

09/08/09

See Sheet 1-A For Index of Sheets

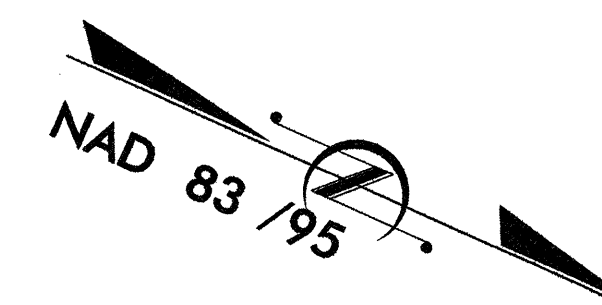
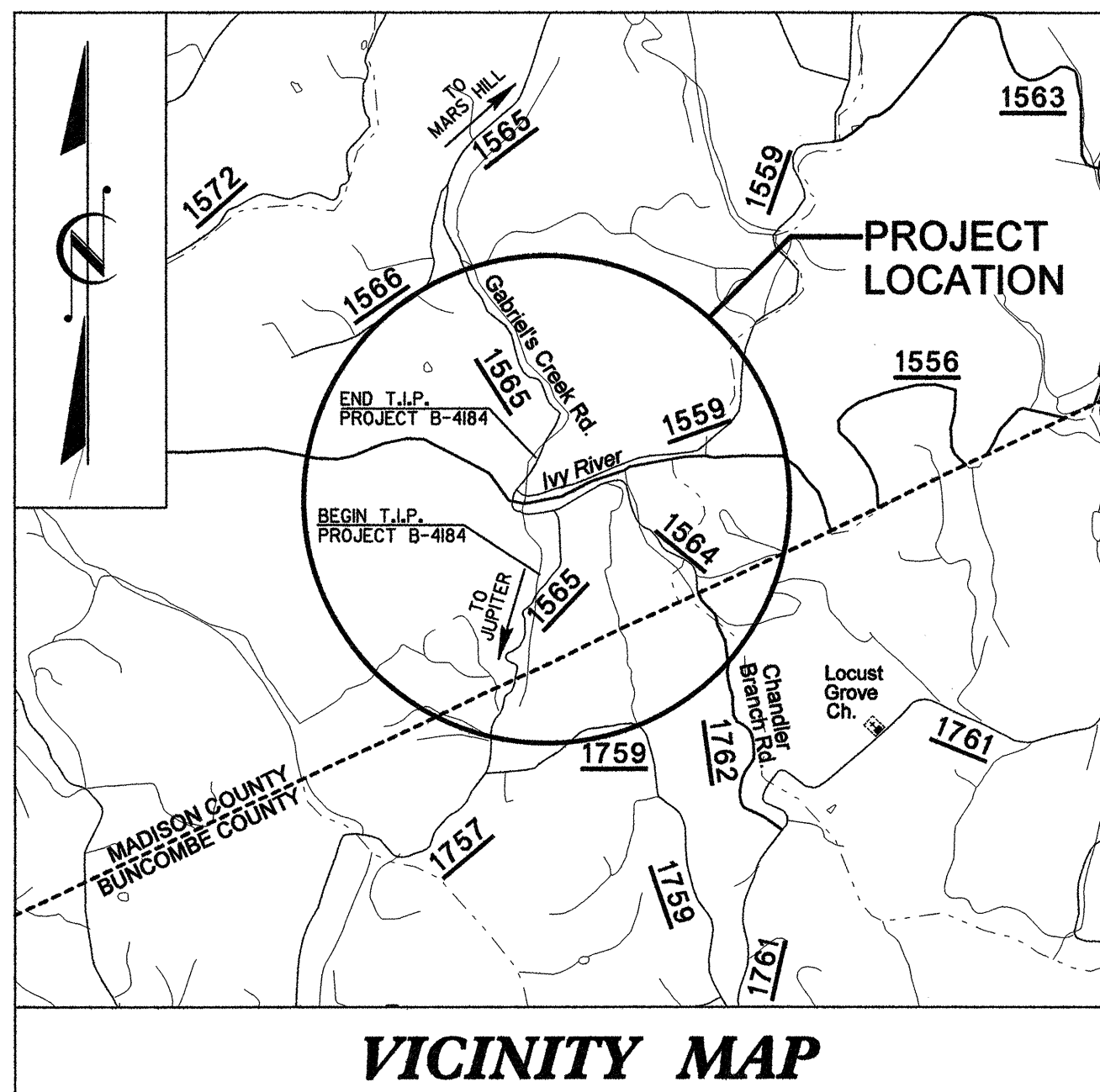
# STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

## MADISON COUNTY

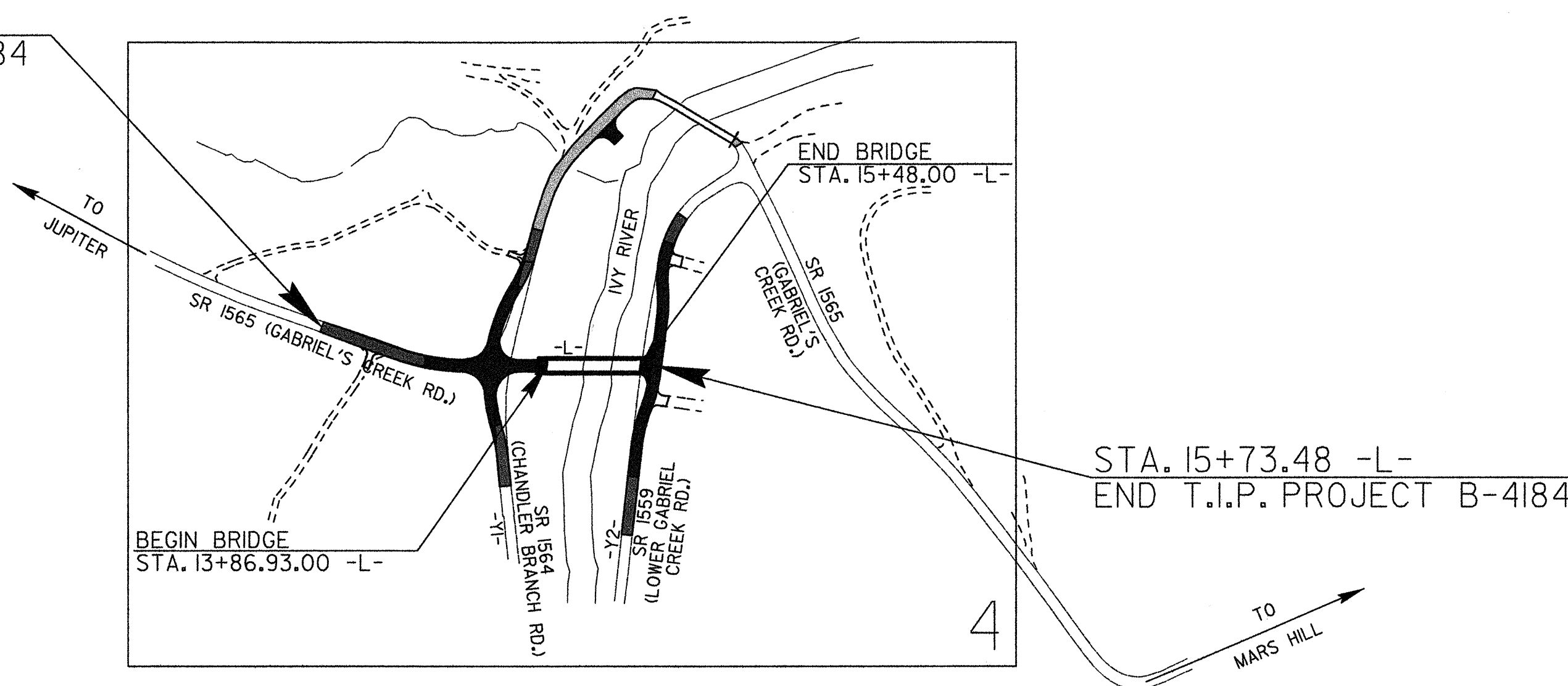
LOCATION: BRIDGE NO. 4 OVER IVY RIVER ON SR 1565

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4184	1	
W.B.S. NO.	F.A. PROJ. NO.	DESCRIPTION	
33531.1.1	BRZ-1565(5)	PE	
33531.2.1	BRZ-1565(5)	RW & UTILITIES	
33531.3.1	BRZ-1565(5)	CONSTRUCTION	



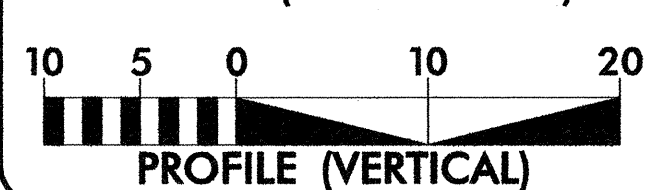
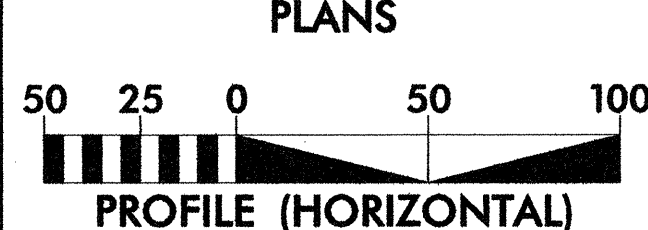
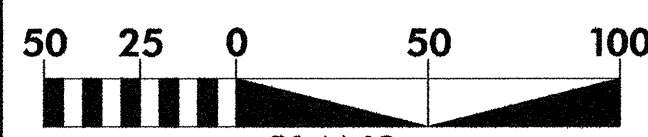
STA. 10+00.00 -L-  
BEGIN T.I.P. PROJECT B-4184



TIP PROJECT: B-4184

CONTRACT: C202034

### GRAPHIC SCALES



### DESIGN DATA

ADT 2008 = 500  
 ADT 2030 = 900  
 DHV = 12 %  
 D = 60 %  
 T = 3 % \*  
 V = 30 MPH  
 \* TTST 1% DUAL 2%  
 FUNC CLASS = RURAL LOCAL

### PROJECT LENGTH

LENGTH ROADWAY T.I.P. PROJECT B-4184 = 0.078 MILES  
 LENGTH STRUCTURES T.I.P. PROJECT B-4184 = 0.031 MILES  
 TOTAL LENGTH T.I.P. PROJECT B-4184 = 0.109 MILES

\*\* DESIGN EXCEPTION REQUIRED FOR DESIGN SPEED

Prepared In the Office of:

**PBSJ** 5200 77 CENTER DRIVE, SUITE 500  
 CHARLOTTE, NORTH CAROLINA 28217  
 (704) 522-7275

2006 STANDARD SPECIFICATIONS

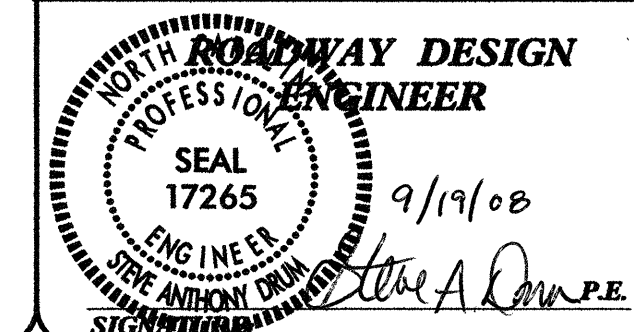
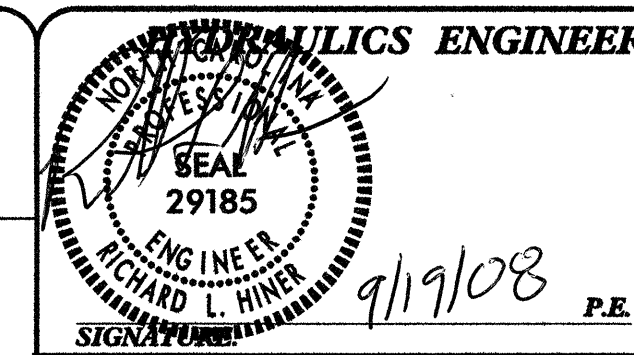
RIGHT OF WAY DATE:  
 DECEMBER 18, 2007

LETTING DATE:  
 DECEMBER 16, 2008

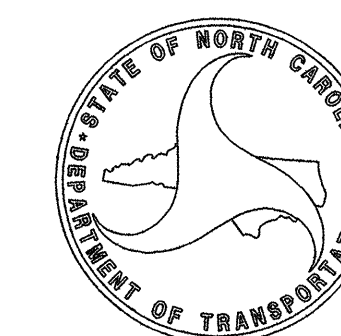
STEVE DRUM, P.E.  
 PROJECT ENGINEER

VIRGINIA SCHAAR, P.E.  
 PROJECT DESIGN ENGINEER

CATHY S. HOUSER, P.E.  
 NCDOT CONTACT

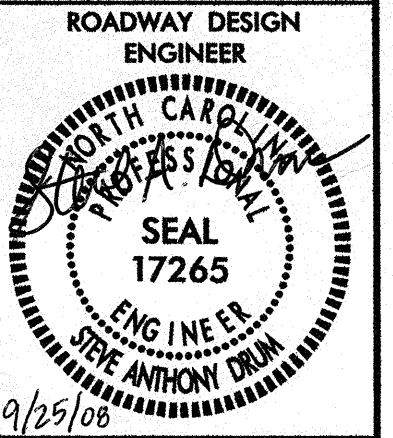


DIVISION OF HIGHWAYS  
 STATE OF NORTH CAROLINA



STATE HIGHWAY DESIGN ENGINEER

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INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES AND LIST OF STANDARDS
1-B	CONVENTIONAL SYMBOLS
1-C	SURVEY CONTROL SHEET
1-D	CENTERLINE COORDINATE LIST
2	PAVEMENT SCHEDULE AND WEDGING DETAILS
2-A	TYPICAL SECTIONS
2-B	TYPE III SHOP CURVED ANCHOR UNIT DETAIL
2-C	BRIDGE APPROACH FILLS
3	SUMMARY OF QUANTITIES
3-A	SUMMARY OF DRAINAGE QUANTITIES, SUMMARY OF GUARDRAIL, EARTHWORK SUMMARY, AND ASPHALT PAVEMENT REMOVAL SUMMARY
4	ROADWAY PLAN SHEET
5, 6	ROADWAY PROFILE SHEET
TCP-1 THRU TCP-10	TRAFFIC CONTROL PLANS
SD-1	SPECIAL SIGN DESIGN
PM-1	PAVEMENT MARKING PLANS
SIGN-1 THRU SIGN-3	SIGNING PLANS
EC-1 THRU EC-5	EROSION CONTROL PLANS
RF-1	REFORESTATION DETAIL SHEET
UO-1 THRU UO-2	UTILITIES BY OTHERS PLANS
X-1A THRU X-12	CROSS SECTIONS
S-1 THRU S-22	STRUCTURE PLANS

GENERAL NOTES:

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

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

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 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.

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 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 CONTRACT.

2006 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 July 18, 2006 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superlevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation - Method 'A'
310.10	Driveway Pipe Construction
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
806.01	Concrete Right-of-Way Marker
806.02	Granite Right-of-Way Marker
815.03	Pipe Underdrain and Blind Drain
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets



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	○ EP
Property Corner	----->
Property Monument	□ EDM
Parcel/Sequence Number	(23)
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 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	○ S
Well	○ W
Small Mine	⊗
Foundation	□
Area Outline	□
Cemetery	□ †
Building	□
School	□
Church	□
Dam	□

**HYDROLOGY:**

Stream or Body of Water	-----
Hydro, Pool or Reservoir	□
River Basin Buffer	-----
Flow Arrow	←
Disappearing Stream	----->
Spring	○
Swamp Marsh	-----
Proposed Lateral, Tail, Head Ditch	-----
False Sump	-----

**RAILROADS:**

Standard Gauge	-----
RR Signal Milepost	○ CSX TRANSPORTATION MILEPOST 35
Switch	□ 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	○ R/W
Proposed Right of Way Line with Iron Pin and Cap Marker	○ R/W ▲
Proposed Right of Way Line with Concrete or Granite Marker	○ R/W ▲
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 Utility Easement	PUE

**ROADS AND RELATED FEATURES:**

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	C
Proposed Slope Stakes Fill	F
Proposed Wheel Chair Ramp	WCR
Curb Cut for Future Wheel Chair Ramp	CCFR
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	PH
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	PH
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	PH
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	UTUL
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.

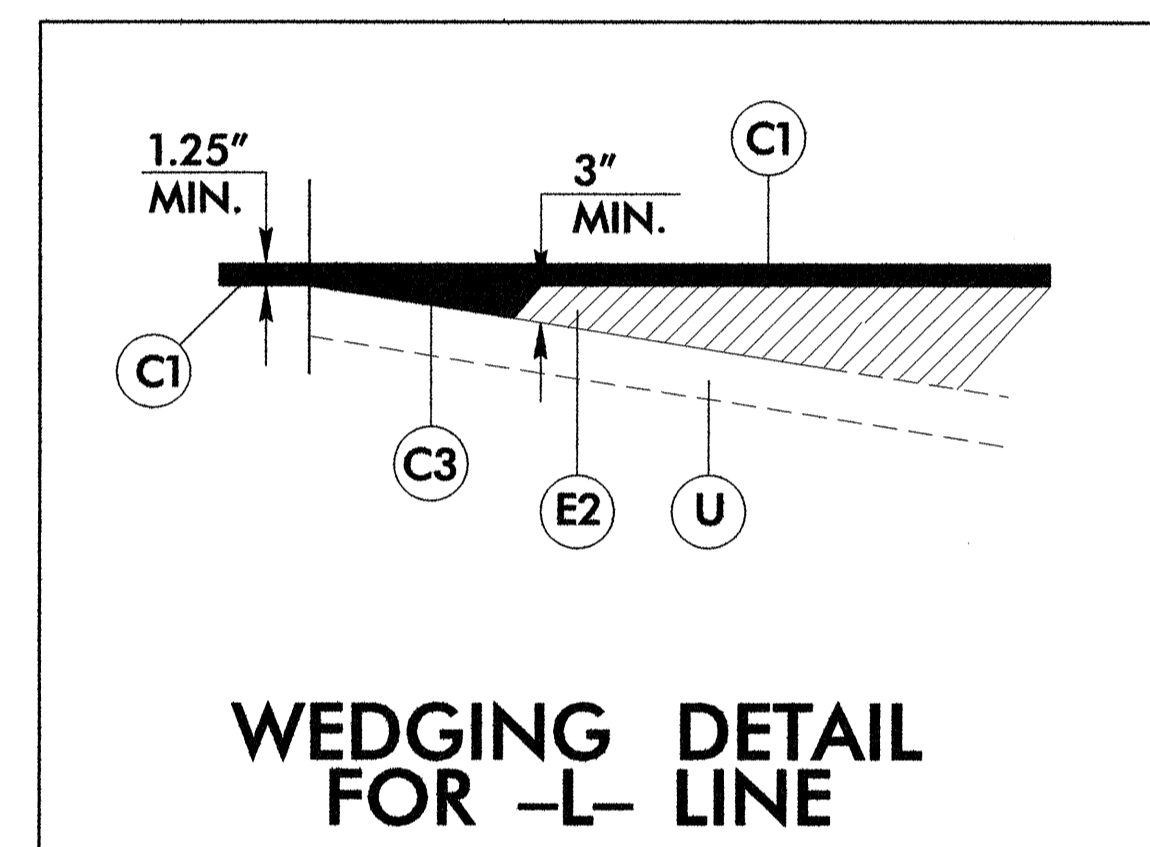




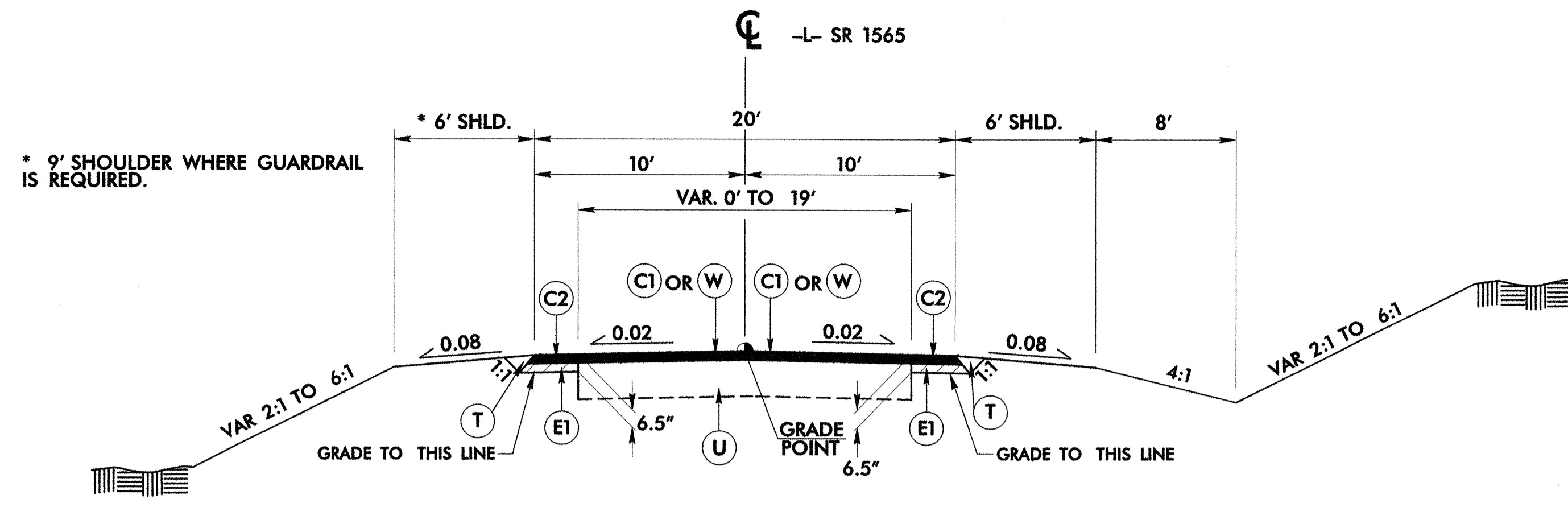


PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1.25" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.
C2	PROP. APPROX. 2.5 " ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1" OR GREATER THAN 1½" 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. 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 5.5" IN DEPTH.
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL)

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





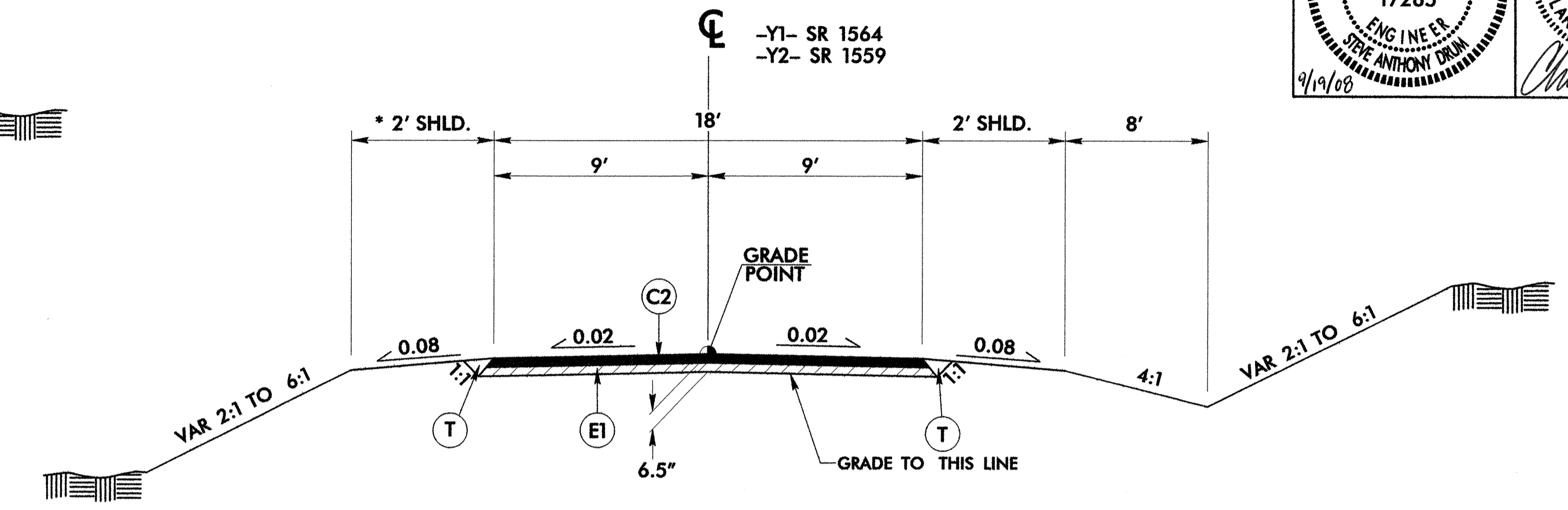


**TYPICAL SECTION NO. 1**

USE TYPICAL SECTION NO. 1 AS FOLLOWS:  
-L- STA. 10+25.00 TO STA. 11+86.43

NOTE:  
TRANSITION FROM EXIST. TO T.S. NO. 1  
-L- STA. 10+00 TO -L- STA. 10+25

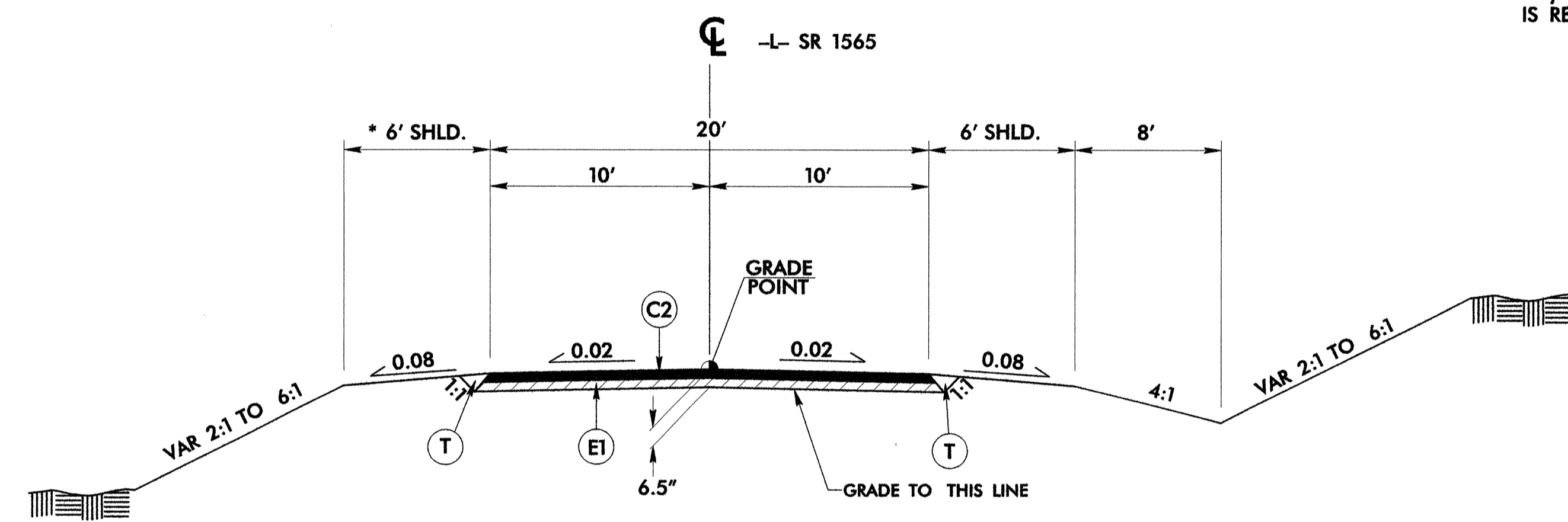
\* 9' SHOULDER WHERE GUARDRAIL IS REQUIRED.



**TYPICAL SECTION NO. 4**

USE TYPICAL SECTION NO. 4 AS FOLLOWS:  
-Y1- STA. 11+10.23 TO STA. 12+45.05  
-Y1- STA. 12+65.12 TO STA. 14+41.70  
-Y2- STA. 11+65.29 TO STA. 16+03.16

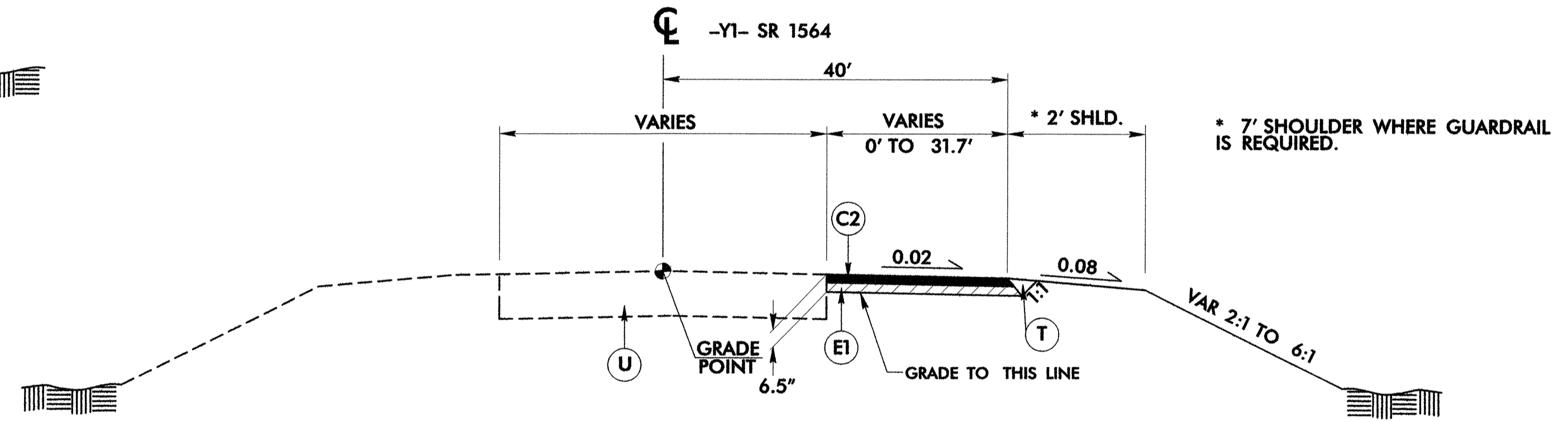
\* 7' SHOULDER WHERE GUARDRAIL IS REQUIRED.



**TYPICAL SECTION NO. 2**

USE TYPICAL SECTION NO. 2 AS FOLLOWS:  
-L- STA. 11+86.43 TO STA. 13+86.93 (BEGIN BRIDGE)  
-L- STA. 15+48.00 (END BRIDGE) TO STA. 15+73.48

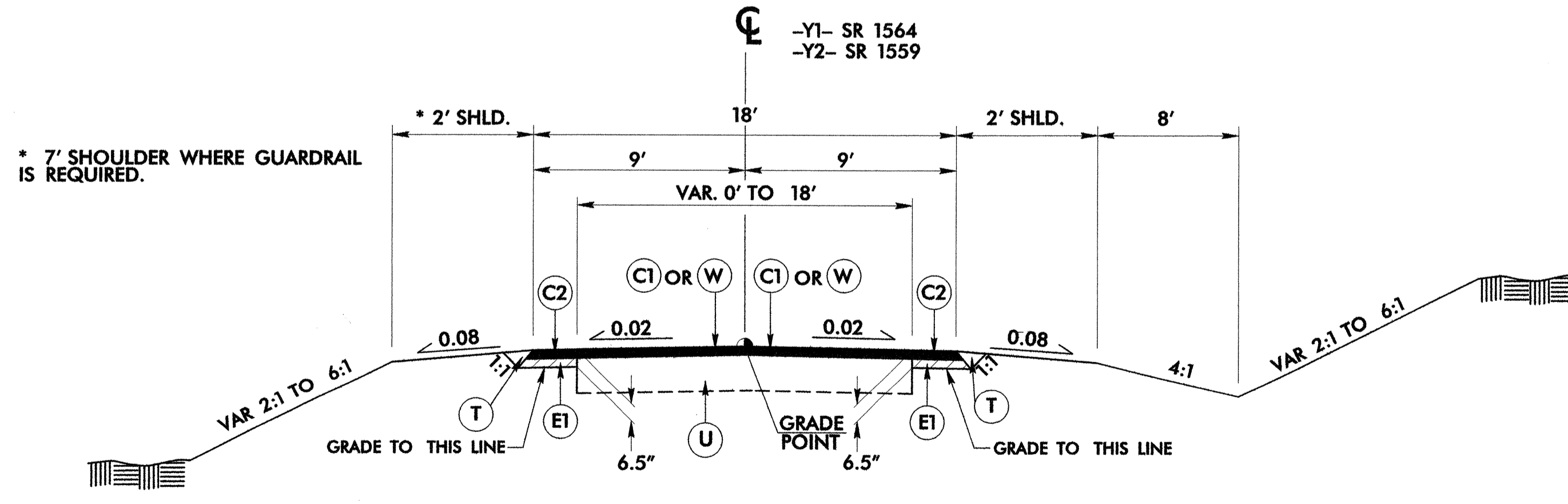
\* 9' SHOULDER WHERE GUARDRAIL IS REQUIRED.



**TYPICAL SECTION NO. 5**

USE TYPICAL SECTION NO. 5 AS FOLLOWS:  
-Y1- STA. 16+64.60 TO STA. 17+47.95

\* 7' SHOULDER WHERE GUARDRAIL IS REQUIRED.

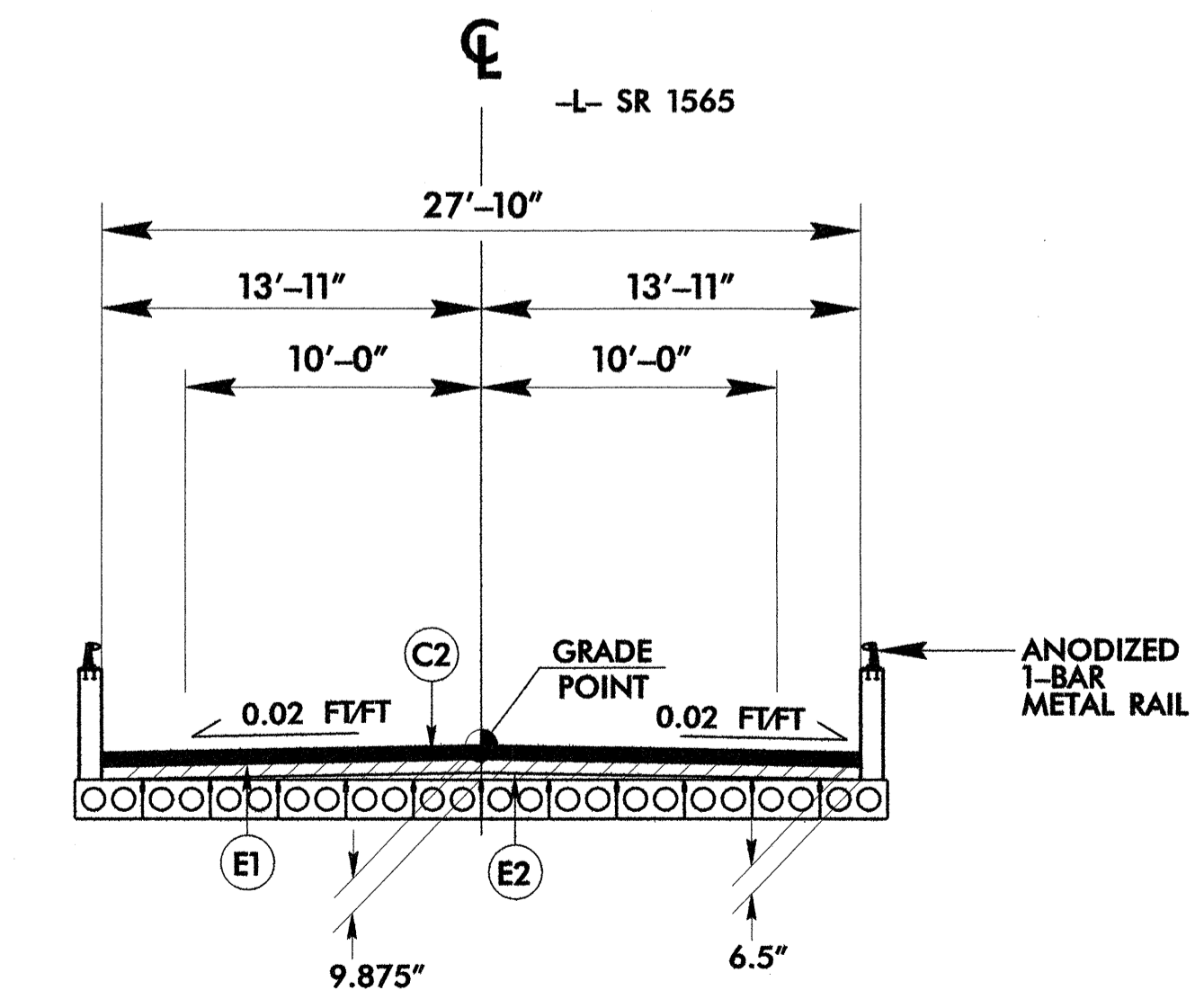


**TYPICAL SECTION NO. 3**

USE TYPICAL SECTION NO. 3 AS FOLLOWS:  
-Y1- STA. 10+75.00 TO STA. 11+10.23  
-Y1- STA. 14+41.70 TO STA. 14+75.00  
-Y2- STA. 11+25.00 TO STA. 11+65.29  
-Y2- STA. 16+03.16 TO STA. 16+25.00

NOTE:  
TRANSITION FROM EXIST. TO T.S. NO. 3  
-Y1- STA. 10+50 TO -Y1- STA. 10+75  
-Y2- STA. 11+00 TO -Y2- STA. 11+25  
TRANSITION FROM T.S. NO. 3 TO EXIST.  
-Y1- STA. 14+75 TO -Y1- STA. 15+00  
-Y2- STA. 16+25 TO -Y2- STA. 16+50

\* 7' SHOULDER WHERE GUARDRAIL IS REQUIRED.



**TYPICAL SECTION ON STRUCTURE**

-L- STA. 13+86.93 TO 15+48.00

PAVEMENT SCHEDULE	
C1	1.25" TYPE SF9.5A
C2	2.5" TYPE SF9.5A
C3	VAR. TYPE SF9.5A
E1	4" TYPE B25.0B
E2	VAR. TYPE B25.0B
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING

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

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

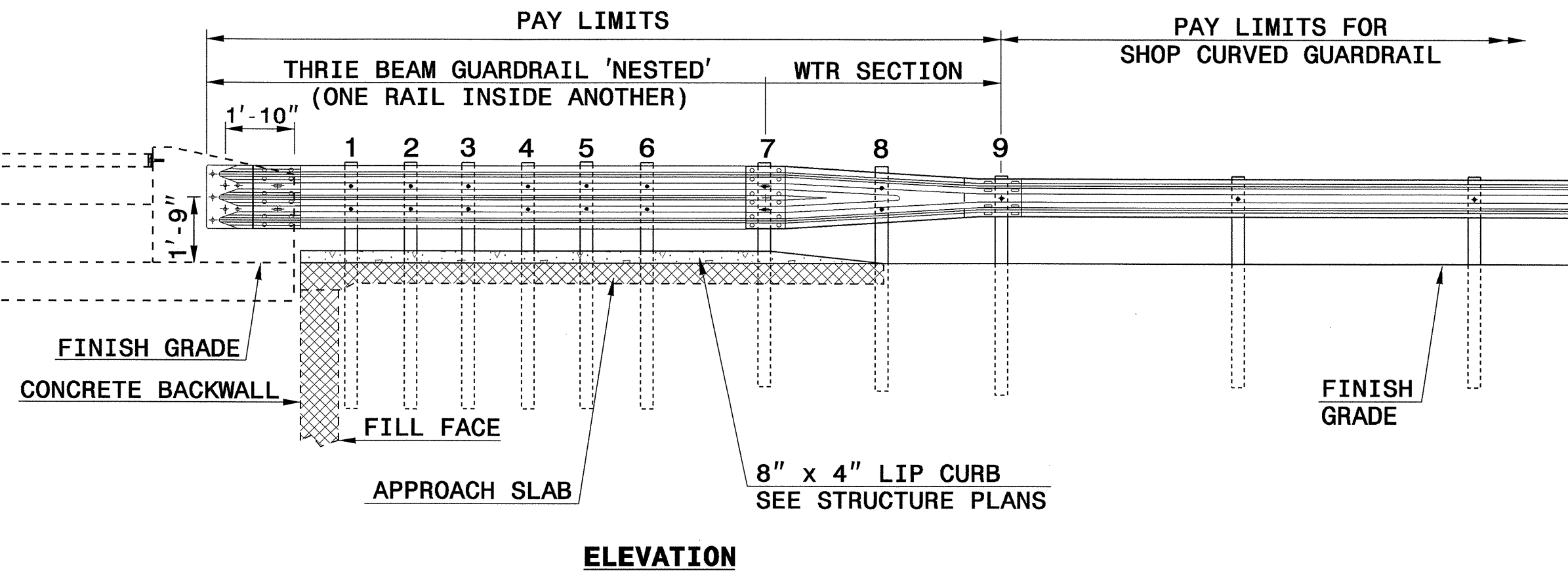
ENGLISH DETAIL DRAWING FOR  
TYPE III - SHOP CURVED  
STRUCTURE ANCHOR UNIT

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

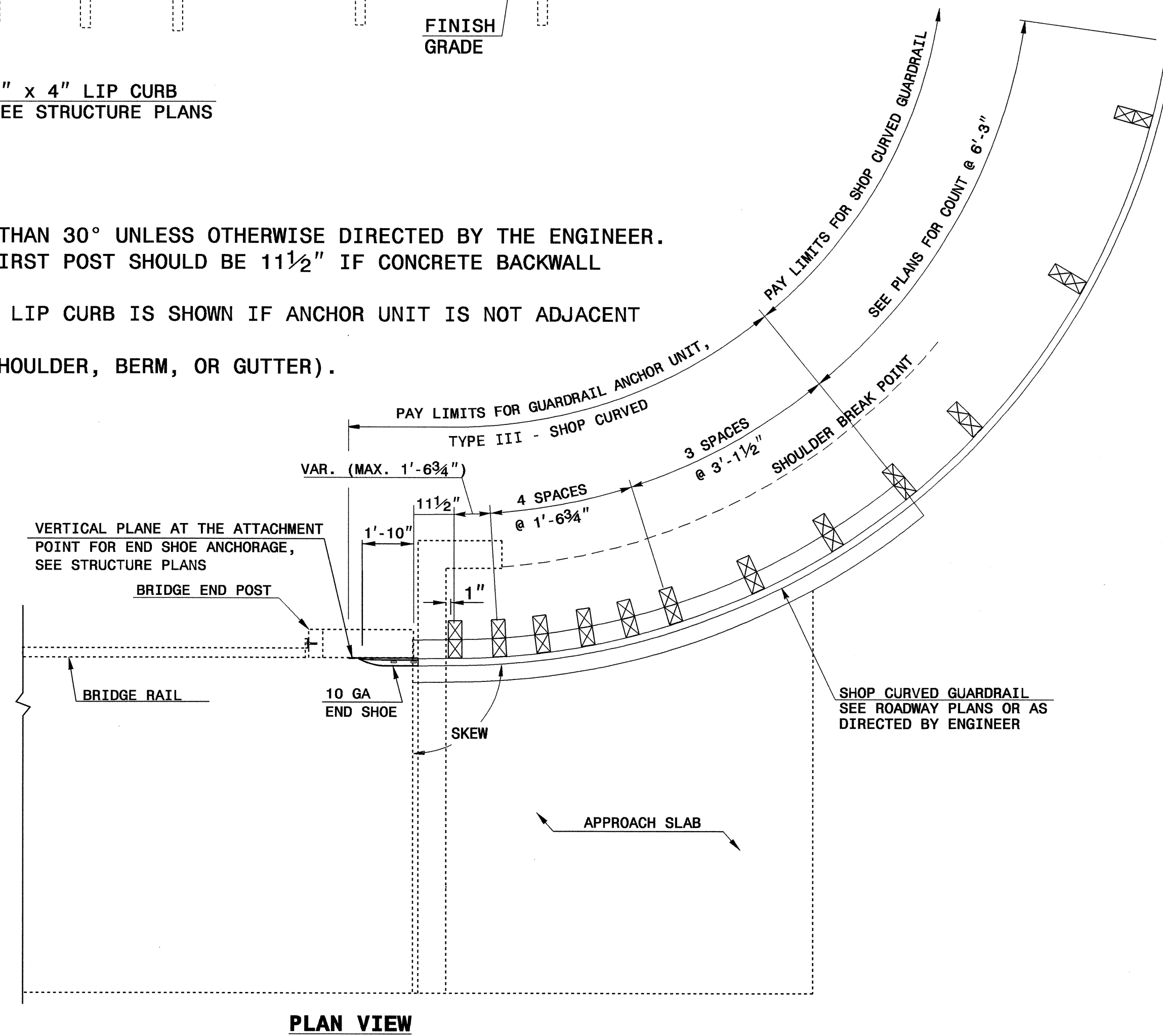
SHEET 1 OF 1  
TYPE III SC



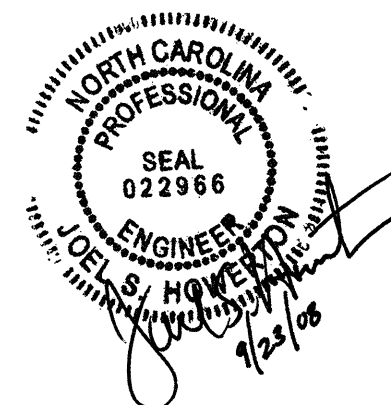
SEE ROADWAY PLANS FOR END TREATMENT

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.



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



PROJECT 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  
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 CHECKED BY: [Signature] DATE: 9/1/08  
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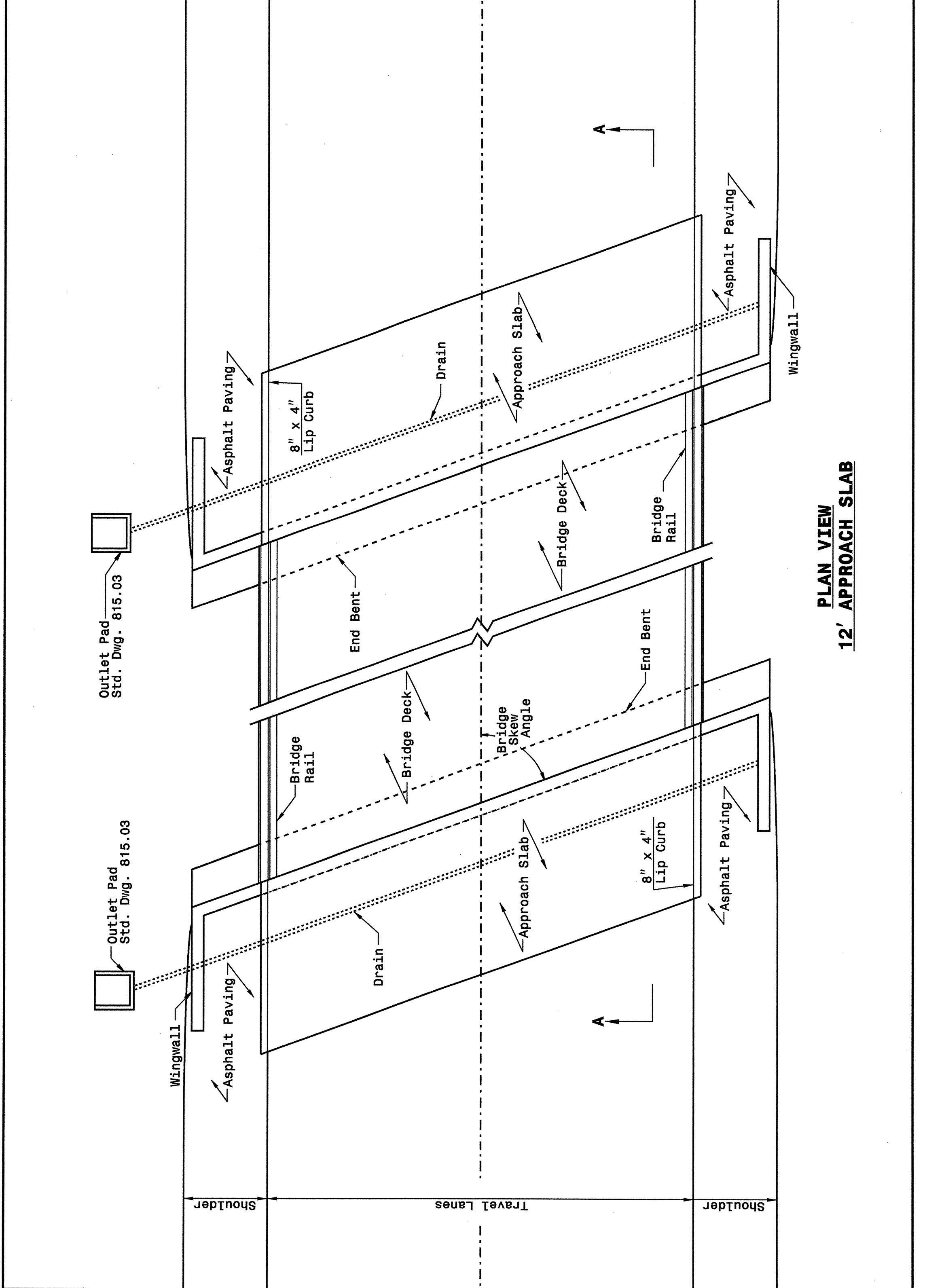
5/14/08



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

ENGLISH DETAIL DRAWING FOR  
**BRIDGE APPROACH FILLS**  
CORED SLAB & BOX BEAM BRIDGES  
SUB REGIONAL TIER

SHEET 1 OF 2  
**422D11**



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

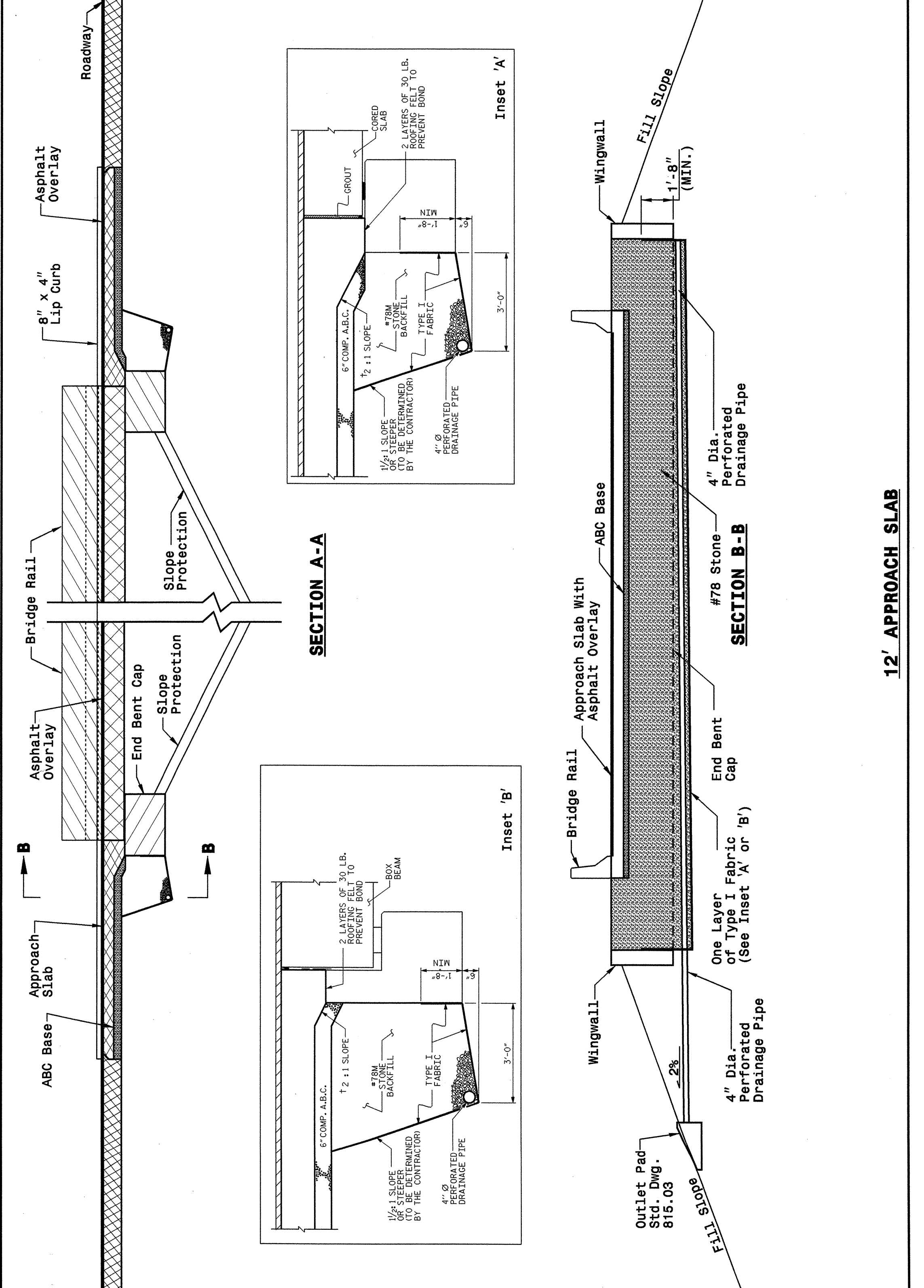
ENGLISH DETAIL DRAWING FOR  
**BRIDGE APPROACH FILLS**  
CORED SLAB & BOX BEAM BRIDGES  
SUB REGIONAL TIER

SHEET 1 OF 2  
**422D11**

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

ENGLISH DETAIL DRAWING FOR  
**BRIDGE APPROACH FILLS**  
CORED SLAB & BOX BEAM BRIDGES  
SUB REGIONAL TIER

SHEET 2 OF 2  
**422D11**



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

ENGLISH DETAIL DRAWING FOR  
**BRIDGE APPROACH FILLS**  
CORED SLAB & BOX BEAM BRIDGES  
SUB REGIONAL TIER

SHEET 2 OF 2  
**422D11**

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

**BRIDGE APPROACH FILLS**  
CORED SLAB & BOX BEAM BRIDGES  
SUB REGIONAL TIER

ORIGINAL BY: K. A. Kempf DATE: 6-10-08  
MODIFIED BY: *[Signature]* DATE: *[Date]*  
CHECKED BY: *[Signature]* DATE: 6/27/08  
FILE SPEC.: kempf/english/bridge approach fills.dgn

26 JUN 2008 15:32  
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kempf

6/21/00

COMPUTED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
CHECKED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO. B-4184  
SHEET NO. 3

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C202034

ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description
000100000-N	800	Lump Sum		MOBILIZATION	445000000-N	1150	600	HR	FLAGGER
004300000-N	226	Lump Sum		GRADING	451600000-N	1180	30	EA	SKINNY DRUM
005000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB-BING	481000000-E	1205	18,894	LF	PAINT PAVEMENT MARKING LINES (4")
005700000-E	226	20	CY	UNDERCUT EXCAVATION	483500000-E	1205	508	LF	PAINT PAVEMENT MARKING LINES (24")
008000000-E	SP	100	TON	CLASS IV SUBGRADE STABILIZATION	485000000-E	1205	197	LF	REMOVAL OF PAVEMENT MARKING LINES (4")
013400000-E	240	30	CY	DRAINAGE DITCH EXCAVATION	487000000-E	1205	21	LF	REMOVAL OF PAVEMENT MARKING LINES (24")
019500000-E	265	100	CY	SELECT GRANULAR MATERIAL	491500000-E	1264	6	EA	7' U-CHANNEL POSTS
019600000-E	270	100	SY	FABRIC FOR SOIL STABILIZATION	495500000-N	1264	6	EA	OBJECT MARKERS (END OF ROAD)
031800000-E	300	30	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRS	600000000-E	1605	2,300	LF	TEMPORARY SILT FENCE
034300000-E	310	44	LF	15" SIDE DRAIN PIPE	600600000-E	1610	400	TON	STONE FOR EROSION CONTROL, CLASS A
034500000-E	310	24	LF	24" SIDE DRAIN PIPE	600900000-E	1610	260	TON	STONE FOR EROSION CONTROL, CLASS B
037200000-E	310	124	LF	18" RC PIPE CULVERTS, CLASS III	601200000-E	1610	360	TON	SEDIMENT CONTROL STONE
037800000-E	310	68	LF	24" RC PIPE CULVERTS, CLASS III	601500000-E	1615	4.5	ACR	TEMPORARY MULCHING
099500000-E	340	178	LF	PIPE REMOVAL	601800000-E	1620	150	LB	SEED FOR TEMPORARY SEEDING
112100000-E	520	1,662	TON	AGGREGATE BASE COURSE	602100000-E	1620	1.5	TON	FERTILIZER FOR TEMPORARY SEEDING
122000000-E	545	20	TON	INCIDENTAL STONE BASE	602900000-E	SP	650	LF	SAFETY FENCE
148900000-E	610	700	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B	603000000-E	1630	1,000	CY	SILT EXCAVATION
152500000-E	610	480	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A	603600000-E	1631	1,250	SY	MATTING FOR EROSION CONTROL
156000000-E	620	65	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22	603700000-E	SP	20	SY	COIR FIBER MAT
174800000-E	660	2,100	SY	ASPHALT SURFACE TREATMENT, MAT & SEAL	603800000-E	SP	300	SY	PERMANENT SOIL REINFORCEMENT MAT
200000000-N	806	31	EA	RIGHT OF WAY MARKERS	607000000-N	SP	12	EA	SPECIAL STILLING BASINS
202200000-E	815	23	CY	SUBDRAIN EXCAVATION	607103000-E	SP	450	LF	COIR FIBER BAFFLES
203300000-E	815	17	CY	SUBDRAIN FINE AGGREGATE	607105000-E	SP	2	EA	*** SKIMMER (1-1/2")
204400000-E	815	100	LF	6" PERFORATED SUBDRAIN PIPE	608400000-E	1660	8	ACR	SEEDING & MULCHING
205500000-E	815	3	EA	6" SUBDRAIN PIPE WYES, TEES, & ELBOWS	608700000-E	1660	2	ACR	MOWING
206600000-N	815	1	EA	CONCRETE PAD FOR SUBDRAIN PIPE OUTLET					
207700000-E	815	6	LF	6" OUTLET PIPE (SUBDRAINS)					
303000000-E	862	300	LF	STEEL BM GUARDRAIL	609000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
304500000-E	862	137.5	LF	STEEL BM GUARDRAIL, SHOP CURVED	609300000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
310500000-N	862	8	EA	STEEL BM GUARDRAIL TERMINAL SECTIONS	609600000-E	1662	75	LB	SEED FOR SUPPLEMENTAL SEEDING
315000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS	610800000-E	1665	2.25	TON	FERTILIZER TOPDRESSING
318000000-N	862	2	EA	GUARDRAIL ANCHOR UNITS, TYPE ***** (III, SHOP CURVE)	611400000-N	SP	5	HR	SPECIALIZED HAND MOWING
321000000-N	862	3	EA	GUARDRAIL ANCHOR UNITS, TYPE CAT-1	611700000-N	SP	12	EA	RESPONSE FOR EROSION CONTROL
321500000-N	862	2	EA	GUARDRAIL ANCHOR UNITS, TYPE III	612300000-E	1670	0.1	ACR	REFORESTATION
327000000-N	SP	1	EA	GUARDRAIL ANCHOR UNITS, TYPE 350	862200000-E	876	720	SY	FILTER FABRIC FOR DRAINAGE
362800000-E	876	80	TON	RIP RAP, CLASS I					
363500000-E	876	400	TON	RIP RAP, CLASS II					
365600000-E	876	1,450	SY	FILTER FABRIC FOR DRAINAGE					
407200000-E	903	140	LF	SUPPORTS, 3-LB STEEL U-CHANNEL					
410200000-N	904	11	EA	SIGN ERECTION, TYPE E					
411610000-N	904	1	EA	SIGN ERECTION, RELOCATE, TYPE **** (GROUND MOUNTED) (D)					
415500000-N	907	11	EA	DISPOSAL OF SIGN SYSTEM, U-CHANNEL					
419200000-N	907	1	EA	DISPOSAL OF SUPPORT, U-CHANNEL					
440000000-E	1110	202	SF	WORK ZONE SIGNS (STATIONARY)					
440500000-E	1110	384	SF	WORK ZONE SIGNS (PORTABLE)					
441000000-E	1110	122	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)					
443000000-N	1130	61	EA	DRUMS					
443500000-N	1135	30	EA	CONES					
444500000-E	1145	64	LF	BARRICADES (TYPE III)					

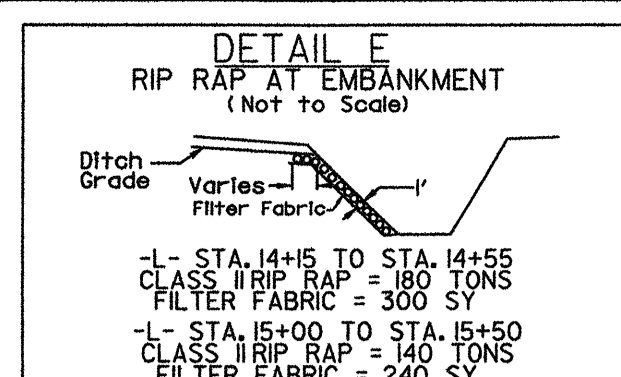
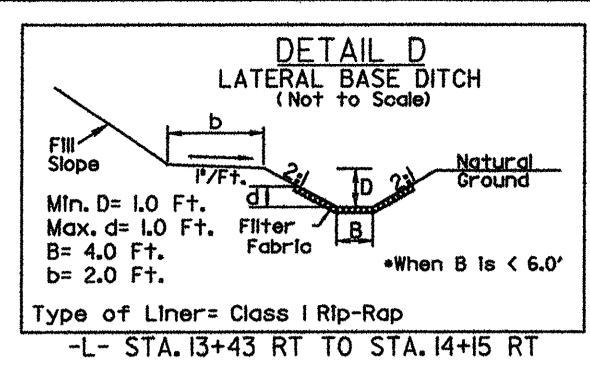
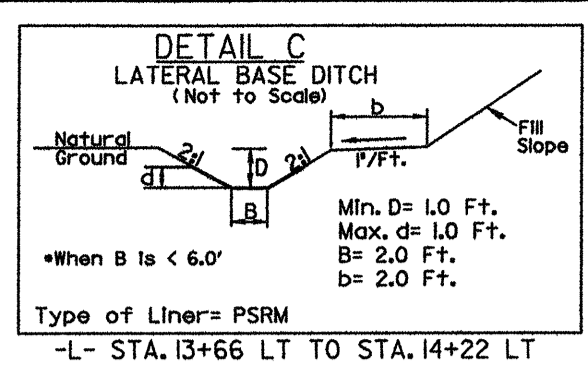
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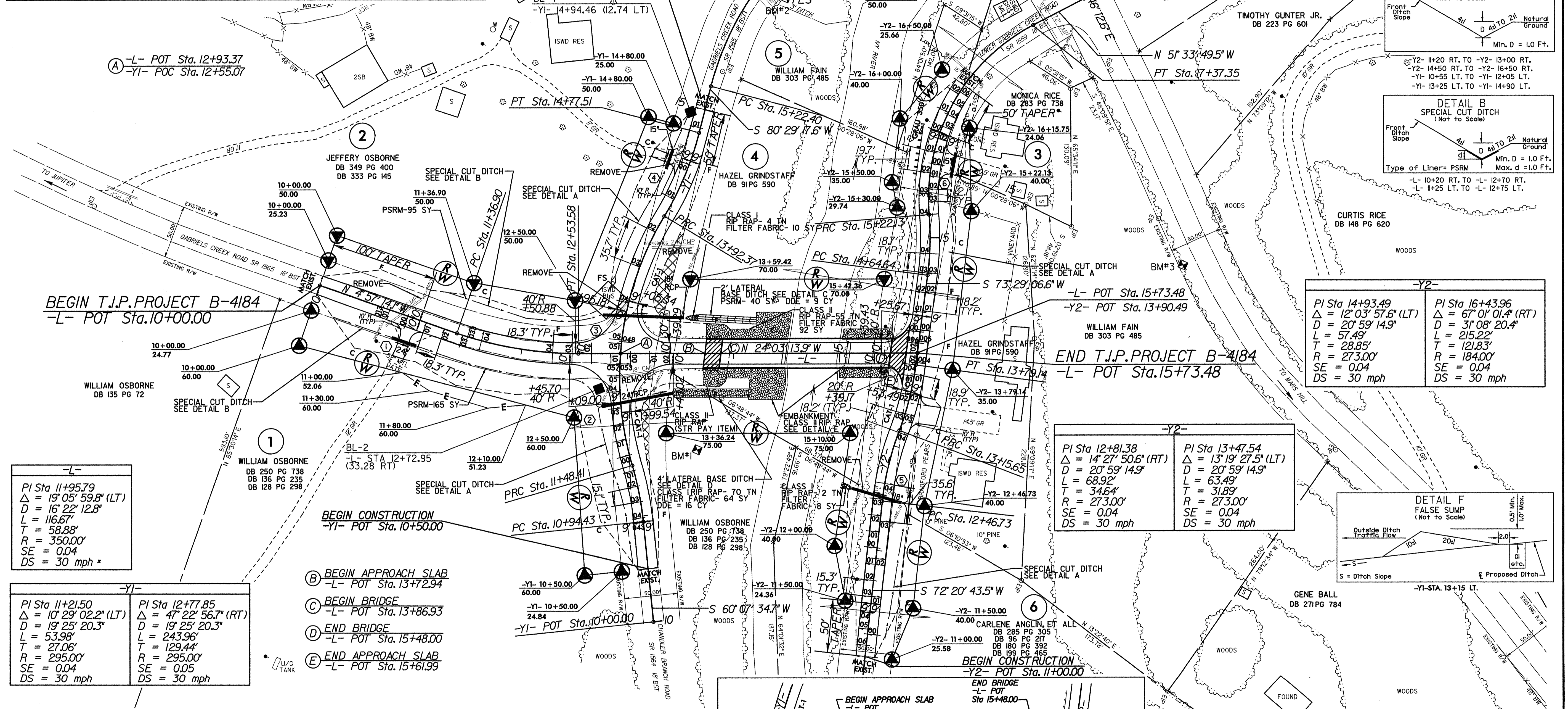


8/17/99



PROJECT REFERENCE NO. B-4184	SHEET NO. 4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER SEAL 17265	HYDRAULICS ENGINEER SEAL 29185
5200 77 CENTER DRIVE, SUITE 500 CHARLOTTE, NORTH CAROLINA 28217 (704) 522-7275	

PI Sta 14+35.24 $\Delta = 16' 32" 11.7" (LT)$ $D = 19' 25" 20.3"$ $L = 85.14'$ $T = 42.87'$ $R = 295.00'$ $SE = MATCH EXIST.$ $DS = 30 mph$	PI Sta 15+95.13 $\Delta = 29' 37" 35.6" (RT)$ $D = 20' 50" 05.4"$ $L = 142.20'$ $T = 72.73'$ $R = 275.00'$ $SE = MATCH EXIST.$ $DS = 30 mph$	PI Sta 18+05.34 $\Delta = 76' 32' 57.3" (RT)$ $D = 95' 29' 34.7"$ $L = 80.16'$ $T = 47.34'$ $R = 60.00'$ $DS = EXISTING$	PI Sta 19+80.77 $\Delta = 33' 06' 22.1" (RT)$ $D = 114' 35' 29.6"$ $L = 28.89'$ $T = 14.86'$ $R = 50.00'$ $DS = EXISTING$
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**-L-**

PI Sta 11+95.79 $\Delta = 19' 05' 59.8" (LT)$ $D = 16' 22' 12.8"$ $L = 116.67'$ $T = 58.88'$ $R = 350.00'$ $SE = 0.04$ $DS = 30 mph$
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**-Y1-**

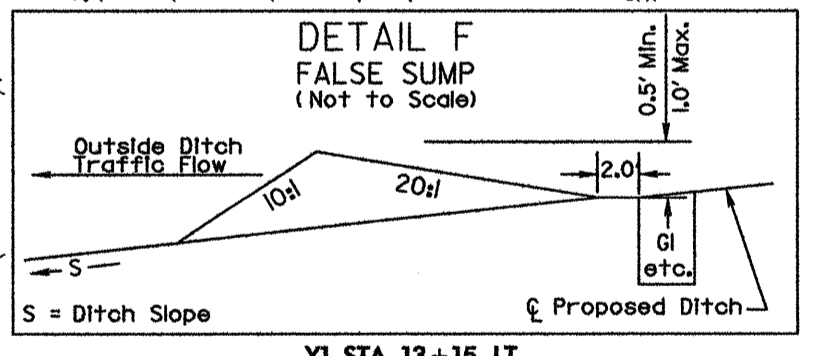
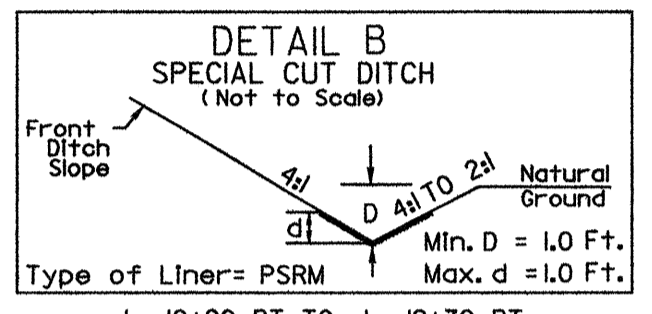
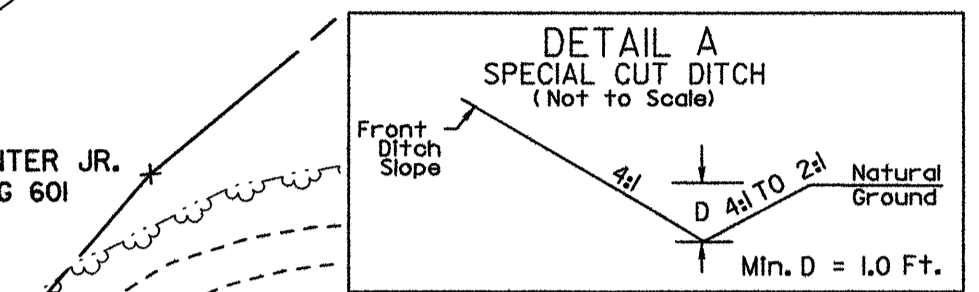
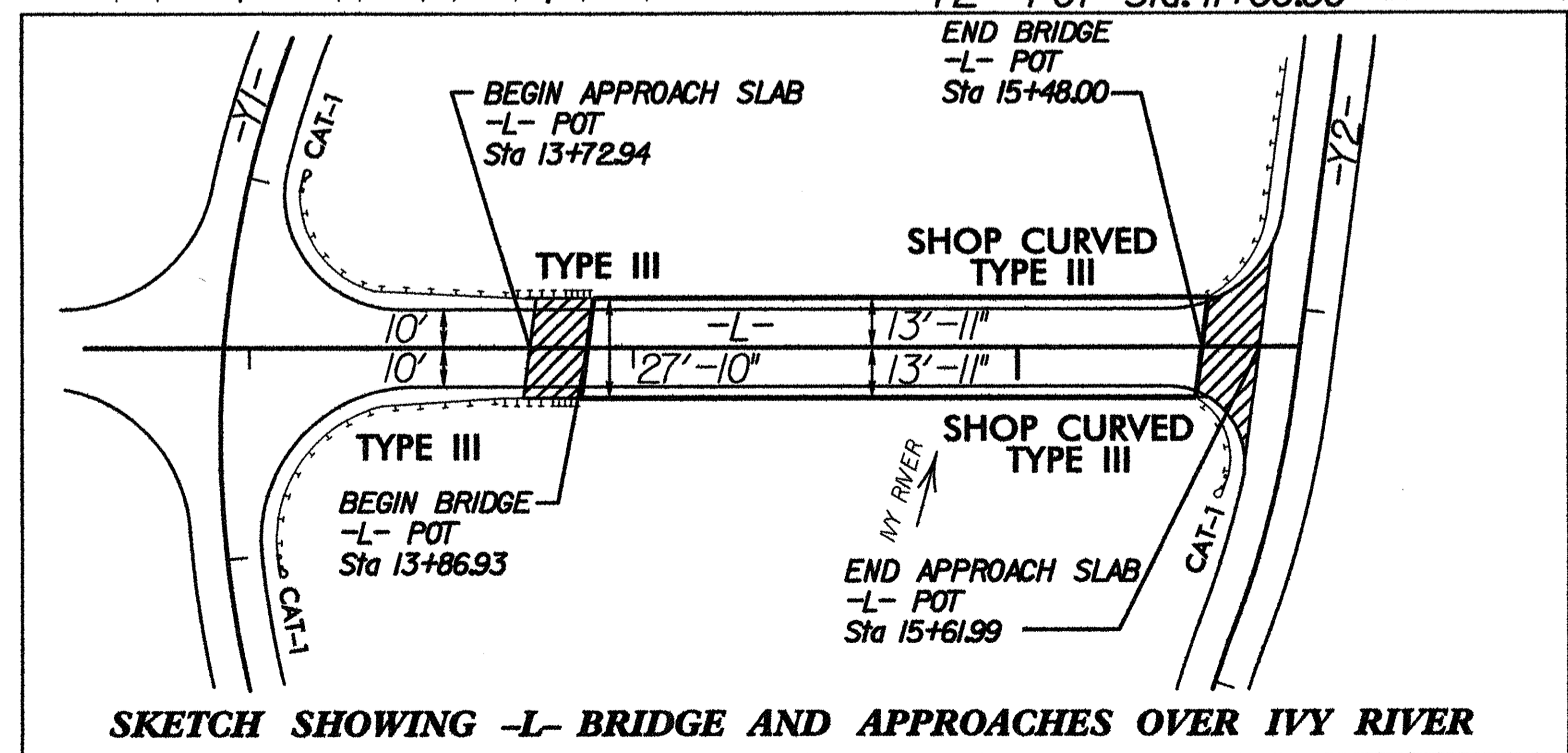
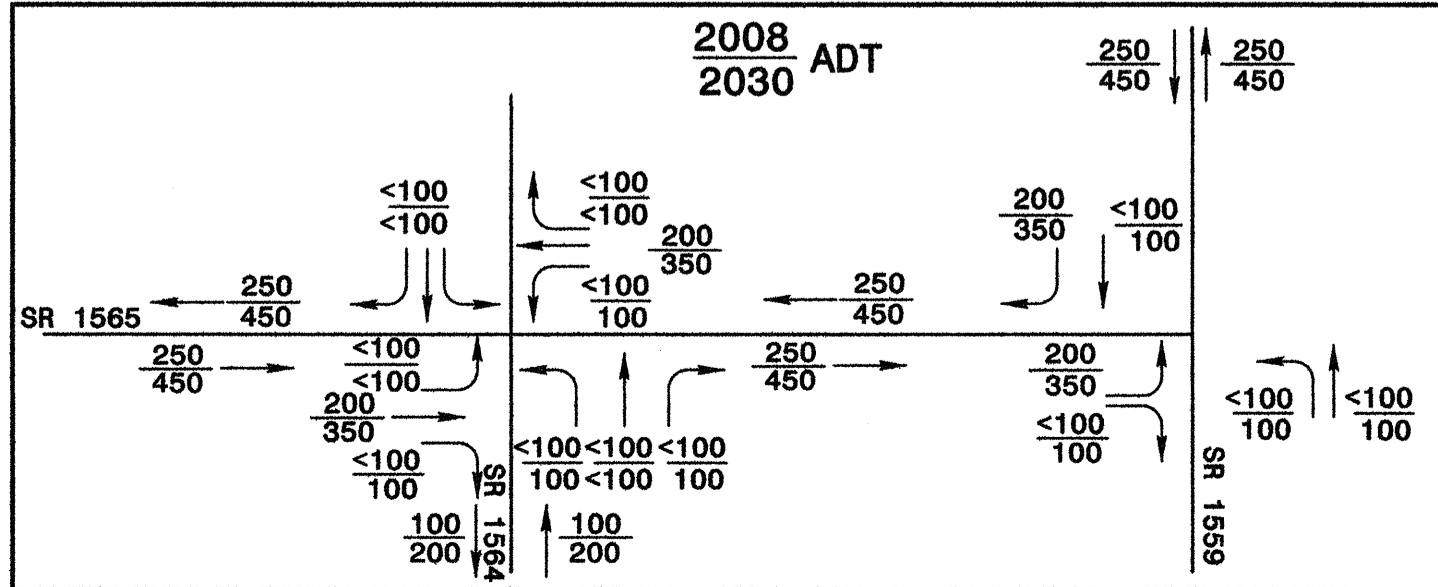
PI Sta 11+21.50 $\Delta = 10' 29' 02.2" (LT)$ $D = 19' 25' 20.3"$ $L = 53.98'$ $T = 27.06'$ $R = 295.00'$ $SE = 0.04$ $DS = 30 mph$	PI Sta 12+77.85 $\Delta = 47' 22' 56.7" (RT)$ $D = 19' 25' 20.3"$ $L = 243.96'$ $T = 129.44'$ $R = 295.00'$ $SE = 0.05$ $DS = 30 mph$
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**-Y2-**

PI Sta 12+81.38 $\Delta = 14' 27' 50.6" (RT)$ $D = 20' 59' 14.9"$ $L = 68.92'$ $T = 34.64'$ $R = 273.00'$ $SE = 0.04$ $DS = 30 mph$	PI Sta 13+47.54 $\Delta = 13' 19' 27.5" (LT)$ $D = 20' 59' 14.9"$ $L = 63.49'$ $T = 31.89'$ $R = 273.00'$ $SE = 0.04$ $DS = 30 mph$
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**-Y2-**

PI Sta 14+93.49 $\Delta = 12' 03' 57.6" (LT)$ $D = 20' 59' 14.9"$ $L = 57.49'$ $T = 28.85'$ $R = 273.00'$ $SE = 0.04$ $DS = 30 mph$	PI Sta 16+43.96 $\Delta = 67' 01' 01.4" (RT)$ $D = 31' 08' 20.4"$ $L = 215.22'$ $T = 121.83'$ $R = 184.00'$ $SE = 0.04$ $DS = 30 mph$
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**\* DESIGN EXCEPTION REQUIRED FOR DESIGN SPEED**

FOR -L- & -Y1- PROFILE, SEE SHEET NO. 5

FOR -Y2- PROFILE, SEE SHEET NO. 6

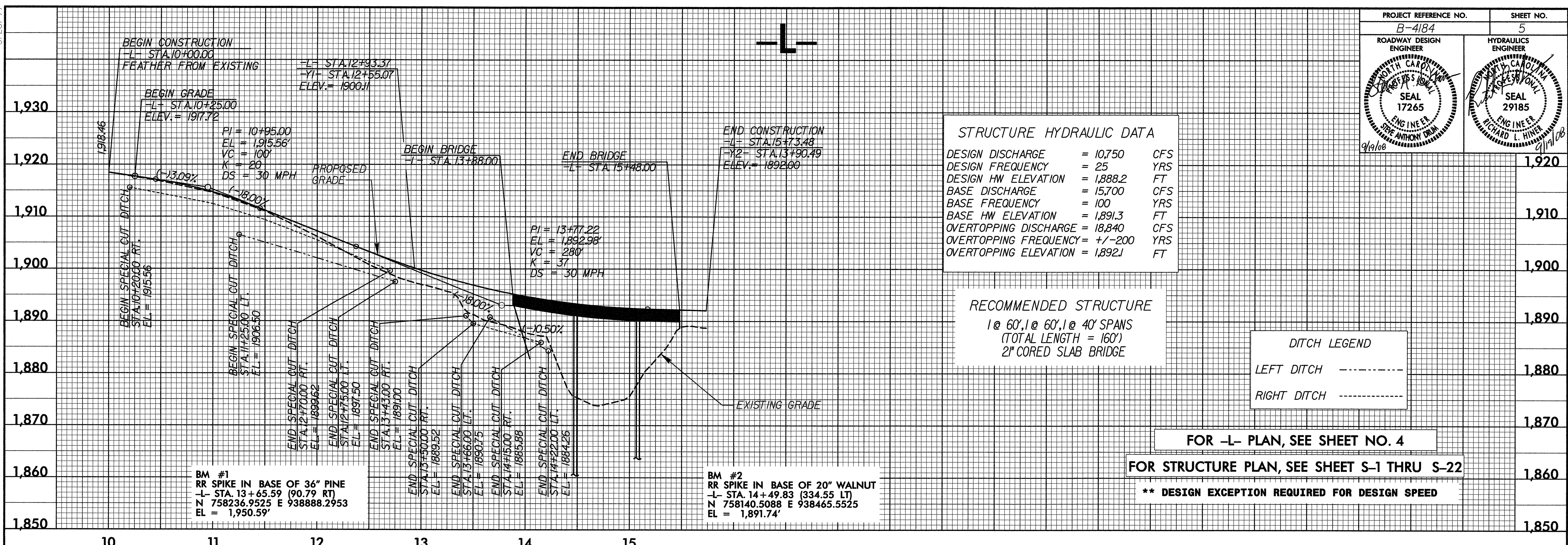
FOR STRUCTURE PLANS, SEE SHEET S-1 THRU S-22

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5/28/99

PROJECT REFERENCE NO. B-4184	SHEET NO. 5
ROADWAY DESIGN ENGINEER SEAL 17265 9/10/08	HYDRAULICS ENGINEER SEAL 29185 9/11/08



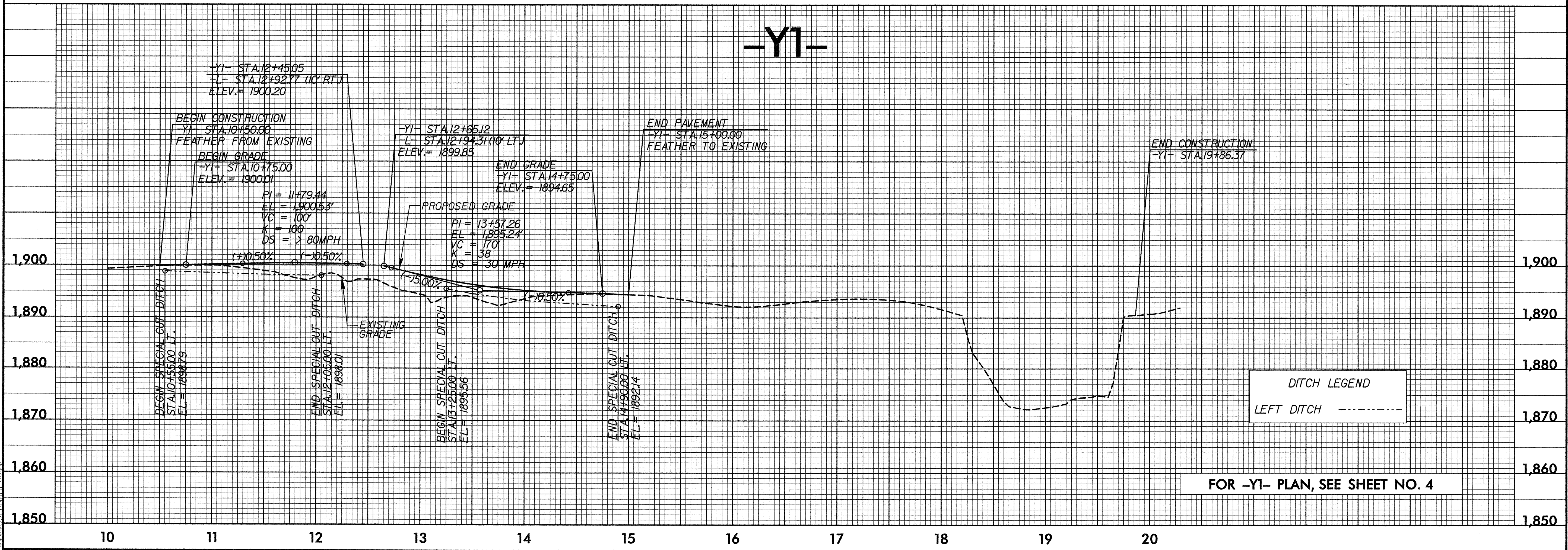
**STRUCTURE HYDRAULIC DATA**

DESIGN DISCHARGE	= 10,750	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 1,888.2	FT
BASE DISCHARGE	= 15,700	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 1,891.3	FT
OVERTOPPING DISCHARGE	= 18,840	CFS
OVERTOPPING FREQUENCY	= +/- 200	YRS
OVERTOPPING ELEVATION	= 1,892.1	FT

**RECOMMENDED STRUCTURE**  
 1 @ 60', 1 @ 60', 1 @ 40' SPANS  
 (TOTAL LENGTH = 160')  
 2" CORED SLAB BRIDGE

**DITCH LEGEND**  
 LEFT DITCH - - - - -  
 RIGHT DITCH - - - - -

FOR -L- PLAN, SEE SHEET NO. 4  
 FOR STRUCTURE PLAN, SEE SHEET S-1 THRU S-22  
 \*\* DESIGN EXCEPTION REQUIRED FOR DESIGN SPEED



**DITCH LEGEND**  
 LEFT DITCH - - - - -

FOR -Y1- PLAN, SEE SHEET NO. 4

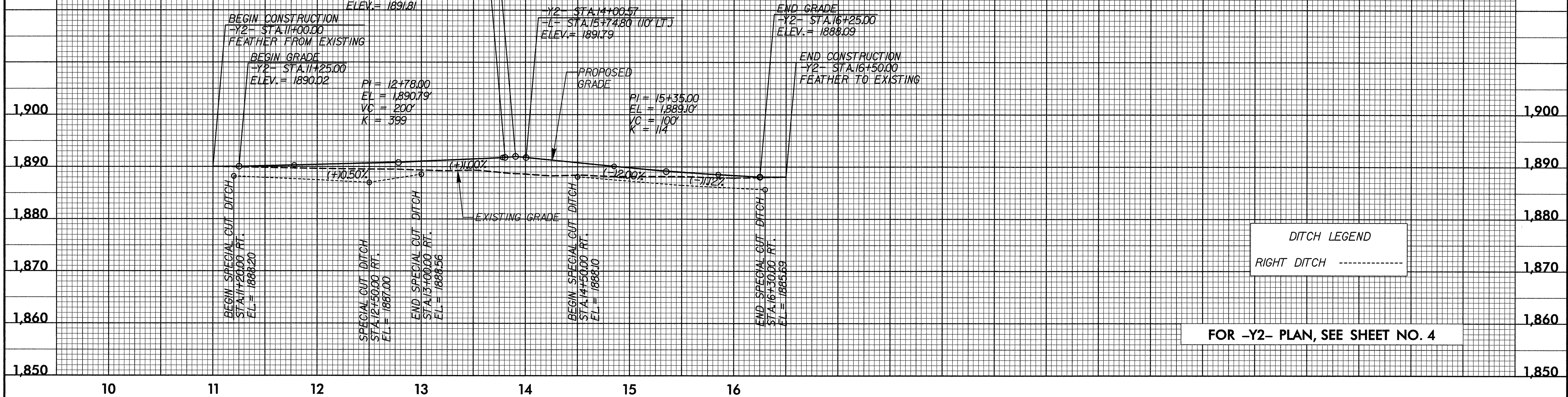
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5/28/99

# -Y2-

PROJECT REFERENCE NO. B-4184	SHEET NO. 6
ROADWAY DESIGN ENGINEER SEAL 17265 STEVE ANTHONY DRAW	HYDRAULICS ENGINEER SEAL 29185 RICHARD L. HINER



FOR -Y2- PLAN, SEE SHEET NO. 4

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