ID. R-2707A

PROJECT: C203027

CONTENTS:

LINE	STATION	SHEET NUMBERS PLAN	PROFILE	X-SECTS.
-L-	5+03.30 to 215+00.00	4-17	23-31	48-56
-RAMPB-	10+00.00 to 52+13.37	7,8,21	32,33	57-61
-LOOPB-	10+00.00 to 19+63.93	8	33	
-RAMPC-	10+00.00 to 34+87.58	8,21	34	
-RAMPD-	10+00.00 to 21+04.26	9,21	35	
-RAMPCON-	10+00.00 to 18+62.20	8,21	35	
-Y2LOOPB-	10+00.00 to 20+10.15	6	36	
-Y2LOOPC-	10+00.00 to 21+19.81	6	36	
-Y2RAMPB-	10+00.00 to 29+47.25	5,6	37	
-Y2RAMPC-	10+00.00 to 31+34.19	5,6	38	
-Y2-	10+27.00 to 38+25.00	18,6,19	39	
-Y4-	12+50.00 to 60+75.00	20,9,21	40,41	
-Y5-	10+25.00 to 24+05.00	16,22	42	
-Y6-	10+00.00 to 28+50.00	21	43,44	
-SR1-	10+00.00 to 24+85.74	6,7	45	
-SR2-	11+87.85 to 23+14.83	21	46	
-SR3-	10+00.00 to 23+16.09	5	46	
-DET-	10+00.00 to 28+84.77	6	47	

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

ROADWAY SUBSURFACE INVESTIGATION

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2707AB	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.FS4	NHF-0074(142)	CONST.

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.

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

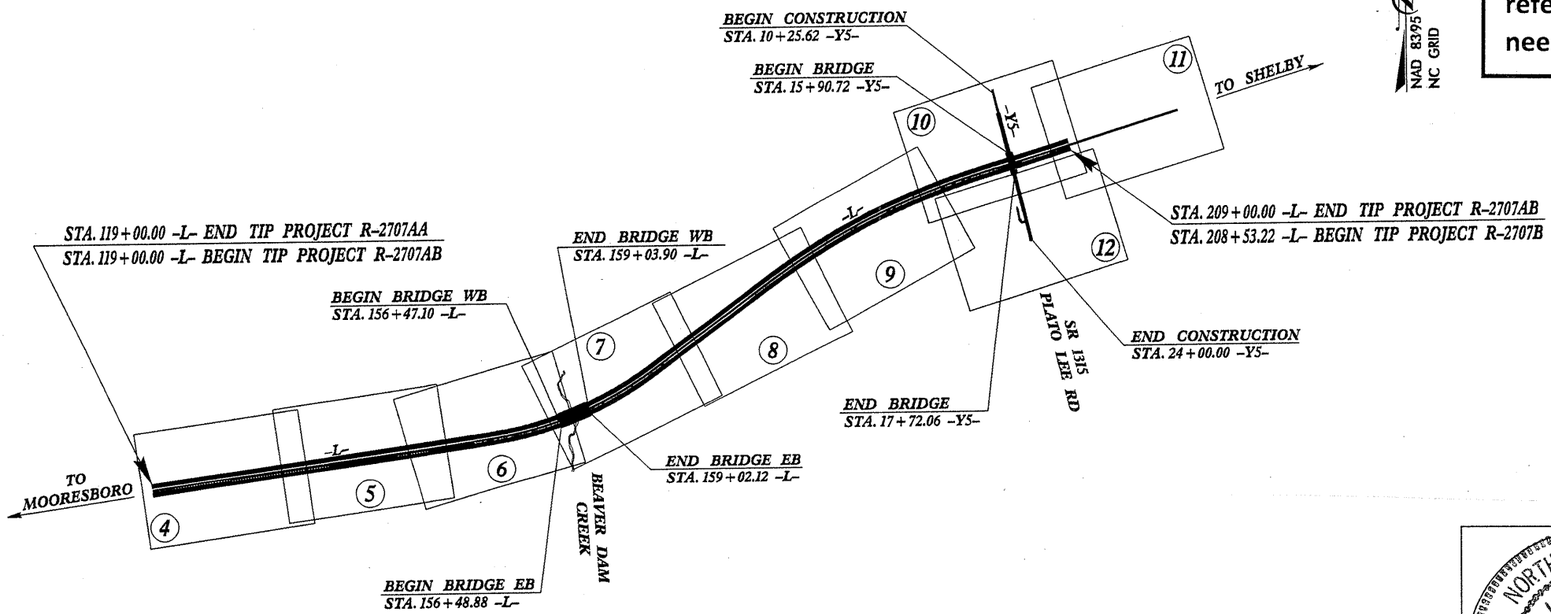
F.A. PROJECT NHF-74(14)

COUNTY CLEVELAND

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

INVENTORY

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



NAD 83/95 NC GRID

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

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

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

NORTH CAROLINA LICENSED SEAL 1104 GEOLOGIST CLINTON B. LITTLE

2-10-05

SEAL

SIGNATURE

DRAWN BY: J.K. McCLURE

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 #40 #200	50 MX 30 MX 15 MX	50 MX 25 MX	51 MN 10 MX	35 MX	35 MX	35 MX	35 MX	36 MN	36 MN	36 MN	36 MN	GRANULAR SOILS	SILT-CLAY SOILS	MUCK, PEAT
LIQUID LIMIT PLASTIC INDEX	6 MX		N.P.	40 MX 10 MX	41 MN 10 MX	40 MX 11 MN	41 MN 11 MN	40 MX 10 MX	41 MN 10 MX	40 MX 11 MN	41 MN 11 MN	SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER		HIGHLY ORGANIC SOILS
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/FT²)
GENERALLY GRANULAR MATERIAL (NON-COHESIVE)	VERY LOOSE LOOSE MEDIUM DENSE DENSE VERY DENSE	<4 4 TO 10 10 TO 30 30 TO 50 >50	N/A
GENERALLY SILT-CLAY MATERIAL (COHESIVE)	VERY SOFT SOFT MEDIUM STIFF STIFF VERY STIFF HARD	<2 2 TO 4 4 TO 8 8 TO 15 15 TO 30 >30	<0.25 0.25 TO 0.5 0.5 TO 1 1 TO 2 2 TO 4 >4

TEXTURE OR GRAIN SIZE

U.S. STD. SIEVE SIZE	4	10	40	60	200	270
OPENING (MM)	4.76	2.0	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	- MOIST - (M)	SOLID; AT OR NEAR OPTIMUM MOISTURE
OM — 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	OTHER MATERIAL	
TRACE OF ORGANIC MATTER	2 - 3%	3 - 5%	TRACE	1 - 10%
LITTLE ORGANIC MATTER	3 - 5%	5 - 12%	LITTLE	10 - 20%
MODERATELY ORGANIC	5 - 10%	12 - 20%	SOME	20 - 35%
HIGHLY ORGANIC	>10%	>20%	HIGHLY	35% AND ABOVE

GROUND WATER

- WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING.
- STATIC WATER LEVEL AFTER 24 HOURS.
- PW — PERCHED WATER, SATURATED ZONE OR WATER BEARING STRATA
- SPRING OR 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 OPT DMT VST PMT — TEST BORING
- AUGER BORING
- CORE BORING
- MW — MONITORING WELL
- PIEZOMETER INSTALLATION
- SLOPE INDICATOR INSTALLATION
- SPT N-VALUE
- REF — SPT REFUSAL

SAMPLE DESIGNATIONS

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

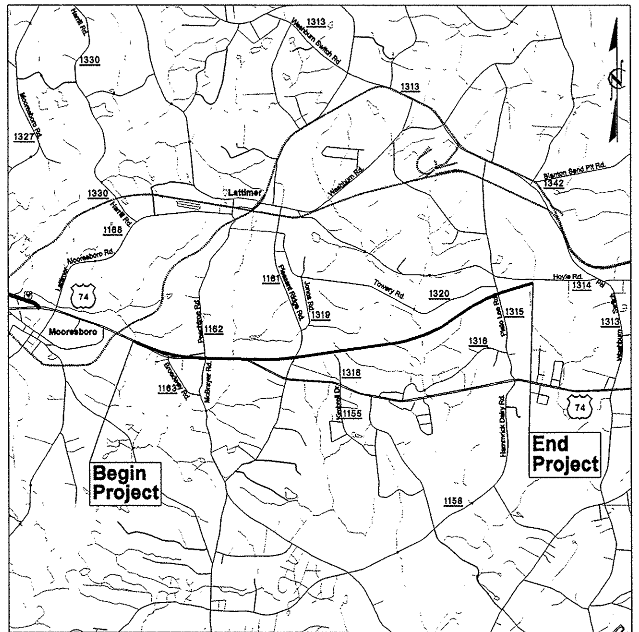
NOTES:

REVISED 09/15/00

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



VICINITY MAP

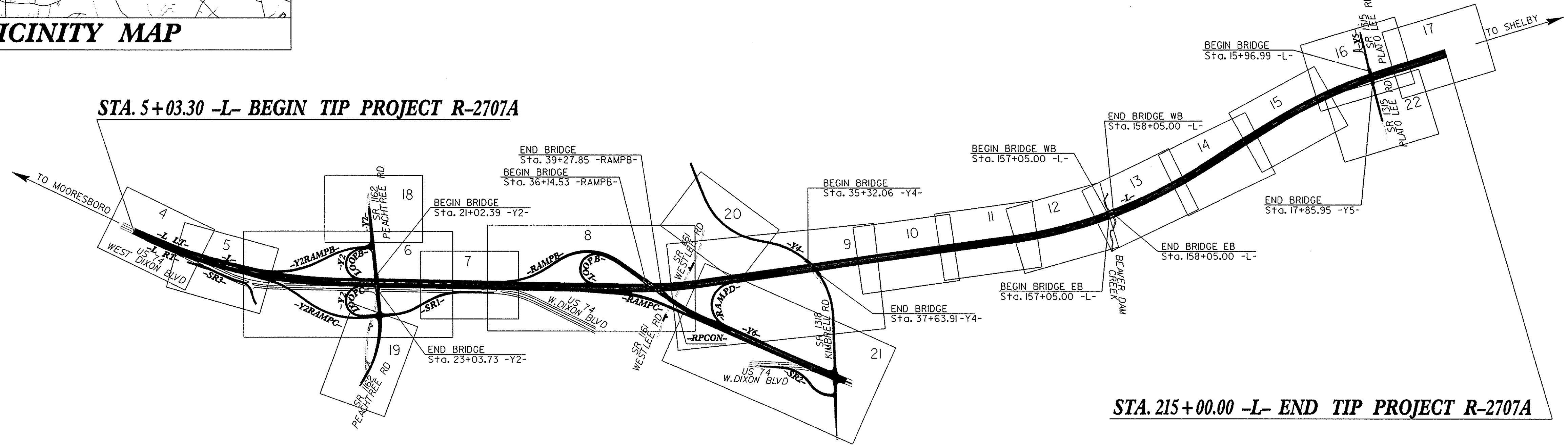
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

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

NAD 83/95



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: April 5, 2013
STATE PROJECT NUMBER: R-2707AB | CHECKED BY: | SHEET: 1 OF 2

STATION	STATION	TOTAL EXCAV. (UNCL.)	ROCK EXCAV.	UNDERCUT EXCAV.	UNSUIT. EXCAV.	SUITABLE EXCAV.	TOTAL EMB.	ROCK EMB.	EARTH EMB.	EMB. + 15%	BORROW	ROCK	SUITABLE WASTE	UNSUIT. WASTE	TOTAL WASTE
SUMMARY #1															
-L-															
119+00.00	149+00.00	53,370				53,370	60,915		60,915	70,052	16,682		0		0
TOTAL SUMMARY #1		**53,370**				**53,370**	**60,915**		**60,915**	**70,052**	**16,682**		**0**		**0**
SUMMARY #2															
-L-															
149+00.00	156+47.10 (Bridge)	105				105	86,038		86,038	98,944	98,839		0		0
TOTAL SUMMARY #2		**105**				**105**	**86,038**		**86,038**	**98,944**	**98,839**		**0**		**0**
SUMMARY #3															
-L-															
159+03.90 (Bridge)	189+00.00	226,635				226,635	84,050		84,050	96,658	0		129977		129,977
TOTAL SUMMARY #3		**226,635**				**226,635**	**84,050**		**84,050**	**96,658**	**0**		**129,977**		**129,977**
SUMMARY #4															
-L Left-															
189+00.00	209+00.00	215,862				215,862	1412		1412	1624	0		214,238		214,238
-Y5-															
10+50.00	15+90.72 (Bridge)	316				316	4,318		4,318	4,966	4,650		0		0
-Y5-															
17+72.06 (Bridge)	24+00.00	18				18	10,444		10,444	12,011	11,993		0		0
TOTAL SUMMARY #4		**216,196**				**216,196**	**16,174**		**16,174**	**18,601**	**16643**		**214,238**		**214,238**
SUBTOTAL SUMMARY #1, #2,#3, & #4		496,306				496,306	247,177		247,177	284,255	132,164		344,215		344,215
TOTALS		496,306				496,306	247,177		247,177	284,255	132,164		344,215		344,215

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	TOTAL EXCAV. (UNCL.)	ROCK EXCAV.	UNDERCUT EXCAV.	UNSUIT. EXCAV.	SUITABLE EXCAV.	TOTAL EMB.	ROCK EMB.	EARTH EMB.	EMB. + 15%	BORROW	ROCK	SUITABLE WASTE	UNSUIT. WASTE	TOTAL WASTE
WASTE TO REPLACE BORROW											-132,164		-132,164		-132,164
LOSS DUE TO CLEARING & GRUBBING		-5,000				-5,000							-5,000		-5,000
GRAND TOTALS		**491,306**				**491,306**					**0**		**207,051**		**207,051**
SAY		**492,000**													

Estimated Shallow Undercut = 1,000 CY.
Estimated Shoulder Borrow = 1,000 CY
Estimated DDE = 1,404 CY
Estimated Undercut = 3,500 CY

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.

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
-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'

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,

JP Rogers

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

cc: Michael Holder, PE
Division 12 Engineer

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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

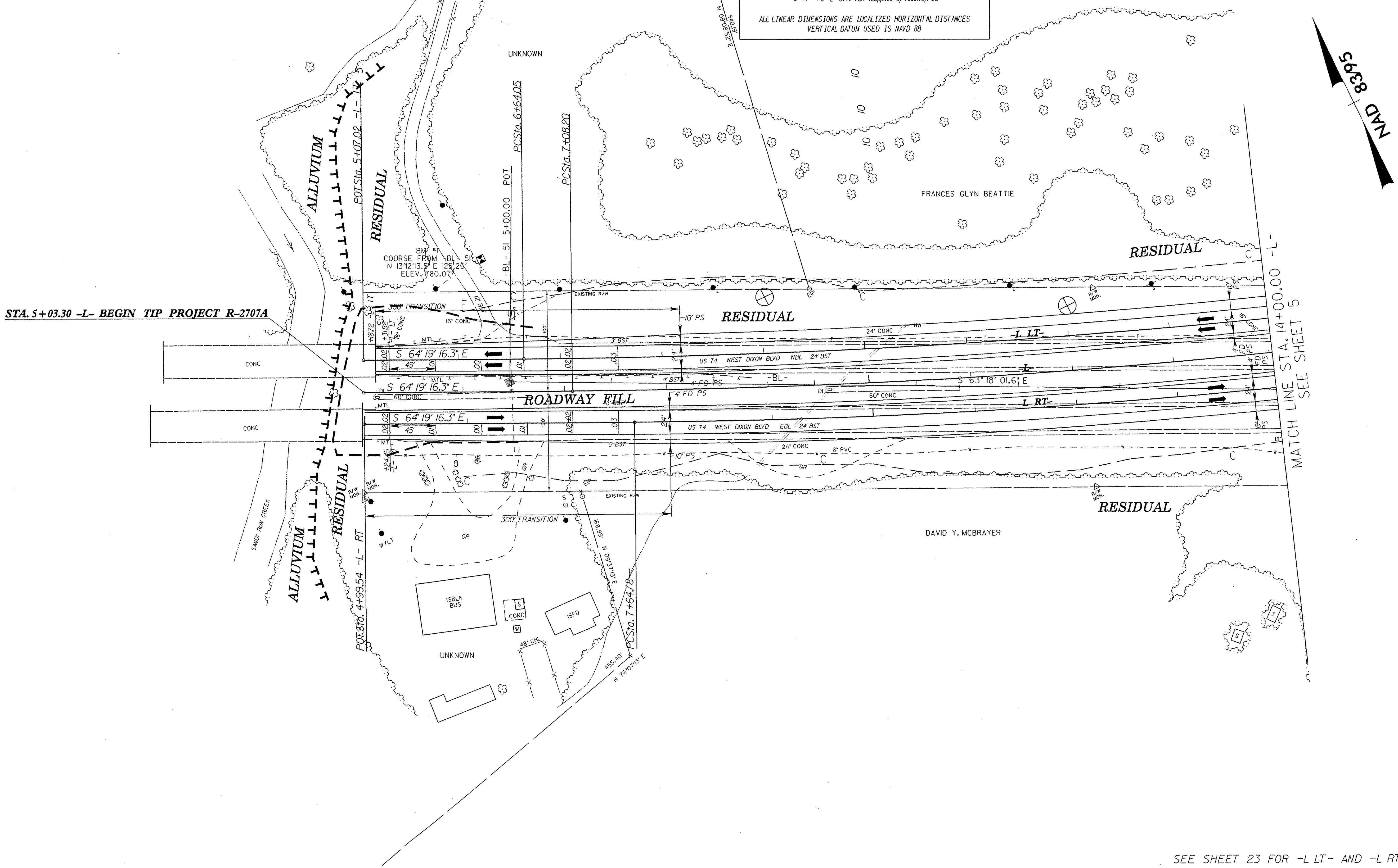
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L-	-L LT-	-L RT-
PI Sta 22+80.18	PI Sta 10+82.45	PI Sta 11+32.77
△ = 24° 35′ 29.4″ (LT)	△ = 6° 21′ 03.5″ (LT)	△ = 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



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

REVISIONS

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

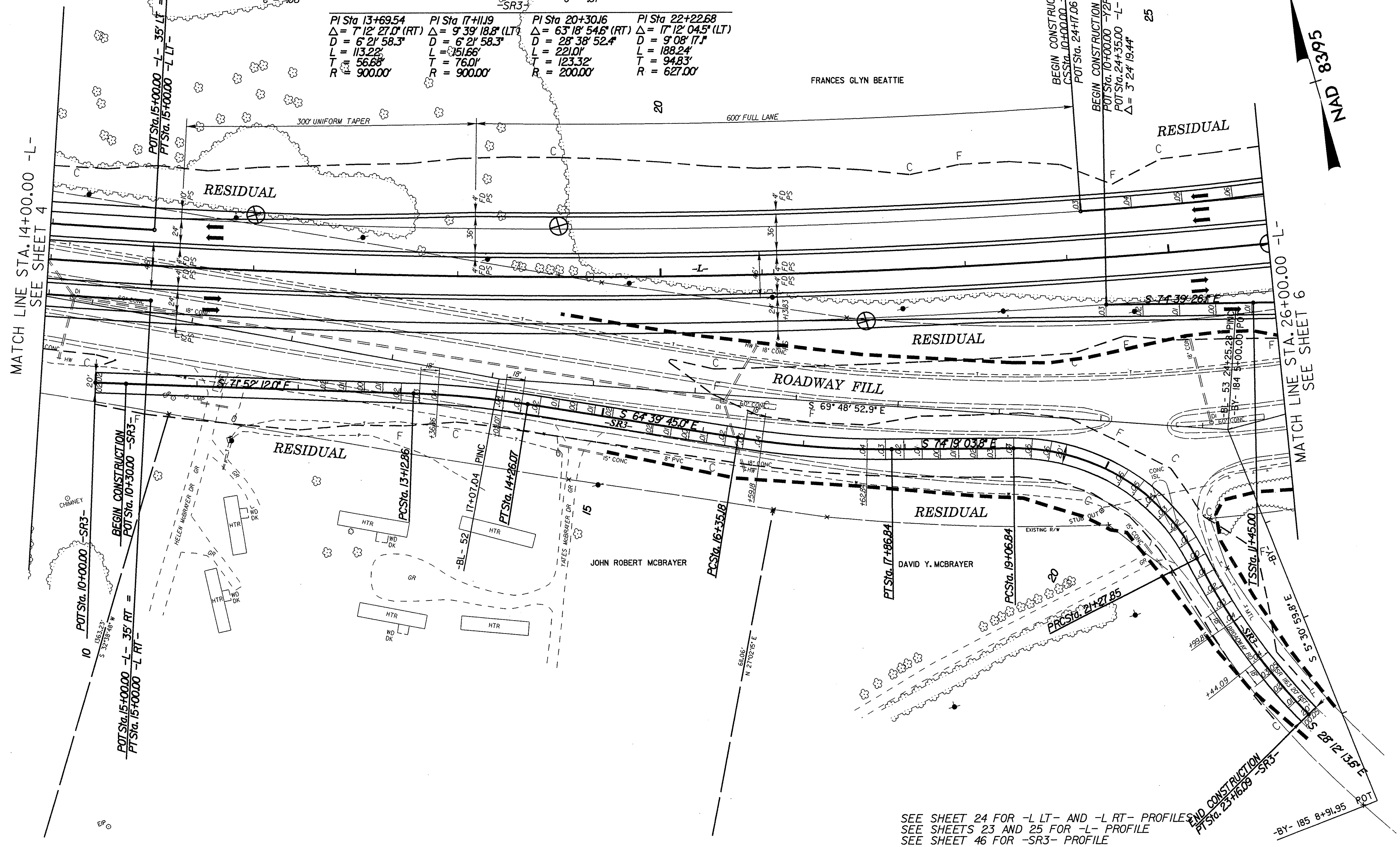
REVISIONS

-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'

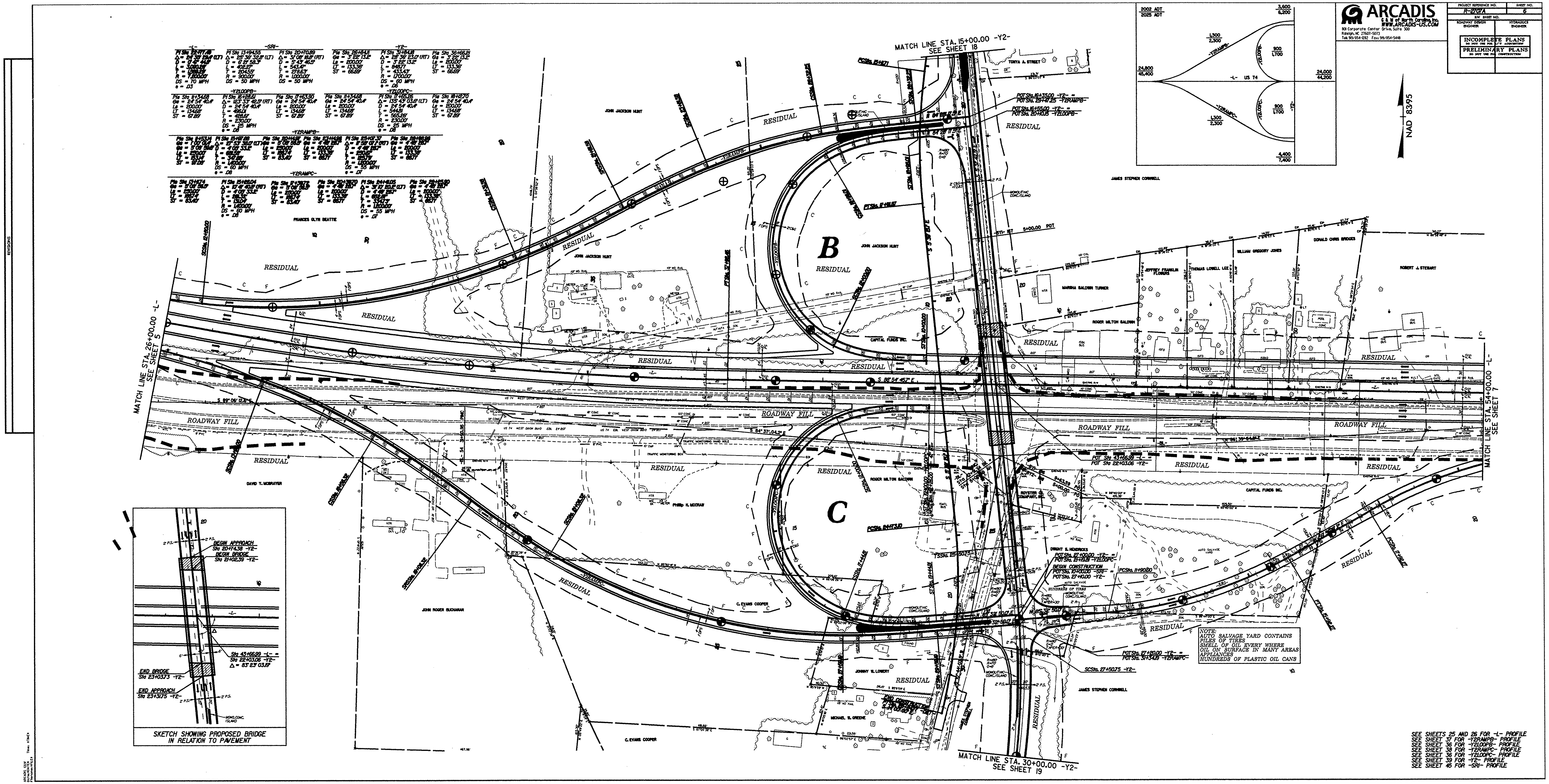
-Y2RAMPC-
PIs Sta 13+11.74 Θs = 5° 06' 56.5" Ls = 250.00' LT = 166.74' ST = 83.40'
PI Sta 15+26.04 Δ = 10° 41' 40.8" (RT) D = 4° 05' 33.2" L = 261.32' T = 131.04' R = 1,400.00' DS = 60 MPH e = .08
PIs Sta 17+39.72 Θs = 5° 06' 56.5" Ls = 250.00' LT = 166.74' ST = 83.40'
PIs Sta 20+39.70 Θs = 4° 46' 28.7" 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

ARCADIS G&M Time: $TIME$
Date: $DATE$
Filename: $FILE$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801 Corporate Center Drive, Suite 300
Raleigh, NC 27607-5073
Tel: 919/854-1282 Fax: 919/854-5448
PROJECT REFERENCE NO. R-2707A
SHEET NO. 6
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
2002 ADT
2025 ADT
3,600 / 6,200
1,300 / 2,300
-Y2RAMPB-
-Y2LOOPB-
900 / 1,700
24,800 / 45,400
-L- US 74
24,000 / 44,200
-Y2RAMPC-
-Y2LOOPC-
-Y2-
4,400 / 7,400
NAD 83/95
-L-
PI Sta 22+17.49
Δ = 24° 38' 29.4" (LT)
D = 0° 47' 44.8"
L = 3,080.88'
T = 1,569.69'
R = 7,200.00'
DS = 70 MPH
e = .03
-SR1-
PI Sta 13+94.55
Δ = 25° 36' 32.8" (LT)
D = 6° 21' 58.3"
L = 402.27'
T = 204.55'
R = 900.00'
DS = 50 MPH
PI Sta 20+70.89
Δ = 31° 08' 18.8" (RT)
D = 5° 43' 46.5"
L = 543.47'
T = 278.63'
R = 1,000.00'
DS = 50 MPH
-Y2-
PIs Sta 26+84.11
Θs = 3° 22' 13.2"
Ls = 200.00'
LT = 133.36'
ST = 66.69'
PI Sta 31+84.18
Δ = 28° 36' 23.0" (RT)
D = 3° 22' 13.2"
L = 848.77'
T = 433.43'
R = 1,700.00'
DS = 60 MPH
e = .06
PIs Sta 36+66.21
Θs = 3° 22' 13.2"
Ls = 200.00'
LT = 133.36'
ST = 66.69'
-Y2LOOPB-
PIs Sta 11+34.68
Θs = 24° 54' 40.4"
Ls = 200.00'
LT = 134.68'
ST = 67.89'
PI Sta 16+28.61
Δ = 123° 33' 42.5" (RT)
D = 24° 54' 40.4"
L = 496.01
T = 428.61'
R = 230.00'
DS = 25 MPH
e = .08
PIs Sta 17+63.90
Θs = 24° 54' 40.4"
Ls = 200.00'
LT = 134.68'
ST = 67.89'
-Y2LOOPC-
PIs Sta 11+34.68
Θs = 24° 54' 40.4"
Ls = 200.00'
LT = 134.68'
ST = 67.89'
PI Sta 17+65.26
Δ = 135° 43' 03.6" (LT)
D = 24° 54' 40.4"
L = 544.81
T = 565.26'
R = 230.00'
DS = 25 MPH
e = .08
PIs Sta 18+12.70
Θs = 24° 54' 40.4"
Ls = 200.00'
LT = 134.68'
ST = 67.89'
-Y2RAMPB-
PI Sta 15+97.88
Δ = 27° 53' 38.0" (LT)
D = 4° 09' 33.2"
L = 681.58'
T = 347.88'
R = 1,400.00'
DS = 60 MPH
e = .08
PI Sta 25+07.37
Δ = 11° 58' 07.2" (RT)
D = 4° 46' 28.7"
L = 250.67'
T = 125.79'
R = 1,200.00'
DS = 55 MPH
e = .07
-Y2RAMPC-
PI Sta 15+68.04
Δ = 10° 41' 40.8" (RT)
D = 4° 09' 33.2"
L = 261.32'
T = 131.04'
R = 1,400.00'
DS = 60 MPH
e = .08
PI Sta 24+41.05
Δ = 31° 10' 20.2" (LT)
D = 4° 46' 28.7"
L = 652.61'
T = 334.73'
R = 1,200.00'
DS = 55 MPH
e = .07
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
POT Sta. 16+35.00 -Y2- = POT Sta. 29+47.25 -Y2RAMPB-
POT Sta. 16+55.00 -Y2- = POT Sta. 20+10.15 -Y2LOOPB-
POT Sta 43+66.99 -L- = POT Sta 22+03.06 -Y2-
POT Sta. 27+00.00 -Y2- = POT Sta. 21+19.81 -Y2LOOPC-
BEGIN CONSTRUCTION
POT Sta. 10+00.00 -SR1- = POT Sta. 27+10.00 -Y2-
PCSta. 11+90.00
POT Sta. 27+20.00 -Y2- = POT Sta. 31+34.19 -Y2RAMPC-
SCSta. 27+50.75 -Y2-
B
C
RESIDUAL
ROADWAY FILL
S 88° 54' 45.7" E
S 89° 06' 12.6" E
S 84° 37' 04.2" E
N 86° 39' 54.8" E
JOHN JACKSON HUNT
FRANCES GLYN BEATTIE
DAVID Y. MCBRAYER
JOHN ROGER BUCHANAN
PHILLIP H. MCCRAW
C. EVANS COOPER
ROGER MILTON BALDWIN
JOHNNY W. LOWERY
MICHAEL W. GREENE
JAMES STEPHEN CORNWELL
CAPITAL FUNDS INC.
ROYSTER OIL COMPANY, INC.
DWIGHT S. HENDRICKS
MARSHA BALDWIN TURNER
JEFFREY FRANKLIN FLOWERS
THOMAS LOWELL LEE
WILLIAM GREGORY JONES
DONALD CHRIS BRIDGES
ROBERT J. STEWART
TONYA A. STREET
AUTO SALVAGE YARD
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
BEGIN APPROACH Sta 20+74.38 -Y2-
BEGIN BRIDGE Sta 21+02.39 -Y2-
Sta 43+66.99 -L- = Sta 22+03.06 -Y2-
Δ = 83° 23' 03.19"
END BRIDGE Sta 23+03.73 -Y2-
END APPROACH Sta 23+31.75 -Y2-
MONO. CONC. ISLAND
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
REVISIONS

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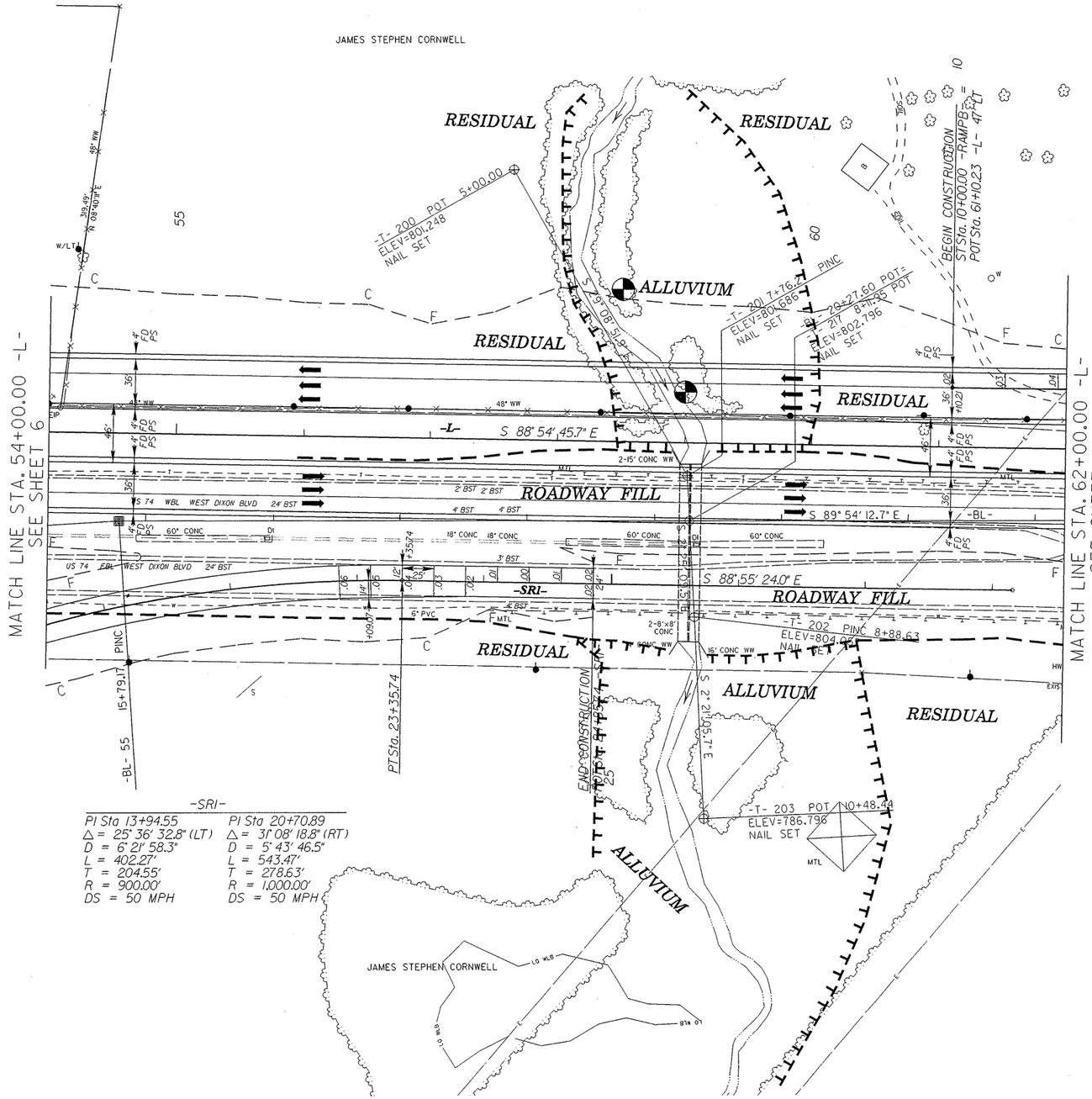
PROJECT REFERENCE NO.	SHEET NO.
R-2707A	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83

REVISIONS

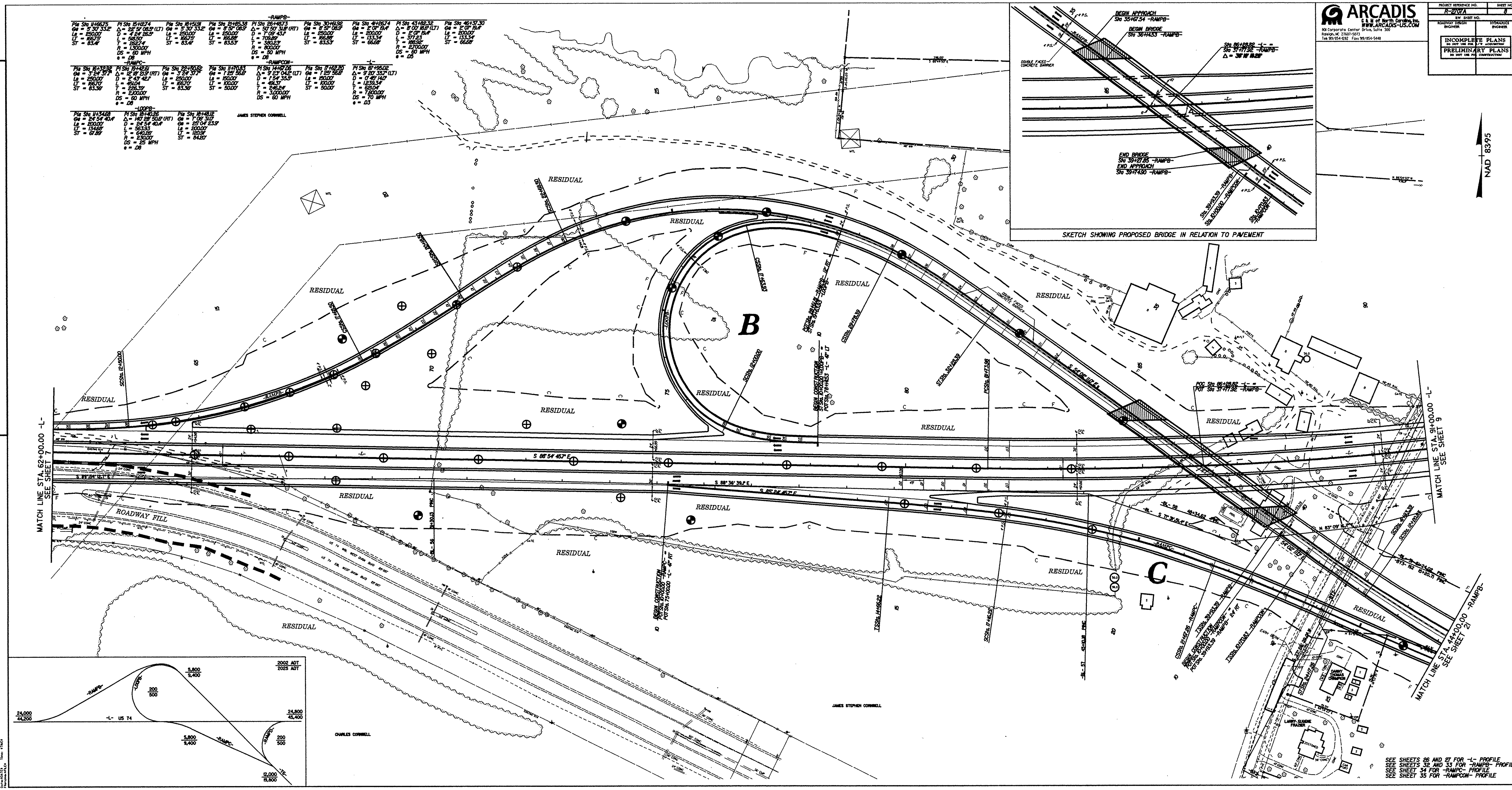


-SRI-

PI Sta 13+94.55	PI Sta 20+70.89
△ = 25° 36' 32.8" (LT)	△ = 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

ARCADIS G&M
Date: 8/24/15
Filename: $FILE$
Time: $TIME$


-RAMPB-
PIs Sta 11+66.75 Θs = 5° 30' 33.2" Ls = 250.00' LT = 166.75' ST = 83.41'
PI Sta 15+12.74 Δ = 22° 51' 08.5" (LT) D = 4° 24' 26.5" L = 518.50' T = 262.74' R = 1,300.00' DS = 60 MPH e = .08
PIs Sta 18+51.91 Θs = 5° 30' 33.2" Ls = 250.00' LT = 166.75' ST = 83.41'
PIs Sta 21+85.38 Θs = 8° 57' 08.9" Ls = 250.00' LT = 166.88' ST = 83.53'
PI Sta 26+48.73 Δ = 50° 50' 31.8" (RT) D = 7° 09' 43.1" L = 709.89' T = 380.23' R = 800.00' DS = 50 MPH e = .08
PIs Sta 30+61.92 Θs = 8° 57' 08.9" Ls = 250.00' LT = 166.88' ST = 83.53'
PIs Sta 41+26.74 Θs = 2° 07' 19.4" Ls = 200.00' LT = 133.34' ST = 66.68'
PI Sta 43+82.32 Δ = 8° 00' 18.6" (LT) D = 2° 07' 19.4" L = 377.23 T = 188.92' R = 2,700.00' DS = 60 MPH e = .05
PIs Sta 46+37.30 Θs = 2° 07' 19.4" Ls = 200.00' LT = 133.34' ST = 66.68'
-RAMPC-
PIs Sta 16+32.98 Θs = 3° 24' 37.7" Ls = 250.00' LT = 166.70' ST = 83.38'
PI Sta 19+42.61 Δ = 12° 18' 21.9" (RT) D = 2° 43' 42.1" L = 451.04 T = 226.39' R = 2,100.00' DS = 60 MPH e = .08
PIs Sta 22+50.62 Θs = 3° 24' 37.7" Ls = 250.00' LT = 166.70' ST = 83.38'
-RAMPCON-
PIs Sta 11+70.83 Θs = 1° 25' 56.8" Ls = 150.00' LT = 100.00' ST = 50.00'
PI Sta 14+67.06 Δ = 9° 23' 04.2" (LT) D = 1° 54' 35.5" L = 491.37 T = 246.24' R = 3,000.00' DS = 60 MPH
PIs Sta 17+62.20 Θs = 1° 25' 56.8" Ls = 150.00' LT = 100.00' ST = 50.00'
-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
-LOOPB-
PIs Sta 11+34.68 Θs = 24° 54' 40.4" Ls = 200.00' LT = 134.68' ST = 67.89'
PI Sta 18+40.26 Δ = 140° 28' 50.8" (RT) D = 24° 54' 40.4" L = 563.93 T = 640.26' R = 230.00' DS = 25 MPH e = .08
PIs Sta 18+48.12 Θs = 7° 06' 31.0" Θs = 25° 04' 23.9" Ls = 200.00' LT = 120.91' ST = 84.20'
JAMES STEPHEN CORNWELL
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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
BEGIN APPROACH
BEGIN BRIDGE
END BRIDGE
END APPROACH
DOUBLE FACED CONCRETE BARRIER
SKETCH SHOWING PROPOSED BRIDGE IN RELATION TO PAVEMENT
NAD 83/95
RESIDUAL
ROADWAY FILL
B
C
-RAMPB-
-LOOPB-
-RAMPC-
-L-
S 86° 54' 45.7" E
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
CHARLES CORNWELL
2002 ADT
2025 ADT
24,000
44,200
24,800
45,400
5,800
9,400
200
500
12,000
18,800
-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

PROJECT REFERENCE NO.	SHEET NO.
R-2707A	9

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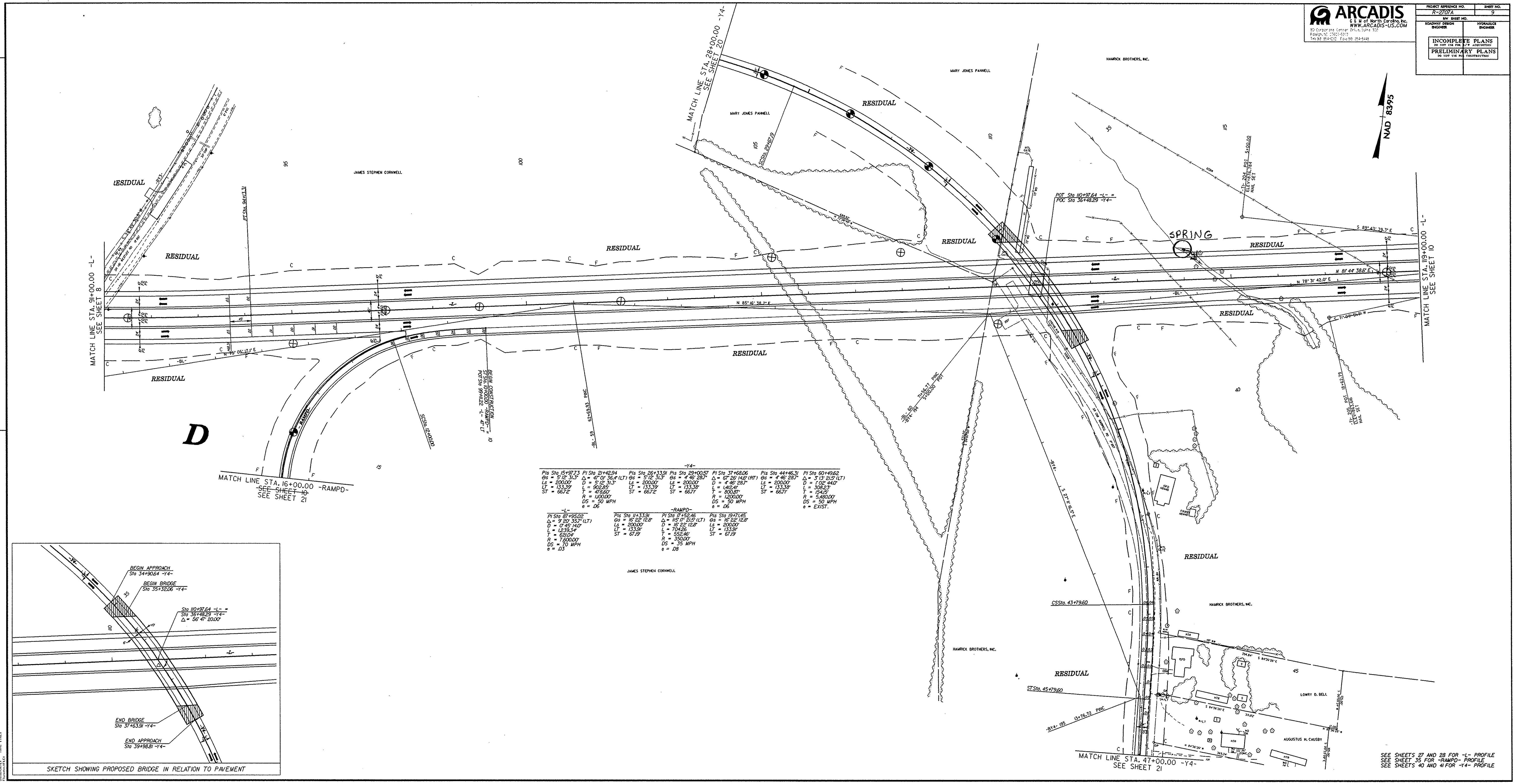
R/W SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



-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.

-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	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 SHEETS 27 AND 28 FOR -L- PROFILE
SEE SHEET 35 FOR -RAMPD- PROFILE
SEE SHEETS 40 AND 41 FOR -Y4- PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
R-2707A	10
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=$DATE$ Time= $TIME$
Filename=$FILE$

120 125 130

NAD 83/95

HAMRICK BROTHERS, INC.

MARY JONES PANNELL

-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

-T2- 207 8+27.63 PINC
ELEV=861.202
NAIL SET

-BL- 62 90+06.87 PINC
-T2- 219 6+87.44 PINC
ELEV=856.004

S 41° 26' 47.2" E

NOTE:
NO WATER HERE (4/04)
FLOW STARTS HERE (4/04)

S 68° 26' 48.6" W

-BL-

S 79° 05' 01.0" E

N 69° 39' 03.2" E

S 89° 43' 39.3" E

N 89° 44' 38.6" E

S 71° 09' 51.9" W

S 8° 40' 42.5" E

-L-

RESIDUAL

C F

10' PS

24"

4' FD PS

46'

MATCH LINE STA. 119+00.00 -L-
SEE SHEET 9

MATCH LINE STA. 132+00.00 -L-
SEE SHEET 11

-T2- 208 10+23.92 POT
ELEV=850.986
NAIL SET

178.84'
S 04°03'21" W

658W

SEE SHEETS 28 AND 29 FOR -L- PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
R-2707A	11
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

-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

MARY JONES PANNELL

BOBBY LEE BLANTON, SR.

MICHAEL J. RHEA

NAD 83 95

135

140

2SFD

GR

S 07°07'29" E
1181.69'

PCSta. 141+09.25

55BW

MTL GATE

-BL- 63 94+25.19 PINC

-BL- 64 97+73.79 PINC

RESIDUAL

N 82° 02' 30.3" E

N 81° 44' 38.6" E

N 81° 14' 30.0" E

-L-

-BL-

S 00°29' 40" W
1658.4'

10' PS

24"

45'

14" FD PS

MATCH LINE STA. 132+00.00 -L-
SEE SHEET 10

MATCH LINE STA. 144+00.00 -L-
SEE SHEET 12

EIP

583.73'
S 84°19'44" E

30' IR

SEE SHEET 29 FOR -L- PROFILE

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Filename:=$FILE$

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PROJECT REFERENCE NO.	SHEET NO.
R-2707A	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

REVISIONS

-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

NAD 83/95

MICHAEL J. RHEA

DUKE POWER

MICHAEL J. RHEA

145

150

155

107+33.99 PINC

-BL- 65

MATCH LINE STA. 144+00.00 -L-
SEE SHEET 11

MATCH LINE STA. 156+00.00 -L-
SEE SHEET 13

RESIDUAL

RESIDUAL

ALLUVIUM

RESIDUAL

RESIDUAL

ALLUVIUM

RESIDUAL

ALLUVIUM

12" PS
24"
46"
4" FD
102 PS
24"
10" PS

N 79° 25' 24.6" E

#85.26: 35BW
N 80°14'24" E

MTL GATE

36" CMP

48" WW

48" WW

48" WD

MTL

WD RAIL

B

BOBBY LEE BLANTON, SR.

3.02 AC±

S 13° 35' 50" E
200.00'

RUTH D. BLANTON

MICHAEL J. RHEA

SEE SHEET 29 FOR -L- PROFILE

ARCADS_G&M
Date:$DATE$ Time: $TIME$
Filename:$FILE$

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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

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

-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

NAD 83/95

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 7+11.87 PINC
ELEV=769.848

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

-BL- 66 119+55.20 PINC

-BL- 67 129+53.51 PINC

-BL-
N 76° 12' 41.5" E

S 64°40'44" W 223.37'
572.71' S 64°40'44" W

S 81°52'35" W 458.55'

S 10° 05' 02.5" W

S 26° 11' 12.5" E

S 04°53'38" W

BEAVER DAM (DRY)

CONC. MON.

SEE SHEETS 29 AND 30 FOR -L- PROFILE

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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

REVISIONS

-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

MATCH LINE STA. 169+00.00 -L-
SEE SHEET 13

MATCH LINE STA. 182+00.00 -L-
SEE SHEET 15

DUKE POWER

-BL- 68 137+82.52 PINC

N 59° 07' 03.9" E

-BL-

N 70° 04' 26.9" E

G. C. CROSBY

ROBERT PERRY MCSWAIN

MARIE ELAINE CULVERSON

-BL- 142+75.88 POT=
-T4- 221 11+05.92
ELEV=852.140
NAIL SET
POT

-T4- 213 8+06.95 PINC
ELEV=838.241
NAIL SET

S 0° 07' 33.6" W

S 0° 04' 53.0" W

S 66°01'36" W 131.50'

568.68'
N 81°54'19" W

310.00'
N 26°45'36" E

310.00'
N 89°31'36" E

200.00'
N 89°54'36" E

SEE SHEET 30 FOR -L- PROFILE

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

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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

REVISIONS

ARCADIS G&M
Date: 4/15/16
Filename: $FILE$

Times: $TIME$

NAD 83/95

-L-
PI Sta 196+48.81
Δ = 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

185

190

ROBERT PERRY MCSWAIN

MARIE ELAINE CULVERSON

DORIS W. MCDANIEL

JOHN LEON WORTMAN

MATCH LINE STA. 182+00.00 -L-
SEE SHEET 14

MATCH LINE STA. 195+00.00 -L-
SEE SHEET 16

RESIDUAL

N 57° 42' 00.7" E

N 61° 52' 10.8" E

PCSta. 186+27.50

-BL- 69 147+91.64 PINC

-BL- 70 155+47.54 PINC

48" ELEC & WW

SEE SHEETS 30 AND 31 FOR -L- PROFILE

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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

REVISIONS

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

SKETCH SHOWING PROPOSED BRIDGE IN RELATION TO PAVEMENT

15

-Y5-

S 13°52'09.5" E

BEGIN APPROACH
Sta 15+60.98 -Y5-

BEGIN BRIDGE
Sta 15+96.99 -Y5-

Sta 203+02.99 -L- =
Sta 16+91.44 -Y5-
Δ = 95° 47' 56.84"

40'

-L-

8'

24'

8'

END BRIDGE
Sta 17+85.95 -Y5-

END APPROACH
Sta 18+08.90 -Y5-

-Y5-

24'

195

-L-
PI Sta 196+48.81
Δ = 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-

RESIDUAL

-BY5- 198 5+00.00 POT

100' UNIFORM TAPER

45'R

SR 1320 TOWERY RD

11' BST

3" PVC

18" CONC

30'

60'R

DORIS W. MCDANIEL

200

MARGARITO V. ORNELAS

18" CMP

24" CONC

C

232.12'

S 74°51'57" E

216.53'
N 74°51'57" W

ROBERT FRANC BODWELL

N 04°24'40" E

10

149.53'
S 70°07'55" E

GLADYS T. HUMPHRIES

-BY5- 197 5+00.00 POT

-BY5- 198 5+00.00 POT

180' HYPERBOLIC 4.4%/-4.4% CONC

SR 1315 PLATO LEE RD

18" CONC

6.9% 6.9%

FARM TAP

ISFD

GR

S

W

222.41'
S 80°33'10" W

N 23°17'44" W
153.98'

67.39'
S 73°05'17" E

88.89'
S 19°59'32" W

FARRIS L. MCSWAIN

247.89'
S 71°52'02" E

NAD 83'95

F

S 14° 25' 48.7" E

S 13° 52' 09.5" E

-BY5- 199 12+42.00 PINC

60'R

DORIS W. MCDANIEL

MALCOLM KEITH BEAVER

205

ROBERT FRANC BODWELL

ALLUVIUM

RESIDUAL

RESIDUAL

RESIDUAL

-TS- 214 5+00.00 POT
ELEV=860.130
NAIL SET

JOHN ROBERT MCBRAYER

15

-L- POC Sta 203+02.99 =
-Y5- POT Sta 16+91.44

RESIDUAL

C F

C

RESIDUAL

MATCH LINE STA. 195+00.00 -L-
SEE SHEET 15

10' PS

24"

4' FDN PS

46'

24"

10' PS

1370.37'
S 75°48'59" W

-L-

RESIDUAL

-Y5-

2nd CONC

213.8'
N 81°45'00" W

WD DK

ISFD

GR

LETHA RAY BEAVER

-TS- 215 7+24.95 PINC
ELEV=854.840
NAIL SET

PT Sta. 206+57.96

MATCH LINE STA. 18+00.00 -Y5-
SEE SHEET 22

MTL CANOPY

S

10' PS

56.47'
N 57°40'01" W

45.12'
31°59'20" W

29.66'
S 32°44'28" E

JOHN ROBERT MCBRAYER

13.10'
N 70°36'36" E

17.84'
S 53°39'02" E

N 73°00'27" E

36.47'
S 61°18'59" E

24.39'
44°50'34" E
26.87'
S 40°01'35" E

421.07'
N 70°34'53" E

MATCH LINE STA. 208+00.00 -L-
SEE SHEET 17

SEE SHEET 31 FOR -L- PROFILE
SEE SHEET 42 FOR -Y5- PROFILE

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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:$DATE$ Times: $TIME$
Filename:$FILE$

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

SEE SHEET 31 FOR -L- PROFILE

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

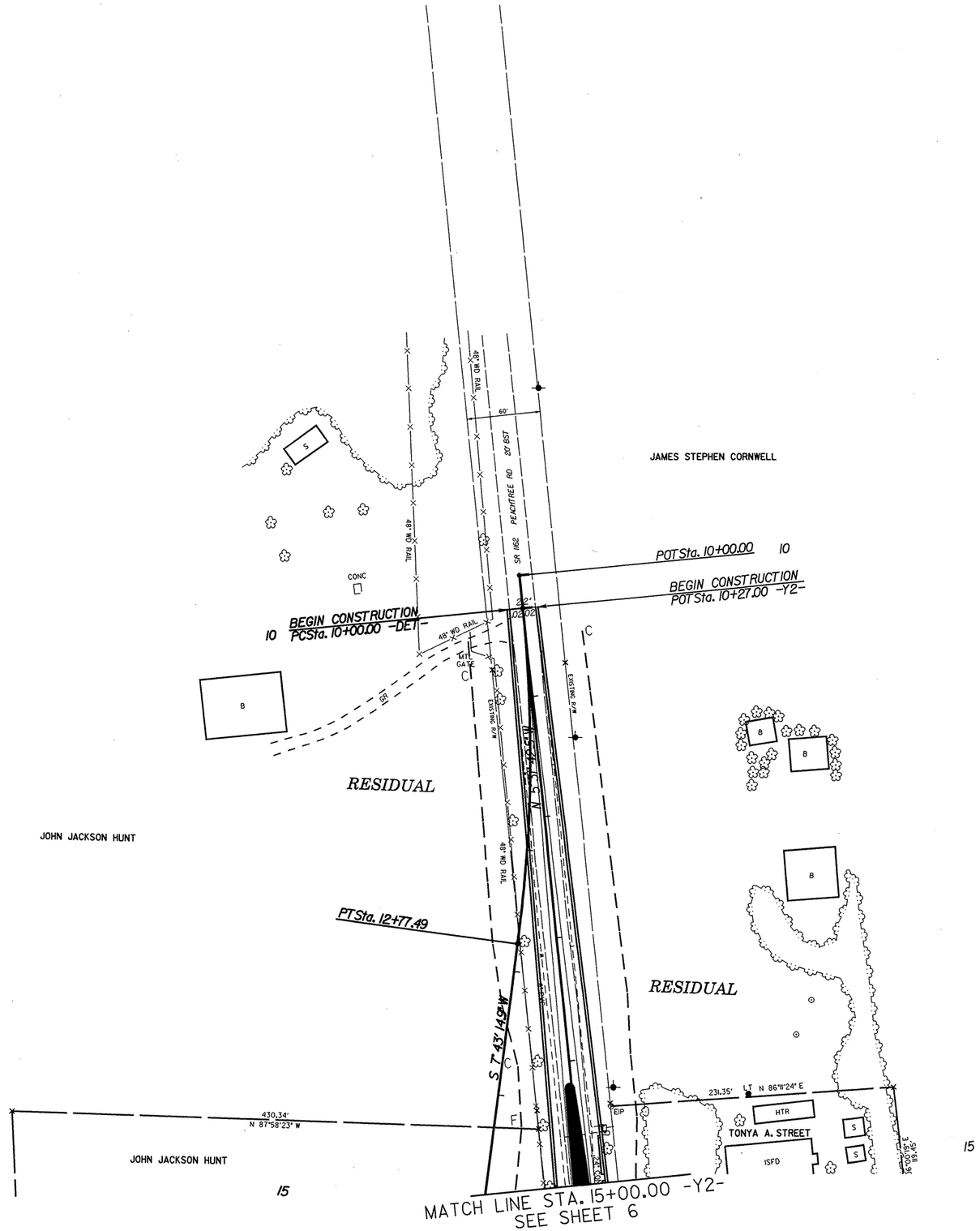
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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

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Raleigh, NC 27607-5073
Tel: 919/854-1282 Fax: 919/854-5448

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

REVISIONS

-Y2-

Pls Sta 26+84.11	Pl Sta 31+84.18	Pls 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

MATCH LINE STA. 30+00.00 -Y2-
SEE SHEET 6

SEE SHEET 39 FOR -Y2- PROFILE

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

BERT

ARCADIS
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Raleigh, NC 27607-5073
Tel: 919 854-1282 Fax: 919 854-5448

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

REVISIONS

ARCADIS G&M
Date:$DATE$
File name:$FILE$
Time: $TIME$

-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

BEGIN CONSTRUCTION
POT Sta. 1+00.00 -Y4-

S 21°19'24.01" E

TS Sta. 14+64.34

SC Sta. 16+64.34

NAD 83/95

RESIDUAL

RESIDUAL

RESIDUAL

RESIDUAL

-Y4-

-BY3- 191 5+00.00 POT

CS Sta. 29+61.19

SR Sta. 27+61.19

MATCH LINE -Y4-
STA. 28+00.00
SEE SHEET 9

JACK BUREN JONES

JACK BUREN JONES

WILLIAM A. JONES

JAMES STEPHEN CORNWELL

TODD MILLER JONES

SR 1161 WESTLEE RD

96" CMP & 358'W

MTL

MTL GATE

18" CONC

GR

GATE

953.30'
N 72°40'54" W

239.18'
S 84°27'24" W

229.33'
S 04°27'03" E

239.94'
N 83°27'48" E

N 84°26'56" E
258.41'

161.73'
S 00°44'51" E

432.14'
S86°05'29"E

ISBKD

CONC

EXISTING R/W

SEE SHEET 40 FOR -Y4- PROFILE

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

MATCH LINE STA. 16+00.00 -RAMPB-
SEE SHEET 9

MATCH LINE STA. 44+00.00 -RAMPB-
SEE SHEET 18

MATCH LINE STA. 47+00.00 -Y4-
SEE SHEET 9

-RAMPCON-
PI Sta 11+70.83
Bs = N 25° 56.8" E
Ls = 150.00'
LT = 100.00'
ST = 50.00'

PI Sta 14+97.05
Δ = 9° 23' 04.2" (LT)
D = 1° 54' 35.5"
L = 491.37'
T = 246.24'
R = 3,000.00'
DS = 60 MPH

PI Sta 17+62.20
Bs = N 25° 56.8" E
Ls = 150.00'
LT = 100.00'
ST = 50.00'

-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-
PI Sta 11+97.73
Bs = S 12° 31' 31.3" E
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 = 478.87'
R = 1,100.00'
DS = 50 MPH
e = .06

PI Sta 26+33.81
Bs = S 12° 31' 31.3" E
Ls = 200.00'
LT = 133.39'
ST = 66.72'

PI Sta 29+00.57
Bs = N 46° 28' 28.7" E
Ls = 200.00'
LT = 133.39'
ST = 66.71'

PI Sta 37+68.06
Δ = 67° 28' 14.0" (RT)
D = 4° 46' 28.7"
L = 1,412.41'
T = 800.31'
R = 1,200.00'
DS = 50 MPH
e = .06

PI Sta 44+96.31
Bs = N 46° 28' 28.7" E
Ls = 200.00'
LT = 133.39'
ST = 66.71'

PI Sta 60+49.62
Δ = 3° 13' 21.5" (LT)
D = 1° 02' 44.0"
L = 368.23'
T = 184.15'
R = 5,480.00'
DS = 50 MPH
e = EXIST.

-SR2-
PI Sta 16+25.54
Δ = 90° 12' 08.4" (RT)
D = 10° 25' 00.7"
L = 90.24'
T = 57.89'
R = 550.00'
DS = 40 MPH

PI Sta 20+71.40
Δ = 98° 30' 01.9" (LT)
D = 16° 22' 12.8"
L = 363.67'
T = 250.04'
R = 350.00'
DS = 30 MPH

-RAMPD-
PI Sta 11+33.91
Bs = N 25° 22' 12.8" E
Ls = 200.00'
LT = 133.91'
ST = 67.79'

PI Sta 11+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

PI Sta 19+71.45
Bs = N 25° 22' 12.8" E
Ls = 200.00'
LT = 133.91'
ST = 67.79'

-Y6LT-
PI Sta 61+25.34
ST Sta. 61+70.63

-Y6RT-
PI Sta 61+25.34
ST Sta. 61+70.63

BEGIN CONSTRUCTION
POT Sta. 61+00.00 -Y6-
POT Sta. 61+25.34 -RAMPB- 24' LT
POT Sta. 61+25.34 -RAMPB- 26' RT

CSSW: 61+70.63

CSSW: 61+20.00

ST Sta. 47+70.63

DOUBLE FACED CONCRETE BARRIER

RESIDUAL

ROADWAY FILL

LARRY EUGENE FRAZIER

MORE WRIGHT WEBB

WILLIAM SUTTON

PEARL H. MCSWAIN

MICHAEL D. MARRILL

JUANITA B. PHILBECK

MELVIN D. JR. LOCKHART

ROGER DALE SANSING

SAMUEL JAY HENNETT

DONALD R. STINNETT

OLLIE L. WEBB ROGERS

JAMES STEPHEN CORNWELL

PATRICIA L. LANDQUIST DB 855 PG 492

FEDERAL HOME LOAN MORTGAGE CORPORATION

ROGER STEVE MOORE

FRED C. HUGHES

GENE RAYMOND MODE, JR.

BILLY DEAN DAVIS

STEVE HOWARD MARTIN

HAWBOCK BROTHERS, INC.

WAYNE GINER KIMBRELL

BENJAMIN A. LEE

HORACE LEE WRIGHT

OSTINE W. GREENE

RUBY H. MOORE

HENRY MONROE BLANTON

MARY ELIZABETH CHILDERS

RICHARD W. MANLEY

JOHN D. LOCKLEAR

FRANK L. HALL

BENJAMIN C. PATRICK

TROY SHANE AUTON

CATHERINE L. STEM

BRENDA HALL

CHARLES M. WEBB

BON ASTOR JONES

DONALD LEE MCSWAIN

PEARL HILL LANE

RUSH DEAN MCSWAIN

MONOLITHIC CONC. ISLAND

POT Sta. 64+00.00 -Y4-
POT Sta. 29+76.00 -Y6-

END CONSTRUCTION
POT Sta. 28+50.00 -Y6-

POT Sta. 64+14.83 -SR2-
POT Sta. 27+15.00 -Y4-

POT Sta. 58+95.46

END CONSTRUCTION
POT Sta. 60+47.00 -Y4-

-BY4- 197

28+73.49 POT

POT Sta. 62+03.69

POT Sta. 63+43.44

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

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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

REVISIONS

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

NAD 8395

JOHN LEON WORTMAN

JOHN HENRY BEAVER, JR.

JOHN HENRY BEAVER, SR.

JOHN ROBERT MCBRAYER

LETHA RAY BEAVER

MICHAEL KARL BEAVER

CURTIS NEAL WORTMAN

RESIDUAL

-BL- A
-BL- 220 164+51.30 PINC
17+01.24 POT

-BL-
N 71° 04' 57.8" E

N 54° 45' 08.4" E

-Y5- 23+60.57 S 18° 25' 28.1" E

END CONSTRUCTION
POT Sta. 23+90.00 -Y5-

POT Sta. 24+05.10

SEE SHEET 42 FOR -Y5- PROFILE

ARCADIS G&M
Date=DATE$
Filename=FILE$ Times $TIME$

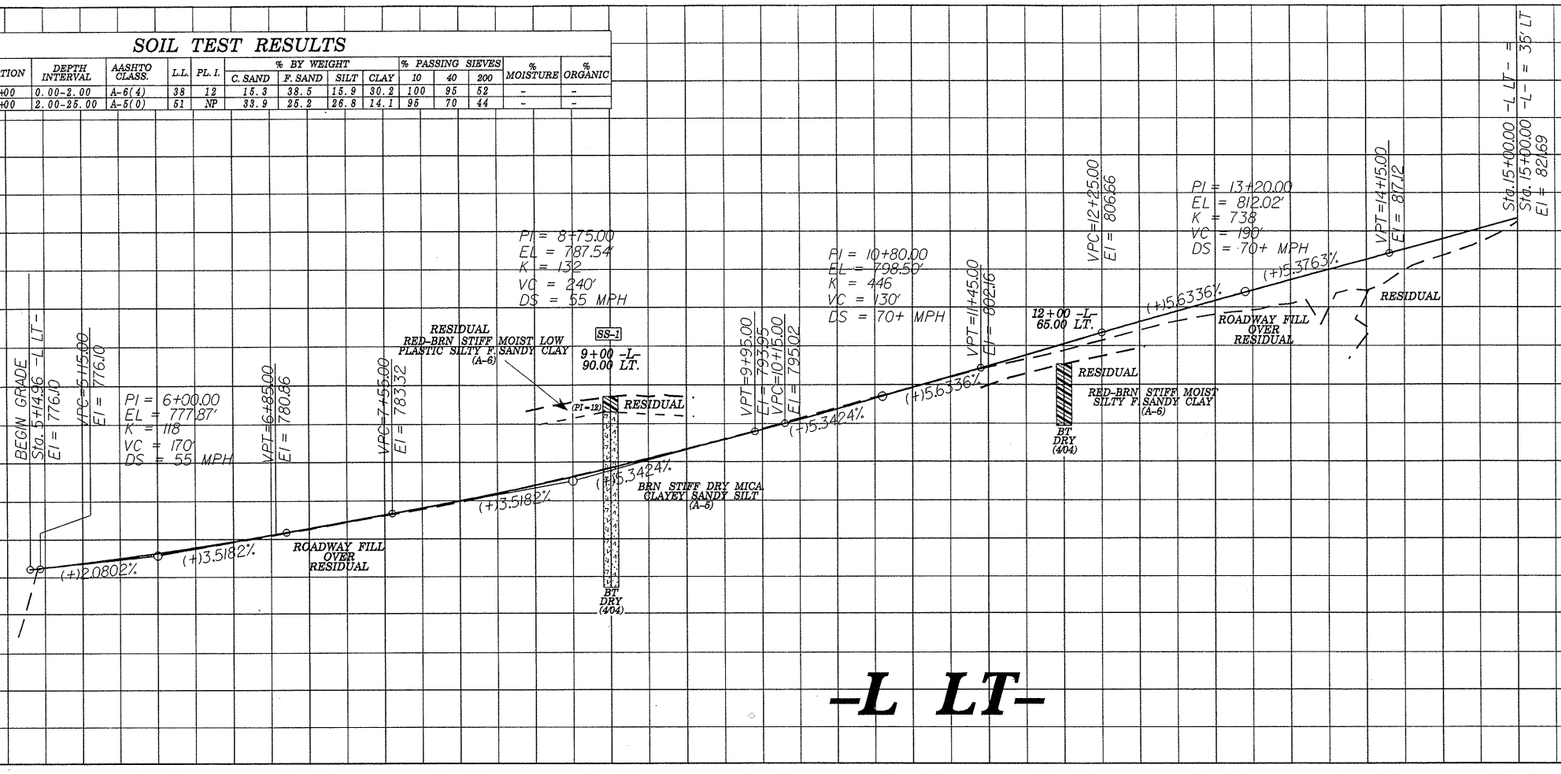
PROJECT REFERENCE NO.	SHEET NO.
R-2707A	23
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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.	LL.	PL. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING SIEVES 10	40	200	% MOISTURE	% ORGANIC
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	2.00-25.00	A-5(0)	51	NP	33.9	25.2	26.8	14.1	96	70	44	-	-



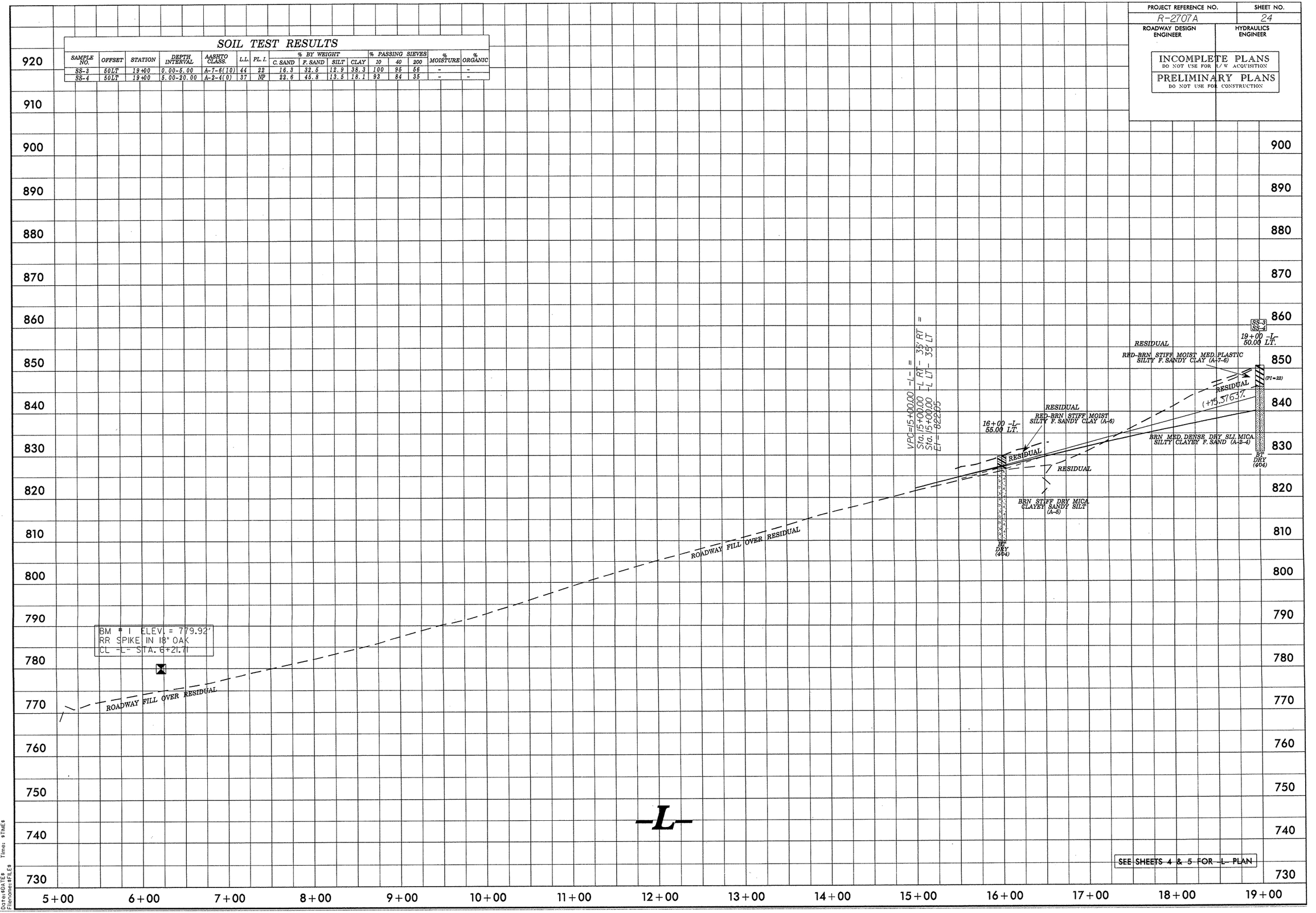
PROJECT REFERENCE NO.	SHEET NO.
R-2707A	24
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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	50LT	19+00	0.00-5.00	A-7-6(10)	44	22	16.3	32.5	12.9	38.3	100	96	56	-	-
SS-4	50LT	19+00	5.00-20.00	A-2-4(0)	37	NP	22.6	45.8	13.5	18.1	93	84	35	-	-



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

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

ROADWAY DESIGN ENGINEER

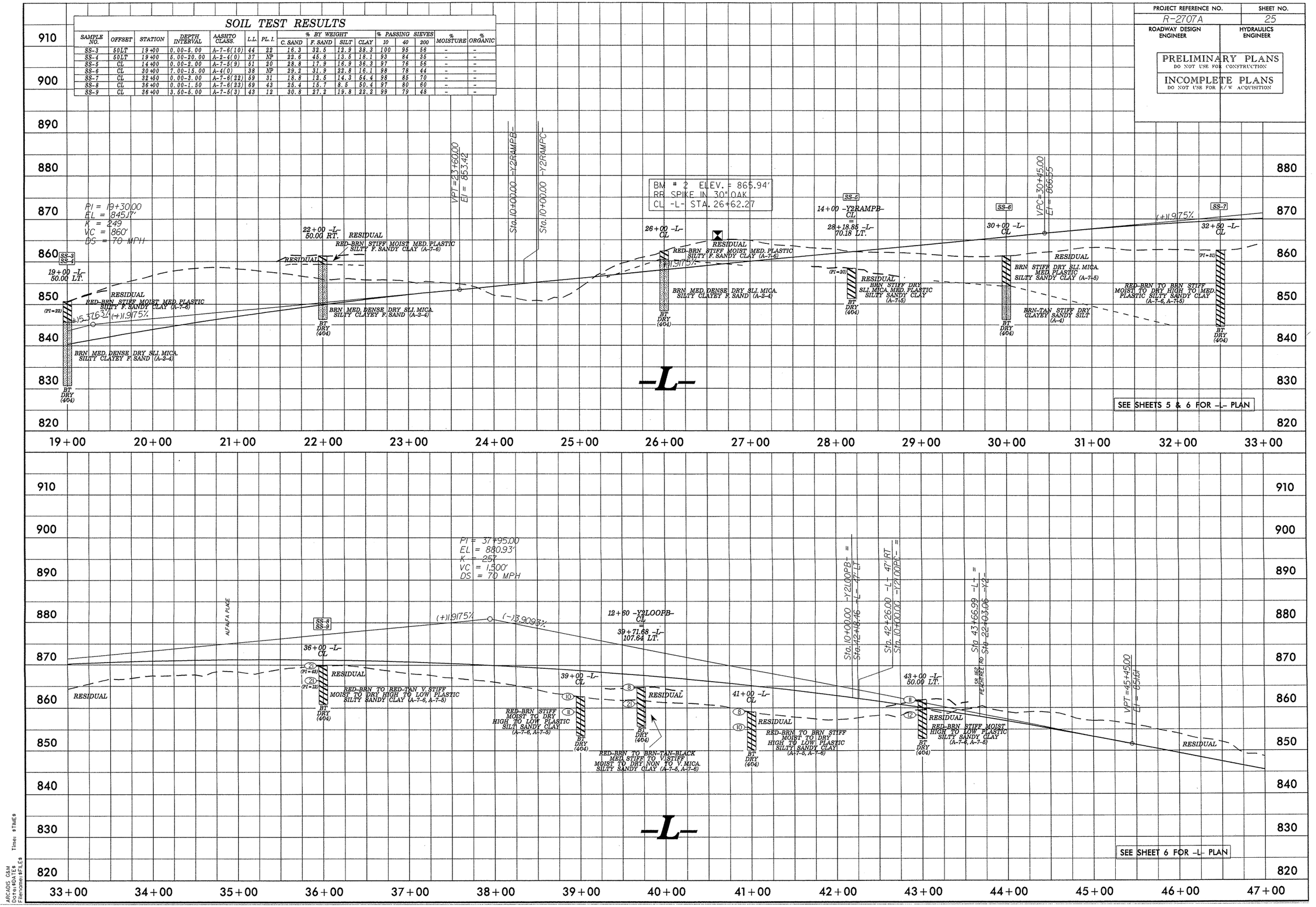
HYDRAULICS ENGINEER

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	19+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	19+00	5.00-20.00	A-2-4(0)	37	NP	22.6	46.8	13.5	16.1	93	84	35	-	-
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	85	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-7-6(3)	43	12	30.8	27.2	19.8	22.2	99	79	48	-	-



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

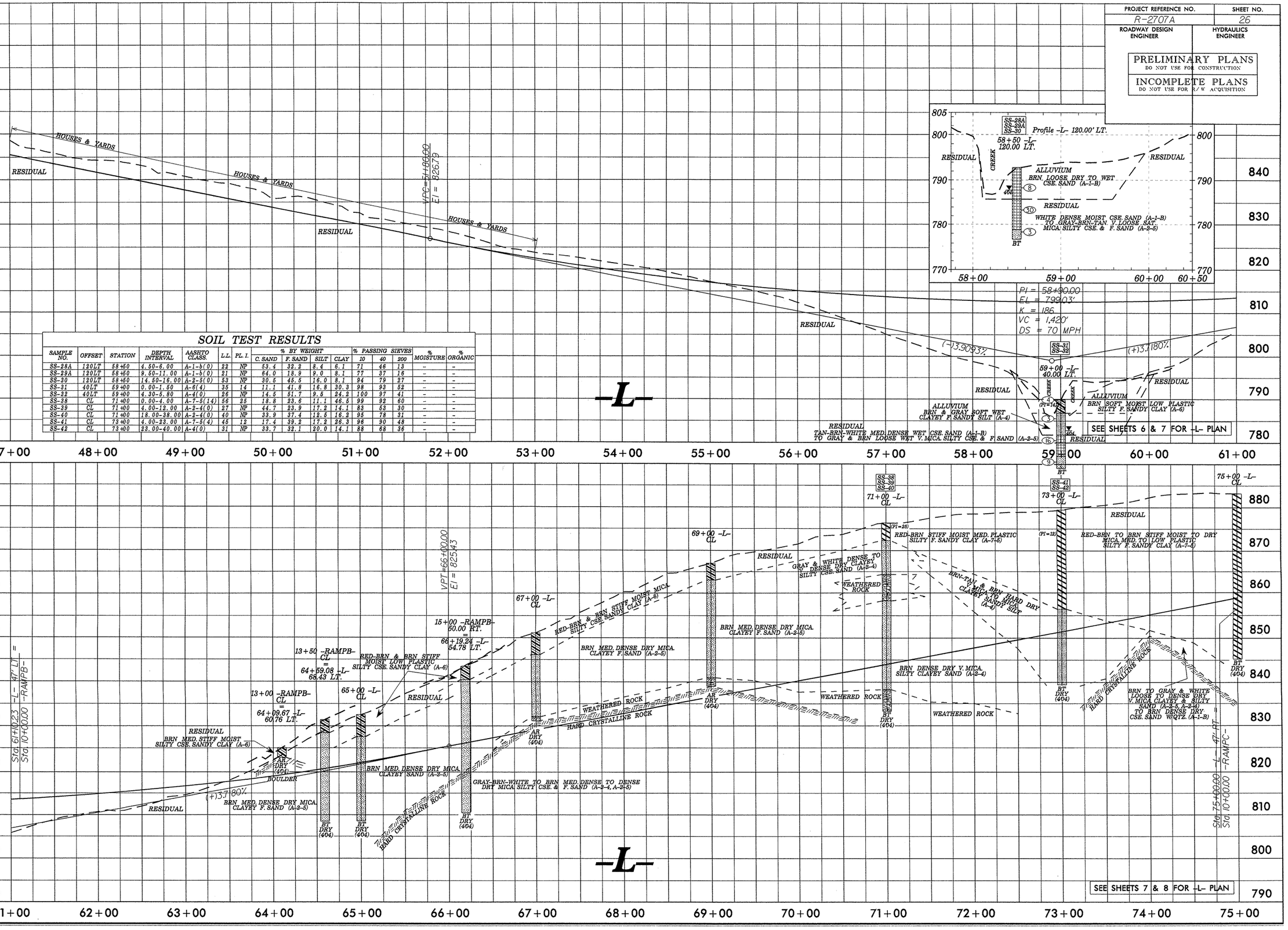
PROJECT REFERENCE NO.	SHEET NO.
R-2707A	26
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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	4.50-8.00	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	57	16	-	-
SS-30	120LT	58+50	14.50-16.00	A-2-6(0)	53	NP	30.6	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-7-6(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	63	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	31	-	-
SS-41	CL	73+00	4.00-23.00	A-7-6(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	-	-



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

Sta. 75+00.00 -L- 47' RT = Sta. 10+00.00 -RAMPC-

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

75+50 -L-
120.00 RT.

75+00 -L-
CL

(PI=31)

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

RESIDUAL

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

AB
DRY
(404)

BT
DRY
(404)

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

VPC=77+00.00
EL = 866.33

77+50 -L-
CL

RESIDUAL

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)

Sta. 78+14.53 -L- 47' LT = Sta. 10+00.00 -LOOPB-

15+00 -RAMPC-
CL

79+99.07 -L-
77.54 RT.

79+50 -L-
CL

RESIDUAL

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

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)

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

BT
DRY
(404)

17+00 -RAMPC-
CL

81+98.09 -L-
93.82 RT.

SS-60
SS-61

81+50 -L-
CL

(PI=39)

(PI=11)

RESIDUAL

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

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

BT
DRY
(404)

83+50 -L-
CL

RESIDUAL

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)

BT
DRY
(404)

SS-61
SS-62
SS-63

84+61 -L-
100.00 LT.

Sta. 86+28.82 -L- = Sta. 37+77.92 -RAMPB-

(+)3.7180%

RESIDUAL

(PI=18)

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)

BRN-TAN-WHITE V. STIFF DRY CLAYEY F. SANDY SILT (A-6)

TAN-WHITE MED. DENSE MOIST SILTY SAND (A-2-4)

BT

-L-

SEE SHEET 8 FOR -L- PLAN

PI = 90+50.00
EL = 916.52'
K = 545
VC = 2,700'
DS = 70+ MPH

(+)3.7180%

SR 1161 WESTLEE RD

18' BST

(-)12.2356%

91+50 -L-
CL

RESIDUAL

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

BT
DRY
(404)

95+00 -L-
65.00 RT.

RESIDUAL

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

BT
DRY
(404)

97+00 -L-
CL

RESIDUAL

BT
DRY
(404)

SS-79
SS-80

99+00 -L-
CL

(PI=35)

(PI=18)

RESIDUAL

BRN STIFF MOIST TO DRY MICA HIGH TO MED. PLASTIC SILTY SANDY CLAY (A-7-5, A-7-6)

BT
DRY
(404)

102+00 -L-
CL

RESIDUAL

BT
DRY
(404)

-L-

SEE SHEETS 8 & 9 FOR -L- 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	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-60	CL	81+60	0.00-6.00	A-7-6(24)	62	39	22.9	15.6	15.1	46.5	100	85	65	-	-
SS-61	CL	81+60	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-6(0)	60	NP	18.2	35.4	30.2	16.2	93	82	61	-	-
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-7-6(21)	65	36	21.3	14.2	10.3	64.2	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	-	-

ARC-ADIS CAM
ARC-ADIA_V2E
Date: $TIME$
Filename: $FILE$

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

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

VPT = 104+00.00
EI = 899.64

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)

BT DRY (404)

-L-

(-)11.2356%

CREEK

SEE SHEET 9 FOR -L- 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-73	120LT	123+00	4.10-6.60	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	0.00-1.60	A-6(1)	29	11	30.1	24.9	8.9	26.1	96	81	37	-	-
SS-77	CL	127+60	3.60-5.00	A-7-5(15)	64	33	24.9	21.9	9.1	44.1	97	83	54	-	-

SS-73
SS-74
SS-75
MS-75

123+00 -L- 120.00 LT.

122+00 -L- CL
120+00 -L- CL
118+30 -L- CL
124+00 -L- CL
126+00 -L- CL
127+60 -L- CL

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

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

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

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

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

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

RED-BRN-TAN LOOSE TO MED. DENSE DRY MICA. SILTY F. SAND (A-2-4)

SS-76
SS-77

BRN MED. STIFF TO STIFF MOIST SLI MICA. LOW TO HIGH PLASTIC SANDY CLAY (A-6, A-7-5)

BORING DESCRIPTIONS
(A) BRN STIFF MOIST SANDY CLAY (A-6)
(B) BRN-TAN TO BRN-TAN-WHITE STIFF DRY MICA. TO NON MICA. CLAYEY SANDY SILT (A-4, A-5)

SEE SHEETS 9 & 10 FOR -L- PLAN

920
910
900
890
880
870
860
850
840
830

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

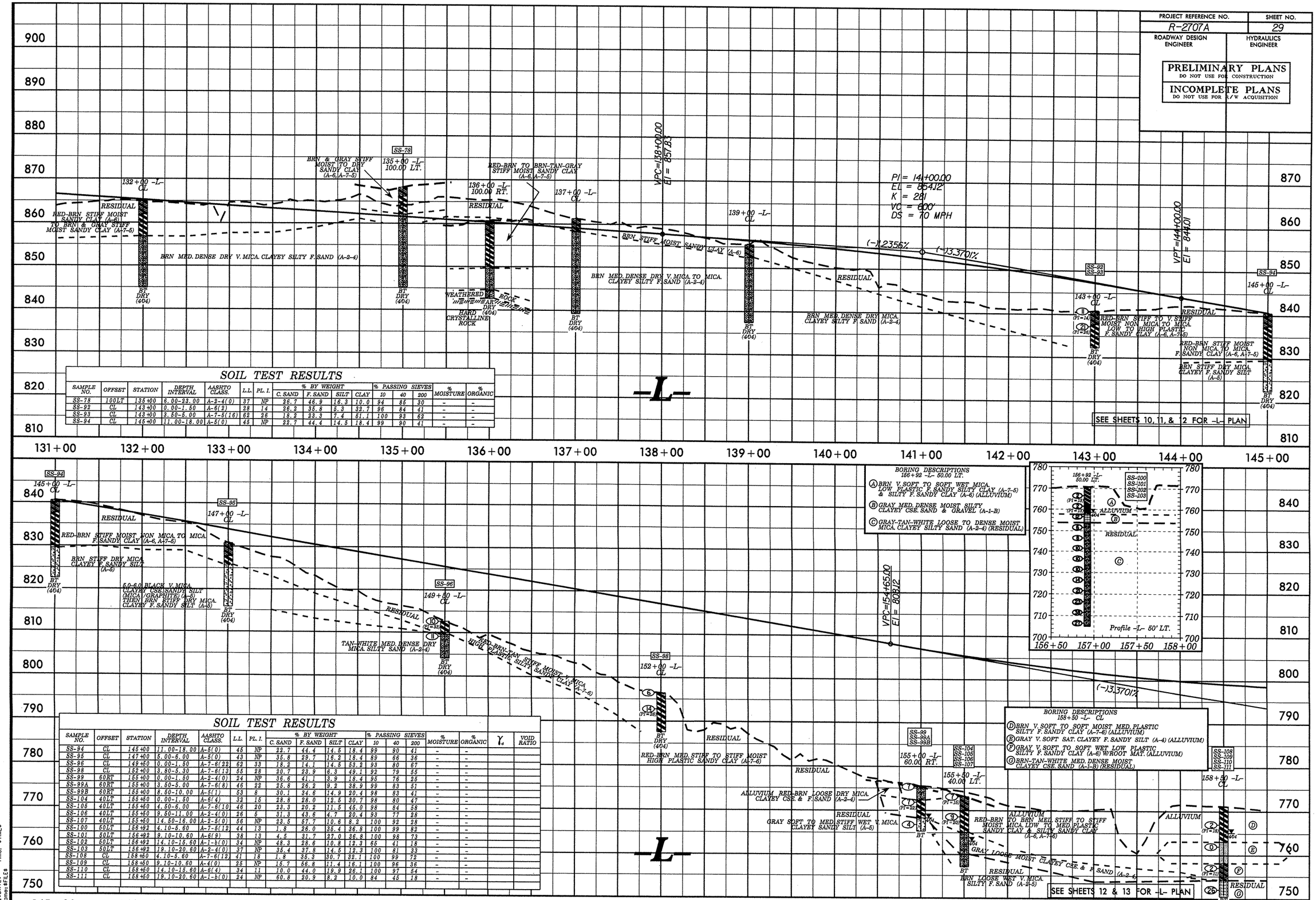
ARCADIS C&M Time: $TIME$
Date: $DATE$
Filename: $FILE$

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



BORING DESCRIPTIONS
166+92 -L- 60.00 LT.

(A) BRN V. SOFT TO SOFT WET MICA. LOW PLASTIC F. SANDY SILTY CLAY (A-7-5) & SILTY F. SANDY CLAY (A-6) (ALLUVIUM)

(B) GRAY MED. DENSE MOIST SILTY CLAYEY CSE. SAND & GRAVEL (A-1-B)

(C) GRAY-TAN-WHITE LOOSE TO DENSE MOIST MICA. CLAYEY SILTY SAND (A-2-4) (RESIDUAL)

BORING DESCRIPTIONS
158+50 -L- CL

(D) BRN V. SOFT TO SOFT MOIST MED. PLASTIC SILTY F. SANDY CLAY (A-7-6) (ALLUVIUM)

(E) GRAY V. SOFT SAT. CLAYEY F. SANDY SILT (A-4) (ALLUVIUM)

(F) GRAY V. SOFT TO SOFT WET LOW PLASTIC SILTY F. SANDY CLAY (A-6) W/ROOT MAT. (ALLUVIUM)

(G) BRN-TAN-WHITE MED. DENSE MOIST CLAYEY CSE. SAND (A-1-B) (RESIDUAL)

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	136+00	6.00-33.00	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	3.50-5.00	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	6	31.3	43.6	4.7	20.4	93	77	29	-	-		
SS-107	40LT	155+50	14.50-16.00	A-2-5(0)	56	NP	23.5	27.7	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	36.4	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	66	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	66.8	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	64	-	-		
SS-111	CL	158+50	19.10-20.60	A-1-b(0)	24	NP	60.8	20.9	8.2	10.0	84	46	18	-	-		

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

PROJECT REFERENCE NO.	SHEET NO.
R-2707A	30
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
NOT TO BE USED 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(15)	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	35	-	-
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+76.00
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)
(PI=16)
6
5
4
3
2
5
WH
BT

VPT = 166+85.00
EI = 807.75

165+00 -L-
CL
RESIDUAL
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)
WH
BT

167+00 -L-
CL
WH
BT

169+00 -L-
70.00 LT.
RESIDUAL
RED-BRN STIFF MOIST SILTY F. SANDY CLAY (A-7-5)
WH
BT

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

170+50 -L-
115.00 RT.
RESIDUAL
RED-BRN STIFF MOIST SILTY F. SANDY CLAY (A-7-5)
(PI=38)
17
(PI=38)
10
9
9
9
14
11
10
15
WH
BT

172+00 -L-
40.00 LT.
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)
RED-BRN STIFF MOIST 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)
BRN MED. DENSE DRY MICA. SILTY CLAYEY F. SAND (A-2-5)
WH
BT

SEE SHEETS 13 & 14 FOR -L- 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-117	70RT	176+60	5.00-17.00	A-4(0)	29	NP	38.0	24.1	19.9	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	82	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 = 834.75

VPC=181+00.00
EI = 846.57

(+)3.310%
(+)1.3040%

SS-117
176+60 -L-
70.00 RT.
178+00 -L-
50.00 LT.
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)
BT DRY (404)
WH
BT

SS-118
SS-119
181+70 -L-
90.00 RT.
RESIDUAL
(PI=16)
7
6
20
8
WH
BRN-TAN LOOSE TO MED. DENSE MOIST SILTY F. SAND TO SILTY CSE. SAND (A-2-4, A-1-B)
BT

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)
BT DRY (404)

SS-121
186+00 -L-
CL
(PI=15)
RESIDUAL
WH
BT

SEE SHEETS 14 & 15 FOR -L- PLAN

-L-

850 840 830 820 810 800 790 780 770

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

880 870 860 850 840 830 820 810 800 790

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

ARCADIS G&M
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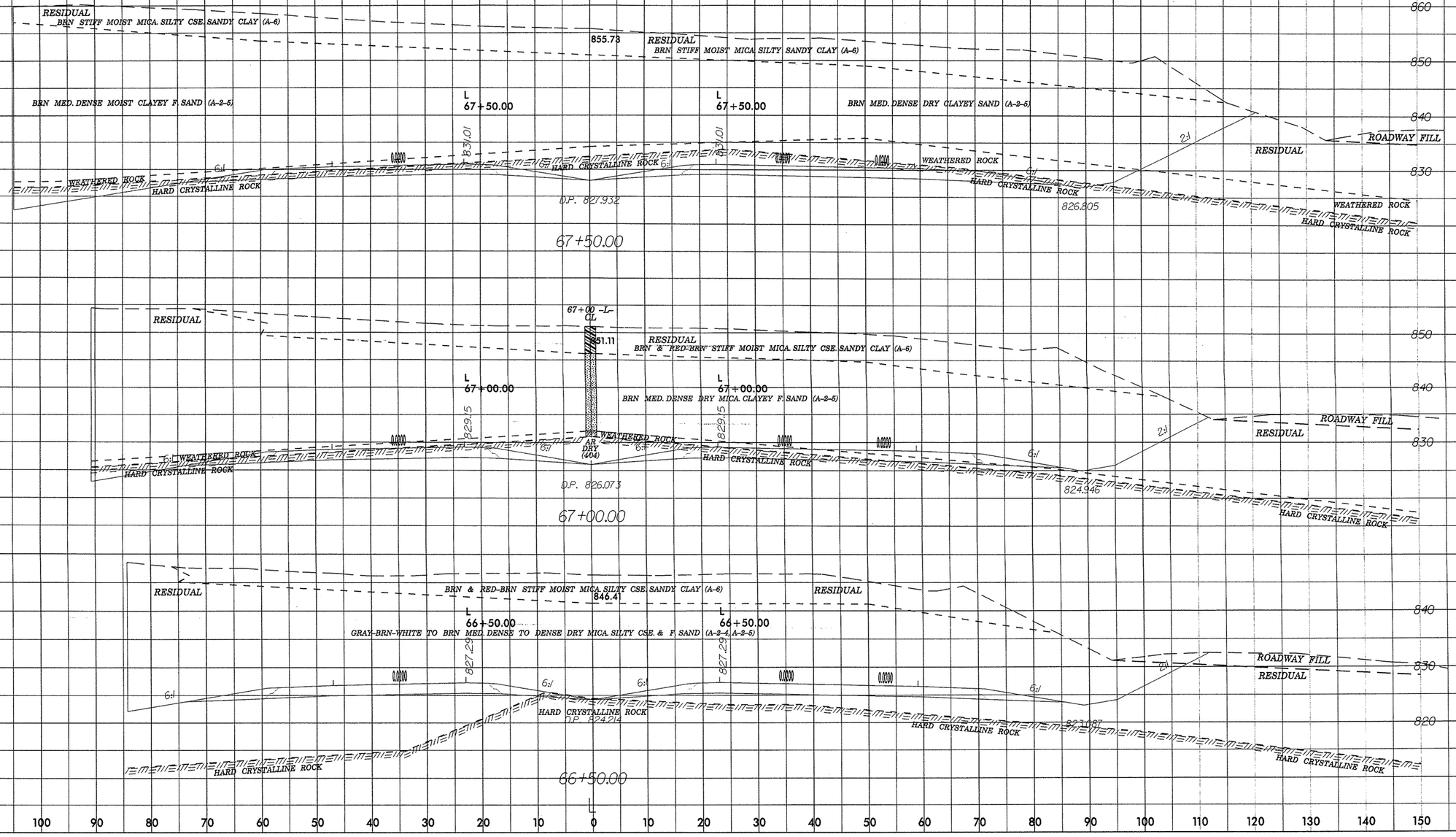
Filename=$FILE$

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

0 10



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

0 10

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

69+00 -L- CL

RESIDUAL

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

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

WEATHERED ROCK

HARD CRYSTALLINE ROCK

866.98

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

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

L 69+00.00

836.58

AR DRY (404)

4:1 6:1 2:1

832.622

D.P. 833.509

832.382

69+00.00

RESIDUAL

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

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

WEATHERED ROCK

HARD CRYSTALLINE ROCK

864.58

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

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

L 68+50.00

835.72

6:1 2:1

830.763

D.P. 831.650

830.523

68+50.00

68+00 -L- 60.00 LT.

68+00 -L- 50.00 RT.

RESIDUAL

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

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

860.32

WEATHERED ROCK

GRAY & WHITE V. DENSE SILTY CSE. SAND & QTZ. (A-2-4) TO BRN DENSE DRY SAND (A-2-5)

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

L 68+00.00

832.85

AR DRY (404)

6:1 2:1

828.904

D.P. 829.79

828.664

68+00.00

L

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.	LL	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-126

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 @ 26.0-36.0)

▽ 10-26-04

BT

VPC=190+85.00
EI = 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 @ 35.0)

▽ 10-26-04

BT

194+00 -L- 75.00 LT.

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

▽ 10-26-04

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)

(+)1.3040%

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

▽ 10-26-04

(SATURATED @ 20.0-29.0)

BT

198+00 -L- 80.00 RT.

RESIDUAL

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

(SATURATED @ 17.0)

▽ 10-26-04

BT

200+00 -L- CL

RESIDUAL

▽ 10-26-04

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 = 960
VC = 2,180'
DS = 70+ MPH

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

202+00 -L- 80.00 LT.

17+86 -Y5- 46.00 RT.

=

202+48.03 -L- 89.34 RT.

(+)1.3040%

(-)2.5890%

RESIDUAL

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)

▽ 10-26-04

7
8
8
7
11
13
16
22
41
57
100

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

BT

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-121A
SS-122A
SS-123A

Profile -L- 90.00 LT.

207+00 -L- 90.00 LT.

▽ 10-26-04

4
4
2
0
5
(PI=16)

RESIDUAL

ALLUVIUM

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

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

BT

870
860
850
840

206+00
207+00
207+75

SS-124A
SS-125A

207+40 -L- CL

RESIDUAL

ALLUVIUM

2
12
(PI=16)
4
3

▽ 10-26-04

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)

SS-124A

BT

208+00 -L- 80.00 RT.

Profile -L- 80.00 RT.

SS-126A
SS-127A

▽ 10-26-04

6
7
4
7

ALLUVIUM

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

RESIDUAL

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

BT

855
850
840
835

207+00
208+00
208+50

-L-

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-	0.00-4.50	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	95	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	16	31.4	35.9	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-126A	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-
EI = 842.39

215+00 -L- CL

RESIDUAL

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

TEMPORARY 4:1 SLOPE

▽ 10-26-04

BT

VPT=212+65.00
EI = 847.41

VPO=213+00.00
EI = 846.50

SEE SHEETS 16 & 17 FOR -L- PLAN

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

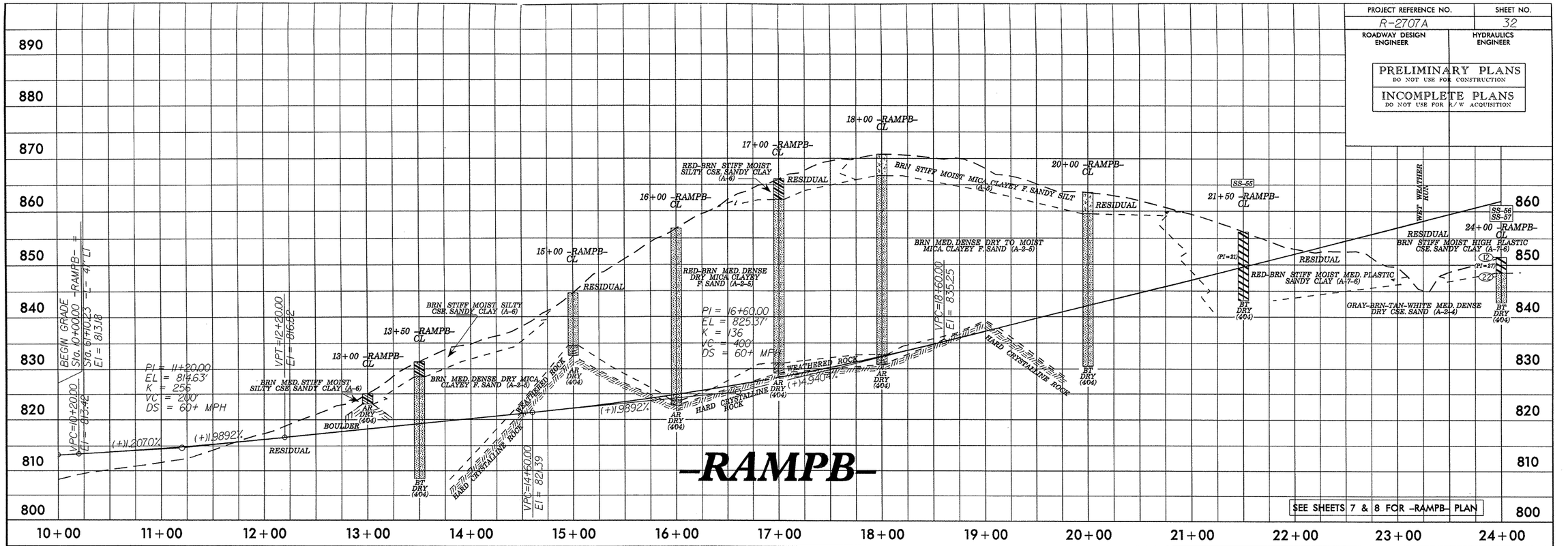
910 900 890 880 870 860 850 840 830 820 810

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+00 202+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

PROJECT REFERENCE NO.	SHEET NO.
R-2707A	32
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

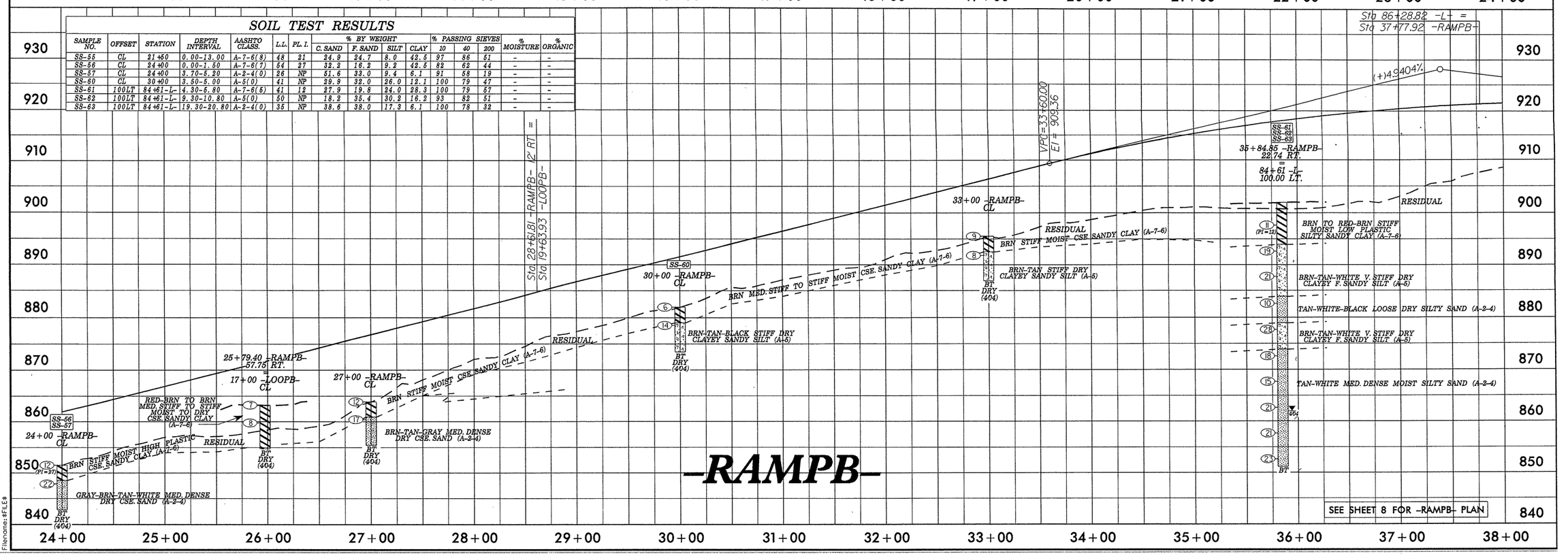
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION



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-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)	54	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-	4.30-6.80	A-7-6(6)	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	-	-



-RAMPB-

-RAMPB-

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.	LL.	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	26	19.3	24.1	12.5	44.1	96	88	57	-	-

PI = 37+40.00
EL = 928.13'
K = 101
VC = 760'
DS = 50 MPH

(-)2.5500%

VPC=41+20.00
EI = 918.44
18' LT
SR 1161 WESTLEE RD

RESIDUAL

SS-87
SS-88

43+34.12 -RAMPB-
74.13 RT.
=
26+00 -RAMPC-
CL

(21) (PI=24)
(19) (PI=14)

RESIDUAL

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

BT DRY (404)

45+77.63 -RAMPB-
54.25 RT.
=
28+50 -RAMPC-
CL

RESIDUAL

(17)
(20)

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

BT DRY (404)

SS-83
SS-84

49+22.87 -RAMPB-
44.16 LT
=
19+00 -RAMPD-
CL

50+00 -RAMPB-
CL

RESIDUAL

(1) (PI=11)
(5) (PI=26)

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

BT DRY (404)

BT DRY (404)

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

RESIDUAL

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

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

BT DRY (404)

52+13.36 -RAMPB-
30.00 LT.
=
10+00 -Y6-
50.00 LT.

Sta. 51+25.34 -RAMPB- 24' LT =
Sta. 21+04.26 -RAMPD-

END GRADE
Sta. 52+13.37 -RAMPB- =
Sta. 10+00.00 -Y6- 20' RT =
Sta. 34+87.58 -RAMPC- 52' RT
EI = 890.56

SEE SHEETS 8 & 21 FOR -RAMPB- PLAN

-RAMPB-

PI = 11+15.00
EL = 865.94'
K = 61
VC = 120'
DS = 45 MPH

BEGIN GRADE
Sta. 10+00.00 -LOOPB- =
Sta. 18+14.53 -L- 47' LT
EI = 869.98

VPC=11+91.55
EI = 868.05

VPT=11+75.00
EI = 862.86

VPC=11+90.00
EI = 861.83

PI = 14+10.00
EL = 849.78'
K = 37
VC = 440'
DS = 25 MPH

VPT=14+30.00
EI = 863.74

PI = 18+80.00
EL = 879.60'
K = 88
VC = 120'
DS = 50 MPH

VPC=18+40.00
EI = 875.79

VPT=19+40.00
EI = 882.59

END GRADE
Sta. 19+63.93 -LOOPB- =
Sta. 29+46.18 -RAMPB- 12' RT
EI = 873.78

10+62.44 -LOOPB-
47.93 LT.
=
77+60 -L-
CL

RESIDUAL

(-)13.5107%

(-)15.4789%

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)

(+)6.3441%

SS-68
SS-69

15+50 -LOOPB-
CL

RESIDUAL

(4)
(9)

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

BRN-TAN-BLACK STIFF MOIST TO DRY CLAYEY SANDY SILT (A-6)

BT DRY (404)

17+00 -LOOPB-
CL

(7)
(8)

BT DRY (404)

RED-BRN TO BRN MED. STIFF TO STIFF MOIST TO DRY CSE. SANDY CLAY (A-7-6)

(+)4.9839%

18+08.48 -LOOPB-
21.98 LT.
=
27+00 -RAMPB-
CL

RESIDUAL

(12)
(17)

BRN STIFF MOIST CSE. SANDY CLAY (A-7-6)

BRN-TAN-GRAY MED. DENSE DRY CSE. SAND (A-2-4)

BT DRY (404)

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-68	CL	15+60	0.00-1.50	A-6(4)	33	18	36.0	20.8	15.9	28.3	96	74	48	-	-
SS-69	CL	15+60	3.50-5.00	A-5(0)	41	NP	29.7	31.5	18.5	20.2	99	79	47	-	-

-LOOPB-

SEE SHEET 8 FOR -LOOPB- PLAN

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

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

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

10+54.36 -RAMPC-
69.81 RT.
=
75+50 -L-
120.00 RT.

RESIDUAL

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

(PI=31)
15
10
11
16
16
100

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)

VPC=12+00.00
EL = 886.68

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

12+46.66 -RAMPC-
62.17 LT.
=
77+50 -L-
CL

RESIDUAL

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

(+)2.8334%
(-)1.6332%

BT DRY (404)

VPT=14+00.00
EL = 872.14

VPC=14+40.00
EL = 873.28

14+46.29 -RAMPC-
74.38 LT.
=
79+50 -L-
CL

RESIDUAL

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

BT DRY (404)

PI = 15+80.00
EL = 877.24'
K = 153
VC = 280'
DS = 60 MPH

SS-60
SS-61

16+43.29 -RAMPC-
88.40 LT.
=
81+50 -L-
CL

RESIDUAL

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

(+)2.8834%

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

BT DRY (404)

VPT=17+10.00
EL = 883.78

17+00 -RAMPC-
CL

RESIDUAL

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

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

BT DRY (404)

SS-52
SS-53
SS-54

19+00 -RAMPC-
CL

RESIDUAL

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

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

BT DRY (404)

VPC=21+05.00
EL = 901.75

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

(+)4.6681%

SR 1161 WESTLEE RD (SR BS1)

-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	120RT	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	120RT	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	120RT	75+60-L-	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+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	120RT	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)	36	11	32.0	25.3	22.6	20.2	100	78	50	-	-
SS-52	CL	19+00	0.00-5.00	A-7-6(22)	66	34	19.2	15.2	21.1	44.6	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	75	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	25.6	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	24.6	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	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	67	-	-

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

(+)4.6681%

(-)12.5500%

SR 1161 WESTLEE RD

VAT=27+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)
21
(PI=14)
19

BT DRY (404)

28+50 -RAMPC-
CL

RESIDUAL

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

11
20

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)
7
(PI=26)
5

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)

END GRADE
Sta. 34+87.58 -RAMPC- =
Sta. 10+00.00 -Y6- 32' LT =
Sta. 52+13.31 -RAMPB- 52' LT
EL = 890.32

34+87.68 -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)

-RAMPC-

SEE SHEETS 8 & 21 FOR -RAMPC- PLAN

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

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

24+00 25+00 26+00 27+00 28+00 29+00 30+00 31+00 32+00 33+00

940 930 920 910 900 890 880 870 860 850

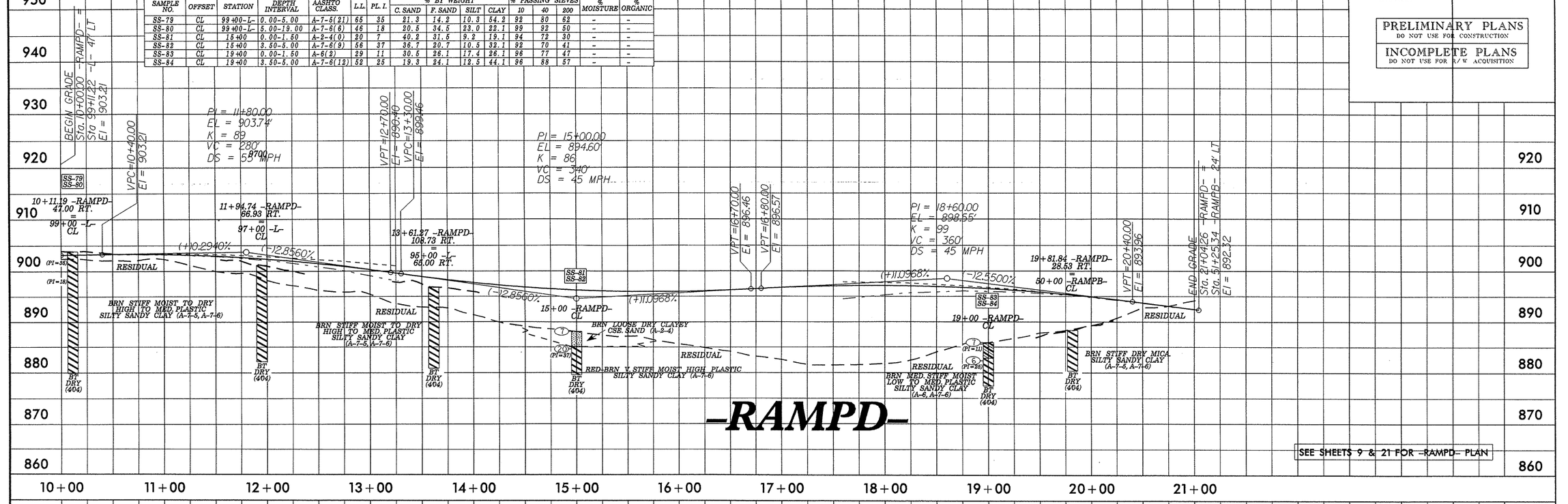
PROJECT REFERENCE NO.	SHEET NO.
R-2707A	35
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

SOIL TEST RESULTS

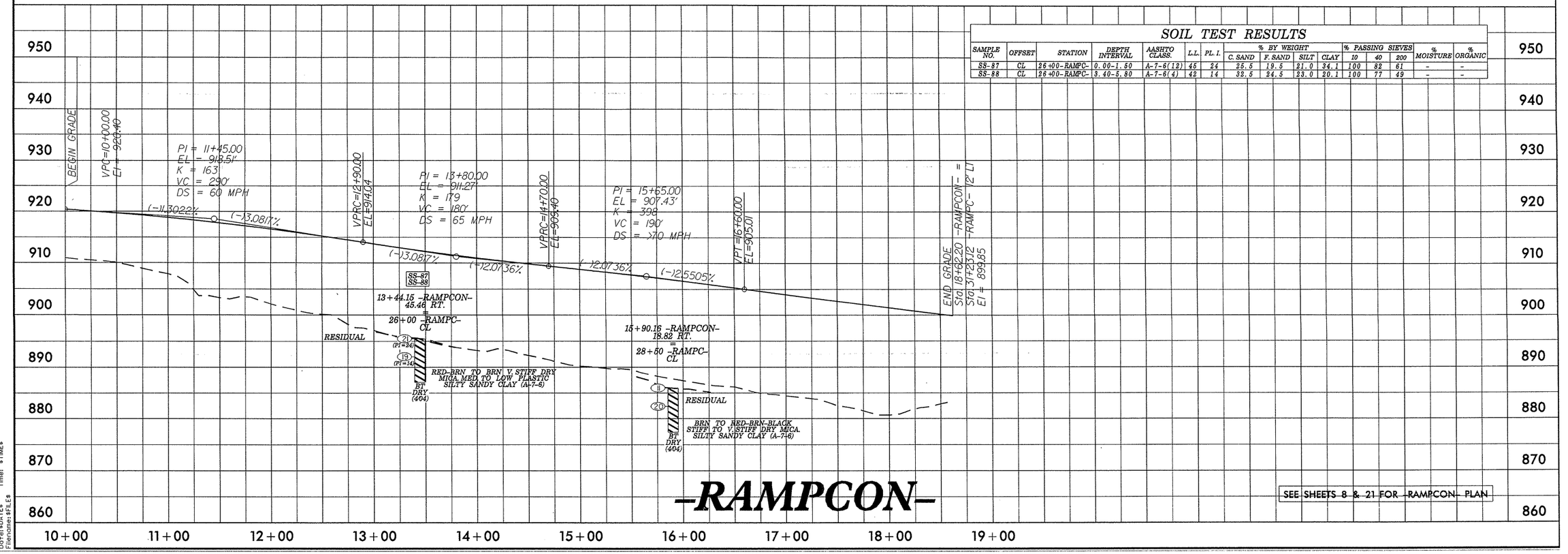
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	PL. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING SIEVES 10	40	200	% MOISTURE	% ORGANIC
SS-79	CL	99+00-L-	0.00-5.00	A-7-5(21)	65	35	21.3	14.2	10.3	54.2	92	80	62	-	-
SS-80	CL	99+00-L-	5.00-19.00	A-7-6(6)	46	18	20.5	34.5	23.0	22.1	99	92	50	-	-
SS-81	CL	15+00	0.00-1.50	A-2-4(0)	20	7	40.2	31.6	9.2	19.1	94	72	30	-	-
SS-82	CL	15+00	3.50-5.00	A-7-6(9)	56	37	38.7	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	-	-



SEE SHEETS 9 & 21 FOR -RAMPD- 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-87	CL	26+00-RAMPC-	0.00-1.60	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	-	-



SEE SHEETS 8 & 21 FOR -RAMPCON- PLAN

ARGOIS C&M
Date:#DATE#
Filename:#FILE#
Time: #TIME#

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.	LL.	PL. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING SIEVES 10	40	200	% MOISTURE	% ORGANIC
SS-13	CL	14+00	0.00-6.00	A-7-5(31)	70	37	13.5	13.3	13.5	60.6	100	93	77	-	-
SS-14	CL	14+00	6.00-16.00	A-7-6(15)	55	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	26.6	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	-	-

BEGIN GRADE Sta. 10+00.00 -Y2LOOPB- = Sta. 42+18.46 -L- 47' LT
EL = 861.83

VPC=10+40.00
EI = 862.87

PI = 11+50.00
EL = 865.73'
K = 53
VC = 220'
DS = 40 MPH

VPT=12+60.00
EI = 864.03

VPC=12+72.00
EI = 863.85

PI = 15+22.00
EL = 859.99'
K = 82
VC = 500'
DS = 45 MPH

VPT=17+72.00
EI = 871.32

PI = 19+90.15
EL = 881.21'
END GRADE
Sta. 20+10.15 -Y2LOOPB- = Sta. 16+55.00 -Y2-
EI = 881.61

11+16.13 -Y2LOOPB- 46.74 LT. = 41+00 -L- CL

12+60 -Y2LOOPB- CL

14+00 -Y2LOOPB- CL

16+00 -Y2LOOPB- CL

16+82.67 -Y2LOOPB- 52.09 LT. = 26+00 -Y2RAMPB- CL

17+70.99 -Y2LOOPB- 56.25 LT. = 27+00 -Y2RAMPB- 30.00 LT.

19+62.90 -Y2LOOPB- 20.00 LT. = 29+00 -Y2RAMPB- CL

(+)2.6002%
(-)1.5431%
(-)1.5431%
(+)4.5328%
(+)4.5328%
(+)2.0010%

SS-15
SS-16

SS-13
SS-14

RESIDUAL

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

RED-BRN TO BRN-TAN-BLACK MED STIFF TO V.STIFF MOIST TO DRY NON-Y.MICA. SILTY SANDY CLAY (A-7-5, A-7-6)

RED-BRN TO BRN STIFF DRY MICA SILTY SANDY CLAY (A-7-6, A-7-6)

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

RED-BRN TO BRN STIFF MOIST TO DRY SILTY CSE SANDY CLAY (A-7-5) TO SLI. MICA. SILTY SANDY CLAY (A-6)

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

BT DRY (404)

(PI=37)
(PI=28)
(PI=24)
(PI=16)

-Y2LOOPB-

SEE SHEET 6 FOR -Y2LOOPB- PLAN

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-17	CL	14+00	0.00-1.50	A-4(0)	24	9	40.0	26.5	11.3	22.2	96	71	36	-	-
SS-18	CL	14+00	3.50-5.00	A-7-6(26)	68	31	14.3	12.5	12.5	60.6	99	90	75	-	-
SS-19	CL	17+50	3.50-5.00	A-4(0)	33	NP	36.6	31.7	19.6	12.1	96	73	38	-	-

BEGIN GRADE Sta. 10+00.00 -Y2LOOPC- = Sta. 42+26.00 -L- 47' RT
EL = 861.63

VPC=10+55.00
EI = 863.07

PI = 11+96.00
EL = 866.76'
K = 50
VC = 282'
DS = 40 MPH

VPT=13+36.81
EI = 862.54

VPC=14+77.00
EI = 858.34

PI = 17+42.00
EL = 850.40'
K = 66
VC = 530'
DS = 40 MPH

VPT=20+07.00
EI = 863.59

PI = 21+00.00
EL = 868.22'
END GRADE
Sta. 21+19.81 -Y2LOOPC- Sta. 27+00.00 -Y2-
EI = 869.22

11+18.17 -Y2LOOPC- 53.59 RT. = 41+00 -L- CL

14+00 -Y2LOOPC- CL

17+50 -Y2LOOPC- CL

(+)2.6154%
(-)2.9956%
(-)2.9956%
(+)4.9777%
(+)4.9777%
(+)5.0480%

SS-17
SS-18

SS-19

US 74 WBL WEST DIXON BLVD
24' BST
US 74 EBL WEST DIXON BLVD
24' BST

SR 1162 McBRAYER HOMESTEAD RD (P-5501)

ROADWAY FILL OVER RESIDUAL

ROADWAY FILL

RESIDUAL

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

BRN MED STIFF TO STIFF MOIST CLAYEY CSE. SANDY SILT (A-4) (FARMED TOPSOIL)

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

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

BRN-TAN-WHITE V. STIFF DRY CLAYEY SANDY SILT (A-4)

BT DRY (404)

(PI=31)

-Y2LOOPC-

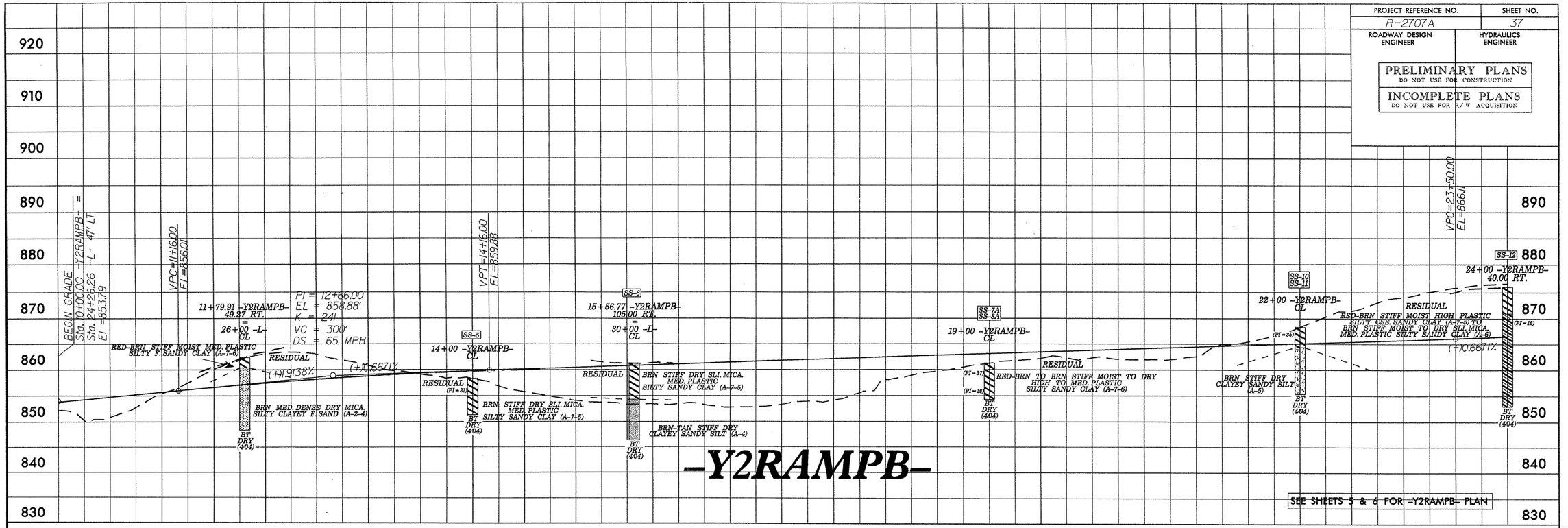
SEE SHEET 6 FOR -Y2LOOPC- PLAN

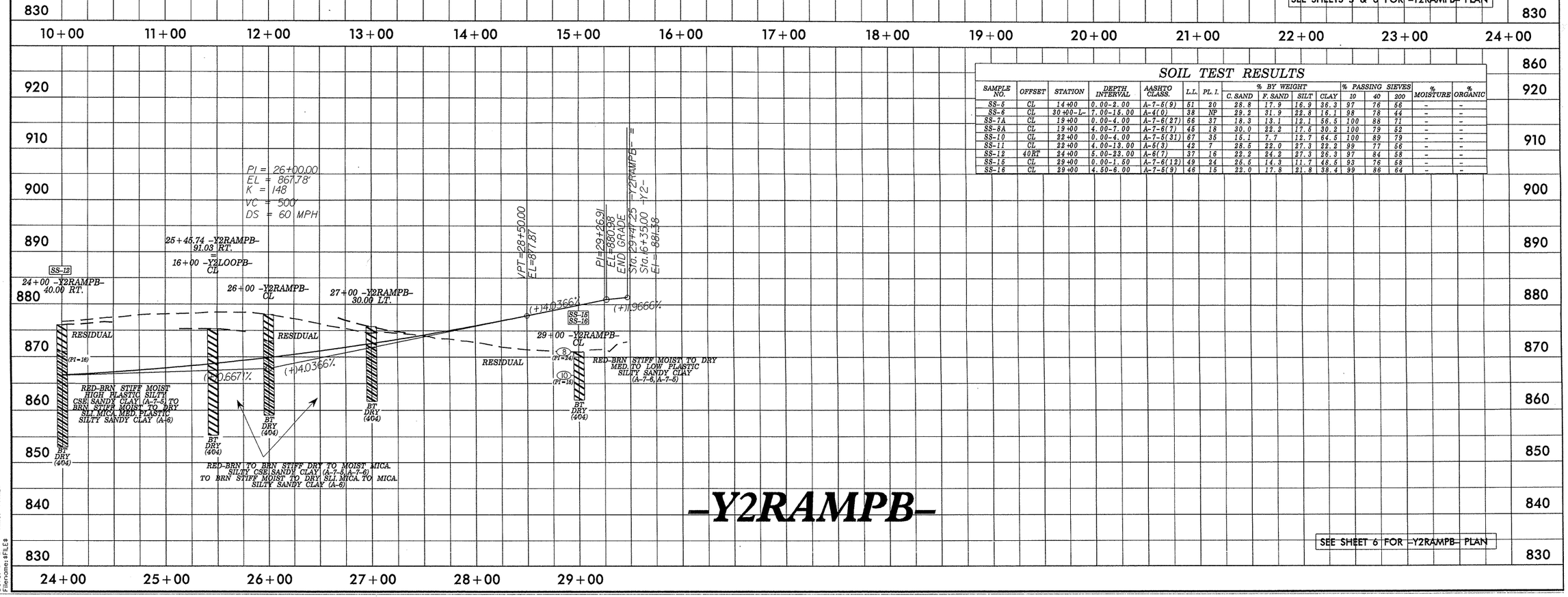
ARCADIS G&M
Date:#DATE$ Time: $TIME$
Filename:$FILE$

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)	51	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)	46	18	30.0	22.2	17.5	30.2	100	79	52	-	-
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-5(3)	42	7	28.5	22.0	27.3	22.2	99	77	56	-	-
SS-12	40RT	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	0.00-1.50	A-7-6(12)	49	24	25.5	14.3	11.7	48.5	93	76	58	-	-
SS-16	CL	29+00	4.50-6.00	A-7-5(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

–Y2RAMPC–

BEGIN GRADE
Sta. 10+00.00 –Y2RAMPC– =
Sta. 24+35.00 –L– 47' RT
EI = 855.57

PI = 12+37.00
EL = 860.35'
K = 154
VC = 160'
DS = 60 MPH

VPC=11+57.00
EL=858.74

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)

(+)2.0169%

(+)10.9769%

VPT=13+17.00
EL=861.13

RESIDUAL

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=9+26.00
EL=853.90

SS-20
SS-21

20+50 –Y2RAMPC– CL

RESIDUAL

VPC=21+15.00
EL=854.56

(10) (PI=25)
(21) (PI=15)

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)

BRN MED. DENSE DRY MICA SILTY CLAYEY SAND (A-2-4)

BT DRY (404)

BT DRY (404)

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 C. SAND	F. SAND	SILT	CLAY	% PASSING SIEVES 10	40	200	% MOISTURE	% ORGANIC
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-7-6(10)	57	24	28.6	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

(-)2.2964%

(+)4.5810%

RESIDUAL

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

BT DRY (404)

SS-19

27+64.64 –Y2RAMPC– 41.48 LT.
=
17+50 –LOOPC– CL

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

BRN-TAN-WHITE V. STIFF DRY CLAYEY SANDY SILT (A-4)

BT DRY (404)

VPT=30+65.00
EL=865.41

(+)4.5810%

SR 1152 MCBRAYER HOMESTEAD RD (S.R.) 1915

PI=31+14.21
EL=867.66
END GRADE
Sta. 31+34.19 –Y2RAMPC– =
Sta. 27+20.00 –Y2–
EI = 865.52

(+)4.2660%

SS-37

31+34.19 –Y2RAMPC– 9.68 LT.
=
10+00 –SR1– CL

RESIDUAL

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

BT DRY (404)

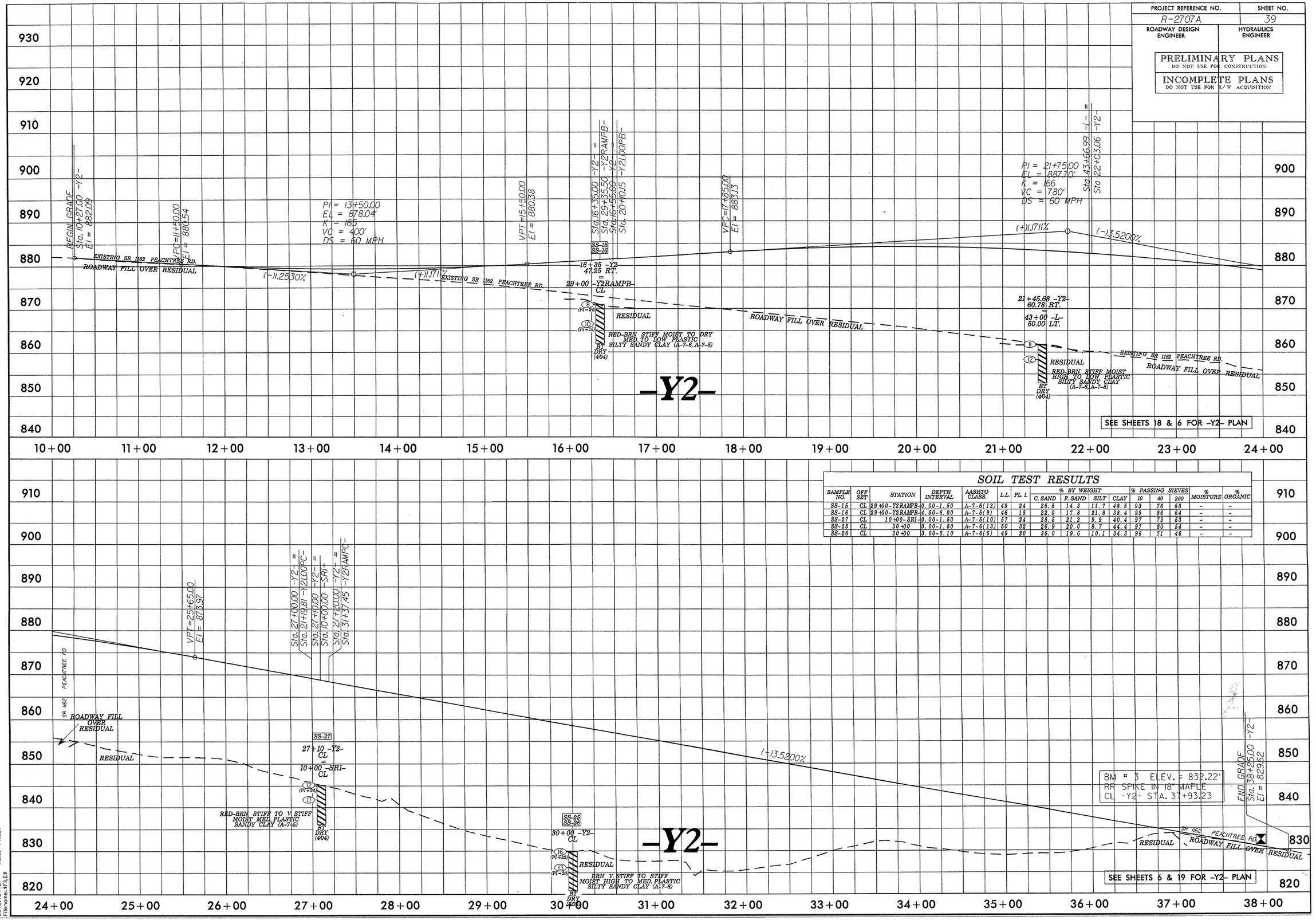
SEE SHEET 6 FOR –Y2RAMPC– PLAN

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

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



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-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	68	-	-
SS-16	CL	29+00-Y2RAMPB-	4.60-6.00	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-7-5(10)	67	24	28.5	21.2	9.9	40.4	97	79	53	-	-
SS-25	CL	30+00	0.00-1.50	A-7-6(13)	60	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	-	-

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

VPT=18+07.84
EL=918.61

(+)2.3746%

(+)1.0981%

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

-Y4-

SS-64
MS-64
SS-65
17+00 -Y4-
CL
9 (PI=21)
41
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-68
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-68
23+00 -Y4-
CL
9
14 (PI=17)
RESIDUAL
BT
RED-BRN-GRAY TO RED-BRN-TAN DRY STIFF MOIST TO DRY MED. PLASTIC SILTY SANDY CLAY (A-7-6, A-7-6) (404)

SEE SHEET 20 FOR -Y4- PLAN

(+)1.0981%

-15.6600%

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

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
VPC=29+35.00
EL=930.99
8
10
BRN & GRAY TO RED-BRN-TAN STIFF MOIST MED. PLASTIC SILTY SANDY CLAY (A-7-6)
BT DRY (404)

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

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

SS-70
SS-71
SS-72
35+10 -Y4-
15.00 RT.
RESIDUAL
BRN MED. STIFF TO STIFF MOIST MED. PLASTIC SILTY SANDY CLAY (A-7-6)
9
9
11
BRN TO BRN-TAN-WHITE LOOSE TO MED. DENSE DRY TO MOIST V. MICA CLAYEY SILTY SAND (A-2-5) TO SILTY F. SAND (A-2-5)
9
10
19
12
25
19
14
14
24
27
BT

SEE SHEETS 20 & 9 FOR -Y4- 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-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	54	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	30.5	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	25+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	10.0	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	-	-

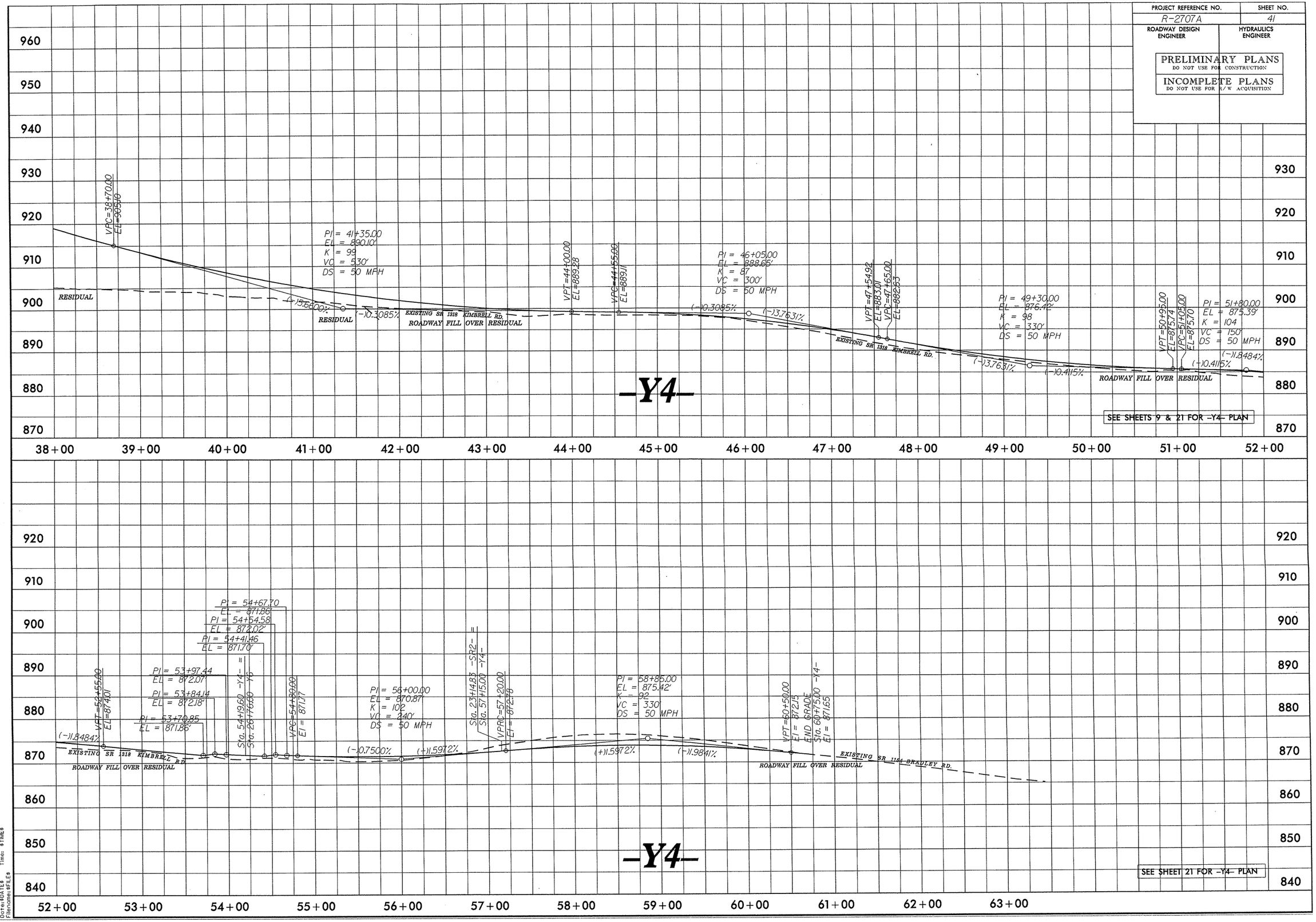
-Y4-

ARCADIS G&M
Date:&DATE$ Time:&TIME$
Dgn:&DGN$ File:none&FILE$

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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Design Date: 8/8/2018
Time: &TIME&
Filename: &FILE&

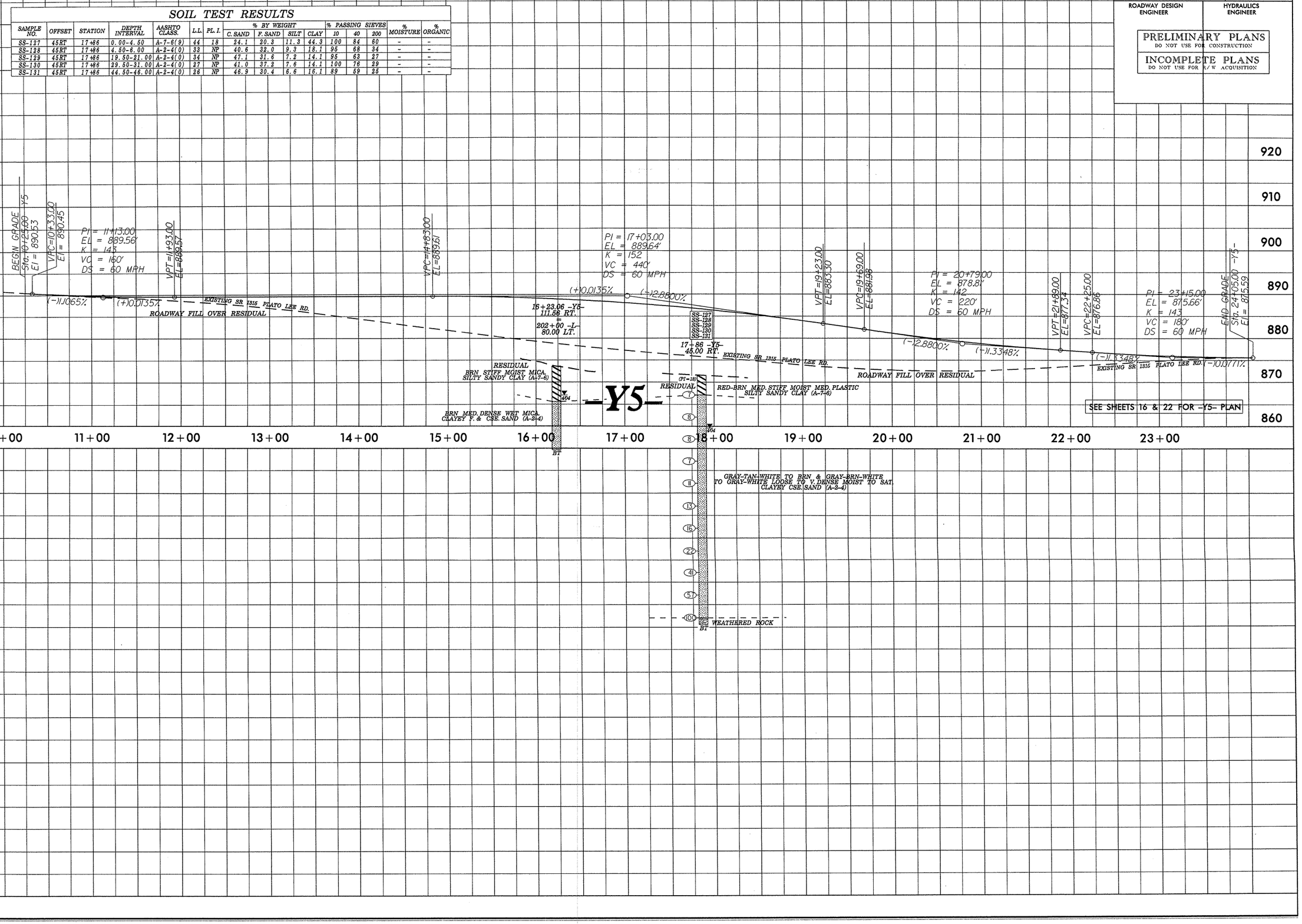
PROJECT REFERENCE NO.	SHEET NO.
R-2707A	42
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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.	LL.	PL. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING SIEVES 10	40	200	% MOISTURE	% ORGANIC
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	96	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	-	-



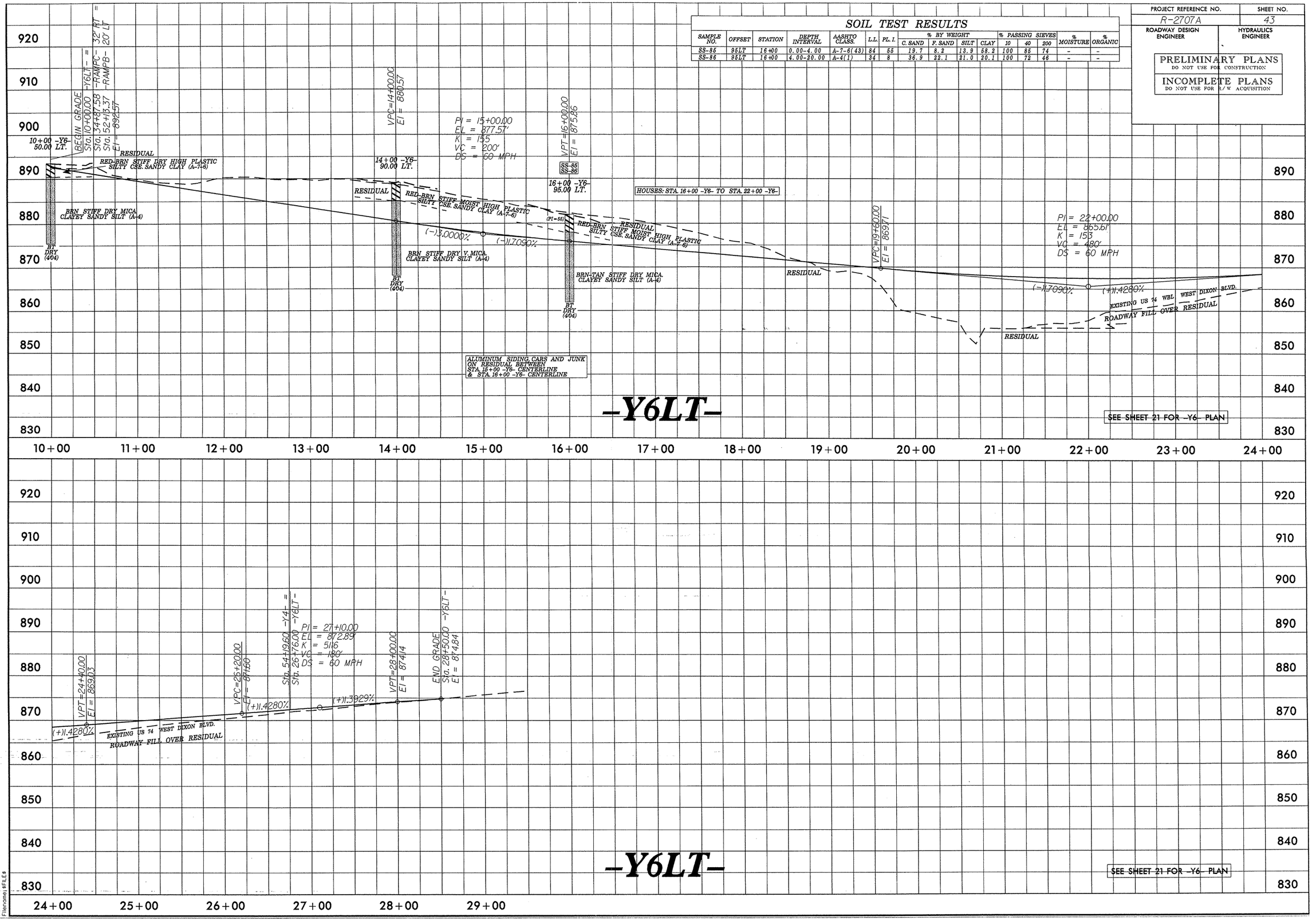
PROJECT REFERENCE NO.	SHEET NO.
R-2707A	43
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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	F. SAND	SILT	CLAY	% PASSING SIEVES 10	40	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	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	-	-



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Time: $TIME$

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

ROADWAY DESIGN ENGINEER

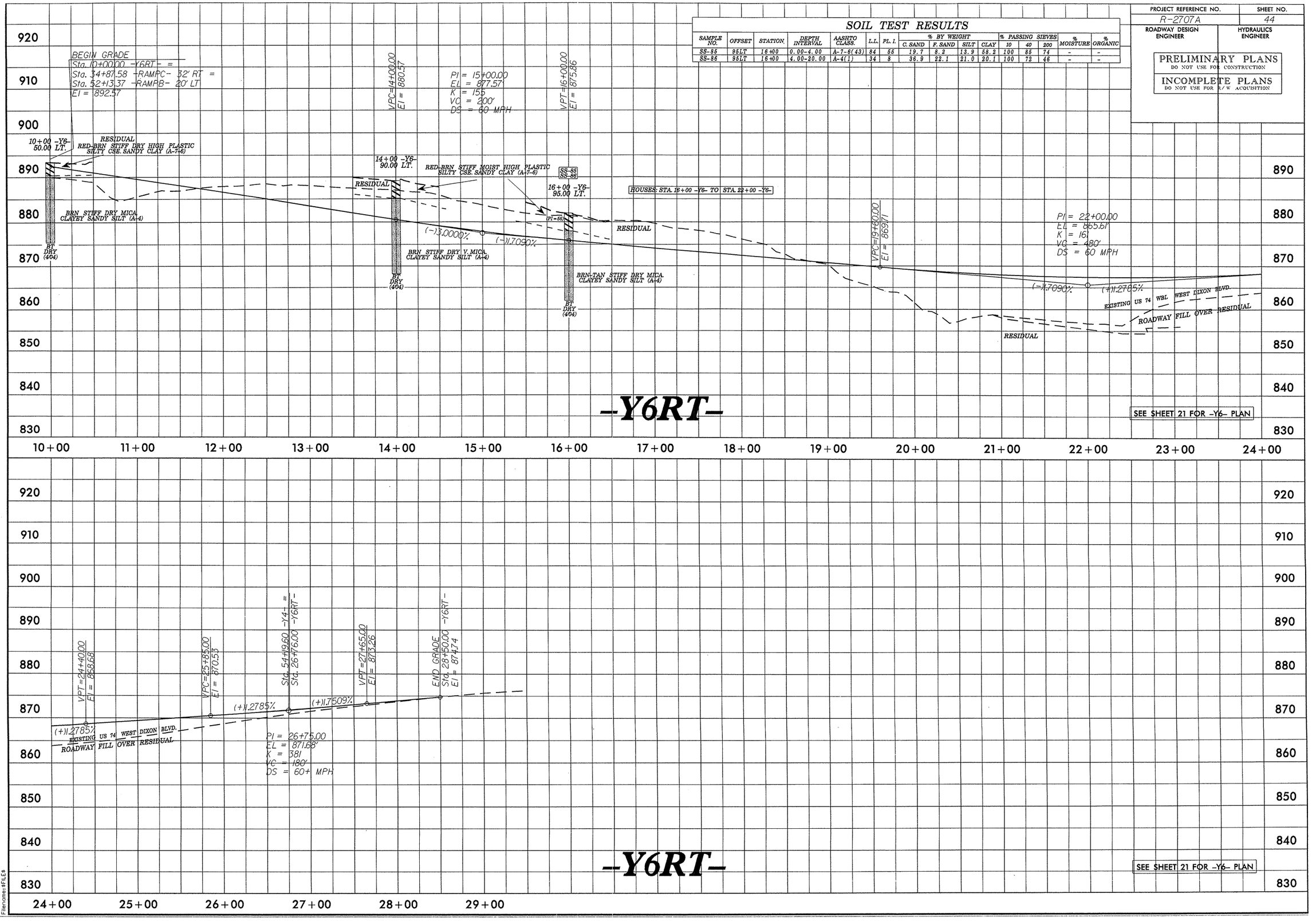
HYDRAULICS ENGINEER

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)	84	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
Date:$DATE$
Filename:$FILE$
Time: $TIME$

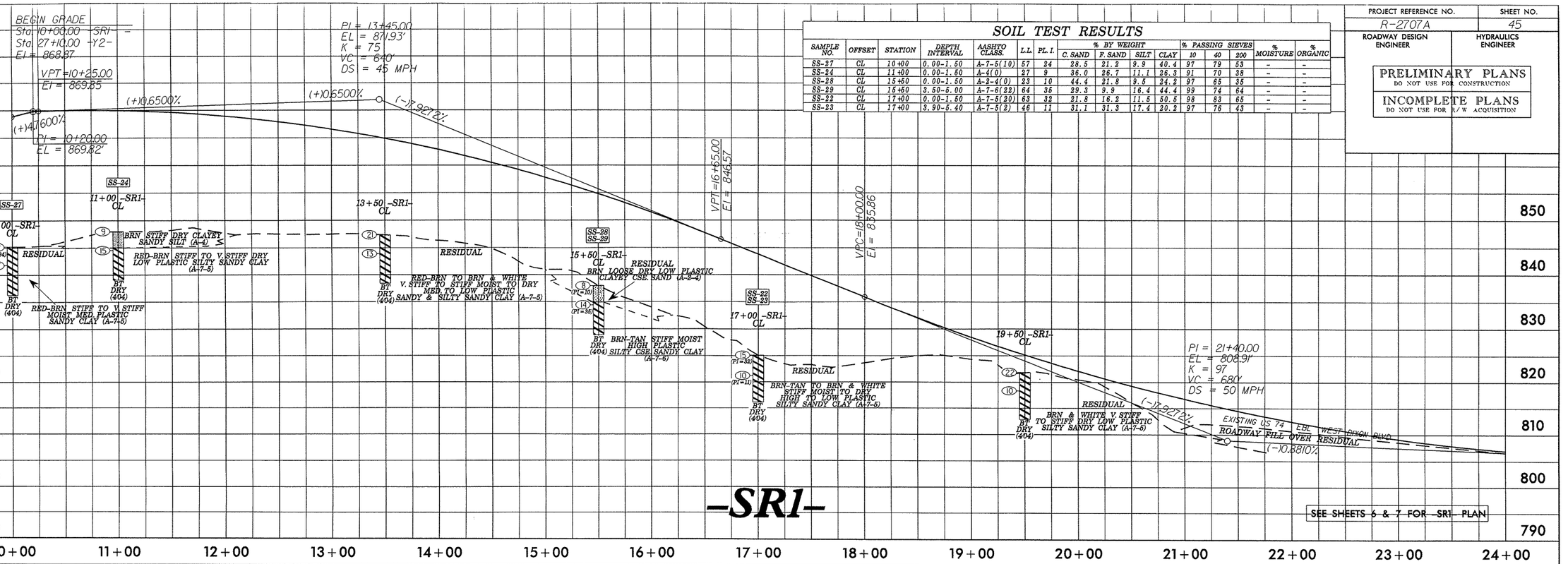
PROJECT REFERENCE NO.	SHEET NO.
R-2707A	45
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

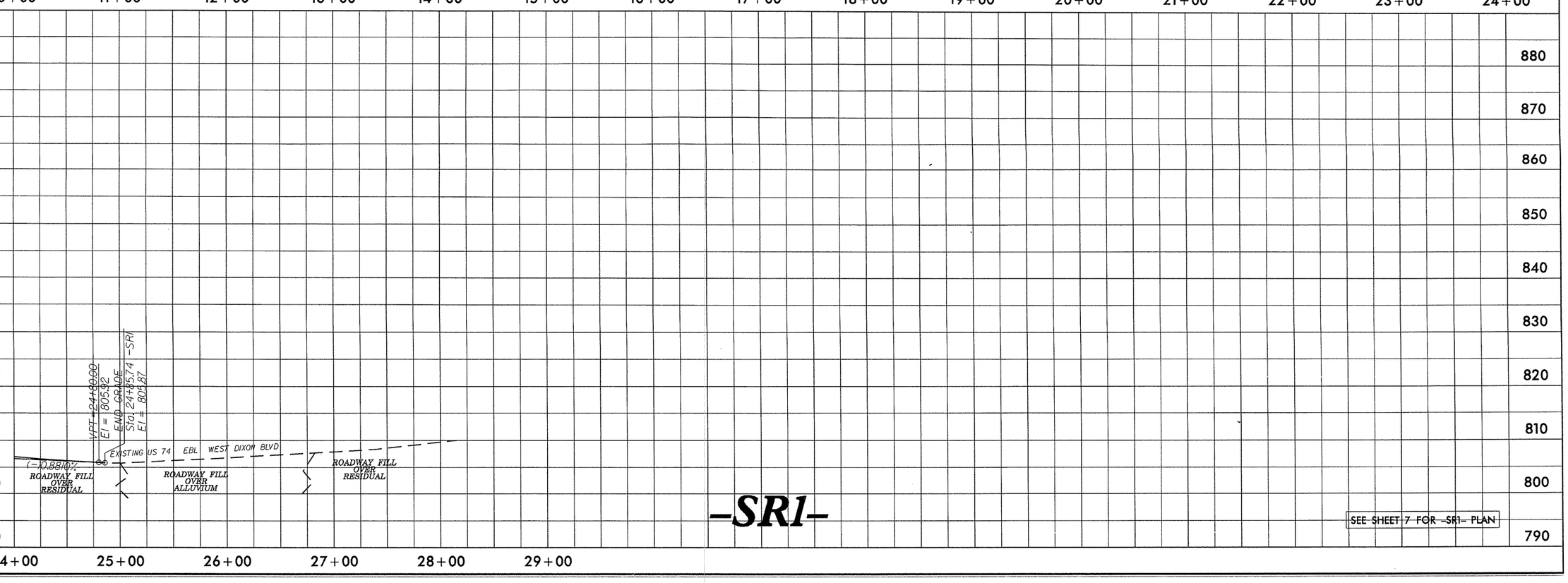
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL.	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-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	36	29.3	9.9	16.4	44.4	99	74	64	-	-
SS-22	CL	17+00	0.00-1.50	A-7-6(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 G&M
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Filename=$FILE$

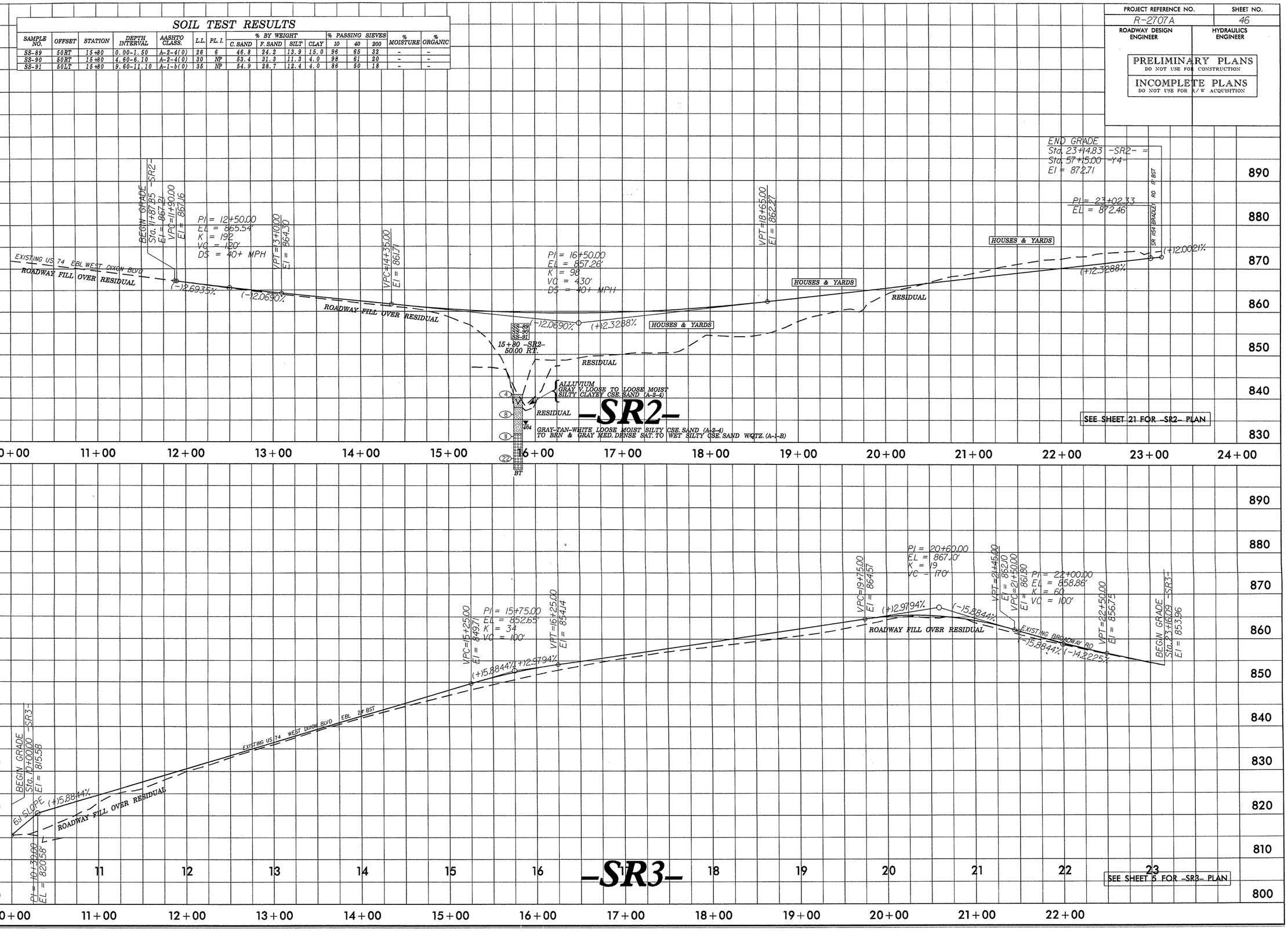
PROJECT REFERENCE NO.	SHEET NO.
R-2707A	46
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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.	LL.	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	33	-	-
SS-90	50RT	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	50LT	15+80	9.60-11.10	A-1-b(0)	35	NP	54.9	28.7	12.4	4.0	86	50	18	-	-



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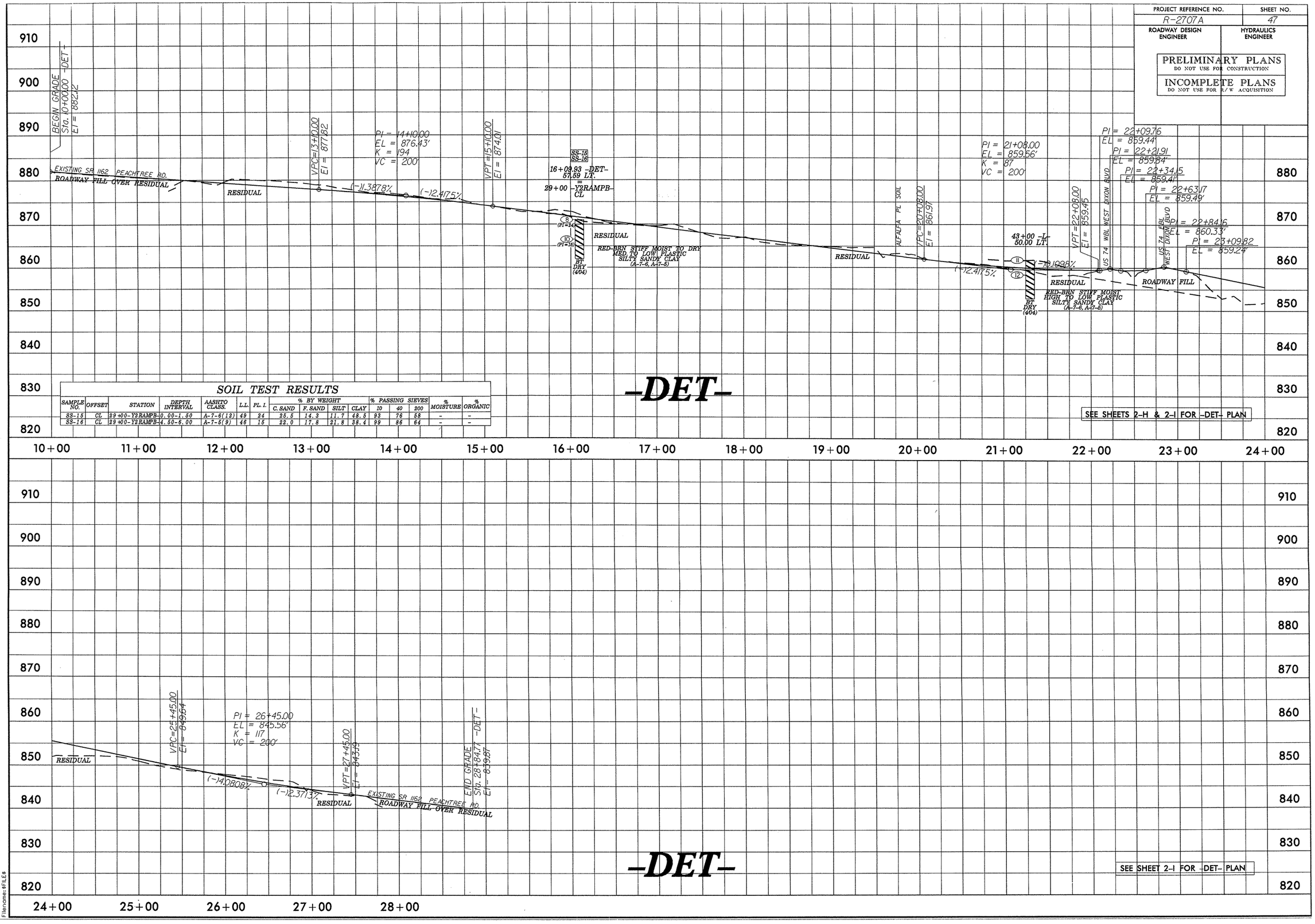
Filename:=$FILE$

PROJECT REFERENCE NO.	SHEET NO.
R-2707A	47

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-15	CL	29+00-Y2RAMPB-	0.00-1.50	A-7-6(12)	49	24	25.5	14.3	11.7	48.5	93	78	58	-	-
SS-16	CL	29+00-Y2RAMPB-	4.50-6.00	A-7-6(9)	46	16	22.0	17.8	21.8	38.4	99	86	64	-	-

-DET-

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

-DET-

SEE SHEET 2-I FOR -DET- PLAN

0 10	PROJ. REFERENCE NO.	SHEET NO.
	R-2707A	X-29

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

13+00 -RAMPB- CL = 64+09.67 -L- 60.76 LT.

RAMPB 12+90.25

L 64+00.00

L 64+00.00

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

AR // BOULDER DRY (40%)

819.07

819.07

822.59

814.619

D.P. 815.993

RESIDUAL

ROADWAY FILL

ROADWAY FILL

814.866

RESIDUAL

NR

64+00.00

RAMPB 12+39.96

L 63+50.00

L 63+50.00

817.01

817.81

817.81

818.14

813.639

D.P. 814.738

813.612

63+50.00

RAMPB 11+89.83

L 63+00.00

L 63+00.00

816.04

816.69

816.69

814.61

812.841

D.P. 813.618

63+00.00

RAMPB 11+39.78

L 62+50.00

L 62+50.00

815.15

815.70

815.70

812.02

812.138

D.P. 812.632

62+50.00

L

830 820 810

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

15+00 -RAMPB- CL

RESIDUAL

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

WEATHERED ROCK

HARD CRYSTALLINE ROCK

RAMPB 14+94.78

AR DRY (404)

0.0704

6:1

818.807

15+00 -RAMPB- 50.00 RT.

RESIDUAL BRN & RED-BRN STIFF MOIST MICA. LOW PLASTIC SILTY CSE. SANDY CLAY (A-6)

GRAY-BRN-WHITE TO BRN MED. DENSE TO DENSE DRY MICA. SILTY CSE. & F. SAND (A-2-4, A-2-5)

L 66+00.00

841.24

825.43

825.43

0.0000

0.0000

0.0000

6:1

2:1

ROADWAY FILL

RESIDUAL

D.P. 822.355

HARD CRYSTALLINE ROCK

821.228

HARD CRYSTALLINE ROCK

BT DRY (404)

66+00.00

RESIDUAL

RESIDUAL

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

RAMPB 14+42.97

GRAY-BRN-WHITE TO BRN MED. DENSE TO DENSE DRY MICA. SILTY CSE. & F. SAND (A-2-4, A-2-5)

HARD CRYSTALLINE ROCK

817.102

821.05

0.0727

L 65+50.00

837.23

823.64

823.64

RESIDUAL

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

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

0.0000

0.0000

0.0200

6:1

2:1

RESIDUAL

ROADWAY FILL

D.P. 820.563

HARD CRYSTALLINE ROCK

819.436

HARD CRYSTALLINE ROCK

65+50.00

RESIDUAL

RAMPB 13+91.68

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

HARD CRYSTALLINE ROCK

816.666

820.03

0.0742

L 65+00.00

832.52

821.98

821.98

0.0000

0.0000

0.0000

6:1

2:1

ROADWAY FILL

RESIDUAL

D.P. 818.905

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

817.779

HARD CRYSTALLINE ROCK

BT DRY (404)

65+00.00

HARD CRYSTALLINE ROCK

HARD CRYSTALLINE ROCK

13+50 -RAMPB- CL

RESIDUAL

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

RAMPB 13+40.80

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

HARD CRYSTALLINE ROCK

815.639

819.02

0.0756

L 64+50.00

820.46

820.46

RESIDUAL

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

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

0.0000

0.0000

0.0200

6:1

2:1

ROADWAY FILL

RESIDUAL

D.P. 817.382

816.265

HARD CRYSTALLINE ROCK

BT DRY (404)

64+50.00 NR

L

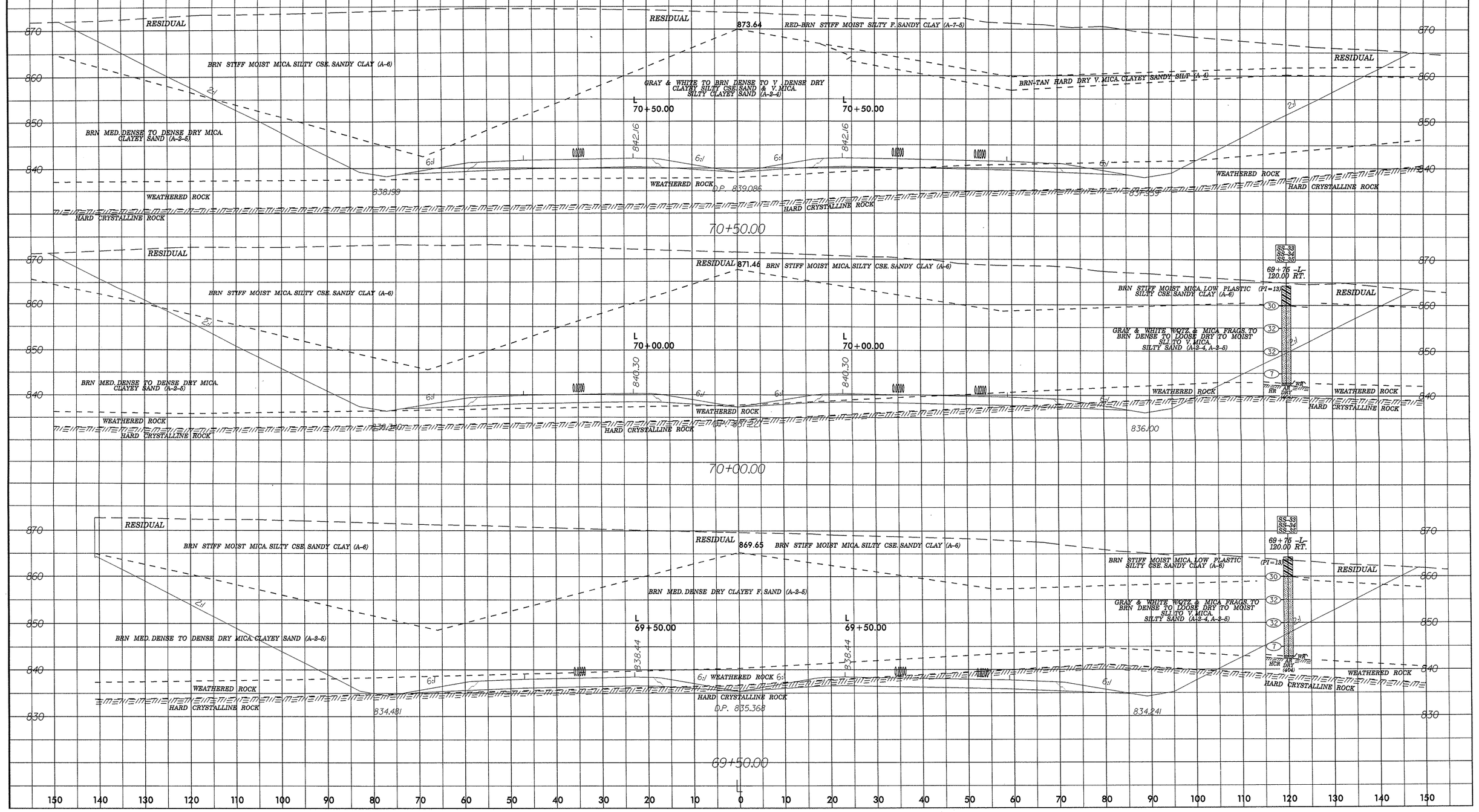
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

PROJ. REFERENCE NO.	SHEET NO.
R-2707A	X-33

52/61

SOIL TEST RESULTS

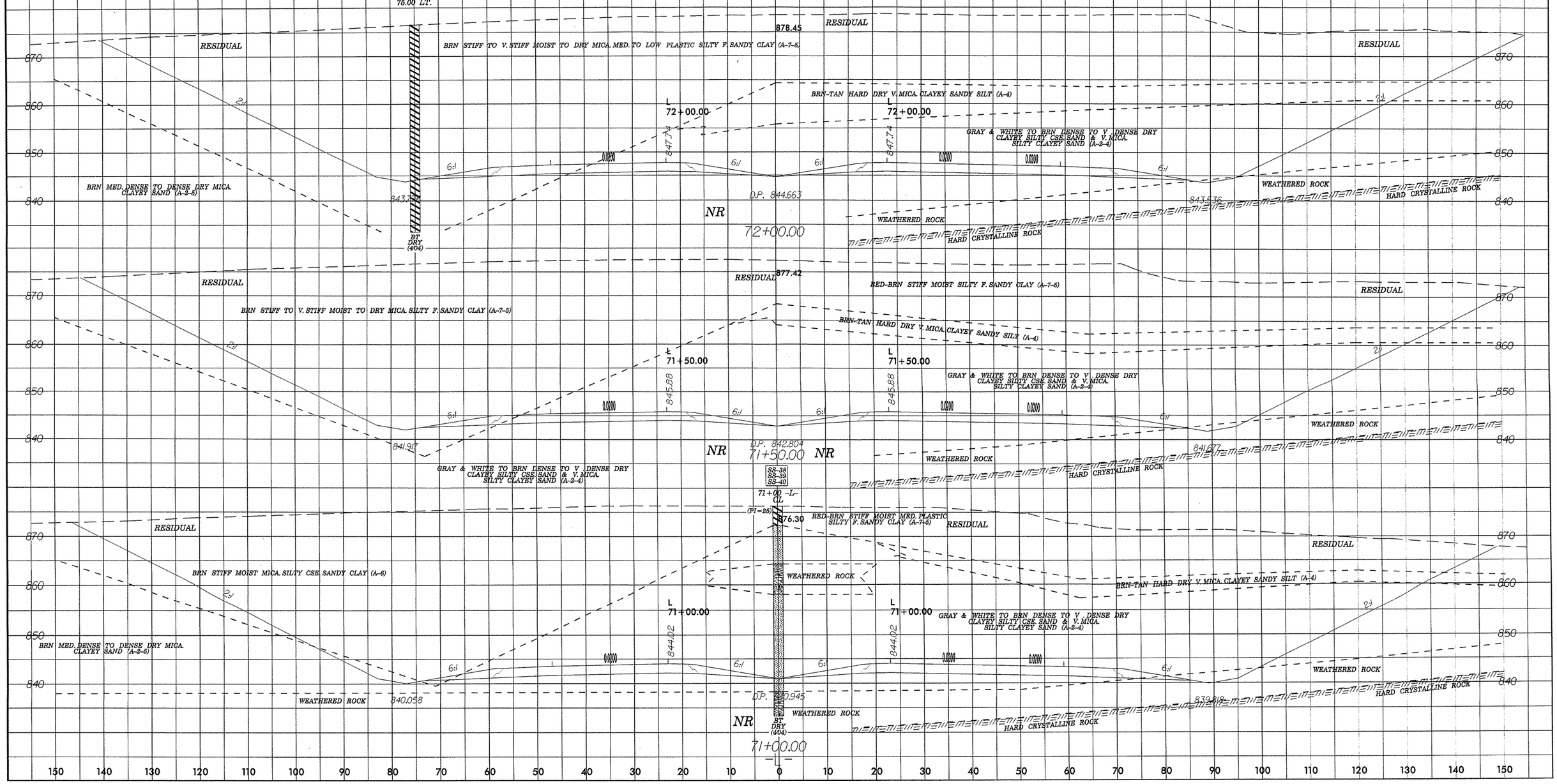
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	PL. I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-33	120 RT	69+75	0.00-4.40	A-6(3)	33	13	33.9	18.4	17.4	30.3	90	67	47	-	-
SS-34	120 RT	69+75	4.40-5.90	A-2-4(0)	29	NP	44.6	29.6	16.7	9.1	95	64	31	-	-
SS-35	120 RT	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

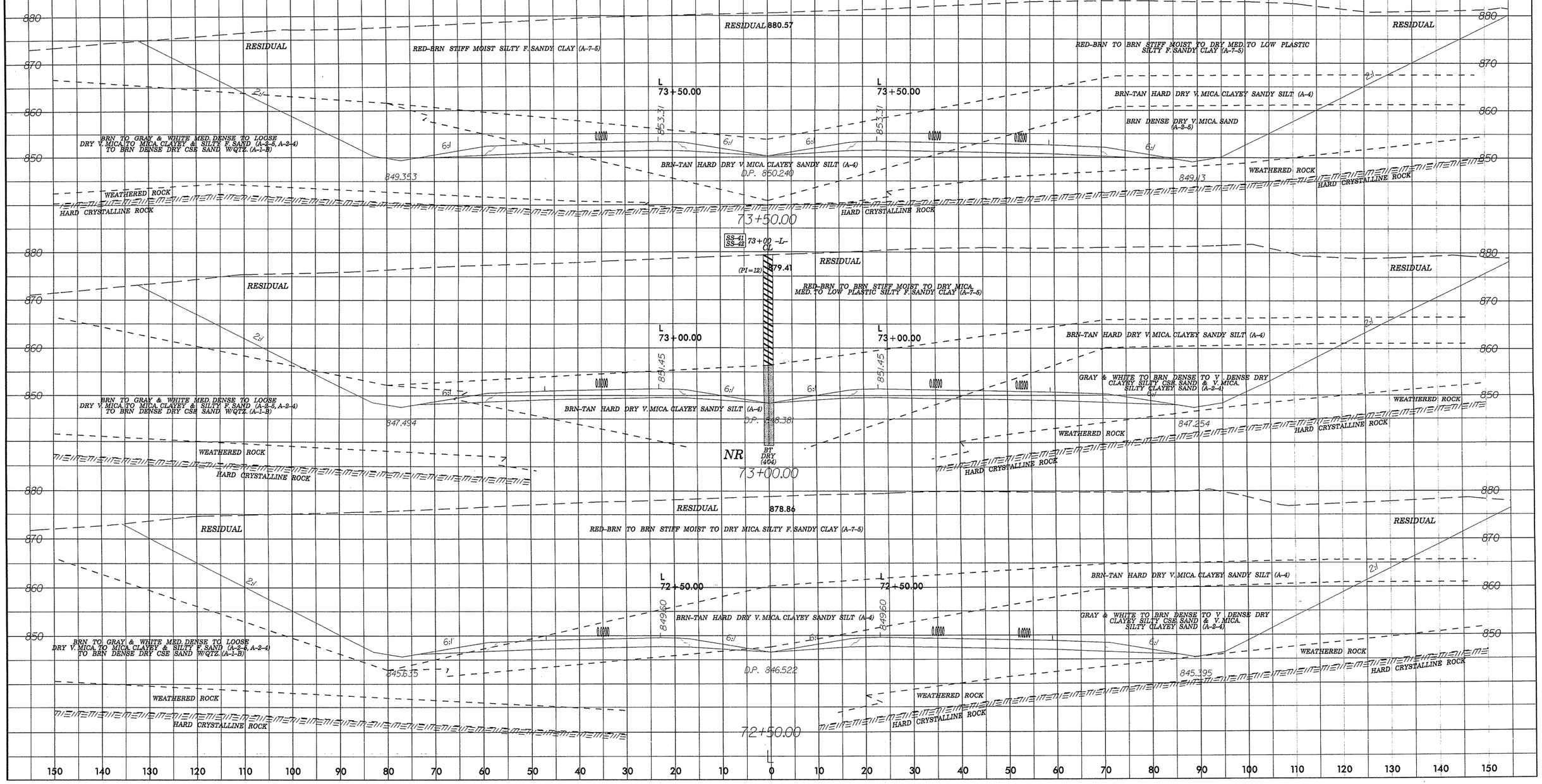
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	PL. I	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING SIEVES 10	40	200	% MOISTURE	% ORGANIC
SS-38	CL	71+00	0.00-4.00	A-7-5(14)	56	25	18.8	23.6	11.1	46.5	99	92	60	-	-
SS-39	CL	71+00	4.00-12.00	A-2-4(0)	27	NP	44.7	23.9	17.2	14.1	83	53	30	-	-
SS-40	CL	71+00	18.00-38.00	A-2-4(0)	40	NP	33.9	37.4	12.5	16.2	95	78	31	-	-



54/61

SOIL TEST RESULTS

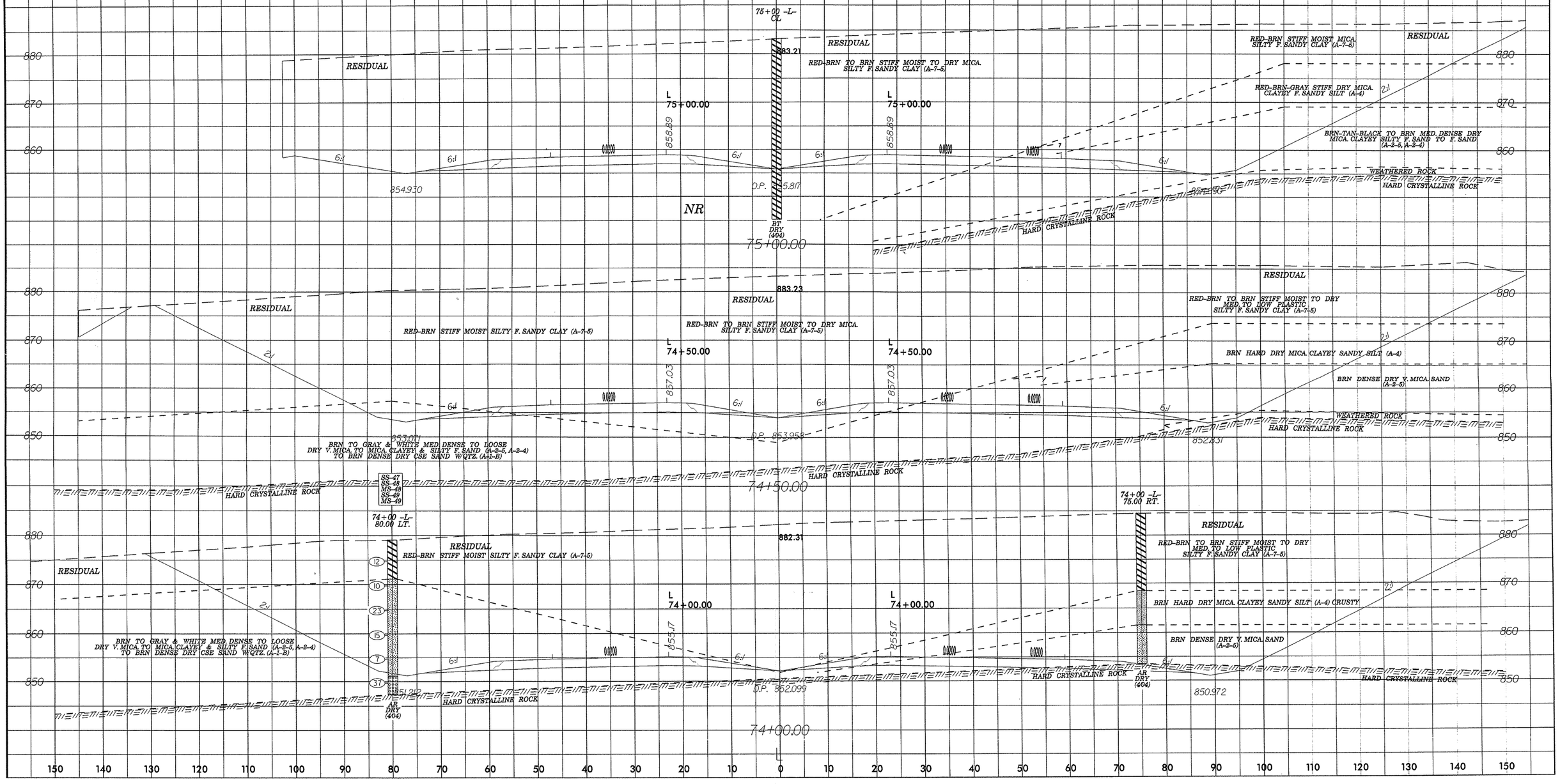
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	PL. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING SIEVES 10	40	200	% MOISTURE	% ORGANIC
SS-41	CL	73+00	4.00-23.00	A-7-5(4)	45	12	17.4	39.2	17.2	26.3	96	90	48	-	-
SS-42	CL	73+00	23.00-40.00	A-4(0)	31	NP	33.7	32.1	20.0	14.1	88	68	36	-	-



55/61

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	PL. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING SIEVES 10	40	200	% MOISTURE	% ORGANIC
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	14.40-15.90	A-2-4(0)	33	NP	25.9	60.1	10.0	4.0	99	92	19	-	-
MS-48	80 LT	74+00	24.40-25.90											20.2	-
SS-49	80 LT	74+00	29.40-30.90	A-1-b(0)	35	NP	54.6	34.0	9.4	2.0	55	34	9	14.3	-

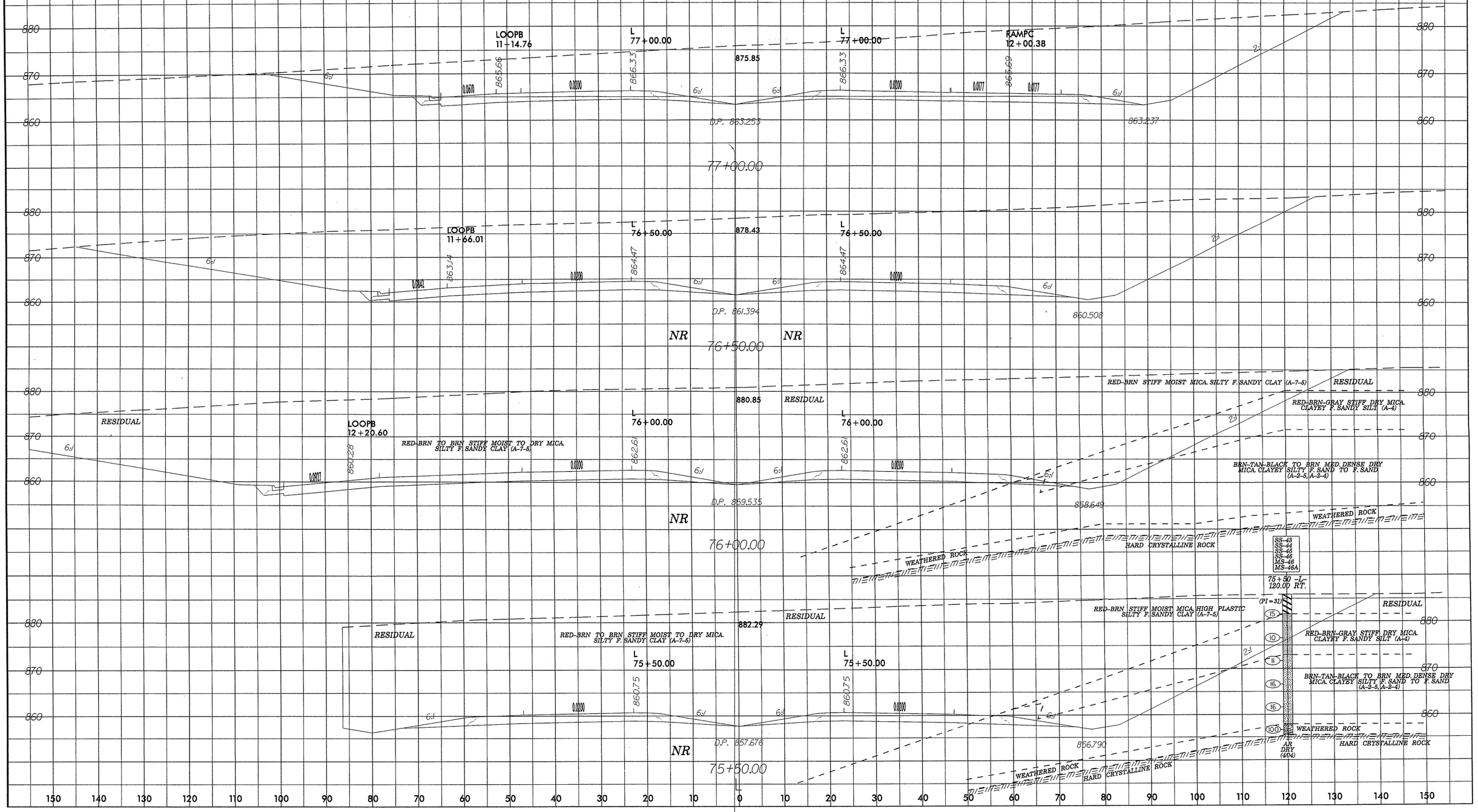


PROJ. REFERENCE NO.	SHEET NO.
R-2707A	X-37

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)	53	NP	22.4	51.2	16.3	10.1	95	85	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	-



PROJ. REFERENCE NO. R2707A

SHEET NO. X-114

57(d

16+00 –RAMPB– CL

RESIDUAL

859.86

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

RESIDUAL

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

2:1

WEATHERED ROCK
HARD CRYSTALLINE ROCK

6:1

HARD CRYSTALLINE ROCK

WEATHERED ROCK

AIR DRY (404)

WEATHERED ROCK
HARD CRYSTALLINE ROCK

821.082

HARD CRYSTALLINE ROCK

16+35.00

16+00 –RAMPB– CL

855.00

RESIDUAL

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

2:1

WEATHERED ROCK
HARD CRYSTALLINE ROCK

WEATHERED ROCK

AIR DRY (404)

WEATHERED ROCK
HARD CRYSTALLINE ROCK

819.535

HARD CRYSTALLINE ROCK

HARD CRYSTALLINE ROCK

15+85.00

15+00 –RAMPB– CL

RESIDUAL

849.53

RESIDUAL

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

2:1

WEATHERED ROCK

AIR DRY (404)

WEATHERED ROCK
HARD CRYSTALLINE ROCK

6:1

6:1

WEATHERED ROCK
HARD CRYSTALLINE ROCK

816.222

HARD CRYSTALLINE ROCK

15+37.00

RAMPB

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

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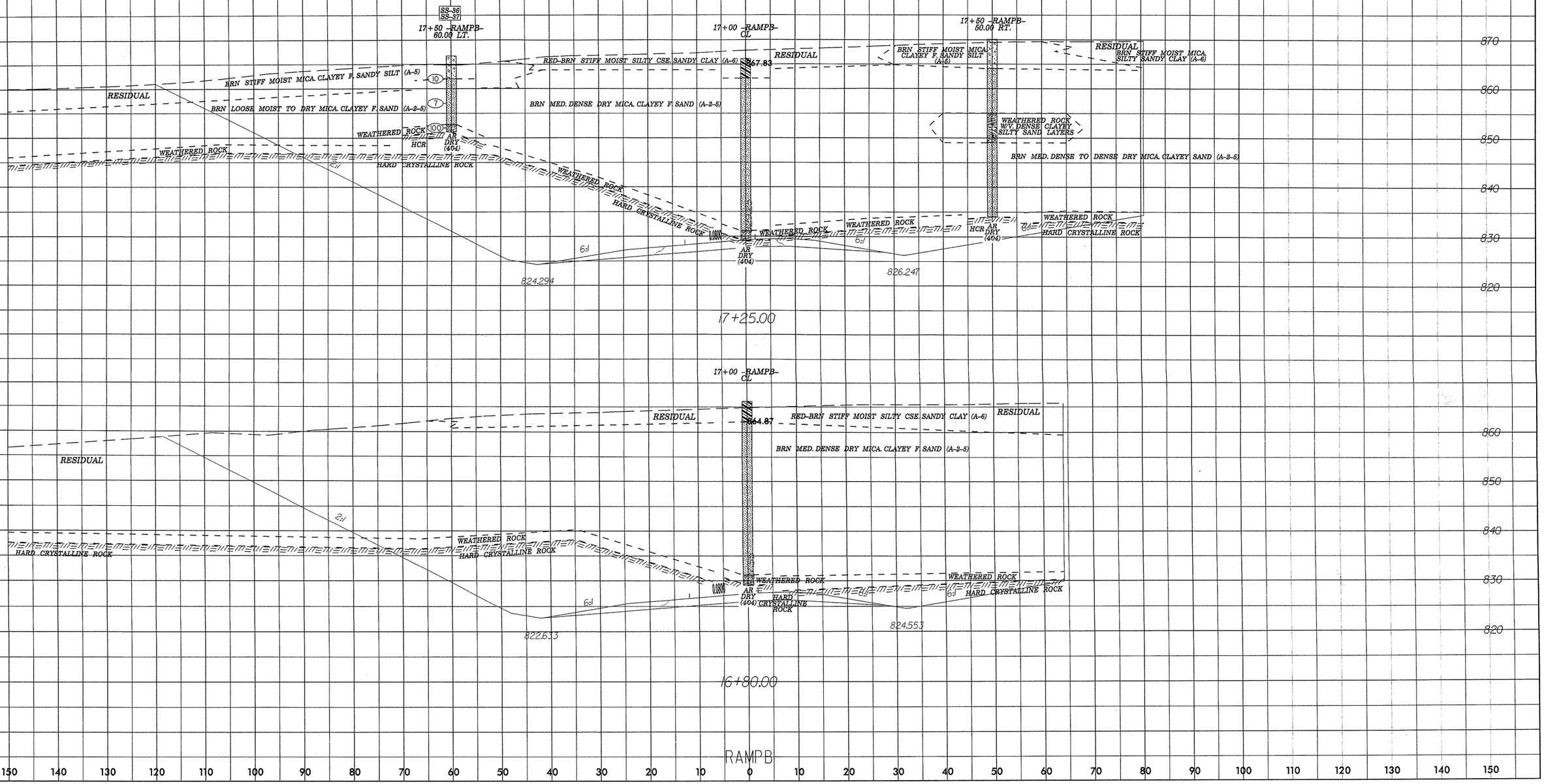
SOIL TEST RESULTS

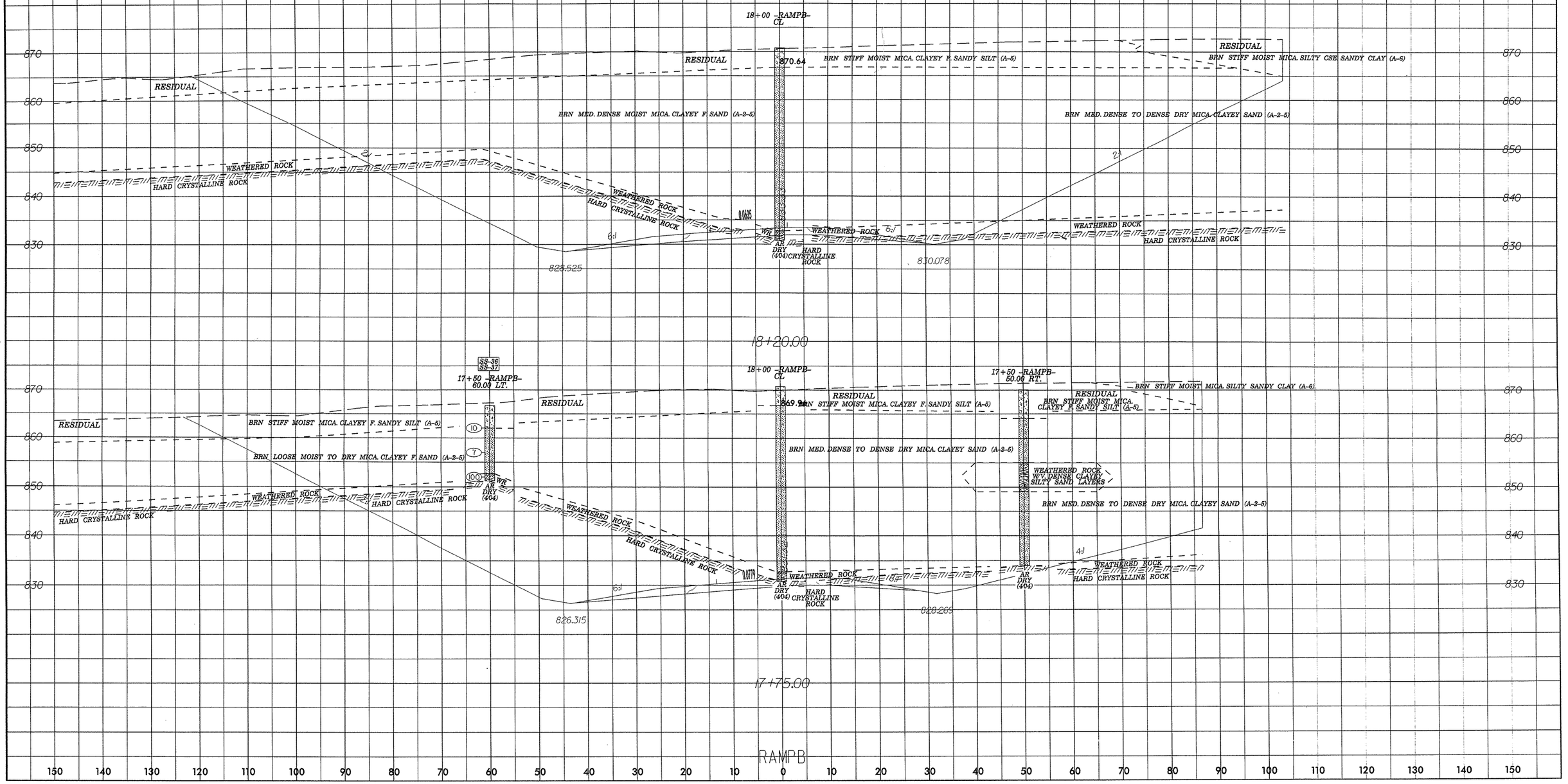
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	PL. I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-36	60LT	17+60	0.00-4.70	A-5(2)	46	10	20.8	36.6	10.3	32.3	96	89	45	-	-
SS-37	60LT	17+60	4.70-6.20	A-2-5(0)	43	NP	32.5	43.4	5.9	18.2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



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+50	0.00-4.70	A-6(2)	46	10	20.8	36.6	10.3	32.3	96	89	45	-	-
SS-37	60LT	17+50	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.	SHEET NO.
	R2707A	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)

2:1

WEATHERED ROCK

HARD CRYSTALLINE ROCK

AR DRY (404)

6:1

833.656

866.97

837.91

834.291

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)

WEATHERED ROCK

HARD CRYSTALLINE ROCK

AR DRY (404)

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)

WEATHERED ROCK

HARD CRYSTALLINE ROCK

AR DRY (404)

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)

WEATHERED ROCK

HARD CRYSTALLINE ROCK

AR HCR DRY (404)

18+70.00

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

0 10

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

9 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

0.0017

84488

6:1

6:1

2:1

841.388

841155

NR

20+55.00

870 860 850 840

20+00 -RAMPB-
CL

RESIDUAL

RESIDUAL

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

863.28

RESIDUAL

2:1

2:1

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

0.0027

6:1

6:1

838.892

838.944

NR

BT
DRY
(404)

HARD CRYSTALLINE ROCK

HARD CRYSTALLINE ROCK

20+10.00

870 860 850 840

20+00 -RAMPB-
CL

RESIDUAL

RESIDUAL

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

864.08

RESIDUAL

2:1

2:1

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

0.0171

6:1

6:1

836.737

836.445

HARD CRYSTALLINE ROCK

HARD CRYSTALLINE ROCK

BT
DRY
(404)

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