

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

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**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 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.

**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.

**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 ELECTRIC MEMBERSHIP CORP. (POWER) AND SURRY TELEPHONE MEMBERSHIP CORP. (TELEPHONE). ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

**RIGHT-OF-WAY MARKERS:**

RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY OTHERS AND BY CONTRACT IN ACCORDANCE WITH DESIGNATED SYMBOLS.

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	
200.03	Method of Clearing - Method III
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation - Method 'A'
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
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
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
866.04	Barbed Wire Fence with Wood Posts (2 - 7 Strands)
876.02	Guide for Rip Rap at Pipe Outlets

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

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

Table listing symbols for 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, Existing Fence Line, Proposed Woven Wire Fence, Proposed Chain Link Fence, Proposed Barbed Wire Fence, Existing Wetland Boundary, Proposed Wetland Boundary, Existing Endangered Animal Boundary, Existing Endangered Plant Boundary.

BUILDINGS AND OTHER CULTURE:

Table listing symbols for 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:

Table listing symbols for hydrology: Stream or Body of Water, Hydro, Pool or Reservoir, Jurisdictional Stream, Buffer Zone 1, Buffer Zone 2, Flow Arrow, Disappearing Stream, Spring, Swamp Marsh, Proposed Lateral, Tail, Head Ditch, False Sump.

RAILROADS:

Table listing symbols for railroads: Standard Gauge, RR Signal Milepost, Switch, RR Abandoned, RR Dismantled.

RIGHT OF WAY:

Table listing symbols for 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:

Table listing symbols for 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:

Table listing symbols for vegetation: Single Tree, Single Shrub, Hedge, Woods Line, Orchard, Vineyard.

EXISTING STRUCTURES:

Table listing symbols for 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:

Table listing symbols for 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.\*); GAS: Gas Valve, Gas Meter, Recorded U/G Gas Line, Designated U/G Gas Line (S.U.E.\*), Above Ground Gas Line.

TELEPHONE:

Table listing symbols for 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:

Table listing symbols for 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:

Table listing symbols for 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:

Table listing symbols for gas: Gas Valve, Gas Meter, Recorded U/G Gas Line, Designated U/G Gas Line (S.U.E.\*), Above Ground Gas Line.

SANITARY SEWER:

Table listing symbols for 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.\*).

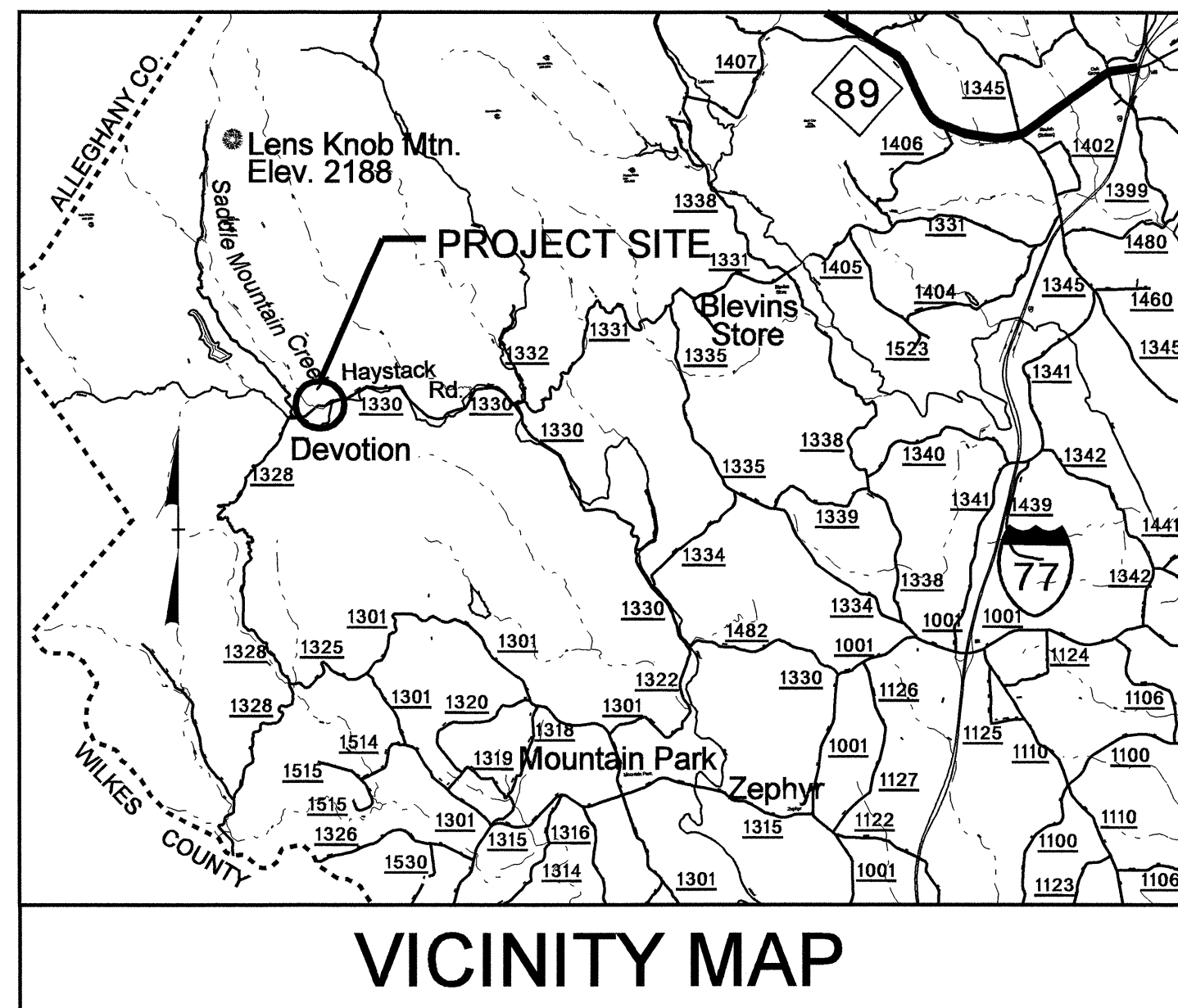
MISCELLANEOUS:

Table listing symbols for 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, End of Information.



6/2/09

# SURVEY CONTROL SHEET B-3911

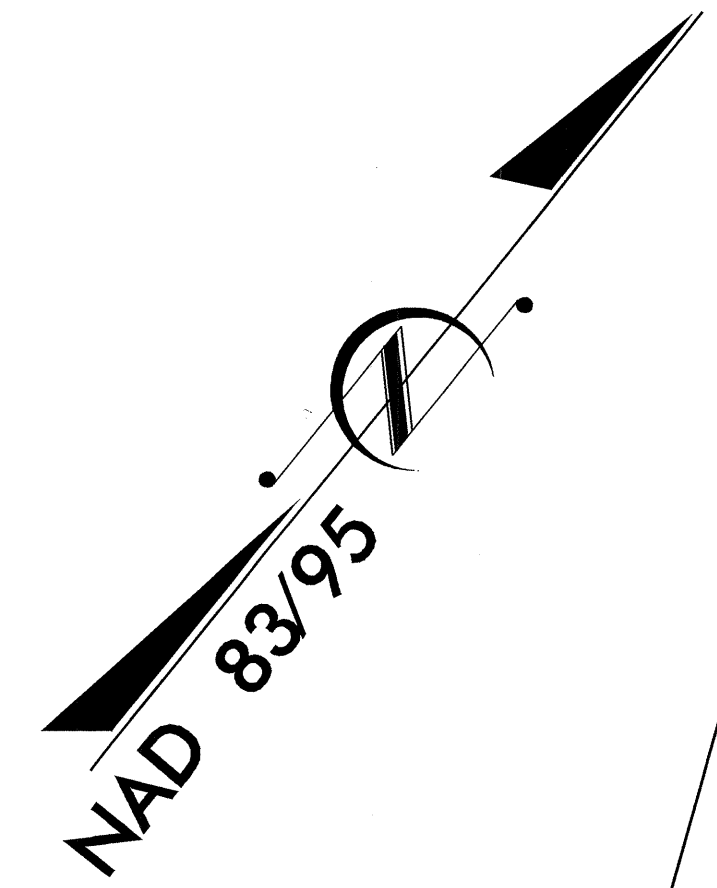


BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
3		BL-3	982407.7715	1436692.1013	1352.19	OUTSIDE PROJECT LIMITS	
1		GPS-B3911-1	982398.7580	1437063.7890	1355.92	OUTSIDE PROJECT LIMITS	
2		GPS-B3911-2	983048.5240	1437903.6440	1331.09	17+48.93	54.21 LT
4		BL-4	982980.8982	1438251.1210	1324.91	OUTSIDE PROJECT LIMITS	

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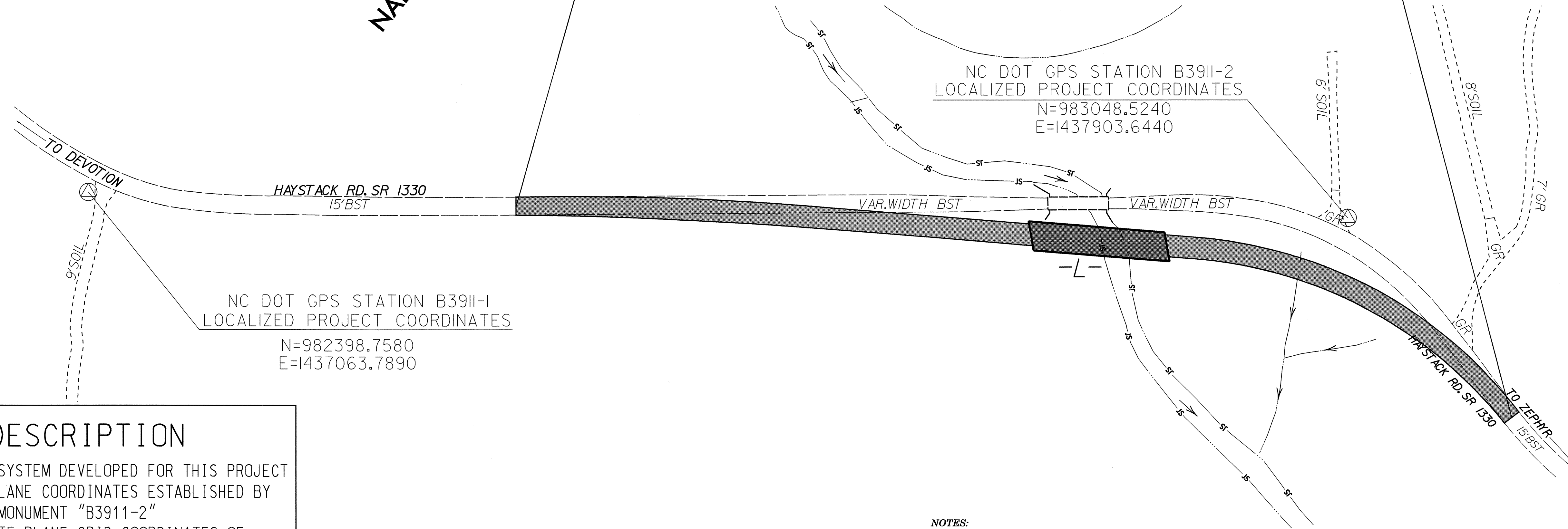
BM*1	ELEVATION = 1354.94	BM*2	ELEVATION = 1332.09	BM*3	ELEVATION = 1329.46
N 982441	E 1436786	N 983137	E 1437921	N 983110	E 1438381
OUTSIDE PROJECT LIMITS		L STATION 17+81 135 LEFT		OUTSIDE PROJECT LIMITS	
RR SPIKE IN BASE OF 15" BLACK GUM		RR SPIKE IN BASE OF 48" TREE		RR SPIKE IN BASE OF 13" BLACK GUM	

\*\*\*\*\*



BEGIN TIP PROJECT B-3911  
-L- STA 10+63.33  
N=982616.4302  
E=1437351.6889

END TIP PROJECT B-3911  
-L- STA 19+48.19  
N=983004.2855  
E=1438116.6325



**DATUM DESCRIPTION**

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B3911-2" WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 983048.524(++) EASTING: 1437903.644(++) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99997301 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B3911-2" TO -L- STATION 10+63.33 IS S 51°56'41" W 700.97 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.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: B-3911\_LS\_CONTROL\_060602.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 EXISTING HARN MONUMENTATION. SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

NOTE: DRAWING NOT TO SCALE

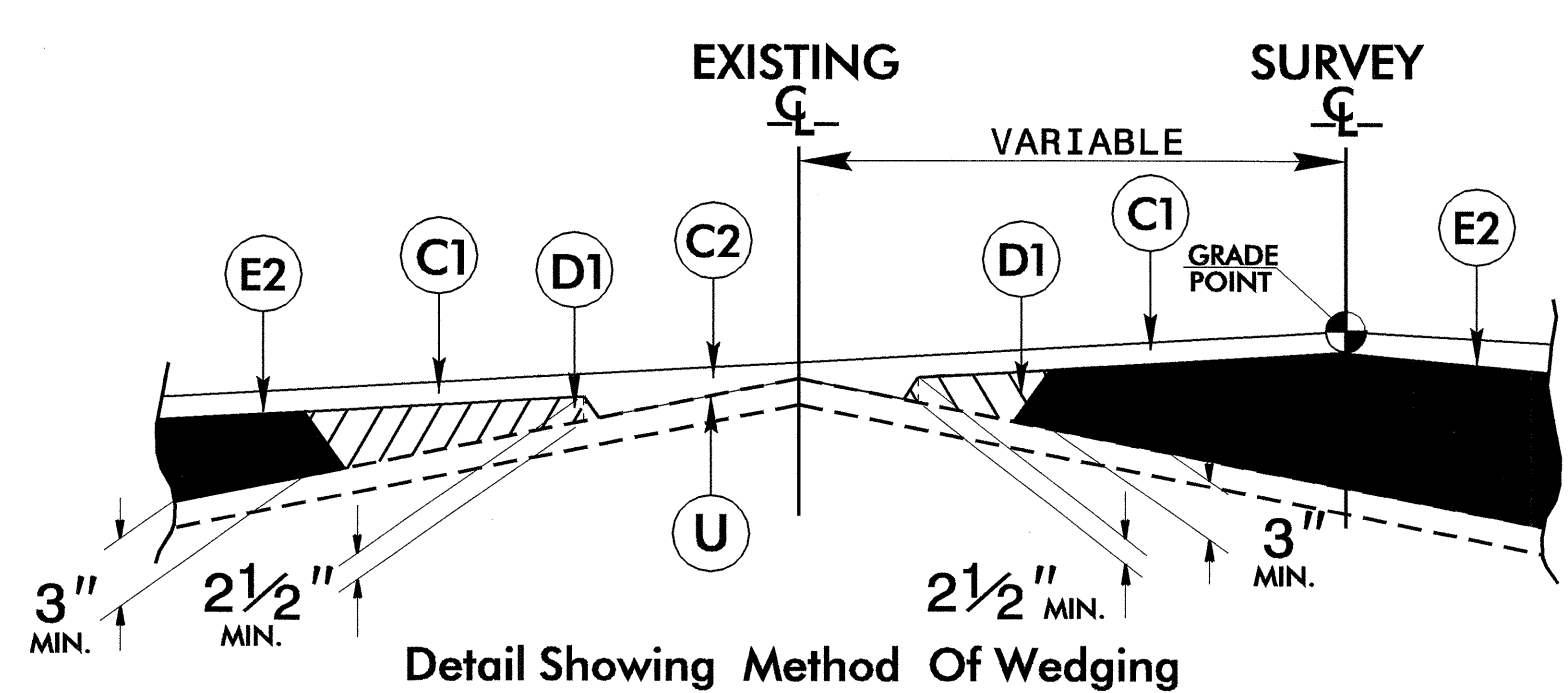
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6/2/99

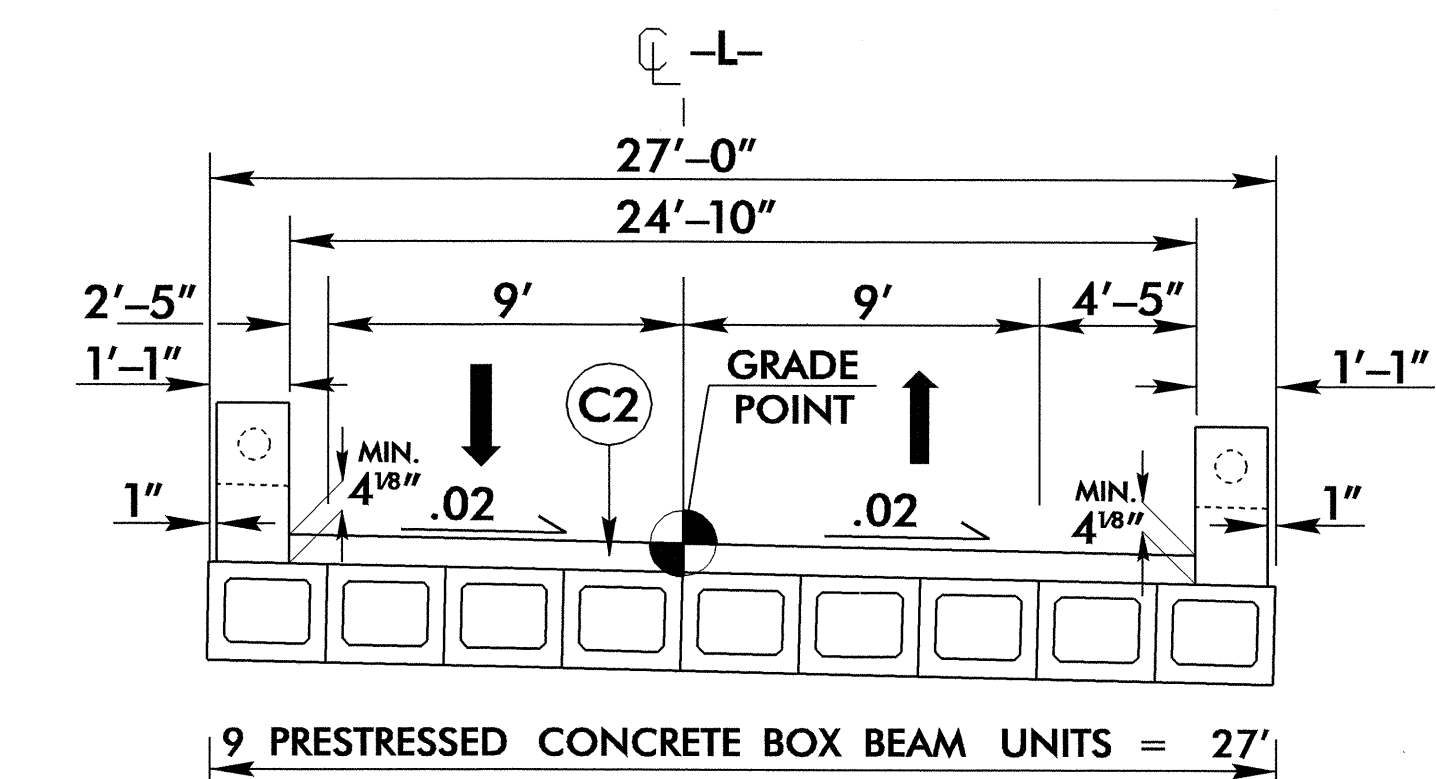
PROJECT REFERENCE NO. B-3911	SHEET NO. 2
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 28-974 CLAYTON C. KEY	PAVEMENT DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 22896 CLARK S. MORRISON

PAVEMENT SCHEDULE			
C1	PROP. APPROX. 2 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	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
C2	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" IN DEPTH OR GREATER THAN 1 1/2" IN DEPTH.	T	EARTH MATERIAL.
D1	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 TWO LAYERS NOT LESS THAN 2 1/2" IN DEPTH OR GREATER THAN 4" IN DEPTH.	U	EXISTING PAVEMENT.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD	W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL BELOW)

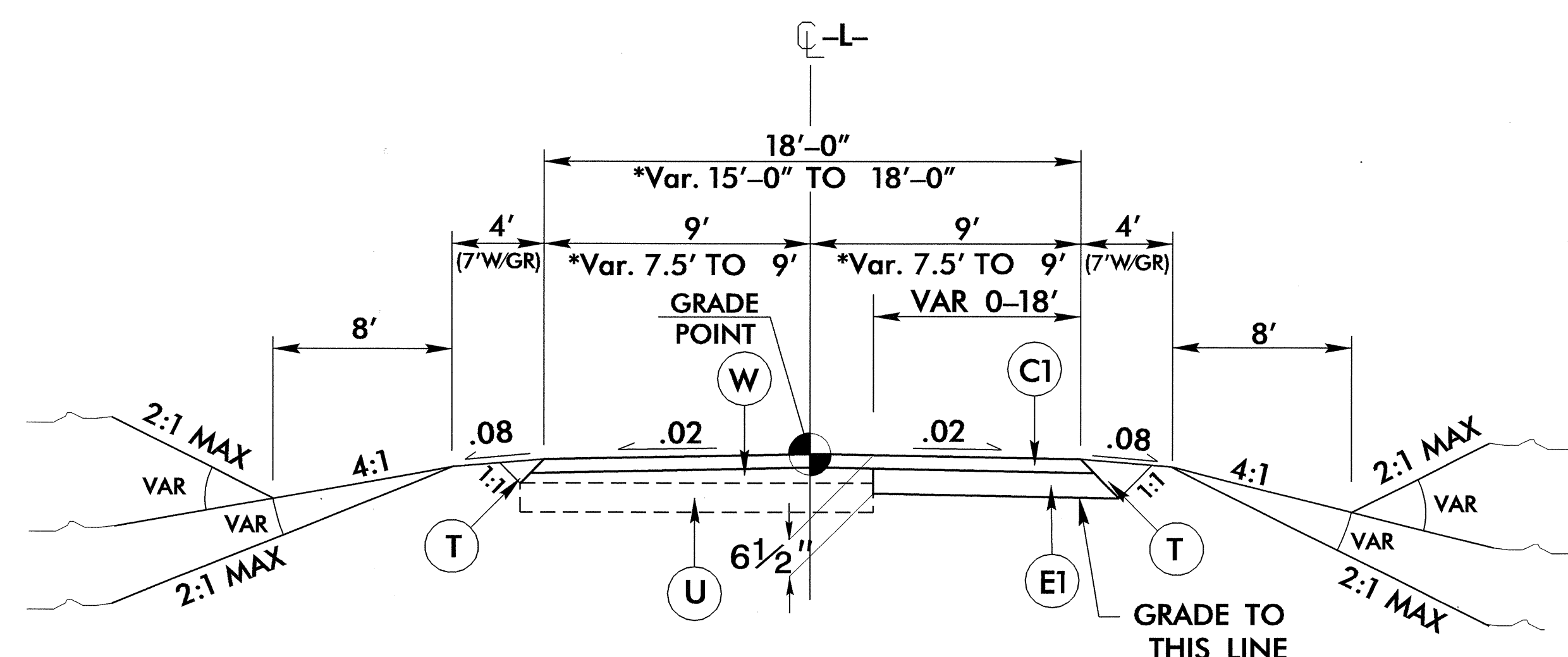
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



Detail Showing Method Of Wedging



USE TYPICAL SECTION ON STRUCTURE  
-L- STA 15+26.50 TO STA 16+11.50



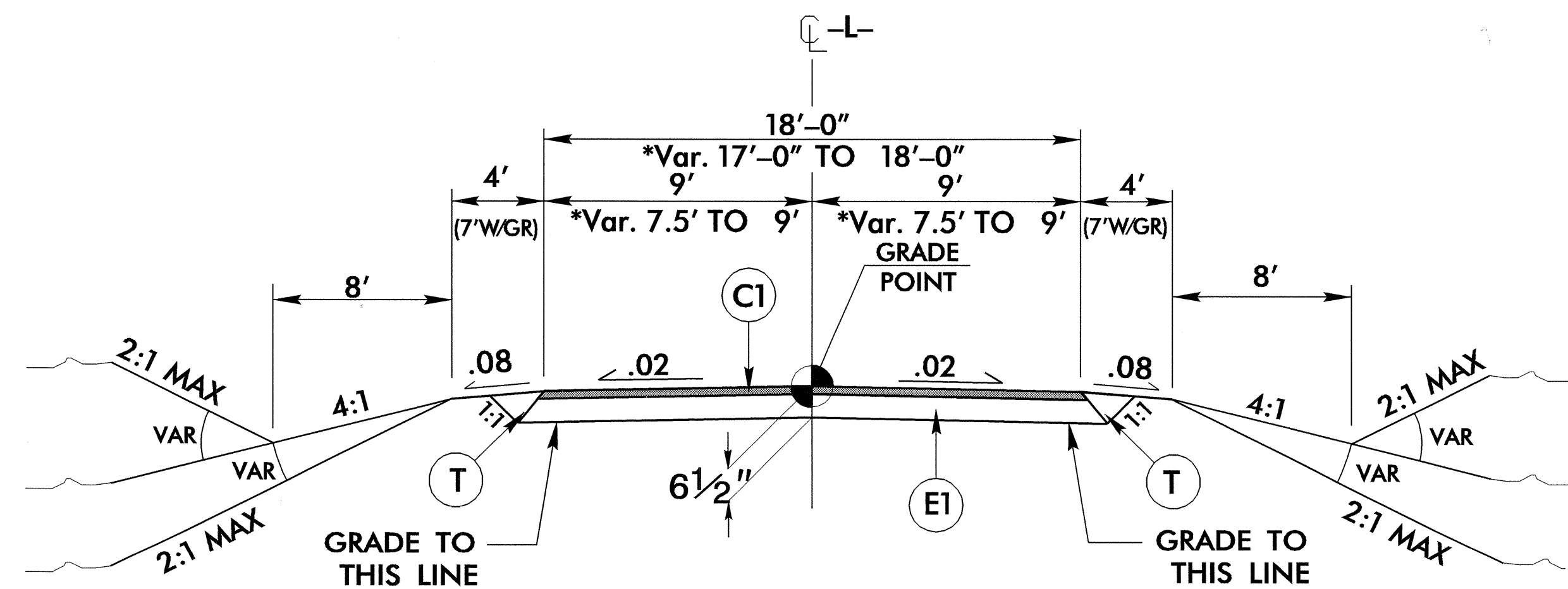
TYPICAL SECTION NO. 1

**USE TYPICAL SECTION NO.1**

- \* -L- STA 10+63.33 TO STA 12+13.33
- L- STA 12+13.33 TO STA 13+74.78
- \* -L- STA 18+43.49 TO STA 19+48.19

NOTE: (PER HYDRO) USE IN CONJUNCTION W/TYPICAL NO.1

- USE 10:1 SIDE SLOPES
- L- LT. STA. 11+00 TO 12+00
- USE 8:1 TO 6:1 SIDE SLOPES
- L- RT. STA. 10+63 TO 11+50



TYPICAL SECTION NO. 2

**USE TYPICAL SECTION NO.2**

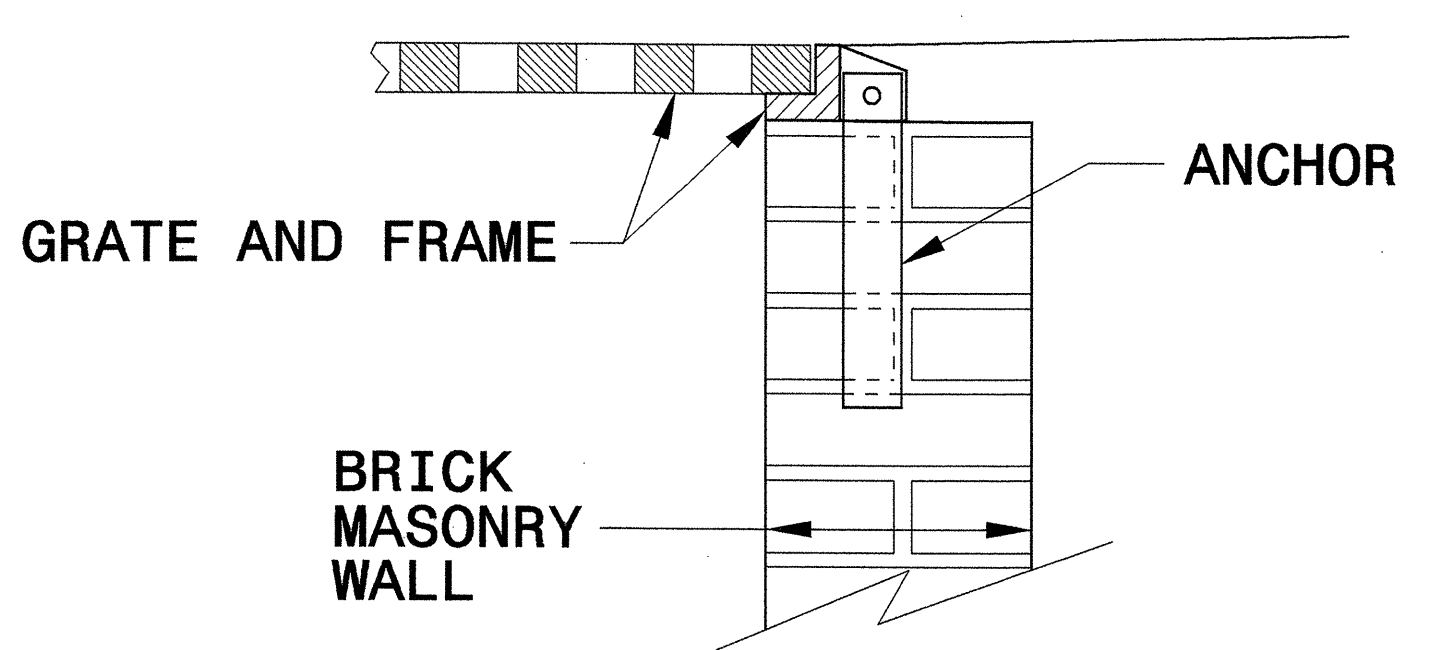
- L- STA 13+74.78 TO STA 15+26.50
- L- STA 16+11.50 TO STA 17+98.19
- \* -L- STA 17+98.19 TO STA 18+43.49

27-OCT-2008 14:10 s:\roadway\pco\B-3911.rdy-tyr.dgn

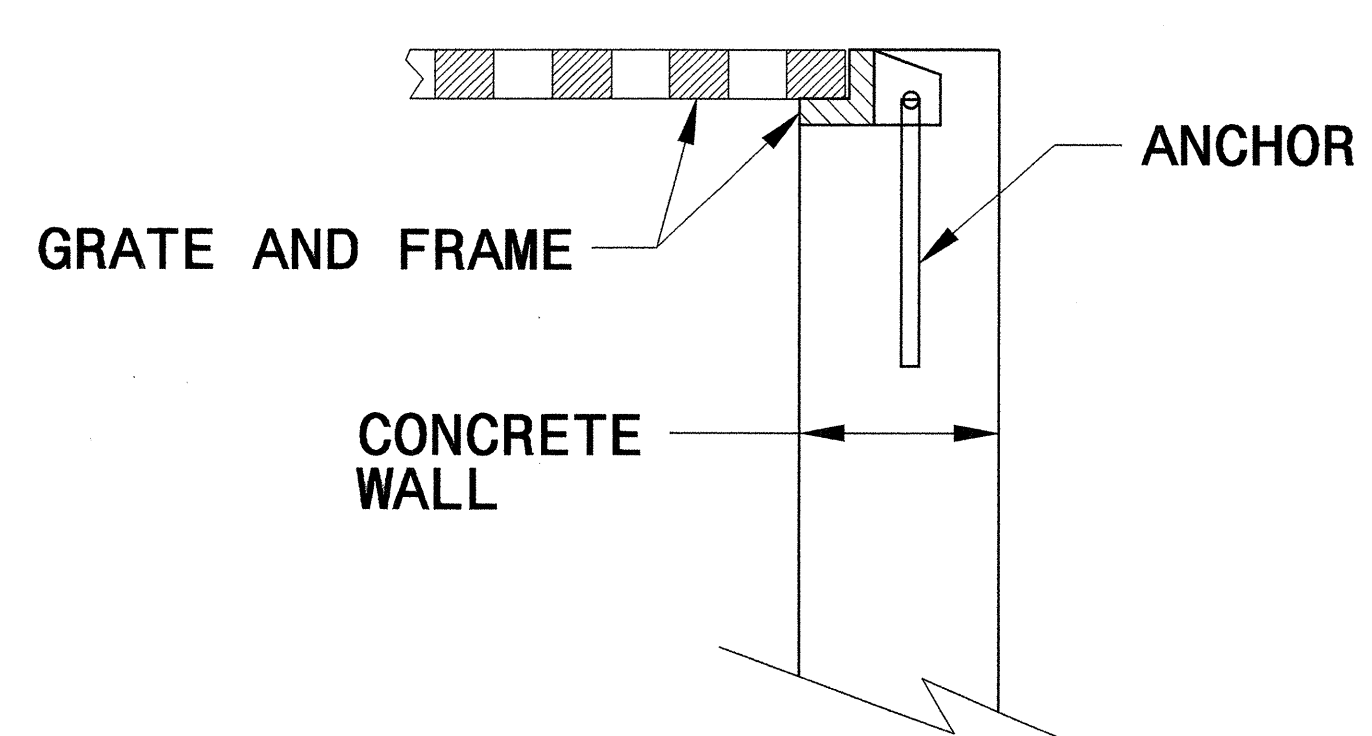
STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR  
**ANCHORAGE FOR FRAMES**  
BRICK/CONCRETE/PRECAST CONCRETE

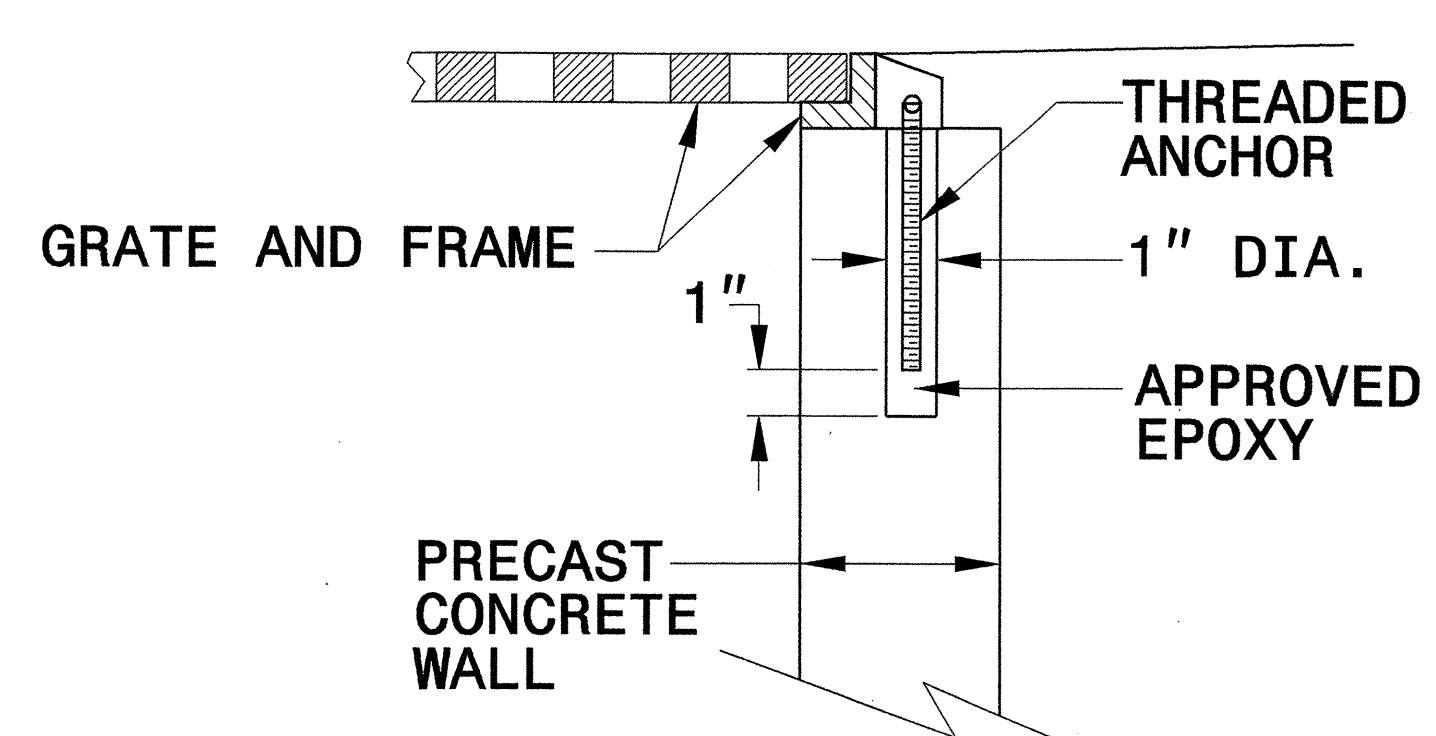
SHEET 1 OF 1  
**840D25**



**BRICK MASONRY CONSTRUCTION**



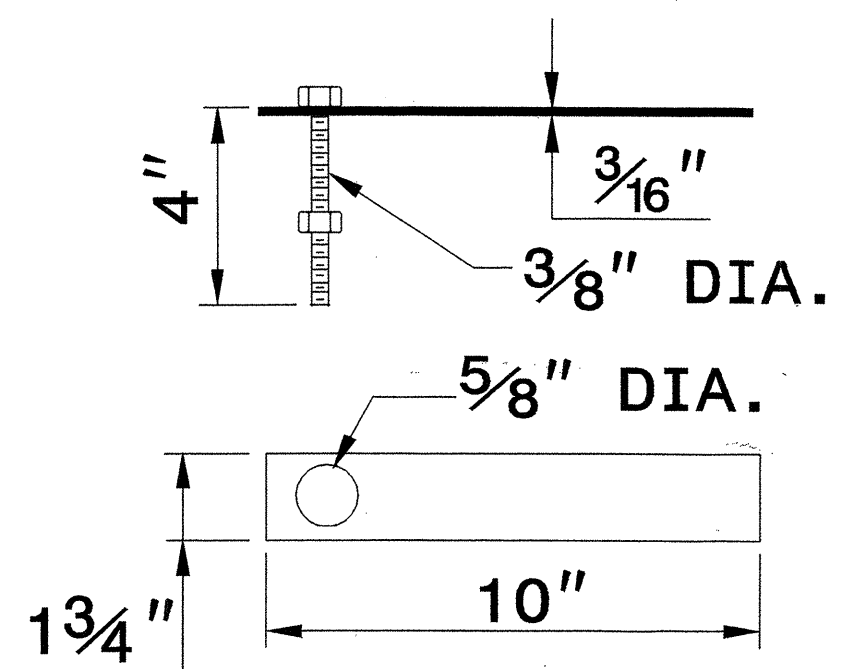
**CONCRETE CONSTRUCTION**



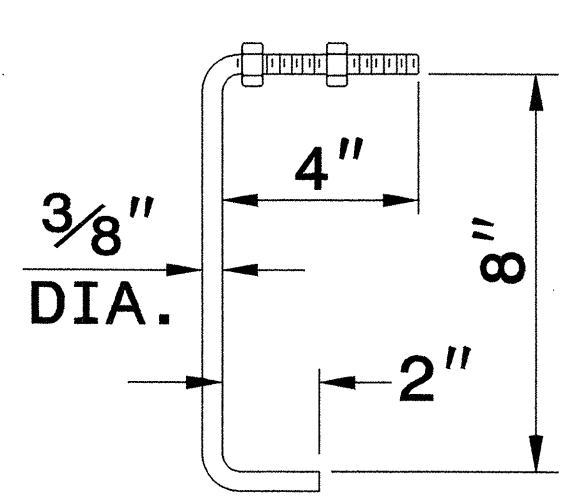
**PRECAST CONCRETE CONSTRUCTION**

**DETAIL SHOWING ANCHORAGE OF FRAME FOR GRATED DROP INLET**

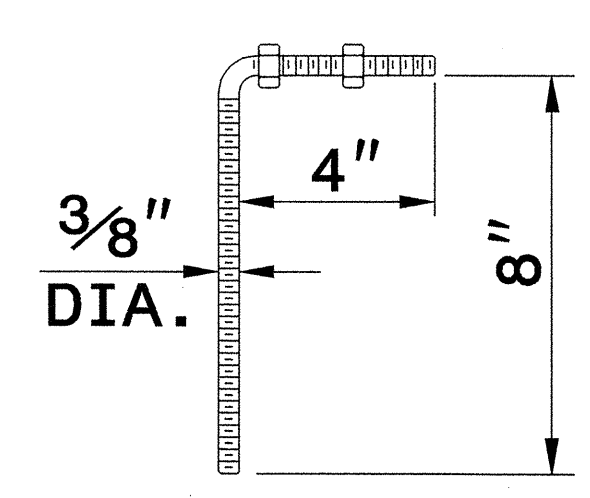
NOTE:  
CONSTRUCT GRATED DROP INLET TO COINCIDE WITH NORMAL OR SUPERELEVATED SHOULDER OR PAVEMENT SLOPE.



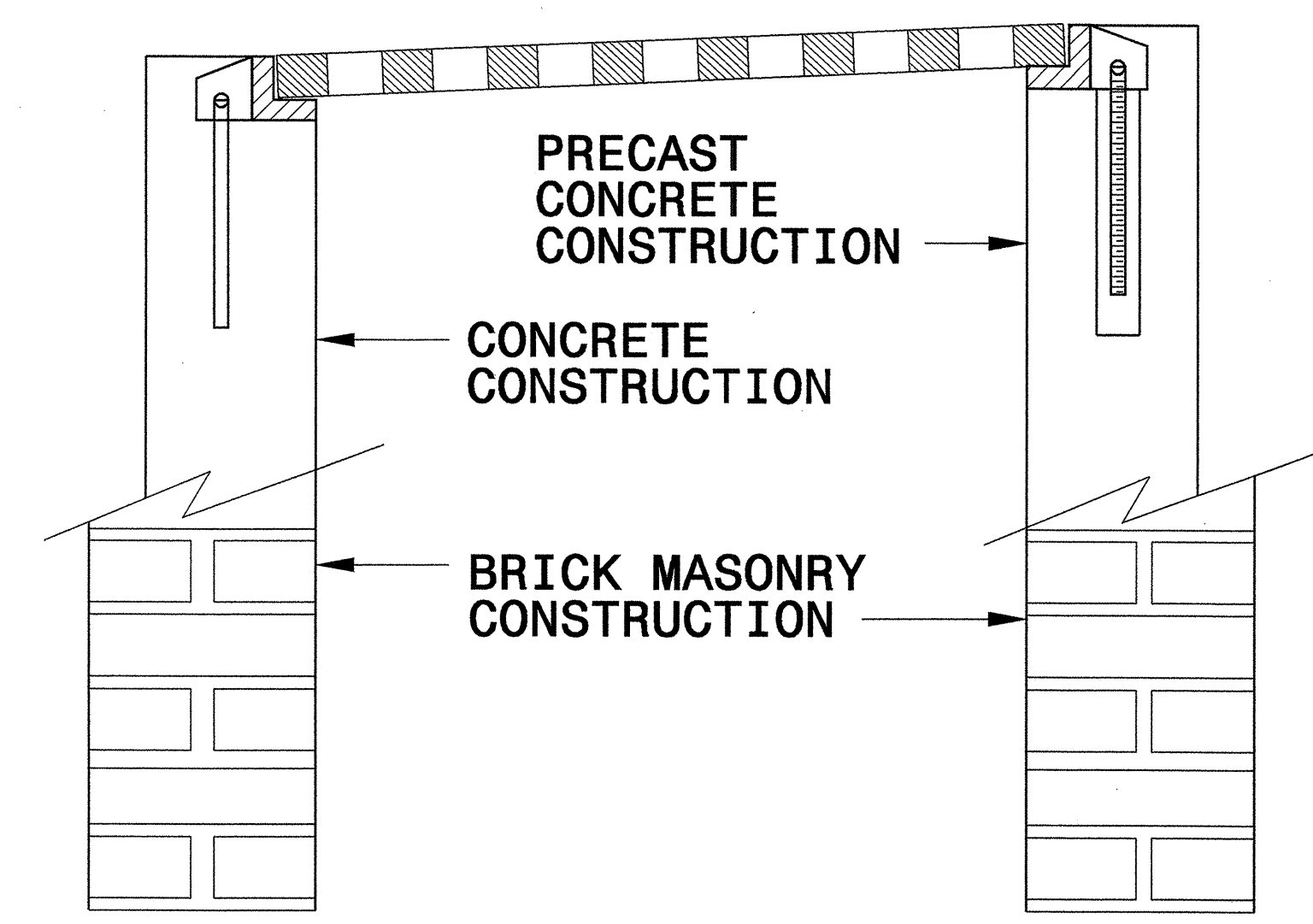
**MASONRY ANCHOR**  
3/8" DIA. BOLT WITH PLATE



**CONCRETE ANCHOR**  
3/8" DIA. BENT BAR



**PRECAST CONCRETE ANCHOR**  
3/8" DIA. BENT BAR



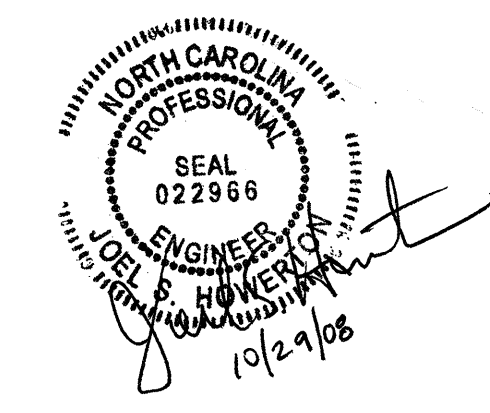
**FRAME AND GRATE INSTALLATION FOR NORMAL CROWN AND SUPERELEVATED SECTIONS**

STATE OF NORTH CAROLINA  
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RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR  
**ANCHORAGE FOR FRAMES**  
BRICK/CONCRETE/PRECAST CONCRETE

SHEET 1 OF 1  
**840D25**

SYSTEMS DESIGN USERNAME



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

**SEE PLATE FOR TITLE**

ORIGINAL BY: 2006 STD 840.25 DATE: 07/18/06  
MODIFIED BY: E.E. WARD DATE: 9/25/06  
CHECKED BY: DATE:  
FILE SPEC.:

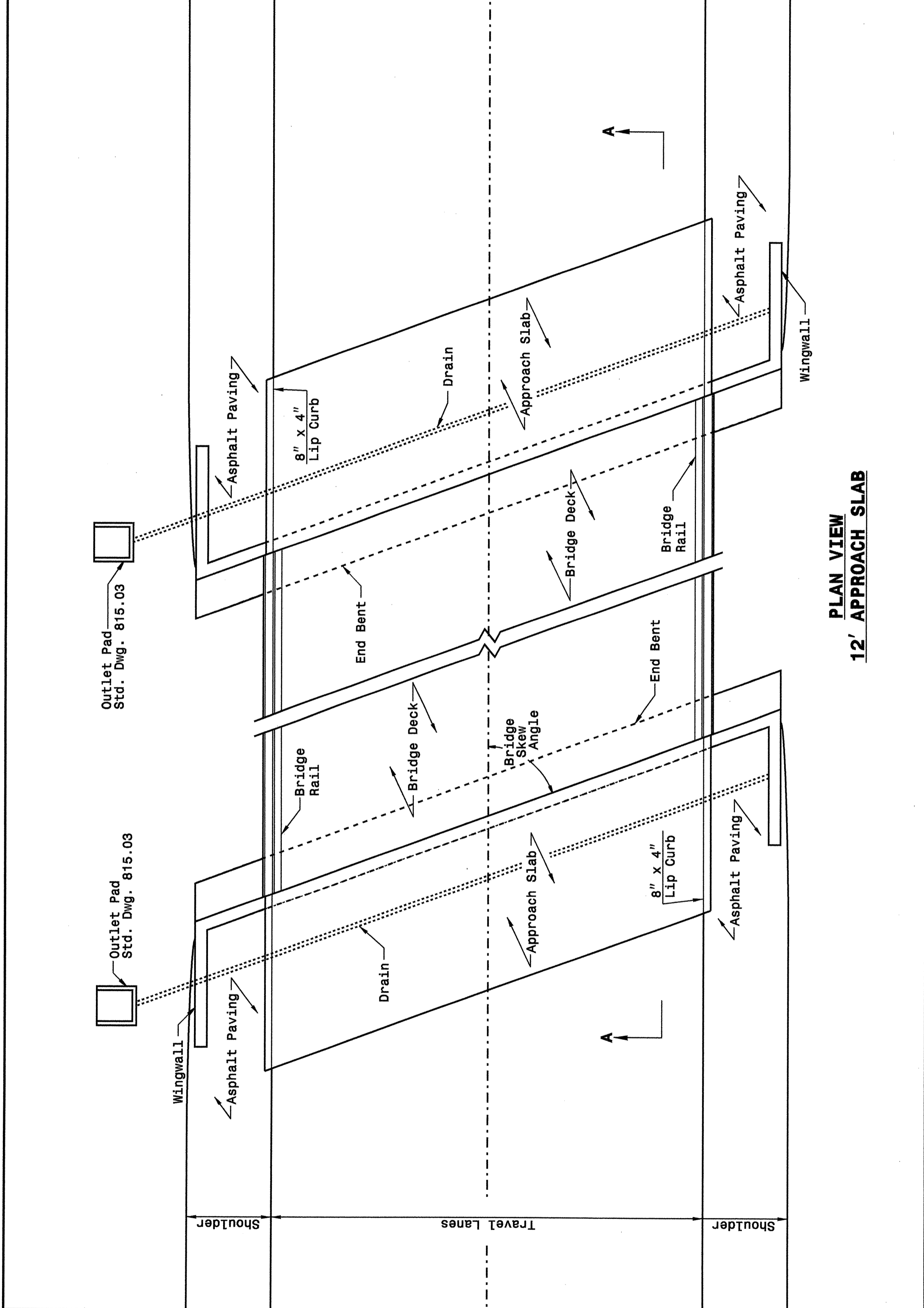




STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

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

SHEET 1 OF 2  
**422D11**



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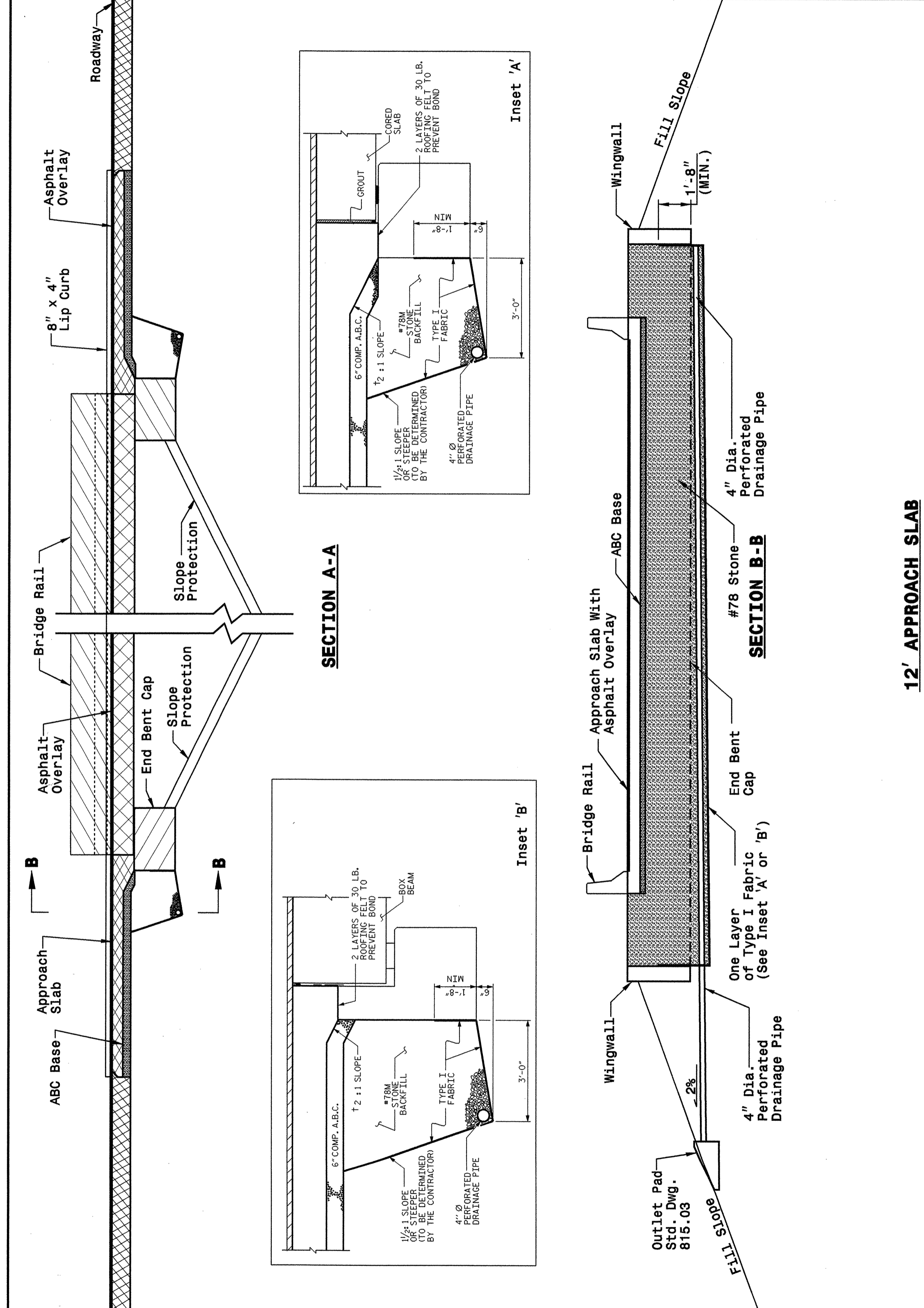
ENGLISH DETAIL DRAWING FOR  
**BRIDGE APPROACH FILLS**  
CORED SLAB & BOX BEAM BRIDGES  
SUB REGIONAL TIER

SHEET 1 OF 2  
**422D11**

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

SHEET 2 OF 2  
**422D11**



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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: *[Blank]*  
CHECKED BY: *[Signature]* DATE: 4/27/09  
FILE SPEC.: *[Blank]*

26-JUN-2008 15:32  
s:\contracts\contract\special\_details\kempf\english\bridge approach fill.dgn  
kempf At P5237489



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

# SUMMARY OF QUANTITIES

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C202022					STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C202022				
ItemNumber	Sec #	Quantity	Unit	Description	ItemNumber	Sec #	Quantity	Unit	Description
000110000-N	800	Lump Sum		MOBILIZATION	2286000000-N	840	2	EA	MASONRY DRAINAGE STRUCTURES
000400000-N	801	Lump Sum		CONSTRUCTION SURVEYING	2367000000-N	840	2	EA	FRAME WITH TWO GRATES, STD 840.29
003000000-N	SP	Lump Sum		BRIDGE APPROACH FILL - SUB REGIONAL TIER, STATION ***** (15+69.00-L-)	2556000000-E	846	60	LF	SHOULDER BERM GUTTER
004300000-N	226	Lump Sum		GRADING	3030000000-E	862	150	LF	STEEL BM GUARDRAIL
005000000-E	226	1	ACR	SUPPLEMENTARY CLEARING & GRUB-BING	3150000000-N	862	5	EA	ADDITIONAL GUARDRAIL POSTS
005700000-E	226	450	CY	UNDERCUT EXCAVATION	3215000000-N	862	4	EA	GUARDRAIL ANCHOR UNITS, TYPE III
019500000-E	265	540	CY	SELECT GRANULAR MATERIAL	3270000000-N	SP	4	EA	GUARDRAIL ANCHOR UNITS, TYPE 350
019600000-E	270	540	SY	FABRIC FOR SOIL STABILIZATION	3380000000-E	862	12.5	LF	TEMPORARY STEEL BM GUARDRAIL
031800000-E	300	15	TON	FOUNDATION CONDITIONING MATERIAL, MINOR STRS	3389100000-N	SP	1	EA	GUARDRAIL ANCHOR UNITS, TYPE 350 TEMPORARY
036600000-E	310	32	LF	15" RC PIPE CULVERTS, CLASS III	3559000000-E	866	800	LF	** STRAND BARBED WIRE FENCE WITH POSTS (5)
037200000-E	310	48	LF	18" RC PIPE CULVERTS, CLASS III	3575000000-E	SP	100	LF	GENERIC FENCING ITEM 60" CHAIN LINK FENCE WITH POSTS AND BARBED WIRE
037800000-E	310	52	LF	24" RC PIPE CULVERTS, CLASS III	3656000000-E	876	545	SY	FILTER FABRIC FOR DRAINAGE
099500000-E	340	72	LF	PIPE REMOVAL	3659000000-N	SP	1	EA	PREFORMED SCOUR HOLES WITH LEVEL SPREADER APRON
122000000-E	545	50	TON	INCIDENTAL STONE BASE	3684000000-E	SP	12	TON	GENERIC EROSION CONTROL ITEM RIF RAP, CLASS B, NATIVE DARK-COLORED STONE
148900000-E	610	240	TON	ASPHALT CONC BASE COURSE, TYPE B25.0B	4400000000-E	1110	80	SF	WORK ZONE SIGNS (STATIONARY)
149800000-E	610	72	TON	ASPHALT CONC INTERMEDIATE COURSE, TYPE 119.0B	4405000000-E	1110	112	SF	WORK ZONE SIGNS (PORTABLE)
152500000-E	610	240	TON	ASPHALT CONC SURFACE COURSE, TYPE SF9.5A	4410000000-E	1110	30	SF	WORK ZONE SIGNS (BARRICADE MOUNTED)
156000000-E	620	30	TON	ASPHALT BINDER FOR PLANT MIX, GRADE PG 64-22	4430000000-N	1130	36	EA	DRUMS
202200000-E	815	45	CY	SUBDRAIN EXCAVATION	4445000000-E	1145	48	LF	BARRICADES (TYPE III)
203300000-E	815	34	CY	SUBDRAIN FINE AGGREGATE	4455000000-N	1150	30	MD	FLAGGER
204400000-E	815	200	LF	6" PERFORATED SUBDRAIN PIPE	4810000000-E	1205	15,600	LF	PAINT PAVEMENT MARKING LINES (4")
205500000-E	815	6	EA	6" SUBDRAIN PIPE WYES, TEES, & ELBOWS	4850000000-E	1205	300	LF	REMOVAL OF PAVEMENT MARKING LINES (4")
206600000-N	815	1	EA	CONCRETE PAD FOR SUBDRAIN PIPE OUTLET	6000000000-E	1605	2,200	LF	TEMPORARY SILT FENCE
207700000-E	815	6	LF	6" OUTLET PIPE (SUBDRAINS)					
					6006000000-E	1610	160	TON	STONE FOR EROSION CONTROL, CLASS A
					6009000000-E	1610	90	TON	STONE FOR EROSION CONTROL, CLASS B
					6012000000-E	1610	190	TON	SEDIMENT CONTROL STONE
					6015000000-E	1615	1	ACR	TEMPORARY MULCHING
					6018000000-E	1620	50	LB	SEED FOR TEMPORARY SEEDING
					6021000000-E	1620	1.25	TON	FERTILIZER FOR TEMPORARY SEEDING
					6024000000-E	1622	40	LF	TEMPORARY SLOPE DRAINS
					6027000000-N	1622	1	EA	INLET PROTECTION AT TEMPORARY SLOPE DRAINS
					6029000000-E	SP	600	LF	SAFETY FENCE
					6030000000-E	1630	290	CY	SILT EXCAVATION
					6036000000-E	1631	2,100	SY	MATTING FOR EROSION CONTROL
					6037000000-E	SP	15	SY	COIR FIBER MAT
					6042000000-E	1632	220	LF	1/4" HARDWARE CLOTH
					6070000000-N	SP	4	EA	SPECIAL STILLING BASINS
					6071010000-E	SP	75	LF	WATTLE
					6071020000-E	SP	27	LB	POLYACRYLAMIDE (PAM)
					6071030000-E	SP	70	LF	COIR FIBER BAFFLES
					6071050000-E	SP	2	EA	*** SKIMMER (1-1/2")
					6084000000-E	1660	2	ACR	SEEDING & MULCHING
					6087000000-E	1660	0.5	ACR	MOWING
					6090000000-E	1661	50	LB	SEED FOR REPAIR SEEDING
					6093000000-E	1661	0.25	TON	FERTILIZER FOR REPAIR SEEDING
					6096000000-E	1662	50	LB	SEED FOR SUPPLEMENTAL SEEDING
					6108000000-E	1665	0.5	TON	FERTILIZER TOPDRESSING
					6114000000-N	SP	5	HR	SPECIALIZED HAND MOWING
					6117000000-N	SP	12	EA	RESPONSE FOR EROSION CONTROL
					6123000000-E	1670	0.1	ACR	REFORESTATION

5/28/99

26 JUN 2008 11:55 AM b-3911\_rdy\_tsh.dgn

CALCULATED BY: TC 6/20/2008  
 CHK: JRH DATE: 11/19/08

PROJECT NO. B-3911 SHEET NO. 3-A

## STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

### SUMMARY OF EARTHWORK

Volumes in Cubic Yards

Station	Station	Uncl. Excav.	Embank. + %	Borrow	Waste
10+63.33 RT	15+26.50 RT	65	490	425	
16+11.50 RT	19+48.19 RT	1	762	761	
<b>SUBTOTAL</b>		<b>66</b>	<b>1252</b>	<b>1186</b>	
10+63.33 LT	15+26.50 LT	0	293	293	
16+11.50 L.T	19+48.19 LT	323	608	608	323
<b>SUBTOTAL</b>		<b>323</b>	<b>901</b>	<b>901</b>	<b>323</b>
<b>TOTAL</b>		<b>389</b>	<b>2153</b>	<b>2087</b>	<b>323</b>
5% to Replace Topsoil on Borrow Pit				104	
<b>GRAND TOTALS:</b>		<b>389</b>	<b>2153</b>	<b>2191</b>	<b>323</b>
<b>SAY:</b>		<b>400</b>		<b>2200</b>	
Additional Undercut = 450 CY					

### SUMMARY OF EXISTING ASPHALT PAVEMENT REMOVAL

LINE	Station	Station	LOC LT/RT	SY
L	11+25.05	15+10.64	LT	337.77
L	15+60.75	19+41.29	LT	536.46
TOTAL:				874.23
SAY:				880

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.

Note: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Clearing and Grubbing, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL  
 TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.  
 FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.  
 W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.  
 G = GATING IMPACT ATTENUATOR TYPE 350  
 NG = NON-GATING IMPACT ATTENUATOR TYPE 350

### GUARDRAIL SUMMARY

LINE	BEG. STA.	END STA.	LOC.	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHLDR WIDTH	FLAIR LENGTH		W		ANCHORS						IMP. ATTEN. TYPE 350			REMOVE EXISTING GRDRAIL	REMARKS	
				STRAIGHT	TEMP STRAIGHT	DOUBLE FACED	APPR. END	TRAIL. END			APPR. END	TRAIL. END	APPR. END	TRAIL. END	XI MOD	TYPE-III	GRAU 350	TEMP 350	XII	CAT-1	VI MOD	EA	G			NG
L	14+15.27	15+33.87	RT.	125			1																			
L	14+38.87	15+20.02	LT	87.5				1																		
L	14+60.00	15+10.72	LT.		62.5																					
L	16+05.02	17+21.86	LT.	125			1																			
L	16+18.87	17+02.13	RT.	87.5				1																		
SUBTOTAL				425	62.5											4	4	1								
LESS ANCHOR DEDUCTIONS				-275	50																					
GRAND TOTAL				150	12.5											4	4	1								

Addition Guardrail Post=5 Each

Less Anchor Deduction = Grau 350 = 4@50' = 200'  
 Type III = 4 @ 18.75 = 75'

Less Anchor Deduction = TEMP Grau 350 = 1@50' = 50'

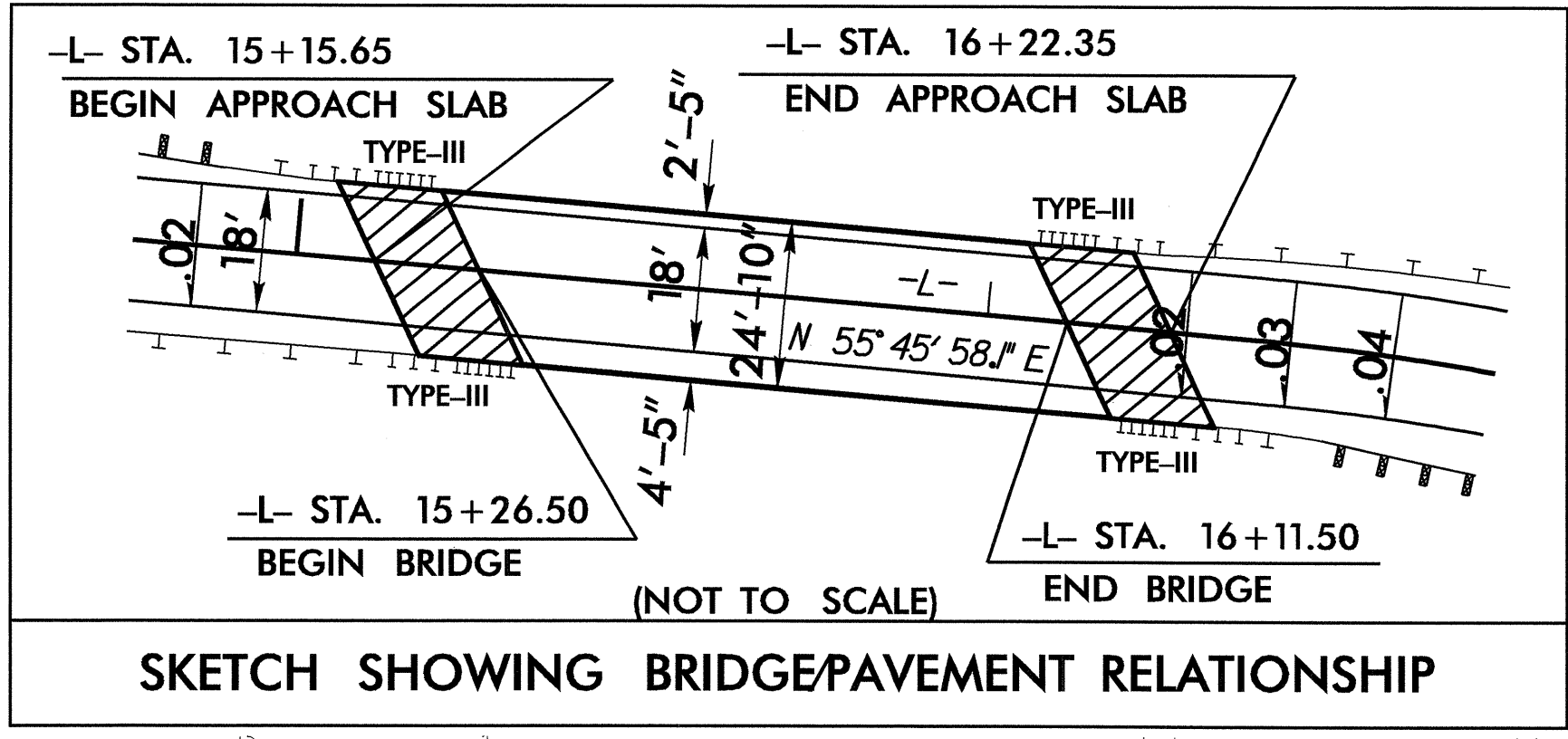






8/17/99

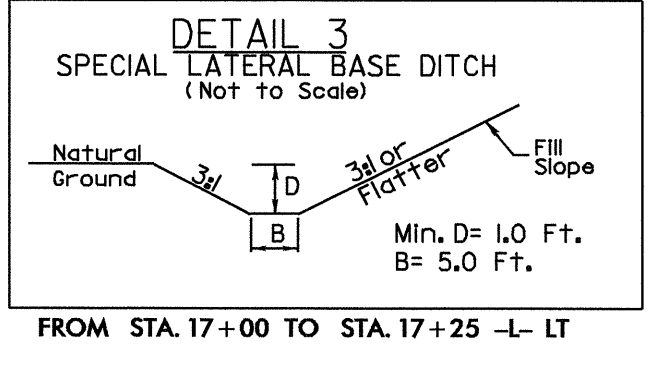
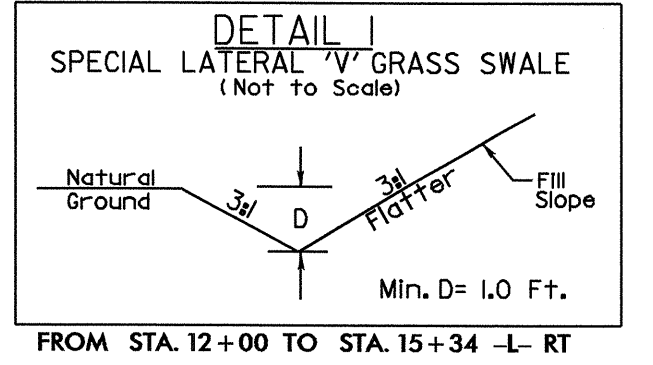
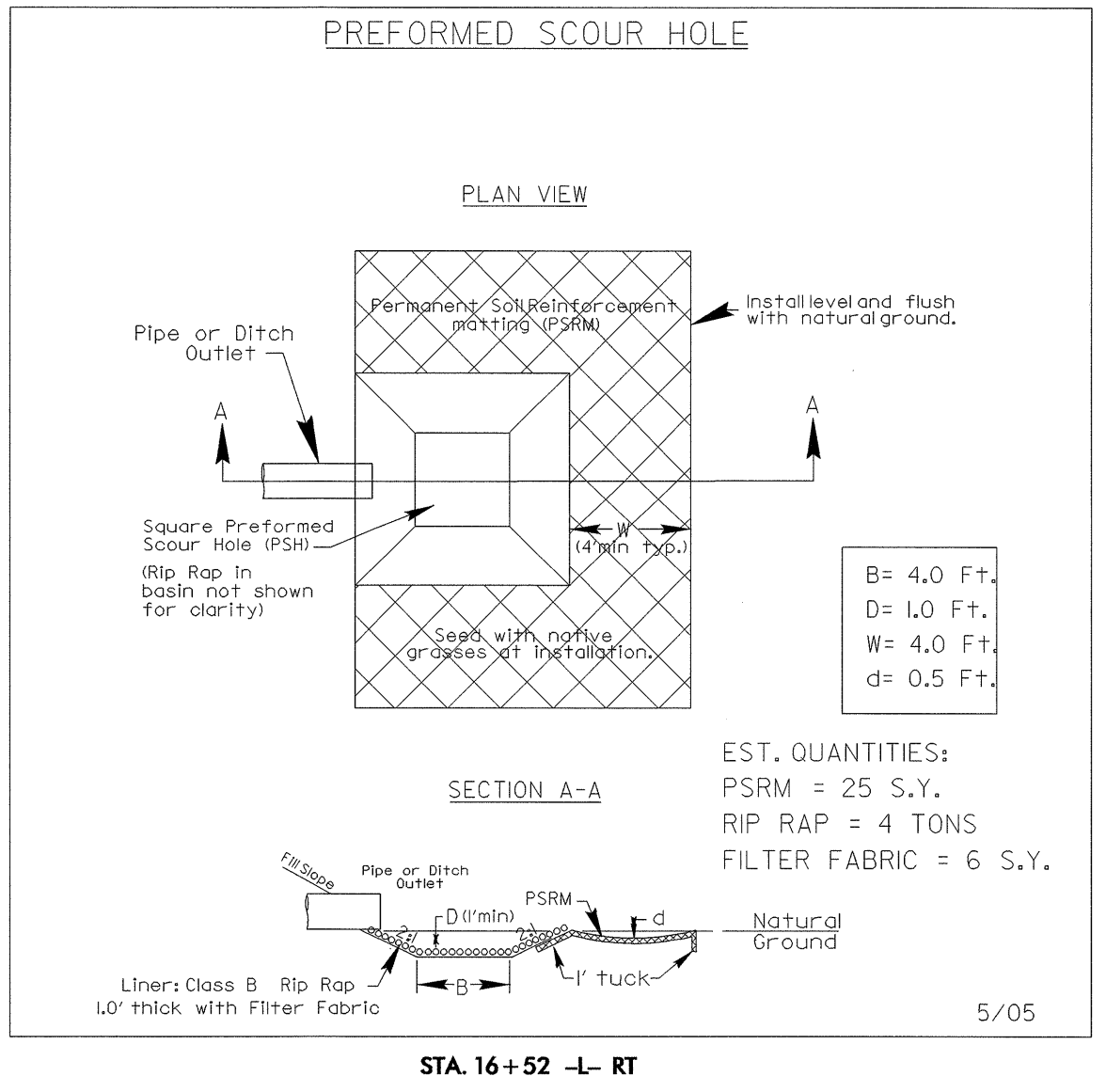
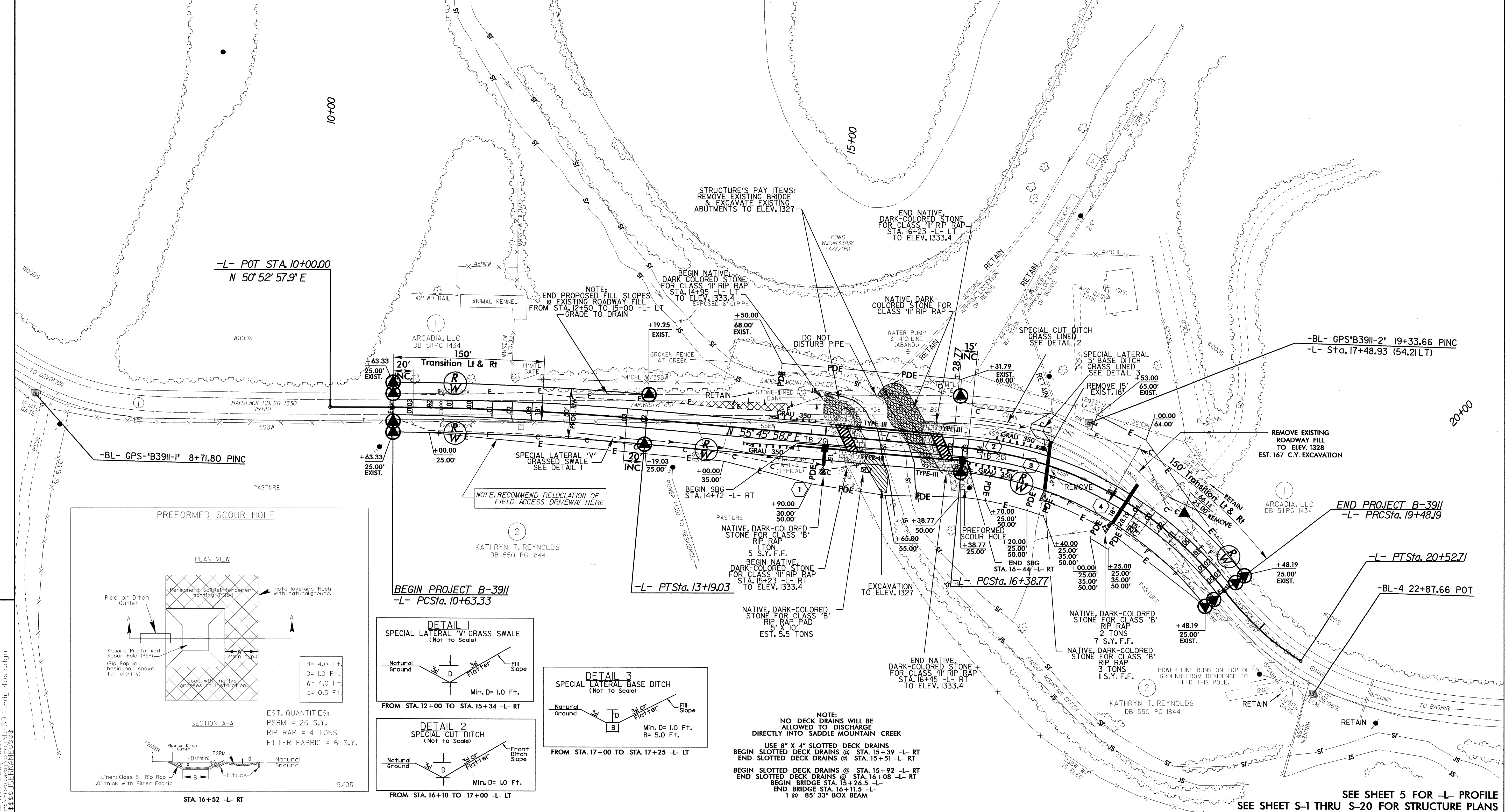
PROJECT REFERENCE NO. B-3911	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 26842 FRYMAN C. KEL	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 14482 JOSEPH W. DUNNELOP
11-20-08	



- L -		
PI Sta 11+91.26	PI Sta 18+02.90	PI Sta 20+00.93
$\Delta = 4' 53'' 00.2''$ (RT)	$\Delta = 47' 16'' 28.0''$ (RT)	$\Delta = 19' 00'' 43.1''$ (LT)
$D = 1' 54' 35.5''$	$D = 15' 16' 43.9''$	$D = 18' 11' 20.9''$
$L = 255.69'$	$L = 309.41'$	$L = 104.52'$
$T = 127.92'$	$T = 164.12'$	$T = 52.75'$
$R = 3,000.00'$	$R = 375.00'$	$R = 315.00'$
$SE = .03$	$SE = .04$	$SE = Existing$
$V_D = 45$ mph	$V_D = 35$ mph	$V_D = Existing$

PAVEMENT REMOVAL

REVISIONS



18-NOV-2008 10:01  
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\$\$\$\$SUSANMAYHEM\$\$\$

SEE SHEET 5 FOR -L- PROFILE  
SEE SHEET S-1 THRU S-20 FOR STRUCTURE PLANS



**BRIDGE HYDRAULIC DATA**

DESIGN DISCHARGE	= 1400	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 1332.4	FT
BASE DISCHARGE	= 2200	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 1334.0	FT
OVERTOPPING DISCHARGE	= 1100	CFS
OVERTOPPING FREQUENCY	= 10+	YRS
OVERTOPPING ELEVATION	= 1331.1	FT

DATE OF SURVEY = 8/30/06  
 W.S. ELEVATION AT DATE OF SURVEY = 1333.95 FT

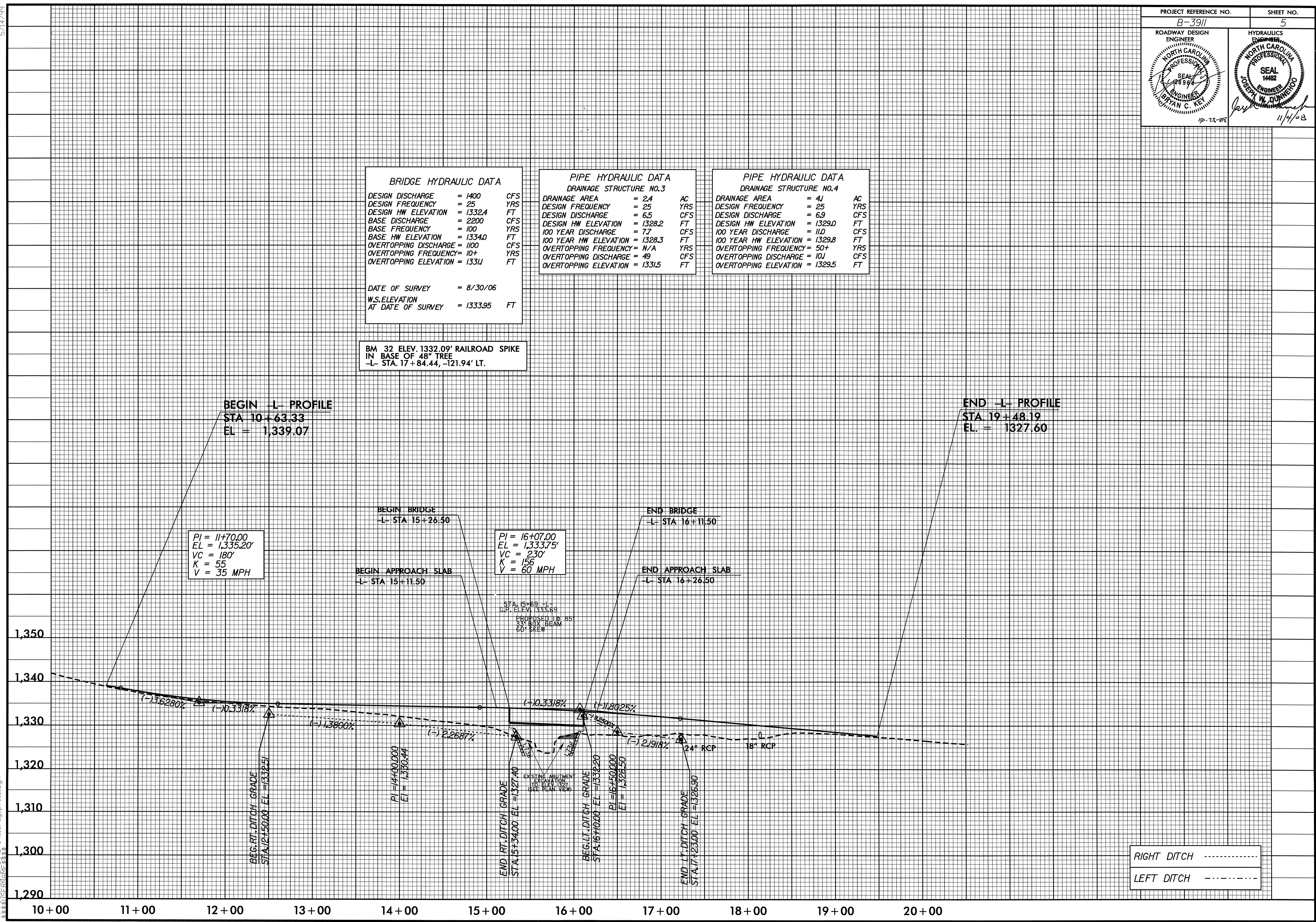
**PIPE HYDRAULIC DATA  
DRAINAGE STRUCTURE NO.3**

DRAINAGE AREA	= 2.4	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 6.5	CFS
DESIGN HW ELEVATION	= 1328.2	FT
100 YEAR DISCHARGE	= 7.7	CFS
100 YEAR HW ELEVATION	= 1328.3	FT
OVERTOPPING FREQUENCY	= N/A	YRS
OVERTOPPING DISCHARGE	= 4.9	CFS
OVERTOPPING ELEVATION	= 1331.5	FT

**PIPE HYDRAULIC DATA  
DRAINAGE STRUCTURE NO.4**

DRAINAGE AREA	= 4.1	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 6.9	CFS
DESIGN HW ELEVATION	= 1329.0	FT
100 YEAR DISCHARGE	= 11.0	CFS
100 YEAR HW ELEVATION	= 1329.8	FT
OVERTOPPING FREQUENCY	= 50+	YRS
OVERTOPPING DISCHARGE	= 10.1	CFS
OVERTOPPING ELEVATION	= 1329.5	FT

BM 32 ELEV. 1332.09' RAILROAD SPIKE  
 IN BASE OF 48" TREE  
 -L- STA. 17 + 84.44, -121.94' LT.



5/14/09  
 04-AUG-2008 10:53  
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 \$\$\$\$PROGRAM\$\$\$\$