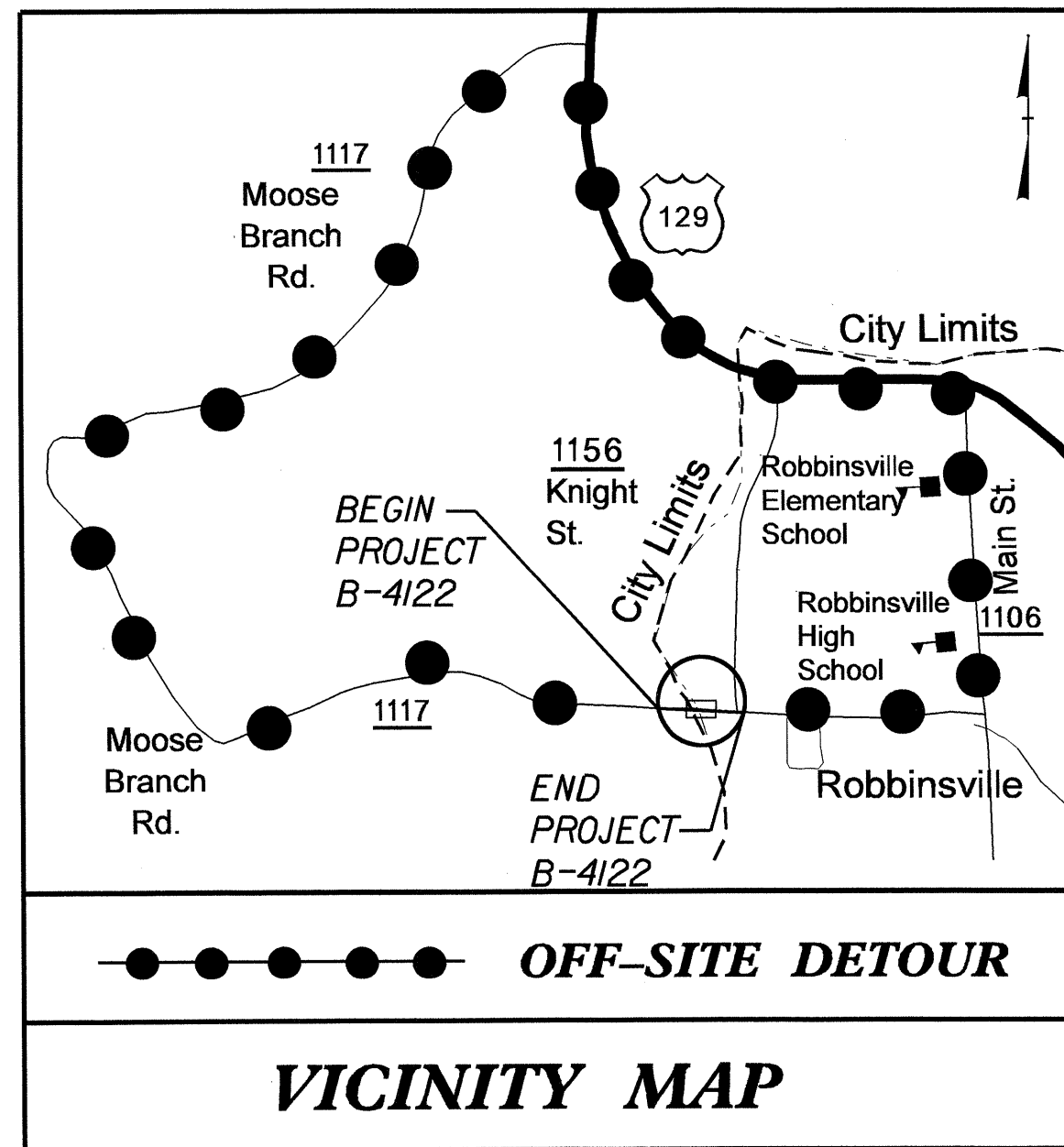


09/28/09

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



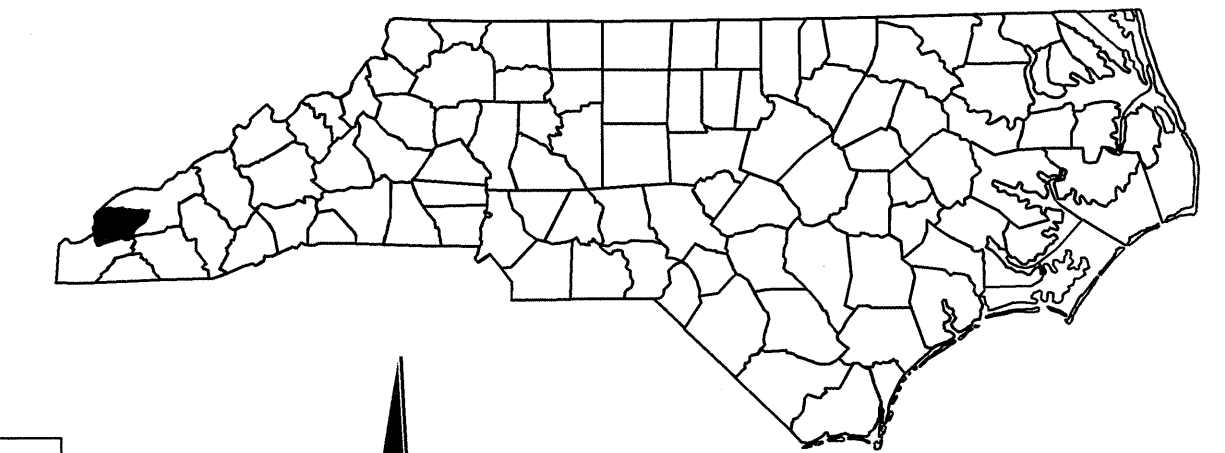
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**GRAHAM COUNTY**

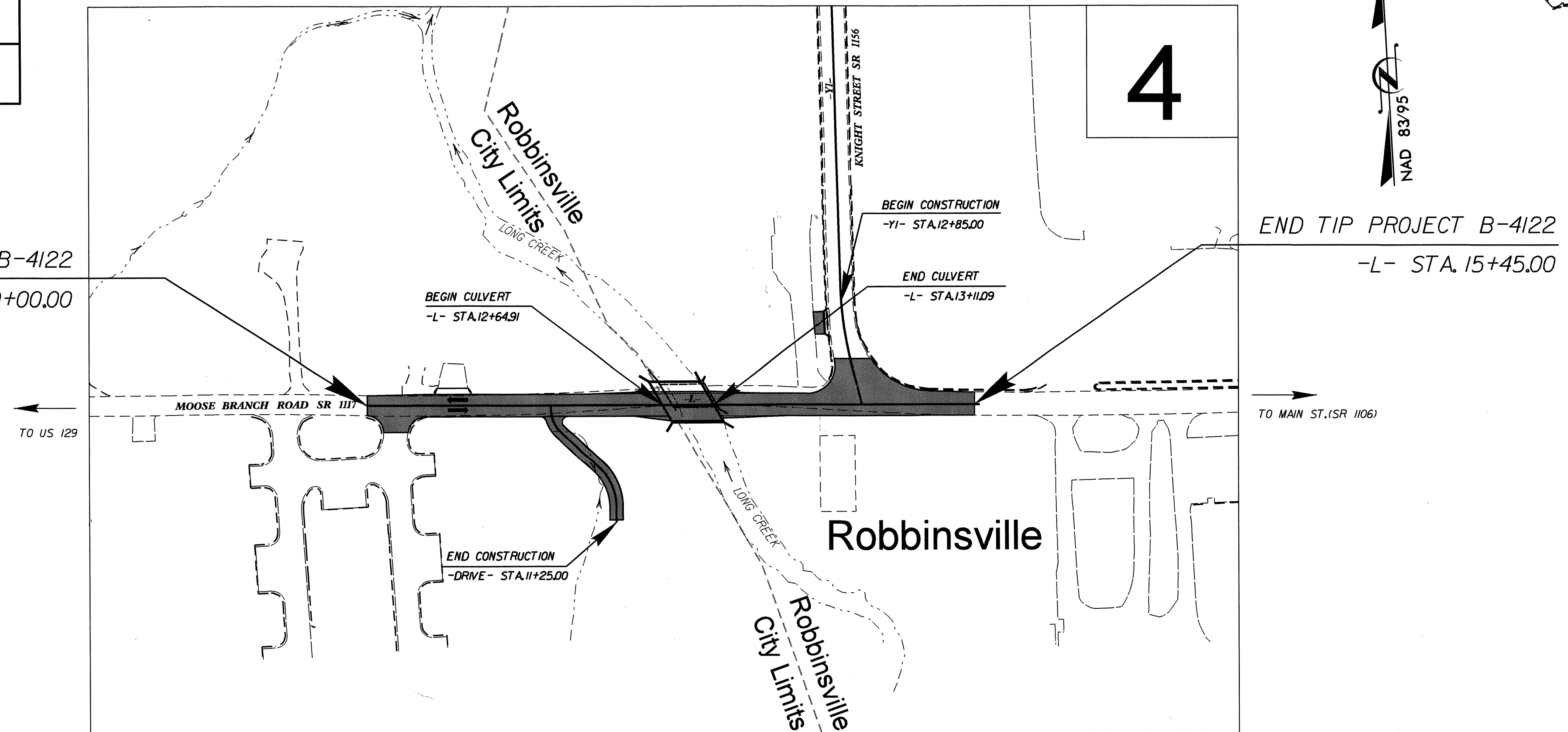
LOCATION: BRIDGE NO. 81 OVER LONG CREEK ON SR 1117

TYPE OF WORK: GRADING, DRAINAGE, CULVERT, AND PAVING

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4122	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33475.1.1	BRZ-1117(8)	PE	
33475.2.1	BRZ-1117(8)	RW, UTIL.	
33475.3.1	BRZ-1117(8)	CONST.	



BEGIN TIP PROJECT B-4122  
-L- STA. 10+00.00



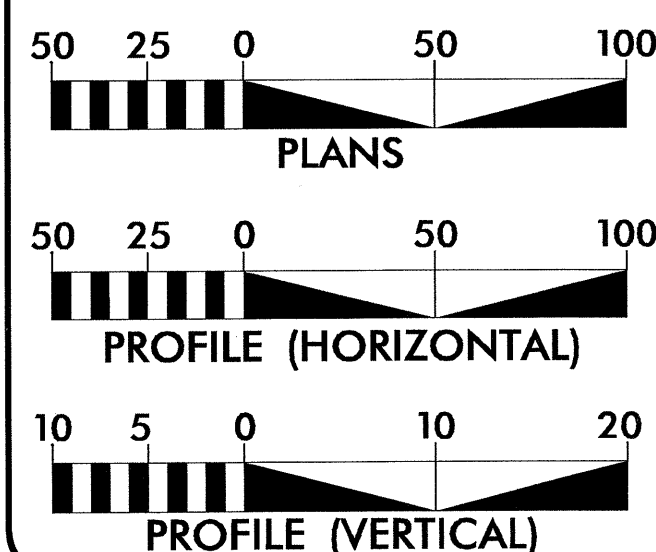
THERE IS NO CONTROL OF ACCESS ON THIS PROJECT.

TIP PROJECT: B-4122

C203277

CONTRACT: C203277

**GRAPHIC SCALES**



**DESIGN DATA**

ADT 2012 = 774 VPD  
ADT 2032 = 1,122 VPD  
DHV = 10 %  
D = 60 %  
\* T = 4 %  
V = 40 MPH  
\* ( TTST 2% + DUAL 2% )  
FUNC. CLASS. = LOCAL  
SUBREGIONAL TIER

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT B-4122 = 0.094 MILE  
LENGTH STRUCTURE TIP PROJECT B-4122 = 0.009 MILE  
TOTAL LENGTH TIP PROJECT B-4122 = 0.103 MILE

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

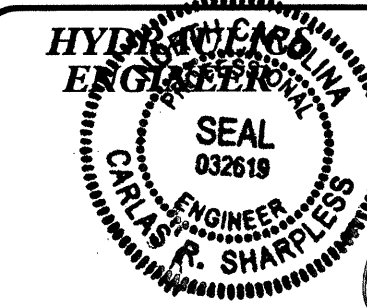
2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:  
JULY 8, 2009

LETTING DATE:  
FEBRUARY 19, 2013

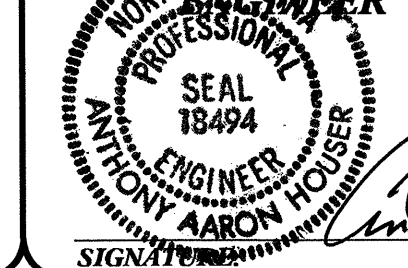
TONY HOUSER, P.E.  
PROJECT ENGINEER

JEFFREY L. TEAGUE, P.E.  
PROJECT DESIGN ENGINEER

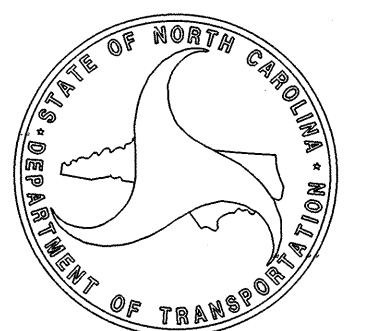


SIGNATURE: *Charles R. Sharpless* 10-9-12

ROADWAY DESIGN



SIGNATURE: *Tony Houser* 10-9-12



12-SEP-2012 10:52  
C:\p00gway\proj\B-4122\_rdy\_tsh.dgn  
\$\$\$\$\$USERNAME\$\$\$\$\$

8/17/99

PROJECT REFERENCE NO. B-4122	SHEET NO. 1-A
ROADWAY DESIGN ENGINEER	

SHEET NUMBER	INDEX OF SHEETS SHEET
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
3-A	SUMMARY OF DRAINAGE QUANTITIES
3-B	SUMMARY OF EARTHWORK, GUARDRAIL SUMMARY, AND ASPHALT PAVEMENT REMOVAL SUMMARY
4	PLAN SHEET
5	PROFILE SHEET
TMP-1 THRU TMP-5	TRANSPORTATION MANAGEMENT PLANS
SD-1	SPECIAL SIGN DESIGN
PMP-1 THRU PMP-2	PAVEMENT MARKING PLANS
EC-1 THRU EC-5	EROSION CONTROL PLANS
SIGN-1 THRU SIGN-2	SIGNING PLANS
UD-1 THRU UD-2	UTILITIES BY OTHERS PLANS
X-1A	CROSS-SECTION SUMMARY SHEET
X-1 THRU X-4	CROSS-SECTIONS
C-1 THRU C-12	CULVERT PLANS

**GENERAL NOTES:**

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

**GRADE LINE:  
GRADING AND SURFACING:**

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AS DIRECTED 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 II.

**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 PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS 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.

**DRIVEWAYS:**

DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.03 AT LOCATIONS SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER.

**STREET TURNOUT:**

STREET RETURNS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 848.04 USING THE RADII NOTED ON PLANS.

**GUARDRAIL:**

THE GUARDRAIL LOCATIONS SHOWN ON THE PLANS MAY BE ADJUSTED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHOULD CONSULT WITH THE ENGINEER PRIOR TO ORDERING GUARDRAIL MATERIAL.

**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.

**UTILITIES:**

UTILITY OWNERS ON THIS PROJECT ARE WATER AND SEWER AUTHORITY, DUKE POWER, AND VERIZON.

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.

**CURB RAMPS:**

CURB RAMPS ARE SHOWN ON THE PLANS AT APPROXIMATE LOCATIONS. CONSTRUCT ALL CURB RAMPS ACCORDANCE WITH STD 848.05.

EFFECTIVE: 01-17-12

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
<b>DIVISION 2 - EARTHWORK</b>	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
<b>DIVISION 3 - PIPE CULVERTS</b>	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
<b>DIVISION 5 - SUBGRADE, BASES AND SHOULDERS</b>	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
<b>DIVISION 6 - ASPHALT BASES AND PAVEMENTS</b>	
654.01	Pavement Repairs
<b>DIVISION 8 - INCIDENTALS</b>	
815.03	Pipe Underdrain and Blind Drain
840.00	Concrete Base Pad for Drainage Structures
840.01	Brick Catch Basin - 12" thru 54" Pipe
840.02	Concrete Catch Basin - 12" thru 54" Pipe
840.03	Frame, Grates and Hood - for Use on Standard Catch Basin
840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.24	Frames and Narrow Slot Sag Grates
840.25	Anchorage for Frames - Brick or Concrete or Precast
840.27	Brick Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.45	Precast Drainage Structure
840.46	Traffic Bearing Precast Drainage Structure
840.51	Brick Manhole - 12" thru 36" Pipe
840.52	Precast Manhole - 4', 5' and 6' Diameter
840.54	Manhole Frame and Cover
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter and Curb & Gutter
846.02	Drop Inlet Installation in Expressway Gutter
848.01	Concrete Sidewalk
848.03	Driveway Turnout - Drop Curb Type
848.04	Street Turnout
848.05	Curb Ramp - Proposed Curb & Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
866.01	Chain Link Fence - 4', 5' and 6' High Fence
876.02	Guide for Rip Rap at Pipe Outlets

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04/16/11

Note: Not to Scale

\*S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

# 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	□ ECM
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	○
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 RW Marker	○
Proposed Control of Access Line with Concrete C/A 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	CONC
Bridge Wing Wall, Head Wall and End Wall	CONC WW
MINOR: Head and End Wall	CONC HW
Pipe Culvert	○
Footbridge	▬
Drainage Box: Catch Basin, DI or JB	CB
Paved Ditch Gutter	▬
Storm Sewer Manhole	○
Storm Sewer	-S-

### 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:

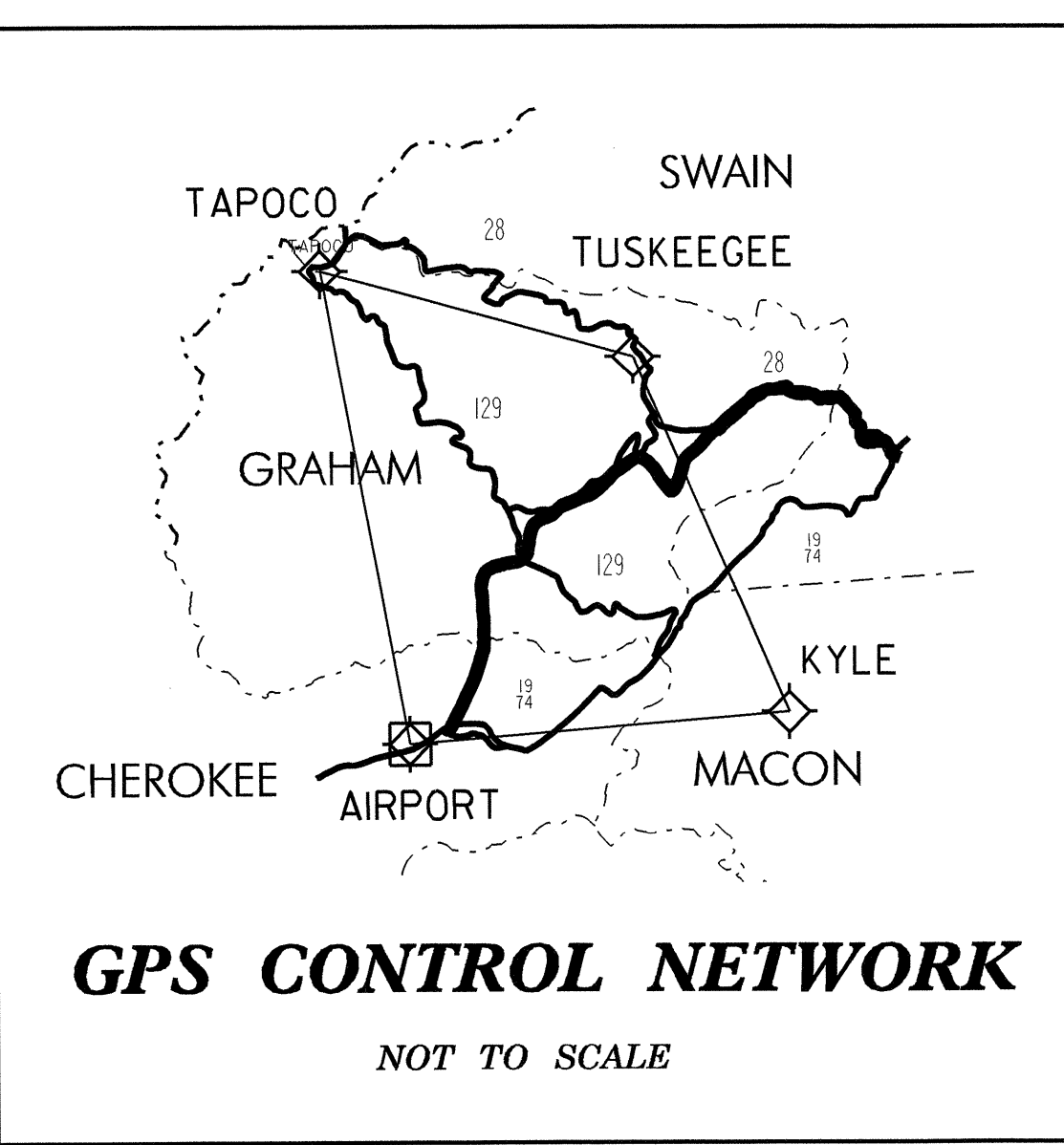
Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	-SS-
Above Ground Sanitary Sewer	-A/G Sanitary Sewer-
Recorded SS Forced Main Line	-FSS-
Designated SS Forced Main Line (S.U.E.*)	-FSS-

### 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.

# SURVEY CONTROL SHEET B-4122

-FINAL-



-FINAL- ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	10+00.00	-19.57	608120.2257	565215.8125
L	10+00.00	-27.00	608127.6448	565216.2138
L	12+05.00	-27.00	608116.5728	565420.9146
L	12+05.00	-40.00	608129.5538	565421.6167
L	12+82.00	-40.00	608125.3951	565498.5043
L	12+95.00	-28.31	608113.0200	565510.8539
L	14+51.22	-56.00	608132.2322	565668.3415
L	14+62.00	-56.00	608131.6499	565679.1057
L	15+05.00	-29.00	608102.3669	565720.5847
L	15+50.00	-29.00	608099.9365	565765.5190
L	15+50.00	-21.30	608092.2477	565765.1031
L	15+50.00	12.70	608058.2973	565763.2668
L	15+50.00	25.00	608046.0153	565762.6025
L	13+75.00	25.00	608055.4670	565587.8579
L	13+45.00	55.00	608027.1311	565556.2814
L	11+60.00	55.00	608037.1229	565371.5514
L	11+60.00	30.00	608062.0864	565372.9017
L	10+00.00	30.00	608070.7200	565213.1352
L	10+00.00	11.43	608089.2709	565214.1382

-FINAL- ROW MARKER PERMANENT UTILITY EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	10+40.00	-27.00	608125.4844	565256.1554
L	10+40.00	-45.00	608143.4571	565257.1276
L	10+95.00	-45.00	608140.4866	565312.0473
L	10+95.00	-27.00	608122.5128	565311.0751

-FINAL- ROW MARKER PERMANENT DRAINAGE EASEMENT-E

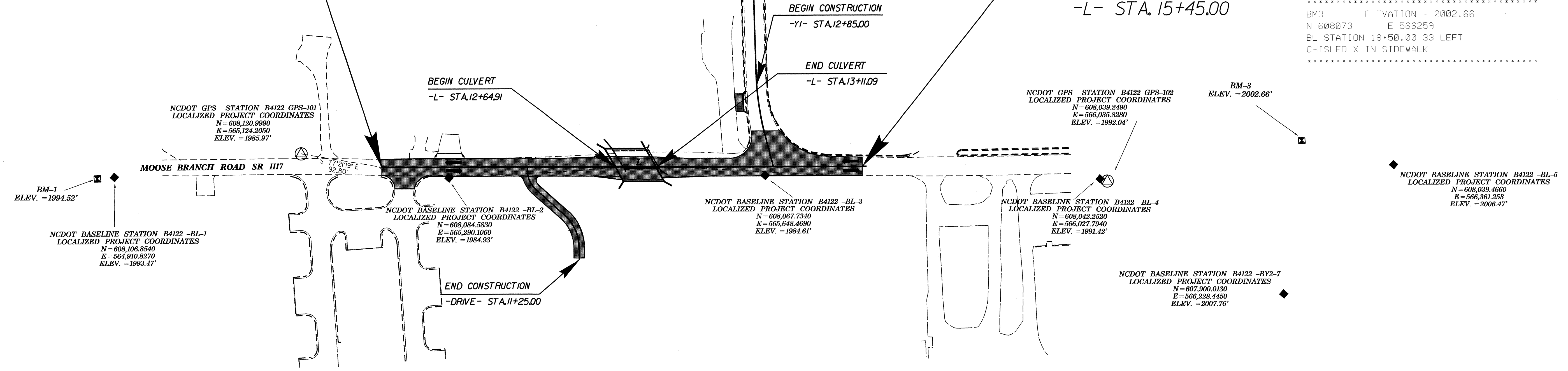
ALIGN	STATION	OFFSET	NORTH	EAST
L	11+95.00	55.00	608035.2315	565406.5003
L	11+95.00	85.00	608025.2753	565404.8900
L	12+40.00	85.00	608002.8449	565449.8144
L	12+50.00	55.00	608032.2610	565461.4201

BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	BL-1	608106.8540	564910.8270	1993.47	OUTSIDE PROJECT LIMITS	
2	BL-2	608084.5830	565290.1060	1984.93	10+76.11	12.01 RT
3	BL-3	608067.7340	565648.4690	1984.61	14+34.86	9.48 RT
4	BL-4	608042.2520	566027.7940	1991.42	OUTSIDE PROJECT LIMITS	
5	BL-5	608039.4660	566361.2530	2006.47	OUTSIDE PROJECT LIMITS	

BY1 POINT	DESC.	NORTH	EAST	ELEVATION	Y1 STATION	OFFSET
6	BY1-6	608431.1880	565671.5780	1980.10	10+22.87	20.10 LT
33	BL-3	608067.7340	565648.4690	1984.61	OUTSIDE PROJECT LIMITS	

BEGIN TIP PROJECT B-4122  
-L- STA. 10+00.00

END TIP PROJECT B-4122  
-L- STA. 15+45.00



\*\*\*\*\*  
 BM1 ELEVATION = 1994.52  
 N 608106 E 564892  
 BL STATION 5+00.00  
 S 88°27'34.09" W DIST 19.23'  
 CHISLED X IN ROCK  
 \*\*\*\*\*  
 BM2 ELEVATION = 1980.00  
 N 608456 E 565666  
 BY1 STATION 5+00.00  
 N 13°48'14.01" W DIST 25.42'  
 CHISLED X IN SIDEWALK  
 \*\*\*\*\*  
 BM3 ELEVATION = 2002.66  
 N 608073 E 566259  
 BL STATION 18+50.00 33 LEFT  
 CHISLED X IN SIDEWALK  
 \*\*\*\*\*

**DATUM DESCRIPTION**

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B-4122 GPS-101"

WITH NAD 83/95 STATE PLANE GRID COORDINATES OF NORTHING: 608,120.9990(ft) EASTING: 565,124.2050(ft)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99978297

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B-4122 GPS-101" TO -L- STATION 10+00.00 IS

S 77°21'19" E 92.80'

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES  
 VERTICAL DATUM USED IS NAVD 88

FINAL -L-

TYPE	STATION	NORTH	EAST
POT	10+00.00	608100.6842	565214.7555
POT	15+50.00	608070.9788	565763.9527

FINAL -Y1-

TYPE	STATION	NORTH	EAST
POT	10+00.00	608454.5935	565652.1015
PC	12+69.58	608185.1151	565644.8166
PT	13+43.64	608111.4872	565651.2327
POT	13+79.15	608076.6925	565658.3176

FINAL -DRIVE-

TYPE	STATION	NORTH	EAST
POT	10+00.00	608091.7780	565379.4145
PC	10+03.15	608088.6371	565379.2446
PT	10+28.32	608065.8108	565387.9803
PC	10+71.30	608035.4055	565418.3648
PT	11+12.86	607997.7632	565432.9446
POT	11+26.96	607983.6765	565432.2962

**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/LOCATION/PROJECT/](http://www.ncdot.org/doh/preconstruct/highway/location/project/)

THE FILES TO BE FOUND ARE AS FOLLOWS:  
 B4122\_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.  
 NETWORK ESTABLISHED FROM EXISTING HARN MONUMENTATION

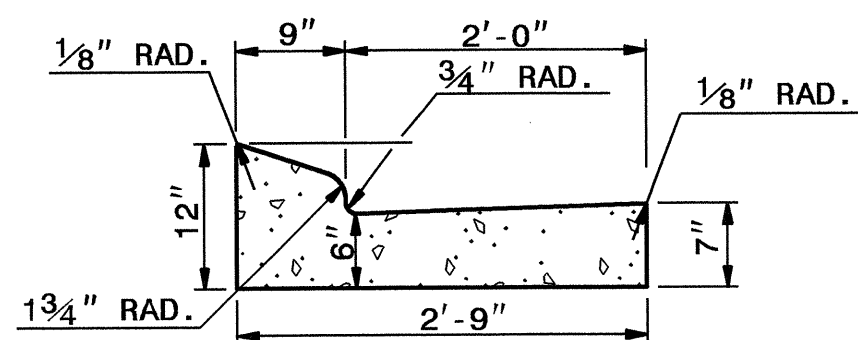
NOTE: DRAWING NOT TO SCALE

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6/2/99

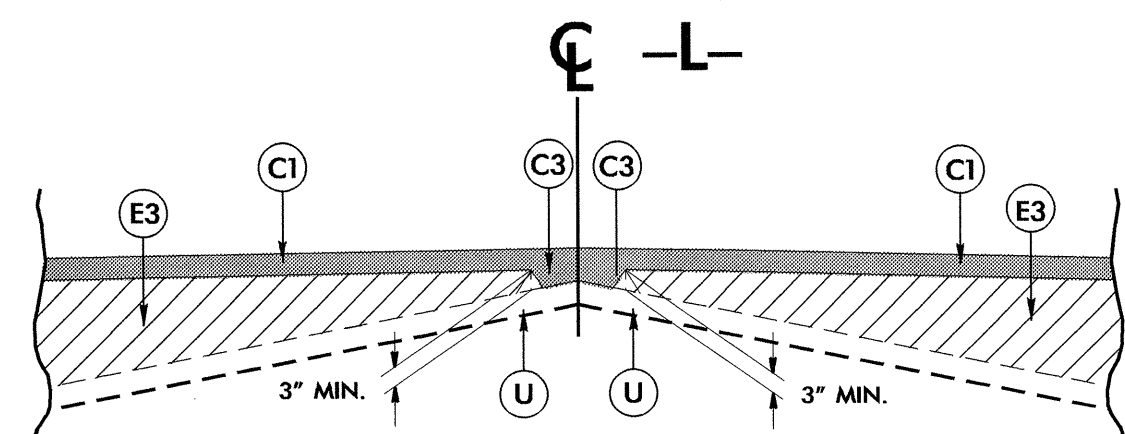
PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	PROP. APPROX. 2 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. IN EACH OF 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 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 513 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.
J	PROP. 5" AGGREGATE BASE COURSE.
R1	2'-9" CONCRETE CURB AND GUTTER (SEE DETAIL).
R2	2'-6" CONCRETE CURB AND GUTTER.
S	4" CONCRETE SIDEWALK.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE DETAIL SHOWING METHOD OF WEDGING).

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

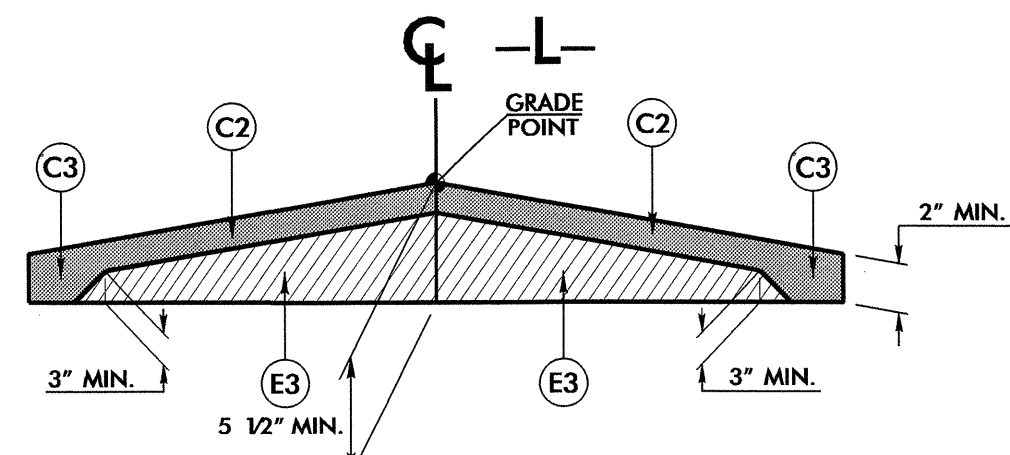


DETAIL OF 2' - 9" CURB AND GUTTER

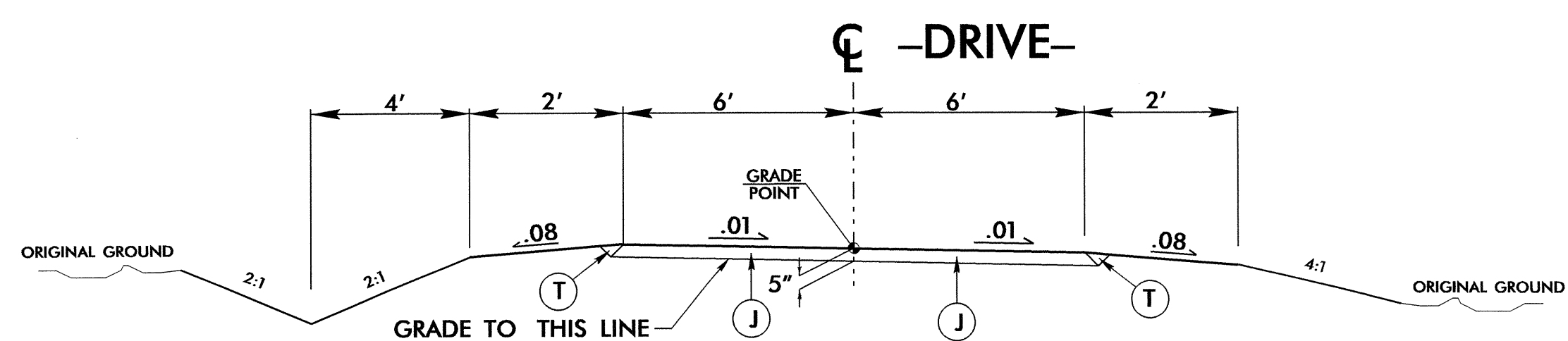
-L- STA. 13+19.17 TO -L- STA. 15+45.00



DETAIL SHOWING METHOD OF WEDGING ON CULVERT USE IN CONJUNCTION WITH TYPICAL SECTION NO. 3

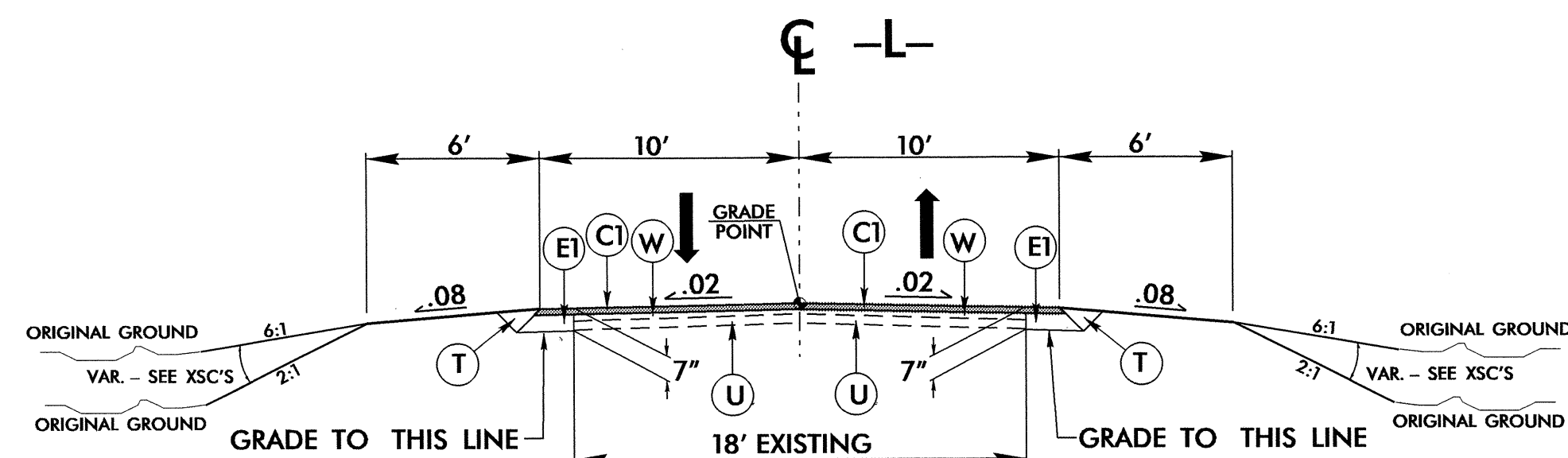


DETAIL SHOWING METHOD OF WEDGING ON CULVERT USE IN CONJUNCTION WITH TYPICAL SECTION NO. 3



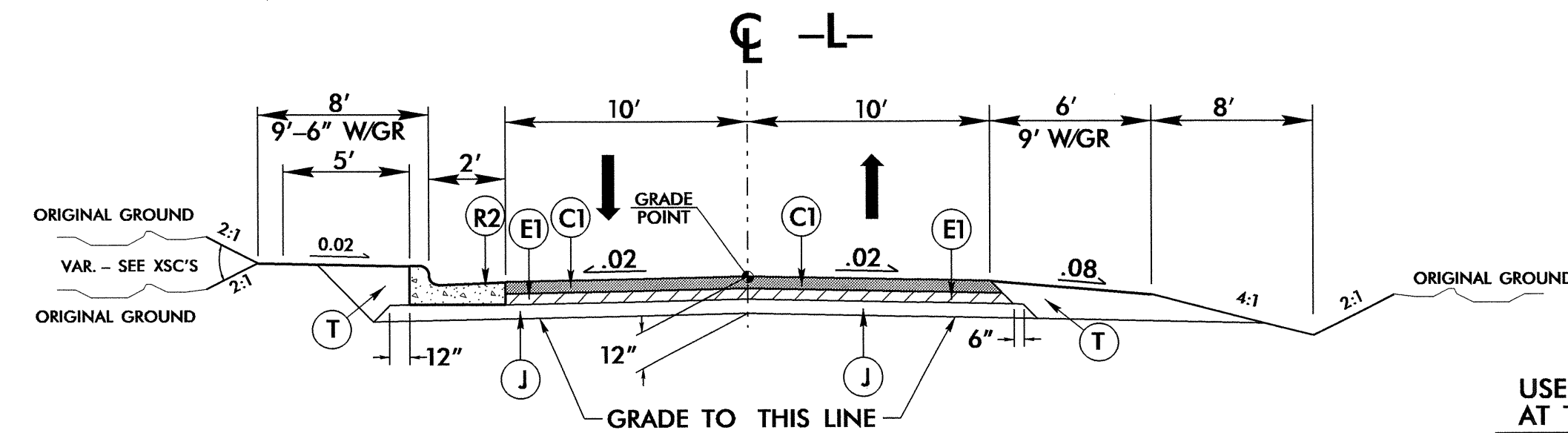
TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6 AT THE FOLLOWING LOCATION:  
-DRIVE- STA 10+10.00 TO -DRIVE- STA 11+25.00



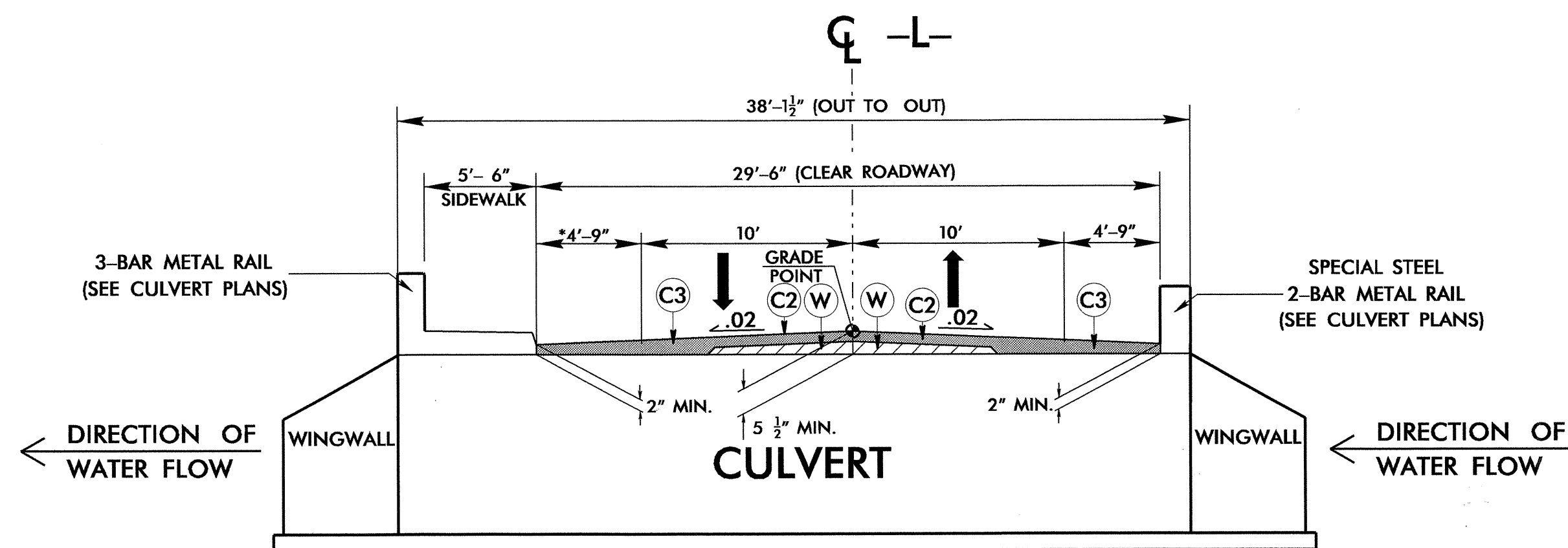
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1 AT THE FOLLOWING LOCATION:  
-L- STA. 10+00.00 TO -L- STA. 11+00.00



TYPICAL SECTION NO. 2

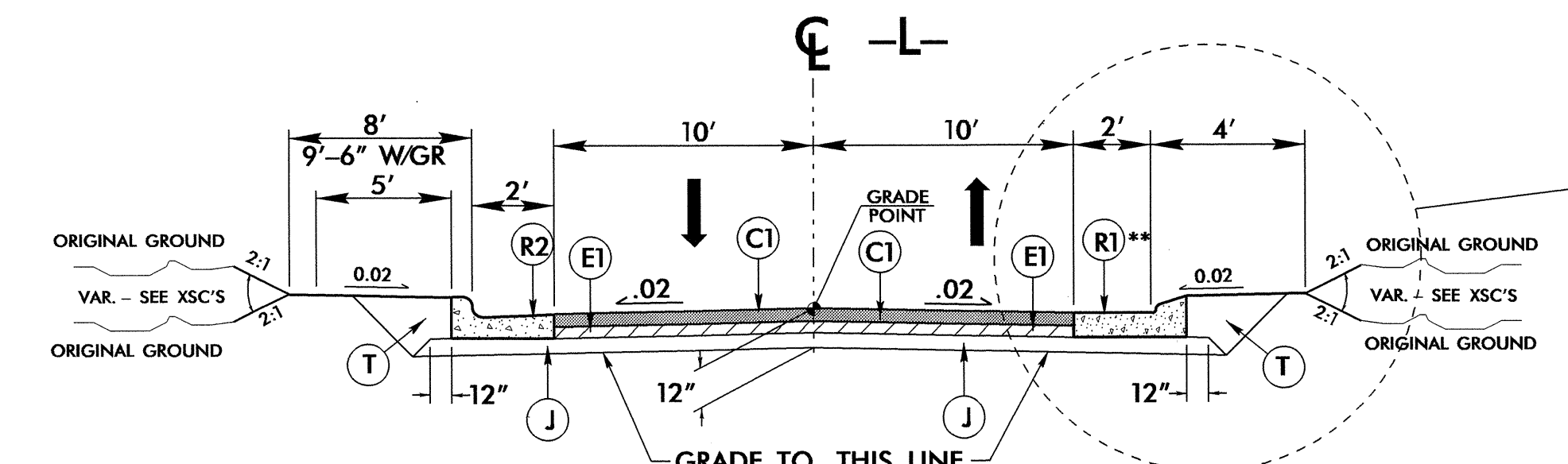
USE TYPICAL SECTION NO. 2 AT THE FOLLOWING LOCATION:  
-L- STA. 11+00.00 TO -L- STA. 12+64.91 (BEGIN CULVERT)



TYPICAL SECTION NO. 3

(SEE CULVERT PLANS)

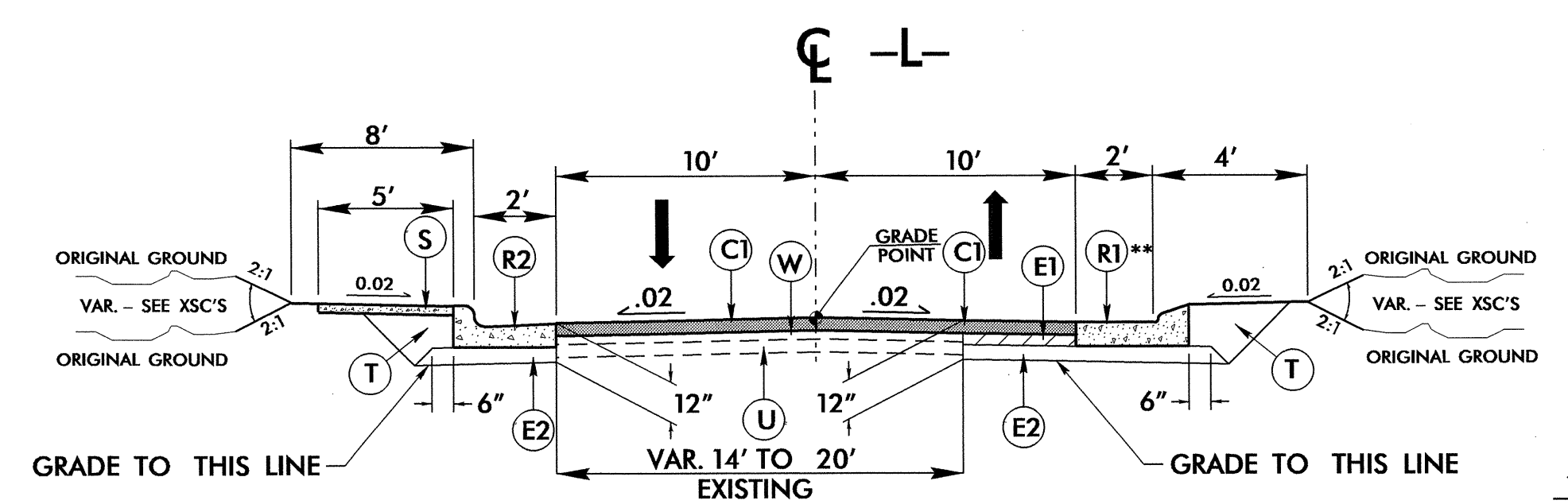
USE TYPICAL SECTION NO. 3 AT THE FOLLOWING LOCATION:  
-L- STA. 12+64.91 TO -L- STA. 13+11.09  
\*ADDITIONAL SHOULDER WIDTH REQUIRED TO ACCOMMODATE HYDRAULIC SPREAD



TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4 AT THE FOLLOWING LOCATION:  
-L- STA. 13+11.09 (END CULVERT) TO -L- STA. 14+00.00

\*\* 2'-9" CURB & GUTTER USED TO MINIMIZE IMPACTS TO SCHOOL PROPERTY



TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 5 AT THE FOLLOWING LOCATION:  
-L- STA. 14+00.00 TO -L- STA. 15+45.00

NOTES:  
SEE PLANS FOR SIDEWALK LIMITS.  
\*\* 2'-9" CURB & GUTTER USED TO MINIMIZE IMPACTS TO SCHOOL PROPERTY

PROJECT REFERENCE NO. B-4122	SHEET NO. 2
ROADWAY DESIGN NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 18494 ANTHONY AARON HOUSER	PAVEMENT DESIGN NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 22896 CLARK S. MORRISON

02-OCT-2012 11:05 R:\Roadway\1001\B-4122-rdy-tp.dgn

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
**SUMMARY OF QUANTITIES**

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - 2203277

ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
0043000000-N	226	Lump Sum		GRADING
0050000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB-BING
0057000000-E	226	120	CY	UNDERCUT EXCAVATION
0195000000-E	265	100	CY	SELECT GRANULAR MATERIAL
0196000000-E	270	100	SY	GEOTEXTILE FOR SOIL STABILIZATION
0318000000-E	300	70	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES
0320000000-E	300	190	SY	FOUNDATION CONDITIONING GEOTEXTILE
0366000000-E	310	76	LF	15" RC PIPE CULVERTS, CLASS III
0372000000-E	310	276	LF	18" RC PIPE CULVERTS, CLASS III
0378000000-E	310	216	LF	24" RC PIPE CULVERTS, CLASS III
0995000000-E	340	132	LF	PIPE REMOVAL
1099500000-E	505	35	CY	SHALLOW UNDERCUT
1099700000-E	505	60	TON	CLASS IV SUBGRADE STABILIZATION
1121000000-E	520	275	TON	AGGREGATE BASE COURSE
1220000000-E	545	20	TON	INCIDENTAL STONE BASE
1489000000-E	610	260	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
1525000000-E	610	230	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A
1575000000-E	620	27	TON	ASPHALT BINDER FOR PLANT MIX
1693000000-E	654	16	TON	ASPHALT PLANT MIX, PAVEMENT REPAIR
2022000000-E	815	23	CY	SUBDRAIN EXCAVATION
2033000000-E	815	17	CY	SUBDRAIN FINE AGGREGATE
2044000000-E	815	100	LF	6" PERFORATED SUBDRAIN PIPE
2070000000-N	815	1	EA	SUBDRAIN PIPE OUTLET
2077000000-E	815	6	LF	6" OUTLET PIPE

ItemNumber	Sec #	Quantity	Unit	Description
2286000000-N	840	10	EA	MASONRY DRAINAGE STRUCTURES
2308000000-E	840	3.5	LF	MASONRY DRAINAGE STRUCTURES
2366000000-N	840	1	EA	FRAME WITH TWO GRATES, STD 840.24
2367000000-N	840	4	EA	FRAME WITH TWO GRATES, STD 840.29
2374000000-N	840	2	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (F)
2374000000-N	840	2	EA	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (G)
2396000000-N	840	1	EA	FRAME WITH COVER, STD 840.54
2538000000-E	846	230	LF	***,** CONCRETE CURB & GUTTER (2'-9")
2549000000-E	846	440	LF	2'-6" CONCRETE CURB & GUTTER
2591000000-E	848	60	SY	4" CONCRETE SIDEWALK
2605000000-N	848	2	EA	CONCRETE CURB RAMP
2612000000-E	848	40	SY	6" CONCRETE DRIVEWAY
2800000000-N	858	1	EA	ADJUSTMENT OF CATCH BASINS
3030000000-E	862	75	LF	STEEL BM GUARDRAIL
3150000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS
3165000000-N	SP	4	EA	GUARDRAIL ANCHOR UNITS, TYPE ***** (350 TL-2)
3215000000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE III
3533000000-E	866	40	LF	CHAIN LINK FENCE, *** FABRIC (72")
3536000000-E	866	300	LF	CHAIN LINK FENCE, 48" FABRIC
3539000000-E	866	3	EA	METAL LINE POSTS FOR *** CHAIN LINK FENCE (72")
3542000000-E	866	30	EA	METAL LINE POSTS FOR 48" CHAIN LINK FENCE
3545000000-E	866	2	EA	METAL TERMINAL POSTS FOR *** CHAIN LINK FENCE (72")

ItemNumber	Sec #	Quantity	Unit	Description
3548000000-E	866	15	EA	METAL TERMINAL POSTS FOR 48" CHAIN LINK FENCE
3649000000-E	876	5	TON	RIP RAP, CLASS B
3656000000-E	876	470	SY	GEOTEXTILE FOR DRAINAGE
4072000000-E	903	40	LF	SUPPORTS, 3-LB STEEL U-CHANNEL
4102000000-N	904	3	EA	SIGN ERECTION, TYPE E
4155000000-N	907	9	EA	DISPOSAL OF SIGN SYSTEM, U-CHANNEL
4400000000-E	1110	302	SF	WORK ZONE SIGNS (STATIONARY)
4405000000-E	1110	96	SF	WORK ZONE SIGNS (PORTABLE)
4410000000-E	1110	104	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
4435000000-N	1135	40	EA	CONES
4445000000-E	1145	80	LF	BARRICADES (TYPE III)
4450000000-N	1150	160	HR	FLAGGER
4810000000-E	1205	3,411	LF	PAINT PAVEMENT MARKING LINES (4")
6000000000-E	1605	1,600	LF	TEMPORARY SILT FENCE
6006000000-E	1610	250	TON	STONE FOR EROSION CONTROL, CLASS A
6009000000-E	1610	35	TON	STONE FOR EROSION CONTROL, CLASS B
6012000000-E	1610	200	TON	SEDIMENT CONTROL STONE
6015000000-E	1615	0.5	ACR	TEMPORARY MULCHING
6018000000-E	1620	50	LB	SEED FOR TEMPORARY SEEDING
6021000000-E	1620	0.25	TON	FERTILIZER FOR TEMPORARY SEEDING
6024000000-E	1622	100	LF	TEMPORARY SLOPE DRAINS
6029000000-E	SP	200	LF	SAFETY FENCE
6030000000-E	1630	100	CY	SILT EXCAVATION
6036000000-E	1631	1,000	SY	MATTING FOR EROSION CONTROL
6042000000-E	1632	475	LF	1/4" HARDWARE CLOTH
6070000000-N	1639	4	EA	SPECIAL STILLING BASINS
6084000000-E	1660	0.5	ACR	SEEDING & MULCHING
6087000000-E	1660	0.25	ACR	MOWING
6090000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
6093000000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
6096000000-E	1662	50	LB	SEED FOR SUPPLEMENTAL SEEDING
6108000000-E	1665	0.5	TON	FERTILIZER TOPDRESSING
6111000000-E	SP	160	LF	IMPERVIOUS DIKE
6114500000-N	1667	10	MHR	SPECIALIZED HAND MOWING
6117000000-N	SP	18	EA	RESPONSE FOR EROSION CONTROL
6132000000-N	SP	1	EA	GENERIC EROSION CONTROL ITEM TREE TRUNK BUMPER
6147000000-E	SP	200	LF	GENERIC EROSION CONTROL ITEM TREE PROTECTION FENCE

5/28/99

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B-4122



12/06/07

COMPUTED BY: TB ROACH DATE: 9/5/2012  
 CHECKED BY: CE HARRIS DATE: 9/5/2012

STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS

PROJECT REFERENCE NO. SHEET NO.  
 B-4122 3-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	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	GRAU 350 TL-2	TYPE III	EA					
-L-	11+96.97	12+53.22 (CUL)	LT	56.25'			CULVERT		10.25'	9'-6" BERM					1	1						
-L-	12+17.18	12+73.43 (CUL)	RT	56.25'					4.75'	9'					1	1						
-L-	12+99.40 (CUL)	13+55.65	LT	56.25'					10.25'	9'-6" BERM					1	1						
-L-	13+19.61 (CUL)	13+75.86	RT	56.25'			CULVERT		4.75'	4' BERM					1	1						
			SUBTOTAL	225.00'																		
			ANCHOR DEDUCTION	175.00'																		
			TOTAL	50.00'											4	4						
			SAY	75.00'																		

ANCHOR DEDUCTION  
 GRAU 350 TL-2: 4 @ 25' = 100.00'  
 TYPE III: 4 @ 18.75' = 75.00'  
 +  
 TOTAL LENGTH = 175.00'

ADDITIONAL GUARDRAIL POSTS: 5

NOTE: USE GRAU 350 TL-2 ANCHOR UNITS PER SUB REGIONAL TIER DESIGN GUIDELINES FOR GUARDRAIL

**★ SUMMARY OF EARTHWORK  
 IN CUBIC YARDS**

STATION	STATION	UNCL EXCAV.	EMBANK. +%	BORROW	WASTE
-L- 10+00.00	12+64.91 (BEG CUL)	240	99		141
-DRIVE- 10+10.00	-DRIVE- 11+25.00	50	40		10
SUBTOTAL		290	139		151
13+11.09 (END CUL)	-L- 15+45.00	91	89		2
SUBTOTAL		91	89		2
TOTAL		381	228		153
LOSS DUE TO CLEARING AND GRUBBING		-10			-10
GRAND TOTALS		371	228		143
SAY		400			150

ESTIMATED UNDERCUT EXCAVATION: 120 CY  
 ESTIMATED SHALLOW UNDERCUT: 35 CY  
 SHOULDER BORROW: 40 CY

Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

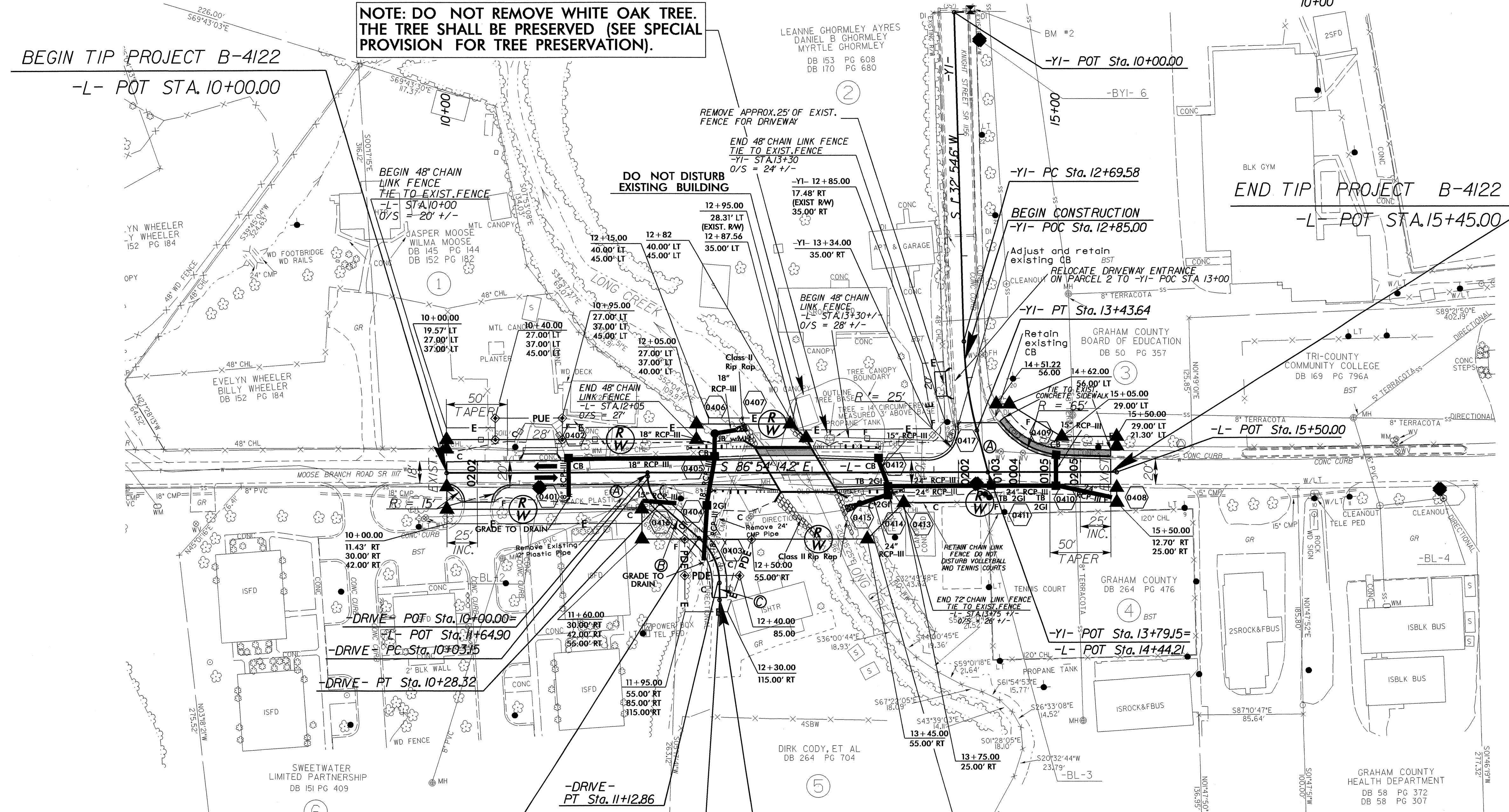
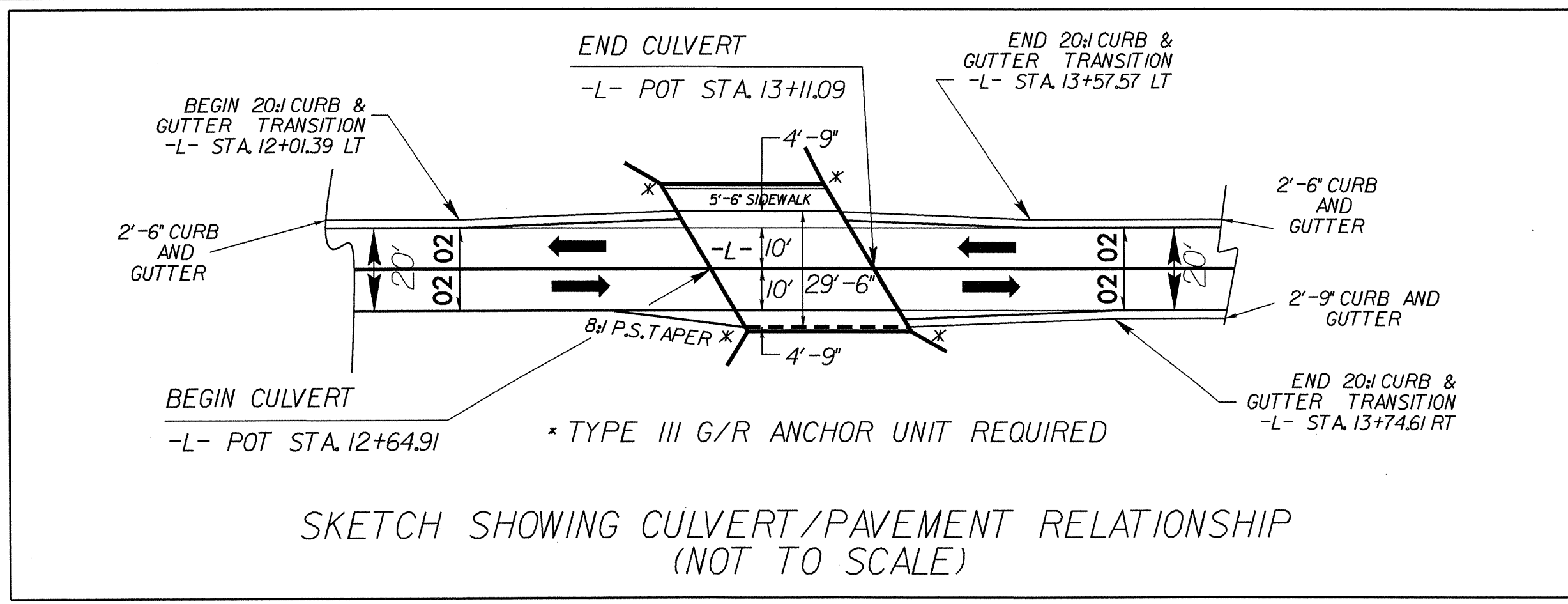
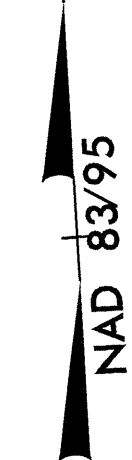
**★ ASPHALT PAVEMENT REMOVAL SUMMARY  
 IN SQUARE YARDS**

SURVEY LINE	STATION	STATION	LOCATION L/R/CL	YD'
-L-	11+00.00	12+74.00	EXIST ROADBED	325
-L-	13+04.00	14+00.00	EXIST ROADBED	177
TOTAL:				502
SAY:				510

★ Approximate quantities only. Unclassified excavation, shoulder borrow, fine grading, clearing and grubbing, and removal of existing pavement will be paid for at the lump sum price for "Grading".

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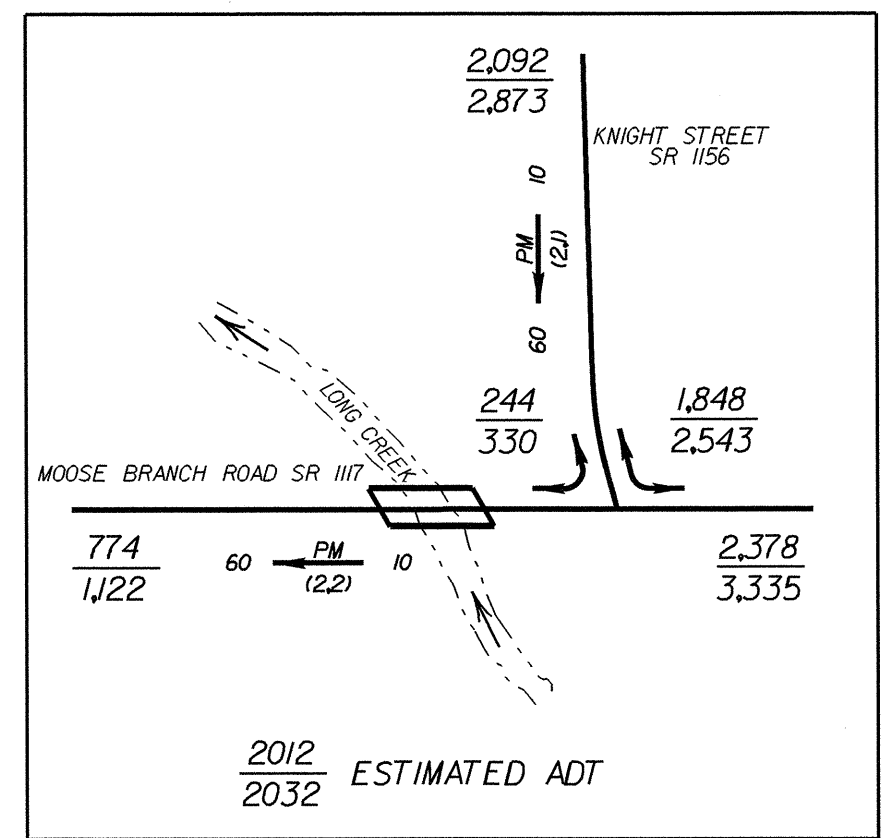




RIP-RAP AND GEOTEXTILE QUANTITIES

STRUCTURE 0407 OUTLET PIPE RIP RAP QUANTITIES	2 TONS CL B RIP RAP & 7 SY GEOTEXTILE
STRUCTURE 0415 OUTLET PIPE RIP RAP QUANTITIES	3 TONS CL B RIP RAP & 11 SY GEOTEXTILE

NOTE: CLASS II RIP RAP IS A STRUCTURE PAY ITEM



-DRIVE-

PI Sta 10+16.53 Δ = 48' 04' 35.4" (LT) D = 190' 59' 09.4" L = 25.17' T = 13.38' R = 30.00'	PI Sta 10+93.36 Δ = 47' 36' 57.1" (RT) D = 114' 35' 29.6" L = 41.55' T = 22.06' R = 50.00'
---	---

-YI-

PI Sta 13+06.77 Δ = 13' 03' 27.5" (LT) D = 17' 37' 46.1" L = 74.07' T = 37.19' R = 325.00' SE = 04 RO = SEE PLANS Ⓐ S 11' 30' 32.9" E
---

ALL DRIVEWAY RADII ARE 5' UNLESS NOTED OTHERWISE

SEE PMP FOR CURB RAMP LOCATIONS AND STATIONING

FOR -L- PROFILE, SEE SHEET NO. 5

5' SIDEWALK

FOR CULVERT PLANS, SEE SHEET NO. C-1 THRU C-12

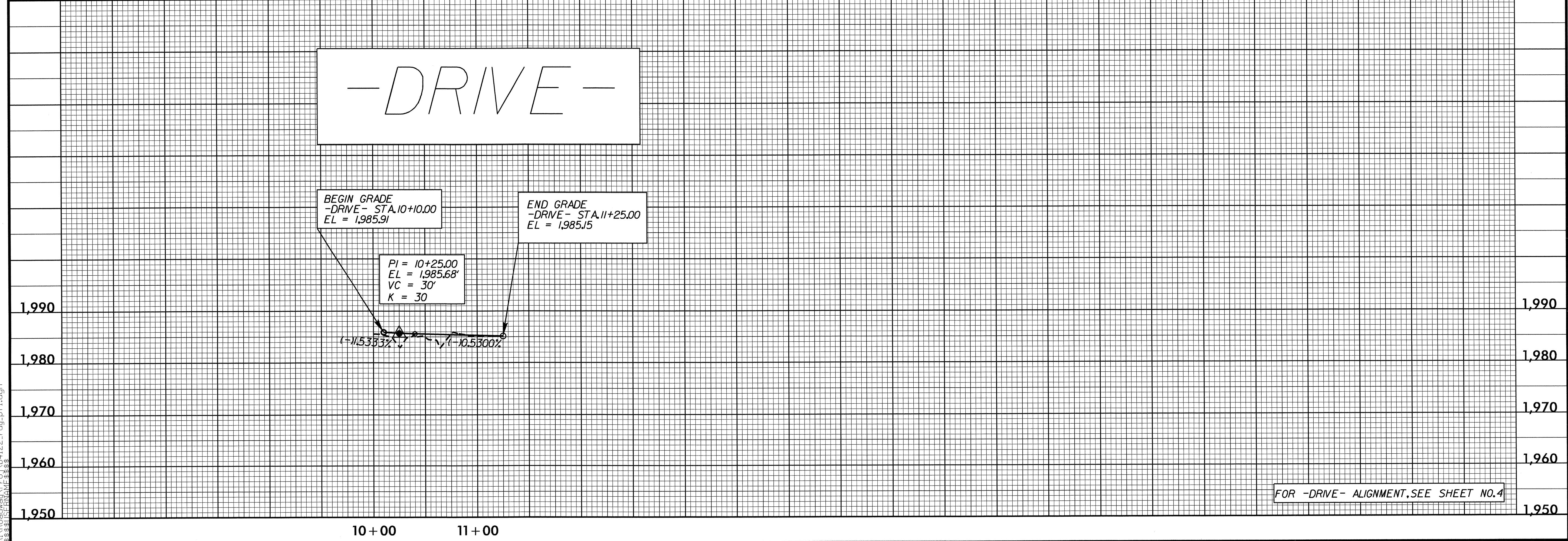
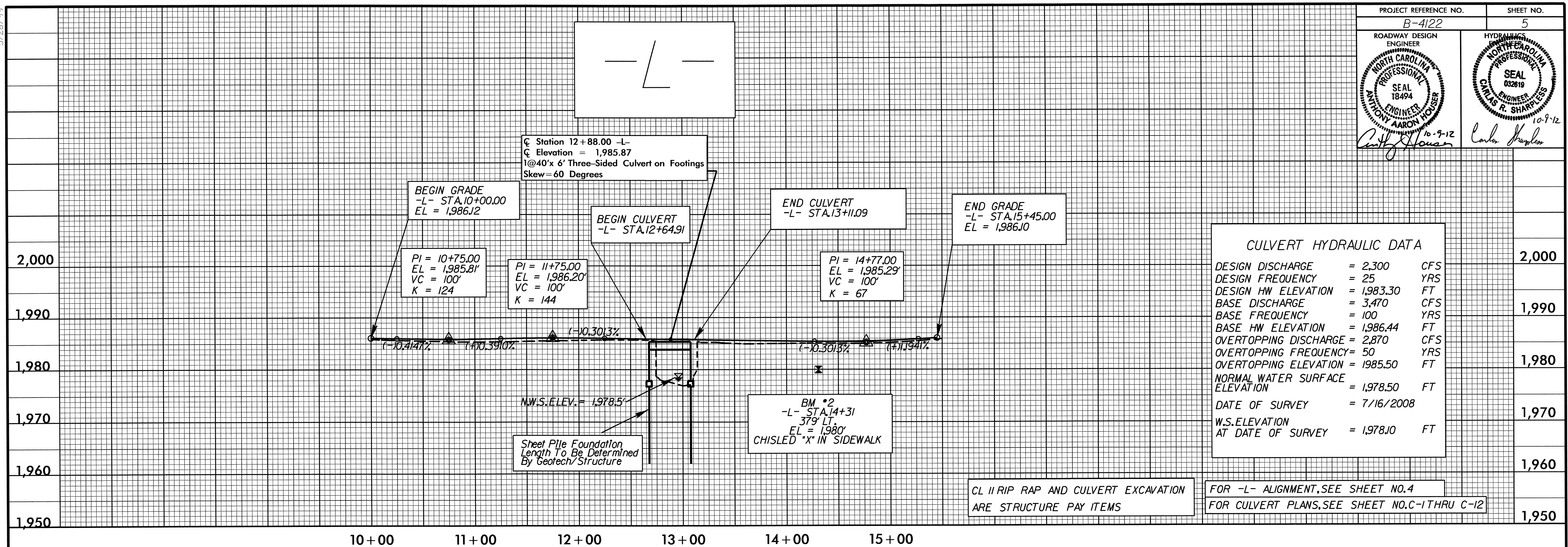
NOTE: USE GRAU 350 TL-2 ANCHOR UNITS PER SUB REGIONAL TIER DESIGN GUIDELINES FOR GUARDRAIL

NOTE: THE CONC. SIDEWALK LOCATED ON THE CULVERT IS A STRUCTURE PAY ITEM.

8/17/99  
08-001-2019 1440  
RS: POC STA 10+00.00 TO 15+50.00  
REVISIONS

5/28/09

PROJECT REFERENCE NO. B-4122	SHEET NO. 5
ROADWAY DESIGN ENGINEER ANTHONY AARON HOUSER NORTH CAROLINA PROFESSIONAL SEAL 18494 10-9-12	HYDRAULICS ENGINEER CARLOS R. SHARPLESS NORTH CAROLINA PROFESSIONAL SEAL 032619 10-9-12



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