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CONTRACT:

ID: U-2579C

NOTE: SEE SHEET 2A 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. 34839.1.1 (U-2579C) F.A. PROJ. _____

COUNTY FORSYTH

PROJECT DESCRIPTION WINSTON-SALEM NORTHERN BELTWAY (EASTERN SECTION) FROM US 311 TO US 158 (FUTURE I-74)

INVENTORY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-2579C	1	98

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34839.1.1		P.E.
		R/W & UTIL.

CAUTION NOTICE

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

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

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

PERSONNEL

C.C. MURRAY

J.E. ESTEP

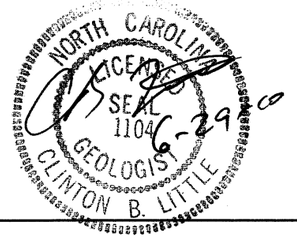
M.R. MOORE

INVESTIGATED BY R.Q. CALLAWAY

CHECKED BY C.B. LITTLE

SUBMITTED BY C.B. LITTLE

DATE JUNE 2010



DRAWN BY: J.K. McCLURE

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

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

PROJECT REFERENCE NO.	SHEET NO.
34839.1.1 (U-2579C)	2

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION

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

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

SOIL LEGEND AND AASHTO CLASSIFICATION

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

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

CONSISTENCY OR DENSENESS

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

TEXTURE OR GRAIN SIZE

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

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

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

SOIL MOISTURE - CORRELATION OF TERMS

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

PLASTICITY

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

COLOR

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

GRADATION

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

ANGULARITY OF GRAINS

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

MINERALOGICAL COMPOSITION

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

COMPRESSIBILITY

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

PERCENTAGE OF MATERIAL

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

GROUND WATER

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

MISCELLANEOUS SYMBOLS

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

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

SAMPLE ABBREVIATIONS

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

EQUIPMENT USED ON SUBJECT PROJECT

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

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

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

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

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

ROCK DESCRIPTION

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

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

WEATHERING

FRESH	ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE.
VERY SLIGHT (V SLI.)	ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN, CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER HAMMER 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:
Soil Strata Shown Thru Borings.

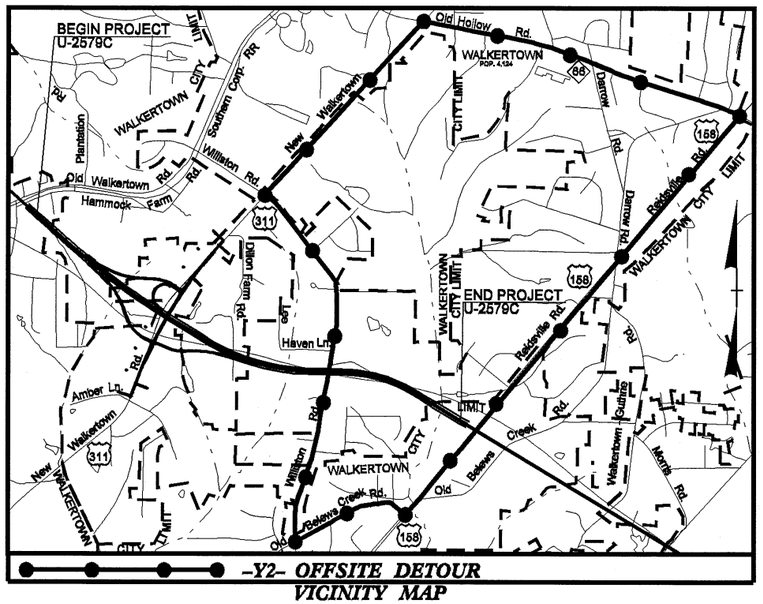
REVISED 09/23/09

09/08/99

TIP PROJECT: U-2579C

CONTRACT:

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



VICINITY MAP

BEGIN PROJ. U-2579C
-L- STA. 373+00.00

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

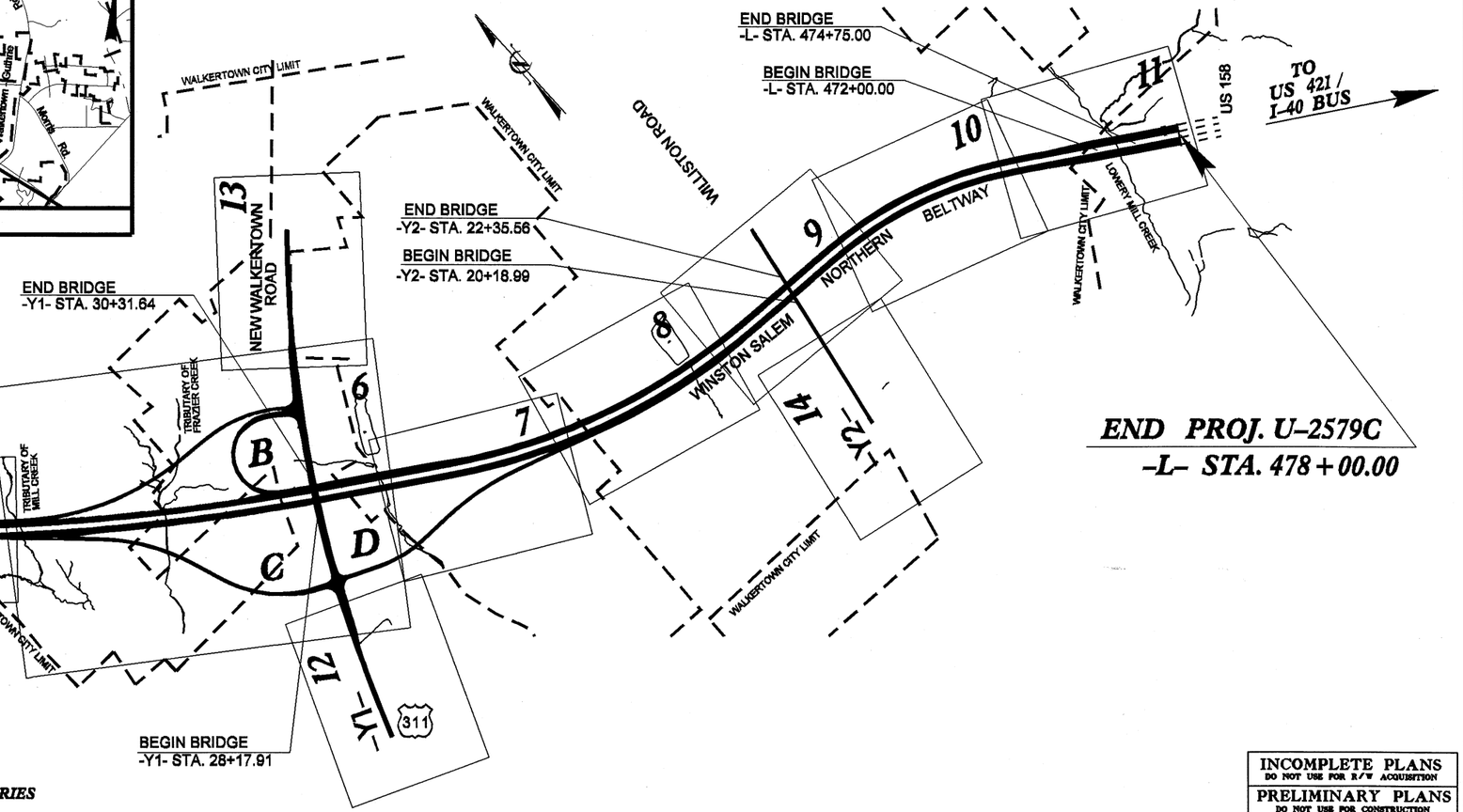
FORSYTH COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-2579C	2A	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
34839.1.1	N/A	PE

LOCATION: ***WINSTON – SALEM NORTHERN BELTWAY (EASTERN SECTION) FROM US 311 TO US 158 (FUTURE I-74)***

TYPE OF WORK: ***WIDENING, GRADING, PAVING, DRAINAGE, SIGNING, SIGNALS, CULVERTS AND STRUCTURES.***



END PROJ. U-2579C
-L- STA. 478+00.00

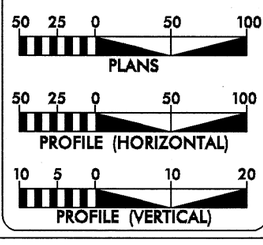
A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF WALKERTOWN

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

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES



DESIGN DATA

ADT 2014	=	61464
ADT 2034	=	88984
DHV	=	10 %
D	=	60 %
T	=	18 % *
V	=	70 MPH

* TTST 12 % DUAL 6 %

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT U-2579C	=	1.895 Miles.
LENGTH OF STRUCTURE PROJECT U-2579C	=	0.094 Miles.
TOTAL LENGTH OF PROJECT U-2579C	=	1.989 Miles.

Prepared In the Office of:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: MAY 15, 2009

LETTING DATE: JAN 20, 2015

TONY HOUSER, PE
PROJECT ENGINEER

LEE ANN MOORE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE:

ROADWAY DESIGN ENGINEER

SIGNATURE:

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

STATE PROJECT: 34839.1.1 (U-2579C)
FEDERAL PROJECT: N.A.
COUNTY: FORSYTH
DESCRIPTION: WINSTON SALEM NORTHERN BELTWAY (EASTERN SECTION) (FUTURE I-74) FROM US 311 TO US 158

SUBJECT: GEOTECHNICAL REPORT – Inventory

PROJECT DESCRIPTION

The U-2579C project is to the northwest of the U-2579B project and connects with it. The aggregate of the U-2579 projects are part of future I-74, and also the eastern half, more or less, of a future Winston–Salem beltway. Predictably enough, the northwest end of "C" will connect to the southeast end of U-2579D and so on, to the end at "F".

From the beginning at station –L- 373+00 to –L- 401+00, the –L- line will be on embankment fill up to 70' thick. This grade is required by a railroad crossing in the following segment: U-2579D. A small amount of alluvial soil was found adjacent to streams, but most of the soil is residual, produced by weathering rock. Where deeper drilling was done the residual soil is up to 50' thick. A succession of soil types from fine to coarse is encountered from the surface to rock. A-7 and A-6 soil is found at the undisturbed surface, followed by A-5 or A-4 then A-2 above rock. Even with the development of the clayey or silty soils in the section, tests of the soil plasticity index (PI) returned values of less than 20. According to the geologic map, biotite gneiss is the rock that disintegrated to form the soil in the project area. The mica that is a constituent of this rock is highly resistant to weathering, contributes to low soil plasticity, and doesn't pack very well.

The field investigation was conducted from July 1, 2008 to August 15, 2008, using a CME-550 drill machine with an automatic hammer. Standard Penetration Tests, (SPT), were performed through hollow stem augers at selected locations. Additional borings were conducted with solid augers for delineation of the limits of rock. Representative soil samples were collected and forwarded to the Materials and Tests Unit laboratory for soil quality analysis, moisture content and ASSHTO classification. All available drill-holes are plotted on the plan view and also appear projected into the profiles.

The following alignments, totaling 5.06 miles, were investigated.

Alignment	Station	to	Station	Length Feet
-L-	369+00.00		478+00	10,900
-Y1-	11+00.00		48+50	4,750
-Y1RPB-	10+00.00		32+88.63	2,288.63
-Y1RPC-	10+00.00		32+95.71	2,295.71
-Y1RPD-	10+00.00		32+31.74	2,231.74
-Y1LPB-	10+00.00		22+19.35	1,219.35
-Y2-	10+00.00		26+50	1,650
-Y1DET-	17+29.79		31+62.46	1,432.67

5.06 miles, or 26,768 feet.

ITEMS OF SPECIAL GEOTECHNICAL INTEREST

1.) Groundwater:
The 24 hr water level was found at or above planned grade in some borings for -L-, –Y1RPB- and –Y1LPB-. The locations are posted on a table in the Physiography and Geology section below.

2.) All-weather spring fed seeps or streams:
There are several streams, seeps and water crossings within the boundaries of this project. The locations are posted on a table in the Physiography and Geology section below.

3.) Wet soil.
Wet soil is adjacent to streams.

4.) Rock within 10' of grade, or above grade.
Rock was found within 10' below grade, or above grade on the project. The locations are posted on a table in the Physiography and Geology section below.

5.) High liquid limit, (LL) low Plasticity Index, (PI), soil.
The high LL, low PI soil test results of this project and the micaceous nature of the rock indicate much of the soil will be low strength and light weight.

6.) Wetlands posted on roadway plans.
The wetlands posted on the roadway plans are not within the National Wetland Inventory. It is possible that they are from a study to identify areas amenable to future wetland mitigation or creation.

7.) Artificial Fill
At –L- 437+50 a section of artificial fill is shown with the water table at the fill/residual soil interface. This location is a topographic low, possibly a wet weather run. There is 30 feet of embankment fill to be placed over 15' of artificial fill soil containing trash, with water at the base.

PHYSIOGRAPHY AND GEOLOGY

Physiography
The project is in the Piedmont Physiographic Province, between the Coastal Plain and the Blue Ridge Provinces. The Piedmont physiographic province is characterized as a peneplane that was eroded flat,

then uplifted and is now being incised by the reenergized streams. The ridge tops are the remnants of the original planar surface that was continuous across the piedmont. In the eroding terrain of the piedmont, rock is more likely to be near land surface in the valleys than on the ridge tops.

The expectation is that the ridges and valleys would have a northeast – southwest trend, reflecting the "grain" of the underlying metamorphic rock. On the scale of this project, the gross topographic features have a north 20 east alignment rather than the north 45 to 55 east that would be expected. This may be an area of local structural grain. The –L- alignment crosses most of the little valleys at a 90 degree angle.

Geology

Throughout North Carolina the geologic provinces run northeast – southwest and are divided on the basis of metamorphic grade or dominant rock type. According to the 1985 Geologic Map of North America, this project is entirely within the Milton Belt. The Winston-Salem Geologic quadrangle map does not delineate the Milton Belt, and places Winston Salem within the Charlotte Belt. In either case it is mapped as micaceous schist and gneiss. The Sauratown Mountains Anticlinorium is the geologic belt to the northwest, and the granitic rock of the Charlotte belt is to the southeast.

Soil Properties

The first subdivision in the classification of soil is naming it as residual, embankment fill, or alluvial soil. After that the AASHTO classification is partly based on grain size, but is also an attempt to predict the soil behavior as a construction material.

Residual soil is a product of in-place chemical destruction of the original rock. Chemical weathering reduces rock strength making it more susceptible to physical erosion, transport, and removal by natural processes. The present residual soil thickness is influenced by the interaction between chemical weathering processes and physical weathering processes on the various rock types. For example, the preliminary boring for the U.S.311 bridge at –Y1-30+31 elevation 960', (–L- 409), found 40' of residual soil and ended in residual soil. The borings at –L- 406+25, elevation 970', found rock at a depth of 35'. The dominant soil type encountered on the project was low plasticity A-2 micaceous sandy soil, the expected soil derived from weathering the gneiss and schist of this geologic province. Eventually, chemical weathering processes produce the red A-7 cap clay that appears most frequently on the ridge tops.

Alluvial Soil: Soil grains that have been transported by a natural process, water or wind and deposited away from their original location forms alluvial soil. This process of transport and deposition leaves visible layering in the soil defined by a physical characteristic such as color, grain size, density, or sorting. Alluvial soil was found in this project only associated with floodplain areas. Generally it was sand, tending toward A-1 to A-2-4, the clays staying in suspension and being transported downstream, while the sand dropped out.

Roadway Embankment, Construction may require addition of soil to bring the natural ground surface to the desired elevation. When soil is transported to a new site and compacted it is fill soil. If it is handled under the standards or aegis of the NCDOT, it becomes Roadway Embankment. If some other entity is responsible for the fill placement or the conditions are unknown, the fill is classed as Artificial Fill.

Artificial fill was identified on this project, from -L- 434+57 to -L- 438+00. The profile shows this fill to be on one side of an existing drainage with a steep slope at the base.

Rock Properties

This investigation is concerned with the depth to rock and the areal extent of rock at or above grade. Rock samples were not collected or analyzed in this investigation. Rock in this region is strongly foliated micaceous schist and gneiss.

All cross sections that contain a boring terminated on rock above grade, are included as part of this report. The depth to rock indicated by auger refusal is variable in cross section and profile. Rock was found less than 10' below grade, or above grade in the following locations, extracted from an examination of the profile.

Rock at or near grade

Alignment	Station	to	Station	note
-L-	416+50		416+50	Single point
-L-	453+00		459+50	centerline

Groundwater Properties

Water was found less than 10' below grade, or above grade in the following locations

Alignment	Station	to	Station	Location
-L-	404+00		411+00	
-L-	415+50		417+00	Single point
-L-	420+50		425+50	
-L-	446+00		498+00	Above Grade
-Y1RPB-	30+50		31+50	Below Grade
-Y1LPB-	10+50		12+00	Below Grade

All-weather spring fed seeps or streams:

The stations in the table below record the location of springs seeps or streams, some which may not have year round flow.

Line	Station			Size of stream: eg: 1st order[1].
-L-	374+40		384+00	Wetland[2] on right side.
-L-	387+50		388+50	1st order stream, crosses left to right.
-L-	397+75		398+50	2nd order stream, continues to Y1RPD & Y1RPB
-L-	414+25		414+50	1st order, continues to –Y1-31+50
-L-	427+00		428+25	Wetland, (footnote 2)

[1] A stream without tributaries is first order. Two first order streams converge to make a second order stream. A third order stream requires two second order streams as tributaries.

[2] Wetland per Roadway Plan

-L-	438+00		438+25	1st order stream, crosses left to right
-L-	473+25		473+75	2nd or 3rd order stream, Lower Mill Creek
-Y1RMPB-	20+75		21+25	2nd order stream
-Y1RMPD-	19+75		20+25	2nd order stream
-Y1RMPD-	27+25		27+75	2nd order stream plus wetland, (footnote 2)

GEOTECHNICAL DESCRIPTIVE ANALYSIS

Because this project is neither very large nor very complex, it is not broken up and is described here as 1 "segment".

Physical Description

This segment is 10,900' long, all new alignment, beginning at a grade separation over Norfolk Southern Railroad. Access will be provided to New Walkertown Road, (Y1), by an interchange with 3 ramps and a loop.

The Norfolk Southern grade separation requires that the initial 2850' of the –L- alignment be on embankment, much of it up to 80' thick. The 3000' following is built mostly on cut, then 1300' on embankment up to 50' thick, then 2600' on cut, mostly 40' thick, and then an 800' stream valley crossing mostly on fill up to 40' thick. This section ends at 478+50. Rock is encountered in some of the cut sections, as noted in the table below. There are several stream crossings.

-L-

This segment is mapped in plan on sheets 4 through 11, and profile sheets 15 through 21.Cross sections were printed for areas of shallow rock. The –L- alignment begins at station –L-373+00 elevation 1042, and then at station 375+00, it begins a descent to elevation 932 at station –L-415+00. From there, the road climbs back to elevation 948 at station 434+50, then drops to elevation 882' at station 478+00, and the end of this project.

Cuts and Fills

Alignment	Station	to	Station	Note
-L-	373+00		401+50	Fill, maximum 80' thick
-L-	400+50		413+00	Cut, 25 to 30' thick
-L-	413+00		415+50	Fill, one valley, 20' deep
-L-	415+50		427+50	Cut, 20' – 25' two hill tops
-L-	427+50		429+50	Fill, one valley with pond.
-L-	429+50		431+00	Cut, nearly at grade, one hilltop.
-L-	431+00		444+00	Fill, one valley up to 50' deep[3]
-L-	444+00		470+00	Cut, 20' to 40'
-L-	470+00		478+00	Bridge approaches and Bridge

Geology

This area is not only covered by the state geologic map, but was also included in the 1° x 2° Winston Salem quadrangle mapping. The mapping shows that the project is on Cambrian age metamorphic rocks of the Charlotte belt, northwest of a Pennsylvanian age granite body that intrudes the metamorphic rock.

Soil

Most of this project has residual soil at the surface, and most of the proposed excavation involves residual soil. It is most likely that that the planned embankments will be built from the planned cut areas.

The distribution of soil type for the 226 samples is as follows:

alignment	AASHTO class	Number / total	percent	
-L-	A-2-4	61	27%	Sand
-L-	A-2-5	21	9%	Silty Sand
-L-	A-2-6	2	1%	Silty Sand with Clay
-L-	A-4	39	17%	Silt
-L-	A-5	41	18%	Silt with high LL
-L-	A-6	9	2%	Clayey Silt
-L-	A-7-5	36	16%	Clay
-L-	A-7-6	14	6%	Clay

The samples with less than 36% silt-clay, and PI values less than 11, fall to the sand side, (A-2-4, A-2-5): 36% of total. (Coarser grained, low plasticity)

The clayey or silty sand, (A-2-6, A-2-7) classification specifies no more than 35% silt-clay, and PI greater than 10: Only 2 samples fell in this group. (coarser grained, high plasticity)

Silt soil, (A-4, A-5), specifies more than 35% silt-clay size grains, (-200), and PI values no greater than 10: 35% of total. (Fine grained, low plasticity)

Clay soil, (A-6, A-7), specifies more than 35% clay and PI values above 10: 24% (fine grained, high plasticity)

The total population of soil sample results is skewed toward low PI values, (71%). Only 8 of the 226 samples are Highly Plastic with PI values above PI=30. High liquid limit values are found in 49% of the samples with LL above 41.

No settlement issues are anticipated from the undisturbed residual soil beneath the embankments. The alluvial soil that was encountered adjacent to stream crossings was thin, less than 10' thick, and either loose wet sand or very stiff clay.

When soil with a high liquid limit is compacted, a variation in soil moisture of 1 or 2 percent will not have much effect on the compacted density, but the optimum density (and strength) of this kind of soil, will be relatively low. Historically though, it has been acceptable.

Rock

[3] Embankment will be over artificial fill that has unknown subgrade drainage system.

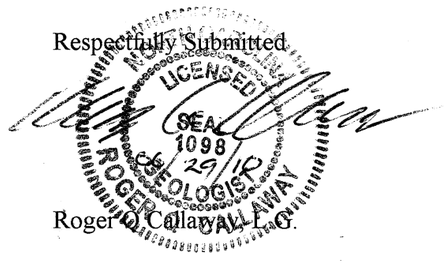
Within the cut section from –L- 444+00 to 470+00, from –L- 452+50 to 461+00, rock was found within 10' of grade. Only one boring found rock above grade.

Groundwater
Static water levels measured during drilling indicate that groundwater will be encountered in much of the cut sections, at or near the planned grade elevation, during construction of this segment.

Align	Station	Grd Elevation	SWT[4] Elevation	Note
-L-	406+24, 84 Lt	952	948	
-L-	409+01, 110 Lt	942	940	
-L-	416+50, 125 Lt	936	936	
-L-	422+00, CL	939	935	
-L-	425+09, 91 Rt	941	936	
-L-	426+00, CL	942	933	
-L-	447+30, 112 Rt	929	924	
-L-	451+50, 110Rt	920	916	Artesian rise
-L-	453+50 CL	916	920	Artesian rise
-L-	456+50 CL	910	916	Artesian rise
-L-	457+25	908	911	
-L-	459+50	906	908	
-L-	462+75	901	900	
-L-	466+00	895	NM[5]	
-L-	469+00	891	NM	

All-Weather Spring-Fed Seeps or Streams:
The locations of the water features are recorded in a table within the Physiography and Geology section above.

Respectfully Submitted,



Roger C. Callaway, L.G.

[4] SWT: Static Water Table
[5] NM = not measured

PROJECT REFERENCE NO.	SHEET NO.
U-2579C	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

8/17/99

-L- ST Sta. 361+71.49

FORSYTH COUNTY
WALKERTOWN CITY LIMITS

WALKERTOWN CITY LIMITS
FORSYTH COUNTY

FORSYTH COUNTY
WINSTON-SALEM CITY LIMITS

JULIA S. GRUBBS

365

370

HARRIS NURSING CARE PROPERTIES, LLC

ISBN/BUS

MTL CANOPY

BST

72" CMP

48" CONC

12" CONC

9" CONC CURB

OLD WALKERTOWN RD 22' BST

SR 2455

NORFOLK SOUTHERN RAILROAD

HAMMICK FARM RD.

RR SIGNAL

BY3-71 PINC 13+03.10

BEGIN
TIP PROJECT U-2579C
-L- POT STA. 369+00.00
U2579C-5 PINC 17+79.80

OAK GROVE MORAVIAN CHURCH TRUSTEES

RESIDUAL

BEGIN GRADING
-L- POT STA. 373+00.00

12' P.S.
GRADE ONLY
12' P.S.
GRADE ONLY
12' P.S.

MATCHLINE L STA. 374+00.00 SEE SHEET 5

S 48°08' 54.4" E

-L-

JOHN & PAULINE STYERS

JOHN L. STYERS, JR.
& ELIZABETH P. STYERS

MT. PLEASANT HOLINESS CHURCH

WAVLIN L.PINNIX

BL-37 POT 5+00.00 =
-BY1- PINC 22+24.49

MARYANN B. SWEAT

ROBERT E. & LISA B. PRUITT

JOHN L. STYERS, JR.
& ELIZABETH P. STYERS

TIMOTHY W. &
SHANNON S. MALONEY

OMDALE DR

JAMES P. SELF

RALPH H. FOOTE

LINDA R. SHAW

FRANCES G. TUCKER

SAMUEL L. TORBIT

JACQUELINE & WILLIE CONRAD, JR.

RESIDUAL

BL-36 PINC 9+94.24
(-L- STA. 370+42.50, 34.5 RT)

JOHN H. MAYFIELD, JR.

-BY3- POT 17+87.87
-BL- PINC 7+69.95 =
BY1A-50 POT 5+00.00 =

CLARENCE E. &
LILLIE M. FARABEE

DEMPSEY BULLOCK

-BY1B- POT 5+00.00
BY1A-51 PINC 9+58.72 =

EXISTING R/W

PROPOSED R/W

PAVED SHOULDER

NOTE:
FOR -L- PROFILE, SEE SHEET 15

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PROJECT REFERENCE NO.	SHEET NO.
U-2579C	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L-
PI Sta 395+20.44
D = 10° 24' 37.2" (LT)
D = 0° 20' 57.7"
L = 2,979.79'
T = 1,494.01'
R = 16,400.00'
SE = NC
RO = 0

APPROXIMATE HISTORIC BOUNDRIES FOR THE HAMMOCK FAMILY FARM

MATCHLINE L STA. 374+00.00 SHEET 4

MATCHLINE -L- STA. 387+00.00 SHEET 6

WINSTON-SALEM CITY LIMITS
FORSYTH COUNTY

PICNIC SHELTER

375

380

-L- PC Sta. 380+26.43

385

MARGARET H. HOERNER & MARY E. HAMMOCK

OAK GROVE MORAVIAN CHURCH TRUSTEES

65KD

10" RCP

BEGIN PAVEMENT
-L- POC STA. 385+00.00

-YIRPB- ST Sta. 10+00.00 =
-L- POC Sta. 386+77.67
(59.00' RT.)

BL-35 PINC 13+92.71
(-L- STA. 374+39.67, 17.85 LT)

BL-34 PINC 17+56.63
(-L- STA. 378+04.04, 1.55 RT)

BL-33 PINC 23+21.00
(-L- STA. 383+68.48, 2.23 RT)

BL-32 PINC 26+35.02
(-L- STA. 386+82.49, 2.51 RT)

300' TAPER

900' FULL LANE

12' P.S.

RESIDUAL

GRADE ONLY

S 48° 08' 54.4" E

S 61° 12' 01.2" E

S 48° 34' 45.8" E -L-

S 49° 56' 40.5" E

ARTIFICIAL FILL

ALLUVIUM

DAM

ARTIFICIAL FILL
(DAM HAS BEEN BREACHED)

OAK GROVE MORAVIAN CHURCH TRUSTEES

MARGARET H. HOERNER & MARY E. HAMMOCK

STEPHEN N. & DEBRA H. RIERSON

GREEN HOUSE

ROGER R. & BARBARA BALEY

12" BST

EXISTING R/W MONUMENT

65.00'

15" CONC

BK WALL

15KD

PAVED SHOULDER

NOTE:
FOR -L- PROFILE, SEE SHEET 16

REVISIONS

8/17/99

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mcclure

PROJECT REFERENCE NO.	SHEET NO.
U-2579C	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

100' 0' 100' 200' 300'

8/17/99

REVISIONS

MATCHLINE -Y1- STA. 39+50.00 SHEET 13

APPROXIMATE HISTORIC BOUNDARY FOR THE HAMMOCK FAMILY FARM

-L-
PI Sta 395+20.44
Δ = 10° 24' 37.2" (LT)
D = 0° 20' 51.7"
L = 2,975.79'
T = 1,494.01'
R = 16,400.00'
SE = NC

Y1
PI Sta 30+99.76
Δ = 22° 13' 10.1" (RT)
D = 0° 37' 25.4"
L = 3,562.39'
T = 1,803.86'
R = 9,186.00'
SE = NC

YILPB
PI Sta 11+39.92
θs = 0° 51' 35.1"
θs = 21° 29' 39.4"
Ls = 210.00'
LT = 139.92'
ST = 72.18'

PI Sta 19+62.96
θs = 21° 29' 09.3"
Ls = 210.00'
LT = 141.05'
ST = 70.95'

PI Sta 19+70.10
D = 129° 33' 19.2" (RT)
D = 201° 27' 46.0"
L = 682.00'
T = 760.00'
R = 286.00'
SE = 08

-YIRPB-
PI Sta 11+51.51
θs = 0° 25' 14.0"
θs = 3° 31' 33.9"
Ls = 240.00'
LT = 151.51'
ST = 88.57'

PI Sta 17+55.26
Δ = 29° 36' 10.2" (LT)
D = 2° 56' 17.7"
L = 1,007.50'
T = 515.26'
R = 1,950.00'
SE = 08

-YIRPB-
PI Sta 23+27.53
θs = 3° 31' 33.2"
Ls = 240.00'
LT = 160.03'
ST = 80.03'

PI Sta 26+47.65
θs = 7° 35' 22.0"
Ls = 240.00'
LT = 160.15'
ST = 80.14'

-YIRPB-
PI Sta 29+42.41
Δ = 26° 51' 34.4" (RT)
D = 6° 21' 58.3"
L = 421.91'
T = 214.90'
R = 900.00'
SE = 08

-YIRPC-
PI Sta 15+68.06
θs = 4° 44' 30.2"
Ls = 240.00'
LT = 160.06'
ST = 80.05'

PI Sta 18+84.60
Δ = 18° 32' 08.7" (RT)
D = 3° 57' 05.2"
L = 469.08'
T = 236.60'
R = 1,450.00'
SE = 08

PI Sta 21+97.13
θs = 4° 44' 30.2"
Ls = 240.00'
LT = 160.06'
ST = 80.05'

PI Sta 25+17.26
θs = 8° 23' 05.1"
Ls = 240.00'
LT = 160.18'
ST = 80.16'

PI Sta 28+92.04
Δ = 39° 34' 05.0" (LT)
D = 6° 59' 14.2"
L = 566.29'
T = 294.96'
R = 820.00'
SE = 08

-YIRPD-
PI Sta 17+40.03
θs = 3° 31' 33.2"
Ls = 240.00'
LT = 160.03'
ST = 80.03'

PI Sta 20+14.52
Δ = 11° 23' 35.4" (LT)
D = 2° 56' 17.7"
L = 387.75'
T = 194.52'
R = 1,950.00'
SE = 08

PI Sta 22+87.78
θs = 3° 31' 33.2"
Ls = 240.00'
LT = 160.03'
ST = 80.03'

PI Sta 26+07.93
θs = 8° 23' 05.1"
Ls = 240.00'
LT = 160.18'
ST = 80.16'

PI Sta 28+02.93
Δ = 15° 59' 28.7" (RT)
D = 6° 59' 14.2"
L = 228.86'
T = 115.18'
R = 820.00'
SE = 08

NEW WALKERTOWN RD

3816 / 4696	9556 / 13636	2216 / 3096
58568 / 84808		61464 / 88984 -L- BELTWAY
1136 / 1616	10292 / 14852	5632 / 7392

YEAR 2014 ADT AND 2034 ADT

NOTE:
FOR -L- PROFILE, SEE SHEET 16 & 17
FOR -Y1- PROFILE, SEE SHEET 22 & 23
FOR -YIRPB- PROFILE, SEE SHEET 24
FOR -YIRPC- PROFILE, SEE SHEET 25 & 26
FOR -YIRPD- PROFILE, SEE SHEET 27
FOR -YILPB- PROFILE, SEE SHEET 28
FOR -YIDET- PROFILE, SEE SHEET 30
FOR -YIDET- PLAN, SEE SHEET 2F & 2G
FOR BRIDGE SKETCH, SEE SHEET 2K

MATCHLINE -L- STA. 387+00.00 SHEET 5

MATCHLINE -L- STA. 414+50.00 SHEET 7

MATCHLINE -Y1- STA. 20+00.00 SHEET 12

PROP. MONOLITHIC CONCRETE ISLAND

PAVED SHOULDER

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mcginnis

PROJECT REFERENCE NO.	SHEET NO.
U-2579C	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

8/17/99

MATCHLINE -L- STA. 414+50.00 SHEET 6

MATCHLINE -L- STA. 427+50.00 SHEET 8

MATCHLINE -YIRPD- STA. 27+00.00 SHEET 6

CHARLES R. DILLON

CHARLES R. & JUDY DILLON

MANYON L. IDOL, JR.

CARL J. MILLER

ALDON M. & BRENDA K. IDOL

-L- TS Sta. 417+61.30

-L- SC Sta. 420+61.30

-YIRPD- SC Sta. 26+87.75

-YIRPD- CS Sta. 22+07.75

-YIRPD- SRS Sta. 24+47.75

-YIRPD- SC Sta. 18+20.00

-YIRPD- TS Sta. 15+80.00

-YIRPD- STA. 15+46.23
BEGIN -YIRPD- PAVEMENT
END -L- PAVEMENT

RESIDUAL

ALLUVIUM

D

S 58°33'31.8" E

N 72° 45' 16.9" W

PI -26 PINC 63+61.80 =
-BY5- POT 11+28.61
(-L- STA. 424+00.28, 5.52 LT)

OBLITERATE AND GRADE TO DRAIN

PAVED SHOULDER

OBLITERATE AND GRADE TO DRAIN

-L-

PIs Sta 419+61.31	PI Sta 431+38.42
Θs = 1°52'13.3"	Δ = 26°23'06.6" (LT)
Ls = 300.00'	D = 1°14'48.9"
LT = 200.01'	L = 2,116.03'
ST = 100.01'	T = 1,077.12'
	R = 4,595.00'
	SE = 05

-YIRPD-

PI Sta 28+02.93	PIs Sta 26+07.93	PIs Sta 22+87.78	PI Sta 20+14.52	PIs Sta 17+40.03
Δ = 15°59'28.7" (RT)	Θs = 8°23'05.1"	Θs = 3°31'33.2"	Δ = 11°23'35.4" (LT)	Θs = 3°31'33.2"
D = 6°59'14.2"	Ls = 240.00'	Ls = 240.00'	D = 2°56'17.7"	Ls = 240.00'
L = 228.86'	LT = 160.18'	LT = 160.03'	L = 387.75'	LT = 160.03'
T = 115.18'	ST = 80.16'	ST = 80.03'	T = 194.52'	ST = 80.03'
R = 820.00'			R = 1,950.00'	
			SE = 08	

NOTE:
FOR -L- PROFILE, SEE SHEET 17 & 18
FOR -YIRPD- PROFILE, SEE SHEET 27

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mwilkes

PROJECT REFERENCE NO.	SHEET NO.
U-2579C	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

8/17/99

-L-
PI Sta 431+38.42
Δ = 26° 23' 06.6" (LT)
D = 1° 14' 48.9"
L = 2,116.03'
T = 1,077.12'
R = 4,595.00'
SE = 05

FARRELL B. & MARILYN BYERS

FARRELL B. & MARILYN E. BYERS

BL-25 PINC 69+25.50
(-L- STA. 429+64.66, 4.53 RT)

50' PIEDMONT NATURAL GAS EASEMENT

48" WW

SOND ACCESS EASEMENT

GR

RW ACCESS EASEMENT

RESIDUAL

435

440

ALLUVIUM

KEVIN S. SELL & LYNNE S. FAZENBAKER

RESIDUAL

BL-24 PINC 74+17.12
(-L- STA. 434+57.12, 17.47 LT)

2SFD

430

RONNIE L. & ROBIN H. BROWN

1SFD

GREG E. & LAUREN B. WILLARD

ARTIFICIAL FILL

RESIDUAL

12" P.S.

MATCHLINE -L- STA. 427+50.00 SHEET 7

ALLUVIUM

WAKEFORD CITY LIMITS

-YIRPD-
N 12° 15' 16.9" W

CAT-1

GRAU-350

RESIDUAL

ARTIFICIAL FILL

WET AREA

BL-23 PINC 78+62.86
(-L- STA. 438+81.69, 85.25 LT)

MICHAEL E. & ETTA E. SMITH

48"-CONC

25FD

CONC

300' TAPER

900' FULL LANE

RESIDUAL

ARTIFICIAL FILL

MANYON L. IDOL, JR.

-L- POC Sta. 430+49.79
-YIRPD- POT Sta. 10+00.00

RONNIE L. & ROBIN H. BROWN

RESIDUAL

MATCHLINE -L- STA. 440+50.00 SHEET 9

PAVED SHOULDER

NOTE:
FOR -L- PROFILE, SEE SHEET 18

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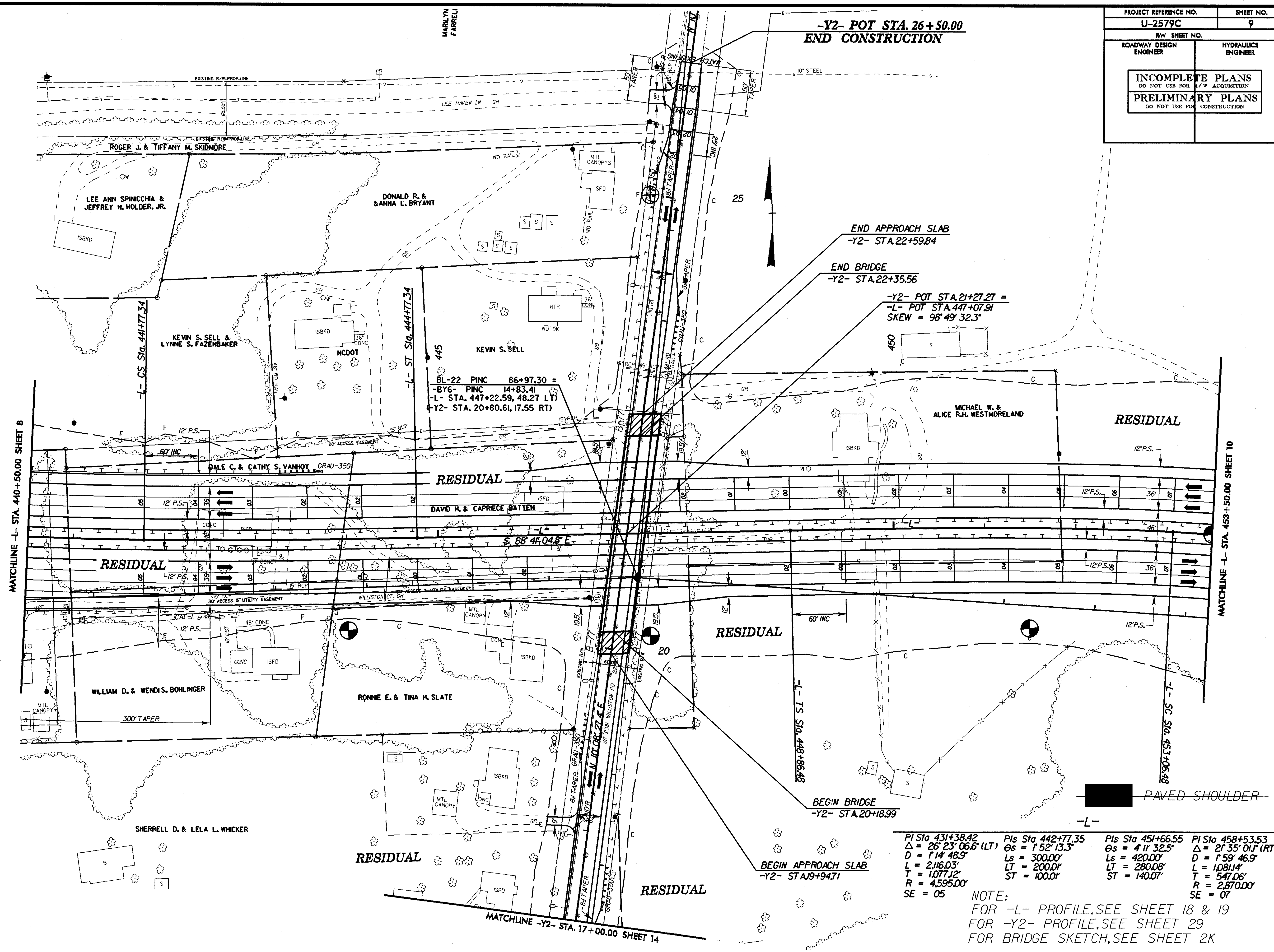
microlites at 1:2.0347

PROJECT REFERENCE NO.	SHEET NO.
U-2579C	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



PI Sta 431+38.42	PIs Sta 442+77.35	PIs Sta 451+66.55	PI Sta 458+53.53
Δ = 26° 23' 06.5" (LT)	θs = 1° 52' 13.3"	θs = 4° 11' 32.5"	Δ = 21° 35' 01.1" (RT)
D = 1° 14' 48.9"	Ls = 300.00'	Ls = 420.00'	D = 1° 59' 46.9"
L = 2,116.03'	LT = 200.01'	LT = 280.08'	L = 1,081.14'
T = 1,077.12'	ST = 100.01'	ST = 140.07'	T = 547.06'
R = 4,595.00'			R = 2,870.00'
SE = 05			SE = 07

NOTE:
FOR -L- PROFILE, SEE SHEET 18 & 19
FOR -Y2- PROFILE, SEE SHEET 29
FOR BRIDGE SKETCH, SEE SHEET 2K

REVISIONS

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
U-2579C	10
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L-
PI Sta 458+53.53
Δ = 21° 35' 01.1" (RT)
D = 1° 59' 46.9"
L = 1,081.14'
T = 547.06'
R = 2,870.00'
SE = 07

PIs Sta 465+27.69
θs = 4° 11' 32.5"
Ls = 420.00'
LT = 280.08'
ST = 140.07'

455 460 465

MICHAEL W. WESTMORELAND

BL-21 PINC 97+52.66
(-L- STA. 457+96.87, 60.06 LT)

RESIDUAL

GRAU-350 CAT-1

MATCHLINE -L- STA. 453+50.00 SHEET 9

MATCHLINE -L- STA. 465+50.00 SHEET 11

-L- CS Sta. 463+87.62

12' P.S.

36'

46'

8'

SOIL

60' INC

MICHAEL W. WESTMORELAND

TOMMY & RUBY WILLIAMSON

RUFUS, JR. & WILMA JAMES

POOL

PAVED SHOULDER

NOTE:
FOR -L- PROFILE, SEE SHEET 19

REVISIONS

8/17/99

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mcline

PROJECT REFERENCE NO.	SHEET NO.
U-2579C	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS 8/17/99

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microstation SS1 (ES1220447

1252-1253

RESIDUAL

-L-
PI Sta 458+53.53
Δ = 21° 35' 01" (RT)
D = 1° 59' 46.9"
L = 1,081.14'
T = 547.06'
R = 2,870.00'
SE = 07

PIs Sta 465+27.69
θs = 4° 11' 32.5"
Ls = 420.00'
LT = 280.08'
ST = 140.07'

-L- ST Sta. 468+07.62

ALLUVIUM

BEGIN APPROACH SLAB
-L- POT STA. 471+55.36

BEGIN BRIDGE
-L- POT STA. 472+00.00

LOWER MUDDY CREEK

END TIP PROJECT U-2579C STA. 478+00.00
TIE MEDIAN GUARDRAIL TO U-2579B
BEGIN TIP PROJECT U-2579B STA. 478+00.00

U2579B BL-13 POT 112+74.68 =
U2579B POT 5+00.00
(-L- STA. 473+26.06)

END APPROACH SLAB
-L- POT STA. 474+97.40

BL-20 PINC 106+48.47
(-L- STA. 466+99.56, 19.99 LT)

MATCHLINE -L- STA. 465+50.00 SHEET 10

300' TAPER

12'P.S.

12'8.4" FULL LANE

CAT-I

B-77

GRAU-350

60' INC.

1153' FULL LANE

END APPROACH SLAB
-L- POT STA. 475+19.64

END BRIDGE
-L- POT STA. 474+75.00

BEGIN APPROACH SLAB
-L- POT STA. 471+97.60

WALKERTOWN CITY LIMITS
FORSYTH COUNTY

PEGGY J. CHURCH

MATCHLINE -L- STA. 478+50.00 SHEET 12

PAVED SHOULDER

NOTE:
FOR -L- PROFILE, SEE SHEET 19& 20

PROJECT REFERENCE NO.	SHEET NO.
U-2579C	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y1-
PI Sta 30+99.76
Δ = 22° 13' 10.7" (RT)
D = 0° 37' 25.4"
L = 3,562.39'
T = 1,803.86'
R = 9,186.00'
SE = NC

BY4C-110 POT 7+85.72

-Y1- POC Sta. 15+17.08 =
-DR2- POT Sta. 10+00.00

-Y1- POT Sta. 10+00.00

BY4B-100 POT 5+00.00

U2579C-2 POT 43+93.53 =
-BY4B- POT 8+28.45 =
-BY4C- POT 5+00.00

-Y1- PC Sta. 12+95.90

BEGIN CONSTRUCTION
-Y1- POT STA. 11+00.00

POT Sta. 12+15.11

BY4-80 PINC 33+72.15
(-Y1- STA. 18+70.12, 40.52 LT)

JAMES B. & RITA D. WOODARD
WILLEM INMAN
RUSSELL A. MITCHELL
THURMAN & WANDA SPAINHOUR
EASTSIDE PROPERTIES, LLC
DARYL L. & SHERRY L. MATHERLY
CHARONA A.T. REMILLARD
DOUGLAS E. & CYNTHIA DONLEY
DONALD G. & SALLY T. BARNEYCASTLE
DONNA L. MILLER
WANDA SPAINHOUR THURMAN &
PAT R. & KAREN D. FULP
JAMES T. & ELIZABETH M. MARSHALL
DARREL C. & MYRNA C. THROCKMORTON
CLARENCE SELL
BONNIE S. PEDDYCORD & MANYON L. IDOL, JR.
NANCY S. McGLAMERY
(MARIE W. & WILLIAM F. MOTSINGER) VICKY MOTSINGER COMBS
JUDY W. HAYES
RAINBOW TABERNACLE OF FAITH MINISTRIES, INC
THOMAS O. & RUBY R. WALKER
FRED T. CAUDLE
ROBERT L. & RUTHERFORD JOHNSON
MICHAEL L. & KEELY H. GREER

RESIDUAL
525' TRANSITION LT.
525' TRANSITION RT.
300' DITCH TRANSITION LT.
100' TAPER
BEGIN +16.60
MATCHLINE -Y1- STA. 20+00.00 SHEET 6

N 20° 00' 53.3" E
S 17° 52' 48.7" W
N 45° 35' 01.2" W
N 76° 01' 43.9" W
S 82° 37' 10.7" E

US 311 24' BST
SR 2393 SELL RD 18' BST
20' ACCESS & UTILITY EASEMENT

PAVED SHOULDER
PROP. 5" CONC. MONOLITHIC ISLAND

NOTE:
FOR -Y1- PROFILE, SEE SHEET 22

REVISIONS

8/17/99

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jmcginnis

PROJECT REFERENCE NO.	SHEET NO.
U-2579C	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y1-
PI Sta 30+99.76
Δ = 22° 13' 10.7" (RT)
D = 0° 37' 25.4"
L = 3,562.39'
T = 1,803.86'
R = 9,186.00'
SE = NC

FORSYTH COUNTY
WALKERTOWN CITY LIMITS

JOHN A. & MARGARET G. FOLK
RESIDUAL
ROBERT B. STIMPSON
JOHN H. VANHOY
RESIDUAL
DONALD G. & GEORGIA B. BARNEYCASTLE
BM #2
-BL- STA 48+32
1693' LT
ELEV. 985.60
RESIDUAL
H.V. & BETTY C. JENKINS & JILES CARDWELL
POT Sta. 50+01.83

-YIDET-
525' TRANSITION LT.
100' TAPER
15" RCP
EXISTING R/W
4 P.S.
10'R
50' TAPER
FORSYTH COUNTY
WALKERTOWN CITY LIMITS
N 42° 14' 04.0" E
-Y1-
12" RCP
24"
MATCHLINE -Y1- STA. 39+00.00 SHEET 6
S 42° 15' 22.6" W
RESIDUAL FORSYTH COUNTY
END 455.76
BST.
ISBKAPT
525' TRANSITION RT.
30" RCP
30' ACCESS EASEMENT
FERRELL CONSTRUCTION COMPANY
LINDA F. OVERBY CHURCH
CHRISTOPHER R. ROTHROCK
YVONNE SWAIM KILBOURNE
RESIDUAL
L-2579C-4 POT
L STA. 46+98.17 (22' LT)
50+00.00
25' TAPER
50' TAPER
SOIL
R. KEITH ROTHROCK
-Y1- PT Sta. 48+58.29
DURA H. DAVIS
END CONSTRUCTION
-Y1- PT STA. 48+50.00
WALKERTOWN CITY LIMITS
FORSYTH COUNTY

PAVED SHOULDER
PROP. 5" MONOLITHIC CONCRETE ISLAND

NOTE:
FOR -Y1- PROFILE, SEE SHEET 23
FOR -YIDET- PROFILE, SEE SHEET 30
FOR -YIDET- PLAN, SEE SHEET 21 & 2J

REVISIONS
8/17/99

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mcclure

PROJECT REFERENCE NO.	SHEET NO.
U-2579C	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

8/17/99

BEGIN CONSTRUCTION
-Y2- POT STA. 10+00.00

-Y2- POT Sta. 10+00.00

LEWIS W. & ETHEL C. IDOL

KATHRYN R. LEWIS
THOMAS J. &

C. LORRAINE KEARNS
EARL W., III &

JULIA L. POWELL

DENNIS LEWIS
JERRY B. LEWIS &

SHERRELL D. & LEE

RESIDUAL

N 10° 08' 27.4" E

-Y2-

MATCHLINE -Y2- STA. 17+00.00 SHEET 9

BY6-131 POT 24+55.21
-Y2- STA. 11+09.55, (17.36 RT)

MICAH W. WOLFINGTON

DAVID M. EWALD

CHESTER D. STULTZ

RESIDUAL

PAVED SHOULDER

NOTE:
FOR -Y2- PROFILE, SEE SHEET 29

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microstation 8.1 (SELECTseries 2)

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-2579C	15
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

-L-

PI = 370+89.00
EL = 1,065.56'
K = 431
VC = 2,790'
SSD = 964'

FUTURE CONSTRUCTION
PROJECT U-2579D

(+)3.2400%
(-)3.2400%

1031.61'

1041.00'

BEGIN GRADE ONLY
-L- STA. 373+00.00
ELEV. 1042.45

SS-1
MS-1
SS-2

372+00.00 -L-
150.00 LT.

RESIDUAL

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

RED-TAN STIFF MOIST SLI. MICA. CLAYEY SANDY SILT (A-5)

14 (PP2.5)
12
BT
DRY
(7/23/08)

OLD WALKERTOWN ROAD
-L- STA. 367+90.00

NORFOLK SOUTHERN RAILROAD
-L- STA. 368+56.00

HAMMOCK FARM ROAD
-L- STA. 369+19.00

SEE SHEET 4 FOR PLAN VIEW

1130 1120 1110 1100 1090 1080 1070 1060 1050 1040 1030 1020 1010 1000 990 980 970 960 950 940 930

361+00 362+00 363+00 364+00 365+00 366+00 367+00 368+00 369+00 370+00 371+00 372+00 373+00 374+00 375+00

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mcguire

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-2579C	16
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

BM 1
Railroad spike set in base of 30" Oak Tree
behind Oak Grove Moravian Church Cemetery.
N 878,791 E 1,649,815
-L- STA. 378+82.39 640.4788' LT
ELEV. 999.15'

1120 1110 1100 1090 1080 1070 1060 1050 1040 1030 1020 1010 1000 990 980 970 960 950 940 930 920

1041.00

(-)3.2400%

1006.89

BEGIN PAVEMENT
-L- STA. 385+00.00

SS-3
MS-3
SS-4
376+00.00 -L-
150.00 LT.
RESIDUAL
TAN TO OLIVE-TAN STIFF MOIST LOW PLASTIC SLI MICA TO MICA SILTY SANDY CLAY (A-7-5)
(PI=12)
OLIVE TAN MED. STIFF TO STIFF MOIST MICA CLAYEY SANDY SILT (A-4)
BT DRY (7/2308)

SS-8
SS-9
377+85.00 -L-
CL
RESIDUAL
TAN-WHITE & OLIVE V. STIFF DRY LOW PLASTIC SILTY SANDY CLAY (A-6)
(PI=15)
OLIVE-TAN-WHITE MED. DENSE DRY SLI. MICA SILTY CLAYEY SAND (A-2-4)
BT DRY (7/2308)

PROFILE -L- 80.00 RT.
SS-5
SS-6
SS-7
377+75.00 -L-
80.00 RT.
ALLUVIUM
GRAY-TAN V. SOFT TO SOFT MOIST TO WET LOW PLASTIC SILTY SANDY CLAY (A-7-5)
ARTIFICIAL FILL
DAM
GROUND SURFACE
GRAY-TAN SOFT WET V. MICA. SILTY SANDY CLAY (A-7-5)
RESIDUAL (PI=15)
OLIVE SOFT WET V. MICA. CLAYEY SANDY SILT (A-5)
OLIVE V. LOOSE WET V. MICA. SILTY SAND (A-2-5)
07/08
BT

SS-10
MS-10
SS-11
380+50.00 -L-
CL
RESIDUAL
RED-TAN & LT. OLIVE STIFF MOIST MED. PLASTIC SANDY CLAY (A-7-6)
(PI=22)
LT. OLIVE MED. STIFF WET CLAYEY SANDY SILT (A-5)
BT DRY (7/2308)

SS-16
MS-16
SS-17
382+65.00 -L-
50.00 LT.
RESIDUAL
RED TO RED-TAN STIFF MOIST CLAYEY SANDY SILT (A-6)
(PI=14)
TAN MED. STIFF TO STIFF MOIST LOW PLASTIC SILTY SANDY CLAY (A-7-5)
BT DRY (7/2308)

382+50.00 -L-
225.00 RT.
GROUND SURFACE
ALLUVIUM
GRAY-TAN V. SOFT TO SOFT MOIST TO WET CLAYEY SANDY SILT (A-4) W/GRAVEL @ BOTTOM
RESIDUAL
OLIVE-TAN V. LOOSE SAT. V. MICA SILTY CLAYEY SAND (A-2-4)
OLIVE-TAN SOFT SAT. V. MICA CLAYEY SANDY SILT (A-4)
07/08
BT

SS-12
SS-13
SS-14
SS-15

S-24
S-25
385+00.00 -L-
CL
RESIDUAL
TAN TO RED-TAN MED. STIFF MOIST HIGH PLASTIC SANDY CLAY (A-7-6)
(PI=32)
(PI=35)
BT DRY (7/2408)

S-26
S-27
387+75.00 -L-
CL
RESIDUAL
TAN MED. STIFF DRY CLAYEY SANDY SILT (A-4)
BT DRY (7/2408)

SEE SHEET 5 & 6 FOR PLAN VIEW

375+00 376+00 377+00 378+00 379+00 380+00 381+00 382+00 383+00 384+00 385+00 386+00 387+00 388+00 389+00

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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-2579C	17
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

-L-

1006.89

(-)3.2400%

96.53

SS-22
SS-23
391+00.00 -L-
CL

SS-20
MS-20
SS-21
392+57.33 -L-
96.54 RT.
=
14+50 -YIRPC-
CL

SS-18
MS-18
SS-19
394+00.00 -L-
CL

SS-49
MS-49
SS-50
SS-51
401+50.00 -L-
CL

SS-45
SS-46
SS-47
SS-48
398+35.00 -L-
CL

13
49
60/7"
TAN STIFF TO HARD MOIST CLAYEY SANDY SILT (A-4)
RESIDUAL
(SEV. WEATHERED CRYSTALLINE ROCK)
WEATHERED ROCK
AR
DRY
(7/23/08)
CRYSTALLINE ROCK

24
(P=11)
15
RESIDUAL
RED-TAN TO TAN V. STIFF MOIST MED. PLASTIC SILTY SANDY CLAY (A-7-6)
OLIVE & TAN STIFF TO V. STIFF MOIST V. MICA. CLAYEY SANDY SILT (A-4)
BT
DRY
(7/23/08)

8
5
RESIDUAL
LT. TAN MED. STIFF MOIST CLAYEY SANDY SILT (A-4)
BT
DRY
(7/23/08)

ALLUVIUM
GRAY LOOSE DRY SAND (A-2)
RESIDUAL
7
9
32
58
34
01/08
RESIDUAL
TAN & OLIVE-TAN MED. STIFF TO STIFF DRY CLAYEY SANDY SILT (A-4)
OLIVE & PINK & TAN DENSE & V. DENSE MOIST CLAYEY SILTY SAND (A-2-4) TO SILTY SAND (A-2-4)
BT

13
30
26
RESIDUAL
TAN & OLIVE STIFF MOIST SANDY SILT (A-4)
OLIVE MED. DENSE TO DENSE MOIST SILTY SAND (A-2-4)
OLIVE V. STIFF MOIST SANDY SILT (A-4)
BT
DRY
(7/23/08)

SEE SHEET 6 FOR PLAN VIEW

1070 1060 1050 1040 1030 1020 1010 1000 990 980 970 960 950 940 930 920 910 900 890 880 870

389+00 390+00 391+00 392+00 393+00 394+00 395+00 396+00 397+00 398+00 399+00 400+00 401+00 402+00 403+00

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-2579C	18
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

406+24.52 -L- 84.26 LT. = 11+25 -YILPB- 20.00 RT.
SS-52 SS-53 SS-54 SS-55 MS-55 SS-56 SS-57

409+01.36 -L- 110.00 LT. = 30+35 -YI- CL
SS-92 SS-93 SS-94 SS-95 SS-96 SS-97 SS-98

PI = 411+94.00
EL = 932.56'
K = 197
VC = 766'

416+50.00 -L- 125.00 LT.
SS-105 SS-106 MS-106 SS-107

414+40.00 -L- 140.00 RT
SS-99 SS-100 SS-101

RESIDUAL
RED-TAN & RED V. STIFF MOIST HIGH TO MED. PLASTIC SILTY SANDY CLAY (A-7-6, A-7-5)
RED-TAN & OLIVE LOOSE MOIST V. MICA. SILTY SAND (A-2-5)
RED-TAN & OLIVE MED. STIFF WET V. MICA. SANDY SILT (A-5)
RED-TAN & OLIVE LOOSE TO V. DENSE SAT. V. MICA. SILTY SAND (A-2-4) (MOSTLY MICA @ 29.0)
CRYSTALLINE ROCK
BT
RED-BRN MED. STIFF MOIST MED. PLASTIC SILTY SANDY CLAY (A-7-5)
TAN-BRN LOOSE TO MED. DENSE MOIST TO WET V. MICA. TO MICA. CLAYEY SILTY SAND & SILTY SAND (A-2-5, A-2-4) (MOSTLY MICA @ 23.5)
TAN-BRN STIFF WET MICA. SANDY SILT (A-5)
TAN-BRN MED. DENSE TO DENSE SAT. SLI. MICA. SILTY SAND (A-2-4)
96.53
(-)3.2400%
(+)0.6500%
ALLUVIUM
GRAY LOOSE MOIST SAND & CLAYEY SAND (A-2-4)
GRAY DENSE MOIST MICA. SAND (A-2-4)
WEATHERED ROCK (SEV. WEATH. CRYSTALLINE ROCK)
RED TO RED-TAN STIFF MOIST LOW PLASTIC SILTY SANDY CLAY (A-7-6)
OLIVE & TAN STIFF MOIST CLAYEY SANDY SILT (A-5)
OLIVE & WHITE DENSE MOIST SILTY SAND (A-2-4)
WEATHERED ROCK (SEV. WEATHERED CRYSTALLINE ROCK)
93.95

BM 2
Railroad spike set in base of 36" Oak Tree.
In front of 4386 New Walkertown Rd.
40' West of Western Edge of Pavement.
60' North of U2579C-4.
N 877,996 E 1,652,824
-L- STA. 408+73.33 1817.5160' LT
ELEV. 985.60'

-L- STA. 409+03.84
-Y1- STA. 29+24.97

SEE SHEET 6 & 7 FOR PLAN VIEW

422+00.00 -L- CL
SS-127 SS-128 SS-129 SS-130 SS-131 SS-132

419+00.00 -L- CL
SS-108 SS-109 SS-110 MS-110 SS-111

425+09.27 -L- 91.39 RT. = 15+50 -YIRPD- CL
SS-121 SS-122 SS-123 SS-124 SS-125 SS-126

426+00.00 -L- CL
SS-133 SS-134 SS-135 SS-136 SS-137

427+75.00 -L- 75.00 LT.
PROFILE -L- 75.00 LT.
SS-138 SS-139 SS-140

491+00.00 -L- 76.00 RT.
SS-141 SS-142 MS-142 SS-143 SS-144

RESIDUAL
RED-TAN V. STIFF MOIST MED. PLASTIC SILTY SANDY CLAY (A-7-6)
RED-TAN & TAN STIFF MOIST SLI. MICA. TO MICA. CLAYEY SANDY SILT (A-4)
OLIVE & TAN & WHITE MED. DENSE MOIST MICA. TO SLI. MICA. SILTY SAND (A-2-4)
TAN STIFF WET SLI. MICA. CLAYEY SANDY SILT (A-4)
RED-TAN TO TAN & OLIVE DENSE MOIST TO DRY CLAYEY SAND (A-2-4)
WEATHERED ROCK (SEV. WEATH. CRYSTALLINE ROCK)
OLIVE-TAN MED. DENSE MOIST V. MICA. SAND (A-2-4) TO SILTY SAND (A-2-5)
OLIVE-TAN STIFF MOIST V. MICA. CLAYEY SANDY SILT (A-5)
DRY (8/7/08)
RED & OLIVE STIFF MOIST MICA. CLAYEY SANDY SILT (A-5)
OLIVE LOOSE MOIST TO WET MICA. SILTY SAND (A-2-4, A-2-5)
RED STIFF TO V. STIFF MOIST LOW PLASTIC SILTY SANDY CLAY (A-7-5)
RED-TAN & TAN STIFF MOIST TO WET MICA. CLAYEY SANDY SILT (A-5)
DRY (8/7/08)
RED-TAN STIFF TO V. STIFF MOIST MED. PLASTIC SILTY SANDY CLAY (A-7-5)
TAN MED. STIFF WET MICA. CLAYEY SANDY SILT (A-6, A-4)
ALLUVIUM
GRAY-TAN V. SOFT TO SOFT MOIST CLAYEY SANDY SILT (A-4)
GROUND SURFACE
DILLON FARM RD
POND
935.85
7+10.6500%

BORING DESCRIPTIONS
(A) RED-TAN STIFF MOIST HIGH PLASTIC SILTY SANDY CLAY (A-7) (RESIDUAL)
(B) RED-TAN STIFF MOIST SLI. MICA. CLAYEY SANDY SILT (A-5) (RESIDUAL)
(C) RED-TAN TO OLIVE-TAN & OLIVE LOOSE TO MED. DENSE MOIST TO WET V. MICA. CLAYEY SILTY SAND & SILTY SAND (A-2-5, A-2-4) (JUST MICA @ 23.9) (RESIDUAL)

SEE SHEET 7 & 8 FOR PLAN VIEW

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PROJECT REFERENCE NO.	SHEET NO.
U-2579C	19
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PI = 437+43.00
EL = 949.13'
K = 329
SSD = 843'
VC = 900'

-L-

SS-141
SS-142
MS-142
SS-143
SS-144

431+00.00 -L-
75.00 RT.

RESIDUAL
RED STIFF TO V. STIFF MOIST LOW PLASTIC SILTY SANDY CLAY (A-7-5)

RESIDUAL

RED-TAN & TAN STIFF MOIST TO WET MICA. CLAYEY SANDY SILT (A-5)

BT DRY (8/1/08)

SS-145
MS-145
SS-146

434+00.00 -L-
50.00 LT.

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

RESIDUAL

TAN LOOSE MOIST MICA. SILTY SAND (A-2-4)

434+50.00 -L-
200.00 RT.

BT DRY (8/13/08)

ARTIFICIAL FILL

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

BT DRY (8/13/08)

435+50.00 -L-
50.00 LT.

ARTIFICIAL FILL

RESIDUAL

BT DRY (8/13/08)

SS-147

436+50.00 -L-
40.00 RT.

ARTIFICIAL FILL
RED-TAN V. STIFF MOIST SLI. MICA. MED. PLASTIC SILTY SANDY CLAY (A-7-6) W/RK. FRAGS.

BT DRY (8/13/08)

SS-155
SS-156
SS-157

437+50.00 -L-
60.00 LT.

ARTIFICIAL FILL
OLIVE-TAN SOFT MOIST TO WET SANDY SILTY CLAY (A-7) W/TRASH TO GRAY MED. STIFF WET LOW PLASTIC SILTY SANDY CLAY (A-6) W/ROOTS

SS-154

436+90.00 -L-
180.00 RT.

ARTIFICIAL FILL

RESIDUAL

BT DRY (8/13/08)

WCAVED 08/08

RESIDUAL

RED-TAN STIFF TO SOFT WET TO SAT. SLI MICA. MED. PLASTIC SILTY SANDY CLAY (A-7-5, A-7-6)

SS-164
SS-165

439+60.00 -L-
90.00 RT.

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

WHITE-TAN & RED MED. DENSE MOIST MED. PLASTIC CLAYEY SAND (A-2-6)

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

BT DRY (8/13/08)

RESIDUAL

RED TO RED-TAN & TAN STIFF TO SOFT MOIST TO WET LOW PLASTIC SANDY SILTY CLAY (A-7-5)

SS-166
SS-167

444+00.00 -L-
100.00 RT.

RESIDUAL

BT DRY (8/13/08)

933.34

(+)0.6500%

(-)2.0856%

BORING DESCRIPTIONS

- (A) RED-TAN MED. STIFF MOIST SILTY SANDY CLAY (A-7) W/CONSTRUCTION DEBRIS (ARTIFICIAL FILL)
- (B) TAN-OLIVE MED. STIFF MOIST SILTY SANDY CLAY (A-7) (ARTIFICIAL FILL)
- (C) RED MED. STIFF MOIST SLI. MICA. SILTY SANDY CLAY (A-7) (RESIDUAL)
- (D) RED-TAN STIFF MOIST MED. PLASTIC SLI. MICA. SILTY SANDY CLAY (A-7-6) (RESIDUAL)
- (E) TAN & OLIVE MED. STIFF TO STIFF MOIST MED. PLASTIC SILTY SANDY CLAY (A-7-6) W/ROOTS & TWIGS (ARTIFICIAL FILL)
- (F) ORANGE-TAN-PINK MED. STIFF TO STIFF MOIST SLI. MICA. SANDY CLAYEY SILT (A-4) (RESIDUAL)

SEE SHEET 8 & 9 FOR PLAN VIEW

970 960 950 940 930 920 910 900 890 880

431+00 432+00 433+00 434+00 435+00 436+00 437+00 438+00 439+00 440+00 441+00 442+00 443+00 444+00 445+00

BM 3
Railroad spike set in base of 30" White Oak Tree. 100' West of western Edge of Pavement of Williston Rd.
N 876,348 E 1,655,376
-L- STA. 447+17.91 1064.5907' LT
ELEV. 957.76'

SR 2381 WILLISTON RD

SS-168
SS-169
SS-170
SS-171
SS-172
SS-173
SS-174
SS-175

447+30.97 -L-
112.14 RT.
=
20+20 -Y2-
40.00 RT.

RESIDUAL

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

RED-TAN STIFF MOIST CLAYEY SANDY SILT (A-5)

WHITE-OLIVE & TAN TO WHITE-TAN & OLIVE MED. DENSE WET SLI. MICA. SILTY SAND (A-2-5, A-2-4)

WCAVED 08/08

BT

-L- STA. 447+07.91
-Y2- STA. 21+27.27

933.34

SS-176
SS-177
SS-178
SS-179

451+50.00 -L-
110.00 RT.

RESIDUAL

RED MED. STIFF MOIST SLI. MICA. CLAYEY SANDY SILT (A-5)

OLIVE & TAN LOOSE TO MED. DENSE MOIST TO SAT. CLAYEY SILTY SAND TO SILTY SAND (A-2-5) W/RK. FRAGS.

WCAVED 08/08

08/08

BT

SS-180
SS-181
SS-182
SS-183
SS-184
MS-184
SS-185

453+50.00 -L-
CL

PI = 454+87.00
EL = 912.76'
K = 380
VC = 200'

RESIDUAL

RED V. STIFF MOIST LOW PLASTIC SILTY SANDY CLAY (A-7-5)

RED-TAN STIFF MOIST SLI. MICA. CLAYEY SANDY SILT (A-5)

TAN TO DK. OLIVE-GRAY LOOSE TO MED. DENSE MOIST V. MICA. TO NON MICA. SILTY SAND (A-2-5, A-2-4)

WCAVED 08/08

08/08

(-)12.0856%

(-)11.5597%

WEATHERED ROCK

(SEV. WEATH. CRYSTALLINE ROCK)

CRYSTALLINE ROCK

AR

WHITE-GRAY-BLACK (SALT & PEPPER) & GRAY-OLIVE TO GRAY & WHITE MED. DENSE TO V. DENSE DRY TO SAT. SLI. MICA. & MICA. CLAYEY SAND (A-2-4) TO CLAYEY SILTY SAND (A-2-4) & SAND (A-2-6, A-2-5) W/SEV. WEATH. CRYSTALLINE ROCK & CRYSTALLINE ROCK LAYERS

SS-186
SS-187
SS-188
SS-189

456+50.00 -L-
CL

RED V. STIFF MOIST SILTY SANDY CLAY (A-7)

WCAVED 08/08

08/08

AR

CRYSTALLINE ROCK

457+25.00 -L-
60.0 LT

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

RESIDUAL

RED-TAN MED. STIFF MOIST SANDY SILT (A-5)

WCAVED 08/08

08/08

AR

CRYSTALLINE ROCK

WEATHERED ROCK (SEV. WEATHERED CRYSTALLINE ROCK)

906.32

SEE SHEET 9 & 10 FOR PLAN VIEW

980 970 960 950 940 930 920 910 900 890

445+00 446+00 447+00 448+00 449+00 450+00 451+00 452+00 453+00 454+00 455+00 456+00 457+00 458+00 459+00

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PROJECT REFERENCE NO.	SHEET NO.
U-2579C	20
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

-L-

SS-190
SS-191
SS-192
SS-193
MS-193
459+50.00 -L-
CL

RESIDUAL
RED MED. STIFF MOIST
SILTY SANDY CLAY (A-7)

RED-TAN & OLIVE MED. DENSE TO
MOIST CLAYEY SAND (A-2-4)

TAN & OLIVE STIFF
MOIST LOW PLASTIC
SILTY SANDY CLAY (A-7-5)

TAN & OLIVE STIFF TO V.STIFF MOIST
CLAYEY SANDY SILT (A-4) W/RK. FRAGS.

906.32
GRAVEL
08/08

OLIVE & TAN MED. DENSE TO V. DENSE
WET MICA CLAYEY SILTY SAND (A-2-4)

AR
CRYSTALLINE
ROCK

WEATHERED ROCK
(SEV. WEATHERED
CRYSTALLINE ROCK)

SS-194
SS-195
SS-196
SS-197
MS-197
462+75.00 -L-
50.0 RT

RESIDUAL

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

RED-TAN TO TAN & OLIVE STIFF
MOIST TO WET SLI. MICA. TO MICA.
SANDY SILT (A-5)
(MOSTLY MICA 28.5-33.5)

GRAVEL
08/08

BT

SS-198
SS-199
SS-200
SS-201
466+00.00 -L-
50.0 LT

RESIDUAL

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

OLIVE & TAN LOOSE MOIST V. MICA.
CLAYEY SILTY SAND (A-2-5)

TAN TO OLIVE-TAN
STIFF MOIST MICA.
CLAYEY SANDY SILT (A-5)

OLIVE MED. DENSE MOIST V. MICA.
SILTY SAND (A-2-4) (MOSTLY MICA)

BT
NM
(8/1808)

SS-202
SS-203
MS-203
SS-204
MS-204
SS-205
469+00.00 -L-
CL

RESIDUAL
RED MED. STIFF DRY
SILTY SANDY CLAY (A-7)

TAN MED. DENSE
DRY SLI. MICA.
CLAYEY SILTY SAND
& SAND (A-2-4, A-2-5)

BT
NM
(8/1808)

BEGIN BRIDGE
-L- STA. 472+00.00

SS-206
SS-207
SS-208
SS-209
SS-210
471+86.00 -L-
15.00 LT.

884.70

RESIDUAL

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

ALLUV.

RED-BRN LOOSE WET
V. MICA. SAND (A-2-5)
(MOSTLY MICA @ 19.0)

BT
NM
(8/1808)

(-)1.5597%

SEE SHEET 10 & 11 FOR PLAN VIEW

1000 990 980 970 960 950 940 930 920 910 900 890 880 870 860 850 840 830 820 810 800

459+00 460+00 461+00 462+00 463+00 464+00 465+00 466+00 467+00 468+00 469+00 470+00 471+00 472+00 473+00

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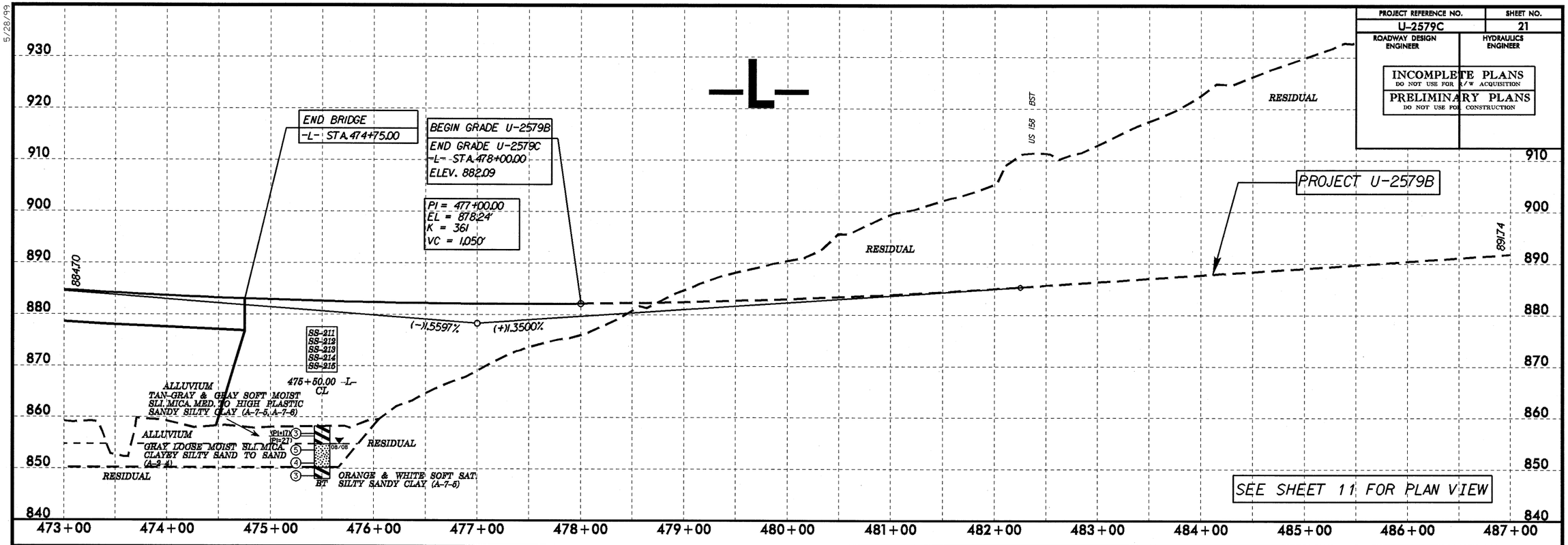
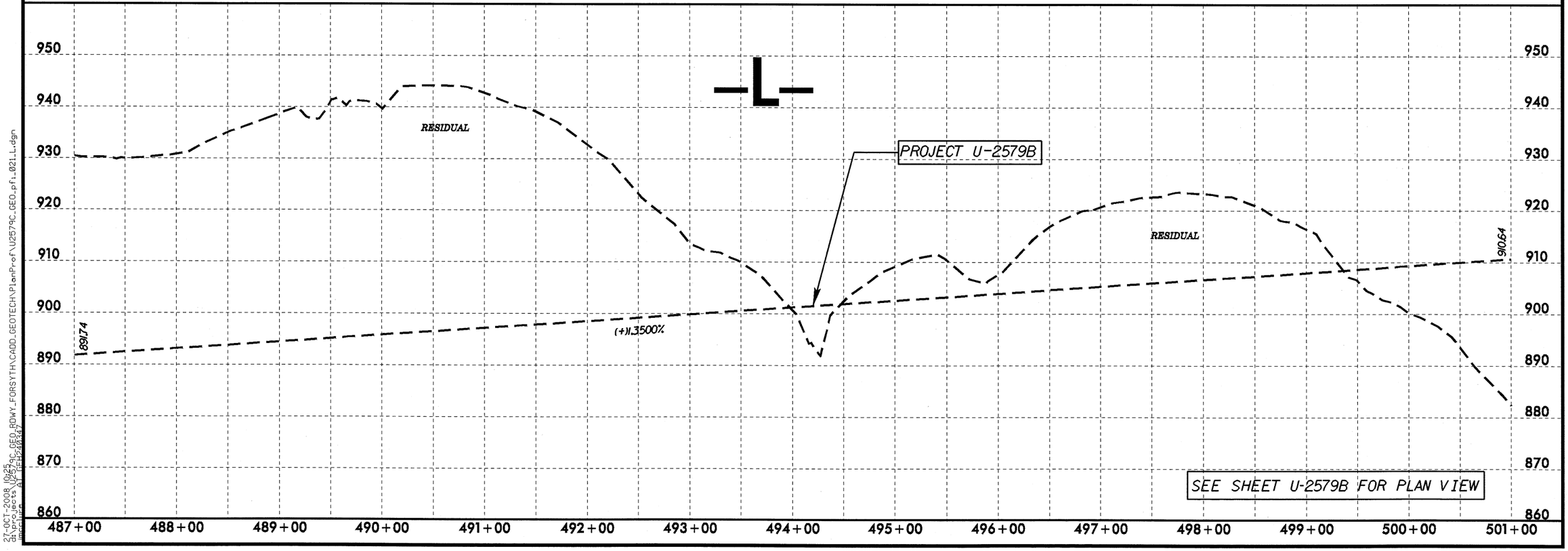
5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-2579C	21
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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





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5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-2579C	22
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

-Y1-

BEGIN GRADE
-Y1- STA.11+00.00
ELEV. 960.95

960.95

PI = 13+90.00
EL = 958.09'
K = 175
VC = 500'

US 311 24' BST
ROADWAY EMBANKMENT (FILL) OVER RESIDUAL

(-)0.9847%

(+)1.8703%

US 311 24' BST
ROADWAY EMBANKMENT (FILL) OVER RESIDUAL

SS-219
MS-219
SS-220
MS-220
SS-221

18+00.00 -Y1-
25.00 RT.

RESIDUAL
RED STIFF TO V. STIFF MOIST HIGH PLASTIC SANDY CLAY (A-7-6) & SILTY SANDY CLAY (A-7-5)
(8) (PI=54)
(16) (PI=27)
RED-BRN STIFF MOIST MICA. CLAYEY SANDY SILT (A-5)
(12)
BT
DRY
(9/8/08)

PI = 22+00.00
EL = 973.24'
K = 243
VC = 600'
SSD = 737'

SS-216
MS-216
SS-217
MS-217
SS-218

20+25.00 -Y1-
25.00 RT.

(+)1.8703%

(-)0.6000%

97.84

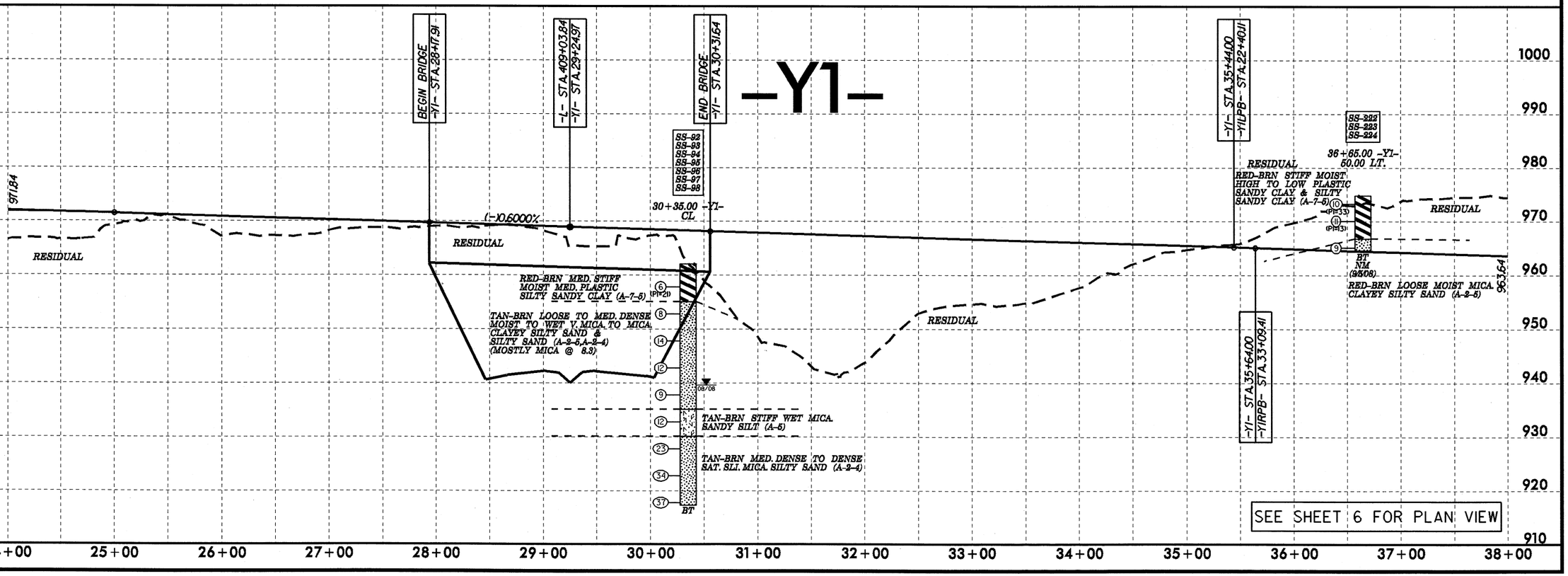
RESIDUAL
RED-BRN STIFF TO HARD MOIST MED. PLASTIC SANDY CLAY (A-6) TO SILTY SANDY CLAY (A-7-5)
(11) (PI=16)
(35) (PI=22)
RED-BRN V. STIFF MOIST CLAYEY SANDY SILT (A-5)
(15)
BT
DRY
(9/8/08)

-Y1- STA.22+91.00
-YIRPC- STA.33+16.49
-YIRPD- STA.32+52.52

SEE SHEET 12 & 6 FOR PLAN VIEW

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

1010 1000 990 980 970 960 950 940 930 920



SEE SHEET 6 FOR PLAN VIEW

24+00 25+00 26+00 27+00 28+00 29+00 30+00 31+00 32+00 33+00 34+00 35+00 36+00 37+00 38+00

1000 990 980 970 960 950 940 930 920 910

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mcclure
AT GEH 2/6/2347

5/26/99

PROJECT REFERENCE NO.	SHEET NO.
U-2579C	23
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

-Y1-

PI = 41+50.00
EL = 961.54'
K = 136
VC = 520'

PI = 46+87.00
EL = 978.81'
K = 152
SSD = 667'
VC = 324'

963.64

980.61

RESIDUAL

(-)0.6000%

(+)3.2161%

RESIDUAL

US 311 24" BST
ROADWAY EMBANKMENT (FILL) OVER RESIDUAL

(+)3.2161%

(+)1.0808%

US 311 24" BST
ROADWAY EMBANKMENT (FILL) OVER RESIDUAL

END GRADE
-Y1- STA. 48+50.00
ELEV. 980.61

SEE SHEET 6 & 13 FOR PLAN VIEW

1010
1000
990
980
970
960
950
940
930
920

38+00 39+00 40+00 41+00 42+00 43+00 44+00 45+00 46+00 47+00 48+00 49+00 50+00

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mcclure

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-2579C	24
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

–Y1RPB–

BEGIN GRADE
–Y1RPB– STA. 10+00.00
ELEV. 1013.34

1013.34

(–)13.2533%

(–)13.9620%

964.13

PI = 12+50.00
EL = 1,005.21'
SSD = 169.7'
K = 494
VC = 350'

S-28
SS-29
SS-30
14+00.00 –Y1RPB– CL

TAN MED. STIFF TO STIFF MOIST SILTY SANDY CLAY (A-6)
OLIVE & TAN DENSE MOIST CLAYEY SILTY SAND (A-2-4)
OLIVE & TAN V. STIFF MOIST SANDY SILT (A-4)
RESIDUAL
BT
DRY
(7/24/08)

SS-31
MS-31
SS-32
17+50.00 –Y1RPB– CL

TAN MED. STIFF TO STIFF MOIST SILTY SANDY CLAY (A-6)
TAN & OLIVE STIFF MOIST CLAYEY SANDY SILT (A-5, A-4)
BT
DRY
(7/24/08)

S-26
S-27
10+96.47 –Y1RPB– 59.28' RT.
=
387+75 –L– CL

CREEK
RESIDUAL
TAN MED. STIFF DRY CLAYEY SANDY SILT (A-4)
BT
DRY
(7/24/08)

SS-40
SS-41
SS-42
MS-42
SS-43
SS-44
21+50.00 –Y1RPB– 110.00 RT.

RESIDUAL
TAN LOOSE DRY SLI. MICA. LOW PLASTIC CLAYEY SAND (A-2-6)
CREEK
ALLUVIUM
RESIDUAL
TAN MED. DENSE, DRY SLI. MICA. SILTY CLAYEY SAND (A-2-4)
TAN MED. STIFF MOIST SLI. MICA. MED. PLASTIC SILTY SANDY CLAY (PI=19) (A-7-6)
TAN LOOSE TO V. DENSE WET SILTY SAND (A-2-4)
07/08
07/08
BT

RESIDUAL
OLIVE-TAN MED. DENSE TO DENSE MOIST CLAYEY SAND (A-2-4)
SS-33
22+50.00 –Y1RPB– 76.00 RT.
ALLUVIUM
CREEK
RESIDUAL
WEATHERED ROCK (SEV. WEATHERED CRYSTALLINE ROCK)
1007.6
BT
DRY
(7/24/08)

SEE SHEET 6 FOR PLAN VIEW

SS-86
SS-87
SS-88
SS-89
MS-89
SS-70
SS-71
28+64.30 –Y1RPB– 64.38 RT.
=
18+00 –Y1LPB– CL

SS-72
SS-73
SS-74
CBR-1
SS-75
SS-76
SS-77
31+00.00 –Y1RPB– 50.00 LT.

RESIDUAL
RED TO RED-TAN STIFF MOIST CLAYEY SANDY SILT (A-5)

SS-222
SS-223
SS-224
32+55.00 –Y1RPB– 98.98 LT.
=
36+65 –Y1– 50.00 LT.

US 311 / NC 65?

964.62

RESIDUAL
RED-BRN STIFF MOIST HIGH TO LOW PLASTIC SANDY CLAY & SILTY SANDY CLAY (A-7-5)
RED-BRN LOOSE MOIST MICA. CLAYEY SILTY SAND (A-2-6)
BT
NM
(9/5/08)

SS-34
SS-35
25+00.00 –Y1RPB– CL

964.13

RESIDUAL
(–)13.9620%
(+)2.0599%
LT. TAN TO LT. OLIVE-TAN V. DENSE TO DENSE MOIST CLAYEY SILTY SAND TO SILTY SAND (A-2-4)
BT
DRY
(7/25/08)

RED. STIFF MOIST SILTY SANDY CLAY (A-7-5)
BRN-OLIVE STIFF MOIST SLI. MICA. CLAYEY SANDY SILT (A-4)
RED-TAN STIFF MOIST LOW PLASTIC SLI. MICA. SILTY SANDY CLAY (A-7-5)
OLIVE LOOSE MOIST V. MICA. SILTY SAND (A-2-4) (MOSTLY MICA)
OLIVE STIFF TO V. STIFF MICA. MOIST SANDY SILT (A-4)
OLIVE DENSE MOIST MICA. SILTY SAND (A-2-4)
BT
DRY
(7/31/08)

TAN STIFF MOIST SLI. MICA. LOW PLASTIC SILTY SANDY CLAY (A-7-5)
CBR-1
CAVED
07/08
TAN & OLIVE & WHITE MED. STIFF TO STIFF MOIST SLI. MICA. TO V. MICA. SANDY SILT (A-4, A-5)
BT

PI = 26+21.40
EL = 950.88'
K = 219
VC = 1,320'

END GRADE
–Y1RPB– STA. 32+88.63
ELEV. 964.62

–Y1RPB–

SEE SHEET 6 FOR PLAN VIEW

10-NOV-2008 14:16
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mmcclure

5/14/99

-Y1RPC-

PROJECT REFERENCE NO.	SHEET NO.
U-2579C	25
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

BEGIN GRADE
-Y1RPC- STA. 10+00.00
ELEV. 1009.02

1009.02

(-13.368)%

964.94

SS-22
SS-23
12+83.99 -Y1RPC-
81.56 LT.
=
391+00 -L-
CL

RESIDUAL
TAN, STIFF TO HARD MOIST
CLAYEY SANDY SILT (A-4)

WEATHERED ROCK
(SEV. WEATHERED
CRYSTALLINE ROCK)

CRYSTALLINE ROCK

AR
DRY
(7/24/08)

RESIDUAL

SS-20
MS-20
SS-21
14+50.00 -Y1RPC-
CL

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

RESIDUAL

BT
DRY
(7/23/08)

OLIVE & TAN STIFF TO V. STIFF MOIST
V. MICA CLAYEY SANDY SILT (A-4)

SS-18
MS-19
SS-19
15+77.93 -Y1RPC-
112.93 LT.
=
394+00 -L-
CL

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

BT
DRY
(7/23/08)

RESIDUAL

SS-36
SS-37
SS-38
20+90.00 -Y1RPC-
90.00 RT.

ALLUVIUM
GRAY-OLIVE LOOSE MOIST
SILTY SAND (A-2)

SS-39
20+40.00 -Y1RPC-
CL

RESIDUAL

ALLUVIUM

TAN LOOSE TO DENSE
MOIST SILTY SAND (A-2-4)
(MICACEOUS @ 8.9)

CRYSTALLINE ROCK

AR

RESIDUAL

ALLUVIUM
GRAY-OLIVE LOOSE MOIST
SILTY SAND (A-2-4)
W/GRAVEL @ 4.0-4.5

RESIDUAL
TAN MED. DENSE TO V. DENSE
MOIST SILTY SAND (A-2-4)

WEATHERED ROCK
(SEV. WEATH. CRYSTALLINE ROCK)

AR

CRYSTALLINE ROCK

SEE SHEET 6 FOR PLAN VIEW

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microstation
AT (GEOPAK)

5/14/99

-Y1RPC-

PROJECT REFERENCE NO.	SHEET NO.
U-2579C	26
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

1070 1060 1050 1040 1030 1020 1010 1000 990 980 970 960 950 940 930 920 910 900 890 880 870

PI = 25+69.20
EL = 956.17'
K = 183
VC = 1.000'

964.94

SS-81
MS-81
SS-82
SS-83

26+50.00 -Y1RPC-
CL

SS-84
SS-85

29+00.00 -Y1RPC-
CL

SS-78
MS-78
SS-79
SS-80

31+50.00 -Y1RPC-
CL

971.36

US 311 24" BST

END GRADE
-Y1RPC- STA. 32+95.71
ELEV. 971.36

RESIDUAL

(-)3.368%

(+)2.090%

RED-TAN TO TAN, V. STIFF MOIST HIGH PLASTIC SLI. MICA SANDY SILTY CLAY (A-7-5)
(24) (PI=26)

OLIVE & TAN & WHITE STIFF MOIST SLI. MICA, CLAYEY SANDY SILT (A-4)
12

OLIVE & WHITE RANDED MED. DENSE MOIST SILTY SAND (A-2-4)
16

BT DRY (8/1/08)

RESIDUAL
RED & TAN STIFF MOIST LOW PLASTIC SLI. MICA SILTY SANDY CLAY (A-7-6)

RESIDUAL

WHITE & TAN MED. STIFF MOIST SLI. MICA, SANDY SILT (A-4)
12 (PI=8) 7

BT DRY (8/6/08)

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

RESIDUAL

TAN V. STIFF MOIST SLI. MICA, CLAYEY SANDY SILT (A-5)
17

OLIVE & TAN LOOSE DRY V. MICA. SILTY SAND (A-2-4) (MOSTLY MICA)
9

OLIVE & TAN STIFF DRY V. MICA. CLAYEY SANDY SILT (A-5)
14

BT DRY (8/4/08)

SEE SHEET 6 FOR PLAN VIEW

24 25 26 27 28 29 30 31 32 33 34 35 36 37 38

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microstation

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-2579C	27
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y1RPD-

BEGIN GRADE
-Y1RPD- STA. 10+00.00
ELEV. 946.43

946.43

SS-133
SS-134
SS-135
SS-136
SS-137

DILLON FARM RD

14+49.07 -Y1RPD-
81.00' RT.
=
426+00 -L-
CL

SS-121
SS-122
SS-123
SS-124
SS-125
SS-126

15+60.00 -Y1RPD-
CL

PI = 18+11.55
EL = 942.06'
K = 384
VC = 1,000'

SS-116
SS-117
SS-118
SS-119
MS-119
SS-120

19+00.00 -Y1RPD-
CL

SS-112
SS-113
SS-114
SS-116

22+00.00 -Y1RPD-
CL

954.20

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

RESIDUAL
RED-TAN STIFF MOIST HIGH PLASTIC SILTY SANDY CLAY (A-7)

RESIDUAL
RED-TAN STIFF MOIST SLI. MICA. CLAYEY SANDY SILT (A-6)

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

RESIDUAL
RED-TAN TO TAN & OLIVE STIFF TO V. STIFF MOIST NON MICA. TO V. MICA. CLAYEY SANDY SILT (A-4)

RESIDUAL

RESIDUAL
RED & OLIVE STIFF MOIST MICA. CLAYEY SANDY SILT (A-5)

OLIVE LOOSE MOIST TO WET MICA. SILTY SAND (A-2-4, A-2-5)

RED-TAN TO OLIVE-TAN & OLIVE LOOSE TO MED. DENSE MOIST TO WET V. MICA. CLAYEY SILTY SAND & SILTY SAND (A-2-5, A-2-4) (JUST MICA @ 23.9)

(-)0.5381%

(+)2.0631%

TAN & OLIVE STIFF MOIST SLI. MICA. CLAYEY SANDY SILT (A-4)

OLIVE & WHITE MED. DENSE MOIST MICA. SILTY SAND (A-2-4)

TAN & OLIVE & WHITE MED. DENSE & DENSE TO LOOSE DRY TO MOIST MICA. CLAYEY SILTY SAND & SILTY SAND (A-2-5, A-2-4) W/SEV. WEATH. CRYSTALLINE ROCK SEAM @ 17.9

BT DRY (8/8/08)

SEE SHEET 7 FOR PLAN VIEW

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

-Y1RPD-

END GRADE
-Y1RPD- STA. 32+31.74
ELEV. 971.37

971.37

954.20

(+)2.0631%

SS-89
SS-90
SS-91

27+25.00 -Y1RPD-
CL

SS-86
SS-87
SS-88

29+00.00 -Y1RPD-
100.00 RT.

SS-102
SS-103
SS-104

26+00.00 -Y1RPD-
25.00 LT.

RESIDUAL
RED-BRN MED. STIFF TO STIFF MOIST CLAYEY SANDY SILT (A-4)

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

RESIDUAL

RESIDUAL

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

TAN LOOSE MOIST MICA. SILTY CLAYEY SAND (A-2-4)

WHITE & TAN LOOSE TO MED. DENSE DRY SLI. MICA. SILTY SAND (A-2-4)

BT DRY (8/8/08)

BORING DESCRIPTIONS
(A) TAN V. SOFT TO SOFT MOIST CLAYEY SANDY SILT (A-4) (ALLUVIUM)
(B) GRAY MED. DENSE WET CLAYEY SAND & GRAVEL (A-2-4) (ALLUVIUM)

WEATHERED ROCK (SEV. WEATHERED CRYSTALLINE ROCK) GNEISS

CRYSTALLINE ROCK

OLIVE-TAN-WHITE TO WHITE & TAN LOOSE WET V. MICA SAND (A-2-4)

AR

SEE SHEET 7 & 6 FOR PLAN VIEW

4 25 26 27 28 29 30 31 32

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

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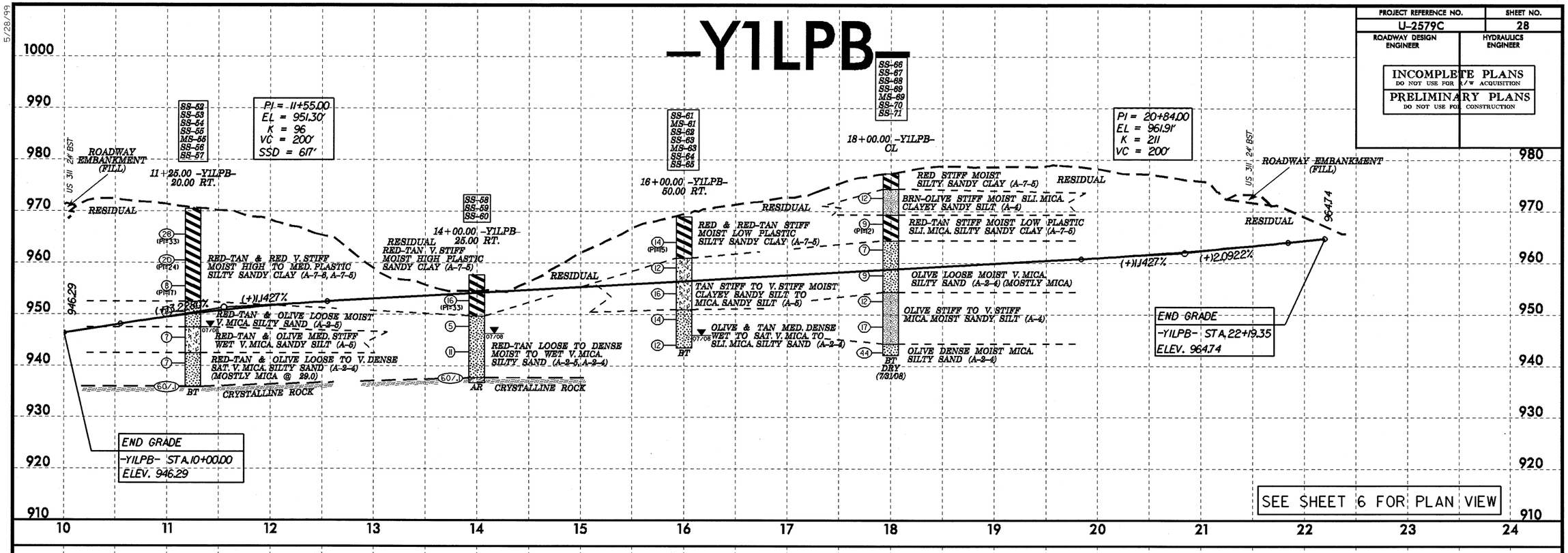
Microstation 21 (21.00.00.47)

5/28/99

-Y1LPB-

PROJECT REFERENCE NO.	SHEET NO.
U-2579C	28
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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



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mgclupe

5/28/99

-Y2-

PROJECT REFERENCE NO.	SHEET NO.
U-2579C	29
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

BEGIN GRADE
-Y2- STA.10+00.00
ELEV. 955.13

PI = 16+10.00
EL = 948.93'
K = 570
VC = 1,220'

BEGIN BRIDGE
-Y2- STA.20+18.99

SS-168
SS-169
SS-170
SS-171
SS-172
SS-173
SS-174
SS-175

-Y2- STA.21+27.27
-L- STA.447+07.91

END BRIDGE
-Y2- STA.22+35.56

S-217
15+00.00 -Y2-
25.00 RT.

20+20.00 -Y2-
40.00 RT.

955.13

967.74

SR 2381 WILLISTON RD 22' BST
ROADWAY EMBANKMENT (FILL)
OVER RESIDUAL

(-)1.017 4%

(+)1.223%

RESIDUAL

(PI=35)
BT
NM
(8/22/08)
RED MED. STIFF
DRY HIGH PLASTIC
SANDY CLAY (A-7-5)

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

(27) (PI=27)
(13) (PI=20)
(11)
(11)
(11)
(11)
(13)
(28)

RED-TAN STIFF MOIST
CLAYEY SANDY SILT (A-5)

CAVED
08/08

WHITE-OLIVE & TAN TO
WHITE-TAN & OLIVE
MED. DENSE WET SLI. MICA.
SILTY SAND (A-2-5,A-2-4)

BT

SEE SHEET 14, 9 & FOR PLAN VIEW

970 960 950 940 930 920 910 900

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

-Y2-

END GRADE
-Y2- STA.26+50.00
ELEV. 960.60

960.60

S-216
25+00.00 -Y2-
25.00 LT.

(+)1.223%

95.74

SR 2381 WILLISTON RD 22' BST
ROADWAY EMBANKMENT (FILL)
OVER RESIDUAL

RED-TAN MED. STIFF DRY
CLAYEY SAND SILT (A-4)

BT
NM
(8/22/08)

SEE SHEET 9 & 15 FOR PLAN VIEW

970 960 950 940 930 920 910 900

24 25 26 27 28 29 30 31 32 33

5/28/99

-Y1DET-

PROJECT REFERENCE NO.	SHEET NO.
U-2579C	30
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

SS-69
SS-63
SS-64
SS-65
MS-65
SS-66
SS-67

13+84.21 -Y1DET- 129.21 LT. = 11+25 -Y1LPB- 20.00 RT.

US 311 24' BST
ROADWAY EMBANKMENT (FILL) OVER RESIDUAL

RESIDUAL
RED-TAN & RED V. STIFF MOIST HIGH TO MED. PLASTIC SILTY SANDY CLAY (A-7-6, A-7-5)

RED-TAN & OLIVE LOOSE MOIST V. MICA. SILTY SAND (A-2-5)

RED-TAN & OLIVE MED. STIFF WET V. MICA. SANDY SILT (A-5)

RED-TAN & OLIVE LOOSE TO V. DENSE SAT. V. MICA. SILTY SAND (A-2-4) (MOSTLY MICA @ 29.0)

CRYSTALLINE ROCK

BT

01/08

BEGIN GRADE
-Y1DET- STA. 17+29.79
ELEV. 966.03

966.03

US 311 24' BST
ROADWAY EMBANKMENT (FILL) OVER RESIDUAL

RESIDUAL
RED TO RED-TAN STIFF MOIST CLAYEY SANDY SILT (A-5)

RESIDUAL
TAN STIFF MOIST SLI. MICA. LOW PLASTIC SILTY SANDY CLAY (A-7-5)

TAN & OLIVE & WHITE MED. STIFF TO STIFF MOIST SLI. MICA. TO V. MICA. SANDY SILT (A-4, A-5)

BT

SS-72
SS-73
SS-74
CBR-1
SS-75
SS-76
SS-77

SS-222
SS-223
SS-224

19+92.71 -Y1DET- 83.21 LT. = 31+00 -Y1RPB- 50.00 LT.

20+39.19 -Y1DET- 75.41 RT. = 36+65 -Y1- 50.00 LT.

PI = 21+30.00
EL = 980.68'
VC = 476'
K = 84
SSD = 426

(+)3.6594%

(-)1.9969%

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

RED-BRN LOOSE MOIST MICA. CLAYEY SILTY SAND (A-2-5)

BT
NM
(9508)

CAVED
01/08

RESIDUAL

975.39

SEE SHEET 6 & 13 FOR PLAN VIEW

-Y1DET-

PI = 27+85.00
EL = 967.60'
VC = 530'
K = 100

PI = 31+00.00
EL = 978.00'
VC = 100'
K = 85
SSD = 970

975.39

RESIDUAL

(-)1.9969%

(+)3.3016%

RESIDUAL

(+)3.3016%

RESIDUAL

(+)2.1285%

979.33

US 311 24' BST
ROADWAY EMBANKMENT (FILL) OVER RESIDUAL

END GRADE
-Y1DET- STA. 31+62.46
ELEV. 979.33

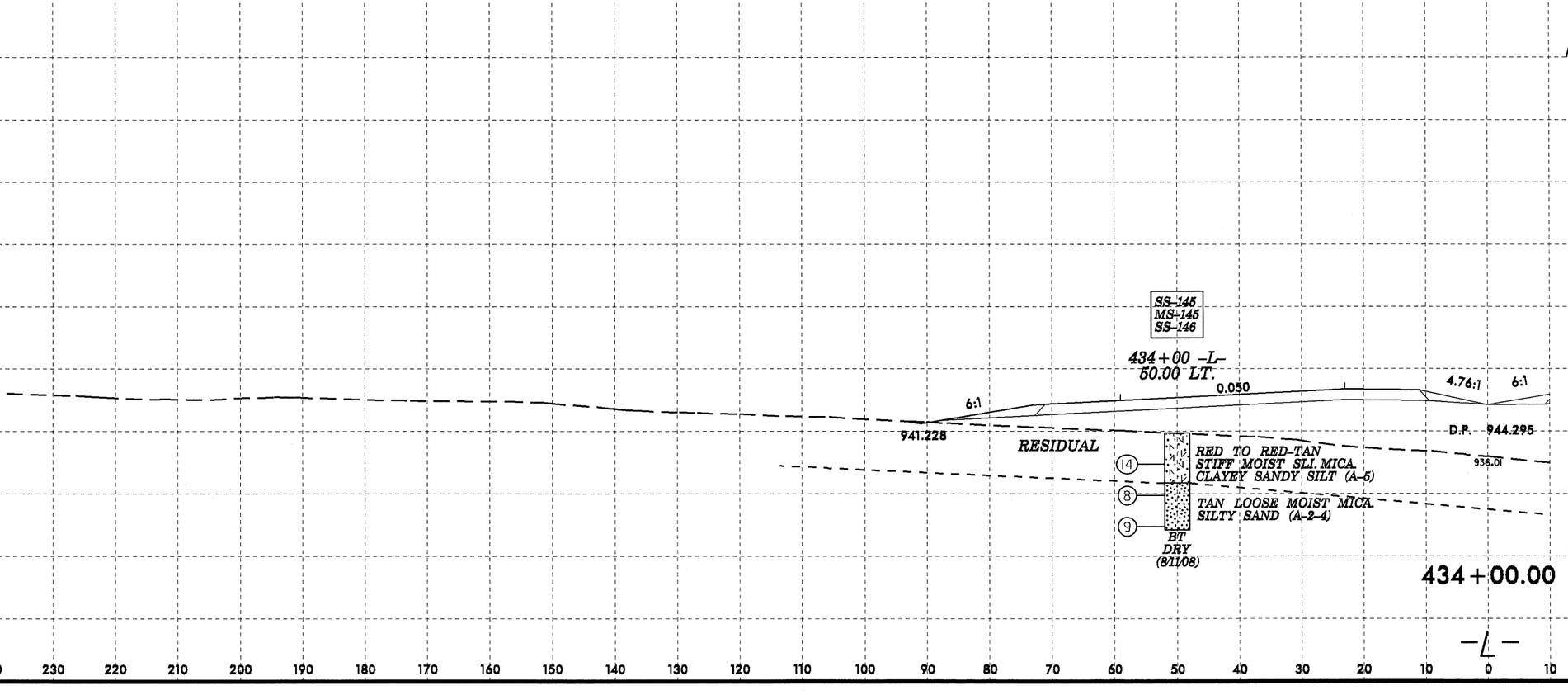
SEE SHEET 13 FOR PLAN VIEW

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	31

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

1030
1020
1010
1000
990
980
970
960
950
940
930
920
910



290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

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D:\Projects\U2579C_GEO_RDWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xsL_FORSYTH_2.dgn
mcclure
AT 0EH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	32

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

1030
1020
1010
1000
990
980
970
960
950
940
930
920
910

RESIDUAL

6:1

0.050

4.76:1

6:1

D.P. 944.419

936.54

RESIDUAL

434+50.00

—L—

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

21-JUN-2010 15:47
D:\Projects\U2579C_GEO_RDWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xs1_FORSYTH_2.dgn
Imcclure
AT 0EL240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	33

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

1020
1010
1000
990
980
970
960
950
940
930
920
910

RESIDUAL

5:1

0.050

4.76:1

6:1

D.P. 944.467

936.36

ARTIFICIAL FILL

RESIDUAL

435+00.00

—L—

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

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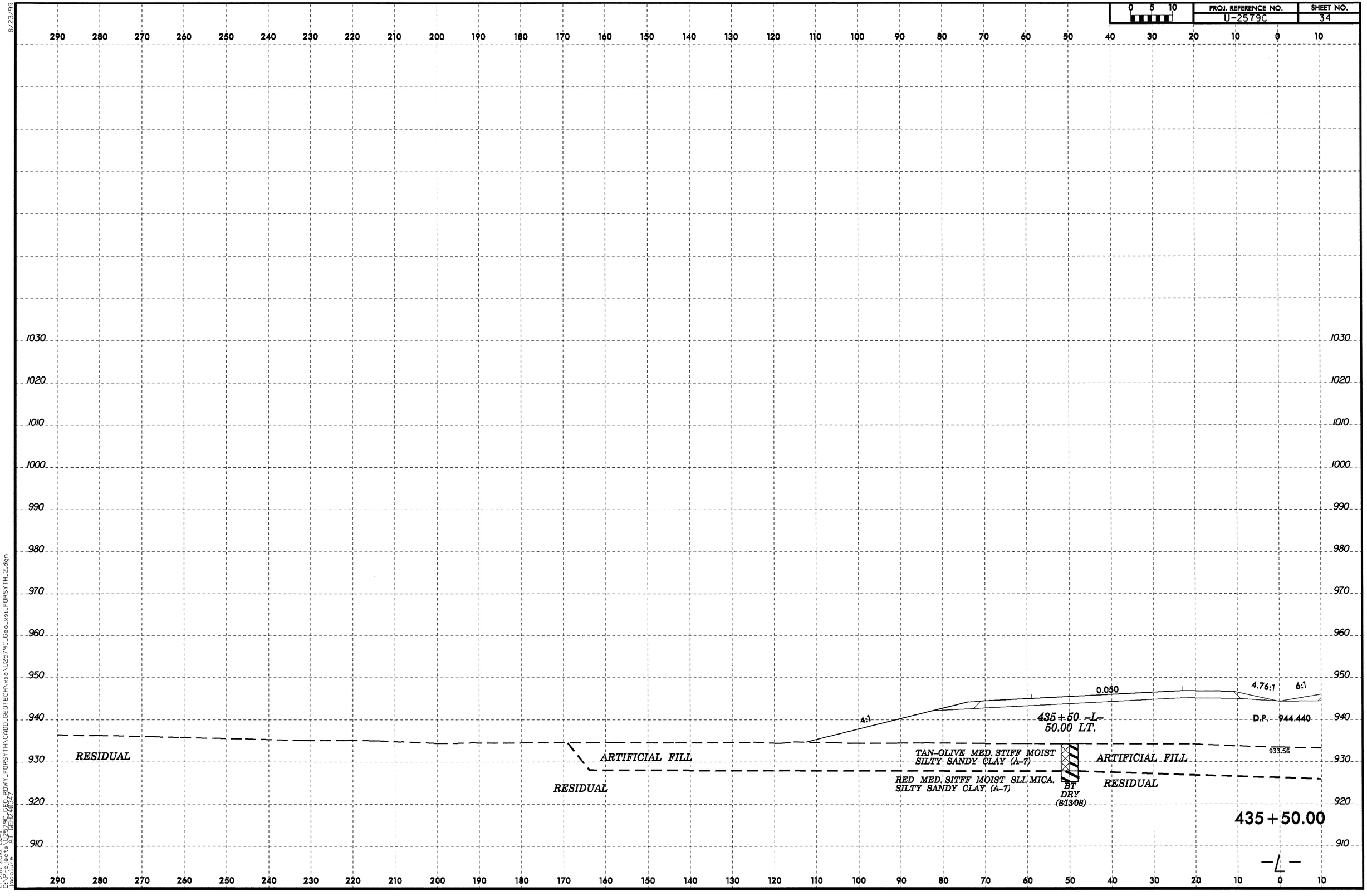
D:\Projects\U2579C_GEO_RDWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xsl_FORSYTH_2.dgn
mcclure
A2GEH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	34



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Projects AT 0EL:240347
Inecture®

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	35

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

1020
1010
1000
990
980
970
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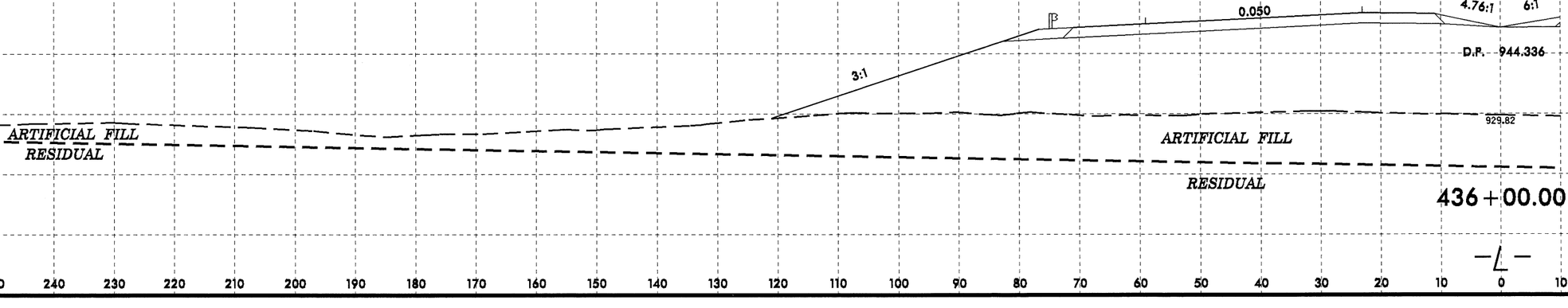
950
940
930
920
910



290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

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D:\Projects\U2579C_GEO_ROWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xsi_FORSYTH_2.dgn
Imcolure
AT 0EH240347

8/23/99

0 5 10

PROJ. REFERENCE NO.	SHEET NO.
U-2579C	36

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

1020
1010
1000
990
980
970
960
950
940
930
920
910
900

0.050
4.76:1
6:1
D.P. 944.157
2:1
925.75
ARTIFICIAL FILL
RESIDUAL
ARTIFICIAL FILL
RESIDUAL

436+50.00

—L—

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

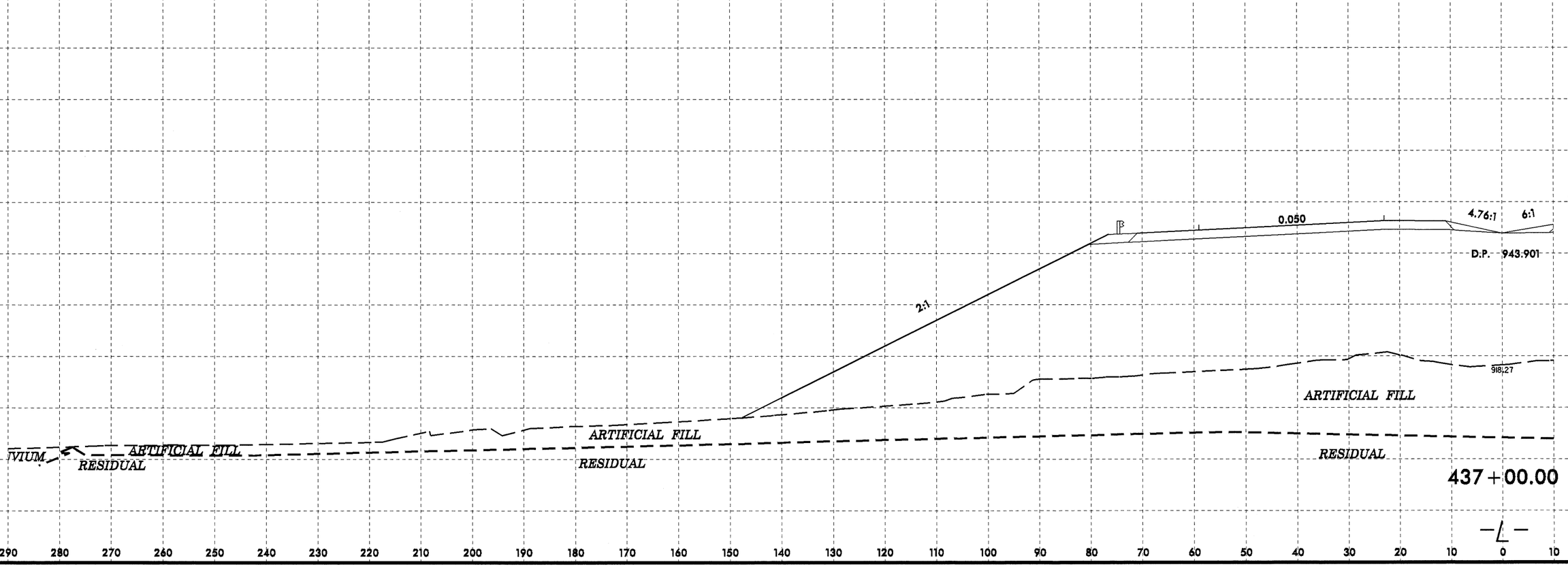
21-JUN-2010 15:47
D:\Projects\U2579C_GEO_RDWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xsl_FORSYTH_2.dgn
mcclure
AT GEH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	37

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

1010
1000
990
980
970
960
950
940
930
920
910
900
890



290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

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lmeclure
AT GEH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	38

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

1000 990 980 970 960 950 940 930 920 910 900 890 880

0.050 4.76:1 6:1

D.P. 943.569

2:1

SS-155
SS-156
SS-157
437+50 -L-
60.00 LT.

913.22

SS-158
SS-159
SS-160
437+50 -L-
130.00 LT.

ARTIFICIAL FILL
RED-TAN, MED. STIFF
MOIST SLI. MICA.
CLAYEY SANDY SILT (A-6)

ARTIFICIAL FILL
OLIVE-TAN TO GRAY
SOFT TO MED. STIFF MOIST TO WET
SANDY SILTY CLAY (A-7) & LOW PLASTIC
SILTY SANDY CLAY (A-6)
W/TRASH

ALLUVIUM

ALLUVIUM

ARTIFICIAL FILL
RESIDUAL

6 (PI=13)
10 (PI=25)
3 (PI=25)
LEVELED 08/08
BT

RESIDUAL
RED-TAN STIFF TO SOFT
WET TO SAT. SLI. MICA. MED. PLASTIC
SILTY SANDY CLAY (A-7-5, A-7-6)

6
2
4
08/08
BT

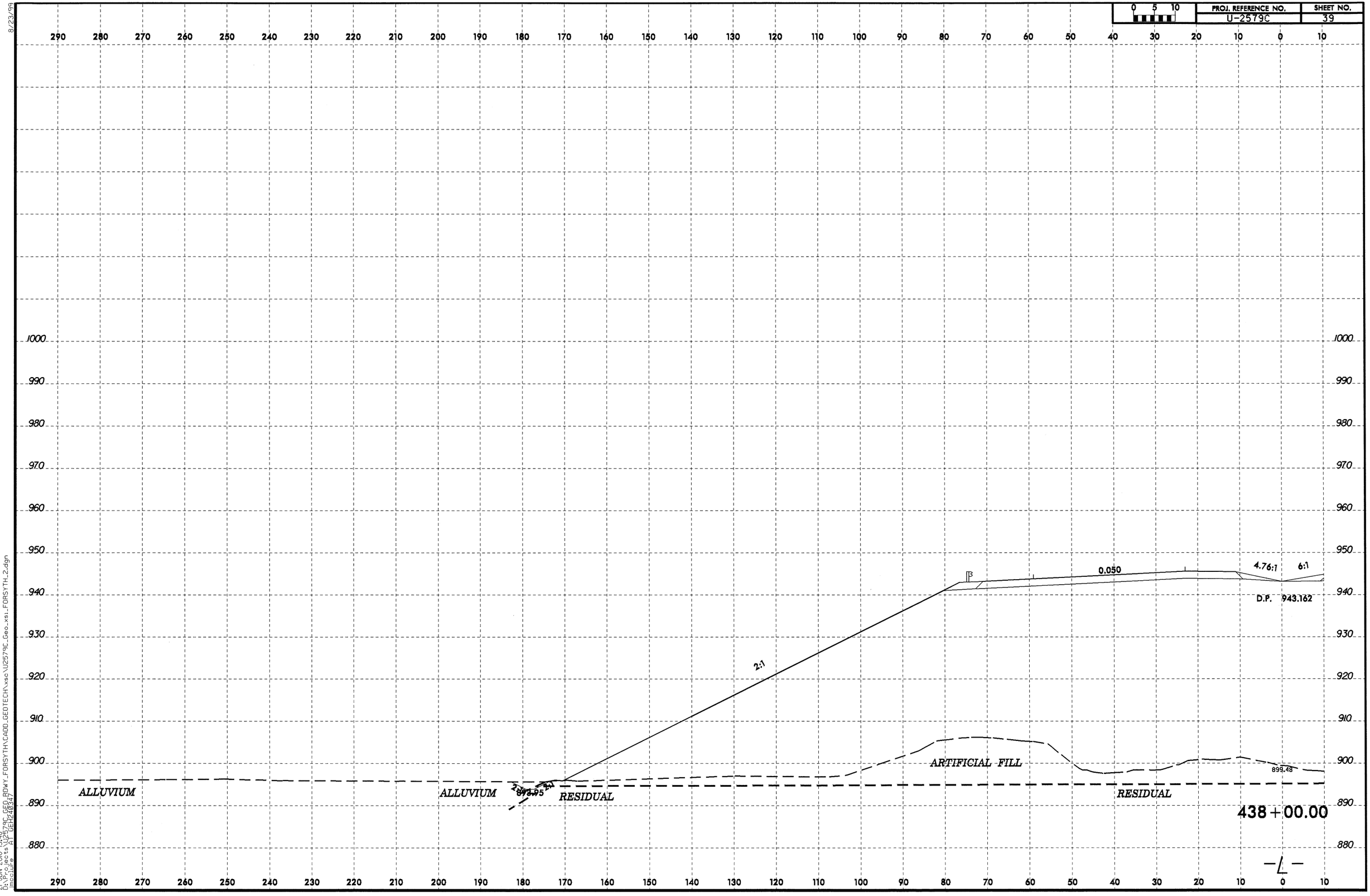
OLIVE-GRAY TO OLIVE & TAN
SOFT TO MED. STIFF
WET TO SAT. V. MICA.
SANDY SILT (A-6)

437+50.00
-L-

21-JUN-2010 15:47
D:\Projects\U2579C_GEO_RDWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xs1_FORSYTH_2.dgn
mcclure AT GEH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	39



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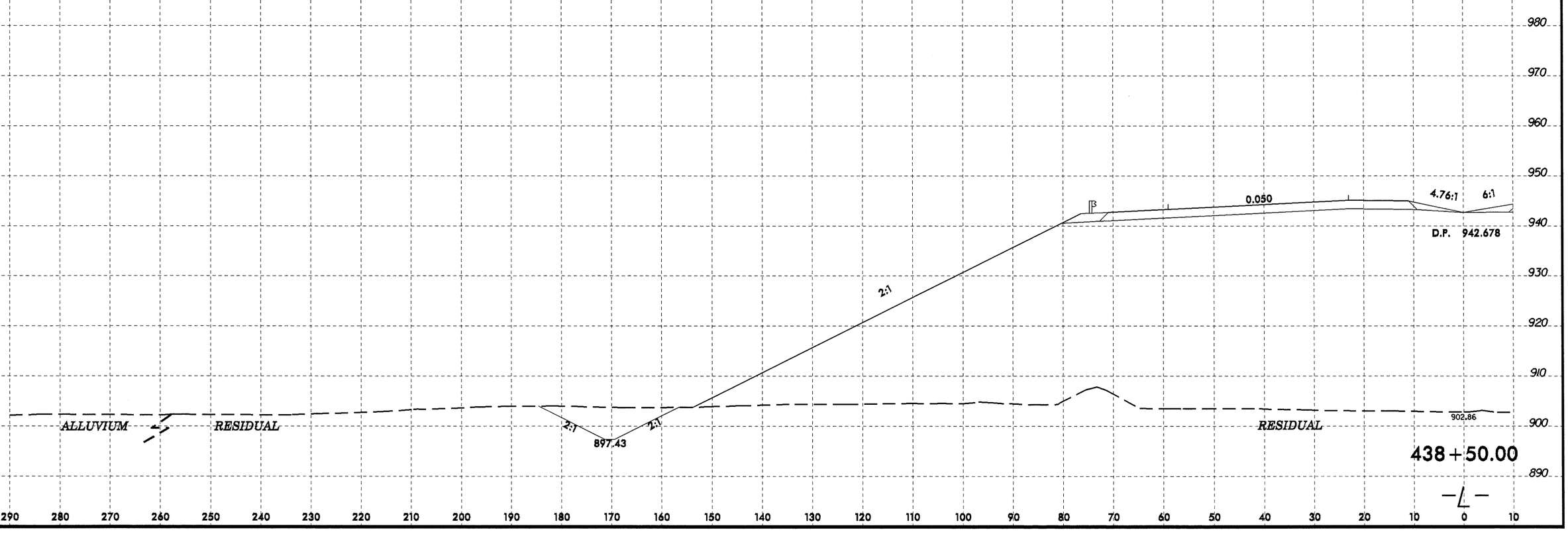
imeclure
AT GEH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	40

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

1010
1000
990
980
970
960
950
940
930
920
910
900
890



290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

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D:\Projects\U2579C_GEO_RDWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xsl_FORSYTH_2.dgn
Imeclure

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	41

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

1010
1000
990
980
970
960
950
940
930
920
910
900
890

RESIDUAL

2:1

900.91

2:1

2:1

0.050

4.76:1

6:1

D.P. 942.119

RESIDUAL

904.72

439+00.00

—L—

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

21-JUN-2010 15:48
D:\Projects\U2579C_GEO_RDWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xs1_FORSYTH_2.dgn
imcclure
AT GEH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	42

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

1010
1000
990
980
970
960
950
940
930
920
910
900

RESIDUAL

2:1
904.39
2:1
2:1

β
0.050
4.76:1
6:1
D.P. 941.483

RESIDUAL
906.75

439+50.00
-L-

21-JUN-2010 15:48
D:\Projects\U2579C_GEO_RDWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xs1_FORSYTH_2.dgn
mcclure
GEH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	43

4.76:1 6:1 0.050 0.050 2:1

D.P. 944.295

936.01

RESIDUAL

RESIDUAL

434+00.00

21-JUN-2010 15:48
C:\Projects\U2579C_GED_RDWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xsi_FORSYTH_2.dgn
mecrure
AT GEH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	44

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

1030
1020
1010
1000
990
980
970
960
950
940
930
920
910
900

4.76:1 6:1 0.050 0.050 2:1

D.P. 944.419

936.54

ARTIFICIAL FILL

RESIDUAL

434+50.00

-L-

434+50 -L-
200.00 RT.

ARTIFICIAL FILL

RESIDUAL

RED-TAN MED. STIFF MOIST SILTY SANDY CLAY (A-7) W/CONSTRUCTION DEBRIS

RED-TAN MED. STIFF MOIST SILTY SANDY CLAY (A-7)

BT
DRY
(8/13/08)

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

21-JUN-2010 15:48
D:\Projects\U2579c_GEO_ROWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xs1_FORSYTH_2.dgn
mcclure
AF 0CH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	45

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

1020
1010
1000
990
980
970
960
950
940
930
920
910

4.76:1 6:1 0.050 0.050 2:1

D.P. 944.467

936.36

ARTIFICIAL FILL

RESIDUAL

435+00.00

—L—

ARTIFICIAL FILL

RESIDUAL

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

21-JUN-2010 15:48
D:\Projects\U2579C_GEO_RDWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xs1_FORSYTH_2.dgn
mcclure
AT GEH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	46

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

1030
1020
1010
1000
990
980
970
960
950
940
930
920
910

4.76:1
6:1
0.050
0.050
2:1
D.P. 944.440
933.56
ARTIFICIAL FILL
RESIDUAL
ARTIFICIAL FILL
RESIDUAL

435+50.00
-L-

21-JUN-2010 15:48
D:\Projects\U2579C_GEO_ROWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xs1_FORSYTH_2.dgn
mcclure AT GEH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	47

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

1020
1010
1000
990
980
970
960
950
940
930
920
910

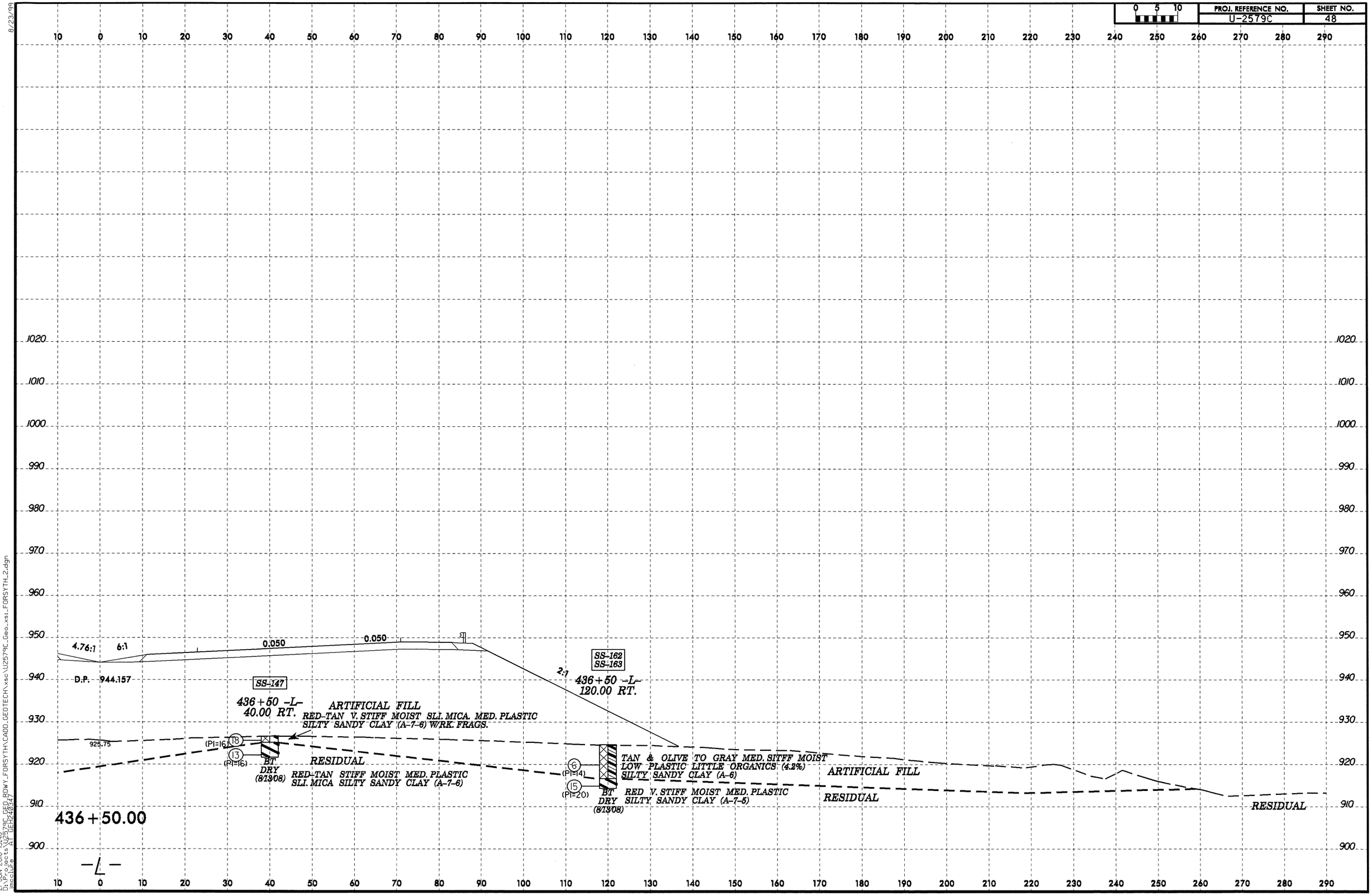
4.76:1
6:1
0.050
0.050
2:1
D.P. 944.336
929.82
ARTIFICIAL FILL
RESIDUAL
ARTIFICIAL FILL
RESIDUAL
436+00.00
-L-

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

21-JUN-2010 15:48
D:\Projects\U2579C_GEO_RDWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xs1_FORSYTH_2.dgn
ATT GEH240347
(mcclure)

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	48



8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	49

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

1010 1000 990 980 970 960 950 940 930 920 910 900 890 880

4.76:1 6:1 0.050 0.050 2:1

D.P. 943.901

918.2T

437+00.00

SS-148
SS-149
MS-149
SS-150
MS-150
SS-151
SS-152
SS-153

437+20 -L-
100.00 RT.

437+20 -L-
130.00 RT.

436+90 -L-
180.00 RT.

SS-154

436+75 -L-
210.00 RT.

ARTIFICIAL FILL
TAN-OLIVE & GRAY-TAN SOFT TO MED. STIFF MOIST
LITTLE ORGANICS (6.5%) CLAYEY SANDY SILT (A-4)

GRAY-TAN SOFT TO MED. STIFF MOIST TO WET
LITTLE ORGANICS (6.7%) MED. PLASTIC
SILTY SANDY CLAY (A-7-6)

RESIDUAL
RED-TAN V. SOFT TO SOFT SAT. CLAYEY SANDY SILT (A-5)

RED-TAN SOFT SAT. HIGH PLASTIC
SANDY SILTY CLAY (A-7-5)

(PI=15) (PI=11) (PI=15) (PI=31)

BT

CAVED 08/08

ALLUVIUM
TAN STIFF TO MED. STIFF WET LOW PLASTIC
SILTY SANDY CLAY (A-6) (ALLUVIUM)

ARTIFICIAL FILL
TAN & OLIVE MED. STIFF TO STIFF MOIST
MED. PLASTIC SILTY SANDY CLAY (A-7-6)
W/ROOTS & TWIGS

BT
DRY
(8/13/08)

RESIDUAL
RED-TAN MED. STIFF
MOIST SLI. MICA
SANDY SILTY CLAY (A-7)

ARTIFICIAL FILL

(PI=18)

BT
DRY
(8/13/08)

RESIDUAL
ORANGE-TAN-PINK MED. STIFF TO STIFF
MOIST SLI. MICA. SANDY CLAYEY SILT (A-4)

BT
DRY
(8/13/08)

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

RESIDUAL
RED-TAN MED. STIFF MOIST
SLI. MICA. SANDY SILTY CLAY (A-7)

-L-

21-JUN-2010 15:49
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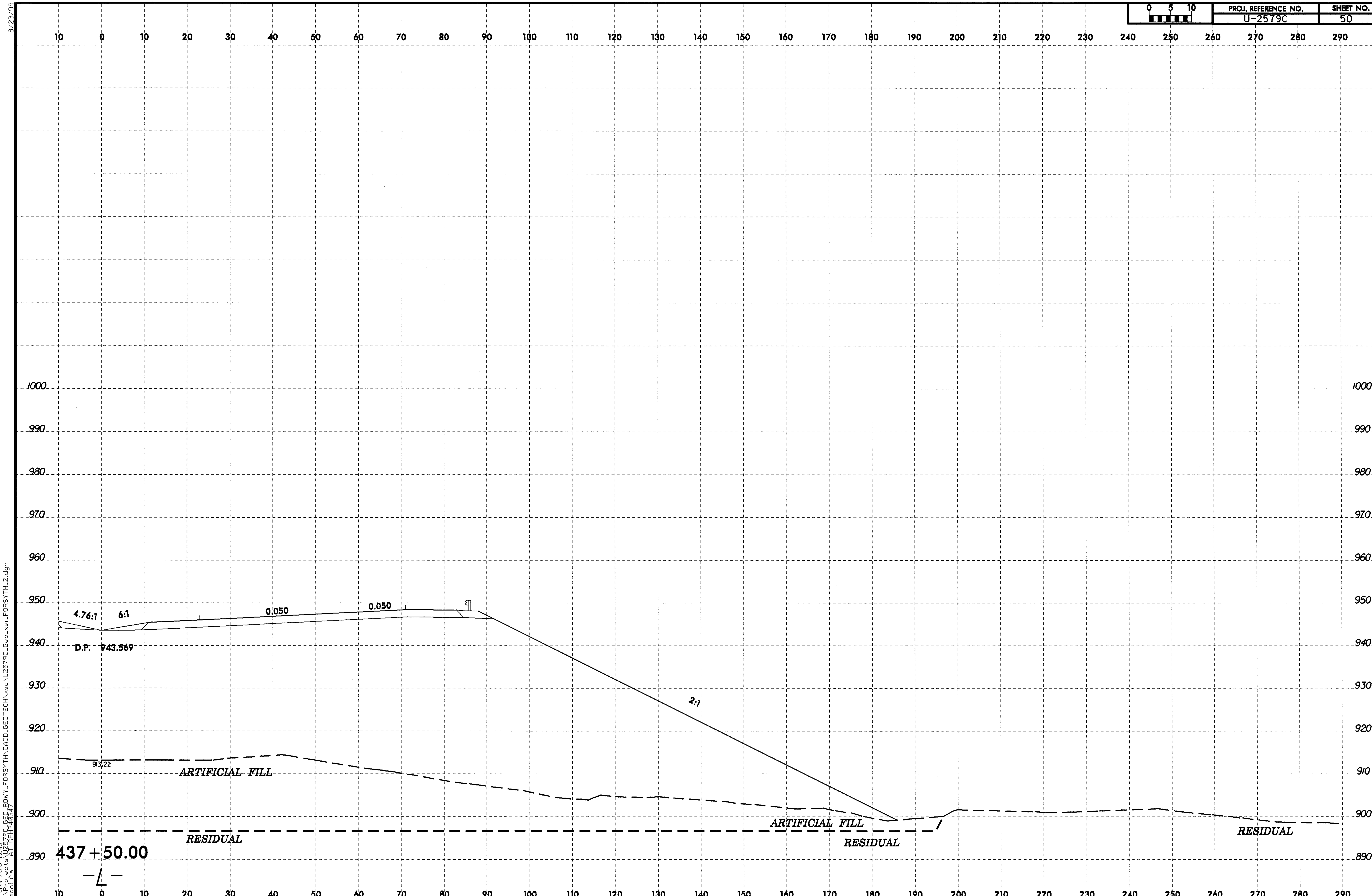
mcclure
AT GEH240347

PROJ. REFERENCE NO.	SHEET NO.
U-2579C	50

8/23/99



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lmcclure AT GEH240347

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	51

4.76:1

6:1

0.050

0.050

D.P. 943.162

2:1

ARTIFICIAL FILL

899.48

RESIDUAL

RESIDUAL

438+00.00

-L-

21-JUN-2010 15:49
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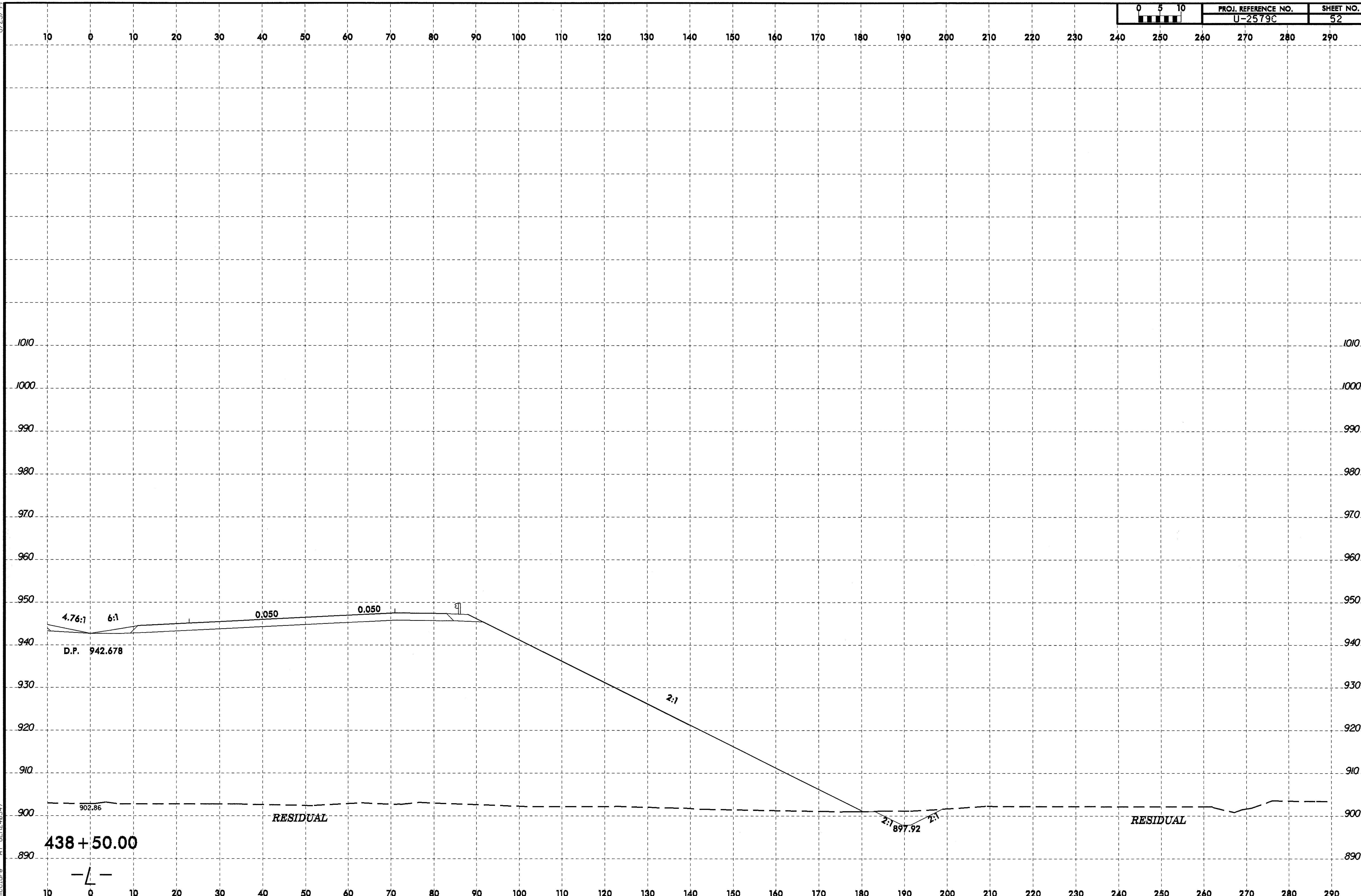
imcelroe
AT GEH240347

PROJ. REFERENCE NO.	SHEET NO.
U-2579C	52



8/23/99

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lmcclure AT GEH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	53

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

1010
1000
990
980
970
960
950
940
930
920
910
900
890

4.76:1 6:1 0.050 0.050 ℄

D.P. 942.119

2:1

904.72

RESIDUAL

2:1 902.08 2:1

RESIDUAL

439+00.00

℄

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

21-JUN-2010 15:49
D:\Projects\U2579C_GEO_RDWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xs1_FORSYTH_2.dgn
mcclure
AT GEH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	54

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

1010
1000
990
980
970
960
950
940
930
920
910
900
890

4.76:1 6:1 0.050 0.050

D.P. 941.483

2:1

SS-164
SS-165

439+60 -L-
90.00 RT.

RED-TAN MED. STIFF MOIST SANDY SILTY CLAY (A-7)

WHITE-TAN & RED MED. DENSE MOIST MED. PLASTIC CLAYEY SAND (A-2-6)

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

(13)
(PI=16)
(10)

BT
DRY
(8/13/08)

2.00:1 2.00:1

RESIDUAL

906.75

RESIDUAL

906.25

439+50.00

-L-

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

21-JUN-2010 15:49
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jmecluire
AT 0EH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	55

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

1030
1020
1010
1000
990
980
970
960
950
940
930
920
910
900
890

954.987

RESIDUAL

4:1

RESIDUAL

937.10

6:1

0.044

6:1

5:1

918.095

D.P. 917.426

NR

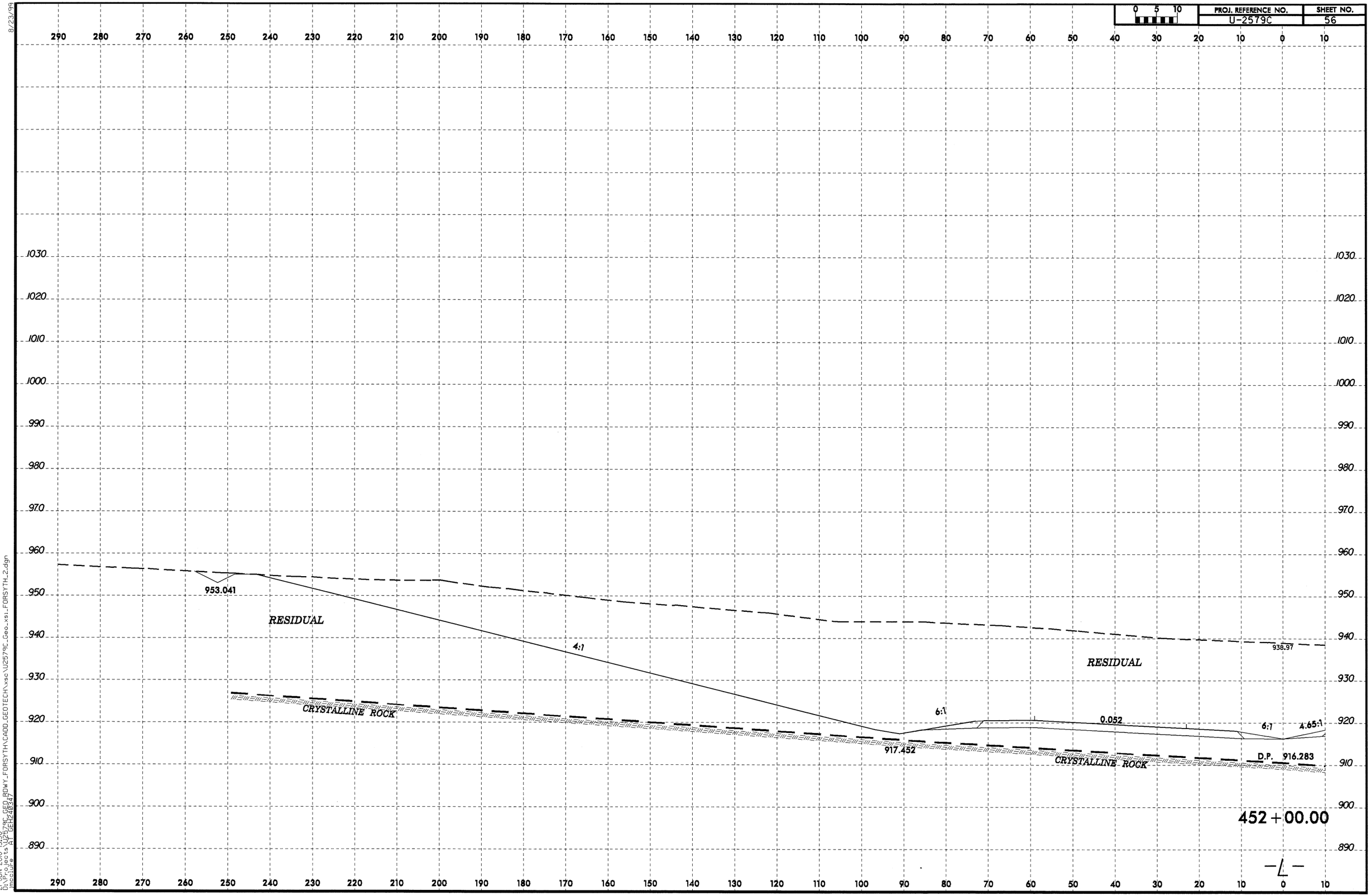
451+50.00

—L—

21-JUN-2010 15:49
D:\Proj_sets\U2579C_GEO_ROWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xsl_FORSYTH_2.dgn
mcclure
AT GEH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	56



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mcclure
AF GEH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	57

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

1030
1020
1010
1000
990
980
970
960
950
940
930
920
910
900
890

952.459

RESIDUAL

4:1

CRYSTALLINE ROCK

916.810

6:1

0.061

6:1

4.28:1

941.03

RESIDUAL

CRYSTALLINE ROCK

D.P. 915.140

452+50.00

—L—

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

21-JUN-2010 15:50
D:\Projects\U2579C_GEO_RDWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xsi_FORSYTH_2.dgn
imcolore
ATGEH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	58

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

1030
1020
1010
1000
990
980
970
960
950
940
930
920
910
900
890

952.156

RESIDUAL

4:1

CRYSTALLINE ROCK

916.166

6:1

0.069

6:1

4:1

942.89

RESIDUAL

D.P. 913.998

CRYSTALLINE ROCK

453+00.00

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

21-JUN-2010 15:50
D:\Projects\U2579C_GEO_RDWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xsl_FORSYTH_2.dgn
Microstation V8 2004 (05.03.01.47)
AF GEH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	59

RESIDUAL

4:1

CRYSTALLINE ROCK

943.13

RESIDUAL

6:1

0.070

6:1

4:1

916.083

D.P. 913.850

CRYSTALLINE ROCK

453+06.48

—L—

21-JUN-2010 15:50
D:\Projects\U2579C_GEO_ROWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xs1_FORSYTH_2.dgn
meclure
AT GEIH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	60

RESIDUAL

RESIDUAL

RESIDUAL

RED V. STIFF MOIST LOW PLASTIC SILTY SANDY CLAY (A-7-5)

RED-TAN STIFF MOIST SLI. MICA CLAYEY SANDY SILT (A-5)

TAN TO DK. OLIVE-GRAY LOOSE TO MED. DENSE MOIST V. MICA. TO NON MICA SILTY SAND (A-2-5, A-2-4)

4:1

6:1

0.070

6:1

4:1

CRYSTALLINE ROCK

WEATHERED ROCK (SEV. WEATH. CRYSTALLINE ROCK)

CRYSTALLINE ROCK

SS-180
SS-181
SS-182
SS-183
SS-184
MS-184
SS-185

453+50 -L- CL

16 (PI=13)
11
7
9
10
9
17

CAVE 08/08
08/08

AR

D.P. 912.942

453+50.00

-L-

21-JUN-2010 15:50
D:\Projects\U2579C_GED_ROWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xsl_FORSYTH_2.dgn
mcclure
AT GEH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	61

RESIDUAL

4:1

CRYSTALLINE ROCK

914.135

6:1

0.070

6:1

4:1

RESIDUAL

947.68

CRYSTALLINE ROCK

D.P. 911.901

454+00.00

—L—

21-JUN-2010 15:50
D:\Projects\U2579C_GEO_RDWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xsi_FORSYTH_2.dgn
Imcclure
AT GEH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	62

RESIDUAL

4:1

CRYSTALLINE ROCK

913.142

RESIDUAL

947.74

6:1

0.070

6:1

4:1

CRYSTALLINE ROCK

D.P. 910.908

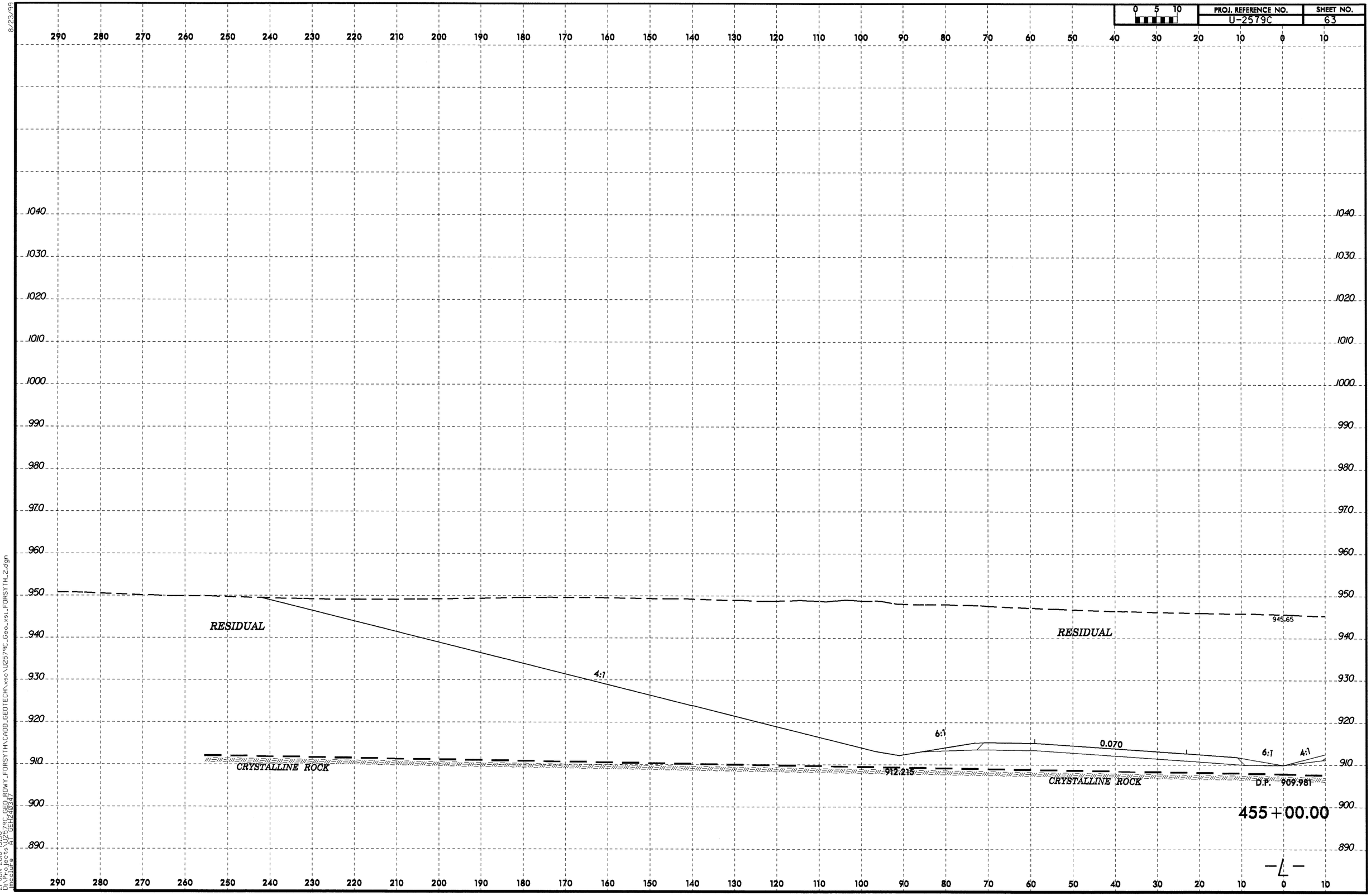
454+50.00

—L—

2H-JUN-2000 15:50
U:\Projects\U2579C_GEO_ROWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xsi_FORSYTH_2.dgn
Imeloure
AT 0EH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	63



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mcclure
AP GEH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	64

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

1040
1030
1020
1010
1000
990
980
970
960
950
940
930
920
910
900
890

RESIDUAL

4:1

CRYSTALLINE ROCK

911.353

6:1

0.070

6:1

4:1

0.3

909.20

RESIDUAL

943.97

CRYSTALLINE ROCK

455+50.00

—L—

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

21-JUN-2000 15:50
D:\Projects\U2579C_GEO_RDWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xsi_FORSYTH_2.dgn
AT GEH240347
Imeclure

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	65

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

1040
1030
1020
1010
1000
990
980
970
960
950
940
930
920
910
900
890

RESIDUAL

4:1

910.555

CRYSTALLINE ROCK

6:1

0.070

6:1

4:1

943.49

RESIDUAL

O.P. 908.322

CRYSTALLINE ROCK

456+00.00

—L—

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

21-JUN-2010 15:50
D:\Projects\U2579C_GEO_RDWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xs1_FORSYTH_2.dgn
mcalvert
AP GEH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	66

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

1040 1030 1020 1010 1000 990 980 970 960 950 940 930 920 910 900 890

RESIDUAL

4:1

CRYSTALLINE ROCK

RESIDUAL

RED V. STIFF MOIST SILTY SANDY CLAY (A-7)

WHITE-GRAY-BLACK (SALT & PEPPER) & GRAY-OLIVE TO GRAY & WHITE MED. DENSE TO V. DENSE DRY TO SAT. SLI. MICA. & MICA. CLAYEY SAND (A-2-4) TO CLAYEY SILTY SAND (A-2-4) & SAND (A-2-4, A-2-5) W/SEV. WEATH. CRYSTALLINE ROCK & CRYSTALLINE ROCK LAYERS

6:1

0.070

4:1

909.776

CRYSTALLINE ROCK

B.P. 907.542

SS-186
SS-187
SS-188
SS-189

456+50 -L- CL

17 29 100 27 84 60/.1 36 60/.1

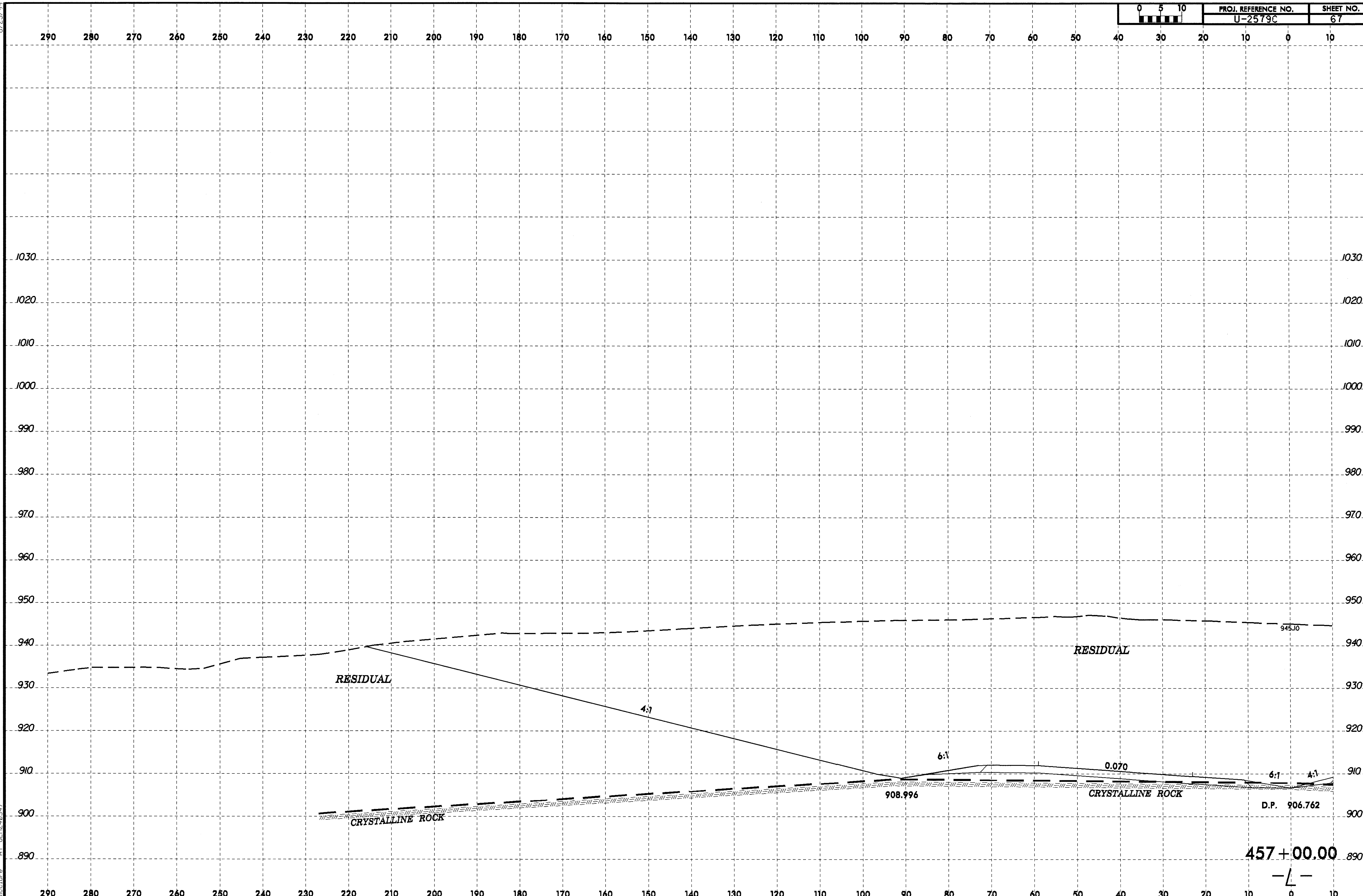
CAVE 08/08 08/08

456+50.00

-L-

21-JUN-2010 15:50
D:\Projects\U2579C_GEO_RDWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xsL_FORSYTH_2.dgn
mcclure
AT GEH240347

PROJ. REFERENCE NO.	SHEET NO.
U-2579C	67



8/23/99

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lmcclure AT GEH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	68

457+25 -L-
60.00 LT.

RESIDUAL

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

945.29

RESIDUAL

RED-TAN MED. STIFF MOIST SANDY SILT (A-6)

4:1

6:1

WEATHERED ROCK (REV. WEATH. CRYSTALLINE ROCK)

0.070

AR

6:1

4:1

CRYSTALLINE ROCK

908.216

CRYSTALLINE ROCK

D.P. 905.983

457+50.00
-L-

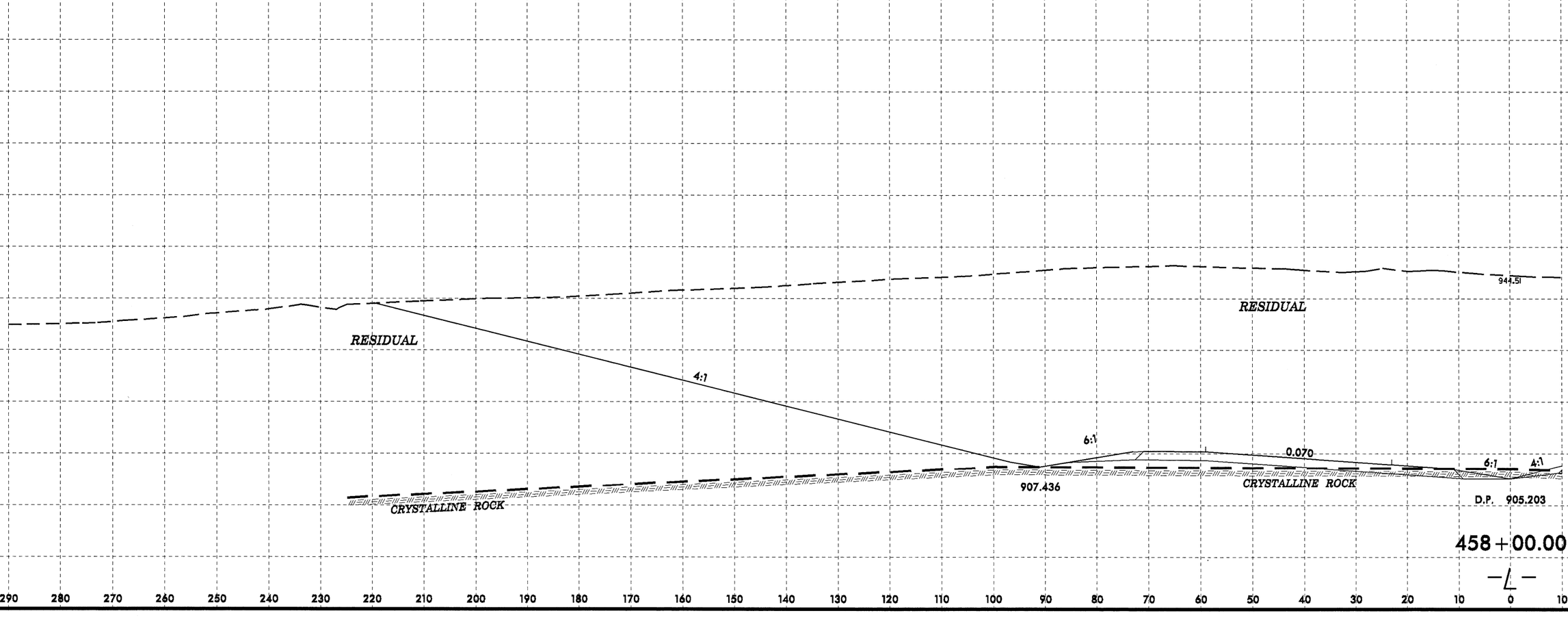
22-JUN-2000 11:50
D:\Projects\U2579C_GEO_RDWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xsl_FORSYTH_2.dgn
mcclure
AT GEH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	69

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

1040 1030 1020 1010 1000 990 980 970 960 950 940 930 920 910 900 890



458+00.00

—L—

22-JUN-2010 11:50
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mcclure
A1 GEH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	70

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

1040
1030
1020
1010
1000
990
980
970
960
950
940
930
920
910
900
890

RESIDUAL

RESIDUAL

4:1

6:1

0.070

6:1

4:1

943.35

906.656

D.P. 904.423

CRYSTALLINE ROCK

CRYSTALLINE ROCK

458+50.00

—L—

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

22-JUN-2010 11:50
D:\Projects\U2579C_GEO_RDWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xs1_FORSYTH_2.dgn
jmeclure

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	71

RESIDUAL

4:1

RESIDUAL

6:1

0.070

6:1

4:1

942.03

905.876

CRYSTALLINE ROCK

CRYSTALLINE ROCK

D.P. 903.643

459+00.00
-L-

22-JUN-2010 11:51
D:\Projects\ATGEH240347\Microstation\U2579C_GEO_RDWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xs1_FORSYTH_2.dgn

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	72

290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10

1040
1030
1020
1010
1000
990
980
970
960
950
940
930
920
910
900
890

RESIDUAL

4:1

6:1

905.096

CRYSTALLINE ROCK

RESIDUAL RED MED. STIFF MOIST SILTY SANDY CLAY (A-7)

RED-TAN & OLIVE MED. DENSE MOIST CLAYEY SAND (A-2-4)

TAN & OLIVE STIFF MOIST LOW PLASTIC SILTY SANDY CLAY (A-7-6)

TAN & OLIVE STIFF TO V. STIFF MOIST CLAYEY SANDY SILT (A-4) W/RK. FRAGS.

OLIVE & TAN MED. DENSE TO V. DENSE WET MICA. CLAYEY SILTY SAND (A-2-4)

WEATHERED ROCK (SEV. WEATH. CRYSTALLINE ROCK)

CRYSTALLINE ROCK

SS-190
SS-191
SS-192
SS-193
MS-193

459+50 -L- CL

11
12 (PI=13)
13
15
15
23
20
77

CAVE 08/25/99

B.P. 909.863 AR

459+50.00 -L-

21-JUN-2010 15:51
D:\Projects\U2579C_GEO_RDWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xsl_FORSYTH_2.dgn
imcclure AT GEH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	73

RESIDUAL

4:1

RESIDUAL

937.92

6:1

0.070

6:1

4:1

904.317

D.P. 902.083

CRYSTALLINE ROCK

CRYSTALLINE ROCK

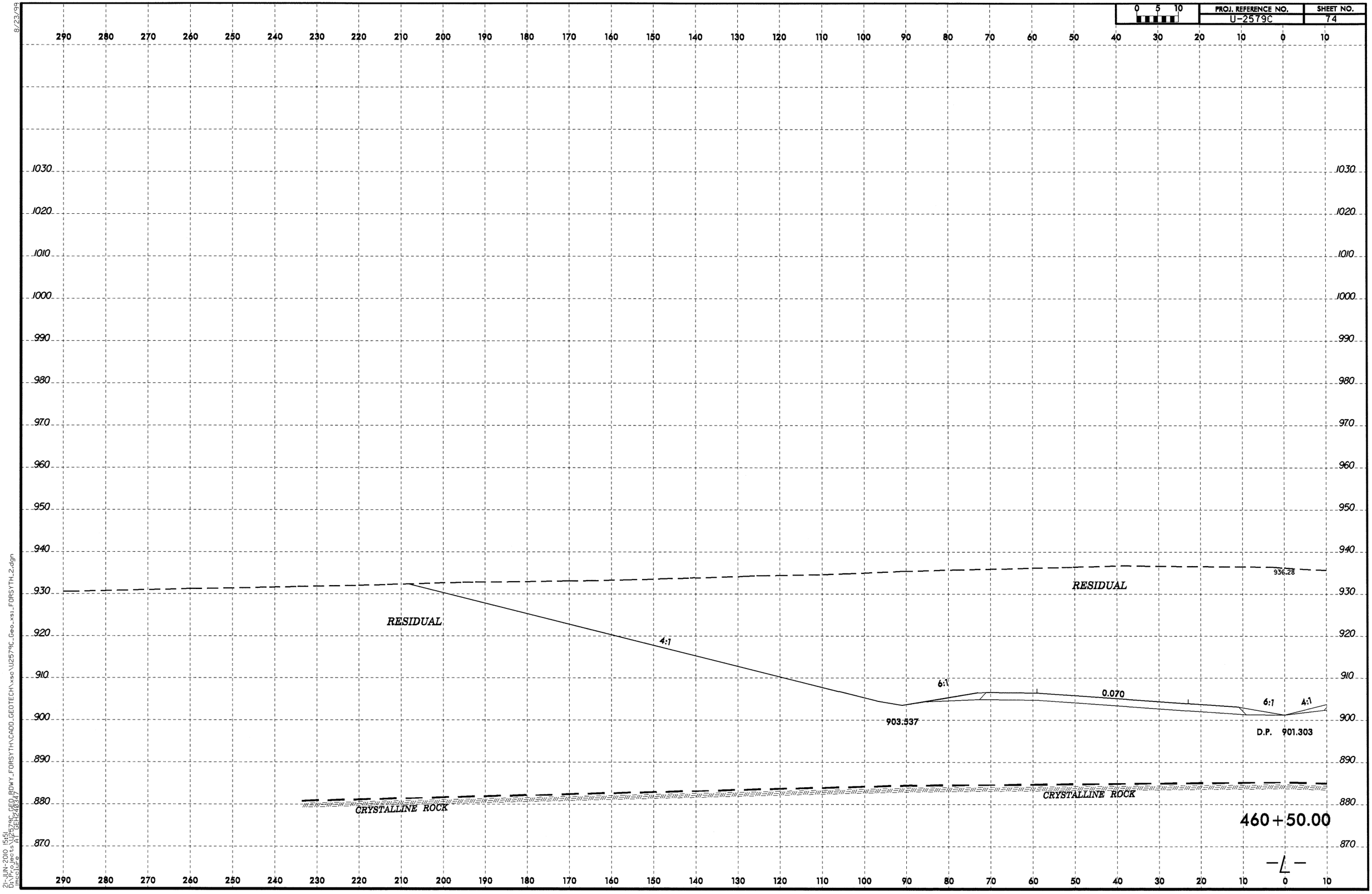
460+00.00

—L—

21-JUN-2010 15:51
D:\Projects\U2579C_GEO_ROWY_FORSYTH\CADD_GEOTECH\xsec\U2579C_Geo_xsL_FORSYTH_2.dgn
mcclure
AT GEH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	74



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Microsurface
AT 08H240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	75

RESIDUAL

4:1

902.757

6:1

0.070

6:1

4:1

RESIDUAL

932.75

D.P. 900.524

NR

461+00.00

—L—

21-JUN-2010 15:51
D:\Projects\U2579C_GEO_ROWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xsl_FORSYTH_2.dgn
mcclure
AT GEH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	76

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

1030
1020
1010
1000
990
980
970
960
950
940
930
920
910
900
890

SS-176
SS-177
SS-178
SS-179

451+50 -L-
110.00 RT.

937.10

RESIDUAL

RED MED. STIFF MOIST SLI. MICA. CLAYEY SANDY SILT (A-5)

RESIDUAL

6:1 5:1 0.044 6:1 1:1

D.P. 917.426

914.590

7
5
6
28
25

CAVED
08/08
08/08

BT

OLIVE & TAN LOOSE TO MED. DENSE MOIST TO SAT. CLAYEY SILTY SAND TO SILTY SAND (A-2-5) W/RK. FRAGS.

NR
451+50.00

-L-

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

21-JUN-2001 15:52
D:\Projects\U2579C_GEO_RDWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xsl_FORSYTH_2.dgn
mecclure

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	77

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

1030
1020
1010
1000
990
980
970
960
950
940
930
920
910
900
890

938.97

RESIDUAL

6:1 4.65:1 0.052 6:1 4:1

RESIDUAL

D.P. 916.283

913.131

CRYSTALLINE ROCK

CRYSTALLINE ROCK

452+00.00

—L—

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

21-JUN-2010 15:52
D:\Projects\U2579C_GED_RDWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xsi_FORSYTH_2.dgn
meclure
AT GEI#240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	78

941.03

RESIDUAL

6:1 4.28:1 0.061 6:1 4:1

RESIDUAL

D.P. 915.140

911.670

CRYSTALLINE ROCK

CRYSTALLINE ROCK

452 + 50.00

—L—

21-JUN-2010 15:52
D:\Projects\U2579C_GEO_RDWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xsi_FORSYTH_2.dgn
jmcclure
AT GEH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	79

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

1030
1020
1010
1000
990
980
970
960
950
940
930
920
910
900
890

942.89

RESIDUAL

RESIDUAL

6:1 4:1 0.069 6:1 4:1

D.P. 913.998

910.213

CRYSTALLINE ROCK

CRYSTALLINE ROCK

453+00.00

—L—

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

21-JUN-2010 15:52
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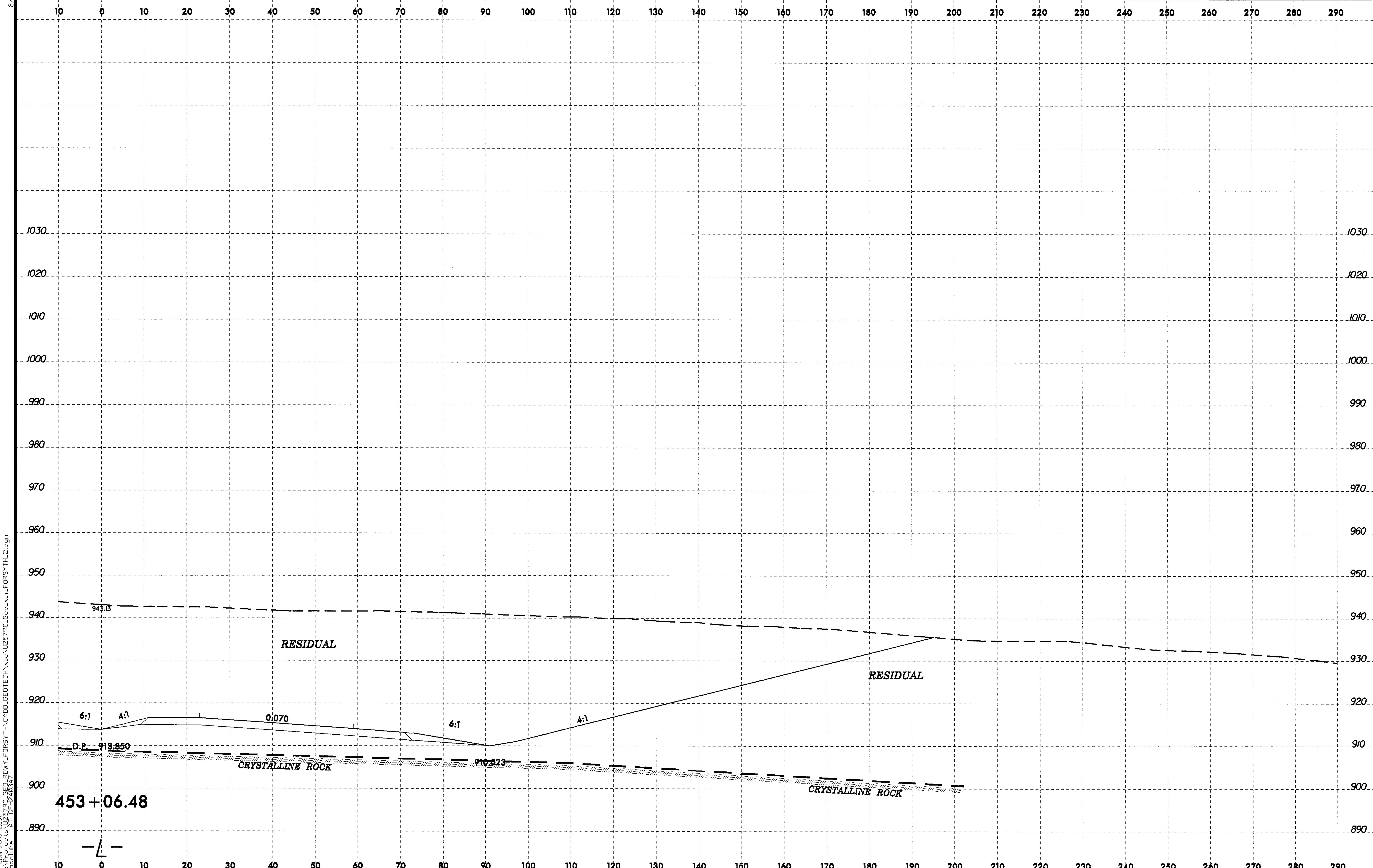
mcclure
AF GEH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	80



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lmcclure AT GEH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	81

SS-180
SS-181
SS-182
SS-183
SS-184
MS-184
SS-185

453+50 -L- CL

RED V. STIFF MOIST LOW PLASTIC SILTY SANDY CLAY (A-7-5) RESIDUAL

RED-TAN STIFF MOIST SLI. MICA CLAYEY SANDY SILT (A-5)

TAN TO DK. OLIVE-GRAY LOOSE TO MED. DENSE MOIST V. MICA TO NON MICA SILTY SAND (A-2-5, A-2-4)

RESIDUAL

RESIDUAL

WEATHERED ROCK (SEV. WEATH. CRYSTALLINE ROCK)

CRYSTALLINE ROCK

CRYSTALLINE ROCK

EAVED 08/08

08/08

6:1

4:1

0.070

6:1

4:1

AR

D.P. 912.942

909.115

453+50.00 -L-

21-JUN-2010 15:52
D:\PROJECTS\U-2579C_GED_RDWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xs1_FORSYTH_2.dgn
imcintyre
AP GEH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	82

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

1040
1030
1020
1010
1000
990
980
970
960
950
940
930
920
910
900
890

947.68

RESIDUAL

RESIDUAL

6:1 4:1 0.070 6:1 4:1

D.P. 911.901

CRYSTALLINE ROCK

908.075

CRYSTALLINE ROCK

454+00.00

—L—

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

21-JUN-2010 15:52
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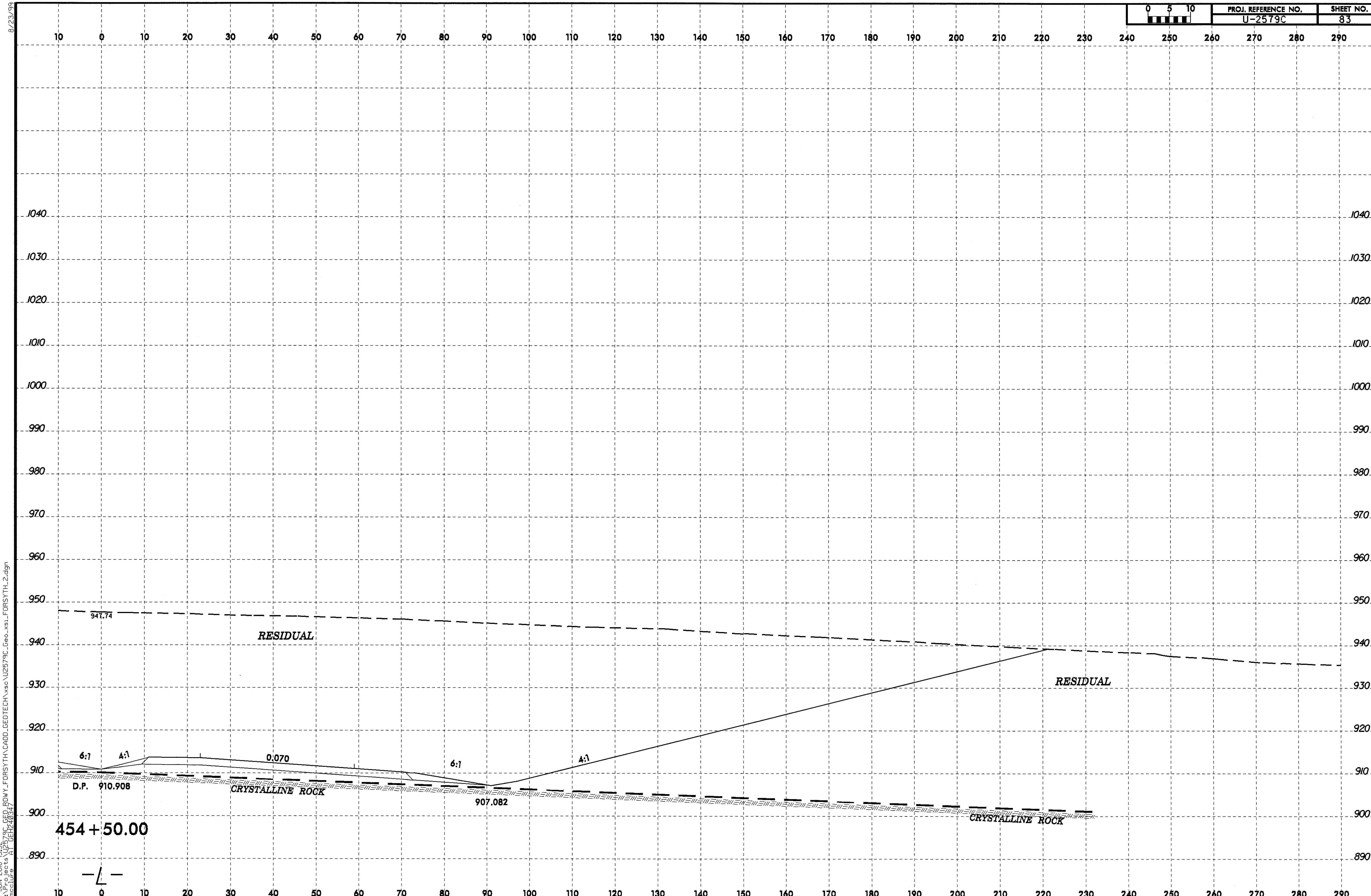
imcclure
AT GEH240347

8/23/99



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lmcclure AT GEH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	84

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

1040
1030
1020
1010
1000
990
980
970
960
950
940
930
920
910
900
890

945.65

RESIDUAL

RESIDUAL

6:1 4:1 0.070 6:1 4:1

D.P. 909.981

CRYSTALLINE ROCK

906.155

CRYSTALLINE ROCK

455+00.00

—L—

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

21-JUN-2010 15:52
D:\Proj_docs\U2579C_GEO_RDWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xs1_FORSYTH_2.dgn
imcalture
AF GEH24037

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	85

RESIDUAL

943.97

RESIDUAL

6:1

4:1

0.070

6:1

4:1

O.F. 909.120

CRYSTALLINE ROCK

905.293

CRYSTALLINE ROCK

455+50.00

21-JUN-2010 15:53
D:\Projects\U2579C_GEO_ROWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xs1_FORSYTH_2.dgn
imcclure
AT GEH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	86

943.49

RESIDUAL

6:1 4:1 0.070 6:1 4:1

RESIDUAL

D.P. 908.322

CRYSTALLINE ROCK

904.495

CRYSTALLINE ROCK

456+00.00

—L—

21-JUN-2010 15:53
D:\Projects\U2579C_GEO_RDWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xs1_FORSYTH_2.dgn
imeclure
AT GEH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	87

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

1040 1030 1020 1010 1000 990 980 970 960 950 940 930 920 910 900 890

SS-186
SS-187
SS-188
SS-189

456+50 -L-
CL

RESIDUAL
RED V. STIFF MOIST SILTY SANDY CLAY (A-7)

17 29 100 27 84 60/.1 36 60/.1

WHITE-GRAY-BLACK (SALT & PEPPER) & GRAY-OLIVE TO GRAY & WHITE
MED. DENSE TO V. DENSE DRY TO SAT. SLI. MICA. & MICA.
CLAYEY SAND (A-2-4) TO CLAYEY SILTY SAND (A-2-4)
& SAND (A-2-4, A-2-5) W/SEV. WEATH. CRYSTALLINE ROCK
& CRYSTALLINE ROCK LAYERS

CAVED 08/08

4:1 08/08

6:1

0.070

6:1

4:1

RESIDUAL

B.P. 907.542

CRYSTALLINE ROCK

903.716

CRYSTALLINE ROCK

456+50.00
-L-

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

21-JUN-2010 15:53
D:\Projects\U2579C_GEO_ROWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xsL_FORSYTH_2.dgn
meclure
AT GEH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	88

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

1030
1020
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890

945.10

RESIDUAL

RESIDUAL

6:1 4:1 0.070 6:1 4:1

D.P. 906.762

CRYSTALLINE ROCK

902.936

CRYSTALLINE ROCK

457+00.00

—L—

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

22-JUN-2010 11:51
D:\Projects\U2579C_GEO_ROWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xsi_FORSYTH_2.dgn
User:GEH240347
Image

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	89

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

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945.29

RED MED. STIFF MOIST SILTY SANDY CLAY (A-7) RESIDUAL

RESIDUAL

RED-TAN MED. STIFF MOIST SANDY SILT (A-5)

6:1 4:1 WEATHERED ROCK (SEV. WEATH. CRYSTALLINE ROCK) 6:1 4:1

CRYSTALLINE ROCK

D.P. 905.983

902.156

CRYSTALLINE ROCK

457+50.00

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

22-JUN-2010 11:51
User:jcole
Pw:jcole
Dgn:\\Mcfile\Projects\U2579C_GEO_ROW_FORSYTH\CADD_GEOTECH\xsec\U2579C_Geo_xsL_FORSYTH_2.dgn
Default
Cell:
Level:
Active Model:
GEH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	90

944.51

RESIDUAL

RESIDUAL

6:1 4:1 0.070 6:1 4:1

CRYSTALLINE ROCK

CRYSTALLINE ROCK

D.P. 905.203

901.376

458+00.00

—L—

22-JUN-2010 11:51
G:\Projects\U-2579C_GEO_ROWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xsi_FORSYTH_2.dgn
Microstation V8 (SELECT Series 2) 08.11.07.347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	91

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

1040
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943.35

RESIDUAL

RESIDUAL

6:1 4:1 0.070 6:1 4:1

D.P. 904.423

CRYSTALLINE ROCK

900.596

CRYSTALLINE ROCK

458+50.00

—L—

22-JUN-2010 11:51
D:\Projects\U2579C_GEO_ROWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xsi_FORSYTH_2.dgn
imcclure
AT GEH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	92

942.03

RESIDUAL

6:1 4:1 0.070 6:1 4:1

RESIDUAL

D.P. 903.643

CRYSTALLINE ROCK

899.816

CRYSTALLINE ROCK

459+00.00

22-JUN-2010 15:51
D:\Projects\U2579C_GEO_ROWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xs1_FORSYTH_2.dgn
Imeclure
AT GEI-2240347

8/23/99

0 5 10

PROJ. REFERENCE NO.	SHEET NO.
U-2579C	93

SS-190
SS-191
SS-192
SS-193
MS-193

459+50 -L-
CL

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

RED-TAN & OLIVE MED. DENSE MOIST CLAYEY SAND (A-2-4)

RESIDUAL

TAN & OLIVE STIFF MOIST LOW PLASTIC SILTY SANDY CLAY (A-7-6)

(PI=13)

TAN & OLIVE STIFF TO V. STIFF MOIST CLAYEY SANDY SILT (A-4) W/RK. FRAGS.

OLIVE & TAN MED. DENSE TO V. DENSE WET MICA, CLAYEY SILTY SAND (A-2-4)

CAVED

6:1

0.070

6:1

4:1

WEATHERED ROCK (SEV. WEATH. CRYSTALLINE ROCK)

CRYSTALLINE ROCK

RESIDUAL

CRYSTALLINE ROCK

459+50.00

21-JUN-2010 15:53
D:\Projects\U-2579C_GEO_ROWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xsi_FORSYTH_2.dgn
User: mcclure
PW: GEH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	94

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

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890
880

937.92

RESIDUAL

6:1 4:1 0.070 6:1 4:1

D.P. 902.083

898.257

RESIDUAL

CRYSTALLINE ROCK

CRYSTALLINE ROCK

460+00.00

—L—

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

21-JUN-2010 15:54
D:\Projects\U2579C_GED_RDWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xs1_FORSYTH_2.dgn
mcclure GEH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	95

936.28

RESIDUAL

RESIDUAL

6:1 4:1 0.070 6:1 4:1

D.P. 901.303

897.477

CRYSTALLINE ROCK

CRYSTALLINE ROCK

460+50.00

—L—

21-JUN-2010 15:54
D:\Projects\U2579C_GEO_RDWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xs1_FORSYTH_2.dgn
imcclure AT GEH240347

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2579C	96

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

1030
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890
880

932.75

RESIDUAL

RESIDUAL

6:1 4:1 0.070 6:1 4:1

D.P. 900.524

896.697

NR

461+00.00

—L—

21-JUN-2010 15:54
D:\Projects\U2579C_GEO_RDWY_FORSYTH\CADD_GEOTECH\xsc\U2579C_Geo_xsl_FORSYTH_2.dgn
imcclure
AT GEH24047

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC	Line or Boring ID
SS-1	150 LT	372+00	4.00-5.50	A-7-6(11)	51	23	16.4	32.2	19.1	32.4	100	93	56	20.8	-	L
SS-2	150 LT	372+00	9.00-10.50	A-5(2)	53	8	13.8	51.0	21.1	14.2	100	96	44	-	-	L
SS-3	150 LT	376+00	3.90-5.40	A-7-5(5)	52	12	12.9	42.3	20.5	24.3	100	95	52	23.0	-	L
SS-4	150 LT	376+00	8.90-10.40	A-4(0)	38	NP	13.5	53.0	21.3	12.1	99	94	41	-	-	L
SS-5	80 RT	377+75	0.50-2.00	A-7-5(9)	56	15	10.7	35.8	21.1	32.4	99	95	59	-	-	L
SS-6	80 RT	377+75	4.00-5.50	A-5(0)	53	NP	18.6	51.6	19.7	10.1	100	93	37	-	-	L
SS-7	80 RT	377+75	9.00-10.50	A-2-5(0)	45	NP	18.2	59.0	14.7	8.1	100	94	31	-	-	L
SS-8	CL	377+85	3.70-5.20	A-6(4)	40	15	19.6	36.0	14.1	30.3	98	90	48	-	-	L
SS-9	CL	377+85	8.70-10.20	A-2-4(0)	32	10	38.4	39.2	10.2	12.1	73	56	20	-	-	L
SS-10	CL	380+50	4.50-6.00	A-7-6(5)	46	22	23.1	37.6	5.0	34.4	98	87	43	19.8	-	L
SS-11	CL	380+50	9.50-11.00	A-5(0)	45	4	18.4	47.3	18.1	16.2	98	91	40	-	-	L
SS-12	225 RT	382+50	0.50-2.00	A-4(4)	39	9	6.9	41.5	27.4	24.3	100	97	60	-	-	L
SS-13	225 RT	382+50	4.40-5.90	A-4(2)	30	10	20.8	34.6	14.3	30.3	98	87	48	-	-	L
SS-14	225 RT	382+50	7.00-8.50	A-2-4(0)	31	6	33.0	40.8	10.0	16.2	87	70	28	-	-	L
SS-15	225 RT	382+50	9.40-10.90	A-4(0)	38	NP	21.4	42.1	24.4	12.1	96	86	41	-	-	L
SS-16	50 LT	382+65	4.00-5.50	A-5(5)	56	8	13.8	34.8	19.1	32.4	98	91	56	25.8	-	L
SS-17	50 LT	382+65	9.00-10.50	A-7-5(6)	47	14	15.6	38.2	24.0	22.2	98	89	53	-	-	L
SS-18	CL	394+00	3.70-5.20	A-4(1)	37	8	15.4	47.1	17.3	20.2	97	93	42	18.9	-	L
SS-19	CL	394+00	8.70-10.20	A-4(0)	33	NP	14.4	55.0	18.5	12.1	96	92	37	-	-	L
SS-20	CL	14+50	3.90-5.40	A-7-6(9)	46	17	11.9	30.5	21.1	36.4	96	91	60	22.7	-	Y1RPC
SS-21	CL	14+50	8.90-10.40	A-4(1)	38	9	11.1	54.8	17.9	16.2	100	97	43	-	-	Y1RPC
SS-22	CL	391+00	0.50-2.00	A-4(0)	27	5	16.3	46.9	14.3	22.4	95	90	41	-	-	L
SS-23	CL	391+00	3.70-5.20	A-4(0)	31	9	23.9	43.9	18.0	14.3	91	79	37	-	-	L
S-24	CL	385+00	0.00-2.00	A-7-5(22)	65	32	12.2	18.8	9.8	59.2	95	89	68	-	-	L
S-25	CL	385+00	2.00-6.00	A-7-5(37)	76	35	4.7	11.8	8.0	75.5	100	98	86	-	-	L
S-26	CL	387+75	0.00-4.00	A-4(1)	29	9	12.9	45.7	16.9	24.5	98	93	47	-	-	L
S-27	CL	387+75	4.00-8.00	A-4(0)	23	6	17.6	45.3	14.7	22.4	92	86	40	-	-	L
S-28	CL	14+00	0.00-4.00	A-6(3)	32	11	14.1	43.9	19.6	22.4	97	92	49	-	-	Y1RPC
SS-29	CL	14+00	4.00-5.50	A-2-4(0)	28	4	15.9	57.8	16.1	10.2	95	90	34	-	-	Y1RPC
SS-30	CL	14+00	9.00-10.50	A-4(0)	35	3	10.0	54.5	27.3	8.2	98	96	46	-	-	Y1RPC
SS-31	CL	17+50	4.00-5.50	A-5(4)	41	7	11.4	38.4	25.7	24.5	100	97	60	20.2	-	Y1RPB
SS-32	CL	17+50	9.00-10.50	A-4(0)	36	2	14.9	47.8	12.9	24.5	99	94	46	-	-	Y1RPB
SS-33	75 RT	22+50	3.30-4.80	A-2-4(0)	29	NP	25.1	51.2	9.4	14.3	72	64	22	-	-	Y1RPC
SS-34	CL	25+00	4.00-5.50	A-2-4(0)	26	4	33.9	43.9	12.0	10.2	89	76	25	-	-	Y1RPB
SS-35	CL	25+00	9.00-10.50	A-2-4(0)	25	NP	20.8	54.9	16.1	8.2	99	94	32	-	-	Y1RPB
SS-36	90 RT	20+90	0.50-2.00	A-2-4(0)	23	NP	18.8	54.5	18.6	8.2	98	91	33	-	-	Y1RPC
SS-37	90 RT	20+90	4.00-4.50	A-2-4(0)	31	NP	40.4	42.2	13.3	4.1	96	76	22	-	-	Y1RPC
SS-38	90 RT	20+90	9.30-10.80	A-2-4(0)	23	NP	34.7	48.6	12.7	4.1	96	81	22	-	-	Y1RPC
SS-39	CL	20+40	8.90-10.40	A-2-4(0)	32	NP	26.9	46.6	18.4	8.1	97	86	34	-	-	Y1RPC
SS-40	110 RT	21+50	0.50-2.00	A-2-6(0)	27	11	24.9	42.1	6.7	26.3	91	79	34	-	-	Y1RPB
SS-41	110 RT	21+50	3.90-5.40	A-2-4(0)	24	6	25.5	44.7	11.5	18.2	84	72	30	-	-	Y1RPB
SS-42	110 RT	21+50	8.90-10.40	A-7-6(8)	44	19	14.6	37.1	26.0	22.3	99	93	54	30.8	-	Y1RPB
SS-43	110 RT	21+50	13.90-15.40	A-2-4(0)	33	3	32.7	35.3	23.9	8.1	88	71	34	-	-	Y1RPB
SS-44	110 RT	21+50	18.90-20.40	A-2-4(0)	34	4	24.9	42.6	24.3	8.1	86	75	34	-	-	Y1RPB
SS-45	CL	398+35	3.50-5.00	A-4(0)	27	8	25.2	38.3	18.3	18.3	95	82	41	-	-	L
SS-46	CL	398+35	8.50-10.00	A-2-4(0)	26	7	32.0	35.3	22.5	10.1	87	70	34	-	-	L
SS-47	CL	398+35	13.50-15.00	A-2-4(0)	24	NP	26.4	46.5	21.1	6.1	97	86	35	-	-	L
SS-48	CL	398+35	18.50-20.00	A-2-4(0)	25	NP	23.9	50.5	19.5	6.1	98	87	34	-	-	L
SS-49	CL	401+50	3.80-5.30	A-4(0)	35	6	19.9	48.7	23.3	8.1	100	97	38	13.9	-	L
SS-50	CL	401+50	8.80-10.30	A-2-4(0)	30	6	20.3	52.5	19.1	8.1	98	91	35	-	-	L
SS-51	CL	401+50	13.80-15.30	A-4(0)	33	NP	21.1	50.9	21.9	6.1	100	94	36	-	-	L
SS-52	20 RT	11+25	4.00-5.50	A-7-6(14)	60	33	23.1	26.1	10.2	40.5	99	85	53	-	-	Y1LPB
SS-53	20 RT	11+25	9.00-10.50	A-7-5(13)	57	24	15.8	29.8	13.9	40.5	99	90	58	-	-	Y1LPB
SS-54	20 RT	11+25	14.00-15.50	A-7-5(9)	65	17	16.4	37.1	30.3	16.2	100	92	55	-	-	Y1LPB
SS-55	20 RT	11+25	19.00-20.50	A-2-5(0)	45	NP	18.0	62.0	13.9	6.1	100	92	30	-	-	Y1LPB
SS-56	20 RT	11+25	24.00-25.50	A-5(0)	47	NP	14.2	58.6	21.2	6.1	100	94	37	27.0	-	Y1LPB
SS-57	20 RT	11+25	34.00-35.50	A-2-4(0)	39	NP	22.5	61.0	14.5	2.0	100	90	25	-	-	Y1LPB
SS-58	25 RT	14+00	4.00-5.50	A-7-5(16)	63	33	22.5	23.1	9.8	44.6	97	83	56	-	-	Y1LPB
SS-59	25 RT	14+00	9.00-10.50	A-2-5(0)	48	NP	23.3	51.1	17.5	8.1	95	82	32	-	-	Y1LPB
SS-60	25 RT	14+00	14.00-15.50	A-2-4(0)	40	NP	26.3	57.5	12.1	4.1	97	83	25	-	-	Y1LPB
SS-61	50 RT	16+00	3.90-5.40	A-7-5(10)	55	15	17.8	25.4	22.3	34.5	97	85	62	32.3	-	Y1LPB
SS-62	50 RT	16+00	8.90-10.40	A-5(4)	47	6	17.8	28.8	39.1	14.2	100	91	61	-	-	Y1LPB
SS-63	50 RT	16+00	13.90-15.40	A-5(0)	49	NP	25.8	44.2	26.0	4.1	100	87	40	32.4	-	Y1LPB
SS-64	50 RT	16+00	18.90-20.40	A-2-4(0)	38	NP	28.0	46.5	19.5	6.1	98	85	33	-	-	Y1LPB
SS-65	50 RT	16+00	23.90-25.40	A-2-4(0)	24	NP	12.8	67.7	15.4	4.1	100	92	29	-	-	Y1LPB
SS-66	CL	18+00	3.70-5.20	A-4(0)	40	NP	15.4	50.7	19.7	14.2	98	91	42	-	-	Y1LPB
SS-67	CL	18+00	8.70-10.20	A-7-5(10)	52	12	4.9	35.1	31.6	28.4	100	98	69	-	-	Y1LPB
SS-68	CL	18+00	13.70-15.20	A-2-4(0)	31	NP	16.0	60.0	19.9	4.1	100	93	35	-	-	Y1LPB
SS-69	CL	18+00	23.70-25.20	A-4(0)	35	5	21.9	46.9	27.2	4.1	99	90	41	28.1	-	Y1LPB
SS-70	CL	18+00	28.70-30.20	A-4(0)	33	NP	23.9	44.0	28.0	4.1	99	88	42	-	-	Y1LPB
SS-71	CL	18+00	33.70-35.20	A-2-4(0)	27	NP	19.5	61.3	17.2	2.0	98	91	28	-	-	Y1LPB
SS-72	50 LT	36+00	3.80-5.30	A-5(6)	48	10	13.8	35.3	30.6	20.3	100	94	60	-	-	Y1RPB
SS-73	50 LT	36+00	8.80-10.30	A-7-5(5)	44	11	10.8	47.3	27.8	14.2	100	97	55	-	-	Y1RPB
SS-74	50 LT	36+00	13.80-15.30	A-4(0)	38	NP	23.3	48.3	20.3	8.1	97	86	39	-	-	Y1RPB

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC	Line or Boring ID
SS-75	50 LT	36+00	18.80-20.30	A-4(0)	38	NP	10.8	56.2	24.9	8.1	100	95	44	-	-	Y1RPB
SS-76	50 LT	36+00	23.80-25.30	A-4(0)	36	NP	27.8	44.6	19.5	8.1	98	82	36	-	-	Y1RPB
SS-77	50 LT	36+00	28.80-30.30	A-5(4)	46	9	9.9	46.9	35.1	8.1	96	92	54	-	-	Y1RPB
SS-78	CL	31+50	4.00-5.50	A-5(4)	51	10	15.6	41.0	19.1	24.3	100	93	51	9.90	-	Y1RPC
SS-79	CL	31+50	9.00-10.50	A-2-5(0)	48	NP	15.2	60.2	16.4	8.1	100	96	34	-	-	Y1RPC
SS-80	CL	31+50	14.00-15.50	A-5(2)	44	8	18.5	44.0	23.3	14.2	100	91	47	-	-	Y1RPC
SS-81	CL	26+50	4.40-5.90	A-7-5(23)	64	26	8.3	19.3	23.7	48.7	100	96	77	25.0	-	Y1RPC
SS-82	CL	26+50	9.40-10.90	A-4(0)	38	3	23.3	42.2	20.3	14.2	99	88	42	-	-	Y1RPC
SS-83	CL	26+50	14.40-19.90	A-2-4(0)	30	NP	29.2	47.9	18.9	4.1	99	92	31	-	-	Y1RPC
SS-84	CL	29+00	4.30-5.80	A-7-5(6)	57	11	12.7	40.8	18.1	28.3	100	94	53	-	-	YIRPC
SS-85	CL	29+00	9.30-10.80	A-4(0)	36	5	27.9	42.7	21.3	8.1	100	85	37	-	-	YIRPC
SS-86	100 RT	29+00	0.50-2.00	A-4(0)	23	8	25.9	36.8	9.0	28.3	99	90	40	-	-	YIRPD
SS-87	100 RT	29+00	3.90-5.40	A-6(2)	32	12	26.3	31.7	9.6	32.4	100	90	45	-	-	YIRPD
SS-88	100 RT	29+00	8.90-10.40	A-2-4(0)	33	6	34.6	40.8	10.4	14.2	100	85	29	-	-	YIRPD
SS-89	CL	27+25	0.50-2.00	A-4(0)	36	3	25.3	42.3	14.3	18.2	99	88	39	-	-	YIRPD
SS-90	CL	27+25	3.50-5.00	A-2-4(0)	35	NP	31.5	50.4	14.1	4.0	99	85	25	-	-	Y1RPD
SS-91	CL	27+25	8.50-10.00	A-2-4(0)	36	NP	31.3	54.0	12.7	2.0	99	85	22	-	-	Y1RPD
SS-92	CL	30+35	3.30-4.80	A-7-5(11)	52	21	17.1	27.8	18.8	36.3	99	90	59	-	-	Y1
SS-93	CL	30+35	8.30-9.80	A-2-5(0)	41	NP	14.9	56.9	14.1	14.1	100	96	35	-	-	Y1
SS-94	CL	30+35	13.30-14.80	A-2-5(0)	45	NP	13.5	63.7	16.7	6.0	100	95	34	-	-	Y1
SS-95	CL	30+35	18.30-19.80	A-2-4(0)	36	NP	22.2	58.9	14.9	4.0	100	91	28	-	-	Y1
SS-96	CL	30+35	23.30-24.80	A-2-5(0)	43	NP	15.7	59.1	19.2	6.0	99	93	35	-	-	Y1
SS-97	CL	30+35	28.30-29.80	A-5(0)	44	NP	16.1	56.0	21.8	6.0	100	94	36	-	-	Y1
SS-98	CL	30+35	33.30-34.80	A-2-4(0)	33	NP	32.9	41.3	21.8	4.0	98	79	33	-	-	Y1
SS-99	140 RT	414+40	1.00-2.50	A-2-4(0)	25	NP	44.8	42.6	4.4	8.1	96	71	16	-	-	L
SS-100	140 RT	414+40	3.90-5.40	A-2-4(0)	21	NP	34.5	50.5	4.8	10.1	93	78	17	-	-	L
SS-101	140 RT	414+40	8.90-10.40	A-2-4(0)	27	NP	37.6	51.1	7.3	4.0	96	84	15	-	-	L
SS-102	25 LT	26+00	0.50-2.00	A-4(0)	34	6	22.8	43.6	15.4	18.2	97	87	37	-	-	YIRPD
SS-103	25 LT	26+00	2.00-3.50	A-2-4(0)	22	NP	27.3	53.9	6.7	12.1	98	87	23	-	-	YIRPD
SS-104	25 LT	26+00	8.80-10.30	A-2-4(0)	33	NP	33.9	54.3	7.7	4.0	96	85	16	-	-	YIRPD
SS-105	125 LT	416+50	3.40-4.90	A-7-5(4)	58	11	15.4	44.8	11.5	28.3	98	89	47	-	-	L
SS-106	125 LT	416+50	8.40-9.90	A-5(0)	49	NP	18.4	49.3	18.2	14.1	99	93	40	32.8	-	L
SS-107	125 LT	416+50	13.40-14.90	A-2-4(0)	37	NP	28.3	54.9	10.7	6.1	98	85	24	-	-	L
SS-108	CL	419+00	3.40-4.90	A-2-4(0)	34	NP	35.2	45.5	7.3	12.1	94	78	23	-	-	L
SS-109	CL	419+00	13.40-14.90	A-2-4(0)	39	NP	41.4	48.1	4.4	6.1	88	70	14	-	-	L
SS-110	CL	419+00	18.40-19.90	A-2-5(0)	52	NP	32.7	48.9	12.3	6.1	98	82	24	27.5	-	L
SS-111	CL	419+00	23.40-24.90	A-5(0)	43	NP	28.5	39.8	21.6	10.1	100	83	40	-	-	L
SS-112	CL	22+00	3.90-5.40	A-4(1)	40	10	30.5	36.6	14.7	18.2	100	82	39	-	-	YIRPD
SS-113	CL	22+00	8.90-10.40	A-2-5(0)	42	NP	35.8	38.6	13.5	12.1	100	80	32	-	-	YIRPD
SS-114	CL	22+00	13.90-15.40	A-2-4(0)	34	NP	38.8	36.8	14.3	10.1	97	73	30	-	-	YIRPD
SS-115	CL	22+00	18.90-20.40	A-2-4(0)	33	NP	46.9	40.7	9.4	3.0	81	57	14	-	-	YIRPD
SS-116	CL	19+00	0.50-2.00	A-7-5(22)	62	31	17.3	16.9	19.4	46.4	100	90	69	-	-	Y1RPD
SS-117	CL	19+00	4.00-5.50	A-6(3)	40	12	22.2	36.9	14.7	26.2	100	89	48	-	-	Y1RPD
SS-118	CL	19+00	9.00-10.50	A-4(0)	34	3	23.2	46.4	16.3	14.1	100	90	40	-	-	Y1RPD
SS-119	CL	19+00	14.00-15.50	A-2-4(0)	32	NP	27.6	49.6	16.7	6.0	100	86	32	12.2	-	Y1RPD
SS-120	CL	19+00	19.00-20.50	A-2-4(0)	36	NP	34.1	40.9	19.0	6.0	99	79	33	-	-	Y1RPD
SS-121	CL	15+50	3.90-5.40	A-5(1)	51	10	33.7	32.5	13.7	20.2	99	79	39	-	-	Y1RPD
SS-122	CL	15+50	8.90-10.40	A-2-5(0)	50	NP	37.3	32.3	18.3	12.1	100	79	35	-	-	Y1RPD
SS-123	CL	15+50	13.90-15.40	A-2-5(0)	42	NP	42.9	40.1	14.9	2.0	99	76	21	-	-	Y1RPD
SS-124	CL	15+50	18.90-20.40	A-2-4(0)	40	NP	30.2	49.0	14.7	6.0	100	85	31	-	-	Y1RPD
SS-125	CL	15+50	23.90-25.40	A-2-4(0)	30	NP	29.0	49.8	15.1	6.0	99	85	30	-	-	Y1RPD
SS-126	CL	15+50	28.90-30.40	A-2-5(0)	48	NP	22.6	52.4	19.0	6.0	99	90	35	-	-	Y1RPD
SS-127	CL	422+00	3.60-5.10	A-7-6(15)	53	25	17.7	20.4	17.5	44.4	97	89	63	-	-	L
SS-128	CL	422+00	8.60-10.10	A-4(1)	36	5	25.8	32.1	24.0	18.1	100	87	50	-	-	L
SS-129	CL	422+00	13.60-15.10	A-4(0)	36	3	28.0	41.1	22.8	8.1	99	85	40	-	-	L
SS-130	CL	422+00	18.60-20.10	A-2-4(0)	33	3	33.7	37.5	20.8	8.1	93	74	35	-	-	L
SS-131	CL	422+00	23.60-25.10	A-2-4(0)	31	NP	50.4	26.8	16.7	6.0	81	52	23	-	-	L
SS-132	CL	422+00	28.60-30.10	A-4(1)	40	4	22.0	39.9	26.0	12.1	99	88	48	-	-	L
SS-133	CL	426+00	4.00-5.50	A-7-5(10)	57	20	20.2	27.2	18.3	34.3	99	87	57	-	-	L
SS-134	CL	426+00	9.00-10.50	A-5(1)	52	7	25.8	42.9	21.2	10.1	99	85	40	-	-	L
SS-135	CL	426+00	14.00-15.50	A-5(0)	47	4	31.9	37.5	20.6	10.1	99	80	38	-	-	L
SS-136	CL	426+00	19.00-20.50	A-2-4(0)	30	NP	31.5	49.8	14.7	4.0	100	86	26	-	-	L
SS-137	CL	426+00	24.00-25.50	A-2-5(0)	41	NP	40.5	35.7	17.7	6.0	96	70	29	-	-	L
SS-138	75 LT	427+75	0.50-2.00	A-4(0)	23	6	36.4	29.3	12.0	22.2	97	78	36	-	-	L
SS-139	75 LT	427+75	4.00-5.50	A-5(2)	42	9	29.9	27.7	18.1	24.3	99	82	47	-	-	L
SS-140	75 LT	427+75	9.00-10.50	A-4(0)	37	5	34.4	36.4	17.1	12.1	95	75	36	-	-	L
SS-141	75 RT	431+00	4.00-5.50	A-7-5(11)	53	15	7.7	31.7	26.2	34.4	100	97	68	-	-	L
SS-142	75 RT	431+00	9.00-10.50	A-5(1)	54	5	15.4	50.2	18.3	16.2	100	95	43	26.0	-	L
SS-143	75 RT	431+00	14.00-15.50	A-5(2)	57	4	11.3	47.7	24.8	16.2	100	97	49	-	-	L
SS-144	75 RT	431+00	19.00-20.50	A-5(1)	54	4	11.9	48.3	25.6	14.2	100	96	47	-	-	L
SS-145	50 LT	434+00	4.00-5.50	A-5(3)	48	10	23.1	34.6	14.1	28.3	100	87	48	23.4	-	L
SS-146	50 LT	434+00	9.00-10.50	A-2-4(0)	40	NP	29.3	47.9	14.7	8.1	100	88	29	-	-	L
SS-147	40 RT	436+50	0.00-1.50	A-7-6(6)	45	16	23.3	26.5	9.8	40.4	99	87	53	-	-	L
SS-148	100 RT	437+20	4.00-5.50	A-4(1)	31	9	27.7	30.3	13.7	28.3	96	82	43	-	-	L

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC	Line or Boring ID
SS-149	100 RT	437+20	9.00-10.50	A-7-6(6)	42	15	21.8	23.9	9.8	44.5	98	87	56	22.5	-	L
SS-150	100 RT	437+20	11.50-13.00	A-6(1)	28	11	29.5	33.6	8.6	28.3	97	83	39	18.9	-	L
SS-151	100 RT	437+20	14.00-15.50	A-6(3)	37	15	26.7	29.5	11.4	32.4	97	84	45	-	-	L
SS-152	100 RT	437+20	16.50-18.00	A-5(2)	45	5	21.0	32.4	32.5	14.2	98	87	53	81.2	-	L
SS-153	100 RT	437+20	19.00-20.50	A-7-5(32)	66	31	4.7	15.8	47.2	32.4	100	98	86	-	-	L
SS-154	180 RT	436+90	3.50-5.00	A-7-6(7)	44	18	25.1	23.9	14.7	36.4	97	83	53	-	-	L
SS-155	60 LT	437+50	8.90-10.40	A-6(3)	38	13	24.9	29.3	17.5	28.3	98	86	48	-	-	L
SS-156	60 LT	437+50	13.90-15.40	A-7-5(16)	58	25	18.6	18.8	14.1	48.5	99	89	64	-	-	L
SS-157	60 LT	437+50	18.90-20.40	A-7-6(8)	52	25	25.7	27.5	12.4	34.4	95	81	48	-	-	L
SS-158	130 LT	437+50	0.00-1.50	A-5(1)	43	8	27.9	36.2	19.7	16.2	99	83	42	-	-	L
SS-159	130 LT	437+50	4.20-5.70	A-5(0)	46	NP	31.8	41.5	20.6	6.1	98	80	36	-	-	L
SS-160	130 LT	437+50	9.20-10.70	A-5(0)	55	NP	27.3	46.0	18.6	8.1	100	86	36	-	-	L
SS-162	120 RT	436+50	3.80-5.30	A-6(3)	36	14	29.1	30.0	12.6	28.3	99	84	44	-	-	L
SS-163	120 RT	436+50	8.80-10.30	A-7-5(10)	56	20	21.5	26.9	13.2	38.5	100	90	56	-	-	L
SS-164	90 RT	439+60	3.70-5.20	A-2-6(1)	36	16	31.4	36.0	6.3	26.3	88	73	32	-	-	L
SS-165	90 RT	439+60	8.70-10.20	A-4(0)	36	8	24.7	45.5	15.6	14.2	97	85	38	-	-	L
SS-166	100 RT	444+00	4.00-5.50	A-7-5(12)	57	12	7.5	26.7	27.3	38.5	99	96	72	-	-	L
SS-167	100 RT	444+00	9.00-10.50	A-7-5(12)	57	12	8.1	28.1	33.4	30.4	100	96	72	-	-	L
SS-168	40 RT	20+20	3.60-5.10	A-7-5(26)	68	27	6.3	19.2	21.9	52.6	100	97	79	-	-	Y2
SS-169	40 RT	20+20	8.60-10.10	A-7-5(15)	61	21	8.1	30.4	23.1	38.5	100	96	67	-	-	Y2
SS-170	40 RT	20+20	13.60-15.10	A-5(4)	56	8	9.7	45.1	26.9	18.2	98	93	53	-	-	Y2
SS-171	40 RT	20+20	18.60-20.10	A-5(0)	52	NP	12.1	57.1	16.6	14.2	100	97	40	-	-	Y2
SS-172	40 RT	20+20	23.60-25.10	A-5(0)	51	NP	13.0	58.3	16.6	12.1	99	94	38	-	-	Y2
SS-173	40 RT	20+20	28.60-30.10	A-5(0)	43	4	26.3	36.6	24.9	12.1	96	82	42	-	-	Y2
SS-174	40 RT	20+20	33.60-35.10	A-2-5(0)	41	NP	37.0	36.2	18.6	8.1	96	72	33	-	-	Y2
SS-175	40 RT	20+20	38.60-40.10	A-2-4(0)	35	NP	22.3	56.1	13.6	8.1	98	87	30	-	-	Y2
SS-176	110 RT	451+50	4.00-5.50	A-5(0)	44	NP	25.3	42.5	11.9	20.2	98	85	38	-	-	L
SS-177	110 RT	451+50	9.00-10.50	A-2-5(0)	46	NP	32.4	44.9	12.6	10.1	98	82	28	-	-	L
SS-178	110 RT	451+50	14.00-15.50	A-2-5(0)	60	NP	35.4	42.5	14.0	8.1	99	90	27	34.4	-	L
SS-179	110 RT	451+50	19.00-21.50	A-2-5(0)	42	NP	34.2	43.3	16.4	6.1	63	52	18	-	-	L
SS-180	CL	453+50	3.30-4.80	A-7-5(5)	53	13	19.8	33.5	18.4	28.3	99	88	51	-	-	L
SS-181	CL	453+50	8.30-9.80	A-5(1)	58	8	17.6	47.7	18.6	16.2	100	92	41	-	-	L
SS-182	CL	453+50	13.30-14.80	A-2-5(0)	45	NP	23.2	52.5	18.2	6.1	100	87	35	-	-	L
SS-183	CL	453+50	18.30-19.80	A-2-4(0)	33	NP	23.4	58.4	12.1	6.1	98	87	25	-	-	L
SS-184	CL	453+50	28.30-29.80	A-2-5(0)	42	NP	24.4	54.1	15.4	6.1	99	88	28	47.1	-	L
SS-185	CL	453+50	33.30-34.80	A-2-4(0)	23	NP	44.6	40.6	10.7	4.0	83	67	17	-	-	L
SS-186	CL	456+50	3.60-5.10	A-2-4(0)	33	NP	27.5	46.9	9.5	16.2	100	91	23	-	-	L
SS-187	CL	456+50	13.60-15.10	A-2-4(0)	24	NP	26.3	52.1	11.5	10.1	77	68	22	-	-	L
SS-188	CL	456+50	18.60-20.10	A-2-4(0)	26	NP	39.6	45.5	8.9	6.1	65	52	13	-	-	L
SS-189	CL	456+50	33.60-35.10	A-2-5(0)	41	NP	36.8	51.3	7.9	4.0	99	85	17	29.1	-	L
SS-190	CL	459+50	3.80-5.30	A-2-4(0)	38	9	43.0	28.3	8.5	20.2	97	72	31	-	-	L
SS-191	CL	459+50	8.80-10.30	A-7-5(2)	52	13	35.8	28.5	13.5	22.2	98	73	40	-	-	L
SS-192	CL	459+50	18.80-20.30	A-4(0)	39	4	30.3	32.9	26.7	10.1	96	77	43	-	-	L
SS-193	CL	459+50	28.80-30.30	A-2-4(0)	38	NP	37.4	34.5	18.0	10.1	94	72	32	14.3	-	L
SS-194	50 RT	462+75	3.50-5.00	A-7-5(15)	57	22	18.8	17.8	21.0	42.4	99	87	67	-	-	L
SS-195	50 RT	462+75	8.50-10.00	A-5(0)	43	6	32.1	35.6	24.2	8.1	94	74	40	-	-	L
SS-196	50 RT	462+75	18.50-20.00	A-5(0)	41	NP	24.8	40.6	26.5	8.1	100	87	44	-	-	L
SS-197	50 RT	462+75	28.50-30.00	A-5(0)	43	NP	33.1	35.6	23.2	8.1	98	76	39	23.2	-	L
SS-198	50 LT	466+00	4.00-5.50	A-2-5(0)	47	NP	33.9	39.8	16.2	10.1	99	79	32	-	-	L
SS-199	50 LT	466+00	9.00-10.50	A-5(1)	44	5	25.3	37.4	21.2	16.2	99	84	46	-	-	L
SS-200	50 LT	466+00	19.00-20.50	A-5(1)	44	6	25.9	37.0	23.0	14.1	99	83	45	-	-	L
SS-201	50 LT	466+00	29.00-30.50	A-2-4(0)	39	NP	26.9	53.9	11.1	8.1	98	87	26	-	-	L
SS-202	CL	469+00	3.90-5.40	A-2-4(0)	40	5	37.8	30.3	17.8	14.1	89	65	34	-	-	L
SS-203	CL	469+00	8.90-10.40	A-2-4(0)	30	NP	41.2	43.4	13.3	2.0	93	73	20	10.9	-	L
SS-204	CL	469+00	13.90-15.40	A-2-4(0)	32	NP	48.5	35.6	9.9	6.1	88	60	19	9.1	-	L
SS-205	CL	469+00	18.90-20.40	A-2-5(0)	42	NP	44.4	40.0	9.5	6.1	88	63	18	-	-	L
SS-206	15 LT	471+85	4.00-5.50	A-7-5(15)	57	21	18.4	16.4	10.7	54.5	99	88	67	-	-	L
SS-207	15 LT	471+85	9.00-10.50	A-7-6(10)	53	25	27.1	20.4	10.1	42.4	96	79	53	-	-	L
SS-208	15 LT	471+85	14.00-15.50	A-7-6(7)	51	23	31.3	22.4	11.9	34.3	92	72	46	-	-	L
SS-209	15 LT	471+85	19.00-20.50	A-2-5(0)	58	NP	38.7	48.5	6.7	6.1	100	86	17	-	-	L
SS-210	15 LT	471+85	29.00-30.50	A-2-5(0)	46	NP	40.6	44.0	9.3	6.1	98	78	21	-	-	L
SS-211	CL	475+50	0.50-2.00	A-7-5(17)	54	17	10.9	11.5	39.2	38.4	100	93	80	-	-	L
SS-212	CL	475+50	2.00-3.50	A-7-6(22)	51	27	5.9	19.0	22.6	52.5	100	98	78	-	-	L
SS-213	CL	475+50	3.70-5.20	A-2-4(0)	26	7	22.4	48.7	12.7	16.2	100	93	34	-	-	L
SS-214	CL	475+50	6.20-7.70	A-2-4(0)	22	NP	60.2	26.3	5.5	8.1	98	64	15	-	-	L
SS-215	CL	475+50	8.70-10.20	A-7-5(9)	51	15	17.4	28.5	31.9	22.2	99	91	60	-	-	L
S-216	25 LT	25+00	0.00-4.00	A-4(0)	29	10	23.6	32.9	15.2	28.3	76	66	36	-	-	Y2
SS-216	25 RT	20+25	0.50-2.00	A-6(3)	33	16	25.4	34.7	9.4	30.5	97	84	42	20.0	-	YI
S-217	25 RT	15+00	0.00-4.00	A-7-5(33)	83	35	9.9	14.3	3.0	72.7	99	93	77	-	-	Y2
SS-217	25 RT	20+25	4.30-5.80	A-7-5(17)	65	22	8.5	29.0	15.7	46.7	100	96	68	20.2	-	YI
SS-218	25 RT	20+25	9.30-10.80	A-5(0)	51	5	14.2	56.2	11.3	18.3	99	92	40	-	-	YI
SS-219	25 RT	18+00	0.50-2.00	A-7-6(20)	62	34	15.6	24.2	7.4	52.8	100	92	63	27.9	-	YI
SS-220	25 RT	18+00	4.10-5.60	A-7-5(16)	70	27	13.4	32.3	15.7	38.6	99	93	60	24.4	-	YI
SS-221	25 RT	18+00	9.10-10.60	A-5(0)	47	5	11.8	59.1	17.0	12.2	100	96	42	-	-	YI

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC	Line or Boring ID
SS-222	50 LT	36+65	0.50-2.00	A-7-5(20)	63	33	14.0	24.6	8.6	52.8	100	93	64	38.7	-	YI
SS-223	50 LT	36+65	3.70-5.20	A-7-5(6)	55	13	15.6	37.2	14.7	32.5	99	92	52	26.5	-	YI
SS-224	50 LT	36+65	8.70-10.20	A-2-5(0)	48	6	15.8	59.5	14.5	10.2	100	95	34	-	-	YI
CBR-1	50 LT	36+00	18.00-20.00	A-4(0)	40	5	16.2	51.1	20.6	12.1	98	90	40	-	-	Y1RPB