ID. R-2707A

PROJECT: C203026

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2707AA	1	61

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34497.1.2	NHF-0074(14)	PE
34497.2.3	NHF-0074(76)	R/W, UTIL
34497.3.3	NHF-0074(141)	CONST.

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

ROADWAY SUBSURFACE INVESTIGATION

STATE PROJECT 34497.1.3 I.D. NO. R-2707A

F.A. PROJECT NHF-74(14)

COUNTY CLEVELAND

DESCRIPTION US 74 (SHELBY BYPASS) FROM WEST OF SR 1162 (PEACHTREE ROAD) TO WEST OF SR 1313 (WASHBURN SWITCH ROAD)

INVENTORY

CONTENTS:

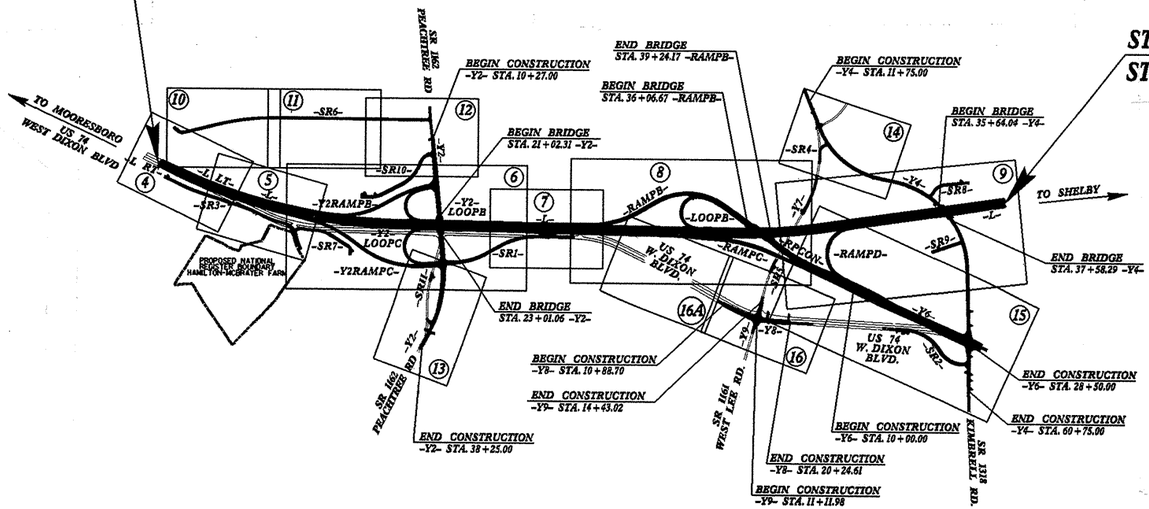
NAD 83/95 NC GRID

This inventory is for R-2707A, which includes R-2707AA and R-2707AB. Please refer to the respective portions for your needs.

-L- STA. 5+03.30 BEGIN TIP PROJECT R-2707AA

STA. 119+00.00 -L- END TIP PROJECT R-2707AA

STA. 119+00.00 -L- BEG. TIP PROJECT R-2707AB



THIS IS A FULL CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES

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.

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CAUTION NOTICE

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

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

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

INVESTIGATED BY J.P. ROGERS PERSONNEL R.W. TODD

CHECKED BY C.B. LITTLE R.S. HINSON

SUBMITTED BY C.B. LITTLE M.L. SMITH

DATE 11/04

NORTH CAROLINA LICENSED SEAL 1104 GEOLOGIST CLINTON B. LITTLE

SEAL

2-10-05

SIGNATURE

ID	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
R-2707A	34497.1.3	2	61

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL 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 WHICH CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER, AND WHICH YIELDS LESS THAN 100 BLOWS PER FOOT ACCORDING TO STANDARD PENETRATION TEST (AASHTO T206, ASTM D-1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM AND BASIC DESCRIPTIONS GENERALLY SHALL INCLUDE: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. EXAMPLE:

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

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	36 MN	
LIQUID LIMIT	6 MX		N.P.	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

P.I. OF A-7-5 ≤ L.L. - 30 ; P.I. OF A-7-6 > L.L. - 30

CONSISTENCY OR DENSENESS

PRIMARY SOIL TYPE	COMPACTNESS OR CONSISTENCY	RANGE OF STANDARD PENETRATION RESISTENCE (N-VALUE)	RANGE OF UNCONFINED COMPRESSIVE STRENGTH ($TONS/FT^2$)
GENERALLY GRANULAR MATERIAL (NON-COHESIVE)	VERY LOOSE	<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 0.5
	MEDIUM STIFF	4 TO 8	0.5 TO 1
	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	2.0	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, YEL-BRN, 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 ARE 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 30
MODERATELY COMPRESSIBLE	LIQUID LIMIT 31-50
HIGHLY COMPRESSIBLE	LIQUID LIMIT GREATER THAN 50

PERCENTAGE OF MATERIAL

ORGANIC MATERIAL	GRANULAR SOILS	SILT- CLAY SOILS
TRACE OF ORGANIC MATTER	2 - 3%	3 - 5%
LITTLE ORGANIC MATTER	3 - 5%	5 - 12%
MODERATELY ORGANIC	5 - 10%	12 - 20%
HIGHLY ORGANIC	>10%	>20%

OTHER MATERIAL	
TRACE	1 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
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 SEEPAGE

MISCELLANEOUS SYMBOLS

- ROADWAY EMBANKMENT WITH SOIL DESCRIPTION
- SOIL SYMBOL
- ARTIFICIAL FILL OTHER THAN ROADWAY EMBANKMENTS
- INFERRED SOIL BOUNDARIES
- 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
- 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 - CBR SAMPLE

ABBREVIATIONS

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

EQUIPMENT USED ON SUBJECT PROJECT

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

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

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

CORE SIZE:
- [ ] -B-_____
- [ ] -N-_____
- [ ] -H-_____

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

ROCK DESCRIPTION

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

WEATHERED ROCK (WR)	NON-COASTAL PLAIN MATERIAL THAT YIELDS SPT N VALUES > 100 BLOWS PER FOOT.
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 ROCKS 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 GEOLOGISTS 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 GEOLOGISTS 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 GEOLOGISTS 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 WHICH 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 IS IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE.

CALCAREOUS (CALC.) - SOILS WHICH 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 (F.P.) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM.

FORMATION (FM.) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD.

JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED.

LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT.

LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS.

MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE.

PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM.

RESIDUAL SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK.

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

SAPROLITE (SAP.) - RESIDUAL SOIL WHICH 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, WHICH 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 B.P.F.) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS LESS THAN 0.1 FOOT PENETRATION WITH 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 (S.R.Q.D.) - A MEASURE OF ROCK QUALITY DESCRIBED BY: TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 10 CENTIMETERS DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE.

TOPSOIL (T.S.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.

BENCH MARK:

ELEVATION:

NOTES:

REVISED 09/15/00

TIP R-2707A

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2707A	2A	61

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
34497.1.2	NHF-74(14)	PE

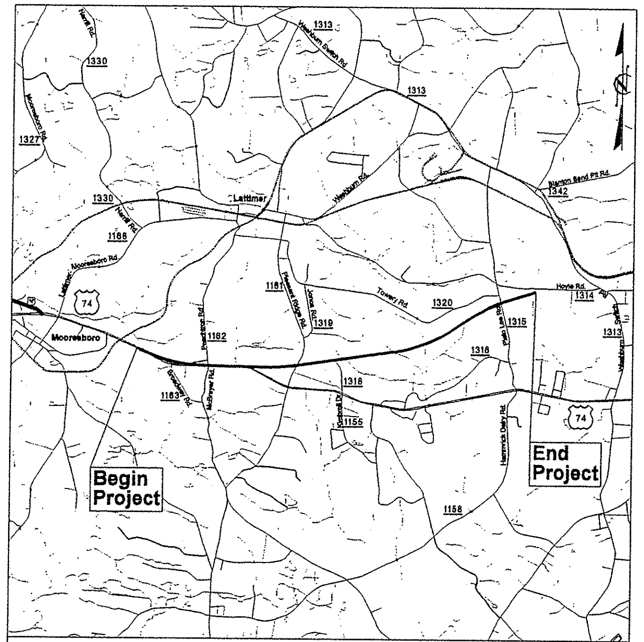
See Sheet 1-A For Index of Sheets

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

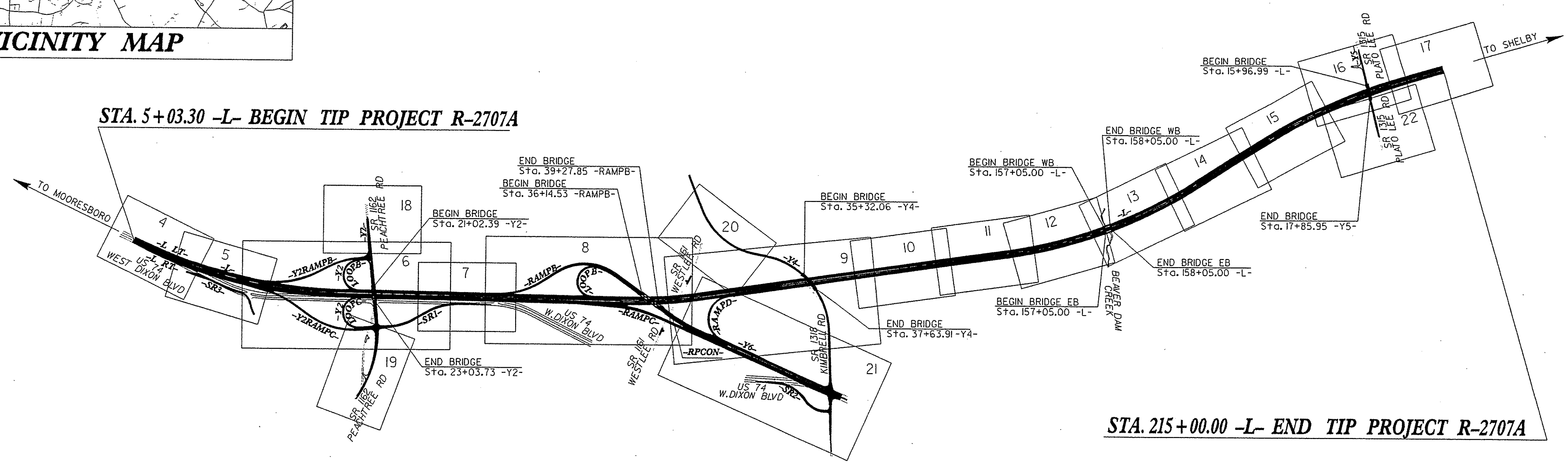
CLEVELAND COUNTY

LOCATION: US 74 (SHELBY BYPASS) FROM WEST OF SR 1162 (PEACHTREE ROAD) TO WEST OF SR 1313 (WASHBURN SWITCH ROAD)

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



VICINITY MAP



NCDOT CONTACT:
TERESA BRUTON, P. E.
DESIGN SERVICES–ENGINEERING COORDINATION

THIS IS A FULL CONTROLLED–ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2002 = 24,800
ADT 2025 = 45,400
DHV = 12 %
D ≐ 60 %
T = 14 % *
V = 70 MPH

* TTST 8% DUAL 6%

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT R-2707A	=	3.98+/– miles
LENGTH OF STRUCTURE TIP PROJECT R-2707A	=	0.00 miles
TOTAL LENGTH TIP PROJECT R-2707A	=	3.98+/– miles

Prepared In The Office of:
ARCADIS
G & M of North Carolina, Inc.
WWW.ARCADIS-US.COM
for the North Carolina Department of Transportation

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
OCTOBER 21, 2005

LETTING DATE:

ARCADIS CONTACT

STEVE SMALLWOOD, P.E.
PROJECT ENGINEER

PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE DESIGN ENGINEER

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR DATE

CONTRACT:

EARTHWORK BALANCE SHEET

PROJECT NAME: US 74 (Shelby Bypass) | COMPUTED BY: DAP | DATE: February 25, 2013
STATE PROJECT NUMBER: R-2707AA | CHECKED BY: HRC | SHEET: 1 OF 4

STATION	STATION	EXCAVATION					EMBANKMENT				BORROW	WASTE			
		TOTAL (UNCL.)	ROCK	UNDERCUT	UNSUIT.	SUITABLE	TOTAL	ROCK + 25%	EARTH	EMB. + 15%		ROCK	SUITABLE	UNSUIT.	TOTAL
SUMMARY #1															
-L- Left-															
05+50.00	32+50.00	34315				34315	10071		10071	11582	0		22733		22733
-L- Right-															
20+00.00	32+50.00	16616				16616	1261		1261	1450	0		15166		15166
TOTAL SUMMARY #1		**50931**				**50931**	**11332**		**11332**	**13032**	**0**		**37899**		**37899**
SUMMARY #2															
-L Left-															
32+50.00	62+00.00	35261		2025		35261	25317		25317	29115	0		6146	2025	8171
-Y2-															
10+50.00	21+02.31 (Bridge)	2052				2052	22517		22517	25895	23843		0		0
-Y2RAMPB-															
14+95.00	25+50.00	20584				20584	2858		2858	3287	0		17297		17297
-Y2LOOPB-															
12+41.21	15+70.00	4222				4222	7		7	8	0		4214		4214
-SR10-															
10+80.00	21+00.00	19088				19088	0		0	0	0		19088		19088
TOTAL SUMMARY #2		**81207**		**2025**		**81207**	**50699**		**50699**	**58305**	**23843**		**46745**	**2025**	**48770**
SUMMARY #3															
-SR6-															
10+00.00	27+00.00	4599				4599	5353		5353	6156	1557		0		0
-SR6-															
27+00.00	44+61.21	1079				1079	8369		8369	9624	8545		0		0
TOTAL SUMMARY #3		**5678**				**5678**	**13722**		**13722**	**15780**	**10102**		**0**		**0**

Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

EARTHWORK BALANCE SHEET

STATION	STATION	EXCAVATION					EMBANKMENT				BORROW	WASTE			
		TOTAL (UNCL.)	ROCK	UNDERCUT	UNSUIT.	SUITABLE	TOTAL	ROCK + 25%	EARTH	EMB. + 15%		ROCK	SUITABLE	UNSUIT.	TOTAL
SUMMARY #4															
-L- Right															
05+50.00	20+00.00	13131				13131	1708		1708	1964	0		11167		11167
-SR3-															
14+00.22	22+99.13	777				777	509		509	585	0		192		192
-SR7-															
10+53.91	18+60.00	634				634	1685		1685	1938	1304		0		0
TOTAL SUMMARY #4		**14542**				**14542**	**3902**		**3902**	**4487**	**1304**		**11359**		**11359**
SUMMARY #5															
-Y2-															
23+01.06 (Bridge)	38+00.00	343				343	89640		89640	103086	102743		0		0
-Y2LOOPC-															
12+21.00	17+00.00	172				172	1333		1333	1533	1361		0		0
-Y2RAMPC-															
14+17.48	30+46.74	9473				9473	22207		22207	25538	16065		0		0
-SR1-															
10+50.00	21+14.00	571				571	45082		45082	51844	51273		0		0
-SR11-															
10+13.65	11+11.06	1				1	27		27	31	30		0		0
TOTAL SUMMARY #5		**10560**				**10560**	**158289**		**158289**	**182032**	**171472**		**0**		**0**
SUMMARY #6															
-L- Right															
32+50.00	62+00.00	17167				17167	23341		23341	26842	9675		0		0
TOTAL SUMMARY #6		**17167**				**17167**	**23341**		**23341**	**26842**	**9675**		**0**		**0**
SUMMARY #7															
-L- Left															
62+00.00	90+50.00	205679	1946			203733	349	279	0	279	0	1667	203733		205400
-L- Right															
62+00.00	90+50.00	225637	3980			221657	978	782	0	782	0	3198	221657		224855

Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

EARTHWORK BALANCE SHEET

STATION	STATION	EXCAVATION					EMBANKMENT				BORROW	WASTE			
		TOTAL (UNCL.)	ROCK	UNDERCUT	UNSUIT.	SUITABLE	TOTAL	ROCK + 25%	EARTH	EMB. + 15%		ROCK	SUITABLE	UNSUIT.	TOTAL
-RAMPB-															
15+63.00	36+06.67 (Bridge)	100571	9581			90990	46049	9581	34073	48765	0		51806		51806
-RAMPB-															
(Bridge) 39+24.17	41+50.00	607				607	7293		7293	8387	7780		0		0
-LOOPB-															
12+65.00	16+75.00	9519				9519	338		338	389	0		9130		9130
-RAMPC-															
17+97.98	24+00.00	18172				18172	788		788	906	0		17266		17266
TOTAL SUMMARY #7		**560185**	**15507**			**544678**	**55795**	**10642**	**42492**	**59508**	**7780**	**4865**	**503592**		**508457**
SUMMARY #8															
-L- Left															
90+50.00	119+00.00	26384				26384	20362		20362	23416	0		2968		2968
-L- Right															
90+50.00	119+00.00	17794				17794	34559		34559	39743	21949		0		0
-RAMPD-															
12+60.00	18+33.00	0				0	13860		13860	15939	15939		0		0
-RAMPC-															
24+00.00	26+19.43	0				0	6771		6771	7787	7787		0		0
-RAMPB-															
41+50.00	51+50.00	946				946	74715		74715	85922	84976		0		0
-Y6-															
10+00.00	28+50.00	44669				44669	18322		18322	21070	0		23599		23599
-SR9-															
10+50.00	14+00.00	184				184	1123		1123	1291	1107		0		0
-SR8-															
10+50.00	15+00.00	28				28	19144		19144	22016	21988		0		0

Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

EARTHWORK BALANCE SHEET

STATION	STATION	EXCAVATION					EMBANKMENT				BORROW	WASTE			
		TOTAL (UNCL.)	ROCK	UNDERCUT	UNSUIT.	SUITABLE	TOTAL	ROCK + 25%	EARTH	EMB. + 15%		ROCK	SUITABLE	UNSUIT.	TOTAL
-SR4-															
10+00.00	11+50.00	115				115	214		214	246	131		0		0
-SR5-															
10+50.00	11+00.00	43				43	0		0	0	0		43		43
-Y7-															
10+50.00	11+00.00	20				20	128		128	147	127		0		0
-Y4-															
12+00.00	35+64.04 (Bridge)	1200				1200	87198		87198	100278	99078		0		0
-Y4-															
(Bridge) 37+58.29	60+50.00	6479				6479	8619		8619	9912	3433		0		0
TOTAL SUMMARY #8		**97862**				**97862**	**285015**		**285015**	**327767**	**256515**		**26610**		**26610**
SUMMARY #9															
-SR2-															
12+00.00	22+50.00	3140				3140	8993		8993	10342	7202		0		0
TOTAL SUMMARY #9		**3140**				**3140**	**8993**		**8993**	**10342**	**7202**		**0**		**0**
SUMMARY #10															
-Y8-															
16+50.00	19+00.00	379				379	0		0	0	0		379		379
TOTAL SUMMARY #10		**379**				**379**	**0**		**0**	**0**	**0**		**379**		**379**
SUBTOTAL SUMMARY #1, #2,#3,#4, #5,#6, #7,#8, #9 & #10		841,651	15,507	2,025		826,144	611,088	10,642	597,785	698,095	487,893	4,865	626,584	2,025	633,474
TOTALS		841,651	15,507	2,025		826,144	611,088	10,642	597,785	698,095	487,893	4,865	626,584	2,025	633,474
LOSS DUE TO CLEARING & GRUBBING		-30,000				-30,000							-30,000		-30,000
ROCK WASTE TO REPLACE BORROW								4,865	-4,865		-4,865	-4,865			-4,865
ADJUST FOR ROCK WASTE										-912	-912				
ADDITIONAL UNDERCUT				9,500			9,500		9,500	10,925	10,925			9,500	9500
WASTE TO REPLACE BORROW											-491,825		-491,825		-491,825
ADJUSTMENT FOR ROCK SWELL									-1,216	-1,216	-1216				
GRAND TOTALS		**811,651**	**15,507**	**11,525**		**796,144**	**620,588**	**15,507**	**601,204**	**706,892**	**0**	**0**	**104,759**	**11,525**	**116,284**
SAY		**820,000**													

Earthwork quantities are calculated by the Roadway Design Unit.These earthwork quantities are based in part on the subsurface dataprovided by the Geotechnical Engineering Unit.

Estimated Shallow Undercut = 2,000 CY
Estimated Shoulder Borrow = 30,460 CY
Estimated DDE = 1,670 CY
Pavement Structure Volume = 3,360 CY

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY, GOVERNOR
P.O. BOX 25201, RALEIGH, N.C. 27611-5201
LYNDO TIPPETT, SECRETARY

November 5, 2004

STATE PROJECT: 34497.1.3 (R-2707A)
FEDERAL PROJECT: NHF-74-(14)
COUNTY: Cleveland
DESCRIPTION: US 74 – Shelby Bypass from West of SR 1162 (Peachtree Rd.) to west of SR 1313 (Washburn Switch Rd.)

SUBJECT: Geotechnical Report – Inventory

This project is located in southwestern Cleveland County near the city of Shelby. Total length of lines investigated for this project is 10.10 miles. –L- line typical sections call for a four-lane median divided facility with paved shoulders with a major interchange at SR 1126 and SR 1161. 2 additional flyover bridges will also be included in the scope of this project.

The Geotechnical field investigation was conducted primarily during the months of March 2004 – April 2004. Field data was collected primarily with an all-terrain CME 550-power auger machine equipped with an automatic hammer for Standard Penetration tests.

Geologically, the project corridor is underlain predominantly by biotite gneiss and mica schist rocks of the Inner Piedmont Geological Belt. Mica can be readily observed in the soil samples obtained from the residual silts and sands. Topography consists of gently rolling hills with relief of about 150.0' between the upland and lowland portions of the project. Beaver Dam Creek and its tributaries are the primary drainage outlets for this section of the Bypass.

The following baselines were investigated either by actual soil testing or visual reconnaissance:

Line	Stations
-L-	05+03 to 215+00
-Ramp B-	10+00 to 52+13
-Loop B-	10+00 to 19+64
-Ramp C-	10+00 to 34+88
-Ramp D-	10+00 to 21+04
-RampCON-	10+00 to 18+62
-Y2LoopB-	10+00 to 20+10

3D

Line	Stations
-Y2LoopC-	10+00 to 21+20
-Y2RampB-	10+00 to 29+47
-Y2RampC-	10+00 to 31+34
-Y2-	10+27 to 38+25
-Y4-	12+50 to 60+75
-Y5-	10+25 to 24+05
-Y6-	10+00 to 28+50
-SR1-	10+00 to 24+88
-SR2-	10+00 to 23+14
-SR3-	10+00 to 23+16
-DET 1-	10+00 to 15+17

Items of Special Geotechnical Interest

1. Groundwater

The following project intervals contain groundwater within six feet of the proposed grade:

Line	Stations
-L-	168+50 to 169+50
"	208+50 to 215+00

2. Hard Rock

Hard, crystalline rock was encountered above or within ten feet of proposed grade at the following locations:

Line	Station
-L-	66+00 to 70+25
"	73+75 to 74+25
Ramp B	14+00 to 19+50

The cross-sections for these areas can be found at the back of the attached Roadway Inventory plans beginning on page 48.

3. Alluvial Deposits

Alluvial soils were encountered throughout the project corridor around ponds, ephemeral streams, and creeks. The largest concentrations of alluvium were encountered at the following locations:

(a) 58+40 to 60+05 –L-. Alluvial soils found in this interval are seven to 12.0' thick and consist of soft sandy clay (A-6), soft sandy silt (A-4), and loose silty sand (A-1-b). Groundwater levels, where encountered, were within seven feet of the existing ground surface. Maximum proposed fill heights through this area are approximately 22.0'.

(b) 154+50 to 160+10 –L-. Beaver Dam Creek is the source of the alluvial soils found in this segment. These soils are approximately 7 to 18' thick and consist of very soft to medium stiff, sandy clay and silt (A-7, A-6, A-4) intermixed with layers of loose silty sand (A-2-4). Groundwater, where encountered, was 6 to 10 feet below the ground surface. Maximum proposed fill heights over this material are approximately 40 feet.

(c) 206+70 to 207+90 –L-. Alluvial soils in this segment are seven to 12.0' thick and consist of very loose to loose silty sand (A-2-4) and stiff sandy clay (A-6). Groundwater was encountered at or near the existing ground surface (elevation 855.00 to 859.00') throughout this interval. Maximum proposed fill heights over this material are approximately six feet.

4. Spring. One spring was located within the construction limits at 114+00 –L-, 60.0' left.

5. High P.I. clays. Several areas within the project corridor were identified as areas with plasticity indices greater than 27. They are as follows:

High P.I. clays occurring within six feet of proposed grade were found in the following areas:

Location	P.I.	Depth (ft.)
33+00 to 38+00 –L-	31-43	0 – 2.0'
91+00 to 101+00 –L-	35	0 – 3.0'
173+50 to 175+00 –L-	38	0 – 2.0'
10+00 to 13+00 –Ramp D-	35	0 – 3.0'
13+00 to 15+00 –Y2LoopC-	31	3.0' – 5.0'
18+00 to 21+00 –Y2RampB-	37	0 – 3.0'
20+00 to 22+00 –Y2RampC	32	0 – 2.0'
10+00 to 13+00 –Y6LT-	55	0 – 3.0'
17+00 to 20+00 –Y6LT-	55	0 – 3.0'

The cap clays in the following cut sections were found to have plasticity indices greater than 27:

Location	P.I.	Depth (ft.)
165+00 to 173+50 –L-	38	0 – 2.0'
187+00 to 191+00 –L-	31	0 – 4.0'
10+00 to 20+00 –Ramp C-	31-39	0 – 3.0'
12+50 to 18+00 –Y2Loop B-	37	0 – 3.0'
21+00 to 23+00 –Y2RampB-	35	0 – 3.0'
13+00 to 17+00 –Y6LT-	55	0 – 3.0'

3E

Soils Properties

Residual soils, derived from the weathering of parent rock materials, occur in the uplands as cut materials, in the flanks of hillsides as foundation soils for proposed fills, and underneath alluvial deposits in floodplains. Red and brown clays (A-6, A-7-5, and A-7-6) cap most of the hills in varying thicknesses. In addition to these clays, a variety of saprolite soils are present. These include sandy silts (A-4, A-5) and silty sands (A-2-4, A-2-5, and A-1-b) plus some weathered rock and hard rock.

If we can furnish any further information on this project, please advise.

Respectfully submitted,

J. P. Rogers
Project Geologist - Geotechnical Unit
Matthews Field Office

cc: Michael Holder, PE
Division 12 Engineer

ARCADIS
G & M of North Carolina, Inc.
WWW.ARCADIS-US.COM

PROJECT REFERENCE NO.	SHEET NO.
R-2707A	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

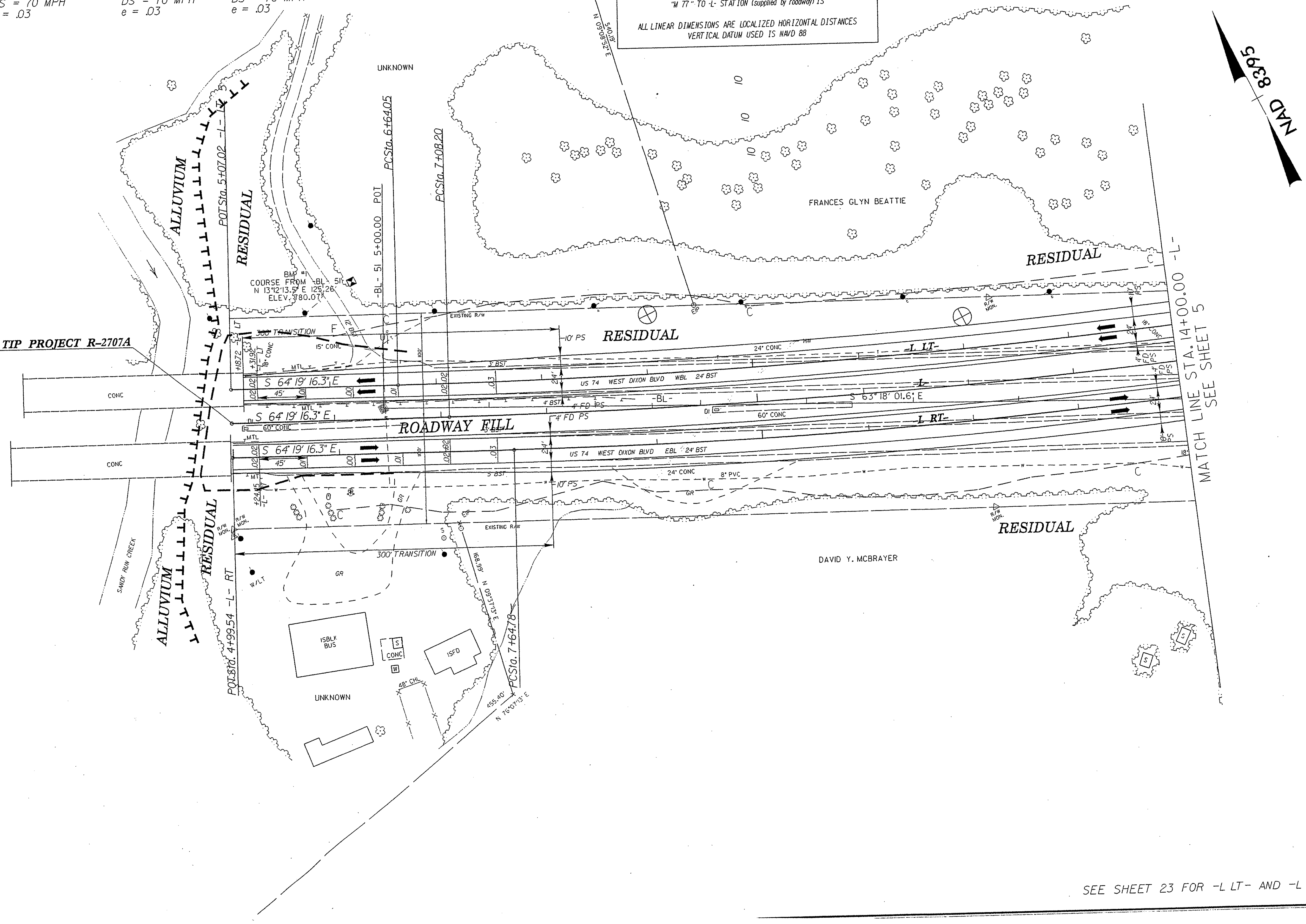
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L-	-L LT-	-L RT-
PI Sta 22+80.18	PI Sta 10+82.45	PI Sta 11+32.77
Δ = 24° 35' 29.4" (LT)	Δ = 6° 21' 03.5" (LT)	Δ = 6° 21' 03.5" (LT)
D = 0° 45' 14.0"	D = 0° 45' 35.0"	D = 0° 51' 49.8"
L = 3,261.94'	L = 835.95'	L = 735.22'
T = 1,656.48'	T = 418.40'	T = 367.99'
R = 7,600.00'	R = 7,541.57'	R = 6,632.81'
DS = 70 MPH	DS = 70 MPH	DS = 70 MPH
e = .03	e = .03	e = .03

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "M 77"
WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF
NORTHING: 573127.522(ft) EASTING: 1242971.658(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99984410
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "M 77" TO -L- STATION (supplied by roadway) IS

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88



REVISIONS

SEE SHEET 23 FOR -L LT- AND -L RT- PROFILES

PROJECT REFERENCE NO.	SHEET NO.
R-2707A	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

ARCADIS
G & M of North Carolina, Inc.
WWW.ARCADIS-US.COM
801 Corporate Center Drive, Suite 300
Raleigh, NC 27607-5073
Tel: 919/854-1282 Fax: 919/854-5448

-L-
PI Sta 22+77.49
Δ = 24° 35' 29.4" (LT)
D = 0° 47' 44.8"
L = 3,090.26'
T = 1,569.29'
R = 7,200.00'
DS = 70 MPH
e = .03

-Y2RAMPB-
PIs Sta 11+53.14
Θs = 1° 00' 01.4"
Θs = 5° 06' 59.6"
Ls = 250.00'
LT = 153.14'
ST = 97.08'

PI Sta 15+97.68
Δ = 27° 53' 38.0" (LT)
D = 4° 05' 33.2"
L = 681.58'
T = 347.68'
R = 1,400.00'
DS = 60 MPH
e = .08

PIs Sta 20+14.97
Θs = 5° 06' 56.5"
Ls = 250.00'
LT = 166.74'
ST = 83.40'

PIs Sta 23+14.96
Θs = 4° 46' 28.7"
Ls = 200.00'
LT = 133.38'
ST = 66.71'

PI Sta 25+07.37
Δ = 11° 58' 07.1" (RT)
D = 4° 46' 28.7"
L = 250.67'
T = 125.79'
R = 1,200.00'
DS = 50 MPH
e = .07

PIs Sta 26+98.96
Θs = 4° 46' 28.7"
Ls = 200.00'
LT = 133.38'
ST = 66.71'

-Y2RAMPC-
PIs Sta 13+11.74
Θs = 5° 06' 56.5"
Ls = 250.00'
LT = 166.74'
ST = 83.40'

PI Sta 15+26.04
Δ = 10° 41' 40.8" (RT)
D = 4° 05' 33.2"
L = 261.32'
T = 131.04'
R = 1,400.00'
DS = 60 MPH
e = .08

PIs Sta 17+39.72
Θs = 5° 06' 56.5"
Ls = 250.00'
LT = 166.74'
ST = 83.40'

PIs Sta 20+39.70
Θs = 4° 46' 28.7"
Ls = 200.00'
LT = 133.38'
ST = 66.71'

PI Sta 24+41.05
Δ = 31° 10' 20.2" (LT)
D = 4° 46' 28.7"
L = 652.87'
T = 334.73'
R = 1,200.00'
DS = 50 MPH
e = .07

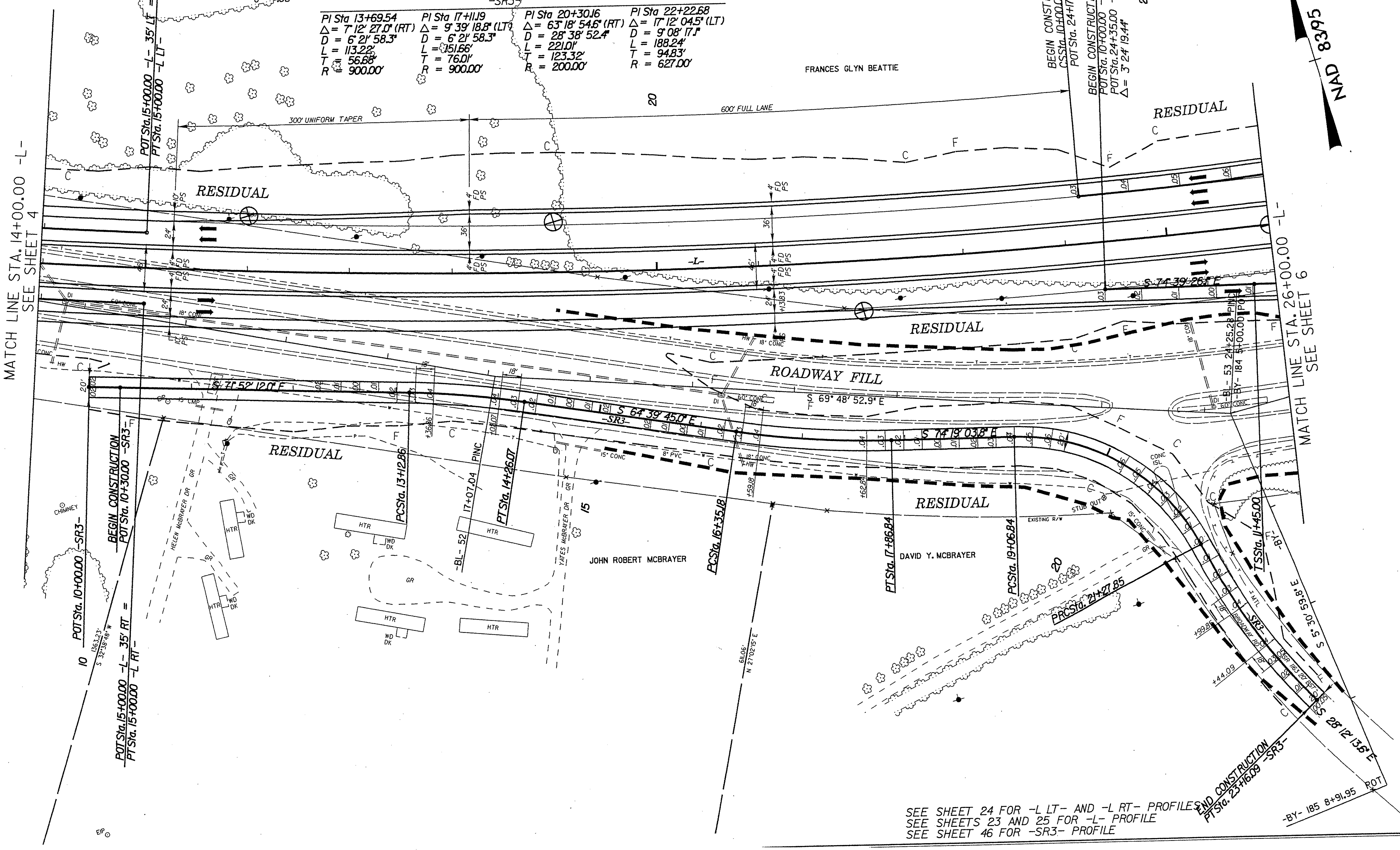
PIs Sta 28+25.90
Θs = 4° 46' 28.7"
Ls = 200.00'
LT = 133.38'
ST = 66.71'

-SR3-
PI Sta 13+69.54
Δ = 7° 12' 27.0" (RT)
D = 6° 21' 58.3"
L = 113.22'
T = 56.68'
R = 900.00'

PI Sta 17+11.19
Δ = 9° 39' 18.8" (LT)
D = 6° 21' 58.3"
L = 151.66'
T = 76.01'
R = 900.00'

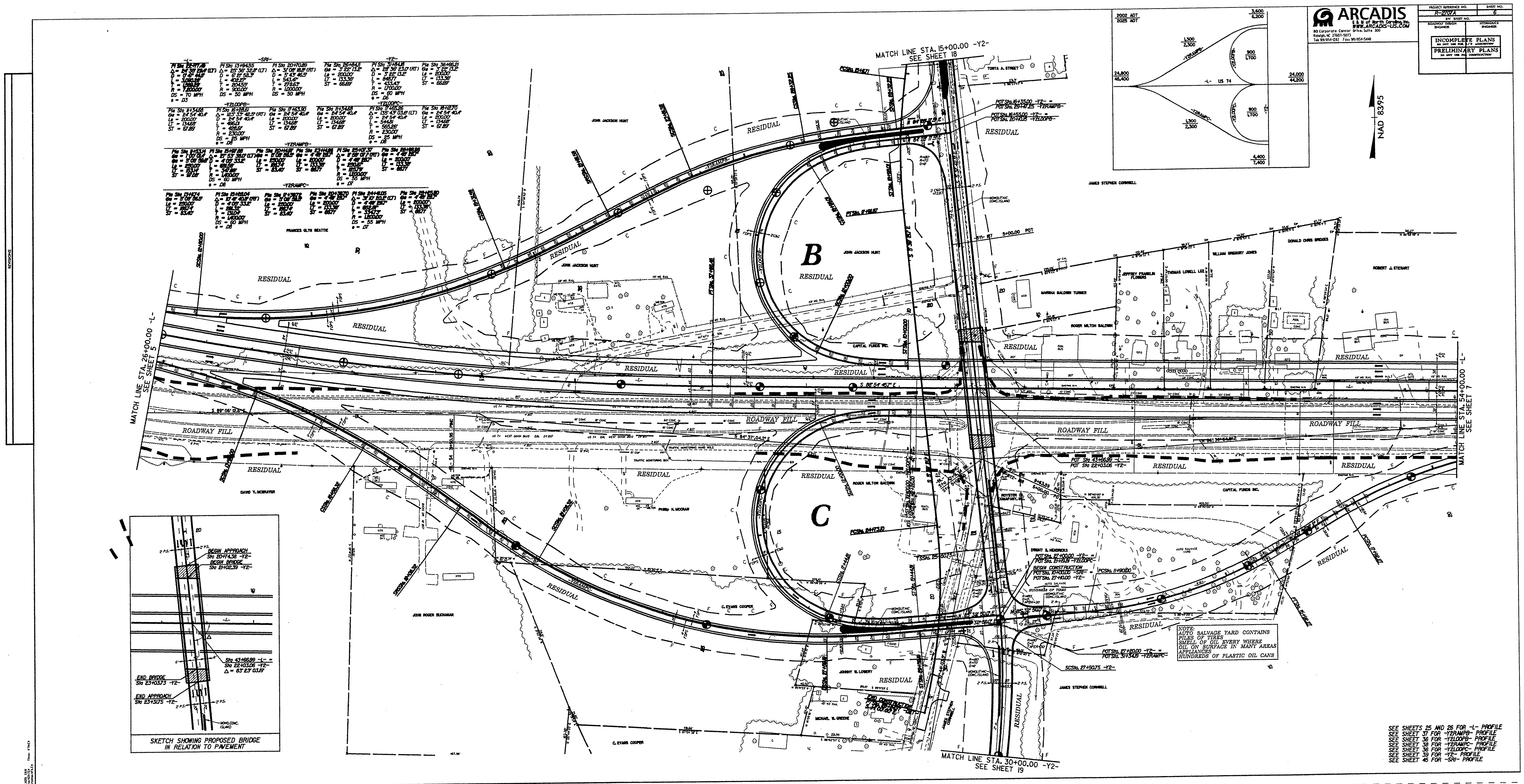
PI Sta 20+30.16
Δ = 63° 18' 54.6" (RT)
D = 28° 38' 52.4"
L = 221.01'
T = 123.32'
R = 200.00'

PI Sta 22+22.68
Δ = 17° 12' 04.5" (LT)
D = 9° 08' 17.1"
L = 188.24'
T = 94.83'
R = 627.00'



SEE SHEET 24 FOR -L LT- AND -L RT- PROFILES
SEE SHEETS 23 AND 25 FOR -L- PROFILE
SEE SHEET 46 FOR -SR3- PROFILE

REVISIONS



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801 Corporate Center Drive, Suite 300
Raleigh, NC 27601-5073
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PROJECT REFERENCE NO.
R-2707A
SHEET NO.
6
RW SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
2002 ADT
2025 ADT
US 74
NAD 83/95
MATCH LINE STA. 15+00.00 -Y2-
SEE SHEET 18
MATCH LINE STA. 26+00.00 -L-
SEE SHEET 5
MATCH LINE STA. 54+00.00 -L-
SEE SHEET 7
MATCH LINE STA. 30+00.00 -Y2-
SEE SHEET 19
B
C
RESIDUAL
ROADWAY FILL
JOHN JACKSON HUNT
FRANCES GLYN BEATTIE
JAMES STEPHEN CORNWELL
ROGER MILTON BALDWIN
CAPITAL FUNDS INC.
DAVID Y. MCBRAYER
PHILLIP H. MCCRAW
JOHN ROGER BUCHANAN
C. EVANS COOPER
JOHNNY W. LOWERY
MICHAEL W. GREENE
ROBERT J. STEWART
DONALD CHRIS BRIDGES
WILLIAM GREGORY JONES
THOMAS LOWELL LEE
JEFFREY FRANKLIN FLOWERS
MARSHA BALDWIN TURNER
TONYA A. STREET
DWIGHT S. HENDRICKS
ROYSTER OIL COMPANY INC.
NOTE:
AUTO SALVAGE YARD CONTAINS
PILES OF TIRES
SMELL OF OIL EVERY WHERE
OIL ON SURFACE IN MANY AREAS
APPLIANCES
HUNDREDS OF PLASTIC OIL CANS
SKETCH SHOWING PROPOSED BRIDGE IN RELATION TO PAVEMENT
SEE SHEETS 25 AND 26 FOR -L- PROFILE
SEE SHEET 37 FOR -Y2RAMPB- PROFILE
SEE SHEET 36 FOR -Y2LOOPB- PROFILE
SEE SHEET 38 FOR -Y2RAMPC- PROFILE
SEE SHEET 36 FOR -Y2LOOPC- PROFILE
SEE SHEET 39 FOR -Y2- PROFILE
SEE SHEET 45 FOR -SR1- PROFILE

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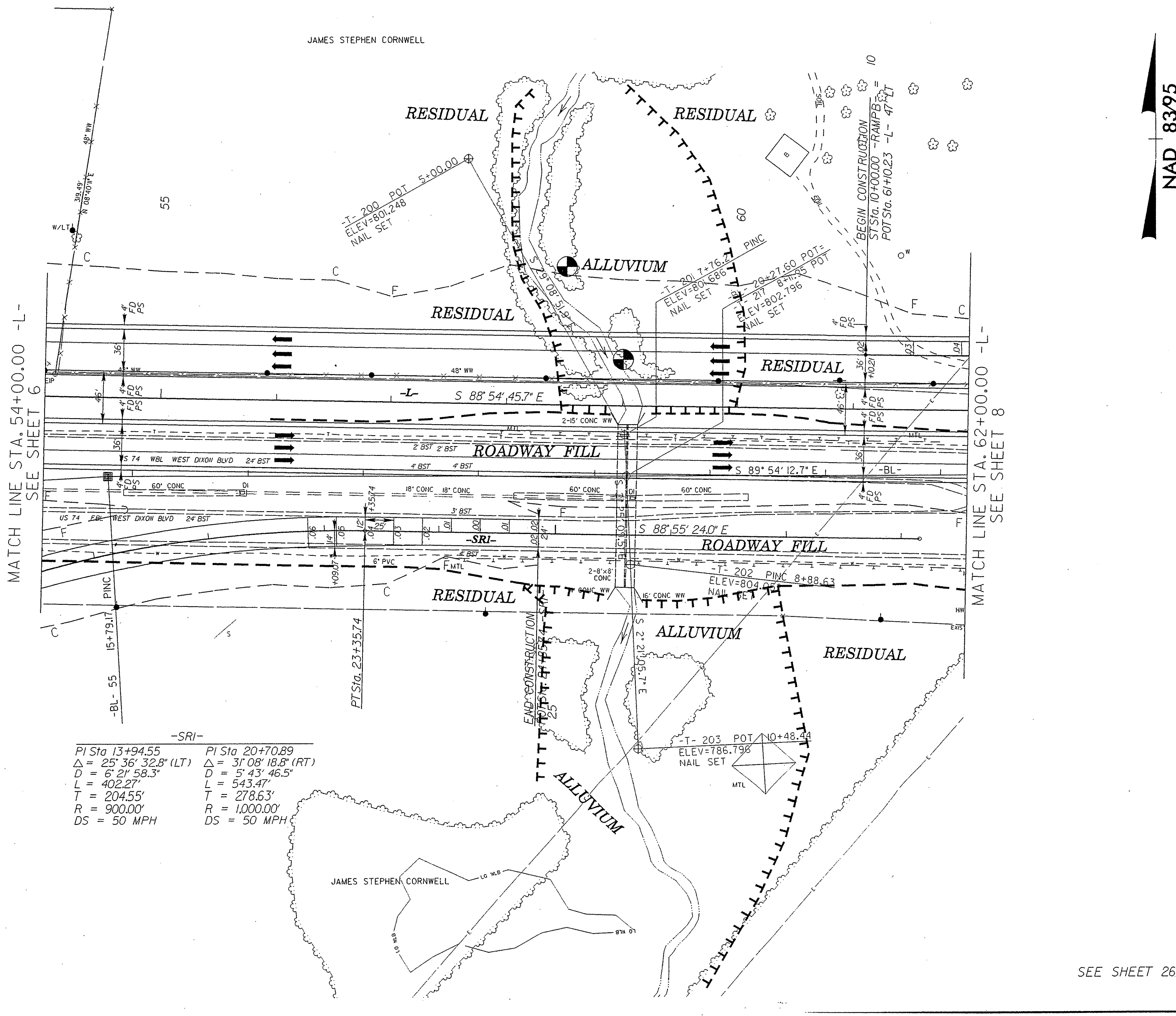
PROJECT REFERENCE NO.	SHEET NO.
R-2707A	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

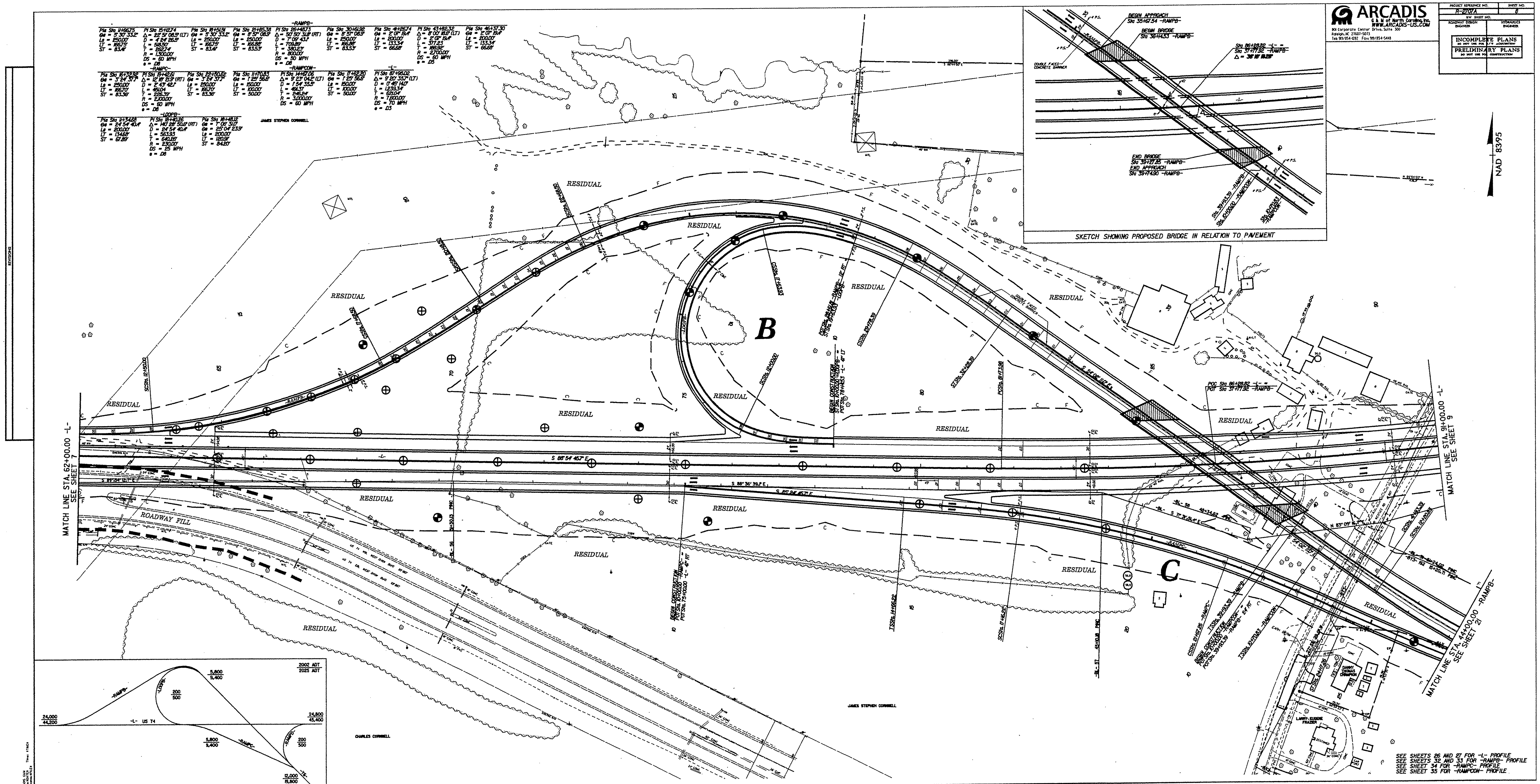
REVISIONS



JAMES STEPHEN CORNWELL
RESIDUAL
RESIDUAL
ALLUVIUM
RESIDUAL
RESIDUAL
ROADWAY FILL
ROADWAY FILL
RESIDUAL
ALLUVIUM
RESIDUAL
ALLUVIUM
-T- 200 POT 5+00.00
ELEV=801.248
NAIL SET
-T- 201 7+76.2 PINC
ELEV=801.686
NAIL SET
-T- 217 8+11.85 POT
ELEV=802.796
NAIL SET
BEGIN CONSTRUCTION
ST Sta. 10+00.00 -RAMPB- =
POT Sta. 61+10.23 -L- 47' LT
-L- S 88° 54' 45.7" E
S 89° 54' 12.7" E
-BL-
S 88° 55' 24.0" E
-SRI-
US 74 WBL WEST DIXON BLVD 24' BST
US 74 EBL WEST DIXON BLVD 24' BST
-T- 202 PINC 8+88.63
ELEV=804.05
NAIL SET
-T- 203 POT 10+48.44
ELEV=786.798
NAIL SET
END CONSTRUCTION
PT Sta. 23+35.74
15+79.17
-BL- 55
MATCH LINE STA. 54+00.00 -L-
SEE SHEET 6
MATCH LINE STA. 62+00.00 -L-
SEE SHEET 8
JAMES STEPHEN CORNWELL
NAD 83/95

-SRI-	
PI Sta 13+94.55	PI Sta 20+70.89
Δ = 25° 36' 32.8" (LT)	Δ = 31° 08' 18.8" (RT)
D = 6° 21' 58.3"	D = 5° 43' 46.5"
L = 402.27'	L = 543.47'
T = 204.55'	T = 278.63'
R = 900.00'	R = 1,000.00'
DS = 50 MPH	DS = 50 MPH

SEE SHEET 26 FOR -L- PROFILE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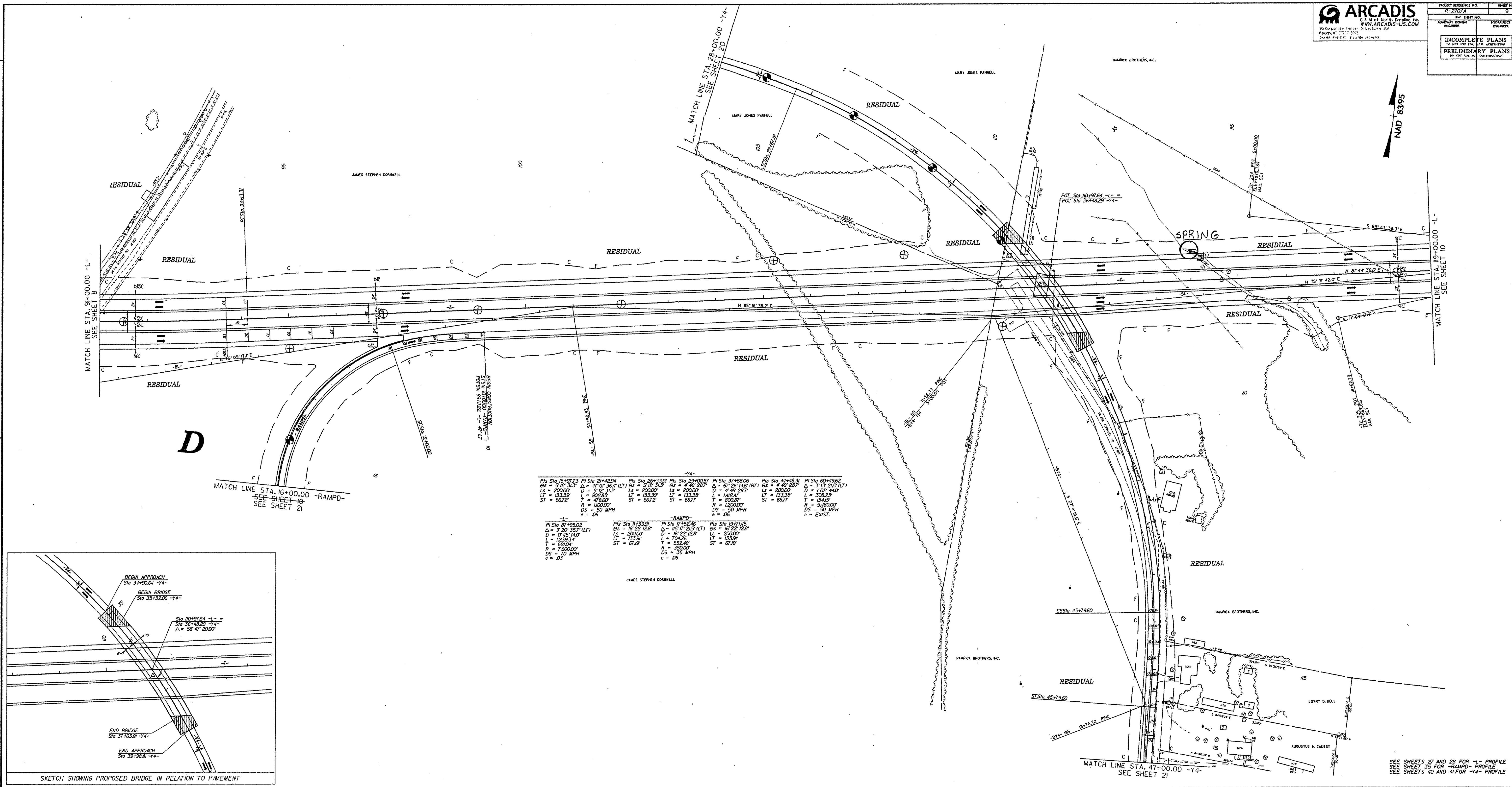
PROJECT REFERENCE NO. R-2707A
SHEET NO. 8
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
SKETCH SHOWING PROPOSED BRIDGE IN RELATION TO PAVEMENT
BEGIN APPROACH
BEGIN BRIDGE
END BRIDGE
END APPROACH
NAD 83/95
REVISIONS
RESIDUAL
B
C
ROADWAY FILL
JAMES STEPHEN CORNWELL
CHARLES CORNWELL
LARRY EUGENE FRAZIER
MATCH LINE STA. 62+00.00 -L- SEE SHEET 7
MATCH LINE STA. 91+00.00 -L- SEE SHEET 9
MATCH LINE STA. 44+00.00 -RAMPB- SEE SHEET 21
2002 ADT
2025 ADT
-L- US 74
SEE SHEETS 26 AND 27 FOR -L- PROFILE
SEE SHEETS 32 AND 33 FOR -RAMPB- PROFILE
SEE SHEET 34 FOR -RAMPC- PROFILE
SEE SHEET 35 FOR -RAMPCON- PROFILE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G & M of North Carolina, Inc.
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PROJECT REFERENCE NO. R-2707A
SHEET NO. 9
RW SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
NAD 83/95
MATCH LINE STA. 28+00.00 -Y4- SEE SHEET 20
MATCH LINE STA. 91+00.00 -L- SEE SHEET 8
MATCH LINE STA. 119+00.00 -L- SEE SHEET 10
MATCH LINE STA. 16+00.00 -RAMPD- SEE SHEET 21
MATCH LINE STA. 47+00.00 -Y4- SEE SHEET 21
RESIDUAL
JAMES STEPHEN CORNWELL
MARY JONES PANNELL
HAMRICK BROTHERS, INC.
LOWRY D. BELL
AUGUSTUS H. CAUSBY
SPRING
D
POT Sta 110+97.64 -L- =
POC Sta 36+48.29 -Y4-
CSSta. 43+79.60
STSta. 45+79.60
N 85° 16' 38.3" E
N 81° 44' 38.6" E
N 78° 31' 42.0" E
-Y4-
PIs Sta 15+97.73
θs = 5° 12' 31.3"
Ls = 200.00'
LT = 133.39'
ST = 66.72'
PI Sta 21+42.94
Δ = 47° 01' 36.4" (LT)
D = 5° 12' 31.3"
L = 902.85'
T = 478.60'
R = 1,100.00'
DS = 50 MPH
e = .06
PIs Sta 26+33.91
θs = 5° 12' 31.3"
Ls = 200.00'
LT = 133.39'
ST = 66.72'
PIs Sta 29+00.57
θs = 4° 46' 28.7"
Ls = 200.00'
LT = 133.38'
ST = 66.71'
PI Sta 37+68.06
Δ = 67° 26' 14.6" (RT)
D = 4° 46' 28.7"
L = 1,412.41'
T = 800.87'
R = 1,200.00'
DS = 50 MPH
e = .06
PIs Sta 44+46.31
θs = 4° 46' 28.7"
Ls = 200.00'
LT = 133.38'
ST = 66.71'
PI Sta 60+49.62
Δ = 3° 13' 21.5" (LT)
D = 1° 02' 44.0"
L = 308.23'
T = 154.15'
R = 5,480.00'
DS = 50 MPH
e = EXIST.
-L-
PI Sta 87+95.02
Δ = 9° 20' 35.7" (LT)
D = 0° 45' 14.0"
L = 1,239.34'
T = 621.04'
R = 7,600.00'
DS = 70 MPH
e = .03
-RAMPD-
PIs Sta 11+33.91
θs = 16° 22' 12.8"
Ls = 200.00'
LT = 133.91'
ST = 67.19'
PI Sta 17+52.46
Δ = 115° 17' 21.5" (LT)
D = 16° 22' 12.8"
L = 704.26
T = 552.46'
R = 350.00'
DS = 35 MPH
e = .08
PIs Sta 19+71.45
θs = 16° 22' 12.8"
Ls = 200.00'
LT = 133.91'
ST = 67.19'
BEGIN APPROACH Sta 34+90.64 -Y4-
BEGIN BRIDGE Sta 35+32.06 -Y4-
Sta 110+97.64 -L- = Sta 36+48.29 -Y4- Δ = 56° 47' 20.00"
END BRIDGE Sta 37+63.91 -Y4-
END APPROACH Sta 39+98.81 -Y4-
SKETCH SHOWING PROPOSED BRIDGE IN RELATION TO PAVEMENT
SEE SHEETS 27 AND 28 FOR -L- PROFILE
SEE SHEET 35 FOR -RAMPD- PROFILE
SEE SHEETS 40 AND 41 FOR -Y4- PROFILE

PROJECT REFERENCE NO.	SHEET NO.
R-2707A	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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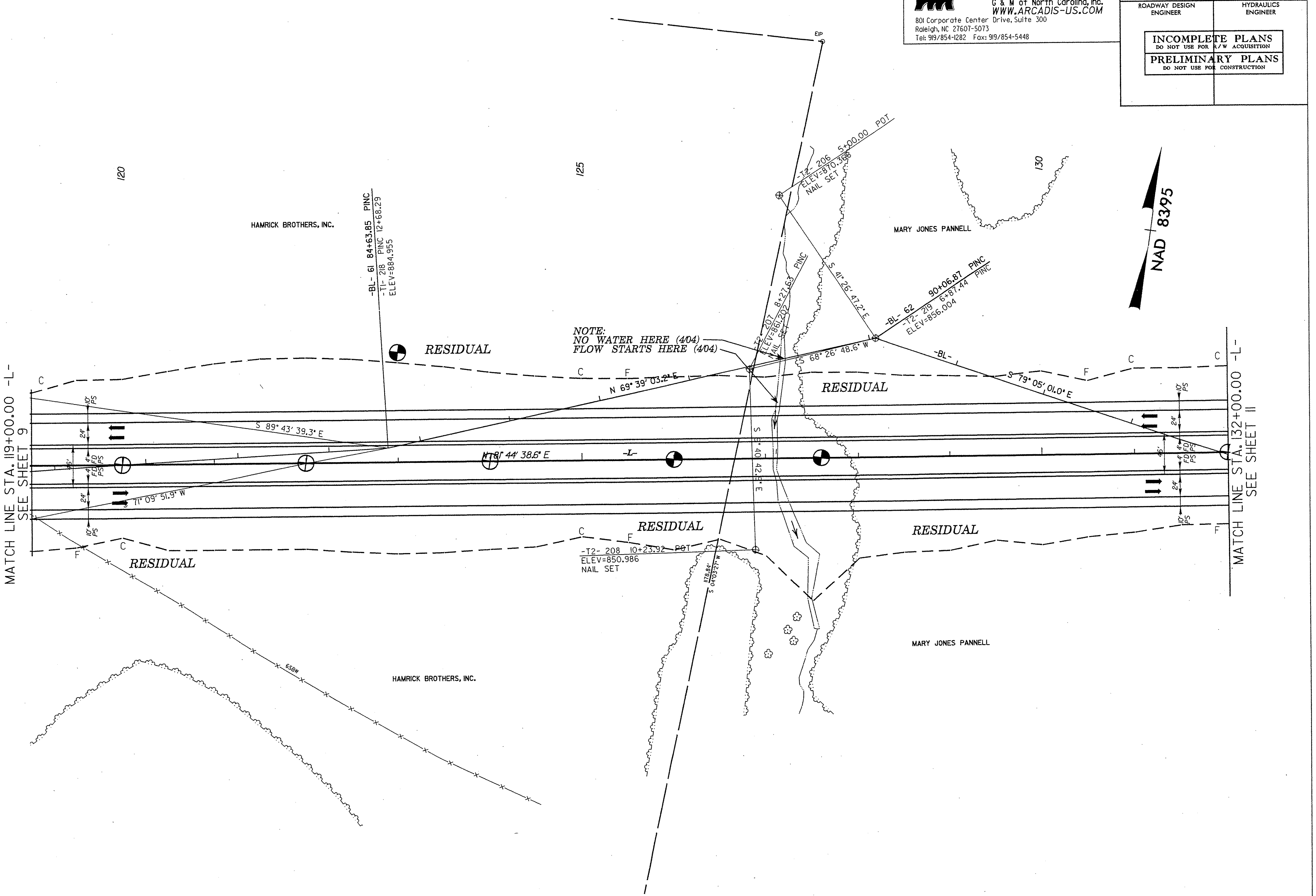
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS



MATCH LINE STA. 119+00.00 -L-
SEE SHEET 9
MATCH LINE STA. 132+00.00 -L-
SEE SHEET 11
HAMRICK BROTHERS, INC.
MARY JONES PANNELL
RESIDUAL
NAD 83/95
-BL- 61 84+63.85 PINC
-T1- 218 PINC 12+68.29
ELEV=884.955
-T2- 206 5+00.00 POT
ELEV=870.368
NAIL SET
-BL- 62 90+06.87 PINC
-T2- 219 6+87.44 PINC
ELEV=856.004
-T2- 207 8+27.63 PINC
ELEV=861.202
NAIL SET
-T2- 208 10+23.92 POT
ELEV=850.986
NAIL SET
NOTE:
NO WATER HERE (4/04)
FLOW STARTS HERE (4/04)
N 69° 39' 03.2" E
S 68° 26' 48.6" W
S 41° 26' 47.2" E
S 79° 05' 01.0" E
S 89° 43' 39.3" E
N 81° 44' 38.6" E
S 71° 09' 51.9" W
S 40° 42' 5" E
-L-
-BL-
120
125
130

SEE SHEETS 28 AND 29 FOR -L- PROFILE

PROJECT REFERENCE NO.	SHEET NO.
R-2707A	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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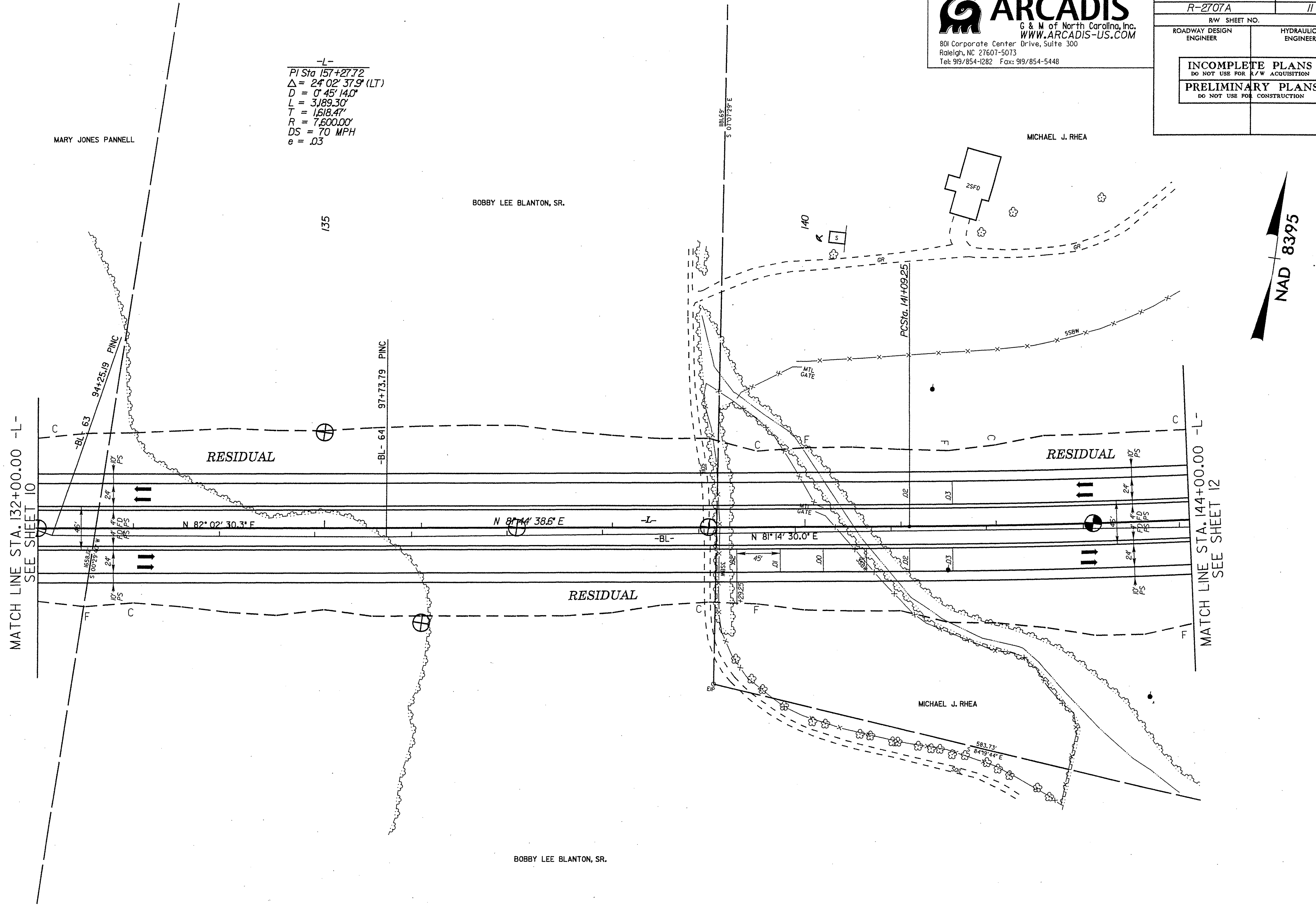
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

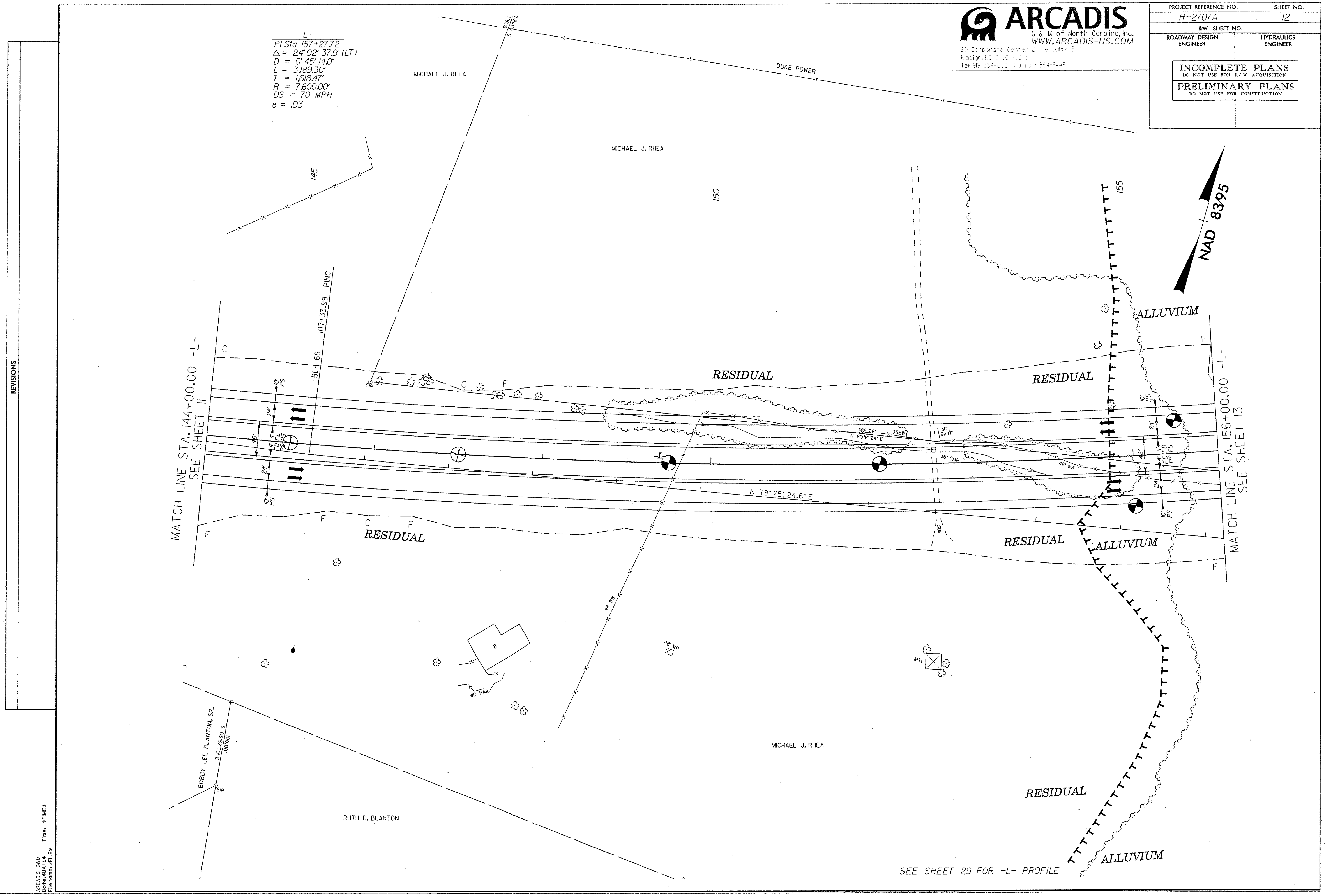
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS



SEE SHEET 29 FOR -L- PROFILE

ARCADIS G&M
Date: $DATE$ Time: $TIME$
Filename: $FILE$



PROJECT REFERENCE NO.
R-2707A
SHEET NO.
12
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
ARCADIS
G & M of North Carolina, Inc.
WWW.ARCADIS-US.COM
-L-
PI Sta 157+27.72
Δ = 24° 02' 37.9" (LT)
D = 0° 45' 14.0"
L = 3,189.30'
T = 1,618.47'
R = 7,600.00'
DS = 70 MPH
e = .03
MICHAEL J. RHEA
MICHAEL J. RHEA
DUKE POWER
NAD 83/95
145
150
155
107+33.99 PINC
-BL- 65
RESIDUAL
RESIDUAL
RESIDUAL
RESIDUAL
RESIDUAL
ALLUVIUM
ALLUVIUM
ALLUVIUM
MATCH LINE STA. 144+00.00 -L-
SEE SHEET 11
MATCH LINE STA. 156+00.00 -L-
SEE SHEET 13
N 79° 25' 24.6" E
N 80°14'24" E
36" CMP
48" WW
48" WD
MTL GATE
MTL
WD RAIL
MICHAEL J. RHEA
BOBBY LEE BLANTON, SR.
RUTH D. BLANTON
REVISIONS
SEE SHEET 29 FOR -L- PROFILE

ARCADIS
G & M of North Carolina, Inc.
WWW.ARCADIS-US.COM
801 Corporate Center Drive, Suite 300
Raleigh, NC 27607-5075
Telephone: 919-854-1282 Fax: 919-854-6259

PROJECT REFERENCE NO.	SHEET NO.
R-2707A	13
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

REVISIONS

NAD 83/95

-L-
PI Sta 157+27.72
△ = 24° 02' 37.9" (LT)
D = 0° 45' 14.0"
L = 3,189.30'
T = 1,618.47'
R = 7,600.00'
DS = 70 MPH
e = .03

BEGIN BRIDGE EB
Sta 157+05.00 -L-
BEGIN APPROACH EB
Sta 156+80.00 -L-
END BRIDGE EB
Sta 158+05.00 -L-
END APPROACH EB
Sta 158+30.00 -L-
BEGIN APPROACH WB
Sta 156+80.00 -L-
BEGIN BRIDGE WB
Sta 157+05.00 -L-
END APPROACH WB
Sta 158+30.00 -L-
END BRIDGE WB
Sta 158+05.00 -L-
Sta 157+55.00 -L-
△ = 88° 22' 38.97"

SKETCH SHOWING PROPOSED BRIDGE IN RELATION TO PAVEMENT

MATCH LINE STA. 156+00.00 -L-
SEE SHEET 12

MATCH LINE STA. 169+00.00 -L-
SEE SHEET 14

MICHAEL J. RHEA

JAMES A. BLACK II

HOWARD VICTOR BOWEN

G. C. CROSBY

DUKE POWER

ALLUVIUM

RESIDUAL

-T3- 209 5+00.00 POT
ELEV=770.846
NAIL SET

-T3- 210
ELEV=769.848
7+11.87 PINC
119+55.20 PINC

-T3- 211 9+53.85 POT
ELEV=769.618
NAIL SET

-BL- 66

-BL- 67
129+53.51 PINC

-BL-
N 76° 12' 41.5" E

S 10° 05' 02.5" W

S 26° 11' 12.2" E

S 81° 52' 35" E 458.55'

S 64° 40' 44" W 223.37'

572.71' S 64° 40' 44" W

S 21° 25' 19" E 236.47'

S 04° 33' 36" W 174.05'

BEAVER DAM CREEK

CONC. MON.

SEE SHEETS 29 AND 30 FOR -L- PROFILE

ARCADIS CAM
Date=$DATE$ Time: $TIME$
Filename=$FILE$

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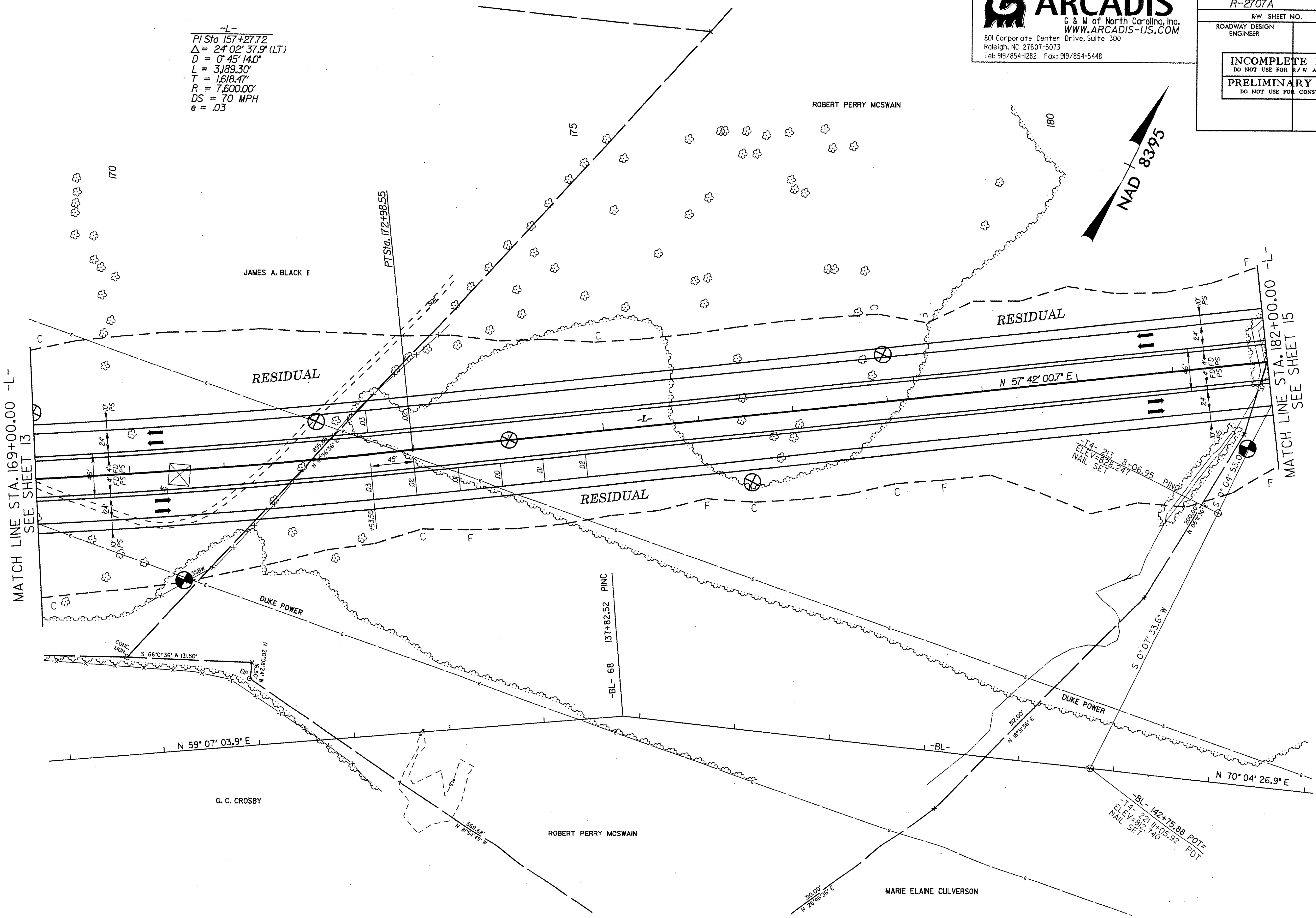
PROJECT REFERENCE NO.	SHEET NO.
R-2707A	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



-L-
PI Sta 157+27.72
Δ = 24° 02' 37.9" (LT)
D = 0° 45' 14.0"
L = 3,189.30'
T = 1,618.47'
R = 7,600.00'
DS = 70 MPH
e = .03
NAD 83/95
ROBERT PERRY MCSWAIN
JAMES A. BLACK II
PT Sta. 172+98.55
RESIDUAL
N 57° 42' 00.7" E
-L-
MATCH LINE STA. 169+00.00 -L- SEE SHEET 13
MATCH LINE STA. 182+00.00 -L- SEE SHEET 15
-T4- 213 8+06.95 PINC
ELEV=828.241
NAIL SET
DUKE POWER
S 66°01'36" W 131.50'
-BL- 68 137+82.52 PINC
N 59° 07' 03.9" E
-BL-
N 70° 04' 26.9" E
S 0° 07' 33.6" W
-BL- 142+75.88 POT=
-T4- 221 11+05.92 POT
ELEV=822.740
NAIL SET
G. C. CROSBY
ROBERT PERRY MCSWAIN
MARIE ELAINE CULVERSON

SEE SHEET 30 FOR -L- PROFILE

REVISIONS

ARCADIS G&M
Date: $DATE$ Time: $TIME$
Filename: $FILE$

PROJECT REFERENCE NO.	SHEET NO.
R-2707A	15
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

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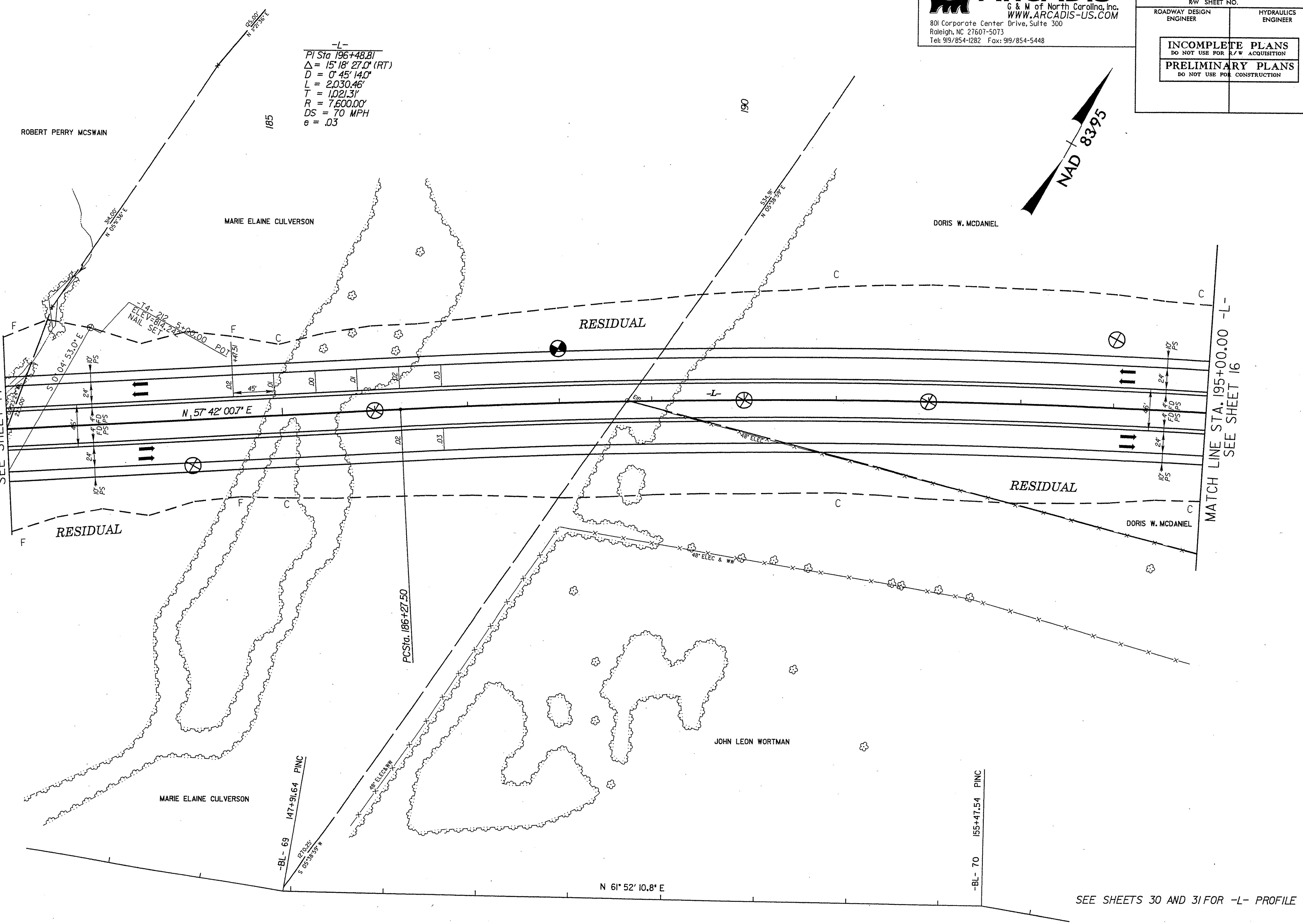
REVISIONS



SEE SHEETS 30 AND 31 FOR -L- PROFILE

ARCADIS G&M
Date:$DATE$ Time: $TIME$
Filename:$FILE$

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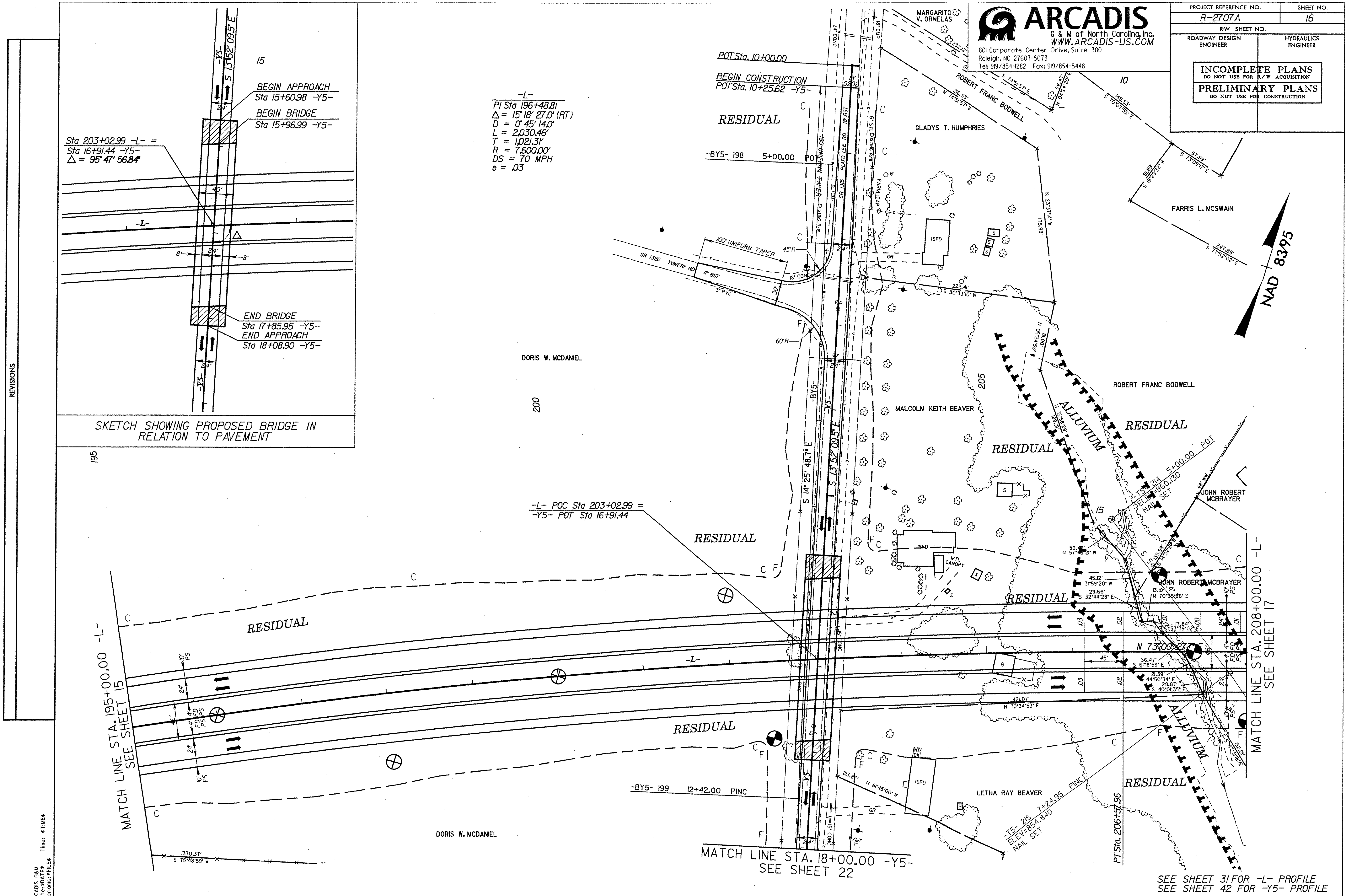
PROJECT REFERENCE NO.	SHEET NO.
R-2707A	16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



BEGIN APPROACH
Sta 15+60.98 -Y5-
BEGIN BRIDGE
Sta 15+96.99 -Y5-
Sta 203+02.99 -L- =
Sta 16+91.44 -Y5-
△ = 95° 47' 56.84"
END BRIDGE
Sta 17+85.95 -Y5-
END APPROACH
Sta 18+08.90 -Y5-
SKETCH SHOWING PROPOSED BRIDGE IN RELATION TO PAVEMENT
-L-
PI Sta 196+48.81
△ = 15° 18' 27.0" (RT)
D = 0° 45' 14.0"
L = 2,030.46'
T = 1,021.31'
R = 7,600.00'
DS = 70 MPH
e = .03
POT Sta. 10+00.00
BEGIN CONSTRUCTION
POT Sta. 10+25.62 -Y5-
-BY5- 198 5+00.00 POT
100' UNIFORM TAPER
SR 1320 TOWERY RD
MARGARITO V. ORNELAS
ROBERT FRANC BODWELL
GLADYS T. HUMPHRIES
FARRIS L. MCSWAIN
NAD 83/95
DORIS W. MCDANIEL
MALCOLM KEITH BEAVER
ALLUVIUM
RESIDUAL
-T5- 214 5+00.00 POT
ELEV=860.130
NAIL SET
JOHN ROBERT MCBRAYER
-L- POC Sta 203+02.99 =
-Y5- POT Sta 16+91.44
N 73°00'21" E
-BY5- 199 12+42.00 PINC
LETHA RAY BEAVER
-T5- 215 7+24.95 PINC
ELEV=854.840
NAIL SET
PT Sta. 206+57.96
MATCH LINE STA. 195+00.00 -L-
SEE SHEET 15
MATCH LINE STA. 208+00.00 -L-
SEE SHEET 17
MATCH LINE STA. 18+00.00 -Y5-
SEE SHEET 22
SEE SHEET 31 FOR -L- PROFILE
SEE SHEET 42 FOR -Y5- PROFILE
REVISIONS

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PROJECT REFERENCE NO.	SHEET NO.
R-2707A	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

REVISIONS

ARCADIS G&M
Date:$DATE$
Filename:$FILE$
Time: $TIME$

MATCH LINE STA. 208+00.00 -L-
SEE SHEET 16

STA. 215+00.00 -L- END TIP PROJECT R-2707A

NAD 83/95

PROJECT TO BE BUILT BY OTHERS
TIP PROJECT R-2707B

FARRIS L. MCSWAIN
ROBERT FRANC BODWELL
HAZEL E. MCSWAIN
JOHN ROBERT MCBRAYER
JOHN R. MCBRAYER
RICHARD E. HAMRICK
HERBERT RAY HAWKINS
PIONEER LAND DEVELOPMENT, INC.
THOMAS LEE HOWELL
LETHA RAY BEAVER

RESIDUAL
ALLUVIUM

-TS- 216 9+68.63 PINC
ELEV=849.777
NAIL SET

-BL- 71 173+66.32 PINC
-TS- 222 12+35.15 POT
ELEV=846.643

-L-
CABLE GUIDERAIL
4 FDPS
GRAU 350
JUNK YARD
CONC
I SM'L BUS
I S F D
HTR ABANDONED
18" RCP
CONC HW
72" PLASTIC

SEE SHEET 31 FOR -L- PROFILE

ARCADIS
G & M of North Carolina, Inc.
WWW.ARCADIS-US.COM
801 Corporate Center Drive, Suite 300
Raleigh, NC 27607-5073
Tel: 919/854-1282 Fax: 919/854-5448

PROJECT REFERENCE NO.	SHEET NO.
R-2707A	18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

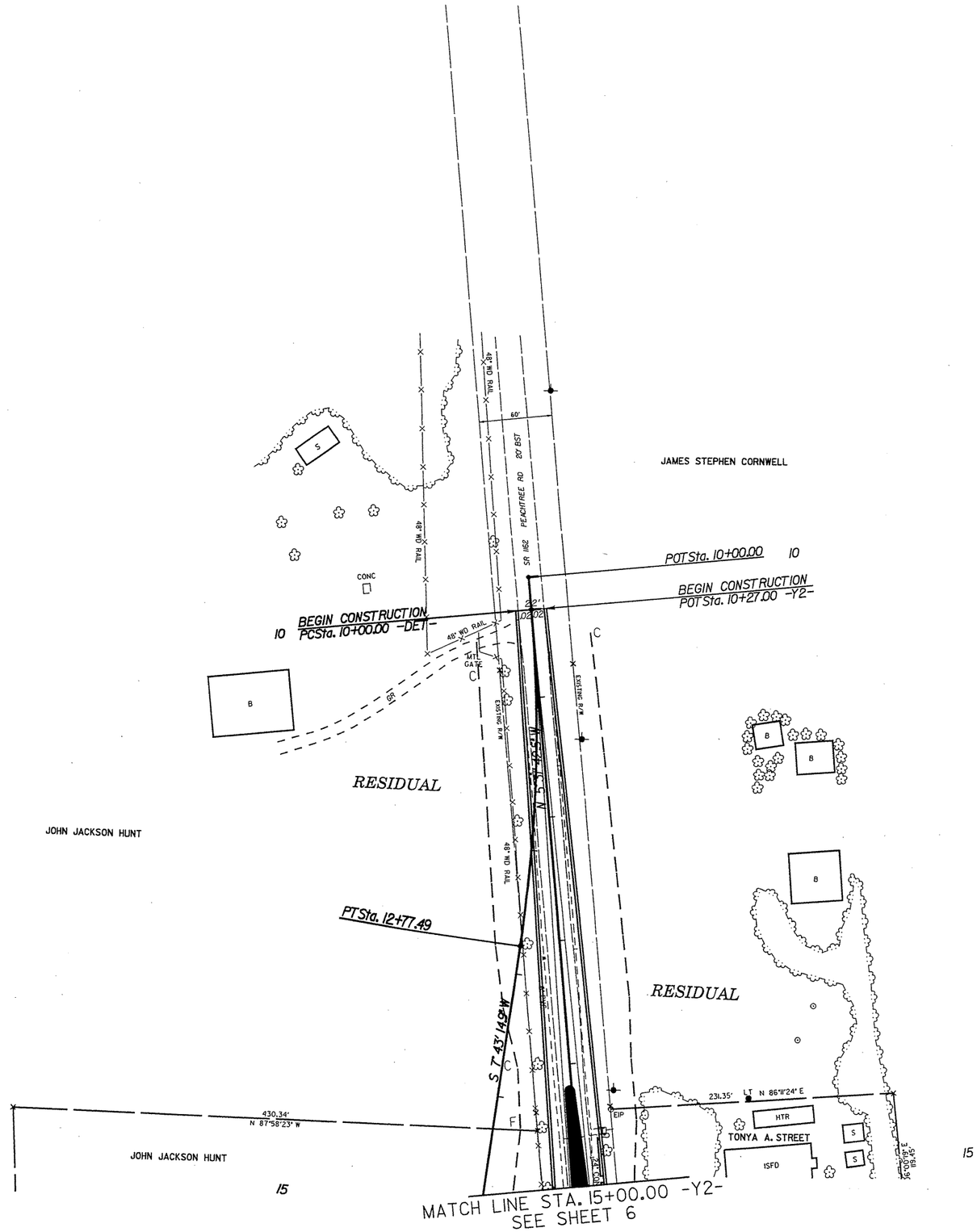
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83/95

REVISIONS

ARCADIS G&M
Date:$DATE$ Time: $TIME$
Filename:$FILE$



SEE SHEET 39 FOR -Y2- PROFILE

PROJECT REFERENCE NO.	SHEET NO.
R-2707A	19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

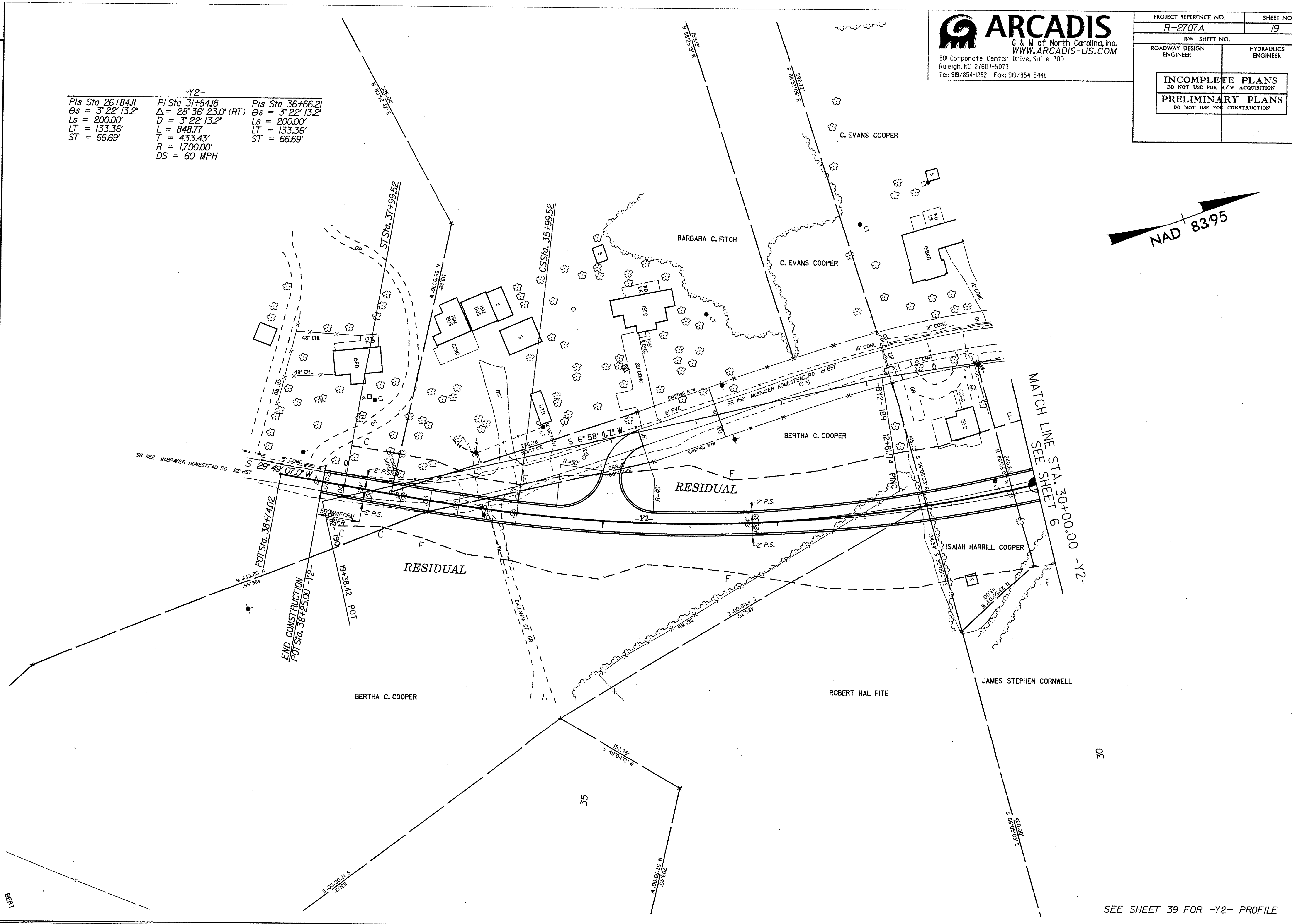
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION

ARCADIS
G & M of North Carolina, Inc.
WWW.ARCADIS-US.COM
801 Corporate Center Drive, Suite 300
Raleigh, NC 27607-5073
Tel: 919/854-1282 Fax: 919/854-5448

-Y2-

PIs Sta 26+84.11	PI Sta 31+84.18	PIs Sta 36+66.21
θs = 3° 22′ 13.2″	Δ = 28° 36′ 23.0″ (RT)	θs = 3° 22′ 13.2″
Ls = 200.00′	D = 3° 22′ 13.2″	Ls = 200.00′
LT = 133.36′	L = 848.77	LT = 133.36′
ST = 66.69′	T = 433.43′	ST = 66.69′
	R = 1,700.00′	
	DS = 60 MPH	



NAD 83/95
C. EVANS COOPER
BARBARA C. FITCH
C. EVANS COOPER
BERTHA C. COOPER
RESIDUAL
RESIDUAL
ISAIAH HARRILL COOPER
JAMES STEPHEN CORNWELL
ROBERT HAL FITE
BERTHA C. COOPER
SR 1162 McBRAYER HOMESTEAD RD 22′ BST
SR 1162 McBRAYER HOMESTEAD RD 19′ BST
S 29° 49′ 07.0″ W
S 6° 58′ 11.7″ W
ST Sta. 37+99.52
CS Sta. 35+99.52
POT Sta. 38+74.02
END CONSTRUCTION
POT Sta. 38+25.00 -Y2-
19+38.42 POT
-BY2- 18+91.14 PINC
-Y2-
MATCH LINE STA. 30+00.00 -Y2-
SEE SHEET 6
EXISTING R/W
UNIFORM TAPER
2′ P.S.
R=50′
R=40′
35
30

SEE SHEET 39 FOR -Y2- PROFILE

REVISIONS

ARCADIS G&M Date: $DATE$ Time: $TIME$ Filename: $FILE$

BERT

PROJECT REFERENCE NO.	SHEET NO.
R-2707A	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

ARCADIS
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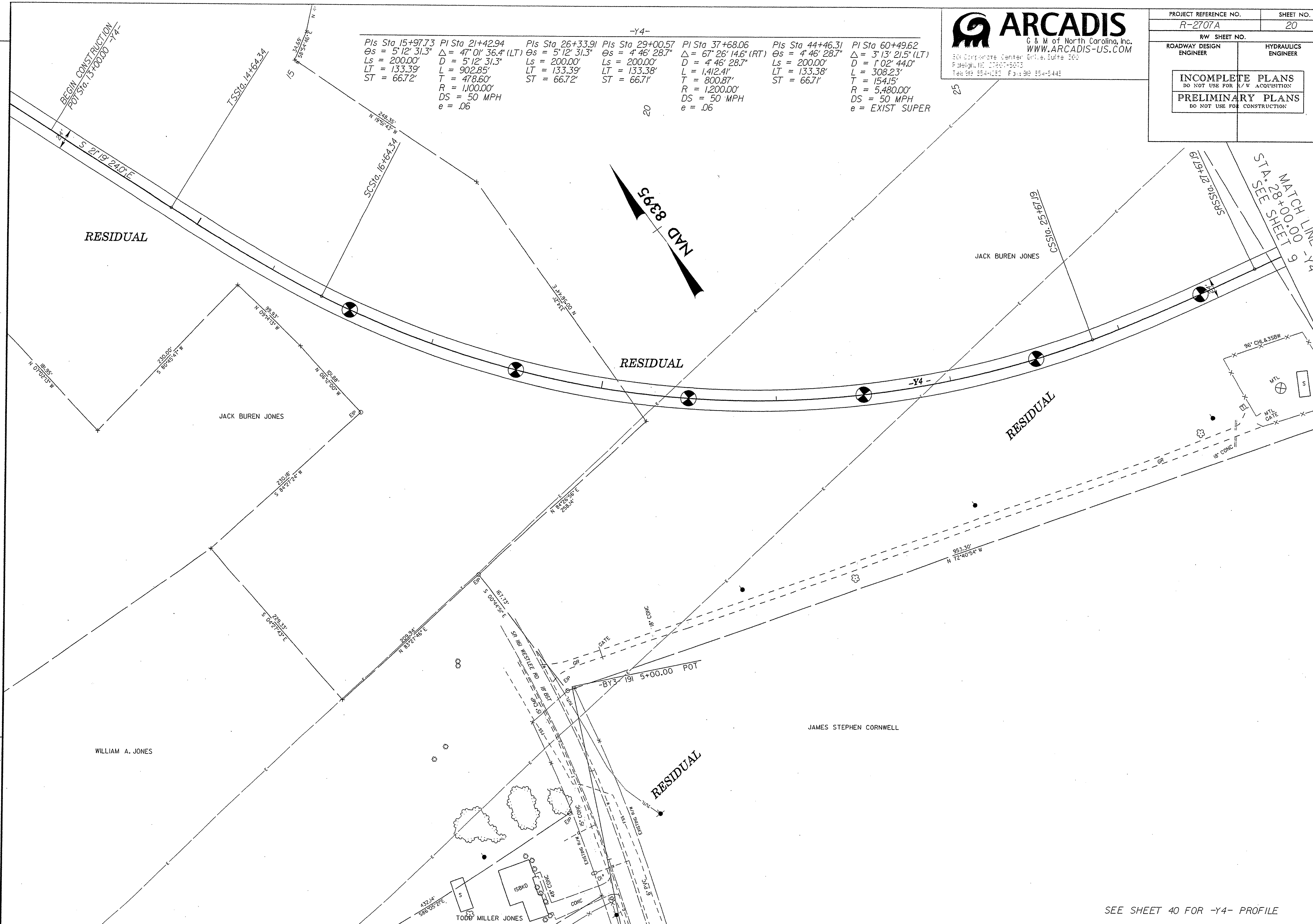
WWW.ARCADIS-US.COM

-Y4-

PIs Sta 15+97.73	PI Sta 21+42.94	PIs Sta 26+33.91	PIs Sta 29+00.57	PI Sta 37+68.06	PIs Sta 44+46.31	PI Sta 60+49.62
Θs = 5° 12' 31.3"	Δ = 47° 01' 36.4" (LT)	Θs = 5° 12' 31.3"	Θs = 4° 46' 28.7"	Δ = 67° 26' 14.6" (RT)	Θs = 4° 46' 28.7"	Δ = 3° 13' 21.5" (LT)
Ls = 200.00'	D = 5° 12' 31.3"	Ls = 200.00'	Ls = 200.00'	D = 4° 46' 28.7"	Ls = 200.00'	D = 1° 02' 44.0"
LT = 133.39'	L = 902.85'	LT = 133.39'	LT = 133.38'	L = 1,412.41'	LT = 133.38'	L = 308.23'
ST = 66.72'	T = 478.60'	ST = 66.72'	ST = 66.71'	T = 800.87'	ST = 66.71'	T = 154.15'
	R = 1,100.00'			R = 1,200.00'		R = 5,480.00'
	DS = 50 MPH			DS = 50 MPH		DS = 50 MPH
	e = .06			e = .06		e = EXIST SUPER



SEE SHEET 40 FOR -Y4- PROFILE

REVISIONS

ARCADIS G&M
Date: $DATE$ Time: $TIME$
Filename: $FILE$

PROJECT REFERENCE NO.	SHEET NO.
R-2707A	21

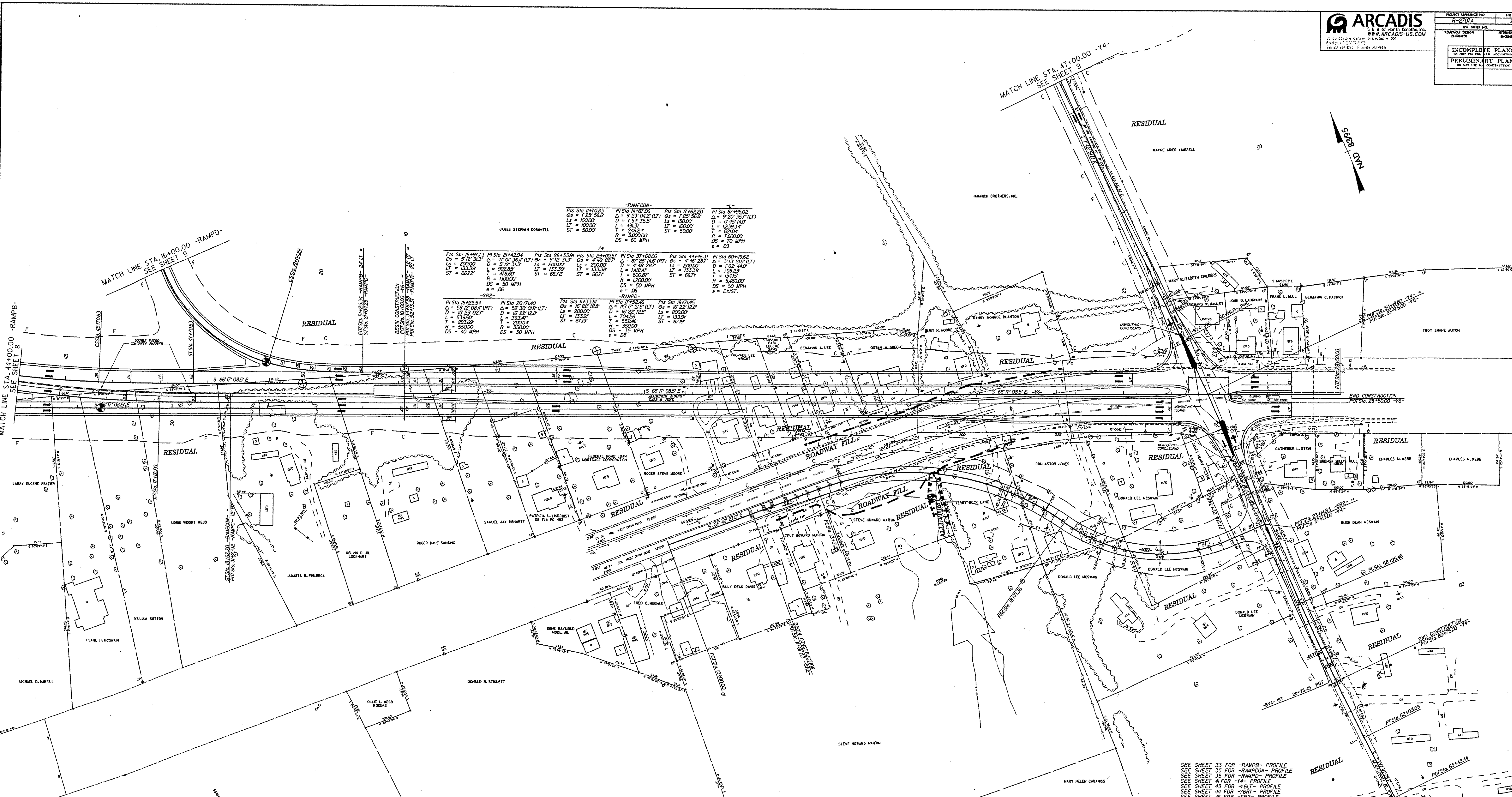
RW SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION

ARCADIS G & M of North Carolina, Inc. WWW.ARCADIS-US.COM



-RAMPCON-

PIs Sta 11+70.83	PI Sta 14+67.06	PIs Sta 17+62.20
θs = 1° 25' 56.6"	Δ = 9° 23' 04.2" (LT)	θs = 1° 25' 56.6"
Ls = 150.00'	D = 1° 54' 35.5"	Ls = 150.00'
LT = 100.00'	L = 491.37	LT = 100.00'
ST = 50.00'	T = 246.24'	ST = 50.00'
	R = 3,000.00'	
	DS = 60 MPH	

-L-

PI Sta 87+95.02
Δ = 9° 20' 35.7" (LT)
D = 0° 45' 14.0"
L = 1,239.34'
T = 621.04'
R = 7,600.00'
DS = 70 MPH
e = .03

-Y4-

PIs Sta 15+97.73	PI Sta 21+42.94	PIs Sta 26+33.91	PIs Sta 29+00.57	PI Sta 37+68.06	PIs Sta 44+46.31	PI Sta 60+49.62
θs = 5° 12' 31.3"	Δ = 47° 01' 36.4" (LT)	θs = 5° 12' 31.3"	θs = 4° 46' 28.7"	Δ = 67° 26' 14.6" (RT)	θs = 4° 46' 28.7"	Δ = 3° 13' 21.5" (LT)
Ls = 200.00'	D = 5° 12' 31.3"	Ls = 200.00'	Ls = 200.00'	D = 4° 46' 28.7"	Ls = 200.00'	D = 1° 02' 44.0"
LT = 133.39'	L = 902.85'	LT = 133.39'	LT = 133.38'	L = 1,412.41'	LT = 133.38'	L = 308.23'
ST = 66.72'	T = 478.60'	ST = 66.72'	ST = 66.71'	T = 800.87'	ST = 66.71'	T = 154.15'
	R = 1,100.00'			R = 1,200.00'		R = 5,480.00'
	DS = 50 MPH			DS = 50 MPH		DS = 50 MPH
	e = .06			e = .06		e = EXIST.

-SR2-

PI Sta 16+25.54	PI Sta 20+71.40
Δ = 56° 12' 08.4" (RT)	Δ = 59° 30' 01.9" (LT)
D = 10° 25' 02.7"	D = 16° 22' 12.8"
L = 539.50'	L = 363.47'
T = 293.69'	T = 200.04'
R = 550.00'	R = 350.00'
DS = 40 MPH	DS = 30 MPH

-RAMPD-

PIs Sta 11+33.91	PI Sta 17+52.46	PIs Sta 19+71.45
θs = 16° 22' 12.8"	Δ = 115° 17' 21.5" (LT)	θs = 16° 22' 12.8"
Ls = 200.00'	D = 16° 22' 12.8"	Ls = 200.00'
LT = 133.91'	L = 704.26	LT = 133.91'
ST = 67.19'	T = 552.46'	ST = 67.19'
	R = 350.00'	
	DS = 35 MPH	
	e = .08	

SEE SHEET 33 FOR -RAMPB- PROFILE
SEE SHEET 35 FOR -RAMPCON- PROFILE
SEE SHEET 35 FOR -RAMPD- PROFILE
SEE SHEET 41 FOR -Y4- PROFILE
SEE SHEET 43 FOR -Y6LT- PROFILE
SEE SHEET 44 FOR -Y6RT- PROFILE
SEE SHEET 46 FOR -SR2- PROFILE

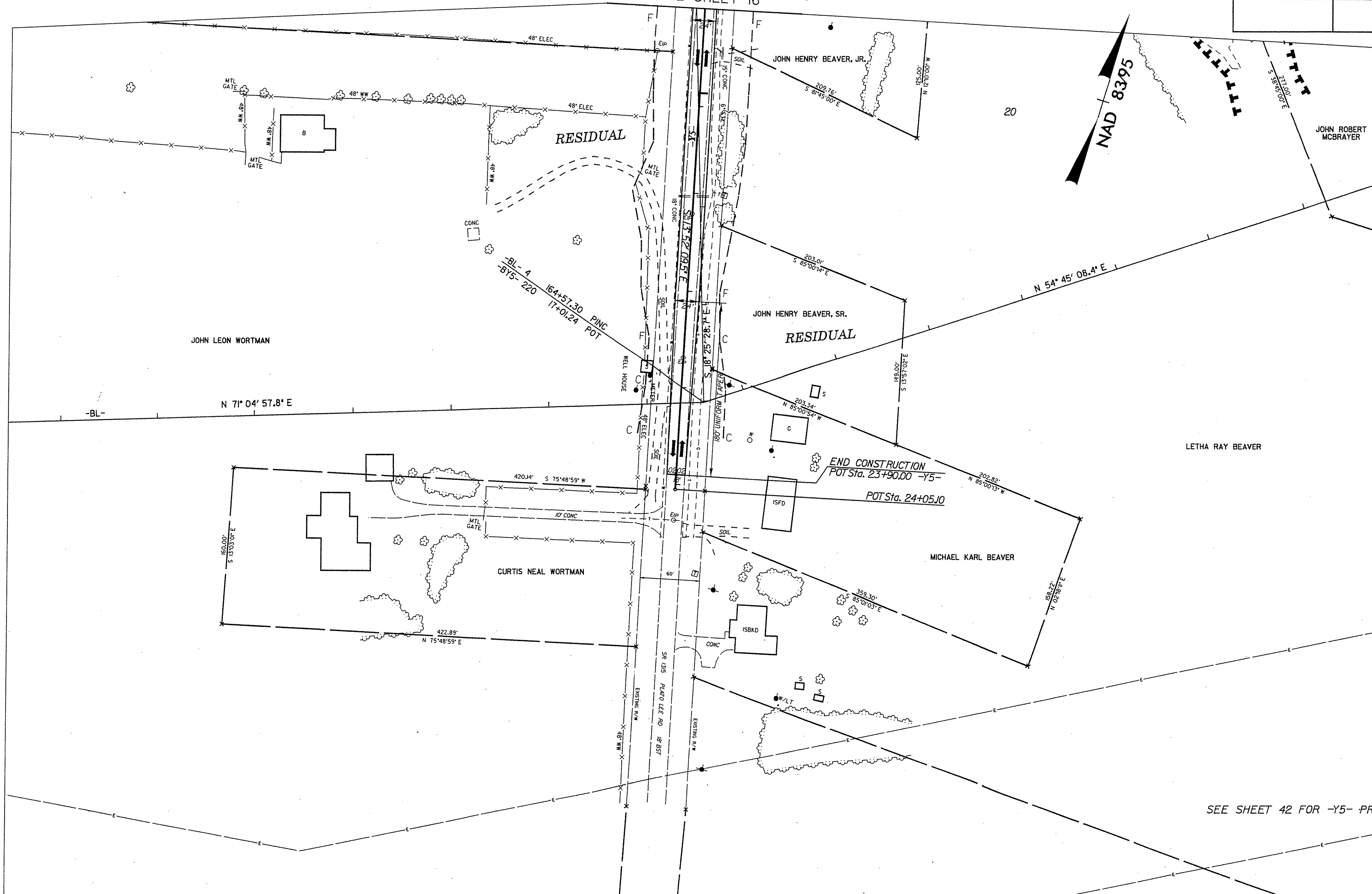
ARCADIS
G & M of North Carolina, Inc.
WWW.ARCADIS-US.COM
801 Corporate Center Drive, Suite 300
Raleigh, NC 27607-5073
Tel: 919/854-1282 Fax: 919/854-5448

PROJECT REFERENCE NO.	SHEET NO.
R-2707A	22
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

MATCH LINE STA. 18+00.00 -Y5-
SEE SHEET 16


NAD 83/95
JOHN HENRY BEAVER, JR.
JOHN ROBERT MCBRAYER
20
RESIDUAL
JOHN HENRY BEAVER, SR.
RESIDUAL
JOHN LEON WORTMAN
N 71° 04' 57.8" E
-BL-
-BL- 4 164+57.30 PINC
-BY5- 220 17+01.24 POT
N 54° 45' 08.4" E
S 13°52'09.5" E
S 18°25'28.1" E
END CONSTRUCTION
POT Sta. 23+90.00 -Y5-
POT Sta. 24+05.10
LETHA RAY BEAVER
MICHAEL KARL BEAVER
CURTIS NEAL WORTMAN
SR 1315 PLATO LEE RD 18' BST
48" ELEC
48" WW
MTL GATE
WELL HOUSE
CONC
ISFD
ISBKD
180' UNIFORM TAPER
420.14' S 75°48'59" W
422.89' N 75°48'59" E
160.00' S 13°03'03" E
209.76' S 81°45'00" E
125.00' N 12°10'00" W
203.01' S 85°00'14" E
149.00' S 13°57'02" E
203.34' N 85°00'54" W
202.82' N 85°00'13" W
359.30' S 85°01'03" E
158.22' N 02°18'11" E
S 36°45'00" E

SEE SHEET 42 FOR -Y5- PROFILE

REVISIONS

ARCADIS G&M
Date: $DATE$ Time: $TIME$
Filename: $FILE$

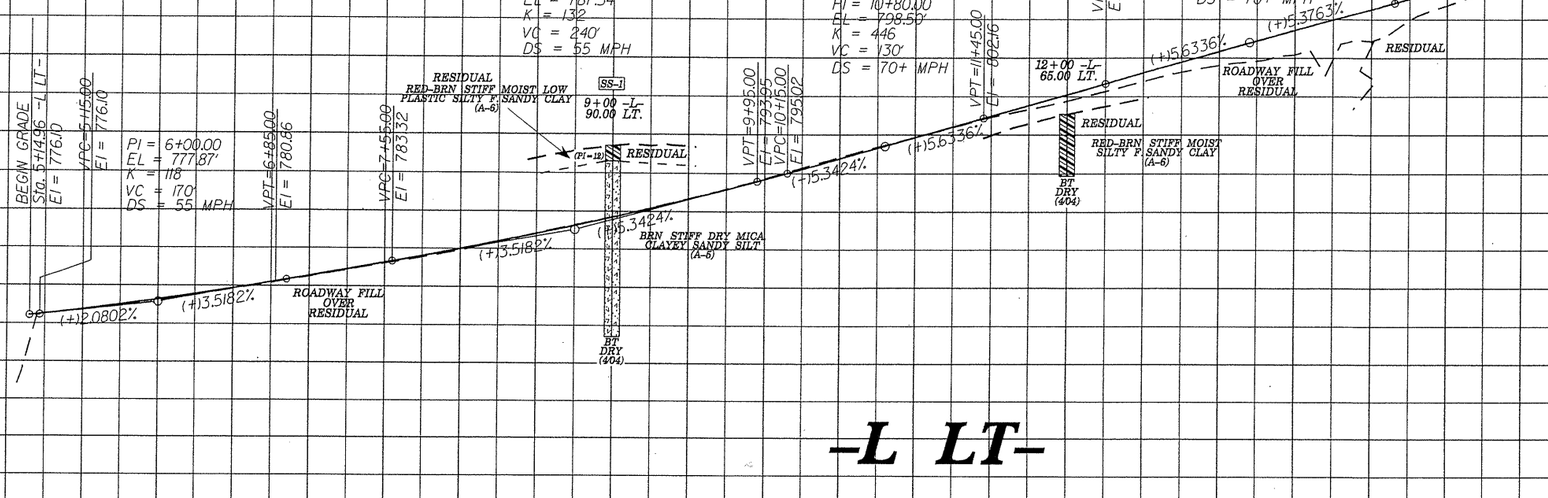
PROJECT REFERENCE NO.	SHEET NO.
R-2707A	23
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

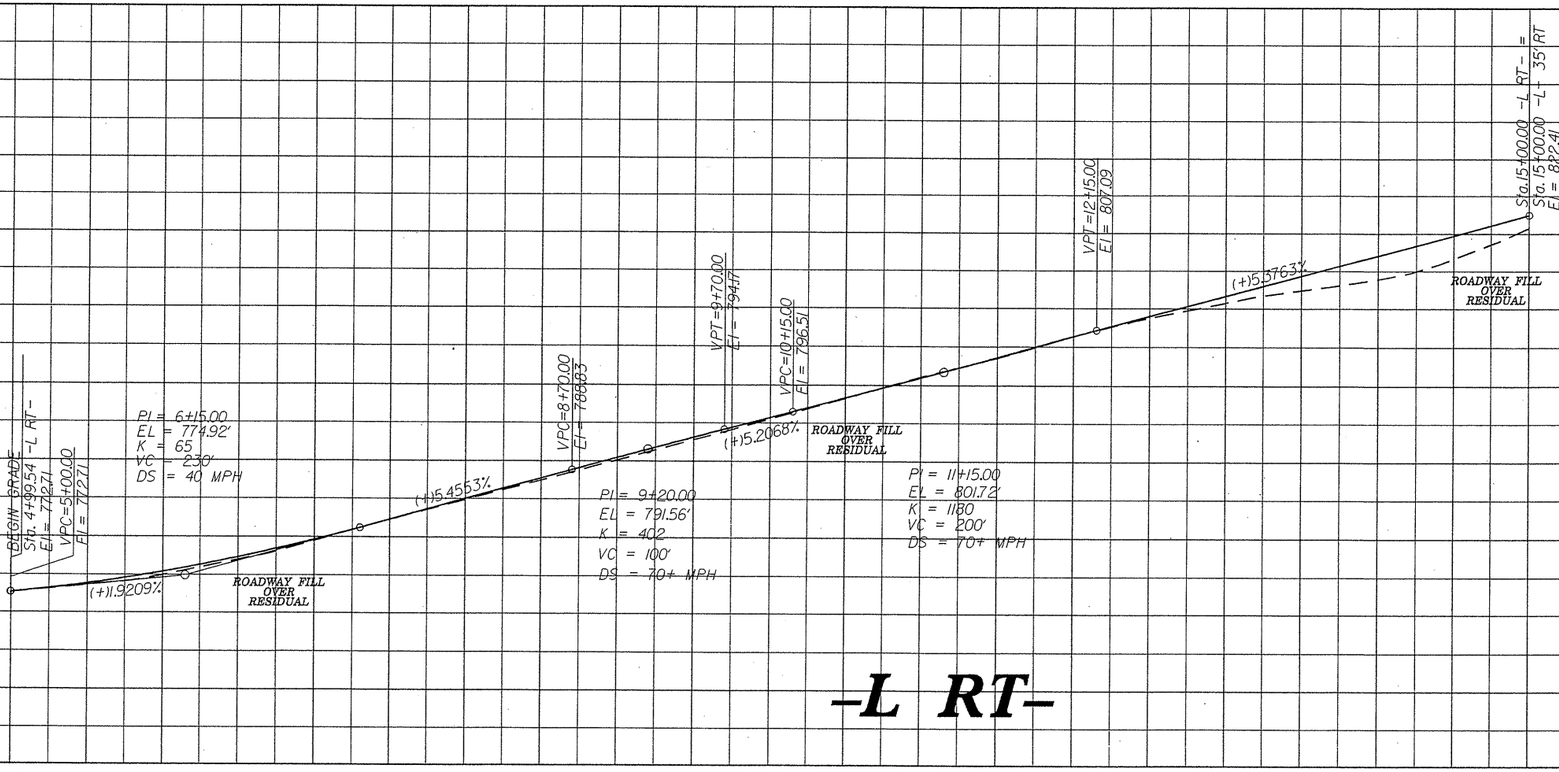
SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	PL. I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-1	90LT	9+00	0.00-2.00	A-6(4)	38	12	15.3	38.5	15.9	30.2	100	95	52	-	-
SS-2	90LT	9+00	2.00-26.00	A-6(0)	61	NP	33.9	26.2	26.8	14.1	95	70	44	-	-



-L LT-

SEE SHEETS 4 & 5 FOR -L LT- PLAN



-L RT-

SEE SHEETS 4 & 5 FOR -L RT- PLAN

4+00 5+00 6+00 7+00 8+00 9+00 10+00 11+00 12+00 13+00 14+00 15+00

840 830 820 810 800 790 780 770 760 750

ARCADIS G&M
Date:=DATE$
Filename:=FILE$
Time: $TIME$

PROJECT REFERENCE NO.	SHEET NO.
R-2707A	24
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	PL. I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-3	60LT	19+00	0.00-5.00	A-7-6(10)	44	22	16.3	32.5	12.9	38.3	100	96	66	-	-
SS-4	60LT	19+00	5.00-20.00	A-2-4(0)	37	NP	22.6	45.8	13.5	18.1	93	84	35	-	-

VPC=15+00.00 -L- = 35' RT =
Sta. 15+00.00 -L RT - 35' RT
Sta. 15+00.00 +L LT - 35' LT
El= 822.05

SS-3
SS-4
19+00 -L-
50.00 LT.

RESIDUAL
RED-BRN STIFF MOIST MED PLASTIC SILTY F. SANDY CLAY (A-7-6)
(PI=22)
RESIDUAL
(1+75.37 -L-)
BRN MED DENSE DRY SLI MICA SILTY CLAYEY F. SAND (A-2-4)
57' DRY (404)

RESIDUAL
RED-BRN STIFF MOIST SILTY F. SANDY CLAY (A-6)
16+00 -L-
55.00 LT.
RESIDUAL
RESIDUAL
BRN STIFF DRY MICA CLAYEY SANDY SILT (A-6)
87' DRY (404)

ROADWAY FILL OVER RESIDUAL

ROADWAY FILL OVER RESIDUAL

BM # 1 ELEV. = 779.92'
RR SPIKE IN 18" OAK
CL -L- STA. 6+21.71

-L-

SEE SHEETS 4 & 5 FOR -L- PLAN

920 910 900 890 880 870 860 850 840 830 820 810 800 790 780 770 760 750 740 730

5+00 6+00 7+00 8+00 9+00 10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00

ARCADIS G&M
Date=$DATE$ Time: $TIME$
Filename=$FILE$

PROJECT REFERENCE NO.	SHEET NO.
R-2707A	25

ROADWAY DESIGN ENGINEER

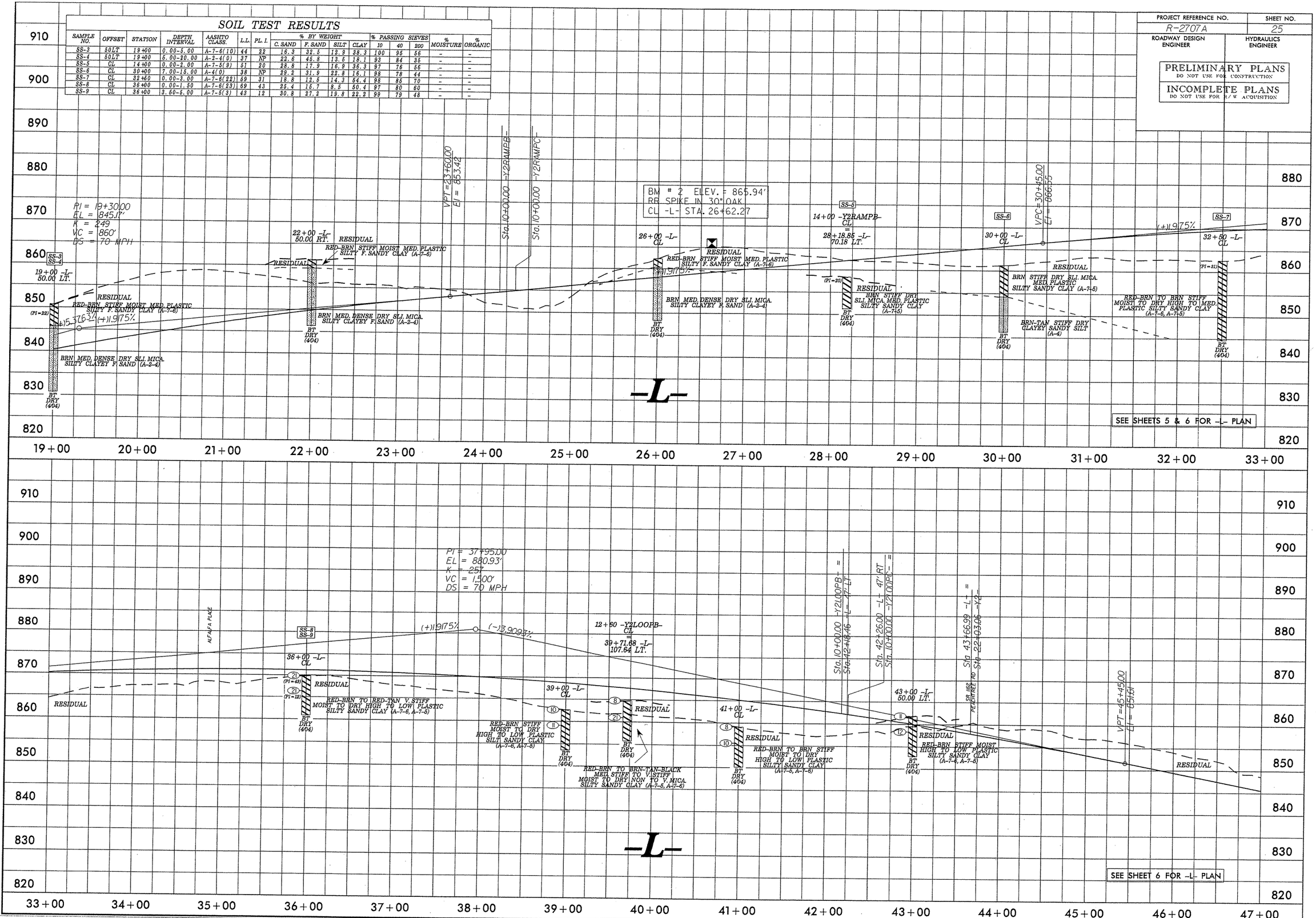
HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	PL. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING SIEVES 10	40	200	% MOISTURE	% ORGANIC
SS-3	50LT	18+00	0.00-5.00	A-7-6(10)	44	22	16.3	32.5	12.9	38.3	100	95	56	-	-
SS-4	50LT	18+00	5.00-20.00	A-2-4(0)	37	NP	22.6	46.8	13.5	18.1	93	84	36	-	-
SS-5	CL	14+00	0.00-2.00	A-7-5(9)	51	20	28.8	17.9	16.9	36.3	97	76	56	-	-
SS-6	CL	30+00	7.00-15.00	A-4(0)	38	NP	29.2	31.9	22.8	16.1	98	78	44	-	-
SS-7	CL	32+50	0.00-3.00	A-7-6(22)	69	31	18.8	12.5	14.3	54.4	98	86	70	-	-
SS-8	CL	36+00	0.00-1.50	A-7-6(23)	69	43	25.4	15.7	8.5	50.4	97	80	60	-	-
SS-9	CL	36+00	3.50-5.00	A-7-5(3)	43	12	30.8	27.2	19.8	22.2	99	79	48	-	-



ARCADIS G&M
Date=$DATE$ Time: $TIME$
Filename=$FILE$

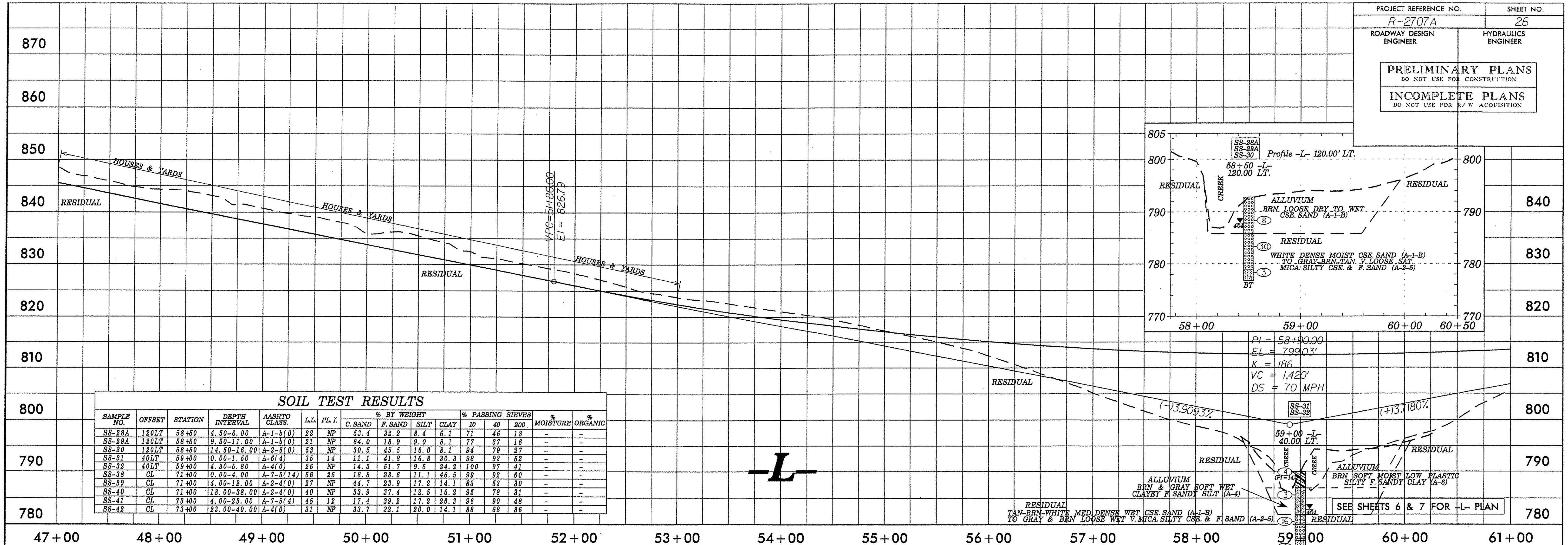
PROJECT REFERENCE NO.	SHEET NO.
R-2707A	26

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

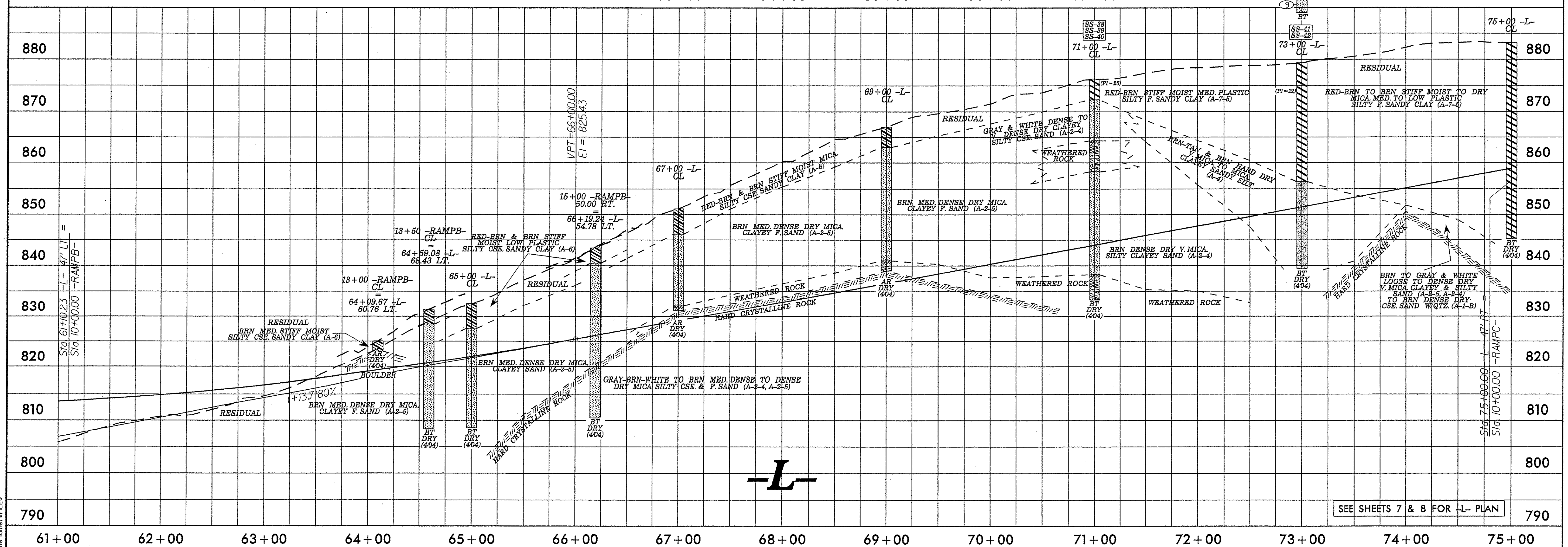
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	PL. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING SIEVES 10	40	200	% MOISTURE	% ORGANIC
SS-28A	120LT	58+50	4.50-6.00	A-1-b(0)	22	NP	53.4	32.2	8.4	6.1	71	46	13	-	-
SS-29A	120LT	58+50	9.50-11.00	A-1-b(0)	21	NP	64.0	18.9	9.0	8.1	77	37	16	-	-
SS-30	120LT	58+50	14.50-16.00	A-2-5(0)	53	NP	30.5	45.5	16.0	8.1	94	79	27	-	-
SS-31	40LT	59+00	0.00-1.50	A-6(4)	35	14	11.1	41.8	16.8	30.3	98	93	52	-	-
SS-32	40LT	59+00	4.30-5.80	A-4(0)	26	NP	14.5	51.7	9.5	24.2	100	97	41	-	-
SS-38	CL	71+00	0.00-4.00	A-7-5(14)	56	25	18.8	23.6	11.1	46.5	99	92	60	-	-
SS-39	CL	71+00	4.00-12.00	A-2-4(0)	27	NP	44.7	23.9	17.2	14.1	83	53	30	-	-
SS-40	CL	71+00	18.00-38.00	A-2-4(0)	40	NP	33.9	37.4	12.5	16.2	95	78	31	-	-
SS-41	CL	73+00	4.00-23.00	A-7-5(4)	45	12	17.4	39.2	17.2	26.3	96	90	48	-	-
SS-42	CL	73+00	23.00-40.00	A-4(0)	31	NP	33.7	32.1	20.0	14.1	88	68	36	-	-

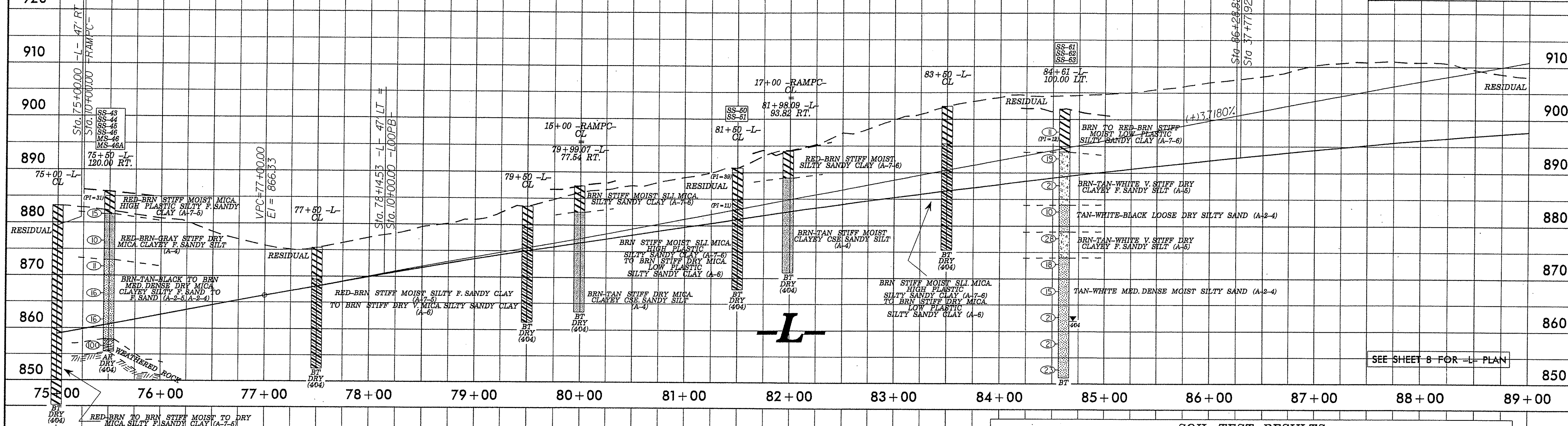


ARCADIS GRAM Time: $TIME$
Date: $DATE$
Filename: $FILE$

PROJECT REFERENCE NO.	SHEET NO.
R-2707A	27
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

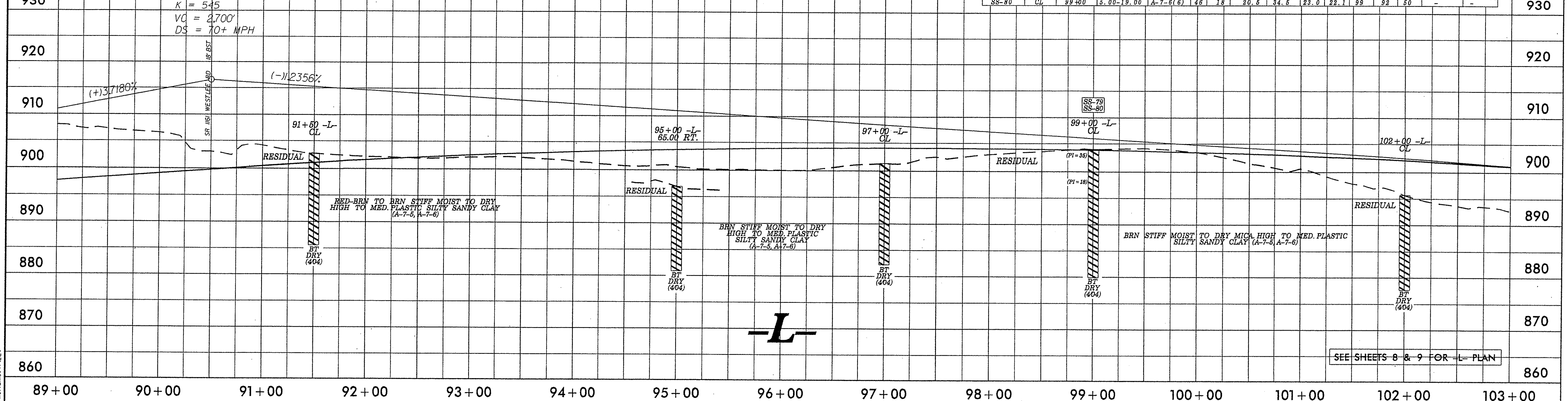
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	PL. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING SIEVES 10	40	200	% MOISTURE	% ORGANIC
SS-43	120RT	75+50	0.00-4.30	A-7-5(25)	62	31	9.3	17.0	11.0	62.7	100	97	75	-	-
SS-44	120RT	75+50	4.30-5.80	A-4(0)	40	NP	16.0	40.0	21.7	22.2	100	94	51	-	-
SS-45	120RT	75+50	14.30-15.80	A-2-5(0)	53	NP	22.4	51.2	16.3	10.1	95	85	33	-	-
SS-46	120RT	75+50	24.30-25.90	A-2-4(0)	40	NP	34.2	53.2	8.6	4.0	100	90	19	22.2	-
MS-46A	120RT	75+50	29.30-29.70											13.4	-
SS-50	CL	81+50	0.00-6.00	A-7-6(24)	62	39	22.9	15.6	15.1	46.5	100	85	65	-	-
SS-51	CL	81+50	6.00-23.00	A-6(3)	35	11	32.0	25.3	22.5	20.2	100	78	50	-	-
SS-61	100LT	84+61	4.30-5.80	A-7-6(5)	41	12	27.9	19.8	24.0	28.3	100	79	57	-	-
SS-62	100LT	84+61	9.30-10.80	A-5(0)	50	NP	18.2	35.4	30.2	16.2	93	82	51	-	-
SS-63	100LT	84+61	19.30-20.80	A-2-4(0)	35	NP	38.6	38.0	17.3	6.1	100	78	32	-	-
SS-79	CL	99+00	0.00-5.00	A-7-5(21)	65	35	21.3	14.2	10.3	54.2	92	80	62	-	-
SS-80	CL	99+00	5.00-19.00	A-7-6(6)	46	18	20.5	34.5	23.0	22.1	99	92	50	-	-



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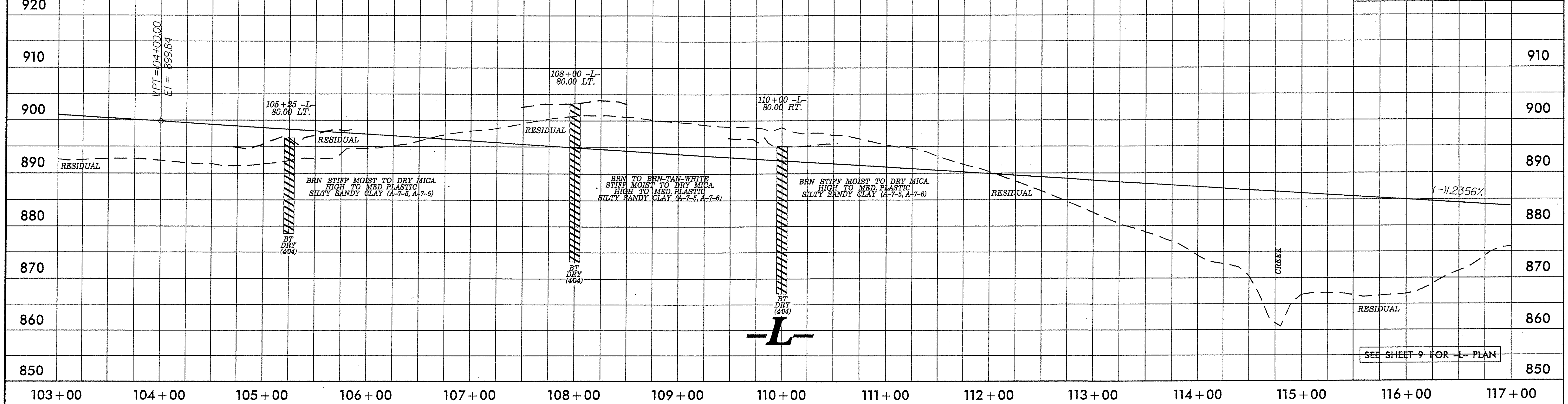
Filename: $FILE$
Time: $TIME$

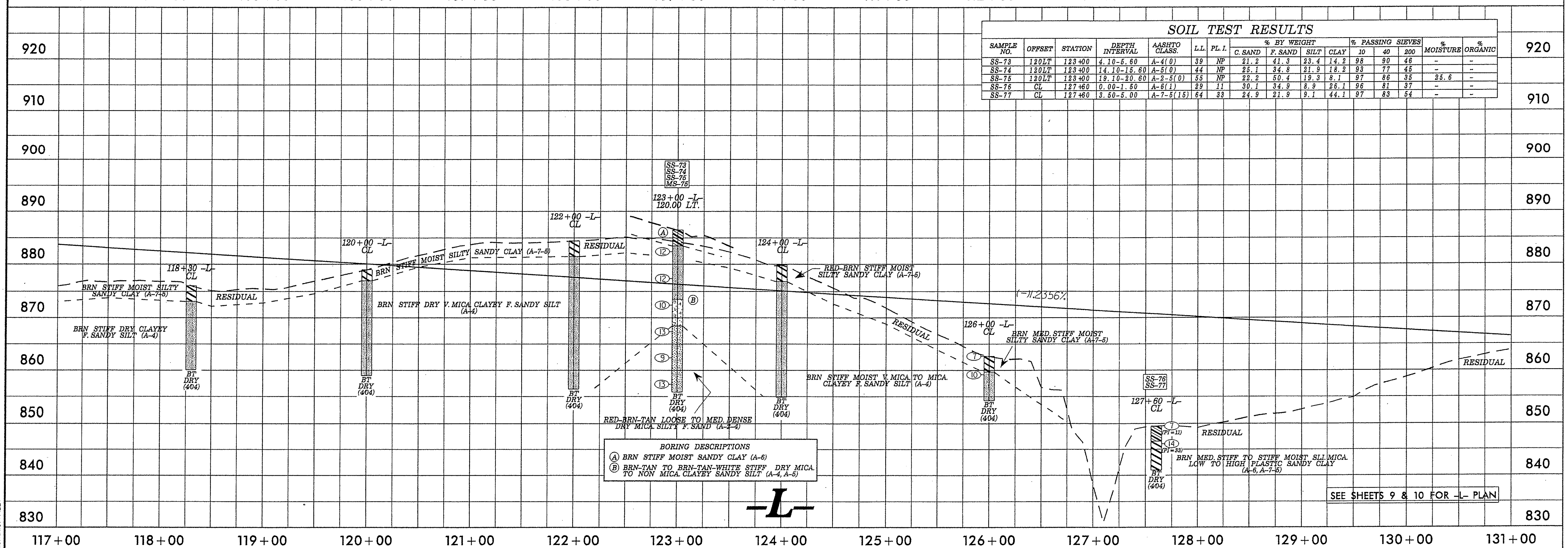
PROJECT REFERENCE NO.	SHEET NO.
R-2707A	28
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION



940
930
920
910
900
890
880
870
860
850
VPT=104+00.00
El = 899.84
105+25 -L-
80.00 LT.
108+00 -L-
80.00 LT.
110+00 -L-
80.00 RT.
RESIDUAL
BRN STIFF MOIST TO DRY MICA. HIGH TO MED. PLASTIC SILTY SANDY CLAY (A-7-5, A-7-6)
BRN TO BRN-TAN-WHITE STIFF MOIST TO DRY MICA. HIGH TO MED. PLASTIC SILTY SANDY CLAY (A-7-5, A-7-6)
BRN STIFF MOIST TO DRY MICA. HIGH TO MED. PLASTIC SILTY SANDY CLAY (A-7-5, A-7-6)
BT DRY (404)
(-)1.2356%
CREEK
-L-
SEE SHEET 9 FOR -L- PLAN
103+00
104+00
105+00
106+00
107+00
108+00
109+00
110+00
111+00
112+00
113+00
114+00
115+00
116+00
117+00



920
910
900
890
880
870
860
850
840
830
118+30 -L- CL
120+00 -L- CL
122+00 -L- CL
123+00 -L- 120.00 LT.
124+00 -L- CL
126+00 -L- CL
127+60 -L- CL
SS-73
SS-74
SS-75
MS-75
SS-76
SS-77
BRN STIFF MOIST SILTY SANDY CLAY (A-7-5)
BRN STIFF DRY CLAYEY F. SANDY SILT (A-4)
BRN STIFF MOIST SILTY SANDY CLAY (A-7-5)
BRN STIFF DRY V. MICA CLAYEY F. SANDY SILT (A-4)
RED-BRN STIFF MOIST SILTY SANDY CLAY (A-7-5)
BRN MED. STIFF MOIST SILTY SANDY CLAY (A-7-5)
BRN STIFF MOIST V. MICA. TO MICA. CLAYEY F. SANDY SILT (A-4)
RED-BRN-TAN LOOSE TO MED. DENSE DRY MICA. SILTY F. SAND (A-2-4)
BRN MED. STIFF TO STIFF MOIST SLI. MICA. LOW TO HIGH PLASTIC SANDY CLAY (A-6, A-7-5)
RESIDUAL
BT DRY (404)
(-)1.2356%
BORING DESCRIPTIONS
Ⓐ BRN STIFF MOIST SANDY CLAY (A-6)
Ⓑ BRN-TAN TO BRN-TAN-WHITE STIFF DRY MICA. TO NON MICA. CLAYEY SANDY SILT (A-4, A-5)
-L-
SEE SHEETS 9 & 10 FOR -L- PLAN
117+00
118+00
119+00
120+00
121+00
122+00
123+00
124+00
125+00
126+00
127+00
128+00
129+00
130+00
131+00

SOIL TEST RESULTS

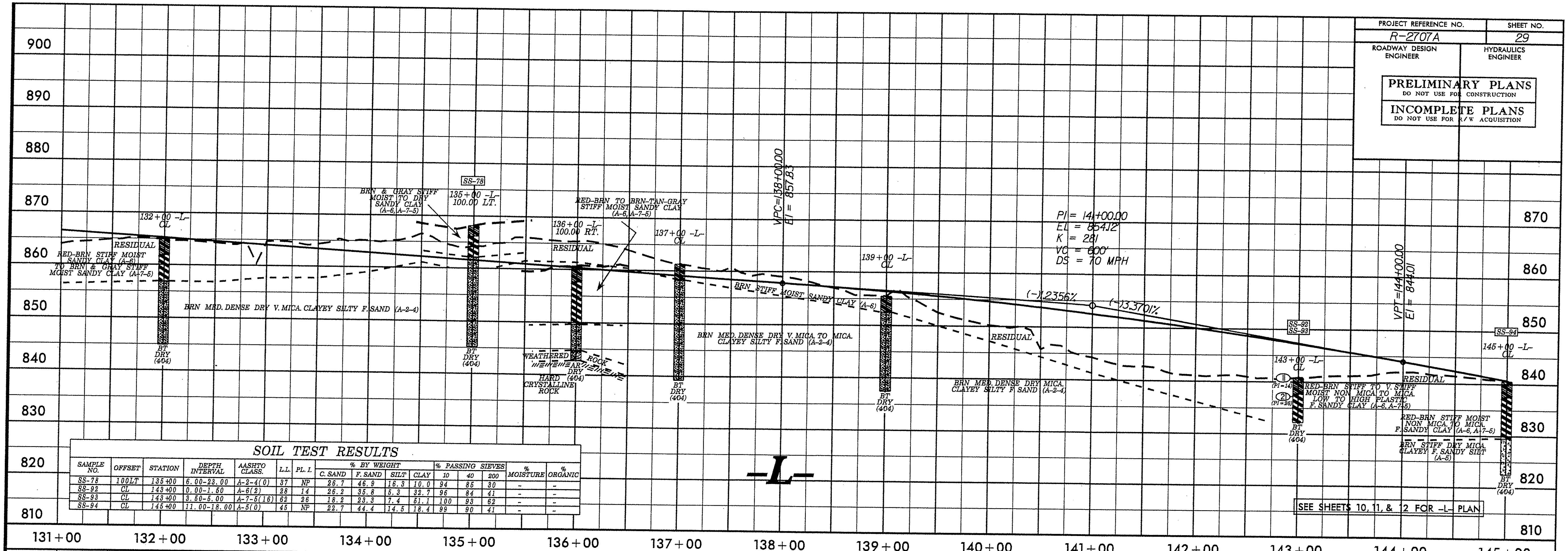
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	PL. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING SIEVES 10	40	200	% MOISTURE	% ORGANIC
SS-73	120LT	123+00	4.10-5.60	A-4(0)	39	NP	21.2	41.3	23.4	14.2	98	90	46	-	-
SS-74	120LT	123+00	14.10-15.60	A-5(0)	44	NP	25.1	34.8	21.9	18.2	93	77	45	-	-
SS-75	120LT	123+00	19.10-20.60	A-2-5(0)	55	NP	22.2	50.4	19.3	8.1	97	86	35	25.6	-
SS-76	CL	127+60	0.00-1.50	A-6(1)	29	11	30.1	34.9	8.9	26.1	96	81	37	-	-
SS-77	CL	127+60	3.50-5.00	A-7-5(15)	64	33	24.9	21.9	9.1	44.1	97	83	54	-	-

ARCADIS CAM
Date: $DATE$ Time: $TIME$
Filename: $FILE$

PROJECT REFERENCE NO.	SHEET NO.
R-2707A	29
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

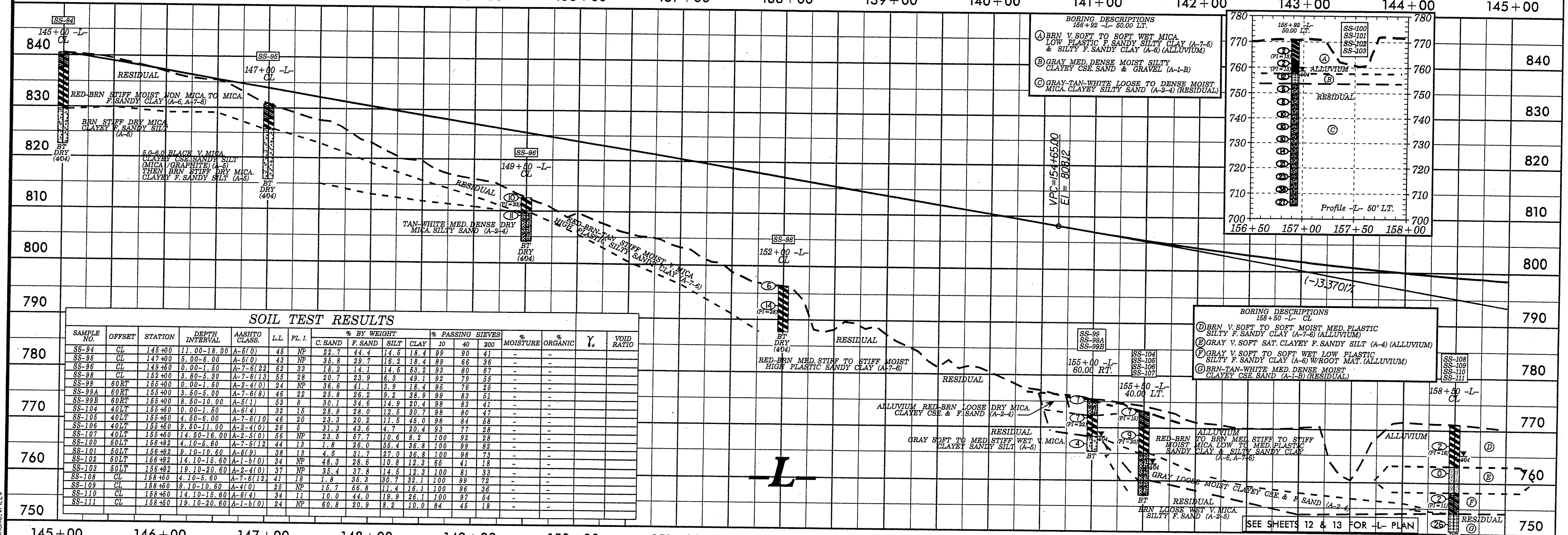
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	PL. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING SIEVES 10	40	200	% MOISTURE	% ORGANIC
SS-78	100LT	135+00	6.00-23.00	A-2-4(0)	37	NP	26.7	46.9	16.3	10.0	94	85	30	-	-
SS-92	CL	143+00	0.00-1.50	A-6(2)	28	14	26.2	35.8	5.3	32.7	96	84	41	-	-
SS-93	CL	143+00	3.50-5.00	A-7-5(16)	62	26	18.2	23.3	7.4	51.1	100	93	62	-	-
SS-94	CL	145+00	11.00-18.00	A-5(0)	45	NP	22.7	44.4	14.5	18.4	99	90	41	-	-



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	PL. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING SIEVES 10	40	200	% MOISTURE	% ORGANIC	γ_d	VOID RATIO
SS-94	CL	145+00	11.00-18.00	A-5(0)	45	NP	22.7	44.4	14.5	18.4	99	90	41	-	-		
SS-95	CL	147+00	5.00-6.00	A-5(0)	43	NP	35.8	29.7	16.2	18.4	89	66	36	-	-		
SS-96	CL	149+50	0.00-1.50	A-7-6(22	62	33	18.2	14.1	14.5	53.2	93	80	67	-	-		
SS-98	CL	152+00	3.80-5.30	A-7-6(13	55	28	20.7	23.9	6.3	49.1	92	79	55	-	-		
SS-99	60RT	155+00	0.00-1.50	A-2-4(0)	24	NP	36.6	41.1	3.9	18.4	95	76	25	-	-		
SS-99A	60RT	155+00	3.50-5.00	A-7-6(8)	46	22	25.8	26.2	9.2	38.9	99	83	51	-	-		
SS-99B	60RT	155+00	8.50-10.00	A-5(1)	53	8	30.1	34.6	14.9	20.4	98	83	41	-	-		
SS-104	40LT	155+50	0.00-1.50	A-6(4)	32	15	28.8	28.0	12.5	30.7	98	80	47	-	-		
SS-105	40LT	155+50	4.50-6.00	A-7-6(10	46	20	23.3	20.2	11.5	45.0	98	84	58	-	-		
SS-106	40LT	155+50	9.50-11.00	A-2-4(0)	26	5	31.3	43.6	4.7	20.4	93	77	28	-	-		
SS-107	40LT	155+50	14.50-16.00	A-2-5(0)	56	NP	23.5	57.7	10.6	8.2	100	92	28	-	-		
SS-100	50LT	156+92	4.10-5.60	A-7-5(12	44	13	1.8	26.0	35.4	36.8	100	99	82	-	-		
SS-101	50LT	156+92	9.10-10.60	A-6(9)	38	13	4.5	31.7	27.0	36.8	100	98	73	-	-		
SS-102	50LT	156+92	14.10-15.60	A-1-b(0)	34	NP	48.3	28.6	10.8	12.3	65	41	18	-	-		
SS-103	50LT	156+92	19.10-20.60	A-2-4(0)	37	NP	35.4	37.8	14.5	12.3	100	81	33	-	-		
SS-108	CL	158+50	4.10-5.60	A-7-6(12	41	18	1.8	35.3	30.7	32.1	100	99	72	-	-		
SS-109	CL	158+50	9.10-10.60	A-4(0)	25	NP	15.7	56.8	11.4	16.1	100	96	36	-	-		
SS-110	CL	158+50	14.10-15.60	A-6(4)	34	11	10.0	44.0	19.9	26.1	100	97	54	-	-		
SS-111	CL	158+50	19.10-20.60	A-1-b(0)	24	NP	60.8	20.9	8.2	10.0	84	45	18	-	-		

PROJECT REFERENCE NO.	SHEET NO.
R-2707A	30

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

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

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	PL. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING SIEVES 10	40	200	% MOISTURE	% ORGANIC
SS-112	CL	161+00	0.00-1.50	A-6(2)	29	15	26.3	33.1	10.4	30.1	93	79	41	-	-
SS-113	115RT	170+50	0.00-4.50	A-7-5(33)	74	38	7.4	17.3	11.0	64.3	97	94	77	-	-
SS-114	115RT	170+50	4.50-6.00	A-7-5(16)	62	29	15.5	33.7	14.7	36.1	100	93	57	-	-
SS-115	115RT	170+50	9.50-11.00	A-2-5(0)	61	NP	19.7	53.0	13.3	14.1	94	83	36	-	-
SS-116	115RT	170+50	34.50-36.00	A-4(0)	38	NP	24.3	48.2	11.4	16.1	100	90	36	20.8	-
MS-116A	115RT	170+50	39.50-41.00											38.6	-

PI = 160+75.00
EL = 787.56'
K = 183
VC = 1,220'
DS = 70 MPH

(-)3.370%

(+)3.310%

SS-112
161+00 -L- CL

RESIDUAL

RED-BRN STIFF MOIST SILTY F. SANDY CLAY (A-7-5)

ALLUVIUM
RED-BRN & GRAY MED. STIFF TO SOFT MOIST LOW PLASTIC SILTY SANDY CLAY (A-6)

BRN & WHITE MED. DENSE MOIST CLAYEY CSE. SAND (A-1-b)

RESIDUAL

BT

404

VPT = 166+85.00
EI = 807.75

167+00 -L- CL

RESIDUAL

RED-BRN STIFF MOIST SILTY F. SANDY CLAY (A-7-5)

165+00 -L- CL

RED-BRN STIFF MOIST SILTY F. SANDY CLAY (A-7-5)

BRN-TAN MED. DENSE DRY MICA. SILTY CLAYEY F. SAND (A-2-5)

BRN MED. DENSE MOIST MICA. SILTY CLAYEY F. SAND (A-2-5)

169+00 -L- 70.00 LT.

RESIDUAL

RED-BRN STIFF MOIST SILTY F. SANDY CLAY (A-7-5)

BRN MED. DENSE DRY TO MOIST MICA. SILTY CLAYEY F. SAND (A-2-5) (MOIST -WET @ 30.0-40.0)

SS-113
SS-114
SS-115
SS-116
MS-116
MS-116A

170+50 -L- 115.00 RT.

PI=35

RED-BRN STIFF TO V. STIFF MOIST TO DRY MICA. HIGH PLASTIC SILTY F. SANDY CLAY (A-7-5)

BRN-WHITE LOOSE TO MED. DENSE DRY V. MICA. SILTY CLAYEY F. SAND (A-2-5)

BRN-WHITE STIFF DRY TO MOIST V. MICA. CLAYEY F. SANDY SILT (A-4)

RED-BRN STIFF MOIST SILTY F. SANDY CLAY (A-7-5)

BRN MED. DENSE DRY MICA. SILTY CLAYEY F. SAND (A-2-5)

172+00 -L- 40.00 LT.

-L-

SEE SHEETS 13 & 14 FOR -L- PLAN

159+00 160+00 161+00 162+00 163+00 164+00 165+00 166+00 167+00 168+00 169+00 170+00 171+00 172+00 173+00

850 840 830 820 810 800 790 780 770

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	PL. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING SIEVES 10	40	200	% MOISTURE	% ORGANIC
SS-117	70RT	176+60	5.00-17.00	A-4(0)	29	NP	38.0	24.1	18.9	18.1	98	71	42	-	-
SS-118	90RT	181+70	0.00-1.50	A-2-4(0)	35	NP	36.7	41.6	13.7	8.0	100	83	29	-	-
SS-119	90RT	181+70	3.50-5.00	A-1-b(0)	35	NP	47.4	33.8	10.8	8.0	97	67	24	-	-
SS-120	60RT	184+00	0.00-19.00	A-6(2)	34	14	32.7	28.3	18.9	20.1	94	73	42	-	-
SS-121	CL	186+00	0.00-5.00	A-6(5)	38	15	30.0	23.9	11.9	34.2	98	79	50	-	-

PI = 178+00.00
EL = 844.66'
K = 299
VC = 600'
DS = 70 MPH

VPC=175+00.00
EI = 834.73

VPC=181+00.00
EI = 840.57

SS-117
176+60 -L- 70.00 RT.

178+00 -L- 50.00 LT.

(+)3.310%

(+)1.340%

174+00 -L- CL

RESIDUAL

RED-BRN STIFF MOIST SILTY F. SANDY CLAY (A-7-5)

GRAY & WHITE STIFF DRY CLAYEY SANDY SILT (A-4)

BRN MED. DENSE DRY MICA. SILTY CLAYEY F. SAND (A-2-5)

BRN MED. DENSE DRY MICA. SILTY CLAYEY F. SAND (A-2-5)

RESIDUAL

SS-118
SS-119
181+70 -L- 90.00 RT.

RESIDUAL

BRN-TAN LOOSE TO MED. DENSE MOIST SILTY F. SAND TO SILTY CSE. SAND (A-2-4, A-1-B)

SS-120
184+00 -L- 50.00 RT.

(PI=14)

RESIDUAL

BRN TO BRN-TAN STIFF TO V. STIFF MOIST TO DRY LOW PLASTIC SILTY SANDY CLAY (A-6)

SS-121
186+00 -L- CL

(PI=15)

RED-BRN STIFF MOIST SILTY F. SANDY CLAY (A-7-5)

BRN MED. DENSE DRY MICA. SILTY CLAYEY F. SAND (A-2-5)

-L-

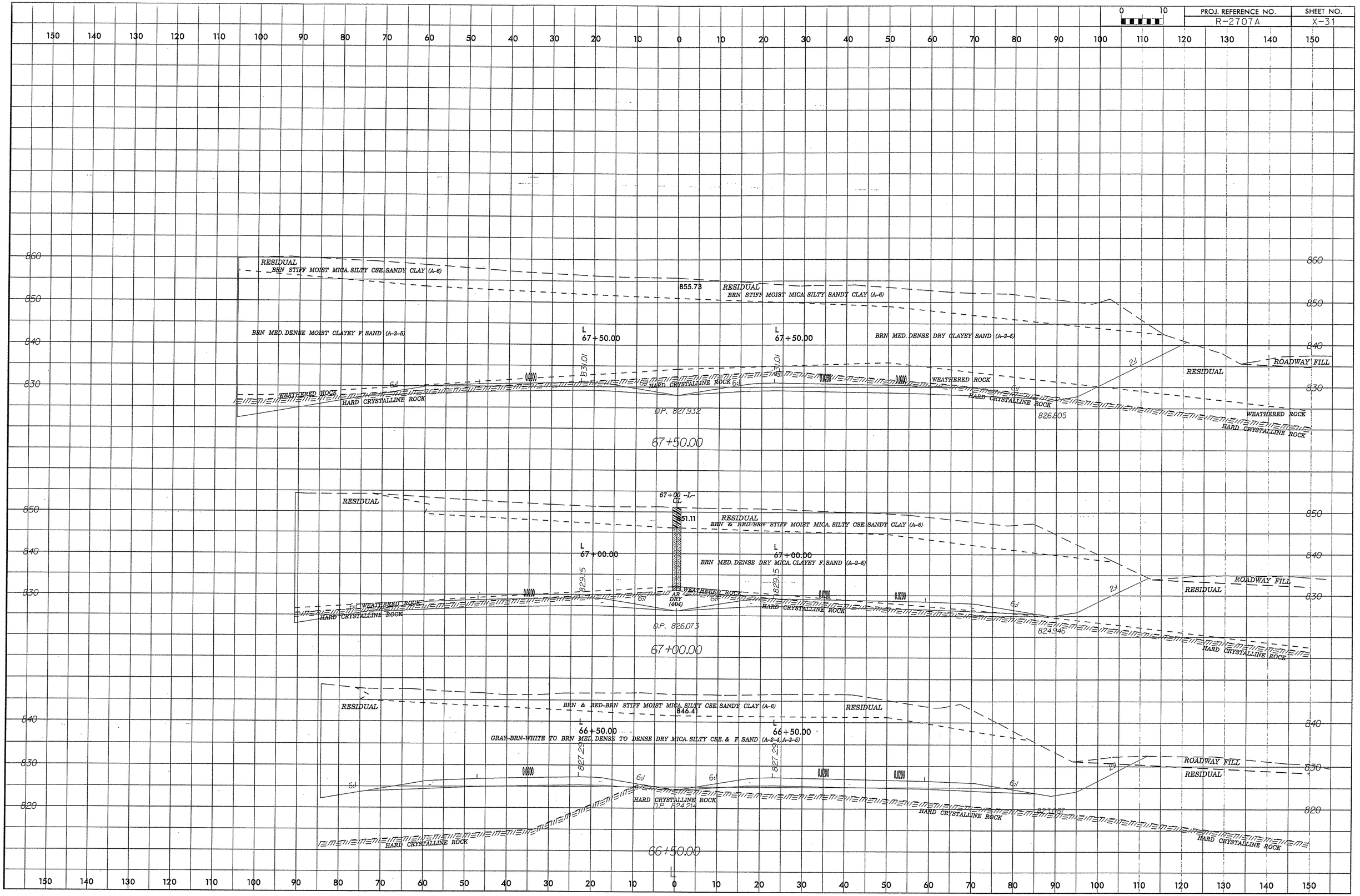
SEE SHEETS 14 & 15 FOR -L- PLAN

173+00 174+00 175+00 176+00 177+00 178+00 179+00 180+00 181+00 182+00 183+00 184+00 185+00 186+00 187+00

880 870 860 850 840 830 820 810 800 790

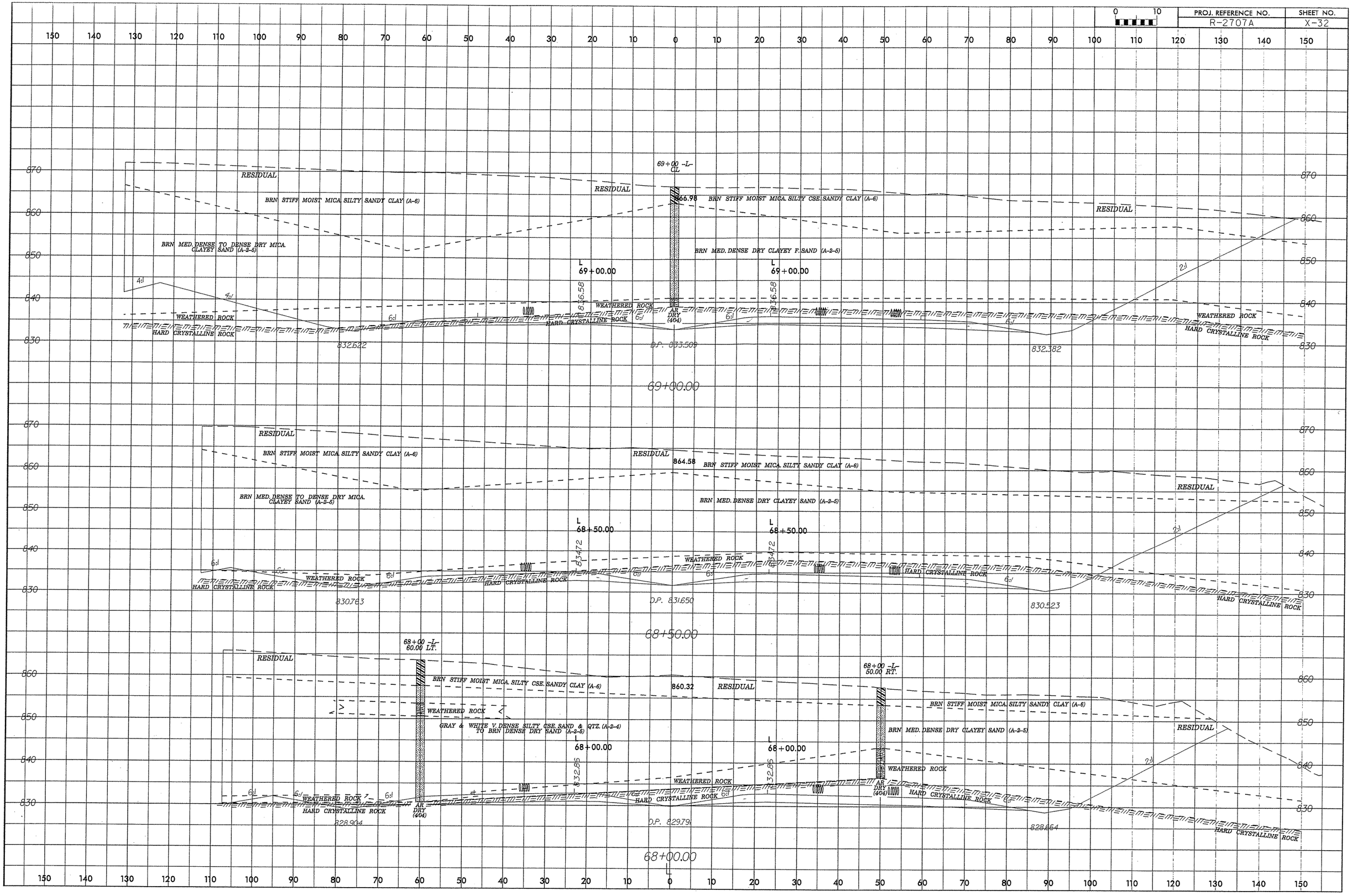
PROJ. REFERENCE NO. R-2707A | SHEET NO. X-31

0 10



PROJ. REFERENCE NO.	SHEET NO.
R-2707A	X-32

0 10



PROJECT REFERENCE NO.	SHEET NO.
R-2707A	31

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	PL. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING SIEVES 10	40	200	% MOISTURE	% ORGANIC
SS-122	60LT	188+00	0.00-4.30	A-7-5(20)	70	31	26.8	10.7	10.3	52.3	97	76	64	-	-
SS-123	60LT	188+00	4.30-5.80	A-7-5(3)	54	15	42.5	17.3	6.0	34.2	92	63	40	-	-
SS-124	60LT	188+00	9.30-10.80	A-4(0)	39	6	42.1	24.7	13.1	20.1	91	60	36	-	-
SS-125	60LT	188+00	24.30-25.80	A-2-5(0)	30	NP	48.7	22.9	8.2	20.1	83	52	28	23.2	-
SS-126	CL	190+00	3.00-36.00	A-4(3)	32	9	21.7	27.2	20.9	30.2	100	91	58	-	-

SS-122
SS-123
SS-124
SS-125
MS-125

188+00 -L-
60.00 LT.

RESIDUAL

BRN TO BRN-TAN STIFF MOIST MICA. HIGH TO LOW PLASTIC SILTY CSE. SANDY CLAY (A-7-5)

(PI=31)
14
(PI=16)
10
12
15
10
12
18

GRAY-BRN-WHITE STIFF MOIST MICA. CLAYEY CSE. SANDY SILT (A-4)

GRAY-BRN-WHITE LOOSE TO MED. DENSE MOIST MICA. CLAYEY CSE. SAND (A-2-5)

BT

SS-126

190+00 -L-
CL

BRN STIFF MOIST SILTY CSE. SANDY CLAY (A-7-5)

BRN-TAN STIFF DRY TO WET MICA. CLAYEY SANDY SILT (A-4) (MOIST TO WET @ 25.0-36.0)

BT

VPC=190+85.00
EL = 861.42

192+00 -L-
CL

RESIDUAL

RED-BRN TO BRN STIFF MOIST SILTY SANDY CLAY (A-7-6, A-7-5)

BRN STIFF MOIST TO WET V. MICA. CLAYEY SANDY SILT (A-4) (WET @ 25.0)

BT

194+00 -L-
75.00 LT.

BRN STIFF MOIST SILTY CSE. SANDY CLAY (A-7-5)

BRN-TAN STIFF DRY TO WET MICA. CLAYEY SANDY SILT (A-4) WET @ 22.0)

BT

196+00 -L-
CL

RESIDUAL

BRN STIFF MOIST MICA. SILTY CSE. SANDY CLAY (A-7-5)

BRN-TAN STIFF WET TO SAT. MICA. CLAYEY SANDY SILT (A-4)

(SATURATED @ 20.0-29.0)

BT

198+00 -L-
80.00 RT.

(+)1.3040%

RESIDUAL

BRN TO BRN-TAN STIFF MOIST TO WET MICA. SILTY CSE. SANDY CLAY (A-7-6)

(SATURATED @ 17.0)

BT

200+00 -L-
CL

RESIDUAL

BRN-TAN LOOSE SAT. MICA. CLAYEY F. & CSE. SAND (A-2-4)

BT

-L-

SEE SHEETS 15 & 16 FOR -L- PLAN

PI = 201+75.00
EL = 875.63'
K = 560
VC = 2,180'
ES = 70+ MPH

Profile -L- 90.00' LT.

SS-121A
SS-122A
SS-123A

207+00 -L-
90.00 LT.

GRAY & BRN TO GRAY-BLACK LOOSE TO V. LOOSE WET SILTY CLAYEY CSE. SAND W/WOOD (A-2-4)

RESIDUAL

ALLUVIUM

BRN MED. STIFF MOIST LOW PLASTIC SILTY SANDY CLAY (A-7-6)

(PI=18)

BT

206+00 207+00 207+75

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	PL. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING SIEVES 10	40	200	% MOISTURE	% ORGANIC
SS-127	45RT	17+86-Y5-	0.00-4.60	A-7-6(9)	44	18	24.1	20.3	11.3	44.3	100	84	60	-	-
SS-128	45RT	17+86-Y5-	4.50-6.00	A-2-4(0)	33	NP	40.6	32.0	9.3	18.1	95	68	34	-	-
SS-129	45RT	17+86-Y5-	19.50-21.00	A-2-4(0)	34	NP	47.1	31.6	7.2	14.1	96	63	27	-	-
SS-130	45RT	17+86-Y5-	29.50-31.00	A-2-4(0)	27	NP	41.0	37.2	7.6	14.1	100	76	29	-	-
SS-131	45RT	17+86-Y5-	44.50-46.00	A-2-4(0)	26	NP	46.9	30.4	6.6	16.1	89	59	25	-	-
SS-121A	90LT	207+00	0.00-1.50	A-2-4(0)	23	8	34.0	33.2	12.8	20.1	96	76	35	-	-
SS-122A	90LT	207+00	7.00-8.50	A-2-4(0)	28	6	40.2	28.9	12.8	18.1	95	71	33	-	-
SS-123A	90LT	207+00	14.50-16.00	A-7-6(2)	41	15	31.4	35.2	23.6	10.1	100	86	39	-	-
SS-124A	CL	207+40	4.00-5.50	A-6(6)	35	19	29.1	21.7	15.0	34.2	96	77	51	-	-
SS-125A	CL	207+40	9.00-10.50	A-2-4(0)	27	6	46.0	24.7	17.2	12.1	99	68	34	-	-
SS-126A	80RT	208+00	0.00-1.50	A-2-4(0)	21	NP	41.2	33.4	11.4	14.1	92	68	28	-	-
SS-127A	80RT	208+00	8.50-10.00	A-2-4(0)	32	NP	50.3	27.1	16.6	6.0	95	62	26	-	-

END PROJECT
END GRADE
Sta. 215+00.00 -L-
EL = 842.39

202+00 -L-
80.00 LT.

17+86 -Y5-
46.00 RT.
=
202+48.03 -L-
89.34 RT.

(+)1.3040%

(-)2.5890%

RESIDUAL

(PI=18)

RED-BRN MED STIFF MOIST MED. PLASTIC SILTY SANDY CLAY (A-7-6)

BRN STIFF MOIST MICA SILTY SANDY CLAY (A-7-6)

BRN MED. DENSE WET MICA CLAYEY F. & CSE. SAND (A-2-4)

BT

SS-127
SS-128
SS-129
SS-130
SS-131

7
8
8
7
11
13
16
22
41
57
100

GRAY-TAN-WHITE TO BRN & GRAY-BRN-WHITE TO GRAY-WHITE LOOSE TO V. DENSE MOIST TO SAT. CLAYEY CSE. SAND (A-2-4)

WEATHERED ROCK

BT

SS-124A
SS-125A

207+40 -L-
CL

RESIDUAL

ALLUVIUM

2
(PI=19)
4
3

GRAY V. LOOSE DRY SILTY CLAYEY SAND (A-2-4) (ALLUVIUM)

GRAY STIFF MOIST MED. PLASTIC SILTY SANDY CLAY (A-6) (ALLUVIUM)

RESIDUAL

BRN-GRAY-WHITE LOOSE TO V. LOOSE SAT. CLAYEY SILTY SAND (A-2-4)

BT

208+00 -L-
80.00 RT.

Profile -L- 80.00' RT.

SS-126A
SS-127A

ALLUVIUM
BRN-TAN LOOSE DRY TO WET SILTY CLAYEY F. & CSE. SAND (A-2-4)

6
7

RESIDUAL

BRN-WHITE LOOSE SAT. TO WET SILTY CSE. SAND (A-2-4)

4
7

BT

855 850 840 835

207+00 208+00 208+50

RESIDUAL

RED-BRN-TAN STIFF DRY SILTY SANDY CLAY (A-7-5) TO GRAY-WHITE STIFF MOIST SILTY SANDY CLAY (A-6)

215+00 -L-
CL

TEMPORARY 4:1 SLOPE

VPT=212+65.00
EL = 847.41

VPO=213+00.00
EL = 846.50

-L-

SEE SHEETS 16 & 17 FOR -L- PLAN

187+00 188+00 189+00 190+00 191+00 192+00 193+00 194+00 195+00 196+00 197+00 198+00 199+00 200+00 201+00

201+00 202+00 203+00 204+00 205+00 206+00 207+00 208+00 209+00 210+00 211+00 212+00 213+00 214+00 215+00

910 900 890 880 870 860 850 840 830 820 810

ARCADIS G&M
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PROJECT REFERENCE NO.	SHEET NO.
R-2707A	32

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

–RAMPB–

BEGIN GRADE Sta. 10+00.00 –RAMPB– = Sta. 6+10.23 –L– 47' LT
EI = 813.18
VPC=10+20.00
EI = 813.42
(+)1.207%
(+)1.989%
PI = 11+20.00
EL = 814.63'
K = 256
VC = 200'
DS = 60+ MPH
VPT=12+20.00
EI = 816.66
RESIDUAL
BOULDER
BRN MED. STIFF MOIST SILTY CSE. SANDY CLAY (A-6)
AR DRY (404)
13+00 –RAMPB– CL
13+50 –RAMPB– CL
BRN STIFF MOIST SILTY CSE. SANDY CLAY (A-6)
BRN MED. DENSE DRY MICA CLAYEY F. SAND (A-2-5)
WEATHERED ROCK
HARD CRYSTALLINE ROCK
BT DRY (404)
VPC=14+50.00
EI = 821.39
15+00 –RAMPB– CL
RESIDUAL
16+00 –RAMPB– CL
RED-BRN MED. DENSE DRY MICA CLAYEY F. SAND (A-2-5)
PI = 16+60.00
EL = 825.37'
K = 136
VC = 400'
DS = 60+ MPH
(+)1.989%
17+00 –RAMPB– CL
RED-BRN STIFF MOIST SILTY CSE. SANDY CLAY (A-6)
RESIDUAL
18+00 –RAMPB– CL
BRN STIFF MOIST MICA CLAYEY F. SANDY SILT (A-5)
VPC=18+60.00
EI = 835.25
(+)1.940%
20+00 –RAMPB– CL
RESIDUAL
BRN MED. DENSE DRY TO MOIST MICA CLAYEY F. SAND (A-2-5)
21+50 –RAMPB– CL
SS-55
(PI=21)
RESIDUAL
RED-BRN STIFF MOIST MED. PLASTIC SANDY CLAY (A-7-6)
WET WEATHER RUN
SS-56
SS-57
24+00 –RAMPB– CL
RESIDUAL
BRN STIFF MOIST HIGH PLASTIC CSE. SANDY CLAY (A-7-6)
(PI=27)
GRAY-BRN-TAN-WHITE MED. DENSE DRY CSE. SAND (A-2-4)

SEE SHEETS 7 & 8 FOR –RAMPB– PLAN

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	PL. I.	% BY WEIGHT C. SAND	% BY WEIGHT F. SAND	% BY WEIGHT SILT	% BY WEIGHT CLAY	% PASSING SIEVES 10	% PASSING SIEVES 40	% PASSING SIEVES 200	% MOISTURE	% ORGANIC
SS-55	CL	21+50	0.00-13.00	A-7-6(8)	48	21	24.9	24.7	8.0	42.5	97	86	51	-	-
SS-56	CL	24+00	0.00-1.50	A-7-6(7)	64	27	32.2	16.2	9.2	42.5	82	62	44	-	-
SS-57	CL	24+00	3.70-5.20	A-2-4(0)	26	NP	51.6	33.0	9.4	6.1	91	58	19	-	-
SS-60	CL	30+00	3.50-5.00	A-5(0)	41	NP	29.9	32.0	26.0	12.1	100	79	47	-	-
SS-61	100LT	84+61-L-	4.30-5.80	A-7-6(5)	41	12	27.9	19.8	24.0	28.3	100	79	57	-	-
SS-62	100LT	84+61-L-	9.30-10.80	A-5(0)	50	NP	18.2	35.4	30.2	16.2	93	82	51	-	-
SS-63	100LT	84+61-L-	19.30-20.80	A-2-4(0)	35	NP	38.6	38.0	17.3	6.1	100	78	32	-	-

Sta 28+61.81 –RAMPB– 12' RT = Sta 19+63.93 –LOOPB–
VPC=33+60.00
EI = 909.36
(+)4.940%
Sta 86+28.82 –L– = Sta 37+77.92 –RAMPB–
SS-61
SS-62
SS-63
35+84.85 –RAMPB– 22.74 RT. = 84+61 –L– 100.00 LT.
33+00 –RAMPB– CL
RESIDUAL
BRN STIFF MOIST CSE. SANDY CLAY (A-7-6)
BRN-TAN STIFF DRY CLAYEY SANDY SILT (A-5)
BRN TO RED-BRN STIFF MOIST LOW PLASTIC SILTY SANDY CLAY (A-7-6)
BRN-TAN-WHITE V. STIFF DRY CLAYEY F. SANDY SILT (A-5)
TAN-WHITE-BLACK LOOSE DRY SILTY SAND (A-2-4)
TAN-WHITE MED. DENSE MOIST SILTY SAND (A-2-4)
30+00 –RAMPB– CL
SS-60
BRN MED. STIFF TO STIFF MOIST CSE. SANDY CLAY (A-7-6)
BRN-TAN-BLACK STIFF DRY CLAYEY SANDY SILT (A-5)
25+79.40 –RAMPB– 57.75 RT. = 17+00 –LOOPB– CL
RESIDUAL
27+00 –RAMPB– CL
BRN STIFF MOIST CSE. SANDY CLAY (A-7-6)
RED-BRN TO BRN MED. STIFF TO STIFF MOIST TO DRY CSE. SANDY CLAY (A-7-6)
BRN-TAN-GRAY MED. DENSE DRY CSE. SAND (A-2-4)
24+00 –RAMPB– CL
SS-66
SS-67
BRN STIFF MOIST HIGH PLASTIC CSE. SANDY CLAY (A-7-6)
RESIDUAL
GRAY-BRN-TAN-WHITE MED. DENSE DRY CSE. SAND (A-2-4)

SEE SHEET 8 FOR –RAMPB– PLAN

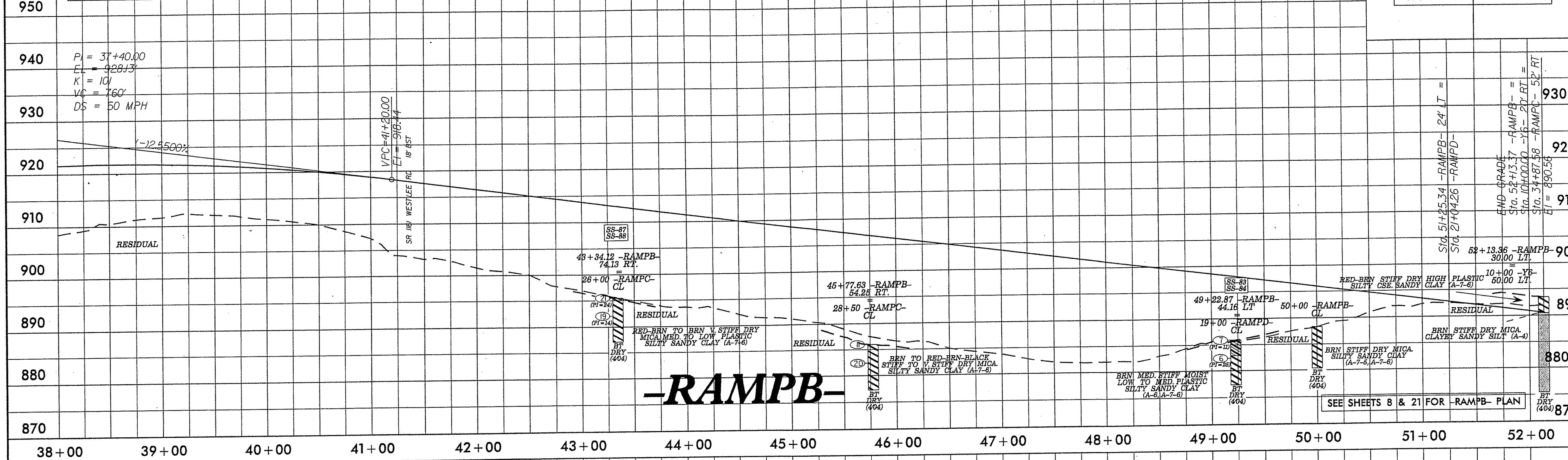
PROJECT REFERENCE NO.	SHEET NO.
R-2707A	33
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

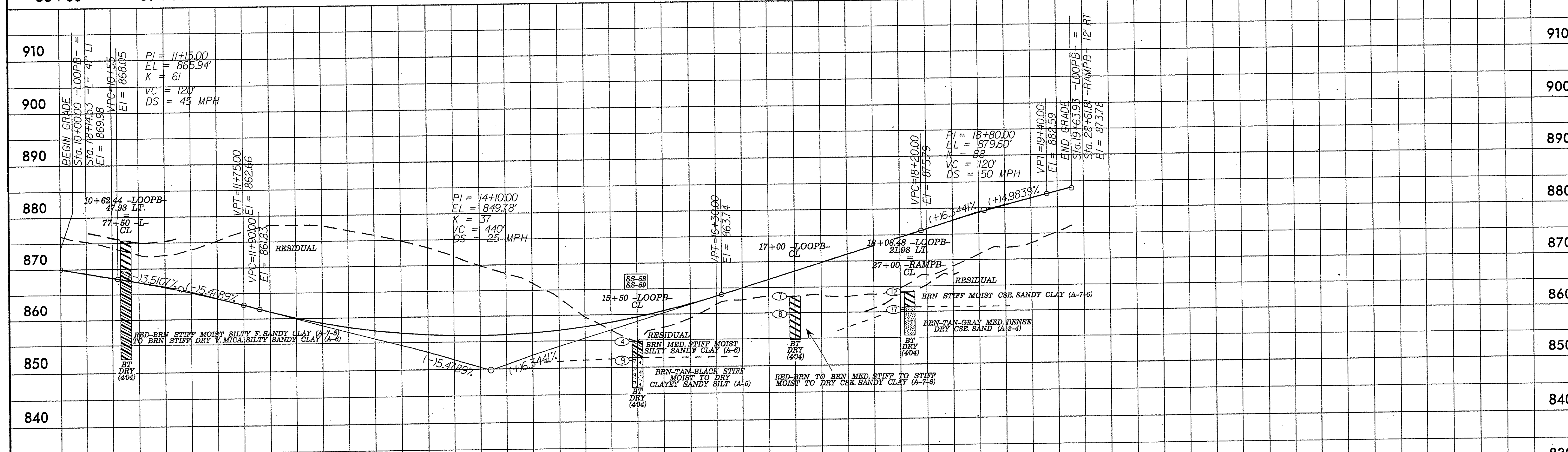
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	PL. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING SIEVES 10	40	200	% MOISTURE	% ORGANIC
SS-87	CL	26+00-RAMPC-	0.00-1.50	A-7-6(12)	45	24	25.5	19.5	21.0	34.1	100	82	61	-	-
SS-88	CL	26+00-RAMPC-	3.40-5.80	A-7-6(4)	42	14	32.5	24.5	23.0	20.1	100	77	49	-	-
SS-83	CL	19+00-RAMPD-	0.00-1.50	A-6(2)	29	11	30.5	26.1	17.4	26.1	96	77	47	-	-
SS-84	CL	19+00-RAMPD-	3.50-5.00	A-7-6(12)	52	25	19.3	24.1	12.5	44.1	96	88	57	-	-





SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	PL. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING SIEVES 10	40	200	% MOISTURE	% ORGANIC
SS-58	CL	15+50	0.00-1.50	A-6(4)	33	18	35.0	20.8	15.9	28.3	96	74	46	-	-
SS-59	CL	15+50	3.50-5.00	A-5(0)	41	NP	29.7	31.5	18.5	20.2	99	79	47	-	-

PROJECT REFERENCE NO.	SHEET NO.
R-2707A	34
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

BEGIN GRADE
Sta. 10+00.00 -RAMPC- =
Sta. 75+00.00 -L- 47' RT
El = 858.41

PI = 13+00.00
EL = 869.31'
K = 250
VC = 200'
DS = 60 MPH

VPC=12+00.00
El = 866.68

VPT=14+00.00
El = 872.14

VPC=14+40.00
El = 873.28

PI = 15+80.00
EL = 877.21'
K = 153
VC = 280'
DS = 60 MPH

VPT=17+10.00
El = 883.76

BM # 4 ELEV. = 908.01'
RR SPIKE IN 28" OAK
CL -RAMPC- STA. 19+89.42

VPC=21+05.00
El = 901.75

SR 1161 WESTLEE RD
(+)4.6681%

SS-43
SS-44
SS-45
SS-46
MS-46
MS-46A

10+54.36 -RAMPC-
69.81 RT.

RESIDUAL

75+50 -L-
120.00 RT

RED-BRN STIFF MOIST MICA. HIGH PLASTIC SILTY F. SANDY CLAY (A-7-6)

(PI=31)

RED-BRN-GRAY STIFF DRY MICA. CLAYEY F. SANDY SILT (A-4)

BRN-TAN-BLACK TO BRN MED. DENSE, DRY MICA. CLAYEY SILTY F. SAND TO F. SAND (A-2-5, A-2-4)

WEATHERED ROCK

AR
DRY
(404)

12+46.66 -RAMPC-
62.17 LT.

77+50 -L-
CL

RESIDUAL

(+)2.8334%

(+)6.6332%

RED-BRN STIFF MOIST SILTY F. SANDY CLAY (A-7-6)
TO BRN STIFF DRY V. MICA. SILTY SANDY CLAY (A-6)

BT
DRY
(404)

14+46.29 -RAMPC-
74.38 LT.

79+50 -L-
CL

15+00 -RAMPC-
CL

RESIDUAL

BRN STIFF MOIST SLI. MICA. SILTY SANDY CLAY (A-7-6)

(PI=39)

BRN STIFF MOIST SLI. MICA. HIGH PLASTIC SILTY SANDY CLAY (A-7-6)
TO BRN STIFF DRY MICA. LOW PLASTIC SILTY SANDY CLAY (A-6)

(PI=11)

BRN-TAN STIFF DRY MICA. CLAYEY CSE. SANDY SILT (A-4)

BT
DRY
(404)

SS-50
SS-51

16+43.29 -RAMPC-
88.40 LT.

81+50 -L-
CL

17+00 -RAMPC-
CL

RESIDUAL

RED-BRN STIFF MOIST SILTY SANDY CLAY (A-7-6)

(PI=14)

BRN-TAN STIFF MOIST CLAYEY CSE. SANDY SILT (A-4)

BT
DRY
(404)

SS-52
SS-53
SS-54

19+00 -RAMPC-
CL

(PI=34)

BRN STIFF MOIST SLI MICA. HIGH TO LOW PLASTIC SILTY SANDY CLAY (A-7-6)

BT
DRY
(404)

SR 1161 WESTLEE RD
(+)4.6681%

-RAMPC-

SEE SHEET 8 FOR -RAMPC- PLAN

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	PL. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING SIEVES 10	40	200	% MOISTURE	% ORGANIC
SS-43	120 RT	75+60-L-	0.00-4.30	A-7-5(25)	62	31	9.3	17.0	11.0	62.7	100	97	75	-	-
SS-44	120 RT	75+60-L-	4.30-5.80	A-4(0)	40	NP	16.0	40.0	21.7	22.2	100	94	51	-	-
SS-45	120 RT	75+60-L-	14.30-15.80	A-2-6(0)	53	NP	22.4	51.2	16.3	10.1	95	86	33	-	-
SS-46	120 RT	75+60-L-	24.30-25.90	A-2-4(0)	40	NP	34.2	53.2	8.6	4.0	100	90	19	22.2	-
MS-46A	120 RT	75+60-L-	29.30-29.70											13.4	-
SS-50	CL	81+60-L-	0.00-6.00	A-7-6(24)	62	39	22.9	15.6	15.1	46.5	100	86	65	-	-
SS-51	CL	81+60-L-	6.00-23.00	A-6(3)	35	11	32.0	25.3	22.5	20.2	100	78	50	-	-
SS-52	CL	19+00	0.00-6.00	A-7-6(22)	56	34	19.2	15.2	21.1	44.5	99	87	68	-	-
SS-53	CL	19+00	5.00-10.00	A-7-6(6)	43	14	25.9	18.6	23.2	32.4	93	76	56	-	-
SS-54	CL	19+00	10.00-24.00	A-4(2)	35	9	30.5	18.4	26.8	24.3	90	70	51	-	-
SS-87	CL	26+00	0.00-1.50	A-7-6(12)	45	24	25.5	19.5	21.0	34.1	100	82	61	-	-
SS-88	CL	26+00	3.40-5.80	A-7-6(4)	42	14	32.5	24.5	23.0	20.1	100	77	49	-	-
SS-83	CL	19+00-RAMPD	0.00-1.50	A-6(2)	29	11	30.6	26.1	17.4	26.1	98	77	47	-	-
SS-84	CL	19+00-RAMPD	3.50-5.00	A-7-6(12)	52	25	19.3	24.1	12.5	44.1	96	88	57	-	-

PI = 24+35.00
EL = 917.16'
K = 91
VC = 660'
DS = 50 MPH

SR 1161 WESTLEE RD
(+)4.6681%

-12.5500%

VPT=21+65.00
El = 908.75

SS-87
SS-88

26+00 -RAMPC-
CL

RESIDUAL

RED-BRN TO BRN V. STIFF DRY MICA MED. TO LOW PLASTIC SILTY SANDY CLAY (A-7-6)

(PI=24)

(PI=14)

BT
DRY
(404)

28+50 -RAMPC-
CL

RESIDUAL

BRN TO RED-BRN-BLACK STUFF TO V. STIFF DRY MICA. SILTY SANDY CLAY (A-7-6)

BT
DRY
(404)

SS-83
SS-84

31+97.09 -RAMPC-
96.16 LT.

19+00 -RAMPD-
CL

RESIDUAL

BRN MED. STIFF MOIST LOW TO MED. PLASTIC SILTY SANDY CLAY (A-6, A-7-6)

(PI=11)

(PI=25)

BT
DRY
(404)

32+74.22 -RAMPC-
52.00 LT.

50+00 -RAMPB-
CL

BRN STIFF DRY MICA. SILTY SANDY CLAY (A-7-5, A-7-6)

BT
DRY
(404)

34+87.58 -RAMPC-
82.00 LT.

10+00 -Y6-
50.00 LT.

RESIDUAL

RED-BRN MED. DRY HIGH PLASTIC SILTY CSE. SANDY CLAY (A-7-6)

BRN STIFF DRY MICA. CLAYEY SANDY SILT (A-4)

BT
DRY
(404)

END GRADE
Sta. 34+87.58 -RAMPC- =
Sta. 10+00.00 -Y6- 32' LT =
Sta. 52+13.37 -RAMPB- 52' LT
El = 890.32

-RAMPC-

SEE SHEETS 8 & 21 FOR -RAMPC- PLAN

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

28+00 29+00 30+00 31+00 32+00 33+00

940 930 920 910 900 890 880 870 860 850

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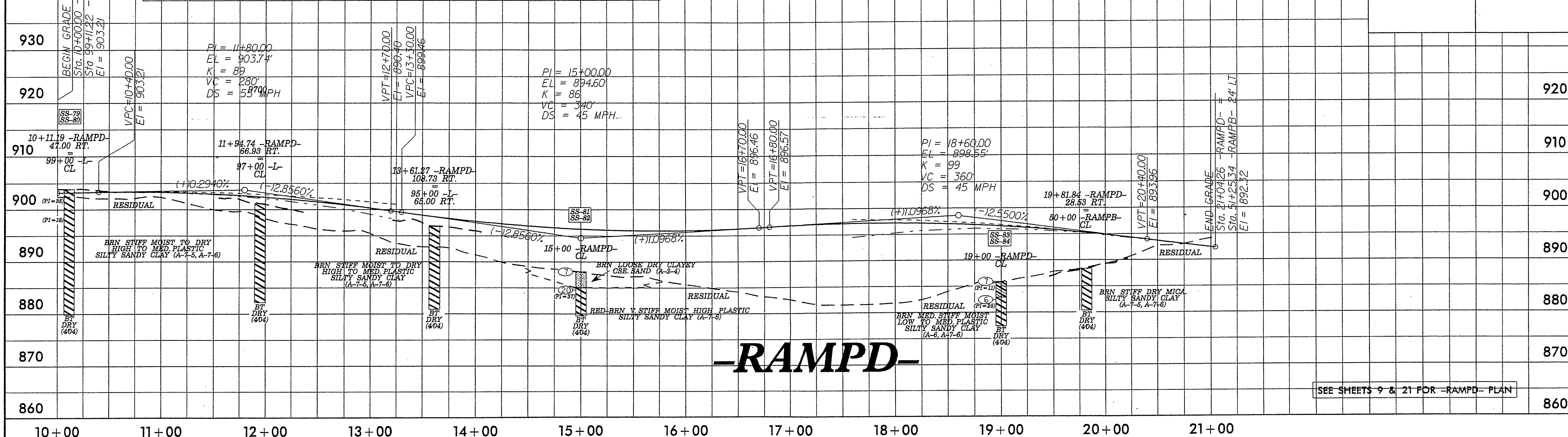
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

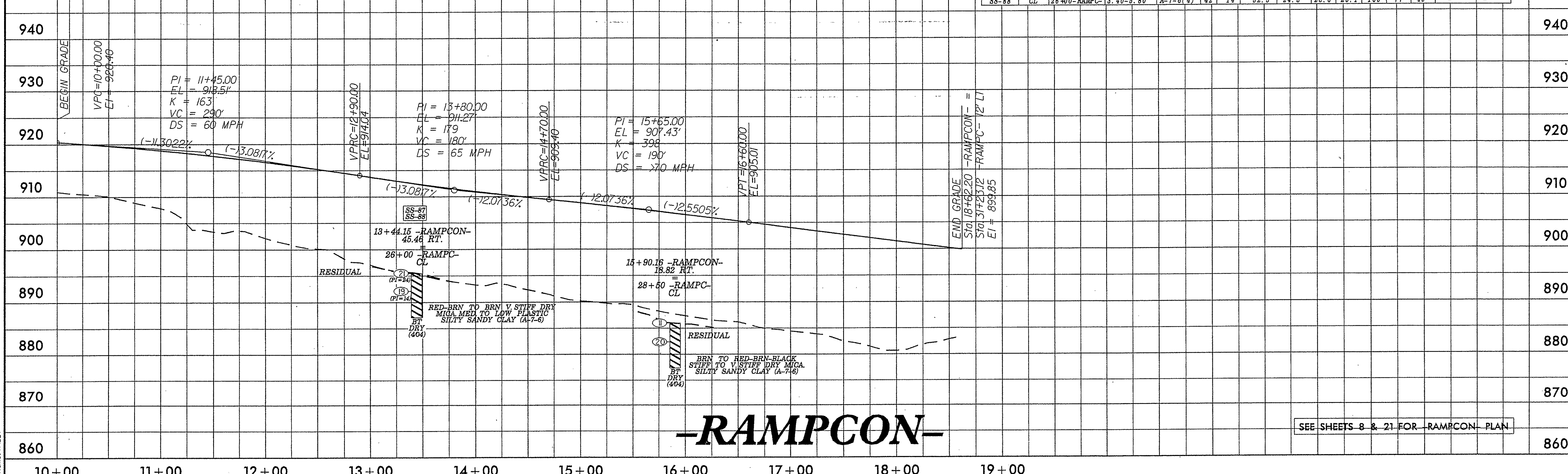
SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	PL. I.	% BY WEIGHT C. SAND	% BY WEIGHT F. SAND	% BY WEIGHT SILT	% BY WEIGHT CLAY	% PASSING SIEVES 10	% PASSING SIEVES 40	% PASSING SIEVES 200	% MOISTURE	% ORGANIC
SS-79	CL	99+00-L-	0.00-5.00	A-7-5(21)	65	35	21.3	14.2	10.3	54.2	92	80	62	-	-
SS-80	CL	99+00-L-	5.00-19.00	A-7-6(6)	46	18	20.5	34.5	23.0	22.1	99	92	50	-	-
SS-81	CL	15+00	0.00-1.50	A-2-4(0)	20	7	40.2	31.5	9.2	19.1	94	72	30	-	-
SS-82	CL	15+00	3.50-5.00	A-7-6(9)	56	37	36.7	20.7	10.5	32.1	92	70	41	-	-
SS-83	CL	19+00	0.00-1.50	A-6(2)	29	11	30.5	26.1	17.4	26.1	96	77	47	-	-
SS-84	CL	19+00	3.50-5.00	A-7-6(12)	52	25	19.3	24.1	12.5	44.1	96	88	57	-	-



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	PL. I.	% BY WEIGHT C. SAND	% BY WEIGHT F. SAND	% BY WEIGHT SILT	% BY WEIGHT CLAY	% PASSING SIEVES 10	% PASSING SIEVES 40	% PASSING SIEVES 200	% MOISTURE	% ORGANIC
SS-87	CL	26+00-RAMPC-	0.00-1.50	A-7-6(12)	45	24	25.5	19.5	21.0	34.1	100	82	61	-	-
SS-88	CL	26+00-RAMPC-	3.40-5.80	A-7-6(4)	42	14	32.5	24.5	23.0	20.1	100	77	49	-	-



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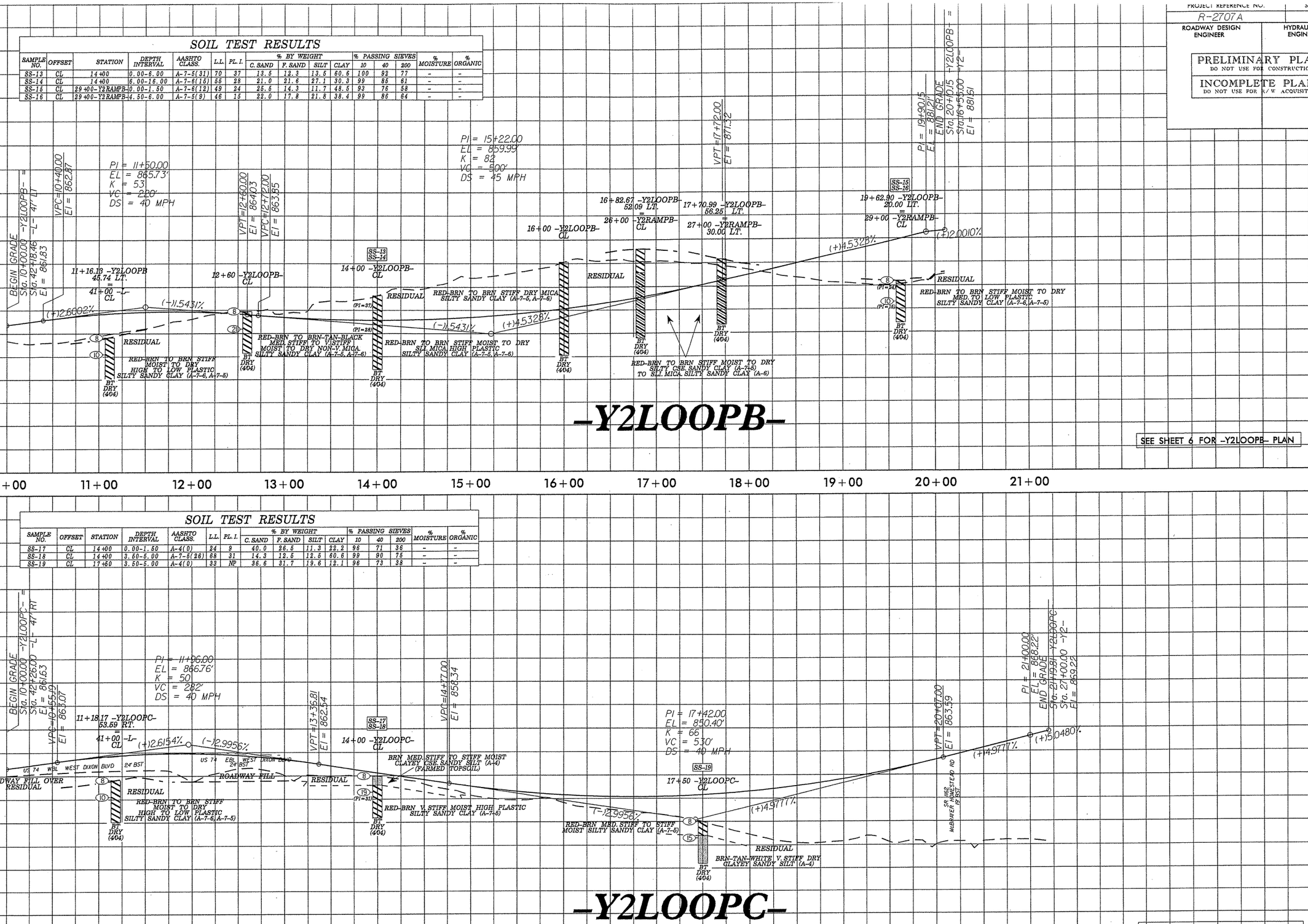
PROJECT REFERENCE NO.	SHEET NO.
R-2707A	36
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	PL. I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-13	CL	14+00	0.00-6.00	A-7-5(31)	70	37	13.5	12.3	13.5	60.6	100	92	77	-	-
SS-14	CL	14+00	6.00-16.00	A-7-6(16)	56	28	21.0	21.6	27.1	30.3	99	86	61	-	-
SS-15	CL	29+00-Y2RAMPB-	0.00-1.50	A-7-6(12)	49	24	25.6	14.3	11.7	48.5	93	76	58	-	-
SS-16	CL	29+00-Y2RAMPB-	4.50-6.00	A-7-5(9)	46	15	22.0	17.8	21.8	38.4	99	86	64	-	-



SEE SHEET 6 FOR -Y2LOOPB- PLAN

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	PL. I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-17	CL	14+00	0.00-1.50	A-4(0)	24	9	40.0	26.6	11.3	22.2	96	71	36	-	-
SS-18	CL	14+00	3.50-6.00	A-7-6(26)	68	31	14.3	12.5	12.6	60.6	99	90	75	-	-
SS-19	CL	17+60	3.50-5.00	A-4(0)	33	NP	36.6	31.7	19.6	12.1	96	73	38	-	-

SEE SHEET 6 FOR -Y2LOOPC- PLAN

ARCADIS G&M
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Time: =TIME$

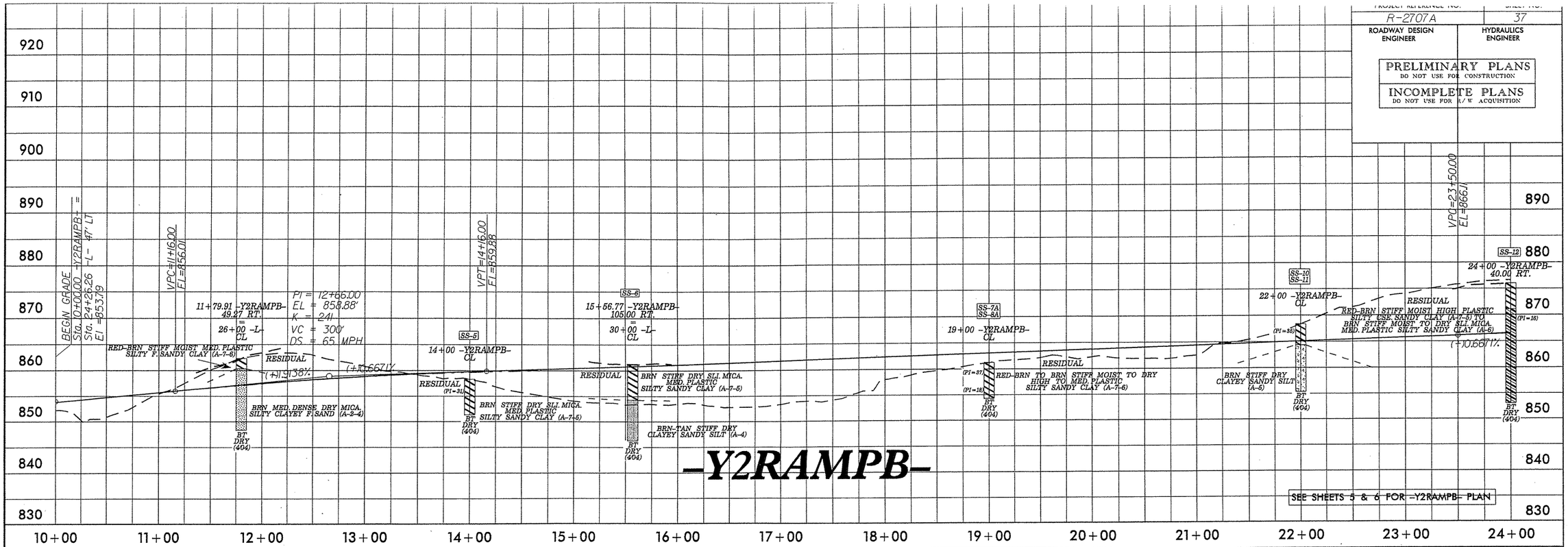
PROJECT REFERENCE NO.	SHEET NO.
R-2707A	37

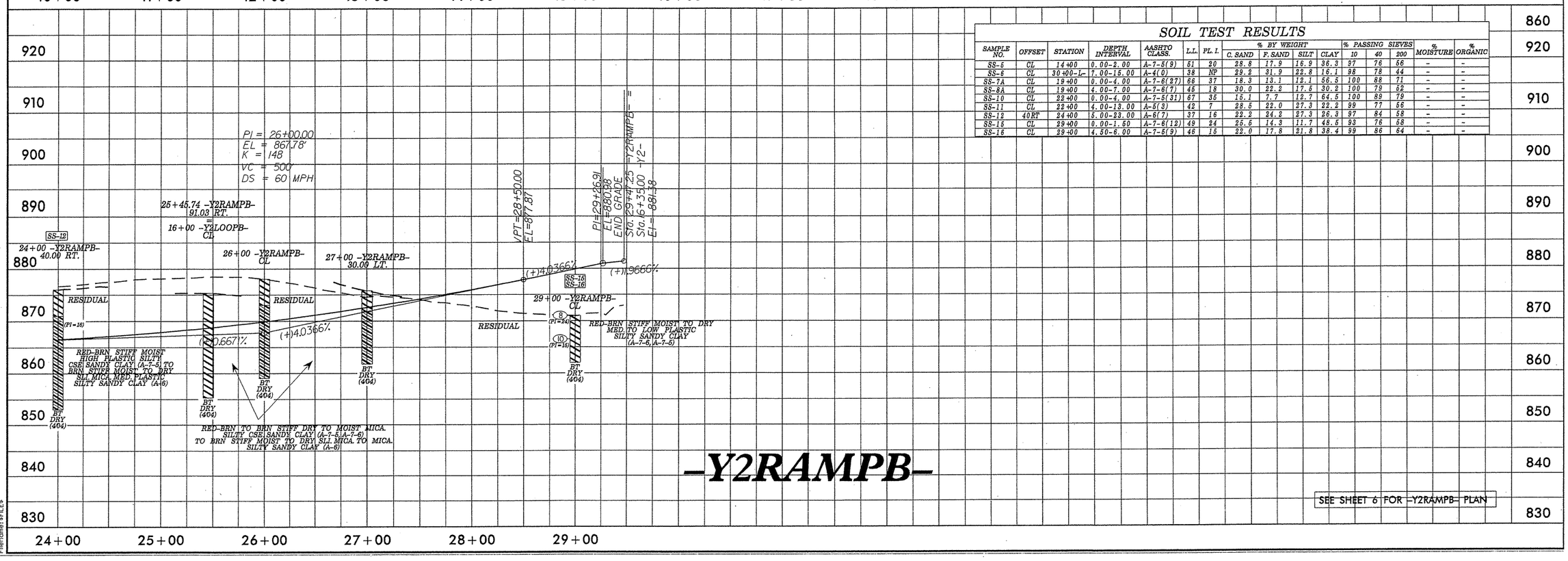
ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION





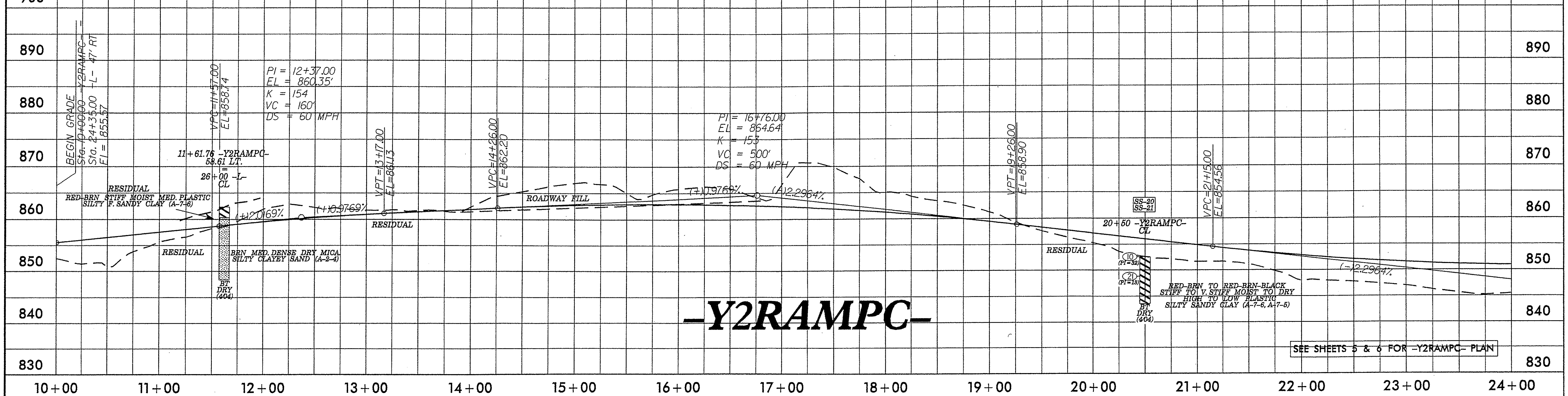
SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	PL. I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-5	CL	14+00	0.00-2.00	A-7-6(9)	61	20	28.8	17.9	16.9	36.3	97	76	56	-	-
SS-6	CL	30+00-L-	7.00-15.00	A-4(0)	38	NP	29.2	31.9	22.8	16.1	98	78	44	-	-
SS-7A	CL	19+00	0.00-4.00	A-7-6(27)	66	37	18.3	13.1	12.1	56.5	100	88	71	-	-
SS-8A	CL	19+00	4.00-7.00	A-7-6(7)	45	18	30.0	22.2	17.5	30.2	100	79	62	-	-
SS-10	CL	22+00	0.00-4.00	A-7-5(31)	67	35	15.1	7.7	12.7	64.5	100	89	79	-	-
SS-11	CL	22+00	4.00-13.00	A-6(3)	42	7	28.5	22.0	27.3	22.2	99	77	56	-	-
SS-12	40 RT	24+00	5.00-23.00	A-6(7)	37	16	22.2	24.2	27.3	26.3	97	84	58	-	-
SS-15	CL	29+00	0.00-1.60	A-7-6(12)	49	24	25.6	14.3	11.7	48.5	93	76	58	-	-
SS-16	CL	29+00	4.50-6.00	A-7-6(9)	46	15	22.0	17.8	21.8	38.4	99	86	64	-	-

PROJECT REFERENCE NO.	SHEET NO.
R-2707A	38
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

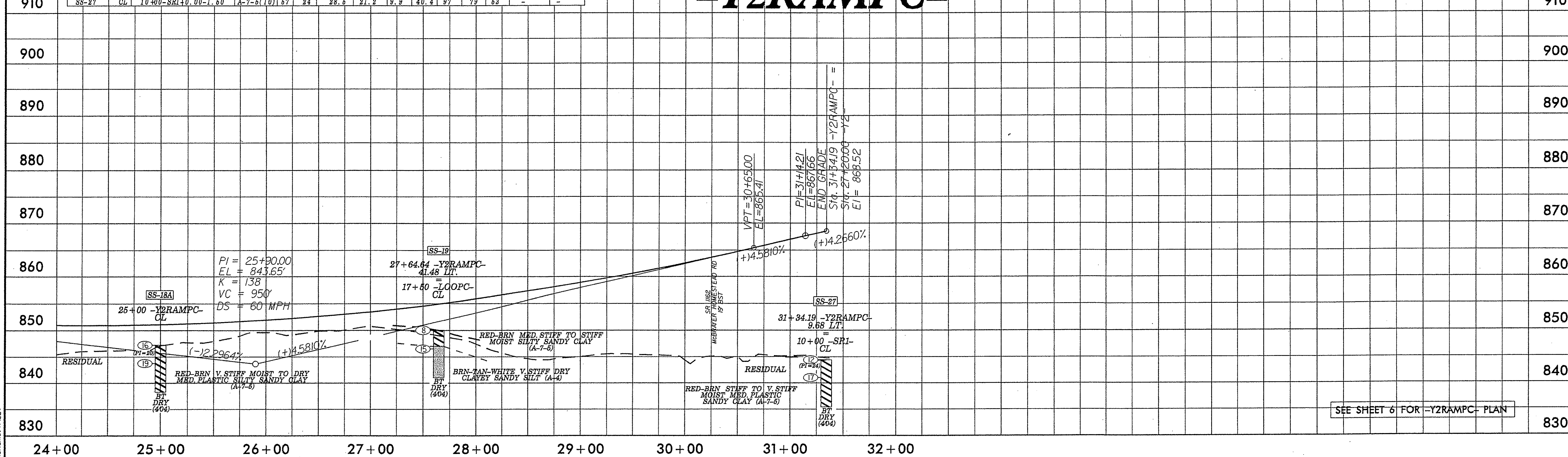
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION



BEGIN GRADE
Sta. 10+00.00 -Y2RAMPC- = Sta. 24+35.00 -L- 47' RT
El = 855.57
VPC=11+57.00
EL=858.74
PI = 12+37.00
EL = 860.35'
K = 154
VC = 160'
DS = 60 MPH
11+61.76 -Y2RAMPC- 58.61 LT. = 26+00 -L- CL
RESIDUAL
RED-BRN STIFF MOIST MED. PLASTIC SILTY F. SANDY CLAY (A-7-6)
BRN MED. DENSE DRY MICA. SILTY CLAYEY SAND (A-2-4)
BT DRY (404)
(+)2.0169%
(+)0.9769%
VPT=13+17.00
EL=861.13
VPC=14+26.00
EL=862.20
ROADWAY FILL
PI= 16+76.00
EL = 864.64'
K = 153
VC = 500'
DS = 60 MPH
(+)0.9769%
(-)2.2964%
VPT=19+26.00
EL=858.90
VPC=21+15.00
EL=854.56
SS-20
SS-21
20+50 -Y2RAMPC- CL
RED-BRN TO RED-BRN-BLACK STIFF TO V. STIFF MOIST TO DRY HIGH TO LOW PLASTIC SILTY SANDY CLAY (A-7-6, A-7-5)
(-)2.2964%
-Y2RAMPC-
SEE SHEETS 5 & 6 FOR -Y2RAMPC- PLAN

SOIL TEST RESULTS															
SAMPLE NO.	OFF SET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	PL. I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-20	CL	20+50	0.00-1.50	A-7-6(19)	58	32	19.4	17.6	10.5	52.5	97	85	64	-	-
SS-21	CL	20+50	3.50-5.00	A-7-5(6)	48	13	21.6	25.7	22.4	30.3	96	81	56	-	-
SS-18A	CL	25+00	0.00-1.50	A-7-5(13)	59	20	18.8	20.6	20.2	40.4	96	83	64	-	-
SS-19	CL	17+50-LOOPC-	3.50-5.00	A-4(0)	33	NP	36.6	31.7	19.6	12.1	96	73	38	-	-
SS-27	CL	10+00-SR1-	0.00-1.50	A-7-5(10)	57	24	28.5	21.2	9.9	40.4	97	79	53	-	-



-Y2RAMPC-
PI = 25+90.00
EL = 843.65'
K = 138
VC = 950'
DS = 60 MPH
SS-18A
25+00 -Y2RAMPC- CL
RESIDUAL
RED-BRN V. STIFF MOIST TO DRY MED. PLASTIC SILTY SANDY CLAY (A-7-5)
BT DRY (404)
(-)2.2964%
(+)4.5810%
SS-19
27+64.64 -Y2RAMPC- 41.48 LT. = 17+50 -LOOPC- CL
RED-BRN MED. STIFF TO STIFF MOIST SILTY SANDY CLAY (A-7-5)
BRN-TAN-WHITE V. STIFF DRY CLAYEY SANDY SILT (A-4)
VPT=30+65.00
EL=865.41
PI=31+14.21
EL=867.66
END GRADE
Sta. 31+34.19 -Y2RAMPC- = Sta. 27+20.00 -Y2-
El = 868.52
(+)4.5810%
(+)4.2660%
SS-27
31+34.19 -Y2RAMPC- 9.68 LT. = 10+00 -SR1- CL
RESIDUAL
RED-BRN STIFF TO V. STIFF MOIST MED. PLASTIC SANDY CLAY (A-7-5)
SEE SHEET 6 FOR -Y2RAMPC- PLAN

ARCADIS G&M
Date: $DATE$
Filename: $FILE$
Time: $TIME$

PROJECT REFERENCE NO.	SHEET NO.
R-2707A	39
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

BEGIN GRADE
Sta. 10+27.00 -Y2-
El = 882.09

PC=11+50.00
El = 880.54

PI = 13+50.00
El = 878.04'
K = 165
VC = 400'
DS = 60 MPH

VPT=15+50.00
El = 880.38

VPC=17+85.00
El = 883.13

Sta 16+35.00 -Y2-
=
Sta 29+35.50 -Y2RAMPB-
Sta 16+35.00 -Y2-
=
Sta 20+40.15 -Y2LOOPB-

PI = 21+75.00
El = 887.70'
K = 166
VC = 780'
DS = 60 MPH

Sta 43+66.99 -L-
=
Sta 22+03.06 -Y2-

(-)11.2530%

(+)11.1711%

(+)11.1711%

(-)13.5200%

EXISTING SR 1162 PEACHTREE RD.
ROADWAY FILL OVER RESIDUAL

EXISTING SR 1162 PEACHTREE RD.

16+35 -Y2
47.25 RT.
=
29+00 -Y2RAMPB-
CL

8 (PI=24)
10 (PI=16)
RESIDUAL
RED-BRN STIFF MOIST TO DRY
MED TO LOW PLASTIC
SILTY SANDY CLAY (A-7-6, A-7-5)
BT
DRY
(404)

ROADWAY FILL OVER RESIDUAL

21+45.68 -Y2-
60.78 RT.
=
43+00 -L-
60.00 LT.

11
12
RESIDUAL
RED-BRN STIFF MOIST
HIGH TO LOW PLASTIC
SILTY SANDY CLAY
(A-7-6, A-7-5)
BT
DRY
(404)

EXISTING SR 1162 PEACHTREE RD.
ROADWAY FILL OVER RESIDUAL

-Y2-

SEE SHEETS 18 & 6 FOR -Y2- PLAN

SOIL TEST RESULTS

SAMPLE NO.	OFF SET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	PL. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING SIEVES 10	40	200	% MOISTURE	% ORGANIC
SS-15	CL	29+00-Y2RAMPB-	0.00-1.60	A-7-6(12)	49	24	26.5	14.3	11.7	48.5	93	76	58	-	-
SS-16	CL	29+00-Y2RAMPB-	4.50-6.00	A-7-5(9)	46	15	22.0	17.8	21.8	38.4	99	86	64	-	-
SS-27	CL	10+00-SR1-	0.00-1.50	A-7-6(10)	67	24	28.6	21.2	9.9	40.4	97	79	53	-	-
SS-25	CL	30+00	0.00-1.50	A-7-6(13)	50	32	26.9	20.0	8.7	44.4	97	80	54	-	-
SS-26	CL	30+00	3.60-5.10	A-7-6(6)	49	20	36.0	19.6	10.1	34.3	96	71	46	-	-

VPT=25+65.00
El = 873.97

Sta. 27+00.00 -Y2-
=
Sta. 21+19.81 -)2LOOPC-

Sta. 27+10.00 -Y2-
=
Sta. 10+00.00 -SR1-

Sta. 27+20.00 -Y2-
=
Sta. 31+37.45 -Y2RAMPC-

PEACHTREE RD
SR 1162

ROADWAY FILL OVER RESIDUAL

RESIDUAL

SS-27
27+10 -Y2-
CL
=
10+00 -SR1-
CL

12 (PI=24)
17
RED-BRN STIFF TO V. STIFF
MOIST MED. PLASTIC
SANDY CLAY (A-7-6)
BT
DRY
(404)

(+)13.5200%

SS-25
SS-26
30+00 -Y2-
CL

16 (PI=32)
13 (PI=20)
RESIDUAL
BRN V. STIFF TO STIFF
MOIST HIGH TO MED. PLASTIC
SILTY SANDY CLAY (A-7-6)
BT
DRY
(404)

-Y2-

BM # 3 ELEV. = 832.22'
RR SPIKE IN 18" MAPLE
CL -Y2- STA. 37+93.23

END GRADE
Sta. 38+25.00 -Y2-
El = 829.62

SR 1162 PEACHTREE RD.
RESIDUAL
ROADWAY FILL OVER RESIDUAL

SEE SHEETS 6 & 19 FOR -Y2- PLAN

ARCADIS G&M
Date=$DATE$ Time: $TIME$
Filename=$FILE$

PROJECT REFERENCE NO.	SHEET NO.
R-2707A	40
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

NOTE:
NO GROUND DTM DATA FROM STA.'S 10+00 -Y4- TO 25+00 -Y4-
BORING ELEVATIONS ASSUMED

BEGIN GRADE
Sta. 12+50.00 -Y4-
El = 906.74

VPC=15+92.16
El = 914.86

PI = 17+00.00
El = 917.43'
K = 169
VC = 216'
DS = 50 MPH

(+)2.3746%

(+)11.0981%

VPT=18+07.84
El = 918.65

BM # 5 ELEV. = 908.11
RR SPIKE IN 28" OAK
CL -Y4- STA. 19+34.59

SS-64
MS-64
SS-65
17+00 -Y4-
CL
9 (PI=21)
4
RESIDUAL
BRN STIFF MOIST MED. PLASTIC SILTY SANDY CLAY (A-7-6)
BRN-TAN-WHITE DENSE DRY CLAYEY SILTY CSE. SAND (A-2-4)
BT DRY (404)

MS-64A
SS-66
19+00 -Y4-
CL
6
17 (PI=37)
RESIDUAL
BRN & GRAY MED. STIFF TO V. STIFF MOIST TO WET MED. TO HIGH PLASTIC SILTY SANDY CLAY (A-7-6,A-7-6)
BT DRY (404)

21+00 -Y4-
CL
6
15
RESIDUAL
BRN & TAN MED. STIFF TO V. STIFF MOIST SILTY F. & CSE. SANDY CLAY (A-7-6, A-7-6)
BT DRY (404)

SS-66
23+00 -Y4-
CL
9
14 (PI=17)
RESIDUAL
BT DRY (404)
RED-BRN-GRAY TO RED-BRN-TAN DRY STIFF MOIST TO DRY MED. PLASTIC SILTY SANDY CLAY (A-7-6, A-7-6)

SEE SHEET 20 FOR -Y4- PLAN

-Y4-

(+)11.0981%

(-)5.6600%

PI = 33+35.00
EL = 935.38'
K = 118
VC = 800
DS = 55 MPH

VPC=29+35.00
El = 930.39

VPT=37+35.00
El = 912.74

SS-69
MS-69A
SS-67
25+00 -Y4-
CL
7 (PI=18)
9 (PI=13)
RED-BRN MED. STIFF MOIST MED. PLASTIC SILTY F. SANDY CLAY (A-7-6)
RESIDUAL
BRN LOOSE MOIST V. MICA LOW PLASTIC CLAYEY SILTY CSE. SAND (A-2-7)
BT DRY (404)

27+00 -Y4-
CL
7
8
BRN MED. STIFF MOIST MED. PLASTIC SILTY F. SANDY CLAY (A-7-6)
BT DRY (404)

29+00 -Y4-
CL
8
10
BRN & GRAY TO RED-BRN-TAN STIFF MOIST MED. PLASTIC SILTY SANDY CLAY (A-7-6)
RESIDUAL
BT DRY (404)

31+00 -Y4-
CL
6
7
RED-BRN MED. STIFF MOIST MED. PLASTIC SILTY SANDY CLAY (A-7-6)
BRN LOOSE MOIST V. MICA LOW PLASTIC CLAYEY SILTY CSE. SAND (A-2-7)
BT DRY (404)

33+00 -Y4-
CL
7
10
RED-BRN MED. STIFF MOIST MED. PLASTIC SILTY SANDY CLAY (A-7-6)
BRN LOOSE TO MED. DENSE MOIST MICA LOW PLASTIC CLAYEY SILTY CSE. SAND (A-2-7)
BT DRY (404)

SS-70
SS-71
SS-72
35+10 -Y4-
15.00 RT.
BRN MED. STIFF TO STIFF MOIST MED. PLASTIC SILTY SANDY CLAY (A-7-6)
RESIDUAL
9
9
11
10
464
19
12
23
19
14
14
24
27
BT
BRN TO BRN-TAN-WHITE LOOSE TO MED. DENSE DRY TO MOIST V. MICA CLAYEY SILTY SAND (A-2-6) TO SILTY F. SAND (A-2-6)

SEE SHEETS 20 & 9 FOR -Y4- PLAN

-Y4-

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL.	PL. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING SIEVES 10	40	200	% MOISTURE	% ORGANIC
SS-64	CL	17+00	0.00-1.50	A-7-6(7)	42	21	27.5	21.6	10.4	40.4	91	75	49	20.6	-
SS-65	CL	17+00	3.50-5.00	A-2-4(0)	33	NP	46.9	28.7	12.2	12.1	83	64	24	-	-
MS-64A	CL	19+00	0.00-1.50											34.4	-
SS-68	CL	19+00	3.50-5.00	A-7-5(28)	78	37	17.2	15.6	18.7	48.5	98	87	69	-	-
SS-66	CL	23+00	3.50-5.00	A-7-6(4)	42	17	30.6	29.5	25.8	14.2	97	81	44	-	-
SS-69	CL	25+00	0.00-1.50	A-7-5(9)	53	18	15.8	34.4	17.5	32.4	98	91	55	29.8	-
SS-67	CL	26+00	3.50-5.00	A-2-7(1)	48	13	41.7	26.1	21.1	12.1	89	63	34	-	-
SS-70	15RT	35+10	4.50-6.00	A-2-5(0)	53	NP	29.5	39.4	18.9	12.1	94	79	34	-	-
SS-71	15RT	35+10	9.50-11.00	A-2-5(0)	56	NP	24.3	61.7	10.9	4.0	97	88	19	-	-
SS-72	15RT	35+10	24.50-26.00	A-2-5(0)	70	NP	29.7	47.3	16.9	6.1	94	78	28	-	-

ARCADIS G&M
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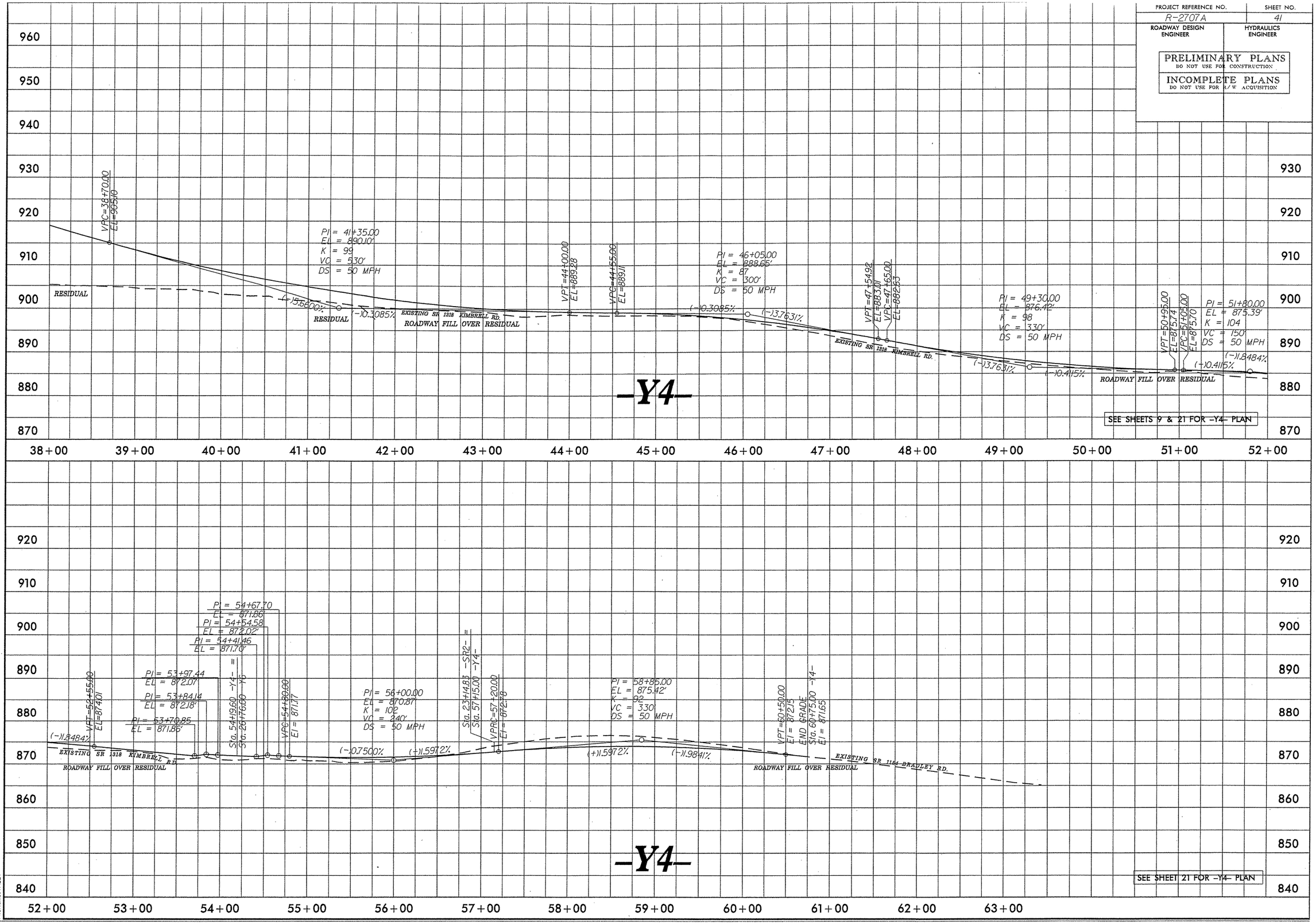
PROJECT REFERENCE NO.	SHEET NO.
R-2707A	41
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION



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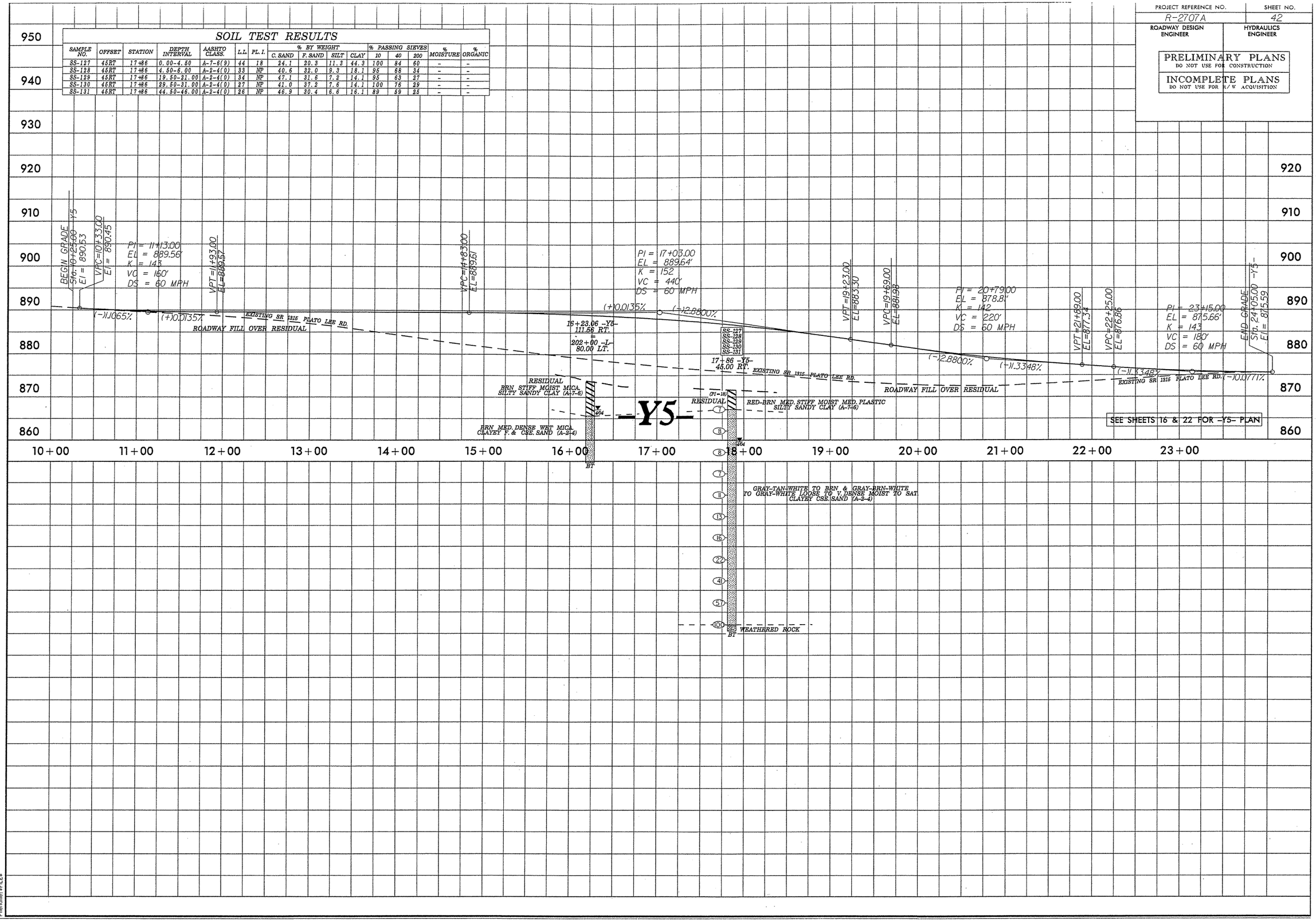
PROJECT REFERENCE NO.	SHEET NO.
R-2707A	42
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	PL. I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-127	45RT	17+86	0.00-4.50	A-7-6(9)	44	18	24.1	20.3	11.3	44.3	100	84	60	-	-
SS-128	45RT	17+86	4.50-6.00	A-2-4(0)	33	NP	40.6	32.0	9.3	18.1	95	68	34	-	-
SS-129	45RT	17+86	19.50-21.00	A-2-4(0)	34	NP	47.1	31.6	7.2	14.1	95	63	27	-	-
SS-130	45RT	17+86	29.50-31.00	A-2-4(0)	27	NP	41.0	37.2	7.6	14.1	100	76	29	-	-
SS-131	45RT	17+86	44.50-46.00	A-2-4(0)	26	NP	46.9	30.4	6.6	16.1	89	59	25	-	-



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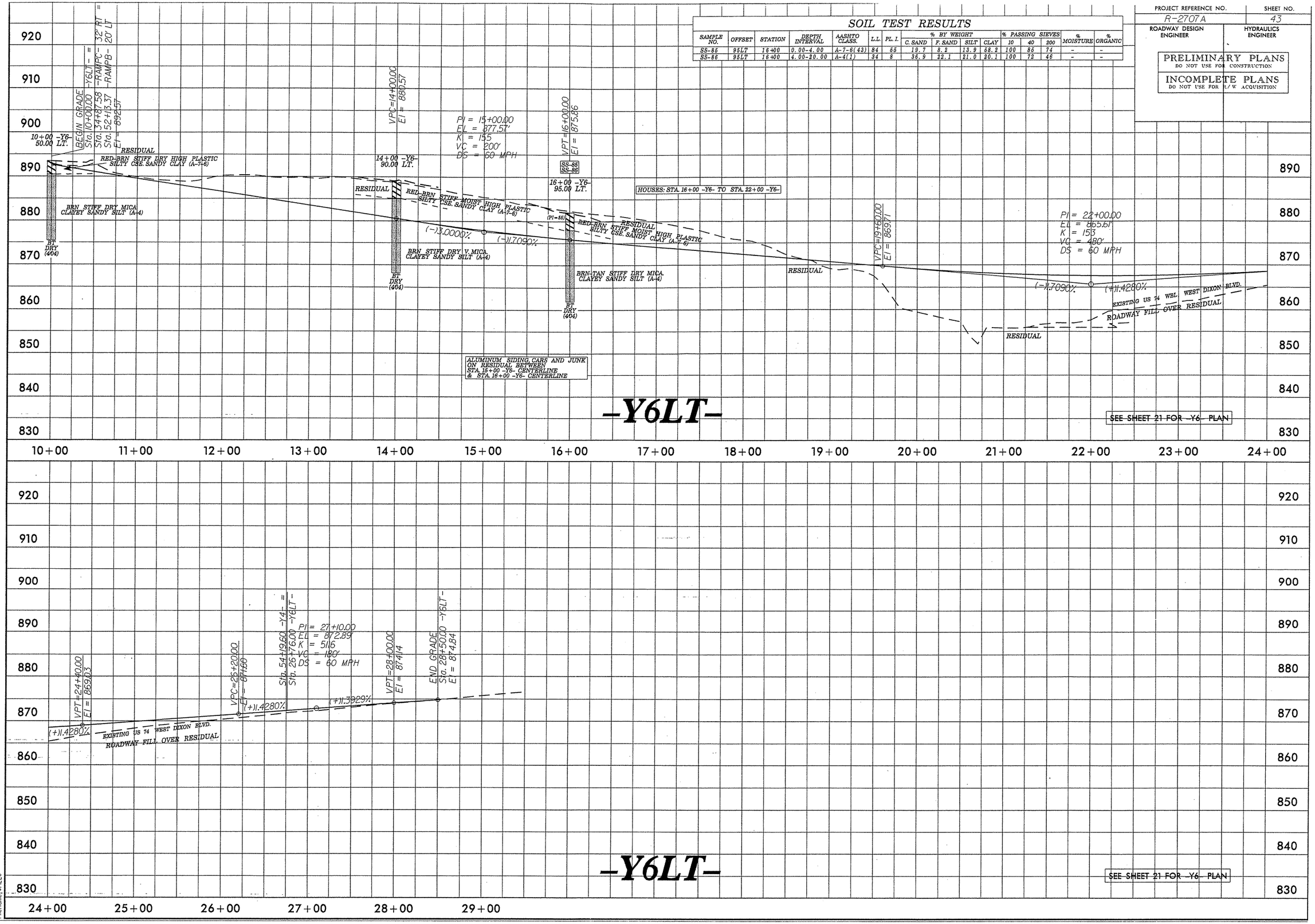
PROJECT REFERENCE NO.	SHEET NO.
R-2707A	43
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	PL. I.	% BY WEIGHT C. SAND	% BY WEIGHT F. SAND	% BY WEIGHT SILT	% BY WEIGHT CLAY	% PASSING SIEVES 10	% PASSING SIEVES 40	% PASSING SIEVES 200	% MOISTURE	% ORGANIC
SS-85	95LT	16+00	0.00-4.00	A-7-6(43)	84	55	19.7	8.2	13.9	58.2	100	86	74	-	-
SS-86	95LT	16+00	4.00-20.00	A-4(1)	34	8	36.9	22.1	21.0	20.1	100	72	46	-	-



ARCADIS G&M
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Filename: $FILE$
Time: $TIME$

PROJECT REFERENCE NO. R-2707A | SHEET NO. 44

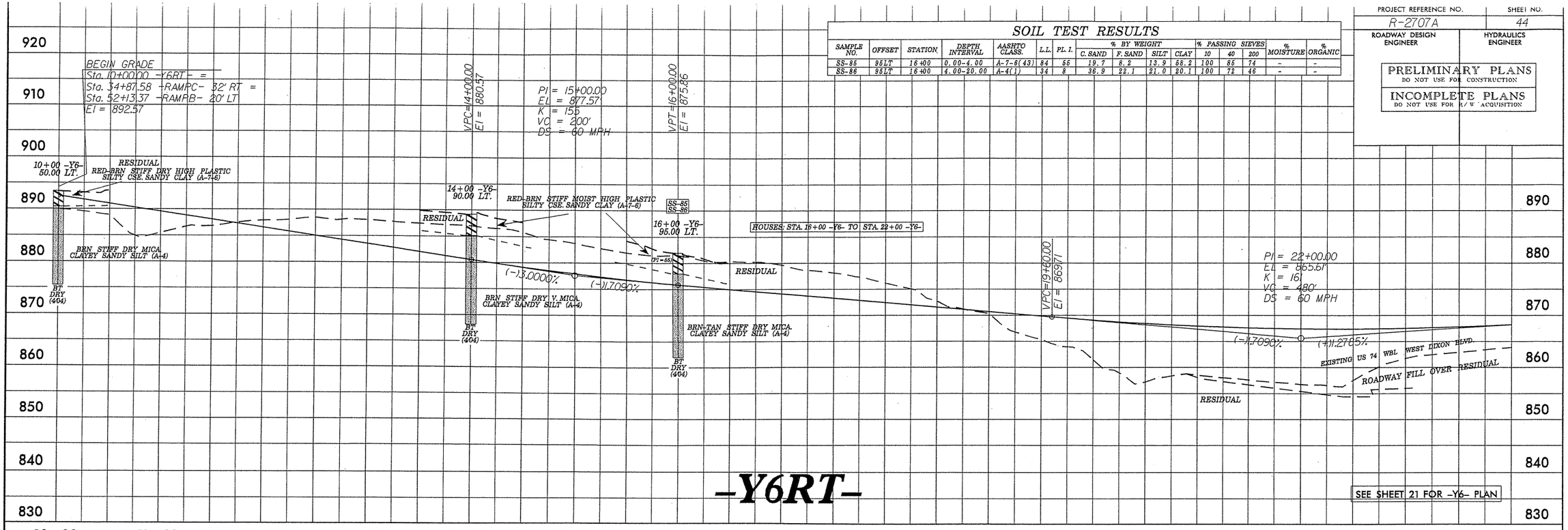
ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

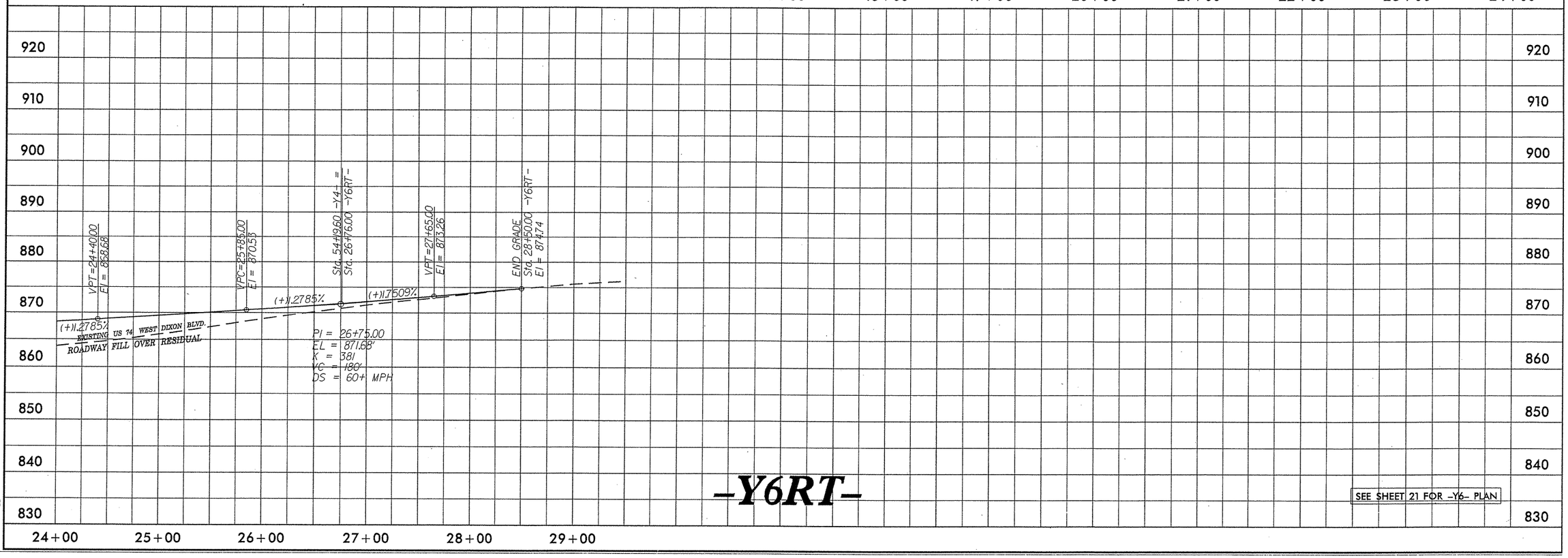
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	PL. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING SIEVES 10	40	200	% MOISTURE	% ORGANIC
SS-85	95LT	16+00	0.00-4.00	A-7-6(43)	64	56	19.7	8.2	13.9	58.2	100	85	74	-	-
SS-86	95LT	16+00	4.00-20.00	A-4(1)	34	8	36.9	22.1	21.0	20.1	100	72	46	-	-





ARCADIS G&M
DGN: DGN
Time: $TIME$
Filename: $FILE$

PROJECT REFERENCE NO.	SHEET NO.
R-2707A	45

ROADWAY DESIGN ENGINEER

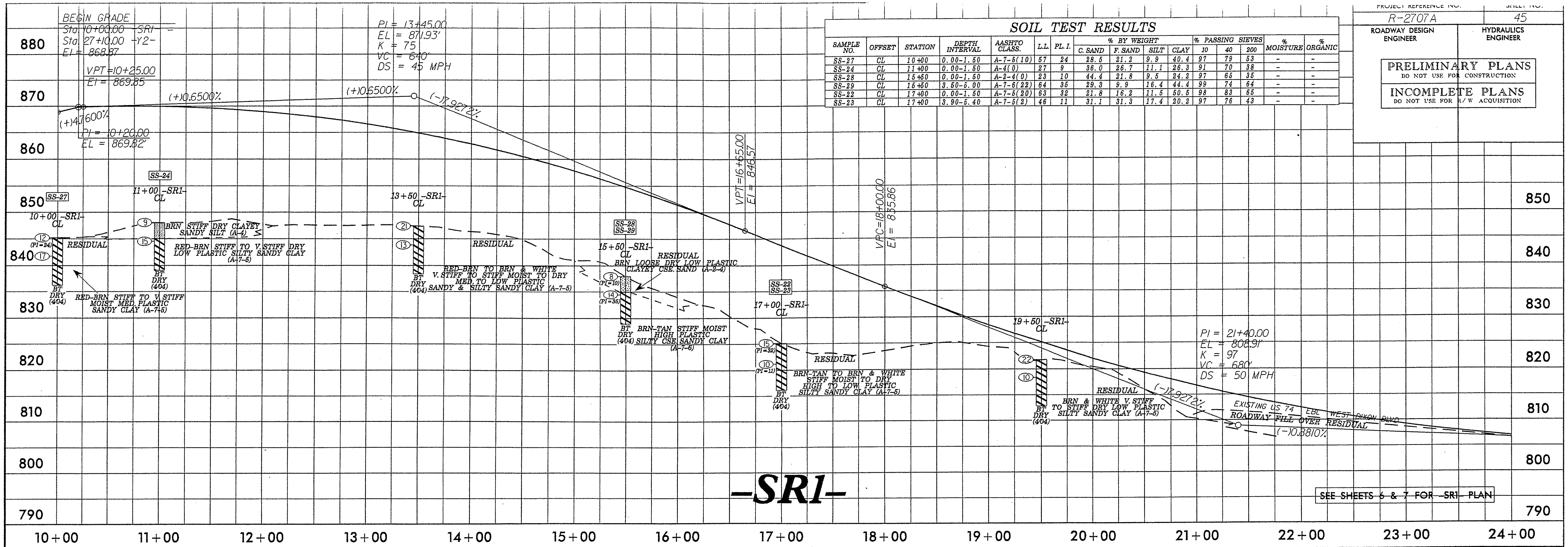
HYDRAULICS ENGINEER

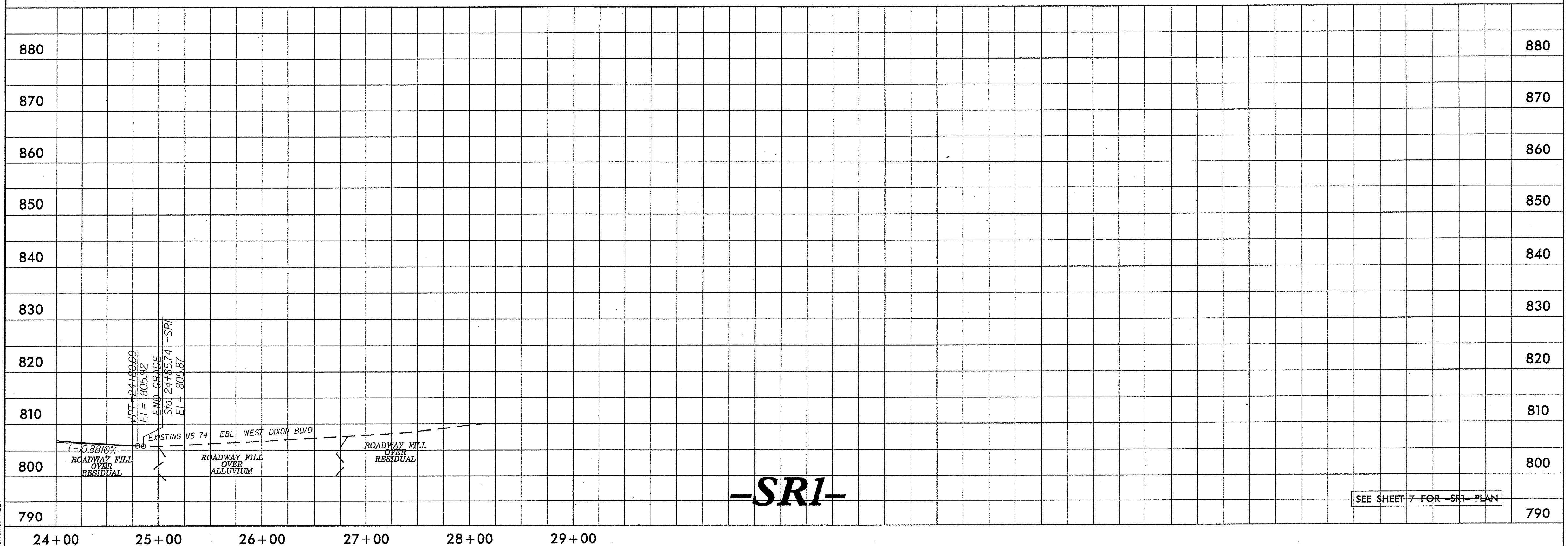
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	PL. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING SIEVES 10	40	200	% MOISTURE	% ORGANIC
SS-27	CL	10+00	0.00-1.50	A-7-5(10)	57	24	28.5	21.2	9.9	40.4	97	79	53	-	-
SS-24	CL	11+00	0.00-1.50	A-4(0)	27	9	36.0	26.7	11.1	26.3	91	70	38	-	-
SS-28	CL	15+50	0.00-1.50	A-2-4(0)	23	10	44.4	21.8	9.5	24.2	97	65	35	-	-
SS-29	CL	15+50	3.50-5.00	A-7-6(22)	64	35	29.3	9.9	16.4	44.4	99	74	64	-	-
SS-22	CL	17+00	0.00-1.50	A-7-5(20)	63	32	21.8	16.2	11.5	50.5	98	83	65	-	-
SS-23	CL	17+00	3.90-5.40	A-7-5(2)	46	11	31.1	31.3	17.4	20.2	97	76	43	-	-





ARCADIS CAAM Date: $DATE$ Time: $TIME$ Filename: $FILE$

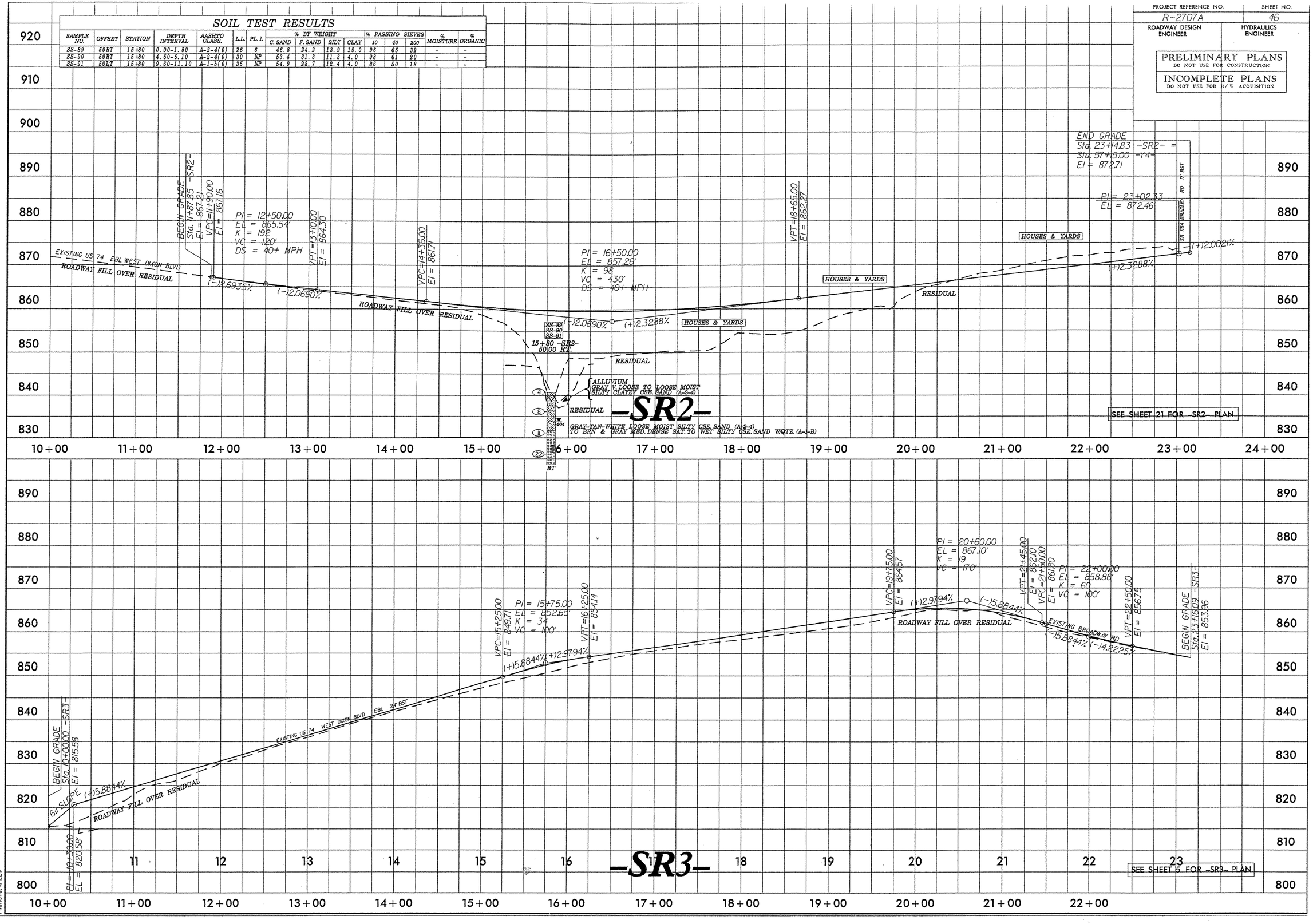
PROJECT REFERENCE NO.	SHEET NO.
R-2707A	46
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	PL. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING SIEVES 10	40	200	% MOISTURE	% ORGANIC
SS-89	50RT	15+80	0.00-1.50	A-2-4(0)	26	6	46.8	24.2	13.9	15.0	96	65	32	-	-
SS-90	60RT	15+80	4.60-6.10	A-2-4(0)	30	NP	53.4	31.3	11.3	4.0	98	61	20	-	-
SS-91	60LT	15+80	9.60-11.10	A-1-b(0)	35	NP	54.9	28.7	12.4	4.0	86	50	18	-	-



ARCADIS G&M
Date=&DATE$ Time: &TIME$
Filename=&FILE$

R-2707A | 47

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

BEGIN GRADE
Sta. 10+00.00 -DET-
El = 882.12

EXISTING SR 1162 PEACHTREE RD.
ROADWAY FILL OVER RESIDUAL

RESIDUAL

VPC=13+10.00
El = 877.82

(-)1.38781%

PI = 14+10.00
EL = 876.43'
K = 194
VC = 200'

(-)2.41751%

VPT =15+10.00
El = 874.01

SS-16
SS-16
16+09.93 -DET-
57.59 LT.
=
29+00 -Y2RAMPB-
CL

8 (PI=24)
10 (PI=15)
BT DRY (404)

RESIDUAL
RED-BRN STIFF MOIST TO DRY MED. TO LOW PLASTIC SILTY SANDY CLAY (A-7-6, A-7-5)

RESIDUAL

ALFALFA PE SOIL

VPC=20+08.00
El = 861.91

PI = 21+08.00
EL = 859.56'
K = 87
VC = 200'

43+00 -L-
50.00 LT.

11
12

-6.1098%

(-)2.41751%

VPT=22+08.00
El = 859.45

RESIDUAL

BT DRY (404)

RED-BRN STIFF MOIST HIGH TO LOW PLASTIC SILTY SANDY CLAY (A-7-6, A-7-5)

US 74 WBL WEST DIXON BLVD

US 74 EBL WEST DIXON BLVD

ROADWAY FILL

PI = 22+09.76
EL = 859.44'
PI = 22+21.91
EL = 859.84'
PI = 22+34.5
EL = 859.41'
PI = 22+63.17
EL = 859.49'
PI = 22+84.16
EL = 860.33'
PI = 23+09.82
EL = 859.24'

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	PL. I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-15	CL	29+00-Y2RAMPB	0.00-1.50	A-7-6(12)	49	24	25.5	14.3	11.7	48.5	93	76	58	-	-
SS-16	CL	29+00-Y2RAMPB	4.50-6.00	A-7-5(9)	46	16	22.0	17.8	21.8	38.4	99	86	64	-	-

-DET-

SEE SHEETS 2-H & 2-I FOR -DET- PLAN

PI = 26+45.00
EL = 845.56'
K = 117
VC = 200'

VPC=25+45.00
El = 849.64

(-)4.08081%

(-)2.37137%

VPT=27+45.00
El = 843.19

RESIDUAL

EXISTING SR 1162 PEACHTREE RD.
ROADWAY FILL OVER RESIDUAL

END GRADE
Sta. 28+84.77 -DET-
El = 839.87

-DET-

SEE SHEET 2-I FOR -DET- PLAN

ARCADIS G&M
Design Data
Filenames: $FILE$

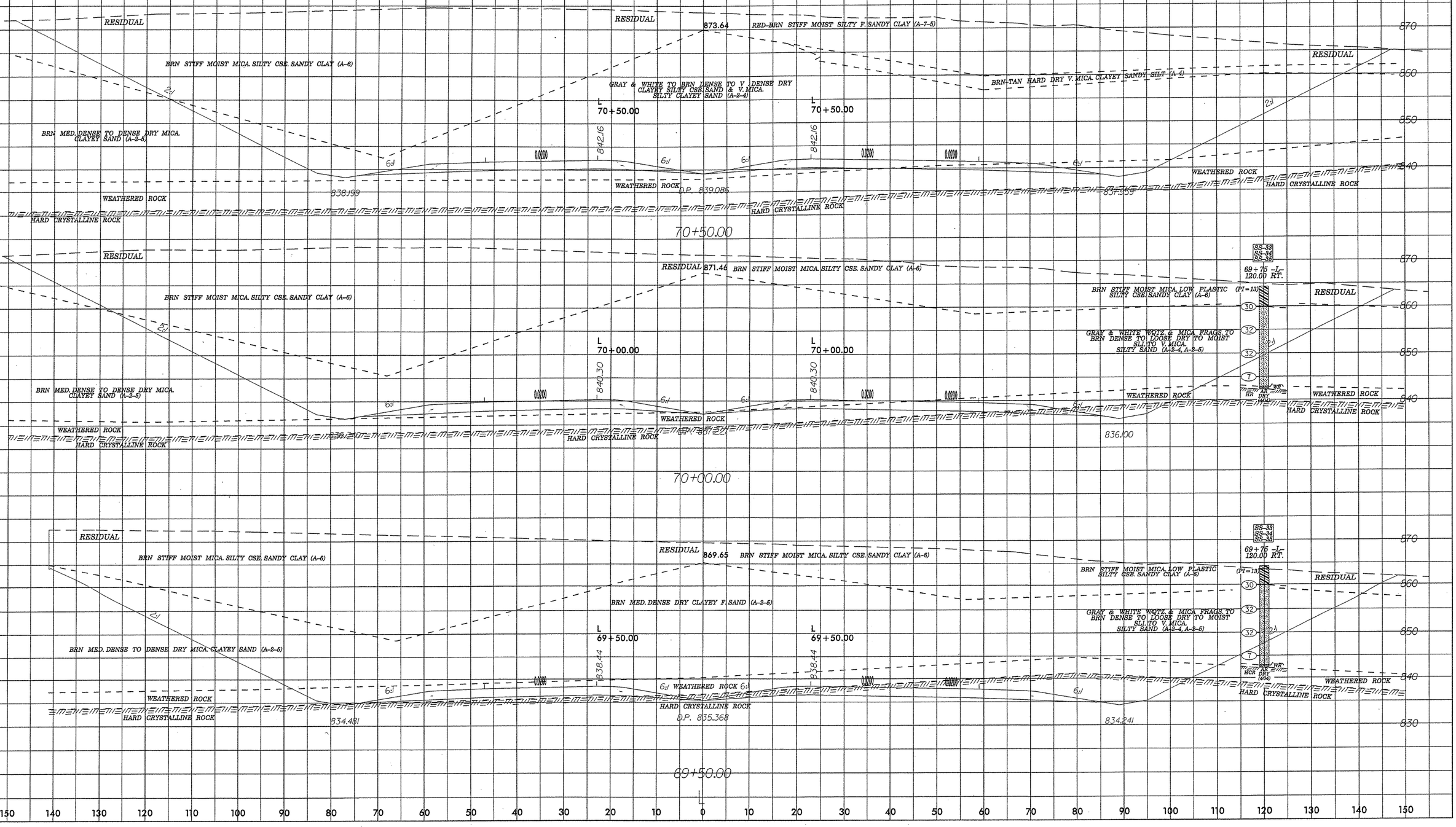
Time: $TIME$

15+00 -RAMPB- CL
15+00 -RAMPB- 50.00 RT.
RESIDUAL
BRN MED. DENSE DRY MICA. CLAYEY F. SAND (A-2-5)
WEATHERED ROCK
HARD CRYSTALLINE ROCK
RAMPB
14+94.78
AR DRY (404)
822.15
0.0704
6:1
818.807
HARD CRYSTALLINE ROCK
RESIDUAL BRN & RED-BRN STIFF MOIST MICA LOW PLASTIC SILTY CSE. SANDY CLAY (A-6)
L
66+00.00
841.24
GRAY-BRN-WHITE TO BRN MED. DENSE TO DENSE DRY MICA. SILTY CSE. & F. SAND (A-2-4, A-2-5)
825.43
825.43
0.0000
6:1
D.P. 822.355
HARD CRYSTALLINE ROCK
RESIDUAL
0.0200
2:1
ROADWAY FILL
821.228
HARD CRYSTALLINE ROCK
ROADWAY FILL
RESIDUAL
HARD CRYSTALLINE ROCK
FT DRY (404)
66+00.00
RESIDUAL
BRN STIFF MOIST MICA SILTY CSE. SANDY CLAY (A-6)
RAMPB
14+42.97
2:1
GRAY-BRN-WHITE TO BRN MED. DENSE TO DENSE DRY MICA. SILTY CSE. & F. SAND (A-2-4, A-2-5)
HARD CRYSTALLINE ROCK
821.05
0.0722
6:1
817.702
L
65+50.00
837.23
RED-BRN STIFF MOIST LOW PLASTIC SILTY CSE. SANDY CLAY (A-6)
823.64
823.64
BRN MED. DENSE DRY MICA. CLAYEY SAND (A-2-5)
0.0000
6:1
D.P. 820.563
HARD CRYSTALLINE ROCK
RESIDUAL
0.0200
2:1
ROADWAY FILL
819.436
HARD CRYSTALLINE ROCK
ROADWAY FILL
RESIDUAL
HARD CRYSTALLINE ROCK
65+50.00
65+00 -L- CL
RESIDUAL
RAMPB
13+91.68
820.03
0.0142
6:1
816.666
HARD CRYSTALLINE ROCK
L
65+00.00
832.52
RED-BRN STIFF MOIST LOW PLASTIC SILTY CSE. SANDY CLAY (A-6)
821.98
821.98
BRN MED. DENSE DRY MICA. CLAYEY SAND (A-2-5)
0.0000
6:1
D.P. 818.905
HARD CRYSTALLINE ROCK
RESIDUAL
0.0200
2:1
ROADWAY FILL
817.779
HARD CRYSTALLINE ROCK
ROADWAY FILL
RESIDUAL
HARD CRYSTALLINE ROCK
FT DRY (404)
65+00.00
13+60 -RAMPB- CL
RESIDUAL
RAMPB
13+40.80
BRN STIFF MOIST SILTY CSE. SANDY CLAY (A-6)
819.62
0.0756
6:1
815.639
BRN MED. DENSE DRY MICA. CLAYEY F. SAND (A-2-5)
L
64+50.00
RESIDUAL
RED-BRN STIFF MOIST LOW PLASTIC SILTY CSE. SANDY CLAY (A-6)
820.46
820.46
BRN MED. DENSE DRY MICA. CLAYEY SAND (A-2-5)
0.0000
6:1
D.P. 817.382
HARD CRYSTALLINE ROCK
RESIDUAL
0.0200
2:1
ROADWAY FILL
816.255
HARD CRYSTALLINE ROCK
ROADWAY FILL
RESIDUAL
HARD CRYSTALLINE ROCK
FT DRY (404)
64+50.00
NR
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
840
830
820

52/61

SOIL TEST RESULTS

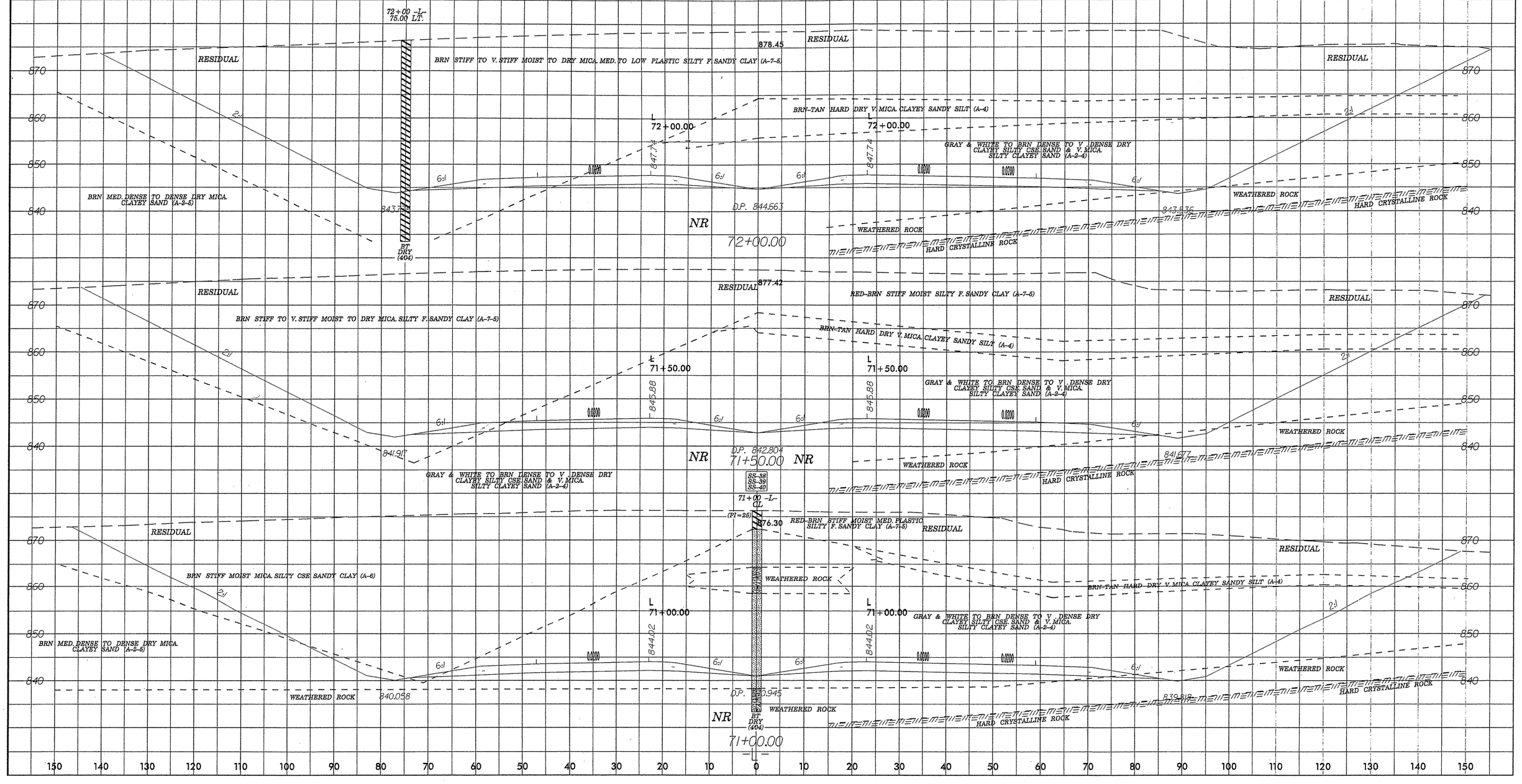
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	PL. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING SIEVES 10	40	200	% MOISTURE	% ORGANIC
SS-33	120RT	69+75	0.00-4.40	A-6(3)	33	13	33.9	18.4	17.4	30.3	90	67	47	-	-
SS-34	120RT	69+75	4.40-6.90	A-2-4(0)	29	NP	44.6	29.6	16.7	9.1	95	64	31	-	-
SS-35	120RT	69+75	19.40-20.90	A-2-5(0)	47	NP	42.4	41.6	7.9	8.1	98	82	18	-	-



53/61

SOIL TEST RESULTS

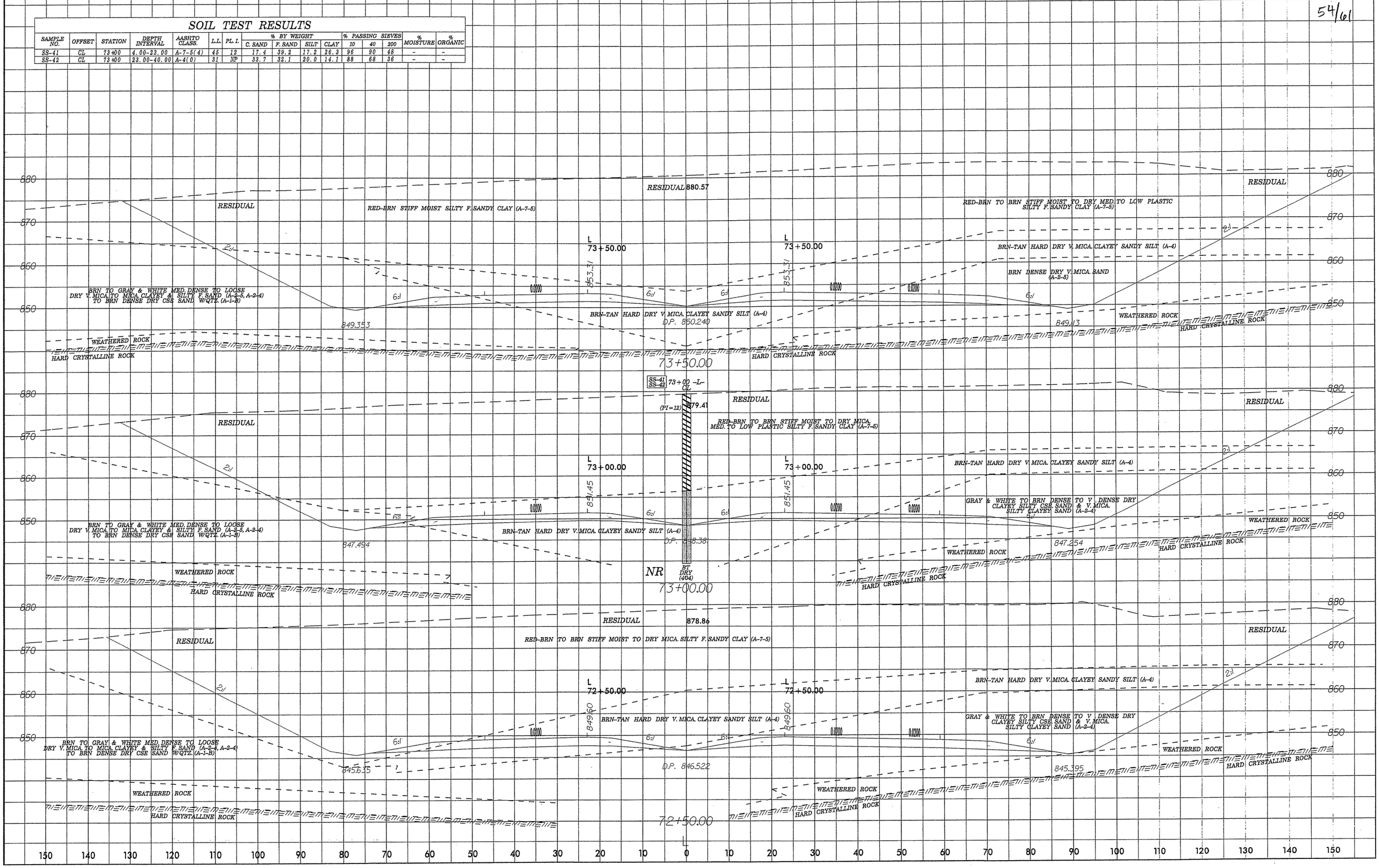
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	PL. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING SIEVES 10	40	200	% MOISTURE	% ORGANIC
SS-38	CL	71+00	0.00-4.00	A-7-6(14)	56	26	18.8	23.6	11.1	46.5	99	92	60	-	-
SS-39	CL	71+00	4.00-12.00	A-2-4(0)	27	NP	44.7	23.9	17.2	14.1	83	53	30	-	-
SS-40	CL	71+00	18.00-28.00	A-2-4(0)	40	NP	33.9	37.4	12.5	16.2	95	78	81	-	-



54/61

SOIL TEST RESULTS

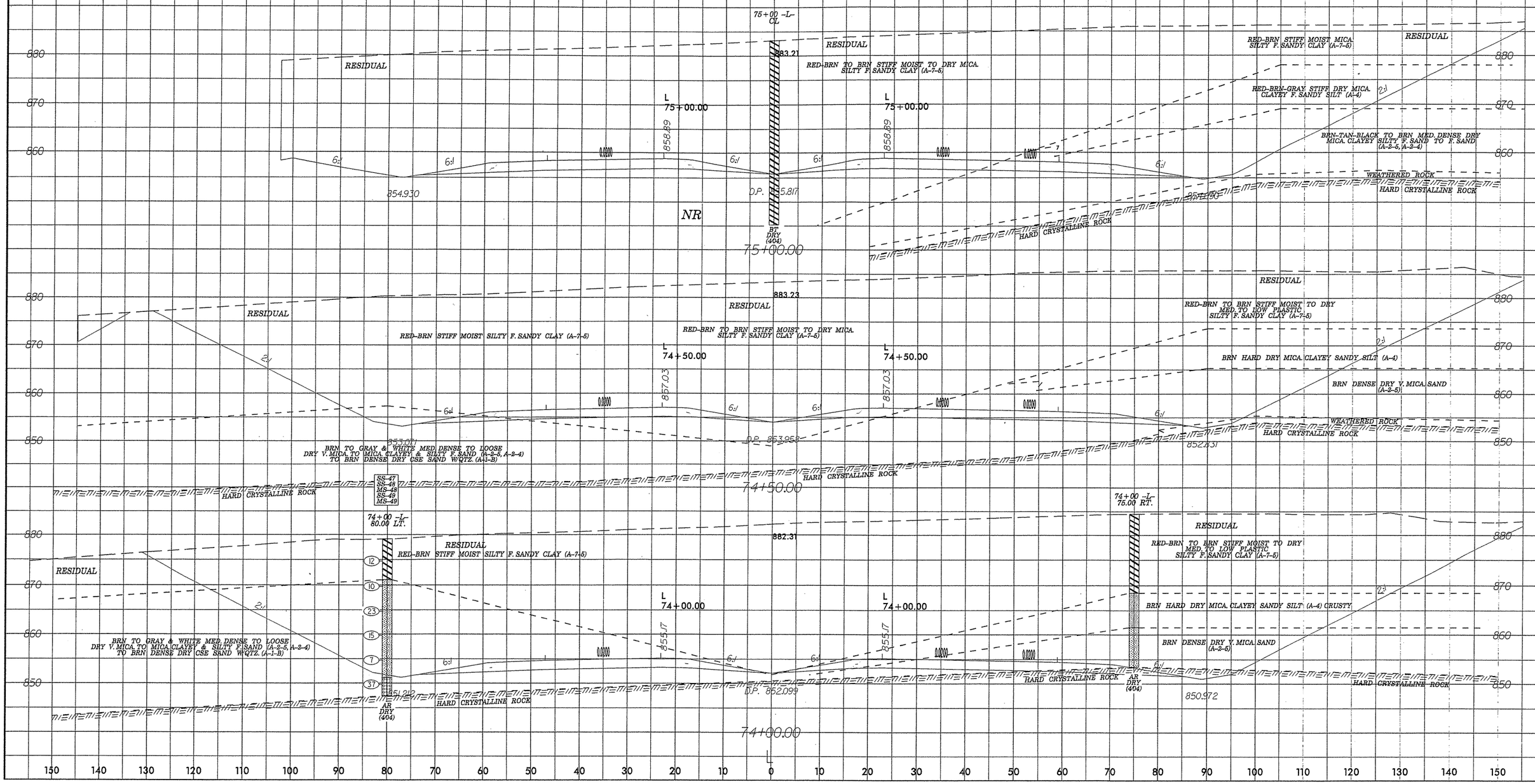
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	PL. I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-41	CL	73+00	4.00-23.00	A-7-5(4)	45	12	17.4	39.2	17.2	26.3	96	90	48	-	-
SS-42	CL	73+00	23.00-40.00	A-4(0)	31	NP	33.7	32.1	20.0	14.1	88	68	36	-	-



55/61

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	PL. I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-47	80 LT	74+00	9.40-10.90	A-2-5(0)	45	NP	32.0	49.1	4.8	14.2	100	90	23	-	-
SS-48	80 LT	74+00	14.40-16.90	A-2-4(0)	33	NP	25.9	60.1	10.0	4.0	99	92	19	-	-
MS-48	80 LT	74+00	24.40-26.90											30.2	-
SS-49	80 LT	74+00	29.40-30.90	A-1-b(0)	35	NP	54.6	34.0	9.4	2.0	56	34	9	14.3	-

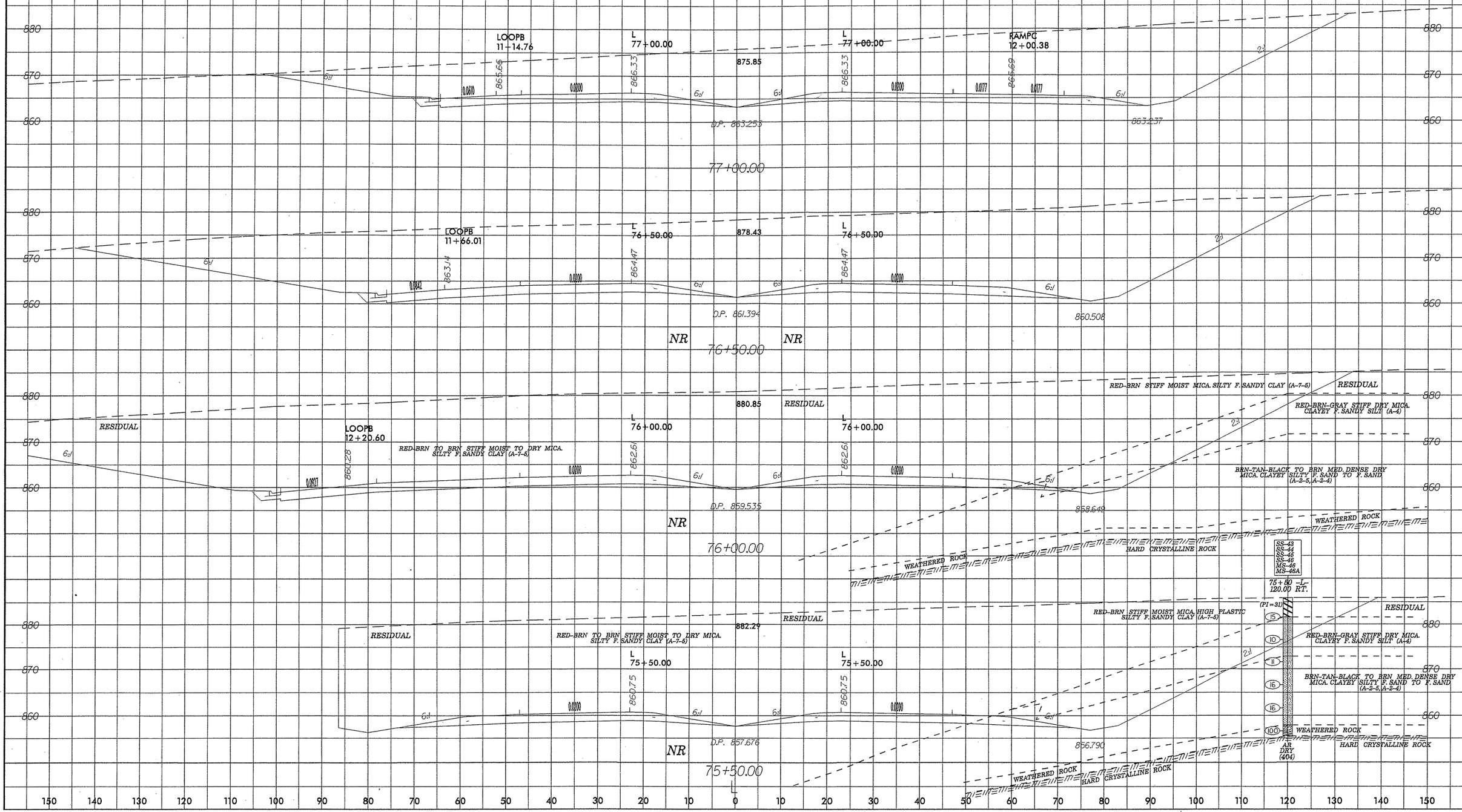


PROJ. REFERENCE NO.	SHEET NO.
R-2707A	X-37

56/61

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	PL. I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-43	120RT	75+60	0.00-4.30	A-7-5(25)	62	31	9.3	17.0	11.0	62.7	100	97	75	-	-
SS-44	120RT	75+60	4.30-5.80	A-4(0)	40	NP	16.0	40.0	21.7	22.2	100	94	51	-	-
SS-45	120RT	75+60	14.30-16.80	A-2-5(0)	63	NP	22.4	61.2	16.3	10.1	96	86	33	-	-
SS-46	120RT	75+60	24.30-25.90	A-2-4(0)	40	NP	34.2	53.2	8.6	4.0	100	90	19	22.2	-
MS-46A	120RT	75+60	29.30-29.70											13.4	-



150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

5716

860 850 840 830 820

16+00 -RAMPB- CL

RESIDUAL

RESIDUAL
RED-BRN STIFF MOIST SILTY CSE. SANDY CLAY (A-6)

859.86

RED-BRN MED. DENSE MOIST CLAYEY F. SAND (A-2-6)

2:1

WEATHERED ROCK
HARD CRYSTALLINE ROCK

6:1

WEATHERED ROCK

AR DRY (404)

HARD CRYSTALLINE ROCK

821.082

16+35.00

16+00 -RAMPB- CL

855.00

RESIDUAL

RED-BRN MED. DENSE MOIST CLAYEY F. SAND (A-2-6)

2:1

WEATHERED ROCK
HARD CRYSTALLINE ROCK

WEATHERED ROCK

AR DRY (404)

HARD CRYSTALLINE ROCK

819.535

15+85.00

15+00 -RAMPB- CL

RESIDUAL

849.53

BRN MED. DENSE DRY MICA. CLAYEY F. SAND (A-2-6)

2:1

WEATHERED ROCK
HARD CRYSTALLINE ROCK

WEATHERED ROCK

AR DRY (404)

6:1

WEATHERED ROCK
HARD CRYSTALLINE ROCK

818.222

15+37.00

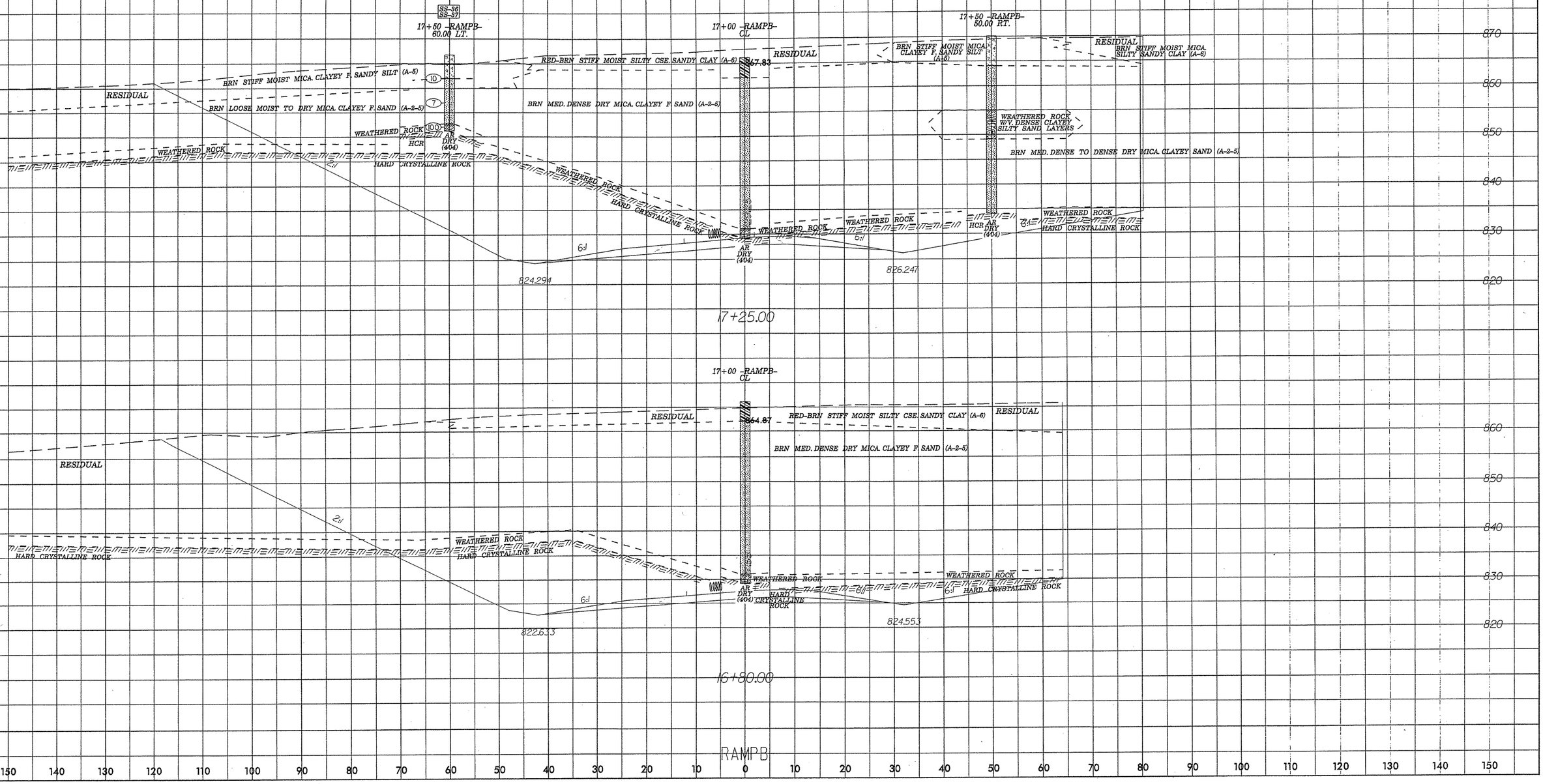
RAMPB

PROJ. REFERENCE NO.	SHEET NO.
R2707A	X-115

58/61

SOIL TEST RESULTS

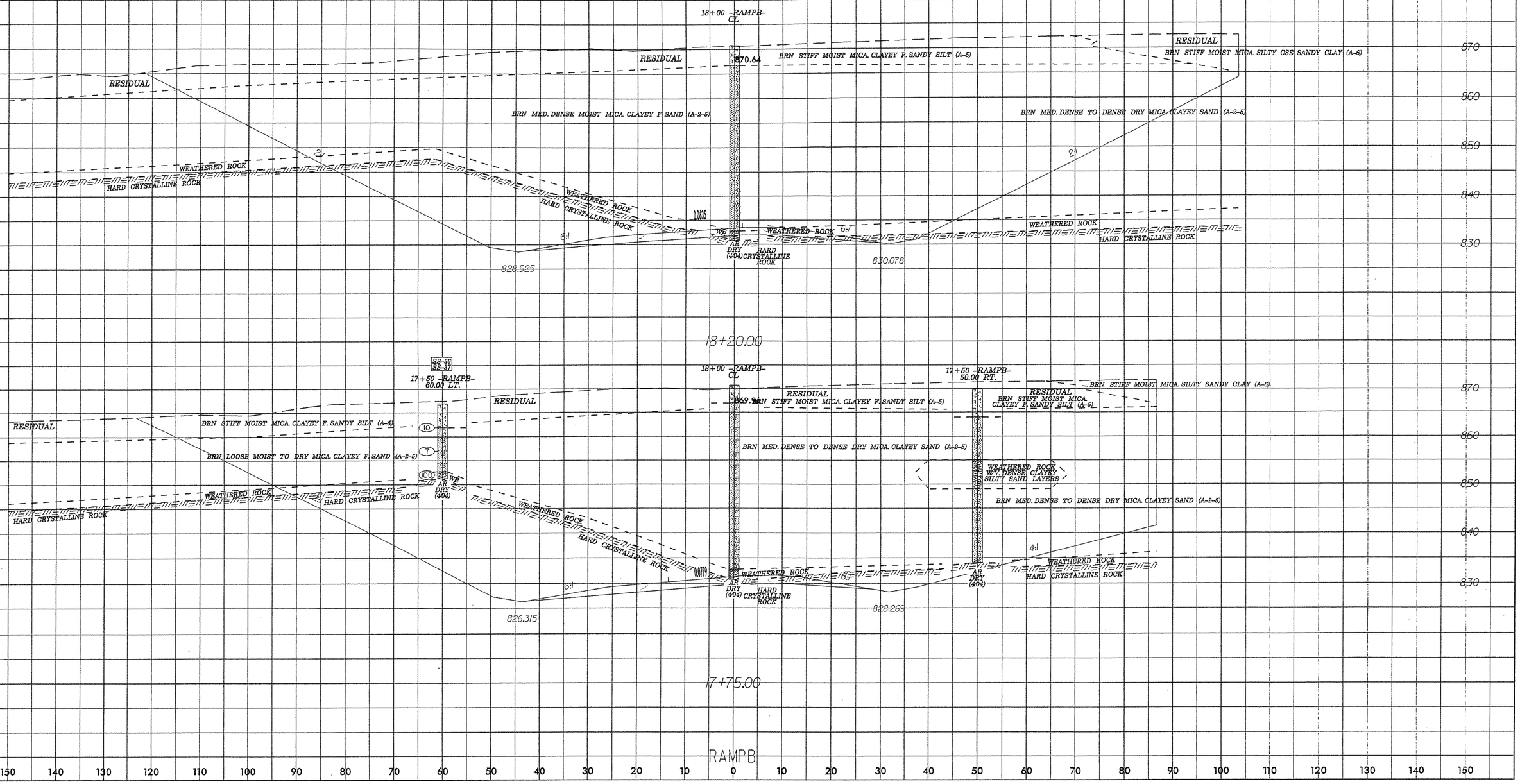
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	PL. I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-36	60LT	17+60	0.00-4.70	A-5(2)	46	10	20.8	36.6	10.3	32.3	96	89	45	-	-
SS-37	60LT	17+60	4.70-6.20	A-2-6(0)	43	NP	32.5	43.4	6.9	18.2	98	88	27	-	-



59/61

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	PL. I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-36	60LT	17+60	0.00-4.70	A-5(2)	46	10	20.8	36.6	10.3	32.3	96	89	45	-	-
SS-37	60LT	17+60	4.70-6.20	A-2-5(0)	43	NP	32.5	43.4	5.9	18.2	98	88	27	-	-



0 10

PROJ. REFERENCE NO. R2707A

SHEET NO. X-117

60/61

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

870 860 850 840 830

19+00 -RAMPB- 60.00 LT.

RESIDUAL

BRN STIFF MOIST MICA. CLAYEY F. SANDY SILT (A-5)

BRN MED. DENSE DRY TO MOIST MICA. CLAYEY F. SAND (A-2-5)

WEATHERED ROCK

HARD CRYSTALLINE ROCK

AR DRY (404)

866.97

837.9

833.656

834.291

19+00 -RAMPB- 60.00 RT.

BRN STIFF MOIST MICA. CLAYEY F. SANDY SILT (A-5)

BRN MED. DENSE TO DENSE DRY MICA. CLAYEY F. SAND (A-2-5)

2:1

6:1

19+15.00

19+00 -RAMPB- 60.00 LT.

RESIDUAL

870.12

BRN STIFF MOIST MICA. CLAYEY F. SANDY SILT (A-5)

BRN MED. DENSE DRY TO MOIST MICA. CLAYEY F. SAND (A-2-5)

2:1

6:1

835.74

831.83

832.325

19+00 -RAMPB- 60.00 RT.

RESIDUAL

BRN STIFF MOIST MICA. CLAYEY F. SANDY SILT (A-5)

BRN MED. DENSE TO DENSE DRY MICA. CLAYEY F. SAND (A-2-5)

AR HCR DRY (404)

18+70.00

RAMPB

PROJ. REFERENCE NO. R2707A | SHEET NO. X-118

6 1/61

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

860 850 840

861.69

2:1

6:1

0.017

841.388

841.155

NR

20+55.00

870 860 850 840

20+00 –RAMPB– CL

RESIDUAL

BRN STIFF MOIST MICA. CLAYEY F. SANDY SILT (A-5)

863.28

BRN MED. DENSE DRY MICA. CLAYEY F SAND (A-2-5)

838.892

838.944

BT DRY (404)

HARD CRYSTALLINE ROCK

20+10.00

20+00 –RAMPB– CL

RESIDUAL

BRN STIFF MOIST MICA. CLAYEY F. SANDY SILT (A-5)

864.08

BRN MED. DENSE DRY MICA. CLAYEY F SAND (A-2-5)

836.737

HARD CRYSTALLINE ROCK

19+65.00

RAMPB

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150