

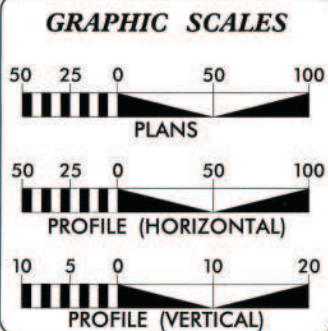
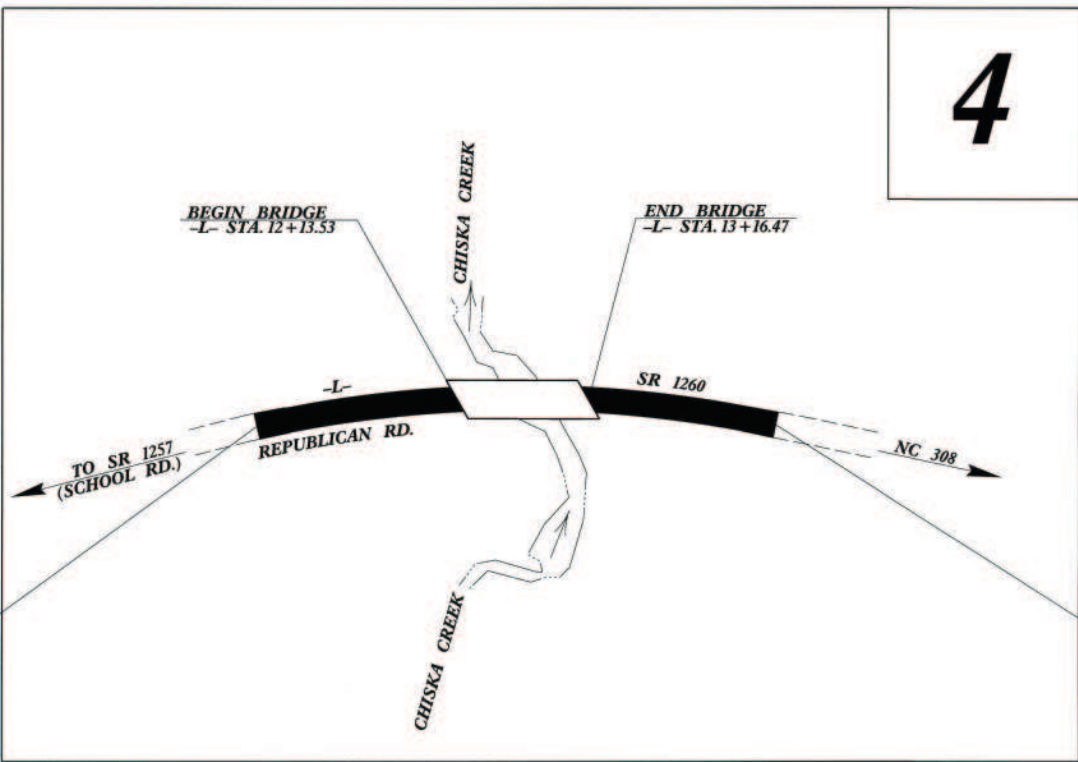
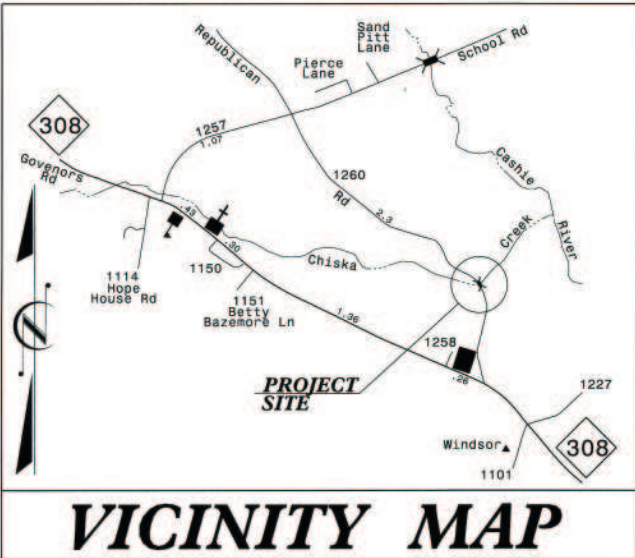
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.1.R.18	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.1.R.18		PE, R/W, UTIL. CONST.	

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BERTIE COUNTY

LOCATION: BRIDGE NO. 43 OVER CHISKA CREEK
ON SR 1260 (REPUBLICAN RD.)

TYPE OF WORK: GRADING, DRAINAGE, PAVING & STRUCTURE



DESIGN DATA

ADT 2009 =	570
ADT 2032 =	1125
DHV =	10 %
D =	50 %
T =	8 % *
V =	45 MPH
* TTST =	3% DUAL = 5%
FUNC CLASS =	LOCAL
SUBREGIONAL TIER	

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT 17BP.1.R.18	=	0.059 MI.
LENGTH STRUCTURES TIP PROJECT 17BP.1.R.18	=	0.019 MI.
TOTAL LENGTH TIP PROJECT 17BP.1.R.18	=	0.078 MI.

WETHERILL ENGINEERING

Prepared for the North Carolina Department of Transportation in the Office of:
559 JONES FARM ROAD
SUITE 164
RALEIGH, N.C. 27606
Phone: 919.857.8077
Fax: 919.851.8107

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: EDWARD G. WETHERILL, PE
PROJECT ENGINEER

LETTING DATE: BOB A. MAY, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

ROADWAY DESIGN ENGINEER

SEAL 23454 10/16/12

SEAL 21116 10/16/12

SIGNATURE: Anne D. Gamber

SIGNATURE: Bob A. May



CONTRACT: TIP PROJECT: 17BP.1.R.18


8/17/99

3:54:44 PM
2/2/2012
8/2/2012
C:\Roadway\Proj\BR*43_RdJ_tsh.dgn

PROJECT REFERENCE NO.
17BPJ.RJB

SHEET NO.
1-A

ROADWAY DESIGN
ENGINEER



GENERAL NOTES

GENERAL NOTES: 2012 SPECIFICATIONS
EFFECTIVE: 01-17-12
REVISED: 11/01/11

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 - MODIFIED.

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.

UNDERDRAINS:

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

GUARDRAIL:

THE GUARDRAIL LOCATIONS SHOWN ON THE PLANS MAY BE ADJUSTED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHOULD CONSULT WITH THE ENGINEER PRIOR TO ORDERING GUARDRAIL MATERIAL.

TEMPORARY SHORING:

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

SUBSURFACE PLANS:

NO SUBSURFACE PLANS ARE AVAILABLE ON THIS PROJECT. THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATION AS TO THE SUBSURFACE CONDITIONS.

END BENTS:

THE ENGINEER SHALL CHECK THE STRUCTURE END BENT PLANS, DETAILS, AND CROSS-SECTION PRIOR TO SETTING OF THE SLOPE STAKES FOR THE EMBANKMENT OR EXCAVATION APPROACHING A BRIDGE.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE ROANOKE ELECTRIC CORPORATION AND CENTURYLINK. ANY RELOCATION OF EXISTING UTILITIES WILL ACCOMPLISHED BY OTHERS.

RIGHT-OF-WAY MARKERS:

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

LIST OF STANDARDS

2012 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 January, 2012 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, Modified
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
DIVISION 4 - MAJOR STRUCTURES	
422.11	Reinforced Bridge Approach Fills - Sub Regional Tier
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
815.03	Pipe Underdrain and Blind Drain
840.00	Concrete Base Pad for Drainage Structures
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.46	Traffic Bearing Precast Drainage Structure
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

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
2	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
3	SUMMARY OF DRAINAGE QUANTITIES, SUMMARY OF GUARDRAIL, EARTHWORK SUMMARY, ASPHALT PAVEMENT REMOVAL SUMMARY AND SHOULDER BERM GUTTER SUMMARY
4	PLAN & PROFILE SHEET
TCP-1	TRAFFIC CONTROL PLANS
EC-1 THRU EC-3B	EROSION CONTROL PLANS
UO-1	UTILITIES BY OTHERS PLANS
X-1A	CROSS-SECTION SUMMARY SHEET
X-1 THRU X-4	CROSS-SECTIONS
S-1 THRU S-20	STRUCTURE PLANS (BRIDGE #43)

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	ESP
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 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	○
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	WLB
Proposed Lateral, Tail, Head Ditch	—
False Sump	◇

RAILROADS:

Standard Gauge	CSX TRANSPORTATION
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 RW Marker	—
Proposed Control of Access Line with Concrete C/A Marker	—
Existing Control of Access	—
Proposed Control of Access	—
Existing Easement Line	—
Proposed Temporary Construction Easement	—
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	⊗
VEGETATION:	
Single Tree	✪
Single Shrub	✪
Hedge	—
Woods Line	—

Orchard	✪
Vineyard	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	S
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	—
Designated U/G Water Line (S.U.E.*)	—
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:

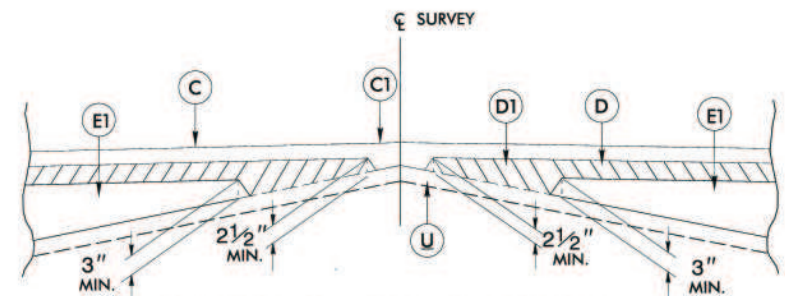
Gas Valve	⊕
Gas Meter	⊕
Recorded U/G Gas Line	G
Designated U/G Gas Line (S.U.E.*)	G
Above Ground Gas Line	A/G Gas

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:

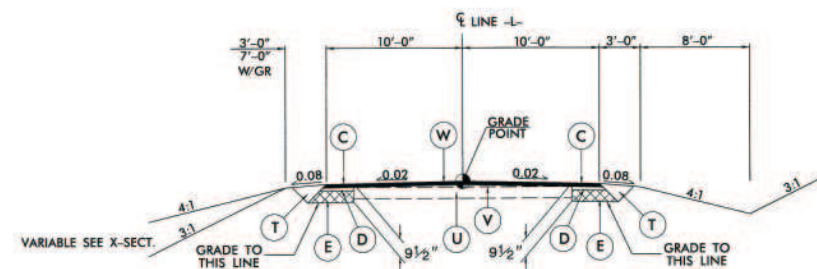
Utility Pole	●
Utility Pole with Base	⊕
Utility Located Object	○
Utility Traffic Signal Box	⊕
Utility Unknown U/G Line	U/L
U/G Tank; Water, Gas, Oil	—
Underground Storage Tank, Approx. Loc.	UST
A/G Tank; Water, Gas, Oil	—
Geoenvironmental Boring	⊕
U/G Test Hole (S.U.E.*)	⊕
Abandoned According to Utility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



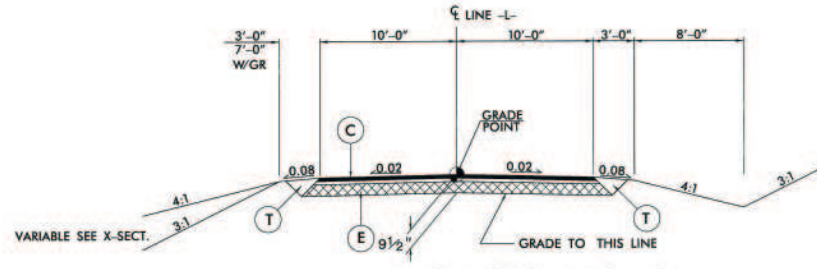
Detail Showing Method of Wedging

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C1	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 1½" IN DEPTH.
D	PROP. APPROX. 2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
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 LAYERS NOT LESS THAN 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	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 5½" IN DEPTH.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V	MILLING BITUMINOUS PAVEMENT. 3" TO 0" DEPTH.

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

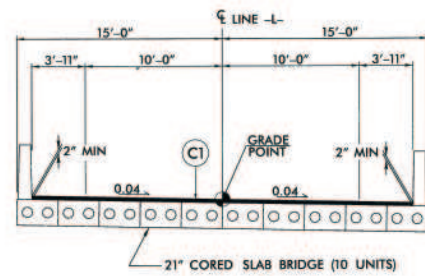


TYPICAL SECTION NO. 1
USE TYPICAL SECTION NO. 1 AS FOLLOWS:
-L- STA. 10+55.00 TO -L- STA. 11+80.00
-L- STA. 13+40.00 TO -L- STA. 14+65.00



TYPICAL SECTION NO. 2
USE TYPICAL SECTION NO. 2 AS FOLLOWS:
-L- STA. 11+80.00 TO -L- STA. 12+13.53 (BEGIN BRIDGE)
-L- STA. 13+16.47 (END BRIDGE) TO -L- STA. 13+40.00

NOTE: MILL EXISTING PAVEMENT AT THE FOLLOWING LOCATIONS:
-L- STA. 10+55.00 TO -L- STA. 11+80.65
-L- STA. 13+62.31 TO -L- STA. 14+65.00



TYPICAL SECTION NO. 3
USE TYPICAL SECTION NO. 3 AS FOLLOWS:
-L- STA. 12+13.53 (BEGIN BRIDGE #43) TO -L- STA. 13+16.47 (END BRIDGE #43)

PROJECT REFERENCE NO. 17BPJ.RJ8	SHEET NO. 2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
 559 Jones Franklin Rd. Suite 164 Raleigh, N.C. 27606 License No. F-0377 Bus: 919 851 8077 Fax: 919 851 8107 TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION	

SUMMARY OF EARTHWORK

STATION	STATION	UNCL EXCAV.	EMBANK. + %	BORROW	WASTE
10 + 55.00	12 + 13.53	6	93	87	
SUBTOTALS:					
13 + 16.47	14 + 65.00	7	24	17	
SUBTOTALS:		7	24	17	
PROJECT TOTALS:		13	117	104	
5% TO REPLACE TOPSOIL ON BORROW PIT				5	
GRAND TOTALS:		13	117	109	
SAY:		50	117	150	

Earthwork quantities are calculated by the Wetherill Engineering, Inc.. These earthwork quantities are based in part on subsurface data provided by the SUMMIT Design Engineering Services, PLLC.

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RV/CL	YD ⁱ
-L-	11 + 80.00	12 + 43.17	CL	147.59
-L-	12 + 96.95	13 + 40.00	CL	99.11
			TOTAL:	246.70
			SAY:	250.00

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

SHOULDER BERM GUTTER SUMMARY

SURVEY LINE	STATION	STATION	LENGTH
-L- RT	11+83.00	12+09.79	26.79
		TOTAL:	26.79
		SAY:	30.00

NOTE: Invert Elevations are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

[illegible]

"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

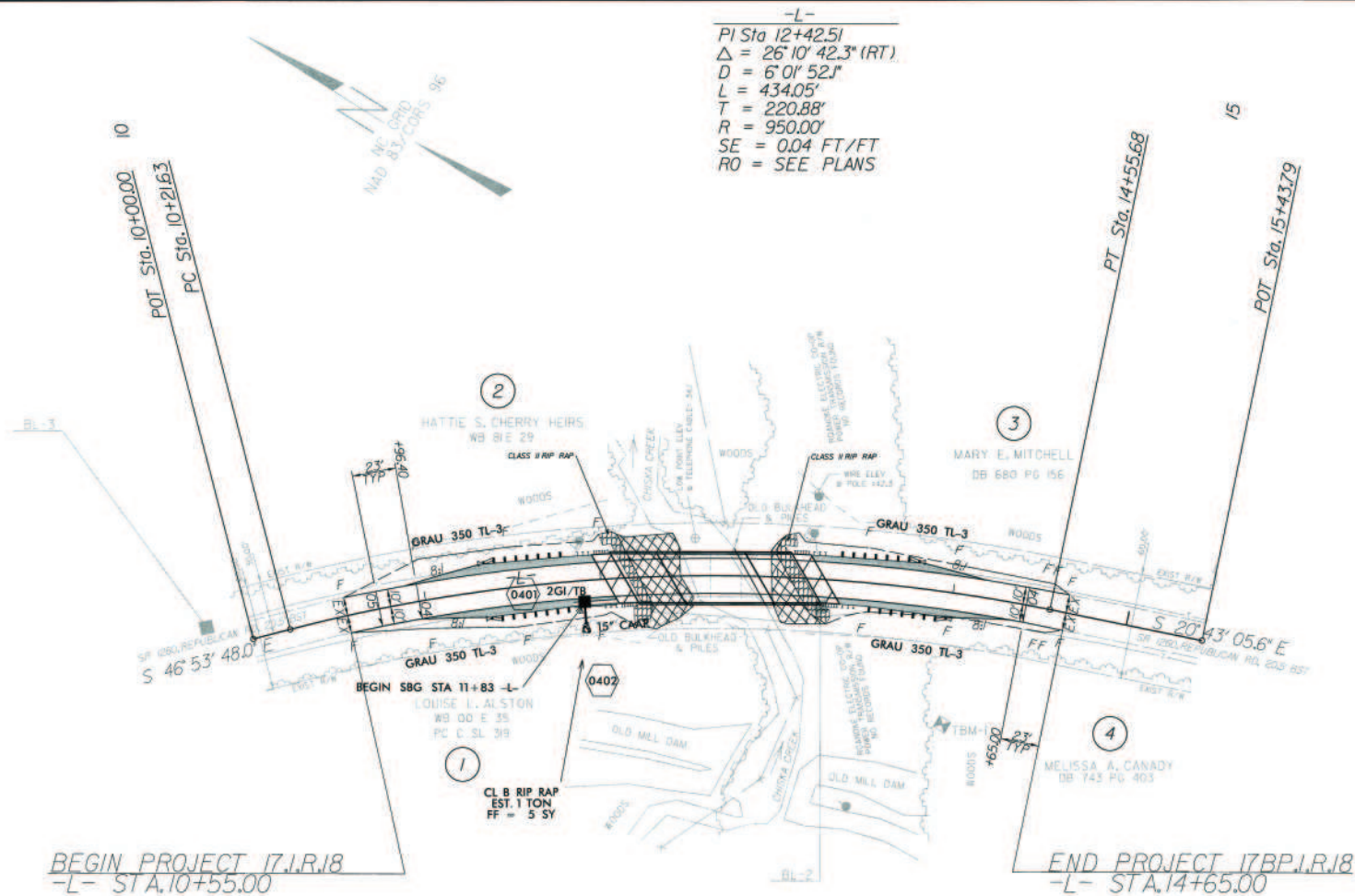
GUARDRAIL SUMMARY

[illegible]

8/17/99

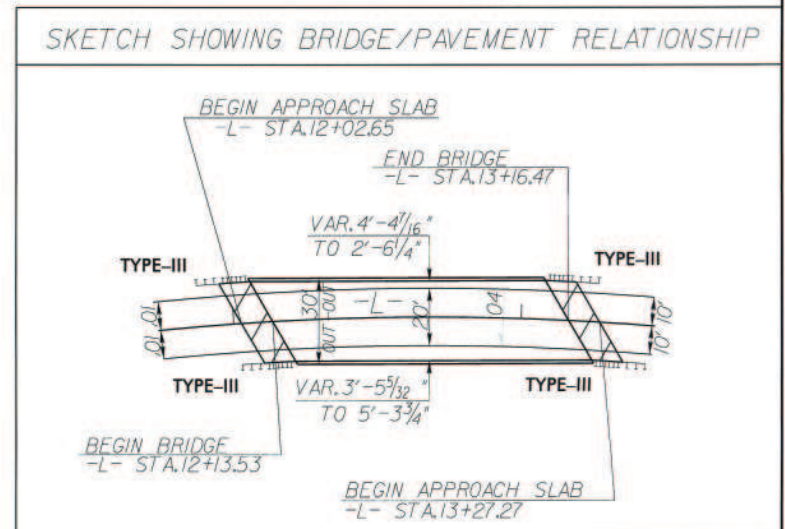
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REVISIONS

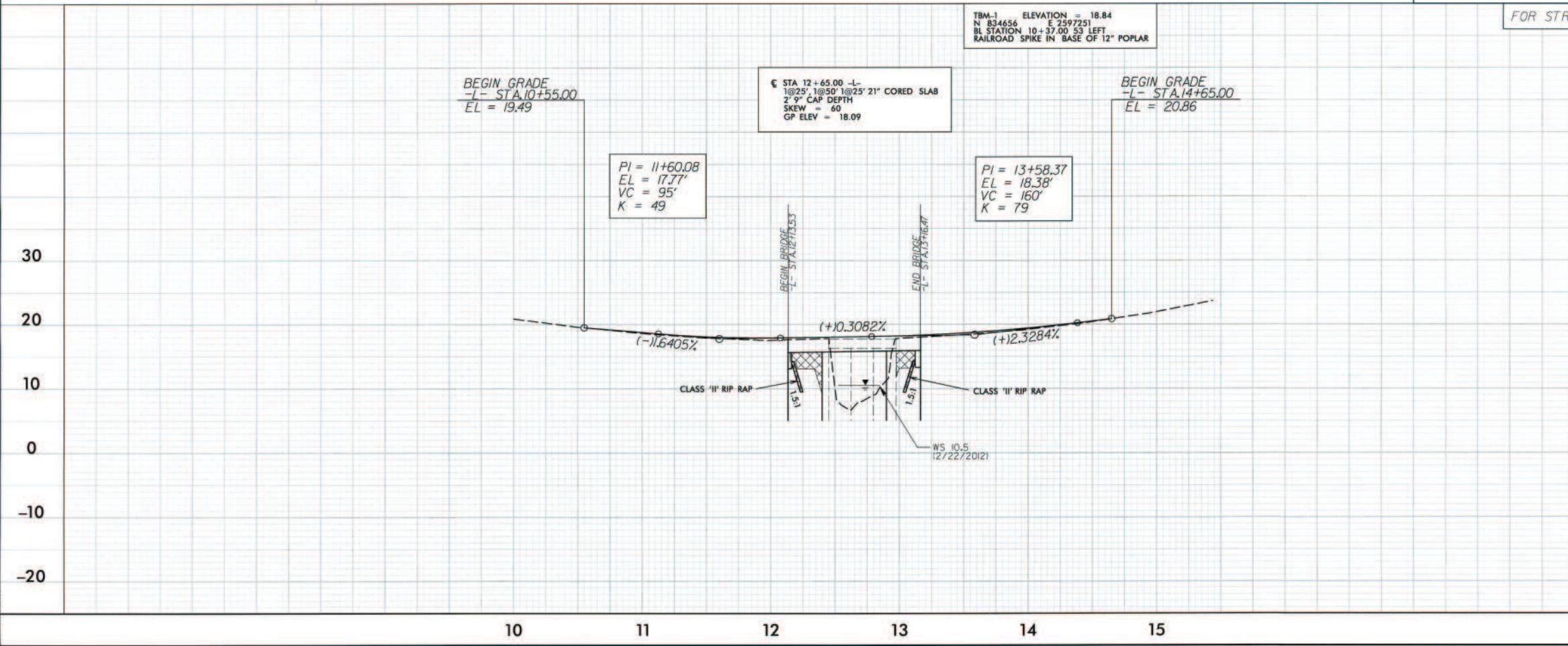


DATUM DESCRIPTION
THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY JOYNER KEENE FOR MONUMENT "BL-2".
WITH NAD 83/CORS 86 STATE PLANE GRID COORDINATES OF
NORTHING: 854749.211 (+1) EASTING: 2597270.431 (+1)
ELEVATION: 17.251 (+1)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999968766
LOCALIZED HORIZONTAL GROUND DISTANCE FROM
"BL-2" TO "L" STATION 10+55.00 IS
N 33° 18' 49.6" W 267.83
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

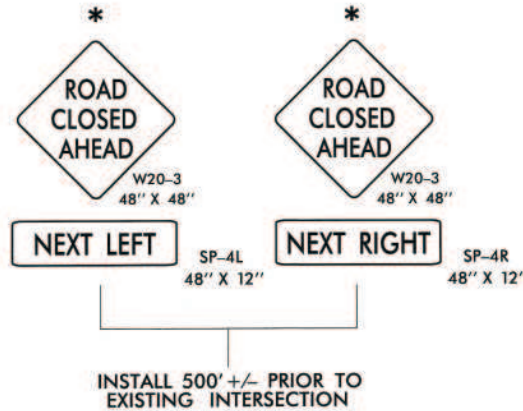
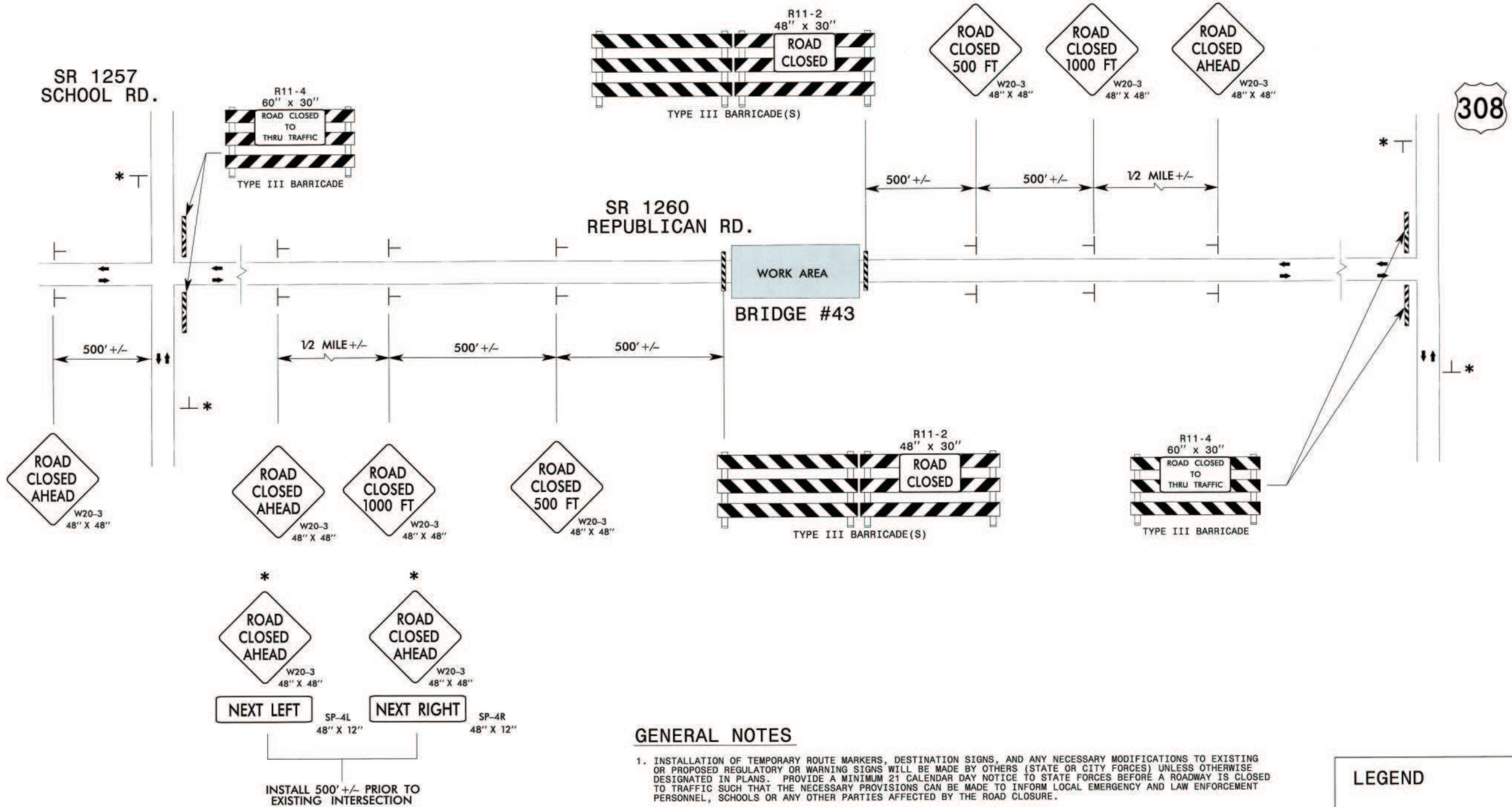
THE HISTORIC HIGH WATER MARK COULD NOT BE DETERMINED BY PHYSICAL OR PAROLE EVIDENCE



FOR STRUCTURE PLANS SEE SHEET S-1 THRU S-20



BRIDGE HYDRAULIC DATA		
DESIGN DISCHARGE	= 750	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 16.0	FT
BASE DISCHARGE	= 1279	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 17.14	FT
OVERTOPPING DISCHARGE	= 2200	CFS
OVERTOPPING FREQUENCY	= 500 +/-	YRS
OVERTOPPING ELEVATION	= 18.4	FT
DATE OF SURVEY	= 2/22/2012	
W.S. ELEVATION AT DATE OF SURVEY	= 10.5	FT



GENERAL NOTES

1. INSTALLATION OF TEMPORARY ROUTE MARKERS, DESTINATION SIGNS, AND ANY NECESSARY MODIFICATIONS TO EXISTING OR PROPOSED REGULATORY OR WARNING SIGNS WILL BE MADE BY OTHERS (STATE OR CITY FORCES) UNLESS OTHERWISE DESIGNATED IN PLANS. PROVIDE A MINIMUM 21 CALENDAR DAY NOTICE TO STATE FORCES BEFORE A ROADWAY IS CLOSED TO TRAFFIC SUCH THAT THE NECESSARY PROVISIONS CAN BE MADE TO INFORM LOCAL EMERGENCY AND LAW ENFORCEMENT PERSONNEL, SCHOOLS OR ANY OTHER PARTIES AFFECTED BY THE ROAD CLOSURE.
2. INSTALL SIGNS BEFORE THE BARRICADES WHEN CLOSING THE ROADWAY TO TRAFFIC. REMOVE BARRICADES BEFORE SIGNS WHEN OPENING THE ROADWAY TO TRAFFIC. INSTALL/REMOVE SIGNS AND BARRICADES WITHIN THE SAME CALENDAR DAY.
3. POSITION WING BARRICADES ON THE SHOULDERS AND SLOPE THE STRIPES DOWNWARD IN THE DIRECTION TOWARD WHICH TRAFFIC MUST TURN IN DETOURING.
4. USE ADDITIONAL TYPE III BARRICADES IN STAGGERED LOCATIONS SUPPLEMENTED WITH SIGN R11-4 "ROAD CLOSED TO THRU TRAFFIC" IN THE EVENT THAT TRAFFIC MUST BE MAINTAINED BEYOND THE DETOUR POINT.
5. SEE STANDARD SPECIFICATION 1089-1 FOR WORK ZONE SIGNS.
6. SEE STANDARD SPECIFICATION 1089-2 FOR WORK ZONE SIGN SUPPORTS.

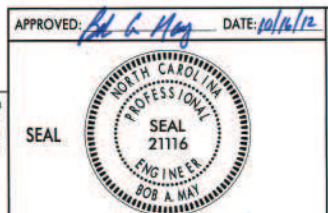
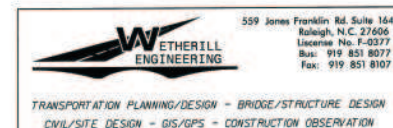
LEGEND

- DIRECTION OF TRAFFIC FLOW
- BARRICADE (TYPE III)
- STATIONARY MOUNTED SIGN

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - 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:

STD. NO.	TITLE
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1135.01	CONES
1145.01	BARRICADES
904.10	ORIENTATION OF GROUND MOUNTED SIGNS



ROAD CLOSURE
SR 1260 (REPUBLICAN RD.)

8/17/99

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011 ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER QUALITY.

Sta.	Description	Symbol
1605.01	Temporary Silt Fence	
1632.03	Rock Inlet Sediment Trap Type C	□
	Cair Fiber Wattle Break	---CFW---
	Turbidity Curtain	---

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.
ADDITIONAL EROSION CONTROL DEVICES MAY BE USED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

ROADSIDE ENVIRONMENTAL UNIT
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
2012 STANDARD SPECIFICATIONS

2012 STANDARD DRAWINGS

1604.01 Railroad Erosion Control Detail	1632.01 Rock Inlet Sediment Trap Type A
1605.01 Temporary Silt Fence	1632.02 Rock Inlet Sediment Trap Type B
1606.01 Special Sediment Control Fence	1632.03 Rock Inlet Sediment Trap Type C
1607.01 Gravel Construction Entrance	1633.01 Temporary Rock Silt Check Type A
1622.01 Temporary Berms and Slope Drains	1633.02 Temporary Rock Silt Check Type B
1630.01 River Basin	1634.01 Temporary Rock Sediment Dam Type A
1630.02 Silt Basin Type B	1634.02 Temporary Rock Sediment Dam Type B
1630.03 Temporary Silt Ditch	1635.01 Rock Pipe Inlet Sediment Trap Type A
1630.04 Stilling Basin	1635.02 Rock Pipe Inlet Sediment Trap Type B
1630.05 Temporary Diversion	1640.01 Cair Fiber Bulb
1630.06 Special Stilling Basin	1645.01 Temporary Stream Crossing
1631.01 Matting Installation	

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY JOYNER KEENE FOR MONUMENT "BL-2" WITH NAD 83/CDRS 96 STATE PLANE GRID COORDINATES OF NORTHING: 836749.211 FT; EASTING: 259720.431 FT; ELEVATION: 17.251411. THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999968766. LOCALIZED HORIZONTAL GROUND DISTANCE FROM "BL-2" TO L- STATION 10+55.00 IS N 33° 19' 49.6" W 267.83'.

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

EROSION CONTROL PLAN

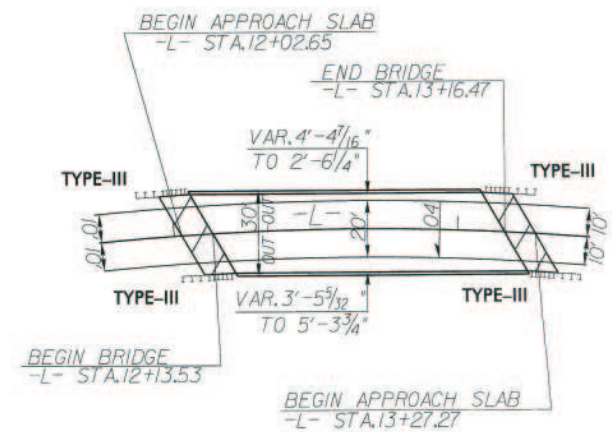
CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 04



PROJECT REFERENCE NO. 17BPJ.R.18	SHEET NO. EC-01/CONST.04
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
559 Jones Franklin Rd Suite 164 Raleigh, N.C. 27605 License No. F-0377 Fax: 919 851 8077 Fax: 919 851 8107	
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION	

DUSTY CREEK
LEVEL II NAME
2019
LEVEL III CERTIFICATION NO.

SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP



FOR STRUCTURE PLANS SEE SHEET S-1 THRU S-20

BEGIN PROJECT 17BPJ.R.18
-L- STA.10+55.00

END PROJECT 17BPJ.R.18
-L- STA.14+65.00

BEGIN GRADE
-L- STA.10+55.00
EL = 19.49

STA 12+65.00 -L-
1@25' 1@50' 1@25' 21" CORED SLAB
21" 9" CAP-DEPTH
SKEW = 60
GP ELEV = 18.09

BEGIN GRADE
-L- STA.14+65.00
EL = 20.86

PI = 11+60.08
EI = 17.77
VC = 95'
K = 49

PI = 13+58.37
EI = 18.38
VC = 160'
K = 79

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 750	CFS	10
DESIGN FREQUENCY	= 25	YRS	
DESIGN HW ELEVATION	= 16.0	FT	
BASE DISCHARGE	= 1279	CFS	
BASE FREQUENCY	= 100	YRS	
BASE HW ELEVATION	= 17.14	FT	0
OVERTOPPING DISCHARGE	= 2200	CFS	
OVERTOPPING FREQUENCY	= 500*/1-	YRS	
OVERTOPPING ELEVATION	= 18.4	FT	-10

DATE OF SURVEY = 2/22/2012
W.S. ELEVATION AT DATE OF SURVEY = 10.5 FT -20

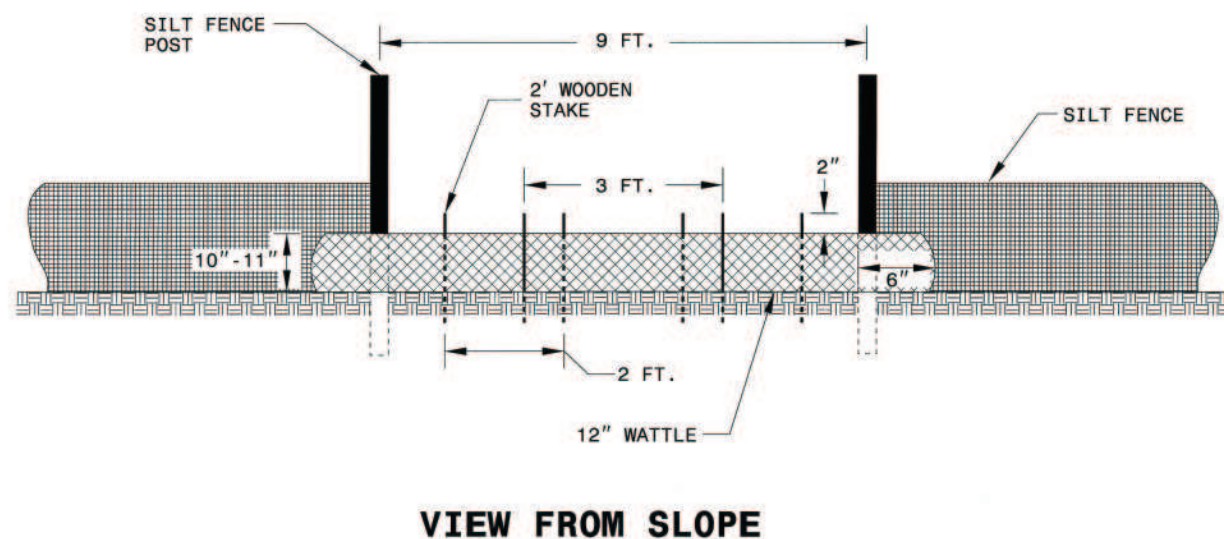
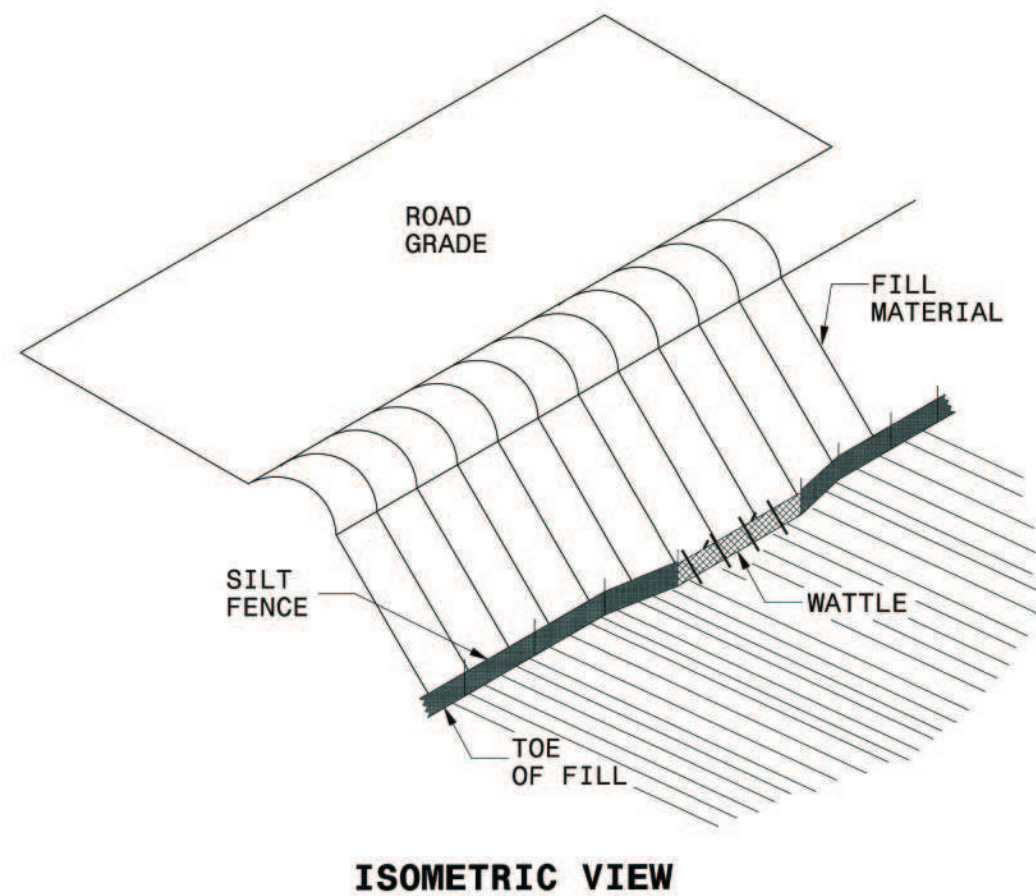
REVISIONS

106541.DWG
5/15/2012
Ber-tue #43
VERSION CONTROL
NBR#43.EC.PSH4.D&S.dgn
5/15/2012

JUSTIN CREECH
 LEVEL III NAME
 19
 LEVEL III CERTIFICATION NO.

SILT FENCE COIR FIBER WATTLE BREAK DETAIL

PROJECT REFERENCE NO.	SHEET NO.
17BPJ.RJ8	EC-2G
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



NOTES:

USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE AND LENGTH OF 10 FT.

EXCAVATE A 1 TO 2 INCH TRENCH FOR WATTLE TO BE PLACED.

DO NOT PLACE WATTLE ON TOE OF SLOPE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.

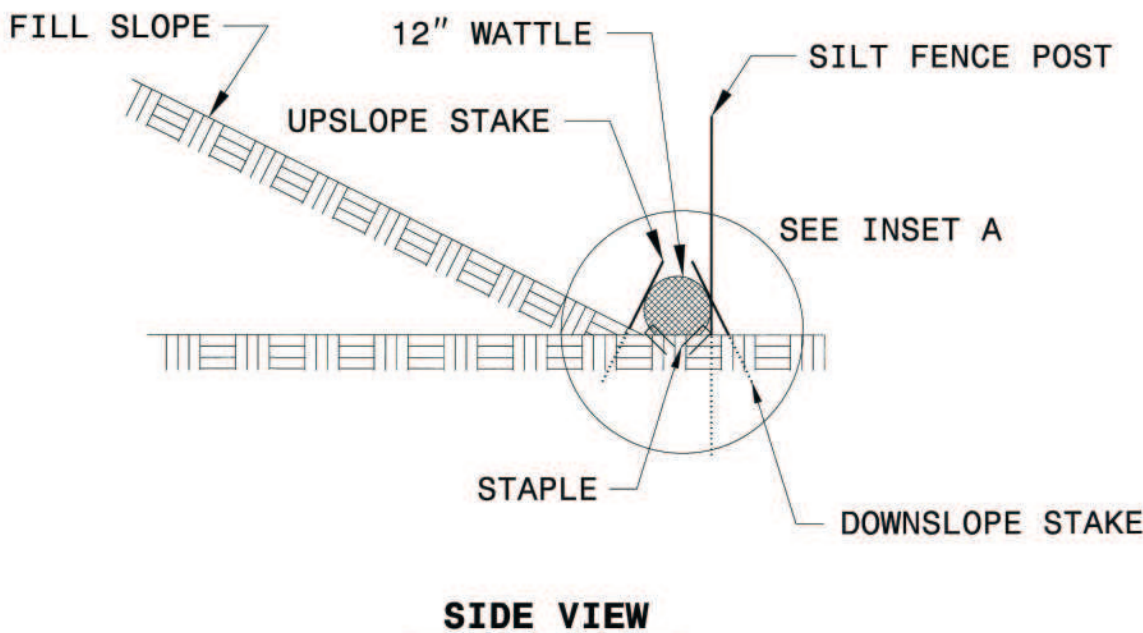
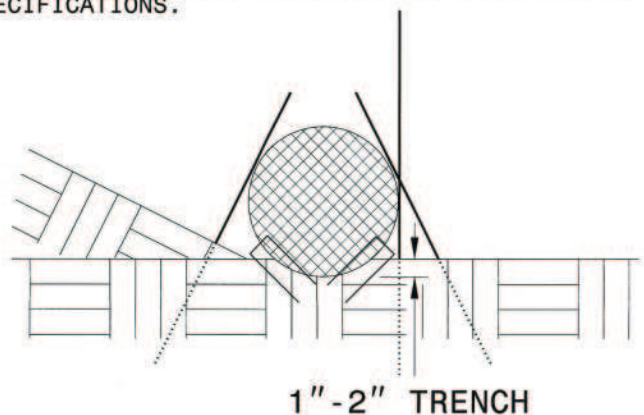
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

WATTLE INSTALLATION CAN BE ON OUTSIDE OF THE SILT FENCE AS DIRECTED.

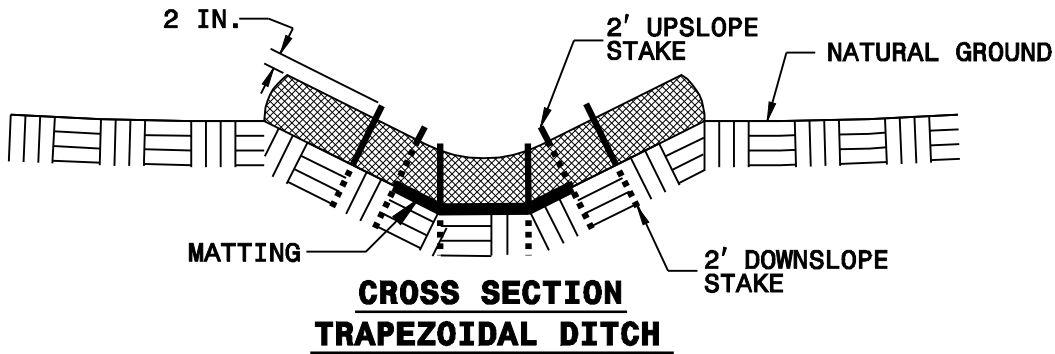
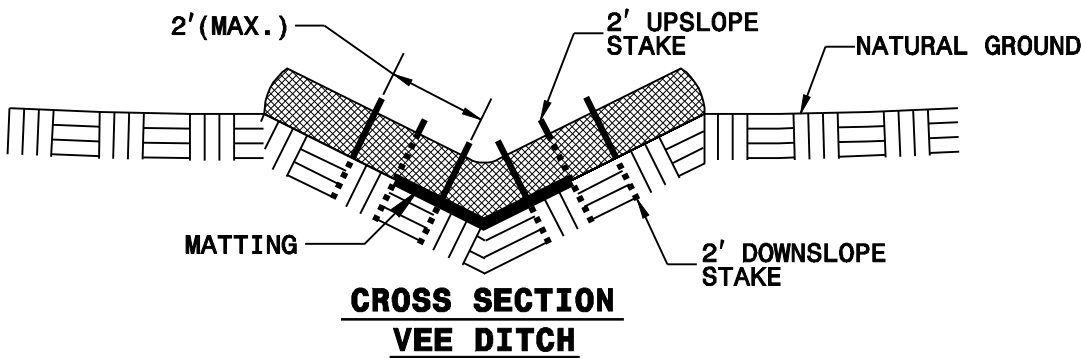
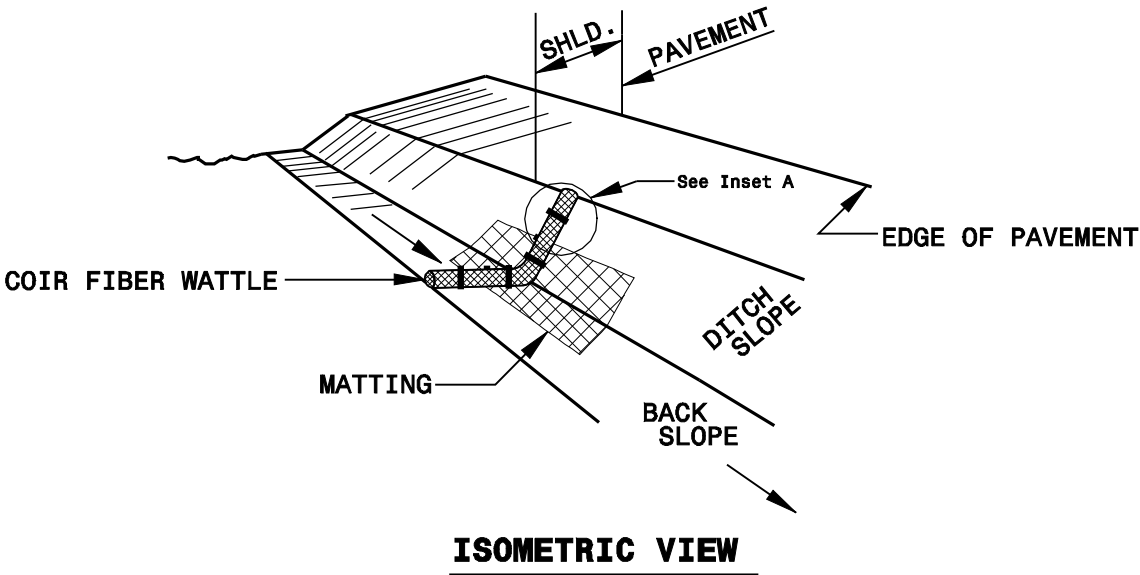
INSTALL TEMPORARY SILT FENCE IN ACCORDANCE WITH SECTION 1605 OF THE STANDARD SPECIFICATIONS.

INSET A



PROJECT REFERENCE NO.	SHEET NO.
X-XXXX	EC-26
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

COIR FIBER WATTLE DETAIL



NOTES:

USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

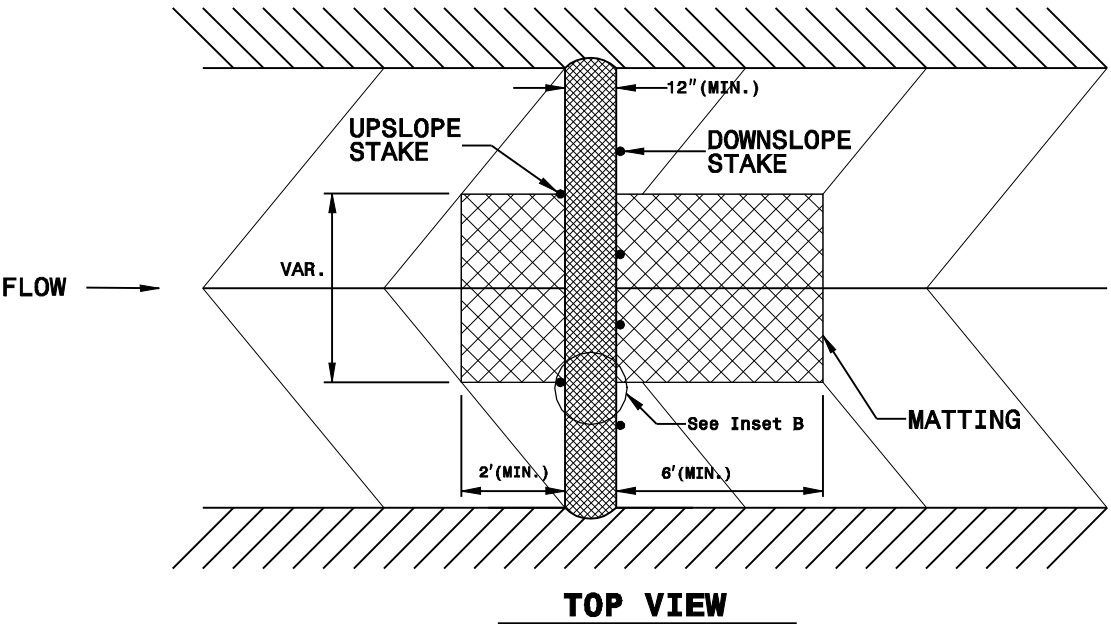
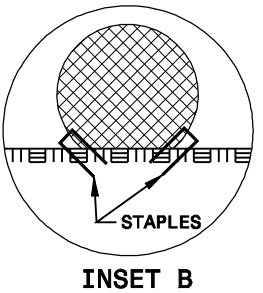
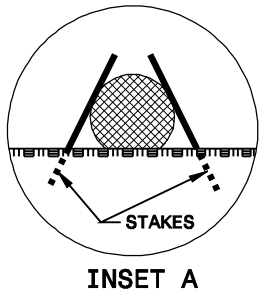
ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

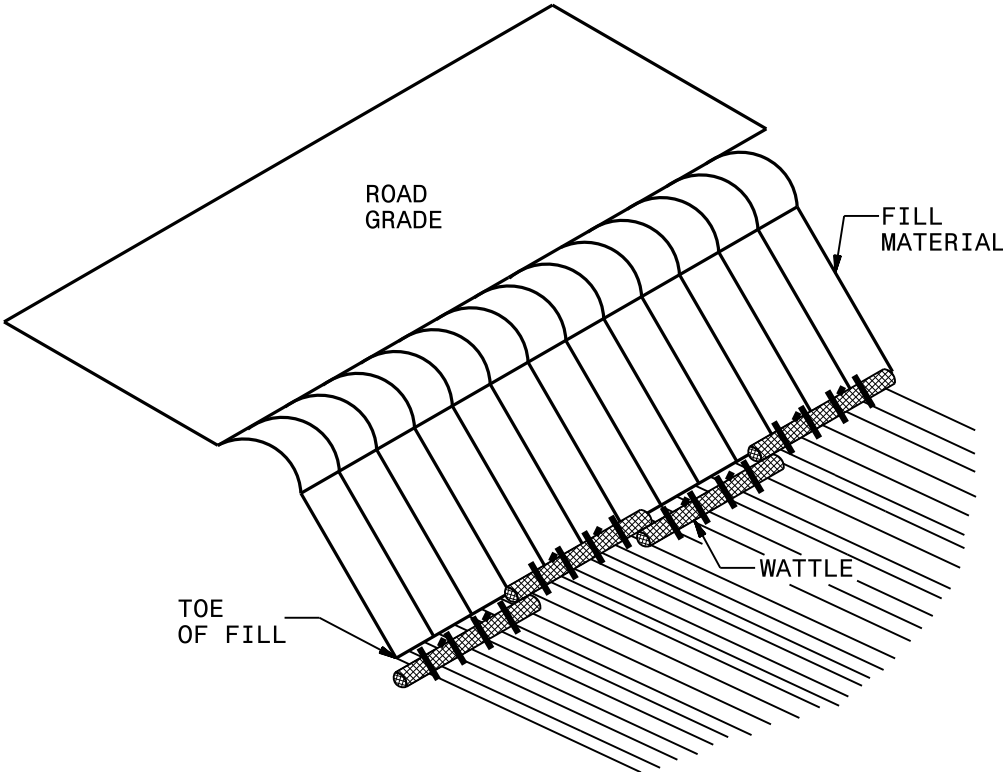
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.

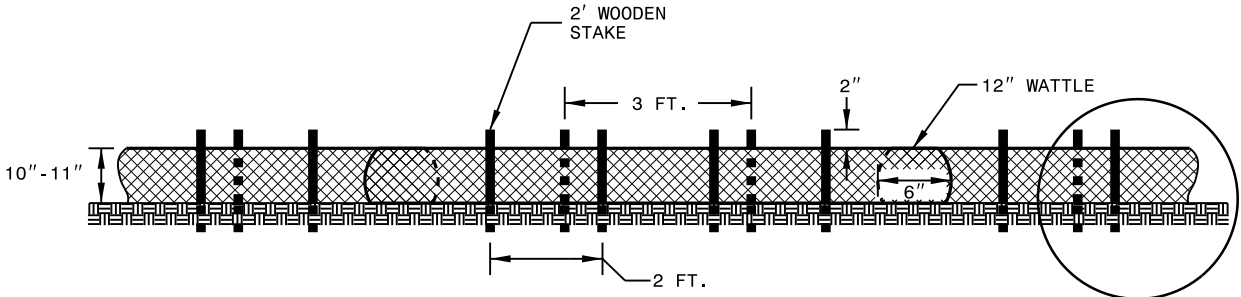


COIR FIBER WATTLE BARRIER DETAIL

PROJECT REFERENCE NO.	SHEET NO.
<i>X-XXXX</i>	<i>EC-2H</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

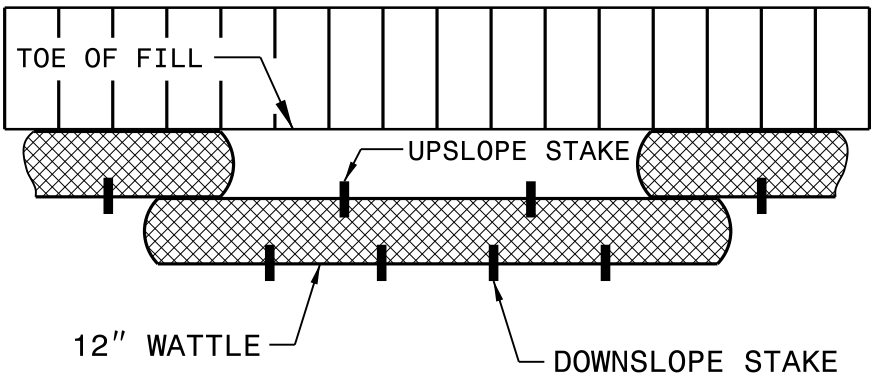
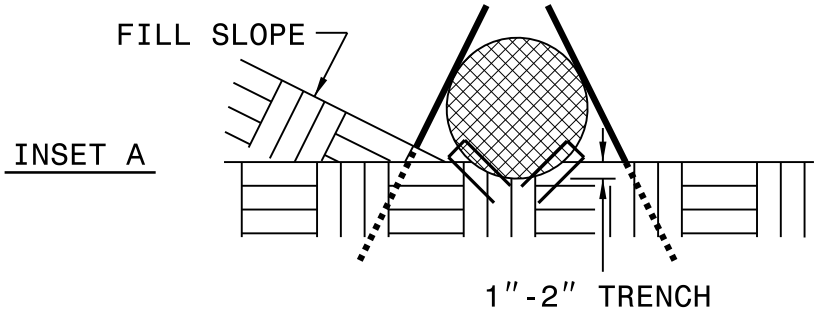


ISOMETRIC VIEW



FRONT VIEW

- NOTES:**
- USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT) WATTLE AND LENGTH OF 10 FT.
 - EXCAVATE A 1 TO 2 INCH TRENCH FOR WATTLE TO BE PLACED.
 - DO NOT PLACE WATTLES ON TOE OF SLOPE.
 - USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.
 - INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.
 - PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.
 - INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.
 - FOR BREAKS ALONG LARGE SLOPES, USE MAXIMUM SPACING OF 20 FT.



TOP VIEW

SHEET NO.

EC-3

**HYDRAULICS
ENGINEER**

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL

[illegible]

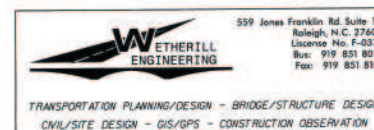
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.	SHEET NO.
17BPJ.RJ8	EC-3B
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SOIL STABILIZATION TIMEFRAMES

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

NOTE:
ALL PROPOSED UTILITY WORK
SHOWN ON THIS SHEET WILL
BE DONE BY OTHERS



-L-

PI Sta 12+42.51
 $\Delta = 26^{\circ}10'42.3''$ (RT)
 $D = 6^{\circ}01'52.1''$
 $L = 434.05'$
 $T = 220.88'$
 $R = 950.00'$
 $SE = 0.04$ FT/FT
 $RO = SEE$ PLANS

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT
IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY
JOYNER KEENE FOR MONUMENT "BL-2"
WITH NAD 83/CORS 96 STATE PLANE GRID COORDINATES OF
NORTHING: 834749.21(+/-); EASTING: 2597270.43(+/-)
ELEVATION: 17.25(+/-)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
(GROUND TO GRID) IS: 0.999998766
[LOCALIZED HORIZONTAL GROUND DISTANCE FROM
"BL-2" TO -1 STATION 10+55.00 IS
N 33° 18' 49.6" E 267.83']

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

```
*****
TBM-1  ELEVATION = 16.84
N 834656      E 2597251
BI STATION 10+37.00 53 LEFT
RAILROAD SPIKE W/ BASE OF 12" POPLAR
*****
```

EXISTING POLE
(NOT LOCATED)

PROPOSED

REMOVE

PROJ. REFERENCE NO.	SHEET NO.
17BP.1.R.18	X-1A

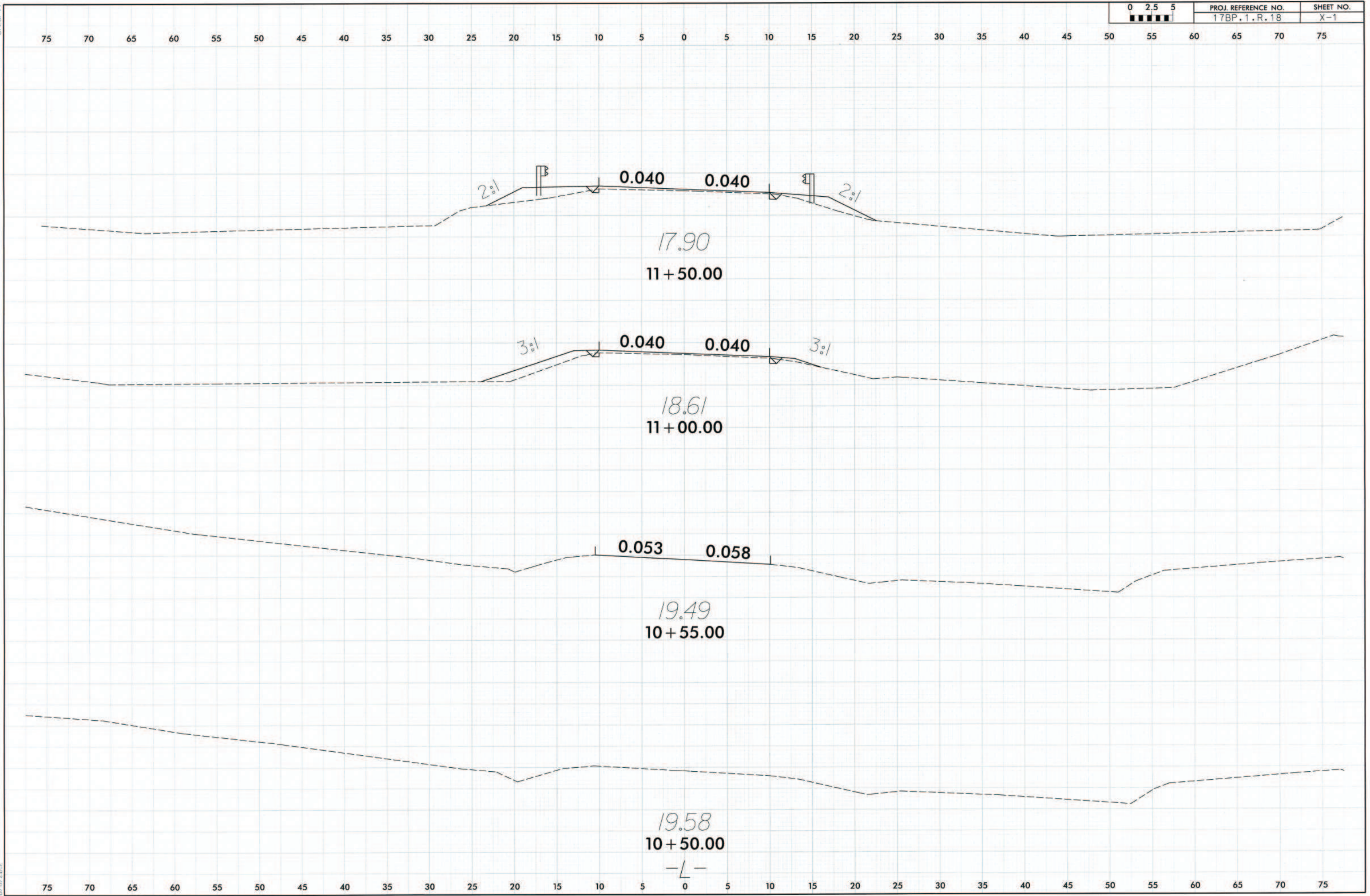
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT

CROSS-SECTION SUMMARY

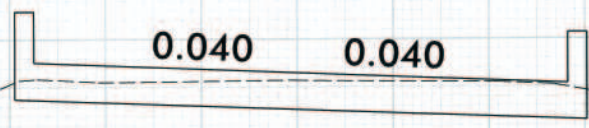
Station	Uncl. Exc.	Embt
L	(cu. yd.)	(cu. yd.)
10+55.00	0	0
11+00.00	1	10
11+50.00	2	30
12+00.00	2	29
12+05.00	0	2
12+13.53	1	3
13+16.47	0	0
13+50.00	1	7
14+00.00	2	7
14+50.00	2	3
14+55.68	1	1
14+65.00	1	1

Approximate quantities only. Unclassified excavation, borrow excavation, shoulder borrow, fine grading, clearing and grubbing, breaking of existing pavement and removal of existing pavement will be paid for at the lump sum price for "Grading".



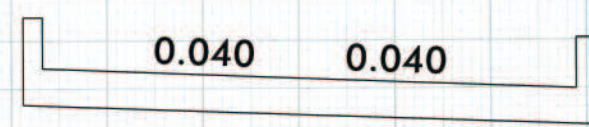
8/23/94

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



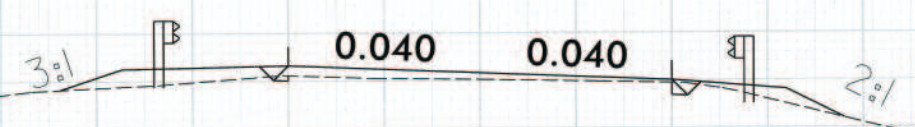
17.83

13 + 00.00



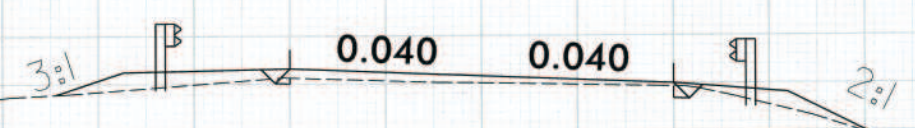
10.09

12 + 50.00



17.57

12 + 05.00



17.53

12 + 00.00

-L-

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

3:1 0.037 0.037 3:1

20.41
14+50.00

3:1 0.040 0.040 3:1

19.23
14+00.00

3:1 0.040 0.040 3:1

18.41
13+50.00

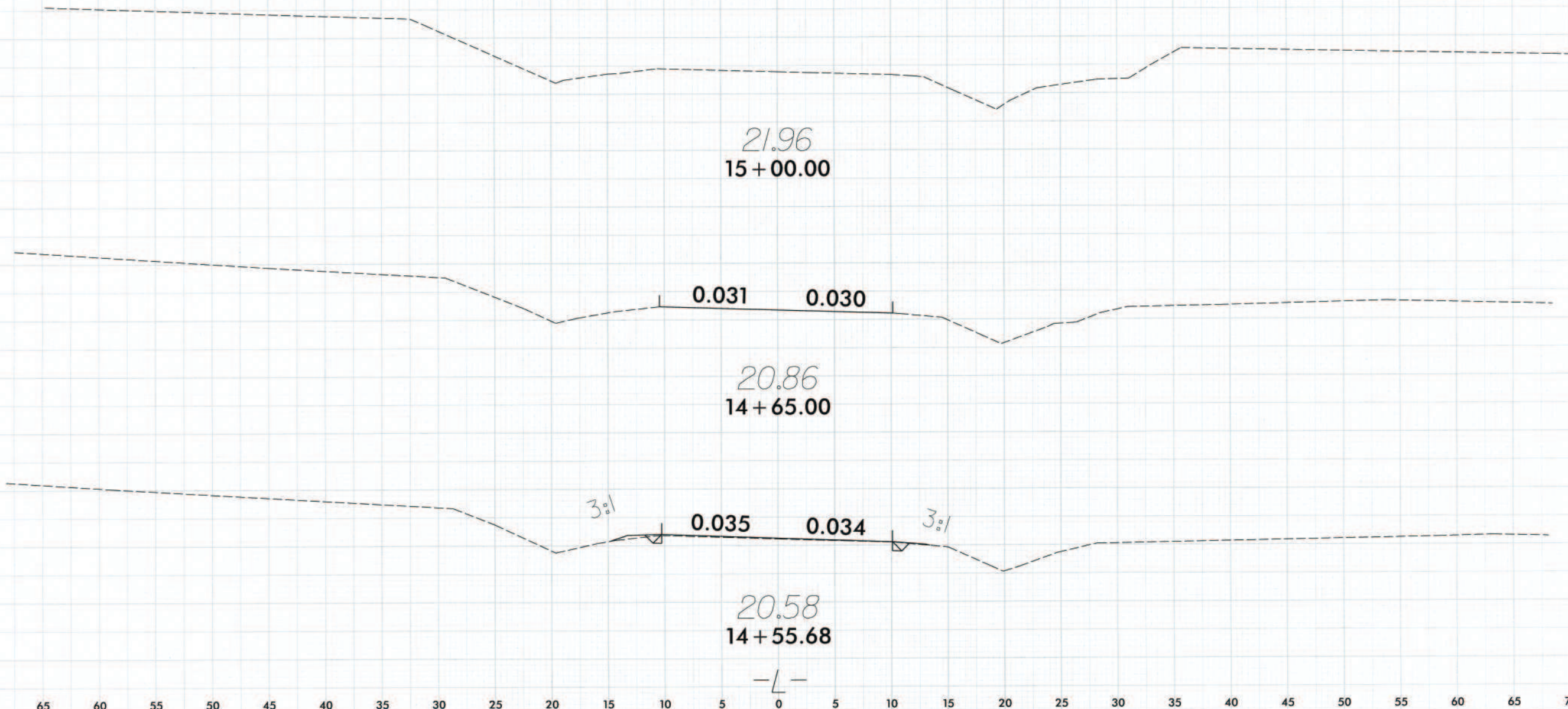
0.040 0.040

18.01
13+15.00

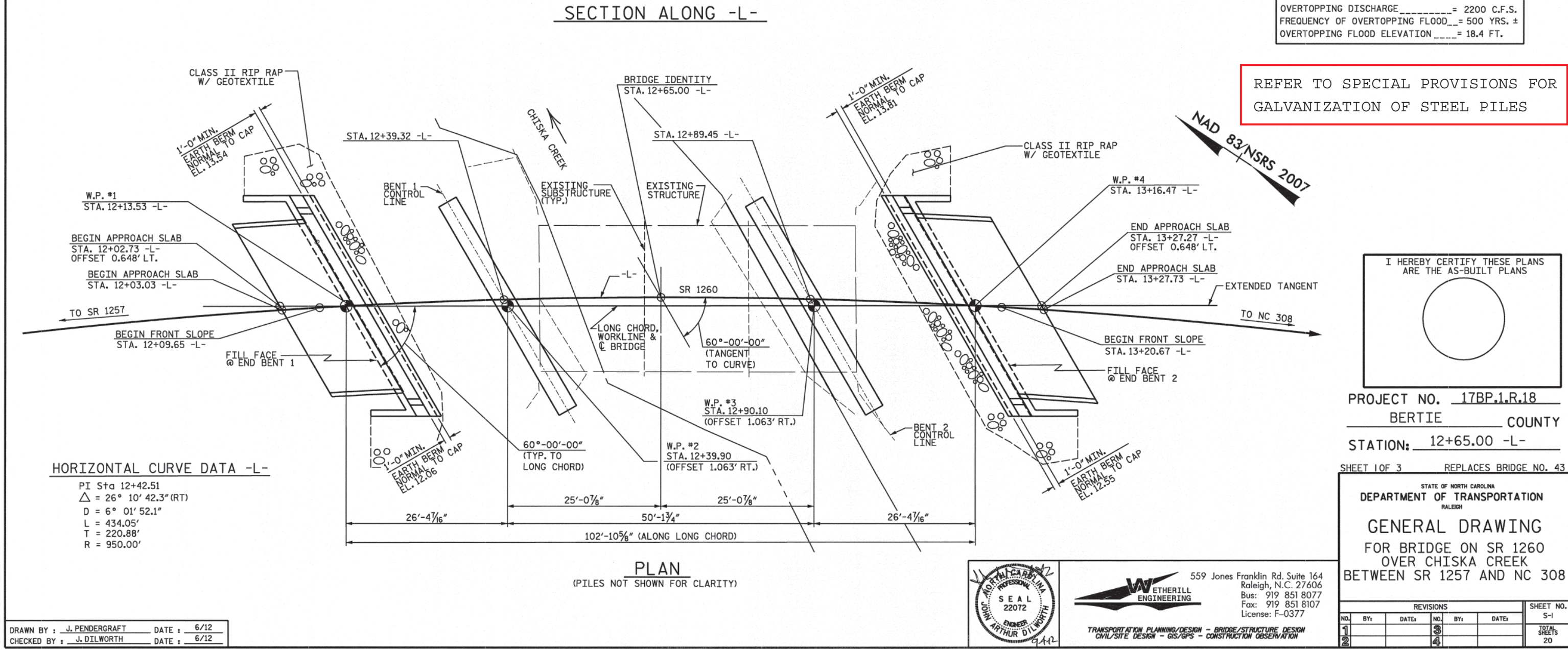
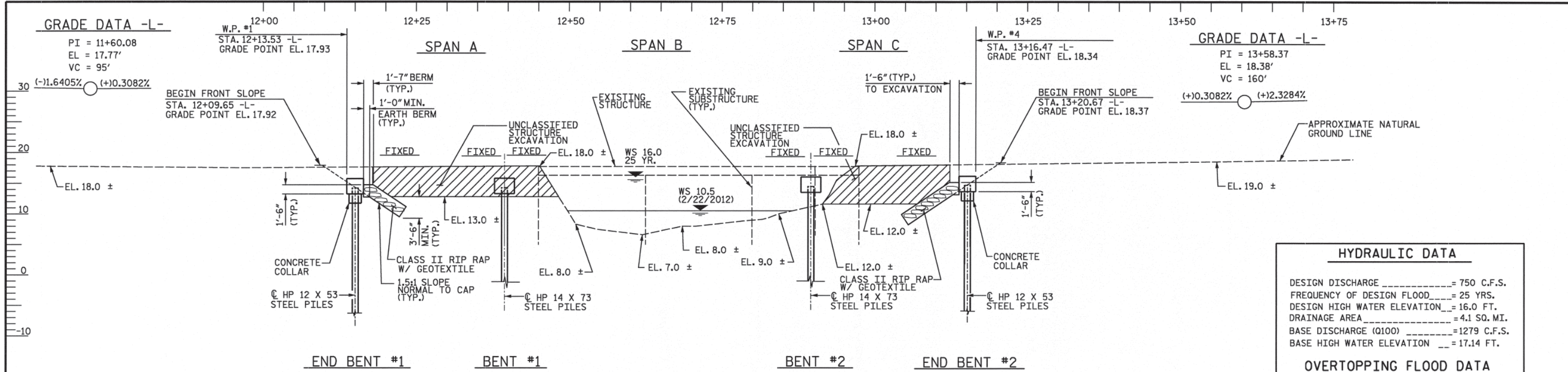
-L-

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

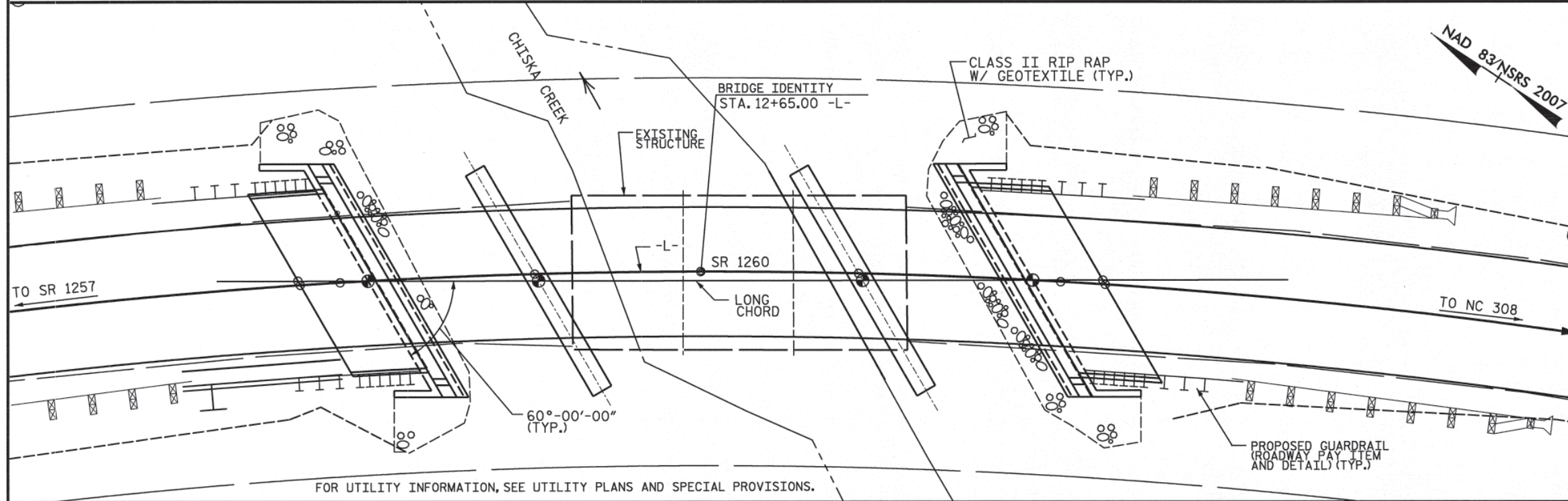


75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



P:\2012\Bertie\43\Structures\OGNBR 4043_STR.GD1.dgn
9/14/2012 9:29:29 AM

TBM #1, BL STATION 10+37.00 53' LEFT; RAILROAD SPIKE IN BASE OF 12" POPLAR, EL = 18.84'



LOCATION SKETCH

NOTES:

- ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.
FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.
FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.
- THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR SEISMIC PERFORMANCE ZONE 1.
- THE EXISTING STRUCTURE CONSISTING OF 1 SPAN @ 17'-6" 1 SPAN @ 17'-1" AND 1 SPAN @ 17'-6" WITH A REINFORCED CONCRETE FLOOR ON TIMBER JOIST SUPERSTRUCTURE AND A CLEAR ROADWAY WIDTH OF 24.2' ON A SUBSTRUCTURE CONSISTING OF TIMBER CAPS ON TIMBER PILES AND LOCATED AT THE PROPOSED STRUCTURE LOCATION SHALL BE REMOVED.
- REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL REMOVE THE BRIDGE AND SUBMIT PLANS FOR DEMOLITION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.
- THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 20 FT. EACH SIDE OF CENTERLINE ROADWAY AS DIRECTED BY ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.
- THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCE BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.
- ASPHALT WEARING SURFACE IS INCLUDED IN ROADWAY QUANTITY ON ROADWAY PLANS.
- THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH HEC 18, "EVALUATING SCOUR AT BRIDGES", MAY 2001.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
- FOR PILE DRIVING CRITERIA, SEE SPECIAL PROVISIONS.

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE	PDA TESTING	UNCLASSIFIED STRUCTURE EXCAVATION	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	HP 12 x 53 STEEL PILES		HP 14 x 73 GALVANIZED STEEL PILES		PILE REDRIVES	VERTICAL CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" X 1'-9" PRESTRESSED CONCRETE COR SLABS	
	LUMP SUM	EACH	LUMP SUM	CU. YDS.	LUMP SUM	LBS.	NO.	LIN. FT.	NO.	LIN. FT.	EACH	LIN. FT.	TONS	SQ. YD.	LUMP SUM	NO.	LIN. FT.
SUPERSTRUCTURE	LUMP SUM				LUMP SUM							200.58				30	1000'-0"
END BENT 1			LUMP SUM	14.7		2218	5	245			2		90	96			
BENT 1				12.0		2350			7	455	2						
BENT 2				12.0		2350			7	469	2						
END BENT 2			LUMP SUM	14.7		2218	5	265			2		115	124			
TOTAL	LUMP SUM	1	LUMP SUM	53.4	LUMP SUM	9136	10	510	14	924	8	200.58	205	220	LUMP SUM	30	1000'-0"

REFER TO SPECIAL PROVISIONS FOR GALVANIZATION OF STEEL PILES

FOUNDATION NOTES:

FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

PILES AT END BENT NO. 1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 55 TONS PER PILE. DRIVE PILES TO A REQUIRED DRIVING RESISTANCE OF 95 TONS.

PILES AT END BENT NO. 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 55 TONS PER PILE. DRIVE PILES TO A REQUIRED DRIVING RESISTANCE OF 95 TONS.

PILES AT BENT NO. 1 ARE DESIGNED FOR A FACTORED RESISTANCE OF 90 TONS PER PILE. DRIVE PILES TO A REQUIRED DRIVING RESISTANCE OF 160 TONS. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR DOWNDRAG OR SCOUR.

INSTALL PILES AT BENT NO. 1 TO A TIP ELEVATION NO HIGHER THAN -11.0 FEET.

PILES AT BENT NO. 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 90 TONS PER PILE. DRIVE PILES TO A REQUIRED DRIVING RESISTANCE OF 160 TONS. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR DOWNDRAG OR SCOUR.

INSTALL PILES AT BENT NO. 2 TO A TIP ELEVATION NO HIGHER THAN -11.5 FEET.

THE SCOUR CRITICAL ELEVATION FOR BENT NO. 1 AND BENT NO. 2 IS ELEVATION -1.0 FEET. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

TESTING PILES WITH THE PILE DRIVING ANALYZER (PDA) DURING DRIVING, RESTRIKING OR REDRIVING MAY BE REQUIRED. THE ENGINEER WILL DETERMINE THE NEED FOR PDA TESTING. FOR PDA TESTING, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 30 TO 33 FT.-KIPS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT END BENT NO. 1. AND END BENT NO. 2. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING EQUIPMENT IN ACCORDANCE WITH SUBARTICLE 450-3(D)(2) OF THE STANDARD SPECIFICATIONS.

IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 40 TO 45 FT.-KIPS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT BENT NO. 1 AND BENT NO. 2. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING EQUIPMENT IN ACCORDANCE WITH SUBARTICLE 450-3(D)(2) OF THE STANDARD SPECIFICATIONS.

PROJECT NO. 17BP.1.R.18
BERTIE COUNTY
STATION: 12+65.00 -L-

SHEET 2 OF 3 REPLACES BRIDGE NO. 43

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE ON SR 1260
OVER CHISKA CREEK
BETWEEN SR 1257 AND NC 308

REVISIONS						SHEET NO. S-2
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 20
2			4			



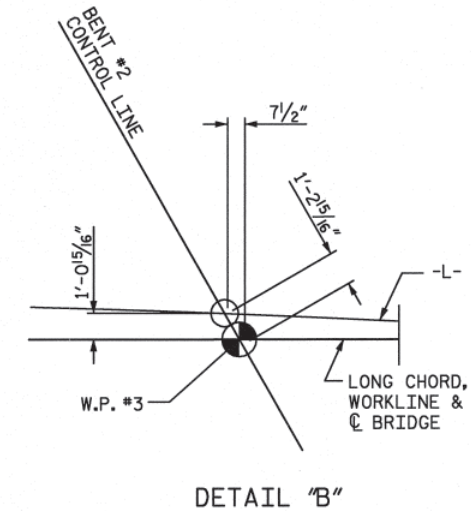
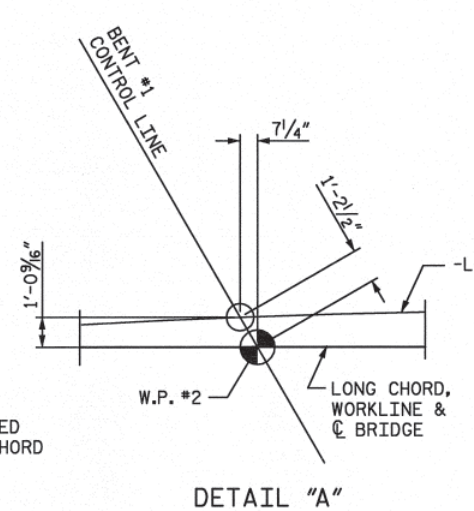
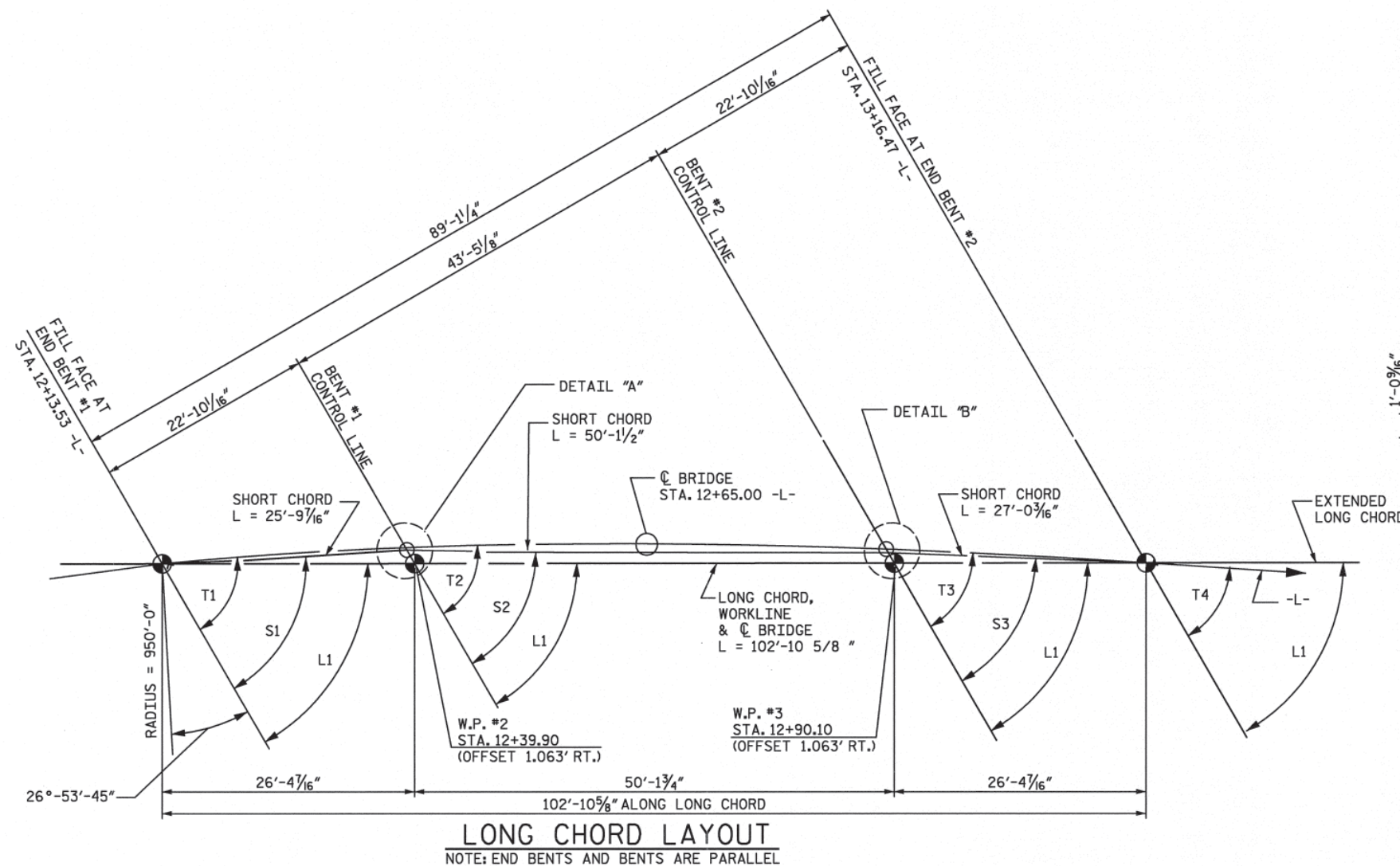
559 Jones Franklin Rd. Suite 164
Raleigh, N.C. 27606
Bus: 919 851 8077
Fax: 919 851 8107
License: F-0377

ETHERILL
ENGINEERING

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

DRAWN BY: J. PENDERGRAFT DATE: 6/12
CHECKED BY: J. DILWORTH DATE: 6/12

P:\2012\Bertie 17BP.1.R.18\Structures\DWG\BR 17BP.1.R.18_STR.TJS1.dgn
9/4/2012 9:32:21 AM



HORIZONTAL CURVE DATA -L-

PI STA. 12+42.51
 $\Delta = 26^\circ 10' 42.3''$ (RT)
 $D = 6^\circ 01' 52.1''$
 $L = 434.05'$
 $T = 220.88'$
 $R = 950.00'$

ANGLES			
LONG CHORD	SHORT CHORD	TANGENT TO CURVE	
L1 60°-00'-00"	S1 62°-19'-35"	T1	63°-06'-15"
	S2 60°-02'-13"	T2	61°-32'-57"
	S3 57°-42'-38"	T3	58°-31'-31"
		T4	56°-53'-45"

PROJECT NO. 17BP.1.R.18
BERTIE COUNTY
 STATION: 12+65.00 -L-

SHEET 3 OF 3 REPLACES BRIDGE NO. 43

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 FOR BRIDGE ON SR 1260
 OVER CHISKA CREEK
 BETWEEN SR 1257 AND NC 308

REVISIONS				SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

S-3
 TOTAL SHEETS
 20



559 Jones Franklin Rd. Suite 164
 Raleigh, N.C. 27606
 Bus: 919 851 8077
 Fax: 919 851 8107
 License: F-0377

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
 CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

DRAWN BY: J. PENDERGRAFT DATE: 6/12
 CHECKED BY: J. DILWORTH DATE: 6/12

P:\2012\Bertie - 43\Structures\DWG\BR #043_STR_1.dgn
 8/8/2012 9:15:16 AM

LOAD AND RESISTANCE FACTOR RATING (LRFD) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS

LEVEL		VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING	MINIMUM RATING FACTORS (RF)	TONS = W X RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE						COMMENT NUMBER	
							LIVELOAD FACTORS	MOMENT					SHEAR					LIVELOAD FACTORS	MOMENT					
								DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)		DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION		DISTANCE FROM LEFT END OF SPAN (ft)
DESIGN LOAD RATING		HL-93(Inv)	N/A	1	1.208	--	1.75	0.257	2.83	25'	EL	11.923	0.659	1.21	25'	EL	1.192	0.80	0.257	2.60	25'	EL	11.923	
		HL-93(0pr)	N/A	--	1.565	--	1.35	0.257	3.66	25'	EL	11.923	0.659	1.57	25'	EL	1.192	N/A	--	--	--	--	--	
		HS-20(Inv)	36.000	2	1.402	50.457	1.75	0.257	4.17	25'	EL	11.923	0.659	1.4	25'	EL	1.192	0.80	0.257	3.85	25'	EL	11.923	
		HS-20(0pr)	36.000	--	1.817	65.407	1.35	0.257	5.41	25'	EL	11.923	0.659	1.82	25'	EL	1.192	N/A	--	--	--	--	--	
LEGAL LOAD RATING	SV	SNSH	13.500	--	3.24	43.746	1.4	0.257	7.59	25'	EL	11.923	0.659	3.24	25'	EL	1.192	0.80	0.257	5.59	25'	EL	11.923	
		SNGARBS2	20.000	--	2.6	51.994	1.4	0.257	7.1	25'	EL	11.923	0.659	2.6	25'	EL	1.192	0.80	0.257	5.24	25'	EL	11.923	
		SNAGRIS2	22.000	--	2.548	56.063	1.4	0.257	7.59	25'	EL	11.923	0.659	2.55	25'	EL	1.192	0.80	0.257	5.59	25'	EL	11.923	
		SNCOTTS3	27.250	--	1.645	44.82	1.4	0.257	3.98	25'	EL	11.923	0.659	1.64	25'	EL	1.192	0.80	0.257	2.93	25'	EL	11.923	
		SNAGGRS4	34.925	--	1.585	55.347	1.4	0.257	3.96	25'	EL	11.923	0.659	1.58	25'	EL	1.192	0.80	0.257	2.92	25'	EL	11.923	
		SNS5A	35.550	--	1.655	58.841	1.4	0.257	3.85	25'	EL	11.923	0.659	1.66	25'	EL	1.192	0.80	0.257	2.82	25'	EL	11.923	
		SNS6A	39.950	--	1.588	63.45	1.4	0.257	3.6	25'	EL	11.923	0.659	1.59	25'	EL	1.192	0.80	0.257	2.66	25'	EL	11.923	
		SNS7B	42.000	--	1.599	67.158	1.4	0.257	3.6	25'	EL	11.923	0.659	1.6	25'	EL	1.192	0.80	0.257	2.64	25'	EL	11.923	
	TTST	TNAGRIT3	33.000	--	1.948	64.275	1.4	0.257	5.09	25'	EL	11.923	0.659	1.95	25'	EL	1.192	0.80	0.257	3.75	25'	EL	11.923	
		TNT4A	33.075	--	1.764	58.347	1.4	0.257	4.4	25'	EL	11.923	0.659	1.76	25'	EL	1.192	0.80	0.257	3.25	25'	EL	11.923	
		TNT6A	41.600	--	1.662	69.142	1.4	0.257	4.13	25'	EL	11.923	0.659	1.66	25'	EL	1.192	0.80	0.257	3.05	25'	EL	11.923	
		TNT7A	42.000	--	1.657	69.603	1.4	0.257	4.28	25'	EL	11.923	0.659	1.66	25'	EL	1.192	0.80	0.257	3.15	25'	EL	11.923	
		TNT7B	42.000	--	1.598	67.097	1.4	0.257	3.85	25'	EL	11.923	0.659	1.6	25'	EL	1.192	0.80	0.257	2.84	25'	EL	11.923	
		TNAGRIT4	43.000	--	1.595	68.603	1.4	0.257	4.14	25'	EL	11.923	0.659	1.6	25'	EL	1.192	0.80	0.257	3.04	25'	EL	11.923	
		TNAGT5A	45.000	--	1.625	73.143	1.4	0.257	4.14	25'	EL	11.923	0.659	1.63	25'	EL	1.192	0.80	0.257	3.04	25'	EL	11.923	
		TNAGT5B	45.000	3	1.476	66.434	1.4	0.257	4.08	25'	EL	9.538	0.659	1.48	25'	EL	1.192	0.80	0.257	3.02	25'	EL	9.538	

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	γ_{DC}	γ_{DW}
	STRENGTH I	1.25	1.50
	SERVICE III	1.00	1.00

NOTES:

MINIMUM RATING FACTORS ARE BASED ON THE STRENGTH I AND SERVICE III LIMIT STATES.

ALLOWABLE STRESSES FOR SERVICE III LIMIT STATE ARE AS REQUIRED FOR DESIGN.

COMMENTS:

- 1.
- 2.
- 3.
- 4.

CONTROLLING LOAD RATING

1 DESIGN LOAD RATING (HL-93)

2 DESIGN LOAD RATING (HS-20)

3 LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

I - INTERIOR GIRDER
EL - EXTERIOR LEFT GIRDER
ER - EXTERIOR RIGHT GIRDER

PROJECT NO. 17BP.1.R.18
BERTIE COUNTY
STATION: 12+65.00 -L-



LRFR SUMMARY
FOR SPAN 'A' OR 'C'

ASSEMBLED BY : N. RUFFIN DATE : 7/10/12
CHECKED BY : B. L. GREEN DATE : 7/10/12
DRAWN BY : CVC 6/10
CHECKED BY : DNS 6/10

20-JUL-2012 10:43
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nruffin



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
LRFR SUMMARY FOR
25' CORED SLAB UNIT
60° SKEW & 120° SKEW
(NON-INTERSTATE TRAFFIC)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-4
2			4			TOTAL SHEETS 20

STD. NO. 21LRFR1-60&120S-25L

LOAD AND RESISTANCE FACTOR RATING (LRFD) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS

LEVEL		VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING	MINIMUM RATING FACTORS (RF)	TONS = W X RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE						COMMENT NUMBER	
							LIVELOAD FACTORS	MOMENT					SHEAR					LIVELOAD FACTORS	MOMENT					
								DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)		DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION		DISTANCE FROM LEFT END OF SPAN (ft)
DESIGN LOAD RATING		HL-93(Inv)	N/A	1	1.35	--	1.75	0.25	1.74	50'	EL	24.423	0.656	1.35	50'	EL	9.769	0.80	0.25	1.59	50'	EL	24.423	
		HL-93(0pr)	N/A	--	1.75	--	1.35	0.25	2.25	50'	EL	24.423	0.656	1.75	50'	EL	9.769	N/A	--	--	--	--	--	
		HS-20(Inv)	36.000	2	1.586	57.108	1.75	0.25	2.15	50'	EL	24.423	0.656	1.59	50'	EL	9.769	0.80	0.25	1.97	50'	EL	24.423	
		HS-20(0pr)	36.000	--	2.056	74.028	1.35	0.25	2.79	50'	EL	24.423	0.656	2.06	50'	EL	9.769	N/A	--	--	--	--	--	
LEGAL LOAD RATING	SV	SNSH	13.500	--	4.009	54.117	1.4	0.25	5.47	50'	EL	24.423	0.656	4.31	50'	EL	9.769	0.80	0.25	4.01	50'	EL	24.423	
		SNGARBS2	20.000	--	3.168	63.352	1.4	0.25	4.32	50'	EL	24.423	0.656	3.19	50'	EL	9.769	0.80	0.25	3.17	50'	EL	24.423	
		SNAGRIS2	22.000	--	3.009	66.192	1.4	0.25	4.18	50'	EL	19.538	0.656	3.01	50'	EL	9.769	0.80	0.25	3.07	50'	EL	24.423	
		SNCOTTS3	27.250	--	2	54.493	1.4	0.25	2.73	50'	EL	24.423	0.656	2.16	50'	EL	9.769	0.80	0.25	2.00	50'	EL	24.423	
		SNAGGRS4	34.925	--	1.739	60.742	1.4	0.25	2.37	50'	EL	24.423	0.656	1.88	50'	EL	9.769	0.80	0.25	1.74	50'	EL	24.423	
		SNS5A	35.550	--	1.696	60.292	1.4	0.25	2.31	50'	EL	24.423	0.656	1.96	50'	EL	9.769	0.80	0.25	1.70	50'	EL	24.423	
		SNS6A	39.950	--	1.586	63.364	1.4	0.25	2.16	50'	EL	24.423	0.656	1.82	50'	EL	9.769	0.80	0.25	1.59	50'	EL	24.423	
	TTST	SNS7B	42.000	--	1.512	63.487	1.4	0.25	2.06	50'	EL	24.423	0.656	1.85	50'	EL	9.769	0.80	0.25	1.51	50'	EL	24.423	
		TNAGRIT3	33.000	--	1.943	64.127	1.4	0.25	2.65	50'	EL	24.423	0.656	2.14	50'	EL	9.769	0.80	0.25	1.94	50'	EL	24.423	
		TNT4A	33.075	--	1.96	64.837	1.4	0.25	2.67	50'	EL	24.423	0.656	2.04	50'	EL	9.769	0.80	0.25	1.96	50'	EL	24.423	
		TNT6A	41.600	--	1.633	67.938	1.4	0.25	2.23	50'	EL	24.423	0.656	2	50'	EL	9.769	0.80	0.25	1.63	50'	EL	24.423	
		TNT7A	42.000	--	1.658	69.634	1.4	0.25	2.26	50'	EL	24.423	0.656	1.86	50'	EL	9.769	0.80	0.25	1.66	50'	EL	24.423	
		TNT7B	42.000	--	1.728	72.595	1.4	0.25	2.36	50'	EL	24.423	0.656	1.76	50'	EL	9.769	0.80	0.25	1.73	50'	EL	24.423	
		TNAGRIT4	43.000	--	1.64	70.537	1.4	0.25	2.24	50'	EL	24.423	0.656	1.69	50'	EL	9.769	0.80	0.25	1.64	50'	EL	24.423	
TNAGT5A	45.000	--	1.532	68.95	1.4	0.25	2.09	50'	EL	24.423	0.656	1.75	50'	EL	9.769	0.80	0.25	1.53	50'	EL	24.423			
TNAGT5B	45.000	3	1.501	67.548	1.4	0.25	2.05	50'	EL	24.423	0.656	1.6	50'	EL	9.769	0.80	0.25	1.50	50'	EL	24.423			

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	γ_{DC}	γ_{DW}
	STRENGTH I	1.25	1.50
	SERVICE III	1.00	1.00

NOTES:

MINIMUM RATING FACTORS ARE BASED ON THE STRENGTH I AND SERVICE III LIMIT STATES.

ALLOWABLE STRESSES FOR SERVICE III LIMIT STATE ARE AS REQUIRED FOR DESIGN.

COMMENTS:

- 1.
- 2.
- 3.
- 4.

CONTROLLING LOAD RATING

1 DESIGN LOAD RATING (HL-93)

2 DESIGN LOAD RATING (HS-20)

3 LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

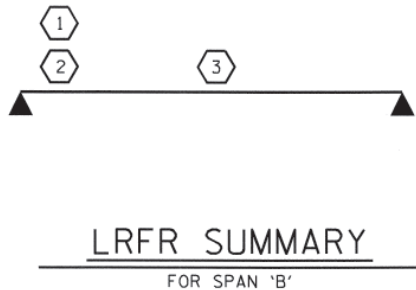
I - INTERIOR GIRDER
EL - EXTERIOR LEFT GIRDER
ER - EXTERIOR RIGHT GIRDER

PROJECT NO. 17BP.1.R.18
BERTIE COUNTY
STATION: 12+65.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
LRFR SUMMARY FOR
50' CORED SLAB UNIT
60° SKEW & 120° SKEW
(NON-INTERSTATE TRAFFIC)

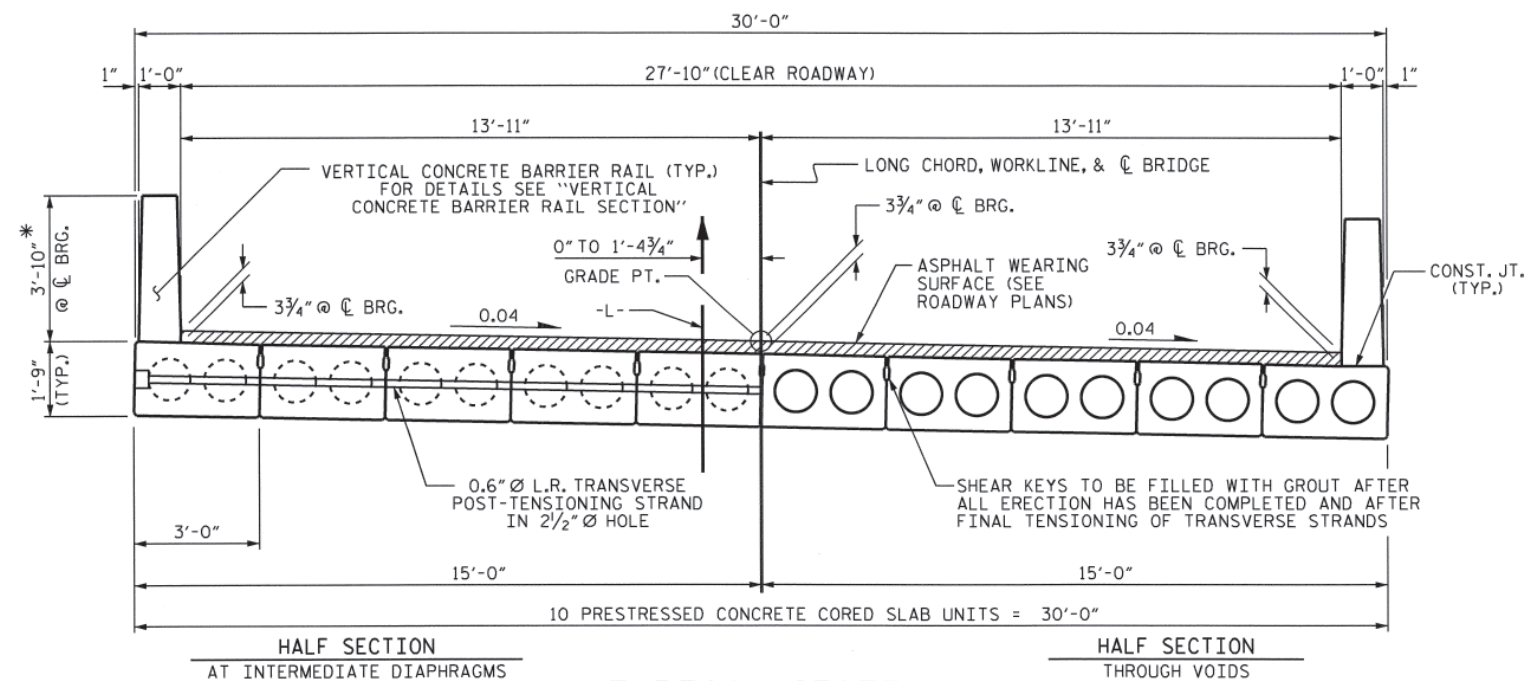
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-5
2			4			
TOTAL SHEETS						20

STD. NO. 21LRFR1.60&120S.50L

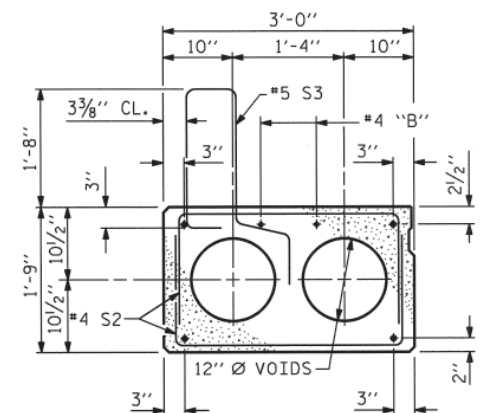
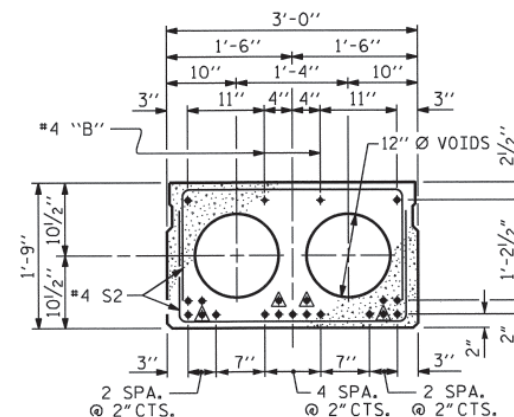
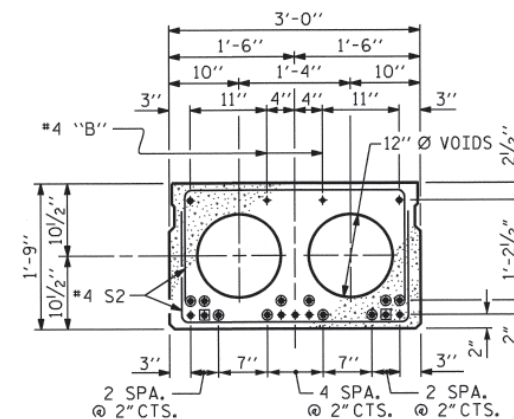
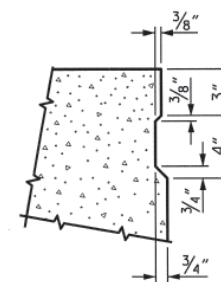
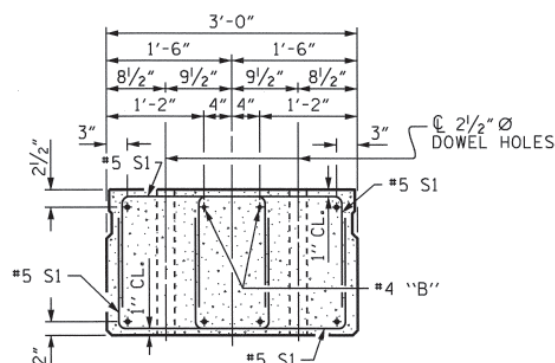
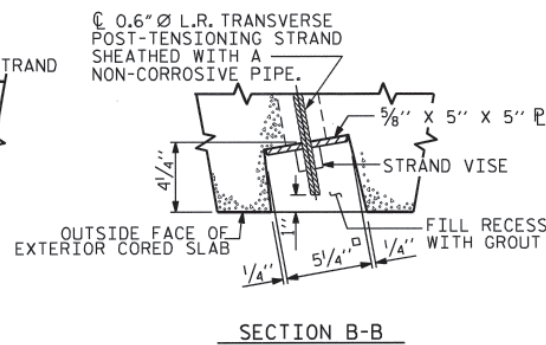
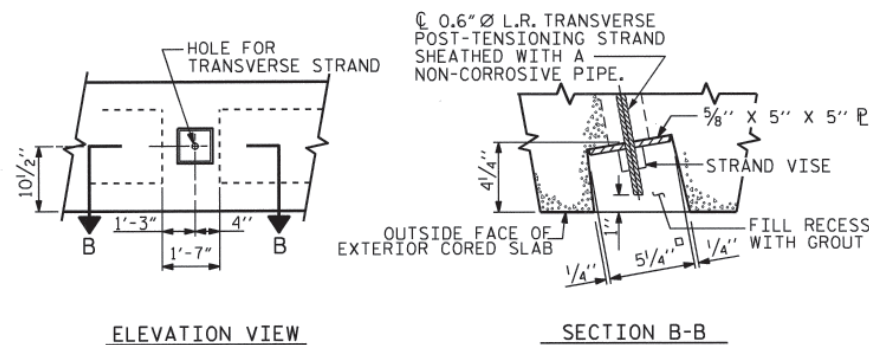
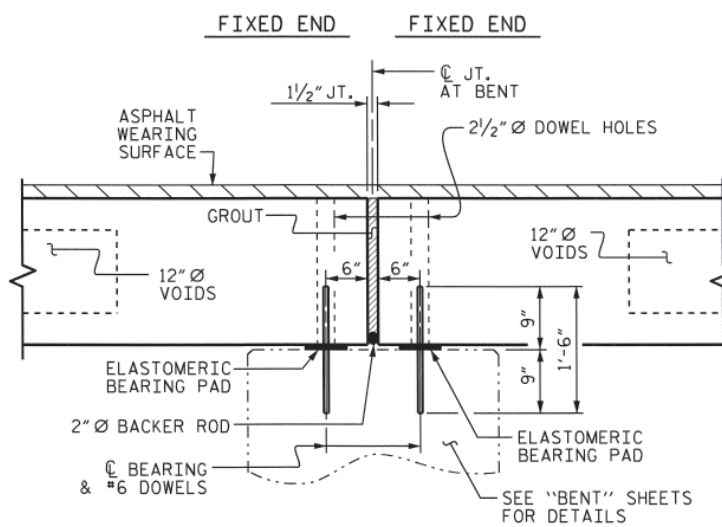
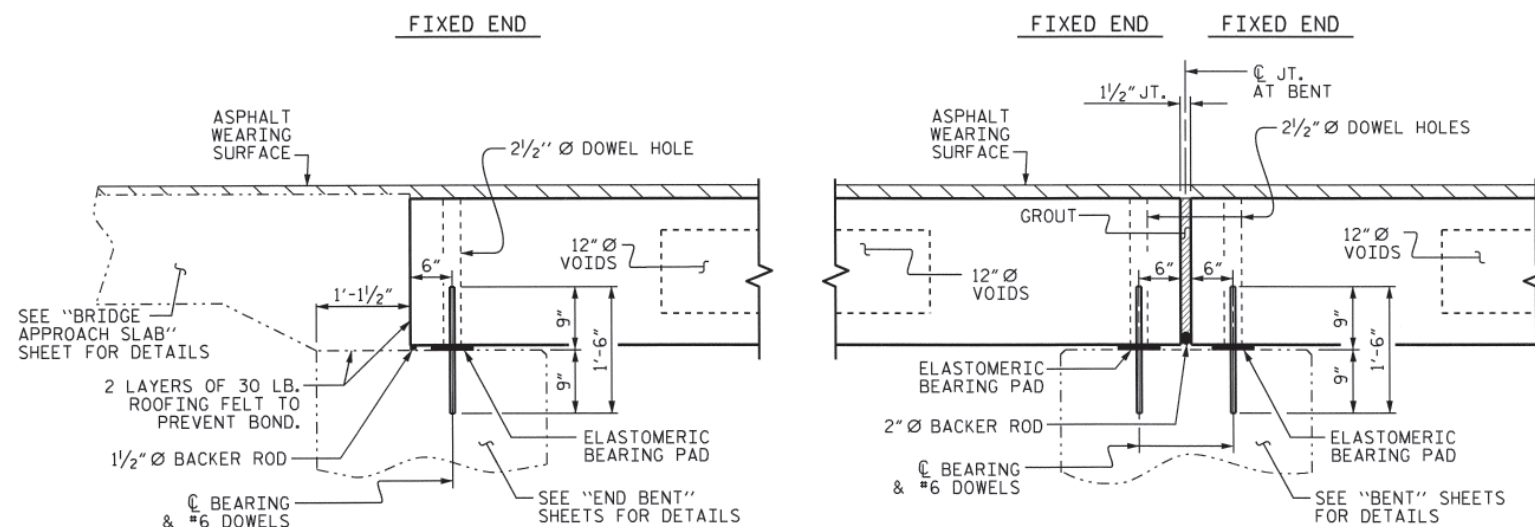





ASSEMBLED BY : N. RUFFIN	DATE : 7/19/12
CHECKED BY : T.L. COGGINS	DATE : 7/19/12
DRAWN BY : CVC	6/10
CHECKED BY : DNS	6/10

20-JUL-2012 10:43
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* - THE MAXIMUM BARRIER RAIL HEIGHT AND ASPHALT THICKNESS IS SHOWN. THE HEIGHT OF THE BARRIER RAIL AND ASPHALT THICKNESS VARIES WHILE THE TOP OF THE BARRIER RAIL FOLLOWS THE PROFILE OF THE GUTTERLINE. FOR RAIL HEIGHT DETAILS AND ASPHALT THICKNESS SEE THE "VERTICAL CONCRETE BARRIER RAIL SECTION" DETAIL.



-  BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 6'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.
-  BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 2'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.
-  OPTIONAL FULL LENGTH DEBONDED STRANDS. THESE STRANDS ARE NOT REQUIRED. IF THE FABRICATOR CHOOSES TO INCLUDE THESE STRANDS IN THE CORED SLAB UNIT, THE STRANDS SHALL BE DEBONDED FOR THE FULL LENGTH OF THE UNIT AT NO ADDITIONAL COST. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

DEBONDING LEGEND

0.6" Ø LOW
RELAXATION STRAND LAYOUT

PROJECT NO. 17BP.1.R.18
BERTIE COUNTY
 STATION: 12+65.00 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

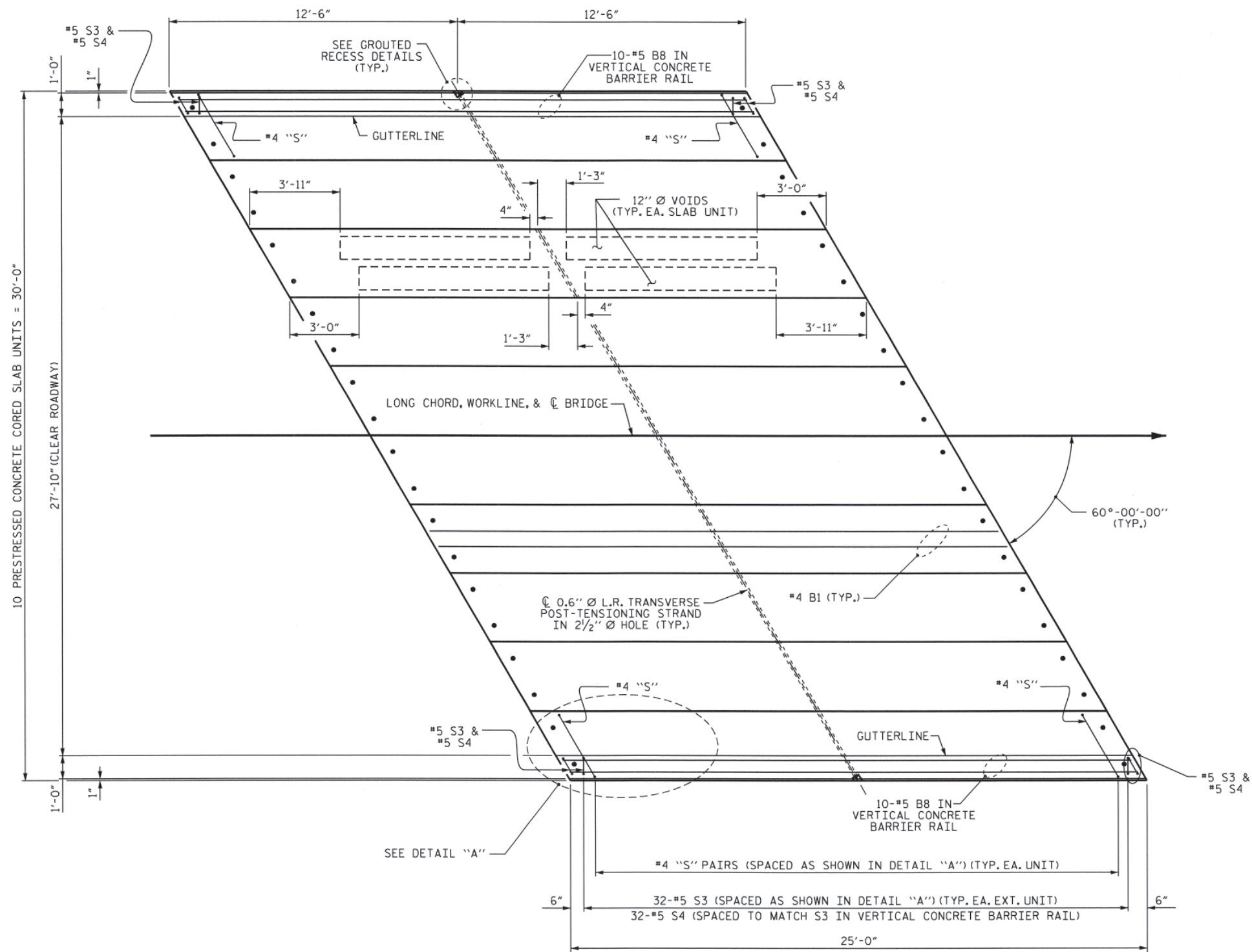
STANDARD
3'-0" X 1'-9"
PRESTRESSED CONCRETE
CORED SLAB UNIT
60° SKEW

REVISIONS						SHEET NO. S-6
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 20
2			4			

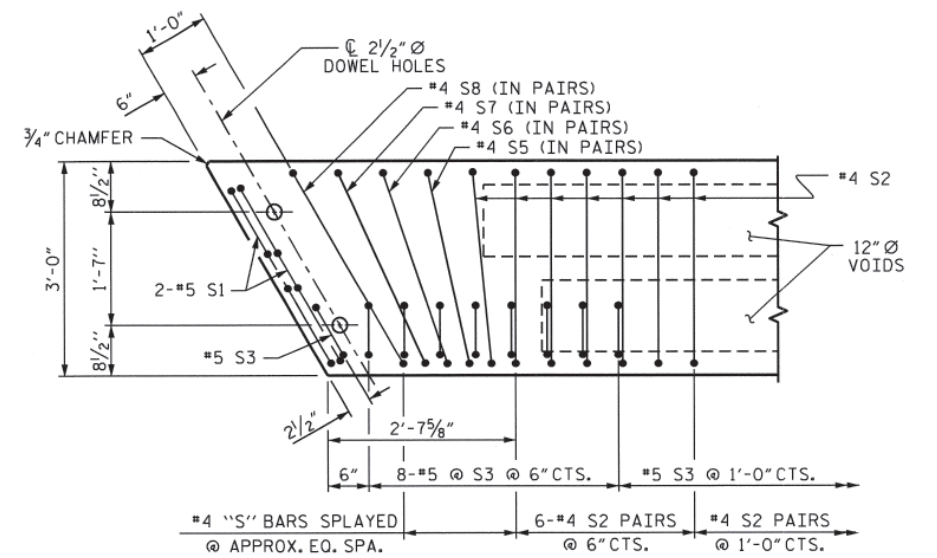
STD. NO. 21" PCS2_30_60S

ASSEMBLED BY : N. RUFFIN	DATE : 7/3/12
CHECKED BY : B.L. GREEN	DATE : 7/10/12
DRAWN BY : DGE 5/09	REV. 12/11 MAA/AAC
CHECKED BY : BCH 6/09	

20-JUL-2012 10:43
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nruffin



PLAN OF UNIT
(SPAN A & C)



DETAIL "A"

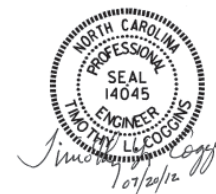
NOTE: EXTERIOR UNIT SHOWN - INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S3 BARS.

PROJECT NO. 17BP.1.R.18
BERTIE COUNTY
STATION: 12+65.00 -L-

SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF 25' UNIT
27'-10" CLEAR ROADWAY
60° SKEW

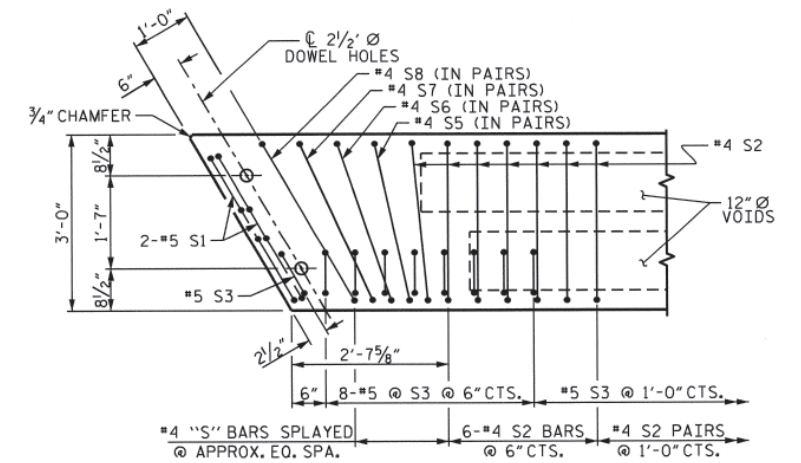
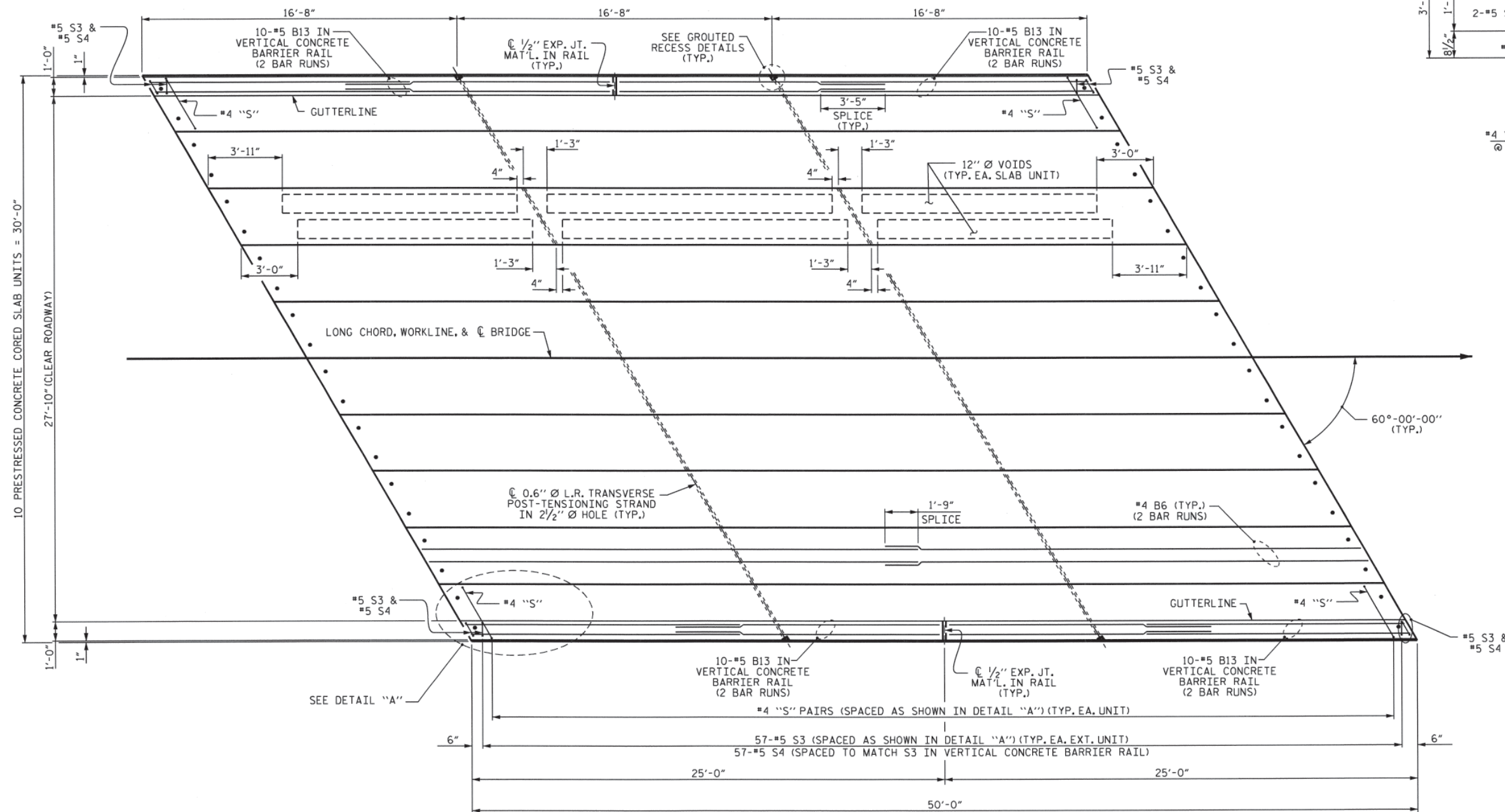


ASSEMBLED BY : N. RUFFIN DATE : 7/3/12
CHECKED BY : B.L. GREEN DATE : 7/10/12
DRAWN BY : DGE 3/09 REV. 12/5/11 MAA/AAC
CHECKED BY : BCH 3/09

20-JUL-2012 10:43
S:\DPG\17BP.1.R.18\N.Ruffin\17BP.1.R.18.sd.01.dgn
nruffin

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			5-7
2			4			TOTAL SHEETS 20

STD.NO. 21" PCS_30_60S_25L



DETAIL "A"

NOTE: EXTERIOR UNIT SHOWN - INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S3 BARS.

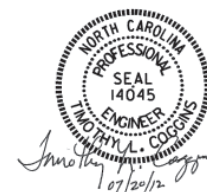
PLAN OF UNIT
(SPAN B)

PROJECT NO. 17BP.1.R.18
BERTIE COUNTY
STATION: 12+65.00 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF 50' UNIT
27'-10" CLEAR ROADWAY
60° SKEW



ASSEMBLED BY : N. RUFFIN DATE : 7/3/12
CHECKED BY : B.L. GREEN DATE : 7/10/12
DRAWN BY : DGE 3/09 REV. 12/5/11 MAA/AAC
CHECKED BY : BCH 3/09

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-8
2			4			
TOTAL SHEETS						20

STD.NO. 21" PCS-30-60S-50L

DEAD LOAD DEFLECTION AND CAMBER	
25' CORED SLAB UNIT	3'-0" x 1'-9"
CAMBER (SLAB ALONE IN PLACE)	0.6" Ø L.R. STRAND
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	1/2" ↑
FINAL CAMBER	1/8" ↓
** INCLUDES FUTURE WEARING SURFACE	

DEAD LOAD DEFLECTION AND CAMBER	
50' CORED SLAB UNIT	3'-0" x 1'-9"
CAMBER (SLAB ALONE IN PLACE)	0.6" Ø L.R. STRAND
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	2 1/2" ↑
FINAL CAMBER	1/4" ↓
** INCLUDES FUTURE WEARING SURFACE	

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL						
BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
25' UNIT						
* B8	20	40	#5	STR	24'-6"	1022
* S4	68	136	#5	2	7'-2"	1017
* EPOXY COATED REINFORCING STEEL						LBS. 2039
CLASS AA CONCRETE						CU.YDS. 13.2
TOTAL VERTICAL CONCRETE BARRIER RAIL						LN.FT. 100.29

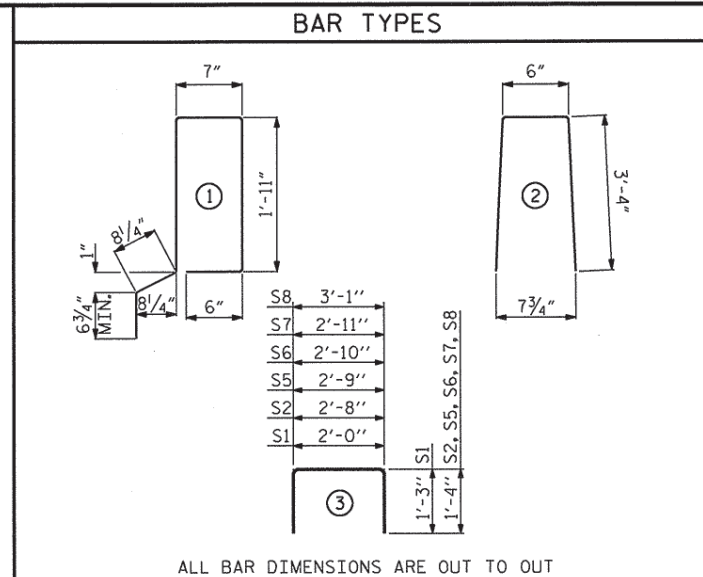
BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL						
BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
50' UNIT						
* B13	80	80	#5	STR	14'-3"	1189
* S4	118	118	#5	2	7'-2"	882
* EPOXY COATED REINFORCING STEEL						LBS. 2071
CLASS AA CONCRETE						CU.YDS. 13.1
TOTAL VERTICAL CONCRETE BARRIER RAIL						LN.FT. 100.29

GUTTERLINE ASPHALT THICKNESS & RAIL HEIGHT		
27'-10" CLEAR ROADWAY	ASPHALT OVERLAY THICKNESS	RAIL HEIGHT
	@ MID-SPAN	@ MID-SPAN
	SUPERED SECTION	
25' UNITS	3 3/8"	3'-9 5/8"
50' UNITS	1 1/2"	3'-7 3/4"

CORED SLABS REQUIRED			
25' UNIT	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.	4	25'-0"	100'-0"
INTERIOR C.S.	16	25'-0"	400'-0"
TOTAL	20		500'-0"

CORED SLABS REQUIRED			
50' UNIT	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.	2	50'-0"	100'-0"
INTERIOR C.S.	8	50'-0"	400'-0"
TOTAL	10		500'-0"

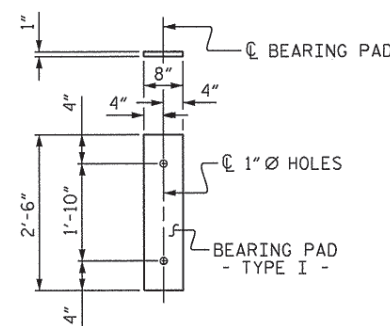
GRADE 270 STRANDS	
AREA (SQUARE INCHES)	0.217
ULTIMATE STRENGTH (LBS. PER STRAND)	58,600
APPLIED PRESTRESS (LBS. PER STRAND)	43,950



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL FOR ONE 25' CORED SLAB UNIT							
BAR	NUMBER	SIZE	TYPE	EXTERIOR UNIT LENGTH	EXTERIOR UNIT WEIGHT	INTERIOR UNIT LENGTH	INTERIOR UNIT WEIGHT
B1	2	#4	STR	24'-7"	33	24'-7"	33
S1	8	#5	3	4'-6"	38	4'-6"	38
S2	52	#4	3	5'-4"	185	5'-4"	185
* S3	34	#5	1	6'-2"	219		
S5	4	#4	3	5'-5"	14	5'-5"	14
S6	4	#4	3	5'-6"	15	5'-6"	15
S7	4	#4	3	5'-7"	15	5'-7"	15
S8	4	#4	3	5'-9"	15	5'-9"	15
REINFORCING STEEL				LBS.	315		315
* EPOXY COATED REINFORCING STEEL				LBS.	219		
5000 P.S.I. CONCRETE				CU. YDS.	3.8		3.8
0.6" Ø L.R. STRANDS				No.	9		9

BILL OF MATERIAL FOR ONE 50' CORED SLAB UNIT							
BAR	NUMBER	SIZE	TYPE	EXTERIOR UNIT LENGTH	EXTERIOR UNIT WEIGHT	INTERIOR UNIT LENGTH	INTERIOR UNIT WEIGHT
B6	4	#4	STR	25'-9"	69	25'-9"	69
S1	8	#5	3	4'-6"	38	4'-6"	38
S2	102	#4	3	5'-4"	363	5'-4"	363
* S3	59	#5	1	6'-2"	379		
S5	4	#4	3	5'-5"	14	5'-5"	14
S6	4	#4	3	5'-6"	15	5'-6"	15
S7	4	#4	3	5'-7"	15	5'-7"	15
S8	4	#4	3	5'-9"	15	5'-9"	15
REINFORCING STEEL				LBS.	529		529
* EPOXY COATED REINFORCING STEEL				LBS.	379		
6500 P.S.I. CONCRETE				CU. YDS.	7.3		7.3
0.6" Ø L.R. STRANDS				No.	19		19



FIXED END
(TYPE I - 60 REQ'D)

ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 50 DUROMETER HARDNESS.

NOTES

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO AASHTO M203 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ALL REINFORCING STEEL CAST WITH THE CORED SLAB SECTIONS SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE CORED SLABS.

RECESSES FOR TRANSVERSE STRANDS SHALL BE GROUTED AFTER THE TENSIONING OF THE STRANDS.

THE 2 1/2" Ø DOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE FILLED WITH NON-SHRINK GROUT.

THE BACKER RODS SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER, SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS.

WHEN CORED SLABS ARE CAST, AN INTERNAL HOLD-DOWN SYSTEM SHALL BE EMPLOYED TO PREVENT VOIDS FROM RISING OR MOVING SIDEWAYS. AT LEAST SIX WEEKS PRIOR TO CASTING CORED SLABS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW AND COMMENT, DETAILED DRAWINGS OF THE PROPOSED HOLD-DOWN SYSTEM, IN ADDITION TO STRUCTURAL DETAILS, LOCATION AND SPACING OF THE HOLD-DOWNS SHALL BE INDICATED.

ALL REINFORCING STEEL IN THE VERTICAL CONCRETE BARRIER RAIL SHALL BE EPOXY COATED.

PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE CORED SLAB UNIT ENDS.

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. A CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED AT MIDPOINT OF BARRIER RAIL SEGMENTS LESS THAN 20 FEET IN LENGTH AND NO CONTRACTION JOINTS ARE REQUIRED FOR THOSE SEGMENTS LESS THAN 10 FEET IN LENGTH.

TRANSVERSE POST TENSIONING OF THE CORED SLAB UNITS SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE CORED SLAB UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN THE REQUIRED STRENGTH SHOWN IN THE "CONCRETE RELEASE STRENGTH" TABLE.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

CONCRETE RELEASE STRENGTH

UNIT	PSI
25' UNITS	4000
50' UNITS	4900

PROJECT NO. 17BP.1.R.18

BERTIE COUNTY

STATION: 12+65.00 -L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
3'-0" X 1'-9"
PRESTRESSED CONCRETE
CORED SLAB UNIT
60° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-9
2			4			TOTAL SHEETS 20

STD. NO. 21' PCS3_30_60S

ASSEMBLED BY: N. RUFFIN	DATE: 7/3/12
CHECKED BY: B.L. GREEN	DATE: 7/10/12
DRAWN BY: DGE 5/09	REV. 12/11
CHECKED BY: BCH 6/09	MAA/AAC

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rcoogins

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A 1/4" HOLD DOWN PLATE AND 7 - 7/8" Ø BOLTS WITH NUTS AND WASHERS.

THE HOLD-DOWN PLATE SHALL CONFORM TO AASHTO M270 GRADE 36. AFTER FABRICATION, THE HOLD-DOWN PLATE SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH AASHTO M111.

BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 7/8" Ø GALVANIZED BOLTS, NUTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)

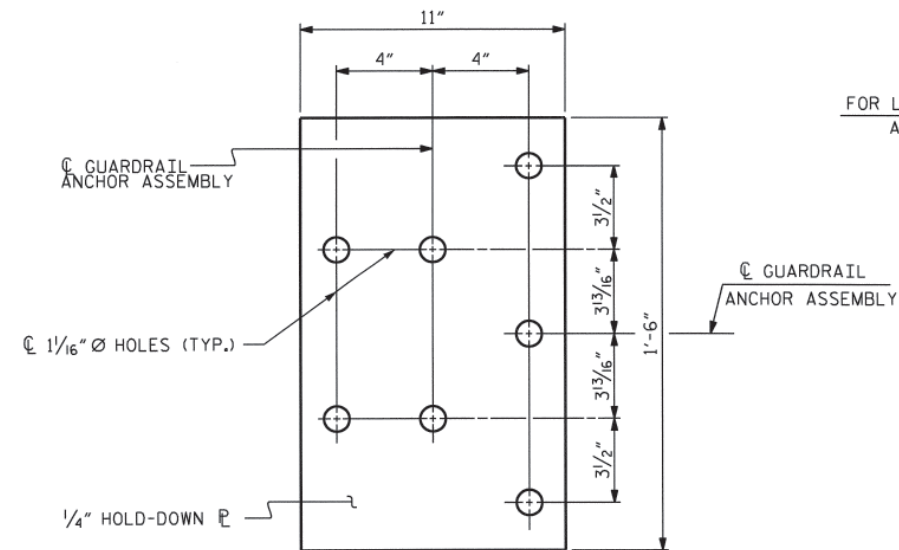
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

AFTER INSTALLATION, THE EXPOSED THREAD OF THE BOLT SHALL BE BURRED WITH A SHARP POINTED TOOL.

THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR VERTICAL CONCRETE BARRIER RAIL.

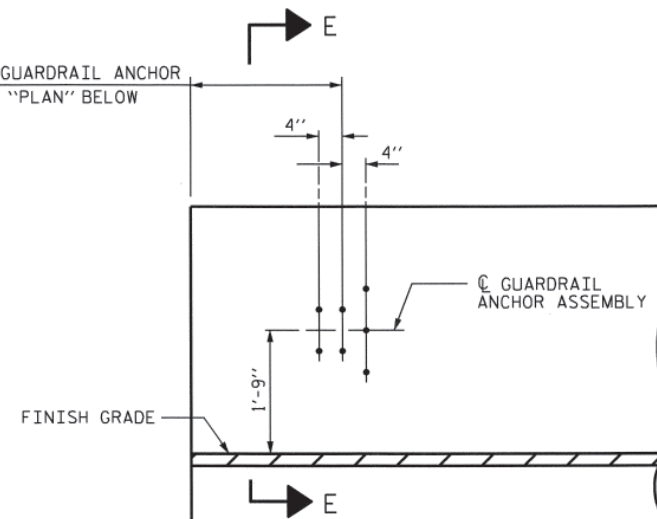
THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE VERTICAL CONCRETE BARRIER RAIL TO CLEAR ASSEMBLY BOLTS.

THE 1 1/4" Ø HOLES SHALL BE FORMED OR DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.

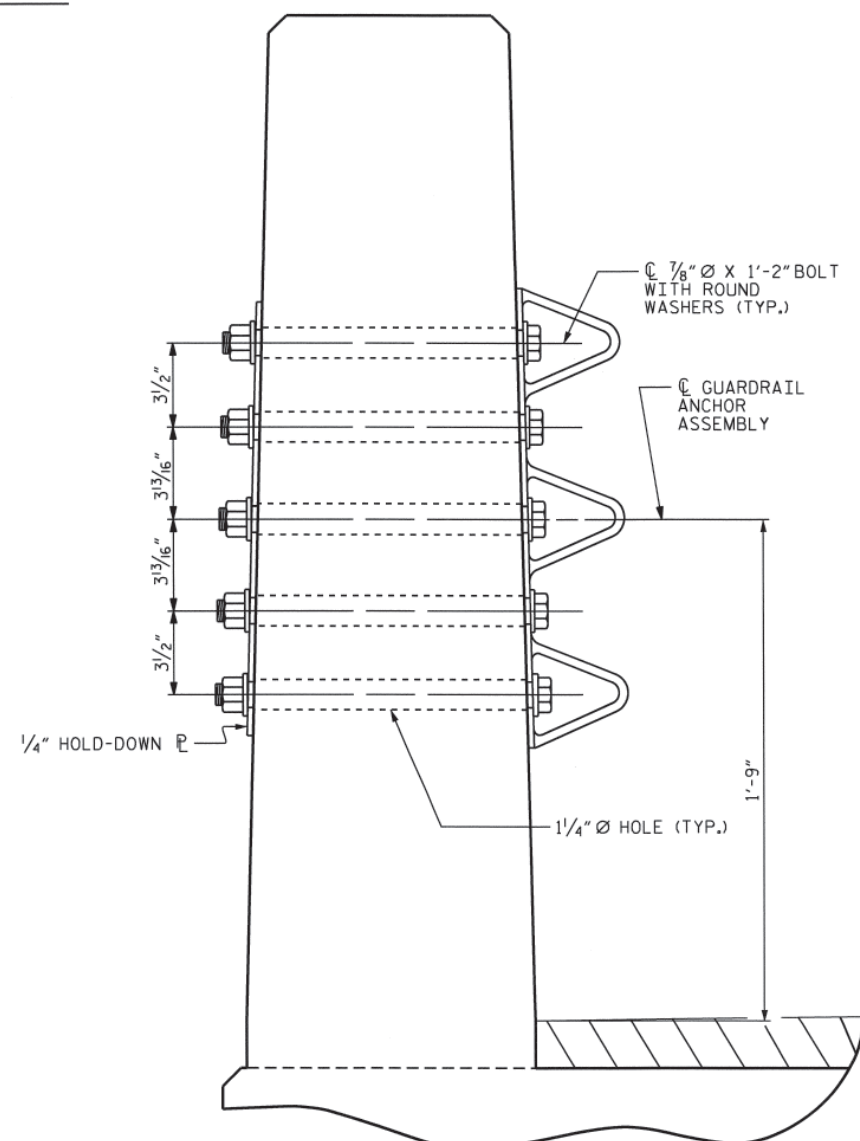


PLAN

FOR LOCATION OF GUARDRAIL ANCHOR ASSEMBLY, SEE "PLAN" BELOW

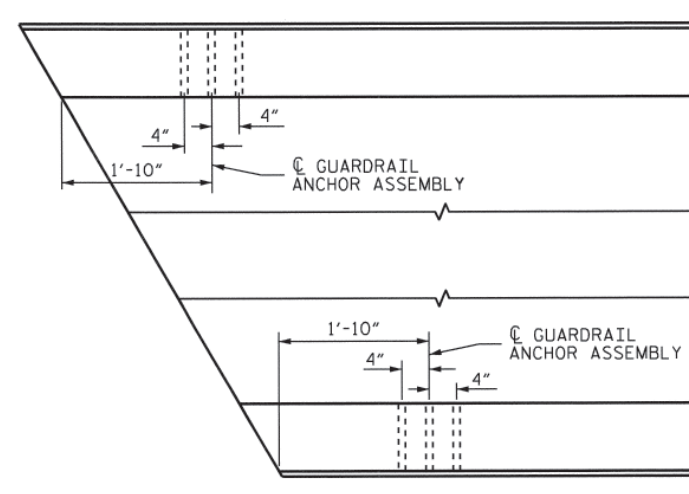


ELEVATION



SECTION E-E

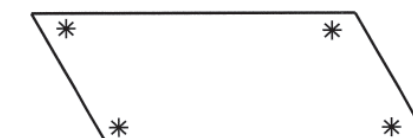
GUARDRAIL ANCHOR ASSEMBLY DETAILS



PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

END BENT #1 SHOWN, END BENT #2 SIMILAR.



SKETCH SHOWING POINTS OF ATTACHMENT

* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. 17BP.1.R.18

BERTIE COUNTY

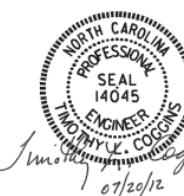
STATION: 12+65.00 -L-

ASSEMBLED BY : *N. Ruffin* DATE : 7/3/12
CHECKED BY : *B.L. GREEN* DATE : 7/10/12
DRAWN BY : MAA 5/10
CHECKED BY : GM 5/10

ADDED 5/6/10
REV. 10/1/11
REV. 12/5/11

MAA/GM
MAA/GM

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
GUARDRAIL ANCHORAGE
FOR VERTICAL CONCRETE
BARRIER RAIL

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-10
2			4			TOTAL SHEETS 20

(SHT 3) STD. NO. GRA3

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

THE LATERAL GUIDES ARE NOT TO BE POURED UNTIL AFTER THE CORED SLAB UNITS ARE IN PLACE.

THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

FOR PILE SPlice DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.

THE CONTRACTOR HAS THE OPTION TO OMIT THE LATERAL GUIDE IF APPROVED BY THE ENGINEER.

INSTALL THE 4" DIA. DRAIN PIPE THROUGH THE WING WALL AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS, SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.



EL. 15.82 @ FILL FACE

WORKLINE

POUR #3 LATERAL GUIDES

CONST. JT. (TYP.)

EL. 19.04 TOP OF WING (LEVEL)

1'-0" (TYP.)

POUR #2 UPPER PART OF WINGS

EL. 16.54

#4 B3 UNDER #4 B2 OVER PILES @ 4'-0" CTS. (11 REQ'D)

2'-5" MIN. SPLICE (TYP.)

4-#9 B1

0.0342 SLOPE

6" MIN. (TYP.)

EL. 15.06

2'-6" (MIN.)

EL. 12.56 BOTTOM OF CAP & WING

POUR #1 CAP, LOWER PART OF WINGS & CONCRETE COLLARS

EL. 14.04 BOTTOM OF CAP & WING

#4 S1 & S2 (TYP. EA. END)

9" (TYP.)

1'-0" MIN. EMBEDMENT (TYP.)

2-#4 S3 (TYP. EA. PILE)

#4 B2 (EACH FACE) (2 BAR RUNS)

8'-8 1/2"

9 1/2"

4-#4 B2 (OVER PILES) (2 BAR RUNS)

9" (TYP.)

3" HIGH BEAM BOLSTER @ 5'-0" CTS.

13-#4 S1 & S2 @ 8" CTS. (TYP. EACH BAY)

9" (TYP.)

9'-6"

9'-6"

9'-6"

9'-6"

HP 12 X 53 STEEL PILES

① ② ③ ④ ⑤

WINGS NOT SHOWN FOR CLARITY.
FOR SECTION A-A, SEE SHEET 4 OF 4.
CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.
SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 4 OF 4.

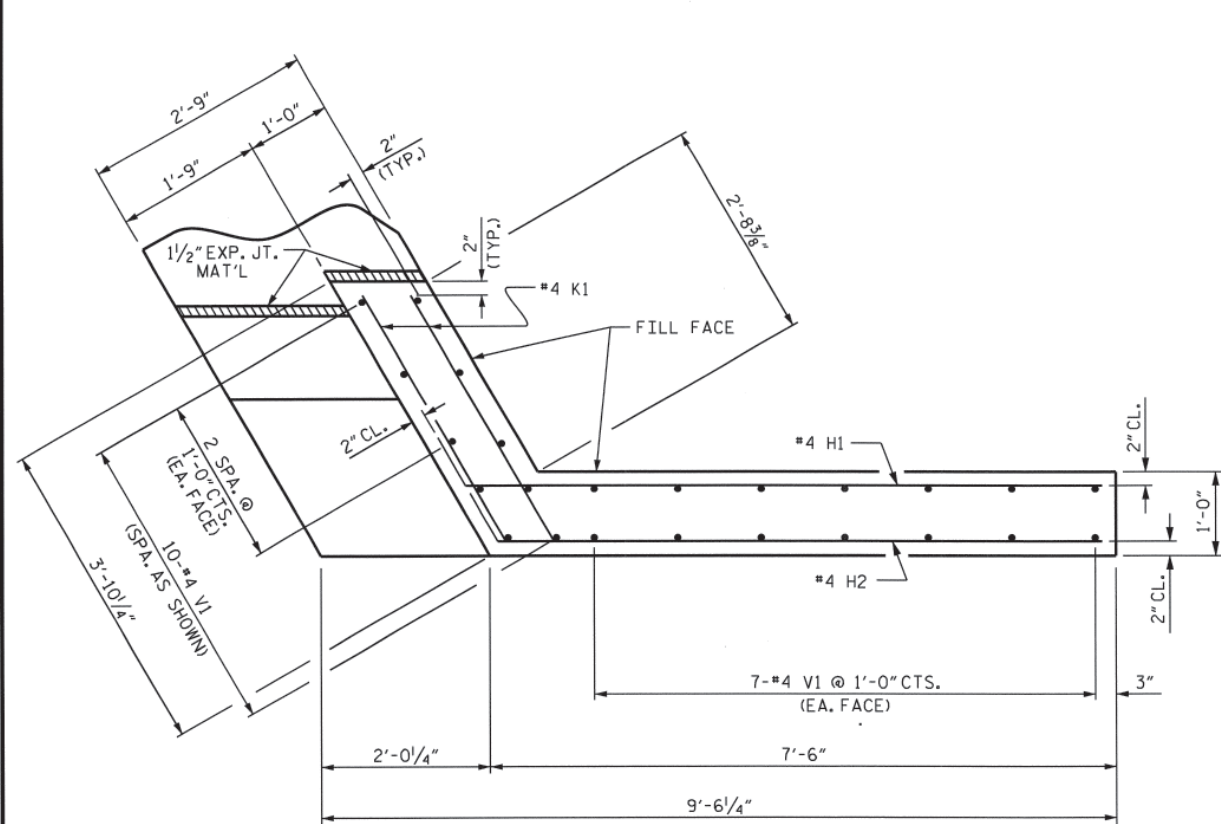
SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

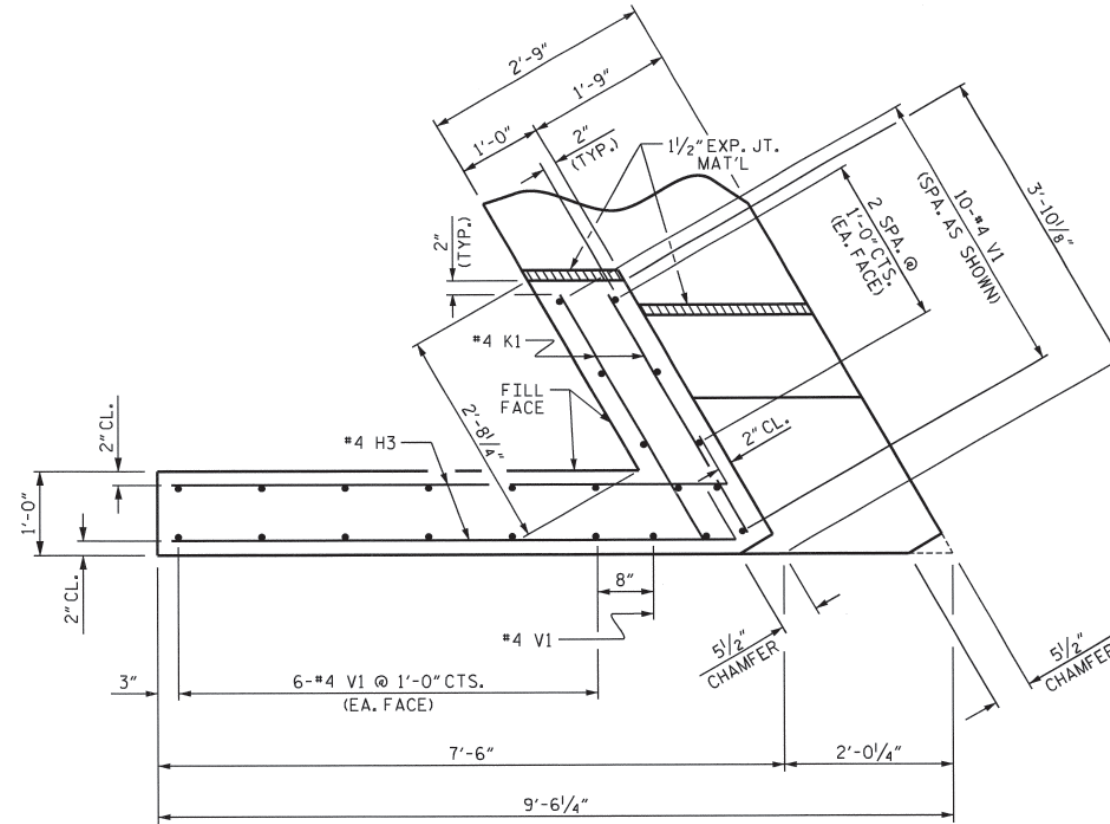
SUBSTRUCTURE
END BENT No. 1

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-11
2			4			TOTAL SHEETS
						20

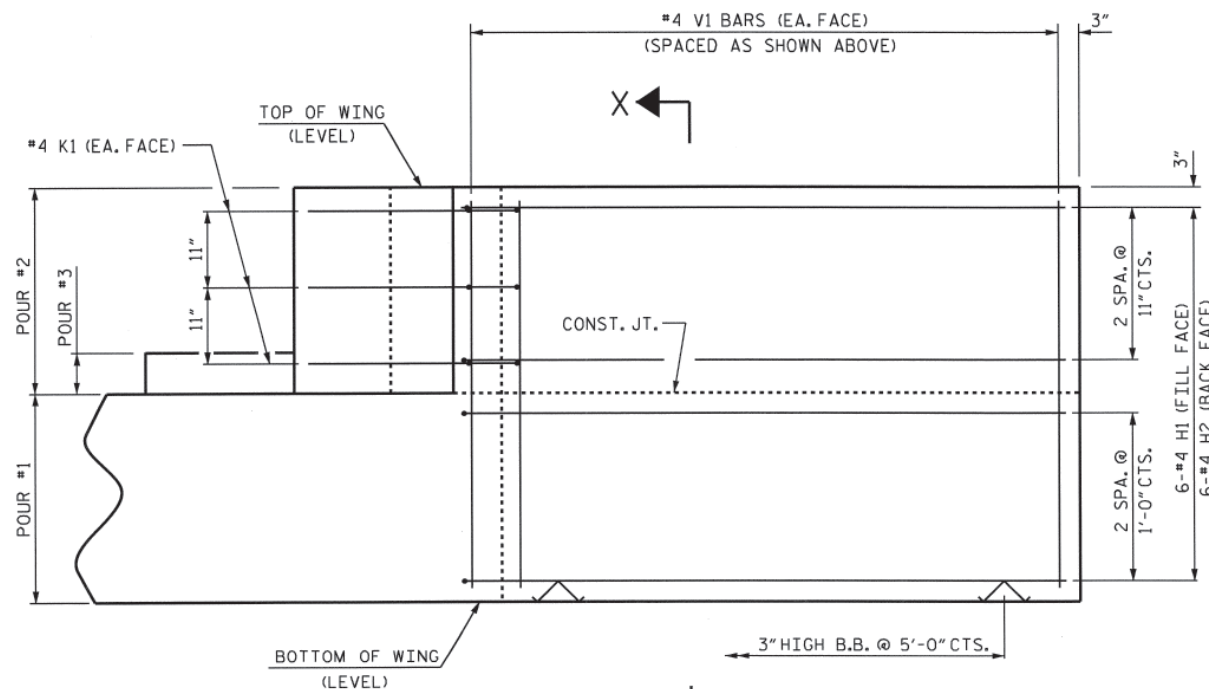
STD. NO. EB_30_60S



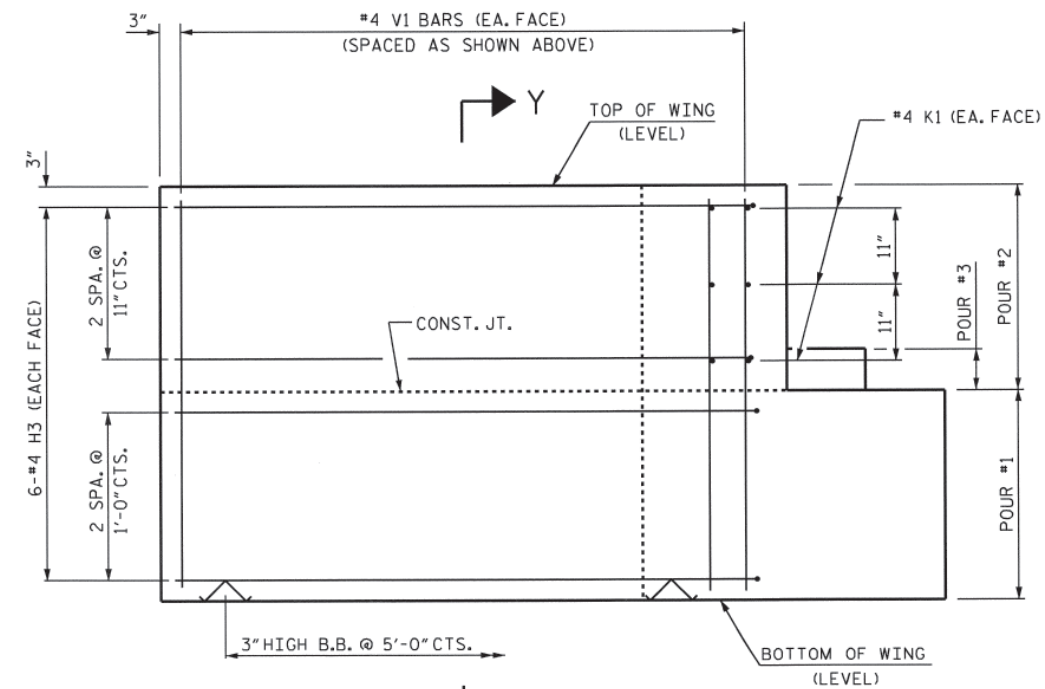
PLAN OF WING (W1)



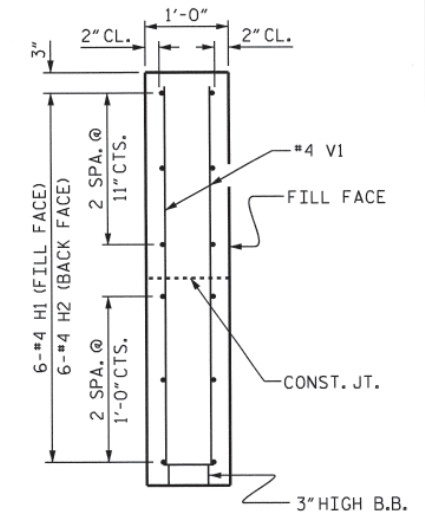
PLAN OF WING (W2)



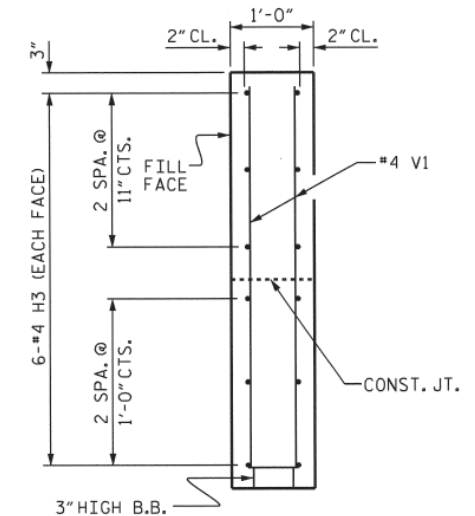
ELEVATION OF WING (W1)



ELEVATION OF WING (W2)



SECTION X-X



SECTION Y-Y

ASSEMBLED BY : N. RUFFIN
 CHECKED BY : B.L. GREEN
 DATE : 7/11/12
 DATE : 7/13/12
 DRAWN BY : DGE 02/10
 CHECKED BY : MKT 02/10

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WING DETAILS

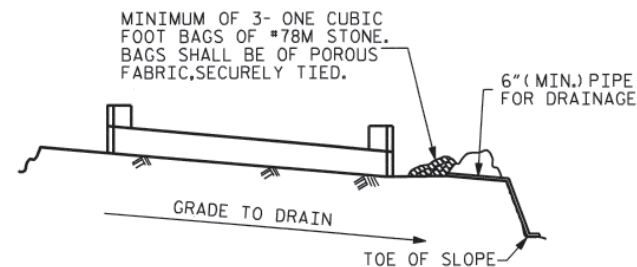


PROJECT NO. 17BP.1.R.18
 BERTIE COUNTY
 STATION: 12+65.00 -L-

SHEET 3 OF 4

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-13
2			4			TOTAL SHEETS 20

STD. NO. EB_30_60S

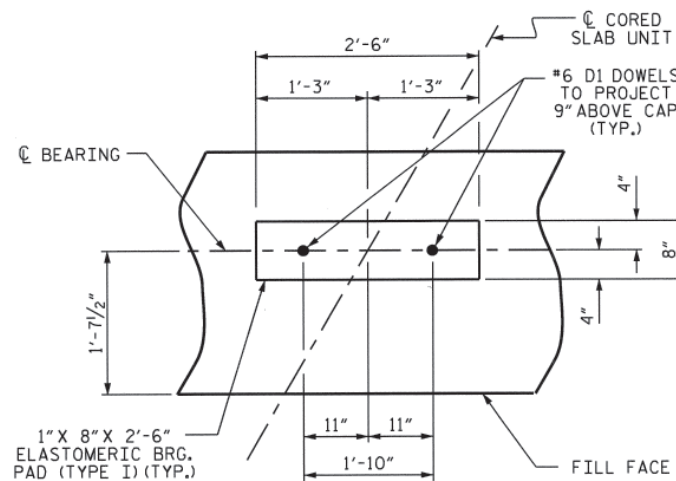


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR EFFECTIVENESS.

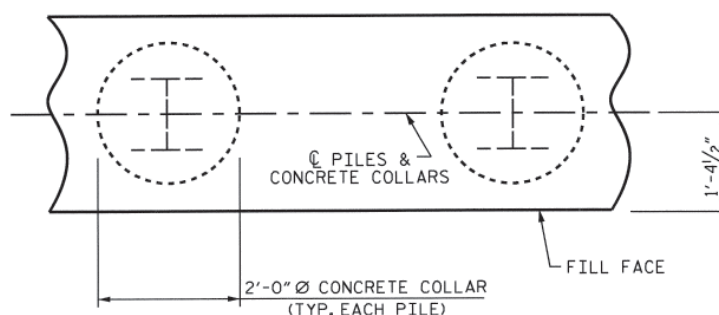
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT



DETAIL "A"

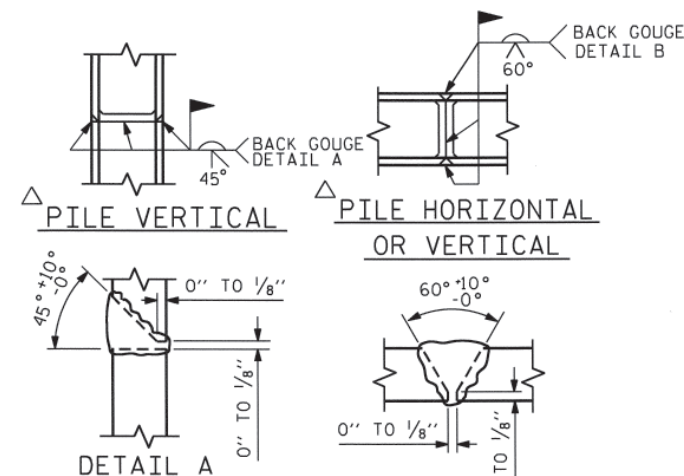
(END BENT No. 1 SHOWN, END BENT No. 2 SIMILAR BY ROTATION)



PLAN

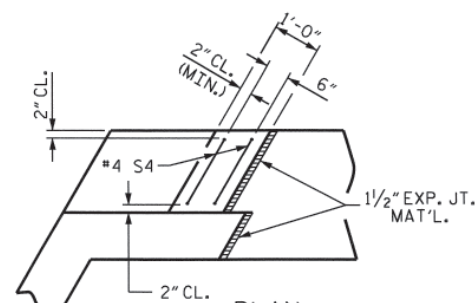
CORROSION PROTECTION FOR STEEL PILES DETAIL

(END BENT No. 1 SHOWN, END BENT No. 2 SIMILAR BY ROTATION)

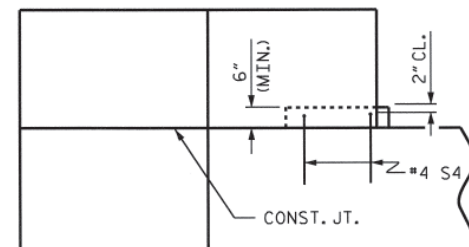


POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS



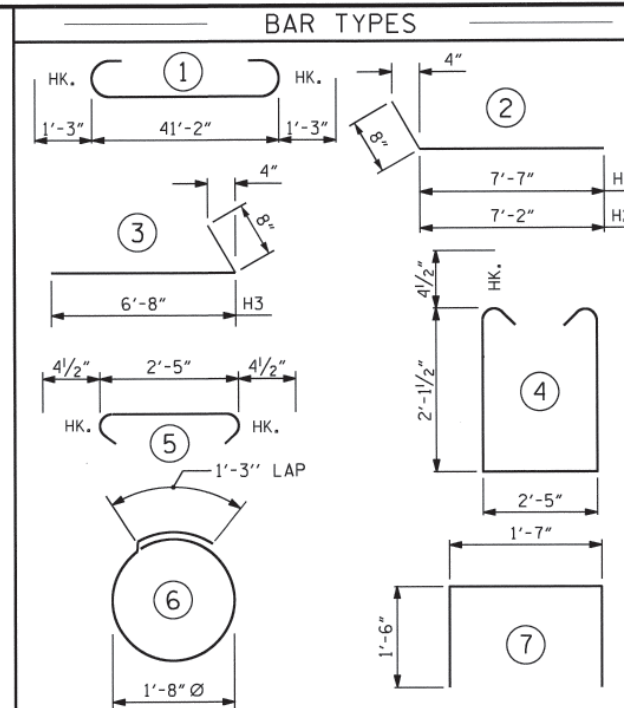
PLAN



ELEVATION

LATERAL GUIDE DETAILS

(END BENT No. 1, LEFT LATERAL GUIDE SHOWN, RIGHT END SIMILAR)
(END BENT No. 2 SIMILAR BY ROTATION)



ALL BAR DIMENSIONS ARE OUT TO OUT.

END BENT No. 1		END BENT No. 2	
HP 12 X 53 STEEL PILES		HP 12 X 53 STEEL PILES	
NO: 5		NO: 5	
LIN. FT. = 245		LIN. FT. = 265	
PILE REDRIVES	EA. 2	PILE REDRIVES	EA. 2

REFER TO SPECIAL PROVISIONS FOR GALVANIZATION OF STEEL PILES

BILL OF MATERIAL

FOR ONE END BENT

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	43'-8"	1188
B2	16	#4	STR	21'-11"	234
B3	11	#4	STR	2'-5"	18
D1	20	#6	STR	1'-6"	45
H1	6	#4	2	8'-3"	33
H2	6	#4	2	7'-10"	31
H3	12	#4	3	7'-4"	59
K1	12	#4	STR	3'-3"	26
S1	54	#4	4	7'-5"	268
S2	54	#4	5	3'-2"	114
S3	10	#4	6	6'-6"	43
S4	4	#4	7	4'-7"	12
V1	47	#4	STR	4'-8"	147

REINFORCING STEEL (FOR ONE END BENT) 2218 LBS.

CLASS A CONCRETE BREAKDOWN (FOR ONE END BENT)

POUR #1 CAP, LOWER PART OF WINGS & COLLARS 12.7 C.Y.

POUR #2 UPPER PART OF WINGS 1.9 C.Y.

POUR #3 LATERAL GUIDES 0.1 C.Y.

TOTAL CLASS A CONCRETE 14.7 C.Y.

PROJECT NO. 17BP.1.R.18
BERTIE COUNTY
STATION: 12+65.00 -L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

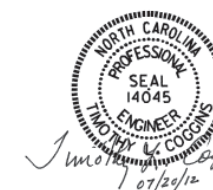
END BENT No. 1 & 2
DETAILS

REVISIONS			SHEET NO.		
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

STD. NO. EB_30_60S

ASSEMBLED BY: N. RUFFIN	DATE: 7/11/12
CHECKED BY: B.L. GREEN	DATE: 7/13/12
DRAWN BY: DGE	02/10
CHECKED BY: MKT	02/10

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nruffin



NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

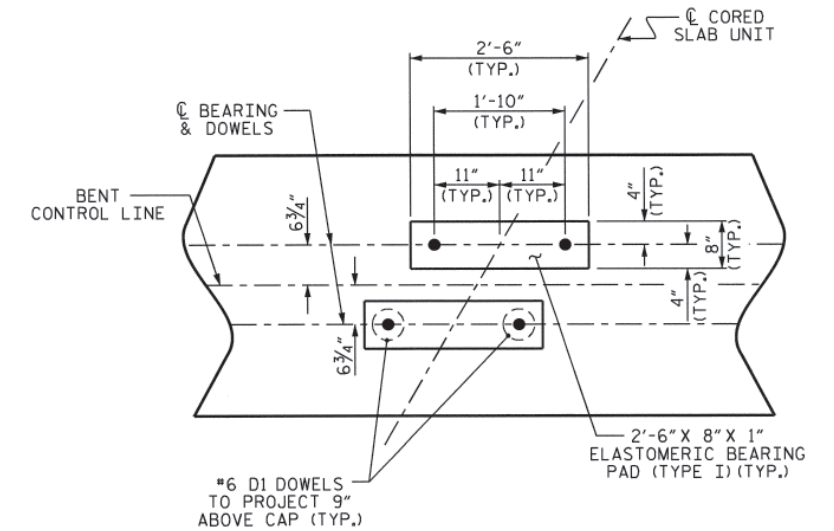
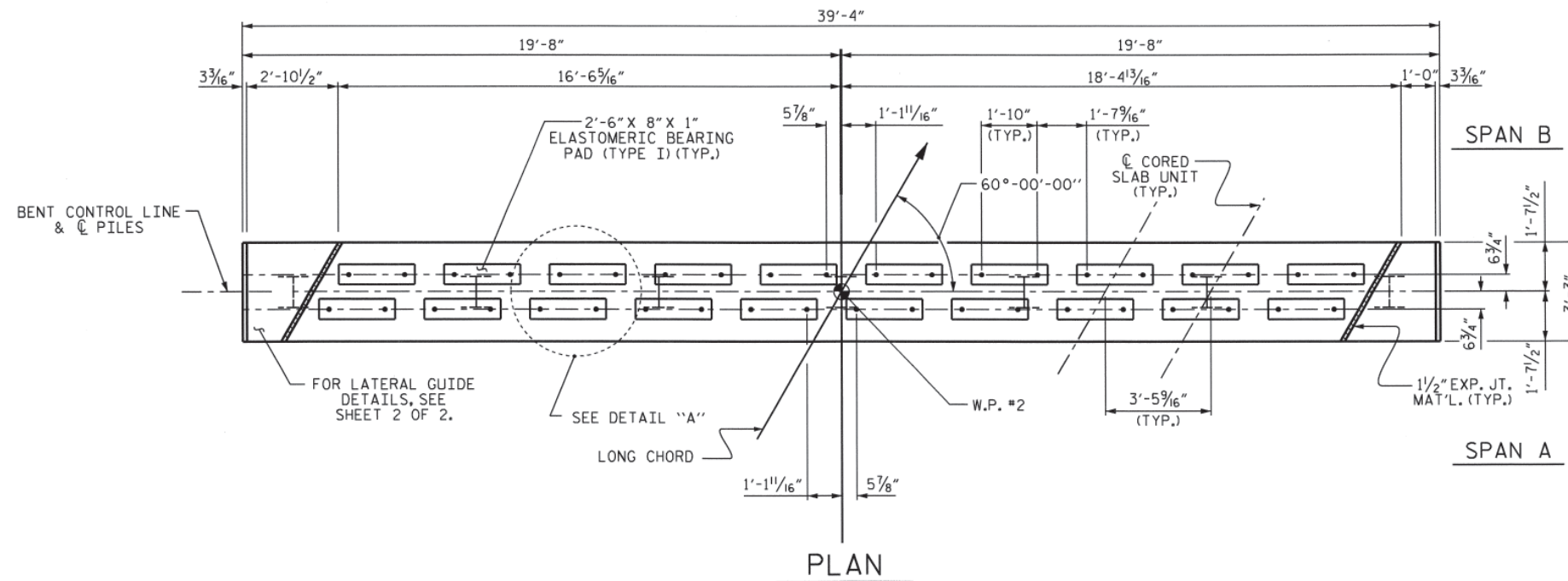
THE LATERAL GUIDES ARE NOT TO BE POURED UNTIL AFTER THE CORED SLAB UNITS ARE IN PLACE.

★ INVERT ALTERNATE STIRRUPS.

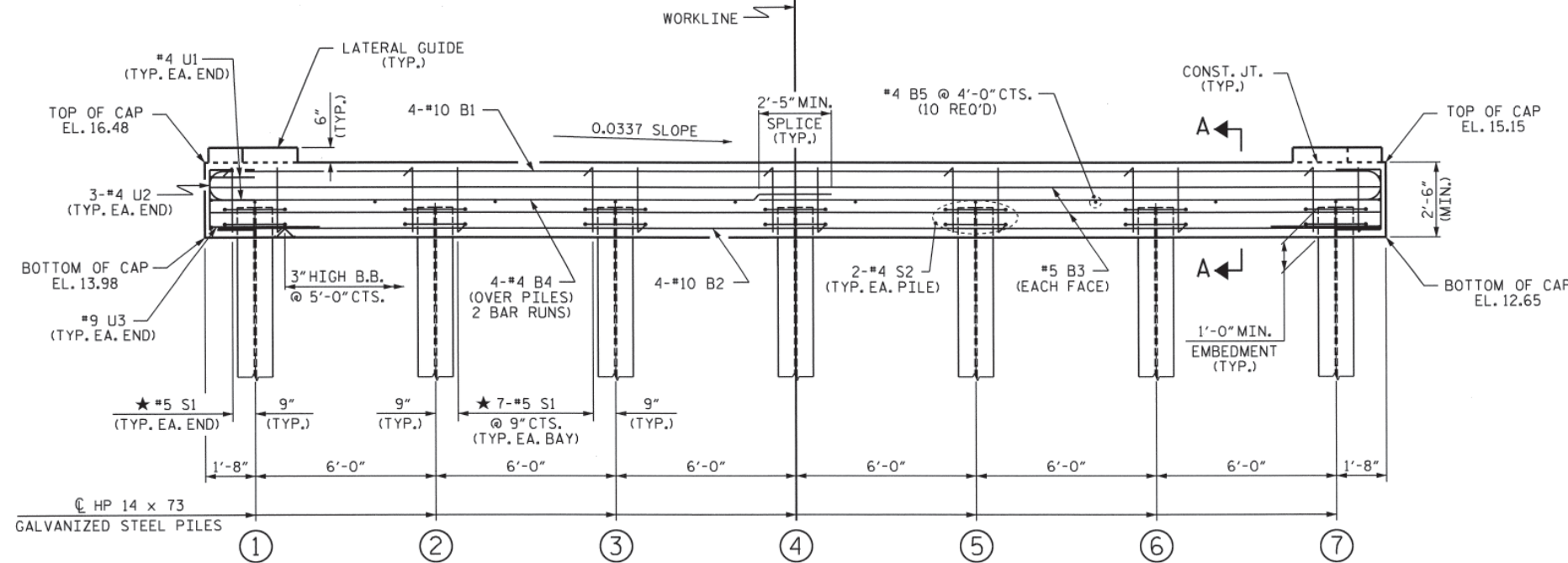
~~GALVANIZE THE TOP OF EACH INTERIOR BENT PILE~~
~~★ MINIMUM OF 26 FEET GALVANIZE IN ACCORDANCE~~
~~WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.~~

THE CONTRACTOR HAS THE OPTION TO OMIT THE LATERAL GUIDE IF APPROVED BY THE ENGINEER.

REFER TO SPECIAL PROVISIONS FOR GALVANIZATION OF STEEL PILES



DETAIL "A"
(DIMENSIONS ARE TYPICAL EACH BEARING)



ELEVATION

FOR SECTION A-A, SEE SHEET 2 OF 2

TOP OF PILE ELEVATIONS	
①	14.94
②	14.74
③	14.54
④	14.34
⑤	14.13
⑥	13.93
⑦	13.73

PROJECT NO. 17BP.1.R.18
BERTIE COUNTY
STATION: 12+65.00 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT No. 1

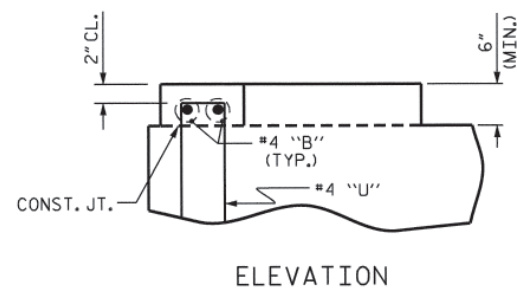
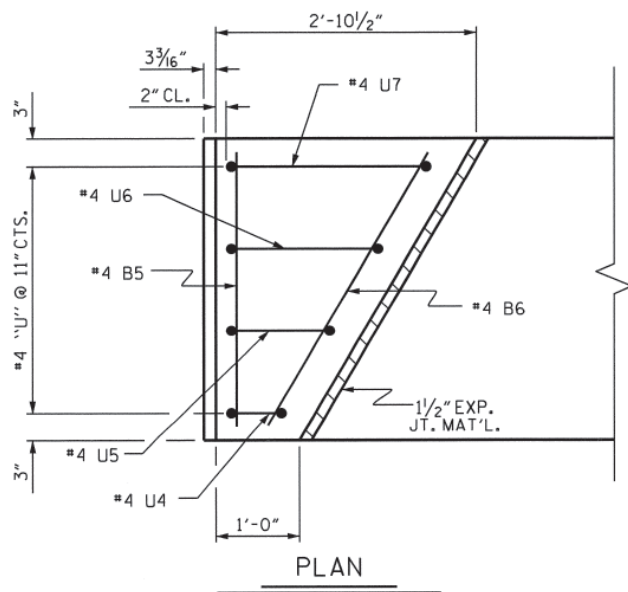
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-15
2			4			TOTAL SHEETS 20

STD. NO. 14" HP_BT_30_60S<60'

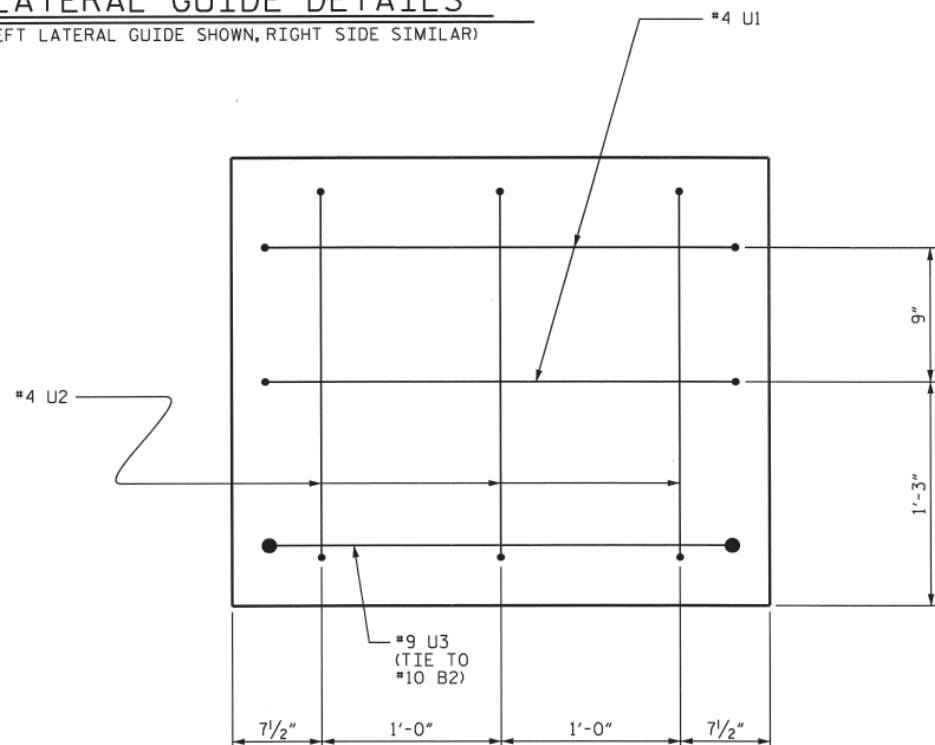
ASSEMBLED BY: N. RUFFIN
CHECKED BY: B.L. GREEN
DATE: 7/11/12
DATE: 7/13/12
DRAWN BY: DGE 05/10
CHECKED BY: MKT 05/10

20-JUL-2012 10:43
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nruffin

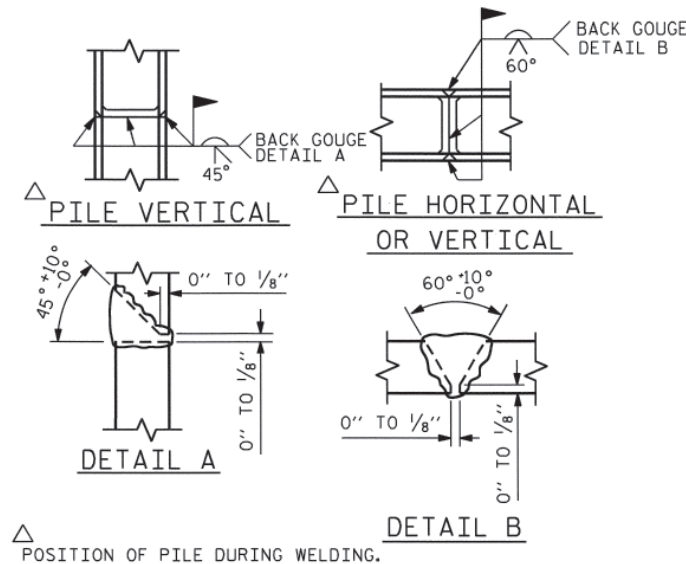




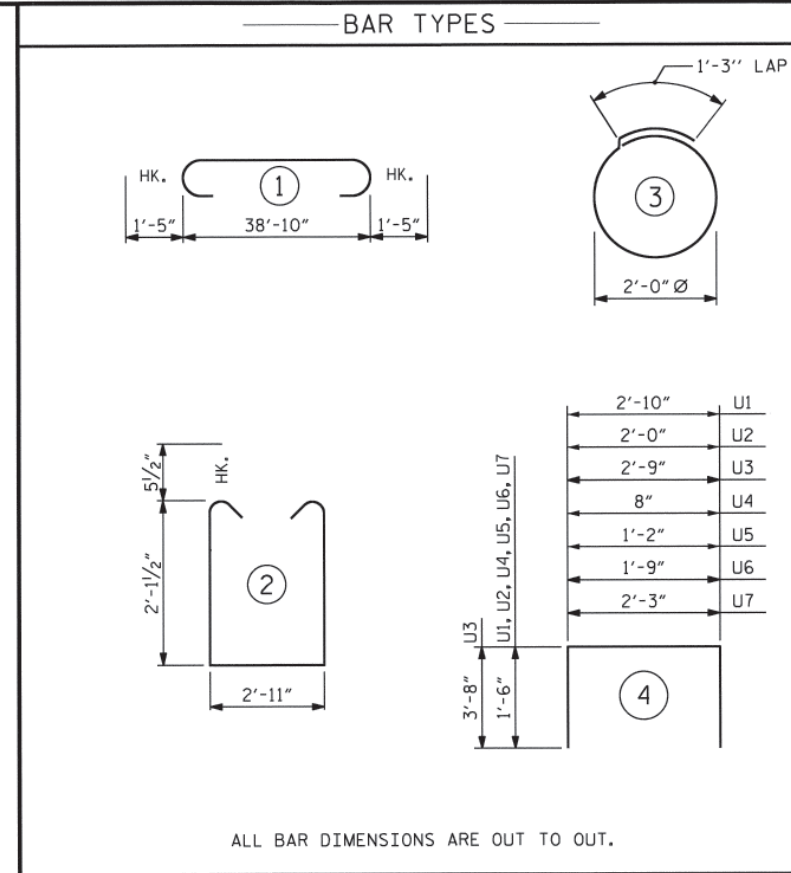
LATERAL GUIDE DETAILS
(LEFT LATERAL GUIDE SHOWN, RIGHT SIDE SIMILAR)



END OF CAP VIEW
(TYPICAL BOTH ENDS)

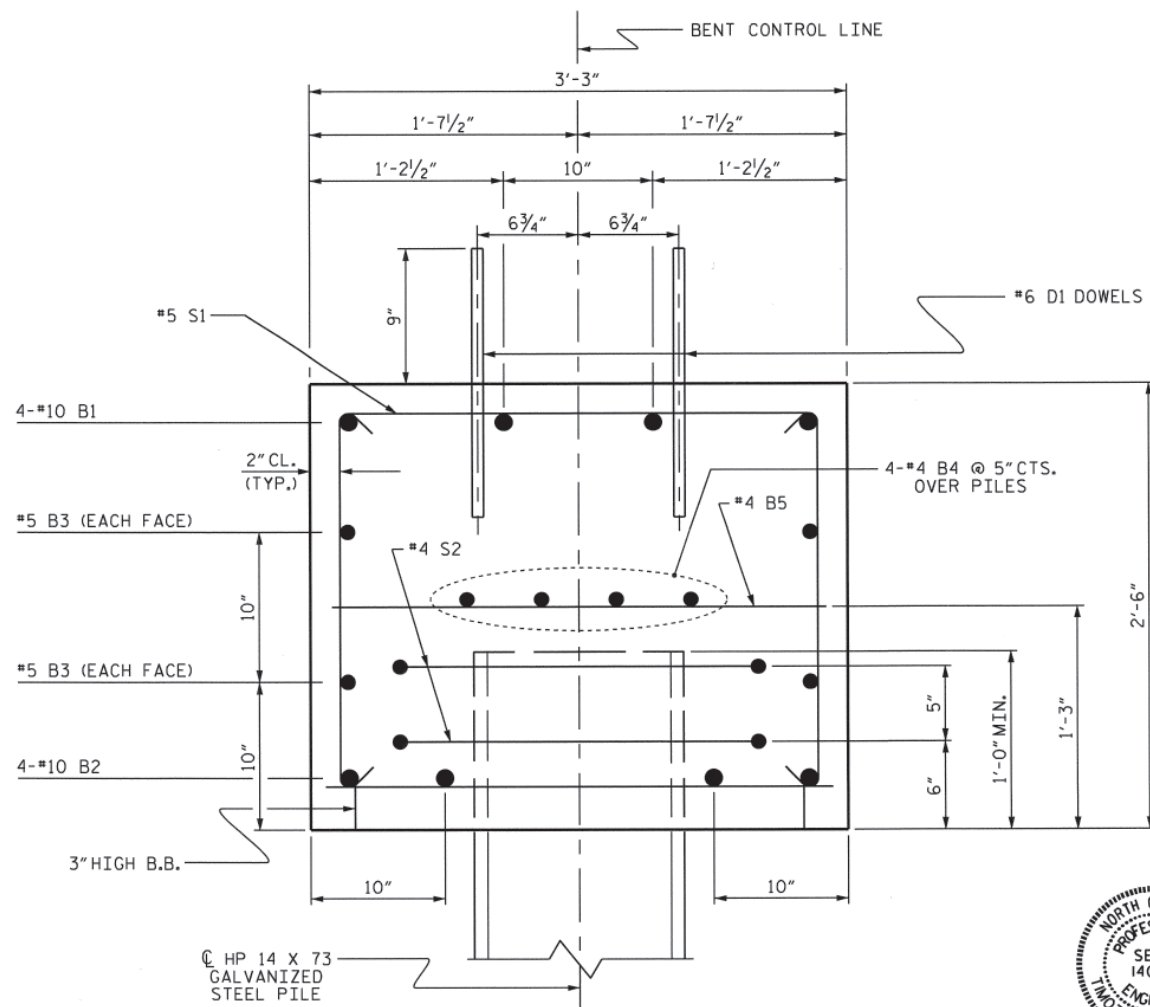


PILE SPLICE DETAILS

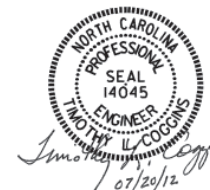


BILL OF MATERIAL					
FOR ONE BENT					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#10	1	41'-8"	717
B2	4	#10	STR	39'-0"	671
B3	4	#5	STR	39'-0"	163
B4	8	#4	STR	20'-9"	111
B5	12	#4	STR	2'-11"	23
B6	2	#4	STR	3'-4"	4
D1	40	#6	STR	1'-6"	90
S1	44	#5	2	8'-1"	371
S2	14	#4	3	7'-7"	71
U1	4	#4	4	5'-10"	16
U2	6	#4	4	5'-0"	20
U3	2	#9	4	10'-1"	69
U4	2	#4	4	3'-8"	5
U5	2	#4	4	4'-2"	6
U6	2	#4	4	4'-9"	6
U7	2	#4	4	5'-3"	7
REINFORCING STEEL				2350 LBS	
(FOR ONE BENT)					
CLASS A CONCRETE BREAKDOWN					
(FOR ONE BENT)					
POUR #1 (CAP)				11.8 C.Y.	
POUR #2 (LATERAL GUIDES)				0.2 C.Y.	
TOTAL CLASS A CONCRETE				12.0 C.Y.	
HP 14 X 73 GALVANIZED STEEL PILES					
(FOR ONE BENT)					
No. 7			LIN. FT.		455
PILE REDRIVES				EA. 2	

REFER TO SPECIAL PROVISIONS FOR GALVANIZATION OF STEEL PILES



SECTION A-A



PROJECT NO. 17BP.1.R.18
BENTIE COUNTY
STATION: 12+65.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE					
BENT No. 1					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO.					S-16
TOTAL SHEETS					20

DRAWN BY : N. RUFFIN DATE : 7/11/12
CHECKED BY : B.L. GREEN DATE : 7/13/12
DRAWN BY : DGE 05/10
CHECKED BY : MKT 05/10

20-JUL-2012 10:43
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nruffin

STD. NO. 14" HP_BT_30-60S-<60'

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

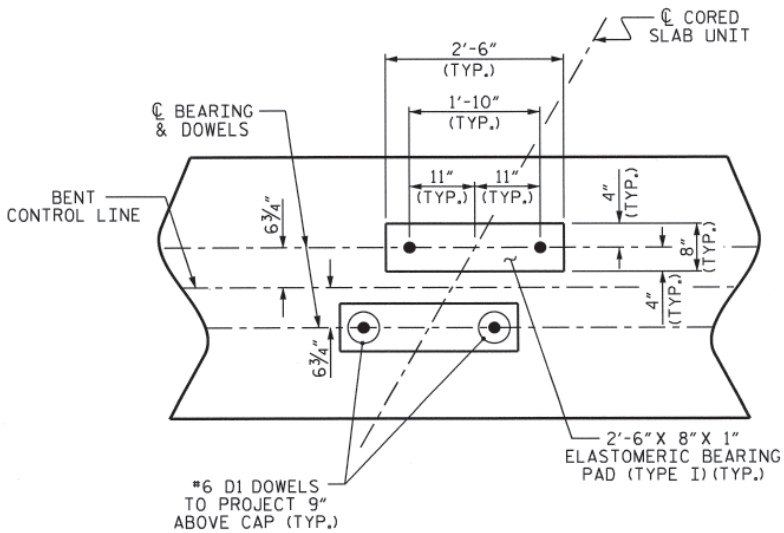
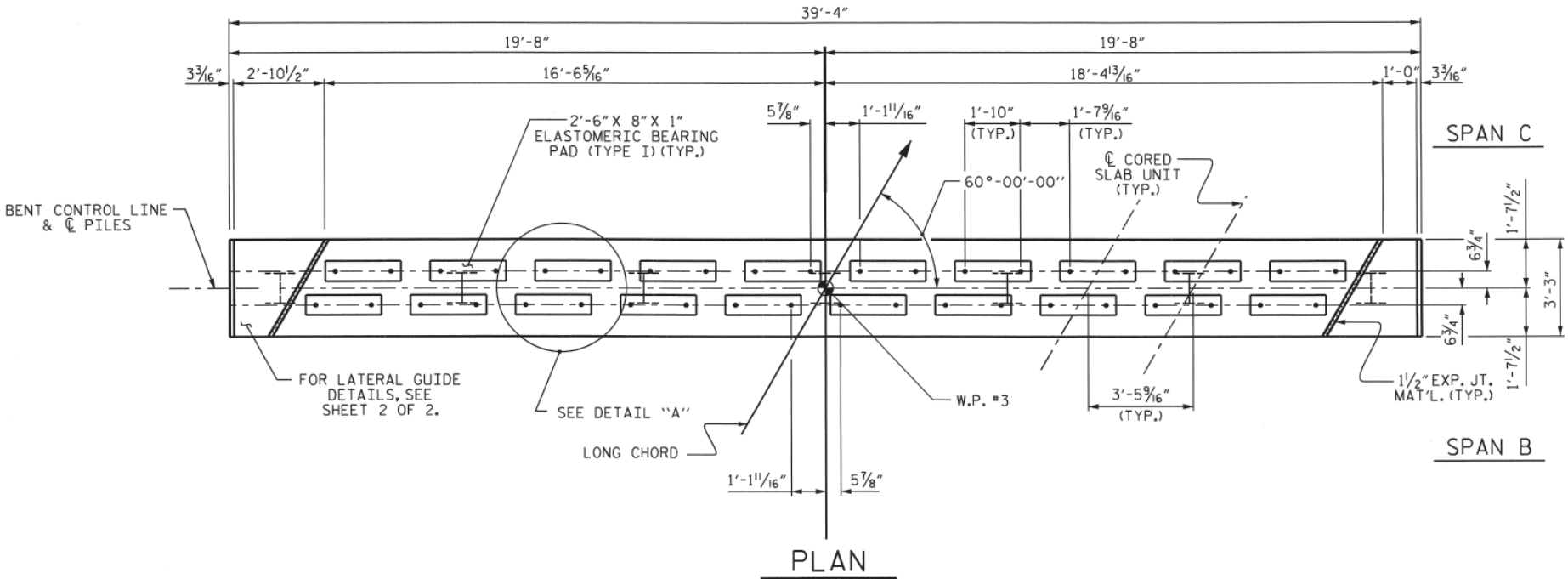
THE LATERAL GUIDES ARE NOT TO BE POURED UNTIL AFTER THE CORED SLAB UNITS ARE IN PLACE.

★ INVERT ALTERNATE STIRRUPS.

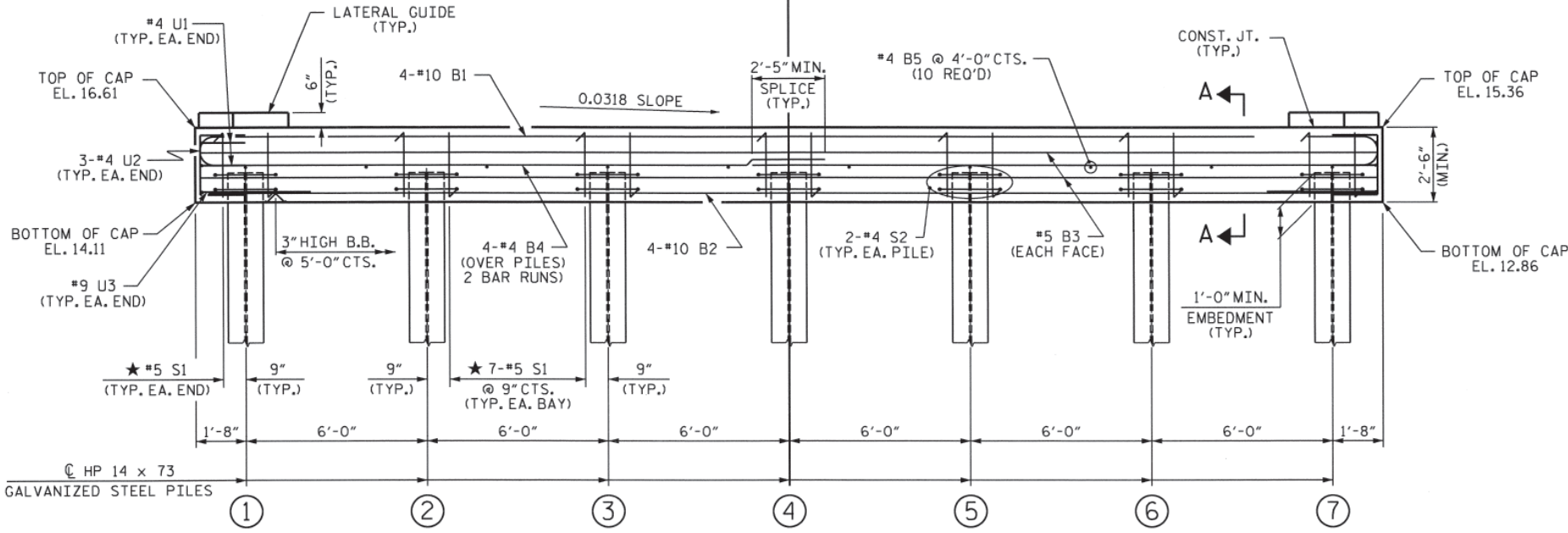
~~GALVANIZE THE TOP OF EACH INTERIOR BENT PILE A MINIMUM OF 26 FEET. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.~~

THE CONTRACTOR HAS THE OPTION TO OMIT THE LATERAL GUIDE IF APPROVED BY THE ENGINEER.

REFER TO SPECIAL PROVISIONS FOR GALVANIZATION OF STEEL PILES



DETAIL "A"
(DIMENSIONS ARE TYPICAL EACH BEARING)



ELEVATION

FOR SECTION A-A, SEE SHEET 2 OF 2

TOP OF PILE ELEVATIONS	
①	15.07
②	14.88
③	14.69
④	14.50
⑤	14.31
⑥	14.12
⑦	13.93

PROJECT NO. 17BP.1.R.18
BERTIE COUNTY
STATION: 12+65.00 -L-

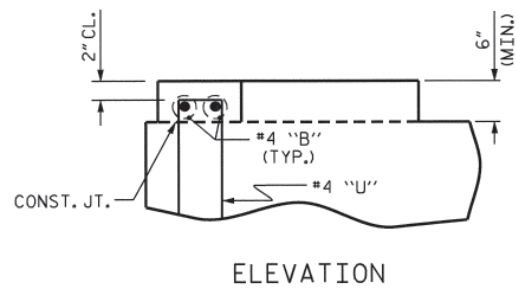
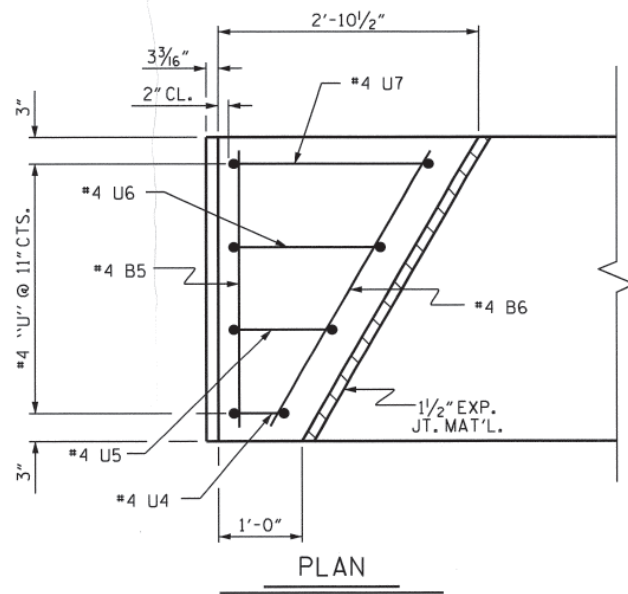
SHEET 1 OF 2



REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			S-17
2			4			TOTAL SHEETS 20

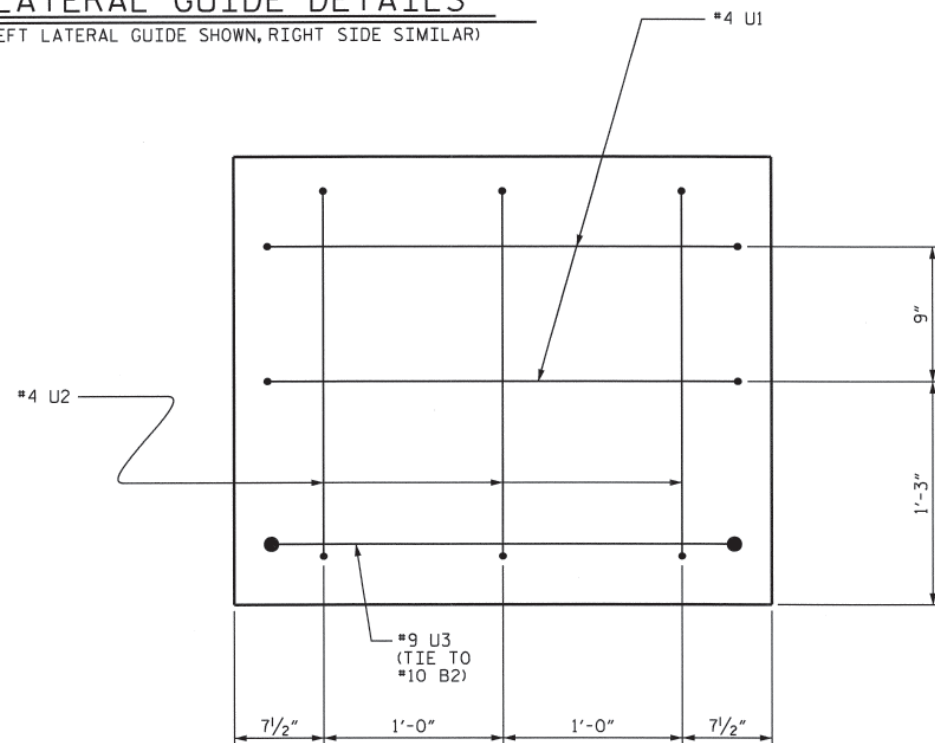
STD. NO. 14" HP_BT_30_60S<60'

ASSEMBLED BY : N. RUFFIN	DATE : 7/11/12
CHECKED BY : B.L. GREEN	DATE : 7/13/12
DRAWN BY : DGE 05/10	
CHECKED BY : MKT 05/10	



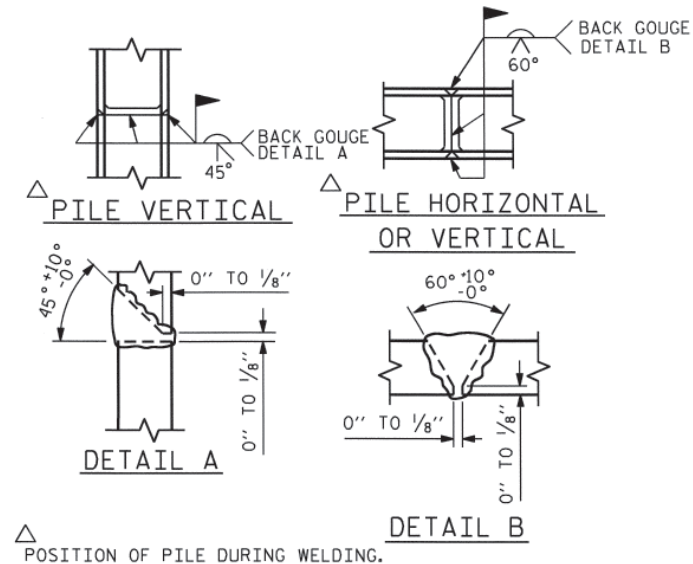
LATERAL GUIDE DETAILS

(LEFT LATERAL GUIDE SHOWN, RIGHT SIDE SIMILAR)

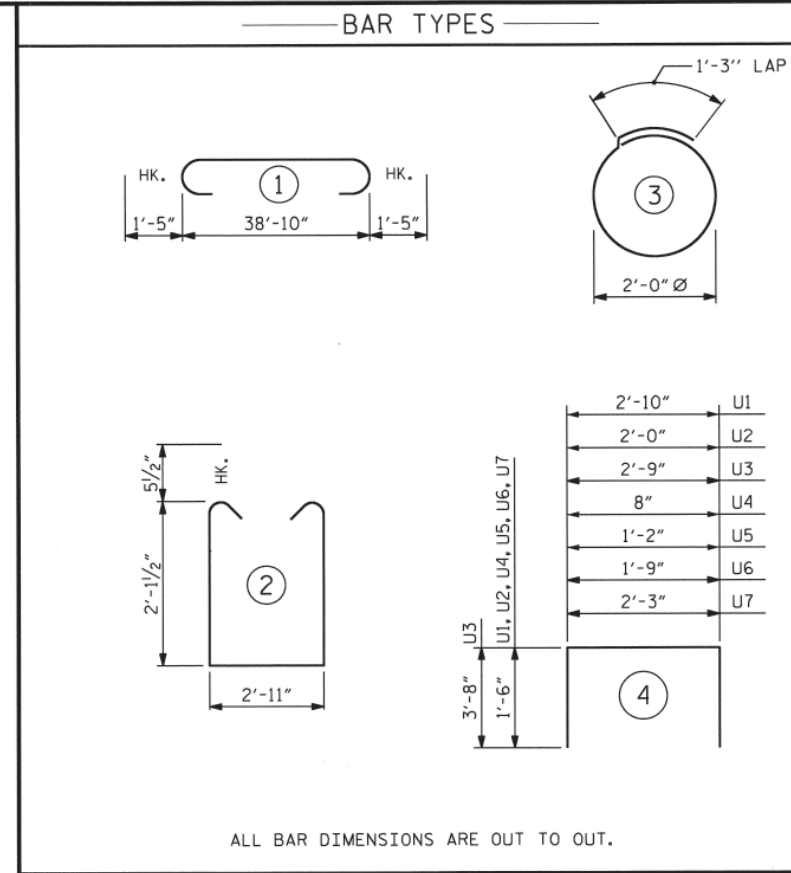


END OF CAP VIEW

(TYPICAL BOTH ENDS)



PILE SPLICE DETAILS



BILL OF MATERIAL

FOR ONE BENT

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#10	1	41'-8"	717
B2	4	#10	STR	39'-0"	671
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D1	40	#6	STR	1'-6"	90
S1	44	#5	2	8'-1"	371
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U4	2	#4	4	3'-8"	5
U5	2	#4	4	4'-2"	6
U6	2	#4	4	4'-9"	6
U7	2	#4	4	5'-3"	7

REINFORCING STEEL (FOR ONE BENT) 2350 LBS

CLASS A CONCRETE BREAKDOWN (FOR ONE BENT)

POUR #1 (CAP) 11.8 C.Y.
POUR #2 (LATERAL GUIDES) 0.2 C.Y.

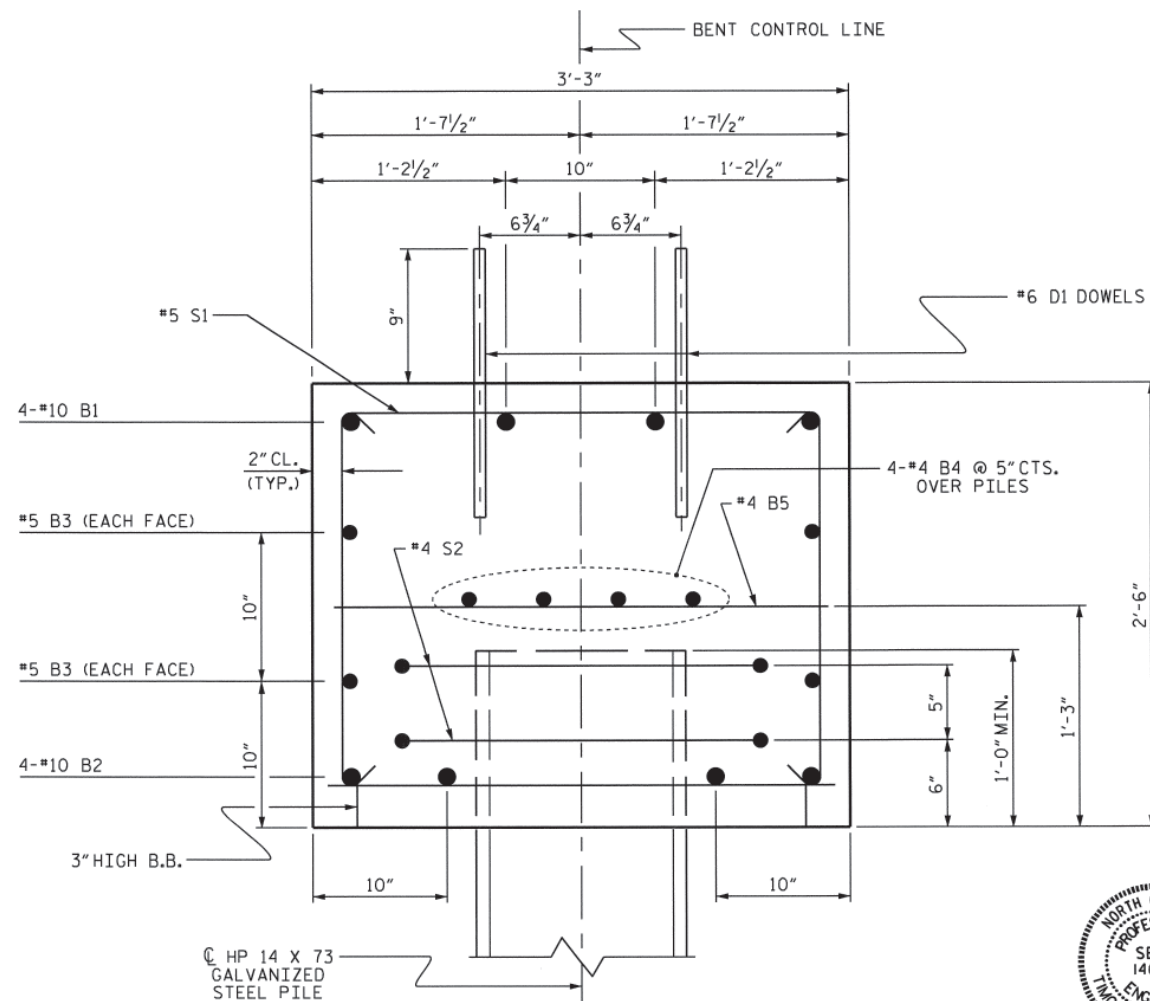
TOTAL CLASS A CONCRETE 12.0 C.Y.

HP 14 X 73 GALVANIZED STEEL PILES (FOR ONE BENT)

No. 7 LIN. FT. 469

PILE REDRIVES EA. 2

REFER TO SPECIAL PROVISIONS FOR GALVANIZATION OF STEEL PILES



SECTION A-A



PROJECT NO. 17BP.1.R.18
BERTIE COUNTY
STATION: 12+65.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

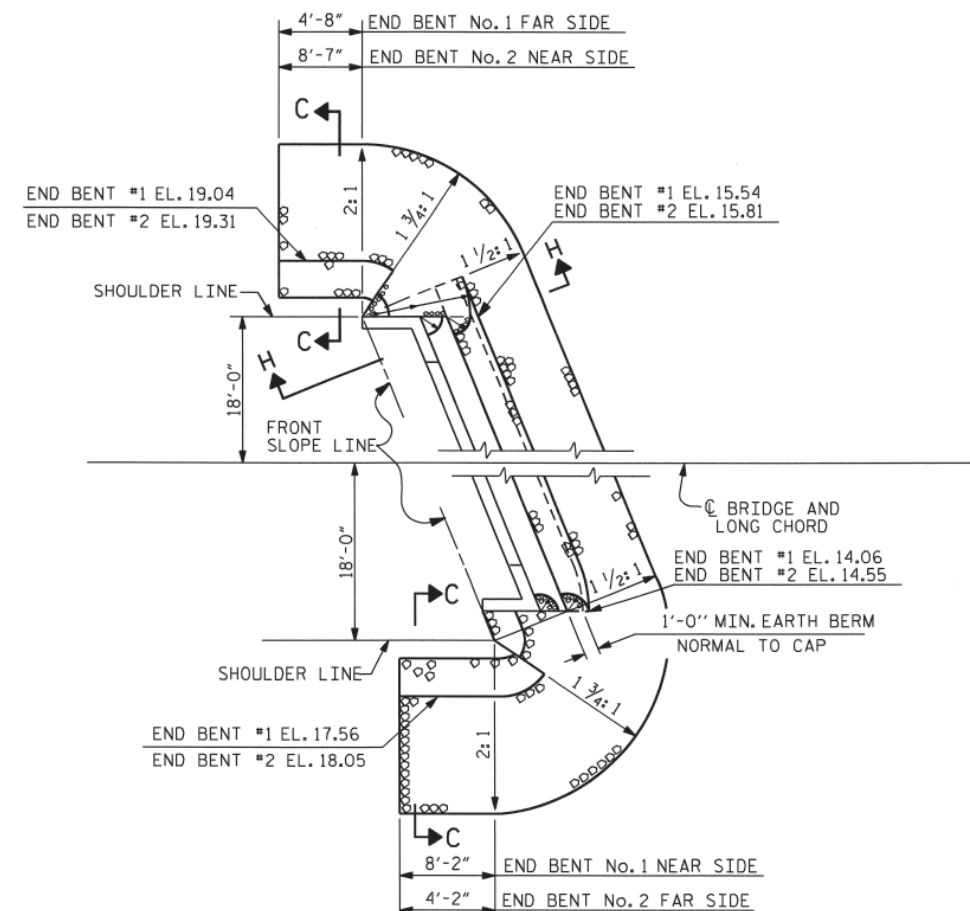
SUBSTRUCTURE
BENT No. 2

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-18	TOTAL SHEETS
1			3			20	
2			4				

STD. NO. 14" HP_BT_30_60S_<60'

DRAWN BY: N. RUFFIN DATE: 7/11/12
CHECKED BY: B.L. GREEN DATE: 7/13/12
DRAWN BY: DGE 05/10
CHECKED BY: MKT 05/10

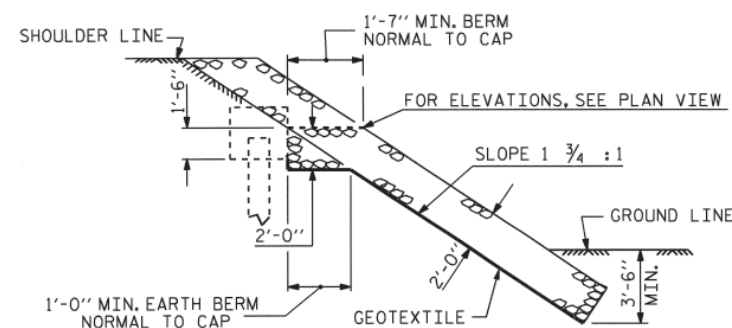
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rruffin



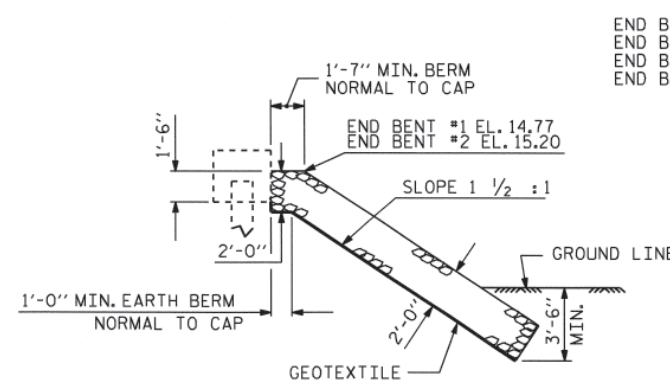
SHOULDER RIP RAP IS HIGHER THAN BERM RIP RAP

NOTES :
FOR EARTH BERM ELEVATIONS, SEE GENERAL DRAWING.

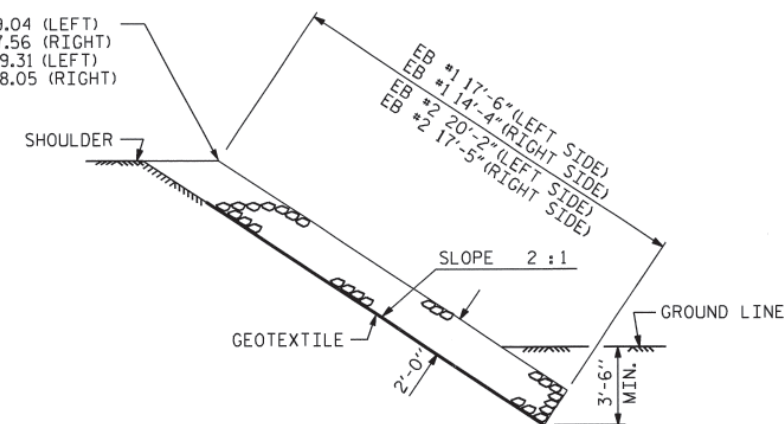
ESTIMATED QUANTITIES		
BRIDGE @ STA. 12+65.00 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	90	96
END BENT 2	115	124



SECTION H-H



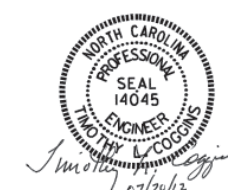
SECTION C-C
BERM RIP RAPPED



SECTION C-C

PROJECT NO. 17BP.1.R.18
BERTIE COUNTY
STATION: 12+65.00 -L-

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD					
—RIP RAP DETAILS—					
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		
SHEET NO. S-19					TOTAL SHEETS 20



ASSEMBLED BY : N. RUFFIN	DATE : 7/12/12
CHECKED BY : B.L. GREEN	DATE : 7/17/12
DRAWN BY : REK 1/84	REV. 5/1/06R TLA/GM
CHECKED BY : RDU 1/84	REV. 10/1/11 MAA/GM
	REV. 12/21/11 MAA/GM

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nruffin

STD. NO. RR1 (Sh+ 1)

