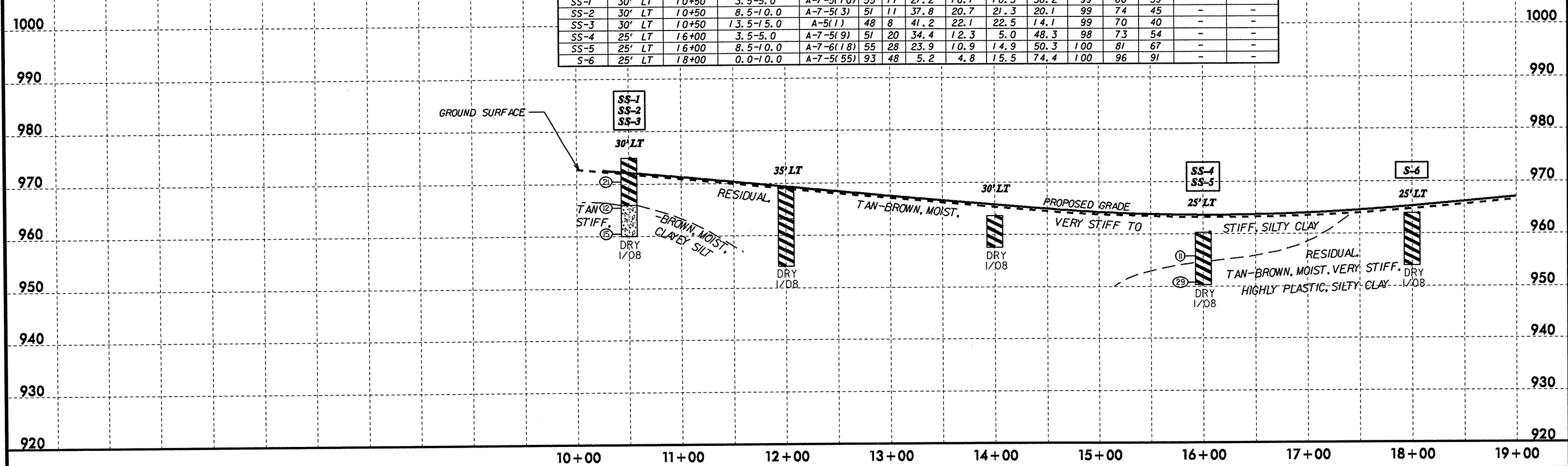
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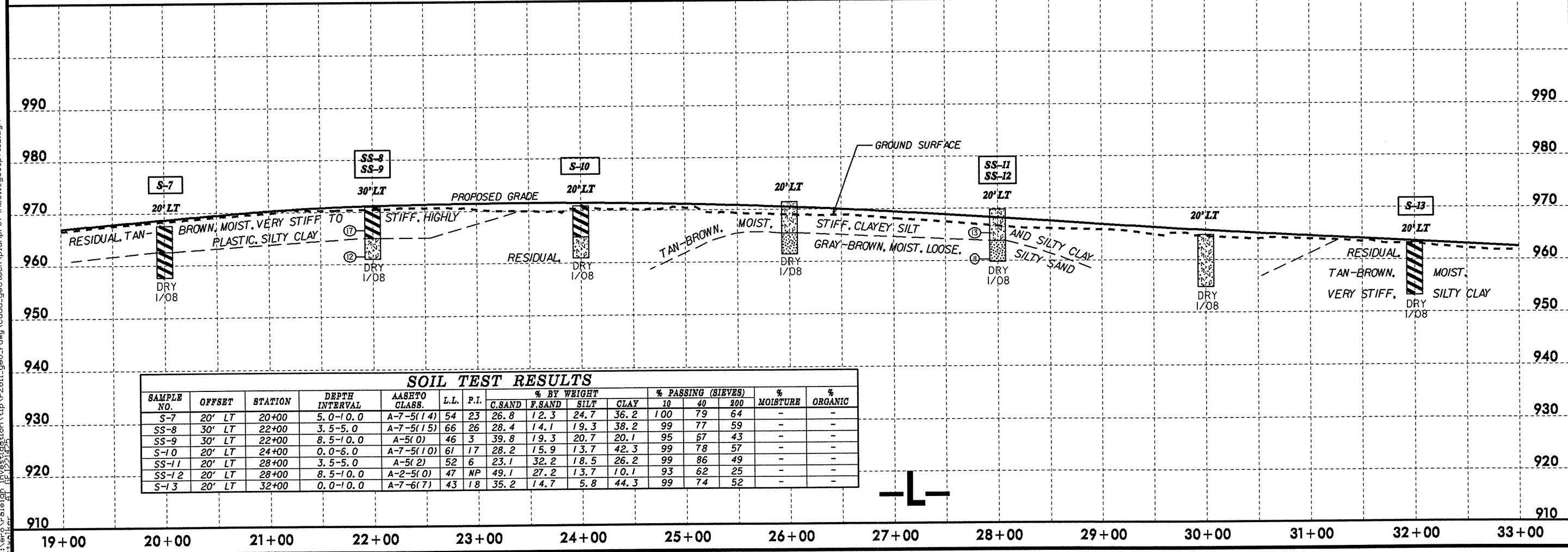
### SOIL TEST RESULTS

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-1	30' LT	10+50	3.5-5.0	A-7-5(10)	55	17	27.2	16.1	18.5	38.2	99	80	59	-	-
SS-2	30' LT	10+50	8.5-10.0	A-7-5(3)	51	11	37.8	20.7	21.3	20.1	99	74	45	-	-
SS-3	30' LT	10+50	13.5-15.0	A-5(1)	48	8	41.2	22.1	22.5	14.1	99	70	40	-	-
SS-4	25' LT	16+00	3.5-5.0	A-7-5(9)	51	20	34.4	12.3	5.0	48.3	98	73	54	-	-
SS-5	25' LT	16+00	8.5-10.0	A-7-6(18)	55	28	23.9	10.9	14.9	50.3	100	81	67	-	-
S-6	25' LT	18+00	0.0-10.0	A-7-5(55)	93	48	5.2	4.8	15.5	74.4	100	96	91	-	-



### SOIL TEST RESULTS

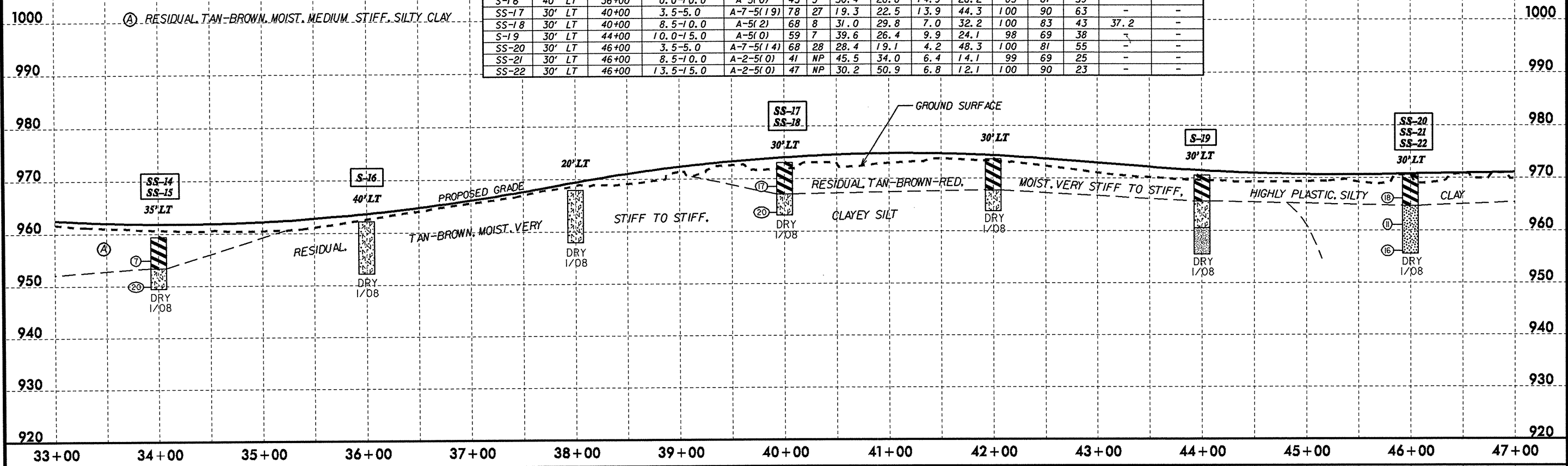
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-7	20' LT	20+00	5.0-10.0	A-7-5(14)	54	23	26.8	12.3	24.7	36.2	100	79	64	-	-
SS-8	30' LT	22+00	3.5-5.0	A-7-5(15)	66	26	28.4	14.1	19.3	38.2	99	77	59	-	-
SS-9	30' LT	22+00	8.5-10.0	A-5(0)	46	3	39.8	19.3	20.7	20.1	95	67	43	-	-
S-10	20' LT	24+00	0.0-6.0	A-7-5(10)	61	17	28.2	15.9	13.7	42.3	99	78	57	-	-
SS-11	20' LT	28+00	3.5-5.0	A-5(2)	52	6	23.1	32.2	18.5	26.2	99	86	49	-	-
SS-12	20' LT	28+00	8.5-10.0	A-2-5(0)	47	NP	49.1	27.2	13.7	10.1	93	62	25	-	-
S-13	20' LT	32+00	0.0-10.0	A-7-6(7)	43	18	35.2	14.7	5.8	44.3	99	74	52	-	-



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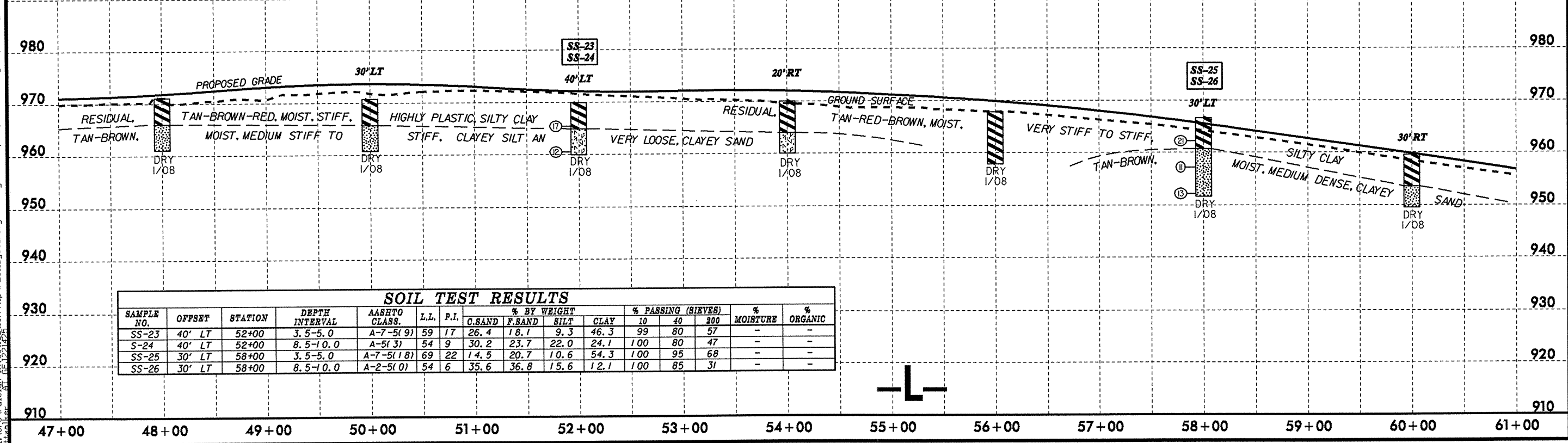
### SOIL TEST RESULTS

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-14	35' LT	34+00	3.5-5.0	A-7-6(9)	45	22	31.4	16.9	9.5	42.3	98	75	53	-	-
SS-15	35' LT	34+00	8.5-10.0	A-5(3)	58	4	25.8	23.5	14.5	36.2	99	83	53	-	-
S-16	40' LT	36+00	0.0-10.0	A-5(0)	43	5	30.4	28.6	14.9	26.2	85	67	39	-	-
SS-17	30' LT	40+00	3.5-5.0	A-7-5(19)	78	27	19.3	22.5	13.9	44.3	100	90	63	-	-
SS-18	30' LT	40+00	8.5-10.0	A-5(2)	68	8	31.0	29.8	7.0	32.2	100	83	43	37.2	-
S-19	30' LT	44+00	10.0-15.0	A-5(0)	59	7	39.6	26.4	9.9	24.1	98	69	38	-	-
SS-20	30' LT	46+00	3.5-5.0	A-7-5(14)	68	28	28.4	19.1	4.2	48.3	100	81	55	-	-
SS-21	30' LT	46+00	8.5-10.0	A-2-5(0)	41	NP	45.5	34.0	6.4	14.1	99	69	25	-	-
SS-22	30' LT	46+00	13.5-15.0	A-2-5(0)	47	NP	30.2	50.9	6.8	12.1	100	90	23	-	-



### SOIL TEST RESULTS

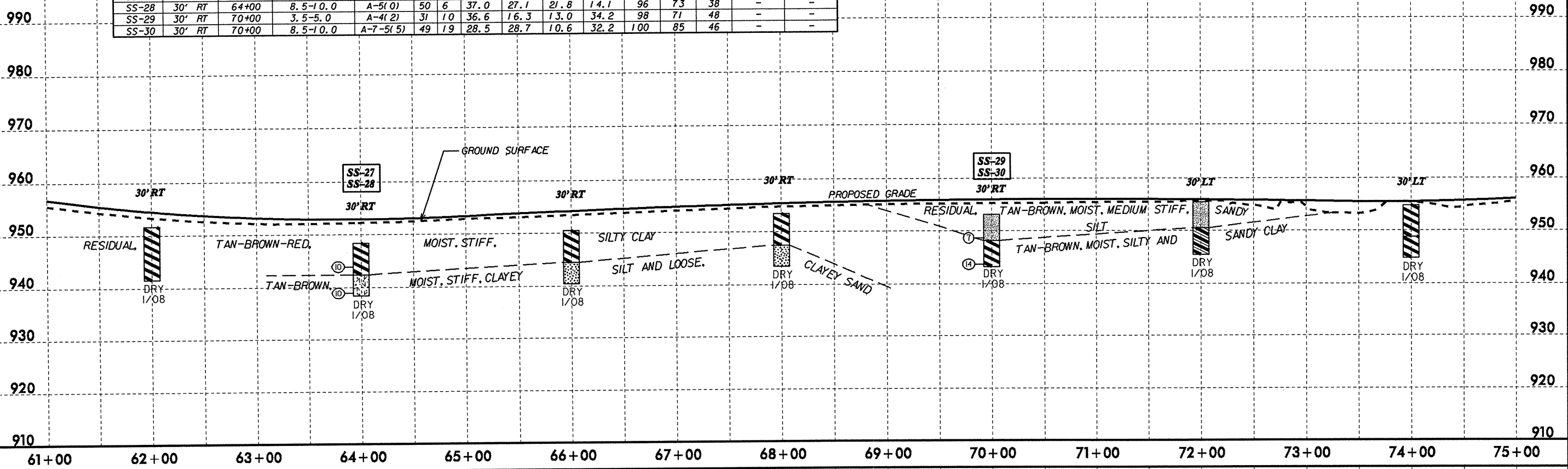
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-23	40' LT	52+00	3.5-5.0	A-7-5(9)	59	17	26.4	18.1	9.3	46.3	99	80	57	-	-
S-24	40' LT	52+00	8.5-10.0	A-5(3)	54	9	30.2	23.7	22.0	24.1	100	80	47	-	-
SS-25	30' LT	58+00	3.5-5.0	A-7-5(18)	69	22	14.5	20.7	10.6	54.3	100	95	68	-	-
SS-26	30' LT	58+00	8.5-10.0	A-2-5(0)	54	6	35.6	36.8	15.6	12.1	100	85	31	-	-



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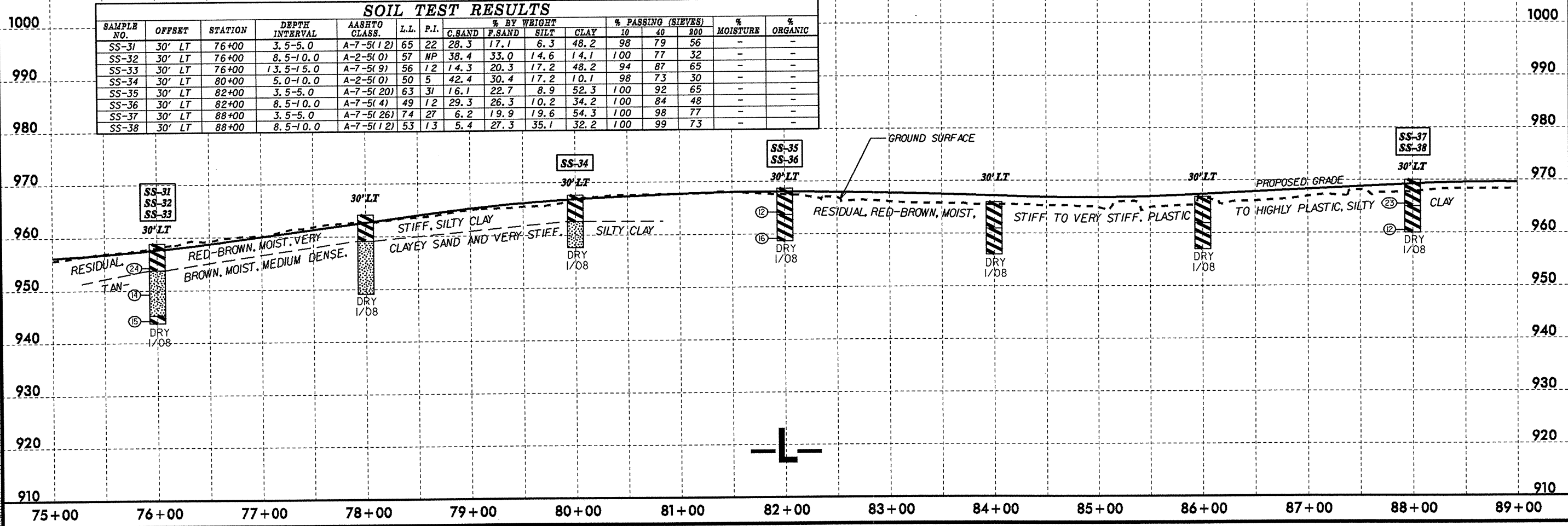
### SOIL TEST RESULTS

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-27	30' RT	64+00	3.5-5.0	A-7-5(6)	59	15	27.9	24.9	13.0	34.2	99	81	50	29.7	-
SS-28	30' RT	64+00	8.5-10.0	A-5(0)	50	6	37.0	27.1	21.8	14.1	96	73	38	-	-
SS-29	30' RT	70+00	3.5-5.0	A-4(2)	31	10	36.6	16.3	13.0	34.2	98	71	48	-	-
SS-30	30' RT	70+00	8.5-10.0	A-7-5(5)	49	19	28.5	28.7	10.6	32.2	100	85	46	-	-



### SOIL TEST RESULTS

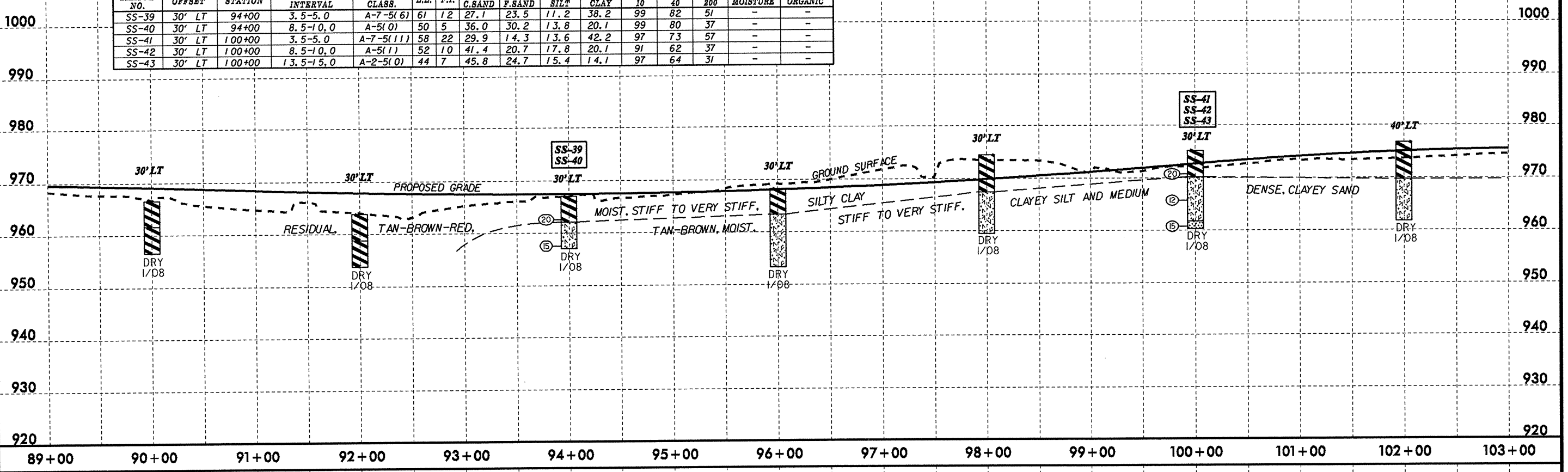
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							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-31	30' LT	76+00	3.5-5.0	A-7-5(12)	65	22	28.3	17.1	6.3	48.2	98	79	56	-	-
SS-32	30' LT	76+00	8.5-10.0	A-2-5(0)	57	NP	38.4	33.0	14.6	14.1	100	77	32	-	-
SS-33	30' LT	76+00	13.5-15.0	A-7-5(9)	56	12	14.3	20.3	17.2	48.2	94	87	65	-	-
SS-34	30' LT	80+00	5.0-10.0	A-2-5(0)	50	5	42.4	30.4	17.2	10.1	98	73	30	-	-
SS-35	30' LT	82+00	3.5-5.0	A-7-5(20)	63	31	16.1	22.7	8.9	52.3	100	92	65	-	-
SS-36	30' LT	82+00	8.5-10.0	A-7-5(4)	49	12	29.3	26.3	10.2	34.2	100	84	48	-	-
SS-37	30' LT	88+00	3.5-5.0	A-7-5(26)	74	27	6.2	19.9	19.6	54.3	100	98	77	-	-
SS-38	30' LT	88+00	8.5-10.0	A-7-5(12)	53	13	5.4	27.3	35.1	32.2	100	99	73	-	-



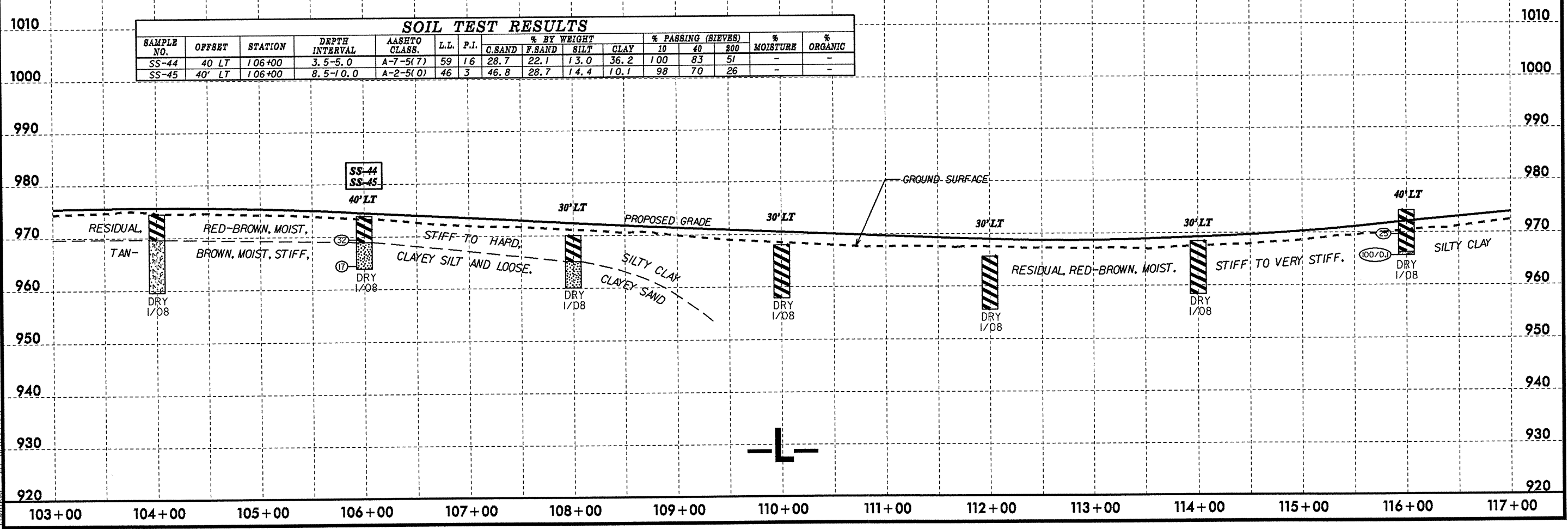
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SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-39	30' LT	94+00	3.5-5.0	A-7-5(6)	61	12	27.1	23.5	11.2	38.2	99	82	51	-	-
SS-40	30' LT	94+00	8.5-10.0	A-5(0)	50	5	36.0	30.2	13.8	20.1	99	80	37	-	-
SS-41	30' LT	100+00	3.5-5.0	A-7-5(11)	58	22	29.9	14.3	13.6	42.2	97	73	57	-	-
SS-42	30' LT	100+00	8.5-10.0	A-5(1)	52	10	41.4	20.7	17.8	20.1	91	62	37	-	-
SS-43	30' LT	100+00	13.5-15.0	A-2-5(0)	44	7	45.8	24.7	15.4	14.1	97	64	31	-	-



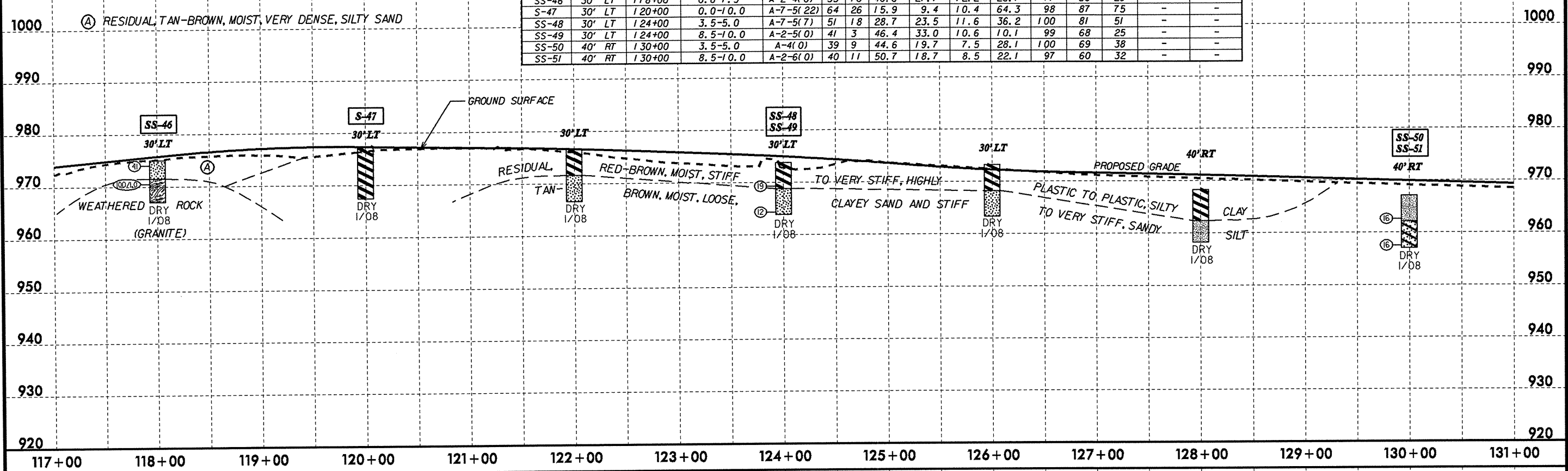
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-44	40' LT	106+00	3.5-5.0	A-7-5(7)	59	16	28.7	22.1	13.0	36.2	100	83	51	-	-
SS-45	40' LT	106+00	8.5-10.0	A-2-5(0)	46	3	46.8	28.7	14.4	10.1	98	70	26	-	-



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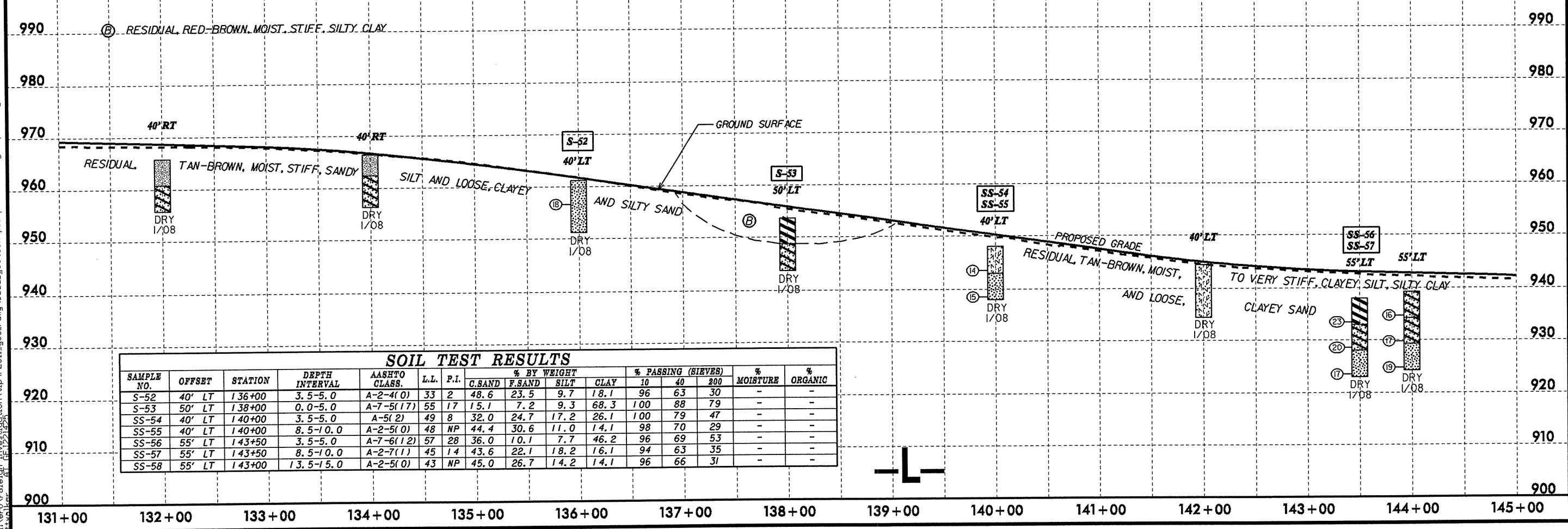
### SOIL TEST RESULTS

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-46	30' LT	118+00	0.0-1.5	A-2-4(0)	33	10	40.6	21.1	12.2	26.1	71	50	29	-	-
S-47	30' LT	120+00	0.0-10.0	A-7-5(22)	64	26	15.9	9.4	10.4	64.3	98	87	75	-	-
SS-48	30' LT	124+00	3.5-5.0	A-7-5(7)	51	18	28.7	23.5	11.6	36.2	100	81	51	-	-
SS-49	30' LT	124+00	8.5-10.0	A-2-5(0)	41	3	46.4	33.0	10.6	10.1	99	68	25	-	-
SS-50	40' RT	130+00	3.5-5.0	A-4(0)	39	9	44.6	19.7	7.5	28.1	100	69	38	-	-
SS-51	40' RT	130+00	8.5-10.0	A-2-6(0)	40	11	50.7	18.7	8.5	22.1	97	60	32	-	-



### 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-52	40' LT	136+00	3.5-5.0	A-2-4(0)	33	2	48.6	23.5	9.7	18.1	96	63	30	-	-
S-53	50' LT	138+00	0.0-5.0	A-7-5(17)	55	17	15.1	7.2	9.3	68.3	100	88	79	-	-
SS-54	40' LT	140+00	3.5-5.0	A-5(2)	49	8	32.0	24.7	17.2	26.1	100	79	47	-	-
SS-55	40' LT	140+00	8.5-10.0	A-2-5(0)	48	NP	44.4	30.6	11.0	14.1	98	70	29	-	-
SS-56	55' LT	143+50	3.5-5.0	A-7-6(12)	57	28	36.0	10.1	7.7	46.2	96	69	53	-	-
SS-57	55' LT	143+50	8.5-10.0	A-2-7(1)	45	14	43.6	22.1	18.2	16.1	94	63	35	-	-
SS-58	55' LT	143+00	13.5-15.0	A-2-5(0)	43	NP	45.0	26.7	14.2	14.1	96	66	31	-	-

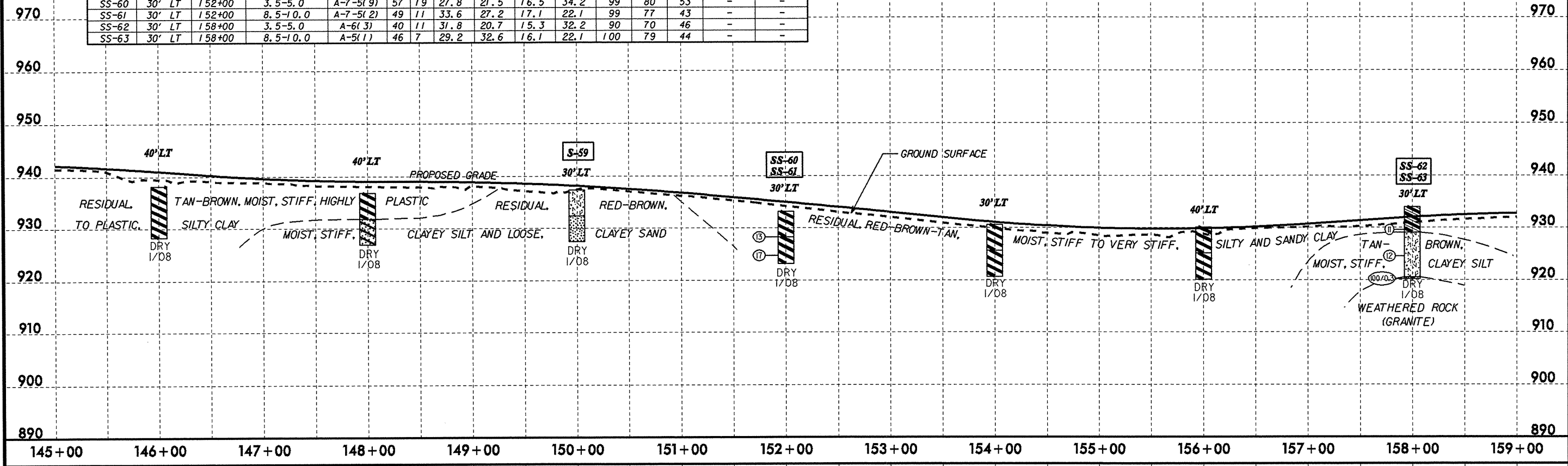


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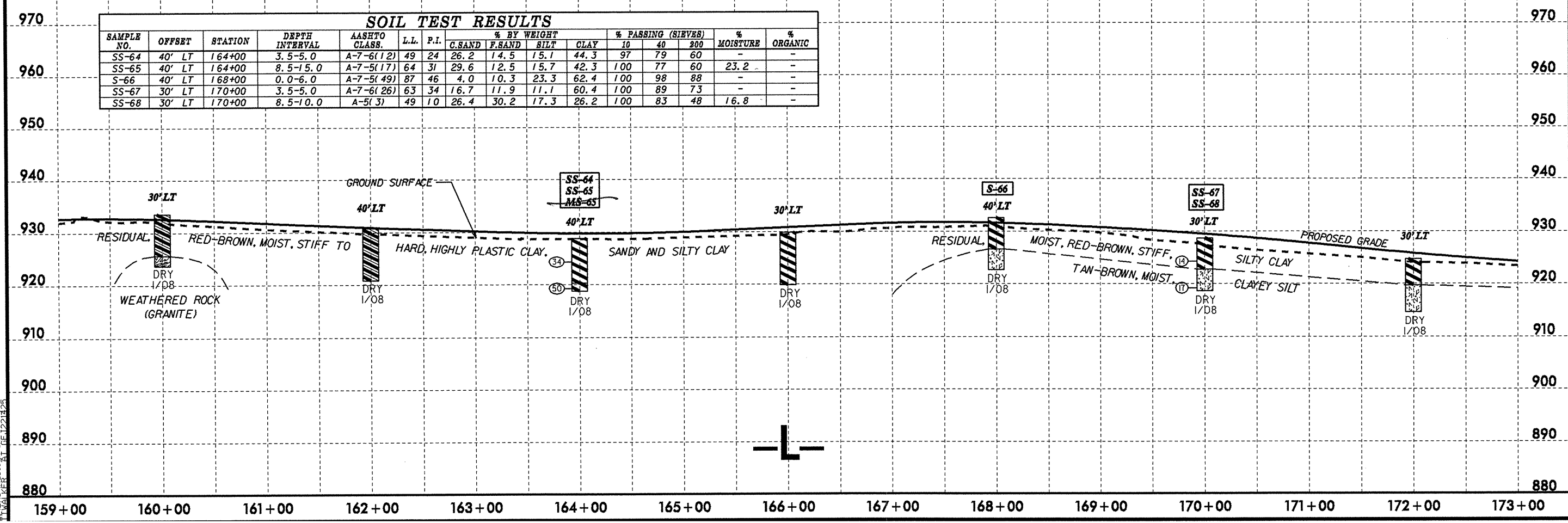
### SOIL TEST RESULTS

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-59	30' LT	150+00	0.0-5.0	A-5(5)	50	9	24.7	18.9	18.2	38.2	97	79	57	-	-
SS-60	30' LT	152+00	3.5-5.0	A-7-5(9)	57	19	27.8	21.5	16.5	34.2	99	80	53	-	-
SS-61	30' LT	152+00	8.5-10.0	A-7-5(2)	49	11	33.6	27.2	17.1	22.1	99	77	43	-	-
SS-62	30' LT	158+00	3.5-5.0	A-6(3)	40	11	31.8	20.7	15.3	32.2	90	70	46	-	-
SS-63	30' LT	158+00	8.5-10.0	A-5(1)	46	7	29.2	32.6	16.1	22.1	100	79	44	-	-



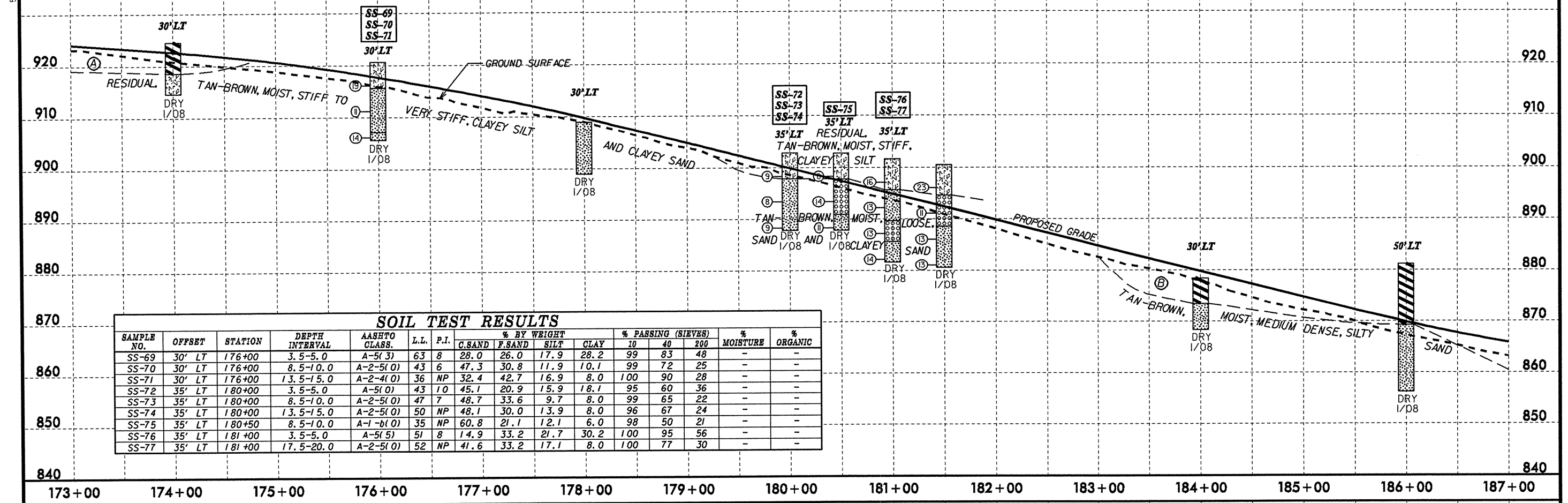
### SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-64	40' LT	164+00	3.5-5.0	A-7-6(12)	49	24	26.2	14.5	15.1	44.3	97	79	60	-	-
SS-65	40' LT	164+00	8.5-15.0	A-7-5(17)	64	31	29.6	12.5	15.7	42.3	100	77	60	23.2	-
S-66	40' LT	168+00	0.0-6.0	A-7-5(49)	87	46	4.0	10.3	23.3	62.4	100	98	88	-	-
SS-67	30' LT	170+00	3.5-5.0	A-7-6(26)	63	34	16.7	11.9	11.1	60.4	100	89	73	-	-
SS-68	30' LT	170+00	8.5-10.0	A-5(3)	49	10	26.4	30.2	17.3	26.2	100	83	48	16.8	-

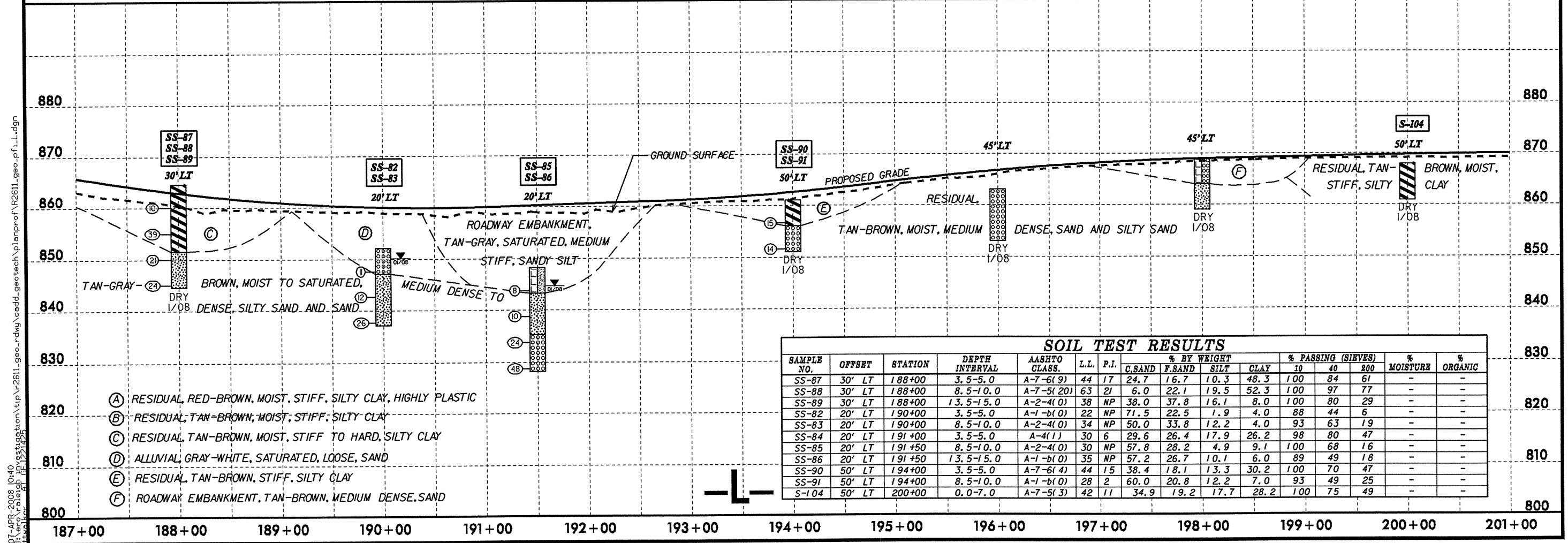


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SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-69	30' LT	176+00	3.5-5.0	A-5(3)	63	8	28.0	26.0	17.9	28.2	99	83	48	-	-
SS-70	30' LT	176+00	8.5-10.0	A-2-5(0)	43	6	47.3	30.8	11.9	10.1	99	72	25	-	-
SS-71	30' LT	176+00	13.5-15.0	A-2-4(0)	36	NP	32.4	42.7	16.9	8.0	100	90	28	-	-
SS-72	35' LT	180+00	3.5-5.0	A-5(0)	43	10	45.1	20.9	15.9	18.1	95	60	36	-	-
SS-73	35' LT	180+00	8.5-10.0	A-2-5(0)	47	7	48.7	33.6	9.7	8.0	99	65	22	-	-
SS-74	35' LT	180+00	13.5-15.0	A-2-5(0)	50	NP	48.1	30.0	13.9	8.0	96	67	24	-	-
SS-75	35' LT	180+50	8.5-10.0	A-1-b(0)	35	NP	60.8	21.1	12.1	6.0	98	50	21	-	-
SS-76	35' LT	181+00	3.5-5.0	A-5(5)	51	8	14.9	33.2	21.7	30.2	100	95	56	-	-
SS-77	35' LT	181+00	17.5-20.0	A-2-5(0)	52	NP	41.6	33.2	17.1	8.0	100	77	30	-	-



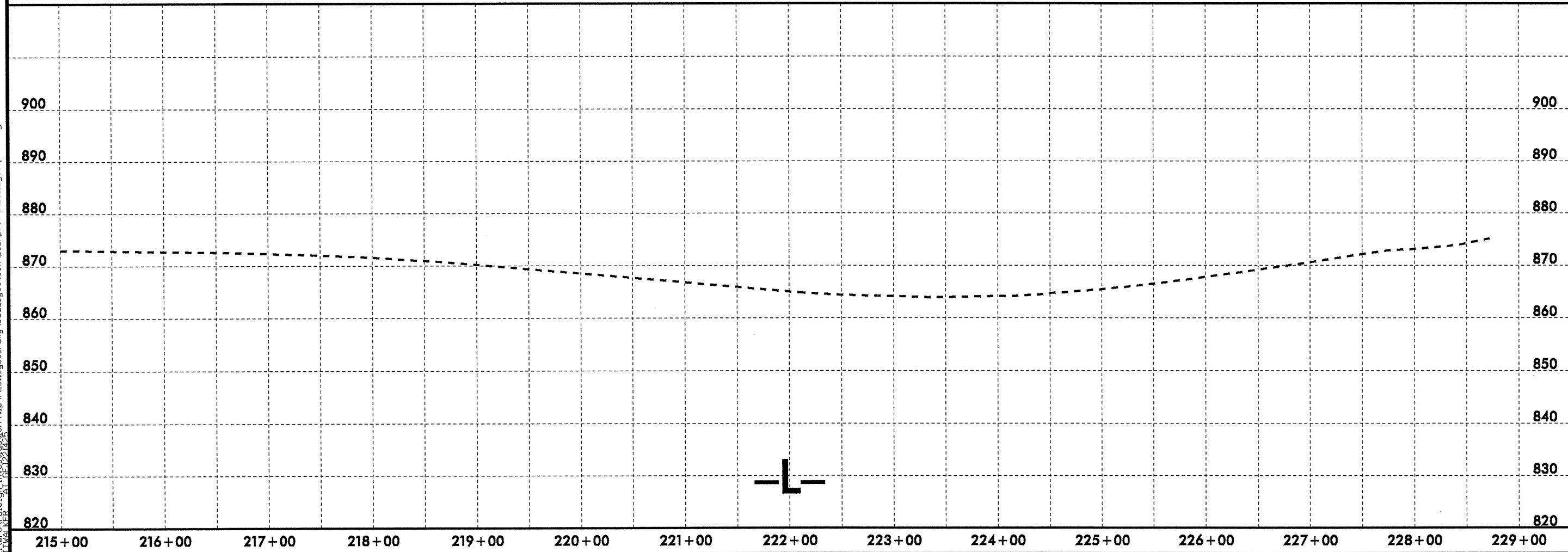
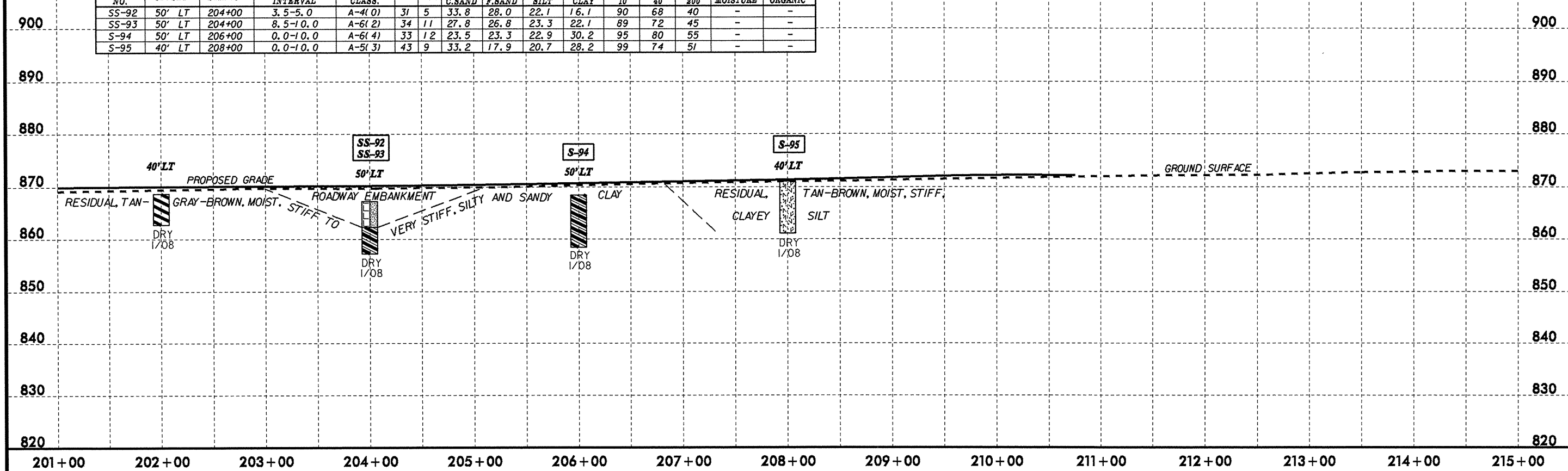
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							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-87	30' LT	188+00	3.5-5.0	A-7-6(9)	44	17	24.7	16.7	10.3	48.3	100	84	61	-	-
SS-88	30' LT	188+00	8.5-10.0	A-7-5(20)	63	21	6.0	22.1	19.5	52.3	100	97	77	-	-
SS-89	30' LT	188+00	13.5-15.0	A-2-4(0)	38	NP	38.0	37.8	16.1	8.0	100	80	29	-	-
SS-82	20' LT	190+00	3.5-5.0	A-1-b(0)	22	NP	71.5	22.5	1.9	4.0	88	44	6	-	-
SS-83	20' LT	190+00	8.5-10.0	A-2-4(0)	34	NP	50.0	33.8	12.2	4.0	93	63	19	-	-
SS-84	20' LT	191+00	3.5-5.0	A-4(1)	30	6	29.6	26.4	17.9	26.2	98	80	47	-	-
SS-85	20' LT	191+50	8.5-10.0	A-2-4(0)	30	NP	57.8	28.2	4.9	9.1	100	68	16	-	-
SS-86	20' LT	191+50	13.5-15.0	A-1-b(0)	35	NP	57.2	26.7	10.1	6.0	89	49	18	-	-
SS-90	50' LT	194+00	3.5-5.0	A-7-6(4)	44	15	38.4	18.1	13.3	30.2	100	70	47	-	-
SS-91	50' LT	194+00	8.5-10.0	A-1-b(0)	28	2	60.0	20.8	12.2	7.0	93	49	25	-	-
S-104	50' LT	200+00	0.0-7.0	A-7-5(3)	42	11	34.9	19.2	17.7	28.2	100	75	49	-	-

- (A) RESIDUAL, RED-BROWN, MOIST, STIFF, SILTY CLAY, HIGHLY PLASTIC
- (B) RESIDUAL, TAN-BROWN, MOIST, STIFF, SILTY CLAY
- (C) RESIDUAL, TAN-BROWN, MOIST, STIFF TO HARD, SILTY CLAY
- (D) ALLUVIAL, GRAY-WHITE, SATURATED, LOOSE, SAND
- (E) RESIDUAL, TAN-BROWN, STIFF, SILTY CLAY
- (F) ROADWAY EMBANKMENT, TAN-BROWN, MEDIUM DENSE, SAND

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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-92	50' LT	204+00	3.5-5.0	A-4(0)	31	5	33.8	28.0	22.1	16.1	90	68	40	-	-
SS-93	50' LT	204+00	8.5-10.0	A-6(2)	34	11	27.8	26.8	23.3	22.1	89	72	45	-	-
S-94	50' LT	206+00	0.0-10.0	A-6(4)	33	12	23.5	23.3	22.9	30.2	95	80	55	-	-
S-95	40' LT	208+00	0.0-10.0	A-5(3)	43	9	33.2	17.9	20.7	28.2	99	74	51	-	-

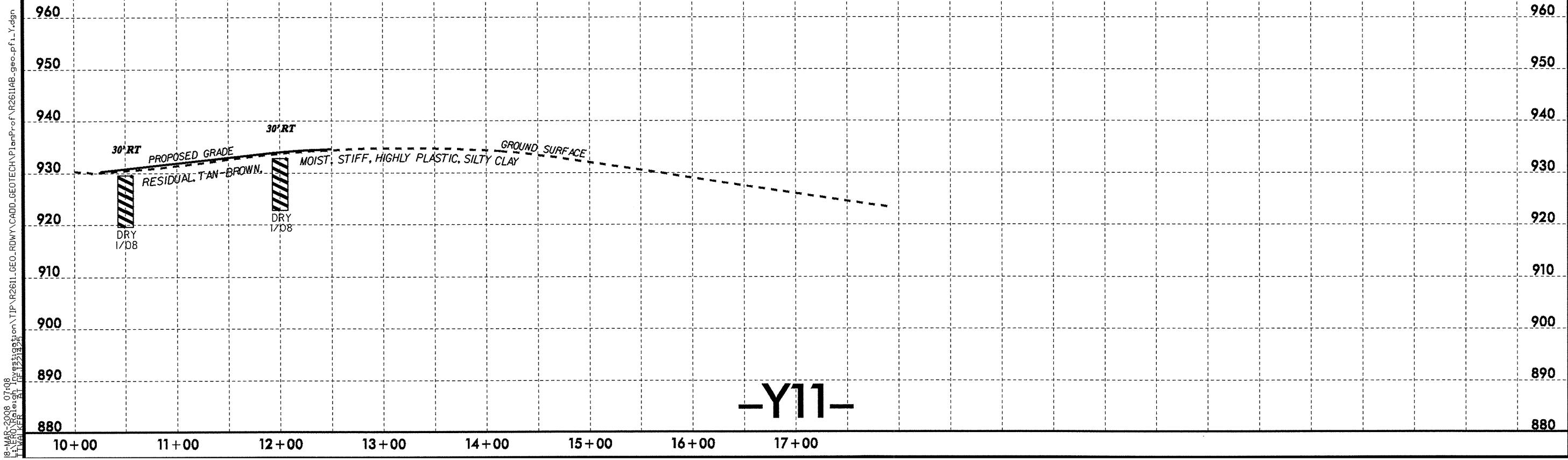
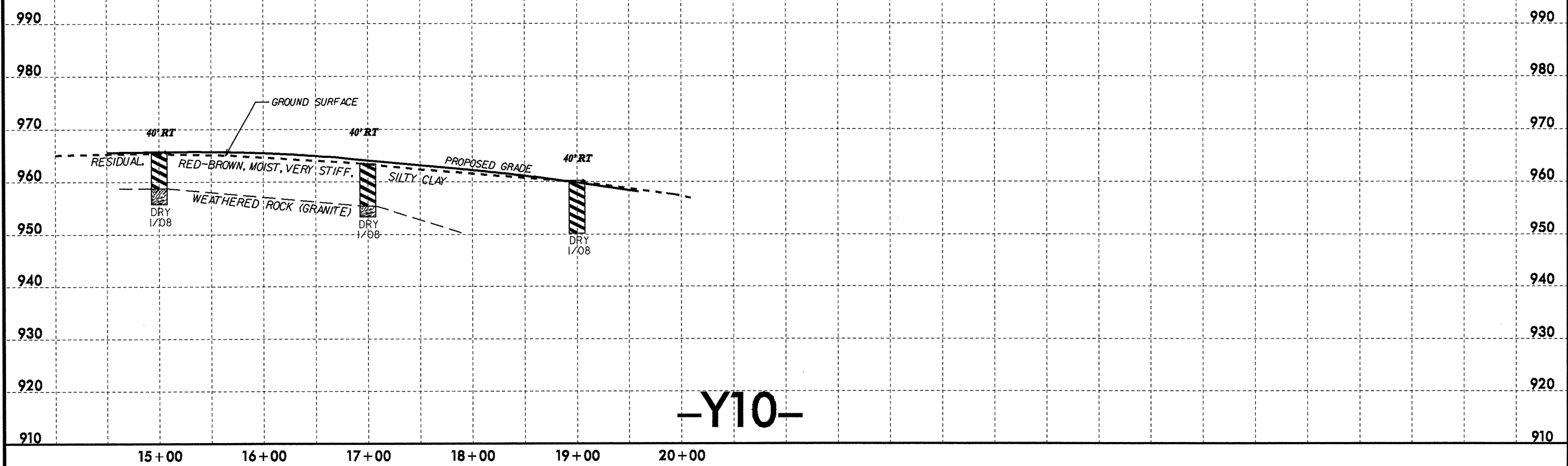


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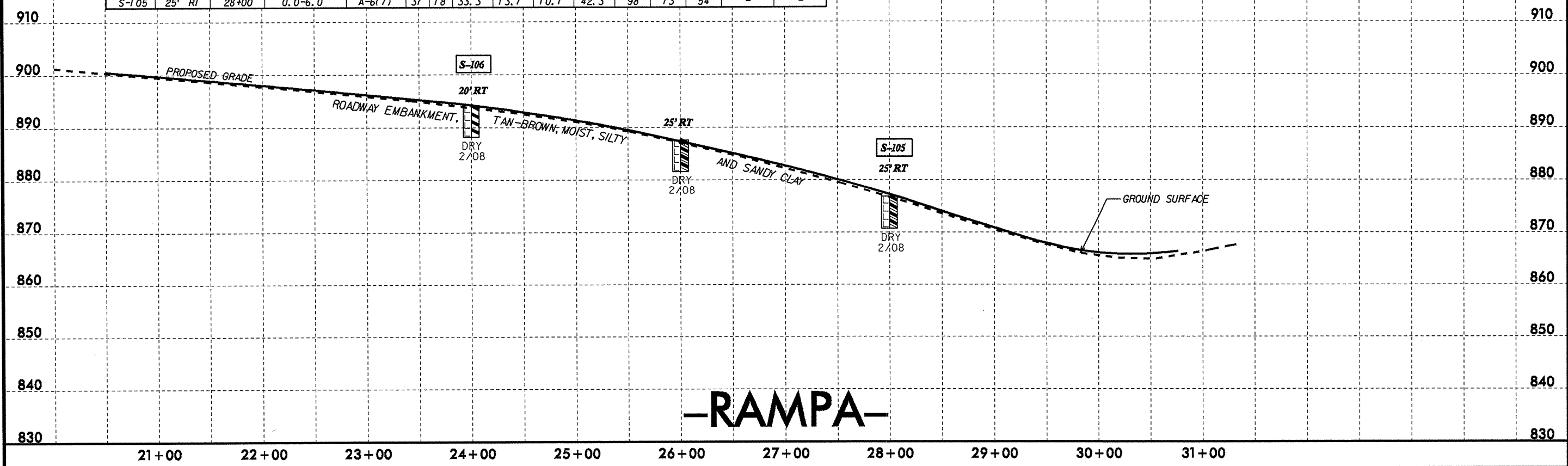
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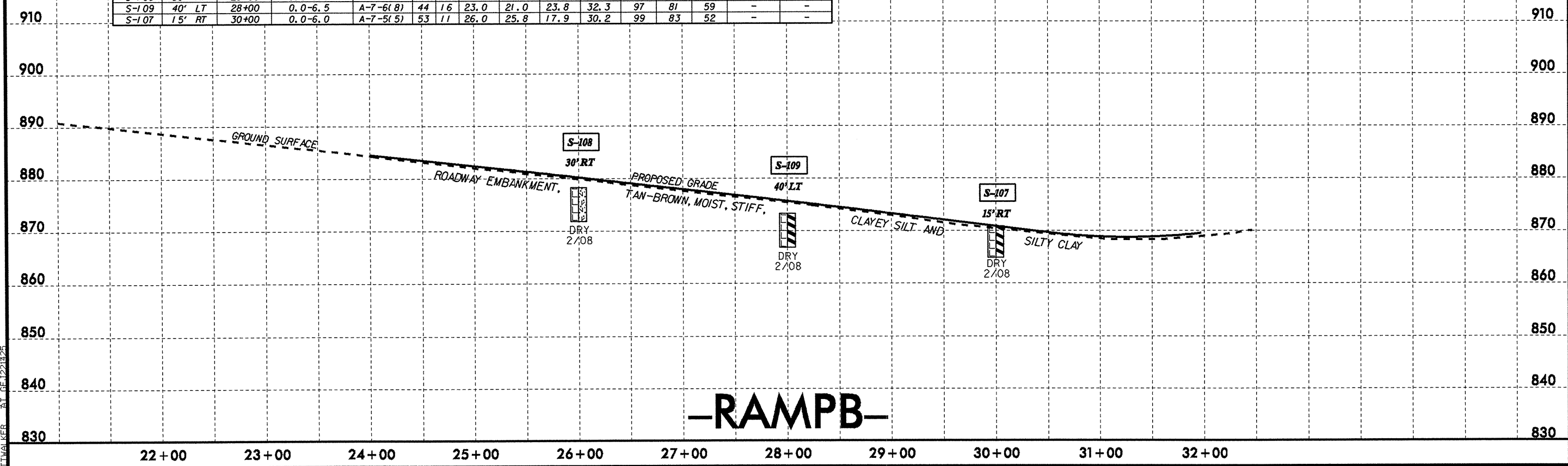


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SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-106	20' RT	24+00	0.0-6.0	A-7-5(14)	62	20	18.1	21.2	20.4	40.3	100	88	64	-	-
S-105	25' RT	28+00	0.0-6.0	A-6(7)	37	18	33.3	13.7	10.7	42.3	98	73	54	-	-



**-RAMPA-**

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-108	30' RT	26+00	0.0-6.5	A-5(6)	43	9	16.5	22.2	29.0	32.3	97	86	65	-	-
S-109	40' LT	28+00	0.0-6.5	A-7-6(8)	44	16	23.0	21.0	23.8	32.3	97	81	59	-	-
S-107	15' RT	30+00	0.0-6.0	A-7-5(5)	53	11	26.0	25.8	17.9	30.2	99	83	52	-	-



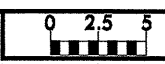
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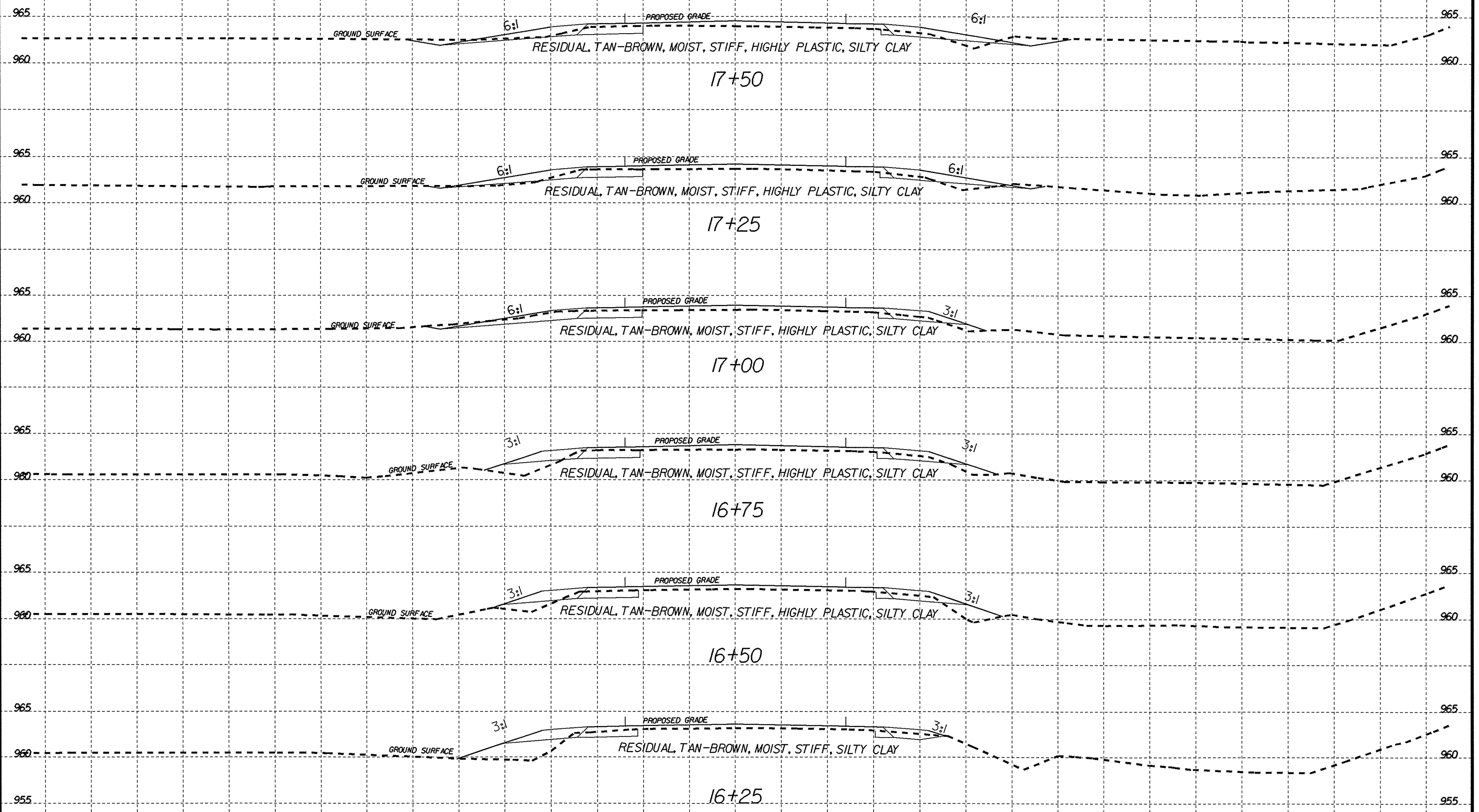


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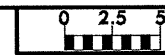
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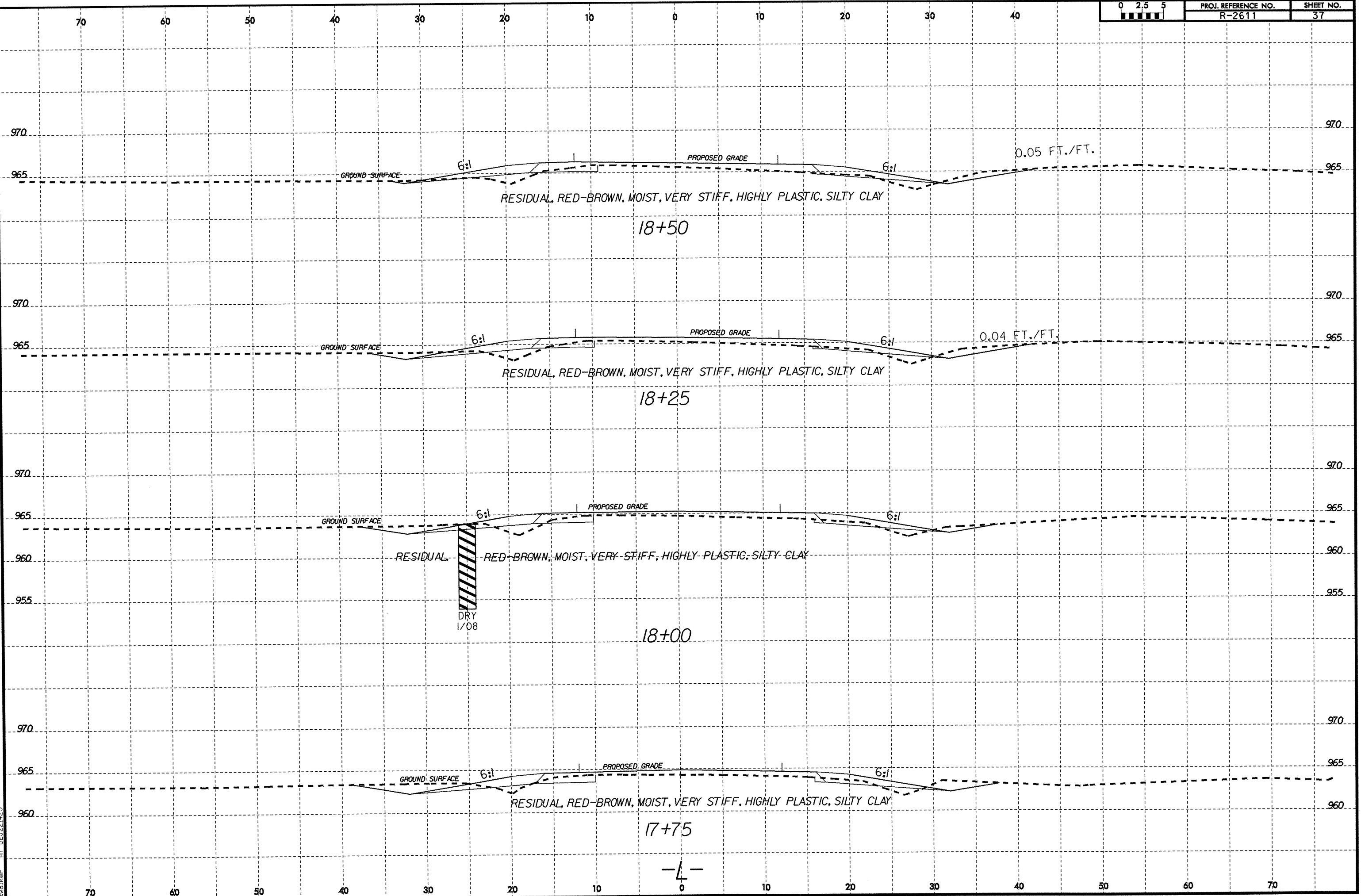
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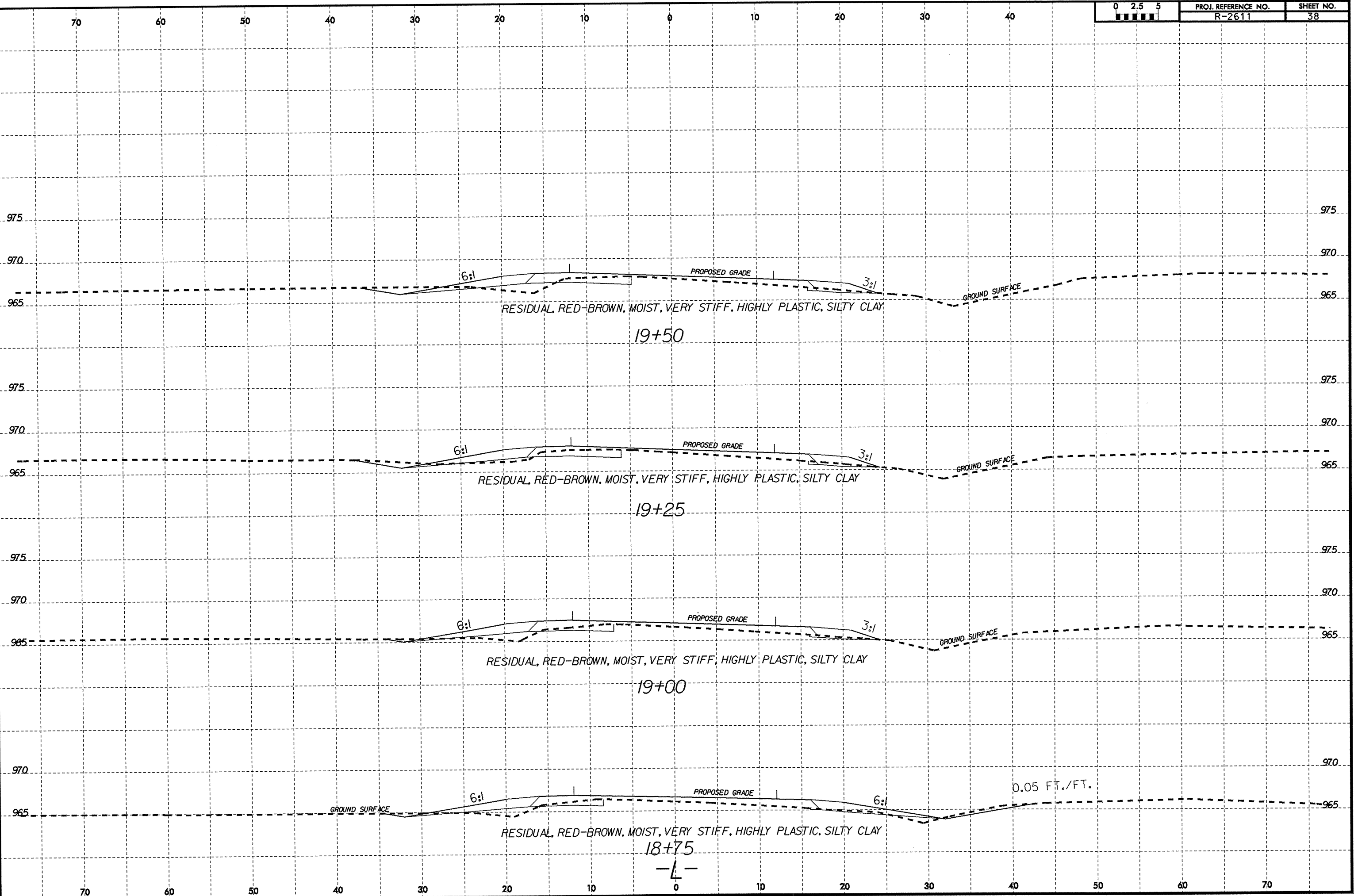
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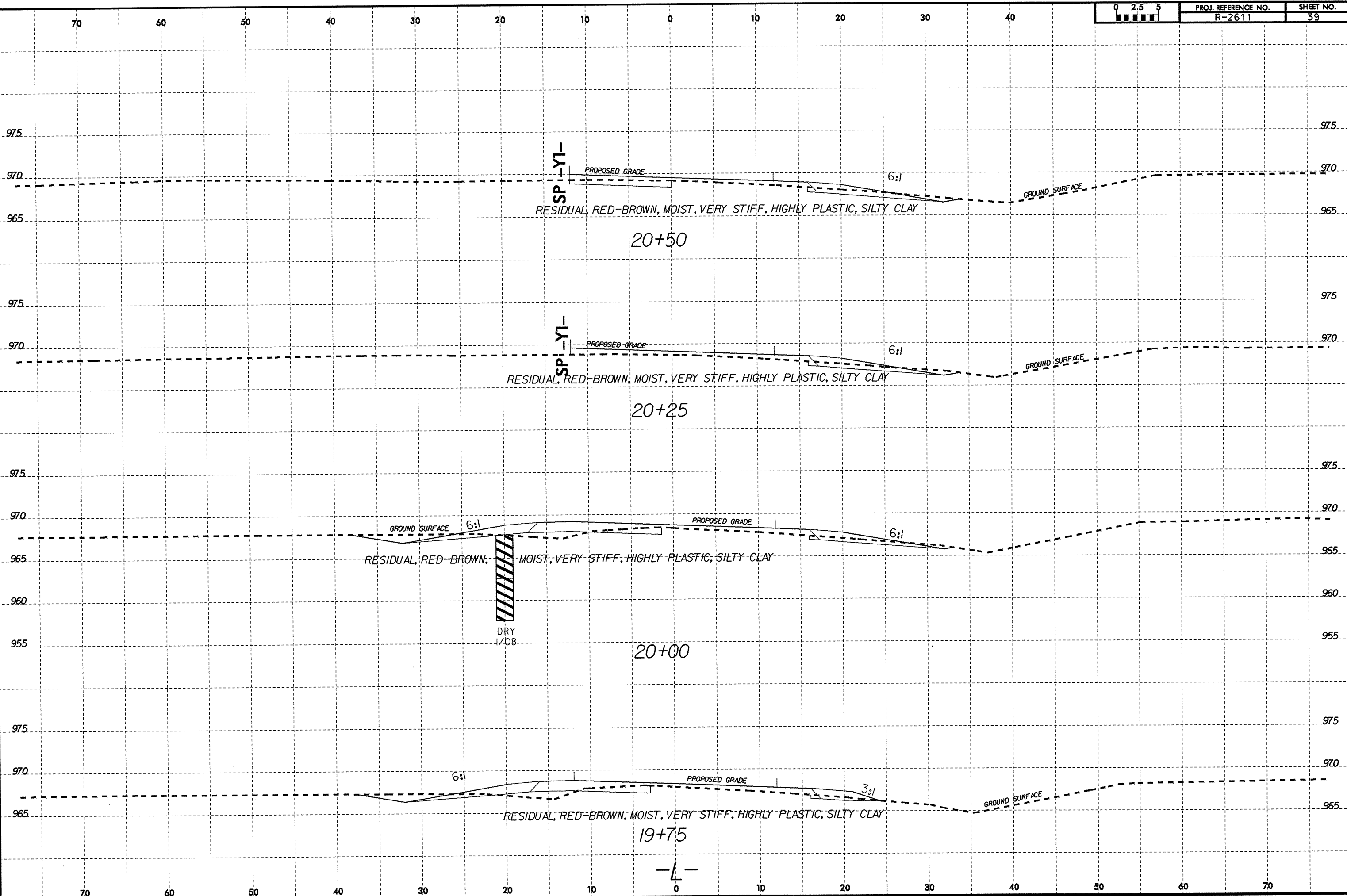


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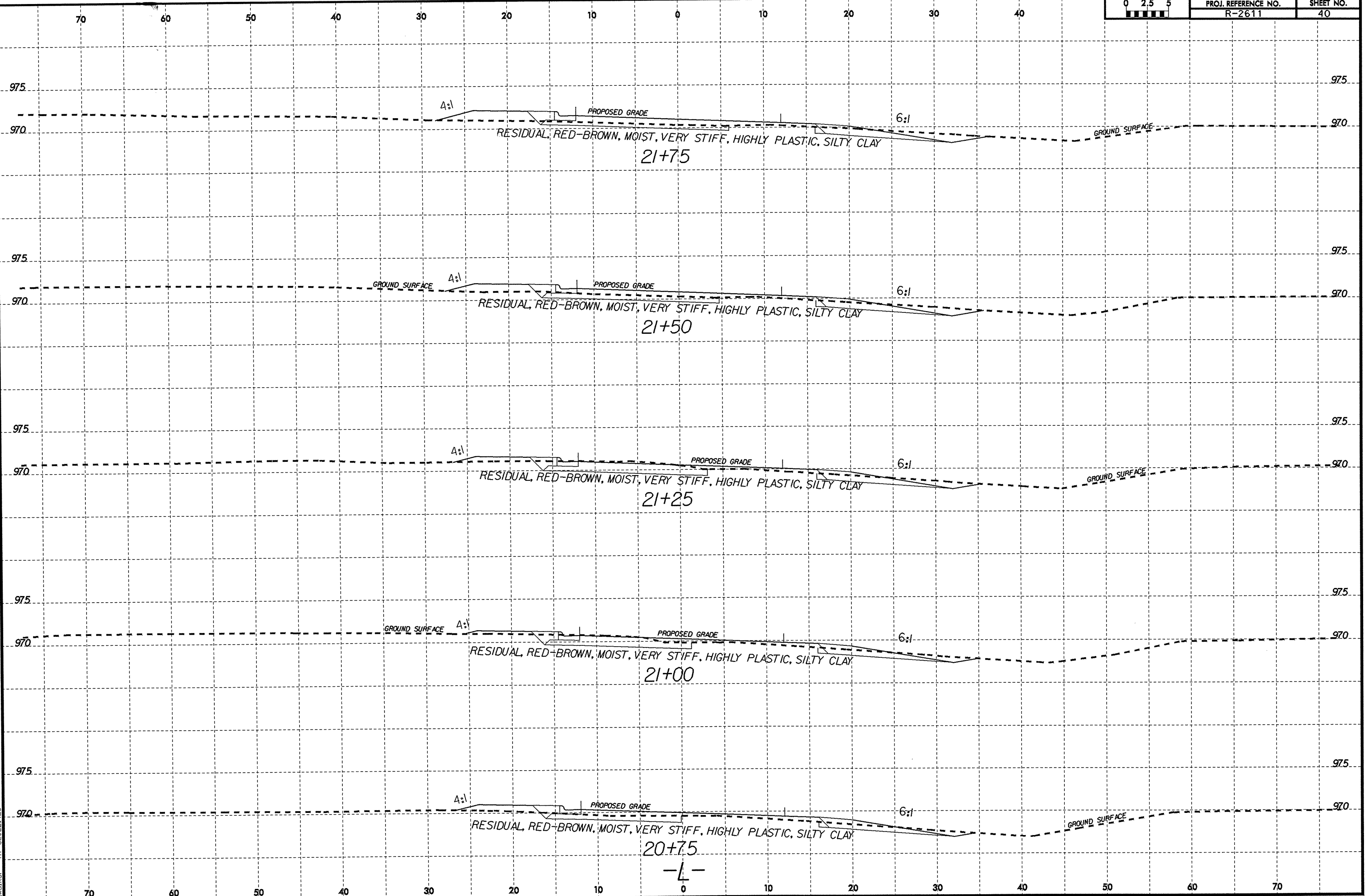


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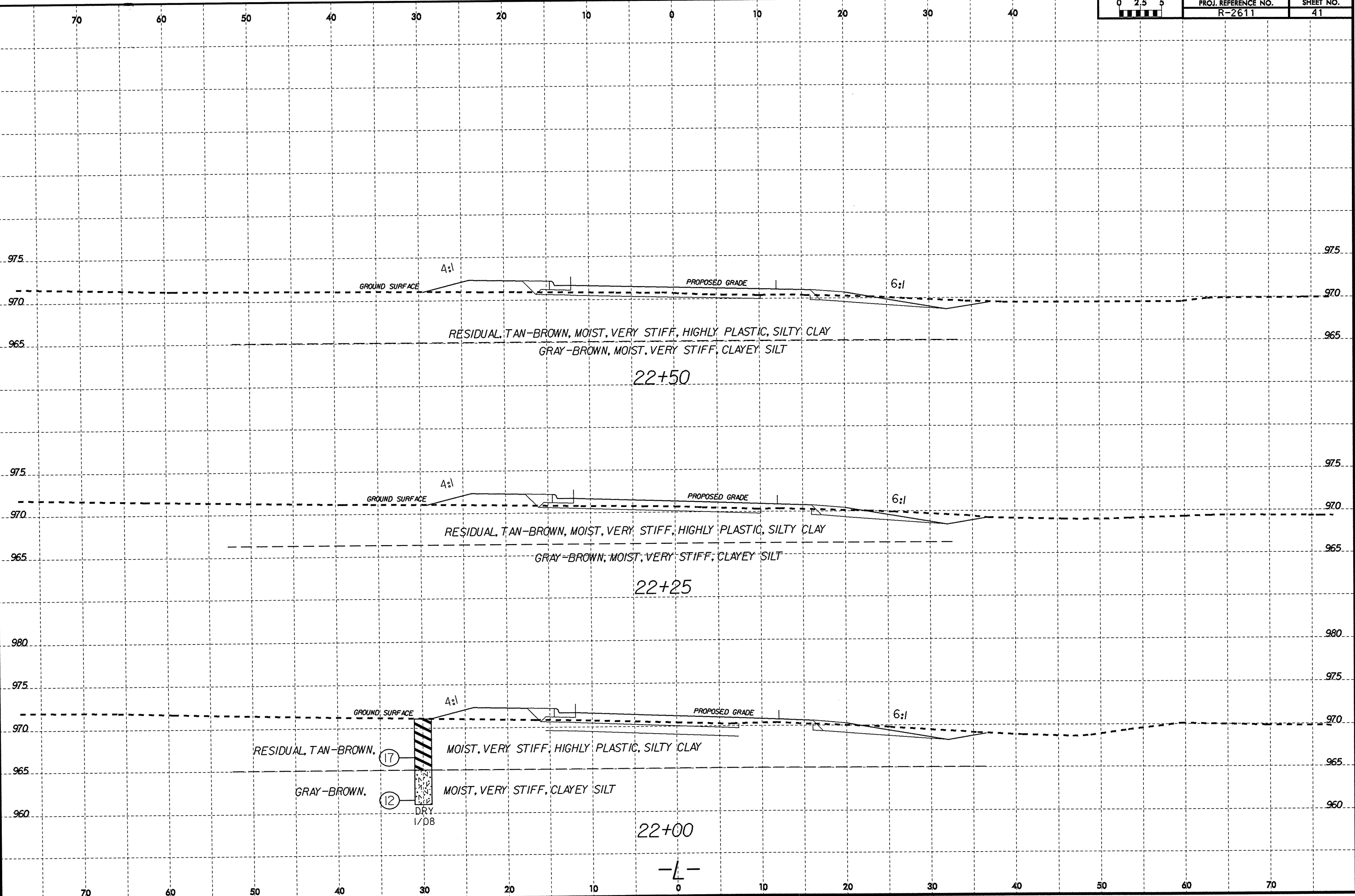
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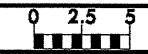
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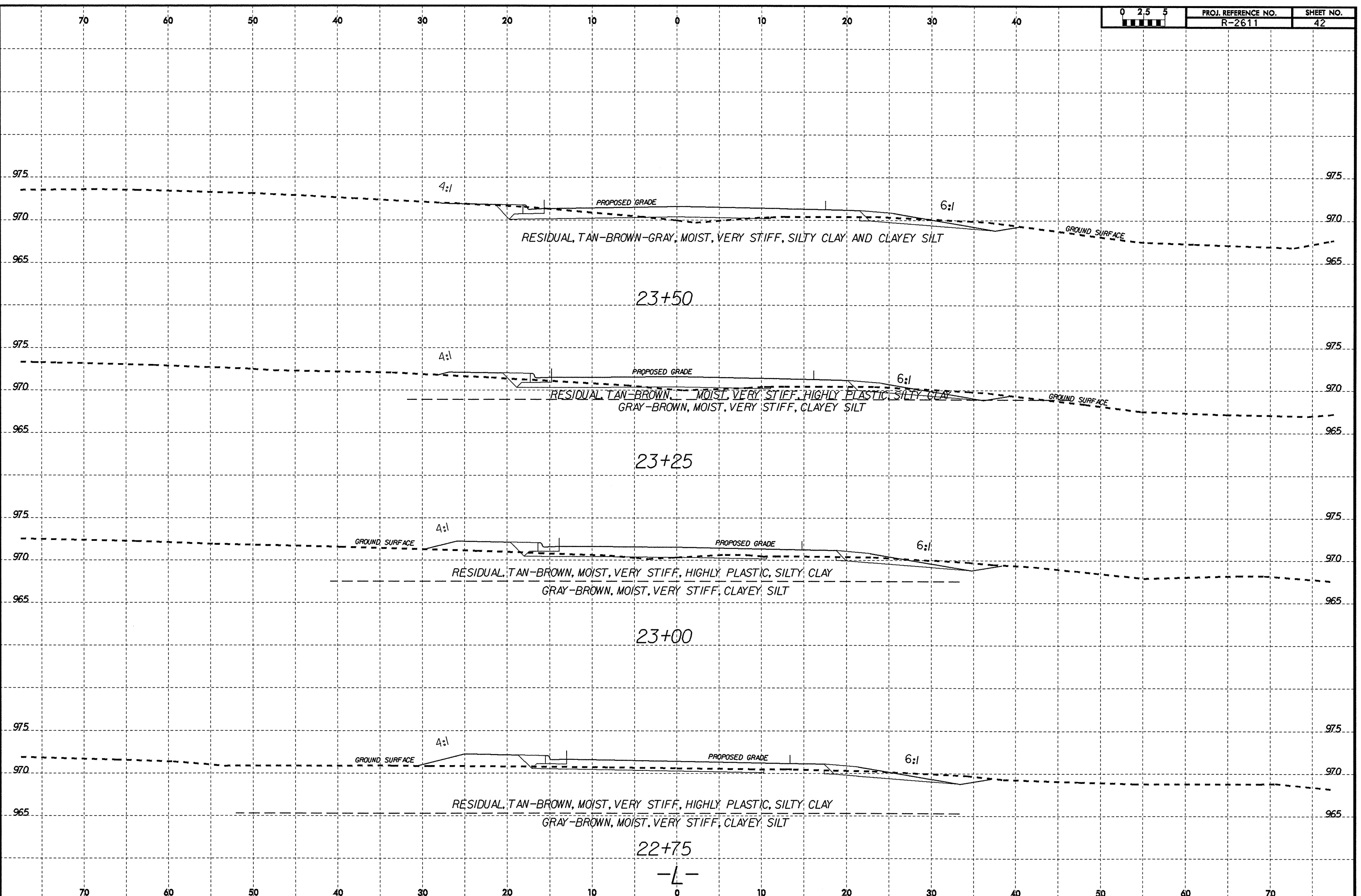
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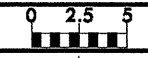


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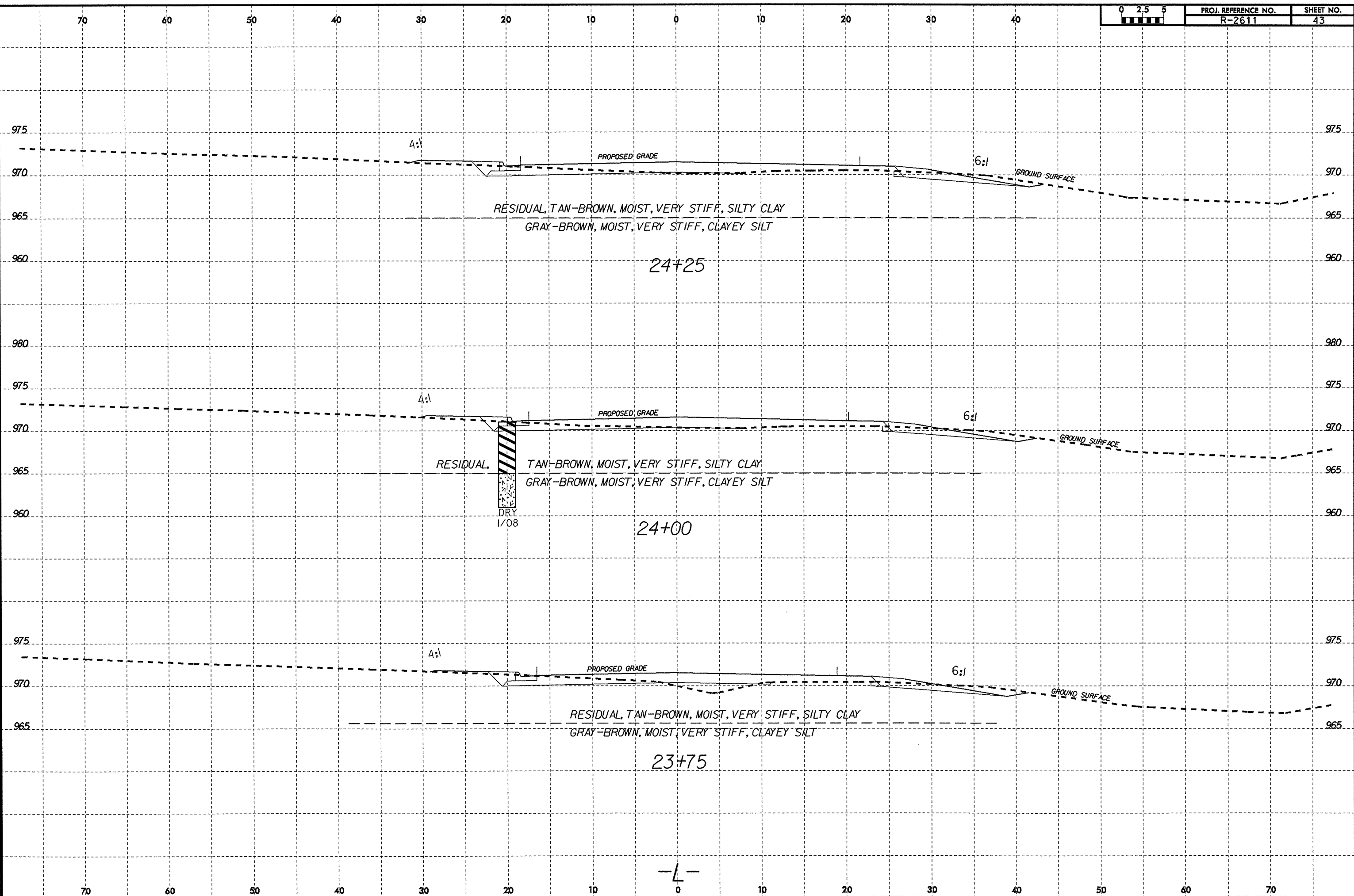


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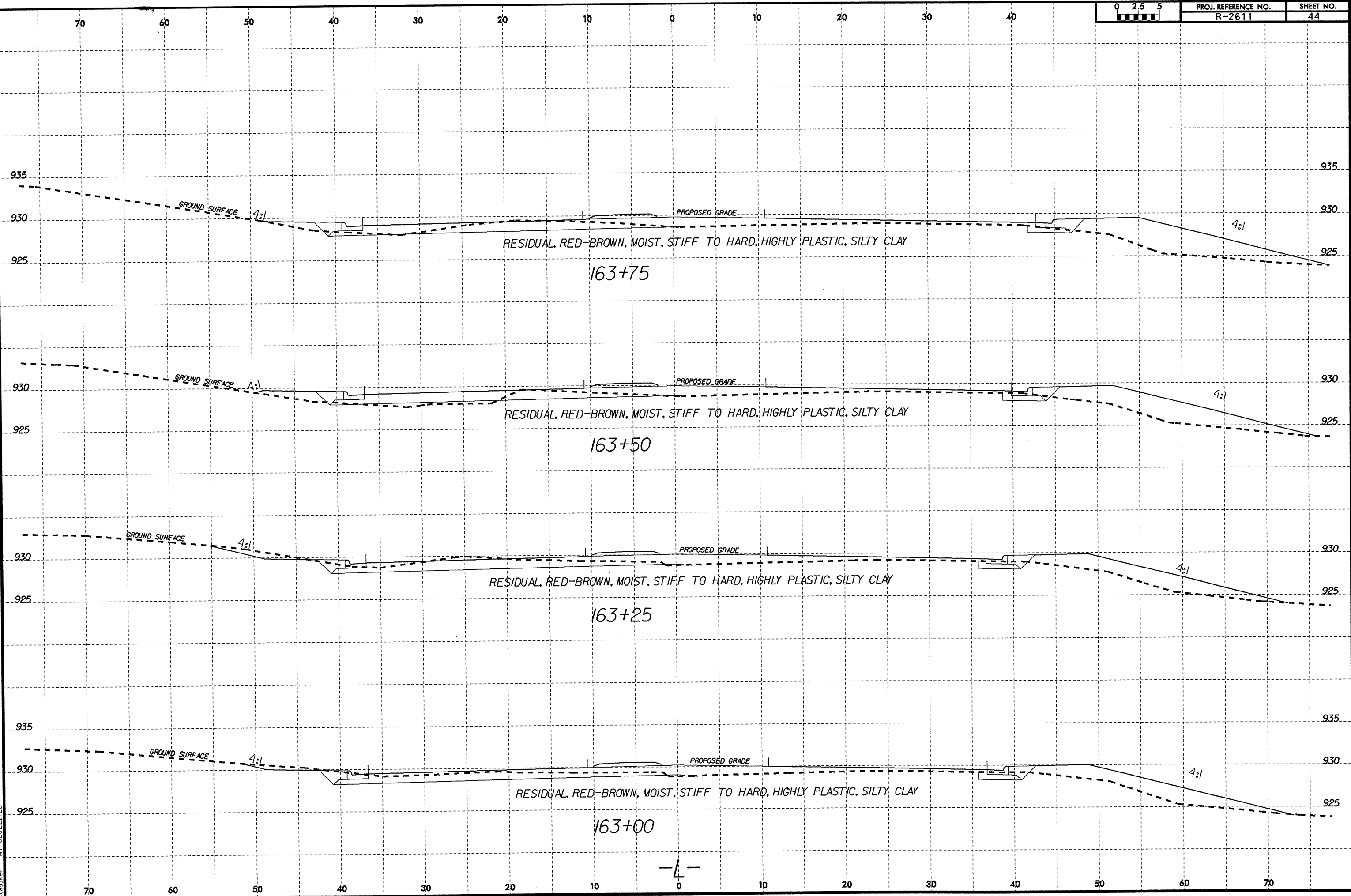


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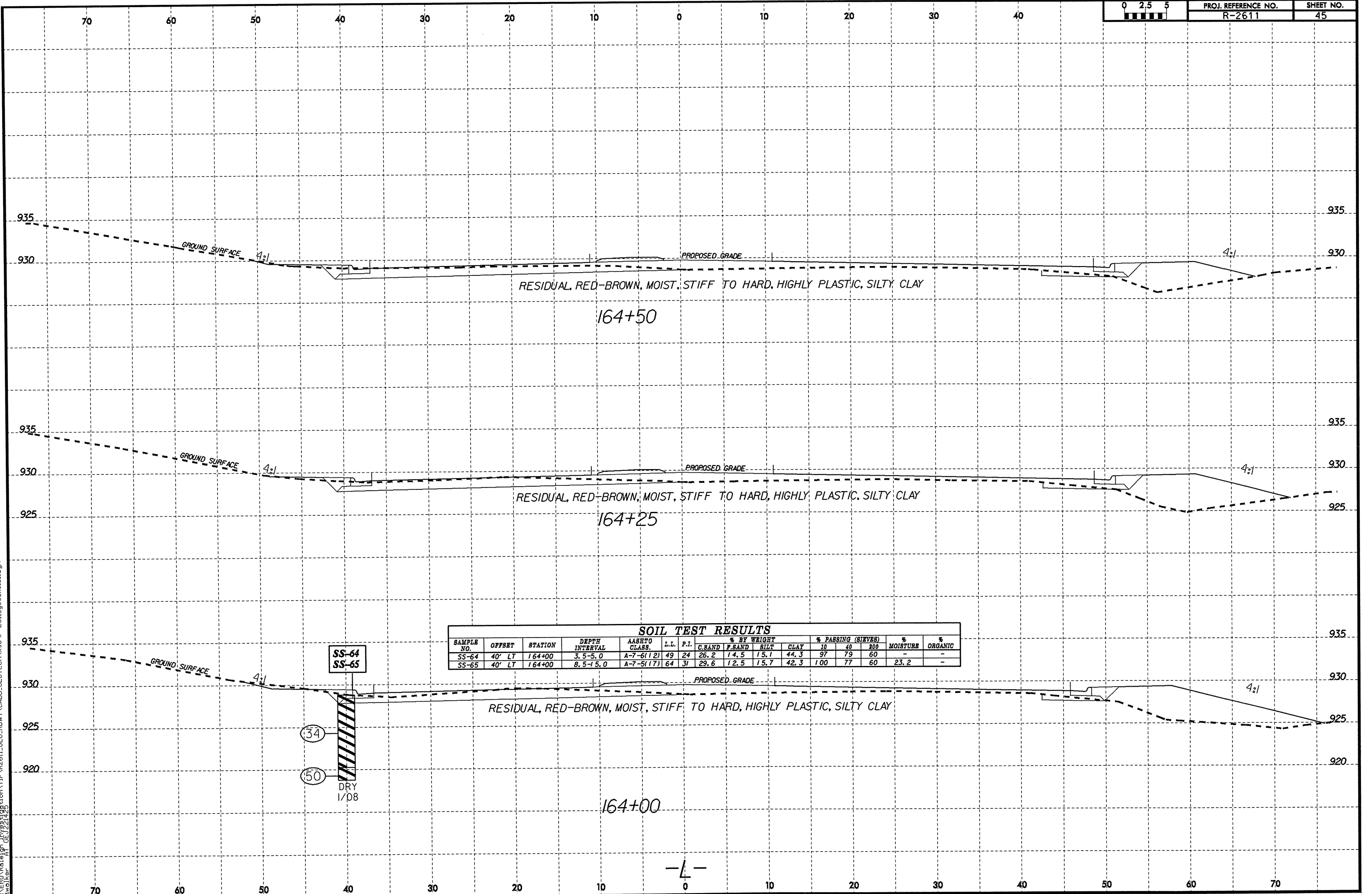
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Author: Rowy, G. Walker

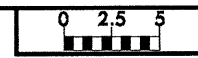


**SOIL TEST RESULTS**

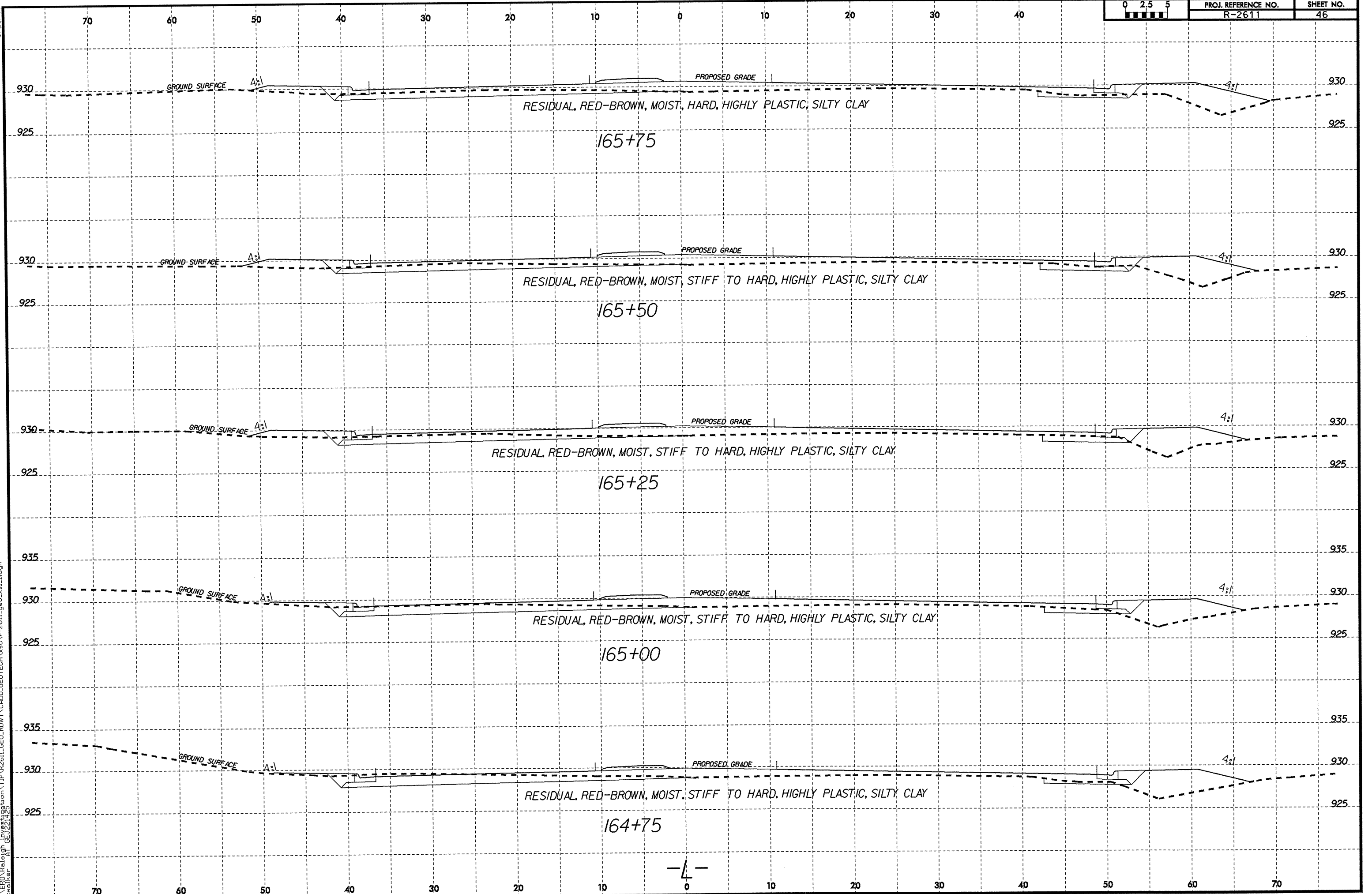
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							G.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-64	40' LT	164+00	3.5-5.0	A-7-6(12)	49	24	26.2	14.5	15.1	44.3	97	79	60	-	-
SS-65	40' LT	164+00	8.5-15.0	A-7-5(17)	64	31	29.6	12.5	15.7	42.3	100	77	60	23.2	-

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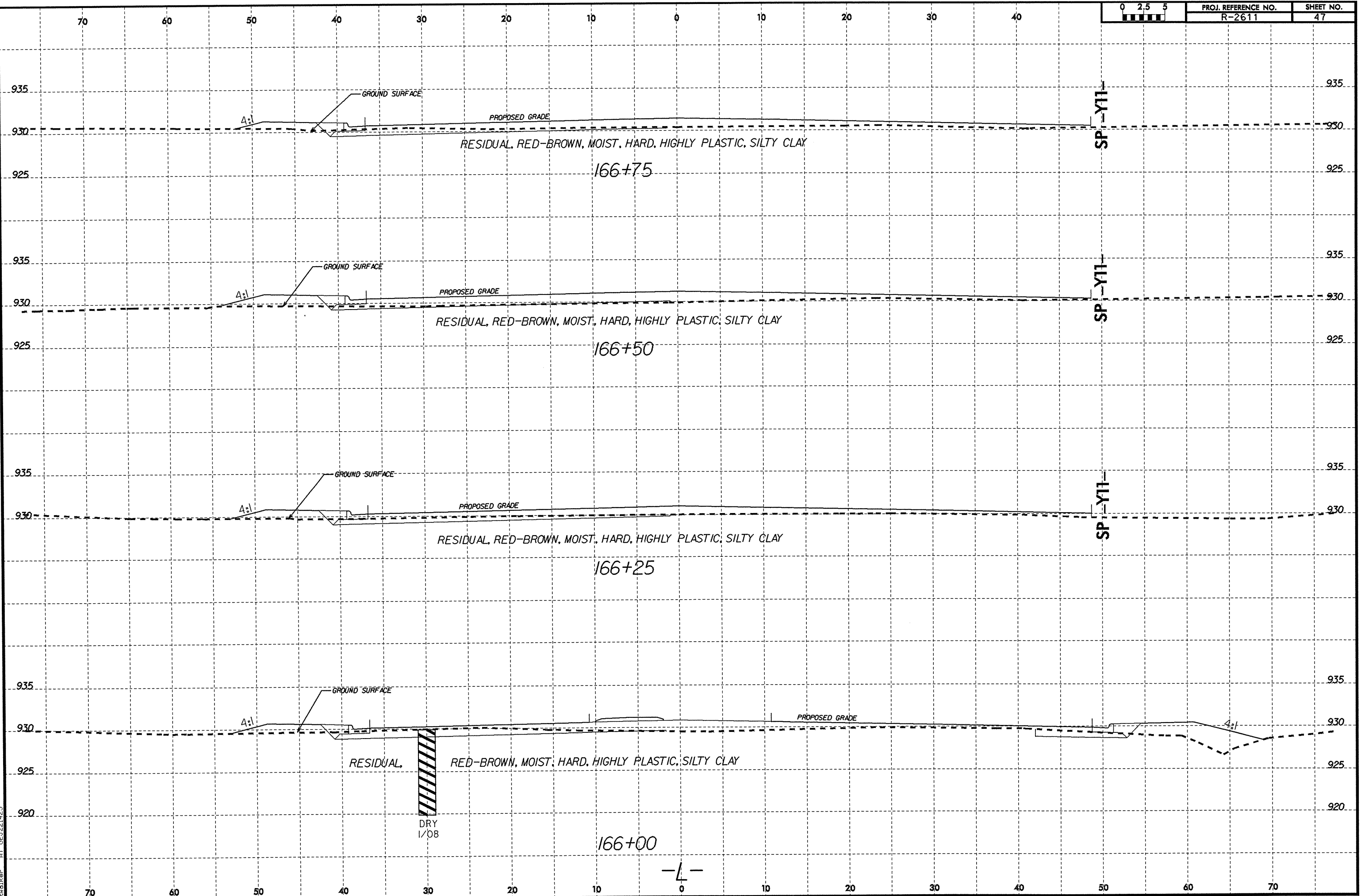
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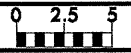
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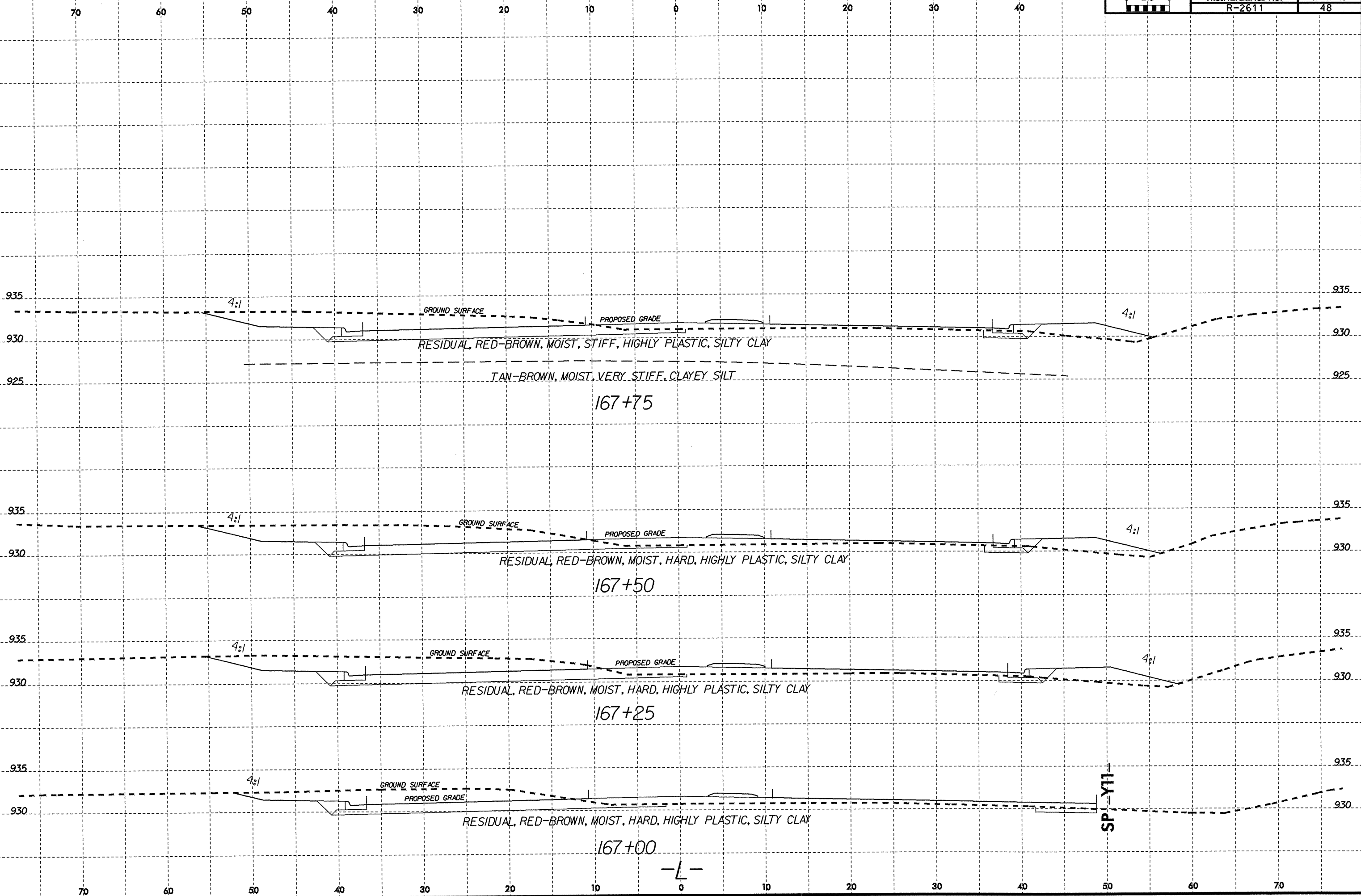
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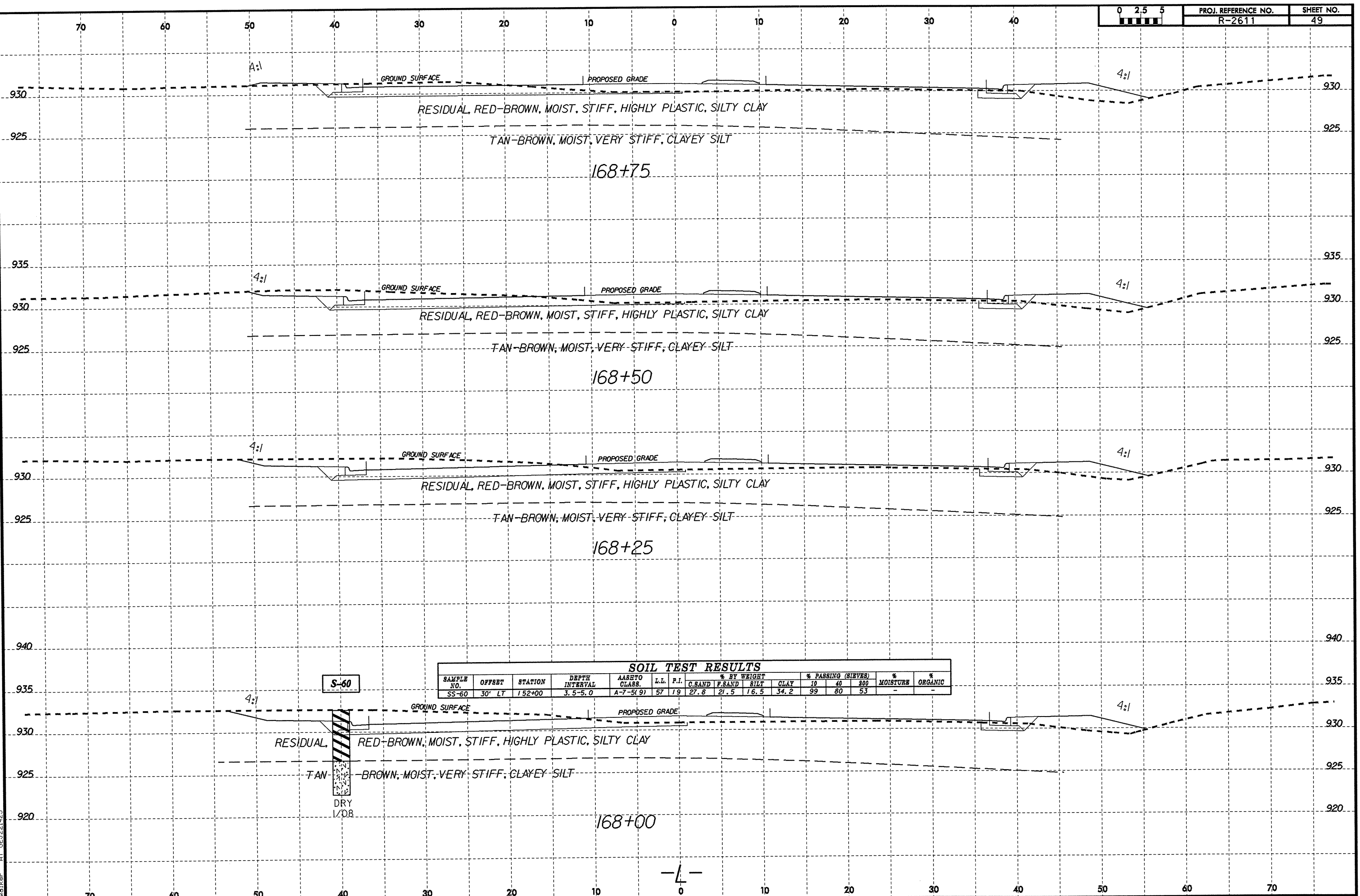
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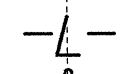
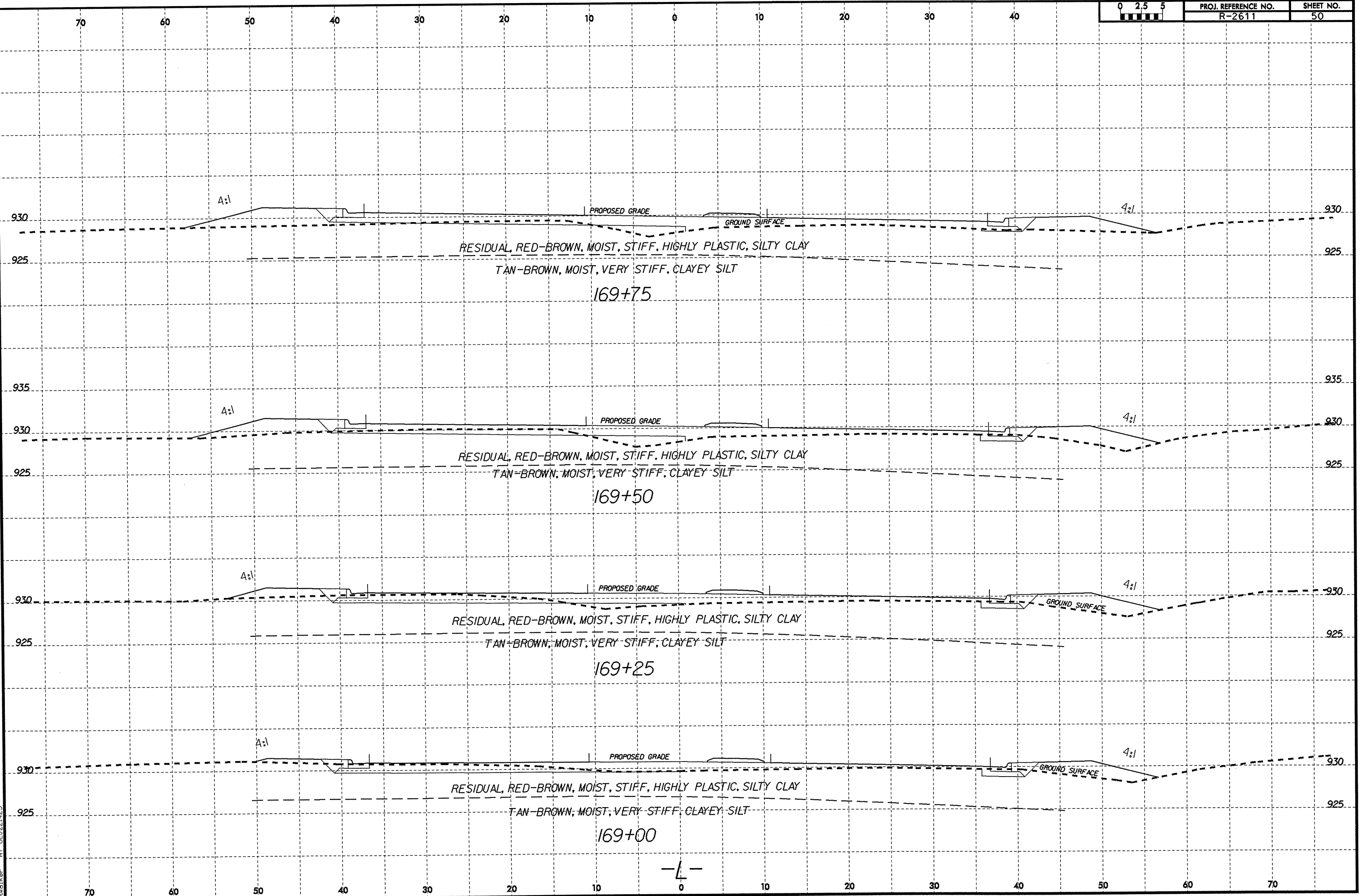


**SOIL TEST RESULTS**

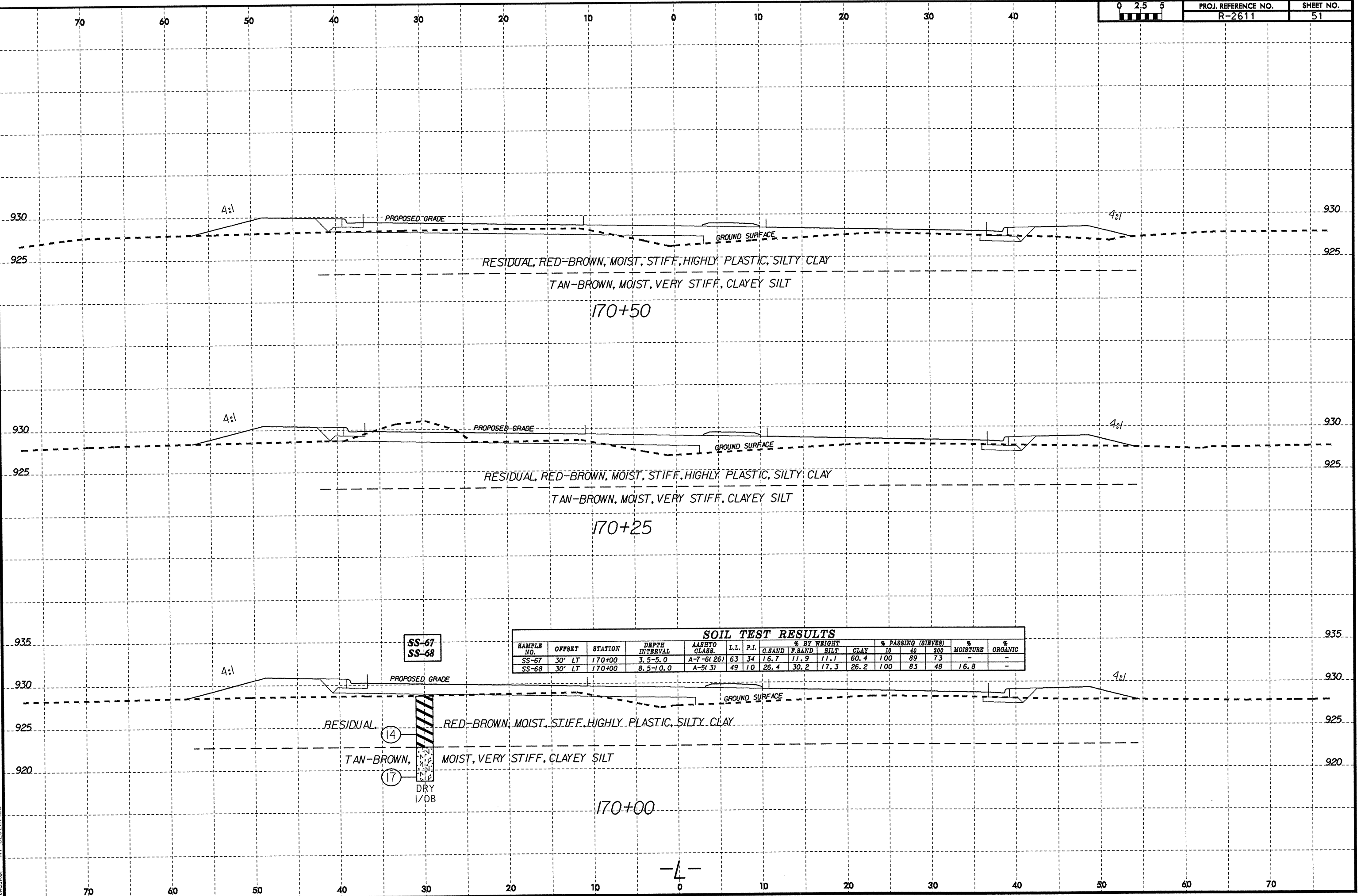
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							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-60	30' LT	152+00	3.5-5.0	A-7-5(9)	57	19	27.6	21.5	16.5	34.2	99	80	53	-	-

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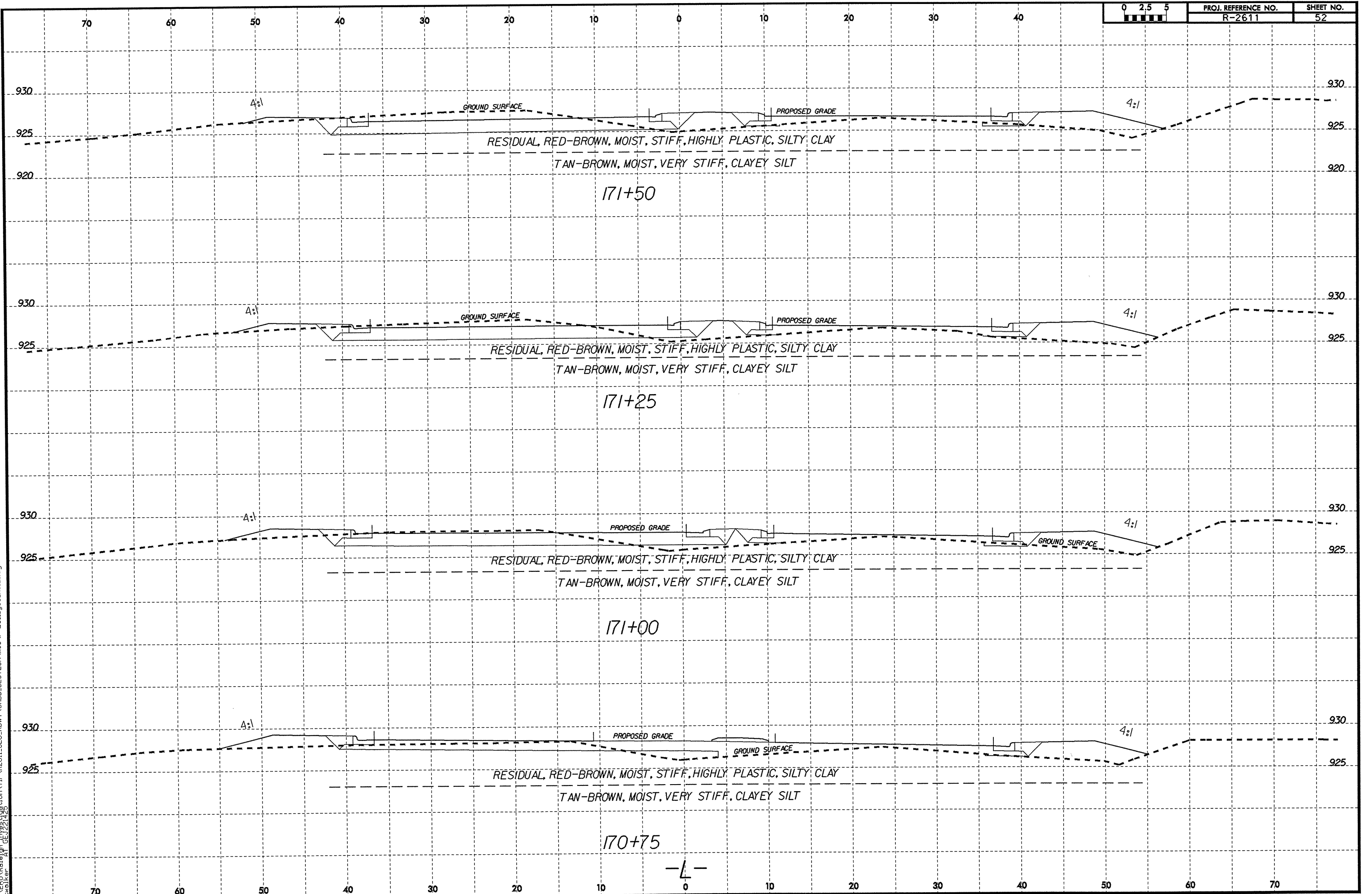
**SOIL TEST RESULTS**

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			
SS-67	30' LT	170+00	3.5-5.0	A-7-6(26)	63	34	16.7	11.9	11.1	60.4	100	89	73	-	-
SS-68	30' LT	170+00	8.5-10.0	A-9(3)	49	10	26.4	30.2	17.3	26.2	100	83	48	16.8	-

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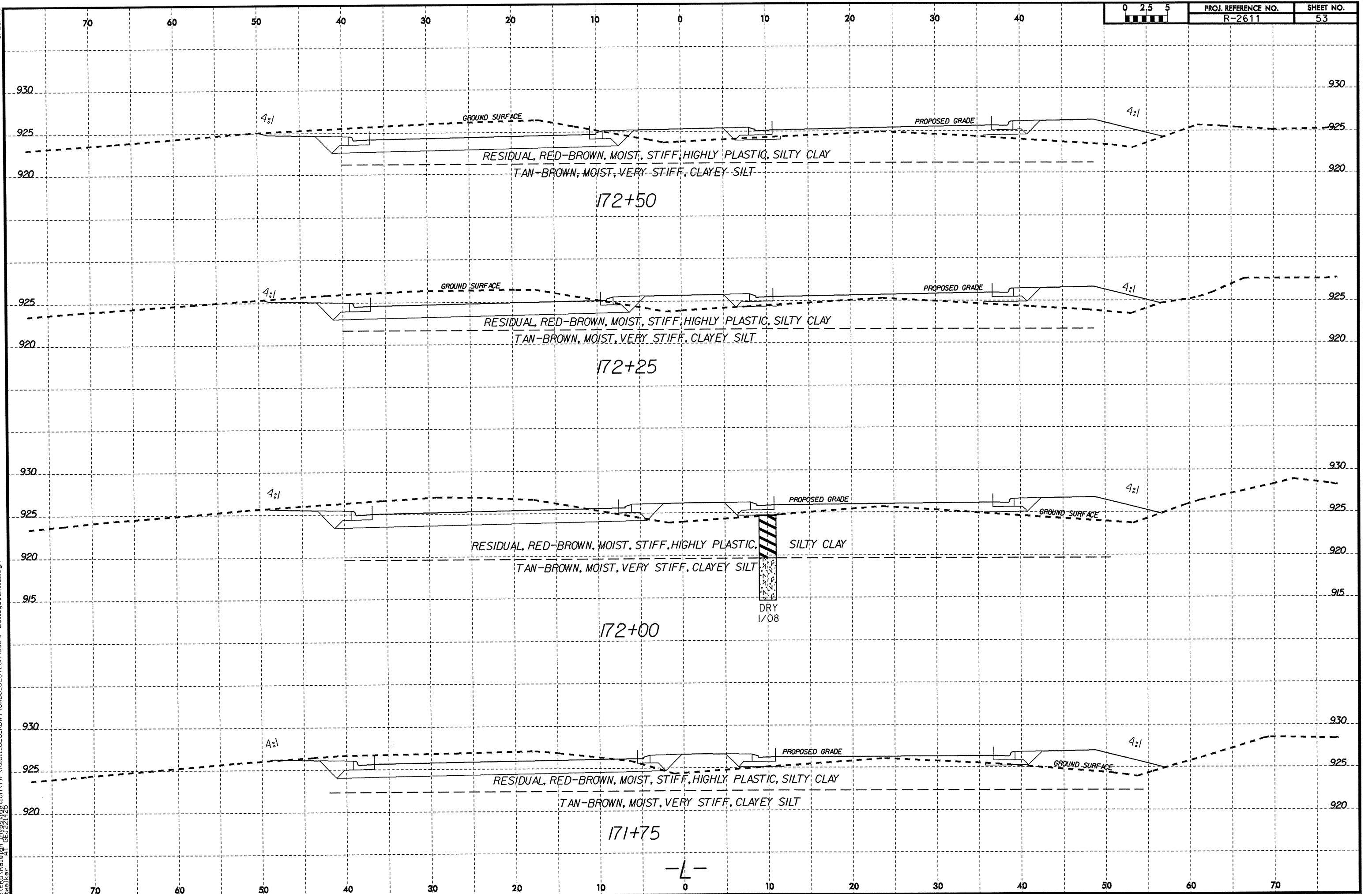


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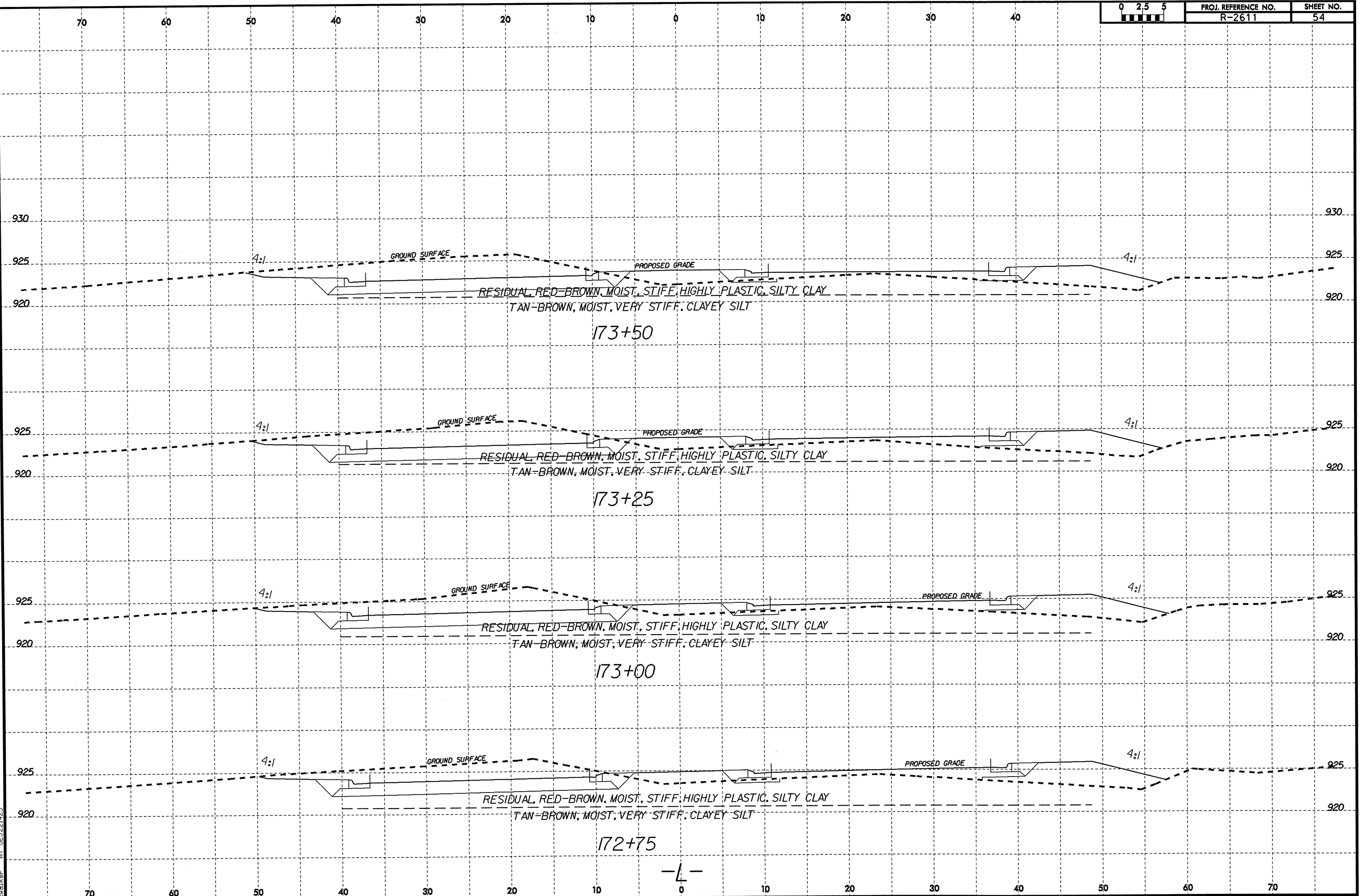
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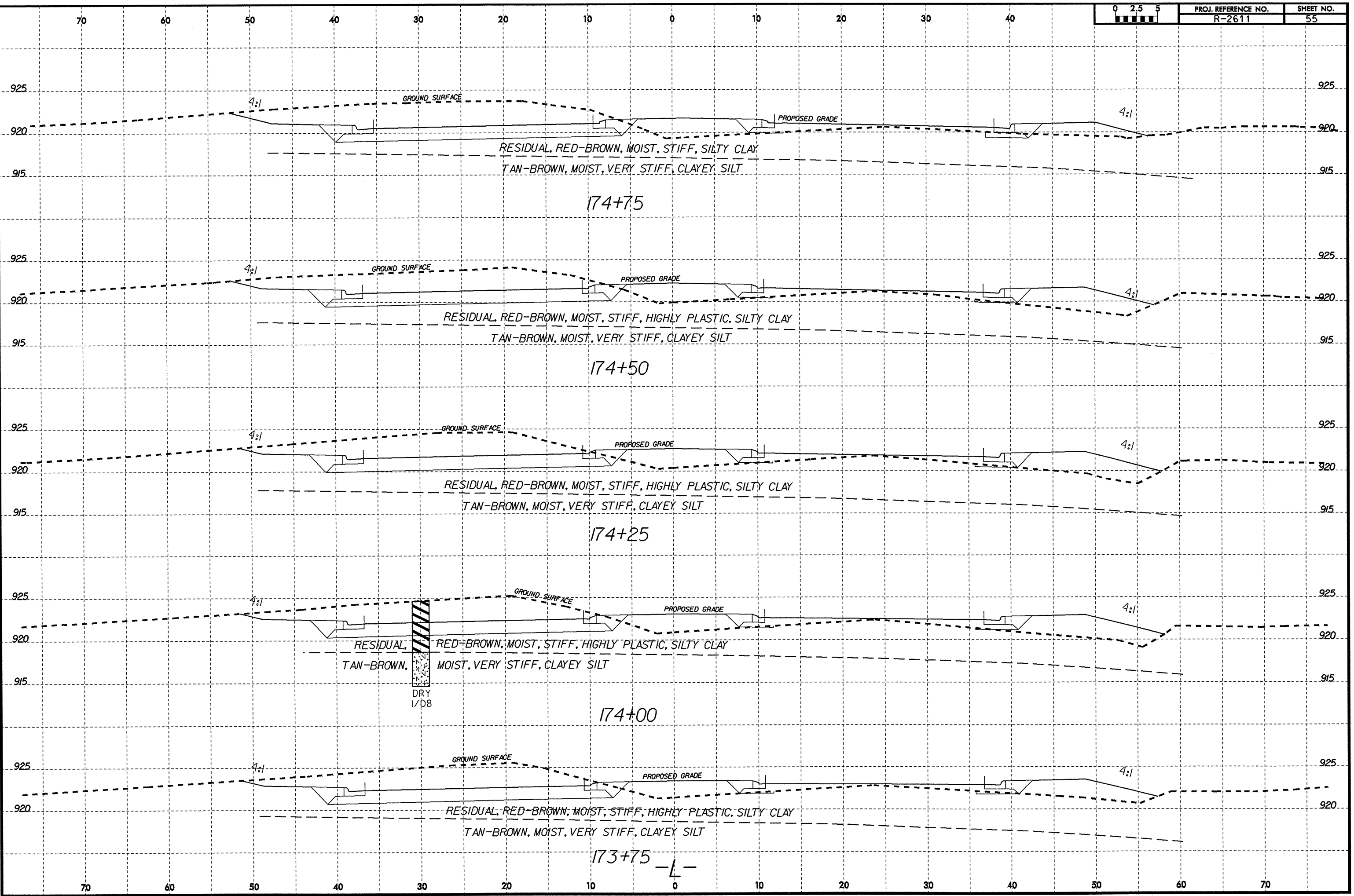
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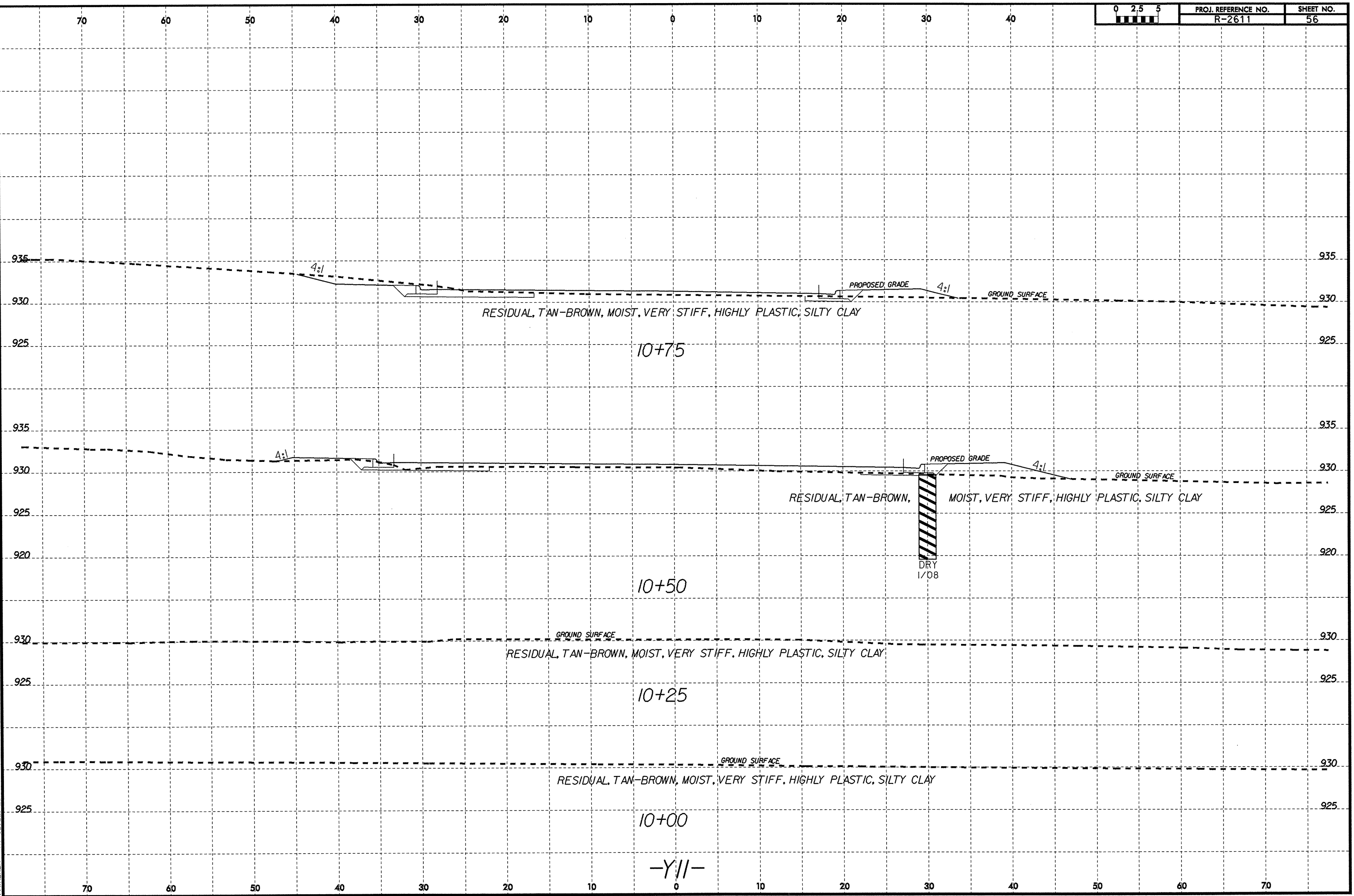


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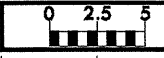
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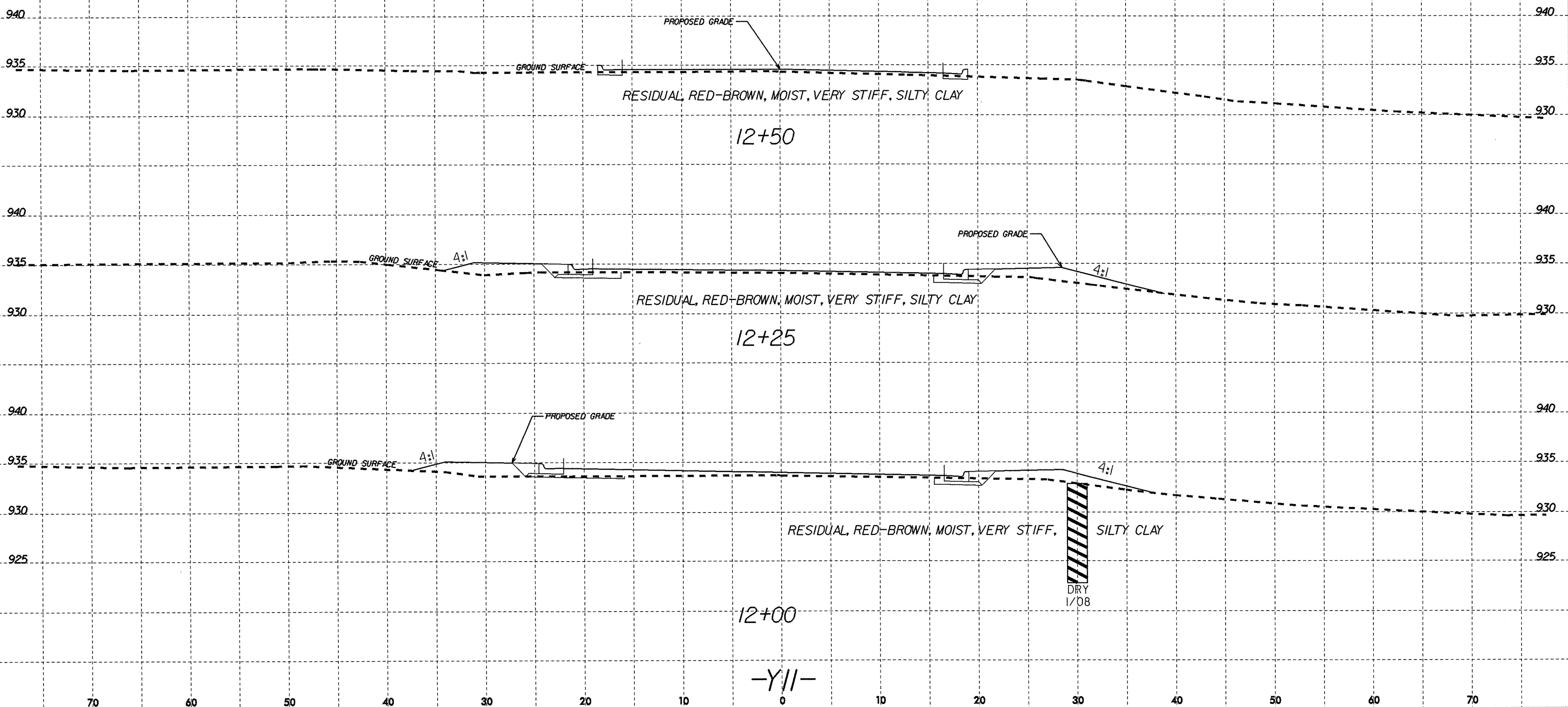


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PROJ. REFERENCE NO. R-2611  
SHEET NO. 58



RESIDUAL, RED-BROWN, MOIST, VERY STIFF, SILTY CLAY

12+50

RESIDUAL, RED-BROWN, MOIST, VERY STIFF, SILTY CLAY

12+25

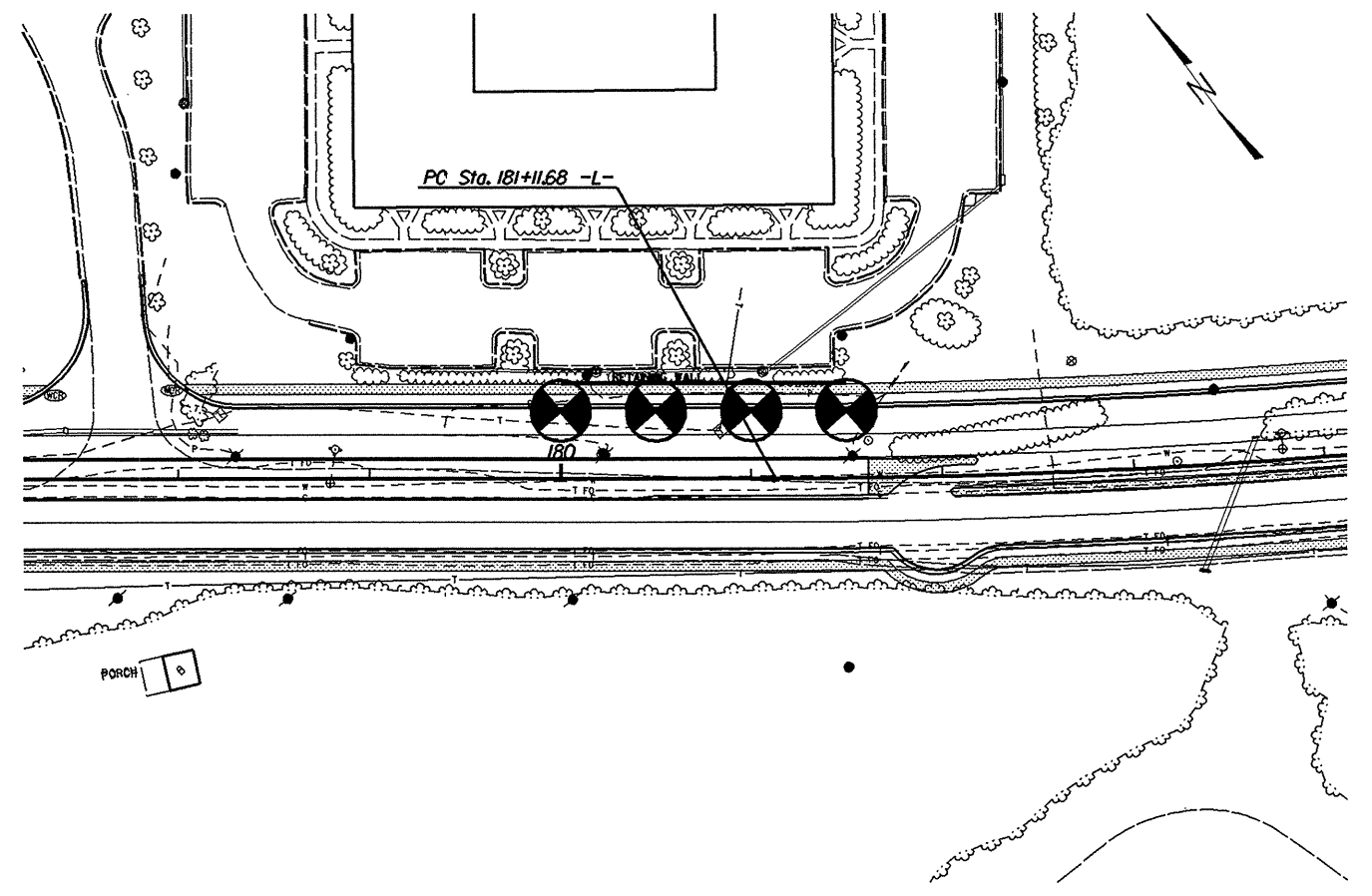
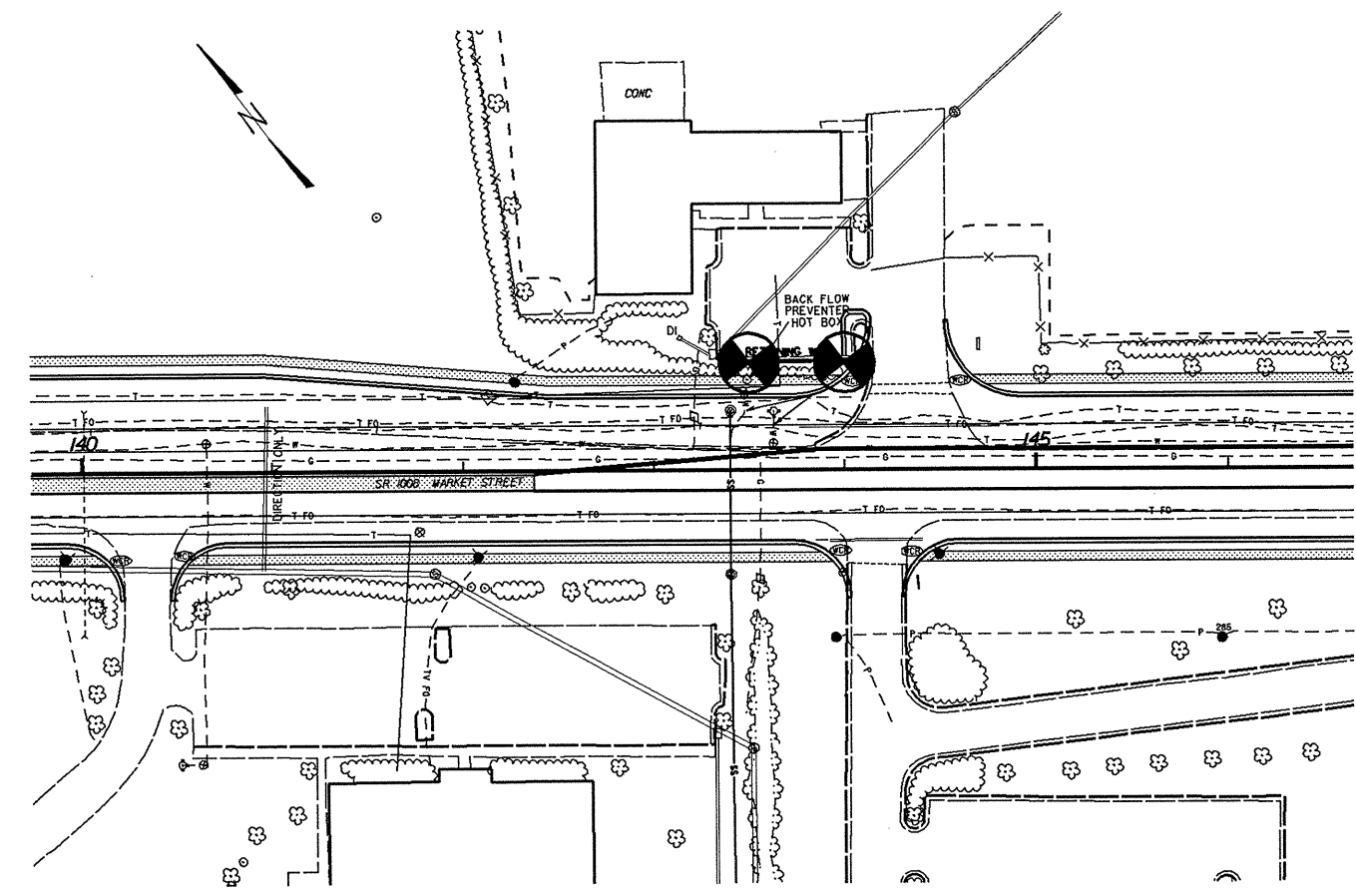
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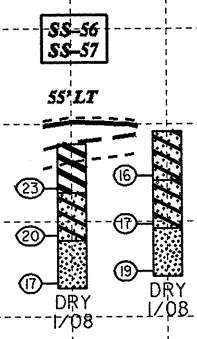
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**WALL 1**

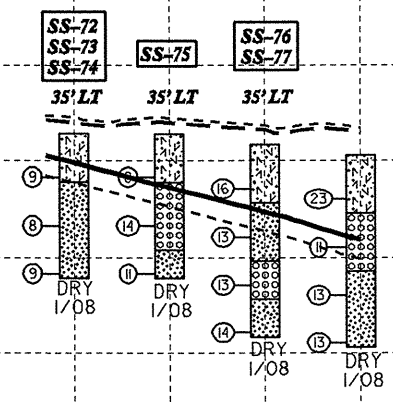
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							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-56	55' LT	143+50	3.5-5.0	A-7-6(12)	57	28	36.0	10.7	7.7	46.2	96	69	53	-	-
SS-57	55' LT	143+50	8.5-10.0	A-2-7(11)	45	14	43.6	22.1	18.2	16.1	94	63	35	-	-



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**WALL 2**

SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-72	35' LT	180+00	3.5-5.0	A-5(0)	43	10	45.1	20.9	15.9	18.1	95	60	36	-	-
SS-73	35' LT	180+00	8.5-10.0	A-2-5(0)	47	7	48.7	33.6	9.7	8.0	99	65	22	-	-
SS-74	35' LT	180+00	13.5-15.0	A-2-5(0)	50	NP	48.1	30.0	13.9	8.0	96	67	24	-	-
SS-75	35' LT	180+50	8.5-10.0	A-1-B(0)	35	NP	60.8	21.1	12.1	6.0	98	50	21	-	-
SS-76	35' LT	181+00	3.5-5.0	A-5(5)	51	8	14.9	33.2	21.7	30.2	100	95	56	-	-
SS-77	35' LT	181+00	17.5-20.0	A-2-5(0)	52	NP	41.6	33.2	17.1	8.0	100	77	30	-	-



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