

09/08/99

See Sheet 1-A For Index of Sheets

STATE OF NORTH CAROLINA

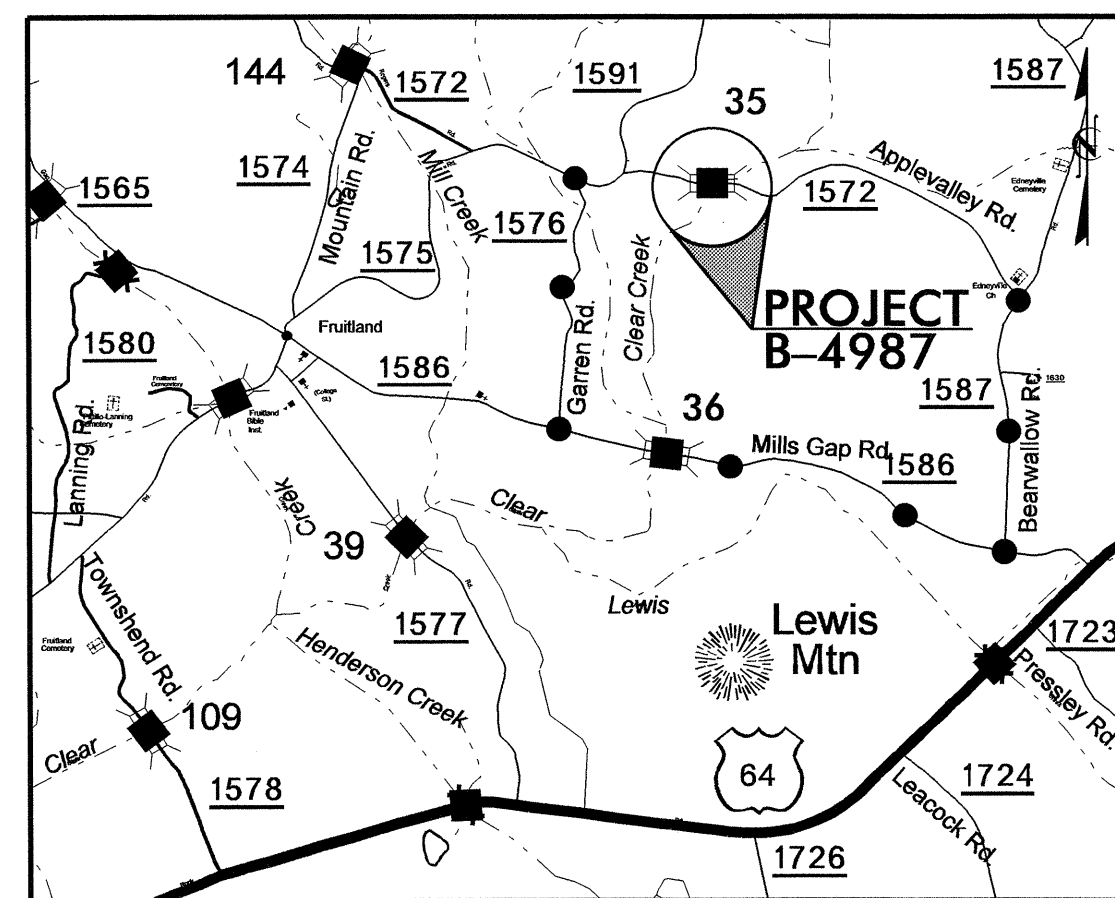
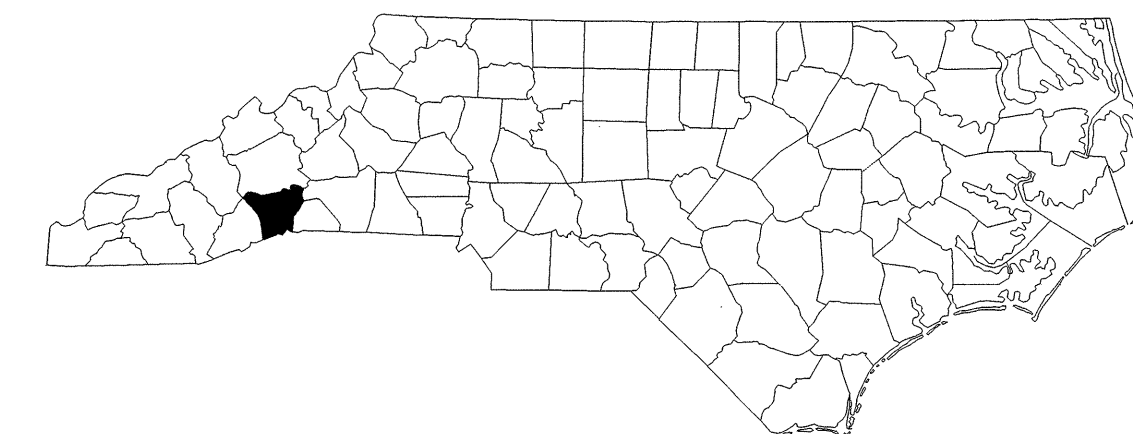
DIVISION OF HIGHWAYS

HENDERSON COUNTY

LOCATION: BRIDGE NO. 35 OVER CLEAR CREEK ON SR 1572 (APPLE VALLEY RD)

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4987	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
40157.1.1	BRZ-1572(2)	P.E.	
40157.2.1	BRZ-1572(2)	R/W, UTIL	
40157.3.1	BRZ-1572(2)	CONST	



DETOUR ROUTE VICINITY MAP

TIP PROJECT: B-4987

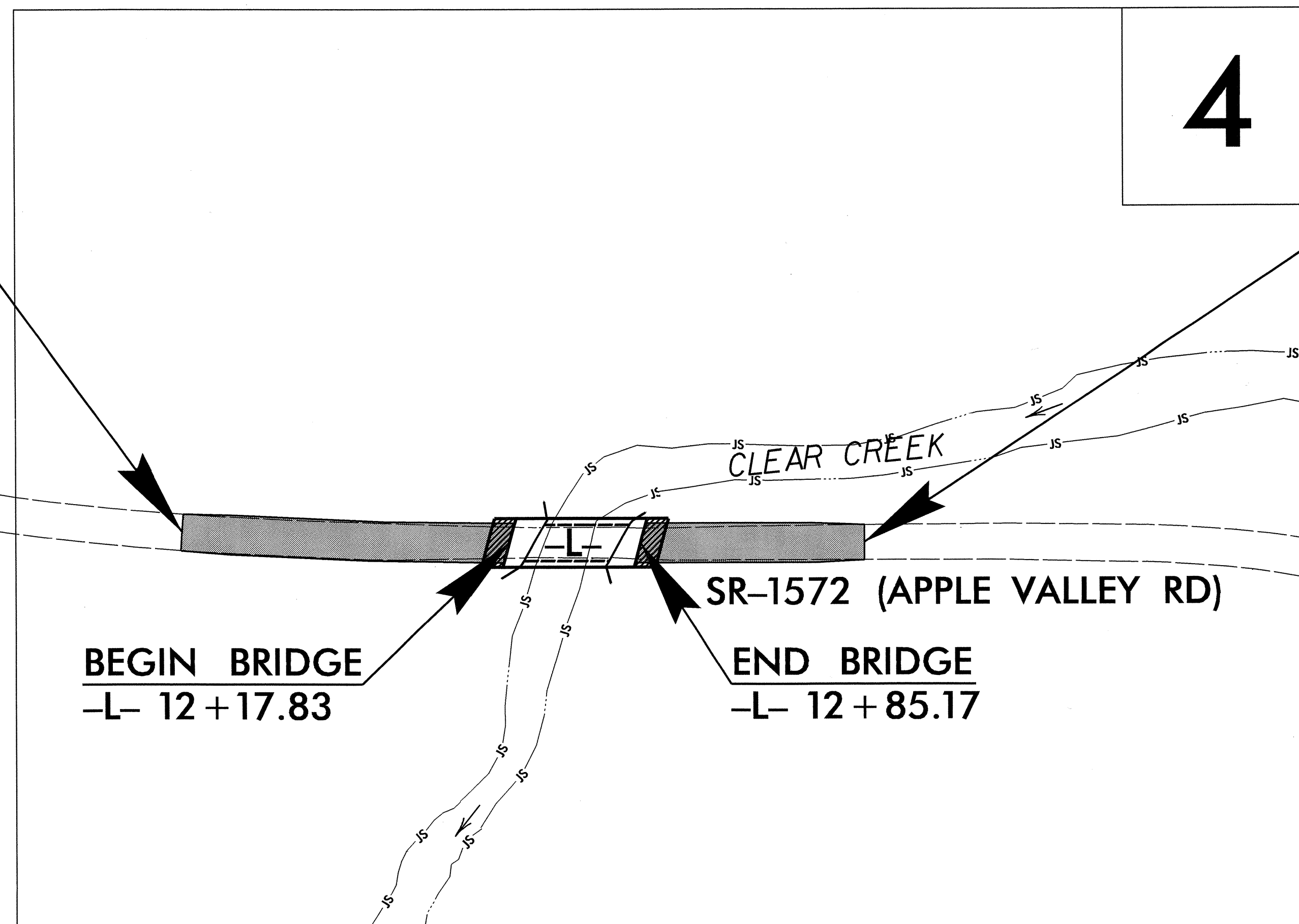
CONTRACT: C203042

BEGIN TIP PROJECT B-4987 -L- STA. 10+50.00

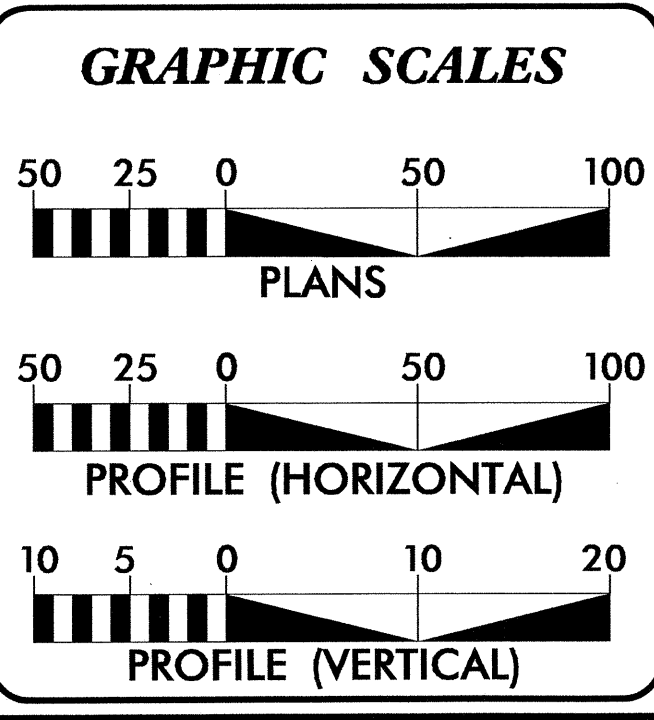
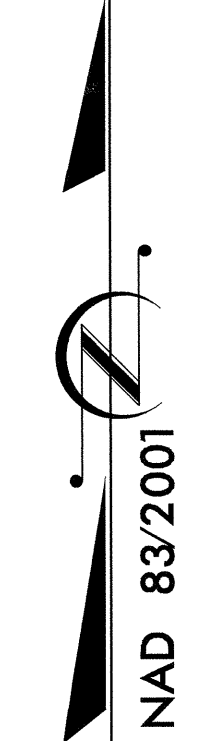
END TIP PROJECT B-4987 -L- STA. 14+00.00

TO SR 1573

TO US 64



4



DESIGN DATA

ADT 2013 = 408
 ADT 2035 = 800
 DHV = 12 %
 D = 60 %
 T = 9 % *
 V = 35 MPH
 * TTST = 1 DUAL 8
 FUNC CLASS = LOCAL
 SUB-REGIONAL TIER DESIGN

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT B-4987 = 0.053 mi.
 LENGTH OF STRUCTURE TIP PROJECT B-4987 = 0.013 mi.
 TOTAL LENGTH OF TIP PROJECT B-4987 = .066 mi.

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: December 23, 2011
 LETTING DATE: February 19, 2013

JIMMY GOODNIGHT, P.E.
 PROJECT ENGINEER

MARK HUSSEY
 PROJECT DESIGN ENGINEER

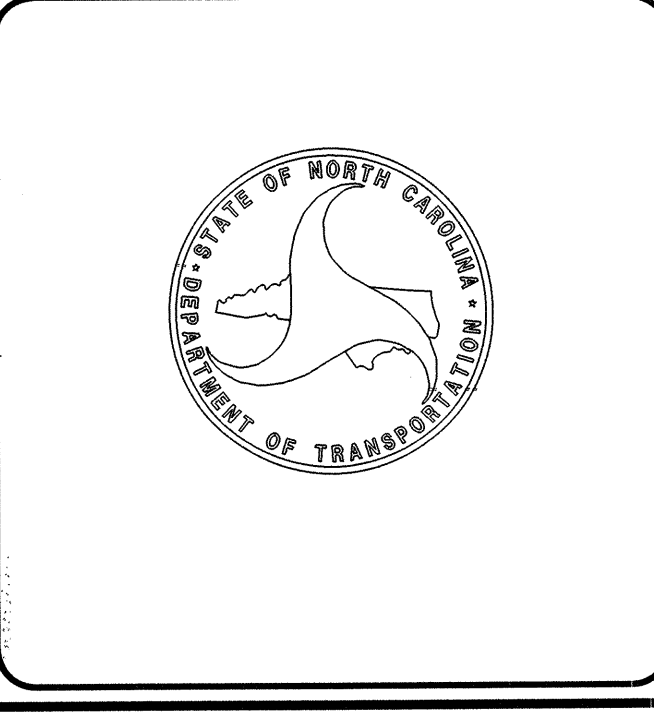
HYDRAULICS ENGINEER

[Signature]
 SIGNATURE

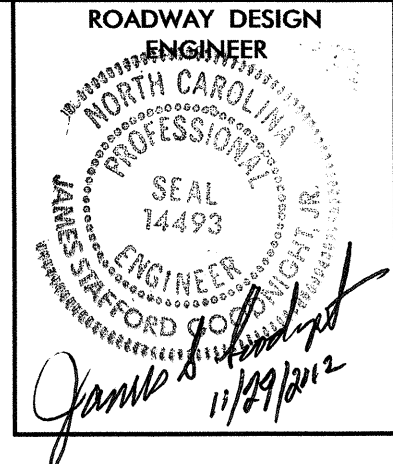
ROADWAY DESIGN ENGINEER

[Signature]
 SIGNATURE

Professional Engineer Seals for Jimmy Goodnight (20870) and Mark Hussey (14493).



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INDEX OF SHEETS, GENERAL NOTES & LIST OF STANDARDS

EFF. 01-17-12

SHEET NUMBER	SHEET
	INDEX OF SHEETS
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1-C	SURVEY CONTROL SHEET
2	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
3	SUMMARY OF QUANTITIES
3A	SUMMARY OF DRAINAGE, GUARDRAIL, EARTHWORK, SHOULDER BERM GUTTER, SUBSURFACE DRAINAGE AND ASPHALT PAVEMENT REMOVAL
4	PLAN/PROFILE SHEET
TMP-1 THRU TMP-3	TRAFFIC MANAGEMENT PLANS
PMP-1 THRU PMP-2	PAVEMENT MARKING PLANS
EC-1 THRU EC-5	EROSION CONTROL PLANS
RF-1	REFORESTATION PLAN
SIGN-1 THRU SIGN-2	SIGNING PLANS
UO-1 THRU UO-2	UTILITIES BY OTHERS PLANS
X-1	EARTHWORK VOLUME SHEET
X-2 THRU X-7	CROSS-SECTIONS
S-1 THRU S-13	STRUCTURE PLANS
W-1 THRU W-3	WALL PLANS

GENERAL NOTES:

2012 SPECIFICATIONS
EFFECTIVE: 01-17-12
REVISED: 07-30-12

GRADING AND SURFACING OR RESURFACING AND WIDENING:
THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING:
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD 11.

SUPERELEVATION:
ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE TYPICAL SECTIONS.

SHOULDER CONSTRUCTION:
ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01.

SIDE ROADS:
THE CONTRACTOR WILL BE REQUIRED TO DO ALL NECESSARY WORK TO PROVIDE SUITABLE CONNECTIONS WITH ALL ROADS, STREETS, AND DRIVES ENTERING THIS PROJECT. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE PARTICULAR ITEMS INVOLVED.

UNDERDRAINS:
UNDERDRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.03 AT LOCATIONS DIRECTED BY THE ENGINEER.

TEMPORARY SHORING:
SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7.

SUBSURFACE PLANS:
NO SUBSURFACE PLANS ARE AVAILABLE ON THIS PROJECT. THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATION AS TO THE SUBSURFACE CONDITIONS.

END BENTS:
THE ENGINEER SHALL CHECK THE STRUCTURE END BENT PLANS, DETAILS, AND CROSS-SECTION PRIOR TO SETTING OF THE SLOPE STAKES FOR THE EMBANKMENT OR EXCAVATION APPROACHING A BRIDGE.

UTILITIES:
UTILITY OWNERS ON THIS PROJECT ARE DUKE POWER & BELL SOUTH TELEPHONE. ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

RIGHT-OF-WAY MARKERS:
ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY OTHERS.

2012 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January, 2012 are applicable to this project and by Reference hereby are considered a part of these plans:

STD.NO.	TITLE
200.02	DIVISION 2 - EARTHWORK Method of Clearing - Method 11
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
300.01	DIVISION 3 - PIPE CULVERTS Method of Pipe Installation
422.11	DIVISION 4 - MAJOR STRUCTURES Reinforced Bridge Approach Fills - Sub Regional Tier
560.01	DIVISION 5 - SUBGRADE, BASES AND SHOULDERS Method of Shoulder Construction - High Side of Superelevated Curve - Method 1
815.03	DIVISION 8 - INCIDENTALS Pipe Underdrain and Blind Drain
840.00	Concrete Base Pad for Drainage Structures
840.25	Anchorage for Frames - Brick or Concrete or Precast
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.46	Traffic Bearing Precast Drainage Structure
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
876.02	Guide for Rip Rap at Pipe Outlets

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EIP
Property Corner	-----
Property Monument	□ EOM
Parcel/Sequence Number	⑫③
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	-WLB-
Proposed Wetland Boundary	-WLB-
Existing Endangered Animal Boundary	-EAB-
Existing Endangered Plant Boundary	-EPB-
Known Soil Contamination: Area or Site	☠ ☠
Potential Soil Contamination: Area or Site	?? ??

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○
Well	○ W
Small Mine	⚡
Foundation	▭
Area Outline	▭
Cemetery	⊕
Building	▭
School	▭
Church	▭
Dam	▭

HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	▭
Jurisdictional Stream	-JS-
Buffer Zone 1	-BZ 1-
Buffer Zone 2	-BZ 2-
Flow Arrow	←
Disappearing Stream	→
Spring	○
Wetland	⚡
Proposed Lateral, Tail, Head Ditch	▭
False Sump	▭

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○
Switch	□
RR Abandoned	-----
RR Dismantled	-----

RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	○
Proposed Right of Way Line with Iron Pin and Cap Marker	○
Proposed Right of Way Line with Concrete or Granite Marker	○
Existing Control of Access	⊙
Proposed Control of Access	⊙
Existing Easement Line	-E-
Proposed Temporary Construction Easement	-E-
Proposed Temporary Drainage Easement	-TDE-
Proposed Permanent Drainage Easement	-PDE-
Proposed Permanent Drainage / Utility Easement	-DUE-
Proposed Permanent Utility Easement	-PUE-
Proposed Temporary Utility Easement	-TUE-
Proposed Aerial Utility Easement	-AUE-
Proposed Permanent Easement with Iron Pin and Cap Marker	◆

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	-C-
Proposed Slope Stakes Fill	-F-
Proposed Curb Ramp	○
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	▭

VEGETATION:

Single Tree	○
Single Shrub	○
Hedge	-----
Woods Line	-----

Orchard	○
Vineyard	▭

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	▭
Bridge Wing Wall, Head Wall and End Wall	▭
MINOR:	
Head and End Wall	▭
Pipe Culvert	▭
Footbridge	▭
Drainage Box: Catch Basin, DI or JB	▭
Paved Ditch Gutter	-----
Storm Sewer Manhole	⊙
Storm Sewer	-----

UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	⊙
Power Line Tower	⊗
Power Transformer	⊗
U/G Power Cable Hand Hole	▭
H-Frame Pole	●
Recorded U/G Power Line	-P-
Designated U/G Power Line (S.U.E.*)	-P-

TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	⊙
Telephone Booth	▭
Telephone Pedestal	▭
Telephone Cell Tower	⊙
U/G Telephone Cable Hand Hole	▭
Recorded U/G Telephone Cable	-T-
Designated U/G Telephone Cable (S.U.E.*)	-T-
Recorded U/G Telephone Conduit	-TC-
Designated U/G Telephone Conduit (S.U.E.*)	-TC-
Recorded U/G Fiber Optics Cable	-T FO-
Designated U/G Fiber Optics Cable (S.U.E.*)	-T FO-

WATER:

Water Manhole	⊙
Water Meter	○
Water Valve	⊙
Water Hydrant	⊙
Recorded U/G Water Line	-W-
Designated U/G Water Line (S.U.E.*)	-W-
Above Ground Water Line	-A/G Water-

TV:

TV Satellite Dish	⊙
TV Pedestal	▭
TV Tower	⊙
U/G TV Cable Hand Hole	▭
Recorded U/G TV Cable	-TV-
Designated U/G TV Cable (S.U.E.*)	-TV-
Recorded U/G Fiber Optic Cable	-TV FO-
Designated U/G Fiber Optic Cable (S.U.E.*)	-TV FO-

GAS:

Gas Valve	◆
Gas Meter	⊙
Recorded U/G Gas Line	-G-
Designated U/G Gas Line (S.U.E.*)	-G-
Above Ground Gas Line	-A/G Gas-

SANITARY SEWER:

Sanitary Sewer Manhole	⊙
Sanitary Sewer Cleanout	⊙
U/G Sanitary Sewer Line	-SS-
Above Ground Sanitary Sewer	-A/G Sanitary Sewer-
Recorded SS Forced Main Line	-FSS-
Designated SS Forced Main Line (S.U.E.*)	-FSS-

MISCELLANEOUS:

Utility Pole	●
Utility Pole with Base	▭
Utility Located Object	○
Utility Traffic Signal Box	▭
Utility Unknown U/G Line	-?UTL-
U/G Tank; Water, Gas, Oil	▭
Underground Storage Tank, Approx. Loc.	⊙
A/G Tank; Water, Gas, Oil	▭
Geoenvironmental Boring	⊙
U/G Test Hole (S.U.E.*)	⊙
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

6/2/99

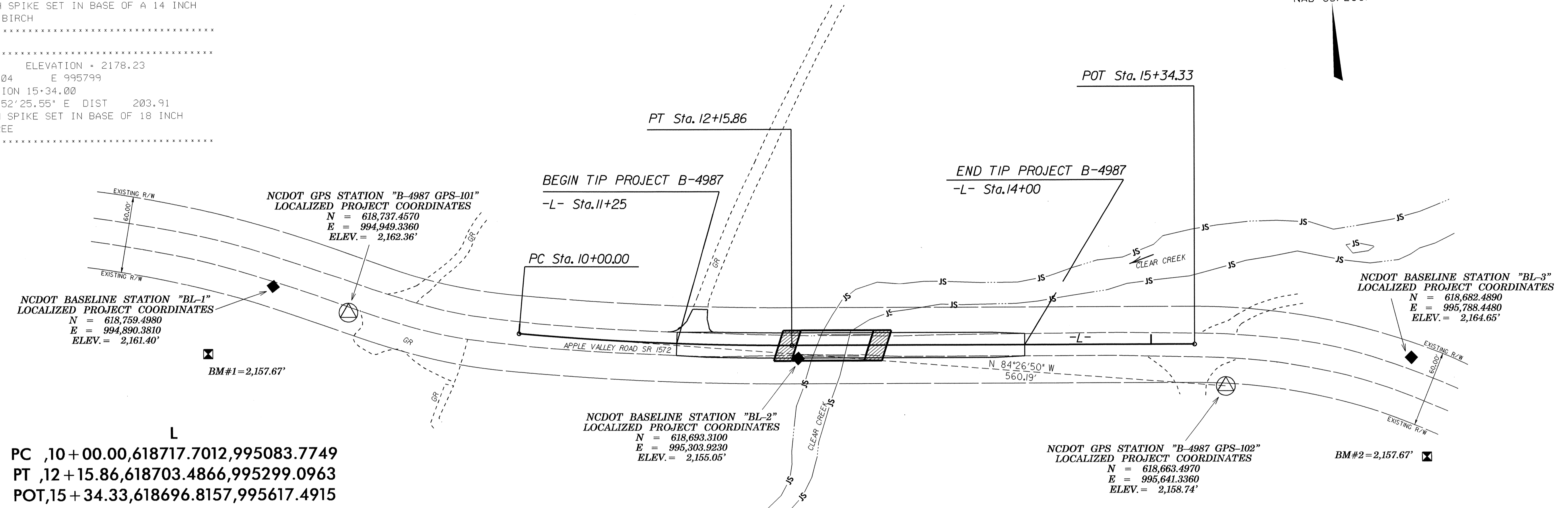
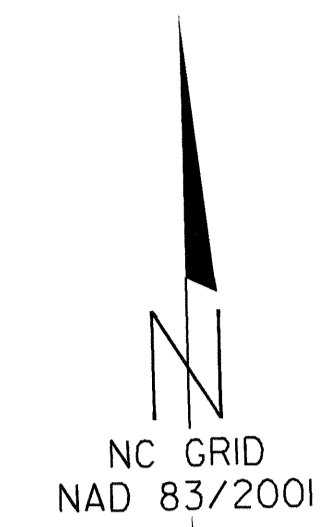
SURVEY CONTROL SHEET B-4987

PROJECT REFERENCE NO.	SHEET NO.
B-4987	1C
Location and Surveys	

BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	BL-1	618759.4980	994890.3810	2161.40	OUTSIDE PROJECT LIMITS	
2	BL-2	618693.3100	995303.9230	2155.05	12+20.90	10.07 RT
3	BL-3	618682.4890	995788.4480	2164.65	OUTSIDE PROJECT LIMITS	

 BM1 ELEVATION = 2157.67
 N 618707 E 994838
 L STATION 15+34.00
 N 89°14'35.23" W DIST 779.83
 8 INCH SPIKE SET IN BASE OF A 14 INCH RIVER BIRCH

 BM2 ELEVATION = 2178.23
 N 618604 E 995799
 L STATION 15+34.00
 S 62°52'25.55" E DIST 203.91
 8 INCH SPIKE SET IN BASE OF 18 INCH PINETREE



L
 PC ,10+00.00,618717.7012,995083.7749
 PT ,12+15.86,618703.4866,995299.0963
 POT,15+34.33,618696.8157,995617.4915

**NO NEW RW MONUMENTS
 ALL CONSTRUCTION INSIDE EXISTING RW**

DATUM DESCRIPTION
 THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4987-GPS102" WITH NAD 83/2001 STATE PLANE GRID COORDINATES OF NORTHING: 618,663.4970(ft) EASTING: 995,641.3360(ft) ELEVATION: 2,158.74(ft)
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99977754
 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4987-GPS102" TO -L- STATION 10+00.00 IS N 84°26'50" W 560.19'
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
 VERTICAL DATUM USED IS NAVD 88

- NOTES:**
1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCT/HIGHWAY/LOCATIONPROJECT/](http://www.ncdot.org/doh/preconstruct/highway/locationproject/)
 THE FILES TO BE FOUND ARE AS FOLLOWS:
 B4987_LS_CONTROL.TXT
 SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
- ⊙ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
 PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM—(OPUS).
- GEOID MODEL = GEOID 03

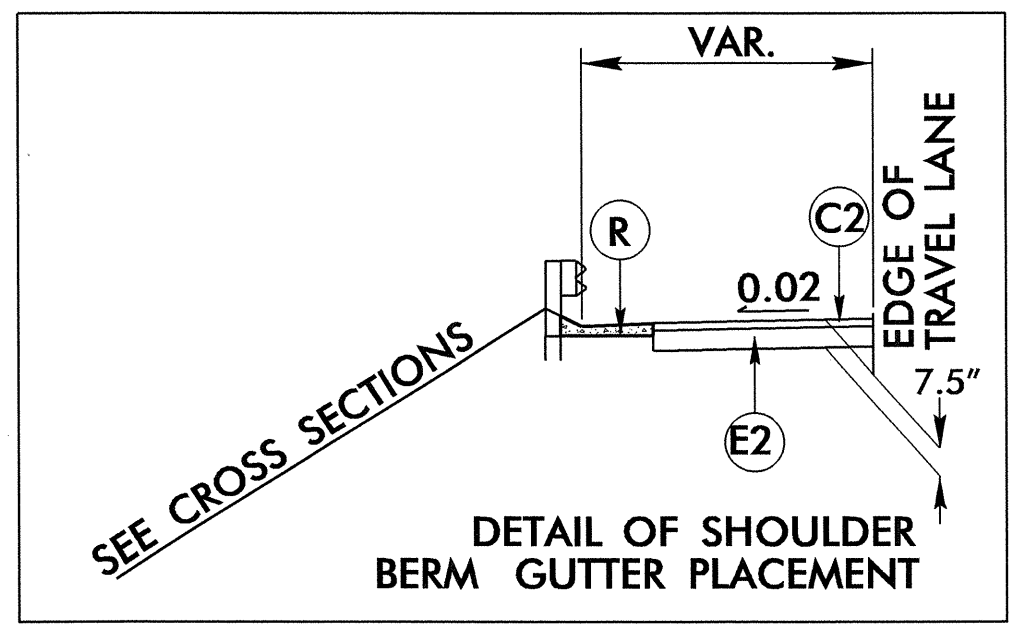
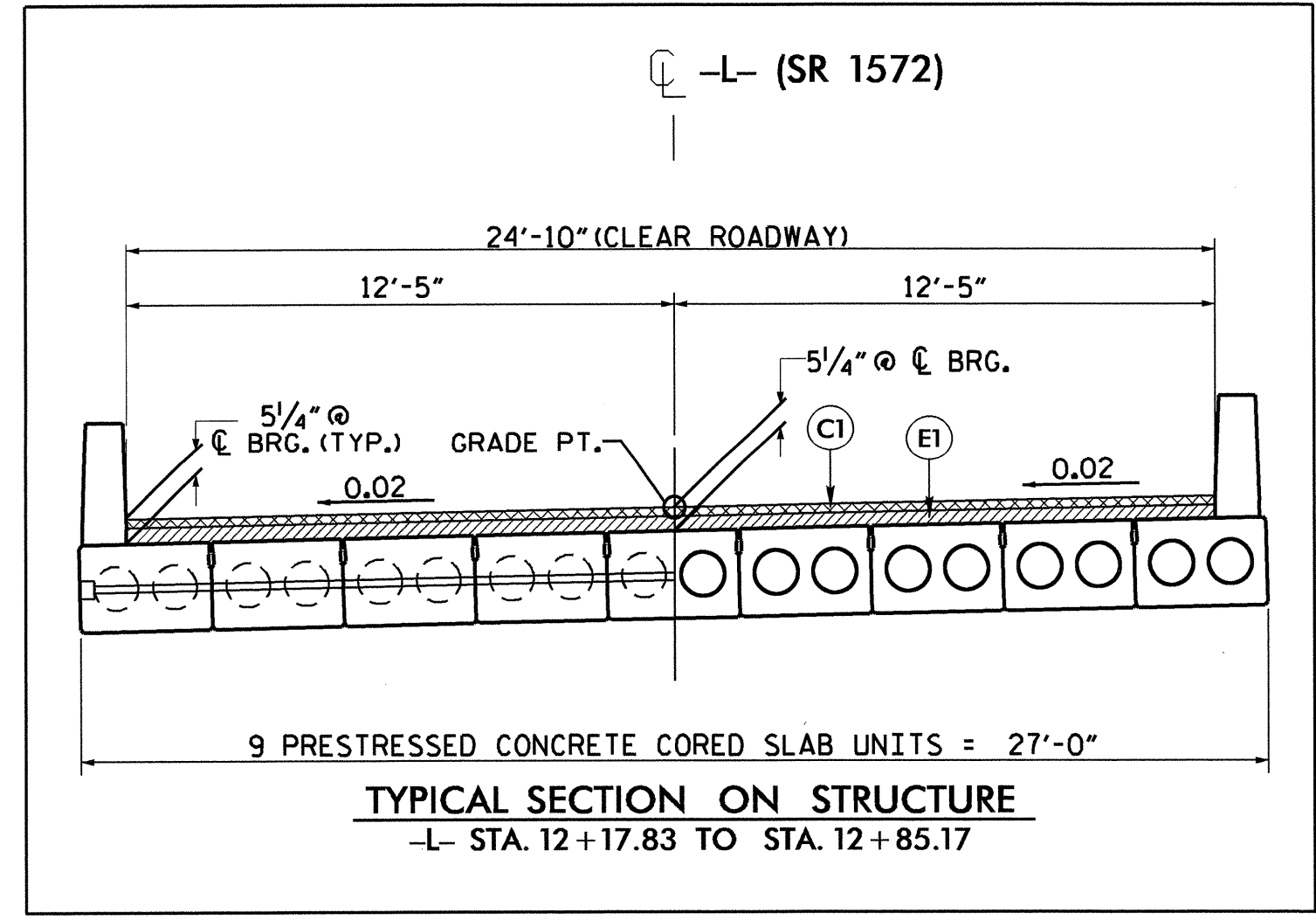
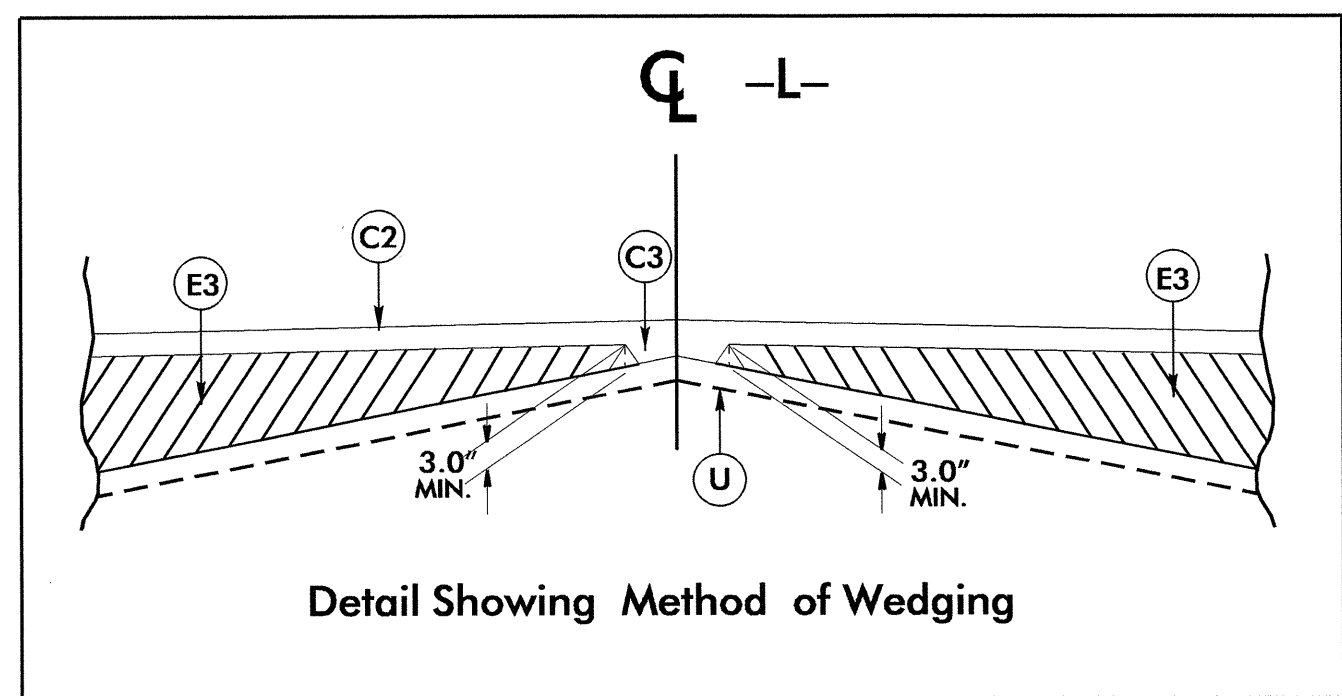
NOTE: DRAWING NOT TO SCALE

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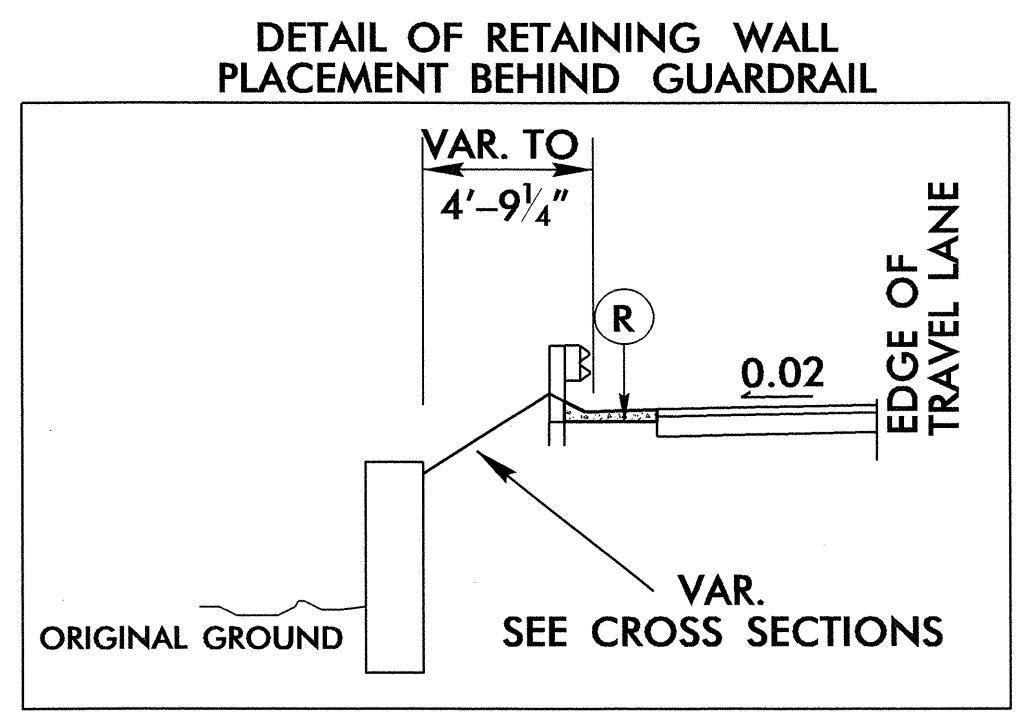
PAVEMENT SCHEDULE
(FINAL PAVEMENT DESIGN)

C1	PROP. APPROX. 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.
C2	PROP. APPROX. 2 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1 1/2" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
E3	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.
R	SHOULDER BERM GUTTER
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL).

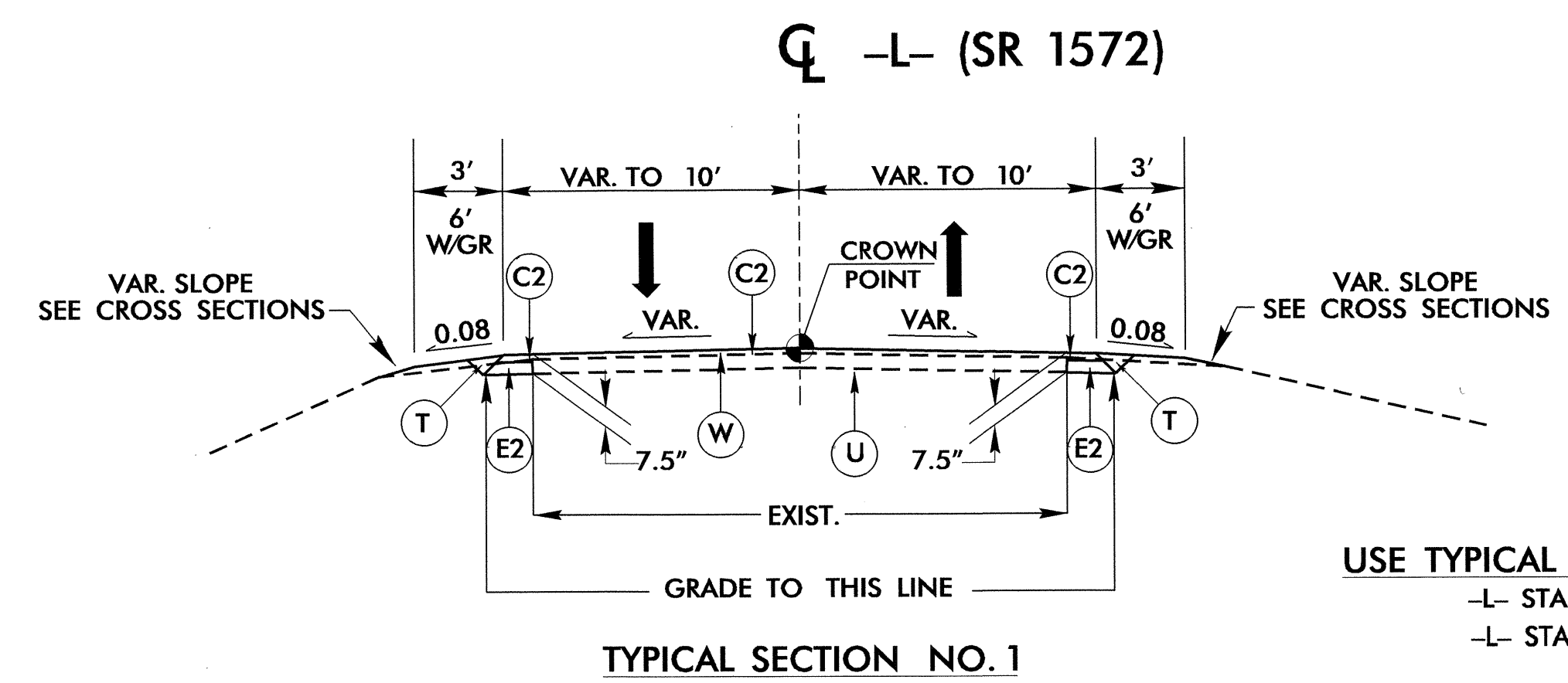
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



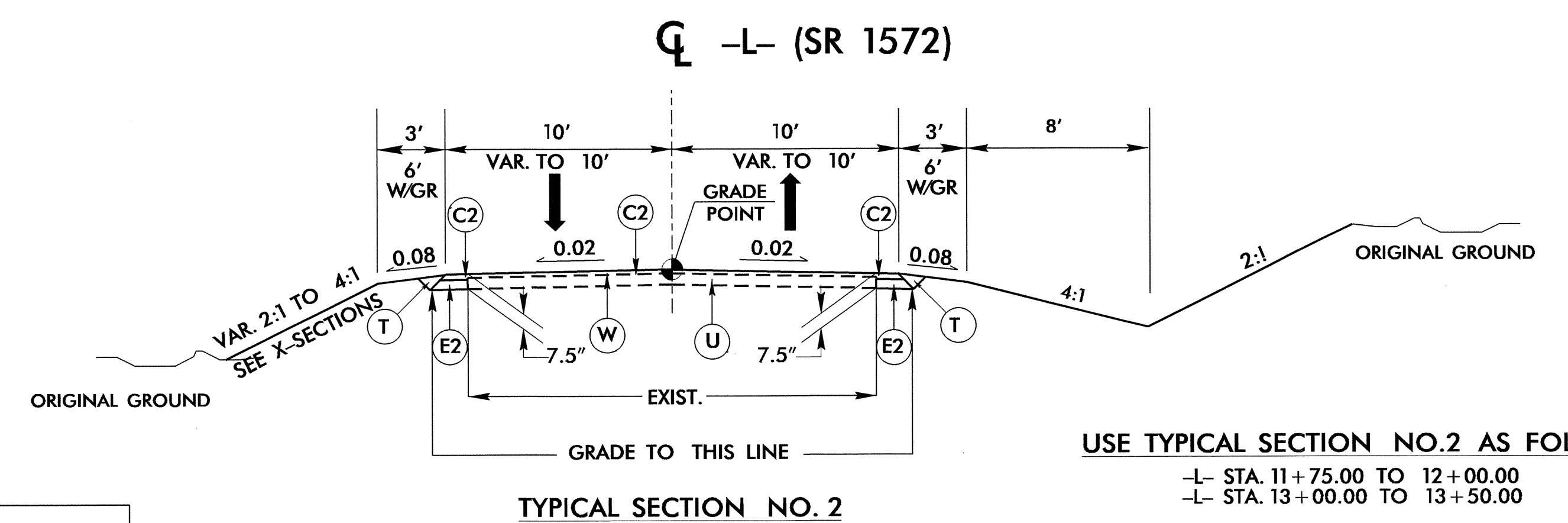
USE IN CONJUNCTION WITH TYPICAL SECTIONS 1, 2 & 3
-L- LT STA. 12+99 TO 13+74



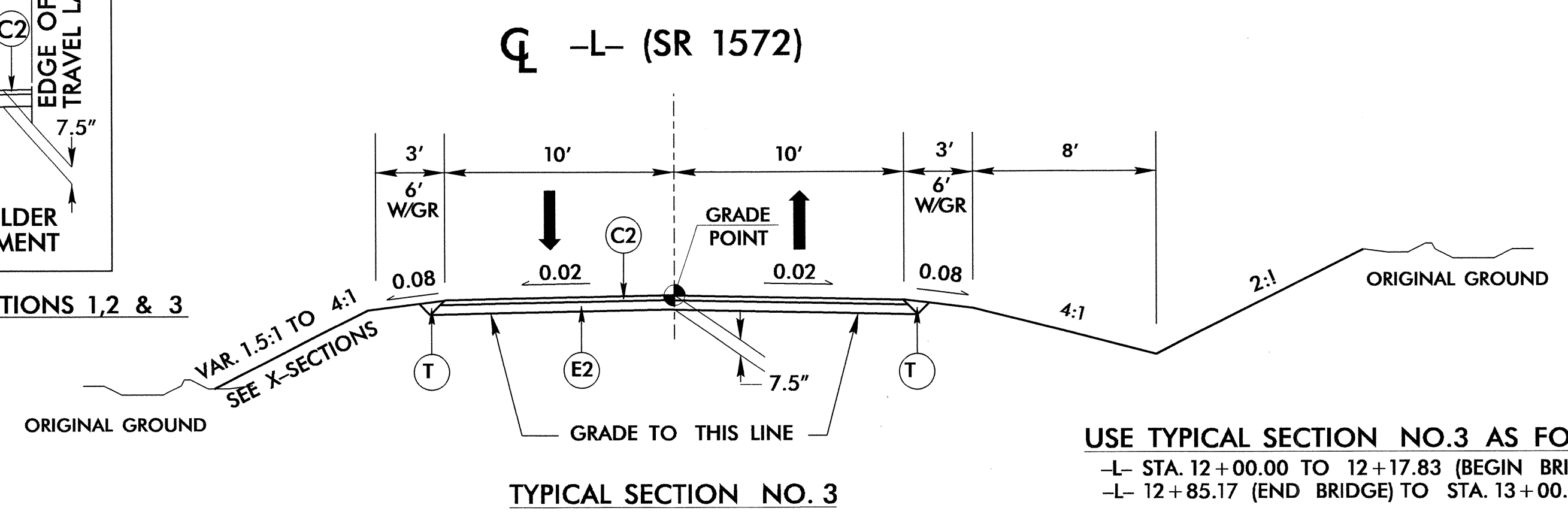
USE IN CONJUNCTION WITH TYPICAL SECTIONS 1, 2 & 3
-L- LT STA. 12+99 TO 13+74



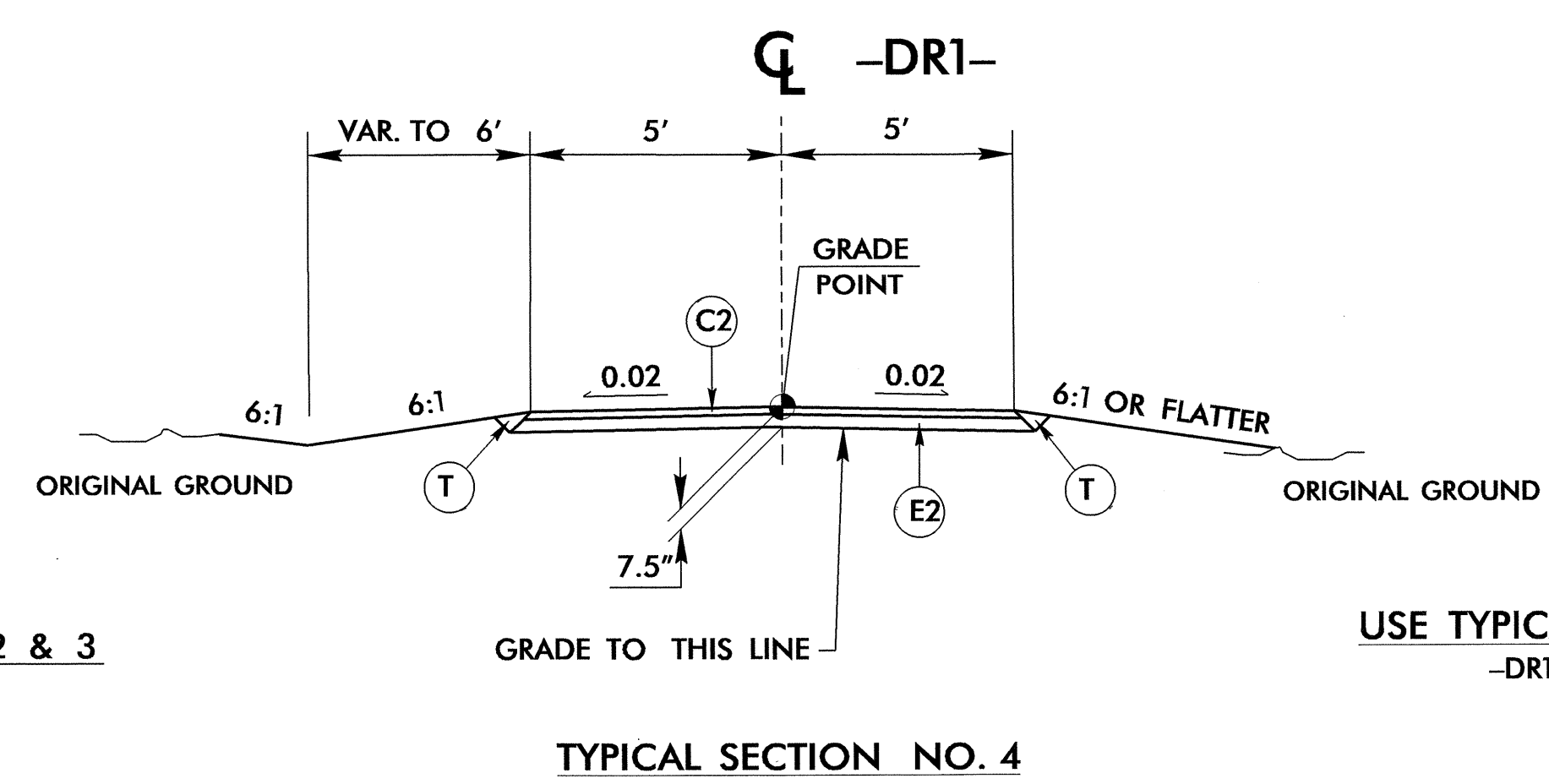
USE TYPICAL SECTION NO.1 AS FOLLOWS
-L- STA. 10+50.00 TO 11+75.00
-L- STA. 13+50.00 TO 14+00.00



USE TYPICAL SECTION NO.2 AS FOLLOWS
-L- STA. 11+75.00 TO 12+00.00
-L- STA. 13+00.00 TO 13+50.00



USE TYPICAL SECTION NO.3 AS FOLLOWS
-L- STA. 12+00.00 TO 12+17.83 (BEGIN BRIDGE)
-L- 12+85.17 (END BRIDGE) TO STA. 13+00.00



USE TYPICAL SECTION NO.4 AS FOLLOWS
-DRI- STA. 10+10.00 TO 10+58.31

6/2/99 27 NOV 2012 10:31 B:\4987.Rdy - typ.dgn 338 30 26 11/27/12

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
SUMMARY OF QUANTITIES

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C203042

ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description
000010000-N	800	Lump Sum		MOBILIZATION	255600000-E	846	80	LF	SHOULDER BERM GUTTER	603600000-E	1631	1,850	SY	MATTING FOR EROSION CONTROL
003000000-N	SP	Lump Sum		BRIDGE APPROACH FILL - SUB REGIONAL TIER, STATION ***** (12+51.50)	303000000-E	862	100	LF	STEEL BM GUARDRAIL	603700000-E	SP	150	SY	COIR FIBER MAT
004300000-N	226	Lump Sum		GRADING	315000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS	603800000-E	SP	15	SY	PERMANENT SOIL REINFORCEMENT MAT
005000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUBBING	316500000-N	SP	4	EA	GUARDRAIL ANCHOR UNITS, TYPE ***** (350 TL-2)	604200000-E	1632	70	LF	1/4" HARDWARE CLOTH
005700000-E	226	100	CY	UNDERCUT EXCAVATION	321500000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE III	607102000-E	SP	5	LB	POLYACRYLAMIDE (PAM)
019500000-E	265	130	CY	SELECT GRANULAR MATERIAL	343500000-N	SP	12	EA	GENERIC GUARDRAIL ITEM EXTRA LENGTH GUARDRAIL POST (8" STEEL)	607103000-E	1640	30	LF	COIR FIBER BAFFLE
019600000-E	270	230	SY	GEOTEXTILE FOR SOIL STABILIZATION	364900000-E	876	2	TON	RIP RAP, CLASS B	607105000-E	SP	1	EA	*** SKIMMER (1-1/2")
031800000-E	300	10	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES	365600000-E	876	410	SY	GEOTEXTILE FOR DRAINAGE	608400000-E	1660	0.75	ACR	SEEDING & MULCHING
032000000-E	300	10	SY	FOUNDATION CONDITIONING GEOTEXTILE	365600000-E	876	410	SY	GEOTEXTILE FOR DRAINAGE	608700000-E	1660	0.5	ACR	MOWING
033200000-E	305	20	LF	15" DRAINAGE PIPE	407200000-E	903	30	LF	SUPPORTS, 3-LB STEEL U-CHANNEL	609000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
033585000-E	305	2	EA	*** DRAINAGE PIPE ELBOWS (15")	410200000-N	904	2	EA	SIGN ERECTION, TYPE E	609300000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
044820000-E	310	8	LF	15" RC PIPE CULVERTS, CLASS IV	415500000-N	907	8	EA	DISPOSAL OF SIGN SYSTEM, U-CHANNEL	609600000-E	1662	50	LB	SEED FOR SUPPLEMENTAL SEEDING
109950000-E	505	45	CY	SHALLOW UNDERCUT	440000000-E	1110	379	SF	WORK ZONE SIGNS (STATIONARY)	610800000-E	1665	0.5	TON	FERTILIZER TOPDRESSING
109970000-E	505	85	TON	CLASS IV SUBGRADE STABILIZATION	441000000-E	1110	94	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)	611450000-N	1667	10	MHR	SPECIALIZED HAND MOWING
122000000-E	545	20	TON	INCIDENTAL STONE BASE	443000000-N	1130	10	EA	DRUMS	611700000-N	SP	13	EA	RESPONSE FOR EROSION CONTROL
148900000-E	610	130	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B	445000000-E	1145	80	LF	BARRICADES (TYPE III)	612300000-E	1670	0.1	ACR	REFORESTATION
152500000-E	610	130	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A	600000000-E	1605	600	LF	TEMPORARY SILT FENCE					
157500000-E	620	15	TON	ASPHALT BINDER FOR PLANT MIX	600600000-E	1610	160	TON	STONE FOR EROSION CONTROL, CLASS A					
202200000-E	815	84	CY	SUBDRAIN EXCAVATION	600900000-E	1610	65	TON	STONE FOR EROSION CONTROL, CLASS B					
203300000-E	815	42	CY	SUBDRAIN FINE AGGREGATE	601200000-E	1610	30	TON	SEDIMENT CONTROL STONE					
204400000-E	815	250	LF	6" PERFORATED SUBDRAIN PIPE	601500000-E	1615	0.75	ACR	TEMPORARY MULCHING					
207000000-N	815	1	EA	SUBDRAIN PIPE OUTLET	601800000-E	1620	50	LB	SEED FOR TEMPORARY SEEDING					
207700000-E	815	6	LF	6" OUTLET PIPE	602100000-E	1620	1.25	TON	FERTILIZER FOR TEMPORARY SEEDING					
228600000-N	840	2	EA	MASONRY DRAINAGE STRUCTURES	602400000-E	1622	200	LF	TEMPORARY SLOPE DRAINS					
236700000-N	840	2	EA	FRAME WITH TWO GRATES, STD 840.29	602900000-E	SP	300	LF	SAFETY FENCE					
					603000000-E	1630	100	CY	SILT EXCAVATION					

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4/24/2016

COMPUTED BY: MHUSSEY DATE: 2/16/11
CHECKED BY: B. FOWLER DATE: 10/24/12

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO. SHEET NO.
B-4987 3-A

NOTE: Invert Elevations are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".

SUB-REGIONAL

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

STATION	LOCATION (L,R, OR CL)	STRUCTURE NO.	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC)								C.S. PIPE								R.C. PIPE (CLASS III)								R.C. PIPE (CLASS IV)								ENDWALLS		QUANTITIES FOR PIPE STRUCTURES			FRAME, GRATES AND HOOD STANDARD 840.03			CONCRETE TRANSITIONAL SECTION		CORR. STEEL ELBOWS NO. & SIZE		PIPE REMOVAL LINFT.		REMARKS							
							12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	.064	.064	.064	.079	.109	.109	15"	18"	24"	30"	36"	42"	48"	15"	18"	24"	30"	36"	42"	48"	12"	15"	18"	24"	30"	36"	42"	48"	12"	15"	18"	24"	30"	36"		42"	48"	CU. YDS.	CU. YDS.	PER EACH (0' THRU 5.0')	A	B

*N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.
TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.
W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.
G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH		W		ANCHORS						IMPACT ATTENUATOR TYPE 350	SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	8' GUARDRAIL POST	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	GRAU 350 TYPE TL-2	TYPE III									

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION L/R/CL	YD'
-L-	12+00	12+31	CL	56
-L-	12+74	13+00	CL	46
			TOTAL:	102
			SAY:	105

SHOULDER BERM GUTTER SUMMARY

SURVEY LINE	LOCATION	STATION	STATION	LENGTH
-L-	LT	12+99	13+74	75
			TOTAL:	75
			SAY:	80

SUMMARY OF EARTHWORK

STATION	STATION	UNCL EXCAV.	EMBANK. +%	BORROW	WASTE
-L-					
-L-	10+50.00 - 12+17.83	10	122	112	
-DR1-					
-DR1-	10+10.00 - 10+58.31	5	44	39	
SUMMARY SUBTOTAL #1:		15	166	151	
-L-					
-L-	12+85.17 - 14+00.00	3	147	144	
SUMMARY SUBTOTAL #2:		3	147	144	
SUMMARY SUBTOTALS:		18	313	295	
LOSS DUE TO CLEARING & GRUBBING		-5		5	
PROJECT TOTAL:		13		300	
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT				15	
GRAND TOTAL:		13		315	
SAY:		20		320	

SUMMARY OF SUBSURFACE DRAINAGE

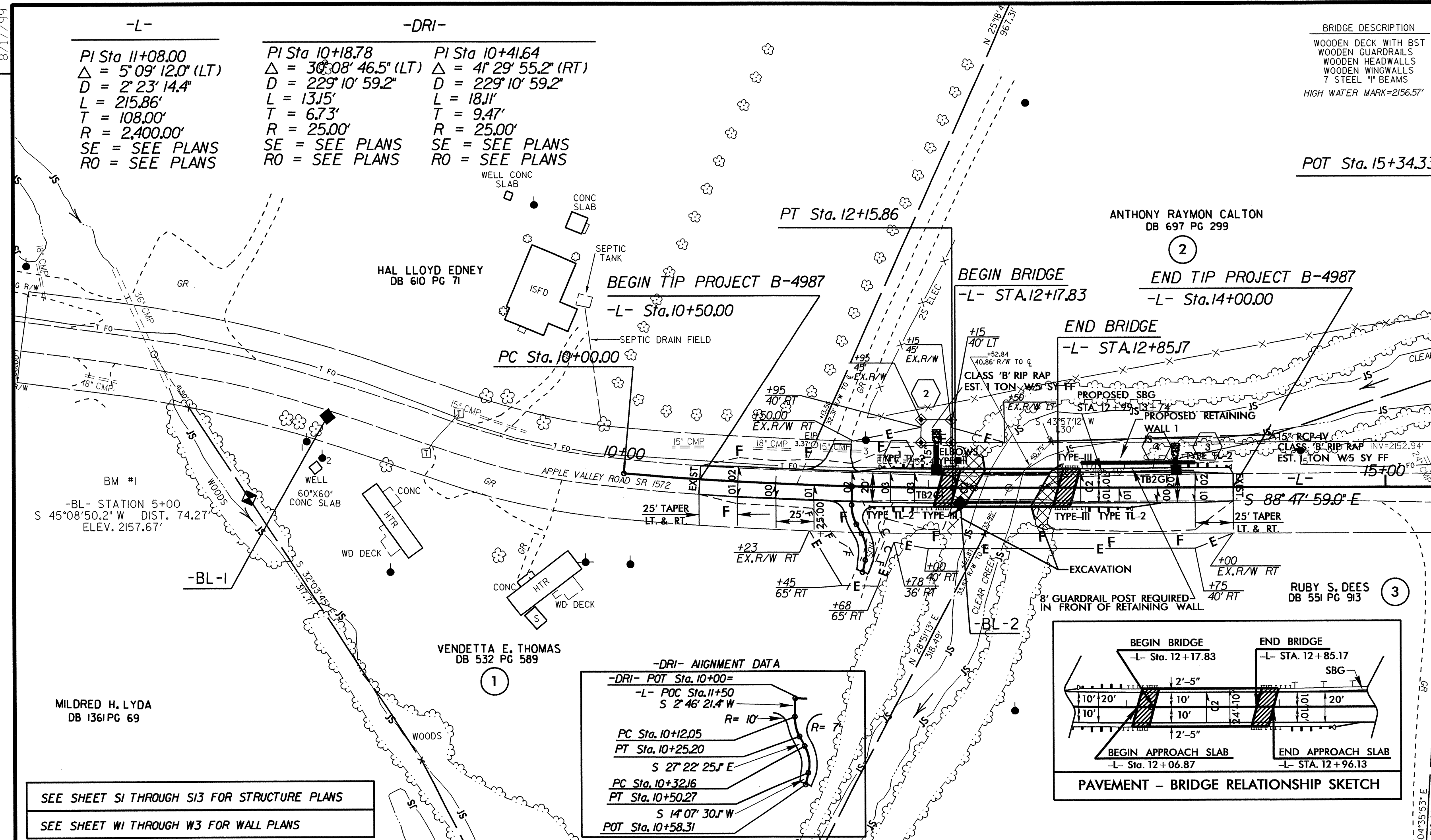
LINE	STATION	STATION	LOCATION L/R/CL	DRAIN TYPE UD/BDSD	LF
CONTINGENCY				UD	250
TOTAL:					250
SAY:					250

GEOTECH RECOMMENDATIONS

- UNDERCUT 100 CY
- GEOTEXTILE FOR SOIL STABILIZATION 130 SY
- CLASS IV SUBGRADE STABILIZATION 85 TONS
- SHALLOW UNDERCUT 45 CY
- SELECT GRANULAR MATERIAL 130 SY

NOTE: APPROXIMATE QUANTITIES ONLY. BORROW EXCAVATION, FINE GRADING, UNCLASSIFIED EXCAVATION, CLEARING AND GRUBBING, AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "GRADING."
EARTHWORK QUANTITIES ARE CALCULATED BY THE ROADWAY DESIGN UNIT. THESE EARTHWORK QUANTITIES ARE BASED IN PART ON SUBSURFACE DATA PROVIDED BY THE GEOTECHNICAL ENGINEERING UNIT.

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SEE SHEET S1 THROUGH S13 FOR STRUCTURE PLANS
 SEE SHEET W1 THROUGH W3 FOR WALL PLANS

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