

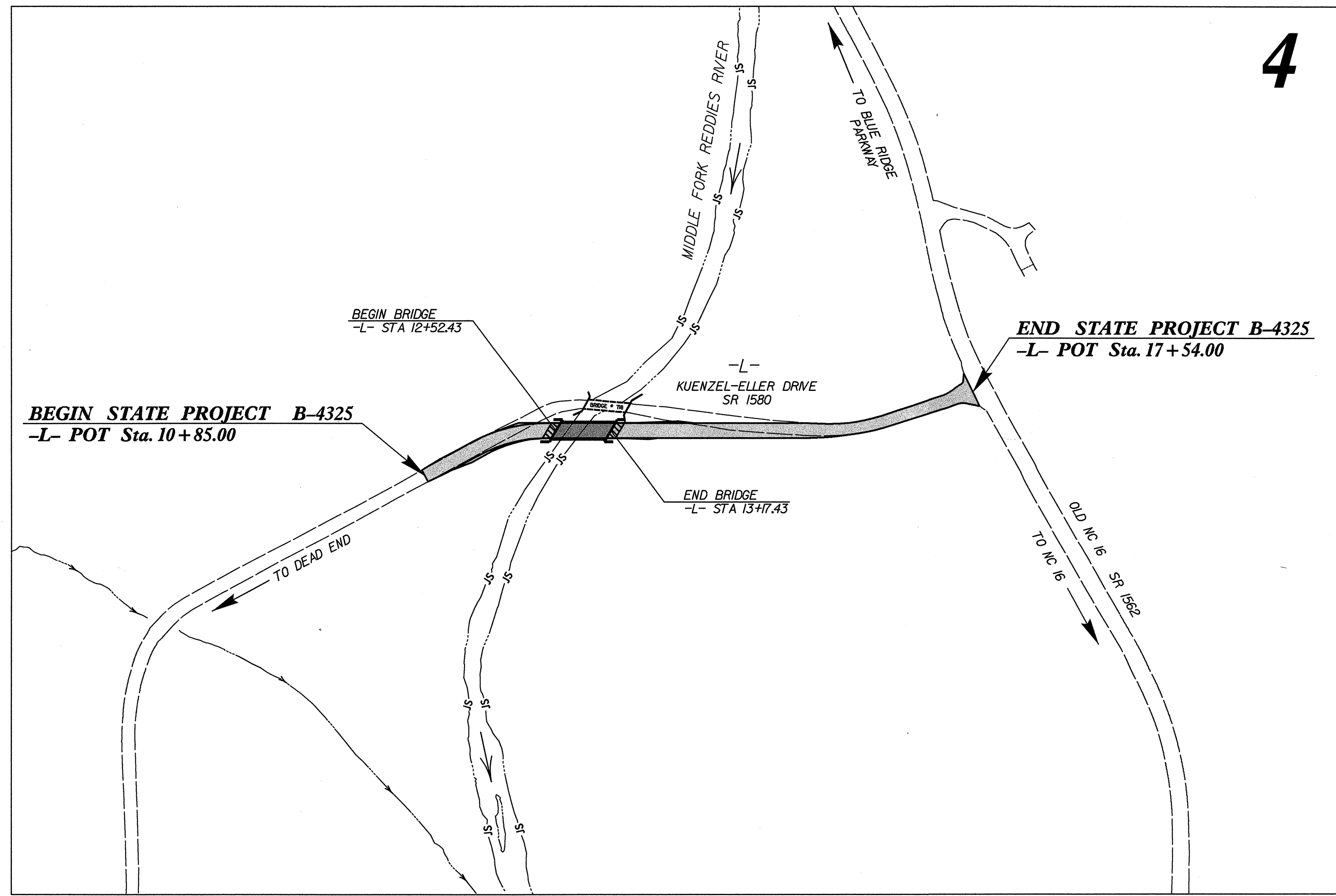
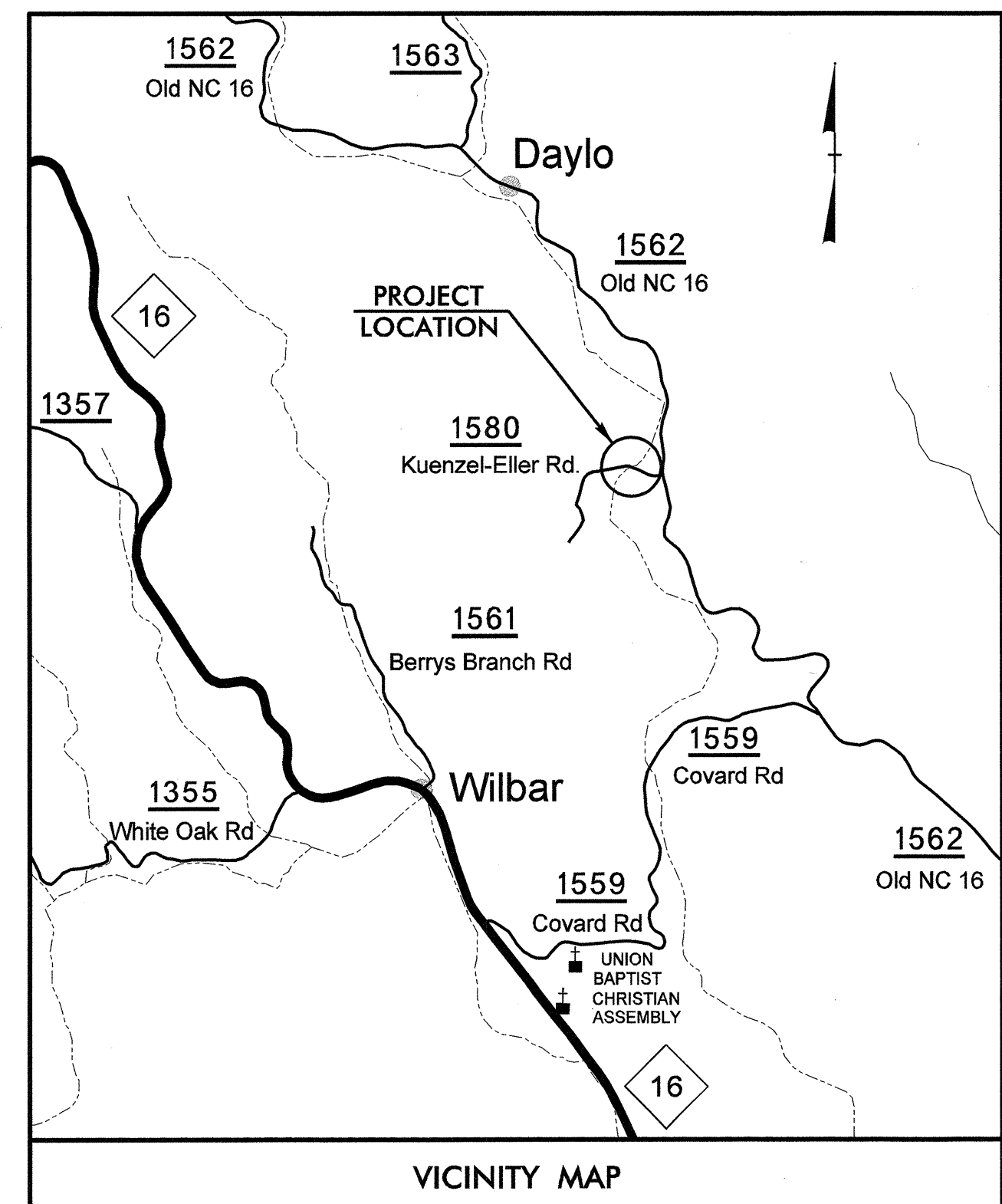
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4325	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33662.1.1	BRZ-1580 (2)	PE	
33662.2.1	BRZ-1580 (2)	R/W, UTILITIES	
33662.3.1	BRZ-1580 (2)	CONSTRUCTION	

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

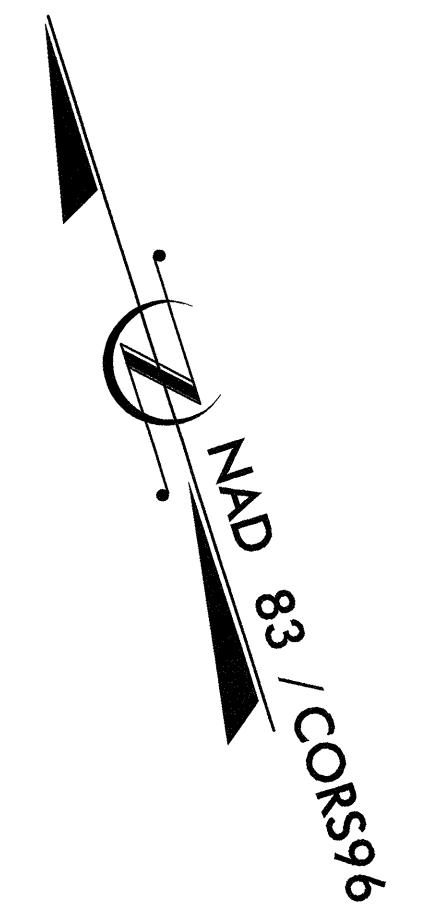
WILKES COUNTY

LOCATION: BRIDGE NO. 718 OVER MIDDLE FORK REDDIES RIVER ON SR 1580.

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



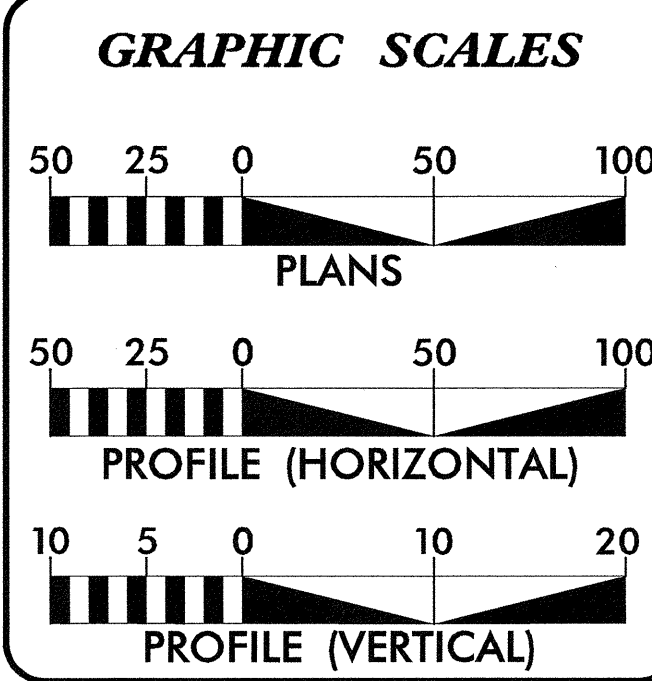
4



NCDOT CONTACT:
BRENDA L. MOORE, PE
PROJECT ENGINEER
ENGINEERING COORDINATION
ROADWAY DESIGN UNIT

TIP PROJECT: B-4325

CONTRACT: C202810



DESIGN DATA

ADT 2013	=	150
ADT 2033	=	240
DHV	=	10 %
D	=	65 %
T	=	4 % *
V	=	25 MPH
FUNCT CLASS=RURAL LOCAL		
* (TTST 1% + DUAL 3%)		
SUB-REGIONAL TEIR DESIGN		

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4325	=	0.115 mile
LENGTH STRUCTURES TIP PROJECT B-4325	=	0.012 mile
TOTAL LENGTH TIP PROJECT B-4325	=	0.127 mile

Prepared For:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610
By:
M A Engineering Consultants, Inc. 598 East Chatham Street - Suite 137
Cary, NC 27511 Phone: 919.297.0220 Fax: 919.297.0221

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
APRIL 15, 2011

LETTING DATE:
APRIL 16, 2013

BURKE EVANS, PE
PROJECT ENGINEER

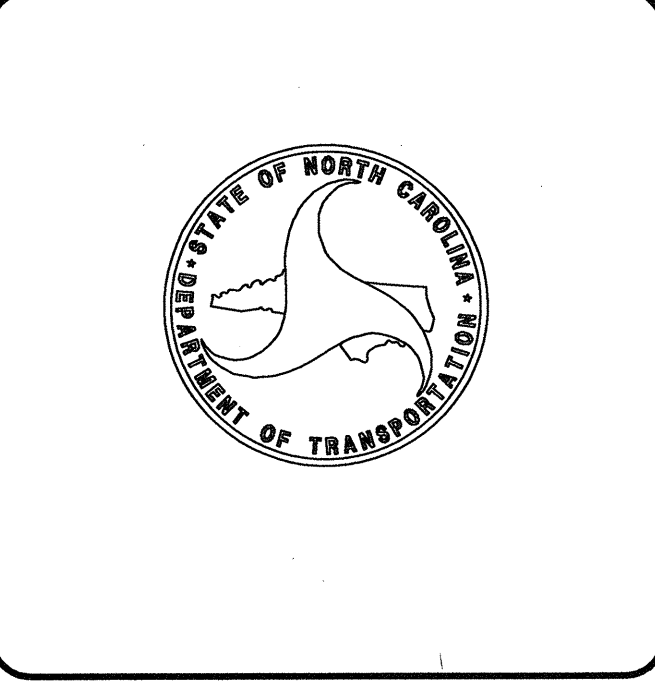
ROBERT W. PORTER, JR PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

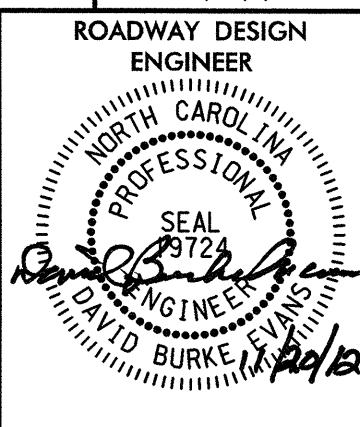

Raymond S. Weadon 11/20/12 P.E.
SIGNATURE: _____

ROADWAY DESIGN ENGINEER

David Burke Evans 11/20/12 P.E.
SIGNATURE: _____



11/20/2012 1:57:02 AM C:\p00dway\proj\B4325_rdy_tsh.dgn

PROJECT REFERENCE NO. B-4325	SHEET NO. 1-A
	
	
598 East Chatham Street Suite 137 Cary, NC 27511 Phone: 919.297.0220 Fax: 919.297.0221	

GENERAL NOTES:

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

2012 ROADWAY ENGLISH STANDARD DRAWINGS

EFF. 01-17-2012
 REV. 10-30-2012

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.

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

CLEARING:

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

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
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

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.

DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction

SHOULDER CONSTRUCTION:

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

DIVISION 4 - MAJOR STRUCTURES	
422.11	Reinforced Bridge Approach Fills - Sub Regional Tier

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.

DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I

UNDERDRAINS:

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

DIVISION 8 - INCIDENTALS	
815.03	Pipe Underdrain and Blind Drain
862.01	Guardrail Placement
862.02	Guardrail Installation
876.04	Drainage Ditches with Class 'B' Rip Rap

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: POWER - BLUE RIDGE EMC
 TELEPHONE - CENTURYLINK (AERIAL & UG)

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

RIGHT-OF-WAY MARKERS:

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

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1-C THRU 1-D	SURVEY CONTROL SHEETS
1-E	CENTERLINE COORDINATE LIST
2	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
2-A	DETAIL SHOWING T-101 GUARDRAIL ANCHOR UNIT
2-B	DETAIL SHOWING TEMPORARY GUARDRAIL ANCHOR UNIT CROSSING WOOD STRUCTURE
3	SUMMARY OF QUANTITIES
3-A	SUMMARIES OF EARTHWORK, PAVEMENT REMOVAL, DRAINAGE, AND GUARDRAIL
4	PLAN SHEET
5	PROFILE SHEET
TMP-1 THRU TMP-3	TRANSPORTATION MANAGEMENT PLANS
EC-1 THRU EC-5	EROSION CONTROL PLANS
RF-1	REFORESTATION DETAIL SHEET
UO-1 THRU UO-3	UTILITIES BY OTHERS PLANS
X-1A	CROSS-SECTION SUMMARY
X-1 THRU X-5	CROSS-SECTIONS
S-1 THRU S-18	STRUCTURE PLANS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

04/16/11

Note: Not to Scale

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

BOUNDARIES AND PROPERTY:

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

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○ 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	-----
Proposed Right of Way Line with Iron Pin and Cap Marker	-----
Proposed Right of Way Line with Concrete or Granite R/W Marker	-----
Proposed Control of Access Line with Concrete CA Marker	-----
Existing Control of Access	-----
Proposed Control of Access	-----
Existing Easement Line	----- E
Proposed Temporary Construction Easement	----- E
Proposed Temporary Drainage Easement	----- TDE
Proposed Permanent Drainage Easement	----- PDE
Proposed Permanent Drainage / Utility Easement	----- DUE
Proposed Permanent Utility Easement	----- PUE
Proposed Temporary Utility Easement	----- TUE
Proposed Aerial Utility Easement	----- AUE
Proposed Permanent Easement with Iron Pin and Cap Marker	-----

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	----- C
Proposed Slope Stakes Fill	----- F
Proposed Curb Ramp	----- CR
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	-----
Single Tree	○
Single Shrub	○
Hedge	-----
Woods Line	-----

VEGETATION:

Orchard	-----
Vineyard	-----

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	----- CONC
Bridge Wing Wall, Head Wall and End Wall	----- CONC WW
MINOR:	
Head and End Wall	----- CONC HW
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	□ CB
Paved Ditch Gutter	-----
Storm Sewer Manhole	Ⓢ
Storm Sewer	----- S

UTILITIES:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

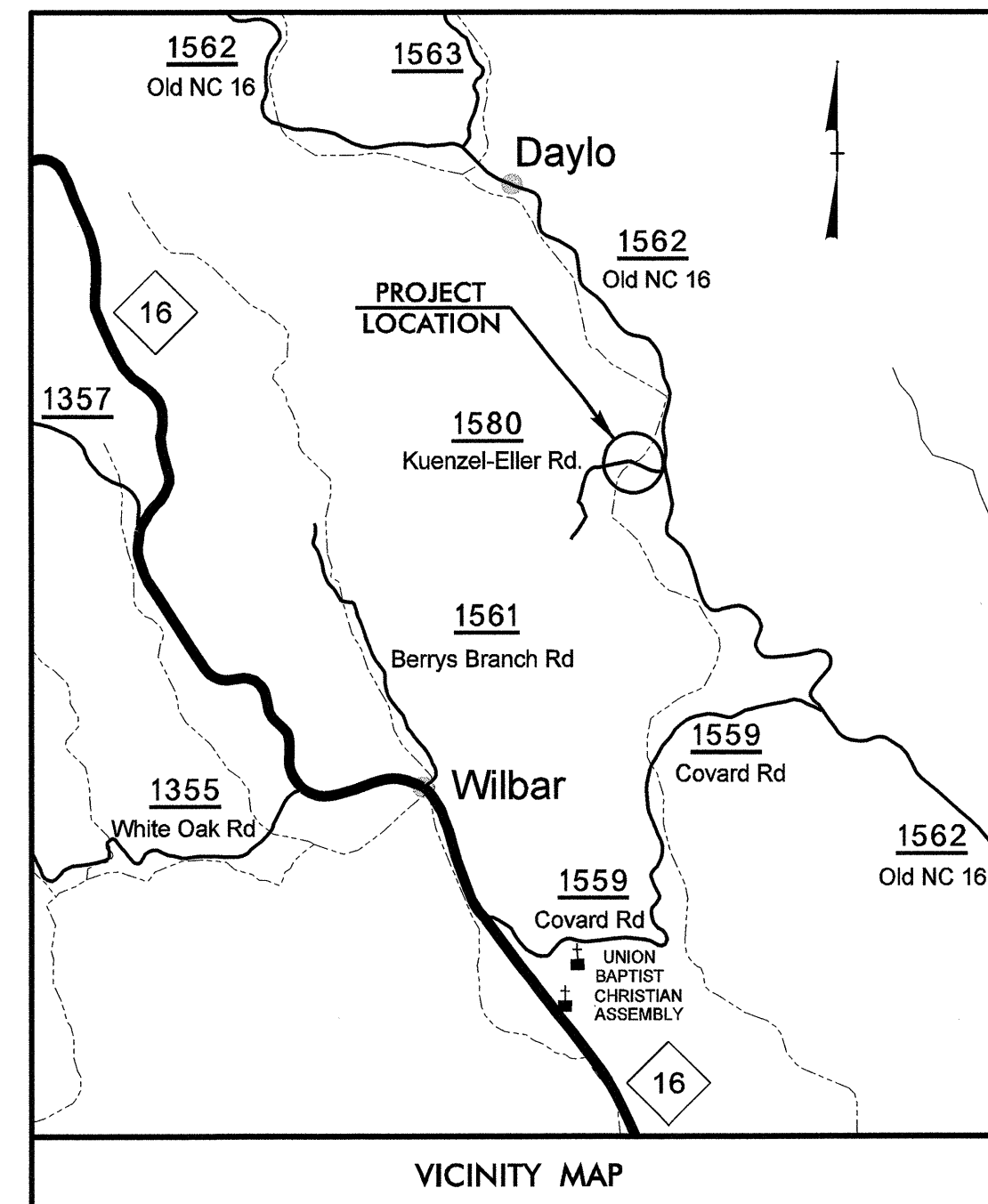
SANITARY SEWER:

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

MISCELLANEOUS:

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

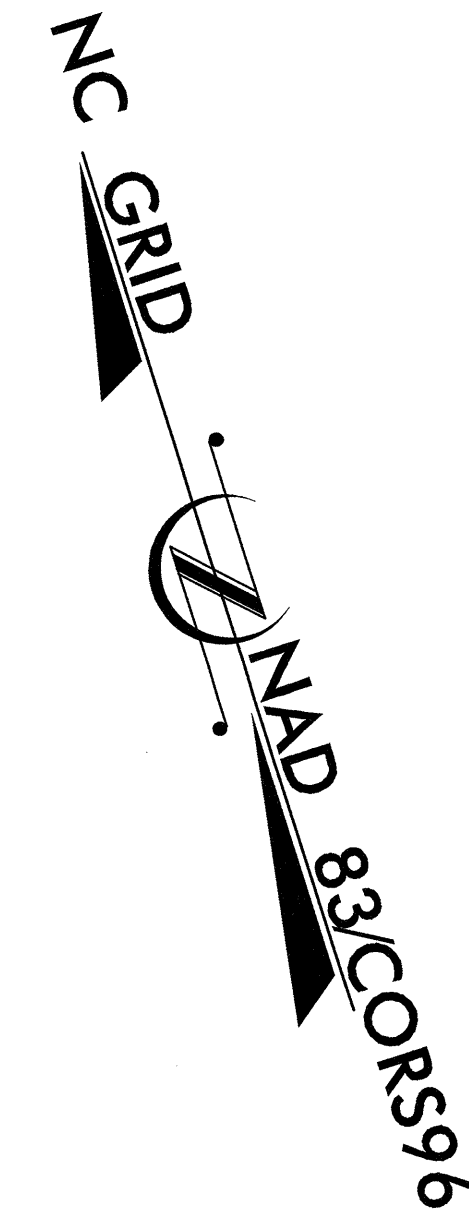
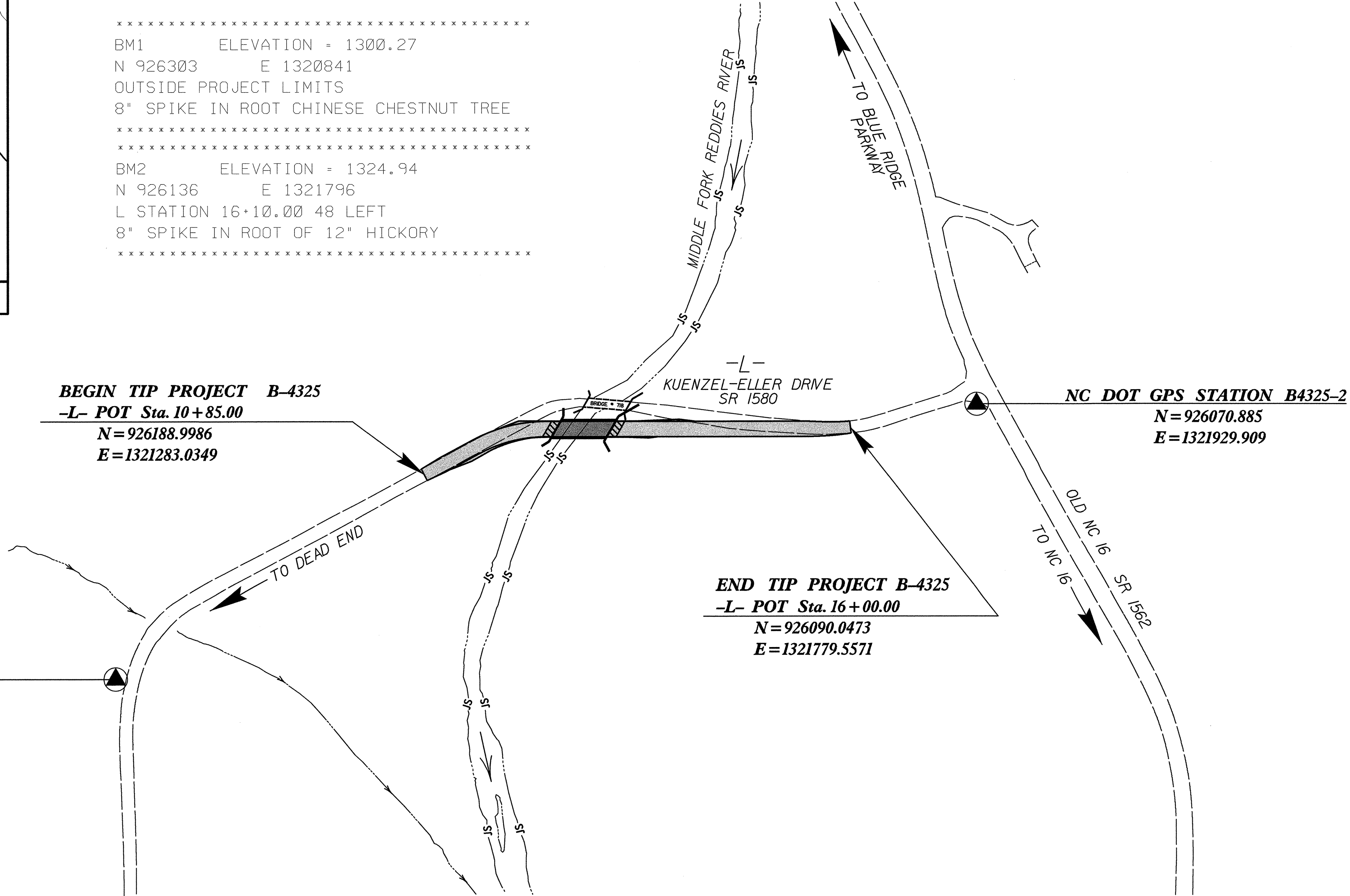
SURVEY CONTROL SHEET B-4325



BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
B43251	GPS B4325-1		926077.4000	1320862.8500	1295.10	OUTSIDE PROJECT LIMITS	
BL3	BL-3		926193.5521	1321254.1583	1293.83	10+57.46	9.80 LT
BL4	BL-4		926221.9975	1321483.0421	1295.33	12+77.37	38.25 LT
BL5	BL-5		926125.9332	1321650.9448	1297.58	14+66.46	2.54 RT
B43252	GPS B4325-2		926070.8850	1321929.9090	1306.31	17+50.54	15.44 RT

 BM1 ELEVATION = 1300.27
 N 926303 E 1320841
 OUTSIDE PROJECT LIMITS
 8" SPIKE IN ROOT CHINESE CHESTNUT TREE

 BM2 ELEVATION = 1324.94
 N 926136 E 1321796
 L STATION 16+10.00 48 LEFT
 8" SPIKE IN ROOT OF 12" HICKORY



NC DOT GPS STATION B4325-1
 N = 926077.400
 E = 1320862.850

BEGIN TIP PROJECT B-4325
 -L- POT Sta. 10+85.00
 N = 926188.9986
 E = 1321283.0349

END TIP PROJECT B-4325
 -L- POT Sta. 16+00.00
 N = 926090.0473
 E = 1321779.5571

NC DOT GPS STATION B4325-2
 N = 926070.885
 E = 1321929.909

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "B4325-2"
 WITH NAD 83/CORS96 STATE PLANE GRID COORDINATES OF
 NORTHING: 926070.885(±) EASTING: 1321929.909(±)
 ELEVATION: 1306.310(±)
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99997433
 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4325-2" TO -L- STATION 10+85 IS
 N 79°39'08" W 657.57
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
 VERTICAL DATUM USED IS NAVD 88

NOTES:

- THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.ncdot.org/doh/preconstruct/highway/location/project/)
 THE FILES TO BE FOUND ARE AS FOLLOWS:
 B4325_LS_CONTROL.HTML
 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)
 SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

NOTE: DRAWING NOT TO SCALE

6/2/09

PROJECT REFERENCE NO.	SHEET NO.
B-4325	ID
Location and Surveys	

SURVEY CONTROL SHEET B-4325

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	11+54.54	30.03	926172.3017	1321356.9173
L	11+54.54	-29.97	926231.2735	1321345.8556
L	12+27.28	-48.77	926247.6694	1321434.7111
L	12+70.33	-60.28	926245.1249	1321482.9951
L	13+49.56	-55.58	926216.6784	1321557.0863
L	14+00.00	30.00	926119.8557	1321579.2865
L	15+00.00	-34.20	926150.8034	1321694.0181
L	15+66.52	30.00	926069.4981	1321738.0047
L	15+66.52	-30.00	926126.6886	1321756.1499
L	16+47.41	-30.00	926115.9205	1321826.6058
L	16+47.41	30.00	926055.9210	1321826.8404

DESIGN ALIGNMENT

TYPE	STATION	NORTH	EAST
POT	10+00.00	926173.3345	1321199.4907
PC	11+54.54	926201.8129	1321351.3793
PT	12+40.74	926196.6157	1321436.5525
PC	15+66.52	926098.0934	1321747.0773
PT	16+47.41	926085.9208	1321826.7231
POT	17+68.70	926086.3950	1321948.0114

DATUM DESCRIPTION

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 NORTHING: 926070.885(ft) EASTING: 1321929.909(ft)
 ELEVATION: 1306.310(ft)
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 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
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[HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.ncdot.org/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/)

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 B4325_LS_CONTROL.HTML

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PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
 NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING SERVICE (OPUS)
 SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

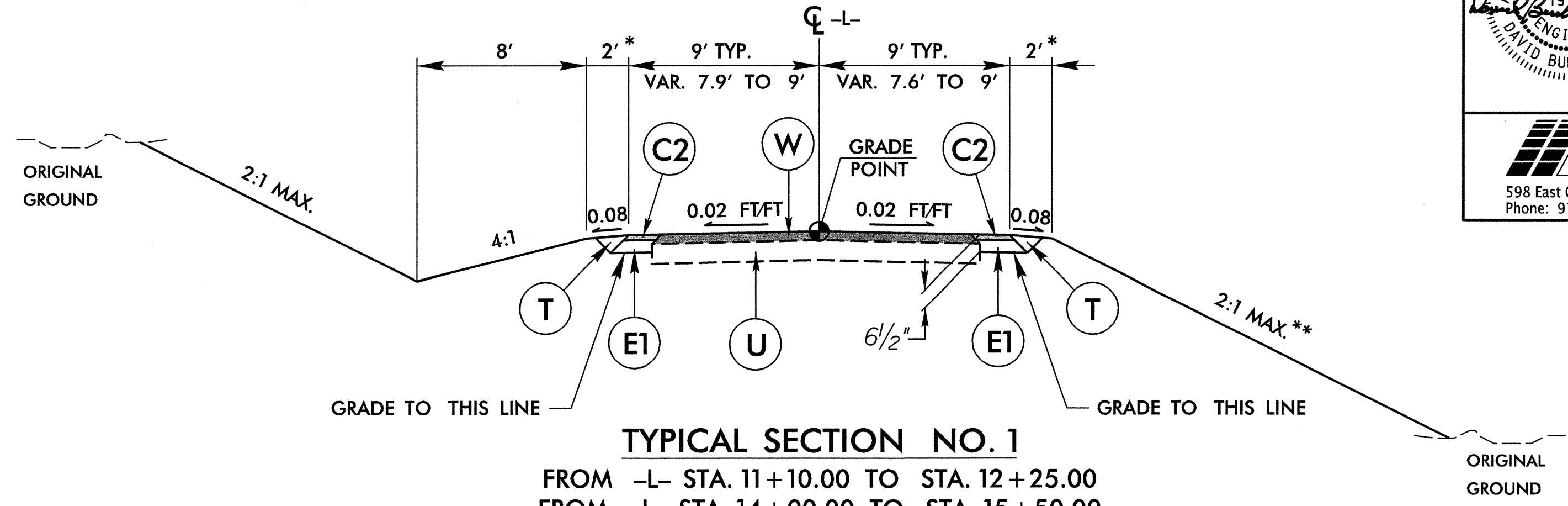
FINAL TABLES

NOTE: DRAWING NOT TO SCALE

20-FEB-2013 16:08:05 1s-1.dwg
 20-FEB-2013 16:08:05 1s-1.dwg

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1.25" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS PER SQUARE YARD.
C2	PROP. APPROX. 2.5" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS PER SQUARE YARD IN EACH OF TWO LAYERS.
C3	PROP. VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS PER SQUARE YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1.0" OR GREATER THAN 1.5" IN DEPTH.
E1	PROP. APPROX. 4.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS PER SQUARE YARD.
E2	PROP. VARIABLE DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS PER SQUARE YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 3.0" OR GREATER THAN 5.5" IN DEPTH.
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL THIS SHEET)

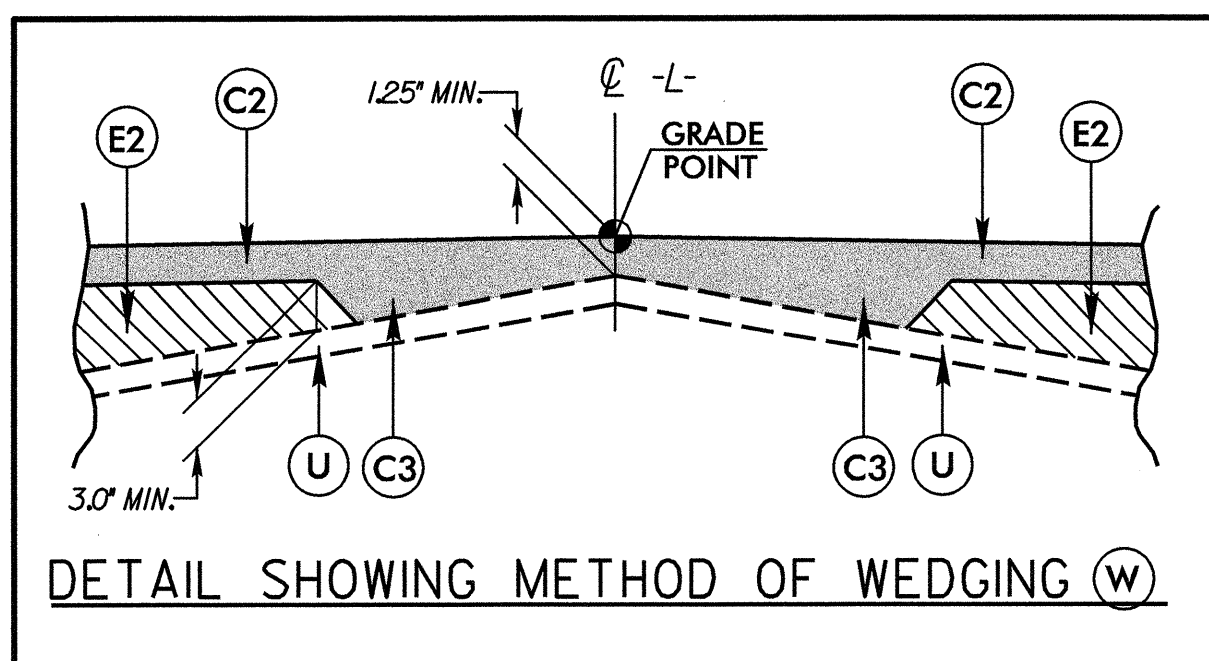
PAVEMENT EDGE SLOPES AND TRENCH SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



TYPICAL SECTION NO. 1
 FROM -L- STA. 11+10.00 TO STA. 12+25.00
 FROM -L- STA. 14+00.00 TO STA. 15+50.00

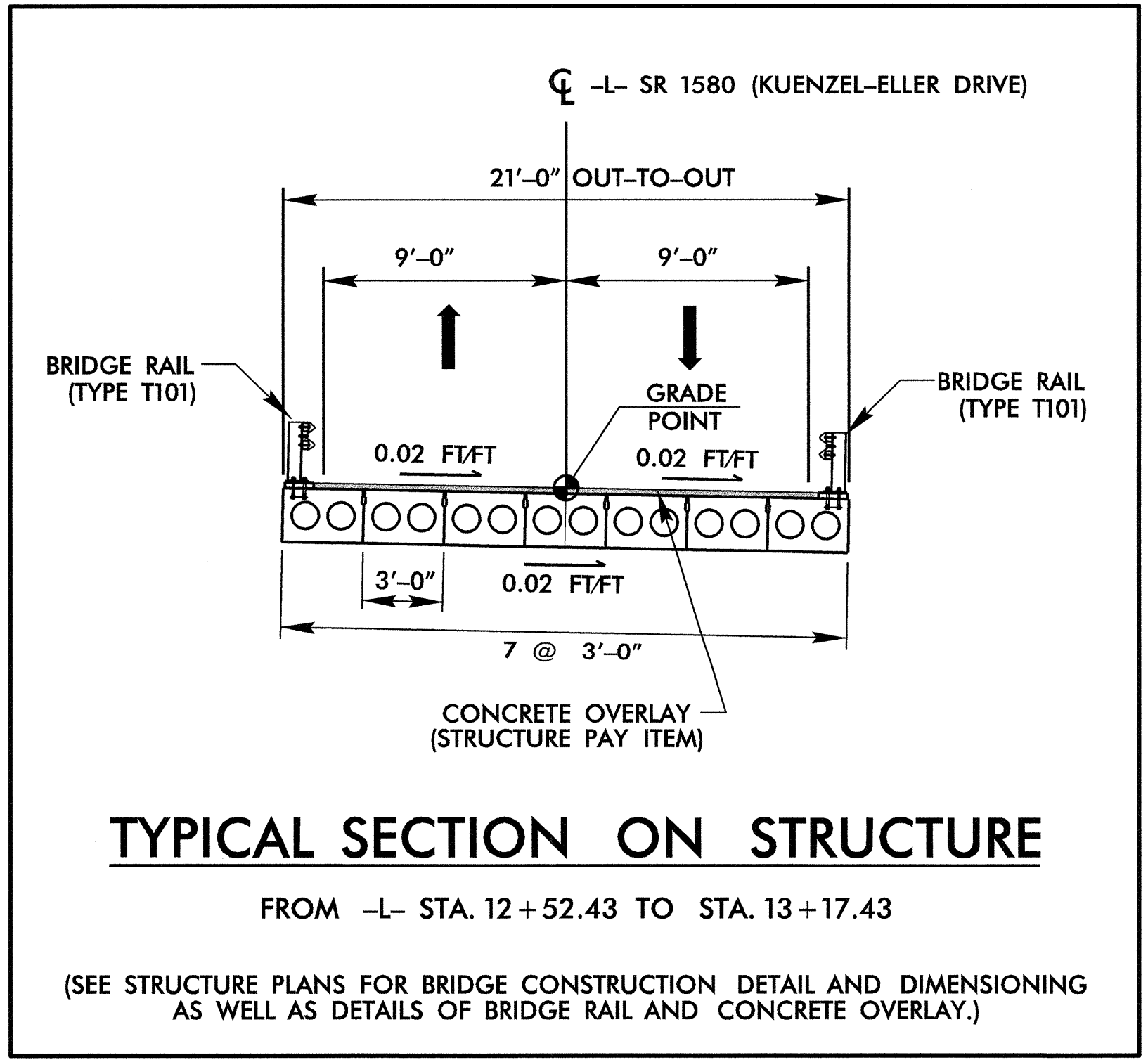
WIDEN AND RESURFACE EXISTING PAVEMENT:
 FROM -L- STA. 10+85.00 TO 11+10.00
 FROM -L- STA. 15+50.00 TO 16+00.00

OVERLAY EXISTING PAVEMENT WITH 1.25" SF9.5A (C1):
 FROM -L- STA. 16+00.00 TO 17+54.00



DETAIL SHOWING METHOD OF WEDGING (W)

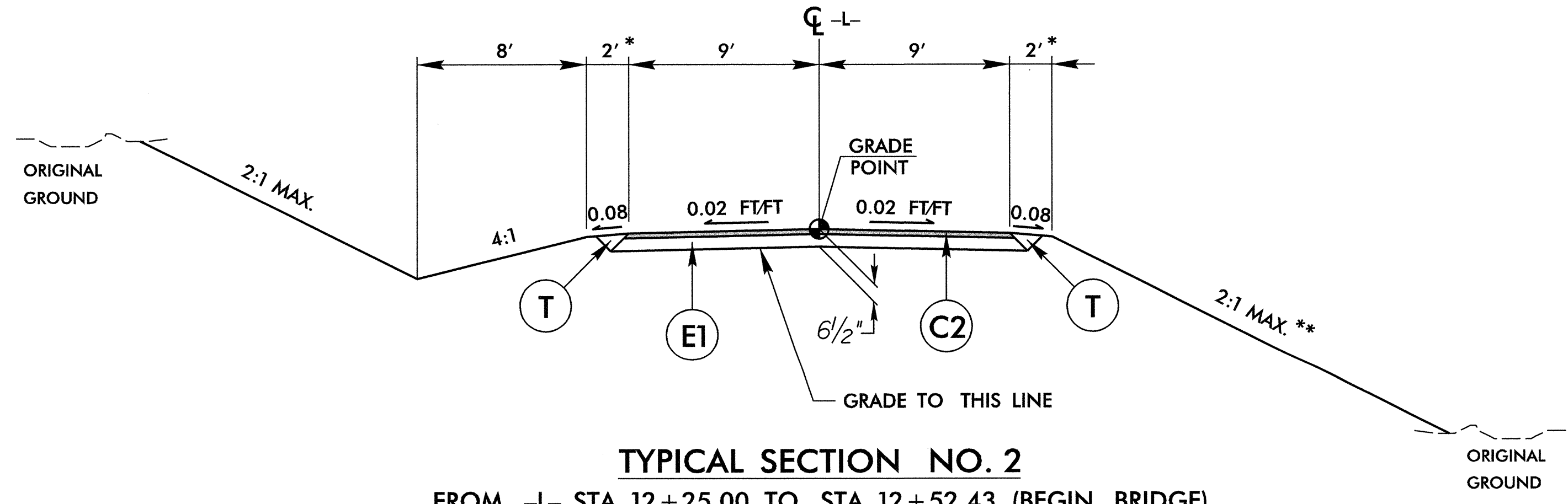
NOTES
 * - 7' WITH GUARDRAIL (FACE OF GUARDRAIL MINIMUM 4' FROM EOP)
 ** - TYPICAL (SEE CROSS SECTIONS FOR VAR. 2:1 TO 4:1 SLOPE LOCATIONS)



TYPICAL SECTION ON STRUCTURE

FROM -L- STA. 12+52.43 TO STA. 13+17.43

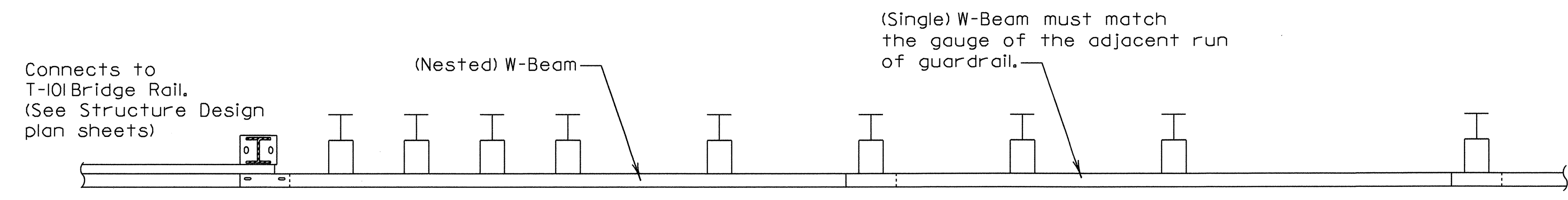
(SEE STRUCTURE PLANS FOR BRIDGE CONSTRUCTION DETAIL AND DIMENSIONING AS WELL AS DETAILS OF BRIDGE RAIL AND CONCRETE OVERLAY.)



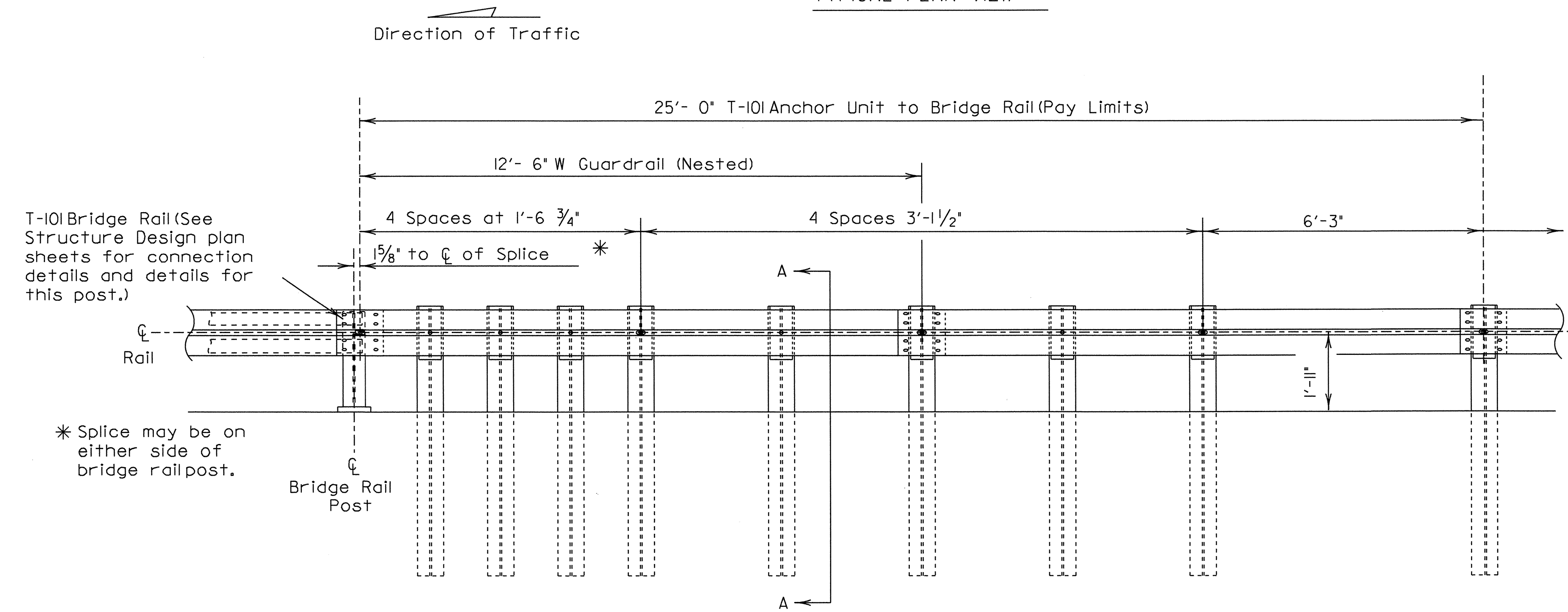
TYPICAL SECTION NO. 2
 FROM -L- STA. 12+25.00 TO STA. 12+52.43 (BEGIN BRIDGE)
 FROM -L- STA. 13+17.43 (END BRIDGE) TO STA. 14+00.00

B/2/09

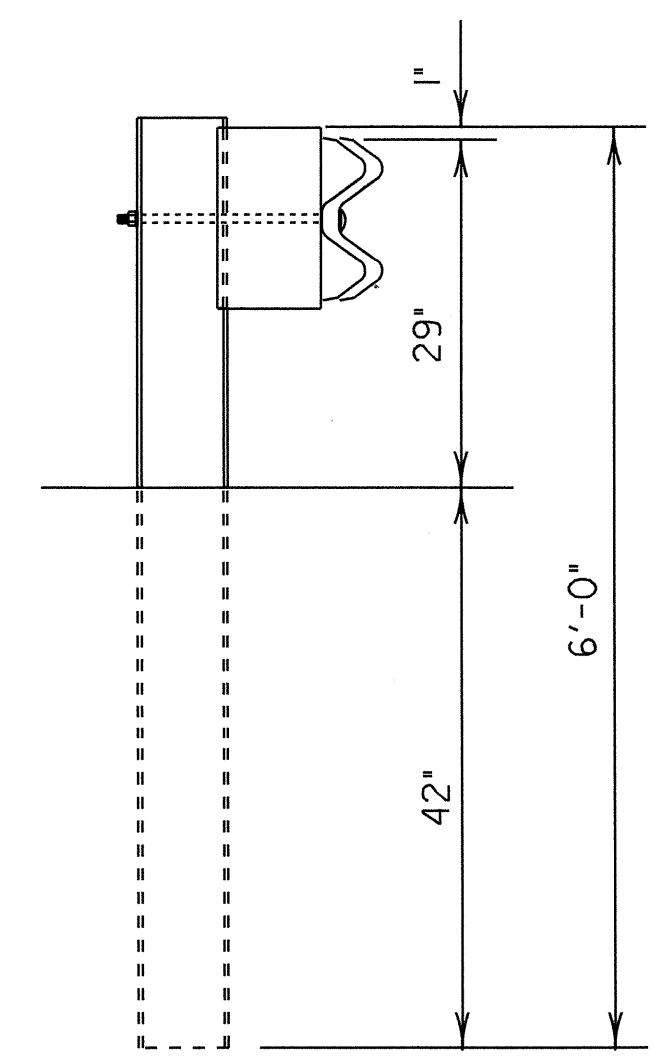
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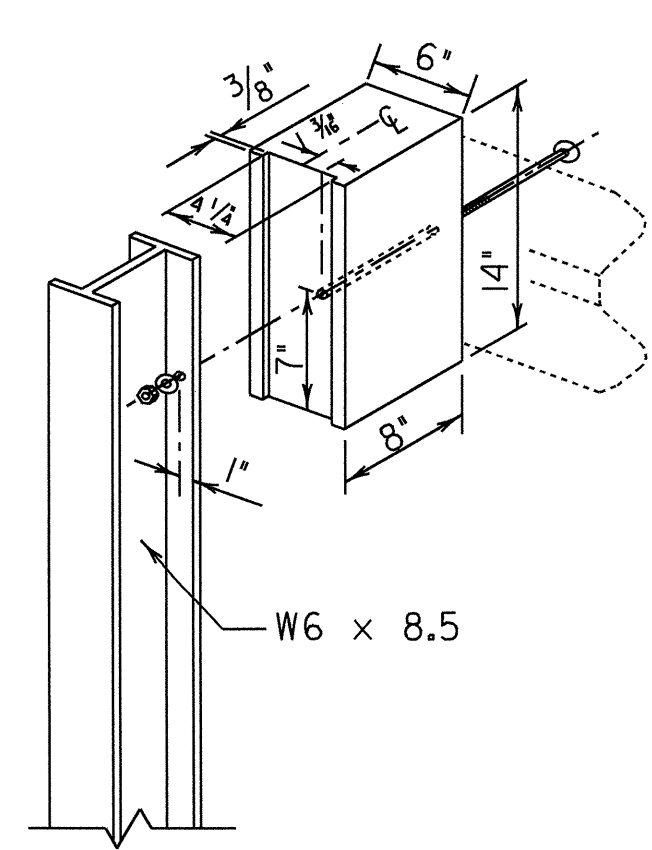
TYPICAL PLAN VIEW



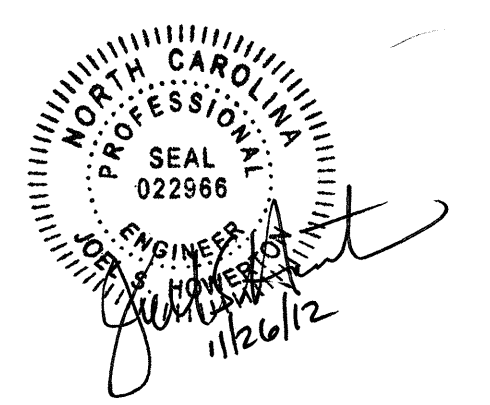
TYPICAL ELEVATION VIEW



SECTION A-A



COMPOSITE BLOCK STEEL POST DETAIL



CONTRACT STANDARDS & DEVELOPMENT UNIT
STANDARDS AND SPECIAL DESIGN
Office 919-707-6950 FAX 919-250-4119

T-101 ANCHOR UNIT

ORIGINAL BY: rpb/itt DATE: 10-27-11
 MODIFIED BY: DATE: 11/16/12
 CHECKED BY: [Signature] DATE: 11/16/12
 FILE SPEC.:

 SYSTEMS *****

 USER *****

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF QUANTITIES

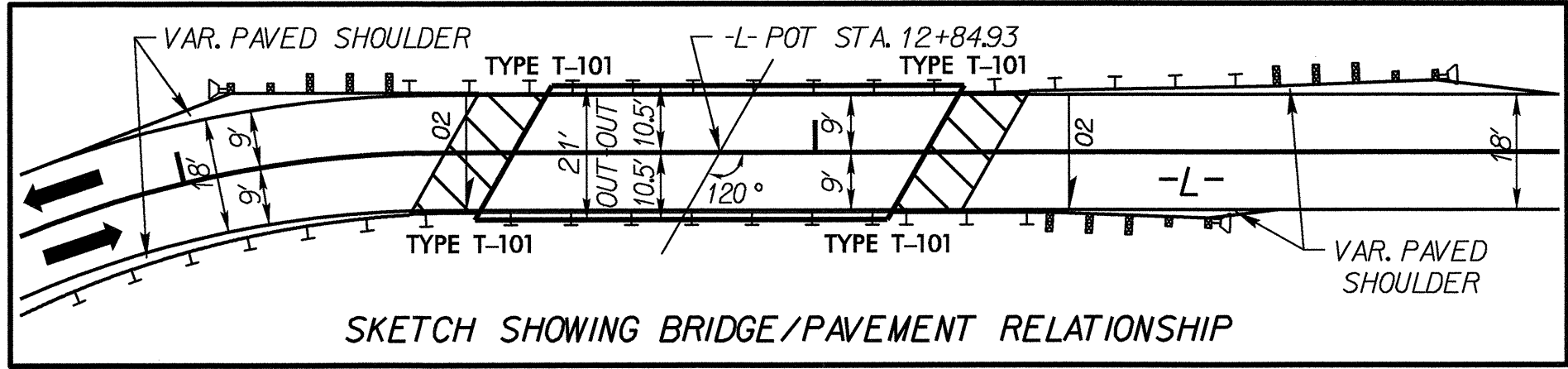
STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C202810														
ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION	3150000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS	6018000000-E	1620	50	LB	SEED FOR TEMPORARY SEEDING
0000400000-N	801	Lump Sum		CONSTRUCTION SURVEYING	3165000000-N	SP	4	EA	GUARDRAIL ANCHOR UNITS, TYPE ***** (350 TL-2)	6021000000-E	1620	1.25	TON	FERTILIZER FOR TEMPORARY SEEDING
0030000000-N	SP	Lump Sum		BRIDGE APPROACH FILL - SUB REGIONAL TIER, STATION ***** (12+84.93-L-)	3180000000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE ***** (T-101)	6024000000-E	1622	100	LF	TEMPORARY SLOPE DRAINS
0043000000-N	226	Lump Sum		GRADING	3380000000-E	862	25	LF	TEMPORARY STEEL BM GUARDRAIL	6029000000-E	SP	300	LF	SAFETY FENCE
0050000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUBBING	3382000000-E	862	25	LF	TEMPORARY STEEL BM GUARDRAIL (SHOP CURVED)	6030000000-E	1630	140	CY	SILT EXCAVATION
0057000000-E	226	100	CY	UNDERCUT EXCAVATION	3387000000-N	862	1	EA	TEMPORARY GUARDRAIL ANCHOR UNITS, TYPE ***** (TEMP RETROFIT)	6036000000-E	1631	2,100	SY	MATTING FOR EROSION CONTROL
0134000000-E	240	30	CY	DRAINAGE DITCH EXCAVATION	3389000000-N	SP	2	EA	TEMPORARY GUARDRAIL ANCHOR UNITS, TYPE ***** (350 TL-2)	6037000000-E	SP	250	SY	COIR FIBER MAT
0195000000-E	265	100	CY	SELECT GRANULAR MATERIAL	3635000000-E	876	30	TON	RIP RAP, CLASS II	6038000000-E	SP	250	SY	PERMANENT SOIL REINFORCEMENT MAT
0196000000-E	270	200	SY	GEOTEXTILE FOR SOIL STABILIZATION	3649000000-E	876	30	TON	RIP RAP, CLASS B	6042000000-E	1632	60	LF	1/4" HARDWARE CLOTH
0318000000-E	300	5	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES	3656000000-E	876	580	SY	GEOTEXTILE FOR DRAINAGE	6070000000-N	1639	2	EA	SPECIAL STILLING BASINS
0320000000-E	300	10	SY	FOUNDATION CONDITIONING GEOTEXTILE	4400000000-E	1110	80	SF	WORK ZONE SIGNS (STATIONARY)	6071010000-E	SP	150	LF	WATTLE
0343000000-E	310	20	LF	15" SIDE DRAIN PIPE	4405000000-E	1110	96	SF	WORK ZONE SIGNS (PORTABLE)	6071012000-E	SP	15	LF	COIR FIBER WATTLE
0995000000-E	340	20	LF	PIPE REMOVAL	4410000000-E	1110	20	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)	6071020000-E	SP	25	LB	POLYACRYLAMIDE (PAM)
1099500000-E	505	70	CY	SHALLOW UNDERCUT	4430000000-N	1130	20	EA	DRUMS	6071030000-E	1640	100	LF	COIR FIBER BAFFLE
1099700000-E	505	125	TON	CLASS IV SUBGRADE STABILIZATION	4435000000-N	1135	20	EA	CONES	6071050000-E	SP	3	EA	** SKIMMER (1-1/2")
1220000000-E	545	50	TON	INCIDENTAL STONE BASE	4445000000-E	1145	16	LF	BARRICADES (TYPE III)	6084000000-E	1660	1.5	ACR	SEEDING & MULCHING
1489000000-E	610	149	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B	4450000000-N	1150	960	HR	FLAGGER	6087000000-E	1660	1	ACR	MOWING
1525000000-E	610	151	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A	4450000000-N	1150	960	HR	FLAGGER	6090000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
1575000000-E	620	20	TON	ASPHALT BINDER FOR PLANT MIX	4516000000-N	1180	20	EA	SKINNY DRUM	6093000000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
2022000000-E	815	25	CY	SUBDRAIN EXCAVATION	4810000000-E	1205	1,012	LF	PAINT PAVEMENT MARKING LINES (4")	6096000000-E	1662	50	LB	SEED FOR SUPPLEMENTAL SEEDING
2033000000-E	815	20	CY	SUBDRAIN FINE AGGREGATE	6000000000-E	1605	500	LF	TEMPORARY SILT FENCE	6108000000-E	1665	1	TON	FERTILIZER TOPDRESSING
2044000000-E	815	100	LF	6" PERFORATED SUBDRAIN PIPE	6006000000-E	1610	160	TON	STONE FOR EROSION CONTROL, CLASS A	6114500000-N	1667	10	MHR	SPECIALIZED HAND MOWING
2070000000-N	815	1	EA	SUBDRAIN PIPE OUTLET	6009000000-E	1610	55	TON	STONE FOR EROSION CONTROL, CLASS B	6117000000-N	SP	15	EA	RESPONSE FOR EROSION CONTROL
2077000000-E	815	6	LF	6" OUTLET PIPE	6012000000-E	1610	60	TON	SEDIMENT CONTROL STONE	6123000000-E	1670	0.1	ACR	REFORESTATION
3030000000-E	862	100	LF	STEEL BM GUARDRAIL	6015000000-E	1615	1	ACR	TEMPORARY MULCHING					

5/28/99

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-L- SR 1580 (KUENZEL-ELLER ROAD)

PI Sta 11+98.53	PI Sta 16+07.29
$\Delta = 28^{\circ}13'20.7''$ (RT)	$\Delta = 17^{\circ}49'37.4''$ (LT)
$D = 32^{\circ}44'25.6''$	$D = 22^{\circ}02'12.6''$
$L = 86.20'$	$L = 80.90'$
$T = 43.99'$	$T = 40.78'$
$R = 175.00'$	$R = 260.00'$
$SE = 0.04$	$SE = 0.04$
$RO = 52'$	$RO = \text{VAR. (SEE PLANS)}$
$V = 25 \text{ MPH}$	$V = 25 \text{ MPH}$



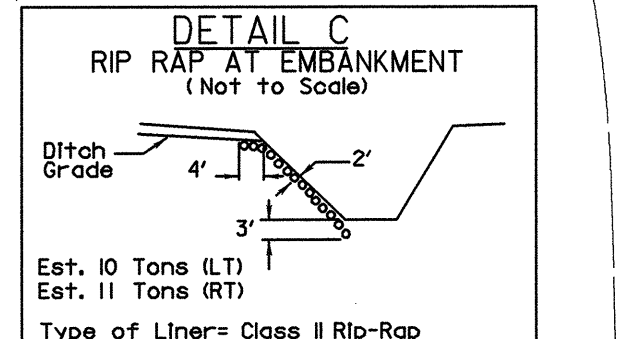
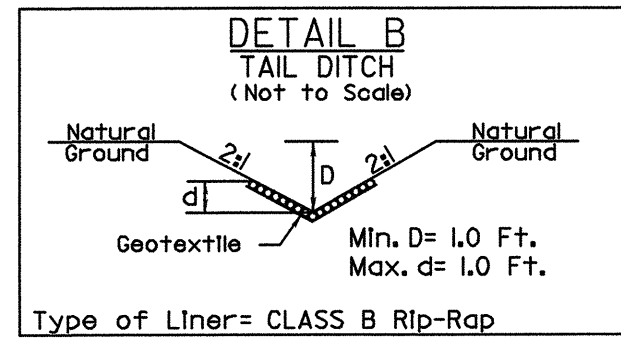
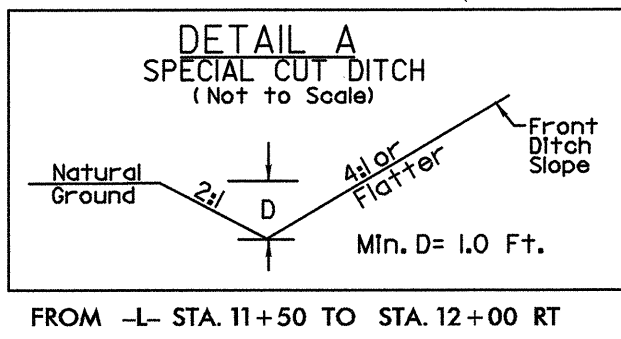
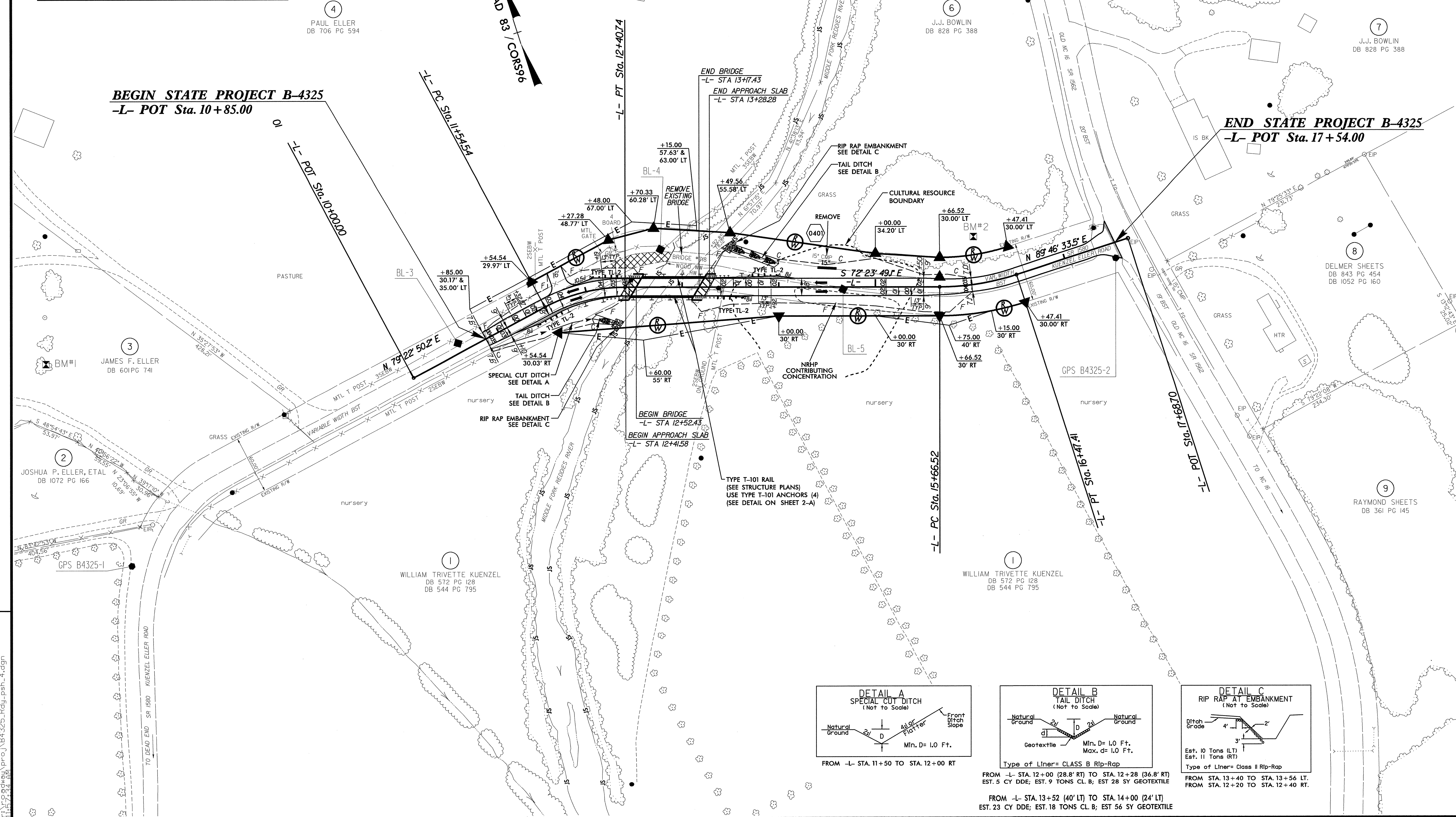
SEE SHEET 5 FOR -L- PROFILE

FOR STRUCTURE PLANS, SEE SHEET S-1 THRU S-18

REVISIONS

BEGIN STATE PROJECT B-4325
-L- POT Sta. 10+85.00

END STATE PROJECT B-4325
-L- POT Sta. 17+54.00



FROM -L- STA. 12+00 (28.8' RT) TO STA. 12+28 (36.8' RT)
EST. 5 CY DDE; EST. 9 TONS CL. B; EST. 28 SY GEOTEXTILE

FROM -L- STA. 13+52 (40' LT) TO STA. 14+00 (24' LT)
EST. 23 CY DDE; EST. 18 TONS CL. B; EST. 56 SY GEOTEXTILE


FROM STA. 13+40 TO STA. 13+56 LT
FROM STA. 12+20 TO STA. 12+40 RT.

8/17/99

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5/14/99

11/20/2012
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PROJECT REFERENCE NO. B-4325	SHEET NO. 5
ROADWAY DESIGN ENGINEER DAVID BURKE SEAL 19724 NORTH CAROLINA PROFESSIONAL ENGINEER	HYDRAULICS ENGINEER RIGER S. WEADON SEAL 21656 NORTH CAROLINA PROFESSIONAL ENGINEER By Weadon 11/20/12
 M A Engineering Consultants, Inc. 598 East Chatham Street Suite 137 Cary, NC 27511 Phone: 919.297.0220 Fax: 919.297.0221	

-L-
SR 1580 (KUENZEL-ELLER ROAD)

