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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

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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 ($TONS/FT^2$)
GENERALLY GRANULAR MATERIAL (NON-COHESIVE)	VERY LOOSE	<4	N/A
	LOOSE	4 TO 10	
	MEDIUM DENSE	10 TO 30	
	DENSE	30 TO 50	
	VERY DENSE	>50	
GENERALLY SILT-CLAY MATERIAL (COHESIVE)	VERY SOFT	<2	<0.25
	SOFT	2 TO 4	0.25 TO 0.50
	MEDIUM STIFF	4 TO 8	0.5 TO 1.0
	STIFF	8 TO 15	1 TO 2
	VERY STIFF	15 TO 30	2 TO 4
	HARD	>30	>4

TEXTURE OR GRAIN SIZE

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

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

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

SOIL MOISTURE - CORRELATION OF TERMS

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

PLASTICITY

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

COLOR

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

GRADATION

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

ANGULARITY OF GRAINS

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

MINERALOGICAL COMPOSITION

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

COMPRESSIBILITY

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

PERCENTAGE OF MATERIAL

ORGANIC MATERIAL	GRANULAR SOILS	SILT - CLAY SOILS	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
- [ ] 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.

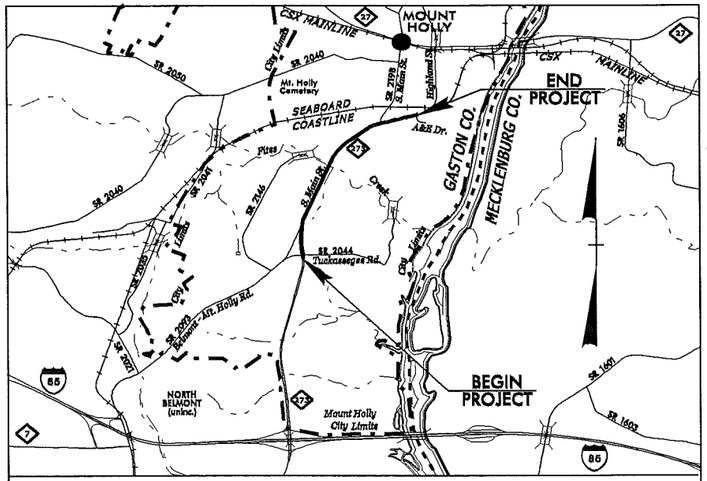
REVISED 09/23/09

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

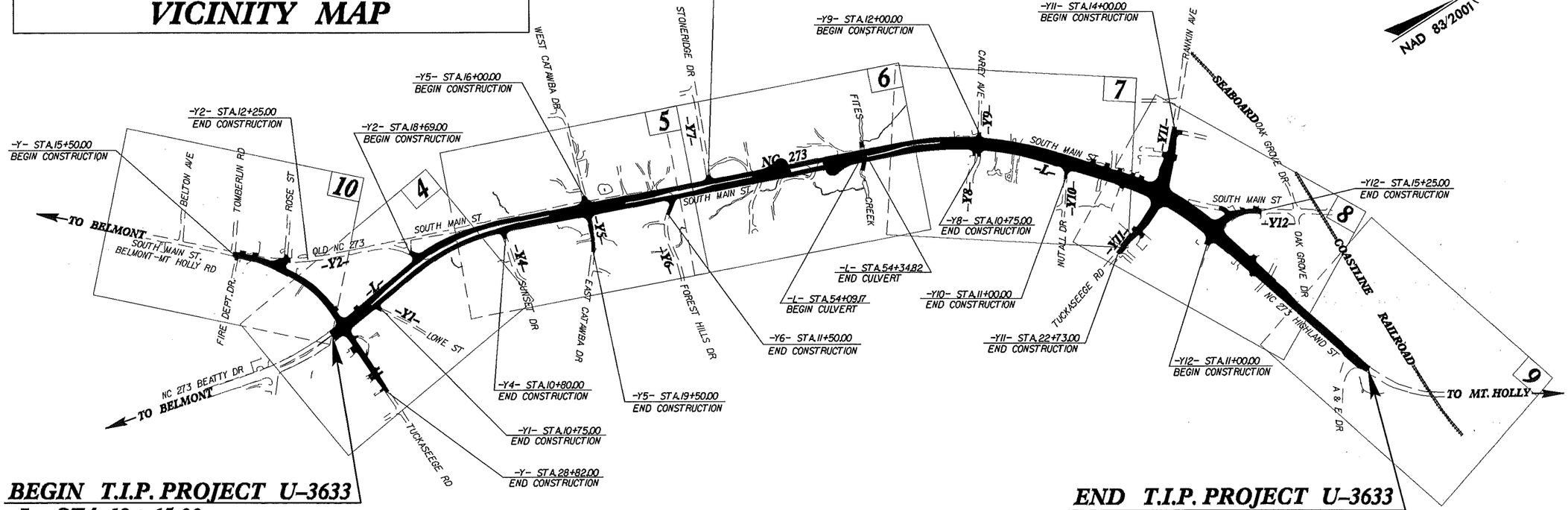
GASTON COUNTY

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

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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

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 •

28-MAR-2012 07:51
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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

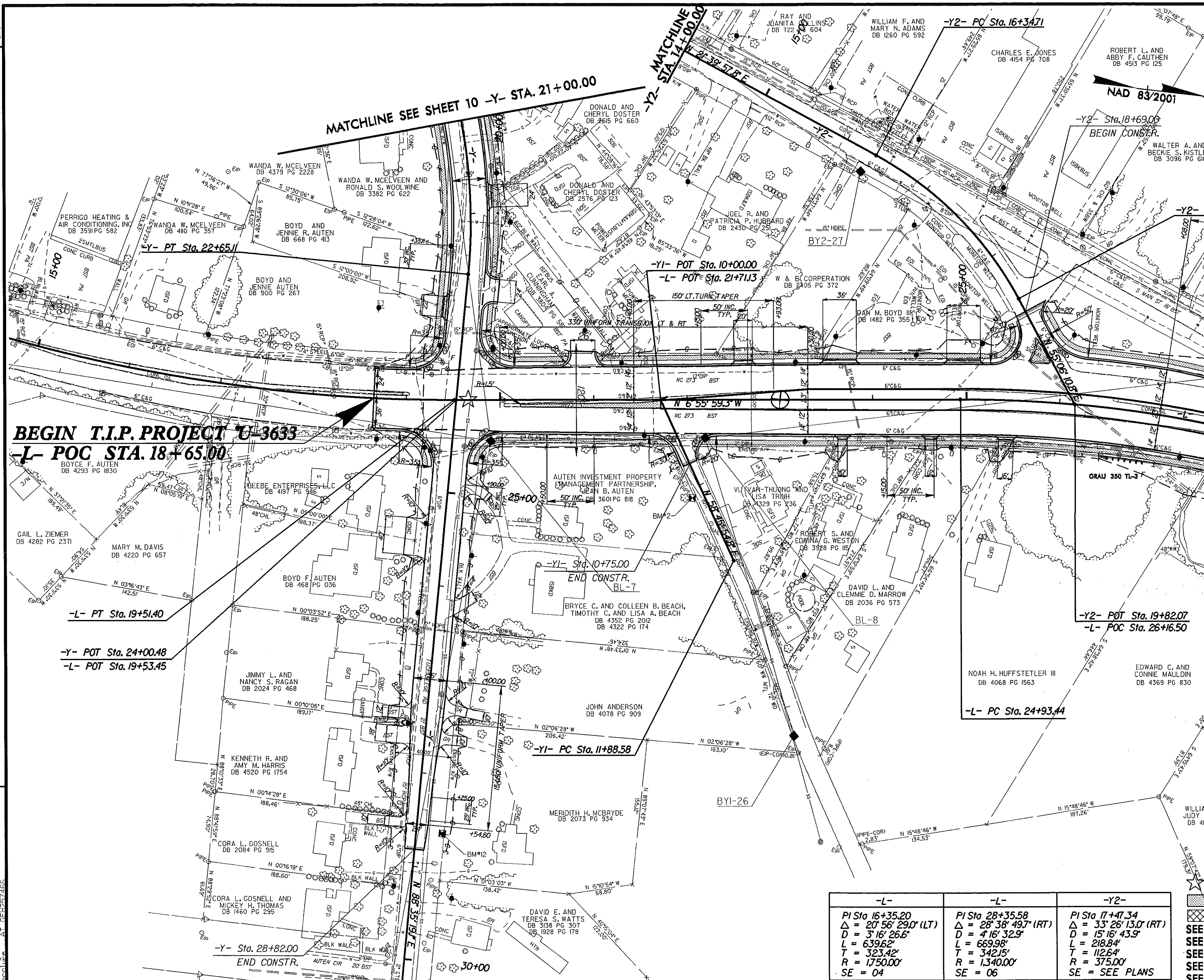
WEBSITE:
www.ncdot.gov/doh/preconstruct/highway/geotech

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



-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.

-Y5- Sta. 19+50.00
END CONSTR.

-Y4- Sta. 11+50.00
END CONSTR.

-Y4- PI Sta. 12+17.58

-Y5- PC Sta. 17+81.67

-Y5- PT Sta. 20+32.03

-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

DEBORAH W. ROPER
DB 3896 PG 840

MARY ANN R. HAMMER
DB 3770 PG 034

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

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

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

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

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

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

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

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

KENNETH E. AND
DELDENA GRAHAM
DB 4466 PG 644

COMAVA, LLC
DB 4213 PG 2000

MARY VANESSA S. WEBB
DB 4089 PG 711

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

JOHN AND
JENNIFER SUTTLE
DB 4527 PG 943

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

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

R. CRANDELL JR. AND MARY M. YON DB 2413 PG 484

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

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

LINDA R. FULLER DB 2379 PG 40

RAUL C. AND ELENA P. AIZCORBE DB 3003 PG 333

TRIANGLE REAL ESTATE OF GASTONIA, INC DB 2062 PG 813

JOHN AND JENNIFER SUTTLE DB 4527 PG 943

WILLIAM A. WHITMAN DB 3680 PG 036

-DRI- POT Sta. 10+00.00
-L- POT Sta. 46+70.00

-DR2- POT Sta. 10+00.00
-L- POT Sta. 48+08.20

-Y7- Sta. 17+20.00
BEGIN CONSTR.

-DRI- 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

-DRI- PT Sta. 12+33.34

-DR2- PT Sta. 11+87.32

-DR2- POT Sta. 12+47.75

EXPOSED ROCK IN CREEK

EXPOSED ROCK IN CREEK

CRYSTALLINE ROCK

ALLUVIAL

RESIDUAL

RESIDUAL

RESIDUAL

181.58' UNIFORM TRANSITION (U-TURN LN.)

150' UNIFORM TRANSITION (U-TURN LN.)

150' UNIFORM TRANSITION (U-TURN LN.)

134.45' UNIFORM TRANSITION (U-TURN LN.)

150' UNIFORM TRANSITION (U-TURN LN.)

-DRI-	-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

8/17/98

20-APR-2012 U3633
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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
BM #6
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
THE DALES GROUP, LLC DB 4410 PG 608
THE DALES GROUP, LLC DB 4183 PG 2296
JOHN M. MANESS DB 2718 PG 740
BY10-37

-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

REVISIONS

8/17/99

-Y11- Sta. 14+00.00
BEGIN CONSTR.

-Y11- PT Sta. 16+05.01

-Y11- PC Sta. 18+06.16

-Y11- PT Sta. 19+21.18

-Y11- PC Sta. 20+11.35

-L- PT Sta. 77+05.60

-Y11- PT Sta. 21+07.19

-Y11- Sta. 22+73.00
END 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.

-Y12- PC Sta. 12+33.59

-Y12- PT Sta. 11+73.92

-Y12- PC Sta. 11+13.90

-Y12- POT Sta. 10+00.00

-Y12- BMP Sta. 11+00.00
BEGIN CONSTR.

END C&G SIDEWALK LT & RT
-L- Sta. 82+10.00

MATCHLINE SEE SHEET 7 -L- STA. 70+50.00

MATCHLINE SEE SHEET 9 -L- STA. 84+50.00

NAD 83/2001

-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

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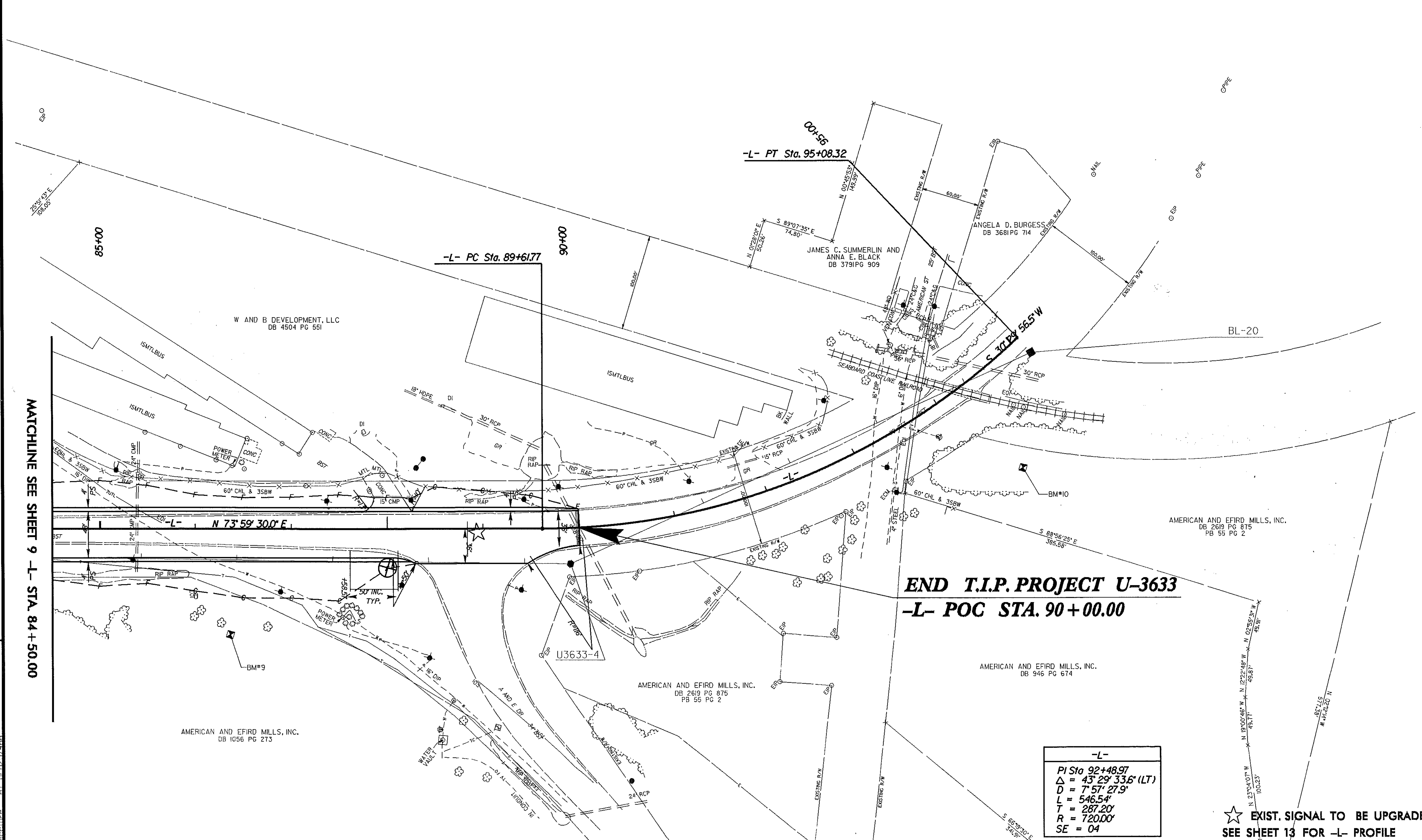
PROJECT REFERENCE NO.	SHEET NO.
U-3633	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION

REVISIONS

8/17/99



NAD 83/2001
-L- PT Sta. 95+08.32
95+00
-L- PC Sta. 89+61.77
90+00
85+00
W AND B DEVELOPMENT, LLC
DB 4504 PG 551
JAMES C. SUMMERLIN AND
ANNA E. BLACK
DB 3791 PG 909
ANGELA D. BURGESS
DB 3681 PG 714
S 30° PT 56.5" W
BL-20
SEABOARD COASTLINE RAILROAD
N 73° 59' 30.0" E
-L-
BM#10
BM#9
AMERICAN AND EFIRD MILLS, INC.
DB 2619 PG 875
PB 55 PG 2
S 88°56'25" E
385.58'
END T.I.P. PROJECT U-3633
-L- POC STA. 90+00.00
U3633-4
AMERICAN AND EFIRD MILLS, INC.
DB 946 PG 674
AMERICAN AND EFIRD MILLS, INC.
DB 1056 PG 273
POWER METER
WATER VAULT
MATCHLINE SEE SHEET 9 -L- STA. 84+50.00
-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

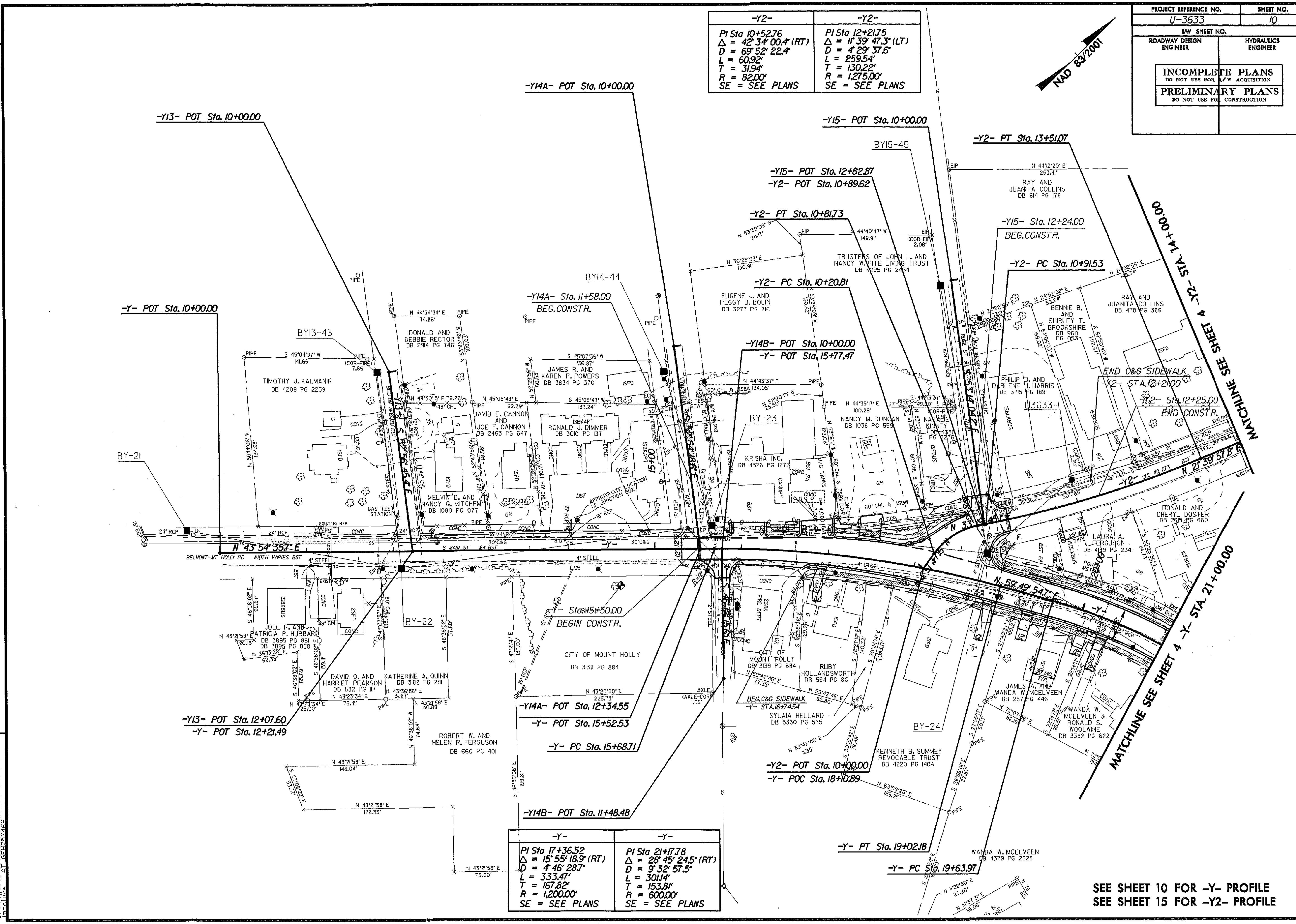
SEE SHEET 13 FOR -L- PROFILE

23-MAR-2012 11:33
U3633_GEO_ROWY_GASTON\CADD_GEOTECH\PlanProf\U3633_GEO_inv_009_GASTON.dgn

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
-Y13- POT Sta. 10+00.00
-Y14A- POT Sta. 10+00.00
-Y15- POT Sta. 10+00.00
-Y2- PT Sta. 13+51.07
-Y15- POT Sta. 12+82.87
-Y2- POT Sta. 10+89.62
-Y2- PT Sta. 10+81.73
-Y15- Sta. 12+24.00
BEG. CONSTR.
-Y2- PC Sta. 10+91.53
-Y2- PC Sta. 10+20.81
-Y14A- Sta. 11+58.00
BEG. CONSTR.
-Y- POT Sta. 10+00.00
-Y14B- POT Sta. 10+00.00
-Y- POT Sta. 15+77.47
END C&G SIDEWALK
-Y2- STA. 12+21.00
-Y2- Sta. 12+25.00
END CONSTR.
MATCHLINE SEE SHEET 4 -Y2- STA. 14+00.00
MATCHLINE SEE SHEET 4 -Y- STA. 21+00.00
BY13-43
BY14-44
BY15-45
BY-21
BY-22
BY-23
BY-24
U3633-1
N 43°54'35.3" E
N 59°49'54.7" E
N 21°39'57.8" E
BELMONT-MT HOLLY RD WIDTH VARIES BST
S MAIN ST
-Y- Sta. 15+50.00
BEGIN CONSTR.
BEG. C&G SIDEWALK -Y- STA. 16+74.54
-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
-Y2- POT Sta. 10+00.00
-Y- POC Sta. 18+10.89
-Y14B- POT Sta. 11+48.48
-Y- PT Sta. 19+02.18
-Y- PC Sta. 19+63.97
TIMOTHY J. KALMANIR DB 4209 PG 2259
DONALD AND DEBBIE RECTOR DB 2914 PG 746
MELVIN D. AND NANCY G. MITCHEM DB 1080 PG 077
DAVID E. CANNON AND JOE F. CANNON DB 2463 PG 647
JAMES R. AND KAREN P. POWERS DB 3934 PG 370
RONALD J. DIMMER DB 3010 PG 137
EUGENE J. AND PEGGY B. BOLIN DB 3277 PG 716
TRUSTEES OF JOHN L. AND NANCY W. FITE LIVING TRUST DB 4295 PG 2464
KRISHA INC. DB 4526 PG 1272
NANCY M. DUNCAN DB 1038 PG 559
RAY AND JUANITA COLLINS DB 614 PG 178
RAY AND JUANITA COLLINS DB 478 PG 386
BENNIE B. AND SHIRLEY T. BROOKSHIRE DB 960 PG 053
PHILIP D. AND DARLENE H. HARRIS DB 3715 PG 189
DONALD AND CHERYL DOSTER DB 2615 PG 660
LAURA A. FERGUSON DB 4139 PG 234
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
CITY OF MOUNT HOLLY DB 3139 PG 884
RUBY HOLLANDSWORTH DB 594 PG 86
SYLAIA HELLARD DB 3330 PG 575
KENNETH B. SUMMEY REVOCABLE TRUST DB 4220 PG 1404
JAMES A. AND WANDA W. MCELVEEN DB 2571 PG 446
WANDA W. MCELVEEN & RONALD S. WOOLWINE DB 3382 PG 622
WANDA W. MCELVEEN DB 4379 PG 2228
GAS TEST STATION
APPROXIMATE LOCATION OF JUNCTION BOX
2SBK FIRE DEPT

-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 = 1275.00'
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

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

S-1 MS-1
S-2 MS-2
S-3 MS-3
23+00 -L-
CL
ELEV. 694.5

BM2
-L- STA. 22+05.29
104.83' RT.
ELEV. = 699.74'
RR SPIKE IN 24" OAK

PI = 27+00.00
EL = 684.65'
K = 259
VC = 150'
V = 50

678.76

NC 273 BEATTY DR
ROADWAY EMBANKMENT (FILL) OVER RESIDUAL

(+)1.4857%
(-)1.2057%
(-)13.5000%
(-)12.9200%

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

(PI=23)
(PI=16)
(PI=20)
BT
NM
(2/14/12)

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

SEE SHEET 4 FOR PLAN VIEW

15 16 17 18 19 20 21 22 23 24 25 26 27 28 29

705 695 685 675 665 655

-L- NC 273 (SOUTH MAIN ST)

BM3
-L- STA. 30+80.53
125.08' LT.
ELEV. = 671.08'
RR SPIKE IN 16" OAK

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

PI = 38+00.00
EL = 660.58'
K = 108
VC = 200'
V = 50

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

S-13
35+00 -L-
66.0 LT.
ELEV. 663.2

S-4
MS-4
42+15 -L-
66.0 RT.
ELEV. 660.2

BM4
-L- STA. 40+12.38
96.72' RT.
ELEV. = 651.54'
RR SPIKE IN 20" OAK

678.76
660.54

(-)12.9200%
(-)15.3679%
(-)10.3053%
(+)11.5395%
(-)16.1885%

NC 273 SOUTH MAIN ST
ROADWAY EMBANKMENT (FILL) OVER RESIDUAL

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

TAN LOOSE MOIST SILTY SAND (A-1-b)

BT
NM
(2/15/12)

(PI=8)
BT
NM
(2/14/12)

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

WEATHERED ROCK
SEV. WEATHERED CRYSTALLINE ROCK

SEE SHEET 5 FOR PLAN VIEW

29 30 31 32 33 34 35 36 37 38 39 40 41 42 43

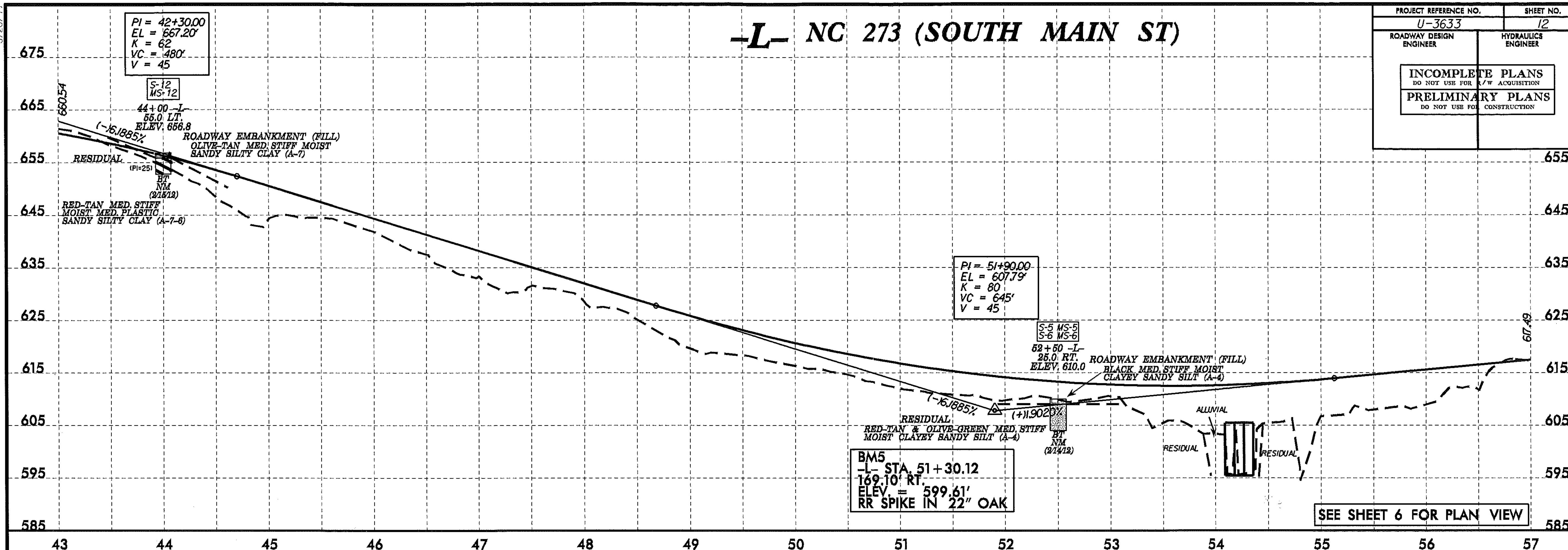
705 695 685 675 665 655 645 635 625

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

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

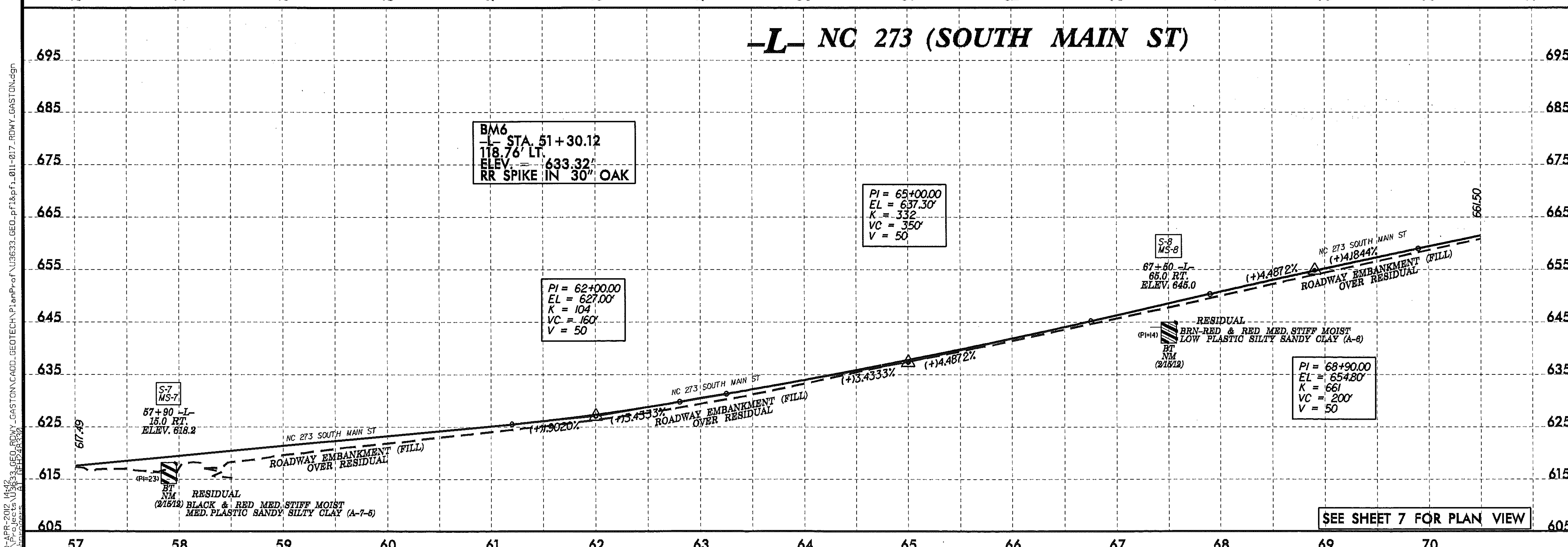
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-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. 656.8
ROADWAY EMBANKMENT (FILL)
OLIVE-TAN MED. STIFF MOIST
SANDY SILTY CLAY (A-7)
660.54
(-)6.1885%
RESIDUAL
(PI=25)
BT
NM
(2/15/12)
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+50 -L-
25.0 RT.
ELEV. 610.0
ROADWAY EMBANKMENT (FILL)
BLACK MED. STIFF MOIST
CLAYEY SANDY SILT (A-4)
(-)6.1885%
(+)1.9020%
RESIDUAL
RED-TAN & OLIVE-GREEN MED. STIFF
MOIST CLAYEY SANDY SILT (A-4)
BT
NM
(2/14/12)
ALLUVIAL
RESIDUAL
RESIDUAL
617.49
BM5
-L- STA. 51+30.12
169.10' RT.
ELEV. = 599.61'
RR SPIKE IN 22" OAK
SEE SHEET 6 FOR PLAN VIEW
675
665
655
645
635
625
615
605
595
585
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57

-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+50 -L-
65.0 RT.
ELEV. 645.0
661.50
NC 273 SOUTH MAIN ST
(+)4.4872%
(+)4.1844%
ROADWAY EMBANKMENT (FILL)
OVER RESIDUAL
RESIDUAL
(PI=14)
BRN-RED & RED MED. STIFF MOIST
LOW PLASTIC SILTY SANDY CLAY (A-6)
BT
NM
(2/15/12)
PI = 68+90.00
EL = 654.80'
K = 661
VC = 200'
V = 50
(+)3.4333%
(+)4.4872%
NC 273 SOUTH MAIN ST
(+)1.9020%
(+)3.4333%
ROADWAY EMBANKMENT (FILL)
OVER RESIDUAL
S-7 MS-7
57+90 -L-
15.0 RT.
ELEV. 618.2
617.49
NC 273 SOUTH MAIN ST
ROADWAY EMBANKMENT (FILL)
OVER RESIDUAL
(PI=23)
BT
NM
(2/15/12)
RESIDUAL
BLACK & RED MED. STIFF MOIST
MED. PLASTIC SANDY SILTY CLAY (A-7-6)
SEE SHEET 7 FOR PLAN VIEW
695
685
675
665
655
645
635
625
615
605
57
58
59
60
61
62
63
64
65
66
67
68
69
70

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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

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

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

SEE SHEET 8 FOR PLAN VIEW

–L– NC 273 (SOUTH MAIN ST)

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

S-10
88+00 –L–
40.0 RT.
ELEV. 629.0

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

646.46
NC 273 HIGHLAND ST
ROADWAY EMBANKMENT (FILL)
OVER RESIDUAL
(–)14.4127%
(–)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

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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% (-)11.6000% (-)11.4667% (-)11.9259% (-)11.9259% (-)12.8100%

ROADWAY EMBANKMENT (FILL) OVER RESIDUAL

(-)12.8100% (-)11.7417%

701.64

SEE SHEET 10 FOR PLAN VIEW

730 720 710 700 690 680

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

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

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

701.64

(-)11.7417% (-)14.4706% (-)12.6939% (-)11.3450% (-)13.2500% (-)11.8390% (-)11.8390% (-)12.5000%

685.43

(-)14.9945% (+)16.8000% (+)10.2143%

ROADWAY EMBANKMENT (FILL) OVER RESIDUAL

ROADWAY EMBANKMENT (FILL) OVER RESIDUAL

ROADWAY EMBANKMENT (FILL) OVER RESIDUAL

SEE SHEET 4 FOR PLAN VIEW

SEE SHEET 4 FOR PLAN VIEW

730 720 710 700 690 680 670 660 650

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

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PROJECT REFERENCE NO.	SHEET NO.
U-3633	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

END RESURF. MIN. WIDENING
-Y2- STA. 11+25.00

PI = 10+45.00
EL = 708.80'
VC = 40'
K = 45
V = N/A

SEE SHEET 10 FOR PLAN VIEW

BEGIN GRADE
-Y2- STA. 18+75
ELEV. = 691.40'

PI = 18+90.00
EL = 691.00'
VC = 32
K = 42
V = N/A

PI = 18+69.00
EL = 691.55'

PI = 18+75.00
EL = 691.40'

ROADWAY EMBANKMENT (FILL) OVER RESIDUAL

(-)12.5000%

(-)12.1529%

691.55

(-)15.5323%
(-)15.5323%
(+)1.2903%
(+)1.2903%

(-)12.5000%
(-)12.6667%
(-)12.6667%

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 4 FOR PLAN VIEW

END GRADE
-Y2- STA. 19+37.50
ELEV. = 690.09'

-Y4- SUNSET DR.

BEGIN GRADE
-Y4- STA. 10+37.65
ELEV. = 666.49'

(-)12.0141%

(-)7.6667%

ROADWAY EMBANKMENT OVER RESIDUAL (FILL)

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'

ROADWAY EMBANKMENT OVER RESIDUAL (FILL)

(-)11.3539%

(+)2.0484%

-Y5- STA. 16+85.69
-L- STA. 36+69.56

PI = 16+30.00
EL = 659.86'
K = 3
VC = 36'
V = N/A

END GRADE
-Y5- STA. 16+48.16
ELEV. = 660.23'

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

(-)14.4719%

(+)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 -Y8-
18.3 LT.
=
42+15 -L-
86.0 RT.
ELEV. 660.2

RESIDUAL
TAN MED. STIFF
MOIST LOW PLASTIC
SILTY SANDY CLAY (A-6)

(-)14.9234%

(PI=B)

BM
NM
(9/14/19)

WEATHERED ROCK
SEV. WEATHERED
CRYSTALLINE ROCK

(-)11.2700%

FOREST HILLS DR

ROADWAY EMBANKMENT OVER RESIDUAL (FILL)

PI = 10+90.00
EL = 660.03'
K = 7
VC = 55'
V = N/A

END GRADE
-Y6- STA. 11+50.00
ELEV. = 652.40'

SEE SHEET 5 FOR PLAN VIEW

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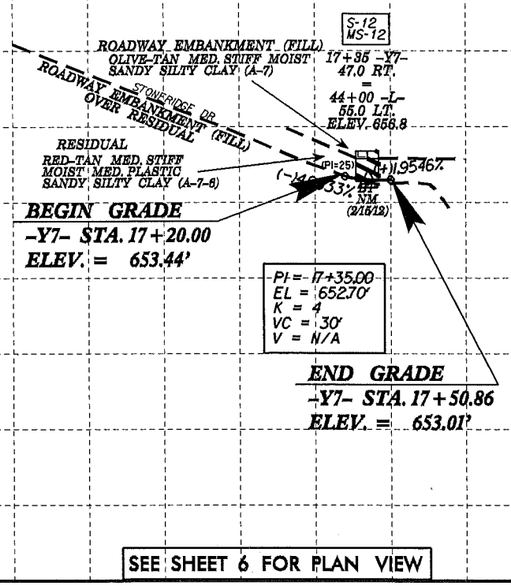
PROJECT REFERENCE NO.	SHEET NO.
U-3633	16
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

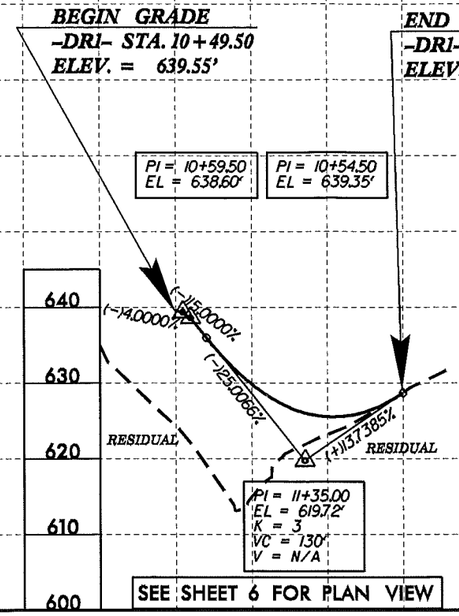
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

–Y7– STONERIDGE DR.



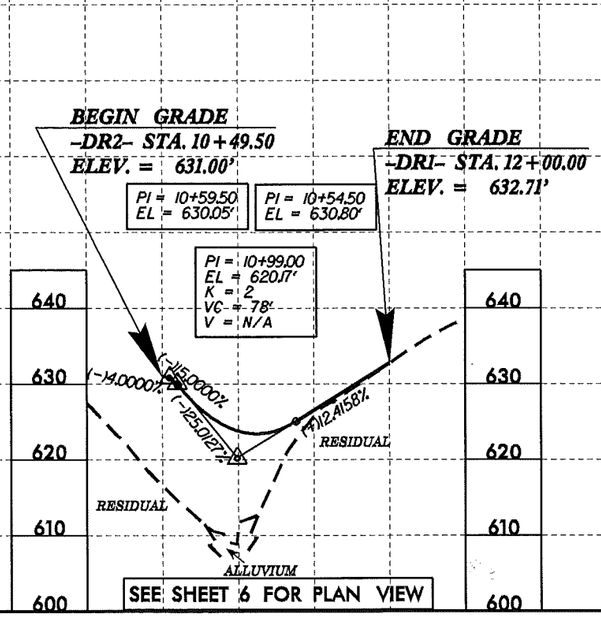
SEE SHEET 6 FOR PLAN VIEW

–DR1–



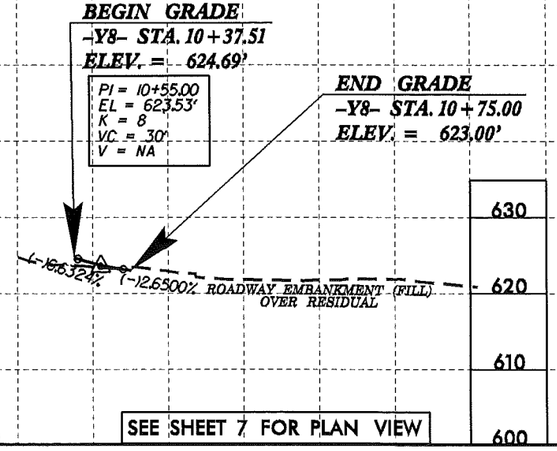
SEE SHEET 6 FOR PLAN VIEW

–DR2–



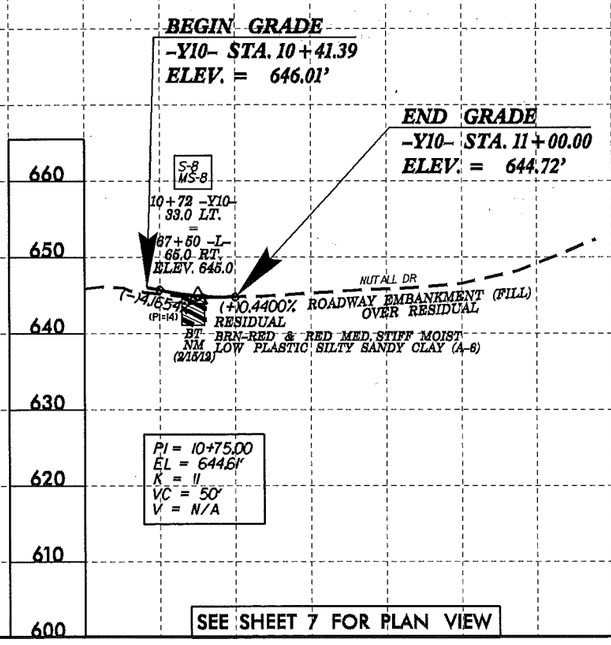
SEE SHEET 6 FOR PLAN VIEW

–Y8–



SEE SHEET 7 FOR PLAN VIEW

–Y10– NUTALL DR.



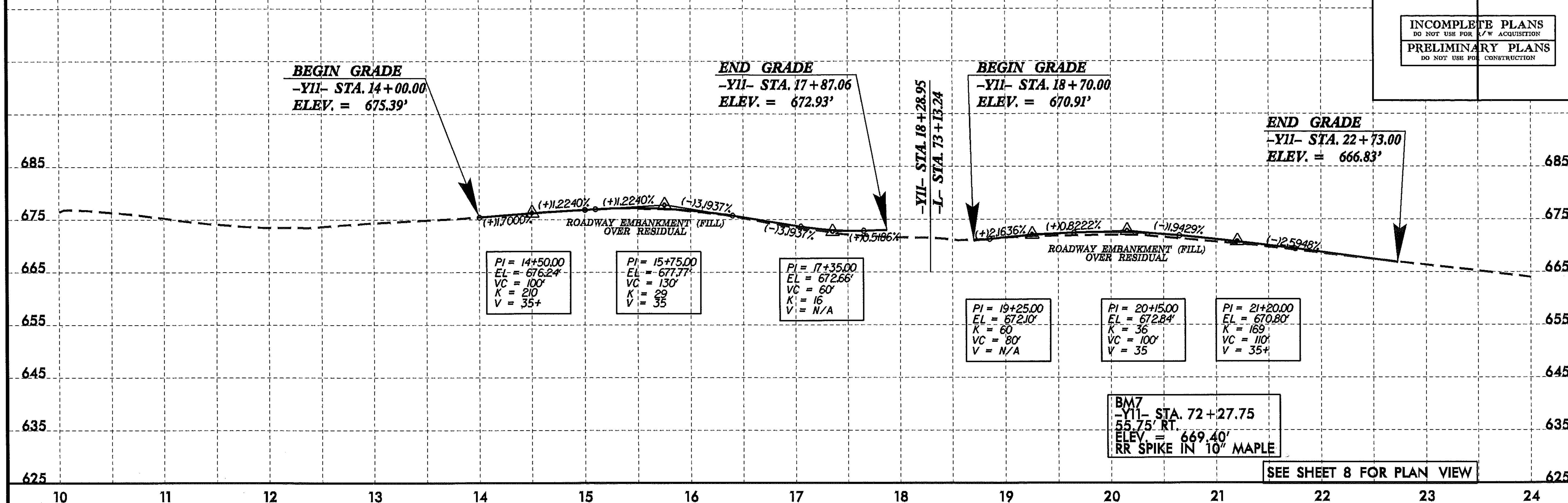
SEE SHEET 7 FOR PLAN VIEW

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

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

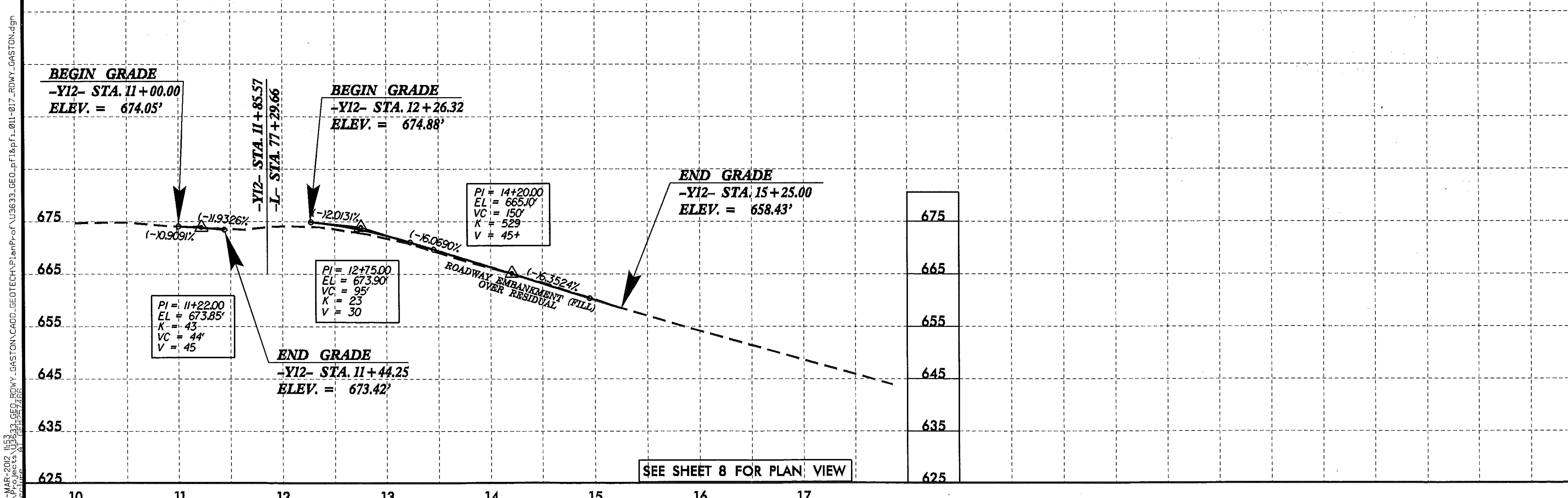
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-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
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.

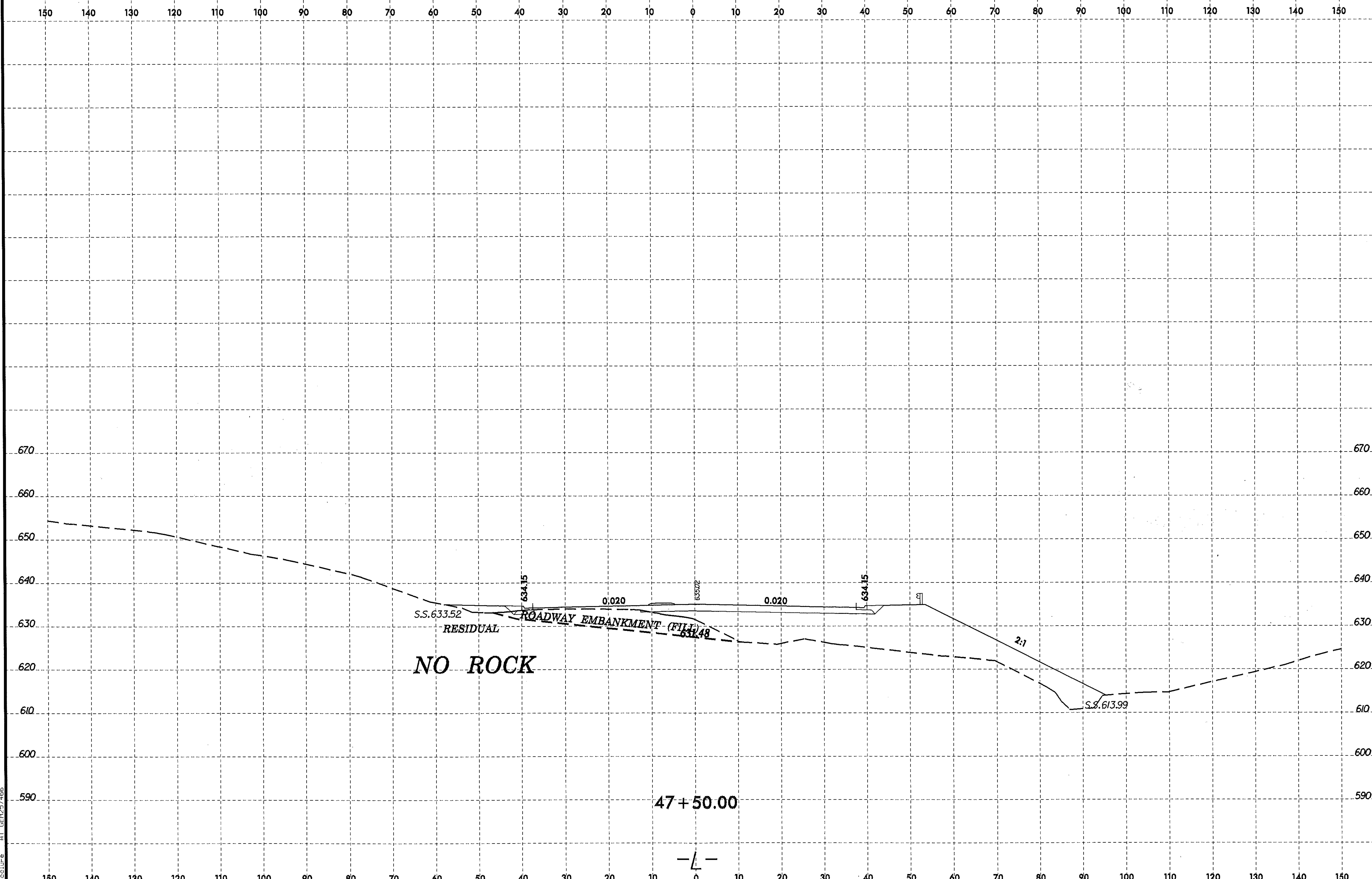


BEGIN GRADE
-Y12- STA. 11+00.00
ELEV. = 674.05'
-Y12- STA. 11+85.57
-L- STA. 77+29.66
BEGIN GRADE
-Y12- STA. 12+26.32
ELEV. = 674.88'
END GRADE
-Y12- STA. 15+25.00
ELEV. = 658.43'
END GRADE
-Y12- STA. 11+44.25
ELEV. = 673.42'
(-)0.9091%
(-)11.9326%
(-)2.0131%
(-)6.0690%
(-)6.3524%
ROADWAY EMBANKMENT (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

5/28/99

26-MAR-2012 11:53
L:\Projects\U3633_GEO_RDWY_GASTON\CADD_GEOTECH\PlanProf\U3633_GEO_pfl&pfl_011-017_RDWY_GASTON.dgn

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-3633	18



8/23/99

26-MAR-2012 15:46
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lmcclure AT GEH257466

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-3633	19

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

670 660 650 640 630 620 610 600 590 580

S.S.646.62

RESIDUAL

2:1

CRYSTALLINE ROCK

630.98

0.020

0.020

631.03

0.020

631.06

2:1

ROADWAY EMBANKMENT (FILL)

RESIDUAL

628.35

S.P. -DR2-
10+60.00

48+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 15:47
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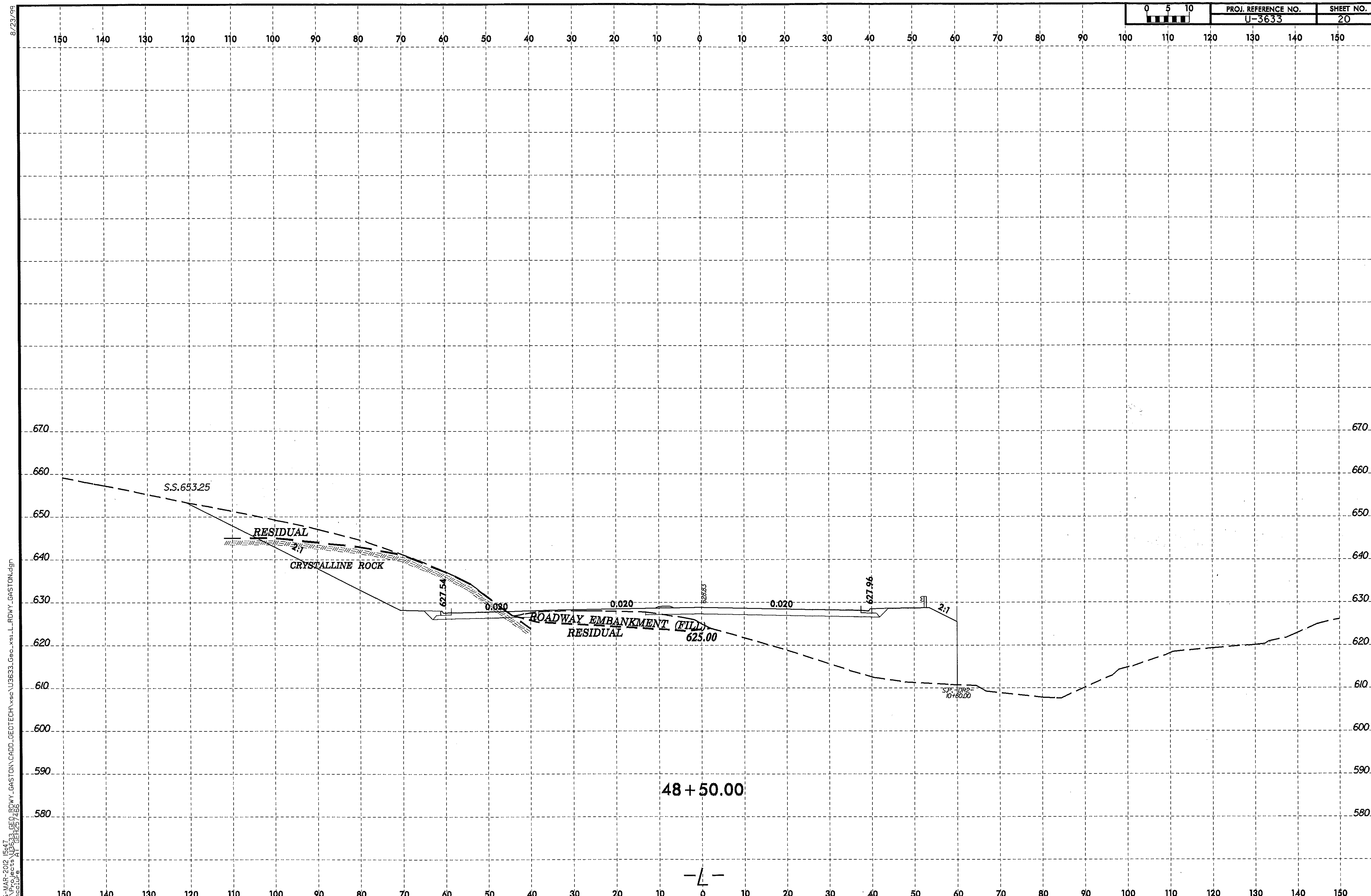
ImcLive


PROJ. REFERENCE NO.
U-3633
SHEET NO.
20
0 5 10
S.S.653.25
RESIDUAL
2:1
CRYSTALLINE ROCK
627.54
0.020
0.020
0.020
627.96
2:1
ROADWAY EMBANKMENT (FILL)
RESIDUAL
625.00
48+50.00
8/23/99
26-MAR-2012 15:47
C:\Projects\U3633_GEO_RDWY_GASTON\CADD_GEOTECH\xsc\U3633_Geo_xsL_L_RDWY_GASTON.dgn
lmcclure 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

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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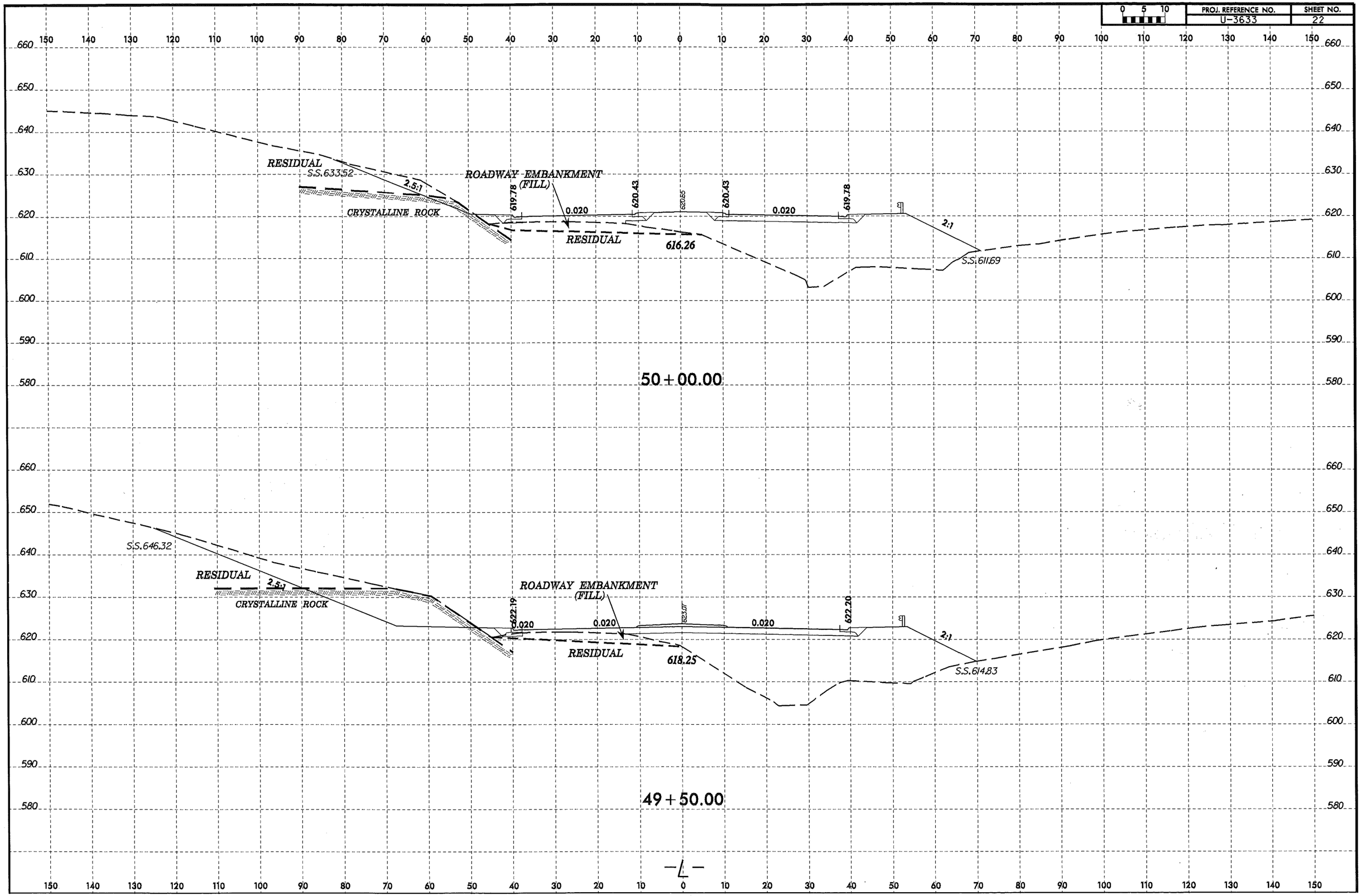
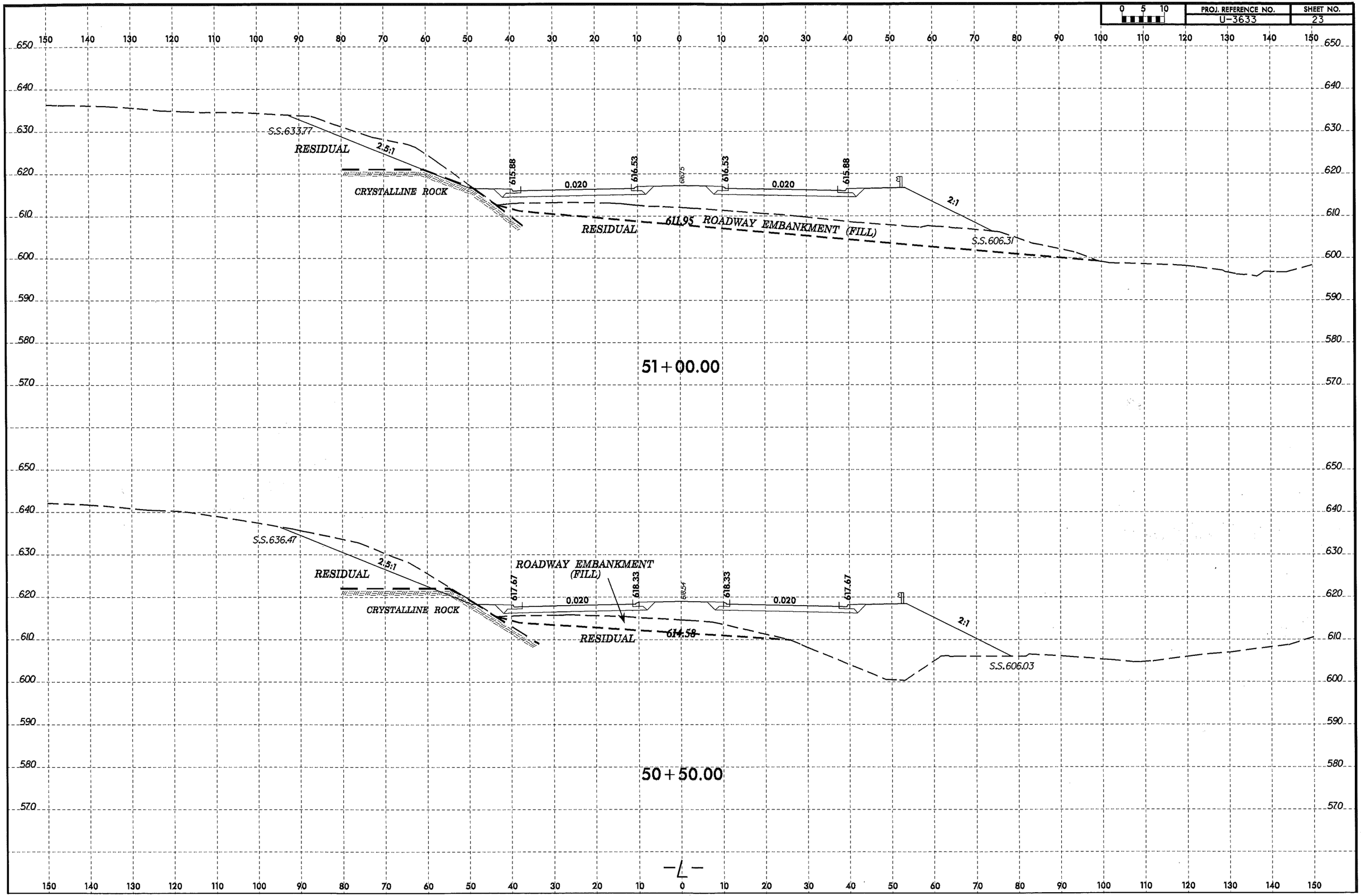
tscollins

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

0 5 10



0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-3633	23



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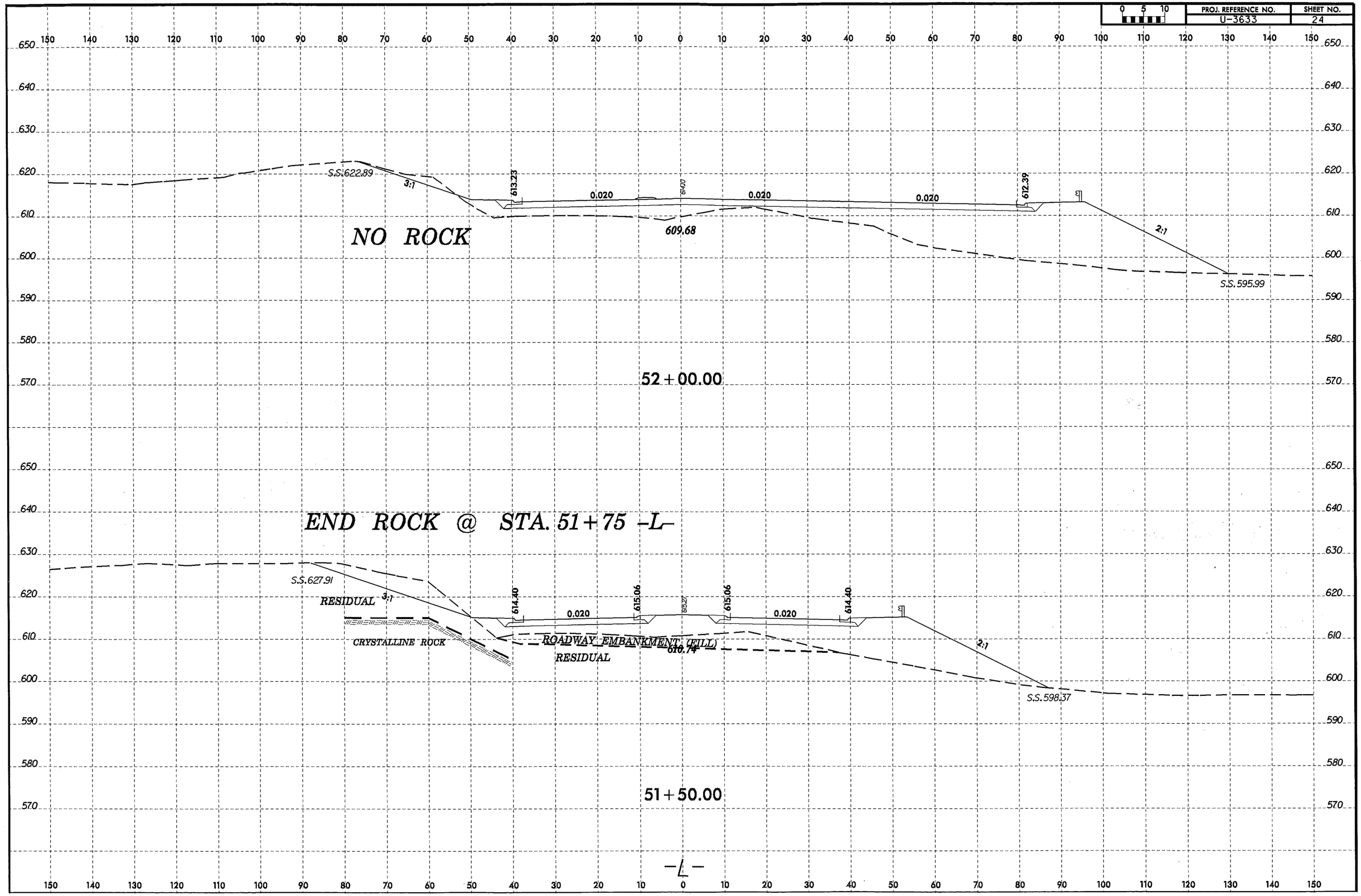
	U-3633	24



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