

See Sheet 1-A For Index of Sheets

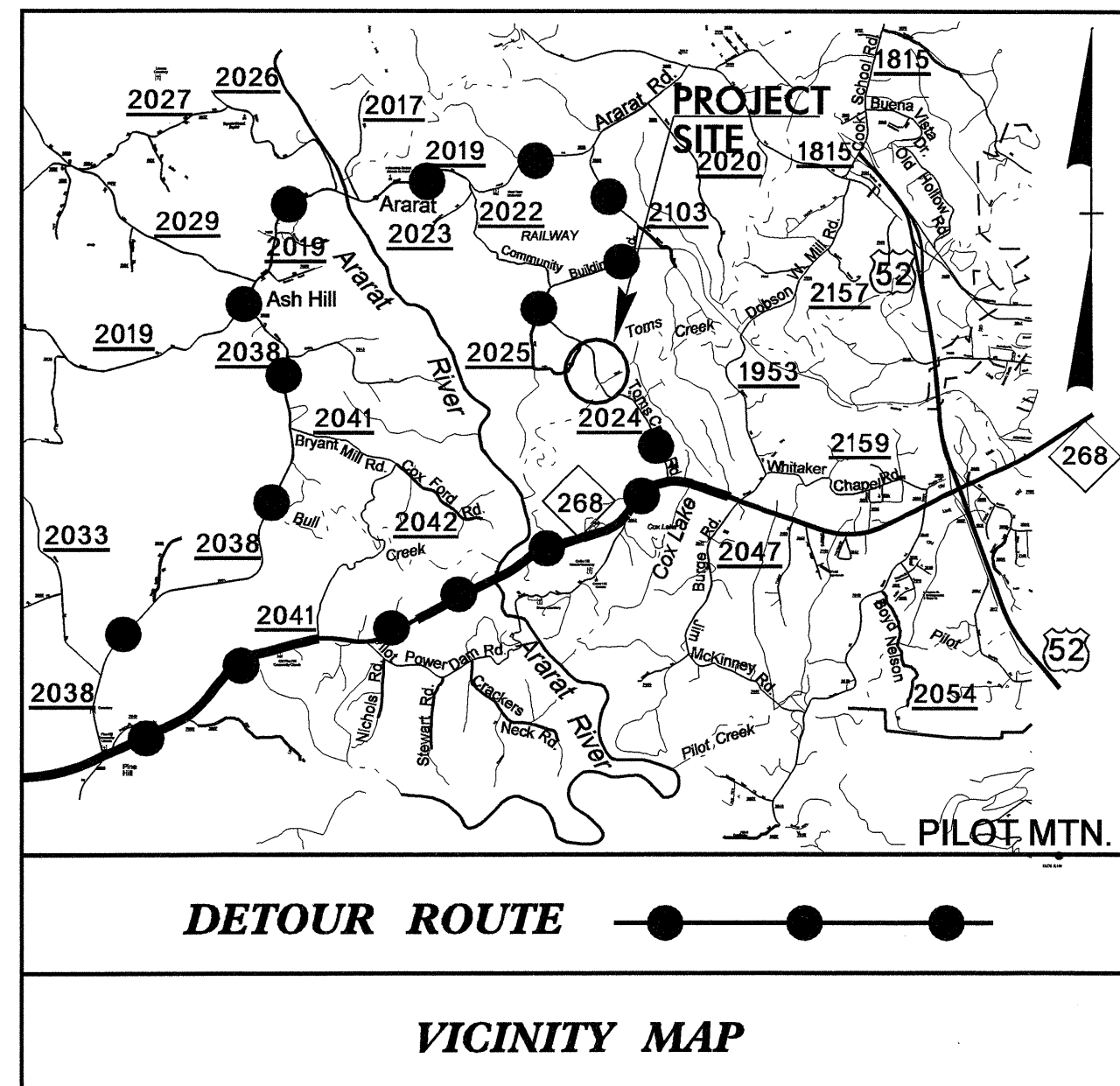
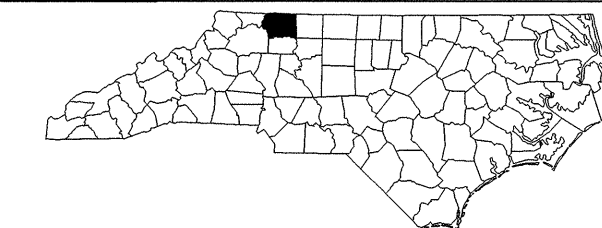
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SURRY COUNTY

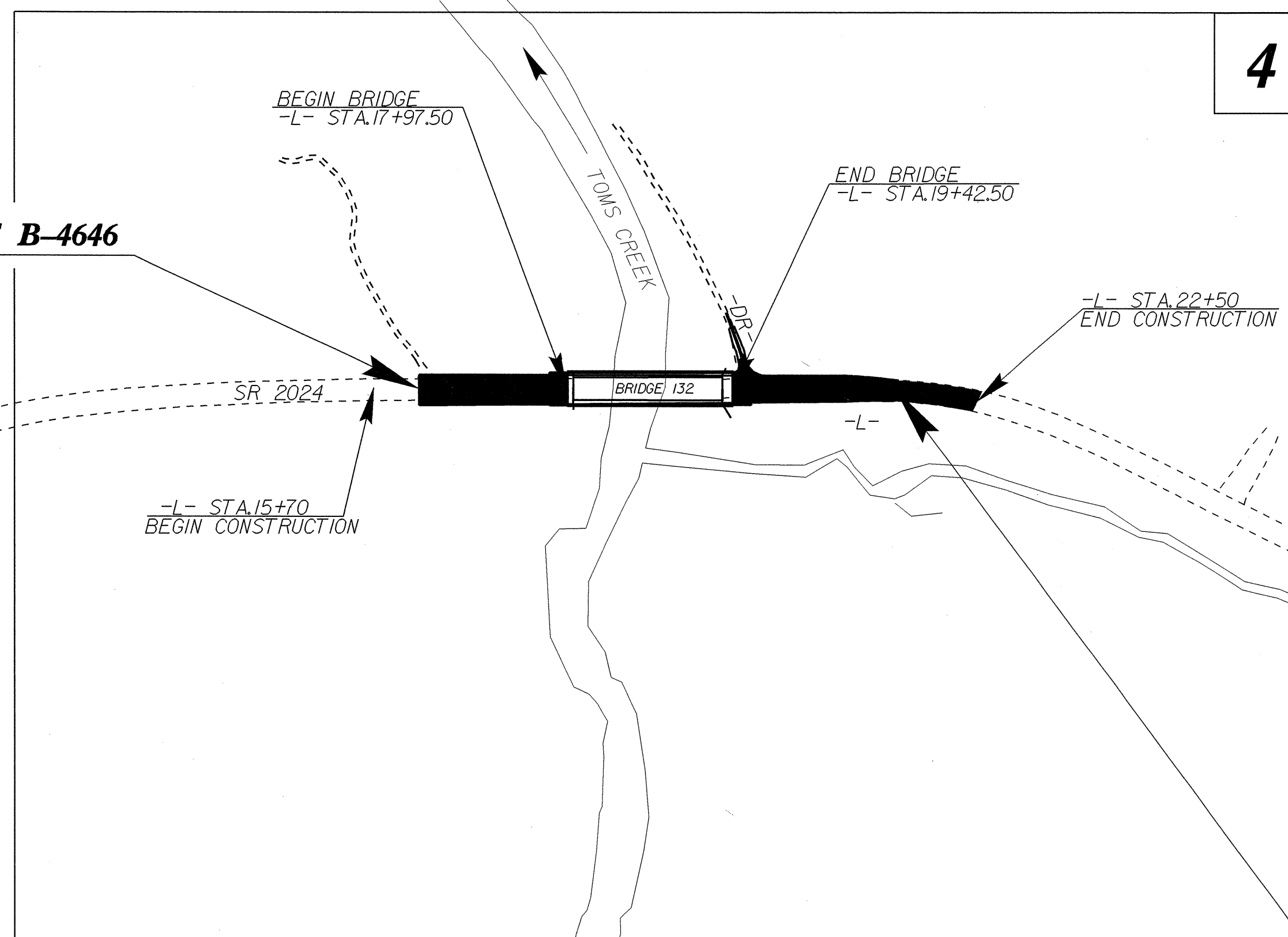
LOCATION: BRIDGE 132 ON SR 2024 OVER TOMS CREEK

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

STATE	STATE PROJECT REFERENCE NO.	
N.C.	B-4646	1
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION
33812.1.1	BRZ-2024(2)	P.E.
33812.2.1	BRZ-2024(2)	R/W & UTIL
33812.3.1	BRZ-2024(2)	CONST.



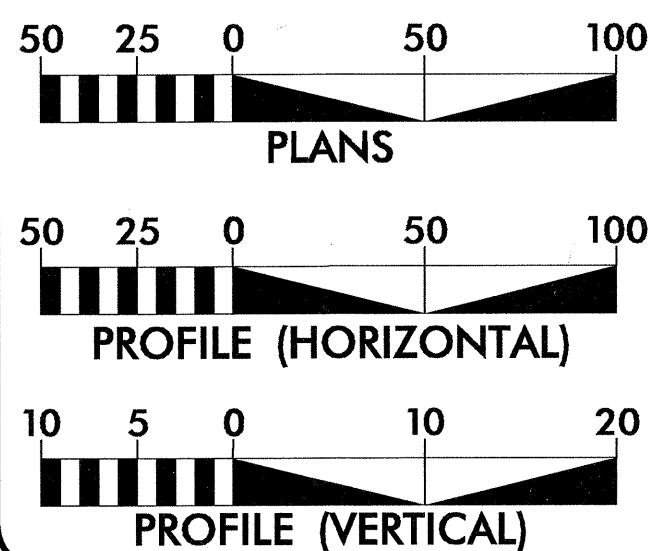
-L- STA. 16+00.00 BEGIN TIP PROJECT B-4646



-L- STA. 21+50.00 END TIP PROJECT B-4646

** USED SUB REGIONAL TIER DESIGN GUIDELINES.

GRAPHIC SCALES



DESIGN DATA

ADT 2009 = 380
ADT 2030 = 800
DHV = 12 %
D = 60 %
* T = 3 %
* * V = 40 MPH
* TTST 1% DUAL 2%
FUNCTIONAL CLASSIFICATION
RURAL LOCAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4646 = 0.077 MILES
LENGTH STRUCTURE TIP PROJECT B-4646 = 0.027 MILES
TOTAL LENGTH TIP PROJECT B-4646 = 0.104 MILES

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
MAY 16, 2008

LETTING DATE:
MAY 19, 2009

G. E. BREW, PE
PROJECT ENGINEER

I. T. YOUNIS
PROJECT DESIGN ENGINEER

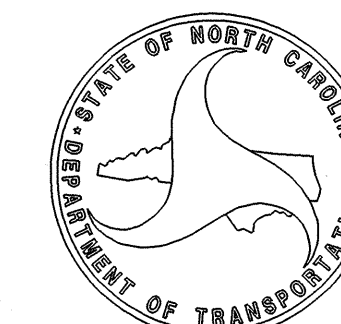
HYDRAULICS ENGINEER

[Signature]
SEAL
24897
NORTH CAROLINA PROFESSIONAL ENGINEER
JUNIOR TWISSDALE, JR.

ROADWAY DESIGN ENGINEER

[Signature]
SEAL
18993
NORTH CAROLINA PROFESSIONAL ENGINEER
GREGORY E. BREW

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

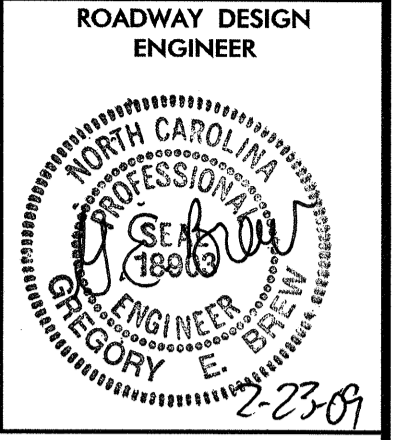


[Signature]
STATE HIGHWAY DESIGN ENGINEER

TIP PROJECT: B-4646

CONTRACT: C202113

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS



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

SHEET NUMBER	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
2-A	DETAIL OF TYPE III SHOP CURVED STRUCTURE ANCHOR UNIT
2-B	DETAIL OF ANCHORAGE FOR FRAMES
2-C	DETAIL OF SUB-REGIONAL TIER BRIDGE APPROACH FILL
3	SUMMARY OF QUANTITIES
3-A	SUMMARY OF DRAINAGE QUANTITIES
3-B	SUMMARY OF GUARDRAIL, EARTHWORK SUMMARY, AND EXISTING ASPHALT PAVEMENT REMOVAL SUMMARY
4	PLAN SHEET
5	PROFILE SHEET
TCP-1 THRU TCP-2	TRAFFIC CONTROL PLANS
SD-1	SPECIAL SIGN DESIGN
EC-1 THRU EC-5	EROSION CONTROL PLANS
UO-1 THRU UO-2	UTILITY CONFLICT PLANS (UTILITIES BY OTHERS)
X-1A	CROSS-SECTION SUMMARY SHEET
X-1 THRU X-6	CROSS-SECTIONS
S-1 THRU S-24	STRUCTURE PLANS

GENERAL NOTES:

2006 SPECIFICATIONS
EFFECTIVE: 07-18-06
REVISED: 07-30-08

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 III.

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.

TEMPORARY SHORING:

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

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 Surry Yadkin EMC
Surry TMC

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
200.03	Method of Clearing - Method III
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'
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
654.01	Pavement Repairs
806.01	Concrete Right-of-Way Marker
806.02	Granite Right-of-Way Marker
815.03	Pipe Underdrain and Blind Drain
816.04	Markers for Drainage Structure and Concrete Pad
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
846.04	Drop Inlet Installation in Shoulder Berm Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

3/15/05

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	○
Property Corner	✕
Property Monument	□
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---

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 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 Utility Easement	---PUE---
Proposed Temporary Utility Easement	---TUE---
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 Wheel Chair Ramp	WCR
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	-----

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	-----

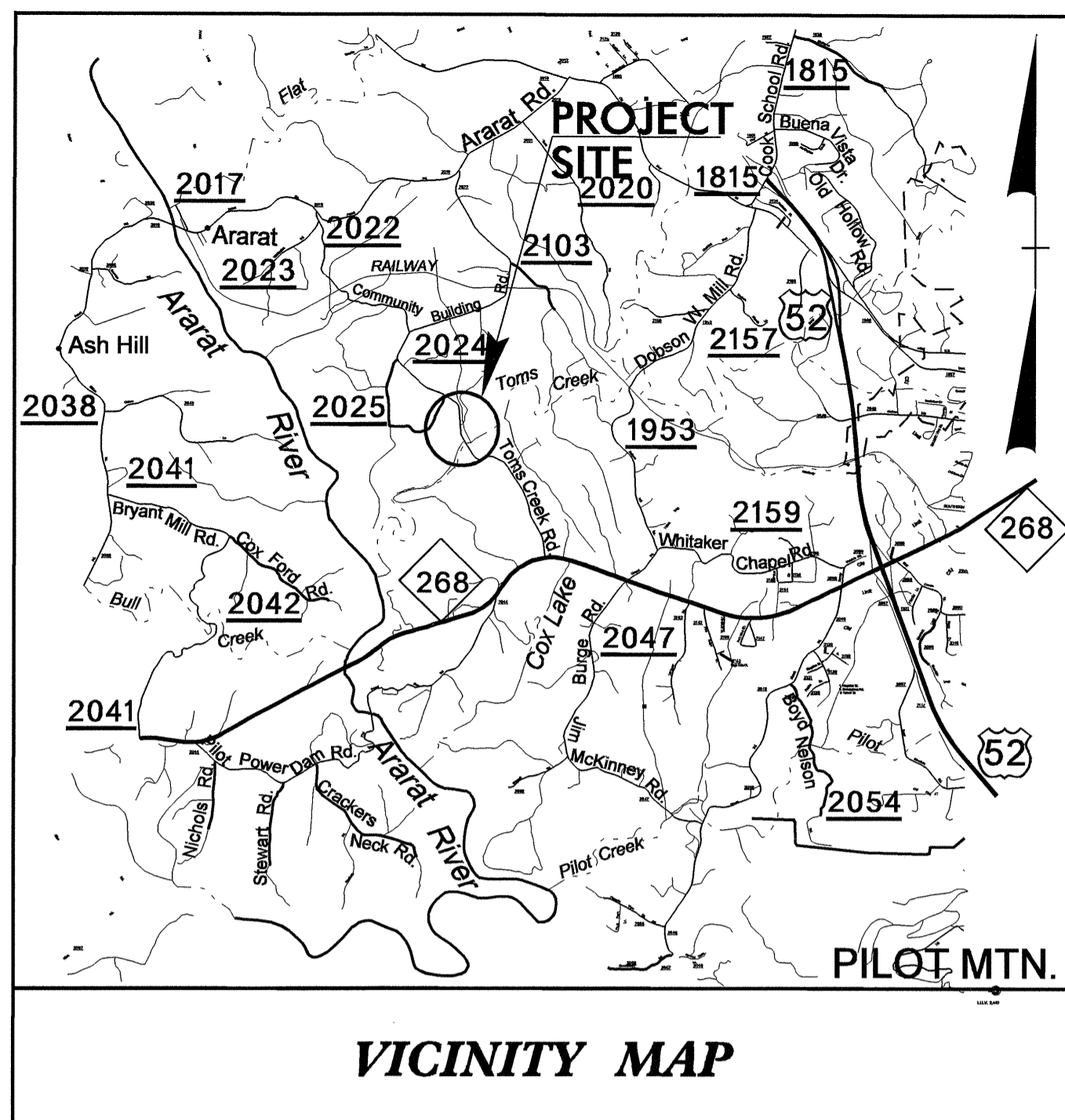
SANITARY SEWER:

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.

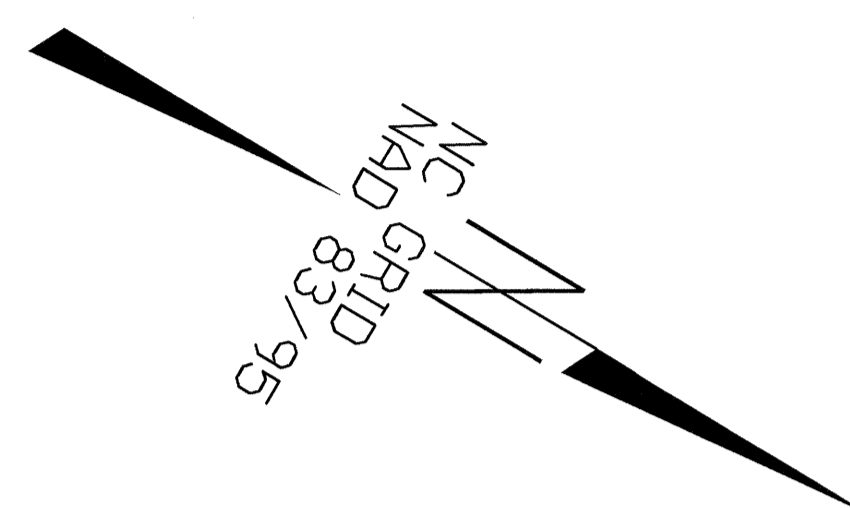
SURVEY CONTROL SHEET B-4646



VICINITY MAP

BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
BL3	(BL-3)	962376.5681	1550113.7078	966.79'	OUTSIDE PROJECT LIMITS	
BL4	(BL-4)	962321.3885	1549891.5242	944.02'	12+27.09	12.43' LT
BL5	(BL-5)	962773.1317	1549540.4125	898.48'	17+97.72	14.03' LT
BL6	(BL-6)	963099.4229	1549362.6493	898.51'	21+66.72	14.21' LT
BL7	(BL-7)	963564.8679	1549339.3537	904.86'	OUTSIDE PROJECT LIMITS	

 BM #1 ELEVATION = 891.66'
 N 963033. E 1549453.
 -L- STATION 20+68 45' RIGHT
 8" SPIKE IN ROOT OF 12" CHERRY TREE



BEGIN BRIDGE
-L- STA 17+97.50

NCDOT GPS STATION B4646-1
LOCALIZED CORDINATES

N = 964,933.6250
E = 1,547,848.9250

-L- STA 16+00.00
BEGIN TIP PROJECT B-4646
N = 962,611.2527
E = 1,549,654.8215

END BRIDGE
-L- STA 19+42.50

-L- STA. 21+50.00
END TIP PROJECT B-4646
N = 963,087.5042
E = 1,549,381.2838

NCDOT GPS STATION B4646-2
LOCALIZED CORDINATES
N = 964,369.9060
E = 1,548,622.0830

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4646-1" WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 964933.625(±) EASTING: 1547848.925(±) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.00002942 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4646-1" TO -L- STATION 16+00 IS S 37°52'08.19" E 2,941.8829' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

NOTES:

1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTP://WWW.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:
 B4646_LS_CONTROL_070604.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 NGS ONLINE POSITIONING SERVICE (OPUS)

NOTE: DRAWING NOT TO SCALE

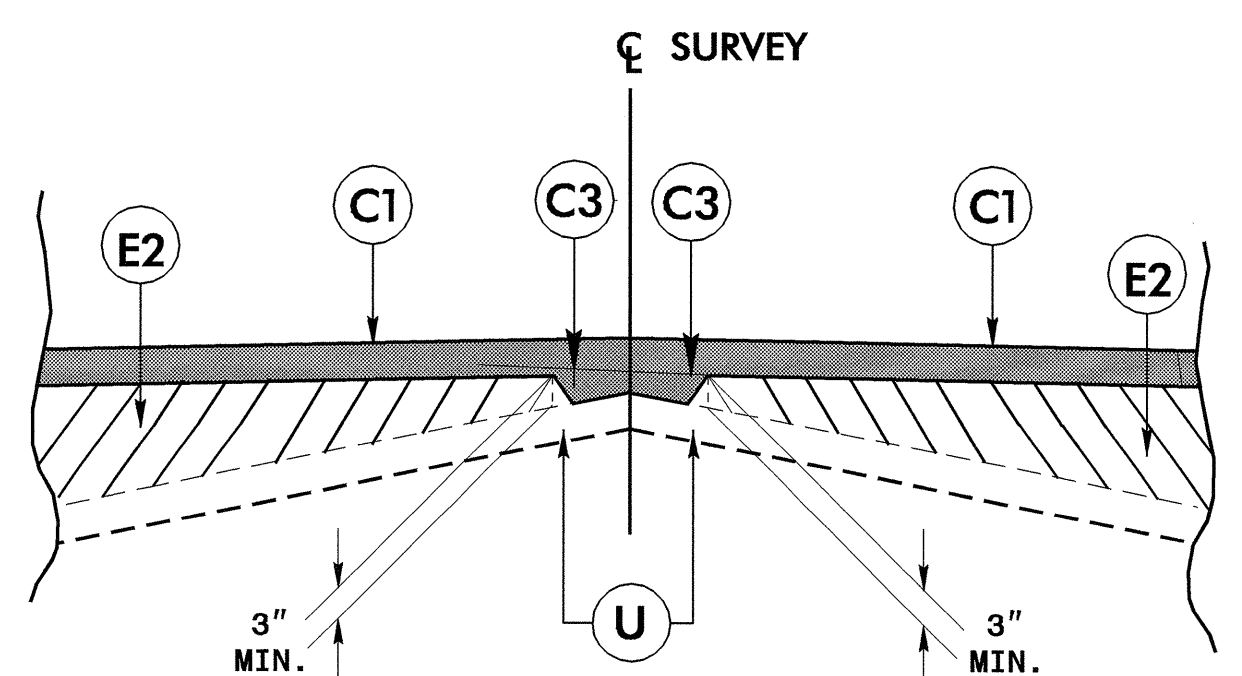
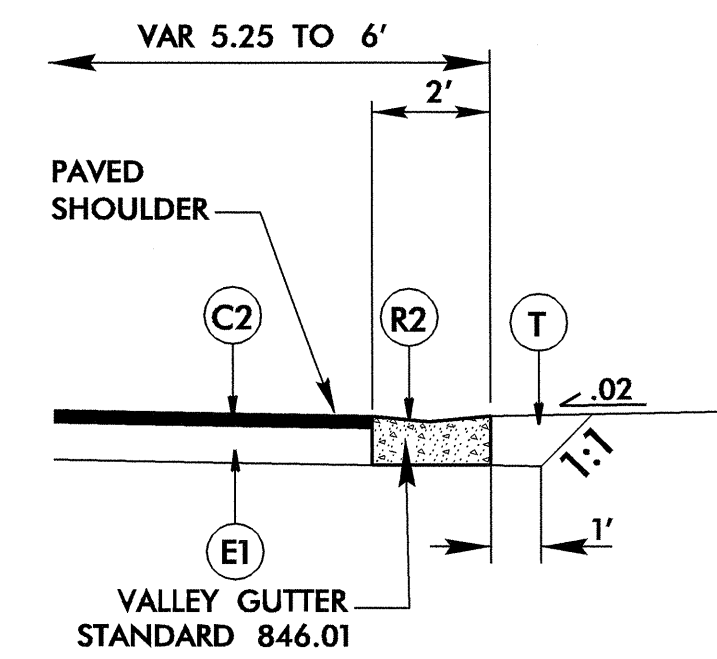
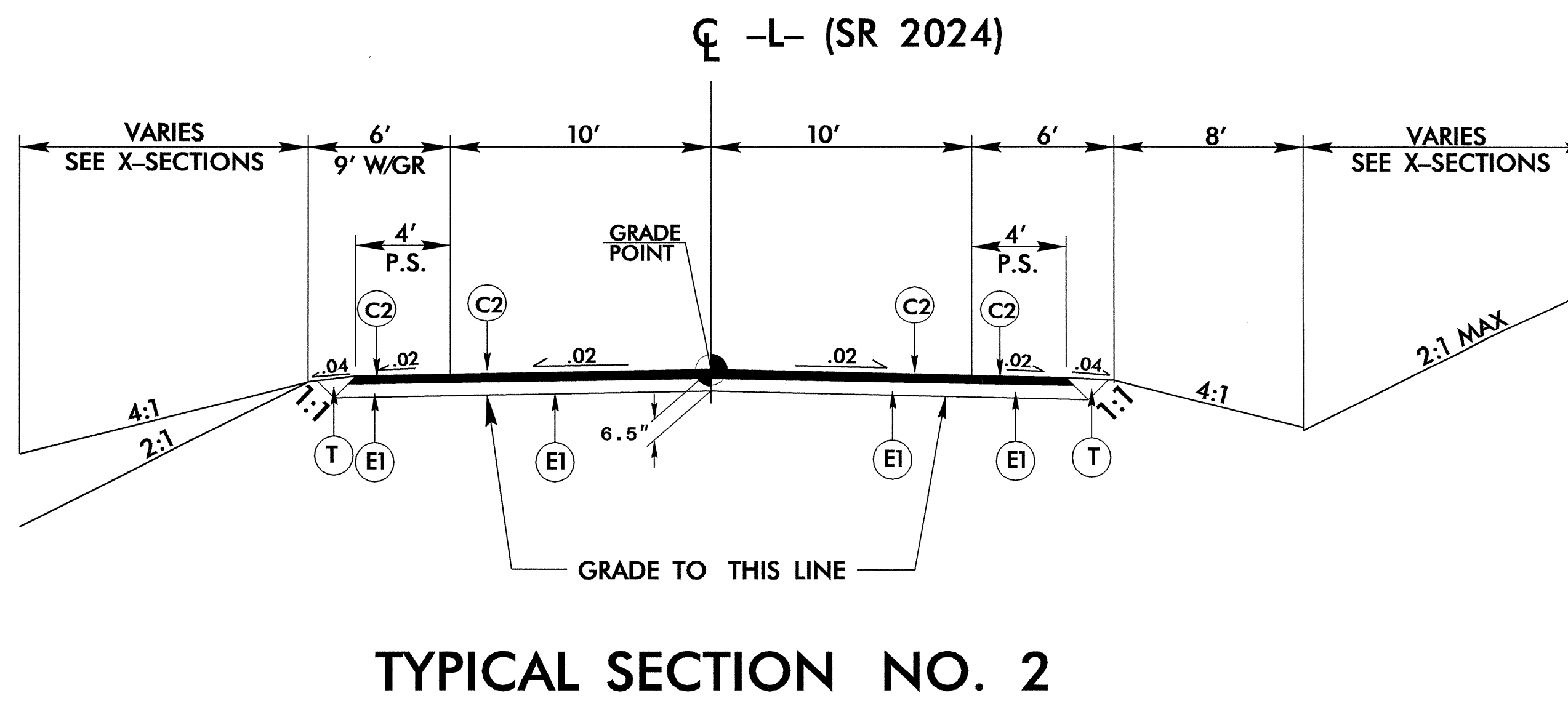
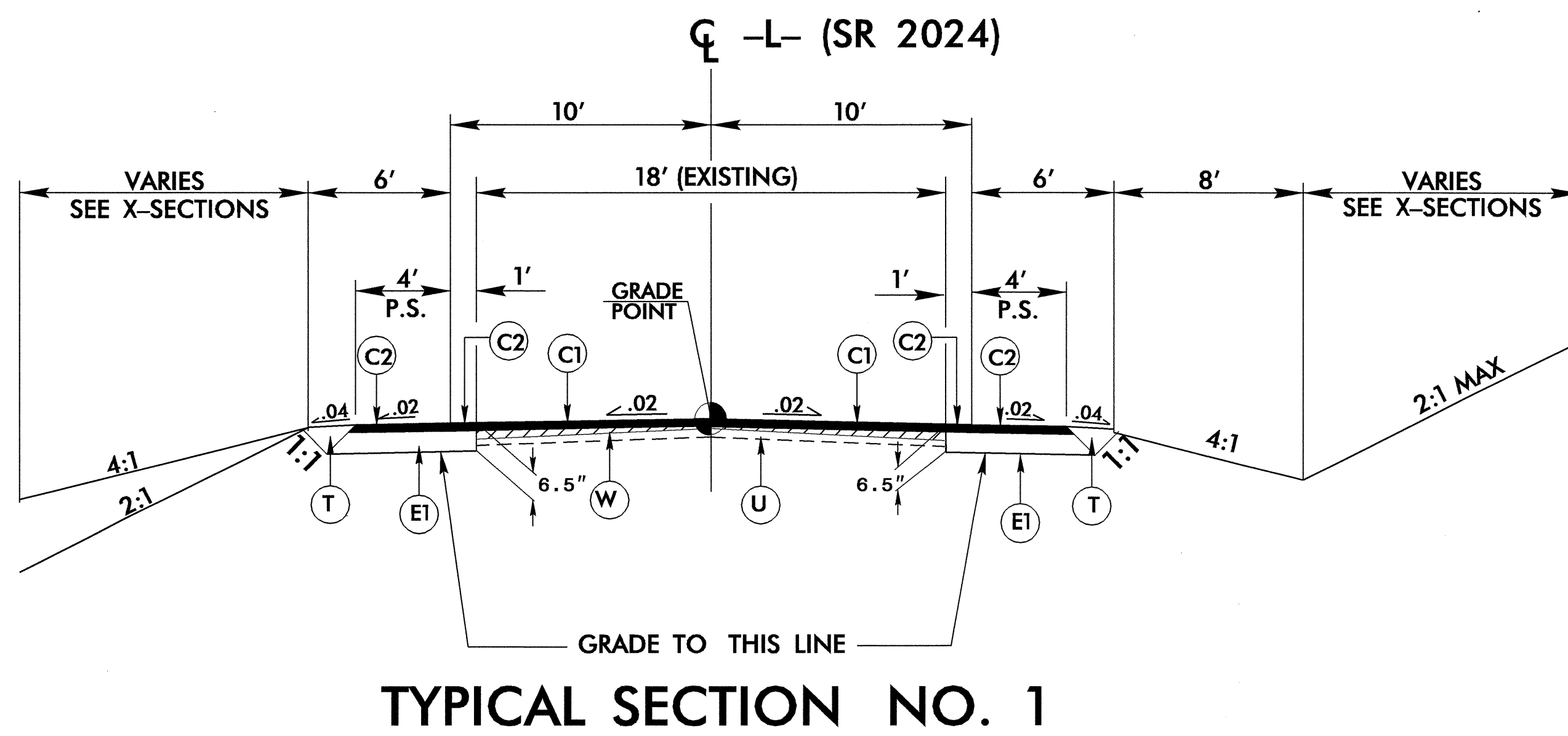
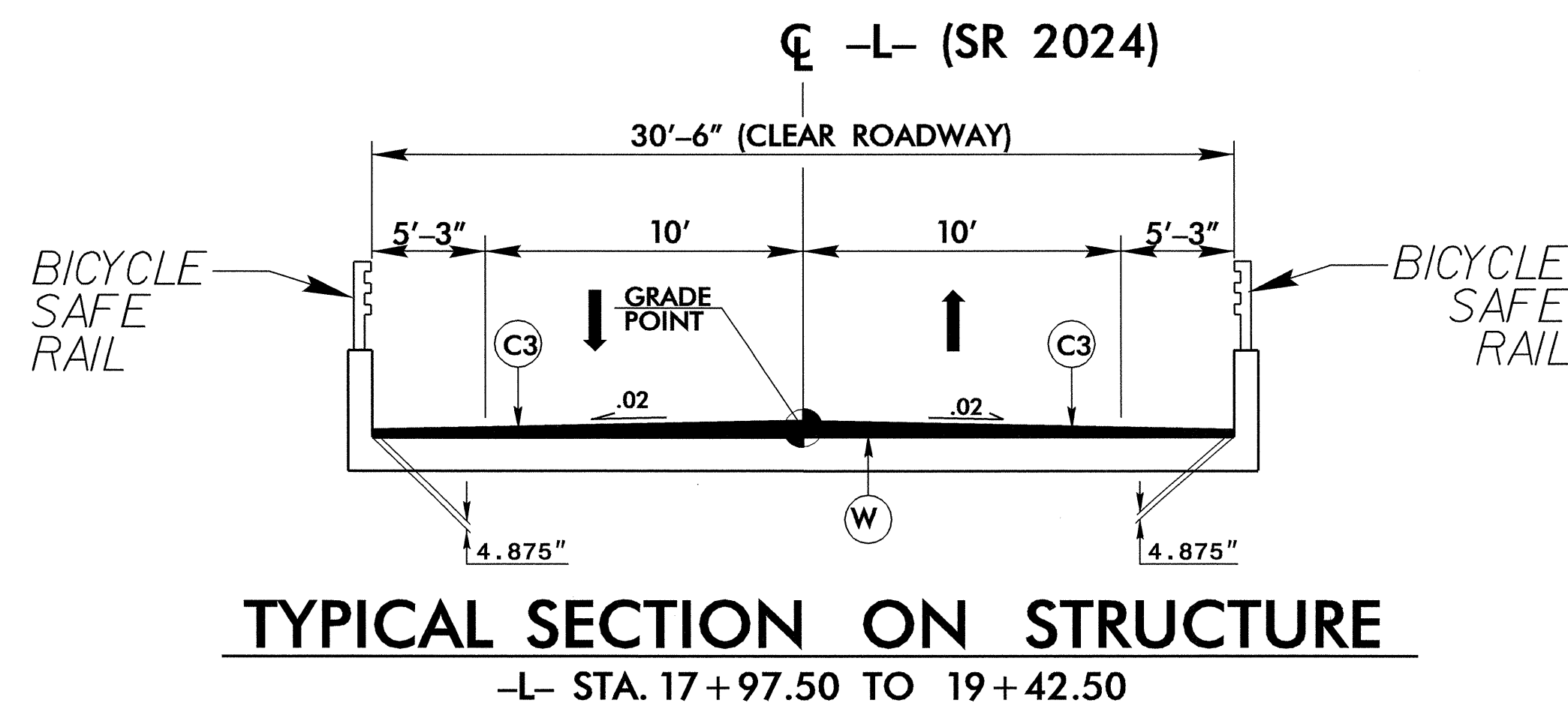
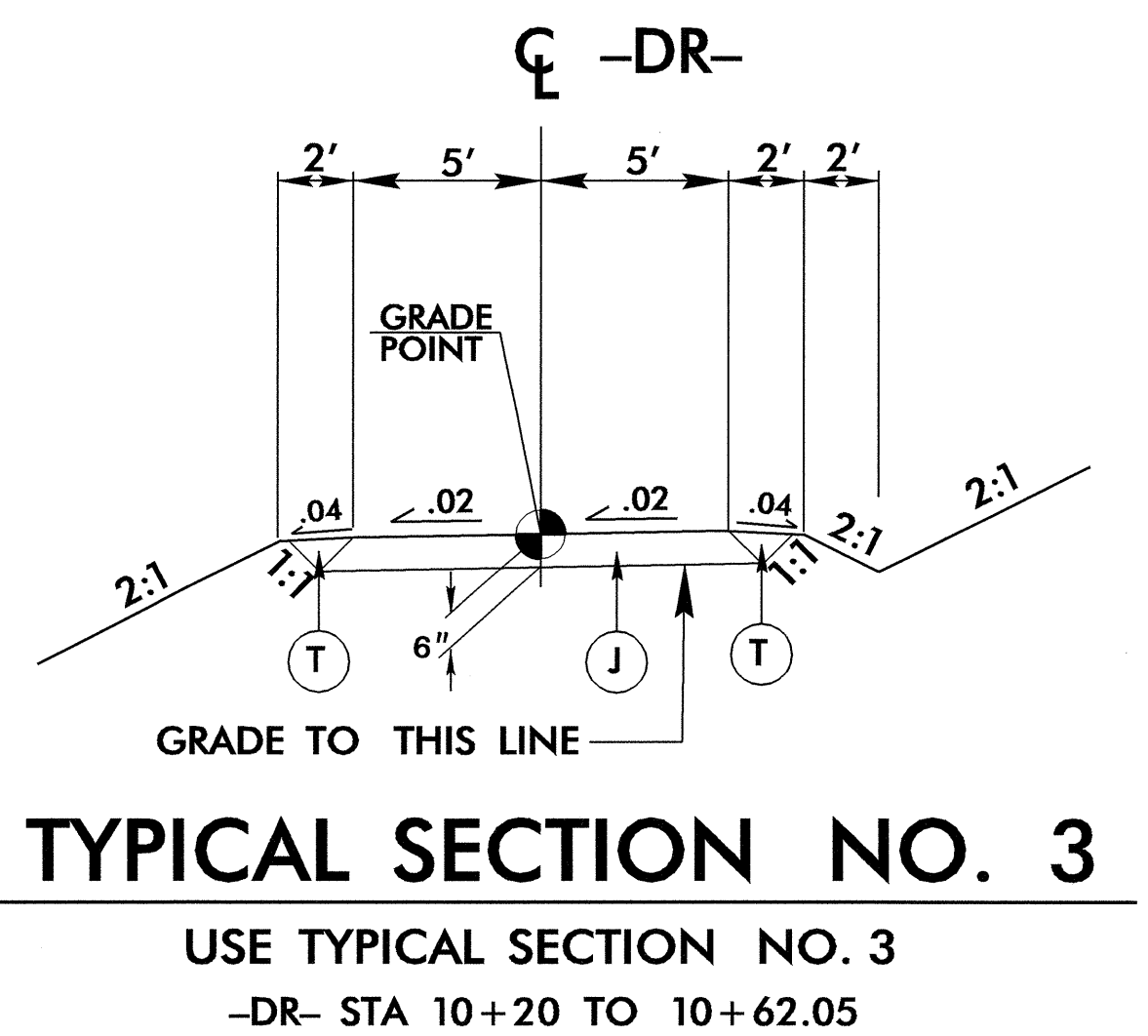
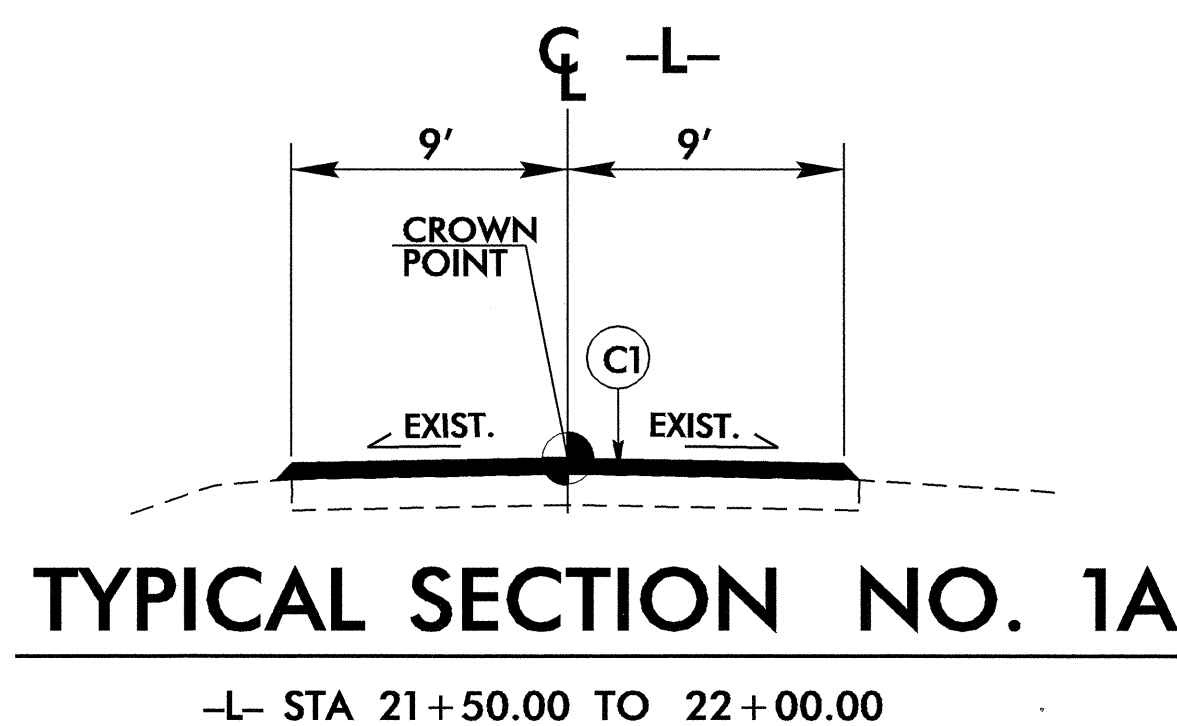
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6/2/99

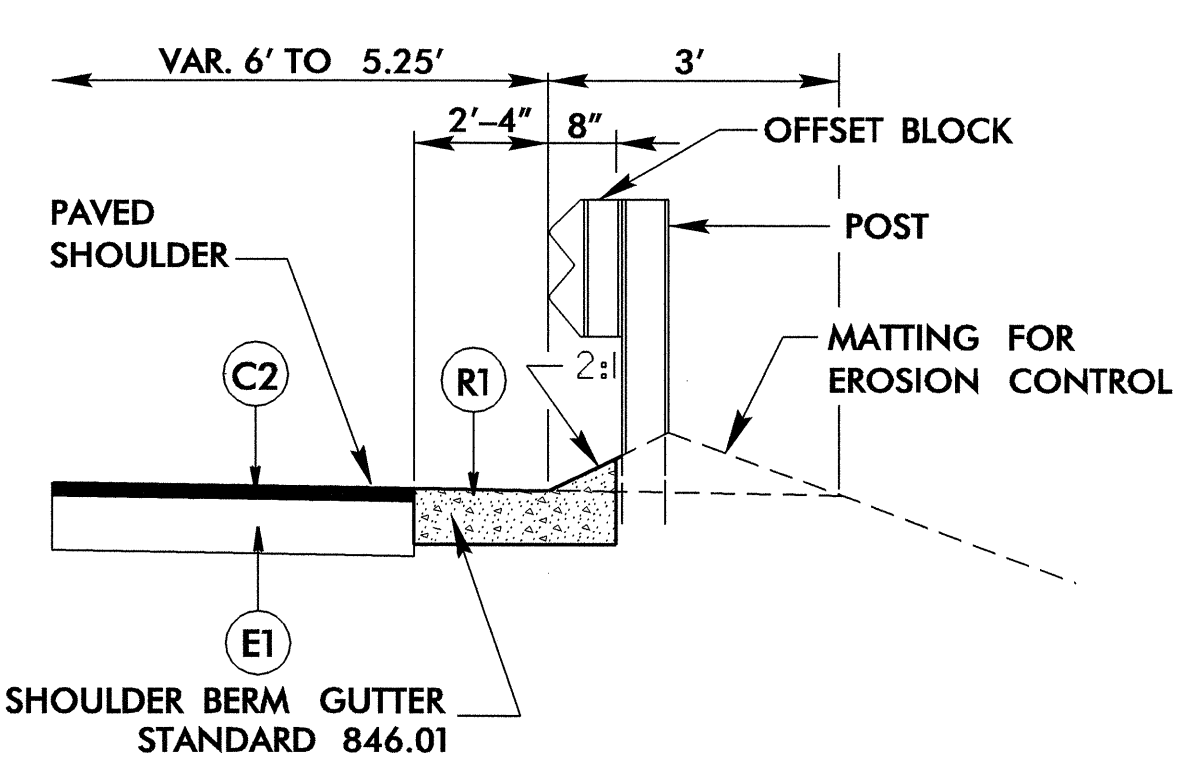
FINAL PAVEMENT SCHEDULE

C1	PROP. APPROX. 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.
C2	PROP. APPROX. 2 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1 1/2" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. 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. 6" AGGREGATE BASE COURSE.
R1	SHOULDER BERM GUTTER.
R2	CONCRETE VALLEY GUTTER.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT.

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



USE TYPICAL SECTION NO. 1
-L- STA 16+00.00 TO 16+50.00 TRANSITION FROM EXISTING TO T.S. 1
-L- STA 16+50.00 TO 17+00.00
-L- STA 20+25.00 TO 21+00.00
-L- STA 21+00.00 TO 21+50.00 TRANSITION FROM T.S. 1 TO T.S. 1A



USE TYPICAL SECTION NO. 2
-L- STA 17+00.00 TO 17+97.50 (BEGIN BRIDGE)
-L- STA 19+42.50 (END BRIDGE) TO 20+25.00

PROJECT REFERENCE NO. B-4646	SHEET NO. 2
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 18903 GREGORY E. MORRISON 2-23-09	PAVEMENT DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 22896 CLAYTON S. MORRISON 2/16/09

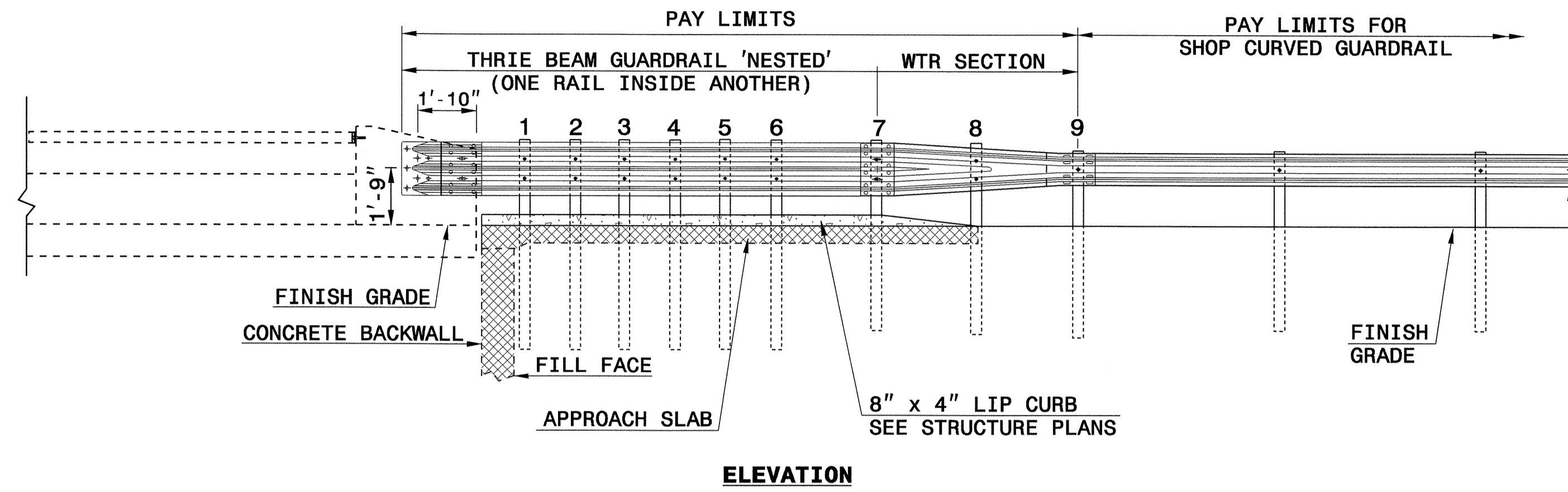
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STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

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

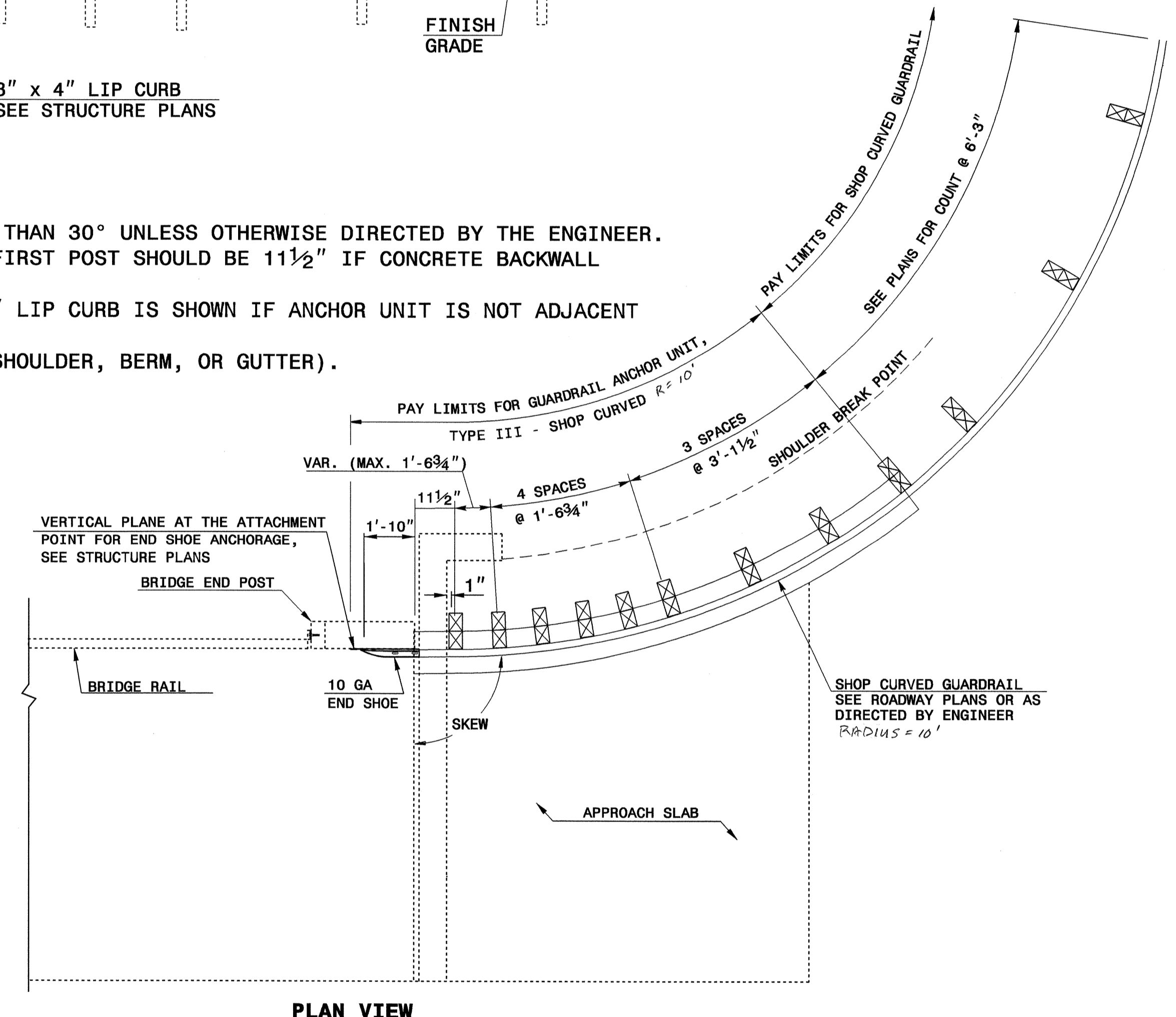
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

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



SEE ROADWAY PLANS FOR END TREATMENT

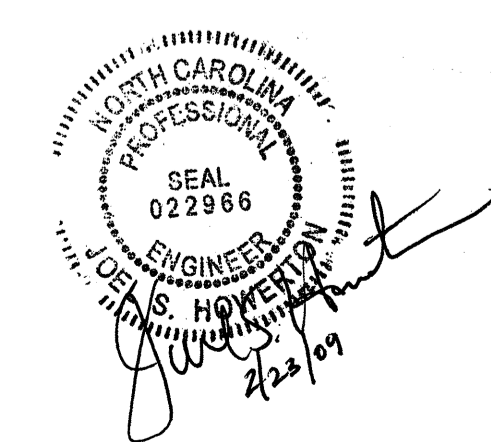
- NOTE:
- **POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
 - *THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11½" IF CONCRETE BACKWALL IS NOT PRESENT.
 - SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 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**

SHEET 1 OF 1
TYPE III SC

SHEET 1 OF 1
TYPE III SC

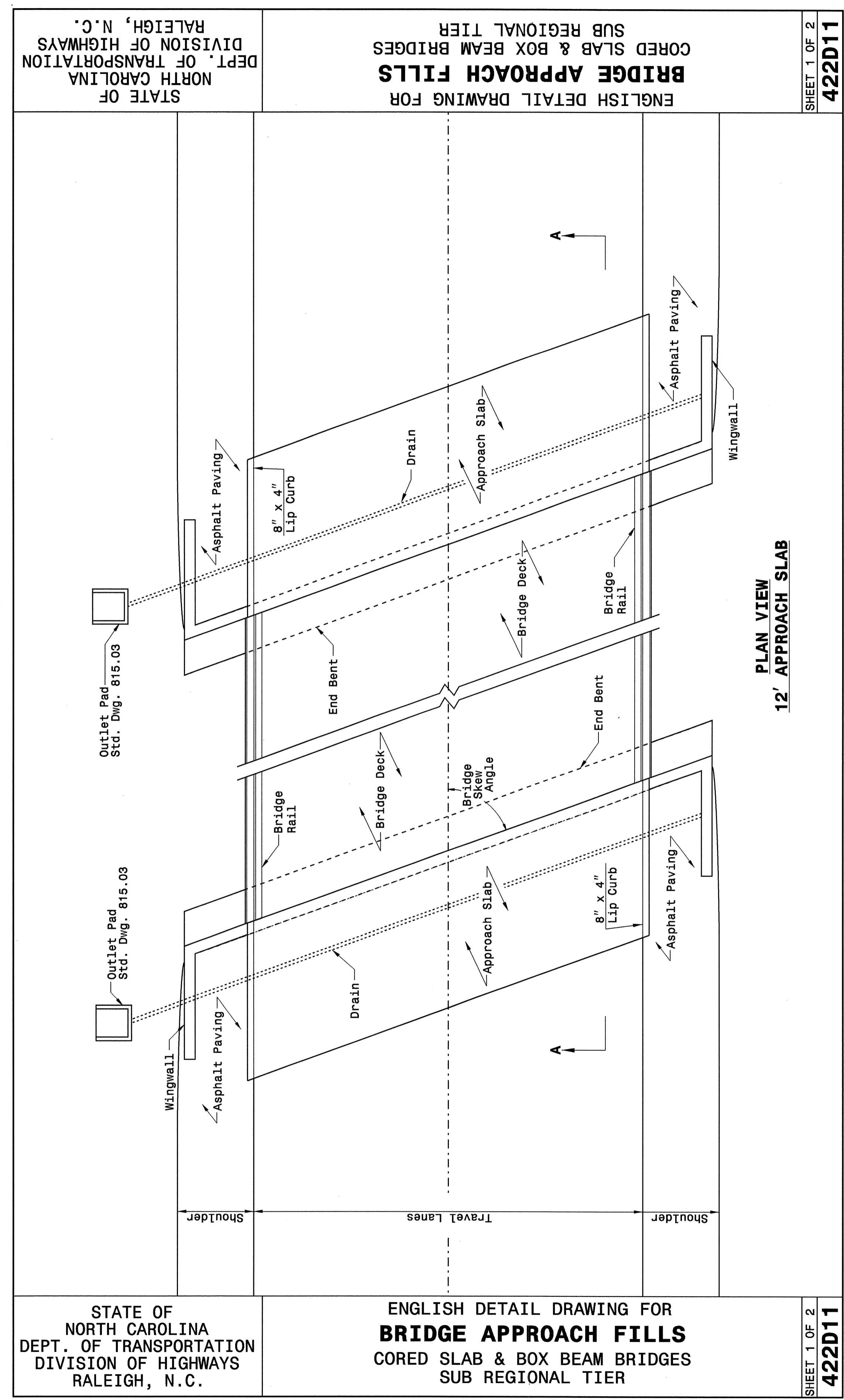


**PROJECT SERVICES UNIT
STANDARDS AND SPECIAL DESIGN**
Office 919-250-4128 FAX 919-250-4119

SEE PLATE FOR TITLE

ORIGINAL BY: E.E. WARD	DATE: 4-4-02
MODIFIED BY: <i>[Signature]</i>	DATE:
CHECKED BY: <i>[Signature]</i>	DATE: 8/26/08
FILE SPEC: \\atd:\usr\details\stand\862stds\type1iisc.dgn	

5/14/99
SYSTEMS
DOWN
USERNAME



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

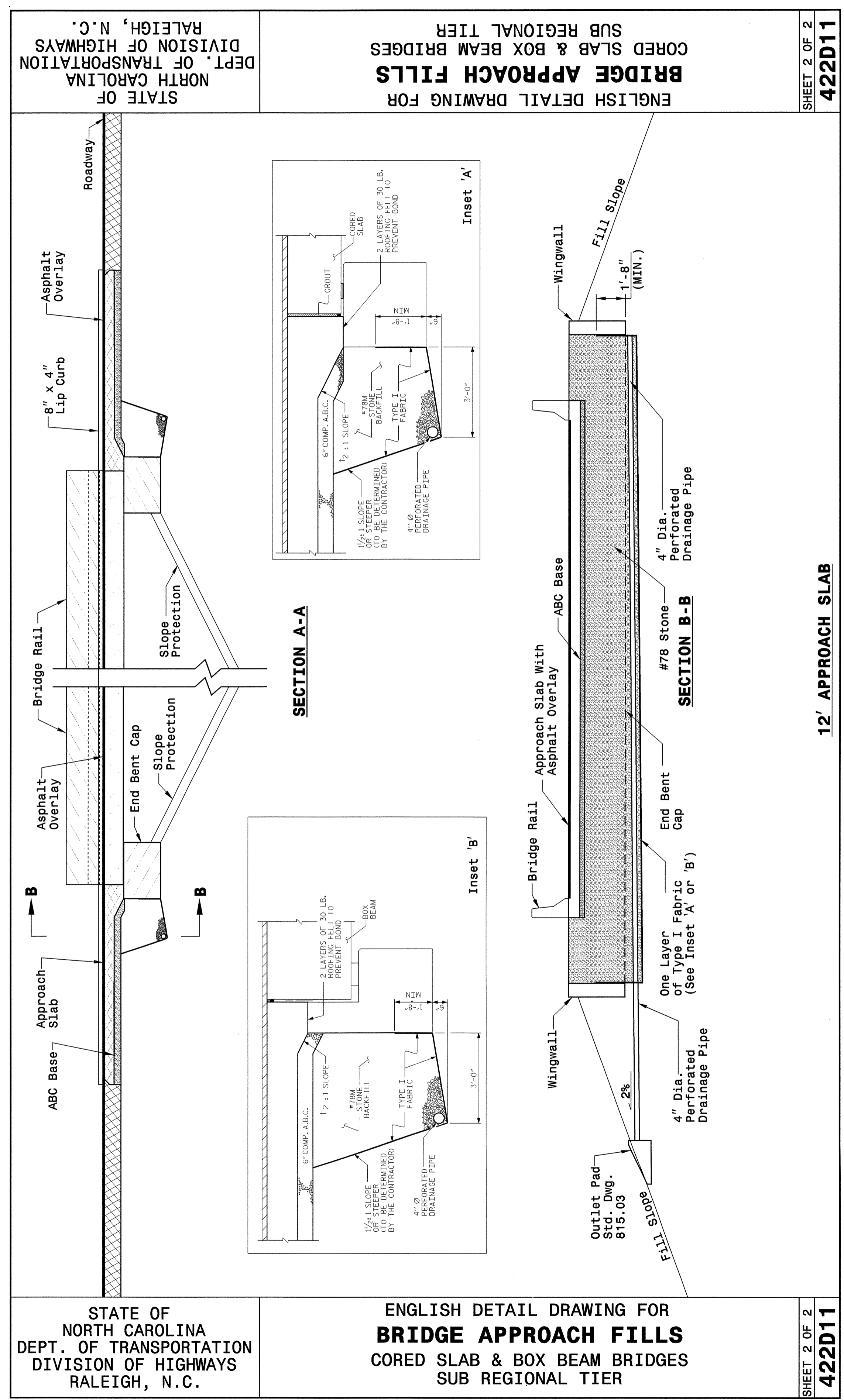
ENGLISH DETAIL DRAWING FOR
BRIDGE APPROACH FILLS
CORED SLAB & BOX BEAM BRIDGES
SUB REGIONAL TIER

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

SHEET 1 OF 2
422D11



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

ENGLISH DETAIL DRAWING FOR
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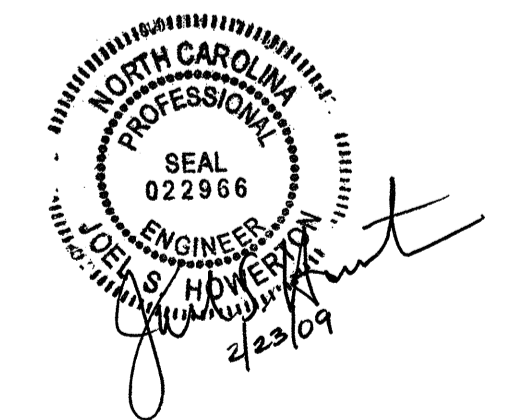
SHEET 2 OF 2
422D11

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: *[Signature]*
CHECKED BY: *[Signature]* DATE: 2/16/09
FILE SPEC: *[Signature]*english\bridge approach fills.dgn



PLANNING & DESIGN DIVISION

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C202113

ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
0000400000-N	801	Lump Sum		CONSTRUCTION SURVEYING
0030000000-N	SP	Lump Sum		BRIDGE APPROACH FILL - SUB REGIONAL TIER, STATION ***** (18+70)
0036000000-E	225	250	CY	UNDERCUT EXCAVATION
0043000000-N	226	Lump Sum		GRADING
0050000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUBBING
0134000000-E	240	168	CY	DRAINAGE DITCH EXCAVATION
0195000000-E	265	250	CY	SELECT GRANULAR MATERIAL
0318000000-E	300	12	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRS
0372000000-E	310	48	LF	18" RC PIPE CULVERTS, CLASS III
1121000000-E	520	30	TON	AGGREGATE BASE COURSE
1220000000-E	545	30	TON	INCIDENTAL STONE BASE
1489000000-E	610	340	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B
1525000000-E	610	225	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A
1560000000-E	620	30	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22
1693000000-E	654	30	TON	ASPHALT PLANT MIX, PAVEMENT REPAIR
2000000000-N	806	11	EA	RIGHT OF WAY MARKERS
2022000000-E	815	26	CY	SUBDRAIN EXCAVATION
2033000000-E	815	18	CY	SUBDRAIN FINE AGGREGATE
2044000000-E	815	100	LF	6" PERFORATED SUBDRAIN PIPE
2055000000-E	815	3	EA	6" SUBDRAIN PIPE WYES, TEES, & ELBOWS
2066000000-N	815	1	EA	CONCRETE PAD FOR SUBDRAIN PIPE OUTLET
2077000000-E	815	6	LF	6" OUTLET PIPE (SUBDRAINS)
2286000000-N	840	3	EA	MASONRY DRAINAGE STRUCTURES

ItemNumber	Sec #	Quantity	Unit	Description
2367000000-N	840	3	EA	FRAME WITH TWO GRATES, STD 840.29
2556000000-E	846	105	LF	SHOULDER BERM GUTTER
2580000000-E	846	35	LF	CONCRETE VALLEY GUTTER
3030000000-E	862	87.5	LF	STEEL BM GUARDRAIL
3150000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS
3180000000-N	862	1	EA	GUARDRAIL ANCHOR UNITS, TYPE ***** (III SHOP CURVED)
3195000000-N	862	1	EA	GUARDRAIL ANCHOR UNITS, TYPE AT-1
3215000000-N	862	3	EA	GUARDRAIL ANCHOR UNITS, TYPE III
3270000000-N	SP	3	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
3635000000-E	876	29	TON	RIP RAP, CLASS II
3649000000-E	876	18	TON	RIP RAP, CLASS B
3656000000-E	876	854	SY	FILTER FABRIC FOR DRAINAGE
4400000000-E	1110	534	SF	WORK ZONE SIGNS (STATIONARY)
4410000000-E	1110	144	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
4430000000-N	1130	10	EA	DRUMS
4445000000-E	1145	102	LF	BARRICADES (TYPE III)
4810000000-E	1205	5,000	LF	PAINT PAVEMENT MARKING LINES (4")
6000000000-E	1605	275	LF	TEMPORARY SILT FENCE
6006000000-E	1610	150	TON	STONE FOR EROSION CONTROL, CLASS A
6009000000-E	1610	200	TON	STONE FOR EROSION CONTROL, CLASS B
6012000000-E	1610	250	TON	SEDIMENT CONTROL STONE
6015000000-E	1615	2.5	ACR	TEMPORARY MULCHING
6018000000-E	1620	100	LB	SEED FOR TEMPORARY SEEDING
6021000000-E	1620	1.25	TON	FERTILIZER FOR TEMPORARY SEEDING
6024000000-E	1622	75	LF	TEMPORARY SLOPE DRAINS

ItemNumber	Sec #	Quantity	Unit	Description
6027000000-N	1622	1	EA	INLET PROTECTION AT TEMPORARY SLOPE DRAINS
6029000000-E	SP	250	LF	SAFETY FENCE
6030000000-E	1630	485	CY	SILT EXCAVATION
6036000000-E	1631	1,000	SY	MATTING FOR EROSION CONTROL
6037000000-E	SP	50	SY	COIR FIBER MAT
6038000000-E	SP	250	SY	PERMANENT SOIL REINFORCEMENT MAT
6042000000-E	1632	100	LF	1/4" HARDWARE CLOTH
6070000000-N	SP	8	EA	SPECIAL STILLING BASINS
6071030000-E	SP	200	LF	COIR FIBER BAFFLES
6071050000-E	SP	5	EA	*** SKIMMER (1-1/2")
6084000000-E	1660	5	ACR	SEEDING & MULCHING
6087000000-E	1660	1	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	1.25	TON	FERTILIZER TOPDRESSING
6114000000-N	SP	5	HR	SPECIALIZED HAND MOWING
6117000000-N	SP	12	EA	RESPONSE FOR EROSION CONTROL

***** BEGIN SCHEDULE AA *****				
***** (3 ALTERNATES) *****				
0366000000-E	310	60	LF	15" RC PIPE CULVERTS, CLASS III
AA1				
*** OR ***				
0366000000-E	310	32	LF	15" RC PIPE CULVERTS, CLASS III
AA2				
0536000000-E	SP	28	LF	*** HDPE PIPE CULVERTS (15")
AA2				
*** OR ***				
0366000000-E	310	32	LF	15" RC PIPE CULVERTS, CLASS III
AA3				
0540000000-E	SP	28	LF	*** ALUMINIZED CORRUGATED STEEL PIPE CULVERTS, *** THICK (15", 0.064")
AA3				
***** END SCHEDULE AA *****				

RD223184

COMPUTED BY: JBT DATE: 8-26-2008
 CHECKED BY: CJT DATE: 12/22/2008

PROJECT NO.	SHEET NO.
B-4646	3-B

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK

Station to Station	CUBIC YARDS			
	Uncl. Exc. C.Y.	Embank. C.Y.	Borrow C.Y.	Waste C.Y.
SUMMARY				
-L- 16+00 TO 17+97.50	465	95		370
-L- 19+42.50 TO 22+00	184	295	111	
-DR- 10+25 TO 12+14.73	6	1		5
SUMMARY TOTALS	655	391	111	375
PROJECT TOTAL	655	391	111	375
Loss due to Clearing&Grubbing	-100			-100
Waste In Lieu of Borrow			-111	-111
GRAND TOTALS	555		0.00	164
SAY	600			
ESTIMATED DDE= 168 CY				
ESTIMATED UNDERCUT = 250 CY				

SUMMARY OF ASPHALT PAVEMENT REMOVAL

LINE	Station to Station	LOC LT/RT/CL	Asphalt Removal SQ. YDS.
L	16+50.00 TO 18+08.05	CL	311.47
L	19+33.98 TO 20+00.00	CL	122.06
PROJECT TOTAL			433.53
SAY			440.00

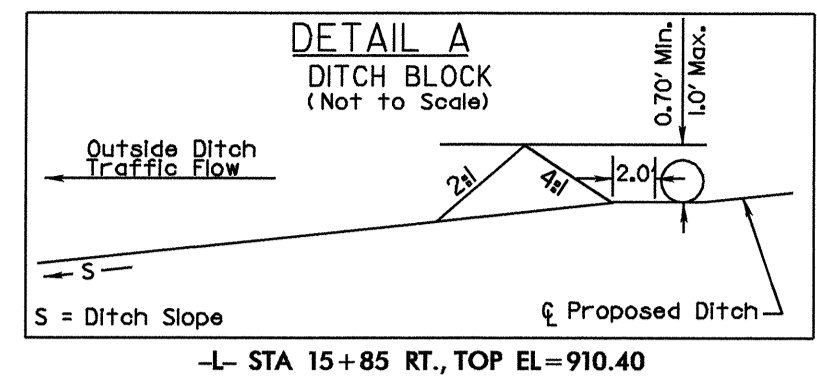
APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED EXCAVATION, FINE GRADING, CLEARING AND GRUBBING AND REMOVAL OF EXISTING ASPHALT PAVEMENT WILL BE PAID FOR AT THE LUMP SUM PRICE OF "GRADING".

Note: 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.

GUARDRAIL SUMMARY

"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

LINE	BEG. STA.	END STA.	LOC.	LENGTH (FT.)			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHLDR WIDTH	FLARE LENGTH		W		ANCHORS				IMP. ATTEN. TYPE 350			REMOVE EXISTING GUARDRAIL	REMARKS	
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPR. END	TRAIL. END			APPR. END	TRAIL. END	APPR. END	TRAIL. END	GRAU 350	TYPE III	AT-1	TYPE III SHOPCURVED	EA	G	NG			
L	16+60.00	17+97.50	RT	137.50			17+97.50		6'	9'	118.75'		1.75'			1	1							BRIDGE WARRANT
L	19+42.50	20+17.50	RT	75.00				20+17.50	6'	9'		56.25'		1.75'		1	1							BRIDGE WARRANT
L	17+22.50	17+97.50	LT	75.00				17+97.50	6'	9'		56.25'		1.75'		1	1							BRIDGE WARRANT
L	19+42.50	19+47.09	LT				19+42.50											1		1				STRUCTURE WARRANT (SEE DETAIL SHT 2-A FOR TYPE - III SHOP CURVED STRUCTURE ANCHOR UNIT)
SUBTOTALS				287.50												3	3	1	1					TOTAL
DEDUCTION FOR ANCHOR UNITS																								
(3 GRAU @ 50')				-150																				
(3 TYPE III @18.75')				-56.25																				
PROJECT TOTAL				81.25												3	3	1	1					
SAY				87.50																				
ADDITIONAL GUARDRAIL POSTS= 5 EA																								

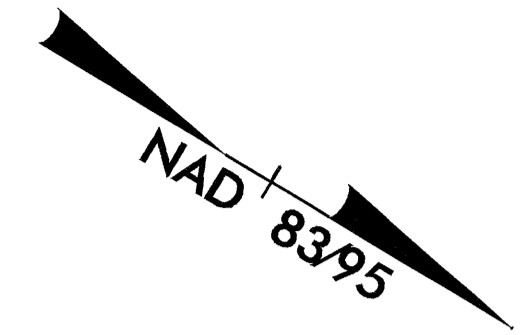


-L-
 PI Sta 12+06.56
 $\Delta = 73' 15" 49.9"$ (RT)
 $D = 35' 48" 35.5"$
 $L = 204.59'$
 $T = 118.96'$
 $R = 160.00'$
 $e = \text{EXISTING}$

PI Sta 13+60.33
 $\Delta = 9' 58" 10.9"$ (RT)
 $D = 20' 06" 13.6"$
 $L = 49.59'$
 $T = 24.86'$
 $R = 285.00'$
 $e = \text{EXISTING}$

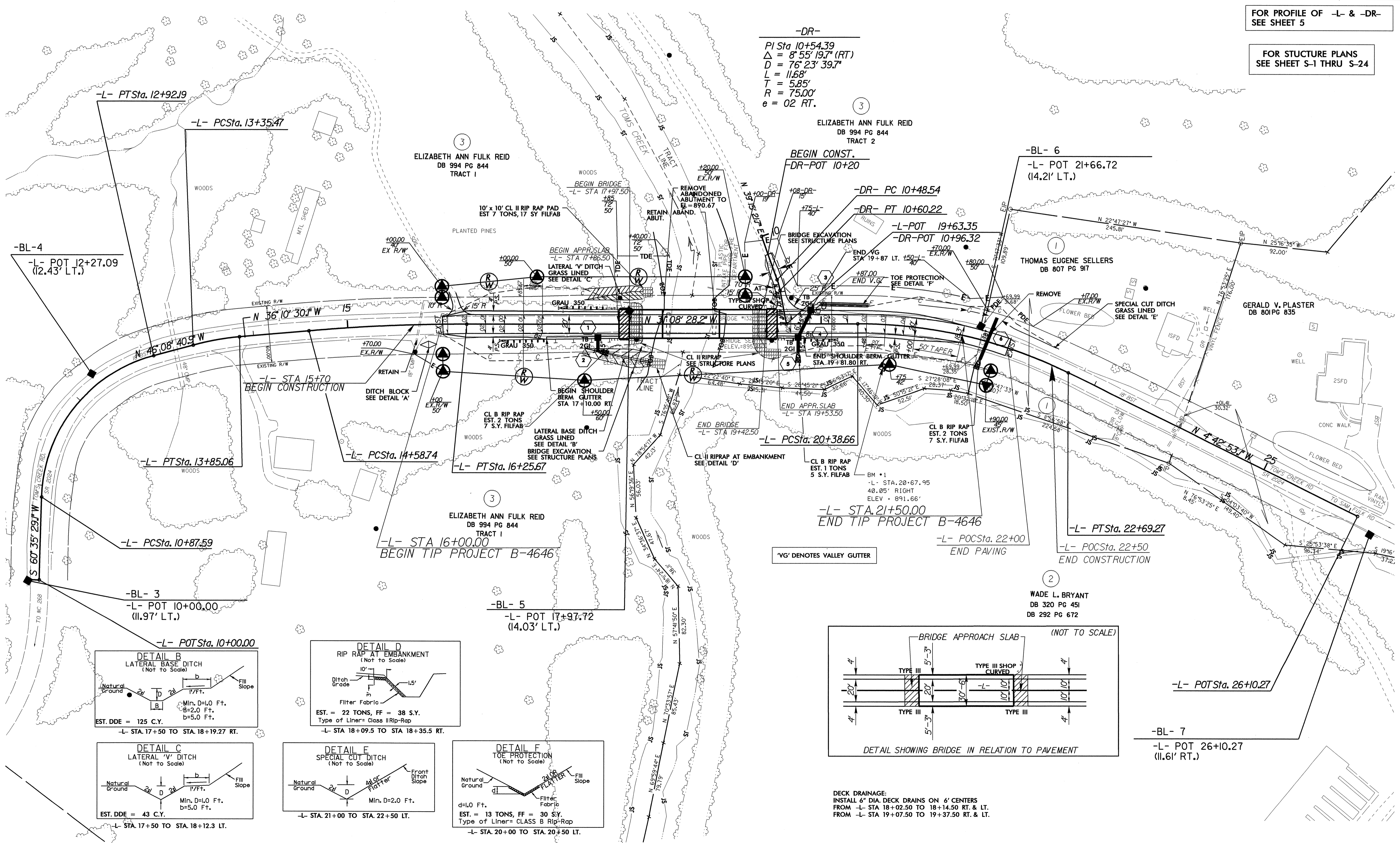
PI Sta 15+42.26
 $\Delta = 5' 02" 01.8"$ (RT)
 $D = 3' 00" 56.0"$
 $L = 166.93'$
 $T = 83.52'$
 $R = 1900.00'$
 $e = \text{SEE PLANS}$

-L-
 PI Sta 21+56.05
 $\Delta = 26' 25" 35.1"$ (RT)
 $D = 11' 27" 33.0"$
 $L = 230.61'$
 $T = 117.40'$
 $R = 500.00'$
 $e = \text{SEE PLANS}$



FOR PROFILE OF -L- & -DR-
SEE SHEET 5

FOR STRUCTURE PLANS
SEE SHEET S-1 THRU S-24



-BL-4
-L- POT 12+27.09
(12.43' LT.)

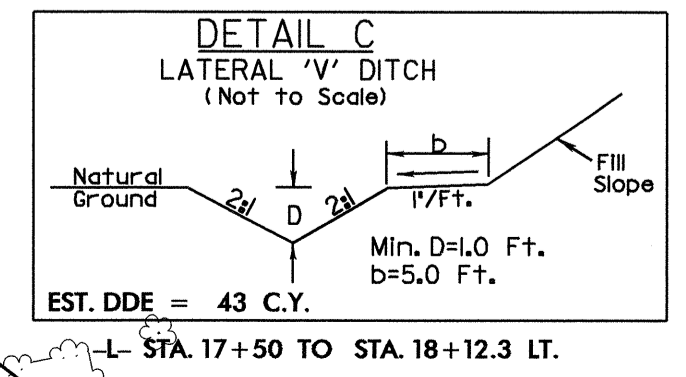
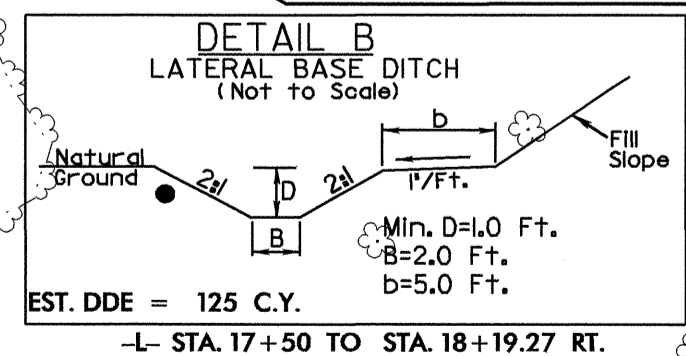
-L- PTSta. 12+92.19
-L- PCSta. 13+35.47

-L- PTSta. 13+85.06

-L- PCSta. 10+87.59

-BL-3
-L- POT 10+00.00
(11.97' LT.)

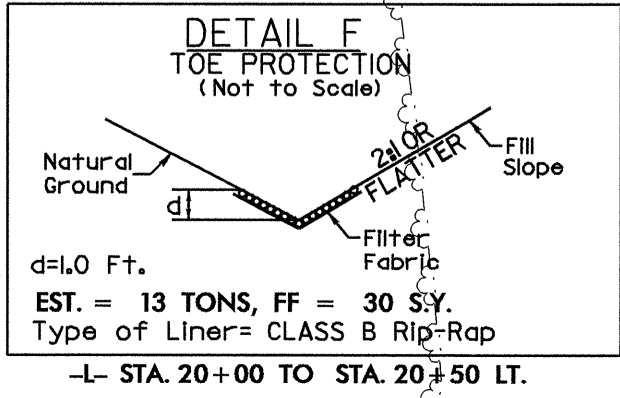
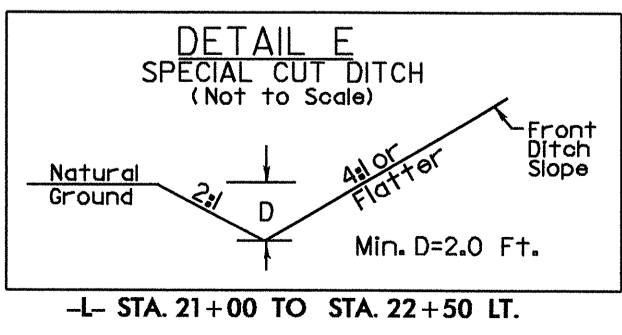
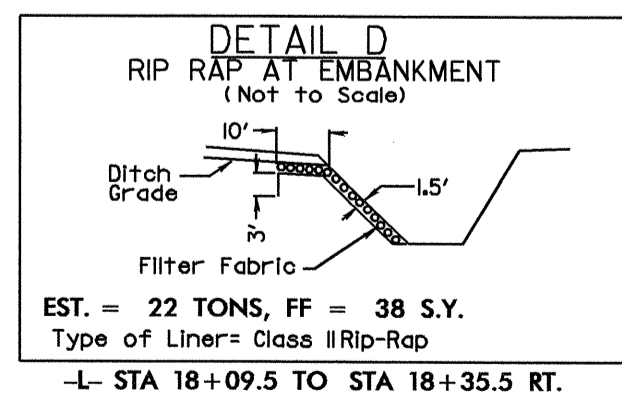
-L- POTSta. 10+00.00



-L- PCSta. 14+58.74

-L- STA 16+00.00
BEGIN TIP PROJECT B-4646

-BL-5
-L- POT 17+97.72
(14.03' LT.)



-DR-
PI Sta 10+54.39
 $\Delta = 8' 55" 19.7"$ (RT)
 $D = 76' 23" 39.7"$
 $L = 11.68'$
 $T = 5.85'$
 $R = 75.00'$
 $e = 02 \text{ RT.}$

ELIZABETH ANN FULK REID
DB 994 PG 844
TRACT 2
BEGIN CONST.
-DR- POT 10+20

-DR- PC 10+48.54
-DR- PT 10+60.22

-L- POT 19+63.35
-DR- POT 10+96.32

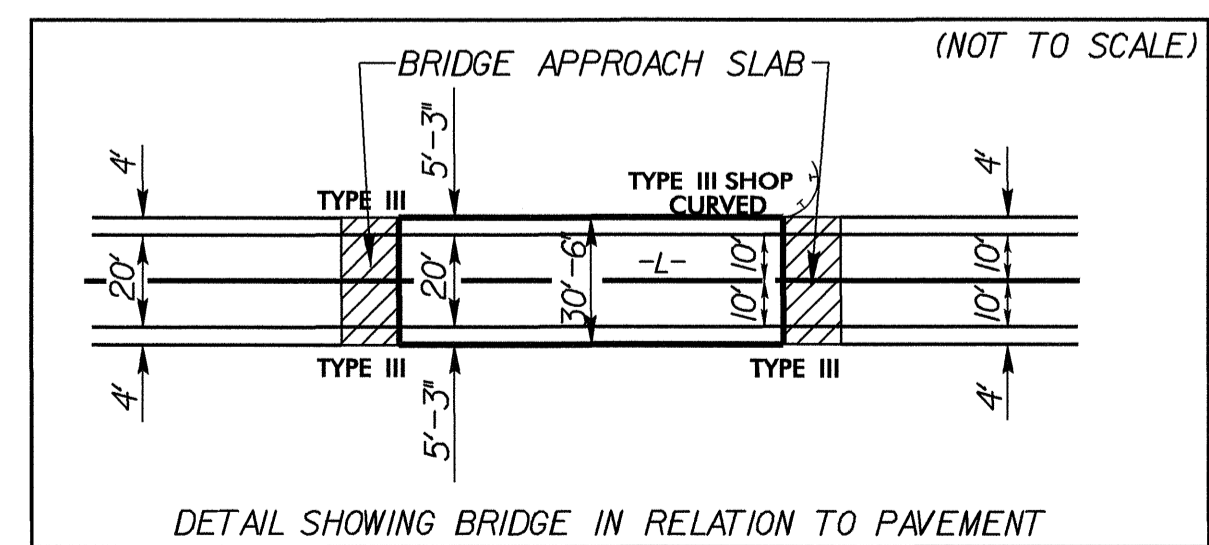
-L- PCSta. 20+38.66

-L- STA 21+50.00
END TIP PROJECT B-4646

-L- PCSta. 22+00
END PAVING

-BL-6
-L- POT 21+66.72
(14.21' LT.)

-L- PTSta. 22+69.27
-L- PCSta. 22+50
END CONSTRUCTION



DECK DRAINAGE:
INSTALL 6" DIA. DECK DRAINS ON 6' CENTERS
FROM -L- STA 18+02.50 TO 18+14.50 RT. & LT.
FROM -L- STA 19+07.50 TO 19+37.50 RT. & LT.

-BL-7
-L- POT 26+10.27
(11.61' RT.)

