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

CONTENTS

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

ROADWAY SUBSURFACE INVESTIGATION

PROJ. REFERENCE NO. *34749.1.1 (U-0209B)* F.A. PROJ. *MAFR-FR-18-2(17)*

COUNTY *MECKLENBURG*

PROJECT DESCRIPTION *US 74 (INDEPENDENCE BLVD.)*
FROM NC 24 /27 TO IDLEWILD ROAD

INVENTORY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-0209B	1	41

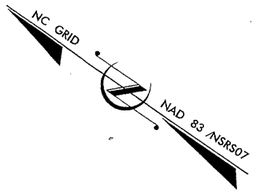
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34749.1.1	MAFR-FR-18-2(17)	P.E.
		R/W & UTIL.

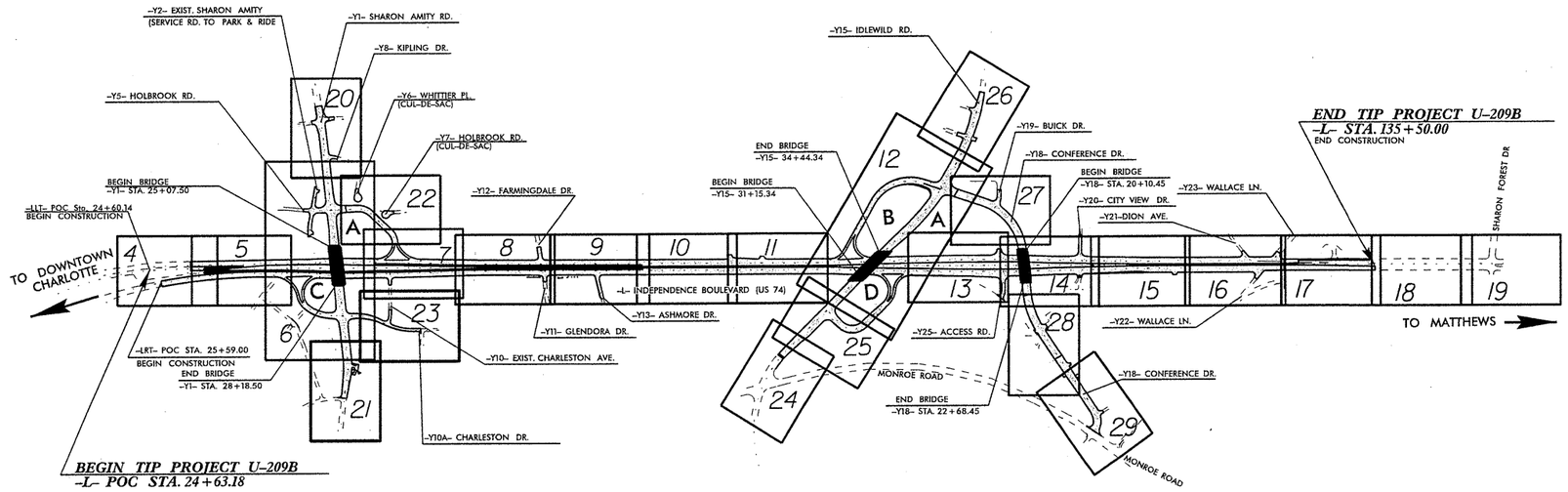
CAUTION NOTICE

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

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

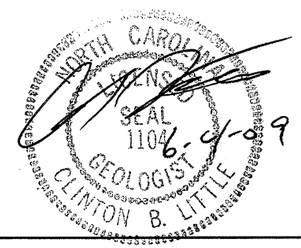
THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT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





PERSONNEL
C.C. MURRAY
J.E. ESTEP
M.R. MOORE

INVESTIGATED BY *R.Q. CALLAWAY*
CHECKED BY *C.B. LITTLE*
SUBMITTED BY *C.B. LITTLE*
DATE *JUNE 2, 2009*



DRAWN BY: *J.K. McCLURE*

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR 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: C202824

ID: U-0209B

09/08/99

TIP PROJECT: U-209B

CONTRACT:

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Standard Symbology Sheet

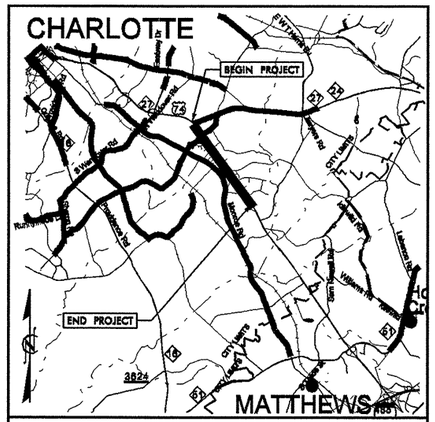
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

MECKLENBURG COUNTY

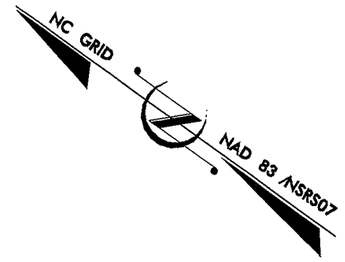
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-209B	1A	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
34749.1.1	MAFR-FR-18-2(17)	PE	

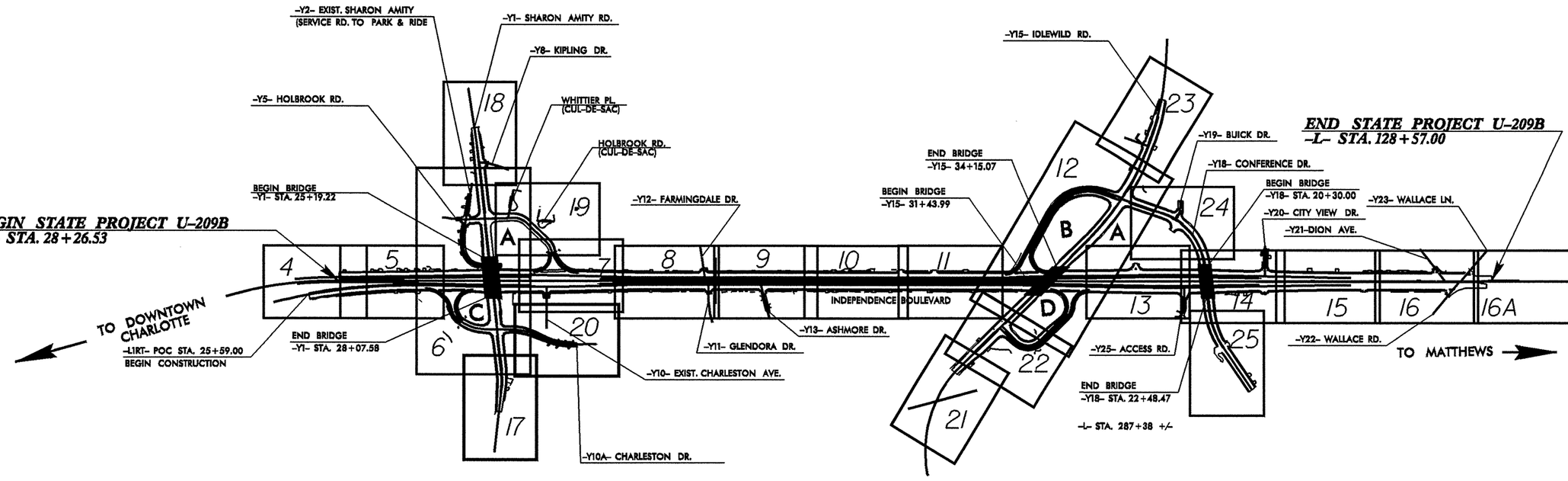
LOCATION: US 74 (INDEPENDENCE BOULEVARD) FROM NC 24/27 TO IDLEWILD ROAD

TYPE OF WORK: MILLING, WIDENING, PAVING, DRAINAGE & STRUCTURES



VICINITY MAP





CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD ___

THIS IS A PARTIAL CONTROLLED ACCESS PROJECTWITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON THE PLANS

THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF CHARLOTTE

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

GRAPHIC SCALES

30' 15' 0 30' 60'
PLANS

50' 25' 0 50' 100'
PROFILE (HORIZONTAL)

10' 5' 0 10' 20'
PROFILE (VERTICAL)

DESIGN DATA

ADT 2011 =
ADT 2021 = 133,880
DHV = 10 %
D = 60 %
T = 10 % *
V = 50 MPH
URBAN EXPRESSWAY
* TTST 4% DUAL 6%

PROJECT LENGTH

LENGTH ROADWAY STATE PROJECT 34747.1.1 = 1.90 Miles
TOTAL LENGTH STATE PROJECT 34747.1.1 = 1.90 Miles
(-L- ALIGNMENT USED FOR LENGTH CALCULATION)

PREPARED FOR NCDOT
DIVISION OF HIGHWAYS
RALEIGH, NC

NCDOT CONTACT:
CATHY HOUSER, PE – Project Engineer

Prepared In the Office of
URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: DECEMBER 19, 2008

LETTING DATE: DECEMBER 21, 2010

MICHAEL D. LINDGREN, PE
PROJECT ENGINEER

EDWARD G. EDENS, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: *P.E.*

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

25% REV. PLANS
MAY 21, 2008

PROJECT REFERENCE NO.	SHEET NO.
34749.1.1 (U-0209B)	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	50 MX											GRANULAR SOILS	SILT-CLAY SOILS	MUCK, PEAT
#40	30 MX	50 MX	51 MN											
#200	15 MX	25 MX	10 MX	35 MX	35 MX	35 MX	35 MX	36 MN	36 MN	36 MN	36 MN			
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/FT²)
GENERALLY GRANULAR MATERIAL (NON-COHESIVE)	VERY LOOSE	<4	N/A
	LOOSE	4 TO 10	
	MEDIUM DENSE	10 TO 30	
	DENSE	30 TO 50	
	VERY DENSE	>50	
GENERALLY SILT-CLAY MATERIAL (COHESIVE)	VERY SOFT	<2	<0.25
	SOFT	2 TO 4	0.25 TO 0.50
	MEDIUM STIFF	4 TO 8	0.5 TO 1.0
	STIFF	8 TO 15	1 TO 2
	VERY STIFF	15 TO 30	2 TO 4
	HARD	>30	>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
LL — LIQUID LIMIT		
PLASTIC RANGE (PI)	- 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 (RE) WITH SOIL DESCRIPTION
- SOIL SYMBOL
- ARTIFICIAL FILL (AF) 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, FRACTURES
FRAGS. - FRAGMENTS
HI. - HIGHLY
MED. - MEDIUM
MICA. - MICACEOUS
MOD. - MODERATELY
NP - NON PLASTIC
ORG. - ORGANIC
PMT - PRESSUREMETER TEST
SAP. - SAPROLITIC
SD. - SAND, SANDY
SL. - SILT, SILTY
SLI. - SLIGHTLY
TCR - TRICONE REFUSAL
#- MOISTURE CONTENT
V - VERY
VST - VANE SHEAR TEST
WEA. - WEATHERED
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
- [ ] _____
- [ ] _____

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

HAMMER TYPE:
- [X] AUTOMATIC [ ] MANUAL

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

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

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 (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK.

ROCK QUALITY DESIGNATION (RQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.

SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK.

SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS.

SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE.

STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS.

STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE.

STRATA ROCK QUALITY DESIGNATION (SRQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE.

TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.

BENCH MARK:

ELEVATION: FT.

NOTES:

REVISED 02/23/06

3

EARTHWORK BALANCE SHEET

Volumes in Cubic Yards

PROJECT: Independence Boulevard COUNTY Mecklenburg DATE 10/10/2012 SHEET 1 OF 2 SHEETS

LINE	STATION	STATION	TOTAL EXCAV. (UNCL.)	ROCK EXCAV.	UNDERCUT EXCAV.	UNSUIT. EXCAV.	SUITABLE EXCAV.	TOTAL EMB.	ROCK EMB.	UNDERCUT EMB.	EARTH EMB.	EMBANK. 20%	BORROW	SUITABLE WASTE	UNSUIT. WASTE	TOTAL WASTE
-Y1DET-	20+79.96	22+68.08	892				892							892		892
-L-(LT)	28+26.00	56+00.00	2254				2254	1894			1894	2273	19			
-Y1-	12+00.00	25+07.50	2053				2053	29622			29622	35546	33493			
		BEGIN BRIDGE														
-Y2-	9+00.00	12+91.65	40				40	1073			1073	1288	1248			
-Y5-	10+37.09	12+50.00	21				21	1792			1792	2150	2129			
-Y1LPA-	11+00.00	12+63.72	652				652	11			11	13		639		639
-Y1RPA-	11+50.00	13+14.87	417				417	14			14	17		400		400
-Y1RPAA-	12+63.72	19+35.36	3119				3119	2475			2475	2970		149		149
SUBTOTAL #1			9448				9448	36881			36881	44257	36889	2080		2080
-Y1DET-	24+33.42	33+97.62	3360				3360	4436			4436	5323	1963			
-L-(RT)	25+59.00	56+00.00	3056				3056	2503			2503	3004		52		52
-Y1-	28+18.50	38+68.00	79				79	63119			63119	75743	75664			
	END BRIDGE															
-Y10-	13+17.00	14+42.04	28				28	39			39	47	19			
-Y10A-	11+70.00	18+44.28	96				96	7910			7910	9492	9396			
-Y1LPC-	11+50.00	13+87.54	6				6	2078			2078	2494	2488			
-Y1RPC-	11+50.00	14+69.39						3437			3437	4124	4124			
-Y1RPCC-	13+87.54	16+66.63						13197			13197	15836	15836			
SUBTOTAL #2			6625				6625	96719			96719	116063	109490	52		52
-L-(LT)	56+00.00	69+25.00	1218				1218	117			117	140	0	1078		1078
SUBTOTAL #3			1218				1218	117			117	140	0	1078		1078
-L(RT)-	56+00.00	69+25.00	1246				1246	352			352	422	0	824		824
-Y13-	10+38.16	12+55.00	489				489	28			28	34	0	455		455
SUBTOTAL #4			1735				1735	380			380	456	0	1279		1279
-L-(MED)	40+00.00	44+50.00	245				245	2			2	2	0	243		243
SUBTOTAL #5			245				245	2			2	2	0	243		243
-L-(MED)	51+00.00	69+25.00	145				145	275			275	330	185			
SUBTOTAL #6			145				145	275			275	330	185			
-L-(LT)	69+25.00	99+00.00	3357				3357	2418			2418	2902	0	455		455
-Y15-	22+00.00	31+15.34	362				362	34048			34048	40858	40496			
		BEGIN BRIDGE														
-Y15LPB-	10+00.00	22+52.49	8101				8101	2978			2978	3574		4527		4527

EARTHWORK BALANCE SHEET

Volumes in Cubic Yards

PROJECT: Independence Boulevard COUNTY Mecklenburg DATE 10/10/2012 SHEET 2 OF 2 SHEETS

3A

LINE	STATION	STATION	TOTAL EXCAV. (UNCL.)	ROCK EXCAV.	UNDERCUT EXCAV.	UNSUIT. EXCAV.	SUITABLE EXCAV.	TOTAL EMB.	ROCK EMB.	UNDERCUT EMB.	EARTH EMB.	EMBANK. 20%	BORROW	SUITABLE WASTE	UNSUIT. WASTE	TOTAL WASTE
-Y15RPB-	10+00.00	22+52.49	6076				6076	4763			4763	5716		360		360
-Y19-	10+67.52	11+03.19	82				82	432			432	518	436			
-Y18-	10+50.00	20+10.45	1439				1439	39060			39060	46872	45433			
		BEGIN BRIDGE														
SUBTOTAL #7			19417				19417	83699			83699	100440	86365	5342		5342
-L-(MED)	69+25.00	99+00.00	936				936	281			281	337		599		599
SUBTOTAL #8			936				936	281			281	337		599		599
-L-(RT)	69+25.00	99+00.00	4361				4361	871			871	1045		3316		3316
-Y15-	34+44.34	51+50.00	1789				1789	52613			52613	63136	61347			
	END BRIDGE															
-Y15LPD-	10+00.00	23+32.80	2289				2289	1461			1461	1753		536		536
L/Y15LPD	92+00.00	93+25.00	332				332	5			5	6		326		326
-Y15RPD-	10+00.00	23+32.80	693				693	2250			2250	2700	2007			
SUBTOTAL #9			9464				9464	57200			57200	68640	63354	4178		4178
-L-(LT)	99+00.00	108+06.78	776				776	1864			1864	2237	1461			
-Y20-	10+00.00	11+75.00	23				23	639			639	767	744			
SUBTOTAL #10			799				799	2503			2503	3004	2205			
-L-(MED)	99+00.00	108+06.78	136				136	460			460	552	416			
SUBTOTAL #11			136				136	460			460	552	416			
-L-(RT)	99+00.00	108+06.78	3499				3499	83			83	100		3399		3399
-Y18-	22+68.45	38+00.00	1437				1437	11578			11578	13894	12457			
	END BRIDGE															
SUBTOTAL #12			4936				4936	11661			11661	13994	12457	3399		3399
-L-(LT)	108+06.78	124+35.82	1478				1478	3082			3082	3698	2220			
SUBTOTAL #13			1478				1478	3082			3082	3698	2220			
-L-(RT)	108+06.78	124+35.82	2330				2330	501			501	601		1729		1729
SUBTOTAL #14			2330				2330	501			501	601		1729		1729
PROJECT SUBTOTAL			58912				58912	293761			293761	352514	313581	19979		19979
EST SHOULDER MATERIAL								5980			5980	7176	7176			
WASTE IN LIEU OF BORROW													-19979	-19979		-19979
PROJECT TOTAL			58912				58912	299741			299741	359690	300778			
EST 5% TO REPLACE TOP SOIL ON BORROW PIT													15039			
GRAND TOTAL			58912										315817			
SAY			**59000**										**315900**			

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

***-Y15DET- EARTHWORK IS INCLUDED IN THE TOTALS FOR -Y15LPB- AND -Y15RPB-**

UNDERCUT = 40,500 CY

SHALLOW UNDERCUT = 20,000 CY

EST. DDE = 1120 CY

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

STATE PROJECT: 34749.1.1 (U-0209B)
FEDERAL PROJECT: MAFR-FR-18-2(17)
COUNTY: Mecklenburg
DESCRIPTION: US 74 (INDEPENDENCE BLVD.) FROM NC 24 / 27 TO IDLEWILD ROAD

SUBJECT: Geotechnical Report – Inventory

PROJECT DESCRIPTION

The U-209B U.S. 74 project roadway improvements will bring three travel lanes each way with a fourth turn lane at the curb, for access to bordering properties. Two lanes in the median area will connect with the established bus lanes. An area about 75' x 1000' will be established in the median below the Sharon Amity overpass. The project covers about 4.7 miles of roadway including all alignments. The high traffic Sharon Amity, Idlewild Road, and Conference Drive at-grade crossings will each be replaced with bridges over U.S. 74.

This report describes a project that will include 1.89 miles of road widening, two bridges, with ramp and loop access, to U.S. 74, and one bridge without direct access. The existing U.S. 74 was built nearly at grade, and except at the three overpasses, the widening will require roadway embankments or cuts of less than 5'.

The field investigation was conducted from June 21 2008 to July 10 2008, using a CME-550 drill machine with an automatic hammer. Standard Penetration Tests, (SPT), were performed through hollow stem augers at selected locations. Representative soil samples were collected and forwarded to the Materials and Tests Unit laboratory for soil quality analysis, moisture content and ASTM classification. The investigations for the bridges were contracted out and are not included in this report. All available drill-holes are plotted on the plan view and also appear projected into the profiles.

The following alignments, totaling 4.71 miles, were investigated.

	Line	Station			Length
	-L-	28+26	to	128+57	10,031
	-Y1LPA-	10+00		12+00	200
	-Y1RMPA –	10+00		13+00	300
	-Y1RMPAA-	12+50		19+00	650
	-Y1LPC-	10+00		13+90	390
	-Y1RMPC-	10+00		14+07	407
	-Y1RMPCC-	13+87		17+03	316
	-Y1-	13+50		38+33	2483
	-Y15-	21+50		51+90	3040
	-Y15LPB-	10+00		23+38	1338
	-Y15RMPB-	10+00		24+12	1412
	-Y15LPD-	10+00		20+32	1032
	-Y15RMPD-	10+00		20+29	1029
	-Y18-	10+38		31+88	2150
	-Y19-	10+37		11+70	133
					Total feet 24,911
					(4.71 miles)

ITEMS OF SPECIAL GEOTECHNICAL INTEREST

Highly plastic clayey residual soil: Only 4 of 131 samples returned a PI value greater than 35. Fifty three of 131 samples, returned PI values from 25 to 35 and would not be suitable for the upper 2 feet of an embankment. In general, PI decreases with depth from the original surface.

Groundwater: No consistent water table was found, but at the 24 hour reading, standing water was found at 10 boring locations in the median, between –L- 47+00CL, and –L- 121+00,Cl, within 8' of the surface.

All-weather spring fed seeps or streams: At the time of the investigation, the locations listed in the table below, had water at the surface. There is a 30" culvert near the seep, and the possibility that the seep is the consequence of a failed drainage pipe. This area is near the apex of a drainage divide, so it is unlikely that the flow into the drop is ordinary ground water.

Line	Station			Offset	comment
-Y20-	10+00	to	10+00	35 left	Open drop, from 30" culvert: 100 gpm
-Y20-	10+00	to	11+50	25 rt	Persistent seep

Planned embankment over artificial fill.
Most of the outside one or two lanes of –Llt- will fall on artificial embankment fill of unknown quality and origin.

Artificial fill settlement
The commercial property on the left side of the alignment at the beginning of the project, was built up at the back with 15' to 20' of artificial fill. A small block building at –L- 34+00, 300' left, (outside of the construction limits), is perched at the top of the fill slope. The north wall of this structure exhibits a crack typical of uneven settlement. This is a pre existing condition, and is not a consequence of future construction.

Wet soil.
Drainage of Independence Boulevard is from the right side parking lots to RCP to drops in the right gutter, then underground to drops in the center island, then underground to the left side, then RCP to off of the project on the left. Either from failures in this drainage system or from natural groundwater, water was noted within 5' of the surface in 24 hour water readings throughout the project. Areas of wet soil below the existing pavement should be expected.

PHYSIOGRAPHY AND GEOLOGY

Physiography
The project is in the Piedmont Physiographic Province, between the Coastal Plain and the Blue Ridge Provinces. The Piedmont has the form of a smooth plane, inclined from the Blue Ridge Front to the Fall Line, that has been dissected by stream valleys that may have 100' of elevation difference in a half mile. Relief within this U-0209B project is from a high of 760' elevation near the beginning of the project to 735' at the end. Where Independence Boulevard crosses McAlpine Creek, about 7,000' beyond the project, the elevation drops to 660'. The low point in southern Mecklenburg County is about elevation 520'.

Geology
Throughout North Carolina the geologic provinces run northeast – southwest and are divided on the basis of metamorphic grade or dominant rock type. This project is entirely within the Charlotte Belt, an agglomeration of igneous rock which extends from the South Carolina border to near Statesville. Specifically, it is in a unit mapped as Czv: Volcanic rock, Cambrian age, (500 to 570 mya)

This highway project runs generally northwest so it traverses the geology at almost right angles to the regional trend. This may be reflected in the northeast southwest trend of the major Mecklenburg county streams, and the intervening divides.

Soil Properties
The soil types found in the investigation of this project are residual, embankment fill, or alluvial soil.

Residual soil is a product of in-place chemical weathering of the original rock. Chemical weathering usually reduces rock strength making it more susceptible to erosion, transport and removal by natural physical processes. The borings for the Albemarle Road Bridge at the beginning of the project, elevation 760' found over 50' of soil. The borings at the end of the project, elevation 737', found rock within 5 feet of the surface.

Alluvial Soil: Occurrences of alluvial soil were recorded and are plotted on the profiles. I have no explanation for this unless they are remnant terrace deposits. Samples from the alluvial sections do not differ much from the residual or embankment soil in composition or hardness.

Fill, Roadway Embankment, Artificial Fill Soil: Construction may require fill or excavation of soil to bring the natural ground surface to the desired elevation. When soil is transported to a new site and compacted it is fill soil. If it is handled under the standards of the NCDOT, it becomes Roadway Embankment. If some other entity is responsible for the fill placement, it is Artificial Fill. On this project, the fill soil properties are similar to those of the residual soil, except according to the tests, the fill properties are more uniform and "better" than that of the residual soil.

Rock Properties
In the last 1000' of –L-, rock was identified less than 10' below grade, though not in outcrop. This rock will not be involved in the cut sections and no water was measured in the borings that ended on rock.

Groundwater Properties
As mentioned above, water was found within 5' of the surface in many of the borings at the 24 hour reading. Because the entire project is on a drainage divide, normally it would be presumed to be an area of hydrologic recharge, rather than discharge. The project area has at least 50% impermeable surface and runoff from most of it is directed into storm drains.

GEOTECHNICAL DESCRIPTIVE ANALYSIS

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

Segment 1: The –L- alignment from –L- 28+26.23, including sections split into –Llft_ and –Lrt-, to the end of the project at –L- 128+57.

Segment 2: Sharon Amity interchange including ramps, loops and access roads.

Segment 3: Idlewild Road and Conference Drive interchanges including ramps, loops access roads.

Segment 1: The –L- alignment from –L- 28+26.23, including sections split into –Llft_ and –Lrt -, to the end of the project at –L- 128+57.

Physical Description

This segment includes the area covered by existing Independence Boulevard, and the extended project limits left and right.

-L-

This segment is mapped in plan on sheets 4 through 16 and 16A, and profile sheets 26 through 30. No cross sections were printed for this report. The –L- alignment begins at station 28+26.33, elevation 771, climbs to elevation 774 at station 35+51, and then descends to elevation 754 at station –L-56+39. From there, the road climbs back to elevation 764 at station 75+25, then drops to 734.8' elevation at station 109+55. The final climb is to elevation 742 at station 124 + 50, and the project ends at station 127+ 15 and elevation 740.56.

Center Bus Lanes

The barriers isolating the center lanes begin at –L- 28+80, separated by 27', two travel lanes. The median area expands to 34' at –L-35+00, then 48' at -L-38+00, finally at –L-41+00 the median area is 62' wide, and the active bus lanes are shifted against the center concrete barrier. There is a reference on the plans to "Cats Station Area" at –L- 43+50, and a center barrier appears, and then at 45+00 the outer barriers disappear, allowing access between the center lanes and the regular Independence Boulevard travel lanes. At – L-49+00 a merge lane enters the median from –Llt, and a lane departs the median from –lrt-. At 51+00 concrete barriers isolating one bus lane each way begin. The center barrier is dropped at –L- 50+00. The two isolated median bus lanes continue to –L-86+00.

From –L-86+00, the median tapers out as above, until it is 65' wide at –L-98+00, only the travel lanes are against the outside barriers. From –L-102+00, the median area narrows until at –L-108+00 it is 47' wide, an interior barrier appears, and the two outside barriers end. There is a painted merge taper up to –L- 115+00. No mention of a "Cats Station Area" is made on the plans, though an area for future development is established.

Regular Travel Lanes

As mentioned above, there will be 3 regular travel lanes each direction and a curb lane that will provide access to the existing properties along Independence Boulevard. The outside lane pinches out at 120+00 on the right and tapers in at 125+00 on the right. The only discontinuities in the curb lane occur in the interval between the exit loops and the on ramps at the two major interchanges: -Lrt-36+00 to 39+00, -Llt- 46+00 to 49+00, -Llft 87+00 to 90+00, -Lrt-90+00 to 93+00.

Geology

With the exception on a narrow planting strip adjacent to the bordering sidewalks, this segment is nearly all covered by pavement. From the borings, we have determined the area is underlain by residual soil, showing evidence of thinning toward the end of the project.

Cuts and Fills

The existing ground line at –L-CL follows the median, which is up to 2' lower than the paved lanes. The planned road has no median; so apparently, the new paved surface will be at an elevation similar to the existing pavement. The segment will push out at least one lane width on each side. The majority of the right side will involve some cut, and the majority of the left side will involve some fill. The existing roadway will probably be undercut throughout.

Soil

From the geotechnical borings completed in the grassed median, this segment is mostly underlain by soil classified as AASHTO A-7, lesser amounts of A-6, and 15 of 131 samples A-4 and A-5. The field classification of the soil included residual, roadway embankment, and alluvium. The soil identified as roadway embankment was less likely to have the highest PI values which are typical of red cap clays. The residual soil had the greatest variation in PI values, reflecting the greatest range depth of origin, (surface to 20' below surface). The alluvium most resembled the residual soil.

Rock

Rock is estimated to be at 50' depth at the beginning of the project, and as indicated by auger refusal, is at less than 10' at the end of the project. It will not be a factor in this segment.

Groundwater

At the 24 hour reading, standing water was found at 10 boring locations in the median, between –L-47+00CL, and –L- 121+00,Cl, within 8' of the surface. Most of the residual soil is rich in clay and should have very poor permeability. The only place an aquifer might exist is in the rock borings between 122+00 and the end of the project at –L- 128+00. None of the borings in this area were wet.

Geologic Hazards

Wet Soil: The AASHTO soil types found in this area, (A-6 and A-7 clayey soil), have the characteristic that once wet, they do not dry easily. Clay soil can have a high maximum density, but the optimum water content usually falls in a narrow range.

Artificial Fill: By inspection, some areas of the left side of the road widening will land on artificial fill at the fringes of the commercial property there. The quality and compaction of this fill will have to be verified before acceptance into the sub grade of the finished road.

Segment 2. Sharon Amity interchange including ramps, loops and access roads.

Physical Description
This segment of the job is new construction, mostly on new location. Plan sheets 6, 7, 8, 17, 18, 19, 20, and profile sheets 31 through 35 cover the segment. Alignments include Y1LPA-, -Y1RMPA –, Y1RMPAA-, -Y1LPC-, -Y1RMPC-, -Y1RMPCC-, -Y1-, -Y5-, -Y6-, -Y7-, -Y8-, -Y10A-, and -Y10-.

Sharon Amity, (-Y1-) will cross over Independence Blvd, (-L-) on a bridge, approximately 150' up line from the present location, (-L- 40+00 to 41+50). Y1RPC- and –Y1LPC- will provide access to the right side of –L- from the right side of -Y1-. Y1RMPC becomes 2 lanes and changes into Y1RMPCC before intersecting –Y1-. Alignment –Y10A- is opposite Y1RMPCC, across -Y1-and provides access to the area currently served by Charleston Drive.

Y1LPC- and –Y1RMPC- will provide access to the left side of –L- from the left side of -Y1-. Alignment -Y1LPA- merges with –L- at about –L-45+00. This loop encloses an area that is approximately 380' x 420'. At –L- 49+00, Ramp -Y1RMPA-departs –L- then bifurcates, and becomes Y1RMPAA- before intersecting –Y- left side. The leg opposite -Y1RMPAA- , (across -Y1-), is Y5-, (Holbrook Ave). Part of the present Sharon Amity Holbrook Ave intersection is preserved as a two lane –Y2- on both sides of Holbrook. Alignment –Y2- runs parallel to –Y1- towards –L-, then crosses under the bridge and stops at the area enclosed by –Y1LPA-.

Geology
This segment is on residual soil 50' thick or thicker, that is currently completely covered with urban development.

Cuts and Fills
The significant fills on this segment are the bridge approach ramps with up to 25' of fill. No cut of any consequence is planned.

Soil
The soil is red, A-7 or A-6 residual, alluvial, or fill soil, most likely all derived from the residual soil. The existing Holbrook Avenue – Sharon Amity intersection is at the head of a topographic low 600' across with 40' relief draining to the northwest. This area was probably filled during the Sharon Amity construction, but it will not be disturbed by this project.

Groundwater
Standing water was not measured in any of the borings on this segment.

Wet weather and persistent streams
The topographic feature mentioned in "Soil", just above, drains the area northeast of Independence Boulevard, and northwest of Sharon Amity.

Segment 3: Idlewild Road and Conference Drive interchanges including ramps, loops access roads.

Physical Description
This segment of the job includes new construction, mostly on existing alignment, (Y-15 bridge approaches), and construction on new location. Plan sheets 12, 13, 14, 21, 22, 23, 24, 25, and profile sheets 35 through 39 cover the segment. Alignments include -Y15-, -Y15LPB-, -Y15RMPB-, -Y15LPD-, -Y15RMPD-, -Y18-, -Y19-, and –Y20-.

Idlewild road, (-Y15-), will cross over Independence Blvd, (-L-) on a bridge at the present location, (-L- 90+00). Alignments –Y15LPD- and Y15RPD provide access to the right side of –L- from the right side of –Y15-, (at –Y15- 27+00), 400' back from the bridge.

Y15RPB- and –Y15LPB- will provide access to the left side of –L- from the left side of -Y15- intersecting –Y15- at 42+47, 800' back from the bridge. Alignment –Y18-, (new alignment Conference Drive) is opposite Y15RMPB / Y15LPB, across -Y15-.

Conference Drive, (Y-18) which now dead ends into Independence Blvd at -L-102+00, will cross on a bridge at –L-103+00 then continue 1000' to intersect with Idlewild Road, (-Y-15-), ultimately giving Conference Drive protected access to –Llft-, and -Lrt-. In the opposite direction Conference Drive rejoins the original alignment at -Y18- 27+50.

Soil
The soil is red, A-7 or A-6 residual, alluvial, or fill soil, most likely all derived from the residual soil. Excessive settlement is not anticipated.

Groundwater
Standing water was not measured in any of the borings on this segment.

Respectfully Submitted

Joe Price

Roger Q Callaway, L.G.

PROJECT REFERENCE NO.	SHEET NO.
U-209B	4

R/W SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

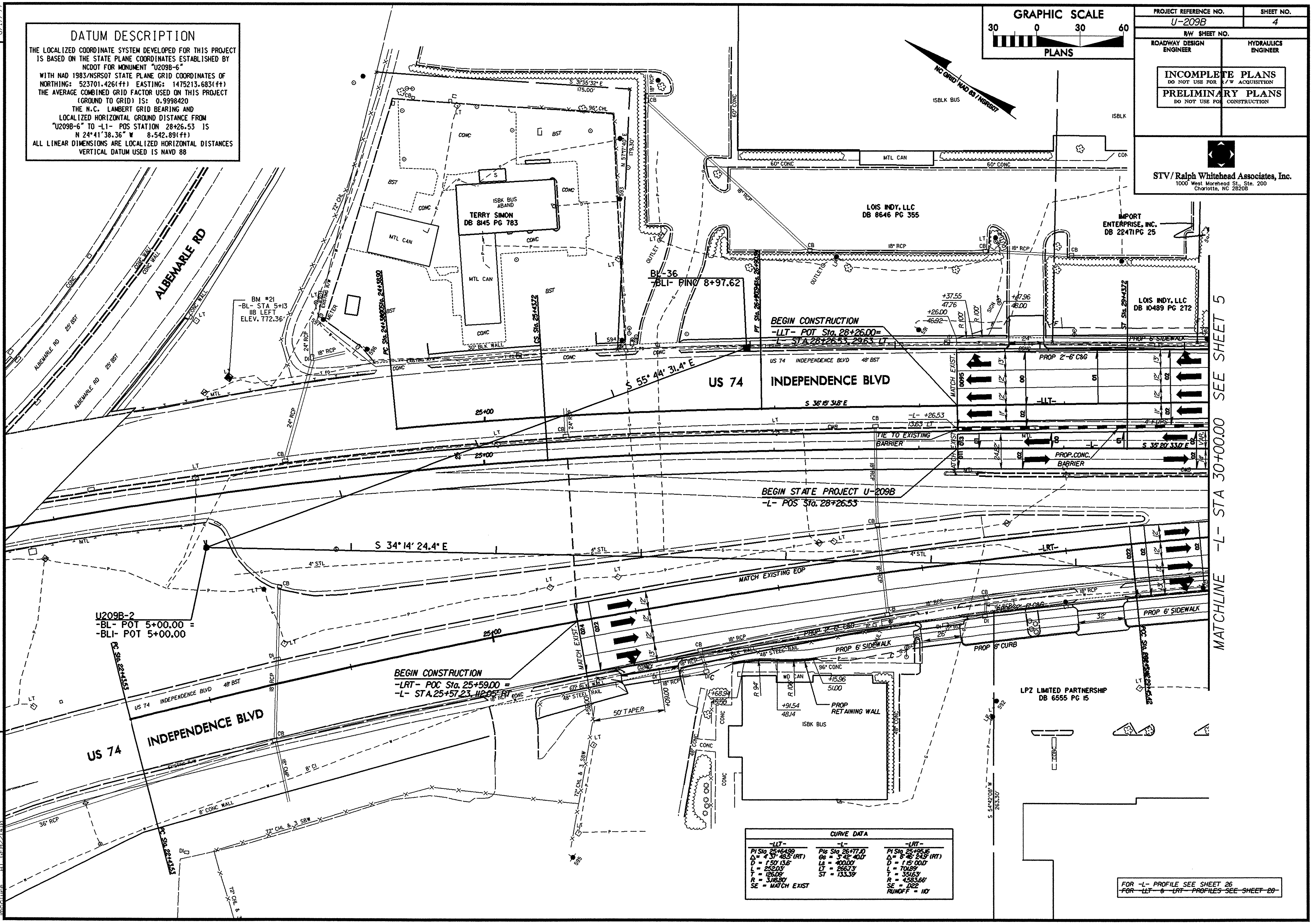
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

STV/ Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "U209B-6"
WITH NAD 1983/NSRS07 STATE PLANE GRID COORDINATES OF NORTHING: 523701.426(ft) EASTING: 1475213.683(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998420
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "U209B-6" TO -L1- POS STATION 28+26.53 IS N 24°41'38.36" W 8,542.89(ft)
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88



CURVE DATA		
-LLT-	-L-	-LRT-
PI Sta 25+64.99	PIs Sta 26+77.10	PI Sta 25+95.16
Δ = 4° 37' 48.5" (RT)	θs = 3° 42' 40.0"	Δ = 8° 46' 24.9" (RT)
D = 1° 50' 13.6"	Ls = 400.00'	D = 1° 15' 00.0"
L = 252.03'	LT = 266.73'	L = 701.89'
T = 126.09'	ST = 133.39'	T = 351.63'
R = 3,116.80'		R = 4,583.66'
SE = MATCH EXIST		SE = .022
		RUNOFF = 110'

FOR -L- PROFILE SEE SHEET 26
~~FOR -LLT- & -LRT- PROFILES SEE SHEET 28~~

8/17/99

19-AUG-2008 11:23
d:\projects\U0209b_geo_rdwy_mecklenburg\cadd\geotech\planprof\U0209b_GEO_inv_004.dgn

8/17/99

REVISIONS

GRAPHIC SCALE
30 0 30 60
PLANS

PROJECT REFERENCE NO.	SHEET NO.
U-209B	5
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

STV/Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208

NC GRID NAD 83 / NSRS07

MATCHLINE -L- STA 30+00.00 SEE SHEET 4

MATCHLINE -L- STA 35+50.00 SEE SHEET 6

US 74 INDEPENDENCE BLVD

IMPORT ENTERPRISE, INC. DB 22471 PG 25

ISBK BUS ABAND

GUY PROPERTIES DB 10371 PG 772

2SBLK BUS

HELEN BALAOURAS DB 21366 PG 430

ISBK BUS

JAR INVESTMENT, LLC. DB 18888 PG 506

ISBUS

BL-35
-BLI- PINC 15+93.04

S 35° 11' 18.3" E

S 36°15'34.8" E

S 35°20'33.0" E

S 36° 42' 50.2" E

N 54°10'41" E 300.04'

BL-7
-BL- PINC 13+44.59

LPZ LIMITED PARTNERSHIP DB 6555 PG 15

BL-8
-BL- PINC 17+33.15 =
-BY- POT 5+00.00

CITY OF CHARLOTTE DB 11964 PG 381

BM #1
-BL- STA 15+43
37 RIGHT
ELEV. 772.05'

S 54°57'06" W 305.16'

S 35°07'45" E 123.32'

BY-37
-BY- PINC 7+17.79 =
-BY4- POT 5+00.00

LANIER AVE

B.V. BELK INVESTMENTS DB 2669 PG 892

GWYNNE AVE

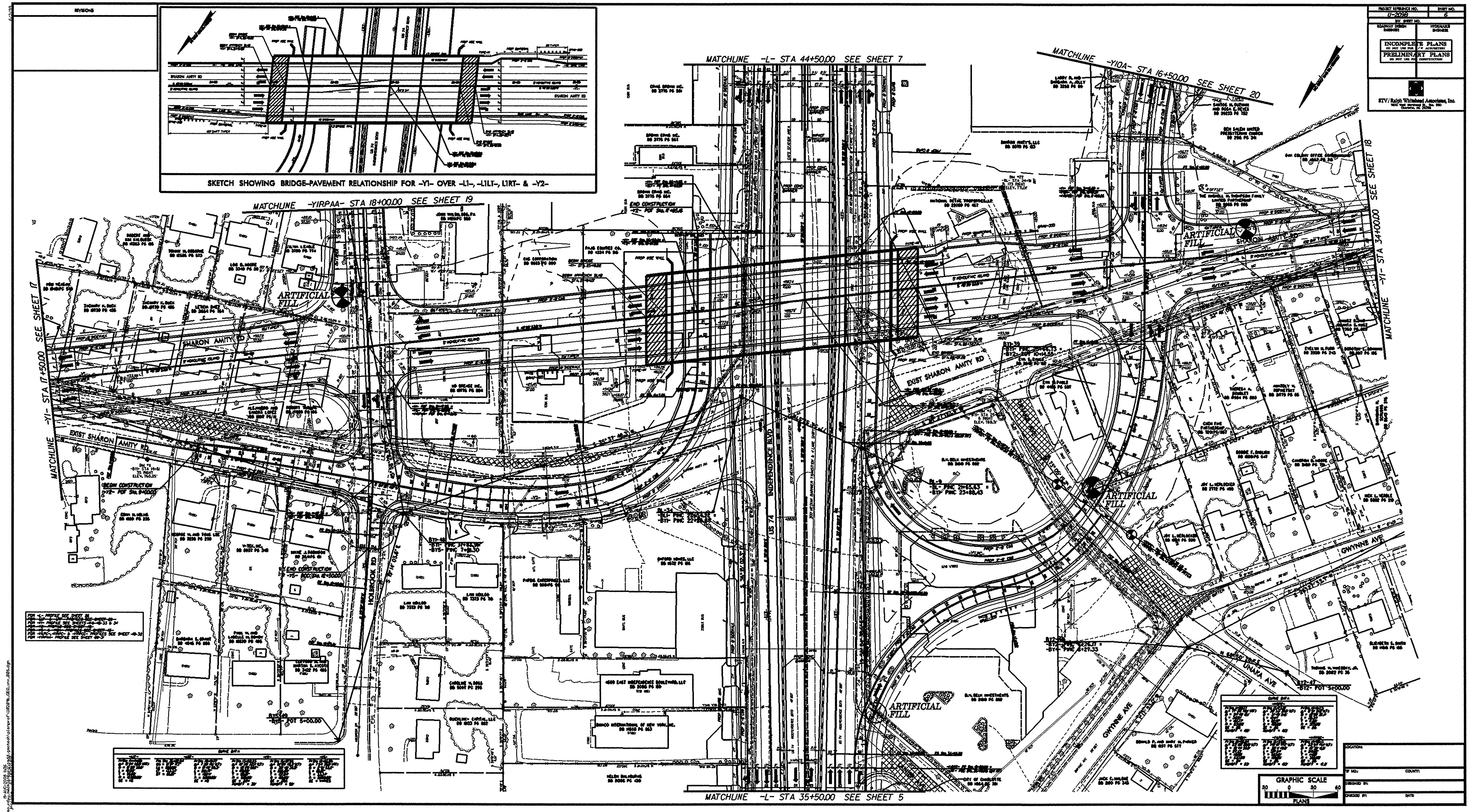
N 71° 31' 05.7" W

JACK C. MALONE DB 2190 PG 343

CURVE DATA
-LRT-
PI Sta 32+70.82
Δ = 6°12'30.8" (RT)
D = 0°51'17.7"
L = 650.16'
T = 325.40'
R = 6,000.00'
SE = RC

FOR -L- PROFILE SEE SHEET 26
~~FOR LLT & LRT PROFILES SEE SHEETS 28 & 29~~

19-AUG-2008 11:31
d:\projects\2209b_geo_dwg-mecklenburg\cadd_geotech\planpro\U0209b_GEO_inv_005.dgn


REVISIONS
SKETCH SHOWING BRIDGE-PAVEMENT RELATIONSHIP FOR -Y1- OVER -L1-, -L1LT-, L1RT- & -Y2-
INCOMPLETE PLANS
PRELIMINARY PLANS
STV/Ralph Whitehead Associates, Inc.
MATCHLINE -L- STA 44+50.00 SEE SHEET 7
MATCHLINE -Y10A- STA 16+50.00 SEE SHEET 20
MATCHLINE -Y1RPAA- STA 18+00.00 SEE SHEET 19
MATCHLINE -Y1- STA 17+50.00 SEE SHEET 17
MATCHLINE -Y1- STA 34+00.00 SEE SHEET 18
MATCHLINE -L- STA 35+50.00 SEE SHEET 5
SHARON AMITY RD
EXIST SHARON AMITY RD
INDEPENDENCE BLVD
US 74
HOLBROOK RD
GWYNNE AVE
UNAMA AVE
ARTIFICIAL FILL
ARTIFICIAL FILL
ARTIFICIAL FILL
ARTIFICIAL FILL
END CONSTRUCTION
BEGIN CONSTRUCTION
GRAPHIC SCALE
PLANS

PROJECT REFERENCE NO.	SHEET NO.
U-209B	7

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

STV / Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208

CURVE DATA	
-LLT-	-LRT-
PI Sta 46+20.86	PI Sta 46+20.86
Δ = 1° 20' 16.2" (RT)	Δ = 1° 20' 16.2" (LT)
D = 0° 28' 38.9"	D = 0° 28' 38.9"
L = 280.19'	L = 280.19'
T = 140.10'	T = 140.10'
R = 12,000.00'	R = 12,000.00'
SE = NC	SE = NC
-YILPA-	-YIRPA-
PI Sta 11+81.11	PI Sta 11+87.39
Δ = 100° 44' 04.7" (LT)	Δ = 78° 05' 52.6" (RT)
D = 38° 11' 49.9"	D = 24° 48' 12.5"
L = 263.72'	L = 314.87'
T = 181.11'	T = 187.39'
R = 150.00'	R = 231.00'
SE = .06	SE = .06
RUNOFF = 103'	RUNOFF = 109'

FOR -L- PROFILE SEE SHEET 27
~~FOR -LLT- & -LRT- PROFILES SEE SHEETS 29 & 30~~
~~FOR -Y10- PROFILE SEE SHEET 44~~
FOR -YILPA- ,-YIRPA- & -YIRPAA- PROFILES SEE SHEET ~~39~~ 31

REVISIONS

8/17/99

19-AUG-2008 11:39
d:\projects\u0209b_geo_rdwy_mecklenburg\cadd_geotech\planprof\U0209b_GEO_inv_007.dgn

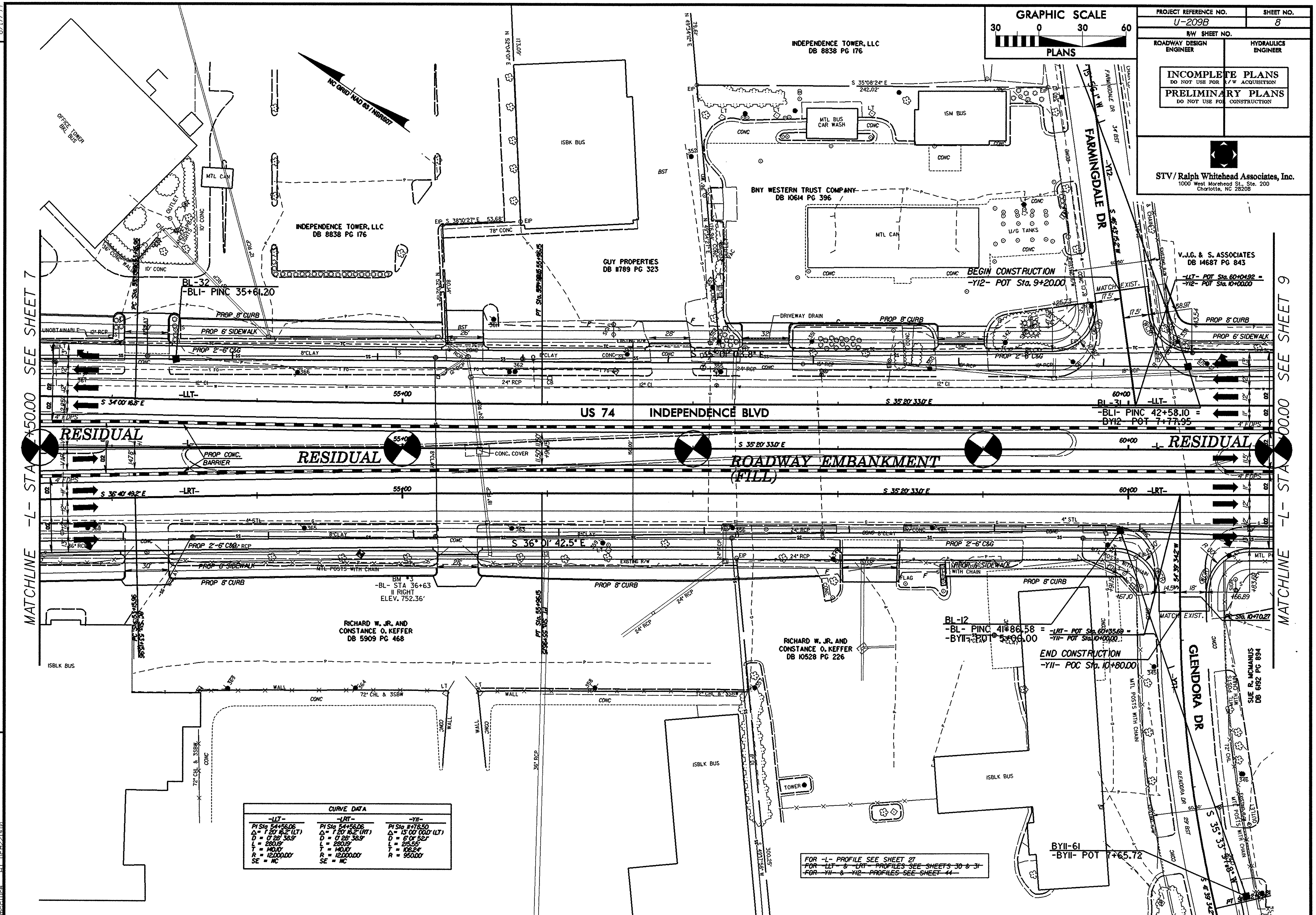
PROJECT REFERENCE NO.	SHEET NO.
U-209B	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

STV/ Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208

GRAPHIC SCALE
30 0 30 60
PLANS



US 74 INDEPENDENCE BLVD
RESIDUAL
ROADWAY EMBANKMENT (FILL)
MATCHLINE -L- STA 50+00 SEE SHEET 7
MATCHLINE -L- STA 60+00 SEE SHEET 9
FARMINGDALE DR
GLENDORA DR
INDEPENDENCE TOWER, LLC DB 8838 PG 176
GUY PROPERTIES DB 11789 PG 323
BNY WESTERN TRUST COMPANY DB 10614 PG 396
V.J.G. & S. ASSOCIATES DB 14687 PG 843
RICHARD W. JR. AND CONSTANCE O. KEFFER DB 5909 PG 468
RICHARD W. JR. AND CONSTANCE O. KEFFER DB 10528 PG 226
SUE R. MCMANUS DB 6192 PG 894
BEGIN CONSTRUCTION -Y12- POT Sta. 9+20.00
END CONSTRUCTION -Y11- POC Sta. 10+80.00
BL-32 -BL1- PINC 35+61.20
BL-31 -BL1- PINC 42+58.10 = -BY12- POT 7+77.95
BL-12 -BL- PINC 41+86.58 = -BY11- POT 5+06.00
BY11-61 -BY11- POT 7+65.72
BM #3 -BL- STA 36+63 11 RIGHT ELEV. 752.36'
PROP 8" CURB
PROP 6' SIDEWALK
PROP 2'-6" C&G
PROP CONC. BARRIER
NC GRID NAD 83 / NSRS07

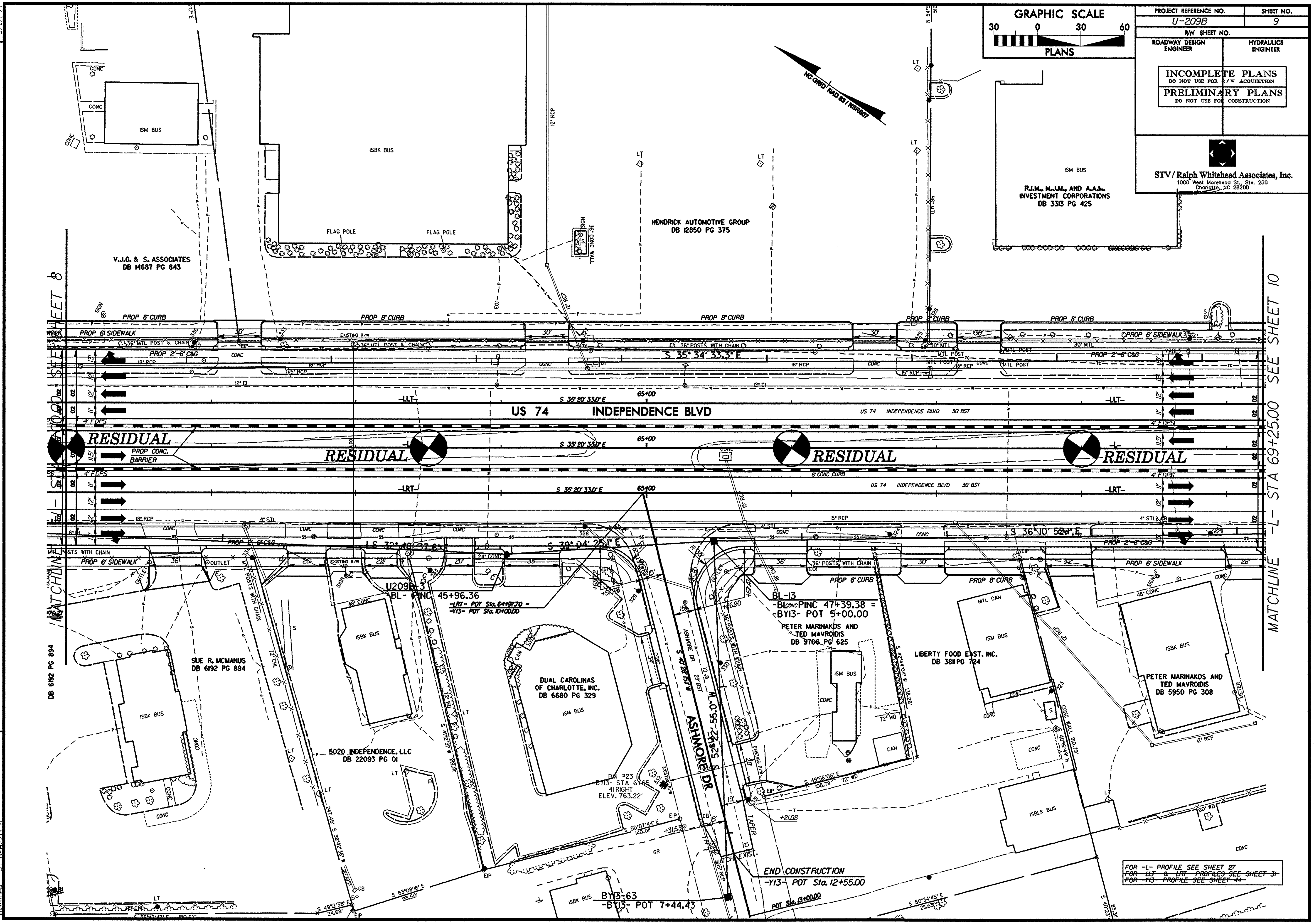
CURVE DATA		
-LLT-	-LRT-	-Y11-
PI Sta 54+56.06	PI Sta 54+56.06	PI Sta 11+78.50
Δ = 1° 20' 16.2" (LT)	Δ = 1° 20' 16.2" (RT)	Δ = 13° 00' 00.0" (LT)
D = 0° 28' 38.9"	D = 0° 28' 38.9"	D = 6° 01' 52.1"
L = 280.19'	L = 280.19'	L = 215.55'
T = 140.10'	T = 140.10'	T = 108.24'
R = 12,000.00'	R = 12,000.00'	R = 950.00'
SE = NC	SE = NC	

FOR -L- PROFILE SEE SHEET 27
~~FOR -LLT- & -LRT- PROFILES SEE SHEETS 30 & 31~~
~~FOR -Y11- & -Y12- PROFILES SEE SHEET 44~~

REVISIONS

8/17/99

19-AUG-2008 11:40
d:\projects\u0209b_geo_rdwy_mecklenburg\cadd_geotech\planprof\U0209b_GEO_inv_008.dgn



GRAPHIC SCALE
30 0 30 60
PLANS
PROJECT REFERENCE NO. U-209B
SHEET NO. 9
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
STV / Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208
NC GRID NAD 83 / NSRS07
REVISIONS
8/17/99
ISM BUS
ISBK BUS
FLAG POLE
V.J.C. & S. ASSOCIATES
DB 14687 PG 843
HENDRICK AUTOMOTIVE GROUP
DB 12850 PG 375
R.I.M., M.J.M., AND A.A.L. INVESTMENT CORPORATIONS
DB 3313 PG 425
PROP 8" CURB
PROP 6' SIDEWALK
PROP 2'-6" C&G
S 35° 34' 33.3" E
US 74 INDEPENDENCE BLVD
RESIDUAL
PROP CONC. BARRIER
-LLT-
-LRT-
65+00
S 35° 20' 33.0" E
MATCHLINE -L- STA 69+25.00 SEE SHEET 10
MATCHLINE SEE SHEET 8
S 32° 40' 37.6" E
S 39° 04' 25.1" E
S 36° 10' 52.4" E
U209B-3
-BL- PINC 45+96.36
-LRT- POT Sta. 64+57.70 =
-Y13- POT Sta. 10+00.00
BL-13
-BL- PINC 47+39.38 =
-BY13- POT 5+00.00
SUE R. MCMANUS
DB 6192 PG 894
5020 INDEPENDENCE, LLC
DB 22093 PG 01
DUAL CAROLINAS OF CHARLOTTE, INC.
DB 6680 PG 329
PETER MARINAKOS AND TED MAVROIDIS
DB 9706 PG 625
LIBERTY FOOD EAST, INC.
DB 3811 PG 724
PETER MARINAKOS AND TED MAVROIDIS
DB 5950 PG 308
ASHMORE DR
BM #23
BY13- STA 6+65
41 RIGHT
ELEV. 763.22'
END CONSTRUCTION
-Y13- POT Sta. 12+55.00
BY13-63
-BY13- POT 7+44.43
FOR -L- PROFILE SEE SHEET 27
FOR -LLT- & -LRT- PROFILES SEE SHEET 31
FOR -Y13- PROFILE SEE SHEET 44
19-AUG-2008 11:42

5/14/99

GRAPHIC SCALE
30 0 30 60
PLANS

PROJECT REFERENCE NO.	SHEET NO.
U-209B	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

Prepared by
URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415

MATCHLINE -L- STA. 69+25.00 - SEE SHEET 9

MATCHLINE -L- STA. 77+25.00 - SEE SHEET 11

NC GRID NAD 83 (NSRS2007)

R.I.M., M.J.M., AND A.A.M. INVESTMENT CORPORATIONS
DB 3313 PG 425

BOROUGH LAND LIMITED PARTNERSHIP
DB 6180 PG 290

B. V. BELK, JR
DB 7109 PG 774

SHAW REALITY INVESTMENTS I
DB 4651PG 911

PETER MARINAKOS AND TED MAVRODIS
DB 5950 PG 308

RONALD B. SR. AND ANNE M. GRIFFIN
DB 4834 PG 176

DOROTHY H. MARSHALL ET AL
DB 3664 PG 809

SIDNEY, LEVIN, AND JEROME L. LEVIN
DB 3753 PG 609

READ TULL ET AL
DB 2303 PG 55

BL-30
-BLI- POT 53+29.12

BL-14
-BL- PINC 51+36.45 =
-BY14- POT 55+00.00

BL-15
-BL- PINC 59+02.52

BY14-64
-BY14- PINC 7+20.21

US 74 INDEPENDENCE BLVD

ROADWAY EMBANKMENT (FILL)

RESIDUAL

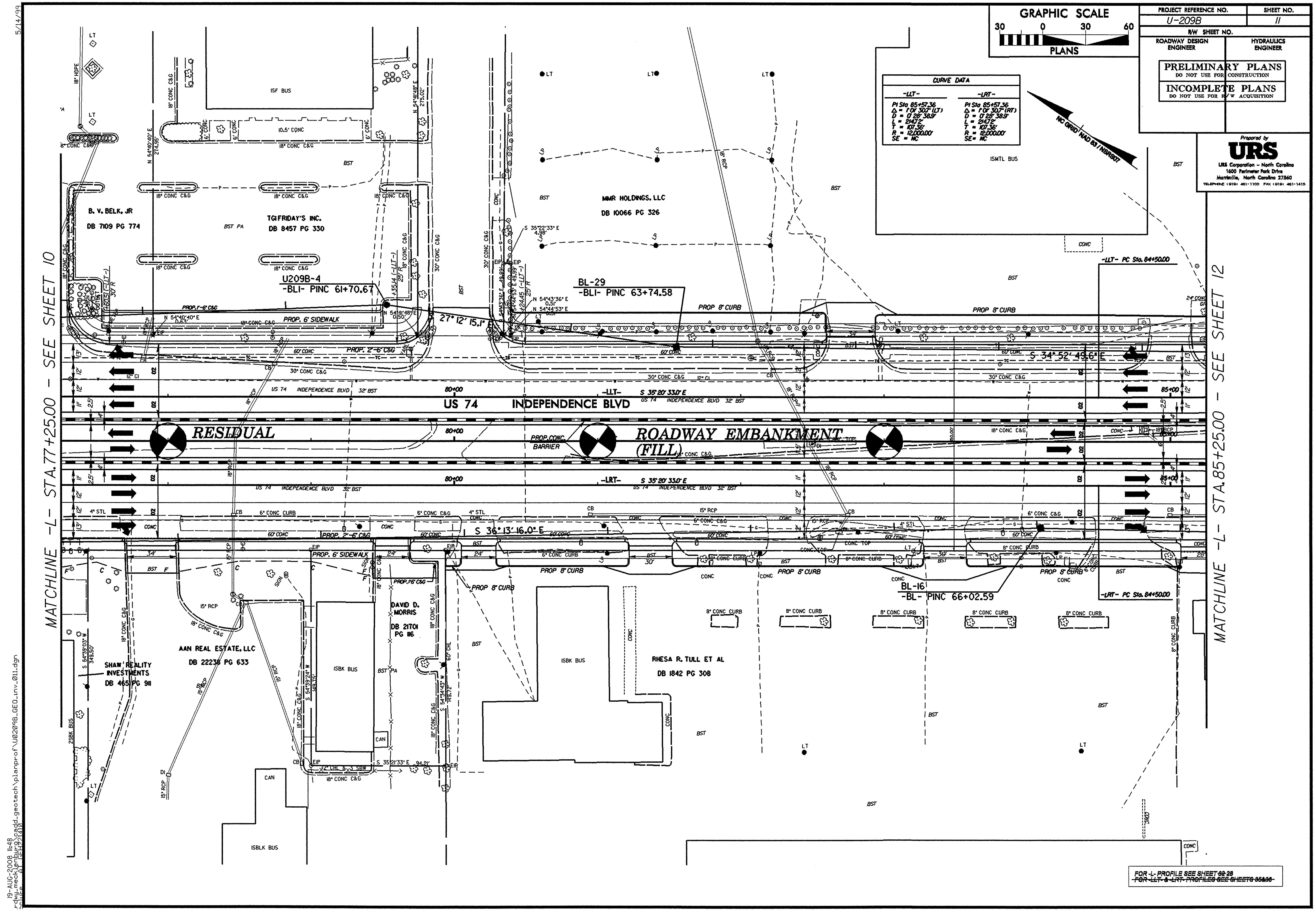
PROP. CONC BARRIER

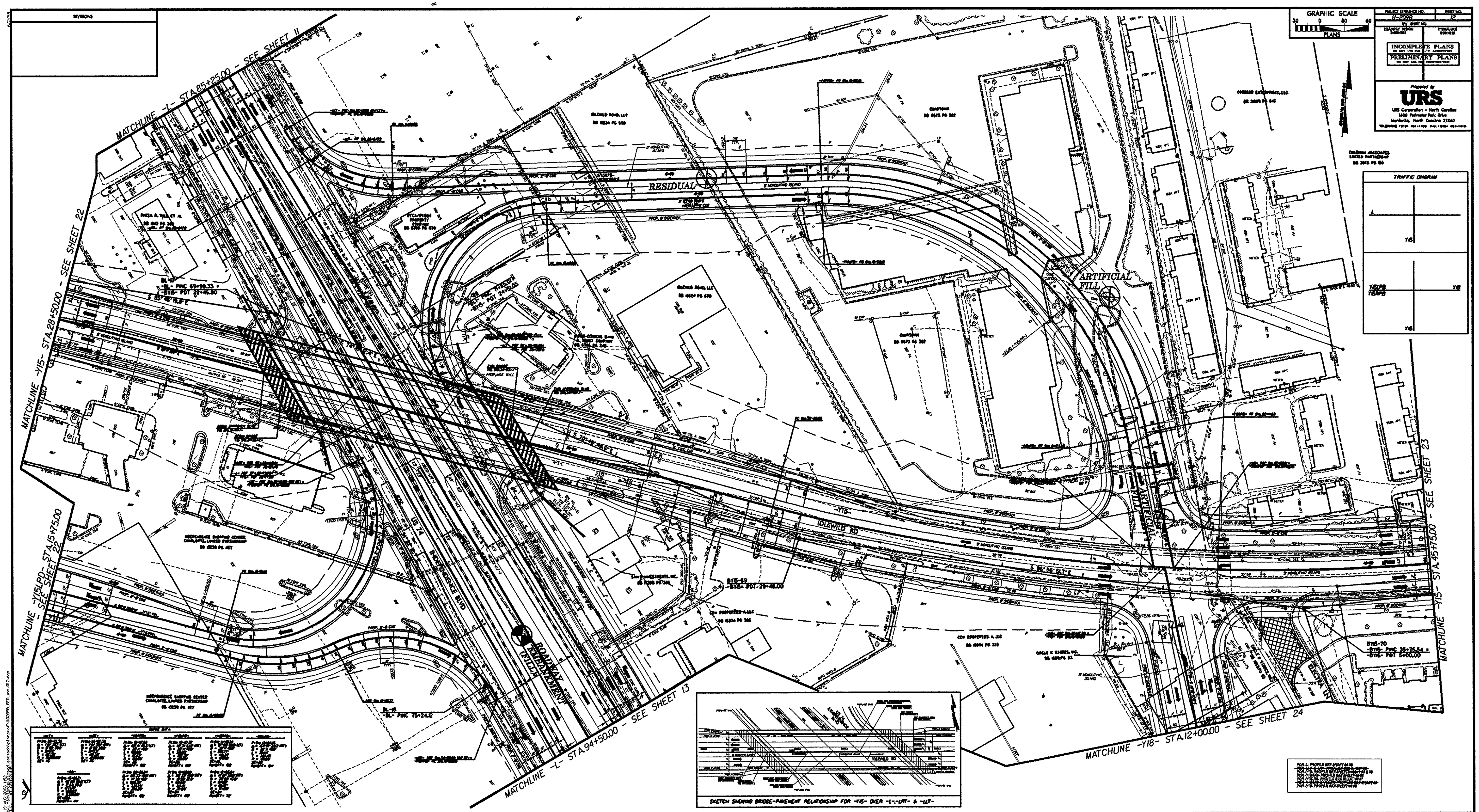
PROP. 6' SIDEWALK

PROP. 2'-6" C&G

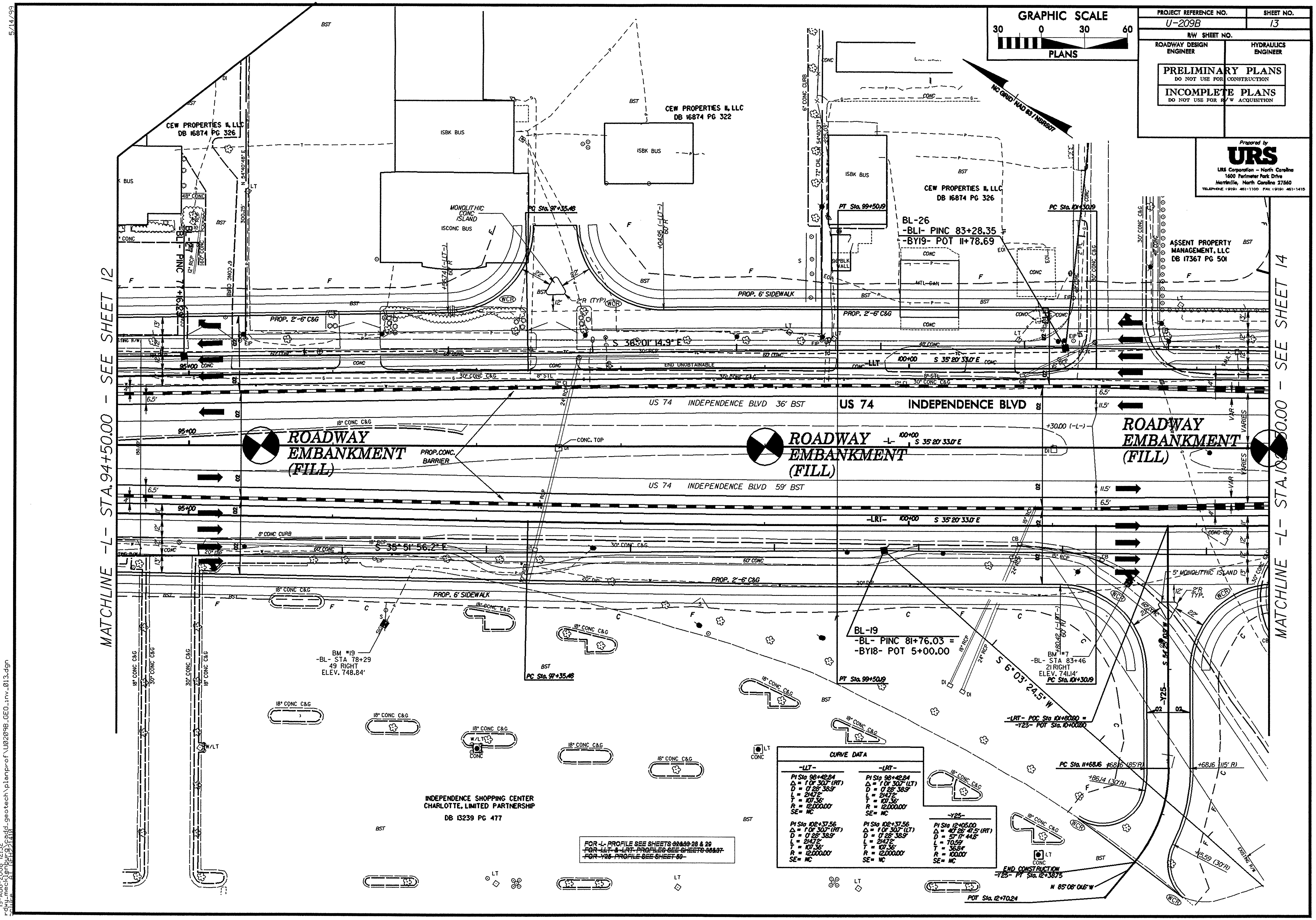
PROP. 8" CURB

FOR -L- PROFILE SEE SHEET ~~32~~ 28
FOR -LLT- & -LRT- PROFILES SEE SHEET ~~35~~


GRAPHIC SCALE
30 0 30 60
PLANS
PROJECT REFERENCE NO.
U-209B
SHEET NO.
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
Prepared by
URS
URS Corporation - North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
CURVE DATA
-LLT-
PI Sta 85+57.36
Δ = 1°01' 30.7" (LT)
D = 0°28' 38.9"
L = 214.72'
T = 107.36'
R = 12,000.00'
SE = NC
-LRT-
PI Sta 85+57.36
Δ = 1°01' 30.7" (RT)
D = 0°28' 38.9"
L = 214.72'
T = 107.36'
R = 12,000.00'
SE = NC
NC GRID NAD 83 / NSRS07
MATCHLINE -L- STA.77+25.00 - SEE SHEET 10
MATCHLINE -L- STA.85+25.00 - SEE SHEET 12
B. V. BELK, JR
DB 7109 PG 774
TGI FRIDAY'S INC.
DB 8457 PG 330
MMR HOLDINGS, LLC
DB 10066 PG 326
ISF BUS
ISMTL BUS
U209B-4
-BLI- PINC 61+70.67
BL-29
-BLI- PINC 63+74.58
BL-16
-BL- PINC 66+02.59
PROP. 6' SIDEWALK
PROP 8' CURB
US 74 INDEPENDENCE BLVD
-LLT- S 35°20' 33.0" E
-LRT- S 35°20' 33.0" E
S 34°52' 49.6" E
S 36°13' 16.0" E
27°12' 15.1"
80+00
85+00
RESIDUAL
ROADWAY EMBANKMENT
(FILL)
PROP. CONC. BARRIER
-LLT- PC Sta. 84+50.00
-LRT- PC Sta. 84+50.00
SHAW REALITY INVESTMENTS
DB 4615 PG 911
AAN REAL ESTATE, LLC
DB 22238 PG 633
DAVID D. MORRIS
DB 21701 PG 116
RHESA R. TULL ET AL
DB 1842 PG 308
ISBK BUS
ISBLK BUS
CAN
FOR -L- PROFILE SEE SHEET 22-28
FOR -LLT- & -LRT- PROFILES SEE SHEETS 35&36
5/14/99
19-AUG-2008 11:48



REVISIONS
GRAPHIC SCALE
30 0 30 60
PLANS
PROJECT REFERENCE NO. U-209B
SHEET NO. 12
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS
PRELIMINARY PLANS
Prepared by
URS
URS Corporation - North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TRAFFIC DIAGRAM
MATCHLINE -L- STA.85+25.00 - SEE SHEET 11
MATCHLINE -Y15- STA.28+50.00 - SEE SHEET 22
MATCHLINE -Y15LPD- STA.15+75.00 - SEE SHEET 22
MATCHLINE -L- STA.94+50.00 - SEE SHEET 13
MATCHLINE -Y18- STA.12+00.00 - SEE SHEET 24
MATCHLINE -Y15- STA.45+75.00 - SEE SHEET 23
RESIDUAL
ARTIFICIAL FILL
ROADWAY EMBANKMENT
US 74
INDEPENDENCE BLVD
IDLEWILD RD
-Y18-
SKETCH SHOWING BRIDGE-PAVEMENT RELATIONSHIP FOR -Y15- OVER -L-, -LRT- & -LLT-


GRAPHIC SCALE
30 0 30 60
PLANS
PROJECT REFERENCE NO. U-209B
SHEET NO. 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
Prepared by
URS
URS Corporation - North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
NC GRID NAD 83/NSRS07
MATCHLINE -L- STA.94+50.00 - SEE SHEET 12
MATCHLINE -L- STA.102+50.00 - SEE SHEET 14
CEW PROPERTIES II, LLC
DB 16874 PG 326
CEW PROPERTIES II, LLC
DB 16874 PG 322
CEW PROPERTIES II, LLC
DB 16874 PG 326
ASSENT PROPERTY MANAGEMENT, LLC
DB 17367 PG 501
MONOLITHIC CONC ISLAND
PC Sta. 97+35.48
PT Sta. 99+50.19
PC Sta. 101+30.19
BL-26
-BLI- PINC 83+28.35 =
-BY19- POT 11+78.69
PROP. 6' SIDEWALK
PROP. 2'-6" C&G
S 36°01' 14.9" E
-LLT- 100+00 S 35°20' 33.0" E
US 74 INDEPENDENCE BLVD 36' BST
US 74 INDEPENDENCE BLVD
ROADWAY EMBANKMENT (FILL)
-L- 100+00 S 35°20' 33.0" E
PROP. CONC. BARRIER
CONC. TOP
US 74 INDEPENDENCE BLVD 59' BST
-LRT- 100+00 S 35°20' 33.0" E
S 35°51' 56.2" E
5' MONOLITHIC ISLAND
BL-19
-BL- PINC 81+76.03 =
-BY18- POT 5+00.00
S 6°03' 24.5" W
BM #19
-BL- STA 78+29
49 RIGHT
ELEV. 748.84'
BM #7
-BL- STA 83+46
21 RIGHT
ELEV. 741.14'
PC Sta. 97+35.48
PT Sta. 99+50.19
-LRT- POC Sta 101+80.80 =
-Y25- POT Sta. 10+00.00
PC Sta. 11+68.16
END CONSTRUCTION
-Y25- PT Sta. 12+38.75
N 85°06' 06.5" W
POT Sta. 12+70.24
INDEPENDENCE SHOPPING CENTER
CHARLOTTE, LIMITED PARTNERSHIP
DB 13239 PG 477
FOR -L- PROFILE SEE SHEETS 28 & 29
FOR -LLT- & -LRT- PROFILES SEE SHEETS 36&37
FOR -Y25- PROFILE SEE SHEET 50
CURVE DATA
-LLT-
PI Sta 98+42.84
Δ = 1°01' 30.7" (RT)
D = 0°28' 38.9"
L = 214.72'
T = 107.36'
R = 12,000.00'
SE = NC
PI Sta 102+37.56
Δ = 1°01' 30.7" (RT)
D = 0°28' 38.9"
L = 214.72'
T = 107.36'
R = 12,000.00'
SE = NC
-LRT-
PI Sta 98+42.84
Δ = 1°01' 30.7" (LT)
D = 0°28' 38.9"
L = 214.72'
T = 107.36'
R = 12,000.00'
SE = NC
PI Sta 102+37.56
Δ = 1°01' 30.7" (LT)
D = 0°28' 38.9"
L = 214.72'
T = 107.36'
R = 12,000.00'
SE = NC
-Y25-
PI Sta 12+05.00
Δ = 40°26' 47.5" (RT)
D = 57°17' 44.8"
L = 70.59'
T = 36.84'
R = 100.00'
SE = NC

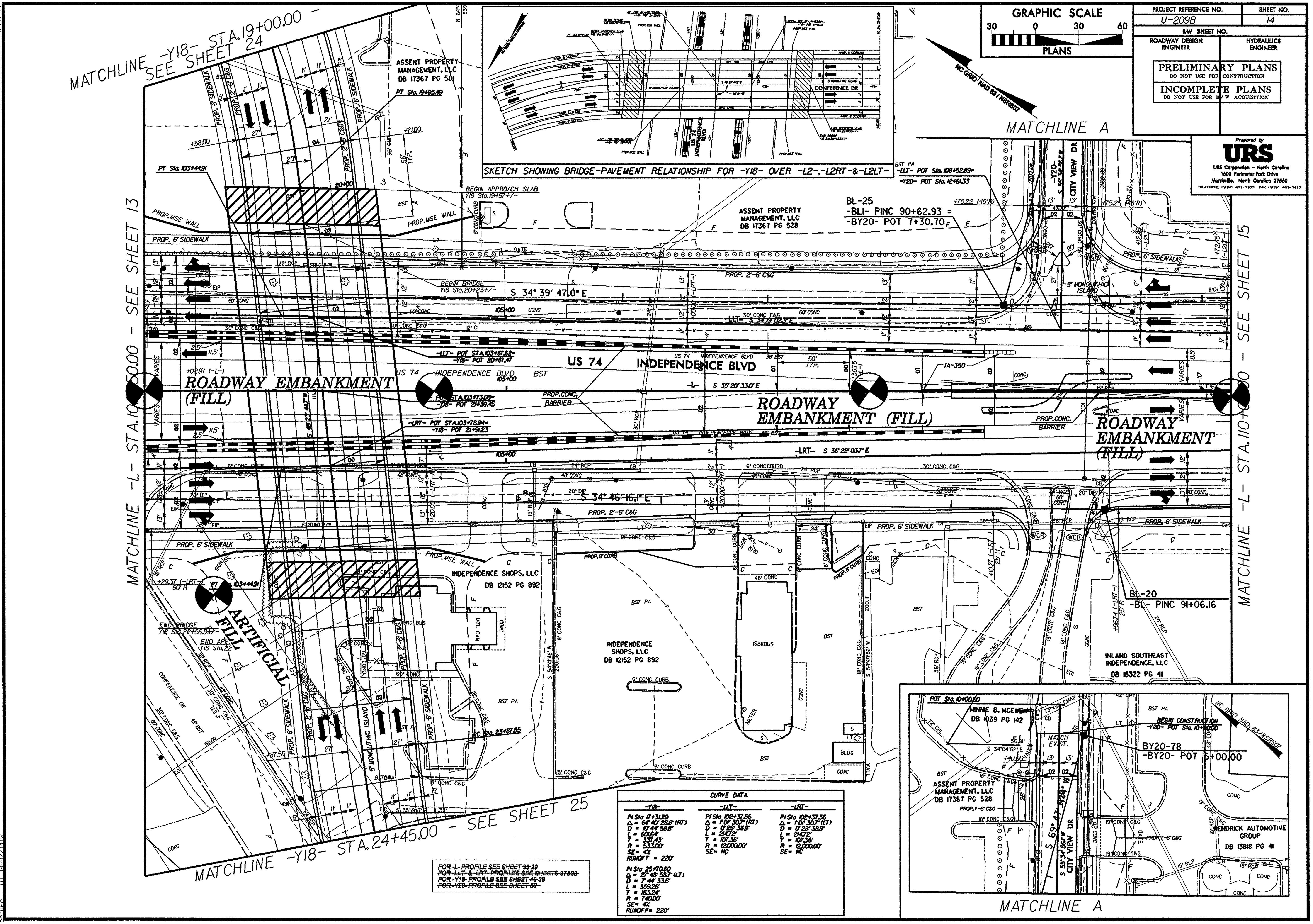
PROJECT REFERENCE NO.	SHEET NO.
U-209B	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

Prepared by
URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415

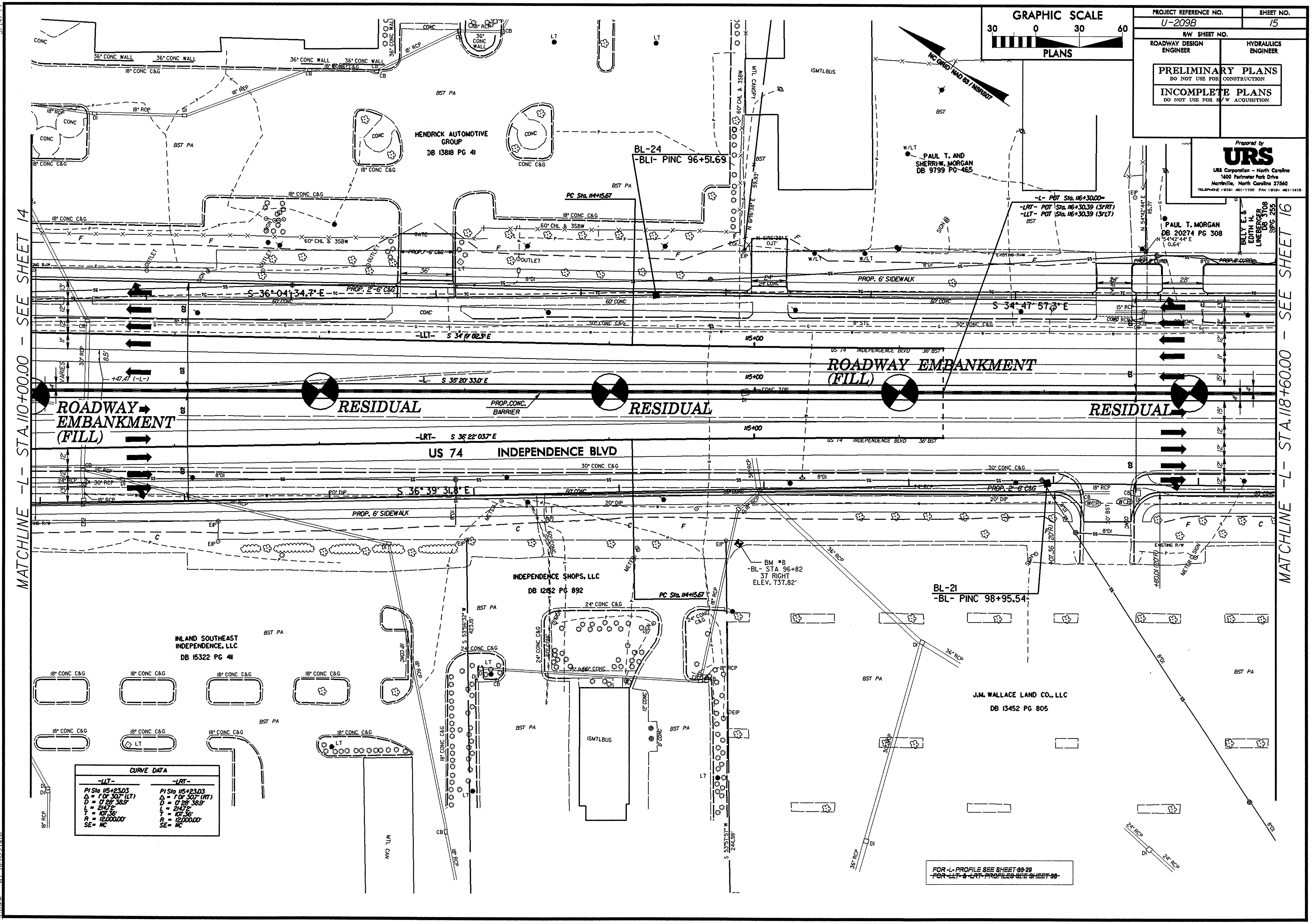
GRAPHIC SCALE
30 0 30 60
PLANS


MATCHLINE -Y18- STA.19+00.00 - SEE SHEET 24
MATCHLINE -L- STA.100+50.00 - SEE SHEET 13
MATCHLINE -L- STA.110+00.00 - SEE SHEET 15
MATCHLINE -Y18- STA.24+45.00 - SEE SHEET 25
MATCHLINE A
SKETCH SHOWING BRIDGE-PAVEMENT RELATIONSHIP FOR -Y18- OVER -L2-,-L2RT-&-L2LT-
NC GRID NAD 83 / NSRS07
ASSENT PROPERTY MANAGEMENT, LLC
DB 17367 PG 501
ASSENT PROPERTY MANAGEMENT, LLC
DB 17367 PG 528
BL-25
-BL- PINC 90+62.93 =
-BY20- POT 7+30.70
US 74 INDEPENDENCE BLVD
ROADWAY EMBANKMENT (FILL)
ROADWAY EMBANKMENT (FILL)
ROADWAY EMBANKMENT (FILL)
ARTIFICIAL FILL
INDEPENDENCE SHOPS, LLC
DB 12152 PG 892
INDEPENDENCE SHOPS, LLC
DB 12152 PG 892
BL-20
-BL- PINC 91+06.16
INLAND SOUTHEAST INDEPENDENCE, LLC
DB 15322 PG 411
CITY VIEW DR
MINNIE B. MCEWEN
DB 1039 PG 142
BY20-78
-BY20- POT 5+00.00
HENDRICK AUTOMOTIVE GROUP
DB 13818 PG 41

CURVE DATA		
-Y18-	-LLT-	-LRT-
PI Sta 17+31.29	PI Sta 102+37.56	PI Sta 102+37.56
Δ = 64° 40' 28.6" (RT)	Δ = 1° 01' 30.7" (RT)	Δ = 1° 01' 30.7" (LT)
D = 10° 44' 58.8"	D = 0° 28' 38.9"	D = 0° 28' 38.9"
L = 601.64'	L = 214.72'	L = 214.72'
T = 337.43'	T = 107.36'	T = 107.36'
R = 533.00'	R = 12,000.00'	R = 12,000.00'
SE = 4%	SE = NC	SE = NC
RUNOFF = 220'		
PI Sta 25+70.80		
Δ = 27° 45' 58.7" (LT)		
D = 7° 44' 33.6"		
L = 359.26'		
T = 183.24'		
R = 740.00'		
SE = 4%		
RUNOFF = 220'		

FOR -L- PROFILE SEE SHEET ~~33~~ 29
~~FOR -LLT- & -LRT- PROFILES SEE SHEETS 37&38~~
FOR -Y18- PROFILE SEE SHEET ~~40~~ 38
~~FOR -Y20- PROFILE SEE SHEET 50~~

5/14/99
19-AUG-2008 12:34
r:\dwy-mecklenburg\cadd-geotech\planprof\U0209B_GEO_inv_014.dgn



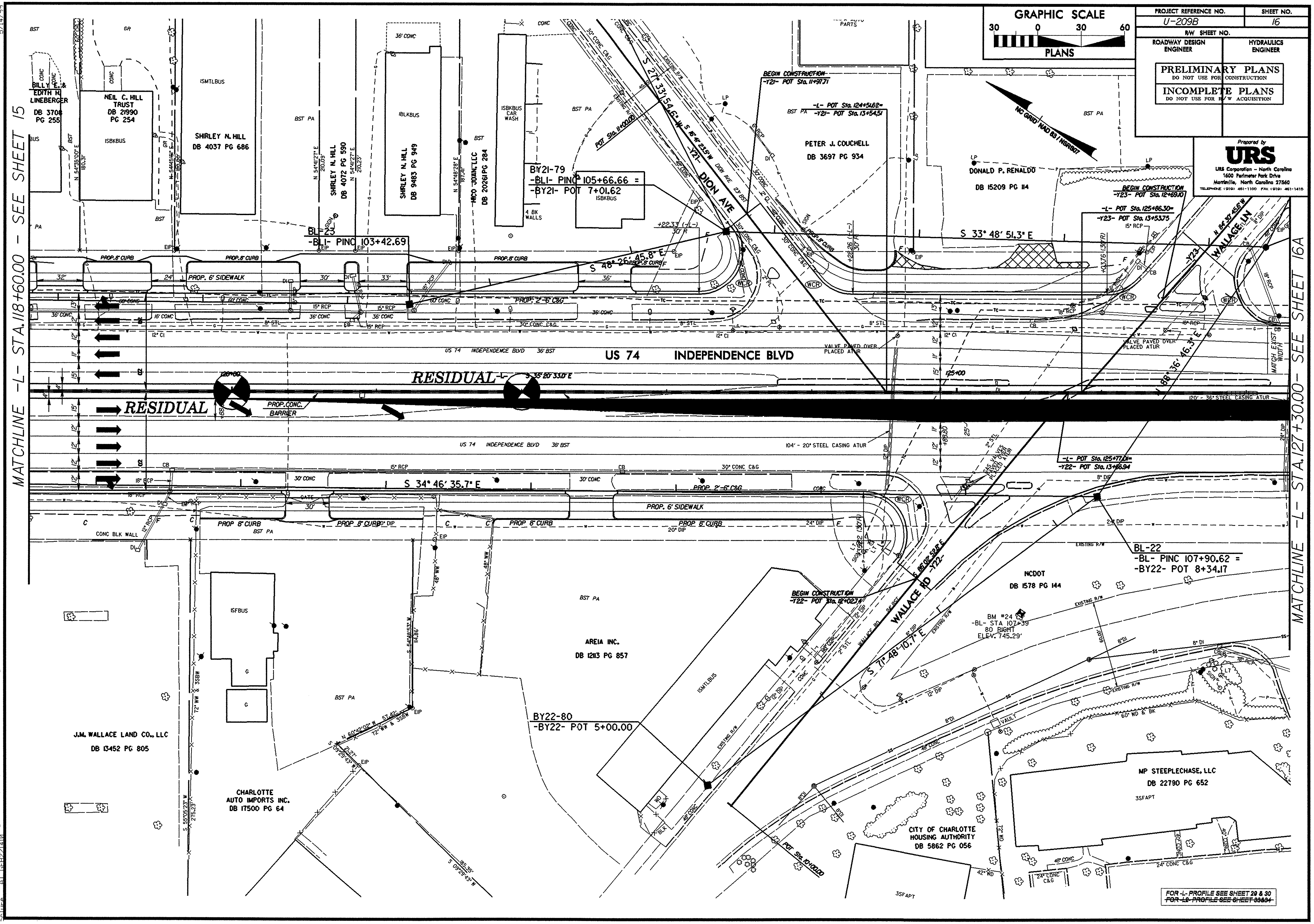
GRAPHIC SCALE
30 0 30 60
PLANS
PROJECT REFERENCE NO. U-209B
SHEET NO. 15
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
Prepared by
URS
URS Corporation - North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
NC GRID NAD 83/NSRS07
MATCHLINE -L- STA.110+00.00 - SEE SHEET 14
MATCHLINE -L- STA.118+60.00 - SEE SHEET 16
HENDRICK AUTOMOTIVE GROUP
DB 13818 PG 41
PAUL T. AND SHERRI W. MORGAN
DB 9799 PG 465
PAUL T. MORGAN
DB 20274 PG 308
BILLY E. & EDITH H. LINEBERGER
DB 3108 PG 235
BL-24
-BLI- PINC 96+51.69
PC Sta. 114+15.67
-L- POT Sta. 116+30.00
-LRT- POT Sta. 116+30.39 (37'RT)
-LLT- POT Sta. 116+30.39 (37'LT)
PROP. 6' SIDEWALK
S 36° 04' 34.7" E
S 34° 47' 57.3" E
-LLT- S 34° 19' 02.3" E
-L- S 35° 20' 33.0" E
-LRT- S 36° 22' 03.7" E
S 36° 39' 31.8" E
ROADWAY EMBANKMENT (FILL)
RESIDUAL
RESIDUAL
ROADWAY EMBANKMENT (FILL)
RESIDUAL
PROP. CONC. BARRIER
US 74 INDEPENDENCE BLVD
115+00
BM #8
-BL- STA 96+82
37 RIGHT
ELEV. 737.82'
BL-21
-BL- PINC 98+95.54
INDEPENDENCE SHOPS, LLC
DB 12152 PG 892
INLAND SOUTHEAST INDEPENDENCE, LLC
DB 15322 PG 41
J.M. WALLACE LAND CO., LLC
DB 13452 PG 805
CURVE DATA
-LLT-
PI Sta 115+23.03
Δ = 1° 01' 30.7" (LT)
D = 0° 28' 38.9"
L = 214.7'
T = 107.36'
R = 12,000.00'
SE = NC
-LRT-
PI Sta 115+23.03
Δ = 1° 01' 30.7" (RT)
D = 0° 28' 38.9"
L = 214.7'
T = 107.36'
R = 12,000.00'
SE = NC
FOR -L- PROFILE SEE SHEET 23-29
FOR -LLT- & -LRT- PROFILES SEE SHEET 38

PROJECT REFERENCE NO.	SHEET NO.
U-209B	16
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

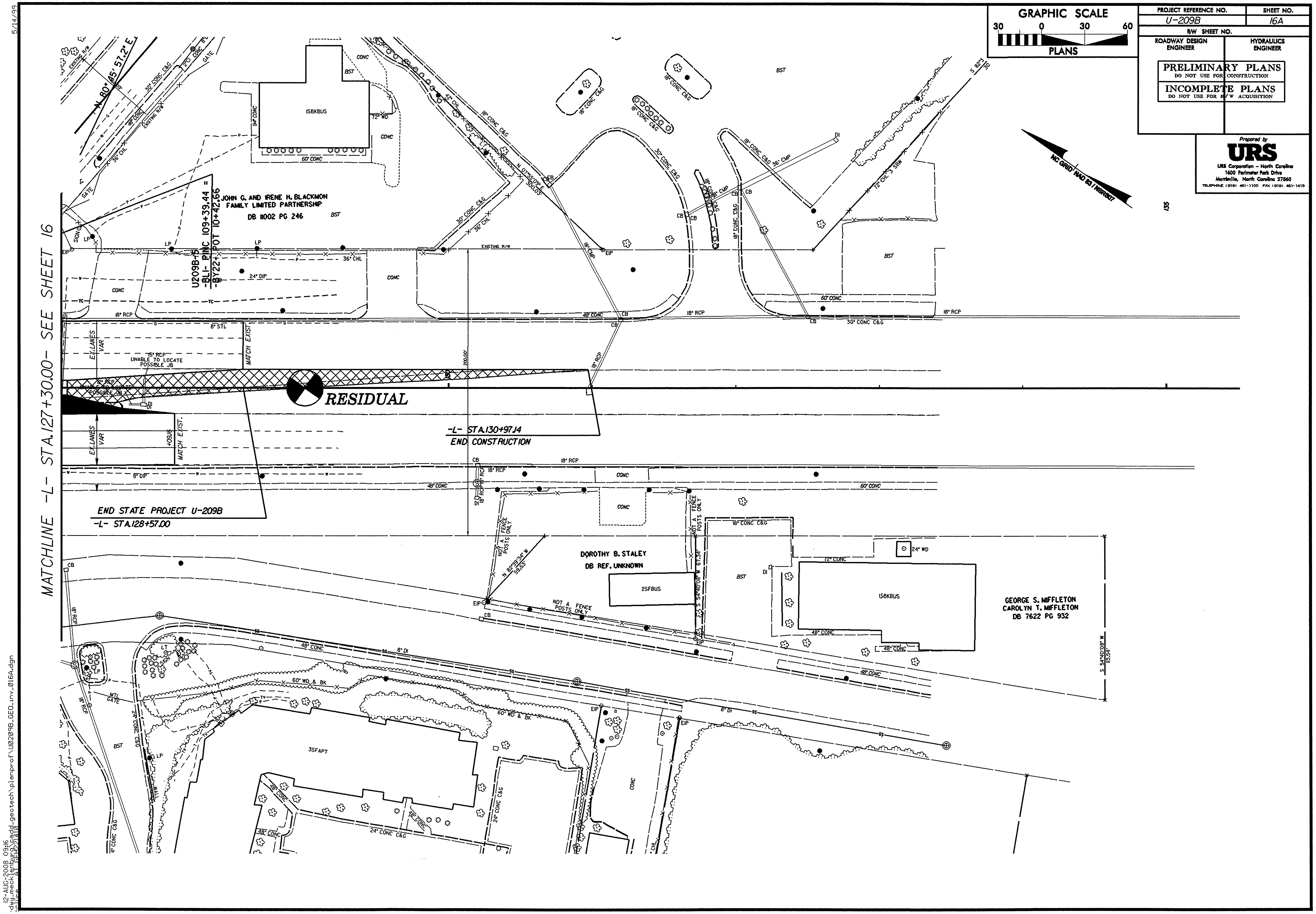
Prepared by
URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560



GRAPHIC SCALE
30 0 30 60
PLANS
NC GRID NAD 83 / NSRS07
MATCHLINE -L- STA. 118+60.00 - SEE SHEET 15
MATCHLINE -L- STA. 127+30.00 - SEE SHEET 16A
US 74 INDEPENDENCE BLVD
RESIDUAL
RESIDUAL -L-
DION AVE
WALLACE LN
WALLACE RD -Y22-
S 34° 46' 35.7" E
S 33° 48' 51.3" E
S 48° 26' 45.8" E
BILLY E. & EDITH H. LINEBERGER DB 3708 PG 255
NEIL C. HILL TRUST DB 21990 PG 254
SHIRLEY N. HILL DB 4037 PG 686
SHIRLEY N. HILL DB 4072 PG 590
SHIRLEY N. HILL DB 9483 PG 949
MCO JUAN, LLC DB 20261 PG 284
PETER J. COUCHELL DB 3697 PG 934
DONALD P. RENALDO DB 15209 PG 114
NCDOT DB 1578 PG 144
AREIA INC. DB 12113 PG 857
J.M. WALLACE LAND CO., LLC DB 13452 PG 805
CHARLOTTE AUTO IMPORTS INC. DB 17500 PG 64
MP STEEPLECHASE, LLC DB 22790 PG 652
CITY OF CHARLOTTE HOUSING AUTHORITY DB 5862 PG 056
BY21-79 -BL1- PINC 105+66.66 = -BY21- POT 7+01.62
BL-23 -BL1- PINC 103+42.69
BL-22 -BL- PINC 107+90.62 = -BY22- POT 8+34.17
BY22-80 -BY22- POT 5+00.00
BEGIN CONSTRUCTION -Y21- POT Sta. 11+97.71
BEGIN CONSTRUCTION -Y23- POT Sta. 12+69.10
BEGIN CONSTRUCTION -Y22- POT Sta. 12+02.71
BM #24 -BL- STA 107+39 80 RIGHT ELEV. 745.29'
PROP. 6' SIDEWALK
PROP. 8' CURB
PROP. CONC. BARRIER
FOR -L- PROFILE SEE SHEET 29 & 30

19-AUG-2008 12:38
r:\hyd...\U0209B_GEO_inv_016.dgn

5/14/99



GRAPHIC SCALE
30 0 30 60
PLANS
PROJECT REFERENCE NO.
U-209B
SHEET NO.
16A
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
Prepared by
URS
URS Corporation - North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
MATCHLINE -L- STA.127+30.00- SEE SHEET 16
JOHN G. AND IRENE H. BLACKMON
FAMILY LIMITED PARTNERSHIP
DB 11002 PG 246
U209B-16
-BL1- PINC 109+39.44 =
-BY22- POT 10+42.66
RESIDUAL
-L- STA.130+97.14
END CONSTRUCTION
END STATE PROJECT U-209B
-L- STA.128+57.00
DOROTHY B. STALEY
DB REF. UNKNOWN
GEORGE S. MIFFLETON
CAROLYN T. MIFFLETON
DB 7622 PG 932
NC GRID NAD 83 / NSRS07

8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
U-209B	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

STV/ Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208

GRAPHIC SCALE
30 0 30 60
PLANS

NC GRID/ NAD 83/ NSRS2007

CURVE DATA	
-Y1-	-Y8-
PI Sta. 14+73.52	PI Sta. 9+10.82
Δ = 2° 26' 30.0" (RT)	Δ = 12° 30' 00.0" (LT)
D = 1° 12' 04.2"	D = 12° 43' 56.6"
L = 203.30'	L = 96.17'
T = 101.66'	T = 49.28'
R = 4770.00'	R = 450.00'
SE = MC	

BY6-54
BY6- POT 5+00.00

BY1-52
-BY1- PINC 8+65.04 =
-BY6- PINC 6+93.21

BY1-51
-BY1- PINC 11+98.01 =
-BY8- POT 7+43.57

BY7-55
-BY6- POT 9+64.48

BEGIN CONSTRUCTION
-Y1- POT Sta. 13+50.00

BEGIN CONSTRUCTION
-Y8- POC Sta. 9+19.00

POT Sta. 7+30.50

AMITY PLACE

KIPLING DR

PIERSON DR

SHARON AMITY RD

MATCHLINE -Y1- STA 17+50.00 SEE SHEET 6

EDGARD DELGADO PACHECO
DB 22649 PG 384

MARGARET L. MILLER
DB 18811 PG 366

LAURA B. EATON
DB 16844 PG 940

HATTIE E. CULBRETH
DB 18454 PG 145

GEORGE AND NOVA JOHNSON
DB 19292 PG 76

ROBERT AND KIM KALOUSEK
DB 17263 PG 186

SANDRA L. ARCHER
DB 17760 PG 598

LOWDER INVESTMENT PROPERTIES, INC.
DB 5252 PG 894

KOU WEASAH
DB 19401 PG 548

AMITY PRESBYTERIAN CHURCH, CHARLOTTE NORTH CAROLINA
DB 7119 PG 111

CHARLIE S. AND IRENE K. PISTOLIS
DB 9574 PG 816

DAVID S. JACOBSON AND JOSHUA D. ALBERTSON
DB 19865 PG 831

DAVID S. JACOBSON AND JOSHUA D. ALBERTSON
DB 19864 PG 228

DAVID S. AND JOSHUA D. JACOBSON
DB 19864 PG 291

EDNA H. HELMS
DB 1250 PG 235

ABDULLAH HUSSAIN
DB 11588 PG 987

CHRISTOPHER S. AND NICOLA C. MENDENHALL
DB 18234 PG 572

BRYAN S. AND VIRGINIA WALLACE
DB 15434 PG 626

GERARDO R. AND ANA P. ZELEDON
DB 15434 PG 626

DOROTHY G. WAYNICK
MB 1844 PG 593

BM #12
-BY1- STA 6+53
81 RIGHT
ELEV. 773.83'

FOR -Y1- PROFILE SEE SHEET 4 33
~~FOR -Y8- PROFILE SEE SHEET 43~~

19-AUG-2008 12:41
d:\projects\U-209b_geo_rdwy_mecklenburg\roads_geotech\planprof\U209b_GEO_rw_017.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-209B	18

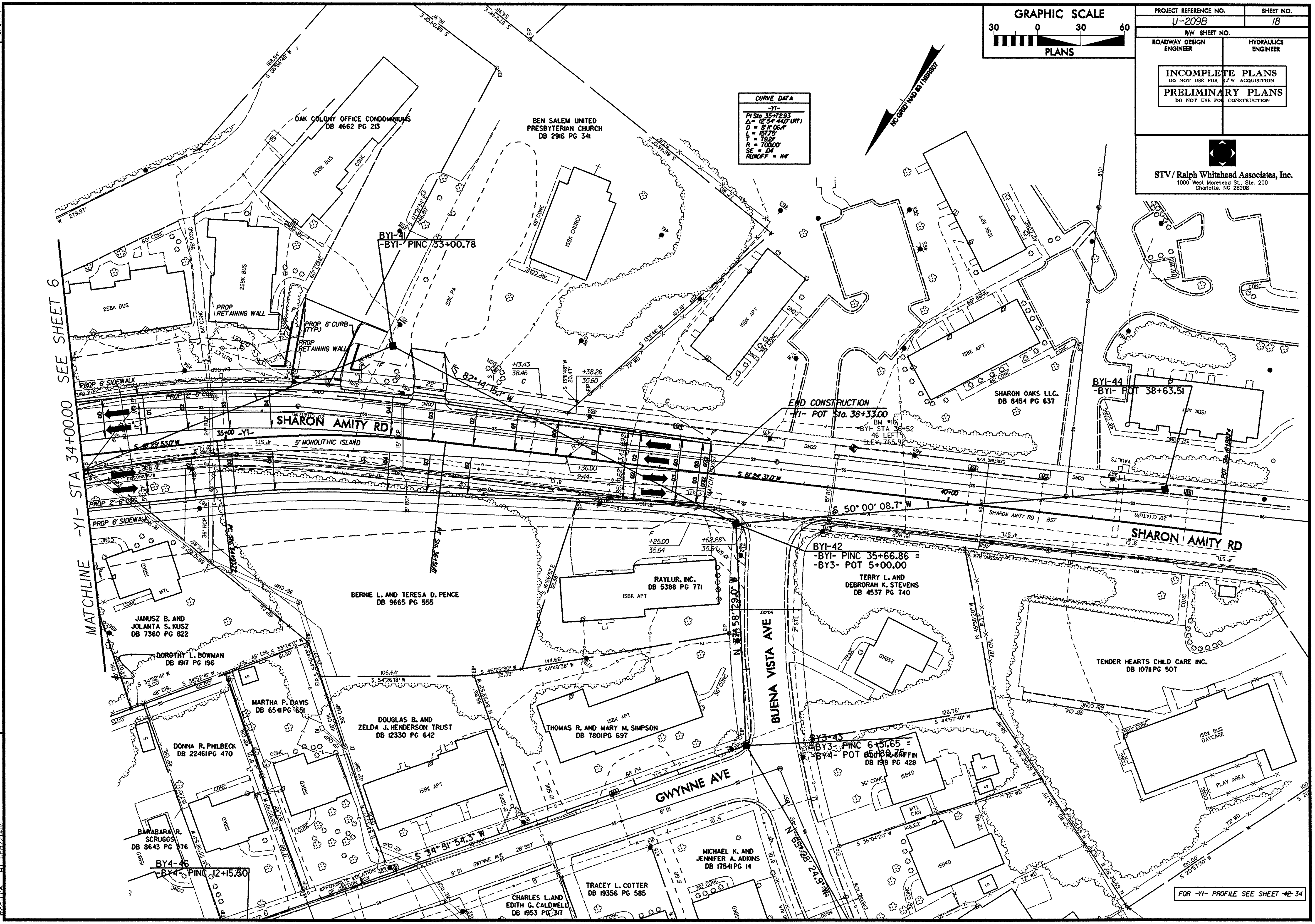
R/W SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

STV/Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208



GRAPHIC SCALE
30 0 30 60
PLANS
NC GRID NAD 83 / NSRS07
CURVE DATA
-Y1-
PI Sta 35+72.93
Δ = 12° 54' 44.0" (RT)
D = 8° 11' 06.4"
L = 157.75'
T = 79.21'
R = 700.00'
SE = .04
RUNOFF = 114'
MATCHLINE -Y1- STA 34+00.00 SEE SHEET 6
REVISIONS
OAK COLONY OFFICE CONDOMINIUMS
DB 4662 PG 213
BEN SALEM UNITED PRESBYTERIAN CHURCH
DB 2916 PG 341
1SBK CHURCH
2SBK BUS
PROP RETAINING WALL
PROP 8' CURB (TYP.)
PROP 6' SIDEWALK
PROP 2'-6" C&G
SHARON AMITY RD
5' MONOLITHIC ISLAND
BYI-41
-BYI- PINC 33+00.78
END CONSTRUCTION
-Y1- POT Sta. 38+33.00
BM #10
-BYI- STA 36+52
46 LEFT
ELEV. 765.92
BYI-44
-BYI- POT 38+63.51
SHARON OAKS LLC.
DB 8454 PG 637
S 50° 00' 08.7" W
BYI-42
-BYI- PINC 35+66.86 =
-BY3- POT 5+00.00
TERRY L. AND DEBRORAH K. STEVENS
DB 4537 PG 740
TENDER HEARTS CHILD CARE INC.
DB 10711 PG 507
BERNIE L. AND TERESA D. PENCE
DB 9665 PG 555
RAYLUR, INC.
DB 5388 PG 771
JANUSZ B. AND JOLANTA S. KUSZ
DB 7360 PG 822
DOROTHY L. BOWMAN
DB 1917 PG 196
MARTHA P. DAVIS
DB 6541 PG 651
DOUGLAS B. AND ZELDA J. HENDERSON TRUST
DB 12330 PG 642
THOMAS R. AND MARY M. SIMPSON
DB 7801 PG 697
BUENA VISTA AVE
GWYNNE AVE
DONNA R. PHILBECK
DB 22461 PG 470
BARABARA R. SCRUGGS
DB 8643 PG 376
BY4-46
-BY4- PINC 12+15.50
BY3-43
-BY3- PINC 6+51.65 =
-BY4- POT 10+80.75
MICHAEL K. AND JENNIFER A. ADKINS
DB 17541 PG 14
TRACEY L. COTTER
DB 19356 PG 585
CHARLES L. AND EDITH G. CALDWELL
DB 1953 PG 317
S 34° 51' 54.3" W
1SBK BUS DAYCARE
PLAY AREA
FOR -Y1- PROFILE SEE SHEET 34

8/17/99
19-AUG-2008 12:43
d:\projects\u209b_geo_rdwy_mecklenburg\cadd_geotech\planprof\U0209b_GEO_inv_018.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-209B	19

R/W SHEET NO.

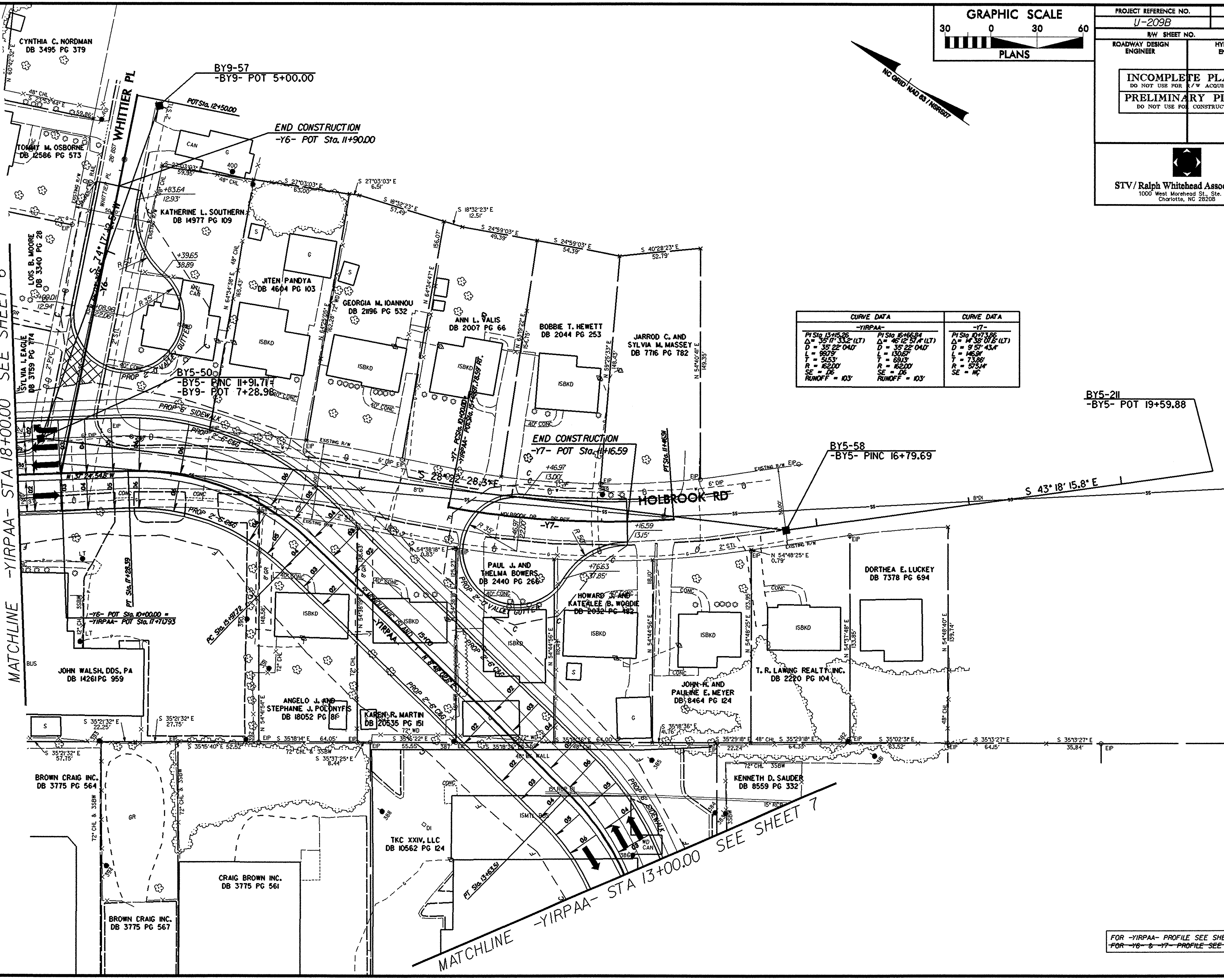
ROADWAY DESIGN ENGINEER — HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

STV/Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208

GRAPHIC SCALE
30 0 30 60
PLANS



NC GRID NAD 83 / NSRS07
CYNTHIA C. NORDMAN DB 3495 PG 379
TOMMY M. OSBORNE DB 12586 PG 573
WHITTIER PL
BY9-57
-BY9- POT 5+00.00
END CONSTRUCTION
-Y6- POT Sta. 11+90.00
KATHERINE L. SOUTHERN DB 14977 PG 109
LOIS B. MOORE DB 3340 PG 28
SYLVIA I. EAGLE DB 3159 PG 774
JITEN PANDYA DB 4604 PG 103
GEORGIA M. IOANNOU DB 21196 PG 532
ANN L. VALIS DB 2007 PG 66
BOBBIE T. HEWETT DB 2044 PG 253
JARROD C. AND SYLVIA M. MASSEY DB 7716 PG 782
BY5-50
-BY5- PINC 11+91.71 =
-BY9- POT 7+28.98
MATCHLINE -YIRPAA- STA 18+00.00 SEE SHEET 6
END CONSTRUCTION
-Y7- POT Sta. 11+16.59
HOLBROOK RD
BY5-58
-BY5- PINC 16+79.69
BY5-211
-BY5- POT 19+59.88
S 43° 18' 15.8" E
-Y6- POT Sta. 10+00.00 = -YIRPAA- POT Sta. 17+17.93
PAUL J. AND THELMA BOWERS DB 2440 PG 266
HOWARD J. AND KATEALEE B. WOODIE DB 2032 PG 182
DORTHEA E. LUCKEY DB 7378 PG 694
JOHN WALSH, DDS, PA DB 14261 PG 959
ANGELO J. AND STEPHANE J. POLONYFIS DB 18052 PG 86
KAREN R. MARTIN DB 20535 PG 151
JOHN H. AND PAULINE E. MEYER DB 8464 PG 124
T. R. LAWING REALTY, INC. DB 2220 PG 104
BROWN CRAIG INC. DB 3775 PG 564
KENNETH D. SAUDER DB 8559 PG 332
TKC XXIV, LLC DB 10562 PG 124
CRAIG BROWN INC. DB 3775 PG 561
BROWN CRAIG INC. DB 3775 PG 567
-YIRPAA-
MATCHLINE -YIRPAA- STA 13+00.00 SEE SHEET 7

CURVE DATA		CURVE DATA
-YIRPAA-		-Y7-
PI Sta 13+15.26	PI Sta 16+66.84	PI Sta 10+73.86
Δ = 35° 17' 33.2" (LT)	Δ = 46° 12' 51.4" (LT)	Δ = 14° 38' 07.6" (LT)
D = 35° 22' 04.0"	D = 35° 22' 04.0"	D = 9° 57' 43.4"
L = 99.79'	L = 130.67'	L = 146.91'
T = 51.53'	T = 69.13'	T = 73.86'
R = 162.00'	R = 162.00'	R = 575.14'
SE = .06	SE = .06	SE = NC
RUNOFF = 103'	RUNOFF = 103'	

FOR -YIRPAA- PROFILE SEE SHEET ~~39~~ 31
~~FOR -Y6- & -Y7- PROFILE SEE SHEET 43~~

REVISIONS

8/17/99

19-AUG-2008 12:44
d:\projects\u0209b_geo_rdwy_mecklenburg\cadd_geotech\planprof\U0209b_GEO_inv_019.dgn

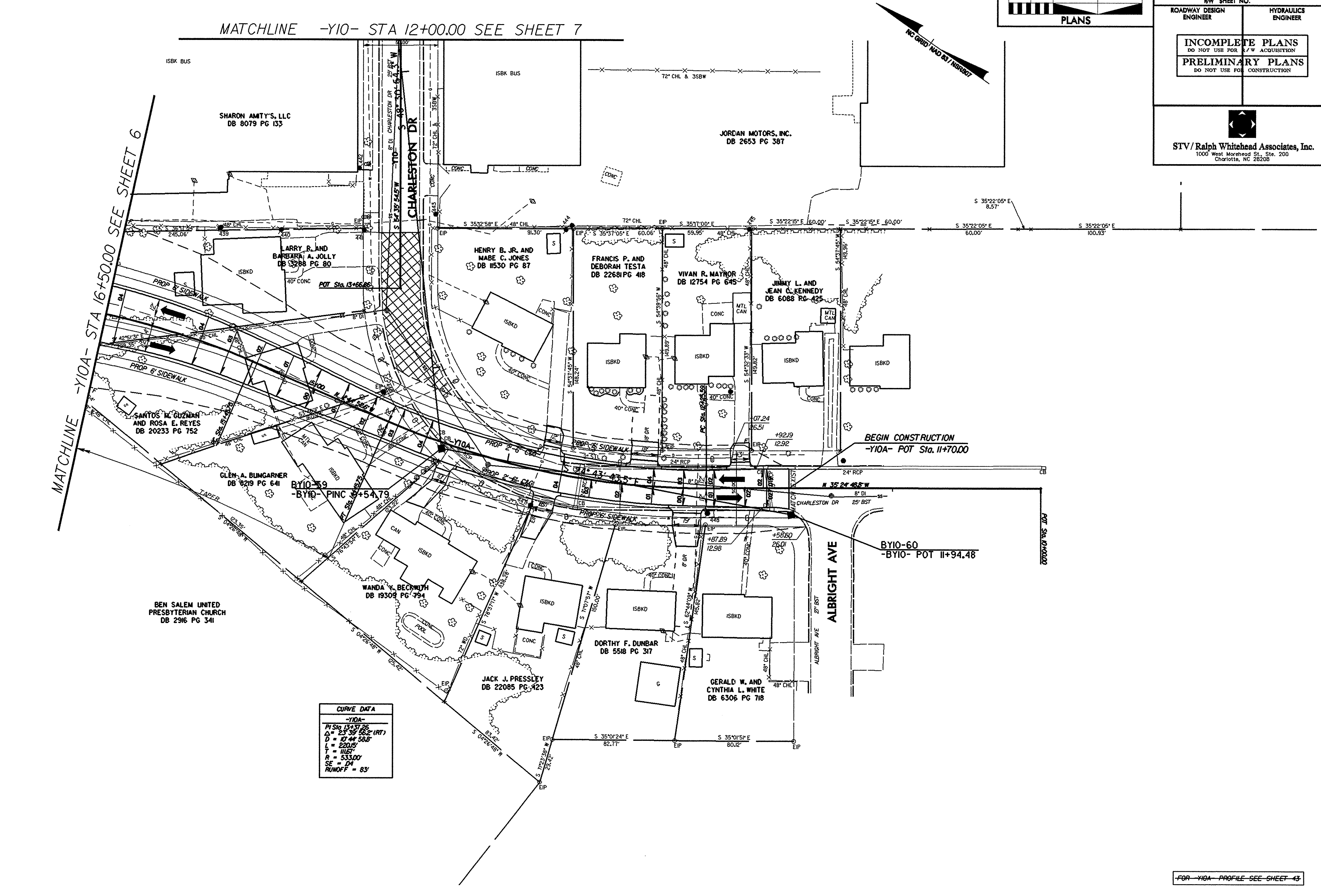
PROJECT REFERENCE NO.	SHEET NO.
U-209B	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

STV/Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208

GRAPHIC SCALE
30 0 30 60
PLANS



MATCHLINE -Y10- STA 12+00.00 SEE SHEET 7
MATCHLINE -Y10A- STA 16+50.00 SEE SHEET 6
NC GRID NAD 83/NSRS07
CHARLESTON DR
ALBRIGHT AVE
SHARON AMITY'S, LLC
DB 8079 PG 133
JORDAN MOTORS, INC.
DB 2653 PG 387
LARRY R. AND BARBARA A. JOLLY
DB 13288 PG 80
HENRY B. JR. AND MABE C. JONES
DB 11530 PG 87
FRANCIS P. AND DEBORAH TESTA
DB 22681 PG 418
VIVAN R. MAYNOR
DB 12754 PG 645
JIMMY L. AND JEAN C. KENNEDY
DB 6088 PG 425
SANTOS M. GUZMAN AND ROSA E. REYES
DB 20233 PG 752
GLEN A. BUMGARNER
DB 8219 PG 641
WANDA Y. BECKWITH
DB 19309 PG 794
BEN SALEM UNITED PRESBYTERIAN CHURCH
DB 2916 PG 341
JACK J. PRESSLEY
DB 22085 PG 423
DORTHY F. DUNBAR
DB 5518 PG 317
GERALD W. AND CYNTHIA L. WHITE
DB 6306 PG 718
BEGIN CONSTRUCTION
-Y10A- POT Sta. 11+70.00
BY10-59
-BY10- PINC 14+54.79
BY10-60
-BY10- POT 11+94.48
PROP 6' SIDEWALK
CURVE DATA
-Y10A-
PI Sta 13+37.26
Δ = 23° 39' 56.2" (RT)
D = 10° 44' 58.8"
L = 220.15'
T = 111.61'
R = 533.00'
SE = .04
RUNOFF = 83'
FOR -Y10A- PROFILE SEE SHEET 43

8/17/99

REVISIONS

19-AUG-2008 12:46
d:\projects\U0209b_geo\rdwy_mecklenburg\cadd_geotech\planprof\U0209b_GEO_inv_020.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-209B	21

R/W SHEET NO.

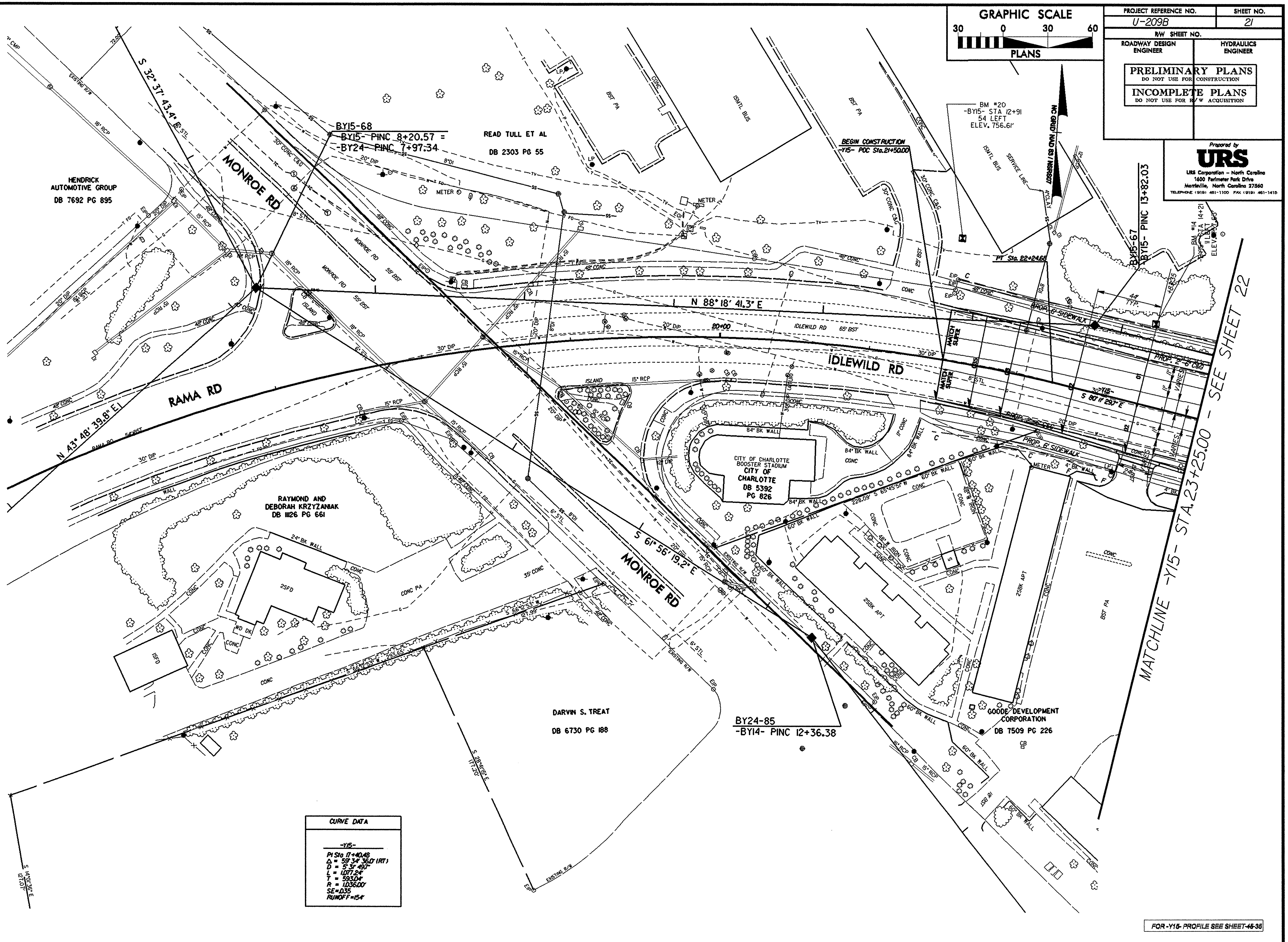
ROADWAY DESIGN ENGINEER — HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

Prepared by
URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415

GRAPHIC SCALE
30 0 30 60
PLANS



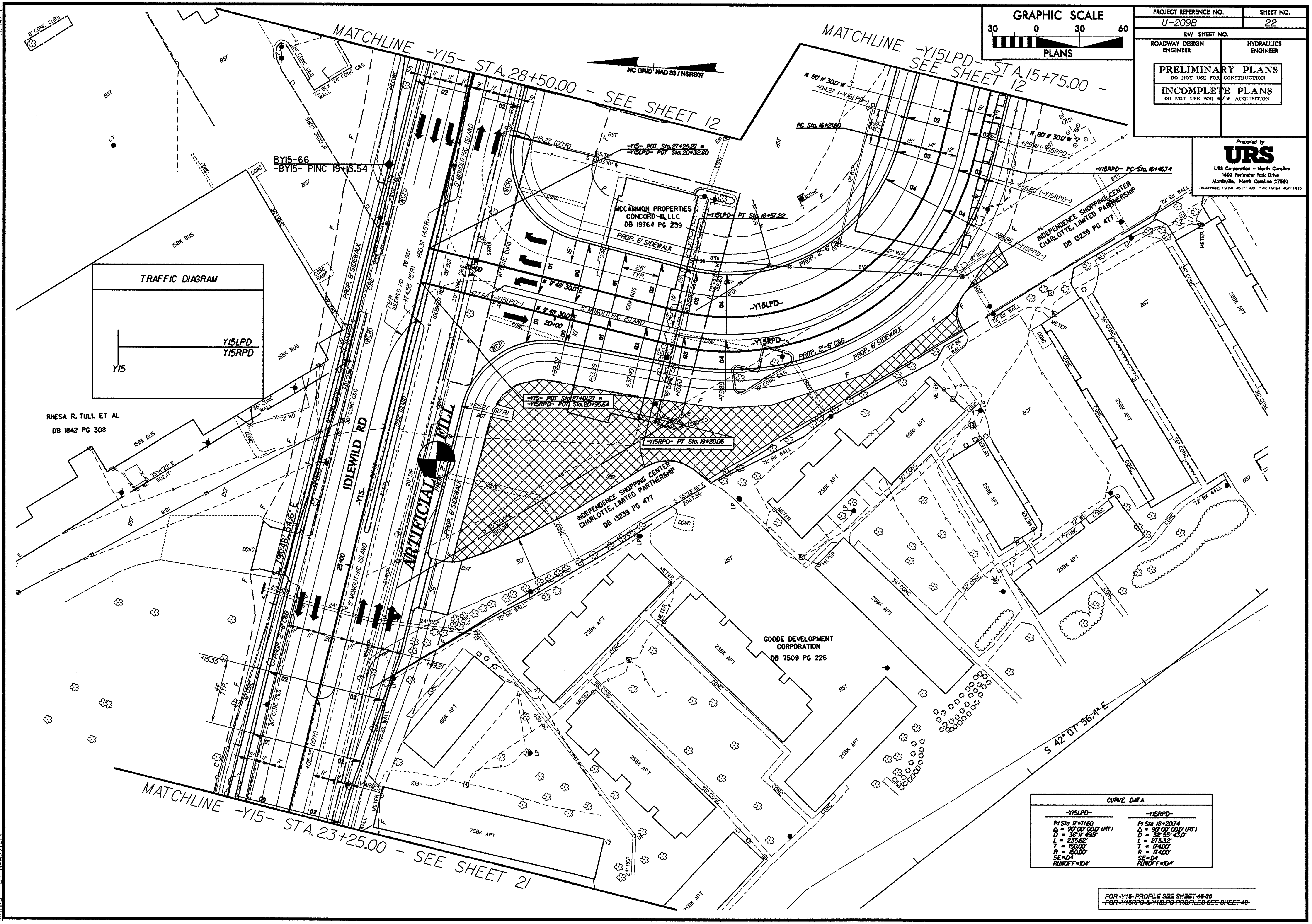
HENDRICK AUTOMOTIVE GROUP
DB 7692 PG 895
READ TULL ET AL
DB 2303 PG 55
BY15-68
-BY15- PINC 8+20.57 =
-BY24- PINC 7+97.34
S 32° 37' 43.4" E
MONROE RD
RAMA RD
N 43° 48' 39.8" E
N 88° 18' 41.3" E
IDLEWILD RD
S 80° 11' 29.7" E
BEGIN CONSTRUCTION
-Y15- POC Sta.21+50.00
BM #20
-BY15- STA 12+91
54 LEFT
ELEV. 756.61'
PT Sta. 22+24.66
BY15-67
-BY15- PINC 13+82.03
NC GRID NAD 83 / NSRS07
CITY OF CHARLOTTE
BOOSTER STADIUM
CITY OF CHARLOTTE
DB 5392
PG 826
RAYMOND AND
DEBORAH KRZYZANIAK
DB 11126 PG 661
S 61° 56' 19.2" E
DARVIN S. TREAT
DB 6730 PG 188
BY24-85
-BY14- PINC 12+36.38
GOODE DEVELOPMENT CORPORATION
DB 7509 PG 226
MATCHLINE -Y15- STA. 23+25.00 - SEE SHEET 22

CURVE DATA
-Y15-
PI Sta 17+40.48
Δ = 59° 34' 36.0" (RT)
D = 5° 31' 49.7"
L = 1,077.24'
T = 593.04'
R = 1,036.00'
SE = .035
RUNOFF = 154'

FOR -Y15- PROFILE SEE SHEET 45-38

5/14/99

19-AUG-2008 12:48
r:\hydraulics\mecklenburg\u209b\planprof\U0209B_GEO_inv_021.dgn



MATCHLINE -Y15- STA. 28+50.00 - SEE SHEET 12
MATCHLINE -Y15LPD- STA. 15+75.00 - SEE SHEET 12
MATCHLINE -Y15- STA. 23+25.00 - SEE SHEET 21
NC GRID NAD 83 / NSRS07
GRAPHIC SCALE
30
0
30
60
PLANS
TRAFFIC DIAGRAM
Y15LPD
Y15RPD
Y15
BY15-66
-BY15- PINC 19+13.54
-Y15- POT Sta. 27+25.27 =
-Y15LPD- POT Sta. 20+32.80
-Y15LPD- PT Sta. 18+57.22
-Y15- POT Sta. 27+01.27 =
-Y15RPD- POT Sta. 20+35.64
-Y15RPD- PT Sta. 19+20.06
-Y15RPD- PC Sta. 16+46.74
PC Sta. 16+21.60
MCCAMMON PROPERTIES
CONCORD -III, LLC
DB 19764 PG 239
INDEPENDENCE SHOPPING CENTER
CHARLOTTE, LIMITED PARTNERSHIP
DB 13239 PG 477
RHESA R. TULL ET AL
DB 1842 PG 308
GOODE DEVELOPMENT
CORPORATION
DB 7509 PG 226
IDLEWILD RD
-Y15-
-Y15LPD-
-Y15RPD-
ARTIFICIAL FILL
PROP. 6' SIDEWALK
PROP. 2'-6" C&G
5' MONOLITHIC ISLAND
S 42° 07' 56.4" E

PROJECT REFERENCE NO.	SHEET NO.
U-209B	22

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

Prepared by
URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415

CURVE DATA

-Y15LPD-	-Y15RPD-
PI Sta 17+71.60	PI Sta 18+20.74
Δ = 90° 00' 00.0" (RT)	Δ = 90° 00' 00.0" (RT)
D = 38° 11' 49.9"	D = 32° 55' 43.0"
L = 235.62'	L = 273.32'
T = 150.00'	T = 174.00'
R = 150.00'	R = 174.00'
SE = .04	SE = .04
RUNOFF = 104'	RUNOFF = 104'

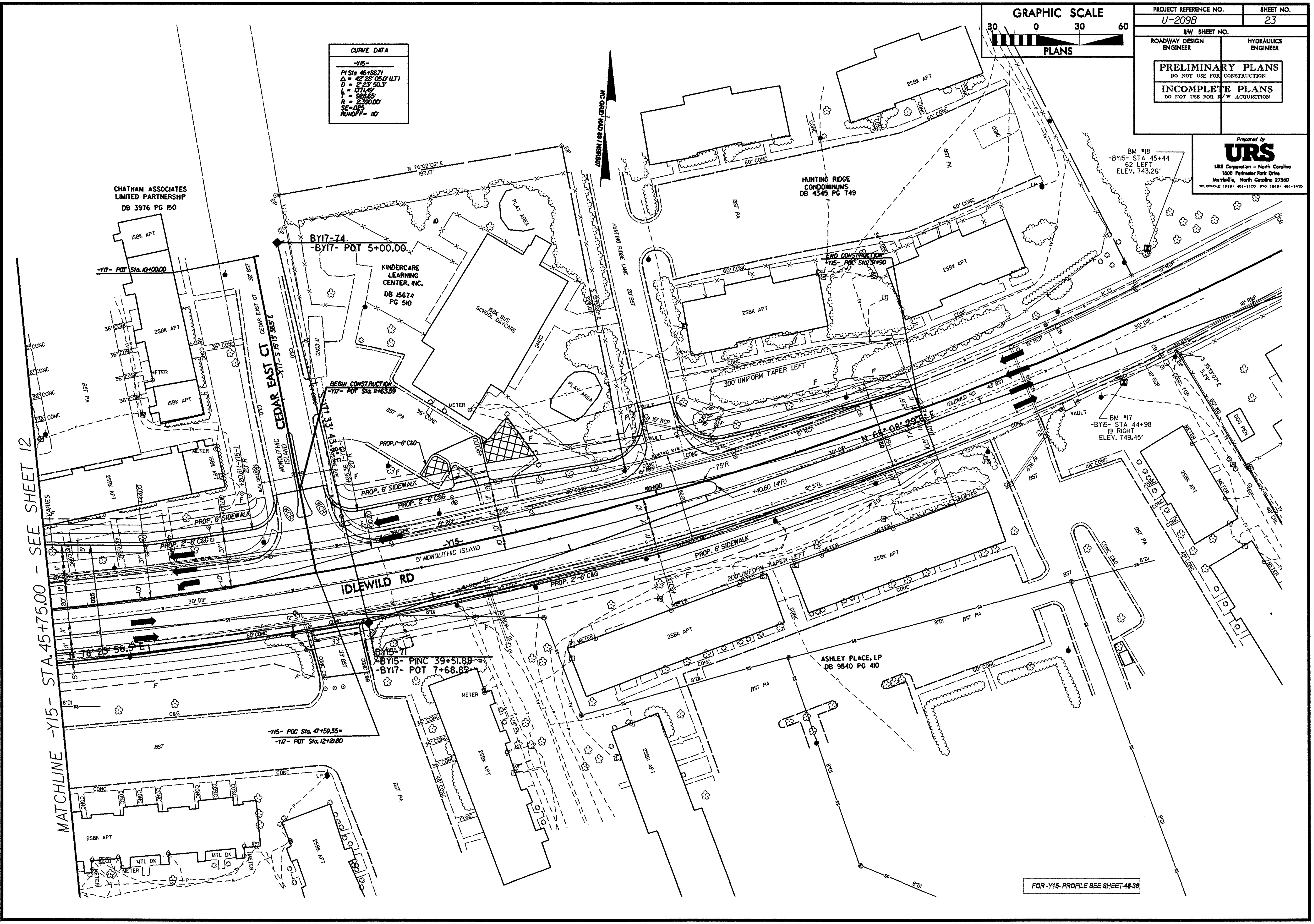
FOR -Y15- PROFILE SEE SHEET ~~45~~ 35
~~FOR -Y15RPD & Y15LPD PROFILES SEE SHEET 48~~

PROJECT REFERENCE NO.	SHEET NO.
U-209B	23
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

Prepared by URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560



GRAPHIC SCALE
30 0 30 60
PLANS
CURVE DATA
-Y15-
PI Sta 46+86.71
Δ = 42° 28' 05.0" (LT)
D = 2° 23' 50.3"
L = 1,771.49'
T = 928.65'
R = 2,390.00'
SE = .025
RUNOFF = 110'
NC GRID NAD 83 / NSRS2007
CHATHAM ASSOCIATES LIMITED PARTNERSHIP
DB 3976 PG 150
KINDERCARE LEARNING CENTER, INC.
DB 15674 PG 510
HUNTING RIDGE CONDOMINIUMS
DB 4345 PG 749
ASHLEY PLACE, LP
DB 9540 PG 410
BM #18
-BY15- STA 45+44
62 LEFT
ELEV. 743.26'
BM #17
-BY15- STA 44+98
19 RIGHT
ELEV. 749.45'
BY17-74
-BY17- POT 5+00.00
-Y17- POT Sta. 10+00.00
BEGIN CONSTRUCTION
-Y17- POT Sta. 11+63.59
END CONSTRUCTION
-Y15- POC Sta. 51+90
BY15-71
-BY15- PINC 39+51.88
-BY17- POT 7+68.82
-Y15- POC Sta. 47+59.35
-Y17- POT Sta. 12+21.80
CEDAR EAST CT
HUNTING RIDGE LANE
IDLEWILD RD
-Y15-
N 68° 08' 29.5" E
N 78° 25' 56.5" E
N 76°02'02" E
PROP. 6' SIDEWALK
PROP. 2'-6" C&G
5' MONOLITHIC ISLAND
MONOLITHIC ISLAND
300' UNIFORM TAPER LEFT
200' UNIFORM TAPER LEFT
PLAY AREA
DOG PEN
MATCHLINE -Y15- STA. 45+75.00 - SEE SHEET 12
FOR -Y15- PROFILE SEE SHEET 46-36

19-AUG-2008 12:51
5/14/99

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

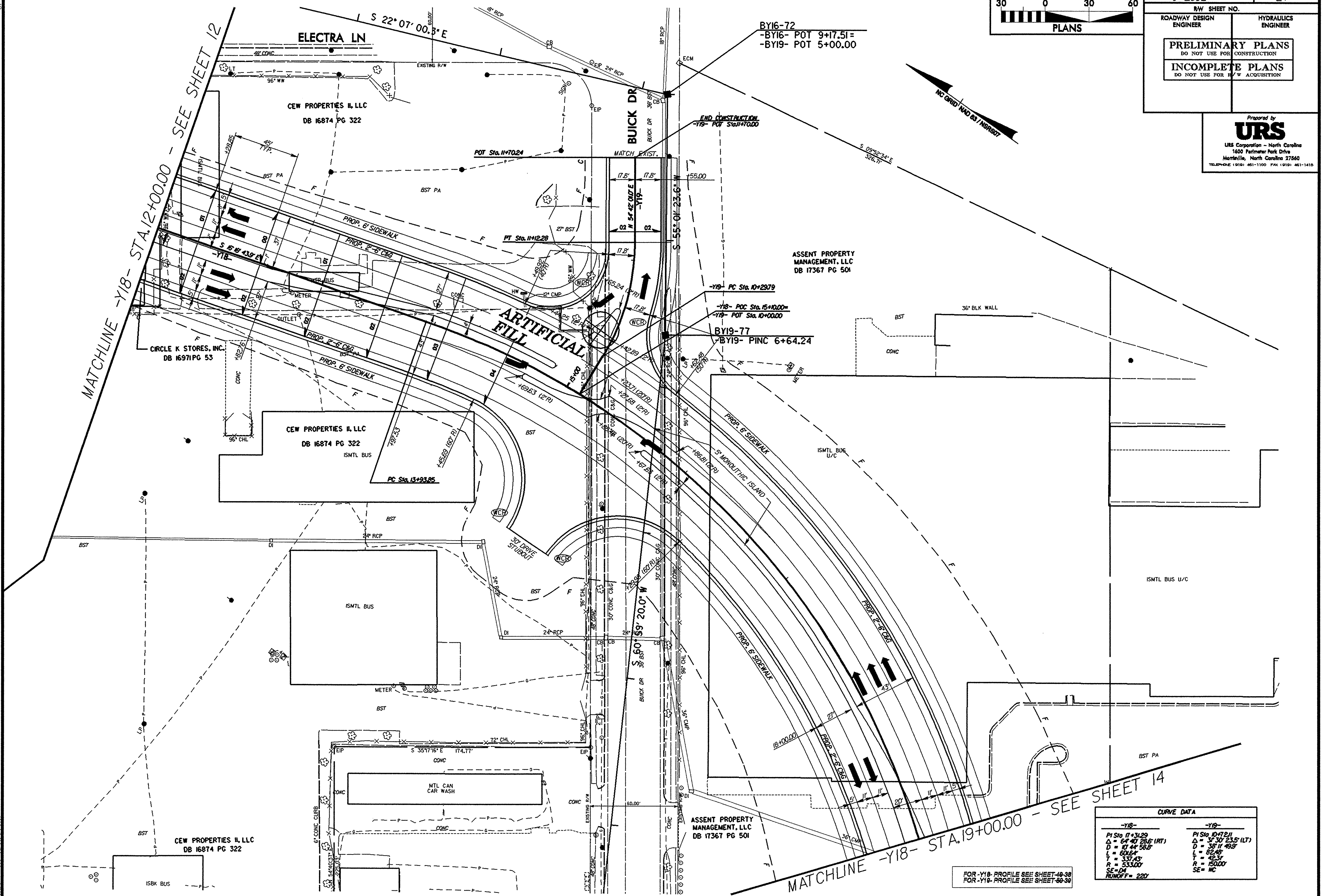
HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

Prepared by
URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415

GRAPHIC SCALE
30 0 30 60
PLANS



MATCHLINE -Y18- STA.12+00.00 - SEE SHEET 12
MATCHLINE -Y18- STA.19+00.00 - SEE SHEET 14
ELECTRA LN
BUICK DR
S 22° 07' 00.3" E
BY16-72
-BY16- POT 9+17.51 =
-BY19- POT 5+00.00
NC GRID NAD 83 / NSRS07
END CONSTRUCTION
-Y19- POT Sta.11+70.00
POT Sta. 11+70.24
PT Sta. 11+12.28
MATCH EXIST.
CEW PROPERTIES II, LLC
DB 16874 PG 322
CIRCLE K STORES, INC.
DB 16971 PG 53
ASSENT PROPERTY MANAGEMENT, LLC
DB 17367 PG 501
ARTIFICIAL FILL
PROP. 6' SIDEWALK
PROP. 2'-6" C&G
-Y19- PC Sta. 10+29.79
-Y18- POC Sta. 15+10.00=
-Y19- POT Sta. 10+00.00
BY19-77
-BY19- PINC 6+64.24
PC Sta. 13+93.85
30' DRIVE STUBOUT
5' MONOLITHIC ISLAND
ISMTL BUS
ISMTL BUS U/C
MTL CAN CAR WASH
ISBK BUS
S 35°17'16" E 174.77'
S 60° 59' 20.0" W
S 55° 01' 23.6" W
S 09°52'34" E 326.11'
36" BLK WALL
FOR -Y18- PROFILE SEE SHEET 49-38
FOR -Y19- PROFILE SEE SHEET 50-39

CURVE DATA

-Y18-	-Y19-
PI Sta 17+31.29	PI Sta 10+72.11
Δ = 64° 40' 28.6" (RT)	Δ = 31° 30' 23.5" (LT)
D = 10° 44' 58.8"	D = 38° 11' 49.9"
L = 601.64'	L = 82.48'
T = 337.43'	T = 42.31'
R = 533.00'	R = 150.00'
SE = .04	SE = NC
RUNOFF = 220'	

5/14/99

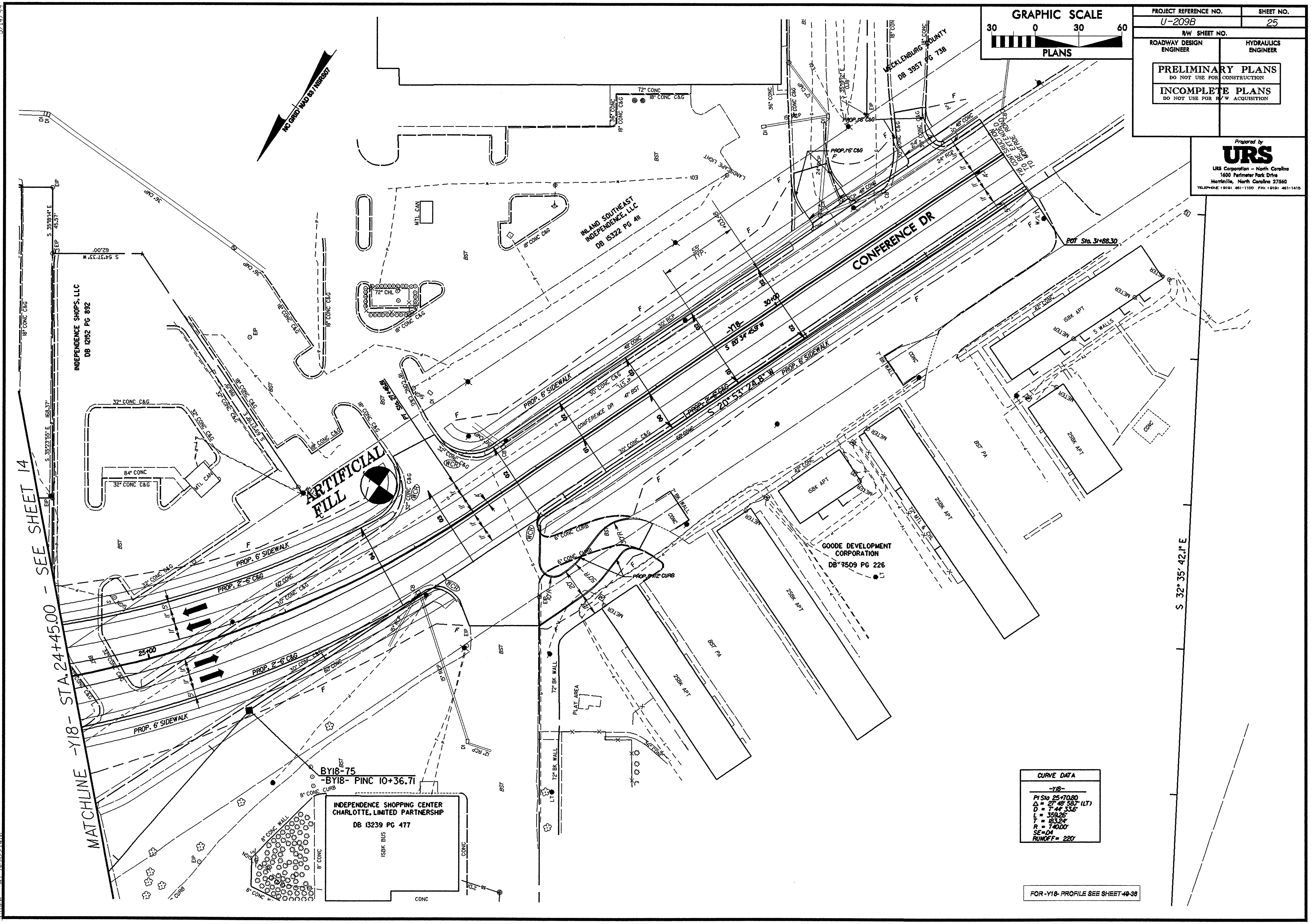
19-AUG-2008 12:53
r:\dy-mecklenburg\cadd-geotech\planprof\U0209B_GEO_inv_024.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-209B	25
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

Prepared by
URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415



GRAPHIC SCALE
30 0 30 60
PLANS
NC GRID NAD 83/NSRS07
CONFERENCE DR
-Y18-
S 20°53'24.8" W
30+00
25+00
POT Sta. 31+88.30
ARTIFICIAL FILL
PROP. 6' SIDEWALK
PROP. 2'-6" C&G
INDEPENDENCE SHOPS, LLC
DB 12152 PG 892
INLAND SOUTHEAST INDEPENDENCE, LLC
DB 15322 PG 411
MECKLENBURG COUNTY
DB 3957 PG 738
GOODE DEVELOPMENT CORPORATION
DB 7509 PG 226
INDEPENDENCE SHOPPING CENTER
CHARLOTTE, LIMITED PARTNERSHIP
DB 13239 PG 477
1SBK BUS
BY18-75
-BY18- PINC 10+36.71
MATCHLINE -Y18- STA. 24+45.00 - SEE SHEET 14
S 32° 35' 42.1" E
CURVE DATA
-Y18-
PI Sta 25+70.80
Δ = 27° 48' 58.7" (LT)
D = 7° 44' 33.6"
L = 359.26'
T = 183.24'
R = 740.00'
SE = .04
RUNOFF = 220'
FOR -Y18- PROFILE SEE SHEET 49-38

5/14/99

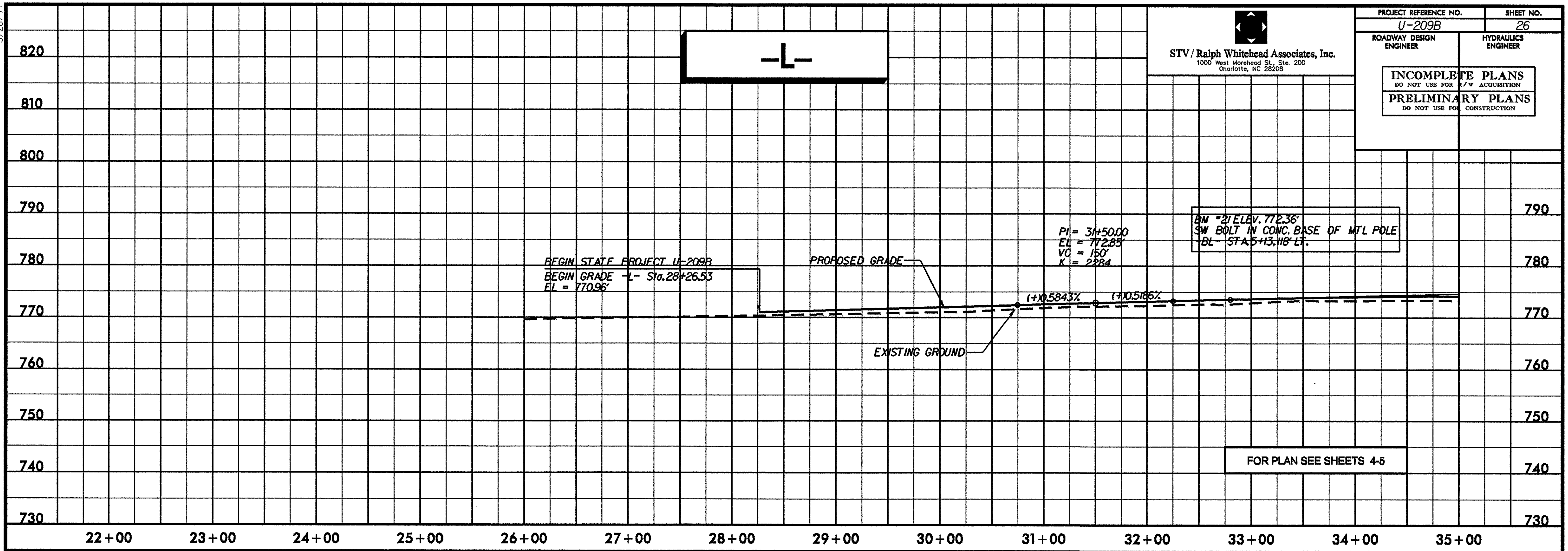
19-AUG-2008 12:55
rdwy-mecklenburg\cadd_geotech\planprof\U0209B_GEO_inv_025.dgn

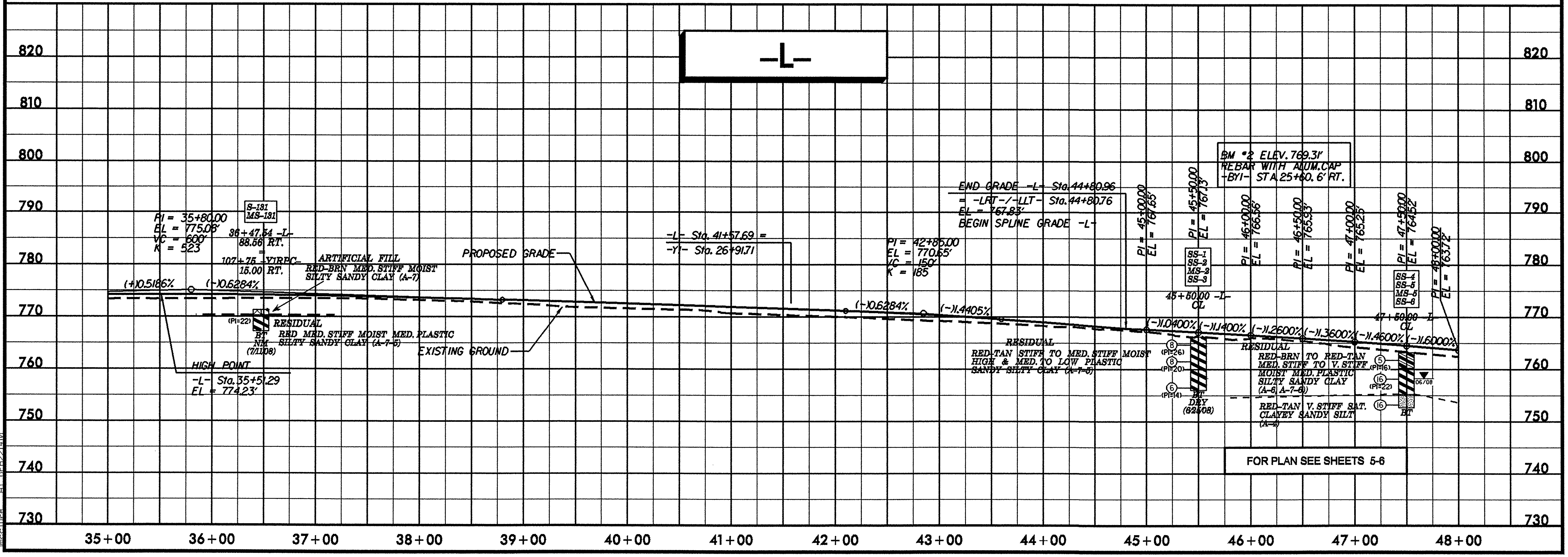
PROJECT REFERENCE NO.	SHEET NO.
U-209B	26
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

STV / Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

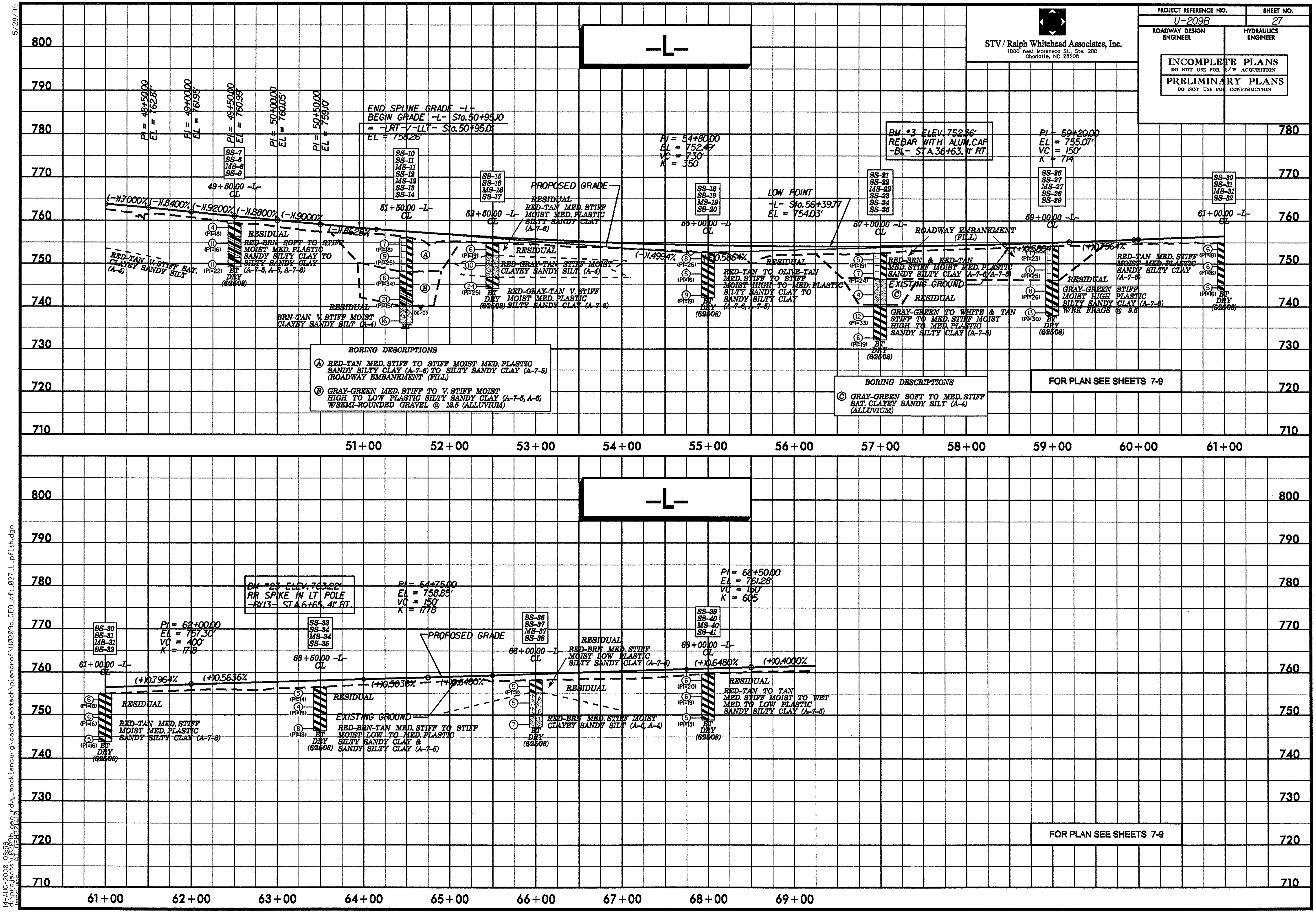
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

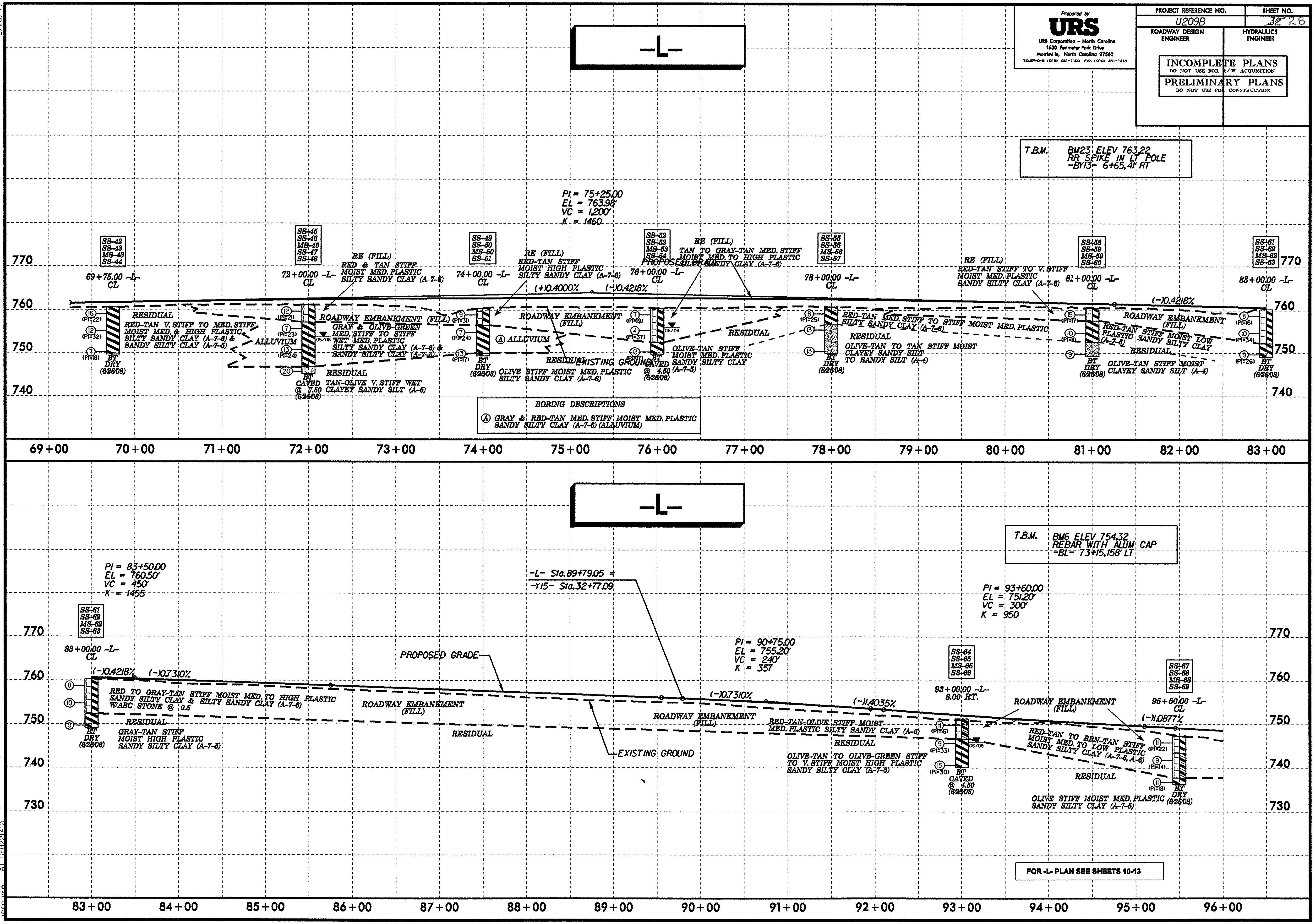




5/28/99

14-AUG-2008 08:58
d:\projects\u0209b_geo_rdwy_mecklenburg\cadd_geotech\planprof\u0209b_geo_pfl_026_1_pflsh.dgn


PROJECT REFERENCE NO. U-209B
SHEET NO. 27
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
STV / Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200 Charlotte, NC 28208
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION
-L-
END SPLINE GRADE -L-
BEGIN GRADE -L- Sta.50+95.10
= -LRT-/-LLT- Sta.50+95.01
EL = 758.26'
PI = 48+50.00 EL = 762.87'
PI = 49+00.00 EL = 761.95'
PI = 49+50.00 EL = 760.99'
PI = 50+00.00 EL = 760.05'
PI = 50+50.00 EL = 759.10'
PI = 54+80.00 EL = 752.49' VC = 730' K = 350
BM #3 ELEV. 752.36' REBAR WITH ALUM. CAP -BL- STA.36+63. 11' RT.
PI = 59+20.00 EL = 755.07' VC = 150' K = 714
PROPOSED GRADE
LOW POINT -L- Sta.56+39.77 EL = 754.03'
ROADWAY EMBANKMENT (FILL)
EXISTING GROUND
RESIDUAL
BORING DESCRIPTIONS
(A) RED-TAN MED. STIFF TO STIFF MOIST MED. PLASTIC SANDY SILTY CLAY (A-7-6) TO SILTY SANDY CLAY (A-7-5) (ROADWAY EMBANKMENT (FILL))
(B) GRAY-GREEN MED. STIFF TO V. STIFF MOIST HIGH TO LOW PLASTIC SILTY SANDY CLAY (A-7-5, A-6) W/SEMI-ROUNDED GRAVEL @ 13.5 (ALLUVIUM)
(C) GRAY-GREEN SOFT TO MED. STIFF SAT. CLAYEY SANDY SILT (A-4) (ALLUVIUM)
RED-TAN V. STIFF SAT. CLAYEY SANDY SILT (A-4)
RED-BRN SOFT TO STIFF MOIST MED. PLASTIC SANDY SILTY CLAY TO SILTY SANDY CLAY (A-7-5, A-6, A-7-6)
BRN-TAN V. STIFF MOIST CLAYEY SANDY SILT (A-4)
RED-TAN MED. STIFF MOIST MED. PLASTIC SILTY SANDY CLAY (A-7-6)
RED-GRAY-TAN STIFF MOIST CLAYEY SANDY SILT (A-4)
RED-GRAY-TAN V. STIFF DRY MOIST MED. PLASTIC SILTY SANDY CLAY (A-7-6)
RED-TAN TO OLIVE-TAN MED. STIFF TO STIFF MOIST HIGH TO MED. PLASTIC SILTY SANDY CLAY TO SANDY SILTY CLAY (A-7-6, A-7-5)
RED-BRN & RED-TAN MED. STIFF MOIST MED. PLASTIC SANDY SILTY CLAY (A-7-6/A-7-5)
GRAY-GREEN TO WHITE & TAN STIFF TO MED. STIFF MOIST HIGH TO MED. PLASTIC SANDY SILTY CLAY (A-7-5)
GRAY-GREEN STIFF MOIST HIGH PLASTIC SILTY SANDY CLAY (A-7-6) W/RK FRAGS @ 9.5
RED-TAN MED. STIFF MOIST MED. PLASTIC SANDY SILTY CLAY
FOR PLAN SEE SHEETS 7-9
51+00 52+00 53+00 54+00 55+00 56+00 57+00 58+00 59+00 60+00 61+00
BM #23 ELEV. 763.22' RR SPIKE IN LT POLE -BY13- STA.6+65. 41' RT.
PI = 62+00.00 EL = 761.30' VC = 400' K = 1718
PI = 64+75.00 EL = 758.85' VC = 150' K = 1778
PI = 68+50.00 EL = 761.28' VC = 150' K = 605
RED-TAN MED. STIFF MOIST MED. PLASTIC SANDY SILTY CLAY (A-7-5)
RED-BRN-TAN MED. STIFF TO STIFF MOIST LOW TO MED. PLASTIC SILTY SANDY CLAY & SANDY SILTY CLAY (A-7-5)
RED-BRN MED. STIFF MOIST LOW PLASTIC SILTY SANDY CLAY (A-7-5)
RED-BRN MED. STIFF MOIST CLAYEY SANDY SILT (A-5, A-4)
RED-TAN TO TAN MED. STIFF MOIST TO WET MED. TO LOW PLASTIC SANDY SILTY CLAY (A-7-5)
61+00 62+00 63+00 64+00 65+00 66+00 67+00 68+00 69+00
5/28/99
14-AUG-2008 08:59 d:\projects\u0209b-geo_rdwy_mecklenburg\cadd_geotech\planprof\U0209b_GEO_pfl_027_L_pflsh.dgn


5/28/99
Prepared by
URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
PROJECT REFERENCE NO.
U209B
SHEET NO.
32
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
-L-
T.B.M. BM23 ELEV 763.22
RR SPIKE IN LT POLE
-BY13- 6+65.41' RT
PI = 75+25.00
EL = 763.98'
VC = 1,200'
K = 1460
(+)0.4000%
(-)0.4218%
69+75.00 -L- CL
72+00.00 -L- CL
74+00.00 -L- CL
76+00.00 -L- CL
78+00.00 -L- CL
81+00.00 -L- CL
83+00.00 -L- CL
RE (FILL)
ROADWAY EMBANKMENT (FILL)
RESIDUAL
ALLUVIUM
EXISTING GROUND
PROPOSED GRADE
BORING DESCRIPTIONS
(A) GRAY & RED-TAN MED. STIFF MOIST MED. PLASTIC SANDY SILTY CLAY (A-7-6) (ALLUVIUM)
69+00
70+00
71+00
72+00
73+00
74+00
75+00
76+00
77+00
78+00
79+00
80+00
81+00
82+00
83+00
770
760
750
740
-L-
T.B.M. BM6 ELEV 754.32
REBAR WITH ALUM CAP
-BL- 73+15.158' LT
PI = 83+50.00
EL = 760.50'
VC = 450'
K = 1455
-L- Sta.89+79.05 =
-Y15- Sta.32+77.09
PI = 90+75.00
EL = 755.20'
VC = 240'
K = 357
PI = 93+60.00
EL = 751.20'
VC = 300'
K = 950
(-)0.4218%
(-)0.7310%
(-)1.4035%
(-)1.0877%
93+00.00 -L- 8.00' RT.
95+50.00 -L- CL
FOR -L- PLAN SEE SHEETS 10-13
83+00
84+00
85+00
86+00
87+00
88+00
89+00
90+00
91+00
92+00
93+00
94+00
95+00
96+00
770
760
750
740
730

Prepared by
URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560

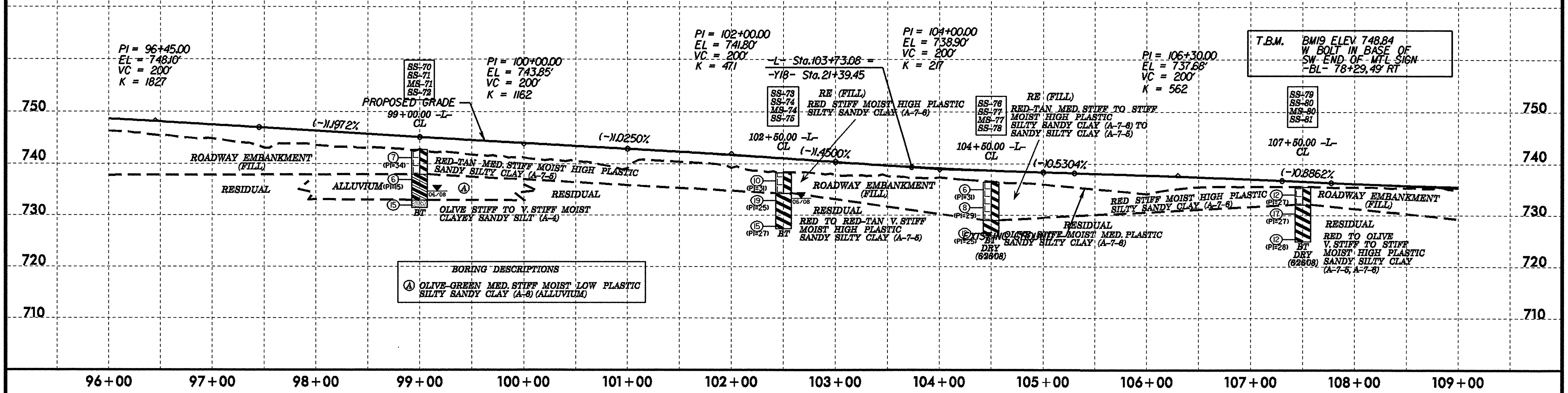
PROJECT REFERENCE NO.	SHEET NO.
U209B	33 29
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

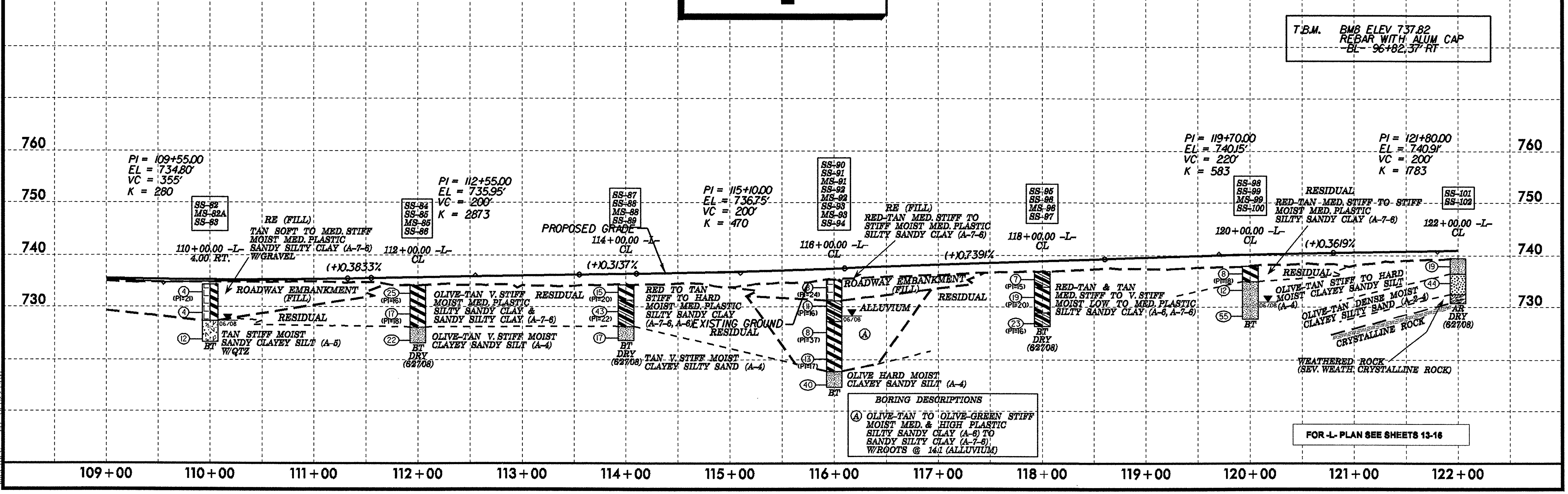
5/28/99

-L-



PI = 96+45.00
EL = 748.10'
VC = 200'
K = 1827
PI = 100+00.00
EL = 743.85'
VC = 200'
K = 1162
PI = 102+00.00
EL = 741.80'
VC = 200'
K = 47.1
-L- Sta.103+73.08 =
-Y18- Sta.21+39.45
PI = 104+00.00
EL = 738.90'
VC = 200'
K = 217
PI = 106+30.00
EL = 737.68'
VC = 200'
K = 562
T.B.M. BM19 ELEV 748.84
W BOLT IN BASE OF SW END OF MTL SIGN
-BL- 78+29.49' RT
PROPOSED GRADE
(−)1.1972%
(−)1.0250%
(−)1.4500%
(−)0.5304%
(−)0.8862%
99+00.00 -L- CL
102+50.00 -L- CL
104+50.00 -L- CL
107+50.00 -L- CL
ROADWAY EMBANKMENT (FILL)
RESIDUAL
ALLUVIUM
RED-TAN MED. STIFF MOIST HIGH PLASTIC SANDY SILTY CLAY (A-7-5)
OLIVE STIFF TO V. STIFF MOIST CLAYEY SANDY SILT (A-4)
RE (FILL) RED STIFF MOIST HIGH PLASTIC SILTY SANDY CLAY (A-7-6)
RED TO RED-TAN V. STIFF MOIST HIGH PLASTIC SANDY SILTY CLAY (A-7-5)
RE (FILL) RED-TAN MED. STIFF TO STIFF MOIST HIGH PLASTIC SILTY SANDY CLAY (A-7-6) TO SANDY SILTY CLAY (A-7-5)
EXISTING GROUND
RED STIFF MOIST HIGH PLASTIC SILTY SANDY CLAY (A-7-6)
RED TO OLIVE V. STIFF TO STIFF MOIST HIGH PLASTIC SANDY SILTY CLAY (A-7-5, A-7-6)
BORING DESCRIPTIONS
(A) OLIVE-GREEN MED. STIFF MOIST LOW PLASTIC SILTY SANDY CLAY (A-6) (ALLUVIUM)
750
740
730
720
710
96+00
97+00
98+00
99+00
100+00
101+00
102+00
103+00
104+00
105+00
106+00
107+00
108+00
109+00

-L-



T.B.M. BM8 ELEV 737.82
REBAR WITH ALUM CAP
-BL- 96+82.37' RT
PI = 109+55.00
EL = 734.80'
VC = 355'
K = 280
PI = 112+55.00
EL = 735.95'
VC = 200'
K = 2873
PI = 115+10.00
EL = 736.75'
VC = 200'
K = 470
PI = 119+70.00
EL = 740.15'
VC = 220'
K = 583
PI = 121+80.00
EL = 740.91'
VC = 200'
K = 1783
PROPOSED GRADE
(+)0.3833%
(+)0.3137%
(+)0.7391%
(+)0.3619%
110+00.00 -L- 4.00' RT.
112+00.00 -L- CL
114+00.00 -L- CL
116+00.00 -L- CL
118+00.00 -L- CL
120+00.00 -L- CL
122+00.00 -L- CL
RE (FILL) TAN SOFT TO MED. STIFF MOIST MED. PLASTIC SANDY SILTY CLAY (A-7-5) W/GRAVEL
ROADWAY EMBANKMENT (FILL)
RESIDUAL
TAN STIFF MOIST SANDY CLAYEY SILT (A-5) W/QTZ
OLIVE-TAN V. STIFF MOIST MED. PLASTIC SILTY SANDY CLAY & SANDY SILTY CLAY (A-7-6)
OLIVE-TAN V. STIFF MOIST CLAYEY SANDY SILT (A-4)
RED TO TAN STIFF TO HARD MOIST MED. PLASTIC SILTY SANDY CLAY (A-7-6, A-6)
EXISTING GROUND
TAN V. STIFF MOIST CLAYEY SILTY SAND (A-4)
RE (FILL) RED-TAN MED. STIFF TO MOIST MED. & HIGH PLASTIC SILTY SANDY CLAY (A-7-6)
ALLUVIUM
OLIVE HARD MOIST CLAYEY SANDY SILT (A-4)
RED-TAN & TAN MED. STIFF TO V. STIFF MOIST LOW TO MED. PLASTIC SILTY SANDY CLAY (A-6, A-7-6)
RESIDUAL RED-TAN MED. STIFF TO STIFF MOIST MED. PLASTIC SILTY SANDY CLAY (A-7-6)
OLIVE-TAN STIFF TO HARD MOIST CLAYEY SANDY SILT (A-4)
OLIVE-TAN DENSE MOIST CLAYEY SILTY SAND (A-2-4)
CRYSTALLINE ROCK
WEATHERED ROCK (SEV. WEATH. CRYSTALLINE ROCK)
BORING DESCRIPTIONS
(A) OLIVE-TAN TO OLIVE-GREEN STIFF MOIST MED. & HIGH PLASTIC SILTY SANDY CLAY (A-6) TO SANDY SILTY CLAY (A-7-6) W/ROOTS @ 14.1 (ALLUVIUM)
760
750
740
730
109+00
110+00
111+00
112+00
113+00
114+00
115+00
116+00
117+00
118+00
119+00
120+00
121+00
122+00

FOR -L- PLAN SEE SHEETS 13-16

18-AUG-2008 11:52
d:\projects\u0209b_geo_rdwy_mecklenburg\cadd_geotech\planprof\U0209B_GEO_pfl_033_L_pflsh.dgn

5/28/99

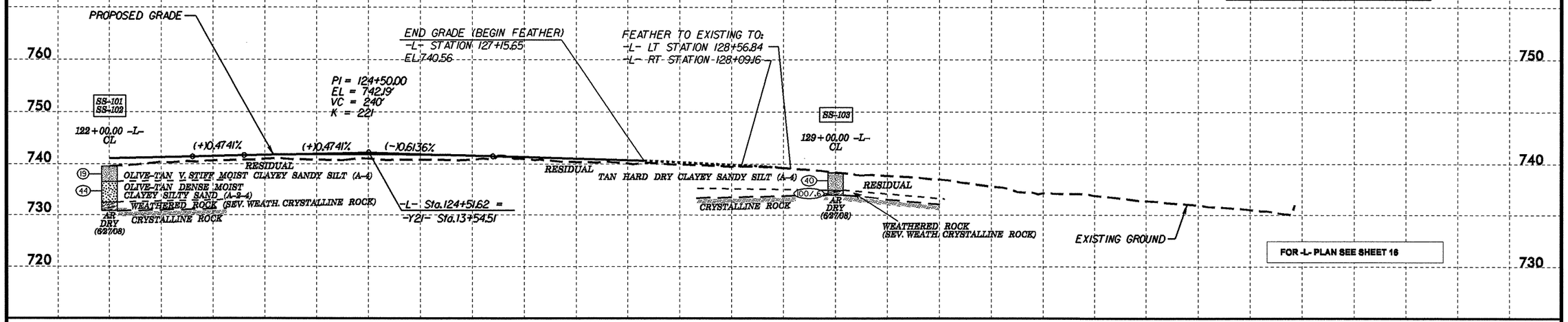
-L-

Prepared by
URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415

PROJECT REFERENCE NO.	SHEET NO.
U209B	34 30
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

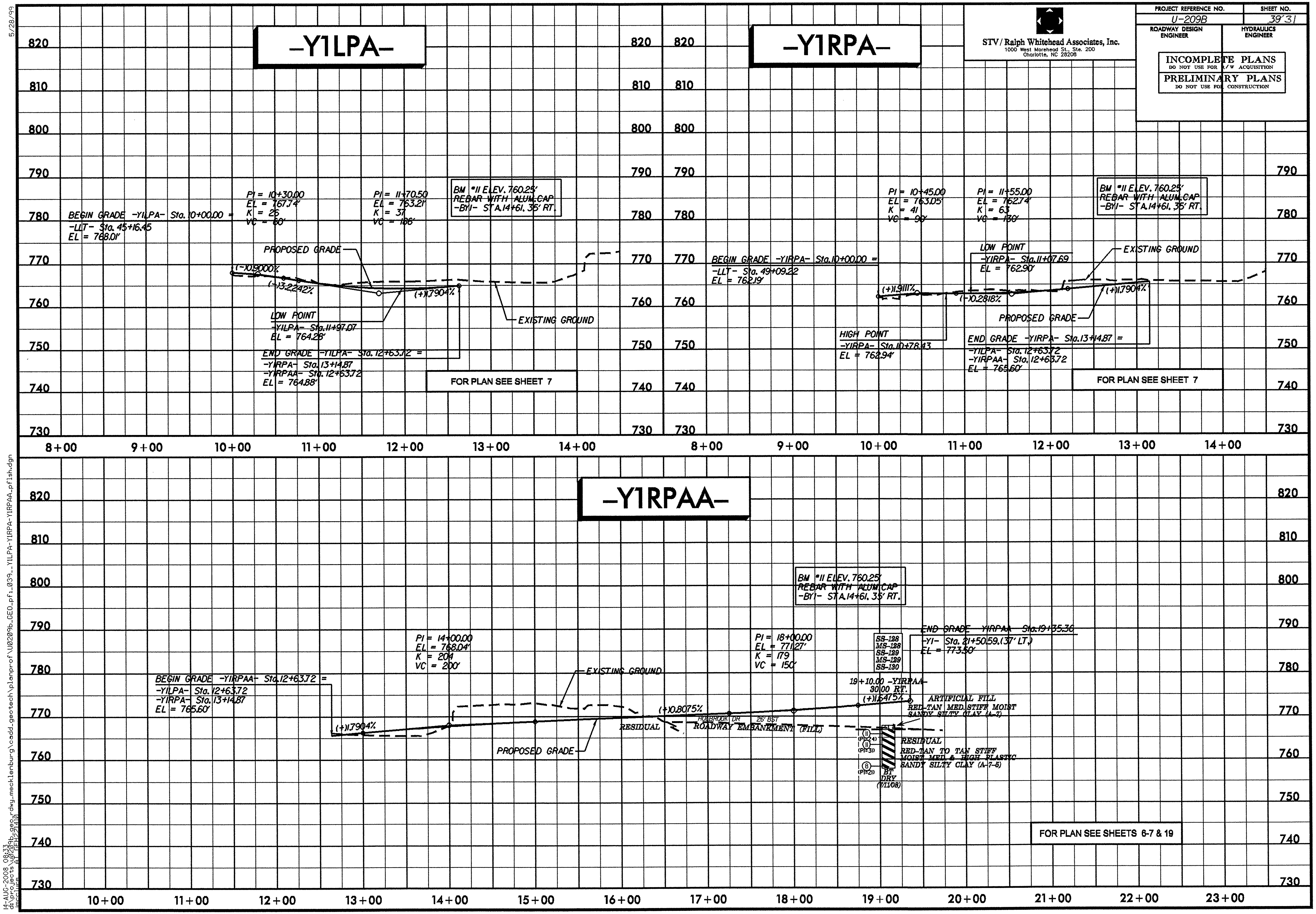
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

T.B.M. BM24 ELEV 745.29
RR SPIKE IN 40" WILLOW OAK
-BL- 107+39.80' RT

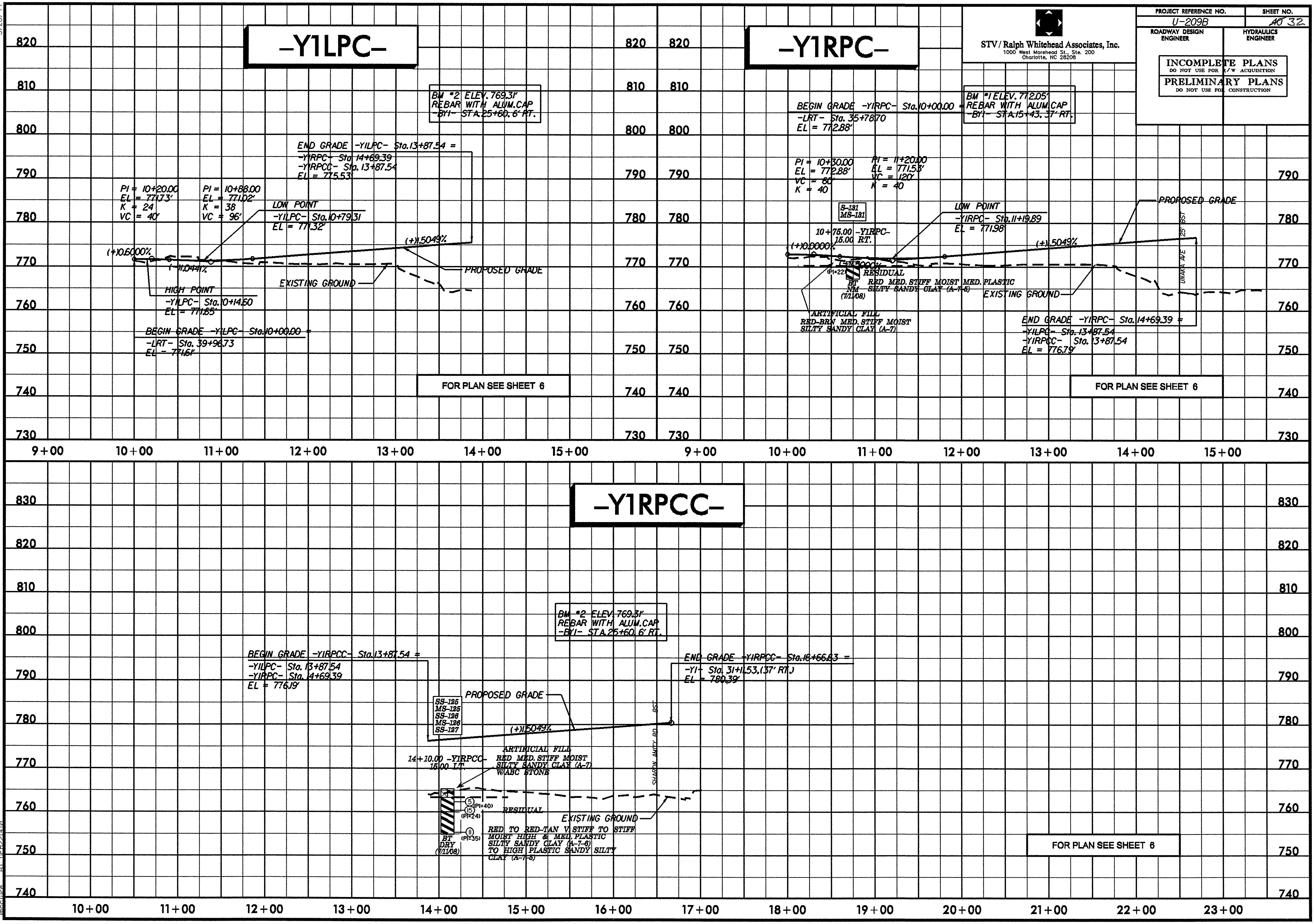


FOR -L- PLAN SEE SHEET 16

18-AUG-2008 11:55
C:\projects\U209b_geo_rdwy_mecklenburg\cadd_geotech\planprof\U02098_GEO_pf1_034_L_pfish.dgn
imcclure



PROJECT REFERENCE NO. U-209B
SHEET NO. 39'31
STV / Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
-Y1LPA-
BEGIN GRADE -Y1LPA- Sta. 10+00.00 = -LLT- Sta. 45+16.45 EL = 768.01'
PI = 10+30.00 EL = 767.74' K = 26 VC = 60'
PI = 11+70.50 EL = 763.21' K = 37 VC = 186'
BM #11 ELEV. 760.25' REBAR WITH ALUM.CAP -BY1- STA.14+61. 35' RT.
PROPOSED GRADE
(-)0.9000%
(-)3.2242%
(+)1.7904%
LOW POINT -Y1LPA- Sta.11+97.07 EL = 764.28'
EXISTING GROUND
END GRADE -Y1LPA- Sta. 12+63.72 = -Y1RPA- Sta. 13+14.87 -Y1RPAA- Sta. 12+63.72 EL = 764.88'
FOR PLAN SEE SHEET 7
-Y1RPA-
BEGIN GRADE -Y1RPA- Sta.10+00.00 = -LLT- Sta. 49+09.22 EL = 762.19'
PI = 10+45.00 EL = 763.05' K = 41 VC = 90'
PI = 11+55.00 EL = 762.74' K = 63 VC = 130'
BM #11 ELEV. 760.25' REBAR WITH ALUM.CAP -BY1- STA.14+61. 35' RT.
LOW POINT -Y1RPA- Sta.11+07.69 EL = 762.90'
EXISTING GROUND
(+)1.9111%
(-)0.2818%
(+)1.7904%
PROPOSED GRADE
HIGH POINT -Y1RPA- Sta.10+78.43 EL = 762.94'
END GRADE -Y1RPA- Sta.13+14.87 = -Y1LPA- Sta. 12+63.72 -Y1RPAA- Sta. 12+63.72 EL = 765.60'
FOR PLAN SEE SHEET 7
-Y1RPAA-
BM #11 ELEV. 760.25' REBAR WITH ALUM.CAP -BY1- STA.14+61. 35' RT.
PI = 14+00.00 EL = 768.04' K = 204 VC = 200'
PI = 18+00.00 EL = 771.27' K = 179 VC = 150'
END GRADE Y1RPAA Sta.19+35.36 -Y1- Sta. 21+50.59.(37' LT.) EL = 773.50'
SS-128 MS-128 SS-129 MS-129 SS-130
BEGIN GRADE -Y1RPAA- Sta.12+63.72 = -Y1LPA- Sta. 12+63.72 -Y1RPA- Sta. 13+14.87 EL = 765.60'
EXISTING GROUND
(+)1.7904%
(+)0.8075%
(+)1.6475%
19+10.00 -Y1RPAA- 30.00 RT.
ARTIFICIAL FILL RED-TAN MED. STIFF MOIST SANDY SILTY CLAY (A-7)
HOLBROOK DR 26' BST
RESIDUAL
ROADWAY EMBANKMENT (FILL)
RESIDUAL RED-TAN TO TAN STIFF MOIST MED. & HIGH PLASTIC SANDY SILTY CLAY (A-7-6)
BT DRY (7/11/08)
PROPOSED GRADE
FOR PLAN SEE SHEETS 6-7 & 19
820 810 800 790 780 770 760 750 740 730
8+00 9+00 10+00 11+00 12+00 13+00 14+00
10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00
5/28/99
14-AUG-2008 08:33



PROJECT REFERENCE NO. U-209B
SHEET NO. 40 32
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
STV / Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200 Charlotte, NC 28208
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION
-Y1LPC-
BM #2 ELEV. 769.31' REBAR WITH ALUM.CAP -BY1- STA.25+60, 6' RT.
END GRADE -Y1LPC- Sta.13+87.54 = -Y1RPC- Sta. 14+69.39 -Y1RPCC- Sta. 13+87.54 EL = 775.53'
PI = 10+20.00 EL = 771.73' K = 24 VC = 40'
PI = 10+88.00 EL = 771.02' K = 38 VC = 96'
LOW POINT -Y1LPC- Sta.10+79.31 EL = 771.32'
(+)0.6000%
(-)1.0441%
(+)1.5049%
PROPOSED GRADE
EXISTING GROUND
HIGH POINT -Y1LPC- Sta.10+14.50 EL = 771.65'
BEGIN GRADE -Y1LPC- Sta.10+00.00 = -LRT- Sta. 39+96.73 EL = 771.61'
FOR PLAN SEE SHEET 6
-Y1RPC-
BEGIN GRADE -Y1RPC- Sta.10+00.00 = -LRT- Sta. 35+78.70 EL = 772.88'
BM #1 ELEV. 772.05' REBAR WITH ALUM.CAP -BY1- STA.15+43, 37' RT.
PI = 10+30.00 EL = 772.88' VC = 60' K = 40
PI = 11+20.00 EL = 771.53' VC = 120' K = 40
S-131 MS-131
LOW POINT -Y1RPC- Sta.11+19.89 EL = 771.98'
PROPOSED GRADE
10+75.00 -Y1RPC- 15.00 RT.
(+)0.0000%
(+)1.5049%
RESIDUAL
RED MED. STIFF MOIST MED. PLASTIC SILTY SANDY CLAY (A-7-6)
BT NM (7/11/08)
ARTIFICIAL FILL RED-BRN MED. STIFF MOIST SILTY SANDY CLAY (A-7)
EXISTING GROUND
UMAKA AVE
END GRADE -Y1RPC- Sta. 14+69.39 = -Y1LPC- Sta. 13+87.54 -Y1RPCC- Sta. 13+87.54 EL = 776.79'
FOR PLAN SEE SHEET 6
-Y1RPCC-
BM #2 ELEV. 769.31' REBAR WITH ALUM.CAP -BY1- STA.25+60, 6' RT.
BEGIN GRADE -Y1RPCC- Sta.13+87.54 = -Y1LPC- Sta. 13+87.54 -Y1RPC- Sta. 14+69.39 EL = 776.19'
END GRADE -Y1RPCC- Sta.16+66.83 = -Y1- Sta. 31+11.53, (37' RT.) EL = 780.39'
SS-125 MS-125 SS-126 MS-126 SS-127
PROPOSED GRADE
(+)1.5049%
SHARON AMITY RD
14+10.00 -Y1RPCC- 15.00 LT.
ARTIFICIAL FILL RED MED. STIFF MOIST SILTY SANDY CLAY (A-7) W/ABC STONE
RESIDUAL
EXISTING GROUND
RED TO RED-TAN V. STIFF TO STIFF MOIST HIGH & MED. PLASTIC SILTY SANDY CLAY (A-7-6) TO HIGH PLASTIC SANDY SILTY CLAY (A-7-6)
BT DRY (7/11/08)
FOR PLAN SEE SHEET 6

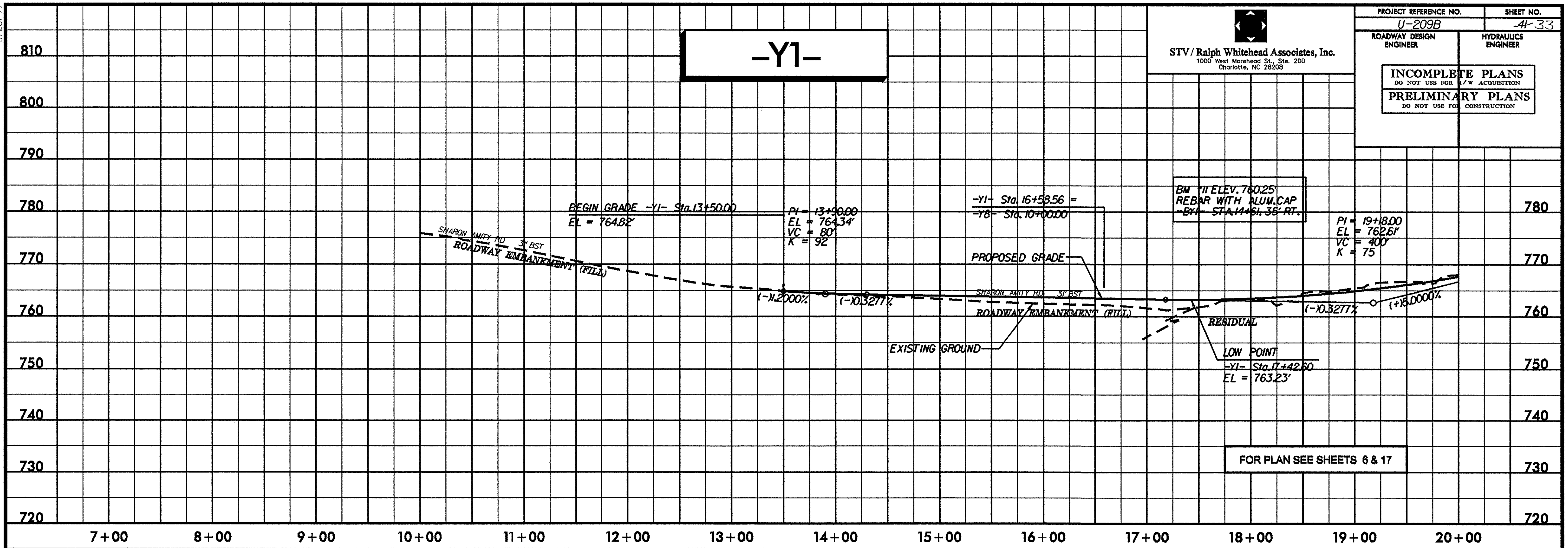
PROJECT REFERENCE NO. U-209B | SHEET NO. 41-33

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

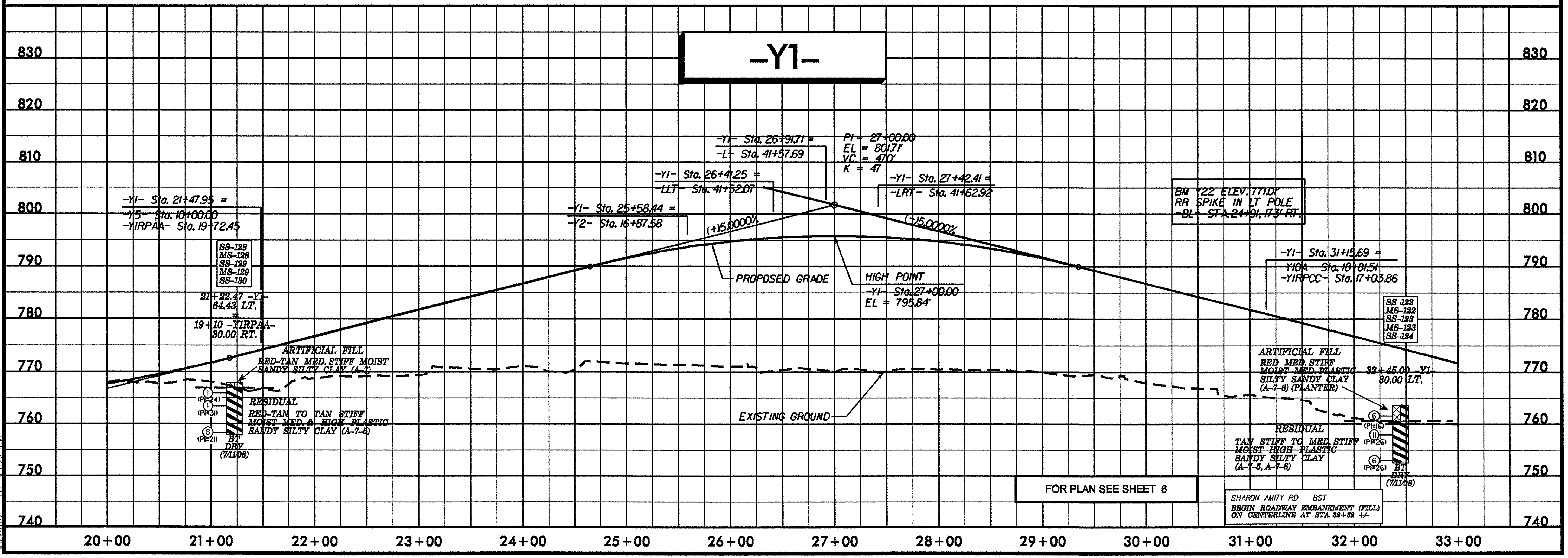
STV / Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



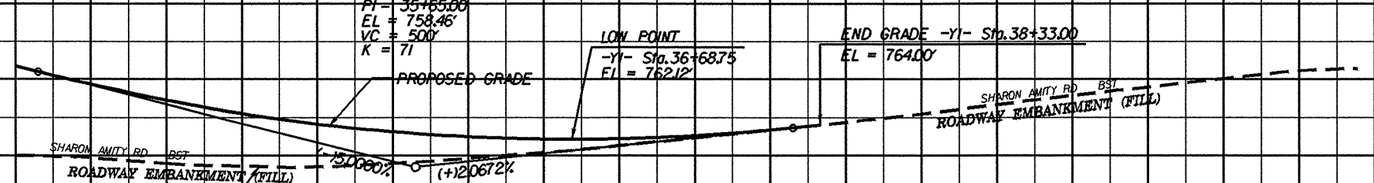
-Y1-
BEGIN GRADE -Y1- Sta. 13+50.00
EL = 764.82'
PI = 13+90.00
EL = 764.34'
VC = 80'
K = 92
SHARON AMITY RD 3" BST
ROADWAY EMBANKMENT (FILL)
(-)1.2000%
(-)0.3277%
-Y1- Sta. 16+58.56 =
-Y8- Sta. 10+00.00
PROPOSED GRADE
EXISTING GROUND
RESIDUAL
LOW POINT
-Y1- Sta. 17+42.60
EL = 763.23'
BM #11 ELEV. 760.25'
REBAR WITH ALUM. CAP
-BY1- STA. 14+61, 38' RT.
PI = 19+18.00
EL = 762.61'
VC = 400'
K = 75
(-)0.3277%
(+)5.0000%
FOR PLAN SEE SHEETS 6 & 17

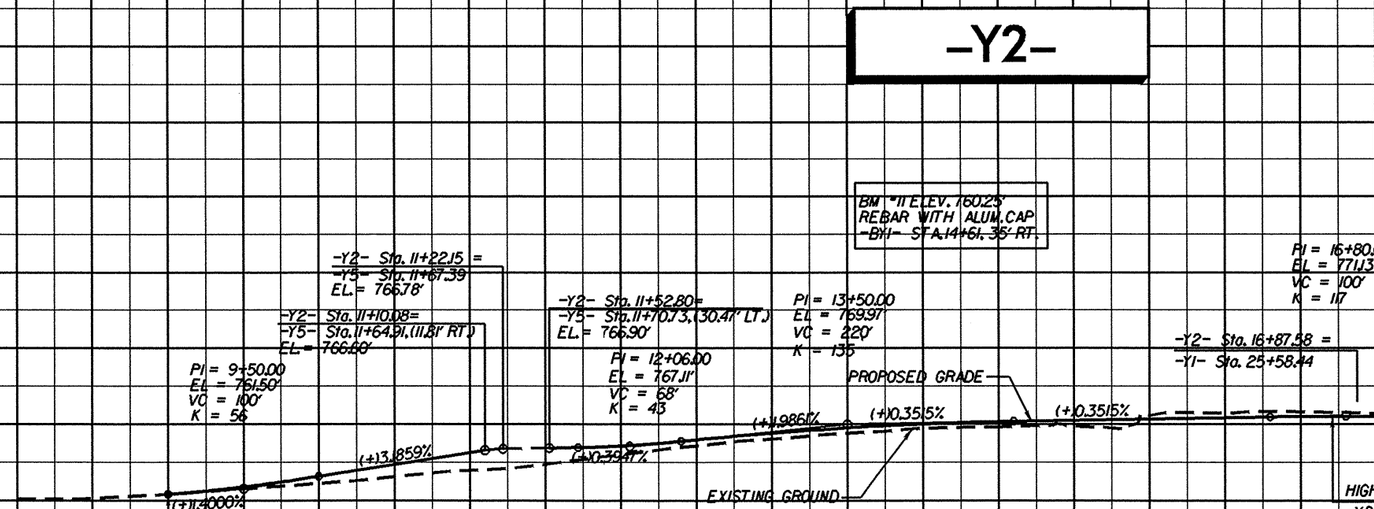


-Y1-
-Y1- Sta. 21+47.95 =
-Y5- Sta. 10+00.00
-Y1RPAA- Sta. 19+72.45
SS-128
MS-128
SS-129
MS-129
SS-130
21+22.47 -Y1-
64.43 LT.
=
19+10 -Y1RPAA-
30.00 RT.
ARTIFICIAL FILL
RED-TAN MED. STIFF MOIST SANDY SILTY CLAY (A-7)
RESIDUAL
RED-TAN TO TAN STIFF MOIST MED. & HIGH PLASTIC SANDY SILTY CLAY (A-7-6)
BT
DRY
(7/11/08)
-Y1- Sta. 25+58.44 =
-Y2- Sta. 16+87.58
-Y1- Sta. 26+41.25 =
-LLT- Sta. 41+52.07
-Y1- Sta. 26+91.71 =
-L- Sta. 41+57.69
PI = 27+00.00
EL = 801.71'
VC = 470'
K = 47
-Y1- Sta. 27+42.41 =
-LRT- Sta. 41+62.92
(+)5.0000%
(-)5.0000%
PROPOSED GRADE
HIGH POINT
-Y1- Sta. 27+00.00
EL = 795.84'
EXISTING GROUND
BM #22 ELEV. 771.01'
RR SPIKE IN LT POLE
-BL- STA. 24+91, 17.3' RT.
-Y1- Sta. 31+15.69 =
Y10A Sta. 18+81.51
-Y1RPCC- Sta. 17+03.86
SS-122
MS-122
SS-123
MS-123
SS-124
ARTIFICIAL FILL
RED MED. STIFF MOIST MED. PLASTIC SILTY SANDY CLAY (A-7-6) (PLANTER)
32+45.00 -Y1-
80.00 LT.
RESIDUAL
TAN STIFF TO MED. STIFF MOIST HIGH PLASTIC SANDY SILTY CLAY (A-7-5, A-7-6)
BT
DRY
(7/11/08)
FOR PLAN SEE SHEET 6
SHARON AMITY RD BST
BEGIN ROADWAY EMBANKMENT (FILL) ON CENTERLINE AT STA. 33+33 +/-

5/28/99

14-AUG-2008 08:48
d:\projects\u0209b_geo_rdwy_mecklenburg\cadd_geotech\planprof\U0209b_GEO_pf1_041_Y1-Y2_pf1sh.dgn





STV/ Ralph Whitehead Associates, Inc.
1000 West Morehead St., Ste. 200
Charlotte, NC 28208

PROJECT REFERENCE NO.	SHEET NO.
U-209B	~~42~~ 34

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y1-

FOR PLAN SEE SHEETS 6 & 18

-Y2-

FOR PLAN SEE SHEET 6

5/28/99

14-AUG-2008 08:51
d:\projects\u0209b_geo_rdwy_mecklenburg\cadd_geotech\planprof\u0209b_geo_pf1_042_y1-y2_pf1sh.dgn
imcclure AT GFH22141O

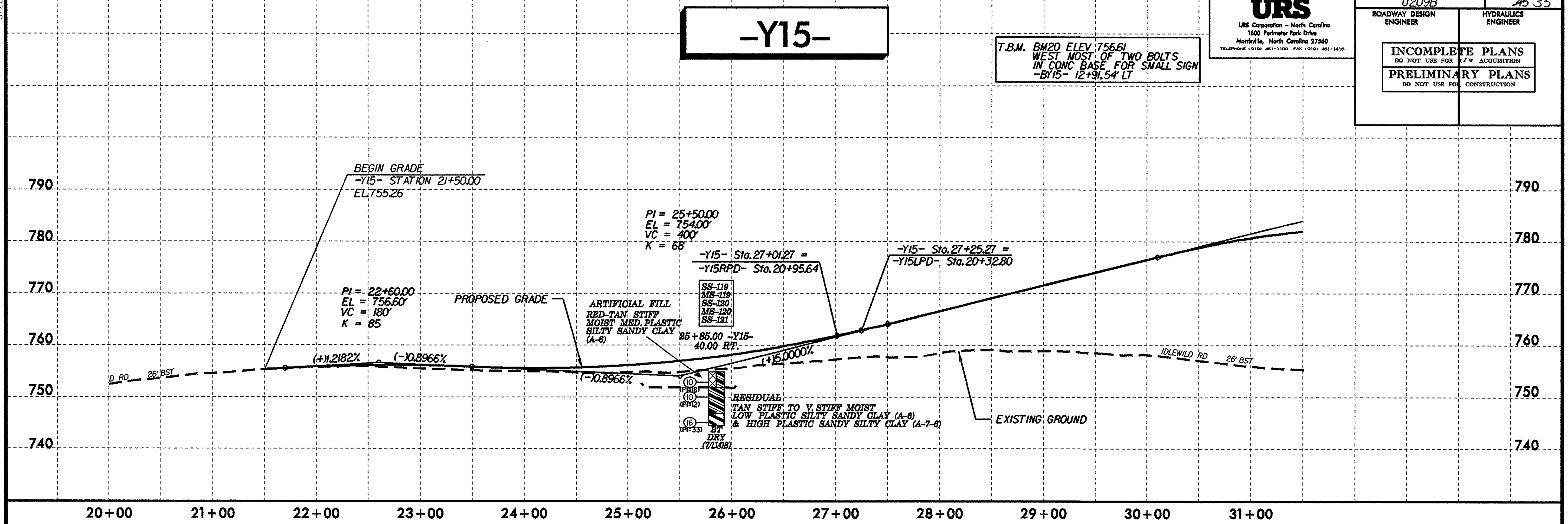
5/28/99

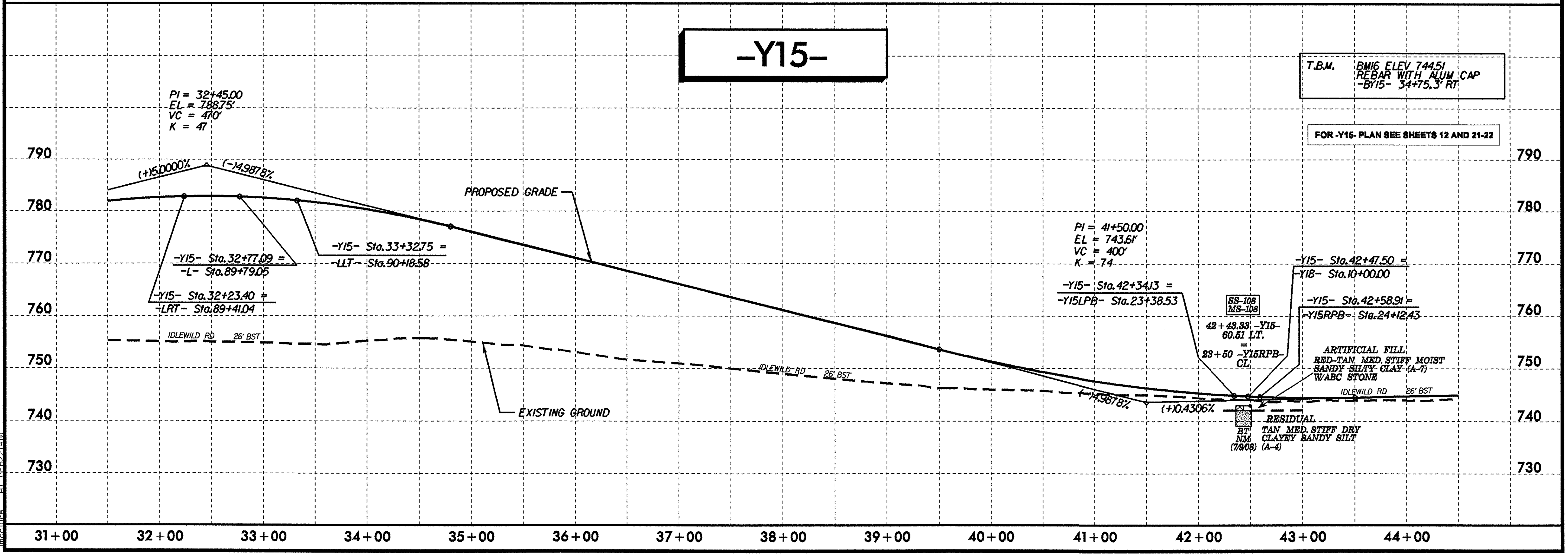
PROJECT REFERENCE NO.	SHEET NO.
U209B	45.35
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Prepared by URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION





18-AUG-2008 14:46
d:\projects\u209b_geo_rdwy_mecklenburg\cadd_geotech\planprof\U0209B_GEO_pf1_045_Y15_pf1sh.dgn

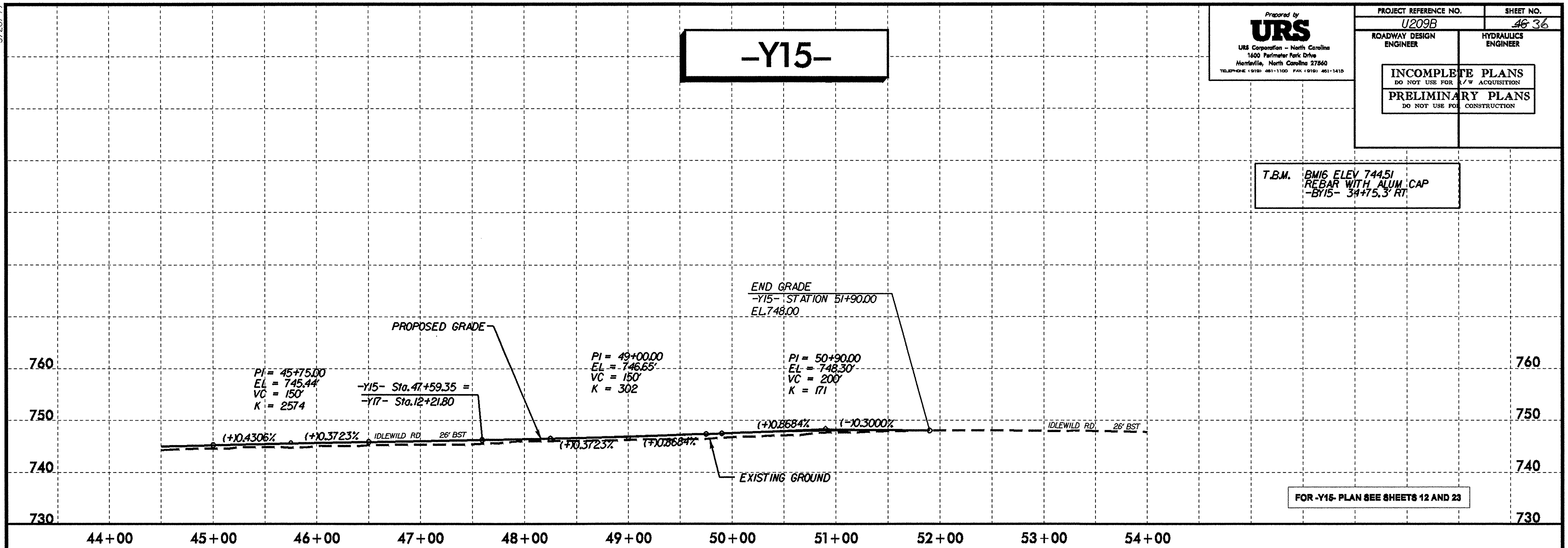
5/28/99

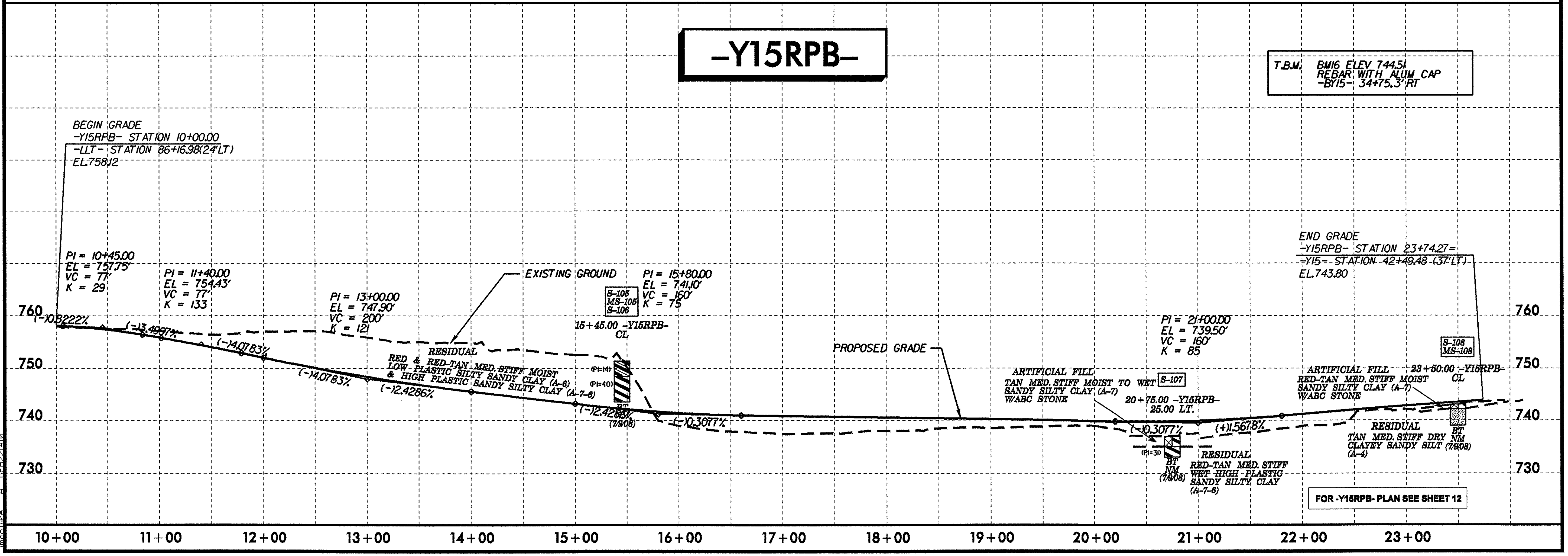
Prepared by URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415

PROJECT REFERENCE NO.	SHEET NO.
U209B	46 36
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION





18-AUG-2008 14:52
d:\projects\u0209b_geo_rdwy_mecklenburg\cadd_geotech\planprof\U0209B_GEO_pf1_046_Y15-Y15RPB_pf1sh.dgn

-Y15LPB-

Prepared by **URS**

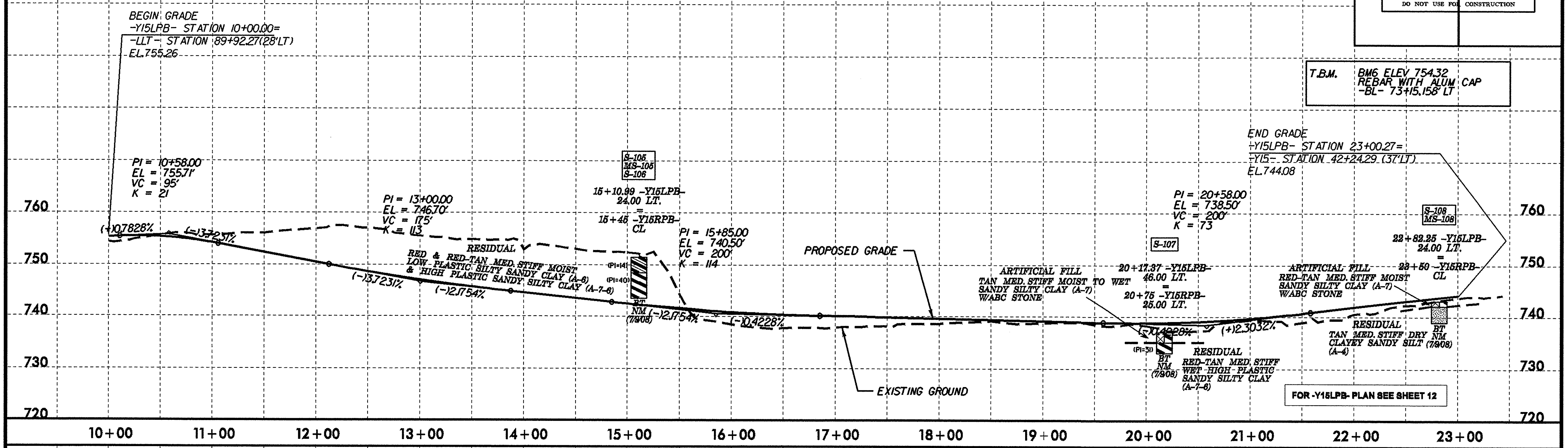
URS Corporation - North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415

PROJECT REFERENCE NO.	SHEET NO.
U209B	47 37
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

T.B.M. BM6 ELEV 754.32
REBAR WITH ALUM CAP
-BL- 73+15.158' LT



BEGIN GRADE
-Y15LPB- STATION 10+00.00=
-LLT- STATION 89+92.27(28'LT)
EL.755.26
PI = 10+58.00
EL = 755.71'
VC = 95'
K = 21
(+)0.7828%
(-)1.3.7231%
(-)3.7231%
(-)2.1754%
PI = 13+00.00
EL = 746.70'
VC = 175'
K = 113
RESIDUAL
RED & RED-TAN MED. STIFF MOIST
LOW PLASTIC SILTY SANDY CLAY (A-6)
& HIGH PLASTIC SANDY SILTY CLAY (A-7-6)
S-105
MS-105
S-106
15+10.99 -Y15LPB-
24.00 LT.
=
15+45 -Y15RPB-
CL
(PI=14)
(PI=40)
BT
NM
(7/9/08)
(-)2.1754%
(-)0.4228%
PI = 15+85.00
EL = 740.50'
VC = 200'
K = 114
PROPOSED GRADE
EXISTING GROUND
ARTIFICIAL FILL
TAN MED. STIFF MOIST TO WET
SANDY SILTY CLAY (A-7)
W/ABC STONE
S-107
20+17.37 -Y15LPB-
46.00 LT.
=
20+75 -Y15RPB-
25.00 LT.
PI = 20+58.00
EL = 738.50'
VC = 200'
K = 73
(-)0.4228%
(+)2.3032%
(PI=51)
BT
NM
(7/9/08)
RESIDUAL
RED-TAN MED. STIFF
WET HIGH PLASTIC
SANDY SILTY CLAY
(A-7-6)
END GRADE
-Y15LPB- STATION 23+00.27=
-Y15- STATION 42+24.29 (37'LT)
EL.744.08
ARTIFICIAL FILL
RED-TAN MED. STIFF MOIST
SANDY SILTY CLAY (A-7)
W/ABC STONE
S-108
MS-108
22+82.25 -Y15LPB-
24.00 LT.
=
23+50 -Y15RPB-
CL
RESIDUAL
TAN MED. STIFF DRY
CLAYEY SANDY SILT
(A-4)
BT
NM
(7/9/08)
760
750
740
730
720
10+00
11+00
12+00
13+00
14+00
15+00
16+00
17+00
18+00
19+00
20+00
21+00
22+00
23+00

FOR -Y15LPB- PLAN SEE SHEET 12

5/28/99

19-AUG-2008 08:08
d:\projects\u209b\geo\rdwy_mecklenburg\cadd_geotech\planprof\u209b_geo_pfl_047_y15lpb_pflsh.dgn
mcclure AT UEH21410

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-0209B	49-38
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y18-

BEGIN GRADE
-Y18- STATION 10+38.17 =
-Y15- STATION 42+56.82 (37' LT)
EL.745.58

(-)1.2018%

PI = 14+90.00
EL = 740.15'
VC = 400'
K = 64

-Y18- Sta.15+10.00 =
-Y19- Sta.10+00.00

S-104
MS-104

15+00.00 -Y18-
45.00 LT.

(+)5.0000%

ARTIFICIAL FILL
RED-TAN MED. STIFF MOIST
SANDY SILTY CLAY (A-7)
W/ABC STONE

RESIDUAL
TAN MED. STIFF MOIST SANDY
CLAYEY SILT (A-4)

BT
NM
(7/9/08)

PI = 20+75.00
EL = 769.40'
VC = 420'
K = 44

(+)5.0000%

(-)4.4471%

-Y18- Sta.21+91.23 =
-LRT- Sta.103+78.94

-Y18- Sta.20+87.47 =
-LLT- Sta.103+67.62

-Y18- Sta.21+39.45 =
-L- Sta.103+73.08

SS-109
MS-109
SS-110
SS-111
SS-112
SS-113
SS-114
SS-115

22+70.00 -Y18-
90.00 RT.

ARTIFICIAL FILL
RED SOFT TO MED. STIFF MOIST
SILTY SANDY CLAY (A-7)

RESIDUAL
OLIVE-TAN STIFF & V. STIFF
MOIST MED. TO LOW PLASTIC
SILTY SANDY CLAY (A-7-6, A-6)

OLIVE-TAN MED. DENSE MOIST
LOW PLASTIC CLAYEY SILTY SAND
(A-2-6)

OLIVE-TAN STIFF MOIST TO WET
CLAYEY SANDY SILT (A-4)

OLIVE-TAN DENSE WET
CLAYEY SILTY SAND (A-2-4)
W/RK FRAGS.

OLIVE-TAN V. STIFF SAT. MED. PLASTIC
SANDY SILTY CLAY (A-7-6)

20 (PI=23)
10 (PI=13)
20 (PI=14)
20 (PI=18)
12
33
24 (PI=16)

01/08

BT
NM
(7/1/08)

FOR PLAN SEE SHEET 12, 24 & 14

790 780 770 760 750 740 730 720 710 700

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00 24+00

-Y18-

END GRADE
-Y18- STATION 31+88.30
EL.760.48

PI = 25+00.00
EL = 750.50'
VC = 430'
K = 66

SS-116
MS-116
SS-117
MS-117
SS-118

PI = 27+75.00
EL = 756.06'
VC = 100'
K = 90

PI = 29+00.00
EL = 757.20'
VC = 150'
K = 476

PI = 31+20.00
EL = 759.90'
VC = 125'
K = 331

ARTIFICIAL FILL
RED STIFF MOIST HIGH PLASTIC
SILTY SANDY CLAY (A-7-6)

27+00.00 -Y18-
50.00 LT.

(+)0.9120%

CONFERENCE DR

4% RST

(+)1.2273%

(+)0.8492%

(+)2.0218%

(-)4.4471%

(1) (PI=29)
(13) (PI=20)
(7) (PI=23)

RESIDUAL
RED-TAN STIFF TO MED. STIFF
MOIST MED. PLASTIC
SANDY SILTY CLAY (A-7-6)

BT
DRY
(7/1/08)

FOR PLAN SEE SHEET 14 & 25

790 780 770 760 750 740 730 720 710 700

24+00 25+00 26+00 27+00 28+00 29+00 30+00 31+00

5/28/99

Prepared by **URS** URS Corporation – North Carolina, 1600 Perimeter Park Drive, Morrisville, North Carolina 27560, TELEPHONE (919) 461-1100 FAX (919) 461-1415	

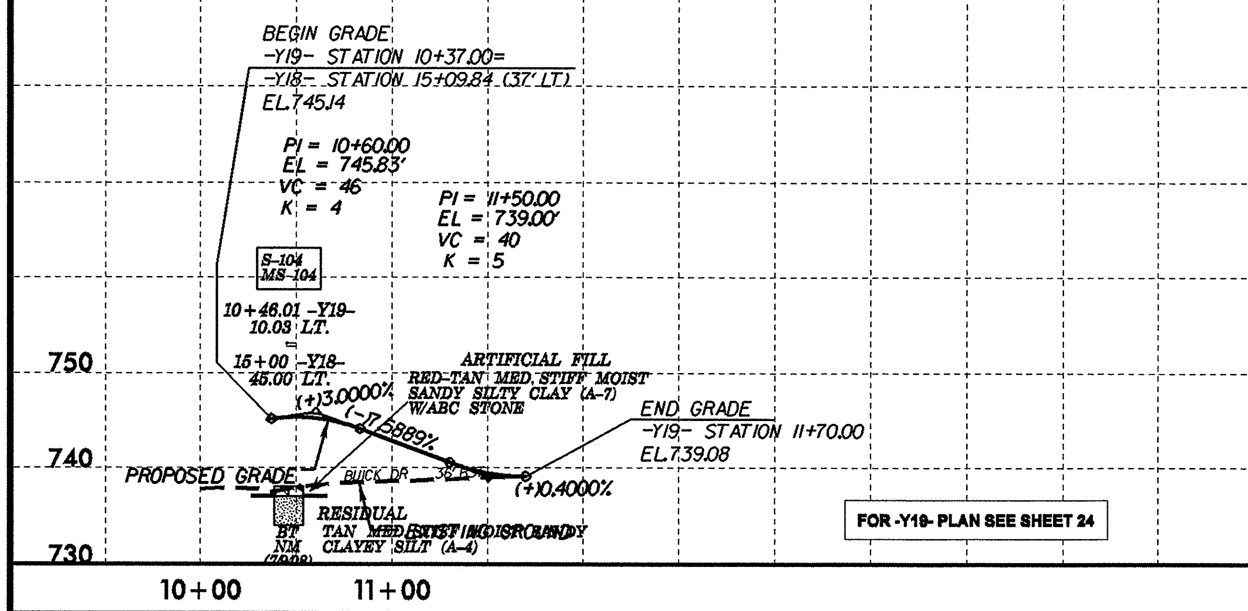
PROJECT REFERENCE NO.	SHEET NO.
U209B	~~50~~ 39
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION

-Y19-

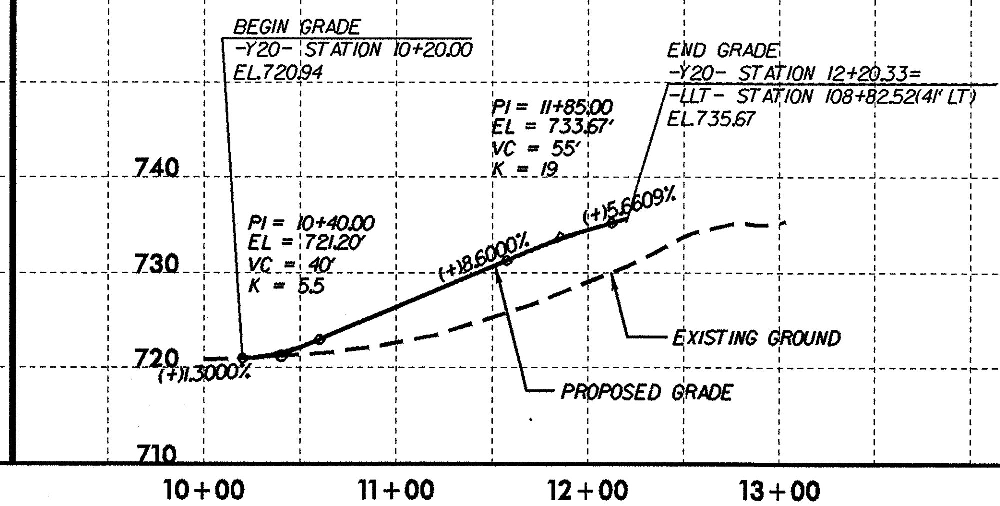
T.B.M. BM16 ELEV 744.51 REBAR WITH ALUM CAP -BY15- 34+75.3' RT



FOR -Y19- PLAN SEE SHEET 24

-Y20-

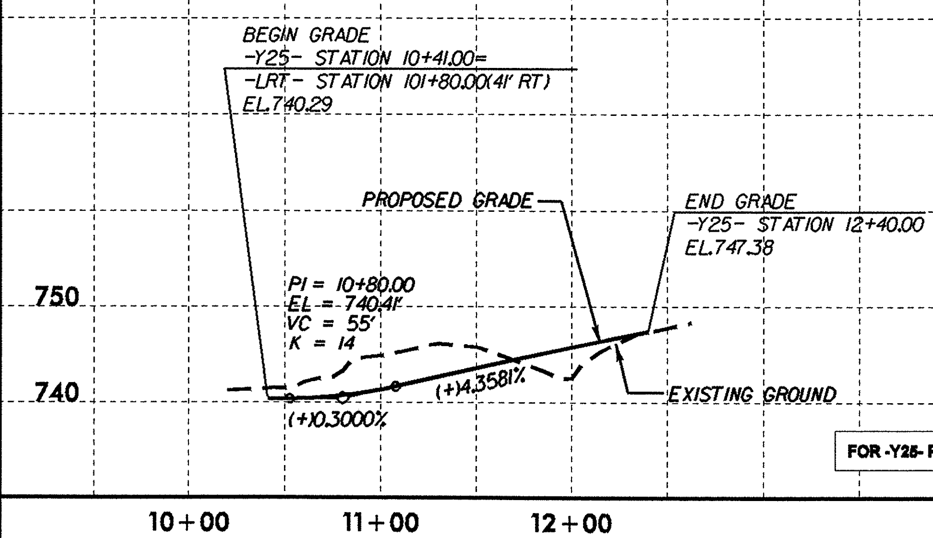
T.B.M. BM8 ELEV 737.82 REBAR WITH ALUM CAP -BL- 96+82.37' RT



FOR -Y20- PLAN SEE SHEET 14

-Y25-

T.B.M. BM7 ELEV 741.14 REBAR WITH ALUM CAP -BL- 83+46.21' RT



FOR -Y25- PLAN SEE SHEET 13

19-AUG-2008 08:54
d:\projects\u0209b_geo_rdwy_mecklenburg\cadd_geotech\planprof\U0209B_GEO_pfl_050_Y19_pflsh.dgn

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC	Line or Boring ID
SS-1	CL	45+50	0.50-2.00	A-7-5(24)	60	26	4.9	23.1	25.4	46.6	100	97	80	-	-	L
SS-2	CL	45+50	3.70-5.20	A-7-5(22)	61	20	3.6	21.1	32.7	42.6	100	98	85	-	-	L
MS-2	CL	45+50	3.70-5.20				0.0	0.0	0.0	0.0		0	0	39.70	-	L
SS-3	CL	45+50	8.70-10.20	A-7-5(17)	58	14	1.2	27.6	38.8	32.4	100	99	83	-	-	L
SS-4	CL	47+50	0.50-2.00	A-6(8)	37	16	14.6	27.6	17.3	40.5	100	94	62	-	-	L
SS-5	CL	47+50	4.10-5.60	A-7-6(18)	50	22	10.1	17.6	19.6	52.7	100	96	76	-	-	L
MS-5	CL	47+50	4.10-5.60				0.0	0.0	0.0	0.0		0	0	21.80	-	L
SS-6	CL	47+50	9.10-10.60	A-4(1)	24	9	23.1	38.5	18.1	20.3	100	91	43	-	-	L
SS-7	CL	49+50	0.50-2.00	A-7-5(13)	49	18	9.9	19.5	24.0	46.6	94	89	70	-	-	L
SS-8	CL	49+50	3.70-5.20	A-6(7)	36	16	15.8	28.6	15.1	40.5	98	92	58	-	-	L
MS-8	CL	49+50	3.70-5.20				0.0	0.0	0.0	0.0		0	0	19.10	-	L
SS-9	CL	49+50	8.70-10.20	A-7-6(16)	51	22	12.2	18.2	14.9	54.7	100	95	72	-	-	L
SS-10	CL	51+50	0.50-2.00	A-7-6(16)	47	18	6.5	15.8	29.1	48.6	100	98	81	-	-	L
SS-11	CL	51+50	3.50-5.00	A-7-5(23)	61	25	7.7	17.6	17.9	56.7	100	97	78	-	-	L
NS-11	CL	51+50	3.50-5.00				0.0	0.0	0.0	0.0		0	0	34.30	-	L
SS-12	CL	51+50	8.50-11.00	A-7-5(24)	64	34	12.6	19.0	11.7	56.7	99	94	70	-	-	L
MS-12	CL	51+50	8.50-11.00				0.0	0.0	0.0	0.0		0	0	32.10	-	L
SS-13	CL	51+50	13.50-15.00	A-6(4)	34	15	20.7	34.9	16.1	28.4	97	89	48	-	-	L
SS-14	CL	51+50	18.00-19.50	A-4(2)	36	10	29.4	30.2	28.3	12.2	99	80	47	-	-	L
SS-15	CL	52+50	0.50-2.00	A-7-6(13)	48	19	12.4	20.3	24.8	42.6	98	93	70	-	-	L
SS-16	CL	52+50	4.20-5.70	A-4(5)	35	10	14.8	27.2	25.6	32.4	99	93	62	-	-	L
MS-16	CL	52+50	4.20-5.70				0.0	0.0	0.0	0.0		0	0	29.4	-	L
SS-17	CL	52+50	9.20-10.70	A-7-6(18)	53	25	12.2	17.6	17.5	52.7	98	93	72	-	-	L
SS-18	CL	55+00	0.50-2.00	A-7-6(16)	48	26	19.7	13.0	24.8	42.6	97	86	68	-	-	L
SS-19	CL	55+00	4.00-5.50	A-7-5(12)	47	16	17.6	15.8	28.1	38.5	99	87	70	-	-	L
SS-20	CL	55+00	9.00-10.50	A-7-5(18)	53	19	9.3	15.2	39.0	36.5	100	95	80	-	-	L
SS-21	CL	57+00	0.50-2.00	A-7-5(15)	52	19	18.8	11.6	29.1	40.5	99	86	73	-	-	L
SS-22	CL	57+00	3.70-5.20	A-7-5(24)	61	24	11.7	9.7	26.1	52.5	100	93	82	-	-	L
MS-22	CL	57+00	3.70-5.20				0.0	0.0	0.0	0.0		0	0	31.10	-	L
SS-23	CL	57+00	8.70-10.20	A-4(2)	27	10	27.0	26.5	22.2	24.3	99	86	50	-	-	L
SS-24	CL	57+00	13.70-15.20	A-7-5(37)	76	33	5.7	7.7	19.8	66.9	100	98	88	-	-	L
SS-25	CL	57+00	18.70-20.20	A-7-5(15)	53	19	14.2	16.6	42.9	26.3	100	93	73	-	-	L
SS-26	CL	59+00	0.50-2.00	A-7-6(17)	52	23	18.4	12.6	24.4	44.6	99	87	71	-	-	L
SS-27	CL	59+00	4.50-6.00	A-7-5(20)	57	25	16.2	11.3	21.8	50.7	99	89	74	-	-	L
MS-27	CL	59+00	4.50-6.00				0.0	0.0	0.0	0.0		0	0	31.80	-	L
SS-28	CL	59+00	9.50-11.00	A-7-6(12)	50	26	25.7	18.6	15.1	40.5	96	83	56	-	-	L
SS-29	CL	59+00	14.50-16.00	A-7-6(20)	57	30	18.3	16.7	23.3	41.7	100	91	69	-	-	L
SS-30	CL	61+00	0.50-2.00	A-7-5(21)	61	18	6.9	9.8	37.5	45.8	100	97	86	-	-	L
SS-31	CL	61+00	4.60-6.10	A-7-5(20)	65	16	7.7	12.7	40.0	39.6	100	96	84	-	-	L
MS-31	CL	61+00	4.60-6.10				0.0	0.0	0.0	0.0		0	0	49.40	-	L
SS-32	CL	61+00	9.60-11.10	A-7-5(17)	57	16	9.0	15.6	40.0	35.4	100	97	80	-	-	L
SS-33	CL	63+50	0.50-2.00	A-7-5(9)	47	14	22.1	17.1	25.4	35.4	99	86	64	-	-	L
SS-34	CL	63+50	3.70-5.20	A-7-5(24)	72	19	5.8	18.1	42.7	33.3	100	98	84	-	-	L
MS-34	CL	63+50	3.70-5.20				0.0	0.0	0.0	0.0		0	0	55.80	-	L
SS-35	CL	63+50	8.70-10.20	A-7-5(18)	60	18	8.5	16.5	45.8	29.2	100	96	77	-	-	L
SS-36	CL	66+00	0.50-2.00	A-7-5(7)	45	11	20.6	17.9	28.1	33.3	100	90	66	-	-	L
SS-37	CL	66+00	4.40-5.90	A-5(3)	45	7	28.3	23.3	31.7	16.7	100	87	55	-	-	L
MS-37	CL	66+00	4.40-5.90				0.0	0.0	0.0	0.0		0	0	34.9	-	L
SS-38	CL	66+00	9.40-10.90	A-4(3)	40	6	25.8	25.4	27.9	20.8	100	90	56	-	-	L
SS-39	CL	68+00	0.50-2.00	A-7-5(20)	58	20	10.2	10.6	31.3	47.9	99	92	82	-	-	L
SS-40	CL	68+00	4.30-5.80	A-7-5(13)	58	19	24.2	8.5	36.0	31.3	91	73	64	-	-	L
MS-40	CL	68+00	4.30-5.80				0.0	0.0	0.0	0.0		0	0	65.1	-	L
SS-41	CL	68+00	9.30-10.80	A-7-5(9)	54	13	28.8	8.5	29.4	33.3	96	74	63	-	-	L
SS-42	CL	69+75	0.50-2.00	A-7-6(16)	51	22	16.5	14.8	22.9	45.8	99	90	72	-	-	L
SS-43	CL	69+75	4.50-6.00	A-7-5(34)	73	32	6.0	13.5	30.4	50.0	100	97	85	-	-	L
MS-43	CL	69+75	4.50-6.00				0.0	0.0	0.0	0.0		0	0	52.90	-	L
SS-44	CL	69+75	9.50-10.00	A-7-5(20)	61	18	6.0	18.8	37.7	37.5	100	97	82	-	-	L
SS-45	CL	72+00	0.50-2.00	A-7-6(14)	47	21	18.1	14.6	21.5	45.8	99	89	70	-	-	L
SS-46	CL	72+00	4.50-6.00	A-7-6(16)	49	23	16.0	11.3	12.3	60.4	93	84	70	-	-	L
MS-46	CL	72+00	4.50-6.00				0.0	0.0	0.0	0.0		0	0	32.50	-	L
SS-47	CL	72+00	9.50-11.00	A-7-5(29)	69	24	3.3	12.3	28.1	56.3	100	98	89	-	-	L
SS-48	CL	72+00	14.50-16.00	A-5(6)	48	10	19.6	28.8	37.1	14.6	100	90	58	-	-	L
SS-49	CL	74+00	0.50-2.00	A-7-6(23)	60	31	17.3	12.9	19.8	50.0	98	88	72	-	-	L
SS-50	CL	74+00	4.60-5.10	A-7-6(24)	47	24	3.3	8.8	27.5	60.4	100	99	91	-	-	L
MS-50	CL	74+00	4.60-5.10				0.0	0.0	0.0	0.0		0	0	32.10	-	L
SS-51	CL	74+00	9.60-11.10	A-7-6(9)	44	17	26.7	17.5	30.8	25.0	100	85	61	-	-	L
SS-52	CL	76+00	0.50-2.00	A-7-6(12)	42	19	16.0	18.3	26.0	39.6	99	91	69	-	-	L
SS-53	CL	76+00	4.20-5.70	A-7-6(28)	60	37	13.1	15.0	11.5	60.4	99	93	74	-	-	L
MS-53	CL	76+00	4.20-5.70				0.0	0.0	0.0	0.0		0	0	35.90	-	L
SS-54	CL	76+00	9.20-10.70	A-7-5(20)	53	17	4.2	12.9	51.7	31.3	100	97	90	-	-	L
SS-55	CL	78+00	0.50-2.00	A-7-6(20)	52	25	10.4	17.1	26.7	45.8	100	96	77	-	-	L
SS-56	CL	78+00	4.20-5.70	A-4(7)	38	10	11.9	25.6	41.7	20.8	100	96	71	-	-	L
MS-56	CL	78+00	4.20-5.70				0.0	0.0	0.0	0.0		0	0	22.50	-	L
SS-57	CL	78+00	9.20-10.70	A-4(1)	32	3	17.5	28.3	45.8	8.3	100	94	63	-	-	L

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC	Line or Boring ID
SS-58	CL	81+00	0.50-2.00	A-7-6(14)	44	17	9.6	15.2	25.2	50.0	98	93	78	-	-	L
SS-59	CL	81+00	4.80-6.30	A-7-5(9)	42	11	7.1	26.9	41.0	25.0	100	99	74	-	-	L
MS-59	CL	81+00	4.80-6.30				0.0	0.0	0.0	0.0		0	0	29.70	-	L
SS-60	CL	81+00	9.80-11.30	A-4(2)	37	3	13.3	32.7	41.5	12.5	100	96	64	-	-	L
SS-61	CL	83+00	0.50-2.00	A-7-6(8)	42	16	16.0	14.4	19.6	50.0	82	74	60	-	-	L
SS-62	CL	83+00	4.60-6.10	A-7-6(29)	59	34	7.9	14.4	17.3	60.4	100	96	81	-	-	L
MS-62	CL	83+00	4.60-6.10				0.0	0.0	0.0	0.0		0	0	32.90	-	L
SS-63	CL	83+00	9.60-11.10	A-7-5(27)	65	26	7.3	12.9	36.0	43.8	100	95	85	-	-	L
SS-64	CL	93+00	0.50-2.00	A-6(8)	39	16	18.2	17.8	23.5	40.5	90	79	62	-	-	L
SS-65	CL	93+00	4.70-6.20	A-7-5(26)	63	33	11.9	13.8	31.8	42.5	95	89	74	-	-	L
MS-65	CL	93+00	4.70-6.20				0.0	0.0	0.0	0.0		0	0	33.90	-	L
SS-66	CL	93+00	9.70-11.20	A-7-5(30)	68	30	7.1	14.2	46.4	32.4	100	97	83	-	-	L
SS-67	CL	95+50	0.50-2.00	A-7-5(20)	57	22	8.5	11.5	17.2	62.8	94	89	78	-	-	L
SS-68	CL	95+50	4.60-6.10	A-6(4)	29	14	22.3	23.1	18.2	36.4	87	75	52	-	-	L
MS-68	CL	95+50	4.60-6.10				0.0	0.0	0.0	0.0		0	0	17.80	-	L
SS-69	CL	95+50	9.60-11.10	A-7-5(17)	51	18	5.5	20.2	39.9	34.4	99	96	80	-	-	L
SS-70	CL	99+00	0.50-2.00	A-7-5(31)	65	34	8.3	9.1	19.8	62.8	95	90	81	-	-	L
SS-71	CL	99+00	4.70-6.20	A-6(6)	36	15	19.2	20.9	19.4	40.5	90	79	58	-	-	L
MS-71	CL	99+00	4.70-6.20				0.0	0.0	0.0	0.0		0	0	41.30	-	L
SS-72	CL	99+00	9.70-11.20	A-4(0)	33	7	31.8	31.0	25.1	12.1	96	76	42	-	-	L
SS-73	CL	102+50	0.50-2.00	A-7-6(22)	57	31	13.8	13.2	14.4	58.7	93	85	71	-	-	L
SS-74	CL	102+50	4.40-5.90	A-7-5(26)	62	25	6.5	10.1	20.6	62.8	99	96	85	-	-	L
MS-74	CL	102+50	4.40-5.90				0.0	0.0	0.0	0.0		0	0	24.50	-	L
SS-75	CL	102+50	9.40-10.90	A-7-5(26)	61	27	8.9	8.9	21.5	60.7	98	92	83	-	-	L
SS-76	CL	104+50	0.50-2.00	A-7-6(23)	57	31	12.6	14.8	18.0	54.7	94	87	72	-	-	L
SS-77	CL	104+50	4.00-5.50	A-7-5(26)	65	29	9.9	8.9	16.4	64.8	94	87	79	-	-	L
MS-77	CL	104+50	4.00-5.50				0.0	0.0	0.0	0.0		0	0	24.50	-	L
SS-78	CL	104+50	9.00-10.50	A-7-6(21)	47	25	6.7	13.6	25.1	54.7	99	96	83	-	-	L
SS-79	CL	107+50	0.50-2.00	A-7-6(22)	54	27	10.9	11.9	16.4	60.7	96	89	77	-	-	L
SS-80	CL	107+50	4.20-5.70	A-7-5(28)	65	27	8.3	8.9	16.0	66.8	98	93	84	-	-	L
MS-80	CL	107+50	4.20-5.70				0.0	0.0	0.0	0.0		0	0	27.50	-	L
SS-81	CL	107+50	9.20-10.70	A-7-6(23)	48	28	5.1	19.4	28.9	46.6	100	98	82	-	-	L
SS-82	CL	110+00	0.50-2.00	A-7-6(15)	45	21	10.9	17.4	37.2	34.4	95	88	74	-	-	L
MS-82A	CL	110+00	4.50-6.00				0.0	0.0	0.0	0.0		0	0	25.60	-	L
SS-83	CL	110+00	9.50-11.00	A-5(10)	43	10	3.0	20.6	54.0	22.3	96	94	83	-	-	L
SS-84	CL	112+00	0.50-2.00	A-7-6(6)	42	16	20.2	24.5	31.0	24.3	86	75	53	-	-	L
SS-85	CL	112+00	4.50-6.00	A-7-6(13)	47	18	7.5	22.5	39.7	30.4	99	95	70	-	-	L
MS-85	CL	112+00	4.50-6.00				0.0	0.0	0.0	0.0		0	0	26.90	-	L
SS-86	CL	112+00	9.50-11.00	A-4(4)	37	8	16.0	24.1	39.7	20.2	93	85	61	-	-	L
SS-87	CL	114+00	0.50-2.00	A-7-6(13)	45	20	14.6	14.8	18.0	52.6	92	83	69	-	-	L
SS-88	CL	114+00	4.20-5.70	A-6(8)	39	22	24.7	23.7	17.2	34.4	92	78	53	-	-	L
MS-88	CL	114+00	4.20-5.70				0.0	0.0	0.0	0.0		0	0	15.50	-	L
SS-89	CL	114+00	9.20-10.70	A-4(3)	31	7	13.4	30.8	35.6	20.2	100	96	63	-	-	L
SS-90	CL	116+00	0.50-2.00	A-7-6(15)	48	24	17.0	16.2	20.2	46.6	95	84	67	-	-	L
SS-91	CL	116+00	4.10-5.60	A-6(5)	32	16	25.9	22.9	16.8	34.4	92	77	51	-	-	L
MS-91	CL	116+00	4.10-5.60				0.0	0.0	0.0	0.0		0	0	12.60	-	L
SS-92	CL	116+00	9.10-10.60	A-7-6(28)	61	37	11.1	13.6	22.7	52.6	95	88	75	-	-	L
MS-92	CL	116+00	9.10-10.60				0.0	0.0	0.0	0.0		0	0	22.50	-	L
SS-93	CL	116+00	14.10-15.60	A-7-6(19)	46	17	1.4	8.9	45.1	44.5	100	99	94	-	-	L
MS-93	CL	116+00	14.10-15.60				0.0	0.0	0.0	0.0		0	0	18.20	-	L
SS-94	CL	116+00	19.10-20.60	A-4(0)	26	3	30.0	34.6	25.3	10.1	95	77	42	-	-	L
SS-95	CL	118+00	0.50-2.00	A-6(5)	31	15	27.5	20.6	21.5	30.4	94	77	53	-	-	L
SS-96	CL	118+00	4.00-5.50	A-7-6(8)	44	20	29.1	19.6	14.8	36.4	97	78	54	-	-	L
MS-96	CL	118+00	4.00-5.50				0.0	0.0	0.0	0.0		0	0	19.30	-	L
SS-97	CL	118+00	9.00-10.50	A-6(7)	35	16	20.6	24.9	32.2	22.3	95	83	58	-	-	L
SS-98	CL	120+00	0.50-2.00	A-7-6(8)	44	18	27.7	15.2	24.7	32.4	93	75	57	-	-	L
SS-99	CL	120+00	3.70-5.20	A-4(0)	29	4	36.6	27.1	22.1	14.2	90	68	38	-	-	L
MS-99	CL	120+00	3.70-5.20				0.0	0.0	0.0	0.0		0	0	10.30	-	L
SS-100	CL	120+00	8.70-10.20	A-4(0)	29	NP	43.1	24.9	21.9	10.1	93	62	36	-	-	L
SS-101	CL	122+00	0.50-2.00	A-4(0)	30	3	42.9	24.5	20.4	12.1	96	67	37	-	-	L
SS-102	CL	122+00	3.80-5.20	A-2-4(0)	28	3	44.5	23.9	21.5	10.1	91	61	34	-	-	L
SS-103	CL	129+00	0.50-2.00	A-4(2)	27	4	2.8	41.7	39.3	16.2	99	98	71	-	-	L
S-104	45 LT	15+00	1.00-4.00	A-4(3)	25	6	5.4	6.9	57.4	30.3	93	89	85	-	-	Y18
MS-104	45 LT	15+00	1.00-4.00				0.0	0.0	0.0	0.0		0	0	8.60	-	Y18
S-105	CL	15+45	0.00-3.00	A-6(7)	31	14	15.7	20.0	28.0	36.3	99	90	68	-	-	Y15RPB
MS-105	CL	15+45	0.00-3.00				0.0	0.0	0.0	0.0		0	0	14.30	-	Y15RPB
S-106	CL	15+45	3.00-8.00	A-7-6(34)	63	40	8.7	13.7	19.1	58.5	100	96	81	-	-	Y15RPB
S-107	25 LT	20+75	2.00-4.00	A-7-6(24)	55	31	10.7	13.5	29.4	46.4	95	89	75	-	-	Y15RPB
MS-107	25 LT	20+75	2.00-4.00				0.0	0.0	0.0	0.0		0	0	27.80	-	Y15RPB
S-108	CL	23+50	1.00-4.00	A-4(0)	20	4	17.6	20.8	41.5	20.2	99	89	66	-	-	Y15RPB
MS-108	CL	23+50	1.00-4.00				0.0	0.0	0.0	0.0		0	0	5.50	-	Y15RPB
MS-109	90 RT	22+70	4.00-5.50				0.0	0.0	0.0	0.0		0	0	20.00	-	Y18
SS-109	90 RT	22+70	4.00-5.50	A-7-6(18)	50	23	13.3	11.2	22.4	53.1	97	89	76	-	-	Y18
SS-110	90 RT	22+70	9.00-10.50	A-6(6)	40	13	21.6	24.7	31.2	22.4	98	86	58	-	-	Y18

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC	Line or Boring ID
							C.SAND	F.SAND	SILT	CLAY	10	40	200			
SS-111	90 RT	22+70	14.00-15.50	A-6(2)	39	14	39.8	20.4	27.6	12.2	83	57	38	-	-	Y18
SS-112	90 RT	22+70	19.00-20.50	A-2-6(0)	36	11	45.5	21.4	20.8	12.2	82	53	31	-	-	Y18
SS-113	90 RT	22+70	24.00-25.50	A-4(0)	34	7	34.3	26.7	26.7	12.2	93	73	42	-	-	Y18
SS-114	90 RT	22+70	29.00-30.50	A-2-4(0)	27	4	43.1	24.7	20.0	12.2	69	47	26	-	-	Y18
SS-115	90 RT	22+70	34.00-35.50	A-7-5(14)	50	16	6.5	18.8	54.3	20.4	91	88	75	-	-	Y18
MS-116	50 LT	27+00	0.50-2.00				0.0	0.0	0.0	0.0		0	0	15.00	-	Y18
SS-116	50 LT	27+00	0.50-2.00	A-7-6(19)	53	29	14.9	15.7	24.5	44.9	93	84	68	-	-	Y18
MS-117	50 LT	27+00	4.00-5.50				0.0	0.0	0.0	0.0		0	0	36.00	-	Y18
SS-117	50 LT	27+00	4.00-5.50	A-7-5(22)	60	20	7.1	10.0	27.8	55.1	100	97	85	-	-	Y18
SS-118	50 LT	27+00	9.00-10.50	A-7-5(25)	67	23	6.1	14.3	40.8	38.8	100	98	84	-	-	Y18
MS-119	40 RT	25+85	1.00-2.50				0.0	0.0	0.0	0.0		0	0	15.00	-	Y15
SS-119	40 RT	25+85	1.00-2.50	A-6(5)	37	18	27.3	19.6	18.4	34.7	84	67	48	-	-	Y15
MS-120	40 RT	25+85	3.80-5.30				0.0	0.0	0.0	0.0		0	0	17.00	-	Y15
SS-120	40 RT	25+85	3.80-5.30	A-6(12)	40	20	13.9	21.8	21.4	42.9	96	87	67	-	-	Y15
SS-121	40 RT	25+85	8.80-10.30	A-7-6(29)	56	33	3.3	20.4	27.3	49.0	99	97	83	-	-	Y15
MS-122	30 LT	32+45	1.00-2.50				0.0	0.0	0.0	0.0		0	0	13.00	-	Y1
SS-122	30 LT	32+45	1.00-2.50	A-7-6(8)	41	16	18.0	20.0	19.2	42.9	95	87	62	-	-	Y1
MS-123	30 LT	32+45	4.60-6.10				0.0	0.0	0.0	0.0		0	0	34.00	-	Y1
SS-123	30 LT	32+45	4.60-6.10	A-7-5(24)	63	26	11.6	14.3	29.2	44.9	100	95	78	-	-	Y1
SS-124	30 LT	32+45	9.60-11.10	A-7-6(18)	42	26	12.2	17.6	35.5	34.7	100	95	75	-	-	Y1
MS-125	15 LT	14+10	2.00-3.50				0.0	0.0	0.0	0.0		0	0	31.00	-	Y1RPCC
SS-125	15 LT	14+10	2.00-3.50	A-7-6(33)	67	40	9.0	13.3	10.4	67.3	97	93	78	-	-	Y1RPCC
MS-126	15 LT	14+10	4.00-5.50				0.0	0.0	0.0	0.0		0	0	25.00	-	Y1RPCC
SS-126	15 LT	14+10	4.00-5.50	A-7-6(13)	51	24	13.3	26.3	7.3	53.1	98	94	62	-	-	Y1RPCC
SS-127	15 LT	14+10	9.00-10.50	A-7-5(32)	77	35	11.2	12.9	26.9	49.0	99	93	78	-	-	Y1RPCC
MS-128	30 RT	19+10	1.00-2.50				0.0	0.0	0.0	0.0		0	0	26.00	-	Y1RPAA
SS-128	30 RT	19+10	1.00-2.50	A-7-5(24)	58	24	6.5	11.6	26.7	55.1	100	98	84	-	-	Y1RPAA
MS-129	30 RT	19+10	3.50-5.00				0.0	0.0	0.0	0.0		0	0	34.00	-	Y1RPAA
SS-129	30 RT	19+10	3.50-5.00	A-7-5(30)	70	31	8.2	14.7	28.2	49.0	100	97	81	-	-	Y1RPAA
SS-130	30 RT	19+10	8.50-10.00	A-7-5(20)	63	21	8.6	20.6	34.1	36.7	100	98	76	-	-	Y1RPAA
MS-131	15 RT	10+75	1.00-4.00				0.0	0.0	0.0	0.0		0	0	26.00	-	Y1RPC
S-131	15 RT	10+75	1.00-4.00	A-7-5(19)	53	22	1.6	21.6	17.6	59.2	98	97	79	-	-	Y1RPC