CONTRACT: C202068

ID: R-3833B

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

CONTENTS

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

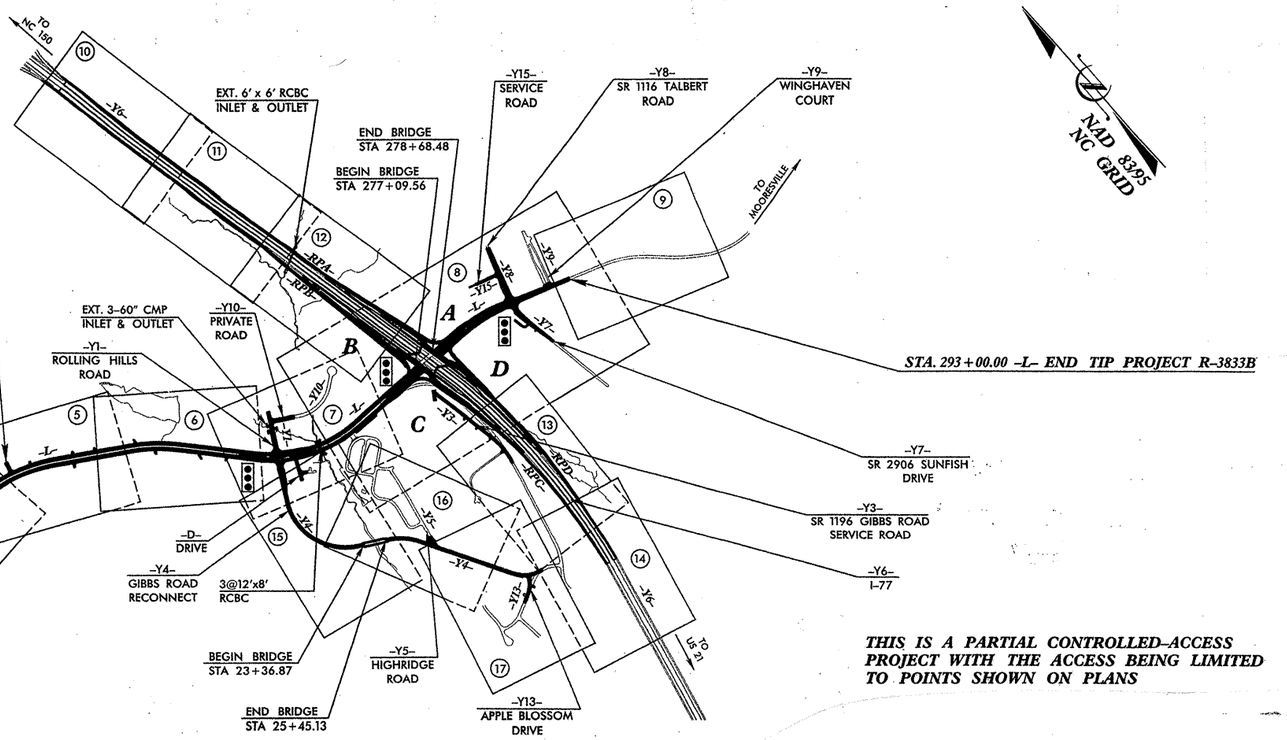
ROADWAY SUBSURFACE INVESTIGATION

PROJ. REFERENCE NO. *34554.1.1 (R-3833B)* F.A. PROJ. *STP-150(11)*

COUNTY *IREDELL*

PROJECT DESCRIPTION *SR 1100 (BRAWLEY SCHOOL RD.) FROM EAST OF SR 1109 (WILLIAMSON RD.) TO EAST OF WINGHAVEN COURT*

INVENTORY



CLEARING ON THIS PROJECT SHALL BE PREFORMED TO THE LIMITS ESTABLISHED BY METHOD III

THIS IS A PARTIAL CONTROLLED-ACCESS PROJECT WITH THE ACCESS BEING LIMITED TO POINTS SHOWN ON PLANS

NAD 83/95 NC GRID

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3833B	1	43

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
34554.1.1	STP-150(11)	P.E.
34554.2.3	STP-1100(20)	R/W, UTL
34554.3.2	STP-1100(20)	CONST.

CAUTION NOTICE

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

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

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

PERSONNEL

J.K. STICKNEY
C.L. SMITH
C.E. BURRIS
M.L. SMITH
H.K. WISE

INVESTIGATED BY *J.E. BEVERLY*

CHECKED BY *C.B. LITTLE*

SUBMITTED BY *C.B. LITTLE*

DATE *JULY 2006*

NORTH CAROLINA LICENSED SEAL 1104 GEOLOGIST CLINTON B. LITTLE 7/13/06

DRAWN BY: *J.K. McCLURE /J.E. BEVERLY*

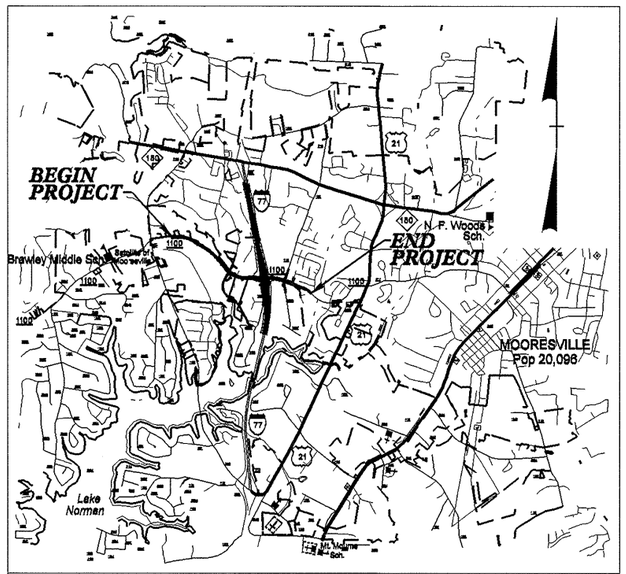
NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IT IS CONSIDERED TO BE PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

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

09/08/99

TIP PROJECT: R-3833B

See Sheet 1-A For Index of Sheets



VICINITY MAP

RIGHT OF WAY

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

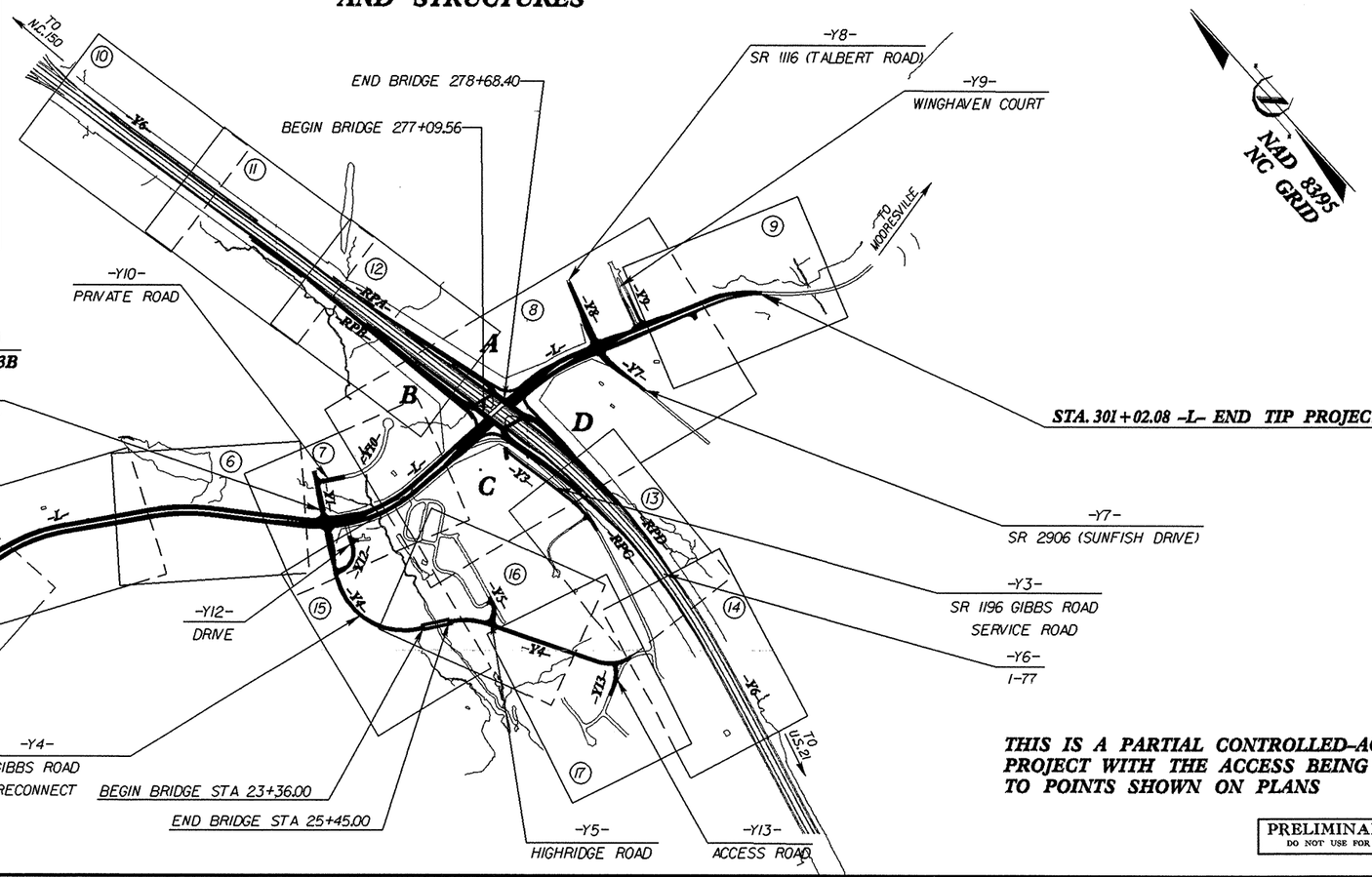
IREDELL COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3833B	1A	43

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34554.1.1	STP-150(11)	P.E.

LOCATION: SR 1100 (BRAWLEY SCHOOL ROAD) FROM EAST OF SR 1109 (WILLIAMSON ROAD) TO EAST OF WINGHAVEN COURT

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



CLEARING ON THIS PROJECT SHALL BE PREFORMED TO THE LIMITS ESTABLISHED BY METHOD III

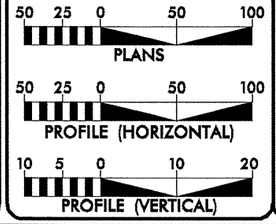
THIS IS A PARTIAL CONTROLLED-ACCESS PROJECT WITH THE ACCESS BEING LIMITED TO POINTS SHOWN ON PLANS

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NCDOT CONTACT: B. DOUG TAYLOR, P.E.

CONTRACT:

GRAPHIC SCALES



DESIGN DATA

ADT 2008 = 24,430
ADT 2028 = 33,340
DHV = 9 %
D = 60 %
T = 9 % *
V = 50 MPH

* (TTST 3% + DUAL 6%)

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-3833B = 1.32 MI

LENGTH STRUCTURES TIP PROJECT R-3833B = 0.03 MI

TOTAL LENGTH OF TIP PROJECT R-3833B = 1.35 MI

Prepared for NCDOT In the Office of:
MOFFATT & NICHOL
1616 EAST MILLBROOK ROAD, SUITE 160
RALEIGH, NORTH CAROLINA 27609
(919) 781-4626 VOICE (919) 781-4869 FAX

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: MAY 19, 2006

LETTING DATE: FEBRUARY 19, 2008

TIM R. REID, P.E.
PROJECT ENGINEER

TRENT E. HUFFMAN, P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER
SDG
Sungate Design Group, P.A.
Engineering - Landscape Architecture - Environmental
915-A Jones Franklin Rd.
Raleigh, N.C. 27606
NORTH CAROLINA PROFESSIONAL SEAL 9334 ENGINEER W. HENRY WELLS, JR.
P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER
MOFFATT & NICHOL
1616 EAST MILLBROOK ROAD, SUITE 160
RALEIGH, NORTH CAROLINA 27609
(919) 781-4626 VOICE (919) 781-4869 FAX
NORTH CAROLINA PROFESSIONAL SEAL 15869 ENGINEER T. E. REID
P.E.
SIGNATURE:

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
P.E.
STATE HIGHWAY DESIGN ENGINEER

12-JUL-2006 11:55
d:\projects\r3833b_geo_rdwy_iredell\cadd_geotech\planprof\r3833b_geo_tshla_orig rdy tsh.dgn
jmcclure AT GEH22410

PROJECT REFERENCE NO.	SHEET NO.
R-3833B	2

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION

SOIL IS CONSIDERED TO BE THE UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER, AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO STANDARD PENETRATION TEST (AASHTO T206, ASTM D-1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY SHALL INCLUDE: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. EXAMPLE:

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

SOIL LEGEND AND AASHTO CLASSIFICATION

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

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

CONSISTENCY OR DENSENESS

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

TEXTURE OR GRAIN SIZE

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

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

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

SOIL MOISTURE - CORRELATION OF TERMS

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

PLASTICITY

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

COLOR

DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.

GRADATION

WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE.
UNIFORM - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. (ALSO POORLY GRADED)
GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLES OF TWO OR MORE SIZES.

ANGULARITY OF GRAINS

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

MINERALOGICAL COMPOSITION

MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE.

COMPRESSIBILITY

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

PERCENTAGE OF MATERIAL

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

OTHER MATERIAL	
TRACE	1 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
HIGHLY	35% AND ABOVE

GROUND WATER

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

MISCELLANEOUS SYMBOLS

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

SAMPLE DESIGNATIONS

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

ABBREVIATIONS

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

EQUIPMENT USED ON SUBJECT PROJECT

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

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

HAMMER TYPE:
- [X] AUTOMATIC [ ] MANUAL

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

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

ROCK DESCRIPTION

HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT IF TESTED, WOULD YIELD SPT REFUSAL. AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. IN NON-COASTAL PLAIN MATERIAL, THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK.
ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:

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

WEATHERING

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

ROCK HARDNESS

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

FRACTURE SPACING

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

BEDDING

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

INDURATION

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

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

TERMS AND DEFINITIONS

ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER.

AQUIFER - A WATER BEARING FORMATION OR STRATA.

ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND.

ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, AS SHALE, SLATE, ETC.

ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE.

CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE.

COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE.

CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.

DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK.

DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL.

DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH.

FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE.

FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES.

FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM PARENT MATERIAL.

FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

BENCH MARK:

ELEVATION: FT.

NOTES:

REVISED 02/23/06

Sheet 2A

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

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

LYNDO TIPPETT
SECRETARY

August 9, 2006

STATE PROJECT: 34554.1.1 (R-3833B)
F.A. PROJECT: STP – 150(11)
COUNTY: Iredell
DESCRIPTION: SR 1100 (Brawley School Rd.) from East of SR 1109 (Williamson Rd.) to East of Winghaven Court

SUBJECT: Geotechnical Report - Inventory

This report presents the findings of the Geotechnical Investigation for the proposed widening of Brawley School Rd. Beginning and ending station limits which define this segment of the project are from -L- 229+50 to 301+02. The project begins west of I-77 (-Y6-) and trends easterly to the heart of Mooresville. A large interchange is planned at I-77 with MSE walls bordering each side of the existing interstate. Brawley School Road will span I-77 with 4 on-ramps and a service road (-Y3-) to control traffic patterns.

The geotechnical field investigation for this project was conducted between the months of December 2005 and February of 2006. An ATV mounted CME 550X drill machine with automatic drop hammer was utilized to perform test borings along the proposed corridor. The following survey lines, 2 culverts, and a retaining wall right of -Y6- are addressed in this inventory report:

Line	Station
-L-	229+50 – 301+02
Ramp A	0+00 – 15+41.36
Ramp A1	14+83.95 – 17+35.36
Ramp B	0+00 – 17+21.14
Ramp B1	16+64.82 – 18+50.58
Ramp C	0+00 – 17+95.68
Ramp C1	17+40.31 – 19+58.80
Ramp D	0+00 – 16+46.17
Ramp D1	12+70 – 17+48.62
-Y1- (Rolling Hills Rd.)	10+00 – 13+84.05
-Y3- (Gibbs Rd.)	14+48.91 – 24+09.03
-Y4- (Proposed Gibbs Rd. Connector)	10+35.92 – 40+44.46
-Y5- (Highridge Rd.)	11+20 – 13+40.2
-Y6- (I-77)	14+00 – 81+30

Line	Station
Ret. Wall Rt. of -Y6-	32+00 – 37+00
-Y7- (Sunfish Dr.)	10+39.69 – 15+00
-Y8- (Talbert Rd.)	10+25 – 15+59.28
-Y9- (Winghaven Ct.)	13+00 – 15+58.28
-Y10- (Private Rd.)	10+16.06 – 12+25
-Y12- (no name)	11+30 – 14+80.69
-Y13- (Access Rd.)	10+12 – 12+68.60
Culvert on -Y6-	40+22
Culvert on -L-	265+08

Areas of Special Geotechnical Interest:

1. *Groundwater:*

There were very few instances in which groundwater was encountered during the course of this investigation. The majority of holes drilled were dry after 24 hours. Most noted groundwater locations were in floodplain areas adjacent to streams and drainage features. There were a couple of exceptions along Ramp B and right of -Y6- SBL. There were no instances of groundwater above proposed grade.

2. *Crystalline Rock:*

There were only two instances in which crystalline rock was noted during the course of this investigation. Each of the two borings which encountered rock were drilled 30 or more feet in depth to auger refusal. The first hole left of -L- station 264+91 was intended for a proposed culvert while the second hole about -Y4- station 24+00 was intended as a preliminary bridge hole.

3. *High PI Soils:* (PI's 26 or greater)

The occurrence of high PI clay soils is common along the project corridor. High PI clays are typically near surface soils. PI values for clay soils range from 13 – 48. Soil samples taken along the following alignments reveal the presence of high PI clay soils. The known occurrences are as follows:

Station Location	Appx. Depth Interval (feet)	High PI Value/Range (27+)
-L- 229+50 – 240+00	0.0 – 8.0	31
-L- 243+00 – 246+00	0.0 – 8.0	39
-L- 275+00 – 280+00	0.0 – 8.0	30 - 40
-L- 278+00 – 280+00	0.0 – 8.0	30
-L- 290+50 – 293+00	6.0 – 10.0	31
RPA 14+00 – 18+00	0.0 – 7.0	40
RPA1 14+00 – 17+00	0.0 – 7.0	40
RPB 19+00 – 21+00	0.0 – 8.0	30
RPC 17+50 – 20+00	0.0 – 8.0	40
RPC 5+00 – 14+00	0.0 – 8.0	29 – 41
RPC1 17+50 – 20+00	0.0 – 8.0	40
RPD 0+00 – 9+50	0.0 – 8.0	32 – 38
RPD 16+00 – 20+00	0.0 – 8.0	30
-Y3- 18+50 – 24+10	0.0 – 8.0	30 – 41

Station Location	Appx. Depth Interval (feet)	High PI Value/Range (27+)
-Y4- 10+00 – 14+00	0.0 – 8.0	48
-Y4- 17+00 – 21+20	0.0 – 8.0	26 – 31
-Y4- 26+00 – 30+00	0.0 – 8.0	28
-Y4- 35+70 – 36+50	0.0 – 8.0	27
-Y6- 52+50 – 58+00	0.0 – 8.0	30 – 40
-Y6- 63+00 – 76+00	0.0 – 8.0	26 – 42

4. *Alluvial Soils / Wet Areas:*

There were a few areas containing alluvial soils along the project corridor. Most of these areas result from adjacent streams, creeks, and drainage features that are small to moderate in size. A number of alluvial areas fall outside of construction limits. One of the larger alluvial sources is a creek that first bisects the project at -L- station 265+00 and then crosses -Y4- at station 24+40. This creek is defined by a fairly large floodplain with soil predominately being sand (A-2-4) with some clay (A-7-6, A-6) subsoils. One other large alluvial area is associated with a creek that parallels -Y6- to the west. The area that is right of station 30+00 – 46+00 lies mostly beyond the construction limits of the project and thus is of little concern.

5. *Artificial Fill Soils:*

There were 2 areas discovered which contain artificial fill. Only one of these areas should be of special interest. This area lies between -Y4- stations 35+60 and 36+50. The fill material ranges in thickness from 5 – 14 feet and contains trash, lumber, and old furniture intermixed with soft to medium stiff silty sandy clay (A-7-5).

Physiography/Geology:

The project area is located in southern Iredell County within the city limits of Mooresville. The area topography is flat to gently rolling, surrounded by residential and business structures, and heavily populated. Approximate elevation range is 760 – 860 feet along the project corridor.

Geologically this site is part of the Charlotte Belt and is mostly underlain by Cenezoic age biotite gneiss rock. Mafic metavolcanic rock types may also be present under a portion of this area.

Soil Properties:

1. *Residual Soils:*

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

Clays consist primarily of medium stiff to stiff red-tan-brown micaceous silty sandy clay in the AASHTO classifications of A-7-5, A-7-6, and A-6. Clays appear mostly as surficial soils. They are well drained with a plasticity index ranging from 13 to 48. Corresponding liquid limit ranges are between 38 and 45.

Sheet 2B
R-3833B

Silts were encountered as both surface soils and subsoils. They occur as A-4 and A-5 AASHTO Classifications. Silts consist primarily of medium stiff to stiff red-tan-brown micaceous clayey sandy silt.

Sands encountered on the project were of the A-2-4, A-2-7 and A-1-b AASHTO Classifications and occur mostly as subsoils. They generally consist of medium dense tan-brown clayey silty sand.

2. *Alluvial Soils:*

Alluvial soils originate from water transportation and deposition in a floodplain environment. These deposits can range from shallow to 20 feet in depth. Alluvial soils are comprised of very loose to medium dense gray-orange sand (A-2-4, A-1-b) with gravel, soft to medium stiff tan-brown clayey sandy silt (A-4, A-5), and very soft to medium stiff brown-gray silty sandy clay (A-7-6, A-6).

3. *Fill Soils:*

Roadway fill soils are present beneath existing Brawley School Rd. and its associated connectors (-Y- lines). Based on visual observation the exiting roadway fill soil and road surfaces appear in good shape. No sample data was obtained in roadway fill soils.

Two areas of artificial fill were encountered along -Y4-. The first area is the byproduct of ongoing construction for a residential complex. The fill soil is being pushed down an embankment into a lower area between -Y4- stations 28+00 – 30+50. No borings were taken in this fill area which extends well left and right of the -Y4- alignment. The fill material appeared at the time to be mostly devoid of trash but more soil was being added to the area as construction was still underway. The second area along -Y4- lies between stations 35+60 to 36+50. This fill is 5 – 14' in depth and contains trash, lumber, and old furniture mixed into soft to medium stiff red-brown micaceous silty sandy clay (A-7-5).

Rock Properties:

Rock is defined by SPT refusal and in most instances by power auger refusal. Two borings achieved auger refusal on crystalline rock during the course of this investigation. Each of the 2 locations were deep holes at stream crossings which are well below proposed grade. Hard rock type may be biotite gneiss or mafic metavolcanic in nature.

Culvert at -L- Station 265+08

A 3-barrel 12'x8' RCBC is proposed at -L- station 265+08 to replace the small 40.6'existing bridge. To determine subsurface soil conditions for construction purposes, a boring was performed close to the mouth of the culvert 55' left of station 264+91. The boring encountered 18' of very loose to medium dense alluvial sand and gravel (A-2-4, A-1-b) overlying 10.5 feet of medium dense to dense residual sand (A-2-4). A thin layer of weathered rock was encountered around 28.5 feet before the boring achieved refusal on crystalline rock. The proposed elevation of the culvert floor is approximately 5 to 7 feet below natural ground along its length. Thus it appears that the current design will place the culvert foundation in loose to medium dense alluvial sand.

Culvert extension(s) at –Y6- Station 40+22

Extensions are proposed on upstream and downstream sides of an exiting 6'x6' RCBC at -Y6- station 40+22. A boring performed on the upstream side of the culvert 110' left of -Y6- station 40+17 encountered 19 feet of loose alluvial sand and gravel (A-2-4, A-1-b) overlying very stiff residual sandy silt (A-4). A boring for the downstream extension was performed 89' right of RPB station 3+62 and encountered 7 feet of soft to medium stiff sandy silt (A-5) with gravel overlying loose residual silty sand (A-2-4). Proposed inlet and outlet culvert floors are 4 to 5 feet below natural ground and thus appear they will be supported by loose alluvial sand and gravel.

Retaining Wall Right of -Y6 Stations 32+00 – 37+00

Obtaining borings for the retaining wall right of -Y6- stations 32+00 – 37+00 was almost impossible since it was bound by a creek on one side and I-77 on the other side. The embankment slope of I-77 was also too steep to navigate so a total of 2 borings at the toe of the slope were all that could be acquired. Cross sections shown at the back of the inventory report denotes information on soil conditions along the length of the retaining wall. Generally, the retaining wall will sit at the top of the I-77 (-Y6-) slope in exiting roadway embankment fill which is underlain by residual soil. Based on 3 borings in the vicinity (2 at the toe of the slope) residual soil is a combination of stiff sandy clay (A-7-5), medium stiff to stiff micaceous sandy silt (A-4, A-5), and medium dense micaceous silty sand (A-2-4). At the toe of the embankment our borings encountered 8 – 9 feet of medium stiff alluvial sandy silt (A-4), sandy clay (A-6), and loose clayey sand (A-2-4) underlain by residual soil.

Wells:

During the course of this investigation there were several wells noted, however, only 2 that were found fall within the proposed construction limits. Locations of these 2 wells are left of -Y4- station 39+10, and right of -Y13- station 11+00. It is possible there are additional wells that went undetected.

Respectfully Submitted,

J.E. Beverly

J.E. Beverly, Project Geo-Engineer

EARTHWORK BALANCE SHEET

Volumes in Cubic Yards

PROJECT R-3833B 34554.1.1 COUNTY Iredell DATE 11/21/2008 SHEET 1 OF 4 SHEETS

STATION TO STATION			EXCAVATION					EMBANKMENT				BORROW	WASTE			
			TOTAL UNCLASS.	ROCK	UNDERCUT	UNSUIT. UNCLASS.	SUITABLE UNCLASS.	TOTAL	ROCK	EARTH	EMBANK. +20%		ROCK	SUITABLE	UNSUIT.	TOTAL
L	229+50.00 (LT)	259+50.00 (LT)	202	0	0	0	202	11,281	0	11,281	13,537	13,335	0	0	0	0
Y14	10+35.00	11+50.00	137	0	0	0	137	36	0	36	43	0	0	94	0	94
SUBTOTAL			339	0	0	0	339	11,317	0	11,317	13,580	13,335	0	94	0	94
L	259+50.00 (LT)	277+08.21 (LT)	1,596	0	0	0	1,596	7,935	0	7,935	9,522	7,926	0	0	0	0
		BEGIN BRIDGE														
Y1	10+00.00	13+00.00	96	0	0	0	96	1,026	0	1,026	1,231	1,135	0	0	0	0
Y10	10+50.00	12+25.00	107	0	0	0	107	29	0	29	35	0	0	72	0	72
RPB1	17+50.00	18+00.00	0	0	0	0	0	6,136	0	6,136	7,363	7,363	0	0	0	0
SUB-TOTAL			1,799	0	0	0	1,799	15,126	0	15,126	18,151	16,424	0	72	0	72
L	278+69.55 (LT)	293+00.00 (LT)	353	0	0	0	353	8,027	0	8,027	9,632	9,279	0	0	0	0
	END BRIDGE															
RPA1	15+50.00	16+00.00	0	0	0	0	0	4,141	0	4,141	4,969	4,969	0	0	0	0
Y8	10+25.00	15+00.00	1,141	0	0	0	1,141	114	0	114	137	0	0	1,004	0	1,004
Y15	10+90.16	13+00.00	725	0	0	0	725	0	0	0	0	0	0	725	0	725
SUB-TOTAL			2,219	0	0	0	2,219	12,282	0	12,282	14,738	14,248	0	1,729	0	1,729

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

EARTHWORK BALANCE SHEET

Volumes in Cubic Yards

PROJECT R-3833B 34554.1.1 COUNTY Iredell DATE 11/21/2008 SHEET 2 OF 4 SHEETS

LINE	STATION	STATION	EXCAVATION					EMBANKMENT				BORROW	WASTE			
			EXCAV. (UNCL.)	ROCK EXCAV.	UNDERCUT EXCAV.	UNSUIT. EXCAV.	SUITABLE EXCAV.	TOTAL EMB.	ROCK EMB.	EARTH EMB.	EMBANK. +20%		ROCK	SUITABLE	UNSUIT.	TOTAL
L	229+50.00 (RT)	259+50.00 (RT)	9,713	0	0	0	9,713	11,931	0	11,931	14,317	4,604	0	0	0	0
SUB-TOTAL			9,713	0	0	0	9,713	11,931	0	11,931	14,317	4,604	0	0	0	0
L	259+50.00 (RT)	277+08.21 (RT)	8,492	0	0	0	8,492	15,531	0	15,531	18,637	10,145	0	0	0	0
		BEGIN BRIDGE														
Y4	11+00.00	23+32.87	12,275	0	0	0	12,275	7,659	0	7,659	9,191	0	0	3,084	0	3,084
		BEGIN BRIDGE														
Y4	25+45.13	40+43.88	4,461	0	2,775	0	4,461	19,709	0	19,709	23,651	19,190	0	0	2,775	2,775
	END BRIDGE															
D	10+50.00	12+28.75	10	0	0	0	10	349	0	349	419	409	0	0	0	0
Y3	15+00.00	24+00.00	1,369	0	0	0	1,369	20	0	20	24	0	0	1,345	0	1,345
Y5	13+00.00	14+07.90	263	0	0	0	263	418	0	418	502	239	0	0	0	0
Y13	10+12.00	12+68.60	45	0	0	0	45	1,239	0	1,239	1,487	1,442	0	0	0	0
RPC1	18+00.00	18+50.00	0	0	0	0	0	1,602	0	1,602	1,922	1,922	0	0	0	0
SUBTOTAL			26,915	0	2,775	0	26,915	46,527	0	46,527	55,833	33,347	0	4,429	2,775	7,204
L	278+69.55 (RT)	293+00.00 (RT)	1,245	0	0	0	1,245	4,398	0	4,398	5,278	4,033	0	0	0	0
	END BRIDGE															
RPD1	16+50.00	17+00.00	60	0	0	0	60	128	0	128	154	94	0	0	0	0
Y7	11+00.00	15+00.00	1,850	0	0	0	1,850	0	0	0	0	0	0	1,850	0	1,850
SUBTOTAL			3,155	0	0	0	3,155	4,526	0	4,526	5,432	4,127	0	1,850	0	1,850

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

EARTHWORK BALANCE SHEET

Volumes in Cubic Yards

PROJECT R-3833B 34554.1.1 COUNTY Iredell DATE 11/21/2008 SHEET 3 OF 4 SHEETS

LINE	STATION	STATION	EXCAVATION					EMBANKMENT				BORROW	WASTE			
			EXCAV. (UNCL.)	ROCK EXCAV.	UNDERCUT EXCAV.	UNSUIT. EXCAV.	SUITABLE EXCAV.	TOTAL EMB.	ROCK EMB.	EARTH EMB.	EMBANK. +20%		ROCK	SUITABLE	UNSUIT.	TOTAL
Y6	11+30.00 (LT)	41+50.00 (LT)	10,475	0	0	0	10,475	1,610	0	1,610	1,932	0	0	8,543	0	8,543
SUB-TOTAL			10,475	0	0	0	10,475	1,610	0	1,610	1,932	0	0	8,543	0	8,543
Y6	11+30.00 (MED)	41+50.00 (MED)	1,278	0	0	0	1,278	0	0	0	0	0	0	1,278	0	1,278
SUB-TOTAL			1,278	0	0	0	1,278	0	0	0	0	0	0	1,278	0	1,278
Y6	11+30.00 (RT)	41+50.00 (RT)	6,700	0	0	0	6,700	7,388	0	7,388	8,866	2,166	0	0	0	0
SUB-TOTAL			6,700	0	0	0	6,700	7,388	0	7,388	8,866	2,166	0	0	0	0
Y6	41+50.00 (LT)	71+50.00 (LT)	53,995	0	0	0	53,995	19,676	0	19,676	23,611	0	0	30,384	0	30,384
SUB-TOTAL			53,995	0	0	0	53,995	19,676	0	19,676	23,611	0	0	30,384	0	30,384
Y6	41+50.00 (MED)	71+50.00 (MED)	1,278	0	0	0	1,278	0	0	0	0	0	0	1,278	0	1,278
SUB-TOTAL			1,278	0	0	0	1,278	0	0	0	0	0	0	1,278	0	1,278
Y6	41+50.00 (RT)	71+50.00 (RT)	24,358	0	0	0	24,358	55,034	0	55,034	66,041	41,683	0	0	0	0
SUB-TOTAL			24,358	0	0	0	24,358	55,034	0	55,034	66,041	41,683	0	0	0	0
Y6	71+50.00 (LT)	84+00.00 (LT)	1,545	0	0	0	1,545	140	0	140	168	0	0	1,377	0	1,377
SUBTOTAL			1,545	0	0	0	1,545	140	0	140	168	0	0	1,377	0	1,377
Y6	71+50.00 (MED)	84+00.00 (MED)	532	0	0	0	532	0	0	0	0	0	0	532	0	532
SUB-TOTAL			532	0	0	0	532	0	0	0	0	0	0	532	0	532
Y6	71+50.00 (RT)	84+00.00 (RT)	17,311	0	0	0	17,311	31	0	31	37	0	0	17,274	0	17,274
SUB-TOTAL			17,311	0	0	0	17,311	31	0	31	37	0	0	17,274	0	17,274

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

EARTHWORK BALANCE SHEET

Volumes in Cubic Yards

PROJECT R-3833B 34554.1.1 COUNTY Iredell DATE 11/21/2008 SHEET 4 OF 4 SHEETS

LINE	STATION	STATION	EXCAVATION					EMBANKMENT				BORROW	WASTE			
			EXCAV. (UNCL.)	ROCK EXCAV.	UNDERCUT EXCAV.	UNSUIT. EXCAV.	SUITABLE EXCAV.	TOTAL EMB.	ROCK EMB.	EARTH EMB.	EMBANK. +20%		ROCK	SUITABLE	UNSUIT.	TOTAL
PROJECT SUBTOTAL			161,612	0	2,775	0	161,612	185,588	0	185,588	222,706	129,934	0	68,840	2,775	71,615
ADDITIONAL UNDERCUT					4,000			4,000		4,000	4,800	4,800			4,000	4,000
GRADE POINT UNDERCUT					4,350			4,350		4,350	5,220	5,220			4,350	4,350
SHALLOW UNDERCUT					3,350										3,350	3,350
SHOULDER MATERIAL								10,020		10,020	12,024	12,024				
WASTE TO REPLACE BORROW												-68,840		-68,840		-68,840
LOSS DUE TO CLEARING & GRUBBING			-37,500				-37,500					37,500				
PROJECT TOTAL			124,112	0	14,475	0	124,112	203,958	0	203,958	244,750	120,638	0	0	14,475	14,475
EST 5% TO REPLACE TOP SOIL ON BORROW PIT												6,032				
GRAND TOTAL			124,112		14,475							126,670				
SAY			**125,000**		**14,475**							**127,000**				

SELECT GRANULAR MATERIAL (CLASS II OR III) = 4,000 CY PER "GEOTECH REPORT - DESIGN AND CONSTRUCTION RECOMMENDATIONS" LETTER DATED AUGUST 15, 2006

CLASS IV SUBGRADE STABILIZATION MATERIAL = 6,300 TONS (TO REPLACE SHALLOW UNDERCUT) PER "GEOTECHNICAL RECOMMENDATIONS FOR PAVEMENT DESIGN" LETTER DAT

-L- & -Y6- PAVEMENT STRUCTURE VOLUME = 24,379 CY

ESTIMATED DDE = 1,200 CY

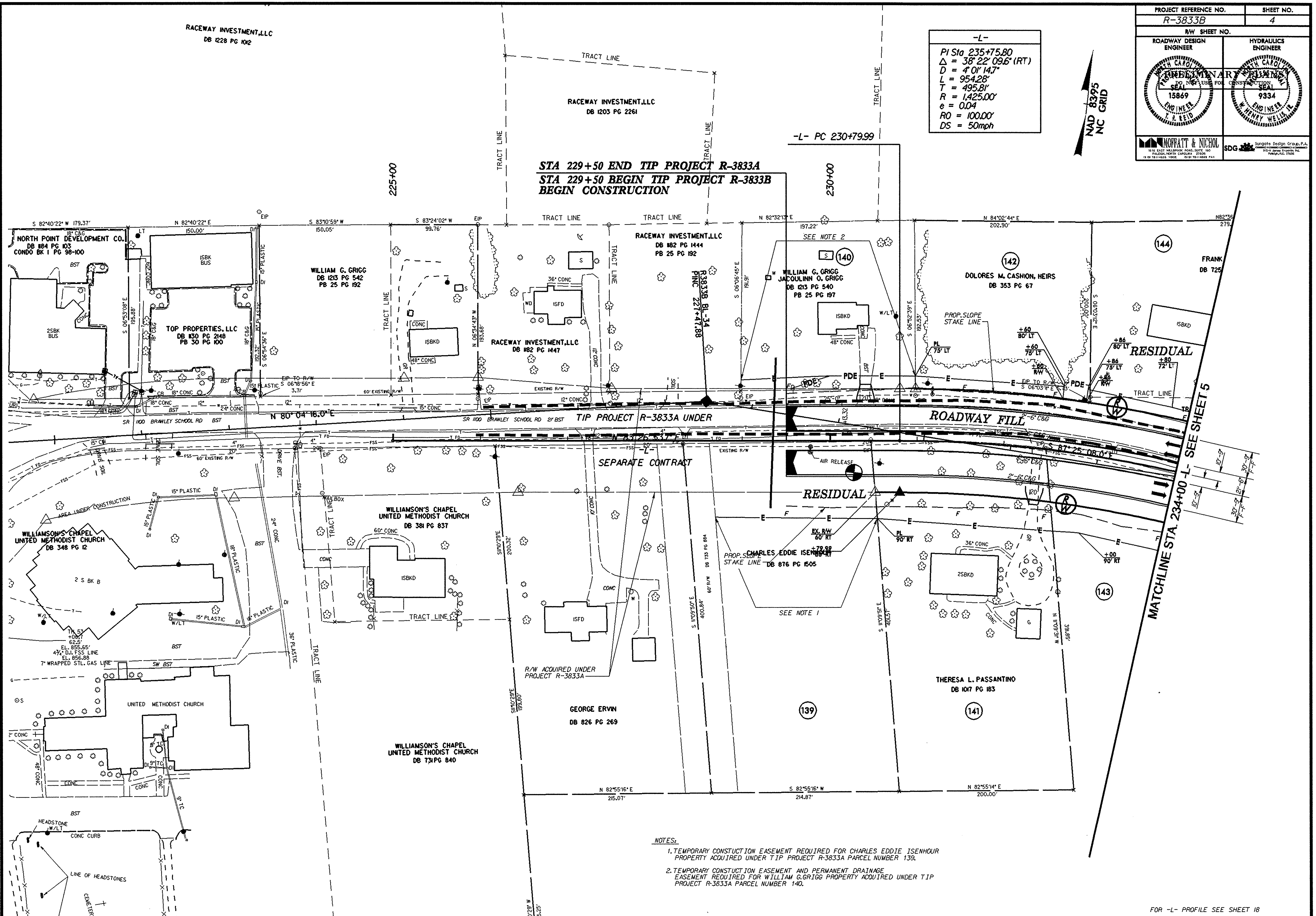
HAZARDOUS SPILL BASIN CONSTRUCTION = 878 CY (BASIN #1 = 533 CY, BASIN #2 = 111 CY, BASIN #3 = 234 CY)

*** 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.**

PROJECT REFERENCE NO.	SHEET NO.
R-3833B	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS — DO NOT USE FOR CONSTRUCTION

MOFFATT & NICHOL — SDG Sungate Design Group, P.A.



NOTES:

1. TEMPORARY CONSTUCTION EASEMENT REQUIRED FOR CHARLES EDDIE ISENHOUR PROPERTY ACQUIRED UNDER TIP PROJECT R-3833A PARCEL NUMBER 139.
2. TEMPORARY CONSTUCTION EASEMENT AND PERMANENT DRAINAGE EASEMENT REQUIRED FOR WILLIAM G.GRIGG PROPERTY ACQUIRED UNDER TIP PROJECT R-3833A PARCEL NUMBER 140.

FOR -L- PROFILE SEE SHEET 18

8/17/99

14-JUL-2006 10:52

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-3833B	5
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 15869 ENGINEER T. A. REID

HYDRAULICS ENGINEER: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 9334 ENGINEER W. HENRY WELLS, JR.

PRELIMINARY PLANS NOT TO BE USED FOR CONSTRUCTION

MOFFATT & NICHOL — 1616 EAST MILLBROOK ROAD, SUITE 160 RALEIGH, NORTH CAROLINA 27609 (919) 781-4626 VOICE (919) 781-4865 FAX

SDG Surgeta Design Group, P.A. 510-A James Kenyon Rd. Raleigh, N.C. 27606

PB 29 PG 38
PB 20 PG 95
PB 31 PG 34
PB 27 PG 57

S54°19'2
260.77'

NAD 83/95 NC GRID

145 147 148 150

N 84°19'24" E 322.88'

E. DUANE MATHEWS
DB 1023 PG 669
PB 28 PG 87

CHARLEEN LAWSON CASHION
DB 416 PG 254
DB 416 PG 252
DB 220 PG 202
TAX MAP

S 32°56'26" W 420.38'

240+00

245+00

-L- PT 240+34.28

N 20°00'49" E 396.33'

N82°36'09"E 70.81'

N 20°00'49" W 83.50'

235+00

144

L. TOWNSEND
PG 8 TRACT 1

W/LT

EIP

N 20°00'49" E 191.33'

R3833B PNC 236+42.07

BL-35

-L- STA 237+11.32
50.46 (LT)

S 75°30'08" E 106.91'

N 84°19'24" E 24.00'

S 25°40'52" W 289.25'

PRESSLEY L. CASHION
DB 718 PG 86
PB 28 PG 87

+23 80' LT
+23 R/W
+48 80' LT
+24 80' LT
+24 R/W
+48 R/W
+00 77' LT
+00 73' LT
+43 74' LT
+34.28 60' LT
+48 75' LT
+73 75' LT
+75 74' LT
+75 R/W
+72 74' LT

POOL CONC
ISBKD
36" CONC
2SFD
48" CONC
MTL CANOPY
G

RESIDUAL

PDE

TRACT LINE

PROP. SLOPE STAKE LINE

-L- STA 244+98.61
46.64 (LT)

R3833B PNC 244+02.67

BL-36

MATCHLINE STA. 234+00 -L- SEE SHEET 4

MATCHLINE STA. 246+00 -L- SEE SHEET 6

ROADWAY FILL

2'-6" CBG

60' EXISTING R/W

S 56° 10' 56.7" E

-L-

20' 16" CONC

EIP

30'-9" F-F
12'-6"
10'-9"

RESIDUAL

PROP. SLOPE STAKE LINE

+00 90' RT
+34.28 60' RT
+00 89' RT

CLAUD W. CASHION
DB 169 PG 37
143

-BL- BMI
STATION 238+55
OFFSET 355.42' RIGHT
ELEV = 830.64'

S 37°48'39" W 668.80'

MARVIN JOHN CASHION
DB 564 PG 86
149

N 38°09'04" E 644.03'

S 37°28'17" W 415.30'

ISFD

+50 77' RT

CLAUD W. CASHION
DB 169 PG 37
143

+78 85' RT

RESIDUAL
151

S 50°07'44" 159.92'

-L-
PI Sta 235+75.80
Δ = 38° 22' 09.6" (RT)
D = 4° 01' 14.7"
L = 954.28'
T = 495.81'
R = 1,425.00'
e = 0.04
RO = 100'
DS = 50mph

FOR -L- PROFILE SEE SHEET 18

14-JUL-2006 10:53
d:\projects\3833b_geo\dwg_redell\cadd_geotech\planprof\R3833b_GEO_inv_005_psh05.dgn
default

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-3833B	6
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA SEAL 15869 ENGINEER A. R. REID

HYDRAULICS ENGINEER — NORTH CAROLINA SEAL 9334 ENGINEER W. HENRY WELLS, JR.

PRELIMINARY PLANS — NOT TO BE USED FOR CONSTRUCTION

MOFFATT & NICHOL — 1616 EAST MILLBROOK ROAD, SUITE 160, RALEIGH, NORTH CAROLINA 27609, (919) 781-4626 VOICE, (919) 781-4865 FAX

SDG Sungate Design Group, P.A. — 3154 James Franklin Rd., Raleigh, N.C. 27604

NAD 83/95 NC GRID

T LINE

TRACT LINE

S 32°04'33" E 69.69'

S 45°36'08" E 140.19'

N 45°00'01" W 201.32'

S 05°37'43" W 70.94'

S 05°37'43" W 108.09'

N30°46'32"W 172.73'

145 ROE LTD DB 958 PG 138 DB 977 PG 1264 PB 26 PG 106 PB 20 PG 75 PB 19 PG 105 PB 27 PG 14 PB 29 PG 58 PB 20 PG 95 PB 31 PG 34 PB 27 PG 57

258

250+00

255+00

POND

-L- PC 247+23.19

152

150

RESIDUAL

+80 79' LT

+23.19 60' LT

+44 84' LT

+73 90' LT

+32 245' LT

+16 260' LT

PDE

PROP. SLOPE STAKE LINE

R3833B BL-37 PINC 250+39.29

-L- STA. 251+20.35 42.88' (LT)

+07 102' LT

+99.71 60' LT

MICHAEL HORACE CASHION DB 873 PG 1861

OVER LAP AREA AS PER ROE DB 958 PG 138

S 80°26'35" E

S 00°04'29" W 4.25'

S 00°04'29" W 42.25'

S 53° 13' 58.5" E

S 46°04'16" E 705.41'

S 46°56'19" E 776.78'

+56 82' LT

+60.91 RAW

+00 97' LT

S 39°32'36" E 127.68'

S 48°45'31" E 75.20'

S 39°1 107.

154

ROE DB 873

152 MICHAEL HORACE CASHION DB 873 PG 1861

ROADWAY FILL

RESIDUAL

MICHAEL HORACE CASHION DB 873 PG 1861

6" C&G

2'-6" C&G

15" CMP

SR 1100 BRAWLEY SCHOOL RD 22' BST

60' EXISTING R/W

S 35° 23' 51.4" E

S 40°30'50" E

ROADWAY FILL

RESIDUAL

MATCHLINE 246+00 -L- SEE SHEET 5

MATCHLINE STA. 258+00 -L- SEE SHEET 7

30'-9" F-F

10'-9"

9'-6"

42'-9" F-F

+23.19 60' RT

+00 74' RT

+99.71 60' RT

+11 96' RT

151

RODERICK STEVEN KISTLER DB 1145 PG 1482

48" CONC

2SBKD

12" CML

S

PROP. SLOPE STAKE LINE

-L- PT 251+99.71

N 45°26'19" E 437.48'

2SBKD

48" CONC

BK

W

152

257+00

100' TAPER

MICHAEL H. CASHION DB 881 PG 455 DB 877 PG 1414 DB 726 PG 606

TRACT LINE

TRACT LINE

-L-

PI Sta 249+63.28
Δ = 17° 20' 05.6" (RT)
D = 3° 38' 16.2"
L = 476.52'
T = 240.09'
R = 1,575.00'
e = 0.035
RO = 87.5'
DS = 50mph

S 54°07'44" E 159.52'

S 54°07'44" E 200.00'

S 50°07'44" E 171.20'

S 50°07'44" E 141.85'

S 50°07'44" E 50.66'

S 40°52'16" E 300.00'

FOR -L- PROFILE SEE SHEET 18

14-JUL-2006 10:53
d:\projects\3833b\geo\rdwy_rredell\cadd_geotech\planprof\R3833b_GEO_rnv_006_psh06.dgn
default

PROJECT REFERENCE NO.	SHEET NO.
R-3833B	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

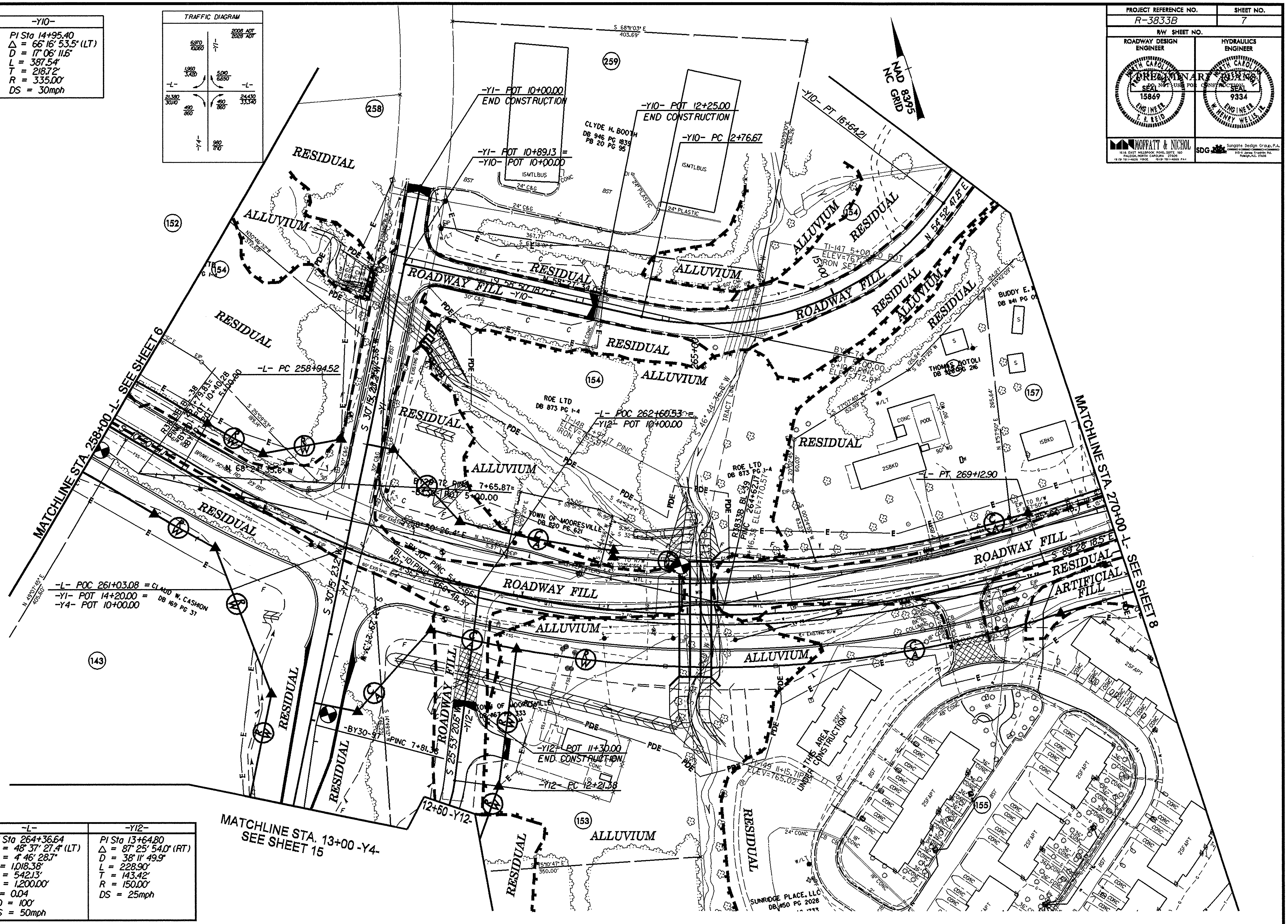
PRELIMINARY PLANS — DO NOT USE FOR CONSTRUCTION

MOFFATT & NICHOL — 1616 EAST MILLBROOK ROAD, SUITE 160, RALEIGH, NORTH CAROLINA 27609

SDG Sungate Design Group, P.A.

8/17/99

-Y10-
PI Sta 14+95.40
Δ = 66° 16' 53.5" (LT)
D = 17° 06' 11.6"
L = 387.54'
T = 218.72'
R = 335.00'
DS = 30mph

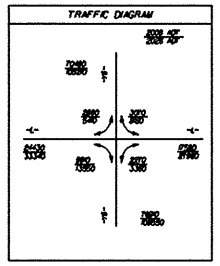


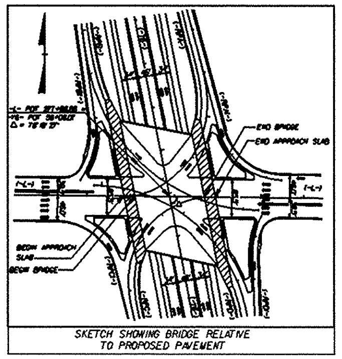
-L-	-Y12-
PI Sta 264+36.64	PI Sta 13+64.80
Δ = 48° 37' 27.4" (LT)	Δ = 87° 25' 54.0" (RT)
D = 4° 46' 28.7"	D = 38° 11' 49.9"
L = 1,018.38'	L = 228.90'
T = 542.13'	T = 143.42'
R = 1,200.00'	R = 150.00'
e = 0.04	DS = 25mph
RO = 100'	
DS = 50mph	

14-JUL-2006 10:56
d:\projects\r3833b\cadd_geotech\planprof\R3833B_GEO_inv_007_psh07.dgn

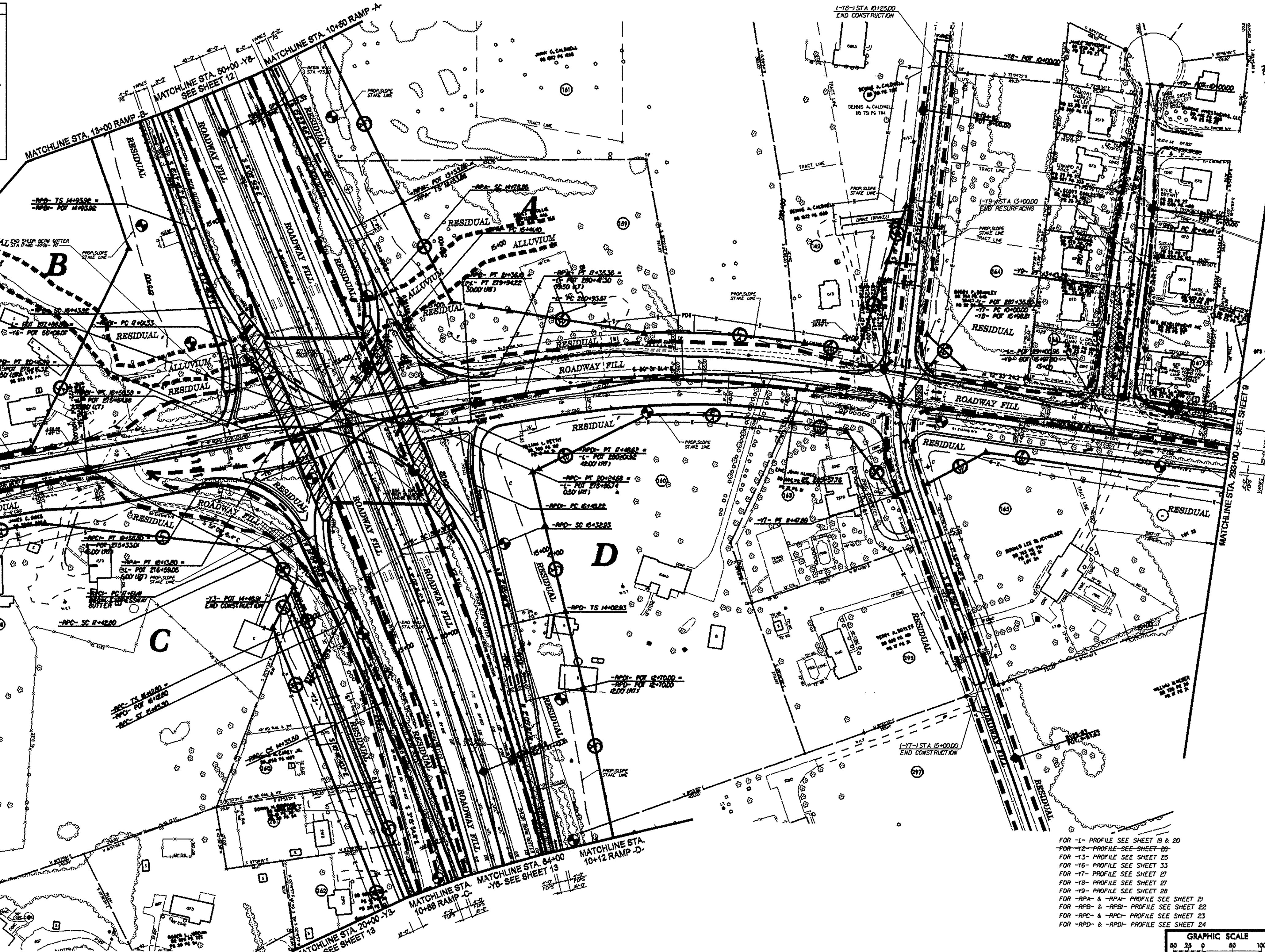
PROJECT REFERENCE NO.	SHEET NO.
R-3833B	8

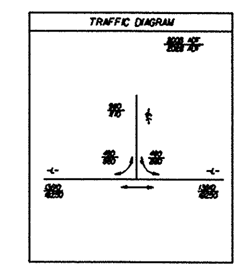
REVISIONS

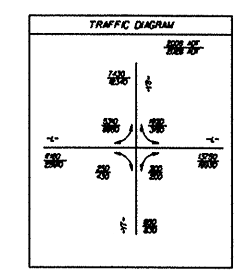




SKETCH SHOWING BRIDGE RELATIVE TO PROPOSED PAVEMENT







-L-
PI Sta 283+27.81
Δ = 18° 59' 50.9" (RT)
D = 4° 05' 33.2"
L = 464.20'
T = 234.25'
R = 1,400.00'
e = 0.04
RO = 100'
DS = 50mph

-Y7-
PI Sta 10+75.45
Δ = 25° 59' 44.0" (LT)
D = 17° 37' 46.1"
L = 147.45'
T = 75.02'
R = 325.00'
e = N/C
DS = 30mph

-RPC1-
PI Sta 18+77.33
Δ = 75° 23' 49.1" (LT)
D = 38° 11' 49.9"
L = 197.38'
T = 115.93'
R = 150.00'
e = 0.02
DS = 25mph

-RPA-
PIs Sta 14+37.57
Θs = 16° 39' 20.1"
Ls = 125.00'
LT = 83.71'
ST = 42.00'

PI Sta 18+91.10
Δ = 89° 15' 32.1" (RT)
D = 26° 38' 57.1"
L = 334.94'
T = 212.24'
R = 215.00'
e = 0.05
DS = 30mph

-RPA1-
PI Sta 16+54.81
Δ = 74° 05' 06.1" (LT)
D = 38° 11' 49.9"
L = 193.95'
T = 113.21'
R = 150.00'
e = 0.04
RO = 115'
DS = 25mph

-RPB-
PIs Sta 15+94.11
Θs = 10° 44' 34.1"
Ls = 150.00'
LT = 100.15'
ST = 50.07'

PI Sta 19+26.81
Δ = 70° 29' 55.6" (LT)
D = 14° 19' 26.2"
L = 492.11'
T = 282.69'
R = 400.00'
e = 0.02
DS = 35mph

-RPB1-
PI Sta 17+79.62
Δ = 42° 45' 27.1" (RT)
D = 28° 38' 52.4"
L = 149.25'
T = 78.29'
R = 200.00'
e = 0.02
DS = 25mph

-RPC-
PI Sta 7+98.34
Δ = 18° 24' 48.4" (LT)
D = 1° 25' 56.6"
L = 1,285.50'
T = 648.34'
R = 4,000.00'
e = 0.05
DS = 70mph

PIs Sta 14+85.50
Θs = 0° 32' 13.1"
Ls = 150.00'
LT = 100.00'
ST = 50.00'

PIs Sta 17+00.01
Θs = 18° 38' 04.3"
Ls = 130.00'
LT = 87.20'
ST = 43.82'

PI Sta 19+18.91
Δ = 85° 00' 06.0" (RT)
D = 30° 09' 20.4"
L = 281.85'
T = 174.11'
R = 190.00'
e = 0.02
DS = 25mph

-RPD-
PIs Sta 14+89.75
Θs = 10° 20' 42.3"
Ls = 130.00'
LT = 86.82'
ST = 43.40'

PI Sta 18+19.50
Δ = 77° 02' 25.2" (LT)
D = 15° 54' 55.8"
L = 484.06'
T = 286.56'
R = 360.00'
e = 0.06
DS = 35mph

-RPD1-
PI Sta 15+99.50
Δ = 28° 45' 41.5" (RT)
D = 28° 38' 52.4"
L = 100.40'
T = 51.28'
R = 200.00'
e = 0.02
DS = 25mph

-Y6-
PIs Sta 57+71.13
Θs = 0° 59' 59.7"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

PI Sta 70+04.47
Δ = 23° 01' 04.9" (RT)
D = 0° 59' 59.7"
L = 2,301.89'
T = 1,166.65'
R = 5,730.00'
DS = 70mph

PIs Sta 82+08.35
Θs = 0° 59' 59.7"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

FOR -L- PROFILE SEE SHEET 19 & 20
~~FOR -Y2- PROFILE SEE SHEET 26~~
FOR -Y3- PROFILE SEE SHEET 25
FOR -Y6- PROFILE SEE SHEET 33
FOR -Y7- PROFILE SEE SHEET 27
FOR -Y8- PROFILE SEE SHEET 27
FOR -Y9- PROFILE SEE SHEET 28
FOR -RPA- & -RPA1- PROFILE SEE SHEET 21
FOR -RPB- & -RPB1- PROFILE SEE SHEET 22
FOR -RPC- & -RPC1- PROFILE SEE SHEET 23
FOR -RPD- & -RPD1- PROFILE SEE SHEET 24

GRAPHIC SCALE
50 25 0 50 100
PLANS

LOCATION:
TIP NO.: COUNTY:
DESIGNED BY:
CHECKED BY: DATE:

14-JUL-2006 10:39
R3833b_GEO_inv_008_psh08.dgn

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-3833B	9
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 15869 ENGINEER T. R. REID	NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 9334 ENGINEER W. HENRY WELLS, II

PRELIMINARY PLANS NOT TO BE USED FOR CONSTRUCTION

MOFFATT & NICHOL — SEAL EAST WILBRAHAM ROAD, SUITE 160, RALEIGH, NORTH CAROLINA 27609, (919) 781-4626, VOICE (919) 781-4865, FAX

SDG Sungate Design Group, P.A. — CIVIL ENGINEERS • STRUCTURAL ENGINEERS • LANDSCAPE ARCHITECTS, 5104 Jones Freeman Rd., Raleigh, N.C. 27606

NAD 83/95 NC GRID

-L-
PI Sta 299+04.99
Δ = 24° 32' 10.9" (RT)
D = 6° 07' 40.4"
L = 400.40'
T = 203.32'
R = 935.00'
DS = 50mph

-L- PC 297+01.67

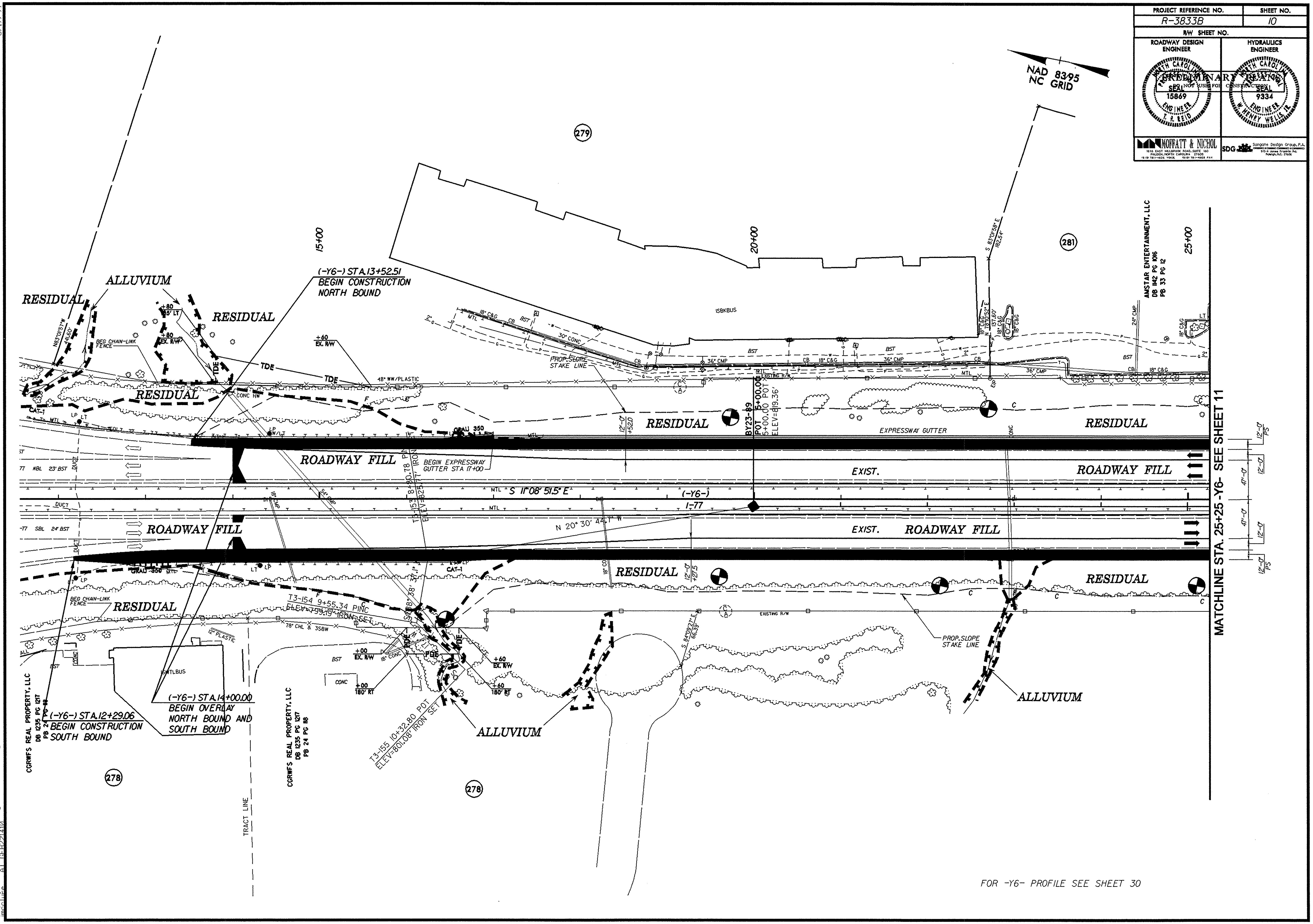
-L- PT 301+02.08

-L- STA 301+02.08 END TIP PROJECT R-3833B
END CONSTRUCTION

MATCHLINE STA. 293+00 -L- SEE SHEET 8

FOR -L- PROFILE SEE SHEET 20

14-JUL-2006 10:48
d:\projects\r3833b_geo.dwg_tredell\cadd_geotech\planprof\R3833b_GEO_inv_809_psh09.dgn
User: jwilliams


PROJECT REFERENCE NO. R-3833B
SHEET NO. 10
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
SEAL 15869
T. R. REID
SEAL 9334
W. HENRY WELLS JR.
MOFFATT & NICHOL
SDG Sungate Design Group, P.A.
NAD 83/95
NC GRID
279
281
278
15+00
20+00
25+00
ALLUVIUM
RESIDUAL
ROADWAY FILL
EXIST.
(-Y6-) STA.13+52.51
BEGIN CONSTRUCTION
NORTH BOUND
(-Y6-) STA.14+00.00
BEGIN OVERLAY
NORTH BOUND AND
SOUTH BOUND
(-Y6-) STA.12+29.06
BEGIN CONSTRUCTION
SOUTH BOUND
BEGIN EXPRESSWAY
GUTTER STA 17+00
EXPRESSWAY GUTTER
S 11°08' 51.5" E
N 20° 30' 44.1" W
(-Y6-)
I-77
BY23-89
POT 5+00.00 POT
ELEV=819.36'
T3-154 9+55.34 PINC
ELEV=799.19' IRON SET
T3-155 10+32.80 POT
ELEV=801.08' IRON SET
PROP. SLOPE STAKE LINE
EXISTING R/W
BEG CHAIN-LINK FENCE
TRACT LINE
CGRWFS REAL PROPERTY, LLC
DB 1235 PG 1217
PB 24 PG 18
AMSTAR ENTERTAINMENT, LLC
DB 1142 PG 1016
PB 33 PG 12
MATCHLINE STA. 25+25 -Y6- SEE SHEET 11
FOR -Y6- PROFILE SEE SHEET 30
8/17/99
14-JUL-2006 10:41

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-3833B	11
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA SEAL 15869 ENGINEER T. R. REID

HYDRAULICS ENGINEER — NORTH CAROLINA SEAL 9334 ENGINEER W. HENRY WEILAS JR.

PRELIMINARY PLANS NOT TO BE USED FOR CONSTRUCTION

MOFFATT & NICHOL — 1616 EAST MILLBROOK ROAD, SUITE 160, RALEIGH, NORTH CAROLINA 27609, (919) 781-4626 VOICE, (919) 781-4865 FAX

SDG Sungate Design Group, P.A. — 910-A Jones Franklin Rd., Raleigh, N.C. 27606

NAD 83/95 NC GRID

N 11°49'08" W 759.70'

30+00

35+00

281

279

283

ISMBUS

+26 EX. R/W

+06 153' LT

+26 155' LT

10' CHL

RETURN

10' CHL

18" C&G CONC

36" CMP

18" C&G

BST

2'

END EXPRESSWAY GUTTER STA.31+50 (-Y6-)

18" PLASTIC

CB

48" WW/PLASTIC

RESIDUAL

EXPRESSWAY GUTTER

ROADWAY FILL

EXIST.

S 11° 09' 27.4" E

S 11° 08' 51.5" E

-Y6-

I-77

S 7° 28' 23.4" E

S 6° 13' 48.3" E

TYPE-XI MOD

GRAU 350

BEGIN RETAINING WALL STA.32+00 (-Y6-)

END RETAINING WALL STA.37+00 (-Y6-)

S 11° 07' 09.8" E

BEGIN SHLDR BERM GUTTER STA.37+50 (-Y6-)

S 13° 55' 25.7" E

ALLUVIUM

RESIDUAL

PROP. SLOPE STAKE LINE

PROP. CHAIN-LINK FENCE

ROE LTD
DB 763 PG 75
PB 29 PG 58

BUFFALO MOOREVILLE, LLC
DB 1388 PG 1191
PB 33 PG 12
PB 33 PG 45

BEGIN SHLDR BERM GUTTER STA 39+00 -Y6- LT

+00 145' LT

+00 EX. R/W

RESIDUAL

PROP. SLOPE STAKE LINE

PROP. CHAIN-LINK FENCE

CAT-1

T4-157 ELEV=796.59

ROADWAY FILL

ALLUVIUM

EX. R/W 150' RT

T5-159 10+96.57 ELEV=776.03' IRON SET

AMEX PROPERTIES, LLC
DB 985 PG 495
PB 20 PG 95

T5-160 9+12.80 ELEV=774.44' IRON SET

T5-161 6+86.76 PINC ELEV=777.94' IRON SET

H&R INVESTMENTS
DB 942 PG 685
PB 20 PG 95

N 88°26'20" W 58.74'

T5-162 5+09.00 POT IRON SET ELEV=780.21'

S 45°37'31" E 85.00'

S 22°31'31" E 68.33'

S 47°22'02" E 40.78'

S 26°18'26" E 158.47'

B123-78 PINC 164+85.49

CONC HW

-RPB- POT 0+00.00 =
-Y6- POT 37+00.00
46.00' (RT)
Δ = 2° 55' 03.26"

ISMTLBUS

MATCHLINE STA. 25+25 -Y6- SEE SHEET 10

MATCHLINE STA. 39+00 -Y6- SEE SHEET 12

MATCHLINE STA. 2+00 RAMP -B- SEE SHEET 12

12'-0" PS 41'-0" 12'-0" PS

4'-0" FDPS 12'-0"

FOR -RPB- PROFILE SEE SHEET 22
FOR -Y6- PROFILE SEE SHEET 31

09-AUG-2006 10:44
d:\projects\r3833b\r3833b_geo_rdwy_rredell\cadd_geotech\planprof\R3833b_GEO_inv_01l_pshll.dgn

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-3833B	12
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 15869 ENGINEER T. R. REID

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 9334 ENGINEER HENRY WELLS IV

PRELIMINARY PLANS — NOT FOR CONSTRUCTION

MOFFATT & NICHOL — 1616 EAST MILLBROOK ROAD, SUITE 160, RALEIGH, NORTH CAROLINA 27609, (919) 781-4626 VOICE, (919) 781-4869 FAX

SDG — Sungate Design Group, P.A., 319-A Jones Franklin Rd., Raleigh, N.C. 27606

-RPA-		
PIs Sta 0+80.00	PI Sta 2+44.98	PIs Sta 4+09.91
Θs = 0° 41' 15.2"	Δ = 2° 51' 49.5" (LT)	Θs = 0° 41' 15.2"
Ls = 120.00'	D = 1° 08' 45.3"	Ls = 120.00'
LT = 80.00'	L = 249.91'	LT = 80.00'
ST = 40.00'	T = 124.98'	ST = 40.00'
	R = 5,000.00'	
	e = 0.04	
	DS = 70mph	

NAD 83/95 NC GRID

-RPA- ST 0+00.00 = -Y6- POT 39+47.85 46.00' (LT)

-RPA- SC 1+20.00

-RPA- CS 3+69.91

-RPA- ST 4+89.91

RESIDUAL

ALLUVIUM

END CHAIN-LINK FENCE

BEG CHAIN-LINK FENCE

END SHLDR BERM GUTTER STA 42+50 -Y6- LT

PROP. SLOPE STAKE LINE

EXISTING R/W

CONC HW

CONC. SLOPE PROTECTION

SHLDR BERM GUTTER

BEGIN SBG STA. 475.00

ROADWAY FILL

I-77

-Y6-

-RPA-

-RPB-

ATTENUATOR

BEGIN WALL STA. 425.00

TYPE-XI MSE WALL

PROP. SLOPE STAKE LINE

MATCHLINE STA. 39+00 -Y6- SEE SHEET 11

MATCHLINE STA. 50+00 -Y6- MATCHLINE STA. 10+50 RAMP -A- SEE SHEET 8

MATCHLINE STA. 2+00 RAMP -B-

MATCHLINE STA. 13+00 RAMP -B-

FOR -Y6- PROFILE SEE SHEET 32
FOR -RPA- PROFILE SEE SHEET 21
FOR -RPB- PROFILE SEE SHEET 22

11-SEP-2006 13:12
d:\projects\r-3833b\r-3833b_geo_rdwy_iredell\cadd_geotech\planprof\r-3833b_geo_inv_012_psh12.dgn
dgnsetup AT [REH226163]

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-3833B	13
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 15869 ENGINEER T. A. REID

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL SEAL 9334 ENGINEER W. HENRY WELLS, IV

PRELIMINARY — NOT FOR CONSTRUCTION

MOFFATT & NICHOL — 1616 EAST MILLBROOK ROAD, SUITE 160, RALEIGH, NORTH CAROLINA 27609, (919) 781-4626 VOICE, (919) 781-4865 FAX

SDG Sungate Design Group, P.A. — 510 Glenwood Avenue, Suite 416, Raleigh, NC 27603

NAD 83/95 NC GRID

-RPD- SC 2+31.79

-RPD- TS 1+51.79

-RPD- ST 1+10.00

-RPD- ST 8+95.19

-RPD- CS 8+15.19

-RPD- CS 0+00.00 =
-Y6- POC 74+00.00
46.00' (RT)
Δ = 2° 19' 06.5"

MATCHLINE STA. 64+00
-Y6- SEE SHEET 8

MATCHLINE STA. 76+00 -Y6-
SEE SHEET 14

MATCHLINE STA. 10+12 RAMP -D-

MATCHLINE STA. 10+88 RAMP -C-

MATCHLINE STA. 20+00 -Y3-
SEE SHEET 8

RESIDUAL

ROADWAY FILL

SHLDR BERM GUTTER

EXPRESSWAY GUTTER

END EXPRESSWAY GUTTER
STA +50.00

PROP. SLOPE STAKE LINE

ATTENUATOR

GRAU 350

I-77

I-77 NBL 24" BST

I-77 SBL 24" BST

S 0° 12' 04.7" E

N 7° 24' 57.9" E

S 13° 15' 51.0" W

ROADWAY FILL SR 1196 GIBBS RD 18" BST

-Y3- PT 24+09.03
END CONSTRUCTION

-Y11- POC 12+13.12

-Y3- POC 22+72.98

-Y11- POT 10+00.00

-Y3- PC 20+79.85

-RPC- SC 1+50.00

-RPC- ST 0+00.00
-Y6- POC 75+23.31
46.00' (LT)

-RPC- SC 1+50.00

RANDALL M. HEBBERT
DB 958 PG 1584
PB 19 PG 39
PB 20 PG 94

PETER E. BRIZA
DB 798 PG 204
PB 20 PG 94

PETER E. BRIZA
DB 798 PG 801
PB 20 PG 94

MICHAEL L. GOODMAN
DB 765 PG 68
PB 19 PG 39

RONNY LEE KELLER
DB 809 PG 391
PB 19 PG 39

SCOTT C. WERNER
DB 935 PG 1372
PB 20 PG 94

HUBERT M. JONES
DB 100 PG 251

-Y3-

PI Sta 22+46.80
Δ = 23° 34' 31.7" (RT)
D = 7° 09' 43.1"
L = 329.18'
T = 166.95'
R = 800.00'
e = 0.05
RO = 120'
DS = 40mph

-Y6-

PI Sta 70+04.47
Δ = 23° 01' 01.9" (RT)
D = 0° 59' 59.7"
L = 2,301.89'
T = 1,166.68'
R = 5,730.00'
DS = 70mph

-RPC-

PIs Sta 0+79.35	PI Sta 7+98.34
Θs = 0° 45' 21.6"	Δ = 18° 24' 48.4" (LT)
Θs = 1° 04' 27.5"	D = 1° 25' 56.6"
Ls = 150.00'	L = 1,285.50'
LT = 79.35'	T = 648.34'
ST = 70.66'	R = 4,000.00'
	e = 0.05
	DS = 70mph

-RPD-

PIs Sta 0+36.67	PIs Sta 2+05.12	PI Sta 5+24.01	PIs Sta 8+41.86
Θs = 0° 21' 25.6"	Θs = 0° 34' 22.6"	Δ = 8° 21' 23.7" (LT)	Θs = 0° 34' 22.6"
Ls = 110.00'	Ls = 80.00'	D = 1° 25' 56.6"	Ls = 80.00'
LT = 73.33'	LT = 53.33'	L = 583.40'	LT = 53.33'
ST = 36.67'	ST = 26.67'	T = 292.22'	ST = 26.67'
		R = 4,000.00'	
		e = 0.03	
		DS = 70mph	

FOR -Y2- PROFILE SEE SHEET 26
FOR -Y3- PROFILE SEE SHEET 25
FOR -Y6- PROFILE SEE SHEET 34
FOR -RPC- PROFILE SEE SHEET 23
FOR -RPD- PROFILE SEE SHEET 24

14-JUL-2006 10:45
d:\projects\3833b\geo\dwg\rredell\cadd.geotech\planprof\R3833b_GEO_rnv_013.pshl3.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-3833B	14

R/W SHEET NO.

ROADWAY DESIGN ENGINEER — HYDRAULICS ENGINEER

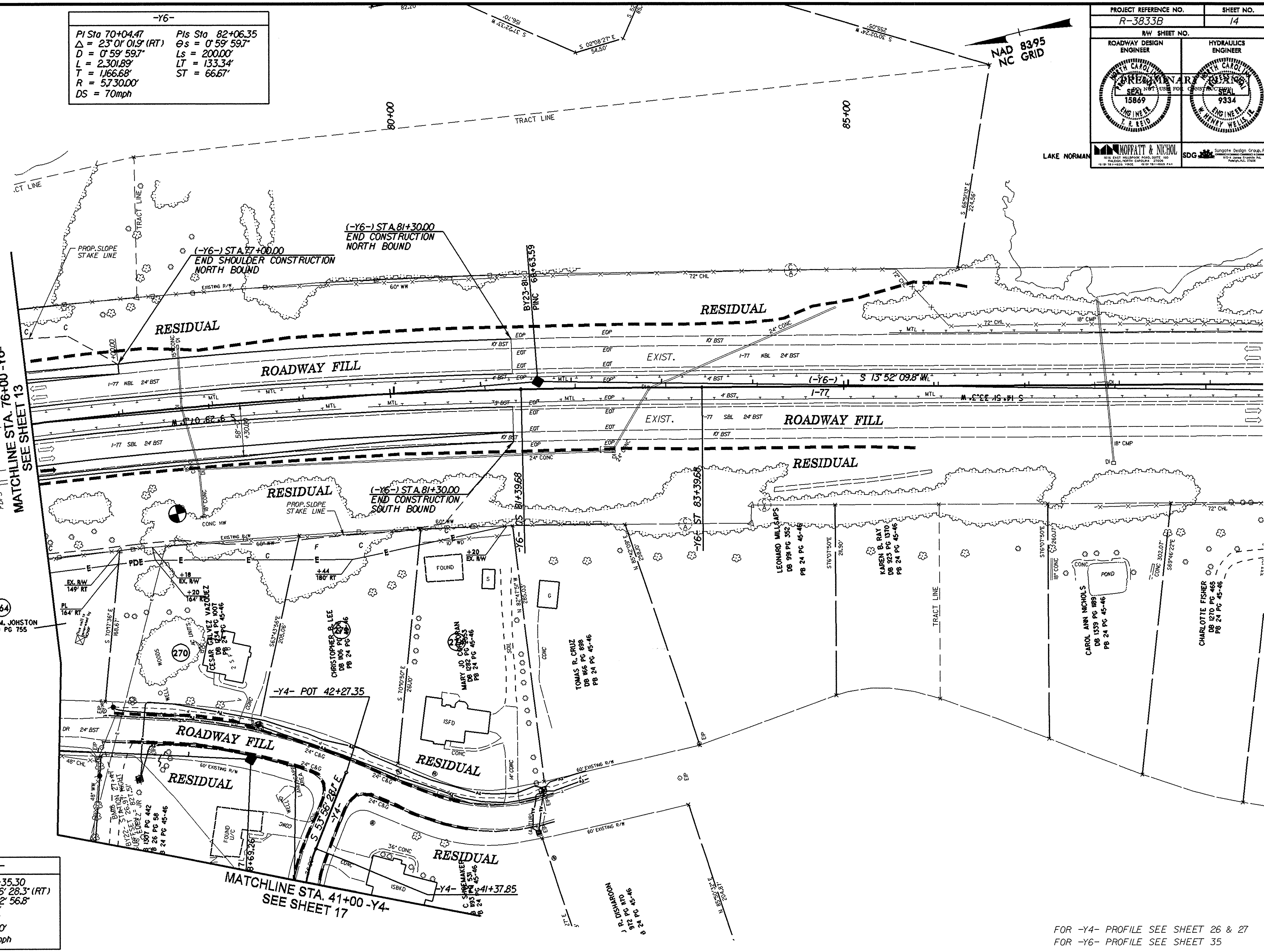
PRELIMINARY PLANS — DO NOT USE FOR CONSTRUCTION

MOFFATT & NICHOL — SDG Sungate Design Group, P.A.

-Y6-

PI Sta 70+04.47
Δ = 23° 01' 01.9" (RT)
D = 0° 59' 59.7"
L = 2,301.89'
T = 1,166.68'
R = 5,730.00'
DS = 70mph

PIs Sta 82+06.35
θs = 0° 59' 59.7"
Ls = 200.00'
LT = 133.34'
ST = 66.67'



-Y4-

PI Sta 40+35.30
Δ = 27° 36' 28.3" (RT)
D = 29° 22' 56.8"
L = 93.96'
T = 47.91'
R = 195.00'
DS = 25mph

FOR -Y4- PROFILE SEE SHEET 26 & 27
FOR -Y6- PROFILE SEE SHEET 35

8/17/99

14-JUL-2006 10:46

PROJECT REFERENCE NO.	SHEET NO.
R-3833B	15

R/W SHEET NO.

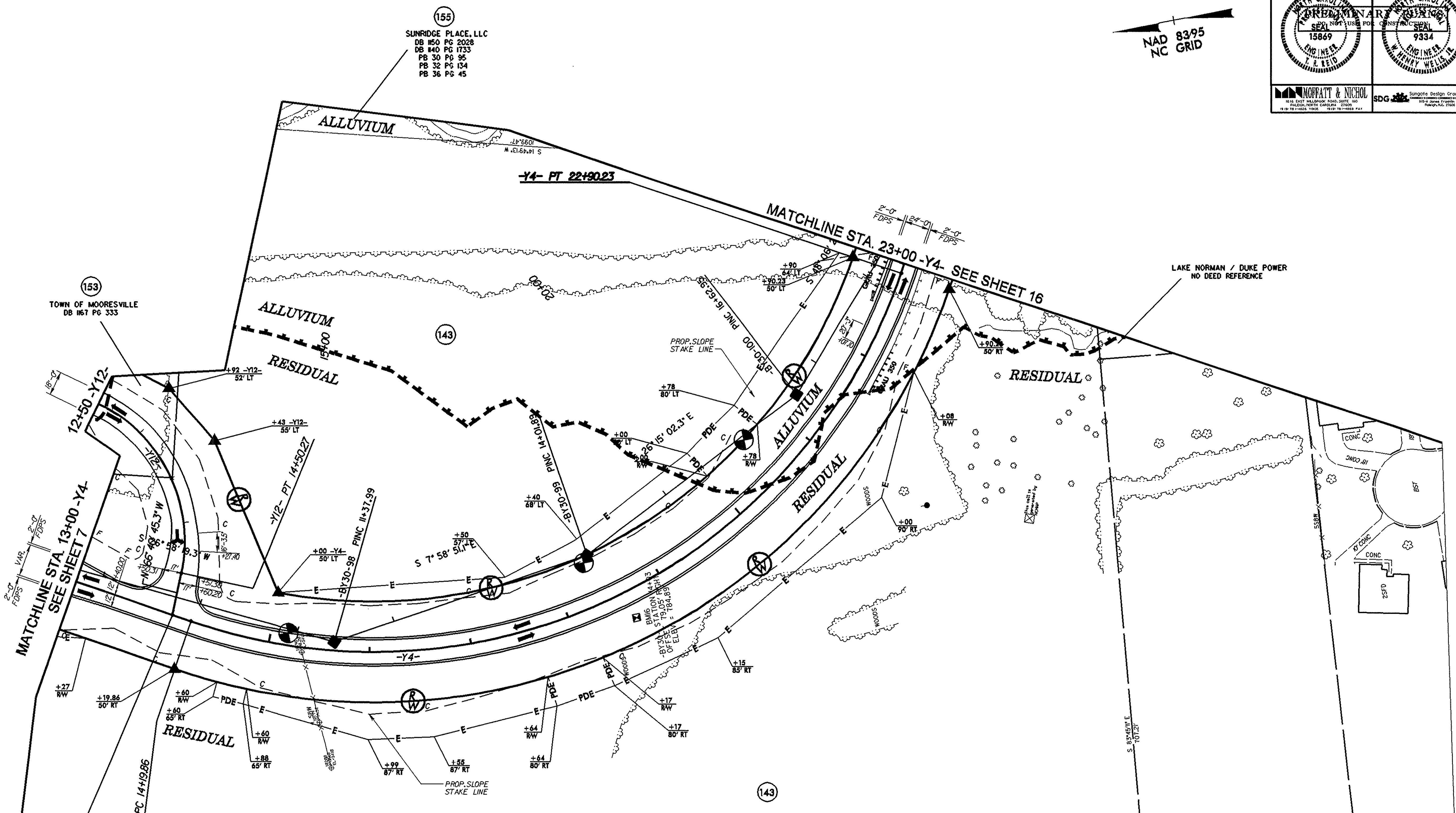
ROADWAY DESIGN ENGINEER — SEAL 15869 T. R. REID

HYDRAULICS ENGINEER — SEAL 9334 W. HENRY WELLS JR.

PRELIMINARY PLANS — DO NOT USE FOR CONSTRUCTION

MOFFATT & NICHOL

SDG Sungate Design Group, P.A.



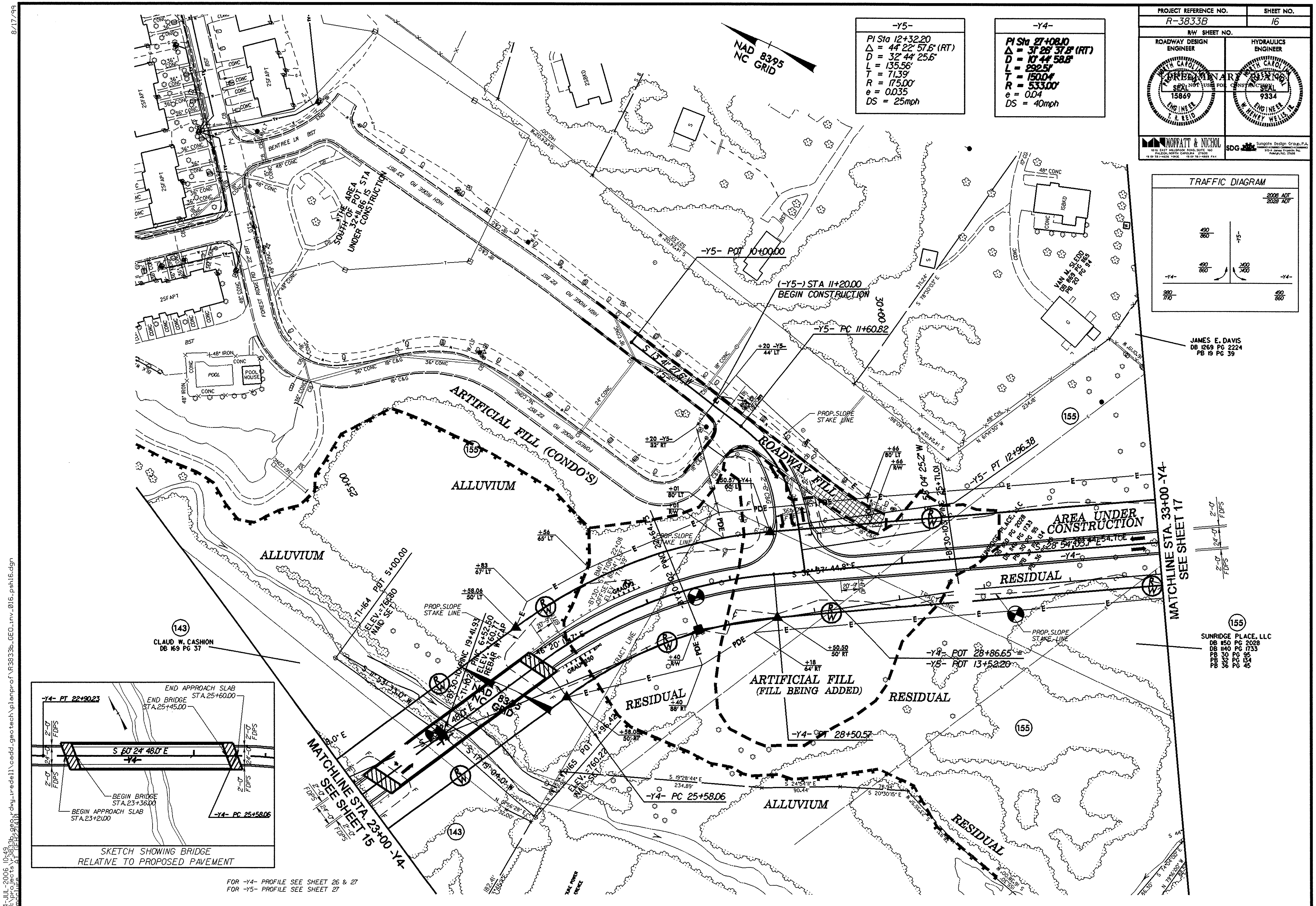
-Y4-	-Y12-
PI Sta 19+76.33	PI Sta 13+64.80
Δ = 90° 40' 11.2" (LT)	Δ = 87° 25' 54.0" (RT)
D = 10° 25' 02.7"	D = 38° 11' 49.9"
L = 870.37'	L = 228.90'
T = 556.47'	T = 143.42'
R = 550.00'	R = 150.00'
e = 0.04	DS = 25mph
RO = 120'	
DS = 40mph	

-Y4- POT 14+00.39 =
-Y12- POT 14+92+69

FOR -Y4- PROFILE SEE SHEET 26 & 27
FOR -Y12- PROFILE SEE SHEET 28

8/17/99

14-JUL-2006 10:48
d:\projects\r3833b_geo_rdwy_iredell\cadd_geotech\planprof\R3833b_GEO_inv_015_psh15.dgn

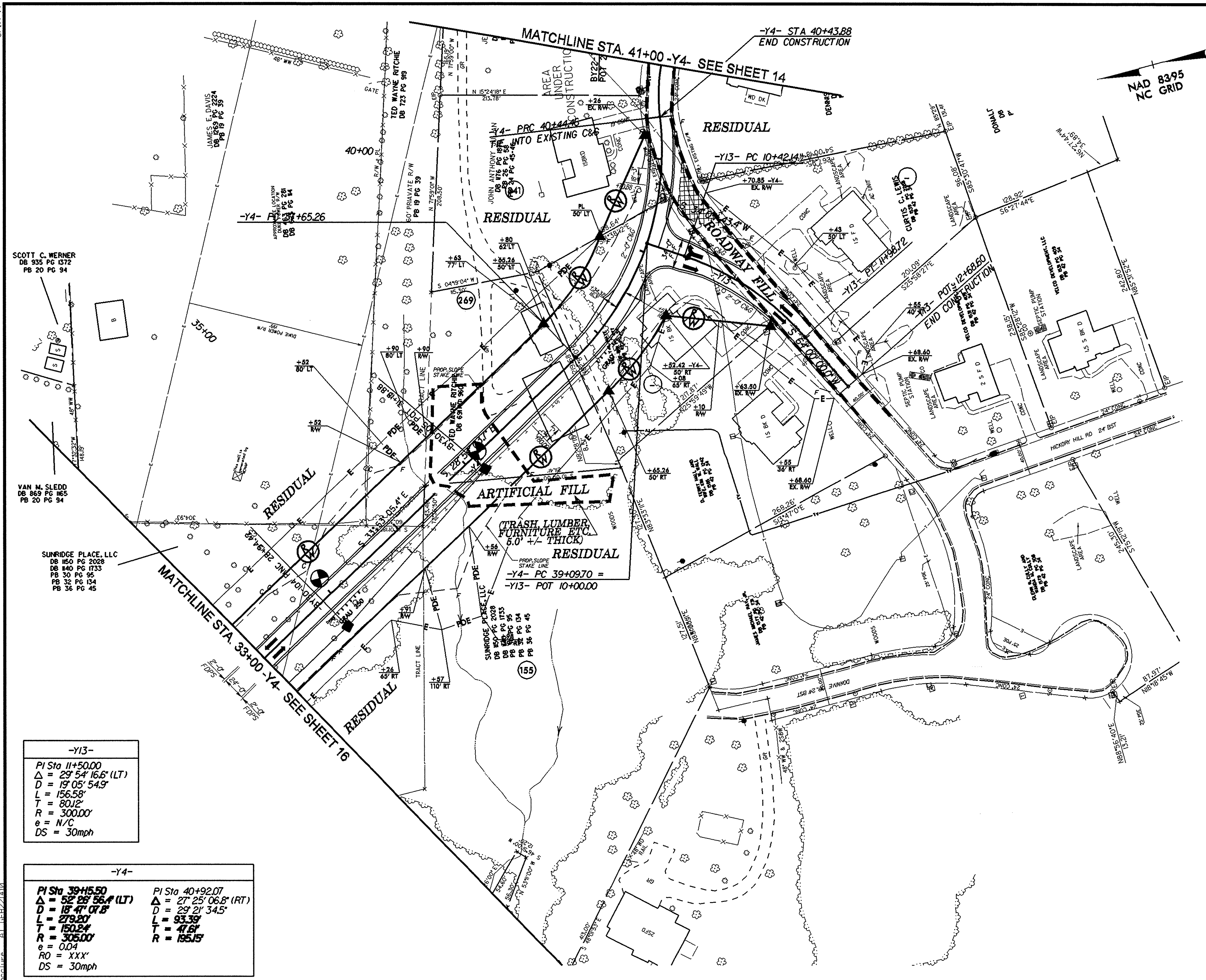

PROJECT REFERENCE NO.
R-3833B
SHEET NO.
16
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
NORTH CAROLINA PROFESSIONAL SEAL 15869 ENGINEER T. R. REID
NORTH CAROLINA PROFESSIONAL SEAL 9334 ENGINEER W. HENRY WELLS JR.
MOFFATT & NICHOL
1616 EAST MILLBROOK ROAD, SUITE 160
RALEIGH, NORTH CAROLINA 27609
(919) 781-4626 VOICE (919) 781-4869 FAX
SDG Sungate Design Group, P.A.
915-A Jones Franklin Rd.
Raleigh, N.C. 27606
-Y5-
PI Sta 12+32.20
Δ = 44° 22' 57.6" (RT)
D = 32° 44' 25.6"
L = 135.56'
T = 71.39'
R = 175.00'
e = 0.035
DS = 25mph
-Y4-
PI Sta 27+08.10
Δ = 31° 26' 37.8" (RT)
D = 10° 44' 58.8"
L = 292.51'
T = 150.04'
R = 533.00'
e = 0.04
DS = 40mph
NAD 83/95 NC GRID
TRAFFIC DIAGRAM
2006 ADT
2028 ADT
JAMES E. DAVIS
DB 1269 PG 2224
PB 19 PG 39
VAN M. SLEDD
DB 869 PG 165
PB 20 PG 94
SUNRIDGE PLACE, LLC
DB 1150 PG 2028
DB 1140 PG 1733
PB 30 PG 95
PB 32 PG 134
PB 36 PG 45
CLAUD W. CASHION
DB 169 PG 37
ARTIFICIAL FILL (CONDO'S)
ALLUVIUM
ROADWAY FILL
AREA UNDER CONSTRUCTION
RESIDUAL
ARTIFICIAL FILL
(FILL BEING ADDED)
THE AREA SOUTH OF POT STA 32+11.86 IS UNDER CONSTRUCTION
-Y5- POT 10+00.00
(-Y5-) STA 11+20.00
BEGIN CONSTRUCTION
-Y5- PC 11+60.82
-Y5- PT 12+96.38
-Y4- POT 28+86.65 = -Y5- POT 13+52.20
-Y4- PT 28+50.57
-Y4- PC 25+58.06
PROP. SLOPE STAKE LINE
MATCHLINE STA. 33+00 -Y4- SEE SHEET 17
MATCHLINE STA. 23+00 -Y4- SEE SHEET 15
-Y4- PT 22+90.23
END APPROACH SLAB STA. 25+60.00
END BRIDGE STA. 25+45.00
S 60° 24' 48.0" E
-Y4-
BEGIN BRIDGE STA. 23+36.00
BEGIN APPROACH SLAB STA. 23+21.00
-Y4- PC 25+58.06
SKETCH SHOWING BRIDGE RELATIVE TO PROPOSED PAVEMENT
FOR -Y4- PROFILE SEE SHEET 26 & 27
FOR -Y5- PROFILE SEE SHEET 27
8/17/99
14-JUL-2006 10:49
d:\projects\r3833b_geo_rdwy_iredell\cadd_geotech\planprof\R3833b_GEO_inv_016_psh16.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-3833B	17
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS — DO NOT USE FOR CONSTRUCTION	
SEAL 15869 — T. R. REID	SEAL 9334 — W. HENRY WELLS JR.

MOFFATT & NICHOL — 1616 EAST MILLBROOK ROAD, SUITE 160, RALEIGH, NORTH CAROLINA 27609

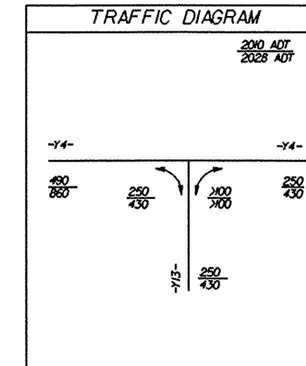
SDG Sungate Design Group, P.A.



-Y13-
PI Sta 11+50.00
Δ = 29° 54' 16.6" (LT)
D = 19° 05' 54.9"
L = 156.58'
T = 80.12'
R = 300.00'
e = N/C
DS = 30mph

-Y4-	
PI Sta 39+15.50	PI Sta 40+92.07
Δ = 52° 26' 56.4" (LT)	Δ = 27° 25' 06.8" (RT)
D = 18° 47' 07.8"	D = 29° 21' 34.5"
L = 279.20'	L = 93.39'
T = 150.24'	T = 47.61'
R = 305.00'	R = 195.15'
e = 0.04	
RO = XXX'	
DS = 30mph	

TRAFFIC DIAGRAM



FOR -Y4- PROFILE SEE SHEET 26 & 27
FOR -Y13- PROFILE SEE SHEET 29

8/17/99

14-JUL-2006 10:50
d:\projects\r3833b_geo_rdwy_iredell\cadd_geotech\planprof\R3833b_GEO_inv_017_psh17.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-3833B	18
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

-L- (SR 1100)
BRAWLEY SCHOOL ROAD

PI = 228+40.00
EL = 864.00'
VC = 300'
k = 110
DS = 50 mph

BEGIN GRADE R-3833B
STA. 229+50.00 (-L-)
EL 862.22
END GRADE R-3833A

R-3833A GRADE
(+)1.1808%
(-)1.5486%
230+27 -L- 37.00 RT.
PROPOSED GRADE
EXISTING GRADE
RESIDUAL
SS-118 SS-120
235+10 -L- 35.00 RT.
(-)0.3015%
238+10 -L- 27.00 RT.

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

⑩ BT
TAN-BRN STIFF MOIST MICA
CLAYEY SANDY SILT (A-5)
DRY (2/06)

⑪ (PI=31) RESIDUAL
RED-BRN STIFF MOIST
MICA HIGH PLASTIC
SILTY SANDY CLAY (A-7-5)

⑧ BT
DRY TAN-BRN STIFF MOIST MICA
(2/06) CLAYEY SANDY SILT (A-5)

PI = 236+30.00
EL = 851.77'
VC = 150'
k = 120
DS = 50 mph

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

⑧ BT
DRY
(2/06)

FOR -L- PLAN SEE SHEET 4 & 5

890 880 870 860 850 840 830 820 810 800

226+00 227+00 228+00 229+00 230+00 231+00 232+00 233+00 234+00 235+00 236+00 237+00 238+00 239+00 240+00

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
SS-119	35 RT	235+10	4.10-5.10	A-7-5(30)	79	31	10.3	14.7	22.7	52.3	100	96	78	-	-
SS-120	35 RT	235+10	9.10-10.10	A-5(2)	61	8	28.8	33.0	22.1	16.1	100	85	43	-	-
SS-117	23 RT	241+08	4.30-5.30	A-5(3)	56	8	21.5	37.0	23.3	18.1	100	90	48	-	-
SS-118	23 RT	241+08	9.30-10.30	A-5(0)	53	7	30.8	40.2	22.9	6.0	100	82	36	-	-
SS-115	25 RT	244+20	4.10-5.10	A-7-5(38)	80	39	5.0	17.5	27.2	50.3	100	98	81	-	-
SS-116	25 RT	244+20	9.10-10.10	A-7-5(9)	52	12	6.8	35.2	35.8	22.1	100	97	66	-	-
SS-113	30 RT	247+50	4.30-5.30	A-7-5(6)	55	14	26.8	25.8	23.3	24.1	100	85	52	-	-
SS-114	30 RT	247+50	9.30-10.30	A-5(0)	46	5	37.0	32.4	24.5	6.0	100	78	36	-	-
SS-112	35 RT	253+00	4.30-5.30	A-5(0)	56	10	36.0	32.4	17.5	14.1	100	78	36	-	-

BM11 - RR SPIKE IN THE ROOT OF 72" OAK TREE
N 672466.8112 E 1444681.3741
-BL- STA. 238+55 OFFSET 355.42' RT
ELEV 830.64

-L- (SR 1100)
BRAWLEY SCHOOL ROAD

PI = 243+75.00
EL = 849.52'
VC = 600'
k = 165
DS = 50 mph

PROPOSED GRADE
EXISTING GRADE
(-)0.3015%
(-)3.9282%
(-)1.2990%

SS-117 SS-118
241+08 -L- 23.00 RT.

⑦ RESIDUAL
BRN-ORANGE-WHITE MED. STIFF
MOIST MICA CLAYEY SANDY SILT (A-5)

⑨ BT
DRY
(2/06)

SS-115 SS-116
244+20 -L- 25.00 RT.

⑯ (PI=39) RESIDUAL
RED-TAN-BRN-YELLOW
STIFF TO V. STIFF MOIST
HIGH TO LOW PLASTIC
SILTY SANDY CLAY (A-7-5)

⑮ (PI=12) BT
DRY
(2/06)

SS-113 SS-114
247+50 -L- 30.00 RT.

RESIDUAL
RED-ORANGE STIFF MOIST
MICA LOW PLASTIC
SILTY SANDY CLAY (A-7-5)

⑨ (PI=14)

⑩ BT
DRY TAN-WHITE STIFF MOIST
(2/06) MICA SANDY SILT (A-5)

250+56 -L- 23.00 RT.

⑧
⑧
⑦ BT
DRY
(2/06)

PI = 250+95.00
EL = 821.24'
VC = 290'
k = 111
DS = 50 mph

SS-112
253+00 -L- 35.00 RT.

RESIDUAL
RED-ORANGE-TAN-BRN
MED. STIFF TO STIFF MOIST
MICA CLAYEY SANDY SILT (A-5)

⑦
⑧
⑦ BT
DRY
(2/06)

FOR -L- PLAN SEE SHEET 5 & 6

870 860 850 840 830 820 810 800 790 780

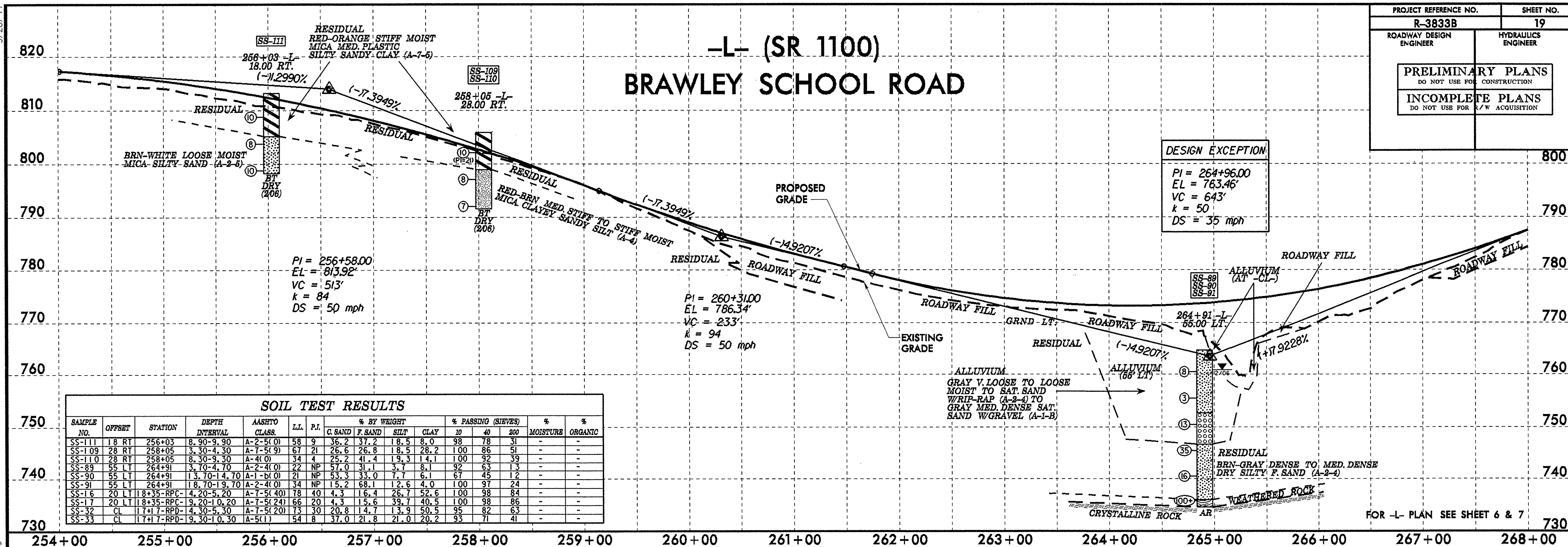
240+00 241+00 242+00 243+00 244+00 245+00 246+00 247+00 248+00 249+00 250+00 251+00 252+00 253+00 254+00

PROJECT REFERENCE NO.	SHEET NO.
R-3833B	19
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

-L- (SR 1100)
BRAWLEY SCHOOL ROAD

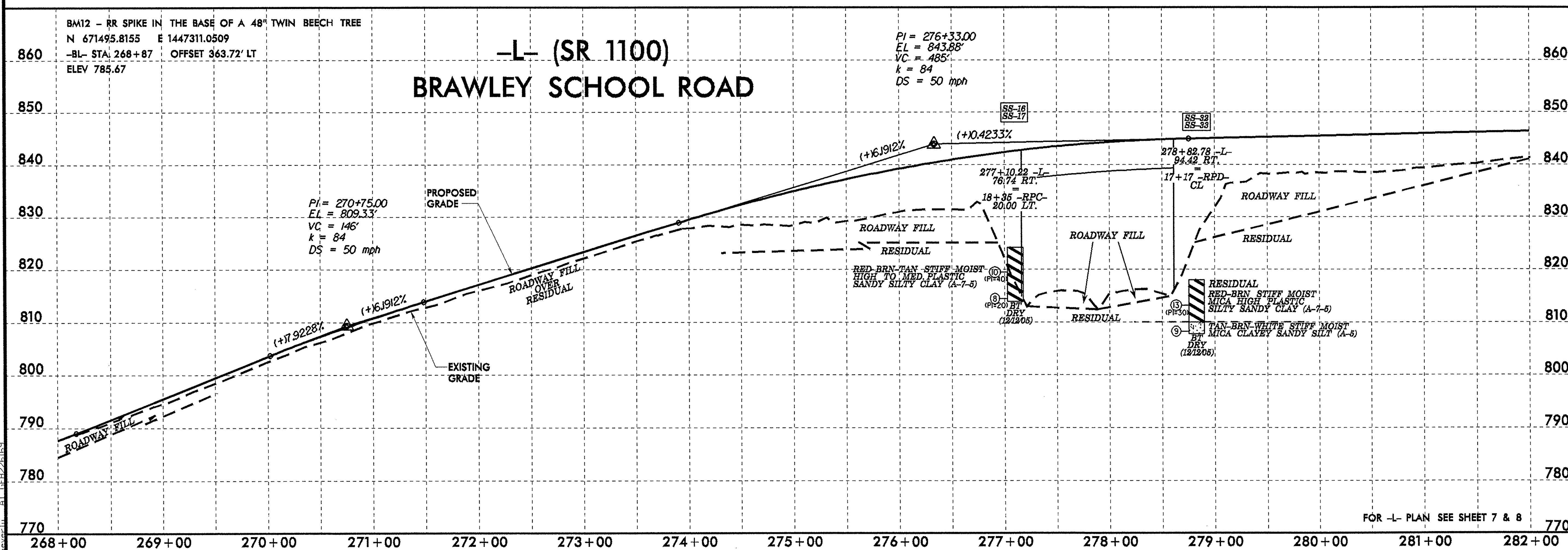


SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
SS-111	18 RT	256+03	8.90-9.90	A-2-5(0)	58	9	36.2	37.2	18.5	8.0	98	78	31	-	-
SS-109	28 RT	258+05	3.30-4.30	A-7-5(9)	67	21	26.6	26.8	18.5	28.2	100	86	51	-	-
SS-110	28 RT	258+05	8.30-9.30	A-4(0)	34	4	25.2	41.4	19.3	14.1	100	92	39	-	-
SS-89	55 LT	264+91	3.70-4.70	A-2-4(0)	22	NP	57.0	31.1	3.7	8.1	92	63	13	-	-
SS-90	55 LT	264+91	13.70-14.70	A-1-b(0)	21	NP	53.3	33.0	7.7	6.1	67	45	12	-	-
SS-91	55 LT	264+91	18.70-19.70	A-2-4(0)	34	NP	15.2	68.1	12.6	4.0	100	97	24	-	-
SS-16	20 LT	18+35-RPC-	4.20-5.20	A-7-5(40)	78	40	4.3	16.4	26.7	52.6	100	98	84	-	-
SS-17	20 LT	18+35-RPC-	9.20-10.20	A-7-5(24)	66	20	4.3	15.6	39.7	40.5	100	98	86	-	-
SS-32	CL	17+17-RPD-	4.30-5.30	A-7-5(20)	73	30	20.8	14.7	13.9	50.5	95	82	63	-	-
SS-33	CL	17+17-RPD-	9.30-10.30	A-5(1)	54	8	37.0	21.8	21.0	20.2	93	71	41	-	-

BM12 – RR SPIKE IN THE BASE OF A 48" TWIN BEECH TREE
N 671495.8155 E 1447311.0509
-BL- STA. 268+87 OFFSET 363.72' LT
ELEV 785.67

-L- (SR 1100)
BRAWLEY SCHOOL ROAD



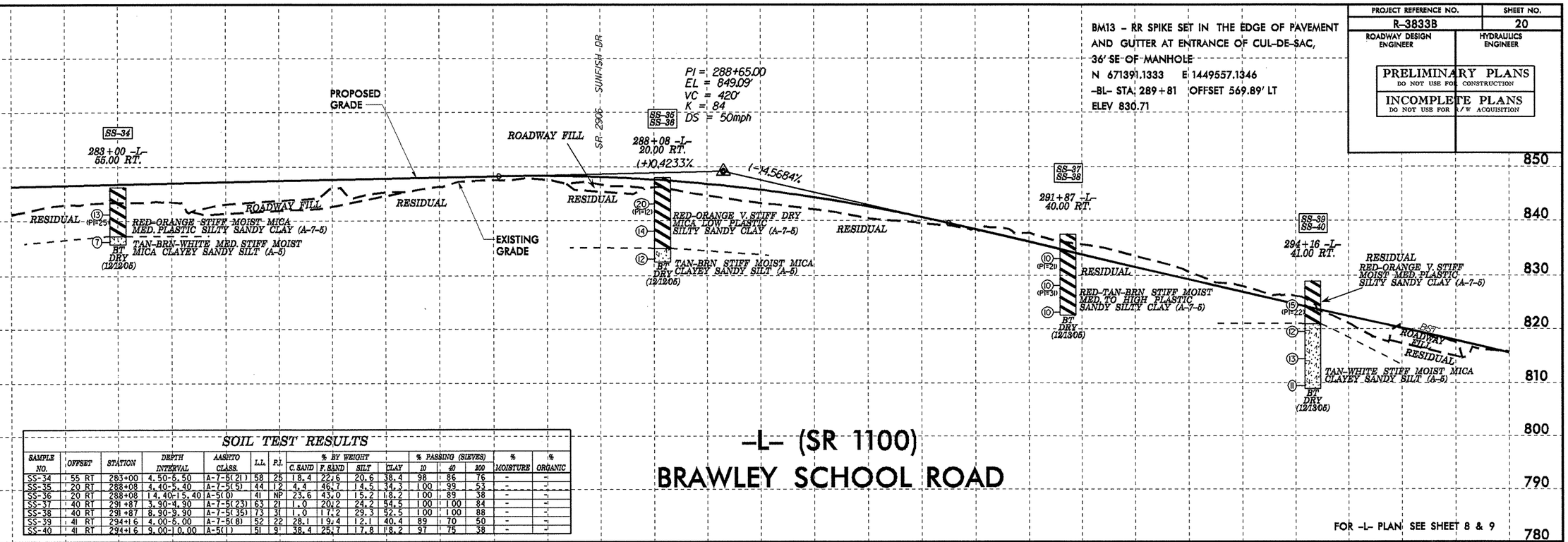
06-DEC-2006 08:53

PROJECT REFERENCE NO.	SHEET NO.
R-3833B	20
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

BM13 – RR SPIKE SET IN THE EDGE OF PAVEMENT AND GUTTER AT ENTRANCE OF CUL-DE-SAC, 36' SE OF MANHOLE
N 671391.1333 E 1449557.1346
-BL- STA. 289+81 OFFSET 569.89' LT
ELEV 830.71

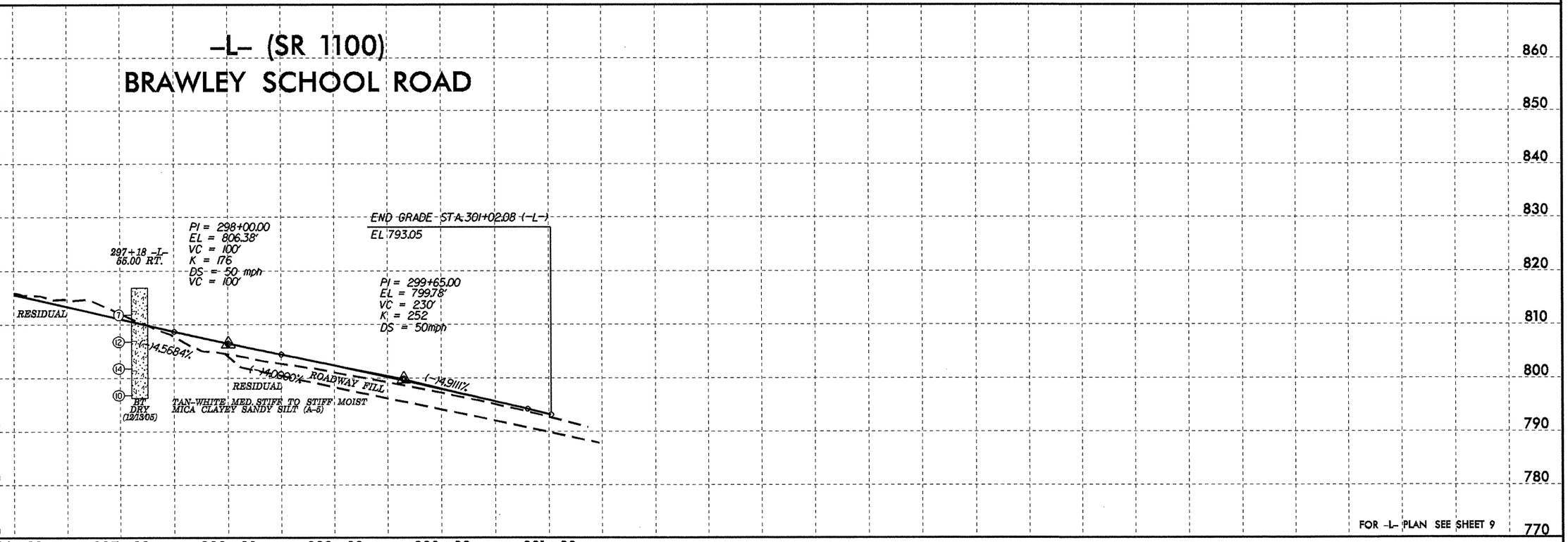


SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
SS-34	55 RT	283+00	4.50-6.50	A-7-5(21)	58	25	18.4	22.6	20.6	38.4	98	86	76	-	-
SS-35	20 RT	288+08	4.40-5.40	A-7-5(5)	44	12	4.4	46.7	14.5	34.3	100	99	53	-	-
SS-36	20 RT	288+08	14.40-15.40	A-5(0)	41	NP	23.6	43.0	15.2	18.2	100	89	38	-	-
SS-37	40 RT	291+87	3.50-4.30	A-7-5(23)	63	27	1.0	20.2	24.2	54.5	100	100	84	-	-
SS-38	40 RT	291+87	8.90-9.90	A-7-5(35)	73	31	1.0	17.2	29.3	52.5	100	100	88	-	-
SS-39	41 RT	294+16	4.00-5.00	A-7-5(8)	52	22	28.1	19.4	12.1	40.4	89	70	50	-	-
SS-40	41 RT	294+16	9.00-10.00	A-5(1)	51	9	38.4	25.7	17.8	18.2	97	75	38	-	-

-L- (SR 1100)
BRAWLEY SCHOOL ROAD

FOR -L- PLAN SEE SHEET 8 & 9



FOR -L- PLAN SEE SHEET 9

PROJECT REFERENCE NO.	SHEET NO.
R-3833B	21

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

RAMP A (-RPA-)

BEGIN GRADE (-RPA-) STA 0+00.00 = (-Y6-) STA 39+47.85; OFFSET: 46'-0" (LT)
EL = 797.68

PI = 0+85.00
EL = 797.73'
VC = 60'
k = 196
DS = 70 mph

PI = 2+25.00
EL = 798.24'
VC = 50'
k = 157
DS = 65 mph

PI = 7+35.00
EL = 801.73'
VC = 520'
k = 99
DS = 50 mph

EXISTING 1-77 NBL

ROADWAY FILL over ALLUVIUM (TO STA. 2+00)

ROADWAY FILL over RESIDUAL (STA. 2+00 - 4+98)

ROADWAY FILL /ALLUVIUM (STA. 6+00 - 5+60)

ROADWAY FILL /RESIDUAL STA. 5+60 - 7+00)

EXISTING GRADE

PROPOSED GRADE

(+)5.9300%

(+)0.6849%

(+)5.9300%

SS-52 SS-53 SS-54 SS-55

0+69.41 -RPA- 63.91 LT. = 40+17 -Y6- 110.00 LT.

GROUND 64' LT.

RESIDUAL

ALLUVIUM

GRAY-ORANGE LOOSE DRY TO MOIST MICA CLAYEY SAND (A-2-4)

GRAY-ORANGE LOOSE SAT. CSE. SAND W/GRAVEL (A-1-B)

RESIDUAL

BT NM (12/05) TAN-ORANGE V. STIFF MOIST MICA CLAYEY SANDY SILT (A-4)

SS-50 SS-51

3+11.75 -RPA- 29.58 LT. = 42+58 -Y6- 82.00 LT.

GROUND 29.6' LT.

RESIDUAL

RED-ORANGE-TAN-BROWN STIFF MOIST MED. TO LOW PLASTIC SILTY SANDY CLAY (A-7-5)

BT DRY (12/05)

SS-47 SS-48 SS-49

5+46.41 -RPA- 48.84 LT. = 44+90 -Y6- 117.00 LT.

GROUND 48.8' LT.

RESIDUAL

RED-GRAY-BRN-WHITE MED. STIFF MOIST MICA MED. TO LOW PLASTIC SILTY SANDY CLAY (A-6)

BT NM (12/05)

ALLUVIUM GRAY-BRN SOFT MOIST CLAYEY SANDY SILT (A-4)

SS-45 SS-46

9+70.33 -RPA- 72.68 LT. = 49+11 -Y6- 172.00 LT.

GROUND 72.6' LT.

RESIDUAL

RED-ORANGE STIFF MOIST MED. PLASTIC SILTY SANDY CLAY (A-7-5)

TAN-BRN-WHITE STIFF MOIST MICA CLAYEY SANDY SILT (A-4)

BT NM (12/05)

FOR RAMP A PLAN SEE SHEET 8 & 12

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVE) 10	40	200	% MOISTURE	% ORGANIC
		Y6													
SS-52	110 LT	40+17	4.40-5.40	A-2-4(0)	30	6	50.6	27.1	7.2	15.2	78	52	20	-	-
SS-53	110 LT	40+17	9.40-10.40	A-2-4(0)	29	NP	23.1	48.6	8.2	20.1	100	93	35	-	-
SS-54	110 LT	40+17	14.40-15.40	A-1-b(0)	28	NP	79.4	14.4	0.2	6.0	53	17	4	-	-
SS-55	110 LT	40+17	19.40-20.40	A-4(0)	34	NP	19.5	54.3	14.1	12.1	100	90	37	-	-
SS-50	82 LT	42+58	4.60-5.60	A-7-5(11)	49	19	17.8	26.5	11.3	44.4	100	90	62	-	-
SS-51	82 LT	42+58	9.60-10.60	A-7-5(5)	48	12	8.9	47.9	25.1	18.2	100	96	53	-	-
SS-47	117 LT	44+90	0.00-4.20	A-4(0)	25	7	26.1	38.2	9.5	26.3	94	78	38	-	-
SS-48	117 LT	44+90	4.20-5.20	A-6(6)	37	17	22.0	28.1	11.5	38.4	97	85	52	-	-
SS-49	117 LT	44+90	9.20-10.20	A-6(4)	36	13	22.8	30.1	10.7	36.4	98	88	51	-	-
SS-45	172 LT	49+11	4.70-5.70	A-7-5(11)	54	19	23.8	19.8	11.9	44.4	100	89	61	-	-
SS-46	172 LT	49+11	9.70-10.70	A-4(0)	36	NP	25.7	41.2	17.0	16.2	100	89	41	-	-
SS-43	170 LT	51+13	4.10-5.10	A-7-5(4)	58	19	37.0	21.0	5.7	36.4	93	69	41	-	-
SS-44	170 LT	51+13	9.10-10.10	A-2-5(0)	56	NP	41.6	24.8	17.4	16.2	93	69	34	-	-
		RPA1													
SS-41	25 RT	14+68	3.00-4.00	A-7-5(27)	76	40	17.4	17.6	12.5	52.5	98	89	66	-	-
SS-42	25 RT	14+68	8.00-9.00	A-5(0)	58	6	37.8	20.2	13.7	28.3	87	66	40	-	-
		RPC													
SS-16	20 LT	18+35	4.20-5.20	A-7-5(40)	78	40	4.3	16.4	26.7	52.6	100	98	84	-	-
SS-17	20 LT	18+35	9.20-10.20	A-7-5(24)	66	20	4.3	15.6	39.7	40.5	100	98	86	-	-

RAMP A (-RPA-)

END GRADE (-RPA-) STA 15+41.36 = (-L-) STA 278+64.22; OFFSET: 144'-8" (LT)
EL = 841.96
(BEGIN APPROACH SLAB)

PI = 13+67.00
EL = 839.21'
VC = 250'
K = 57
DS = 40 mph

PROPOSED GRADE

(+)1.5746%

(+)5.9300%

SS-43 SS-44

11+71.63 -RPA- 55.65 LT. = 51+13 -Y6- 170.00 LT.

GROUND 55.7' LT.

RESIDUAL

RED-ORANGE STIFF MOIST MED. PLASTIC MICA SANDY CLAY (A-7-5)

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

BT DRY (12/05)

EXISTING GRADE

SS-41 SS-42

14+72.76 -RPA- 15.16 RT. = 14+68 -RPA1- 25.00 RT.

ALLUVIUM

RESIDUAL

TAN-BRN V. STIFF MOIST HIGH PLASTIC SILTY SANDY CLAY (A-7-5)

BT DRY (12/05)

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

ROADWAY FILL

RESIDUAL

SS-16 SS-17

17+76.70 -RPA- 76.28 LT. = 18+35 -RPC- 20.00 LT.

RESIDUAL

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

BT NM (12/05)

FOR -RPA- PLAN SEE SHEET 8 & 12

RAMP A1 (-RPA1-)

END GRADE (-RPA1-) STA 17+35.36 = (-L-) STA 280+47.30; OFFSET: 39'-6" (LT)
EL = 846.03

PI = 15+35.00
EL = 841.86'
VC = 60'
k = 37
DS = 30 mph

PROPOSED GRADE

(+)0.4418%

(+)2.0801%

ALLUVIUM

ROADWAY FILL

SS-41 SS-43

14+68 -RPA1- 25.00 RT.

RESIDUAL

TAN-BRN V. STIFF MOIST HIGH PLASTIC SILTY SANDY CLAY (A-7-5)

(ALLUVIUM)

EXISTING GRADE

BT DRY (12/05)

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

BEGIN GRADE (-RPA1-) STA 14+83.95 = (-RPA-) STA 14+81.16; OFFSET: 13'-3" (LT)
EL = 841.63

FOR -RPA1- PLAN SEE SHEET 8

PROJECT REFERENCE NO.	SHEET NO.
R-3833B	22
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

RAMP B (–RPB–)

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
		Y6													
SS-80	96 RT	37+00	4.60-5.60	A-5(1)	43	6	29.3	26.9	27.9	16.0	99	80	48	-	-
SS-81	96 RT	37+00	9.60-10.60	A-5(0)	45	NP	18.0	48.9	29.1	4.0	100	91	44	-	-
SS-82	96 RT	37+00	12.10-13.10	A-4(0)	35	NP	15.4	53.7	28.9	2.0	100	94	41	-	-
SS-83	96 RT	37+00	14.60-15.60	A-4(0)	32	2	16.6	42.3	33.1	8.0	95	87	48	-	-
SS-84	153 RT	40+57	9.70-10.70	A-2-4(0)	30	5	43.5	32.7	17.8	6.0	97	69	28	-	-
SS-85	145 RT	45+57	4.40-5.40	A-5(0)	53	3	38.1	22.8	27.1	12.0	100	69	44	-	-
SS-86	166 RT	48+60	4.50-5.50	A-7-5(17)	63	17	6.2	23.8	45.9	24.0	100	98	76	-	-

BEGIN GRADE (–RPB–) STA 0+00.00 = (–Y6–) STA 37+02.34; OFFSET: 46'–0" (RT)
EL = 798.53

PI = 7+50.00
EL = 798.08'
VC = 400'
k = 100
DS = 50 mph

PROPOSED GRADE

(+)0.1456%

(+)4.1465%

SS-86
8+60.93 –RPB–
55.25 RT.
=
45+57 –Y6–
146.00 RT.

SS-86
11+64.60 –RPB–
60.80 RT.
=
48+60 –Y6–
166.00 RT.

SS-80
SS-81
SS-82
SS-83

0+02.54 –RPB–
49.94 RT.
=
37+00 –Y6–
96.00 RT.

PI = 2+30.00
EL = 797.32'
VC = 125'
k = 187
DS = 70 mph

SS-84
3+61.98 –RPB–
88.69 RT.
=
40+57 –Y6–
153.00 RT.

ROADWAY FILL
ALLUVIUM
TAN-BRN MED. STIFF MOIST CLAYEY SANDY SILT (A-5)
GROUND 50' RT
ROADWAY FILL
RESIDUAL
TAN-BRN TO GRAY-BRN-WHITE MED. STIFF TO STIFF MOIST TO WET SANDY SILT (A-5, A-4) W/QTZ. SEAMS @ 14.1
BT
1/06

ROADWAY FILL over ALLUVIUM (STA. 2+80 – 4+74)
GROUND 88.7' RT
ALLUVIUM
ALLUVIUM
TAN-BRN SOFT TO MED. STIFF MOIST CLAYEY SANDY SILT (A-5) W/GRAVEL
RESIDUAL
BRN-GRAY LOOSE MOIST SILTY SAND (A-2-4)
BT
1/06

ROADWAY FILL /RESIDUAL (STA. 4+74 – 7+00)
EXISTING GRADE
ROADWAY FILL /ALLUVIUM (7+00 – 9+00)
ALLUVIUM
ROADWAY FILL
GROUND 56' RT
RESIDUAL
TAN-YELLOW MED. STIFF TO STIFF MOIST CLAYEY SANDY SILT (A-5)
BT
DRY
(1/06)

GROUND 60.5' RT
RESIDUAL
TAN-WHITE SOFT TO MED. STIFF MOIST MED. PLASTIC SANDY SILTY CLAY (A-7-5)
BT
DRY
(1/06)

FOR –RPB– PLAN SEE SHEET 8, 11 & 12

RAMP B (–RPB–)

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC	γ_d	VOID RATIO
		Y6															
ST-1	197 RT	51+60	3.90-5.90														
SS-87	197 RT	51+60	4.30-5.30	A-7-5(22)	56	22	3.8	18.6	39.1	38.4	100	98	83	-	-		
SS-88	195 RT	53+75	4.40-5.40	A-2-7(10)	46	11	43.1	31.7	15.1	10.1	79	58	24	-	-		
		RPD															
SS-32	CL	17+17	4.30-5.30	A-7-5(20)	73	30	20.8	14.7	13.9	50.5	95	82	63	-	-		
SS-33	CL	17+17	9.30-10.30	A-5(1)	54	8	37.0	21.8	21.0	20.2	93	71	41	-	-		

PI = 16+32.00
EL = 834.65'
VC = 80'
k = 94
DS = 45 mph

(+)4.1465%

(+)3.2957%

END GRADE (–RPB–) STA 17+21.14 = (–L–) STA 276+49.78; OFFSET: 166'–7" (LT)
EL = 837.59
(BEGIN APPROACH SLAB)

PROPOSED GRADE

SS-88
16+62.95 –RPB–
79.07 RT.
=
53+75 –Y6–
195.00 RT.

SS-87
ST-1
14+65.79 –RPB–
76.49 RT.
=
51+60 –Y6–
197.00 RT.

RESIDUAL
EXISTING GRADE
ROADWAY FILL
RESIDUAL

GROUND 78.5' RT
RESIDUAL
TAN-BRN-YELLOW SOFT MOIST TO WET MED. PLASTIC SANDY SILTY CLAY (A-7-5)
BT
1/06

GROUND 79' RT
RESIDUAL
ALLUVIUM
RESIDUAL
TAN-BRN LOOSE MOIST MICA LOW PLASTIC CLAYEY SILTY SAND (A-2-7)
BT
CAVED
1/06

SS-32
SS-33
20+41.90 –RPB–
77.61 RT.
=
17+17 –RPD–
CL

RESIDUAL
RESIDUAL
RED-BRN STIFF MOIST MICA HIGH PLASTIC SILTY SANDY CLAY (A-7-5)
TAN-BRN-WHITE STIFF MOIST MICA CLAYEY SANDY SILT (A-5)
BT
DRY
(12/05)

FOR –RPB– PLAN SEE SHEET 8, 11 & 12

RAMP B1 (–RPB1–)

END GRADE (–RPB1–)
STA 18+50.58 =
(–L–) STA 275+84.88;
OFFSET: 35'–6" (LT)
EL = 837.94

PI = 17+10.00
EL = 836.99'
VC = 50'
k = 30
DS = 30 mph

(+)2.3634%

(+)10.6752%

PROPOSED GRADE

BEGIN GRADE (–RPB1–)
STA 16+64.82 =
(–RPB–) STA 16+62.60;
OFFSET: 13'–7" (RT)
EL = 835.93

SS-88
16+80.41 –RPB1–
63.56 RT.
=
53+75 –Y6–
195.00 RT.

RESIDUAL
EXISTING GRADE
ALLUVIUM
RESIDUAL
ROADWAY FILL
GND. 68.5' RT
RESIDUAL
TAN-BRN LOOSE MOIST MICA LOW PLASTIC CLAYEY SILTY SAND (A-2-7)
CAVED
1/06
BT
GND. ET.
RESIDUAL
ALLUVIUM

FOR –RPB1– PLAN SEE SHEET 8

5/28/99

06-DEC-2006 09:20
d:\projects\prepmatted to wro-tip\r-3833b\r-3833b_geo_rdwy_tredell\cadd_geotech\planprof\r-3833b_geo_pf_rpb_psh22.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-3833B	23

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

RAMP C (–RPC–)

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
		Y6													
SS-1	120 RT	75+00	3.50-4.50	A-7-5(6)	52	15	26.9	30.0	22.9	20.2	100	83	50	-	-
SS-2	120 RT	75+00	8.50-9.50	A-7-5(7)	50	16	6.7	50.4	28.7	14.2	100	96	54	-	-
SS-3	120 RT	75+00	18.50-19.50	A-7-5(6)	52	14	4.3	55.1	26.5	14.2	100	99	52	-	-
SS-4	120 RT	75+00	23.50-24.50	A-2-5(0)	44	NP	47.4	27.5	19.0	6.1	93	63	28	-	-
SS-6	120 RT	72+27	4.50-5.50	A-7-5(9)	56	14	3.0	45.3	23.3	28.3	100	99	61	-	-
SS-7	120 RT	72+27	9.50-10.50	A-7-5(10)	50	14	4.0	42.3	35.4	18.2	100	99	67	-	-
SS-8	120 RT	72+27	24.50-25.50	A-4(2)	40	9	13.0	48.0	22.9	16.2	100	97	47	-	-

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
		Y6													
SS-9	103 RT	68+95	4.30-5.30	A-7-5(37)	72	29	0.4	7.9	26.9	64.8	100	100	95	-	-
SS-10	103 RT	68+95	9.30-10.30	A-7-5(29)	65	24	0.6	13.2	39.7	46.6	100	100	91	-	-
SS-11	100 RT	66+85	4.30-5.30	A-7-5(37)	71	30	1.0	8.3	32.0	58.7	100	99	94	-	-
SS-12	100 RT	66+85	9.30-10.30	A-5(3)	50	7	26.5	28.5	28.7	16.2	100	85	51	-	-
SS-13	100 RT	66+85	19.30-20.30	A-7-5(17)	60	22	8.9	30.4	40.5	20.2	100	97	70	-	-
SS-14	115 RT	63+90	4.10-5.10	A-7-5(30)	73	41	13.8	16.6	15.0	54.7	96	86	70	-	-
SS-15	115 RT	63+90	9.10-10.10	A-5(0)	50	NP	24.3	35.8	23.7	16.2	91	79	43	-	-

BEGIN GRADE (–RPC–) STA 0+00.00 = (–Y6–) STA 75+23.31; OFFSET: 46'–0" (RT)
EL = 797.12

0+23.13 –RPC– 74.00 LT. = 75+00 –Y6– 120.00 RT.

SS-1 SS-2 SS-3 SS-4

GROUND 74' LT.
RESIDUAL
(10) (PI=5) RED-ORANGE-TAN-BRN STIFF DRY TO MOIST MICA LOW TO MED. PLASTIC SILTY SANDY CLAY (A-7-5)
(9) (PI=6)
(9)
(12) (PI=14)
(11) BT DRY (12/05) GRAY-WHITE MED. DENSE MOIST MICA SILTY SAND (A-2-5)

PI = 0+72.00
EL = 798.76'
VC = 88'
k = 250
DS = 70 mph

(+)1.9227% EXISTING I-77 SBL
(+)2.7750%
ROADWAY FILL over RESIDUAL

SS-6 SS-7 SS-8

2+95.11 –RPC– 72.16 LT. = 72+27 –Y6– 120.00 RT.

GROUND 72' LT.
RESIDUAL
(14) (PI=14)
RED-ORANGE-TAN-BRN STIFF MOIST LOW PLASTIC SILTY SANDY CLAY (A-7-5)
(10) (PI=14)
(14)
(16)
(16) (PI=9) BT DRY (12/05) GRAY-WHITE V. STIFF MOIST CLAYEY SANDY SILT (A-4)

PROPOSED GRADE

PI = 5+66.00
EL = 808.26'
VC = 50'
k = 254
DS = 70 mph

SS-9 SS-10

6+24.98 –RPC– 45.78 LT. = 68+95 –Y6– 103.00 RT.

GROUND 46' LT.
RESIDUAL
(20) (PI=29)
RED-TAN-BRN MED. STIFF TO V. STIFF MOIST HIGH TO MED. PLASTIC SILTY CLAY (A-7-5)
(9) (PI=24)
(6) BT DRY (12/05)

(+)1.7257% EXISTING I-77 SBL
ROADWAY FILL over RESIDUAL

SS-11 SS-12 SS-13

8+32.88 –RPC– 32.74 LT. = 66+85 –Y6– 100.00 RT.

GROUND 32.7' LT.
RESIDUAL
(19) (PI=30)
RED-BRN V. STIFF MOIST HIGH PLASTIC SILTY CLAY (A-7-5)
(10)
RESIDUAL
(16)
TAN-BRN STIFF MOIST CLAYEY SANDY SILT (A-5)
(9) (PI=22) BT DRY (12/05) TAN-WHITE STIFF MOIST MED. PLASTIC SANDY SILTY CLAY (A-7-5)

EXISTING GRADE

(+)1.7257%

SS-14 SS-15 SS-16

11+24.95 –RPC– 28.28 LT. = 63+90 –Y6– 115.00 RT.

ROADWAY FILL
EXISTING SR 1196 GIBBS RD
GROUND 38.3' LT.
RESIDUAL
(12) (PI=41)
RED-BRN STIFF MOIST MICA HIGH PLASTIC SILTY SANDY CLAY (A-7-5)
(11)
(10)
(11) BT DRY (12/05)
(+)3.2684%
TAN-BRN STIFF MOIST MICA CLAYEY SANDY SILT (A-5)

PI = 10+70.00
EL = 816.96'
VC = 165'
k = 107
DS = 50 mph

FOR –RPC– PLAN SEE SHEET 8 & 13

0 1+00 2+00 3+00 4+00 5+00 6+00 7+00 8+00 9+00 10+00 11+00 12+00 13+00

RAMP C (–RPC–)

END GRADE (–RPC–) STA 17+95.68 = (–L–) STA 277+09.29; OFFSET: 122'–7" (RT)
EL = 840.11
(BEGIN APPROACH SLAB)

PI = 16+70.00
EL = 836.57'
VC = 165'
k = 122
DS = 50 mph

PROPOSED GRADE
EXISTING GRADE

15+55.04 –RPC– 16.78 RT. = 59+60 –Y6– 110.00 RT.

(+)2.8173%
(+)3.2684%

EXISTING SR 1196 GIBBS RD
RESIDUAL
ROADWAY FILL
ROADWAY FILL
RESIDUAL
(10)
(12)
RESIDUAL
TAN-BRN STIFF MOIST MICA CLAYEY SANDY SILT (A-5)
BT DRY (12/06)

SS-16 SS-17

18+35.00 –RPC– 20.00 LT.

END 30' LT.
(10) (PI=20)
(8) (PI=20) BT NM (12/06)

RESIDUAL
RED-BRN-TAN STIFF MOIST HIGH TO MED. PLASTIC SANDY SILTY CLAY (A-7-5)

ROADWAY FILL
RESIDUAL

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
		RPC													
SS-16	20 LT	18+35	4.20-5.20	A-7-5(40)	78	40	4.3	16.4	26.7	52.6	100	98	84	-	-
SS-17	20 LT	18+35	9.20-10.20	A-7-5(24)	66	20	4.3	15.6	39.7	40.5	100	98	86	-	-

FOR –RPC– PLAN SEE SHEET 8 & 13

RAMP C1 (–RPC1–)

END GRADE (–RPC1–) STA 19+58.80 = (–L–) STA 275+33.01; OFFSET: 46'–0" (RT)
EL = 835.56

PI = 18+05.00
EL = 840.12'
VC = 105'
k = 23
DS = 30 mph

PI = 19+20.00
EL = 837.22'
VC = 12'
k = 7
DS = 20 mph

SS-16 SS-17

(+)2.1401%
(–)2.5235%
(–)4.2714%

18+12.03 –RPC1– 63.61 RT. = 18+35 –RPC– 20.00 LT.

EXISTING SR 1196 GIBBS RD
ROADWAY FILL
RESIDUAL
PROPOSED GRADE
EXISTING GRADE
RESIDUAL
(10) (PI=40)
RED-BRN-TAN STIFF MOIST HIGH TO MED. PLASTIC SANDY SILTY CLAY (A-7-5)
(8) (PI=20) BT NM (12/06)

BEGIN GRADE (–RPC1–) STA 17+40.31 = (–RPC–) STA 17+37.33; OFFSET: 13'–7" (LT)
EL = 838.47

FOR –RPC1– PLAN SEE SHEET 8

14+00 15+00 16+00 17+00 18+00 19+00 20+00

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
R-3833B	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.	LL.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
		Y6													
SS-20	90 LT	72+27	4.00-5.00	A-7-5(26)	73	32	12.5	16.4	8.5	62.6	98	87	72	-	-
SS-21	90 LT	72+27	9.00-10.00	A-5(3)	56	8	31.7	22.2	19.8	26.3	95	75	47	-	-
SS-22	88 LT	69+36	4.20-5.20	A-7-5(26)	68	38	16.6	18.4	8.5	56.6	100	90	68	-	-
SS-23	120 LT	66+34	4.00-5.00	A-7-5(14)	58	26	21.4	20.6	3.4	54.5	97	86	59	-	-
SS-24	120 LT	66+34	14.00-15.00	A-7-6(9)	48	29	23.8	33.5	6.3	36.4	98	83	46	-	-
SS-25	125 LT	63+91	4.10-5.10	A-5(5)	56	10	28.7	22.4	20.6	28.3	98	80	52	-	-
SS-26	125 LT	63+91	14.10-15.10	A-5(1)	52	9	39.6	22.0	22.2	16.2	92	67	38	-	-
SS-27	125 LT	63+91 RPD	19.10-20.10	A-2-4(0)	27	NP	47.1	28.5	12.3	12.1	94	67	27	-	-
SS-28	70 RT	12+60	4.20-5.20	A-7-5(14)	63	25	9.5	35.2	12.9	42.4	100	95	59	-	-
SS-29	70 RT	12+60	9.20-10.20	A-5(0)	48	3	24.6	42.8	14.3	18.2	100	92	39	-	-
SS-30A	70 RT	12+60	19.20-20.20	A-2-4(0)	22	NP	46.5	33.3	8.1	12.1	100	80	24	-	-
SS-30	45 RT	15+32	4.70-5.70	A-7-5(14)	55	17	8.5	30.5	24.6	36.4	100	97	71	-	-
SS-31	45 RT	15+32	9.70-10.70	A-5(4)	46	5	4.8	46.7	24.2	24.2	100	98	60	-	-
SS-32	CL	17+17	4.30-5.30	A-7-5(20)	73	30	20.8	14.7	13.9	50.5	95	82	63	-	-
SS-33	CL	17+17	9.30-10.30	A-5(1)	54	8	37.0	21.8	21.0	20.2	93	71	41	-	-

RAMP D (-RPD-)

BEGIN GRADE (-RPD-) STA 0+00.00 = (-Y6-) STA 73+98.15; OFFSET: 46'-0" (LT)
EL = 801.06

EXISTING I-77 NBL
(+)1.8924%
SS-20 SS-21
1+76.96 -RPD- 35.15 RT. = 72+27 -Y6- 90.00 LT.
(+)1.9815%
RESIDUAL
RED-BRN- STIFF MOIST HIGH PLASTIC SANDY CLAY (A-7-6)
(14) (PI=32)
(11)
BT DRY (12/05)
TAN-BROWN STIFF MOIST MICA CLAYEY SANDY SILT (A-6)
PI = 1+18.00
EL = 803.29'
VC = 35'
k = 380
DS = 80 mph

ROADWAY FILL
RESIDUAL
SS-22
4+70.19 -RPD- 16.53 RT. = 69+36 -Y6- 88.00 LT.
(15) (PI=38)
(19)
RED-BRN V. STIFF MOIST HIGH PLASTIC SANDY CLAY (A-7-6)
TAN-BRN V. STIFF MOIST MICA CLAYEY SANDY SILT (A-5)
BT DRY (12/05)

PROPOSED GRADE
EXISTING GRADE
SS-23 SS-24
7+76.51 -RPD- 38.27 RT. = 86+34 -Y6- 120.00 LT.
(+)11.9843%
RESIDUAL
RED-BRN TO RED-BRN-TAN-WHITE V. STIFF MOIST HIGH PLASTIC SANDY CLAY (A-7-6, A-7-5)
(25) (PI=26)
(25)
(15) (PI=29)
BT DRY (12/05)

PI = 9+20.00
EL = 819.20'
VC = 205'
k = 121
DS = 55 mph
(+)3.6802%
SS-25 SS-26 SS-27
10+23.99 -RPD- 36.72 RT. = 69+91 -Y6- 126.00 LT.
RESIDUAL
RED-ORANGE-TAN-BRN STIFF MOIST MICA CLAYEY SANDY SILT (A-5)
TAN-ORANGE MED. DENSE MICA CLAYEY SILTY SAND (A-2-4)
(14) (9) (8) (12) (11)
BT DRY (12/05)

SS-28 SS-29 SS-30A
12+60 -RPD- 70.00 RT.
GROUND 70' RT
RESIDUAL
RED-BRN STIFF MOIST MICA MED. PLASTIC SILTY SANDY CLAY (A-7-5)
(11) (PI=25)
(7)
(+)3.6802%
TAN-BRN MED. STIFF MOIST MICA CLAYEY SANDY SILT (A-5)
(7)
BLACK-WHITE MED. DENSE, DRY CLAYEY SAND (A-2-4)
(16)
TAN-BRN- STIFF- MOIST MICA CLAYEY SANDY SILT (A-5)
(9)
BT DRY (12/05)

FOR -RPD- PLAN SEE SHEET 8 & 13

RAMP D (-RPD-)

END GRADE (-RPD-) STA 16+46.17 = (-L-) STA 279+24.96; OFFSET: 151'-2" (RT)
EL = 842.09
(BEGIN APPROACH SLAB)

SS-30 SS-31
15+32 -RPD- 45.00 RT.
GROUND 45' RT
RED-BRN STIFF MOIST MICA MED. PLASTIC SILTY SANDY CLAY (A-7-5)
(6) (PI=17)
(+)3.6802%
TAN-BRN MED. STIFF MOIST MICA CLAYEY SANDY SILT (A-5)
(9)
(7)
BT DRY (12/05)
PI = 14+80.00
EL = 839.81'
VC = 185'
K = 80
DS = 45 mph

PROPOSED GRADE
3.720%
RESIDUAL
ROADWAY FILL
RESIDUAL
SS-32 SS-33
17+17 -RPD- CL
RED-BRN STIFF MOIST MICA HIGH PLASTIC SILTY SANDY CLAY (A-7-6)
(13) (PI=30)
(9)
BT DRY (12/05)
TAN-BRN-WHITE STIFF MOIST MICA CLAYEY SANDY SILT (A-5)
ROADWAY FILL
RESIDUAL

EXISTING GRADE
EXISTIN SR 1100 BRAWLEY SCHOOL RD
I-77 NBL
I-77 SBL

FOR -RPD- PLAN SEE SHEET 8 & 13

RAMP D1 (-RPD1-)

BEGIN GRADE (-RPD1-) STA 12+70.00 = (-RPD-) STA 12+70.00; OFFSET: 12'-0" (RT)
EL = 831.84

SS-30 SS-31
15+39.55 -RPD1- 24.65 RT. = 15+32 -RPD- 45.00 RT.
RESIDUAL
(+)3.8682%
(6) (PI=17)
3.529%
RESIDUAL
RED-BRN STIFF MOIST MICA MED. PLASTIC SILTY SANDY CLAY (A-7-5)
(9)
TAN-BRN MED. STIFF TO STIFF MOIST CLAYEY SANDY SILT (A-5)
(7)
BT NM (12/05)
PI = 15+00.00
EL = 840.74'
VC = 150'
k = 65
DS = 45 mph

END GRADE (-RPD1-) STA 17+48.62 = (-L-) STA 280+01.92; OFFSET: 42'-0" (RT)
EL = 844.60

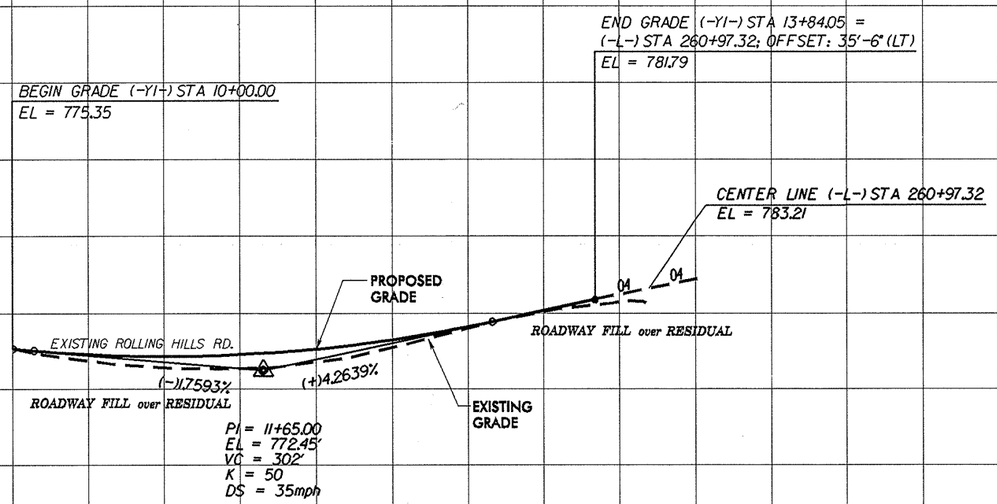
FOR -RPD1- PLAN SEE SHEET 8

PROJECT REFERENCE NO.	SHEET NO.
R-3833B	25
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

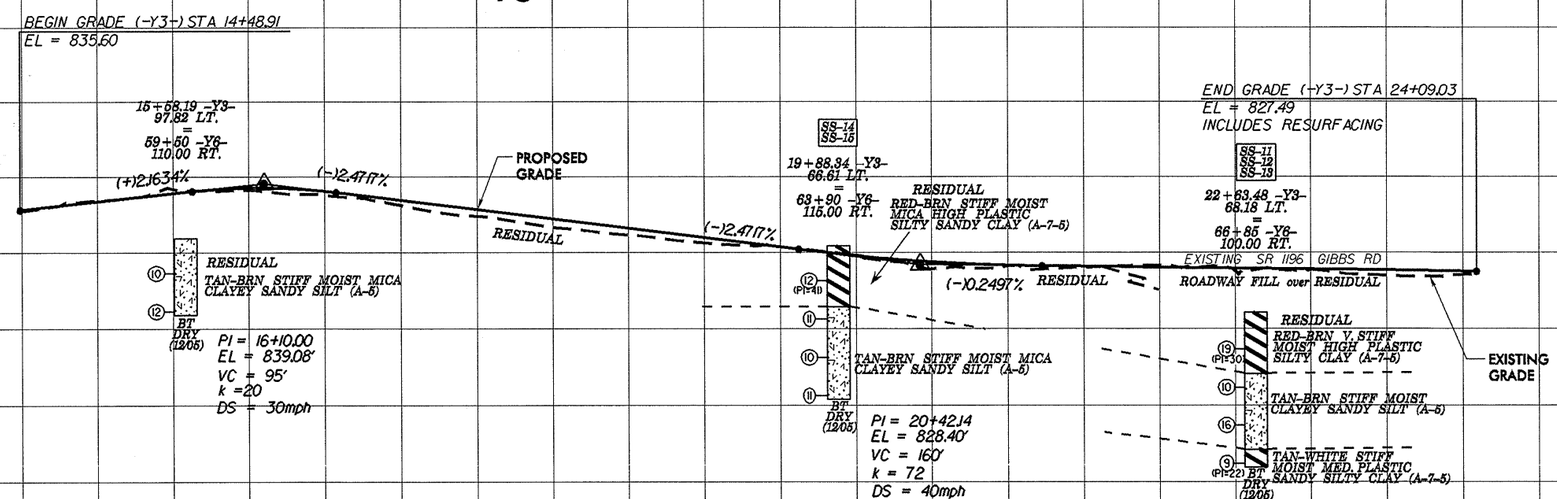
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

-Y1-
ROLLING HILLS ROAD



FOR -Y1- PLAN SEE SHEET 7

-Y3-



FOR -Y3- PLAN SEE SHEET 8 & 13

SOIL TEST RESULTS

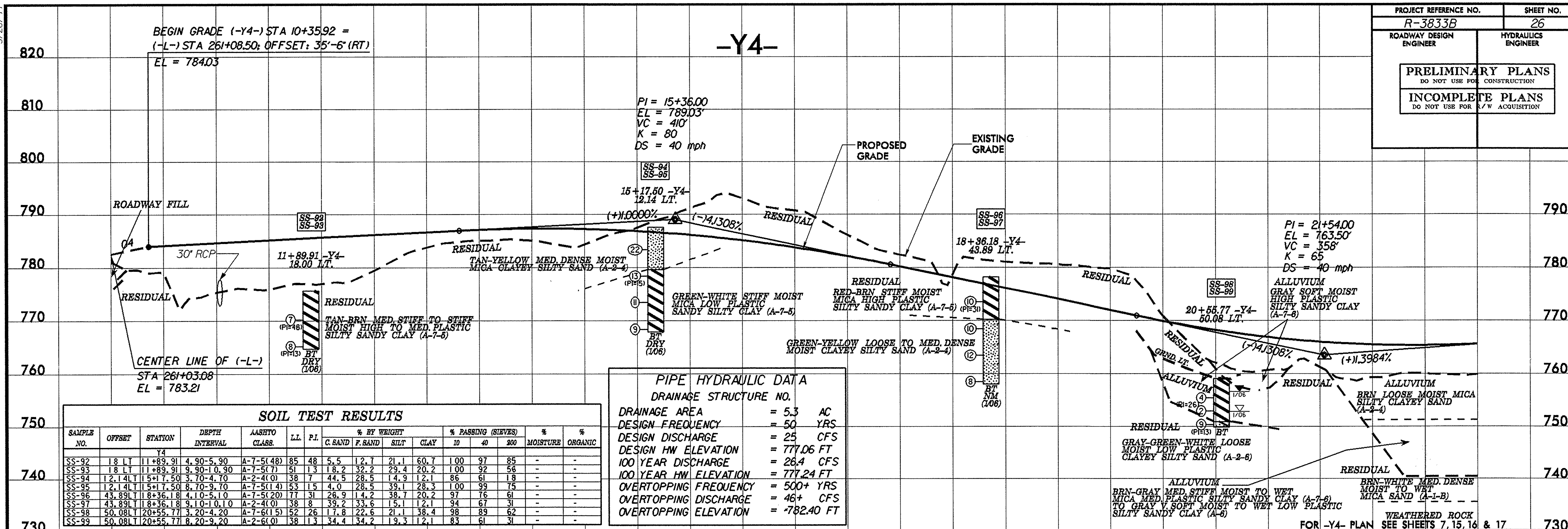
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
		Y6													
SS-14	115 RT	63+90	4.10-5.10	A-7-5(30)	73	41	13.8	16.6	15.0	54.7	96	86	70	-	-
SS-15	115 RT	63+90	9.10-10.10	A-5(0)	50	NP	24.3	35.8	23.7	16.2	91	79	43	-	-
SS-11	100 RT	66+85	4.30-5.30	A-7-5(37)	71	30	1.0	8.3	32.0	58.7	100	99	94	-	-
SS-12	100 RT	66+85	9.30-10.30	A-5(3)	50	7	26.5	28.5	28.7	16.2	100	85	51	-	-
SS-13	100 RT	66+85	19.30-20.30	A-7-5(17)	60	22	8.9	30.4	40.5	20.2	100	97	70	-	-

PROJECT REFERENCE NO.	SHEET NO.
R-3833B	26
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS — DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS — DO NOT USE FOR R/W ACQUISITION

-Y4-



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
		Y4													
SS-92	18 LT	11+89.91	4.90-5.90	A-7-5(48)	85	48	5.5	12.7	21.1	60.7	100	97	85	-	-
SS-93	18 LT	11+89.91	9.90-10.90	A-7-5(7)	51	13	18.2	32.2	29.4	20.2	100	92	56	-	-
SS-94	12.14LT	15+17.50	3.70-4.70	A-2-4(0)	38	7	44.5	28.5	14.9	12.1	86	61	18	-	-
SS-95	12.14LT	15+17.50	8.70-9.70	A-7-5(14)	53	15	4.0	28.5	39.1	28.3	100	99	75	-	-
SS-96	43.89LT	18+36.18	4.10-5.10	A-7-5(20)	77	31	26.9	14.2	38.7	20.2	97	76	61	-	-
SS-97	43.89LT	18+36.18	9.10-10.10	A-2-4(0)	38	8	39.2	33.6	15.1	12.1	94	67	31	-	-
SS-98	50.08LT	20+55.77	3.20-4.20	A-7-6(15)	52	26	17.8	22.6	21.1	38.4	98	89	62	-	-
SS-99	50.08LT	20+55.77	8.20-9.20	A-2-6(0)	38	13	34.4	34.2	19.3	12.1	83	61	31	-	-

PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 5.3 AC
DESIGN FREQUENCY	= 50 YRS
DESIGN DISCHARGE	= 25 CFS
DESIGN HW ELEVATION	= 777.06 FT
100 YEAR DISCHARGE	= 26.4 CFS
100 YEAR HW ELEVATION	= 777.24 FT
OVERTOPPING FREQUENCY	= 500+ YRS
OVERTOPPING DISCHARGE	= 46+ CFS
OVERTOPPING ELEVATION	= ~782.40 FT

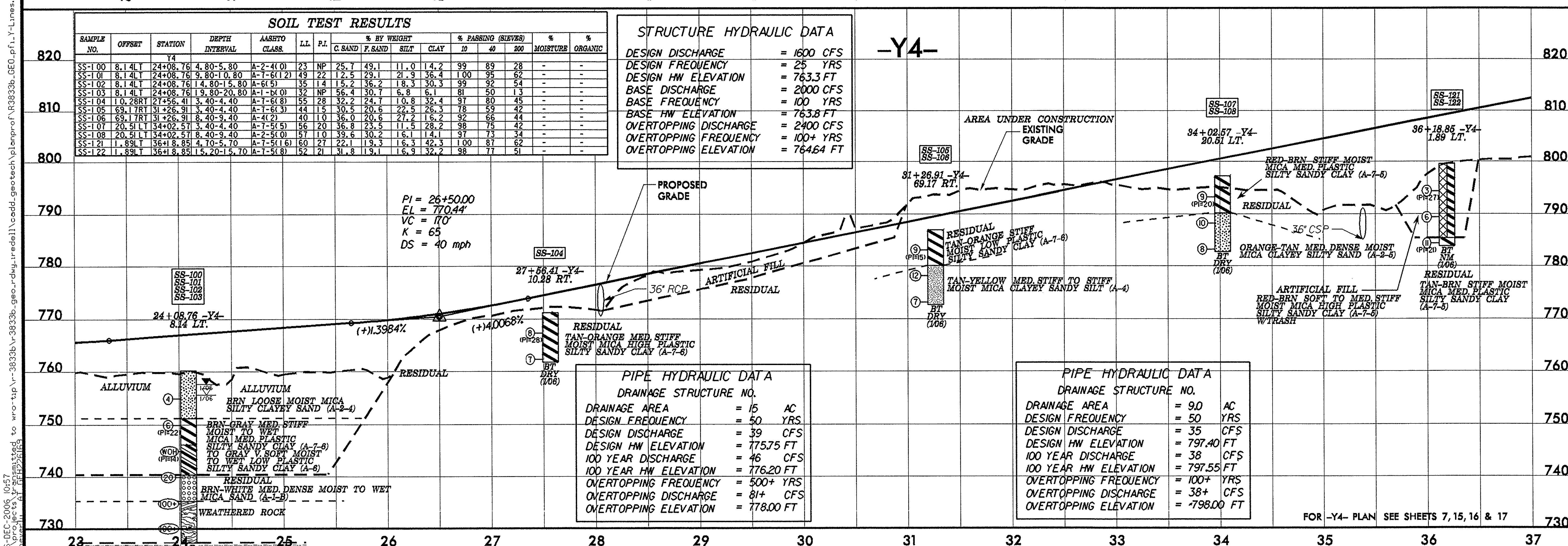
SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
		Y4													
SS-100	8.14LT	24+08.76	4.80-5.80	A-2-4(0)	23	NP	25.7	49.1	11.0	14.2	99	89	28	-	-
SS-101	8.14LT	24+08.76	9.80-10.80	A-7-6(12)	49	22	12.5	29.1	21.9	36.4	100	95	62	-	-
SS-102	8.14LT	24+08.76	14.80-15.80	A-6(5)	35	14	15.2	36.2	18.3	30.3	99	92	54	-	-
SS-103	8.14LT	24+08.76	19.80-20.80	A-1-b(0)	32	NP	56.4	30.7	6.8	6.1	81	50	13	-	-
SS-104	10.28RT	27+56.41	3.40-4.40	A-7-6(8)	55	28	32.2	24.7	10.8	32.4	97	80	45	-	-
SS-105	69.17RT	31+26.91	3.40-4.40	A-7-6(3)	44	15	30.5	20.6	22.5	26.3	78	59	42	-	-
SS-106	69.17RT	31+26.91	8.40-9.40	A-4(2)	40	10	36.0	20.6	27.2	16.2	92	66	44	-	-
SS-107	20.51LT	34+02.57	3.40-4.40	A-7-5(5)	56	20	36.8	23.5	11.5	28.2	98	75	42	-	-
SS-108	20.51LT	34+02.57	8.40-9.40	A-2-5(0)	57	10	39.6	30.2	16.1	14.1	97	73	34	-	-
SS-121	1.89LT	36+18.85	4.70-5.70	A-7-5(16)	60	27	22.1	19.3	16.3	42.3	100	87	62	-	-
SS-122	1.89LT	36+18.85	15.20-15.70	A-7-5(8)	52	21	31.8	19.1	16.9	32.2	98	77	51	-	-

STRUCTURE HYDRAULIC DATA

DESIGN DISCHARGE	= 1600 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 763.3 FT
BASE DISCHARGE	= 2000 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 763.8 FT
OVERTOPPING DISCHARGE	= 2400 CFS
OVERTOPPING FREQUENCY	= 100+ YRS
OVERTOPPING ELEVATION	= 764.64 FT

-Y4-



PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 15 AC
DESIGN FREQUENCY	= 50 YRS
DESIGN DISCHARGE	= 39 CFS
DESIGN HW ELEVATION	= 775.75 FT
100 YEAR DISCHARGE	= 46 CFS
100 YEAR HW ELEVATION	= 776.20 FT
OVERTOPPING FREQUENCY	= 500+ YRS
OVERTOPPING DISCHARGE	= 81+ CFS
OVERTOPPING ELEVATION	= 778.00 FT

PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO.

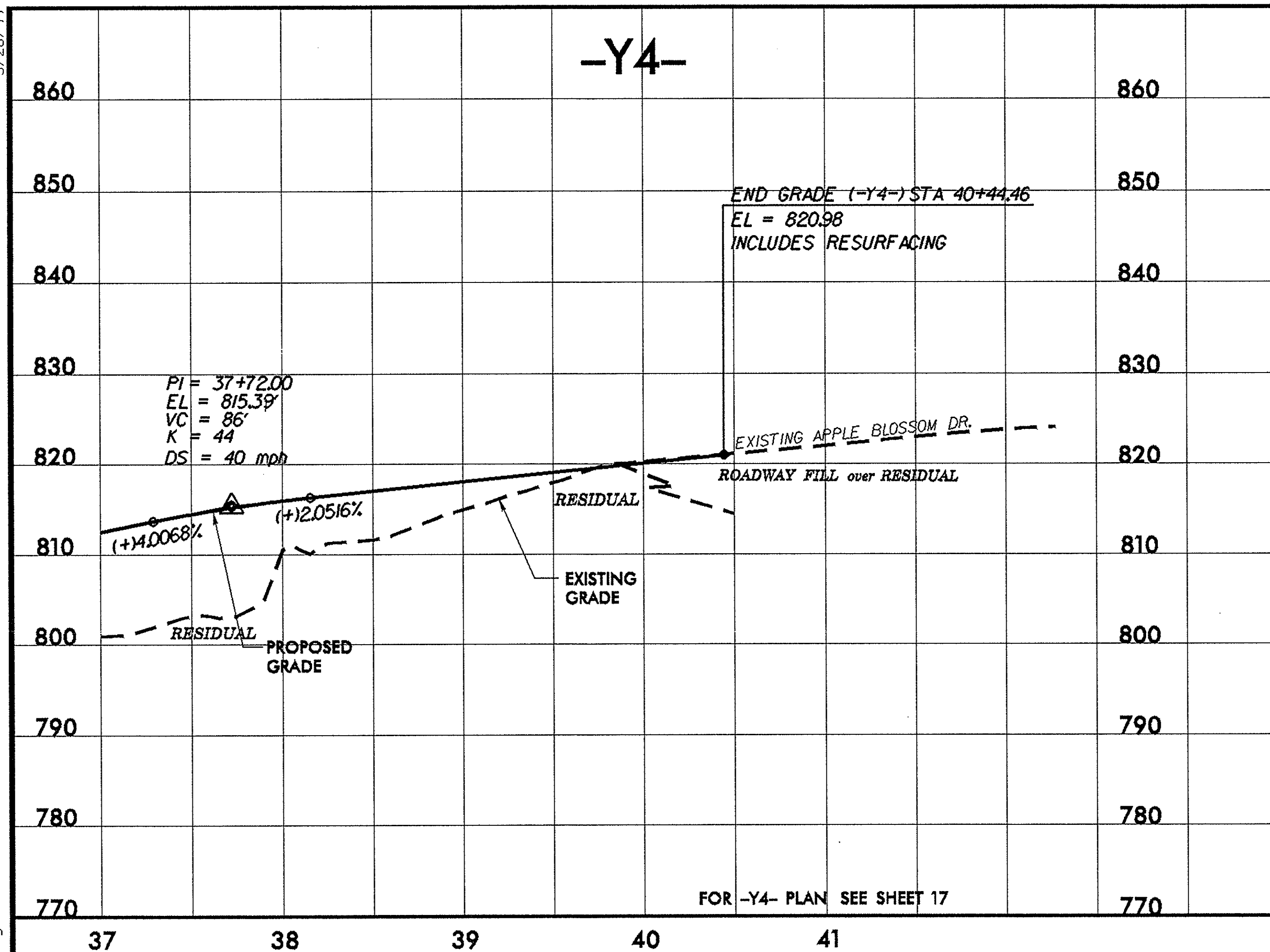
DRAINAGE AREA	= 9.0 AC
DESIGN FREQUENCY	= 50 YRS
DESIGN DISCHARGE	= 35 CFS
DESIGN HW ELEVATION	= 797.40 FT
100 YEAR DISCHARGE	= 38 CFS
100 YEAR HW ELEVATION	= 797.55 FT
OVERTOPPING FREQUENCY	= 100+ YRS
OVERTOPPING DISCHARGE	= 38+ CFS
OVERTOPPING ELEVATION	= ~798.00 FT

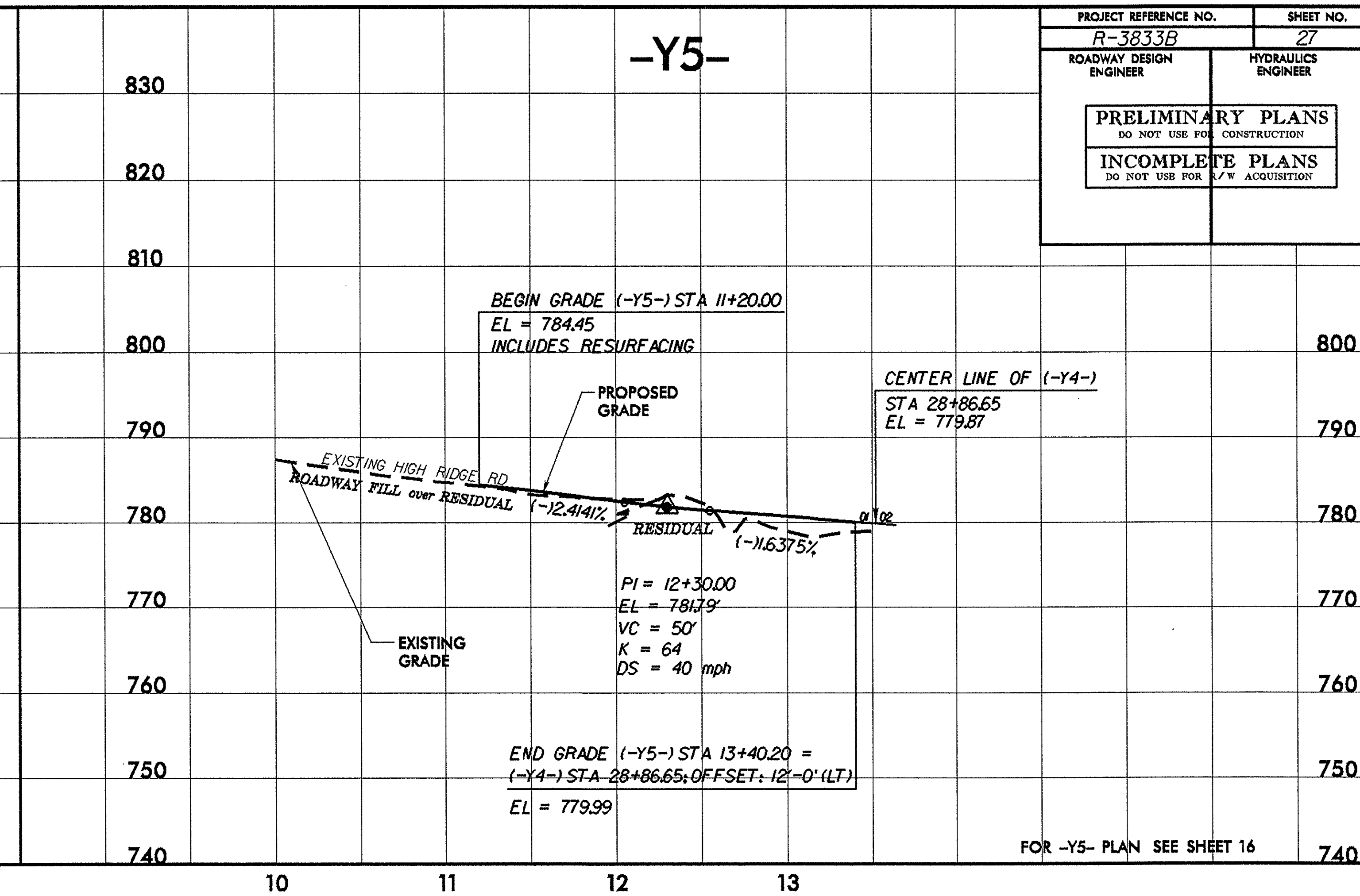
PROJECT REFERENCE NO.	SHEET NO.
R-3833B	27

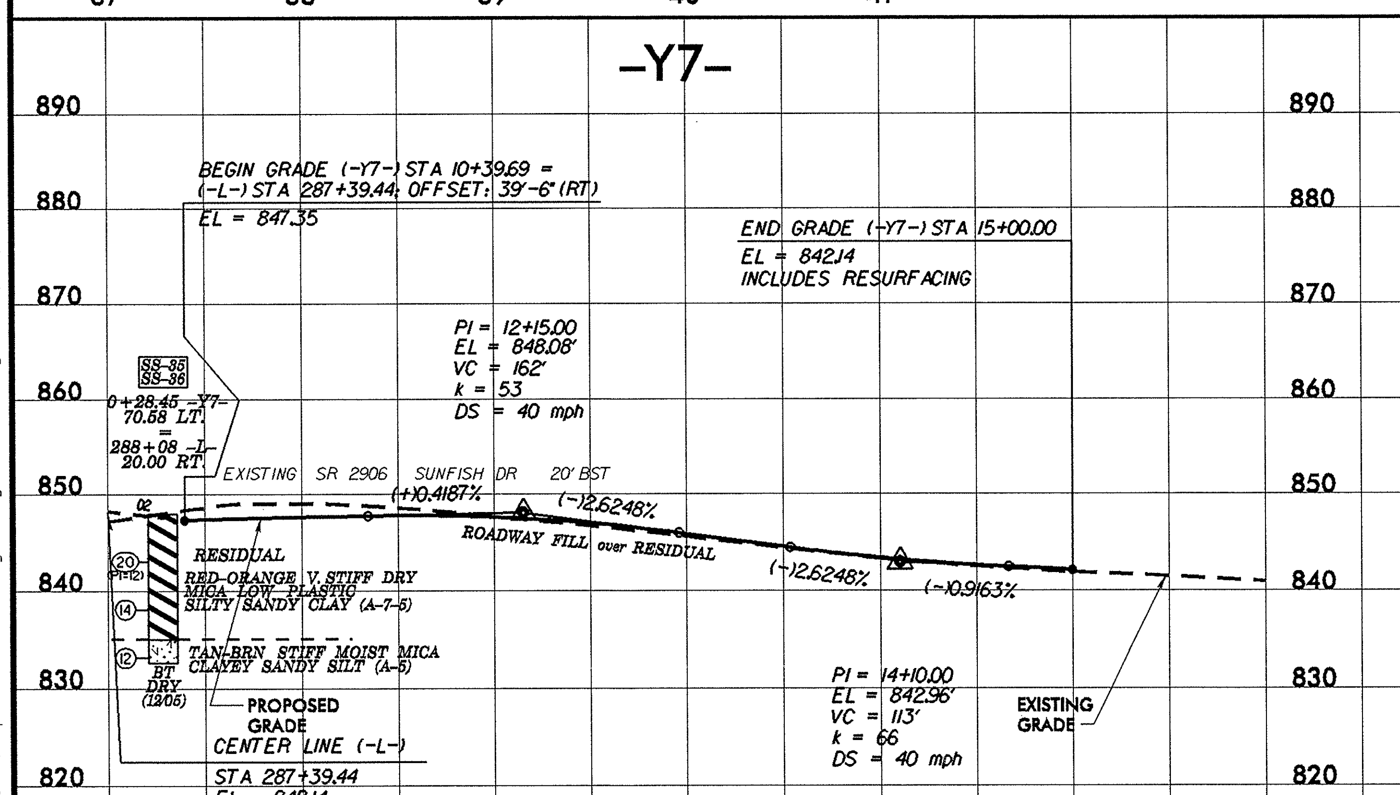
ROADWAY DESIGN ENGINEER — HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION





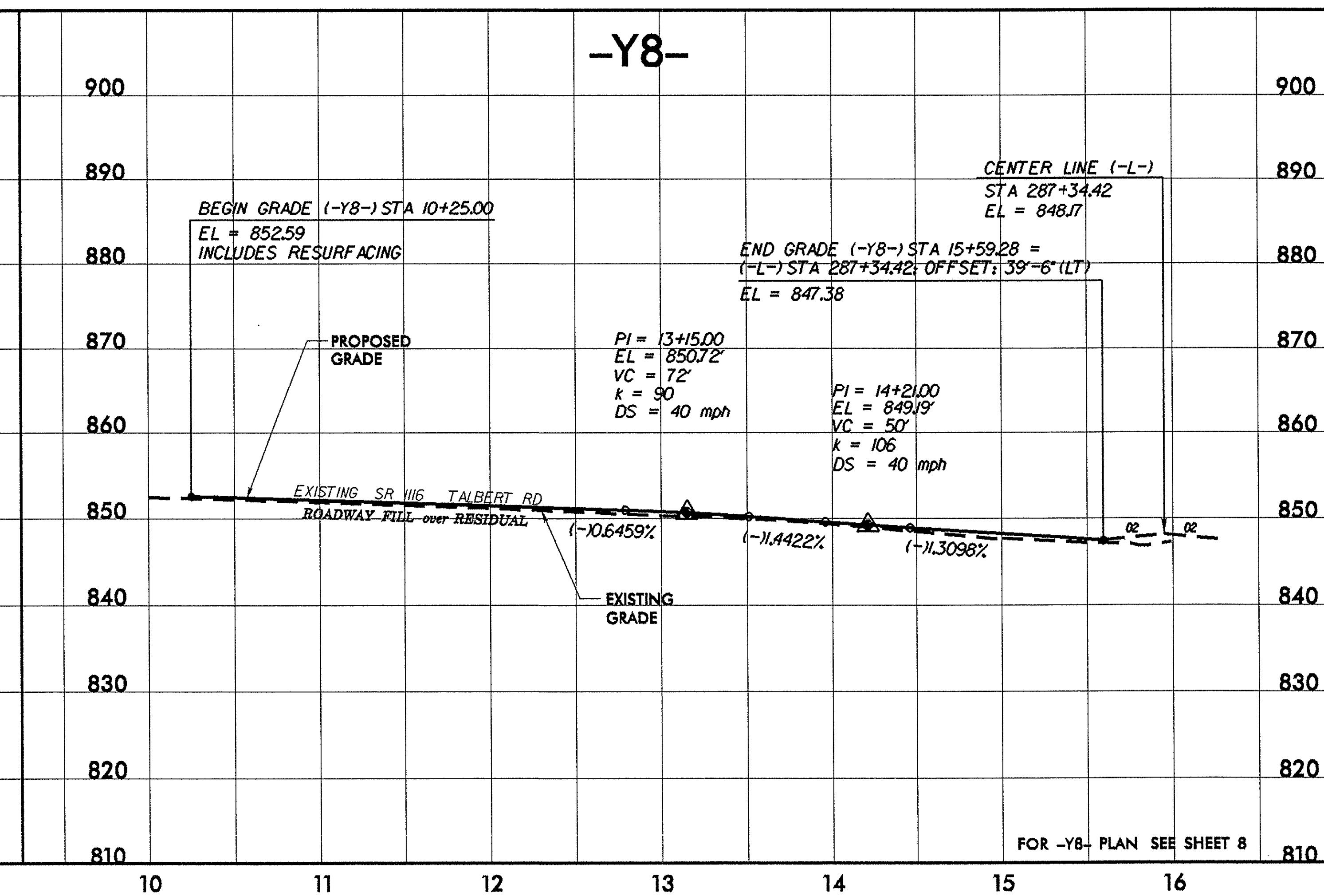


SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
		L													
SS-35	20 RT	288+08	4.40-5.40	A-7-5(5)	44	12	4.4	46.7	14.5	34.3	100	99	53	-	-
SS-36	20 RT	288+08	14.40-15.40	A-5(0)	41	NP	23.6	43.0	15.2	18.2	100	89	38	-	-

FOR -Y7- PLAN SEE SHEET 8

10 11 12 13 14 15 16



06-DEC-2006 10:59 d:\projects\r-3833b\r3833b_geo_rdwy_iredell\cadd_geotech\planprof\R3833b_GEO_pfl_Y-Lines.dgn

5/28/99

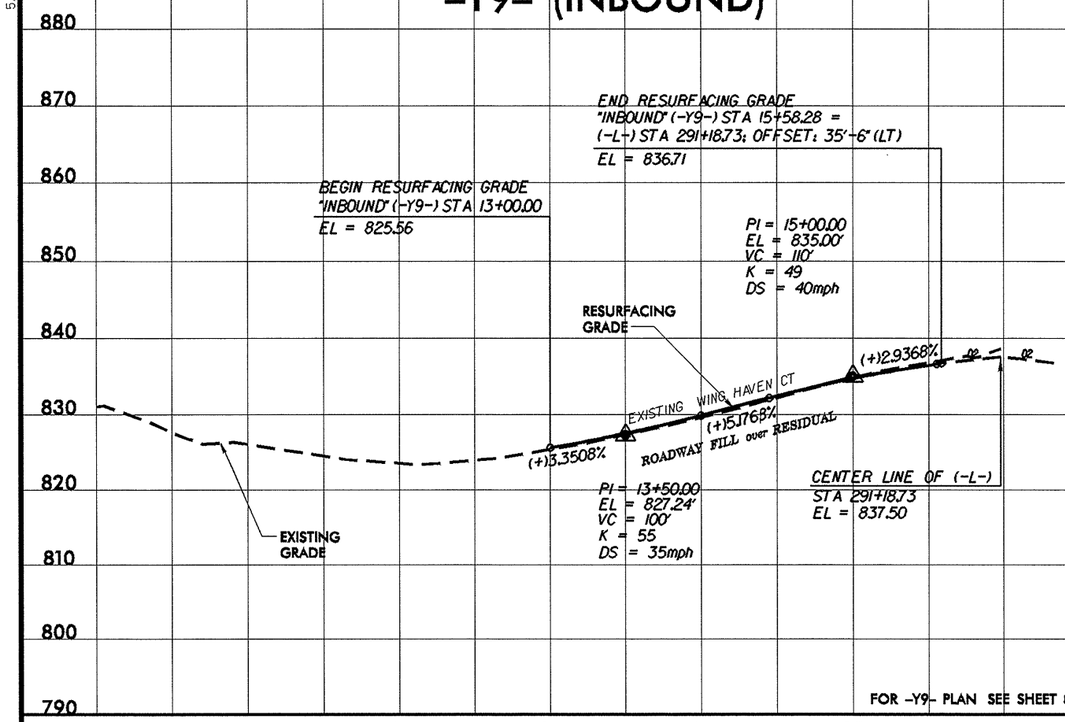
5/28/99

PROJECT REFERENCE NO.	SHEET NO.
R-3833B	28
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

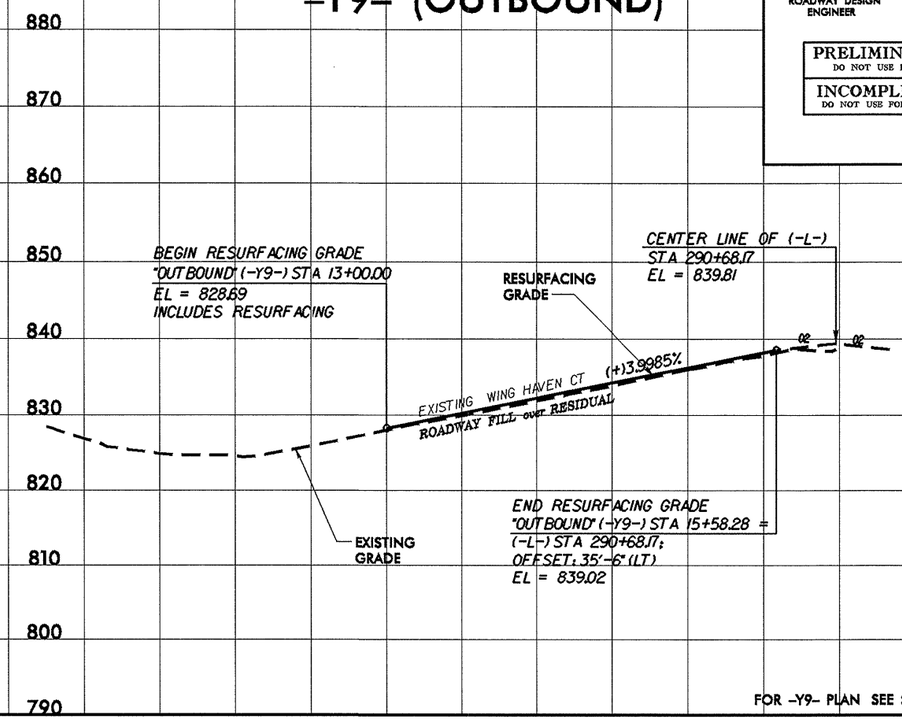
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

-Y9- (INBOUND)



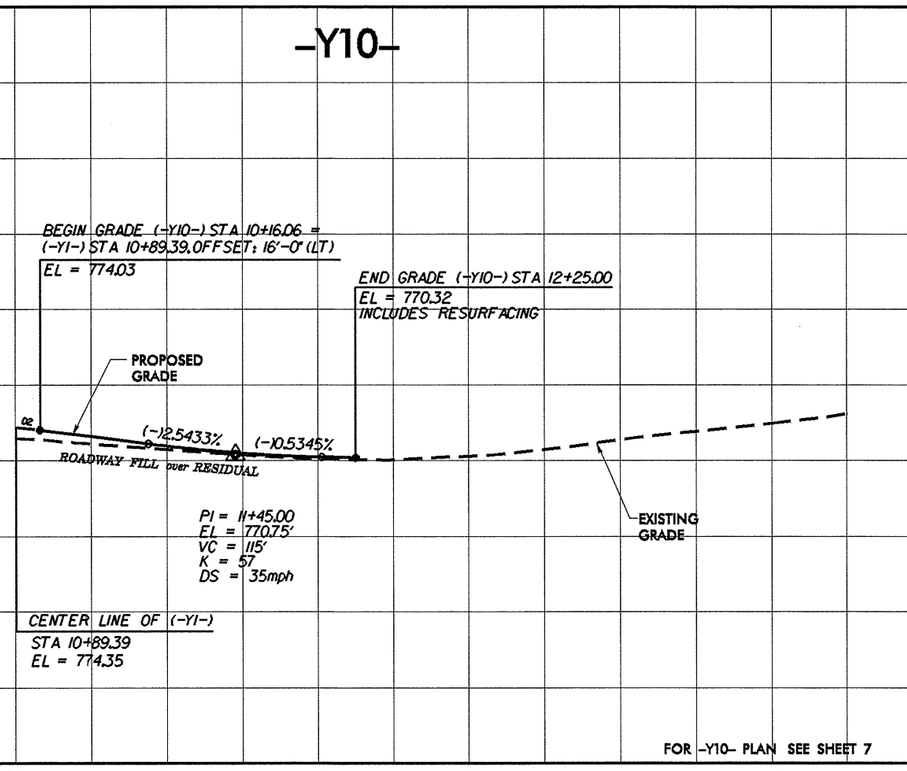
FOR -Y9- PLAN SEE SHEET 8

-Y9- (OUTBOUND)



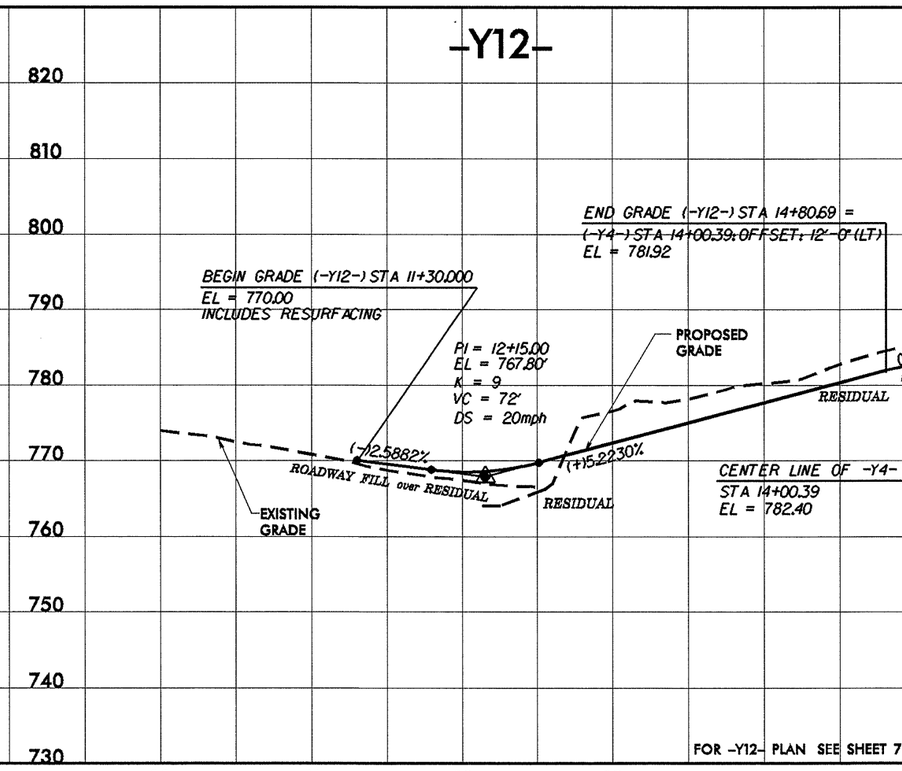
FOR -Y9- PLAN SEE SHEET 8

-Y10-



FOR -Y10- PLAN SEE SHEET 7

-Y12-

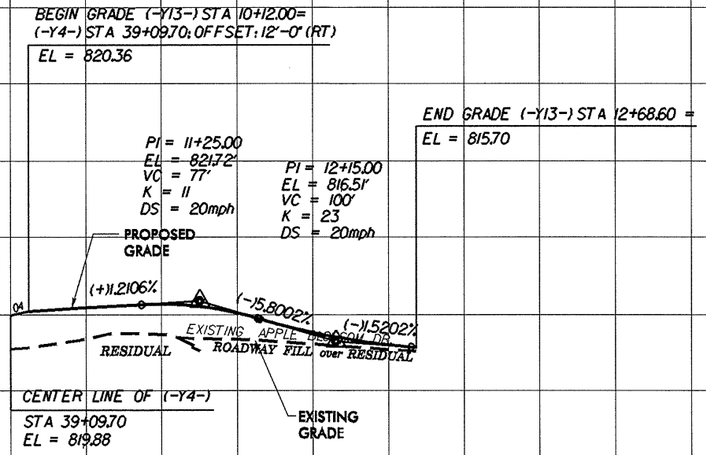


FOR -Y12- PLAN SEE SHEET 7 & 15

07-JUL-2006 10:39
d:\projects\r3833b\geo\dwg.tredell\cadd.geotech\planprof\R3833b_GEO_pf1_Y-Lines.dgn
tmoore

5/28/99

-Y13-



FOR -Y13- PLAN SEE SHEET 17

PROJECT REFERENCE NO.	SHEET NO.
R-3833B	29

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

860 850 840 830 820 810 800 790 780 770

10 11 12 13

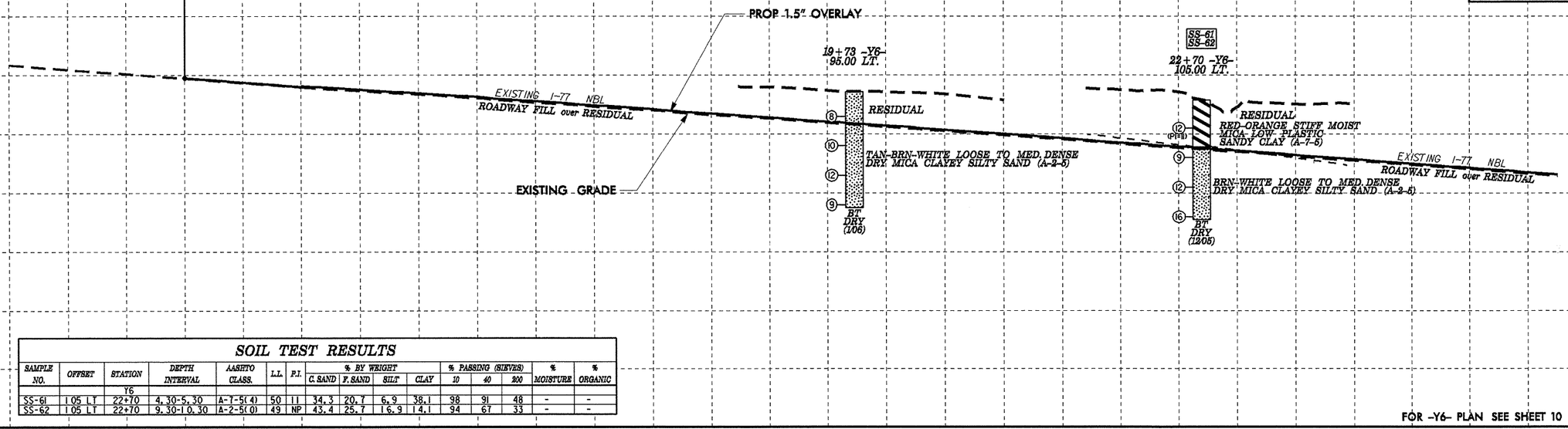
5/28/99

PROJECT REFERENCE NO.	SHEET NO.
R-3833B	30
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y6-
NORTH BOUND

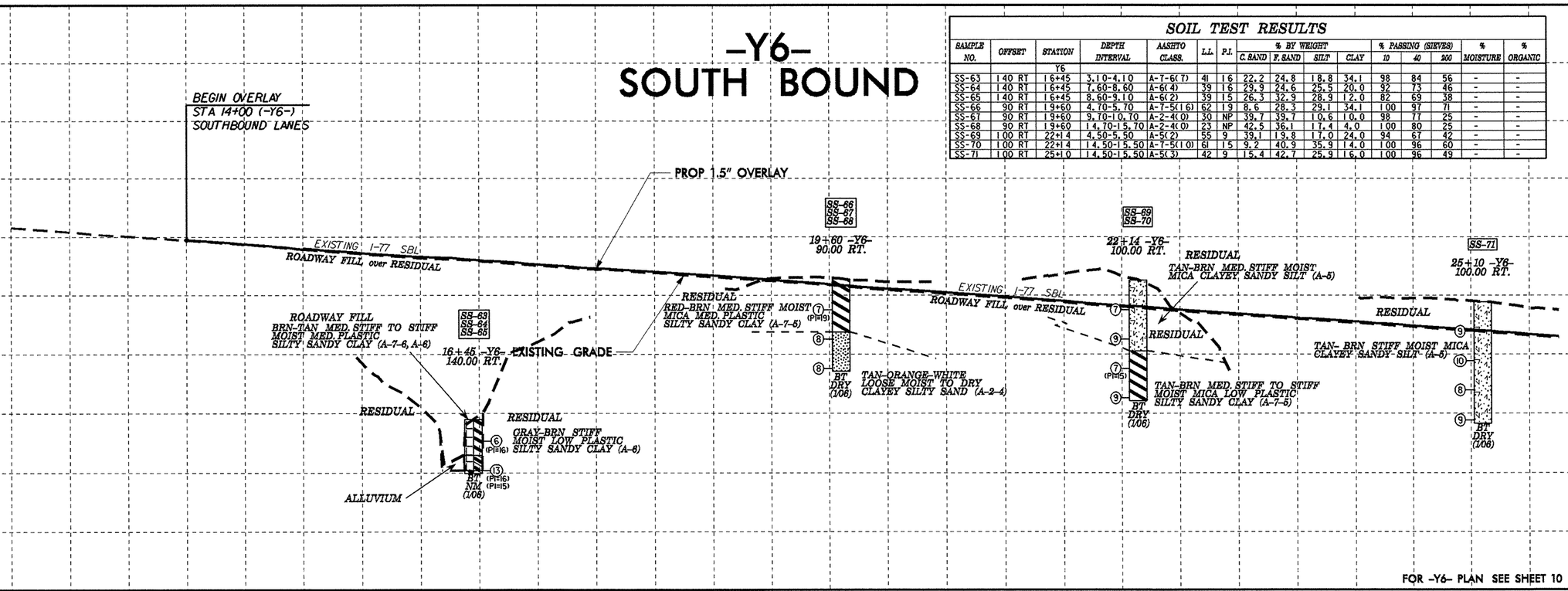


FOR -Y6- PLAN SEE SHEET 10

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
		Y6													
SS-61	105 LT	22+70	4.30-5.30	A-7-5(4)	50	11	34.3	20.7	6.9	38.1	98	91	48	-	-
SS-62	105 LT	22+70	9.30-10.30	A-2-5(0)	49	NP	43.4	25.7	16.9	14.1	94	67	33	-	-

-Y6-
SOUTH BOUND



FOR -Y6- PLAN SEE SHEET 10

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
		Y6													
SS-63	140 RT	16+45	3.10-4.10	A-7-6(17)	41	16	22.2	24.8	18.8	34.1	98	84	56	-	-
SS-64	140 RT	16+45	7.60-8.60	A-6(4)	39	16	29.9	24.6	25.5	20.0	92	73	46	-	-
SS-65	140 RT	16+45	8.60-9.10	A-6(2)	39	15	26.3	32.9	28.9	12.0	82	69	38	-	-
SS-66	90 RT	19+60	4.70-5.70	A-7-5(16)	62	19	8.6	28.3	29.1	34.1	100	97	71	-	-
SS-67	90 RT	19+60	9.70-10.70	A-2-4(0)	30	NP	39.7	39.7	10.6	10.0	98	77	25	-	-
SS-68	90 RT	19+60	14.70-15.70	A-2-4(0)	23	NP	42.5	36.1	17.4	4.0	100	80	25	-	-
SS-69	100 RT	22+14	4.50-5.50	A-5(2)	55	9	39.1	13.8	17.0	24.0	94	67	42	-	-
SS-70	100 RT	22+14	14.50-15.50	A-7-5(10)	61	15	9.2	40.9	35.9	14.0	100	96	60	-	-
SS-71	100 RT	25+10	14.50-15.50	A-5(3)	42	9	15.4	42.7	25.9	16.0	100	96	49	-	-

PROJECT REFERENCE NO.	SHEET NO.
R-3833B	31
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

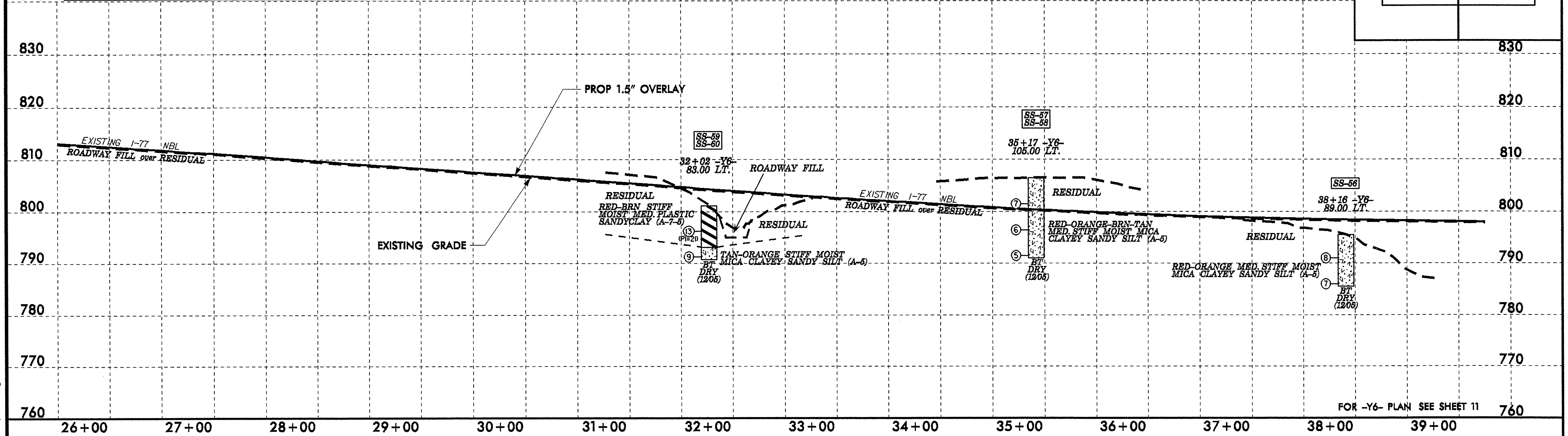
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y6-
NORTH BOUND

SOIL TEST RESULTS

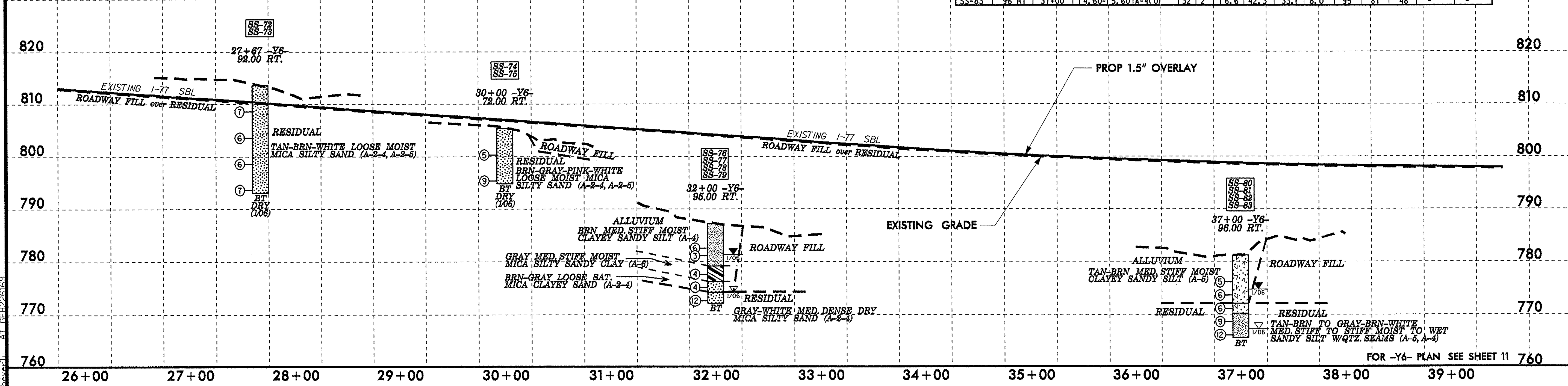
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
		Y6													
SS-59	83 LT	32+02	4.40-5.40	A-7-5(10)	51	21	21.5	24.5	7.8	46.2	100	86	57	-	-
SS-60	83 LT	32+02	9.40-10.40	A-5(3)	58	9	24.1	34.5	17.3	24.1	100	98	46	-	-
SS-57	105 LT	35+17	4.50-5.50	A-5(6)	50	9	14.3	33.1	16.5	36.1	100	96	59	-	-
SS-58	105 LT	35+17	14.50-15.50	A-5(0)	44	NP	19.1	46.6	18.3	16.1	100	95	42	-	-
SS-56	89 LT	38+16	4.00-5.00	A-5(0)	47	NP	15.1	51.0	7.8	26.1	100	94	42	-	-



-Y6-
SOUTH BOUND

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
		Y6													
SS-72	92 RT	27+67	4.50-5.50	A-2-4(0)	35	NP	34.5	40.3	19.2	6.0	100	87	31	-	-
SS-73	92 RT	27+67	14.50-15.50	A-2-5(0)	45	NP	45.7	26.5	19.8	8.0	83	59	26	-	-
SS-74	72 RT	30+00	4.60-5.60	A-2-4(0)	38	NP	51.0	24.1	14.8	10.1	94	60	26	-	-
SS-75	72 RT	30+00	9.60-10.60	A-2-5(0)	42	NP	47.7	25.3	21.0	6.0	88	59	27	-	-
SS-76	95 RT	32+00	4.10-5.10	A-4(0)	23	4	31.9	34.9	15.2	18.0	97	80	36	-	-
SS-77	95 RT	32+00	9.60-10.60	A-6(4)	34	13	20.4	29.5	22.0	28.1	100	89	54	-	-
SS-78	95 RT	32+00	11.60-12.60	A-2-4(0)	32	9	57.7	21.0	9.2	12.0	67	37	16	-	-
SS-79	95 RT	32+00	14.10-15.10	A-2-4(0)	31	NP	35.3	41.3	19.4	4.0	100	84	29	-	-
SS-80	96 RT	37+00	4.60-5.60	A-5(1)	43	6	29.3	26.9	27.9	16.0	99	80	48	-	-
SS-81	96 RT	37+00	9.60-10.60	A-5(0)	45	NP	18.0	48.9	29.1	4.0	100	91	44	-	-
SS-82	96 RT	37+00	12.10-13.10	A-4(0)	35	NP	15.4	53.7	28.9	2.0	100	94	41	-	-
SS-83	96 RT	37+00	14.60-15.60	A-4(0)	32	2	16.6	42.3	33.1	8.0	95	87	48	-	-



5/28/99

29-NOV-2006 10:00
d:\projects\r-3833b\r-3833b_geo_rdwy_iredell\cadd_geotech\planprof\r-3833b_geo_pfl_y6_nbl&sbl_psh30.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-3833B	32
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

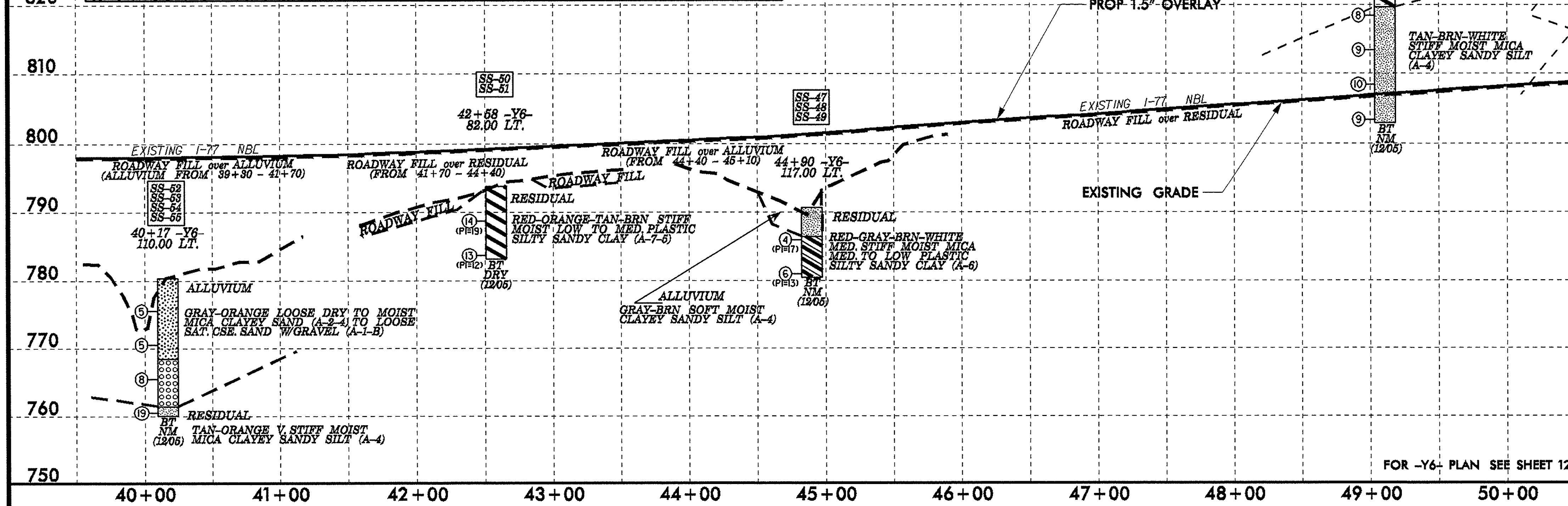
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION

-Y6- NORTH BOUND

SOIL TEST RESULTS

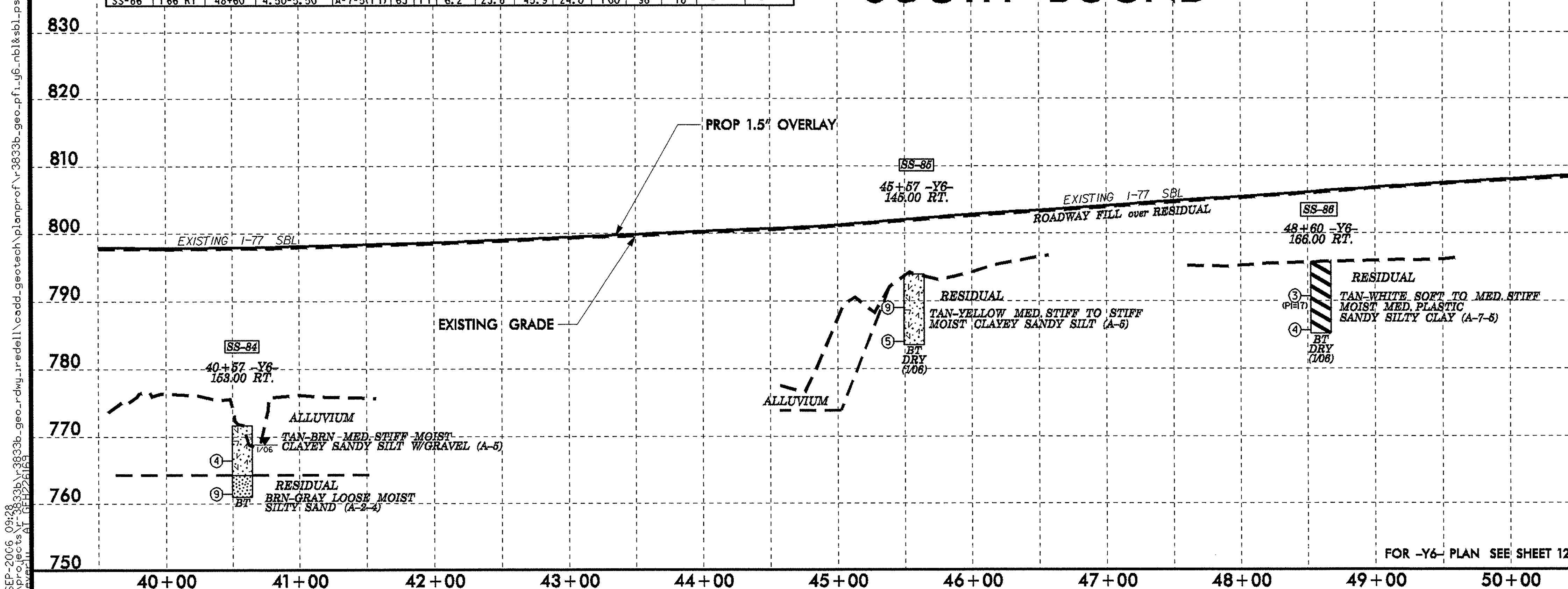
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	% BY WEIGHT F. SAND	% BY WEIGHT SILT	% BY WEIGHT CLAY	% PASSING (SIEVES) 10	% PASSING (SIEVES) 40	% PASSING (SIEVES) 200	% MOISTURE	% ORGANIC
		Y6													
SS-52	110 LT	40+17	4.40-5.40	A-2-4(0)	30	6	50.6	27.1	7.2	15.2	78	52	20	-	-
SS-53	110 LT	40+17	9.40-10.40	A-2-4(0)	29	NP	23.1	48.6	8.2	20.1	100	93	35	-	-
SS-54	110 LT	40+17	14.40-15.40	A-1-b(0)	28	NP	79.4	14.4	0.2	6.0	53	17	4	-	-
SS-55	110 LT	40+17	19.40-20.40	A-4(0)	34	NP	19.5	54.3	14.1	12.1	100	90	37	-	-
SS-50	82 LT	42+58	4.60-5.60	A-7-5(11)	49	19	17.8	26.5	11.3	44.4	100	90	62	-	-
SS-51	82 LT	42+58	9.60-10.60	A-7-5(5)	48	12	8.9	47.9	25.1	18.2	100	96	53	-	-
SS-47	117 LT	44+90	0.00-4.20	A-4(0)	25	7	26.1	38.2	9.5	26.3	94	78	38	-	-
SS-48	117 LT	44+90	4.20-5.20	A-6(6)	37	17	22.0	28.1	11.5	38.4	97	85	52	-	-
SS-49	117 LT	44+90	9.20-10.20	A-6(4)	36	13	22.8	30.1	10.7	36.4	98	88	51	-	-
SS-45	172 LT	49+11	4.70-5.70	A-7-5(11)	54	19	23.8	19.8	11.9	44.4	100	89	61	-	-
SS-46	172 LT	49+11	9.70-10.70	A-4(0)	36	NP	25.7	41.2	17.0	16.2	100	89	41	-	-



-Y6- SOUTH BOUND

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.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
		Y6													
SS-84	153 RT	40+57	9.70-10.70	A-2-4(0)	30	5	43.5	32.7	17.8	6.0	97	69	28	-	-
SS-85	145 RT	45+57	4.40-5.40	A-5(0)	53	3	38.1	22.8	27.1	12.0	100	69	44	-	-
SS-86	166 RT	48+60	4.50-5.50	A-7-5(17)	63	17	6.2	23.8	45.9	24.0	100	98	76	-	-



5/28/99

11-SEP-2006 09:28 d:\projects\r3833b\r3833b_geo_rdwy_iredell\cadd_geotech\planprof\r3833b_geo_pfl_y6_nbl&sbl_psh30.dgn

5/28/99

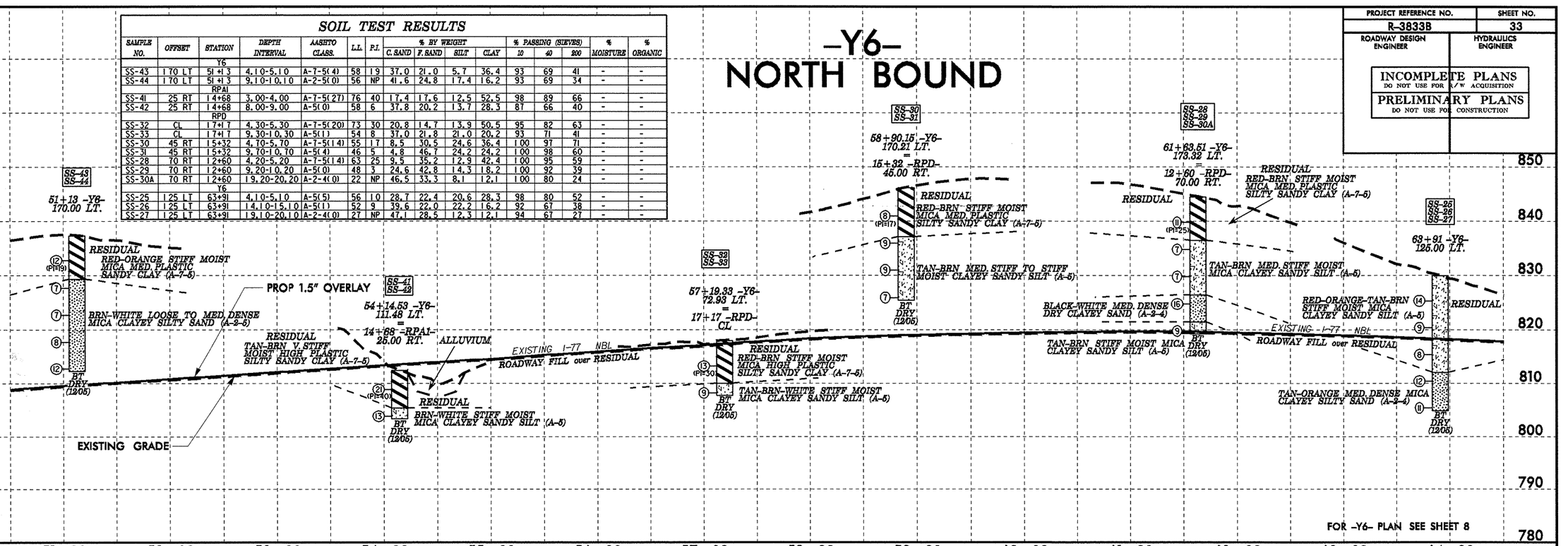
PROJECT REFERENCE NO.	SHEET NO.
R-3833B	33
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

-Y6-
NORTH BOUND

SOIL TEST RESULTS

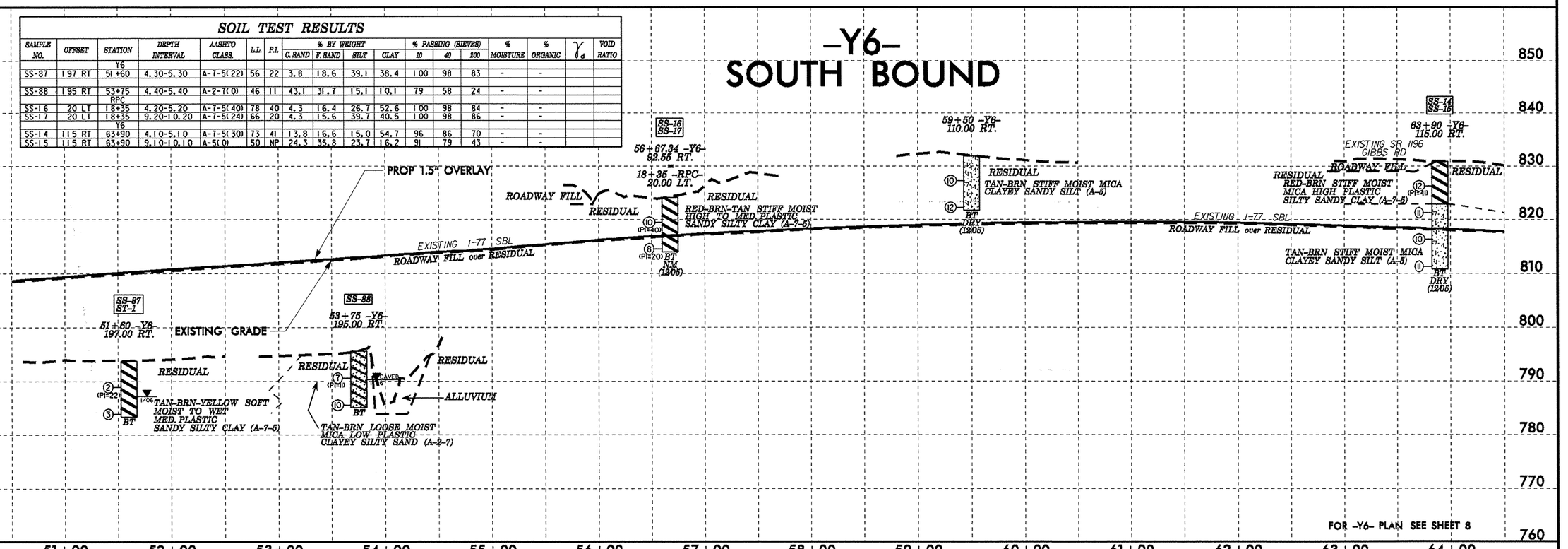
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
		Y6													
SS-43	170 LT	51+13	4.10-5.10	A-7-5(4)	58	19	37.0	21.0	5.7	36.4	93	69	41	-	-
SS-44	170 LT	51+13	9.10-10.10	A-2-5(0)	56	NP	41.6	24.8	17.4	16.2	93	69	34	-	-
		RPAI													
SS-41	25 RT	14+68	3.00-4.00	A-7-5(27)	76	40	17.4	17.6	12.5	52.5	98	89	66	-	-
SS-42	25 RT	14+68	8.00-9.00	A-5(0)	58	6	37.8	20.2	13.7	28.3	87	66	40	-	-
		RPD													
SS-32	CL	17+17	4.30-5.30	A-7-5(20)	73	30	20.8	14.7	13.9	50.5	95	82	63	-	-
SS-33	CL	17+17	9.30-10.30	A-5(1)	54	8	37.0	21.8	21.0	20.2	93	71	41	-	-
SS-30	45 RT	15+32	4.10-5.10	A-7-5(14)	55	17	8.5	30.5	24.6	36.4	100	97	71	-	-
SS-31	45 RT	15+32	9.10-10.10	A-5(4)	46	5	4.8	46.7	24.2	24.2	100	98	60	-	-
SS-28	70 RT	12+60	4.20-5.20	A-7-5(14)	63	25	9.5	35.2	12.9	42.4	100	95	59	-	-
SS-29	70 RT	12+60	9.20-10.20	A-5(0)	48	3	24.6	42.8	14.3	18.2	100	92	39	-	-
SS-30A	70 RT	12+60	19.20-20.20	A-2-4(0)	22	NP	46.5	33.3	8.1	12.1	100	80	24	-	-
		Y6													
SS-25	125 LT	63+91	4.10-5.10	A-5(5)	56	10	28.7	22.4	20.6	28.3	98	80	52	-	-
SS-26	125 LT	63+91	14.10-15.10	A-5(1)	52	9	39.6	22.0	22.2	16.2	92	67	38	-	-
SS-27	125 LT	63+91	19.10-20.10	A-2-4(0)	27	NP	47.1	28.5	12.3	12.1	94	67	27	-	-



-Y6-
SOUTH BOUND

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC	γ_d	VOID RATIO
		Y6															
SS-87	197 RT	51+60	4.30-5.30	A-7-5(22)	56	22	3.8	18.6	39.1	38.4	100	98	83	-	-		
SS-88	195 RT	53+75	4.40-5.40	A-2-7(0)	46	11	43.1	31.7	15.1	10.1	79	58	24	-	-		
		RPC															
SS-16	20 LT	18+35	4.20-5.20	A-7-5(40)	78	40	4.3	16.4	26.7	52.6	100	98	84	-	-		
SS-17	20 LT	18+35	9.20-10.20	A-7-5(24)	66	20	4.3	15.6	39.7	40.5	100	98	86	-	-		
		Y6															
SS-14	115 RT	63+90	4.10-5.10	A-7-5(30)	73	41	13.8	16.6	15.0	54.7	96	86	70	-	-		
SS-15	115 RT	63+90	9.10-10.10	A-5(0)	50	NP	24.3	35.8	23.7	16.2	91	79	43	-	-		



PROJECT REFERENCE NO.	SHEET NO.
R-3833B	34

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

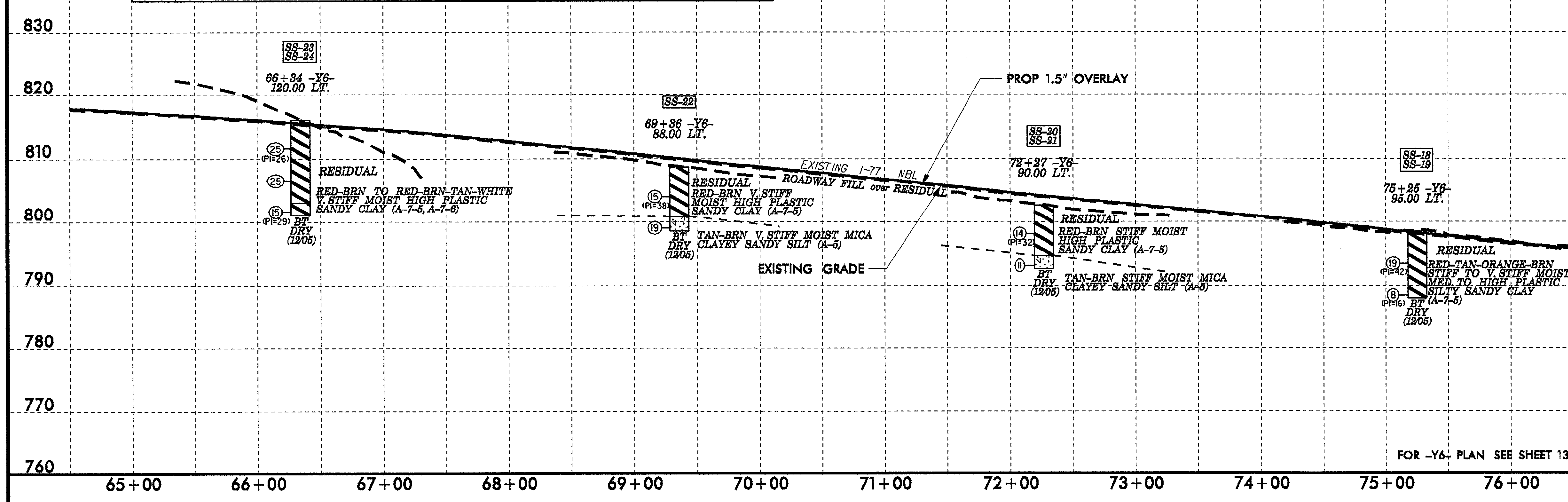
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

5/28/99

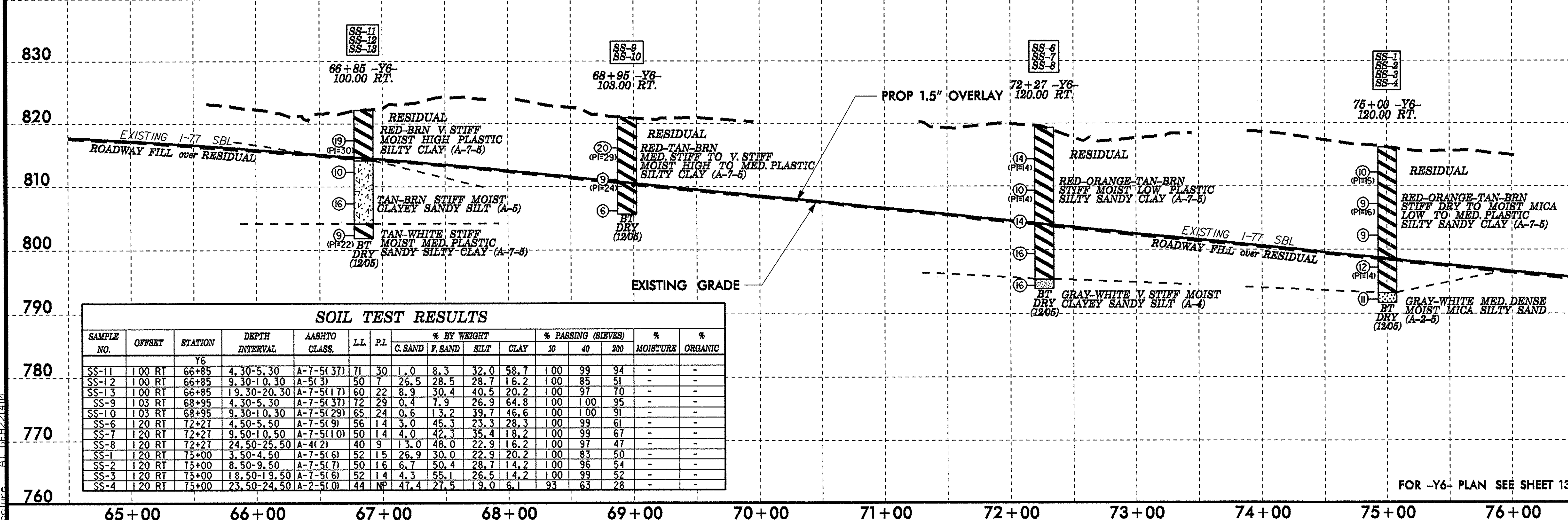
-Y6- NORTH BOUND

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.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
		Y6													
SS-23	120 LT	66+34	4.00-5.00	A-7-5(14)	58	26	21.4	20.6	3.4	54.5	97	86	59	-	-
SS-24	120 LT	66+34	14.00-15.00	A-7-6(9)	48	29	23.8	33.5	6.3	36.4	98	83	46	-	-
SS-22	88 LT	69+36	4.20-5.20	A-7-5(26)	68	38	16.6	18.4	8.5	56.6	100	90	68	-	-
SS-20	90 LT	72+27	4.00-5.00	A-7-5(26)	73	32	12.5	16.4	8.5	62.6	98	87	72	-	-
SS-21	90 LT	72+27	9.00-10.00	A-5(3)	56	8	31.7	22.2	19.8	26.3	95	75	47	-	-
SS-18	95 LT	75+25	4.60-5.60	A-7-5(36)	75	42	5.3	21.8	10.3	62.6	100	98	77	-	-
SS-19	95 LT	75+25	9.60-10.60	A-7-5(9)	51	16	14.5	30.9	20.2	34.3	100	91	60	-	-



-Y6- SOUTH BOUND



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.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
		Y6													
SS-11	100 RT	66+85	4.30-5.30	A-7-5(37)	71	30	1.0	8.3	32.0	58.7	100	99	94	-	-
SS-12	100 RT	66+85	9.30-10.30	A-5(3)	50	7	26.5	28.5	28.7	16.2	100	85	51	-	-
SS-13	100 RT	66+85	19.30-20.30	A-7-5(17)	60	22	8.9	30.4	40.5	20.2	100	97	70	-	-
SS-9	103 RT	68+95	4.30-5.30	A-7-5(37)	72	29	0.4	7.9	26.9	64.8	100	100	95	-	-
SS-10	103 RT	68+95	9.30-10.30	A-7-5(29)	65	24	0.6	13.2	39.7	46.6	100	100	91	-	-
SS-6	120 RT	72+27	4.50-5.50	A-7-5(9)	56	14	3.0	45.3	23.3	28.3	100	99	61	-	-
SS-7	120 RT	72+27	9.50-10.50	A-7-5(10)	50	14	4.0	42.3	35.4	18.2	100	99	67	-	-
SS-8	120 RT	72+27	24.50-25.50	A-4(2)	40	9	13.0	48.0	22.9	16.2	100	97	47	-	-
SS-1	120 RT	75+00	3.50-4.50	A-7-5(6)	52	15	26.9	30.0	22.9	20.2	100	83	50	-	-
SS-2	120 RT	75+00	8.50-9.50	A-7-5(7)	50	16	6.7	50.4	28.7	14.2	100	96	54	-	-
SS-3	120 RT	75+00	18.50-19.50	A-7-5(6)	52	14	4.3	55.1	26.5	14.2	100	99	52	-	-
SS-4	120 RT	75+00	23.50-24.50	A-2-5(0)	44	NP	47.4	27.5	19.0	6.1	93	63	28	-	-

12-JUL-2006 10:17
d:\projects\r3833b\cadd_geotech\planprof\R3833B_GEO_pfl_Y6_NBL&SBL_psh38.dgn

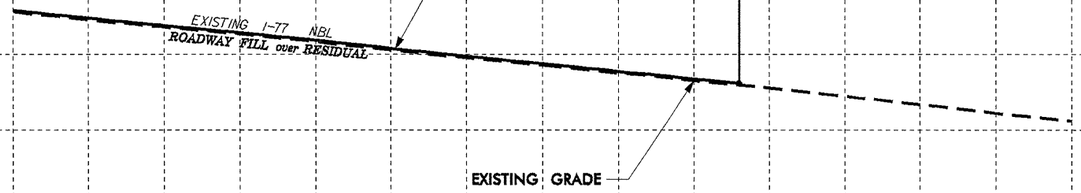
5/28/99

PROJECT REFERENCE NO.	SHEET NO.
R-3833B	35
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

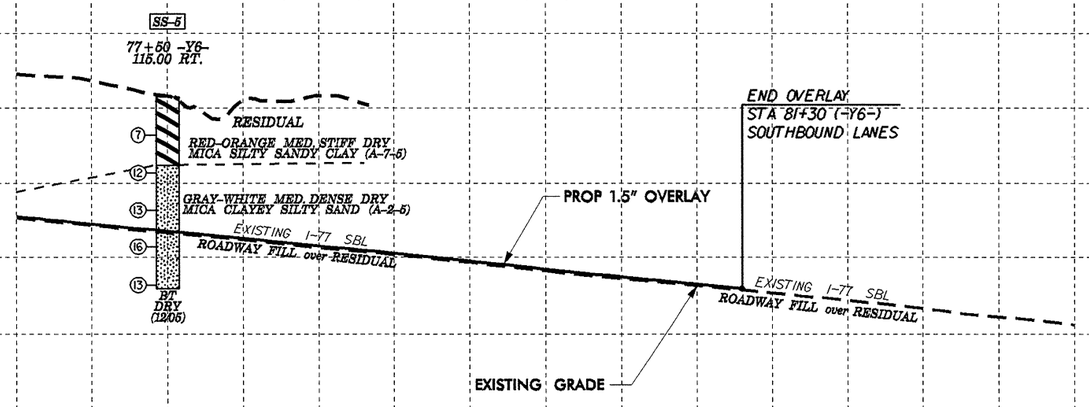
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y6-
NORTH BOUND



FOR -Y6- PLAN SEE SHEET 14

-Y6-
SOUTH BOUND



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
		Y6													
SS-5	115 RT	77+50	9.50-10.50	A-2-5(0)	49	NP	40.3	29.6	20.0	10.1	97	74	33	-	-

FOR -Y6- PLAN SEE SHEET 14

77+00 78+00 79+00 80+00 81+00 82+00 83+00

740 750 760 770 780 790 800 810 820 830

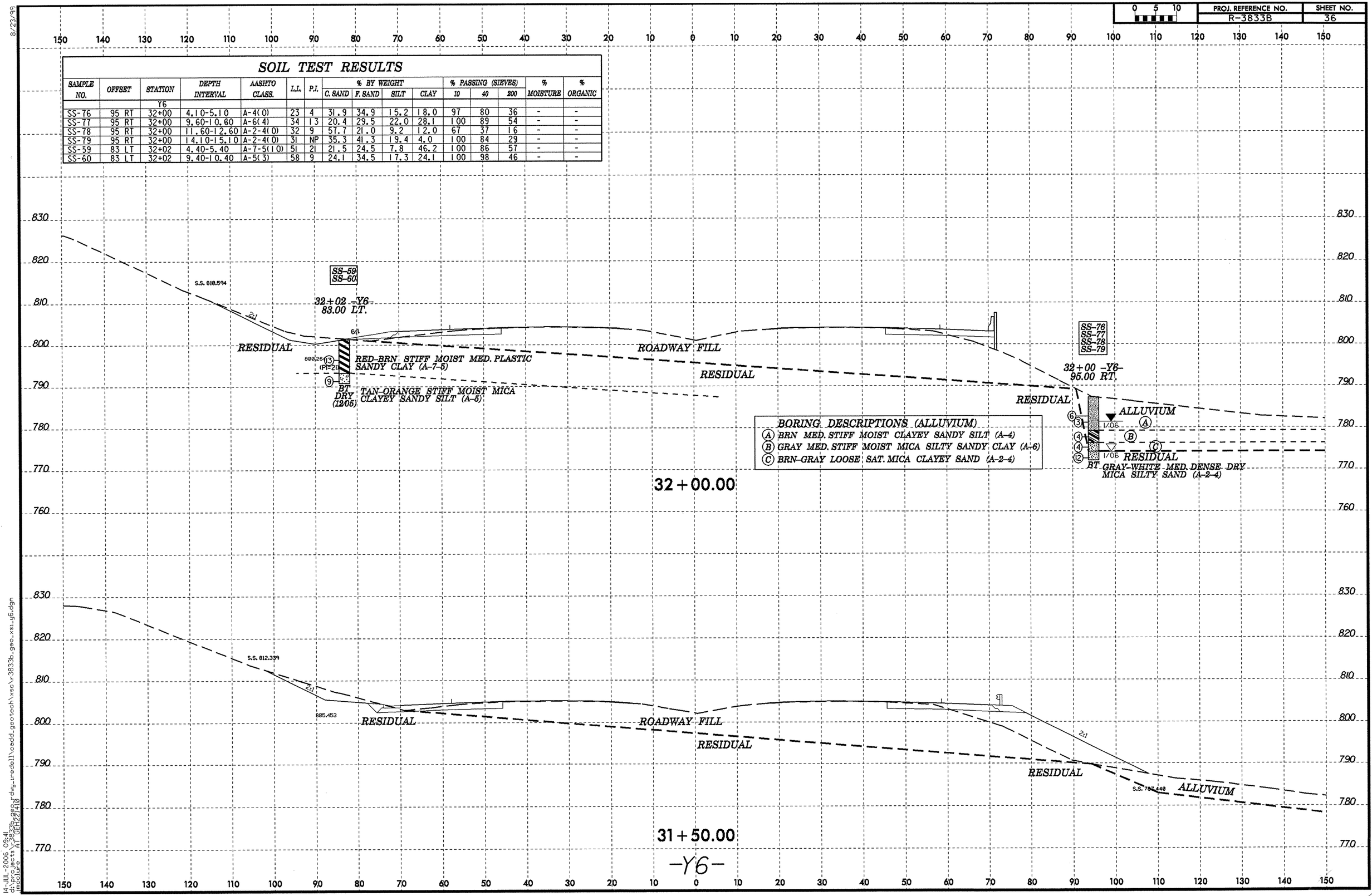
12-JUL-2006 10:18
d:\projects\3833b\geo\dwg\iredell\cadd\geotech\planprof\R3833B_GEO_pf1_Y6_NBL&SBL_psh30.dgn
microstation v8 (08.11.07.443)

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3833B	36

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
		Y6													
SS-76	95 RT	32+00	4.10-5.10	A-4(0)	23	4	31.9	34.9	15.2	18.0	97	80	36	-	-
SS-77	95 RT	32+00	9.60-10.60	A-6(4)	34	13	20.4	29.5	22.0	28.1	100	89	54	-	-
SS-78	95 RT	32+00	11.60-12.60	A-2-4(0)	32	9	57.7	21.0	9.2	12.0	67	37	16	-	-
SS-79	95 RT	32+00	14.10-15.10	A-2-4(0)	31	NP	35.3	41.3	19.4	4.0	100	84	29	-	-
SS-59	83 LT	32+02	4.40-5.40	A-7-5(10)	51	21	21.5	24.5	7.8	46.2	100	86	57	-	-
SS-60	83 LT	32+02	9.40-10.40	A-5(3)	58	9	24.1	34.5	17.3	24.1	100	98	46	-	-



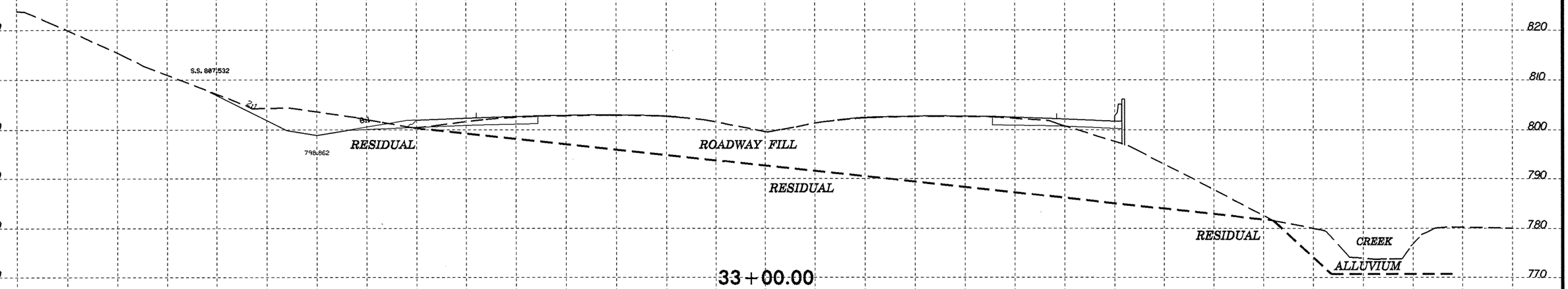
14-JUL-2006 09:41
d:\projects\7.3823.01\dwg.rredell\cadd_geotech\xsc\r-3833b_geo_xsl_y6.dgn
microstation V8 SELECTseries

8/23/99

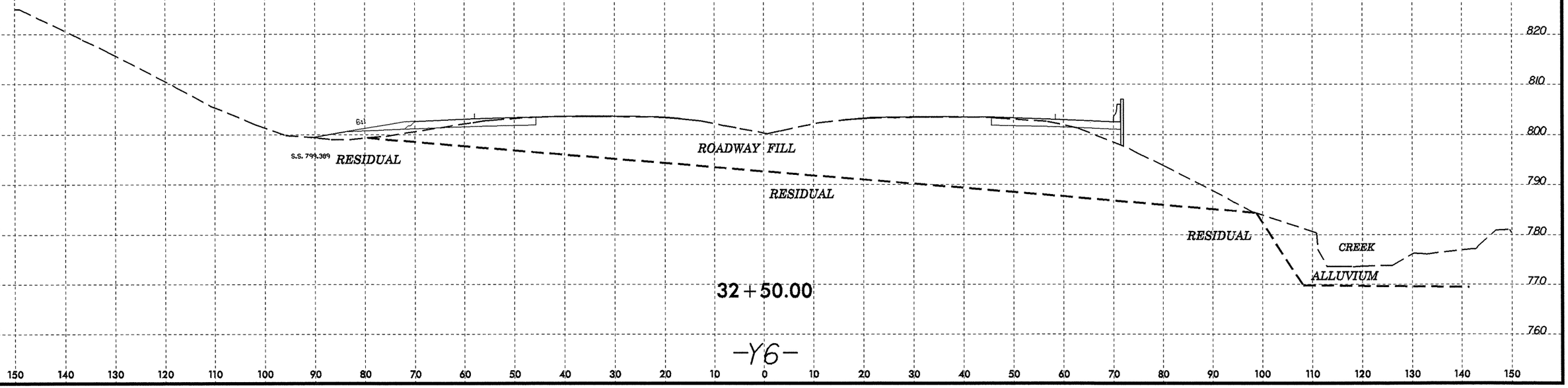
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3833B	37

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

830 820 810 800 790 780 770



33+00.00



32+50.00

760

-Y6-

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

12-JUL-2006 14:41
d:\projects\3833b\geo\dwg_rredell\cedd_geotech\xsc\R3833B_Geo_xsL_Y6.dgn
measure

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3833B	38

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

830 820 810 800 790 780 770

S.S. 808.853

2:1

6:1

797.595

RESIDUAL

ROADWAY FILL

RESIDUAL

RESIDUAL

ALLUVIUM

CREEK

34+00.00

830 820 810 800 790 780 770

S.S. 808.579

2:1

6:1

796.198

RESIDUAL

ROADWAY FILL

RESIDUAL

RESIDUAL

ALLUVIUM

CREEK

33+50.00

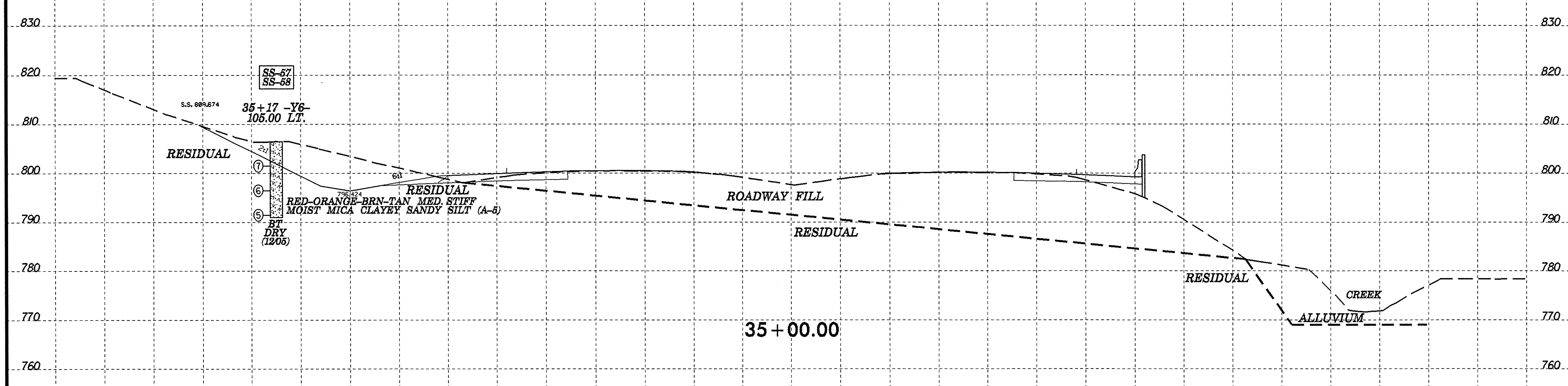
-Y6-

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

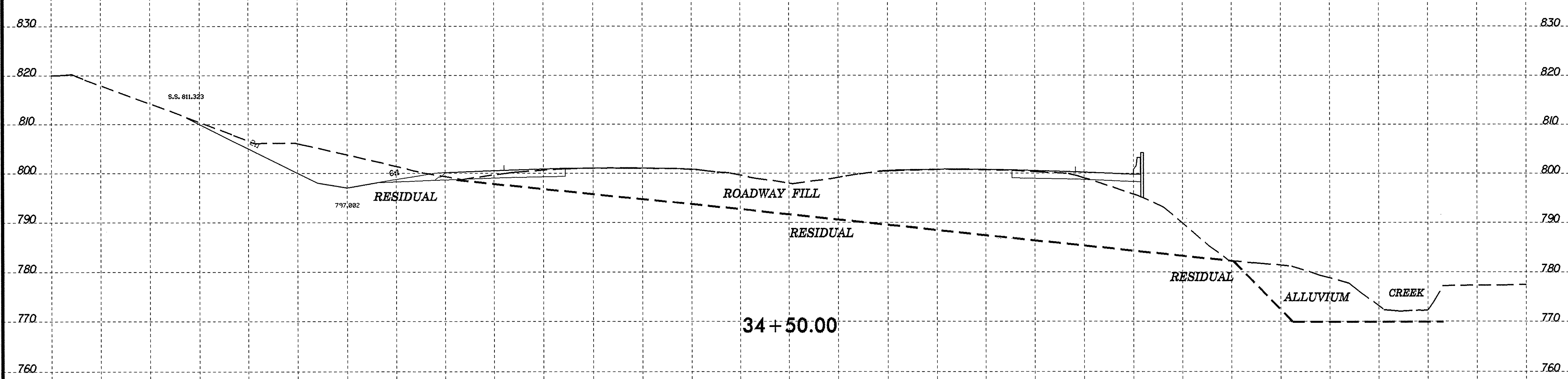
12-JUL-2006 14:41
d:\projects\r3833b_2007\dwg.redell\cadd_geotech\xsc\R3833B_Geo_xsl_Y6.dgn
mcguire at AECOM

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
		Y6													
SS-57	105 LT	35+17	4.50-5.50	A-5(6)	50	9	14.3	33.1	16.5	36.1	100	96	59	-	-
SS-58	105 LT	35+17	14.50-15.50	A-5(0)	44	NP	19.1	46.6	18.3	16.1	100	95	42	-	-



35+00.00



34+50.00

-Y6-

8/23/99
14-JUL-2006 09:42
d:\projects\r3833b_geo_rdwy_iredell\cadd_geotech\xsc\r3833b-geo-xs1-y6.dgn
jmcclure AT GEH221410

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3833B	40

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

820 810 800 790 780 770 760

S.S. 885.526

2:1

6:1

795.572

RESIDUAL

ROADWAY FILL

RESIDUAL

RESIDUAL

CREEK

ALLUVIUM

36+00.00

820 810 800 790 780 770 760

S.S. 886.319

2:1

6:1

795.978

RESIDUAL

ROADWAY FILL

RESIDUAL

RESIDUAL

CREEK

ALLUVIUM

35+50.00

-Y6-

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

12-JUL-2006 14:42
d:\projects\r3833b\dwg.iredell\cadd_geotech\xsec\R3833B_Geo_xsi_Y6.dgn
microstation CE8.2.2.10

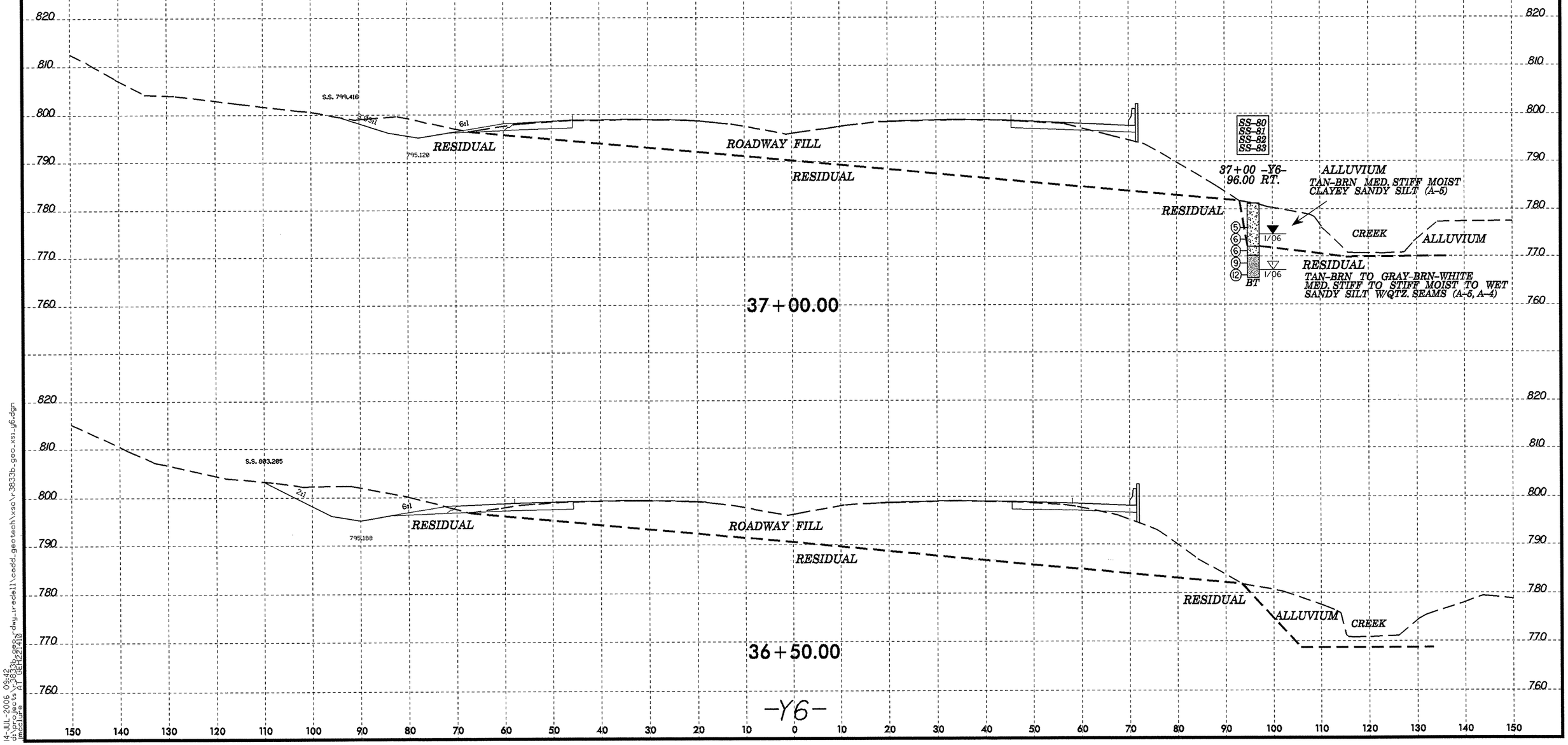
8/23/99

PROJ. REFERENCE NO.	SHEET NO.
R-3833B	41

0 5 10

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
		Y6													
SS-80	96 RT	37+00	4.60-5.60	A-5(1)	43	6	29.3	26.9	27.9	16.0	99	80	48	-	-
SS-81	96 RT	37+00	9.60-10.60	A-5(0)	45	NP	18.0	48.9	29.1	4.0	100	91	44	-	-
SS-82	96 RT	37+00	12.10-13.10	A-4(0)	35	NP	15.4	53.7	28.9	2.0	100	94	41	-	-
SS-83	96 RT	37+00	14.60-15.60	A-4(0)	32	2	16.6	42.3	33.1	8.0	95	87	48	-	-



14-JUL-2006 09:42
d:\projects\3833b_geo_dwg_iredell\cadd_geotech\xsc\r3833b_geo_xsi_y6.dgn
mcclure
AT 08:42:10

8/23/99

PROJ. REFERENCE NO.	SHEET NO.
R-3833B	42

0 5 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

820 810 800 790 780 770 760

S.S. 799.598

2.5:1

6:1

794.635

RESIDUAL

ROADWAY FILL

RESIDUAL

-RPB- STA 0+50.17
O/S 48.55(RT)

2.06:1

RESIDUAL

S.S. 788.897

CREEK

ALLUVIUM

37+50.00

-Y6-

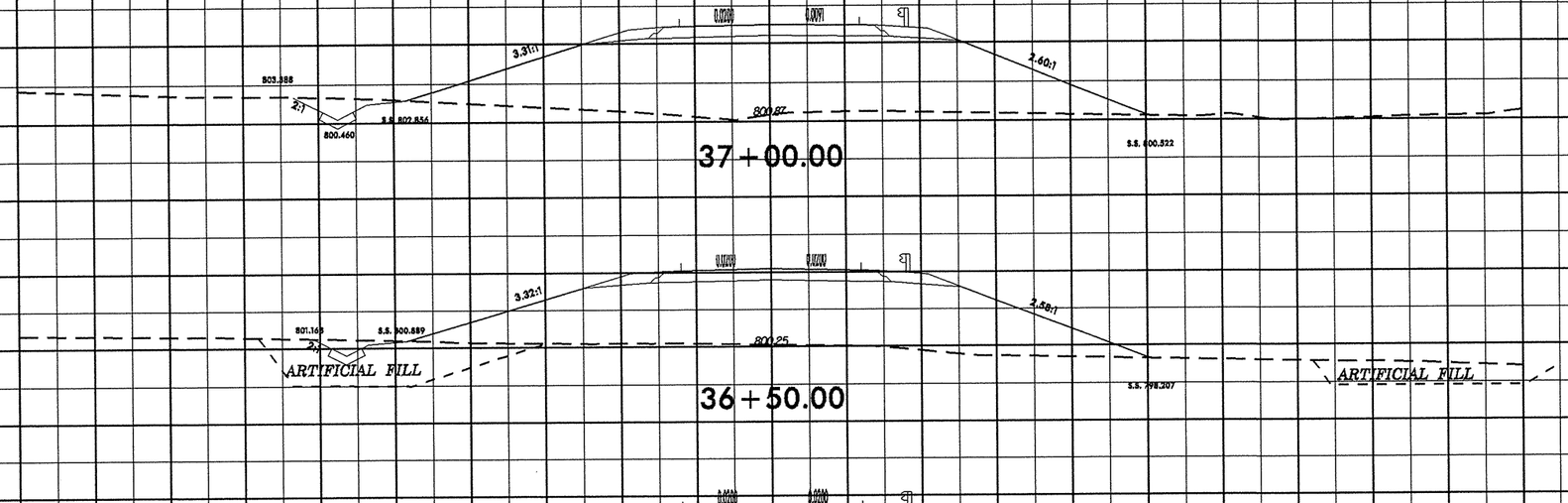
12-JUL-2006 14:43
d:\projects\3833b\gpr\dwg_tredell\cadd_geotech\vsc\R3833B_Geo_xsl_Y6.dgn
microstation V8 DGN 2.5.10

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3833B	43

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

820 810 800 790 780 770 760



06-DEC-2006 11:21
c:\projects\proposal to wro-tip\r-3833b\r-3833b_geo_rdwy_tredell\cadd_geotech\xsc\r-3833b_geo_xsr_y4.dgn
User:ajh