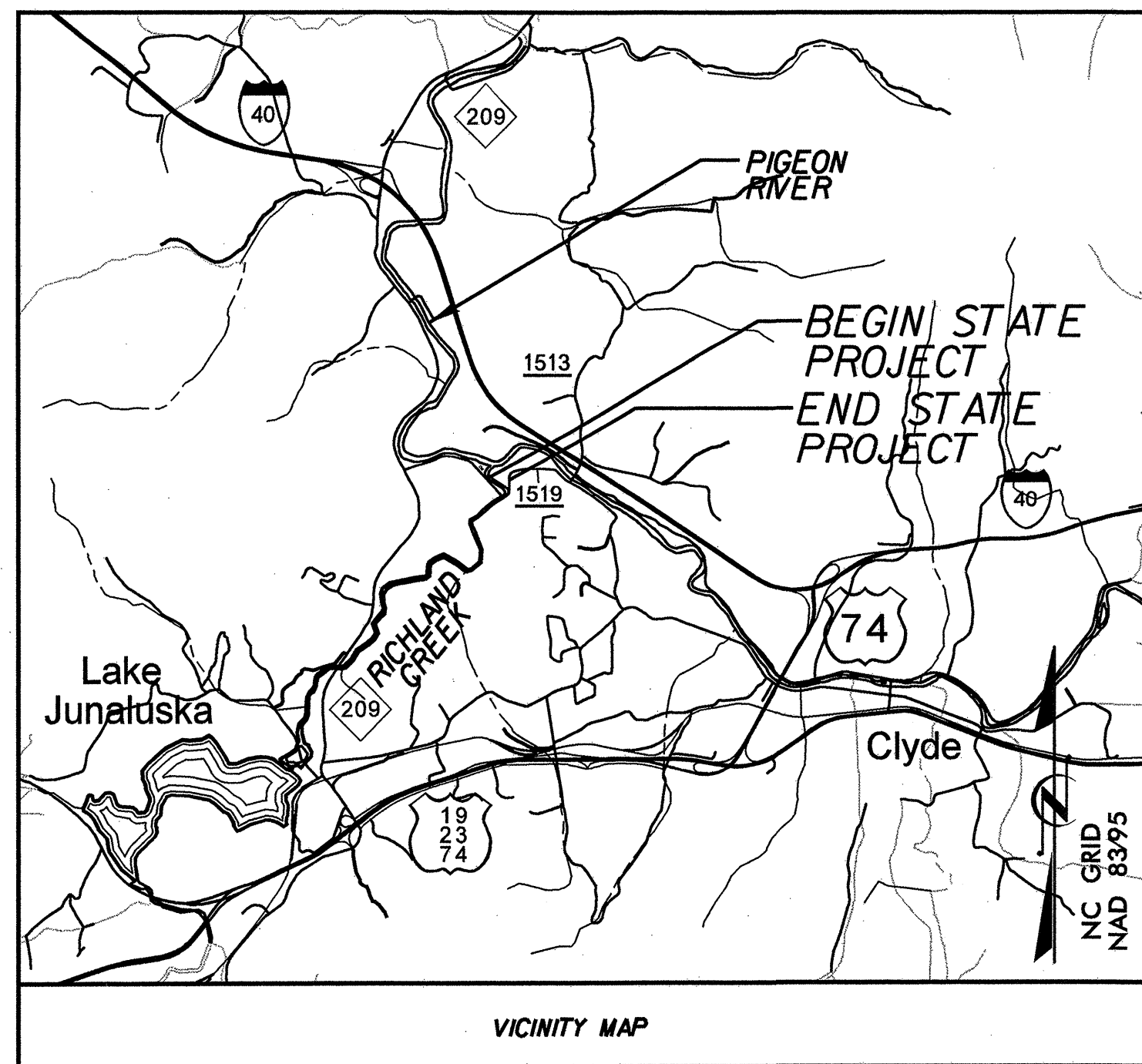


**TIP PROJECT: B-4144**

**CONTRACT: C201760**

SEE SHEET 1-A FOR INDEX OF SHEETS  
SEE SHEET 1-B FOR CONVENTIONAL PLAN SHEET SYMBOLS



VICINITY MAP

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

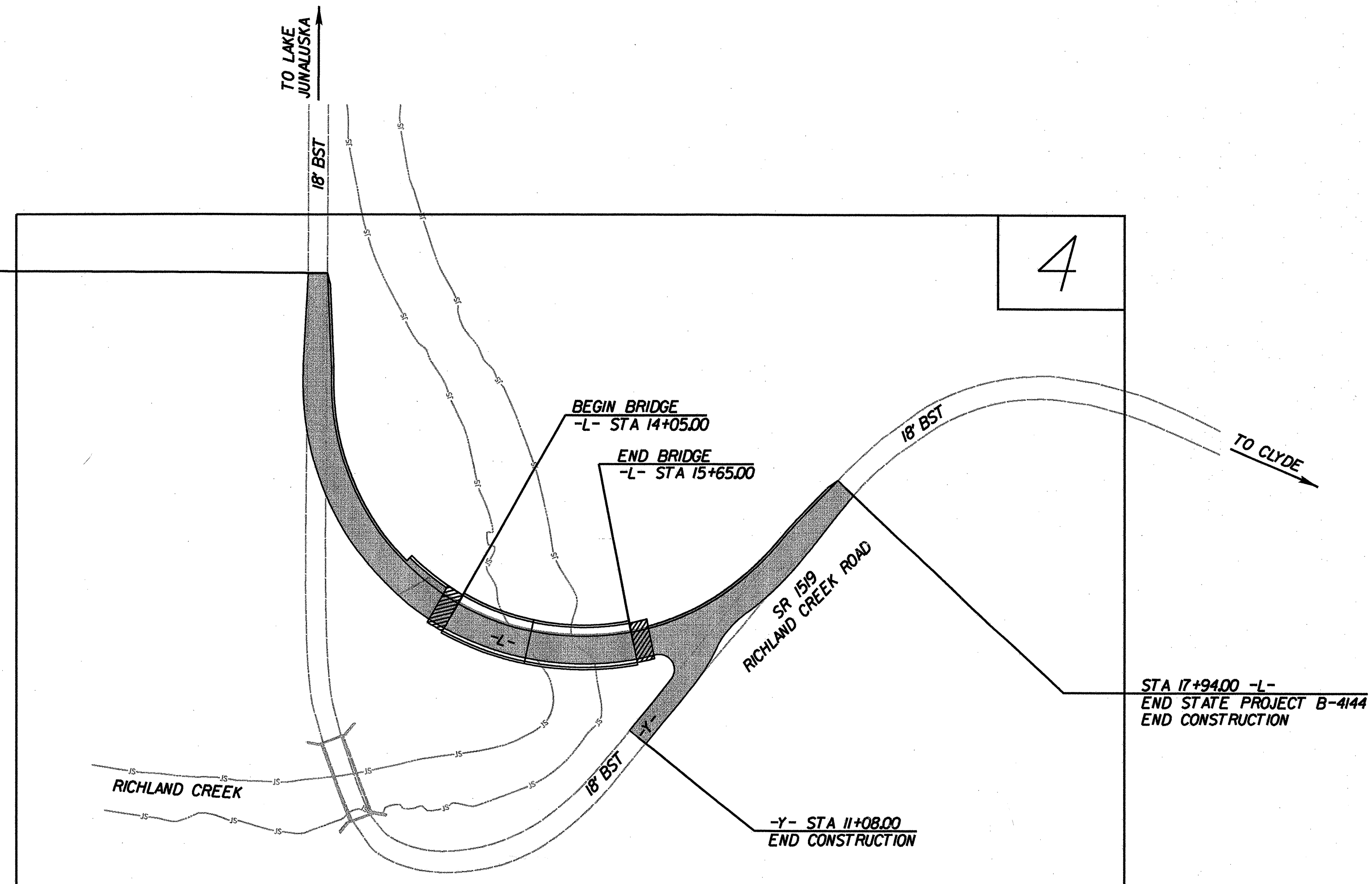
**HAYWOOD COUNTY**

**LOCATION: BRIDGE NO. 211 OVER RICHLAND CREEK  
ON SR 1519**

**TYPE OF WORK: GRADING, PAVING, DRAINAGE, AND STRUCTURE**

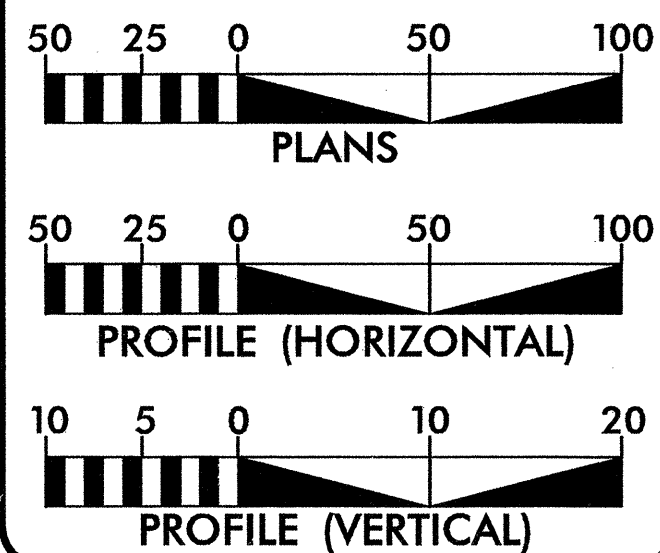
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4144	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33493.1.1	BRZ-1519(2)	P.E.	
33493.2.1	BRZ-1519(2)	RIGHT-OF-WAY	
33493.2.1	BRZ-1519(2)	UTILITY	
33493.3.1	BRZ-1519(2)	CONSTRUCTION	

STA 10+75.00 -L-  
BEGIN STATE PROJECT B-4144  
BEGIN CONSTRUCTION



NCDOT CONTACT: B.D. TAYLOR, P.E.  
PROJECT ENGINEER  
ROADWAY DESIGN UNIT

**GRAPHIC SCALES**



**DESIGN DATA**

ADT 2007 = 1,400 VPD  
ADT 2030 = 3,300 VPD  
DHV = 10%  
D = 60%  
T = 8% \*  
V = 20 mph

FUNCTIONAL CLASSIFICATION:  
LOCAL RURAL  
\* (TTST 4% + DUAL 4%)

**PROJECT LENGTH**

LENGTH OF ROADWAY TIP PROJECT B-4144 = 0.106 MILES  
LENGTH OF STRUCTURE TIP PROJECT B-4144 = 0.030 MILES  
TOTAL LENGTH OF TIP PROJECT B-4144 = 0.136 MILES

PLANS PREPARED FOR  
THE NCDOT BY:



2006 STANDARD SPECIFICATIONS

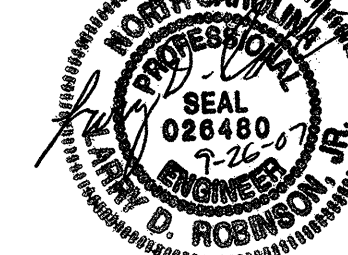
RIGHT OF WAY DATE:  
AUGUST 18, 2006

LETTING DATE:  
MAY 20, 2008

**JEFFREY W. MOORE, PE**  
PROJECT ENGINEER

**J. JASON PACE, PE**  
PROJECT DESIGN ENGINEER

HYDRAULIC ENGINEER

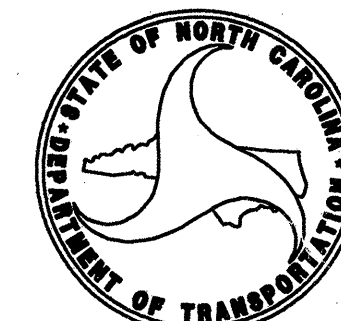


SIGNATURE:  
**JEFFREY W. MOORE**  
ROADWAY DESIGN ENGINEER

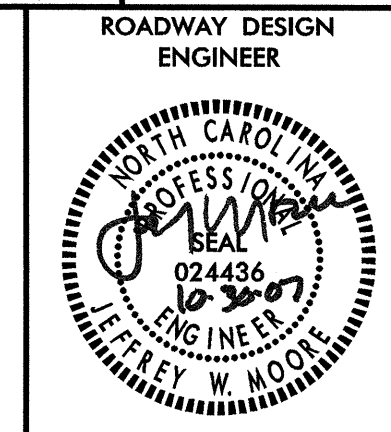


SIGNATURE:  
**J. JASON PACE**  
ROADWAY DESIGN ENGINEER

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA



*aut miller*  
STATE HIGHWAY DESIGN ENGINEER



INDEX OF SHEETS

<u>SHEET NUMBER</u>	<u>SHEET</u>
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1-C	SURVEY CONTROL SHEET
2, 2-A	TYPICAL SECTIONS, PAVEMENT SCHEDULE, AND MISCELLANEOUS DETAILS
2-B	ANCHORAGE FOR FRAMES
2-C	GUARDRAIL ANCHOR UNIT TYPE III SHOP CURVE
3	SUMMARY OF QUANTITIES
3-A	SUMMARY OF DRAINAGE QUANTITIES
3-B	SUMMARY OF GUARDRAIL, EARTHWORK SUMMARY, AND SUMMARY OF PAVEMENT REMOVAL
4	PLAN SHEET
5	PROFILE SHEET
TCP-1 THRU TCP-5	TRAFFIC CONTROL PLANS
PM-1	PAVEMENT MARKING PLAN
EC-1 THRU EC-5	EROSION CONTROL PLANS
UC-1 THRU UC-2	UTILITY CONSTRUCTION PLANS
UO-1 THRU UO-2	UTILITY BY OTHERS PLANS
X-1A	CROSS SECTION SUMMARY SHEET
X-1 THRU X-9	CROSS SECTIONS
S-1 THRU S-40	STRUCTURE PLANS

GENERAL NOTES: 2006 SPECIFICATIONS  
EFFECTIVE: 07-18-06  
REVISED: 07-18-06

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.

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.

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  
JUNALUSKA SANITARY DISTRICT  
BELLSOUTH AND HEMC POWER  
TOWN OF WAYNESVILLE WATER  
ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

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

2006 ROADWAY STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated July 18, 2006 are applicable to this project and by reference hereby are considered a part of these plans:

STD. NO.	TITLE
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
300.01	Method of Pipe Installation - Method 'A'
310.10	Driveway Pipe Construction
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
654.01	Pavement Repairs
815.03	Pipe Underdrain and Blind Drain
840.00	Concrete Base Pad for Drainage Structures
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
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
876.02	Guide for Rip Rap at Pipe Outlets
876.03	Drainage Ditches with Class 'A' Rip Rap
876.04	Drainage Ditches with Class 'B' Rip Rap

EFF. 07-18-06  
REV. 01-02-07



Note: Not to Scale

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

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO. B-4144	SHEET NO. 1-B
---------------------------------	------------------

# CONVENTIONAL PLAN SHEET SYMBOLS

### BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○
Property Corner	⊠
Property Monument	⊠
Parcel/Sequence Number	①②③
Existing Fence Line	× × ×
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	⊠
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	---WLB---
Proposed Wetland Boundary	---WLB---
Existing High Quality Wetland Boundary	---HQ WLB---
Existing Endangered Animal Boundary	---EAB---
Existing Endangered Plant Boundary	---EPB---

### 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	-----
River Basin Buffer	---RBB---
Flow Arrow	←
Disappearing Stream	→
Spring	○
Swamp Marsh	⊠
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	-----
Proposed Temporary Construction Easement	-----
Proposed Temporary Drainage Easement	-----
Proposed Permanent Drainage Easement	-----
Proposed Permanent Utility Easement	-----

### ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	-----
Proposed Slope Stakes Fill	-----
Proposed Wheel Chair Ramp	-----
Curb Cut for Future Wheel Chair 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	-----
Designated U/G Power Line (S.U.E.*)	-----

### 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	-----
Designated U/G Telephone Cable (S.U.E.*)	-----
Recorded U/G Telephone Conduit	-----
Designated U/G Telephone Conduit (S.U.E.*)	-----
Recorded U/G Fiber Optics Cable	-----
Designated U/G Fiber Optics Cable (S.U.E.*)	-----

### WATER:

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

### TV:

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

### GAS:

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

### SANITARY SEWER:

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

### MISCELLANEOUS:

Utility Pole	⊙
Utility Pole with Base	⊠
Utility Located Object	⊙
Utility Traffic Signal Box	⊠
Utility Unknown U/G Line	-----
U/G Tank; Water, Gas, Oil	⊠
A/G Tank; Water, Gas, Oil	⊠
U/G Test Hole (S.U.E.*)	⊙
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

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9/25/2007

# SURVEY CONTROL SHEET B-4144

BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	BL-1		678211.7170	826974.9330	2532.38	OUTSIDE PROJECT LIMITS	
2	BL-2		678061.4160	826827.6030	2523.23	18+69.69	13.44 LT
3	BL-3		677540.8070	826815.4660	2509.33	14+83.33	199.07 RT
4	BL-4		677536.7600	826615.8950	2505.79	13+73.08	145.98 RT
5	BL-5		678024.1106	826228.3829	2498.73	OUTSIDE PROJECT LIMITS	
6	BL-6		678492.2300	825809.6440	2498.68	OUTSIDE PROJECT LIMITS	

\*\*\*\*\*  
 BM1 ELEVATION = 2543.70  
 N 678155 E 826957  
 L STATION 20+32  
 S 36° 11' 27.2" E DIST 30.16  
 8 INCH SPIKE SET IN TOP OF 15 INCH  
 MAPLE STUMP  
 \*\*\*\*\*

\*\*\*\*\*  
 BM2 ELEVATION = 2506.57  
 N 677448 E 826676  
 L STATION 14+01 240 RIGHT  
 8 INCH SPIKE SET IN BASE OF 60 INCH  
 WILLOW TREE  
 \*\*\*\*\*

\*\*\*\*\*  
 BM3 ELEVATION = 2501.78  
 N 677888 E 826350  
 L STATION 10+21 18 LEFT  
 8 INCH SPIKE SET IN BASE OF 52 INCH  
 DOUBLE WHITE OAK TREE  
 \*\*\*\*\*

\*\*\*\*\*  
 BM4 ELEVATION = 2500.02  
 N 678473 E 825847  
 L STATION 18+95 1075 LEFT  
 8 INCH SPIKE SET IN BASE OF 36 INCH  
 WILD CHERRY TREE  
 \*\*\*\*\*

NCDOT BASELINE STATION B4144-BL6  
 LOCALIZED PROJECT COORDINATES  
 N = 678492.230  
 E = 825809.644  
 ELEV. = 2498.68'

NCDOT MONUMENT (B4144 GPS-102)  
 LOCALIZED PROJECT COORDINATES  
 N = 678219.529  
 E = 826034.808  
 ELEV. = 2497.47'

NCDOT BASELINE STATION B4144-BL5  
 LOCALIZED PROJECT COORDINATES  
 N = 678024.111  
 E = 826228.383  
 ELEV. = 2498.73'

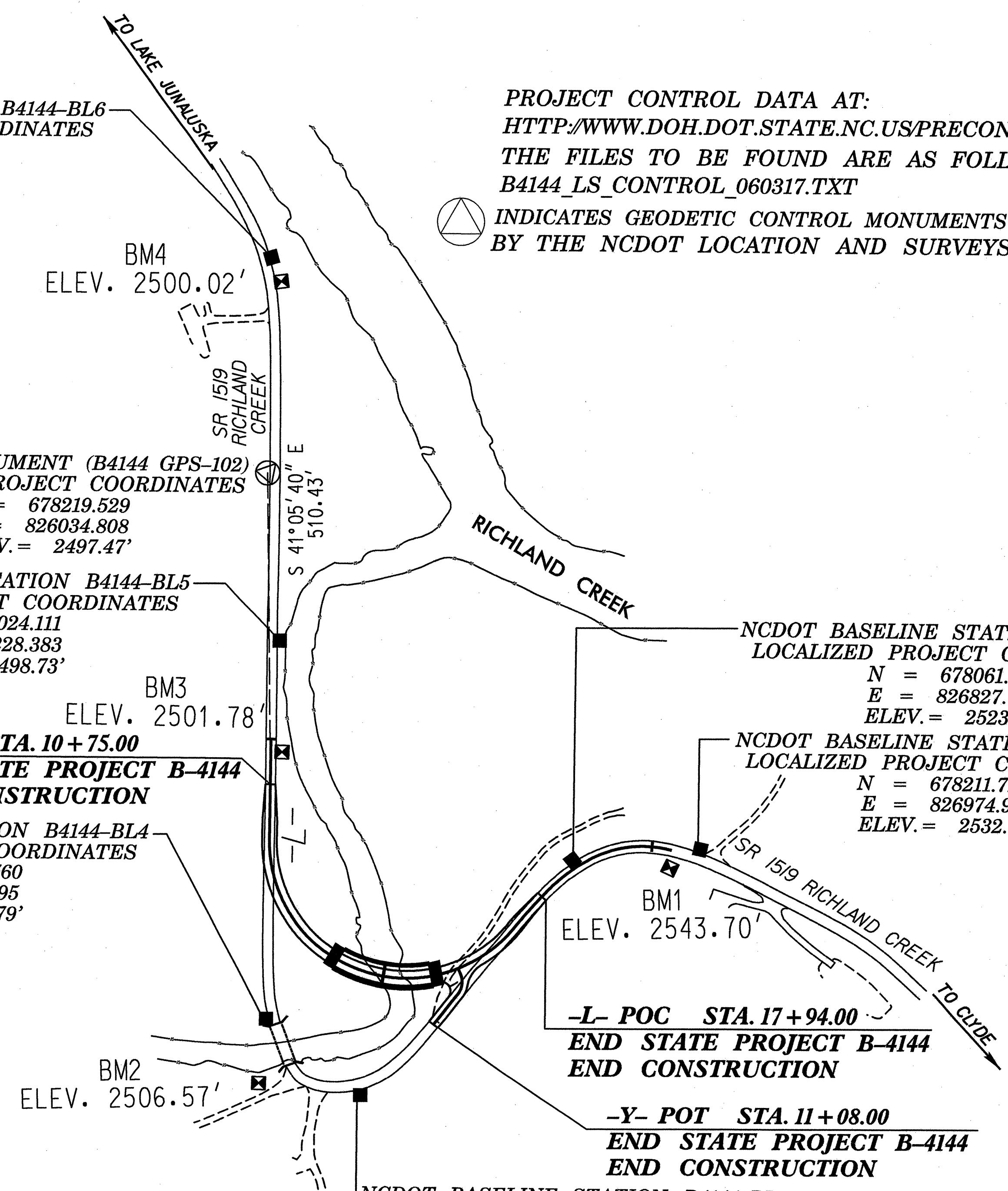
**-L- POT STA. 10+75.00**  
**BEGIN STATE PROJECT B-4144**  
**BEGIN CONSTRUCTION**

NCDOT BASELINE STATION B4144-BL4  
 LOCALIZED PROJECT COORDINATES  
 N = 677536.760  
 E = 826615.895  
 ELEV. = 2505.79'

NCDOT BASELINE STATION B4144-BL2  
 LOCALIZED PROJECT COORDINATES  
 N = 678061.416  
 E = 826827.603  
 ELEV. = 2523.23'

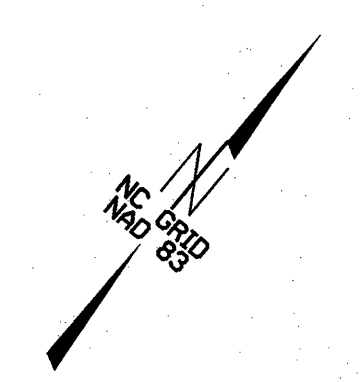
NCDOT BASELINE STATION B4144-BL1  
 LOCALIZED PROJECT COORDINATES  
 N = 678211.7170  
 E = 826974.933  
 ELEV. = 2532.38'

NCDOT BASELINE STATION B4144-BL3  
 LOCALIZED PROJECT COORDINATES  
 N = 677540.807  
 E = 826815.466  
 ELEV. = 2509.33'



PROJECT CONTROL DATA AT:  
[HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.doh.dot.state.nc.us/preconstruct/highway/location/project/)  
 THE FILES TO BE FOUND ARE AS FOLLOWS:  
 B4144\_LS\_CONTROL\_060317.TXT

INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.



## DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4144 GPS-102" WITH NAD 1983 STATE PLANE GRID COORDINATES OF NORTHING: 678219.529(±) EASTING: 826034.808(±) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99976475 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4144 GPS-102" TO -L- STATION 10+75.00 IS S 41°05'40" E 510.43'

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

NOTE: DRAWING NOT TO SCALE

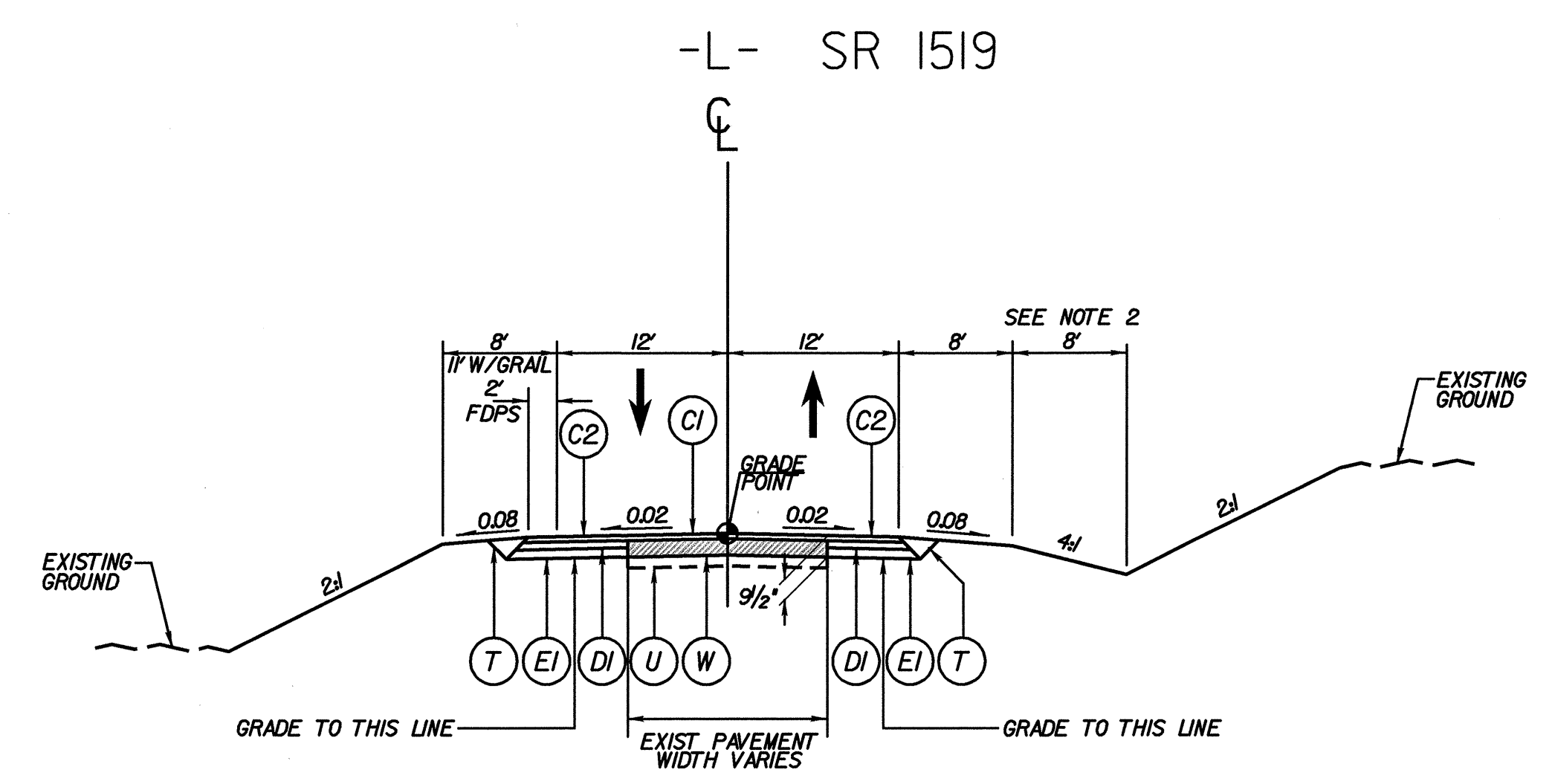
PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.  
 INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL ESTABLISHED USING NCDOT MONUMENT (B4144-GPS-102)

R:\010362\Roadway\Pro\B-4144\_rj\_tsh.dgn 9/25/2007



### PAVEMENT SCHEDULE

<b>C1</b>	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
<b>C2</b>	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
<b>C3</b>	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1/2" IN DEPTH OR GREATER THAN 2" IN DEPTH.
<b>D1</b>	PROP. APPROX. 2 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
<b>D2</b>	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2 1/2" OR GREATER THAN 4" DEPTH.
<b>E1</b>	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
<b>E2</b>	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" OR GREATER THAN 5 1/2" DEPTH.
<b>R</b>	PROPOSED SHOULDER BERM GUTTER
<b>T</b>	EARTH MATERIAL
<b>U</b>	EXISTING PAVEMENT
<b>W</b>	VARIABLE DEPTH ASPHALT PAVEMENT (SEE DETAIL WITHIN SHEET)



#### TYPICAL SECTION NO. 1

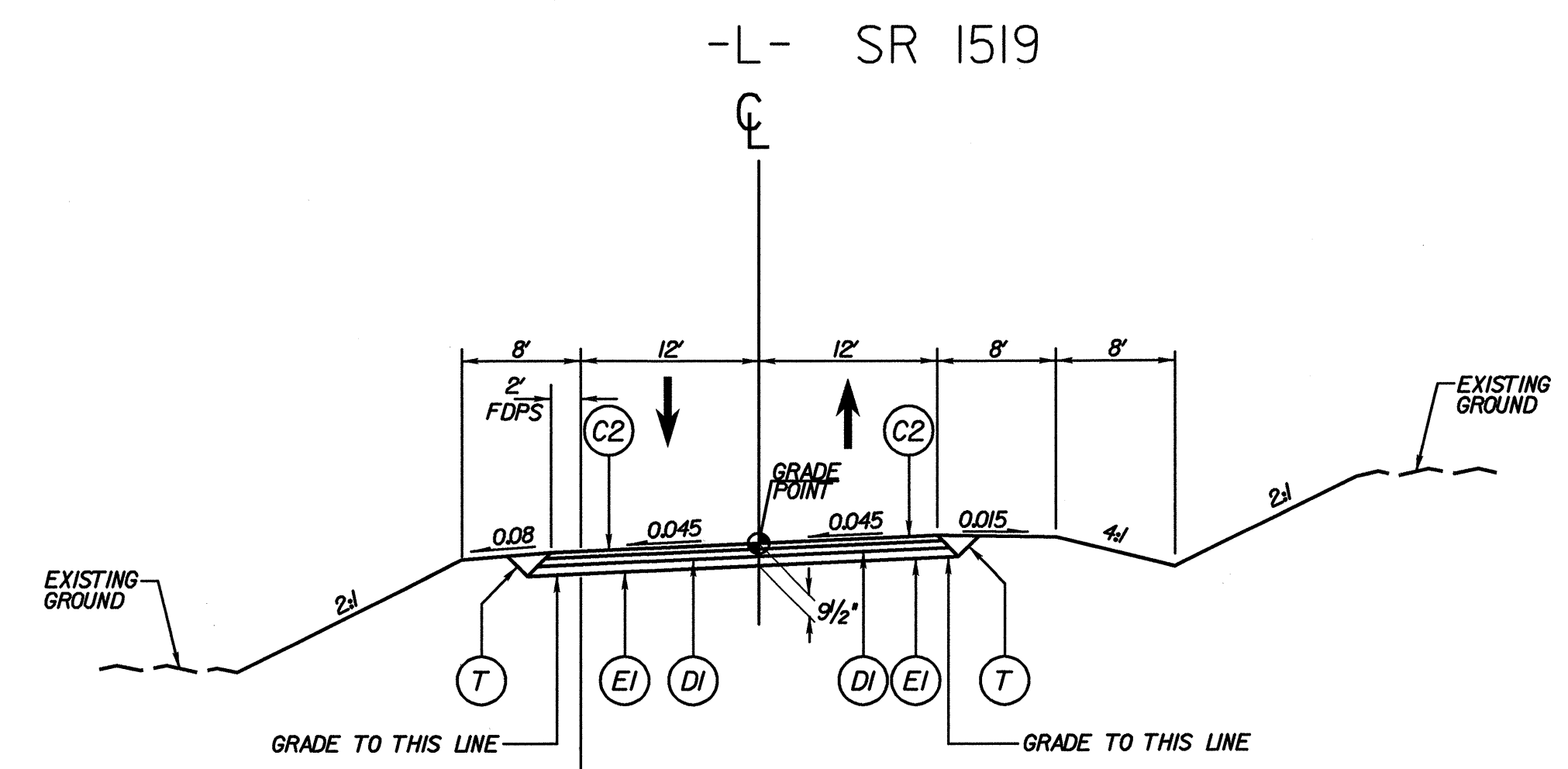
-L- STA 10+75.00 TO STA 12+44.00  
 -L- STA 16+24.00 TO STA 17+94.00

NOTE 1:  
 SAWCUT AND REMOVE EXISTING ASPHALT PAVEMENT AND PROVIDE 1' MINIMUM WIDTH OF FULL DEPTH PAVEMENT

NOTE 2:  
 USE 4' FRONT SLOPE FROM -L- STA 16+50 TO STA 17+94 (RT)

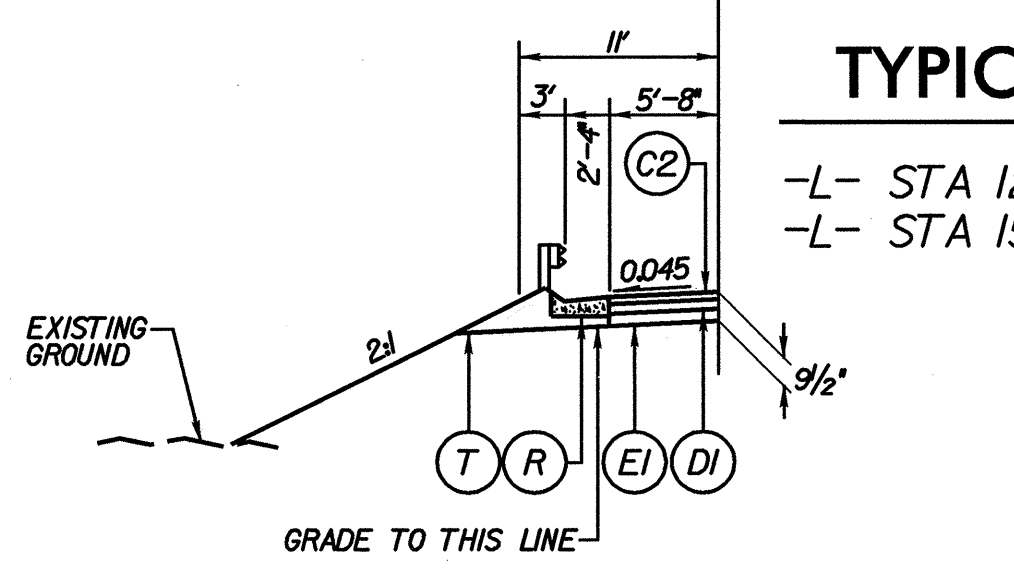
NOTE 3:  
 MILL NOTCH TO KEY-IN S9.5B FROM -L- STA 10+75.00 TO STA 11+25.00 AND FROM -L- STA 17+69.00 TO STA 17+94.00

NOTE 4: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE INDICATED



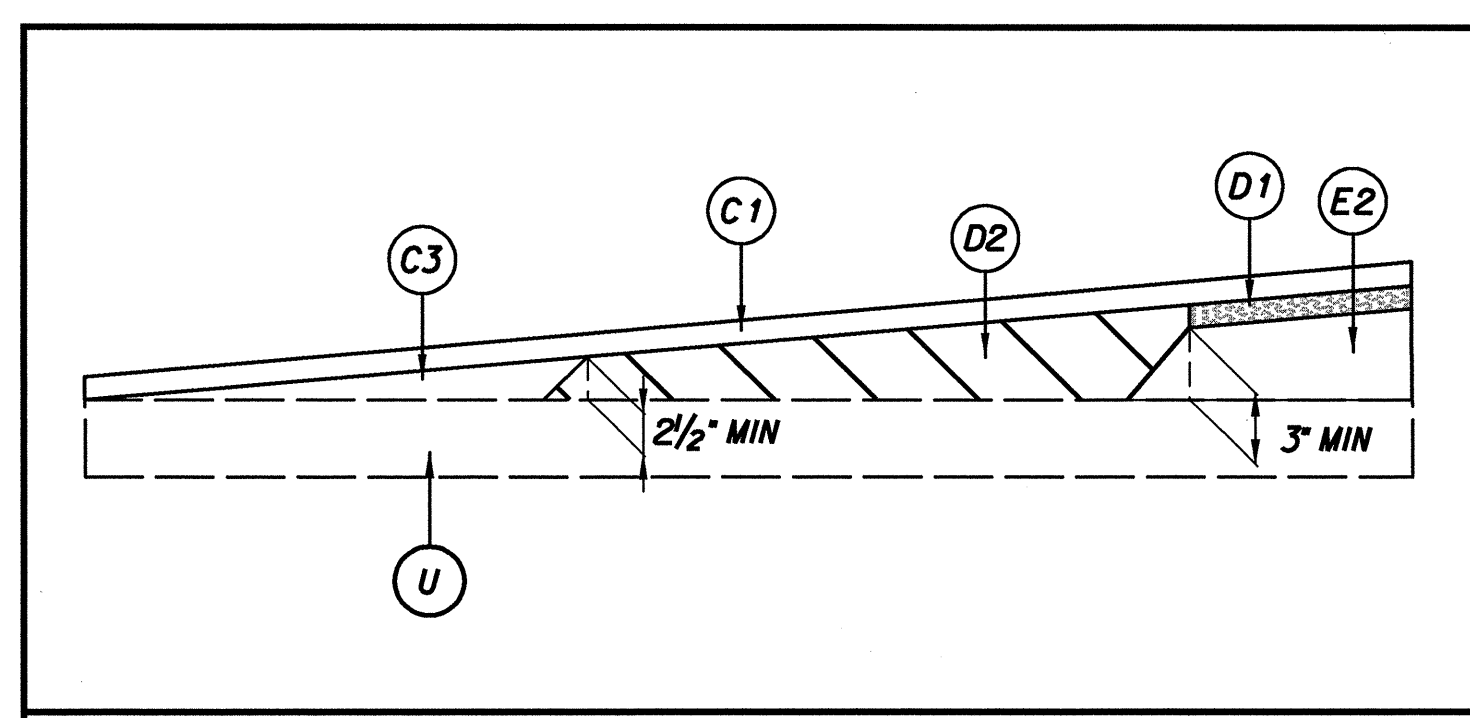
#### TYPICAL SECTION NO. 2

-L- STA 12+44.00 TO STA 14+05.00 (BEGIN BRIDGE)  
 -L- STA 15+65.00 (END BRIDGE) TO STA 16+24.00

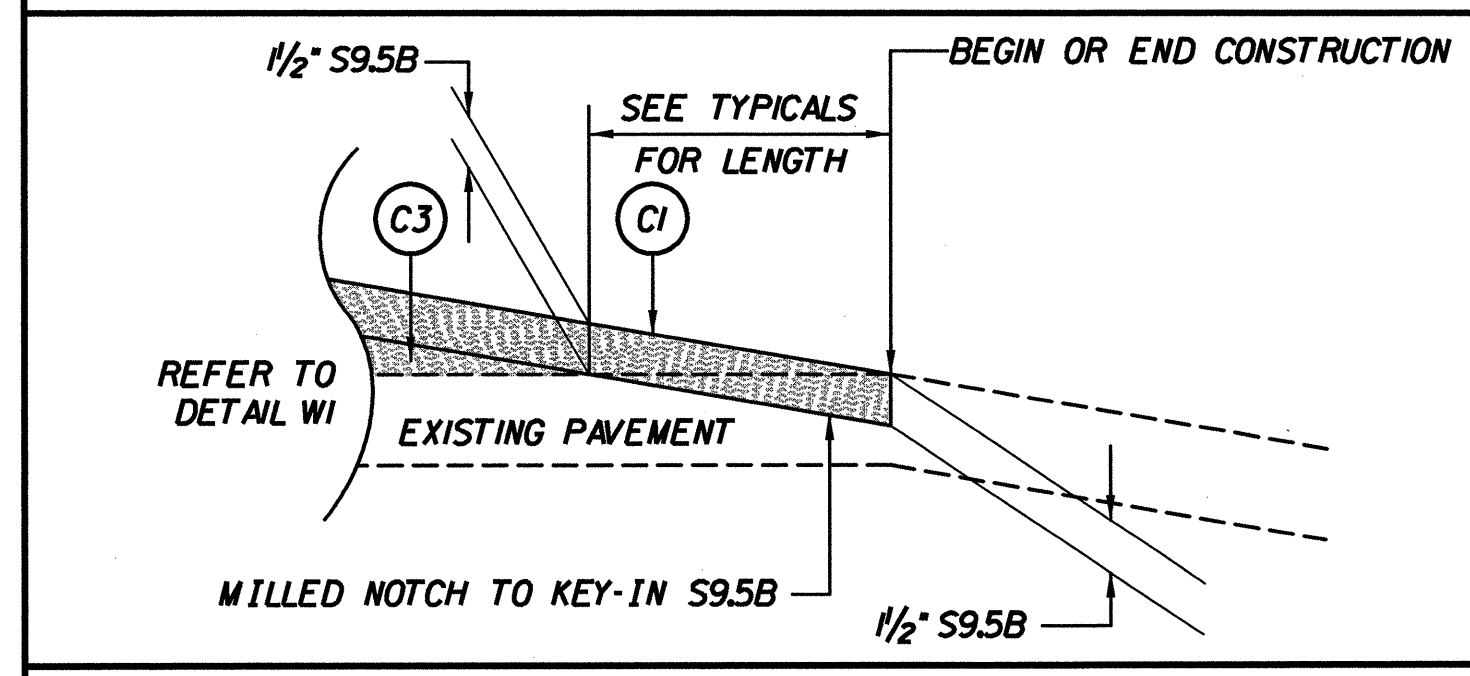


#### TYPICAL SECTION NO. 2A

-L- STA 13+45.25 TO STA 13+88.75 (LT)



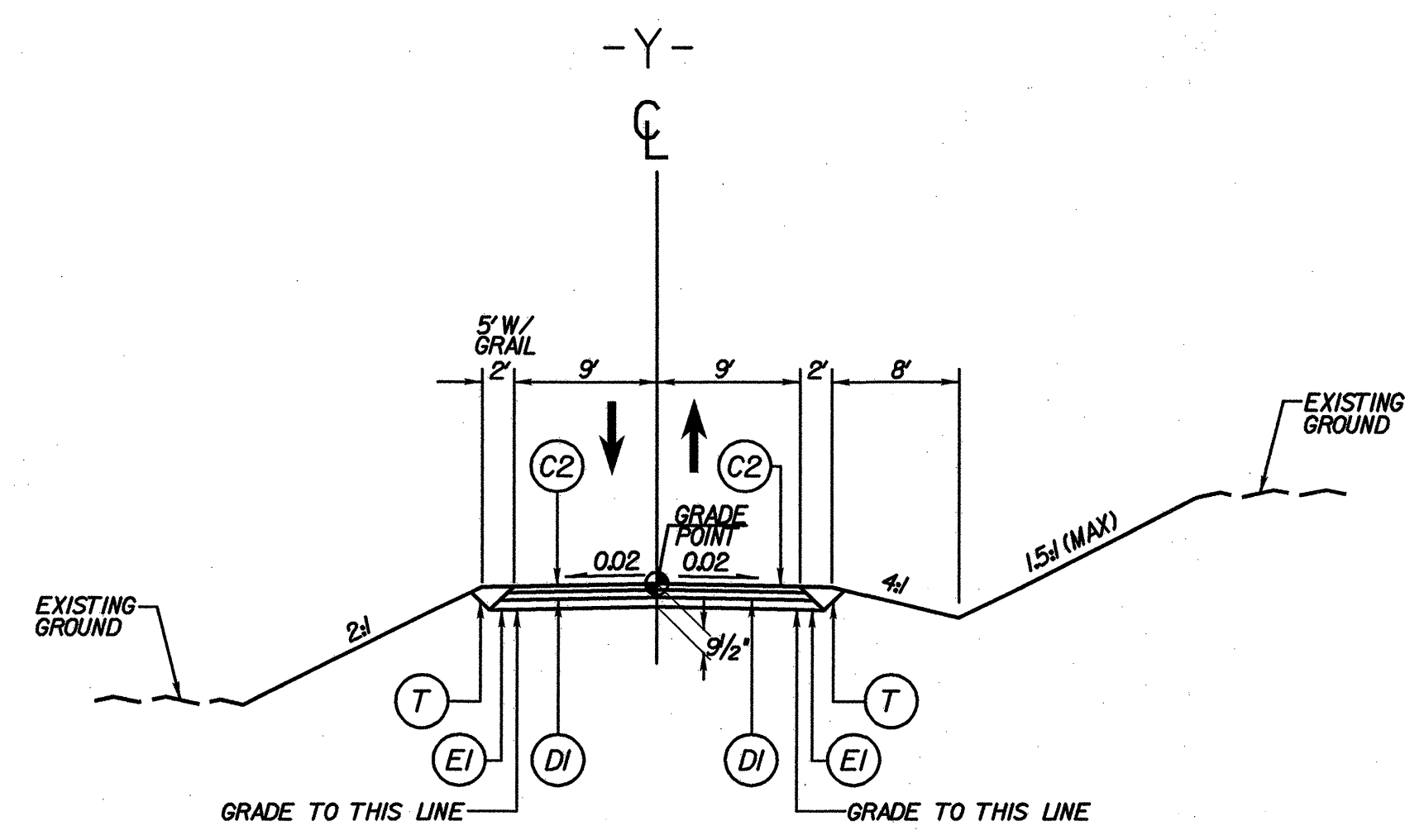
#### DETAIL W1 SHOWING METHOD OF WEDGING



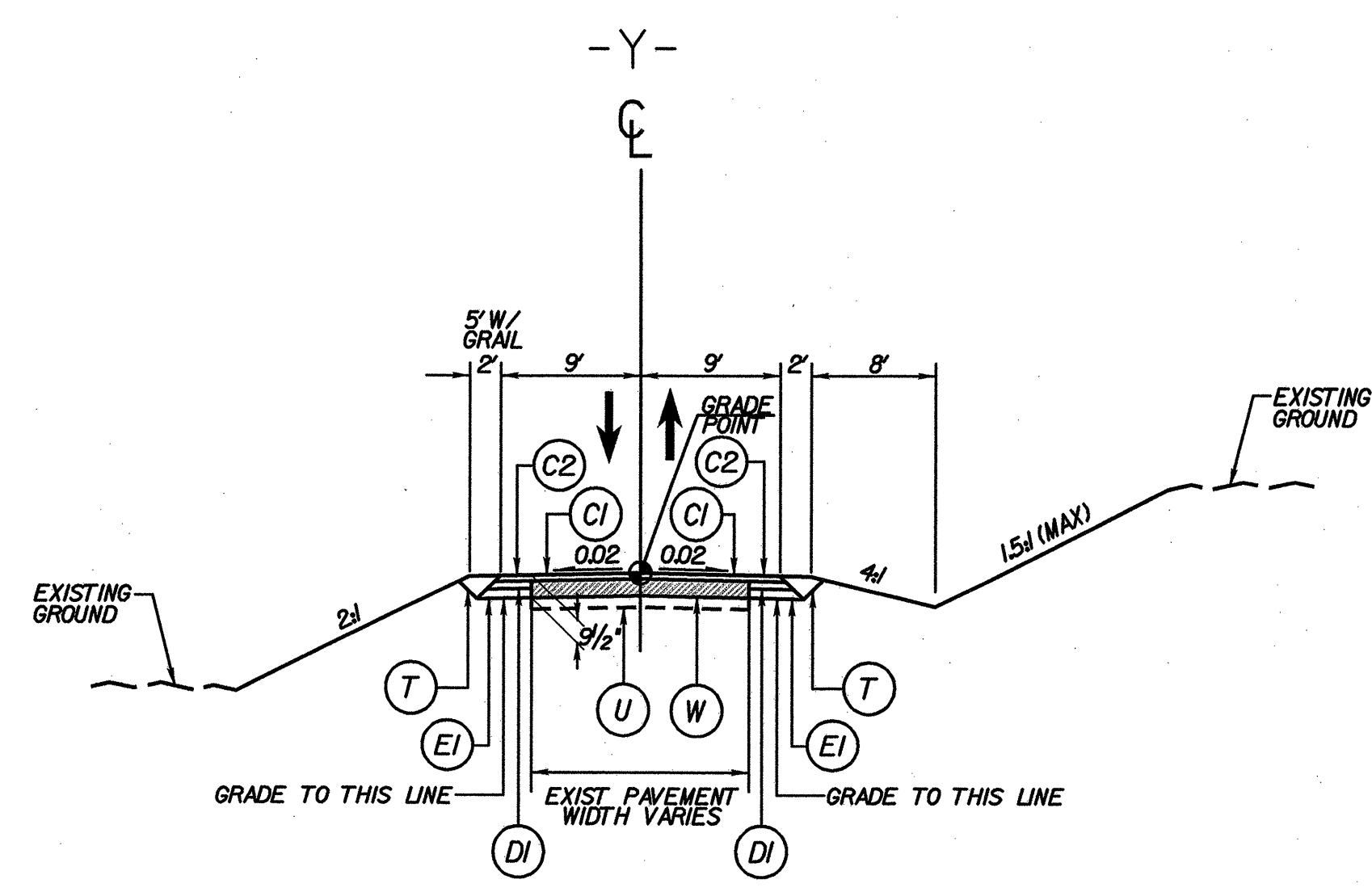
#### DETAIL W2 SHOWING TIE-INS AT PROJECT TERMINI

Kimley-Horn  
and Associates, Inc.  
P.O. BOX 33068  
RALEIGH, N.C. 27636-3068

PROJECT REFERENCE NO. B-4144	SHEET NO. 2-A
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER



**TYPICAL SECTION NO. 3**  
-Y- STA 10+12.00 TO STA 10+52.00



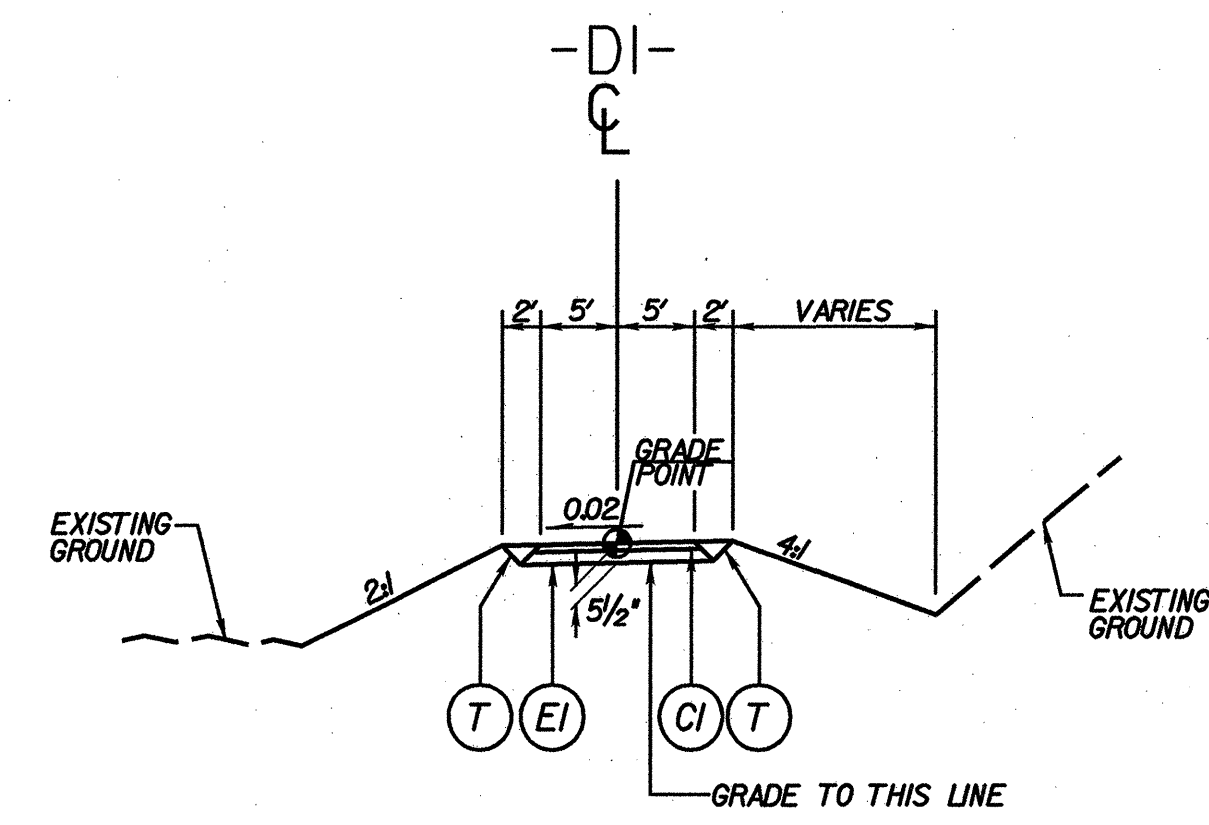
**TYPICAL SECTION NO. 4**  
-Y- STA 10+52.00 TO STA 11+08.00

NOTE 1:  
SAWCUT AND REMOVE EXISTING ASPHALT PAVEMENT AND PROVIDE 1' MINIMUM WIDTH OF FULL DEPTH PAVEMENT

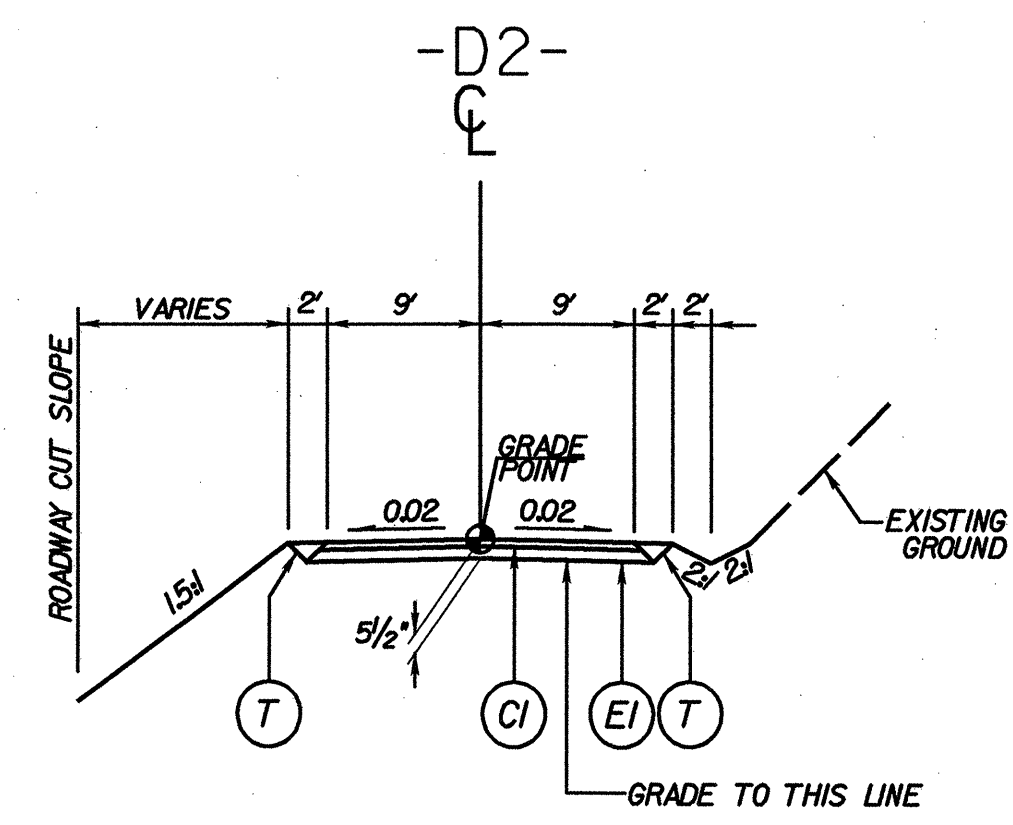
NOTE 2:  
MILL NOTCH TO KEY-IN S9.5B FROM -Y- STA 10+83.00 TO STA 11+08.00

**PAVEMENT SCHEDULE**

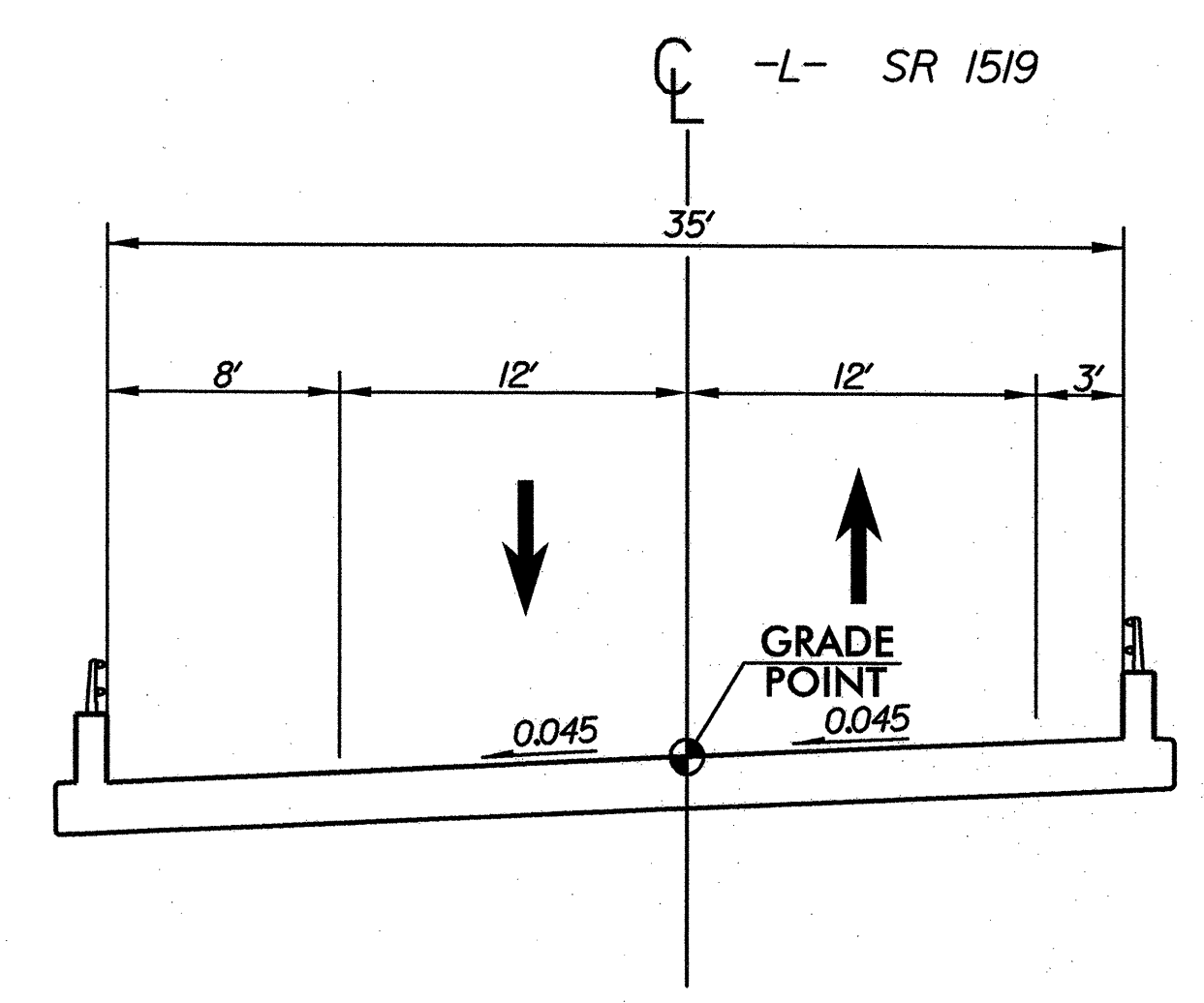
C1	1/2" S9.5B
C2	3" S9.5B
DI	2 1/2" 119.0B
EI	4" B25.0B
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VARIABLE DEPTH ASPHALT PAVEMENT



**TYPICAL SECTION NO. 5**  
-DI- STA 10+14.00 TO STA 12+30.00



**TYPICAL SECTION NO. 6**  
-D2- STA 10+12.30 TO STA 10+88.00



**BRIDGE TYPICAL SECTION NO. 1**

**DESIGN DATA**

ADT 2007	=	1,400 VPD
ADT 2030	=	3,300 VPD
DHV	=	10%
D	=	60%
TTST	=	4%
DUAL	=	4%
V	=	20 mph

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STATE OF  
NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

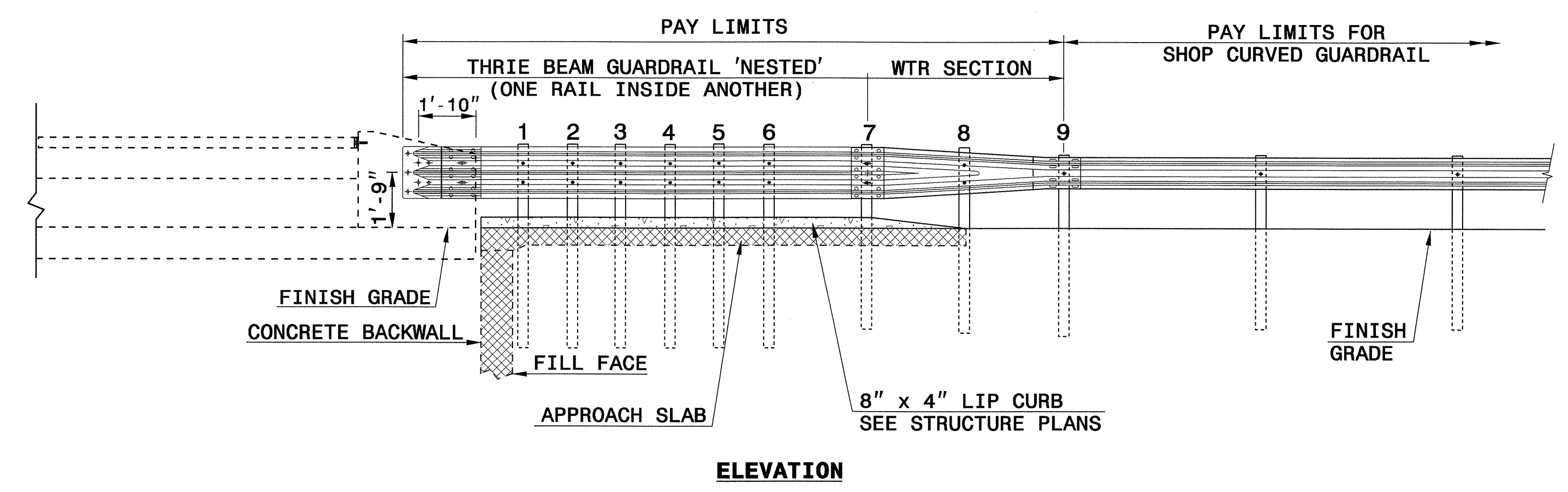
ENGLISH DETAIL DRAWING FOR  
**TYPE III - SHOP CURVED  
STRUCTURE ANCHOR UNIT**

SHEET 1 OF 1  
**TYPE III SC**

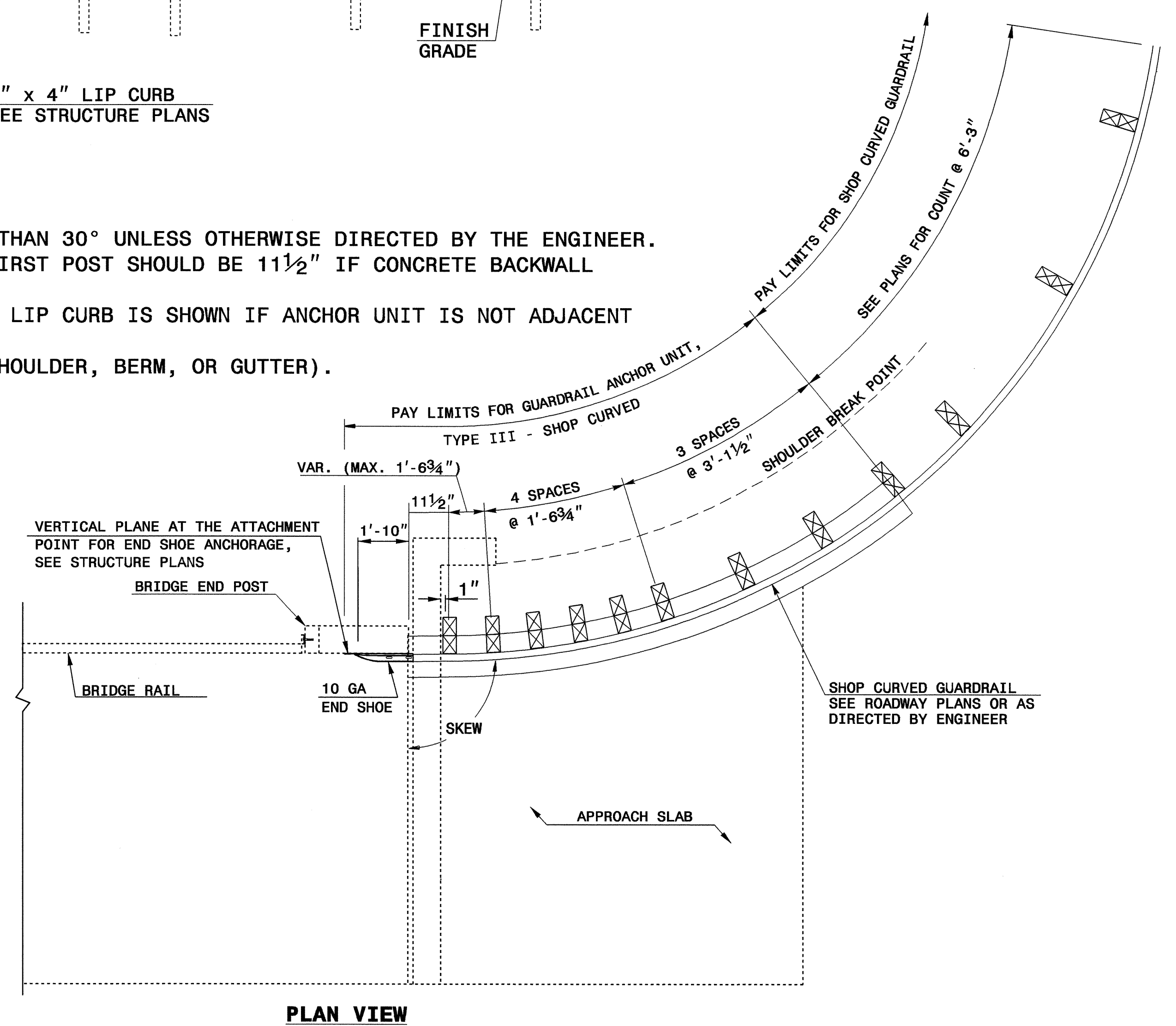
STATE OF  
NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR  
**TYPE III - SHOP CURVED  
STRUCTURE ANCHOR UNIT**

SHEET 1 OF 1  
**TYPE III SC**

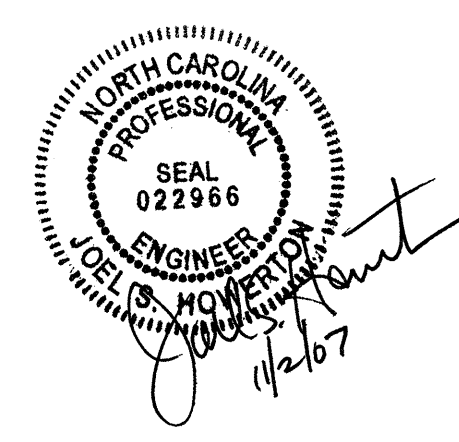


**NOTE:**  
 \*\*POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.  
 \*THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11½" IF CONCRETE BACKWALL IS NOT PRESENT.  
 -SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" x 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.  
 -MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).  
 -USE NO STEEL POSTS WITHIN THE GUARDRAIL ANCHOR UNIT LIMITS.  
 -LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.  
 -SEE STANDARD 862.03 SHEET 4 FOR POST SECTIONS 1 THRU 9.



SEE ROADWAY PLANS FOR END TREATMENT

**GUARDRAIL ANCHOR UNIT, TYPE III - SHOP CURVED  
FOR ATTACHMENT TO RAIL ON BRIDGE**



**DESIGN SERVICES UNIT  
STANDARDS AND SPECIAL DESIGN**  
 Office 919-250-4128 FAX 919-250-4119

**SEE PLATE FOR TITLE**

ORIGINAL BY: E.E. WARD DATE: 4-4-02  
 MODIFIED BY: *[Signature]* DATE: *[Signature]*  
 CHECKED BY: *[Signature]* DATE: 11/22/07  
 FILE SPEC.: ward:\usr\details\stand\862stds\typeiiisc.dgn

5/14/99



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C201760

ItemNumber	Sec #	Quantity	Unit	Description
000100000-N	800	Lump Sum		MOBILIZATION
000400000-N	801	Lump Sum		CONSTRUCTION SURVEYING
004300000-N	226	Lump Sum		GRADING
005000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB-BING
005700000-E	226	10	CY	UNDERCUT EXCAVATION
008000000-E	SP	250	TON	CLASS IV SUBGRADE STABILIZATION
019500000-E	265	250	CY	SELECT GRANULAR MATERIAL
019600000-E	270	500	SY	FABRIC FOR SOIL STABILIZATION
031800000-E	300	22	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRS
034500000-E	310	44	LF	24" SIDE DRAIN PIPE
036600000-E	310	20	LF	15" RC PIPE CULVERTS, CLASS III
122000000-E	545	200	TON	INCIDENTAL STONE BASE
133000000-E	607	150	SY	INCIDENTAL MILLING
148900000-E	610	350	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
149800000-E	610	150	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0B
151900000-E	610	290	TON	ASPHALT CONC SURFACE COURSE, TYPE S9.5B
156000000-E	620	40	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22
169300000-E	654	5	TON	ASPHALT PLANT MIX, PAVEMENT REPAIR
202200000-E	815	12	CY	SUBDRAIN EXCAVATION
203300000-E	815	9	CY	SUBDRAIN FINE AGGREGATE
204400000-E	815	50	LF	6" PERFORATED SUBDRAIN PIPE
205500000-E	815	2	EA	6" SUBDRAIN PIPE WYES, TEES, & ELBOWS
206600000-N	815	1	EA	CONCRETE PAD FOR SUBDRAIN PIPE OUTLET
207700000-E	815	6	LF	6" OUTLET PIPE (SUBDRAINS)
ItemNumber	Sec #	Quantity	Unit	Description
228600000-N	840	1	EA	MASONRY DRAINAGE STRUCTURES
236700000-N	840	1	EA	FRAME WITH TWO GRATES, STD 840.29
255600000-E	846	44	LF	SHOULDER BERM GUTTER
303000000-E	862	200	LF	STEEL BM GUARDRAIL
304500000-E	862	37.5	LF	STEEL BM GUARDRAIL, SHOP CURVED
310500000-N	862	2	EA	STEEL BM GUARDRAIL TERMINAL SECTIONS
315000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS
319500000-N	862	1	EA	GUARDRAIL ANCHOR UNITS, TYPE AT-1
321500000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE III
327000000-N	SP	3	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
338700000-N	862	2	EA	GUARDRAIL ANCHOR UNITS, TYPE ***** TEMPORARY (AT-1)
362800000-E	876	4	TON	RIP RAP, CLASS I
364200000-E	876	65	TON	RIP RAP, CLASS A
364900000-E	876	8	TON	RIP RAP, CLASS B
365600000-E	876	535	SY	FILTER FABRIC FOR DRAINAGE
440000000-E	1110	48	SF	WORK ZONE SIGNS (STATIONARY)
440500000-E	1110	96	SF	WORK ZONE SIGNS (PORTABLE)
441000000-E	1110	30	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
442000000-N	1120	2	EA	CHANGEABLE MESSAGE SIGN
443000000-N	1130	100	EA	DRUMS
444500000-E	1145	48	LF	BARRICADES (TYPE III)
445000000-N	1150	200	HR	FLAGGER
481000000-E	1205	11,034	LF	PAINT PAVEMENT MARKING LINES (4")
485000000-E	1205	730	LF	REMOVAL OF PAVEMENT MARKING LINES (4")

ItemNumber	Sec #	Quantity	Unit	Description
491500000-E	1264	3	EA	7' U-CHANNEL POSTS
495500000-N	1264	3	EA	OBJECT MARKERS (END OF ROAD)
569130000-E	1520	298	LF	8" SANITARY GRAVITY SEWER
600000000-E	1605	775	LF	TEMPORARY SILT FENCE
600600000-E	1610	75	TON	STONE FOR EROSION CONTROL, CLASS A
600900000-E	1610	205	TON	STONE FOR EROSION CONTROL, CLASS B
601200000-E	1610	160	TON	SEDIMENT CONTROL STONE
601500000-E	1615	2.5	ACR	TEMPORARY MULCHING
601800000-E	1620	100	LB	SEED FOR TEMPORARY SEEDING
602100000-E	1620	0.5	TON	FERTILIZER FOR TEMPORARY SEEDING
602400000-E	1622	30	LF	TEMPORARY SLOPE DRAINS
602700000-N	1622	1	EA	INLET PROTECTION AT TEMPORARY SLOPE DRAINS
602900000-E	SP	725	LF	SAFETY FENCE
603000000-E	1630	955	CY	SILT EXCAVATION
603600000-E	1631	410	SY	MATTING FOR EROSION CONTROL
603700000-E	SP	15	SY	COIR FIBER MAT
603800000-E	SP	275	SY	PERMANENT SOIL REINFORCEMENT MAT
604200000-E	1632	20	LF	1/4" HARDWARE CLOTH
607000000-N	SP	4	EA	SPECIAL STILLING BASINS
607103000-E	SP	300	LF	COIR FIBER BAFFLES
607105000-E	SP	2	EA	*** SKIMMER (1-1/2")
608400000-E	1660	2.5	ACR	SEEDING & MULCHING
608700000-E	1660	1.5	ACR	MOWING
609000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
609300000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
609600000-E	1662	50	LB	SEED FOR SUPPLEMENTAL SEEDING

ItemNumber	Sec #	Quantity	Unit	Description
610800000-E	1665	1.75	TON	FERTILIZER TOPDRESSING
611400000-N	SP	2	HR	SPECIALIZED HAND MOWING
611700000-N	SP	12	EA	RESPONSE FOR EROSION CONTROL

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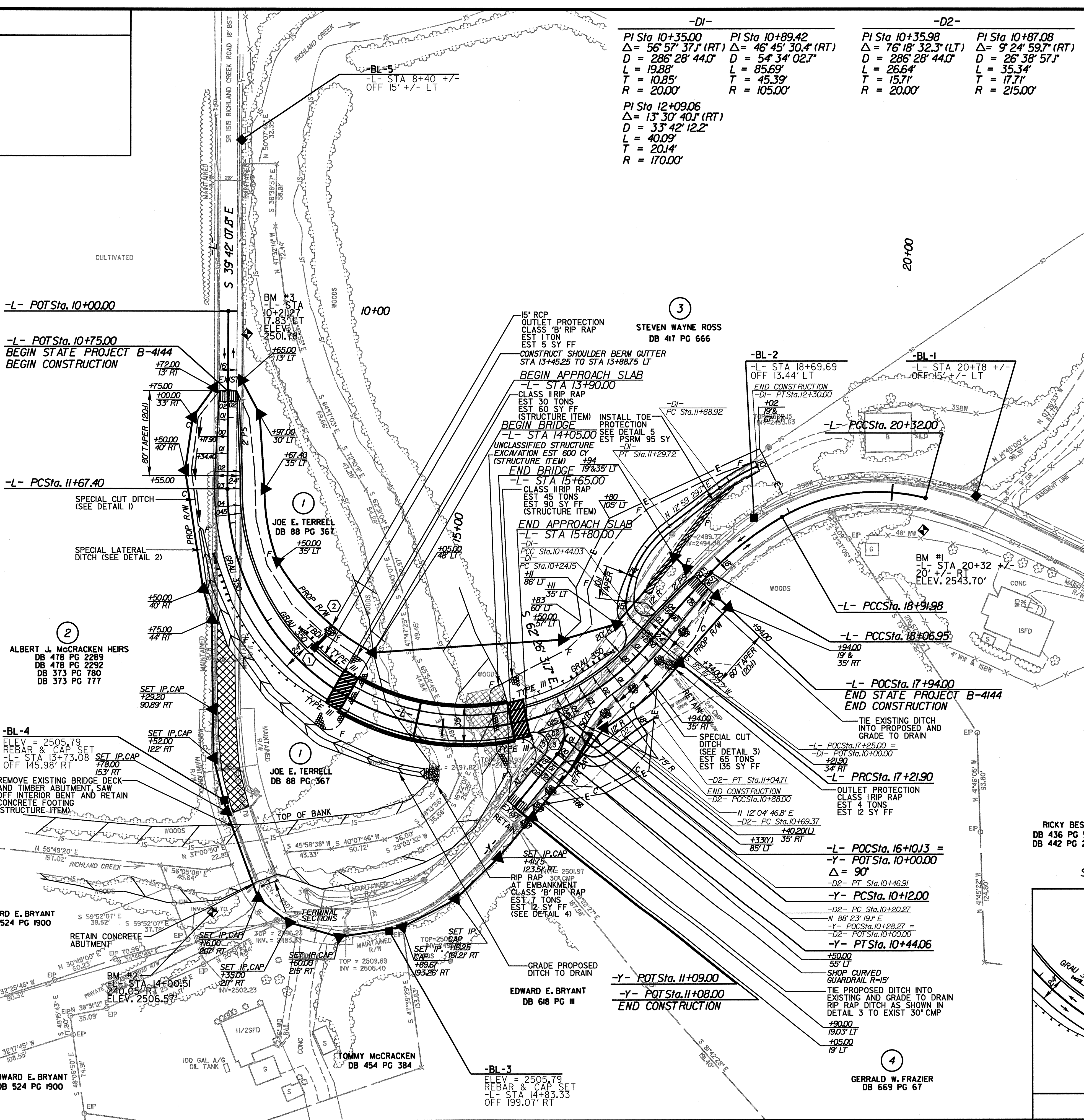
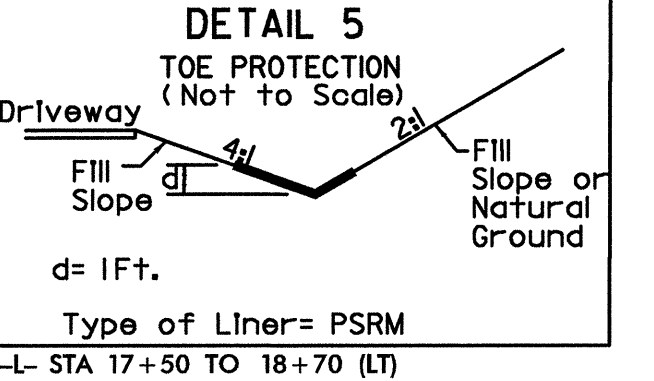
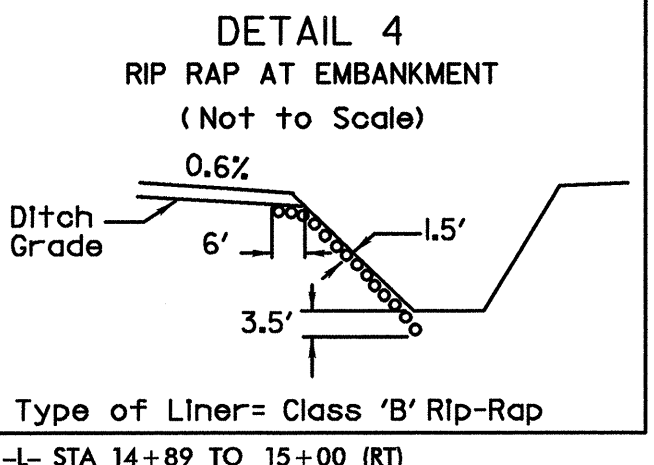
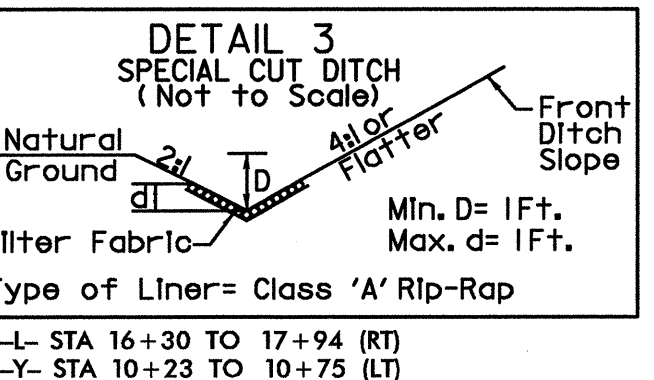
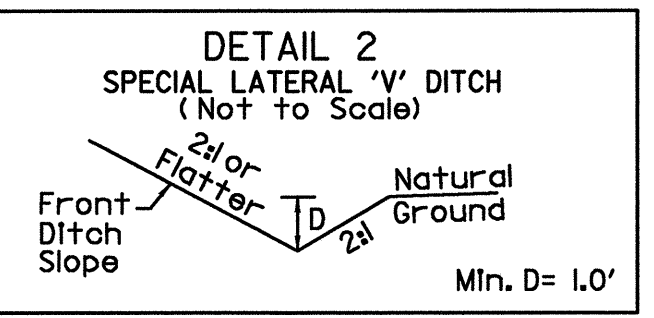
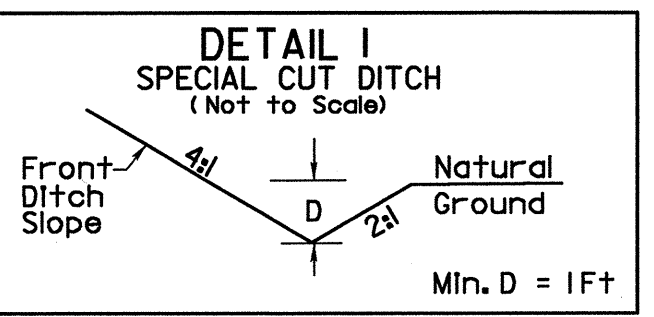


REVISIONS

PROJECT REFERENCE NO. B-4144	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
P.O. BOX 33068 RALEIGH, N.C. 27636-3068	
RIGHT-OF-WAY REV. CONST. REV.	



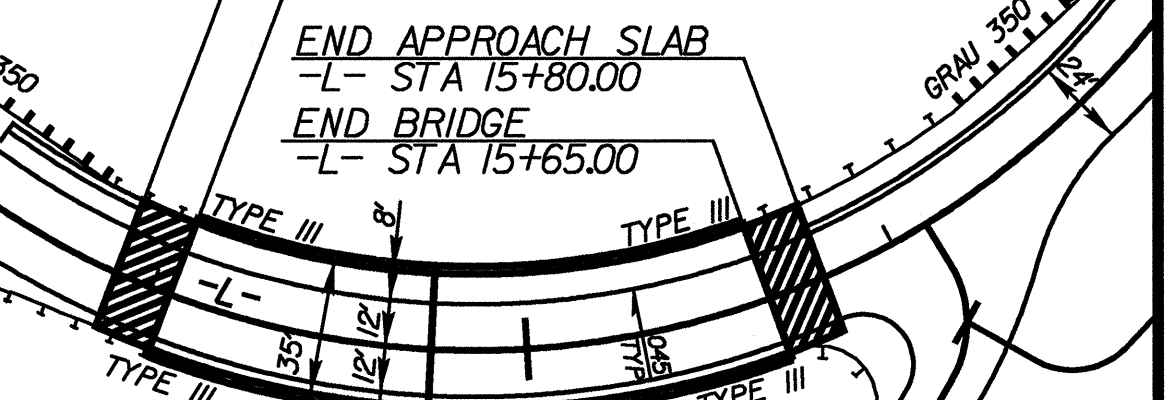
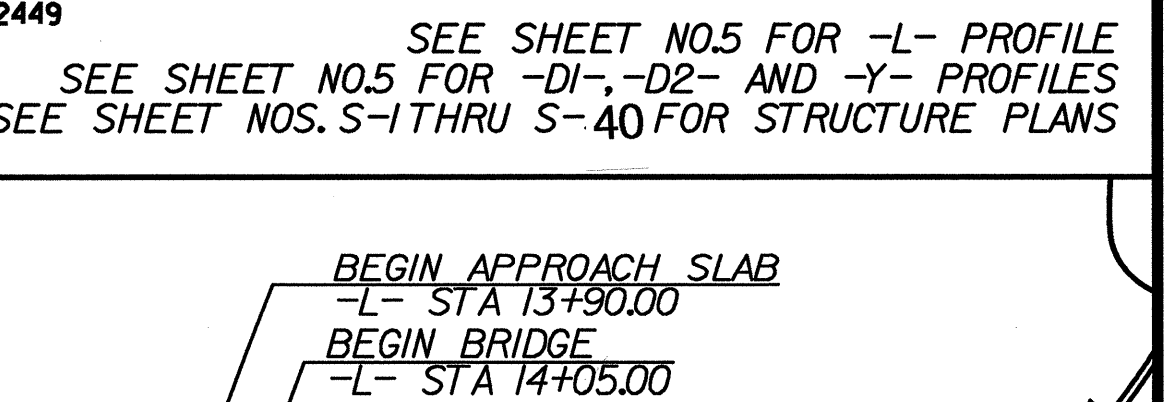
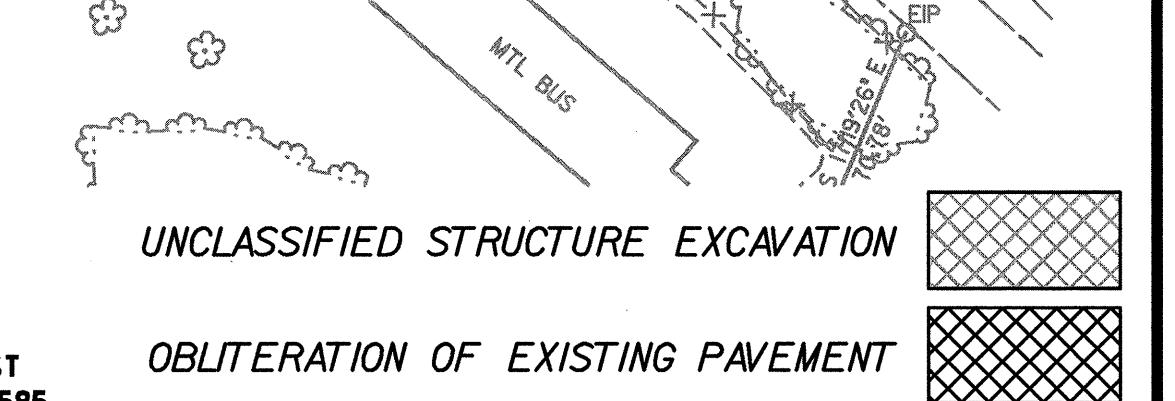
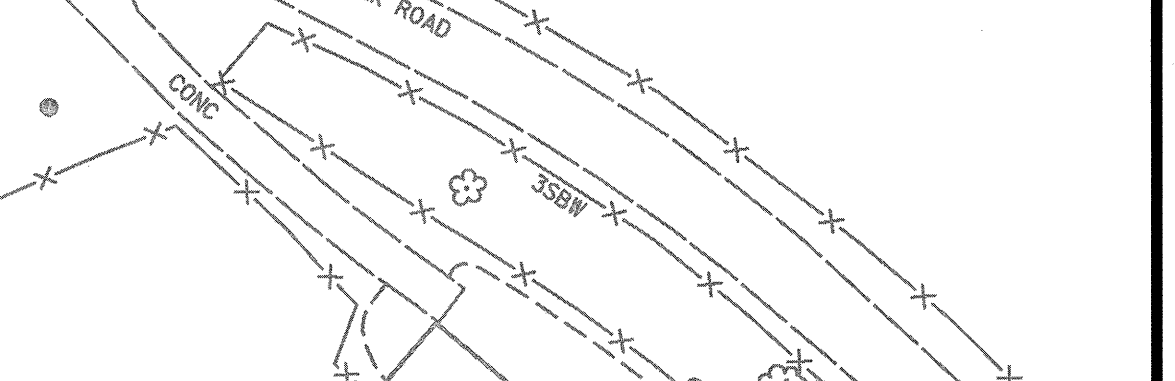
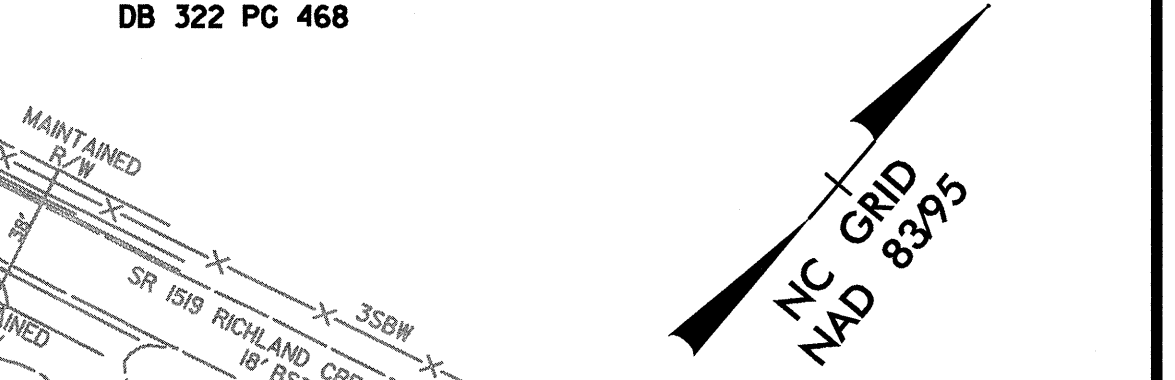
-D1-		-D2-	
PI Sta 10+35.00 Δ = 56° 57' 37.1" (RT) D = 286' 28" 44.0" L = 19.88' T = 10.85' R = 20.00'	PI Sta 10+89.42 Δ = 46° 45' 30.4" (RT) D = 54' 34" 02.7" L = 85.69' T = 45.39' R = 105.00'	PI Sta 10+35.98 Δ = 76° 18' 32.3" (LT) D = 286' 28" 44.0" L = 26.64' T = 15.71' R = 20.00'	PI Sta 10+87.08 Δ = 9° 24' 59.7" (RT) D = 26' 38" 57.1" L = 35.34' T = 17.71' R = 215.00'
PI Sta 12+09.06 Δ = 13° 30' 40.1" (RT) D = 33' 42" 12.2" L = 40.09' T = 20.14' R = 170.00'			



-L-	
PI Sta 18+06.37 Δ = 141° 12' 09.0" (LT) D = 25' 27" 53.2" L = 55.45' T = 638.97' SE = 0.045 RO = 74.25'	PI Sta 17+64.45 Δ = 4° 52' 23.2" (RT) D = 5' 43" 46.5" L = 85.05' T = 42.55' R = 1,000.00' SE = 0.060 RO = 99'
PI Sta 18+49.75 Δ = 19° 05' 54.9" (RT) D = 19' 05" 54.9" L = 85.03' T = 42.80' R = 300.00' SE = EXISTING RO = EXISTING	PI Sta 19+65.75 Δ = 44° 34' 08.5" (RT) D = 31' 49" 51.6" L = 140.02' T = 73.77' R = 180.00' SE = EXISTING RO = EXISTING

-Y-	
PI Sta 10+29.75 Δ = 61° 13' 25.8" (RT) D = 190' 59" 09.4" L = 32.06' T = 17.75' R = 30.00' SE = 0.025 RO = 30'	

-DI-	
PI Sta 10+35.00 Δ = 56° 57' 37.1" (RT) D = 286' 28" 44.0" L = 19.88' T = 10.85' R = 20.00'	PI Sta 10+89.42 Δ = 46° 45' 30.4" (RT) D = 54' 34" 02.7" L = 85.69' T = 45.39' R = 105.00'
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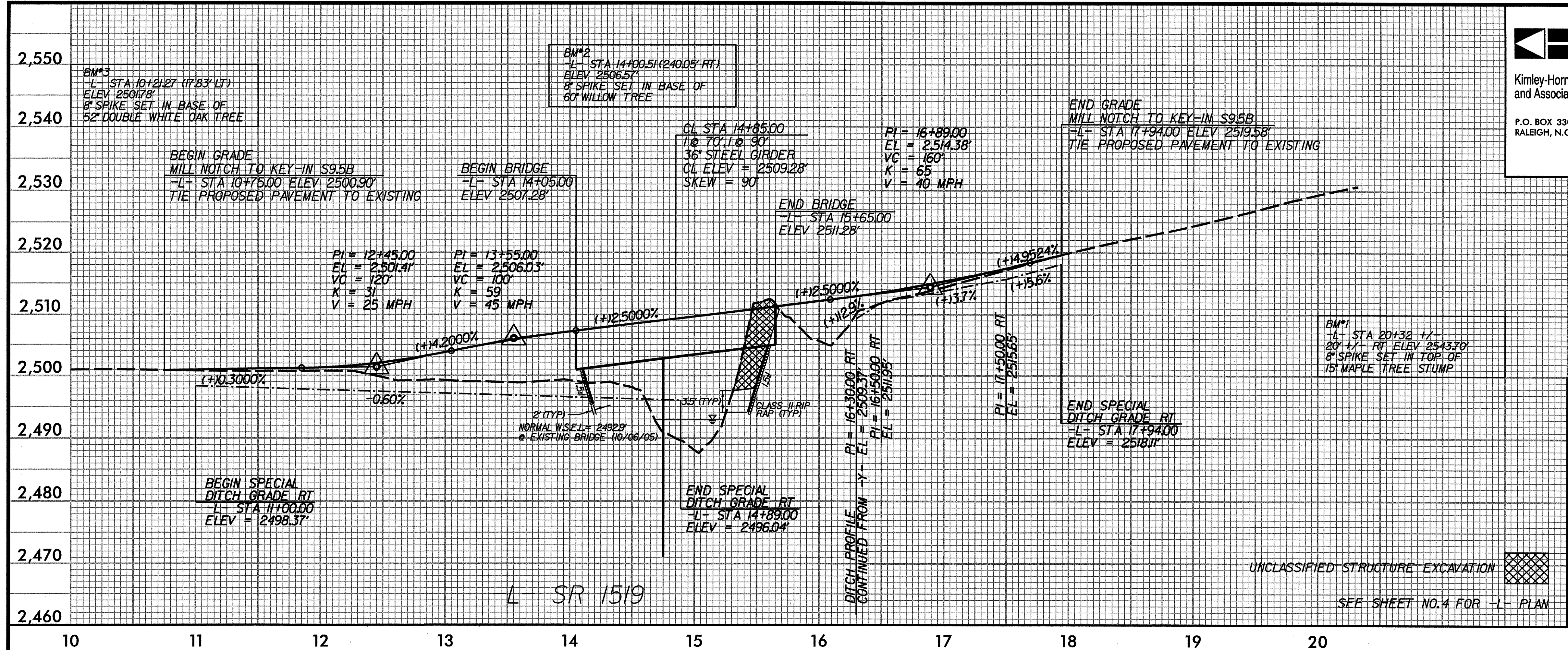


SKETCH SHOWING BRIDGE / PAVEMENT RELATIONSHIP

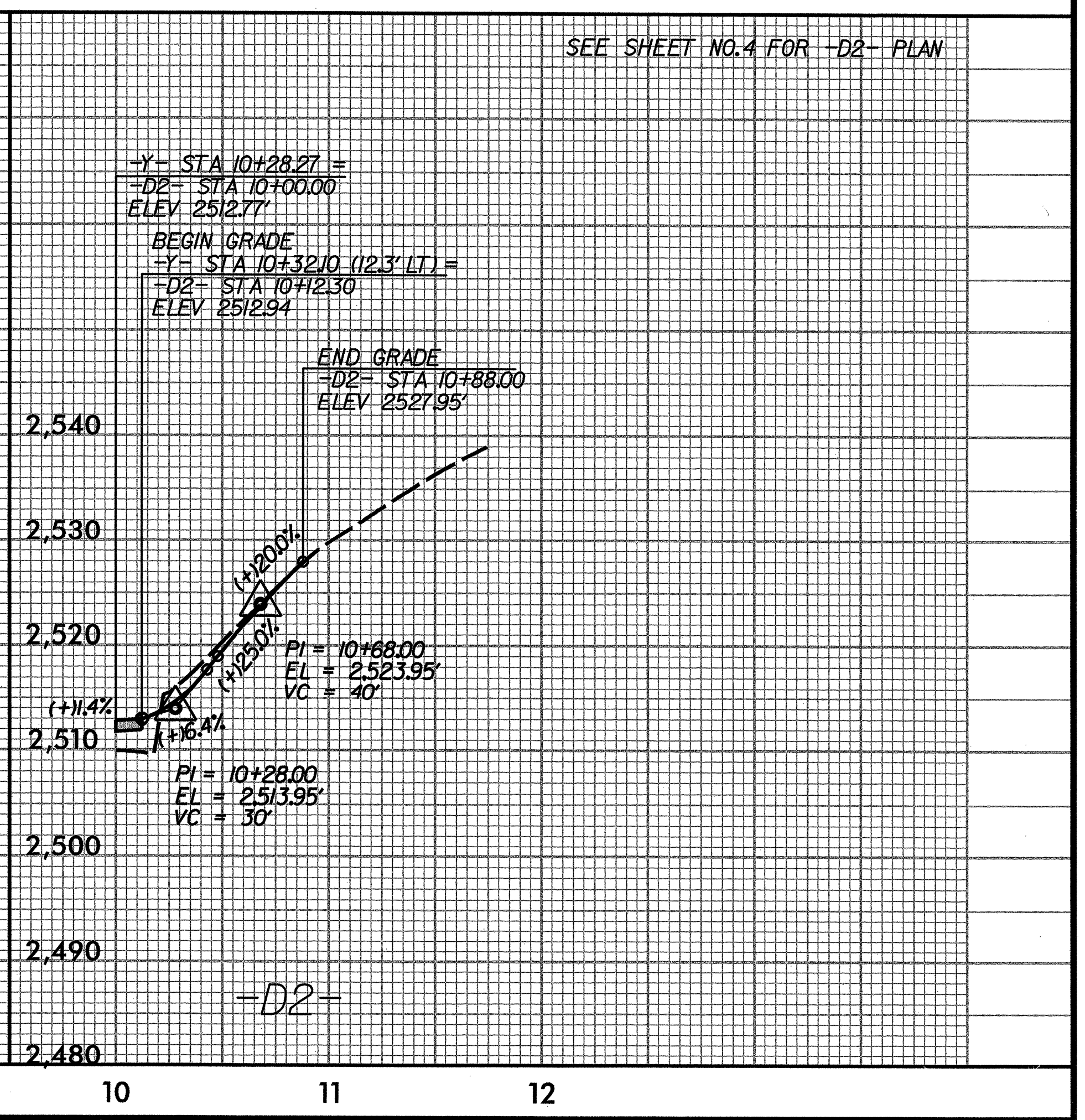
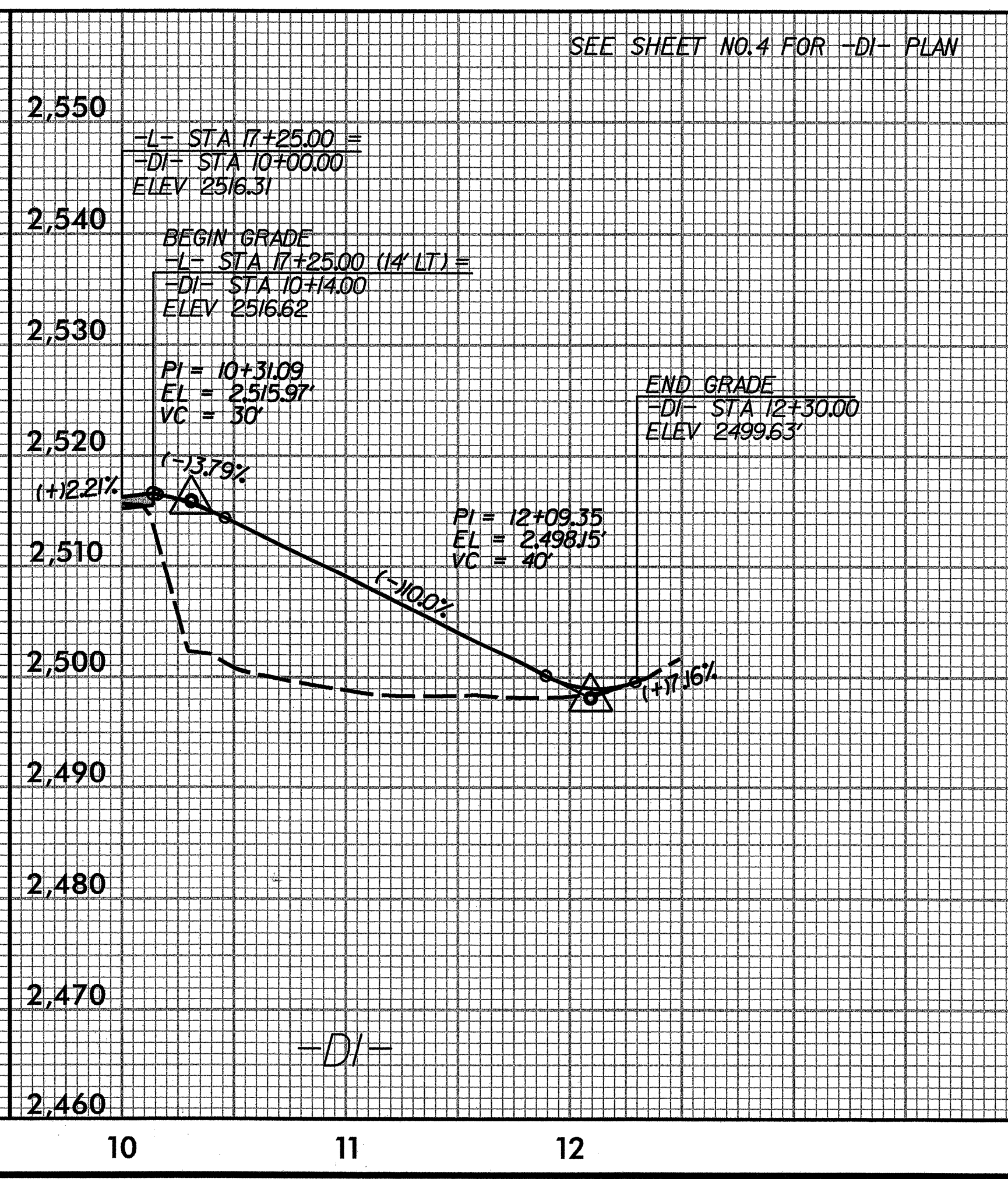
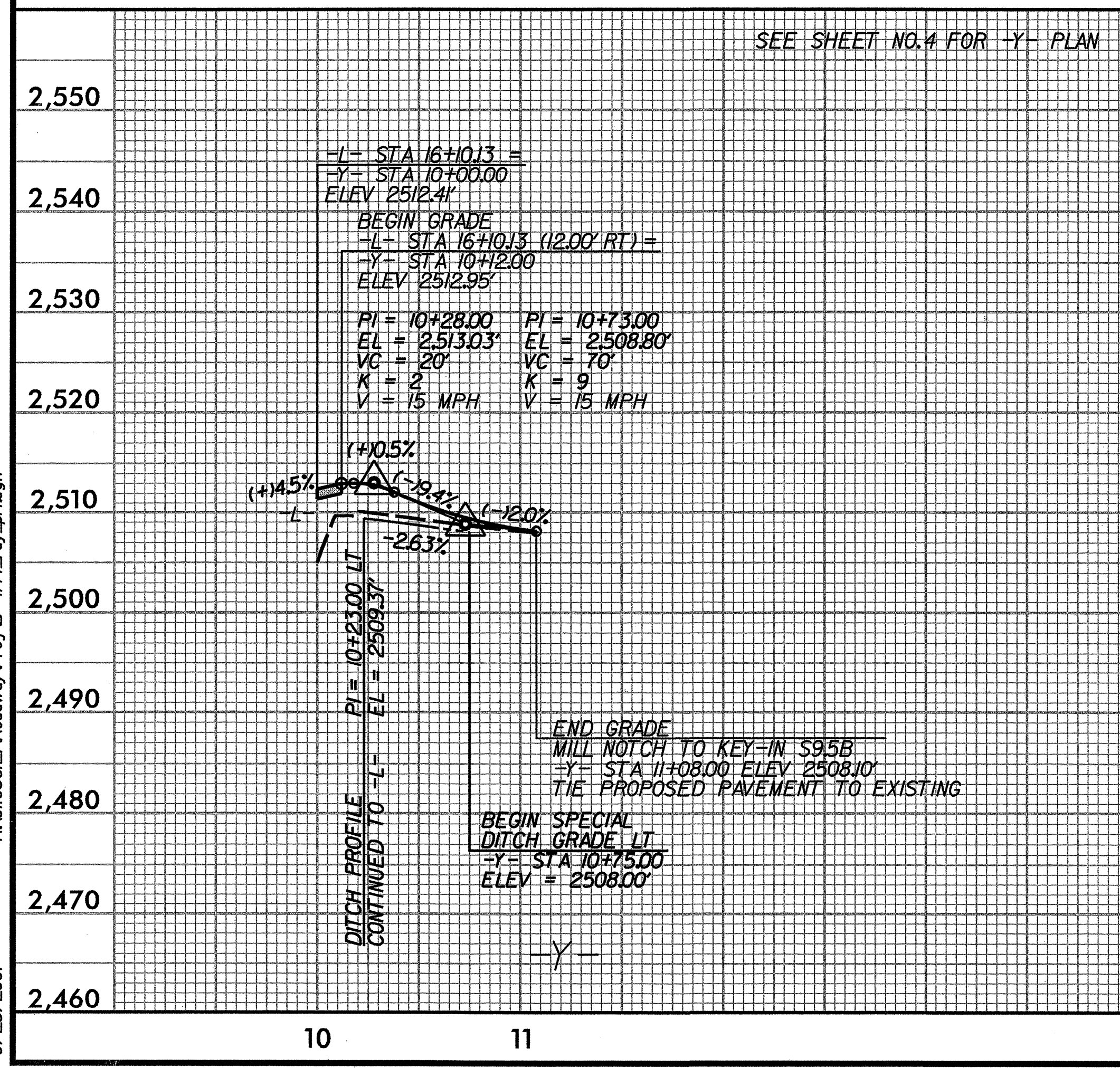
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PROJECT REFERENCE NO. B-4144		SHEET NO. 5	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
Kimley-Horn and Associates, Inc. P.O. BOX 33068 RALEIGH, N.C. 27636-3068			



BRIDGE HYDRAULIC DATA	
DESIGN DISCHARGE	= 7300 CFS
DESIGN FREQUENCY	= 25 YR
DESIGN HW ELEVATION	= 2502.1 FT
BASE DISCHARGE	= 10000 CFS
BASE FREQUENCY	= 100 YR
BASE HW ELEVATION	= 2503.0 FT
OVERTOPPING DISCHARGE	= < 7300 CFS
OVERTOPPING FREQUENCY	= < 25 YR
OVERTOPPING ELEVATION	= 2500.9 FT
DATE OF SURVEY	= 10/6/2005
W.S. ELEVATION AT DATE OF SURVEY	= 2492.9 FT



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