

CONTRACT: C201475 ID: U-3313

CONTENTS: LINE	STATION	SHEET NUMBERS		
		PLAN	PROFILE	Z-SECTS.
-L-	10+54 to 72+00	4-8	9-11	14-17
-Y1-	10+00 to 15+26	6	12	48-50
-Y2-	10+36 to 12+75	6	12	51,52
-Y3-	10+00 to 13+66	6	12	53,54
-Y4-	10+35 to 12+75	7	12	55
-Y5-	14+50 to 15+88	8	12	56
-Y6-	10+65 to 13+62	8	13	57

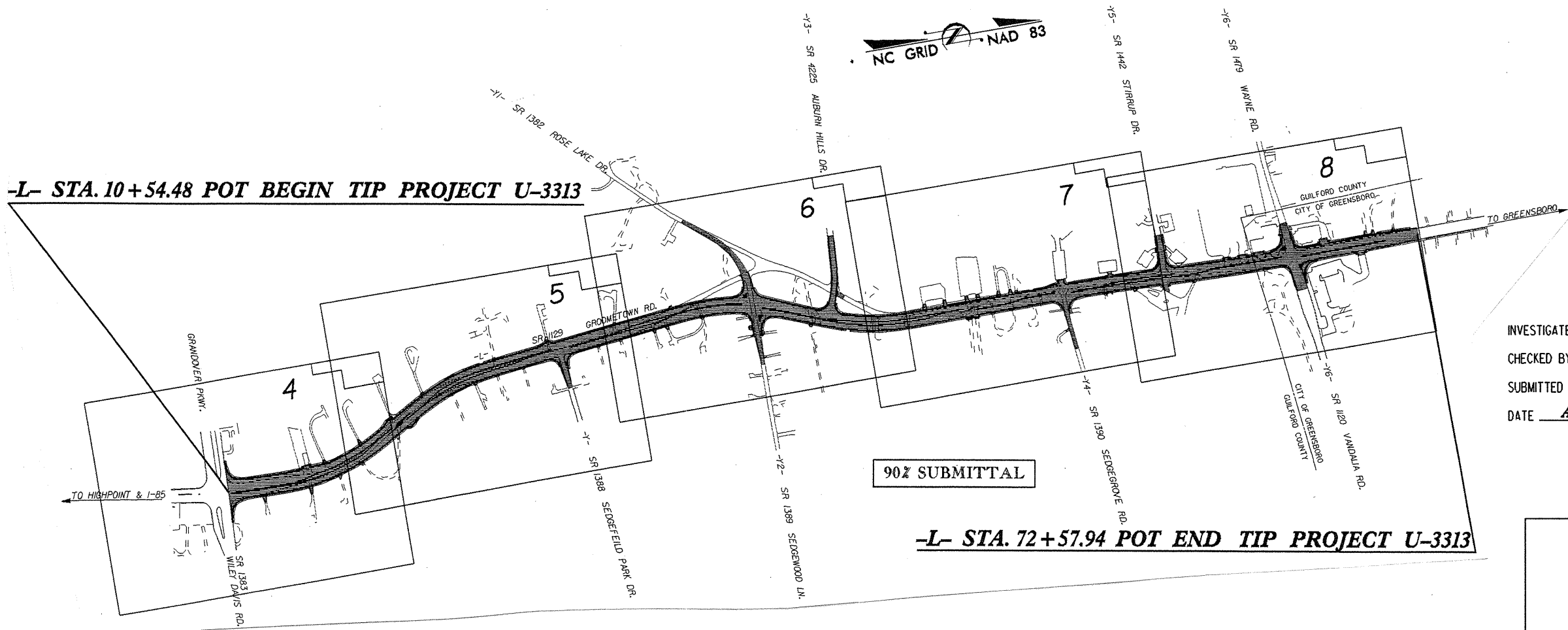
NOTE: REFER TO SHEET 2A FOR PLAN SHEET LAYOUT AT TIME OF INVESTIGATION.

**DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL UNIT**

**ROADWAY
SUBSURFACE INVESTIGATION**

STATE PROJECT 34919.3.2 I.D. NO. U-3313
 F.A. PROJECT STP-1129(4)
 COUNTY GUILFORD
 PROJECT DESCRIPTION SR 1129 (GROOMETOWN RD.) FROM
SR 1383 (WILEY DAVIS RD.) TO SR 1479 (WAYNE RD.)

INVENTORY



	STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
	N.C.	U-3313	1	57
	STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
	34919.1.1	STP-1129(4)	P.E.	
	34919.2.2	STP-1129(4)	R.O.W.	
	34919.3.2	STP-1129(11)	CONST.	

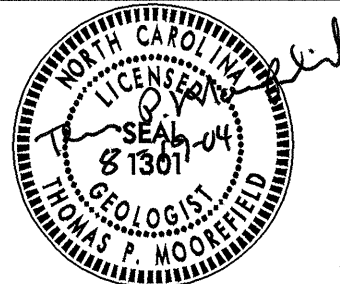
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INVESTIGATED BY T.P. MOOREFIELD PERSONNEL J.L. LOVE
 CHECKED BY D.N. ARGENBRIGHT C. D. CZAJKA
 SUBMITTED BY D.N. ARGENBRIGHT H. R. CONLEY
 DATE AUGUST 2004 W. T. DUGGINS



DRAWN BY: J.L. LOVE, 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 UNIT

ID	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
U-3313	34919.1.1	2	57

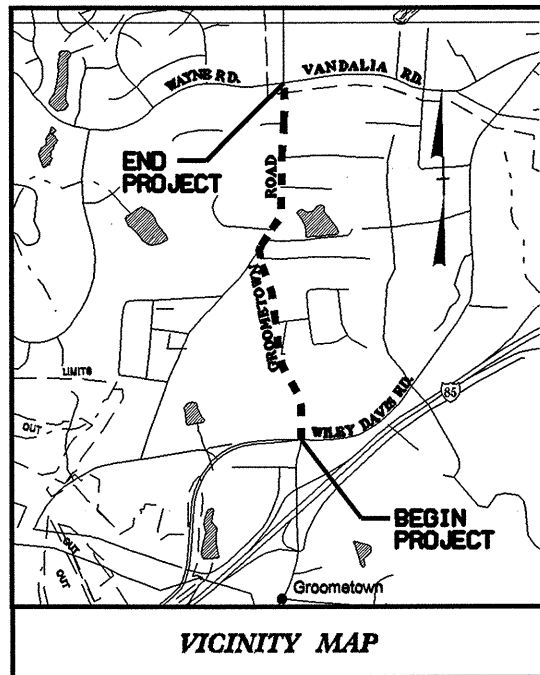
SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION		GRADATION	ROCK DESCRIPTION		TERMS AND DEFINITIONS
SOIL IS CONSIDERED TO BE THE UNCONSOLIDATED, SEMI-CONSOLIDATED OR WEATHERED EARTH MATERIALS WHICH CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER, AND WHICH YIELDS LESS THAN 100 BLOWS PER FOOT ACCORDING TO STANDARD PENETRATION TEST (AASHTO T286, ASTM D-1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM AND BASIC DESCRIPTIONS GENERALLY SHALL INCLUDE: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. EXAMPLES: <i>VERY STIFF, GRN SOFT 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 ARE DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.	HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT WHEN TESTED, WOULD YIELD SPT REFUSAL. AN INFERRERD 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) FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC. 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 SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED SHELL BEDS, ETC.	ALLUVIUM (ALLUV.) - SOILS WHICH 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 IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE. CALCAREOUS (CALC.) - SOILS WHICH 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 (F.P.) - 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 SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. ROCK QUALITY DESIGNATION (R.Q.D.) - 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 WHICH 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, WHICH 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 B.P.F.) 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 LESS THAN 0.1 FOOT PENETRATION WITH 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 (S.R.Q.D.) - A MEASURE OF ROCK QUALITY DESCRIBED BY: TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 10 CENTIMETERS DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. TOPSOIL (T.S.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.	
SOIL LEGEND AND AASHTO CLASSIFICATION		MINERALOGICAL COMPOSITION			
GENERAL CLASS. GRANULAR MATERIALS (<20% PASSING #200) SILT-CLAY MATERIALS (>20% PASSING #200) ORGANIC MATERIALS		MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE.			
COMPRESSION		PERCENTAGE OF MATERIAL			
SLIGHTLY COMPRESSIBLE MODERATELY COMPRESSIBLE HIGHLY COMPRESSIBLE		LIQUID LIMIT LESS THAN 30 LIQUID LIMIT 31-50 LIQUID LIMIT GREATER THAN 50			
ORGANIC MATERIAL TRACE OF ORGANIC MATTER LITTLE ORGANIC MATTER MODERATELY ORGANIC HIGHLY ORGANIC		GRANULAR SOILS SILT-CLAY SOILS OTHER MATERIAL TRACE LITTLE SOME HIGHLY			
GROUND WATER					
WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING. STATIC WATER LEVEL AFTER 24 HOURS. PERCHED WATER, SATURATED ZONE OR WATER BEARING STRATA SPRING OR SEEPAGE					
CONSISTENCY OR DENSENESS		MISCELLANEOUS SYMBOLS			
PRIMARY SOIL TYPE COMPACTNESS OR CONSISTENCY RANGE OF STANDARD PENETRATION RESISTANCE (N-VALUE) RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/FT ²)		ROADWAY EMBANKMENT WITH SOIL DESCRIPTION SOIL SYMBOL ARTIFICIAL FILL OTHER THAN ROADWAY EMBANKMENTS INFERRERD SOIL BOUNDARIES INFERRERD ROCK LINE ALLUVIAL SOIL BOUNDARY DIP/DIP DIRECTION OF ROCK STRUCTURES SOUNDING ROD			
		SPT TEST BORING AUGER BORING CORE BORING MONITORING WELL PIEZOMETER INSTALLATION SLOPE INDICATOR INSTALLATION SPT N-VALUE SPT REFUSAL			
TEXTURE OR GRAIN SIZE		ABBREVIATIONS			
U.S. STD. SIEVE SIZE OPENING (MM) BOULDER (BLDR.) COBBLE (COB.) GRAVEL (GR.) COARSE SAND (CSE. SD.) FINE SAND (F. SD.) SILT (SL.) CLAY (CL.)		AR - AUGER REFUSAL BT - BORING TERMINATED CL - CLAY CPT - CONE PENETRATION TEST CSE. - COARSE DNT - DILATOMETER TEST DPT - DYNAMIC PENETRATION TEST e - VOID RATIO F. - FINE FOSS. - FOSSILIFEROUS FRAC. - FRACTURED FRAGS. - FRAGMENTS MED. - MEDIUM PMT - PRESSUREMETER TEST SD. - SAND, SANDY SL. - SILT, SILTY SLI. - SLIGHTLY TCR - TRICONE REFUSAL γ - UNIT WEIGHT γ _d - DRY UNIT WEIGHT w - MOISTURE CONTENT v. - VERY VST - VANE SHEAR TEST			
SOIL MOISTURE - CORRELATION OF TERMS		EQUIPMENT USED ON SUBJECT PROJECT			
SOIL MOISTURE SCALE (ATTERBERG LIMITS) FIELD MOISTURE DESCRIPTION GUIDE FOR FIELD MOISTURE DESCRIPTION		DRILL UNITS: MOBILE B- BK-51 CME-45C CME-550 PORTABLE HOIST OTHER OTHER			
ADVANCING TOOLS: CLAY BITS 6" CONTINUOUS FLIGHT AUGER 6" HOLLOW AUGERS HARD FACED FINGER BITS TUNG.-CARBIDE INSERTS CASING w/ ADVANCER TRICONE *STEEL TEETH TRICONE *TUNG.-CARB. CORE BIT OTHER		HAMMER TYPE: AUTOMATIC MANUAL CORE SIZE: B N H HAND TOOLS: POST HOLE DIGGER HAND AUGER SOUNDING ROD VANE SHEAR TEST OTHER			
PLASTICITY		FRACTURE SPACING			
NONPLASTIC LOW PLASTICITY MED. PLASTICITY HIGH PLASTICITY		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			
COLOR		BEDDING			
DESCRIPTORS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YEL.-BRN, BLUE-GRAY) MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.		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			
		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.			
		INDURATION			

CONTRACT: TIP PROJECT: U-3313

See Sheet 1-A For Index of Sheets



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

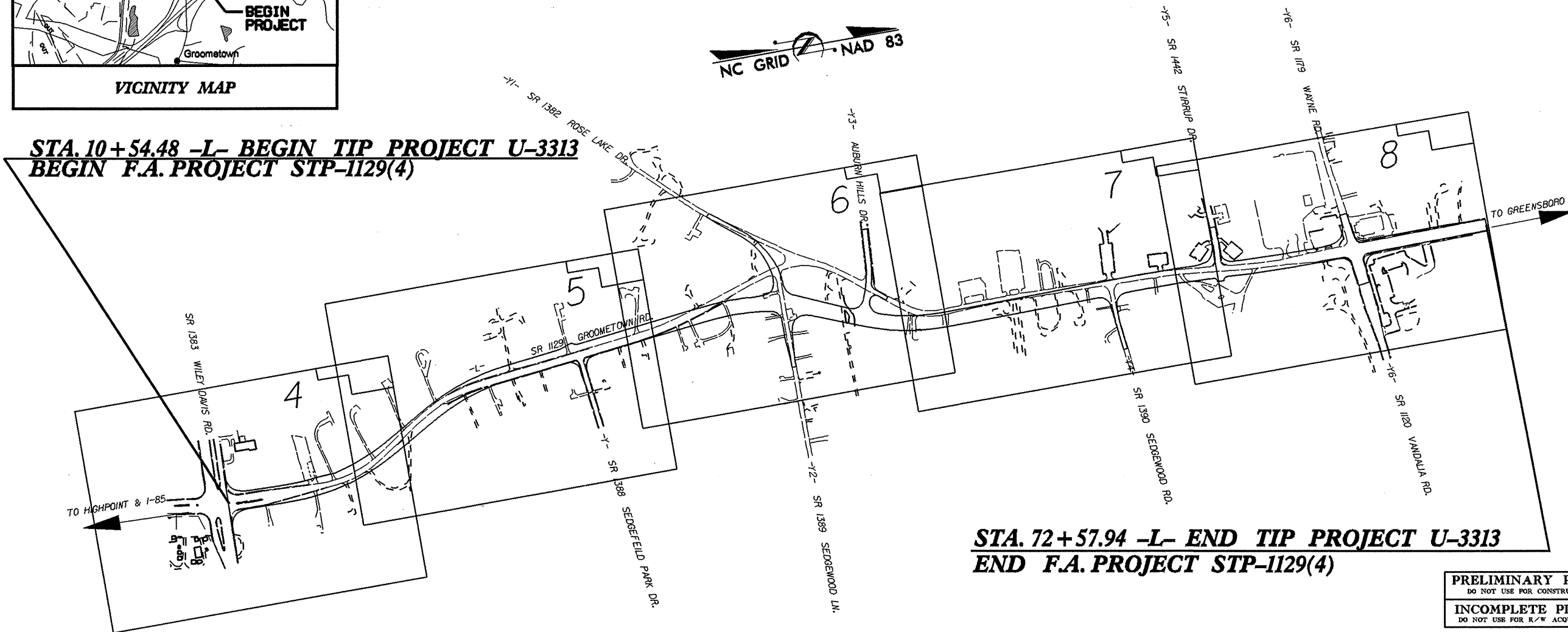
GUILFORD COUNTY

LOCATION: SR 1129 (GROOMETOWN ROAD) FROM SR 1383 (WILEY DAVIS ROAD) TO SR 1479 (WAYNE ROAD)

TYPE OF WORK: WIDENING, GRADING, DRAINAGE, PAVING, AND SIGNING

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3313	2A	57
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34919.1.1	STP-1129(4)	P.E.	

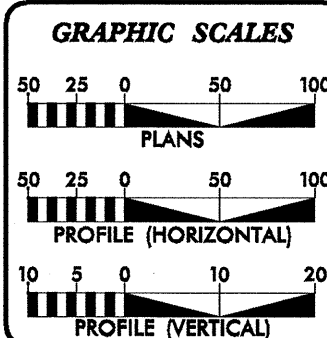
STA. 10+54.48 -L- BEGIN TIP PROJECT U-3313
BEGIN F.A. PROJECT STP-1129(4)



STA. 72+57.94 -L- END TIP PROJECT U-3313
END F.A. PROJECT STP-1129(4)

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

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.



DESIGN DATA

ADT 2005 = 18,900-29,000
ADT 2025 = 13,800-21,400
DHV = 11%
D = 55%
T = 8%
(5% Duals + 3% TTST)
V = 50 mph

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-3313 = 1.17 MILES
TOTAL LENGTH OF TIP PROJECT U-3313 = 1.17 MILES

Prepared in the Office of:
Parsons
401 Harrison Oaks Blvd., Suite 200
Cary, N.C. for the
DIVISION OF HIGHWAYS

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JULY 16, 2004

LETTING DATE:
JANUARY 17, 2006

DAVE COCHRAN, P.E.
PROJECT ENGINEER

VICTOR M. CHAVEZ, P.E.
PROJECT DESIGN ENGINEER

SCOTT D. BLEVINS, P.E.
ENGINEERING COORDINATOR
DESIGN SERVICES

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

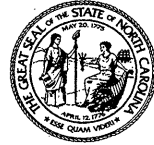
SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE DESIGN ENGINEER P.E.

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED _____
DIVISION ADMINISTRATOR DATE



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION

Michael F. Easley
 GOVERNOR

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

Lyndo Tippet
 SECRETARY

August 19, 2004

STATE PROJECT: 34919.1.1 (U-3313)
 FEDERAL PROJECT: STP-1129(4)
 COUNTY: Guilford
 DESCRIPTION: SR 1129 (Groometown Road) from SR 1383 (Wiley Davis Road) to SR 1479 (Wayne Road)
 SUBJECT: Geotechnical Report – Inventory

PROJECT DESCRIPTION

This project consists primarily of widening the existing Groometown Road (-L-, SR 1129) from two lanes to four lanes with medians and turn lanes. The widening occurs both left and right of the existing road from the start of the project (-L- Sta. 10+54) to approximately -L- Sta. 33+00. From -L- Sta. 33+00 through Sta. 46+00, the alignment shifts approximately 180 feet right of the existing road. Two intersecting streets (-Y1- Rose Lake Drive and -Y3- Auburn Hills Drive) are being realigned to accommodate the new alignment in this area. From -L- Sta. 46+00 to the end of the project, the widening occurs both left and right of existing Groometown Road. A retaining wall, approximately 100' in length, is proposed adjacent to a historical property left of -L- Sta. 45+75 to 47+00. The project is approximately 1.2 miles in length. There are no significant changes to the grades of -L- and associated -Y- lines.

The geotechnical field investigation was conducted in November and December of 2003. Borings were advanced using a CME-550 ATV-mounted drill machine with automatic hammer. Standard Penetration Tests were performed in selected borings. Hand auger borings were also completed. Representative soil samples were collected for visual classification in the field and for laboratory analysis by the Materials and Tests Unit.

The following alignments, totaling 1.5 miles, were investigated. Subsurface soil profiles, or cross-sections, of these alignments are included in this report.

<u>Line</u>	<u>Station</u>
-L-	10+54 to 72+00
-Y1-	10+00 to 15+26
-Y2-	10+36 to 12+75
-Y3-	10+00 to 13+66
-Y4-	10+35 to 12+75
-Y5-	14+50 to 15+88
-Y6-	10+65 to 13+62

AREAS OF SPECIAL GEOTECHNICAL INTEREST

1) Highly Plastic Clay Soils: Areas containing plastic clay soils (plasticity indices greater than 25) in cut sections, or within the proposed subgrade, are noted below:

<u>Alignment</u>	<u>Station</u>
-L-	11+00 to 12+50
-L-	14+75 to 15+25
-L-	17+60 to 26+00
-L-	37+90 to 40+60
-L-	43+40 to 72+00
-Y1-	10+00 to 15+26
-Y2-	10+36 to 12+75
-Y3-	11+50 to 13+00
-Y4-	10+35 to 12+75
-Y5-	14+50 to 15+88
-Y6-	10+65 to 13+62

A discussion of these highly plastic clay soils is located below in the section titled: "Soil Properties".

2) Wells: One water well was found within the proposed right of way at -L- Sta. 14+00/60' RT.

PHYSIOGRAPHY AND GEOLOGY

The project is located in the Piedmont area of North Carolina. Single-family homes, apartments, churches, and businesses occur along Groometown Road. The terrain is fairly level within the project area. Geologically, the project is located within the Carolina Slate Belt. Soils are derived from the weathering of the underlying bedrock which is composed of metamorphosed granite with minor occurrences of metamorphosed gabbro and diorite. These units are generally foliated, and trend in a northeasterly direction.

SOIL PROPERTIES

Artificial Fill Soils: Artificial fill soil occurs in the four areas indicated below. The fill soils were generally placed either for landscaping, or to provide grading for drainage.

-L- Sta. 11+00 to 12+40 / LT One to two feet of artificial fill has been placed at this location. An ornamental rock wall is situated on the fill soil. The fill soil consists of loose, moist silty sand (ASHTTO soil classification of A-2-4).

-L- Sta. 49+90 to 50+45 / RT Approximately two feet of artificial fill occurs as a shallow fill for a driveway at this location. The fill soil consists of brown, loose, moist coarse sand (A-2-4).

-L- Sta. 60+60 to 61+40 / LT Three feet of landscaping fill has been placed at this site. The fill soil consists of brown, medium stiff to stiff, sandy clay (A-7-6) with medium plasticity and brown, loose to medium dense, moist silty sand (A-2-4).

-L- Sta. 66+30 to 70+00 / LT Artificial fill soil occurs adjacent to the existing roadway embankment in front of a business at this location. The fill soil consists of loose, dry to moist clayey sand (A-2-6).

Roadway Embankment Soils: Embankment fill soil occurs from -L- Sta. 11+00 to 15+40 (see Plansheet No. 4 and Cross-section Sheet Nos. 14 through 16). The fill soil is up to 5 feet in thickness, and consists of loose, moist, coarse sand (A-2-4). The roadway embankment fill soil overlies residual silty clay soils.

Residual Soils: The residual soils are derived from the in-place weathering of the underlying metamorphosed granite, gabbro, and diorite bedrock. Clay soil is the most common soil in the project area. These clay soils are generally medium stiff and consist of clay, silty clay, silty sandy clay, and sandy silty clay (A-7-5, A-7-6, and A-6). Minor amounts of medium stiff sandy silt (A-4), and loose silty sand (A-2-4) and clayey sand (A-2-6) are also present.

Residual plastic to highly plastic "cap" clays occur at the ground surface over several areas of the project. Cut areas containing highly plastic (plasticity indices of greater than 25) clay soils, as well as areas where the highly plastic soils will occur at subgrade, are listed above, in the section "Areas of Special Geotechnical Interest".

RETAINING WALL

A retaining wall is proposed adjacent to a historical property left of -L- Sta. 45+75 to 47+00 (see Plansheet Nos. 6 and 7). The wall is less than 1.5 feet height (see Cross-section Sheet No. 34) and is to be constructed as part of the adjacent concrete sidewalk. The wall and sidewalk will be underlain by residual, medium stiff, clay and silty clay.

GROUNDWATER

Groundwater was only encountered in one boring located at -L- Sta. 50+00. The ground occurred at an elevation of 862 feet.

Prepared by,

Thomas P. Moorefield

Thomas P. Moorefield, LG
Project Geologist

PROJECT_ U-3313 COUNTY_ GUILFORD DATE 12/01/05 Volumes in Cubic Yards COMPILED BY: DBG SHEET_ 1 OF 2 SHEETS

STATION	STATION	EXCAVATION					EMBANKMENT				BORROW	WASTE			
		TOTAL UNCLASS.	ROCK	UNDERCUT	UNSUIT. UNCLASS.	SUITABLE UNCLASS.	TOTAL	ROCK	EARTH	EMBANK. (+) 15%		ROCK	SUITABLE	UNSUIT.	TOTAL
L 10+54.48 LT	36+50.00 LT	5,467		367		5,467	505		505	581			4,886	367	5,253
	SUBTOTAL	5,467		367		5,467	505		505	581			4,886	367	5,253
L 10+54.48 RT	36+50.00 RT	1,776		403		1,776	3,762		3,762	4,326	2,550			403	403
Y 10+50.00	11+50.00	182				182	41		41	47			135		135
	SUBTOTAL	1,958		403		1,958	3,803		3,803	4,373	2,550		135	403	538
L 36+50.00	40+00.00	1,179		671		1,179	517		517	595			584	671	1,255
Y1 10+00.00	15+00.00	1,601		387		1,601	227		227	261			1,340	387	1,727
Y2 10+50.00	12+50.00	339		148		339	42		42	48			291	148	439
	SUBTOTAL	3,119		1,206		3,119	786		786	904			2,215	1,206	3,421
L 40+00.00	53+50.00	2,538		1,380		2,538	6,566		6,566	7,551	5,013			1,380	1,380
Y3 10+00.00	13+50.00	263				263	263		263	302	39				
	SUBTOTAL	2,801		1,380		2,801	6,829		6,829	7,853	5,052			1,380	1,380
L 53+50.00 LT	65+00.00 LT	1,041		858		1,041	739		739	850			191	858	1,049
Y5 14+50.00	15+50.00	62		38		62	14		14	16			46	38	84
Y6 11+00.00	11+50.00	78				78	43		43	49			29		29
	SUBTOTAL	1,181		896		1,181	796		796	915			266	896	1,162
L 53+50.00 RT	65+00.00 RT	2,089		1,202		2,089	110		110	127			1,962	1,202	3,164
Y4 10+50.00	12+50.00	284		69		284	5		5	6			278	69	347
Y6 13+00.00	13+50.00	55				55	10		10	11			44		44
	SUBTOTAL	2,428		1,271		2,428	125		125	144			2,284	1,271	3,555
L 65+00.00 LT	72+57.94 LT	143		48		143	1,133		1,133	1,303	1,160			48	48
	SUBTOTAL	143		48		143	1,133		1,133	1,303	1,160			48	48
L 65+00.00 RT	72+57.94 RT	74		11		74	304		304	350	276			11	11
	SUBTOTAL	74		11		74	304		304	350	276			11	11
SHEET TOTAL		17,171		5,582		17,171	14,281		14,281	16,423	9,038		9,786	5,582	15,368

Volumes in Cubic Yards

PROJECT U-3313

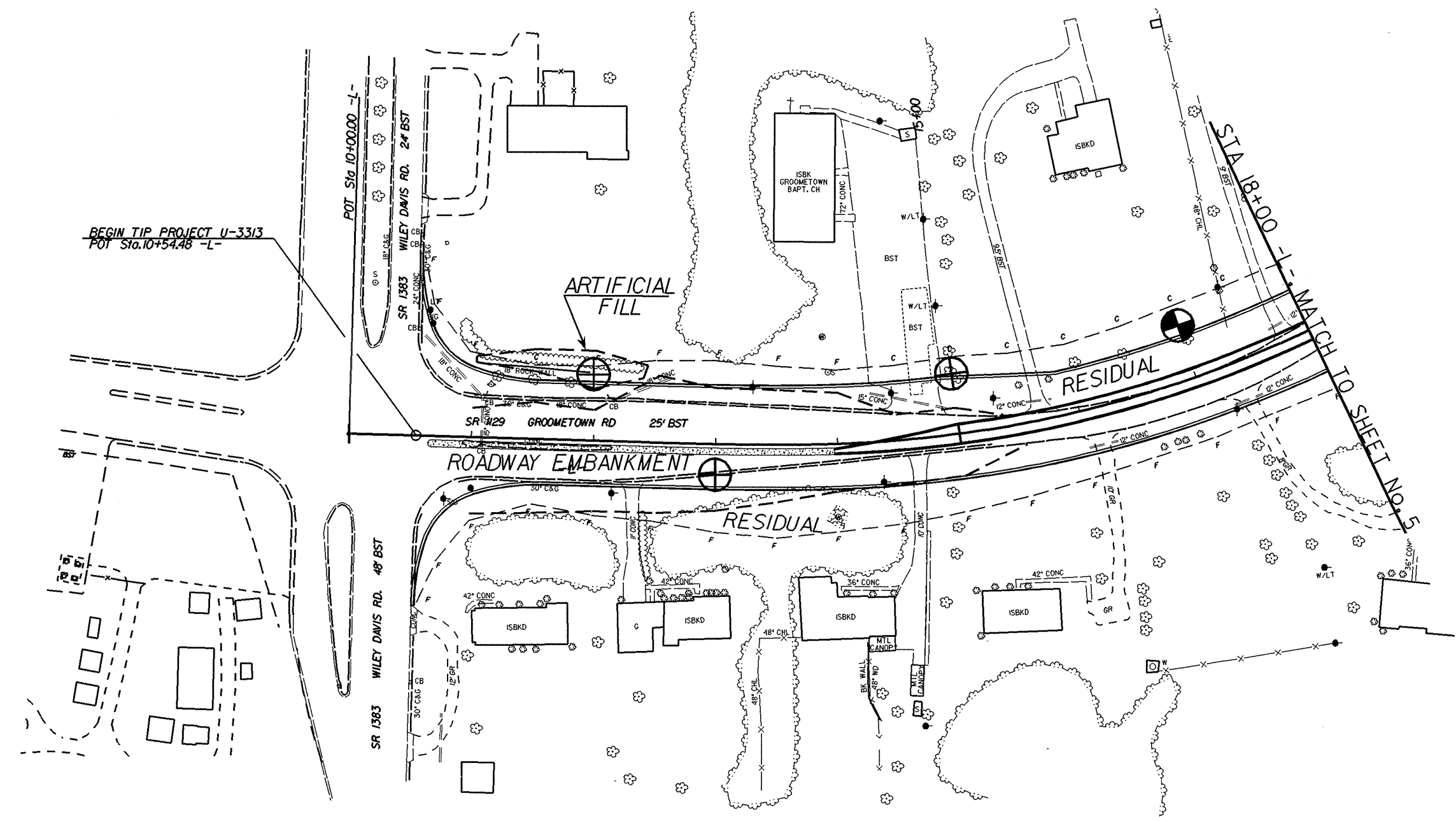
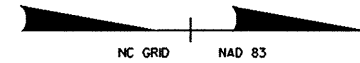
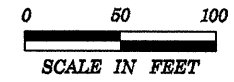
COUNTY GUILFORD

DATE 12/01/05

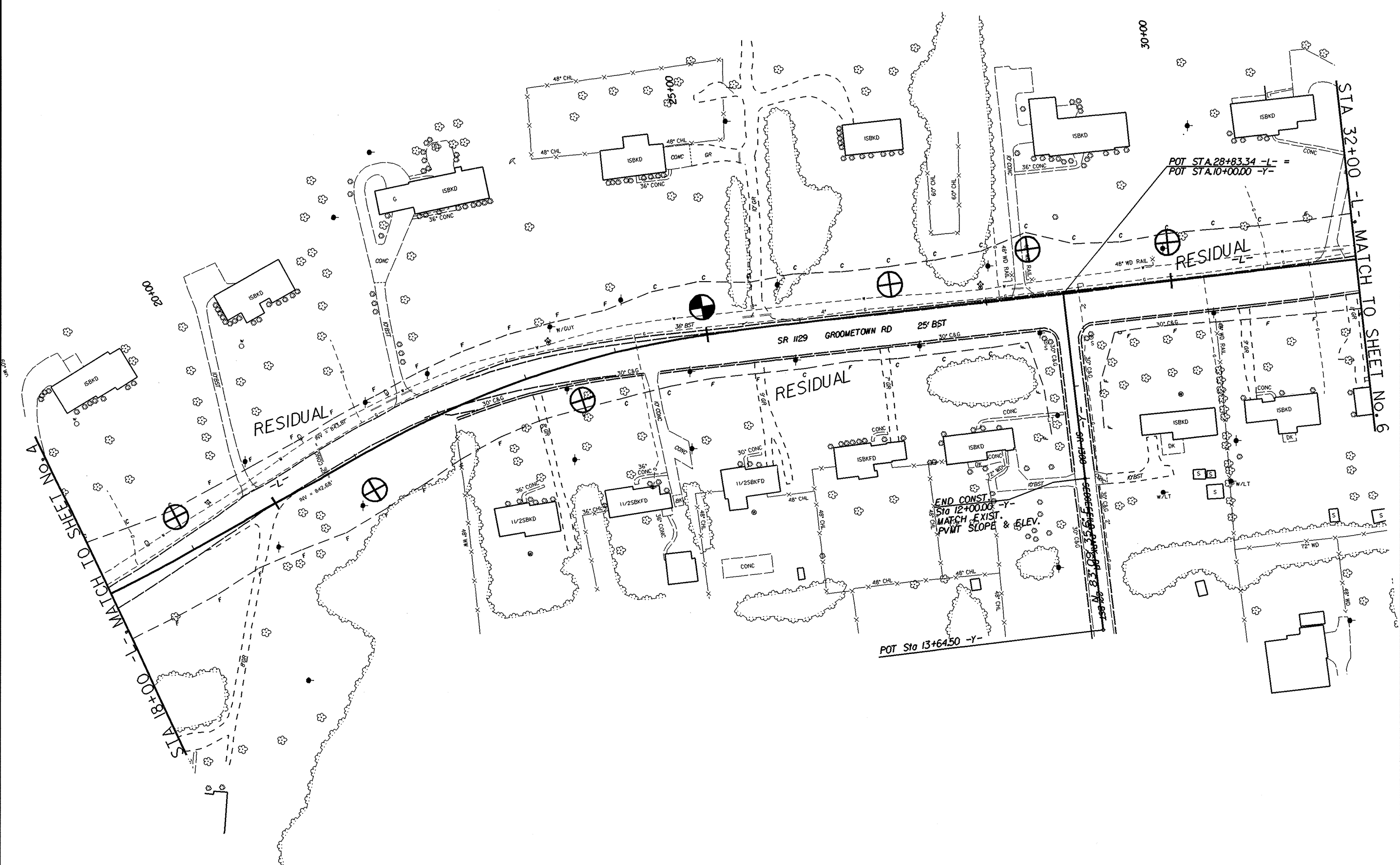
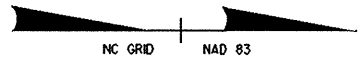
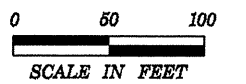
COMPILED BY: DBG

SHEET 2 OF 2 SHEETS

STATION	STATION	EXCAVATION					EMBANKMENT				BORROW	WASTE			
		TOTAL UNCLASS.	ROCK	UNDERCUT	UNSUIT. UNCLASS.	SUITABLE UNCLASS.	TOTAL	ROCK	EARTH	EMBANK. (+) 15%		ROCK	SUITABLE	UNSUIT.	TOTAL
TOTAL FROM SHEET 1		17,171		5,582		17,171	14,281		14,281	16,423	9,038		9,786	5,582	15,368
LOSS DUE TO CLEARING AND GRUBBING		-4000				-4000					4,000				
EARTH WASTE TO REPLACE BORROW											-9786		-9786		-9786
EST. SHOULDER MATERIAL							5,100		5,100	5,865	5,865				
ADDITIONAL UNDERCUT				450			450		450	518	518			450	450
PROJECT TOTALS		13,171		6,032		13,171	19,831		19,831	22,806	9,635			6,032	6,032
EST. FOR REPLACING TOPSOIL ON BORROW PITS											482				
GRAND TOTAL		13,171									10,117				
SAY		13,500									10,500				



8/17/99



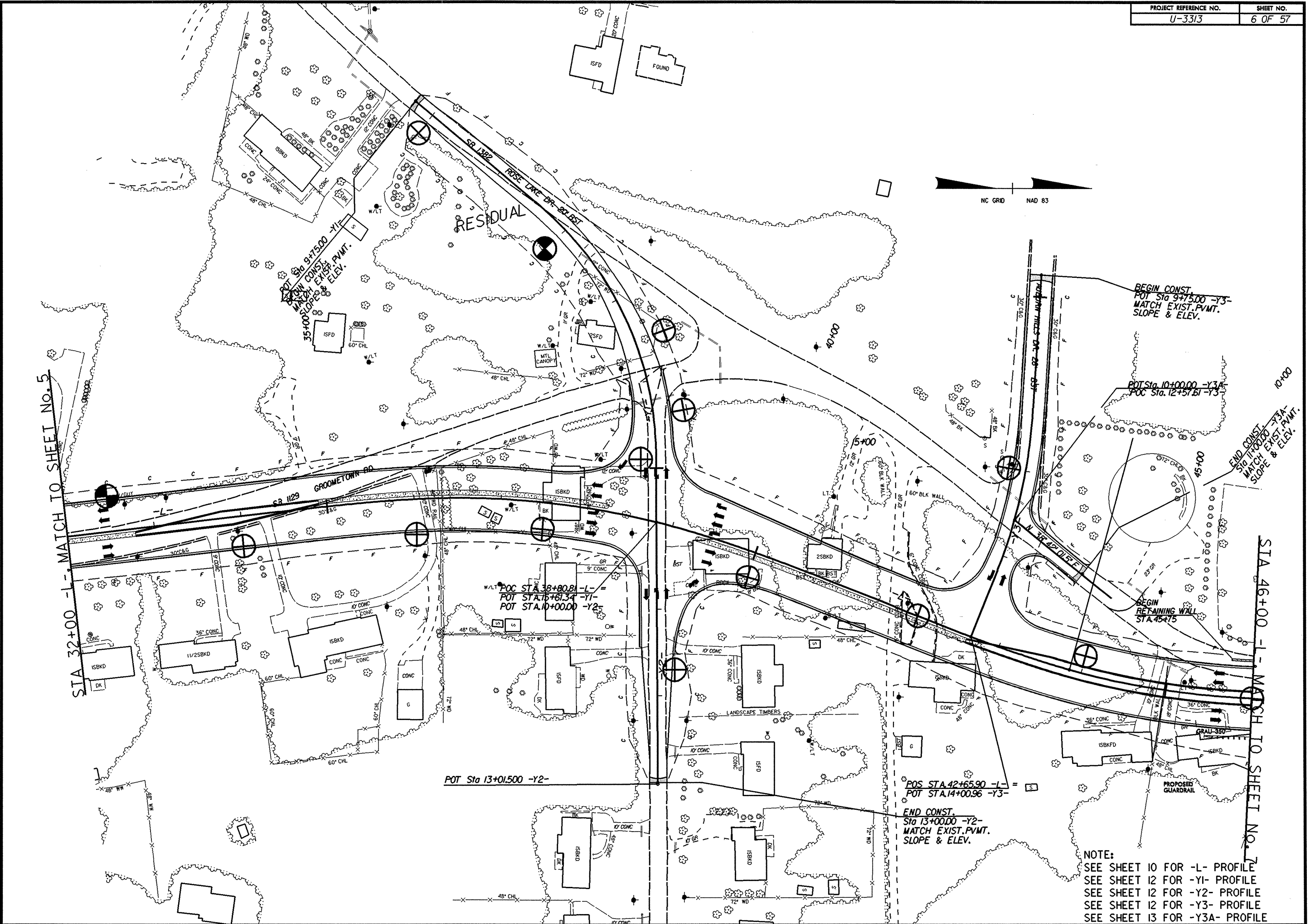
STA 18+00 -1- MATCH TO SHEET NO. 4

STA 32+00 -1- MATCH TO SHEET NO. 6

END CONST.
STA 12+00.00 -Y-
MATCH EXIST.
PVMT SLOPE & ELEV.

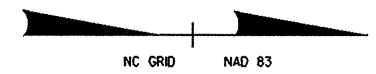
POT STA 13+6450 -Y-

POT STA 28+83.34 -L- =
POT STA 10+00.00 -Y-



STA 32+00 -L- MATCH TO SHEET NO. 5

STA 46+00 -L- MATCH TO SHEET NO. 7



POT Sta 9+75.00 -Y1-
 BEGIN CONST.
 MATCH EXIST. P.V.M.T.
 SLOPE & ELEV.

BEGIN CONST.
 POT Sta 9+75.00 -Y3-
 MATCH EXIST. P.V.M.T.
 SLOPE & ELEV.

POT Sta 10+00.00 -Y3A-
 POC Sta. 12+51.61 -Y3-

END CONST.
 Sta 11+00.00 -Y3A-
 MATCH EXIST. P.V.M.T.
 SLOPE & ELEV.

W/L POC STA 38+80.81 -L-
 POT STA 15+61.34 -Y1-
 POT STA 10+00.00 -Y2-

BEGIN
 RETAINING WALL
 STA 45+75

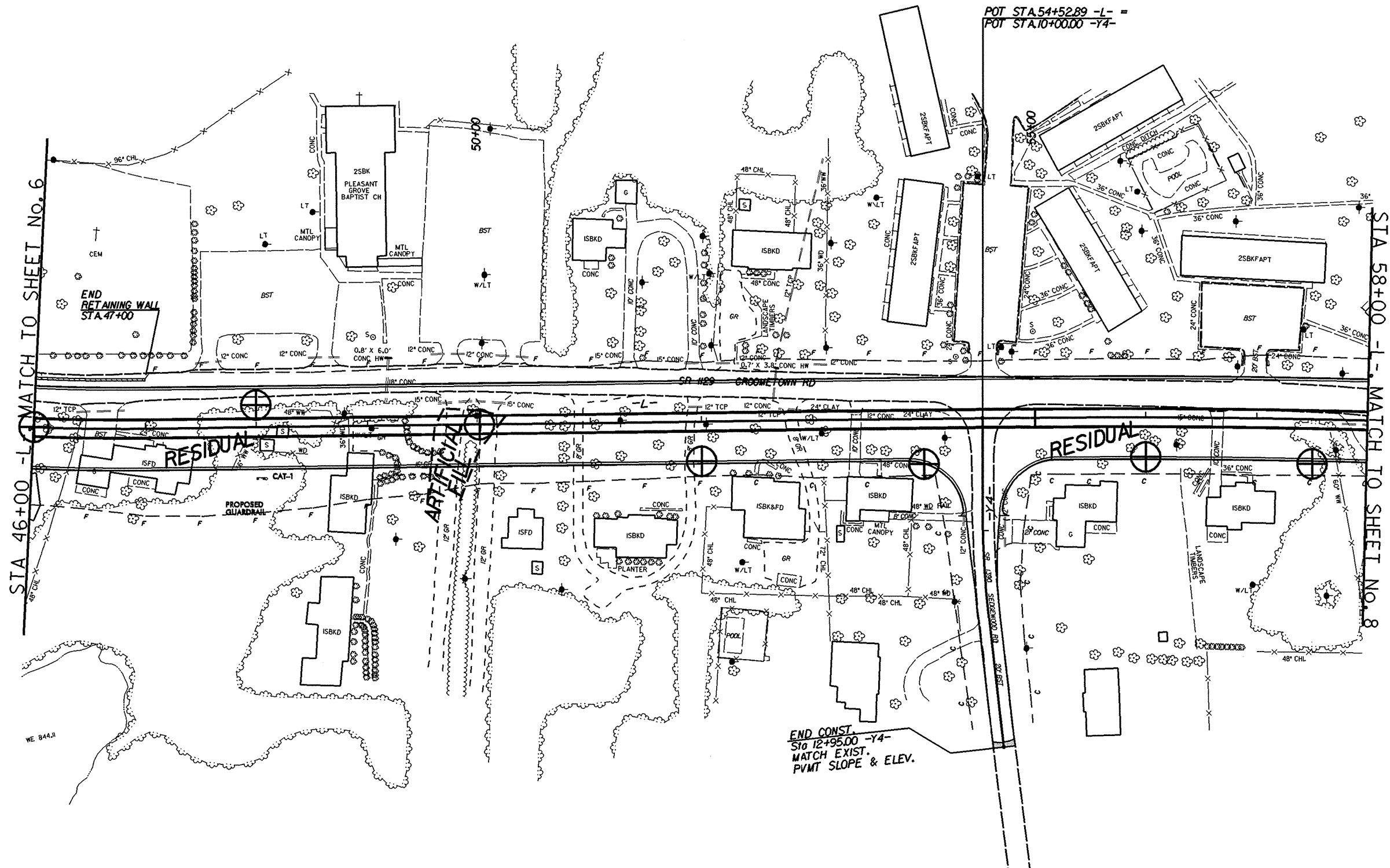
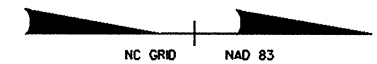
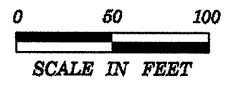
POT Sta 13+01.50 -Y2-

POS STA 42+65.90 -L-
 POT STA 14+00.96 -Y3-

END CONST.
 Sta 13+00.00 -Y2-
 MATCH EXIST. P.V.M.T.
 SLOPE & ELEV.

NOTE:
 SEE SHEET 10 FOR -L- PROFILE
 SEE SHEET 12 FOR -Y1- PROFILE
 SEE SHEET 12 FOR -Y2- PROFILE
 SEE SHEET 12 FOR -Y3- PROFILE
 SEE SHEET 13 FOR -Y3A- PROFILE

8/17/99



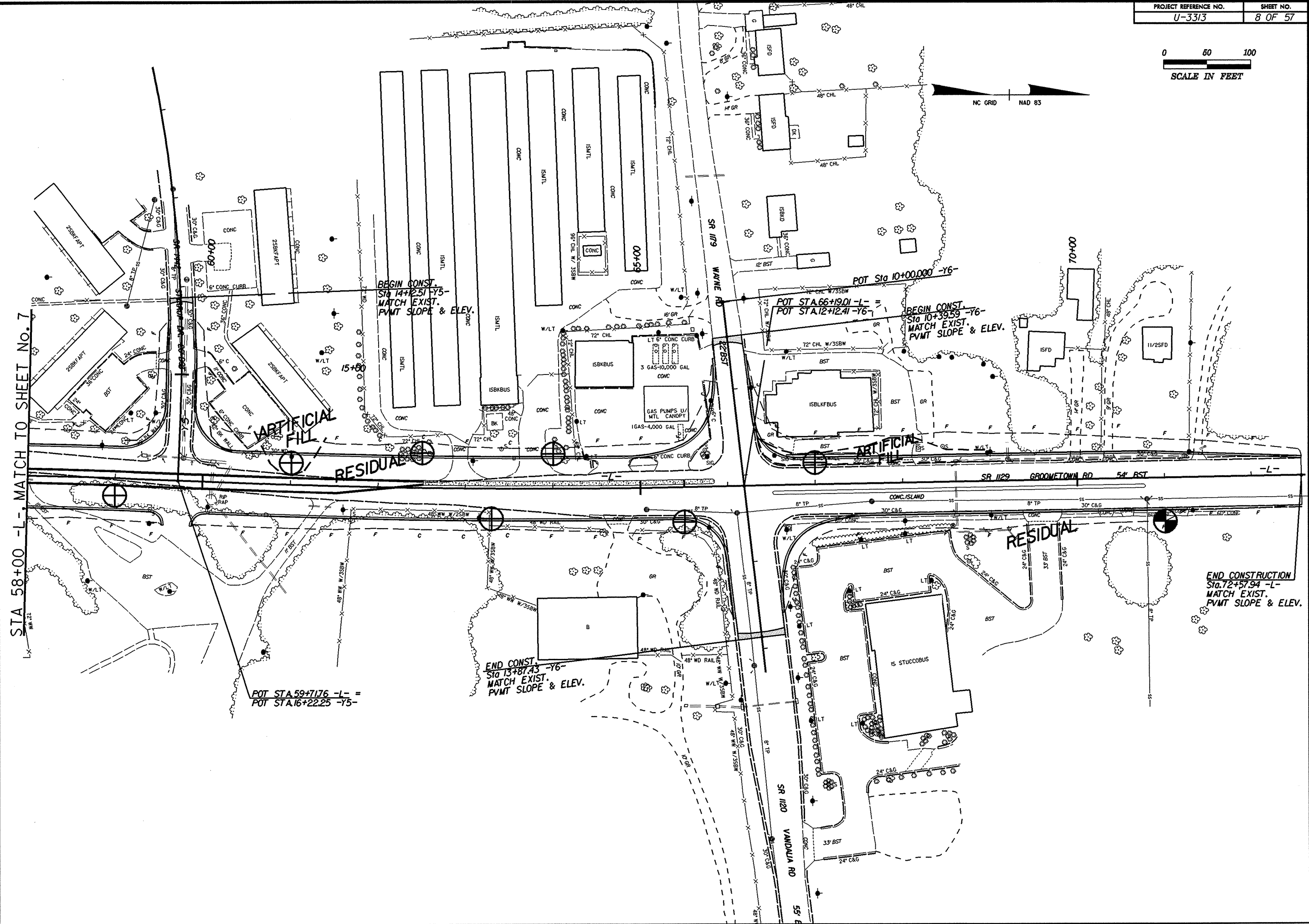
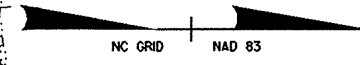
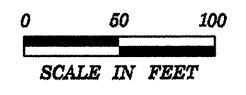
STA 46+00 -L- MATCH TO SHEET No. 6

STA 58+00 -L- MATCH TO SHEET No. 8

POT STA. 54+52.89 -L- =
POT STA. 10+00.00 -Y4-

END CONST.
Sta 12+95.00 -Y4-
MATCH EXIST.
PVT SLOPE & ELEV.

END
RETAINING WALL
STA 47+00



STA 58+00 -L- MATCH TO SHEET No. 7

BEGIN CONST.
Sta 14+12.51 -Y5-
MATCH EXIST.
PVMT SLOPE & ELEV.

POT STA 10+00.000 -Y6-

POT STA 66+19.01 -L- =
POT STA 12+12.41 -Y6-

BEGIN CONST.
Sta 10+39.59 -Y6-
MATCH EXIST.
PVMT SLOPE & ELEV.

ARTIFICIAL FILL

ARTIFICIAL FILL

RESIDUAL

RESIDUAL

END CONST.
Sta 13+87.43 -Y6-
MATCH EXIST.
PVMT SLOPE & ELEV.

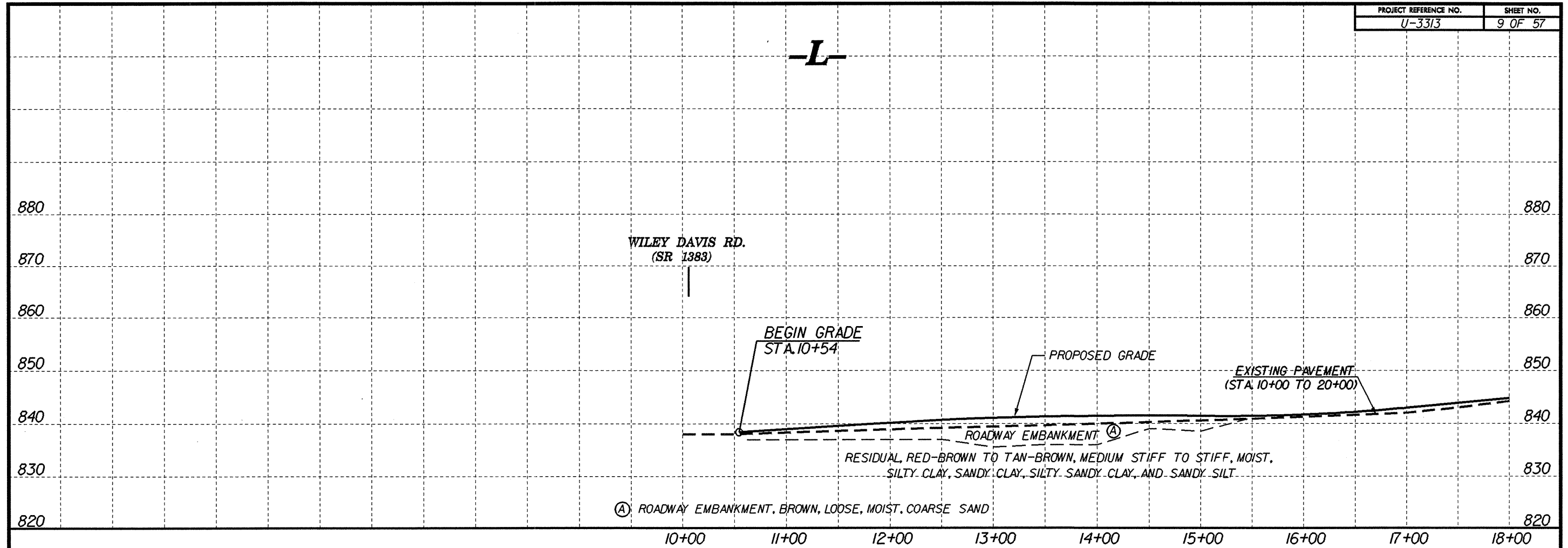
END CONSTRUCTION
Sta 72+57.94 -L-
MATCH EXIST.
PVMT SLOPE & ELEV.

POT STA 59+71.76 -L- =
POT STA 16+22.25 -Y5-

SR 1120
VANDALIA RD
5' E

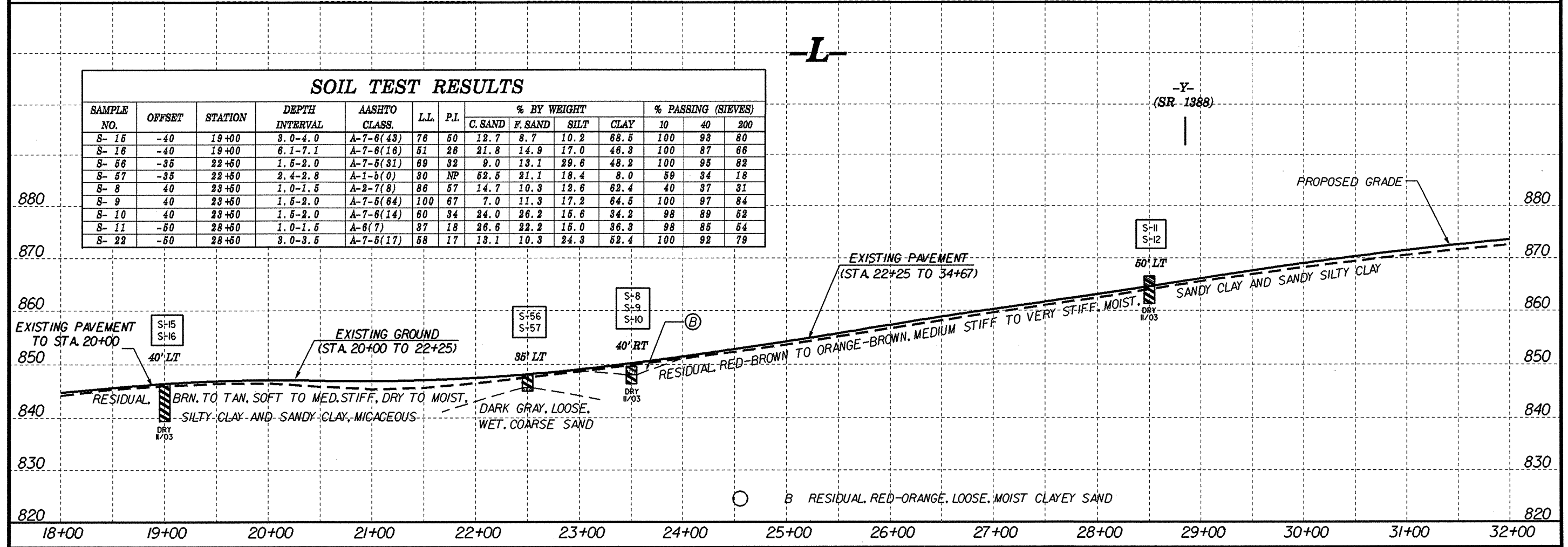
SR 1129
GROOMTOWN RD
54' BST

SR 1179
WAYNE RD

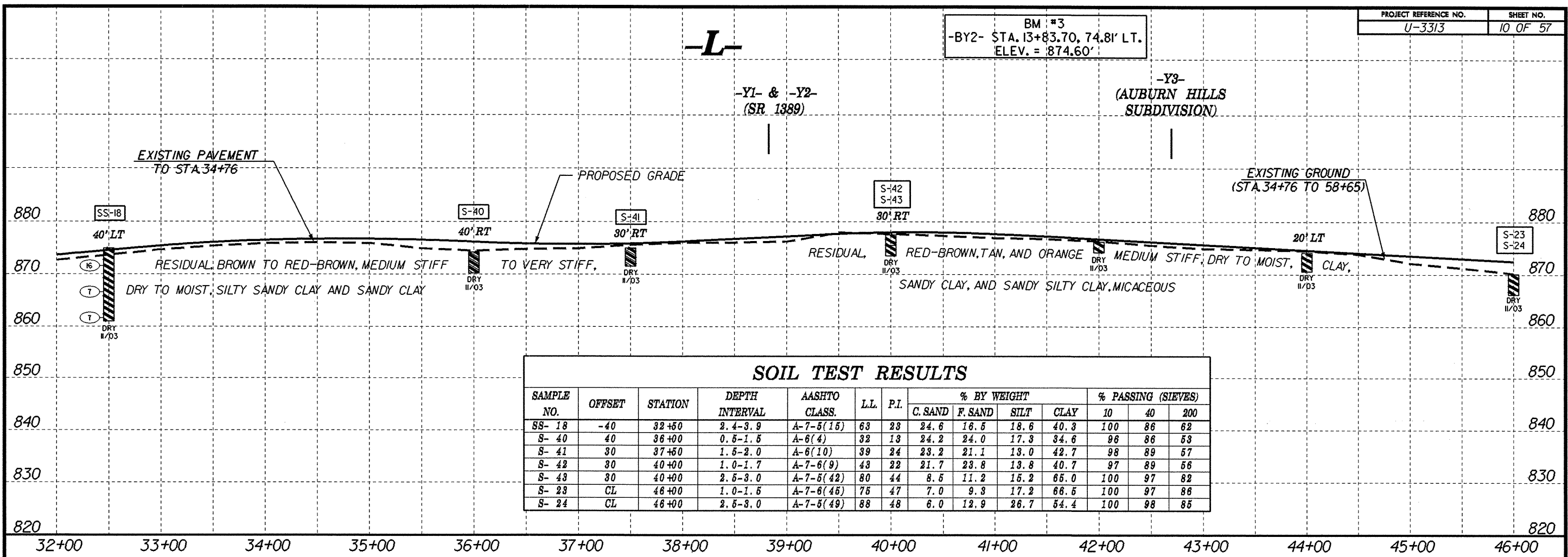


SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT			% PASSING (SIEVES)			
							C. SAND	F. SAND	SILT	CLAY	10	40	200
S-15	-40	19+00	3.0-4.0	A-7-6(43)	78	50	12.7	8.7	10.2	68.5	100	93	80
S-18	-40	19+00	6.1-7.1	A-7-6(16)	51	26	21.8	14.9	17.0	46.3	100	87	66
S-56	-35	22+50	1.5-2.0	A-7-5(31)	69	32	9.0	13.1	29.6	48.2	100	95	82
S-57	-35	22+50	2.4-2.8	A-1-5(0)	30	NP	62.5	21.1	18.4	8.0	59	34	18
S-8	40	23+50	1.0-1.5	A-2-7(8)	86	57	14.7	10.3	12.6	62.4	40	37	31
S-9	40	23+50	1.5-2.0	A-7-5(64)	100	67	7.0	11.3	17.2	64.5	100	97	84
S-10	40	23+50	1.5-2.0	A-7-6(14)	60	34	24.0	26.2	16.6	34.2	98	89	52
S-11	-50	28+50	1.0-1.5	A-6(7)	37	18	26.6	22.2	16.0	36.3	98	85	54
S-22	-50	28+50	3.0-3.5	A-7-5(17)	58	17	13.1	10.3	24.3	62.4	100	92	79

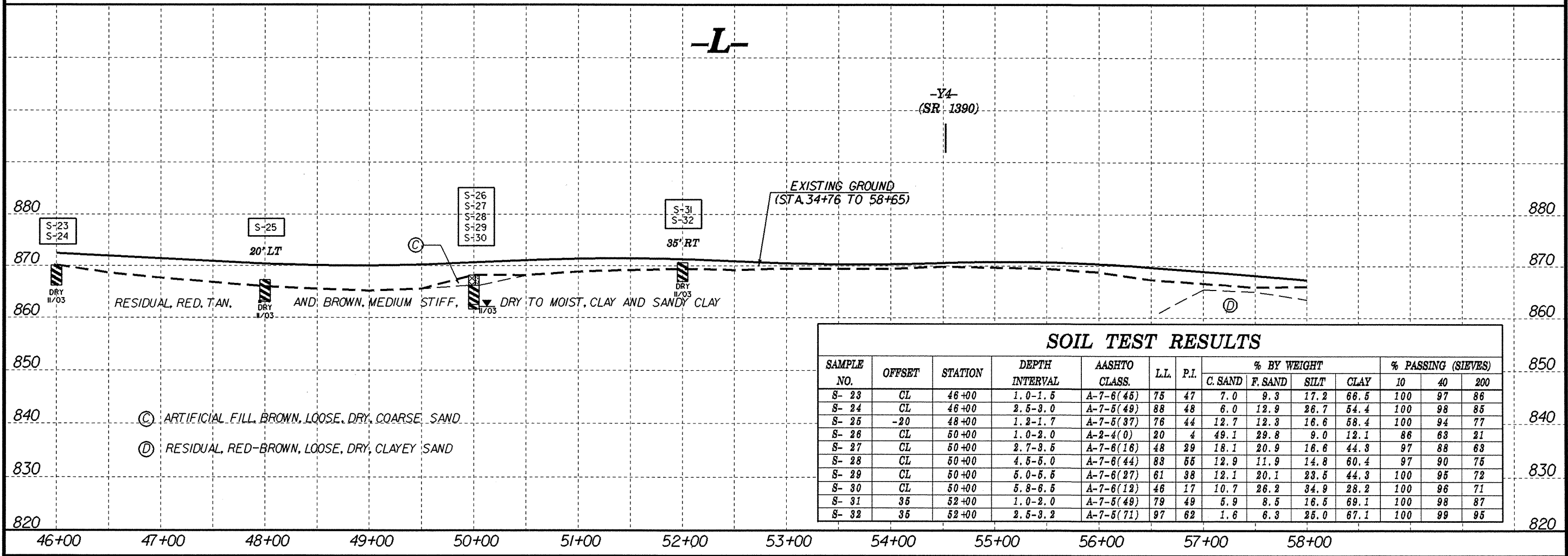


BM #3
-BY2- STA. 13+83.70, 74.81' LT.
ELEV. = 874.60'



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)		
							C. SAND	F. SAND	SILT	CLAY	10	40	200
SS- 18	-40	32+50	2.4-3.9	A-7-5(15)	63	23	24.6	16.5	18.6	40.3	100	86	62
S- 40	40	36+00	0.5-1.5	A-6(4)	32	13	24.2	24.0	17.3	34.6	96	86	53
S- 41	30	37+50	1.5-2.0	A-6(10)	39	24	23.2	21.1	13.0	42.7	98	89	57
S- 42	30	40+00	1.0-1.7	A-7-6(9)	43	22	21.7	23.8	13.8	40.7	97	89	56
S- 43	30	40+00	2.5-3.0	A-7-5(42)	80	44	8.5	11.2	15.2	65.0	100	97	82
S- 23	CL	46+00	1.0-1.5	A-7-6(45)	75	47	7.0	9.3	17.2	66.5	100	97	86
S- 24	CL	46+00	2.5-3.0	A-7-5(49)	88	48	6.0	12.9	26.7	54.4	100	98	85

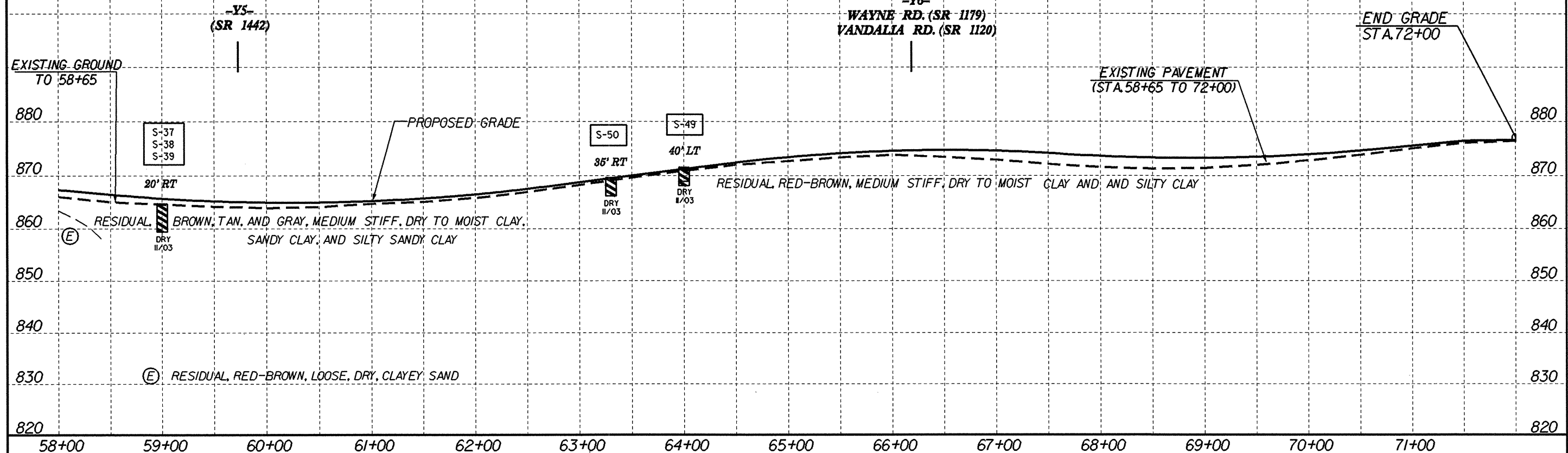


SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)		
							C. SAND	F. SAND	SILT	CLAY	10	40	200
S- 23	CL	46+00	1.0-1.5	A-7-6(45)	75	47	7.0	9.3	17.2	66.5	100	97	86
S- 24	CL	46+00	2.5-3.0	A-7-5(49)	88	48	6.0	12.9	26.7	54.4	100	98	85
S- 25	-20	48+00	1.2-1.7	A-7-5(37)	76	44	12.7	12.3	16.6	58.4	100	94	77
S- 26	CL	50+00	1.0-2.0	A-2-4(0)	20	4	49.1	29.8	9.0	12.1	86	63	21
S- 27	CL	50+00	2.7-3.5	A-7-6(16)	48	29	18.1	20.9	16.6	44.3	97	88	63
S- 28	CL	50+00	4.5-5.0	A-7-6(44)	83	55	12.9	11.9	14.8	60.4	97	90	75
S- 29	CL	50+00	5.0-5.5	A-7-6(27)	61	38	12.1	20.1	23.5	44.3	100	95	72
S- 30	CL	50+00	5.8-6.5	A-7-6(12)	46	17	10.7	26.2	34.9	28.2	100	96	71
S- 31	35	52+00	1.0-2.0	A-7-5(49)	79	49	5.9	8.5	16.5	69.1	100	98	87
S- 32	35	52+00	2.5-3.2	A-7-5(71)	97	62	1.6	6.3	25.0	67.1	100	99	95

Ⓒ ARTIFICIAL FILL, BROWN, LOOSE, DRY, COARSE, SAND
 Ⓓ RESIDUAL, RED-BROWN, LOOSE, DRY, CLAYEY SAND

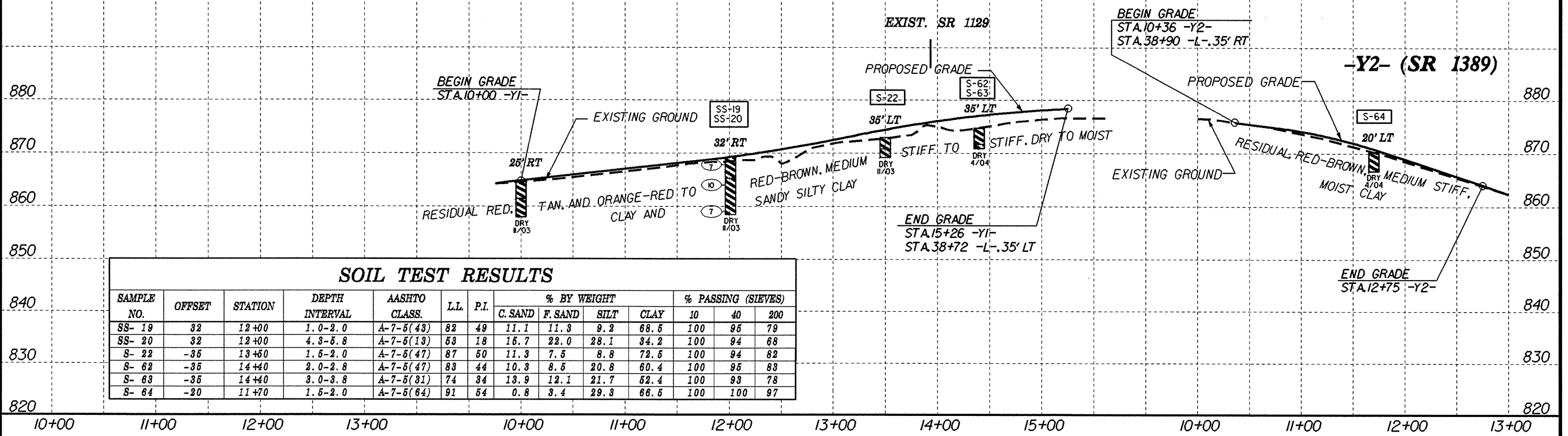
-L-



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)		
							C. SAND	F. SAND	SILT	CLAY	10	40	200
S- 37	20	59+00	2.0-2.7	A-7-6(39)	77	48	9.6	14.8	8.5	67.1	98	95	76
S- 38	20	59+00	4.0-4.5	A-7-6(34)	74	49	9.6	10.2	11.2	69.1	86	88	70
S- 39	20	59+00	1.5-2.0	A-7-5(16)	58	30	15.9	22.6	20.9	40.7	91	84	60
S- 50	35	63+30	1.0-1.7	A-7-5(58)	90	48	1.4	4.7	16.7	77.3	100	99	96
S- 49	-40	64+00	0.5-1.0	A-7-5(64)	95	59	2.4	4.1	16.3	77.2	96	95	91

-Y1- (SR 1382)

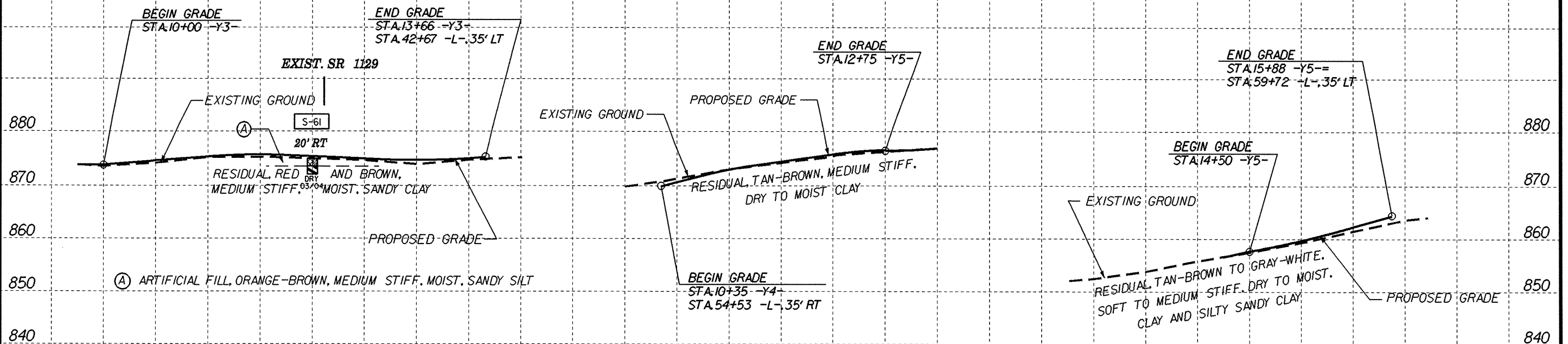


SOIL TEST RESULTS													
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)		
							C. SAND	F. SAND	SILT	CLAY	10	40	200
SS-19	32	12+00	1.0-2.0	A-7-5(43)	82	49	11.1	11.3	9.2	68.5	100	95	79
SS-20	32	12+00	4.3-5.8	A-7-5(13)	53	18	15.7	22.0	28.1	34.2	100	94	68
S-22	-35	13+50	1.5-2.0	A-7-5(47)	87	50	11.3	7.5	8.8	72.5	100	94	82
S-62	-35	14+40	2.0-2.8	A-7-5(47)	83	44	10.3	8.5	20.8	60.4	100	95	83
S-63	-35	14+40	3.0-3.8	A-7-5(31)	74	34	13.9	12.1	21.7	52.4	100	93	78
S-64	-20	11+70	1.5-2.0	A-7-5(64)	91	54	0.8	3.4	29.3	66.5	100	100	97

-Y3- (AUBURN HILLS DR.)

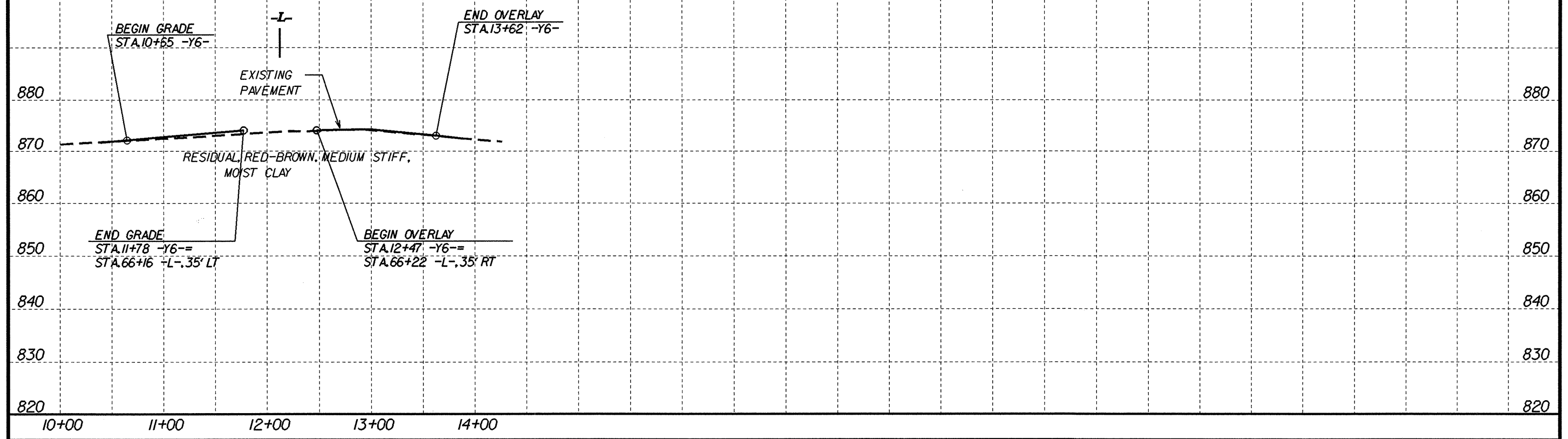
-Y4- (SR 1390)

-Y5- (SR 1442)



SOIL TEST RESULTS													
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)		
							C. SAND	F. SAND	SILT	CLAY	10	40	200
S-61	20	12+00	1.5-3.0	A-7-6(16)	53	28	20.0	19.6	11.9	48.5	100	91	63

-Y6- (SR 1120)

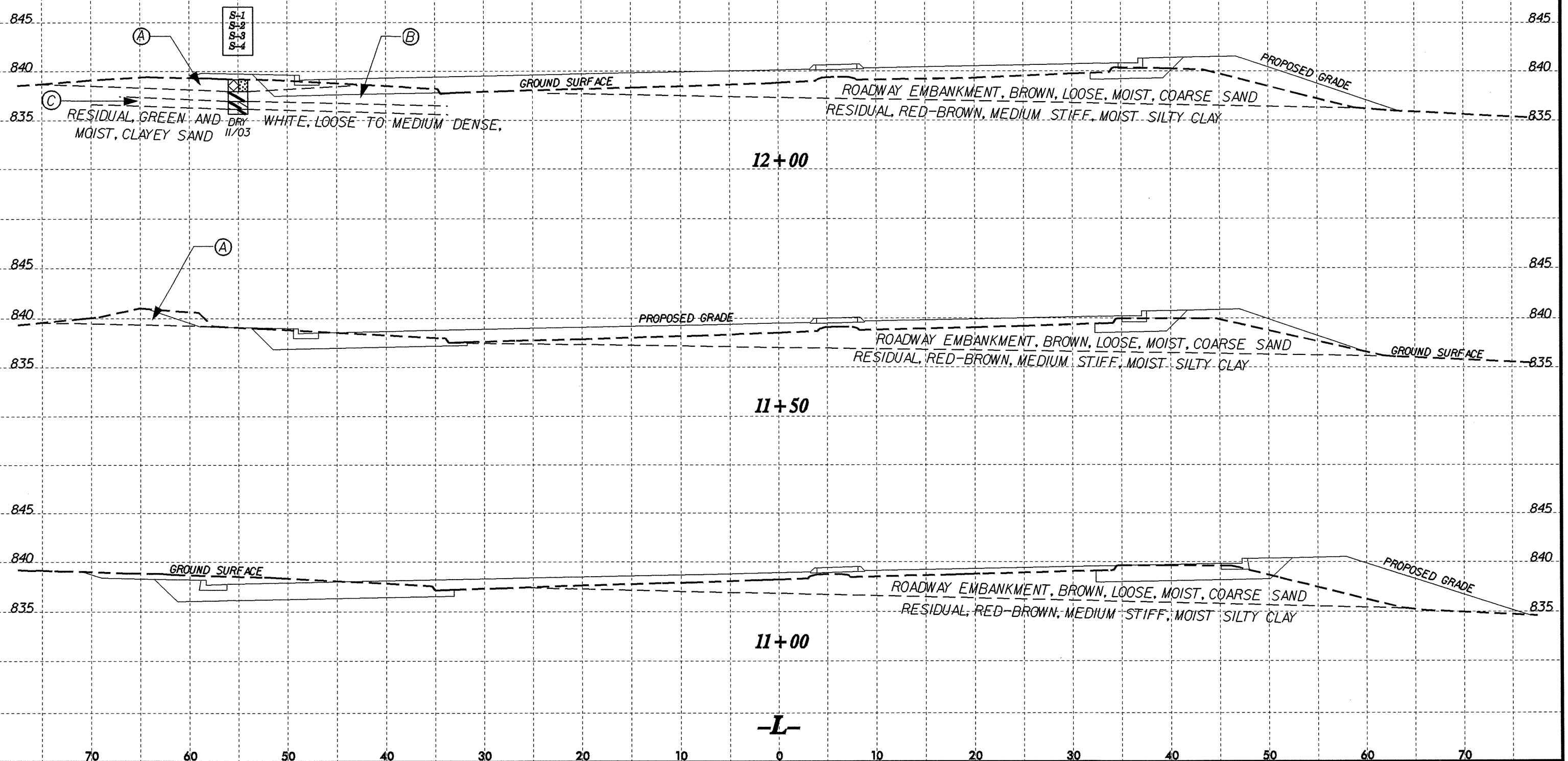


70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

- Ⓐ ARTIFICIAL FILL, BROWN, LOOSE, MOIST, SILTY SAND
- Ⓑ RESIDUAL, RED-BROWN, MEDIUM STIFF, MOIST SILTY CLAY
- Ⓒ RESIDUAL, GRAY-BROWN, SOFT, MOIST, SILTY SANDY CLAY

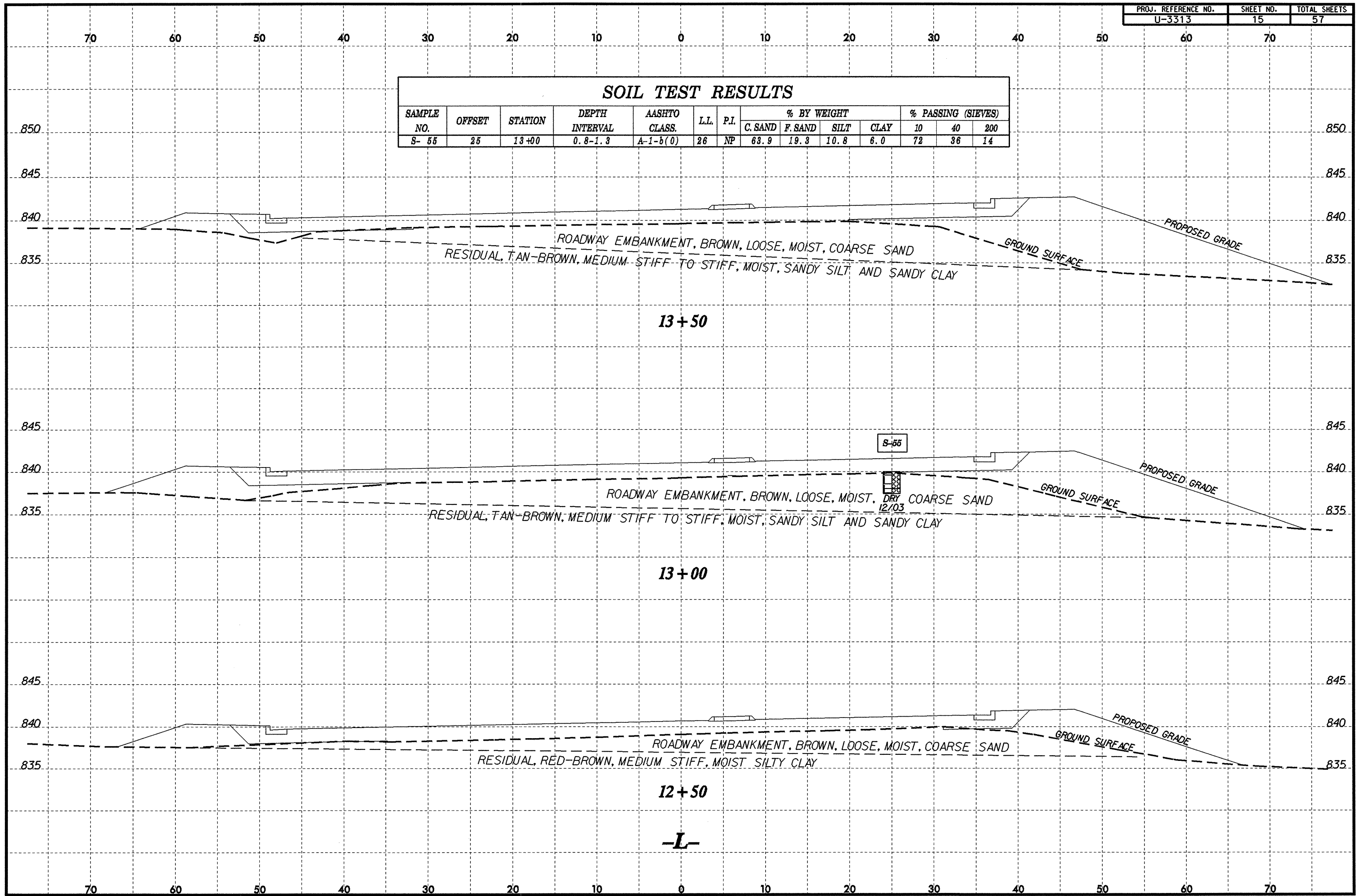
SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL.	P.I.	% BY WEIGHT				% PASSING (SIEVES)		
							C. SAND	F. SAND	SILT	CLAY	10	40	200
S-1	-55	12+00	0.0-1.0	A-2-4(0)	24	NP	46.0	30.6	17.3	6.0	92	67	26
S-2	-55	12+00	1.5-2.0	A-7-5(22)	64	33	16.3	17.5	21.9	44.3	96	88	67
S-3	-55	12+00	2.5-3.0	A-6(4)	33	12	29.0	19.7	25.1	26.2	100	84	54
S-4	-55	12+00	3.0-3.5	A-2-6(0)	30	11	46.7	22.6	12.6	18.1	91	62	31



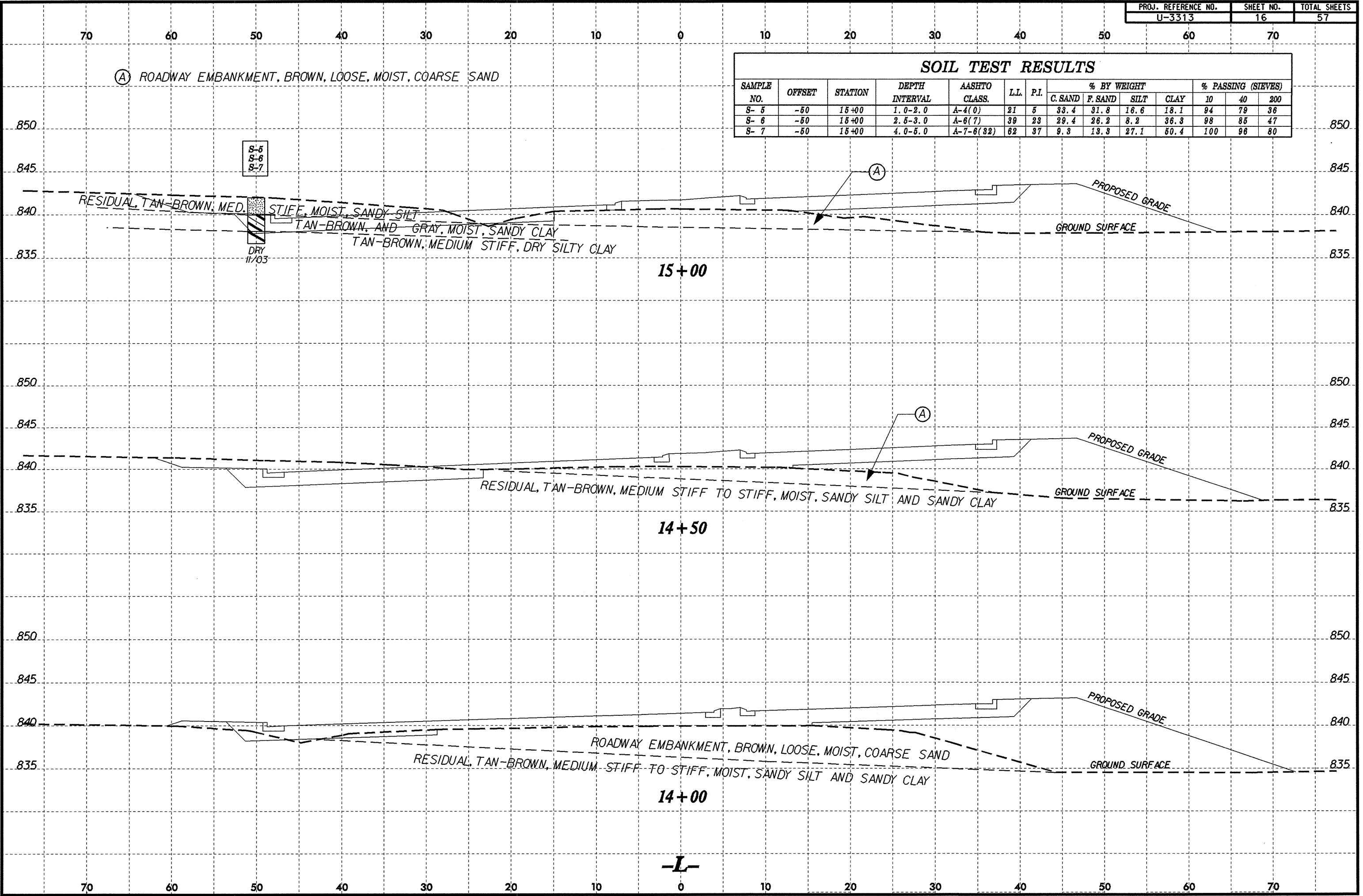
-L-

SOIL TEST RESULTS													
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)		
							C. SAND	F. SAND	SILT	CLAY	10	40	200
S- 55	25	13+00	0.8-1.3	A-1-b(0)	26	NP	63.9	19.3	10.8	6.0	72	36	14

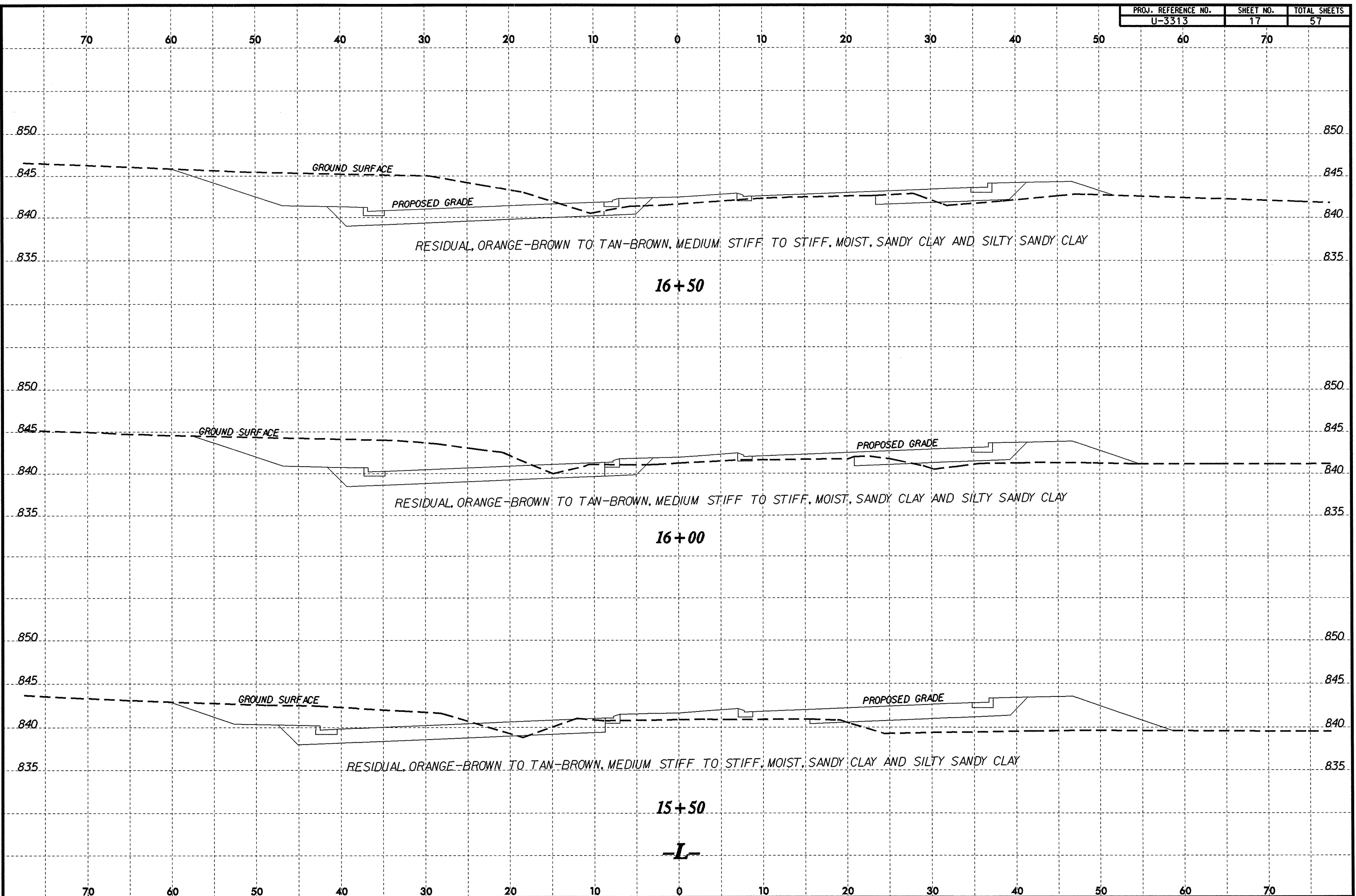


SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)		
							C. SAND	F. SAND	SILT	CLAY	10	40	200
S-5	-50	15+00	1.0-2.0	A-4(0)	21	5	33.4	31.8	16.6	18.1	94	79	36
S-6	-50	15+00	2.5-3.0	A-6(7)	39	23	29.4	26.2	8.2	36.3	98	85	47
S-7	-50	15+00	4.0-5.0	A-7-6(32)	62	37	9.3	13.3	27.1	50.4	100	96	80



-L-



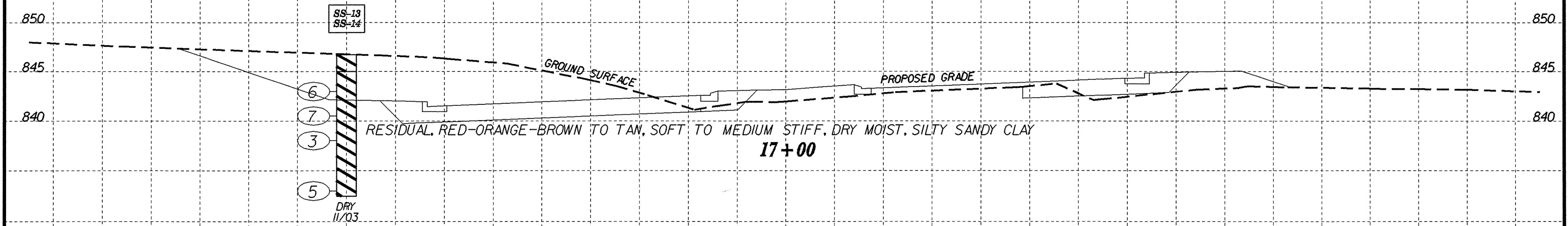
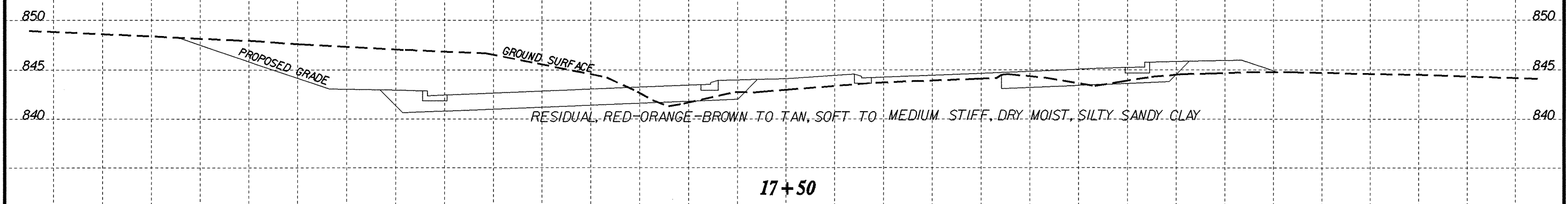
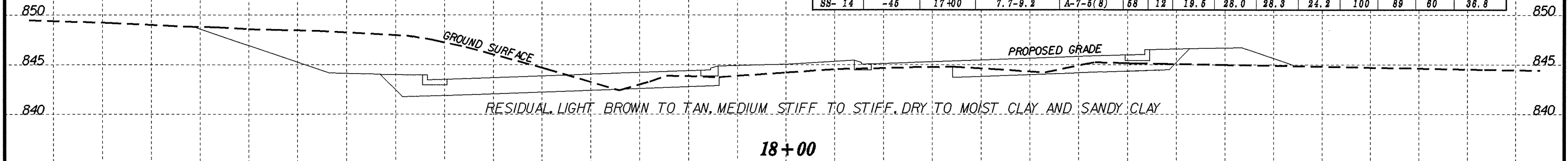
16+50

16+00

15+50

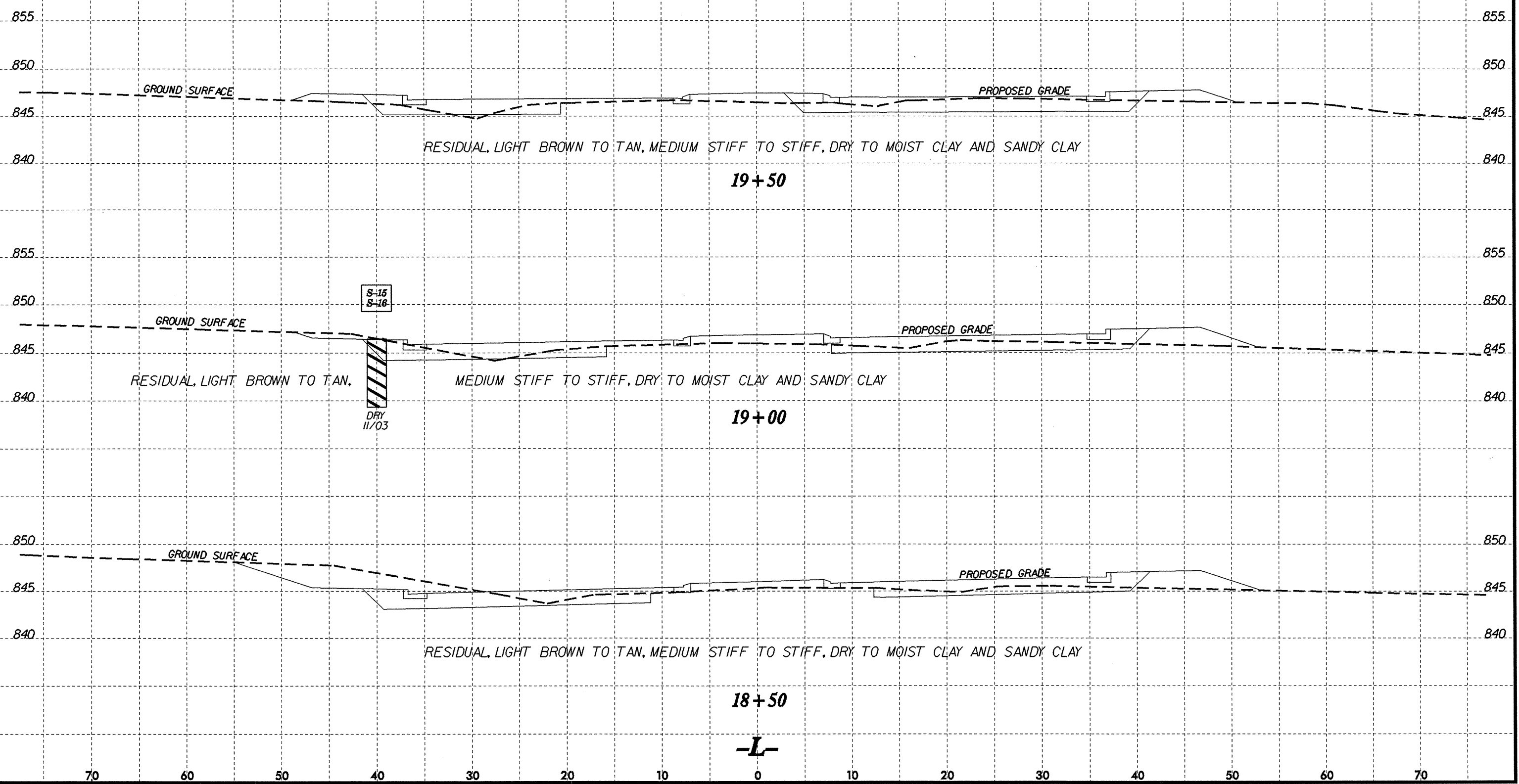
-L-

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE
							C. SAND	F. SAND	SILT	CLAY	10	40	200	
SS- 13	-45	17+00	2.7-4.2	A-7-5(10)	65	16	23.4	22.6	25.9	28.2	100	85	59	
SS- 14	-45	17+00	7.7-9.2	A-7-5(8)	58	12	19.5	28.0	28.3	24.2	100	89	60	36.8



70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

SOIL TEST RESULTS													
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)		
							C. SAND	F. SAND	SILT	CLAY	10	40	200
S- 15	-40	19+00	3.0-4.0	A-7-6(43)	76	50	12.7	8.7	10.2	68.5	100	93	80
S- 16	-40	19+00	6.1-7.1	A-7-6(16)	51	26	21.8	14.9	17.0	46.3	100	87	66



19+50

19+00

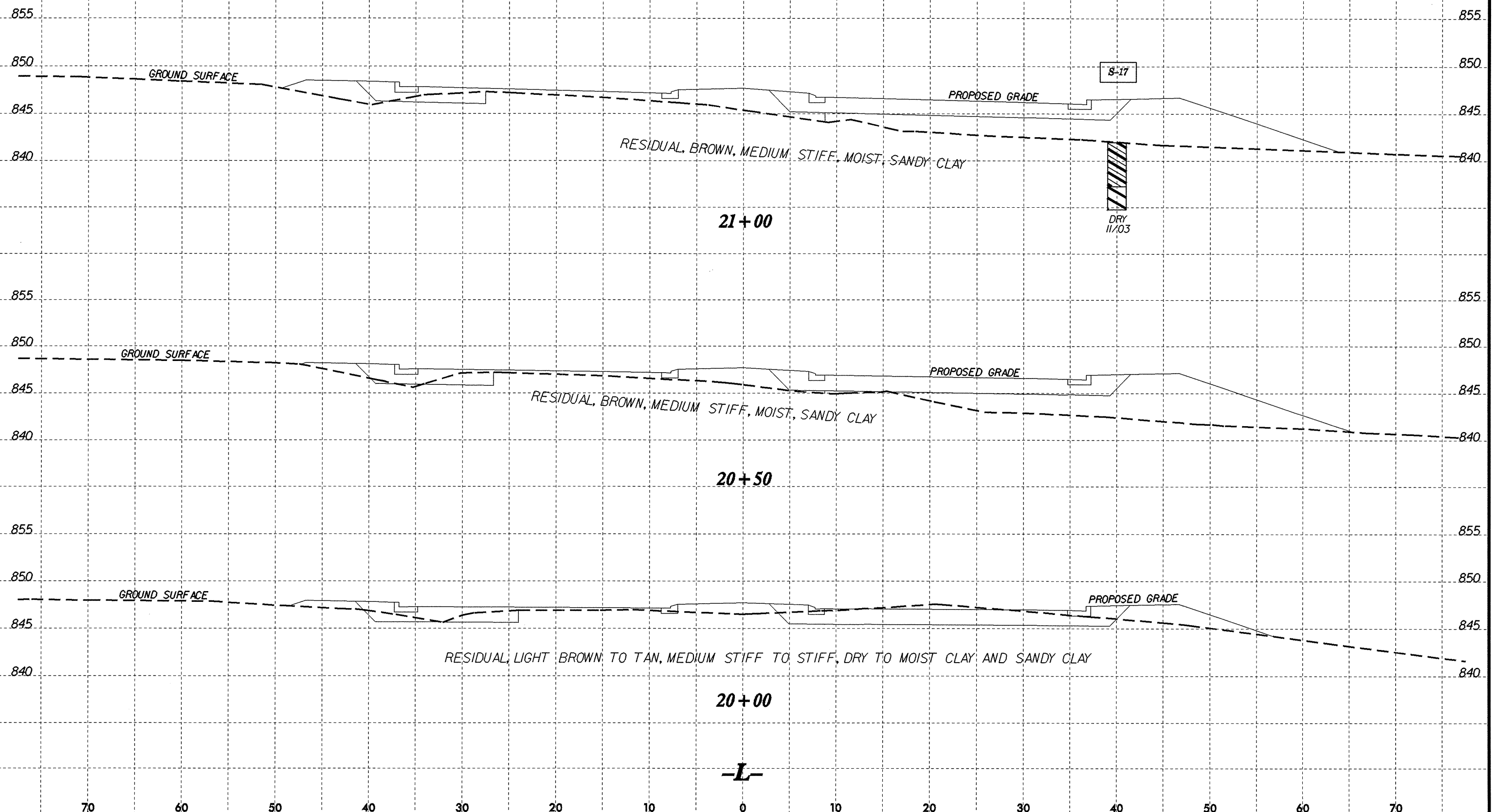
18+50

-L-

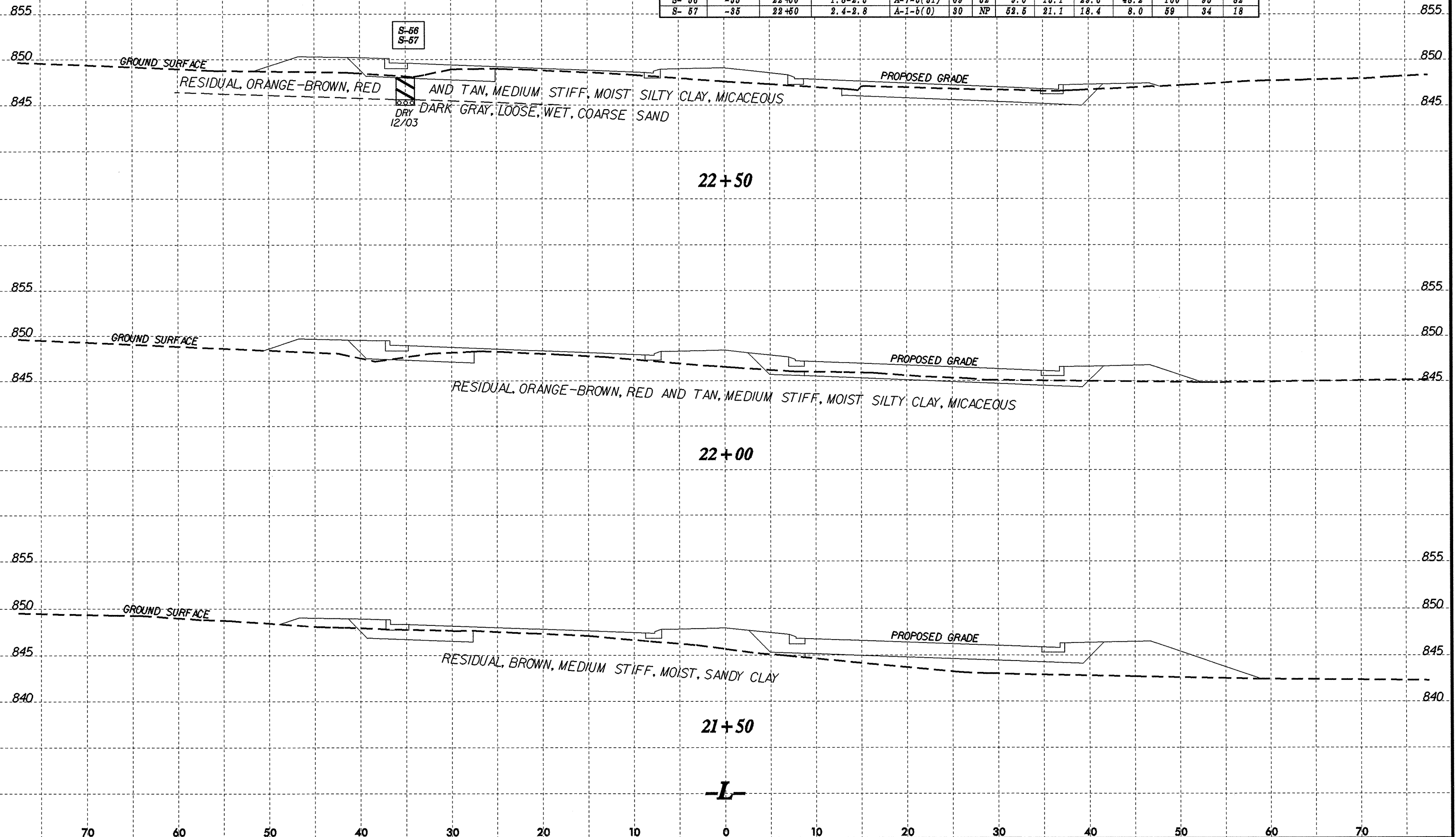
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70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

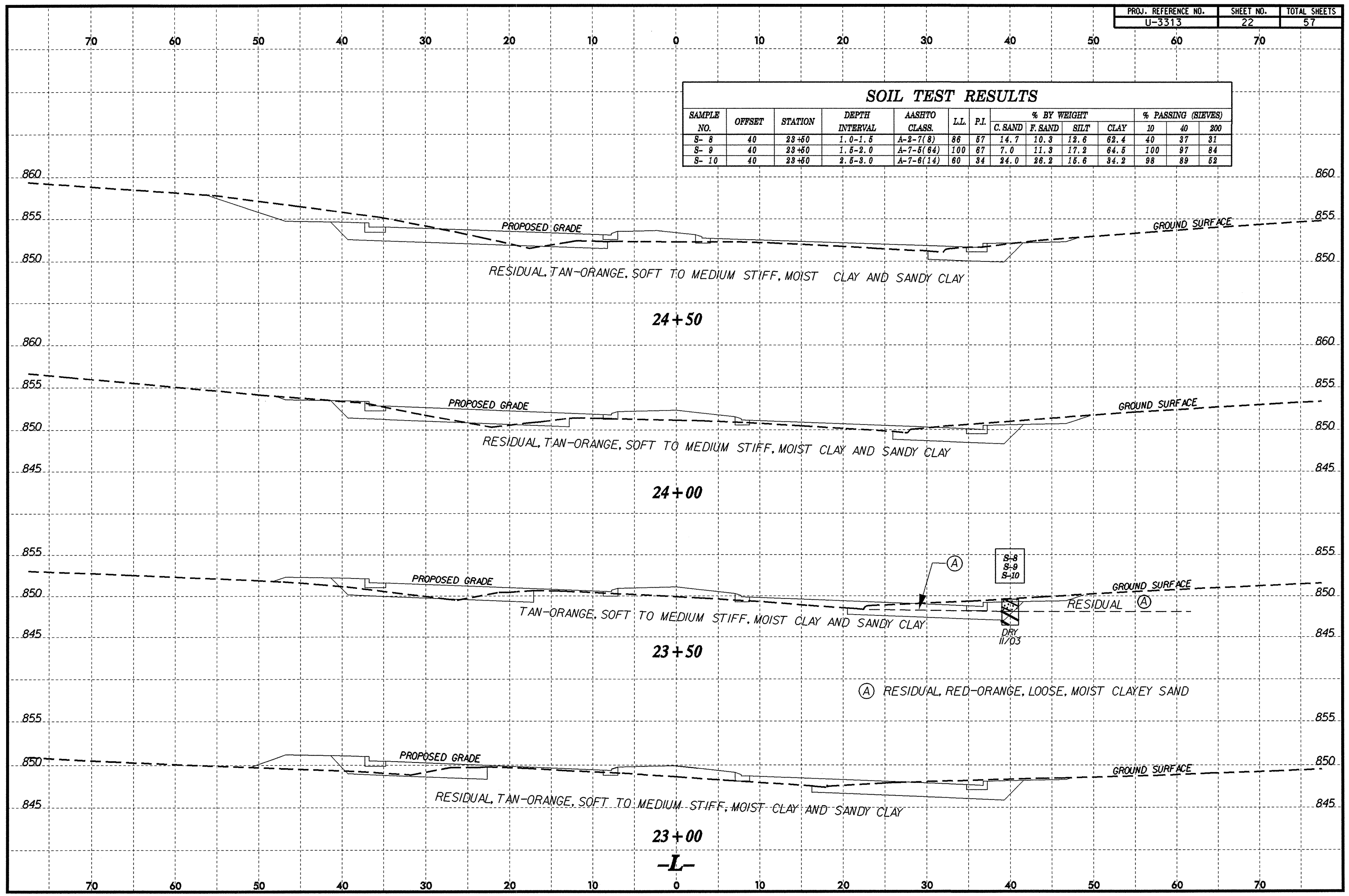
SOIL TEST RESULTS													
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)		
							C. SAND	F. SAND	SILT	CLAY	10	40	200
S-17	40	21+00	0.0-3.0	A-6(4)	36	21	86.3	23.6	12.0	28.2	98	82	41



SOIL TEST RESULTS													
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL.	P.I.	% BY WEIGHT				% PASSING (SIEVES)		
							C. SAND	F. SAND	SILT	CLAY	10	40	200
S- 56	-35	22+50	1.8-2.3	A-7-5(31)	69	32	9.0	13.1	29.6	48.2	100	95	82
S- 57	-35	22+50	2.4-2.8	A-1-b(0)	30	NP	52.5	21.1	18.4	8.0	59	34	18

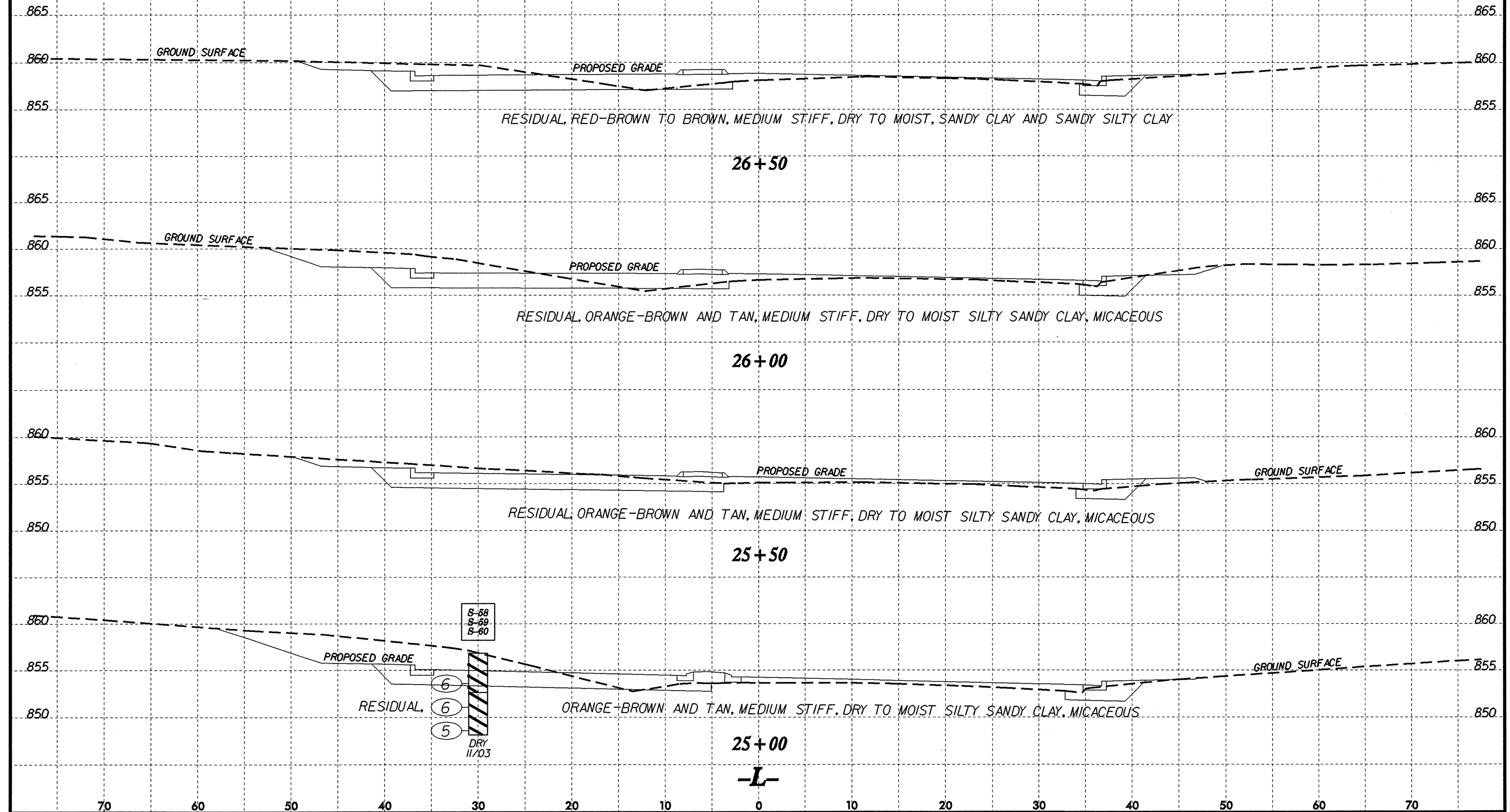


SOIL TEST RESULTS													
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)		
							C. SAND	F. SAND	SILT	CLAY	10	40	200
S- 8	40	23+50	1.0-1.5	A-2-7(8)	86	67	14.7	10.3	12.6	62.4	40	37	31
S- 9	40	23+50	1.5-2.0	A-7-5(64)	100	67	7.0	11.3	17.2	64.5	100	97	84
S- 10	40	23+50	2.5-3.0	A-7-6(14)	60	34	24.0	28.2	15.6	34.2	98	89	62



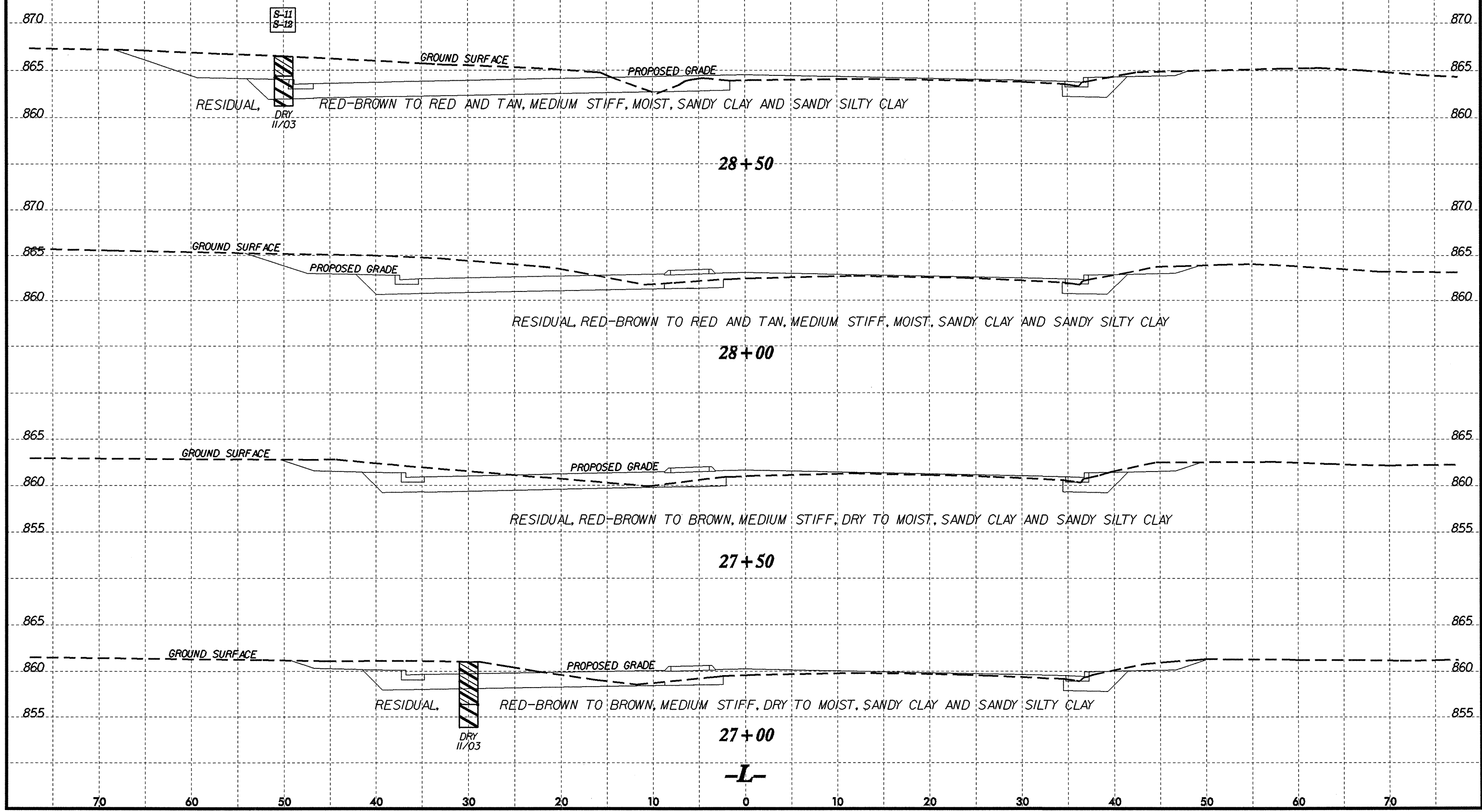
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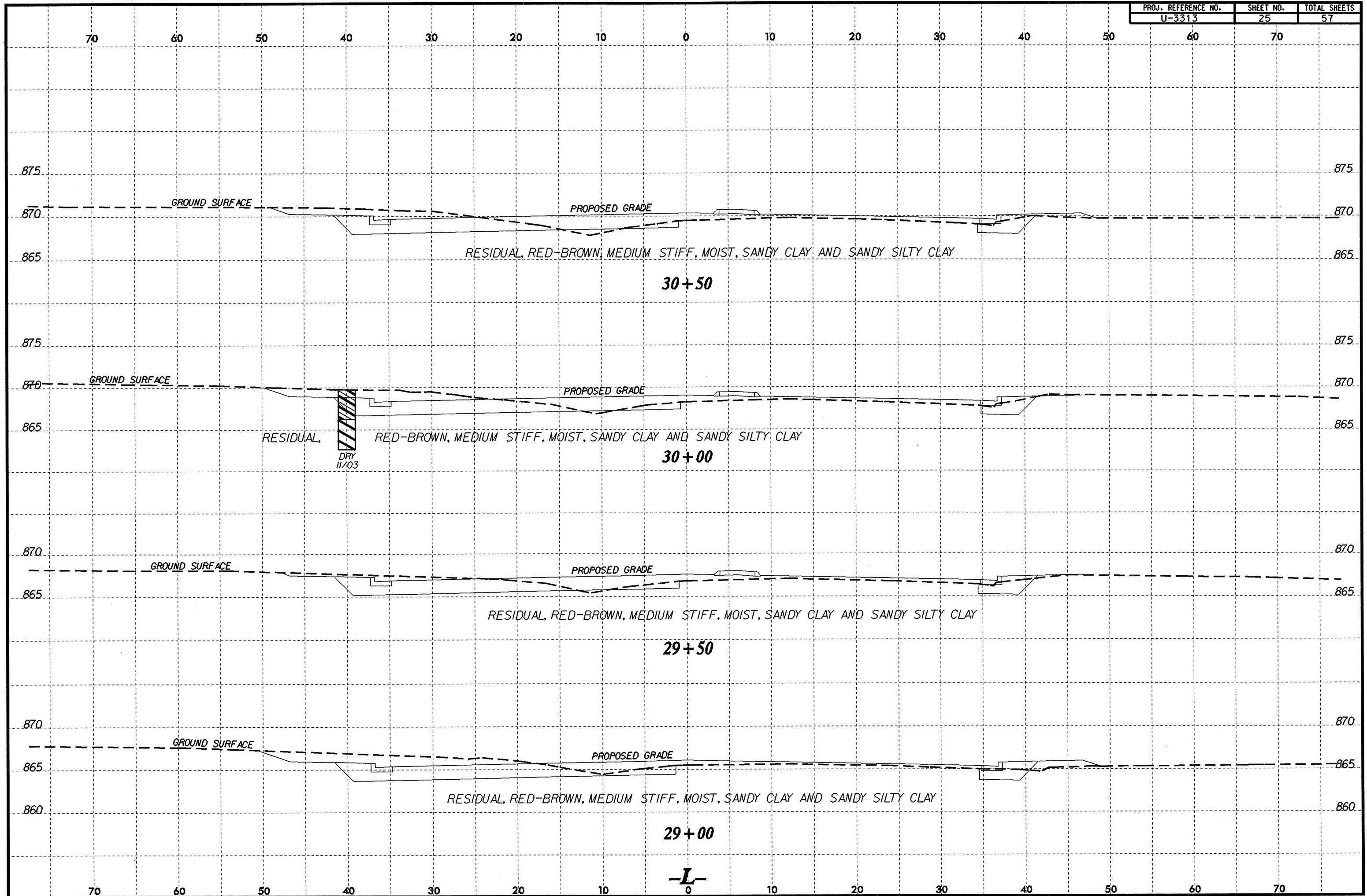
SOIL TEST RESULTS														
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE
							C. SAND	F. SAND	SILT	CLAY	10	40	200	
S- 58	-32	25+00	1.0-1.5	A-7-5(19)	65	27	19.1	18.5	24.2	38.2	100	88	66	42
S- 59	-32	25+00	2.6-3.0	A-7-5(24)	64	28	7.2	20.7	38.9	38.2	100	98	76	
S- 60	-32	25+00	4.4-5.0	A-7-5(24)	69	28	12.8	17.5	26.0	44.2	100	94	74	



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PI	% BY WEIGHT				% PASSING (SIEVES)		
							C. SAND	F. SAND	SILT	CLAY	10	40	200
S- 11	-50	28+50	1.0-1.5	A-6(7)	37	18	26.6	22.2	15.0	36.3	98	85	54
S- 12	-50	28+50	3.0-3.5	A-7-6(17)	58	17	13.1	10.3	24.3	52.4	100	92	79

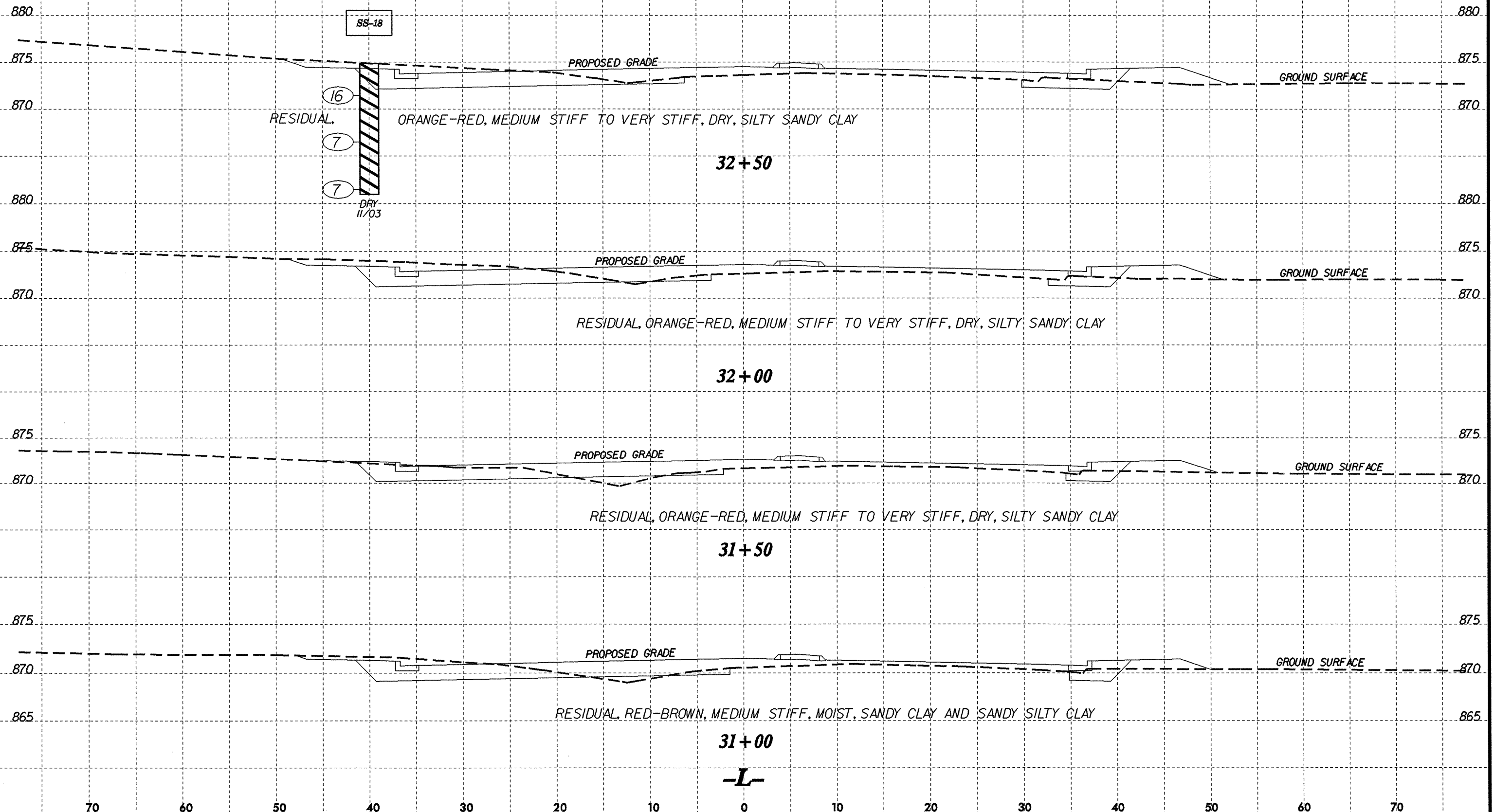




-L-

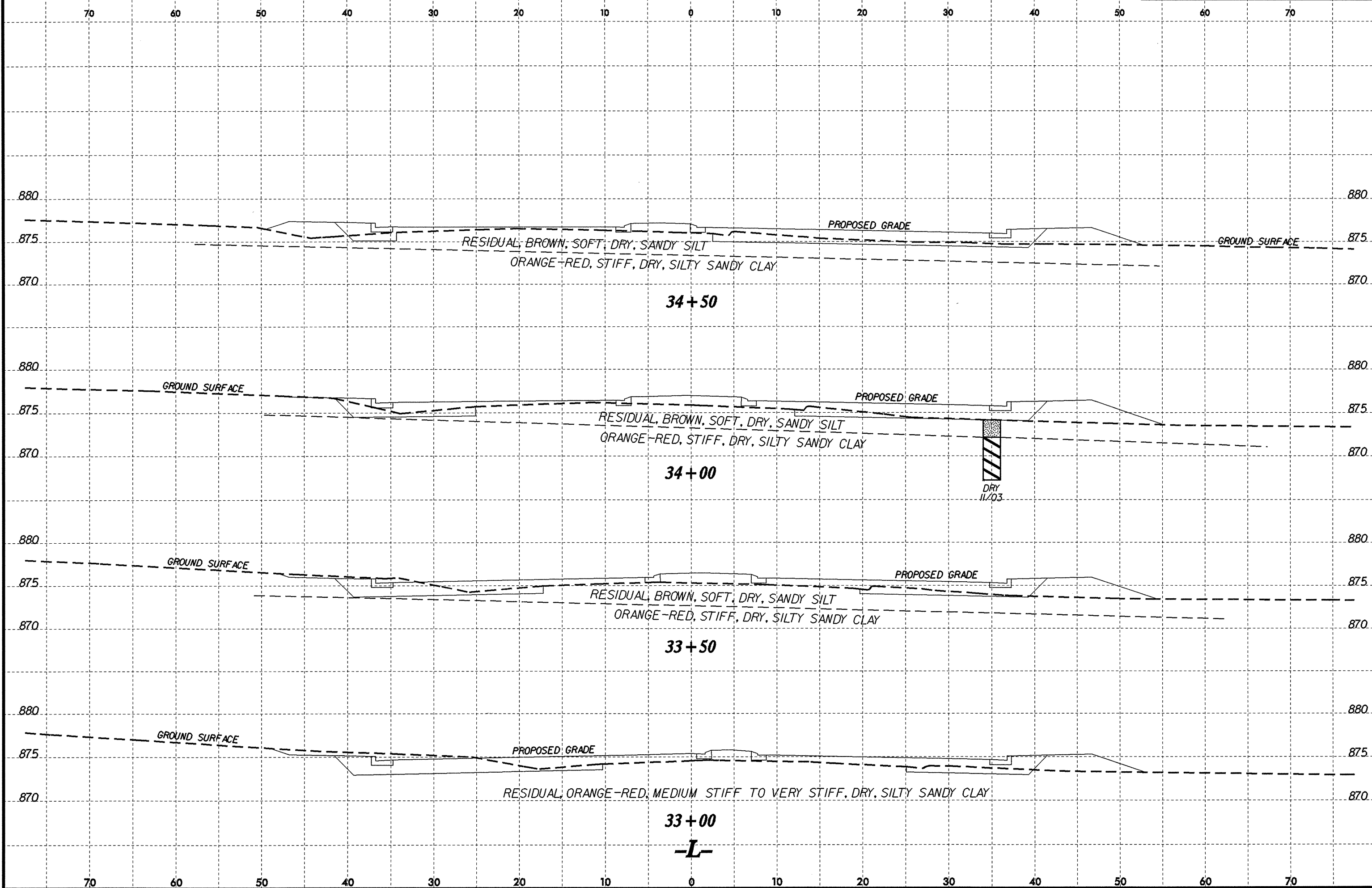
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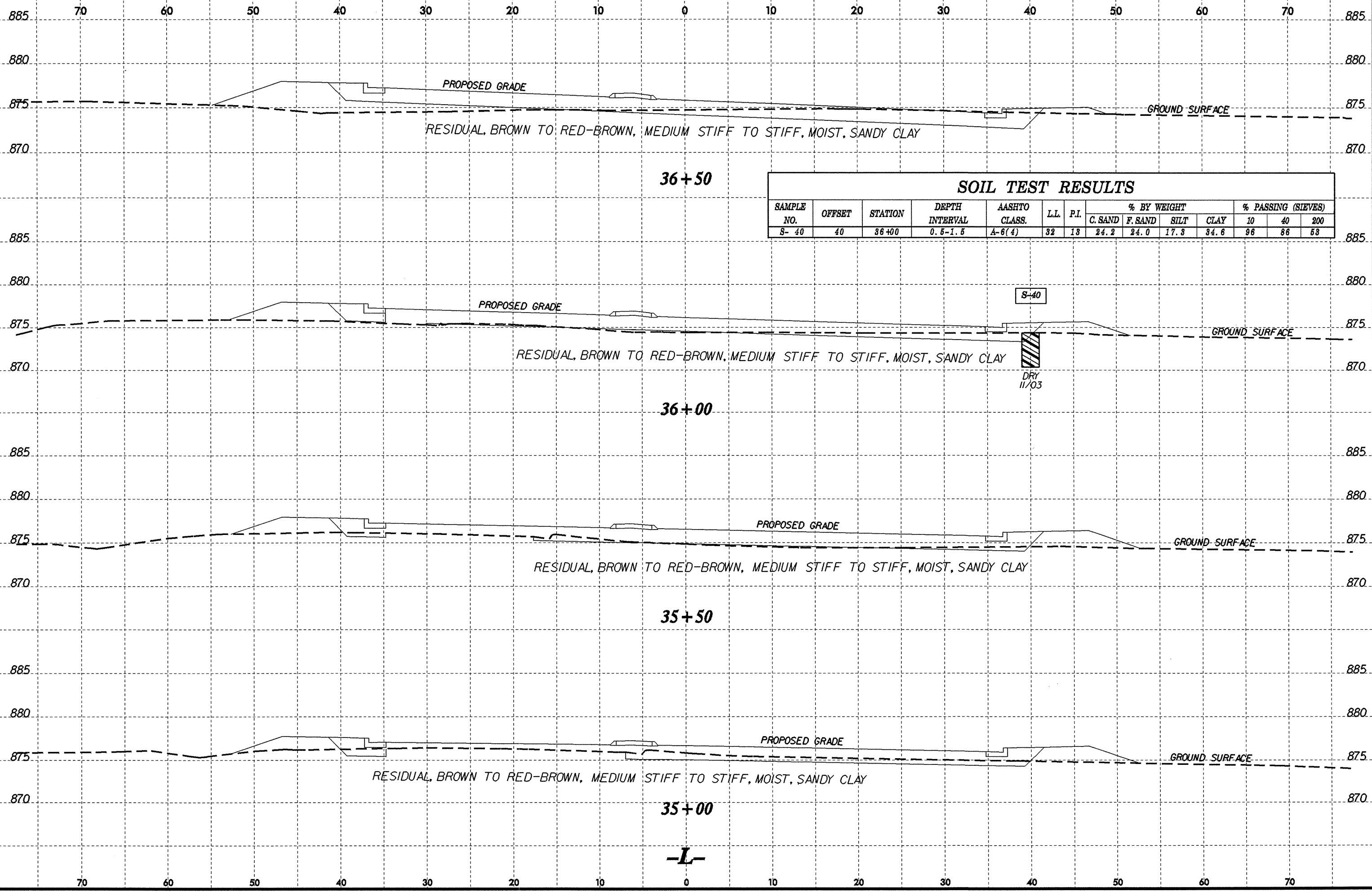
SOIL TEST RESULTS													
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)		
							C. SAND	F. SAND	SILT	CLAY	10	40	200
SS-18	-40	32+50	2.4-3.9	A-7-5(15)	63	23	24.6	16.5	18.6	40.3	100	86	62



-L-

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70





SOIL TEST RESULTS													
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)		
							C. SAND	F. SAND	SILT	CLAY	10	40	200
S-40	40	36+00	0.5-1.5	A-6(4)	32	13	24.2	24.0	17.3	34.6	96	86	53

36+50

36+00

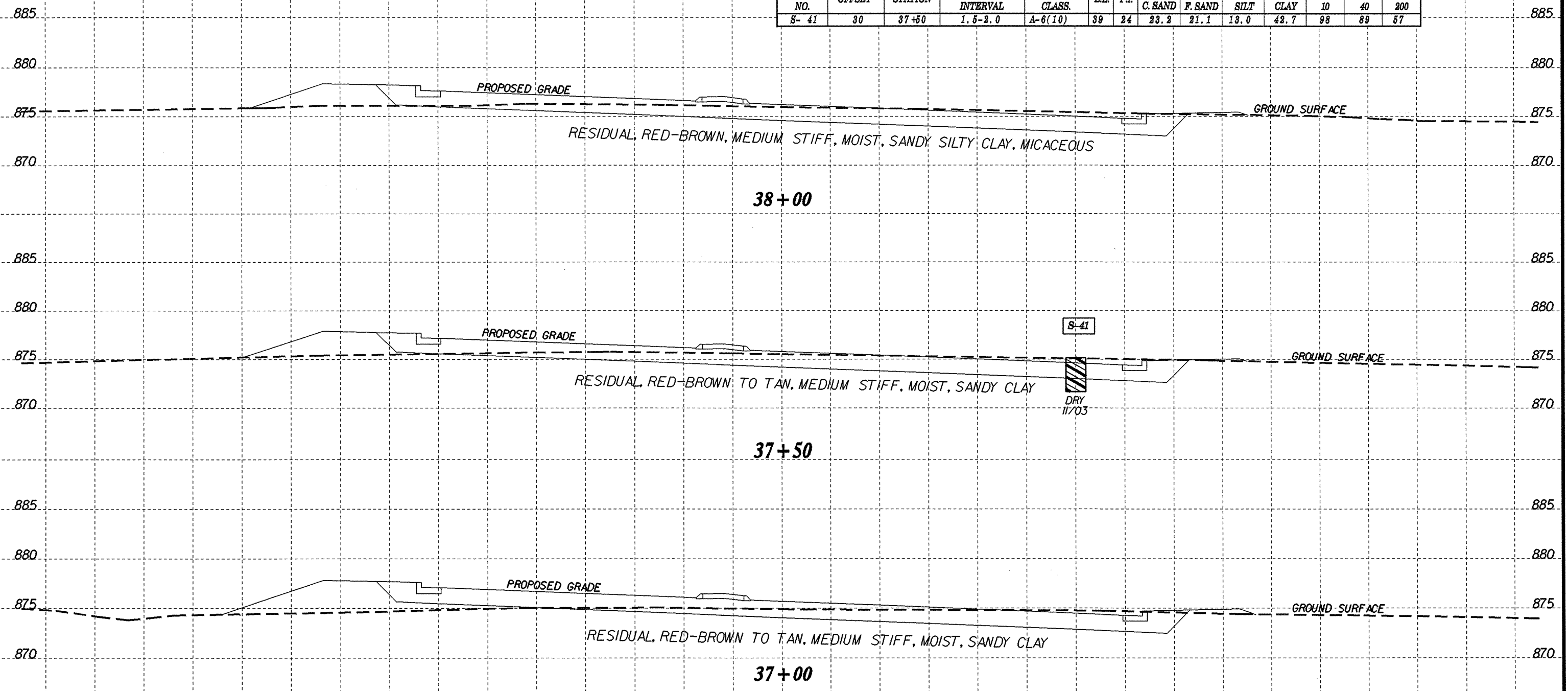
35+50

35+00

-L-

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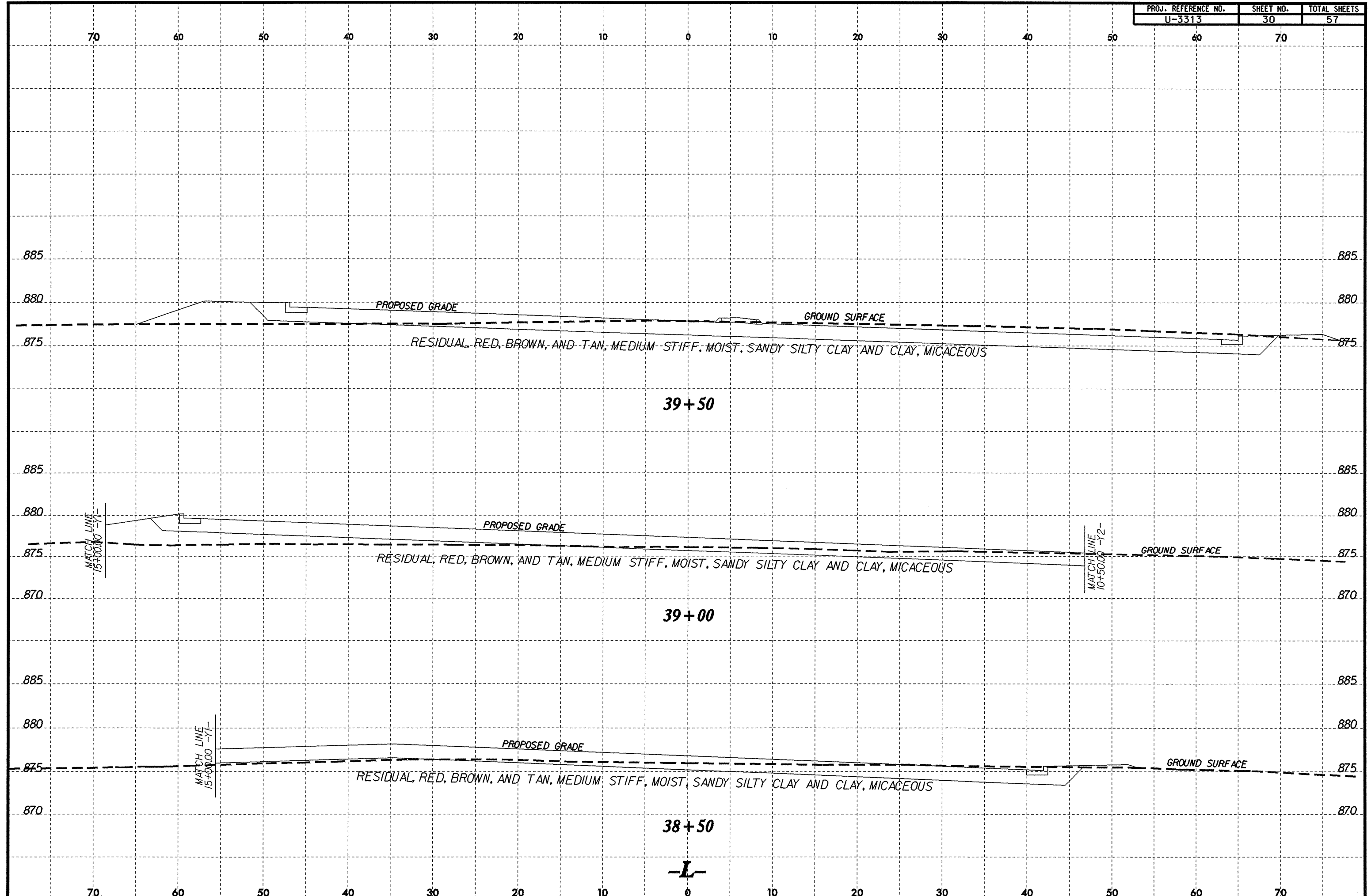
SOIL TEST RESULTS													
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)		
							C. SAND	F. SAND	SILT	CLAY	10	40	200
S-41	30	37+50	1.5-2.0	A-6(10)	39	24	23.2	21.1	13.0	42.7	98	89	57



-L-

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
U-3313	30	57



39+50

39+00

38+50

-L-

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

885 885

880 880

875 875

885 885

880 880

875 875

870 870

885 885

880 880

875 875

870 870

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

PROPOSED GRADE

GROUND SURFACE

RESIDUAL, RED, BROWN, AND TAN, MEDIUM STIFF, MOIST, SANDY SILTY CLAY AND CLAY, MICACEOUS

PROPOSED GRADE

GROUND SURFACE

RESIDUAL, RED, BROWN, AND TAN, MEDIUM STIFF, MOIST, SANDY SILTY CLAY AND CLAY, MICACEOUS

PROPOSED GRADE

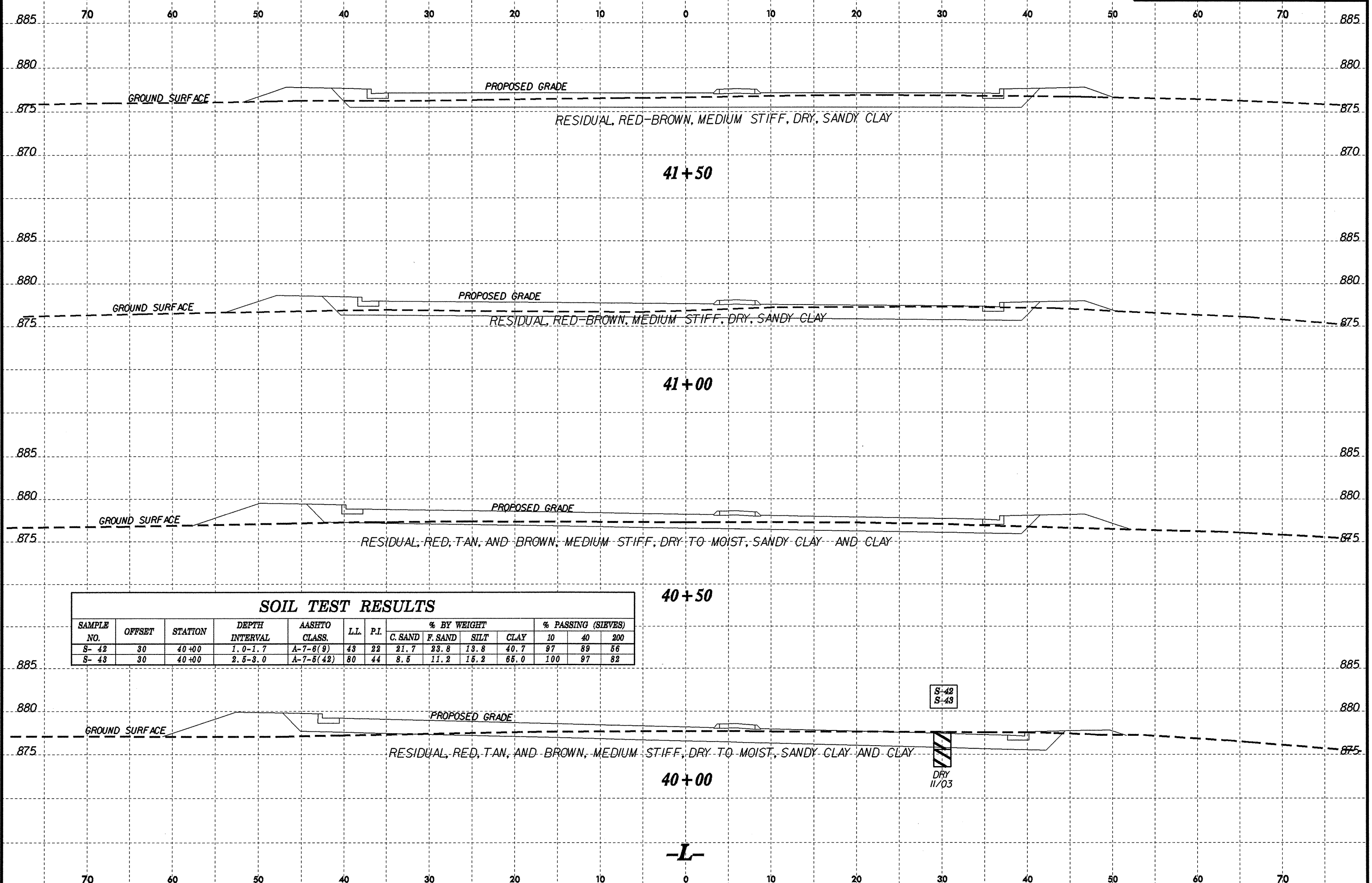
GROUND SURFACE

RESIDUAL, RED, BROWN, AND TAN, MEDIUM STIFF, MOIST, SANDY SILTY CLAY AND CLAY, MICACEOUS

MATCH LINE
15+00.00 -Y1-

MATCH LINE
10+50.00 -Y2-

MATCH LINE
15+00.00 -Y1-



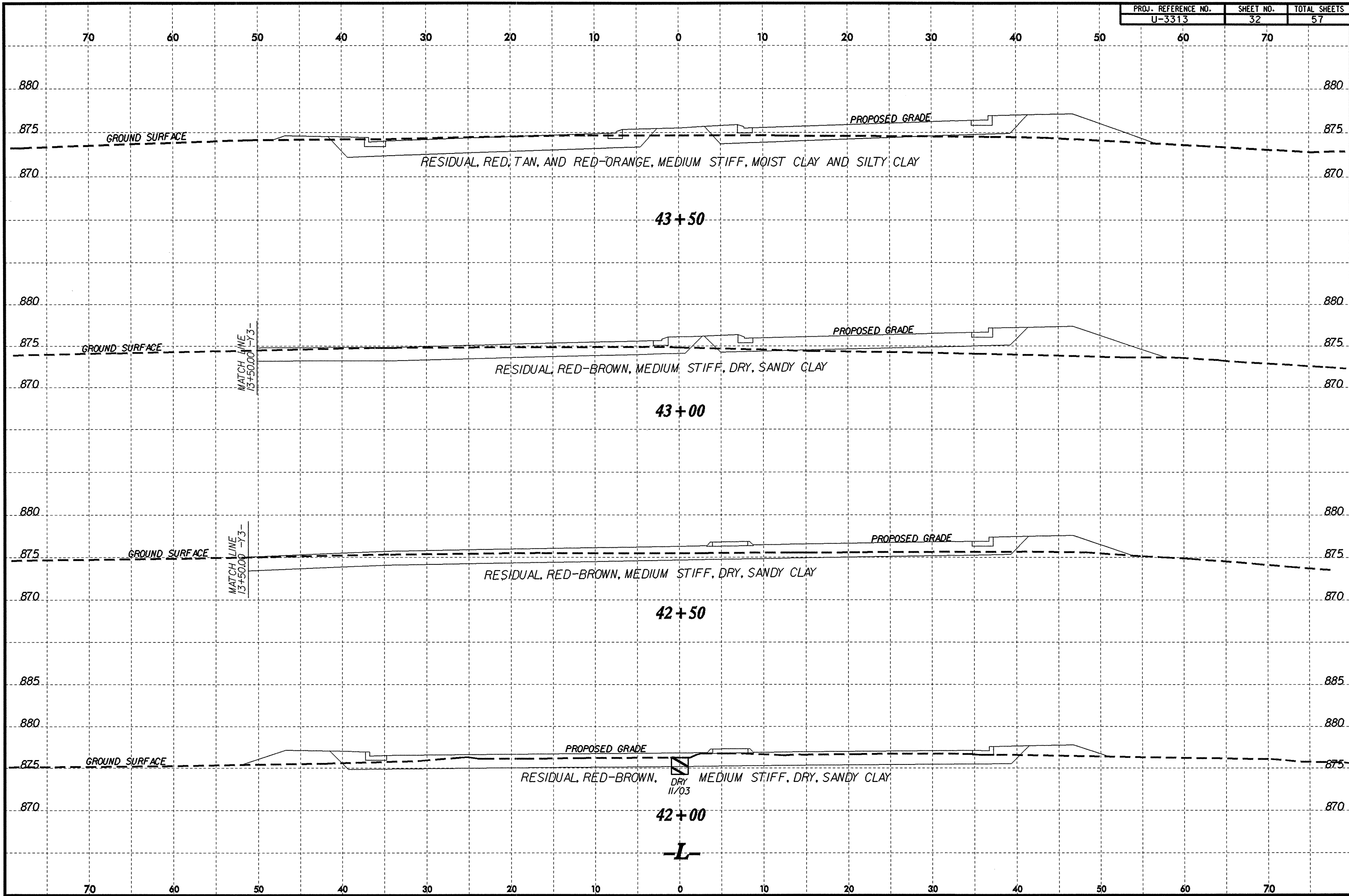
SOIL TEST RESULTS

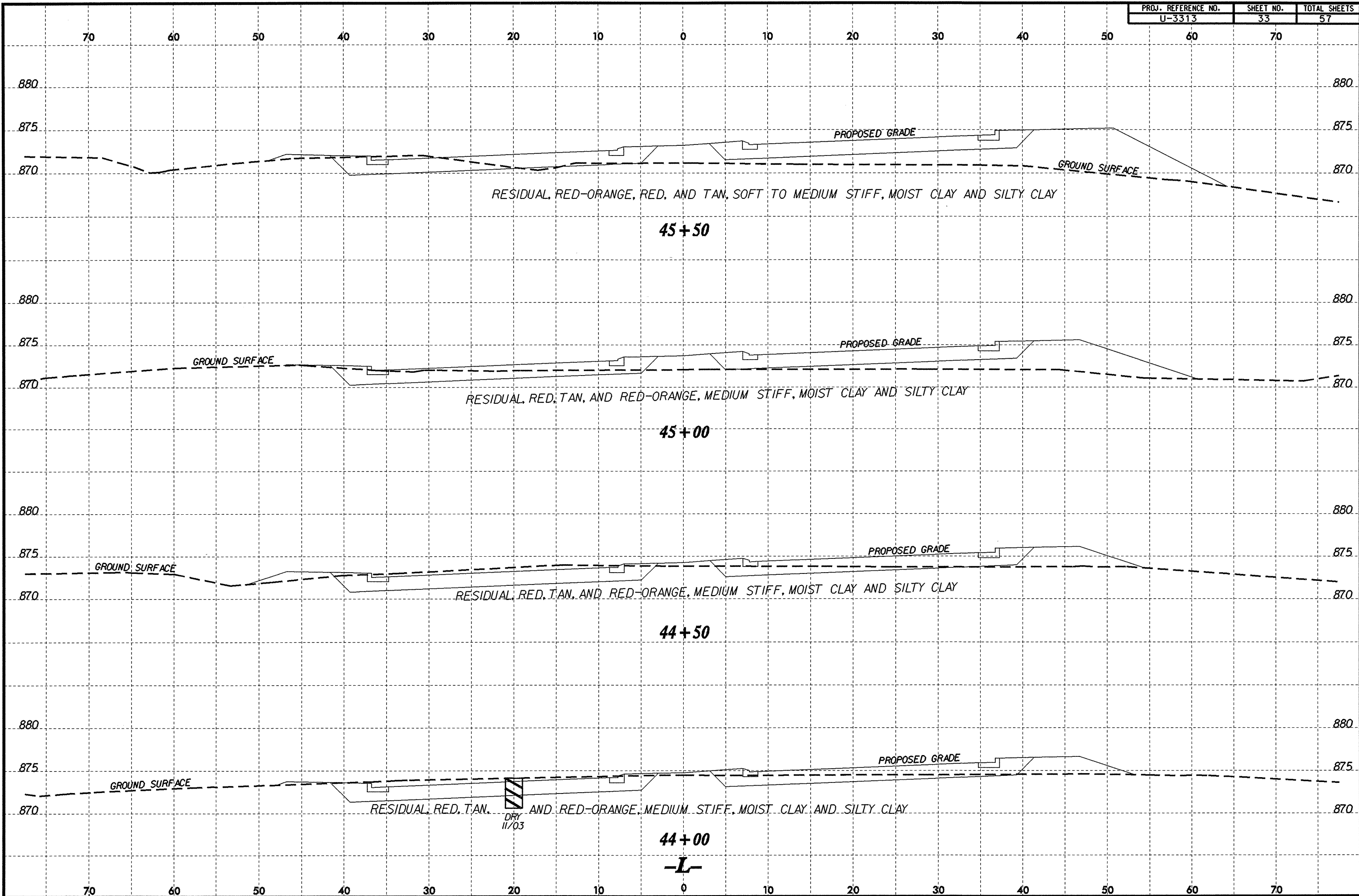
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							C. SAND	F. SAND	SILT	CLAY	10	40	200
S-42	30	40+00	1.0-1.7	A-7-6(9)	43	22	21.7	23.8	13.8	40.7	97	89	56
S-43	30	40+00	2.5-3.0	A-7-5(42)	80	44	8.5	11.2	15.2	65.0	100	97	82

S-42
S-43

DRY
11/03

-L-

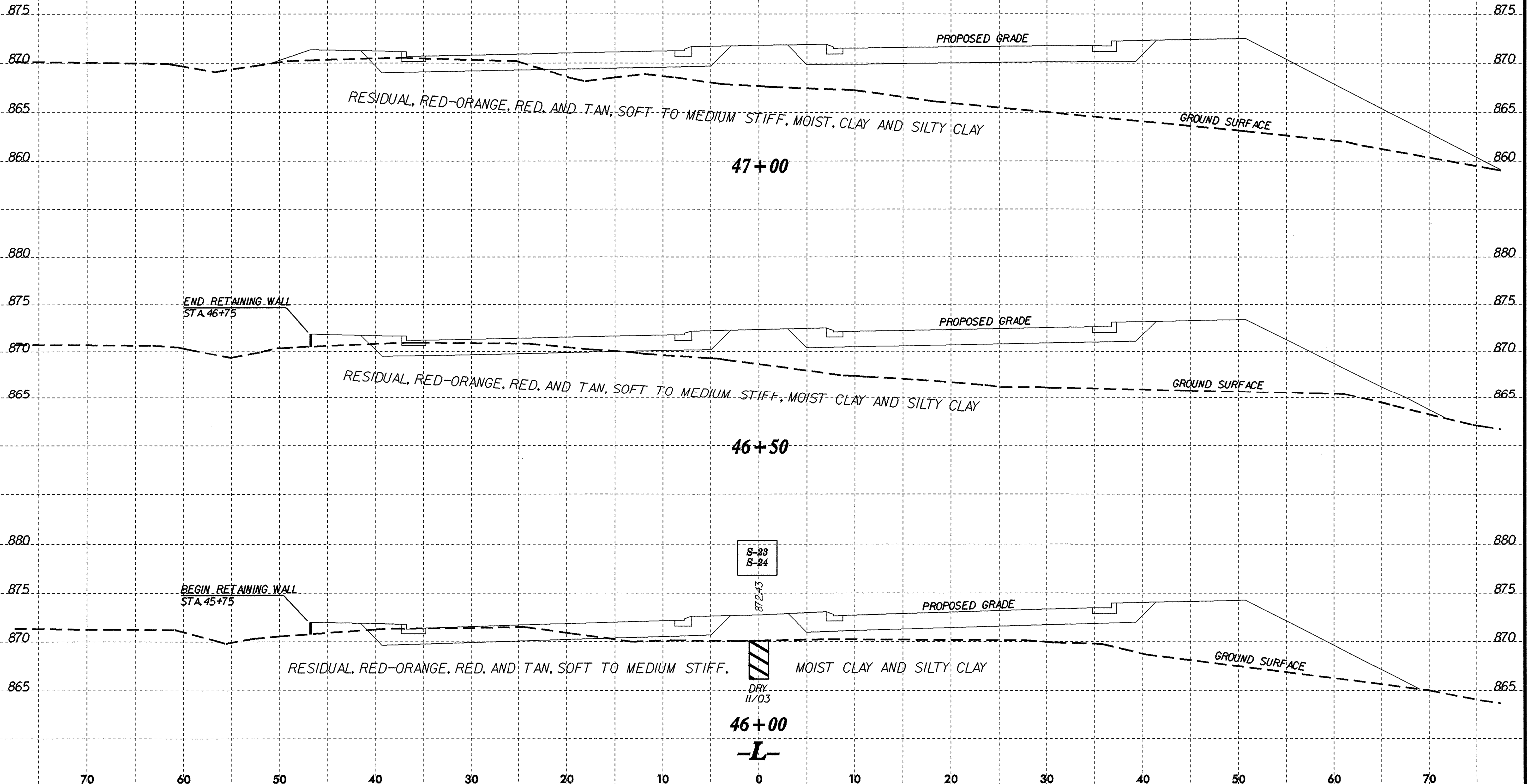




70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)		
							C. SAND	F. SAND	SILT	CLAY	10	40	200
S- 23	0	46+00	1.0-1.5	A-7-6(45)	75	47	7.0	9.3	17.2	66.5	100	97	86
S- 24	0	46+00	2.5-3.0	A-7-5(49)	88	48	6.0	12.9	26.7	54.4	100	98	85

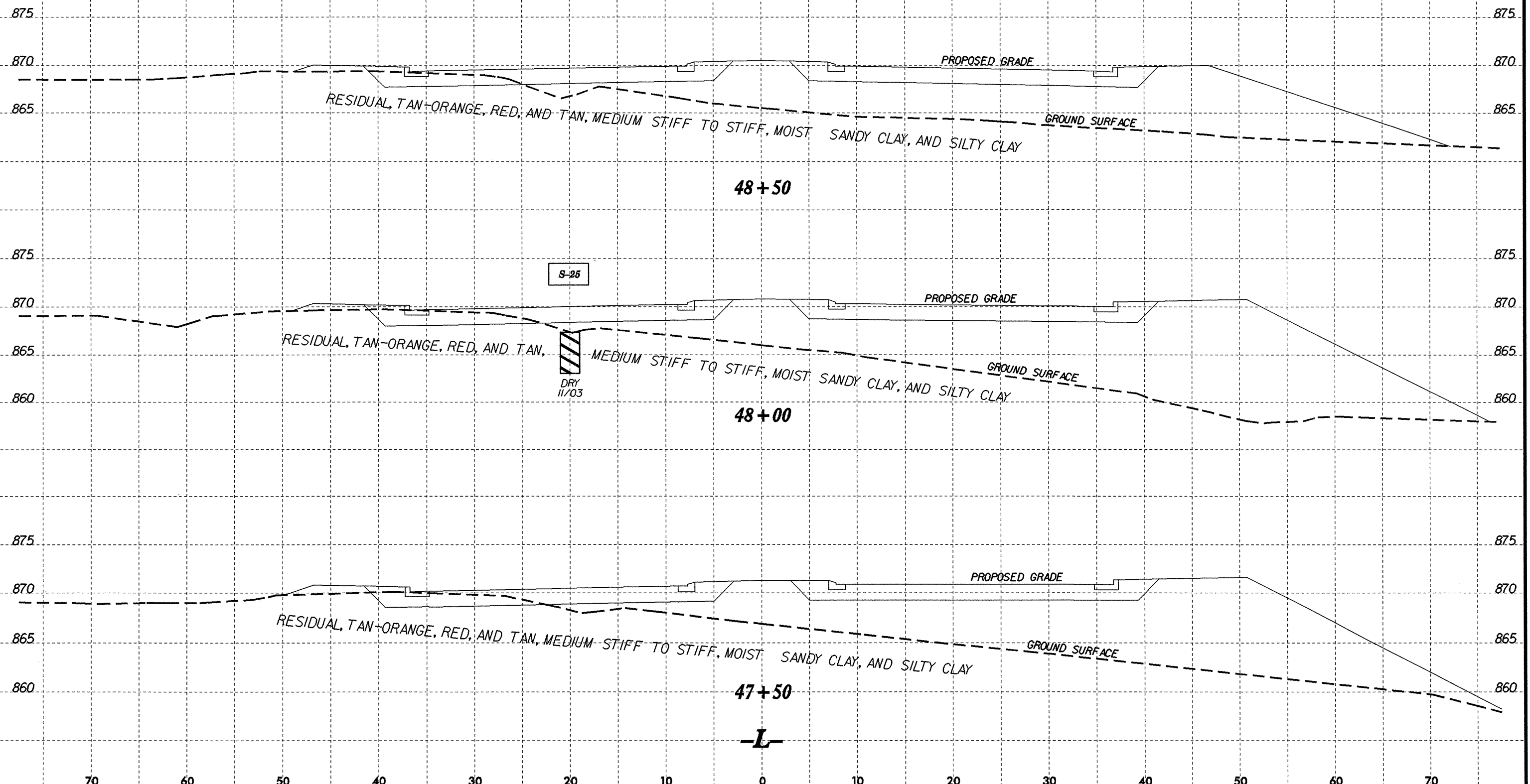


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70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)		
							C. SAND	F. SAND	SILT	CLAY	10	40	200
S-26	-20	48+00	1.2-1.7	A-7-6(37)	76	44	12.7	12.3	16.6	68.4	100	94	77

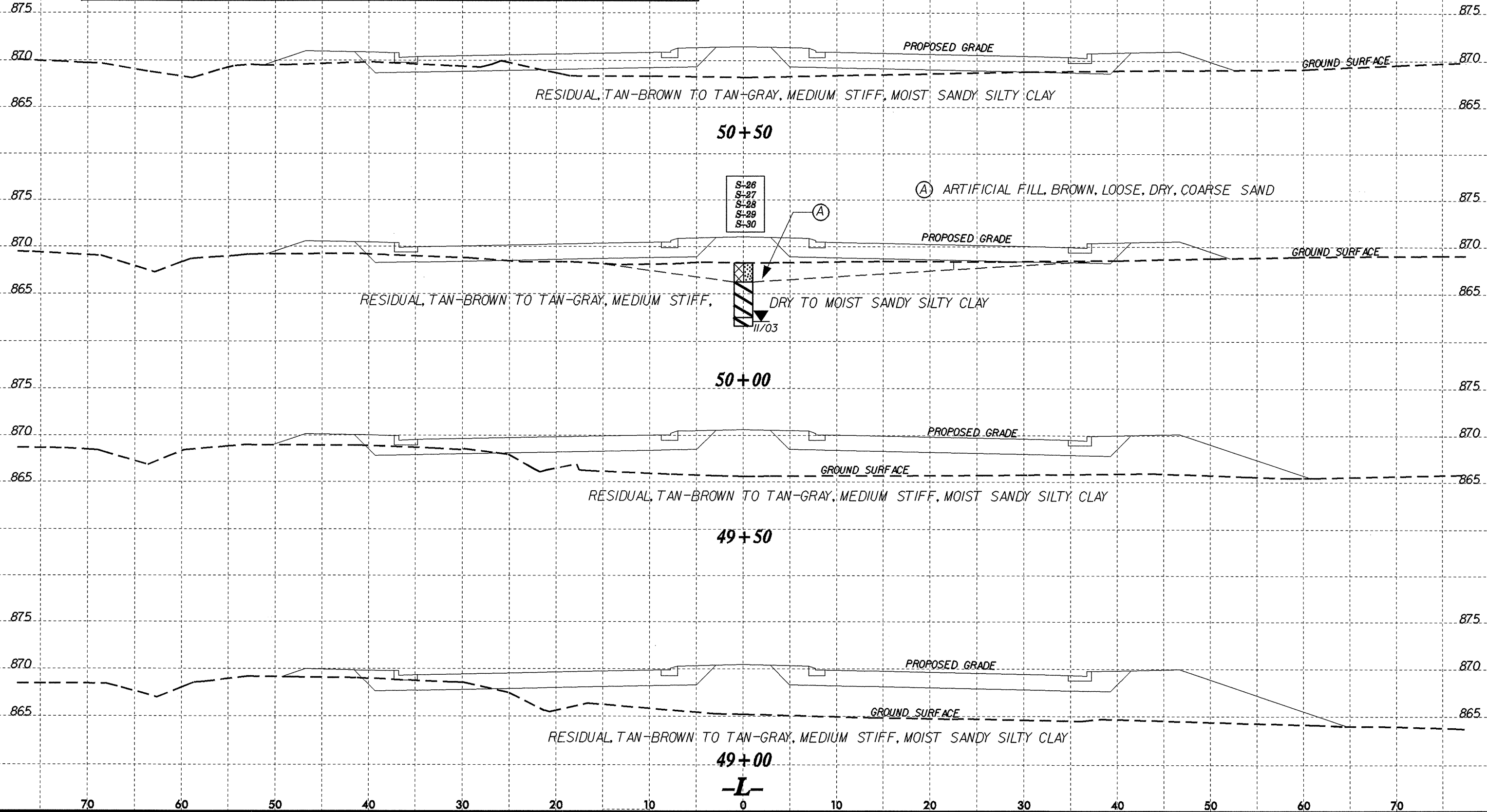


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70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

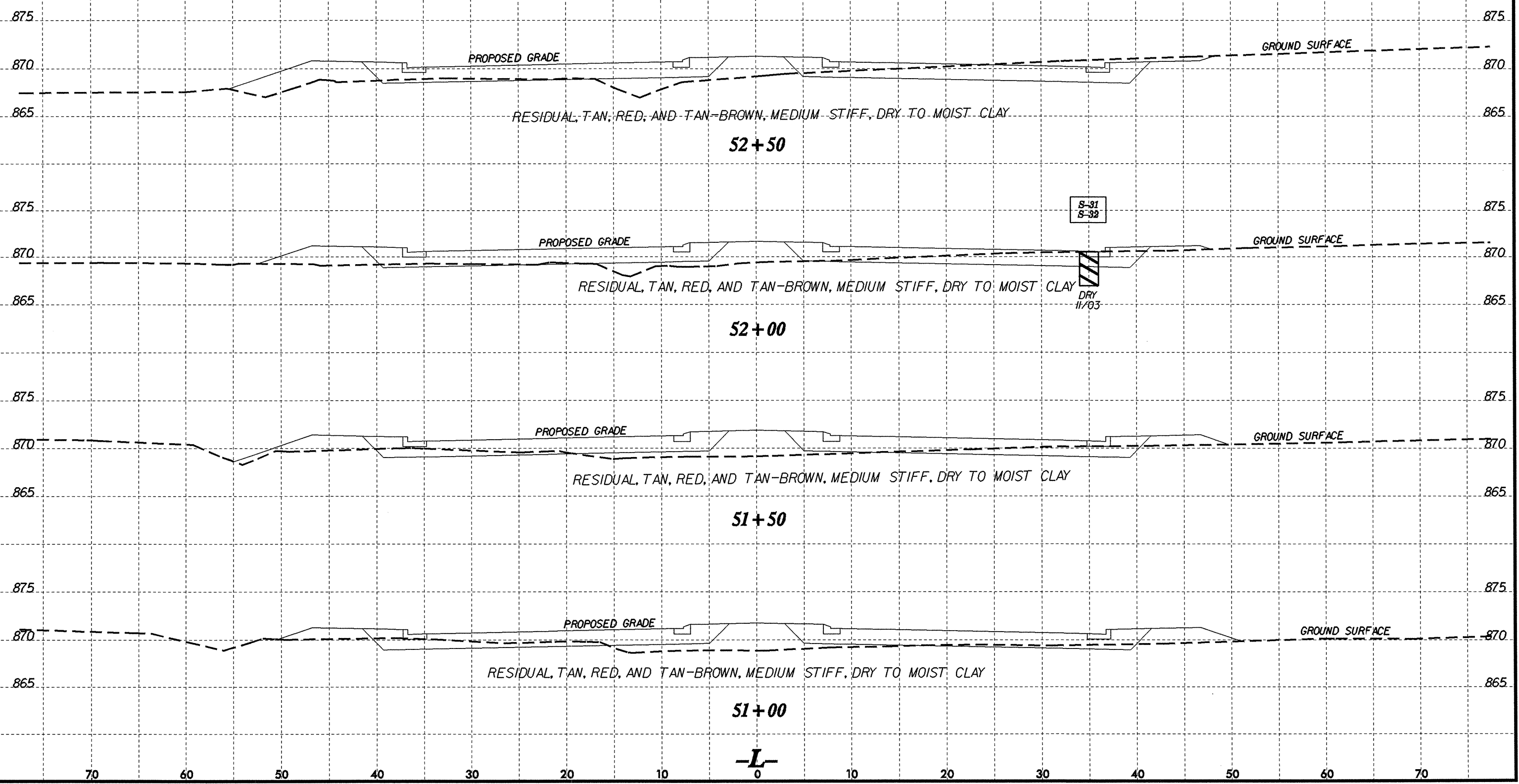
SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)		
							C. SAND	F. SAND	SILT	CLAY	10	40	200
S- 26	0	50+00	1.0-2.0	A-2-4(0)	20	4	49.1	29.8	9.0	12.1	86	63	21
S- 27	0	50+00	2.7-3.5	A-7-6(16)	48	29	18.1	20.9	16.6	44.3	97	88	63
S- 28	0	50+00	4.5-5.0	A-7-6(44)	83	55	12.9	11.9	14.8	60.4	97	90	75
S- 29	0	50+00	5.0-5.5	A-7-6(27)	61	38	12.1	20.1	23.5	44.3	100	95	72
S- 30	0	50+00	5.8-6.5	A-7-6(12)	46	17	10.7	26.2	34.9	28.2	100	96	71



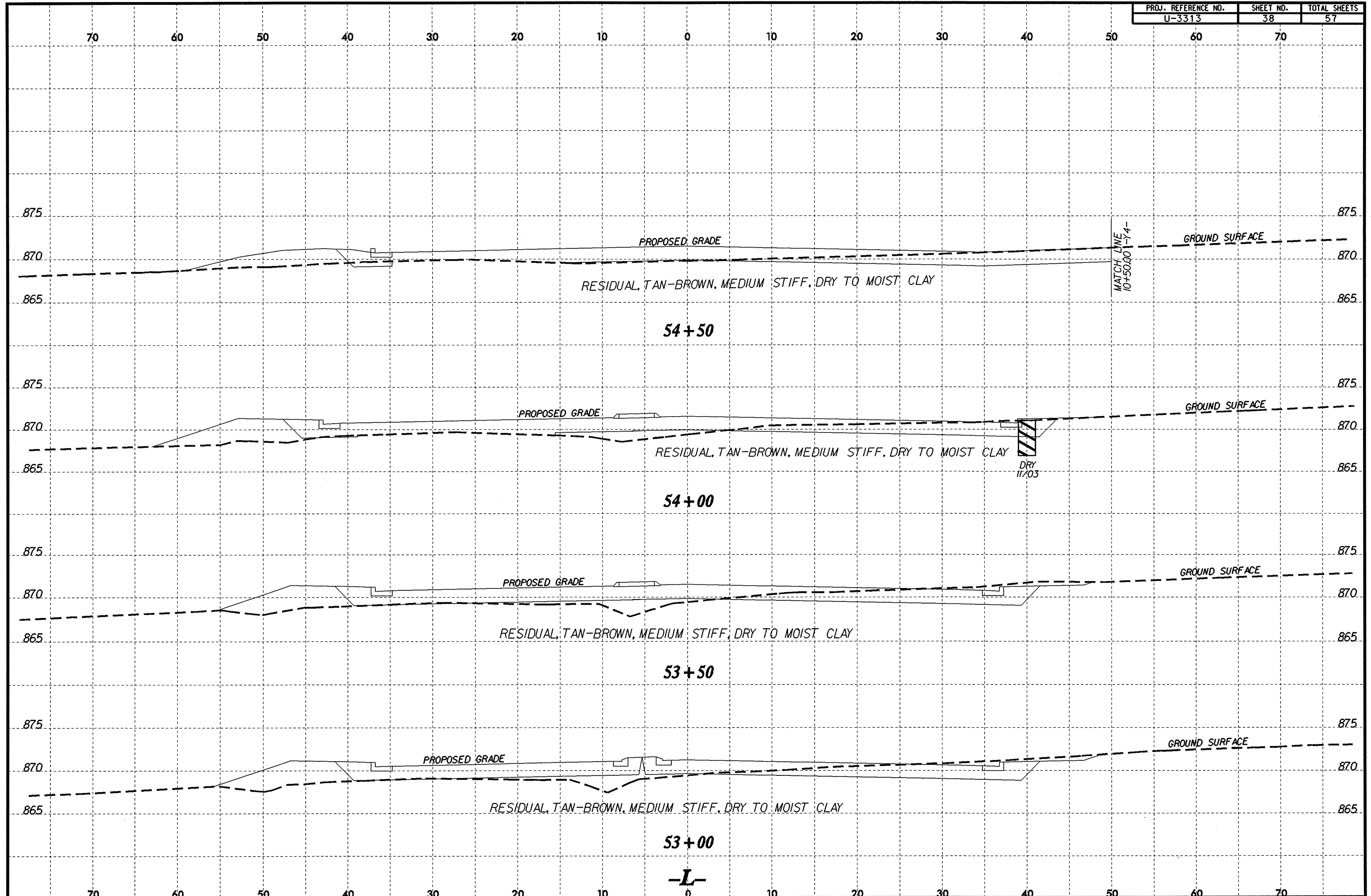
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SOIL TEST RESULTS													
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)		
							C. SAND	F. SAND	SILT	CLAY	10	40	200
S-31	35	52+00	1.0-2.0	A-7-5(49)	79	49	5.9	8.5	16.5	69.1	100	98	87
S-32	35	52+00	2.5-3.2	A-7-5(71)	97	62	1.6	6.3	25.0	67.1	100	99	95



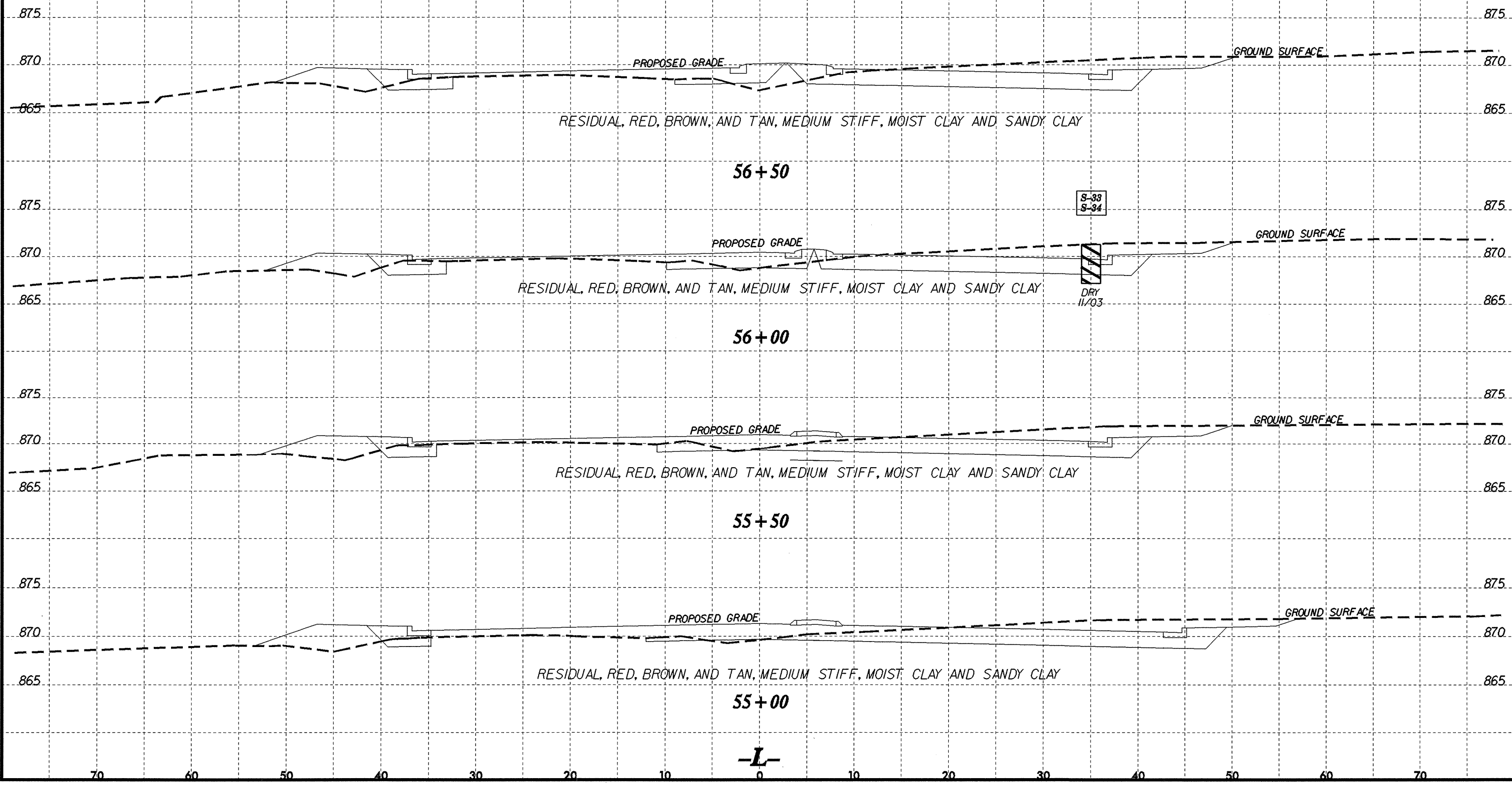
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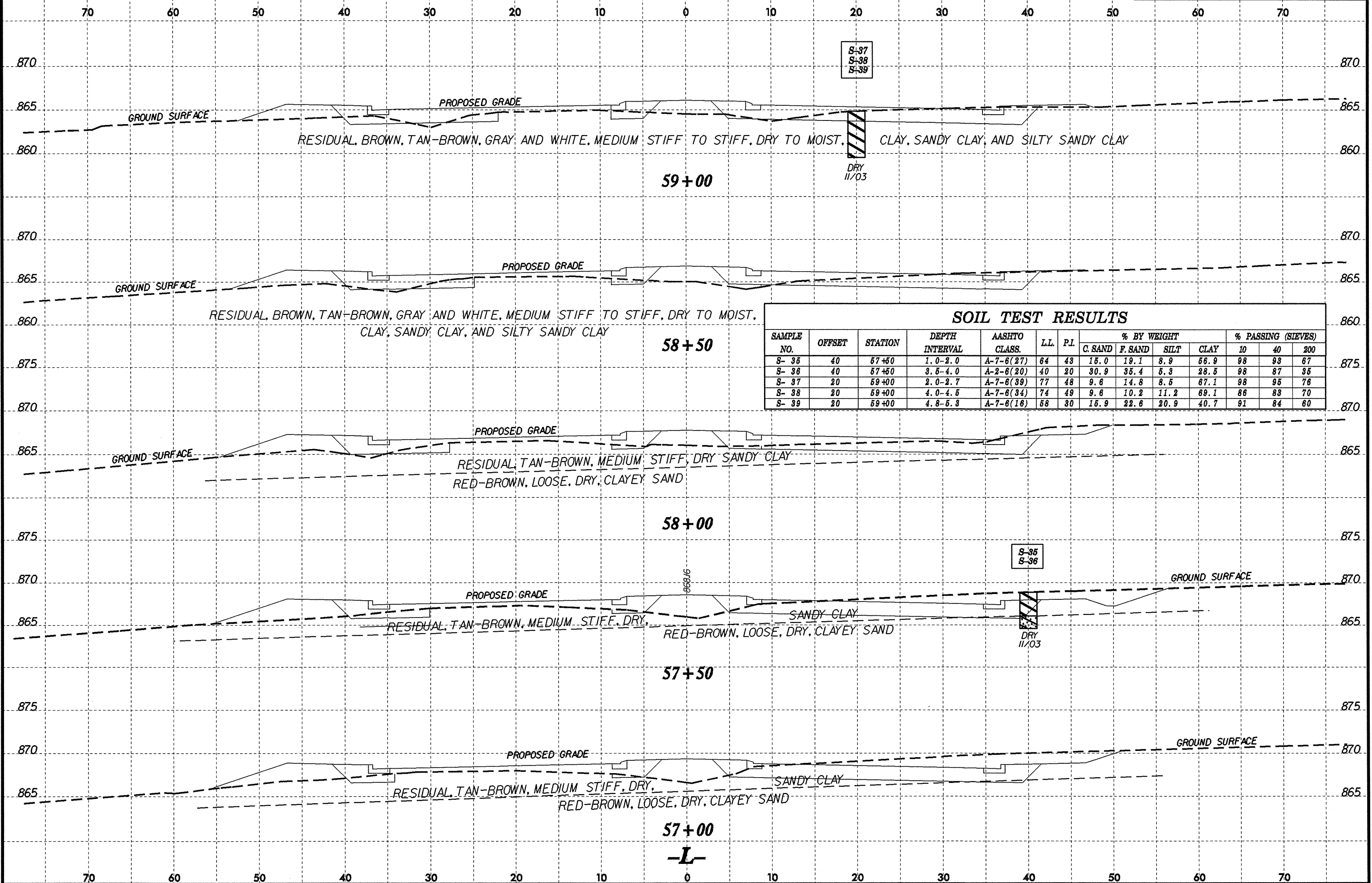
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70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

SOIL TEST RESULTS													
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)		
							C. SAND	F. SAND	SILT	CLAY	10	40	200
S- 33	35	56+00	1.0-2.0	A-7-6(30)	71	39	10.6	16.5	12.0	61.0	98	95	73
S- 34	35	56+00	3.5-4.0	A-7-6(58)	87	58	5.3	8.3	17.3	69.1	100	97	88





SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)		
							C. SAND	F. SAND	SILT	CLAY	10	40	200
S-35	40	57+50	1.0-2.0	A-7-6(27)	64	48	15.0	19.1	8.9	56.9	98	93	67
S-36	40	57+50	3.5-4.0	A-2-6(20)	40	20	30.9	35.4	5.3	28.5	98	87	35
S-37	20	59+00	2.0-2.7	A-7-6(39)	77	48	9.6	14.8	8.5	67.1	98	95	76
S-38	20	59+00	4.0-4.5	A-7-6(34)	74	49	9.6	10.2	11.2	69.1	86	83	70
S-39	20	59+00	4.8-5.3	A-7-6(16)	68	30	15.9	22.6	20.9	40.7	91	84	60

57+00

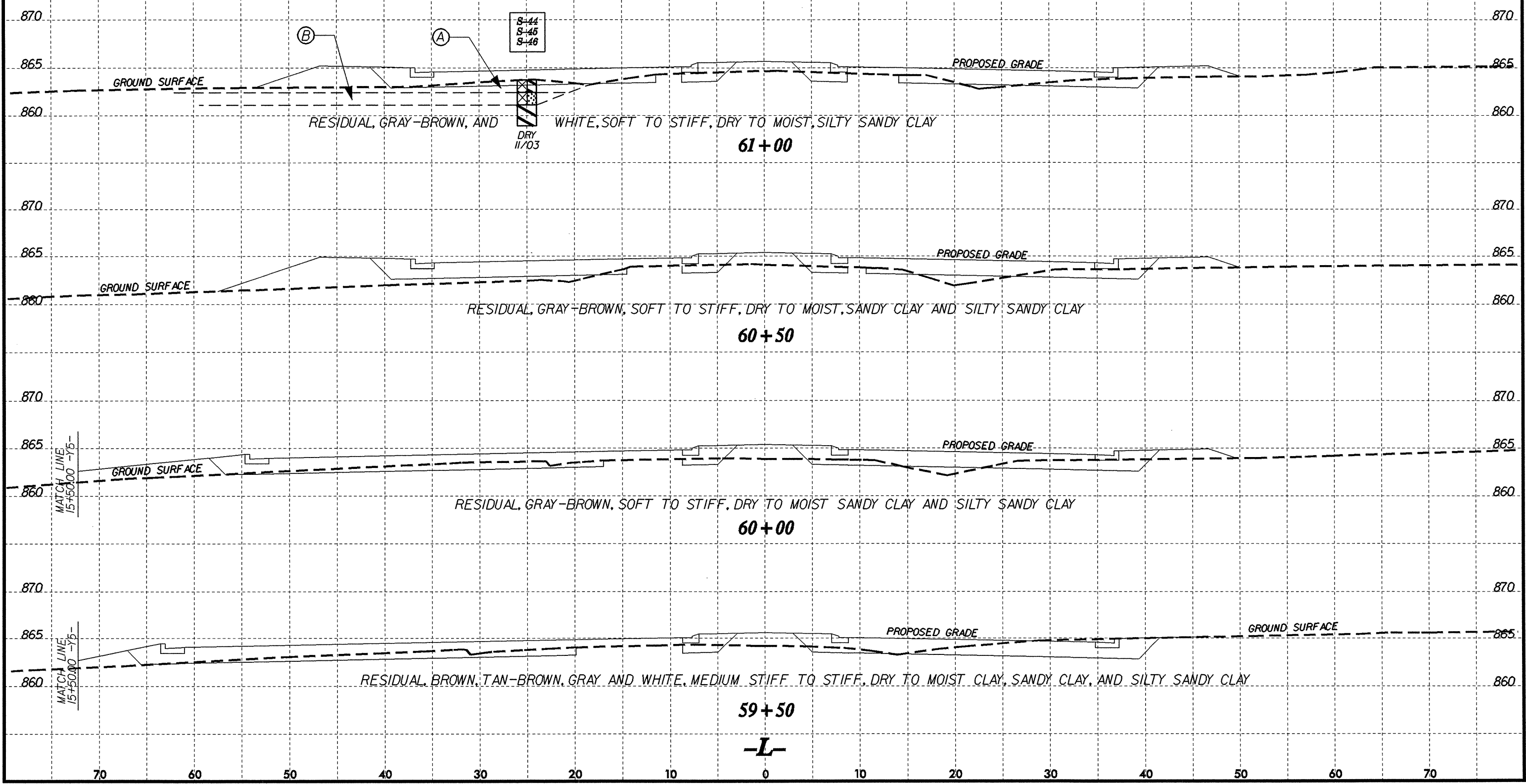
-L-

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE
							C. SAND	F. SAND	SILT	CLAY	10	40	200	
S- 44	-25	61+00	0.5-1.0	A-7-6(12)	43	25	22.8	21.5	13.0	42.7	99	86	59	
S- 45	-25	61+00	1.8-2.5	A-2-4(0)	19	5	22.2	42.1	21.5	14.2	78	72	32	
S- 46	-25	61+00	3.5-4.0	A-7-6(23)	55	34	9.3	19.7	12.0	58.9	96	93	71	29.5

- Ⓐ ARTIFICIAL FILL, BROWN, MEDIUM STIFF TO STIFF, MOIST, SANDY CLAY
- Ⓑ ARTIFICIAL FILL, BROWN, LOOSE TO MEDIUM DENSE, MOIST SILTY SAND

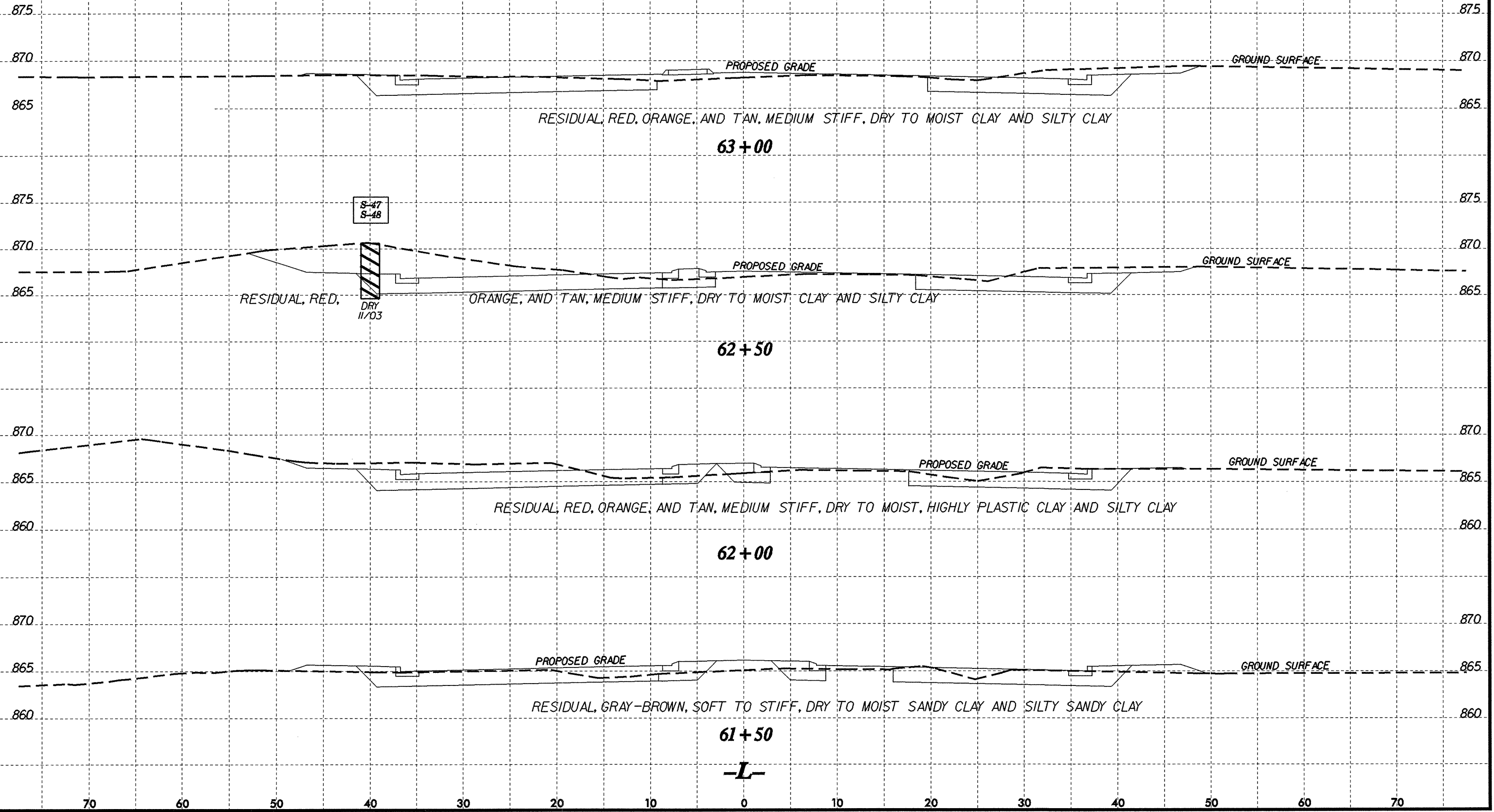


-L-

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

SOIL TEST RESULTS

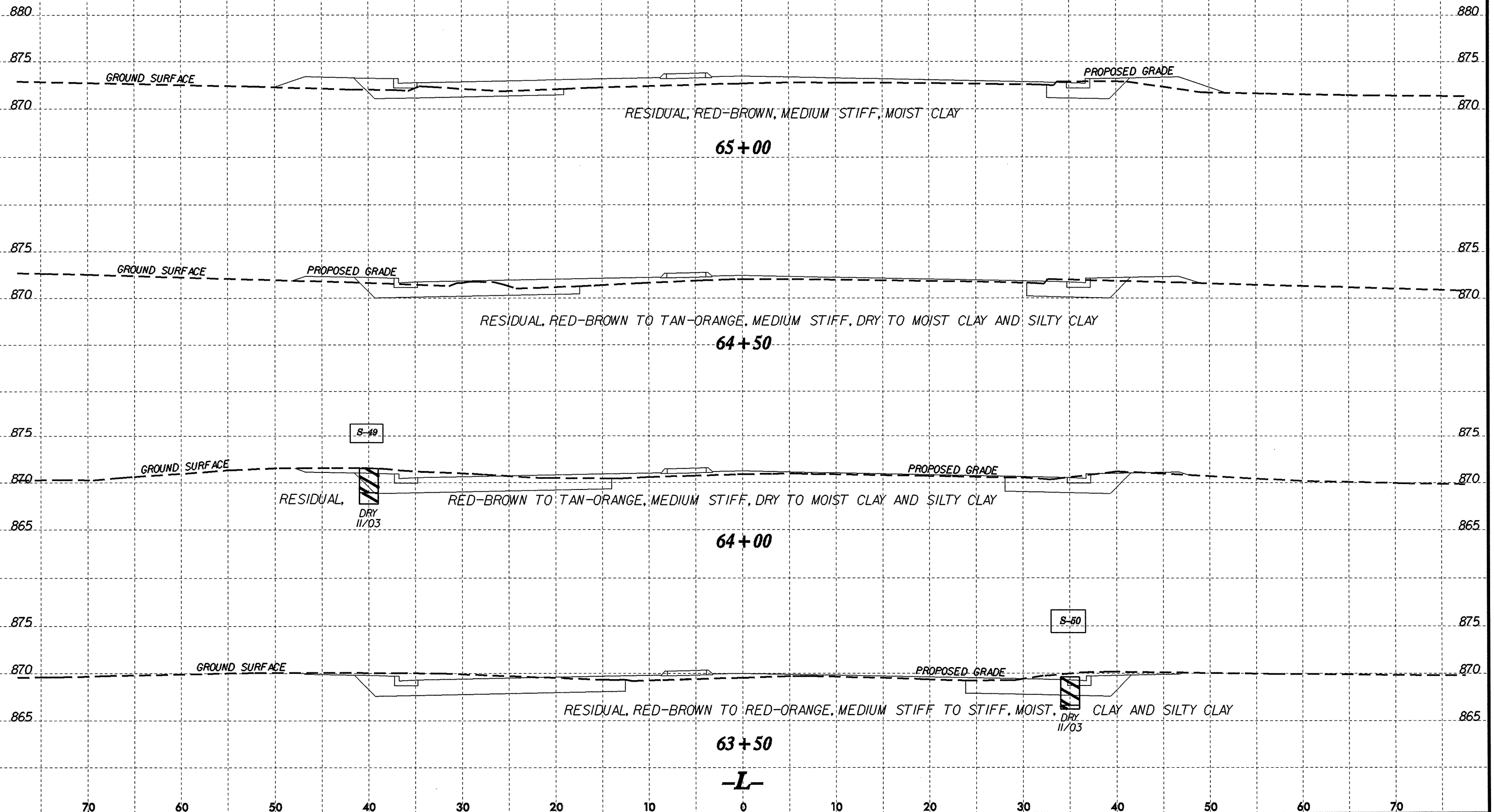
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)		
							C. SAND	F. SAND	SILT	CLAY	10	40	200
S-47	-40	62+50	1.0-2.0	A-7-5(37)	71	35	3.9	10.8	20.3	65.0	100	99	88
S-48	-40	62+50	4.0-4.5	A-7-5(38)	72	33	1.8	11.8	37.6	48.8	100	99	81



-L-

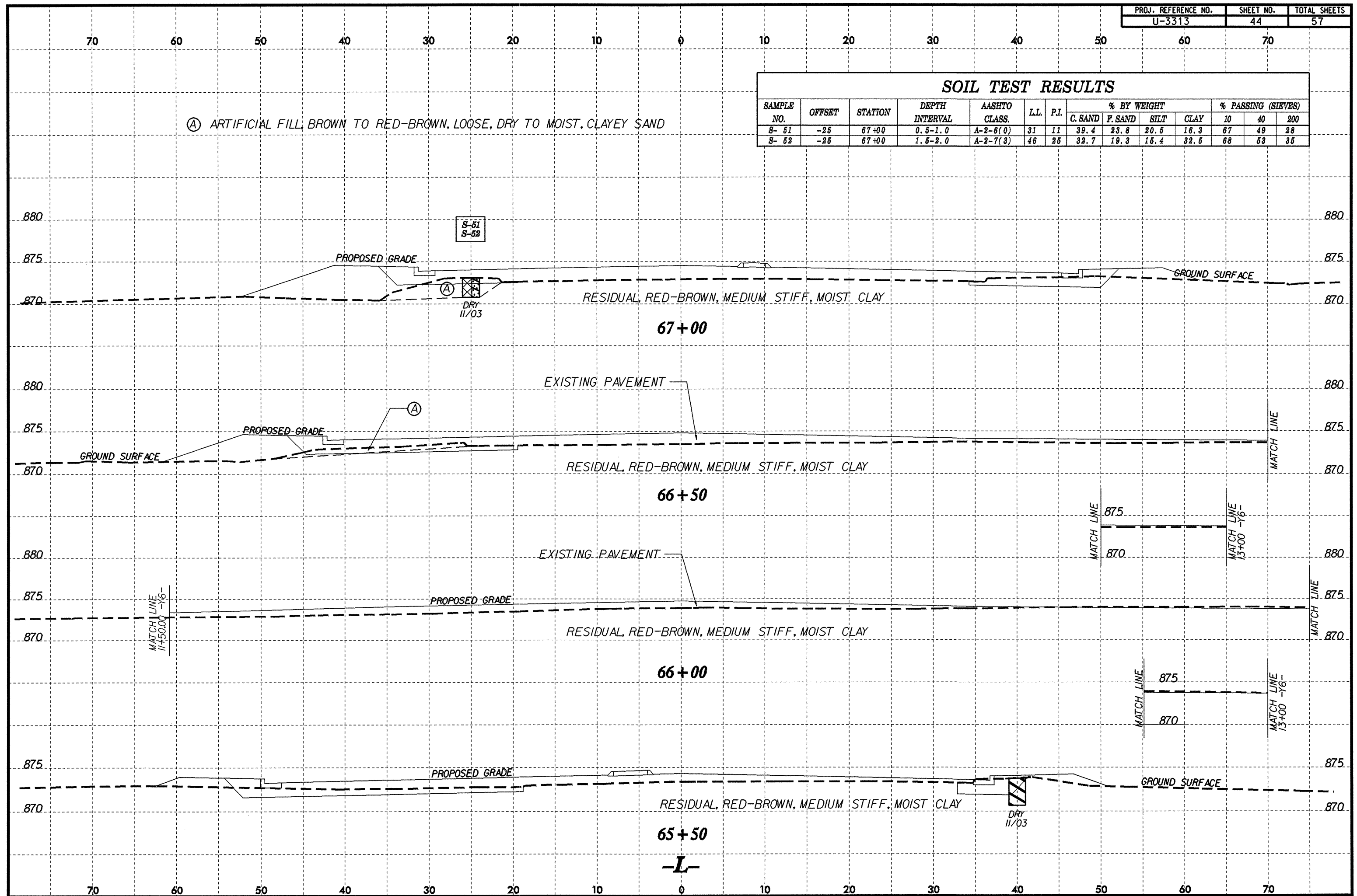
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SOIL TEST RESULTS													
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PI	% BY WEIGHT				% PASSING (SIEVES)		
							C. SAND	F. SAND	SILT	CLAY	10	40	200
S- 60	36	63+80	1.0-1.7	A-7-5(58)	90	48	1.4	4.7	16.7	77.2	100	99	96
S- 49	-40	64+00	0.6-1.0	A-7-5(64)	86	59	2.4	4.1	16.9	77.2	96	96	91



70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

SOIL TEST RESULTS													
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)		
							C. SAND	F. SAND	SILT	CLAY	10	40	200
S- 51	-25	67+00	0.5-1.0	A-2-6(0)	31	11	39.4	23.8	20.5	16.3	67	49	28
S- 52	-25	67+00	1.5-2.0	A-2-7(3)	46	25	32.7	19.3	15.4	32.5	68	53	35



Ⓐ ARTIFICIAL FILL, BROWN TO RED-BROWN, LOOSE, DRY TO MOIST, CLAYEY SAND

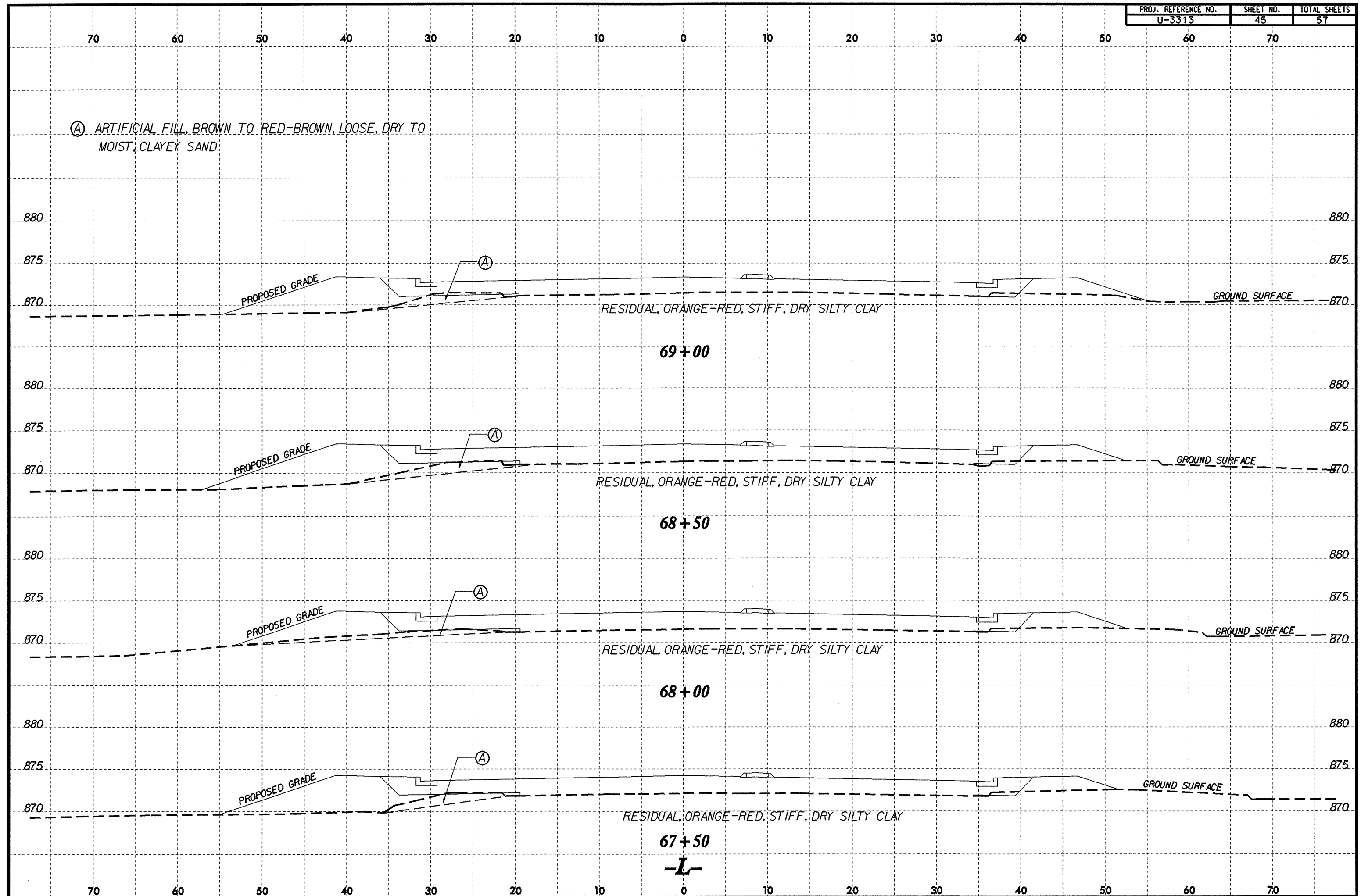
67+00

66+50

66+00

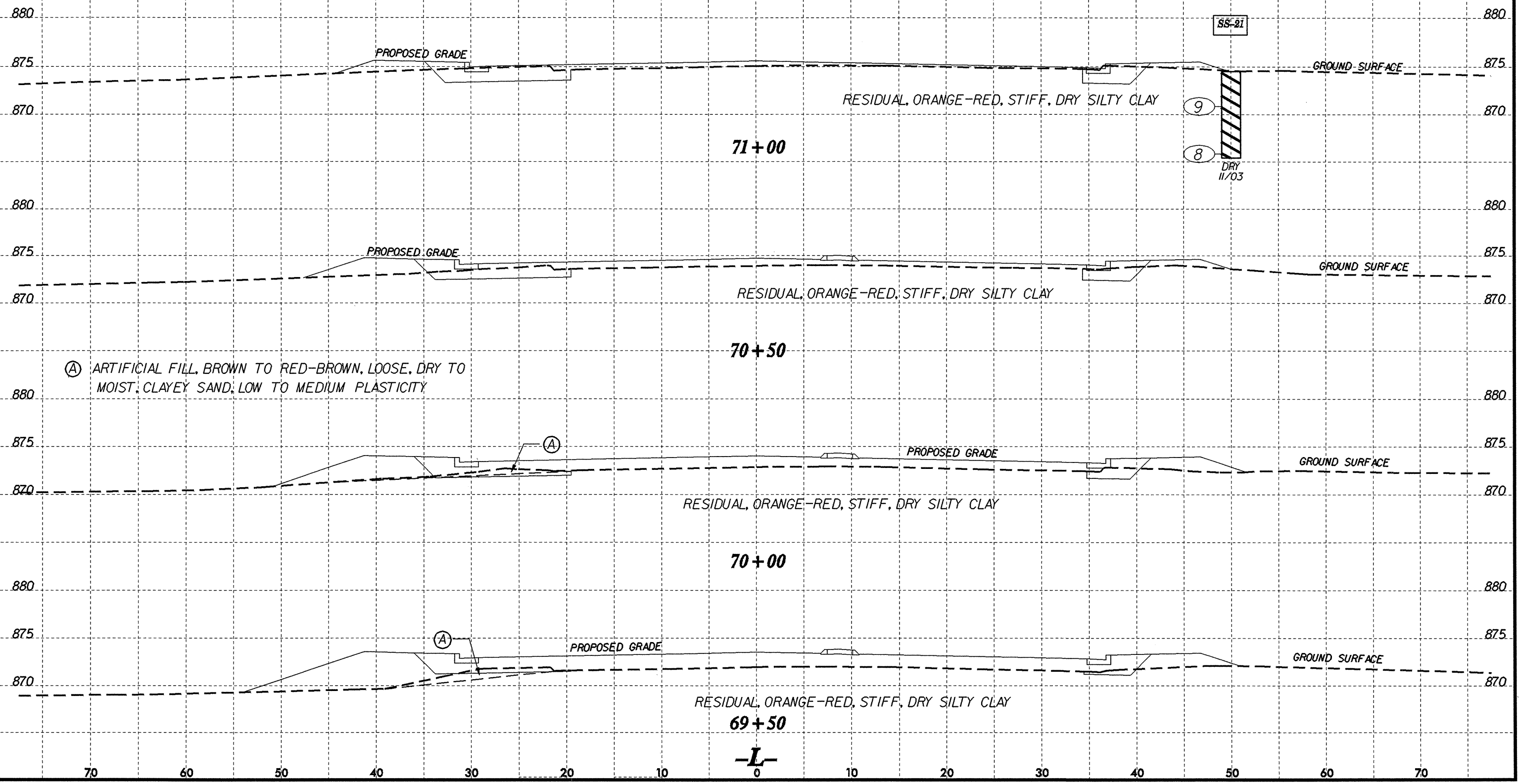
65+50

-L-

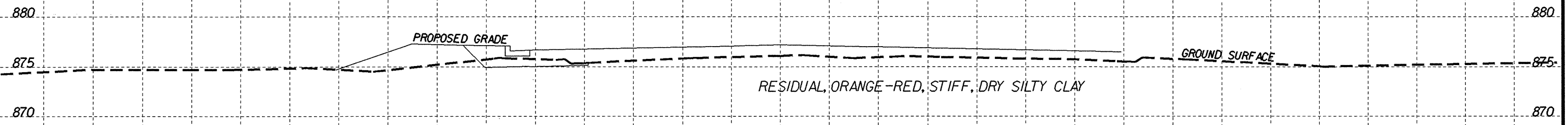


70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

SOIL TEST RESULTS													
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)		
							C. SAND	F. SAND	SILT	CLAY	10	40	200
SS-21	50	71+00	2.6-4.1	A-7-6(37)	72	35	4.2	10.9	26.5	58.4	100	99	88



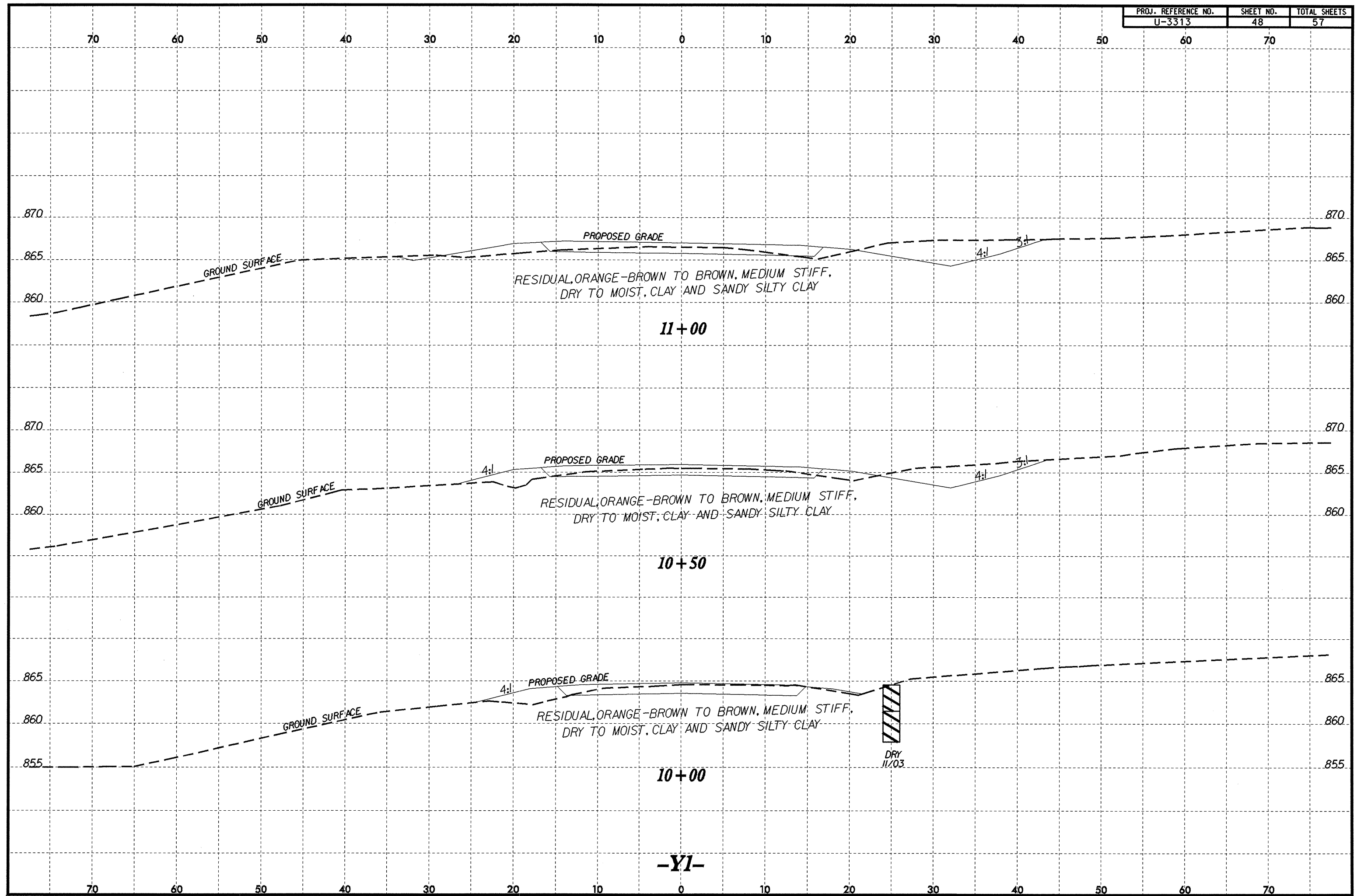
70 60 50 40 30 20 10 0 10 20 30 40 50 60 70



71+50

-L-

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70



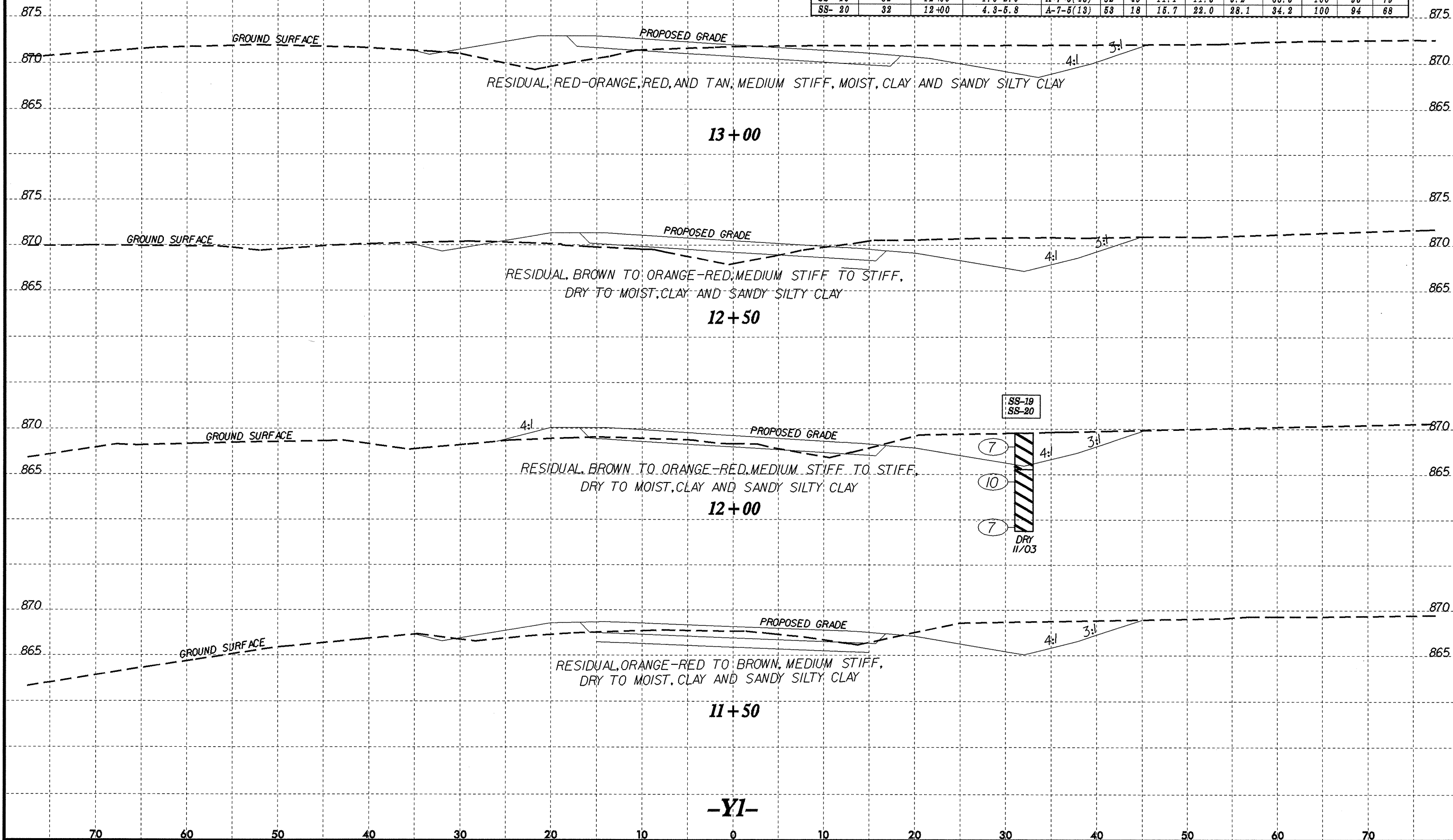
11+00

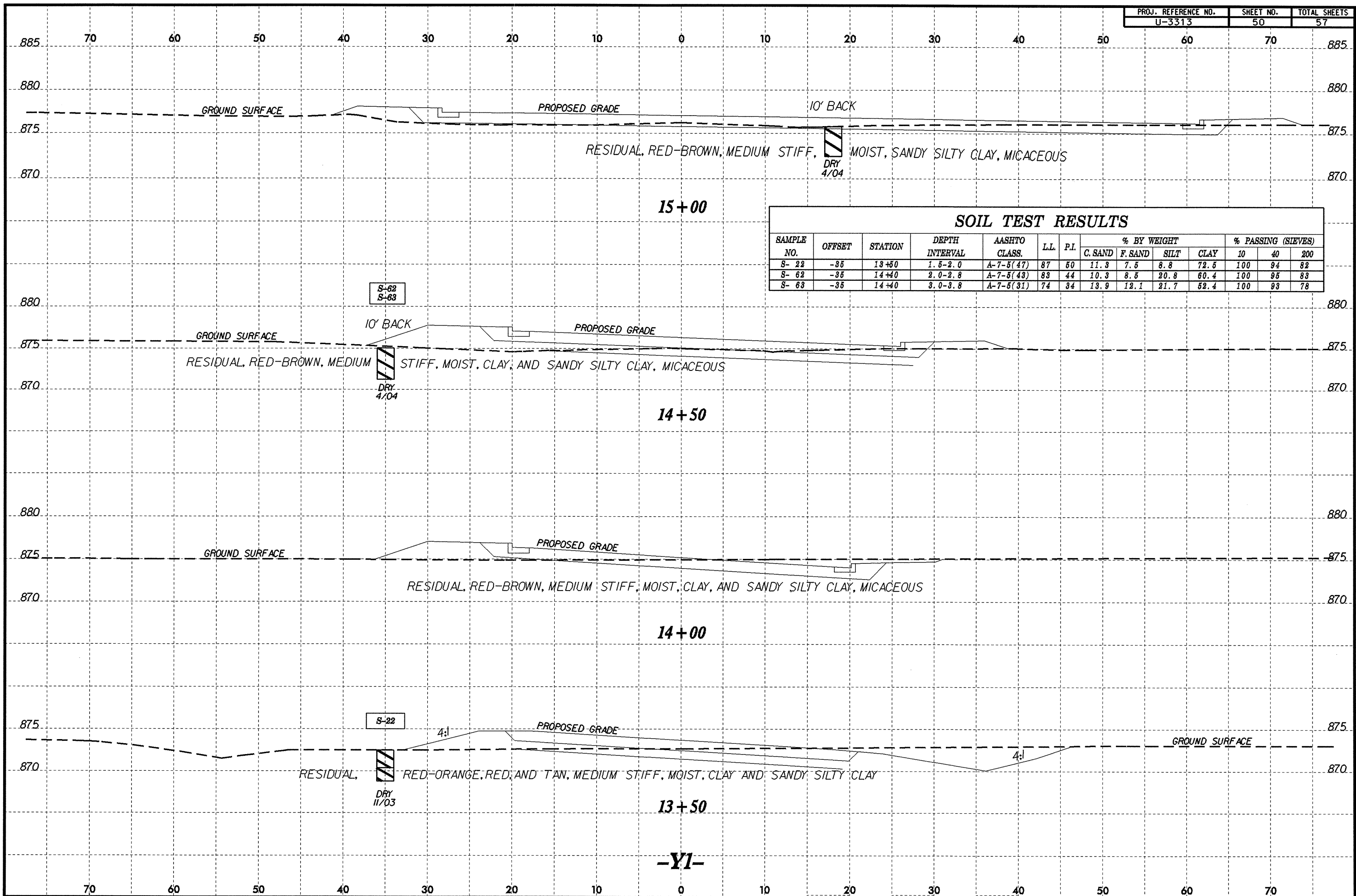
10+50

10+00

-Y1-

SOIL TEST RESULTS													
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)		
							C. SAND	F. SAND	SILT	CLAY	10	40	200
SS- 19	32	12+00	1.0-2.0	A-7-6(43)	82	49	11.1	11.3	9.2	68.5	100	95	79
SS- 20	32	12+00	4.3-5.8	A-7-6(13)	53	18	16.7	22.0	28.1	34.2	100	94	68





SOIL TEST RESULTS													
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)		
							C. SAND	F. SAND	SILT	CLAY	10	40	200
S- 22	-35	13+50	1.5-2.0	A-7-5(47)	87	60	11.3	7.5	8.8	72.5	100	94	82
S- 62	-35	14+40	2.0-2.8	A-7-5(43)	83	44	10.3	8.5	20.8	60.4	100	95	83
S- 63	-35	14+40	3.0-3.8	A-7-5(31)	74	34	13.9	12.1	21.7	52.4	100	93	78

15+00

14+50

14+00

13+50

-Y1-

S-62
S-63

S-22

GROUND SURFACE

PROPOSED GRADE

10' BACK

RESIDUAL, RED-BROWN, MEDIUM STIFF, MOIST, SANDY SILTY CLAY, MICACEOUS

DRY
4/04

GROUND SURFACE

PROPOSED GRADE

10' BACK

RESIDUAL, RED-BROWN, MEDIUM STIFF, MOIST, CLAY, AND SANDY SILTY CLAY, MICACEOUS

DRY
4/04

GROUND SURFACE

PROPOSED GRADE

RESIDUAL, RED-BROWN, MEDIUM STIFF, MOIST, CLAY, AND SANDY SILTY CLAY, MICACEOUS

4:1

PROPOSED GRADE

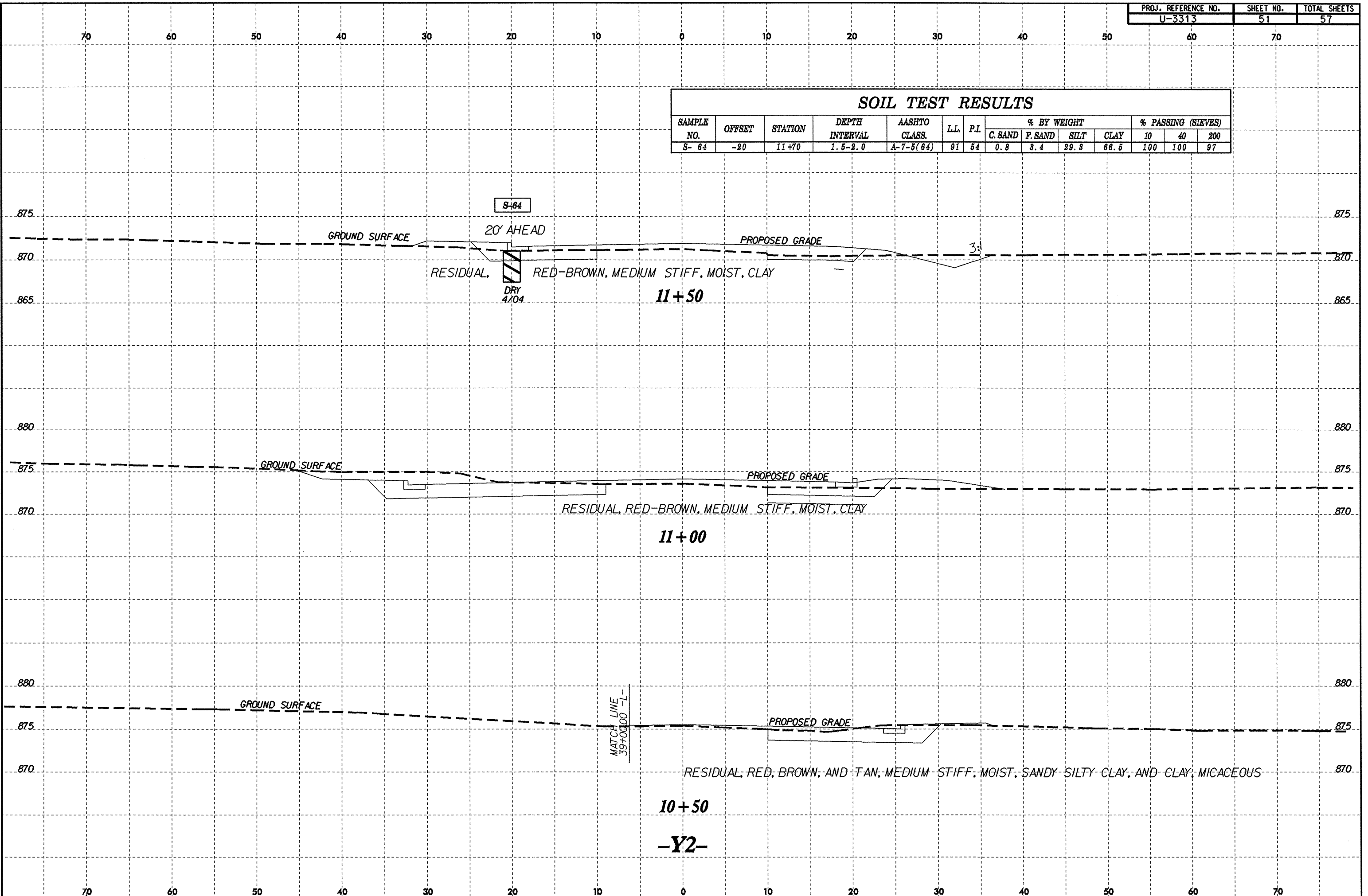
RESIDUAL, RED-ORANGE, RED, AND TAN, MEDIUM STIFF, MOIST, CLAY AND SANDY SILTY CLAY

DRY
11/03

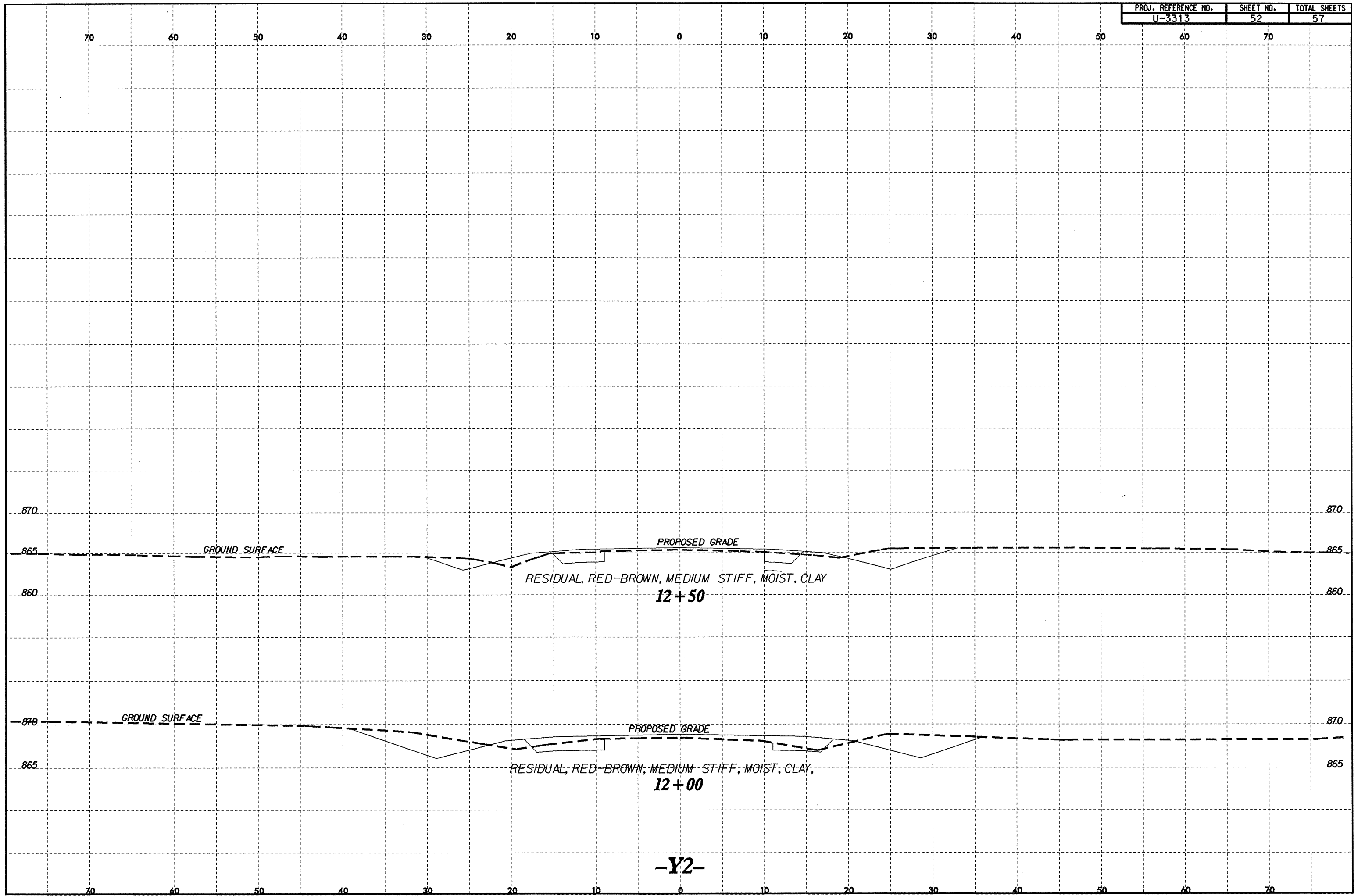
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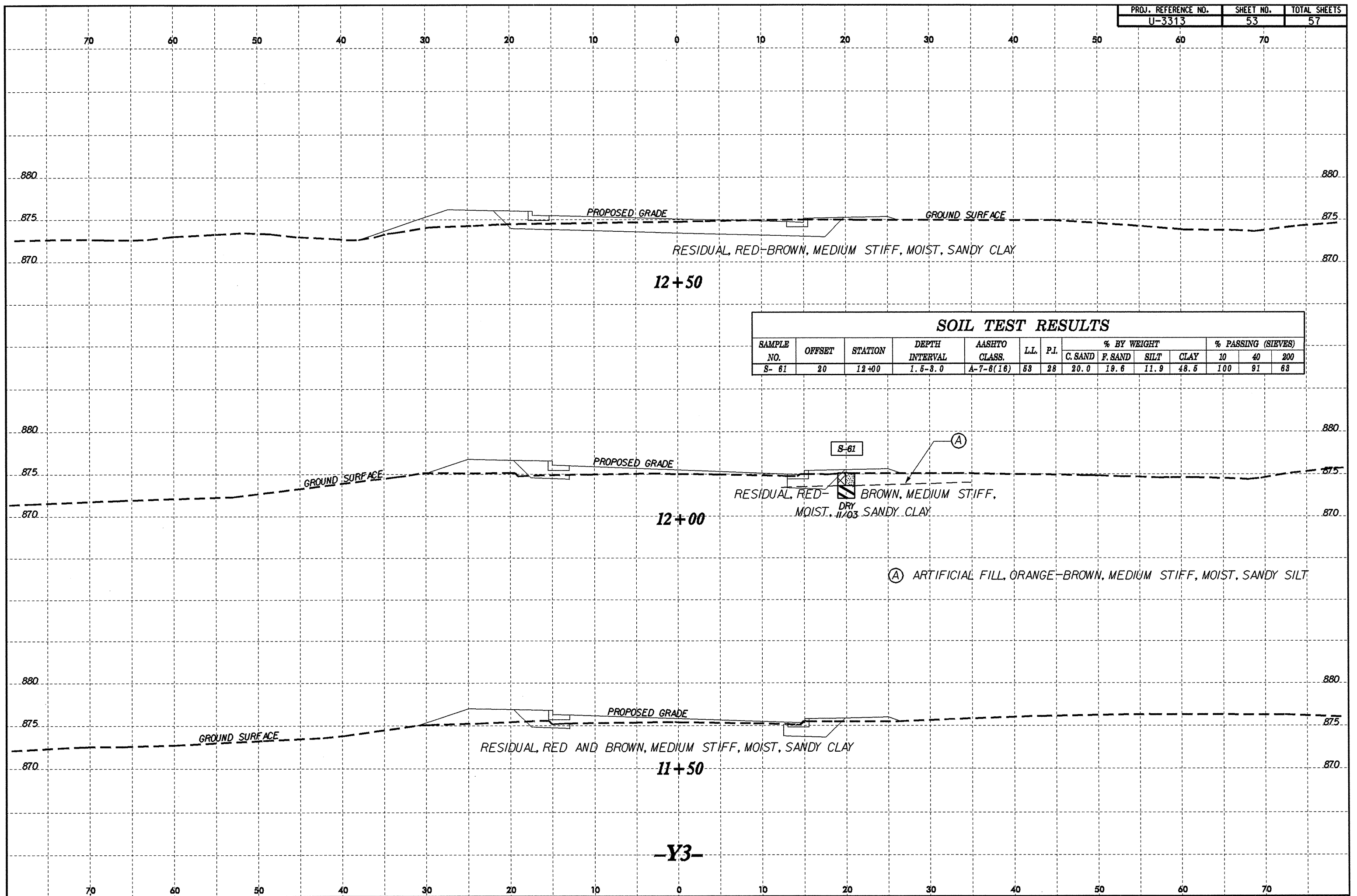
GROUND SURFACE

SOIL TEST RESULTS													
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)		
							C. SAND	F. SAND	SILT	CLAY	10	40	200
S-64	-20	11+70	1.5-2.0	A-7-5(64)	91	64	0.8	8.4	29.3	66.5	100	100	97



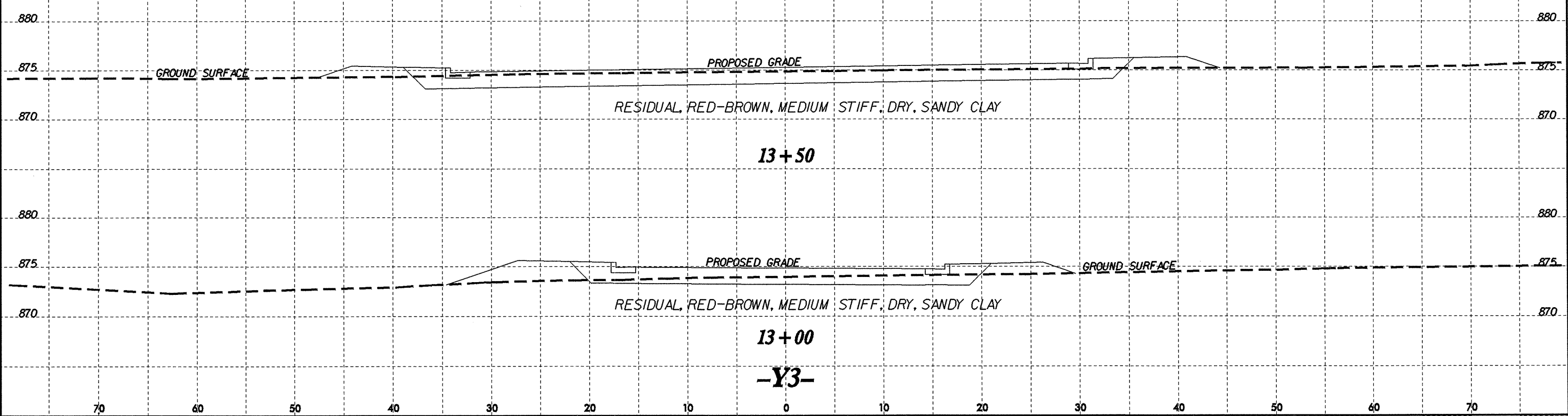
11+50
-Y2-





SOIL TEST RESULTS													
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)		
							C. SAND	F. SAND	SILT	CLAY	10	40	200
S-61	20	12+00	1.5-3.0	A-7-6(16)	53	28	20.0	19.6	11.9	48.5	100	91	63

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70

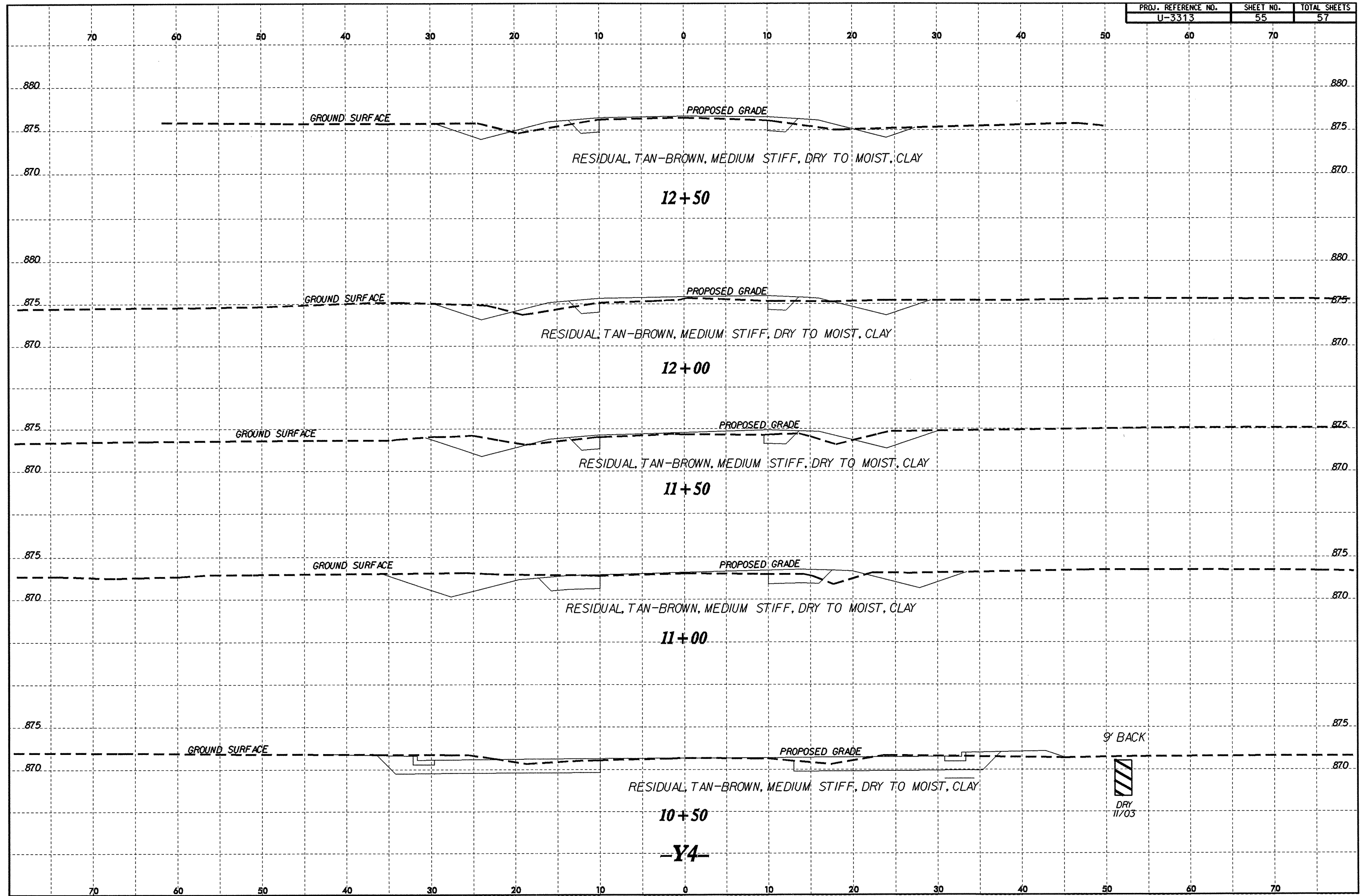


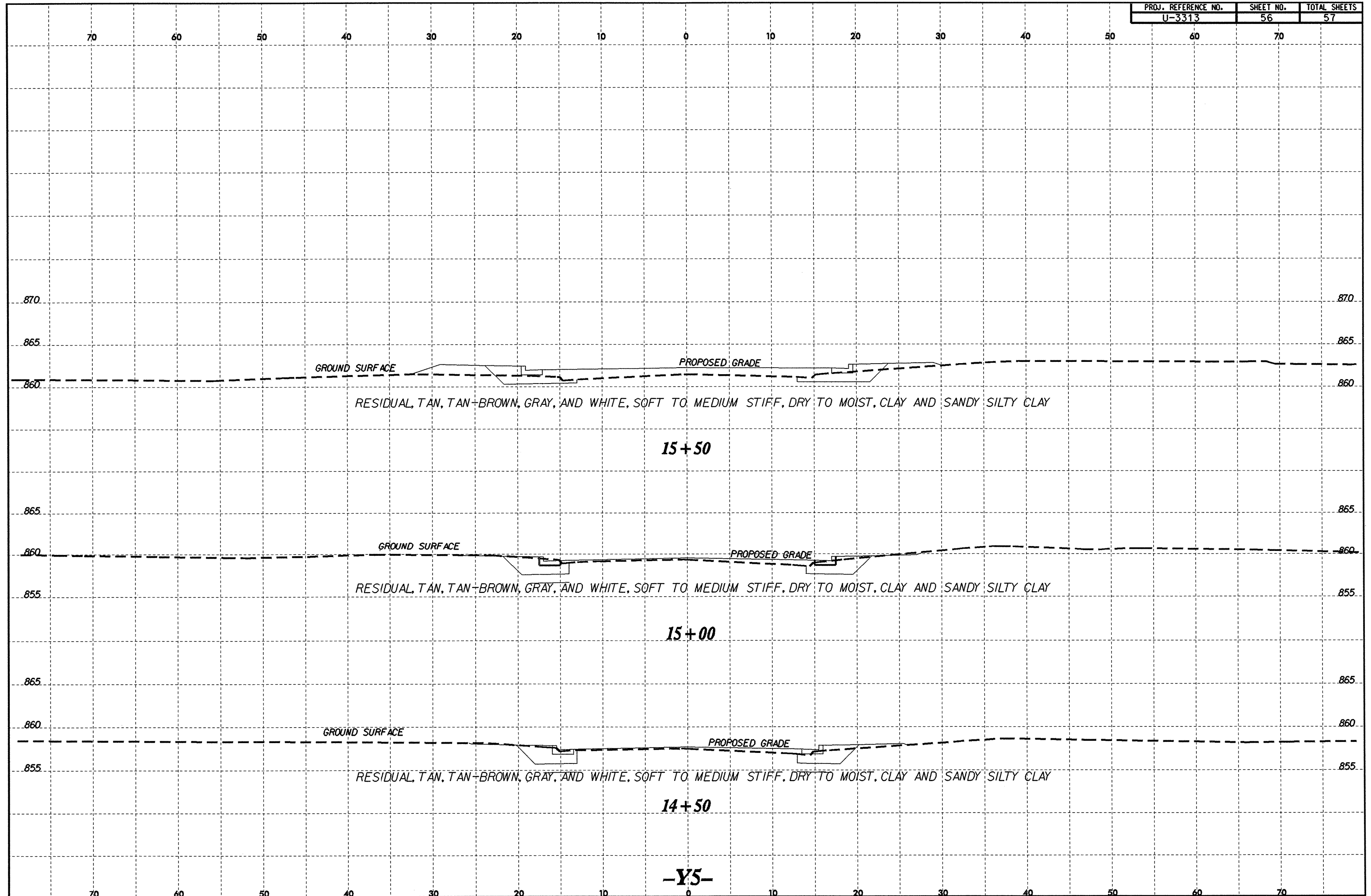
13+50

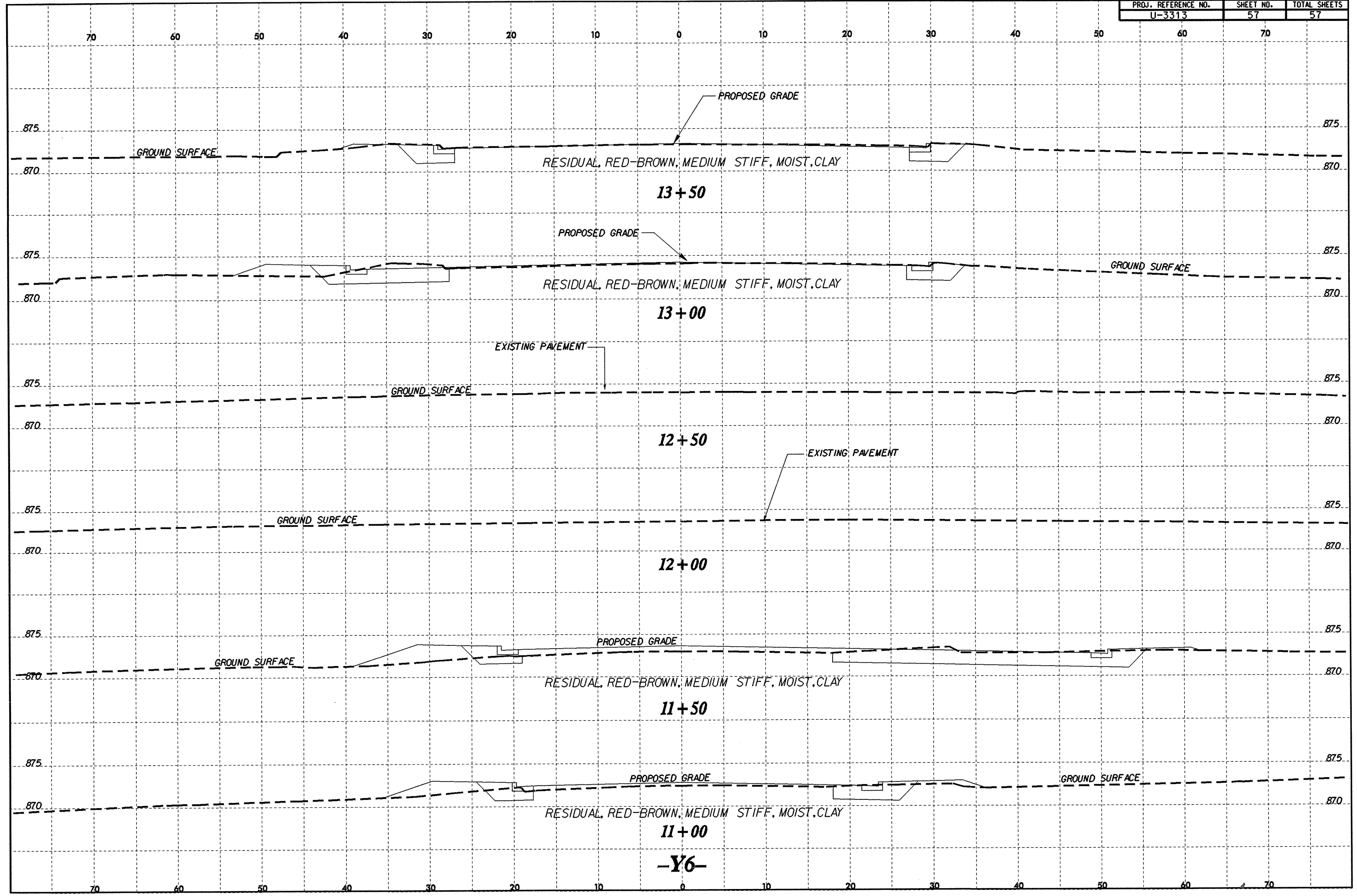
13+00

-Y3-

70 60 50 40 30 20 10 0 10 20 30 40 50 60 70







-Y6-