

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

GEOTECHNICAL UNIT

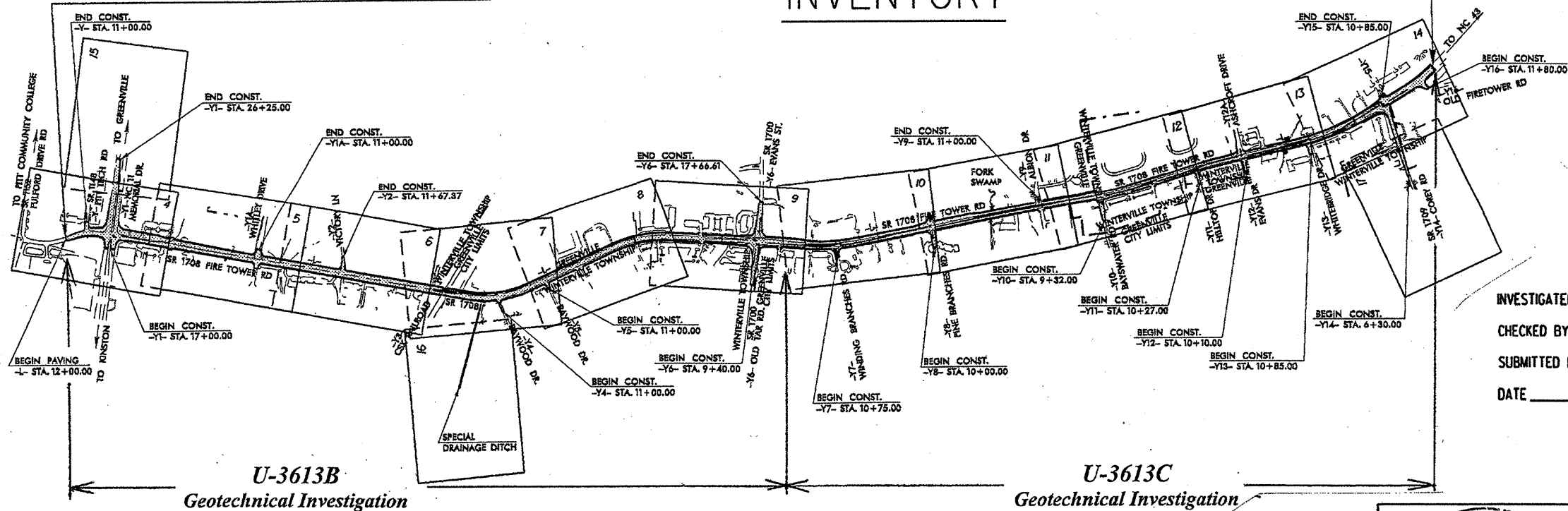
SUBSURFACE INVESTIGATION

STATE PROJECT 34961.3.3 I.D. NO. U-3613B
 F.A. PROJECT MASTP-1708(II)
 COUNTY PITT
 DESCRIPTION GREENVILLE - SR 1708
(FIRE TOWER RD.) FROM WEST OF NC 11-903
TO SR 1700 (OLD TAR RD/EVANS RD.)

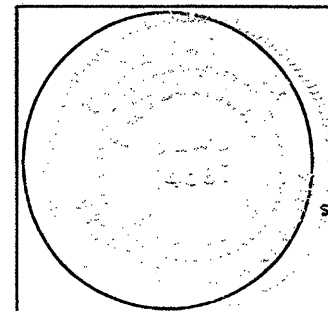
STA. 151+70.00 -L- END TIP PROJECT U-3613B

STA. 11+98.70 -L- BEGIN TIP PROJECT U-3613B

INVENTORY



INVESTIGATED BY N. T. ROBERSON PERSONNEL JWB
 CHECKED BY C. M. GILLIAM LBM
 SUBMITTED BY L. T. PACKER GEJ
 DATE 09/05/01



SEAL

SIGNATURE

[Handwritten Signature]

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.

DRAWN BY: W. D. FIELDS

CONTENTS:

-L- STA. 11+98.70 TO 83+74.50

CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WAS 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 UNIT @ (919) 250-4088. NEITHER THE SUBSURFACE PLANS AND REPORTS, NOR THE FIELD BORING LOGS, ROCK CORES, OR SOIL TEST DATA IS 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 (ON-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

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

CONTRACT: C201700 U-3613B

STATE	STATE PROJECT REFERENCE NO.	SUBJECT NO.	TOTAL SHEETS
N.C.	U-3613B	1	12
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34961.1.2	MA-STP-1708(1)	PE	
34961.2.2	STP-1708(3)	RW UTIL.	
34961.3.3	STP-1708(5)	CONST.	

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

GEOTECHNICAL UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

Table with columns: ID, STATE PROJECT NO., SHEET NO., TOTAL SHEETS. Values: U-3613B, 8. 2220901, 2, 12.

SOIL IS CONSIDERED TO BE THE UNCONSOLIDATED, SEMI-CONSOLIDATED OR WEATHERED EARTH MATERIALS WHICH CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER, AND WHICH YIELDS LESS THAN 100 BLOWS PER FOOT ACCORDING TO STANDARD PENETRATION TEST (AASHTO T208, ASTM D-1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM AND BASIC DESCRIPTIONS GENERALLY SHALL INCLUDE: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. EXAMPLE:

GRADATION 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.

ROCK DESCRIPTION HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT WHEN TESTED, WOULD YIELD SPT REFUSAL. AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL.

TERMS AND DEFINITIONS ALLUVIUM (ALLUV.) - SOILS WHICH HAVE BEEN TRANSPORTED BY WATER. AQUIFER - A WATER BEARING FORMATION OR STRATA.

SOIL LEGEND AND AASHTO CLASSIFICATION table with columns for GRANULAR MATERIALS, SILT-CLAY MATERIALS, ORGANIC MATERIALS, GROUP CLASS., SYMBOL, % PASSING, LIQUID LIMIT, PLASTIC INDEX, GROUP INDEX, USUAL TYPES, GEN. RATING.

MINERALOGICAL COMPOSITION MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE. COMPRESSIBILITY SLIGHTLY COMPRESSIBLE LIQUID LIMIT LESS THAN 30 MODERATELY COMPRESSIBLE LIQUID LIMIT 31-50 HIGHLY COMPRESSIBLE LIQUID LIMIT GREATER THAN 50

WEATHERING ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE. VERY SLIGHT (V. SL.) ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN.

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.

CONSISTENCY OR DENSITY table with columns for PRIMARY SOIL TYPE, COMPACTNESS OR CONSISTENCY, RANGE OF STANDARD PENETRATION RESISTANCE, RANGE OF UNCONFINED COMPRESSIVE STRENGTH.

MISCELLANEOUS SYMBOLS ROADWAY EMBANKMENT WITH SOIL DESCRIPTION. SOIL SYMBOL. ARTIFICIAL FILL OTHER THAN ROADWAY EMBANKMENTS. INFERRED SOIL BOUNDARIES.

ROCK HARDNESS VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGISTS PICK.

RESIDUAL SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. ROCK QUALITY DESIGNATION (R.Q.D.) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.

TEXTURE OR GRAIN SIZE table with columns for U.S. STD. SIEVE SIZE, BOULDER, COBBLE, GRAVEL, COARSE SAND, FINE SAND, SILT, CLAY.

ABBREVIATIONS AR - AUGER REFUSAL. BT - BORING TERMINATED. CL - CLAY. CPT - CONE PENETRATION TEST.

FRACTURE SPACING TERM SPACING VERY WIDE MORE THAN 10 FEET WIDE 3 TO 10 FEET MODERATELY CLOSE 1 TO 3 FEET CLOSE 0.16 TO 1 FEET VERY CLOSE LESS THAN 0.16 FEET

SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS IN OR B.P.F. OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER.

SOIL MOISTURE - CORRELATION OF TERMS table with columns for SOIL MOISTURE SCALE, FIELD MOISTURE DESCRIPTION, GUIDE FOR FIELD MOISTURE DESCRIPTION.

EQUIPMENT USED ON SUBJECT PROJECT DRILL UNITS: MOBILE B-, BK-51, CME-45, CME-550, PORTABLE HOIST, OTHER. ADVANCING TOOLS: CLAY BITS, 6" CONTINUOUS FLIGHT AUGER, 8" HOLLOW AUGERS, HARD FACED FINGER BITS, TUNG-CARBIDE INSERTS, CASING W/ ADVANCER, TRICONE STEEL TEETH, TRICONE TUNG-CARB., CORE BIT, OTHER.

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.

TOPSOIL (T.S.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER. BENCH MARK: ELEVATION: NOTES:

PLASTICITY table with columns for PLASTICITY INDEX (PI), DRY STRENGTH, COLOR. DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YEL-BRN, BLUE-GRAY) MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.

HAND TOOLS: POST HOLE DIGGER, HAND AUGER, SOUNDING ROD, VANE SHEAR TEST, OTHER DCP.

INDURATION FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF THE MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC. MODERATELY INDURATED GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER.

INDURATION FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF THE MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC. EXTREMELY INDURATED SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.

See Sheet 1-A For Index of Sheets

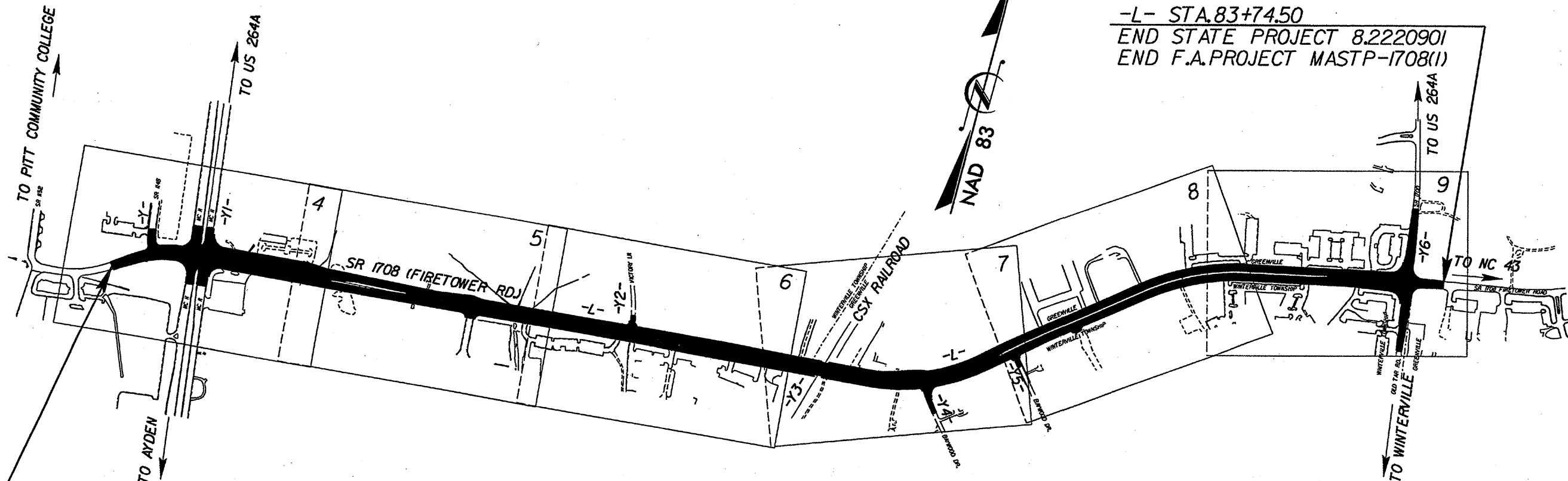
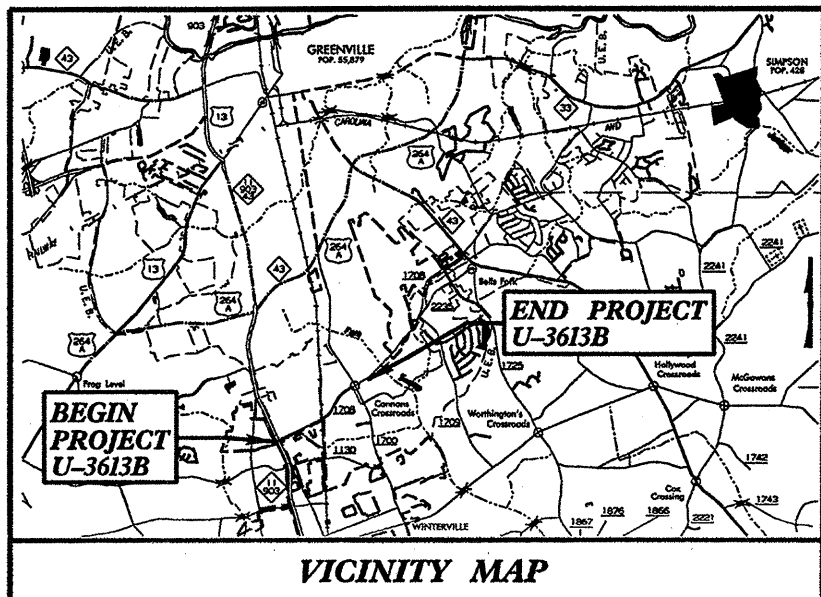
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PITT COUNTY

LOCATION: GREENVILLE - SR 1708 (FIRE TOWER ROAD) FROM WEST OF NC 11-903 TO SR 1700 (OLD TAR ROAD/EVANS ROAD).

TYPE OF WORK: GRADING, DRAINAGE, PAVING, CURB & GUTTER

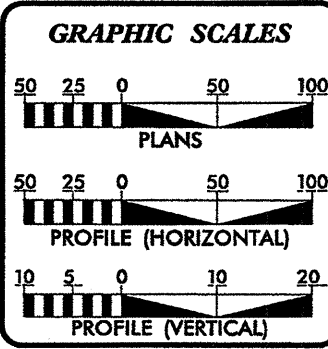
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3613B	2A	12
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
8.2220901	MASTP-1708(1)	PE	



-L- STA. 11+98.70
BEGIN STATE PROJECT 8.2220901
BEGIN F.A. PROJECT MASTP-1708(1)

-L- STA. 83+74.50
END STATE PROJECT 8.2220901
END F.A. PROJECT MASTP-1708(1)

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



DESIGN DATA

ADT 2000 =	17,400
ADT 2020 =	27,000
DHV =	10 %
D =	60 %
T =	3 % *
V =	50 MPH
* TTST 1.0 %	DUAL 2.0 %

PROJECT LENGTH

LENGTH OF ROADWAY F.A. PROJECT MASTP-1708(1) =	1.359 mi.
TOTAL LENGTH STATE PROJECT 8.2220901 =	1.359 mi.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD	

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

1995 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE: NOVEMBER 16, 2001	J. A. SPEER, PE PROJECT ENGINEER
LETTING DATE: JUNE 17, 2003	S. M. CASEY PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE DESIGN ENGINEER

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED

DIVISION ADMINISTRATOR

DATE

PROJECT: 8.2220901 U-3613B

9/09/99



STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

1501 MAIL SERVICE CENTER, RALEIGH, N.C. 27699-1501

LYNDO TIPPETT
SECRETARY

September 5, 2001

STATE PROJECT: 8.2220901 (U-3613B)
FEDERAL PROJECT: MASTP-1708 (1)
COUNTY: Pitt
DESCRIPTION: Greenville – SR 1708 (Fire Tower Rd.) from west of
NC 11/ 903 to SR 1700 (Old Tar Rd./Evans Rd.)
SUBJECT: Geotechnical Report – Inventory

Project Description

The project is located in central Pitt County near Winterville. The proposed construction consists of upgrading the existing three-lane roadway to a four to five-lane facility with curb and gutter. The length of the project is 1.359 miles.

A geotechnical investigation was conducted in May 2001 utilizing hand augers and dynamic cone penetrometers. Soil samples were obtained for visual classification in the field and for laboratory analysis by the Materials and Tests Unit.

Subsurface information is provided for the following survey line:

<u>Line</u>	<u>Station</u>
-L-	11+98 to 83+74.5

Areas of Special Geotechnical Interest

- 1) Ground water: No ground water was encountered within 6 ft. of proposed subgrade during this investigation.
- 2) Hard Rock: Hard rock was not encountered during this subsurface investigation.

Physiography and Geology

The project is located south of Greenville within the Coastal Plain Physiographic Province. The project has topography consistent with the Coastal Plain with flat terrain and very broad stream valleys. The project is drained by Fork Swamp and its tributaries which flow into The Tar River. Geologically, the project is underlain by sedimentary rocks and soils of the Yorktown Formation.

Soil Properties

Soils present on this project are primarily of Coastal Plain origin. These soils are derived from the weathering of underlying sedimentary strata. The soils consist of silty sands (A-2-4) sandy silts (A-4) and sandy, silty clays (A-6, A-7). The Coastal Plain clays have low to moderate plasticity indices (11 to 24).

Ground water

Ground water was encountered intermittently in borings throughout the project. Generally, the water table is fairly shallow especially in the relatively low-lying areas. Ground water was not encountered within 6 feet of subgrade elevation.

Respectfully submitted,

N. T. Roberson
Project Geologist

LTP/NTR/kw
File: U-3613B inv. doc

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA **SUMMARY OF EARTHWORK** IN CUBIC YARDS

LOCATION		EXCAVATION (CUBIC YARDS)					EMBANKMENT (CUBIC YARDS)					WASTE (CUBIC YARDS)		
STATION	STATION	TOTAL	ROCK	UNDERCUT	UNSUITABLE	SUITABLE	TOTAL	ROCK	EARTH	EMBANKMENT PLUS 25%	BORROW	SUITABLE	UNSUITABLE	TOTAL
		UNCLASSIFIED			UNCLASSIFIED	UNCLASSIFIED	EMBANKMENT							
PHASE I														
WIDEN -L- RIGHT														
SUMMARY NO. 1														
-L- 12+00.00	-L- 16+20.70	473			47	426							47	47
TOTAL SUMMARY NO. 1		473			47	426							47	47
SUMMARY NO. 2														
-L- 27+04.00	-L- 30+90.00	109			11	98	39		39	49		49	11	60
-L- 31+68.00	-L- 33+95.00	20			2	18	38		38	48	30		2	2
-L- 38+00.00	-L- 38+90.00	10			1	9	18		18	23	14		1	1
-L- 39+33.00	-L- 39+66.00	2				2	5		5	6	4			
-L- 46+00.00	-L- 46+58.00	6			1	5	23		23	29	24		1	1
TOTAL SUMMARY NO. 2		147			15	132	123		123	155	72	49	15	64
SUMMARY NO. 3														
-L- 47+20.00	-L- 49+68.00	35			3	32	58		58	73	41		3	3
TOTAL SUMMARY NO. 3		35			3	32	58		58	73	41		3	3
SUMMARY NO. 4														
-L- 51+50.00	-L- 81+19.00	1556		1585	156	1400	2076		2076	2595	1195		1741	1741
TOTAL SUMMARY NO. 4		1556		1585	156	1400	2076		2076	2595	1195		1741	1741
SUMMARY NO. 5														
-L- 82+66.00	-L- 88+44.00	178		245	36	142	348		348	435	293		281	281
-L- 89+97.00	-L- 94+29.00	116		127	23	93	220		220	275	182		150	150
-L- 97+26.00	-L- 98+91.00	17		183	3	14	213		213	266	232		186	186
TOTAL SUMMARY NO. 5		311		555	62	249	781		781	976	727		617	617
SUMMARY NO. 6														
-L- 116+46.00	-L- 138+37.00	839		1020	168	671	1716		1716	2145	1474		1188	1188
-L- 140+90.00	-L- 143+25.00	93			19	74	2		2	3		71	19	90
TOTAL SUMMARY NO. 6		932		1020	187	745	1718		1718	2148	1474	71	1207	1278
PHASE II														
CONSTRUCT -L- LEFT														
SUMMARY NO. 7														
-L- 12+00.00	-L- 16+20.70	63			6	57	177		177	221	164		6	6
-Y- 10+18.01	-Y- 11+00.00	3				3	36		36	45	42			
-Y1- 18+48.72	-Y1- 26+25.00	284			28	256	221		221	276	20		28	28
TOTAL SUMMARY NO. 7		350			34	316	434		434	542	226		34	34

Note: Approximate quantities only. Unclassified Excavation, Fine Grading, Clearing and Grubbing, Breaking of Existing Pavement, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA SUMMARY OF EARTHWORK IN CUBIC YARDS

LOCATION		EXCAVATION (CUBIC YARDS)					EMBANKMENT (CUBIC YARDS)				WASTE (CUBIC YARDS)			
STATION	STATION	TOTAL UNCLASSIFIED	ROCK	UNDERCUT	UNSUITABLE UNCLASSIFIED	SUITABLE UNCLASSIFIED	TOTAL EMBANKMENT	ROCK EMBANKMENT	EARTH EMBANKMENT	EMBANKMENT PLUS 25%	BORROW	SUITABLE	UNSUITABLE	TOTAL
SUMMARY NO. 8														
-L- 17+25.00	-L- 49+82.00	5210		5093	521	4689	13227		13227	16534	11845		5614	5614
-Y1A- 10+34.00	-Y1A- 11+00.00	12			1	11	28		28	35	24		1	1
-Y2- 10+34.03	-Y2- 11+67.37	73			7	66	96		96	120	54		7	7
TOTAL SUMMARY NO. 8		5295		5093	529	4766	13351		13351	16689	11923		5622	5622
SUMMARY NO. 9														
-L- 49+92.00	-L- 81+85.97	701		2493	70	631	6347		6347	7934	7303		2563	2563
-Y6- 14+08.98	-Y6- 17+66.61	278			28	250	406		406	508	258		28	28
TOTAL SUMMARY NO. 9		979		2493	98	881	6753		6753	8442	7561		2591	2591
SUMMARY NO. 10														
-L- 81+85.97	-L- 111+00.00	7511		2555	1502	6009	4878		4878	6098	89		4057	4057
-Y9- 10+34.01	-Y9- 11+00.00	14			3	11	3		3	4		7	3	10
TOTAL SUMMARY NO. 10		7525		2555	1505	6020	4881		4881	6102	89	7	4060	4067
SUMMARY NO. 11														
-L- 111+00.00	-L- 141+00.00	3432		1818	686	2746	4274		4274	5343	2597		2504	2504
TOTAL SUMMARY NO. 11		3432		1818	686	2746	4274		4274	5343	2597		2504	2504
SUMMARY NO. 12														
-L- 141+00.00	-L- 151+70.00	218			44	174	440		440	550	376		44	44
TOTAL SUMMARY NO. 12		218			44	174	440		440	550	376		44	44
PHASE III CONSTRUCT -L- RIGHT														
SUMMARY NO. 13														
-L- 12+00.00	-L- 16+20.70	186			19	167	256		256	320	183		19	19
-Y1- 17+00.00	-Y1- 18+48.72	18			2	16	12		12	15		1	2	3
TOTAL SUMMARY NO. 13		204			21	183	268		268	335	183	1	21	22
SUMMARY NO. 14														
-L- 17+25.00	-L- 49+82.00	843			84	759	4259		4259	5324	4565		84	84
TOTAL SUMMARY NO. 14		843			84	759	4259		4259	5324	4565		84	84
SUMMARY NO. 15														
-L- 49+92.00	-L- 81+85.97	770			77	693	3841		3841	4801	4108		77	77
-Y4- 11+00.00	-Y4- 12+24.90						287		287	359	359			
-Y5- 11+00.00	-Y5- 11+66.53						70		70	88	88			
-Y6- 9+40.00	-Y6- 13+40.92	405			40	365	144		144	180		185	40	225
TOTAL SUMMARY NO. 15		1175			117	1058	4342		4342	5428	4555	185	117	302

Note: Approximate quantities only. Unclassified Excavation, Fine Grading, Clearing and Grubbing, Breaking of Existing Pavement, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA **SUMMARY OF EARTHWORK** IN CUBIC YARDS

LOCATION		EXCAVATION (CUBIC YARDS)					EMBANKMENT (CUBIC YARDS)				WASTE (CUBIC YARDS)			
STATION	STATION	TOTAL UNCLASSIFIED	ROCK	UNDERCUT	UNSUITABLE UNCLASSIFIED	SUITABLE UNCLASSIFIED	TOTAL EMBANKMENT	ROCK EMBANKMENT	EARTH EMBANKMENT	EMBANKMENT PLUS 25%	BORROW	SUITABLE	UNSUITABLE	TOTAL
SUMMARY NO. 16														
-L- 81+85.97	-L- 111+00.00	652		664	132	530	3991		3991	4989	4459		796	796
-Y7- 10+75.00	-Y7- 11+66.89	24			5	19	60		60	75	56		5	5
-Y8- 10+00.00	-Y8- 11+69.12	182			36	146							36	36
TOTAL SUMMARY NO. 16		858		664	173	695	4051		4051	5064	4515		837	837
SUMMARY NO. 17														
-L- 111+00.00	-L- 141+00.00	763		201	153	610	3493		3493	4366	3756		354	354
-Y10- 9+32.00	-Y10- 11+71.73	102			20	82	151		151	189	107		20	20
-Y11- 10+00.00	-Y11- 11+65.05	298			60	238	6		6	8		230	60	290
-Y12- 10+00.00	-Y12- 11+62.54	92			18	74	47		47	59		15	18	33
-Y13- 10+85.00	-Y13- 11+99.11	18			4	14	35		35	44	30		4	4
TOTAL SUMMARY NO. 17		1273		201	255	1018	3732		3732	4666	3893	245	456	701
SUMMARY NO. 18														
-L- 141+00.00	-L- 151+70.00	39			5	31	2004		2004	2505	2474		8	8
-Y14- 6+30.00	-Y14- 13+70.00	1211			242	969	1263		1263	1579	610		242	242
-Y16- 11+80.00	-Y16- 12+63.53	20			4	16	2		2	3		13	4	17
TOTAL SUMMARY NO. 18		1270			254	1016	3269		3269	4087	3084	13	254	267
SUMMARY TOTALS		26886		15984	4270	22616	54810		54810	68519	47046	571	20254	20825
WASTE IN LIEU OF BORROW											-571	-571		-571
SHOULDER MATERIAL							75		75	94				
LOSS DUE TO C&G (500+1300)		-1800				-1800								1800
GRADE POINT UNDERCUT (700+300)				1000	1000		1000		1000	1250	1250		1000	1000
CONTINGENCY UNDERCUT (500+500+350)				1350	1350		1350		1350	1688	1688		1350	1350
*LESS SELECT GRANULAR MATERIAL										-25250	-25250			
GRAND TOTALS		25086		18334	4620	20816	57235		57235	46301	26057		22604	22604
+5% TO REPLACE TOPSOIL IN BORROW PIT											1303			
PROJECT GRAND TOTALS		25086		18334							27360			
SAY		25100		18350							27375			
DRAINAGE DITCH EXCAVATION = 2280 CY														
FABRIC FOR SOIL STABILIZATION = 24900 SY														
CLASS IV SUBGRADE STABILIZATION = 673 TONS														
<small>*UNDERCUT AREAS ARE BACKFILLED WITH EMBANKMENT WITHIN EARTHWORK SUMMARY; THEREFORE, THE SELECT GRANULAR MATERIAL IS DEDUCTED FROM THE BORROW QUANTITY AT END OF SUMMARY TOTALS</small>														

Note: Approximate quantities only. Unclassified Excavation, Fine Grading, Clearing and Grubbing, Breaking of Existing Pavement, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

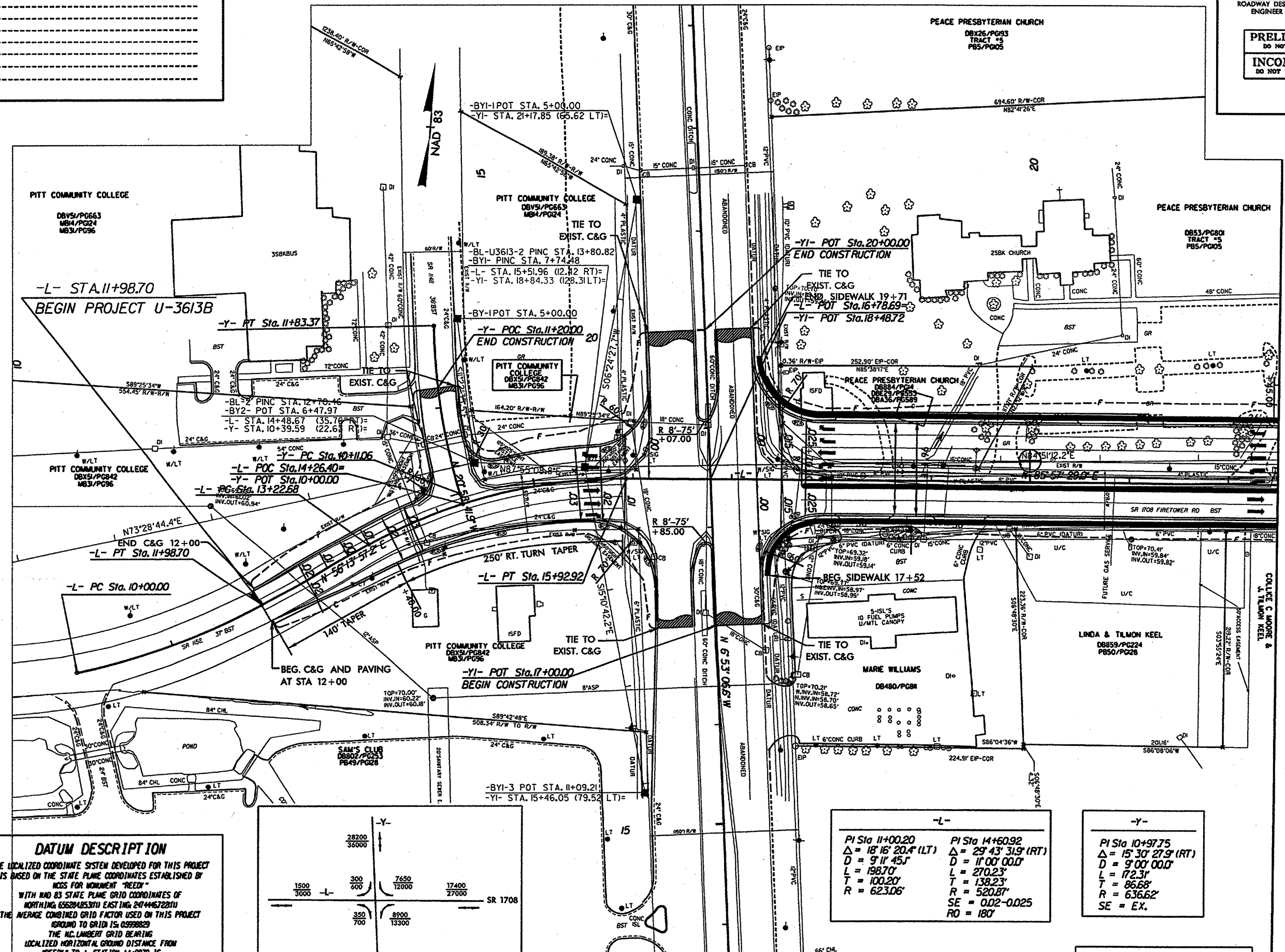
6/14/99

E-MAR-2006 14-03
 P. 1000 1000 1000 1000
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7/2/95

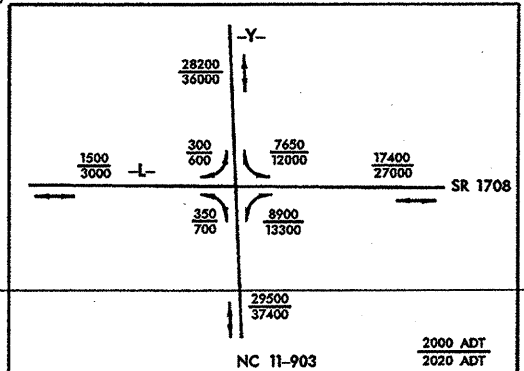
REVISIONS

PROJECT REFERENCE NO. U-3613B	SHEET NO. 4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDS FOR MONUMENT "REEDY" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTING: 65629485370 EASTING: 24744672210 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998829 THE N.C. LAMBERT GRID BEARING LOCALIZED HORIZONTAL GROUND DISTANCE FROM "REEDY" TO -L- STA. 11+9870 IS N 17° 02' 55.9" W 1806.16 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NGVD 29



-L-	
PI Sta 11+00.20	PI Sta 14+60.92
$\Delta = 18' 16" 20.4' (LT)$	$\Delta = 29' 43" 31.9' (RT)$
$D = 9' 11" 45.1'$	$D = 11' 00" 00.0'$
$L = 198.70'$	$L = 270.23'$
$T = 100.20'$	$T = 138.23'$
$R = 623.06'$	$R = 520.87'$
	SE = 0.02-0.025
	RO = 180'

-Y-
PI Sta 10+97.75
$\Delta = 15' 30" 27.9' (RT)$
$D = 9' 00" 00.0'$
$L = 172.31'$
$T = 86.68'$
$R = 636.62'$
SE = EX.

SEE SHEET 10 FOR -L- PROFILE
SEE SHEET 13 FOR -Y- PROFILE
SEE SHEET 13 FOR -YI- PROFILE

MATCHLINE -L- STA 22 + 50.00 (SEE SHEET 5)

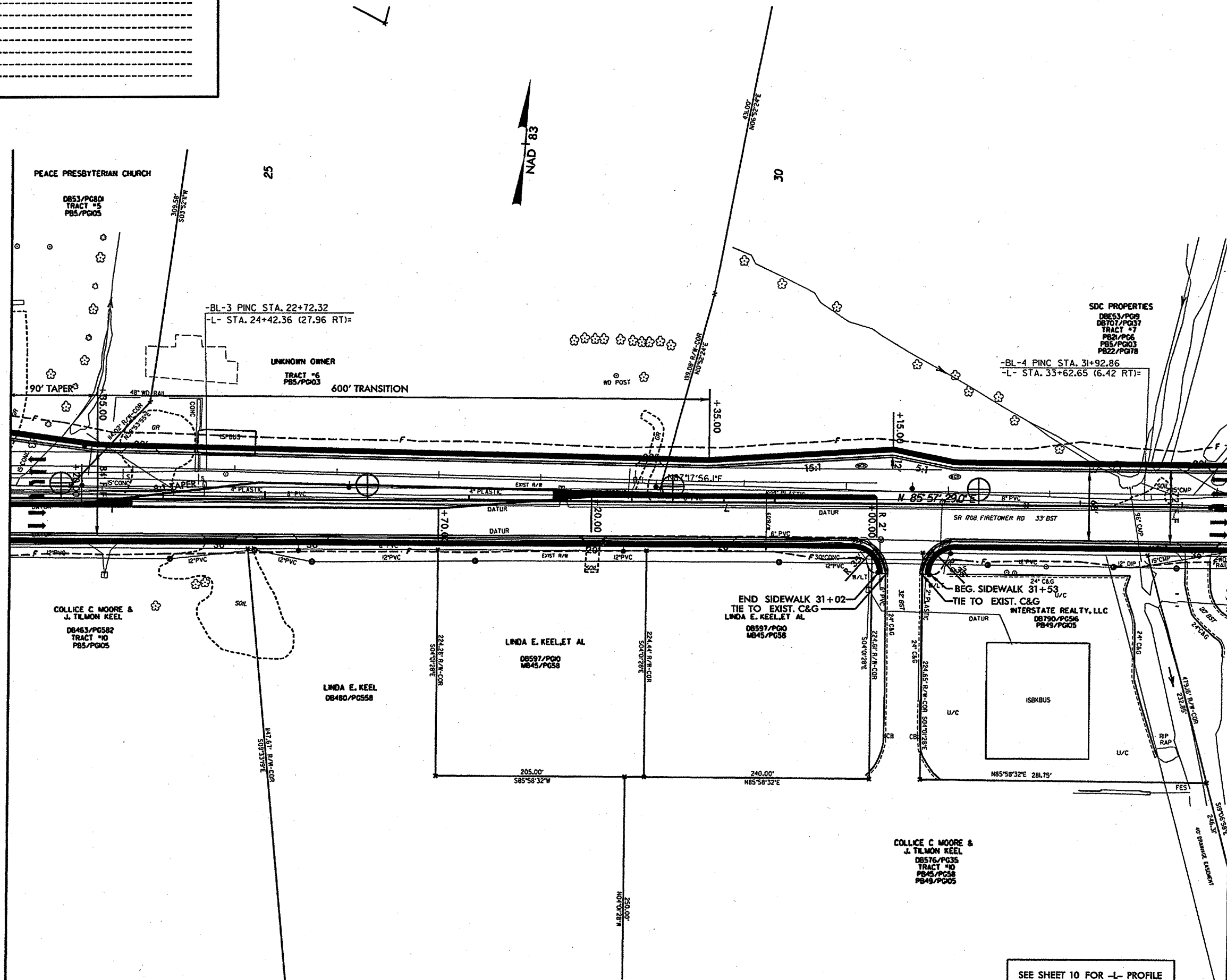
7/2/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
U-3613B	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS	
DO NOT USE FOR CONSTRUCTION	
INCOMPLETE PLANS	
DO NOT USE FOR R/W ACQUISITION	

MATCHLINE -L- STA 22 + 50.00 (SEE SHEET 4)

MATCHLINE -L- STA 34 + 50.00 (SEE SHEET 6)



SEE SHEET 10 FOR -L- PROFILE

 SYSTEMS

 USER NAME *****

7/2/99

REVISIONS

PROJECT REFERENCE NO. U-3613B	SHEET NO. 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	

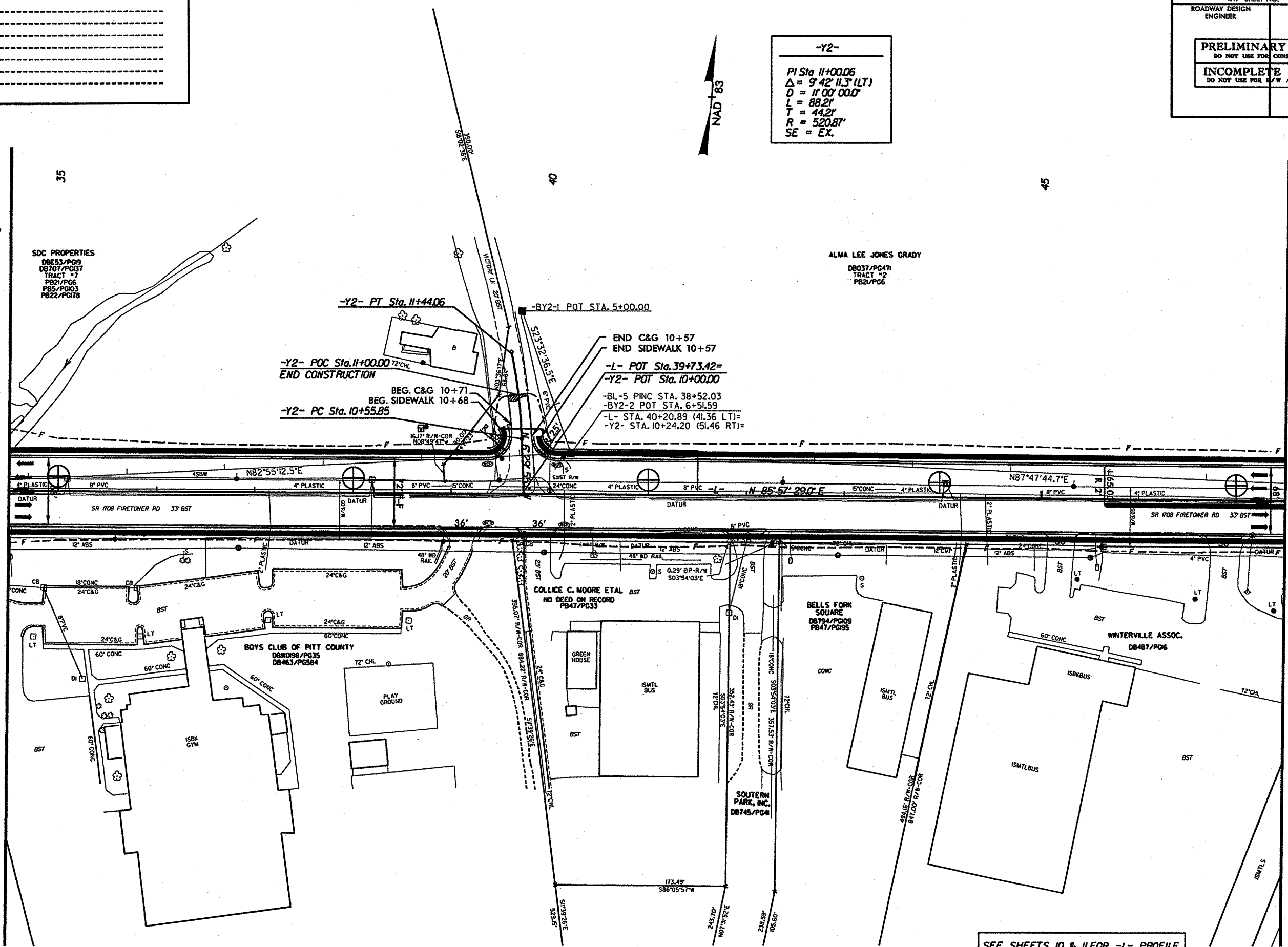
-Y2-

PI Sta 11+00.06
 $\Delta = 9' 42" 11.3" (LT)$
 $D = 11' 00" 00.0"$
 $L = 88.2'$
 $T = 44.2'$
 $R = 520.87'$
 SE = EX.



MATCHLINE -L- STA. 34+50.00 (SEE SHEET 5)

MATCHLINE -L- STA. 47+50.00 (SEE SHEET 7)



SEE SHEETS 10 & 11 FOR -L- PROFILE
 SEE SHEET 13 FOR -Y2- PROFILE

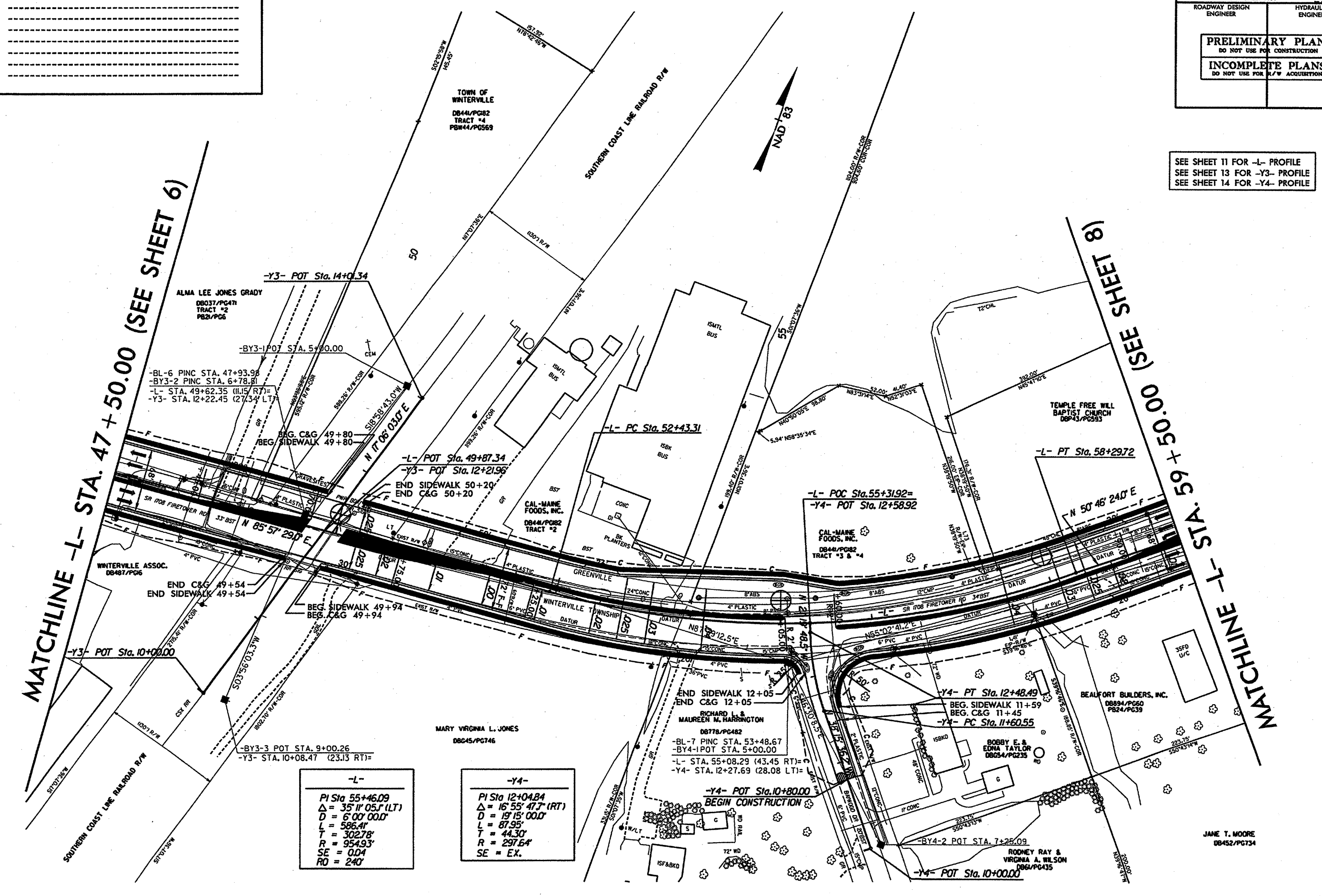
 SYSTEMS

7/2/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
U-3613B	7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS	
DO NOT USE FOR CONSTRUCTION	
INCOMPLETE PLANS	
DO NOT USE FOR R/W ACQUISITION	

SEE SHEET 11 FOR -L- PROFILE
 SEE SHEET 13 FOR -Y3- PROFILE
 SEE SHEET 14 FOR -Y4- PROFILE



-L-	
PI Sta 55+46.09	
$\Delta = 35^\circ 11' 05.1" (LT)$	
$D = 6' 00" 00.0'$	
$L = 586.4'$	
$T = 302.78'$	
$R = 954.93'$	
$SE = 0.04$	
$RO = 240'$	

-Y4-	
PI Sta 12+04.84	
$\Delta = 16^\circ 55' 47.7" (RT)$	
$D = 19' 15" 00.0'$	
$L = 87.95'$	
$T = 44.30'$	
$R = 297.64'$	
$SE = EX.$	

 SYSTEMS

JANE T. MOORE
 08452/PG734

7/2/99

REVISIONS

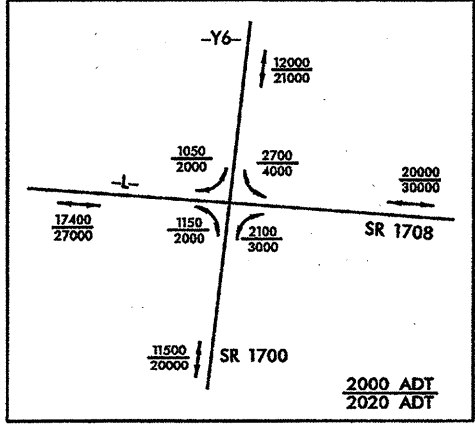
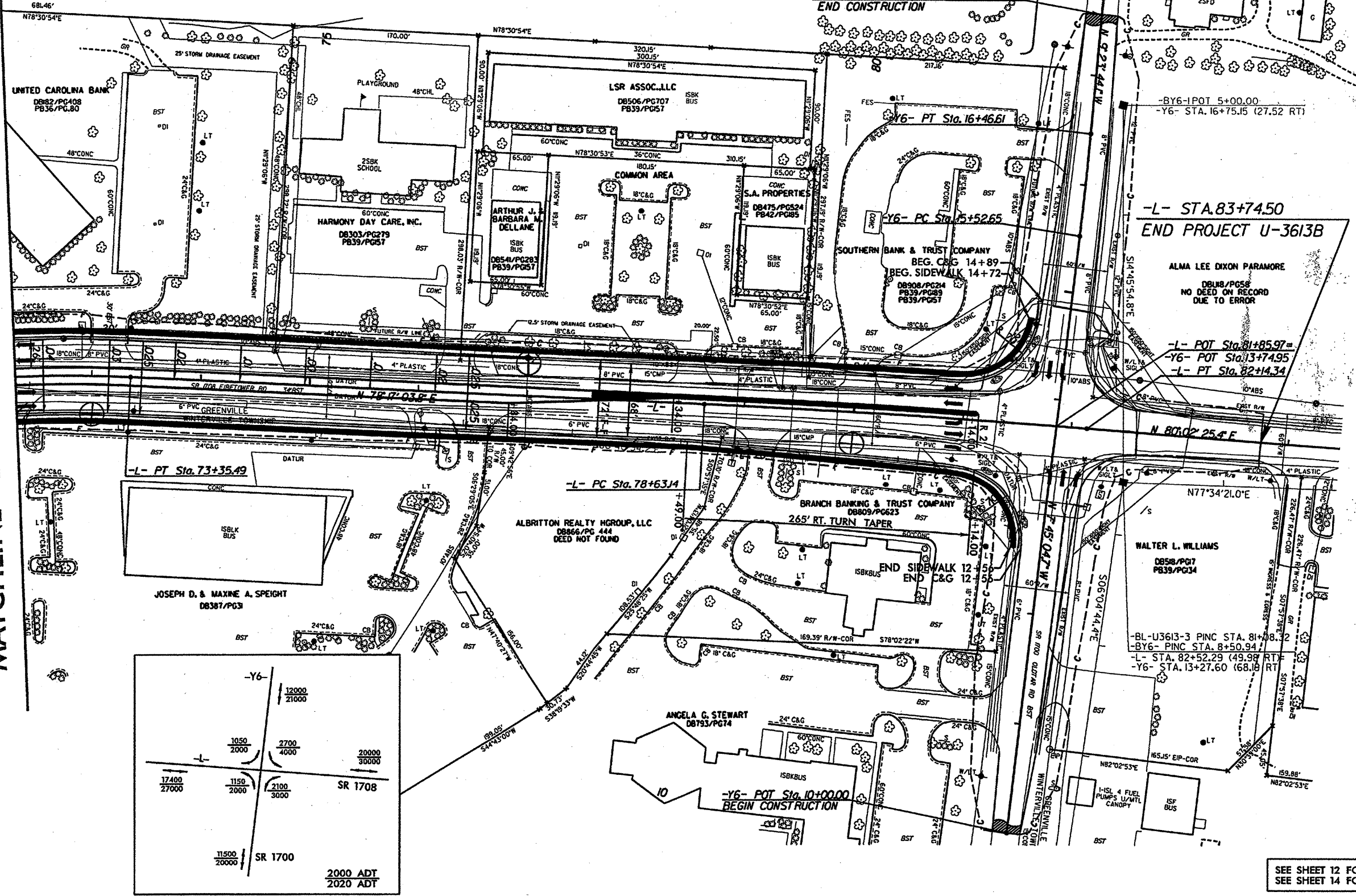
PROJECT REFERENCE NO.	SHEET NO.
U-3613B	9
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	

-Y6-
 PI Sta 15+99.64
 $\Delta = 1' 38' 39.4" (LT)$
 $D = 1' 45' 00.0"$
 $L = 93.96'$
 $T = 46.98'$
 $R = 3,274.04'$
 SE = EX

-L-
 PI Sta 80+38.76
 $\Delta = 1' 45' 21.6" (RT)$
 $D = 0' 30' 00.0"$
 $L = 351.20'$
 $T = 175.61'$
 $R = 11,459.16'$
 SE = 0.025



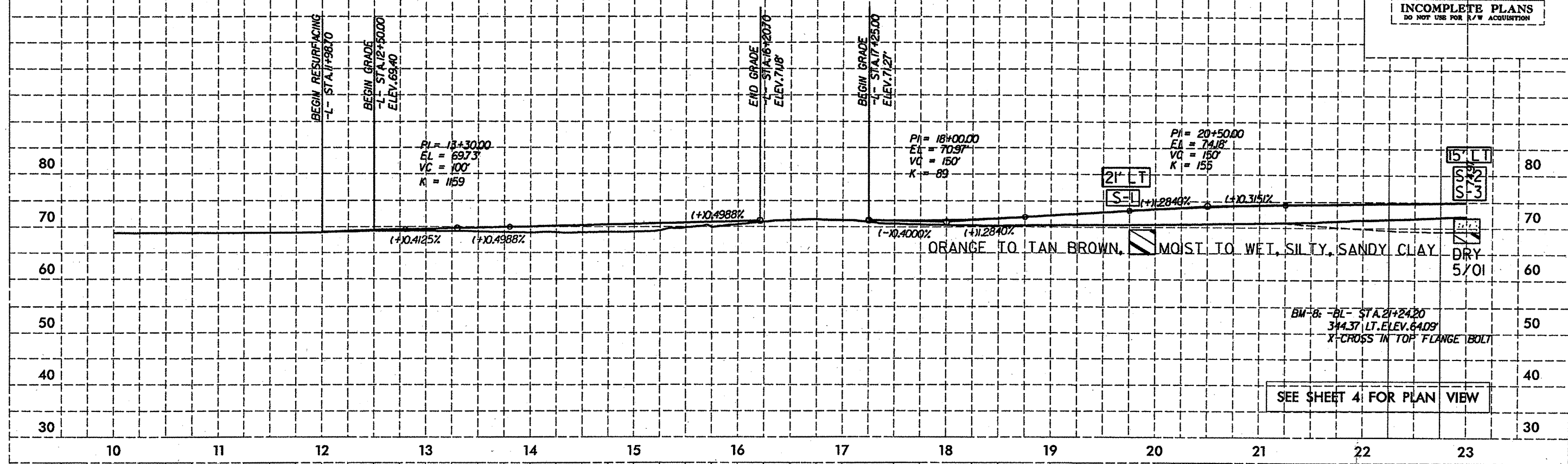
MATCHLINE -L- STA. 72 + 30.00 (SEE SHEET 8)



SEE SHEET 12 FOR -L- PROFILE
 SEE SHEET 14 FOR -Y6- PROFILE

5/28/99

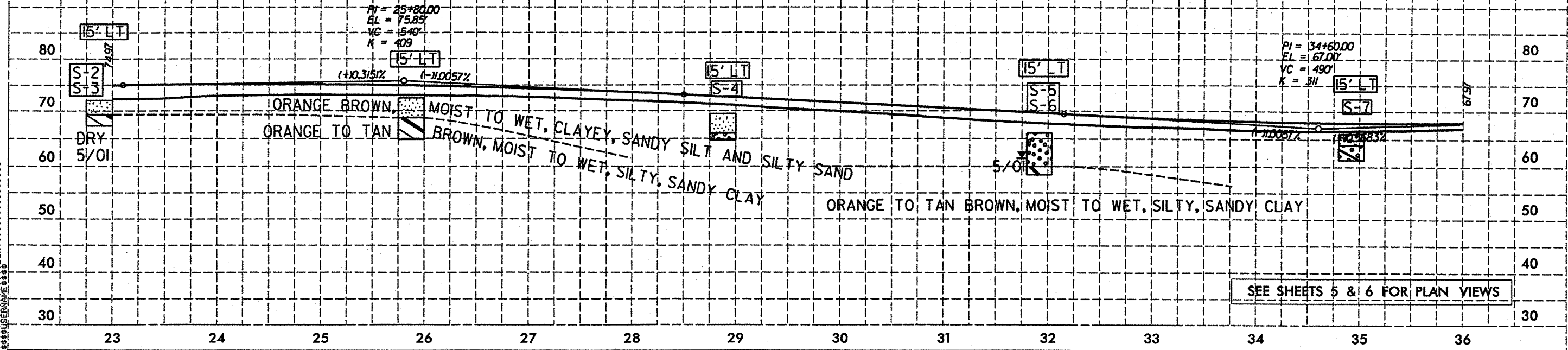
-L- SR 1708 (FIRETOWER ROAD)



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-1	21' LT	20+00	0.00 - 4.00	A-6(1)	23	11	7.3	52.7	17.7	22.3	100	98	43	129	
S-2	15' LT	23+00	0.00 - 2.70	A-4(1)	20	5	5.1	55.9	20.8	18.2	100	99	40		
S-3	15' LT	23+00	2.70 - 4.70	A-6(3)	34	18	4.9	58.2	10.6	26.3	100	99	40		
S-4	15' LT	29+00	3.50 - 4.70	A-2-4(1)	28	9	9.7	58.9	5.1	26.3	100	97	33		
S-5	15' LT	32+00	0.00 - 6.00	A-2-4(1)	16	2	11.9	59.9	9.9	18.2	100	96	30		
S-6	15' LT	32+00	6.00 - 7.00	A-7-5(8)	55	15	20.4	26.3	22.9	30.4	100	89	58	77.4	
S-7	15' LT	35+00	2.00 - 4.70	A-2-6(1)	26	11	7.1	64.2	4.5	24.3	100	98	30		

-L- SR 1708 (FIRETOWER ROAD)



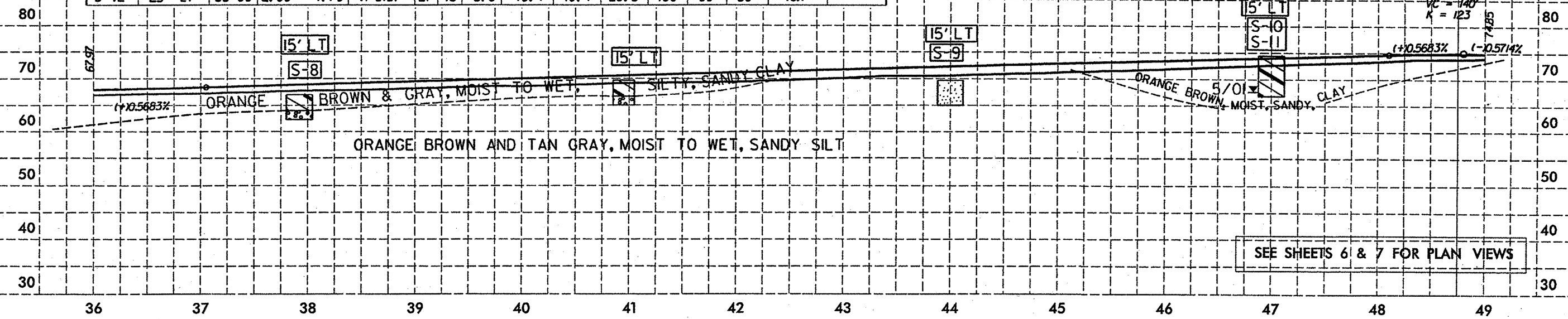
*****ST TIME*****
*****SHEET*****
*****DATE*****

5/28/94

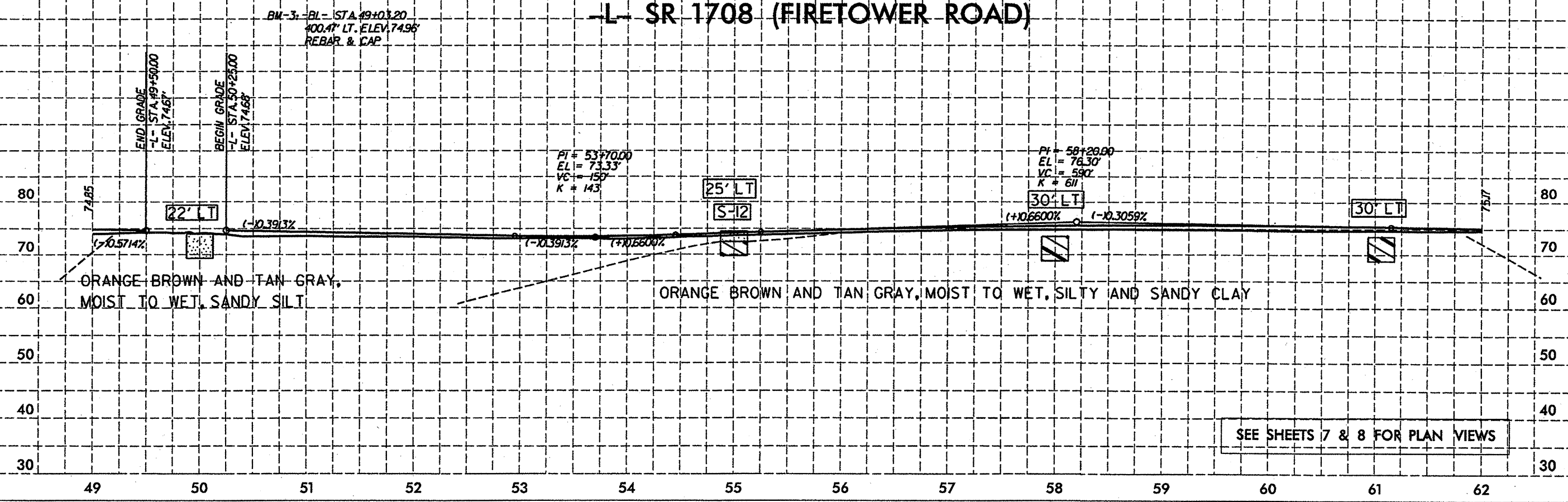
-L- SR 1708 (FIRETOWER ROAD)

PROJECT REFERENCE NO. U-3613B SHEET NO. 11
 ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER
PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
 DO NOT USE FOR A/W ACQUISITION

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-8	15' LT	38+00	0.00 - 3.50	A-6(2)	28	13	4.9	53.6	9.1	32.4	100	99	42		
S-9	15' LT	44+00	1.00 - 5.00	A-4(1)	19	5	7.3	57.5	17.0	18.2	100	98	39		
S-10	15' LT	47+00	1.00 - 4.50	A-6(3)	27	13	4.3	50.4	15.0	30.4	100	99	48	16.8	
S-11	15' LT	47+00	4.50 - 7.60	A-6(5)	40	23	3.8	57.3	8.5	30.4	100	99	42		
S-12	25' LT	55+00	2.00 - 4.70	A-6(3)	27	13	3.8	48.4	19.4	28.3	100	99	50	16.4	



-L- SR 1708 (FIRETOWER ROAD)



SYTIME\$\$\$\$\$
 DGN\$\$\$\$\$
 PLOT\$\$\$\$\$
 SHEET\$\$\$\$\$

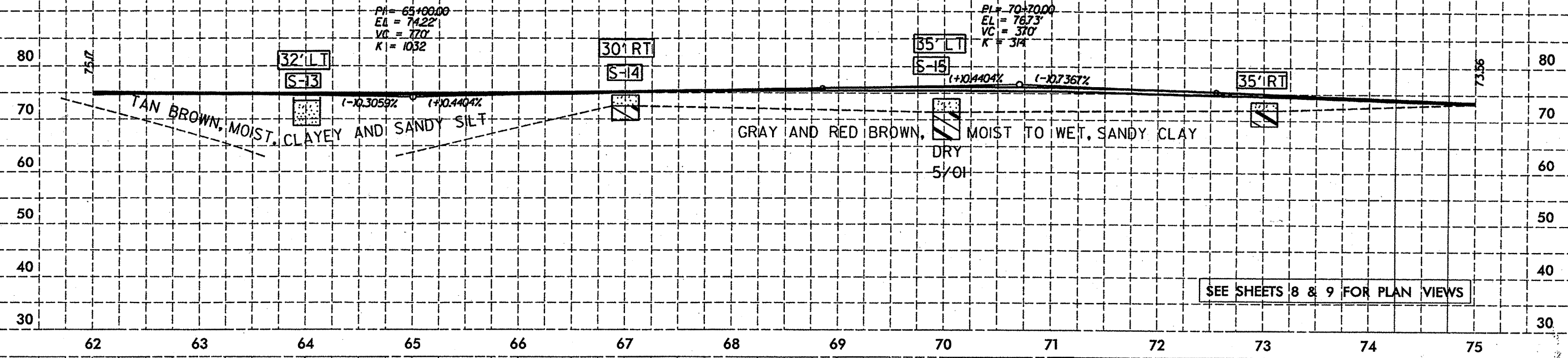
5/28/99

-L- SR 1708 (FIRETOWER ROAD)

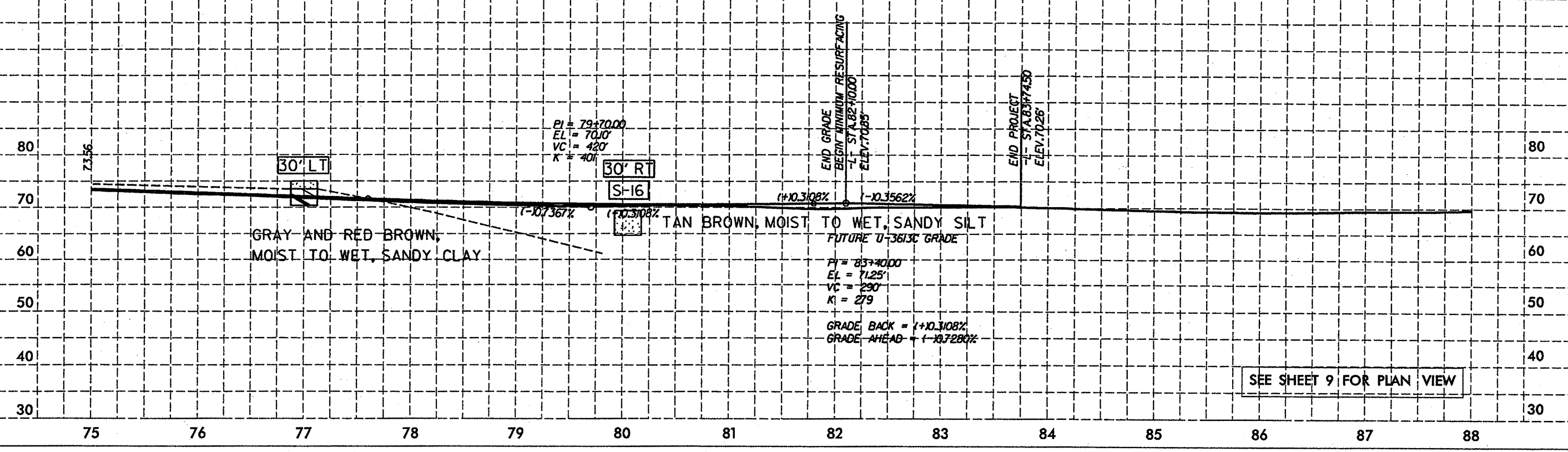
PROJECT REFERENCE NO. U-3613B	SHEET NO. 12
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-13	32' LT	64+00	1.00 - 4.70	A-4(1)	21	7	4.3	55.3	16.2	24.3	100	99	44		
S-14	30' RT	67+00	2.00 - 4.70	A-6(1)	26	12	4.5	56.5	14.8	24.3	100	99	42		
S-15	35' LT	70+00	5.50 - 7.00	A-6(4)	39	24	5.7	57.1	4.9	32.4	100	98	39		
S-16	30' RT	80+00	2.00 - 4.50	A-4(1)	24	10	6.3	59.7	9.7	24.3	100	99	36		

BM-4: +BL- STA. 69+11.89
 164.89 LT. ELEV. 72.59
 BOXOUT IN BACK OF CURB



-L- SR 1708 (FIRETOWER ROAD)



 SYSTEMS

CONTRACT: C201449 ID: U-3613C

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

GEOTECHNICAL UNIT

SUBSURFACE INVESTIGATION

STATE PROJECT 34961.3.3 I.D. NO. U-3613C
 F.A. PROJECT MASTP-1708(I)
 COUNTY PITT
 DESCRIPTION SR 1708 (FIRE TOWER RD.) FROM
SR 1700 (OLD TAR RD. / EVANS RD.) TO
EAST OF SR 1709 (COREY RD.)

CONTENTS:

LINE	STATION	SHEET NO.
-L-	83+74-151+70	4-12

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3613C	1	14
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34961.1.2	MA-STP-1708(I)	PE	
34961.2.2	STP-1708(3)	RW, UTIL.	
34961.3.3	STP-1708(5)	CONST.	

CAUTION NOTICE

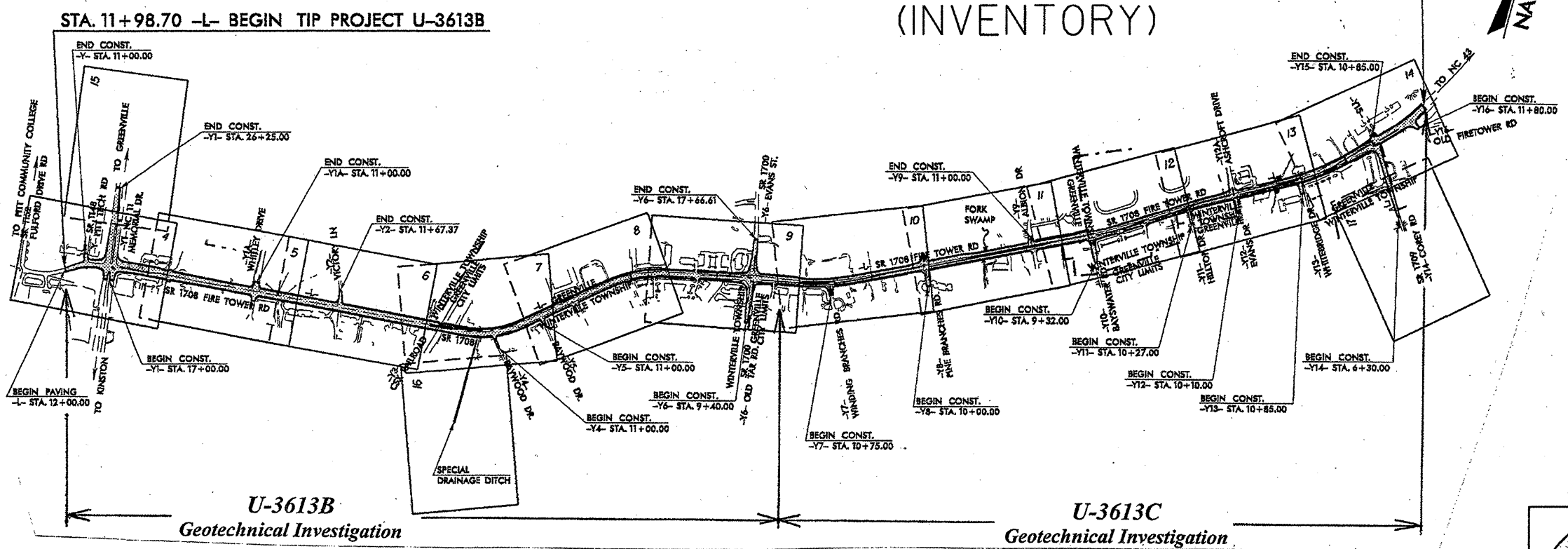
THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WAS MADE FOR THE PURPOSE OF STUDY, PLANNING AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES, AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING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

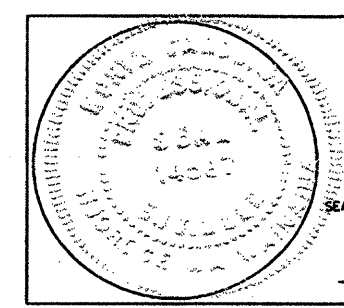
THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT 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.

STA. 151+70.00 -L- END TIP PROJECT U-3613B

(INVENTORY)



INVESTIGATED BY J. B. BARFIELD PERSONNEL N.T.R.
 CHECKED BY C. M. GILLIAM L.B.M.
 SUBMITTED BY L. T. PACKER G.E.J.
 DATE OCTOBER 24, 2001 J.W.B.



DRAWN BY: W. D. FIELDS

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.

SIGNATURE M. J. Wainman 11/7/01

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION			GRADATION			TERMS AND DEFINITIONS			ABBREVIATIONS								
SOIL IS CONSIDERED TO BE THE UNCONSOLIDATED, SEMI-CONSOLIDATED OR WEATHERED EARTH MATERIALS WHICH CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER. AND WHICH YIELDS LESS THAN 100 BLOWS ACCORDING TO STANDARD PENETRATION TEST (ASTM D-1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM AND BASIC DESCRIPTIONS GENERALLY SHALL INCLUDE: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION AND OTHER PERTINENT FACTORS, SUCH AS, MINERALOGICAL COMPOSITION, ANGULARITY STRUCTURE, PLASTICITY, ETC. EXAMPLE: VERY STIFF, GRAY SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY 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.			ALLUVIUM (ALLUV.) - SOILS WHICH HAVE BEEN TRANSPORTED BY WATER. APPARENT DIP - THE DIP OF ROCK STRATA NOT PERPENDICULAR TO STRIKE. AQUIFER - A WATER BEARING FORMATION OR STRATA. AUGER REFUSAL (A.R.) - POINT AT WHICH POWER AUGERS WILL NOT PENETRATE. BEDDED - SOIL OR ROCK LYING IN A POSITION ESSENTIALLY PARALLEL. BEDROCK - ROCK OF RELATIVELY GREAT THICKNESS AND EXTENT IN ITS ORIGINAL LOCATION. CALCAREOUS (CALC.) - SOILS WHICH CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. COHESIVE SOIL - A SOIL THAT WHEN UNCONFINED HAS CONSIDERABLE DRY STRENGTH AND SIGNIFICANT COHESION WHEN SUBMERGED. COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. CORE RECOVERY (% REC.) - TOTAL LENGTH OF ALL ROCK DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. COQUINA - A ROCK TYPE COMPOSED ESSENTIALLY OF MARINE SHELLS CEMENTED BY CALCIUM CARBONATE. DIKE - IGNEOUS ROCK INTRUSION WHICH IS NARROW COMPARED WITH ITS OTHER DIMENSIONS. DIP - THE ANGLE BETWEEN A BEDDING PLANE, JOINT PLANE OR FAULT PLANE AND THE HORIZONTAL, MEASURED PERPENDICULAR TO THE STRIKE. DUMPS - UNCOVERED DEPOSITS OF WASTE MATERIAL SUCH AS WOOD, MASONRY DEBRIS OR GARBAGE. FAULT - A BREAK IN THE CONTINUITY OF A BODY OF ROCK, ATTENDED BY A MOVEMENT ON EITHER OR BOTH SIDES OF THE BREAK. FINES - PORTIONS OF A SOIL FINER THAN NO. 200 U.S. STANDARD SIEVE. FISSILITY OR FISSILE - A PROPERTY OF SPLITTING EASILY ALONG CLOSELY SPACED PARALLEL PLANES. FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM PARENT MATERIAL. FLOODPLAIN - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. FORMATION - A MAPPABLE UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD. FRACTURE - A CRACK LARGE ENOUGH TO BE VISIBLE TO THE UNAIDED EYE. FRIABLE - EASY TO BREAK OR CRUMBLE. GRANULAR MATERIAL - SOIL THAT WHEN UNCONFINED HAS LITTLE OR NO DRY STRENGTH AND HAS LITTLE OR NO COHESION WHEN SUBMERGED. GROUNDWATER (G.W.) - WATER THAT IS FREE TO MOVE THROUGH SOIL MASS UNDER THE INFLUENCE OF GRAVITY. GROUNDWATER LEVEL - LEVEL OF WATER WITH RESPECT TO EXISTING GROUND SURFACE. HARDPAN - A GENERAL TERM USED TO DESCRIBE A HARD CEMENTED SOIL LAYER WHICH DOES NOT SOFTEN WHEN WET. INDURATED - EARTH MATERIAL HARDENED BY HEAT, PRESSURE OR CEMENTATION. INTERBEDDED - ALTERNATING LENSES OR LAYERS OF SOIL AND/OR ROCK MATERIALS. JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED. LAMINATED - VERY THIN ALTERNATING LAYERS LESS THAN 1/4 INCH. LAYER - SUBJECT MATERIAL GREATER THAN 1/4 INCH IN THICKNESS. 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. MARL - A NON-INDURATED, CALCAREOUS DEPOSIT OF CLAYS, SILTS AND SANDS, OFTEN CONTAINING SHELLS. MICACEOUS SOIL (MIC.) - A SOIL OR ROCK TYPE CONTAINING AN APPRECIABLE AMOUNT OF MICA. MUCK (MK.) - A HIGHLY ORGANIC SOIL OF VERY SOFT CONSISTENCY, GENERALLY FOUND ON TIDAL FLATS, LAKE OR STREAM FLOODPLAINS. PEAT (PT) - A FIBROUS MASS OF ORGANIC MATTER IN VARIOUS STAGES OF DECOMPOSITION. PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM. RESIDUAL SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. ROCK - SEE LEGEND. ROCK QUALITY DESIGNATION (R.Q.D.) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN EXPRESSED AS A PERCENTAGE. SANITARY LANDFILLS - COMPACTED AND/OR COVERED LAYERS OF SOIL AND WASTE PRODUCTS. SAPROLITE (SAP.) - RESIDUAL SOIL WHICH RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. SILL - AN IGNEOUS SHEET OF INTRUSIVE ROCK WHOSE THICKNESS IS SLIGHT COMPARED TO ITS LATERAL EXTENT. SOME - PRESENCE OF 5% TO 30% OF SUBJECT MATERIAL. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR B.P.F.) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL PENETRATION RESISTANCE OF LESS THAN 10 BLOWS WITH 50 BLOWS. STRIKE - THE DIRECTION OR BEARING OF A HORIZONTAL LINE IN THE PLANE OF AN INCLINED STRATUM, JOINT, FAULT OR OTHER STRUCTURAL PLANE. SUBGRADE - THE SOIL PREPARED TO SUPPORT A STRUCTURE OR A PAVEMENT SYSTEM. TOPSOIL (T.S.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER. TRACE - PRESENCE OF LESS THAN 5% OF SUBJECT MATERIAL.			MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE.			BLDR. - BOULDER CL. - CLAY COB. - COBBLE CSE. - COARSE EST. - ESTIMATED F. - FINE FOSS. - FOSSILIFEROUS FRAC. - FRACTURED GR. - GRAVEL LL - LIQUID LIMIT MED. - MEDIUM W - MOISTURE CONTENT MOT. - MOTTLED OM - OPTIMUM MOISTURE ORG. - ORGANIC			PL - PLASTIC LIMIT PI - PLASTICITY INDEX n - POROSITY SD. - SAND SAT. - SATURATED SL. - SILT, SILTY SLI. - SLIGHTLY G _s - SPECIFIC GRAVITY qu - UNCONFINED COMPRESSIVE STRENGTH γ - UNIT WEIGHT (WET UNIT WEIGHT) γ _d - DRY UNIT WEIGHT γ _{sat} - SATURATED UNIT WEIGHT e - VOID RATIO V. - VERY		
SOIL LEGEND AND AASHTO CLASSIFICATION			MINERALOGICAL COMPOSITION			ROCK DESCRIPTION			CAUTION NOTICE :								
GENERAL CLASS. GRANULAR MATERIALS (≤ 35% PASSING #200) SILT-CLAY MATERIALS (> 35% PASSING #200) ORGANIC MATERIALS			MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE.			IN THE BROADEST MEANING, HARD ROCK IS CONSIDERED THAT MATERIAL WHICH CANNOT BE SAMPLED BY CONVENTIONAL SOIL SAMPLING TOOLS OR TECHNIQUES. THE BOUNDARY BETWEEN SOIL AND ROCK IS ARBITRARY. TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF "WEATHERED ROCK". FOR THE PURPOSE OF THIS INVESTIGATION, THESE MATERIALS ARE DIVIDED AS FOLLOWS:			THIS INFORMATION MAY BE VIEWED BY APPOINTMENT BY CONTACTING THE N.C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL UNIT @ (919) 250-4088. NEITHER THE SUBSURFACE PLANS AND REPORTS, NOR THE FIELD BORING LOGS, ROCK CORES, OR SOIL TEST DATA IS PART OF THE CONTRACT.								
GROUP CLASS. SYMBOL % PASSING LIQUID LIMIT PLASTIC INDEX			COMPRESSIBILITY			WEATHERED ROCK (SWR) (HWR) HARD WEATHERED ROCK HARD ROCK (HR) CORED ROCK INFERRED ROCK LINE			ADDITIONAL INFORMATION MAY BE AVAILABLE, INCLUDING, BUT NOT LIMITED TO THE FOLLOWING: FIELD BORING LOGS ROCK CORES SOIL & ROCK TEST DATA SUBSURFACE REPORT								
USUAL TYPES OF MAJOR MATERIALS GEN. RATING AS A SUBGRADE			ROCK QUALITY DESIGNATION (RQD) - TOTAL LENGTH OF SOUND ROCK SEGMENTS RECOVERED THAT ARE LONGER THAN OR EQUAL TO 4" DIVIDED BY THE TOTAL LENGTH OF THE CORE RUN TIMES 100%.			WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING. STATIC WATER LEVEL AFTER 24 HOURS. PERCHED WATER, SATURATED ZONE OR WATER BEARING STRATA. SPRING OR SEEPAGE			THIS INFORMATION MAY BE VIEWED BY APPOINTMENT BY CONTACTING THE N.C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL UNIT @ (919) 250-4088. NEITHER THE SUBSURFACE PLANS AND REPORTS, NOR THE FIELD BORING LOGS, ROCK CORES, OR SOIL TEST DATA IS PART OF THE CONTRACT.								
P.I. OF A-7.5 ≤ L.L. - 30 : P.I. OF A-7.5 > L.L. - 30			GROUND WATER			MISCELLANEOUS SYMBOLS AND ABBREVIATIONS			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.								
CONSISTENCY OR DENSENESS			GROUND WATER			ROADWAY EMBANKMENT WITH SOIL DESCRIPTION			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 OPINIONS 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 ADDITIONAL TO BE ENCOUNTERED ON THIS PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR CONDITIONS TO BE ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.								
PRIMARY SOIL TYPE COMPACTNESS OR CONSISTENCY RANGE OF STANDARD PENETRATION RESISTANCE (BLOWS) RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/FT ²)			GROUND WATER			SOIL SYMBOL			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.								
GENERAL GRANULAR MATERIAL GENERAL SILT-CLAY MATERIAL			GROUND WATER			ARTIFICIAL FILL OTHER THAN ROADWAY EMBANKMENTS			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.								
TEXTURE OR GRAIN SIZE			GROUND WATER			INFERRERED SOIL BOUNDARIES			NOTES:								
U.S. STD. SIEVE SIZE OPENING (MM)			GROUND WATER			ALLUVIAL/RESIDUAL BOUNDARIES											
BOULDER COBBLE GRAVEL COARSE SAND FINE SAND SILT CLAY			GROUND WATER			25° DIP DIRECTION AND DIP OF STRUCTURES											
GRAIN SIZE			GROUND WATER			APPARENT DIP (NORMAL TO _____)											
SOIL MOISTURE - CORRELATION OF TERMS			GROUND WATER			EQUIPMENT USED ON SUBJECT PROJECT											
SOIL MOISTURE SCALE (ATTERBERG LIMITS) FIELD MOISTURE DESCRIPTION GUIDE FOR FIELD MOISTURE DESCRIPTION			GROUND WATER			DRILL UNITS:											
LL - LIQUID LIMIT PLASTIC RANGE (PI) - PLASTIC LIMIT ON - OPTIMUM MOISTURE SL - SHRINKAGE LIMIT			GROUND WATER			AUGER TOOLS:											
SATURATED - (SAT.) USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE			GROUND WATER			HAMMER TYPE:											
WET - (W) SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE			GROUND WATER			CORE BORING TOOLS:											
MOIST - (M) SOLID; AT OR NEAR OPTIMUM MOISTURE			GROUND WATER			HAND TOOLS:											
DRY - (D) REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE			GROUND WATER			OTHER:											
PLASTICITY PLASTICITY INDEX DRY STRENGTH			GROUND WATER			OTHER:											
NONPLASTIC LOW PLASTICITY MED. PLASTICITY HIGH PLASTICITY			GROUND WATER			OTHER:											
COLOR			GROUND WATER			OTHER:											
DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YEL-BRN, BLUE-GRAY) MODIFIERS SUCH AS LIGHT, DARK, MOTTLED, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.			GROUND WATER			OTHER:											

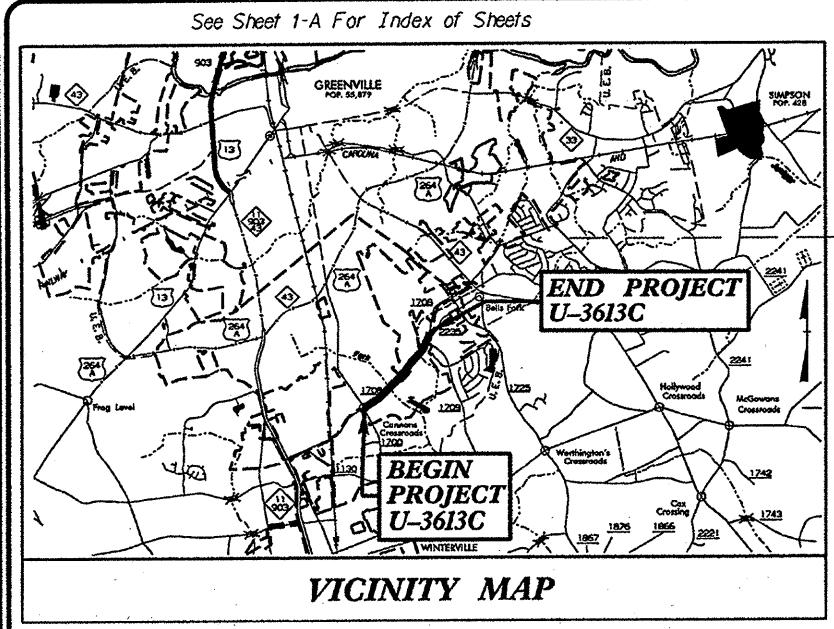
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3613C	3	14
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
8.2220901	MASTP-1708(1)	PE	

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

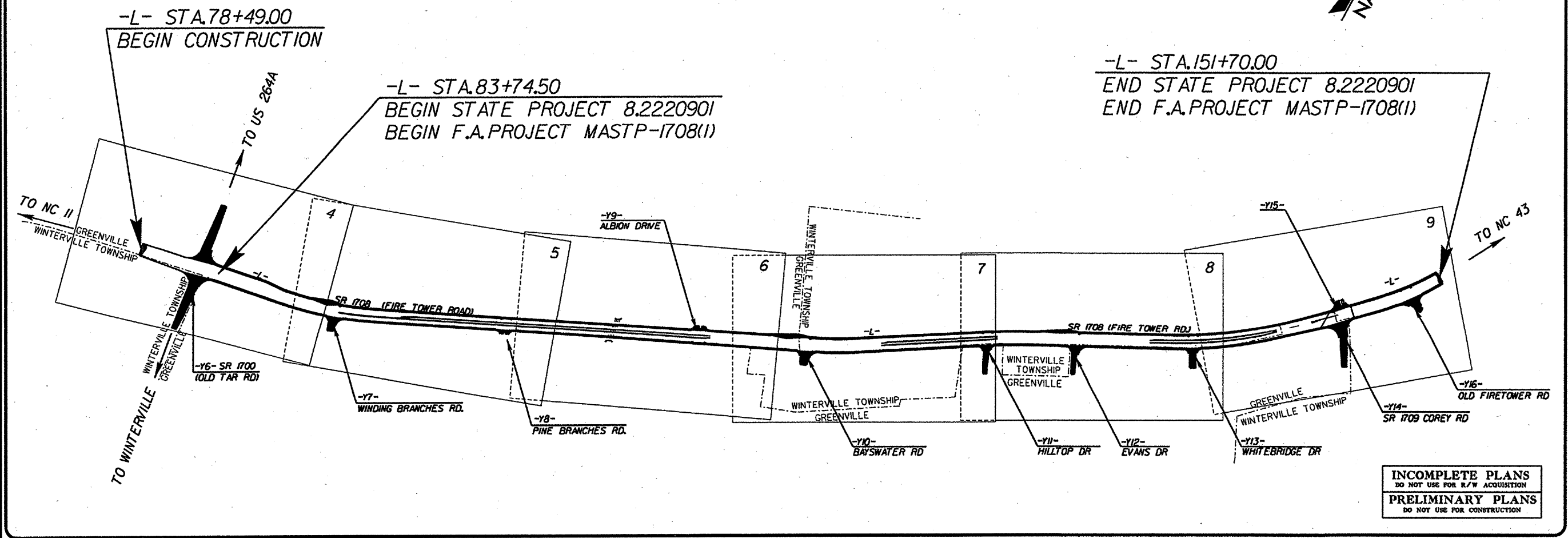
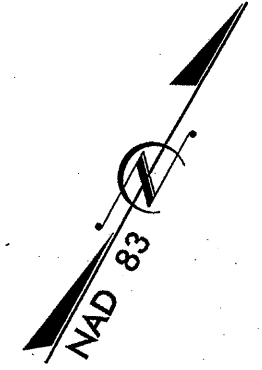
PITT COUNTY

LOCATION: GREENVILLE - SR 1708 (FIRE TOWER RD) FROM SR 1700 (OLD TAR RD /EVANS RD) TO EAST OF SR 1709 (COREY RD)

TYPE OF WORK: GRADING, DRAINAGE, PAVING, CURB & GUTTER AND GUARDRAIL



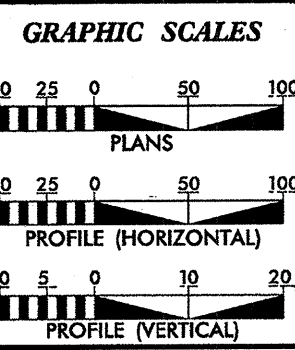
VICINITY MAP



9/09/99

U-3613C

PROJECT: 8.2220901



DESIGN DATA

ADT 2000 =	20,000
ADT 2020 =	30,000
DHV =	10 %
D =	60 %
T =	3 % *
V =	50 MPH
* TTST 1 %	DUAL 2 %

PROJECT LENGTH

LENGTH ROADWAY F. A. PROJECT BRSTP-1708(1) =	1.287 mi.
TOTAL LENGTH STATE PROJECT 8.2220901 =	1.287 mi.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD _____	

Prepared In the Office of:

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

1995 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE:	J. A. SPEER, PE PROJECT ENGINEER
NOVEMBER 16, 2001	
LETTING DATE:	S. M. CASEY PROJECT DESIGN ENGINEER
JUNE 17, 2003	

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE DESIGN ENGINEER P.E.

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED DIVISION ADMINISTRATOR DATE



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

1501 MAIL SERVICE CENTER, RALEIGH, N.C. 27699-1501

LYNDO TIPPETT
SECRETARY

October 23, 2001

- 5) Extension of existing 60 in CMP (135+20 ±)
Soundings made in the immediate vicinity of the above site indicate approximately 2 to 4 feet of loose alluvial sands (A-2-4, A-3) underlain by soft to medium stiff clays (A-6, A-7).

STATE PROJECT: 8.2220901 (U-3613C)
FEDERAL PROJECT: MASTP-1701 (1)
COUNTY: Pitt
DESCRIPTION: Greenville – SR 1708 (Fire Tower Rd.) from SR 1700 (Old Tar Rd./Evans Rd.) to east of SR 1709 (Corey Rd.)

SUBJECT: Geotechnical Report – Inventory

Project Description

The project is located in central Pitt County near Greenville City limits and Winterville Township border. The project consists of widening the existing two-lane roadway to a five-lane facility at the beginning and the end of the project with curb and gutter. The remaining of the project will consist of widening the two-lane roadway into a four-lane divided roadway with curb and gutter and a raised earth median.

A geotechnical investigation was conducted in May 2001 utilizing hand augers and Dynamic Cone Penetrometer. Soil samples were obtained for visual classification in the field and for laboratory analysis by the Materials and Test Unit.

The following survey lines were investigated:

<u>Line</u>	<u>Station</u>
-L-	83+74 to 151+70

Areas of Special Geotechnical Interest

- 1) Groundwater: Groundwater was encountered within 6 feet of proposed subgrade in the following areas.

<u>Line</u>	<u>Station</u>
-L-	130+00 to 137+50

- 2) Hard Rock: Hard rock was not encountered during this investigation.
3) Wells: No wells were discovered within the right-of-way during this investigation.
4) Artificial Berms: There are several man-made berms along the project. These berms consist of sands and silty sands.

Physiography and Geology

The project is located south of Greenville within the Coastal Plain Physiographic Province. The topography for the project is generally flat. Drainage for the project is typically good and is provided by Fork swamp and its tributaries, which flow into the Tar River. Geologically the project is underlain by soil and sedimentary rocks of the Yorktown Formation.

Coastal Plain Soil Properties

Soils present on this project are typical of Coastal Plain origin. These soils derived from weathering of underlying sedimentary strata. These soils consist of orange-tan, tan, white, and brown, loose to dense fine sands (A-3) and silty sands (A-2-4). The cohesive soils consist of tan, brown, orange-tan, sandy silts (A-4) and sandy, silty clays (A-6, A-7). The coastal plain clays have low to moderate plasticity indices ranging from (11-29).

Alluvial Soils

Alluvial soils are present in the tributaries and creek beds of Fork Swamp. These soils consist of loose, tan, brown, fine, to coarse sands (A-3), and silty sands (A-2-4). Underneath these soils are soft to stiff tan, and gray sandy, silty clays (A-6, A-7). Organic soils are found within the immediate vicinity of these creeks. The soils consist of approximately 1 to 3 ft. of black medium stiff to stiff sandy silts (A-4) and sandy clays (A-6). The organic content for these soils range from 7 – 9 percent. These soils have low plasticity indices that range from (9-12)

Groundwater

Groundwater was typically greater than six feet in the upper elevations of the project. The exception is for the lower elevations adjacent to a tributary of Fork Swamp.

Respectfully Submitted,

J. B. Barfield
Project Geologist

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA SUMMARY OF EARTHWORK IN CUBIC YARDS

LOCATION		EXCAVATION (CUBIC YARDS)					EMBANKMENT (CUBIC YARDS)					WASTE (CUBIC YARDS)		
STATION	STATION	TOTAL UNCLASSIFIED	ROCK	UNDERCUT	UNSUITABLE UNCLASSIFIED	SUITABLE UNCLASSIFIED	TOTAL EMBANKMENT	ROCK EMBANKMENT	EARTH EMBANKMENT	EMBANKMENT PLUS 25%	BORROW	SUITABLE	UNSUITABLE	TOTAL
PHASE I														
WIDEN -L- RIGHT														
SUMMARY NO. 1														
-L- 12+00.00	-L- 16+20.70	473			47	426							47	47
TOTAL SUMMARY NO. 1		473			47	426							47	47
SUMMARY NO. 2														
-L- 27+04.00	-L- 30+90.00	109			11	98	39		39	49		49	11	60
-L- 31+68.00	-L- 33+95.00	20			2	18	38		38	48	30		2	2
-L- 38+00.00	-L- 38+90.00	10			1	9	18		18	23	14		1	1
-L- 39+33.00	-L- 39+66.00	2				2	5		5	6	4			
-L- 46+00.00	-L- 46+58.00	6			1	5	23		23	29	24		1	1
TOTAL SUMMARY NO. 2		147			15	132	123		123	155	72	49	15	64
SUMMARY NO. 3														
-L- 47+20.00	-L- 49+68.00	35			3	32	58		58	73	41		3	3
TOTAL SUMMARY NO. 3		35			3	32	58		58	73	41		3	3
SUMMARY NO. 4														
-L- 51+80.00	-L- 81+19.00	1556		1585	156	1400	2076		2076	2595	1195		1741	1741
TOTAL SUMMARY NO. 4		1556		1585	156	1400	2076		2076	2595	1195		1741	1741
SUMMARY NO. 5														
-L- 82+66.00	-L- 88+44.00	178		245	36	142	348		348	435	293		281	281
-L- 89+97.00	-L- 94+29.00	116		127	23	93	220		220	275	182		150	150
-L- 97+26.00	-L- 98+91.00	17		183	3	14	213		213	266	252		186	186
TOTAL SUMMARY NO. 5		311		555	62	249	781		781	976	727		617	617
SUMMARY NO. 6														
-L- 116+46.00	-L- 138+37.00	839		1020	168	671	1716		1716	2145	1474		1188	1188
-L- 140+90.00	-L- 143+25.00	93			19	74	2		2	3		71	19	90
TOTAL SUMMARY NO. 6		932		1020	187	745	1718		1718	2148	1474	71	1207	1278
PHASE II														
CONSTRUCT -L- LEFT														
SUMMARY NO. 7														
-L- 12+00.00	-L- 16+20.70	63			6	57	177		177	221	164		6	6
-Y- 10+18.01	-Y- 11+00.00	3				3	36		36	45	42			
-Y1- 18+48.72	-Y1- 26+25.00	284			28	256	221		221	276	20		28	28
TOTAL SUMMARY NO. 7		350			34	316	434		434	542	226		34	34

Note: Approximate quantities only. Unclassified Excavation, Fine Grading, Clearing and Grubbing, Breaking of Existing Pavement, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA SUMMARY OF EARTHWORK IN CUBIC YARDS

LOCATION		EXCAVATION (CUBIC YARDS)					EMBANKMENT (CUBIC YARDS)				WASTE (CUBIC YARDS)			
STATION	STATION	TOTAL UNCLASSIFIED	ROCK	UNDERCUT	UNSUITABLE UNCLASSIFIED	SUITABLE UNCLASSIFIED	TOTAL EMBANKMENT	ROCK EMBANKMENT	EARTH EMBANKMENT	EMBANKMENT PLUS 25%	BORROW	SUITABLE	UNSUITABLE	TOTAL
SUMMARY NO. 8														
-L- 17+25.00	-L- 49+82.00	5210		5093	521	4689	13227		13227	16534	11845		5614	5614
-Y1A- 10+34.00	-Y1A- 11+00.00	12			1	11	28		28	35	24		1	1
-Y2- 10+34.03	-Y2- 11+67.37	73			7	66	96		96	120	54		7	7
TOTAL SUMMARY NO. 8		5295		5093	529	4766	13351		13351	16689	11923		5622	5622
SUMMARY NO. 9														
-L- 49+92.00	-L- 81+85.97	701		2493	70	631	6347		6347	7934	7303		2563	2563
-Y6- 14+08.98	-Y6- 17+66.61	278			28	250	406		406	508	258		28	28
TOTAL SUMMARY NO. 9		979		2493	98	881	6753		6753	8442	7561		2591	2591
SUMMARY NO. 10														
-L- 81+85.97	-L- 111+00.00	7311		2555	1502	6009	4878		4878	6098	89		4057	4057
-Y9- 10+34.01	-Y9- 11+00.00	14			3	11	3		3	4		7	3	10
TOTAL SUMMARY NO. 10		7325		2555	1505	6020	4881		4881	6102	89	7	4060	4067
SUMMARY NO. 11														
-L- 111+00.00	-L- 141+00.00	3432		1818	686	2746	4274		4274	5343	2597		2504	2504
TOTAL SUMMARY NO. 11		3432		1818	686	2746	4274		4274	5343	2597		2504	2504
SUMMARY NO. 12														
-L- 141+00.00	-L- 151+70.00	218			44	174	440		440	550	376		44	44
TOTAL SUMMARY NO. 12		218			44	174	440		440	550	376		44	44
PHASE III CONSTRUCT -L- RIGHT														
SUMMARY NO. 13														
-L- 12+00.00	-L- 16+20.70	186			19	167	256		256	320	153		19	19
-Y1- 17+00.00	-Y1- 18+48.72	18			2	16	12		12	15		1	2	3
TOTAL SUMMARY NO. 13		204			21	183	268		268	335	153	1	21	22
SUMMARY NO. 14														
-L- 17+25.00	-L- 49+82.00	843			84	759	4259		4259	5324	4565		84	84
TOTAL SUMMARY NO. 14		843			84	759	4259		4259	5324	4565		84	84
SUMMARY NO. 15														
-L- 49+92.00	-L- 81+85.97	770			77	693	3841		3841	4801	4108		77	77
-Y4- 11+00.00	-Y4- 12+24.90						287		287	359	359			
-Y5- 11+00.00	-Y5- 11+66.53						70		70	88	88			
-Y6- 9+40.00	-Y6- 13+40.92	405			40	365	144		144	180		185	40	225
TOTAL SUMMARY NO. 15		1175			117	1058	4342		4342	5428	4553	185	117	302

Note: Approximate quantities only. Unclassified Excavation, Fine Grading, Clearing and Grubbing, Brecking of Existing Pavement, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

15-MAR-2006 14:03
 P:\PROJ\0613B\SUMMARY\SUMMARY.DWG

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA **SUMMARY OF EARTHWORK** IN CUBIC YARDS

LOCATION		EXCAVATION (CUBIC YARDS)					EMBANKMENT (CUBIC YARDS)					WASTE (CUBIC YARDS)		
STATION	STATION	TOTAL UNCLASSIFIED	ROCK	UNDERCUT	UNSUITABLE UNCLASSIFIED	SUITABLE UNCLASSIFIED	TOTAL EMBANKMENT	ROCK EMBANKMENT	EARTH EMBANKMENT	EMBANKMENT PLUS 25%	BORROW	SUITABLE	UNSUITABLE	TOTAL
SUMMARY NO. 16														
-L- 81+85.97	-L- 111+00.00	662		664	132	530	3991		3991	4989	4459		796	796
-Y7- 10+75.00	-Y7- 11+66.89	24			5	19	60		60	75	56		5	5
-Y8- 10+00.00	-Y8- 11+69.12	182			36	146							36	36
TOTAL SUMMARY NO. 16		868		664	173	695	4051		4051	5064	4515		837	837
SUMMARY NO. 17														
-L- 111+00.00	-L- 141+00.00	763		201	153	610	3493		3493	4366	3756		354	354
-Y10- 9+32.00	-Y10- 11+71.73	102			20	82	151		151	189	107		20	20
-Y11- 10+00.00	-Y11- 11+65.05	298			60	238	6		6	8		230	60	290
-Y12- 10+00.00	-Y12- 11+62.56	92			18	74	47		47	59		15	18	33
-Y13- 10+85.00	-Y13- 11+99.11	18			4	14	35		35	44	30		4	4
TOTAL SUMMARY NO. 17		1273		201	255	1018	3732		3732	4666	3893	245	456	701
SUMMARY NO. 18														
-L- 141+00.00	-L- 151+70.00	39			8	31	2004		2004	2505	2474		8	8
-Y14- 6+30.00	-Y14- 13+70.00	1211			242	969	1263		1263	1579	610		242	242
-Y16- 11+80.00	-Y16- 12+63.53	20			4	16	2		2	3		13	4	17
TOTAL SUMMARY NO. 18		1270			254	1016	3269		3269	4087	3084	13	254	267
SUMMARY TOTALS		26886		15984	4270	22616	54810		54810	68519	47046	571	20254	20825
WASTE IN LIEU OF BORROW											-571	-571		-571
SHOULDER MATERIAL							75		75	94				
LOSS DUE TO C&G (500+1300)		-1800				-1800								
GRADE POINT UNDERCUT (700+300)				1000	1000		1000		1000	1250	1230		1000	1000
CONTINGENCY UNDERCUT (500+500+350)				1350	1350		1350		1350	1688	1688		1350	1350
*LESS SELECT GRANULAR MATERIAL										-25250	-25250			
GRAND TOTALS		25086		18334	6620	20816	57235		57235	46301	26057		22604	22604
+5% TO REPLACE TOPSOIL IN BORROW PIT											1303			
PROJECT GRAND TOTALS		25086		18334							27360			
SAY		25100		18350							27375			
DRAINAGE DITCH EXCAVATION = 2280 CY														
FABRIC FOR SOIL STABILIZATION = 24900 SY														
CLASS IV SUBGRADE STABILIZATION = 675 TONS														
*UNDERCUT AREAS ARE BACKFILLED WITH EMBANKMENT WITHIN EARTHWORK SUMMARY; THEREFORE, THE SELECT GRANULAR MATERIAL IS DEDUCTED FROM THE BORROW QUANTITY AT END OF SUMMARY TOTALS														

Note: Approximate quantities only. Unclassified Excavation, Fine Grading, Clearing and Grubbing, Breaking of Existing Pavement, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

15-MAR-2006 14:03

7/2/99

REVISIONS

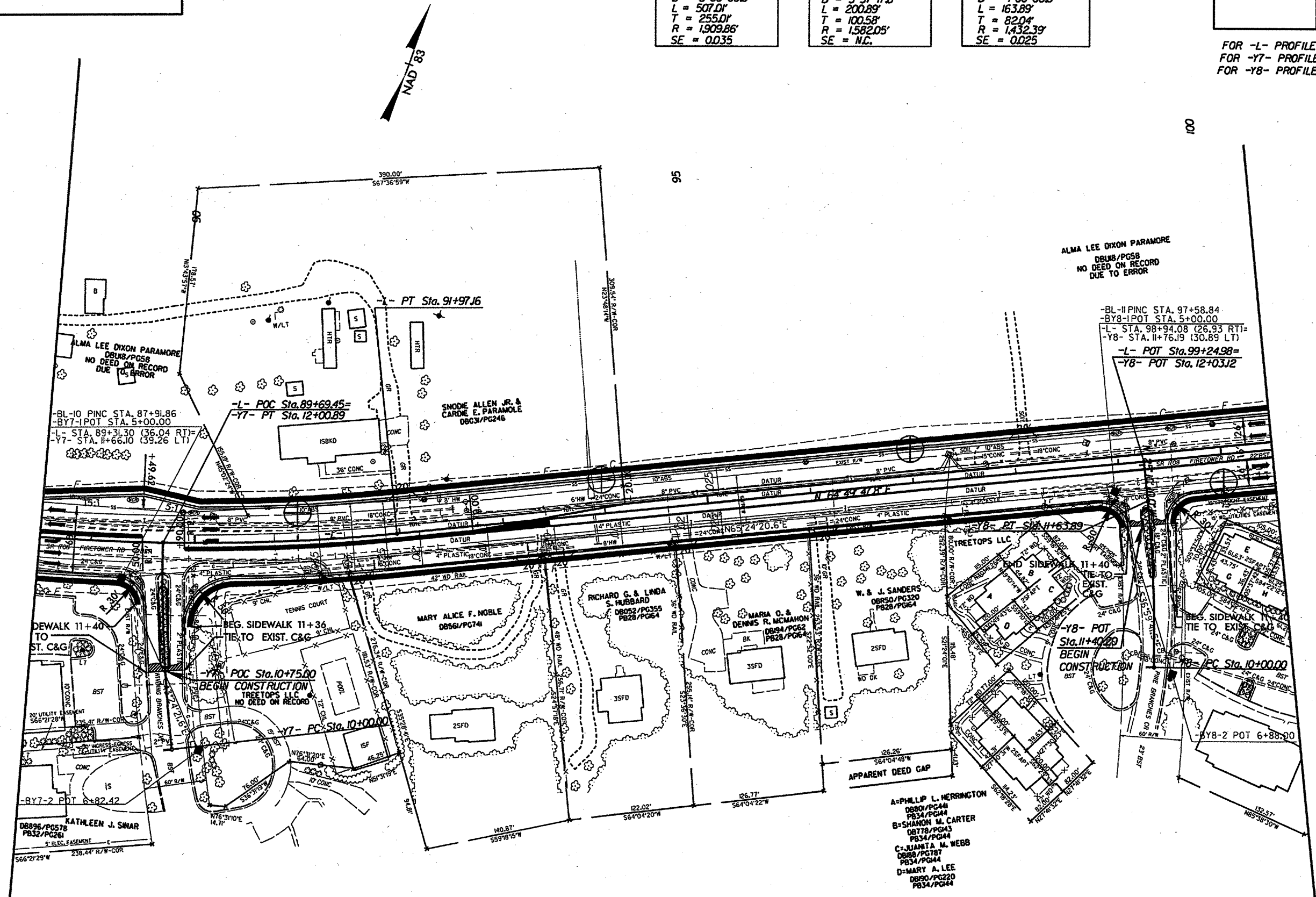
PROJECT REFERENCE NO. U-3613C	SHEET NO. 6
RAW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	

-L-
PI Sta 89+45.15
 $\Delta = 15' 12' 37.6" (LT)$
 $D = 3' 00' 00.0"$
 $L = 507.0'$
 $T = 255.0'$
 $R = 1,909.86'$
 $SE = 0.035$

-Y7-
PI Sta 11+00.58
 $\Delta = 7' 16' 31.7" (RT)$
 $D = 3' 37' 17.8"$
 $L = 200.89'$
 $T = 100.58'$
 $R = 1,582.05'$
 $SE = N.C.$

-Y8-
PI Sta 10+82.04
 $\Delta = 6' 33' 20.5" (LT)$
 $D = 4' 00' 00.0"$
 $L = 163.89'$
 $T = 82.04'$
 $R = 1,432.39'$
 $SE = 0.025$

FOR -L- PROFILE SEE SHEET 10
FOR -Y7- PROFILE SEE SHEET 13
FOR -Y8- PROFILE SEE SHEET 13



ALMA LEE DIXON PARAMORE
DBL88/PG58
NO DEED ON RECORD
DUE TO ERROR

-BL-11 PINC STA. 97+58.84
-BY8-1 POT STA. 5+00.00
-L- STA. 98+94.08 (26.93 RT)
-Y8- STA. 11+76.19 (30.89 LT)
-L- POT Sta. 99+24.98=
-Y8- POT Sta. 12+03.12

126.26'
564'04'48"W
APPARENT DEED GAP

- A=PHILLIP L. HERRINGTON
DB80/PG44
PB34/PG44
- B=SHANON M. CARTER
DB778/PG43
PB34/PG44
- C=JUANITA M. WEBB
DB88/PG78
PB34/PG44
- D=MARY A. LEE
DB90/PG220
PB34/PG44

*****SYTIME*****
*****8/19/00*****
*****SUBS*****

7/2/99

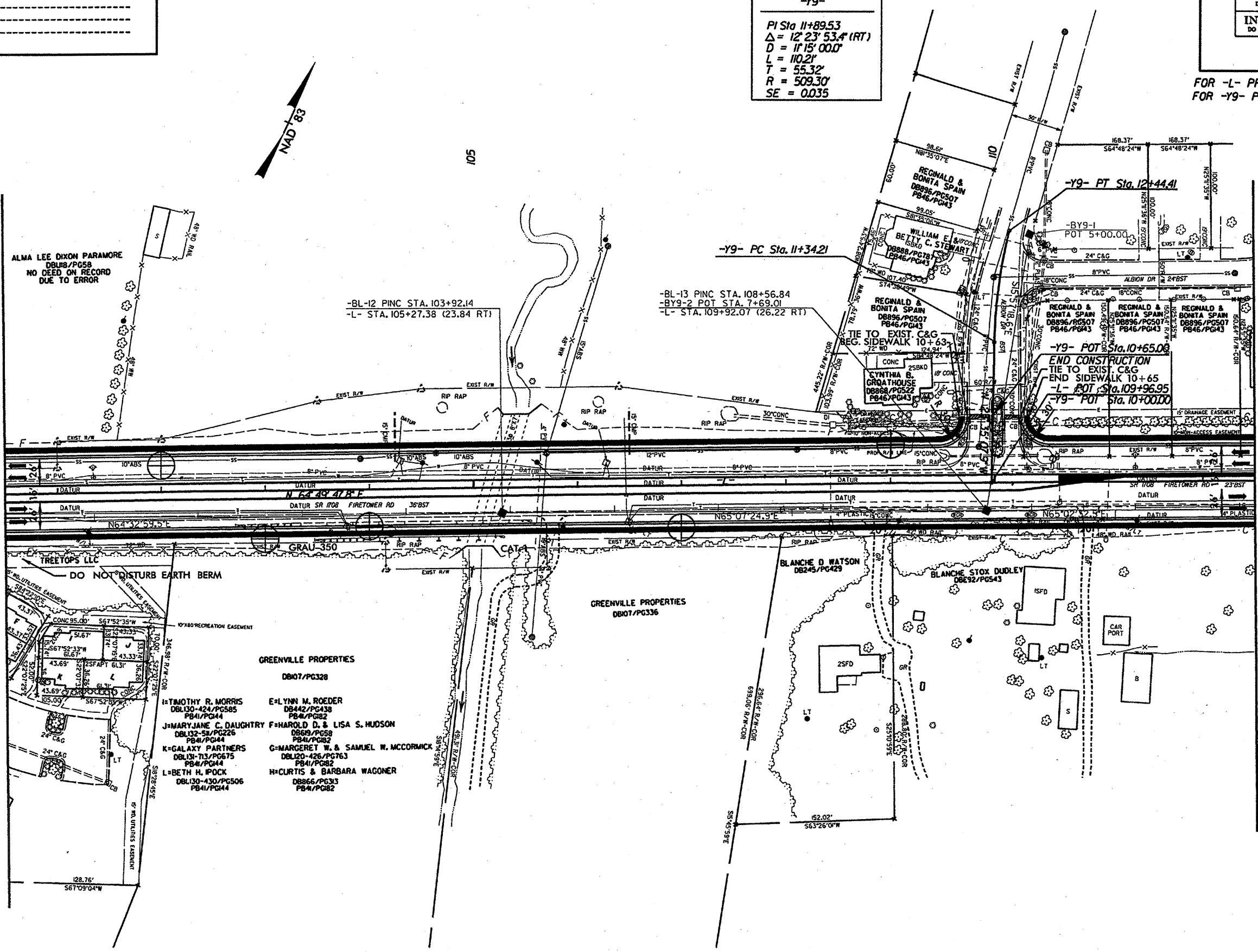
REVISIONS

PROJECT REFERENCE NO. U-3613C	SHEET NO. 7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	

-Y9-

PI Sta 11+89.53
 $\Delta = 12' 23" 53.4 (RT)$
 $D = 11' 15" 00.0'$
 $L = 110.2'$
 $T = 55.32'$
 $R = 509.30'$
 $SE = 0.035$

FOR -L- PROFILE SEE SHEET 10 & 11
 FOR -Y9- PROFILE SEE SHEET 13



ALMA LEE DIXON PARAMORE
 DBL88/PG58
 NO DEED ON RECORD
 DUE TO ERROR

-BL-12 PINC STA. 103+92.14
 -L- STA. 105+27.38 (23.84 RT)

-BL-13 PINC STA. 108+56.84
 -BY9-2 POT STA. 7+69.01
 -L- STA. 109+92.07 (26.22 RT)

-Y9- PC Sta. 11+34.21

-Y9- PT Sta. 12+44.41

-Y9- POT Sta. 10+65.08
END CONSTRUCTION
 TIE TO EXIST. C&G
 END SIDEWALK 10+65
 -L- POT Sta. 109+96.95
 -Y9- POT Sta. 10+00.00

DO NOT DISTURB EARTH BERM

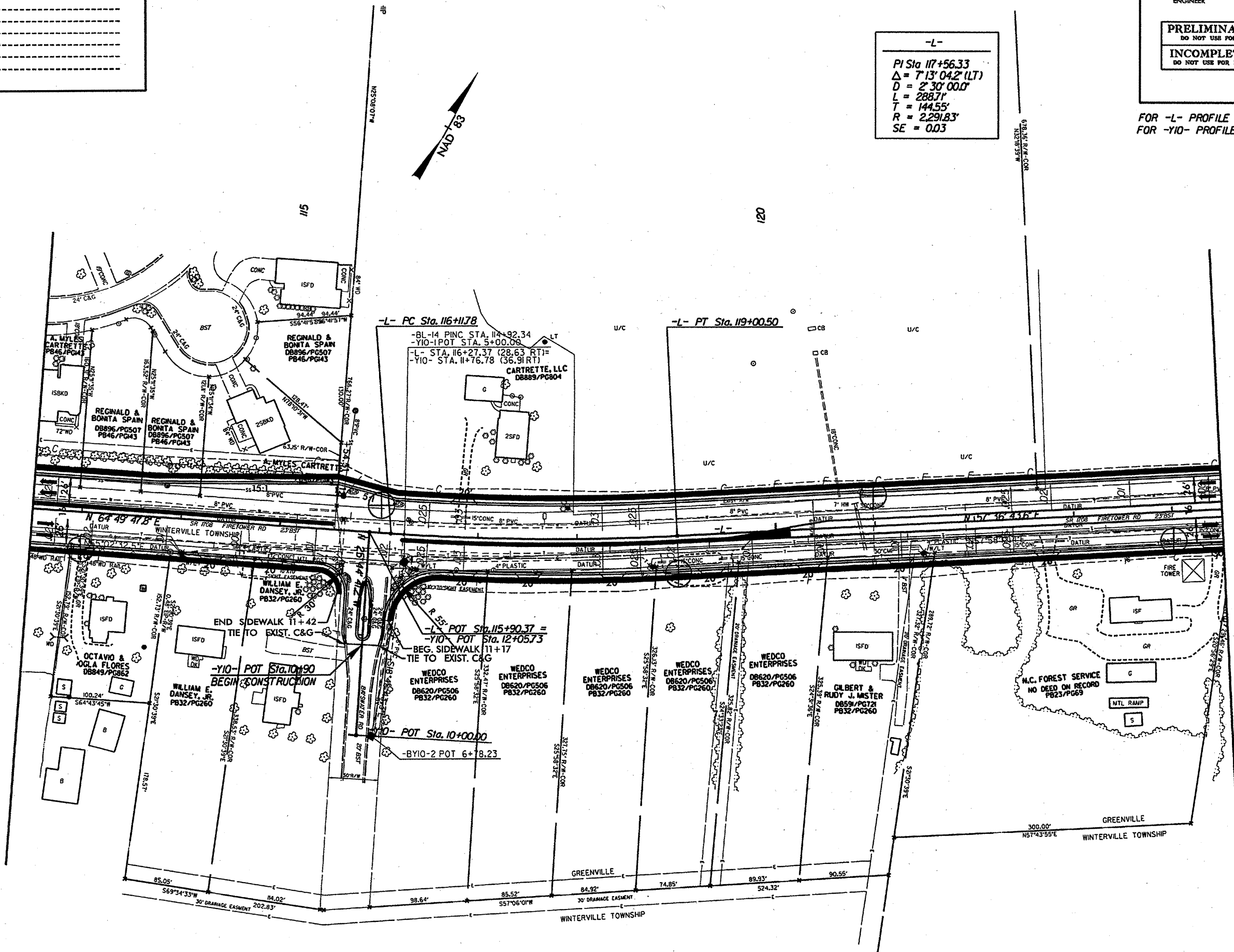
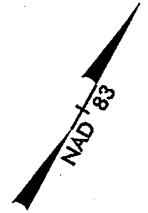
- GREENVILLE PROPERTIES**
 DB07/PG328
- H=TIMOTHY R. MORRIS DBL130-424/PG585 PB41/PG44
 - J=MARYJANE C. DAUGTRY DBL132-58/PG226 PB41/PG44
 - K=GALAXY PARTNERS DBL131-713/PG675 PB41/PG44
 - L=BETH H. FOCK DBL130-430/PG506 PB41/PG44
 - E=LYNN M. ROEDER DB442/PG438 PB41/PG82
 - F=HAROLD D. & LISA S. HUDSON DB609/PG588 PB41/PG82
 - G=MARGERET W. & SAMUEL W. MCCORMACK DBL130-426/PG763 PB41/PG82
 - H=CURTIS & BARBARA WAGONER DB866/PG313 PB41/PG82

 ESTIMATED

FOR -L- PROFILE SEE SHEET 11
FOR -Y10- PROFILE SEE SHEET 13

-L-

PI Sta 117+56.33
 $\Delta = 7' 13'' 04.2'' (LT)$
 $D = 2' 30'' 00.0''$
 $L = 288.71'$
 $T = 144.55'$
 $R = 2,291.83'$
 $SE = 0.03$



7/2

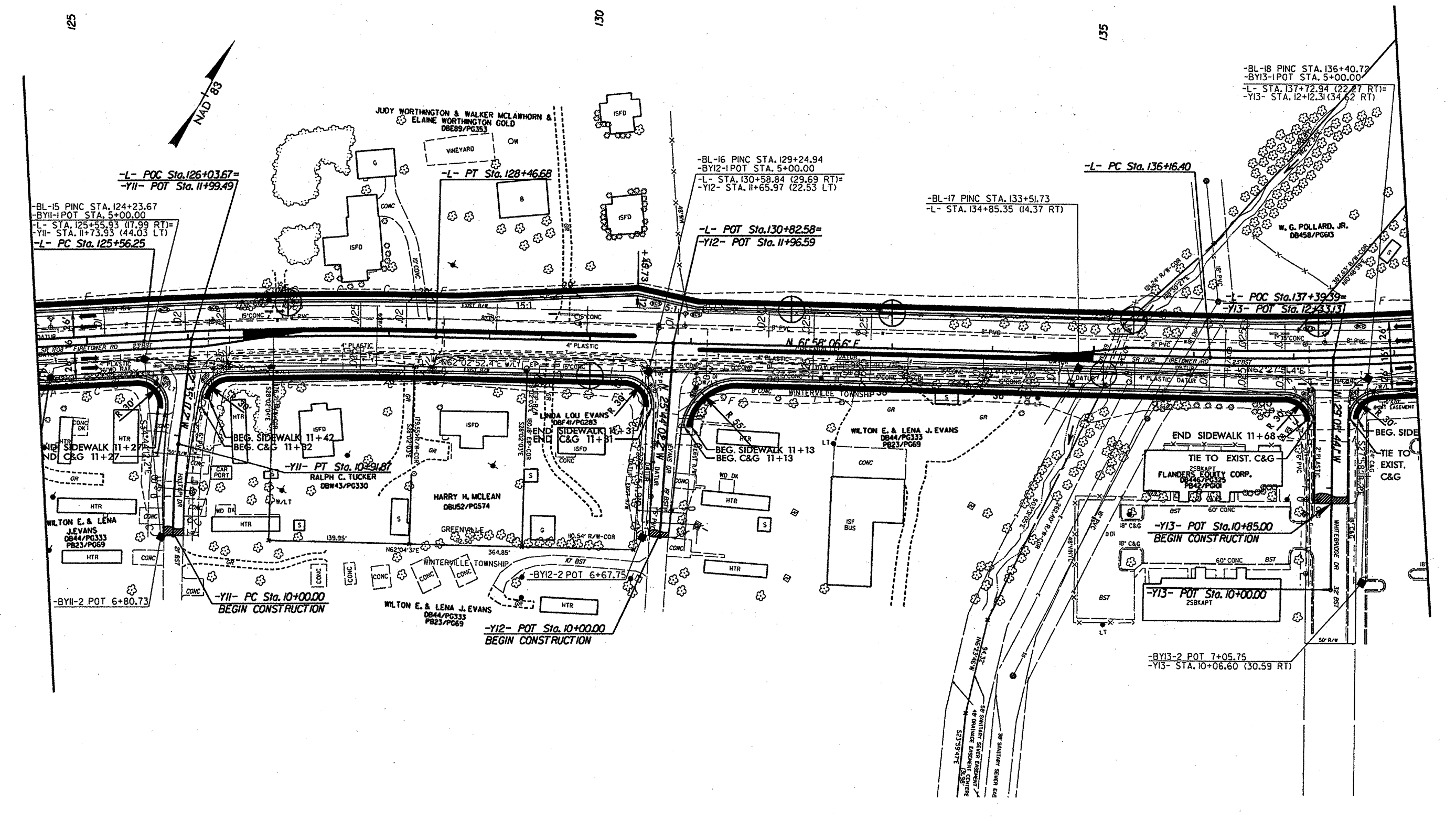
 SYSTEMS

REVISIONS	

PROJECT REFERENCE NO.	U-3613C	SHEET NO.	9
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			

FOR -L- PROFILE SEE SHEET 11 & 12
 FOR -YII- PROFILE SEE SHEET 13
 FOR -Y12- PROFILE SEE SHEET 14
 FOR -Y13- PROFILE SEE SHEET 14

-YII-	-L-	-L-
PI Sta 10+46.00 Δ = 7° 34' 44.2" (RT) D = 8° 15' 00.0" L = 91.87' T = 46.00' R = 694.49' SE = 0.033	PI Sta 127+01.53 Δ = 4° 21' 23.0" (RT) D = 1° 30' 00.0" L = 290.43' T = 145.28' R = 3,819.72' SE = 0.025	PI Sta 139+77.26 Δ = 17° 53' 45.4" (LT) D = 2° 30' 00.0" L = 715.84' T = 360.86' R = 2,291.83' SE = 0.03



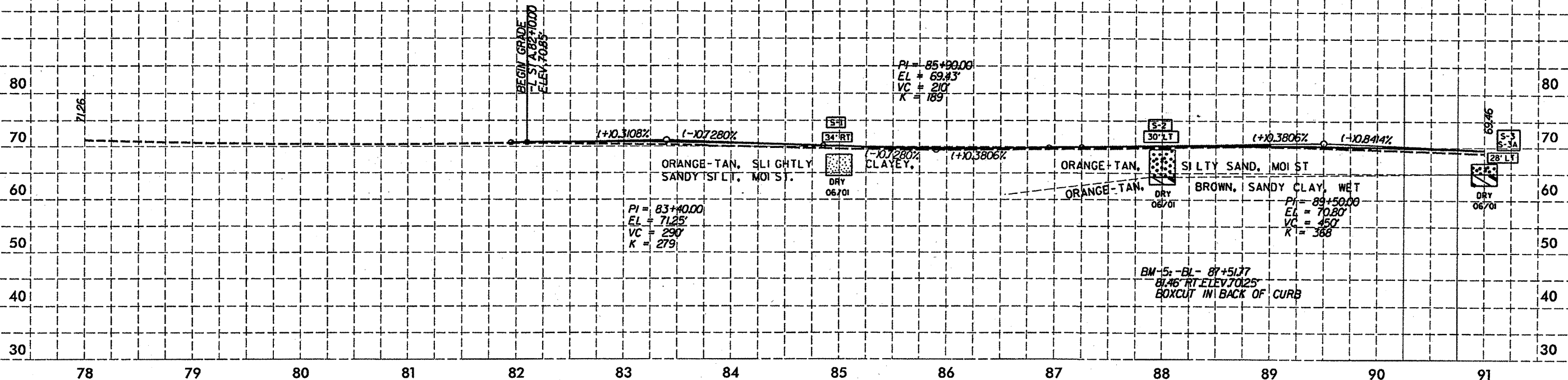
 SYSTEMS

5/28/99

PROJECT REFERENCE NO. U-3613C	SHEET NO. 11
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	

-L- SR 1708 (FIRE TOWER RD.)

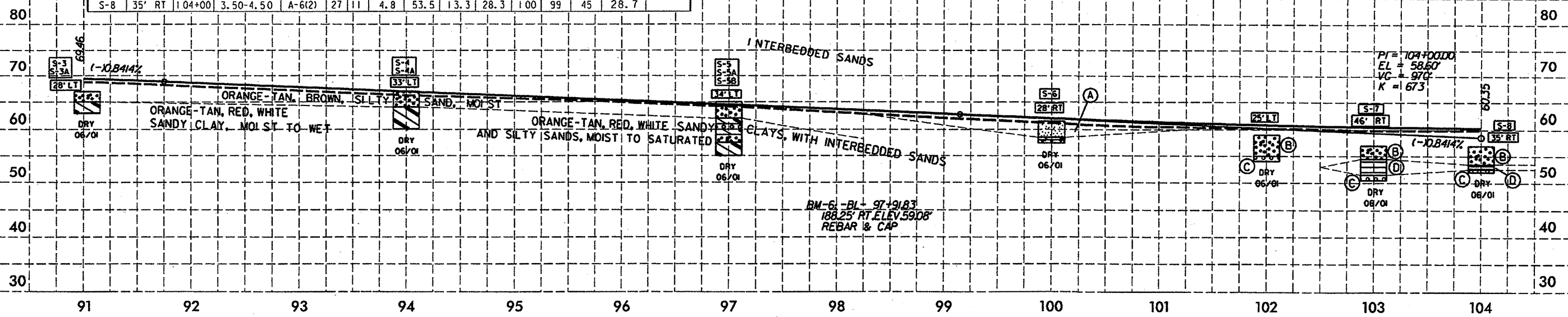
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-1	34' RT	85+00	0.00-4.00	A-4(0)	22	8	7.1	57.6	13.1	22.2	100	98	38	18.6	
S-2	30' LT	88+00	5.20-6.60	A-6(6)	30	14	7.1	33.1	31.5	28.3	100	97	63		
S-3	28' LT	91+00	2.00-3.50	A-6(7)	29	11	0.2	34.7	36.8	28.3	100	100	77		
S-3A	28' LT	91+00	3.50-4.10	A-6(2)	30	15	8.5	54.5	8.7	28.3	100	98	39		
S-4	33' LT	94+00	3.00-5.00	A-6(4)	36	19	5.3	53.3	9.1	32.3	100	99	44	21.5	



-L- SR 1708 (FIRE TOWER RD.)

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-4A	33' LT	94+00	5.00-7.00	A-6(3)	38	21	9.1	55.8	4.8	30.3	100	98	37		
S-5	34' LT	97+00	0.00-3.00	A-2-4(0)	20	NP	33.7	48.3	5.9	12.1	83	73	17		
S-5A	34' LT	97+00	5.00-6.00	A-6(11)	38	23	4.2	42.4	19.0	34.3	100	99	60	26.3	
S-5B	34' LT	97+00	6.00-7.50	A-2-4(0)	24	9	14.3	57.4	10.1	18.2	96	91	31		
S-6	28' RT	100+00	0.00-3.00	A-4(0)	21	3	6.1	63.2	12.5	18.2	100	99	36		
S-7	46' RT	103+00	2.50-5.50	A-6(2)	34	11	4.4	51.3	24.0	20.2	100	99	47	3.1	
S-8	35' RT	104+00	3.50-4.50	A-6(2)	27	11	4.8	53.5	13.3	28.3	100	99	45	28.7	

- (A) LTL TAN TO TAN-BROWN, SANDY SILT, MOIST
- (B) TAN, WHITE, FINE, SILTY SAND, MOIST TO WET
- (C) WHITE, TAN, FINE TO COARSE SAND, MOIST TO SATURATED
- (D) ALLUVIAL; DARK BROWN TO BLACK, ORGANIC, SANDY CLAY, MOIST

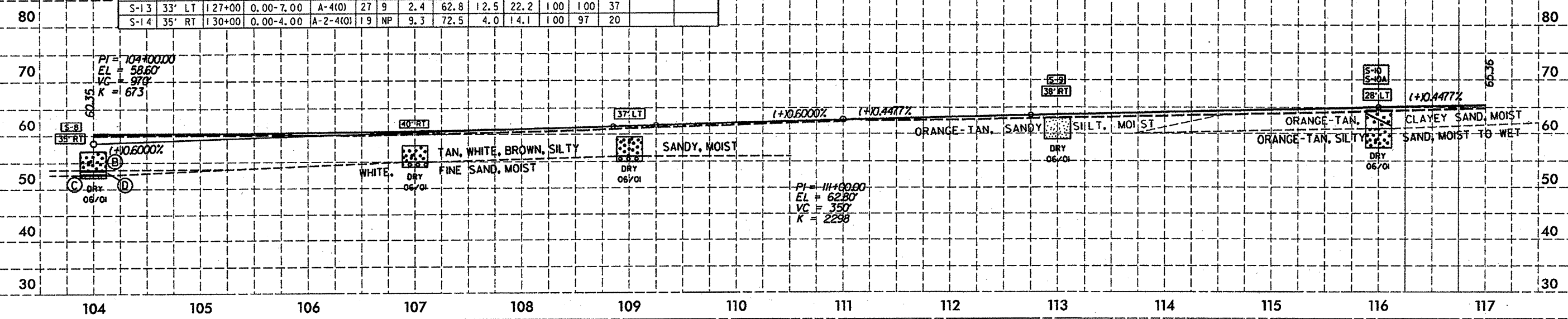


PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
 DO NOT USE FOR R/W ACQUISITION

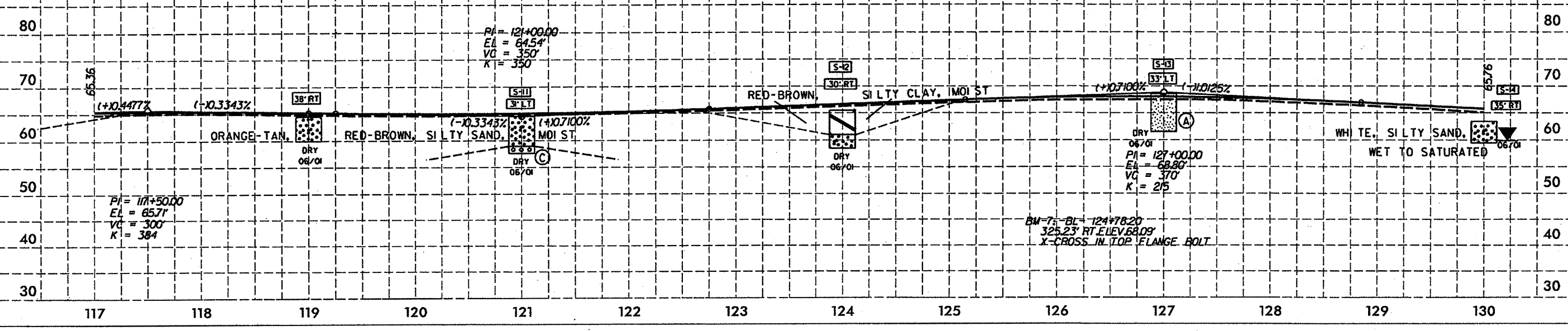
-L- SR 1708 (FIRETOWER RD.)

SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-8	35' RT	104+00	3.50-4.50	A-6(2)	27	11	4.8	53.5	13.3	28.3	100	99	45		
S-9	38' RT	113+00	0.00-4.00	A-4(0)	22	6	1.2	60.4	16.2	22.2	100	100	43		
S-10	28' LT	116+00	0.00-3.50	A-2-6(1)	35	16	5.1	64.6	2.0	28.3	100	100	31		
S-10A	28' LT	116+00	3.50-7.00	A-2-4(0)	21	NP	37.2	46.9	1.8	14.1	99	87	17		
S-11	31' LT	121+00	0.00-5.50	A-2-4(0)	18	NP	1.8	83.9	7.2	7.1	100	100	17		
S-12	30' RT	124+00	0.00-4.50	A-7-6(4)	41	21	1.0	61.8	4.8	32.3	100	100	40		
S-13	33' LT	127+00	0.00-7.00	A-4(0)	27	9	2.4	62.8	12.5	22.2	100	100	37		
S-14	35' RT	130+00	0.00-4.00	A-2-4(0)	19	NP	9.3	72.5	4.0	14.1	100	97	20		

- (A) LTL TAN TO TAN-BROWN, SANDY SILT, MOIST
- (B) TAN, WHITE, FINE, SILTY SAND, MOIST TO WET
- (C) WHITE, TAN, FINE TO COARSE SAND, MOIST TO SATURATED
- (D) ALLUVIAL: DARK BROWN TO BLACK, ORGANIC, SANDY CLAY, MOIST



-L- SR 1708 (FIRETOWER RD.)

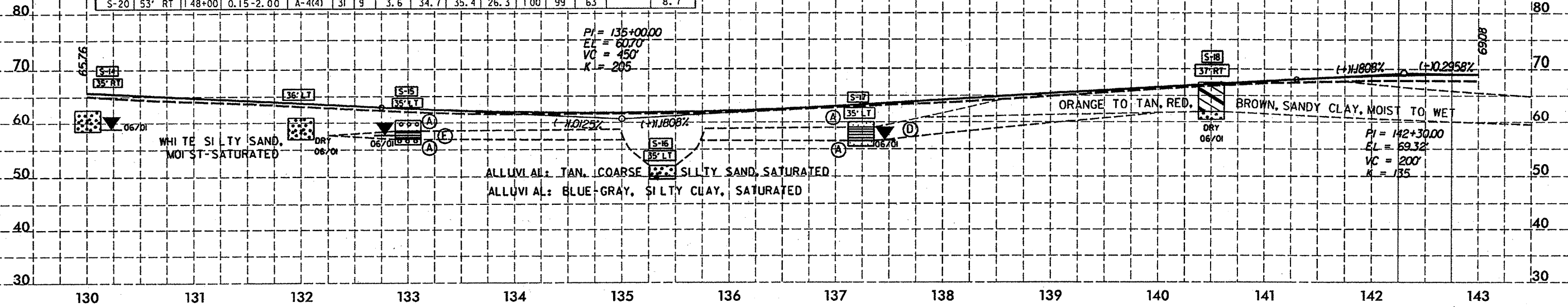


—L— SR 1708 (FIRETOWER RD.)

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

SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PI	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							G.SAND	F.SAND	SILT	CLAY	10	40	200		
S-14	35' RT	130+00	0.00-4.00	A-2-4(0)	19	NP	9.3	72.5	4.0	14.1	100	97	20		
S-15	35' LT	133+00	2.00-3.50	A-4(0)	28	8	9.5	52.7	21.6	16.2	100	98	40	35.3	7
S-16	35' LT	135+40	2.00-2.50	A-7-6(14)	45	29	6.1	36.6	14.9	42.4	100	99	59		
S-17	35' LT	137+24	1.00-3.50	A-6(1)	31	12	15.2	46.7	18.0	20.2	100	97	39	33.6	7
S-18	37' RT	140+50	0.00-5.50	A-6(2)	31	14	1.4	60.6	9.7	28.3	100	100	41		
S-19	37' RT	144+00	2.00-5.00	A-7-6(7)	43	23	6.9	47.3	7.5	38.4	100	98	48		
S-19A	37' RT	144+00	5.00-6.00	A-7-6(7)	43	26	5.5	52.5	7.7	34.3	100	98	45		
S-20	53' RT	148+00	0.15-2.00	A-4(4)	31	9	3.6	34.7	35.4	26.3	100	99	63	8.7	

- (A) LT. TAN TO TAN-BROWN, SANDY SILT, MOIST
- (D) ALLUVIAL: DARK BROWN TO BLACK, ORGANIC, SANDY CLAY, MOIST
- (E) ALLUVIAL: DARK BROWN TO BLACK, ORGANIC, SANDY SILT, MOIST TO WET



—L— SR 1708 (FIRETOWER RD.)

