

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

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4506	1	17
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
38395.1.1	BRNHS-52(24)	PE	
38395.2.1	BRNHS-52(24)	RW & UTIL.	
38395.3.1	BRNHS-0052(24)	CONST.	

CONTENTS

LINE	STATION	PLAN	PROFILE	XSECT
-L-	11+00 TO 41+50	4 - 9	10 - 16	
-Y-	24+00 - 30+50	5, 8	16	
-DETOUR-	11+50 - 40+90	7 - 9	13 - 14	
-XOVER-	11+50 - 41+05	7 - 9	14 - 15	
SAMPLES		SHEET 17		

ROADWAY
SUBSURFACE INVESTIGATION

PROJ. REFERENCE NO. B-4506 F.A. PROJ. BRNHS-52(24)
COUNTY FORSYTH
PROJECT DESCRIPTION BRIDGE #319 AND 335 ON US 52 OVER
SR 1620 (TOBACCOVILLE RD.)

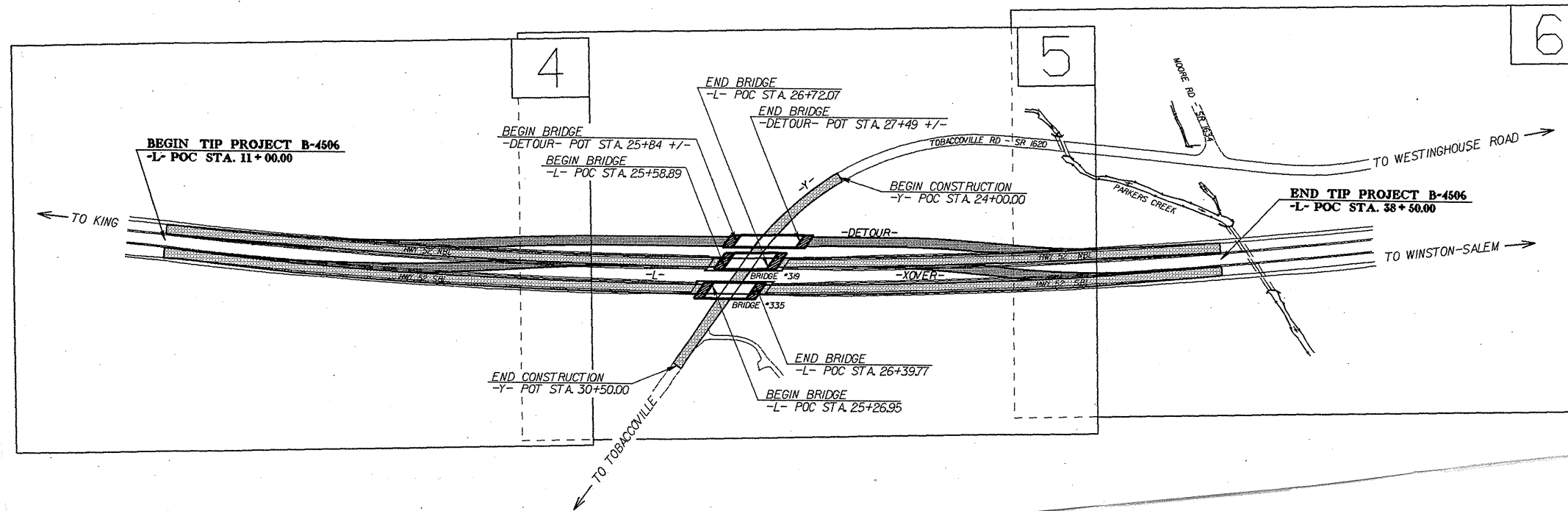
CAUTION NOTICE

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-PLACED) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION, AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

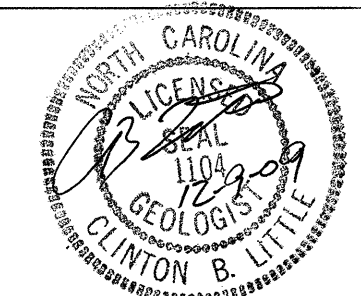
THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT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

INVENTORY



PERSONNEL
J. K. STICKNEY
C. L. SMITH
J. E. ROLFSMEYER

INVESTIGATED BY J. E. BEVERLY
CHECKED BY C. B. LITTLE
SUBMITTED BY C. B. LITTLE
DATE NOVEMBER, 2009



DRAWN BY: J.E. BEVERLY

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

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

CONTRACT: C202812, ID: B-4506

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

PROJECT REFERENCE NO. 38395.I.I(B-4506)	SHEET NO. 2
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SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION		GRADATION		ROCK DESCRIPTION		TERMS AND DEFINITIONS																																																																																																																																																																																								
SOIL IS CONSIDERED TO BE THE UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER, AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO STANDARD PENETRATION TEST (AASHTO T206, ASTM D-1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY SHALL INCLUDE: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. EXAMPLE: VERY STIFF, GRAN. SCLY CLAY, MOST WITH INTERBEDDED FINE SAND LAYERS, HIGH 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) POORLY GRADED GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLES OF TWO OR MORE SIZES.		HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT IF TESTED, WOULD YIELD SPT REFUSAL. AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. IN NON-COASTAL PLAIN MATERIAL, THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS: WEATHERED ROCK (WR) CRYSTALLINE ROCK (CR) NON-CRYSTALLINE ROCK (NCR) COASTAL PLAIN SEDIMENTARY ROCK (CP)		ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER. AQUIFER - A WATER BEARING FORMATION OR STRATA. ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, AS SHALE, SLATE, ETC. ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE. CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK. DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL. DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM PARENT MATERIAL. FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. FORMATION (FM.) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD. JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED. LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT. LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS. MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE. PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM. RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. ROCK QUALITY DESIGNATION (RQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SRQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.																																																																																																																																																																																								
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	4.76	2.00	0.42	0.25	0.075	0.053																																																																																																																																																																																								
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SOIL MOISTURE SCALE (ATTERBERG LIMITS)		FIELD MOISTURE DESCRIPTION		GUIDE FOR FIELD MOISTURE DESCRIPTION																																																																																																																																																																																										
PLASTIC RANGE (PI)	LL	LIQUID LIMIT	- SATURATED - (SAT.)	USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE																																																																																																																																																																																										
	PL	PLASTIC LIMIT	- WET - (W)	SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE																																																																																																																																																																																										
	OM	OPTIMUM MOISTURE SHRINKAGE LIMIT	- MOIST - (M)	SOLID; AT OR NEAR OPTIMUM MOISTURE																																																																																																																																																																																										
			- DRY - (D)	REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE																																																																																																																																																																																										
PLASTICITY																																																																																																																																																																																														
NONPLASTIC				LOW PLASTICITY				MED. PLASTICITY				HIGH PLASTICITY																																																																																																																																																																																		
PLASTICITY INDEX (PI)				DRY STRENGTH																																																																																																																																																																																										
0-5				6-15				16-25				26 OR MORE					VERY LOW				SLIGHT				MEDIUM				HIGH																																																																																																																																																																	
COLOR																																																																																																																																																																																														
DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.																																																																																																																																																																																														
EQUIPMENT USED ON SUBJECT PROJECT																																																																																																																																																																																														
DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:																																																																																																																																																																																						
<input type="checkbox"/> MOBILE B-___				<input type="checkbox"/> CLAY BITS				<input checked="" type="checkbox"/> AUTOMATIC <input type="checkbox"/> MANUAL																																																																																																																																																																																						
<input type="checkbox"/> BK-51				<input type="checkbox"/> 6" CONTINUOUS FLIGHT AUGER				CORE SIZE:																																																																																																																																																																																						
<input type="checkbox"/> CME-45C				<input checked="" type="checkbox"/> 6" HOLLOW AUGERS				<input type="checkbox"/> -B-___																																																																																																																																																																																						
<input type="checkbox"/> CME-550				<input type="checkbox"/> HARD FACED FINGER BITS				<input type="checkbox"/> -N-___																																																																																																																																																																																						
<input type="checkbox"/> PORTABLE HOIST				<input checked="" type="checkbox"/> TUNG.-CARBIDE INSERTS				<input type="checkbox"/> -H-___																																																																																																																																																																																						
<input type="checkbox"/>				<input type="checkbox"/> CASING <input type="checkbox"/> W/ ADVANCER				HAND TOOLS:																																																																																																																																																																																						
<input type="checkbox"/>				<input type="checkbox"/> TRICONE ___ * STEEL TEETH				<input type="checkbox"/> POST HOLE DIGGER																																																																																																																																																																																						
<input type="checkbox"/>				<input type="checkbox"/> TRICONE 2 1/8 * TUNG.-CARB.				<input type="checkbox"/> HAND AUGER																																																																																																																																																																																						
<input type="checkbox"/>				<input type="checkbox"/> CORE BIT				<input type="checkbox"/> SOUNDING ROD																																																																																																																																																																																						
<input type="checkbox"/>								<input type="checkbox"/> VANE SHEAR TEST																																																																																																																																																																																						
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FRACTURE SPACING																																																																																																																																																																																														
TERM				SPACING				BEDDING																																																																																																																																																																																						
VERY WIDE				MORE THAN 10 FEET				VERY THICKLY BEDDED																																																																																																																																																																																						
WIDE				3 TO 10 FEET				THICKLY BEDDED																																																																																																																																																																																						
MODERATELY CLOSE				1 TO 3 FEET				THINLY BEDDED																																																																																																																																																																																						
CLOSE				0.16 TO 1 FEET				VERY THINLY BEDDED																																																																																																																																																																																						
VERY CLOSE				LESS THAN 0.16 FEET				THICKLY LAMINATED																																																																																																																																																																																						
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INDURATION																																																																																																																																																																																														
FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF THE MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.																																																																																																																																																																																														
FRIABLE				RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE.																																																																																																																																																																																										
MODERATELY INDURATED				GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER.																																																																																																																																																																																										
INDURATED				GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER.																																																																																																																																																																																										
EXTREMELY INDURATED				SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.																																																																																																																																																																																										
BENCH MARK:																																																																																																																																																																																														
ELEVATION: _____ FT.																																																																																																																																																																																														
NOTES:																																																																																																																																																																																														
ROADWAY BORING ELEVATIONS DERIVED FROM TIN FILE: B4506.LS.TNL.080730.TIN																																																																																																																																																																																														

09/08/09

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

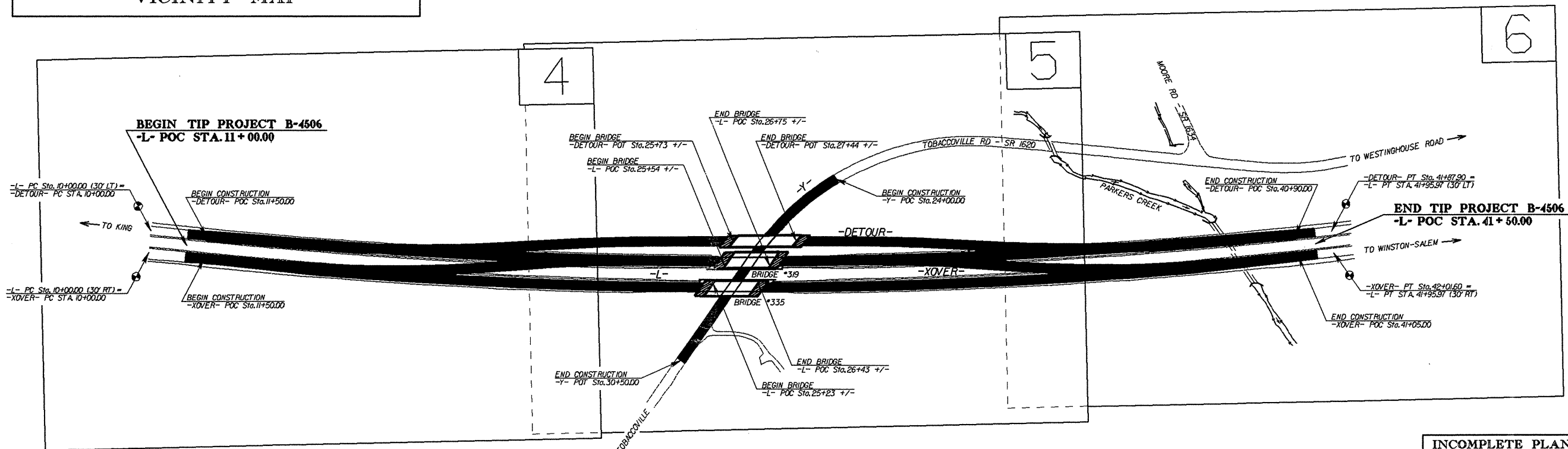
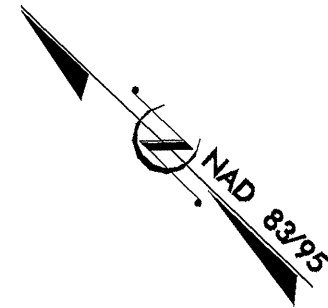
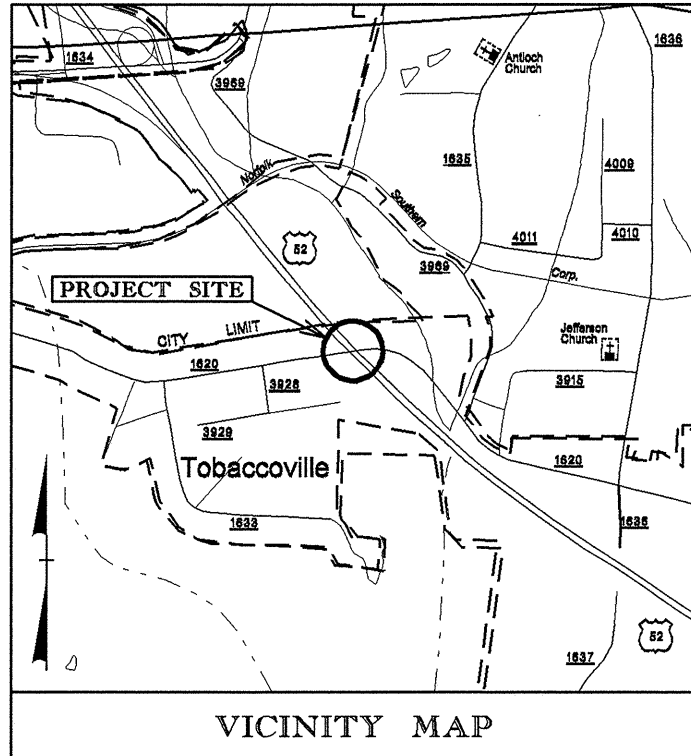
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4506	2A	17
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
38395.1.1	BRNHS-52(24)	PE	

FORSYTH COUNTY

LOCATION: BRIDGES NO. 319 & NO. 335 ON US 52
OVER SR 1620 (TOBACCOVILLE RD.)

TYPE OF WORK: GRADING, PAVING, DRAINAGE, & STRUCTURES

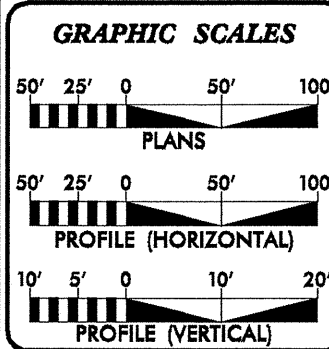
TIP PROJECT: B-4506



NOTES: (1) CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD _____
(2) THIS PROJECT IS WITHIN THE TOBACCOVILLE MUNICIPAL BOUNDARIES.

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

CONTRACT:



DESIGN DATA

ADT 2011 =	63,200
ADT 2030 =	105,000
DHV =	10 %
D =	60 %
T =	16 % *
V =	70 MPH
V (DETOUR) =	60 MPH
* TTST 10 %	DUAL 6 %

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4506 =	0.555 MI.
LENGTH STRUCTURE TIP PROJECT B-4506 =	0.023 MI.
TOTAL LENGTH OF TIP PROJECT B-4506 =	0.578 MI.

Prepared In the Office of:

DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:	MARCH 2010
LETTING DATE:	MARCH 15, 2011

ROGER D. THOMAS, P.E.
PROJECT ENGINEER

MICHAEL W. LITTLE, P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER

05-NOV-2009 09:26 d:\projects\b4506_geo_rdwy_forsyth\cadd_geotech\planprof\b4506_rdy_tsh.dgn ebeverly AT 06H28340

EARTHWORK BALANCE SHEET - FINAL ESTIMATE

Volumes in Cubic Yards

PROJECT: B-4506

COUNTY: Forsyth

DATE: 11/30/2011

ROCK SWELL:

SHEET 3 OF 17 SHEETS

LINE	STATION	STATION	EXCAVATION					EMBANKMENT				BORROW	WASTE				
			TOTAL UNLCASS.	ROCK	UNDERCUT	UNSUIT. UNCLASS.	SUITABLE UNCLASS.	TOTAL	ROCK	EARTH	EMBANK. 20%		ROCK	SUITABLE	UNSUIT.	TOTAL	
DETOUR & XOVER WORK																	
-L- (DET)	12+50.00	25+96.00	9,217					9,217								6,722	6,722
-L- (XOVER)	12+50.00	25+81.00	271					271					2,295				
SUBTOTAL 1			9,488				9,488	4,217		4,217	5,061	2,295			6,722	6,722	
DETOUR & XOVER WORK																	
-L- (DET)	27+25.00	37+00.00	204					204									
-L- (XOVER)	26+85.00	37+00.00	323					323									
SUBTOTAL 2			527				527	14,115		14,115	16,938	16,411					
DETOUR & XOVER SUBTOTAL			10,015				10,015	18,332		18,332	21,999	18,706			6,722	6,722	
LOSS DUE TO CLEARING & GRUBBING			-2,035				-2,035					2,035					
WASTE IN LIEU OF BORROW												-6,722		-6,722		-6,722	
DETOUR & XOVER TOTAL			7,980				7,980	18,332		18,332	21,999	14,019		0	0	0	
-L- (MED)	11+00.00	25+58.89	1,867					1,867							1,157	1,157	
-L- (RIGHT)	11+00.00	25+58.89	10,159					10,159							8,335	8,335	
SUBTOTAL 3			12,026				12,026	2,112		2,112	2,534			9,492	9,492		
-L- (MED)	26+39.77	38+50.00	1,523					1,523							900	900	
-L- (RIGHT)	26+26.00	38+50.00	3,138					3,138							1,159	1,159	
SUBTOTAL 4			4,661				4,661	2,168		2,168	2,602			2,059	2,059		
-Y-	24+00.00	30+50.00	1,750					1,750					1,558				
SUBTOTAL 5			1,750				1,750	2,757		2,757	3,308	1,558					
FINAL DESIGN SUBTOTAL			18,437				18,437	7,037		7,037	8,444	1,558		11,551	11,551		
WASTE IN LIEU OF BORROW												-1,558		-1,558		-1,558	
FINAL DESIGN TOTAL			18,437				18,437	7,037		7,037	8,444	0		9,993	9,993		
-L- (LEFT)	11+00.00	25+58.00	5,542					5,542							4,164	4,164	
SUBTOTAL 6			5,542				5,542	1,148		1,148	1,378			4,164	4,164		
-L- (LEFT)	26+72.07	38+50.00	4,574					4,574							3,354	3,354	
SUBTOTAL 7			4,574				4,574	1,017		1,017	1,220			3,354	3,354		
DETOUR REMOVAL TOTAL			10,116				10,116	2,165		2,165	2,598			7,518	7,518		
PROJECT SUBTOTAL			36,533				36,533	27,534		27,534	33,041	14,019		17,511	17,511		
MATERIAL FOR SHOULDER CONSTRUCTION								6,500		6,500	7,800	7,800					
WASTE IN LIEU OF BORROW (SHOULDER)												-7,800		-7,800		-7,800	
PROJECT TOTAL			36,533	0	0	0	36,533	34,034	0	34,034	40,841	14,019	0	9,711	0	9,711	
EST 5% TO REPLACE TOP SOIL ON BORROW PIT												701					
GRAND TOTAL			36,533									14,720					
SAY			37,000									15,000					
EST. DDE = 200 CY																	
EST. SHALLOW UNDERCUT = 1,000 CY																	
EST UNDERCUT = 1,000 CY																	

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



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

November 10, 2009

Respectfully submitted,

Eddie Beverly
Project Geological Engineer

STATE PROJECT: 38395.1.1 (B-4506)
FEDERAL PROJECT: BRNHS-52(24)
COUNTY: Forsyth
DESCRIPTION: Bridge No. 319 and 335 on US 52 over SR 1620 (Tobaccoville Rd.)
SUBJECT: Geotechnical Report - Inventory

PROJECT DESCRIPTION

The proposed project area falls within the Tobaccoville city limits in the northern part of Forsyth County. This roadway improvement project will include the replacement of 2 bridge structures along US 52, and will require construction of a temporary detour. The geotechnical investigation was performed in October of 2009. A total of 4 SPT roadway borings were performed utilizing a CME 550 drill machine with 8" hollow stem augers.

AREAS OF SPECIAL GEOTECHNICAL INTEREST

Some soft alluvial soils are associated with area drainage features and along the Parkers Creek floodplain. Alluvial soils are mainly comprised of soft silty sandy clay (A-7).

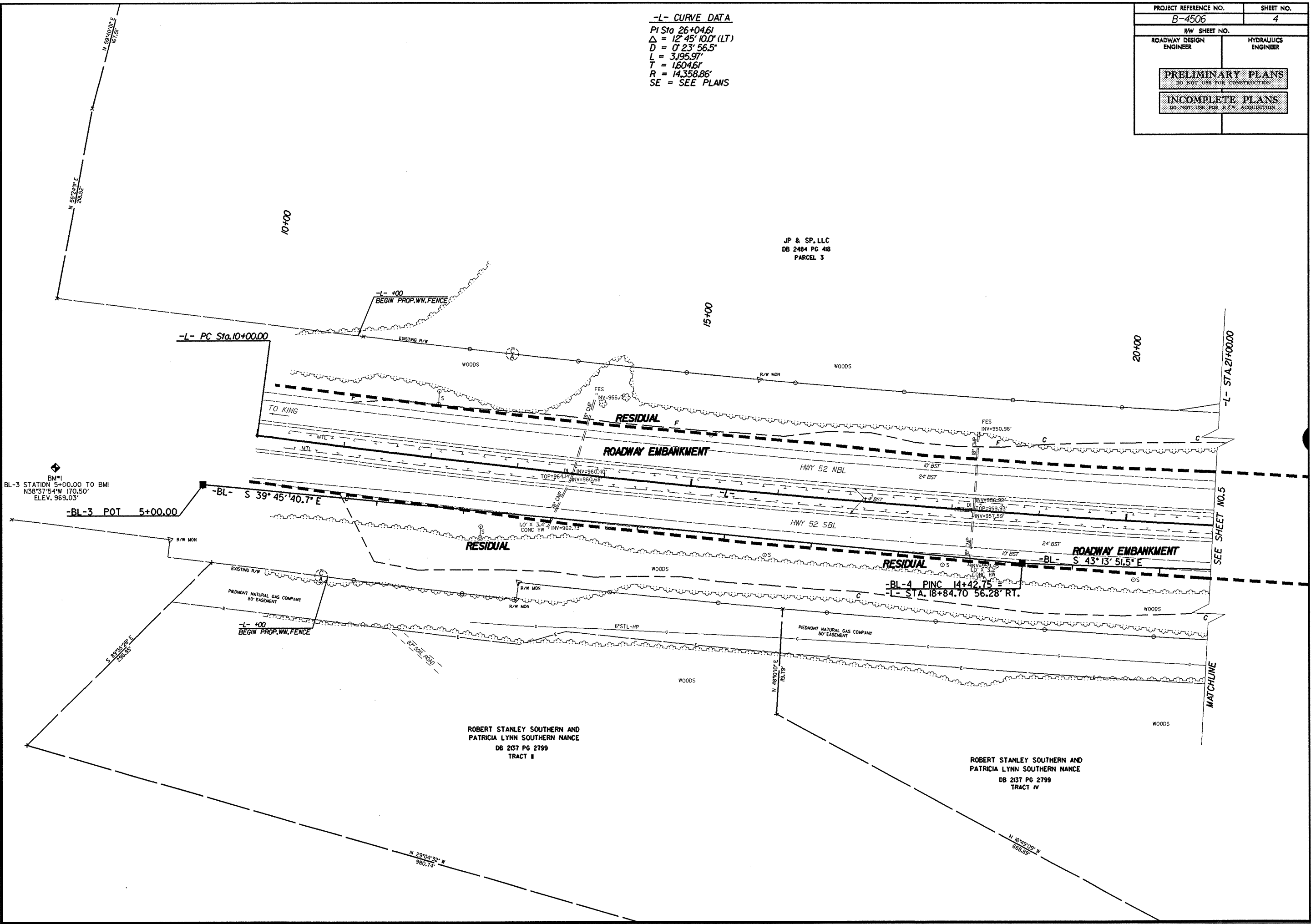
PHYSIOGRAPHY AND GEOLOGY

Geologically this site appears to fall within the Elk Park Plutonic Group of the Sauratown Mountains Anticlinorium. Likely underlying parent rock material would be quartz monzonite and / or diorite. Residual soil types were stiff to very stiff silty sandy clay (A-7-5, A-7-6), stiff sandy silt (A-5), and loose to medium dense silty sand (A-2-4). Soils are generally dry to moist. Severely weathered crystalline rock was encountered in only one boring at a depth of 30 feet. Water measurements made immediately after drilling showed no indication of water. No long term 24+ hour groundwater measurements were taken.

-L- CURVE DATA
 PI Sta 26+04.61
 $\Delta = 12^{\circ} 45' 10.0''$ (LT)
 $D = 0^{\circ} 23' 56.5''$
 $L = 3,195.97'$
 $T = 1,604.61'$
 $R = 14,358.86'$
 SE = SEE PLANS

REVISIONS

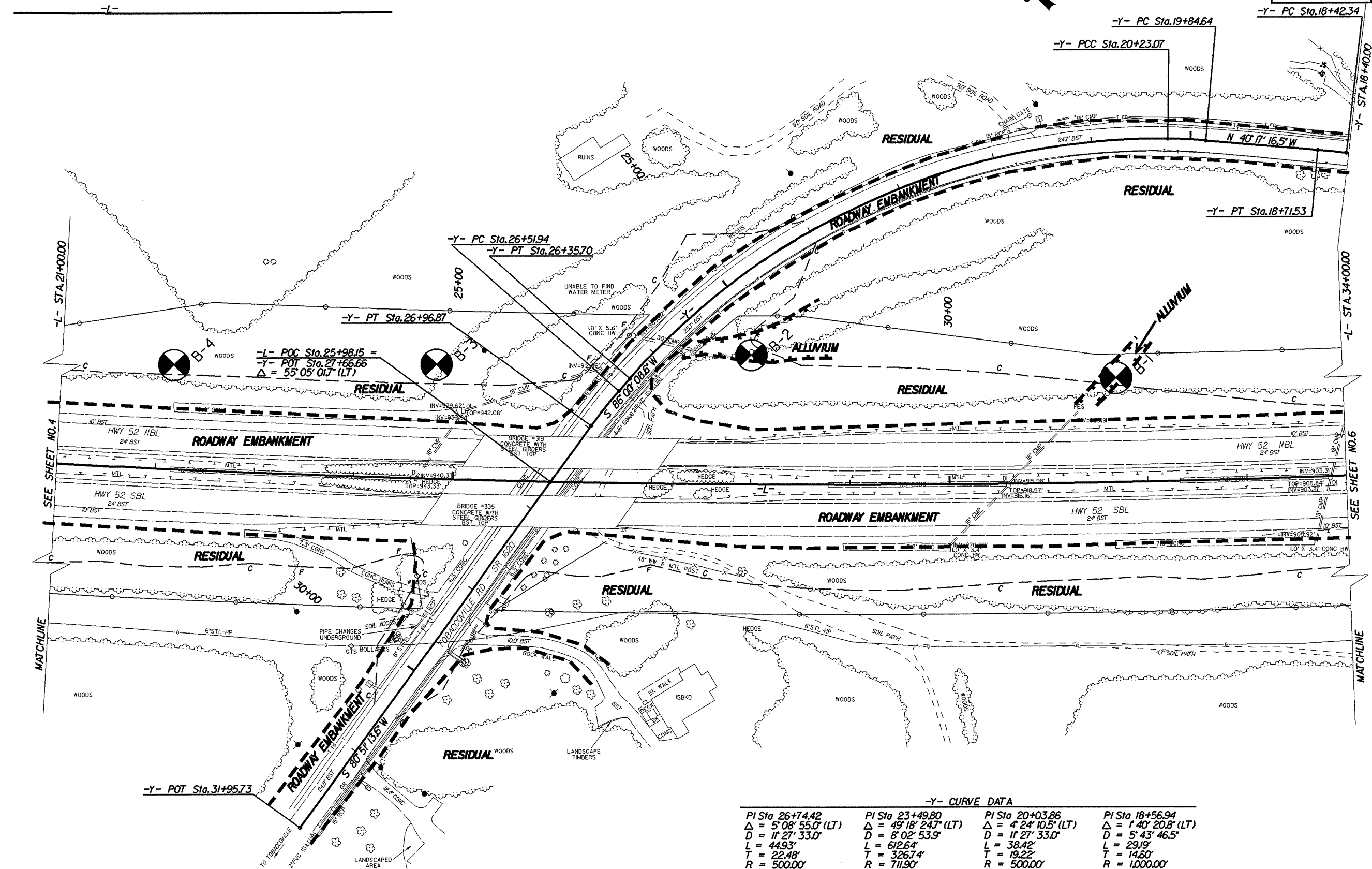
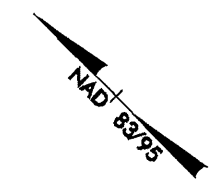
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PROJECT REFERENCE NO.	SHEET NO.
B-4506	5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>	
INCOMPLETE PLANS <small>DO NOT USE FOR R/F ACQUISITION</small>	

-L- CURVE DATA

PI Sta 26+04.61
 $\Delta = 12' 45" 10.0" (LT)$
 $D = 0' 23' 56.5"$
 $L = 3,195.97'$
 $T = 1,604.61'$
 $R = 14,358.86'$
 SE = SEE PLANS



REVISIONS

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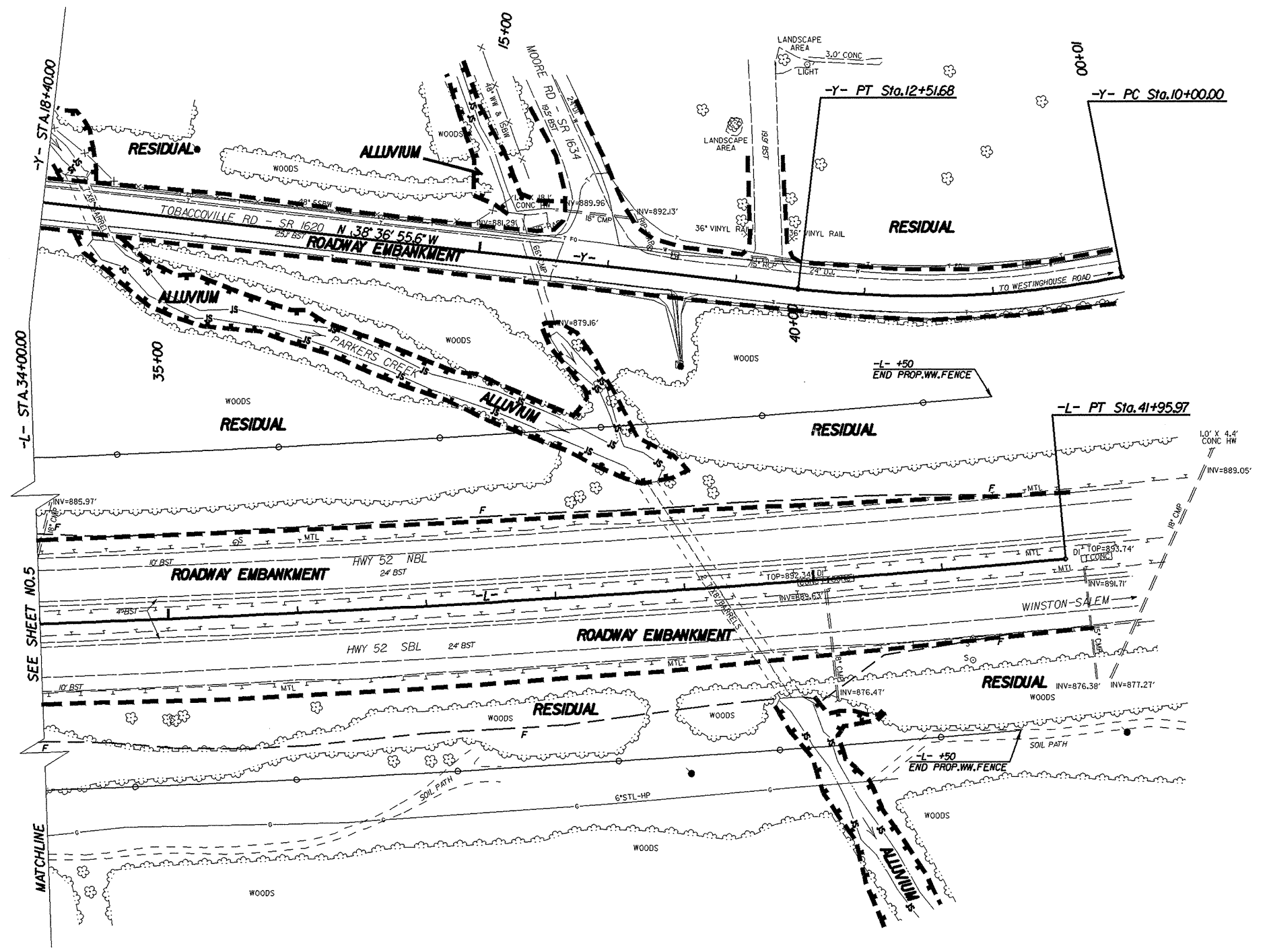
-Y- CURVE DATA

PI Sta 26+74.42 $\Delta = 5' 08' 55.0" (LT)$ $D = 1' 27' 33.0"$ $L = 44.93'$ $T = 22.48'$ $R = 500.00'$ SE = EXISTING	PI Sta 23+49.80 $\Delta = 49' 18' 24.7" (LT)$ $D = 8' 02' 53.9"$ $L = 612.64'$ $T = 326.74'$ $R = 711.90'$ SE = EXISTING	PI Sta 20+03.86 $\Delta = 4' 24' 10.5" (LT)$ $D = 1' 27' 33.0"$ $L = 38.42'$ $T = 19.22'$ $R = 500.00'$ SE = EXISTING	PI Sta 18+56.94 $\Delta = 1' 40' 20.8" (LT)$ $D = 5' 43' 46.5"$ $L = 29.19'$ $T = 14.60'$ $R = 1,000.00'$ SE = EXISTING
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PROJECT REFERENCE NO.	SHEET NO.
B-4506	6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	

-Y- CURVE DATA
 PI Sta 11+26.82
 $\Delta = 17^\circ 27' 27.5"$ (RT)
 $D = 6' 56" 11.5"$
 $L = 251.68'$
 $T = 126.82'$
 $R = 826.00'$
 SE = EXISTING

-L- CURVE DATA
 PI Sta 26+04.61
 $\Delta = 12^\circ 45' 10.0"$ (LT)
 $D = 0' 23' 56.5"$
 $L = 3,195.97'$
 $T = 1,604.61'$
 $R = 14,358.86'$
 SE = SEE PLANS



REVISIONS

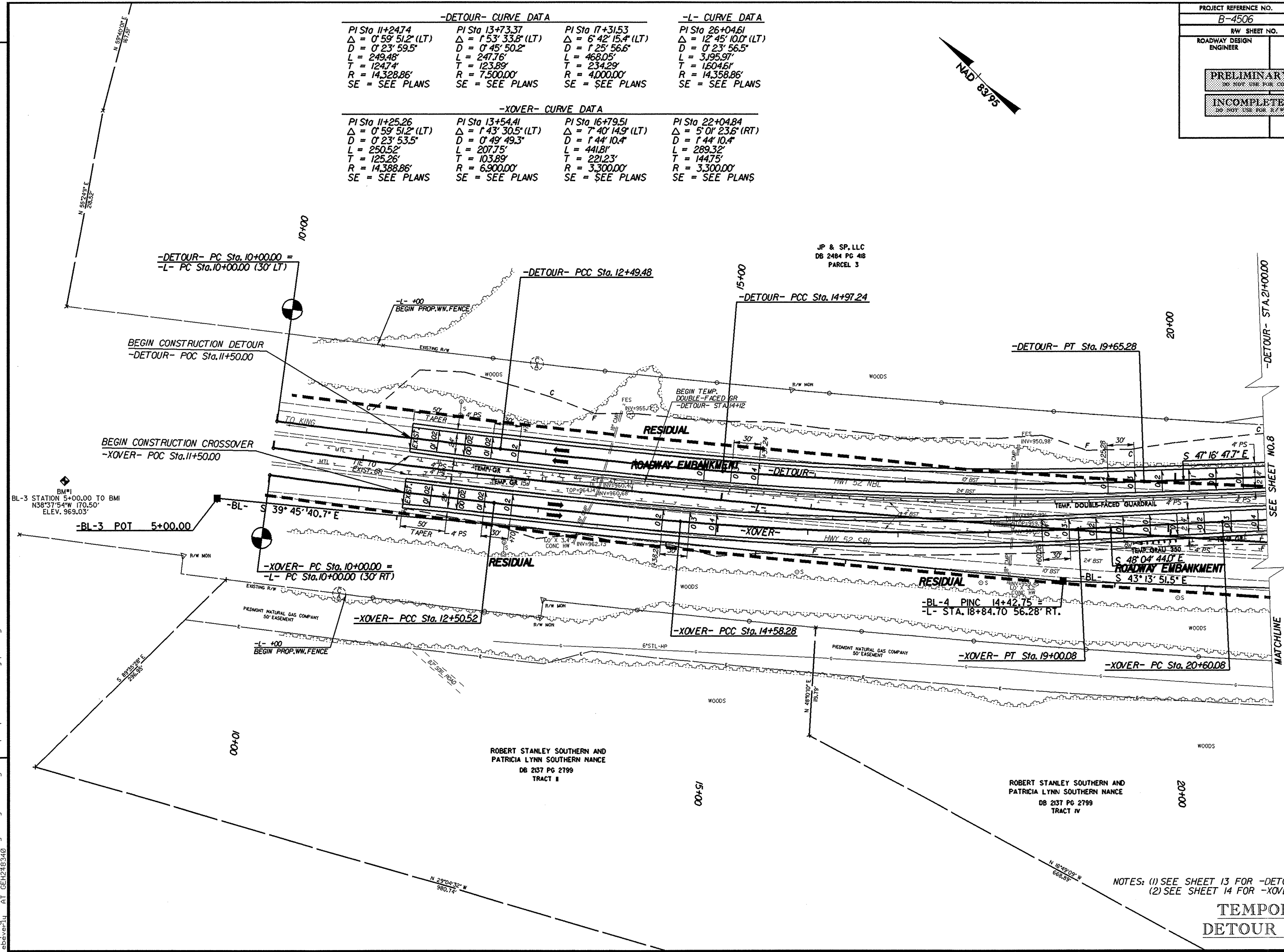
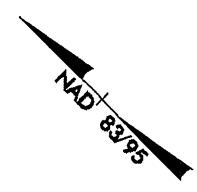
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SEE SHEET NO.5

MATCHLINE

-DETOUR- CURVE DATA			-L- CURVE DATA	
PI Sta 11+24.74	PI Sta 13+73.37	PI Sta 17+31.53	PI Sta 26+04.61	
$\Delta = 0^\circ 59' 51.2''$ (LT)	$\Delta = 1^\circ 53' 33.8''$ (LT)	$\Delta = 6^\circ 42' 15.4''$ (LT)	$\Delta = 12^\circ 45' 10.0''$ (LT)	
D = 0' 23' 59.5"	D = 0' 45' 50.2"	D = 1' 25' 56.6"	D = 0' 23' 56.5"	
L = 249.48'	L = 247.76'	L = 468.05'	L = 3,195.97'	
T = 124.74'	T = 123.89'	T = 234.29'	T = 1,604.61'	
R = 14,328.86'	R = 7,500.00'	R = 4,000.00'	R = 14,358.86'	
SE = SEE PLANS	SE = SEE PLANS	SE = SEE PLANS	SE = SEE PLANS	

-XOVER- CURVE DATA			
PI Sta 11+25.26	PI Sta 13+54.41	PI Sta 16+79.51	PI Sta 22+04.84
$\Delta = 0^\circ 59' 51.2''$ (LT)	$\Delta = 1^\circ 43' 30.5''$ (LT)	$\Delta = 7^\circ 40' 14.9''$ (LT)	$\Delta = 5^\circ 01' 23.6''$ (RT)
D = 0' 23' 53.5"	D = 0' 49' 49.3"	D = 1' 44' 10.4"	D = 1' 44' 10.4"
L = 250.52'	L = 207.75'	L = 441.81'	L = 289.32'
T = 125.26'	T = 103.89'	T = 221.23'	T = 144.75'
R = 14,388.86'	R = 6,900.00'	R = 3,300.00'	R = 3,300.00'
SE = SEE PLANS	SE = SEE PLANS	SE = SEE PLANS	SE = SEE PLANS



REVISIONS

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SEE SHEET NO. 8

MATCHLINE

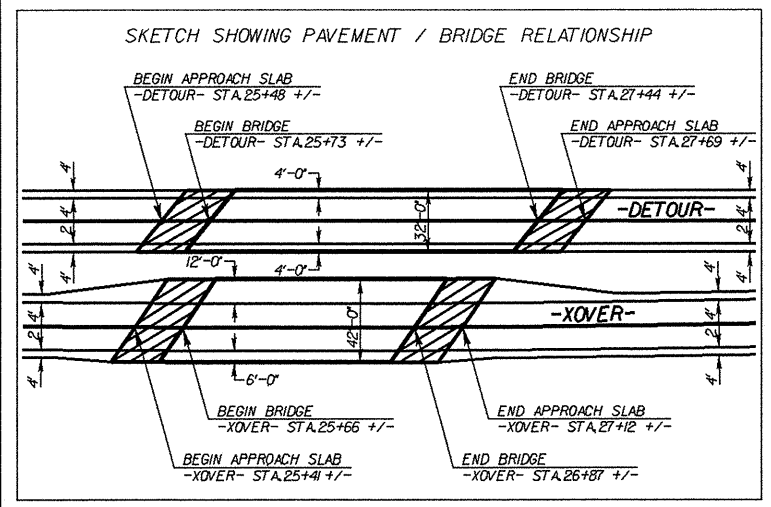
ROBERT STANLEY SOUTHERN AND
 PATRICIA LYNN SOUTHERN NANCE
 DB 2137 PG 2799
 TRACT II

ROBERT STANLEY SOUTHERN AND
 PATRICIA LYNN SOUTHERN NANCE
 DB 2137 PG 2799
 TRACT IV

NOTES: (1) SEE SHEET 13 FOR -DETOUR- PROFILE
 (2) SEE SHEET 14 FOR -XOVER- PROFILE

**TEMPORARY
 DETOUR SHEET**

WILLIAM ASHFORD CALDWELL III
DIANA M CLADWELL
DB 1863 PG 2390



-DETOUR- CURVE DATA

PI Sta 22+33.88 Δ = 3'06' 37.4" (RT) D = 1'25' 56.6" L = 217.15' T = 108.60' R = 4,000.00' SE = SEE PLANS	PI Sta 30+07.99 Δ = 3'06' 37.4" (RT) D = 1'25' 56.6" L = 217.15' T = 108.60' R = 4,000.00' SE = SEE PLANS	PI Sta 35+10.83 Δ = 6'42' 15.4" (LT) D = 1'25' 56.6" L = 468.05' T = 234.29' R = 4,000.00' SE = SEE PLANS	-L- CURVE DATA PI Sta 26+04.61 Δ = 12'45' 10.0" (LT) D = 0'23' 56.5" L = 3195.97' T = 1604.61' R = 14,358.86' SE = SEE PLANS
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-XOVER- CURVE DATA

PI Sta 22+04.84 Δ = 5'01' 23.6" (RT) D = 1'44' 10.4" L = 289.32' T = 144.75' R = 3,300.00' SE = SEE PLANS	PI Sta 26+27.91 Δ = 2'13' 40.0" (LT) D = 0'24' 00.0" L = 556.94' T = 144.75' R = 14,323.86' SE = SEE PLANS	PI Sta 30+51.10 Δ = 5'01' 23.6" (RT) D = 1'44' 10.4" L = 289.32' T = 144.75' R = 3,300.00' SE = SEE PLANS	PI Sta 35+76.90 Δ = 7'40' 14.9" (LT) D = 1'44' 10.4" L = 441.81' T = 221.23' R = 3,300.00' SE = SEE PLANS
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JP & SP, LLC
DB 2484 PG 418
PARCEL 3

JP & SP, LLC
DB 2272 PG 1835

JP & SP, LLC
DB 2272 PG 1835

AMY L MOORE
DB 2285 PG 0001

DERRICK J HUNTER
JOHNNIE M HUNTER
DB 2421 PG 674

DERRICK J HUNTER
JOHNNIE M HUNTER
DB 2074 PG 0859

ROBERT STANLEY SOUTHERN AND
PATRICIA LYNN SOUTHERN NANCE
DB 2137 PG 2799
TRACT IV

NOTES: (1) SEE SHEET 13 FOR -DETOUR- PROFILE
(2) SEE SHEET 15 FOR -XOVER- PROFILE
(3) SEE SHEET 16 FOR -Y- PROFILE
(4) SEE SHEETS S- TO S- FOR STRUCTURE DETAILS

-Y- CURVE DATA

PI Sta 26+74.42 Δ = 5'08' 55.0" (LT) D = 11'27' 33.0" L = 44.93' T = 22.48' R = 5,000.00' SE = EXISTING	PI Sta 23+49.80 Δ = 49'18' 24.7" (LT) D = 8'02' 53.9" L = 612.64' T = 326.74' R = 711.90' SE = EXISTING	PI Sta 20+03.86 Δ = 4'24' 10.5" (LT) D = 11'27' 33.0" L = 38.42' T = 19.22' R = 5,000.00' SE = EXISTING	PI Sta 18+56.94 Δ = 1'40' 20.8" (LT) D = 5'43' 46.5" L = 29.19' T = 14.60' R = 1,000.00' SE = EXISTING
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TEMPORARY
DETOUR SHEET

REVISIONS

SEE SHEET NO.7

SEE SHEET NO.9

MATCHLINE

MATCHLINE

23-OCT-2009 11:15:06 s:\p06_096_096.dwg...for\syth\cadd\geotech\planproj\4506_rdy.pst8.dgn

PROJECT REFERENCE NO.	SHEET NO.
B-4506	9
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
INCOMPLETE PLANS DO NOT USE FOR E/C ACQUISITION	

-Y- CURVE DATA
 PI Sta 11+26.82
 $\Delta = 17' 27" 27.5" (RT)$
 $D = 6' 56" 11.5"$
 $L = 251.68'$
 $T = 126.82'$
 $R = 826.00'$
 SE = EXISTING

-L- CURVE DATA
 PI Sta 26+04.61
 $\Delta = 12' 45" 10.0" (LT)$
 $D = 0' 23" 56.5"$
 $L = 3,195.97'$
 $T = 1604.61'$
 $R = 14,358.86'$
 SE = SEE PLANS

-DETOUR- CURVE DATA
 PI Sta 35+10.83
 $\Delta = 6' 42" 15.4" (LT)$
 $D = 1' 25" 56.6"$
 $L = 468.05'$
 $T = 234.29'$
 $R = 4,000.00'$
 SE = SEE PLANS

-DETOUR- CURVE DATA
 PI Sta 38+68.48
 $\Delta = 1' 53" 33.8" (LT)$
 $D = 0' 45" 50.2"$
 $L = 247.76'$
 $T = 123.89'$
 $R = 7,500.00'$
 SE = SEE PLANS

-DETOUR- CURVE DATA
 PI Sta 40+90.13
 $\Delta = 0' 46" 55.1" (LT)$
 $D = 0' 23" 59.5"$
 $L = 195.56'$
 $T = 97.78'$
 $R = 14,328.86'$
 SE = SEE PLANS

-XOVER- CURVE DATA
 PI Sta 35+76.90
 $\Delta = 7' 40" 14.9" (LT)$
 $D = 1' 44" 10.4"$
 $L = 441.81'$
 $T = 221.23'$
 $R = 3,300.00'$
 SE = SEE PLANS

-XOVER- CURVE DATA
 PI Sta 39+01.35
 $\Delta = 1' 43" 30.5" (LT)$
 $D = 0' 49" 49.3"$
 $L = 207.75'$
 $T = 103.89'$
 $R = 6,900.00'$
 SE = SEE PLANS

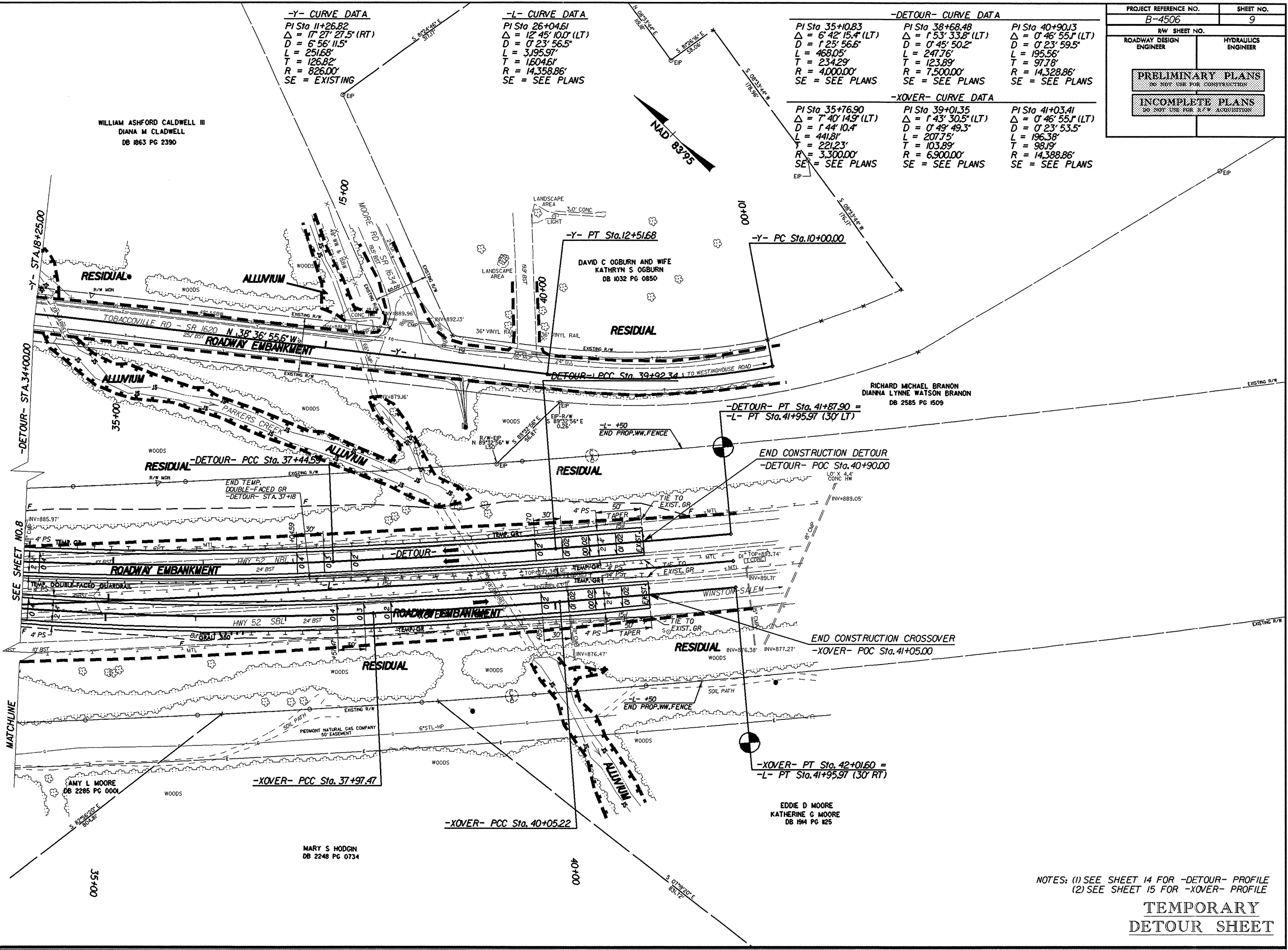
-XOVER- CURVE DATA
 PI Sta 41+03.41
 $\Delta = 0' 46" 55.1" (LT)$
 $D = 0' 23" 53.5"$
 $L = 196.38'$
 $T = 98.19'$
 $R = 14,388.86'$
 SE = SEE PLANS

WILLIAM ASHFORD CALDWELL III
 DIANA M CLADWELL
 DB 1863 PG 2390

RICHARD MICHAEL BRANON
 DIANNA LYNNE WATSON BRANON
 DB 2585 PG 1509

EDDIE D MOORE
 KATHERINE G MOORE
 DB 1944 PG 125

MARY S HODGIN
 DB 2248 PG 0734



REVISIONS

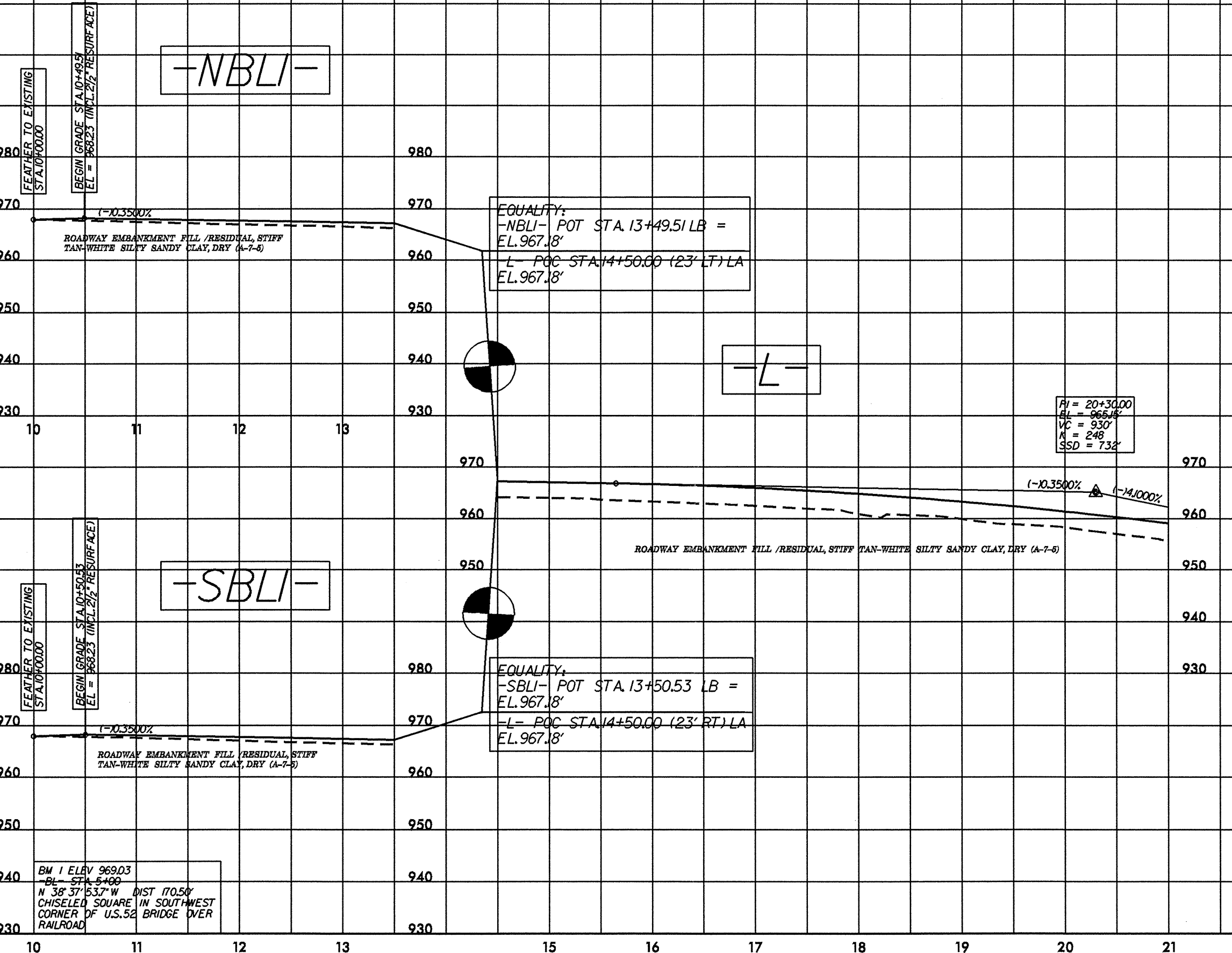
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 01/28/09 10:33:10
 01/28/09 10:33:10

NOTES: (1) SEE SHEET 14 FOR -DETOUR- PROFILE
 (2) SEE SHEET 15 FOR -XOVER- PROFILE

**TEMPORARY
 DETOUR SHEET**

5/14/99

PROJECT REFERENCE NO. B-4506	SHEET NO. 10
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



-NBLI-

-L-

-SBLI-

EQUALITY:
 -NBLI- POT STA. 13+49.51 LB = EL. 967.8'
 -L- POC STA. 14+50.00 (23' LT) LA EL. 967.8'

EQUALITY:
 -SBLI- POT STA. 13+50.53 LB = EL. 967.8'
 -L- POC STA. 14+50.00 (23' RT) LA EL. 967.8'

PI = 20+30.00
 EL = 965.15
 VC = 930'
 K = 248
 SSD = 732'

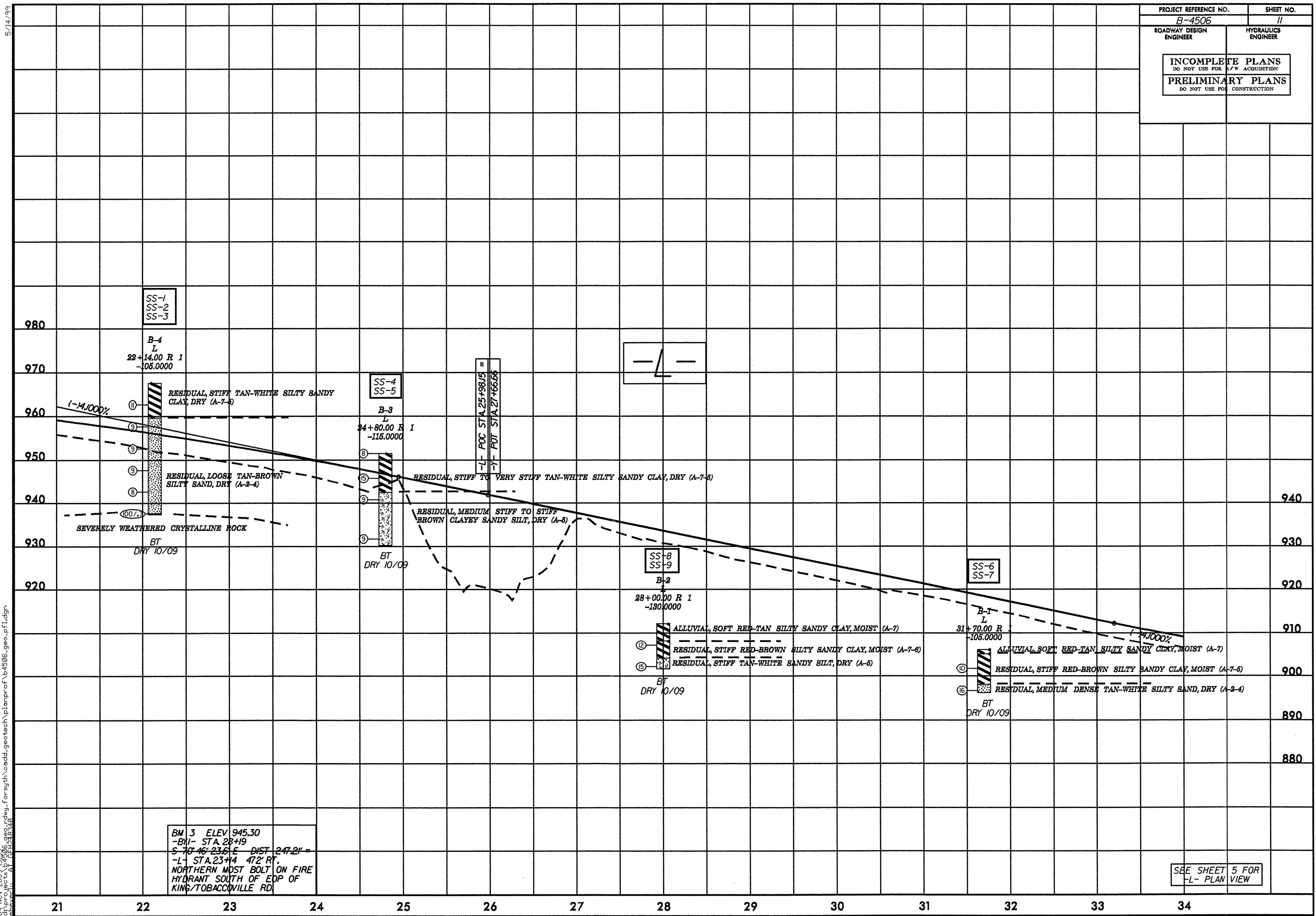
BM 1 ELEV 969.03
 -BL- STA 5+00
 N 38° 37' 53.7\"

SEE SHEET 4 FOR
 -L- PLAN VIEW

04-NOV-2009 13:33
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5/14/99

PROJECT REFERENCE NO. B-4506	SHEET NO. 11
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



SS-1
SS-2
SS-3

B-4
L
22+14.00 R 1
-105.0000

(-14.000%)

- 11
- 9
- 9
- 8
- 100%

RESIDUAL, STIFF TAN-WHITE SILTY SANDY CLAY, DRY (A-7-6)

RESIDUAL, LOOSE TAN-BROWN SILTY SAND, DRY (A-2-4)

SEVERELY WEATHERED CRYSTALLINE ROCK

BT
DRY 10/09

SS-4
SS-5

B-3
L
24+80.00 R 1
-115.0000

- 8
- 15
- 9
- 9

RESIDUAL, STIFF TO VERY STIFF TAN-WHITE SILTY SANDY CLAY, DRY (A-7-6)

RESIDUAL, MEDIUM STIFF TO STIFF BROWN CLAYEY SANDY SILT, DRY (A-5)

BT
DRY 10/09

-L-

POC STA. 25+98.15
-L- POC STA. 27+466.66

SS-8
SS-9

B-2
L
28+00.00 R 1
-130.0000

- 12
- 15

ALLUVIAL, SOFT RED-TAN SILTY SANDY CLAY, MOIST (A-7)

RESIDUAL, STIFF RED-BROWN SILTY SANDY CLAY, MOIST (A-7-8)

RESIDUAL, STIFF TAN-WHITE SANDY SILT, DRY (A-5)

BT
DRY 10/09

SS-6
SS-7

B-1
L
31+70.00 R 1
-105.0000

- 10
- 16

ALLUVIAL, SOFT RED-TAN SILTY SANDY CLAY, MOIST (A-7)

RESIDUAL, STIFF RED-BROWN SILTY SANDY CLAY, MOIST (A-7-5)

RESIDUAL, MEDIUM DENSE TAN-WHITE SILTY SAND, DRY (A-2-4)

BT
DRY 10/09

BM 3 ELEV 945.30
-BN1- STA. 28+19
S 70° 46' 23.6" E DIST 247.24'
-L- STA. 23+4 472' RT.
NORTHERN MOST BOLT ON FIRE
HYDRANT SOUTH OF EOP OF
KING/TOBACCOVILLE RD

SEE SHEET 5 FOR
-L- PLAN VIEW

04-NOV-2009 13:38 c:\projects\114506\114506.dwg...forsyth\cadd\geotech\p\lans\proj\114506-geo-pl.dwg

5/14/99

PROJECT REFERENCE NO. B-4506	SHEET NO. 12
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

-NBL2-

PI = 11+60.00
 EL = 896.22'
 VC = 320'
 K = 183

END GRADE STA. 13+20.00
 EL = 896.54 (INCL. 2 1/2" RESURFACE)
 FEATHER TO EXISTING
 STA. 13+49.54

EQUALITY:
 -L- POC STA. 38+00.00 (23' LT) LB =
 EL. 898.70'
 -NBL2- POT STA. 10+00.00 LA
 EL. 898.70'

ROADWAY EMBANKMENT FILL /RESIDUAL, STIFF TAN-WHITE
 SILTY SANDY CLAY, DRY (A-7-6)

PI = 35+60.00
 EL = 902.42'
 VC = 480'
 K = 188

ROADWAY EMBANKMENT FILL /RESIDUAL, STIFF TAN-WHITE
 SILTY SANDY CLAY, DRY (A-7-6)

-L-

-SBL2-

PI = 11+60.00
 EL = 896.22'
 VC = 320'
 K = 183

END GRADE STA. 13+20.00
 EL = 896.54 (INCL. 2 1/2" RESURFACE)
 FEATHER TO EXISTING
 STA. 13+50.53

EQUALITY:
 -L- POC STA. 38+00.00 (23' RT) LB =
 EL. 898.70'
 -SBL2- POT STA. 10+00.00 LA
 EL. 898.70'

ROADWAY EMBANKMENT FILL /RESIDUAL, STIFF TAN-WHITE
 SILTY SANDY CLAY, DRY (A-7-6)

BM 2 ELEV 906.41
 -BL- STA. 39+63
 S 51° 36' 18.8" E DIST 237.10'
 RAILROAD SPIKE IN SEAM OF
 PAVED CONCRETE DITCH IN
 MEDIAN OF U.S. 52

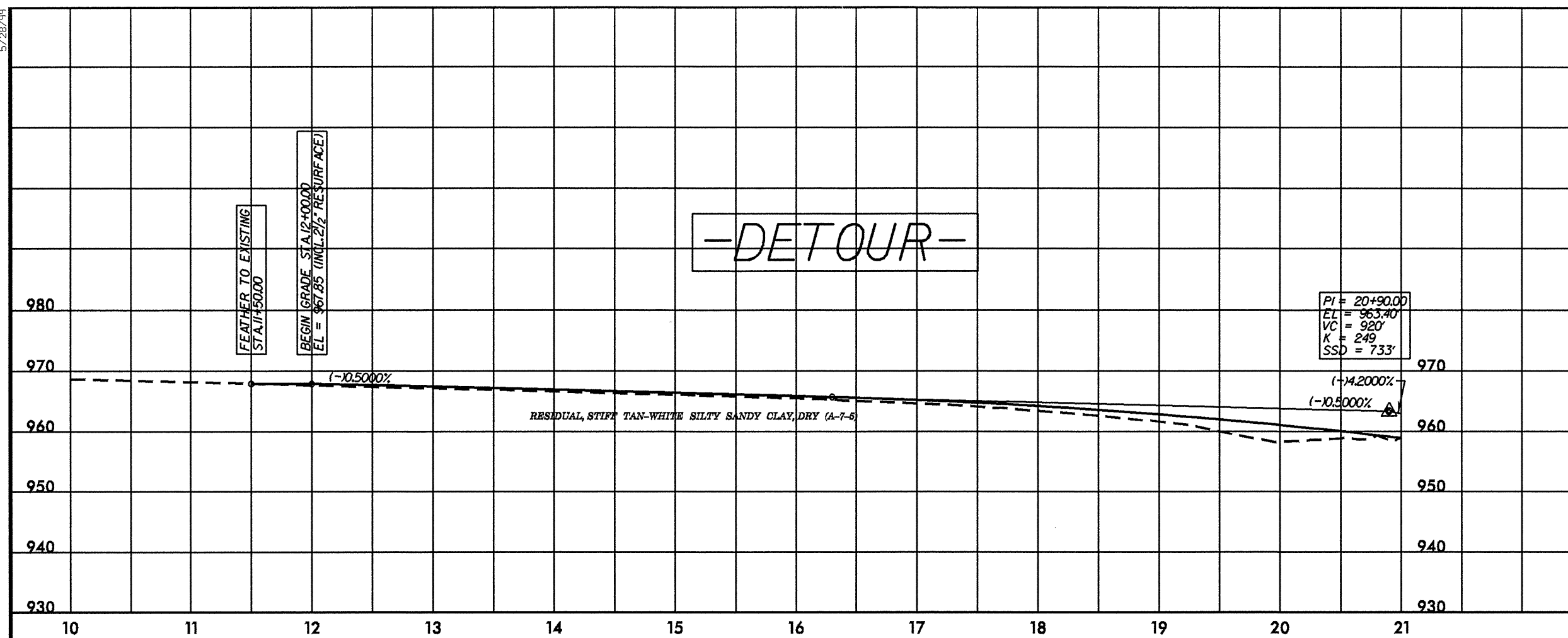
SEE SHEET 6 FOR
 -L- PLAN VIEW

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5/28/99

PROJECT REFERENCE NO. B-4506	SHEET NO. 13
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



SEE SHEET 7 FOR -DETOUR- PLAN VIEW



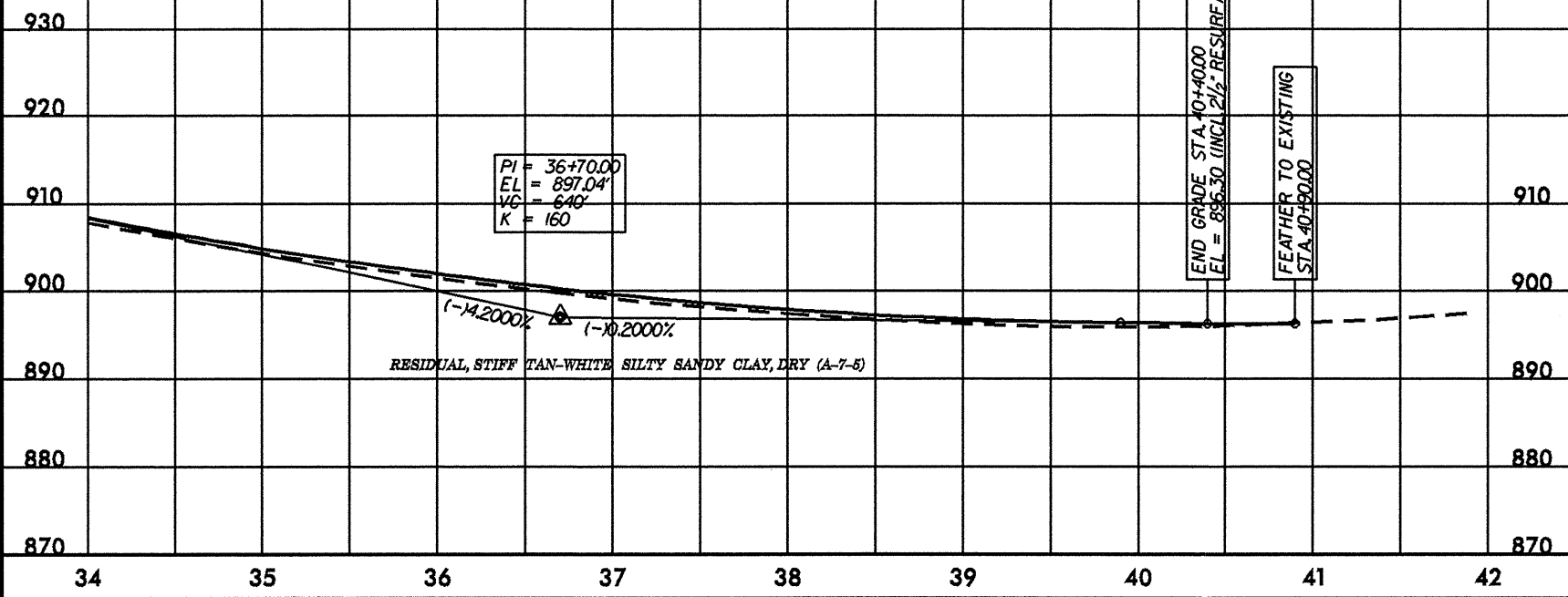
SEE SHEET 8 FOR -DETOUR- PLAN VIEW

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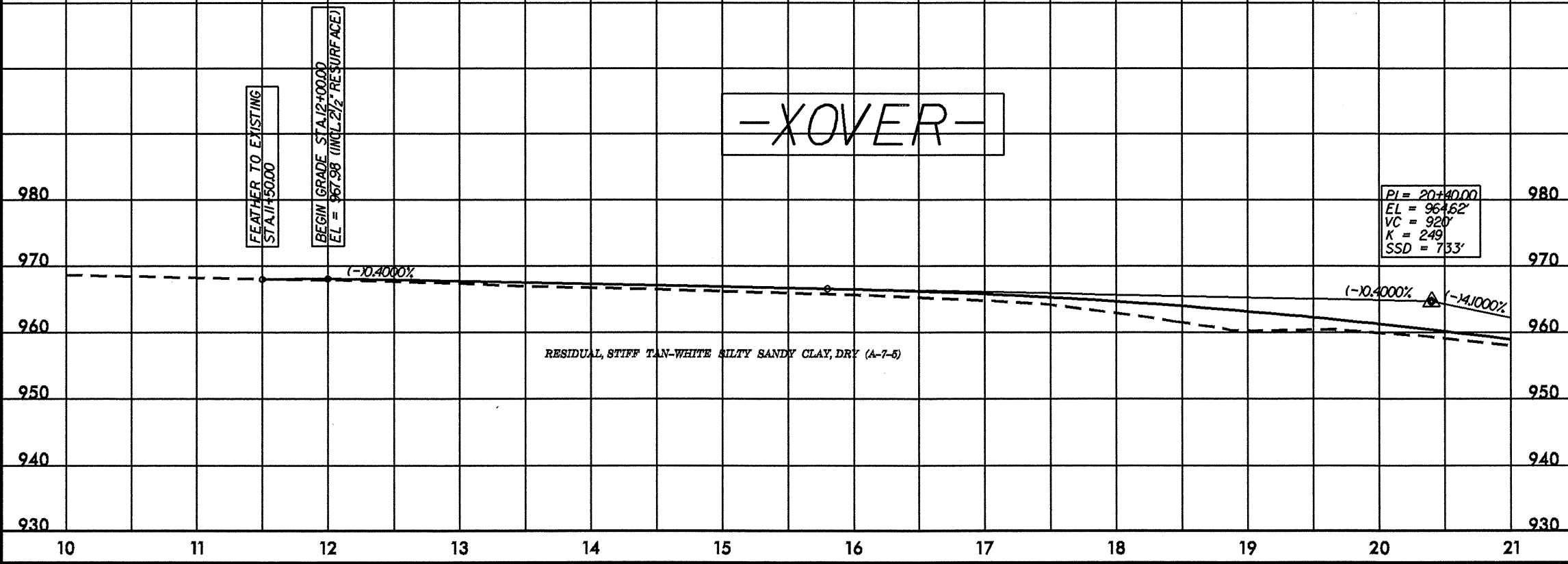
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ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

-DETOUR-



SEE SHEET 9 FOR
-DETOUR- PLAN VIEW

-XOVER-

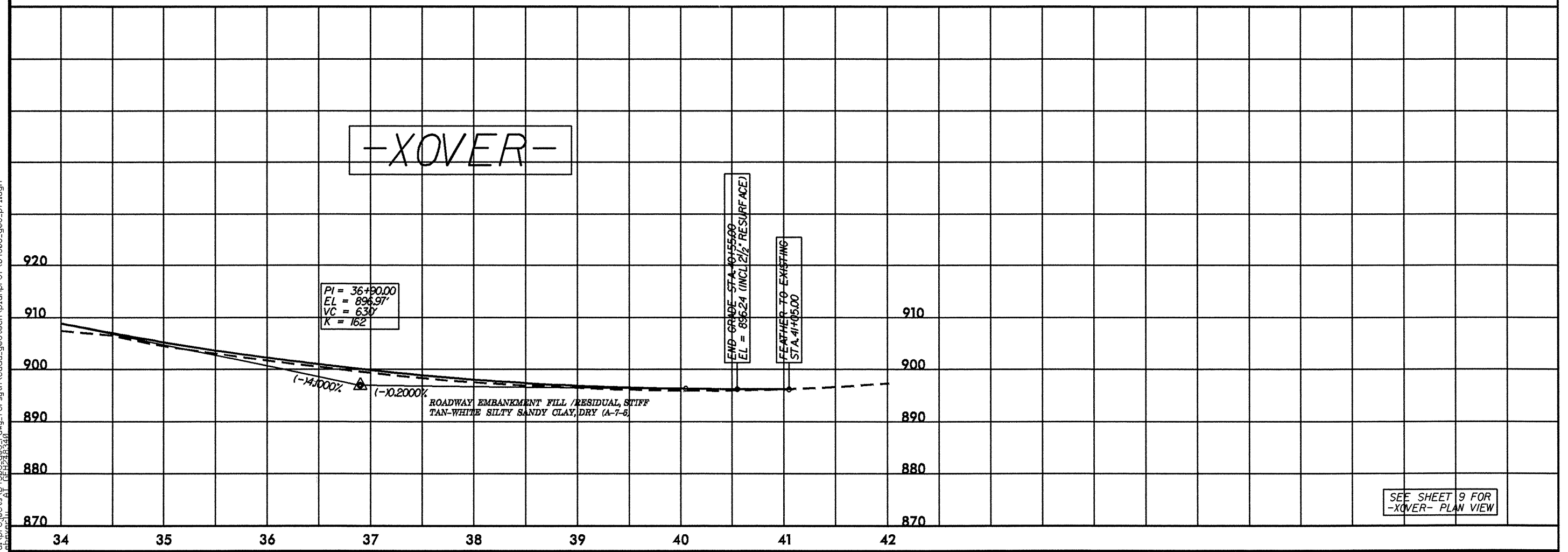
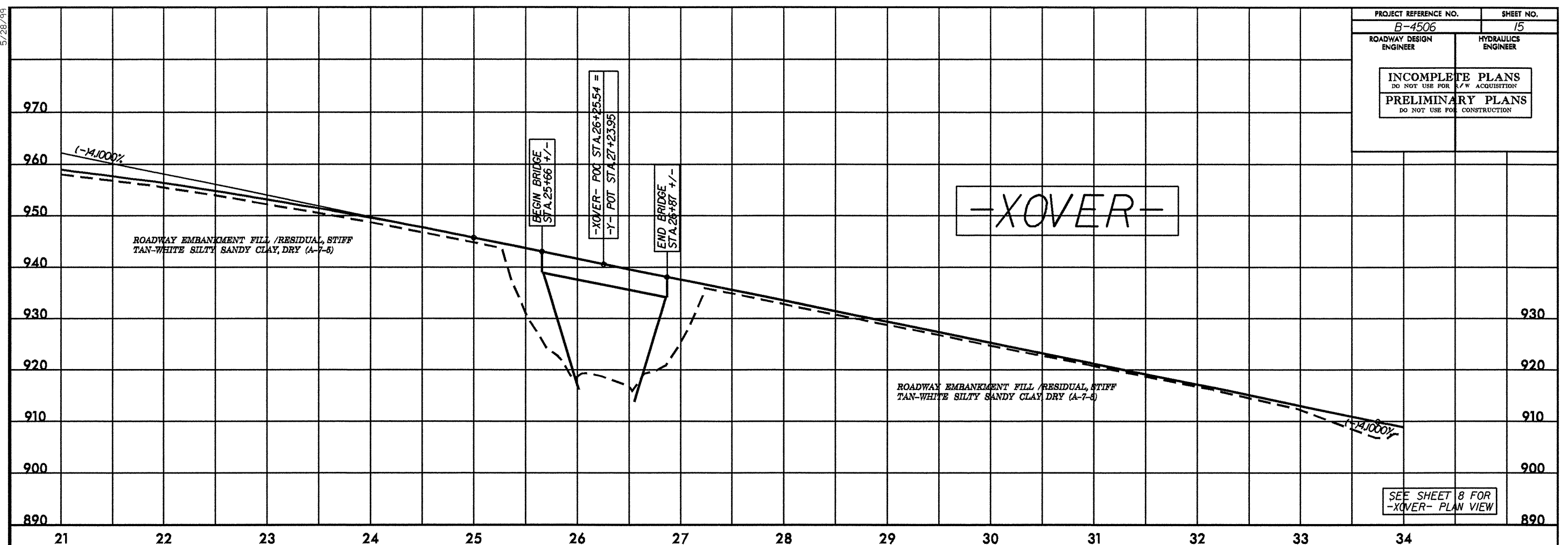


SEE SHEET 7 FOR
-XOVER- PLAN VIEW

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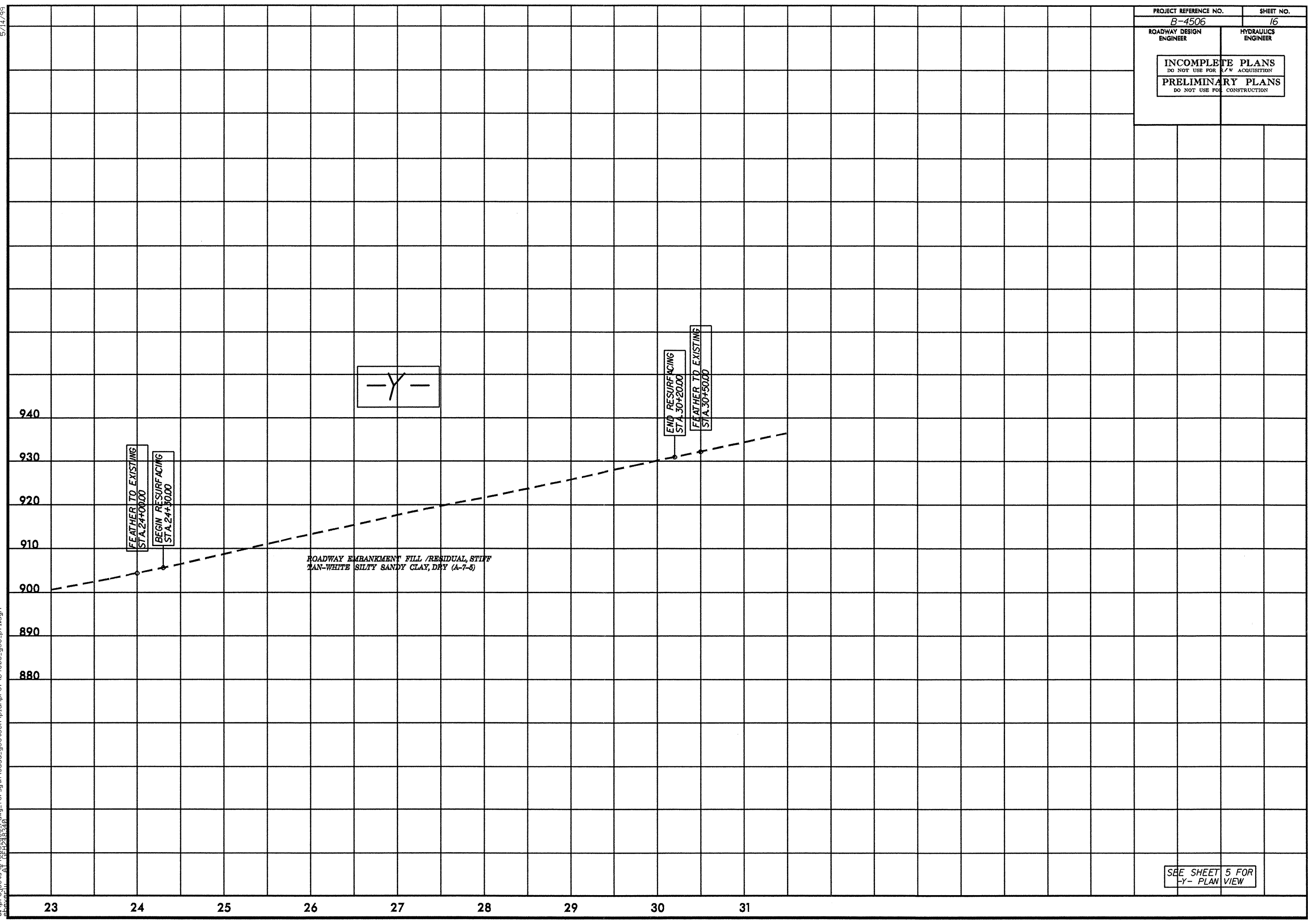
PROJECT REFERENCE NO. B-4506	SHEET NO. 15
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



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PROJECT REFERENCE NO.	SHEET NO.
B-4506	16
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

SEE SHEET 5 FOR
-Y- PLAN VIEW

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAY
 MATERIALS & TESTS UNIT
 SOILS LABORATORY

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAY
 MATERIALS & TESTS UNIT
 SOILS LABORATORY

T. I. P. No. B-4506

T. I. P. No. B-4506

REPORT ON SAMPLES OF SOILS FOR QUALITY

REPORT ON SAMPLES OF SOILS FOR QUALITY

Project 38395.1 County FORSYTH Owner _____

Project 38395.1 County FORSYTH Owner _____

TEST RESULTS

Proj. Sample No.	SS-1	SS-2	SS-3	SS-4	SS-5	SS-6
Lab. Sample No.	758768	758769	758770	758771	758772	758773
Retained #4 Sieve %	-	-	2	-	-	1
Passing #10 Sieve %	100	100	97	99	98	97
Passing #40 Sieve %	96	84	92	87	91	94
Passing #200 Sieve %	60	32	26	50	44	70

TEST RESULTS

Proj. Sample No.	SS-7	SS-8	SS-9		
Lab. Sample No.	758774	758775	758776		
Retained #4 Sieve %	-	6	-		
Passing #10 Sieve %	97	84	100		
Passing #40 Sieve %	76	67	90		
Passing #200 Sieve %	34	40	44		

MINUS NO. 10 FRACTION

SOIL MORTAR - 100%						
Coarse Sand Ret - #60 %	12.1	32.3	22.4	22.8	20.8	9.1
Fine Sand Ret - #270 %	33.3	41.6	58.5	31.7	40.9	21.8
Silt 0.05 - 0.005 mm %	24.3	20.1	15.0	21.3	22.2	10.6
Clay < 0.005 mm %	30.3	6.1	4.0	24.2	16.1	58.5
Passing #40 Sieve %	-	-	-	-	-	-
Passing #200 Sieve %	-	-	-	-	-	-

MINUS NO. 10 FRACTION

SOIL MORTAR - 100%					
Coarse Sand Ret - #60 %	36.7	31.9	21.2		
Fine Sand Ret - #270 %	34.9	22.6	43.2		
Silt 0.05 - 0.005 mm %	20.3	13.2	27.5		
Clay < 0.005 mm %	8.1	32.3	8.1		
Passing #40 Sieve %	-	-	-		
Passing #200 Sieve %	-	-	-		

L. L.	71	31	50	52	52	67
P. I.	19	2	2	16	8	29
AASHTO Classification	A-7-5(13)	A-2-4(0)	A-2-5(0)	A-7-5(6)	A-5(2)	A-7-5(22)
Station	22+14	22+14	22+14	24+80	24+80	31+70
OFFSET	105 LT	105 LT	105 LT	115 LT	115 LT	105 LT
ALIGNMENT	L	L	L	L	L	L
Depth (Ft)	3.40	8.40	13.40	5.00	10.00	4.30
to	4.40	9.40	14.40	6.00	11.00	5.30

L. L.	35	41	45		
P. I.	5	17	4		
AASHTO Classification	A-2-4(0)	A-7-6(3)	A-5(0)		
Station	31+70	28+00	28+00		
OFFSET	105 LT	130 LT	130 LT		
ALIGNMENT	L	L	L		
Depth (Ft)	9.30	4.20	9.20		
to	10.30	5.20	10.20		