

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	TOTAL SHEETS
N.C.	U-2579G	1	30
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34839.1.1		P.E.	
		RW & UTIL	

CONTENTS

LINE	STATION	PLAN	PROFILE	XSECT
-Y4-	126+50.00 to 134+50.00	5		11-16
-Y5A-	53+48.46 to 81+50.00	4-6	7-9	17-23
-Y6-	10+00.00 to 17+25.77	6, 5	10	24-29
Sample Sheet		30		

ROADWAY  
SUBSURFACE INVESTIGATION

PROJ. REFERENCE NO. 34839.1.1 (U-2579G) F.A. PROJ. \_\_\_\_\_  
COUNTY FORSYTH  
PROJECT DESCRIPTION BRIDGE NO. 366 ON SR 2667 (HASTINGS HILL RD.) OVER I-40 BUS /US 421

INVENTORY

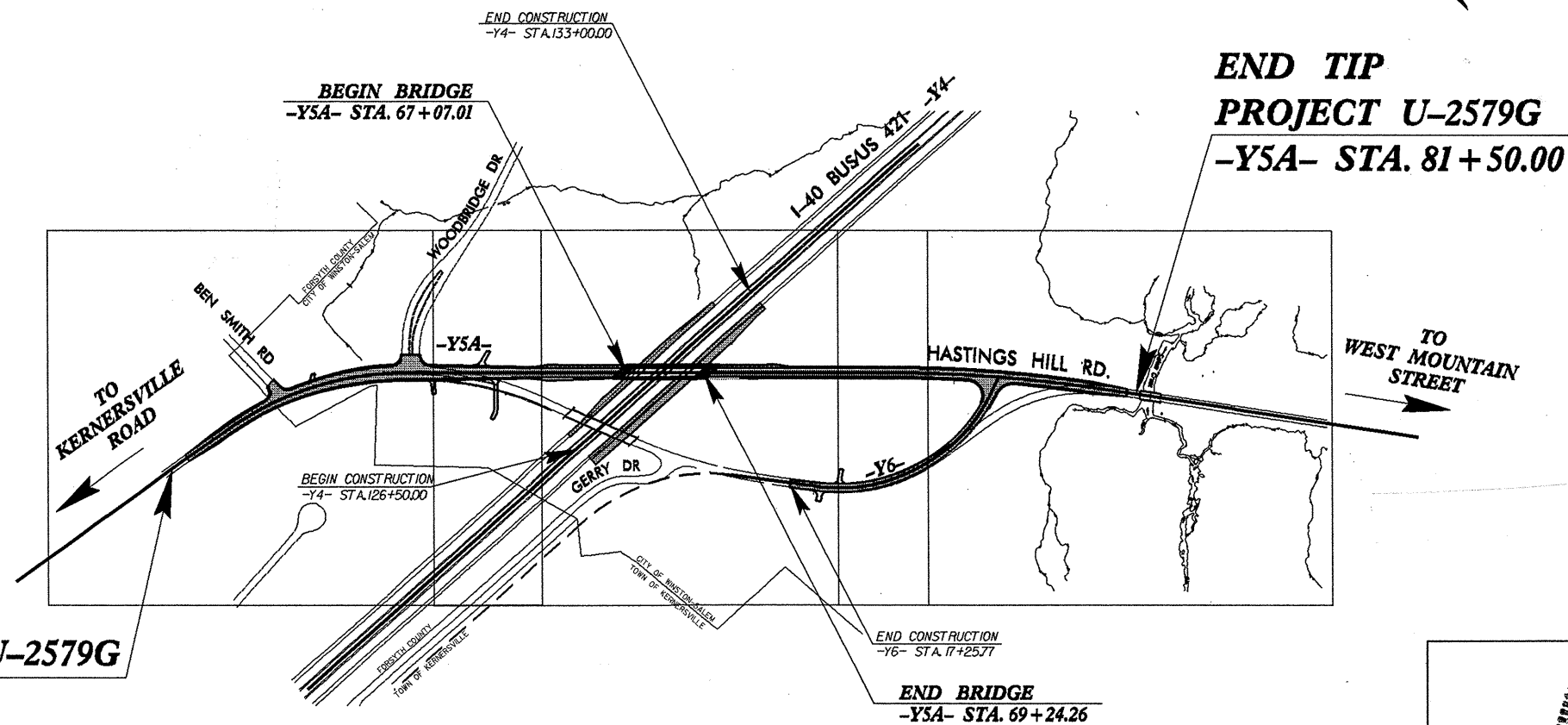
CAUTION NOTICE

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

GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU (IN-PLACED) 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: C203015 ID: U-2579G

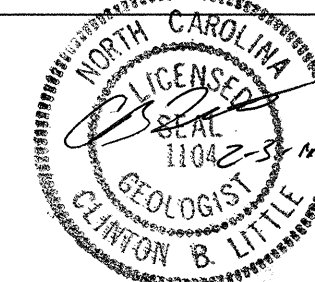


BEG. TIP PROJECT U-2579G  
-Y5A- STA. 53 + 48.46

END TIP  
PROJECT U-2579G  
-Y5A- STA. 81 + 50.00

PERSONNEL  
G.C. MURRAY  
J.E. ESTEP  
H.K. WISE

INVESTIGATED BY R.Q. CALLAWAY  
CHECKED BY C.B. LITTLE  
SUBMITTED BY C.B. LITTLE  
DATE JANUARY 2011



DRAWN BY: J.K. McCLURE

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

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

**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION**  
**DIVISION OF HIGHWAYS**  
**GEOTECHNICAL ENGINEERING UNIT**

PROJECT REFERENCE NO. 34839.11(U-2579G)	SHEET NO. 2
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**SUBSURFACE INVESTIGATION**

**SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS**

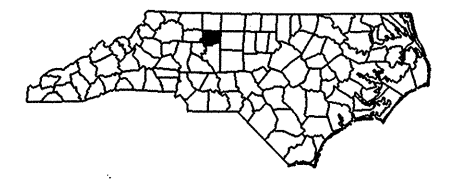
SOIL DESCRIPTION				GRADATION				ROCK DESCRIPTION				TERMS AND DEFINITIONS			
SOIL IS CONSIDERED TO BE THE UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER, AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO STANDARD PENETRATION TEST (ASHTO T208, ASTM D-1586). SOIL CLASSIFICATION IS BASED ON THE ASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY SHALL INCLUDE: CONSISTENCY, COLOR, TEXTURE, MOISTURE, ASHTO 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, HIGHLY PLASTIC, A-7-6</i>				WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORM - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. (ALSO POORLY GRADED) GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLES OF TWO OR MORE SIZES.				HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT IF TESTED, WOULD YIELD SPT REFUSAL. AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. IN NON-COASTAL PLAIN MATERIAL, THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:				ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER. AQUIFER - A WATER BEARING FORMATION OR STRATA. ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, AS SHALE, SLATE, ETC. ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE. CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK. DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL. DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLOGGED 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 (ROQ) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. SAPROLITE (SAP) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (IN OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. STRATA CORE RECOVERY (SCREC) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SROQ) - 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.			
<b>SOIL LEGEND AND ASHTO CLASSIFICATION</b>				<b>MINERALOGICAL COMPOSITION</b>				<b>WEATHERING</b>				<b>WEATHERING</b>			
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.				WEATHERED ROCK (WR) NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > 100 BLOWS PER FOOT IF TESTED.				FRESH ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE.			
GROUP CLASS. A-1, A-3, A-2, A-4, A-5, A-6, A-7, A-1, A-2, A-3, A-4, A-5, A-6, A-7				COMPRESSIBILITY SLIGHTLY COMPRESSIBLE LIQUID LIMIT LESS THAN 31 MODERATELY COMPRESSIBLE LIQUID LIMIT EQUAL TO 31-50 HIGHLY COMPRESSIBLE LIQUID LIMIT GREATER THAN 50				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.				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.			
SYMBOL				ANGULARITY OF GRAINS THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.				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.				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.			
% PASSING #10 #40 #200				PERCENTAGE OF MATERIAL ORGANIC MATERIAL GRANULAR SOILS SILT-CLAY SOILS OTHER MATERIAL TRACE OF ORGANIC MATTER 2-3% 3-5% TRACE LITTLE ORGANIC MATTER 3-5% 5-12% LITTLE MODERATELY ORGANIC 5-10% 12-20% SOME HIGHLY ORGANIC >10% >20% HIGHLY 35% AND ABOVE				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.				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.			
LIQUID LIMIT PLASTIC INDEX				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 SEEP				MODERATELY SEVERE (MOD. SEV.) ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK. ROCK GIVES 'CLUNK' SOUND WHEN STRUCK. IF TESTED, WOULD YIELD SPT REFUSAL.				SEVERE (SEV.) ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND EVIDENT BUT REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. IF TESTED, YIELDS SPT N VALUES > 100 BPF.			
GROUP INDEX				MISCELLANEOUS SYMBOLS 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				SEVERE (V SEV.) ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS ARE DISCERNIBLE BUT THE MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE SUCH THAT ONLY MINOR VESTIGES OF THE ORIGINAL ROCK FABRIC REMAIN. IF TESTED, YIELDS SPT N VALUES < 100 BPF.				COMPLETE ROCK REDUCED TO SOIL. QUARTZ NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.			
USUAL TYPES OF MAJOR MATERIALS				CONSISTENCY OR DENSENESS PRIMARY SOIL TYPE COMPACTNESS OR CONSISTENCY RANGE OF STANDARD PENETRATION RESISTANCE (N-VALUE) RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/F <sup>2</sup> )				TEST BORING AUGER BORING CORE BORING MONITORING WELL PIEZOMETER INSTALLATION SLOPE INDICATOR INSTALLATION CONE PENETROMETER TEST SOUNDING ROD				ROCK HARDNESS VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.			
GEN. RATING AS A SUBGRADE				TEXTURE OR GRAIN SIZE 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.)				ABBREVIATIONS 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. - MICACEOUS 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 W - UNIT WEIGHT W <sub>d</sub> - DRY UNIT WEIGHT S - BULK SS - SPLIT SPOON ST - SHELBY TUBE RS - ROCK RT - RECOMPACTED TRIAXIAL CBR - CALIFORNIA BEARING RATIO				HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN.			
PI OF A-7-5 SUBGROUP IS <= LL - 30 ; PI OF A-7-6 SUBGROUP IS >= LL - 30				SOIL MOISTURE - CORRELATION OF TERMS SOIL MOISTURE SCALE (ATTERBERG LIMITS) FIELD MOISTURE DESCRIPTION GUIDE FOR FIELD MOISTURE DESCRIPTION				EQUIPMENT USED ON SUBJECT PROJECT DRILL UNITS: MOBILE B- BK-51 CME-45C CME-550 PORTABLE HOIST ADVANCING TOOLS: CLAY BITS 6" CONTINUOUS FLIGHT AUGER 8" HOLLOW AUGERS HARD FACED FINGER BITS TUNG-CARBIDE INSERTS CASING w/ ADVANCER TRICONE STEEL TEETH TRICONE TUNG-CARB. CORE BIT HAMMER TYPE: AUTOMATIC MANUAL CORE SIZE: B N H HAND TOOLS: POST HOLE DIGGER HAND AUGER SOUNDING ROD VANE SHEAR TEST				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.			
PLASTICITY NONPLASTIC LOW PLASTICITY MED. PLASTICITY HIGH PLASTICITY				FRACTURE SPACING TERM VERY WIDE WIDE MODERATELY CLOSE CLOSE VERY CLOSE SPACING MORE THAN 10 FEET 3 TO 10 FEET 1 TO 3 FEET 0.15 TO 1 FEET LESS THAN 0.15 FEET				BEDDING TERM VERY THICKLY BEDDED THICKLY BEDDED THINLY BEDDED VERY THINLY BEDDED THICKLY LAMINATED THINLY LAMINATED THICKNESS > 4 FEET 1.5 - 4 FEET 0.16 - 1.5 FEET 0.03 - 0.16 FEET 0.008 - 0.03 FEET < 0.008 FEET				BENCH MARK: ELEVATION: FT.			
COLOR DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.				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.				NOTES: STRATIGRAPHY SHOWN ON PROFILES IS FROM BORING TO BORING. THE ROCK LINE ON CROSS-SECTIONS IS CUT AT THE SECTION. SOIL STRATIGRAPHY ON CROSS-SECTIONS IS FROM THE BORING.							

09/08/99

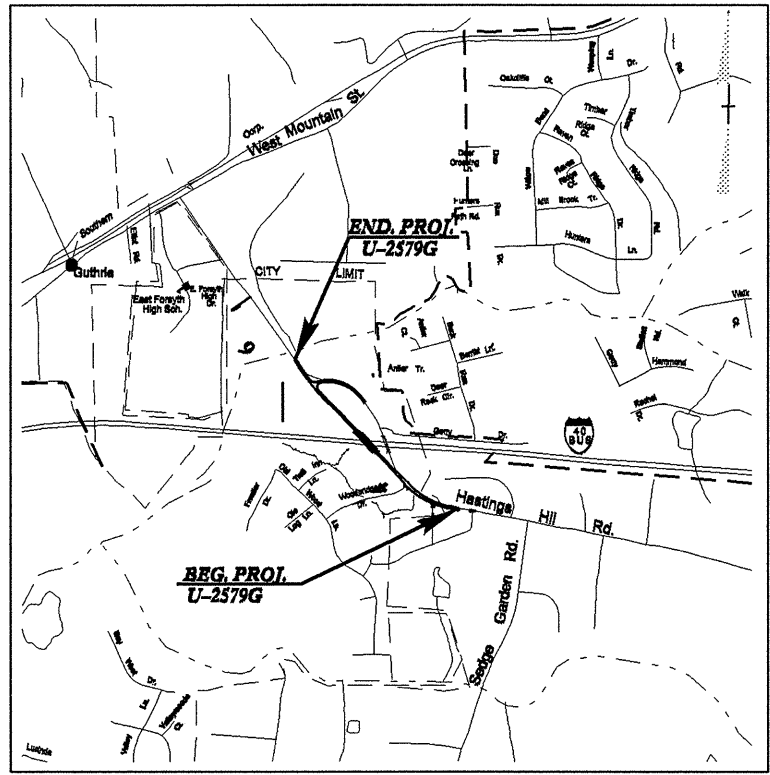
See Sheet 1-A For Index of Sheets  
See Sheet 1-B For Conventional Symbol

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
**FORSYTH COUNTY**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-2579G	2A	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34839.1.1	MULTIPLE	PE	
34839.2.15	MULTIPLE	R/W	



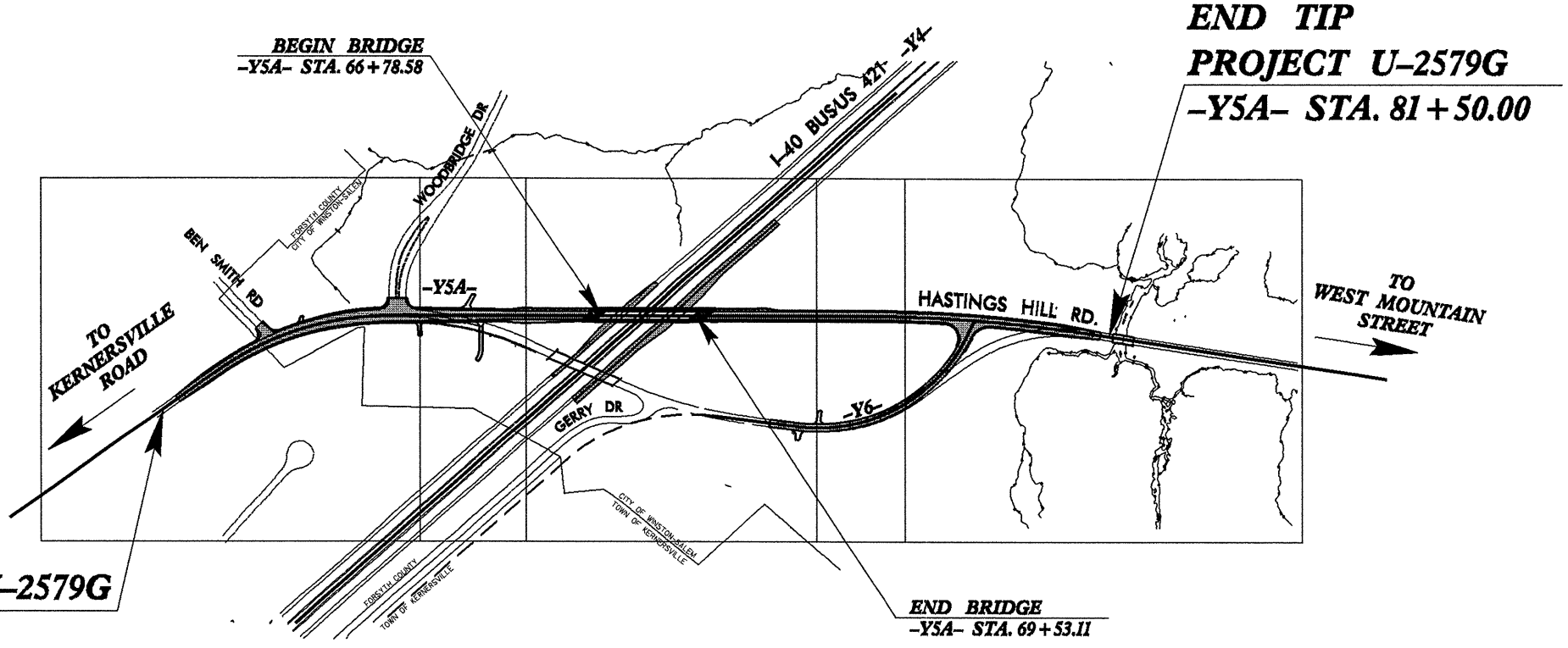
**TIP PROJECT: U-2579G**



VICINITY MAP

**LOCATION:** BRIDGE NO. 366 ON SR 2667 (HASTINGS HILL RD)  
OVER I-40 BUSUS 421

**TYPE OF WORK:** WIDENING, GRADING, PAVING, DRAINAGE  
AND STRUCTURE

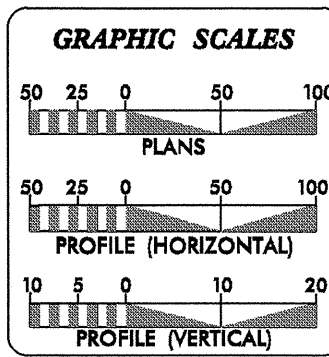


**BEG. TIP PROJECT U-2579G**  
**-Y5A- STA. 53 + 48.46**

**END TIP PROJECT U-2579G**  
**-Y5A- STA. 81 + 50.00**

A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES  
KERNERSVILLE AND WINSTON-SALEM  
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION



**DESIGN DATA**

ADT 2010 =	5,260
ADT 2030 =	8,300
DHV =	11 %
D =	60 %
T =	3 % *
V =	40 MPH
* TTST 1 %	DUAL 2 %
STATEWIDE TIER FUNC CLASS = RURAL LOCAL	

**PROJECT LENGTH**

LENGTH OF ROADWAY PROJECT U-2579B	=	0.478 Miles.
LENGTH OF STRUCTURE PROJECT U-2579B	=	0.052 Miles.
TOTAL LENGTH OF PROJECT U-2579B	=	0.530 Miles.

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

2006 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE:	TONY HOUSER, PE PROJECT ENGINEER
LETTING DATE: Post Year	LEE ANN MOORE PROJECT DESIGN ENGINEER

SIGNATURE: _____	<b>HYDRAULICS ENGINEER</b>
SIGNATURE: _____	<b>ROADWAY DESIGN ENGINEER</b>

**DIVISION OF HIGHWAYS**  
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER

07-JAN-2011 14:11 D:\Projects\U2579G\_GEO\_RDWY-Forsyth\CADD-GEOTECH\PlanProf\U2579G\_GEO\_RDWY-TSH Inv\_002A.dgn  
Inclure A1 GET240347

**CONTRACT:**



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE  
GOVERNOR

EUGENE A. CONTI, JR.  
SECRETARY

February 02, 2011

STATE PROJECT: 34839.1.1 (U-2579G)  
COUNTY: Forsyth  
DESCRIPTION: Bridge No. 366 on SR 2667 (Hastings Hill Road)  
Over I-40 Bus. / US 421

SUBJECT: Geotechnical Report - Inventory

**PROJECT DESCRIPTION**

This project was originally a part of Project U-2579B. It consists of a bridge replacement and associated roadway approaches. The following roadway alignments were investigated:

- Y4- Station 126+50 to 134+50 (I-40 Business / US 421)
- Y5A- Station 53+48.46 to 81+50 (Hastings Hill Road)
- Y6- Station 10+00 to 17+25.77 (Gerry Drive).

Hastings Hill Road is relocated approximately 220 feet to the west (as measured along the centerline median of I-40 Business). Some of the existing Hastings Hill Road (north of I-40 Bus.) will be utilized as a continuation of Gerry Drive.

The geotechnical data presented in this report is the same as originally presented under project U-2579B. The field work was conducted in September 2007. The borings were made with a CME 550 drill utilizing 6" hollow augers or 4" standard augers. Standard Penetration Tests were performed in the vicinity of the bridge and along the top of the I-40 Business cut slopes. Most of the borings for Hastings Hill Road were standard auger borings used to delineate a top of rock surface.

**AREAS OF SPECIAL GEOTECHNICAL INTEREST**

Rock (crystalline rock, probably biotite gneiss) was found near or above grade along the -Y5A- alignment, from Station 72+14 to 79+50, and from Station 10+75 to 15+75 -Y6-. There is a slight chance of encountering rock in the sliver cuts for -Y4- I-40 Bus., mainly on the right (north) side.

**PHYSIOGRAPHY AND GEOLOGY**

The project location per the 1985 Geologic Map of North Carolina (NCGS) is on Czbg Biotite Gneiss and Schist of the Charlotte or Milton Geologic Belt. These rocks contain mica and quartz rich seams. The quartz layers are much more resistance to weathering leading to very irregular depth to rock. As noted previously there is an area on the north side of the project where rock was encountered in numerous borings. There seems to be little or no rock on the south side.

The soils encountered are predominantly clayey silty sand (A-2-4, A-2-5) with variable mica content. Red sandy clays (A-7-5) commonly occur as surface soils 5-7' thick overlying the sands. Lesser quantities of silty clay and clayey silt (A-5, A-6) (commonly micaceous) were also found.

Groundwater was not noted within six feet below proposed grade.

Respectfully submitted,

Clint Little  
Regional Geological Engineer

### Earthwork Balance Sheet

PROJECT: U-2579G COUNTY: Forsyth Volumes in Cubic Yards DATE: 4/30/2012 CHECK BY: John Braxton COMPILED BY: Casey Harris SHEET 1 OF 1 SHEETS

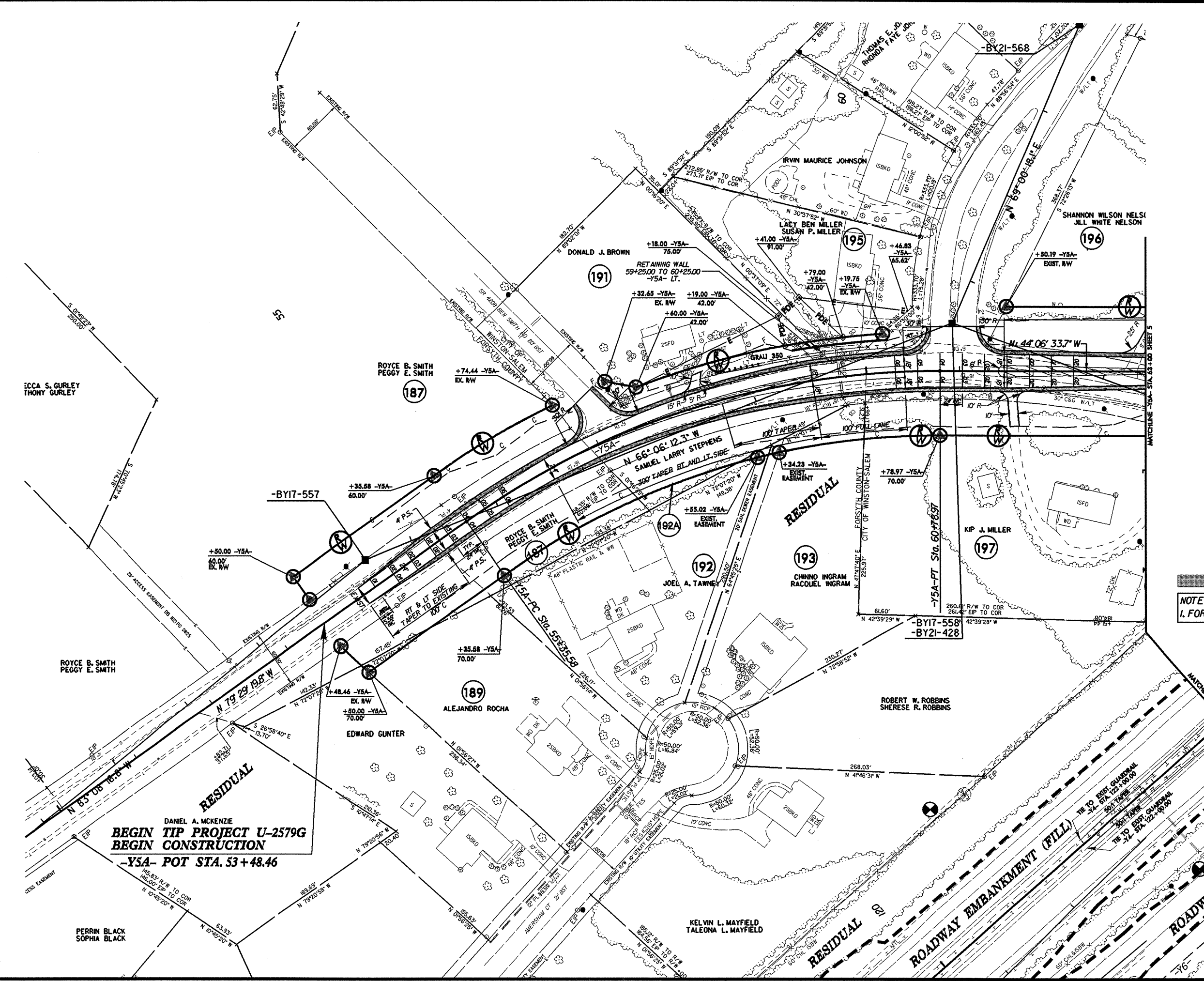
STATION	STATION	EXCAVATION					EMBANKMENT				BORROW	WASTE			
		TOTAL UNCLASS.	ROCK	UNDERCUT	UNSUIT. UNCLASS.	SUITABLE UNCLASS.	TOTAL	ROCK	EARTH	EMBANK. +20%		ROCK	SUITABLE	UNSUIT.	TOTAL
Y5A LT 54+00.00	Y5A LT 67+07.01 (BR)	2,680				2,680	8,576		8,576	10,291	7,611				
Y5A LT 69+24.26 (BR)	Y5A LT 81+25.00	33,528	9,015			24,513	4,547	3,789		3,789		5,226	24,513		29,739
Y5A RT 54+00.00	Y5A RT 67+07.01 (BR)	2,107				2,107	7,872		7,872	9,446	7,339				
Y5A RT 69+24.26 (BR)	Y5A RT 81+25.00	42,303	16,439			25,864	2,695	2,246		2,246		14,193	25,864		40,057
<b>SUBTOTAL</b>		80,618	25,454			55,164	23,690	6,035	16,448	25,772	14,950	19,419	50,377		69,796
Y6 LT 10+75.00	Y6 LT 17+25.77	680				680	77		77	92			588		588
Y6RT 10+75.00	Y6 RT 17+25.77	5,609	382			5,227	46	38		38		344	5,227		5,571
<b>SUBTOTAL</b>		6,289	382			5,907	123	38	77	130		344	5,815		6,159
Y4 LT 126+50.00	Y4 LT 132+00.00	901				901	217		217	260			641		641
Y4 RT 126+50.00	Y4 RT 133+00.00	5,255				5,255							5,255		5,255
<b>SUBTOTAL</b>		6,156				6,156	217		217	260			5,896		5,896
<b>SUBTOTAL</b>															
<b>TOTAL</b>		93,063	25,836			67,227	24,030	6,073	16,742	26,162	14,950	19,763	62,088		81,851
MATERIAL FOR SHOULDER CONSTRUCTION															
LOSS DUE TO CLEARING & GRUBBING		-3,500				-3,500							-3,500		-3,500
ROCK WASTE TO REPLACE BORROW								10,382	-10,382		-10,382	-10,382			-10,382
ADJUST FOR ROCK SWELL									-2,076	-2,076	-2,076				
ADJUST FOR EARTH SHRINKAGE										-2,492	-2,492				
<b>PROJECT TOTAL</b>		89,563	25,836			63,727	24,030	16,455	4,284	21,594		9,381	58,588		67,969
ADJUST FOR ROCK WASTE SWELL												1,876			1,876
ADJUST FOR UNCOMPACTED ROCK WASTE												2,251			2,251
<b>GRAND TOTAL</b>		89,563	25,836			63,727	24,030	16,455	4,284	21,594		13,508	58,588		72,096
<b>SAY</b>		89,600													
SHOULDER BORROW = 1,760 CUBIC YARDS															
CLASS IV SUBGRADE STABILIZATION : 1,250 TONS															
ESTIMATED 1,200 CUBIC YARDS OF UNDERCUT, ESTIMATED 675 CY SHALLOW UNDERCUT TO BE USED IN THE DISCRETION OF THE RESIDENT ENGINEER.															
PAVEMENT STRUCTURE VOL.= 3,350 CUBIC YARDS															

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.



5/14/99

PROJECT REFERENCE NO. U-2579G		SHEET NO. 4	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION			

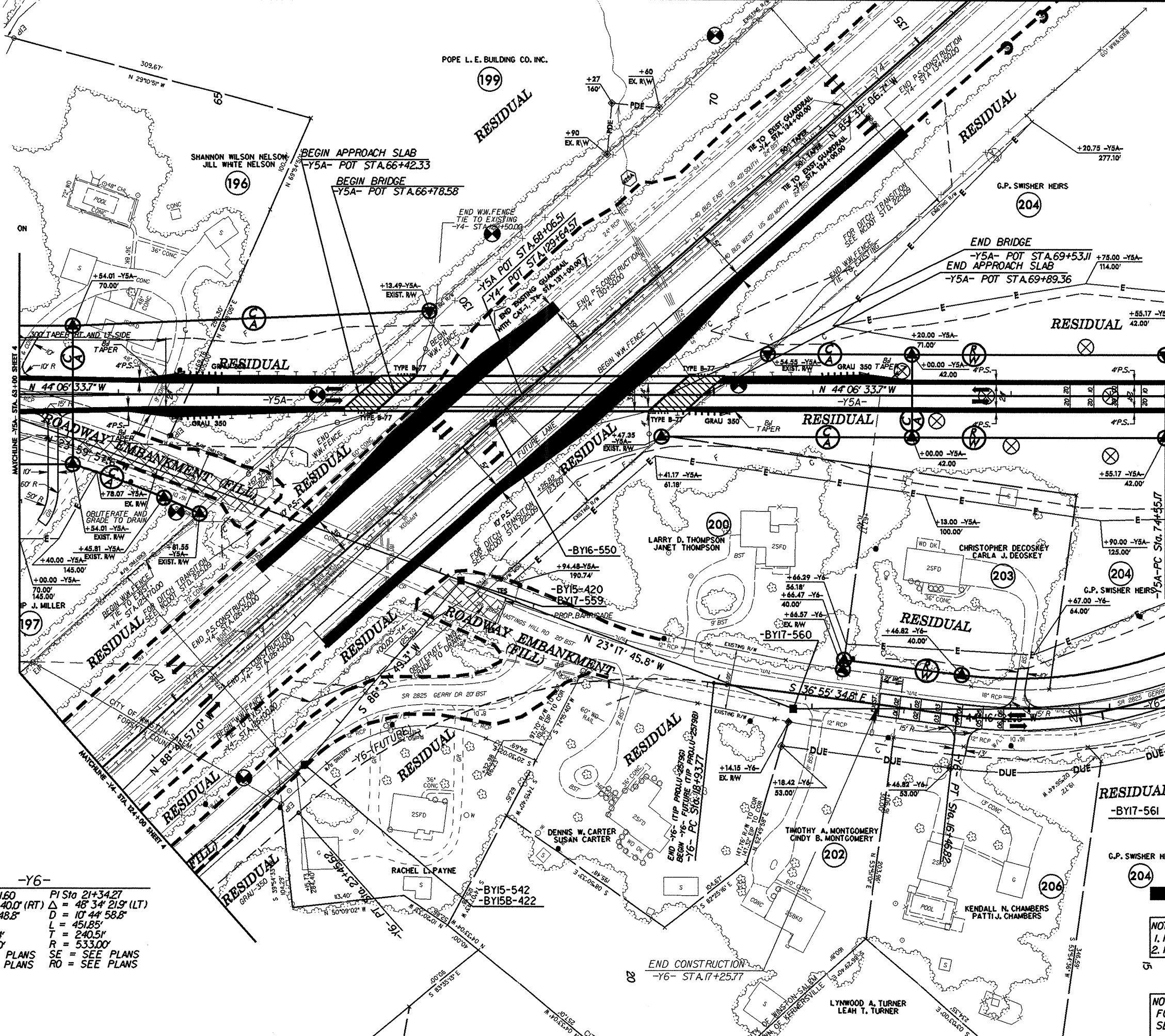


**-Y5A-**  
 PI Sta 58+16.25  
 $\Delta = 35^{\circ} 22' 46.1''$  (RT)  
 $D = 6^{\circ} 30' 39.2''$   
 $L = 543.39'$   
 $T = 280.61'$   
 $R = 880.00'$   
 SE = SEE PLANS  
 RQ = SEE PLANS

**PAVED SHOULDER**  
 NOTE :  
 1. FOR -Y5A- PROFILE, SEE SHEET 7

07-JAN-2011 09:40:00 GEOTECH\PlanP\of\U2579G\_GED\_rv\_004.dgn  
 07-JAN-2011 09:40:00 GEOTECH\PlanP\of\U2579G\_GED\_rv\_004.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-25796	5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



-Y5A-  
 PI Sta 77+45.60  
 $\Delta = 8' 32'' 22.4'' (RT)$   
 $D = 1' 28'' 22.4''$   
 $L = 579.78'$   
 $T = 290.43'$   
 $R = 3,890.00'$   
 SE = SEE PLANS  
 RO = SEE PLANS

-Y6-  
 PI Sta 13+91.60    PI Sta 21+34.27  
 $\Delta = 71' 04'' 40.0'' (RT)$      $\Delta = 48' 34'' 21.9'' (LT)$   
 $D = 11' 48'' 48.8''$      $D = 10' 44'' 58.8''$   
 $L = 601.66'$      $L = 451.85'$   
 $T = 346.44'$      $T = 240.51'$   
 $R = 485.00'$      $R = 533.00'$   
 SE = SEE PLANS    SE = SEE PLANS  
 RO = SEE PLANS    RO = SEE PLANS

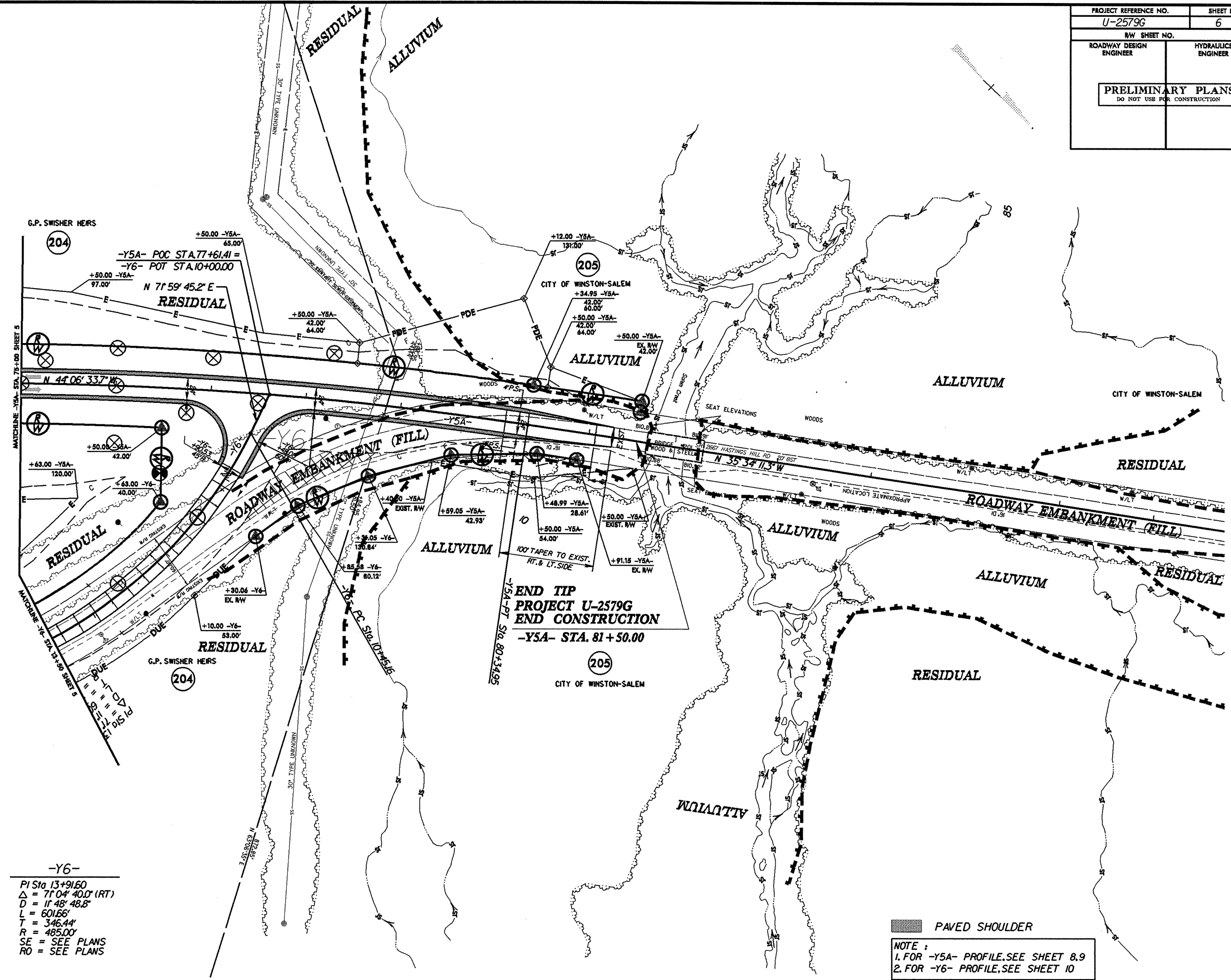
NOTE:  
 1. FOR -Y5A- PROFILE, SEE SHEET 7, 8  
 2. FOR -Y6- PROFILE, SEE SHEET 10

NOTE:  
 FOR FUTURE -Y4- AND -Y6- DESIGNS  
 SEE PROJECT TIP U-2579B

5/14/99  
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5/14/99

PROJECT REFERENCE NO. U-2579G		SHEET NO. 6	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION			



-Y5A-	-Y6-
PI Sta 77+45.60	PI Sta 13+91.60
Δ = 8° 32' 22.4" (RT)	Δ = 71° 04' 40.0" (RT)
D = 1' 28' 22.4"	D = 11' 48' 48.8"
L = 579.78'	L = 601.66'
T = 290.43'	T = 346.44'
R = 3,890.00'	R = 485.00'
SE = SEE PLANS	SE = SEE PLANS
RO = SEE PLANS	RO = SEE PLANS

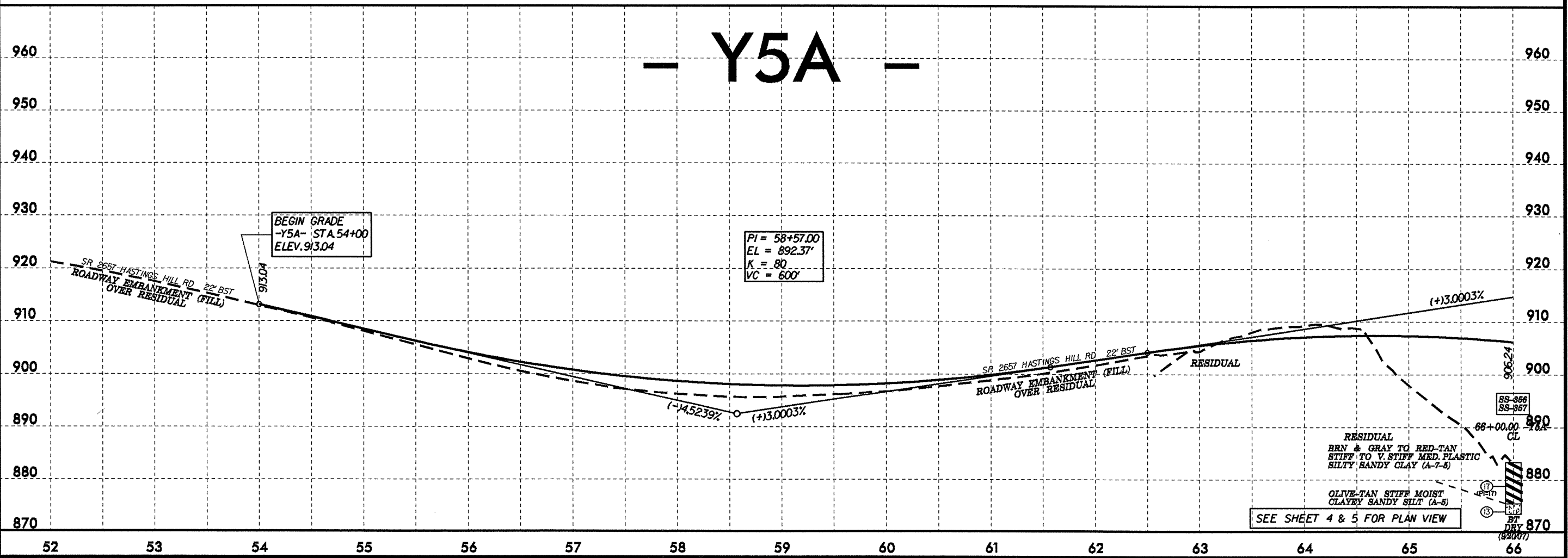
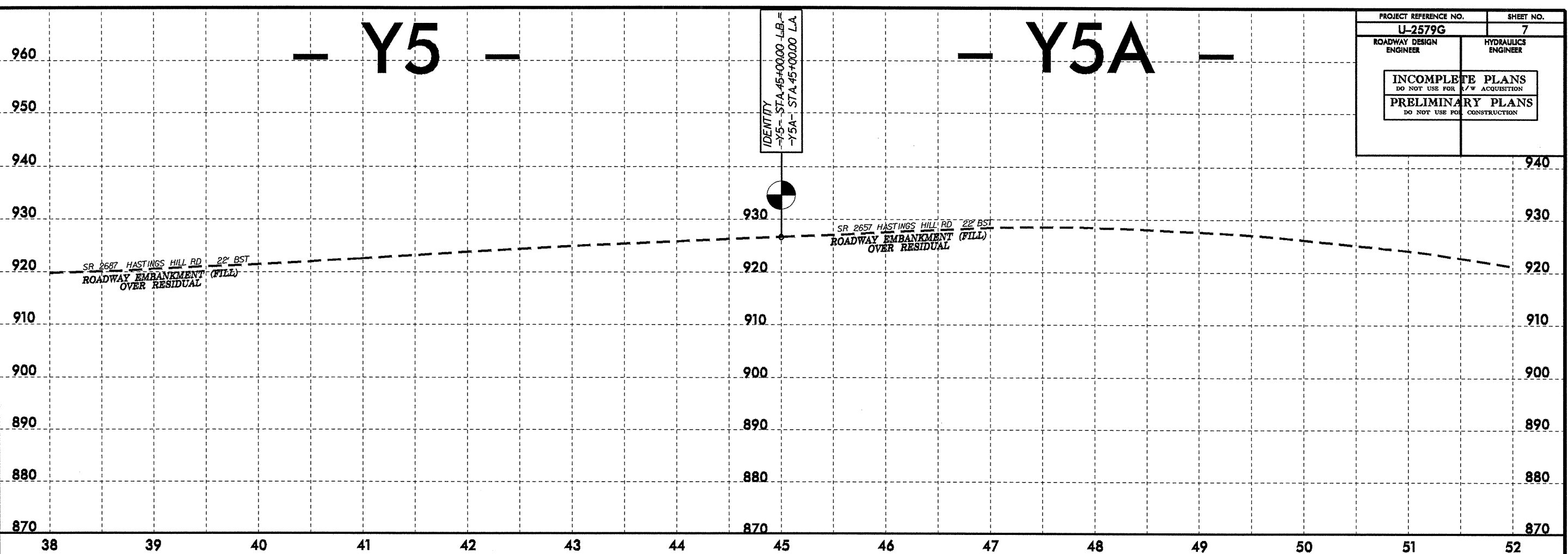
PAVED SHOULDER  
**NOTE :**  
 1. FOR -Y5A- PROFILE, SEE SHEET 8.9  
 2. FOR -Y6- PROFILE, SEE SHEET 10

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5/28/99

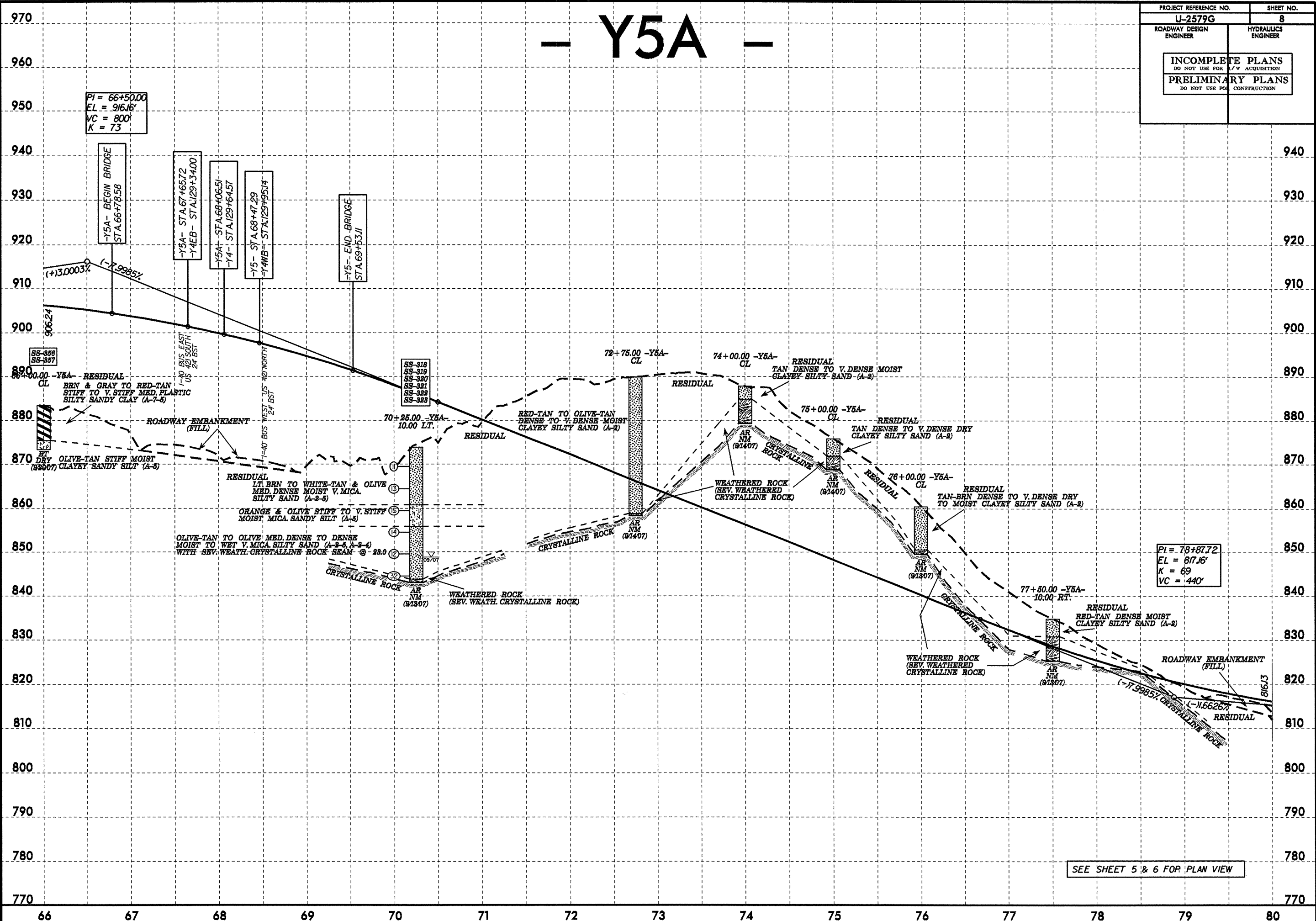
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<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	



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# - Y5A -

PROJECT REFERENCE NO. <b>U-2579G</b>	SHEET NO. <b>8</b>
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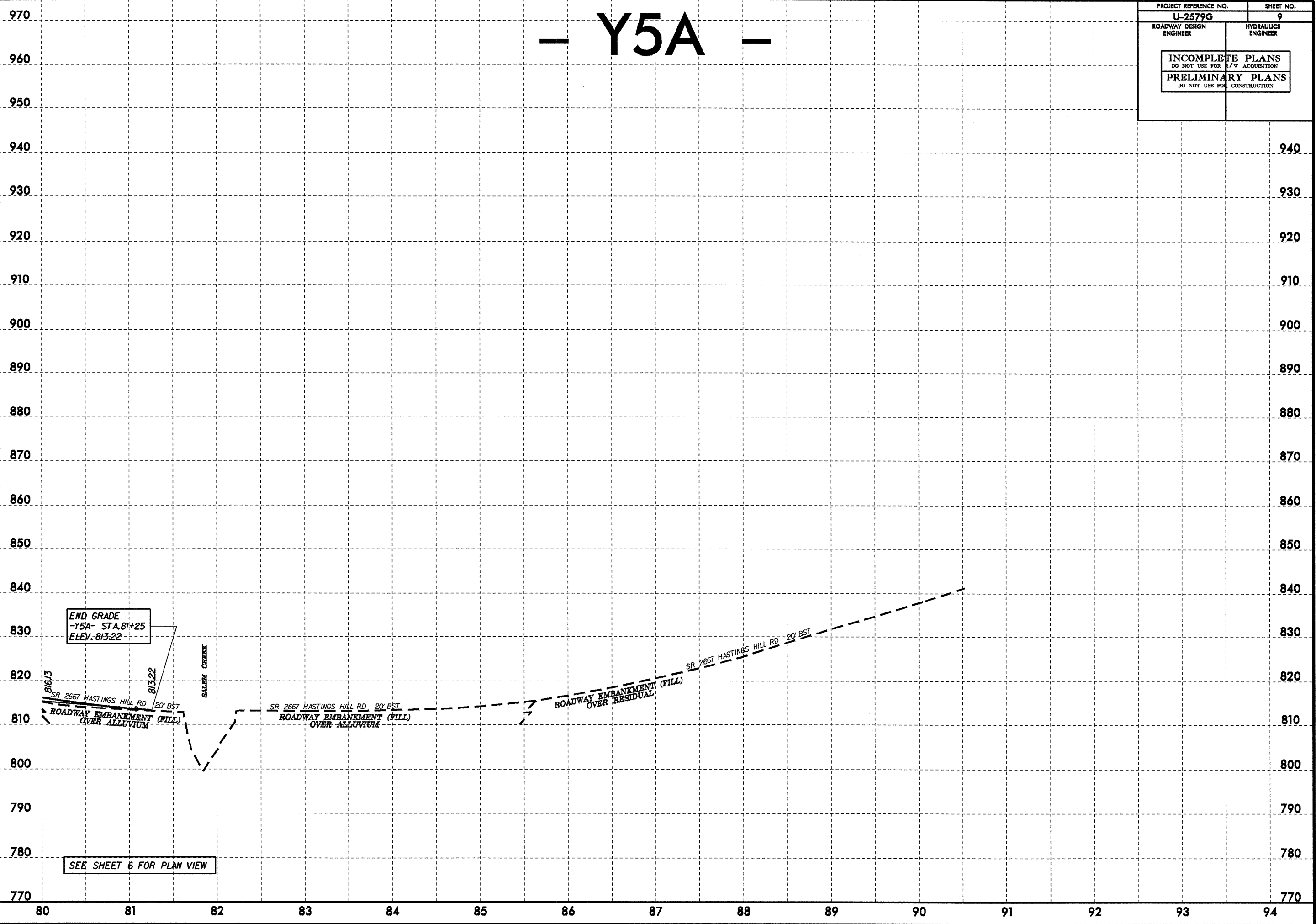
SEE SHEET 5 & 6 FOR PLAN VIEW

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5/14/99  
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# - Y5A -

PROJECT REFERENCE NO. <b>U-2579G</b>		SHEET NO. <b>9</b>	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<b>INCOMPLETE PLANS</b> DO NOT USE FOR A/W ACQUISITION			
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION			



END GRADE  
-Y5A- STA. 81+25  
ELEV. 813.22

SEE SHEET 6 FOR PLAN VIEW

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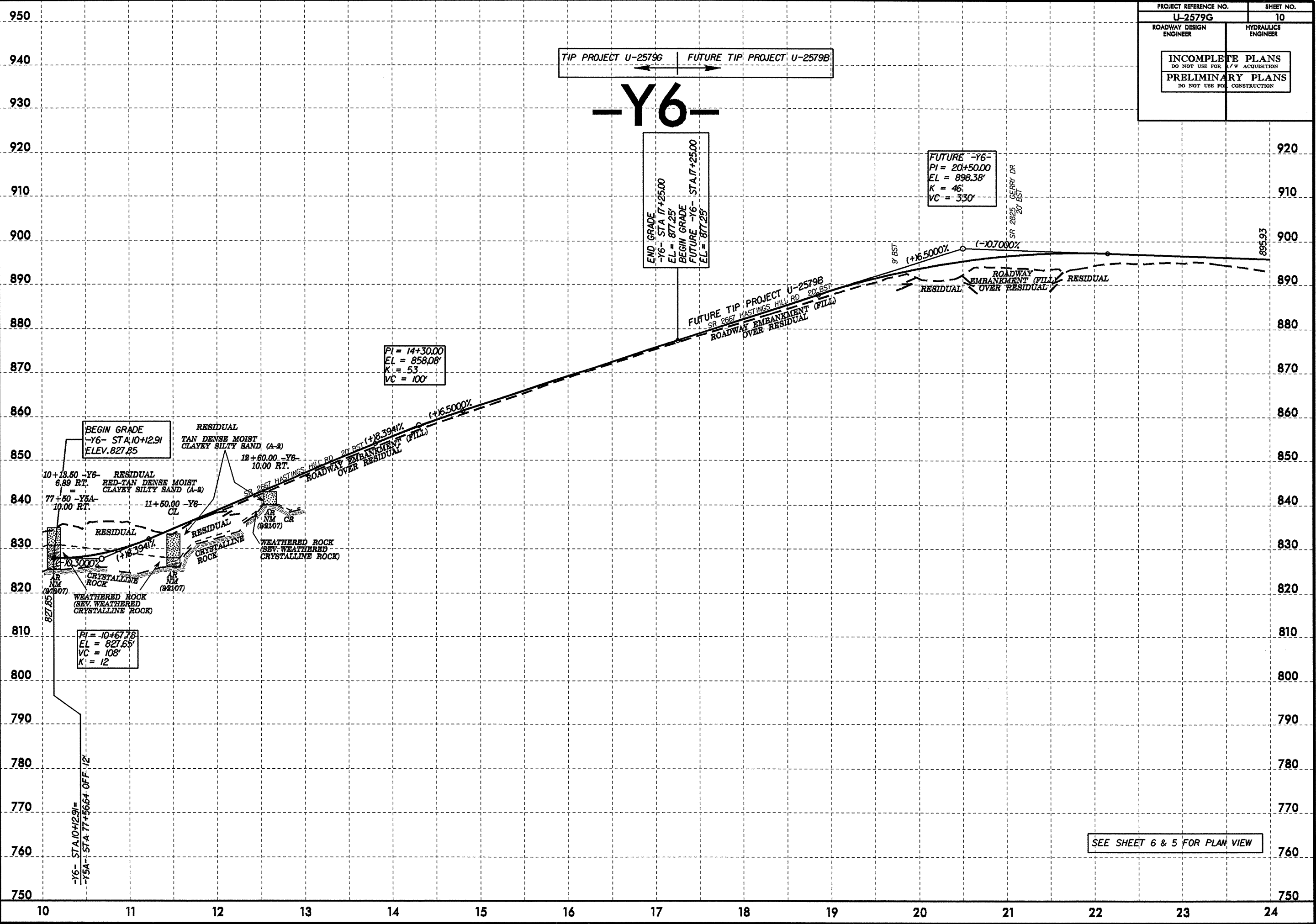
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5/14/99

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<b>INCOMPLETE PLANS</b> DO NOT USE FOR A/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

TIP PROJECT U-2579G      FUTURE TIP PROJECT U-2579B

# -Y6-

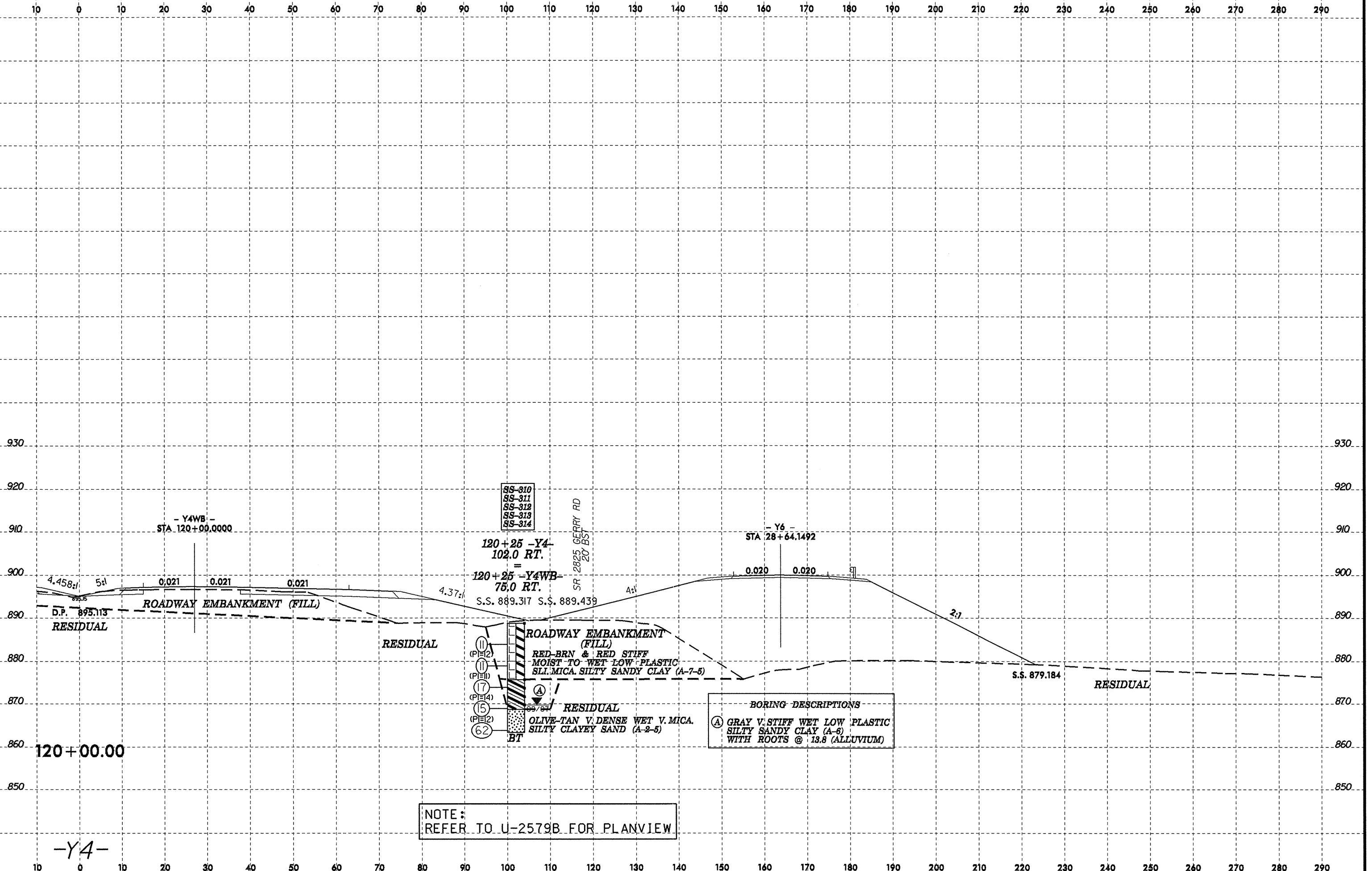


SEE SHEET 6 & 5 FOR PLAN VIEW

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 imccu@fws



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**NOTE:**  
REFER TO U-2579B FOR PLANVIEW

**BORING DESCRIPTIONS**  
 (A) GRAY V. STIFF WET LOW PLASTIC SILTY SANDY CLAY (A-6) WITH ROOTS @ 13.8 (ALLUVIUM)

SS-310  
SS-311  
SS-312  
SS-313  
SS-314

120+25 -Y4-  
102.0 RT.  
= 120+25 -Y4WB-  
75.0 RT.  
S.S. 889.317 S.S. 889.439

- Y6 -  
STA 28+64.1492

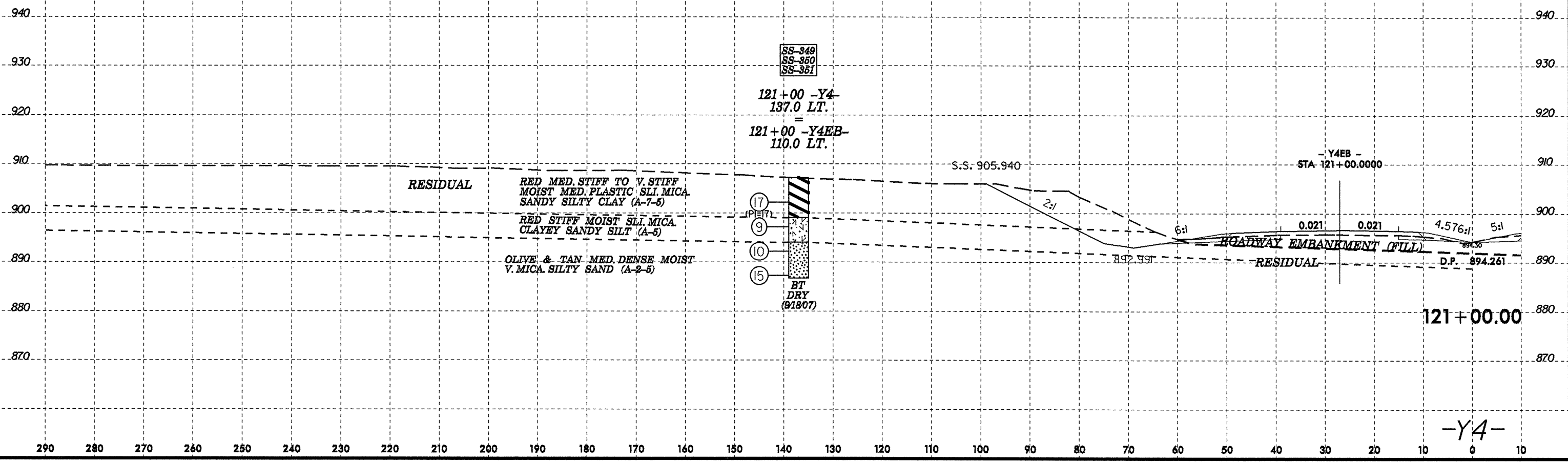
ROADWAY EMBANKMENT (FILL)  
RED-BRN & RED STIFF MOIST TO WET LOW PLASTIC SILTY MICA SILTY SANDY CLAY (A-7-5)  
RESIDUAL  
OLIVE-TAN V. DENSE WET V. MICA SILTY CLAYEY SAND (A-2-5)  
BT

120+00.00

-Y4-

8/23/99

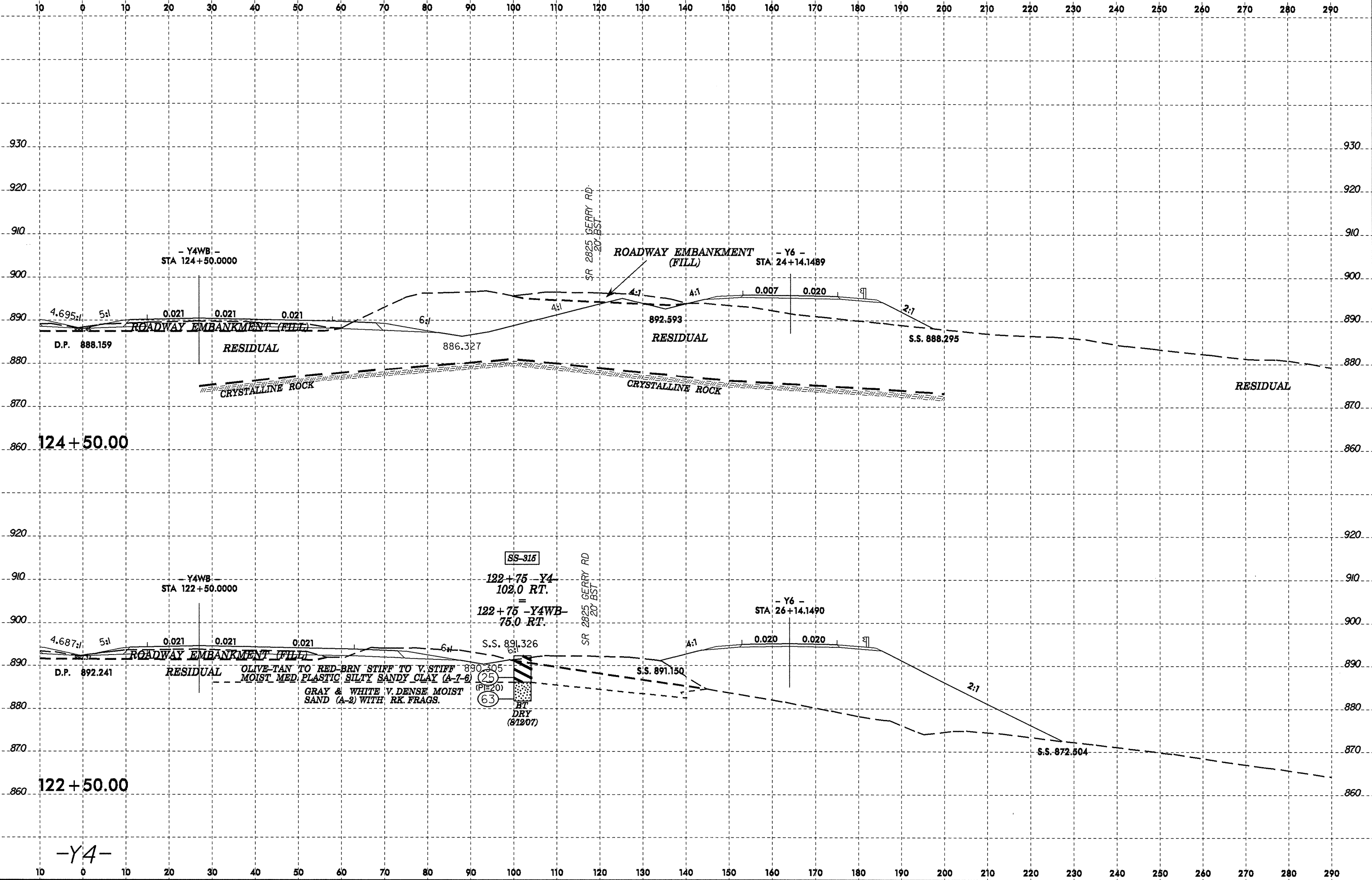
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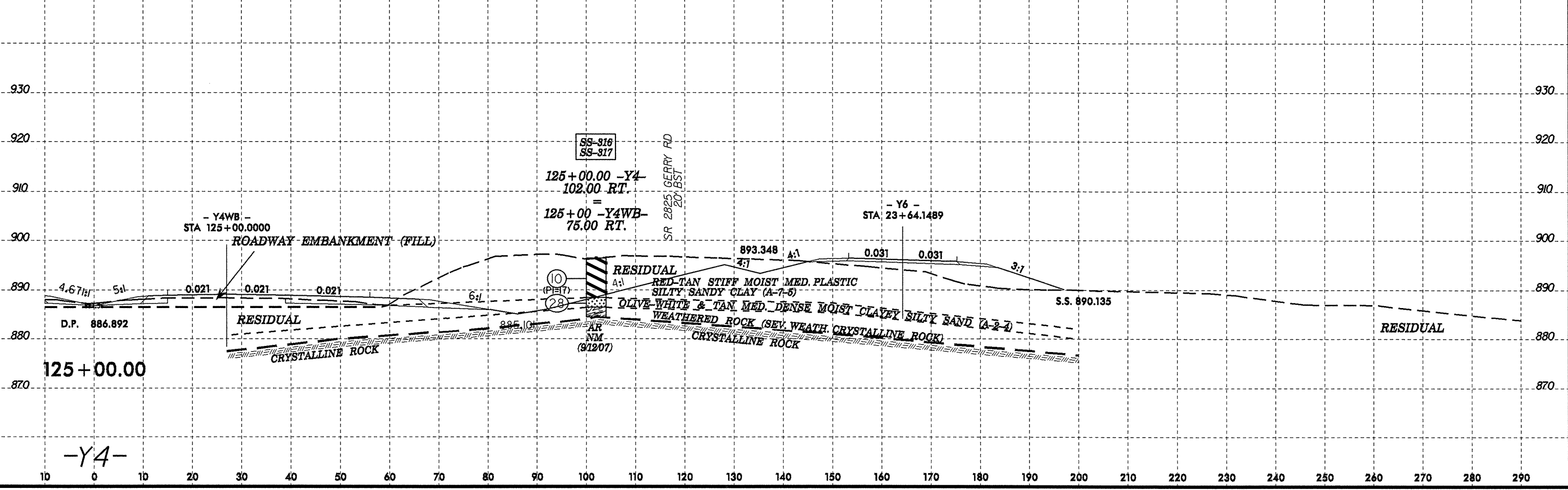
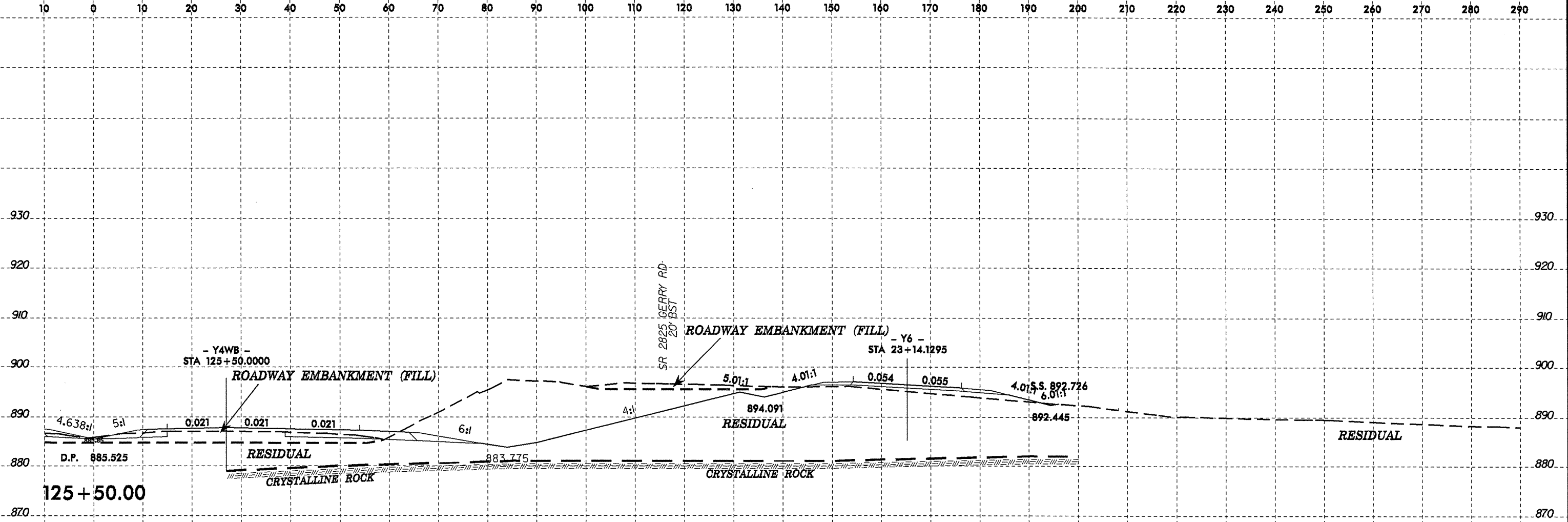
8/23/95



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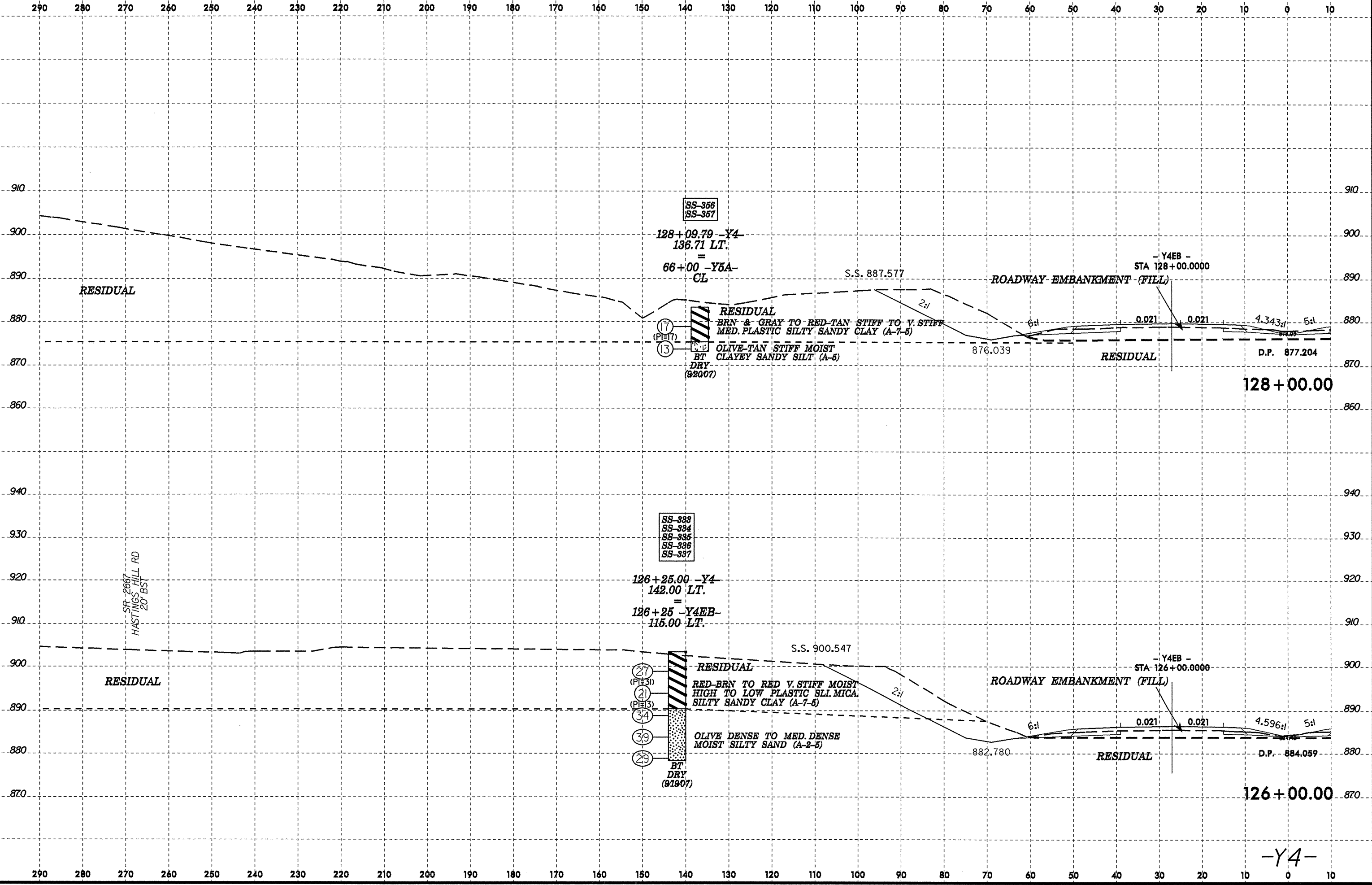
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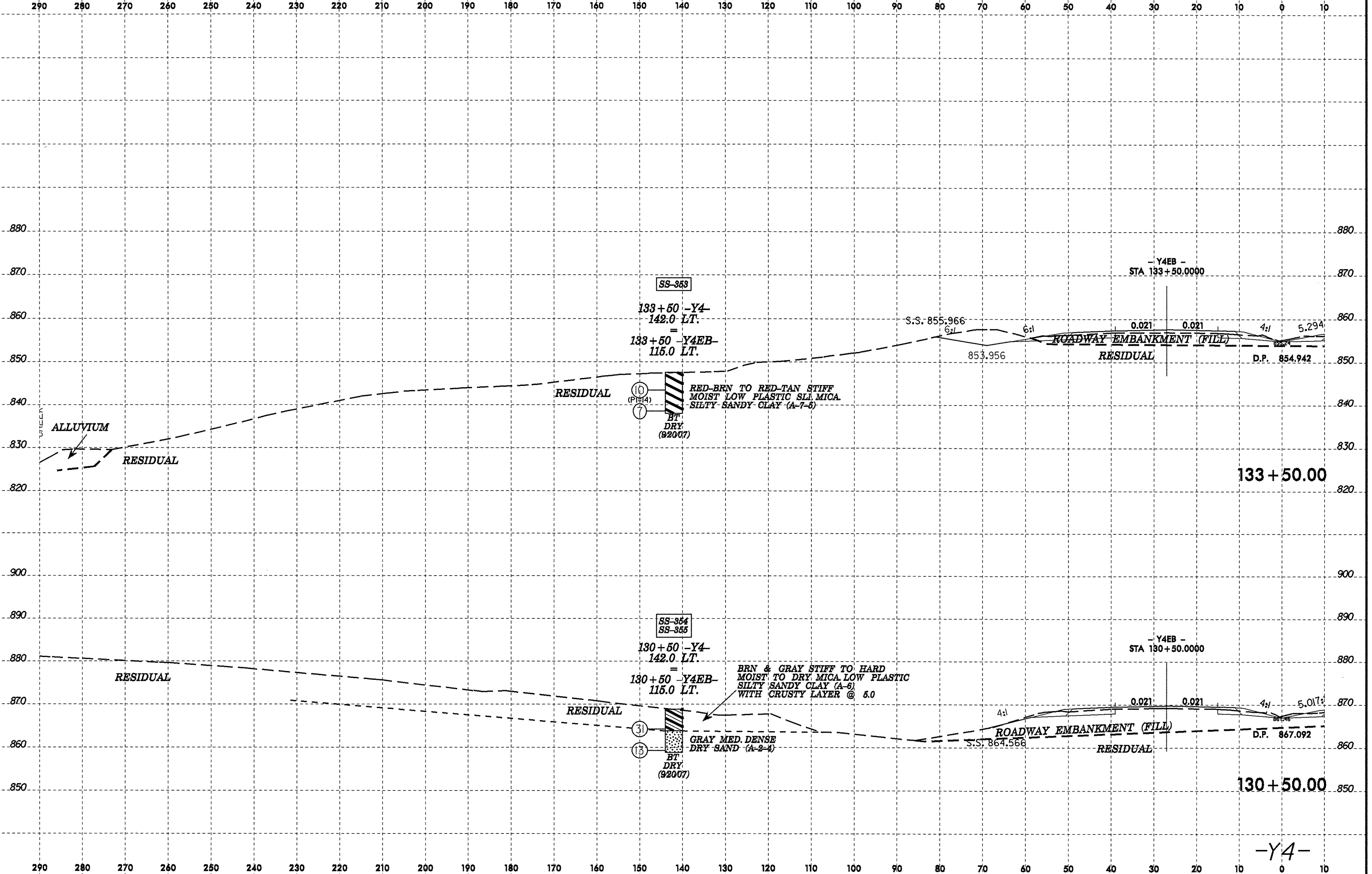




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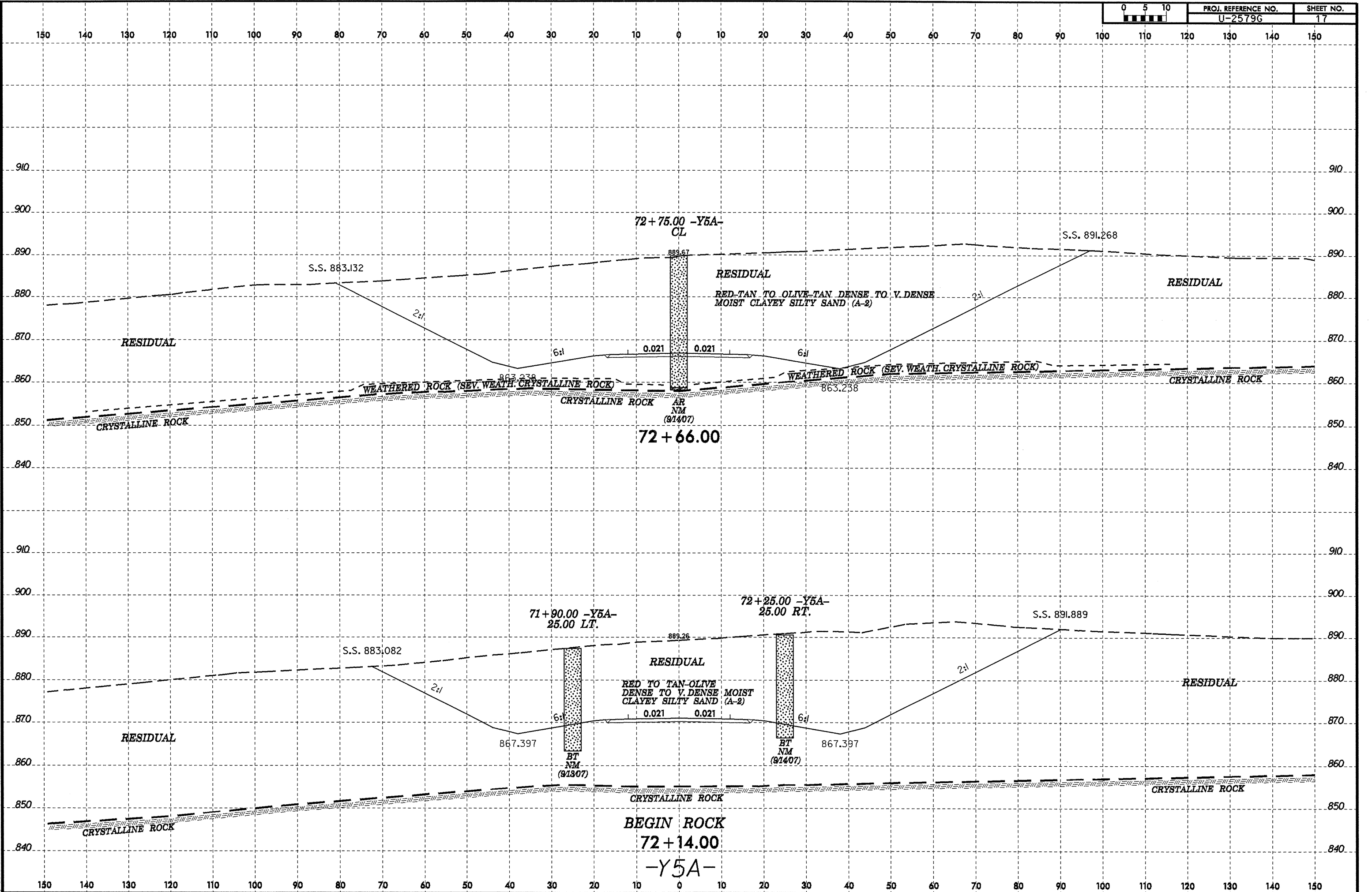
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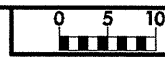


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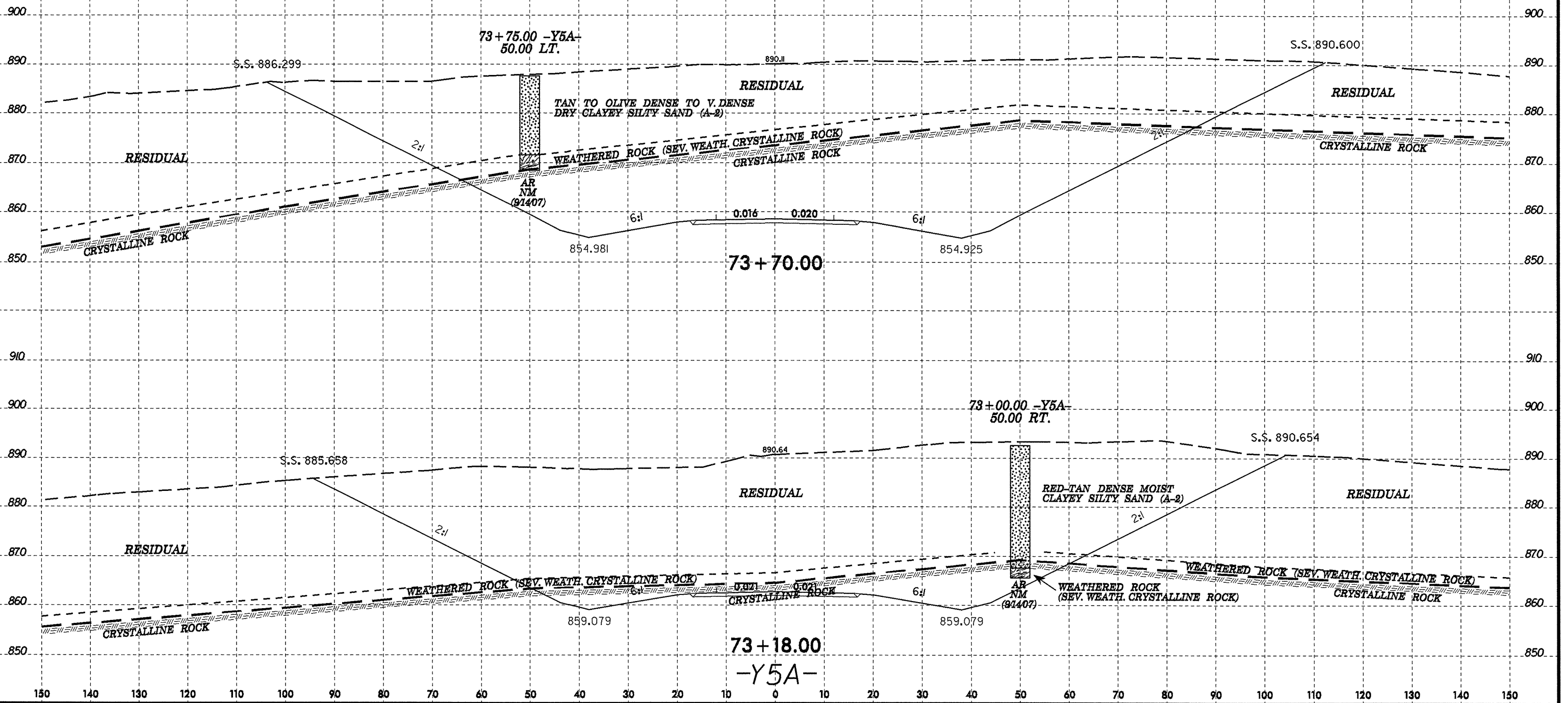
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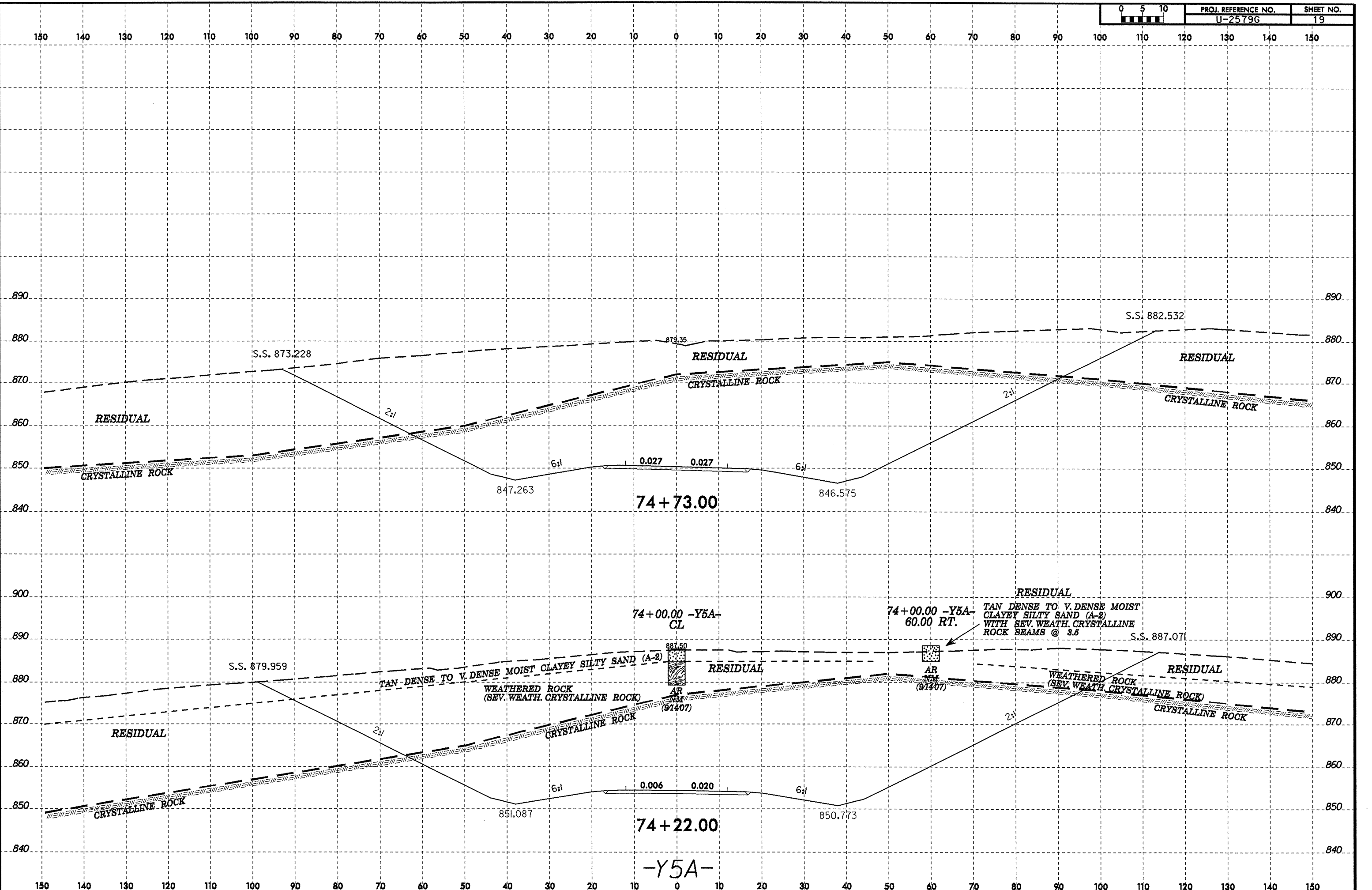
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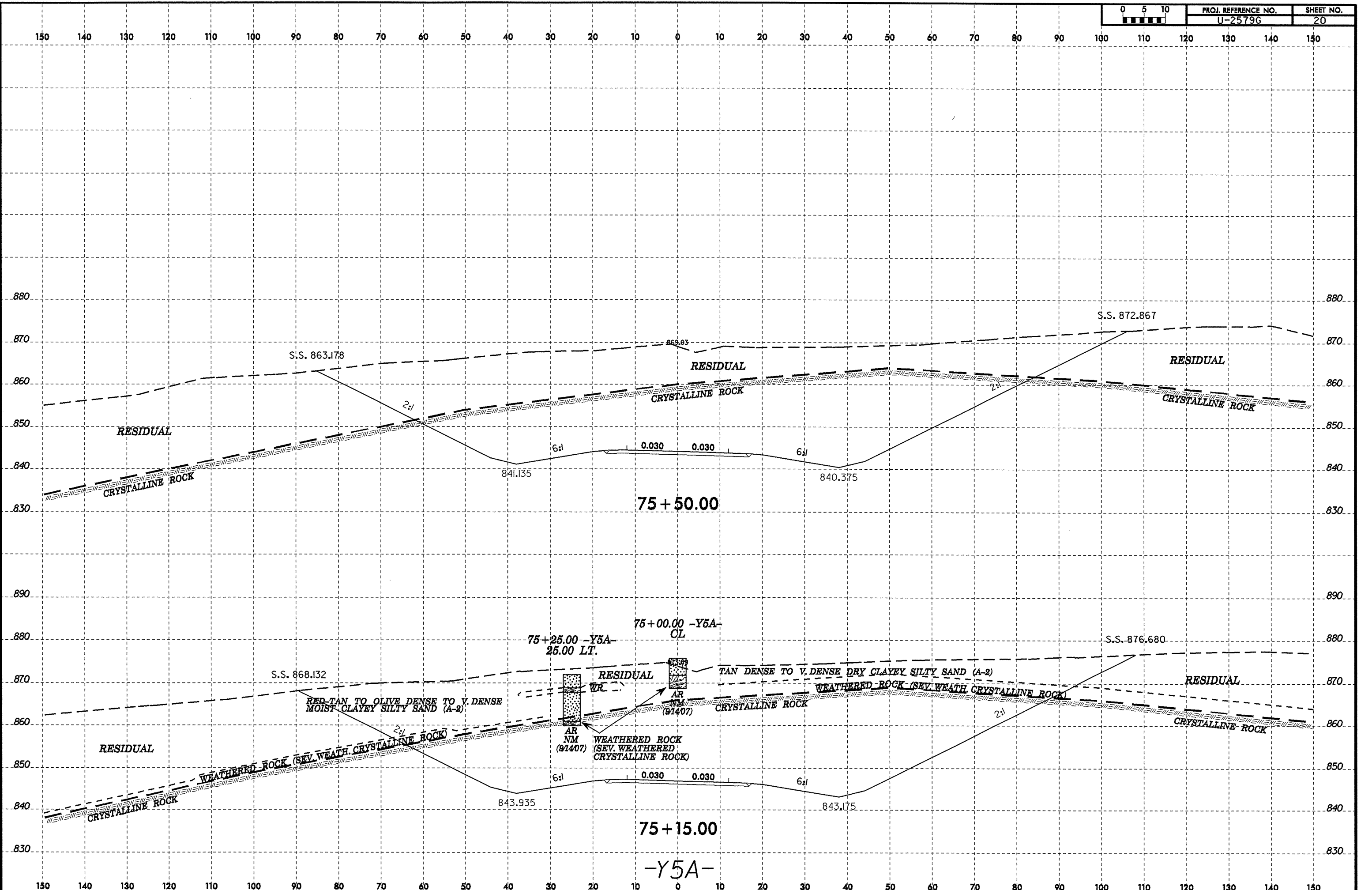
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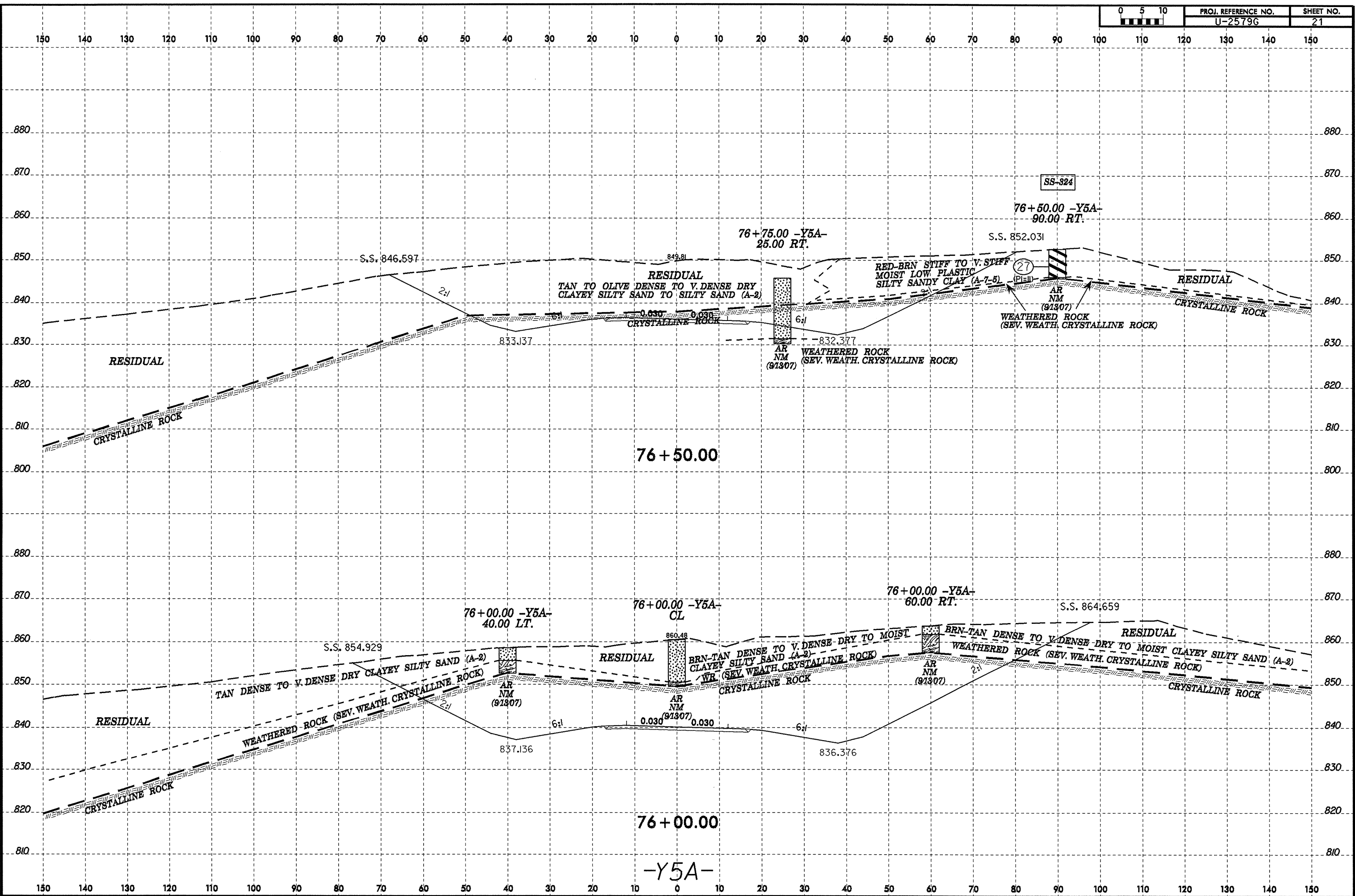
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imc@luc



76 + 50.00

76 + 00.00

-Y5A-

S.S. 846.597

76 + 75.00 -Y5A-  
25.00 RT.

S.S. 852.031

76 + 50.00 -Y5A-  
90.00 RT.

SS-324

RESIDUAL  
TAN TO OLIVE DENSE TO V. DENSE DRY  
CLAYEY SILTY SAND TO SILTY SAND (A-2)

RED-BRN STIFF TO V. STIFF  
MOIST LOW PLASTIC  
SILTY SANDY CLAY (A-7-5)

RESIDUAL  
CRYSTALLINE ROCK

RESIDUAL

CRYSTALLINE ROCK

AR NM (91307)  
WEATHERED ROCK  
(SEV. WEATH. CRYSTALLINE ROCK)

AR NM (91307)  
WEATHERED ROCK  
(SEV. WEATH. CRYSTALLINE ROCK)

S.S. 854.929

76 + 00.00 -Y5A-  
40.00 LT.

76 + 00.00 -Y5A-  
CL

76 + 00.00 -Y5A-  
60.00 RT.

S.S. 864.659

TAN DENSE TO V. DENSE DRY CLAYEY SILTY SAND (A-2)

RESIDUAL

BRN-TAN DENSE TO V. DENSE DRY TO MOIST  
CLAYEY SILTY SAND (A-2)

RESIDUAL  
BRN-TAN DENSE TO V. DENSE DRY TO MOIST CLAYEY SILTY SAND (A-2)

RESIDUAL

CRYSTALLINE ROCK

WEATHERED ROCK (SEV. WEATH. CRYSTALLINE ROCK)

AR NM (91307)

AR NM (91307)

AR NM (91307)

WEATHERED ROCK (SEV. WEATH. CRYSTALLINE ROCK)

CRYSTALLINE ROCK

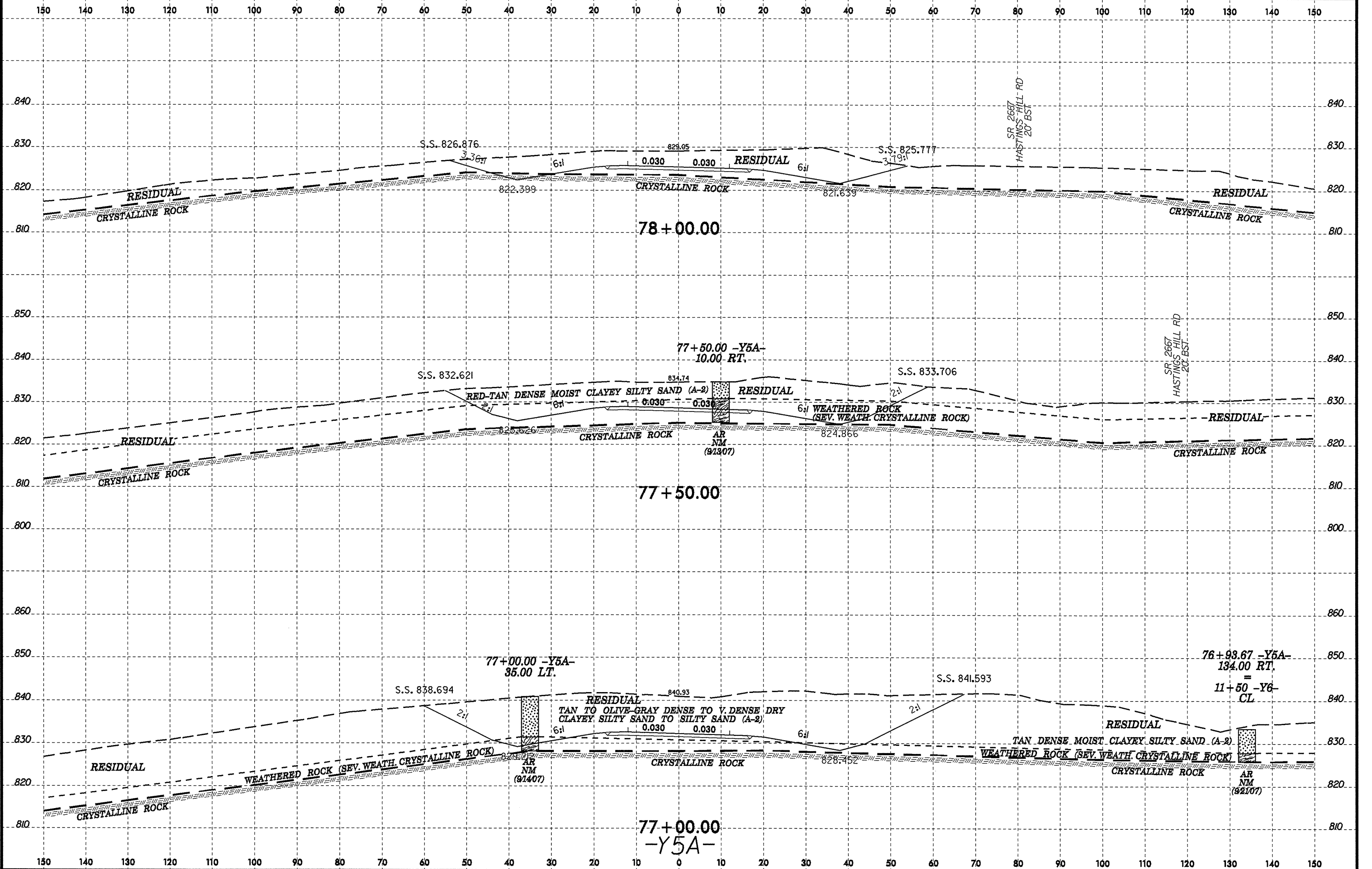
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860.48

836.376

S.S. 864.659

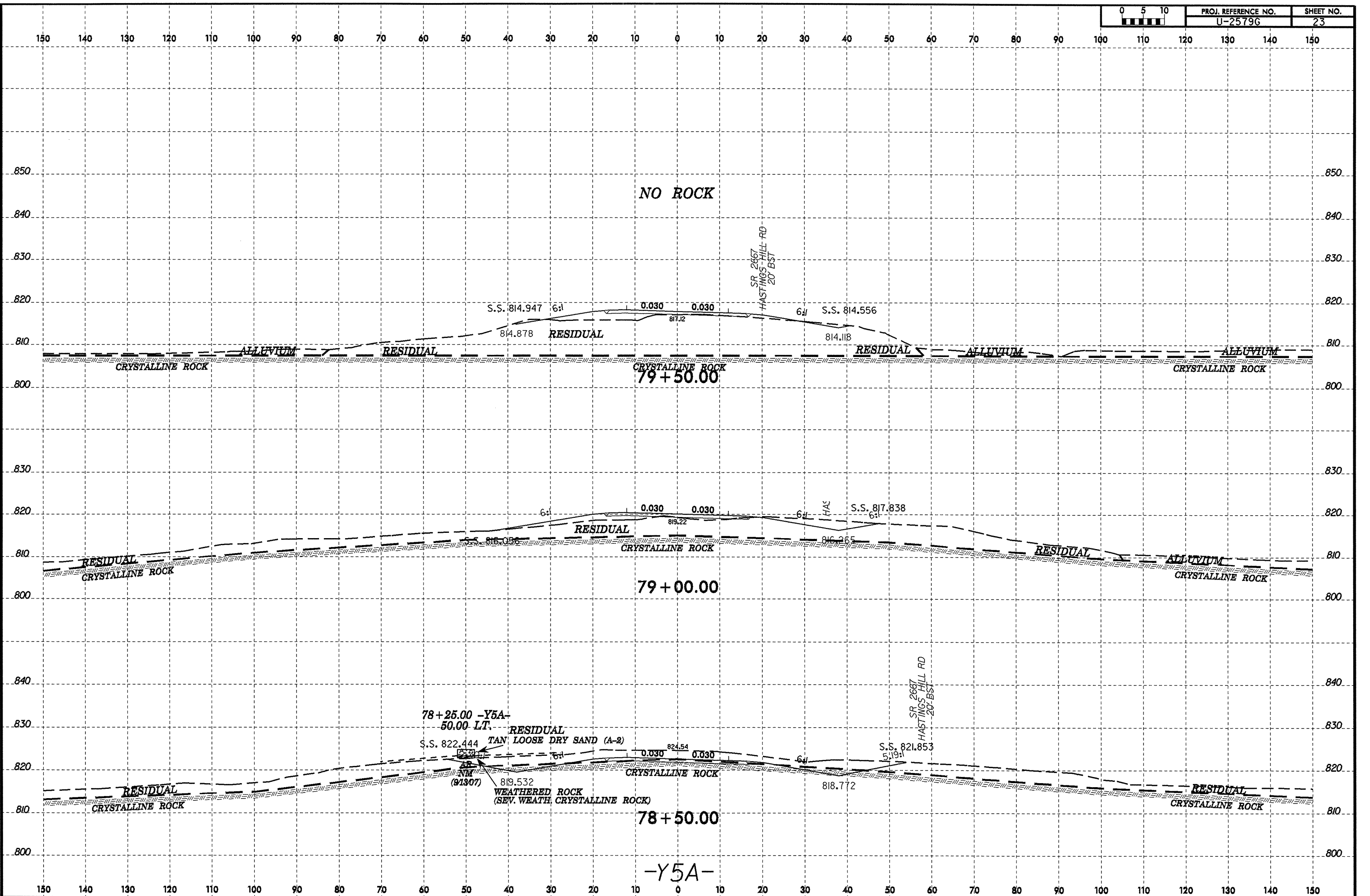
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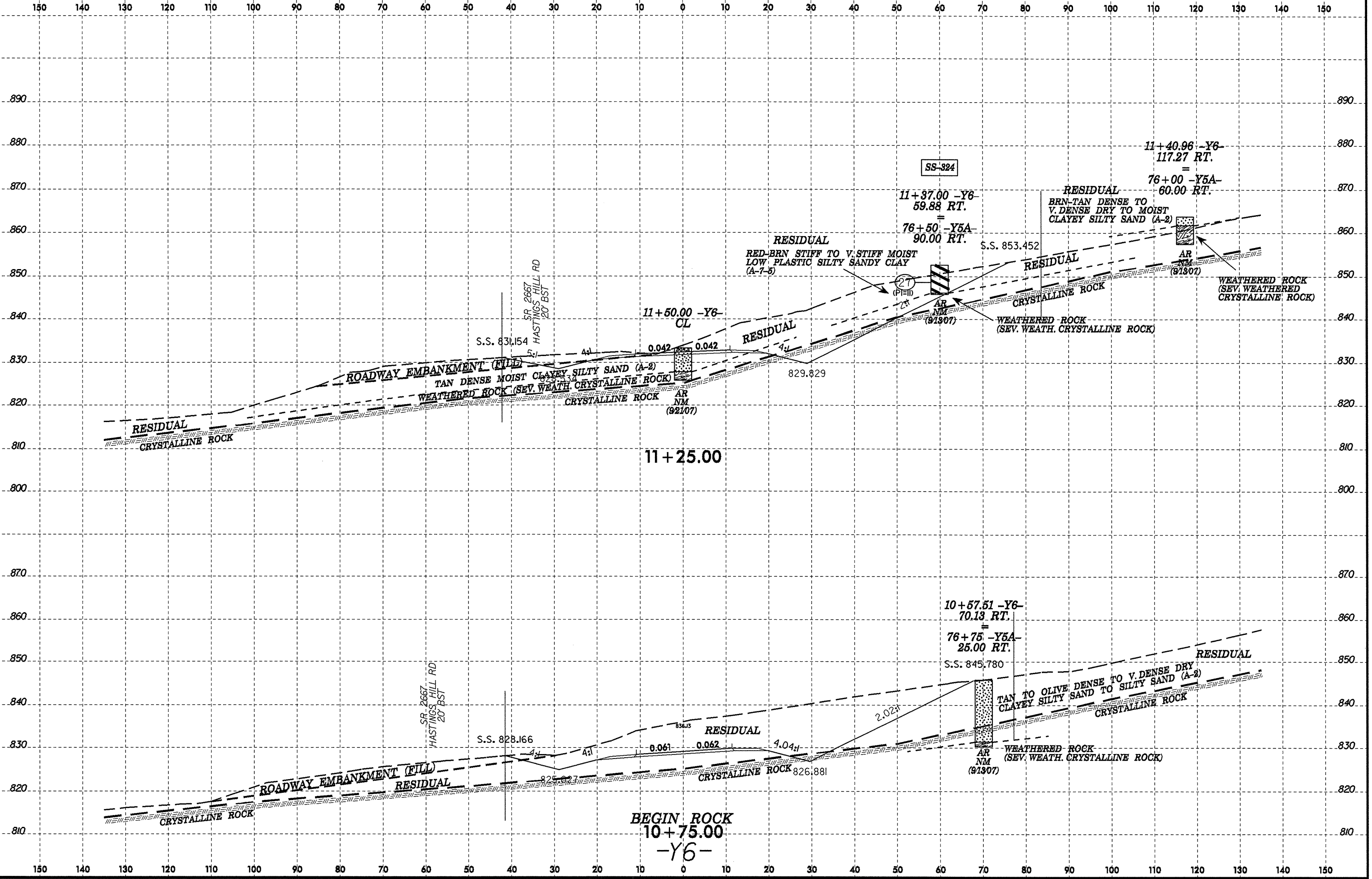
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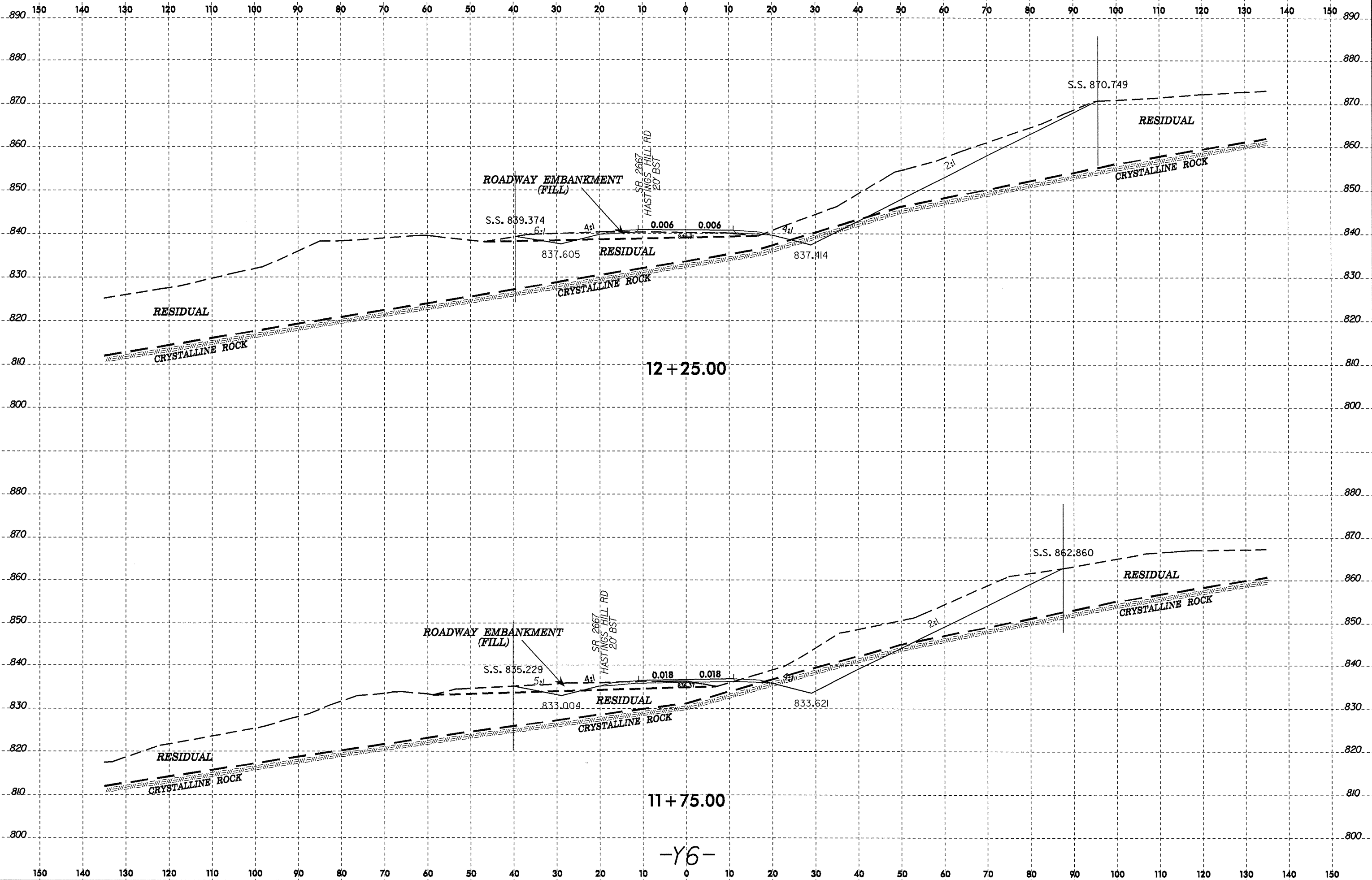
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8/23/99



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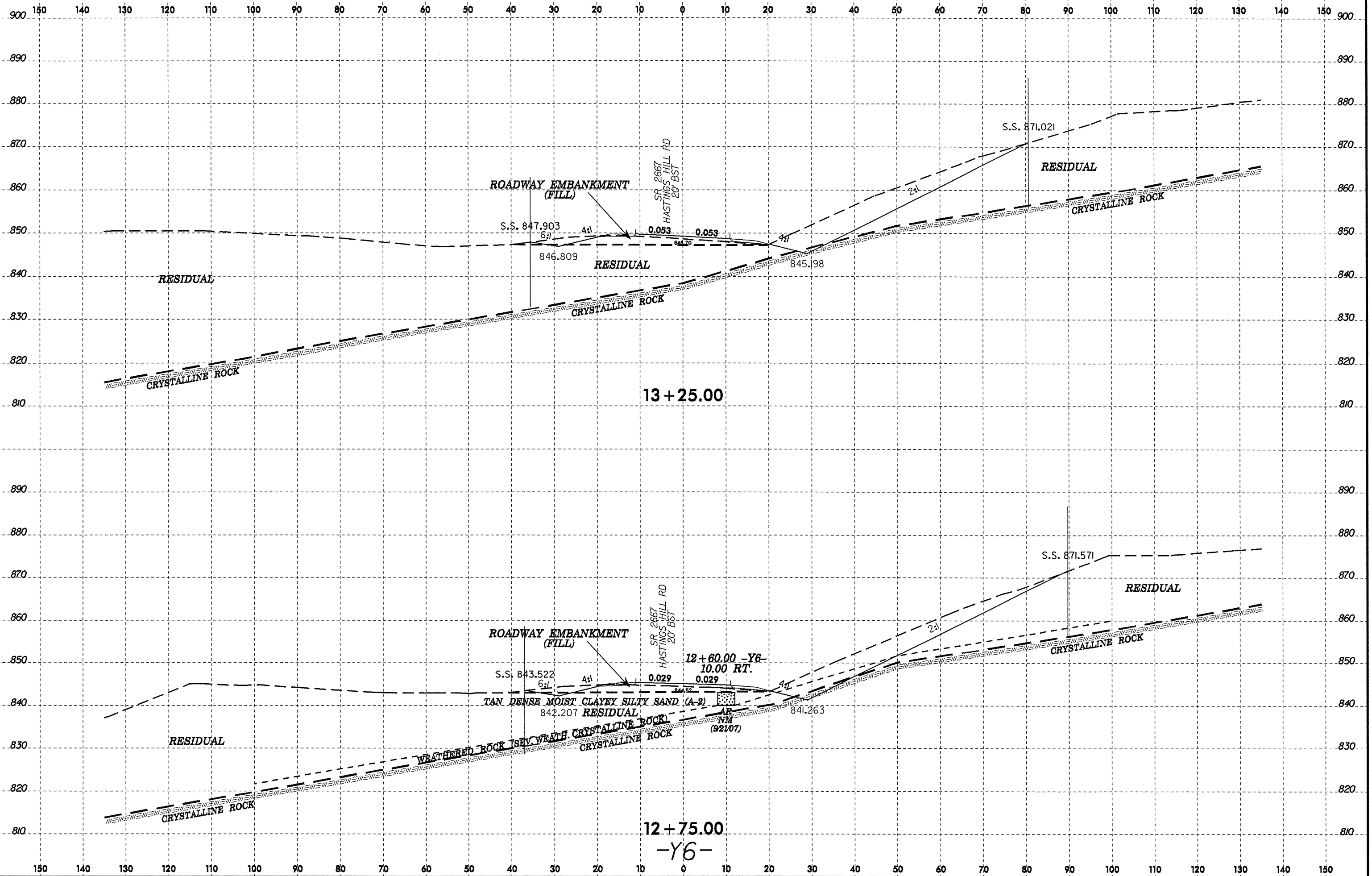
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11+75.00

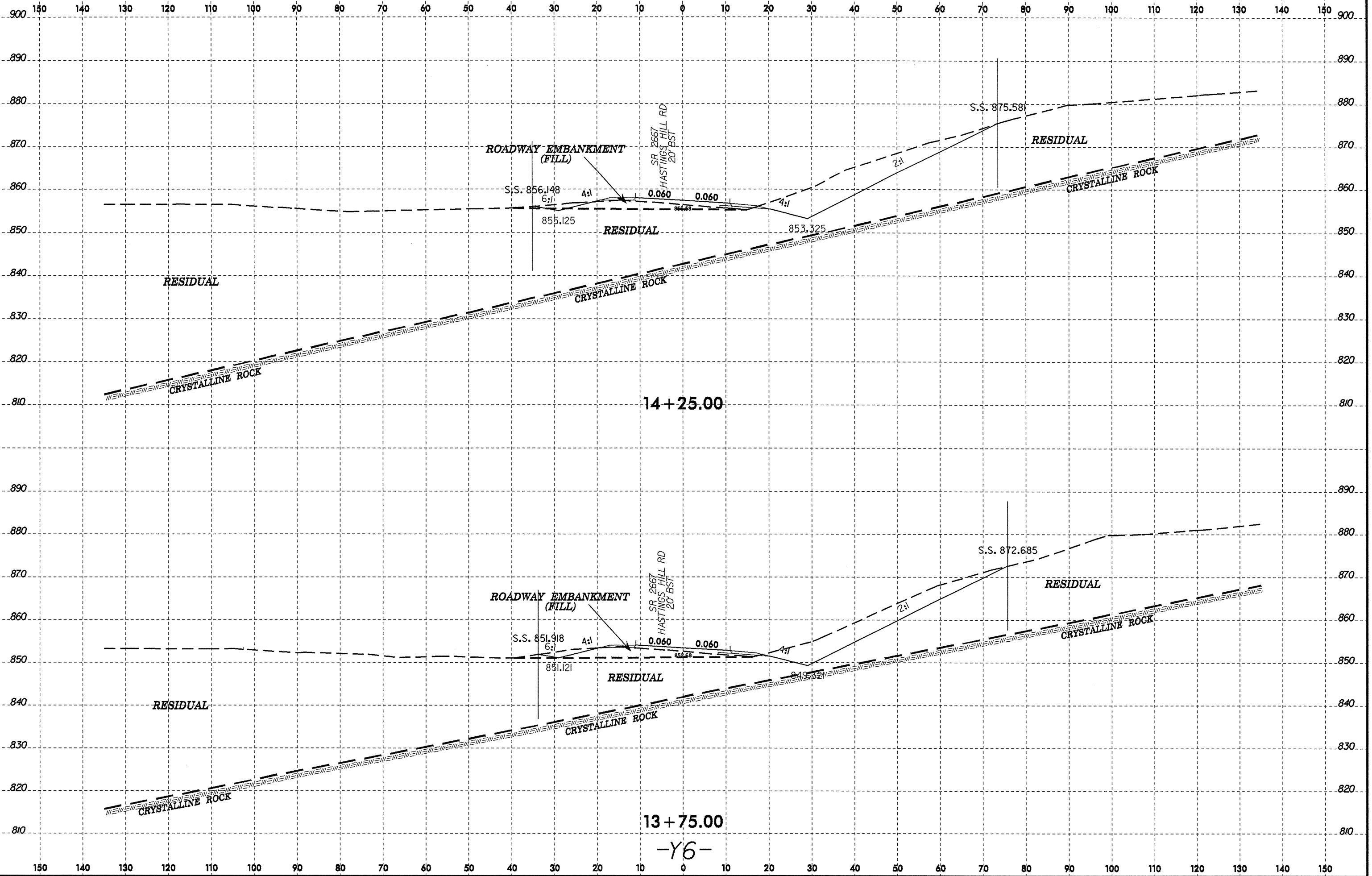
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8/23/99

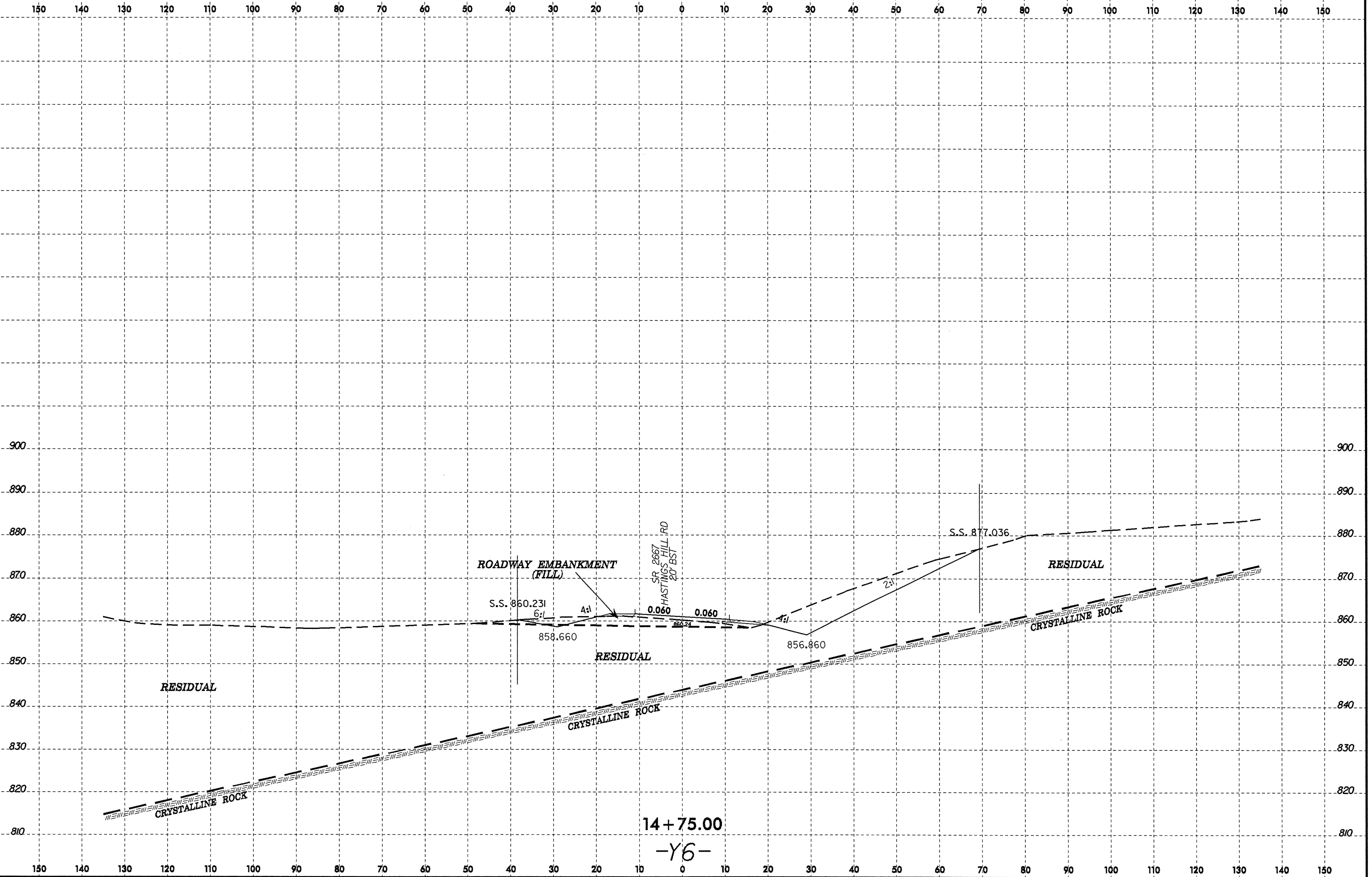


18-JAN-2011 15:23  
D:\Projects\U-2579G\_GEO\RDWY\_F\proj\4\CADD\_GEOTECH\U2579G\_Geo\_xsl\_1\_Y6.dgn



8/23/99

0 5 10	PROJ. REFERENCE NO. U-2579G	SHEET NO. 28
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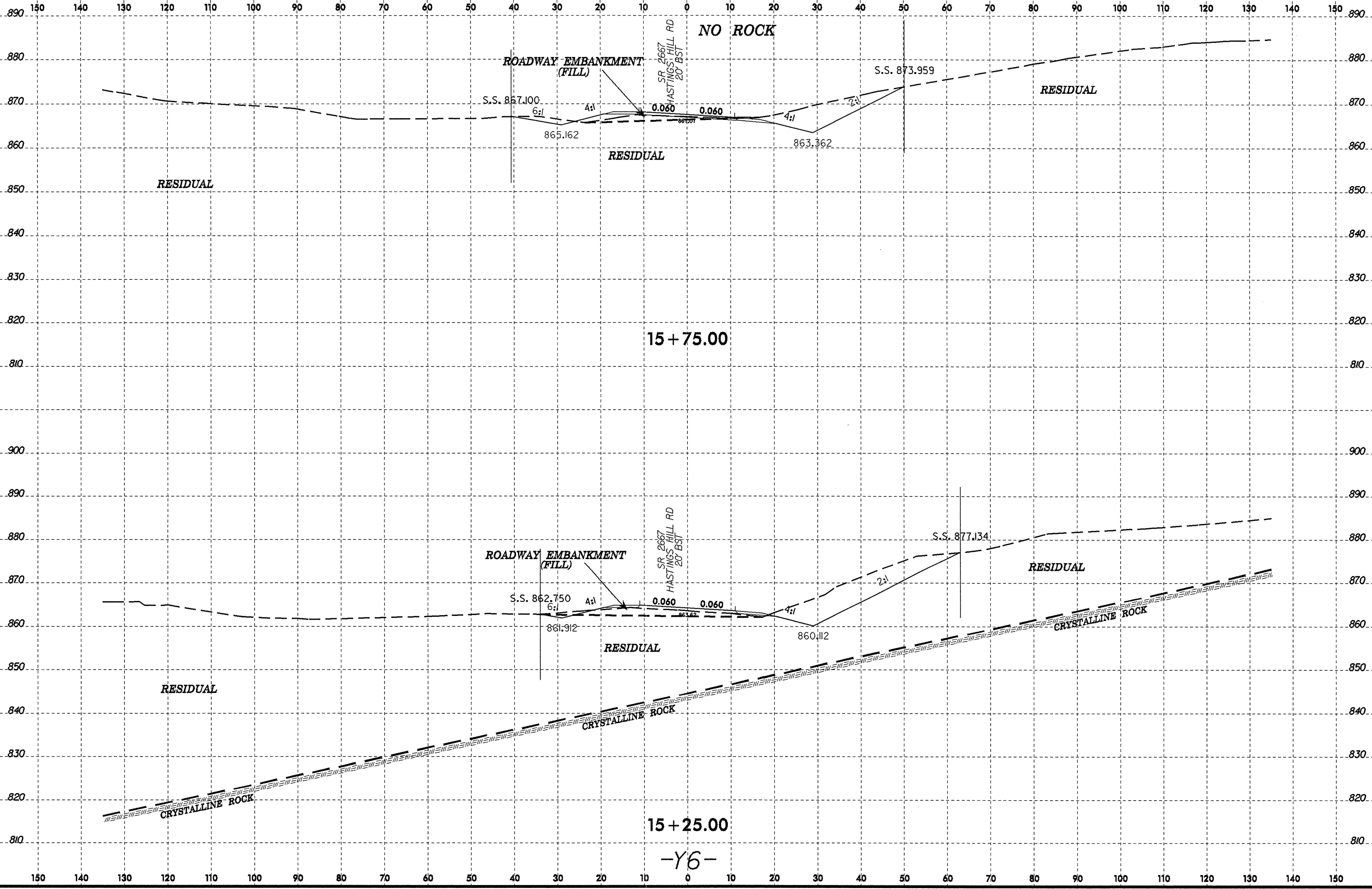


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 Date: 8/23/99



8/23/99

0 5 10	PROJ. REFERENCE NO. U-2579G	SHEET NO. 29
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 imc:ljr AT GEH248347

15+25.00

15+75.00

-Y6-

## SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC	Line or Boring ID
							C.SAND	F.SAND	SILT	CLAY	10	40	200			
SS-310	75 RT	120+25	3.80-5.30	A-7-5(2)	49	12	28.2	34.8	14.5	22.5	98	80	42	-	-	Y4WB
SS-311	75 RT	120+25	8.80-10.30	A-7-5(2)	53	11	50.1	10.2	15.1	24.5	99	70	40	-	-	Y4WB
SS-312	75 RT	120+25	13.80-15.30	A-6(3)	35	14	31.9	21.9	19.6	26.6	96	77	47	-	-	Y4WB
SS-313	75 RT	120+25	18.80-20.30	A-6(1)	35	12	43.8	21.7	12.1	22.5	97	67	36	-	-	Y4WB
SS-314	75 RT	120+25	23.80-25.30	A-2-5(0)	47	10	40.9	30.1	12.7	16.4	99	73	32	-	-	Y4WB
SS-315	75 RT	122+75	8.90-10.40	A-7-6(9)	48	20	22.7	19.0	11.2	47.0	93	79	56	-	-	Y4WB
SS-316	75 RT	125+00	3.20-4.70	A-7-5(4)	59	17	32.9	30.7	26.2	10.2	100	80	41	-	-	Y4WB
SS-317	75 RT	125+00	8.20-9.70	A-2-4(0)	31	NP	18.0	55.6	16.2	10.2	100	95	33	-	-	Y4WB
SS-318	10 LT	70+25	3.30-4.80	A-2-5(0)	47	5	24.3	44.8	24.8	6.1	100	89	35	-	-	Y5A
SS-319	10 LT	70+25	8.30-9.80	A-2-5(0)	46	6	45.6	30.5	19.8	4.1	100	69	28	-	-	Y5A
SS-320	10 LT	70+25	13.30-14.80	A-5(0)	44	5	34.8	30.7	26.4	8.2	98	77	39	-	-	Y5A
SS-321	10 LT	70+25	18.30-19.80	A-2-5(0)	51	5	50.3	32.3	13.3	4.1	99	65	21	-	-	Y5A
SS-322	10 LT	70+25	23.30-24.80	A-2-5(0)	43	6	42.7	38.2	14.9	4.1	83	60	21	-	-	Y5A
SS-323	10 LT	70+25	28.30-29.80	A-2-4(0)	36	1	38.2	34.4	23.3	4.1	75	54	25	-	-	Y5A
SS-324	90 RT	76+50	3.00-4.50	A-7-5(1)	47	11	32.3	30.3	10.8	26.6	98	81	40	-	-	Y5A
SS-333	115 LT	126+25	3.60-5.10	A-7-5(19)	61	31	21.3	16.4	11.6	50.7	100	86	64	-	-	Y4EB
SS-334	115 LT	126+25	8.60-10.10	A-7-5(3)	50	13	20.3	40.0	17.4	22.3	100	92	45	-	-	Y4EB
SS-335	115 LT	126+25	13.60-15.10	A-2-5(0)	45	5	29.4	45.6	16.8	8.1	98	83	30	-	-	Y4EB
SS-336	115 LT	126+25	18.60-20.10	A-2-5(0)	47	9	34.9	44.2	14.8	6.1	99	83	27	-	-	Y4EB
SS-337	115 LT	126+25	23.60-25.10	A-2-5(0)	54	8	31.8	46.2	13.8	8.1	100	84	27	-	-	Y4EB
SS-349	110 LT	121+00	3.90-5.40	A-7-5(7)	57	17	30.8	19.3	23.5	26.4	96	74	51	-	-	
SS-350	110 LT	121+00	8.90-10.40	A-5(0)	53	8	25.4	45.2	17.2	12.2	98	83	36	-	-	Y4EB
SS-351	110 LT	121+00	13.90-15.40	A-2-5(0)	49	8	25.4	50.3	16.2	8.1	100	84	32	-	-	Y4EB
SS-353	115 LT	133+50	3.10-4.60	A-7-5(3)	49	14	35.1	28.8	17.8	18.3	100	76	41	-	-	Y4EB
SS-354	115 LT	130+50	3.60-5.10	A-6(1)	40	12	20.9	43.6	11.2	24.3	95	86	38	-	-	Y4EB
SS-355	115 LT	130+50	8.60-10.10	A-2-4(0)	31	NP	54.6	33.5	7.9	4.1	90	57	14	-	-	Y4EB
SS-356	CL	66+00	3.60-5.10	A-7-5(7)	54	17	19.5	30.2	19.9	30.4	94	84	52	-	-	Y5A
SS-357	CL	66+00	8.60-10.10	A-5(2)	45	8	15.6	48.9	25.4	10.1	100	94	45	-	-	Y5A