ID: U-2510A

CONTRACT: C201622

NOTE: SEE SHEET 1A FOR PLAN SHEET LAYOUT AT TIME OF INVESTIGATION

CONTENTS

LINE	STATION	SHEET NUMBERS PLAN	PROFILE	XSECT
-L-	18+00 to 204+63.70	4-21	22-28	
-Y2-	10+00 to 12+35	6	26	
-Y2A-	10+00 to 11+75	7	26	
-Y3-	10+00 to 12+46.22	8	26	
-Y4-	10+00 to 25+50	8,19	26	
-Y5-	10+00 to 20+00	11,20	27	
-Y9-	10+00 to 20+56.45	16,21	28	
-Y10-	10+00 to 14+77.54	18	28	
-Y11-	10+00 to 11+47.57	18	28	

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

ROADWAY SUBSURFACE INVESTIGATION

PROJ. REFERENCE NO. 34813.1.1 (U-2510A) F.A. PROJ. STP - 16(20)

COUNTY MECKLENBURG AND UNION

PROJECT DESCRIPTION NC 16 (OLD PROVIDENCE RD.) FROM SOUTH OF SR 2984 (REA ROAD EXT.) IN UNION COUNTY TO SOUTH OF I-485 (CHARLOTTE OUTER LOOP)

INVENTORY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-2510A	1	31

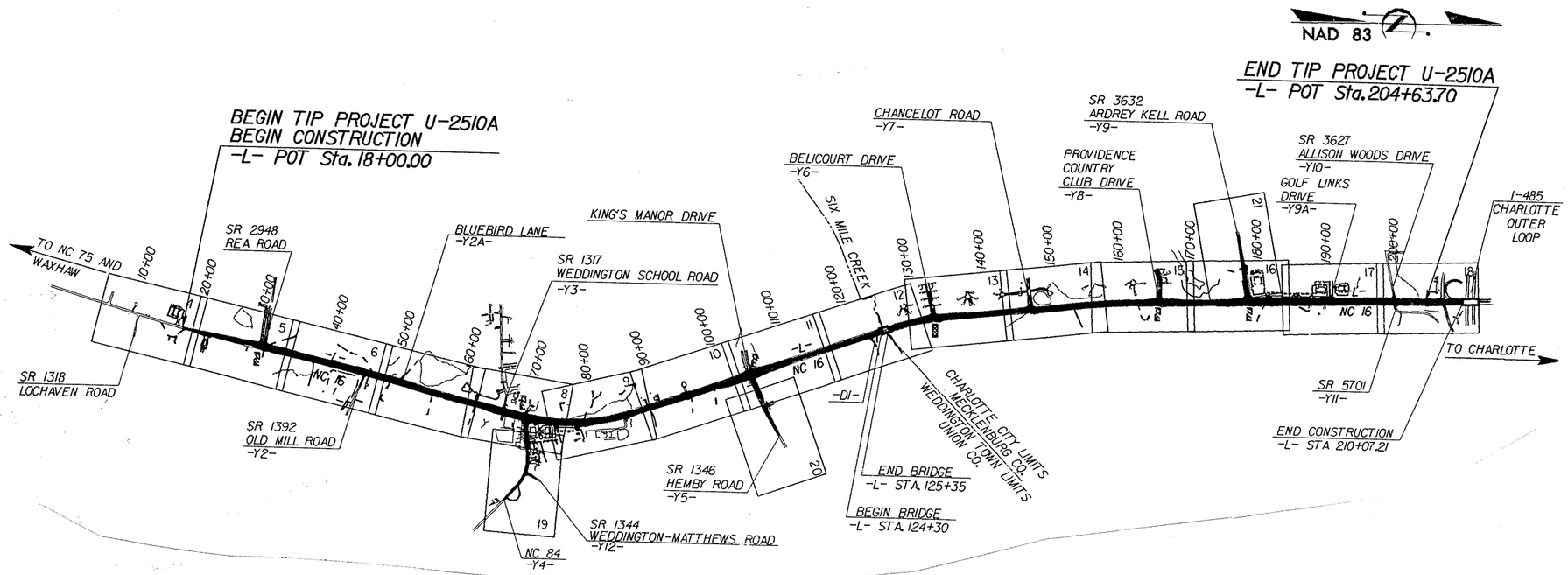
WBS NO.	F.A. PROJ. NO.	DESCRIPTION
34813.1.1	STP - 16(20)	P.E.
34813.2.3	STP - 16(20)	R/W, UTILITIES
34813.3.3	STP - 16(36)	CONSTRUCTION

CAUTION NOTICE

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

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

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



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INVESTIGATED BY J.E. BEVERLY

CHECKED BY C.B. LITTLE

SUBMITTED BY C.B. LITTLE

DATE JULY 2005

NORTH CAROLINA LICENSED SEAL 1104 GEOLOGIST CLINTON B. LITTLE

8-3-05

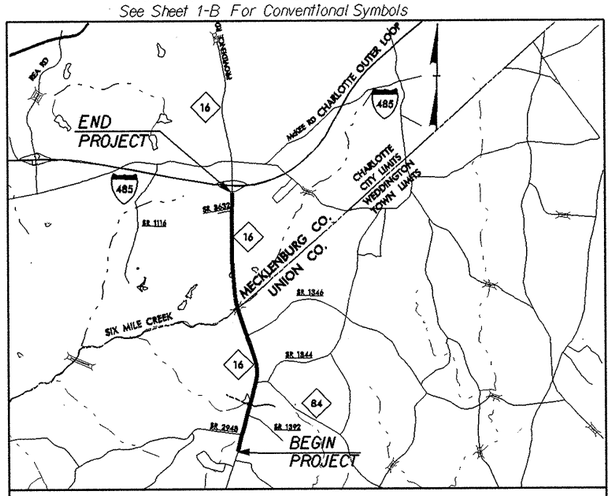
DRAWN BY: J.E. BEVERLY

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

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

CONTRACT: TIP PROJECT: U-2510A

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



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

MECKLENBURG AND UNION COUNTIES

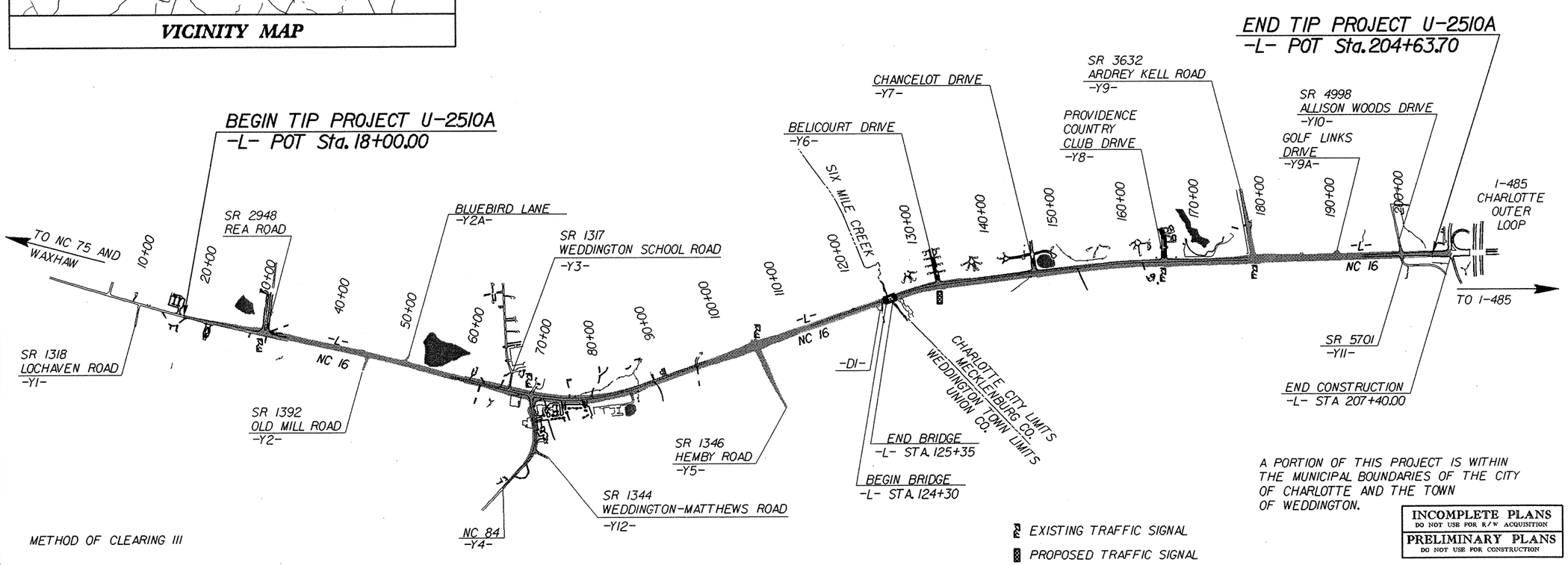
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-2510A	1A	
WBS NO.	F.A.PROJ. NO.	DESCRIPTION	
34813.1.1	STP - 16(20)	P.E., R/W	

PFI PLANS

LOCATION: *NC 16 (OLD PROVIDENCE ROAD) FROM SOUTH OF SR 2948 (REA ROAD EXT.) IN UNION COUNTY TO SOUTH OF I-485 (CHARLOTTE OUTER LOOP).*

TYPE OF WORK: *GRADING, DRAINAGE, PAVING, WIDENING, RESURFACING, STRUCTURE, RETAINING WALLS, CURB & GUTTER, SIDEWALK AND SIGNALS*

NAD 83



METHOD OF CLEARING III

EXISTING TRAFFIC SIGNAL

PROPOSED TRAFFIC SIGNAL

A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF CHARLOTTE AND THE TOWN OF WEDDINGTON.

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

PLANS: 50 25 0 50 100

PROFILE (HORIZONTAL): 50 25 0 50 100

PROFILE (VERTICAL): 10 5 0 10 20

DESIGN DATA

ADT 2006 = 32,780
ADT 2030 = 43,000
DHV = 10 %
D = 60 %
*T = 5 %
V = 50 MPH
* (TTST 2% + DUAL 3%)
FUNC CLASS = URBAN ARTERIAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-2510A = 3.515 MILES
LENGTH STRUCTURE TIP PROJECT U-2510A = 0.020 MILES
TOTAL LENGTH OF TIP PROJECT U-2510A = 3.535 MILES

Prepared In the Office of:
TRANSITE CONSULTING
ENGINEERS, INCORPORATED
1300 Paddock Drive, Suite G-10
Raleigh, N.C. 27609

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: MARCH 18, 2005

LETTING DATE: SEPTEMBER 19, 2006

RICHARD L. BOLLINGER, JR P.E. — PROJECT ENGINEER

CLINTON J. MORGAN, P.E. — PROJECT DESIGN ENGINEER

NCDOT CONTACT: TERESA M. BRUTON, P.E. — DESIGN SERVICES - PROJECT ENGINEER

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

103.001.002/roadway/proj/U2510A_rdy_tsh.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-2510A	2

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION

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, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6

SOIL LEGEND AND AASHTO CLASSIFICATION

GENERAL CLASS.	GRANULAR MATERIALS (≤ 35% PASSING #200)							SILT-CLAY MATERIALS (> 35% PASSING #200)				ORGANIC MATERIALS		
GROUP CLASS.	A-1		A-3	A-2				A-4	A-5	A-6	A-7	A-1, A-2 A-3	A-4, A-5 A-6, A-7	
	A-1-a	A-1-b		A-2-4	A-2-5	A-2-6	A-2-7				A-7-5 A-7-6			
SYMBOL														
% PASSING #10 #40 #200	50 MX 30 MX 15 MX		50 MX 25 MX	51 MN 10 MX	35 MX	35 MX	35 MX	35 MX	35 MX	36 MN	36 MN	36 MN	36 MN	
	GRANULAR SOILS							SILT-CLAY SOILS						MUCK, PEAT
LIQUID LIMIT	6 MX		NP	40 MX	41 MN	40 MX	41 MN	40 MX	41 MN	40 MX	41 MN	SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER		HIGHLY ORGANIC SOILS
PLASTIC INDEX				10 MX	10 MX	11 MN	11 MN	10 MX	10 MX	11 MN	11 MN			
GROUP INDEX	0		0	0		4 MX		8 MX	12 MX	16 MX	No MX			
USUAL TYPES OF MAJOR MATERIALS	STONE FRAGS. GRAVEL, AND SAND		FINE SAND	SILTY OR CLAYEY GRAVEL AND SAND				SILTY SOILS		CLAYEY SOILS				
GEN. RATING AS A SUBGRADE	EXCELLENT TO GOOD							FAIR TO POOR				FAIR TO POOR	POOR	UNSUITABLE

PI OF A-7-5 SUBGROUP IS ≤ LL - 30 ; PI OF A-7-6 SUBGROUP IS > LL - 30

CONSISTENCY OR DENSENESS

PRIMARY SOIL TYPE	COMPACTNESS OR CONSISTENCY	RANGE OF STANDARD PENETRATION RESISTENCE (N-VALUE)	RANGE OF UNCONFINED COMPRESSIVE STRENGTH ($TONS/FT^2$)
GENERALLY GRANULAR MATERIAL (NON-COHESIVE)	VERY LOOSE LOOSE MEDIUM DENSE DENSE VERY DENSE	<4 4 TO 10 10 TO 30 30 TO 50 >50	N/A
GENERALLY SILT-CLAY MATERIAL (COHESIVE)	VERY SOFT SOFT MEDIUM STIFF STIFF VERY STIFF HARD	<2 2 TO 4 4 TO 8 8 TO 15 15 TO 30 >30	<0.25 0.25 TO 0.50 0.5 TO 1.0 1 TO 2 2 TO 4 >4

TEXTURE OR GRAIN SIZE

U.S. STD. SIEVE SIZE	4	10	40	60	200	270
OPENING (MM)	4.76	2.00	0.42	0.25	0.075	0.053

BOULDER (BLDR.)	COBBLE (COB.)	GRAVEL (GR.)	COARSE SAND (CSE. SD.)	FINE SAND (F SD.)	SILT (SL.)	CLAY (CL.)

GRAIN SIZE	MM	305	75	2.0	0.25	0.05	0.005
	IN.	12	3				

SOIL MOISTURE - CORRELATION OF TERMS

SOIL MOISTURE SCALE (ATTERBERG LIMITS)	FIELD MOISTURE DESCRIPTION	GUIDE FOR FIELD MOISTURE DESCRIPTION
	- SATURATED - (SAT.)	USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE
PLASTIC RANGE (PI): LL — LIQUID LIMIT		
	- WET - (W)	SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE
PL — PLASTIC LIMIT		
OM — OPTIMUM MOISTURE	- MOIST - (M)	SOLID; AT OR NEAR OPTIMUM MOISTURE
SL — SHRINKAGE LIMIT		
	- DRY - (D)	REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE

PLASTICITY

	PLASTICITY INDEX (PI)	DRY STRENGTH
NONPLASTIC	0-5	VERY LOW
LOW PLASTICITY	6-15	SLIGHT
MED. PLASTICITY	16-25	MEDIUM
HIGH PLASTICITY	26 OR MORE	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.

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.

ANGULARITY OF GRAINS

THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.

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 31
MODERATELY COMPRESSIBLE	LIQUID LIMIT EQUAL TO 31-50
HIGHLY COMPRESSIBLE	LIQUID LIMIT GREATER THAN 50

PERCENTAGE OF MATERIAL

ORGANIC MATERIAL	GRANULAR SOILS	SILT - CLAY SOILS	OTHER MATERIAL	
TRACE OF ORGANIC MATTER	2 - 3%	3 - 5%	TRACE	1 - 10%
LITTLE ORGANIC MATTER	3 - 5%	5 - 12%	LITTLE	10 - 20%
MODERATELY ORGANIC	5 - 10%	12 - 20%	SOME	20 - 35%
HIGHLY ORGANIC	>10%	>20%	HIGHLY	35% AND ABOVE

GROUND WATER

- WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING
- STATIC WATER LEVEL AFTER 24 HOURS
- PW — PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA
- SPRING OR SEEP

MISCELLANEOUS SYMBOLS

- ROADWAY EMBANKMENT WITH SOIL DESCRIPTION
- SOIL SYMBOL
- ARTIFICIAL FILL OTHER THAN ROADWAY EMBANKMENT
- INFERRED SOIL BOUNDARY
- INFERRED ROCK LINE
- ALLUVIAL SOIL BOUNDARY
- 25/025 — DIP & DIP DIRECTION OF ROCK STRUCTURES
- SOUNDING ROD
- SPT CPT DPT DMT VST PMT — TEST BORING
- AUGER BORING
- CORE BORING
- MW — MONITORING WELL
- PIEZOMETER INSTALLATION
- SLOPE INDICATOR INSTALLATION
- SPT N-VALUE
- REF — SPT REFUSAL

SAMPLE DESIGNATIONS

- S - BULK SAMPLE
- SS - SPLIT SPOON SAMPLE
- ST - SHELBY TUBE SAMPLE
- RS - ROCK SAMPLE
- RT - RECOMPACTED TRIAXIAL SAMPLE
- CBR - CALIFORNIA BEARING RATIO SAMPLE

ABBREVIATIONS

AR - AUGER REFUSAL
BT - BORING TERMINATED
CL. - CLAY
CPT - CONE PENETRATION TEST
CSE. - COARSE
DMT - DILATOMETER TEST
DPT - DYNAMIC PENETRATION TEST
e - VOID RATIO
F - FINE
FOSS. - FOSSILIFEROUS
FRAC. - FRACTURED
FRAGS. - FRAGMENTS
HI. - HIGHLY
MED. - MEDIUM
MICA. - MICACEOUS
MOD. - MODERATELY
NP - NON PLASTIC
PMT - PRESSUREMETER TEST
SAP. - SAPROLITIC
SD. - SAND, SANDY
SL. - SILT, SILTY
SLI. - SLIGHTLY
TCR - TRICONE REFUSAL
W - MOISTURE CONTENT
V - VERY
VST - VANE SHEAR TEST
γ - UNIT WEIGHT
γ_d - DRY UNIT WEIGHT

EQUIPMENT USED ON SUBJECT PROJECT

DRILL UNITS:
- [ ] MOBILE B-___
- [ ] BK-51
- [ ] CME-45C
- [X] CME-550
- [ ] PORTABLE HOIST
- [ ] OTHER _____
- [ ] OTHER _____

ADVANCING TOOLS:
- [ ] CLAY BITS
- [X] 6" CONTINUOUS FLIGHT AUGER
- [X] 8" HOLLOW AUGERS
- [ ] HARD FACED FINGER BITS
- [ ] TUNG.-CARBIDE INSERTS
- [ ] CASING [ ] W/ ADVANCER
- [ ] TRICONE _____" STEEL TEETH
- [ ] TRICONE _____" TUNG.-CARB.
- [ ] CORE BIT
- [ ] OTHER _____

HAMMER TYPE:
- [X] AUTOMATIC
- [ ] MANUAL

CORE SIZE:
- [ ] -B_____
- [ ] -N_____
- [ ] -H_____

HAND TOOLS:
- [ ] POST HOLE DIGGER
- [X] HAND AUGER
- [ ] SOUNDING ROD
- [ ] VANE SHEAR TEST
- [ ] OTHER _____

ROCK DESCRIPTION

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)	NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > 100 BLOWS PER FOOT IF TESTED.
CRYSTALLINE ROCK (CR)	FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC.
NON-CRYSTALLINE ROCK (NCR)	FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN SEDIMENTARY ROCK THAT WOULD YEILD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC.
COASTAL PLAIN SEDIMENTARY ROCK (CP)	COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED SHELL BEDS, ETC.

WEATHERING

FRESH	ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE.
VERY SLIGHT (V SLI.)	ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN, CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER HAMMER BLOWS IF OF A CRYSTALLINE NATURE.
SLIGHT (SLI.)	ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO 1 INCH. OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR CRYSTALS ARE DULL AND DISCOLORED. CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS.
MODERATE (MOD.)	SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLAY. ROCK HAS DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED WITH FRESH ROCK.
MODERATELY SEVERE (MOD. SEV.)	ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK. ROCK GIVES "CLUNK" SOUND WHEN STRUCK. *IF TESTED, WOULD YIELD SPT REFUSAL*
SEVERE (SEV.)	ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND EVIDENT BUT REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. *IF TESTED, YIELDS SPT N VALUES > 100 BPF*
VERY SEVERE (V SEV.)	ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS ARE DISCERNIBLE BUT THE MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE SUCH THAT ONLY MINOR VESTIGES OF THE ORIGINAL ROCK FABRIC REMAIN. *IF TESTED, YIELDS SPT N VALUES < 100 BPF*
COMPLETE	ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.

ROCK HARDNESS

VERY HARD	CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.
HARD	CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN.
MODERATELY HARD	CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS.
MEDIUM HARD	CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PEICES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK.
SOFT	CAN BE GROVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE.
VERY SOFT	CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 INCH OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY FINGERNAIL.

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

BEDDING

TERM	THICKNESS
VERY THICKLY BEDDED	> 4 FEET
THICKLY BEDDED	1.5 - 4 FEET
THINLY BEDDED	0.16 - 1.5 FEET
VERY THINLY BEDDED	0.03 - 0.16 FEET
THICKLY LAMINATED	0.008 - 0.03 FEET
THINLY LAMINATED	< 0.008 FEET

INDURATION

FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF THE MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.

FRIABLE	RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE.
MODERATELY INDURATED	GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER.
INDURATED	GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER.
EXTREMELY INDURATED	SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.

TERMS AND DEFINITIONS

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 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.

BENCH MARK:

ELEVATION: FT.

NOTES:

REVISED 03/07/05

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

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

LYNDO TIPPETT
SECRETARY

July 11, 2005

STATE PROJECT: 34813.1.1 (U-2510A)
F.A. PROJECT: STP – 16(20)
COUNTY: Mecklenburg / Union
DESCRIPTION: NC 16 (Old Providence Rd.) from south of SR 2984 (Rea Rd. Ext.) in Union County to South of I-485 (Charlotte Outer Loop)

SUBJECT: Geotechnical Report - Inventory

This report presents the findings of the Geotechnical Investigation for section A of the proposed widening of NC 16 (Old Providence Rd.). Stations encompassed on this project are from -L- 18+00 to 204+63.70. The project proceeds in a northerly direction from beginning to end.

The geotechnical field investigation for this project was conducted in May of 2005. An ATV mounted CME 550X drill machine with automatic drop hammer was utilized to perform test borings along the roadway. In a few areas inaccessible to drill equipment it was necessary to obtain soil samples by hand auger.

The main survey line investigated was -L-, however several -Y- lines were visually inspected and soil conditions were interpreted from sample data obtained on -L-. The following survey lines are addressed in this inventory report:

Line	Station
-L-	18+00 – 204+63.70
-Y2-	10+00 – 12+35
-Y2A-	10+00 – 11+75
-Y3-	10+00 – 12+46.22
-Y4-	10+00 – 25+50
-Y5-	10+00 – 20+00
-Y9-	10+00 – 20+56.45
-Y10-	10+00 – 14+77.54
-Y11-	10+00 – 11+47.57

Areas of Special Geotechnical Interest:

1. *Groundwater:*

Groundwater was encountered sporadically throughout the project corridor. In most instances groundwater is associated with low-lying areas that are alluvial in nature. Groundwater was not present at or above grade in any location. In a few instances groundwater is at or near the ground surface in alluvial environments.

2. *Rock:*

Hard rock was encountered in only 2 borings during this investigation. In one of those instances hard rock was encountered at or just below the approximate grade elevation right of -L- stations 120+50 – 121+50.

3. *High PI Soils:* (PI's Greater than 26)

High PI clays are quite common along the project corridor and can encompass large areas. PI's in the upper 20's to as high as 52 were noted consistently during our investigation. The following areas along the main alignment -L- are known to contain High PI clays:

Station Range	Depth Interval (feet)	High PI Range (27+)
18+00 – 32+00 (-L-)	0.0 – 7.5	37 – 49
41+50 – 45+50 (-L-)	0.0 – 10.0	40
74+00 – 87+50 (-L-)	0.0 – 10.0	31 – 45
98+00 – 105.00 (-L-)	0.0 – 7.5	30
115+00 – 123+50 (-L-)	0.0 – 8.0	27 – 30
127+00 – 137+00 (-L-)	0.0 – 5.0	39
139+00 – 162+00 (-L-)	0.0 – 10.0	34 – 52
171+50 – 184+00 (-L-)	0.0 – 10.2	28 – 46
193+00 – 204+63 (-L-)	0.0 – 14.0	29 – 43

We anticipate the following -Y- lines to have high PI clays. This is based on visual inspection and interpretation from soil sample data where -Y- lines connect to the adjacent -L- alignment. Since sample data was not obtained along -Y- lines an actual PI value is not reported.

Station Range	Depth Interval (feet)	High PI Range (27+)
10+00 – 12+35 (-Y2-)	0.0 – 7.0	range uncertain
10+00 – 20+00 (-Y5-)	0.0 – 7.0	"
10+00 – 20+00 (-Y9-)	0.0 – 7.0	"
10+00 – 14+77 (-Y10-)	0.0 – 7.0	"
10+00 – 11+47 (-Y11-)	0.0 – 7.0	"

4. *Alluvial Soils / Wet Areas:*

There are many areas containing alluvial soils throughout the project corridor. Most of these areas result from adjacent streams, creeks, drainage features and low-lying areas. There are also several ponds that border the project corridor but are of little consequence. Alluvial soils are comprised mainly of very soft to medium stiff sandy silty clay (A-7's) with high PI values. Silts (A-4) and sands (A-2-4) occur in only a couple of instances. Some alluvial areas are of no special interest. The following is a list of areas that are known to contain very soft to soft alluvial soils that may be of concern.

Line	**Station Range**
-L-	64+00 – 65+50 Rt of -L- (Creek / Drainage)
-L-	123+50 – 126+50 (Six Mile Creek Floodplain)
-L-	144+50 – 152+50 Rt of -L- (Wetlands)
-L-	193+00 – 195+50 Rt of -L- (Wetlands)

Physiography/Geology:

The project area is located in southern Mecklenburg and northern Union counties and crosses the border between the cities of Charlotte and Weddington. Area topography is flat to gently rolling with gently sloping stream and drainage features bisecting the project. The project is surrounded by residential and business development. Elevation range within the project area is approximately 610 to 735 feet.

Geologically this site is part of the Charlotte Belt and is underlain by Cenezoic age meta-volcanic rock and/or Paleozoic age gabbro rock.

Soil Properties:

1. *Residual Soils:*

These soils are derived from in place weathering of parent materials. They occur in a variety of consistencies, classifications, and stratigraphic sequences. Residual soils are further subdivided into clays, silts, and sands.

Clays are the predominant soil found throughout the project corridor. They occur as both near surface soils and subsoils. Clays consist primarily of medium stiff to very stiff sandy silty clay, or silty sandy clay in the AASHTO classifications of A-7-5, A-7-6, and A-6. Color combinations of red, tan, gray, brown, and yellow are most common. The occurrence of wetlands perched over high PI clay soils was noted in a couple of locations, however most soils appear well drained. Clays along the project tend to be high PI soils with a plasticity index ranging from 11 to 52. Corresponding liquid limit ranges are between 37 and 93.

Silts of the A-4 and A-5 classification were encountered in only a couple of instances and occur as subsoil layers only a few feet in thickness. They are described as medium stiff to stiff tan clayey sandy silt.

Sands encountered on the project were of the A-2-4, A-2-5, and, A-2-7 AASHTO Classification and occur sporadically as subsoils only a few feet in thickness. Sands generally consist of medium dense to dense tan-white brown clayey silty sand.

2. *Alluvial Soils:*

Alluvial soils originate from water transportation and deposition in a floodplain environment. These deposits are usually shallow, but range up to 18 feet deep in the floodplain at Six Mile Creek. Alluvial soils consist of very soft to stiff clayey sandy silt (A-4), very soft to very stiff silty sandy clay, high PI (A-7-6), and medium dense clayey sand (A-2-4).

3. *Fill Soils:*

No borings were performed in any fill materials. Roadway fill soils are present beneath NC 16 and its connecting -Y- lines but heavy traffic and utilities made boring in and adjacent to the roadway unfeasible. The existing road (NC 16) and its connectors appear in generally good condition.

Rock Properties:

Rock is defined as that material which refuses penetration of power augers and / or achieves SPT refusal. Only two borings achieved auger refusal on hard rock during the course of this investigation. Hard rock type is most likely meta-volcanic or gabbro.

Wells:

Several wells were noted during the course of this investigation, however none were within the proposed construction limits. It should be also noted that due to the amount of residential and business structures along the corridor there is still the possibility for additional wells that remain undetected at this time.

Respectfully Submitted,

J E Beverly

J.E. Beverly, Project Geologist

EARTHWORK BALANCE SHEET

Volumes in Cubic Yards

PROJECT: U-2510A | COUNTY: Mecklenburg/Union | DATE October 2007 | COMPILED BY: TCE/PCP/RLB | SHEET 1 OF 3 SHEETS

STATION	STATION	EXCAVATION					EMBANKMENT				BORROW	WASTE			
		TOTAL UNCLASS.	ROCK	UNDERCUT	UNSUIT. UNCLASS.	SUITABLE UNCLASS.	TOTAL	ROCK	EARTH	EMBANK. (+) 20%		ROCK	SUITABLE	UNSUIT.	T0TAL
-L- (LEFT)															
-L- 18+00	48+00.00	9472		1874		9472	8492		8492	10190	718			1874	1874
	SUBTOTAL 1	9472		1874		9472	8492		8492	10190	718			1874	1874
-L- 48+00.00	78+00.00	6845		4269		6845	14648		14648	17578	10733			4269	4269
-Y2A- 10+20.00	11+35.33	33				33	140		140	168	135				
-Y3- 10+00.00	12+08.69	1241				1241							1241		1241
	SUBTOTAL 2	8119		4269		8119	14788		14788	17746	10868		1241	4269	5510
-L- 78+00.00	108+00.00	194		411		194	6346		6346	7615	7421			411	411
	SUBTOTAL 3	194		411		194	6346		6346	7615	7421			411	411
-L- 108+00.00	124+30.00 (Bridge)	287				287	7882		7882	9458	9171				
-L- 125+35.00 (Bridge)	138+00.00	1				1	2881		2881	3457	3456				
	SUBTOTAL 4	288				288	10763		10763	12915	12627				
-L- 138+00.00	168+00.00	83				83	2828		2828	3394	3311				
	SUBTOTAL 5	83				83	2828		2828	3394	3311				
-L- 168+00.00	198+00.00	1754		4863		1754	12099		12099	14519	12765			4863	4863
-Y9- 10+50.00	20+03.31	783				783	1657		1657	1988	1205				
	SUBTOTAL 6	2537		4863		2537	13756		13756	16507	13970			4863	4863
-L- 198+00.00	207+40.00	117				117	4043		4043	4852	4735				
-Y10- 12+90.00	14+30.07	144				144	168		168	202	58				
	SUBTOTAL 7	261				261	4211		4211	5054	4793				
	SUBTOTAL (LEFT)	20954		11417		20954	61184		61184	73421	53708		1241	11417	12658

NOTE: EARTHWORK QUANTITIES ARE CALCULATED BY THE ROADWAY DESIGN UNIT.

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

EARTHWORK BALANCE SHEET

Volumes in Cubic Yards

PROJECT: U-2510A | COUNTY: Mecklenburg/Union | DATE September 2007 | COMPILED BY: TCE/PCP/RLB | SHEET 2 OF 3 SHEETS

STATION	STATION	EXCAVATION					EMBANKMENT				BORROW	WASTE			
		TOTAL UNCLASS.	ROCK	UNDERCUT	UNSUIT. UNCLASS.	SUITABLE UNCLASS.	TOTAL	ROCK/ UNDERCUT	EARTH	EMBANK. (+) 20%		ROCK	SUITABLE	UNSUIT.	T0TAL
-L- (RIGHT)															
-L- 18+00	48+00.00	93		20		93	757		757	908	815			20	20
-Y2- 10+35.27	12+35.00	327				327	64		64	77			250		250
	SUBTOTAL 1	420		20		420	821		821	985	815		250	20	270
-L- 48+00.00	78+00.00	746		2571		746	10440		10440	12528	11782			2571	2571
-Y4- 10+57.97	23+50.00	1258				1258	1900		1900	2280	1022				
	SUBTOTAL 2	2004		2571		2004	12340		12340	14808	12804			2571	2571
-L- 78+00.00	108+00.00	2874		925		2874	11728		11728	14074	11200			925	925
-Y5- 10+55.02	18+11.00	2273				2273	1740		1740	2088			185		185
	SUBTOTAL 3	5147		925		5147	13468		13468	16162	11200		185	925	1110
-L- 108+00.00	124+30.00 (Bridge)	9277				9277	8001		8001	9601	324				
-L- 125+35.00 (Bridge)	138+00.00	922				922	4965		4965	5958	5036				
-D1- 10+68.01	12+01.59	551				551							551		551
	SUBTOTAL 4	10750				10750	12966		12966	15559	5360		551		551
-L- 138+00.00	168+00.00	2186		3300		2186	14905		14905	17886	15700			3300	3300
	SUBTOTAL 5	2186		3300		2186	14905		14905	17886	15700			3300	3300
-L- 168+00.00	198+00.00	10591		950		10591	9545		9545	11454	863			950	950
	SUBTOTAL 6	10591		950		10591	9545		9545	11454	863			950	950
-L- 198+00.00	207+40.00	515				515	1281		1281	1537	1022				
-Y11- 10+46.75	11+30.00	400				400	21		21	25			375		375
	SUBTOTAL 7	915				915	1302		1302	1562	1022		375		375
	SUBTOTAL (RIGHT)	32013		7766		32013	65347		65347	78416	47764		1361	7766	9127

NOTE: EARTHWORK QUANTITIES ARE CALCULATED BY THE ROADWAY DESIGN UNIT.

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

RD10S01C

EARTHWORK BALANCE SHEET

Volumes in Cubic Yards

PROJECT: U-2510A | COUNTY: Mecklenburg/Union | DATE September 2007 | COMPILED BY: TCE/PCP/RLB | SHEET 3 OF 3 SHEETS

STATION	STATION	EXCAVATION					EMBANKMENT				BORROW	WASTE			
		TOTAL UNCLASS.	ROCK	UNDERCUT	UNSUIT. UNCLASS.	SUITABLE UNCLASS.	TOTAL	ROCK	EARTH	EMBANK. (+) 20%		ROCK	SUITABLE	UNSUIT.	T0TAL
BALANCE (LEFT & RIGHT)		52967		19183		52967	126531		126531	151837	101472		2602	19183	21785
LOSS DUE TO CLEARING AND GRUBBING 5%		-2648				-2648					2648				
WASTE IN LIEU OF BORROW											-2602		-2602		-2602
SHOULDER MATERIAL							11000		11000	13200	13200				
UNDERCUT CONTINGENCY PER GEOTECH				8900			8900		8900	10680	10680			8900	8900
PROJECT TOTAL		50319		28083		50319	146431		146431	175717	125398			28083	28083
+5% TO REPLACE TOPSOIL ON BORROW PIT											6270				
GRAND TOTALS		50319									131668				
SAY		51000									132000				

NOTE: EARTHWORK QUANTITIES ARE CALCULATED BY THE ROADWAY DESIGN UNIT.

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

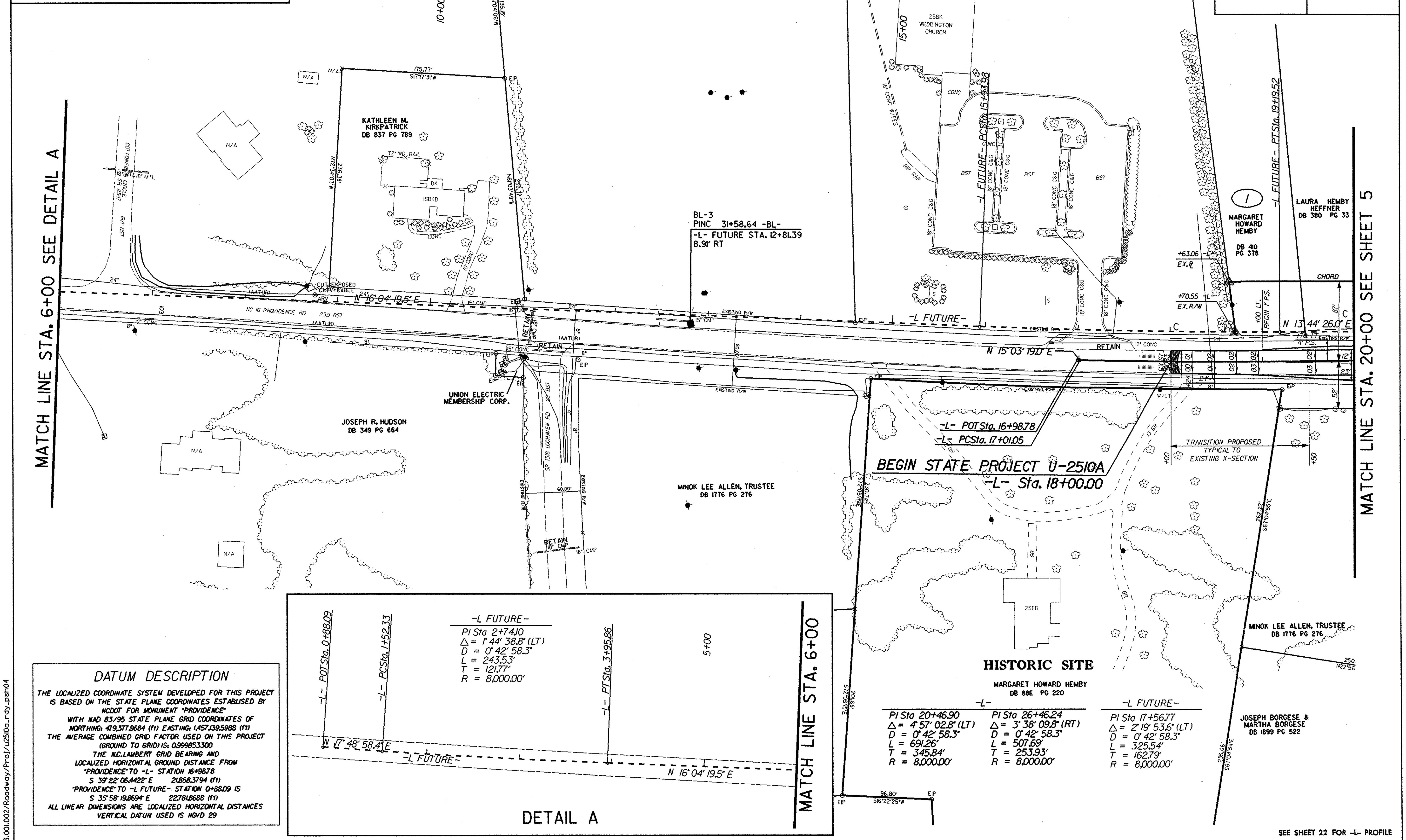
REVISIONS

TRANSITE CONSULTING ENGINEERS, INCORPORATED
1300 Padock Drive, Suite G-10
Raleigh, N.C. 27609

PROJECT REFERENCE NO.	SHEET NO.
U-2510A	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



FIRST BAPTIST CHURCH OF WEDDINGTON, INC.
DB 1155 PG 711
FIRST BAPTIST CHURCH OF WEDDINGTON, INC.
DB 1155 PG 711
2SBK WEDDINGTON CHURCH
KATHLEEN M. KIRKPATRICK
DB 837 PG 789
BL-3
PINC 31+58.64 -BL-
-L- FUTURE STA. 12+81.39
8.91' RT
NC 16 PROVIDENCE RD
N 16° 04' 19.5" E
N 15° 03' 19.0" E
-L FUTURE-
-L FUTURE- PCSta. 15+93.98
-L FUTURE- PTSta. 19+19.52
UNION ELECTRIC MEMBERSHIP CORP.
JOSEPH R. HUDSON
DB 349 PG 664
SR 1318 LOCHAVEN RD
MINOK LEE ALLEN, TRUSTEE
DB 1776 PG 276
MARGARET HOWARD HEMBY
DB 410 PG 378
LAURA HEMBY HEFFNER
DB 380 PG 33
-L- POTSta. 16+98.78
-L- PCSta. 17+01.05
BEGIN STATE PROJECT U-2510A
-L- Sta. 18+00.00
TRANSITION PROPOSED TYPICAL TO EXISTING X-SECTION
MINOK LEE ALLEN, TRUSTEE
DB 1776 PG 276
JOSEPH BORGESE &
MARTHA BORGESE
DB 1899 PG 522
MATCH LINE STA. 6+00 SEE DETAIL A
MATCH LINE STA. 20+00 SEE SHEET 5
-L- POTSta. 0+88.09
-L- PCSta. 1+52.33
-L- PTSta. 3+95.86
N 17° 48' 58.4" E
N 16° 04' 19.5" E
MATCH LINE STA. 6+00
DETAIL A

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISED BY NCDOT FOR MONUMENT "PROVIDENCE" WITH NAD 83/95 STATE PLANE GRID COORDINATES OF NORTHING: 479,377.9684 (ft) EASTING: 1,457,139.5988 (ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999853300
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "PROVIDENCE" TO -L- STATION 16+98.78
S 39° 22' 06.4422" E 21,858.3794 (ft)
"PROVIDENCE" TO -L FUTURE- STATION 0+88.09 IS
S 35° 58' 19.8694" E 22,781.8688 (ft)
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NGVD 29

-L FUTURE-
PI Sta 2+74.10
Δ = 1° 44' 38.8" (LT)
D = 0° 42' 58.3"
L = 243.53'
T = 121.77'
R = 8,000.00'

HISTORIC SITE

MARGARET HOWARD HEMBY
DB 88E PG 220

-L-

PI Sta 20+46.90	PI Sta 26+46.24
Δ = 4° 57' 02.8" (LT)	Δ = 3° 38' 09.8" (RT)
D = 0° 42' 58.3"	D = 0° 42' 58.3"
L = 691.26'	L = 507.69'
T = 345.84'	T = 253.93'
R = 8,000.00'	R = 8,000.00'

-L FUTURE-
PI Sta 17+56.77
Δ = 2° 19' 53.6" (LT)
D = 0° 42' 58.3"
L = 325.54'
T = 162.79'
R = 8,000.00'

SEE SHEET 22 FOR -L- PROFILE

103.001.002/Roadway/Proj/u2510a_rdy_psh04

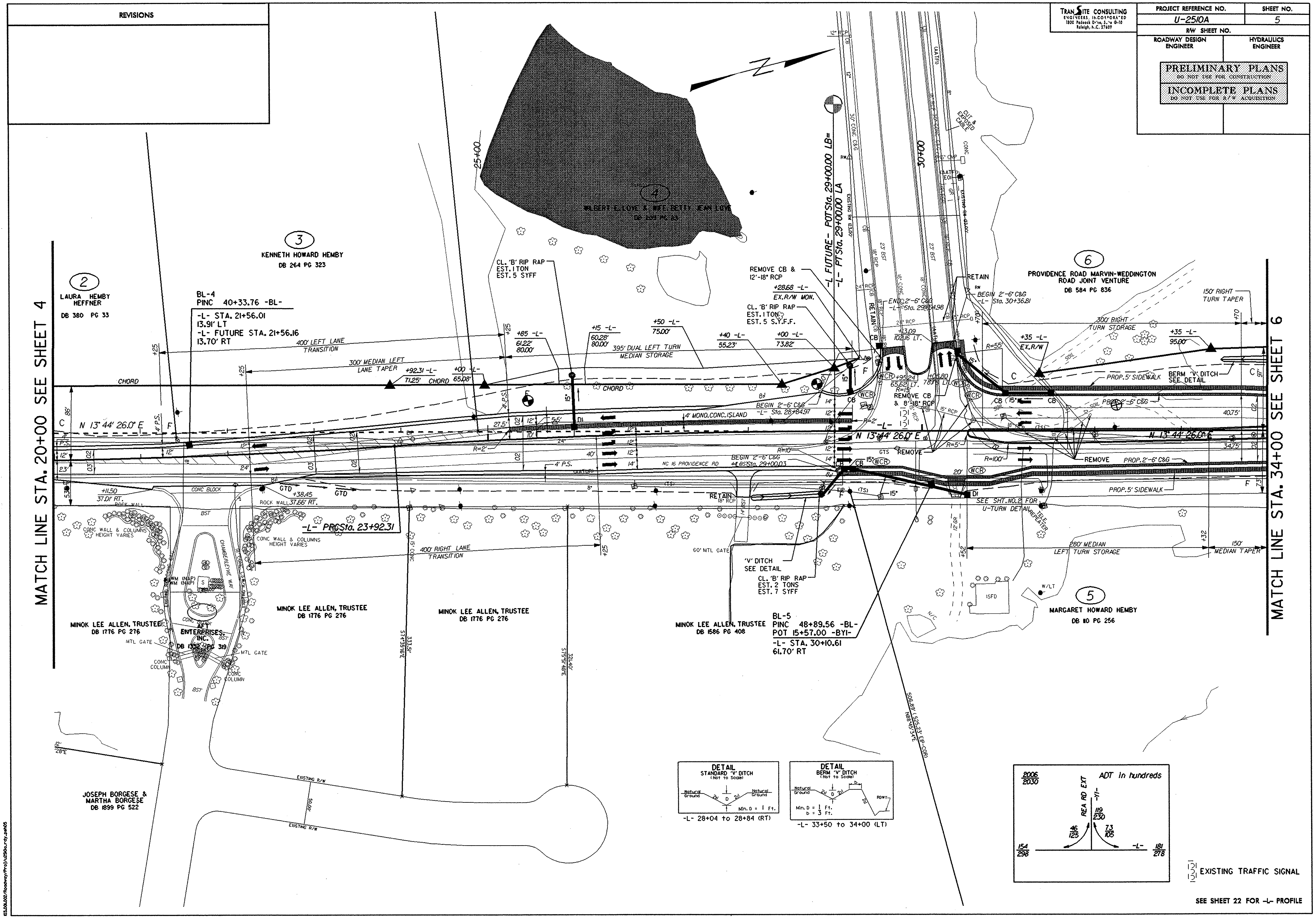
REVISIONS

TRANSITE CONSULTING ENGINEERS, INCORPORATED
1300 Paddock Drive, Suite G-10
Raleigh, N.C. 27609

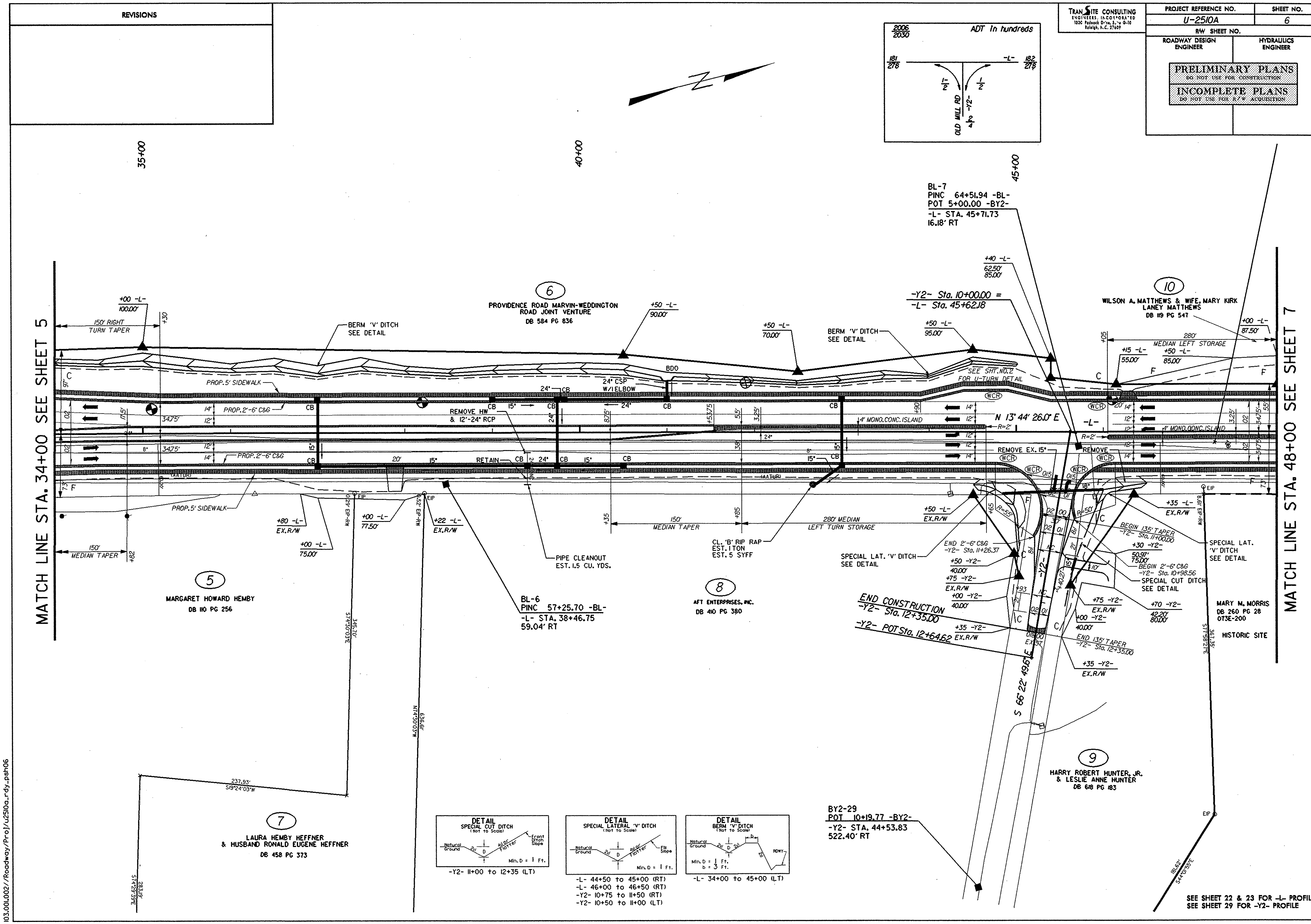
PROJECT REFERENCE NO.	SHEET NO.
U-2510A	5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION



MATCH LINE STA. 20+00 SEE SHEET 4
MATCH LINE STA. 34+00 SEE SHEET 6
2 LAURA HEMBY HEFFNER DB 380 PG 33
3 KENNETH HOWARD HEMBY DB 264 PG 323
4 WILBERT E. LOVE & WIFE BETTY JEAN LOVE
5 MARGARET HOWARD HEMBY DB 110 PG 256
6 PROVIDENCE ROAD MARVIN-WEDDINGTON ROAD JOINT VENTURE DB 584 PG 836
BL-4 PINC 40+33.76 -BL-
-L- STA. 21+56.01 13.91' LT
-L- FUTURE STA. 21+56.16 13.70' RT
400' LEFT LANE TRANSITION
300' MEDIAN LEFT LANE TAPER
395' DUAL LEFT TURN MEDIAN STORAGE
CL. 'B' RIP RAP EST. 1 TON EST. 5 SYFF
REMOVE CB & 12'-18" RCP
-L- FUTURE- POT Sta. 29+00.00 LB=
-L- PT Sta. 29+00.00 LA
N 13° 44' 26.0" E
4' MONO. CONC. ISLAND
NC 16 PROVIDENCE RD
300' RIGHT TURN STORAGE
150' RIGHT TURN TAPER
BERM 'V' DITCH SEE DETAIL
PROP. 5' SIDEWALK
PROP. 2'-6" C&G
SEE SHT. NO. 2 FOR U-TURN DETAIL
280' MEDIAN LEFT TURN STORAGE
150' MEDIAN TAPER
-L- PRC Sta. 23+92.31
400' RIGHT LANE TRANSITION
CONC WALL & COLUMNS HEIGHT VARIES
CHAMBERLAYNE WAY
MINOK LEE ALLEN, TRUSTEE DB 1776 PG 276
AFT ENTERPRISES, INC. DB 1353 PG 319
MINOK LEE ALLEN, TRUSTEE DB 1586 PG 408
'V' DITCH SEE DETAIL
CL. 'B' RIP RAP EST. 2 TONS EST. 7 SYFF
BL-5 PINC 48+89.56 -BL-
POT 15+57.00 -BYI-
-L- STA. 30+10.61 61.70' RT
JOSEPH BORGESE & MARTHA BORGESE DB 1899 PG 522
DETAIL STANDARD 'V' DITCH (Not to Scale)
Min. D = 1 Ft.
-L- 28+04 to 28+84 (RT)
DETAIL BERM 'V' DITCH (Not to Scale)
Min. D = 1 Ft. b = 3 Ft.
-L- 33+50 to 34+00 (LT)
2006 / 2030 ADT in hundreds
REA RD EXT -Y1-
119/230 46/125 73/105 154/298 181/278
EXISTING TRAFFIC SIGNAL
SEE SHEET 22 FOR -L- PROFILE



REVISIONS
TRANSITE CONSULTING ENGINEERS, INCORPORATED
PROJECT REFERENCE NO. U-2510A
SHEET NO. 6
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
2006 2030 ADT in hundreds
OLD MILL RD -Y2-
MATCH LINE STA. 34+00 SEE SHEET 5
MATCH LINE STA. 48+00 SEE SHEET 7
35+00
40+00
45+00
BL-7 PINC 64+51.94 -BL- POT 5+00.00 -BY2- -L- STA. 45+71.73 16.18' RT
-Y2- Sta. 10+00.00 = -L- Sta. 45+62.18
PROVIDENCE ROAD MARVIN-WEDDINGTON ROAD JOINT VENTURE DB 584 PG 836
WILSON A. MATTHEWS & WIFE, MARY KIRK LANEY MATTHEWS DB 119 PG 547
150' RIGHT TURN TAPER
BERM 'V' DITCH SEE DETAIL
PROP. 5' SIDEWALK
PROP. 2'-6" C&G
REMOVE HW & 12"-24" RCP
24" CSP W/ELBOW
4' MONO. CONC. ISLAND
N 13° 44' 26.0" E
280' MEDIAN LEFT STORAGE
SEE SHT. NO. 2 FOR U-TURN DETAIL
REMOVE EX. 15"
150' MEDIAN TAPER
280' MEDIAN LEFT TURN STORAGE
CL. 'B' RIP RAP EST. 1 TON EST. 5 SYFF
PIPE CLEANOUT EST. 1.5 CU. YDS.
BL-6 PINC 57+25.70 -BL- -L- STA. 38+46.75 59.04' RT
MARGARET HOWARD HEMBY DB 110 PG 256
AFT ENTERPRISES, INC. DB 410 PG 380
SPECIAL LAT. 'V' DITCH SEE DETAIL
END CONSTRUCTION -Y2- Sta. 12+35.00
-Y2- POT Sta. 12+64.62
S 66° 22' 49.6" E
BEGIN 135' TAPER -Y2- Sta. 11+00.00
BEGIN 2'-6" C&G -Y2- Sta. 10+98.56
SPECIAL CUT DITCH SEE DETAIL
END 2'-6" C&G -Y2- Sta. 11+26.37
END 135' TAPER -Y2- Sta. 12+35.00
MARY M. MORRIS DB 260 PG 28 073E-200 HISTORIC SITE
HARRY ROBERT HUNTER, JR. & LESLIE ANNE HUNTER DB 618 PG 183
LAURA HEMBY HEFFNER & HUSBAND RONALD EUGENE HEFFNER DB 458 PG 373
BY2-29 POT 10+19.77 -BY2- -Y2- STA. 44+53.83 522.40' RT
DETAIL SPECIAL CUT DITCH (Not to Scale) -Y2- 11+00 to 12+35 (LT)
DETAIL SPECIAL LATERAL 'V' DITCH (Not to Scale) -L- 44+50 to 45+00 (RT) -L- 46+00 to 46+50 (RT) -Y2- 10+75 to 11+50 (RT) -Y2- 10+50 to 11+00 (LT)
DETAIL BERM 'V' DITCH (Not to Scale) -L- 34+00 to 45+00 (LT)
SEE SHEET 22 & 23 FOR -L- PROFILE
SEE SHEET 29 FOR -Y2- PROFILE
103.00.002//Roadway/Proj/u2510a_rdy_psh06

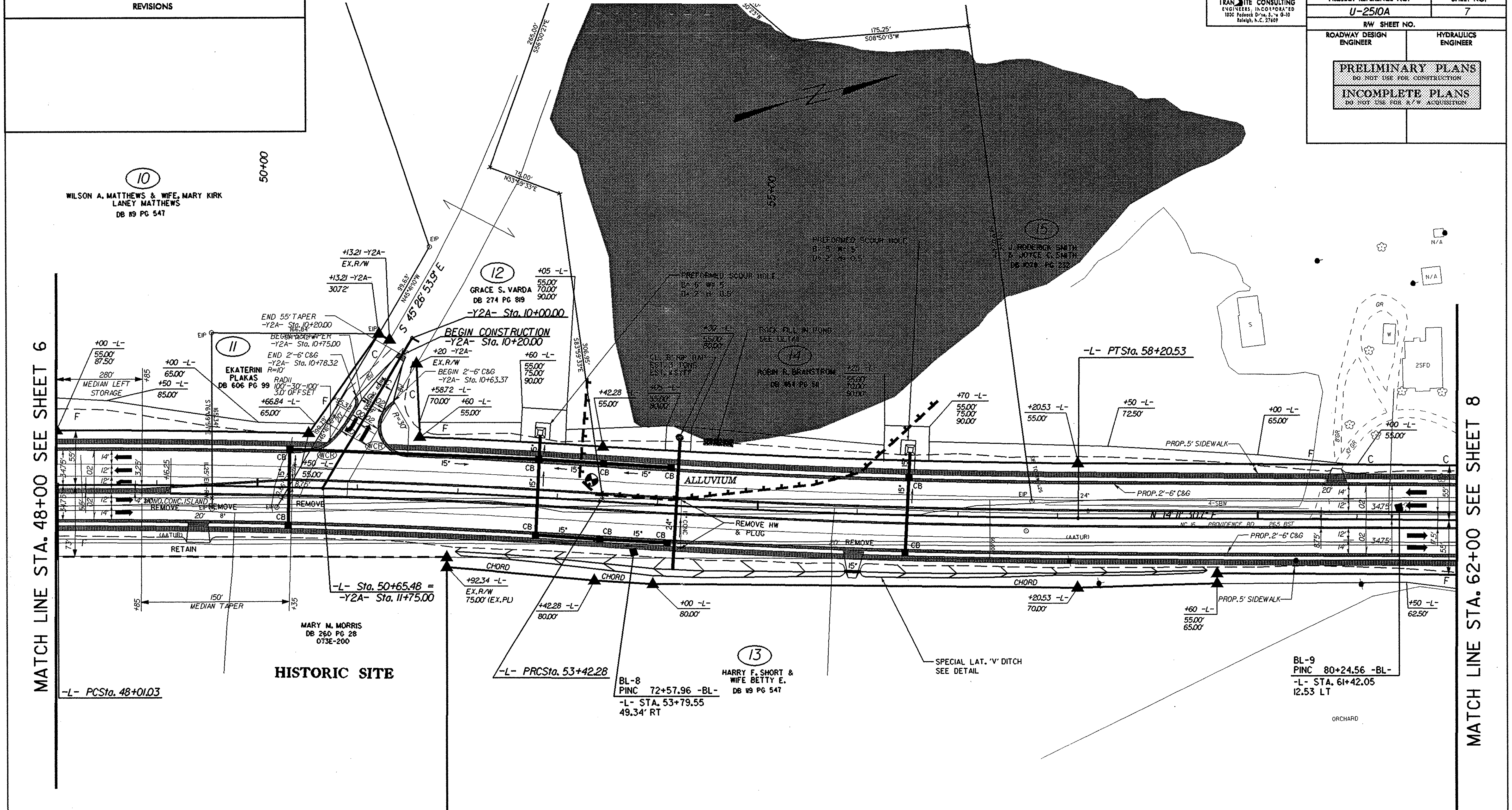
REVISIONS

TRANSITE CONSULTING ENGINEERS, INCORPORATED
1200 Padock Drive, Suite G-10
Raleigh, N.C. 27609

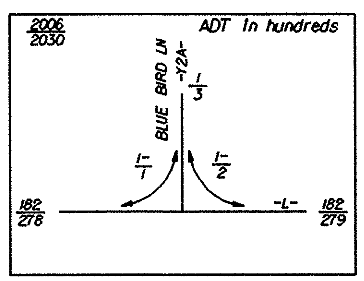
PROJECT REFERENCE NO.	SHEET NO.
U-2510A	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION



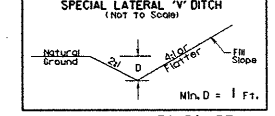
MATCH LINE STA. 48+00 SEE SHEET 6
MATCH LINE STA. 62+00 SEE SHEET 8
10
WILSON A. MATTHEWS & WIFE, MARY KIRK
LANEY MATTHEWS
DB 119 PG 547
50+00
55+00
11
EKATERINI PLAKAS
DB 606 PG 99
12
GRACE S. VARDA
DB 274 PG 819
13
HARRY F. SHORT & WIFE BETTY E.
DB 119 PG 547
14
ROBIN R. BRANSTROM
15
J. RODERICK SMITH
& JOYCE C. SMITH
MARY M. MORRIS
DB 260 PG 28
073E-200
HISTORIC SITE
BEGIN CONSTRUCTION
-Y2A- Sta. 10+20.00
-Y2A- Sta. 10+00.00
S 45°26'53.9" E
END 55' TAPER
-Y2A- Sta. 10+20.00
BEGIN 55' TAPER
-Y2A- Sta. 10+75.00
END 2'-6" C&G
-Y2A- Sta. 10+78.32
RADII
100'-30'-100'
3.0' OFFSET
BEGIN 2'-6" C&G
-Y2A- Sta. 10+63.37
-L- PTSta. 58+20.53
-L- PCSta. 48+01.03
-L- PRCSta. 53+42.28
-L- Sta. 50+65.48 = -Y2A- Sta. 11+75.00
BL-8
PINC 72+57.96 -BL-
-L- STA. 53+79.55
49.34' RT
BL-9
PINC 80+24.56 -BL-
-L- STA. 61+42.05
12.53 LT
150' MEDIAN TAPER
280' MEDIAN LEFT STORAGE
ALLUVIUM
REMOVE HW & PLUG
PREFORMED SCOUR HOLE
ROCK FILL IN POND SEE DETAIL
SPECIAL LAT. 'V' DITCH SEE DETAIL
PROP. 5' SIDEWALK
PROP. 2'-6" C&G
N 14°11'30.7" E
NC 16 PROVIDENCE RD 26.5 BST
CHORD
RETAIN
REMOVE
MONO. CONC. ISLAND
ORCHARD
2SFD



-L-

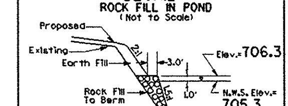
PI Sta 50+71.76	PI Sta 55+81.48
Δ = 3° 52' 35.2" (RT)	Δ = 3° 25' 30.5" (LT)
D = 0° 42' 58.3"	D = 0° 42' 58.3"
L = 541.26'	L = 478.24'
T = 270.73'	T = 239.19'
R = 8,000.00'	R = 8,000.00'
SE = NC	SE = NC

DETAIL
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



-L- 52+00 to 59+50 (RT)

DETAIL
ROCK FILL IN POND
(Not to Scale)



-L- 54+42 to 54+77 (LT)

SEE SHEET 23 FOR -L- PROFILE
SEE SHEET 29 FOR -Y2A- PROFILE

103.001.002/Roadway/Proj/u2510a_rdy_psh07

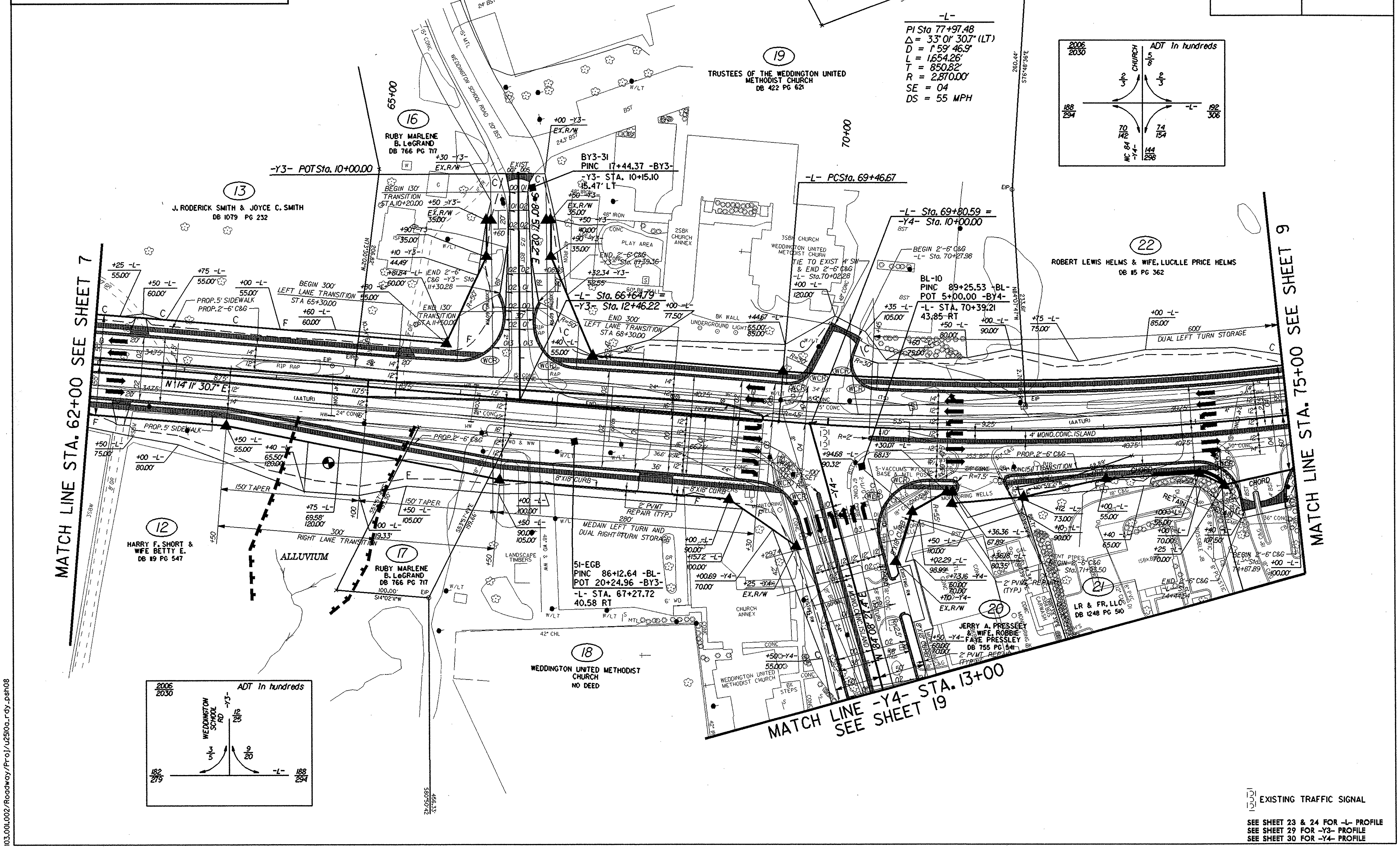
REVISIONS

TRANSITE CONSULTING ENGINEERS, INCORPORATED
1300 Paddock Drive, Suite G-10
Raleigh, N.C. 27609

PROJECT REFERENCE NO.	SHEET NO.
U-2510A	8
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



-L-
PI Sta 77+97.48
Δ = 33°01' 30.7" (LT)
D = 1°59' 46.9"
L = 1,654.26'
T = 850.82'
R = 2,870.00'
SE = .04
DS = 55 MPH
ADT in hundreds
2006
2030
CHURCH
NC 84 -Y4-
19
TRUSTEES OF THE WEDDINGTON UNITED METHODIST CHURCH
DB 422 PG 621
16
RUBY MARLENE B. LeGRAND
DB 766 PG 717
13
J. RODERICK SMITH & JOYCE C. SMITH
DB 1079 PG 232
22
ROBERT LEWIS HELMS & WIFE, LUCILLE PRICE HELMS
DB 115 PG 362
12
HARRY F. SHORT & WIFE BETTY E.
DB 119 PG 547
17
RUBY MARLENE B. LeGRAND
DB 766 PG 717
18
WEDDINGTON UNITED METHODIST CHURCH
NO DEED
20
JERRY A. PRESSLEY & WIFE, ROBBIE FAYE PRESSLEY
DB 755 PG 541
21
LR & FR, LLC
DB 1248 PG 510
-Y3- POT Sta. 10+00.00
BY3-31
PINC 17+44.37 -BY3-
-Y3- STA. 10+15.10
15.47' LT
-L- PC Sta. 69+46.67
-L- Sta. 69+80.59 =
-Y4- Sta. 10+00.00
-L- Sta. 66+64.79 =
-Y3- Sta. 12+46.22
BL-10
PINC 89+25.53 -BL-
POT 5+00.00 -BY4-
-L- STA. 70+39.21
43.85 RT
51-EGB
PINC 86+12.64 -BL-
POT 20+24.96 -BY3-
-L- STA. 67+27.72
40.58 RT
N 14°11' 30.7" E
MATCH LINE STA. 62+00 SEE SHEET 7
MATCH LINE STA. 75+00 SEE SHEET 9
MATCH LINE -Y4- STA. 13+00
SEE SHEET 19
ALLUVIUM
WEDDINGTON SCHOOL RD -Y3-
DUAL LEFT TURN STORAGE
MEDAIN LEFT TURN AND DUAL RIGHT TURN STORAGE

EXISTING TRAFFIC SIGNAL

SEE SHEET 23 & 24 FOR -L- PROFILE
SEE SHEET 29 FOR -Y3- PROFILE
SEE SHEET 30 FOR -Y4- PROFILE

103.001.002/Roadway/Proj/u2510a_rdy_psh08

REVISIONS

TRANSITE CONSULTING ENGINEERS, INCORPORATED
1000 Paderock Drive, Suite 9-10
Raleigh, N.C. 27609

PROJECT REFERENCE NO.	SHEET NO.
U-2510A	9
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

-L-
PI Sta 77+97.48
Δ = 33°01' 30.7" (LT)
D = 1°59' 46.9"
L = 1654.26'
T = 850.82'
R = 2,870.00'
SE = 04
DS = 55 MPH

323.57'
N48°01'48"E

MATCH LINE STA. 75+00 SEE SHEET 8

MATCH LINE STA. 88+00 SEE SHEET 10

ROBERT LEWIS HELMS & WIFE, LUCILLE PRICE HELMS
DB 115 PG 362

WEDDINGTON ASSOCIATES, A N.C. GENERAL PARTNERSHIP
DB 677 PG 216

JAMES OLIVER HUNTER
DB 16 PG 688

54 INVESTMENT, LLC
DB 1090 PG 677

ROBERT ORIN WINCHESTER TRUST
DB 962 PG 825

CLAIRE J. KING
DB 85 PG 292

BCS MOSA, INC.
DB 375 PG 543

MICHAEL T. O'BRIEN
DB 727 PG 539

FRANCES M. DOW & THE DETROIT BANK & TRUST, TRUSTEES OF THE ROBERT B. DOW TRUST
DB 483 PG 725

BL-11
PINC 98+39.24 -BL-
-L- STA. 79+45.92
23.12' RT

BL-12
PINC 105+77.29 -BL-
-L- STA. 86+82.46
1.74' RT

-L- PT Sta. 86+00.93

END 2'-6" C&G
-L- Sta. 77+64.62

BEGIN 2'-6" C&G
-L- Sta. 78+04.44

END 2'-6" C&G
-L- Sta. 84+46.83

BEGIN 2'-6" C&G
-L- Sta. 84+76.14

DUAL LEFT TURN STORAGE 600' +45

880' MEDIAN LEFT TURN STORAGE +45

150' TAPER +55

PROP. 5' SIDEWALK

PROP. 2'-6" C&G

PROP. 15:1 TRANSITION

72' CHL & 35BW

48'WW & 35BW

300' RIGHT AND LEFT LANE TRANSITION

ALLUVIUM

ISBKD

ISBK & FBUS

ISFBUS

ABAND WELL

WD Rail

24" PLASTIC

N 48°50'00" W

SEE SHEET 24 FOR -L- PROFILE

103.001.002/Roadway/Proj/u2510a_rdy_dsh09

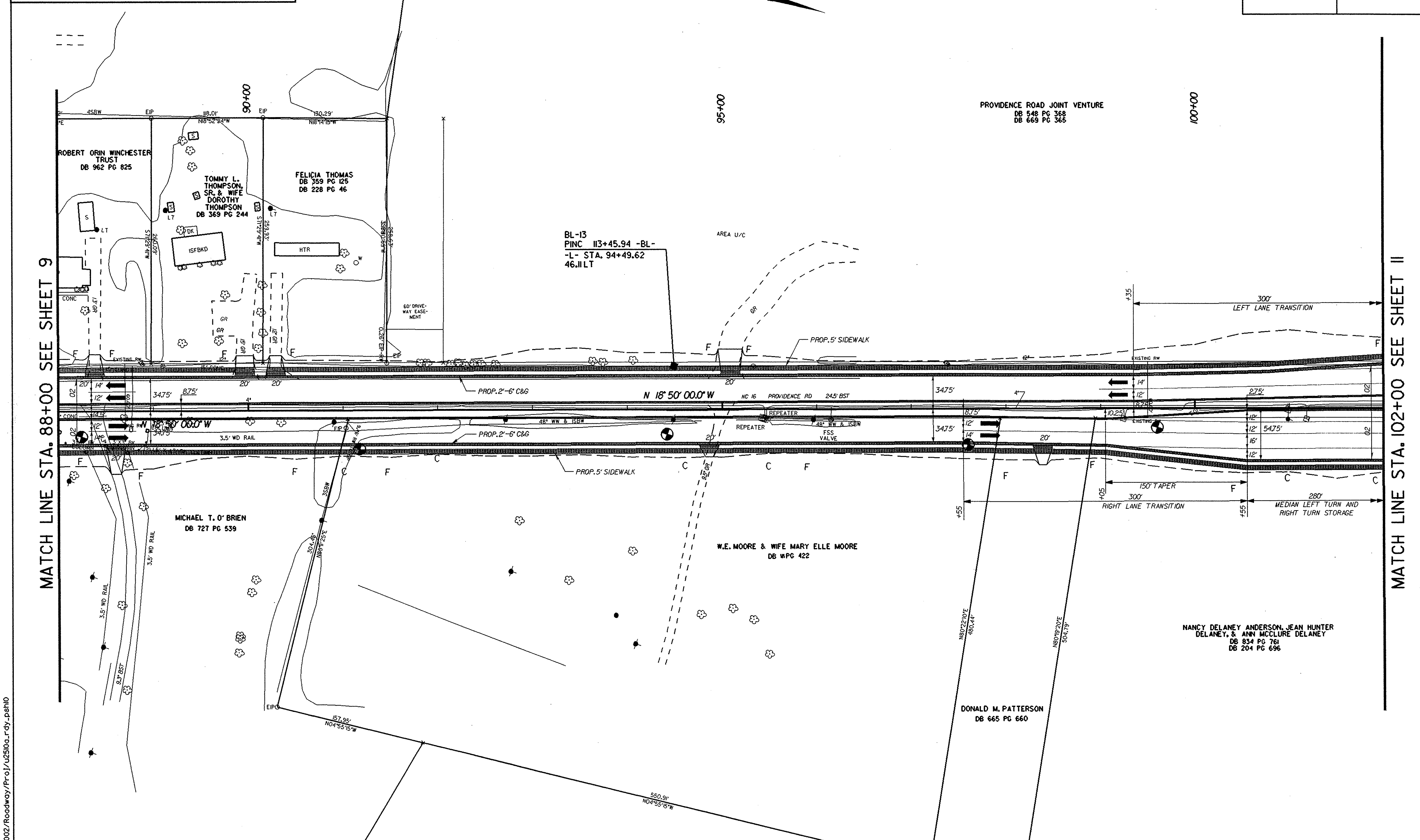
REVISIONS

TRANSITE CONSULTING ENGINEERS, INCORPORATED
1300 Paddock Drive, Suite B-10
Raleigh, N.C. 27609

PROJECT REFERENCE NO.	SHEET NO.
U-2510A	10
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



SEE SHEET 24 & 25 FOR -L- PROFILE

103.001.002/Roadway/Proj/u2510a_rdy_psh10

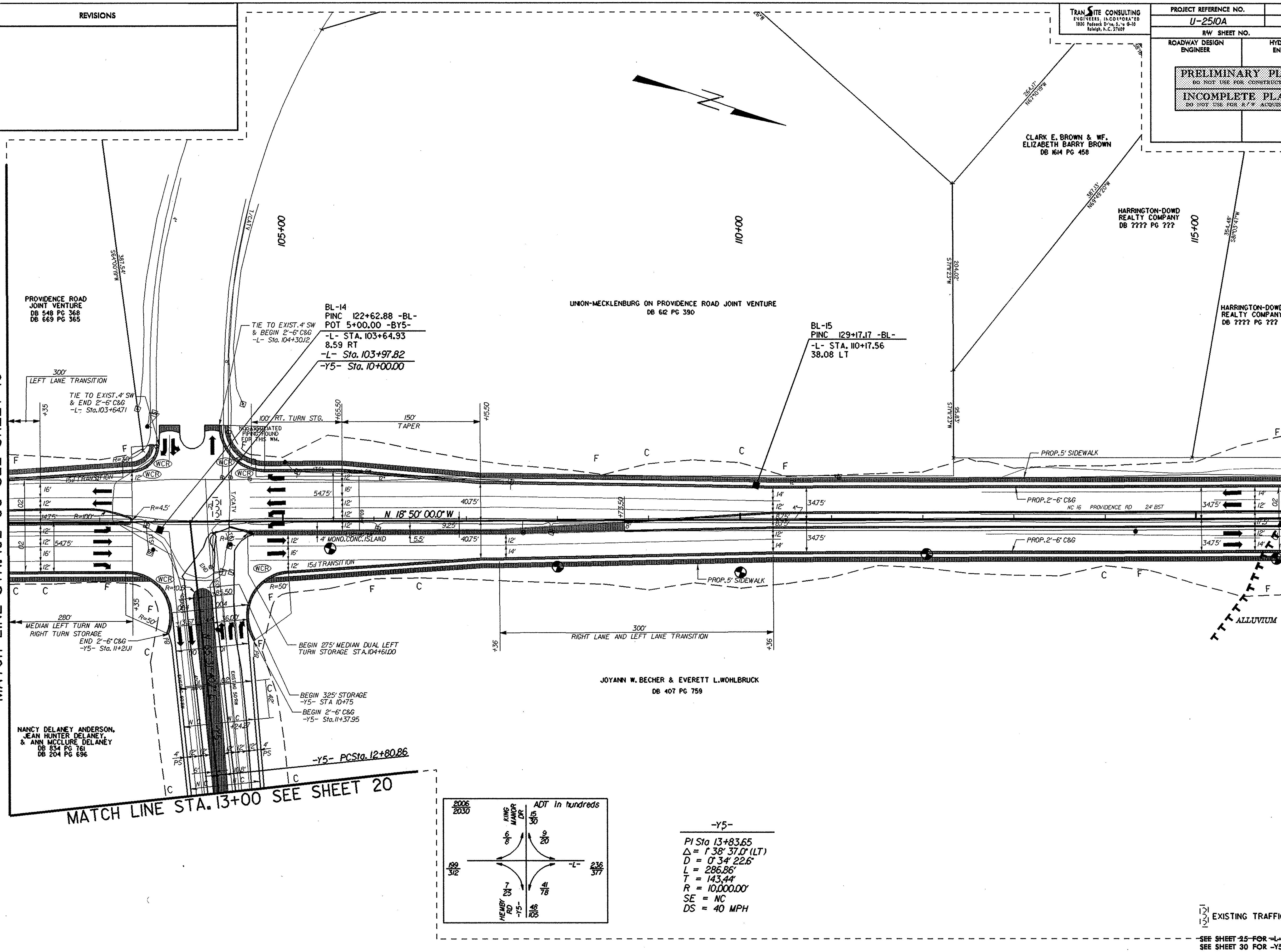
REVISIONS

TRANSITE CONSULTING ENGINEERS, INCORPORATED
1300 Paddock Drive, Suite G-10
Raleigh, N.C. 27609

PROJECT REFERENCE NO.	SHEET NO.
U-2510A	11
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



MATCH LINE STA. 102+00 SEE SHEET 10
MATCH LINE STA. 116+00 SEE SHEET 12
MATCH LINE STA. 13+00 SEE SHEET 20
105+00
110+00
115+00
PROVIDENCE ROAD JOINT VENTURE
DB 548 PG 368
DB 669 PG 365
UNION-MECKLENBURG ON PROVIDENCE ROAD JOINT VENTURE
DB 612 PG 390
CLARK E. BROWN & WF. ELIZABETH BARRY BROWN
DB 1614 PG 458
HARRINGTON-DOWD REALTY COMPANY
DB ???? PG ???
HARRINGTON-DOWD REALTY COMPANY
DB ???? PG ???
JOYANN W. BECHER & EVERETT L. WOHLBRUCK
DB 407 PG 759
NANCY DELANEY ANDERSON, JEAN HUNTER DELANEY, & ANN MCCLURE DELANEY
DB 834 PG 761
DB 204 PG 696
BL-14
PINC 122+62.88 -BL-
POT 5+00.00 -BY5-
-L- STA. 103+64.93
8.59 RT
-L- Sta. 103+97.82
-Y5- Sta. 10+00.00
BL-15
PINC 129+17.17 -BL-
-L- STA. 110+17.56
38.08 LT
TIE TO EXIST. 4' SW & BEGIN 2'-6" C&G -L- Sta. 104+30.12
TIE TO EXIST. 4' SW & END 2'-6" C&G -L- Sta. 103+64.71
300' LEFT LANE TRANSITION
100' RT. TURN STG.
150' TAPER
N 18° 50' 00.0" W
4' MONO. CONC. ISLAND
15:1 TRANSITION
PROP. 5' SIDEWALK
PROP. 2'-6" C&G
NC 16 PROVIDENCE RD 24' BST
300' RIGHT LANE AND LEFT LANE TRANSITION
280' MEDIAN LEFT TURN AND RIGHT TURN STORAGE
END 2'-6" C&G -Y5- Sta. 11+21.11
BEGIN 275' MEDIAN DUAL LEFT TURN STORAGE STA. 104+61.00
BEGIN 325' STORAGE -Y5- STA 10+75
BEGIN 2'-6" C&G -Y5- Sta. 11+37.95
-Y5- PC Sta. 12+80.86
ALLUVIUM
WCR
ADT In hundreds
2006 / 2030
KING MANOR DR
HEMBY RD -Y5-
-L-

-Y5-
PI Sta 13+83.65
Δ = 1° 38' 37.0" (LT)
D = 0° 34' 22.6"
L = 286.86'
T = 143.44'
R = 10,000.00'
SE = NC
DS = 40 MPH

EXISTING TRAFFIC SIGNAL

SEE SHEET 25 FOR -L- PROFILE
SEE SHEET 30 FOR -Y5- PROFILE

103.001.002/Roadway/Proj/u2510a_rdy_psh11

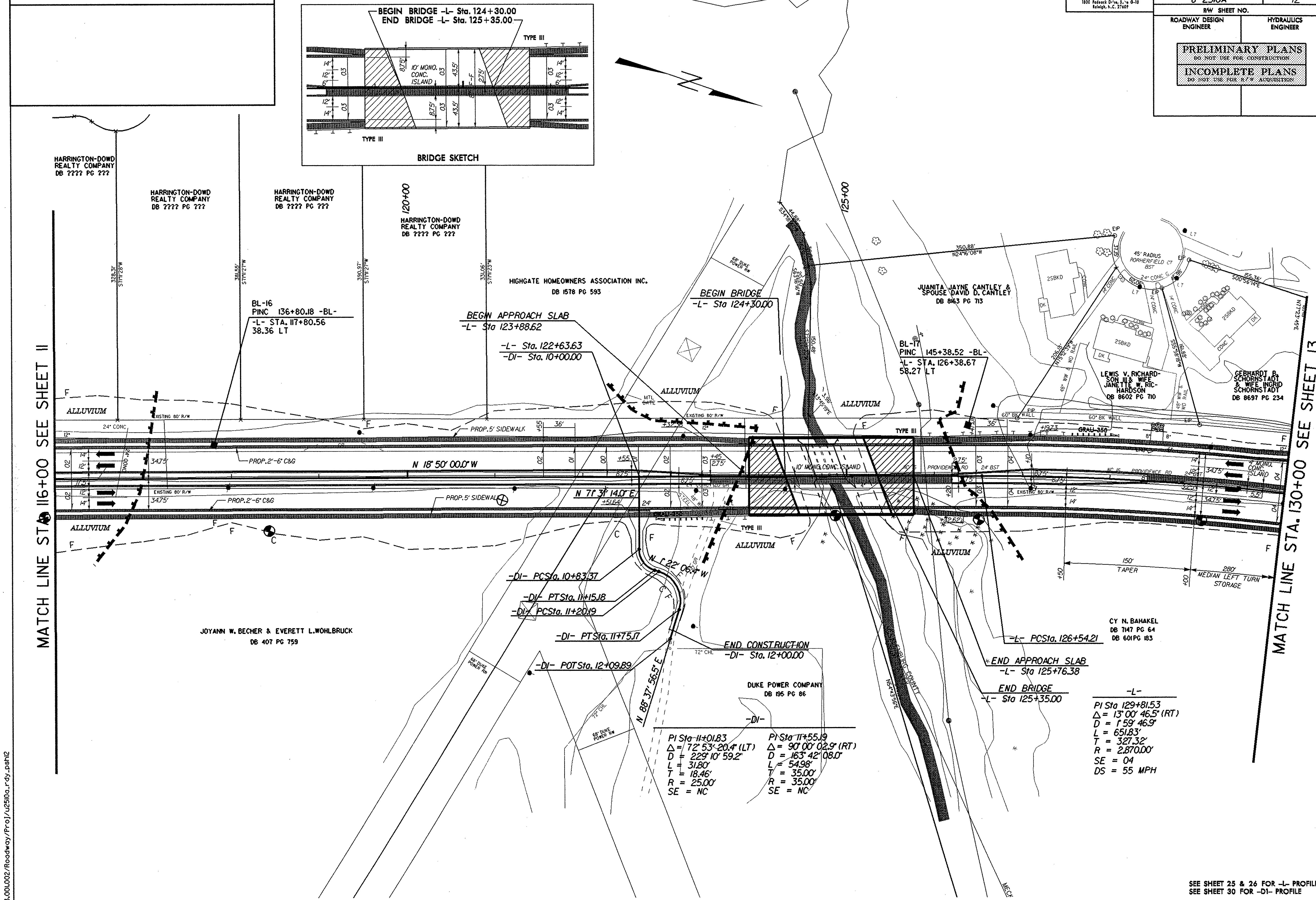
PROJECT REFERENCE NO.	SHEET NO.
U-2510A	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TRANSITE CONSULTING ENGINEERS, INCORPORATED
1300 Padcock Drive, Suite G-10
Raleigh, N.C. 27609

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

REVISIONS



SEE SHEET 25 & 26 FOR -L- PROFILE
SEE SHEET 30 FOR -DI- PROFILE

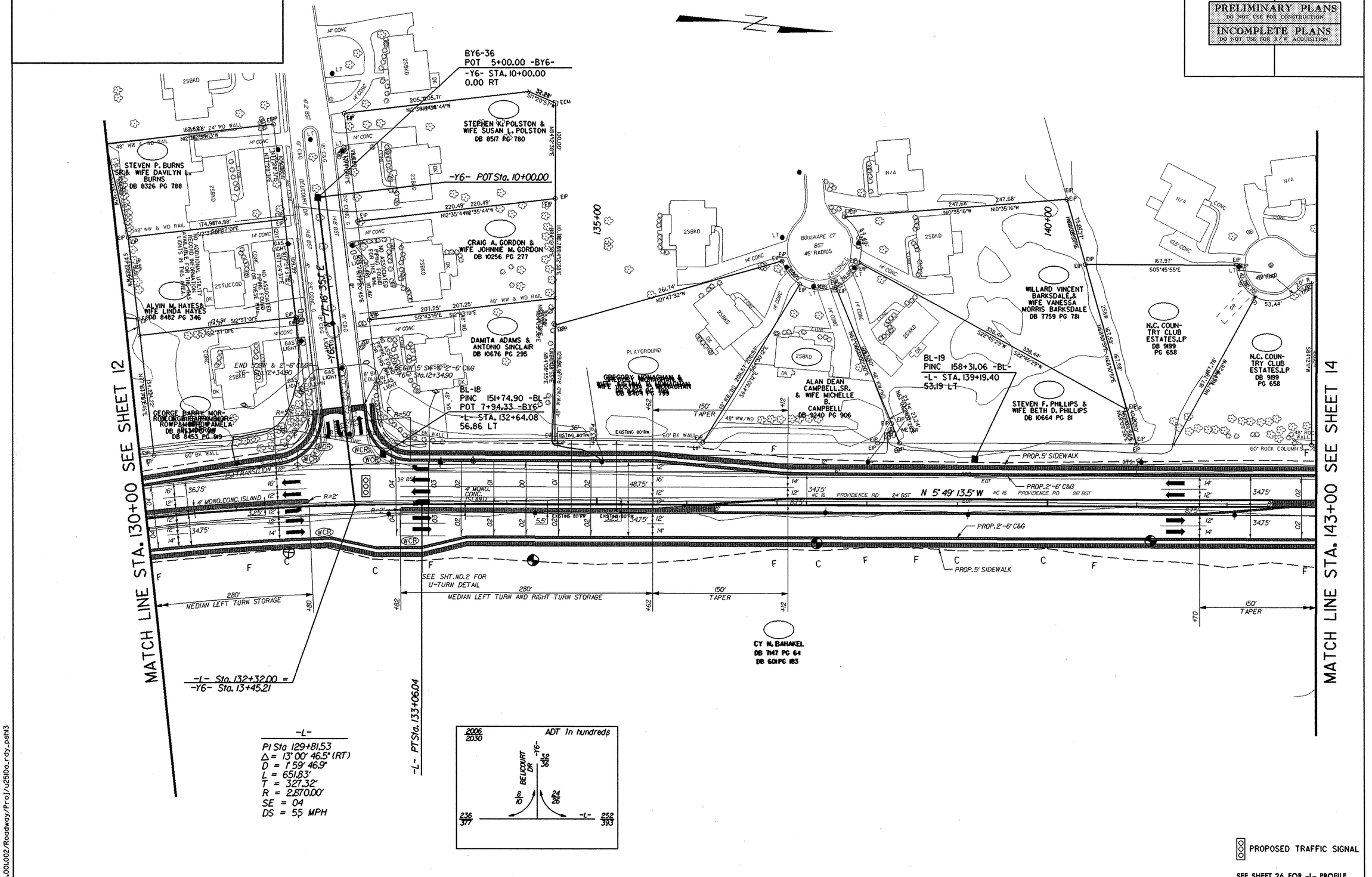
103.001.002/Roadway/Proj/u2510a_rdy_psh12

REVISIONS

TRANSITE CONSULTING ENGINEERS, INCORPORATED
1830 Pedcock Drive, Suite 0-10
Raleigh, N.C. 27609

PROJECT REFERENCE NO.	SHEET NO.
U-2510A	13
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



I:\2003.001.002\Roadway\Proj\u2510a_rdy_psh13

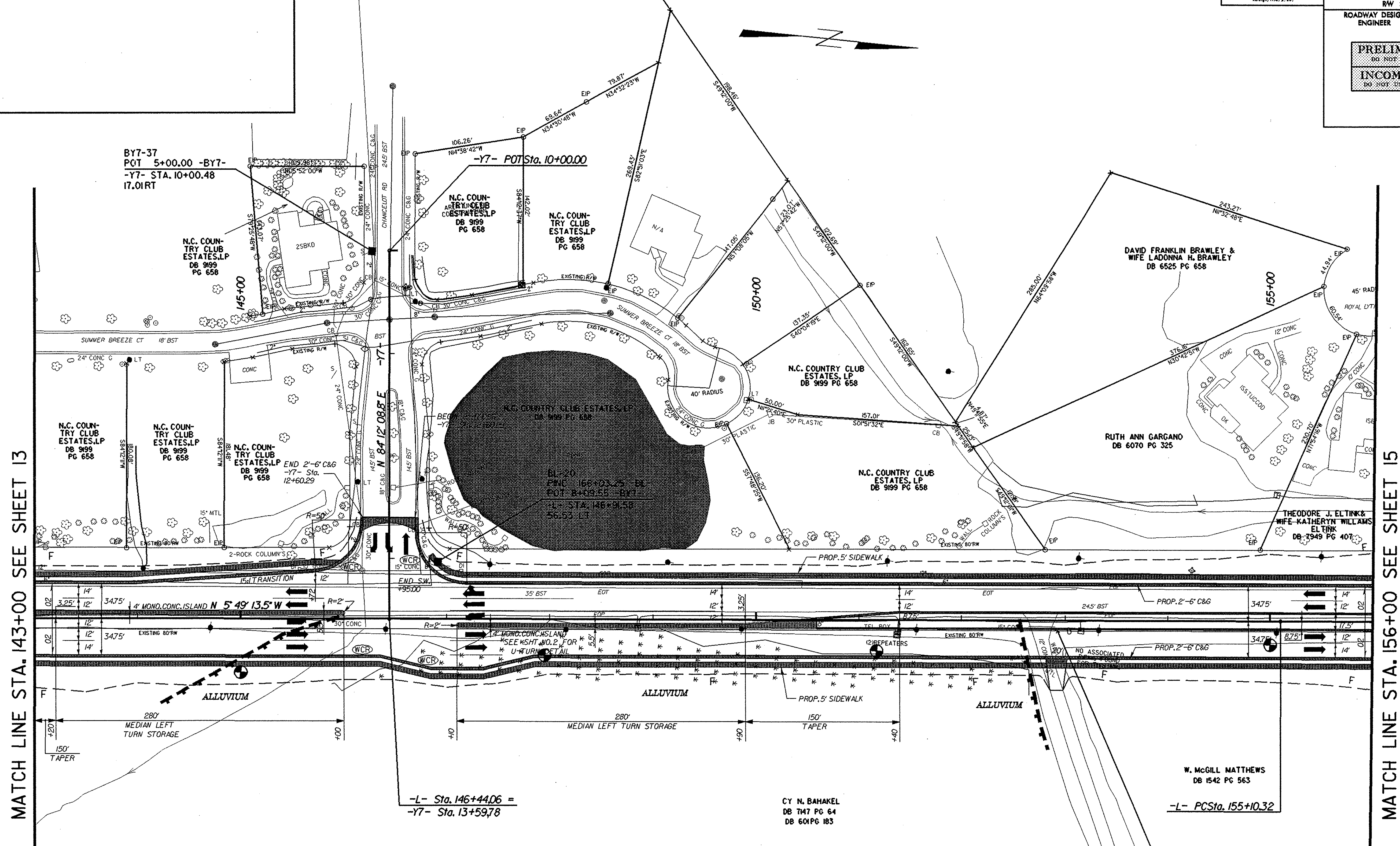
REVISIONS

TRANSITE CONSULTING ENGINEERS, INCORPORATED
1300 Paddock Drive, Suite G-10
Raleigh, N.C. 27609

PROJECT REFERENCE NO.	SHEET NO.
U-2510A	14
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



2006 / 2030	ADT In hundreds
CHANCELOT RD -Y7-	11 / 13
Left turn	3 / 4
Right turn	8 / 9
-L- west	252 / 393
-L- east	257 / 398

-L-
PI Sta 158+70.99
Δ = 5° 09' 45.4" (RT)
D = 0° 42' 58.3"
L = 720.84'
T = 360.66'
R = 8,000.00'
SE = NC
DS = 50 MPH

SEE SHEET 26 & 27 FOR -L- PROFILE

103.001.002/Roadway/Proj/u2510a_rdy_psh14

REVISIONS

TRANSITE CONSULTING ENGINEERS, INCORPORATED 1000 Pedcock Drive, Suite 0-10 Raleigh, N.C. 27609

PROJECT REFERENCE NO.	SHEET NO.
U-2510A	15
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

MATCH LINE STA. 156+00 SEE SHEET 14

MATCH LINE STA. 170+00 SEE SHEET 16

PROVIDENCE COUNTRY CLUB HOMEOWNERS ASSOCIATION, INC. DB 10138 PG 347

BOND R. ISAACSON & WIFE BONNIE M. ISAACSON DB 7749 PG 535

DAVID C. FRANCIS DB 7952 PG 600

PROVIDENCE COUNTRY CLUB DB 7897 PG 190

PROVIDENCE COUNTRY CLUB HOMEOWNERS ASSOCIATION, INC. DB 10138 PG 347

MARCEL IAN STARK & WIFE SUSAM MILLER STARK DB 7935 PG 844

WILLIAM EARL COLLINS & WIFE PATRICIA L. COLLINS DB 5144 PG 393

JOSEPH GIRARDI &SPOUSE ROBIN GIRARDI DB 6795 PG 349

JOHN T. BARTLEY, JR. & WIFE MARY K. BARTLEY DB 6670 PG 728

VINCENT L. JAMES & WIFE CAROLYN R. JAMES DB 6066 PG 342

MARK G. GILREATH & WIFE HOPE C. GILREATH DB 9369 PG 966

THEODORE J. ELTINK& WIFE KATHERYN WILLAMS ELTINK DB 7949 PG 407

ABRAHAM LUSKI & ISAAC LUSKI DB 5396 PG 812

W. McGILL MATTHEWS DB 1542 PG 563

BY8-38
POT 5+00.00 -BY8-
-Y8- STA. 10+06.45
36.81RT

-Y8- POT Sta. 10+00.00

BL-22
PINC 184+14.66 -BL-
POT 7+47.22 -BY8-
-L- STA. 184+97.93
73.24 LT

BL-21
PINC 175+42.34 -BL-
-L- STA. 156+29.92
45.48 LT

-L- Sta. 165+34.55 =
-Y8- Sta. 13+52.76

-L- PT Sta. 162+31.16

-L-
PI Sta 158+70.99
Δ = 5° 09' 45.4" (RT)
D = 0° 42' 58.3"
L = 720.84'
T = 360.66'
R = 8,000.00'
SE = NC
DS = 50 MPH

2006 / 2030	ADT In hundreds
PROVIDENCE COUNTRY CLUB -Y8-	57 / 62
14 / 15	43 / 47
257 / 398	-L- 286 / 430

EXISTING TRAFFIC SIGNAL

SEE SHEET 27 FOR -L- PROFILE

103.001.002/Roadway/Proj/u2510a_rdy.psnl5

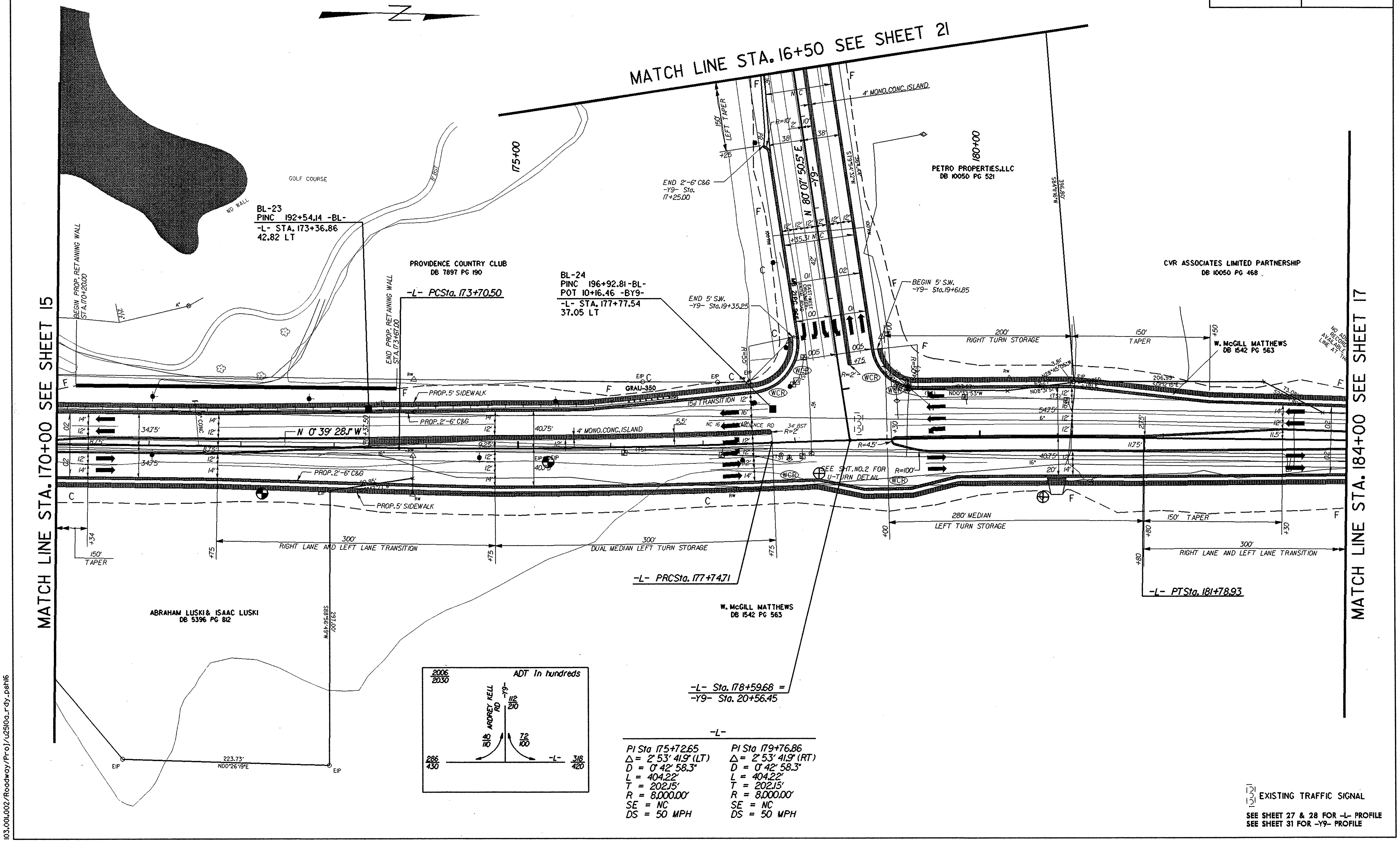
REVISIONS

TRANSITE CONSULTING ENGINEERS, INCORPORATED

PROJECT REFERENCE NO.	SHEET NO.
U-2510A	16
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION



103.00.002/Roadway/Proj/u2510a_rdy_psh16.dgn

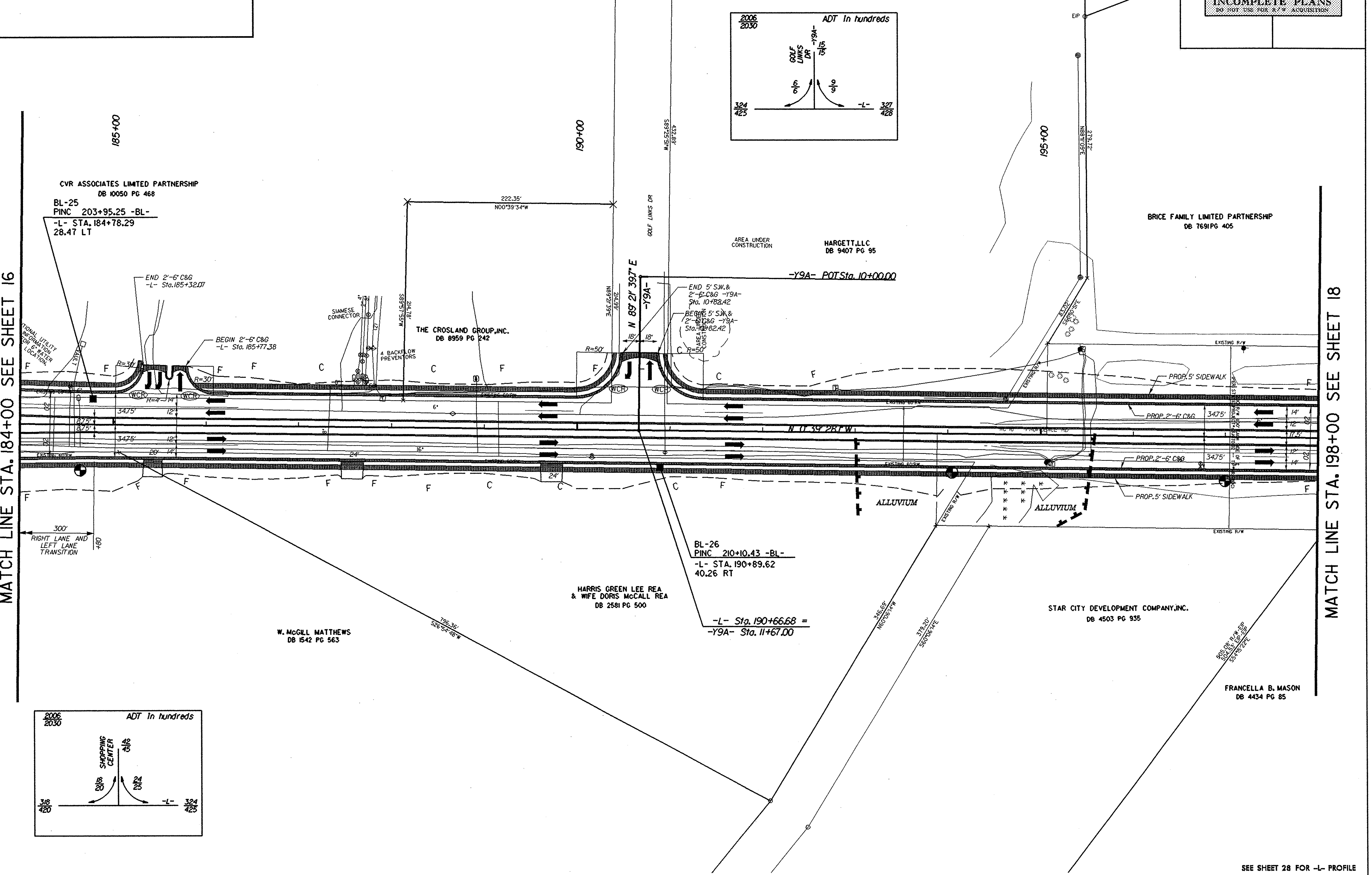
REVISIONS

TRANSITE CONSULTING ENGINEERS, INCORPORATED
1800 Padsock Drive, Suite G-10
Raleigh, N.C. 27609

PROJECT REFERENCE NO.	SHEET NO.
U-2510A	17
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



MATCH LINE STA. 184+00 SEE SHEET 16
MATCH LINE STA. 198+00 SEE SHEET 18
185+00
190+00
195+00
CVR ASSOCIATES LIMITED PARTNERSHIP
DB 10050 PG 468
BL-25
PINC 203+95.25 -BL-
-L- STA. 184+78.29
28.47 LT
222.35'
N00°39'34"W
END 2'-6' C&G
-L- Sta. 185+32.07
BEGIN 2'-6' C&G
-L- Sta. 185+77.38
SIAMESE CONNECTOR
4 BACKFLOW PREVENTORS
THE CROSLAND GROUP, INC.
DB 8959 PG 242
GOLF LINKS DR
N 89°21'39.7" E
-Y9A-
-Y9A- POT Sta. 10+00.00
END 5' S.W. &
2'-6' C&G -Y9A-
Sta. 10+88.42
BEGIN 5' S.W. &
2'-6' C&G -Y9A-
AREA UNDER CONSTRUCTION
HARGETT, LLC
DB 9407 PG 95
BRICE FAMILY LIMITED PARTNERSHIP
DB 7691 PG 405
EXISTING R/W
PROP. 5' SIDEWALK
PROP. 2'-6' C&G
N 0°39'28.1" W
ALLUVIUM
300'
RIGHT LANE AND LEFT LANE TRANSITION
BL-26
PINC 210+10.43 -BL-
-L- STA. 190+89.62
40.26 RT
-L- Sta. 190+66.68 =
-Y9A- Sta. 11+67.00
HARRIS GREEN LEE REA
& WIFE DORIS McCALL REA
DB 2581 PG 500
W. McGILL MATTHEWS
DB 1542 PG 563
796.36'
S26°54'48"W
STAR CITY DEVELOPMENT COMPANY, INC.
DB 4503 PG 935
FRANCELLA B. MASON
DB 4434 PG 85
ADT In hundreds
2006
2030
GOLF LINKS DR -Y9A-
324
425
327
428
SHOPPING CENTER
318
420
-L-

SEE SHEET 28 FOR -L- PROFILE

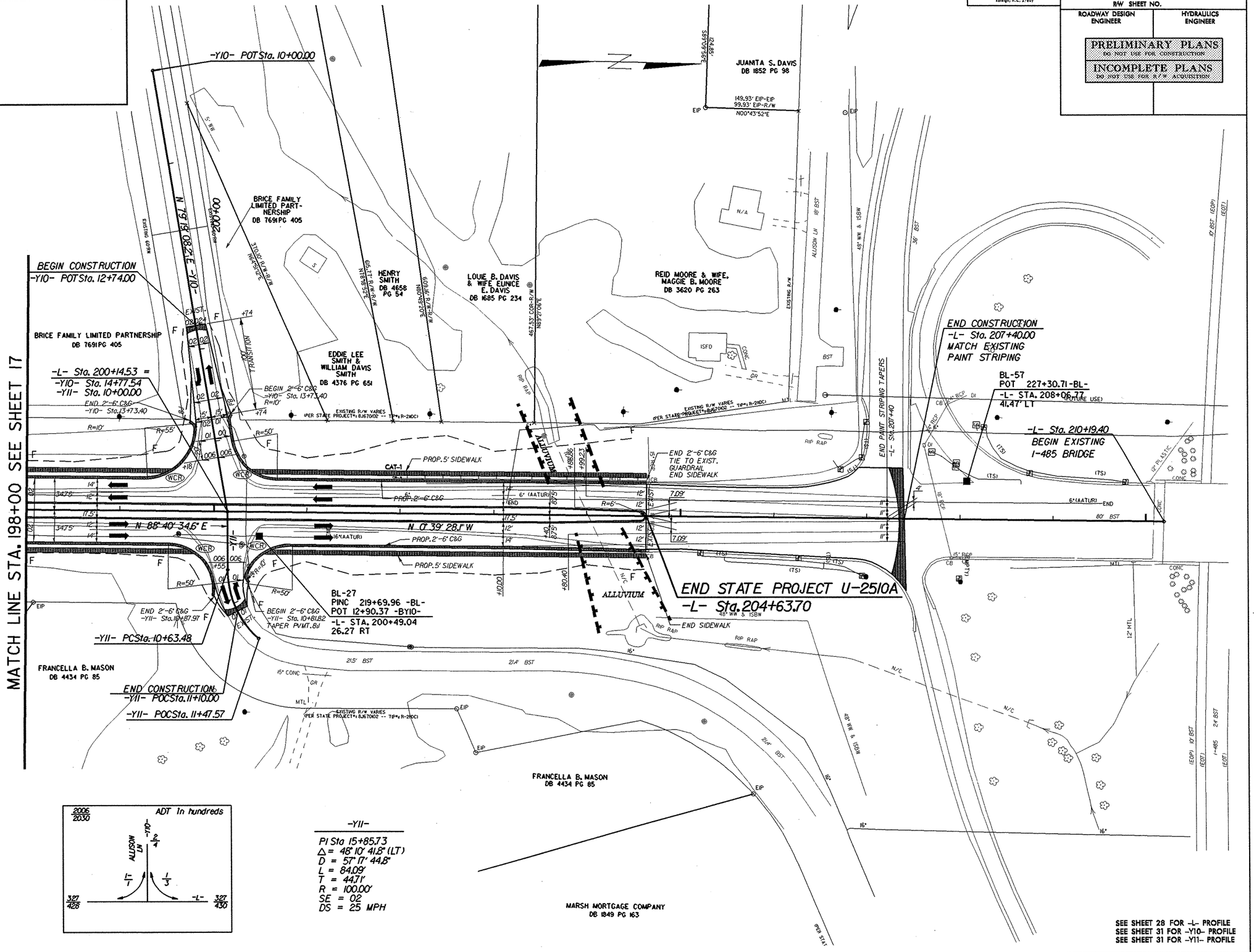
103.001.002/Roadway/Proj/u2510a_rdy_psh17

REVISIONS

TRANSITE CONSULTING
ENGINEERS, INCORPORATED
1936 Pedenick Dr've, Suite 9-30
Raleigh, N.C. 27609

PROJECT REFERENCE NO.	SHEET NO.
U-2510A	18
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



SEE SHEET 28 FOR -L- PROFILE
SEE SHEET 31 FOR -Y10- PROFILE
SEE SHEET 31 FOR -Y11- PROFILE

103.001.002/Roadway/Proj/u2510a_rdy.pshl8

REVISIONS

TRANSITE CONSULTING ENGINEERS, INCORPORATED
1800 Pedcock Drive, Suite G-10
Raleigh, N.C. 27609

PROJECT REFERENCE NO.	SHEET NO.
U-2510A	19
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

MATCH LINE STA. 13+00
SEE SHEET 8

LR & FR, LLC
DB 1248 PG 510

JERRY A. PRESSLEY & WIFE, ROBBIE FAYE PRESSLEY
DB 755 PG 541

WEDDINGTON ASSOCIATES, A N.C. GENERAL PARTNERSHIP
DB 677 PG 216

WEDDINGTON ASSOCIATES
DB 101 PG 52

GEORGE F. PINSAK & WIFE, CAROL H. PINSAK
DB 177 PG 331

TOWN OF WEDDINGTON, A N.C. MUNICIPAL CORP.
DB 578 PG 764

WEDDINGTON METHODIST CHURCH
DB 82 PG 76

GERTRUDE P. REID
DB 146 PG 339

WEDDINGTON UNITED METHODIST CHURCH
NO DEED

CLAIRE J. KING
DB 115 PG 161

BY4-32
PINC 11+21.48 -BY4-
-Y4- STA. 16+77.44
26.21 LT

BY4-33
POT 13+35.26 -BY4-
-Y4- STA. 18+83.46
23.75 LT

-Y12- POTSta. 12+49.31

END CONSTRUCTION
-Y12- POCSta. 11+75.00

-Y4- PCSta. 15+74.94

-Y4- Sta. 18+34.98 =
-Y12- Sta. 10+00.00

-Y4- PTSta. 20+81.77

END CONSTRUCTION
-Y4- POTSta. 25+50.00

BEGIN 1000' E.B. LEFT LANE
STA. 15+50.00 14' RIGHT

END 1000' E.B. LEFT LANE
STA. 20+70.00

NOTE: FOR THE RIGHT EASTBOUND THROUGH LANE TRANSITION USE R=1000'
BEGIN RADIUS -Y4- STA. 15+50.00
OFFSET = 14' (RT)
END RADIUS -Y4- STA. 21+50.00
OFFSET = 0

-Y4-
PI Sta 18+45.81
Δ = 50° 04' 04.0" (RT)
D = 9° 52' 42.9"
L = 506.83'
T = 270.88'
R = 580.00'

SEE SHEET 30 FOR -Y4- PROFILE

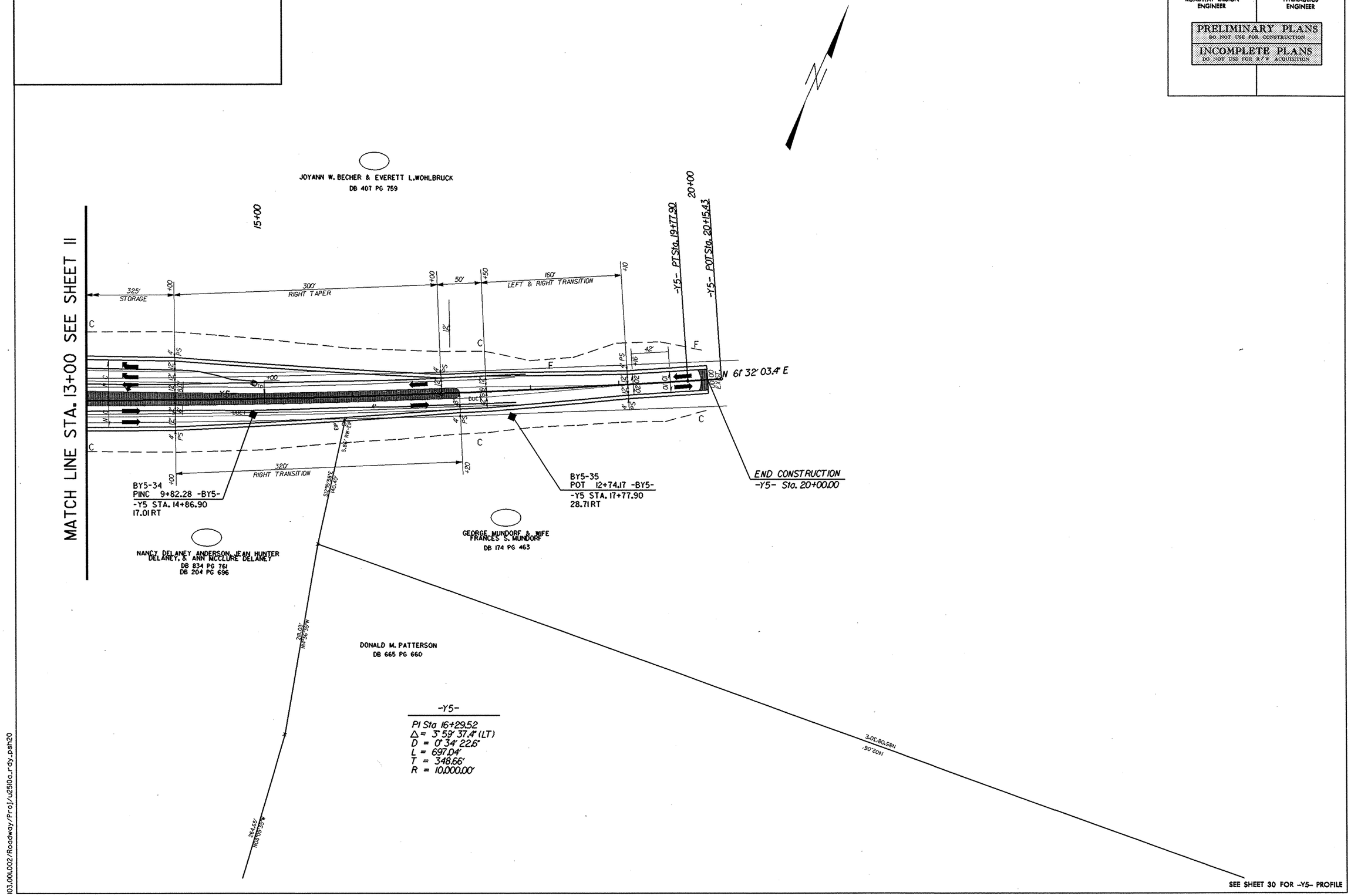
REVISIONS

TRANSITE CONSULTING
ENGINEERS, INCORPORATED
1800 Pedcoke Drive, Suite G-10
Raleigh, N.C. 27609

PROJECT REFERENCE NO.	SHEET NO.
U-2510A	20
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



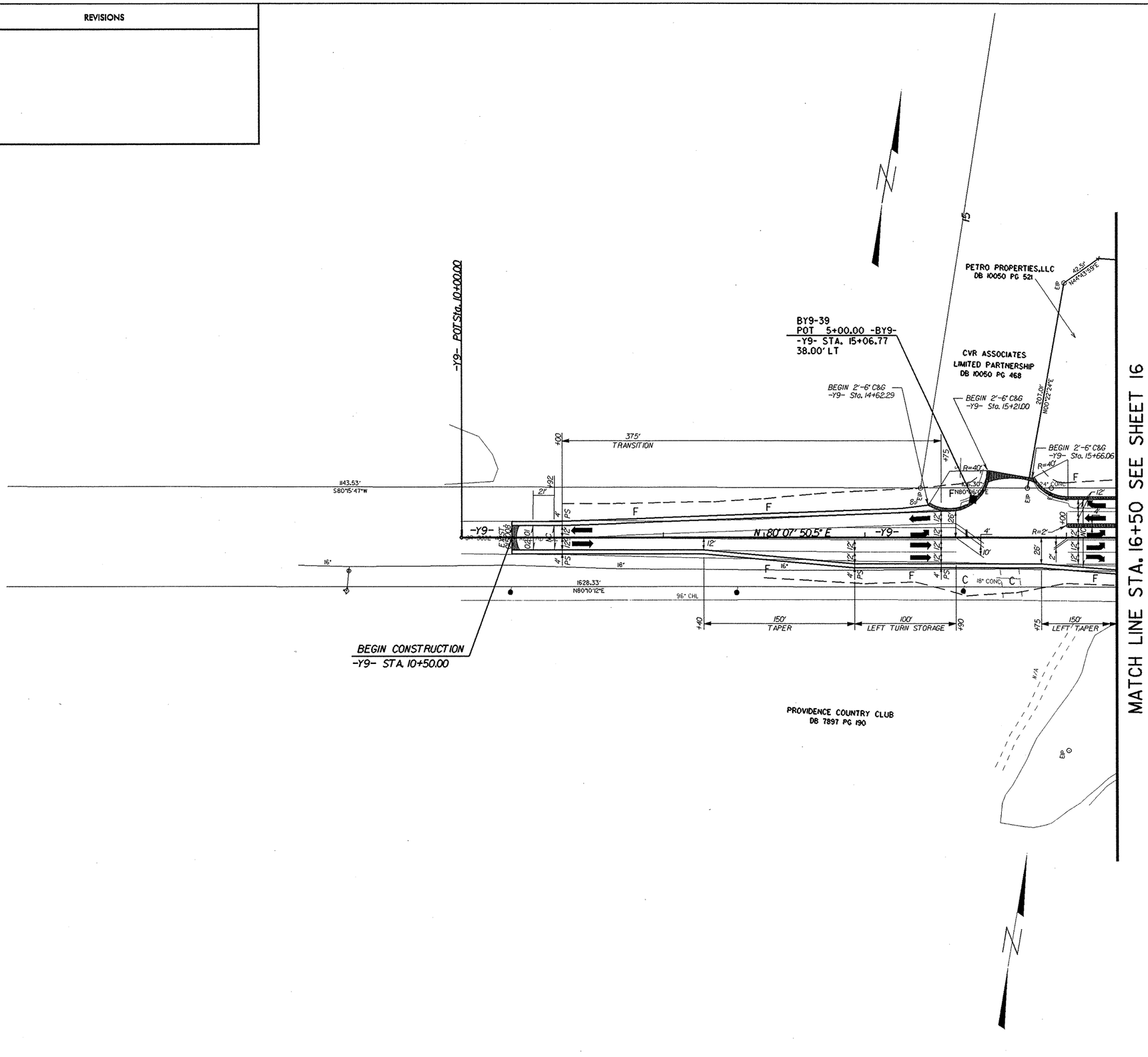
103.001.002/Roadway/Proj/u2510a_rdy.pst20

REVISIONS

TRANSITE CONSULTING
ENGINEERS, INCORPORATED
1350 Paddock Drive, Suite 0-10
Raleigh, N.C. 27609

PROJECT REFERENCE NO.	SHEET NO.
U-2510A	21
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



103.001.002/Roadway/Proj/u2510a_rdy_psh21

TRANSITE CONSULTING ENGINEERS, INCORPORATED
1000 Paddock Drive, Suite G-10
Raleigh, N.C. 27609

PROJECT REFERENCE NO.	SHEET NO.
U-2510A	22

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

BM-1 700.034
RAILROAD SPIKE IN BASE
OF POWER POLE
51.0463 FT LT OF -L FUTURE- STA 12+93.17

BEGIN GRADE STA. 18+00.00 -L-
EL = 703.83

PI = 19+50.00
EL = 705.27'
VC = 200'
K = 43.7
Vs = 80+ mph

(+)0.9580%

(+)0.5008%

PROPOSED

RESIDUAL - STIFF RED-BROWN SANDY SILTY CLAY, HIGH PI, MOIST

EXISTING

-L-

SEE SHEET 4 & 5 FOR ALIGNMENT

Proj. Sample No.		SS-1	SS-2	SS-3	SS-4	SS-5	SS-6	SS-7	SS-8
Passing #10 Sieve	%	100	100	98	99	95	89	93	94
Passing #40 Sieve	%	98	99	80	88	62	54	74	68
Passing #200 Sieve	%	89	80	68	67	39	32	56	49
Coarse Sand Ret - #60	%	4.1	1.6	23.2	14.5	42.4	48.3	26.1	34.2
Fine Sand Ret - #270	%	10.8	28.1	10.2	30.1	22.2	19.8	18.1	17.1
Silt 0.05 - 0.005 mm	%	28.1	31.6	9.6	28.9	11.0	11.6	17.1	7.9
Clay <0.005 mm	%	57.0	38.7	57.0	26.5	24.4	20.4	38.7	40.7
L. L.		80	76	82	52	40	42	59	51
P. I.		37	18	49	15	20	20	26	22
AASHTO Classification		A-7-5(42)	A-7-5(22)	A-7-5(34)	A-7-5(11)	A-6(3)	A-2-7(2)	A-7-5(13)	A-7-6(8)
Station		25+48	25+48	28+80	28+80	32+25	32+25	35+10	35+20
OFFSET		44 LT	44 LT	55 LT	55 LT	30 LT	30 LT	28 LT	35 LT
ALIGNMENT		L	L	L	L	L	L	L	L
Depth (Ft)		4.10	9.10	3.60	9.10	4.20	14.20	3.40	4.00
	to	5.10	10.10	4.60	10.10	5.20	15.20	4.40	5.00

PI = 27+42.61
EL = 709.24'
VC = 250'
K = 79.6
Vs = 80+ mph

PI = 33+30.00
EL = 713.75'
VC = 250'
K = 169
Vs = 60 mph

SS-1
SS-2
25+48
44 LT

SS-3
SS-4
28+80
55 LT

SS-5
SS-6
32+25
30 LT

SS-7
35+10
28 LT

(+)0.5008%

(+)0.7677%

(+)0.7677%

-0.7063%

PROPOSED

EXISTING

RESIDUAL - STIFF RED-BROWN SANDY SILTY CLAY, HIGH PI, MOIST

MEDIUM STIFF RED-BROWN SANDY SILTY CLAY, MOIST

DRY 5-06

RESIDUAL - STIFF RED-YELLOW-GRAY SANDY SILTY CLAY, HIGH PI, MOIST

MEDIUM STIFF TAN-YELLOW SILTY SANDY CLAY, MOIST

RESIDUAL - MEDIUM STIFF TO STIFF TAN-GRAY SILTY SANDY CLAY, MOIST

MEDIUM DENSE TAN-YELLOW SILTY CLAYEY SAND, MOIST

RESIDUAL - STIFF WHITE-TAN SILTY SANDY CLAY, MOIST

-L-

SEE SHEET 5 & 6 FOR ALIGNMENT

TRANSITE CONSULTING ENGINEERS, INCORPORATED
1000 Paddock Drive, Suite G-10
Raleigh, N.C. 27609

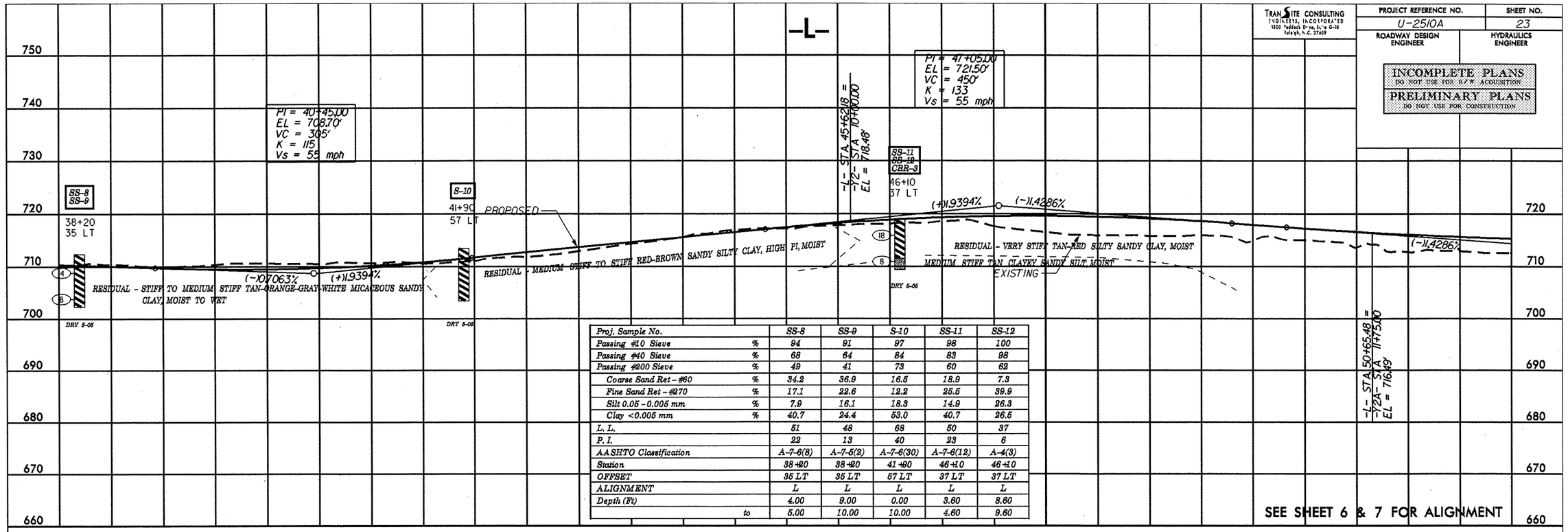
PROJECT REFERENCE NO.	SHEET NO.
U-2510A	23

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

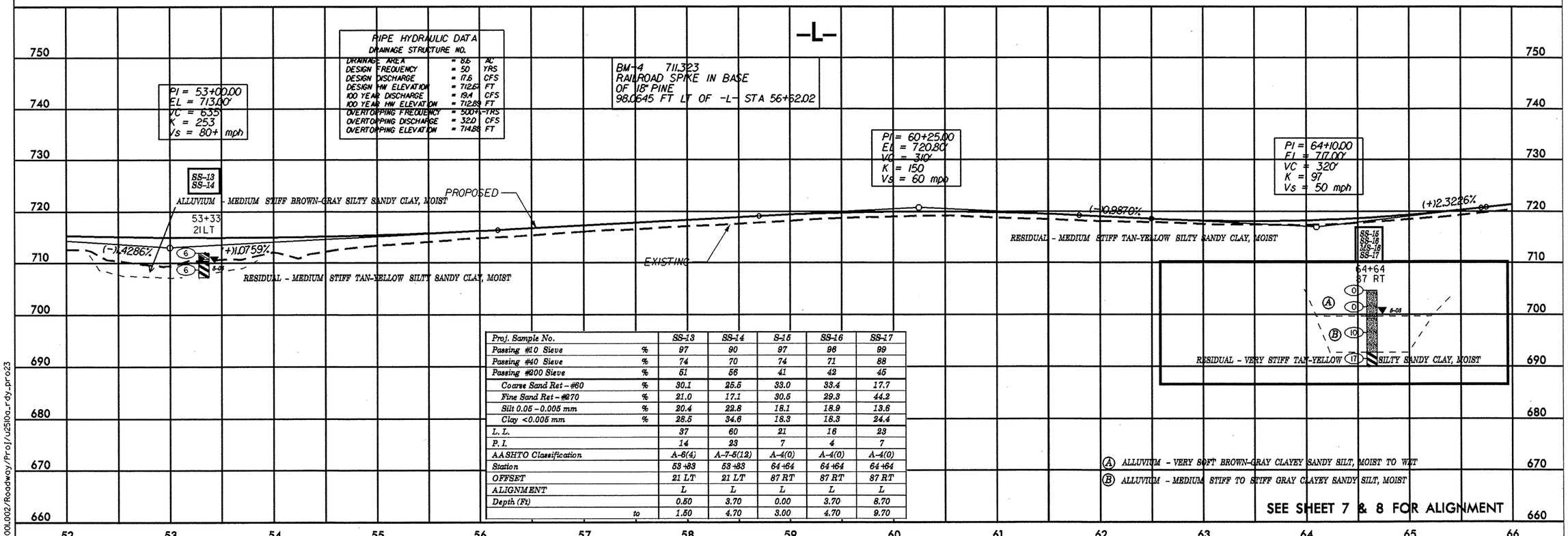
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



Proj. Sample No.		SS-8	SS-9	S-10	SS-11	SS-12
Passing #10 Sieve	%	94	91	97	98	100
Passing #40 Sieve	%	68	64	84	83	98
Passing #200 Sieve	%	49	41	73	60	62
Coarse Sand Ret - #60	%	34.2	36.9	16.5	18.9	7.3
Fine Sand Ret - #270	%	17.1	22.6	12.2	25.5	39.9
Silt 0.05 - 0.005 mm	%	7.9	16.1	18.3	14.9	26.3
Clay <0.005 mm	%	40.7	24.4	53.0	40.7	26.5
L. L.		51	48	68	50	37
P. I.		22	13	40	23	6
AASHTO Classification		A-7-6(8)	A-7-5(2)	A-7-6(30)	A-7-6(12)	A-4(3)
Station		38+20	38+20	41+90	46+10	46+10
OFFSET		35 LT	35 LT	57 LT	37 LT	37 LT
ALIGNMENT		L	L	L	L	L
Depth (Ft)		4.00	9.00	0.00	3.60	8.60
	to	5.00	10.00	10.00	4.60	9.60

SEE SHEET 6 & 7 FOR ALIGNMENT



Proj. Sample No.		SS-13	SS-14	S-15	SS-16	SS-17
Passing #10 Sieve	%	97	90	97	96	99
Passing #40 Sieve	%	74	70	74	71	88
Passing #200 Sieve	%	51	56	41	42	45
Coarse Sand Ret - #60	%	30.1	25.5	33.0	33.4	17.7
Fine Sand Ret - #270	%	21.0	17.1	30.5	29.3	44.2
Silt 0.05 - 0.005 mm	%	20.4	22.8	18.1	18.9	13.6
Clay <0.005 mm	%	28.5	34.6	18.3	18.3	24.4
L. L.		37	60	21	16	23
P. I.		14	23	7	4	7
AASHTO Classification		A-6(4)	A-7-5(12)	A-4(0)	A-4(0)	A-4(0)
Station		53+33	53+33	64+64	64+64	64+64
OFFSET		21 LT	21 LT	87 RT	87 RT	87 RT
ALIGNMENT		L	L	L	L	L
Depth (Ft)		0.50	3.70	0.00	3.70	8.70
	to	1.50	4.70	3.00	4.70	9.70

(A) ALLUVIUM - VERY SOFT BROWN-GRAY CLAYEY SANDY SILT, MOIST TO WET

(B) ALLUVIUM - MEDIUM STIFF TO STIFF GRAY CLAYEY SANDY SILT, MOIST

SEE SHEET 7 & 8 FOR ALIGNMENT

TRANSITE CONSULTING
ENGINEERS, INCORPORATED
1300 Baldock Drive, Suite 6-10
Raleigh, N.C. 27609

PROJECT REFERENCE NO.	SHEET NO.
U-2510A	24

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

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

BM-5I EGB 720.710
USGS MONUMENT
40.5822 FT RT OF -L- STA 67+27.72

PI = 68+75.00
EL = 727.80'
VC = 600'
K = 85
Vs = 50 mph

-L- STA 69+80.59 =
-Y4- STA 10+00.00
EL = 720.53'

(+)2.3226%

-L- STA 66+66.79 =
-Y3- STA 12+46.22
EL = 722.44'

RESIDUAL - MEDIUM STIFF TO STIFF TAN-YELLOW SILTY SANDY CLAY, MOIST

EXISTING

(-)4.7667%

PROPOSED

PI = 74+75.00
EL = 699.20'
VC = 490'
K = 96
Vs = 50 mph

BM-5 705.490
RAILROAD SPIKE IN 24" PINE
91.6916 FT RT OF -L- STA 78+59.69

PI = 79+80.00
EL = 700.90'
VC = 520'
K = 194
Vs = 65 mph

(+)0.3366%

SS-18
SS-19
79+45
71 RT

RESIDUAL - VERY STIFF TAN-WHITE SILTY SANDY CLAY, HIGH PI, MOIST

LOOSE TO MEDIUM DENSE TAN-WHITE MICACEOUS CLAYEY SILTY SAND, MOIST

DRY 6-05

BEGIN 4' LAT. BASE DITCH
STA. 78+50 (RT)
ELEV = 679.50

Proj. Sample No.		SS-18	SS-19	SS-20
Passing #10 Sieve	%	92	83	100
Passing #40 Sieve	%	71	53	98
Passing #200 Sieve	%	48	28	88
Coarse Sand Ret - #60	%	29.9	45.6	4.3
Fine Sand Ret - #270	%	21.6	26.1	11.2
Silt 0.05 - 0.005 mm	%	15.9	15.1	21.4
Clay <0.005 mm	%	32.6	14.3	63.1
L. L.		62	47	93
P. I.		31	10	45
AASHTO Classification		A-7-5(11)	A-2-5(0)	A-7-5(50)
Station		79+48	79+45	82+00
OFFSET		71 RT	71 RT	45 RT
ALIGNMENT		L	L	L
Depth (Ft)		3.90	8.90	3.90
	to	4.90	9.90	4.90

SEE SHEET 8 & 9 FOR ALIGNMENT

Proj. Sample No.		SS-21	SS-22	SS-23	SS-24
Passing #10 Sieve	%	95	94	91	87
Passing #40 Sieve	%	79	59	54	58
Passing #200 Sieve	%	54	18	20	37
Coarse Sand Ret - #60	%	25.3	56.4	55.4	43.4
Fine Sand Ret - #270	%	22.0	29.1	25.7	17.3
Silt 0.05 - 0.005 mm	%	14.1	6.3	4.7	8.8
Clay <0.005 mm	%	38.7	8.1	14.3	30.5
L. L.		46	16	21	56
P. I.		24	NP	NP	34
AASHTO Classification		A-7-6(10)	A-2-4(0)	A-2-4(0)	A-7-6(6)
Station		85+65	85+65	85+65	85+65
OFFSET		33 RT	33 LT	33 LT	33 RT
ALIGNMENT		L	L	L	L
Depth (Ft)		0.50	2.90	7.90	8.20
	to	1.50	3.90	8.90	8.50

Proj. Sample No.		SS-25	SS-26	SS-27
Passing #10 Sieve	%	100	100	100
Passing #40 Sieve	%	89	86	94
Passing #200 Sieve	%	55	38	63
Coarse Sand Ret - #60	%	24.2	31.1	13.6
Fine Sand Ret - #270	%	25.2	37.0	30.1
Silt 0.05 - 0.005 mm	%	12.0	17.7	23.8
Clay <0.005 mm	%	38.6	14.2	32.5
L. L.		46	47	64
P. I.		24	5	19
AASHTO Classification		A-7-6(10)	A-5(0)	A-7-5(13)
Station		88+24	88+24	91+17
OFFSET		27 RT	27 RT	41 RT
ALIGNMENT		L	L	L
Depth (Ft)		3.50	8.50	3.80
	to	4.50	9.50	4.80
Moisture %		29.1	33.9	36

BM-6 696.345
RAILROAD SPIKE IN 12" CEDAR
262.6022 FT LT OF -L- STA 91+47.64

SS-20
82+00
45 RT

PI = 85+80.00
EL = 686.80'
VC = 480'
K = 97
Vs = 50 mph

SS-21
SS-22
SS-23
SS-24
85+65
33 RT

SS-25
MS-25
SS-26
MS-26
88+24
27 RT

PROPOSED

(+)2.6150%

SS-27
MS-27
91+17
41 RT

(+)2.6150%

RESIDUAL - STIFF TAN SANDY SILTY CLAY, HIGH PI, MOIST

MEDIUM DENSE TAN CLAYEY SILTY SAND, MOIST

DRY 5-05

ALLUVIUM - MEDIUM STIFF BROWN-GRAY SILTY SANDY CLAY, MOIST

LOOSE BROWN-GRAY CLAYEY SAND, MOIST TO WET

RESIDUAL - MEDIUM STIFF GRAY-WHITE SANDY CLAY, HIGH PI, DRY

RESIDUAL - VERY STIFF BROWN-GRAY SILTY SANDY CLAY, MOIST

EXISTING

STIFF GRAY MICACEOUS CLAYEY SANDY SILT, MOIST

DRY 5-05

RESIDUAL - STIFF RED-BROWN SILTY SANDY CLAY, MOIST

SEE SHEET 9 & 10 FOR ALIGNMENT

103.001.002/Roadway/Proj/u2510a_rdy_pro24

Proj. Sample No.		SS-28	SS-29	SS-30	SS-31	SS-32	SS-33	SS-34	SS-35
Passing #10 Sieve	%	100	96	100	100	100	100	100	100
Passing #40 Sieve	%	97	79	97	96	92	99	99	93
Passing #200 Sieve	%	82	60	80	81	59	84	74	70
Coarse Sand Ret - #60	%	5.1	24.0	7.7	9.3	18.9	3.7	6.3	16.0
Fine Sand Ret - #270	%	18.5	18.3	14.2	12.3	28.3	17.1	24.6	18.7
Silt 0.05 - 0.005 mm	%	23.6	23.2	19.1	19.5	26.4	24.4	26.4	21.5
Clay <0.005 mm	%	52.8	34.6	58.9	58.9	26.4	54.9	42.7	44.7
L. L.		66	59	67	70	62	67	64	65
P. I.		24	19	22	30	11	24	18	21
AASHTO Classification		A-7-5(25)	A-7-5(11)	A-7-5(23)	A-7-5(29)	A-7-5(8)	A-7-5(26)	A-7-5(17)	A-7-5(17)
Station		94+42	94+42	97+60	99+60	99+60	105+52	105+52	108+00
OFFSET		26 RT	26 RT	38 RT	20 RT	20 RT	30 RT	30 RT	51 RT
ALIGNMENT		L	L	L	L	L	L	L	L
Depth (Ft)		4.70	9.70	3.80	3.60	8.60	3.40	8.40	4.30
	to	5.70	10.70	4.80	4.60	9.60	4.40	9.40	5.30
Moisture %		33.8		31.2			37.1		

PI = 95+15.00
EL = 711.25'
VC = 500'
K = 85
Vs = 50 mph

SS-28
MS-28

94+42
26 RT

(+)2.6150%

SS-30
MS-30

97+60
38 RT

PROPOSED

(-)3.3009%

SS-31
MS-31
SS-32

99+60
20 RT

EXISTING

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

DRY 5-05

RESIDUAL - VERY STIFF RED-BROWN SILTY SANDY CLAY, HIGH PI, MOIST

STIFF RED-BROWN MICACEOUS SILTY SANDY CLAY, MOIST

-L- STA 103+97.82 =
-Y- STA 0+00.00
EL = 691.44'

(-)0.3639%

SS-33
MS-33
SS-34

105+52
30 RT

SS-35

108
51

RESIDUAL - MEDIUM STIFF TO STIFF RED-BROWN

DRY

BM-7 690.308
RAILROAD SPIKE IN 12" OAK
103.2092 FT RT OF -L- STA 104+88.95

TRANSITE CONSULTING ENGINEERS, INCORPORATED
1800 Paddock Drive, Ste A-10
Raleigh, N.C. 27609

PROJECT REFERENCE NO.	SHEET NO.
U-2510A	25

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

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

SEE SHEET 10 & 11 FOR ALIGNMENT

SS-35
+00
RT

SS-36
SS-37

110+00
58 RT

MICACEOUS SILTY SANDY CLAY, MOIST

STIFF TO VERY STIFF TAN-BROWN SANDY SILTY CLAY, HIGH PI, MOIST

DRY 5-05

BM-8 661.306
RAILROAD SPIKE IN 16" OAK
188.9590 FT RT OF -L- STA 115+11.77

SS-38
SS-39

112+04
38 RT

RESIDUAL - MEDIUM DENSE RED-TAN SILTY CLAYEY SAND, MOIST

MEDIUM DENSE BROWN-WHITE CLAYEY SILTY SAND, DRY

(-)5.4999%

PROPOSED

EXISTING

SS-40
MS-40
SS-41

115+88
44 RT

NOTE: FLOODPLAIN TO RT BEGINS AT STATION 115+85 AND ENDS AT 116+84

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.

DRAINAGE AREA	11.2 AC
DESIGN FREQUENCY	50 YRS
DESIGN DISCHARGE	29.0 CFS
DESIGN HW ELEVATION	639.83 FT
100 YEAR DISCHARGE	34.0 CFS
100 YEAR HW ELEVATION	640.20 FT
OVERTOPPING FREQUENCY	200+ YRS
OVERTOPPING DISCHARGE	44.0 CFS
OVERTOPPING ELEVATION	641.58 FT

118+43
61 RT

RESIDUAL - MEDIUM STIFF TO STIFF RED-TAN-BROWN MICACEOUS SILTY SANDY CLAY, HIGH PI, MOIST

121+08
26 RT

RESIDUAL - MEDIUM STIFF TO STIFF RED-TAN MIC. SILTY SANDY CLAY, HIGH PI, MOIST

HARD ROCK

DRY 5-05

Proj. Sample No.		SS-35	SS-36	SS-37	SS-38	SS-39	SS-40	SS-41
Passing #10 Sieve	%	100	93	100	87	85	97	98
Passing #40 Sieve	%	93	76	98	58	57	91	90
Passing #200 Sieve	%	70	57	89	29	25	64	69
Coarse Sand Ret - #60	%	15.0	25.4	3.7	45.3	46.9	16.2	16.9
Fine Sand Ret - #270	%	18.7	15.7	12.2	25.0	28.8	21.2	18.8
Silt 0.05 - 0.005 mm	%	21.5	8.1	26.2	11.4	14.1	11.2	16.9
Clay <0.005 mm	%	44.7	50.8	58.9	18.3	10.3	51.4	53.4
L. L.		65	48	70	45	36	53	61
P. I.		21	19	33	12	NP	27	30
AASHTO Classification		A-7-5(17)	A-7-6(9)	A-7-5(36)	A-2-7(0)	A-2-4(0)	A-7-6(16)	A-7-6(21)
Station		108+00	110+00	110+00	112+04	112+04	115+88	115+88
OFFSET		51 RT	58 RT	58 RT	38 RT	38 RT	44 RT	44 RT
ALIGNMENT		L	L	L	L	L	L	L
Depth (Ft)		4.30	4.60	14.60	5.20	10.20	0.50	4.90
	to	5.30	5.60	15.60	6.20	11.20	1.50	5.90
Moisture %							26	

Ⓐ ALLUVIUM - VERY STIFF RED-BROWN SILTY SANDY CLAY, HIGH PI, MOIST
Ⓑ RESIDUAL - STIFF TAN-BROWN SILTY SANDY CLAY, HIGH PI, MOIST

SEE SHEET 11 & 12 FOR ALIGNMENT

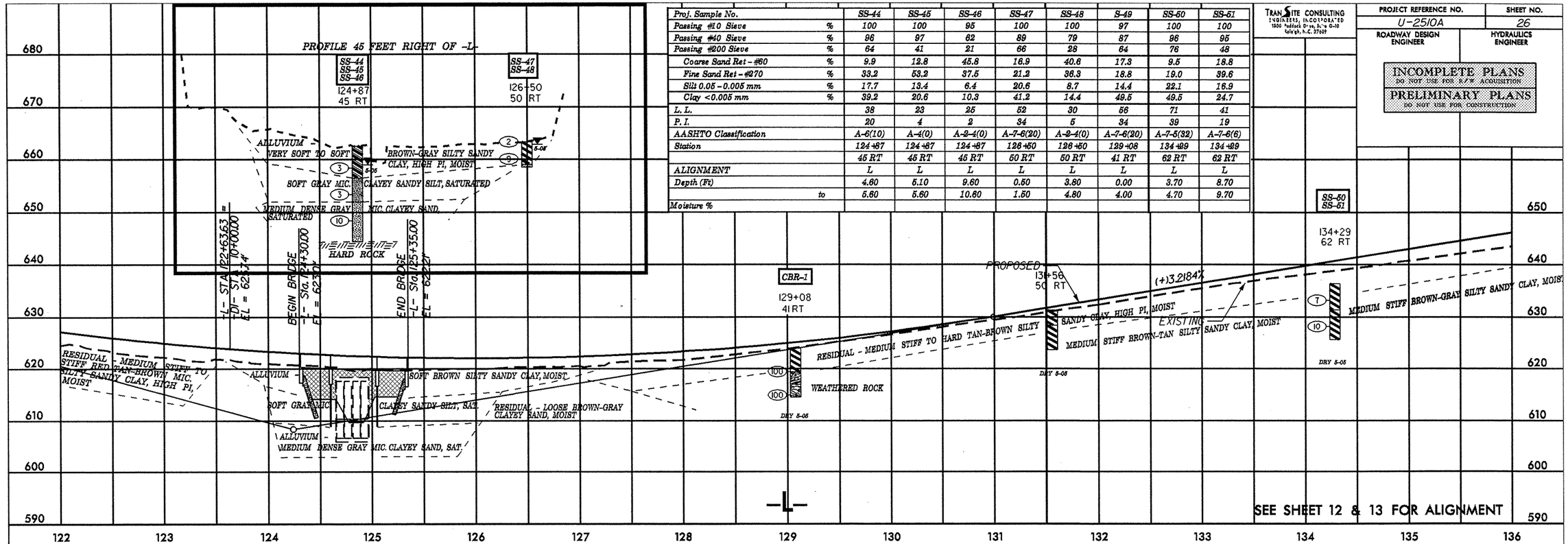
103.004.002/Roadway/Proj/u2510a_rdy_pro25

Proj. Sample No.		SS-44	SS-45	SS-46	SS-47	SS-48	S-49	SS-50	SS-51
Passing #10 Sieve	%	100	100	95	100	100	97	100	100
Passing #40 Sieve	%	96	97	62	89	79	87	96	95
Passing #200 Sieve	%	64	41	21	66	28	64	76	48
Coarse Sand Ret - #60	%	9.9	12.8	45.8	16.9	40.6	17.3	9.5	18.8
Fine Sand Ret - #270	%	33.2	53.2	37.5	21.2	36.3	18.8	19.0	39.6
Silt 0.05 - 0.005 mm	%	17.7	13.4	6.4	20.6	8.7	14.4	22.1	16.9
Clay <0.005 mm	%	39.2	20.6	10.3	41.2	14.4	49.5	49.5	24.7
L. L.		38	23	25	52	30	66	71	41
P. I.		20	4	2	34	5	34	39	19
AASHTO Classification		A-6(10)	A-4(0)	A-2-4(0)	A-7-6(20)	A-2-4(0)	A-7-6(30)	A-7-5(32)	A-7-6(6)
Station		124+87	124+87	124+87	126+50	126+50	129+08	134+29	134+29
		45 RT	45 RT	45 RT	50 RT	50 RT	41 RT	62 RT	62 RT
ALIGNMENT		L	L	L	L	L	L	L	L
Depth (Ft)		4.60	5.10	9.60	0.50	3.80	0.00	3.70	8.70
	to	5.60	5.60	10.60	1.50	4.80	4.00	4.70	9.70
Moisture %									

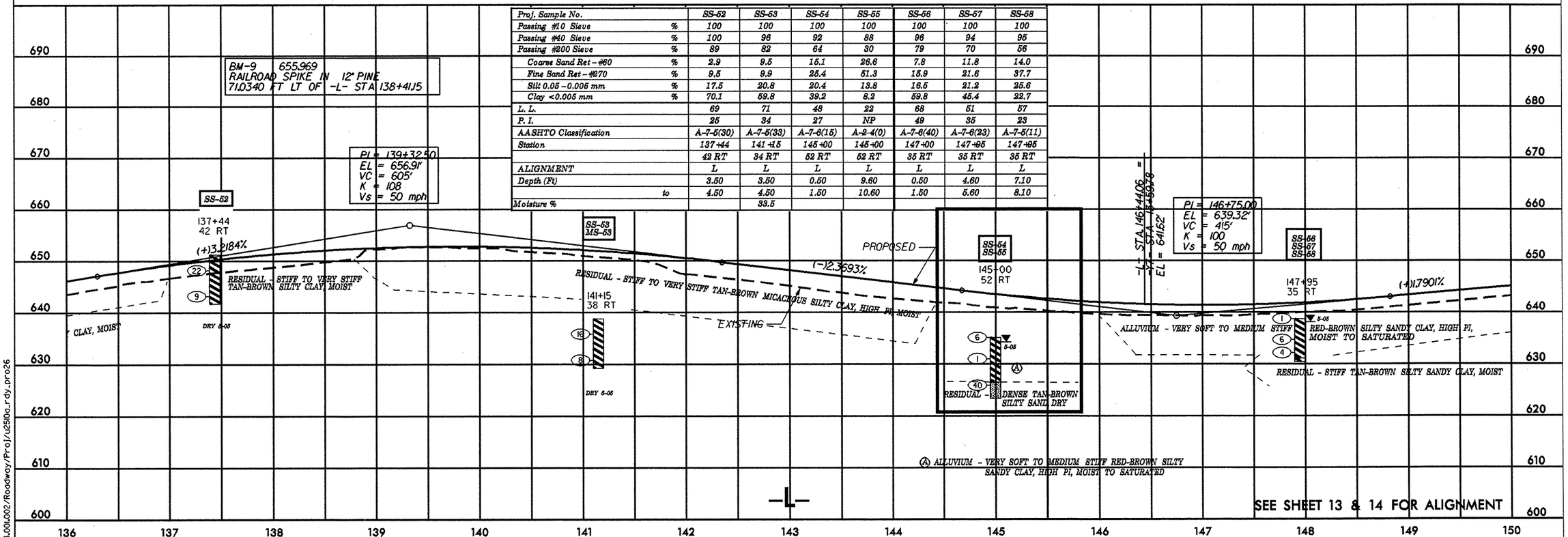
TRANSITE CONSULTING ENGINEERS, INCORPORATED
1300 Paddock Drive, Suite G-30
Raleigh, N.C. 27609

PROJECT REFERENCE NO.	SHEET NO.
U-2510A	26
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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



Proj. Sample No.		SS-62	SS-63	SS-64	SS-65	SS-66	SS-67	SS-68
Passing #10 Sieve	%	100	100	100	100	100	100	100
Passing #40 Sieve	%	100	96	92	88	96	94	95
Passing #200 Sieve	%	89	82	64	30	79	70	56
Coarse Sand Ret - #60	%	2.9	9.5	16.1	26.6	7.8	11.8	14.0
Fine Sand Ret - #270	%	9.5	9.9	25.4	51.3	15.9	21.6	37.7
Silt 0.05 - 0.006 mm	%	17.5	20.8	20.4	13.8	16.5	21.2	25.6
Clay <0.005 mm	%	70.1	59.8	39.2	8.3	59.8	45.4	22.7
L. L.		69	71	48	22	68	51	57
P. I.		25	34	27	NP	49	35	23
AASHTO Classification		A-7-5(30)	A-7-5(33)	A-7-6(15)	A-2-4(0)	A-7-6(40)	A-7-6(23)	A-7-5(11)
Station		137+44	141+15	145+00	145+00	147+00	147+95	147+95
		42 RT	34 RT	52 RT	52 RT	35 RT	35 RT	35 RT
ALIGNMENT		L	L	L	L	L	L	L
Depth (Ft)		3.50	3.50	0.50	9.60	0.50	4.60	7.10
	to	4.50	4.50	1.50	10.60	1.50	5.60	8.10
Moisture %			33.5					



103.001.002/Roadway/Proj/u2510a_rdy_pro26

TRANSITE CONSULTING ENGINEERS, INCORPORATED
1208 Hodges Dr ve, N. Ca 0-10
Raleigh, N.C. 27609

PROJECT REFERENCE NO.	SHEET NO.
U-2510A	27

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

BM-10 649.954
RAILROAD SPIKE POWER POLE
60.8171 FT LT OF -L- STA 153+11.68

Proj. Sample No.		SS-59	SS-60	SS-61	SS-62	SS-63	SS-64	SS-65
Passing #10 Sieve	%	100	100	99	100	100	100	100
Passing #40 Sieve	%	96	94	91	95	98	96	95
Passing #200 Sieve	%	75	49	75	89	89	77	83
Coarse Sand Ret - #60	%	8.7	20.6	12.6	6.6	4.7	9.5	9.1
Fine Sand Ret - #270	%	20.4	35.5	14.8	6.0	6.7	20.0	9.9
Silt 0.05 - 0.005 mm	%	21.4	17.1	16.9	27.6	30.9	41.6	8.9
Clay <0.005 mm	%	49.5	26.8	55.7	59.8	55.7	28.9	72.2
L. L.		64	47	61	93	73	65	58
P. I.		43	27	34	52	29	23	26
AASHTO Classification		A-7-6(33)	A-7-6(9)	A-7-6(27)	A-7-5(56)	A-7-5(34)	A-7-5(22)	A-7-6(25)
Station		151+17	151+17	155+00	155+00	158+86	158+86	162+60
		30 RT	30 RT	23 RT	23 RT	14 RT	14 RT	55RT
ALIGNMENT		L	L	L	L	L	L	L
Depth (Ft)		0.60	4.20	4.10	9.10	5.10	10.10	9.60
	to	1.50	5.20	5.10	10.10	6.10	11.10	4.50
Moisture %				26.1		35		29

PI = 154+00.00
EL = 652.30'
VC = 500'
K = 145
Vs = 60 mph

SS-59
SS-60
151+17
30 RT

SS-61
MS-61
SS-62
155+00
23 RT

SS-63
MS-63
SS-64
158+86
14 RT

SS-65
MS-65
162+60
55 RT

(+)1.7901%

(+)5.2315%

(+)5.2315%

ALLUVIUM - VERY SOFT TO SOFT GRAY SANDY SILTY CLAY, HIGH PI, MOIST TO WET

RESIDUAL - VERY STIFF RED-BROWN SILTY CLAY, HIGH PI, MOIST

RESIDUAL - STIFF RED-BROWN SILTY CLAY, HIGH PI, MOIST

RESIDUAL - STIFF RED-BROWN CLAY, MOIST

MEDIUM STIFF TAN SANDY SILTY CLAY, MOIST

PROPOSED

EXISTING

DRY 5-05

-L-

SEE SHEET 14 & 15 FOR ALIGNMENT

Proj. Sample No.		SS-66	SS-67	SS-68	SS-69	SS-70	SS-71	SS-72	SS-73	SS-74
Passing #10 Sieve	%	100	100	100	100	100	100	100	100	100
Passing #40 Sieve	%	95	92	95	96	94	93	89	96	84
Passing #200 Sieve	%	83	78	82	82	80	74	67	81	71
Coarse Sand Ret - #60	%	9.1	13.4	9.7	9.5	11.1	14.4	20.0	10.1	21.6
Fine Sand Ret - #270	%	9.3	10.7	9.9	9.9	10.7	13.4	16.7	10.5	8.5
Silt 0.05 - 0.005 mm	%	7.4	5.8	10.3	14.6	12.2	20.6	30.3	9.3	12.2
Clay <0.005 mm	%	74.2	70.1	70.1	66.0	66.0	51.5	33.0	70.1	57.7
L. L.		57	63	61	61	65	71	65	55	79
P. I.		23	29	25	18	38	29	25	20	36
AASHTO Classification		A-7-5(23)	A-7-5(26)	A-7-5(24)	A-7-5(20)	A-7-6(33)	A-7-5(25)	A-7-5(18)	A-7-5(19)	A-7-5(29)
Station		165+35	165+35	168+70	168+70	172+23	172+23	172+23	175+32	175+32
		50 RT	50 RT	46 RT	46 RT	51 RT	51 RT	51 RT	51 RT	15 RT
ALIGNMENT		L	L	L	L	L	L	L	L	L
Depth (Ft)		4.30	9.30	4.60	9.60	4.20	9.20	14.20	3.60	8.60
	to	5.30	10.30	5.60	10.60	5.20	10.20	15.20	4.60	9.60
Moisture %		26.4		26.5						

BM-11 699.249
RAILROAD SPIKE 18" OAK
82.3995 FT LT OF -L- STA 168+66.02

PI = 164+80.00
EL = 708.80'
VC = 575'
K = 84
Vs = 50 mph

SS-66
MS-66
SS-67
165+35
50 RT

SS-68
MS-68
SS-69
168+70
46 RT

SS-70
SS-71
SS-72
172+23
51RT

SS-73
SS-74
CBR-2
175+23
15 RT

PI = 177+50.00
EL = 716.55'
VC = 505'
K = 85
Vs = 50 mph

(+)5.2315%

(-)1.5946%

(+)3.6887%

(-)2.2866%

RESIDUAL - STIFF RED-BROWN CLAY, MOIST

STIFF RED-BROWN SANDY CLAY, HIGH PI, MOIST

EXISTING

PROPOSED

RESIDUAL - STIFF TO VERY STIFF RED-BROWN SILTY CLAY, MOIST

RESIDUAL - STIFF TO VERY STIFF RED-BROWN SANDY SILTY CLAY, HIGH PI, MOIST

DRY 5-05

-L-

SEE SHEET 15 & 16 FOR ALIGNMENT

103.001.002/Roadway/Proj/u2510a_rdy_pro2T

Proj. Sample No.		S-75	S-76	S-77	S-78	SS-79	SS-80
Passing #10 Sieve	%	100	100	99	100	94	90
Passing #40 Sieve	%	94	91	94	92	81	78
Passing #200 Sieve	%	83	76	83	79	69	67
Coarse Sand Ret - #60	%	9.5	16.9	8.2	14.0	17.9	18.8
Fine Sand Ret - #270	%	9.7	9.3	6.8	7.6	10.5	8.4
Silt 0.05 - 0.005 mm	%	10.7	14.0	12.8	12.4	11.8	11.6
Clay <0.005 mm	%	70.1	59.8	72.2	66.0	59.8	61.2
L. L.		56	76	67	85	61	79
P. I.		28	34	27	46	25	47
AASHTO Classification		A-7-6(26)	A-7-6(30)	A-7-5(26)	A-7-5(42)	A-7-6(17)	A-7-5(32)
Station		178+25	178+25	180+68	180+68	184+65	184+65
		35 RT	35 RT	65 RT	65 RT	50 RT	50 RT
ALIGNMENT		L	L	L	L	L	L
Depth (Ft)		0.00	5.00	0.00	5.00	3.90	8.90
	to	5.00	15.00	5.00	9.00	4.90	9.90
Moisture %							

TRANSITE CONSULTING ENGINEERS, INCORPORATED
1500 Pollack Drive, Suite 6-10
Raleigh, N.C. 27609

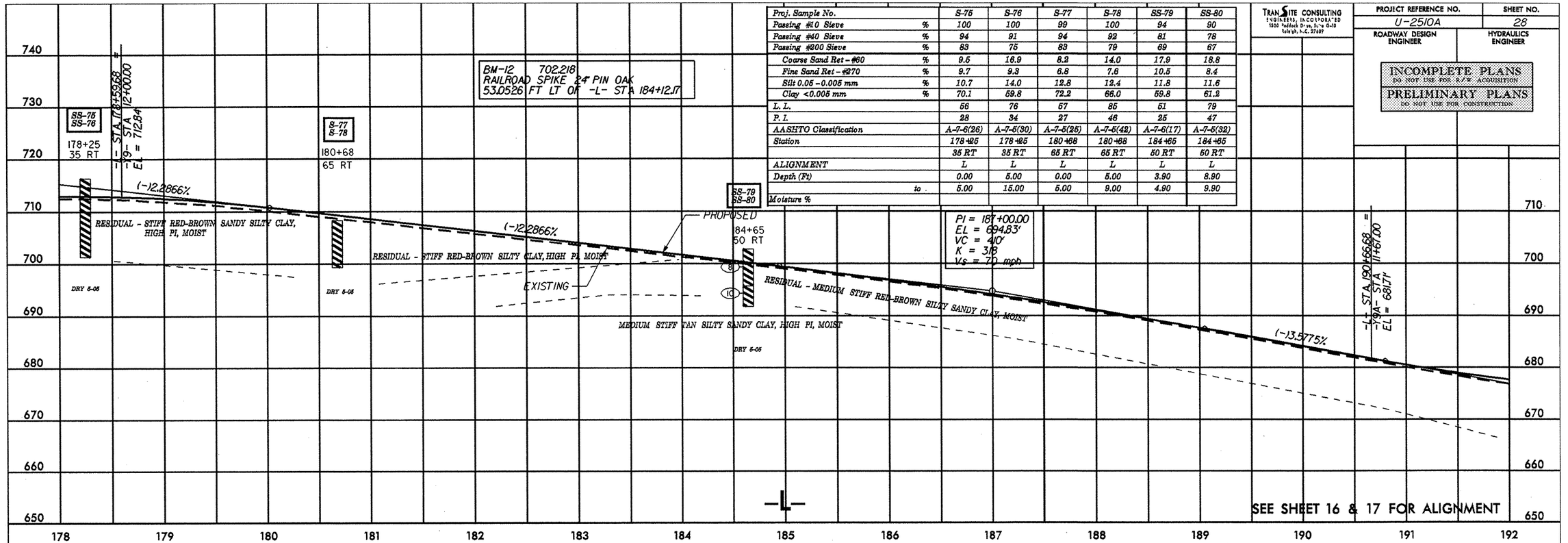
PROJECT REFERENCE NO.	SHEET NO.
U-2510A	28

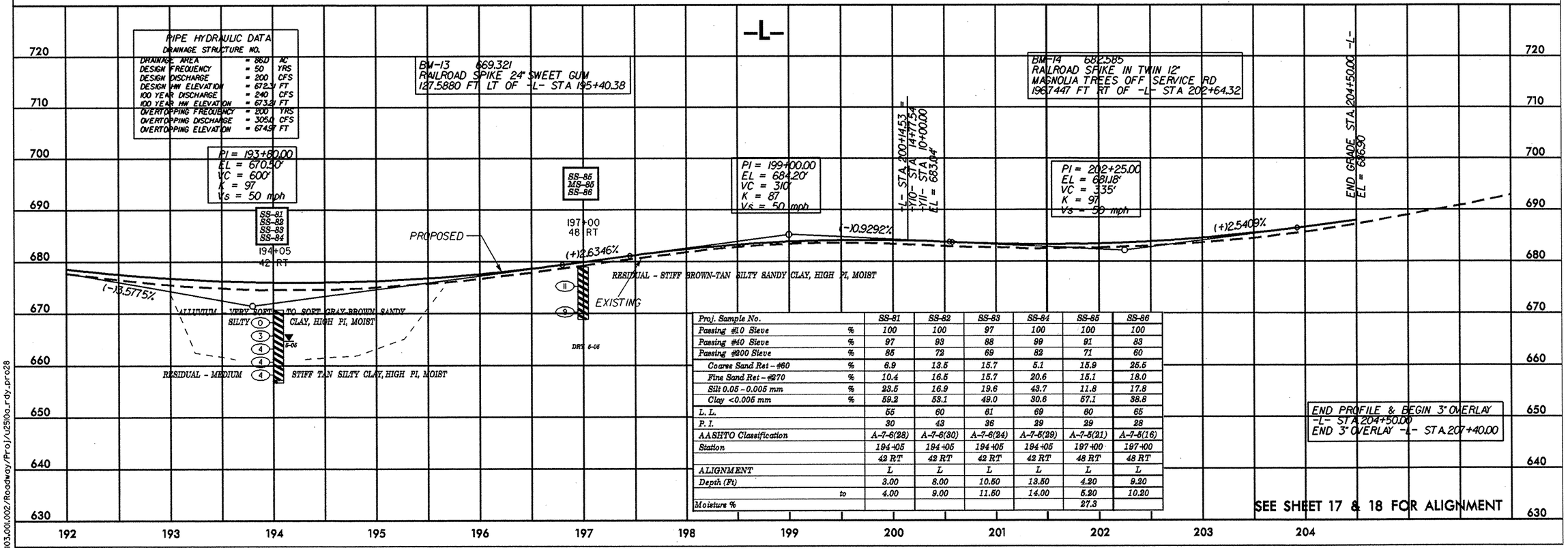
ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION





Proj. Sample No.		SS-81	SS-82	SS-83	SS-84	SS-85	SS-86
Passing #10 Sieve	%	100	100	97	100	100	100
Passing #40 Sieve	%	97	93	88	89	91	83
Passing #200 Sieve	%	85	72	69	82	71	60
Coarse Sand Ret - #60	%	6.9	13.5	15.7	5.1	15.9	25.5
Fine Sand Ret - #270	%	10.4	16.5	15.7	20.6	15.1	18.0
Silt 0.05 - 0.005 mm	%	23.5	16.9	19.6	43.7	11.8	17.8
Clay <0.005 mm	%	59.2	53.1	49.0	30.6	57.1	38.8
L. L.		55	60	61	69	60	65
P. I.		30	43	36	29	29	28
AASHTO Classification		A-7-6(28)	A-7-6(30)	A-7-6(24)	A-7-5(29)	A-7-5(21)	A-7-5(16)
Station		194+05	194+05	194+05	194+05	197+00	197+00
		42 RT	42 RT	42 RT	42 RT	48 RT	48 RT
ALIGNMENT		L	L	L	L	L	L
Depth (Ft)		3.00	8.00	10.50	13.50	4.20	9.20
	to	4.00	9.00	11.50	14.00	5.20	10.20
Moisture %						27.3	

TRANSITE CONSULTING ENGINEERS, INCORPORATED
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Raleigh, N.C. 27609

PROJECT REFERENCE NO.	SHEET NO.
U-2510A	29

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

BM-4 711.323
RAILROAD SPIKE IN BASE
OF 18" PINE
98.0645 FT LT OF -L- STA 56+62.02

BEGIN GRADE STA 10+35.27 -Y2-
EL = 717.69

END GRADE STA 12+35.00 -Y2-
EL = 719.08

PROPOSED

(+)0.6759%

02

RESIDUAL - MEDIUM STIFF TO STIFF RED-TAN SANDY SILTY CLAY, HIGH PI, MOIST

EXISTING

-Y2-

SEE SHEET 6 FOR ALIGNMENT

BM-4 711.323
RAILROAD SPIKE IN BASE
OF 18" PINE
98.0645 FT LT OF -L- STA 56+62.02

BEGIN GRADE STA 10+20.00 -Y2A-
EL = 713.12

BEGIN GRADE STA 11+35.33 -Y2A-
EL = 715.59

PROPOSED

(+)2.1417%

02

RESIDUAL - MEDIUM STIFF TAN-YELLOW SILTY SANDY CLAY, MOIST

EXISTING

-Y2A-

SEE SHEET 7 FOR ALIGNMENT

BM-5 705.490
RAILROAD SPIKE IN 24" PINE
91.6916 FT RT OF -L- STA 78+59.69

BEGIN GRADE STA 10+00.00 -Y3-
EL = 732.80

PI = 10+40.00
EL = 731.45'
VC = 70'
K = 16
Vs = 25 mph

EXISTING

(-)13.3700%

(-)17.7410%

PROPOSED

(-)13.0000%

02

RESIDUAL - MEDIUM STIFF TAN-YELLOW SILTY SANDY CLAY, MOIST

PI = 11+40.00
EL = 723.71'
VC = 125'
K = 26
Vs = 25 mph

END GRADE STA 12+08.69 -Y3-
EL = 721.65

-Y3-

SEE SHEET 8 FOR ALIGNMENT

BM-5 705.490
RAILROAD SPIKE IN 24" PINE
91.6916 FT RT OF -L- STA 78+59.69

BEGIN GRADE STA 10+70.66 -Y4-
EL = 722.18

04

L=1027.21'

(+)2.3682%

PROPOSED

PI = 11+95.00
EL = 721.65'
VC = 200'
K = 71
Vs = 40 mph

PI = 16+14.73
EL = 731.59'
VC = 400'
K = 92
Vs = 50 mph

(-)1.9615%

RESIDUAL - MEDIUM STIFF TO STIFF RED-TAN-YELLOW SANDY SILTY CLAY, MOIST

EXISTING

-Y4- STA 18+37.98 =
-Y12- STA 10+00.00
EL = 704.29

-Y4-

SEE SHEET 8 & 19 FOR ALIGNMENT

103.001.002/Roadway/Proj/u2510a_rdy_pro29

TRANSITE CONSULTING ENGINEERS, INCORPORATED
1300 Baddock Drive, Suite 6-10
Raleigh, N.C. 27609

PROJECT REFERENCE NO.	SHEET NO.
U-2510A	30

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

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

PI = 22+00.00
EL = 720.11'
VC = 150'
K = 321
Vs = 55+ mph

PI = 23+78.55
EL = 717.44'
VC = 200'
K = 312
Vs = 55+ mph

END GRADE STA 25+50.00
EL = 713.78

PROPOSED

(-)7.5615%

(-)11.4954%

(-)11.4954%

(-)12.1347%

EXISTING

RESIDUAL - MEDIUM STIFF TO STIFF RED-TAN-YELLOW SANDY SILTY CLAY MOIST

-Y4-

SEE SHEET 8 & 19 FOR ALIGNMENT

BM-7 690.308
RAILROAD SPIKE IN 12" OAK
103.2092 FT RT OF -L- STA 104+88.95

BEGIN GRADE STA 10+55.00 -Y5-
EL = 690.33

PI = 15+45.00
EL = 702.01'
VC = 250'
K = 42
Vs = 35 mph

PROPOSED

(+)2.3838%

(-)13.5670%

EXISTING

RESIDUAL - VERY STIFF RED-BROWN SILTY SANDY CLAY, HIGH PI, MOIST

PI = 19+15.00
EL = 688.81'
VC = 170'
K = 49
Vs = 35 mph

END GRADE STA 20+00.00 -Y5-
EL = 686.56

-13.5670%

(-)10.3000%

-Y5-

SEE SHEET 11 & 20 FOR ALIGNMENT

BM-52 EGB 618.400
USGS MONUMENT IN WINGWALL
OF BOX CULVERT AT COUNTY LINE
35.0435 FT LT OF -L- STA 124+86.73

BEGIN GRADE STA 10+45.75 -D1-
EL = 625.62

PI = 11+15.00
EL = 624.04'
VC = 50'
K = 10

(-)12.2758%

(-)17.2500%

BEGIN GRADE STA 12+00.00 -D1-
EL = 619.28

(-)10.0400%

PI = 11+75.00
EL = 619.68'
VC = 50'
K = 7

-D1-

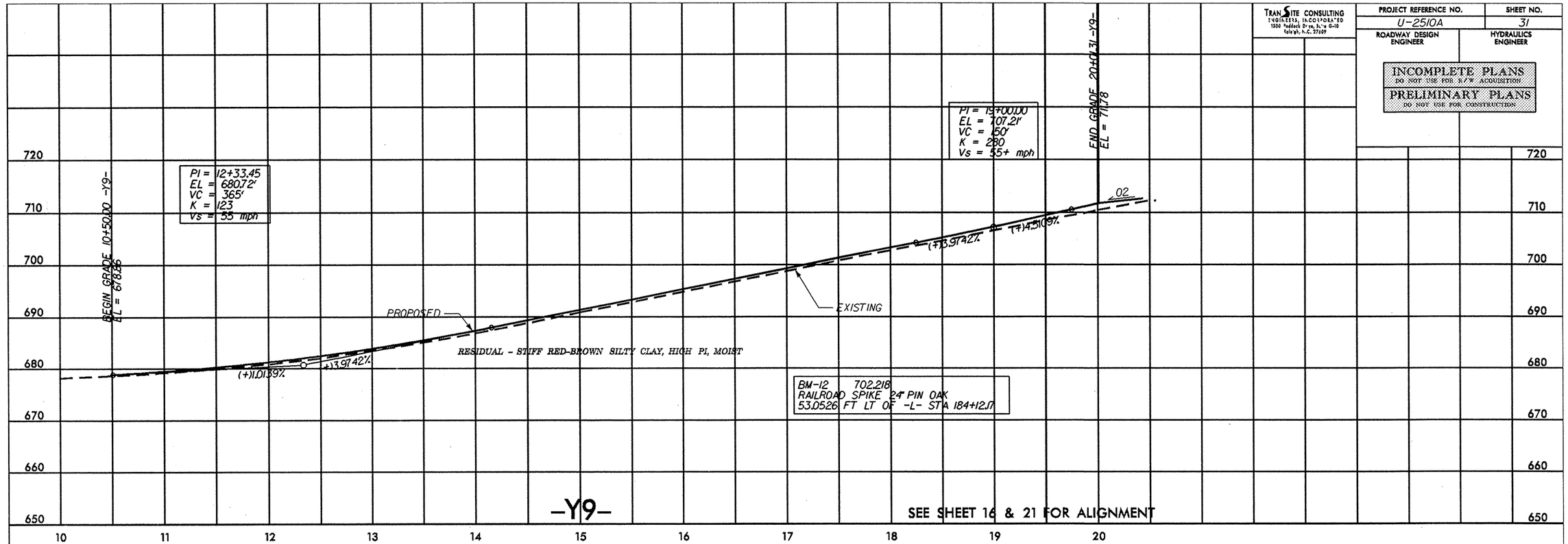
SEE SHEET 12 FOR ALIGNMENT

103.001.002/Roadway/Proj/u2510a_rdy.pr30

TRANSITE CONSULTING ENGINEERS, INCORPORATED
1500 Paddock Drive, Suite G-10
Raleigh, N.C. 27609

PROJECT REFERENCE NO.	SHEET NO.
U-2510A	31
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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



103.001.002/Roadway/Proj/u2510a_rdy.prj31