

STATE	STATE PROJECT REFERENCE NO.	SHEET	TOTAL SHEETS
N.C.	U-2579AB	1	102
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34839.1.1	NHF-0918(14)	P.E.	
		RW & UTIL.	

CAUTION NOTICE

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

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

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

PERSONNEL
C.G. MURRAY

J.E. ESTEP

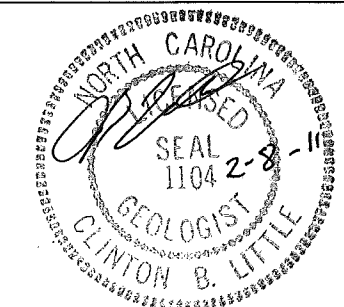
M.R. MOORE

INVESTIGATED BY **R.Q. CALLAWAY**

CHECKED BY **G.B. LITTLE**

SUBMITTED BY **G.B. LITTLE**

DATE **JANUARY, 2011**



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

ROADWAY
SUBSURFACE INVESTIGATION

PROJ. REFERENCE NO. 34839.1.1 (U-2579AB) F.A. PROJ. NHF-0918(14)
COUNTY FORSYTH
PROJECT DESCRIPTION WINSTON-SALEM NORTHERN BELTWAY
(EASTERN SECTION OF FUTURE I-74)
FROM I-40 TO I-40 BUS /US 421

INVENTORY

NOTE: SEE SHEET 2A FOR PLAN SHEET LAYOUT AT TIME OF INVESTIGATION

CONTENTS

LINE	STATION	PLAN	PROFILE	XSECT	
-L-	692+32.98 to 836+32.44	4-12	28-33	76-87	
-Y1-	10+00.00 to 15+50.00	14	33		
-Y1B-	12+00.00 to 41+83.63	5,6,14	34-35		
-Y1BDET-	16+00.00 to 31+00.00	14A	35		
-Y2-	10+00.00 to 14+30.93	6	36		
-Y4D-	10+00.00 to 11+00.00	15	36		
-Y4-	11+00.00 to 60+50.00	13,6,14,15	37-38		
-Y4DET-	10+00.00 to 36+52.73	15A	39		
-Y4RPA-	10+00.00 to 27+70.87	6	40		
-Y4RPB-	10+00.00 to 28+87.96	6	41		
-Y4RPC-	10+00.00 to 26+16.04	7,8	42		
-Y4RPD-	10+00.00 to 27+40.58	7,8	43		
-Y4SPRA-	10+00.00 to 14+00.44	6	44		
-Y4SPRB-	10+00.00 to 13+33.00	6	44		
-Y4SPRC-	10+00.00 to 14+24.68	6	44		
-Y4SPRD-	10+00.00 to 13+33.00	6	44		
-Y4A-	10+00.00 to 18+00.00	13	45		
-Y4B-	12+50.00 to 14+52.58	13	45		
-Y5B-	14+00.00 to 23+50.00	26	46		
-Y8-	13+00.00 to 20+00.00	27	46		
-Y15-	21+50.00 to 56+00.00 LB	16-18	47-48		
-Y15REV-	8+00.00 LA to 96+28.30 LB	18,19,10,20,21	48-51		
-Y15-	145+00.00 LA to 176+96.90	21-24	51-52		
-Y15FLYAC-	10+00.00 to 93+22.52	21,20,10,11	53-55	88,89	
-Y15FLYBD-	10+00.00 to 97+36.57	9,10,25,20,21	56-59	90-92	
-Y15FLYCA-	10+00.00 to 90+39.94	17-19,11,10,9	60-62	93-96	
-Y15RPA-	10+00.00 to 36+16.69	20,10,9	63		
-Y15RPB-	10+00.00 to 41+32.99	10,19	64-65		
-Y15RPC-	10+00.00 to 32+03.05	19,11	65-66		
-Y15RPD-	10+00.00 to 40+50.44	25,11	66-67		
-Y15LPA-	10+00.00 to 26+95.04	10	68		
-Y16-	12+00.00 to 34+00.00	11	69		
-Y16DET-	13+00.00 to 33+76.97	11A	70		
-16A-	10+00.00 to 12+51.55	11	71		
-Y16B-	10+00.00 to 15+23.68	11	71		
-UXRPB-	10+00.00 to 19+13.04	23	72		
-UXRPC-	10+00.00 to 23+89.52	22,23	72		
-SERVI-	10+00.00 to 29+32.42	13,6	73	97	
-Y15XOVER1-	10+00.00 to 21+89.81	24A	74		
-Y15XOVER2-	10+00.00 to 21+89.81	24B	74		
-Y6-	10+09.31 to 12+50.00	6	75		
SAMPLE RESULTS		98-102			

CONTRACT: 34839.1.1 ID: U-2579AB

DRAWN BY: **J.K. McCLURE/J.E. ROLFSMEYER**

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

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

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

PROJECT REFERENCE NO.
34839.W(U-2579AB) SHEET NO.
2

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION		GRADATION		ROCK DESCRIPTION		TERMS AND DEFINITIONS																																																																									
SOIL IS CONSIDERED TO BE THE UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER, AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO STANDARD PENETRATION TEST (ASTM D-1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY SHALL INCLUDE: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. EXAMPLE: VERY STIFF, GRAY, SILTY CLAY, MOST WITH INTERBEDDED FINE SAND LAYERS, HEAVY PLASTIC, A-7-6		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. THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.		HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT IF TESTED, WOULD YIELD SPT REFUSAL, AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 60 BLOWS PER FOOT IN NON-COASTAL PLAIN MATERIAL. THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:		ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER. AQUIFER - A WATER BEARING FORMATION OR STRATA. ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, AS SHALE, SLATE, ETC. ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE. CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK. DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL. DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM PARENT MATERIAL. FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. FORMATION (FM) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD. JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED. LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT. LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS. MOTTLED (MOTL) - 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 (ROQI) - 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 60 BLOWS PER FOOT. 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 (SROQI) - 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.																																																																									
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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.		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.		DRILL UNITS: <input type="checkbox"/> MOBILE B- <input type="checkbox"/> BK-51 <input type="checkbox"/> CME-45C <input checked="" type="checkbox"/> CME-550 <input type="checkbox"/> PORTABLE HOIST <input type="checkbox"/> _____ <input type="checkbox"/> _____		ADVANCING TOOLS: <input type="checkbox"/> CLAY BITS <input checked="" type="checkbox"/> 6" CONTINUOUS FLIGHT AUGER <input checked="" type="checkbox"/> 8" HOLLOW AUGERS <input type="checkbox"/> HARD FACED FINGER BITS <input checked="" type="checkbox"/> TUNG-CARBIDE INSERTS <input type="checkbox"/> CASING <input type="checkbox"/> W/ ADVANCER <input type="checkbox"/> TRICONE _____ * STEEL TEETH <input type="checkbox"/> TRICONE _____ * TUNG-CARB. <input type="checkbox"/> CORE BIT <input type="checkbox"/> _____																																																																									

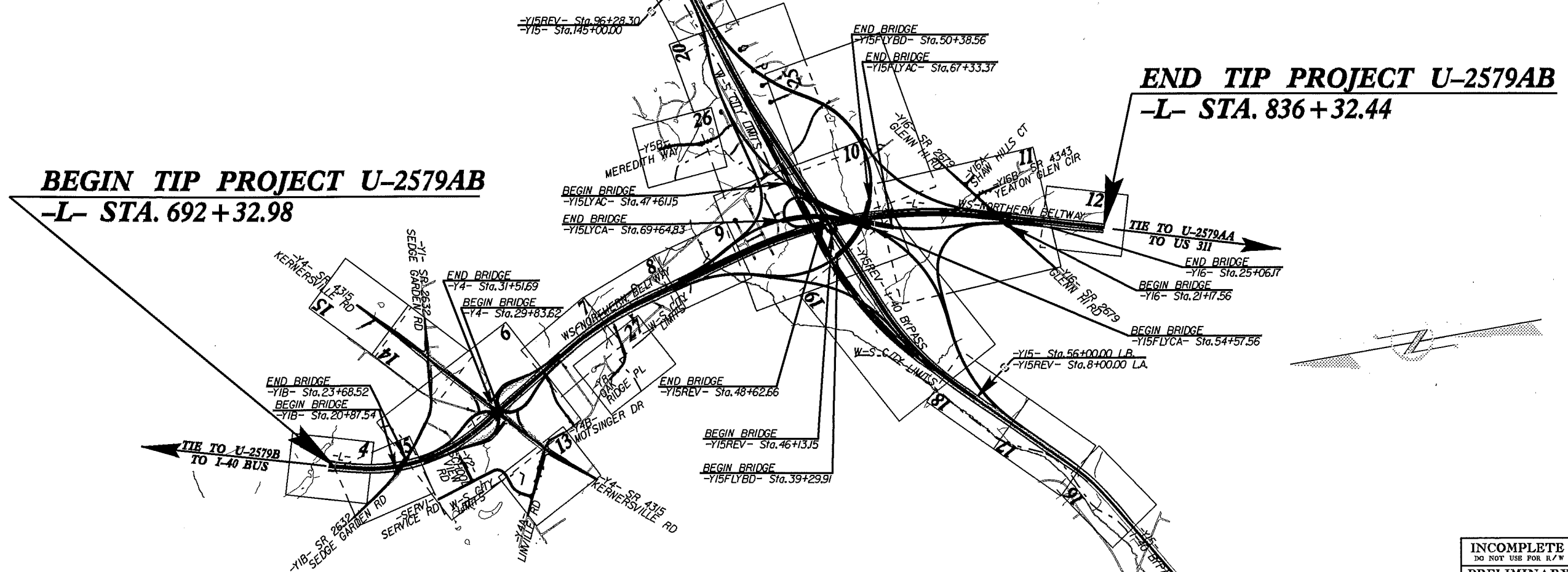
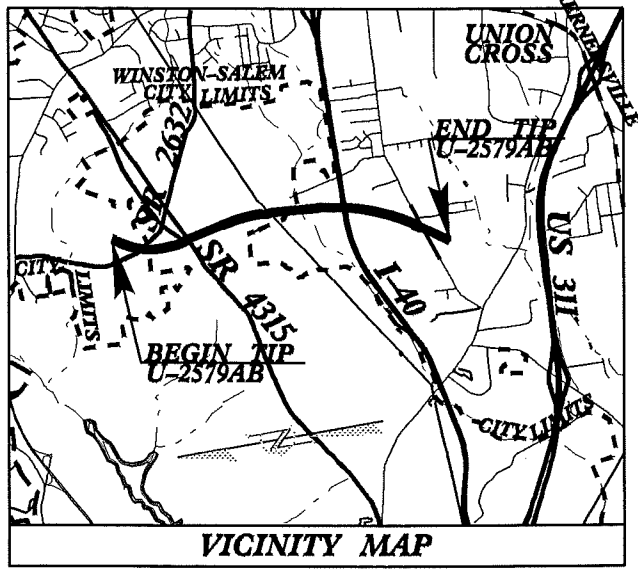
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-2579AB	2A	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34839.1.1	NHF - 0918(14)	PE	

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

FORSYTH COUNTY

LOCATION: WINSTON-SALEM - NORTHERN BELTWAY
(EASTERN SECTION OF FUTURE I-74)
FROM I-40 TO I-40 BUS / US 421
TYPE OF WORK: GRADING, PAVING, DRAINAGE, STRUCTURES,
SIGNALS, SIGNING, PAVEMENT MARKERS

See Sheet 1-A For Index of Sheets



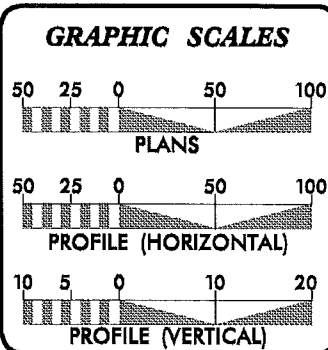
BEGIN TIP PROJECT U-2579AB
-L- STA. 692 + 32.98

END TIP PROJECT U-2579AB
-L- STA. 836 + 32.44

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

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

CONTRACT: TIP PROJECT: U-2579AB



DESIGN DATA

ADT 2015 =	28,143
ADT 2035 =	39,000
DHV =	10 %
D =	60 %
T =	18 % *
V =	70 MPH
* TTST 6	DUAL 12

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT U-2579AB = 2.73 MILES
TOTAL LENGTH OF TIP PROJECT U-2579AB = 2.73 MILES

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
DECEMBER 18, 2009

LETTING DATE:
JANUARY 20, 2015

TONY HOUSER, PE
PROJECT ENGINEER

BRUCE PAYNE, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____

ROADWAY DESIGN ENGINEER

SIGNATURE: _____

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

STATE PROJECT: 34839.1.1 (U-2579AB)
FEDERAL PROJECT: NHF-0918(14).
COUNTY: FORSYTH
DESCRIPTION: WINSTON SALEM NORTHERN BELTWAY (EASTERN SECTION)
(FUTURE I-74) FROM I-40 to I-40 Bus / US 421

SUBJECT: GEOTECHNICAL REPORT – Inventory

PROJECT DESCRIPTION

The U-2579 projects are part of future I-74, and are the eastern leg of a future Winston–Salem beltway. From the south end of U-2579B this project, U-2579AB, will advance I-75 construction as the -L- alignment. The new road will pass under Kernersville road, and connect with it through ramps etcetera. It will pass under existing I-40 Bypass (-Y15-) and connect to it through ramps, a loop and three flyovers. The -L- line is mostly in cut up to the I-40 Bypass, and then beyond it is close to at-grade. The I-40 bypass, (Y-15-), will require relocation of about 5400' of -Y-15 to a new alignment that is at the same grade. New construction will join the ramps, loop, and flyovers to existing -Y-15-. The field investigation was conducted from August, 2008 to February 2009, using a CME-550 drill machine with an automatic hammer. Standard Penetration Tests, (SPT), were performed through hollow stem augers at selected locations. Representative soil samples were collected and forwarded to the Materials and Tests Unit laboratory for soil quality analysis, moisture content and ASTM classification. All available drill-holes are plotted on the plan view and profiles.

The following alignments, totaling 19.68 miles, were investigated.

Alignment	Station	to	Station	Length Feet
-L-	692+32.98		836+32.44	14,400
-Y1-	10+00.00		15+50.00	550.00
-Y1B-	12+00.00		41+83.63	2983.63
-Y1BDET-	16+00.00		31+00.00	1500.00
-Y2-	10+00.00		14+30.93	430.93
-Y4D-	10+00.00		11+00.00	100.00
-Y4-	11+00.00		60+50.00	4950.00
-Y4DET-	10+00.00		36+52.73	2652.73
-Y4RPA-	10+00.00		27+70.87	1770.87

-Y4RPB-	10+00.00		28+87.96	1887.96
-Y4RPC-	10+00.00		26+16.04	1616.04
-Y4RPD-	10+00.00		27+40.58	1740.58
-Y4SPRA-	10+00.00		14+00.44	400.44
-Y4SPRB-	10+00.00		13+33.00	333.00
-Y4SPRC-	10+00.00		14+24.68	424.68
-Y4SPRD-	10+00.00		13+33.00	333.00
-Y4A-	10+00.00		18+00.00	800.00
-Y4B-	12+50.00		14+52.58	202.58
-Y4B-	14+00.00		23+50.00	950.00
-Y8-	13+00.00		20+00.00	700.00
-Y15-	21+50.00		56+00.00	3450.00
-Y15REV-	8+00.00		96+28.30	8828.3
-Y15-	145+00.00		176+96.90	3196.9
-Y15FLYAC-	10+00.00		93+22.52	9312.52
-Y15FLYBD-	10+00.00		97+36.57	8736.57
-Y15FLYCA-	10+00.00		90+39.94	8039.94
-Y15RPA-	10+00.00		36+16.69	2616.69
-Y15RPB-	10+00.00		41+32.99	3132.99
-Y15RPC-	10+00.00		32+03.05	2203.05
-Y15RPD-	10+00.00		40+50.44	3050.44
-Y15LPA-	10+00.00		26+95.04	1695.04
-Y16-	12+00.00		34+00.00	2200.00
-Y16DET-	13+00.00		33+76.97	2076.97
-Y16A-	10+00.00		12+51.55	251.55
-Y16B-	10+00.00		15+23.68	523.68
-UXRPB-	10+00.00		19+13.04	913.04
- UXRPC-	10+00.00		23+89.52	389.52
-SERV1-	10+00.00		29+32.42	1932.42
-X15XOVER1-	10+00.00		21+89.81	1189.81
-X15XOVER2-	10+00.00		21+89.81	1189.81
-Y6-	10+09.31		12+50.00	240.69

19.68 miles, or 103,896 feet.

ITEMS OF SPECIAL GEOTECHNICAL INTEREST

- 1. Groundwater:** At the intersection of -L- and -Y15- and -Y15LPA- groundwater was measured near finished grade. The completed loop will drain to -L- which drains to the north. This may complicate construction but should not present a long-term instability.
- 2. Flyovers:** Rock is within reach for the flyover bridges.
- 3. Soil:** The micaceous soil of the project is typical of Winston Salem and may require attention to yield the desired strength for the high embankments of the bridge approaches.

PHYSIOGRAPHY AND GEOLOGY

Physiography

Regional

The project is in the Piedmont Physiographic Province, located between the Coastal Plain Province and the Blue Ridge Provinces. These provinces occur as northeast – southwest belts of similar topographic character separated by abrupt topographic breaks: The Blue Ridge Escarpment is the southeast limit of the Blue Ridge province, and The Fall line is the southeast limit of the Piedmont province. The Blue Ridge, the Piedmont and the Coastal plain provinces form a stair-step down to the coast. Several thousand feet of elevation change occurs across the Blue Ridge Escarpment. Several hundred feet of elevation change occur at the Fall line. The Piedmont Province is between these areas of abrupt change, and has a gradual tilt from northwest to southeast. The planar character of the Piedmont has been locally obscured by the work of the myriad eroding streams that provide local relief on the order of 100 feet within a mile. The planar aspect is preserved in the ridge top elevations that cluster around 950 here in the upland part of the Piedmont, and gradually drop southeastward to around 600' just before the fall line, at, for example, Biscoe.

Project

The -L- alignment begins at station 692+32, elevation 891, at the top of the first break in slope above a tributary to Fishers Branch. The alignment crosses a broad east-northeast trending ridge, bordered by Fishers Branch, (elevation 840'), on the north to Fiddlers Creek, (elevation 840), on the south. The apex of this ridge is at about 960' at -L- 722+00 to 727+00. From Fiddlers Creek, the alignment again climbs the flank of an easterly trending ridge that tops out at 930 elevation at station 818+00. The -Y15- alignment begins at elevation 820, climbs to 910, drops back to 880, and then climbs to 935. The difference between -L- and -Y15- is that -L- crosses these east-northeast, geomorphic features perpendicularly and -Y15- crosses them obliquely. The features are an expression of the geology of the area. (See below)

Geology

Throughout North Carolina the geologic provinces run northeast – southwest and are divided on the basis of metamorphic grade or dominant rock type. According to the 1985 Geologic Map of North Carolina, this project is at the contact between the Milton belt and the Charlotte belt. The Winston-Salem Geologic quadrangle map does not delineate the Milton Belt, and places Winston Salem within the Charlotte Belt. In either case the lithology northwest of Fiddlers Creek is mapped as biotite gneiss and schist, (CZbg). The lithology southeast of Fiddlers Creek is mapped as granitic rock, (Ppg) of the Charlotte belt. Fiddlers Creek flows along the contact.

Soil Properties

General

The first subdivision in the engineering classification of soil is a designation as residual, fill, or alluvial soil. Residual soil is very highly weathered rock with no physical transport of the soil. Fill soil has been moved and placed by human activity, either as specified by the NCDOT, (embankment fill), or in unknown circumstance, (artificial fill). Alluvial soil has been transported by moving water and deposited. The AASHTO classification of soil is not

concerned with origin, is partly based on soil particle grain size, but is also an attempt to predict the soil behavior as a construction material.

Project Soil Properties

If the residual soil properties reflect the mapped lithology, there should be a definite change at Fiddlers Creek. The soil north of Fiddlers Creek, the -L-, -Y1-, and -Y4- alignments, is underlain by biotite gneiss (Czbg) and would be expected to be micaceous with an erratic rock line. The soil south of Fiddlers Creek, -L- and -Y15- alignments is mapped as granite (Ppg) and is expected to be silty or sandy soil with a deep rock line consistent from hole to hole.

Rock Properties

This investigation is concerned with the depth to rock and the areal extent of rock at or above grade. Rock samples were not collected or analyzed in this investigation. Rock north of Fiddlers Creek should be biotite gneiss or schist, that from south of Fiddlers Creek should be granite. All cross sections that contain a boring terminated on rock above grade, are included as part of this report. The depth to rock indicated by auger refusal is variable in cross section and profile.

Rock was found above grade, or less than 10' below grade, at the following locations as plotted on the profiles.

Alignment	Station	to	Station	Note
-L-	700+00		702+00	
-L-	710+50		715+00	
-L-	726+00			Single point
-L-	737+00			Single point
-L-	775+50		786+50	
-Y4RMPA-	13+50		19+00	
-Y4RMPB-	14+00		18+00	
-Y8-	15+50		18+00	
-Y15 I-40 BYPASS-	23+00		25+50	
-Y15 I-40 BYPASS-	41+00		45+50	
-Y15 REV I-40 BYPASS-	13+50		14+50	
-Y15 I-40 BYPASS-	34+00		37+00	Stream Channel Change
- Y15 I-40 BYPASS -	77+50		81+50	Fill section.
-Y15FLYCA-	39+00			Single point
-Y15FLYCA-	73+00		77+50	
-Y15RPA-	24+50		34+00	
-Y15RPC-	15+00			Single point
-Y15LPA-	13+00		19+00	
-SERV1-	15+50		18+00	

Groundwater Occurrences

Water was found less than 10' below grade, or above grade in the following locations

Alignment	Station	to	Station	Location
-L-	698+00		705+50	Above Grade
-L-	717+50		728+00	Within 5'; below grade
-L-	782+50		790+00	At grade in SPT borings
-L-	538+00		548+00	Above Grade
-Y4DET-	20+00		24+50	Within 10' below grade
-Y4RPA-	18+00		21+00	Within 10' below grade
-Y15 I-40 BYPASS-	33+00		41+50	Within 10' below grade
-Y15 I-40 BYPASS-	45+50		54+00	Within 10' below grade
-Y15 I-40 BYPASS-	145+00		157+00	Within 10' below grade
-Y15FLYAC-	10+82			Single point, below grade.
-Y15FLYCA-	11+00		18+00	Within 10' below grade
-Y15LPA-	10+00		20+00	Above grade, ¹
-Y15XOVR1-	13+00		18+00	

All-weather spring fed seeps or streams:

The stations in the table below record the location of springs seeps or streams, some which may not have year round flow. (Occurrences are organized by plan sheet page.)

Line	Station		Sht #	Size of stream: eg: 1 st order ² .
-L-	746+50		7, 8	1 st order flows to wetland / pond
-L-	748+50		8	Wetland
	750+00		8	Pond, Left Lane
-L-	769+00	to	9	3 nd order, Fiddler Creek
-Y15FLYCA-	83+80		9	3 nd order Fiddler Creek
-Y15FLYBD-	20+30	to	9	3 nd order Fiddler Creek
-Y15FLYCA-	70+35		10	1 st order flows to wetland / pond
-Y15LPA-	22+00		10	1 st order flows to wetland / pond
-L-	781+50		10	1 st order flows to wetland / pond
-Y15FLYBD-	45+70		10	1 st order stream
-Y15FLYCA-	56+00		10	1 st order stream
-Y15FLYAC-	61+00		10	1 st order stream
-L-	794+50		10	1 st order stream

¹ (Same area as -L-, -Y15FLYCA-)

² A stream without tributaries is first order. Two first order streams converge to make a second order stream. A third order stream requires two second order streams as tributaries.

-Y15RPD-	34+25			11	1 st order stream
-L-	808+00			11	1 st order stream
-L-	810+00			11	1 st order stream
-Y15FLYAC-	75+00			11	2 nd order stream
-Y15FLYCA-	43+90			11	2 nd order stream
-L-	832+50			12	1 st order stream
-Y15-	30+00			16	3 rd order
-Y15 REV -	16+50			19	2 nd order stream
-Y15 FLYCA-	29+00			19	2 nd order stream
-Y15 REV -	30+00			19	wetland
-Y15 REV -	30+50		32+25	19	2 nd order stream to be relocated
-Y15 FLYAC-	28+50			20	1 st order stream
-Y15 FLYAC-	22+00		18+50	20	3 rd order
-Y15 REV -	65+20			20	36" rcp
-Y15 REV -	69+00			20	10" rcp
-Y15 REV -	73+00		77+00	20	3, 10" to 36" rcp
-Y15 FLYAC-	18+50		18+25	21	
-Y15 REV -	86+00			21	60" rcp
-Y15-	140+80			21	36" rcp
-Y15-	145+00			21	24" rcp
-Y15-	149+00		159+00	22	60" rcp
-Y15-	169+00			23	36" rcp
-UXRPB1-	15+25			23	42" rcp
-Y15FLYBD-	67+50			25	pond
-Y5B-	18+00			26	3 rd order stream
-Y5B-	20+00			26	1 st order stream

GEOTECHNICAL DESCRIPTIVE ANALYSIS

The project is broken into segments that are discussed in the following sections, so that it may be more easily digested. The segments are as follows:

Segment 1: The -L- alignment from the beginning at -L- 692+32.98 to Fiddler Creek at -L- 769+00, including the -Y1-, -Y5B- and -Y8- alignments and the -Y4- interchange

Segment 2: -L-, from -L- 769+00 to the end at -L- 836+32.44.

Segment 3: The -Y15- interchange, ramps, loops, flies, etc.

Segment 4: -Y15- including -Y15-Rev Bypass, but separate from the loops, ramps, etc.

Segment 1: The -L- alignment from the beginning at -L- 692+32.98 to Fiddler Creek at -L- 769+00, including the -Y1- alignments and the -Y4- interchange: 5.75 miles.

Alignment	Station	to	Station	Length	Pages plan / profile
-L-	692+32.98		769+00.00	7667.02	4-9, / 28-30
-Y1-	10+00.00		15+50.00	550.00	14, / 23
-Y1B-	12+00.00		41+83.63	2983.63	5,6,14, / 34,35
-Y1BDET-	16+00.00		31+00.00	1500.00	14a, / 35
-Y2-	10+00.00		14+30.93	430.93	6, / 36
-Y4D-	10+00.00		11+00.00	100.00	15, / 36
-Y4-	11+00.00		60+50.00	4950.00	6,13, 15 / 37,38
-Y4DET-	10+00.00		36+52.73	2652.73	15A / 39
-Y4RPA-	10+00.00		27+70.87	1770.87	6, / 40
-Y4RPB-	10+00.00		28+87.96	1887.96	6, / 41
-Y4RPC-	10+00.00		26+16.04	1616.04	6, 7, / 42
-Y4RPD-	10+00.00		27+40.58	1740.58	6, 7, / 43
-Y4SPRA-	10+00.00		14+00.44	400.44	6, / 44
-Y4SPRB-	10+00.00		13+33.00	333.00	6, / 44
-Y4SPRC-	10+00.00		14+24.68	424.68	6, / 44
-Y4SPRD-	10+00.00		13+33.00	333.00	6, / 44
-Y4A-	10+00.00		18+00.00	800.00	13, / 45
-Y4B-	12+50.00		14+52.58	202.58	13, / 45
-Y5B-	14+00.00		23+50.00	950.00	26 / 46
-Y8-	13+00.00		20+00.00	700.00	27 / 46
-SERV1-	10+00.00		29+32.42	1932.42	13, 6 / 73
-Y6-	10+09.31		12+50.00	240.69	6 / 75
Total				34,166.57	

Physical Description

Geology

The limits of this segment were delineated on mapped geology. As mapped, it is underlain only by biotite gneiss and schist, (CZbg). An inspection of the profile plots shows low plasticity A-7 cap clay, a variable soil layer thickness and an erratic rock line, all characteristic of highly weathered biotite gneiss that lies north of Fiddlers Creek.

Soil

Most of this segment has residual soil at the surface, and all of the proposed excavation involves residual soil. A soil column typical of this area has less than 10' of clayey A-7-5 residual soil at the surface, sometimes followed by A-4 or A-5 micaceous soil, followed by A-2-4 and A-2-5 sandy soil, up to 30' thick, over rock. Excavating through this soil column will produce the following conditions.

L- and the -Y-4- interchange.

Residual Soil

Except for two areas noted below, from the beginning at -L-692+00 to -L-732+50 the finished grade will be on A-2-4 and A-2-5 residual soil.

1.) A-4 and A-5 residual soil were found around -L-701+00.

2.) Rock was found from -L-711+00 to 714+00 and should be expected at -Y4RMPB-14+00 to 17+00.

The upper 10' of the cut slopes will be in A-7-5 soil, with PI of 20 or less. From 732+50 to the transition to embankment fill at -L-738+00 the excavation, the cut slopes and the finished grade will all be in A-7-5 with PI no greater than 21. From -L-738+00 to the end of the segment at -L-769+00 the roadway will be mostly on embankment fill over A-7-5 residual soil.

Y1B-

All of this alignment will be on A-7-5.

Alluvial Soil

From about -L- 749+00 to 754+00 the planned embankment will land on soft wet A-7-5 alluvial soil with a wetland.

Rock

Rock was found above grade from -L-711+00 to 714+00 and should be expected at -Y4RMPB- 14+00 to 17+00.

Description of individual alignments

The 18 alignments in this segment are individually discussed in the following Physical Description section.

-L-	692+32.98		769+00.00	7667.02	4-9, / 28-30
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The -L- alignment is future I-74 and the main new construction of the project. It begins at station -L-692+32, elevation 891, and climbs at a 3% grade to elevation 914 at station 701+00, where it flattens out to a .6% grade that it maintains to the top of the hill at 733+50 and elevation 940'. The grade rolls over to a 2.6% grade downhill until station 767+00 where the road flattens before the bottom of the hill and the end of the segment at 769+00, elevation 856'.

Cuts and Fills

- L -				
Station	To	Station		Note
696+50		732+50	Cut	Cut: 0 to 40' to 0' thick
732+50		744+00	Fill	Fill: Over residual, less than 10' thick
744+00		757+00	Fill	Fill: 0 to 20' to 0, over artificial fill, alluvium, residual
757+00		761+50	Cut	Cut: 0 to 10' to 0
761+50		769+00	Fill	Fill: 0 to 25' to 0, Fiddler Creek valley (End of segment).

Geology

From 696+50 to 705+50, the roadway will be built on residual soil that leaves A-5 and A-7 in the subgrade and cut slopes. From 705+50 to 732+50 the cut slope will be A-7 at the top, over A-2 mostly, with intervals of A-5 showing up at 722+00 in one boring. From 732+50 to the end at 769 the road will be built mostly on fill none of which appears to be especially hazardous.

These borings were dry.

-Y1-	10+00.00	15+50.00	550.00	14, / 33
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This alignment is existing Sedge Garden Road **southeast** of Kernersville Rd. and the work involves improvement of the intersection with -Y4-. The resulting cut slopes and subgrade are all in A-7

-Y1B-	12+00.00	41+83.63	2983.63	5,6,14, / 34,35
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This alignment is existing Sedge Garden Road, **northwest** of Kernersville Rd. Beginning at 12+50, elevation 951, the alignment runs at grade to the bridge over -L- from 20+87, elevation 947 to station 23+68, elevation 945. From the bridge, existing Sedge Garden road, and the improved version climb to station 31+00, elevation 952 where the profile ends. The profile then begins again at station 34+00, elevation 958, and continues to the end at station 41+00, elevation 959.

Cuts and Fills

-Y1B-				
Station	to	Station		Note
12+50		17+50		On grade, ditches are cut.
17+50		20+87	Fill	Fill: 3' on bridge approach
20+87		23+68	Bridge	Bridge over -L-
23+68		31+00		On grade, ditches in cut (Profile ends)
34+00		41+00		On grade. (additional piece of profile)

Geology

The plan view for the alignment shows cut most of the way, but it is minimal. The exposed residual soil will probably be A-7, which could be slippery when wet.

-Y1BDET-	16+00.00	31+00.00	1500.00	14A / 35
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This alignment is a temporary detour for the construction of the new bridge of -Y1B- over future -L-. The alignment is built almost entirely on fill less than 5' thick, beginning at station 17+81 and ending at station 27+89.

-Y2-	10+00.00	14+30.93	430.93	6, / 36
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This portion of the project concerns the termination of School View road where it will be cut by the new -L- alignment.

-Y4D-	10+00.00	11+00.00	100.00	15, / 36
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This portion of the project concerns the improvement of the intersection of Weavil Road with Kernersville road, (-Y4-).

-Y4-	11+00.00	60+50.00	4950.00	6,13, 15 / 37,38
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This alignment improves Kernersville Road outside of the -L-, -Y4- interchange, and for the most part, is built very close to original grade. It begins at station 11+50, elevation 955, and climbs gradually to station 24+50 and elevation 968, before dropping to the bridge which runs from station 29+83, and elevation 963, to station 31+52, elevation 960. The downhill grade across the bridge continues at a 3.5% grade to the bottom of the hill at 39+50 and elevation 943, and then climbs to the intersection with Y1 and Y1B at station 45+50 and elevation 960 hitting the top of

the hill at 47+50, elevation 965. The road runs level from station 47+50 to 54+50, and then descends at up to 4% grade to the end at station 60+00, elevation 948.

Cuts and Fills

-Y4-				
Station	to	Station		Note
11+50		23+00	Cut	Cut: Less than 2', mainly for ditches
23+00		29+83	Fill	Fill: About 6'
29+83		31+52	Bridge	Bridge
31+52		34+50		At grade: minimal cut or fill
34+50		43+00	Fill	Fill: 0 to 5' to 0
43+00		60+00		At grade, minimal cut or fill

Geology

The plan view for the alignment shows cut most of the way, but it is minimal. The exposed residual soil will probably be A-7, which could be slippery when wet.

-Y4DET-	10+00.00	36+52.73	2652.73	15A / 39
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From station 10+00, elevation 965, the alignment runs level to station 12+00 where it begins a descent at a grade of 3%, a slope that begins to flatten out at station 24+50, reaching the bottom of the hill at station 26+75, elevation 930. The ascent steepens to a grade of 4.5% by station 31+50, elevation 940 and climbs at that angle to the end at station 35+12, elevation 956.

Cuts and Fills

-Y4DET-				
Station	to	Station		Note
12+50		26+50	Cut	Cut: 0 to 15' to 0
26+50		31+75	Fill	Fill: 0 to 30' (at 30+25), to zero. Creek Crossing
31+75		35+12	Cut	Cut: consistently less than 5' on an uphill climb.

Geology

The existing land surface is in A-7 residual soil, with PI of less than 24.

A creek will be crossed at station 30+25, presumably by culvert and soil cover.

-Y4RPA-	10+00.00	27+70.87	1770.87	6, / 40
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This ramp begins at elevation 921 at -L-706+75, and runs nearly level to station 15+50, elevation 923 where the grade increases until at station 19+00, elevation 930, the grade is at 5%, which is maintained to the end at station 24+81, elevation 957.

Cuts and Fills

-Y4RPA-				
Station	to	Station		Note
10+00		24+81	Cut	Cut: 14' to 40' to 0

Geology

There is a fairly well identified residual soil column with A-7 at the surface, then A-2, then weathered rock, then rock. The cut slope should be A-2, Dense or harder, or weathered rock.

Rock may be encountered above grade from 14+00 to 16+50 and at 18+00 to 19+00.

Groundwater was not encountered in the borings.

-Y4RPB-	10+00.00	28+87.96	1887.96	6, / 41
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This ramp will provide two exit lanes from southbound -L- to -Y4-. It begins at elevation 926, at -L-707+50 then runs at a .6% grade to station 15+00, elevation 930 where the grade increases to 4% at 18+50, elevation 937. The grade runs at 4% to station 24+75, elevation 960, and then is flat to the end at station 27+00, elevation 960.

Cuts and Fills

-Y4RPB-				
Station	to	Station		Note
10+00		11+00	Cut	Cut: minimal, less than 2'
11+00		19+00	Cut	Cut: 0 to 25' to 0 probably some rock
19+00		25+00	Fill	Fill: 0 to 20 to 0.
25+00		27+00		At grade

Geology

There is a fairly well identified residual soil column with A-7 at the surface, then A-2, then weathered rock, then rock. The cut slope should be A-2 Dense or harder, or weathered rock.

Rock may be encountered above grade from 14+00 to 16+50, up to 15' above grade.

Groundwater was not encountered in the borings.

-Y4RPC-	10+00.00	26+16.04	1616.04	6, 7, / 42
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This ramp will provide two entrance lanes from -Y4- to southbound -L-. It begins at elevation 934, at -L-736+87 and rises slightly to station 13+00, elevation 938, then rises to a 4.8% grade to station 21+50, elevation 960 where the grade decreases to the end of the profile at station 23+00 elevation 962.

Cuts and Fills

-Y4RPC-				
Station	to	Station		Note
10+00		21+50	Cut	Cut: 0 to 20 to 0.
21+50		26+16		At grade, minimal cut or fill

Geology

There is a fairly well identified residual soil column with A-7 at the surface, then A-5, then A-2. The cut slope should be A-5 or A-2 stiff or dense.

Groundwater was not encountered in the borings.

-Y4RPD-	10+00.00	27+40.58	1740.58	6, 7, / 43
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This ramp begins at elevation 933, at -L-737+42 rises at a grade of 1.3% to station 13+00, then flattens to .4% to station 15+00, then increases grade to 3.4% to the end of the profile at station 24+31, elevation 958.

Cuts and Fills

-Y4RPC-				
Station	to	Station		Note
10+00		13+75	Fill	Fill: Up to 5' of fill.
13+75		22+00	Cut	Cut: 0 to 14' to 0
22+00		24+50	Fill	Fill: Up to 5' of fill over commercial development

Geology

There is a fairly well identified residual soil column with A-7 at the surface, then A-2. The cut slope should be A-7 or A-2 stiff or dense.

Groundwater was not encountered in the borings.

-Y4SPRA-	10+00.00	14+00.44	400.44	6 / 44
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This is a connector between -Y4RPA- and -Y4-, built at grade

-Y4SPRB-	10+00.00	14+00.44	400.44	6 / 44
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This is a connector between -Y4RPB- and -Y4-, built at grade

-Y4SPRC-	10+00.00	14+00.44	400.44	6 / 44
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This is a connector between -Y4RPC- and -Y4-, built at grade.

-Y4SPRD-	10+00.00	14+00.44	400.44	6 / 44
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This is a connector between -Y4RPD- and -Y4-, built at grade.

-Y4A-	10+00.00	18+00.00	800.00	13, / 45
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This alignment is Linville Road. The work is widening to the intersection with Kernersville Road, (-Y4-).

-Y4B-	12+50.00	14+52.58	202.58	13, / 45
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This alignment is opposite -Y4A-, across -Y4-. The work appears to be improvement of Motsinger Drive at the intersection with -Y4-.

-Y5B-	14+00.00	23+50.00	950.00	26 / 46
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This alignment connects Meredith way with Emback Drive, replacing lost access. The alignment begins at elevation 874, and then descends at existing grade to the edge of the Fiddlers Creek floodplain at station 17+50, elevation 860. From station 17+50 to station 20+50 the grade is 10 to 15' above the existing floodplain though the exact type of crossing is not shown. From 20+50 to the end at 23+00 the alignment is at or near existing land surface. Surface soil outside of the floodplain is residual A-7.

-Y8-	13+00.00	20+00.00	700.00	27 / 46
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This alignment connects Motsinger Drive to Oak Ridge Place, replacing lost access. The alignment begins at 14+50, elevation 914 and climbs throughout the alignment to end at station 20+50, elevation 935. The alignment follows the existing grade, though the ditches require minimal cut. The surface soil will be A-7-6 according to soil tests.

-SERV1-	10+00.00	29+32.42	1932.42	13, 6 / 73
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This alignment connects School View road, (-Y2-) to Linville Road, (-Y4A-), replacing lost access. The alignment begins at 10+00, elevation 958 and descends at a 3% grade to station 14+50, elevation 920 where an abrupt rise in topography is encountered. The finished road runs essentially level to the end at station 29+50, elevation 924.

Cuts and Fills

Alignment	Station	to	Station	Note
- SERV1-	10+00		14+50	At grade.
- SERV1-	14+50		18+50	Cut: 0 to 20 to 0 feet thick
- SERV1-	18+50		25+50	Fill: 25' tapering to 0
- SERV1-	25+50		29+50	At grade

Geology

There is a fairly well identified residual soil column with A-5 at the surface, then rock. From the start to 18+50, the surface soil will be A-5. In the cut area, rock is encountered at about 10'

below land surface and up to 10' above grade. The fill section is across a wetland, the alluvial plain and the stream.

-Y6-	10+09.31	12+50.00	240.69	6 / 75
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This alignment consists of construction related to the termination of Orvil Road where it terminates against -L-. There is a minor grade change and connection to some driveways.

Segment 2: : -L-, from -L- 769+00 to the end at -L- 836+32.44.

Physical Description

This segment of the job is limited to the -L- alignment from Fiddlers Creek to the end of the project. It begins at Fiddlers Creek at deck elevation 856' and beyond the bridge, rises at a 0.68% grade to 870' at station -L-790+00. Within this section of roadway, the new I-74 actually passes 25' below the existing grade elevation of I-40. The grade then steepens to 2.07% up to -L-798+00, (across fill), where it relaxes to 1.45% to the top of the hill at -L-820+00. The road then loses elevation to the end of the project at -L-836+32.

Cuts and Fills

Alignment	Station	to	Station	Note
-L-	769+00		772+50	Fill: up to 25' thick. Over Floodplain
-L-	772+50		792+00	Cut: up to 50' thick
-L-	792+00		800+50	Fill: up to 20' thick
-L-	800+50		808+00	Cut: up to 15' thick
-L-	808+00		811+50	Fill: up to 10' thick
-L-	811+50		827+50	Cut: up to 20' thick
-L-	827+50		836+32	Fill: up to 50' thick (to end)

Geology

The geologic map places this segment within an outcrop area of Ppg, or Pennsylvanian age granite. The sample descriptions are in conflict with this identification, particularly where very micaceous soil is reported. A continuous section of rock with a very erratic rock line was encountered just north of existing I-40. This is more typical of the Czbj biotite gneiss than granite. It may be that the contact between the biotite gneiss to the north and the granite to the south is actually near I-40, instead of at Fiddlers Creek.

Soil

Most of this segment will be built on cut or fill over residual soil. PI values are typically less than 20 and commonly NP. A typical soil column has less than 10 feet of A-7 cap clay, followed by A-4 or A-5 silty sand less than 10' thick and maybe absent, followed by 35' of loose white residual sand, (see boring at -L-801+00).

Rock

There is a rather continuous section of rock on the north side of I-40.

Alignment	Station	to	Station	Note
-L-	782+00		785+50	Above grade, in cut

All-Weather Spring-Fed Seeps or Streams:

The location of the water features was recorded in a table within the Physiography and Geology section above.

Discussion

According to the drill data:

From -L-733+00 to -L-777+00 the finished grade and slopes will be loose residual sand.

From -L-777+00 to -L-786+00 the finished grade and slopes may be rocky.

From 786+00 to 791+00 the finished grade and slopes should be loose residual A-2 with A-4 and A-5 above, and a cap of A-7-5. Groundwater is shown at grade.

From -L-800+00 to -L-827+00 the cut sections, should leave A-2-4 at grade with intervals of A-2, A-4, A-5, and A-7 in the (less than 20' high) slopes.

Groundwater Occurrences

Water was found less than 10' below grade, or above grade in the following locations

Alignment	Station	T o	Station	Location
-L-	698+00		705+50	Above Grade
-L-	717+50		728+00	Within 5'; below grade
-L-	782+50		790+00	At grade in SPT borings
-L-	538+00		548+00	Above Grade

Segment 3: The -Y15- interchange, ramps, loops, flys, etc.

Y15- is existing Business I-40. This section will discuss the access between new I-74 and existing business I-40. Specific bridge plans have not been received. The dirt work will occur at the approaches, (which were investigated). The 12 alignments in this segment are individually discussed in the following Physical Description section. The segment geology will be discussed below.

Alignment	Station	to	Station	Note
-Y15FLYAC-	10+00.00		93+22.52	Page 21, 20, 10, 11
-Y15FLYBD-	10+00.00		97+36.57	Page 9, 10, 25, 20, 21
-Y15FLYCA-	10+00.00		90+39.94	Page 17, 18, 19, 11, 10, 9
-Y15RPA-	10+00.00		36+16.69	Page 9, 10, 20
-Y15RPB-	10+00.00		41+32.99	Page 10, 19
-Y15RPC-	10+00.00		32+03.05	Page 19, 11
-Y15RPD-	10+00.00		40+50.44	Page 25, 11
-Y15LPA-	10+00.00		26+95.04	Page 10
-Y16-(Glenn Hi rd)	12+00.00		34+00.00	Page 11
-Y16DET-	13+00.00		33+76.97	Page 11
-Y16A-	10+00.00		12+51.55	Page 11
-Y16B-	10+00.00		15+23.68	Page 11

Geology of Segment 3:

The geologic map places this segment within an outcrop area of Ppg, or Pennsylvanian age granite. Some of the sample descriptions are in conflict with this identification, particularly where very micaceous soil is reported. The contact between the biotite gneiss to the north and the granite to the south is probably uneven and interpenetrating with xenoliths of biotite gneiss in the granite and granite intrusions into the gneiss.

Rock

Rock was found as noted in the table below

Alignment	Station	to	Station	Note
- Y15FLYCA -	38+00		40+00	At grade
- Y15FLYCA -	72+00		76+00	At grade
- Y15FLYCA -	76+00		77+50	15' above grade
-Y15RPA-	21+00		34+00	At grade
-Y15RPA-	32+75			25' Above grade
-Y15RPC-	15+00			At grade
-Y15LPA-	13+50		17+50	At or above grade

Soil

The soil of interest is either the soil that will be exposed in a cut slope, the soil that is in the subgrade, or the soil immediately under embankment fill. Within this segment, alluvial soil beneath embankment fill may provide access or settlement issues. Though silty soil in the slopes and subgrade may provide construction challenges, no unusually weak examples were recognized.

All-Weather Spring-Fed Seeps or Streams:

The location of the water features was recorded in a table within the Physiography and Geology section above.

Groundwater Issues:

Groundwater at or above grade was identified in the -Y15LPA- segment where it connects with -L- below I-40 Bypass. Drainage is open to -L-, but may present an issue during construction.

Description of alignments

The 12 alignments in this segment are individually discussed in the following Physical Description section.

Physical Description

-Y15FLYAC-	10+00.00	93+22.52	Page 21, 20, 10, 11
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The -Y15FLYAC- alignment connects westbound Business I-40 to southbound -L-, (I-74). The alignment exits existing Business I-40 at station 10+00, elevation 890 and drops to elevation 880, station 15+00 all on residual. The grade elevation drops to 878 at station 17+50, then climbs at 2.5% to about station 43+00, then runs flat to the beginning of the bridge at 47+61, elevation 934.9. The bridge continues to station 67+33, landing at elevation 925.27. The ramp descends at 1.4% grade to elevation 906 at station 83+00, and then runs nearly flat to the end at elevation 905, station 93+22.

Cuts and Fills

- Y15FLYAC -				
Station	to	Station		Note
10+00		15+00	Cut	Mainly push-back of existing I-40 cut slope.
15+00		22+50	Fill	Fill over Fiddlers Creek and adjacent alluvium.
22+50		25+00	Fill	Shallow fill over weathered rock

25+00		28+00	Fill	Fill up to 25' over residual.
28+00		29+50	Fill	Fill over 20' deep valley, plus 25' to grade elevation.
29+50		46+00	Fill	Fill 25' to 30', over residual.
46+00		47+61	Fill	Fill over existing Business I-40
47+61		67+33	Bridge	Up to 70' above land surface
67+33		79+00	Fill	Fill, 20' to 40' thick
79+00		93+25	Cut	Cut up to 25' thick, residual soil

Geology

From 10+00 to 47+61, and 67+00 to 79+00, the roadway will be built on embankment fill. From 16+00 to 22+00 a flood plain that may be wet is crossed. From 79+00 to the end at 93+22 the road is constructed in cut. The present surface and up to 10' of the uppermost future cut slope are in A-7 clayey soil, with PI less than 20. Below this either A-5 or A-2 are found down to the finished grade level. According to the borings, the lower part of the slopes will be medium dense sandy soil or medium stiff silty soil. These borings were dry.

-Y15FLYBD-	10+00.00	97+36.57	Page 9, 10, 25, 20, 21
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The -Y15FLYBD- alignment connects southbound -L-, (I-74), to eastbound Business I-40. The alignment begins at -Y15FLYBD station 10+00, (-L- station 759+92), elevation 876, then drops to elevation 857, station 18+50. The grade then climbs at 4.1% to the beginning of the -Y15FLYBD- bridge at about station 39+30, and continues to rise at 4.1% grade to the end of the bridge at station 50+38 and elevation 968. The top of the grade is reached beyond the bridge at station 52+00, elevation 970. The descent then begins at a 2.59% grade to the bottom, at station 91+75, elevation 878. The alignment then rises to station 97+36 and elevation 884 where Business I-40 is joined at -Y15REV- station 90+31.

Cuts and Fills

- Y15FLYBD -				
Station	to	Station		Note
10+00		11+50		Cut: residential development
11+50		14+00	Fill	Fill over valley, up to 20'.
14+00		16+00	Fill	Within 5' of grade
16+00		19+50	Fill	Fill up to 18' over residual.
19+50		24+00	Fill	Fill up to 30' over Fiddlers Creek with soft alluvium.
24+00		37+00	Fill	Fill 30', over residual, land surface rises to grade at end
37+00		39+30	Fill	Fill over existing Business I-40
39+30		50+38	Bridge	Up to 100' above land surface
50+38		60+00	Fill	Fill, 80' thick, tapering to 40' at end
60+00		70+50	Fill	Fill over residual, 25' to 30' thick, tapers to zero at end.
70+50		82+50	Cut	Cut 20' A-5 in sub-grade. Mostly residential
82+50		85+50	Fill	Fill over residual.
85+50		90+50	Cut	Cut 25'. A-2 in subgrade
90+50		97+36	Fill	Joins existing I-40 Business roadway embankment.

Geology

From 11+50 to 39+30, and 50+38 to 70+50 the roadway will be built on embankment fill. From 20+00 to 24+00 a flood plain with wet soil, adjacent to Fiddler Creek is crossed. From 70+50

to 82+50 the road is constructed in cut, and medium stiff A-5 soil is projected to be in most of the cut slope and the subgrade. The borings here were dry.

From 85+50 to 90 +50 the lower 10' of the cut slope is medium dense sand; the upper 15' of the slope is medium stiff A-5 silty soil or medium dense sand. The samples were dry.

-Y15FLYCA-	10+00.00	90+39.94	Page 17, 18, 19, 11, 10, 9
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The -Y15FLYCA- alignment connects eastbound -Y15-, (Business I-40), to northbound -L-, (I-74). The alignment begins at -Y15FLYCA- station 10+00, (-Y15- station 46+50), elevation 820 and runs alongside I-40 essentially flat until 17+00, then climbs at a 2.748% grade to elevation 924 at station 54+57, the beginning of the bridge. The grade continues the climb to 59+50 and elevation 932, in the interior of the bridge. It then drops with the grade increasing to 5%, reaching the end of the bridge at station 69+65 elevation 900'. The ramp continues to drop at 5% to station 76+50, elevation 865 where the grade starts to flatten out towards the bottom at 81+50 and elevation 855. The ramp then rises to join I-74 at elevation 872, -Y15FLYCA-90+40 and -L- station 761.37.

Cuts and Fills

- Y15FLYCA -				
Station	to	Station		Note
10+00		17+00		At grade, departing Business I-40.
17+00		29+00	Cut	Cut increases to 30' through a single hill.
29+00		41+00	Cut	Cut at 20' thick as topography and finished grade rise.
41+00		49+00	Fill	Fill 0 to 45' to 0 as a single valley is filled.
49+00		54+50	Fill	Fill 0 to 75' at beginning of bridge.
54+50		69+64	Bridge	Freeboard varies from 70 to 20 to 0 to 20.
69+64		72+00	Fill	Fill bridge approach.
72+00		82+50	Cut	Cut: Highly variable; rock, A-2, &A-5,
50+38		90+40	Fill	Fill, 0 - 30 - 0, ramp to -L-

Geology

From 17+00 to 29+00 the cut slope will have A-2-5, A-2-4, A-4, A-5 and A-7 but blow counts are mostly above N=10, and no groundwater was found even within 10' below grade.

From 29+00 to 38+00 clayey A-7 soil will occur in the upper 10' of the slope followed by medium stiff to stiff A-5 soil in the slope and the subgrade. From 38+00 to 40+00, there is an occurrence of rock at grade and variable soil and weathered rock above grade.

From 72+00 to 76+00 the 20' to 30' slope will be medium dense A-2 soil but rock was found just below grade. From 76+00 to 77+50 rock was found 15' up into the slope. From 77+50 to the end, the soil was variable but this entire cut was dry.

-Y15RPA-	10+00.00	36+16.69	Page 9, 10, 20
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The -Y15RPA- alignment connects westbound -Y15-, (Business I-40), to northbound -L-, (I-74). The alignment begins at station 10+00, (-Y15FLYAC- station 32+00), elevation 910 on the fly approach ramp, 30' above original land surface. The ramp climbs at 2.7% grade to elevation 922 at station 16+50, then descends at a 4.5% grade to elevation 870 at station 32+50, where the

descent flattens out a little before station 36+17 elevation 856, where it merges with -Y15FLYCA .

Cuts and Fills

- Y15RPA -				
Station	to	Station		Note
10+00		21+00	Fill	Fill 25' thick, tapers to 0 last 400'
21+00		36+16	Cut	Cut tapers from 0 to 30 at 34+50. Decreases to 20 at end.

Geology

From 21+00 to 34+00 rock was found near and above grade; 25' above grade at station 32+75. are mostly above N=10, and no groundwater was found even within 10' below grade. From 34+00 to the end, A-5 and A-2-5 dry soil was found.

-Y15RPB-	10+00.00	41+32.99	Page 10, 19
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The -Y15RPB- alignment connects southbound -L-, (I-74), to westbound -Y15-, (Business I-40). The alignment begins at station 10+00, (-Y15FLYBD- station 25+60), elevation 872 on the fly approach ramp, 30' above original land surface. The ramp climbs at 4.3% grade to elevation 898 at station 18+00, then descends at a 3.8% grade to elevation 857 at station 31+00, where the descent flattens out on the way to station 41+32 elevation 834, where it merges with -Y15REV-,(Business I-40).

Cuts and Fills

- Y15RPB -				
Station	to	Station		Note
10+00		20+00	Fill	Fill 30' to 40' thick, some over artificial fill
20+00		34+00	Fill	Fill, most less than 20', over descending topography.
34+00		35+50	Cut	Cut less than 5'.
35+50		41+00	Fill	Fill less than 10' over old I-40 Business roadbed.

Geology

Nearly the entire ramp will be built on embankment. From 12+00 to 17+00, 30' to 40' of embankment will be placed over 20 to 30 feet of artificial fill.

-Y15RPC-	10+00.00	32+03.05	Page 19, 11
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The -Y15RPC- alignment connects eastbound -Y15-, (Business I-40), to southbound -L-, (I-74). The alignment begins at station 10+00, (-Y15FLYCA- station 34+00), elevation 867 on the fly approach ramp, in cut 20' below original land surface. The ramp climbs at 3.0% grade to elevation 887 at station 16+50, then 1.87% to 27+00 elevation 904 and .4% to the end at station 32+00, elevation 906, where it merges with -Y15FLYAC- station84+90.

Cuts and Fills

- Y15RPC -				
Station	to	Station		Note
10+00		17+50	Cut	Cut 20' thick, tapering to 0 last 15'.
17+50		26+25	Fill	Fill, most less than 15'.
26+25		32+00	Cut	Cut tapering from 0 to 22' at the end.

Geology

From 10+00 to 17+00 the cut slope investigation indicated stiff A-5 soil will be in the slope at station 12+50, and at 15+00 rock will be at grade with weathered rock and variable soil in the slope.

From 26+25 to 32+00, A-7-5 soil is indicated for the upper 10' of the slope, with A-5 below. No groundwater was found.

-Y15RPD-	10+00.00	40+50.44	Page 25, 11
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The -Y15RPD- alignment connects northbound -L-, (I-74) to eastbound -Y15-, (Business I-40). The alignment begins at station 10+00, (-Y15FLYBD- station 65+00), elevation 944 on the fly approach ramp, 25' above original land surface. The ramp climbs at 2.6% grade to elevation 960 at station 17+00, then descends at 5% grade to 29+50, elevation 910, where it flattens out, reaching the bottom at station 33+50 elevation 904. It then climbs to the end at station 41+50, elevation 908, where it merges with -L- station 817+00.

Cuts and Fills

- Y15RPD -				
Station	to	Station		Note
10+00		18+00	Fill	Fill 25' to start, increasing to 50' thick.
18+00		21+50	Fill	Fill, 50' increasing to 70', decreasing to 50' thick.
21+50		25+00	Fill	Fill 50' decreasing to 40'
25+00		28+00	Fill	Fill 40' decreasing to 0'.
28+00		35+50		Less than 10' of fill or cut
35+50		41+50	Cut	Cut tapers from 0 to 18'.

Geology

From 28+00 to 41+50 the cut slope investigation indicated the upper 10' of the slopes will be A-7-5 with A-5 below. No groundwater was found.

-Y15LPA-	10+00.00	26+95.04	Page 10
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The -Y15LPA- alignment connects northbound -L-, (I-74) to westbound -Y15-, (Business I-40). The alignment begins at station 10+00, (-L- station 789+00), elevation 867, 35' below original land surface. The loop descends at 1.5% grade to elevation 862 at station 16+50, then climbs at 6% grade to 24+00, elevation 900, where it flattens out, reaching the top at station 25+00 elevation 904. It then drops to the end at station 26+95, elevation 900, where it merges with -Y15REV- station 50+37.

Cuts and Fills

- Y15LPA -				
Station	to	Station		Note
10+00		17+50	Cut	Cut 35' at start, tapers to 0 last 100'. Possibly Wet
17+50		24+00	Cut	Cut, 20' constant as road climbs, tapers to 0 last 100'
24+00		27+00	Cut	Cut, less than 10' thick, tapers to 0

Geology

From 10+00 to 13+50 the slope will be either loose sand to stiff silt. From 13+50 to 17+50 rock was found at or above grade with weathered rock or medium dense sand above. From 17+50 to 23+50 the investigation indicated the upper 10' of the slopes will be A-7-5 with A-5

or A-2 below. From 10+00 to 19+00 water was found near or above grade, and from 10+00 to 13+50 the groundwater was up into the section of sandy soil at the base of the slope.

-Y16-(Glenn Hi rd)	12+00.00	34+00.00	Page 11
-Y16A-	10+00.00	12+51.55	Page 11
-Y16B-	10+00.00	15+23.68	Page 11

The -Y16- alignment, (SR 2679) runs roughly parallel to Business I-40 and crosses the path of the planned -L- alignment south of the I-40 / I-74 interchange. The alignment begins at station 12+50, and follows the original land surface to station 16+00. The roadway then will gain about 12' elevation before the entrance to a new bridge that runs from station 21+00 to 25+28. The roadway will then drop back to the original grade at 31+00 with the alignment end at 33+25. -Y16A- and -Y16B- concern improvements to the intersection of Shaw Hills Ct and Yeaton Glen Cir with -Y16-.

Cuts and Fills

- Y16 -				
Station	to	Station		Note
12+50		16+00		No cut or fill
16+00		21+00	Fill	Fill : Bridge approach taper 0 to 12.
21+00		25+28	Bridge	Bridge
25+28		31+00	Fill	Fill Bridge approach 12' to 0
28+00		33+50		No cut or fill

- Y16B -				
Station	to	Station		Note
11+00		14+00		Taper 0 to 5' to match bridge approach ramp of -Y16-

Geology

The -Y16- alignment is built entirely at grade on residual soil or on embankment fill.

-Y16DET-	13+00.00	33+76.97	Page 11
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The -Y16DET- alignment will be a temporary access road while the -Y16- Bridge over future I-74 is built. The alignment begins at station 14+52 elevation 923, and then rises to elevation 932 at station 18+50. From 18+50 to 24+00 the road runs nearly level, dropping a foot or two, then descends at 1.58% grade to station 30+50. From there to station 32+41, the detour merges with -Y16-, running nearly level.

Cuts and Fills

- Y16B -				
Station	to	Station		Note
19+50		24+50	Fill	Fill, less than 5'.
24+50		31+50	Fill	Fill, 0' to 9'

Geology

The -Y16DET- alignment is built entirely at grade on residual soil or on embankment fill.

Segment 4:-Y15- including -Y15-Rev Bypass, but separate from the loops, ramps, etc.

This segment covers the improvements to Business I-40. I-40 will be widened and repaved from the beginning at station -Y15- 21+50 to -Y15- 56+00 where -Y15REV- begins, (station -Y15REV-

8+00). The -Y15REV- alignment replaces Business I-40, shifting the roadway about 300' to the south of the old location. At -Y15REV-96+28 the new alignment merges back to the old location at -Y15- station 145+00. The -Y15- alignment continues as a widening project to the end at 176+96. At -Y15- 159+00 the first of the two UXRPs depart -Y15-.

Alignment	Station	to	Station	Note
-Y15-	21+50.00		56+00.00	Plan Sheet 16, 18, 47, 48
-Y15REV-	8+00.00		96+28.30	Plan Sheet 18, 19, 10, 20, 21, 48 - 51
-Y15-	145+00		176+96.90	Plan Sheet 21-24, 51, 52
-UXRPB-	10+00.00		19+13.04	Plan Sheet 23, 72
-UXRPC-	10+00.00		23+89.52	Plan Sheet 22, 23, 72

Discussion of the Segment

Segment Geology

This segment involves excavation of residual soil, and construction of embankments, all adjacent to and at the same grade as I-40. Within the data in hand, no special problems were identified.

Physical Description

This segment of the job covers -Y15-, -Y15REV-, -UXRPB- and -UXRPC-. Each alignment will be discussed separately. The -Y15- alignment is widening only and precedes and follows -Y15Rev- which is a new alignment south of existing I-40. The discussion below follows this order: -Y15-, -Y15REV-, and -Y15-.

-Y15-	21+50.00	56+00.00	Plan Sheet 16, 18, 47, 48
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One lane is added on the right, from -Y15-EBL, 21+50 up to 38+00; then two are added to the right. From -Y15-WBL, 32+00 to 47+00, a lane is added on the WBL, taking some room from the island and some from additional fill. From WBL 47+00 to 56+00 a lane is added on the left side on fill. The -Y15FLYCA- alignment departs the EBL to the right beginning at 49+50

Cuts and Fills

Alignment	Station	to	Station	Note
-Y15-EBL-	21+50		29+00	Widen on fill, cut for ditch
-Y15-EBL-	29+00		40+00	Cut: Minimal, just for new ditch on right
-Y15-EBL-	40+00		48+50	Cut: Up to 15' thick: Pushes back existing slope.
-Y15-EBL-	48+50		56+00	Near grade.
-Y15-WBL-	32+00		47+00	Fill: Minimal, some in island, some left side.
-Y15-WBL-	47+00		56+00	Fill: up to 15' thick

Geology

Existing Business I-40 is on embankment fill on the south side of a broad flood plain. After crossing an area of alluvial soil from 29+00 to 34+50, the EBL is on fill over residual, and the WBL is on fill or alluvial soil. The widening on the EBL pushes the existing slopes back. Rock was found below grade from station 44+00 through 46+00. From station -Y15- 33+00 to 41+00

the WBL of the old alignment is over soft wet alluvial A-6. From 41+00 to 44+00 fill will be over rock, and then from 44+00 to the end at 56+00 fill will be over alluvial.

-Y15REV-	8+00.00	96+28.30	Plan Sheet 18, 19, 10, 20, 21, 48 - 51
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Alignment -Y15REV- begins at elevation 826, station 8+00, and climbs gradually to station 21+00, elevation 834, where the grade increases to 2.3%, which is maintained to station 52+50 and elevation 906. After flattening out a little, the top of the climb is reached at station 55+50 elevation 906. Elevation is then lost at .5% down to station 84+00, elevation 881, then back up the hill to the end of the alignment at station 96+28 and elevation 895.

Cuts and Fills

The EBL, (right side -Y15REV- will be discussed, then WBL, (left side -Y15REV-)

-Y15REV- right side

Alignment	Station	to	Station	Note
-Y15-EBL-	8+00		12+50	Minimal cut or fill, widen on right
-Y15-EBL-	12+50		28+00	Cut: 0 to 40' to 0
-Y15-EBL-	28+00		34+00	Fill: 0 to 24' to 0
-Y15-EBL-	34+00		46+00	Fill: 0 to 30 to 0
-Y15-EBL-	46+00		49+50	Bridge
-Y15-EBL-	49+50		52+50	Minimal cut or fill
-Y15-EBL-	52+50		56+50	Cut: less than 10'
-Y15-EBL-	56+50		65+50	Cut: 10 to 24 to 10' Rt side of I-40Business
-Y15-EBL-	65+50		72+50	Cut 10' to 31' to 0' Rt side of I-40Business
-Y15-EBL-	72+50			Covers footprint of -Y15-
-Y15-EBL-	72+50		79+50	Minimal cut/fill left and right
-Y15-EBL-	79+50		84+50	Cut, merge with -Y15FLYBD- on right
-Y15-EBL-	84+50		87+50	Minimal cut or fill
-Y15-EBL-	87+50		96+28	Cut: up to 25' as right slope is pushed back.

Cuts and Fills

-Y15REV- leftside

Alignment	Station	to	Station	Note
-Y15-WBL-	8+00		16+50	Fill: up to 12' x 24' fill over alluvium
-Y15-WBL-	16+50		28+00	On grade: mostly fill over old I-40
-Y15-WBL-	28+00		46+00	Fill: Partly over wetland, up to 20' thick.
-Y15-WBL-	46+00		49+50	Bridge
-Y15-WBL-	49+50		55+00	Cut: less than 5'
-Y15-WBL-	55+00		64+00	Cut: old right hand slope of I-40
-Y15-WBL-	56+50		74+50	On grade: mostly on old I-40 alignment.
-Y15-WBL-	74+50		77+00	Fill: 5' lateral on existing fill slope
-Y15-WBL-	77+00		81+50	Cut: 5' pushback of existing slope
-Y15-WBL-	81+50		89+00	Fill: lateral to -Y15FLYAC-embankment
-Y15-WBL-	89+00		91+50	Cut: minimal cut for ditch
-Y15-WBL-	91+50		96+28	Cut: pushback of existing slope.

Geology

This alignment departs Business I-40, pushing the right side of the new alignment out while dragging the left over existing Business I-40. After running parallel, it merges back, pushing the left side back across existing I-40. Most of the geology of this alignment is the constructed environment of Business I-40. The cut on the right side from 22+00 to 27+00 will leave A-5 or A-4 in the cut slopes but no groundwater was found in the future slope. The cut from 53+00 to 64+00 will leave A-4 and A-5 in the slope, but groundwater should be below the ditch elevation. The fill section from 28+00 to 46+00 covers an existing stream but the measures can be taken during construction to correct any soil weakness that turn up during construction.

-Y15-	145+00		176+96.90	Plan Sheet 21-24, 51, 52
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One continuous lane is added on each side along with additional areas of widening associated with traffic entering or departing from two sets of ramps. The existing grade and centerline of Y-15, (I-40 bypass), is maintained with additions on the sides.

Cuts and Fills

The -Y15EBL- side will be discussed, then the WBL side.

Y15- right side

Alignment	Station	to	Station		Note
-Y15-EBL-	145+00		153+50	Cut	Cut: Slope pushback, 17' x 20 tapering to 0
-Y15-EBL-	153+50		163+50	Fill	Fill: Minimal, just for new shoulder on right
-Y15-EBL-	163+50		167+00	Cut	Cut: 5' x 8' each section, pushes back slope.
-Y15-EBL-	167+00		176+96		Cut: Minimal, just for new shoulder on right.

-Y15- left side

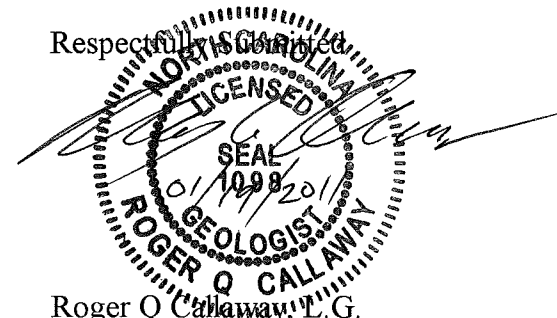
Alignment	Station	to	Station		Note
-Y15-WBL-	145+00		149+00	Cut	Cut: Slope pushback, 12' x 20 tapering to 0
-Y15-WBL-	149+00		155+50	Fill	Fill: Minimal, just for new shoulder on left
-Y15-WBL-	155+50		167+00	Cut	Cut: 5' x 20' each section: pushes back slope.
-Y15-WBL-	167+00		176+96		Minimal: work is taken up by ramp.

Geology

This alignment widens existing I-40. The available information indicates that the cuts will leave A-2 soil in the new cut slopes. Groundwater was encountered in some borings, but it was below the ditch line elevation.

-UXRPB-	10+00.00		19+13.04	Plan Sheet 23,72
-UXRPC-	10+00.00		23+89.52	Plan Sheet 22, 23, 72

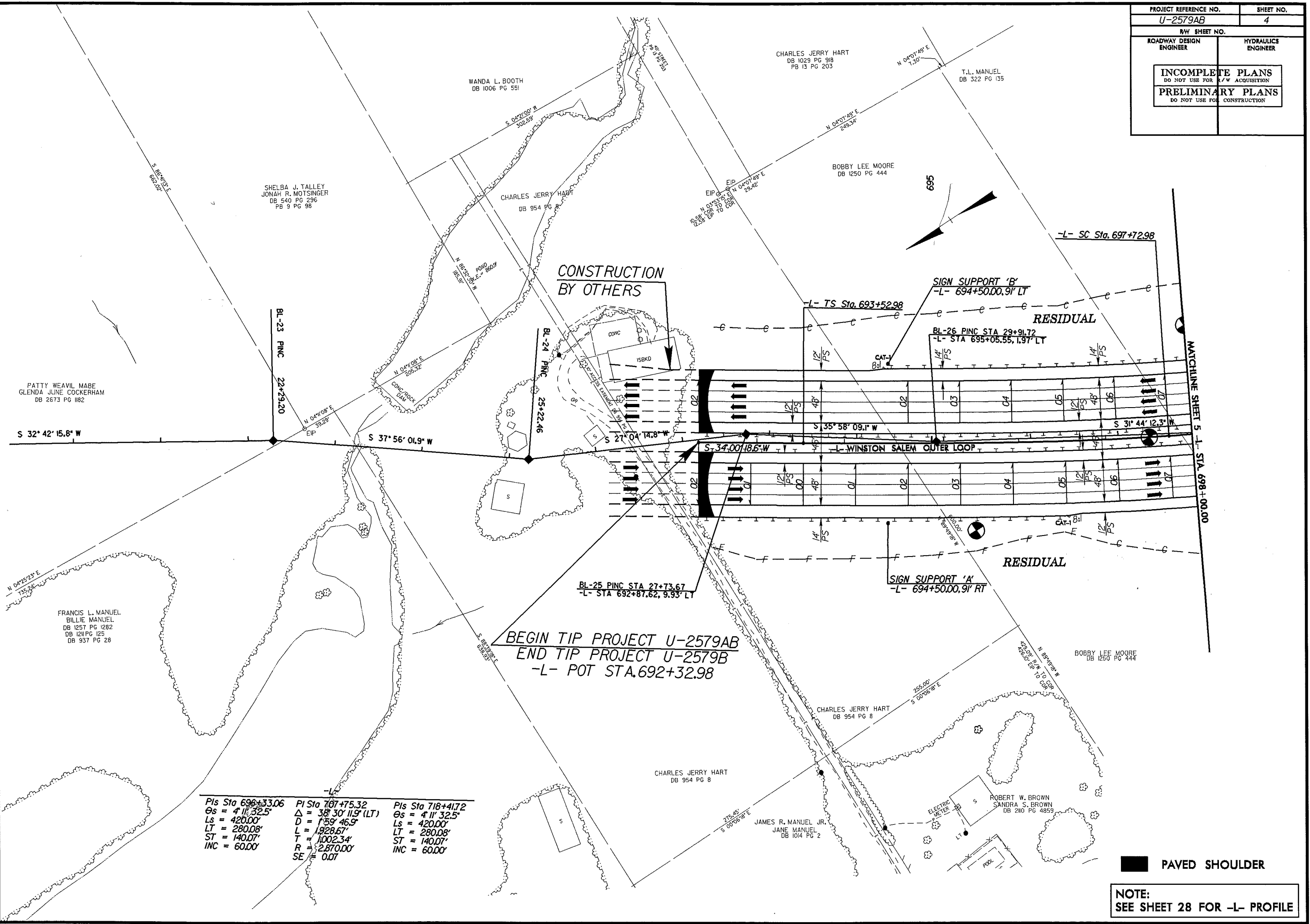
These alignments improve existing ramps

Respectfully,

 Roger Q Callaway, L.G.

EARTHWORK BALANCE SHEET

PROJECT REFERENCE NO. U-2579AB	SHEET NO. 4
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	CONSTRUCTION ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

8/17/99
 REVISIONS
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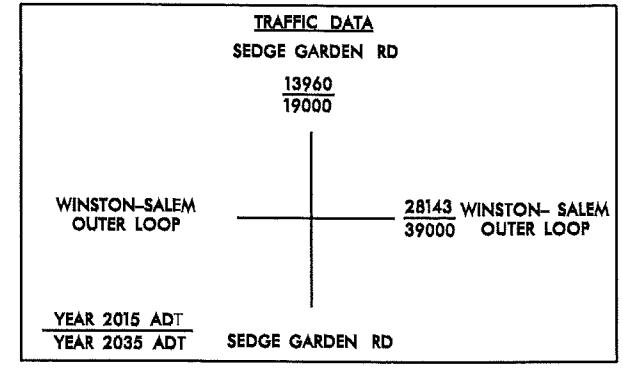


PIs Sta 696+33.06 $\theta_s = 4' 11' 32.5''$ $L_s = 420.00'$ $LT = 280.08'$ $ST = 140.07'$ $INC = 60.00'$	PIs Sta 707+75.32 $\Delta = 38' 30' 11.9'' (LT)$ $D = 1' 59' 46.9''$ $L = 1,928.67'$ $T = 1,002.34'$ $R = 2,870.00'$ $SE = 0.07$	PIs Sta 718+417.2 $\theta_s = 4' 11' 32.5''$ $L_s = 420.00'$ $LT = 280.08'$ $ST = 140.07'$ $INC = 60.00'$
--	--	--

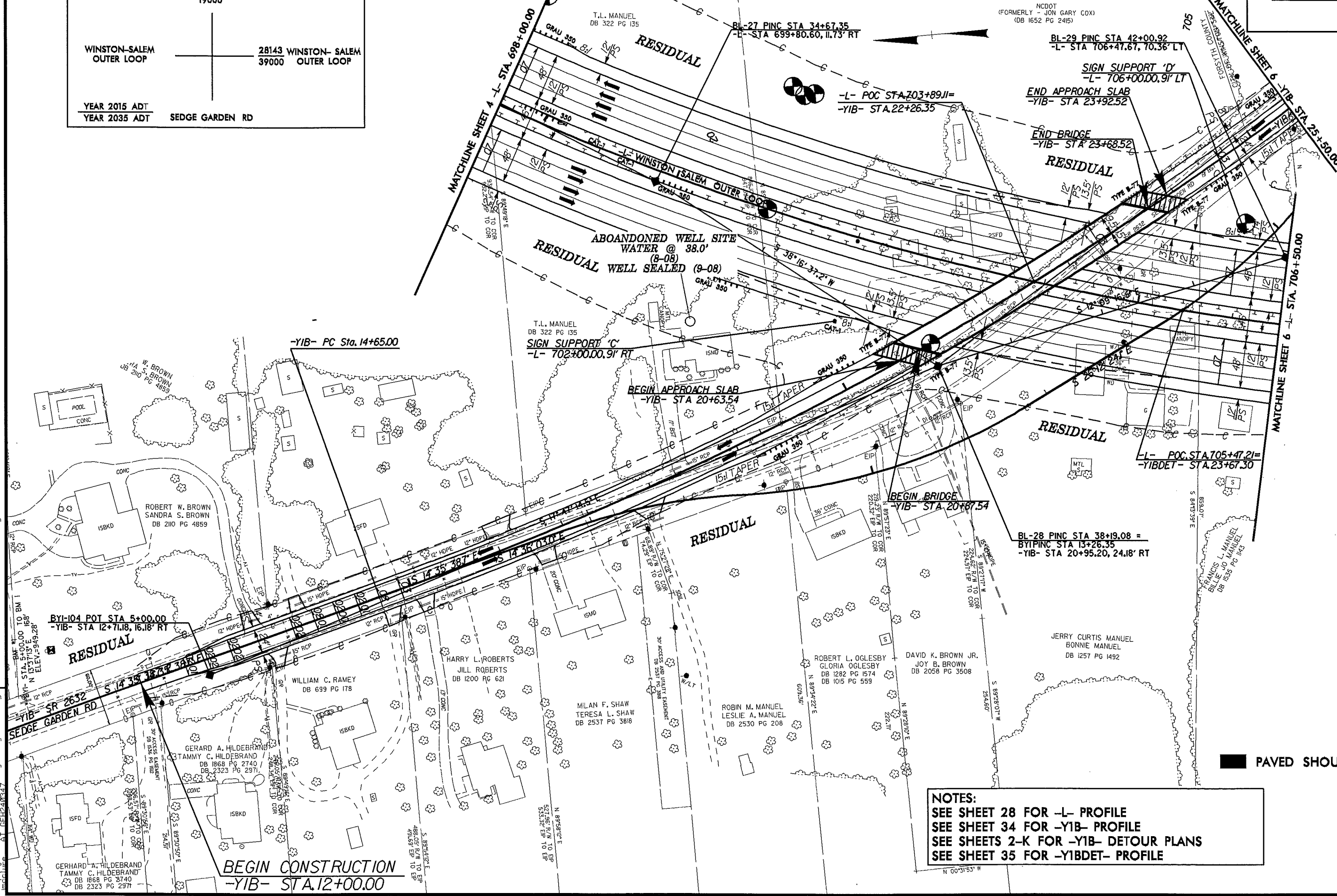
PAVED SHOULDER
NOTE:
 SEE SHEET 28 FOR -L- PROFILE

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 14-APR-2009 09:56
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PROJECT REFERENCE NO. U-2579AB	SHEET NO. 5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



PIs Sta 696+33.06 $\Theta_s = 4' 11'' 32.5''$ $L_s = 420.00'$ $LT = 280.08'$ $ST = 140.07'$ $INC = 60.00'$	PI Sta 707+75.32 $\Delta = 38' 30'' 11.9'' (LT)$ $D = 1' 59'' 46.9''$ $L = 1928.67'$ $T = 1,002.34'$ $R = 2,870.00'$ $SE = 0.07$	PIs Sta 718+41.72 $\Theta_s = 4' 11'' 32.5''$ $L_s = 420.00'$ $LT = 280.08'$ $ST = 140.07'$ $INC = 60.00'$	-YIB- PI Sta 21+42.48 $\Delta = 20' 48'' 25.4'' (LT)$ $D = 1' 33'' 09.8''$ $L = 1,340.03'$ $T = 677.48'$ $R = 3,690.00'$ $SE = 0.03$
---	--	---	---



NOTES:
 SEE SHEET 28 FOR -L- PROFILE
 SEE SHEET 34 FOR -YIB- PROFILE
 SEE SHEETS 2-K FOR -YIB- DETOUR PLANS
 SEE SHEET 35 FOR -YIBDET- PROFILE

PAVED SHOULDER

8/17/99

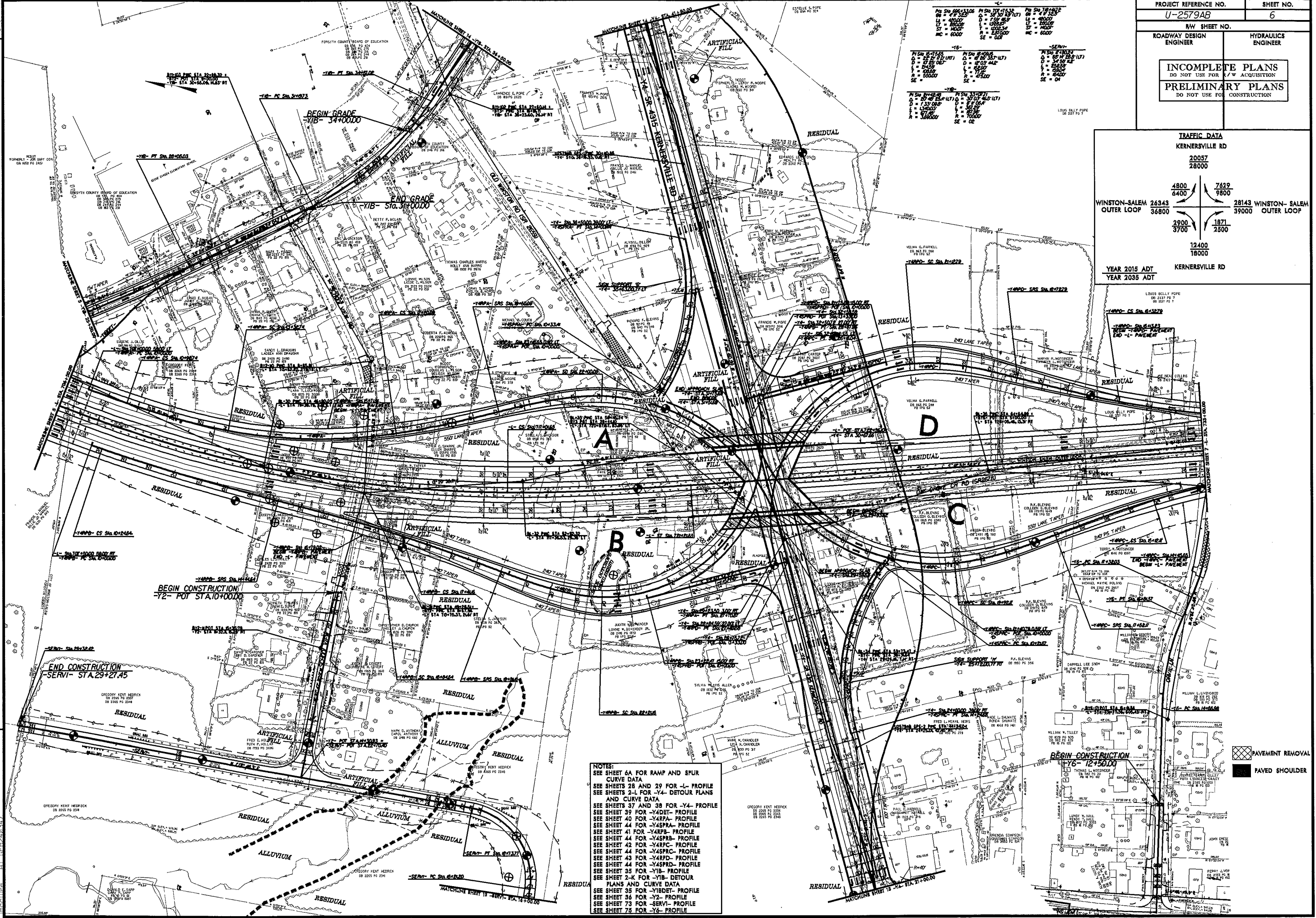
PROJECT REFERENCE NO.	SHEET NO.
U-2579AB	6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

TRAFFIC DATA	
KERNERSVILLE RD	
20057 28000	
4800 6400	7629 9800
WINSTON-SALEM OUTER LOOP 26343 36800	28143 WINSTON-SALEM OUTER LOOP 39000
2900 3700	1871 2500
12400 18000	
YEAR 2015 ADT	
YEAR 2035 ADT	
KERNERSVILLE RD	

-16- P.S. 4000 L = 4000 T = 1000 MC = 6000 SE = 0.02	-16- P.S. 4000 L = 4000 T = 1000 MC = 6000 SE = 0.02	-16- P.S. 4000 L = 4000 T = 1000 MC = 6000 SE = 0.02
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REVISIONS

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NOTES:
 SEE SHEET 6A FOR RAMP AND SPUR
 CURVE DATA
 SEE SHEETS 28 AND 29 FOR -L- PROFILE
 SEE SHEETS 2-1 FOR -Y4- DETOUR PLANS
 AND CURVE DATA
 SEE SHEETS 37 AND 38 FOR -Y4- PROFILE
 SEE SHEET 39 FOR -Y4DET- PROFILE
 SEE SHEET 40 FOR -Y4PA- PROFILE
 SEE SHEET 44 FOR -Y4SPAL- PROFILE
 SEE SHEET 41 FOR -Y4RPS- PROFILE
 SEE SHEET 44 FOR -Y4SRB- PROFILE
 SEE SHEET 42 FOR -Y4RPC- PROFILE
 SEE SHEET 44 FOR -Y4SPRC- PROFILE
 SEE SHEET 43 FOR -Y4RPD- PROFILE
 SEE SHEET 44 FOR -Y4SPRD- PROFILE
 SEE SHEET 35 FOR -Y1B- PROFILE
 SEE SHEET 2-K FOR -Y1B- DETOUR
 PLANS AND CURVE DATA
 SEE SHEET 35 FOR -Y1BDET- PROFILE
 SEE SHEET 36 FOR -Y2- PROFILE
 SEE SHEET 73 FOR -SERVI- PROFILE
 SEE SHEET 75 FOR -Y6- PROFILE

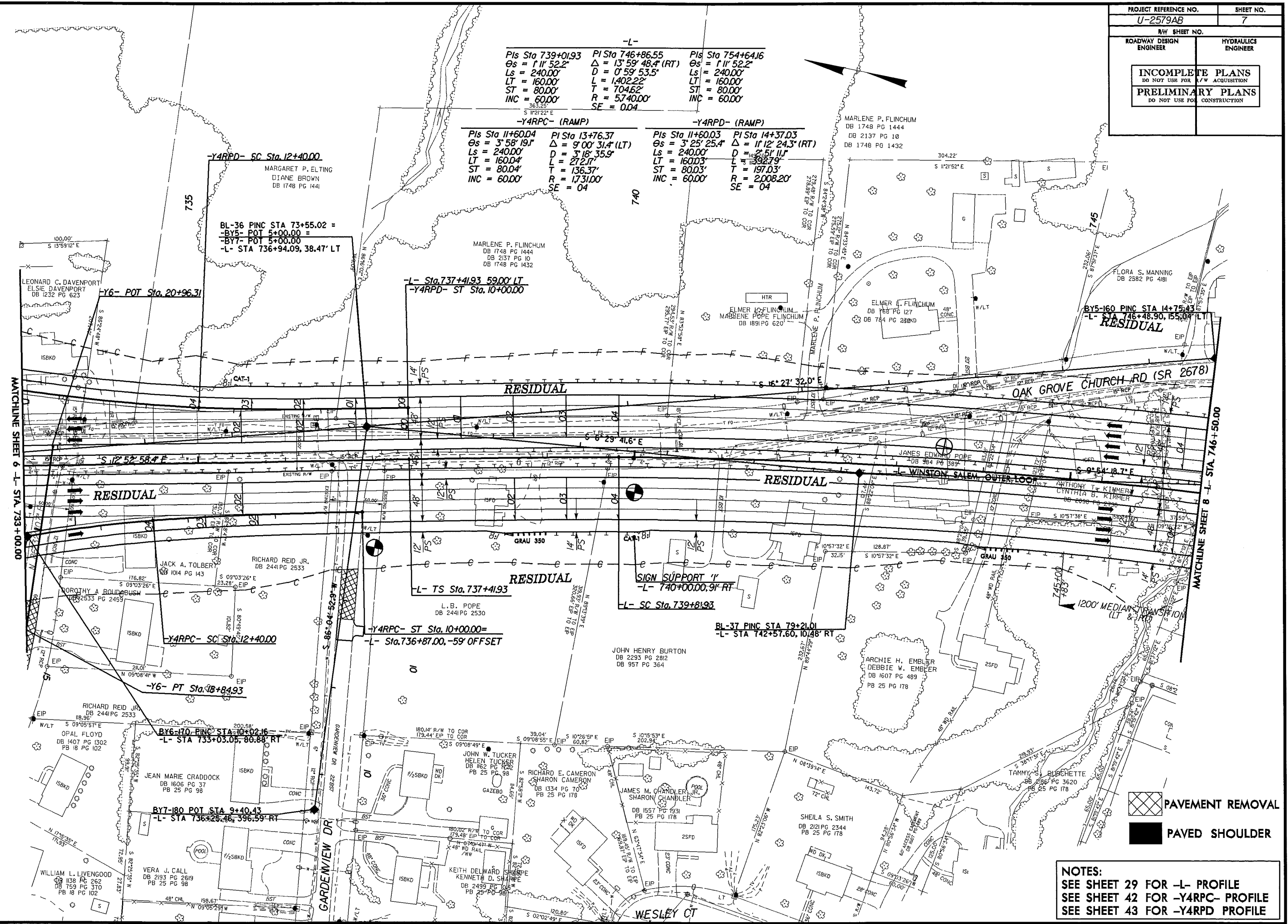
PAVEMENT REMOVAL
 PAVED SHOULDER

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PROJECT REFERENCE NO. U-2579AB	SHEET NO. 7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

-L- PIs Sta 739+01.93 $\Theta_s = 1^\circ 11' 52.2''$ Ls = 240.00' LT = 160.00' ST = 80.00' INC = 60.00'	PIs Sta 746+86.55 $\Delta = 13^\circ 59' 48.4''$ (RT) D = 0' 59' 53.5" L = 1402.22' T = 704.62' R = 5740.00' SE = 0.04	PIs Sta 754+64.16 $\Theta_s = 1^\circ 11' 52.2''$ Ls = 240.00' LT = 160.00' ST = 80.00' INC = 60.00'
--	--	---

-Y4RPC- (RAMP) PIs Sta 11+60.04 $\Theta_s = 3^\circ 58' 19.1''$ Ls = 240.00' LT = 160.04' ST = 80.04' INC = 60.00'	PIs Sta 13+76.37 $\Delta = 9^\circ 00' 31.4''$ (LT) D = 3' 18' 35.9" L = 272.17' T = 136.37' R = 1731.00' SE = 04	-Y4RPD- (RAMP) PIs Sta 14+37.03 $\Delta = 1^\circ 12' 24.3''$ (RT) D = 2' 51' 11.1" L = 392.79' T = 197.03' R = 2008.20' SE = 04
--	---	---



PAVEMENT REMOVAL
 PAVED SHOULDER

NOTES:
 SEE SHEET 29 FOR -L- PROFILE
 SEE SHEET 42 FOR -Y4RPC- PROFILE
 SEE SHEET 43 FOR -Y4RPD PROFILE

MATCHLINE SHEET 6 -L- STA. 733+00.00

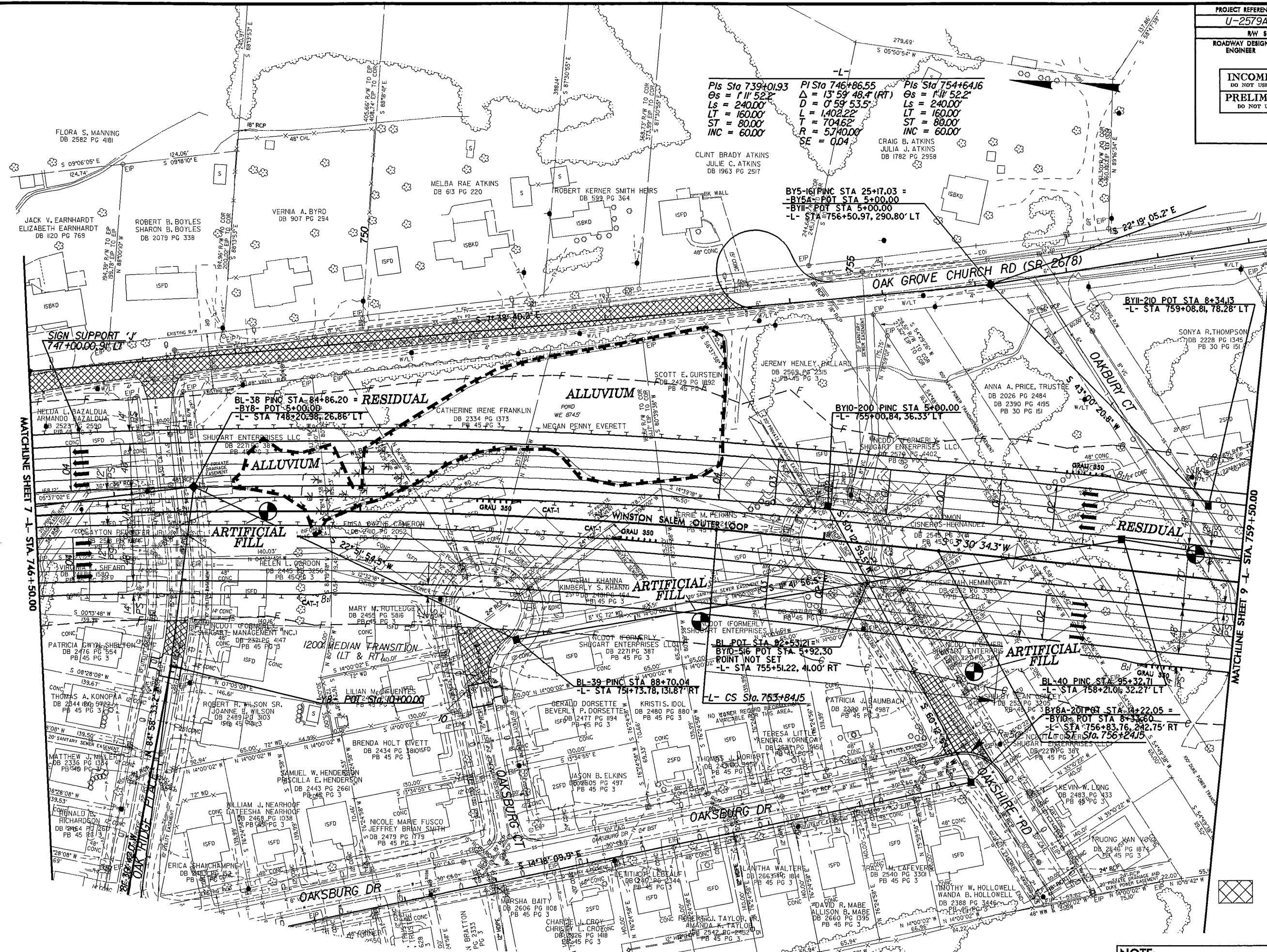
MATCHLINE SHEET 8 -L- STA. 746+50.00

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 REVISIONS
 MATCHLINE SHEET 7 - L- STA. 746+50.00
 MATCHLINE SHEET 9 - L- STA. 759+50.00

PROJECT REFERENCE NO. U-2579AB	SHEET NO. 8
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

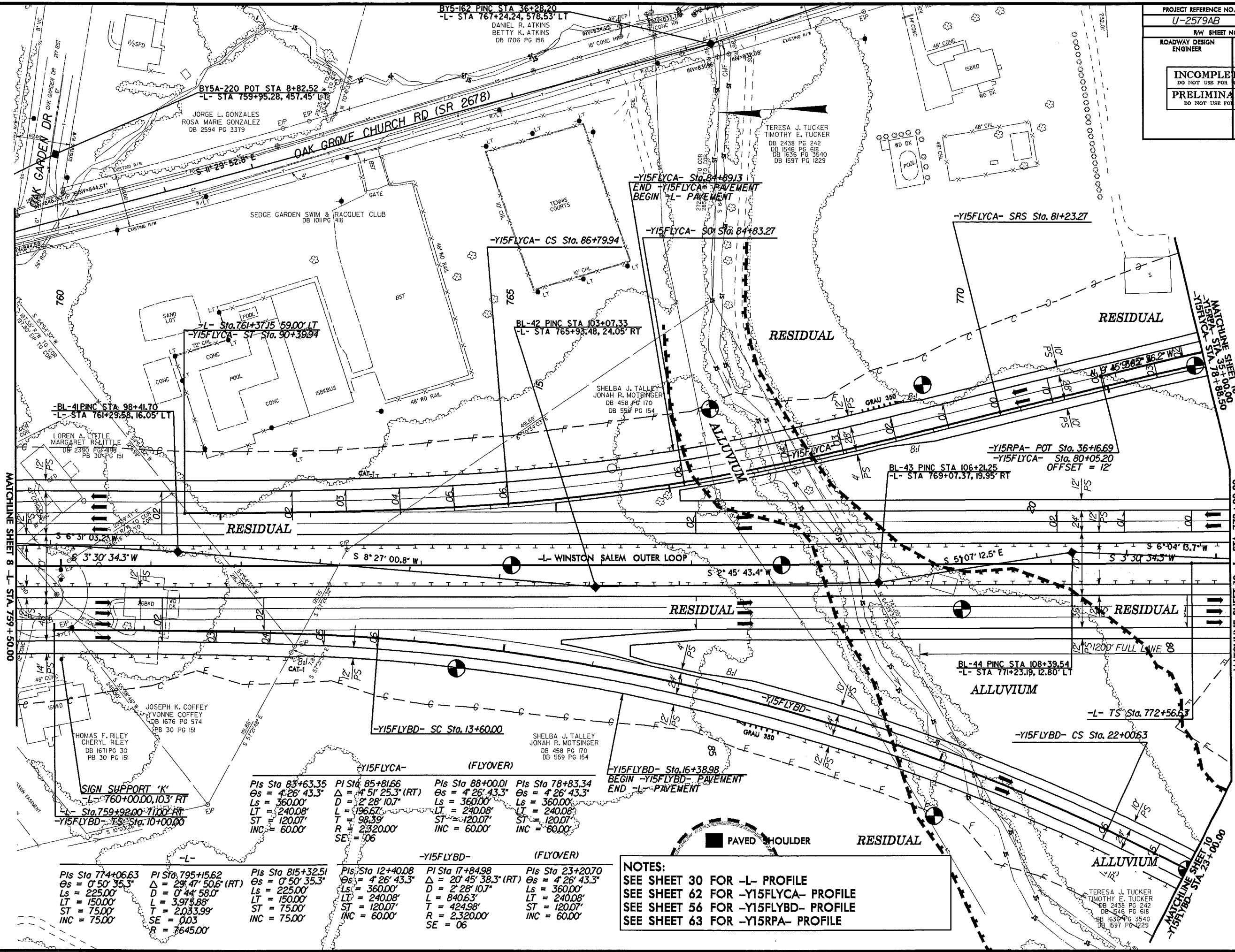
-L-
 PIs Sta 739+01.93 PIs Sta 746+86.55 PIs Sta 754+64.16
 Os = 1" 52.2 Δ = 13' 59" 48.4 (RT) Os = 1" 52.2
 Ls = 240.00 D = 0' 59" 53.5 Ls = 240.00
 LT = 160.00 L = 1,402.22' LT = 160.00
 ST = 80.00 T = 704.62' ST = 80.00
 INC = 60.00 R = 5,740.00 INC = 60.00
 SE = 0.04

BY5-161 PNC STA 25+17.03 =
 -BY5A- POT STA 5+00.00
 -BY11- POT STA 5+00.00
 -L- STA 756+50.97, 290.80' LT



NOTE:
 SEE SHEETS 29 AND 30 FOR -L- PROFILE

PROJECT REFERENCE NO.	SHEET NO.
U-2579AB	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



MATCHLINE SHEET 8 -L- STA. 759+50.00

MATCHLINE SHEET 10 -L- STA. 773+00.00

PIs Sta 774+06.63 $\Theta_s = 0^\circ 50' 35.3''$ $L_s = 225.00'$ $LT = 150.00'$ $ST = 75.00'$ $INC = 75.00'$	PIs Sta 795+15.62 $\Delta = 29^\circ 47' 50.6''$ (RT) $D = 0^\circ 44' 58.0''$ $L = 3.975.88'$ $T = 2.033.99'$ $SE = 0.03$ $R = 7645.00'$	PIs Sta 815+32.51 $\Theta_s = 0^\circ 50' 35.3''$ $L_s = 225.00'$ $LT = 150.00'$ $ST = 75.00'$ $INC = 75.00'$	PIs Sta 12+40.08 $\Theta_s = 4^\circ 26' 43.3''$ $L_s = 360.00'$ $LT = 240.08'$ $ST = 120.07'$ $INC = 60.00'$	PIs Sta 17+84.98 $\Delta = 20^\circ 45' 38.3''$ (RT) $D = 2^\circ 28' 10.7''$ $L = 840.63'$ $T = 424.98'$ $R = 2320.00'$ $SE = 06$	PIs Sta 23+20.70 $\Theta_s = 4^\circ 26' 43.3''$ $L_s = 360.00'$ $LT = 240.08'$ $ST = 120.07'$ $INC = 60.00'$
--	---	--	--	--	--

PIs Sta 83+63.35 $\Theta_s = 4^\circ 26' 43.3''$ $L_s = 360.00'$ $L = 196.62'$ $ST = 120.07'$ $INC = 60.00'$	PIs Sta 85+81.66 $\Delta = 4^\circ 51' 25.3''$ (RT) $D = 2^\circ 28' 10.7''$ $L_s = 360.00'$ $LT = 240.08'$ $T = 98.39'$ $R = 2320.00'$ $SE = 106$	PIs Sta 88+00.01 $\Theta_s = 4^\circ 26' 43.3''$ $L_s = 360.00'$ $LT = 240.08'$ $ST = 120.07'$ $INC = 60.00'$	PIs Sta 78+83.34 $\Theta_s = 4^\circ 26' 43.3''$ $L_s = 360.00'$ $LT = 240.08'$ $ST = 120.07'$ $INC = 60.00'$
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NOTES:
 SEE SHEET 30 FOR -L- PROFILE
 SEE SHEET 62 FOR -Y15FLYCA- PROFILE
 SEE SHEET 56 FOR -Y15FLYBD- PROFILE
 SEE SHEET 63 FOR -Y15RPA- PROFILE

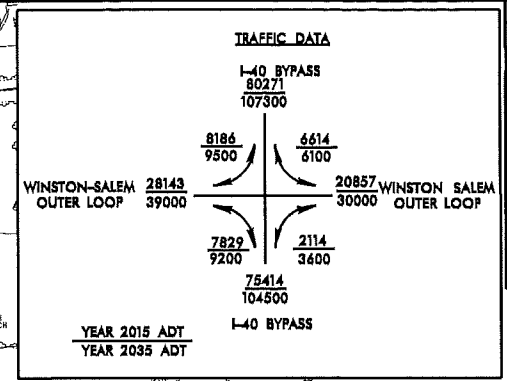
REVISIONS

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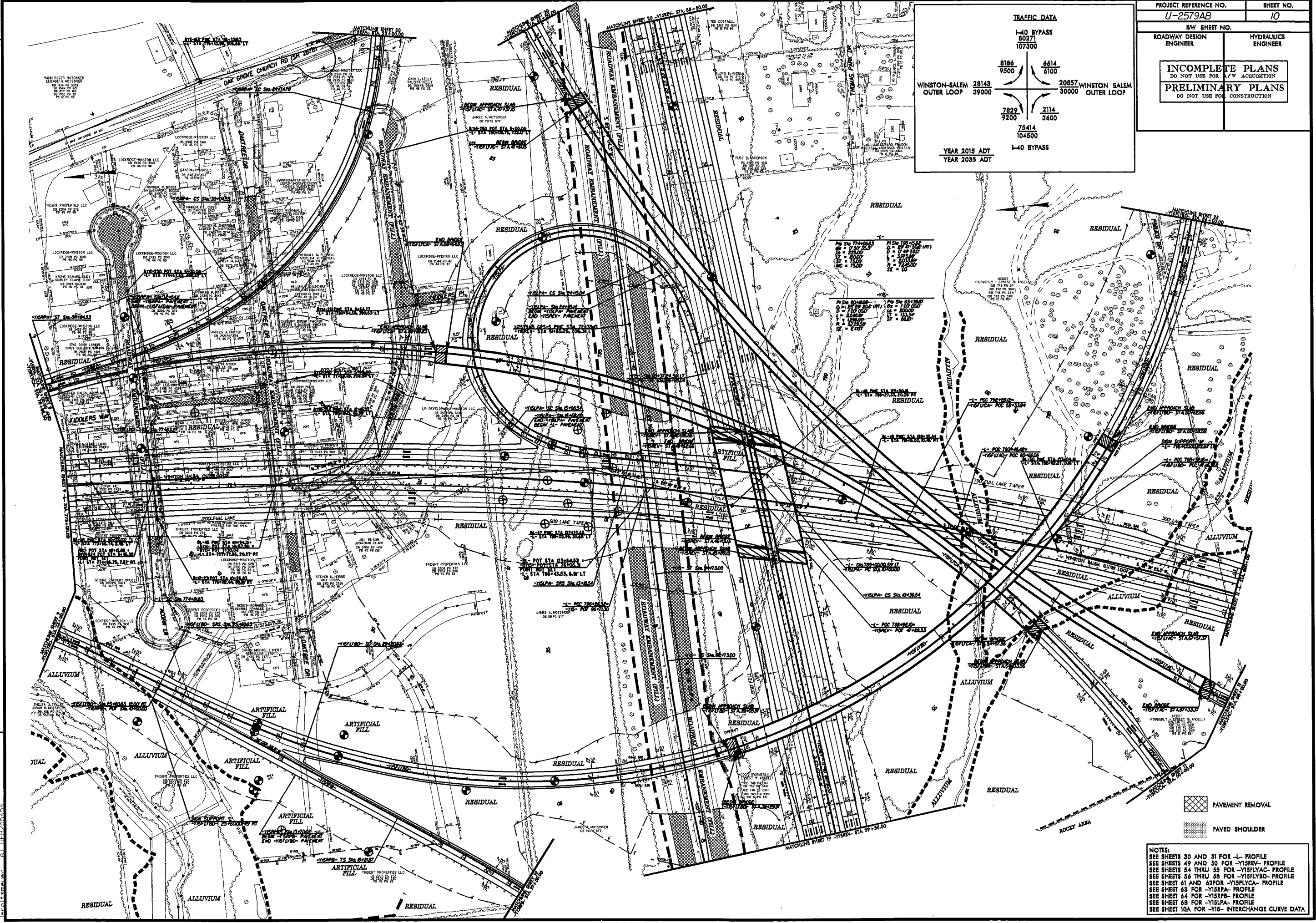
8/17/99

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PROJECT REFERENCE NO. U-2579AB	SHEET NO. 10
RAW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



REVISIONS



- PAVEMENT REMOVAL
- PAVED SHOULDER

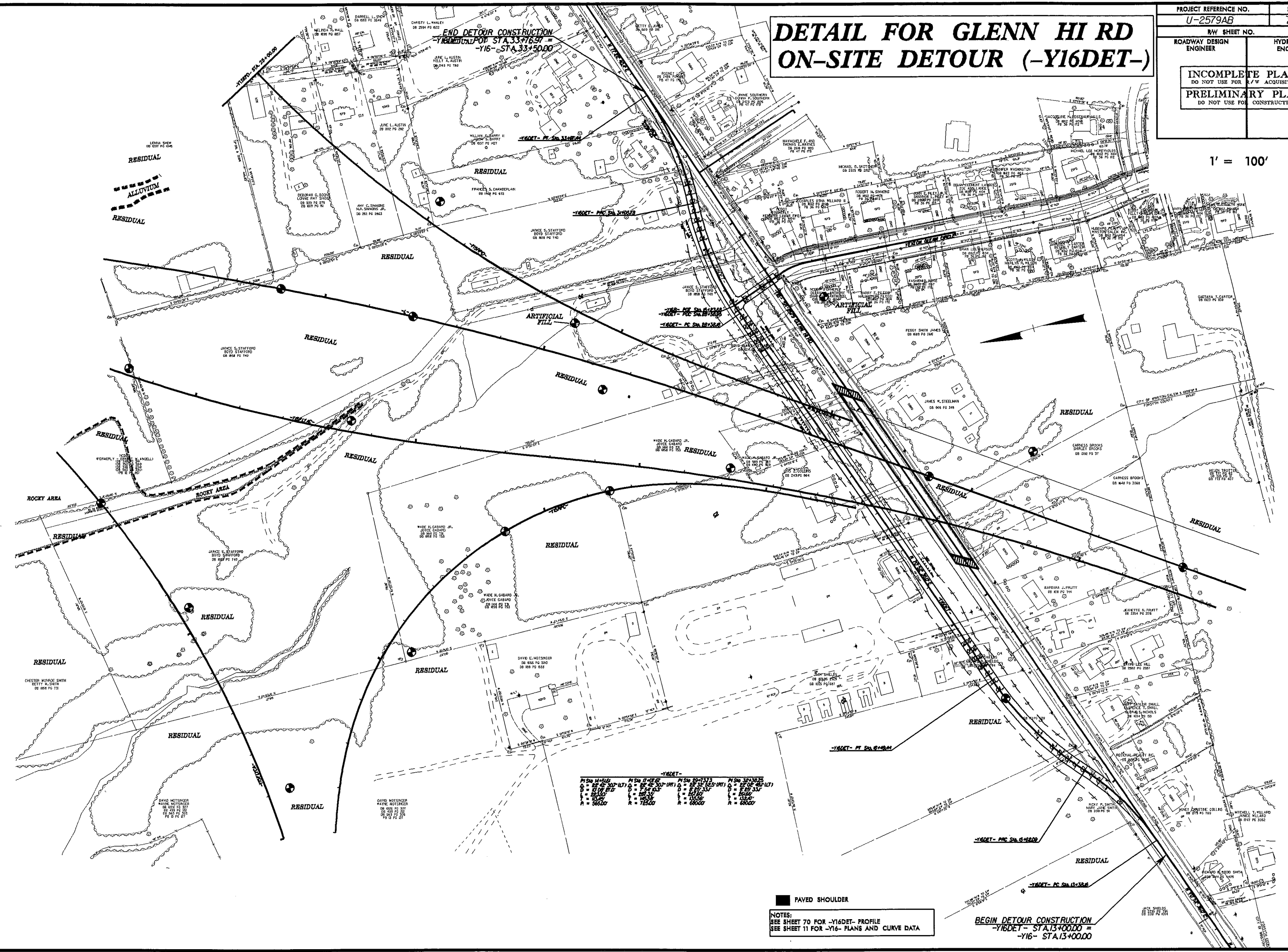
NOTES:
 SEE SHEETS 30 AND 31 FOR -L- PROFILE
 SEE SHEETS 49 AND 50 FOR -Y1SRV- PROFILE
 SEE SHEETS 54 THRU 55 FOR -Y1SRVAC- PROFILE
 SEE SHEETS 56 THRU 59 FOR -Y1SRVBD- PROFILE
 SEE SHEET 61 AND 62 FOR -Y1SRVCA- PROFILE
 SEE SHEET 63 FOR -Y1SRPA- PROFILE
 SEE SHEET 64 FOR -Y1SRPB- PROFILE
 SEE SHEET 65 FOR -Y1SLPA- PROFILE
 SEE SHEET 10A FOR -Y15- INTERCHANGE CURVE DATA

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 12-AUG-2009 13:28
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DETAIL FOR GLENN HI RD ON-SITE DETOUR (-Y16DET-)

PROJECT REFERENCE NO. U-2579AB	SHEET NO. 2-M 11A
RWY SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

1' = 100'



-Y16DET-			
PI Sta 14+46.00	PI Sta 15+48.00	PI Sta 16+50.00	PI Sta 17+52.00
Δ = 28° 30' 15" (RT)	Δ = 28° 30' 15" (RT)	Δ = 28° 30' 15" (RT)	Δ = 28° 30' 15" (RT)
L = 210.00	L = 210.00	L = 210.00	L = 210.00
R = 26500	R = 26500	R = 26500	R = 26500

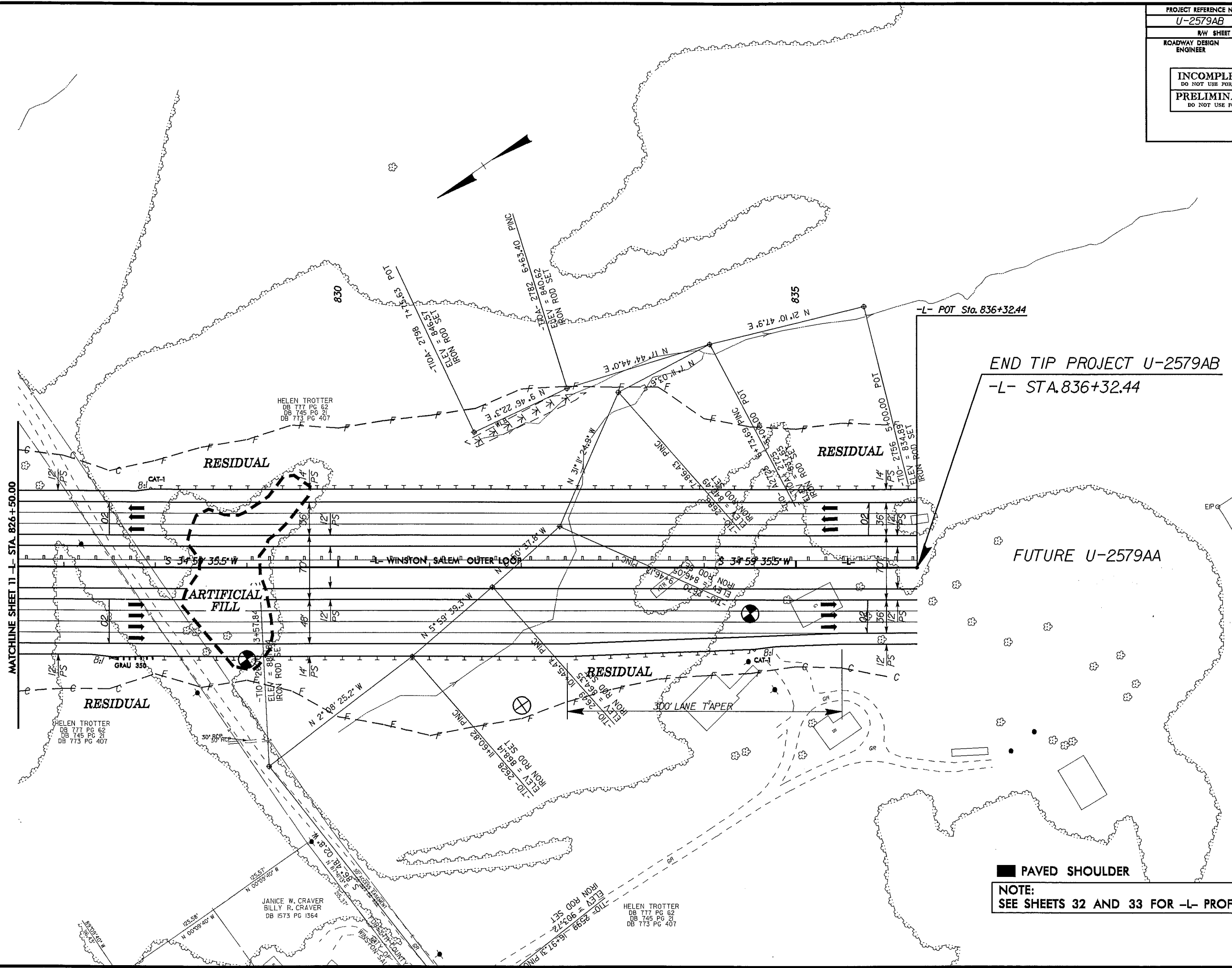
■ PAVED SHOULDER
 NOTES:
 SEE SHEET 70 FOR -Y16DET- PROFILE
 SEE SHEET 11 FOR -Y16- PLANS AND CURVE DATA

BEGIN DETOUR CONSTRUCTION
 -Y16DET- STA. 13+00.00 =
 -Y16- STA. 13+00.00

14-APR-2009 09:27
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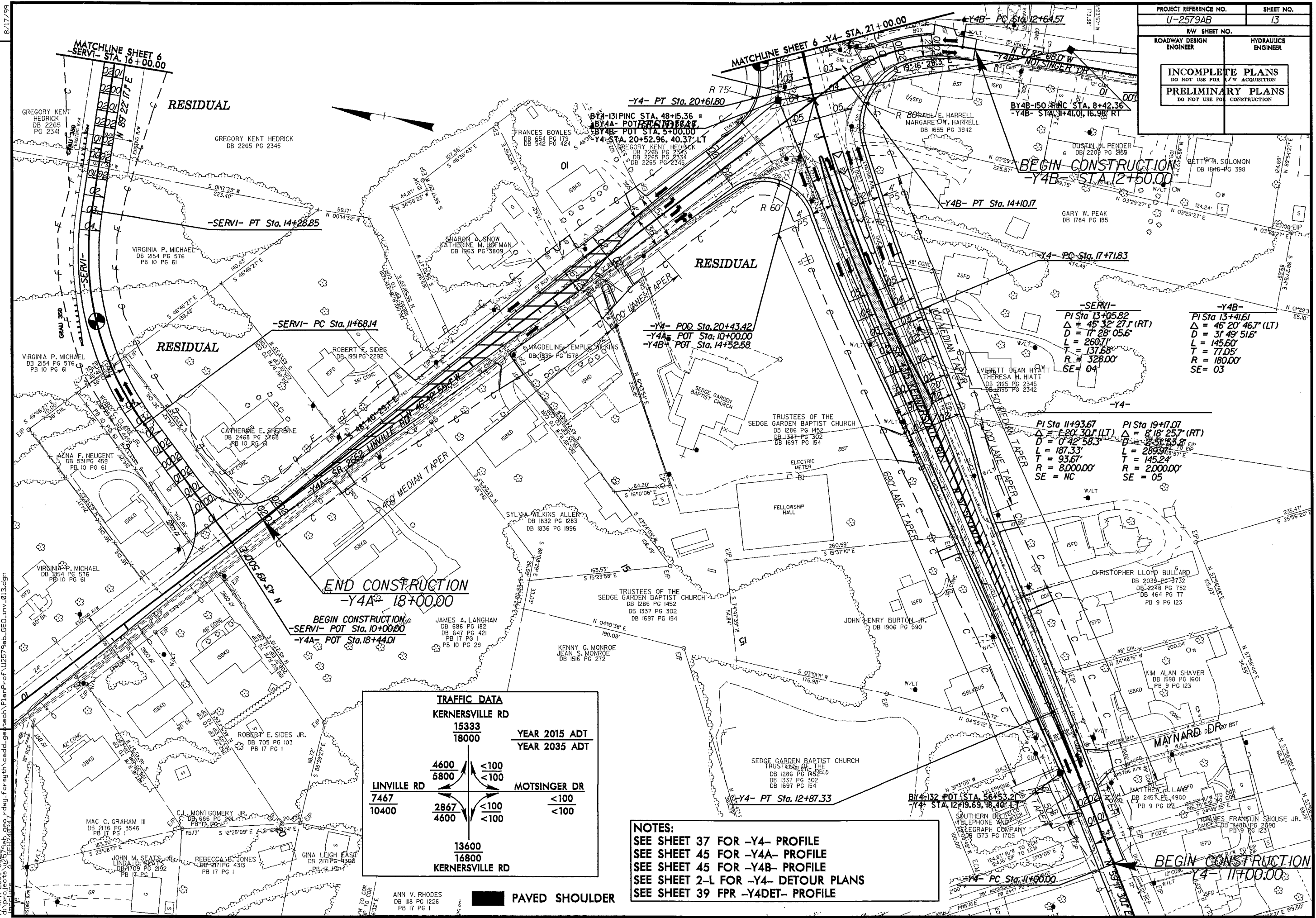
REVISIONS

PROJECT REFERENCE NO. U-2579AB	SHEET NO. 12
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



END TIP PROJECT U-2579AB
 -L- STA.836+32.44

■ PAVED SHOULDER
 NOTE:
 SEE SHEETS 32 AND 33 FOR -L- PROFILE



REVISIONS

14-APR-2009 09:57 bhj: rchj: forsyth:\esdd.get\tech\PlanPr\of\U2579ab_GEO_inv_013.dgn

TRAFFIC DATA			
KERNERSVILLE RD			
15333		YEAR 2015 ADT	
18000		YEAR 2035 ADT	
4600	<100		
5800	<100		
LINVILLE RD			
7467		MOTSINGER DR	
10400		2867	<100
		4600	<100
KERNERSVILLE RD			
13600			
16800			

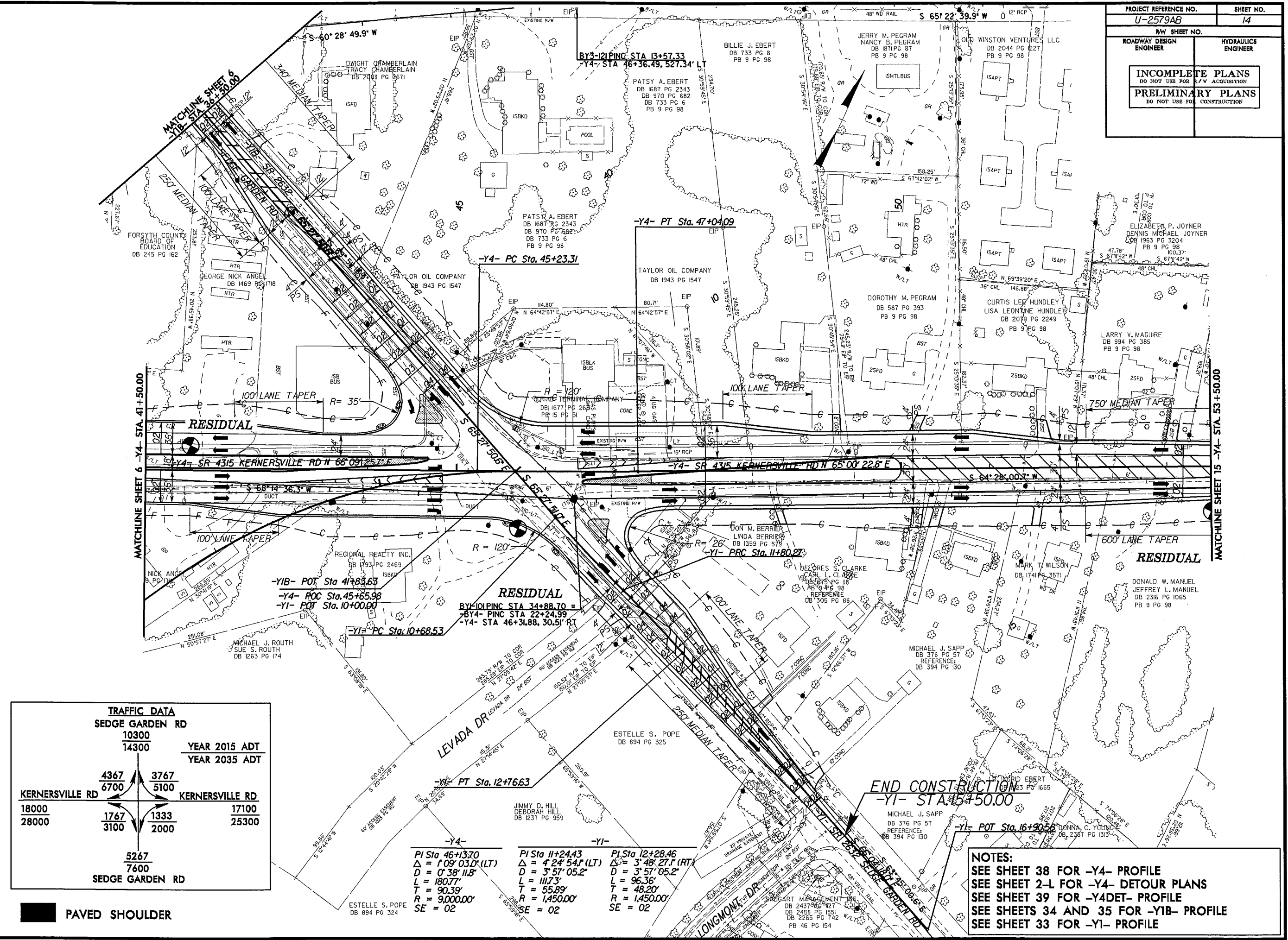
ANN V. RHODES
DB 188 PG 1226
PB 17 PG 1

PAVED SHOULDER

NOTES:
 SEE SHEET 37 FOR -Y4- PROFILE
 SEE SHEET 45 FOR -Y4A- PROFILE
 SEE SHEET 45 FOR -Y4B- PROFILE
 SEE SHEET 2-L FOR -Y4- DETOUR PLANS
 SEE SHEET 39 FOR -Y4DET- PROFILE

8/17/99
 04-APR-2009 09:37
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PROJECT REFERENCE NO.	SHEET NO.
U-2579AB	14
RAW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	CONSTRUCTION
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



TRAFFIC DATA			
SEdge GARDEN RD			
10300		YEAR 2015 ADT	
14300		YEAR 2035 ADT	
$\frac{4367}{6700}$		$\frac{3767}{5100}$	
KERNERSVILLE RD		KERNERSVILLE RD	
$\frac{18000}{28000}$		$\frac{17100}{25300}$	
$\frac{1767}{3100}$		$\frac{1333}{2000}$	
SEdge GARDEN RD		SEdge GARDEN RD	
$\frac{5267}{7600}$			

PAVED SHOULDER

-Y4-	-Y1-	-Y1-
PI Sta 46+13.70	PI Sta 11+24.43	PI Sta 12+28.46
$\Delta = 1^{\circ}09'03.0''$ (LT)	$\Delta = 4^{\circ}24'54.1''$ (LT)	$\Delta = 3^{\circ}48'27.1''$ (RT)
D = 0'38'11.8"	D = 3'57'05.2"	D = 3'57'05.2"
L = 180.77'	L = 111.73'	L = 96.36'
T = 90.39'	T = 55.89'	T = 48.20'
R = 9,000.00'	R = 1,450.00'	R = 1,450.00'
SE = 02	SE = 02	SE = 02

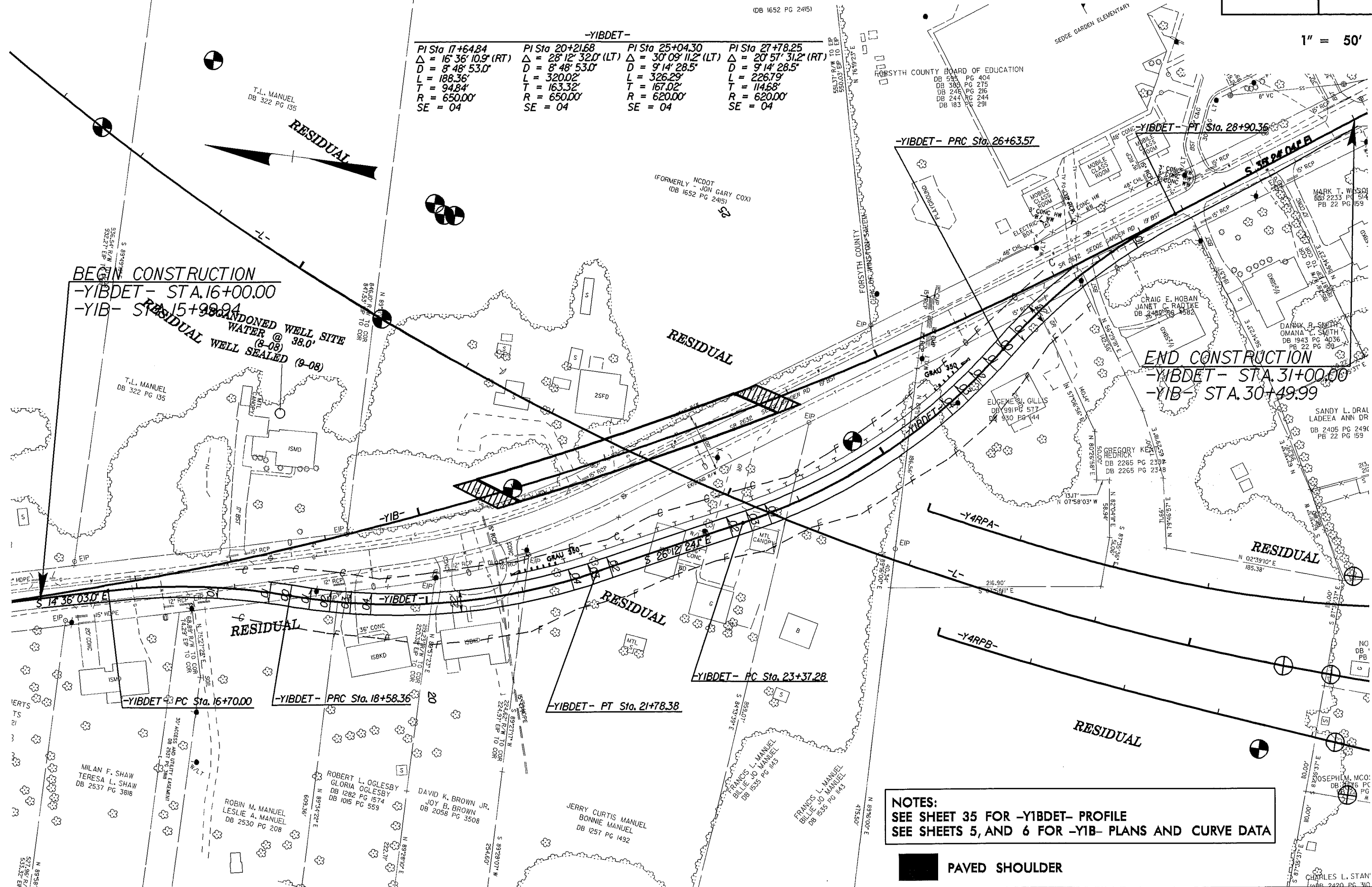
NOTES:
 SEE SHEET 38 FOR -Y4- PROFILE
 SEE SHEET 2-L FOR -Y4- DETOUR PLANS
 SEE SHEET 39 FOR -Y4DET- PROFILE
 SEE SHEETS 34 AND 35 FOR -Y1B- PROFILE
 SEE SHEET 33 FOR -Y1- PROFILE

END CONSTRUCTION
 -Y1- STA. 15+50.00

8/17/99
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 16-AUG-2009 11:44 AM
 16-2579AB_GEO_RDMY_FORSYTH_CADD_GEO\TECH\Plan\Proc\16-2579ab_GEO Inv. 014A_YIBDET.dgn

DETAIL FOR SEDGE GARDEN RD ON-SITE DETOUR (-YIBDET-)

PROJECT REFERENCE NO. U-2579AB	SHEET NO. 2-K 14A
RAW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



-YIBDET-

PI Sta 17+64.84 Δ = 16° 36' 10.9" (RT) D = 8' 48' 53.0" L = 188.36' T = 94.84' R = 650.00' SE = 04	PI Sta 20+21.68 Δ = 28° 12' 32.0" (LT) D = 8' 48' 53.0" L = 320.02' T = 163.32' R = 650.00' SE = 04	PI Sta 25+04.30 Δ = 30° 09' 11.2" (LT) D = 9' 14' 28.5" L = 326.29' T = 167.02' R = 620.00' SE = 04	PI Sta 27+78.25 Δ = 20° 57' 31.2" (RT) D = 9' 14' 28.5" L = 226.79' T = 114.68' R = 620.00' SE = 04
--	---	---	---

BEGIN CONSTRUCTION
 -YIBDET- STA. 16+00.00
 -YIB- STA. 15+99.94
 DANDONED WELL SITE
 WATER @ 38.0
 (8-08)
 RESIDUAL WELL SEALED (9-08)

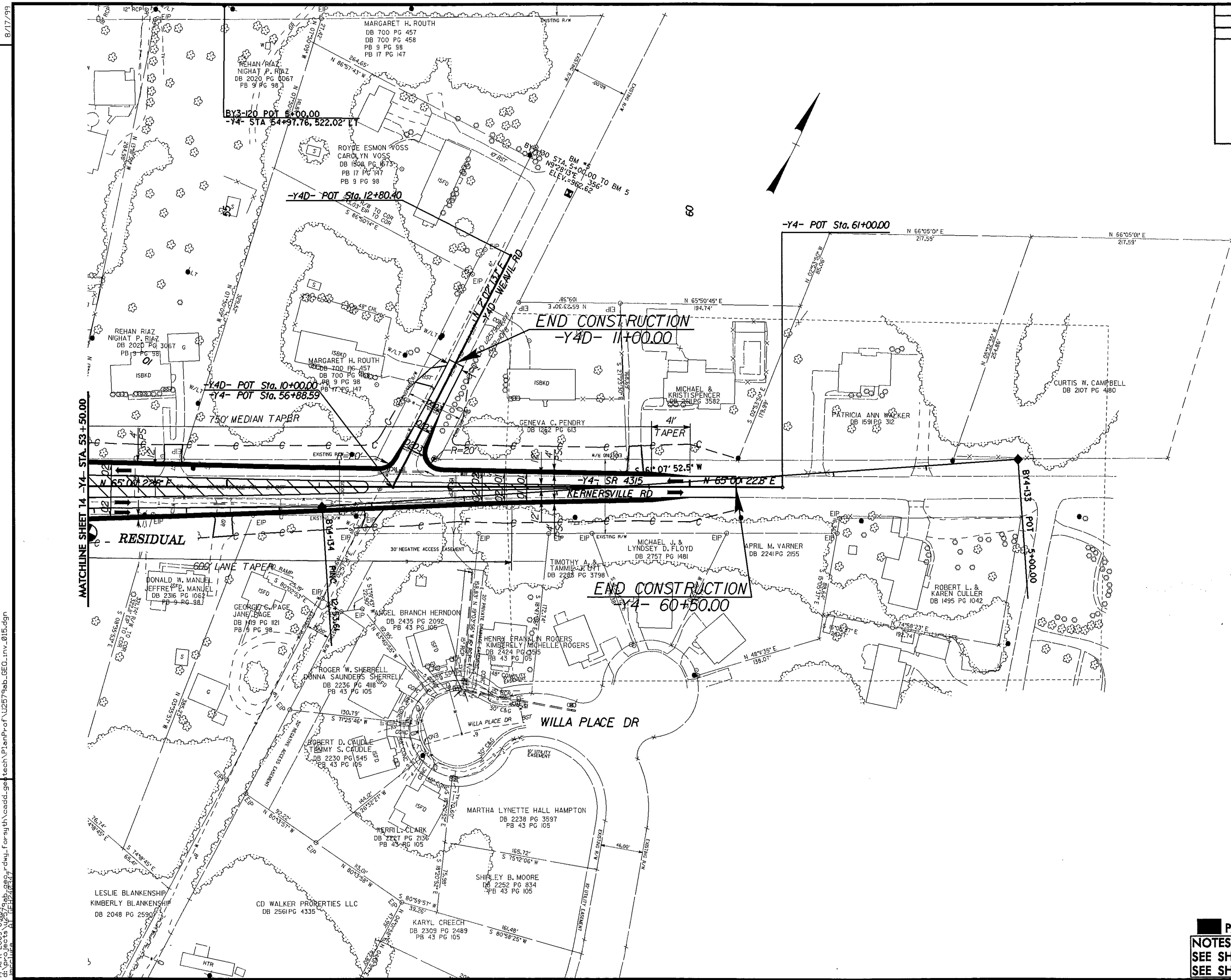
END CONSTRUCTION
 -YIBDET- STA. 31+00.00
 -YIB- STA. 30+49.99

NOTES:
 SEE SHEET 35 FOR -YIBDET- PROFILE
 SEE SHEETS 5, AND 6 FOR -YIB- PLANS AND CURVE DATA

PAVED SHOULDER

1" = 50'

PROJECT REFERENCE NO. U-2579AB	SHEET NO. 15
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



PAVED SHOULDER
NOTES:
 SEE SHEET 38 FOR -Y4- PROFILE
 SEE SHEET 36 FOR -Y4D- PROFILE

REVISIONS

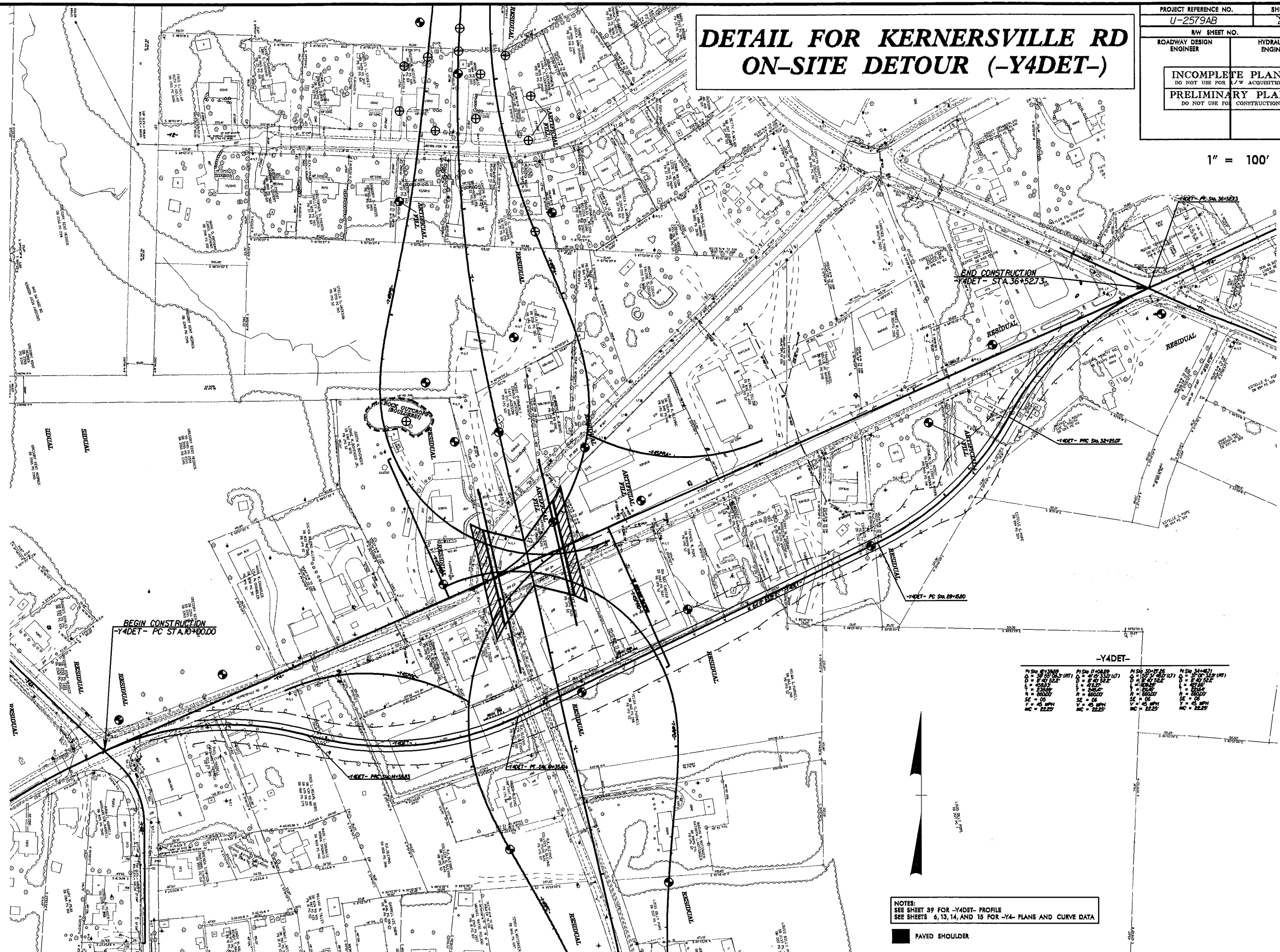
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8/17/99
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of AutoProjects\U2579ab\GEO\planprof\U2579ab.GEO_mv_077_Y4DET.dgn

DETAIL FOR KERNERSVILLE RD ON-SITE DETOUR (-Y4DET-)

PROJECT REFERENCE NO. U-2579AB	SHEET NO. 2-L 15A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

1" = 100'



BEGIN CONSTRUCTION
-Y4DET- PC STA. 10+90.00

END CONSTRUCTION
-Y4DET- STA. 36+52.73

-Y4DET- PC Sta. 29+58.00

-Y4DET-			
PI Sta. 10+90.00	PI Sta. 10+90.00	PI Sta. 30+00.00	PI Sta. 34+00.00
D = 40' 0.00'	D = 40' 0.00'	D = 30' 0.00'	D = 30' 0.00'
L = 200.00'	L = 200.00'	L = 150.00'	L = 150.00'
R = 60000'	R = 60000'	R = 60000'	R = 60000'
SE = 0%	SE = 0%	SE = 0%	SE = 0%
V = 45 MPH	V = 45 MPH	V = 45 MPH	V = 45 MPH
MC = 22.25'	MC = 22.25'	MC = 22.25'	MC = 22.25'

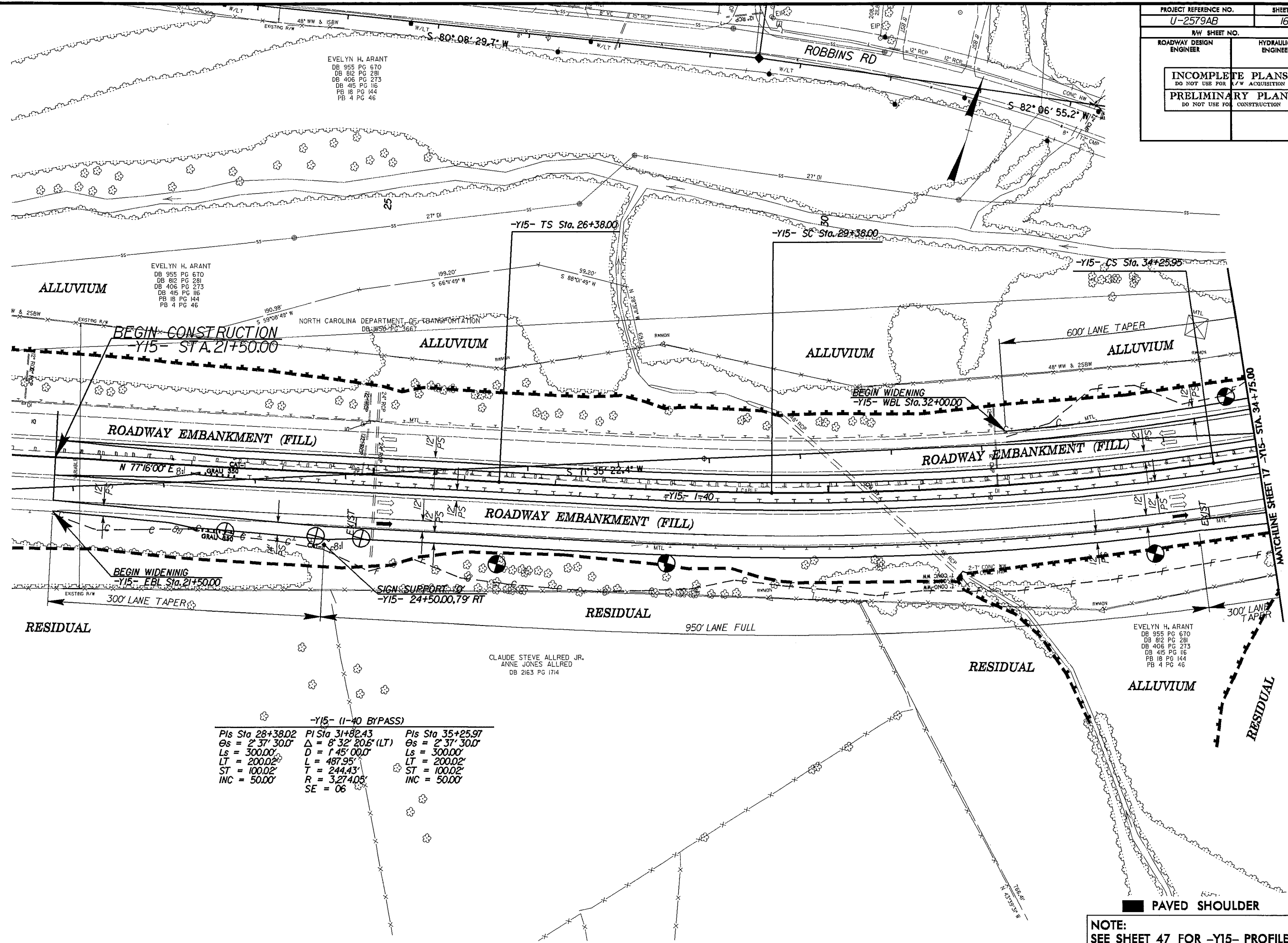


NOTES:
SEE SHEET 39 FOR -Y4DET- PROFILE
SEE SHEETS 6, 13, 14, AND 15 FOR -Y4- PLANS AND CURVE DATA

PAVED SHOULDER

14-APR-2009 09:56
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 For: s:\th\cadd\get\tech\1\anPr\of\U2579ab\GEO.inv_016.dgn

PROJECT REFERENCE NO. U-2579AB	SHEET NO. 16
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



EVELYN H. ARANT
 DB 955 PG 670
 DB 812 PG 281
 DB 406 PG 273
 DB 415 PG 116
 PB 18 PG 144
 PB 4 PG 46

EVELYN H. ARANT
 DB 955 PG 670
 DB 812 PG 281
 DB 406 PG 273
 DB 415 PG 116
 PB 18 PG 144
 PB 4 PG 46

EVELYN H. ARANT
 DB 955 PG 670
 DB 812 PG 281
 DB 406 PG 273
 DB 415 PG 116
 PB 18 PG 144
 PB 4 PG 46

CLAUDE STEVE ALLRED JR.
 ANNE JONES ALLRED
 DB 2163 PG 1714

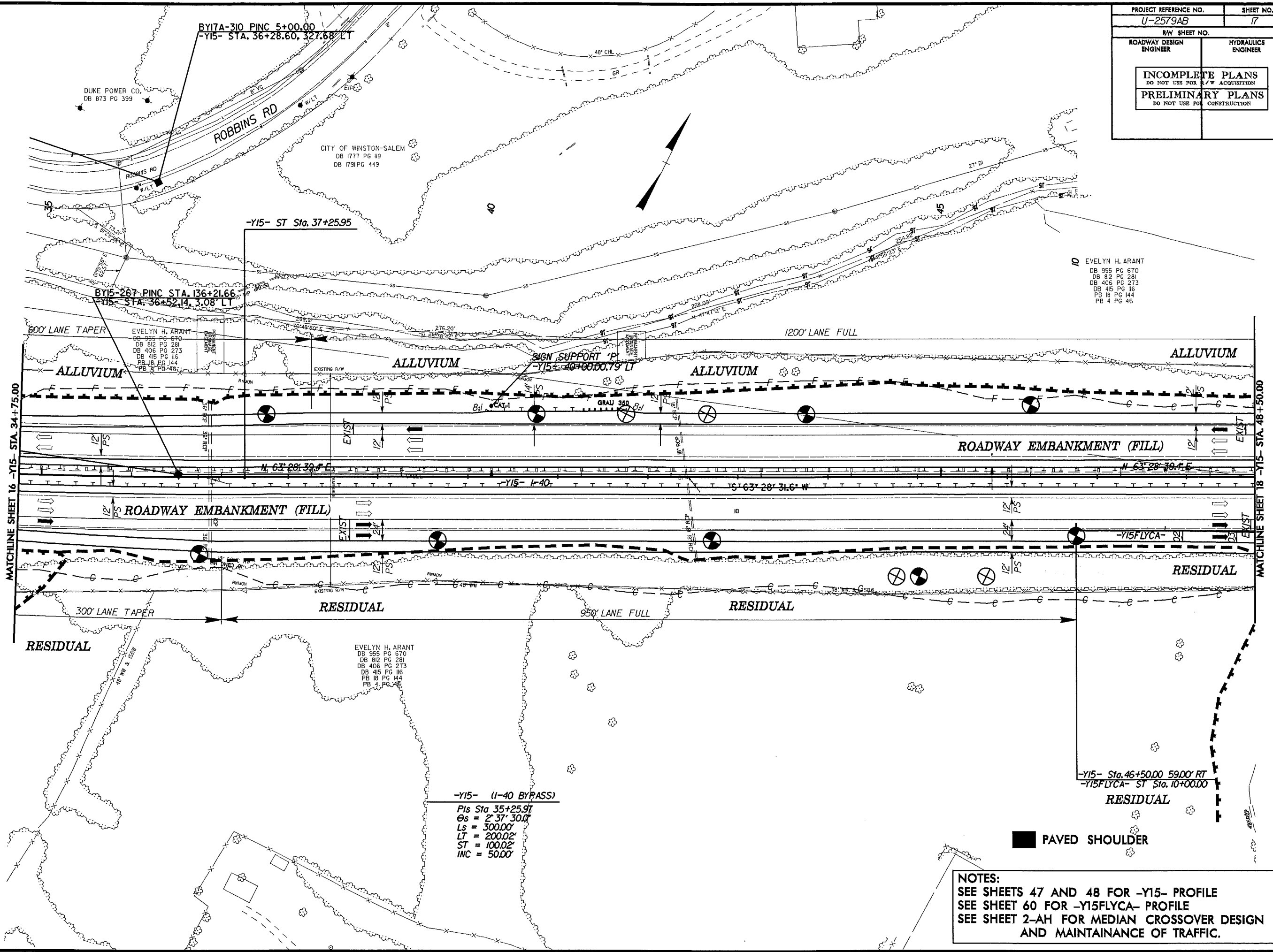
-Y15- (I-40 BYPASS)

PIs Sta 28+38.02	PI Sta 31+82.43	PIs Sta 35+25.97
$\theta_s = 2^\circ 37' 30.0''$	$\Delta = 8^\circ 32' 20.6''$ (LT)	$\theta_s = 2^\circ 37' 30.0''$
LS = 300.00'	D = 145' 00.0'	LS = 300.00'
LT = 200.02'	L = 487.95'	LT = 200.02'
ST = 100.02'	T = 244.43'	ST = 100.02'
INC = 50.00'	R = 3,274.05'	INC = 50.00'
	SE = 06	

■ PAVED SHOULDER
NOTE:
 SEE SHEET 47 FOR -Y15- PROFILE

8/17/99
 14-APR-2009 09:56
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PROJECT REFERENCE NO. U-2579AB	SHEET NO. 17
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



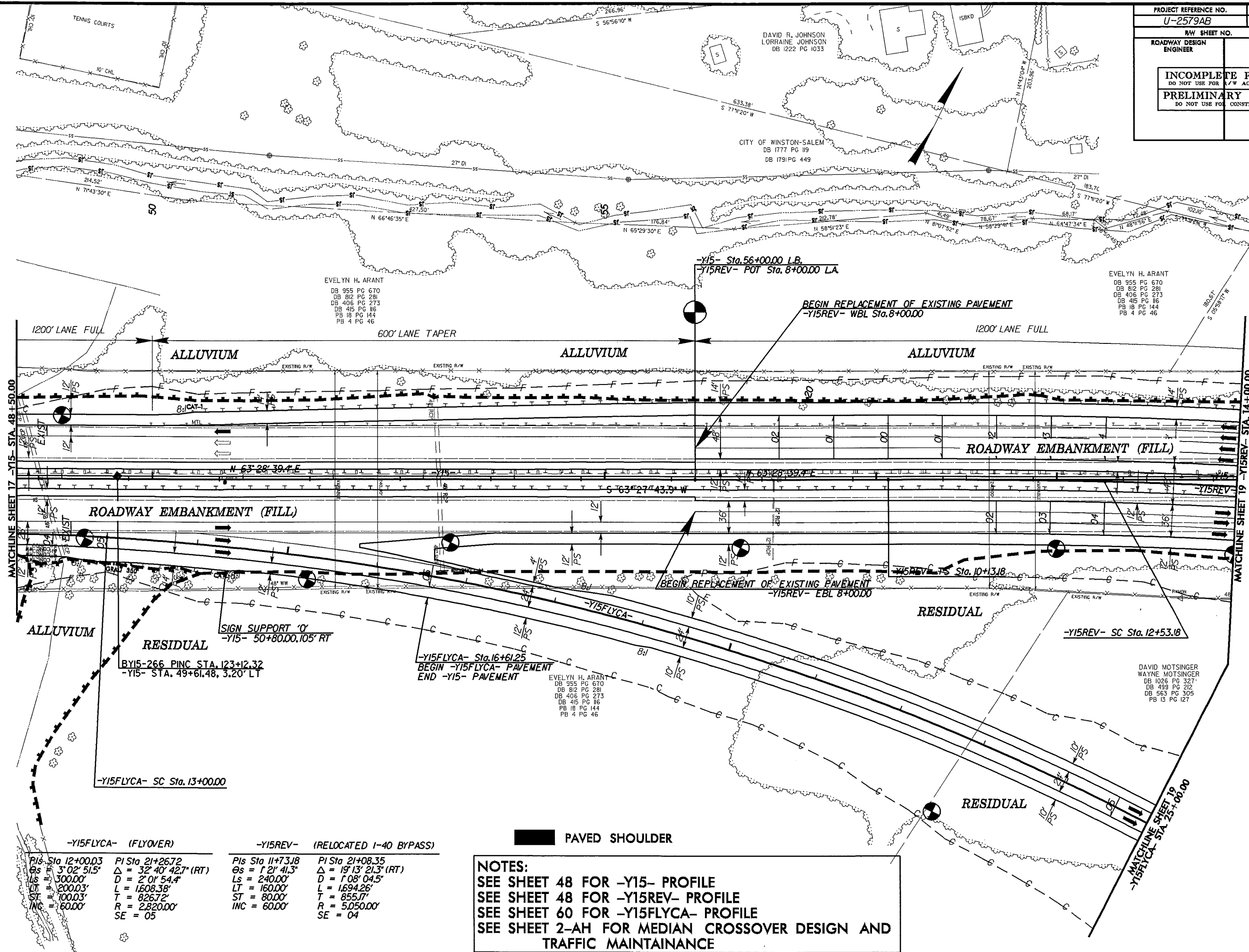
-Y15- (I-40 BYPASS)
 PIs Sta 35+25.97
 Os = 2' 37" 30.0"
 Ls = 300.00'
 LT = 200.02'
 ST = 100.02'
 INC = 50.00'

NOTES:
 SEE SHEETS 47 AND 48 FOR -Y15- PROFILE
 SEE SHEET 60 FOR -Y15FLYCA- PROFILE
 SEE SHEET 2-AH FOR MEDIAN CROSSOVER DESIGN
 AND MAINTAINANCE OF TRAFFIC.

PAVED SHOULDER

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PROJECT REFERENCE NO. U-2579AB		SHEET NO. 18	
RAW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION		PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



-Y15FLYCA- (FLYOVER)		-Y15REV- (RELOCATED I-40 BYPASS)	
PI Sta 12+00.03	PI Sta 21+26.72	PI Sta 11+73.18	PI Sta 21+08.35
Os = 3° 02' 51.5"	Δ = 32° 40' 42.7" (RT)	Os = 1° 21' 41.3"	Δ = 19° 13' 21.3" (RT)
Ls = 300.00'	D = 2° 01' 54.4"	Ls = 240.00'	D = 1° 08' 04.5"
ST = 200.03'	L = 1,608.38'	LT = 160.00'	L = 1,694.26'
ST = 100.03'	T = 826.72'	ST = 80.00'	T = 855.17'
INC = 60.00'	R = 2,820.00'	INC = 60.00'	R = 5,050.00'
	SE = 05		SE = 04

NOTES:
 SEE SHEET 48 FOR -Y15- PROFILE
 SEE SHEET 48 FOR -Y15REV- PROFILE
 SEE SHEET 60 FOR -Y15FLYCA- PROFILE
 SEE SHEET 2-AH FOR MEDIAN CROSSOVER DESIGN AND TRAFFIC MAINTAINANCE



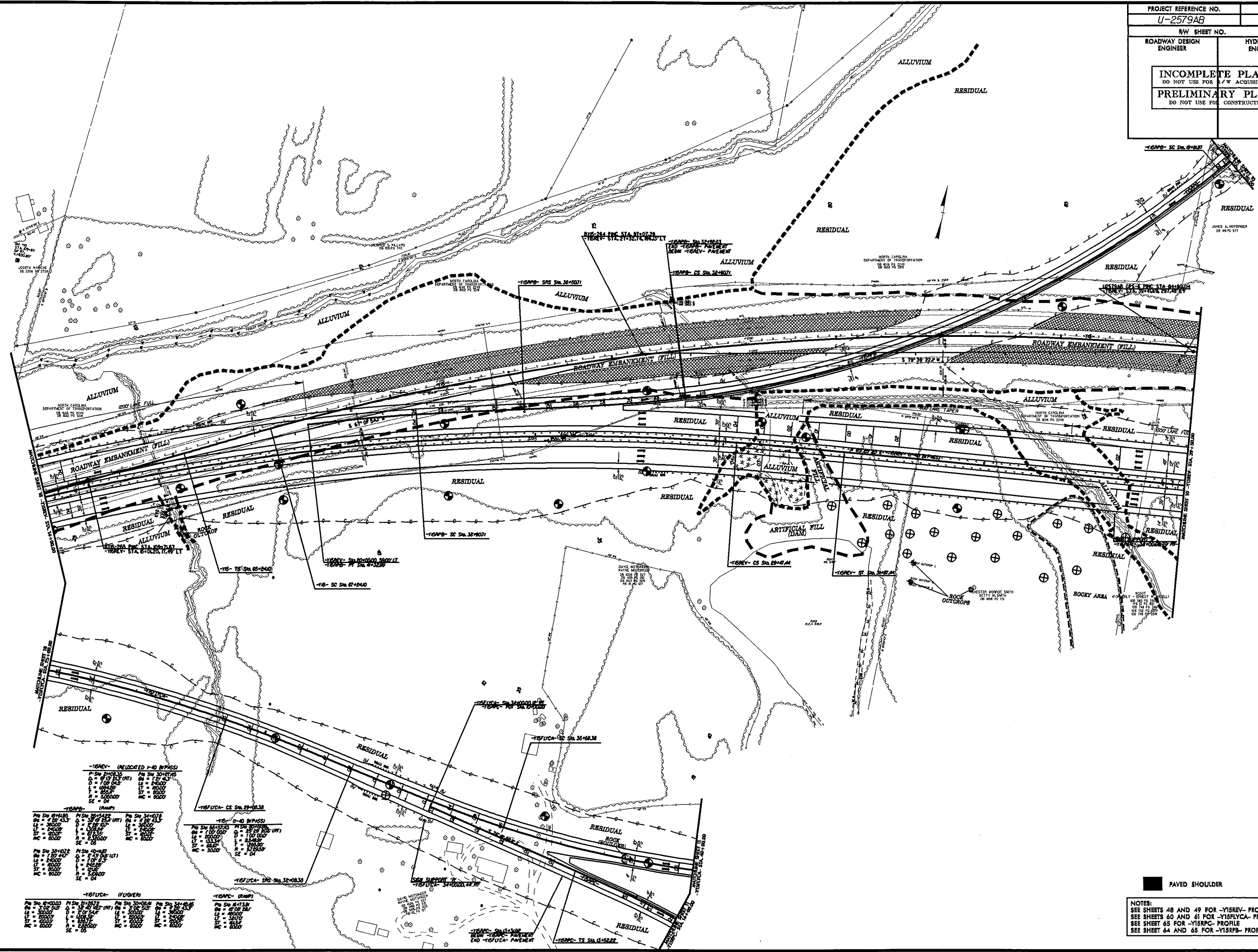
REVISIONS

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REVISIONS

PROJECT REFERENCE NO. U-2579AB	SHEET NO. 19
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



-15RPA- UNLOCKED (R-10) BYPASS P Sta 30+00.00 P Sta 30+00.00 D = 125.00' D = 125.00' L = 800.00' L = 800.00' P = 0.0000' P = 0.0000' SE = 04 SE = 04	
-15RPA- (RAMP) P Sta 30+00.00 P Sta 30+00.00 D = 125.00' D = 125.00' L = 800.00' L = 800.00' P = 0.0000' P = 0.0000' SE = 04 SE = 04	
-15RPA- (R-10) BYPASS P Sta 30+00.00 P Sta 30+00.00 D = 125.00' D = 125.00' L = 800.00' L = 800.00' P = 0.0000' P = 0.0000' SE = 04 SE = 04	
-15RPA- (RAMP) P Sta 30+00.00 P Sta 30+00.00 D = 125.00' D = 125.00' L = 800.00' L = 800.00' P = 0.0000' P = 0.0000' SE = 04 SE = 04	

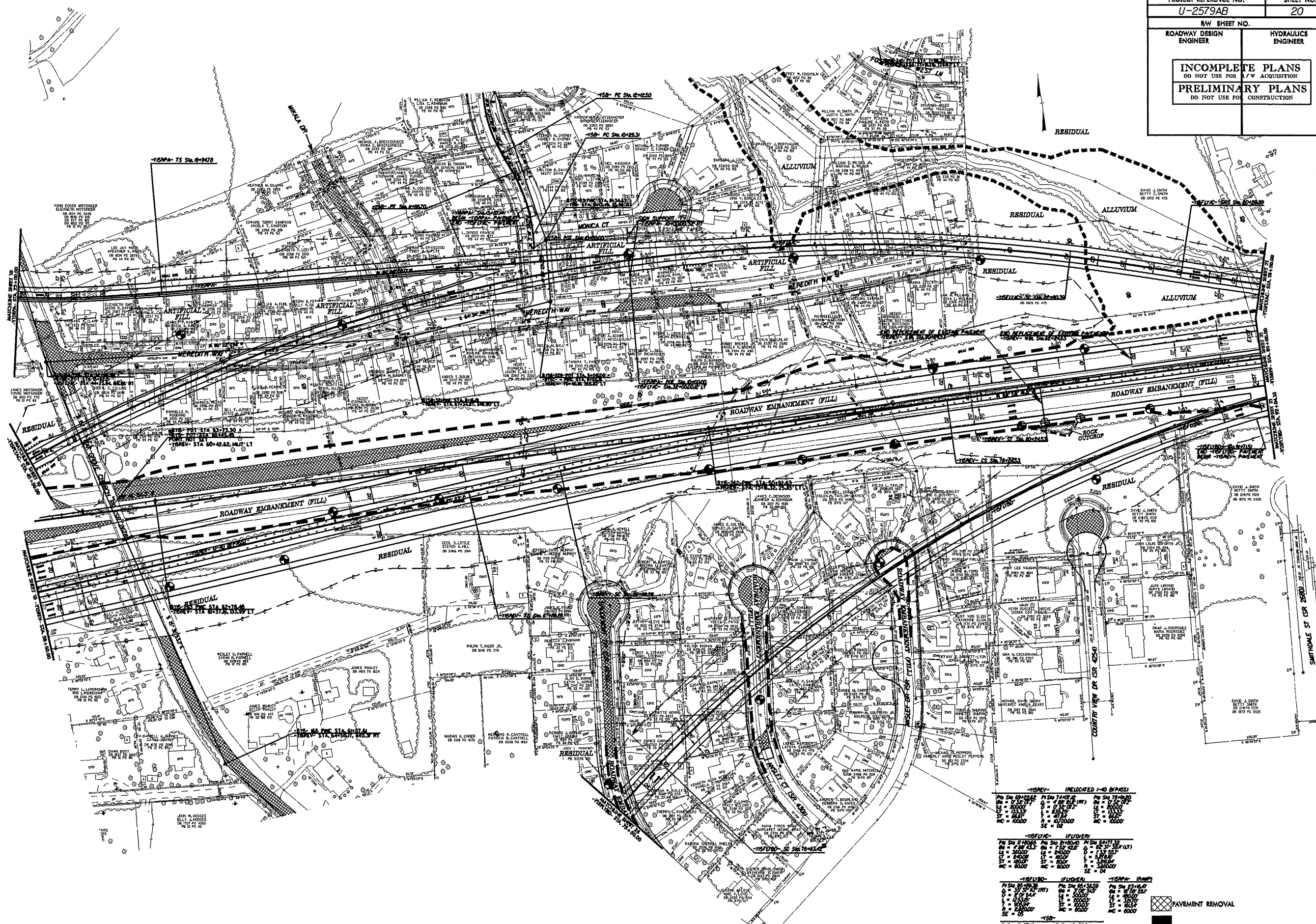
PAVED SHOULDER

NOTES:
 SEE SHEETS 48 AND 49 FOR -15RPA- PROFILE
 SEE SHEETS 40 AND 41 FOR -15RPA- PROFILE
 SEE SHEET 45 FOR -15RPA- PROFILE
 SEE SHEET 44 AND 45 FOR -15RPA- PROFILE

8/17/99

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PROJECT REFERENCE NO. U-2579AB	SHEET NO. 20
RAW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



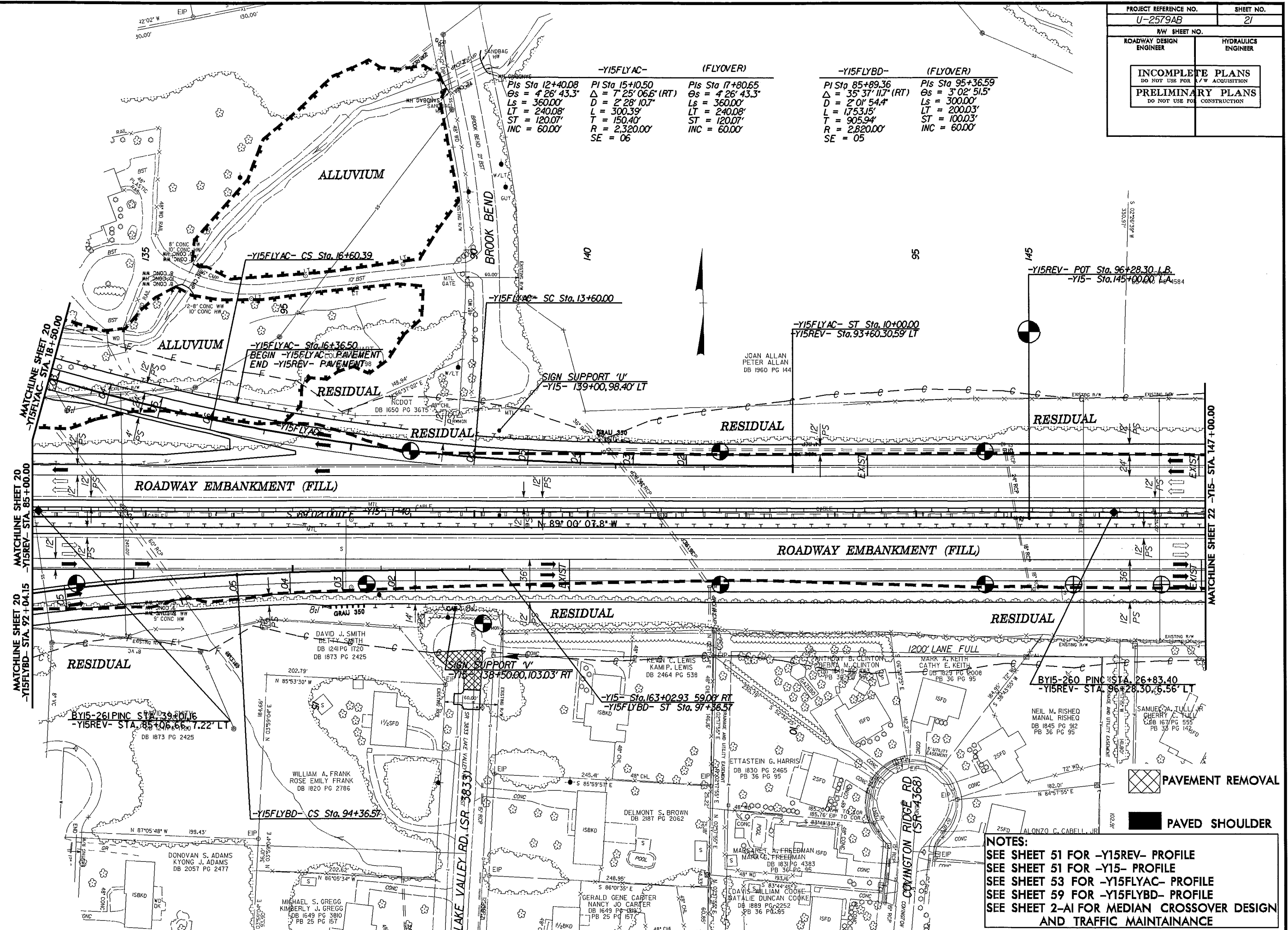
-Y5REV- (UNCLASSIFIED 1-NO BYPASS)			
PC Sta 65+00.00	Pt Sta 74+00.00	Pt Sta 78+00.00	
LE = 800.00	Lt = 150.00 (INT)	LE = 800.00	
ST = 335.00	ST = 150.00	ST = 335.00	
MC = 800.00	MC = 800.00	MC = 800.00	
-Y5FYC- (UP/DIR)			
PC Sta 80+00.00	Pt Sta 85+00.00	Pt Sta 90+00.00	
LE = 800.00	LE = 150.00	LE = 800.00	
ST = 800.00	ST = 150.00	ST = 800.00	
MC = 800.00	MC = 800.00	MC = 800.00	
-Y5FYB- (UP/DIR)			
PC Sta 95+00.00	Pt Sta 100+00.00	Pt Sta 105+00.00	
LE = 800.00	LE = 150.00	LE = 800.00	
ST = 800.00	ST = 150.00	ST = 800.00	
MC = 800.00	MC = 800.00	MC = 800.00	
-Y5FPA- (GRAMP)			
PC Sta 110+00.00	Pt Sta 115+00.00	Pt Sta 120+00.00	
LE = 800.00	LE = 150.00	LE = 800.00	
ST = 800.00	ST = 150.00	ST = 800.00	
MC = 800.00	MC = 800.00	MC = 800.00	
-Y5F- (GRAMP)			
PC Sta 125+00.00	Pt Sta 130+00.00	Pt Sta 135+00.00	
LE = 800.00	LE = 150.00	LE = 800.00	
ST = 800.00	ST = 150.00	ST = 800.00	
MC = 800.00	MC = 800.00	MC = 800.00	

- PAVEMENT REMOVAL
- PAYED SHOULDER
- NOTES:**
- SEE SHEETS 50 AND 51 FOR -Y5REV- PROFILE
- SEE SHEETS 53 AND 54 FOR -Y5FYAC- PROFILE
- SEE SHEETS 58 AND 59 FOR -Y5FYB- PROFILE
- SEE SHEET 63 FOR -Y5FPA- PROFILE
- SEE SHEET 2-A FOR MEDIAN CROSSOVER DESIGN AND TRAFFIC MAINTENANCE

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PROJECT REFERENCE NO.	SHEET NO.
U-2579AB	21
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

-Y15FLYAC- (FLYOVER) Pls Sta 12+40.08 $\Theta_s = 4' 26' 43.3"$ $L_s = 360.00'$ $LT = 240.08'$ $ST = 120.07'$ $INC = 60.00'$	-Y15FLYBD- (FLYOVER) Pls Sta 15+10.50 $\Delta = 7' 25' 06.6" (RT)$ $D = 2' 28' 10.7"$ $L = 300.39'$ $T = 150.40'$ $R = 2,320.00'$ $SE = 06$	-Y15FLYAC- (FLYOVER) Pls Sta 17+80.65 $\Theta_s = 4' 26' 43.3"$ $L_s = 360.00'$ $LT = 240.08'$ $ST = 120.07'$ $INC = 60.00'$	-Y15FLYBD- (FLYOVER) Pls Sta 85+89.36 $\Delta = 35' 37' 11.7" (RT)$ $D = 2' 01' 54.4"$ $L = 1753.15'$ $T = 905.94'$ $R = 2,620.00'$ $SE = 05$	-Y15FLYBD- (FLYOVER) Pls Sta 95+36.59 $\Theta_s = 3' 02' 51.5"$ $L_s = 300.00'$ $LT = 200.03'$ $ST = 100.03'$ $INC = 60.00'$
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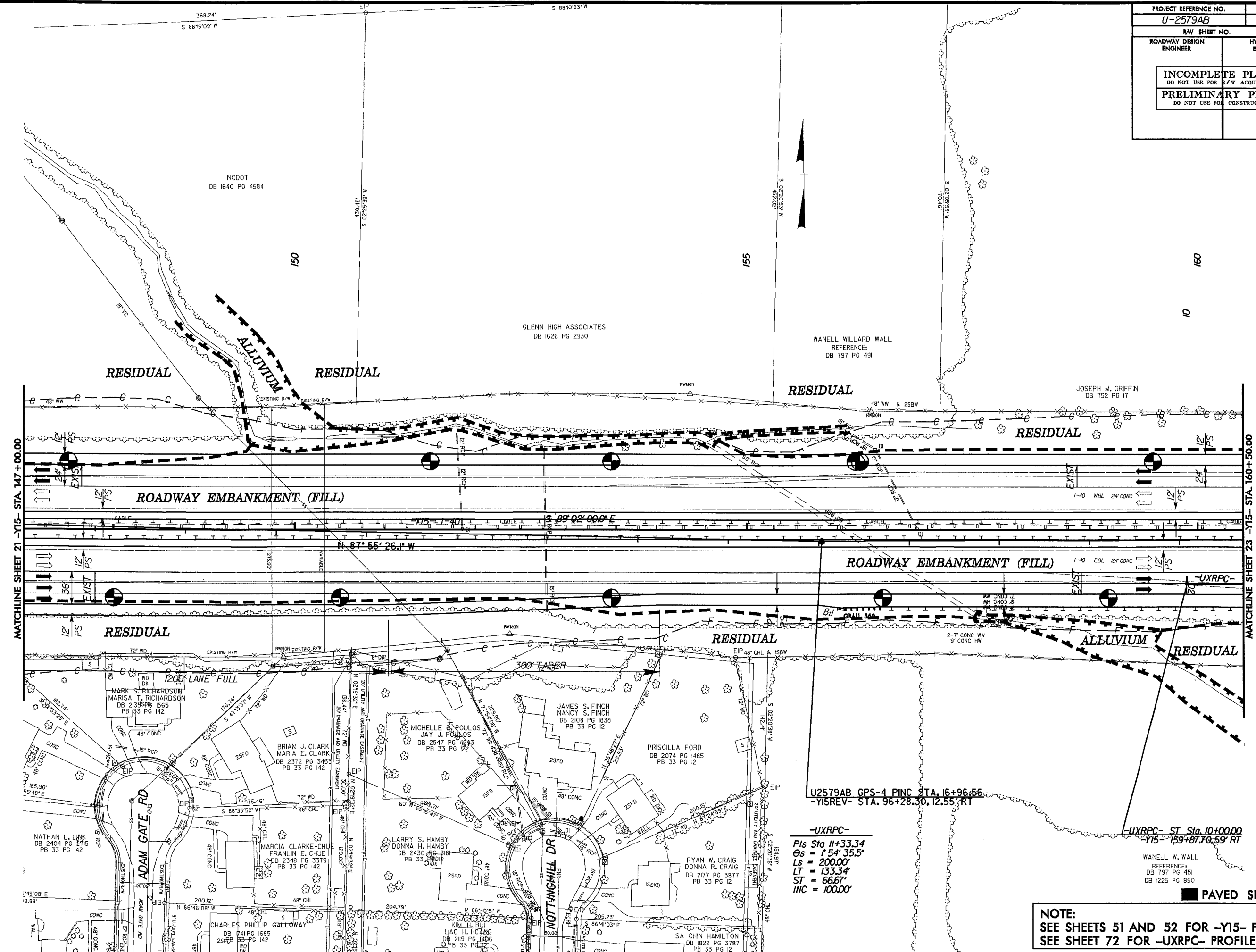
NOTES:

- SEE SHEET 51 FOR -Y15REV- PROFILE
- SEE SHEET 51 FOR -Y15- PROFILE
- SEE SHEET 53 FOR -Y15FLYAC- PROFILE
- SEE SHEET 59 FOR -Y15FLYBD- PROFILE
- SEE SHEET 2-AI FOR MEDIAN CROSSOVER DESIGN AND TRAFFIC MAINTAINANCE

PAVEMENT REMOVAL
 PAVED SHOULDER

8/17/99
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PROJECT REFERENCE NO. U-2579AB	SHEET NO. 22
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



U2579AB GPS-4 PINC STA. 16+96.56
 -Y15REV- STA. 96+28.30, 12.55, RT

-UXRPC-
 Pts Sta 11+33.34
 Os = 1° 54' 35.5"
 Ls = 200.00'
 LT = 133.34'
 ST = 66.67'
 INC = 100.00'

-UXRPC- ST Sta. 10+00.00
 -Y15- 159+87.70, 59' RT

WANELL W. WALL
 REFERENCE:
 DB 797 PG 451
 DB 1225 PG 850

PAVED SHOULDER

NOTE:
 SEE SHEETS 51 AND 52 FOR -Y15- PROFILE
 SEE SHEET 72 FOR -UXRPC- PROFILE

8/17/99

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Forsyth\tech\planprof\U2579ab_GEO_INV_023.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-2579AB	23
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

T. WRAY &
ESTIE M. CHARLES
DB 1000 PG 359

ROBERT H. & TREVA H. BOYLES
DB 1000 PG 578

H&K INVESTMENT CO
DB 1967 PG 1626

PRIME PROPERTY, LLC
DB 2770 PG 1472
PB 52 PG 85

CHARLES O. WILLIARD JR.
DB 121 PG 1524
DB 1037 PG 1008
REFERENCES
DB 797 PG 451

-UXRPB-

PIs Sta 12+00.12 θs = 6°13'23.9" Ls = 300.00' LT = 200.12' ST = 100.11' INC = 50.00'	PI Sta 14+57.19 Δ = 12°59'14.6" (LT) D = 4°08'55.9" L = 313.04' T = 157.19' R = 1,381.00' SE = 06	PIs Sta 17+13.15 θs = 6°13'23.9" Ls = 300.00' LT = 200.12' ST = 100.11' INC = 50.00'
---	---	---

-UXRPC-

PIs Sta 11+00.00 θs = 0°51'40.2" Ls = 150.00' LT = 100.00' ST = 50.00' INC = 100.00'	PI Sta 15+55.46 Δ = 9°17'26.0" (RT) D = 1°08'53.6" L = 809.13' T = 405.46' R = 4,990.00' SE = 02	PIs Sta 20+09.13 θs = 0°51'40.2" Ls = 150.00' LT = 100.00' ST = 50.00' INC = 50.00'
---	--	--

PIs Sta 22+42.65
θs = 9°18'59.0"
Ls = 200.00'
LT = 133.52'
ST = 66.83'
INC = 50.00'

PI Sta 23+49.38
Δ = 7°29'21.6" (LT)
D = 9°18'59.0"
L = 80.39'
T = 40.25'
R = 615.00'
SE = 04

-UXRPC- Sta. 16+43.67
BEGIN -UXRPC- PAVEMENT
END -Y15- PAVEMENT

-UXRPC- CS Sta. 19+59.13

-UXRPC- SRS Sta. 21+09.13

TO BE CONSTRUCTED BY OTHERS UNDER TIP PROJECT U-4909

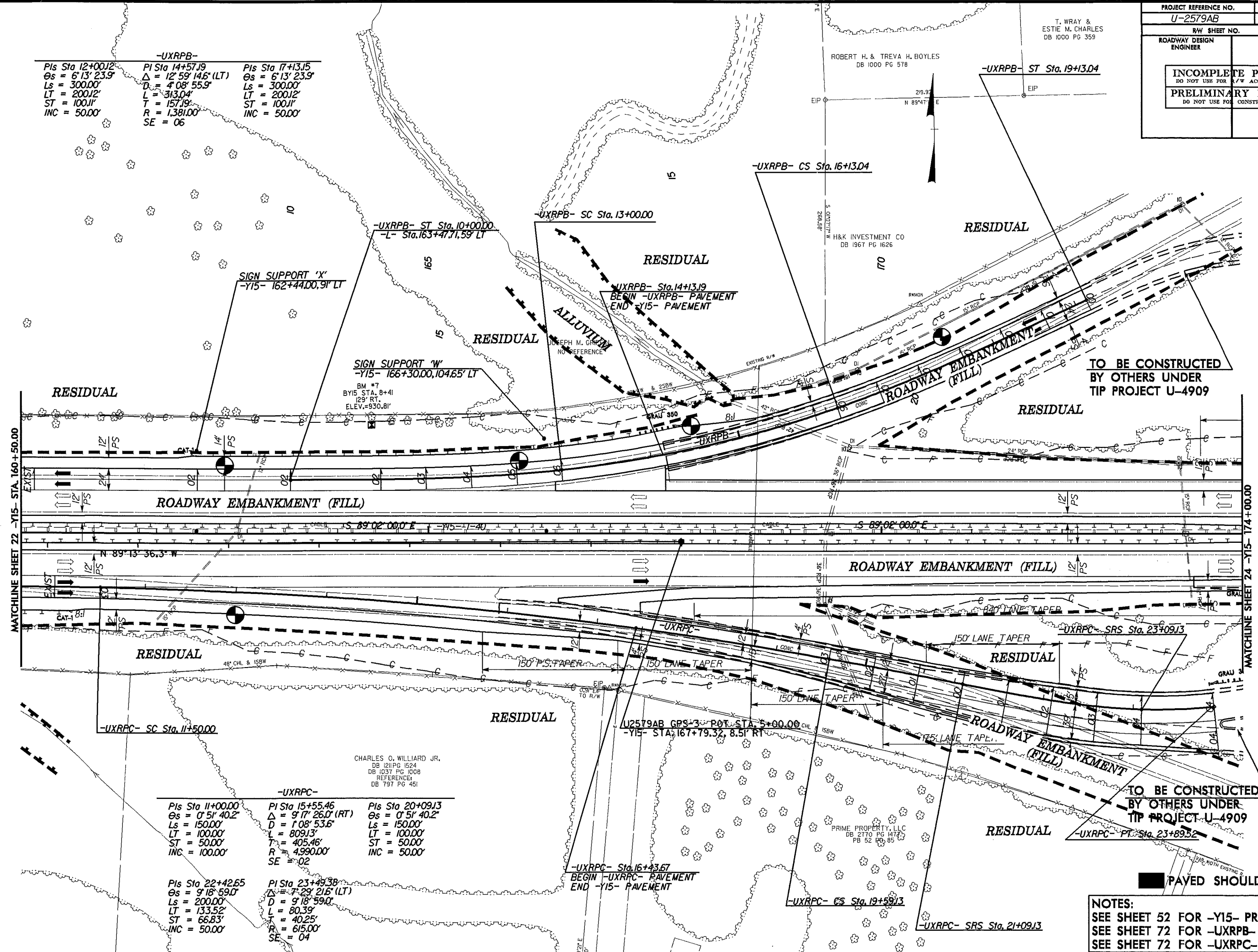
NOTES:
SEE SHEET 52 FOR -Y15- PROFILE
SEE SHEET 72 FOR -UXRPB- PROFILE
SEE SHEET 72 FOR -UXRPC- PROFILE

PAVED SHOULDER

REVISIONS

MATCHLINE SHEET 22 -Y15- STA. 160+50.00

MATCHLINE SHEET 24 -Y15- 174+00.00



8/17/99

PROJECT REFERENCE NO. U-2579AB	SHEET NO. 24
RAW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	CONSTRUCTION
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

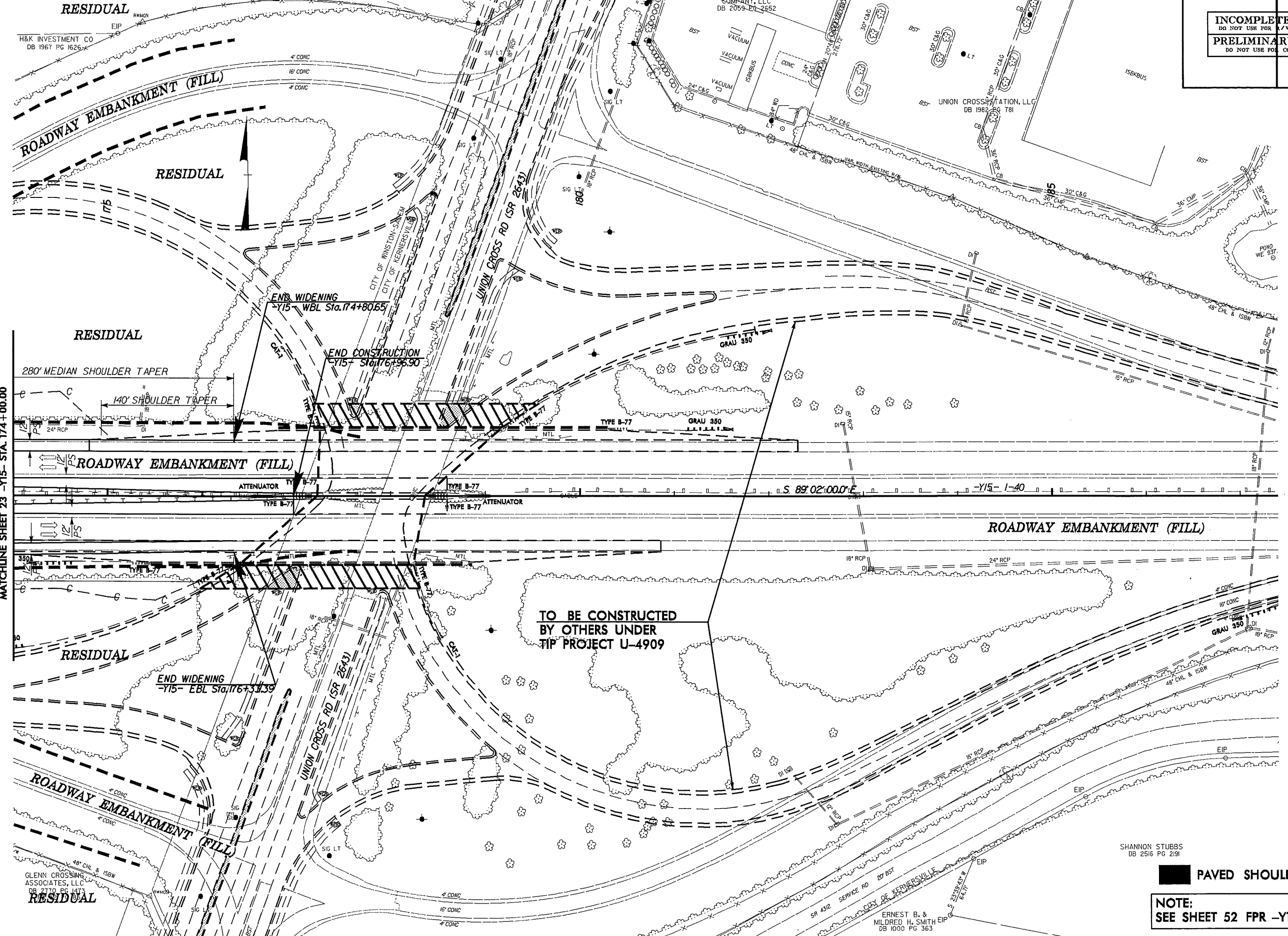
T. WRAY & ESTIE M. CHARLES
DB 1000 PG 359

H&K INVESTMENT CO
DB 1967 PG 1626

T. WRAY & ESTIE M. CHARLES
DB 780 PG 320

TRIAID HOLDING
30' LOT COMPANY, LLC
DB 2059 PG 2652

UNION CROSSING STATION, LLC
DB 1982 PG 781



MATCHLINE SHEET 23 -Y15- STA. 174+00.00

REVISIONS

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GLENN CROSSING
ASSOCIATES, LLC
DB 2770 PG 1473

SHANNON STUBBS
DB 2516 PG 291

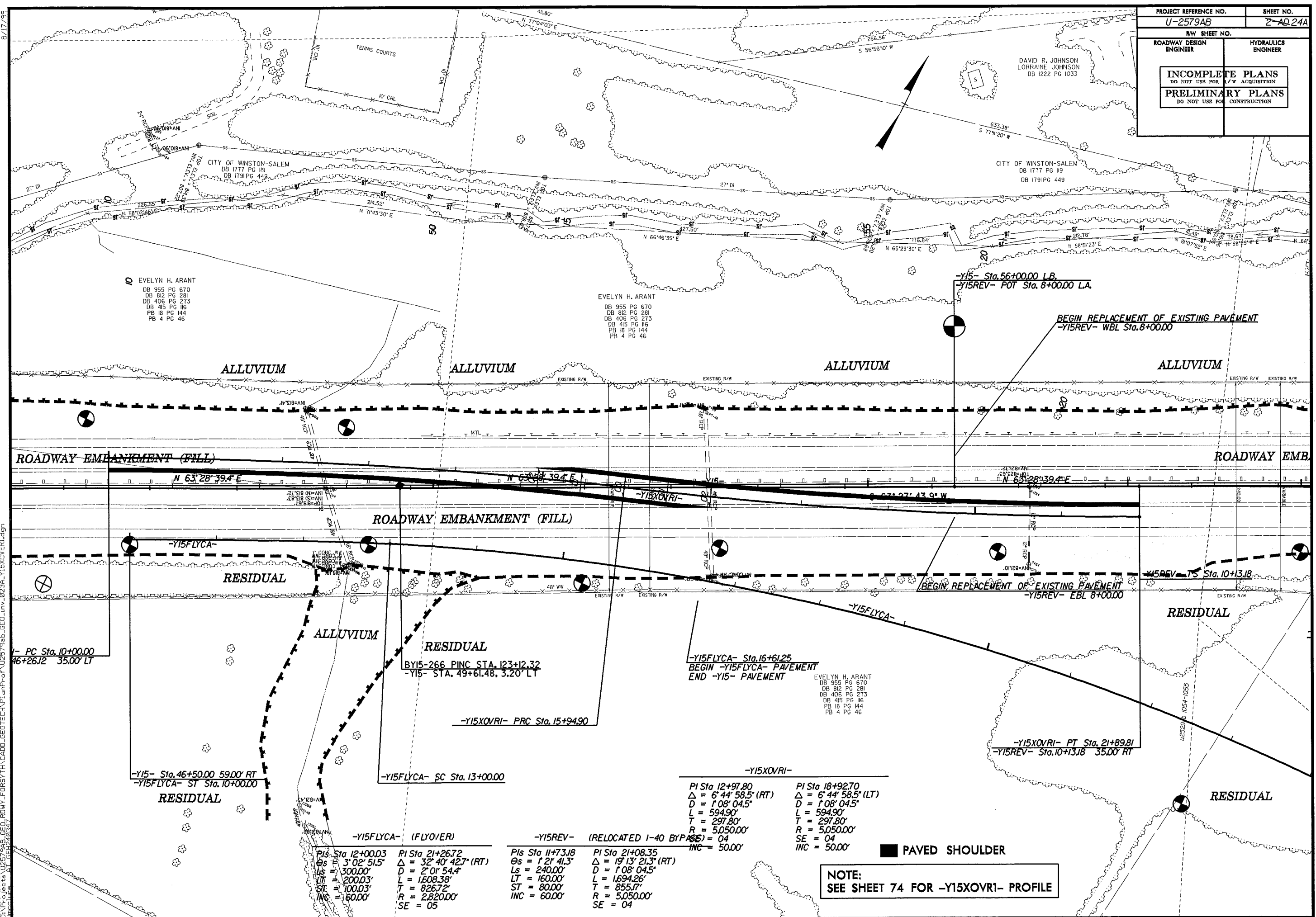
PAVED SHOULDER

NOTE:
SEE SHEET 52 FPR -Y15- PROFILE

8/17/99

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PROJECT REFERENCE NO. U-2579AB	SHEET NO. 2-AD 24A
RAW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



10 EVELYN H. ARANT
DB 955 PG 670
DB 812 PG 281
DB 406 PG 273
DB 415 PG 116
PB 18 PG 144
PB 4 PG 46

EVELYN H. ARANT
DB 955 PG 670
DB 812 PG 281
DB 406 PG 273
DB 415 PG 116
PB 18 PG 144
PB 4 PG 46

DAVID R. JOHNSON
LORRAINE JOHNSON
DB 1222 PG 1033

CITY OF WINSTON-SALEM
DB 1777 PG 119
DB 1791 PG 449

EVELYN H. ARANT
DB 955 PG 670
DB 812 PG 281
DB 406 PG 273
DB 415 PG 116
PB 18 PG 144
PB 4 PG 46

-Y15XQVRI- PI Sta 12+97.80 Δ = 6' 44" 58.5" (RT) D = 1' 08" 04.5" L = 594.90' T = 297.80' R = 5,050.00' SE = 04 INC = 50.00'	-Y15XQVRI- PI Sta 18+92.70 Δ = 6' 44" 58.5" (LT) D = 1' 08" 04.5" L = 594.90' T = 297.80' R = 5,050.00' SE = 04 INC = 50.00'
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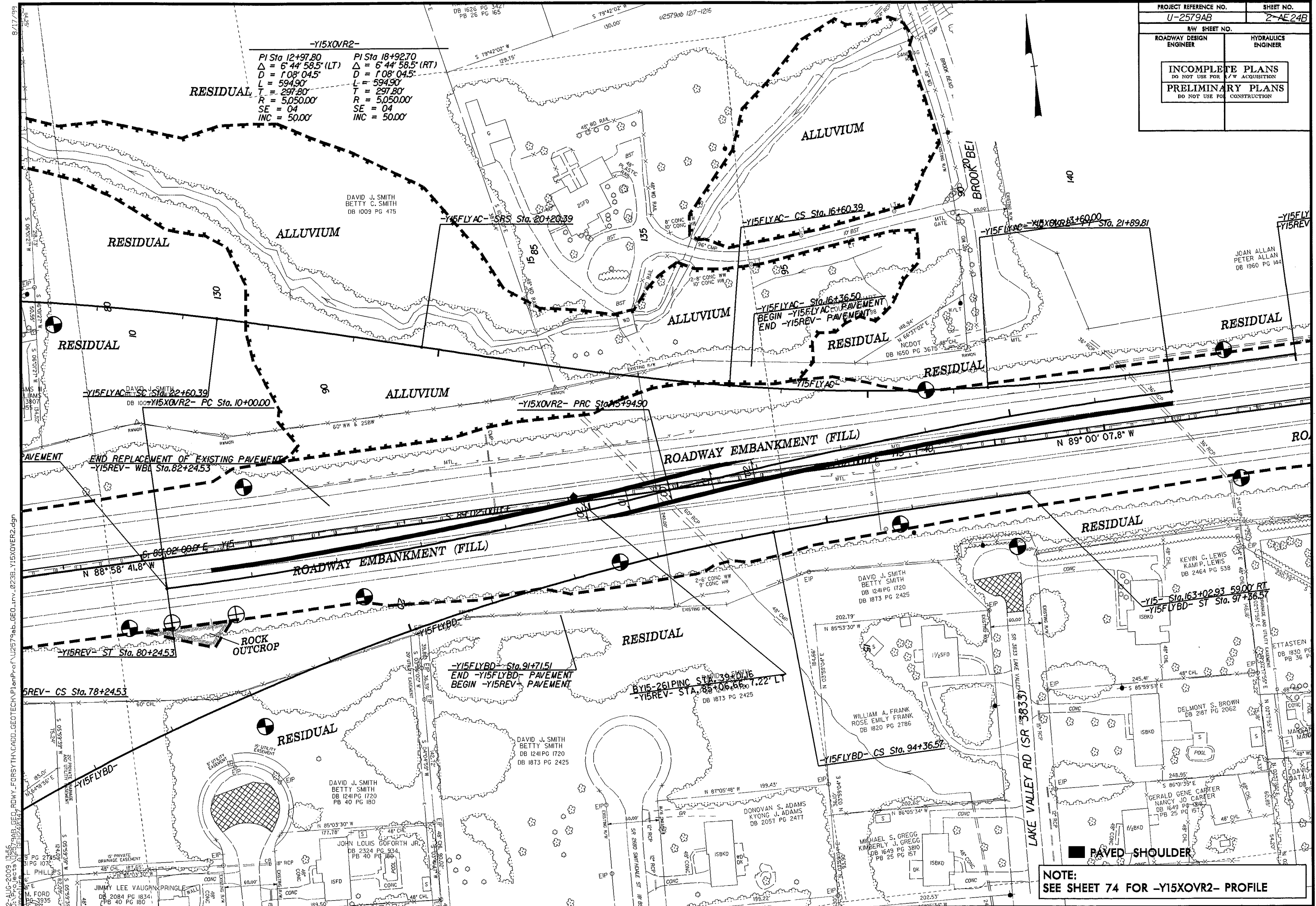
-Y15FLYCA- (FLYOVER) PI Sta 12+100.03 Δs = 3' 02" 51.5" Ls = 300.00' LT = 200.03' ST = 100.03' INC = 60.00'	-Y15FLYCA- (FLYOVER) PI Sta 21+26.72 Δ = 32' 40" 42.7" (RT) D = 2' 01" 54.4" L = 1,608.38' T = 826.72' R = 2,820.00' SE = 05
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-Y15REV- (RELOCATED I-40 BYPASS) PI Sta 11+73.18 Δs = 1' 21" 41.3" Ls = 240.00' LT = 160.00' ST = 80.00' INC = 60.00'	-Y15REV- (RELOCATED I-40 BYPASS) PI Sta 21+08.35 Δ = 19' 13" 21.3" (RT) D = 1' 08" 04.5" L = 1,694.26' T = 855.17' R = 5,050.00' SE = 04
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■ PAVED SHOULDER

NOTE:
SEE SHEET 74 FOR -Y15XQVRI- PROFILE

PROJECT REFERENCE NO. U-2579AB		SHEET NO. 2-AE24B	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION			
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			



NOTE:
SEE SHEET 74 FOR -Y15XOVR2- PROFILE

8/17/99
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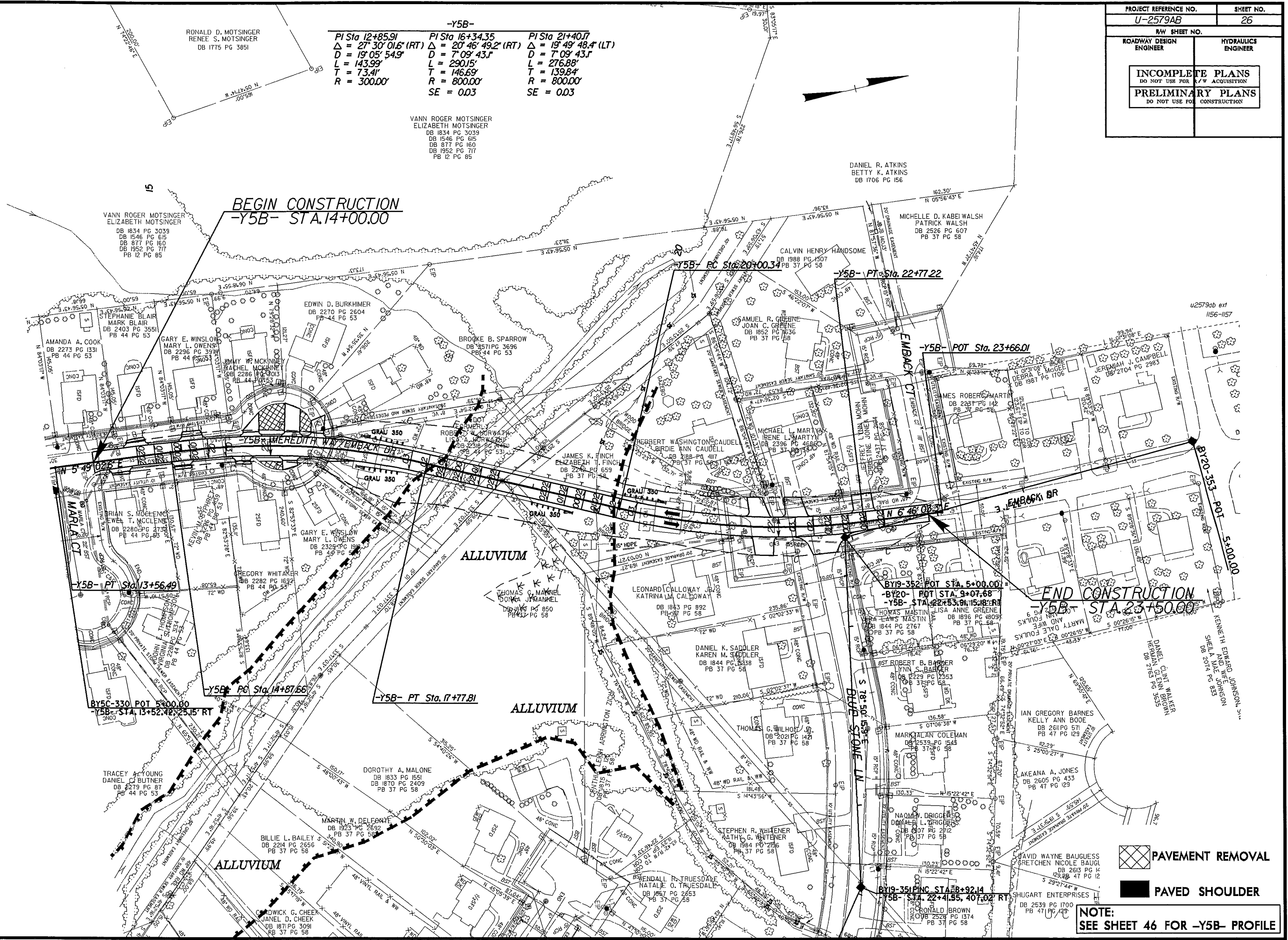
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 REVISIONS
 8/17/09

PROJECT REFERENCE NO.	SHEET NO.
U-2579AB	26
RAW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

-Y5B-

PI Sta 12+85.91 Δ = 27° 30' 01.6" (RT) D = 19° 05' 54.9" L = 143.99' T = 73.41' R = 300.00'	PI Sta 16+34.35 Δ = 20° 46' 49.2" (RT) D = 7° 09' 43.1" L = 290.15' T = 146.69' R = 800.00'	PI Sta 21+40.17 Δ = 19° 49' 48.4" (LT) D = 7° 09' 43.1" L = 276.88' T = 139.84' R = 800.00'
	SE = 0.03	SE = 0.03

VANN ROGER MOTSINGER
 ELIZABETH MOTSINGER
 DB 1834 PG 3039
 DB 1546 PG 615
 DB 877 PG 160
 DB 1952 PG 717
 PB 12 PG 85



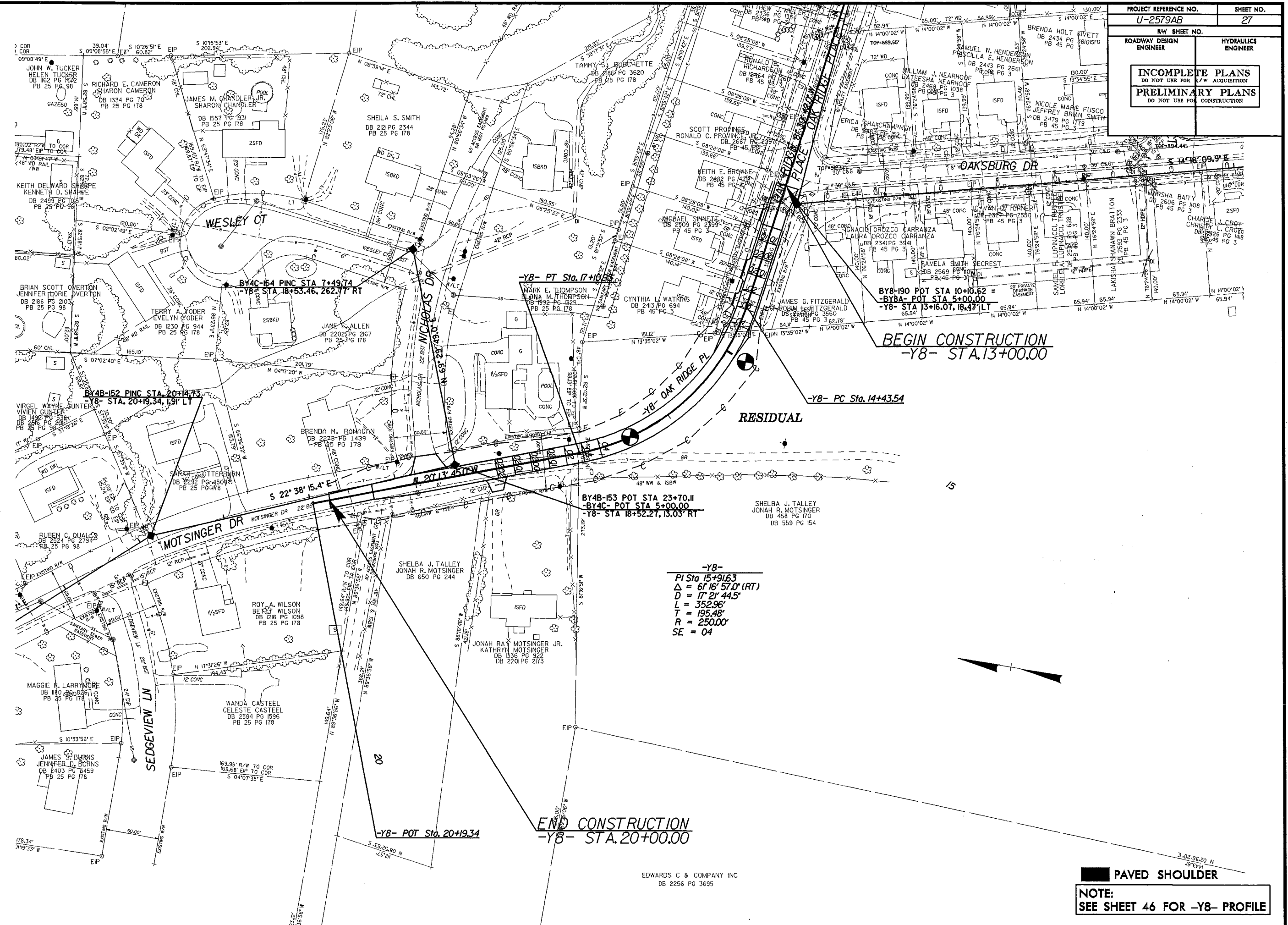
PAVEMENT REMOVAL
 PAVED SHOULDER

NOTE:
SEE SHEET 46 FOR -Y5B- PROFILE

8/17/99

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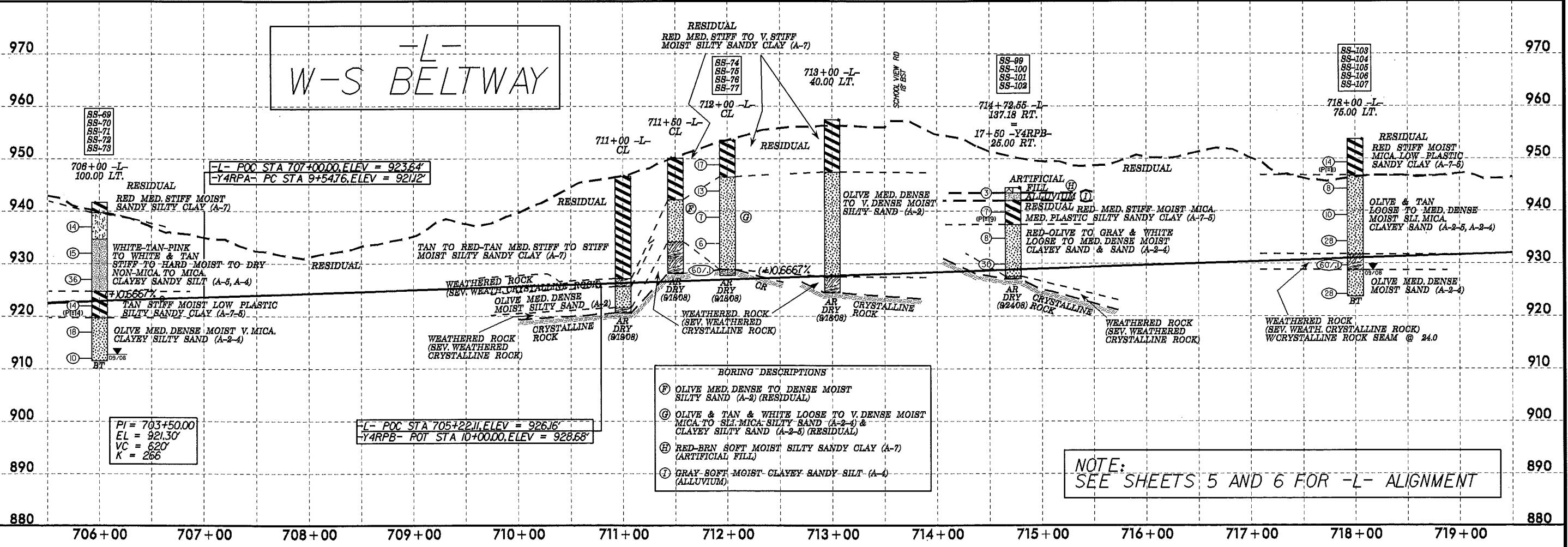
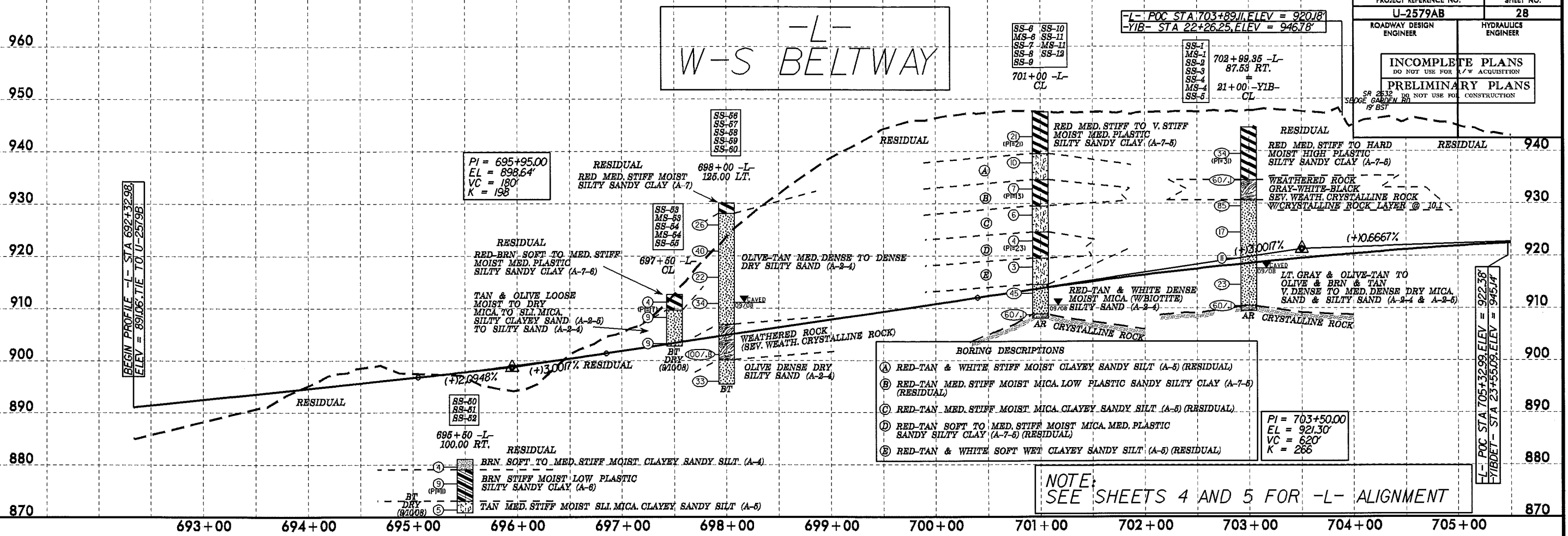
PROJECT REFERENCE NO. U-2579AB	SHEET NO. 27
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



REVISIONS

EDWARDS C & COMPANY INC
DB 2256 PG 3695

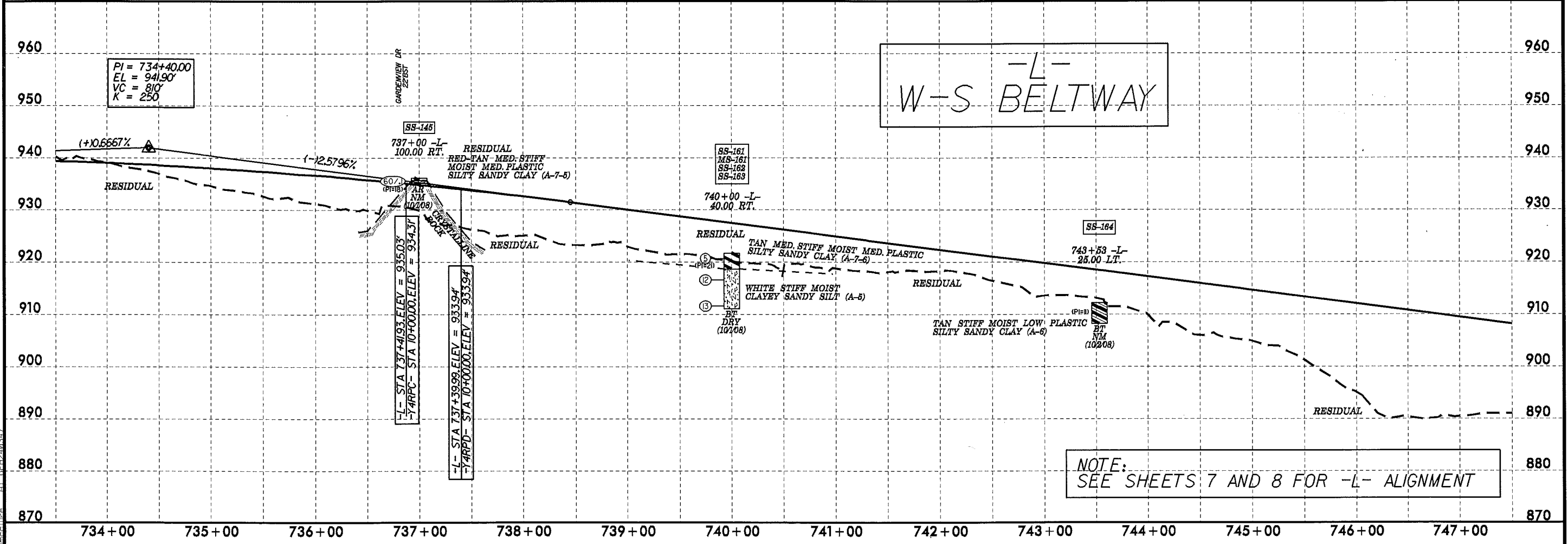
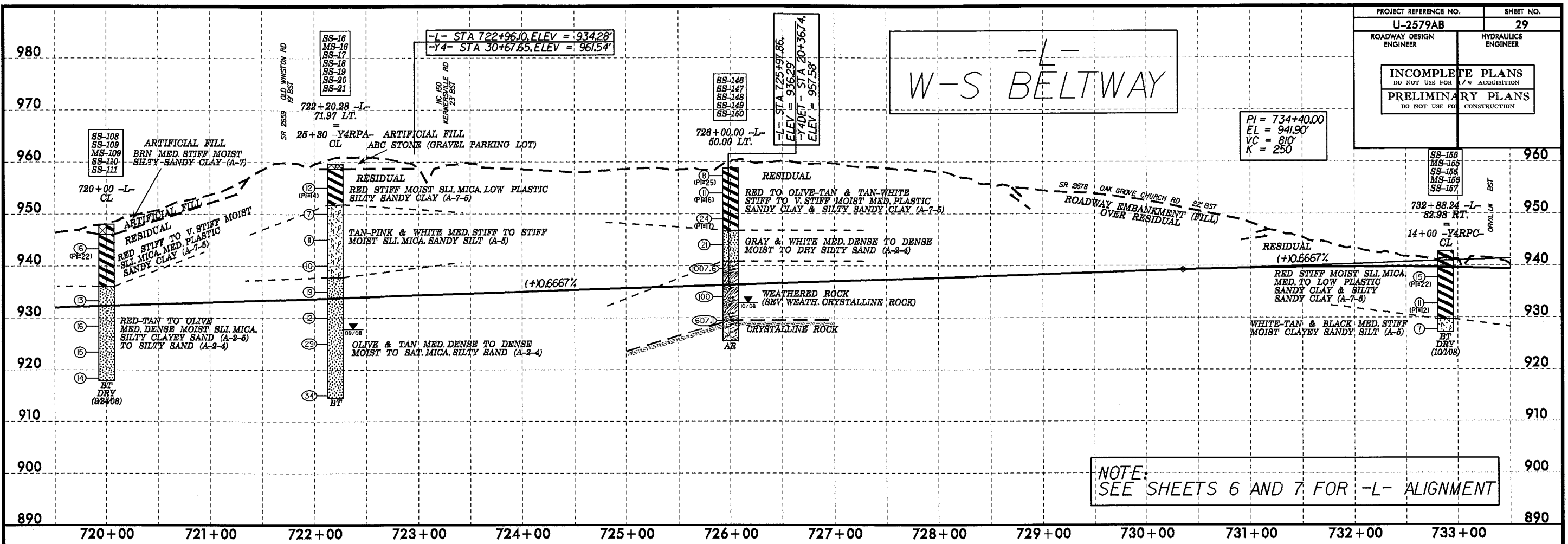
PAVED SHOULDER
NOTE:
SEE SHEET 46 FOR -Y8- PROFILE



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5/28/99

PROJECT REFERENCE NO. U-2579AB	SHEET NO. 29
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

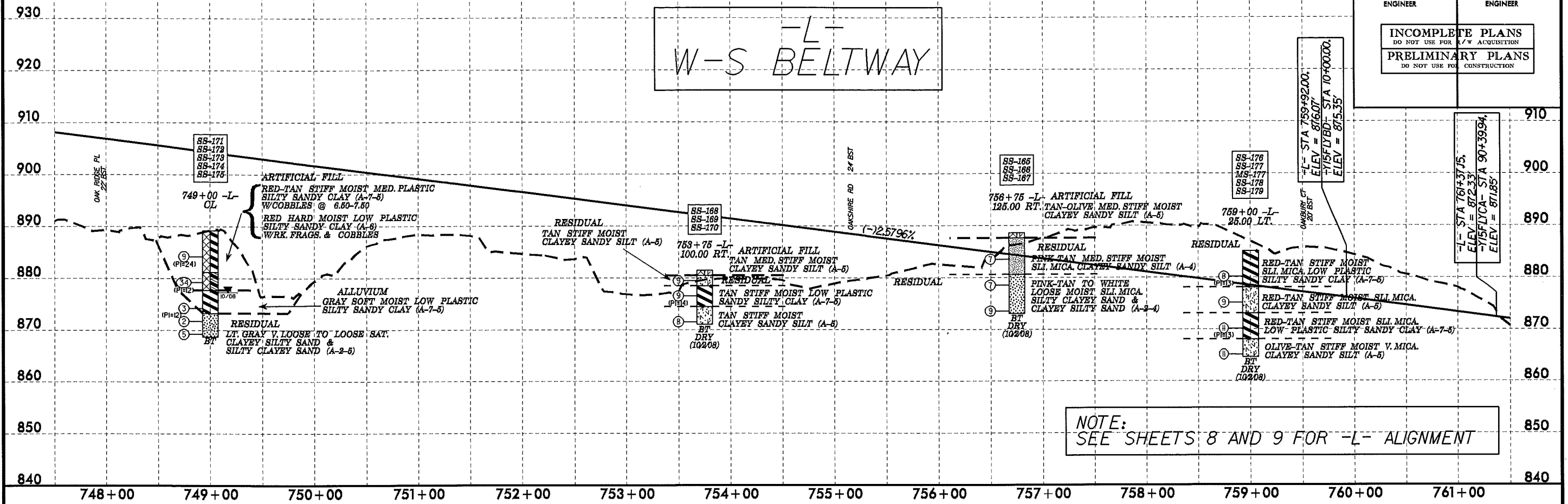


10-AUG-2009 10:02 AM C:\projects\2579ab\99_rdw\1_for\sj\h\cecd\geotech\p\mprof\U2579AB_GEO_pf.L_029.dgn

5/28/99

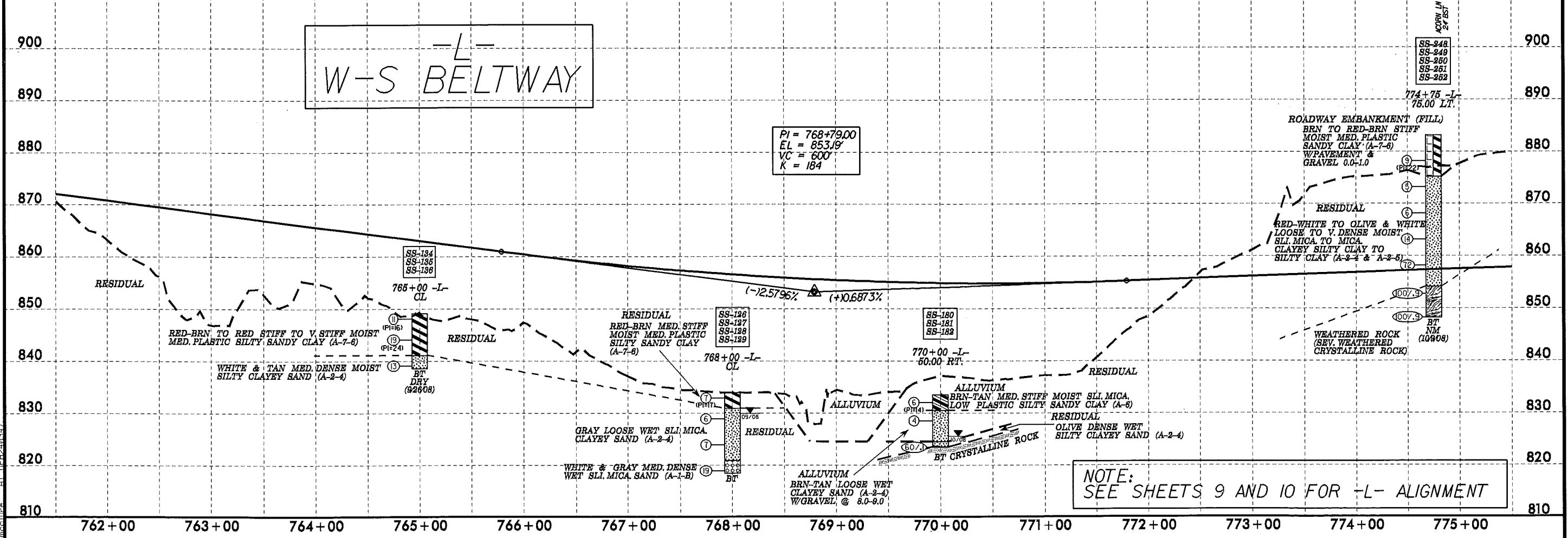
PROJECT REFERENCE NO. U-2579AB	SHEET NO. 30
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

-L-
W-S BELTWAY



NOTE:
SEE SHEETS 8 AND 9 FOR -L- ALIGNMENT

-L-
W-S BELTWAY



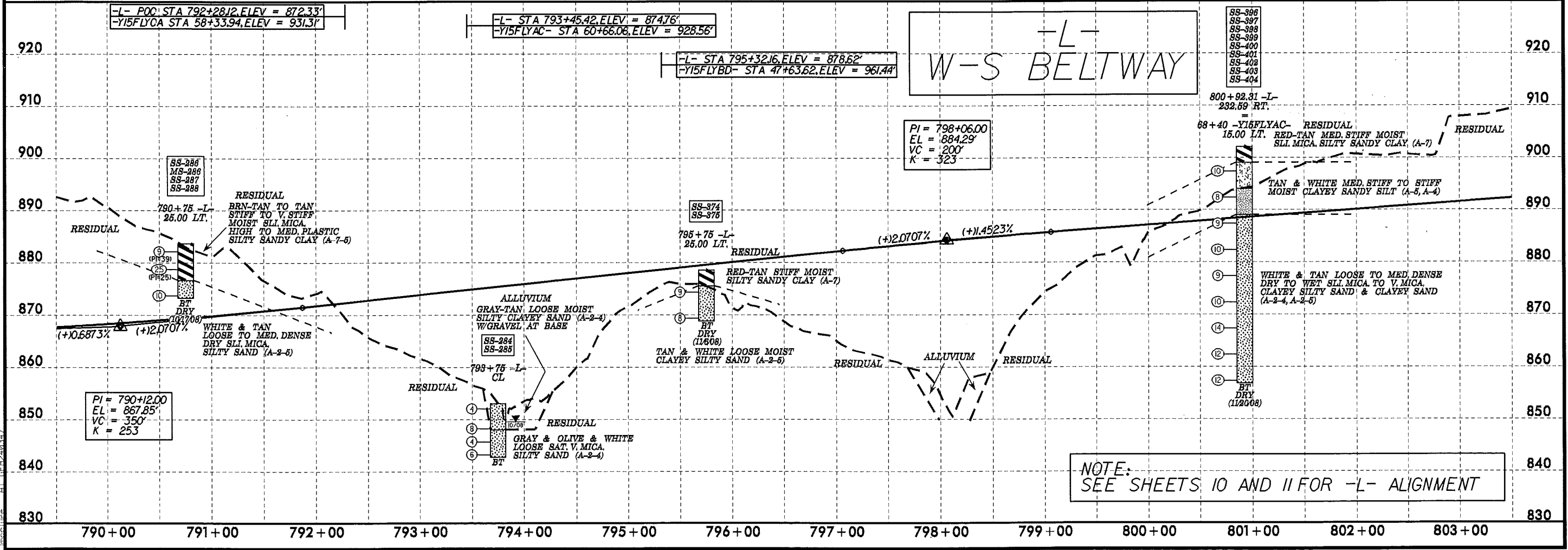
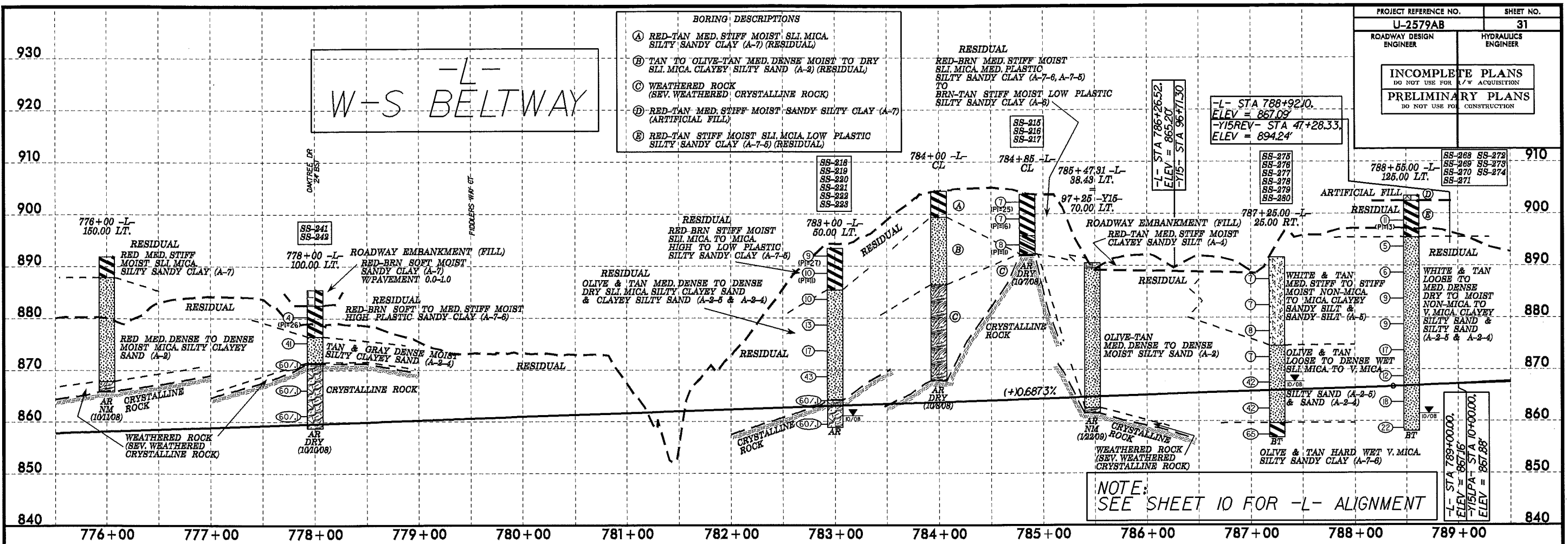
NOTE:
SEE SHEETS 9 AND 10 FOR -L- ALIGNMENT

I:\LIC-2008\102579ab_rdw\for\sydh\geotech\p\ampr\of\U2579AB_GEO_pf.L_030.dgn

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-2579AB	31
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

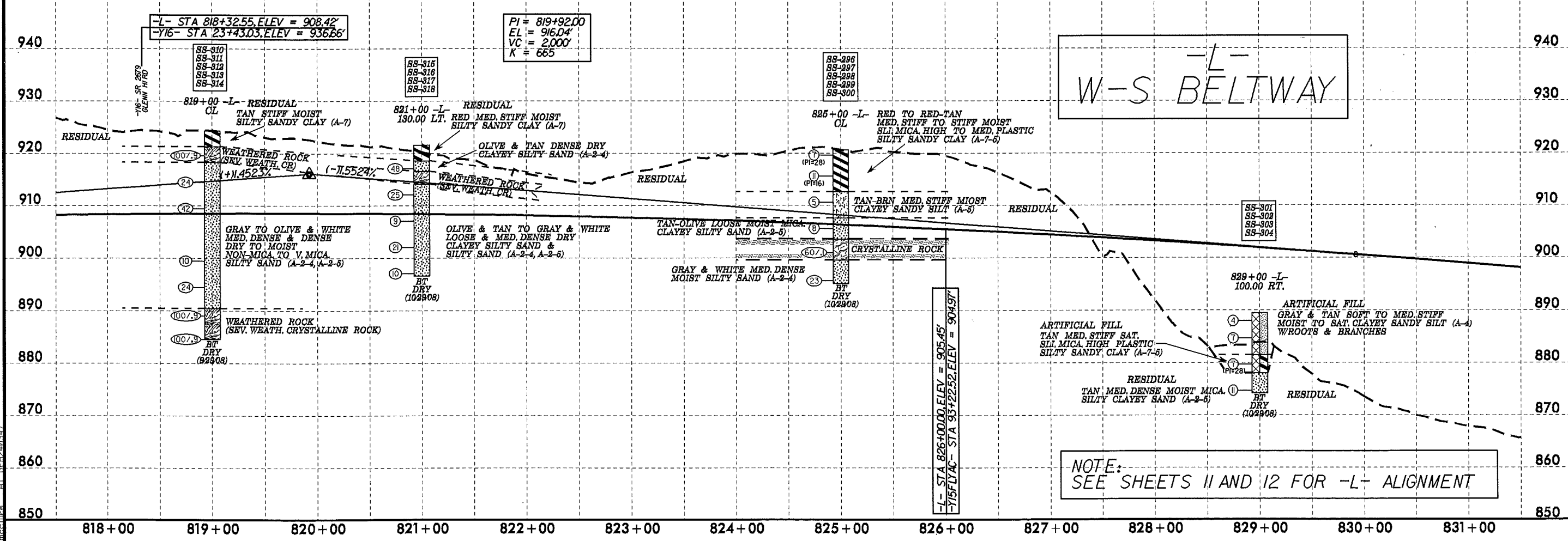
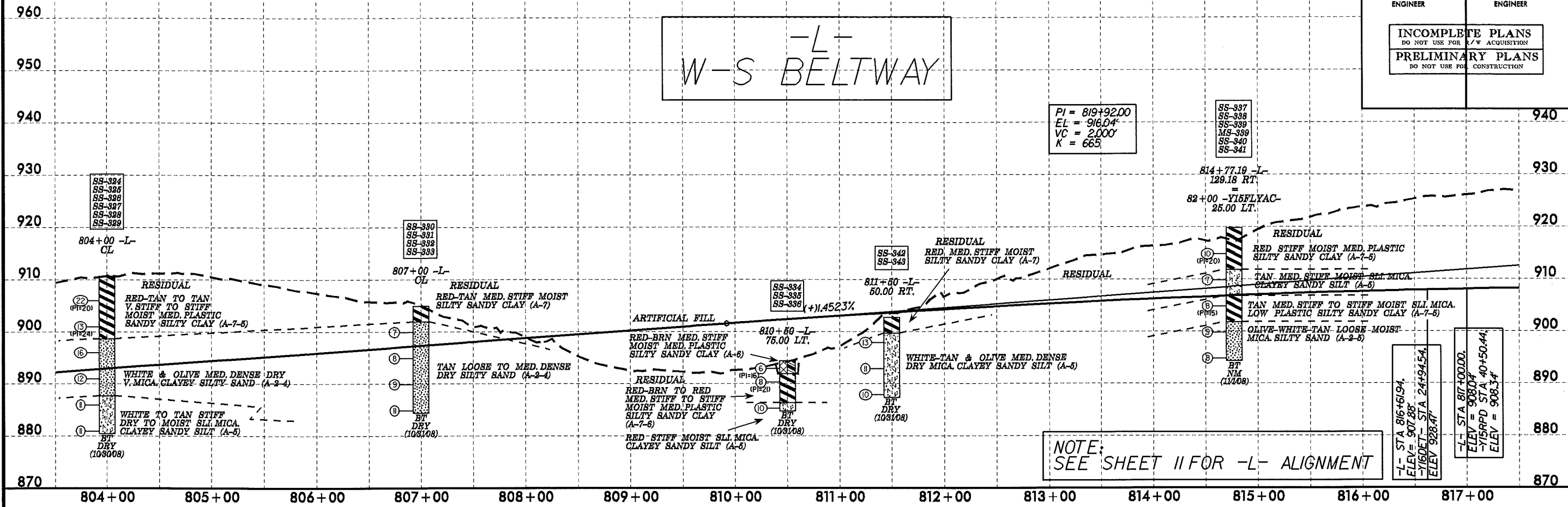
- BORING DESCRIPTIONS**
- (A) RED-TAN MED. STIFF MOIST SLI MICA SILTY SANDY CLAY (A-7) (RESIDUAL)
 - (B) TAN TO OLIVE-TAN MED. DENSE MOIST TO DRY SLI MICA CLAYEY SILTY SAND (A-2) (RESIDUAL)
 - (C) WEATHERED ROCK (SEV. WEATHERED CRYSTALLINE ROCK)
 - (D) RED-TAN MED. STIFF MOIST SANDY SILTY CLAY (A-7) (ARTIFICIAL FILL)
 - (E) RED-TAN STIFF MOIST SLI MICA LOW PLASTIC SILTY SANDY CLAY (A-7-5) (RESIDUAL)



G:\AUG-2009\1196799b\99b\99b_rdw\for\sjth\cadd\geotech\plan\prof\U2579AB_GEO.pf...L_031.dgn

5/28/99
10-AUG-2008 11:08:11 799b-999-rdw-For-sj4h\cedd.geotech\plmprof\U2579AB_050.pf.L_032.dgn

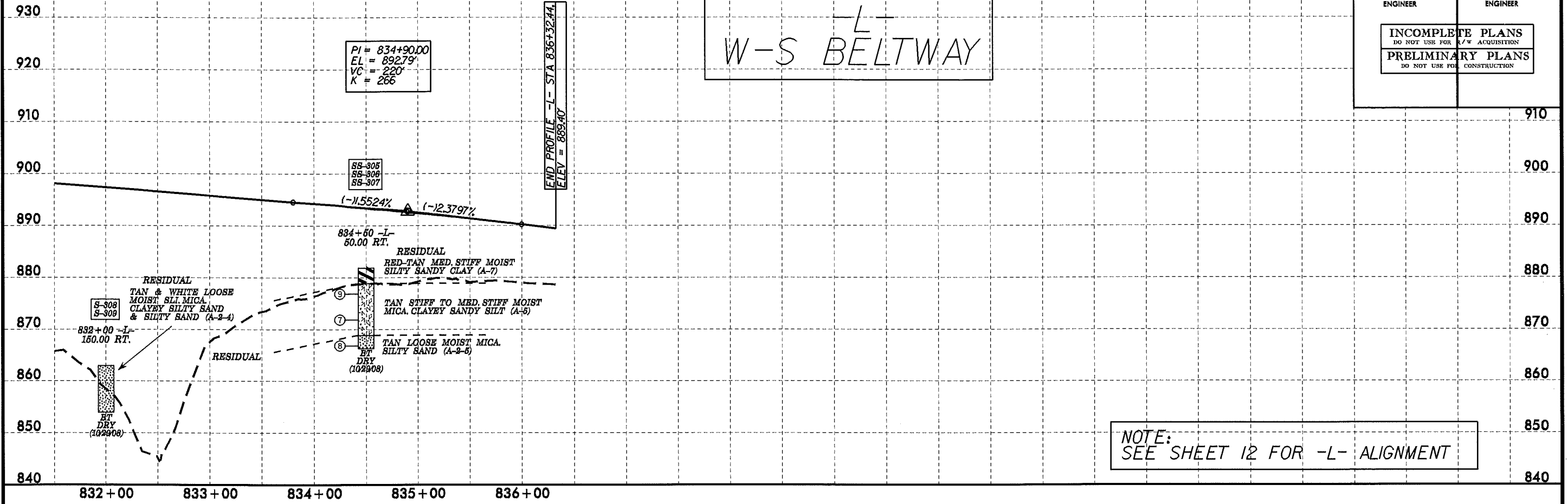
PROJECT REFERENCE NO. U-2579AB	SHEET NO. 32
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



5/28/99

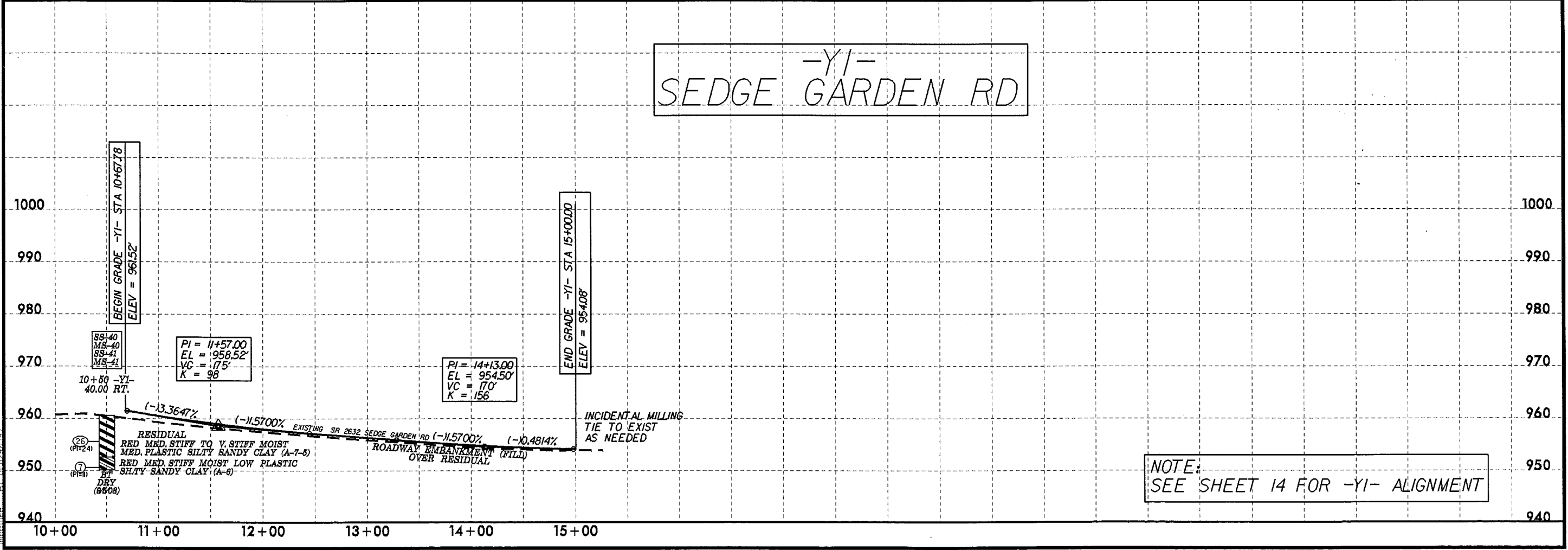
PROJECT REFERENCE NO. U-2579AB	SHEET NO. 33
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS <small>DO NOT USE FOR ACQUISITION</small>	
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>	

-L-
W-S BELTWAY



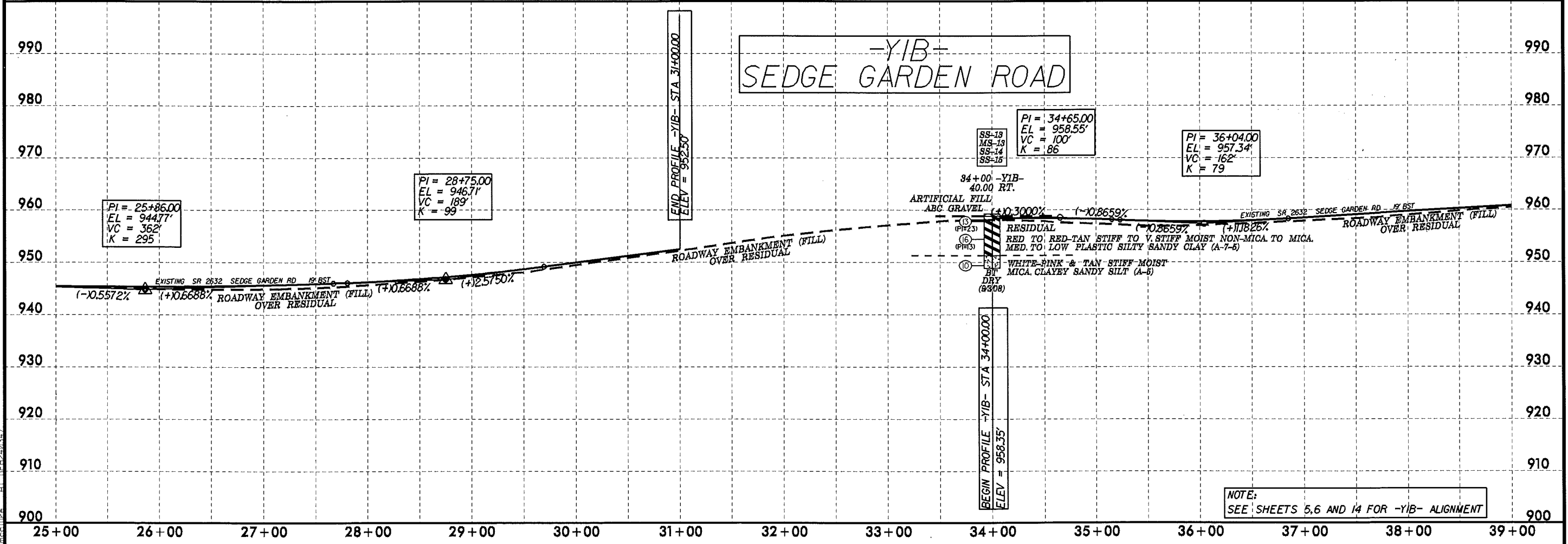
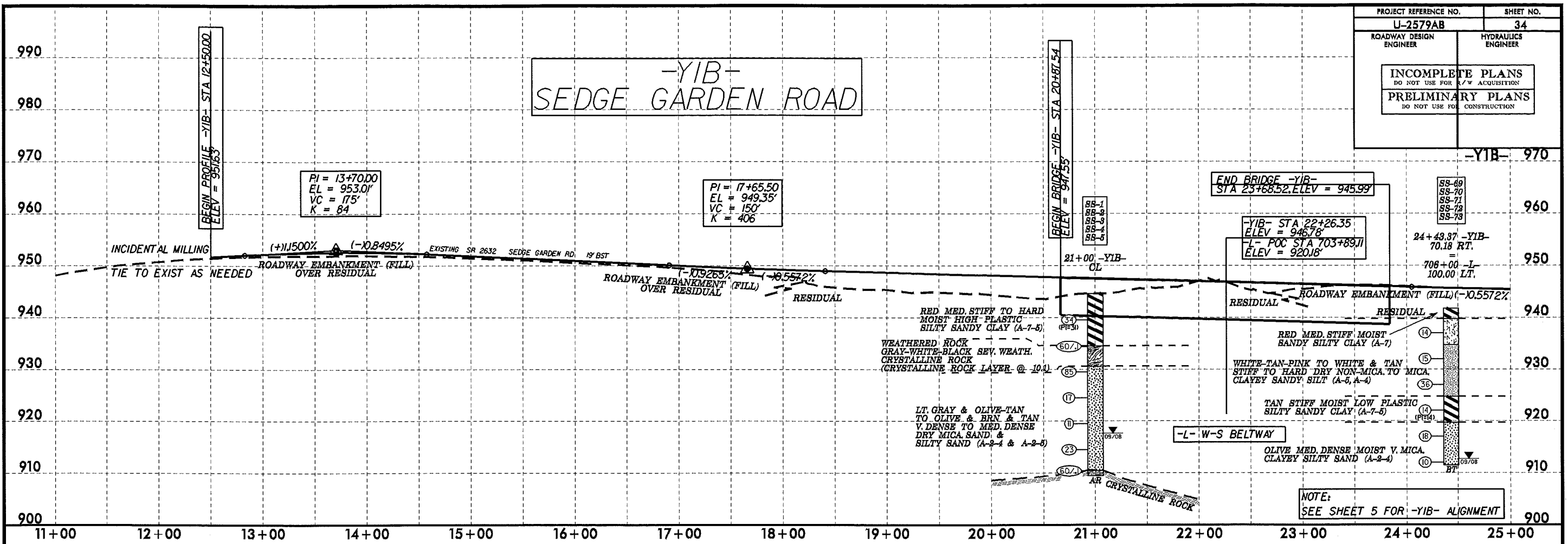
-Y1-
SEEDGE GARDEN RD

10-AUG-2009 10:01:00 c:\pcc\lects\U2579AB\planprof\U2579AB_GEO.pf...L_033.dgn



5/28/99

PROJECT REFERENCE NO. U-2579AB		SHEET NO. 34	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION		PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

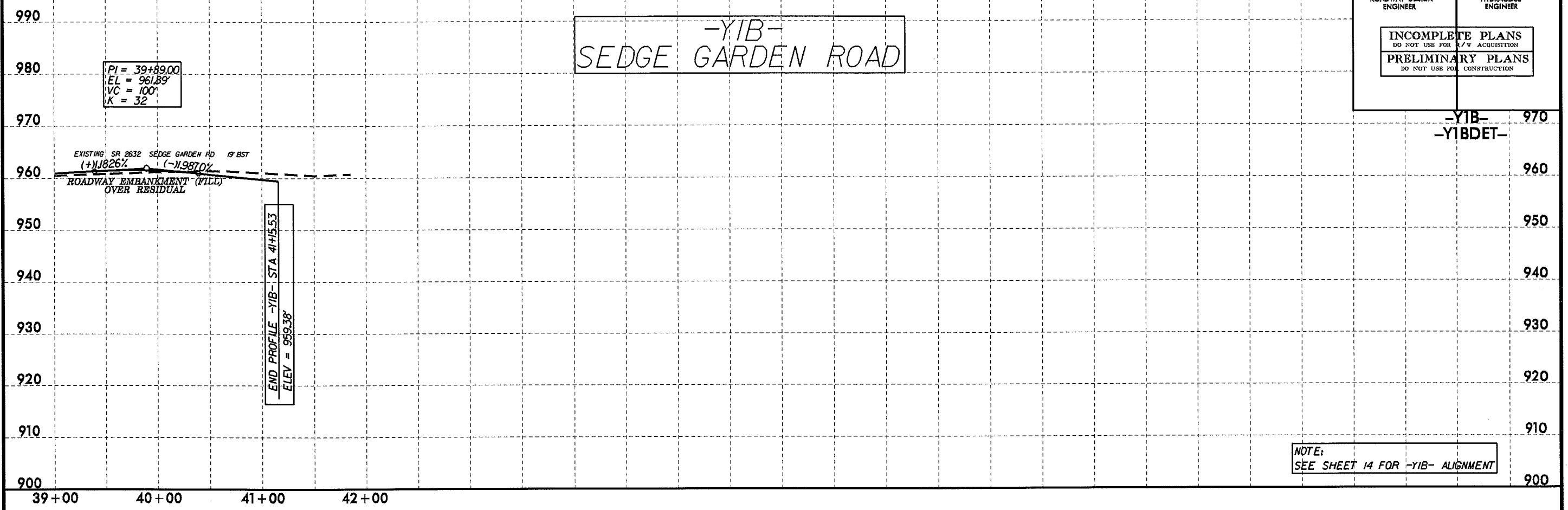


IC-ALUC-2008 11:50 11/22/99 U:\2579ab_999_rdw_1_for_sj4h\lead\geotech\plan\prof\U2579ab_GEO_pf_1_YIB_034.dgn

5/28/99

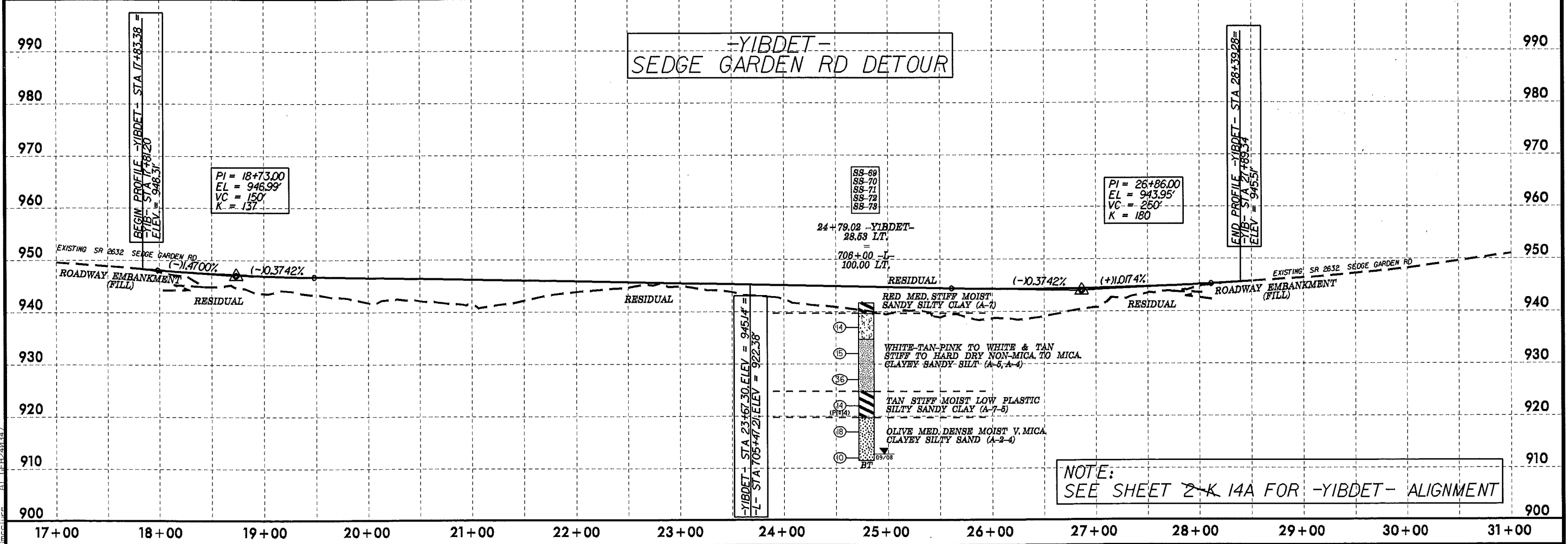
PROJECT REFERENCE NO. U-2579AB	SHEET NO. 35
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

-YIB-
SEEDGE GARDEN ROAD



NOTE:
SEE SHEET 14 FOR -YIB- ALIGNMENT

-YIBDET-
SEEDGE GARDEN RD DETOUR

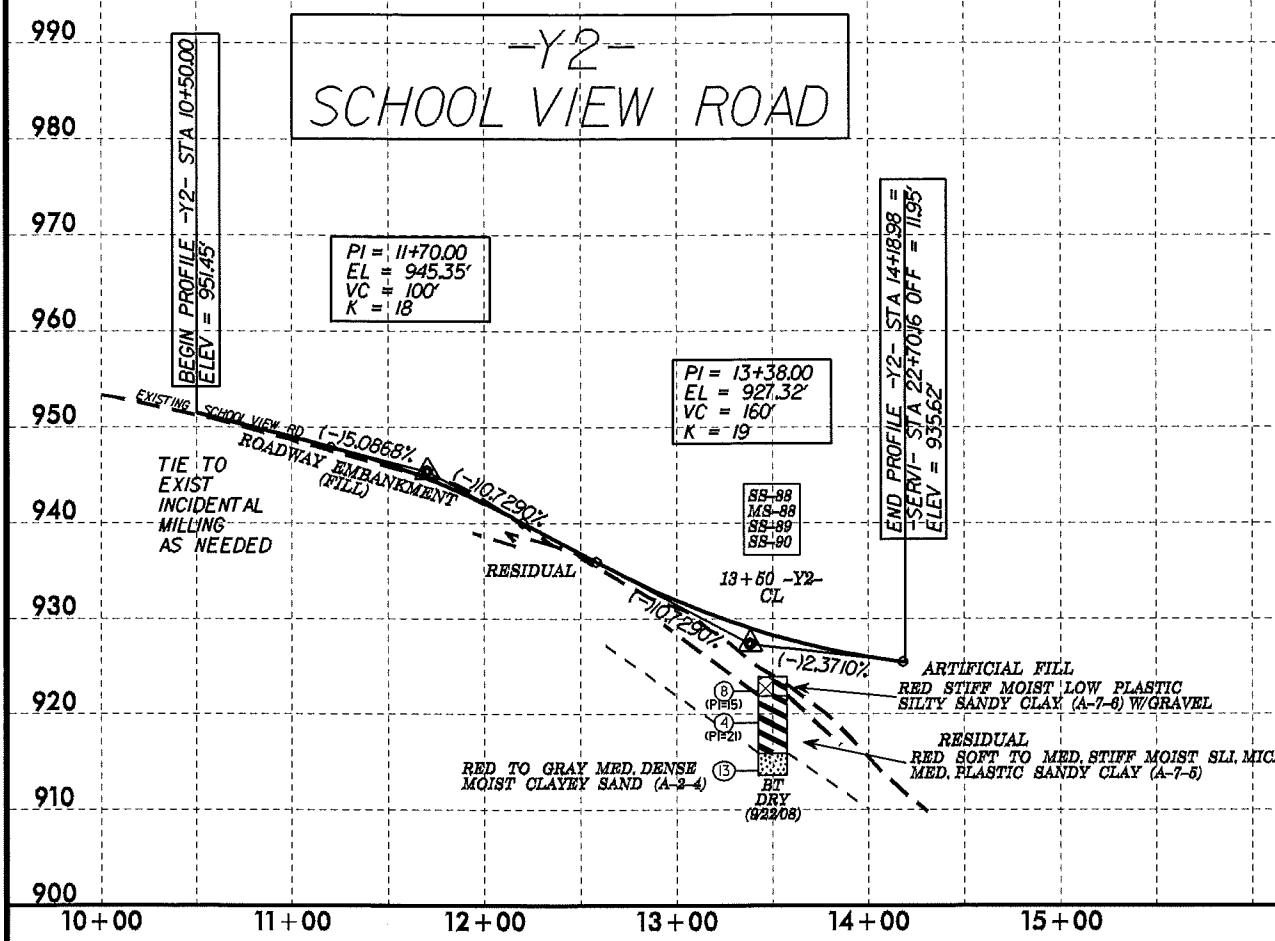


NOTE:
SEE SHEET 2-K 14A FOR -YIBDET- ALIGNMENT

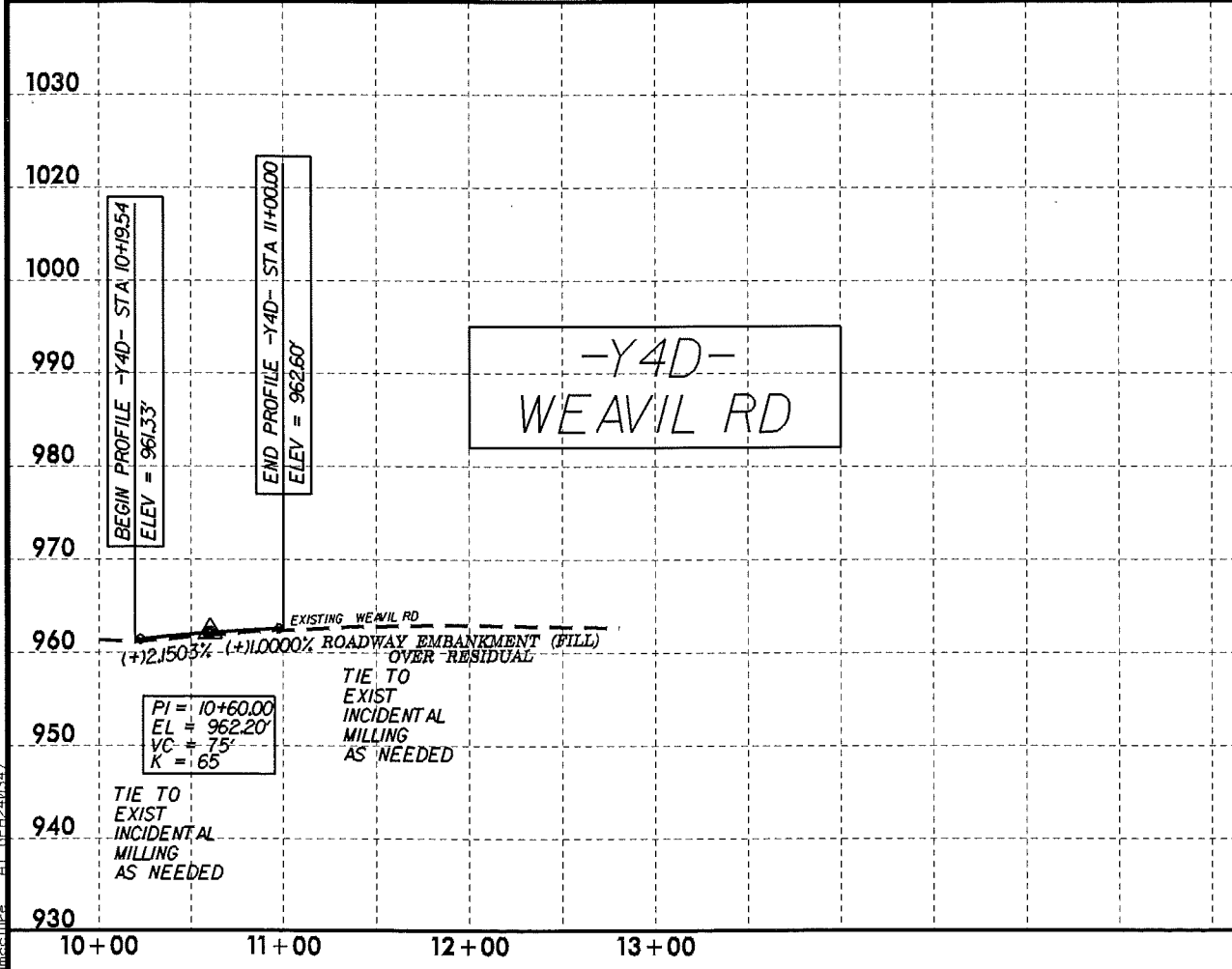
15-AUG-2009 11:51 AM J:\2579AB\GEO_ROWY_FORSYTH\CADD\GEO\TECH\PLAN\Prof\U2579ab_GEO.pfl_YIB-YIBDET_0235.dgn
 15-AUG-2009 11:51 AM J:\2579AB\GEO_ROWY_FORSYTH\CADD\GEO\TECH\PLAN\Prof\U2579ab_GEO.pfl_YIB-YIBDET_0235.dgn

5/28/99

PROJECT REFERENCE NO. U-2579AB	SHEET NO. 36
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



NOTE:
SEE SHEET 6 FOR -Y2- ALIGNMENT

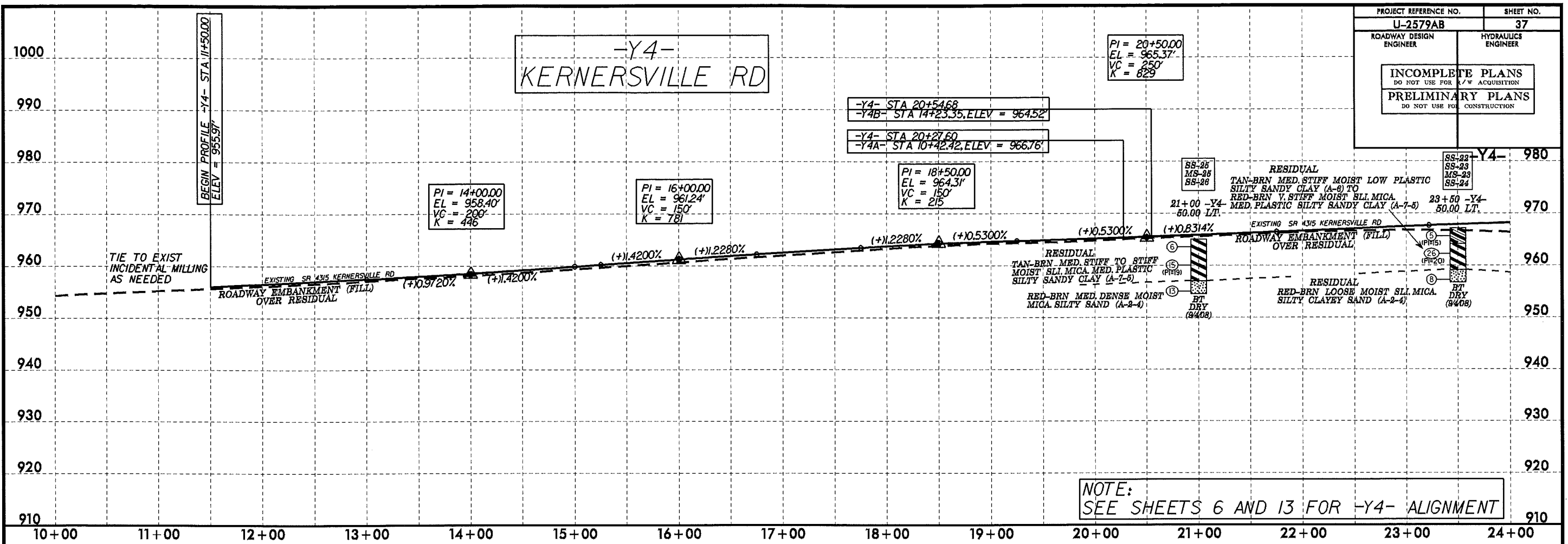


NOTE:
SEE SHEET 15 FOR -Y4D- ALIGNMENT

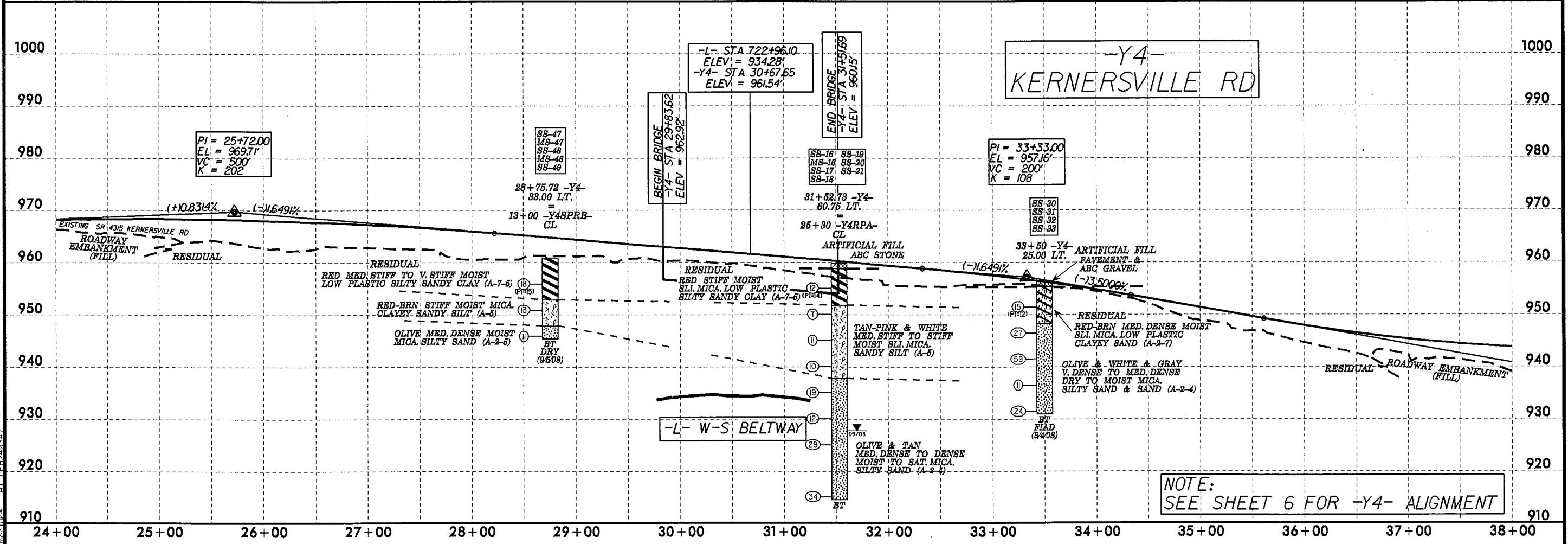
10-AUG-2008 10:52:26 2579ab-ges-rdw-forsyth\cedd-geotech\planprof\U2579ab_GEO_pf_-Y2-Y4D_036.dgn
 2579ab-ges-rdw-forsyth\cedd-geotech\planprof\U2579ab_GEO_pf_-Y2-Y4D_036.dgn
 2579ab-ges-rdw-forsyth\cedd-geotech\planprof\U2579ab_GEO_pf_-Y2-Y4D_036.dgn

5/28/99

PROJECT REFERENCE NO. U-2579AB	SHEET NO. 37
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



NOTE:
SEE SHEETS 6 AND 13 FOR -Y4- ALIGNMENT



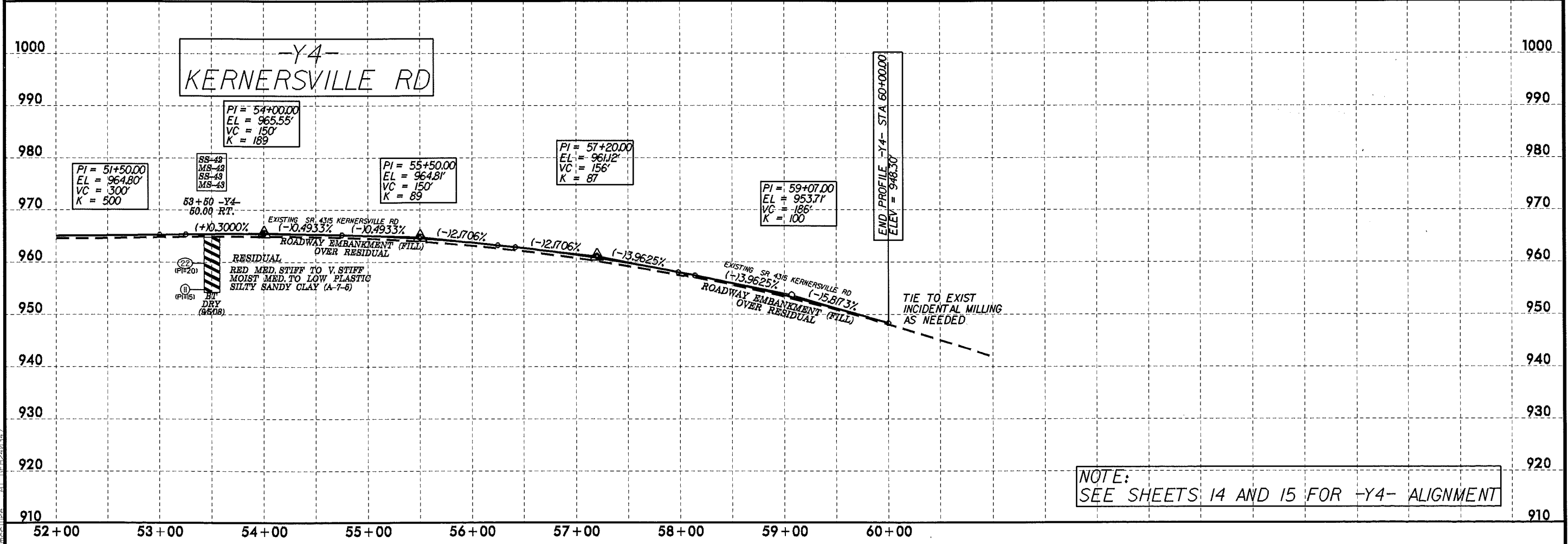
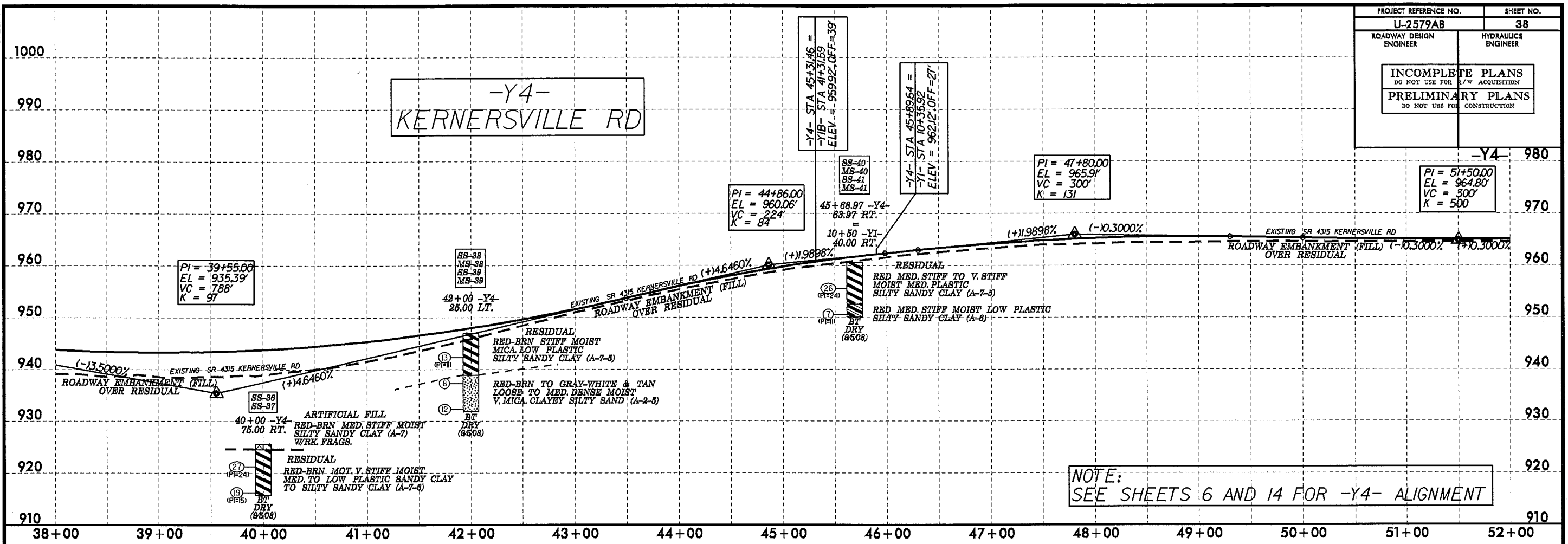
NOTE:
SEE SHEET 6 FOR -Y4- ALIGNMENT

10-AUG-2008 11:57 AM
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 10-AUG-2008 11:57 AM
 C:\p00\lects\AT\102579ab\rdwy\for\sj\th\veadd\geotech\plmpref\U2579ab_BEO_pf_1_4_037.dgn

5/28/99

IG-AUG-2008 14:47
D:\projects\2579ab\p1\mprof\U2579ab_GEO_pf_1_4_038.dgn

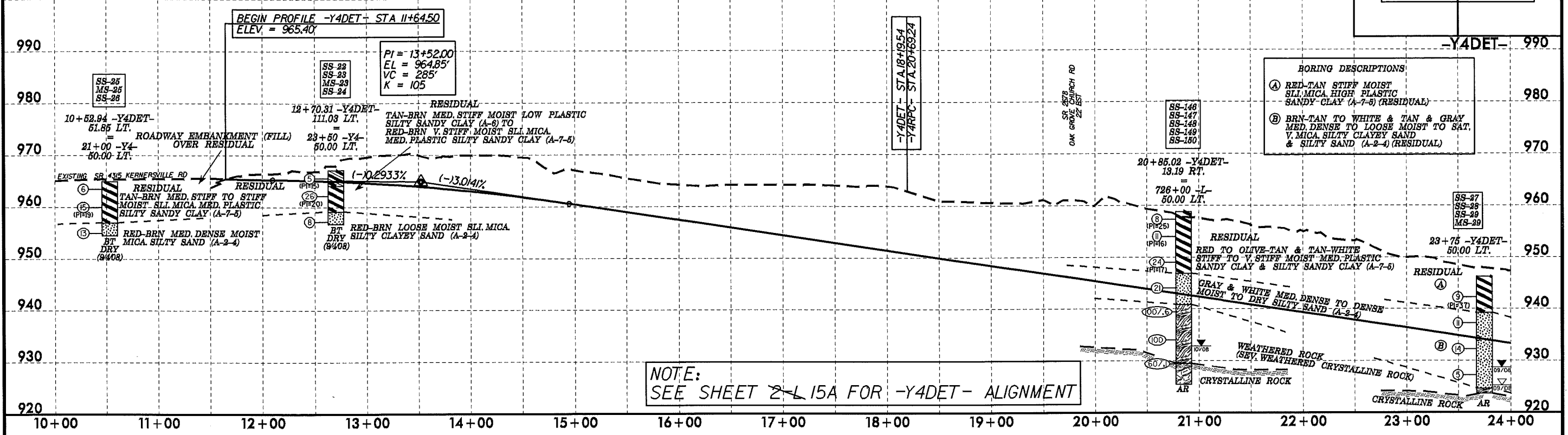
PROJECT REFERENCE NO.	SHEET NO.
U-2579AB	38
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



5/28/99

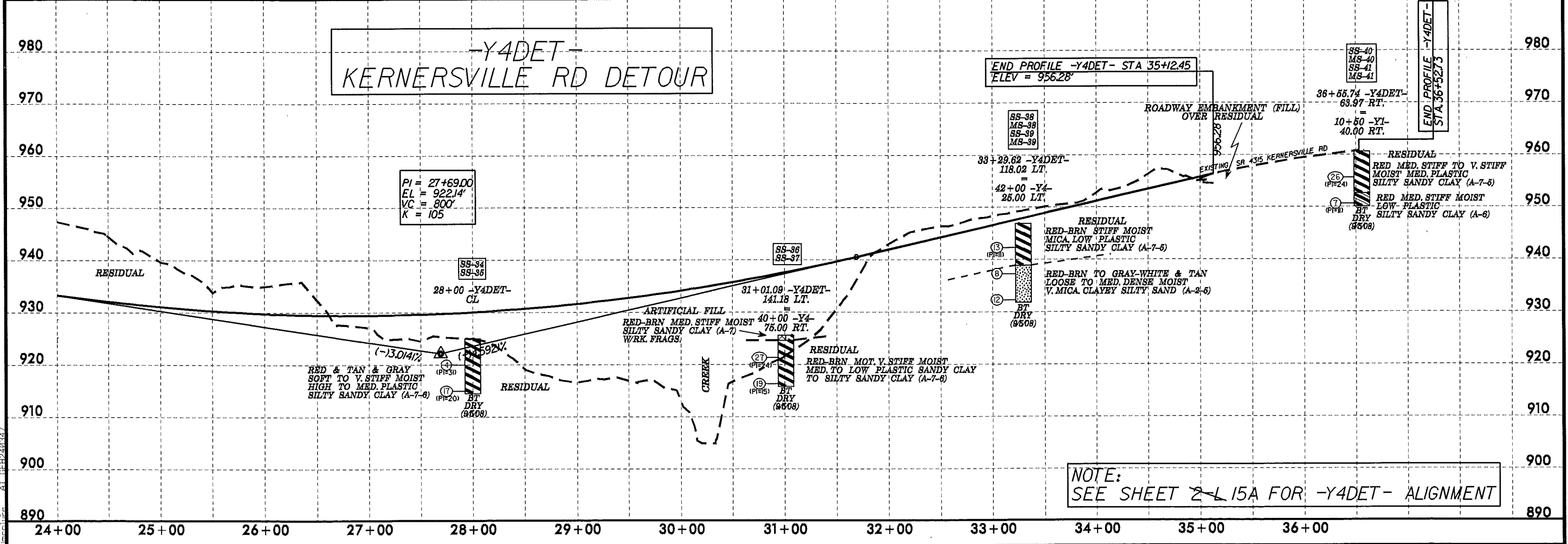
PROJECT REFERENCE NO. U-2579AB	SHEET NO. 39
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

-Y4DET- KERNERSVILLE RD DETOUR



- BORING DESCRIPTIONS**
- ① RED-TAN STIFF MOIST SILT/MICA HIGH PLASTIC SANDY CLAY (A-7-5) (RESIDUAL)
 - ② BRN-TAN TO WHITE & TAN & GRAY MED. DENSE TO LOOSE MOIST TO SAT. V. MICA SILTY CLAYEY SAND & SILTY SAND (A-2-4) (RESIDUAL)

-Y4DET- KERNERSVILLE RD DETOUR



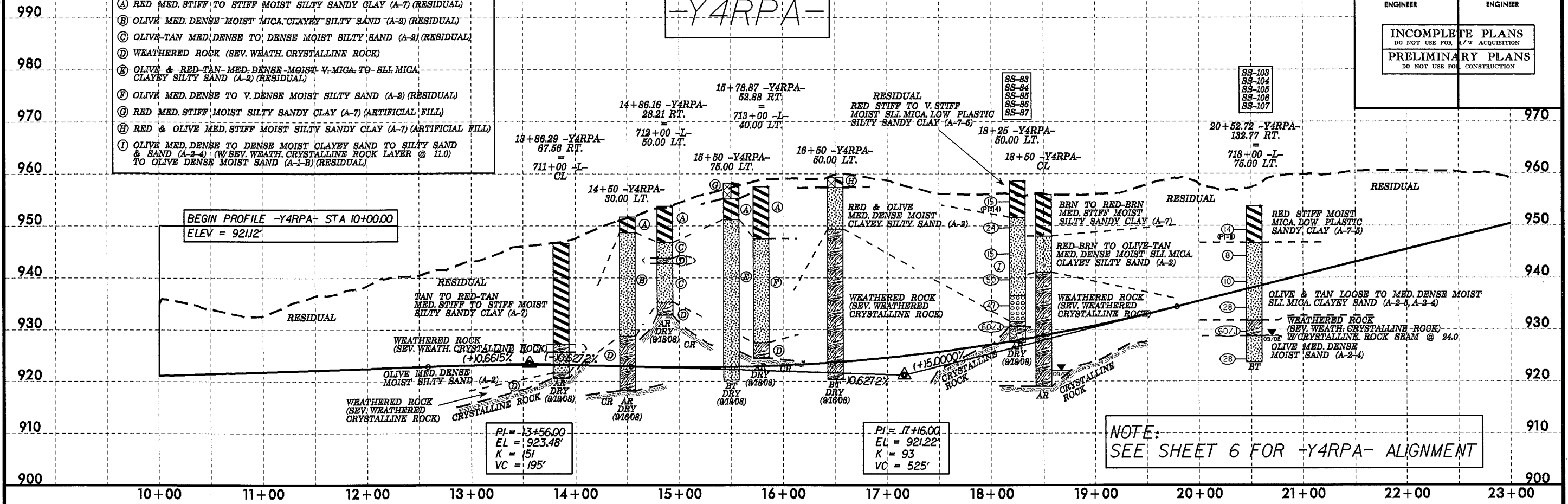
12-AUG-2009 11:52 AM C:\PROJECTS\U2579AB\GEO\RDWY_FORSYTH\CADD_GEO\TECH\PLAN\Prof\U2579ab_GEO.pfl_Y4DET_L039.dgn
 12-AUG-2009 11:52 AM C:\PROJECTS\U2579AB\GEO\RDWY_FORSYTH\CADD_GEO\TECH\PLAN\Prof\U2579ab_GEO.pfl_Y4DET_L039.dgn

5/28/99

PROJECT REFERENCE NO. U-2579AB		SHEET NO. 40	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION		PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

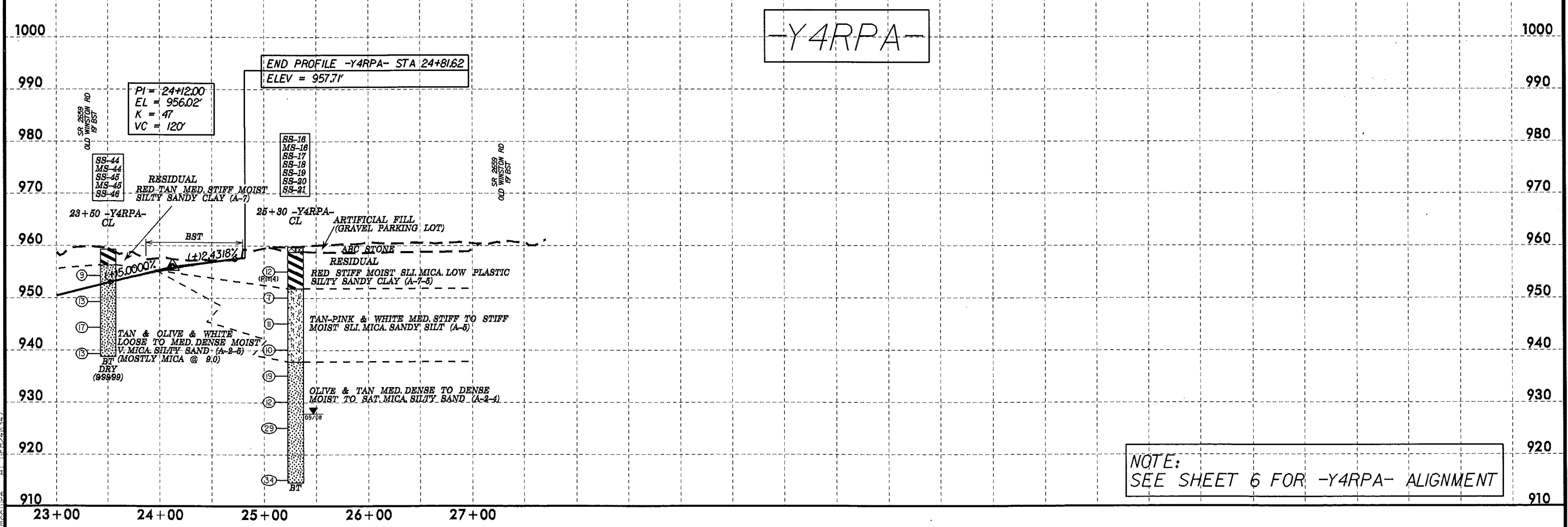
- BORING DESCRIPTIONS**
- (A) RED MED. STIFF TO STIFF MOIST SILTY SANDY CLAY (A-7) (RESIDUAL)
 - (B) OLIVE MED. DENSE MOIST MICA CLAYEY SILTY SAND (A-2) (RESIDUAL)
 - (C) OLIVE-TAN MED. DENSE TO DENSE MOIST SILTY SAND (A-2) (RESIDUAL)
 - (D) WEATHERED ROCK (SEV. WEATH. CRYSTALLINE ROCK)
 - (E) OLIVE & RED-TAN MED. DENSE MOIST V. MICA TO SLT. MICA CLAYEY SILTY SAND (A-2) (RESIDUAL)
 - (F) OLIVE MED. DENSE TO V. DENSE MOIST SILTY SAND (A-2) (RESIDUAL)
 - (G) RED MED. STIFF MOIST SILTY SANDY CLAY (A-7) (ARTIFICIAL FILL)
 - (H) RED & OLIVE MED. STIFF MOIST SILTY SANDY CLAY (A-7) (ARTIFICIAL FILL)
 - (I) OLIVE MED. DENSE TO DENSE MOIST CLAYEY SAND TO SILTY SAND & SAND (A-2-4) (W/ SEV. WEATH. CRYSTALLINE ROCK LAYER @ 11.0) TO OLIVE DENSE MOIST SAND (A-1-B) (RESIDUAL)

-Y4RPA-



NOTE:
SEE SHEET 6 FOR -Y4RPA- ALIGNMENT

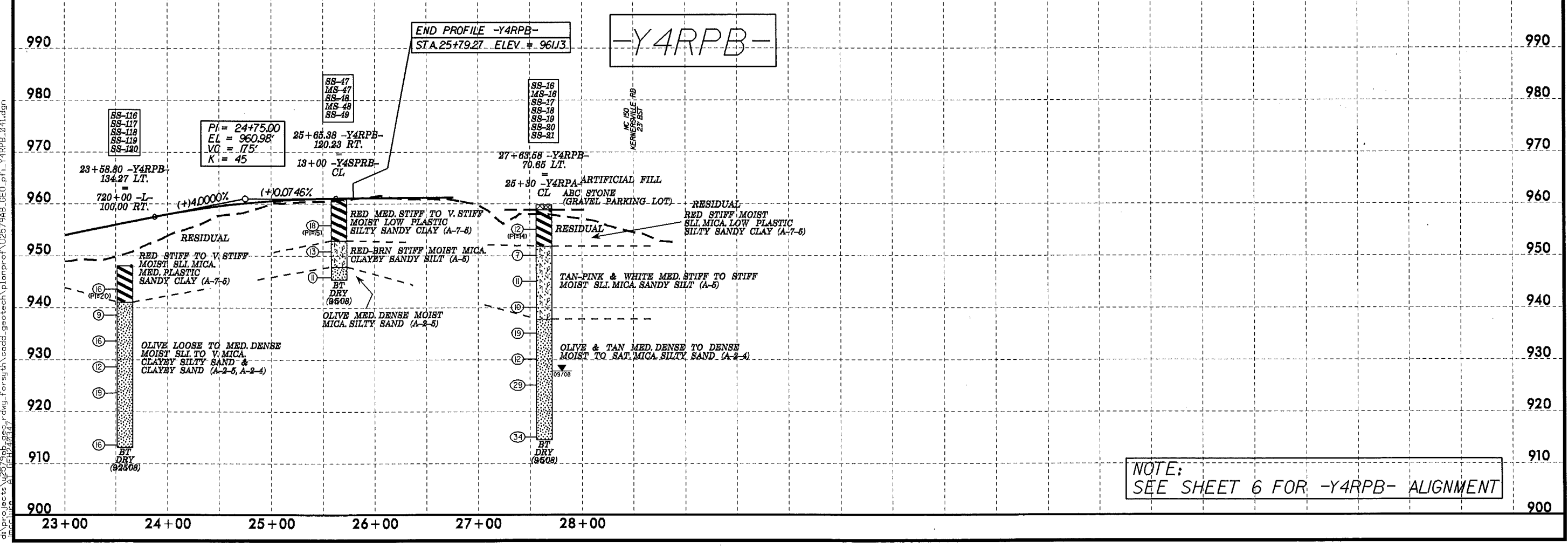
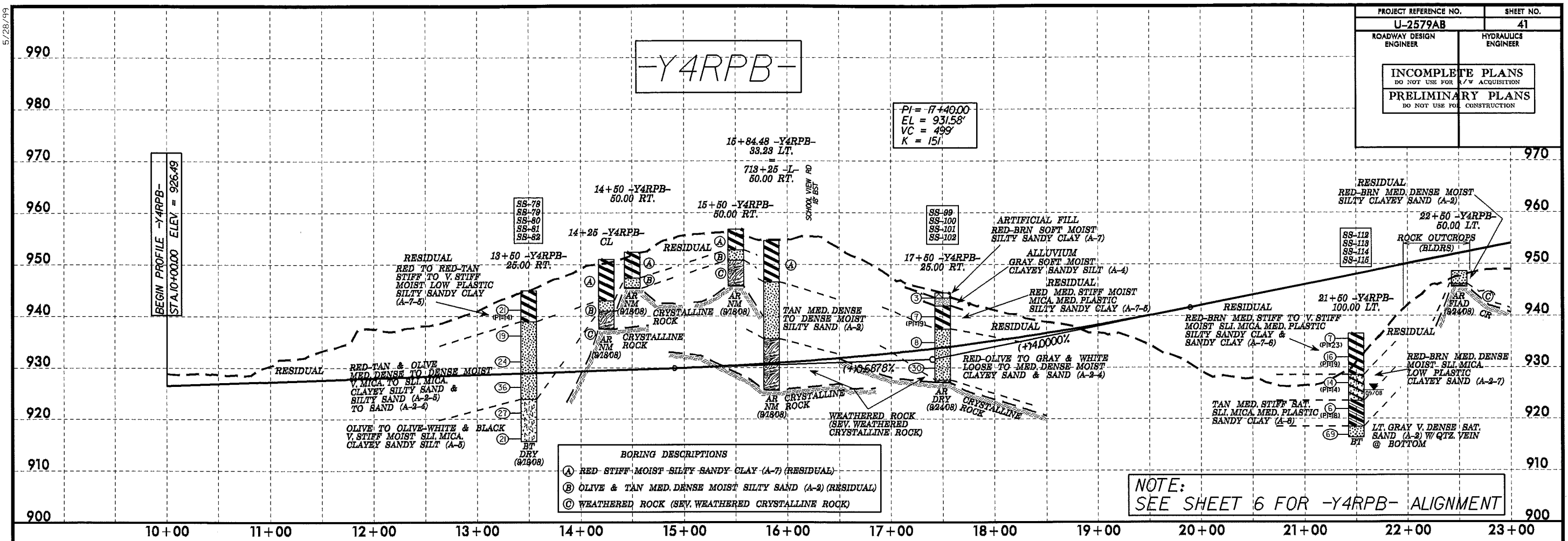
-Y4RPA-



NOTE:
SEE SHEET 6 FOR -Y4RPA- ALIGNMENT

I:\LIC-2008\15037\98b_999_rdw\1_for_synth\cadd\geotech\planprof\U2579ab_GEO.prf_Y4RPA_040.dgn

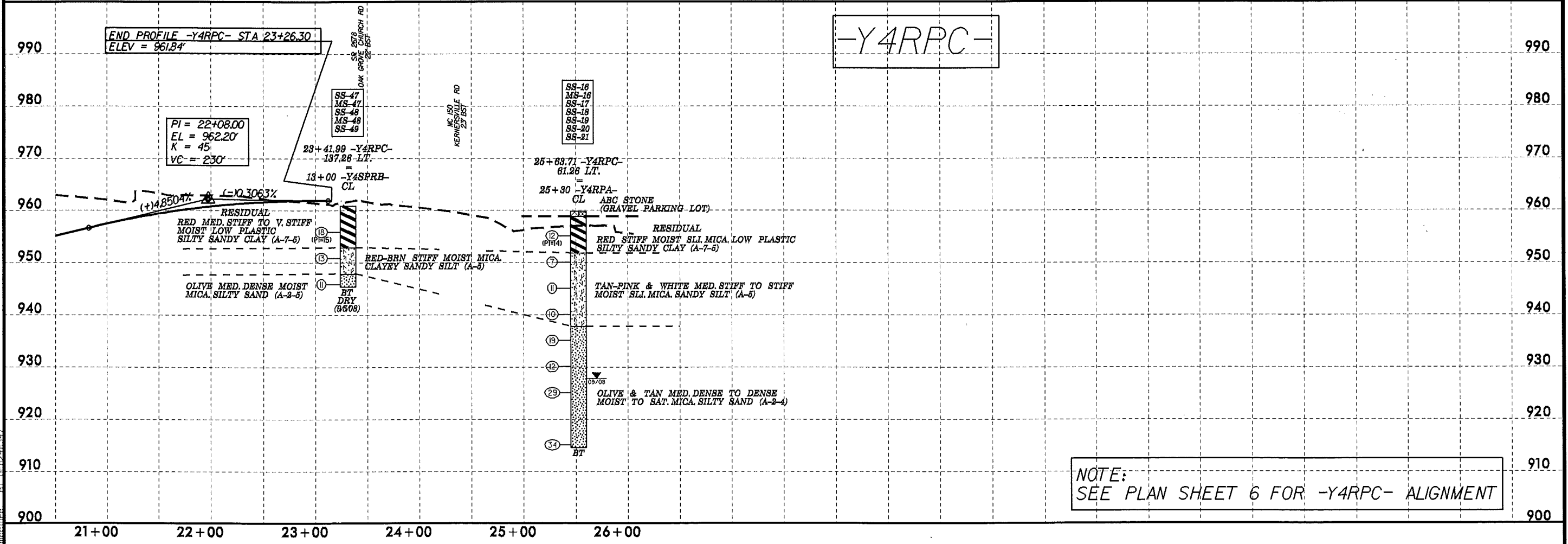
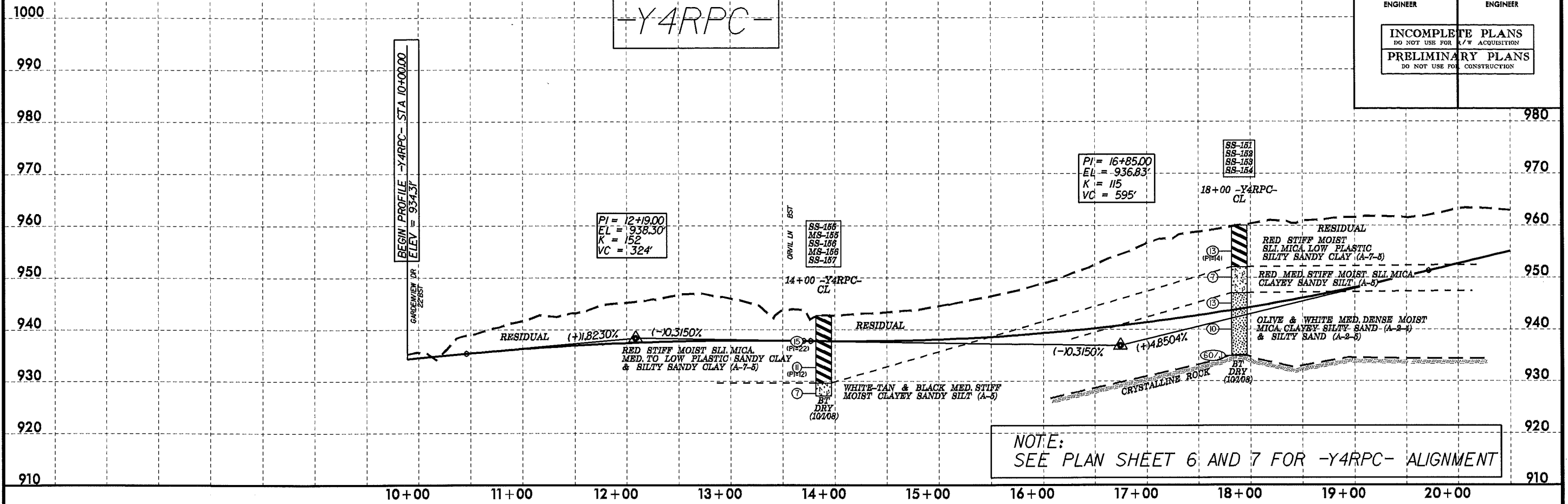
PROJECT REFERENCE NO. U-2579AB	SHEET NO. 41
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



5/28/99
 10-AUG-2008 15:25:33
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 User: jeh

5/28/99

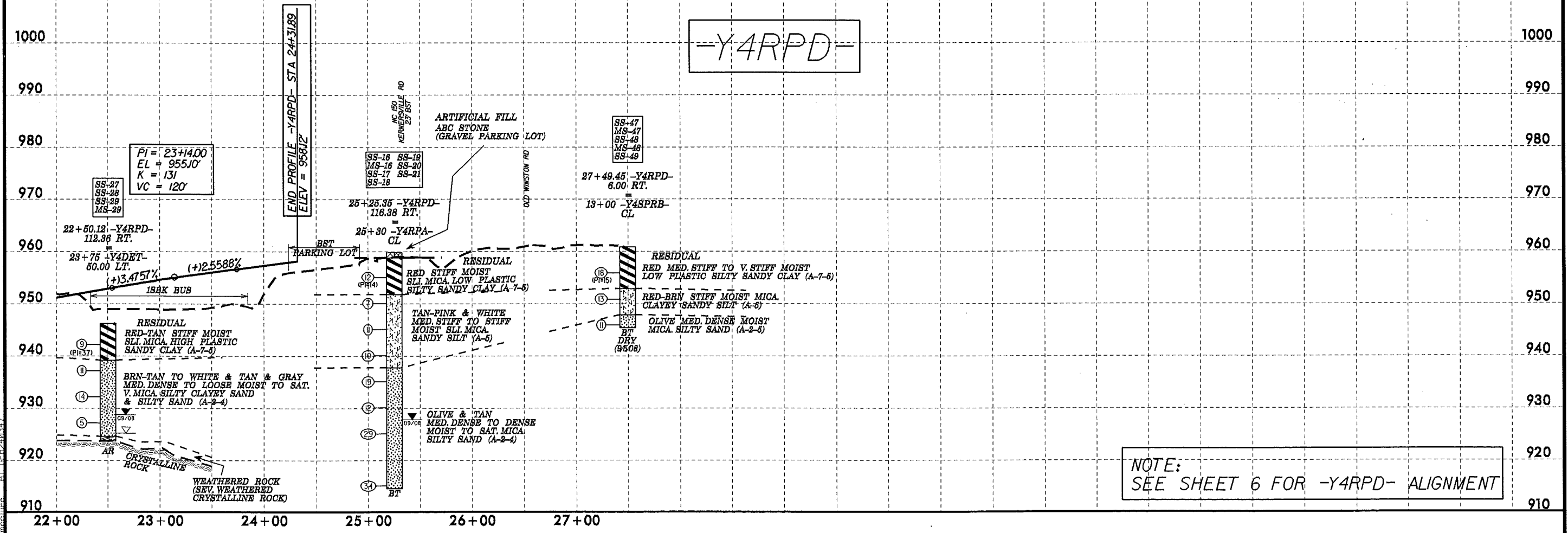
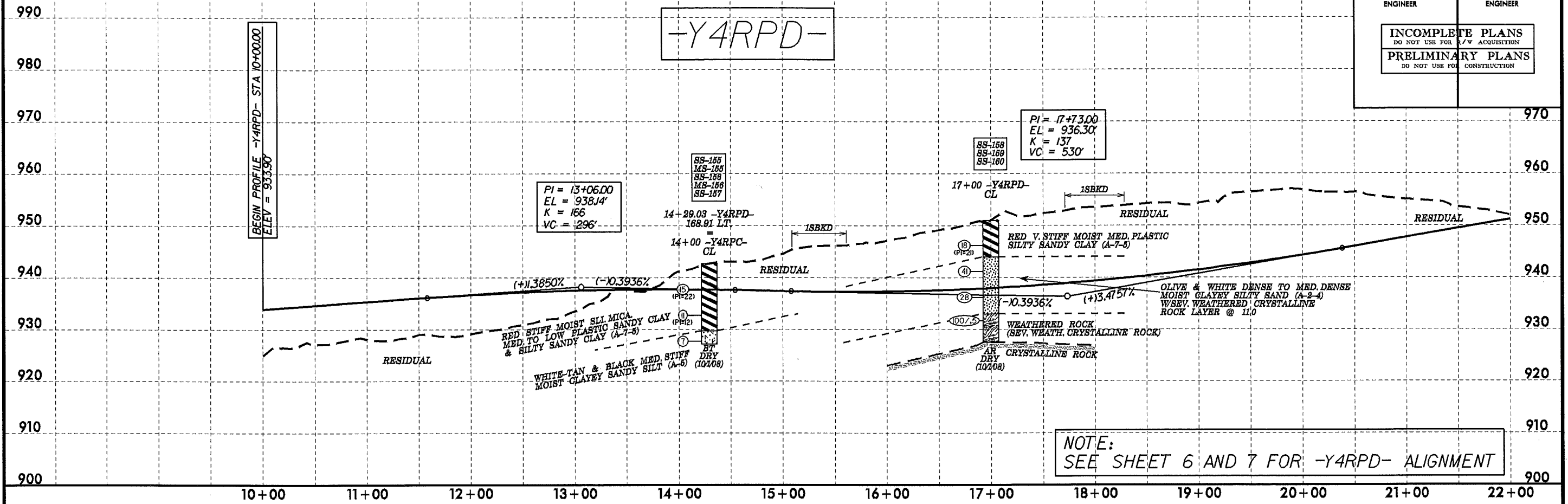
PROJECT REFERENCE NO. U-2579AB		SHEET NO. 42	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION		PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



IC-1110-2008 15:06
d:\proj\lects\2579ab\p1\mprof\2579AB_GEO.p1_-Y4RPC_042.dgn
15:06 11/12/99

5/28/99

PROJECT REFERENCE NO. U-2579AB	SHEET NO. 43
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

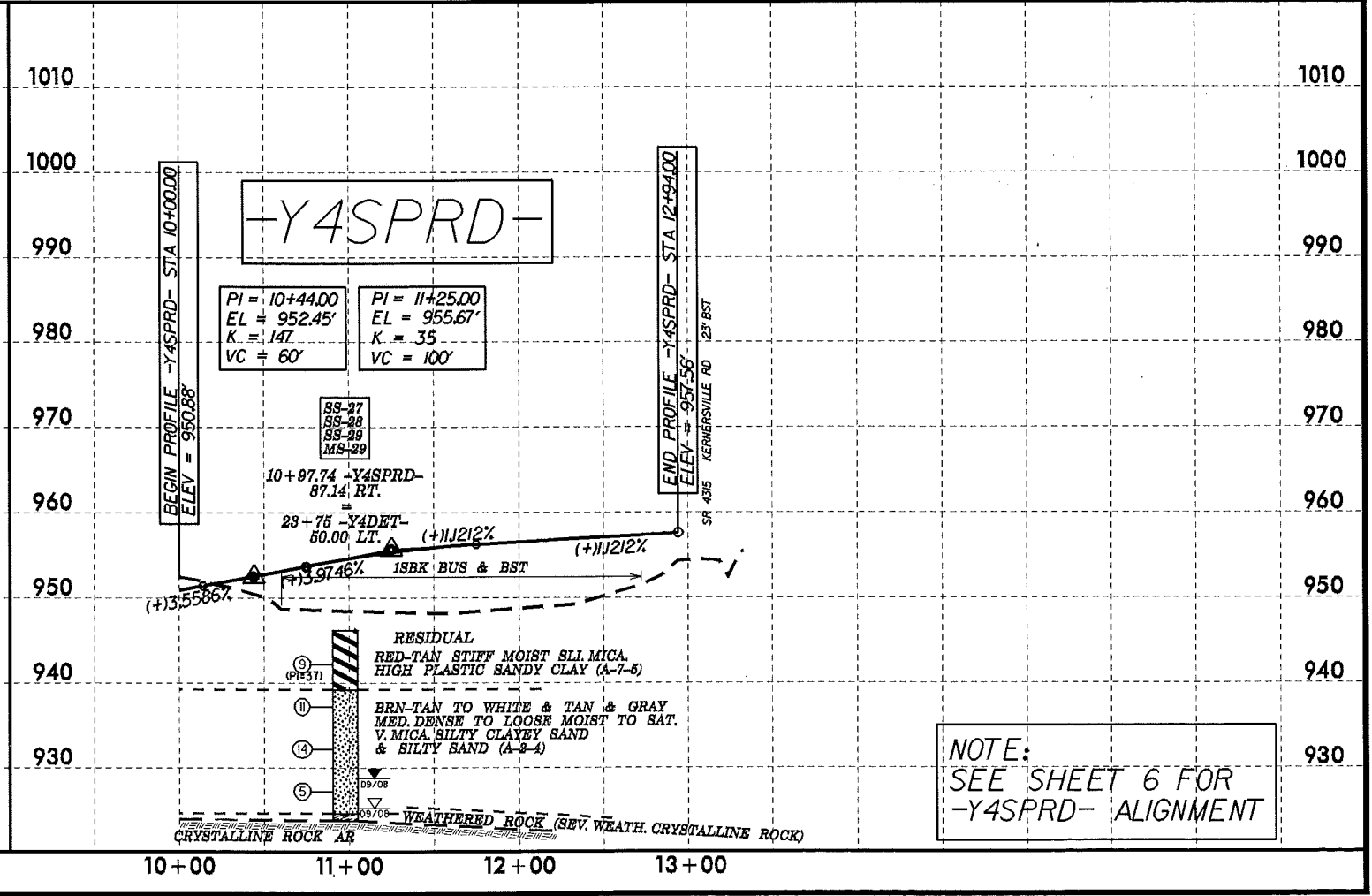
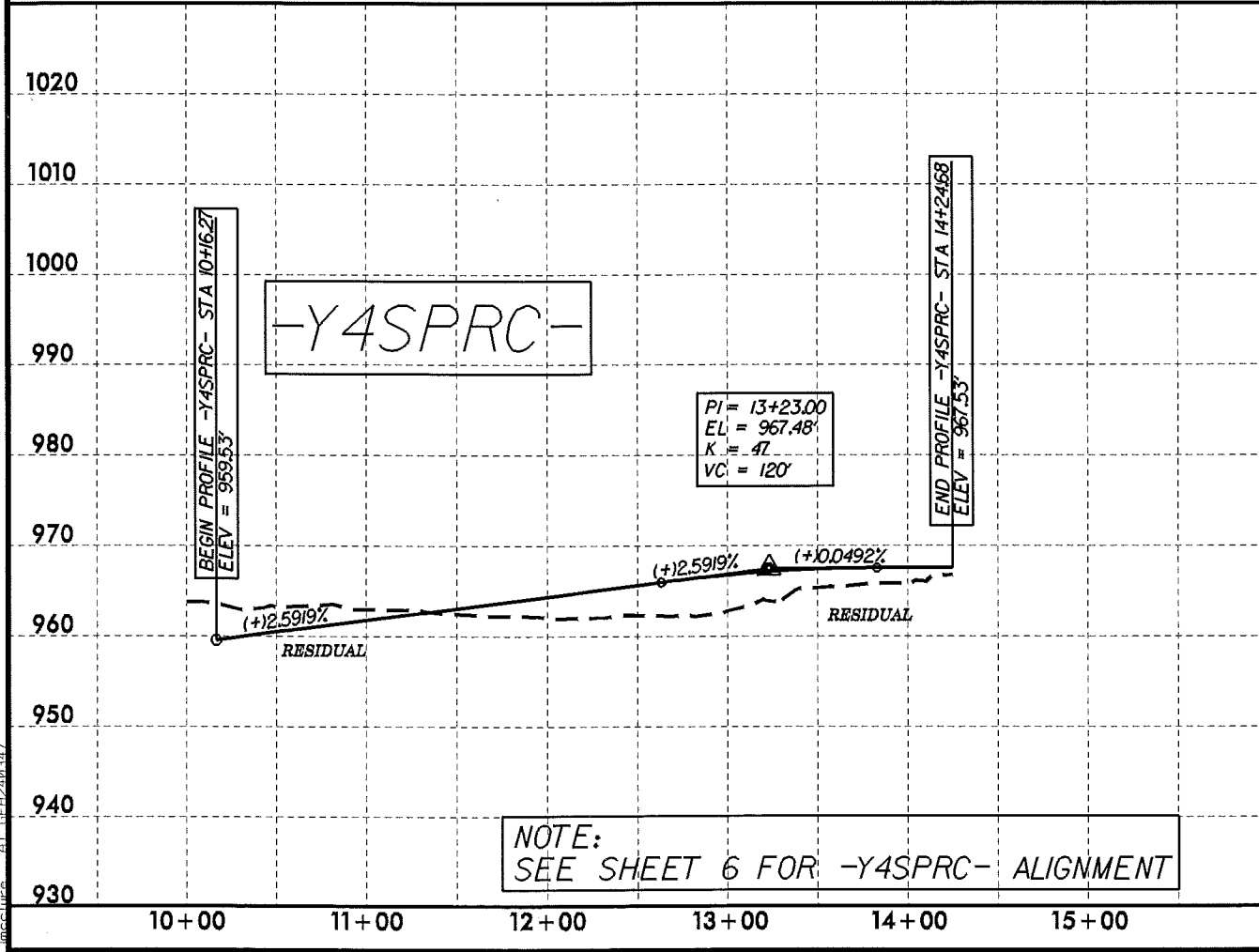
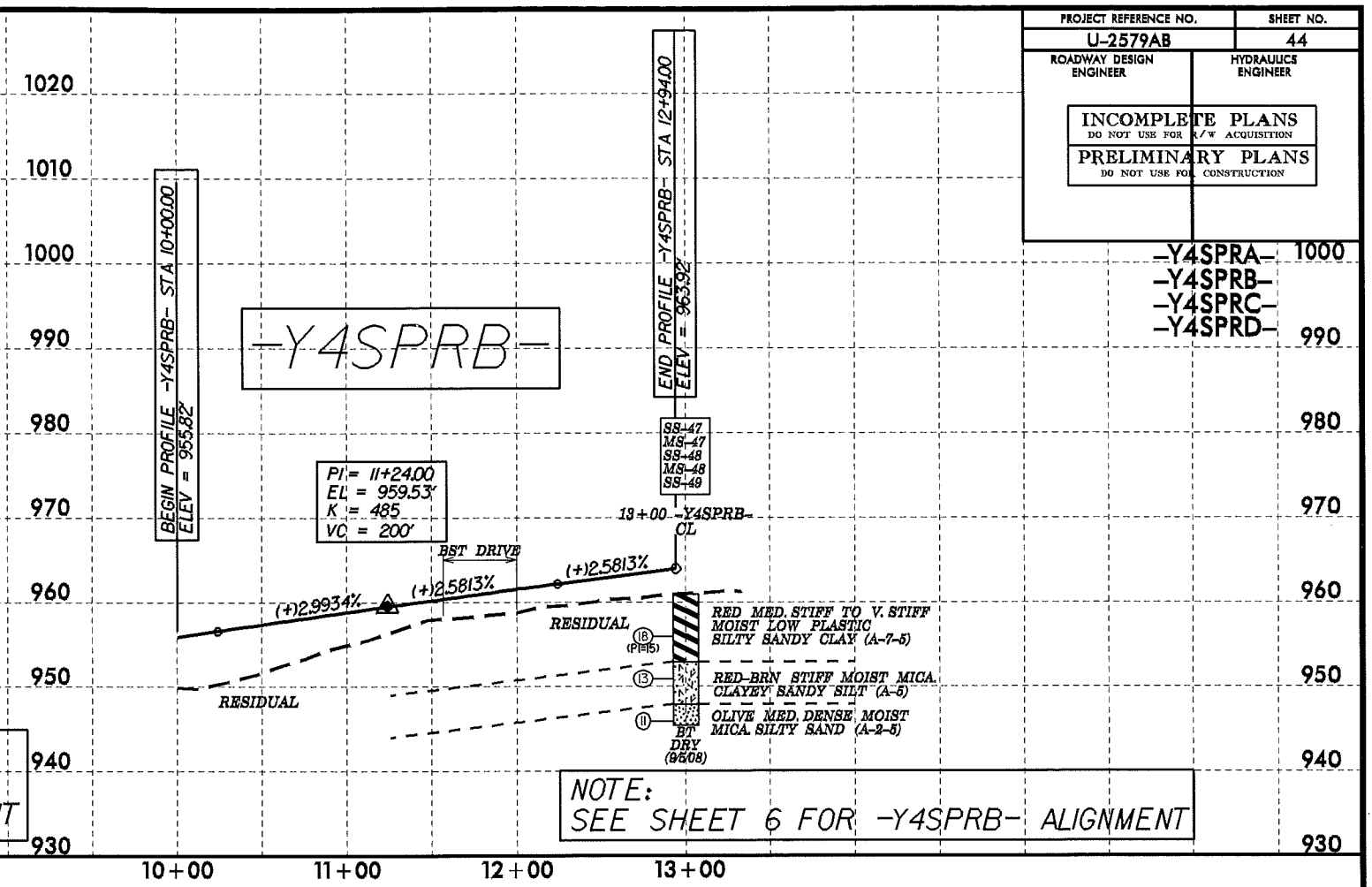
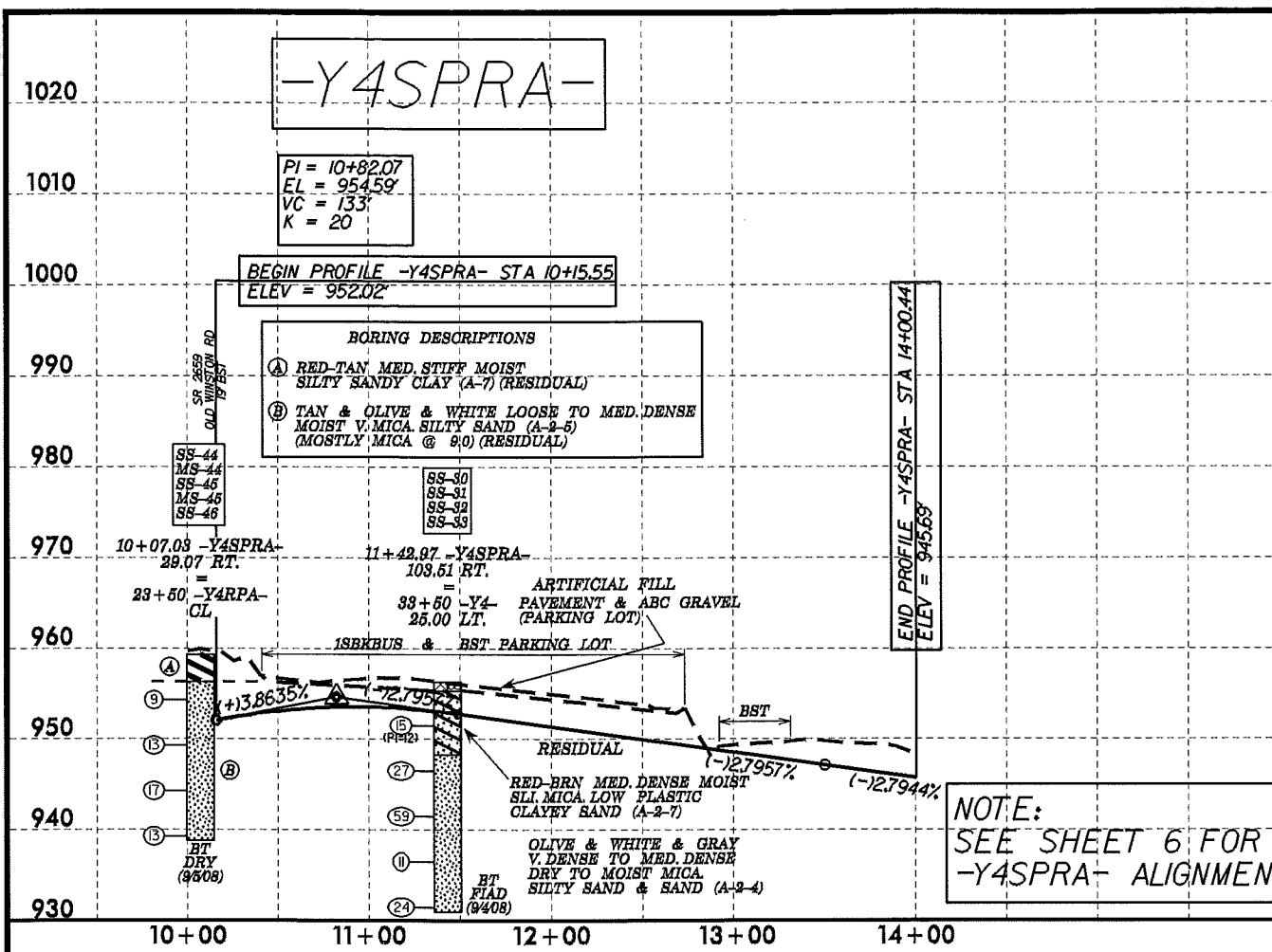


10-AUG-2006 15:07 d:\proj\2579ab\99_rdw\for\st4\cadd\geotech\p\mprof\U2579AB_GEO.pf_-Y4RPD_043.dgn

5/28/99

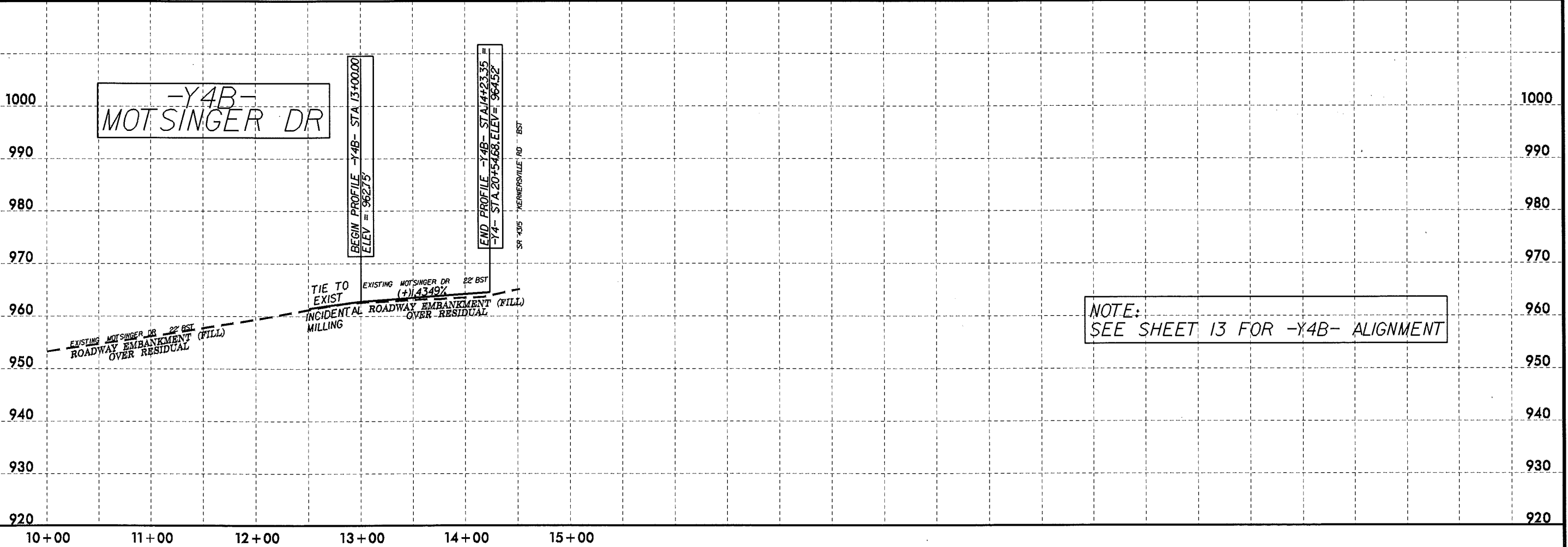
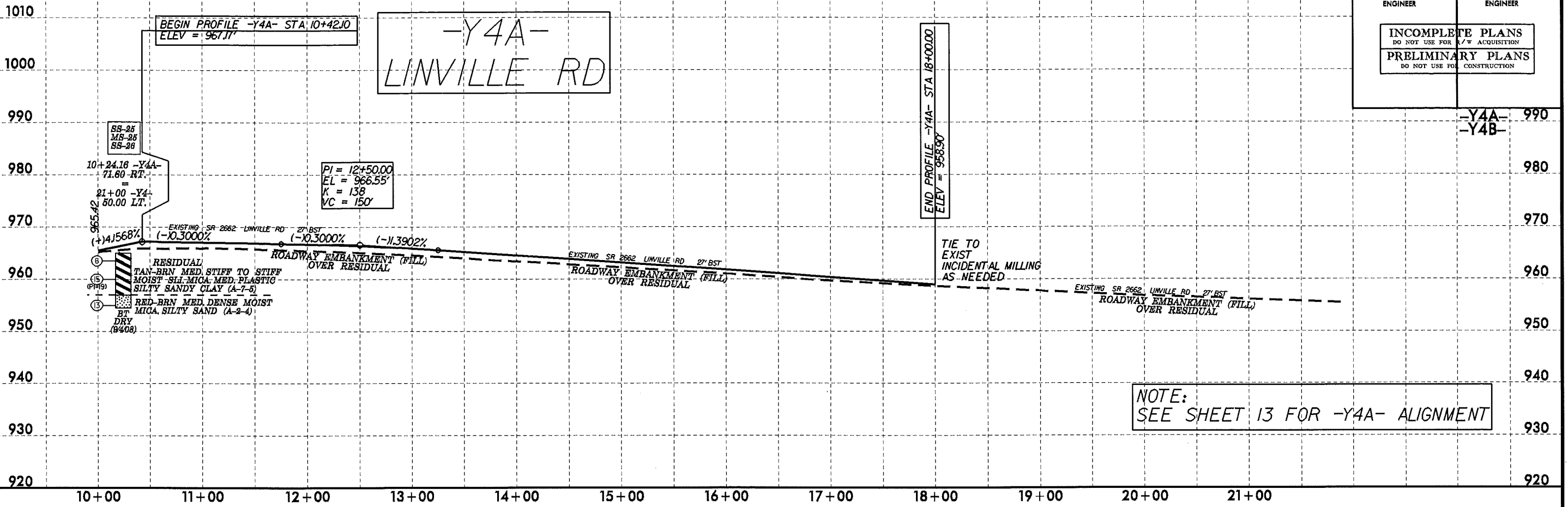
19-AUG-2008 15:09
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PROJECT REFERENCE NO. U-2579AB	SHEET NO. 44
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



5/28/99

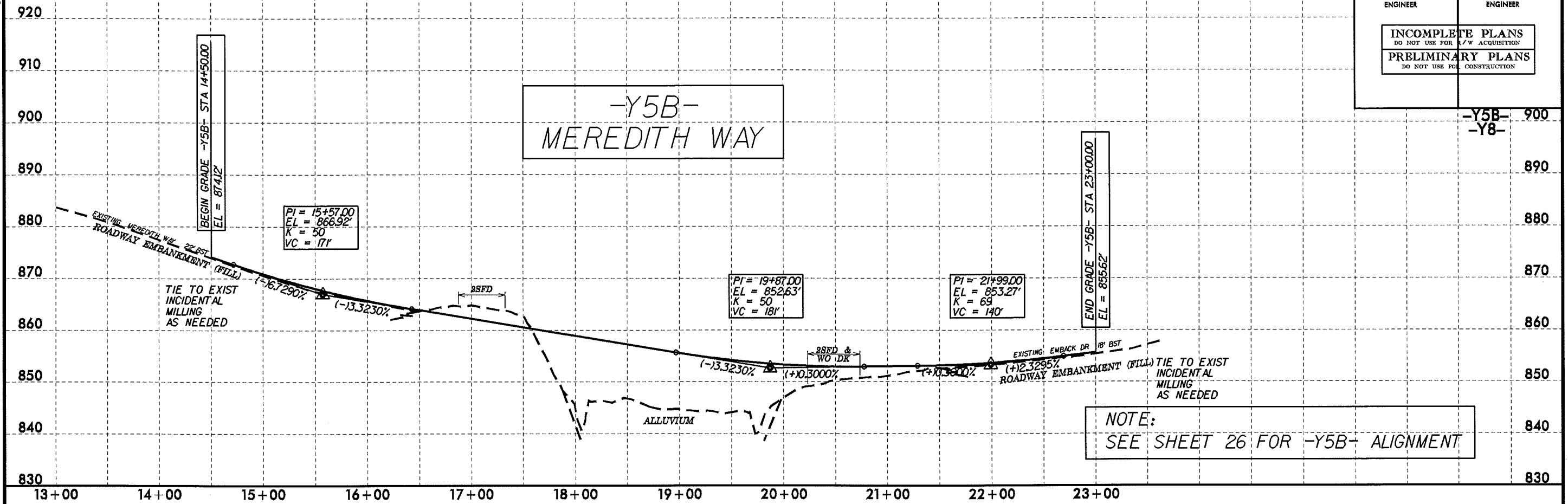
PROJECT REFERENCE NO. U-2579AB	SHEET NO. 45
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



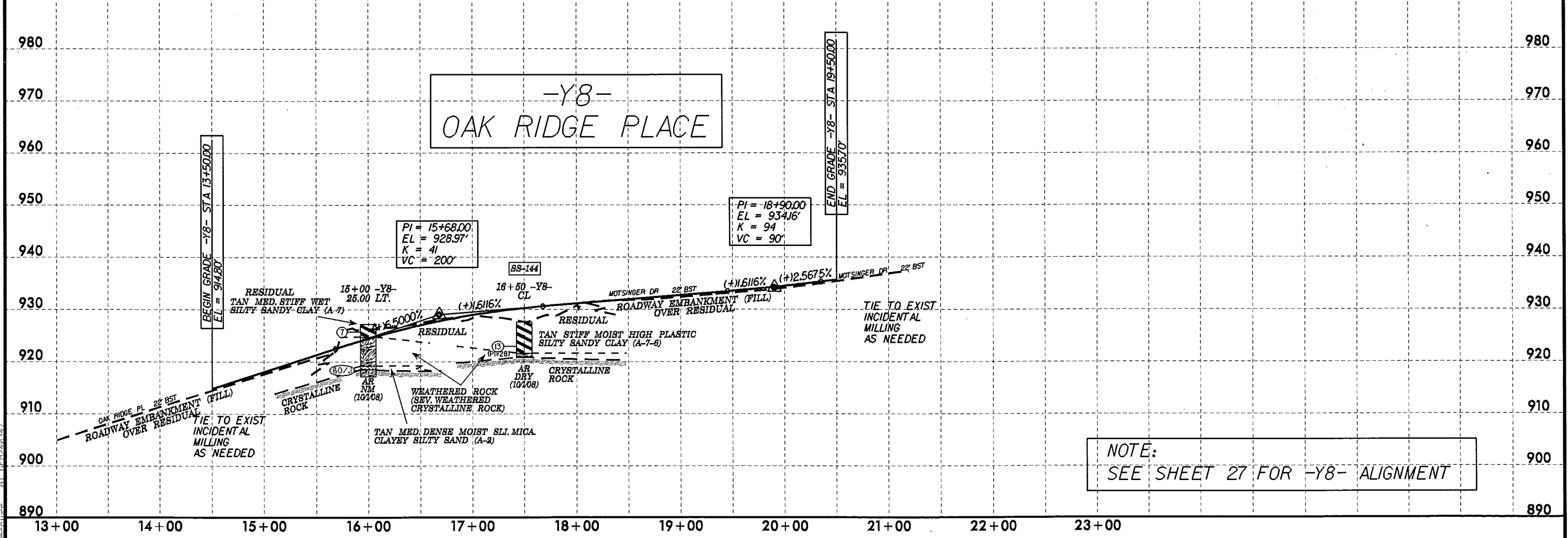
IG-AUG-2008 14:45
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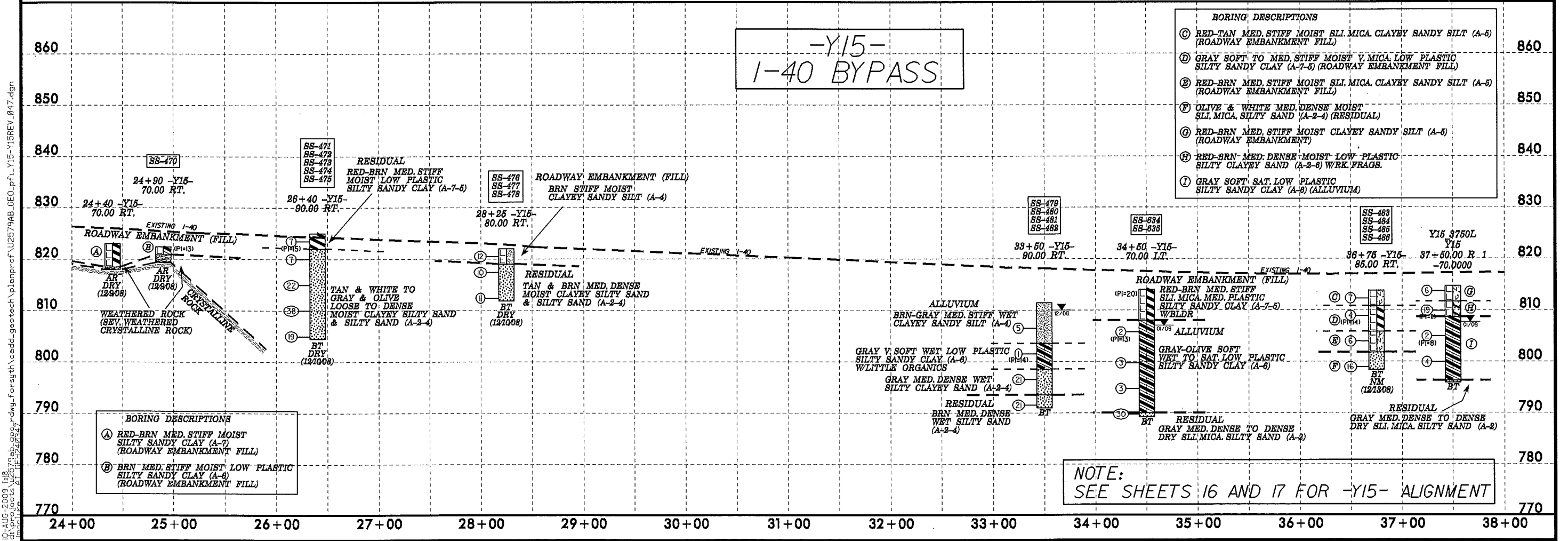
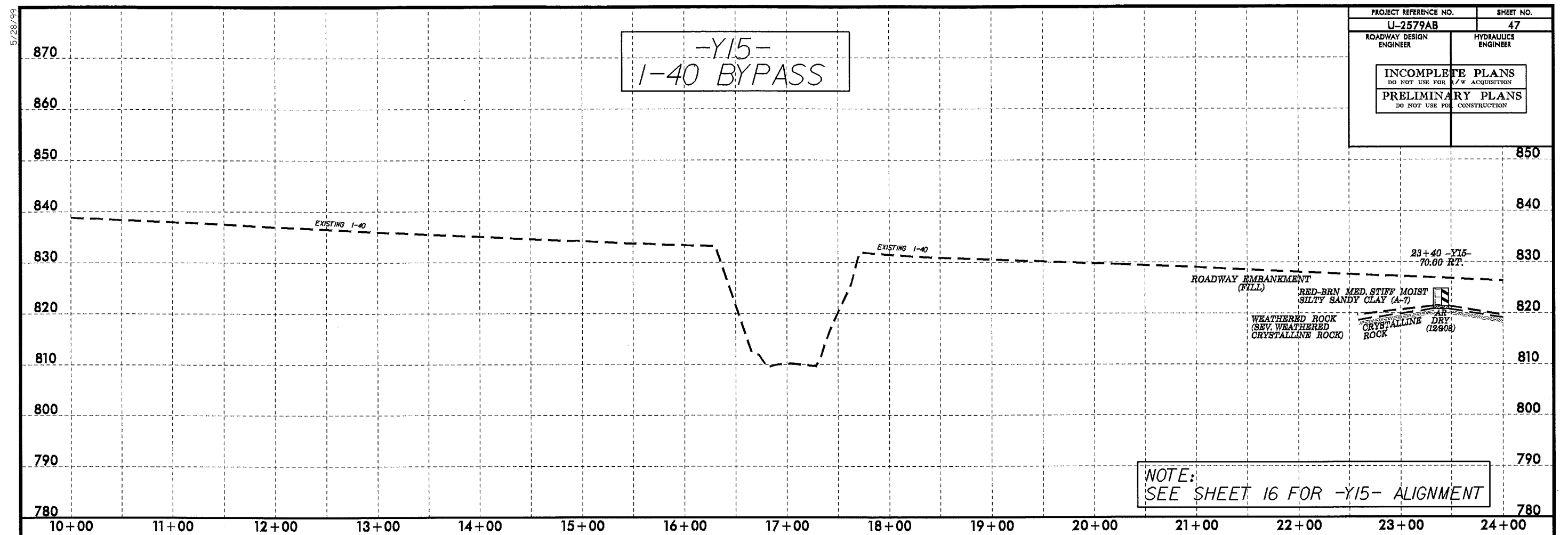
5/28/99

PROJECT REFERENCE NO. U-2579AB		SHEET NO. 46
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION		
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION		



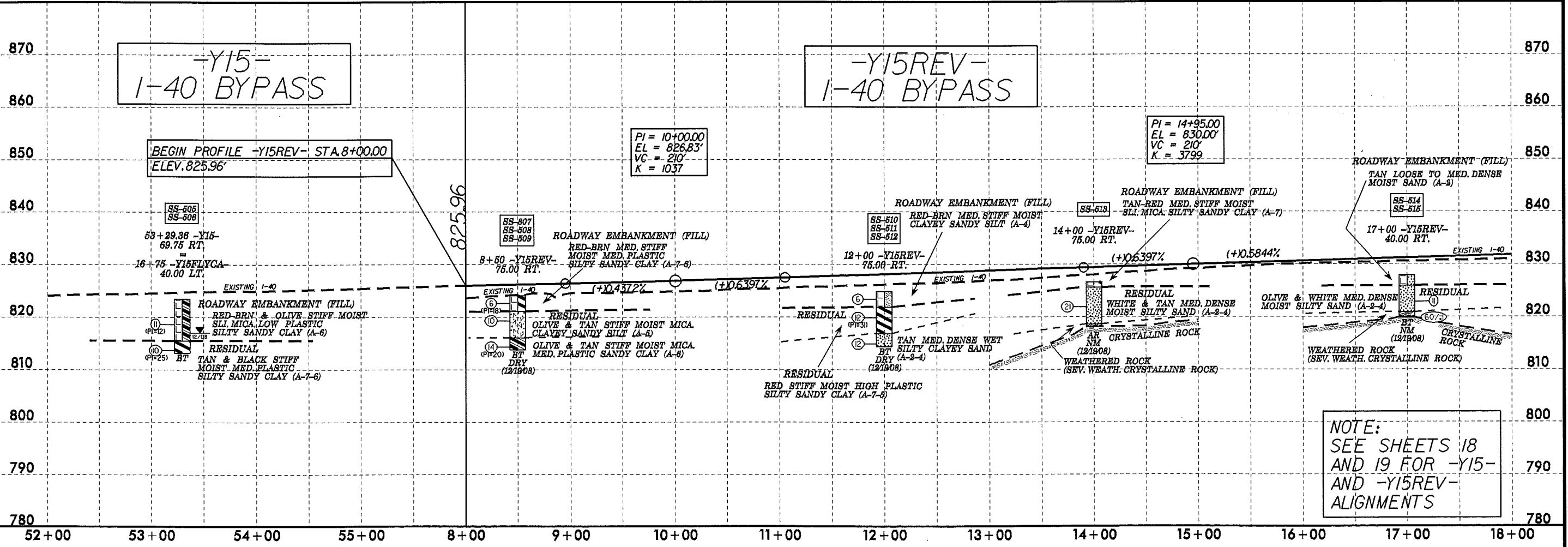
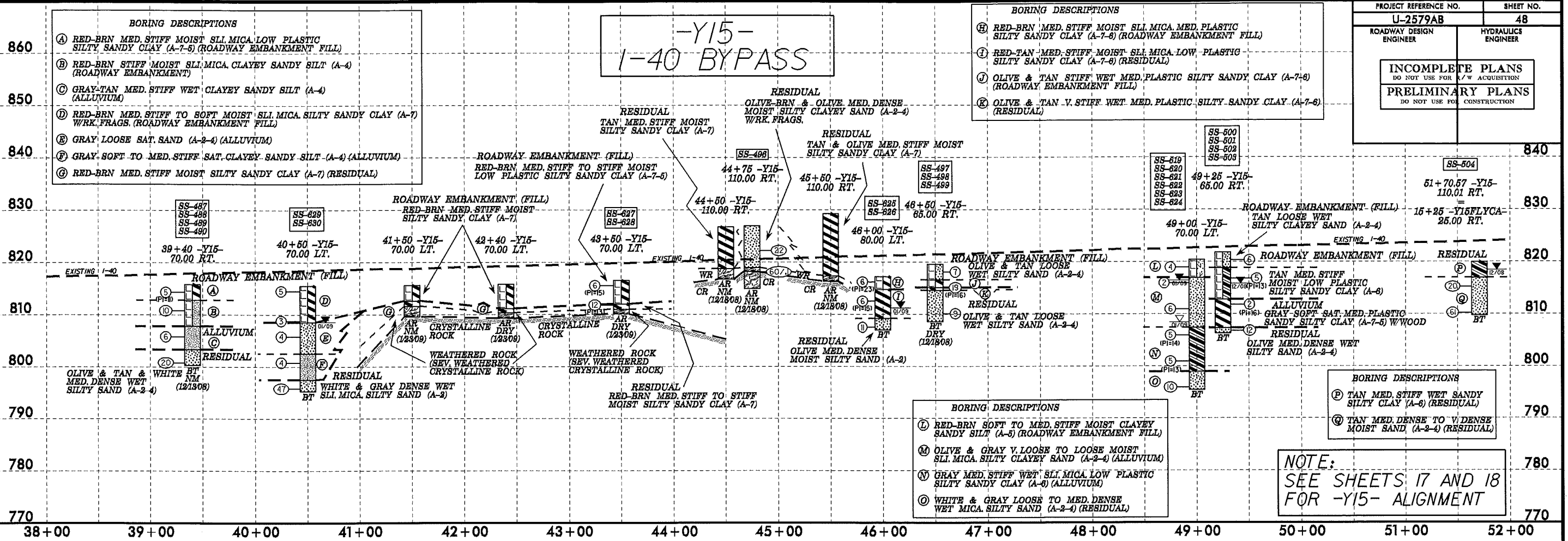
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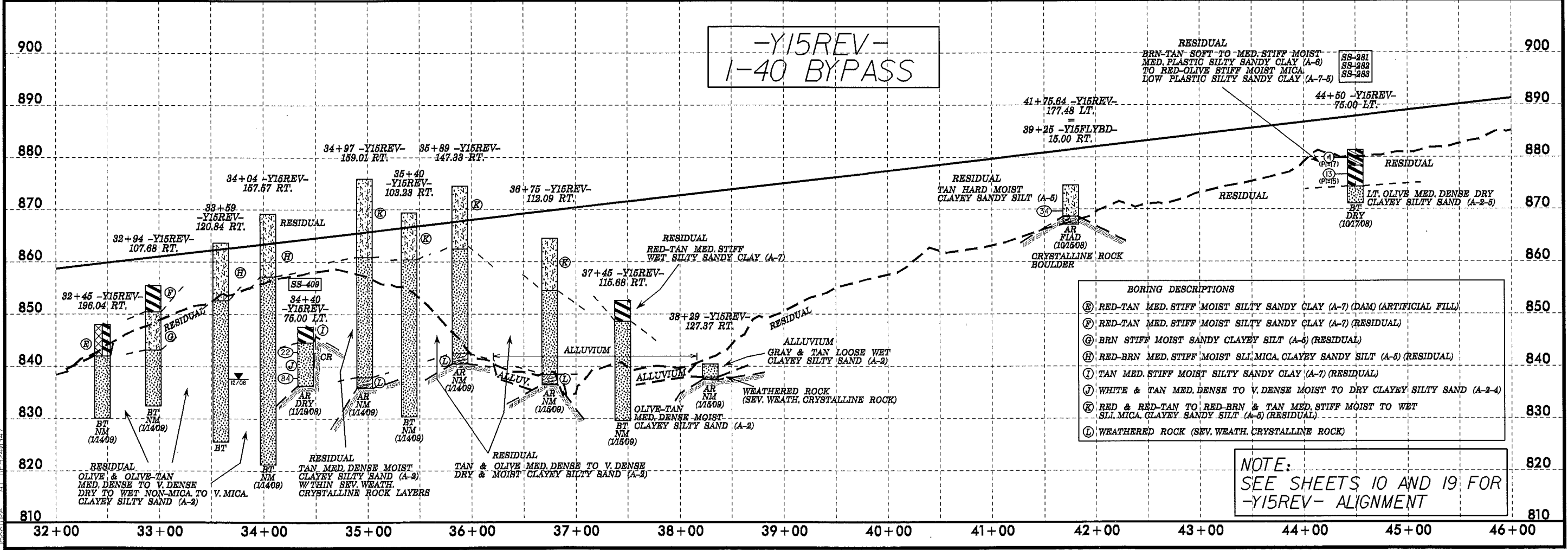
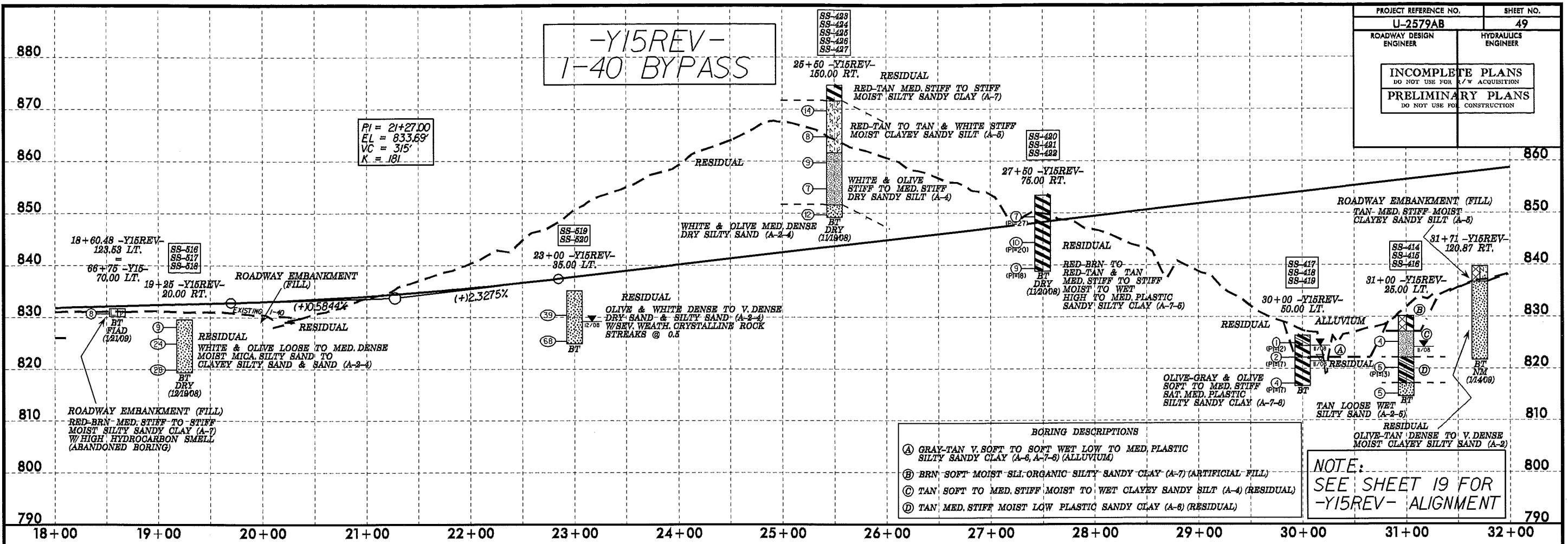
10-AUG-2009 11:18
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 5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-2579AB	48
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



5/28/99
 I:\LIC-2008\1121\2579ab\99_rdw\for_synth\cadd\geotech\planprof\U2579AB_GEO_pf_1_Y15REV_049.dgn

PROJECT REFERENCE NO. U-2579AB	SHEET NO. 49
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



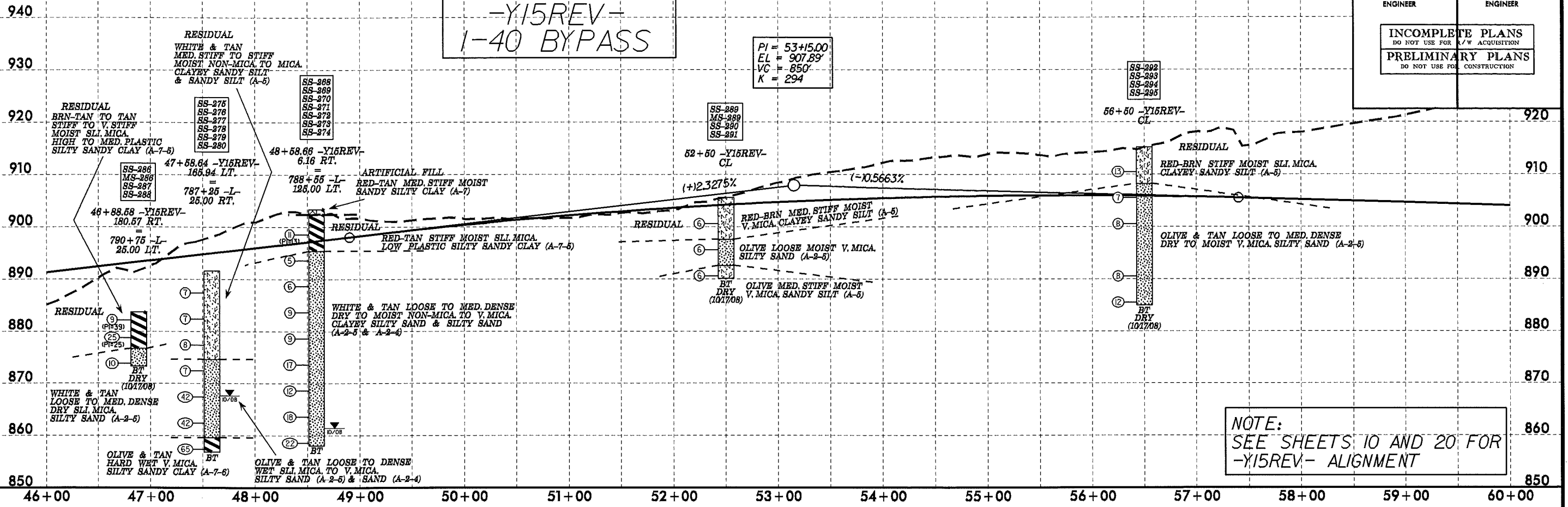
5/28/99

PROJECT REFERENCE NO.		SHEET NO.	
U-2579AB		50	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER		
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION		PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

-Y15REV-
I-40 BYPASS

PI = 53+15.00
EL = 907.89'
VC = 850'
K = 294

SS-292
SS-293
SS-294
SS-295

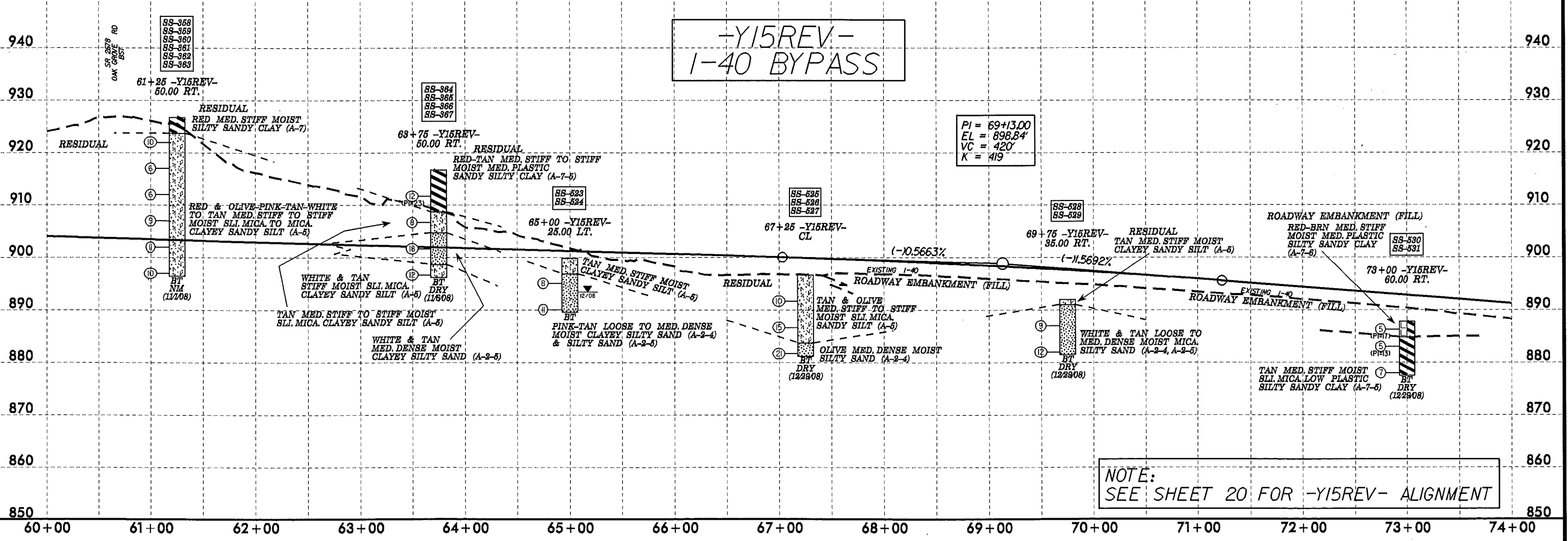


NOTE:
SEE SHEETS 10 AND 20 FOR
-Y15REV- ALIGNMENT

-Y15REV-
I-40 BYPASS

PI = 69+13.00
EL = 898.84'
VC = 420'
K = 419

SS-628
SS-629

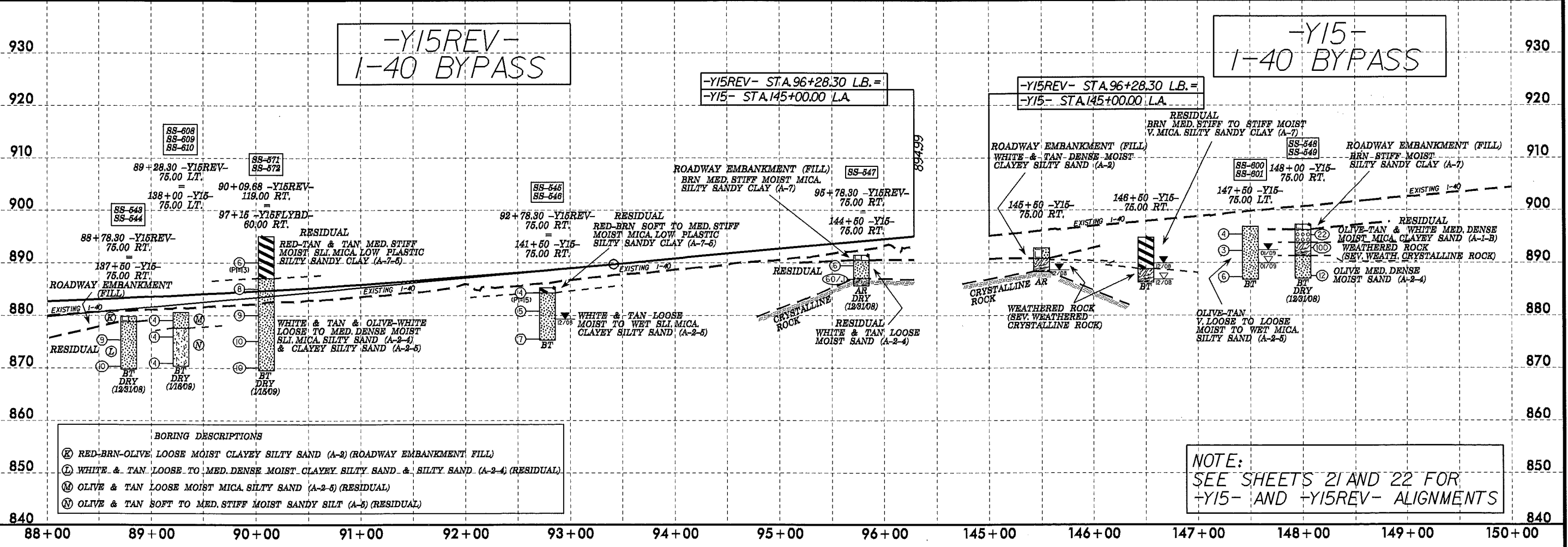
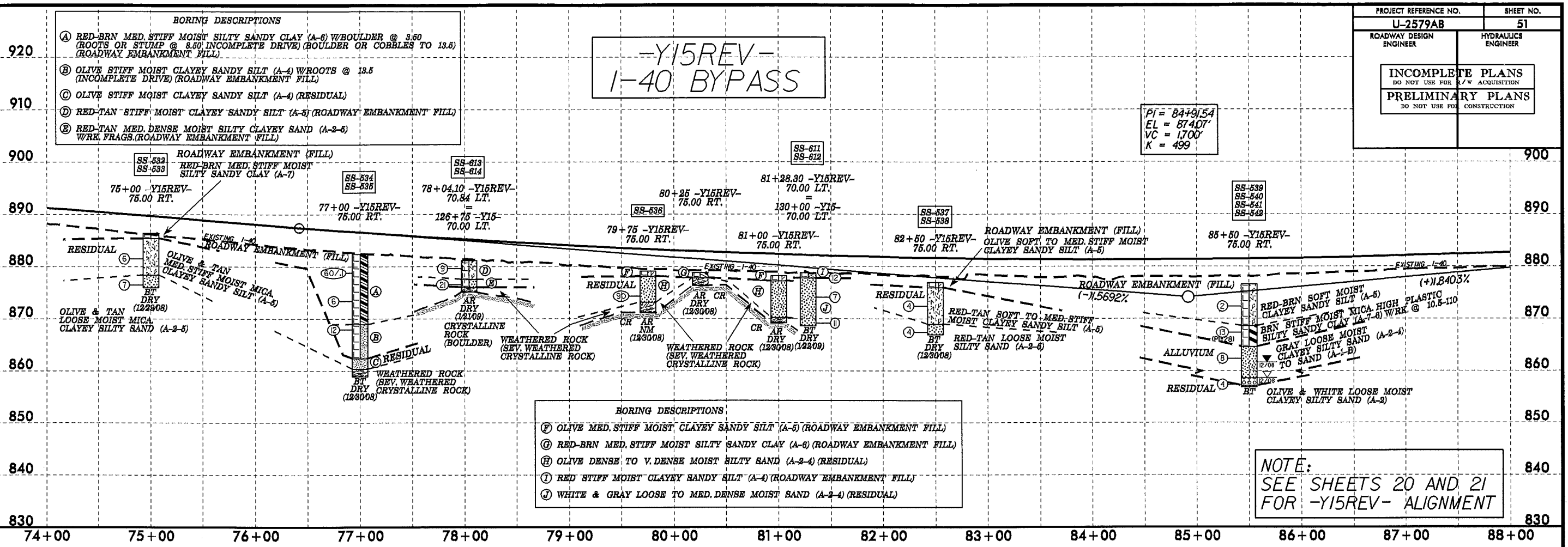


NOTE:
SEE SHEET 20 FOR -Y15REV- ALIGNMENT

10-AUG-2009 16:23
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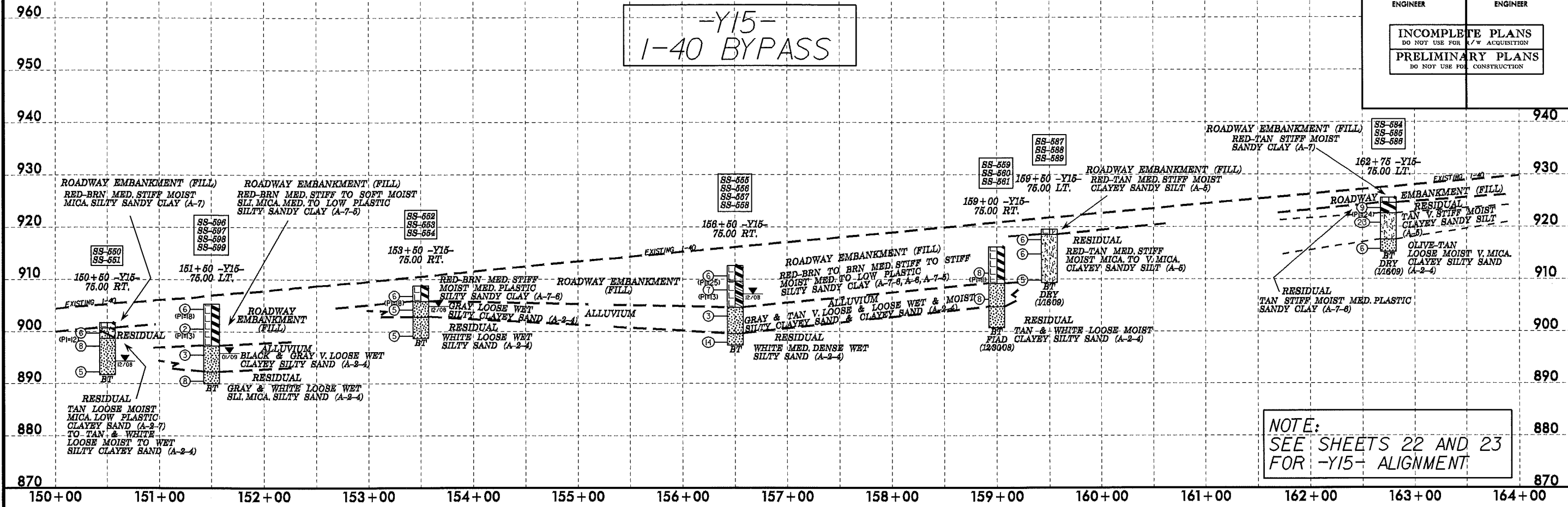
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10-AUG-2008 11:24
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PROJECT REFERENCE NO. U-2579AB		SHEET NO. 51	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION		PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

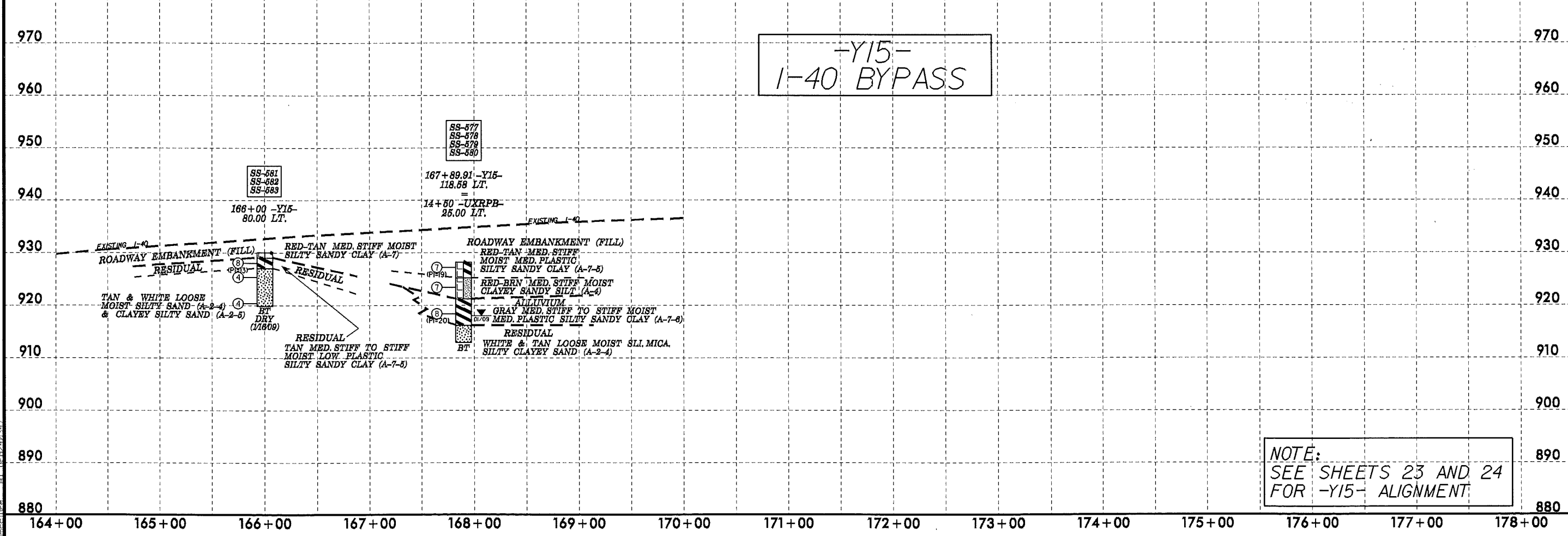


5/28/99
 10-AUG-2009 10:25 AM
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 Y15-Y15REV_052.dgn
 include: AT: 12/24/97

PROJECT REFERENCE NO. U-2579AB	SHEET NO. 52
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



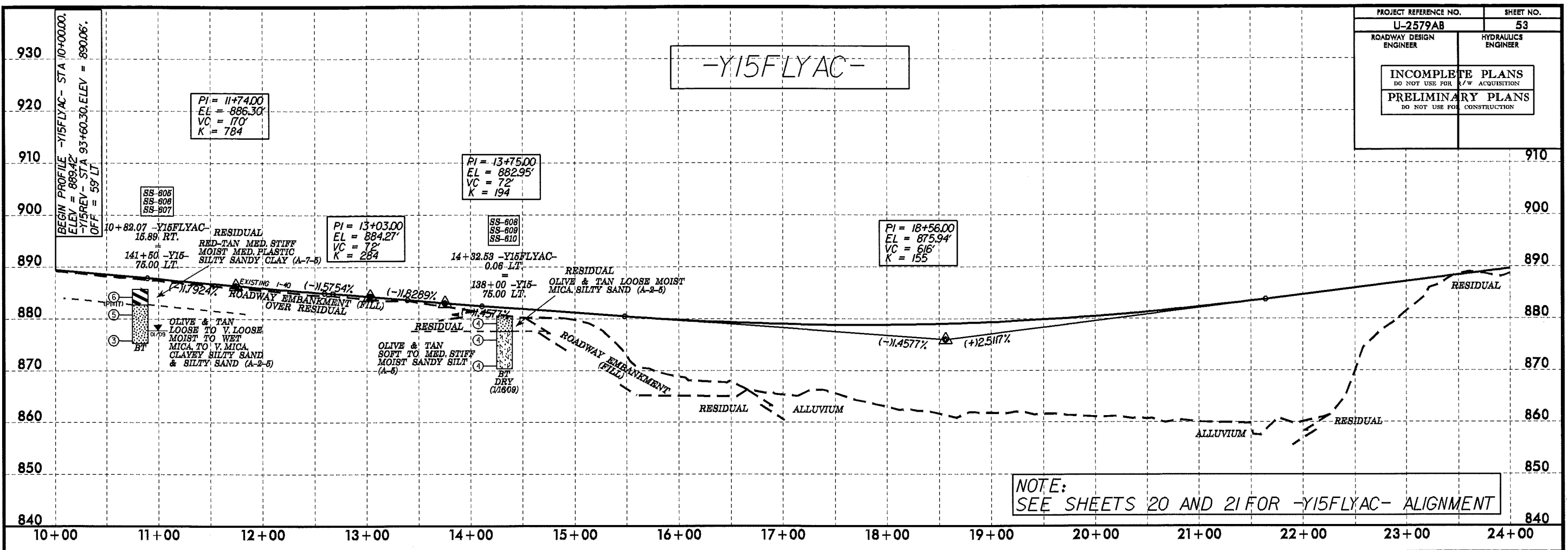
NOTE:
SEE SHEETS 22 AND 23
FOR -Y15- ALIGNMENT



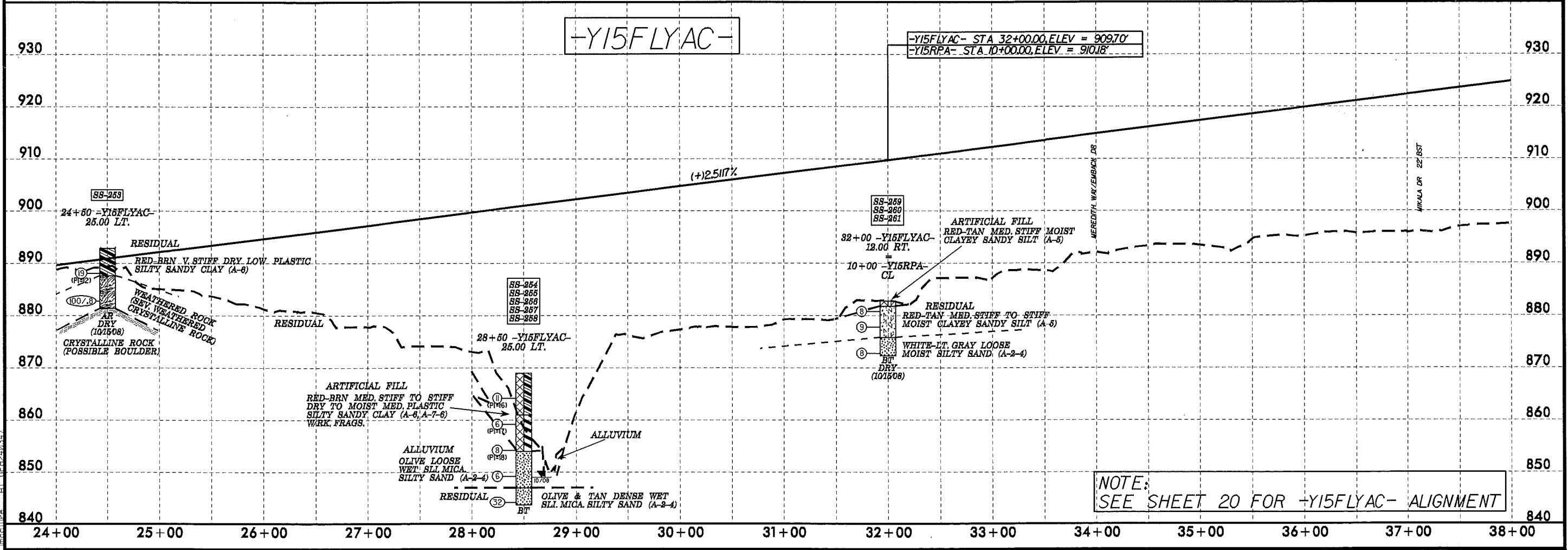
NOTE:
SEE SHEETS 23 AND 24
FOR -Y15- ALIGNMENT

5/28/99

PROJECT REFERENCE NO.		SHEET NO.	
U-2579AB		53	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER		
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION		PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

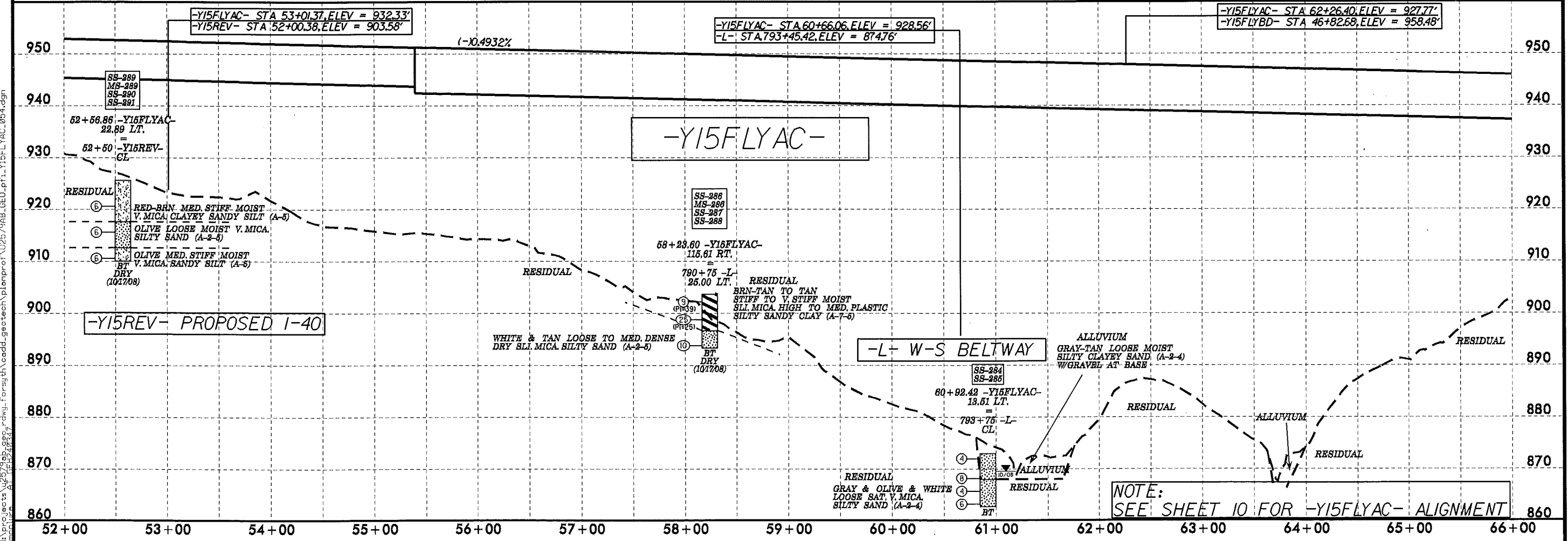
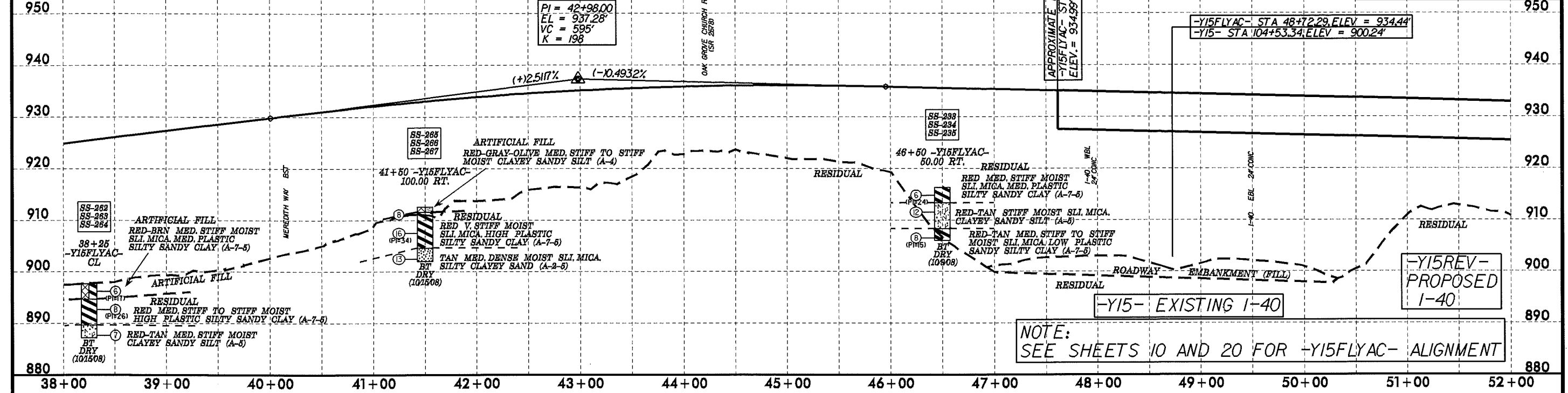


10-AUG-2008 11:25:25 99bb_992_rdwj_forrsytd\cadd_geotech\p\proj\U2579AB_GEO.pf.-Y15FLYAC_053.dgn



5/28/99

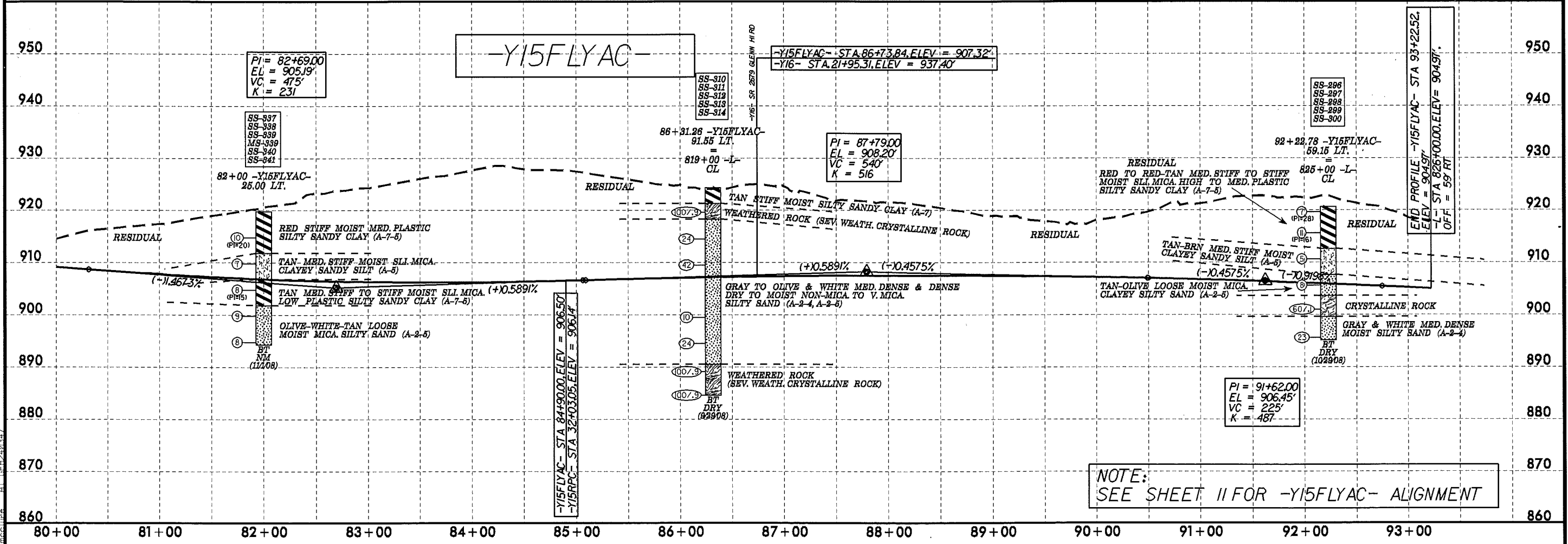
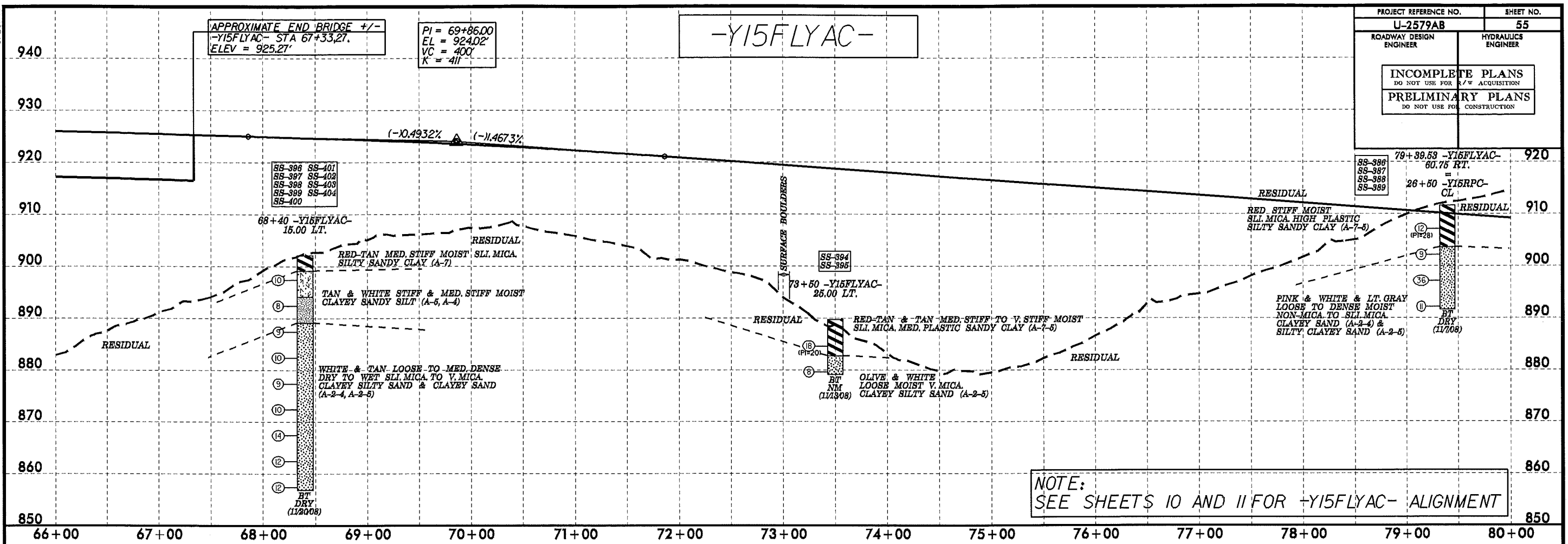
PROJECT REFERENCE NO. U-2579AB		SHEET NO. 54	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION		PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



19-AUG-2008 11:27 d:\proj\2579ab\999_rdwj\for\st\h\geotech\p\l\m\p\of\U2579AB_GEO.p\1_-Y15FLYAC_054.dgn

5/28/99

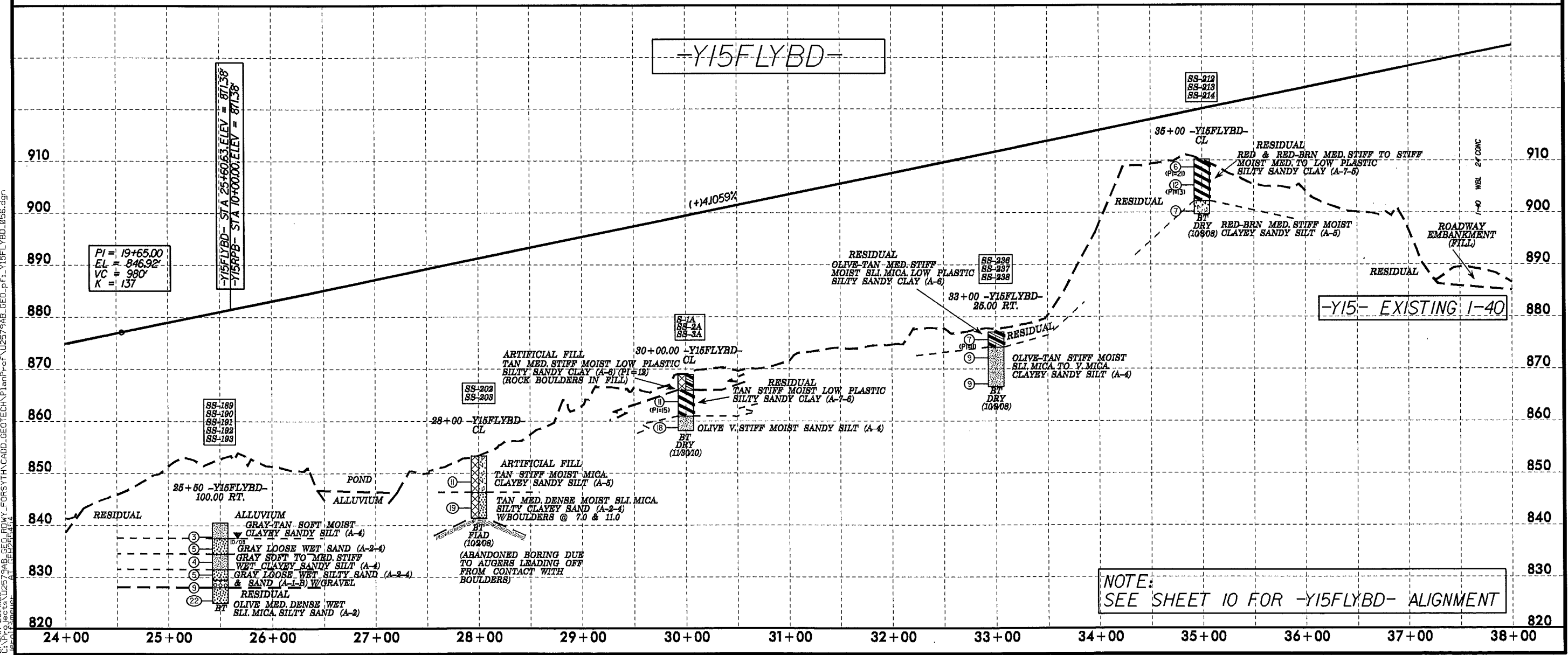
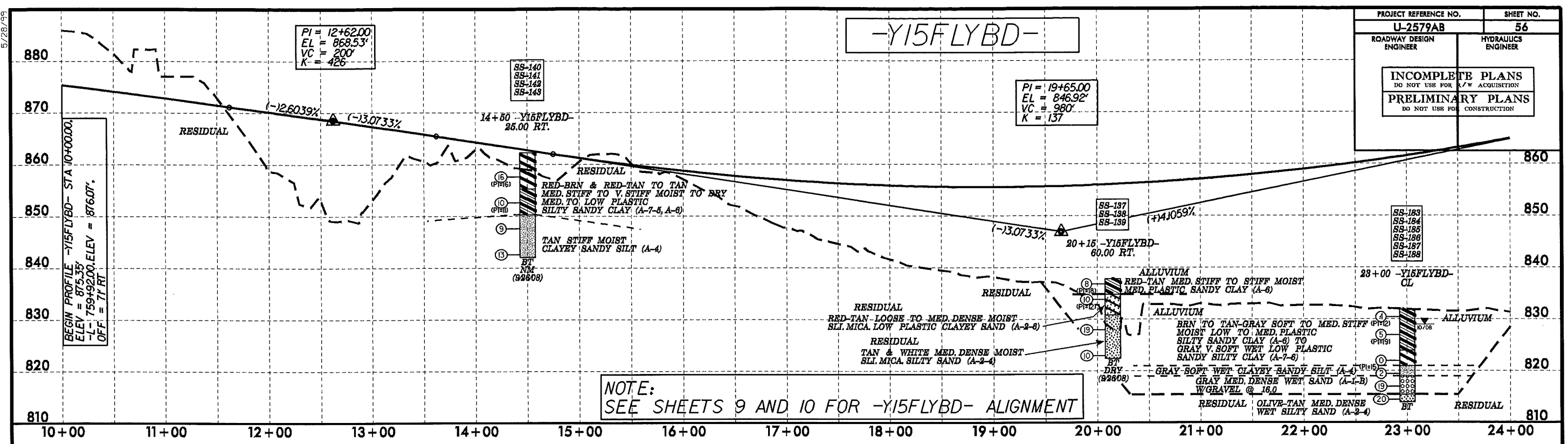
PROJECT REFERENCE NO.		SHEET NO.	
U-2579AB		55	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER		
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			



10-AUG-2008 11:28:29 2579ab_099_rdw_l_for_sj4h_cadd_geotech\plan\prof\U2579AB_GEO_pf_1_Y15FLYAC_085.dgn

5/28/99

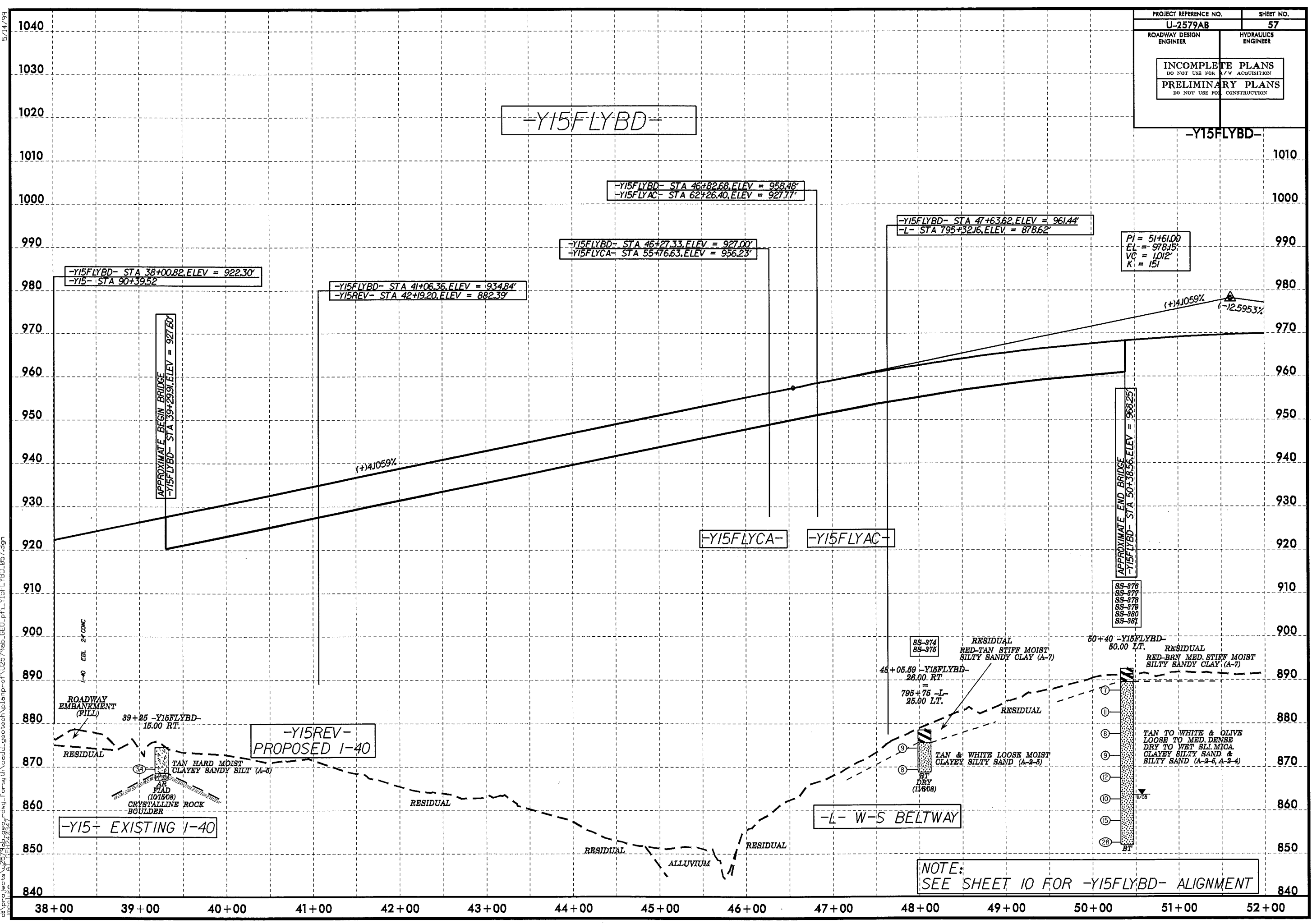
PROJECT REFERENCE NO. U-2579AB	SHEET NO. 56
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



21 JAN 2011 10:27 U:\2579AB\GEO\RDWY_FORSYTH\CADD_GEO\TECH\Plan\Prof\U2579AB_GEO.pf.1-Y15FLYBD_056.dgn

5/14/99
19-AUG-2008 11:31
C:\Users\jcooper\Documents\Roadway\U2579ab\GEO\p1...Y15FLYBD_057.dgn

PROJECT REFERENCE NO. U-2579AB	SHEET NO. 57
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



-Y15FLYBD-

-Y15FLYBD-

-Y15FLYBD- STA 46+82.68, ELEV = 958.48'
-Y15FLYAC- STA 62+26.40, ELEV = 927.77'

-Y15FLYBD- STA 46+27.33, ELEV = 927.00'
-Y15FLYCA- STA 55+76.63, ELEV = 956.23'

-Y15FLYBD- STA 47+63.62, ELEV = 961.44'
-L- STA 795+32.16, ELEV = 878.62'

PI = 51+61.00
EI = 978.15'
VC = 1012'
K1 = 151

-Y15FLYBD- STA 38+00.82, ELEV = 922.30'
-Y15- STA 90+39.52

-Y15FLYBD- STA 41+06.36, ELEV = 934.84'
-Y15REV- STA 42+19.20, ELEV = 882.39'

APPROXIMATE BEGIN BRIDGE
-Y15FLYBD- STA 39+29.91, ELEV = 927.60'

APPROXIMATE END BRIDGE
-Y15FLYBD- STA 50+38.56, ELEV = 968.25'

-Y15FLYCA-

-Y15FLYAC-

SS-376
SS-377
SS-378
SS-379
SS-380
SS-381

SS-374
SS-376

RESIDUAL
RED-TAN STIFF MOIST
SILTY SANDY CLAY (A-7)

RESIDUAL
RED-BRN MED. STIFF MOIST
SILTY SANDY CLAY (A-7)

48+05.59 -Y15FLYBD-
26.00 RT.
795+75 -L-
25.00 LT.

TAN & WHITE LOOSE MOIST
CLAYEY SILTY SAND (A-2-5)

TAN TO WHITE & OLIVE
LOOSE TO MED. DENSE
DRY TO WET SLL MICA
CLAYEY SILTY SAND &
SILTY SAND (A-2-5, A-2-4)

1-40
EBL 24 CONC

ROADWAY
EMBANKMENT
(FILL)

39+25 -Y15FLYBD-
15.00 RT.
AR
FIAD
(101508)
CRYSTALLINE ROCK
BOULDER

-Y15REV-
PROPOSED I-40

-Y15- EXISTING I-40

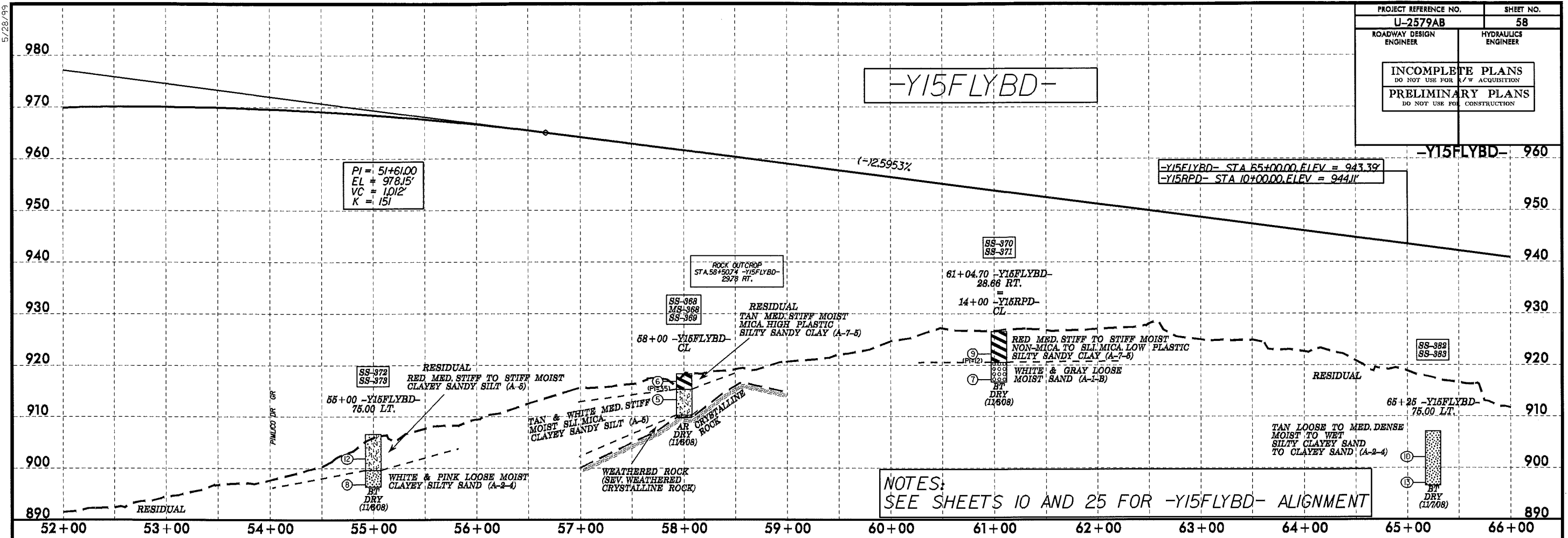
-L- W-S BELTWAY

NOTE:
SEE SHEET 10 FOR -Y15FLYBD- ALIGNMENT

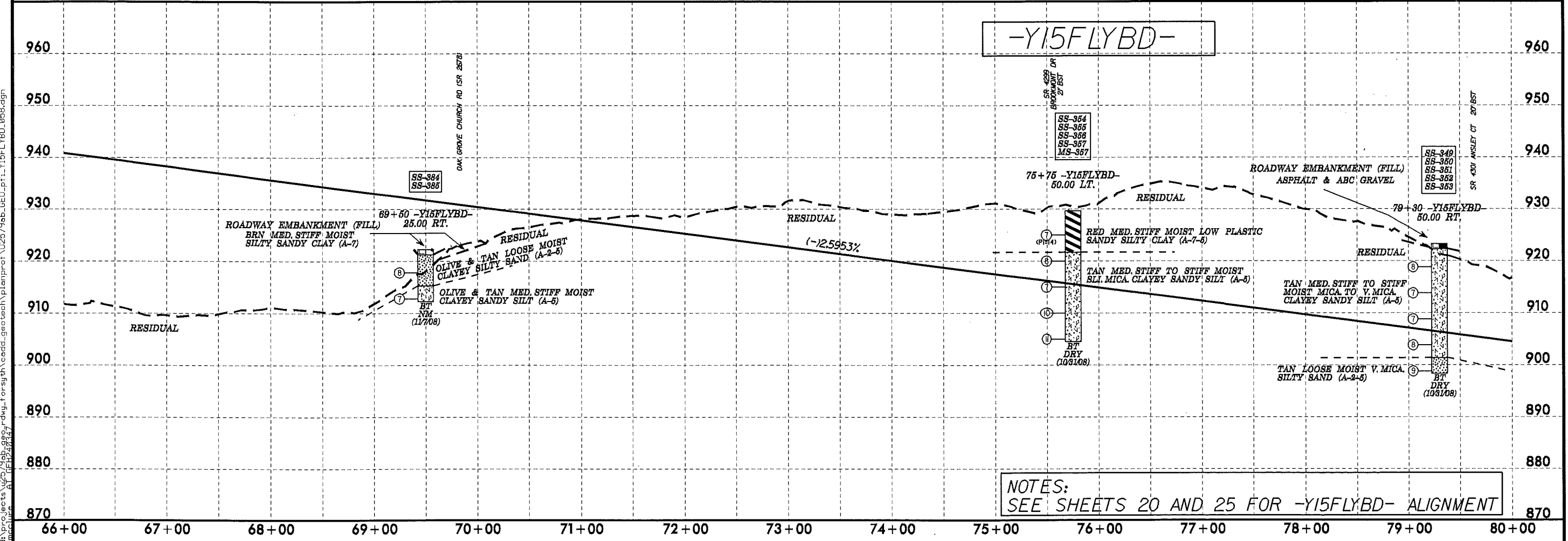
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C:\Users\jcooper\Documents\Roadway\U2579ab\GEO\p1...Y15FLYBD_057.dgn

5/28/99

PROJECT REFERENCE NO. U-2579AB		SHEET NO. 58	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION		PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



NOTES:
SEE SHEETS 10 AND 25 FOR -Y15FLYBD- ALIGNMENT

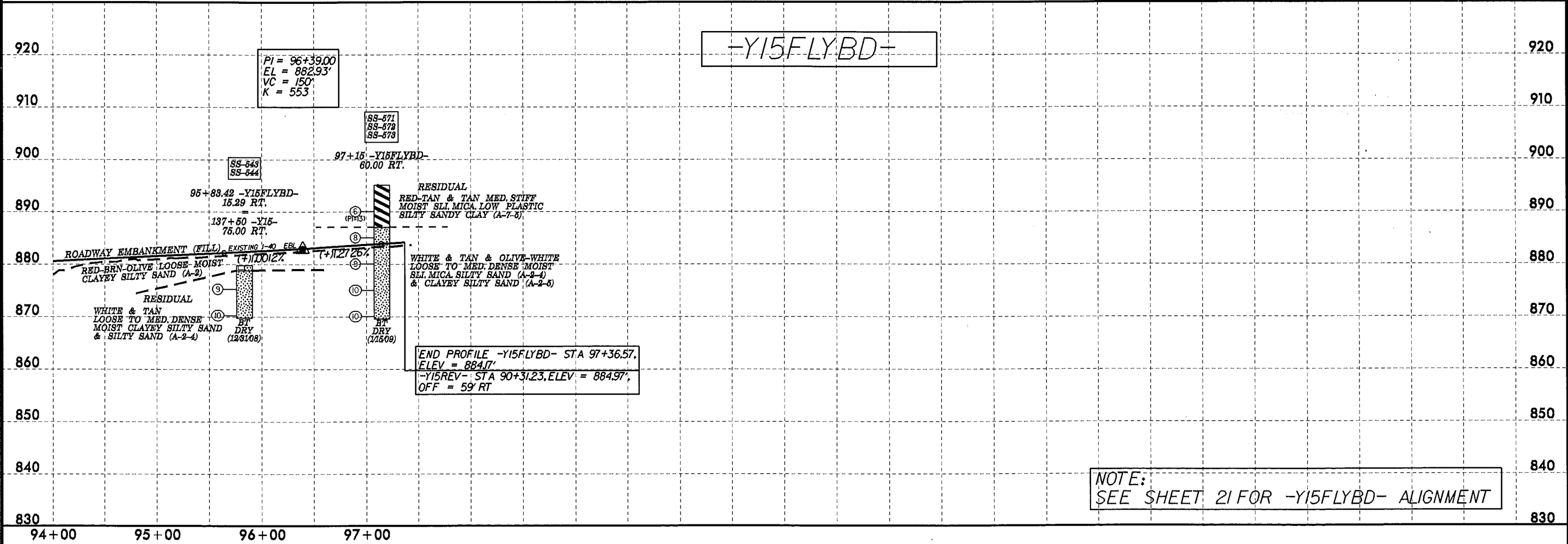
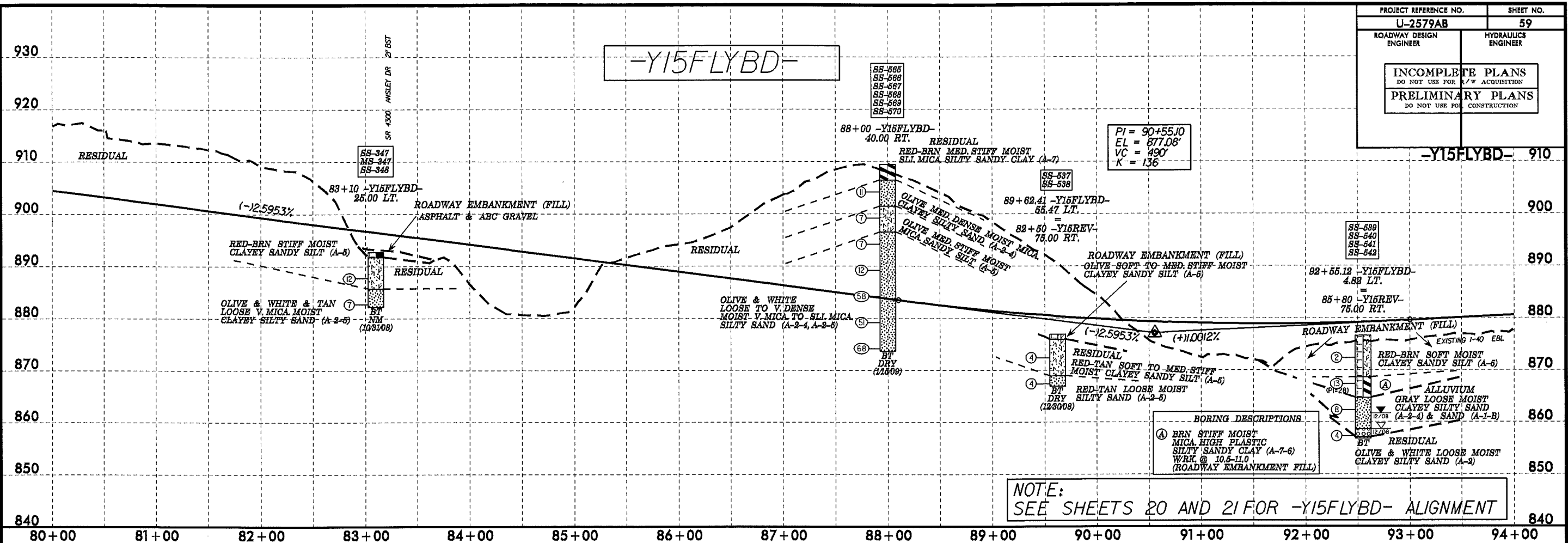


NOTES:
SEE SHEETS 20 AND 25 FOR -Y15FLYBD- ALIGNMENT

IG-116-2009 11:32
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11/24/08 10:47:37

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-2579AB	59
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR P/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



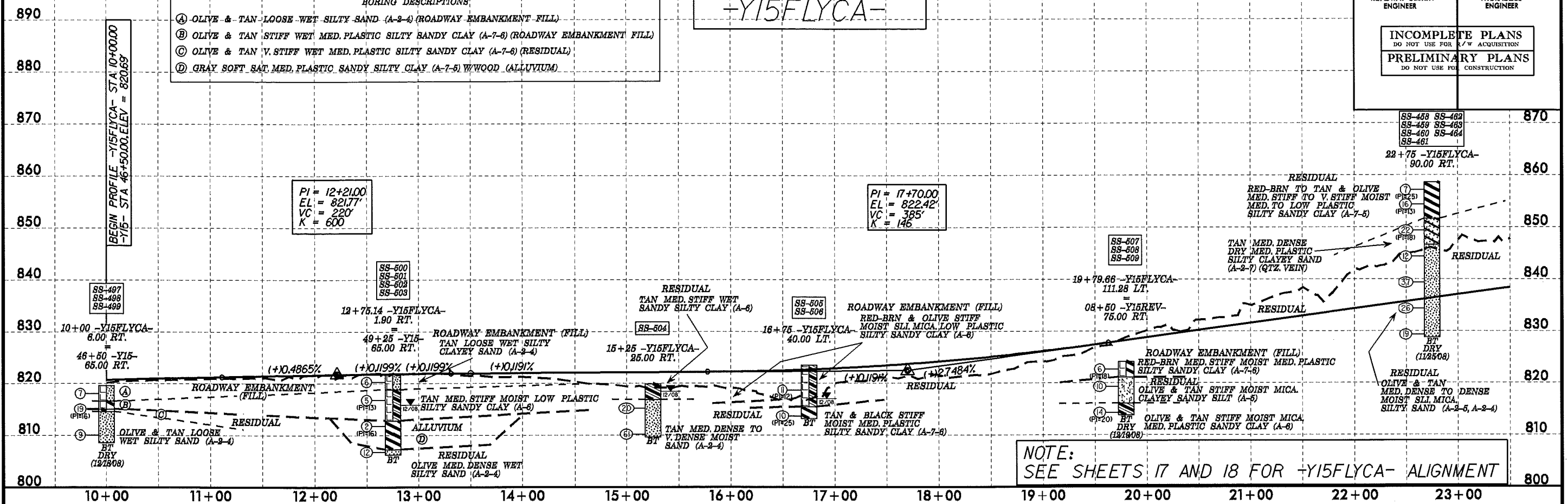
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5/28/99

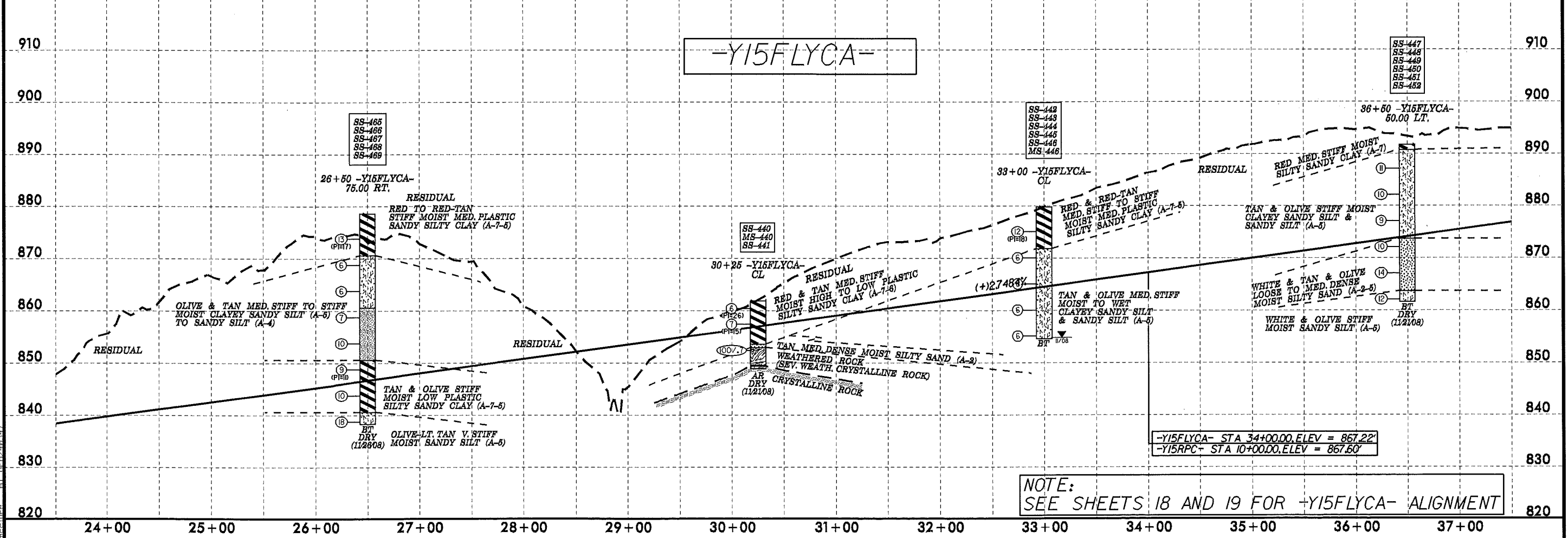
PROJECT REFERENCE NO.		SHEET NO.	
U-2579AB		60	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER		
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION			
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			

- BORING DESCRIPTIONS:**
- (A) OLIVE & TAN LOOSE WET SILTY SAND (A-2-4) (ROADWAY EMBANKMENT FILL)
 - (B) OLIVE & TAN STIFF WET MED. PLASTIC SILTY SANDY CLAY (A-7-6) (ROADWAY EMBANKMENT FILL)
 - (C) OLIVE & TAN V. STIFF WET MED. PLASTIC SILTY SANDY CLAY (A-7-6) (RESIDUAL)
 - (D) GRAY SOFT SAT. MED. PLASTIC SANDY SILTY CLAY (A-7-6) W/ WOOD (ALLUVIUM)

-Y15FLYCA-



-Y15FLYCA-

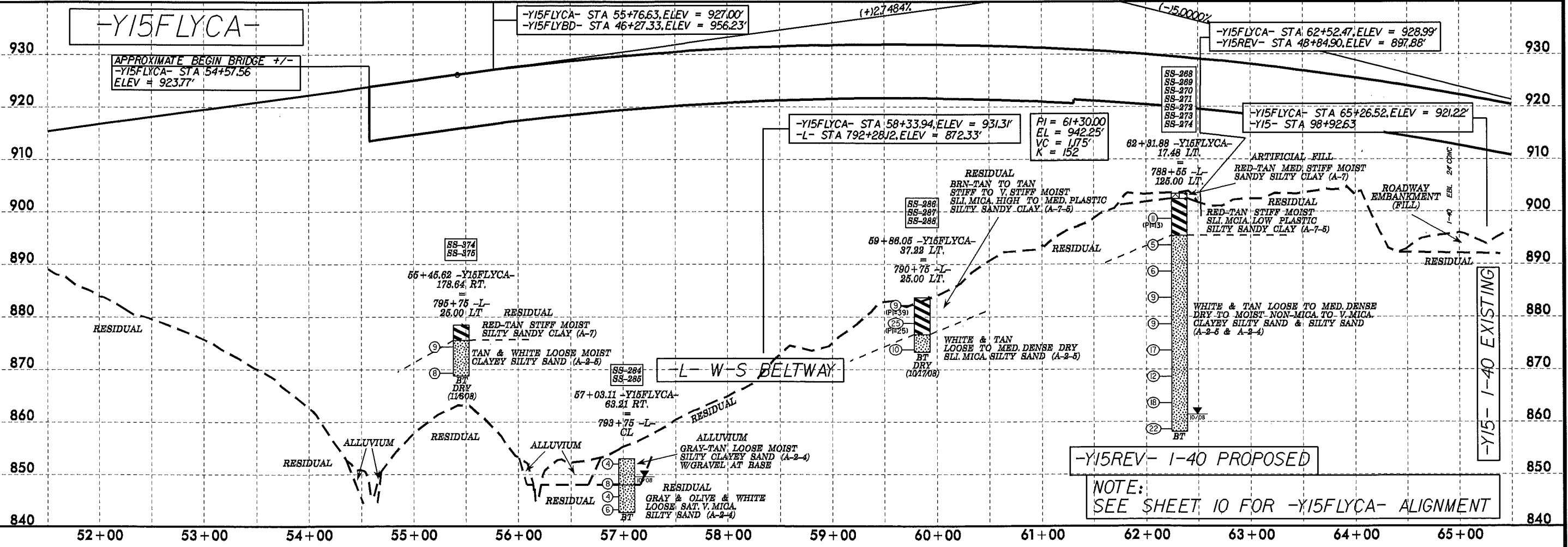
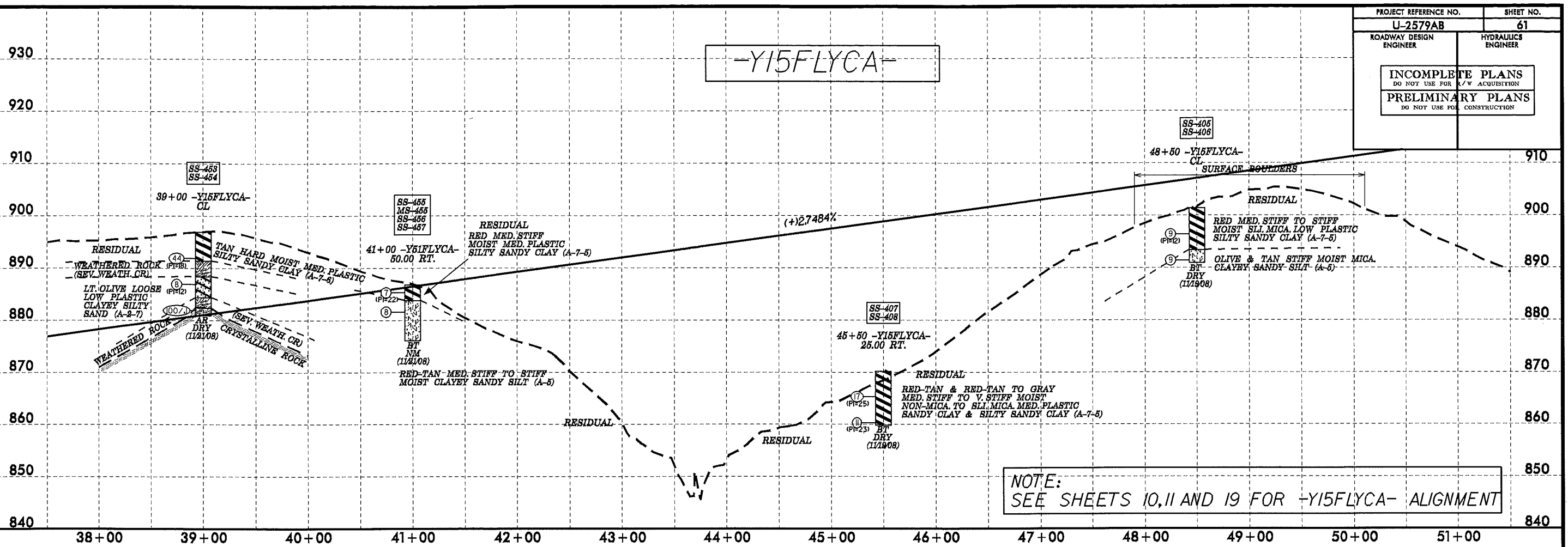


NOTE: SEE SHEETS 18 AND 19 FOR -Y15FLYCA- ALIGNMENT

10-AUG-2008 11:34 d:\projects\2579ab\geo\rdwy_for\stl\cadd\geotech\plmproj\U2579AB_GEO.plt -Y15FLYCA_050.dgn

5/28/99

PROJECT REFERENCE NO. U-2579AB	SHEET NO. 61
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

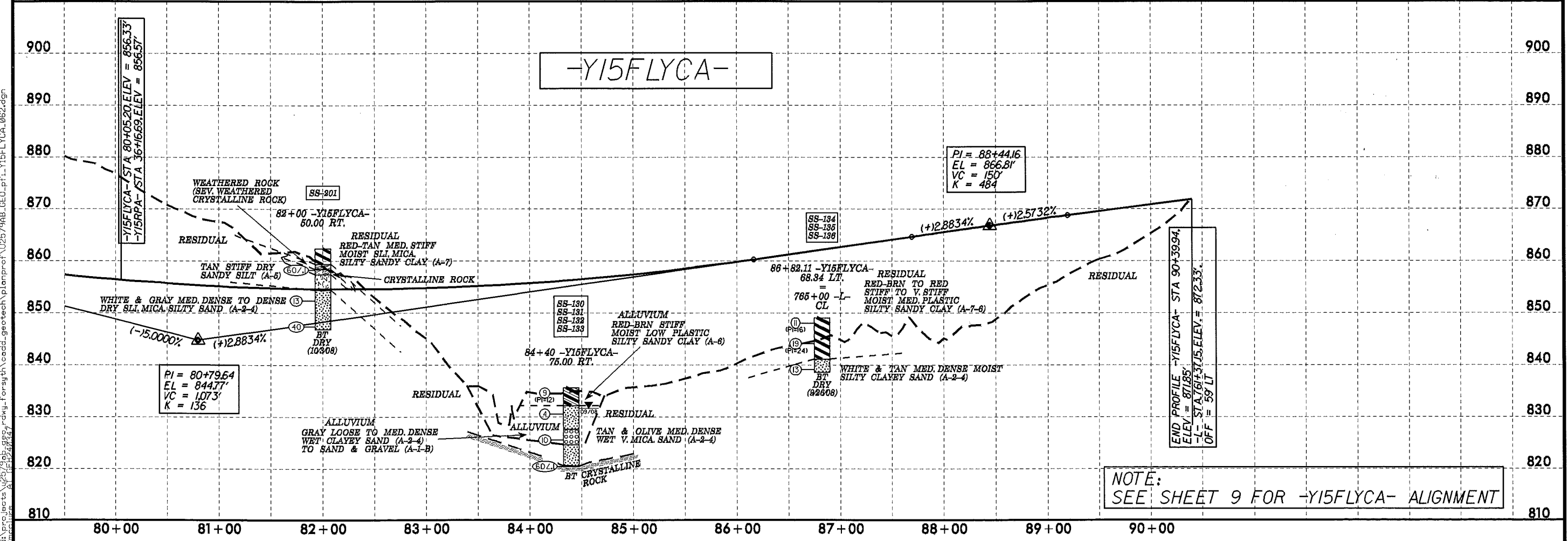
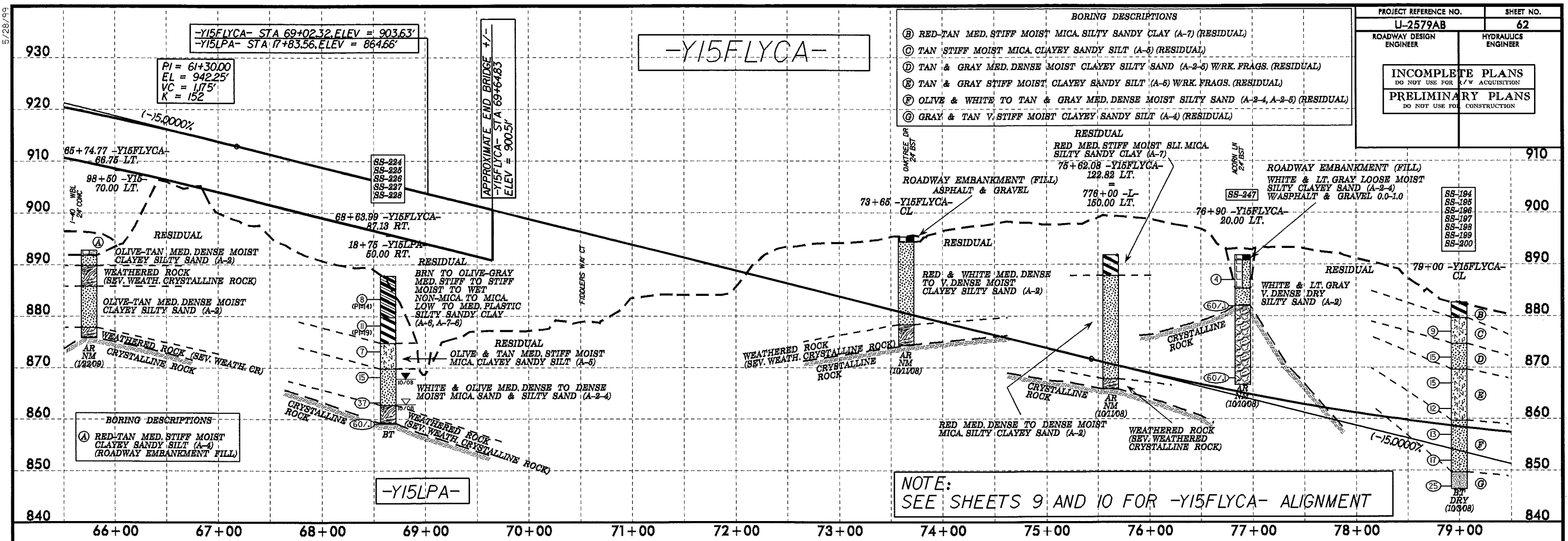


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5/28/99

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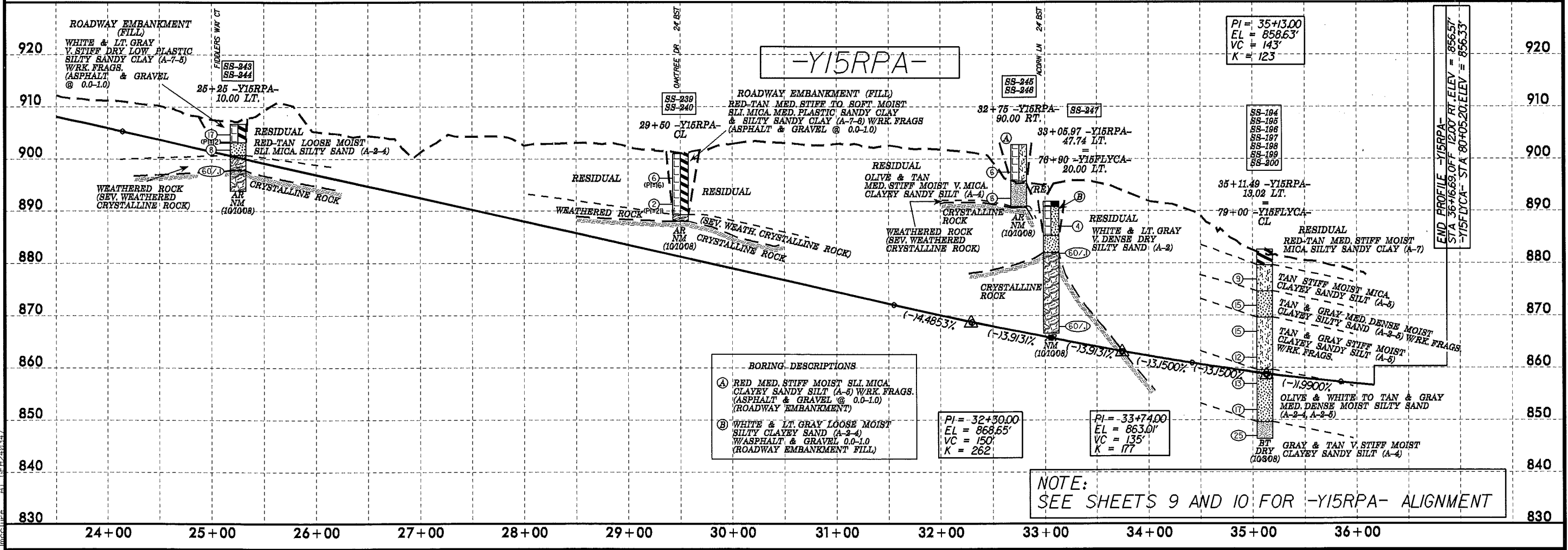
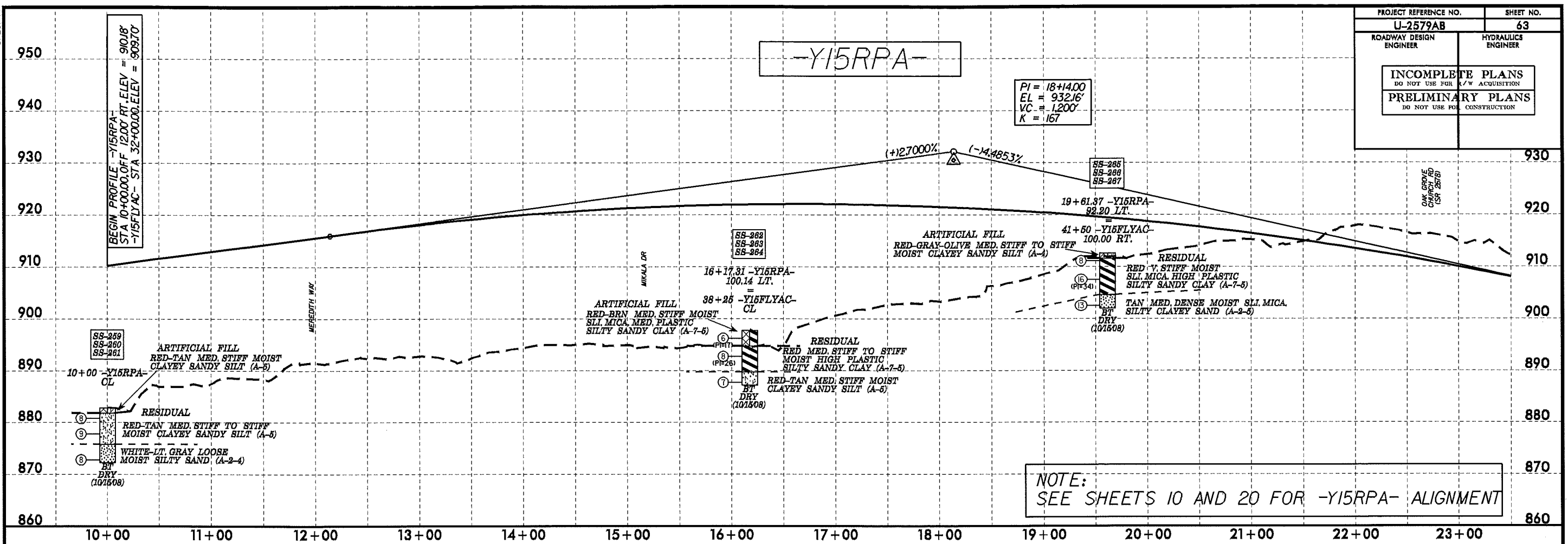
PROJECT REFERENCE NO. U-2579AB		SHEET NO. 62	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION		PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



5/28/99

19-AUG-2008 11:38 d:\projects\25799ab_for_suth\cadd_geotech\plan\prof\U25799AB_GEO.pf...-Y15RPA_063.dgn

PROJECT REFERENCE NO. U-2579AB		SHEET NO. 63	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION			
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			



BORING DESCRIPTIONS

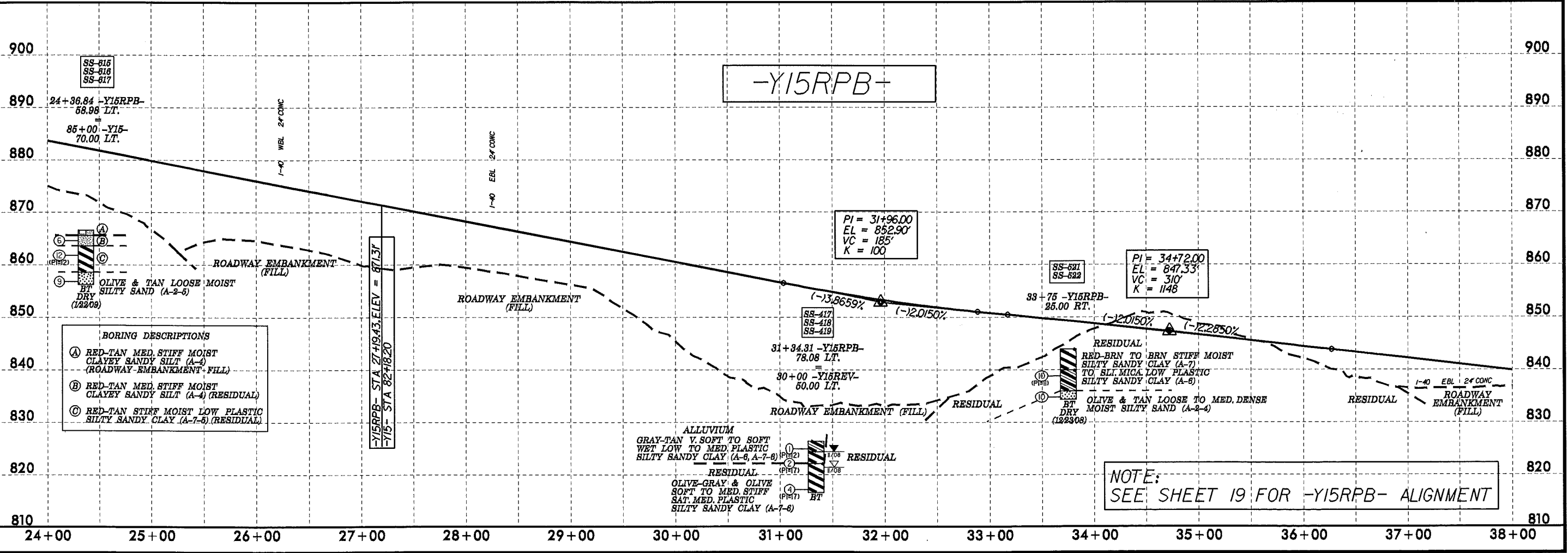
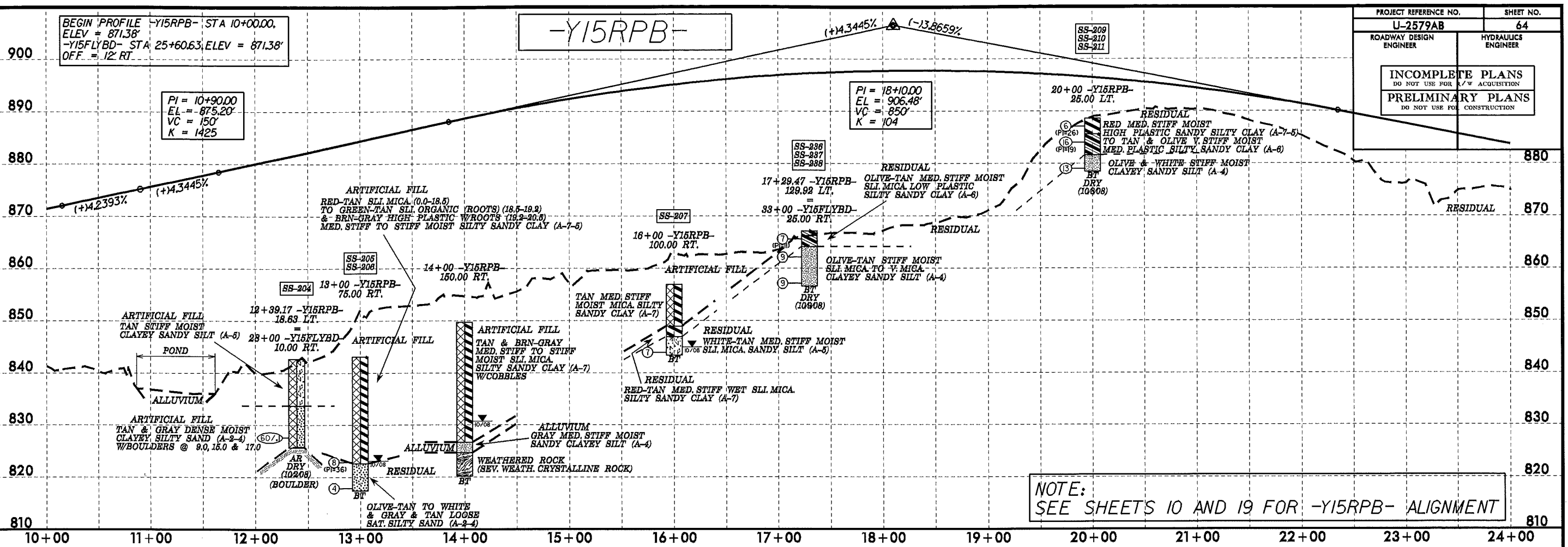
(A) RED MED. STIFF MOIST SLI. MICA CLAYEY SANDY SILT (A-6) WRK FRAGS. (ASPHALT & GRAVEL @ 0.0-1.0) (ROADWAY EMBANKMENT)

(B) WHITE & LT. GRAY LOOSE MOIST SILTY CLAYEY SAND (A-2-4) (ASPHALT & GRAVEL @ 0.0-1.0) (ROADWAY EMBANKMENT FILL)

5/28/99

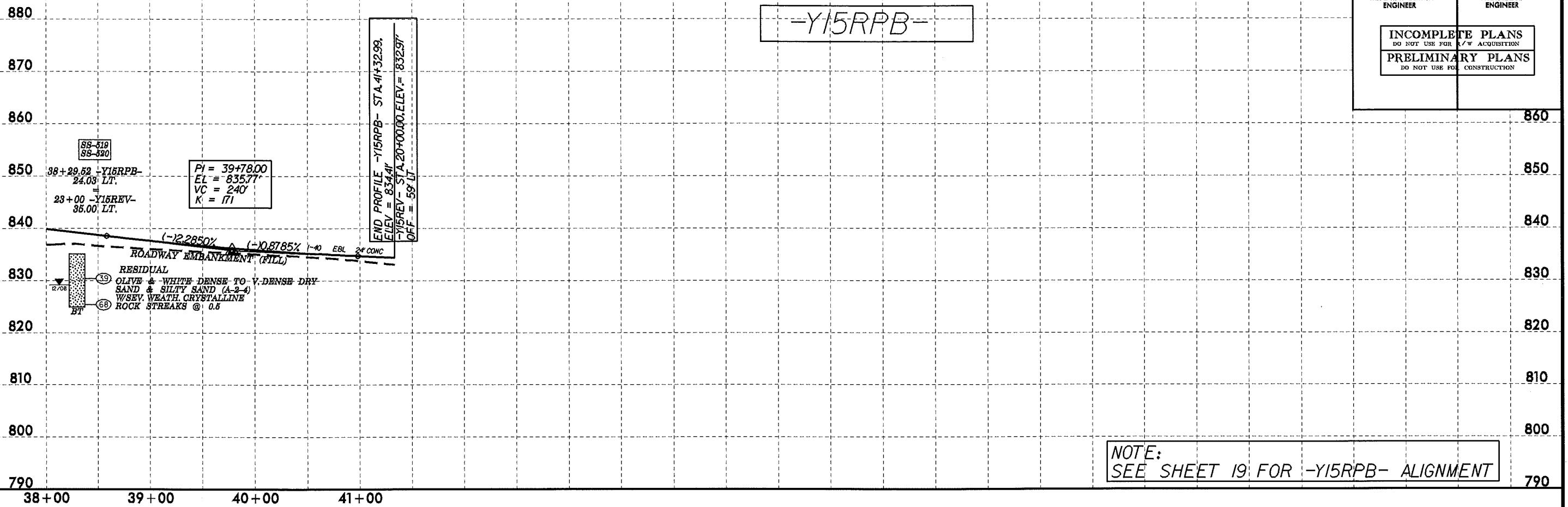
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PROJECT REFERENCE NO.	SHEET NO.
U-2579AB	64
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

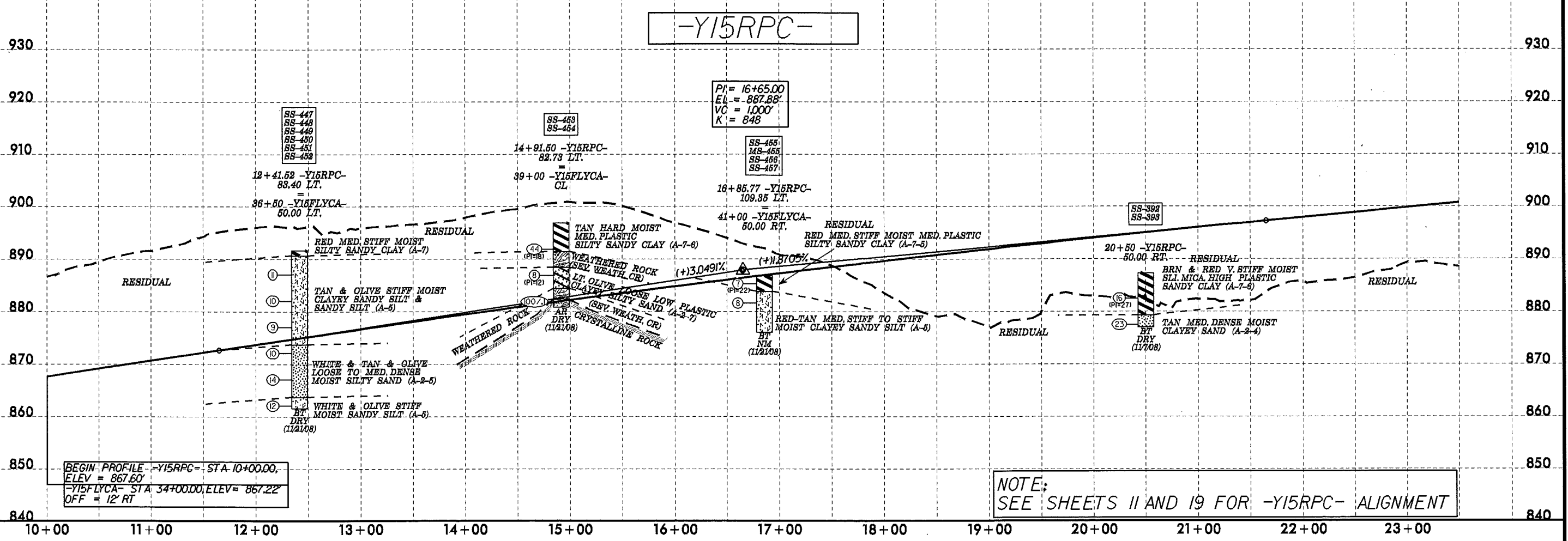


5/28/99

PROJECT REFERENCE NO. U-2579AB		SHEET NO. 65	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION		PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

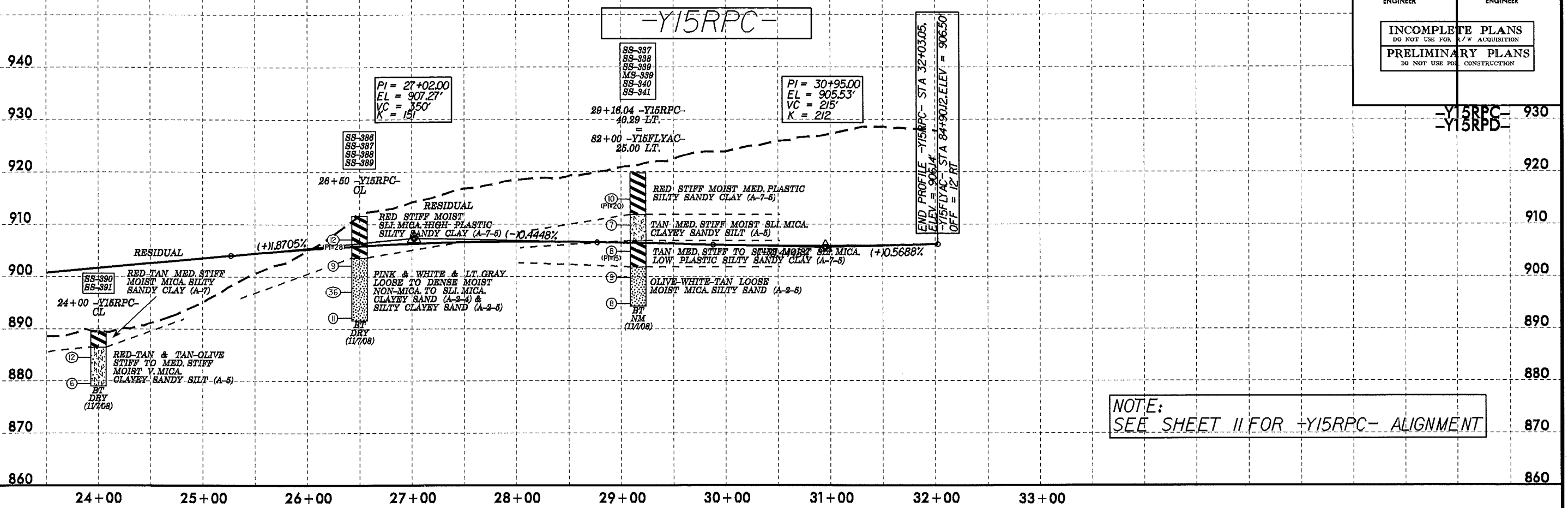


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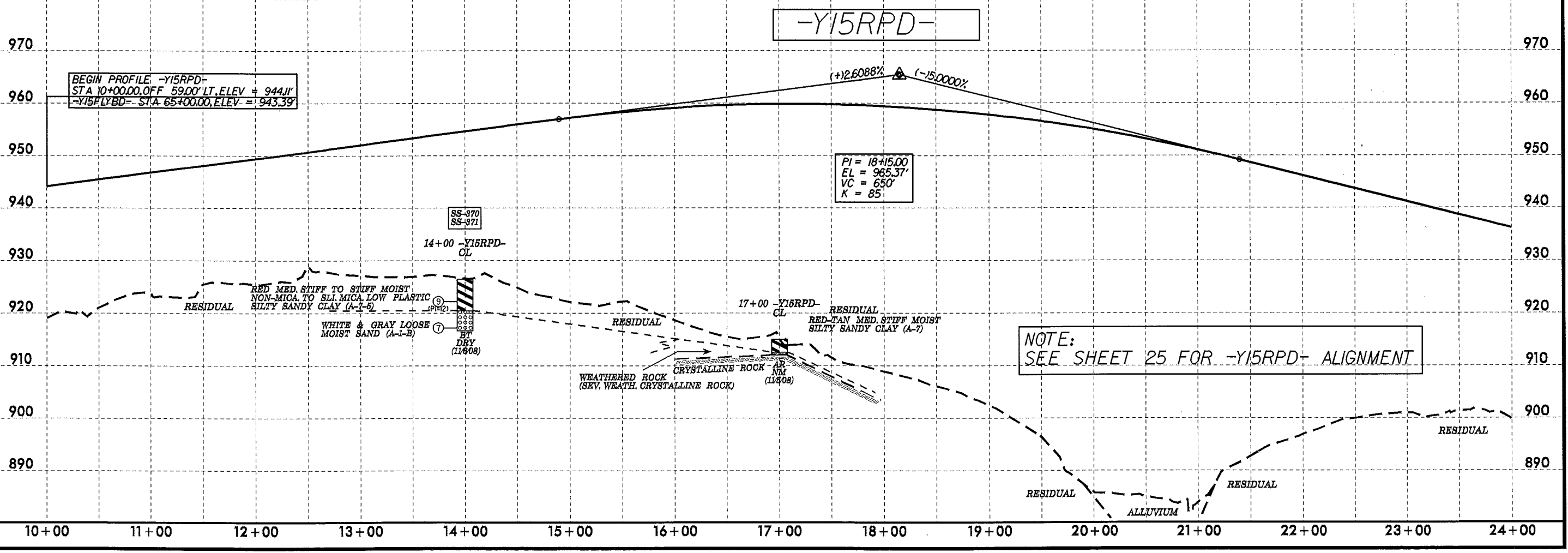


5/28/99

PROJECT REFERENCE NO. U-2579AB		SHEET NO. 66	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION		PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

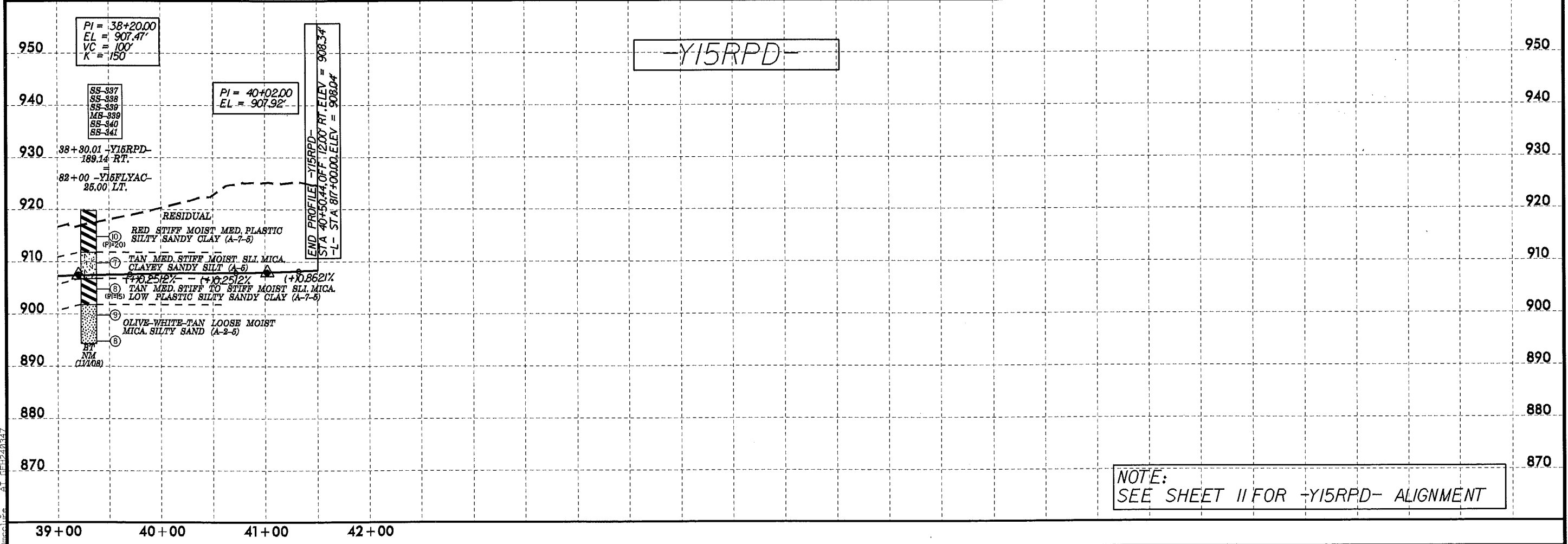
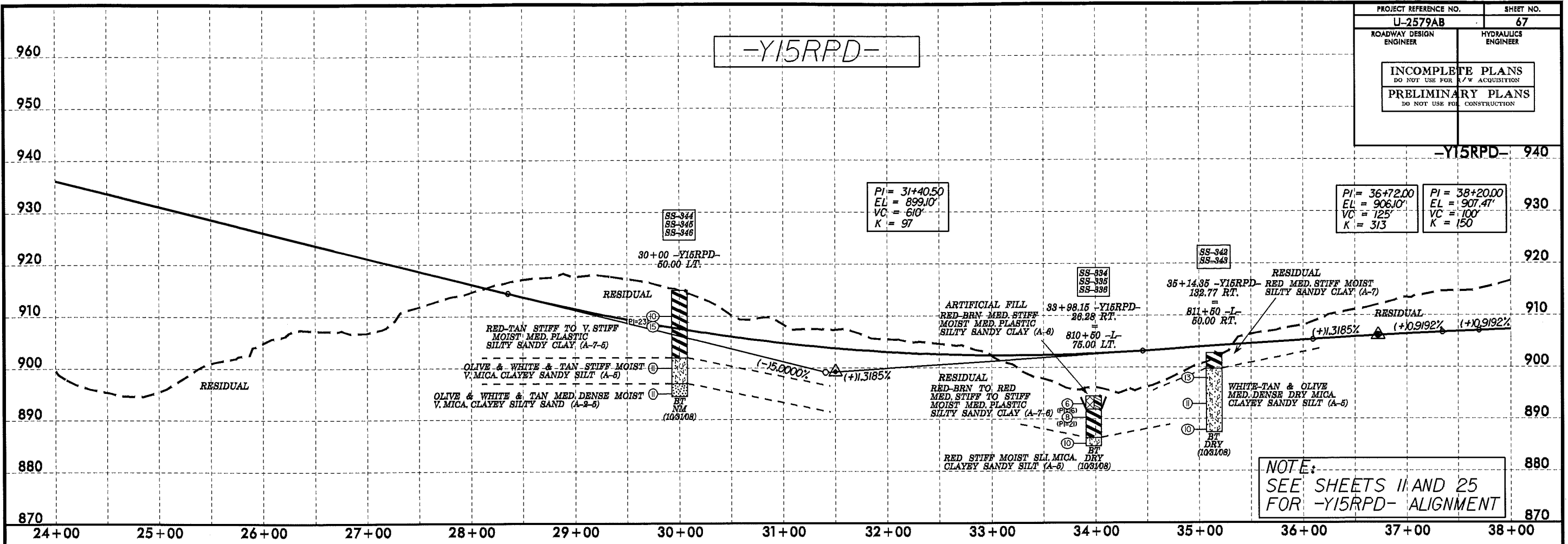


10-AUG-2008 11:43
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11/1/08



5/28/99

PROJECT REFERENCE NO. U-2579AB	SHEET NO. 67
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



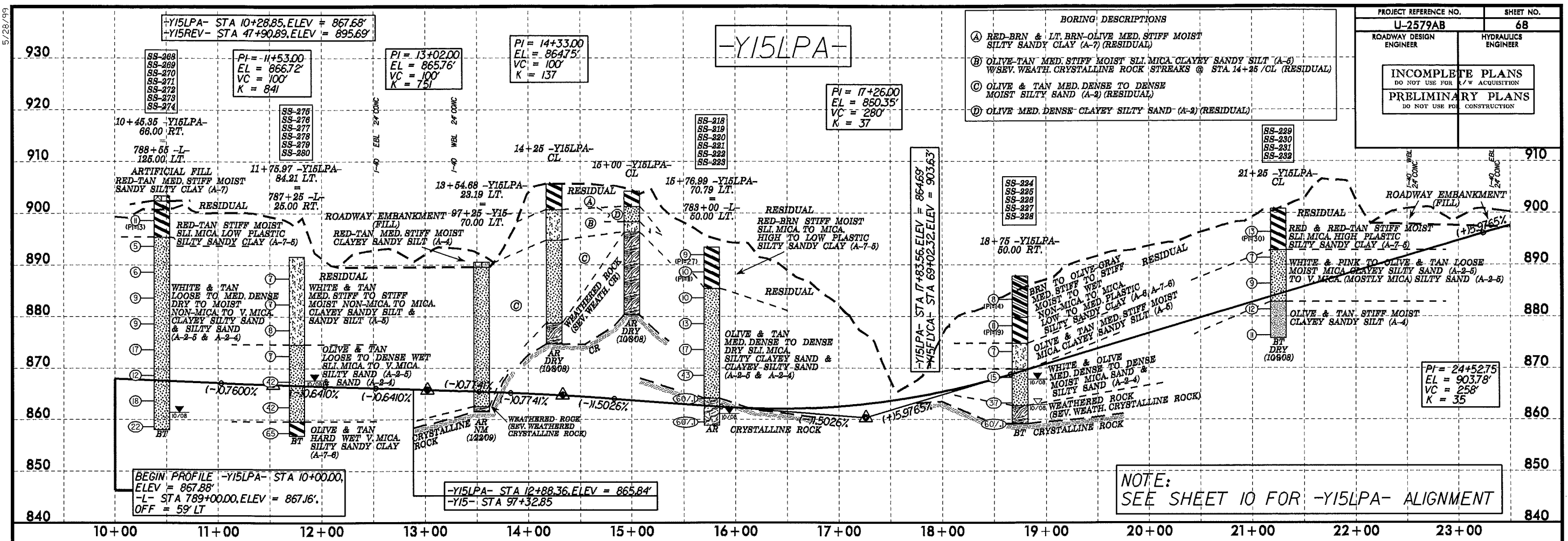
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5/28/99

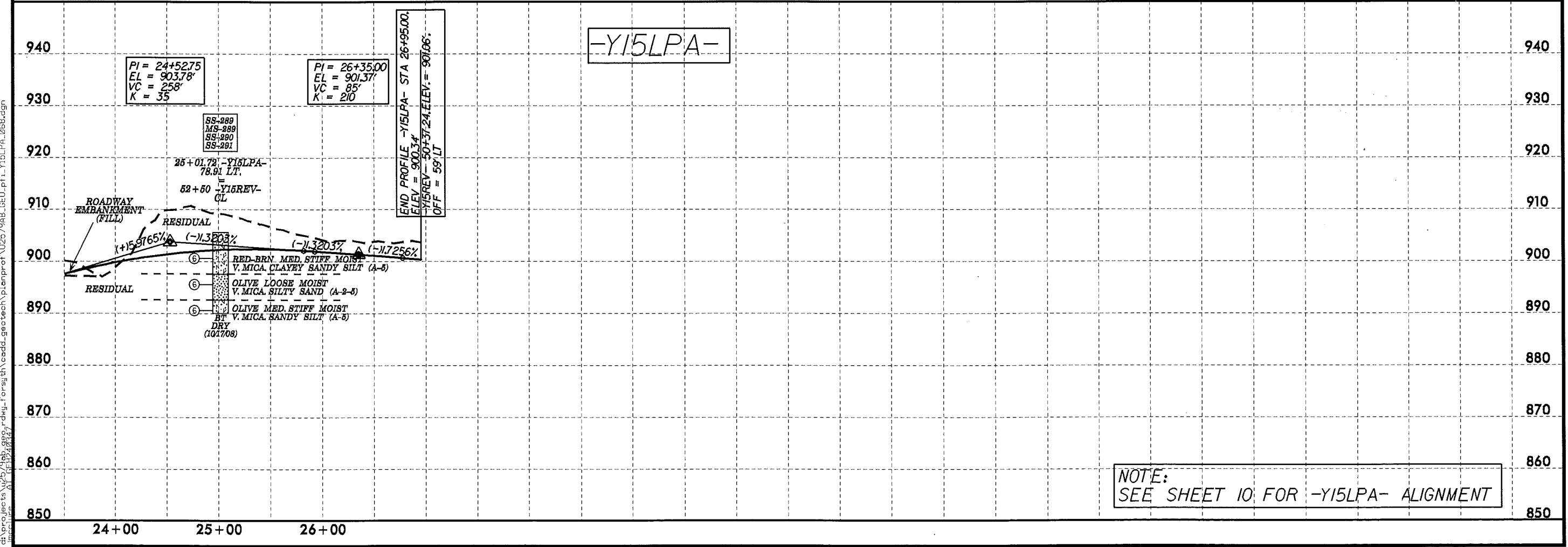
10-ALIC-2009 1137
C:\arcprojects\102579ab\102579ab.dwg_rdw\102579ab.dwg\102579ab.dwg

PROJECT REFERENCE NO. U-2579AB		SHEET NO. 68	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION		PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

- BORING DESCRIPTIONS**
- (A) RED-BRN & LT. BRN-OLIVE MED. STIFF MOIST SILTY SANDY CLAY (A-7) (RESIDUAL)
 - (B) OLIVE-TAN MED. STIFF MOIST SLI. MICA CLAYEY SANDY SILT (A-5) W/SEV. WEATH. CRYSTALLINE ROCK STREAKS @ STA. 14+25/CL (RESIDUAL)
 - (C) OLIVE & TAN MED. DENSE TO DENSE MOIST SILTY SAND (A-2) (RESIDUAL)
 - (D) OLIVE MED. DENSE CLAYEY SILTY SAND (A-2) (RESIDUAL)



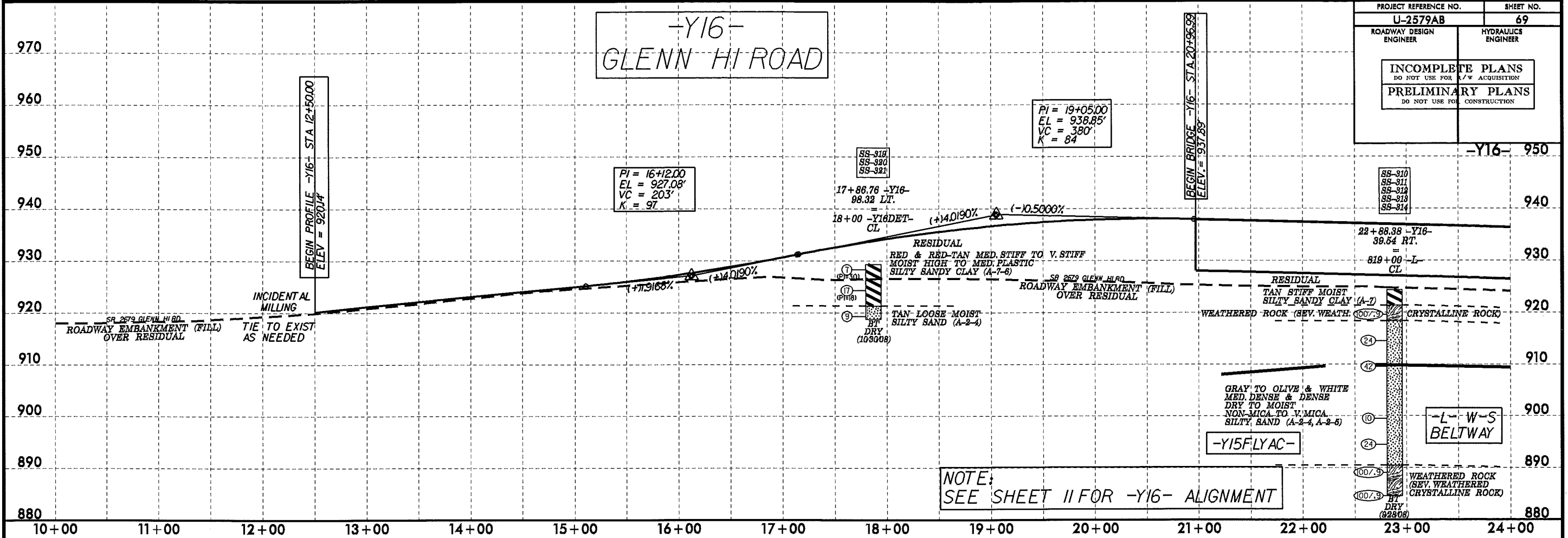
NOTE:
SEE SHEET 10 FOR -Y15LPA- ALIGNMENT



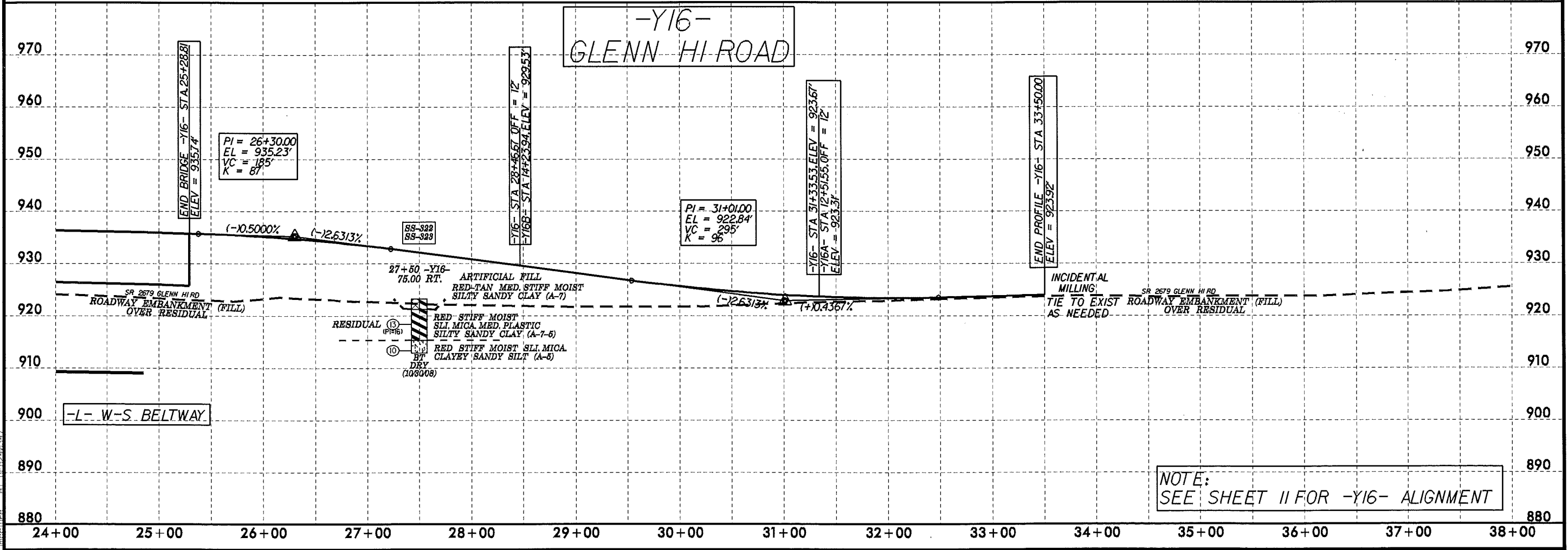
NOTE:
SEE SHEET 10 FOR -Y15LPA- ALIGNMENT

5/28/99

PROJECT REFERENCE NO.		SHEET NO.	
U-2579AB		69	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER		
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION			
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			

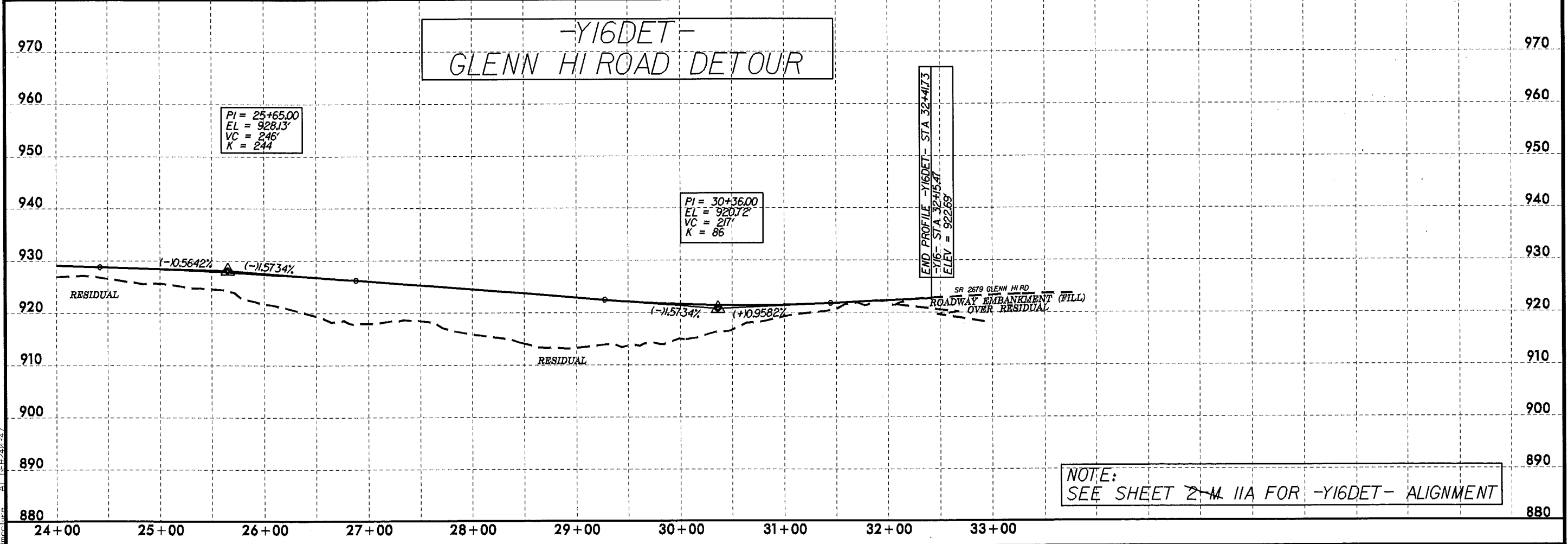
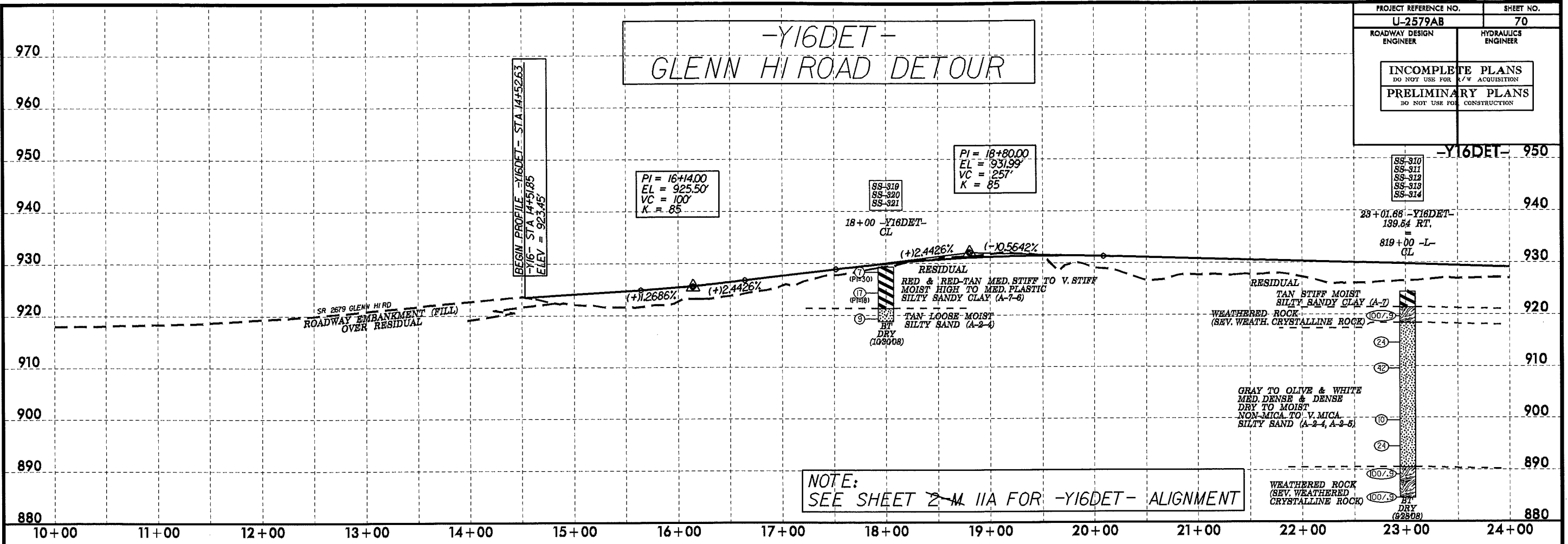


10-AUG-2008 11:46 29ab-892-rdwu-forsyth\cadd_gis\tech\planproj\U2579ab-geo.pfl-116-069.dgn



5/28/99

PROJECT REFERENCE NO. U-2579AB	SHEET NO. 70
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

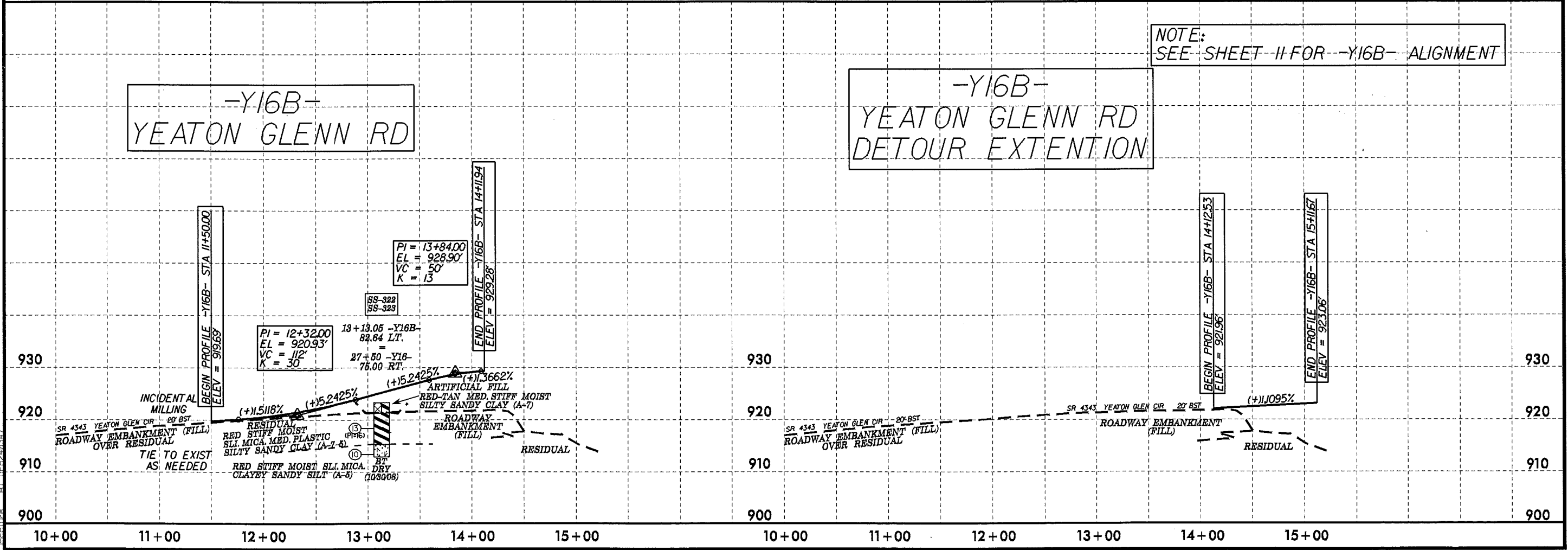
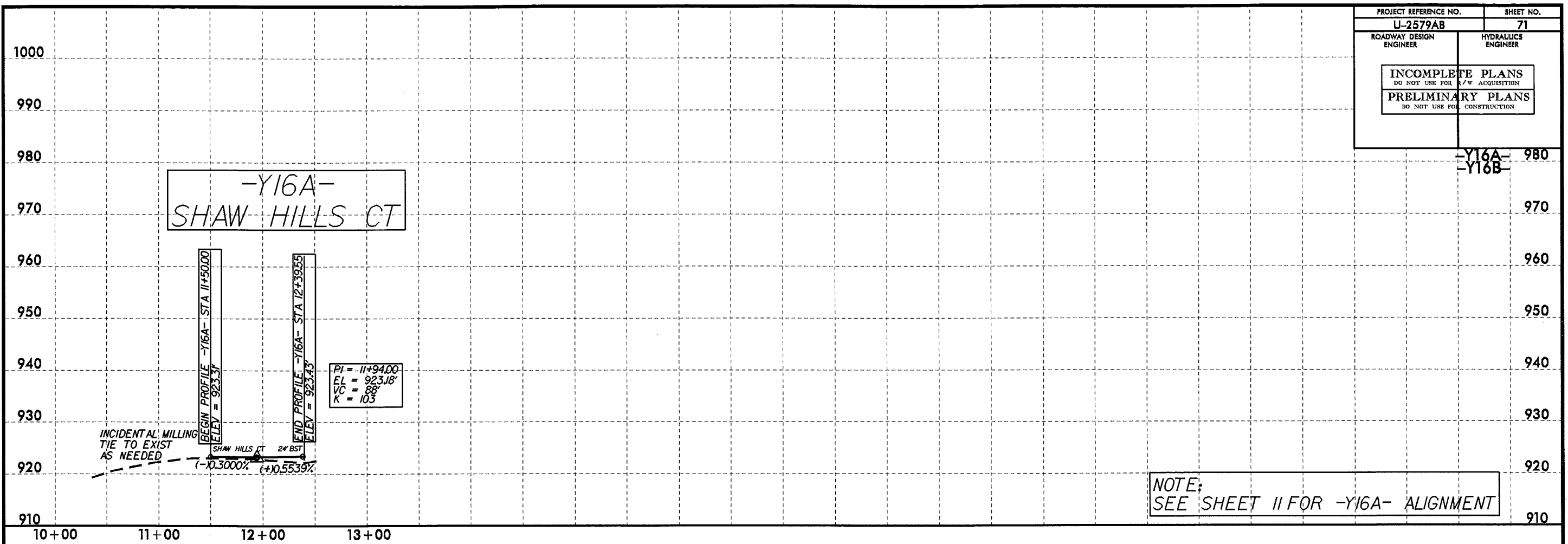


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5/28/99

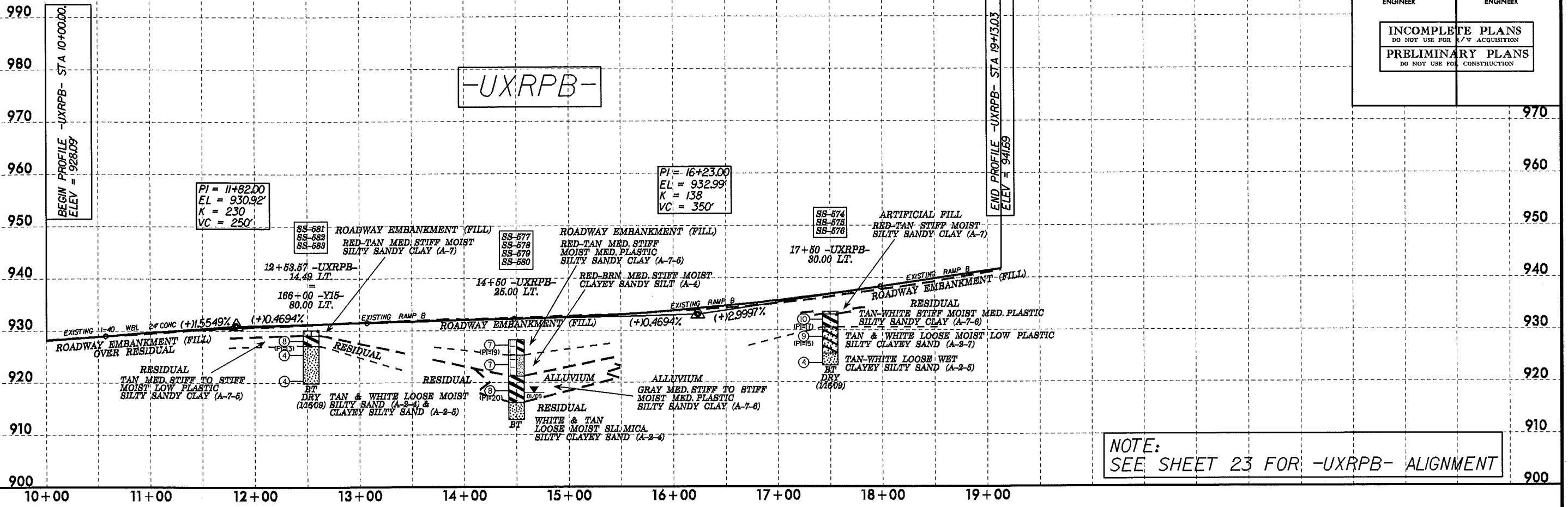
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PROJECT REFERENCE NO.		SHEET NO.	
U-2579AB		71	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER		
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION		PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

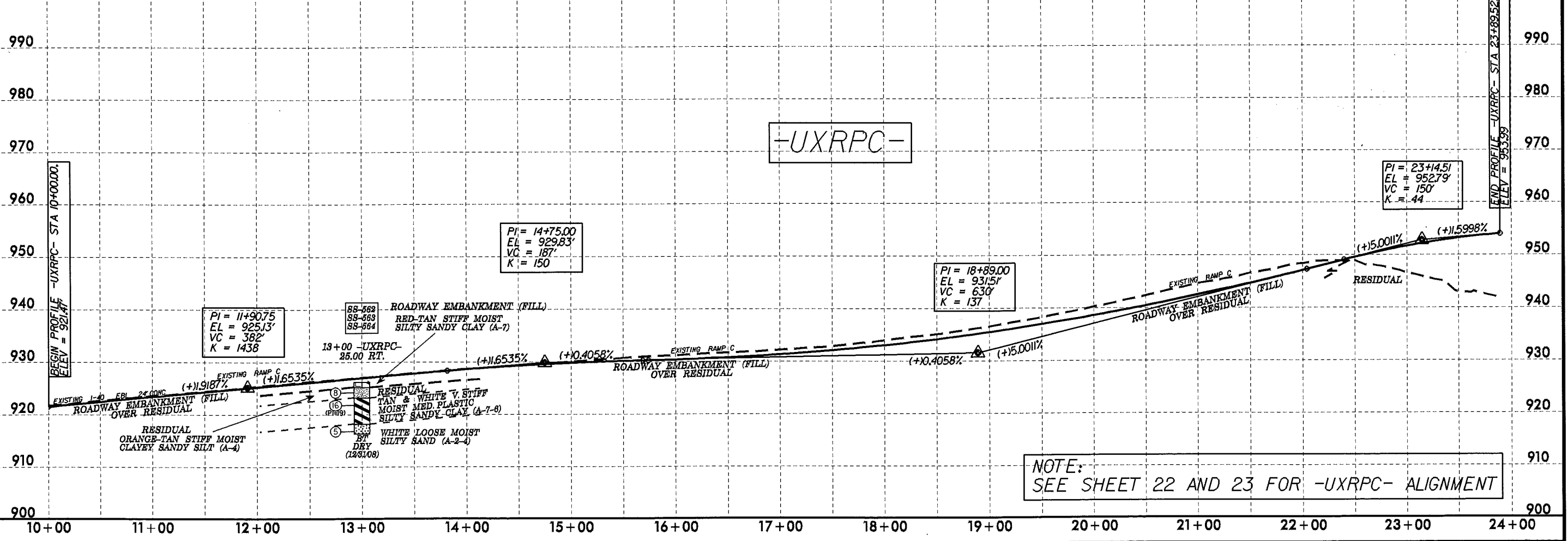


5/28/99

PROJECT REFERENCE NO. U-2579AB	SHEET NO. 72
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



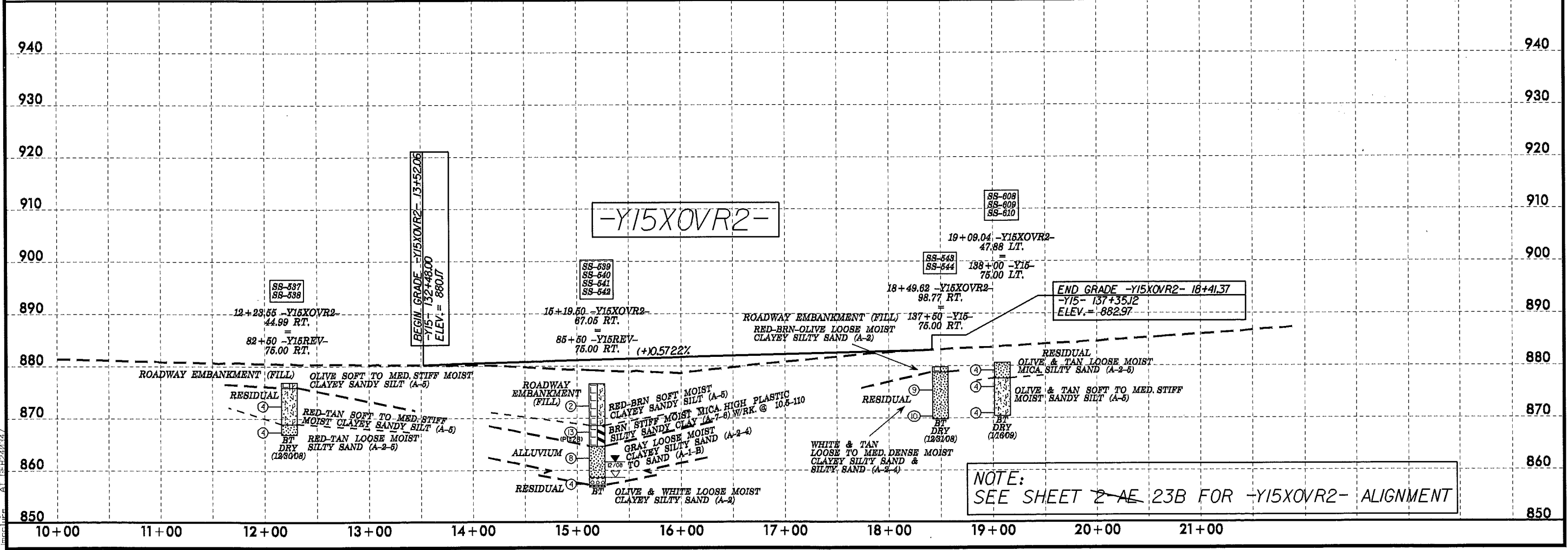
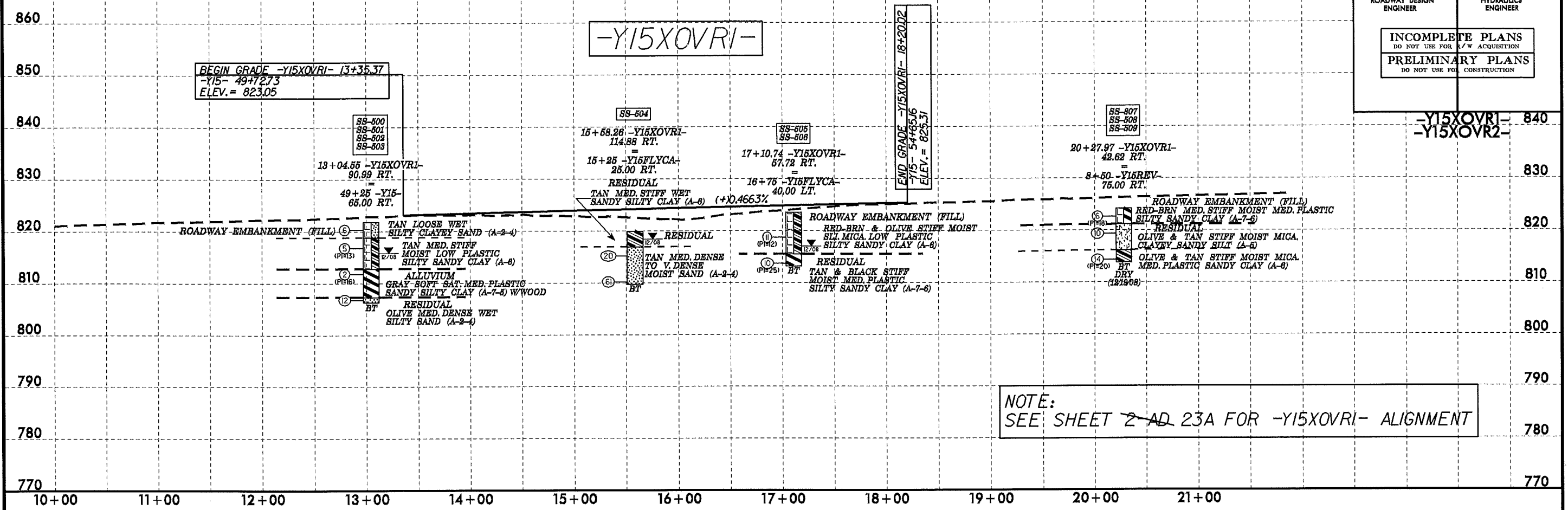
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5/28/99

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PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

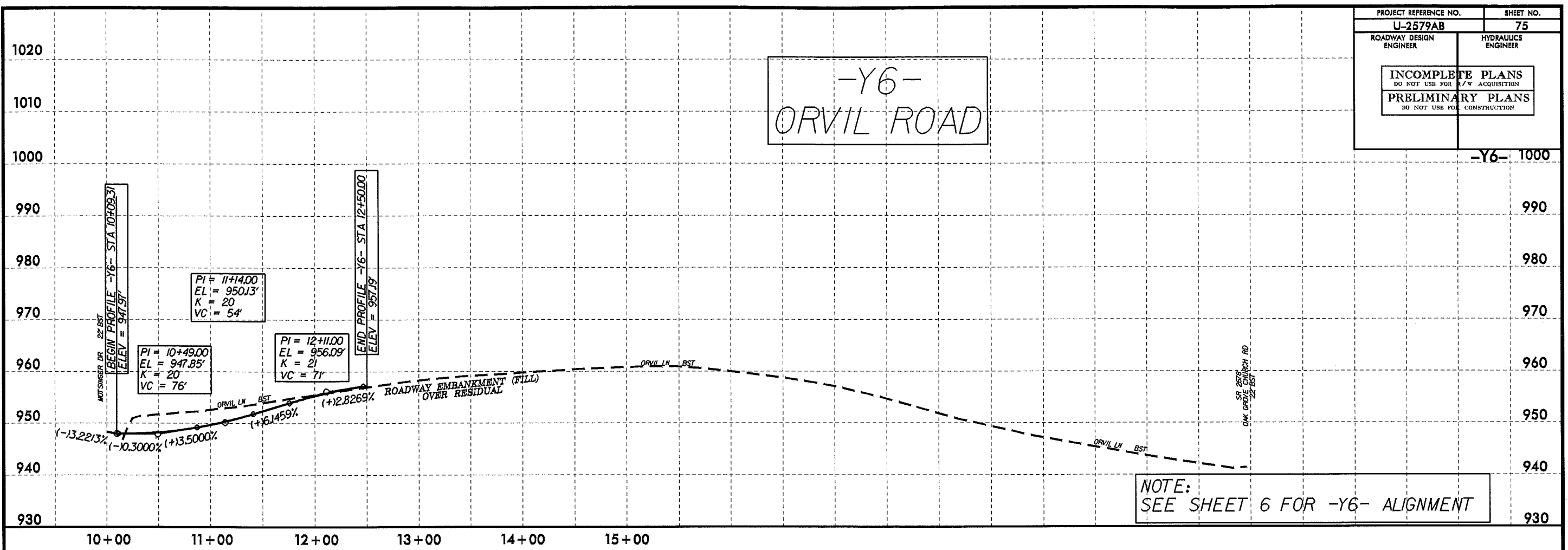


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-Y6-
ORVIL ROAD



-Y6- 1000

990

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970

960

950

940

930

10+00

11+00

12+00

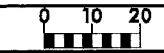
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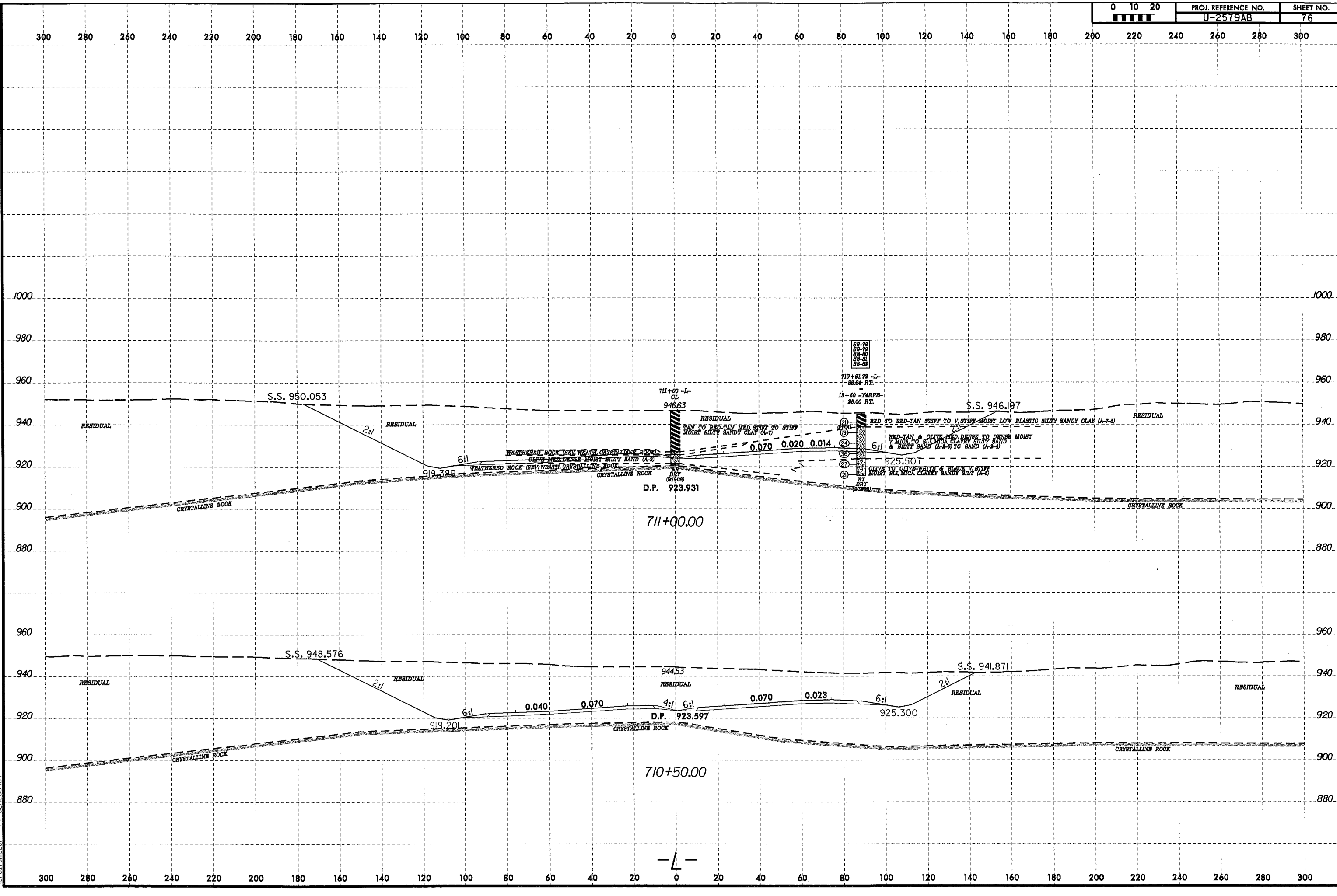
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NOTE:
SEE SHEET 6 FOR -Y6- ALIGNMENT

8/23/93



20-JAN-2011 09:17
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1/1/93



300 280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300

1000 980 960 940 920 900 880

960 940 920 900 880

300 280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300

S.S. 950.053

S.S. 948.576

711+00 -L-
CL
946.63

944.53

68-78
88-79
88-80
88-81
88-82

710+81.78 -L-
88.84 RT.
13+80 -YARP
85.00 RT.

S.S. 946.197

S.S. 941.871

D.P. 923.931

D.P. 923.597

711+00.00

710+50.00

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

RED-TAN & OLIVE MED. DENSE TO DENSE MOIST V. MICA TO RED-MICA CLAYEY SILTY SAND & SILTY SAND (A-3-S) TO SAND (A-3-S)

OLIVE TO OLIVE-WHITE & BLACK V. STIFF MOIST SIL. MICA CLAYEY SANDY SILT (A-6)

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OLIVE TO OLIVE-WHITE & BLACK V. STIFF MOIST SIL. MICA CLAYEY SANDY SILT (A-6)

OLIVE TO OLIVE-WHITE & BLACK V. STIFF MOIST SIL. MICA CLAYEY SANDY SILT (A-6)

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OLIVE TO OLIVE-WHITE & BLACK V. STIFF MOIST SIL. MICA CLAYEY SANDY SILT (A-6)

0.070 0.020 0.014

WEATHERED ROCK (BY WEATH. CRYSTALLINE ROCK)
OLIVE MED. DENSE MOIST SILTY SAND (A-3)
WEATHERED ROCK (BY WEATH. CRYSTALLINE ROCK)

CRYSTALLINE ROCK

CRYSTALLINE ROCK

CRYSTALLINE ROCK

CRYSTALLINE ROCK

CRYSTALLINE ROCK

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CRYSTALLINE ROCK

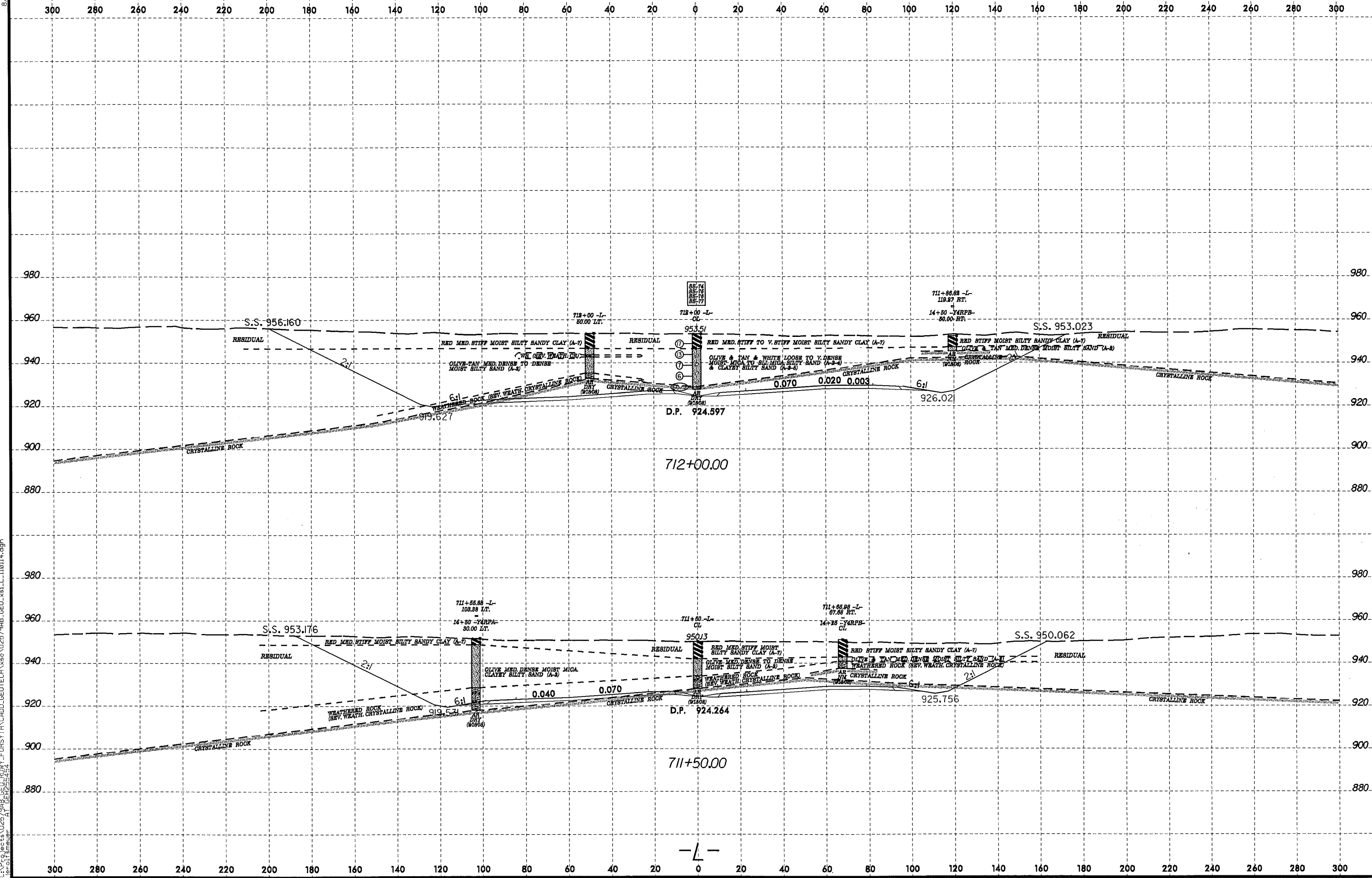
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CRYSTALLINE ROCK

CRYSTALLINE ROCK

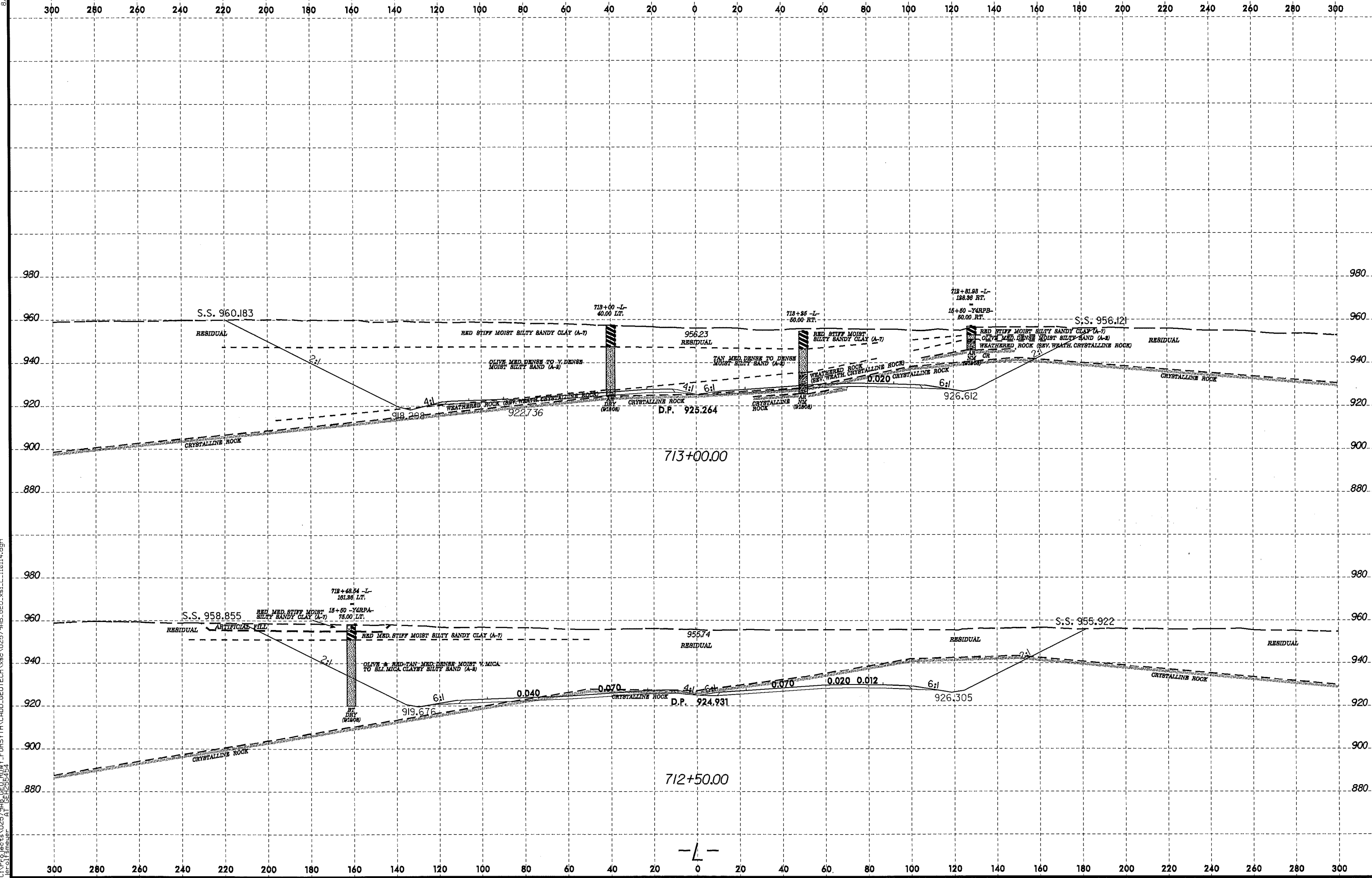
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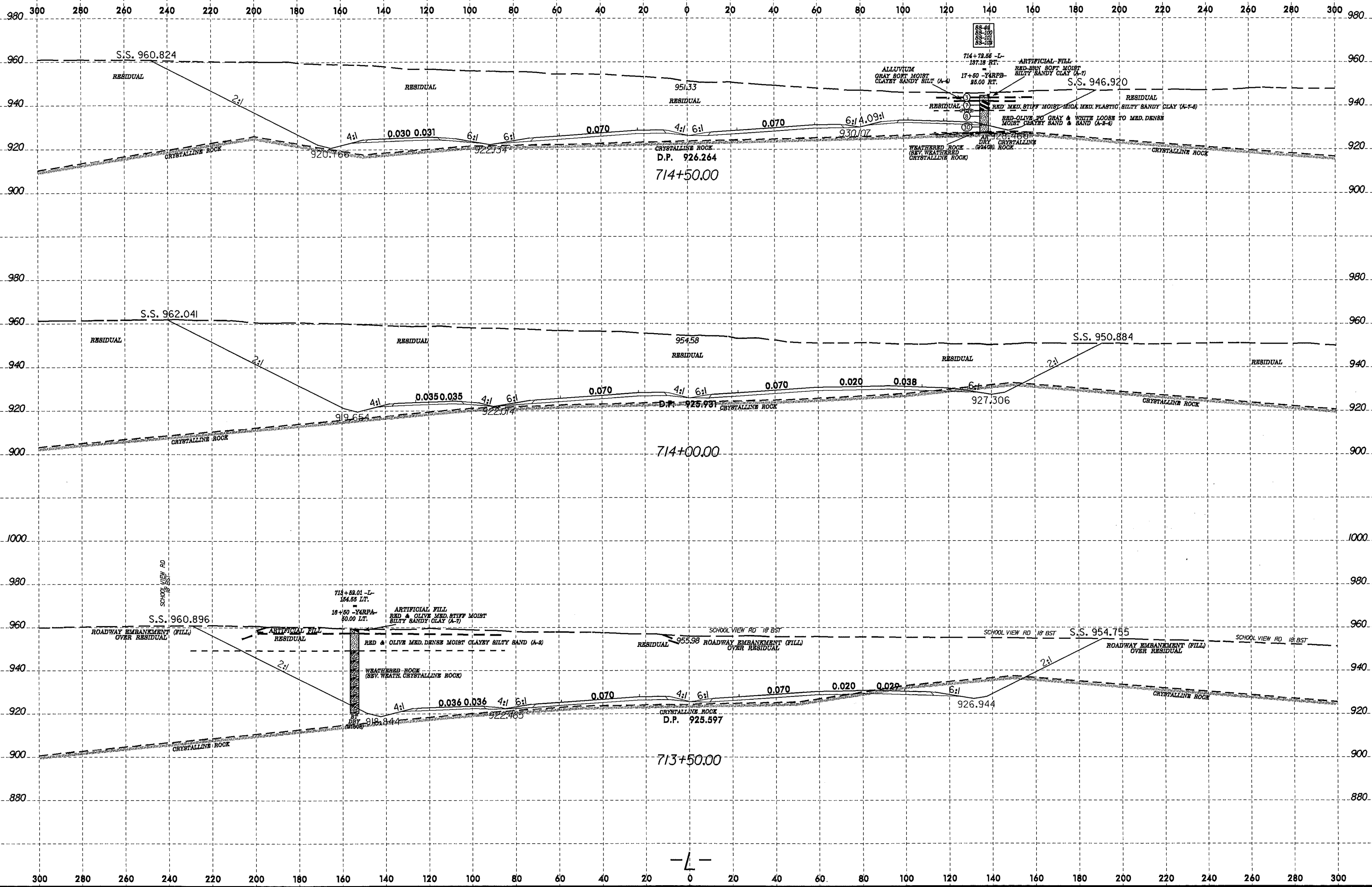
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8/23/99



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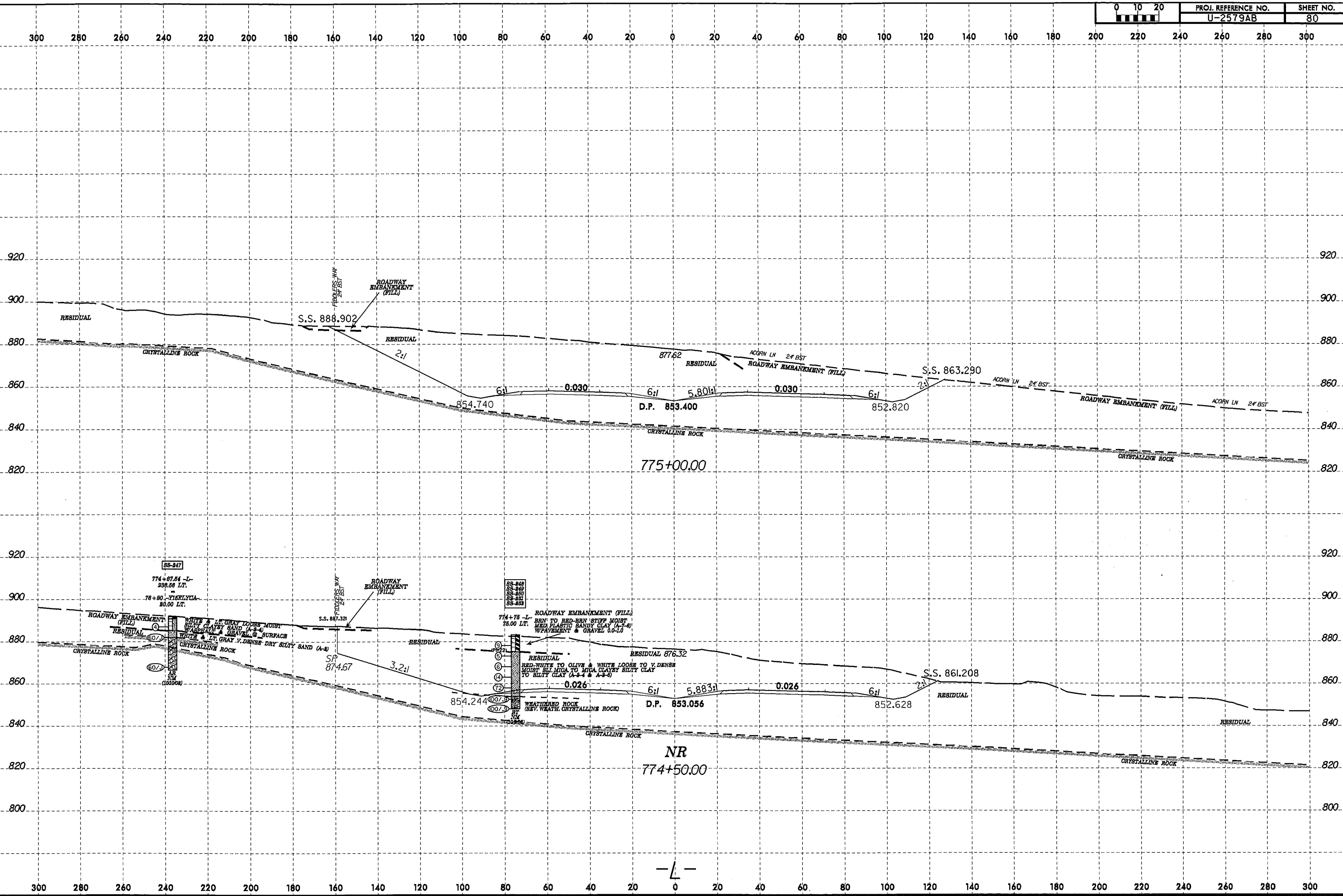
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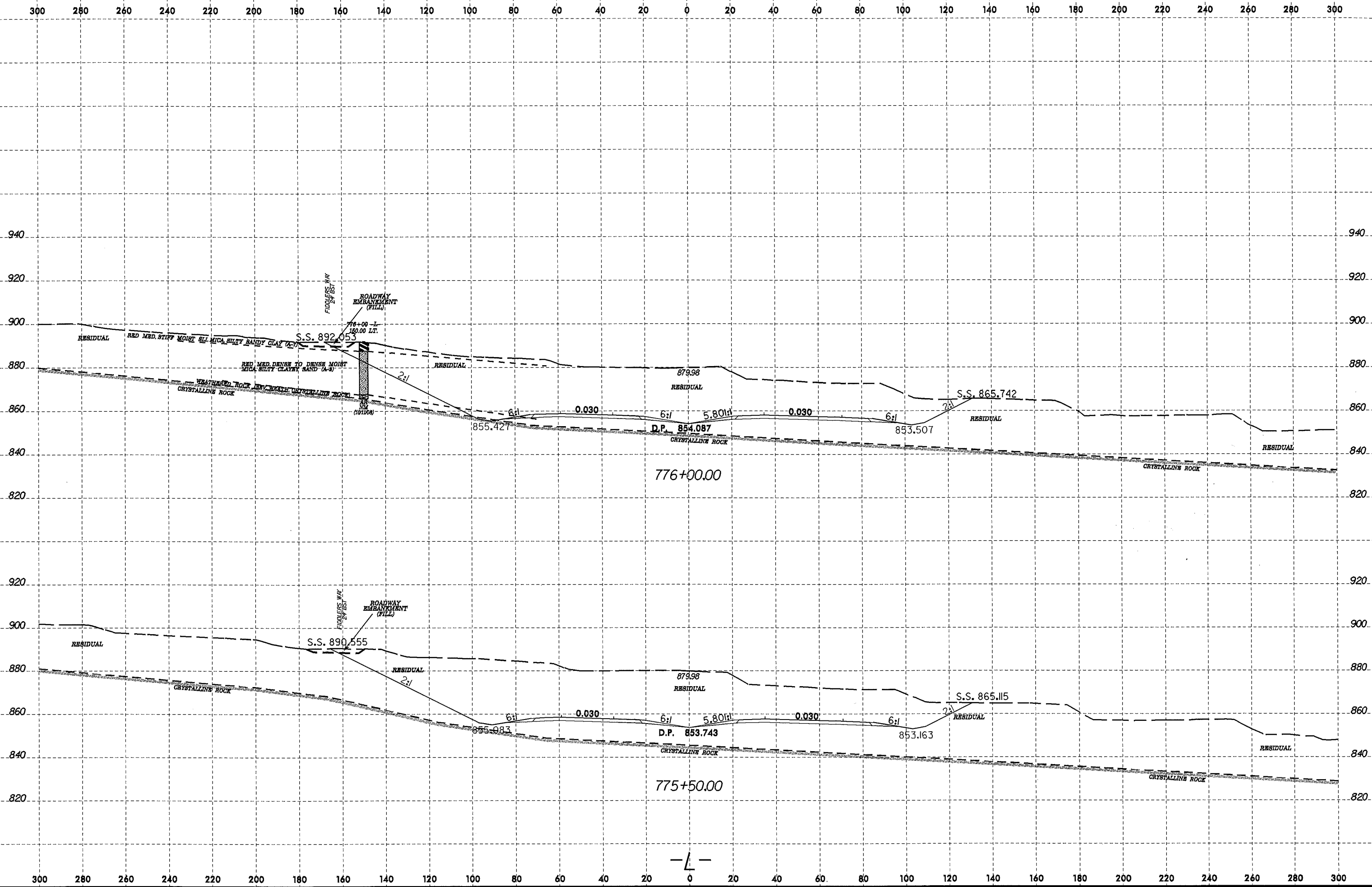
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8/23/99



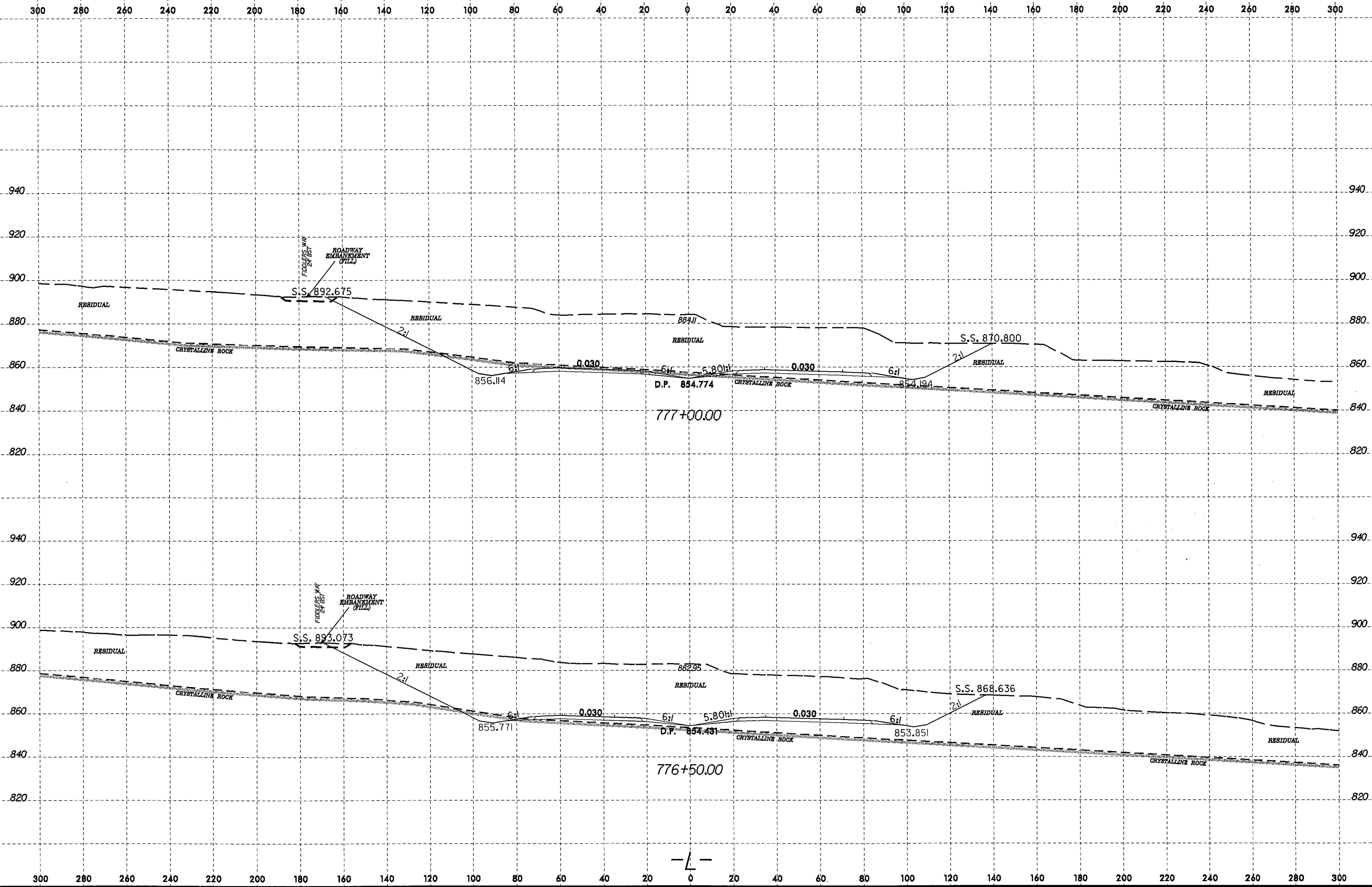
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8/23/99



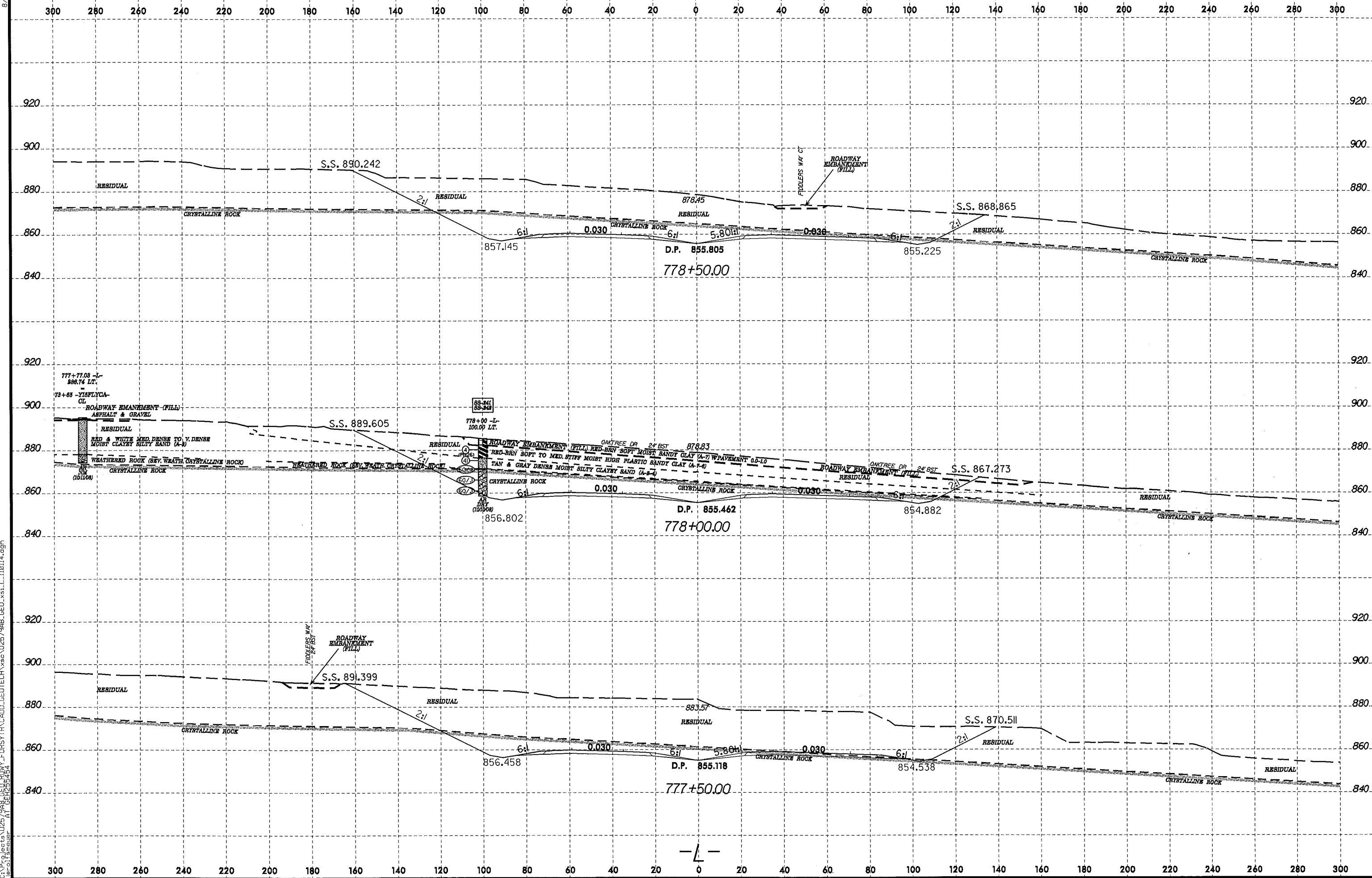
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8/23/99



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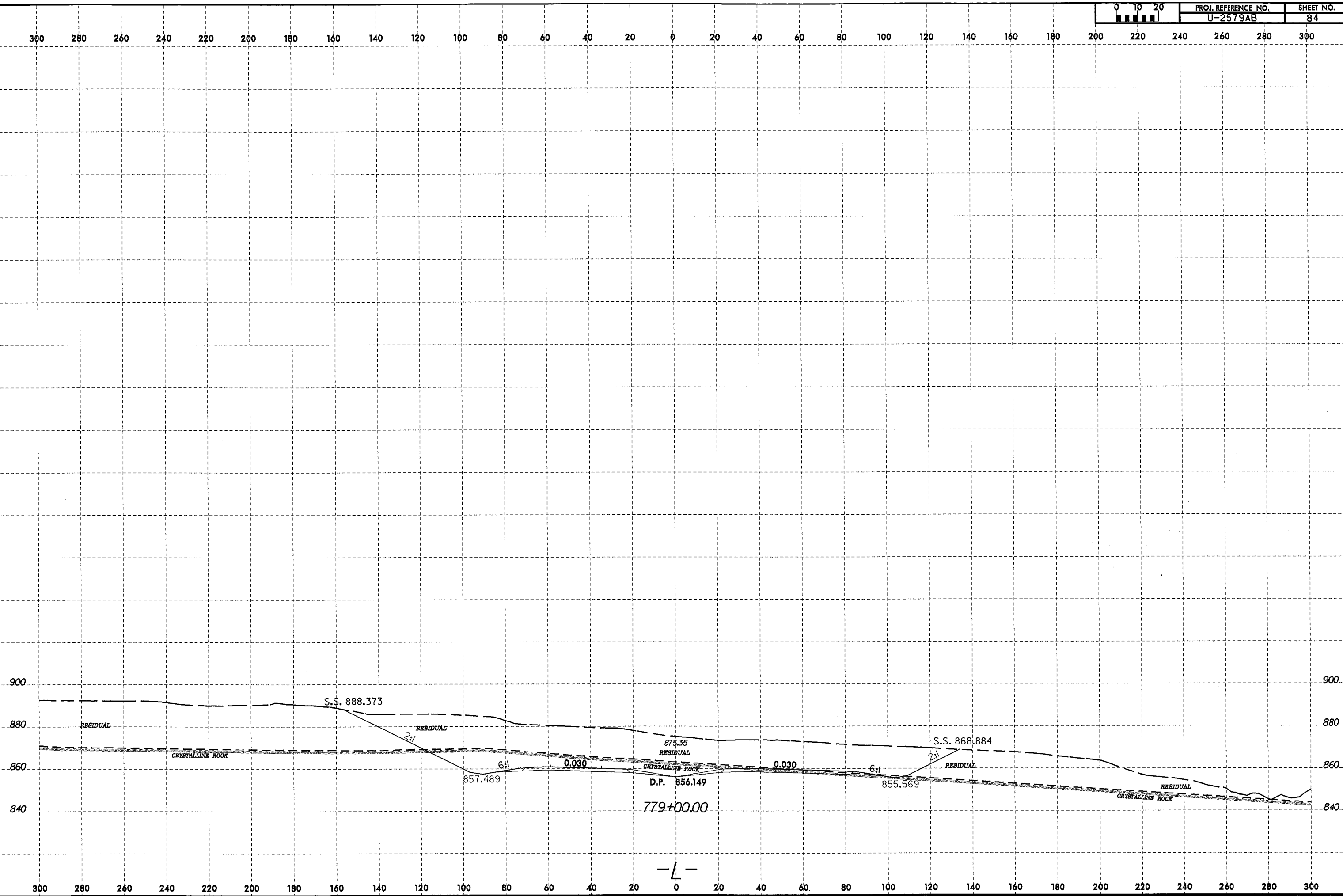
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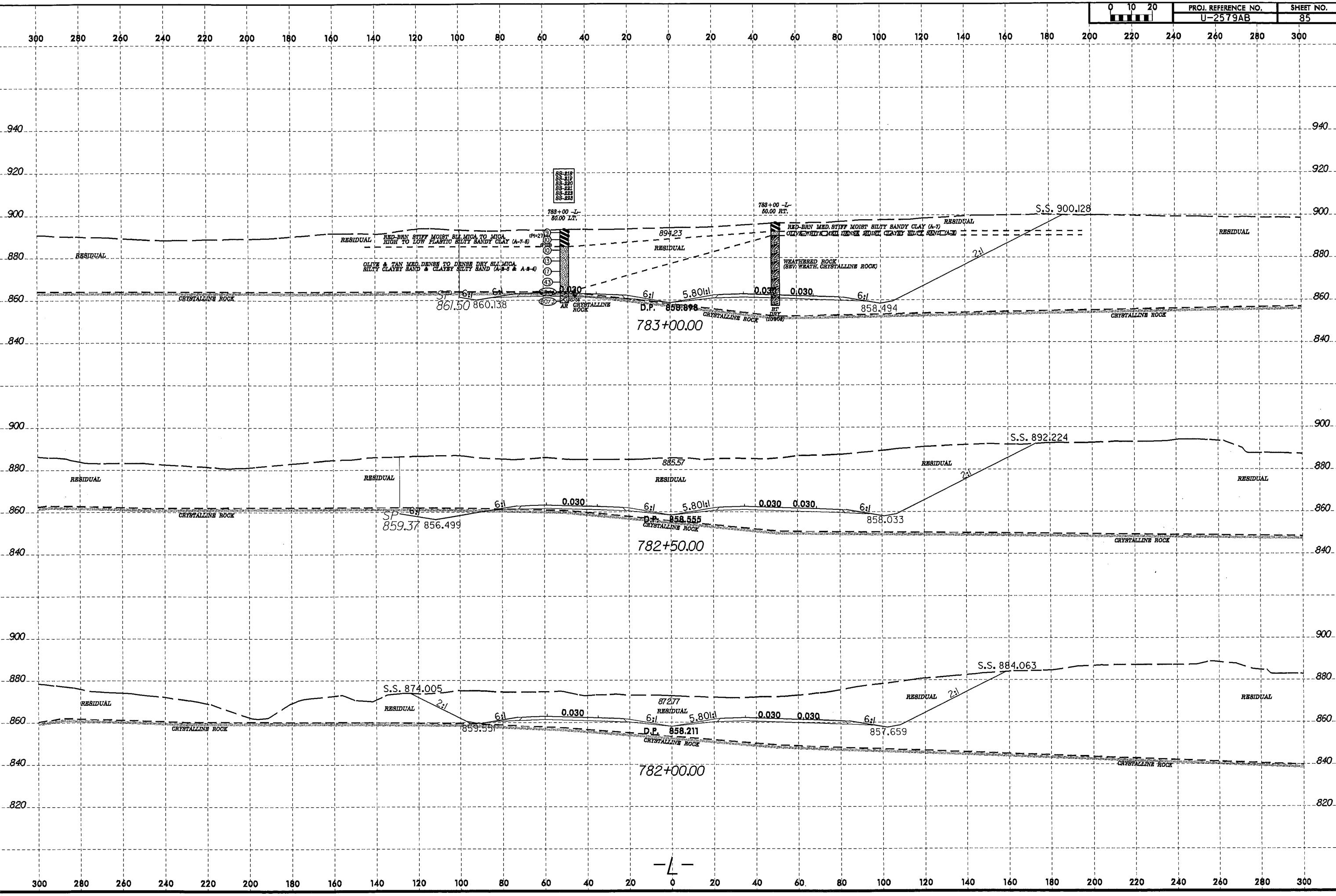
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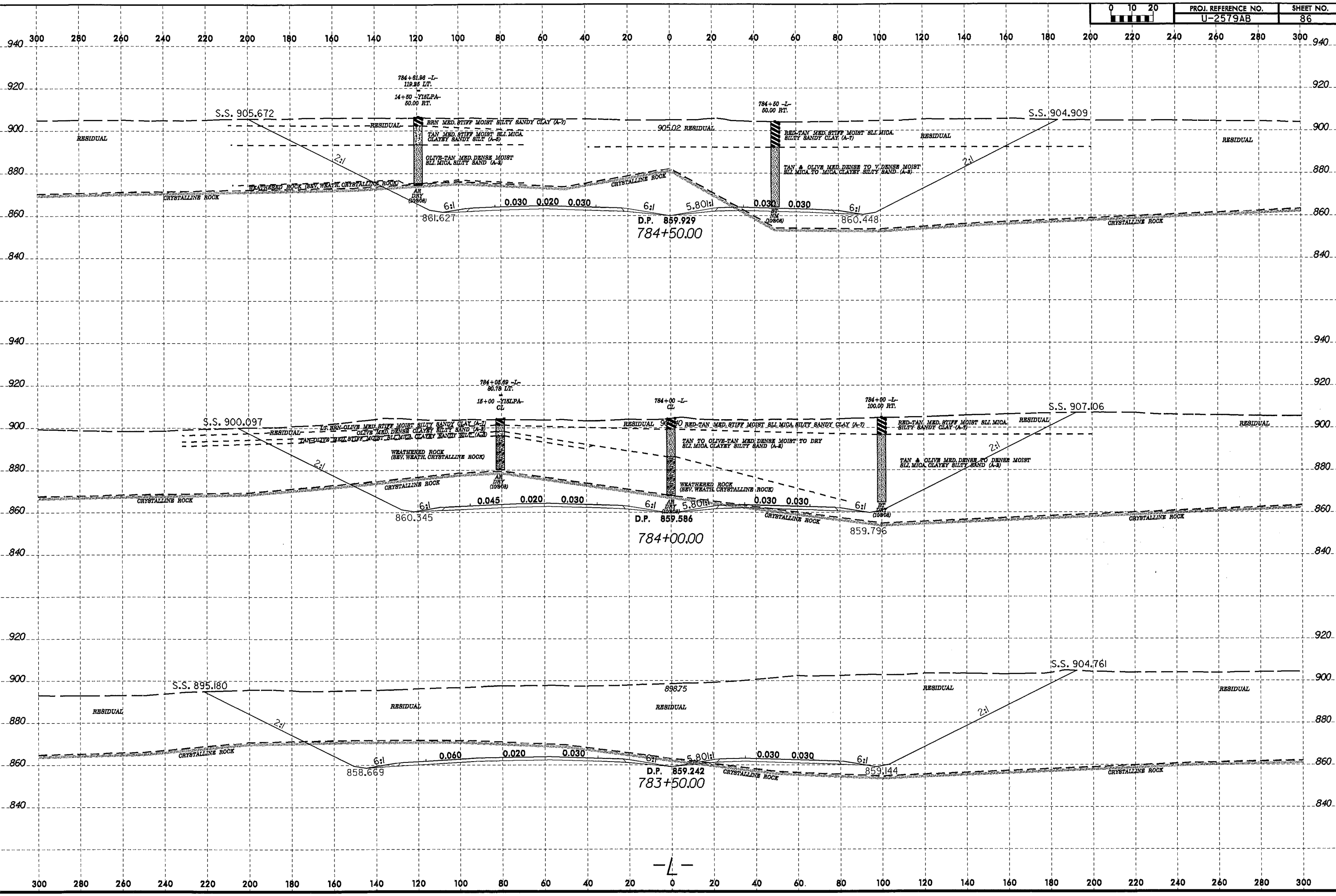


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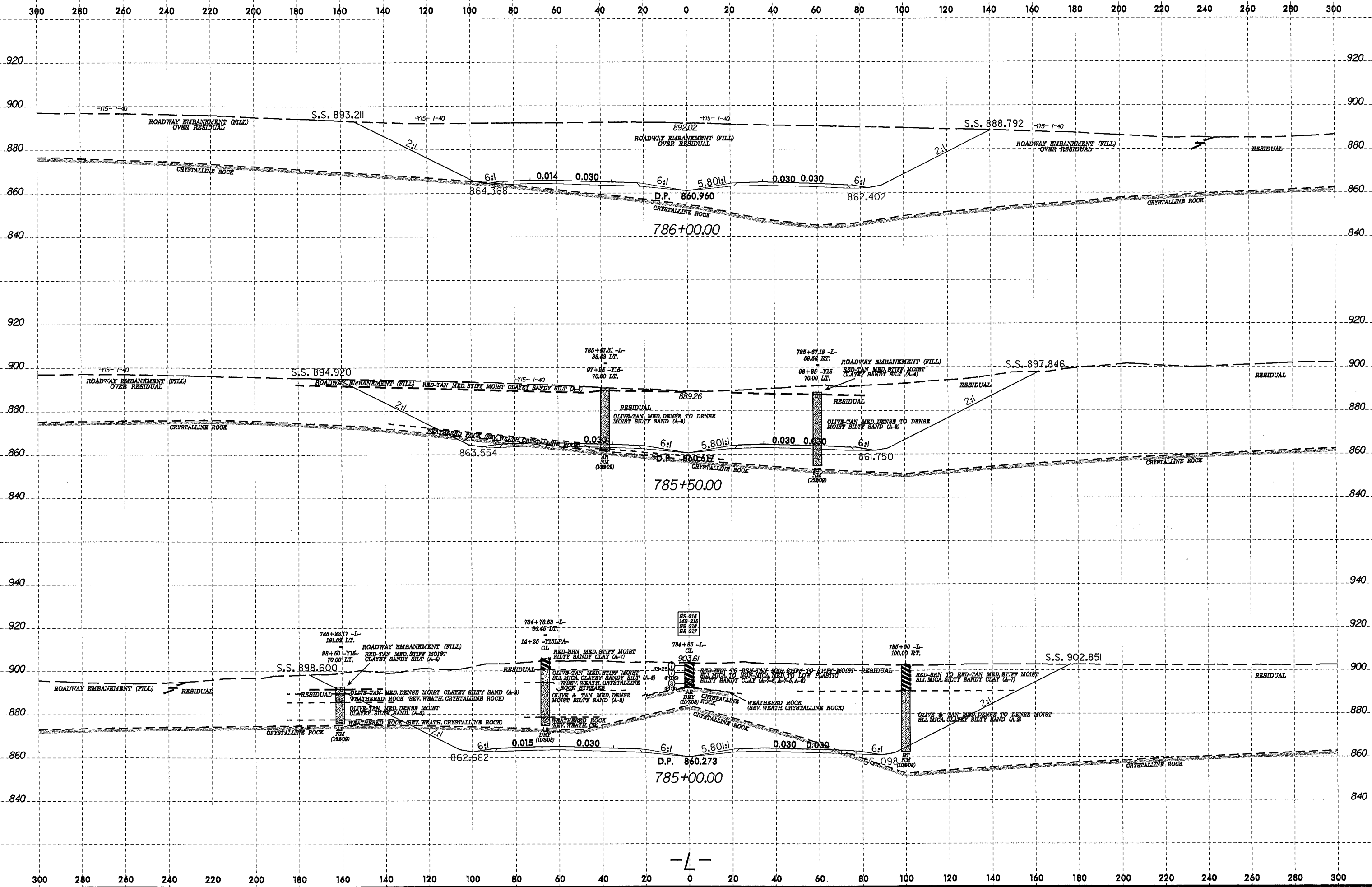
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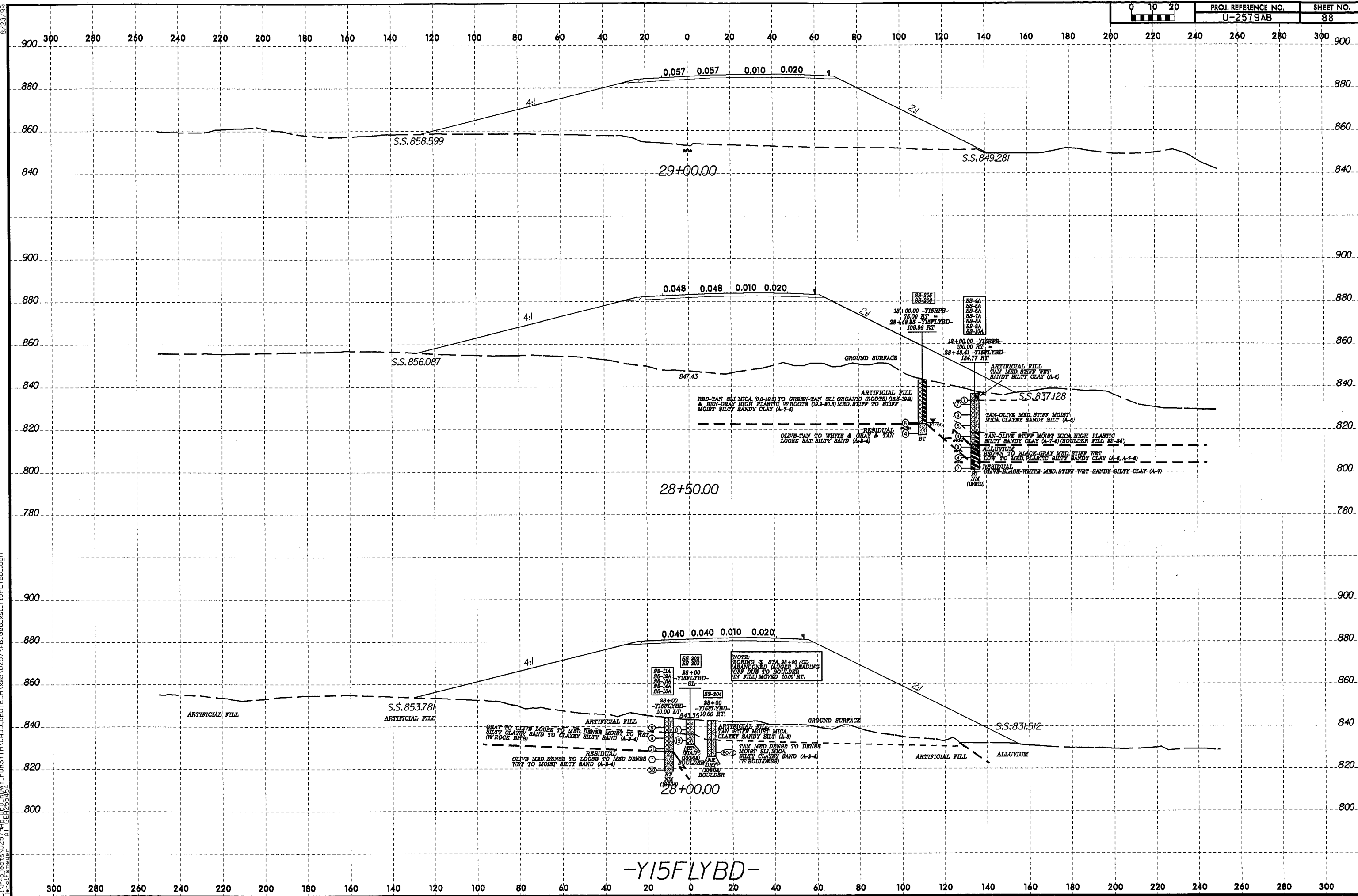
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8/23/99



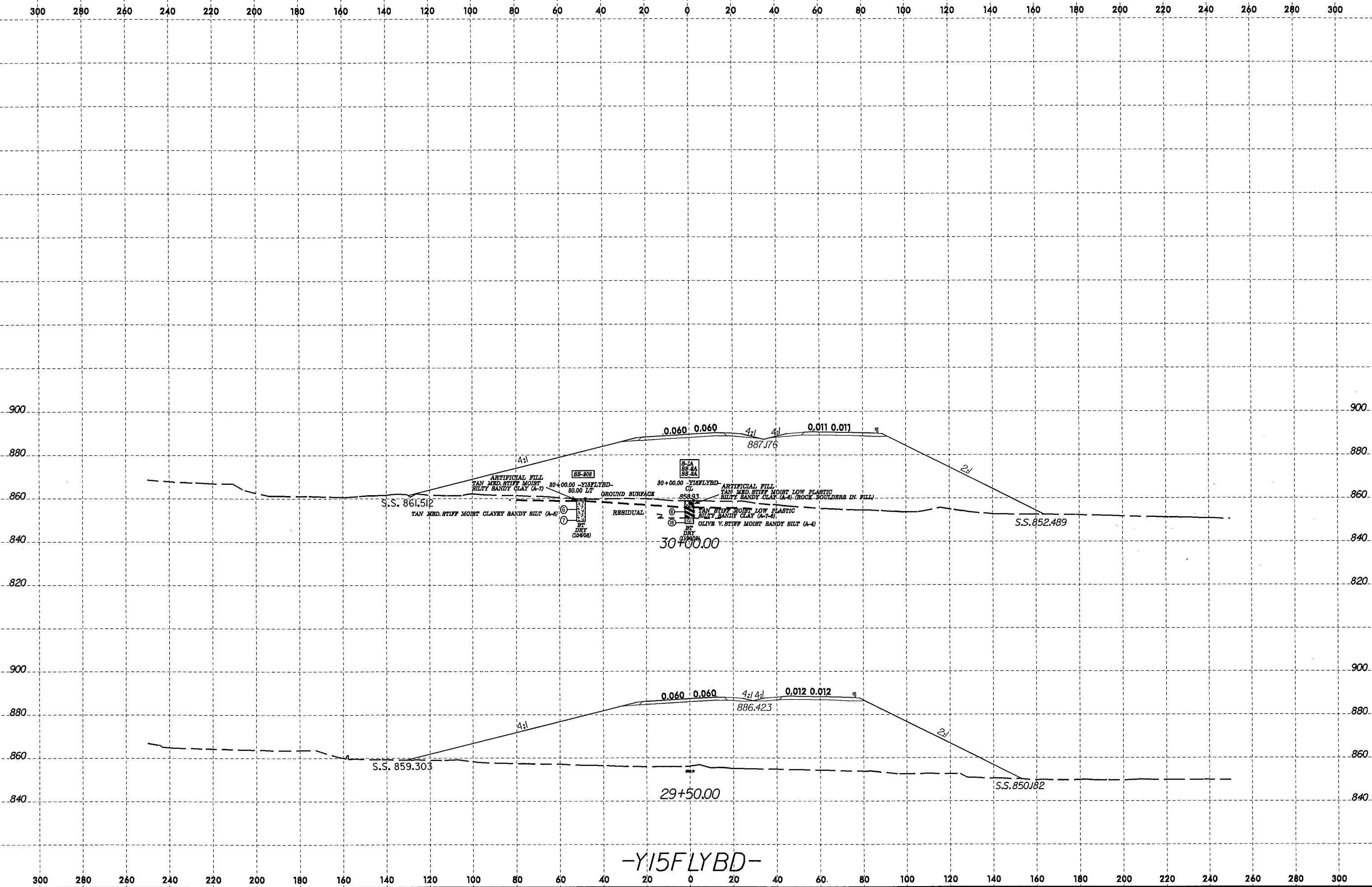
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 AT 8/23/99



-Y15FLYBD-

8/23/95
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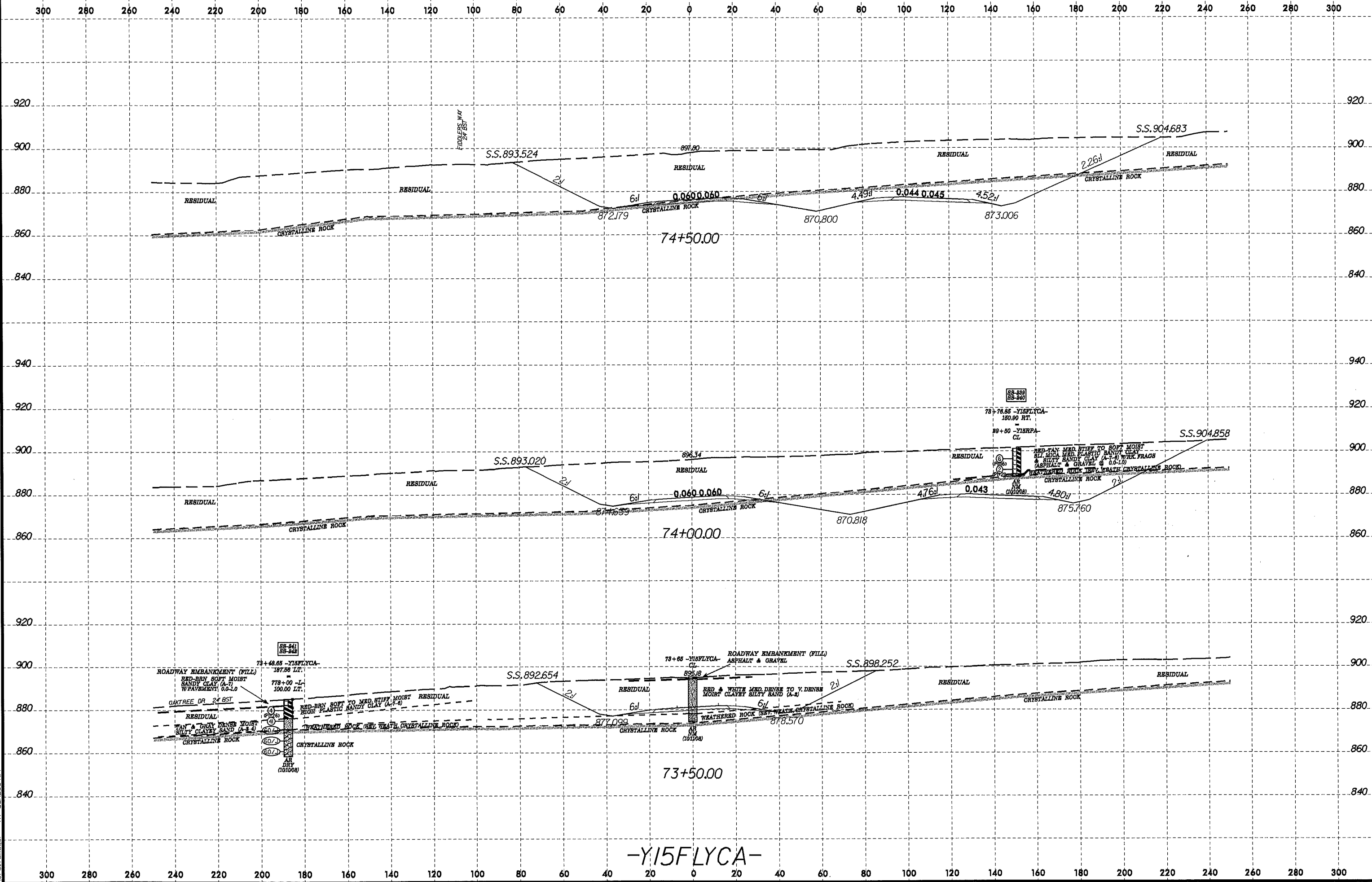
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12/25/99

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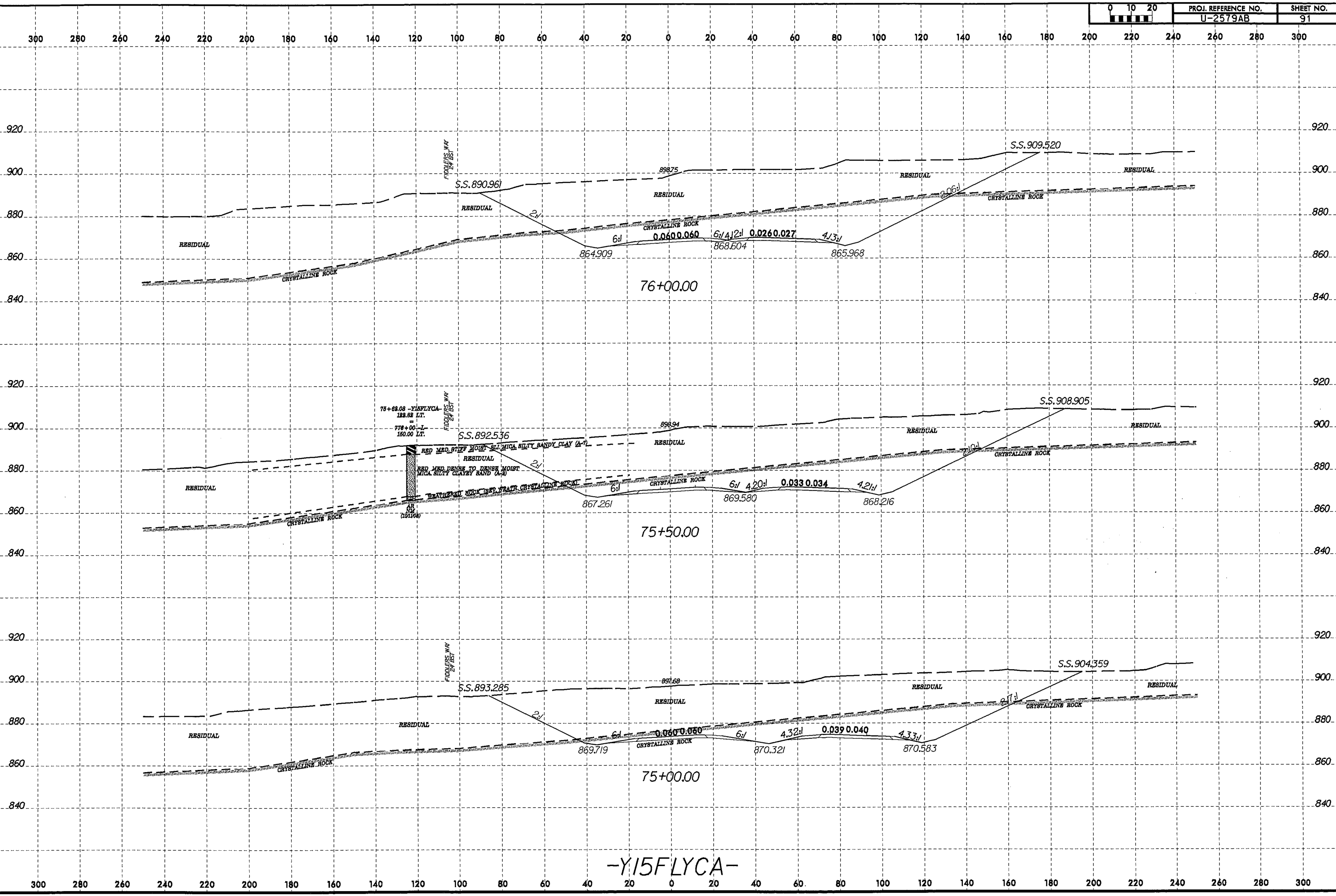
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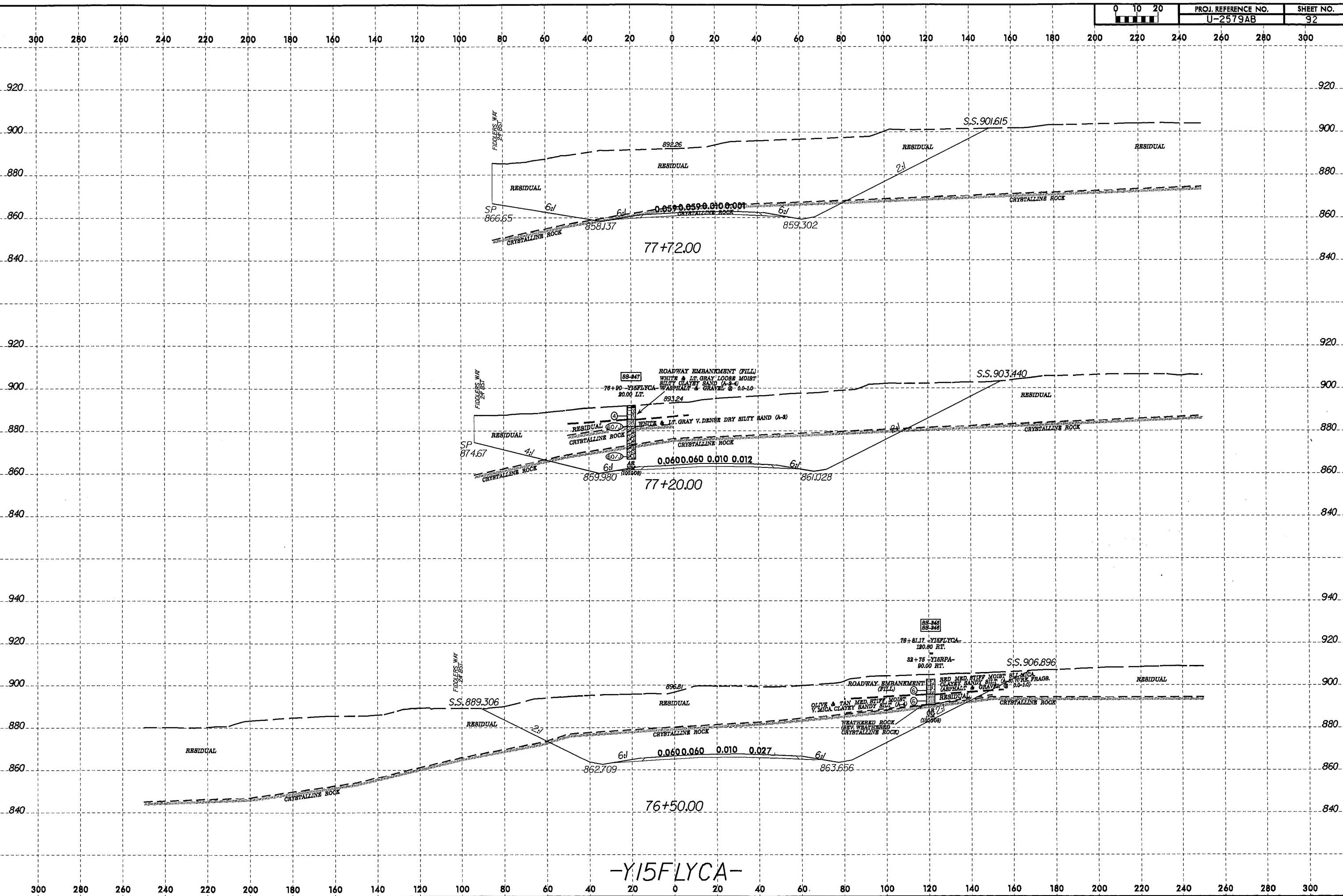
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8/23/99

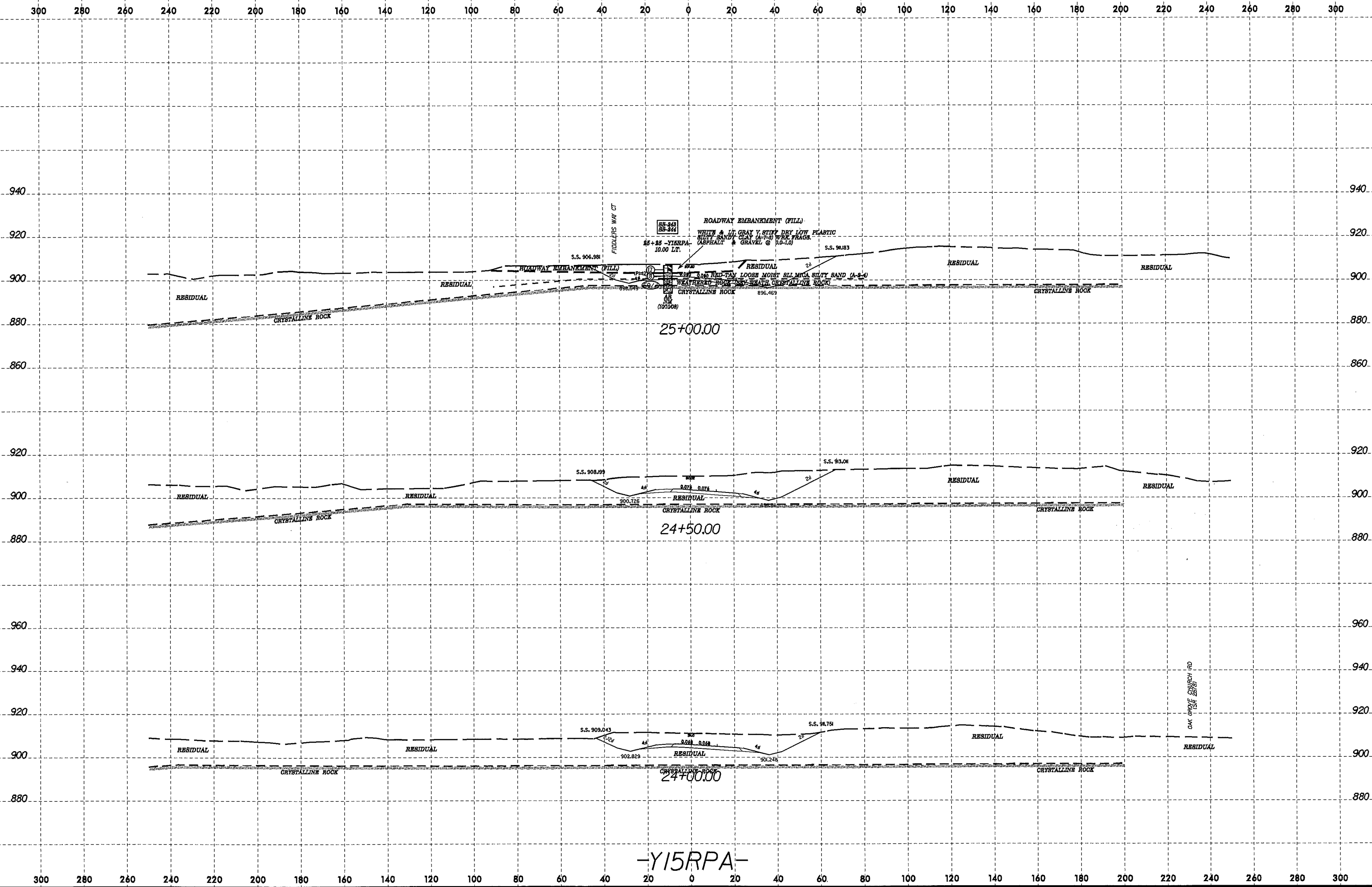


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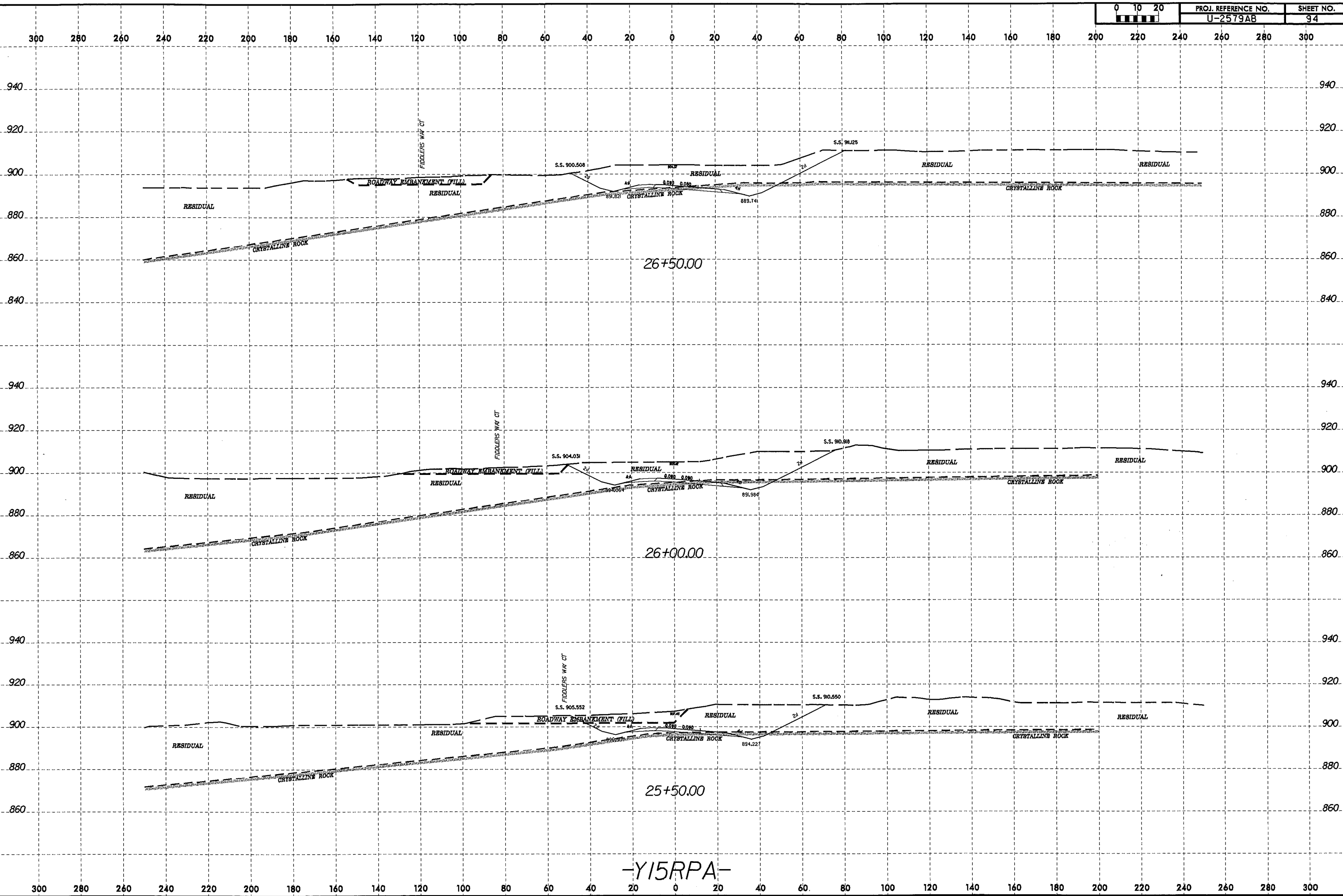
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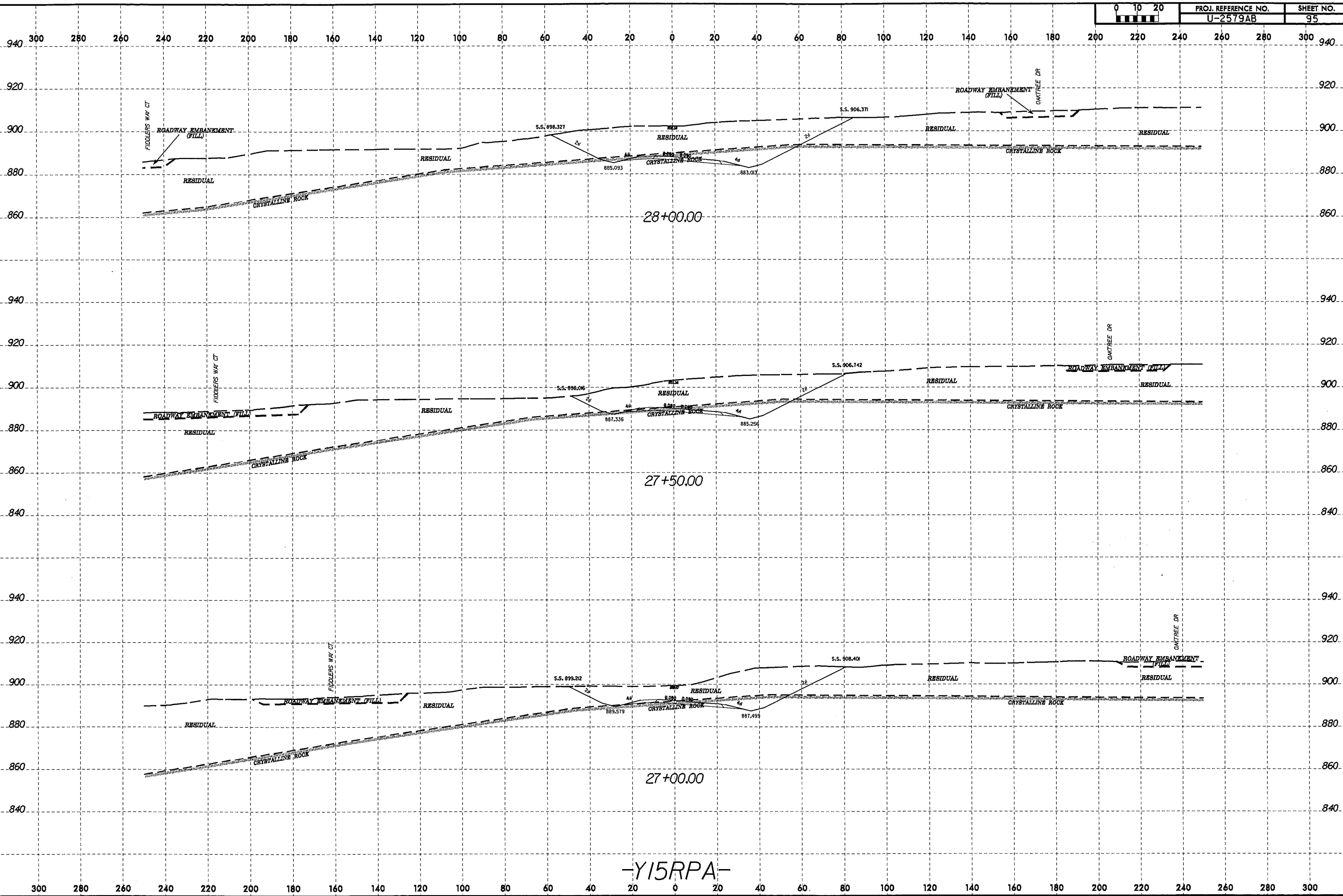
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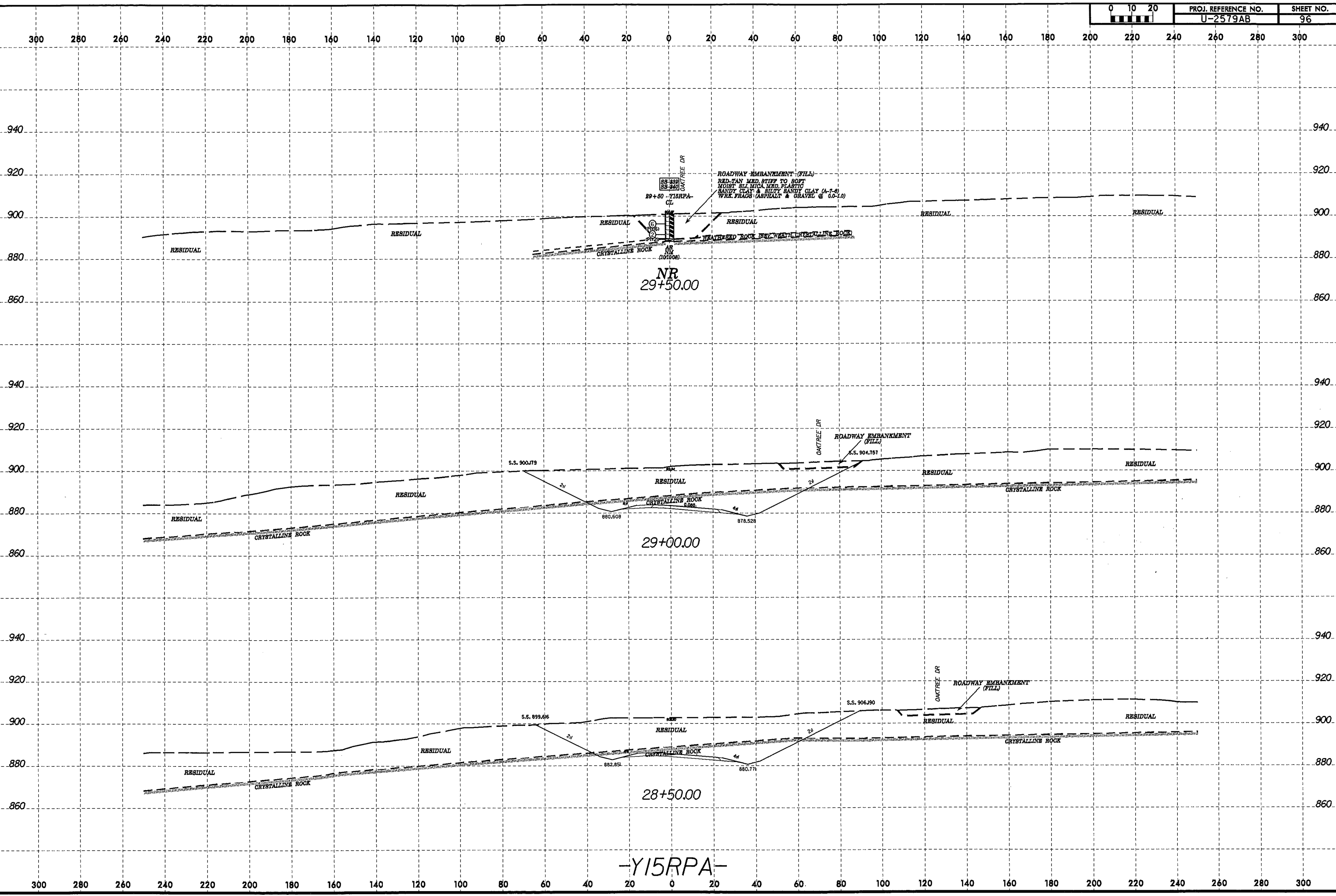
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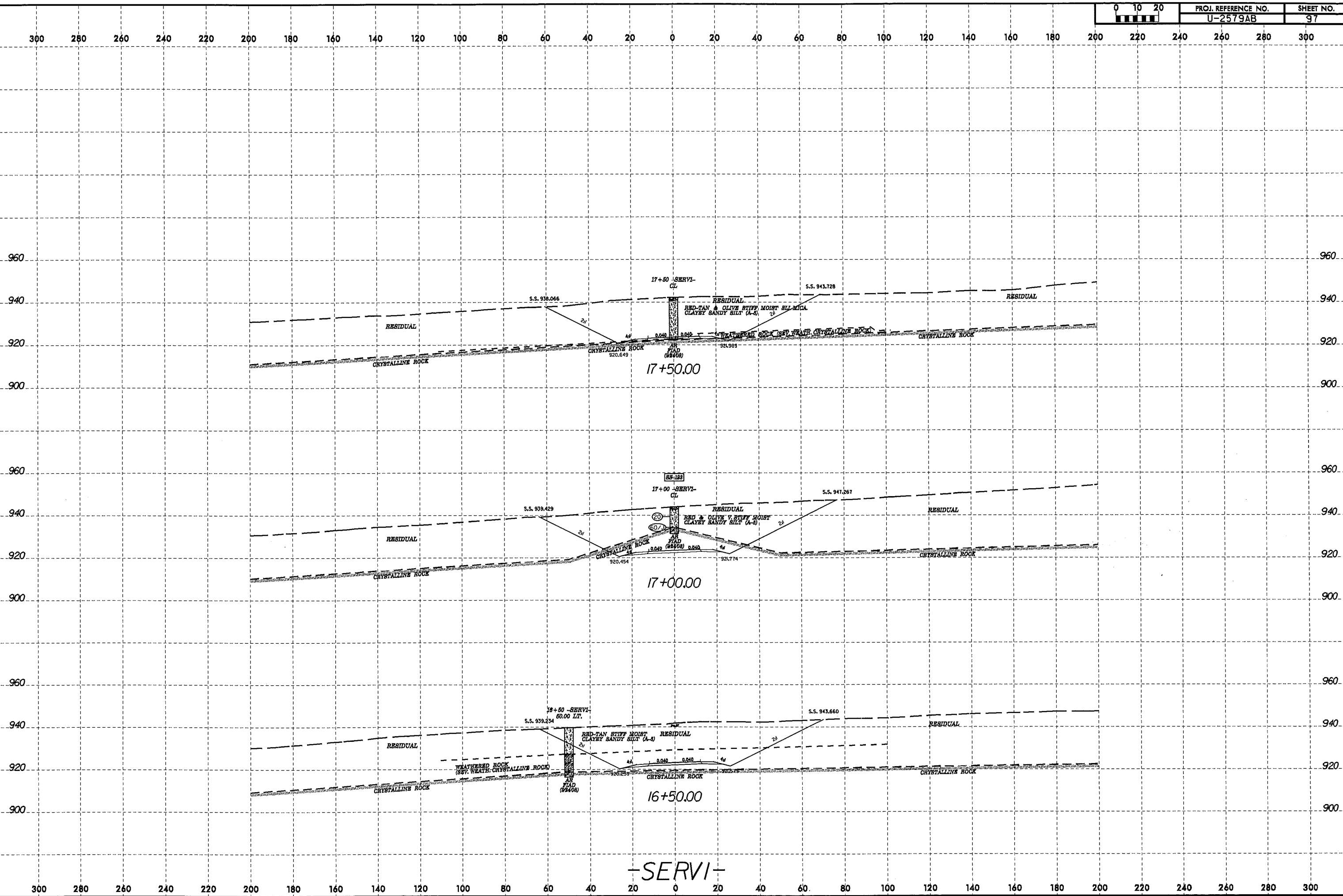
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8/23/99



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 12/11/99

SOIL TEST RESULTS

Table with columns: SAMPLE NO., OFFSET, STATION, DEPTH INTERVAL, AASHTO CLASS., L.L., P.I., % BY WEIGHT (C.SAND, F.SAND, SILT, CLAY), % PASSING (SIEVES) (10, 40, 200), % MOISTURE, % ORGANIC, and Line or Boring ID. Contains soil test data for samples SS-282 to SS-355.

SOIL TEST RESULTS

Table with columns: SAMPLE NO., OFFSET, STATION, DEPTH INTERVAL, AASHTO CLASS., L.L., P.I., % BY WEIGHT (C.SAND, F.SAND, SILT, CLAY), % PASSING (SIEVES) (10, 40, 200), % MOISTURE, % ORGANIC, and Line or Boring ID. Contains soil test data for samples SS-356 to SS-429.

SOIL TEST RESULTS

Table with columns: SAMPLE NO., OFFSET, STATION, DEPTH INTERVAL, AASHTO CLASS., L.L., P.I., % BY WEIGHT (C.SAND, F.SAND, SILT, CLAY), % PASSING (SIEVES) (10, 40, 200), % MOISTURE, % ORGANIC, Line or Boring ID. Contains 500 rows of soil test data.

SOIL TEST RESULTS

Table with columns: SAMPLE NO., OFFSET, STATION, DEPTH INTERVAL, AASHTO CLASS., L.L., P.I., % BY WEIGHT (C.SAND, F.SAND, SILT, CLAY), % PASSING (SIEVES) (10, 40, 200), % MOISTURE, % ORGANIC, Line or Boring ID. Contains 500 rows of soil test data.

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-571	60 RT	97+15	4.00-5.50	A-7-5(3)	61	13	29.3	31.5	17.0	22.2	99	85	43			Y15FLYBD
SS-572	60 RT	97+15	9.00-10.50	A-2-4(0)	39	2	52.5	26.3	13.1	8.1	96	60	25			Y15FLYBD
SS-573	60 RT	97+15	19.00-20.50	A-2-5(0)	41	3	39.2	32.9	17.8	10.1	98	75	32			Y15FLYBD
SS-574	30 LT	17+50	0.50-2.00	A-7-6(4)	43	17	36.6	22.4	12.7	28.3	99	76	44			UXRPB
SS-575	30 LT	17+50	3.80-5.30	A-2-7(1)	49	15	41.4	27.7	14.7	16.2	99	73	35			UXRPB
SS-576	30 LT	17+50	8.80-10.30	A-2-5(0)	42	9	46.1	21.6	18.2	14.1	96	63	35			Y15
SS-577	25 LT	14+50	0.00-1.50	A-7-5(6)	49	19	32.5	22.6	12.5	32.3	99	79	48			UXRPB
SS-578	25 LT	14+50	3.80-5.30	A-4(0)	29	7	43.2	23.0	9.5	24.2	98	69	36			UXRPB
SS-579	30 LT	17+50	8.80-10.30	A-7-6(6)	42	20	36.0	19.6	10.1	34.3	98	73	47			UXRPB
SS-580	25 LT	14+50	13.80-15.30	A-2-4(0)	40	8	44.8	23.0	16.0	16.2	96	64	35			UXRPB
SS-581	80 LT	166+00	1.00-2.50	A-7-5(4)	48	13	34.1	21.6	16.0	28.3	100	77	48			Y15
SS-582	80 LT	166+00	3.70-5.20	A-2-4(0)	37	2	47.5	30.1	14.3	8.1	99	68	27			Y15
SS-583	80 LT	166+00	8.70-10.20	A-2-5(0)	41	4	42.6	30.9	16.4	10.1	100	72	31			Y15
SS-584	75 LT	162+75	1.00-2.50	A-7-6(7)	46	24	41.2	15.4	7.1	36.4	99	69	45			Y15
SS-585	75 LT	162+75	3.80-5.30	A-5(0)	42	8	41.0	26.1	12.7	20.2	99	72	37			Y15
SS-586	75 LT	162+75	8.80-10.30	A-2-5(0)	45	3	41.2	30.5	14.1	14.1	100	74	33			Y15
SS-587	75 LT	159+50	1.00-2.50	A-5(1)	51	6	22.2	37.4	16.2	24.2	100	96	44			Y15
SS-588	75 LT	159+50	3.70-5.20	A-5(0)	50	5	19.8	42.6	15.4	22.2	100	98	41			Y15
SS-589	75 LT	159+50	8.70-10.20	A-5(2)	53	9	20.8	40.6	16.4	22.2	100	97	42			Y15
SS-590	75 LT	156+25	1.00-2.50	A-5(0)	46	6	36.0	28.7	15.2	20.2	99	77	40			Y15
SS-591	75 LT	156+20	0.00-1.50	A-2-4(0)	31	4	60.6	19.4	7.9	12.1	98	54	23			Y15
SS-592	75 LT	156+20	9.50-11.00	A-6(2)	33	13	39.8	21.1	14.9	24.1	98	71	41			Y15
SS-593	75 LT	153+50	4.00-5.50	A-7-6(5)	46	19	40.0	15.7	12.1	32.2	98	70	46			Y15
SS-594	75 LT	153+50	9.00-10.50	A-6(3)	35	14	39.8	20.1	15.9	24.1	98	70	43			Y15
SS-595	75 LT	153+50	14.00-15.50	A-1-b(0)	42	3	63.6	21.5	10.9	4.0	85	43	16			Y15
SS-596	75 LT	151+50	0.00-1.50	A-7-5(6)	51	18	33.4	21.1	13.3	32.2	98	76	48			Y15
SS-597	75 LT	151+50	3.80-5.30	A-7-5(2)	51	13	37.0	25.8	17.1	20.1	97	73	40			Y15
SS-598	75 LT	151+50	8.80-10.30	A-2-4(0)	27	5	41.9	27.4	20.7	10.1	97	71	33			Y15
SS-599	75 LT	151+50	13.80-15.30	A-2-4(0)	36	NP	57.1	28.0	12.9	2.0	91	52	17			Y15
SS-600	75 LT	147+50	0.50-2.00	A-2-5(0)	48	5	43.1	38.2	14.7	4.0	99	77	24			Y15
SS-601	75 LT	147+50	8.60-10.10	A-2-5(0)	42	10	37.2	36.0	18.7	8.0	100	79	32			Y15
SS-602	75 LT	144+50	0.50-2.00	A-2-4(0)	34	NP	43.9	33.6	18.5	4.0	99	72	28			Y15
SS-603	75 LT	144+50	4.00-5.50	A-2-7(0)	43	12	41.4	27.2	19.3	12.1	99	73	35			Y15
SS-604	75 LT	144+50	9.00-10.50	A-2-4(0)	28	NP	52.5	26.8	14.7	6.0	98	63	25			Y15
SS-605	75 LT	141+50	0.50-2.00	A-7-5(7)	54	17	32.8	19.5	19.5	28.2	99	76	50			Y15
SS-606	75 LT	141+50	3.90-5.40	A-2-5(0)	52	6	44.9	26.0	19.1	10.1	98	66	34			Y15
SS-607	75 LT	141+50	8.90-10.40	A-2-5(0)	52	7	42.3	32.6	17.1	8.0	98	70	31			Y15
SS-608	75 LT	138+00	0.50-2.00	A-2-5(0)	56	2	38.0	35.8	20.1	6.0	100	79	32			Y15
SS-609	75 LT	138+00	3.70-5.20	A-5(0)	56	4	27.6	39.6	24.7	8.0	100	87	40			Y15
SS-610	75 LT	138+00	8.70-10.20	A-5(0)	56	7	31.8	40.0	22.1	6.0	100	85	36			Y15
SS-611	70 LT	130+00	0.00-1.50	A-4(0)	39	8	36.2	29.1	14.4	20.3	97	75	38			Y15
SS-612	70 LT	130+00	3.70-5.20	A-2-4(0)	36	NP	47.4	42.1	6.5	4.1	99	78	16			Y15
SS-613	70 LT	126+75	0.50-2.00	A-5(0)	44	3	32.1	32.9	18.7	16.3	100	81	41			Y15
SS-614	70 LT	126+75	3.60-5.10	A-2-5(0)	44	10	36.2	25.8	17.7	20.3	79	61	34			Y15
SS-615	70 LT	85+00	1.00-2.50	A-4(0)	40	6	37.0	23.0	17.7	22.4	99	73	43			Y15
SS-616	70 LT	85+00	3.80-5.30	A-7-5(5)	46	12	26.6	25.8	21.1	26.4	99	84	52			Y15
SS-617	70 LT	85+00	8.80-10.30	A-2-5(0)	45	5	45.1	32.5	14.2	8.1	99	71	26			Y15
SS-619	70 LT	49+00	0.50-2.00	A-5(2)	47	9	35.0	23.6	21.1	20.3	98	75	44			Y15
SS-620	70 LT	49+00	3.50-5.00	A-2-4(0)	32	5	41.5	29.7	12.6	16.3	98	72	33			Y15
SS-621	70 LT	49+00	8.50-10.00	A-2-4(0)	29	5	38.4	34.8	12.6	14.2	99	74	31			Y15
SS-622	70 LT	49+00	13.50-15.00	A-6(3)	33	14	35.6	23.8	14.2	26.4	100	75	44			Y15
SS-623	70 LT	49+00	18.50-20.00	A-6(3)	30	13	28.5	23.8	13.2	34.6	98	81	50			Y15
SS-624	70 LT	49+00	23.50-25.00	A-2-4(0)	32	NP	42.1	42.3	11.6	4.1	100	81	20			Y15
SS-625	80 LT	46+00	0.00-1.50	A-7-6(14)	50	23	15.2	23.2	18.9	42.7	100	93	66			Y15
SS-626	80 LT	46+00	3.70-5.20	A-7-6(2)	43	15	33.7	30.9	13.0	22.4	99	81	39			Y15
SS-627	70 LT	43+50	0.00-1.50	A-7-5(7)	55	15	28.7	22.4	20.5	28.5	96	77	52			Y15
SS-628	70 LT	43+50	3.70-5.20	A-7-5(4)	53	13	31.5	24.0	22.2	22.4	98	77	48			Y15
SS-629	70 LT	40+50	8.70-10.20	A-2-4(0)	27	NP	53.9	29.5	8.5	8.1	94	61	19			Y15
SS-630	70 LT	40+50	13.70-15.20	A-4(0)	33	7	23.2	44.5	14.0	18.3	98	83	39			Y15
SS-631	70 LT	37+50	0.00-1.50	A-5(1)	47	5	31.3	24.4	22.0	22.4	99	79	48			Y15
SS-632	70 LT	37+50	3.80-5.30	A-2-6(0)	39	11	43.7	25.8	14.2	16.3	54	38	19			Y15
SS-633	70 LT	37+50	8.80-10.30	A-6(8)	35	14	6.1	32.1	19.1	42.7	100	99	68			Y15
SS-634	70 LT	34+50	0.00-1.50	A-7-5(10)	55	20	28.9	16.9	13.6	40.7	99	78	57			Y15
SS-635	70 LT	34+50	7.30-8.80	A-6(6)	40	13	23.8	20.9	24.8	30.5	97	82	59			Y15