CONTRACT: ID: U-3633

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. *37649.1.1 (U-3633)* F.A. PROJ. *STP-0273(1)*

COUNTY *GASTON*

PROJECT DESCRIPTION *MOUNT HOLLY-NC 273 (SOUTH MAIN ST.) FROM TUCKASEEGE RD. TO HIGHLAND ST. AT. SOUTH MAIN ST.*

INVENTORY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3633	1	27

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
37649.1.1	STP-0273(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 *J.P. ROGERS*

CHECKED BY *C.B. LITTLE*

SUBMITTED BY *C.B. LITTLE*

DATE *MARCH 2012*

NORTH CAROLINA LICENSED SEAL 1104 GEOLOGIST CLINTON B. LITTLE

4-27-12

DRAWN BY: *J.K. McCLURE /JP ROGERS*

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.
37649.1.1 (U-3633)	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-7-5, A-7-6)	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							
SYMBOL														
% PASSING #10	50 MX											GRANULAR SOILS	SILT-CLAY SOILS	MUCK, PEAT
#40	30 MX	50 MX	51 MN											
#200	15 MX	25 MX	10 MX	35 MX	35 MX	35 MX	35 MX	36 MN	36 MN	36 MN	36 MN			
LIQUID LIMIT	6 MX		NP	40 MX	41 MN	40 MX	41 MN	40 MX	41 MN	40 MX	41 MN	SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER		HIGHLY ORGANIC SOILS
PLASTIC INDEX				10 MX	10 MX	11 MN	11 MN	10 MX	10 MX	11 MN	11 MN			
GROUP INDEX	0		0	0		4 MX		8 MX	12 MX	16 MX	No MX			
USUAL TYPES OF MAJOR MATERIALS	STONE FRAGS. GRAVEL, AND SAND		FINE SAND	SILTY OR CLAYEY GRAVEL AND SAND				SILTY SOILS		CLAYEY SOILS				
GEN. RATING AS A SUBGRADE	EXCELLENT TO GOOD							FAIR TO POOR				FAIR TO POOR	POOR	UNSUITABLE

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

CONSISTENCY OR DENSENESS

PRIMARY SOIL TYPE	COMPACTNESS OR CONSISTENCY	RANGE OF STANDARD PENETRATION RESISTENCE (N-VALUE)	RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/FT²)
GENERALLY GRANULAR MATERIAL (NON-COHESIVE)	VERY LOOSE	<4	N/A
	LOOSE	4 TO 10	
	MEDIUM DENSE	10 TO 30	
	DENSE	30 TO 50	
	VERY DENSE	>50	
GENERALLY SILT-CLAY MATERIAL (COHESIVE)	VERY SOFT	<2	<0.25
	SOFT	2 TO 4	0.25 TO 0.50
	MEDIUM STIFF	4 TO 8	0.5 TO 1.0
	STIFF	8 TO 15	1 TO 2
	VERY STIFF	15 TO 30	2 TO 4
	HARD	>30	>4

TEXTURE OR GRAIN SIZE

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

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

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

SOIL MOISTURE - CORRELATION OF TERMS

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

PLASTICITY

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

COLOR

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

GRADATION

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

ANGULARITY OF GRAINS

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

MINERALOGICAL COMPOSITION

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

COMPRESSIBILITY

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

PERCENTAGE OF MATERIAL

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

GROUND WATER

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

MISCELLANEOUS SYMBOLS

- ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION
- SOIL SYMBOL
- ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT
- INFERRED SOIL BOUNDARY
- INFERRED ROCK LINE
- ALLUVIAL SOIL BOUNDARY
- 26/025 — 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
- [ ] CME-550
- [ ] PORTABLE HOIST
- [ ] _____
- [ ] _____

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

HAMMER TYPE:
- [ ] AUTOMATIC [ ] MANUAL

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

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

ROCK DESCRIPTION

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

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

WEATHERING

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

ROCK HARDNESS

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

FRACTURE SPACING

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

BEDDING

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

INDURATION

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

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

TERMS AND DEFINITIONS

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

AQUIFER - A WATER BEARING FORMATION OR STRATA.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

BENCH MARK:

ELEVATION: FT.

NOTES:
SOIL STRATIGRAPHY IS THROUGH THE BORINGS FOR PROFILES AND CROSS-SECTIONS.

BORING ELEVATIONS OBTAINED FROM THE U3633_PS_TIN_110615.TIN FILE.

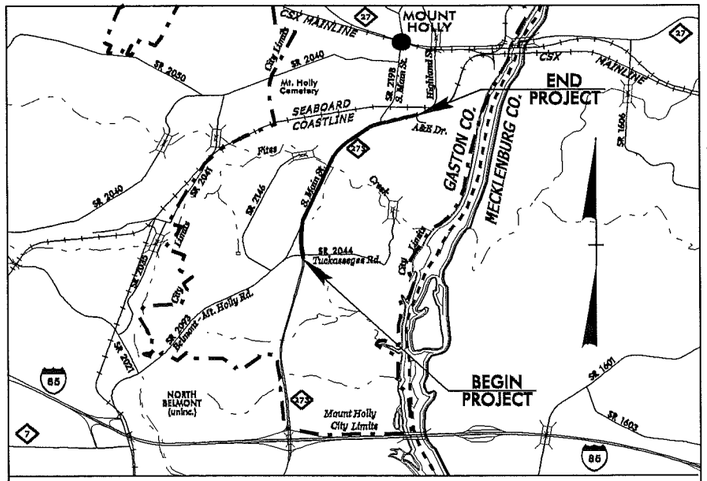
REVISED 09/23/09

09/06/99

TIP PROJECT: U-3633

CONTRACT:

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols
See Sheet 1-C For Survey Control Sheet



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

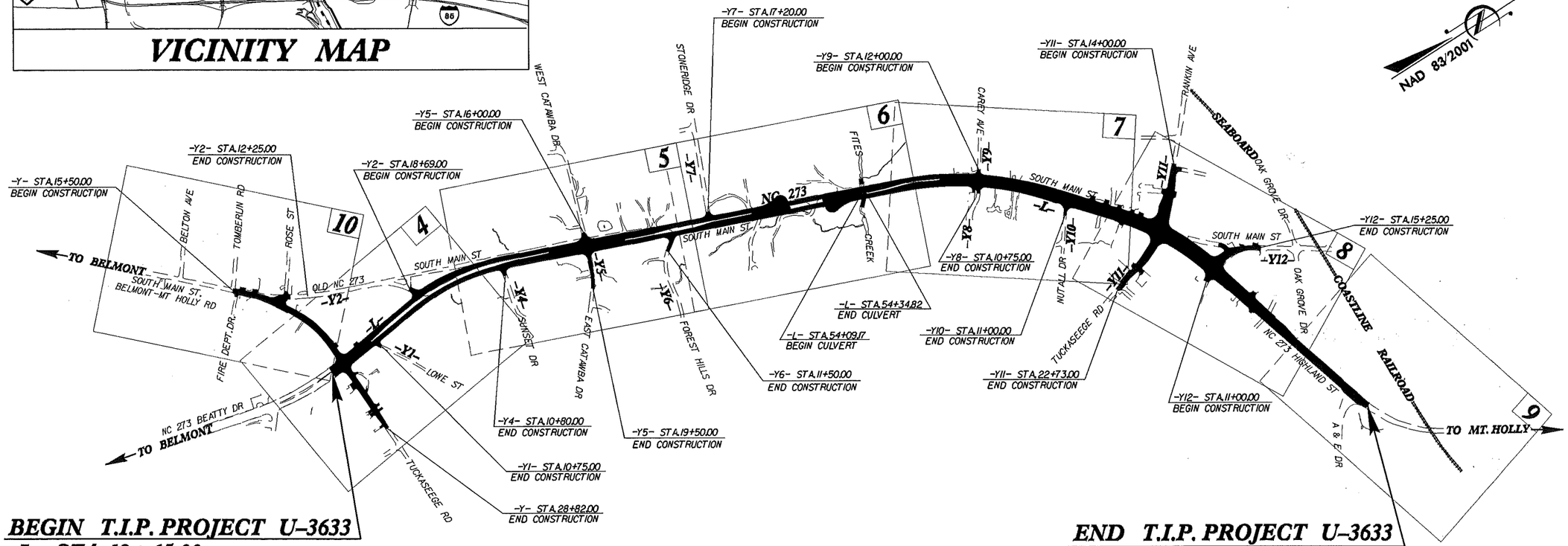
GASTON COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3633	2A	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
37649.1.1	STP-0273(1)	PE
37649.1.2	STP-0273(1)	R/W
37649.1.3	STP-0273(1)	UTIL

LOCATION: MOUNT HOLL – NC 273 (SOUTH MAIN STREET) FROM TUCKASEEGE ROAD TO HIGHLAND STREET AT A&G DRIVE

TYPE OF WORK: WIDENING, GRADING, DRAINAGE, PAVING, RESURFACING, CULVERT, & GUARDRAIL.



BEGIN T.I.P. PROJECT U-3633
-L- STA. 18+65.00

END T.I.P. PROJECT U-3633
-L- STA. 90+00.00

NAD 83/2001

THIS IS NOT A CONTROL OF ACCESS PROJECT
THIS PROJECT IS WITHIN THE MOUNT HOLLY MUNICIPAL BOUNDARIES
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2014 = 26,800
ADT 2035 = 42,300
DHV = 10 %
D = 55 %
T = 4 % *
V = 50 MPH
* TTST =2 DUAL 2
FUNC CLASS =
URBAN COLLECTOR
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY T.I.P. PROJECT U-3633 = 1.346 MI

LENGTH STRUCTURE T.I.P. PROJECT U-3633 = 0.005 MI

TOTAL LENGTH OF T.I.P. PROJECT U-3633 = 1.351 MI

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
MARCH 19, 2013

LETTING DATE:
NOVEMBER 18, 2014

JASON MOORE, PE
PROJECT ENGINEER

NYA BOAYUE, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

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jmcclure
AT GEH257466

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PURDUE
GOVERNOR

Eugene A. Conti, Jr.
SECRETARY

April 25, 2012

STATE PROJECT: 37649.1.1 (U-3633)
FEDERAL PROJECT: STP-0273(1)
COUNTY: Gaston
DESCRIPTION: Mt. Holly – NC 273 (South Main Str.) from Tuckaseege Rd. to Highland Str. at South Main Str.

SUBJECT: Geotechnical Report – Inventory

PROJECT DESCRIPTION

This project is located in eastern Gaston County near the Town of Mt. Holly. The scope of this project is to widen existing NC 273 from two to four lanes from Tuckaseege Road to Highland Street. The project begins approximately 1.5 miles north of I-85. This segment of NC 273 serves as a major thruway from I-85 into Mt. Holly. The following alignments were investigated:

–L- Station 18+65.00 to 90+00.00 (1.35 miles)
-Y- 15+50.00 to 28+82.00 (0.25 miles)
-Y1- 10+39.49 to 10+75.00 (0.01 miles)
-Y2- 10+22.61 to 19+37.50 (0.18 miles)
-Y4- 10+37.65 to 10+80.00 (0.01 miles)
-Y5- 16+00.00 to 19+50.00 (0.07 miles)
-Y6- 10+45.64 to 11+50.00 (0.02 miles)
-Y7- 17+20.00 to 17+50.86 (0.01 miles)
-DR1- 10+49.50 to 12+00.00 (0.03 miles)
-DR2- 10+49.50 to 12+00.00 (0.03 miles)
-Y8- 10+37.51 to 10+75.00 (0.01 miles)
-Y10- 10+41.39 to 11+00.00 (0.01 miles)
-Y11- 14+00.00 to 22+73.00 (0.17 miles)
-Y12- 11+00.00 to 15+25.00 (0.08 miles)

The total length of lines investigated is 2.23 miles. The investigation phase of this project was conducted in February 2012. Due to the presence of existing traffic, existing utilities, and design considerations, the field investigation was accomplished with a hand auger, ½" bridge rod, and visual reconnaissance. No Standard Penetration Tests were performed within the project corridor during this investigation. 22 soil samples were submitted to the Materials and Tests Unit for laboratory analysis. Rock outcrops were observed within the project corridor on both the east and west side of existing NC 273. Where readily apparent, these outcrops were noted on the planview sheets of the attached inventory report.

AREAS OF SPECIAL GEOTECHNICAL INTEREST

Pond: A pond is located adjacent to the project corridor at the following location:

Line	Station(s)	Offset
-L-	38+00	75' Left

Crystalline Rock: Crystalline rock was encountered within 10' of proposed grade in the following cut section:

Line	Station(s)	Offset
-L-	47+50 to 51+75	Left

Please refer to the cross sections contained in the attached inventory report for a graphical depiction of this area.

Alluvial Soils: Fites Creek and an unnamed tributary serve as the primary drainage outlets for this project. The unnamed tributary is on the eastern side of existing NC 273 and flows almost entirely on severely weathered crystalline rock and crystalline rock. The alluvial soil that was encountered within the project corridor was found immediately adjacent to Fites Creek. Based on field classification, these soils are sandy silts (A-4).

SOIL PROPERTIES

Residual Soils

All residual soils on the project are derived from the metamorphosed quartz diorite and tonalite (mqd) rocks encountered within the project corridor. The dominant residual soil types encountered are silty and sandy clay (A-7-6, A-6), silty sand (A-2-4, A-1-b) and sandy silt (A-4).

Respectfully submitted,

John P. Rogers
Project Geological Engineer

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
GEOTECHNICAL ENGINEERING UNIT
1589 MAIL SERVICE CENTER
RALEIGH NC 27699-1589

TELEPHONE: 919-707-6850
FAX: 919-250-4237

WEBSITE:
www.ncdot.gov/doh/preconstruct/highway/geotech

LOCATION:
CENTURY CENTER COMPLEX
ENTRANCE B-2
1020 BIRCH RIDGE DRIVE
RALEIGH NC

PROJECT REFERENCE NO.	SHEET NO.
U-3633	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

NAD 83/2001

MATCHLINE SEE SHEET 10 -Y- STA. 21+00.00

MATCHLINE -Y2- STA. 14+00.00

MATCHLINE SEE SHEET 5 -L- STA. 29+00.00

BEGIN T.I.P. PROJECT U-3633
-L- POC STA. 18+65.00

-Y2- PC Sta. 16+34.71

-Y2- Sta. 18+69.00
BEGIN CONSTR.

-Y2- PT Sta. 18+53.55

300' UNIFORM TRANSITION
RT. TURN LN.

-Y1- POT Sta. 10+00.00
-L- POT Sta. 21+71.13

330' UNIFORM TRANSITION LT & RT

150' LT. TURN TAPER

50' INC. TYP.

REG. PVMT REMOVAL
-L- STA. 28+39.00

-Y- PT Sta. 22+65.11

-Y- Sta. 28+82.00
END CONSTR.

-Y1- Sta. 10+75.00
END CONSTR.

-L- PT Sta. 19+51.40

-Y- POT Sta. 24+00.48
-L- POT Sta. 19+53.45

-Y1- PC Sta. 11+88.58

-Y2- POT Sta. 19+82.07
-L- POC Sta. 26+16.50

-L- PC Sta. 24+93.44

BM#1 BM#2 BM#12

BY2-27 BY1-26 BL-7 BL-8 U3633-2

-L-	-L-	-Y2-
PI Sta 16+35.20	PI Sta 28+35.58	PI Sta 17+47.34
Δ = 20° 56' 29.0" (LT)	Δ = 28° 38' 49.7" (RT)	Δ = 33° 26' 13.0" (RT)
D = 3° 16' 26.6"	D = 4° 16' 32.9"	D = 15° 16' 43.9"
L = 639.62'	L = 669.98'	L = 218.84'
T = 323.42'	T = 342.15'	T = 112.64'
R = 1,750.00'	R = 1,340.00'	R = 375.00'
SE = 04	SE = 06	SE = SEE PLANS

EXIST. SIGNAL TO BE UPGRADED
MONOLITHIC CONC. ISLAND
PAVEMENT REMOVAL
SEE SHEET 2-C FOR TRAFFIC DIAGRAM
SEE SHEET 11 FOR -L- PROFILE
SEE SHEET 14 FOR -Y- PROFILE
SEE SHEET 14 FOR -Y1- PROFILE
SEE SHEET 15 FOR -Y2- PROFILE

REVISIONS

8/17/99

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-Y5-	-Y6-
PI Sta 19+08.42	PI Sta 12+40.37
Δ = 22° 04' 06.7" (RT)	Δ = 49° 00' 33.9" (LT)
D = 8° 48' 53.0"	D = 21° 37' 15.8"
L = 250.36'	L = 226.67'
T = 126.75'	T = 120.79'
R = 650.00'	R = 265.00'
SE = SEE PLANS	SE = SEE PLANS

PROJECT REFERENCE NO.	SHEET NO.
U-3633	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

NAD 83/2001

-Y5- POT Sta. 11+65.00

-Y4- POT Sta. 10+00.00
-L- POC Sta. 31+30.38

-Y5- POT Sta. 16+85.69
-L- POT Sta. 36+69.56

-Y6- POT Sta. 10+00.00
-L- POT Sta. 42+37.82

-L- PT Sta. 31+63.42

-Y5- Sta. 16+00.00
BEGIN CONSTR.

-Y4- Sta. 10+80.00
END CONSTR.

-Y4- PI Sta. 12+17.58

-Y5- PC Sta. 17+81.67

-Y5- PT Sta. 20+32.03

-Y5- Sta. 19+50.00
END CONSTR.

-Y6- Sta. 11+50.00
END CONSTR.

-Y6- PC Sta. 11+19.58

-Y6- PT Sta. 13+46.25

BY5-30 BY6-32 BY4-28 BY5-31 BL-10 BL-11

MATCHLINE SEE SHEET 4 -L- STA. 29+00.00

MATCHLINE SEE SHEET 6 -L- STA. 43+00.00

DEBORAH W. ROPER DB 3896 PG 845

MARY ANN R. HAMMER DB 3770 PG 034

BRUCE M. AND MARILYN B. BRADLEY DB 4043 PG 697

DEBORAH W. ROPER DB 3896 PG 840

RICHARD E. AND ANN C. BROWNE DB 4146 PG 1339

HARVEY L. AND CAROL R. THOMAS DB 4466 PG 2430

ROBERT I. CONNELL DB 2847 PG 738

EDWARD C. AND CONNIE MAULDIN DB 4369 PG 830

JIMMY M. AND JEAN CLYBURN DB 2047 PG 926 DB 3148 PG 213

ROBERT AND BARBARA WEAVER DB 4065 PG 280

JEFFREY A. AND LEAH Y. ROBERSON DB 4443 PG 2425

JAMES G. AND RITA M. BRUHN DB 4423 PG 271

LESTER O. AND RUTH B. MUNDY DB 0694 PG 063

GRADY L. AND HEATHER C. MCMANUS DB 4502 PG 2142

WILLIAM S. AND JUDY K. HUDSON DB 4137 PG 1361

ROBERT D. AND KAREN B. CLAWSON DB 1758 PG 809

KENNETH E. AND DELDENA GRAHAM DB 4466 PG 644

MARY VANESSA S. WEBB DB 4089 PG 711

THOMAS R. AND DORIS G. BETHUNE DB 2501 PG 183

COMAVA, LLC DB 4213 PG 2000

JOHN AND JENNIFER SUTTLE DB 4527 PG 943

DALE K. AND CARRIE H. FENNELL DB 3811 PG 125

150' UNIFORM TRANSITION

300' UNIFORM TRANSITION RT. TURN LN.

150' UNIFORM TRANSITION (U-TURN LN.)

181.58' TRANSITION

181.09' TRANSITION

END 1512.75' RAD.

END 1487.25' RAD.

9' OFFSETS TO ISLAND

APPROXIMATE LOCATION OF JUNCTION BOX

PROP. G/R

MONOLITHIC CONC. ISLAND

PAVEMENT REMOVAL

SEE SHEET 2-C FOR TRAFFIC DIAGRAM

SEE SHEET 11 FOR -L- PROFILE

SEE SHEET 15 FOR -Y4- PROFILE

SEE SHEET 15 FOR -Y5- PROFILE

SEE SHEET 15 FOR -Y6- PROFILE

REVISIONS

8/17/99

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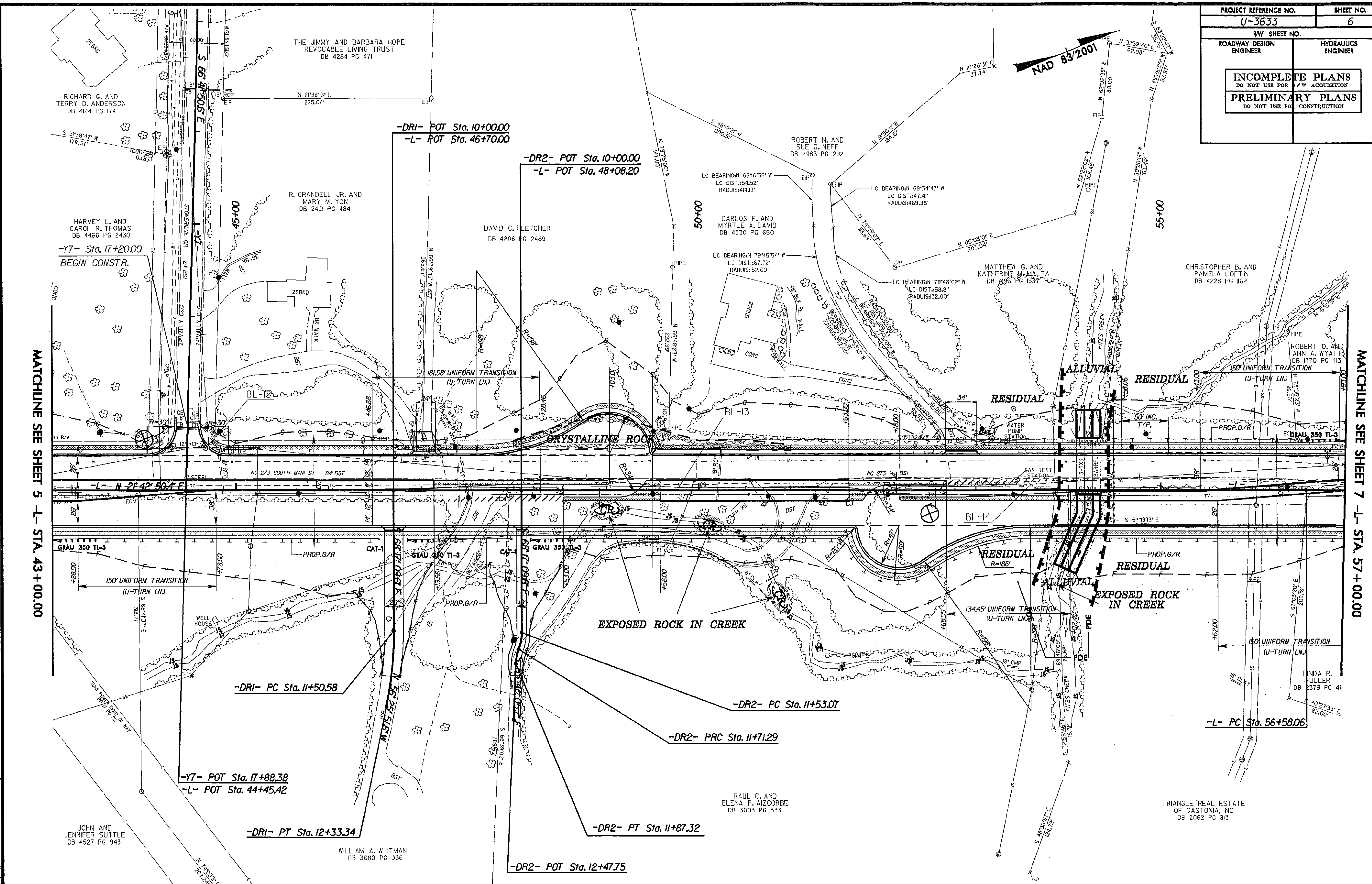
PROJECT REFERENCE NO.	SHEET NO.
U-3633	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



NAD 83/2001
MATCHLINE SEE SHEET 5 -L- STA. 43+00.00
MATCHLINE SEE SHEET 7 -L- STA. 57+00.00
THE JIMMY AND BARBARA HOPE REVOCABLE LIVING TRUST DB 4284 PG 471
RICHARD G. AND TERRY D. ANDERSON DB 4124 PG 174
HARVEY L. AND CAROL R. THOMAS DB 4466 PG 2430
R. CRANDELL JR. AND MARY M. YON DB 2413 PG 484
DAVID C. FLETCHER DB 4208 PG 2489
ROBERT N. AND SUE G. NEFF DB 2983 PG 292
CARLOS F. AND MYRTLE A. DAVID DB 4530 PG 650
MATTHEW G. AND KATHERINE M. MALTA DB 4196 PG 1937
CHRISTOPHER B. AND PAMELA LOFTIN DB 4228 PG 1162
ROBERT O. AND ANN A. WYATT DB 1770 PG 413
JOHN AND JENNIFER SUTTLE DB 4527 PG 943
WILLIAM A. WHITMAN DB 3680 PG 036
RAUL C. AND ELENA P. AIZCORBE DB 3003 PG 333
TRIANGLE REAL ESTATE OF GASTONIA, INC DB 2062 PG 813
-Y7- Sta. 17+20.00 BEGIN CONSTR.
-DR1- POT Sta. 10+00.00
-L- POT Sta. 46+70.00
-DR2- POT Sta. 10+00.00
-L- POT Sta. 48+08.20
-L- N 2°42'50.4" E
CRYSTALLINE ROCK
RESIDUAL
ALLUVIAL
EXPOSED ROCK IN CREEK
150' UNIFORM TRANSITION (U-TURN LN.)
181.58' UNIFORM TRANSITION (U-TURN LN.)
134.45' UNIFORM TRANSITION (U-TURN LN.)
-DR1- PC Sta. 11+50.58
-DR2- PC Sta. 11+53.07
-DR2- PRC Sta. 11+71.29
-Y7- POT Sta. 17+88.38
-L- POT Sta. 44+45.42
-DR1- PT Sta. 12+33.34
-DR2- PT Sta. 11+87.32
-DR2- POT Sta. 12+47.75
-L- PC Sta. 56+58.06
45+00
50+00
55+00

-DR1-	-DR2-	-DR2-
PI Sta 11+92.11	PI Sta 11+79.38	PI Sta 11+62.28
Δ = 11° 51' 18.0" (RT)	Δ = 18° 22' 12.0" (LT)	Δ = 20° 52' 15.9" (RT)
D = 14° 19' 26.2"	D = 114° 35' 29.6"	D = 114° 35' 29.6"
L = 82.76'	L = 16.03'	L = 18.21'
T = 41.53'	T = 8.08'	T = 9.21'
R = 400.00'	R = 50.00'	R = 50.00'

MONOLITHIC CONC. ISLAND
SEE SHEET 2-C FOR TRAFFIC DIAGRAM
SEE SHEET 12 FOR -L- PROFILE
SEE SHEET 16 FOR -Y7- PROFILE
SEE SHEET 16 FOR -DR1- PROFILE
SEE SHEET 16 FOR -DR2- PROFILE

REVISIONS

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
U-3633	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83/2001

REVISIONS 8/17/99

-Y9- POT Sta. 10+00.00

BY9-39

-Y9- Sta. 12+00.00
BEGIN CONSTR.

-Y9- POT Sta. 12+67.83
-L- POC Sta. 61+44.56

-Y8- POT Sta. 10+00.00
-L- POC Sta. 61+36.29

-Y10- POT Sta. 10+00.00
-L- POT Sta. 67+04.92

CHRISTOPHER B. AND PAMELA LOFTIN DB 4228 PG 1162

ROBERT O. AND ANN A. WYATT DB 1770 PG 413

TERRY L. AND CYNTHIA W. BARBER DB 1244 PG 166

RAYMOND J. DIMMER DB 1828 PG 189

THE DALES GROUP, LLC DB 4134 PG 918

THE DALES GROUP, LLC DB 4161PG 618

BL-15

USGS 1949 RESET

J.P. AND LOUISE S. GUIN DB 578 PG 658

WILLIAM H. STEWART JR DB 1096 PG 662

BL-16

THE DALES GROUP, LLC DB 4161PG 621

HARRELL H. JR AND JOANNE S. RICK DB 2947 PG 951

MARTHA P. WHITE DB 2885 PG 742

HUBERT R. BROOME SR AND HUBERT R. BROOME JR DB 4186 PG 1584

MCDONALD'S CORPORATION DB 2058 PG 475 DB 2060 PG 123 DB 2060 PG 892

MATCHLINE SEE SHEET 6 -L- STA. 57+00.00

MATCHLINE SEE SHEET 8 -L- STA. 70+50.00

LINDA R. FULLER DB 2379 PG 461

LINDA R. GIBBARD DB 1300 PG 553

MT HOLLY WATER PUMP STATION 809 S. MAIN

CITY OF GASTONIA DB 1935 PG 764

TRIANGLE REAL ESTATE OF GASTONIA, INC DB 2062 PG 813

TRIANGLE REAL ESTATE OF GASTONIA, INC DB 2577 PG 270

TIMOTHY P. AND MARGARET S. JONES DB 4225 PG 2357

ANDREW S. AND DAWN H. WILLIAMS DB 2471PG 239

CARROLL E. AND LETA P. HELTON DB 1474 PG 242

1942, LLC DB 4409 PG 114

CARLOS L. AIZCORBE DB 4204 PG 1591

LARRY D. AND PATRICIA COX DB 2647 PG 088

LARRY D. AND PATRICIA COX DB 2208 PG 074

LARRY D. AND PATRICIA COX DB 2208 PG 078

BL-17

JOHN M. MANESS DB 2718 PG 740

THE DALES GROUP, LLC DB 4183 PG 2296

THE DALES GROUP, LLC DB 4410 PG 608

-Y8- PC Sta. 10+60.89

-Y8- Sta. 10+75.00
END CONSTR.

-Y8- PT Sta. 11+30.72

-Y8- PC Sta. 11+82.49

-L- PT Sta. 65+85.34

-Y10- PC Sta. 10+11.41

-Y10- Sta. 11+00.00
END CONSTR.

-L- PC Sta. 70+26.60

-Y10- PT Sta. 14+29.61

-L-	-Y8-	-Y10-
PI Sta 61+31.13	PI Sta 10+96.16	PI Sta 12+20.75
Δ = 27° 57' 46.0" (RT)	Δ = 20° 00' 09.8" (RT)	Δ = 6° 44' 58.8" (LT)
D = 3° 00' 56.0"	D = 28° 38' 52.4"	D = 1° 36' 50.3"
L = 927.28'	L = 69.82'	L = 418.20'
T = 473.07'	T = 35.27'	T = 209.34'
R = 1,900.00'	R = 200.00'	R = 3,550.00'
SE = 04	SE = SEE PLANS	SE = SEE PLANS

MONOLITHIC CONC. ISLAND
SEE SHEET 2-C FOR TRAFFIC DIAGRAM
SEE SHEET 12 FOR -L- PROFILE
SEE SHEET 16 FOR -Y8- PROFILE
SEE SHEET 16 FOR -Y9- PROFILE
SEE SHEET 16 FOR -Y10- PROFILE

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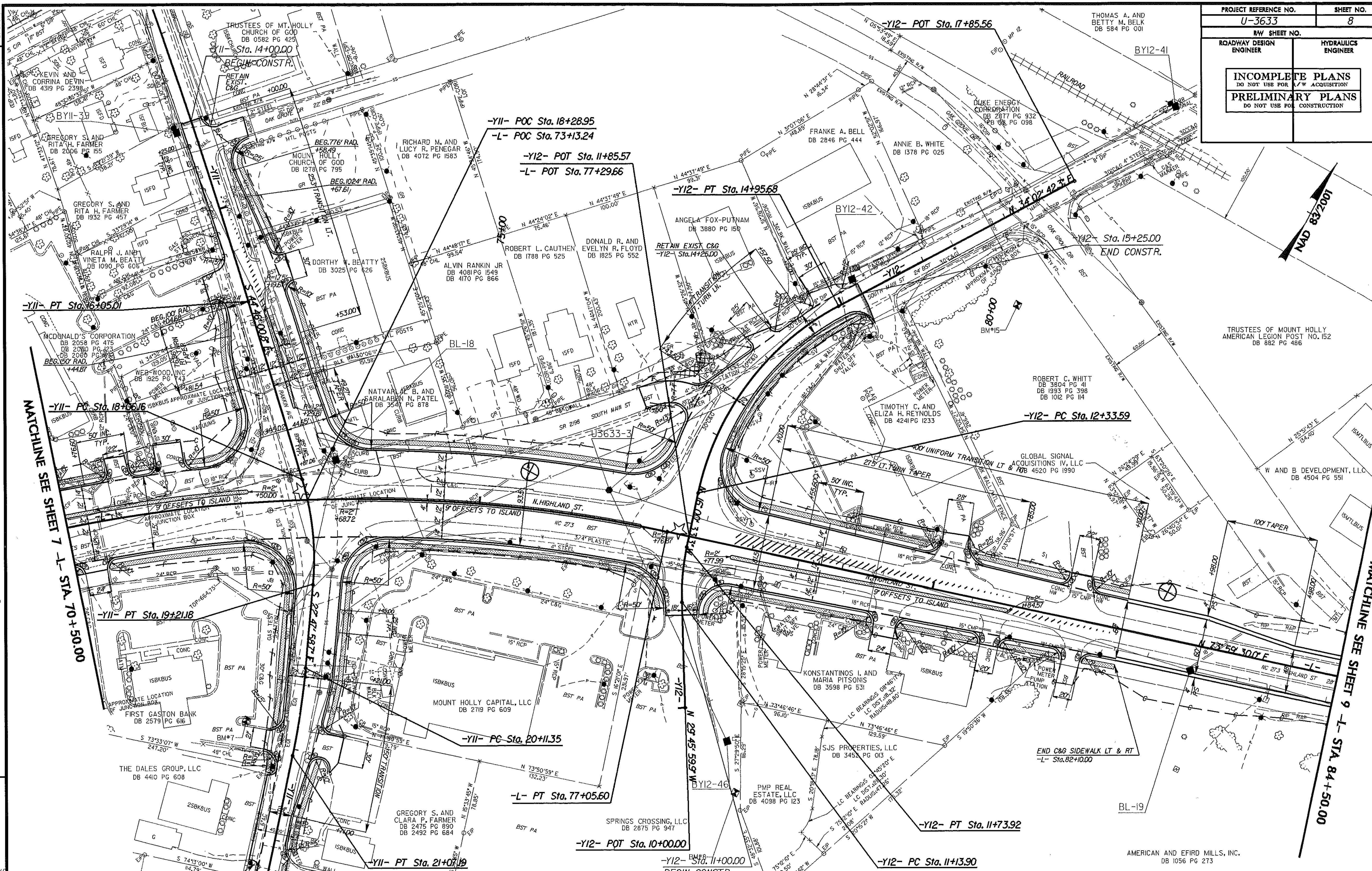
PROJECT REFERENCE NO.	SHEET NO.
U-3633	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



MATCHLINE SEE SHEET 7 -L- STA. 70+50.00
MATCHLINE SEE SHEET 9 -L- STA. 84+50.00
NAD 83/2001
-Y11- Sta. 14+00.00 BEGIN CONSTR.
-Y11- POC Sta. 18+28.95
-L- POC Sta. 73+13.24
-Y12- POT Sta. 11+85.57
-L- POT Sta. 77+29.66
-Y12- POT Sta. 17+85.56
-Y12- PT Sta. 14+95.68
-Y12- Sta. 15+25.00 END CONSTR.
-Y11- PT Sta. 16+05.01
-Y11- PC Sta. 18+06.16
-Y12- PC Sta. 12+33.59
-Y11- PT Sta. 19+21.18
-Y11- PC Sta. 20+11.35
-L- PT Sta. 77+05.60
-Y12- POT Sta. 10+00.00
-Y12- Sta. 11+00.00 BEGIN CONSTR.
-Y12- PT Sta. 11+73.92
-Y12- PC Sta. 11+13.90
-Y11- PT Sta. 21+07.19
-Y11- Sta. 22+73.00 END CONSTR.
END C&G SIDEWALK LT & RT -L- Sta. 82+10.00
N.HIGHLAND ST.
SOUTH MAIN ST
RAILROAD
TRUSTEES OF MT. HOLLY CHURCH OF GOD DB 0582 PG 425
MOUNT HOLLY CHURCH OF GOD DB 1278 PG 795
RICHARD M. AND LUCY R. PENEGAR DB 4072 PG 1583
FRANKE A. BELL DB 2846 PG 444
ANNIE B. WHITE DB 1378 PG 025
THOMAS A. AND BETTY M. BELK DB 584 PG 001
DUKE ENERGY CORPORATION DB 2877 PG 932
KEVIN AND CORRINA DEVIN DB 4319 PG 2398
GREGORY S. AND RITA H. FARMER DB 2006 PG 155
GREGORY S. AND RITA H. FARMER DB 1932 PG 457
RALPH J. AND VINETA M. BEATTY DB 1090 PG 606
DORTHY W. BEATTY DB 3025 PG 526
ALVIN RANKIN JR DB 4081 PG 1549 DB 4170 PG 866
ROBERT L. CAUTHEN DB 1788 PG 525
DONALD R. AND EVELYN R. FLOYD DB 1825 PG 552
ANGELA FOX-PUTNAM DB 3880 PG 150
TRUSTEES OF MOUNT HOLLY AMERICAN LEGION POST NO. 152 DB 882 PG 486
MCDONALD'S CORPORATION DB 2058 PG 475
WEB-WOOD, INC DB 1925 PG 743
NATVARLAL B. AND SARALABEN N. PATEL DB 3541 PG 878
TIMOTHY C. AND ELIZA H. REYNOLDS DB 4241 PG 1233
ROBERT C. WHITT DB 3604 PG 41 DB 1993 PG 398 DB 1012 PG 114
GLOBAL SIGNAL ACQUISITIONS IV, LLC DB 4520 PG 1990
W AND B DEVELOPMENT, LLC DB 4504 PG 551
FIRST GASTON BANK DB 2579 PG 616
MOUNT HOLLY CAPITAL, LLC DB 2719 PG 609
KONSTANTINOS I. AND MARIA PITSONIS DB 3598 PG 531
SJS PROPERTIES, LLC DB 3453 PG 013
PMP REAL ESTATE, LLC DB 4098 PG 123
THE DALES GROUP, LLC DB 4410 PG 608
GREGORY S. AND CLARA P. FARMER DB 2475 PG 890 DB 2492 PG 684
SPRINGS CROSSING, LLC DB 2875 PG 947
AMERICAN AND EFIRD MILLS, INC. DB 1056 PG 273
GREGORY S. FARMER DB 4087 PG 090
MT HOLLY BOARD OF ALCOHOLIC DB 4374 PG 2319
RETAIN EXISTING C&G
9' OFFSETS TO ISLAND
100' TAPER

-L-	-Y11-	-Y11-	-Y11-	-Y12-	-Y12-
PI Sta 73+71.29	PI Sta 13+48.15	PI Sta 18+64.38	PI Sta 20+59.32	PI Sta 11+44.05	PI Sta 13+73.66
Δ = 24° 18' 53.7" (RT)	Δ = 4° 21' 22.3" (RT)	Δ = 21° 58' 02.1" (RT)	Δ = 6° 41' 48.8" (RT)	Δ = 13° 45' 26.5" (RT)	Δ = 50° 03' 15.6" (RT)
D = 3° 34' 51.6"	D = 0° 50' 51.3"	D = 19° 05' 54.9"	D = 6° 59' 14.2"	D = 22° 55' 05.9"	D = 19° 05' 54.9"
L = 679.00'	L = 513.96'	L = 115.02'	L = 95.84'	L = 60.03'	L = 262.08'
T = 344.69'	T = 257.11'	T = 58.23'	T = 47.98'	T = 30.16'	T = 140.07'
R = 1,600.00'	R = 6,760.00'	R = 300.00'	R = 820.00'	R = 250.00'	R = 300.00'
SE = 03	SE = SEE PLANS	SE = SEE PLANS	SE = SEE PLANS	SE = SEE PLANS	SE = SEE PLANS

☆ EXIST. SIGNAL TO BE UPGRADED
MONOLITHIC CONC. ISLAND
PAVEMENT REMOVAL

SEE SHEET 2-C FOR TRAFFIC DIAGRAM
SEE SHEET 13 FOR -L- PROFILE
SEE SHEET 17 FOR -Y11- PROFILE
SEE SHEET 17 FOR -Y12- PROFILE

REVISIONS

8/17/99

23-MAR-2012 11:31
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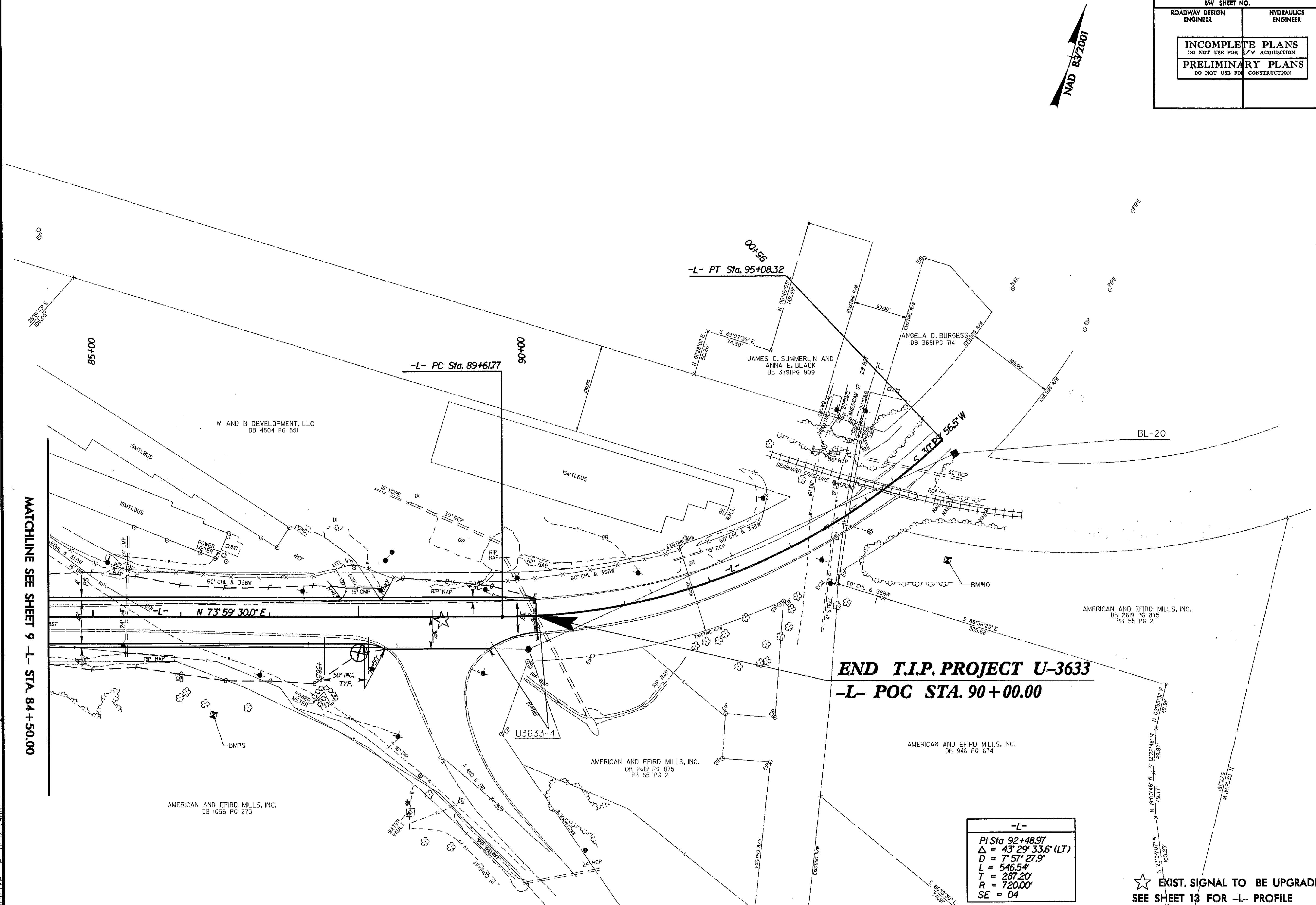
PROJECT REFERENCE NO.	SHEET NO.
U-3633	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/99

REVISIONS



NAD 83/2001
-L- PT Sta. 95+08.32
95+00
90+00
85+00
-L- PC Sta. 89+61.77
W AND B DEVELOPMENT, LLC
DB 4504 PG 551
JAMES C. SUMMERLIN AND
ANNA E. BLACK
DB 3791PG 909
ANGELA D. BURGESS
DB 3681PG 714
SEABOARD COASTLINE RAILROAD
BL-20
N 73° 59' 30.0" E
-L-
BM#10
BM#9
U3633-4
AMERICAN AND EFIRD MILLS, INC.
DB 2619 PG 875
PB 55 PG 2
AMERICAN AND EFIRD MILLS, INC.
DB 946 PG 674
AMERICAN AND EFIRD MILLS, INC.
DB 1056 PG 273
MATCHLINE SEE SHEET 9 -L- STA. 84+50.00
END T.I.P. PROJECT U-3633
-L- POC STA. 90+00.00
-L-
PI Sta 92+48.97
Δ = 43° 29' 33.6" (LT)
D = 7° 57' 27.9"
L = 546.54'
T = 287.20'
R = 720.00'
SE = .04

☆ EXIST. SIGNAL TO BE UPGRADED

SEE SHEET 13 FOR -L- PROFILE

23-MAR-2012 11:33
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PROJECT REFERENCE NO.	SHEET NO.
U-3633	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83/2001

-Y2-	-Y2-
PI Sta 10+52.76	PI Sta 12+21.75
Δ = 42° 34' 00.4" (RT)	Δ = 11° 39' 47.3" (LT)
D = 69° 52' 22.4"	D = 4° 29' 37.6"
L = 60.92'	L = 259.54'
T = 31.94'	T = 130.22'
R = 82.00'	R = 1,275.00'
SE = SEE PLANS	SE = SEE PLANS

-Y-	-Y-
PI Sta 17+36.52	PI Sta 21+17.78
Δ = 15° 55' 18.9" (RT)	Δ = 28° 45' 24.5" (RT)
D = 4° 46' 28.7"	D = 9° 32' 57.5"
L = 333.47'	L = 301.14'
T = 167.82'	T = 153.81'
R = 1,200.00'	R = 600.00'
SE = SEE PLANS	SE = SEE PLANS

-Y13- POT Sta. 10+00.00

-Y14A- POT Sta. 10+00.00

-Y15- POT Sta. 10+00.00

-Y- POT Sta. 10+00.00

-Y14A- Sta. 11+58.00
BEG. CONSTR.

-Y15- POT Sta. 12+82.87
-Y2- POT Sta. 10+89.62

-Y2- PT Sta. 10+81.73

-Y2- PC Sta. 10+20.81

-Y14B- POT Sta. 10+00.00
-Y- POT Sta. 15+77.47

-Y2- PT Sta. 13+51.07

-Y15- Sta. 12+24.00
BEG. CONSTR.

-Y2- PC Sta. 10+91.53

END C&G SIDEWALK
-Y2- STA. 12+21.00

-Y2- Sta. 12+25.00
END CONSTR.

-Y- Sta. 15+50.00
BEGIN CONSTR.

-Y13- POT Sta. 12+07.60
-Y- POT Sta. 12+21.49

-Y14A- POT Sta. 12+34.55

-Y- POT Sta. 15+52.53

-Y- PC Sta. 15+68.71

-Y14B- POT Sta. 11+48.48

-Y2- POT Sta. 10+00.00
-Y- POC Sta. 18+10.89

-Y- PT Sta. 19+02.18

-Y- PC Sta. 19+63.97

BEG. C&G SIDEWALK
-Y- STA. 16+17.54

BY13-43 — TIMOTHY J. KALMANIR, DB 4209 PG 2259

DONALD AND DEBBIE RECTOR, DB 2914 PG 746

JAMES R. AND KAREN P. POWERS, DB 3834 PG 370

DAVID E. CANNON AND JOE F. CANNON, DB 2463 PG 647

ISBKAPT RONALD J. DIMMER, DB 3010 PG 137

MELVIN D. AND NANCY G. MITCHEM, DB 1080 PG 077

GAS TEST STATION

BY14-44

EUGENE J. AND PEGGY B. BOLIN, DB 3277 PG 716

TRUSTEES OF JOHN L. AND NANCY W. FITE LIVING TRUST, DB 4295 PG 2464

BY15-45

RAY AND JUANITA COLLINS, DB 614 PG 178

BENNIE B. AND SHIRLEY T. BROOKSHIRE, DB 360 PG 054

RAY AND JUANITA COLLINS, DB 478 PG 386

PHILIP D. AND DARLENE H. HARRIS, DB 3715 PG 189

U3633-1

BY-21

BY-22

JOEL R. AND PATRICIA P. HUBBARD, DB 3895 PG 861, DB 3895 PG 858

DAVID O. AND HARRIET PEARSON, DB 832 PG 117

KATHERINE A. QUINN, DB 3182 PG 281

ROBERT W. AND HELEN R. FERGUSON, DB 660 PG 401

CITY OF MOUNT HOLLY, DB 3139 PG 884

BY-23

KRISHA INC., DB 4526 PG 1272

NANCY M. DUNCAN, DB 1038 PG 559

NATALIE KINNEY, DB 4376 PG 1376

CITY OF MOUNT HOLLY, DB 3139 PG 884

RUBY HOLLANDSWORTH, DB 594 PG 86

SYLAIA HELLARD, DB 3330 PG 575

BY-24

KENNETH B. SUMMEY REVOCABLE TRUST, DB 4220 PG 1404

WANDA W. MCELVEEN, DB 4379 PG 2228

JAMES A. AND WANDA W. MCELVEEN, DB 2571 PG 446

WANDA W. MCELVEEN & RONALD S. WOOLWINE, DB 3382 PG 622

DONALD AND CHERYL DOSTER, DB 2615 PG 660

LAURA A. FERGUSON, DB 4139 PG 234

MATCHLINE SEE SHEET 4 -Y2- STA. 14+00.00

MATCHLINE SEE SHEET 4 -Y- STA. 21+00.00

SEE SHEET 10 FOR -Y- PROFILE
SEE SHEET 15 FOR -Y2- PROFILE

REVISIONS

8/17/99

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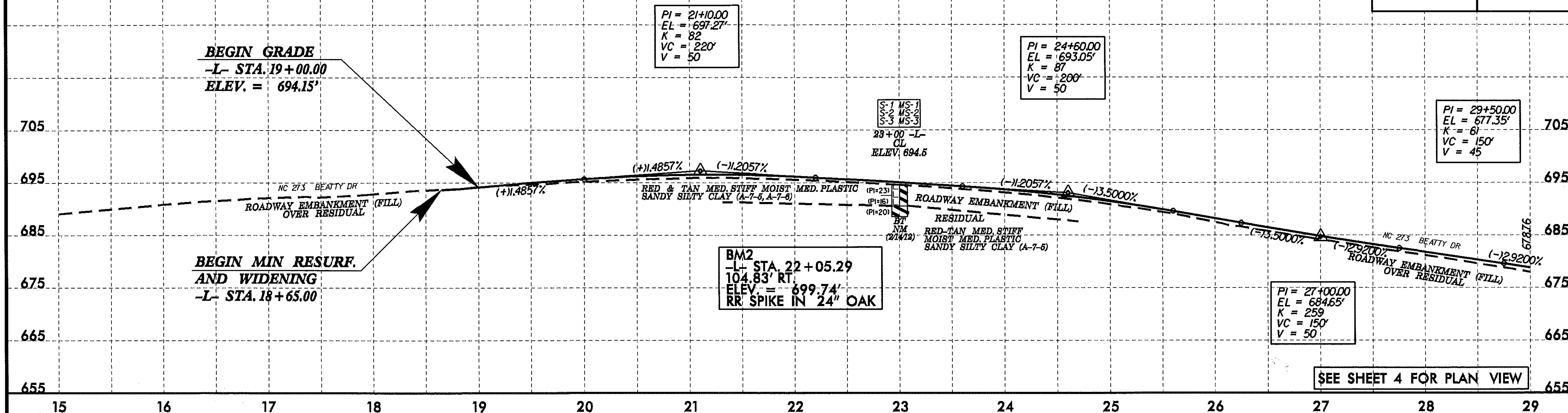
5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-3633	11
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L- NC 273 (BEATTY DR)



BEGIN GRADE
-L- STA. 19+00.00
ELEV. = 694.15'
BEGIN MIN RESURF. AND WIDENING
-L- STA. 18+65.00
PI = 21+10.00
EL = 697.27'
K = 82
VC = 220'
V = 50
PI = 24+60.00
EL = 693.05'
K = 87
VC = 200'
V = 50
PI = 29+50.00
EL = 677.35'
K = 61
VC = 150'
V = 45
PI = 27+00.00
EL = 684.65'
K = 259
VC = 150'
V = 50
S-1 MS-1
S-2 MS-2
S-3 MS-3
23+00 -L-
CL
ELEV. 694.5
(+)1.4857%
(-)1.2057%
(-)3.5000%
(-)2.9200%
NC 273 BEATTY DR
ROADWAY EMBANKMENT (FILL) OVER RESIDUAL
RED & TAN MED. STIFF MOIST MED. PLASTIC SANDY SILTY CLAY (A-7-5, A-7-6)
ROADWAY EMBANKMENT (FILL)
RESIDUAL
RED-TAN MED. STIFF MOIST MED. PLASTIC SANDY SILTY CLAY (A-7-5)
BT
NM
(2/14/12)
BM2
-L- STA. 22+05.29
104.83' RT.
ELEV. = 699.74'
RR SPIKE IN 24" OAK
678.76
SEE SHEET 4 FOR PLAN VIEW
705
695
685
675
665
655
15
16
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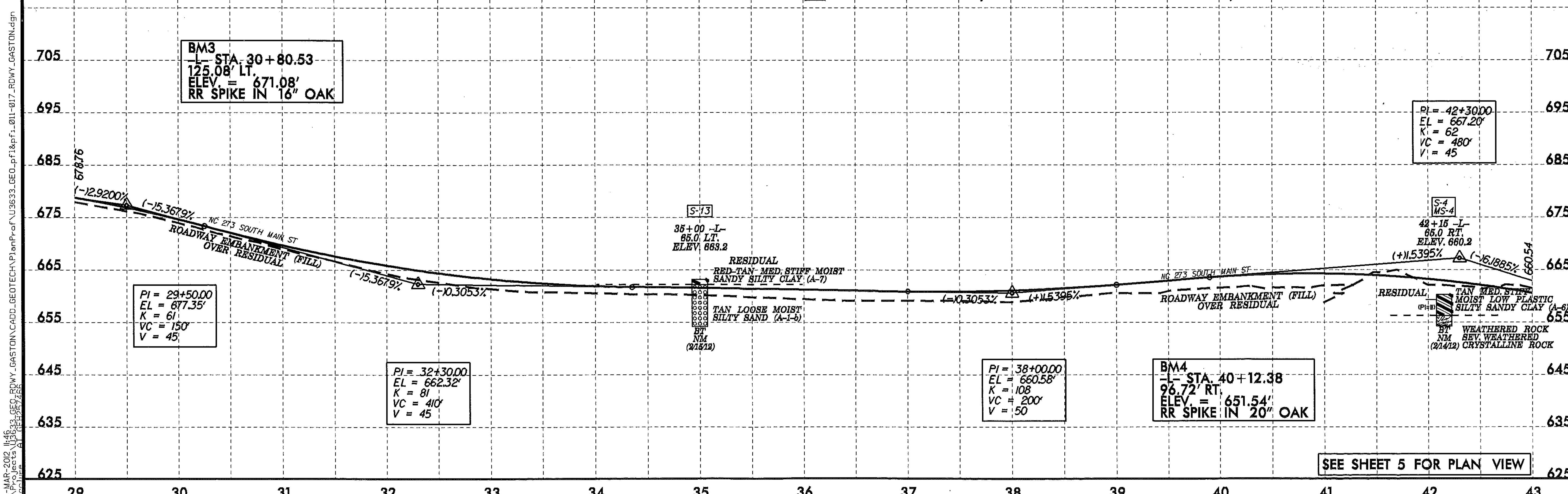
29

-L- NC 273 (SOUTH MAIN ST)



BM3
-L- STA. 30+80.53
125.08' LT.
ELEV. = 671.08'
RR SPIKE IN 16" OAK
678.76
(-)2.9200%
(-)5.3679%
(-)0.3053%
(+)1.5395%
(-)6.1885%
NC 273 SOUTH MAIN ST
ROADWAY EMBANKMENT (FILL) OVER RESIDUAL
PI = 29+50.00
EL = 677.35'
K = 61
VC = 150'
V = 45
PI = 32+30.00
EL = 662.32'
K = 81
VC = 410'
V = 45
S-13
35+00 -L-
65.0 LT.
ELEV. 663.2
RESIDUAL
RED-TAN MED. STIFF MOIST SANDY SILTY CLAY (A-7)
TAN LOOSE MOIST SILTY SAND (A-1-b)
BT
NM
(2/14/12)
PI = 38+00.00
EL = 660.58'
K = 108
VC = 200'
V = 50
BM4
-L- STA. 40+12.38
96.72' RT.
ELEV. = 651.54'
RR SPIKE IN 20" OAK
PI = 42+30.00
EL = 667.20'
K = 62
VC = 480'
V = 45
S-4
MS-4
42+15 -L-
65.0 RT.
ELEV. 660.2
660.54
RESIDUAL
TAN MED. STIFF MOIST LOW PLASTIC SILTY SANDY CLAY (A-6)
WEATHERED ROCK
SEV. WEATHERED CRYSTALLINE ROCK
SEE SHEET 5 FOR PLAN VIEW
705
695
685
675
665
655
645
635
625
29
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43

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PROJECT REFERENCE NO.	SHEET NO.
U-3633	12
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L- NC 273 (SOUTH MAIN ST)

PI = 42+30.00
EL = 667.20'
K = 62
VC = 480'
V = 45

S-12
MS-12

44+00 -L-
55.0 LT.
ELEV. 666.8

660.54

(-)6.1885%

ROADWAY EMBANKMENT (FILL)
OLIVE-TAN MED. STIFF MOIST
SANDY SILTY CLAY (A-7)

RESIDUAL

(PI=25)

BT
NM
(2/16/12)

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

PI = 51+90.00
EL = 607.79'
K = 80
VC = 645'
V = 45

S-5 MS-5
S-6 MS-6

52+60 -L-
25.0 RT.
ELEV. 610.0

ROADWAY EMBANKMENT (FILL)
BLACK MED. STIFF MOIST
CLAYEY SANDY SILT (A-4)

(-)6.1885%

(+)11.9020%

RESIDUAL
RED-TAN & OLIVE-GREEN MED. STIFF
MOIST CLAYEY SANDY SILT (A-4)

BT
NM
(2/14/12)

ALLUVIAL

RESIDUAL

RESIDUAL

607.49

BM5
-L- STA. 51+30.12
169.10' RT.
ELEV. = 599.61'
RR SPIKE IN 22" OAK

SEE SHEET 6 FOR PLAN VIEW

43 44 45 46 47 48 49 50 51 52 53 54 55 56 57

695 685 675 665 655 645 635 625 615 605 595 585

-L- NC 273 (SOUTH MAIN ST)

BM6
-L- STA. 51+30.12
118.76' LT.
ELEV. = 633.32'
RR SPIKE IN 30" OAK

PI = 65+00.00
EL = 637.30'
K = 332
VC = 350'
V = 50

PI = 62+00.00
EL = 627.00'
K = 104
VC = 160'
V = 50

S-8
MS-8

67+60 -L-
65.0 RT.
ELEV. 645.0

(+)4.4872%

NC 273 SOUTH MAIN ST

(+)4.1844%

ROADWAY EMBANKMENT (FILL)
OVER RESIDUAL

660.50

RESIDUAL

(PI=14)

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

BT
NM
(2/16/12)

PI = 68+90.00
EL = 654.80'
K = 661
VC = 200'
V = 50

(+)4.4872%

(+)3.4333%

NC 273 SOUTH MAIN ST

(+)3.4333%

ROADWAY EMBANKMENT (FILL)
OVER RESIDUAL

(+)1.9020%

NC 273 SOUTH MAIN ST

ROADWAY EMBANKMENT (FILL)
OVER RESIDUAL

617.49

S-7
MS-7

57+90 -L-
15.0 RT.
ELEV. 618.2

(PI=23)

BT
NM
(2/16/12)

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

SEE SHEET 7 FOR PLAN VIEW

57 58 59 60 61 62 63 64 65 66 67 68 69 70

695 685 675 665 655 645 635 625 615 605

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abenfield AT REPO4330

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PROJECT REFERENCE NO.	SHEET NO.
U-3633	13
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

–L– NC 273 (SOUTH MAIN ST)

PI = 73+40.00
EL = 673.63'
K = 64
VC = 215'
V = 45

S-9
75+60 –L–
40.0 LT.
ELEV. 672.1

PI = 77+30.00
EL = 676.78'
K = 87
VC = 420'
V = 50

PI = 80+25.00
EL = 665.00'
K = 423
VC = 150'
V = 50

PI = 83+50.00
EL = 650.87'
K = 2306
VC = 150'
V = 50

S-11
82+60 –L–
50.0 LT.
ELEV. 656.6

BM8
–L– STA. 78+38.04
259.55' RT.
ELEV. = 674.36'
RR SPIKE IN 12" OAK

661.50
NC 273 SOUTH MAIN ST
ROADWAY EMBANKMENT (FILL) OVER RESIDUAL
(+)4.1844%
(+)0.8077%
RESIDUAL
RED-TAN MED. STIFF MOIST CLAYEY SANDY SILT (A-4)
RED-TAN & TAN MED. STIFF MOIST CLAYEY SANDY SILT (A-4)
BT
NM
(2/15/12)
(+)0.8077%
(-)13.9932%
NC 273 HIGHLAND ST
ROADWAY EMBANKMENT (FILL) OVER RESIDUAL
(-)13.9932%
(-)14.3477%
RESIDUAL
RED-TAN MED. STIFF MOIST MED. PLASTIC SILTY CLAY (A-7-6)
(PI=17)
BT
NM
(2/15/12)
(-)14.3477%
NC 273 HIGHLAND ST
(-)14.4127%
ROADWAY EMBANKMENT (FILL) OVER RESIDUAL
646.46

SEE SHEET 8 FOR PLAN VIEW

71 72 73 74 75 76 77 78 79 80 81 82 83 84

705 695 685 675 665 655 645 635 625

–L– NC 273 (SOUTH MAIN ST)

END GRADE
–L– STA. 90+00.00
ELEV. = 624.34'

646.46
NC 273 HIGHLAND ST
ROADWAY EMBANKMENT (FILL) OVER RESIDUAL

S-10
88+00 –L–
40.0 RT.
ELEV. 629.0

PI = 89+00.00
EL = 626.60'
K = 95
VC = 200'
V = 45

(-)4.4127%
(-)12.3000%
RESIDUAL
TAN LOOSE MOIST SILTY SAND (A-2-4)
BT
NM
(2/15/12)
NC 273 HIGHLAND ST
ROADWAY EMBANKMENT (FILL) OVER RESIDUAL

BM9
–L– STA. 86+38.35
109.28' RT.
ELEV. = 649.05'
RR SPIKE IN 27" OAK

SEE SHEET 9 FOR PLAN VIEW

85 86 87 88 89 90 91 92 93 94 95

695 685 675 665 655 645 635 625 615 605

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PROJECT REFERENCE NO.	SHEET NO.
U-3633	14
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y- BELMONT-MT HOLLY RD/SOUTH MAIN ST.

BEGIN GRADE
-Y- STA. 15+50.00
ELEV. = 713.40'

PI = 15+75.00
EL = 712.90'

PI = 16+00.00
EL = 712.50'

PI = 16+75.00
EL = 711.40'
VC = 120'
K = 261
V = 45

PI = 18+10.00
EL = 708.80'
VC = 120'
K = 136
V = 40

PI = 20+10.00
EL = 703.18'
VC = 250'
K = 234
V = 45

ROADWAY EMBANKMENT (FILL) OVER RESIDUAL

(-)12.0000% (-)1.6000% (-)1.4667% (-)1.9259% (-)1.9259% (-)12.8100% (-)12.8100% (-)1.7417%

701.64

730 720 710 700 690 680

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

SEE SHEET 10 FOR PLAN VIEW

-Y- BELMONT-MT HOLLY RD/SOUTH MAIN ST.

-Y1- LOWE ST.

END GRADE
-Y- STA. 23+68.20
ELEV. = 695.20'

-Y- STA. 24+00.48
-L- STA. 19+53.45

BEGIN GRADE
-Y- STA. 24+32.61
ELEV. = 695.54'

END GRADE
-Y- STA. 28+82.00
ELEV. = 685.39'

BEGIN GRADE
-Y1- STA. 10+39.49
ELEV. = 696.15'

END GRADE
-Y1- STA. 10+75.00
ELEV. = 697.98'

PI = 22+50.00
EL = 699.00'
VC = 106'
K = 39
V = 45

PI = 23+35.00
EL = 695.20'
VC = 64'
K = 36
V = 45

PI = 24+32.61
EL = 695.54'

PI = 24+65.00
EL = 695.10'
VC = 60'
K = 32
V = 45

PI = 25+45.00
EL = 692.50'
VC = 100'
K = 71
V = 45

PI = 27+50.00
EL = 688.73'
VC = 150'
K = 227
V = 45

PI = 10+62.50
EL = 697.13'
K = 3
VC = 10'
V = N/A

PI = 10+48.50
EL = 695.70'
K = 1
VC = 18'
V = N/A

ROADWAY EMBANKMENT (FILL) OVER RESIDUAL

701.64

(-)1.7417% (-)4.4706% (-)2.6939% (-)1.3450% (-)3.2500% (-)1.8390% (-)1.8390% (-)12.5000% 685.43

(-)4.9945% (+)6.8000% (+)10.2143%

730 720 710 700 690 680 670 660 650

21 22 23 24 25 26 27 28 29 30 31 10 11 12

SEE SHEET 4 FOR PLAN VIEW

SEE SHEET 4 FOR PLAN VIEW

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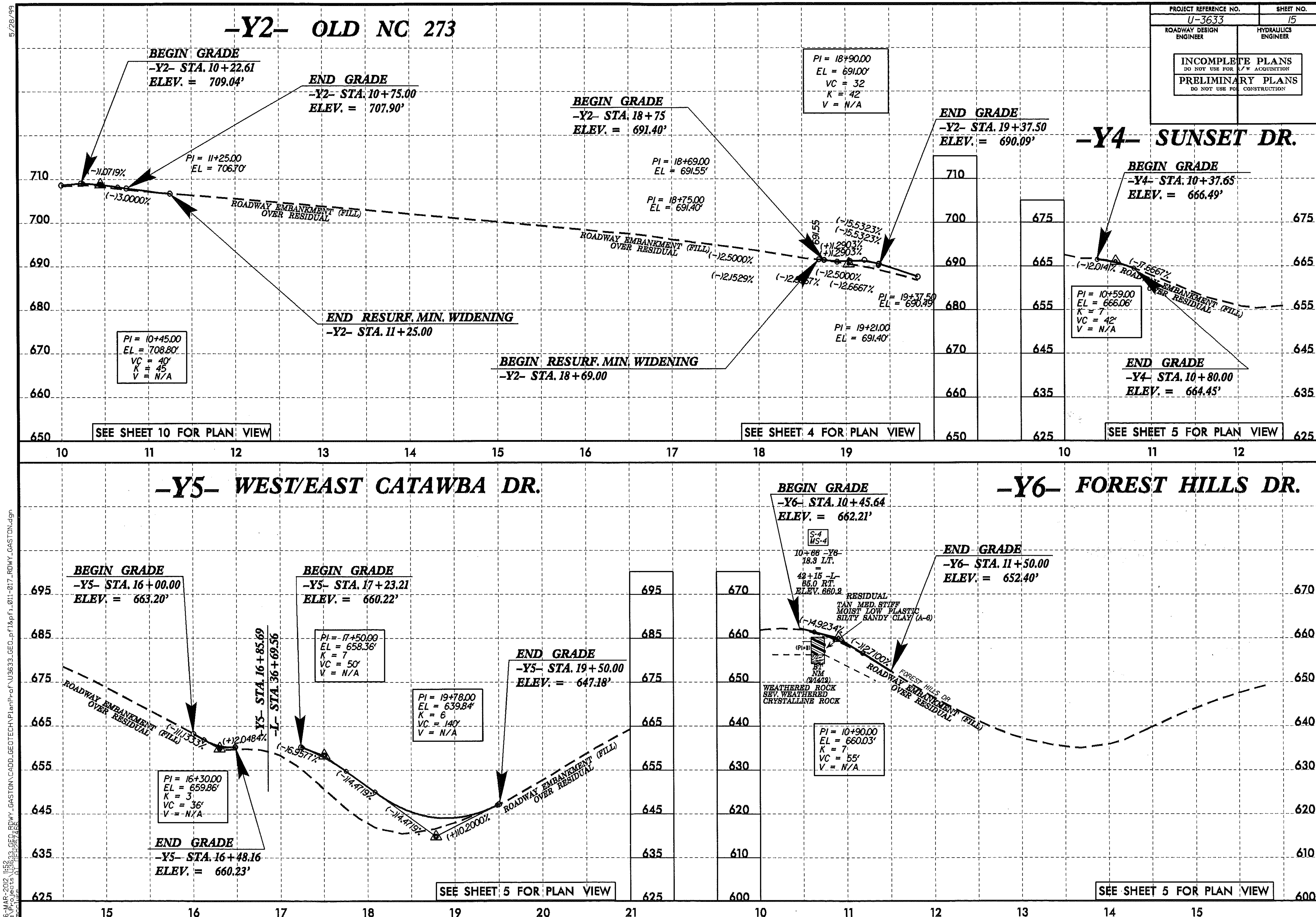


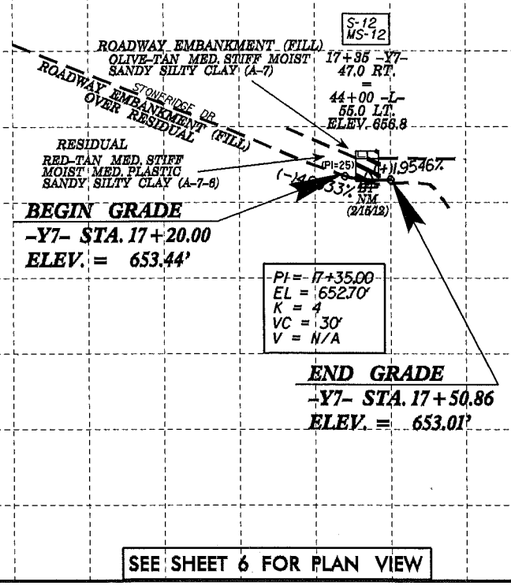
5/28/99
PROJECT REFERENCE NO. U-3633
SHEET NO. 15
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
-Y2- OLD NC 273
BEGIN GRADE
-Y2- STA. 10+22.61
ELEV. = 709.04'
END GRADE
-Y2- STA. 10+75.00
ELEV. = 707.90'
PI = 11+25.00
EL = 706.70'
(-)1.0719%
(-)3.0000%
ROADWAY EMBANKMENT (FILL) OVER RESIDUAL
PI = 10+45.00
EL = 708.80'
VC = 40'
K = 45
V = N/A
END RESURF. MIN. WIDENING
-Y2- STA. 11+25.00
BEGIN GRADE
-Y2- STA. 18+75
ELEV. = 691.40'
PI = 18+69.00
EL = 691.55'
PI = 18+75.00
EL = 691.40'
PI = 18+90.00
EL = 691.00'
VC = 32
K = 42
V = N/A
END GRADE
-Y2- STA. 19+37.50
ELEV. = 690.09'
(-)2.5000%
(-)2.1529%
(-)15.5323%
(+)11.2903%
(-)2.6667%
PI = 19+37.50
EL = 690.49'
PI = 19+21.00
EL = 691.40'
BEGIN RESURF. MIN. WIDENING
-Y2- STA. 18+69.00
SEE SHEET 10 FOR PLAN VIEW
SEE SHEET 4 FOR PLAN VIEW
-Y4- SUNSET DR.
BEGIN GRADE
-Y4- STA. 10+37.65
ELEV. = 666.49'
(-)2.0141%
(-)7.6667%
ROADWAY EMBANKMENT (FILL) OVER RESIDUAL
PI = 10+59.00
EL = 666.06'
K = 7
VC = 42'
V = N/A
END GRADE
-Y4- STA. 10+80.00
ELEV. = 664.45'
SEE SHEET 5 FOR PLAN VIEW
-Y5- WEST/EAST CATAWBA DR.
BEGIN GRADE
-Y5- STA. 16+00.00
ELEV. = 663.20'
(-)1.1333%
(+)2.0484%
PI = 16+30.00
EL = 659.86'
K = 3
VC = 36'
V = N/A
END GRADE
-Y5- STA. 16+48.16
ELEV. = 660.23'
-Y5- STA. 16+85.69
-L- STA. 36+69.56
BEGIN GRADE
-Y5- STA. 17+23.21
ELEV. = 660.22'
PI = 17+50.00
EL = 658.36'
K = 7
VC = 50'
V = N/A
(-)6.9577%
(-)14.4719%
PI = 19+78.00
EL = 639.84'
K = 6
VC = 140'
V = N/A
(+)10.2000%
END GRADE
-Y5- STA. 19+50.00
ELEV. = 647.18'
ROADWAY EMBANKMENT (FILL) OVER RESIDUAL
SEE SHEET 5 FOR PLAN VIEW
-Y6- FOREST HILLS DR.
BEGIN GRADE
-Y6- STA. 10+45.64
ELEV. = 662.21'
S-4 MS-4
10+66 -Y6- 18.3 LT.
42+15 -L- 66.0 RT.
ELEV. 660.2
RESIDUAL
TAN MED. STIFF MOIST LOW PLASTIC SILTY SANDY CLAY (A-6)
WEATHERED ROCK
SEV. WEATHERED CRYSTALLINE ROCK
(-)4.9234%
(-)11.2710%
END GRADE
-Y6- STA. 11+50.00
ELEV. = 652.40'
PI = 10+90.00
EL = 660.03'
K = 7
VC = 55'
V = N/A
ROADWAY EMBANKMENT (FILL) OVER RESIDUAL
FOREST HILLS DR.
SEE SHEET 5 FOR PLAN VIEW
26-MAR-2012 11:52

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-3633	16
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

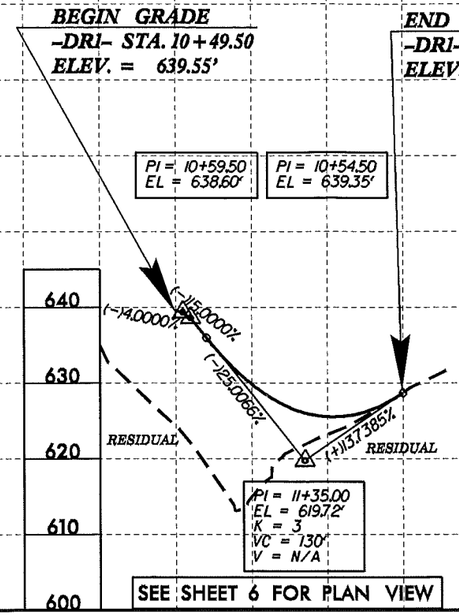
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y7- STONERIDGE DR.



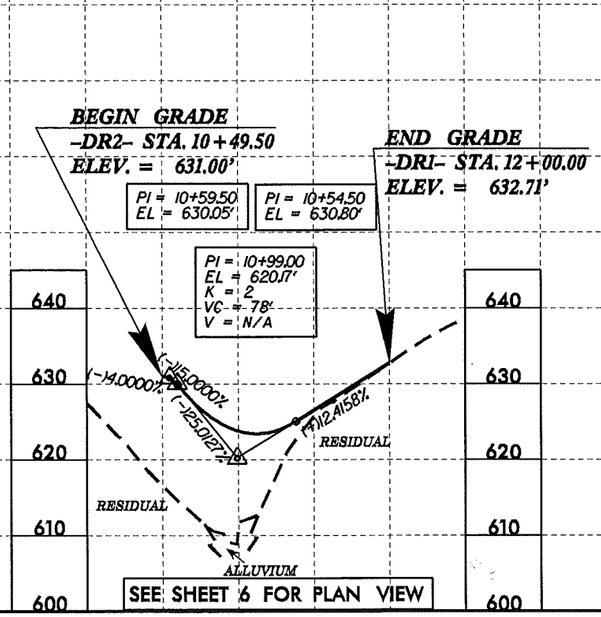
SEE SHEET 6 FOR PLAN VIEW

-DR1-



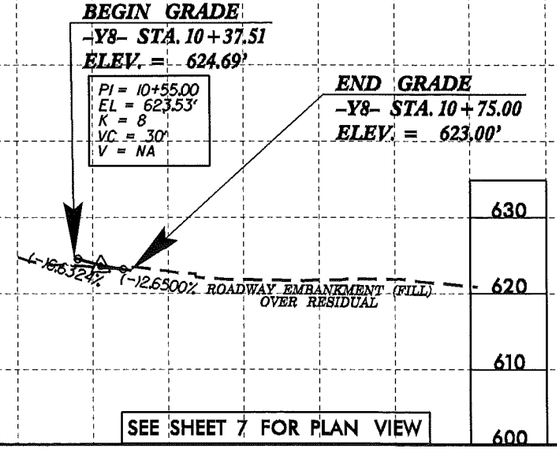
SEE SHEET 6 FOR PLAN VIEW

-DR2-



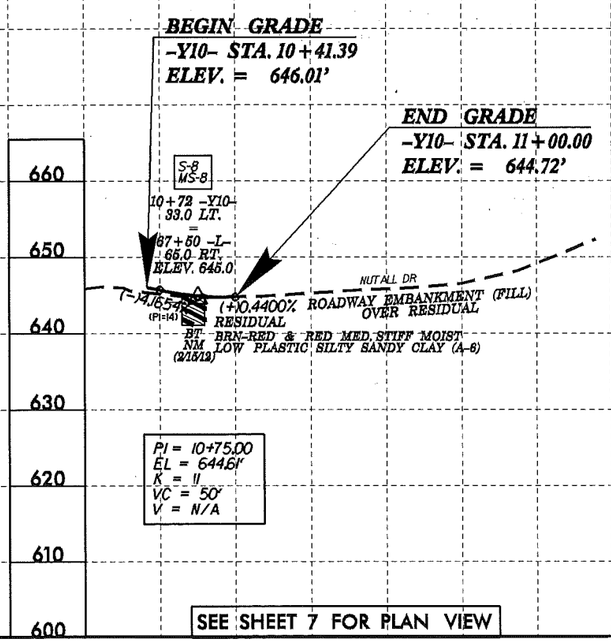
SEE SHEET 6 FOR PLAN VIEW

-Y8-



SEE SHEET 7 FOR PLAN VIEW

-Y10- NUTALL DR.



SEE SHEET 7 FOR PLAN VIEW

26-MAR-2012 11:53
C:\Projects\U3633_GEO_ROWY_GASTON\CADD_GEOTECH\PlanProf\U3633_GEO_pf18pf1_011-017_ROWY_GASTON.dgn

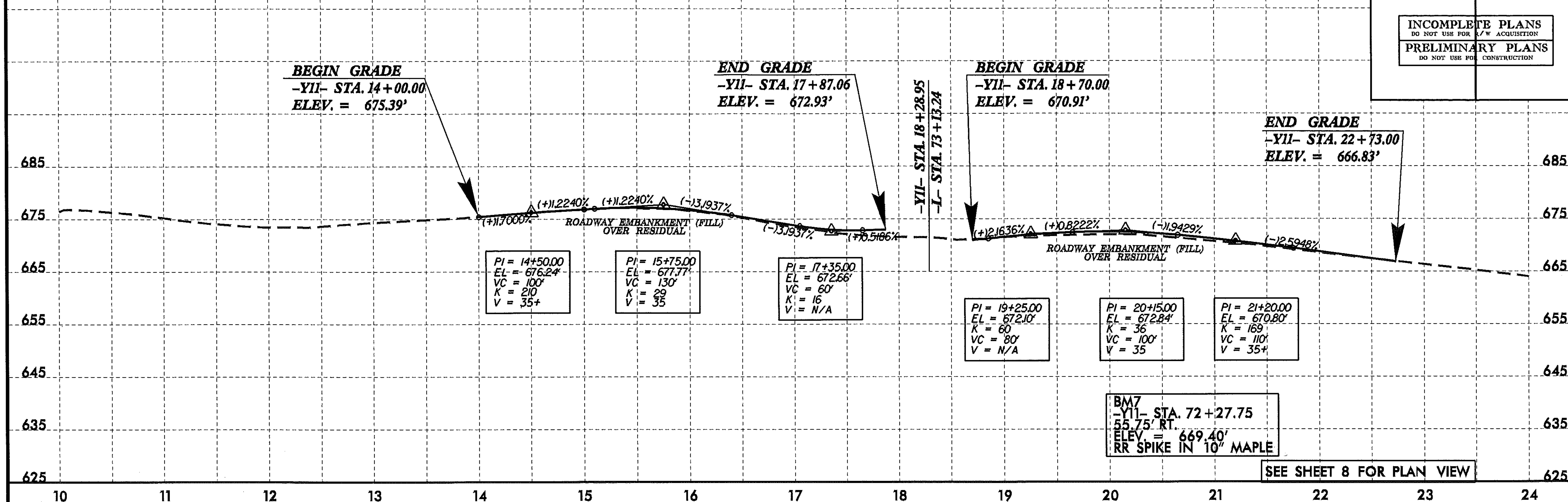
5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-3633	17
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

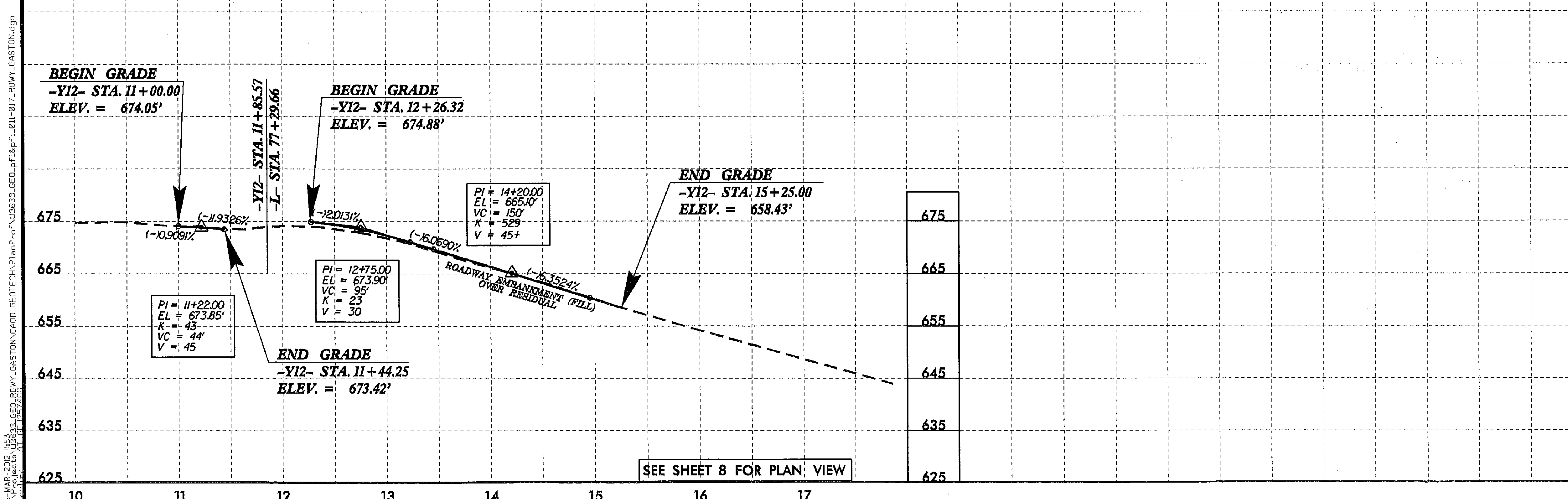
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y11- RANKIN AVE./TUCKASEEGE RD.



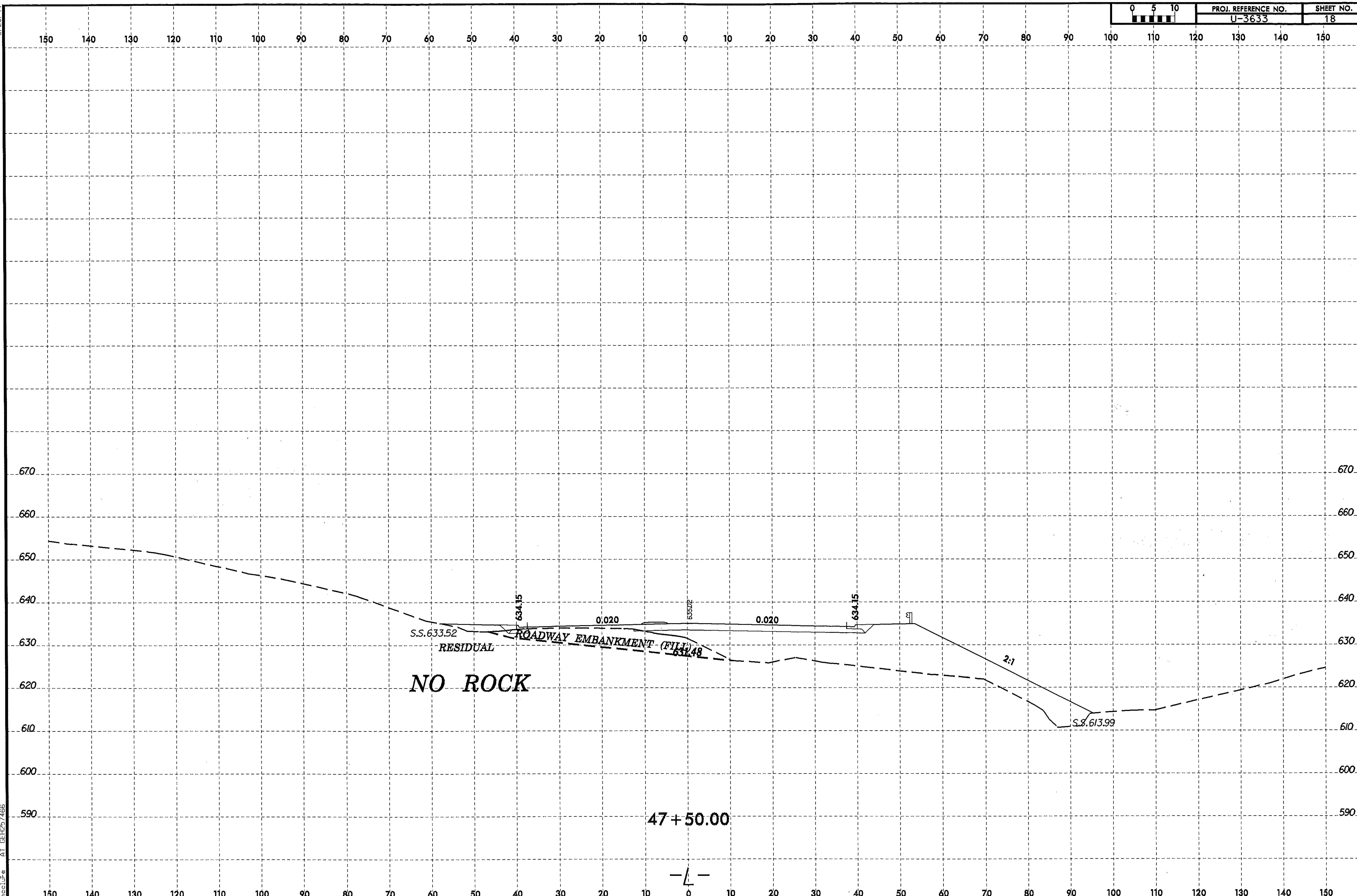
BEGIN GRADE
-Y11- STA. 14+00.00
ELEV. = 675.39'
END GRADE
-Y11- STA. 17+87.06
ELEV. = 672.93'
-Y11- STA. 18+28.95
-L- STA. 73+13.24
BEGIN GRADE
-Y11- STA. 18+70.00
ELEV. = 670.91'
END GRADE
-Y11- STA. 22+73.00
ELEV. = 666.83'
(+)1.7000%
(+)1.2240%
(+)1.2240%
(-)3.1937%
(-)3.1937%
(+)0.5186%
(+)2.1636%
(+)0.8222%
(-)1.9429%
(-)2.5948%
ROADWAY EMBANKMENT (FILL) OVER RESIDUAL
ROADWAY EMBANKMENT (FILL) OVER RESIDUAL
PI = 14+50.00 EL = 676.24' VC = 100' K = 210 V = 35+
PI = 15+75.00 EL = 677.77' VC = 130' K = 29 V = 35
PI = 17+35.00 EL = 672.66' VC = 60' K = 16 V = N/A
PI = 19+25.00 EL = 672.10' K = 60 VC = 80' V = N/A
PI = 20+15.00 EL = 672.84' K = 36 VC = 100' V = 35
PI = 21+20.00 EL = 670.80' K = 169 VC = 110' V = 35+
BM7 -Y11- STA. 72+27.75 55.75' RT. ELEV. = 669.40' RR SPIKE IN 10" MAPLE
SEE SHEET 8 FOR PLAN VIEW
685
675
665
655
645
635
625
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

-Y12- SOUTH MAIN ST.



BEGIN GRADE
-Y12- STA. 11+00.00
ELEV. = 674.05'
-Y12- STA. 11+85.57
-L- STA. 77+29.66
BEGIN GRADE
-Y12- STA. 12+26.32
ELEV. = 674.88'
END GRADE
-Y12- STA. 15+25.00
ELEV. = 658.43'
END GRADE
-Y12- STA. 11+44.25
ELEV. = 673.42'
(-)0.9091%
(-)1.9326%
(-)2.0131%
(-)6.0690%
(-)6.3524%
ROADWAY EMBANKMENT (FILL) OVER RESIDUAL
PI = 11+22.00 EL = 673.85' K = 43 VC = 44' V = 45
PI = 12+75.00 EL = 673.90' VC = 95' K = 23 V = 30
PI = 14+20.00 EL = 665.10' VC = 150' K = 529 V = 45+
SEE SHEET 8 FOR PLAN VIEW
675
665
655
645
635
625
10
11
12
13
14
15
16
17

26-MAR-2012 11:53



8/23/99

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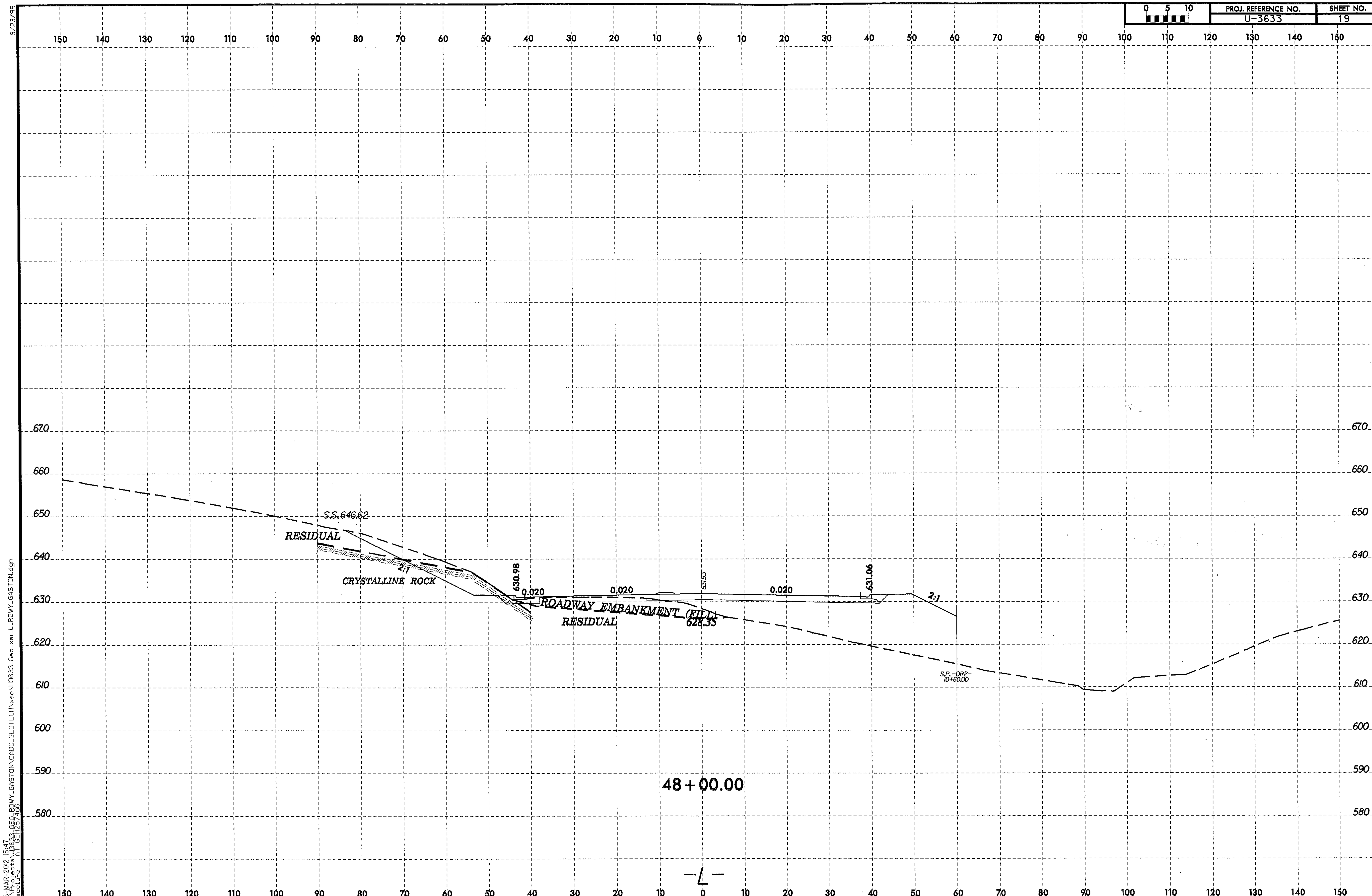
imcclure AT GEH257466


PROJ. REFERENCE NO.
U-3633
SHEET NO.
19
0 5 10
S.S.646.62
RESIDUAL
2:1
CRYSTALLINE ROCK
630.98
0.020
0.020
631.93
0.020
631.06
2:1
ROADWAY EMBANKMENT (FILL)
RESIDUAL
628.35
S.P.-DR2-
10+60.00
48+00.00
8/23/99
26-MAR-2012 15:47
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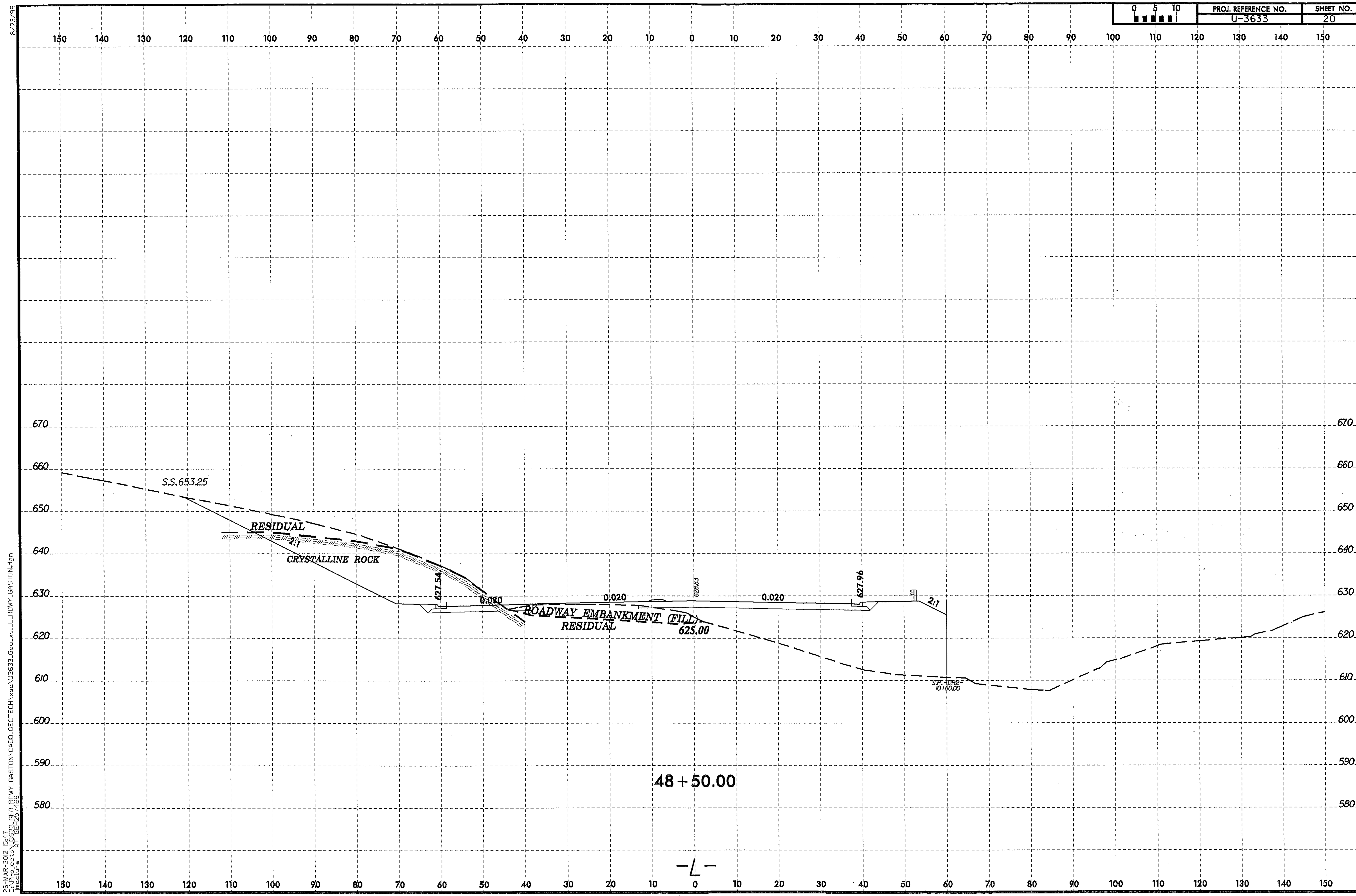
lmcclure AT GEH257466


PROJ. REFERENCE NO.
U-3633
SHEET NO.
20
0 5 10
8/23/99
S.S.653.25
RESIDUAL
2:1
CRYSTALLINE ROCK
627.54
0.020
0.020
0.020
625.83
627.96
2:1
ROADWAY EMBANKMENT (FILL)
RESIDUAL
625.00
S.F.-DR2= 10+60.00
48+50.00
26-MAR-2012 15:47
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mcclure AT GEH257466

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-3633	21

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

690 680 670 660 650 640 630 620 610 600 590 580

S.S.658.44

MATCHLINE

MATCHLINE

2:1 RESIDUAL

CRYSTALLINE ROCK

624.03

0.020

0.020

625.80

0.020

624.93

ROADWAY EMBANKMENT (FILL)

RESIDUAL

619.53

2:1

S.S.615.12

49+00.00

—L—

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

26-MAR-2012 15:50
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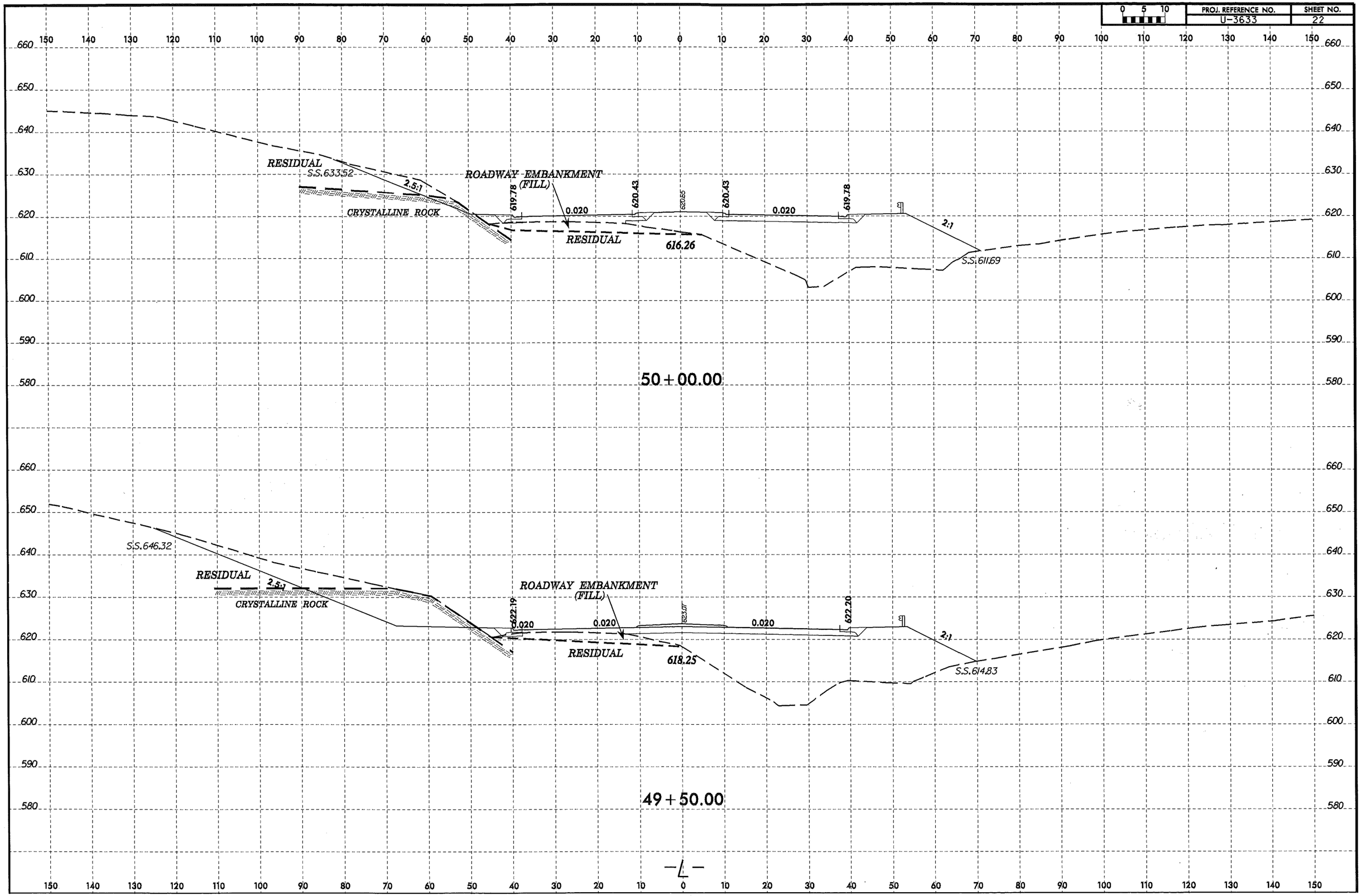
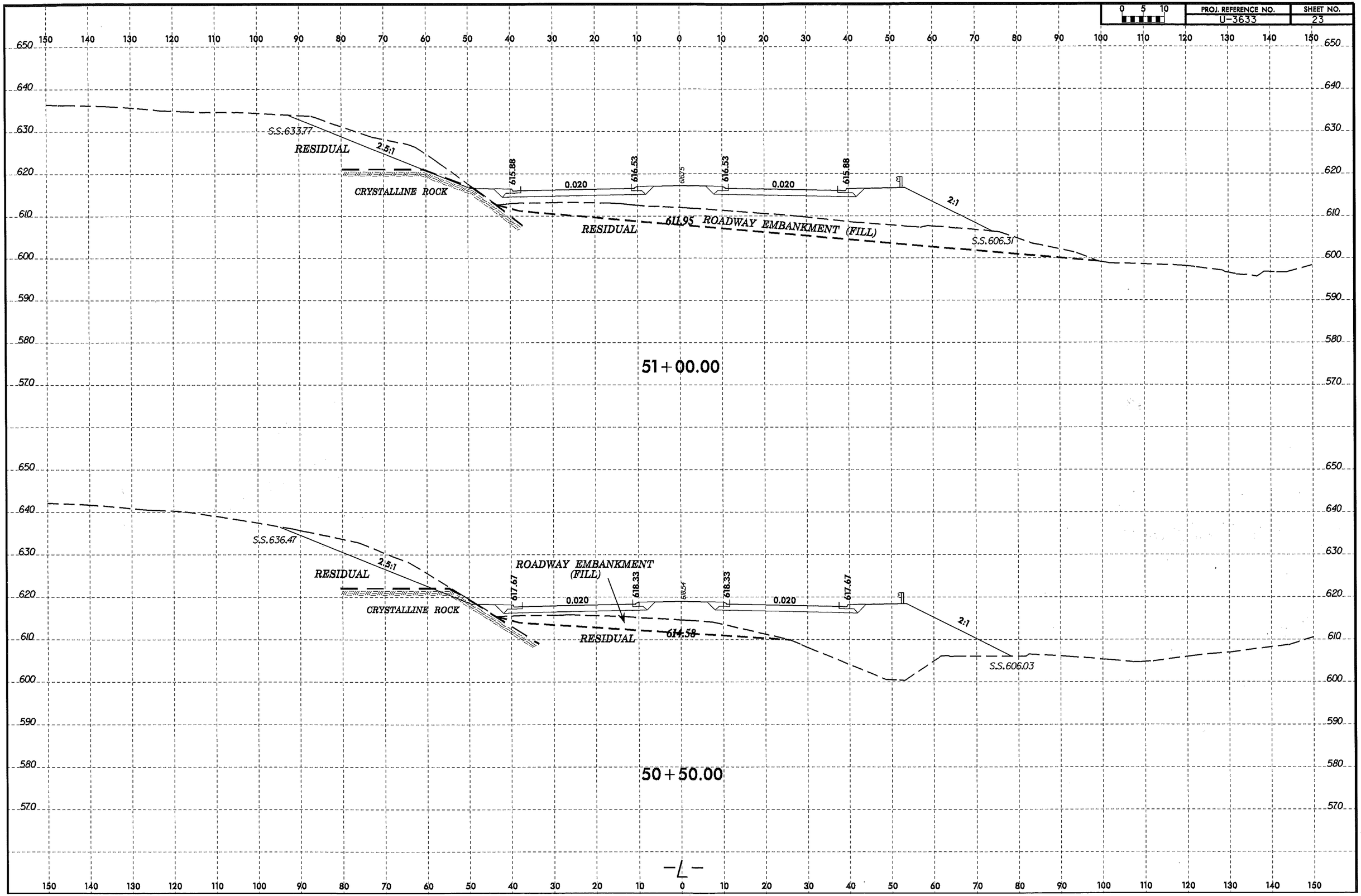
mcclure

PROJ. REFERENCE NO.	SHEET NO.
U-3633	22

0 5 10



PROJ. REFERENCE NO.	SHEET NO.
U-3633	23



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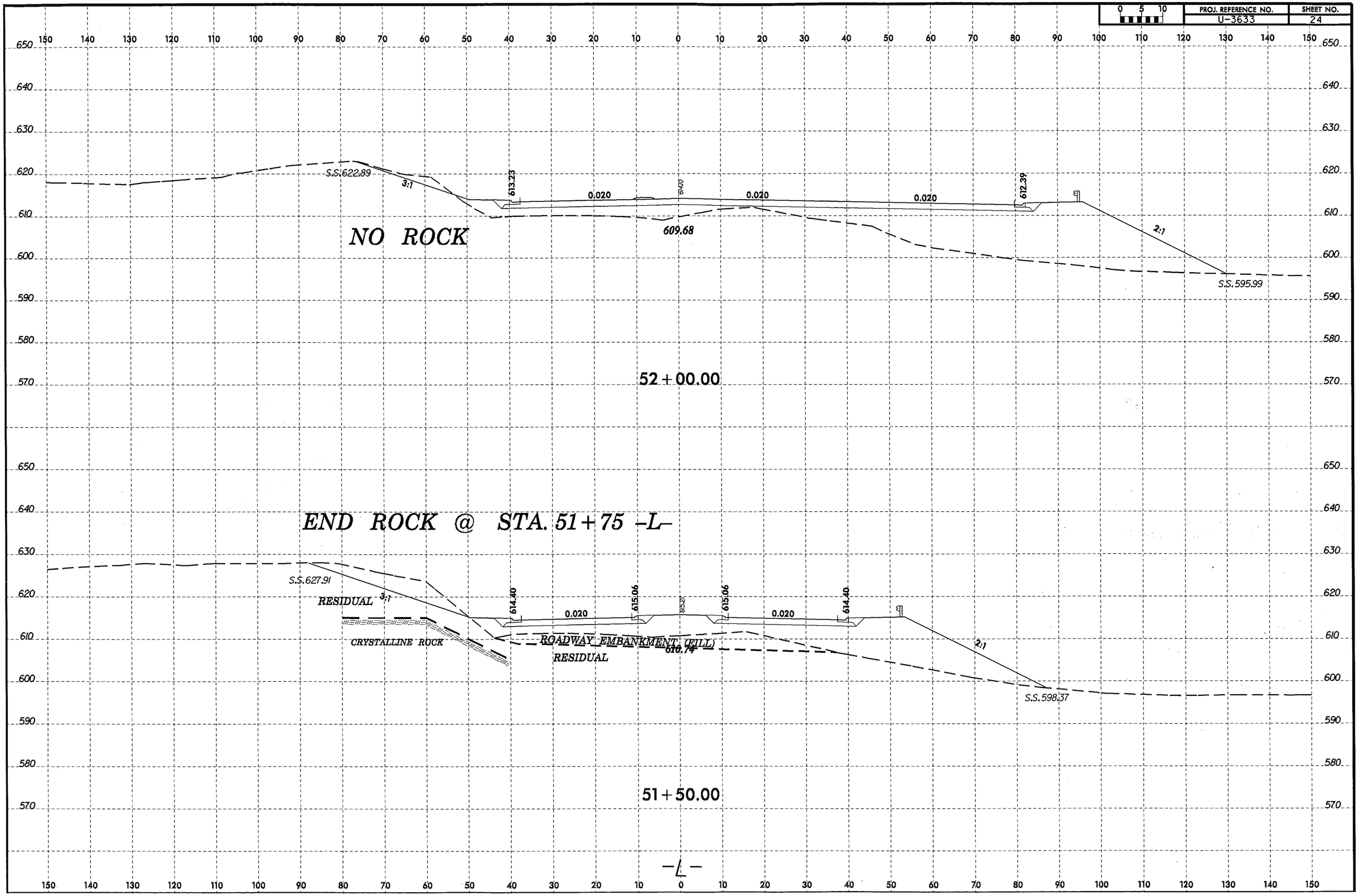
	U-3633	24



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC	Line or Boring ID
							C.SAND	F.SAND	SILT	CLAY	10	40	200			
S-1	CL	23+00	0.0-2.0	A-7-5(21)	57	23	11.2	9.3	20.6	58.9	100	93	80	-	-	L
MS-1	CL	23+00	0.0-2.0	-	-	-	-	-	-	-	-	-	-	30.3	-	L
S-2	CL	23+00	2.0-4.0	A-7-6(11)	45	16	13.4	14.0	32.0	40.6	94	87	69	-	-	L
MS-2	CL	23+00	2.0-4.0	-	-	-	-	-	-	-	-	-	-	26.8	-	L
S-3	CL	23+00	4.0-6.0	A-7-5(22)	59	20	3.7	11.0	42.7	42.6	100	98	86	-	-	L
MS-3	CL	23+00	4.0-6.0	-	-	-	-	-	-	-	-	-	-	36.7	-	L
S-4	65 RT	42+15	1.0-4.0	A-6(2)	28	11	20.1	26.8	28.7	24.4	92	82	50	-	-	L
MS-4	65 RT	42+15	1.0-4.0	-	-	-	-	-	-	-	-	-	-	18.5	-	L
S-5	25 RT	52+50	2.0-3.0	A-4(1)	29	9	35.3	19.9	22.4	22.3	100	79	45	-	-	L
MS-5	25 RT	52+50	2.0-3.0	-	-	-	-	-	-	-	-	-	-	18.6	-	L
S-6	25 RT	52+50	3.0-6.0	A-4(3)	31	4	3.9	22.5	53.3	20.3	100	99	75	-	-	L
MS-6	25 RT	52+50	3.0-6.0	-	-	-	-	-	-	-	-	-	-	33.0	-	L
S-7	15 RT	57+90	2.0-4.0	A-7-5(18)	60	23	19.5	9.9	25.9	44.7	100	87	71	-	-	L
MS-7	15 RT	57+90	2.0-4.0	-	-	-	-	-	-	-	-	-	-	30.7	-	L
S-8	65 RT	67+50	1.0-4.0	A-6(4)	31	14	39.4	12.2	18.0	30.5	100	76	49	-	-	L
MS-8	65 RT	67+50	1.0-4.0	-	-	-	-	-	-	-	-	-	-	16.1	-	L
S-9	40 LT	75+50	1.0-6.0	A-4(0)	33	6	32.5	23.4	23.9	20.3	100	85	45	-	-	L
S-10	40 RT	88+00	1.0-9.0	A-2-4(0)	25	NP	50.2	30.9	14.9	4.1	96	67	19	-	-	L
S-11	50 LT	82+50	1.0-6.0	A-7-5(22)	61	17	1.8	7.7	37.7	52.8	100	99	91	-	-	L
S-12	55 LT	44+00	1.0-4.0	A-7-6(20)	53	25	5.7	18.3	33.4	42.6	100	98	77	-	-	L
MS-12	55 LT	44+00	1.0-4.0	-	-	-	-	-	-	-	-	-	-	33.6	-	L
S-13	65 LT	35+00	1.0-9.0	A-1-b(0)	25	3	59.9	19.8	13.2	7.1	88	48	18	-	-	L