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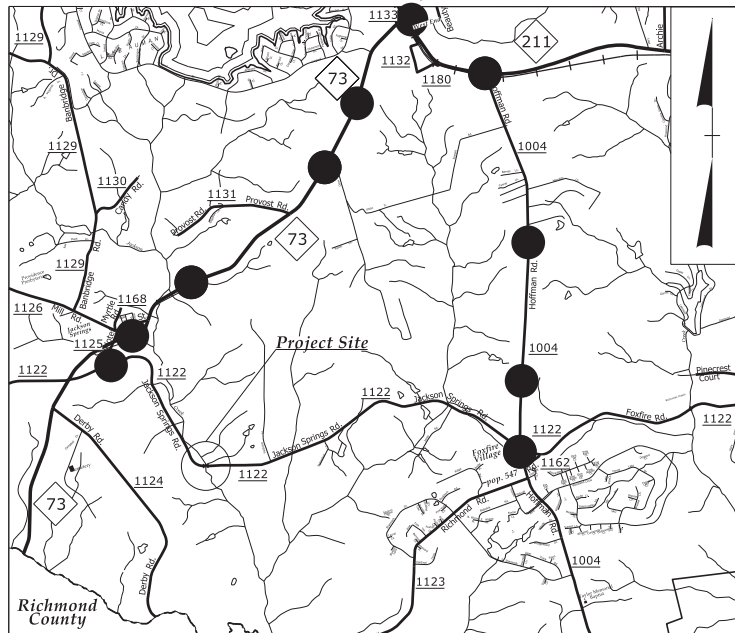


09/08/99

**PROJECT: 17BP.8.R.116**

**CONTRACT:**

See Sheet 1A For Index of Sheets  
See Sheet 1B For Conventional Symbols  
See Sheet 1C-1 For Survey Control Sheet



**VICINITY MAP**

● DETOUR ROUTE

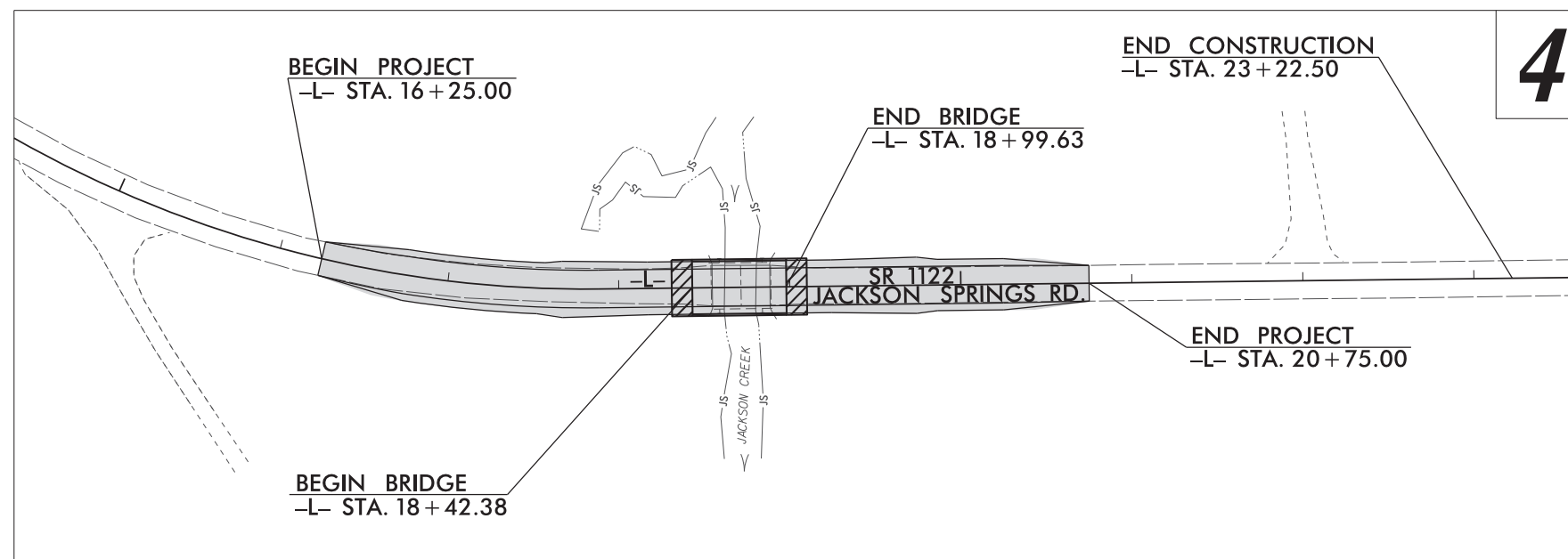
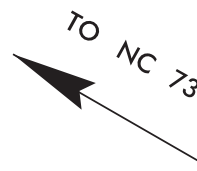
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**MOORE COUNTY**

**LOCATION: BRIDGE NO. 620025 ON SR 1122 (JACKSON SPRINGS RD.)  
OVER JACKSON CREEK**

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

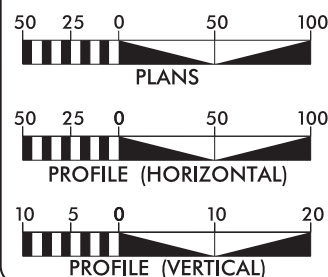
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.8.R.116	1	
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
17BP.8.R.116	NA	PE	
17BP.8.R.116	NA	ROW/UTILITIES	
17BP.8.R.116	NA	CONST	



TO SR 1004  
(HOFFMAN RD.)

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

**GRAPHIC SCALES**



**DESIGN DATA**

ADT 2011 = 500  
ADT 2025 = 1000  
T = 6 % \*  
V = 55 MPH  
\* TTST = 3% DUAL 3%  
FUNC CLASS =  
LOCAL RURAL  
SUB-REGIONAL TIER

**PROJECT LENGTH**

LENGTH ROADWAY PROJECT = 0.074 MILES  
LENGTH STRUCTURES PROJECT = 0.011 MILES  
TOTAL LENGTH PROJECT = 0.085 MILES

**NCDOT CONTACT:** TIM WELCH, PE  
NCDOT HWY DIV 8



Prepared in the Office of:

504 Meadowland Drive  
Hillsborough, NC 27278-8551  
Voice: (919) 732-3883  
Fax: (919) 732-6776  
www.summitide.net

2012 STANDARD SPECIFICATIONS

**RIGHT OF WAY DATE:**  
DECEMBER 2016

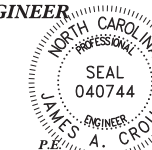
**LETTING DATE:**  
MAY 23, 2017

**TRACY N. PARROT, PE**  
PROJECT ENGINEER

**BRANDON W. JOHNSON, PE**  
PROJECT DESIGN ENGINEER

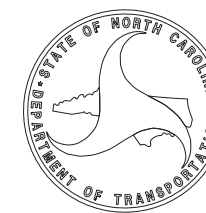
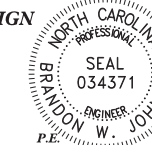
**HYDRAULICS ENGINEER**  
2/28/2017

Designed by:  
James A. Crouse  
SIGNATURE:



**ROADWAY DESIGN ENGINEER**  
2/28/2017

Designed by:  
Brandon W. Johnson  
SIGNATURE:

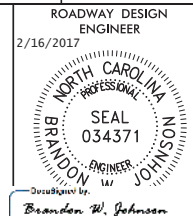


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8/17/99

BRIDGE NO.620025

PROJECT REFERENCE NO.	SHEET NO.
17BP.8.R.116	1A



**DOCUMENT NOT FOR CONSTRUCTION**  
**UNLESS ALL SIGNATURES COMPLETED**

Prepared in the Office of: NC FIRM LICENSE No. P-0339  
504 Meadows Drive  
Hillsborough, NC 27278  
(919) 752-3883  
(919) 752-6676 (FAX)

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
1C-1	SURVEY CONTROL SHEETS
1E-1	LINE ITEM ESTIMATE
2A-1 THRU 2A-2	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
2C-1	SPECIAL DETAILS
3B-1	ROADWAY SUMMARIES
4	PLAN AND PROFILE SHEET
TMP-1 THRU TMP-3	TRAFFIC MANAGEMENT PLANS
SD-1	SPECIAL SIGN DESIGN
PMP-1	PAVEMENT MARKING PLANS
EC-1 THRU EC-5	EROSION CONTROL PLANS
RF-1	REFORESTATION PLANS
UO-1	UTILITIES BY OTHERS PLANS
X-1 THRU X-5	CROSS-SECTIONS
S-1 THRU S-14	STRUCTURE PLANS
SN	STANDARD NOTES

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

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 II.

SUPERELEVATION:  
ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 AND/OR STD. NO. 225.05 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 AND/OR STD. NO. 560.02

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.

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

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

UTILITIES:  
UTILITY OWNERS ON THIS PROJECT ARE PEE DEE EMC.  
ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

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

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
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
225.06	Method of Grading Sight Distance at Intersections
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
DIVISION 4 - MAJOR STRUCTURES	
422.10	Reinforced Bridge Approach Fills
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
840.00	Concrete Base Pad for Drainage Structures
840.24	Frames and Narrow Slot Sag Grates
840.25	Anchorage for Frames - Brick or Concrete or Precast
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.46	Traffic Bearing Precast Drainage Structure
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter and Curb & Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

# 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	○ EIP
Computed Property Corner	-----
Property Monument	□ EDM
Parcel/Sequence Number	(123)
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	----- WLB
Proposed Wetland Boundary	----- WLB
Existing Endangered Animal Boundary	----- EAB
Existing Endangered Plant Boundary	----- EPB
Existing Historic Property Boundary	----- HPB
Known Contamination Area: Soil	☠-S-☠
Potential Contamination Area: Soil	☠-S-☠
Known Contamination Area: Water	☠-W-☠
Potential Contamination Area: Water	☠-W-☠
Contaminated Site: Known or Potential	☠☠

### BUILDINGS AND OTHER CULTURE:

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

### HYDROLOGY:

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

### RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○ MILEPOST 35
Switch	□ SWITCH
RR Abandoned	-----
RR Dismantled	-----

Note: Not to Scale

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

### RIGHT OF WAY & PROJECT CONTROL:

Secondary Horiz and Vert Control Point	◆
Primary Horiz Control Point	○
Primary Horiz and Vert Control Point	◆
Exist Permanent Easement Pin and Cap	◇
New Permanent Easement Pin and Cap	◆
Vertical Benchmark	⊠
Existing Right of Way Marker	△
Existing Right of Way Line	-----
New Right of Way Line	----- RW
New Right of Way Line with Pin and Cap	----- RW ▲
New Right of Way Line with Concrete or Granite RW Marker	----- RW ▲
New Control of Access Line with Concrete CA Marker	----- CA
Existing Control of Access	----- CA
New Control of Access	----- CA
Existing Easement Line	----- E
New Temporary Construction Easement	----- E
New Temporary Drainage Easement	----- TDE
New Permanent Drainage Easement	----- PDE
New Permanent Drainage / Utility Easement	----- DUE
New Permanent Utility Easement	----- PUE
New Temporary Utility Easement	----- TUE
New Aerial Utility Easement	----- AUE

### 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	⊙
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	●
U/G Power Line LOS B (S.U.E.*)	----- P
U/G Power Line LOS C (S.U.E.*)	----- P
U/G Power Line LOS D (S.U.E.*)	----- P

### TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	⊙
Telephone Pedestal	⊠
Telephone Cell Tower	⊠
U/G Telephone Cable Hand Hole	-----
U/G Telephone Cable LOS B (S.U.E.*)	----- T
U/G Telephone Cable LOS C (S.U.E.*)	----- T
U/G Telephone Cable LOS D (S.U.E.*)	----- T
U/G Telephone Conduit LOS B (S.U.E.*)	----- TC
U/G Telephone Conduit LOS C (S.U.E.*)	----- TC
U/G Telephone Conduit LOS D (S.U.E.*)	----- TC
U/G Fiber Optics Cable LOS B (S.U.E.*)	----- T FO
U/G Fiber Optics Cable LOS C (S.U.E.*)	----- T FO
U/G Fiber Optics Cable LOS D (S.U.E.*)	----- T FO

### WATER:

Water Manhole	⊙
Water Meter	○
Water Valve	⊗
Water Hydrant	⊙
U/G Water Line LOS B (S.U.E.*)	-----
U/G Water Line LOS C (S.U.E.*)	-----
U/G Water Line LOS D (S.U.E.*)	-----
Above Ground Water Line	----- A/G Water

### TV:

TV Pedestal	⊠
TV Tower	⊗
U/G TV Cable Hand Hole	-----
U/G TV Cable LOS B (S.U.E.*)	----- TV
U/G TV Cable LOS C (S.U.E.*)	----- TV
U/G TV Cable LOS D (S.U.E.*)	----- TV
U/G Fiber Optic Cable LOS B (S.U.E.*)	----- TV FO
U/G Fiber Optic Cable LOS C (S.U.E.*)	----- TV FO
U/G Fiber Optic Cable LOS D (S.U.E.*)	----- TV FO

### GAS:

Gas Valve	◇
Gas Meter	⊙
U/G Gas Line LOS B (S.U.E.*)	----- G
U/G Gas Line LOS C (S.U.E.*)	----- G
U/G Gas Line LOS D (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
SS Forced Main Line LOS B (S.U.E.*)	----- FSS
SS Forced Main Line LOS C (S.U.E.*)	----- FSS
SS Forced Main Line LOS D (S.U.E.*)	----- FSS

### MISCELLANEOUS:

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



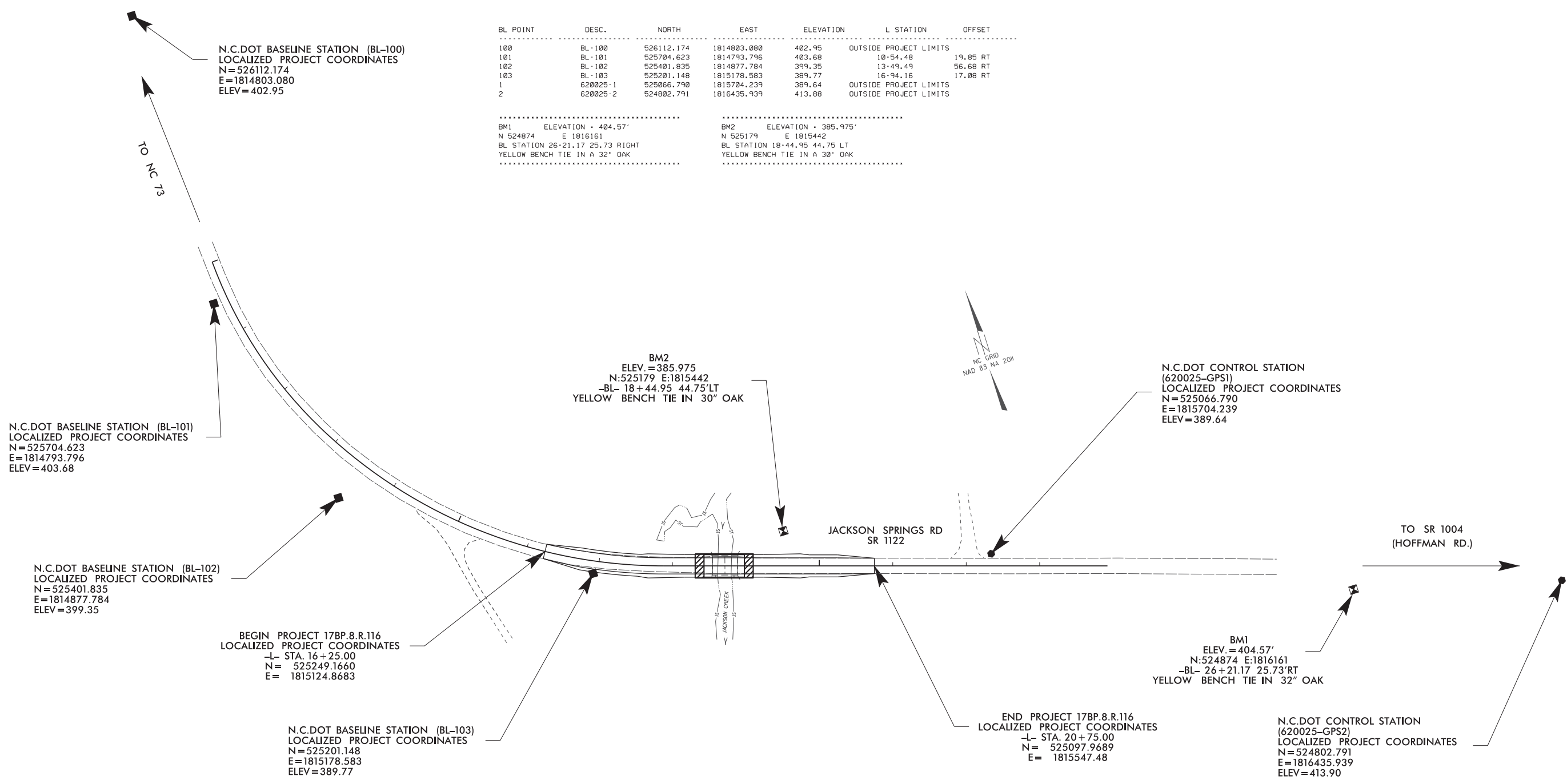
# SURVEY CONTROL SHEET 17BP.8.R.116

## MOORE COUNTY #620025

PROJECT REFERENCE NO.	SHEET NO.
17BP.8.R.116	1C-1
<b>Location and Surveys</b>	
Prepared in the Office of:	NC FIRM LICENSE No P-0339 504 Meadows Drive Wilmington, NC 27212 (919) 732-3883 • (919) 732-6676 (FAX)

BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
100	BL-100	526112.174	1814803.080	402.95	OUTSIDE PROJECT LIMITS	
101	BL-101	525704.623	1814793.796	403.68	10+54.48	19.85 RT
102	BL-102	525401.835	1814877.784	399.35	13+49.49	56.68 RT
103	BL-103	525201.148	1815178.583	389.77	16+94.16	17.08 RT
1	620025-1	525066.790	1815704.239	389.64	OUTSIDE PROJECT LIMITS	
2	620025-2	524802.791	1816435.939	413.88	OUTSIDE PROJECT LIMITS	

.....		.....	
BM1	ELEVATION = 404.57'	BM2	ELEVATION = 385.975'
N 524874	E 1816161	N 525179	E 1815442
BL STATION 26+21.17 25.73 RIGHT		BL STATION 18+44.95 44.75 LT	
YELLOW BENCH TIE IN A 32" OAK		YELLOW BENCH TIE IN A 30" OAK	
.....		.....	



**NOTES:**

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.
- INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR VERTICAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT. PROJECT CONTROL ESTABLISHED USING GNSS (GLOBAL NAVIGATION SATELLITE SYSTEM).

**DATUM DESCRIPTION**

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "620025-GPS2" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 524802.791(ft) EASTING: 1816435.939(ft) ELEVATION: 413.90(ft)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99987144

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "620025-GPS2" TO -EL- STATION 10+00 IS N 58°54'32" W 1902.62'

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

NOTE: DRAWING NOT TO SCALE

REVISIONS

8/17/99

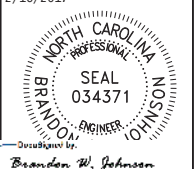

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# ITEMIZED PROPOSAL FOR BRIDGE 620025

Type	Item Number	Section	Description	Quantity	Unit	Type	Item Number	Section	Description	Quantity	Unit
M	0000100000-N	801	Mobilization	1	LS	L	6117000000-N	1675	Response for Erosion Control	25	EA
G	0008000000-E	200	Supplementary Clearing and Grubbing	1	AC	L	6123000000-E	1670	Reforestation	0.1	AC
G	0030000000-N	SP	Bridge App. Fill-Subregional Tier at Sta. 18+43	1	LS	L	6132000000-N	SP	Generic Erosion Control Item - Concrete Washout Structure	2.00	EA
G	0036000000-E	225	Undercut Excavation	50	CY	B	8035000000-N	402	Removal of Existing Structure at Station 18+71	1.00	LS
G	0043000000-N	226	Grading	1	LS	B	8112730000-N	450	PDA Testing	1.00	EA
G	0195000000-E	265	Select Granular Material	50	CY	B	8121000000-N	412	Unclassified Structure Excavation at Station 18+71	1.00	LS
G	0196000000-E	270	Geotextile for Soil Stabilization	50	SY	B	8182000000-E	420	Class A Concrete (Bridge)	46.20	CY
D	0318000000-E	300	Foundation Cond. Material, Minor Struct.	10	TON	B	8210000000-N	422	Bridge Approach Slabs	1.00	LS
D	0320000000-E	300	Foundation Conditioning Geotextile	20	SY	B	8217000000-E	425	Reinforcing Steel (Bridge)	5,534.00	LBS
D	0335200000-E	305	15" Drainage Pipe	44	LF	B	8364000000-E	450	HP 12 x 53 Steel Piles	175.00	LF
G	1220000000-E	545	Incidental Stone Base	50	TON	B	8391000000-N	450	Steel Pile Points	14.00	EA
P	1330000000-E	607	Incidental Milling	120	SY	B	8505000000-E	460	Vertical Concrete Barrier Rail	110.00	LF
P	1489000000-E	610	Asphalt Conc Base Course, Type B25.0B	240	TON	B	8608000000-E	876	Rip Rap Class II (2'-0" Thick)	615.00	TON
P	1498000000-E	610	Asphalt Conc Interm. Course, Type I19.0B	170	TON	B	8622000000-E	876	Geotextile For Drainage	680.00	SY
P	1525000000-E	610	Asphalt Conc Surface Course, Type SF9.5A	170	TON	B	8657000000-N	430	Elastomeric Bearings	1.00	LS
P	1575000000-E	620	Asphalt Binder for Plant Mix, PG 64-22	35	TON	B	8763000000-E	430	3'-0" X 2'-0" Prestressed Conc Cored Slabs	605.00	LF
D	2286000000-N	840	Masonry Drainage Structures	1	EA	B	8860000000-N	SP	Generic Structure Item (Asbestos Assessment, Sta 18+71)	1.00	LS
D	2407000000-N	840	Steel Frame With Two Grates, STD 840.37	1	EA						
P	2556000000-E	846	Shoulder Berm Gutter	22	LF						
GR	3030000000-E	862	Steel Beam Guardrail	25	LF						
GR	3180000000-N	862	Guardrail Anchor Units, Type 350 TL-3	4	EA						
GR	3215000000-N	862	Guardrail Anchor Units, Type III	4	EA						
G	3635000000-E	876	Rip Rap, Class II	500	TON						
G	3649000000-E	876	Rip Rap, Class B	1	TON						
D	3656000000-E	876	Geotextile for Drainage	230	SY						
Y	4400000000-E	1110	Work Zone Signs (Stationary)	418	SF						
Y	4410000000-E	1110	Work Zone Signs (Barricade Mounted)	114	SF						
Y	4445000000-E	1145	Barricades (Type III)	64	LF						
PM	4810000000-E	1205	Paint Pavement Marking Lines, 4"	1,673	LF						
L	6000000000-E	1605	Temporary Silt Fence	1,385	LF						
L	6006000000-E	1610	Erosion Control Stone, Class A	75	TON						
L	6009000000-E	1610	Erosion Control Stone, Class B	5	TON						
L	6012000000-E	1610	Sediment Control Stone	40	TON						
L	6015000000-E	1615	Temporary Mulching	0.5	AC						
L	6018000000-E	1620	Seed for Temporary Seeding	100	LB						
L	6021000000-E	1620	Fertilizer for Temporary Seeding	0.5	TON						
L	6024000000-E	1622	Temporary Slope Drains	200	LF						
L	6029000000-E	SP	Safety Fence	200	LF						
L	6030000000-E	1630	Silt Excavation	10	CY						
L	6036000000-E	1631	Matting for Erosion Control	7,500	SY						
L	6037000000-E	SP	Coir Fiber Mat	100	SY						
L	6042000000-E	1632	1/4" Hardware Cloth	180	LF						
L	6071013000-E	SP	Wattle Barrier	80	LF						
L	6084000000-E	1660	Seeding and Mulching	0.5	AC						
L	6087000000-E	1660	Mowing	0.5	AC						
L	6090000000-E	1661	Seed for Repair Seeding	50	LB						
L	6093000000-E	1661	Fertilizer for Repair Seeding	0.25	TON						
L	6096000000-E	1662	Seed for Supplemental Seeding	50	LB						
L	6108000000-E	1663	Fertilizer Topdressing	0.25	TON						
L	6114500000-N	1667	Specialized Hand Mowing	10	MHR						

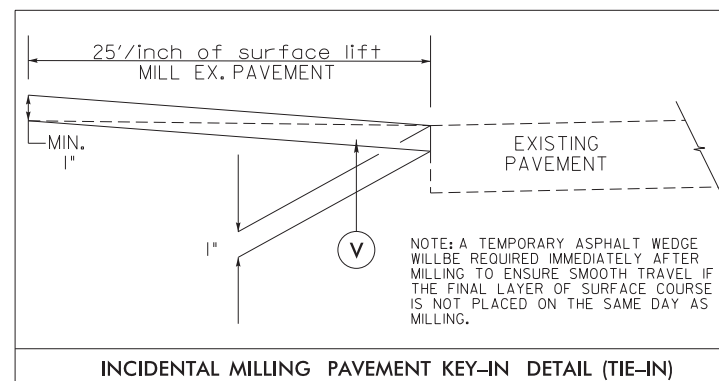
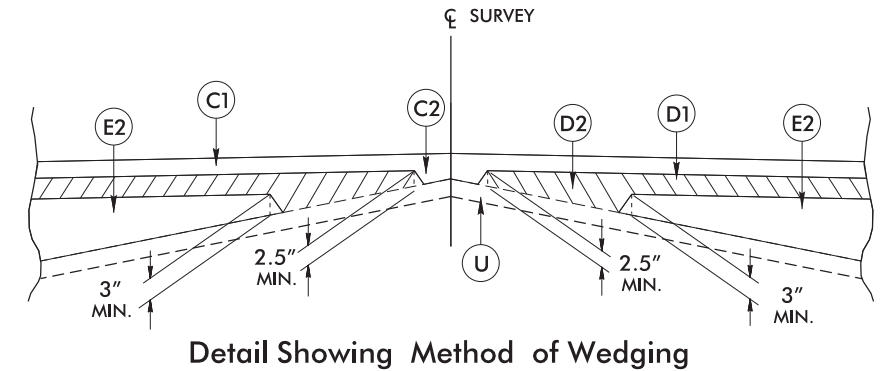
6/2/99

BRIDGE NO. 620025

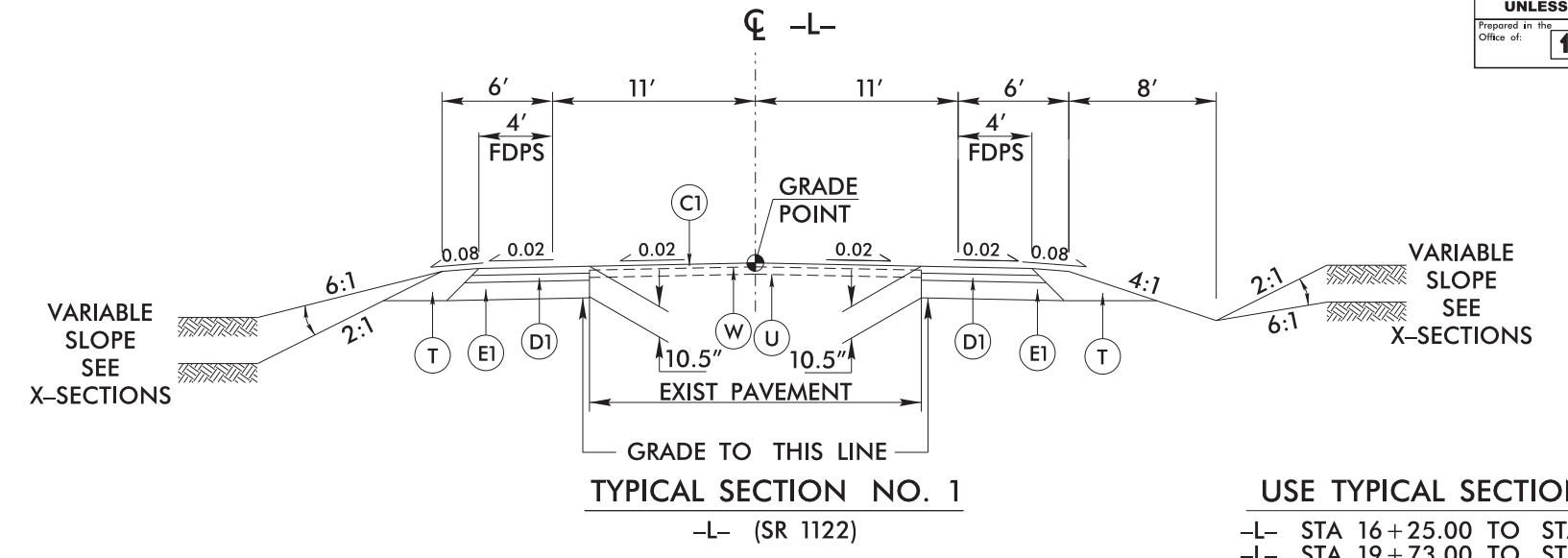
PROJECT REFERENCE NO. 17BP.8.R.116	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER 2/16/2017	
	
Prepared in the Office of: 	
NC FIRM LICENSE No. P-0339 504 Meadowlands Drive Raleigh, NC 27706 (919) 732-3883 • (919) 732-0676 (FAX)	

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1" OR TO EXCEED 1.5" IN DEPTH.
D1	PROP. APPROX. 3" ASPHALT CONCRETE INTERMEDIATE COURSE TYPE I19.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
D2	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 2.5" IN DEPTH OR GREATER THAN 4" IN DEPTH
E1	PROP. APPROX. 5.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
E2	PROP. VARIABLE DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	MILLING BITUMINOUS PAVEMENT. VARIABLE 0" TO 1" DEPTH.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL ON THIS SHEET)

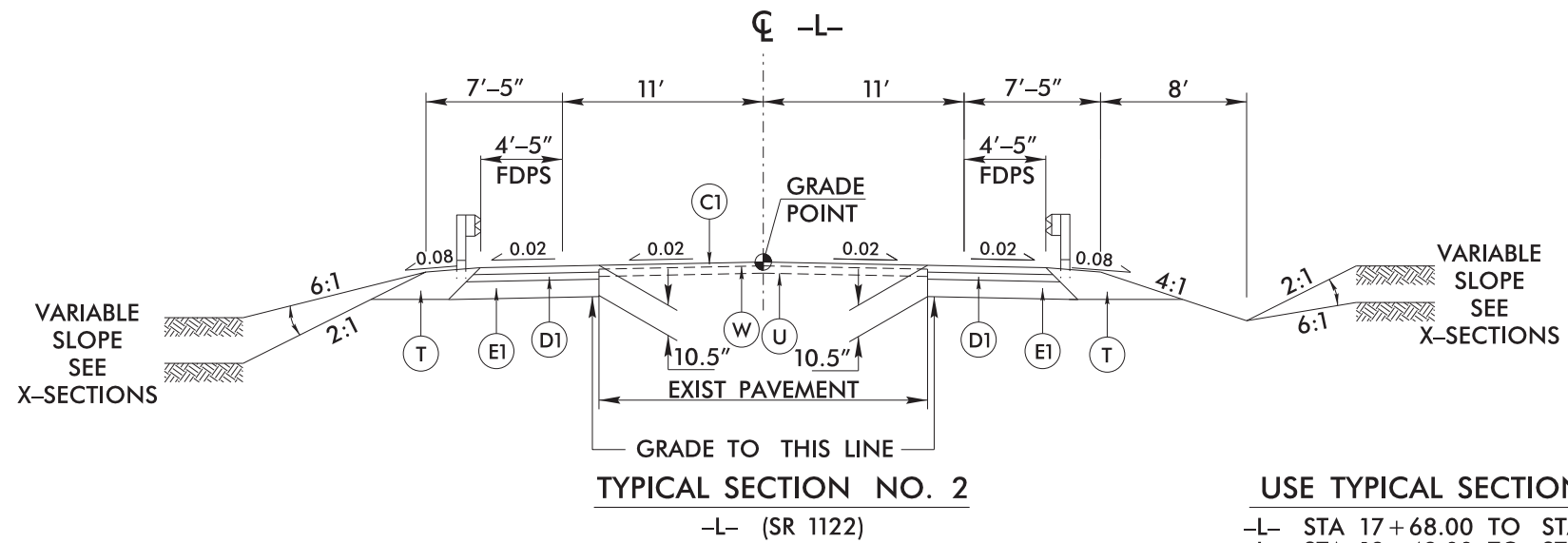
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



-L- STA 16+25.00 TO 16+50.00  
 -L- STA 20+50.00 TO 20+75.00  
 STATION RANGES ARE APPROXIMATE ONLY.  
 GRADE MAY BE ADJUSTED BY ENGINEER  
 TO ENSURE A PROPER TIE-IN.



**USE TYPICAL SECTION NO. 1**  
 -L- STA 16+25.00 TO STA 17+68.00  
 -L- STA 19+73.00 TO STA 20+75.00



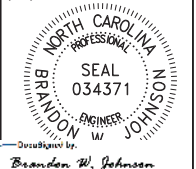

**USE TYPICAL SECTION NO. 2**  
 -L- STA 17+68.00 TO STA 17+93.00  
 -L- STA 19+48.00 TO STA 19+73.00

**SR 1122 (JACKSON SPRINGS RD) IS A PART OF NC BICYCLE ROUTE, NC9 - SANDHILLS SECTOR**

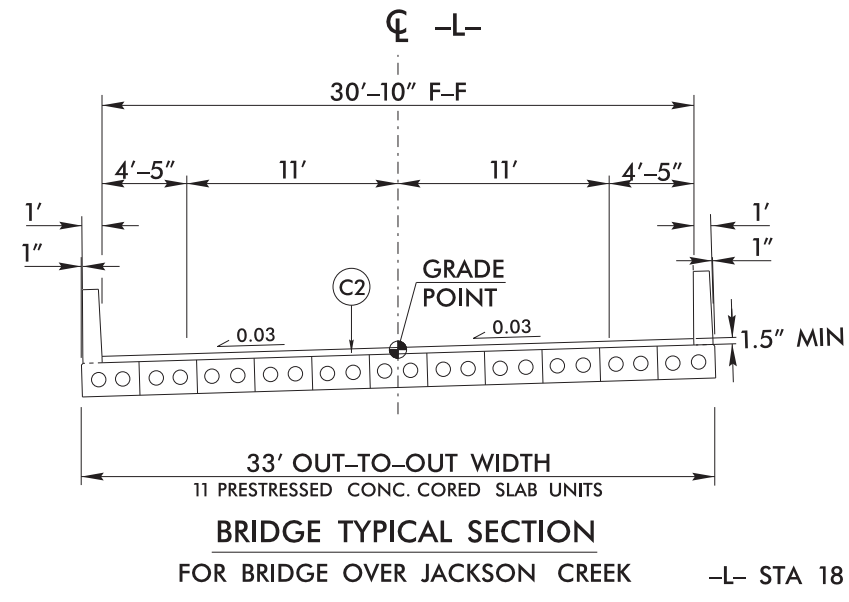
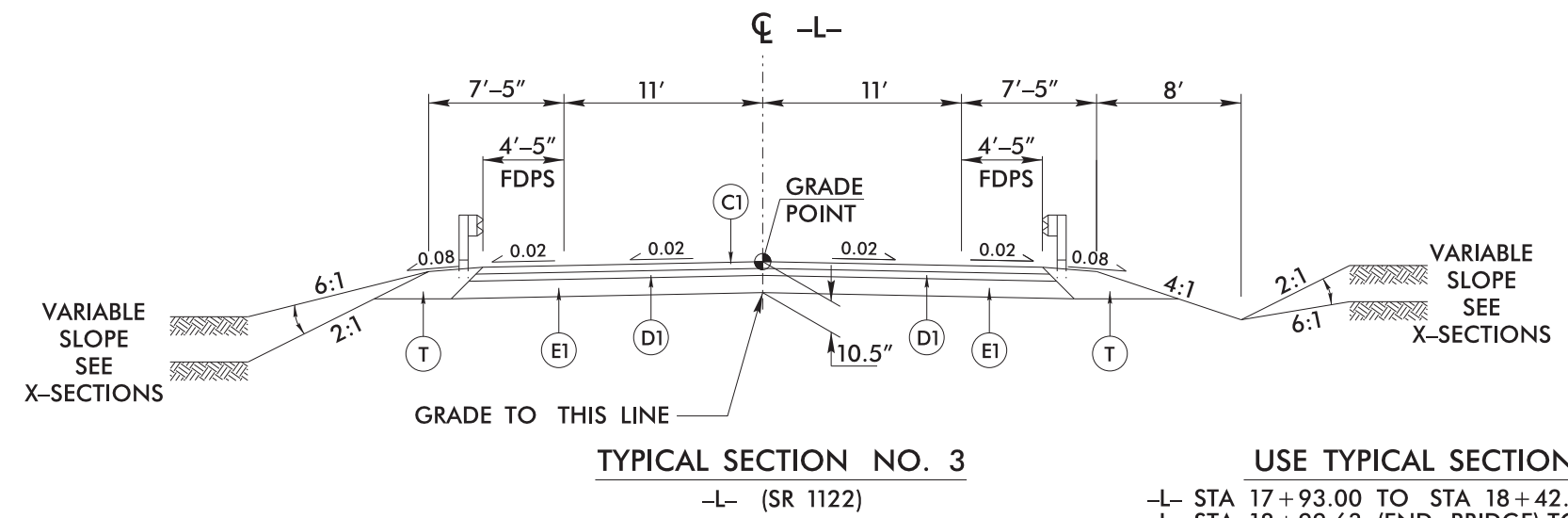
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 620025-Rdy-tyo.dgn  
 fath, jhanna

6/2/99

BRIDGE NO. 620025

PROJECT REFERENCE NO. 17.BP.B.R.J16	SHEET NO. 2A-2
ROADWAY DESIGN ENGINEER 2/16/2017	
	
Prepared by: <u>Brandon W. Johnson</u> <b>DOCUMENT NOT CONSIDERED FINAL</b> <b>UNLESS ALL SIGNATURES COMPLETED</b>	
Prepared in the Office of: 	NC FIRM LICENSE No. P-0339 504 Meadowlands Drive Raleigh, NC 27716 (919) 732-3885 • (919) 732-6676 (FAX)

PAVEMENT SCHEDULE	
C1	2" SF9.5A
C2	VAR. SF9.5A
D1	3" I19.0B
D2	VAR. I19.0B
E1	5.5" B25.0B
E2	VAR. B25.0B
T	EARTH MATERIAL
U	EX. PAVEMENT
V	VAR. MILLING
W	WEDGING



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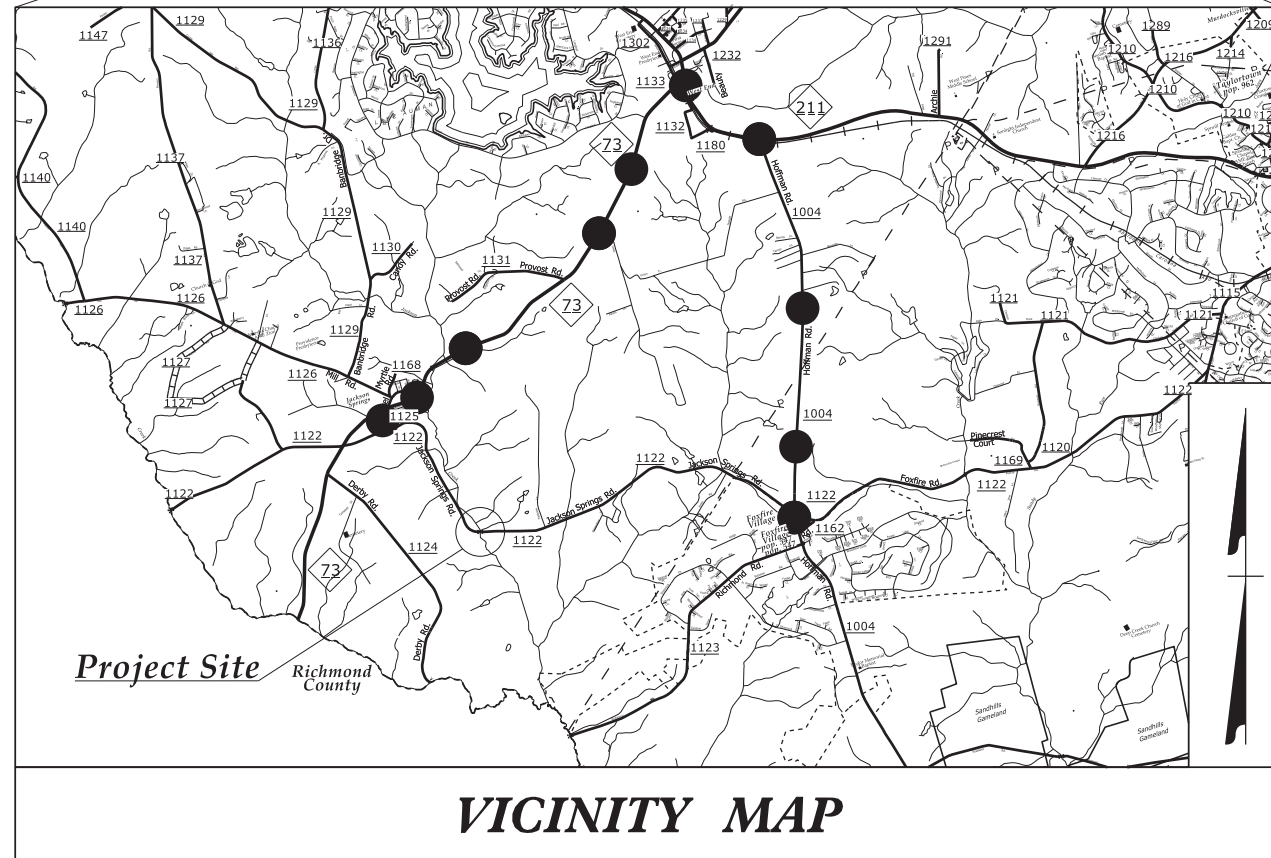
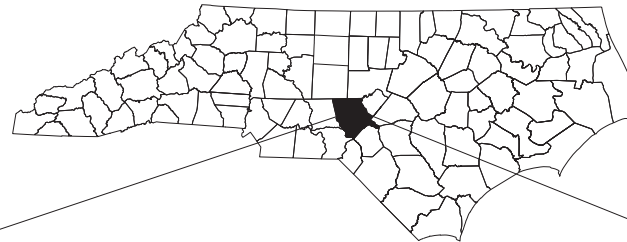




STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**TRANSPORTATION MANAGEMENT PLAN**

**MOORE COUNTY**  
(BRIDGE NO. 620025)



● DETOUR ROUTE

**INDEX OF SHEETS**

SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP AND INDEX OF SHEETS
TMP-1A	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES, GENERAL NOTES AND LOCAL NOTES)
TMP-2	PHASE 1 DETAIL DRAWING
TMP-3	OFFSITE DETOUR PLAN
SD-1	SPECIAL SIGN DESIGN
PMP-1	PAVEMENT MARKING PLAN

**ROADWAY STANDARD DRAWINGS**

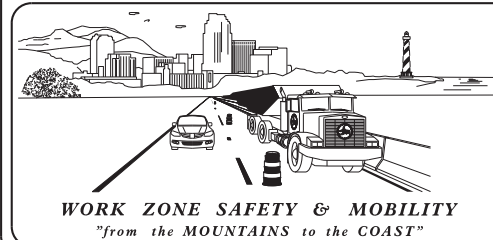
THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.01	WORK ZONE MARKING SIGNS
1101.03	TEMPORARY ROAD CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS

**LEGEND**

- DIRECTION OF TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- WORK AREA
- BARRICADE (TYPE III)
- STATIONARY SIGN

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



N.C.D.O.T. WORK ZONE TRAFFIC CONTROL  
1561 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1561  
750 N. GREENFIELD PARKWAY, GARNER, NC 27529 (DELIVERY)  
PHONE: (919) 773-2800 FAX: (919) 771-2745

J. S. BOURNE, P.E. STATE TRAFFIC MANAGEMENT ENGINEER  
T. N. PARROTT, P.E. TRAFFIC CONTROL PROJECT ENGINEER  
B. W. JOHNSON, P.E. TRAFFIC CONTROL PROJECT DESIGN ENGINEER  
S. W. MERRITT, E.I. TRAFFIC CONTROL DESIGNER



Prepared in the Office of:  
**SUMMIT**  
DESIGN AND ENGINEERING SERVICES

NC FIRM LICENSE No: P-0339  
504 Meadowlands Drive  
Hillsborough, NC 27278  
(919) 732-3883  
(919) 732-6676 (FAX)

APPROVED:   
DATE: 2/16/2017

SEAL

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620025-1C-TMP-1.dgn  
rathj,jm,nke

SHEET NO.  
TMP-1

**17BP.8.R.116**

**PROJECT:**



## MANAGEMENT STRATEGIES

BRIDGE #620025 ON SR 1122 (JACKSON SPRINGS RD.) REPLACEMENT TO BE PERFORMED UNDER ROAD CLOSURE WITH AN INTERMEDIATE CONTRACT TIME.

LOCAL ACCESS TO ALL RESIDENCES AND BUSINESSES WILL BE MAINTAINED BETWEEN CLOSURE POINTS AT ALL TIMES DURING CONSTRUCTION.

IF BRIDGE #620025 IS CLOSED DURING THE SCHOOL YEAR, THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER TO ENSURE SCHOOL BUSES HAVE A LOCATION TO TURN AROUND PRIOR TO THE ROAD CLOSURES.

## PHASING

INTERMEDIATE CONTRACT TIME: 120 DAYS

PROVIDE ENGINEER A THIRTY (30) DAY WRITTEN NOTICE PRIOR TO ROAD CLOSURE.

STEP 1:

IMPLEMENT OFF-SITE DETOUR AND ROAD CLOSURE FOR SR 1122 AT BRIDGE #620025 AS SHOWN ON SHEET TMP-2 AND TMP-3 AND IN ACCORDANCE WITH THE GENERAL NOTES. COVER ALL ADVANCE WARNING SIGNS AND DETOUR SIGNS PRIOR TO ROAD CLOSURE.

STEP 2:

WITH SR 1122 CLOSED TO TRAFFIC PERFORM ALL BRIDGE REPLACEMENT OPERATIONS. PRIOR TO OPENING THE ROADWAY TO TRAFFIC, PLACE FINAL PAVEMENT MARKINGS.

STEP 3:

UPON COMPLETION OF BRIDGE WORK REMOVE THE ROAD CLOSURE AND DETOUR SIGNS AND OPEN SR 1122 TO TRAFFIC.

## LOCAL NOTES

NOTIFY MOORE COUNTY SCHOOLS AT (910) 947-2976 AT LEAST THIRTY (30) CALENDAR DAYS PRIOR TO ROAD CLOSURE.

NOTIFY COLUMBUS COUNTY EMERGENCY SERVICES AT (910) 947-6317 AT LEAST THIRTY (30) CALENDAR DAYS PRIOR TO ROAD CLOSURE.

## GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSION IN THE DETAIL DRAWINGS, STANDARD DETAILS AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS, OR RESULT IN DUPLICATE OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING OR REMOVAL OF DEVICES, AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR DIRECTED BY THE ENGINEER.

### TRAFFIC PATTERN ALTERATIONS

A) NOTIFY THE ENGINEER THIRTY (30) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

### SIGNING

B) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL SHEETS.

C) PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRAFFIC CONTROL SHEETS. COVER OR REMOVE SIGNS WHEN DETOUR IS NOT IN OPERATION.

D) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

### TRAFFIC CONTROL DEVICES

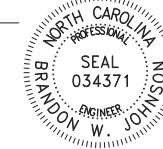

E) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

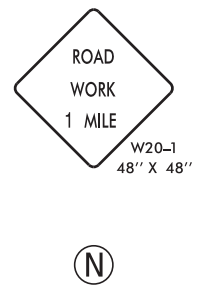
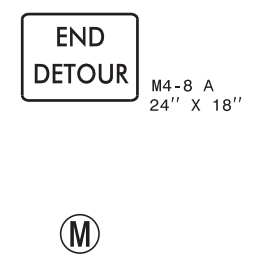
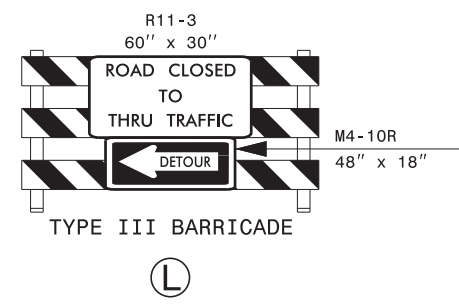
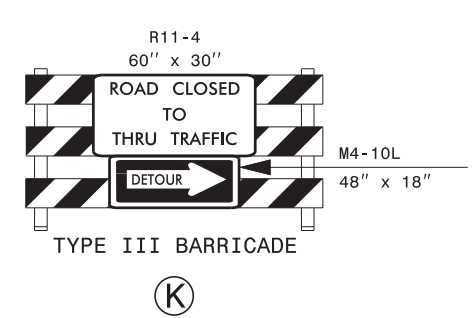
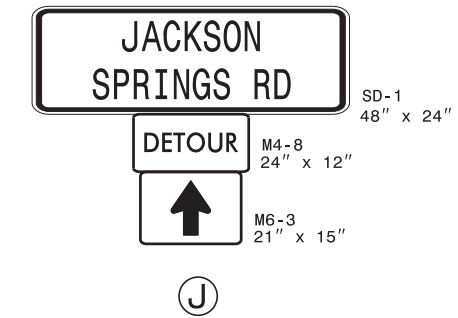
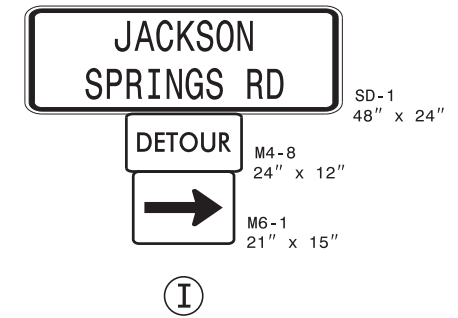
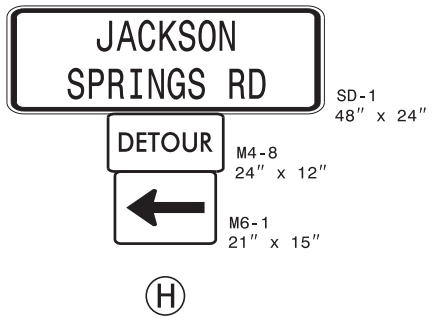
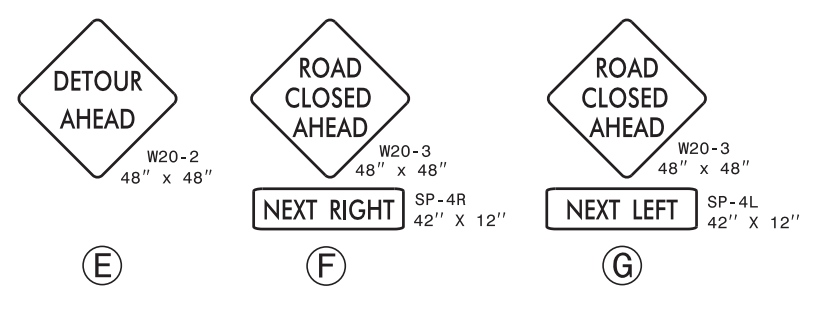
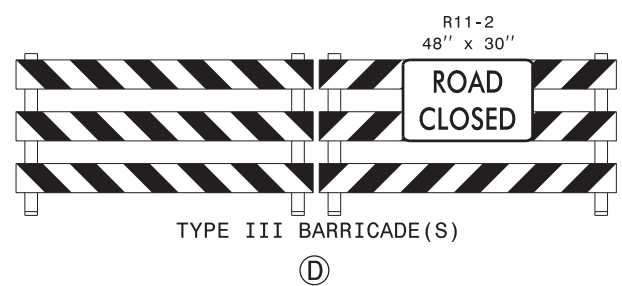
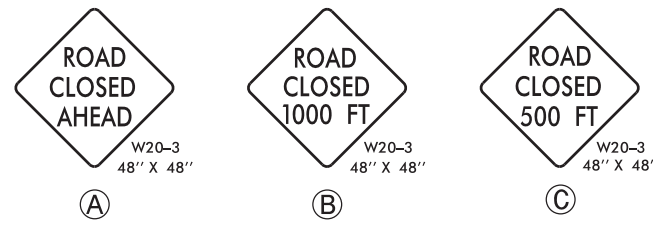
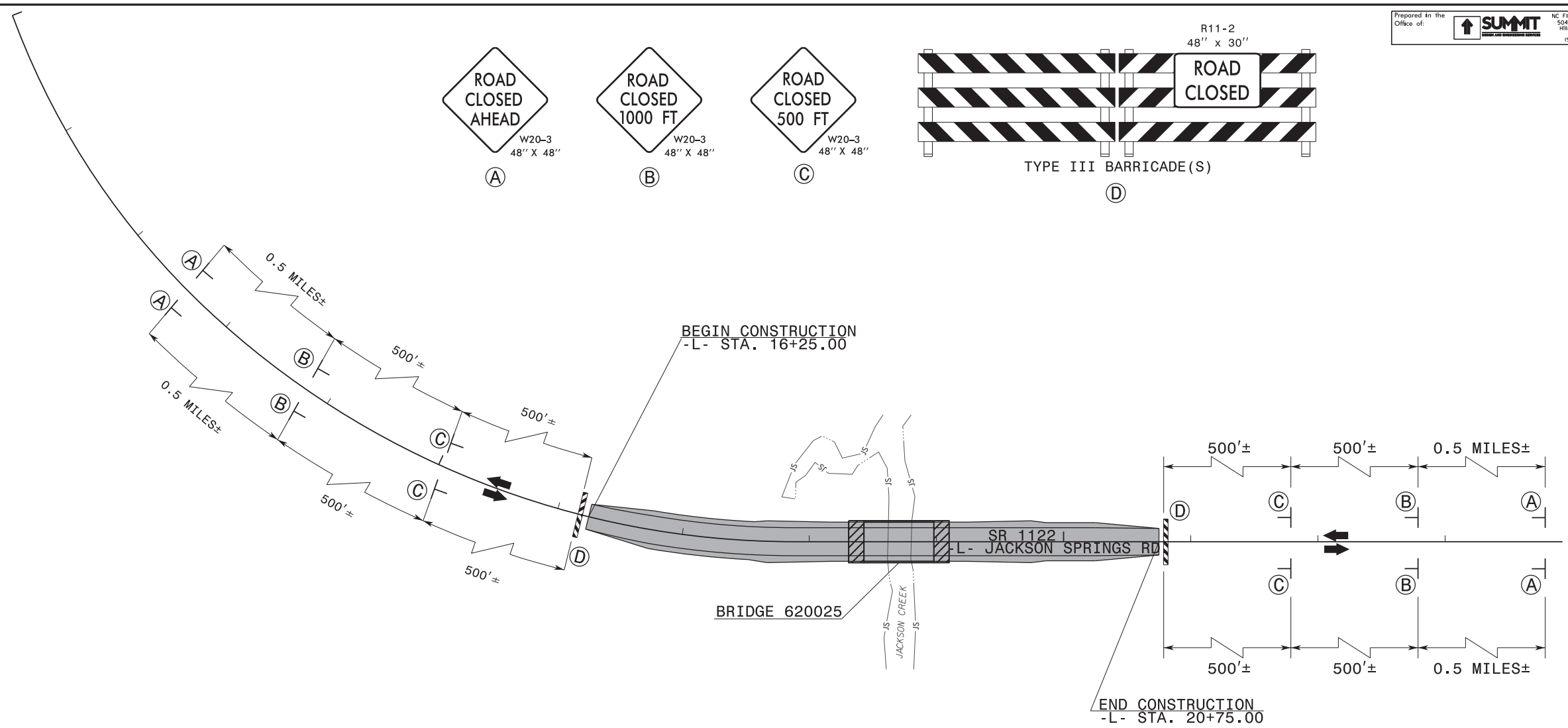
### PAVEMENT MARKINGS AND MARKERS

F) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE, AS SHOWN IN THE PAVEMENT MARKING PLAN.

G) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

15-FEB-2017 10:25  
620025\_C\_TMP\_1A.dgn  
faith.johnke

APPROVED: <u>Brandon W. Johnson</u> <small>6-024-14 11.28 4EN</small> DATE: 2/16/2017 <div style="text-align: center; margin-top: 10px;">                       SEAL                      BRAYDON W. JOHNSON                      ENGINEER                      NO. 034371                 </div>		TRANSPORTATION OPERATIONS PLAN
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>		



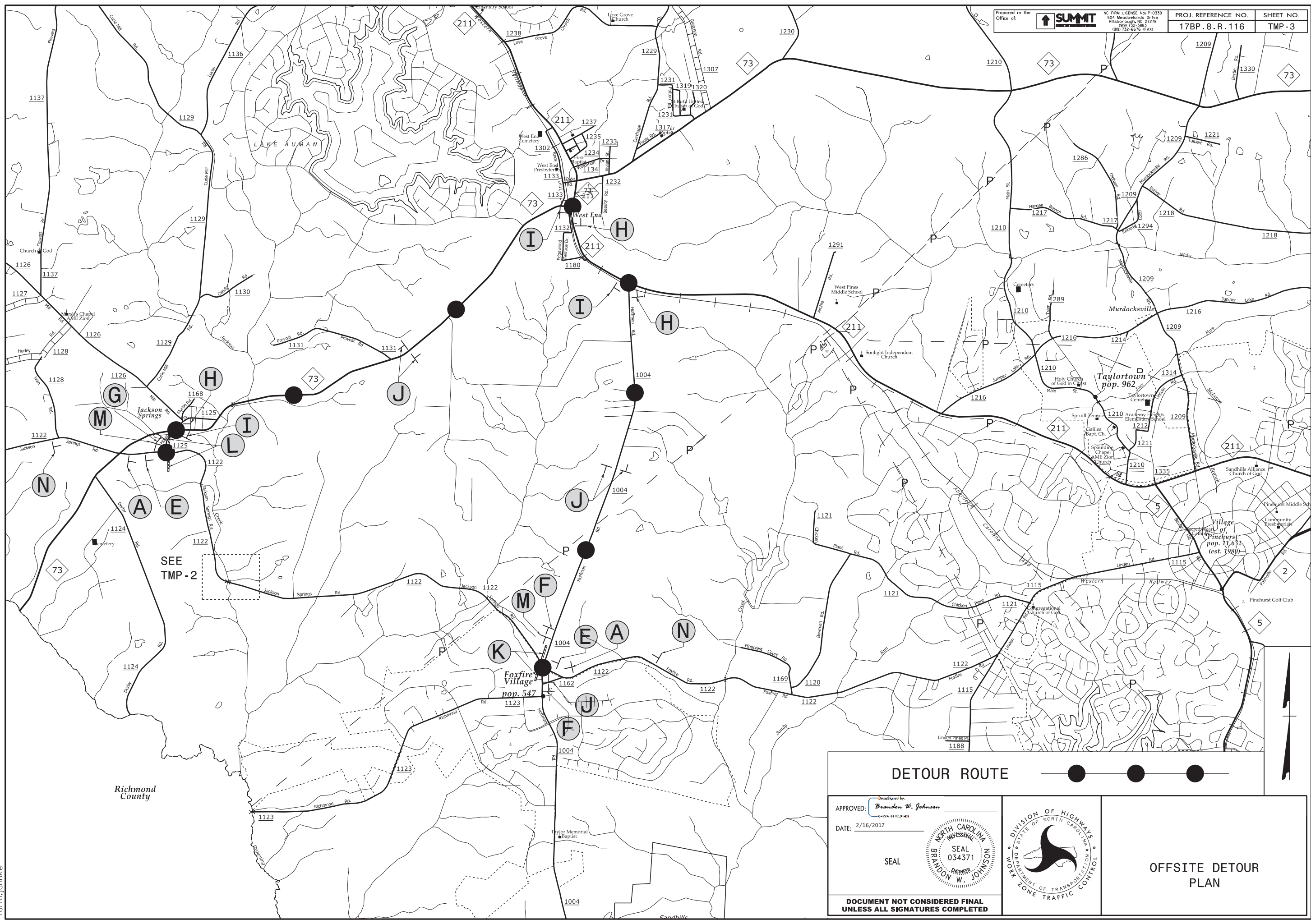
APPROVED: *Beauden W. Johnson*  
 DATE: 2/16/2017  
 SEAL:



PHASE 1 DETAIL DRAWING

15-FEB-2017 10:25  
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 faith.johnke

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SEE TMP-2

Richmond County

### DETOUR ROUTE

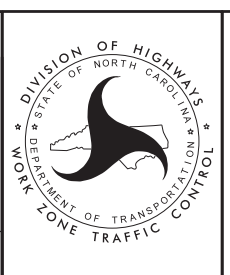


APPROVED: Brandon W. Johnson  
Designated by  
DATE: 2/16/2017

SEAL

**NORTH CAROLINA PROFESSIONAL ENGINEER**  
 SEAL 034371  
 BRANDON W. JOHNSON

**DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED**



**OFFSITE DETOUR PLAN**

<p><b>SIGN NUMBER:</b> SD-1  <b>TYPE:</b> STATIONARY  <b>QUANTITY:</b> SEE PLANS  <b>SIGN WIDTH:</b> 4'-0"  <b>HEIGHT:</b> 2'-0"  <b>TOTAL AREA:</b> 8.00 SF</p> <p><b>BORDER TYPE:</b> INSERT  <b>RECESS:</b> 0.375"  <b>WIDTH:</b> 0.625"  <b>RADII:</b> 1.50"</p> <p><b>NO. Z BARS:</b> N/A  <b>LENGTH:</b> N/A</p> <p style="text-align: center;"><b>MAT'L:</b> 0.125" ALUMINUM</p> <p><b>USE NOTES:</b> 1,2                  1. Legend and border shall be direct applied black non-reflective sheeting.                  2. Background shall be NC GRADE B flourescent orange retroreflective sheeting.</p>	<p><b>DESIGN BY:</b> SWM  <b>PROJECT ID:</b> 17BP.8.R.116</p> <p><b>CHECKED BY:</b> BWJ  <b>DIV:</b> 8</p> <p><b>DATE:</b> Mar 2016</p> <div style="text-align: center;"> </div> <p><b>BORDER</b>                  R=1.50"                  TH=0.625"                  IN=0.375"</p> <p style="text-align: right;">Spacing Factor is 1 unless specified otherwise</p>																																																																																				
<p><b>LETTER POSITIONS</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="13">Letter spacings are to start of next letter</th> <th>Series/Size</th> </tr> <tr> <th></th> <th>J</th> <th>A</th> <th>C</th> <th>K</th> <th>S</th> <th>O</th> <th>N</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>Text Length</th> </tr> </thead> <tbody> <tr> <td></td> <td>9.3</td> <td>3.9</td> <td>4.6</td> <td>4.6</td> <td>4.1</td> <td>4.3</td> <td>4.7</td> <td>3.4</td> <td>9.3</td> <td></td> <td></td> <td></td> <td>C 2000</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>29.5</td> </tr> <tr> <td></td> <td></td> <td>S</td> <td>P</td> <td>R</td> <td>I</td> <td>N</td> <td>G</td> <td>S</td> <td></td> <td>R</td> <td>D</td> <td></td> <td>C 2000</td> </tr> <tr> <td></td> <td>3.3</td> <td>4.4</td> <td>4.6</td> <td>4.4</td> <td>2.2</td> <td>4.6</td> <td>4.3</td> <td>3.4</td> <td>6.0</td> <td>4.4</td> <td>3.4</td> <td>3.3</td> <td>41.4</td> </tr> </tbody> </table> <p style="font-size: small;">FILENAME: 620025_TC_SD-1.dgn <span style="float: right;">SUMMIT DESIGN &amp; ENGINEERING SIGN DETAIL</span></p>		Letter spacings are to start of next letter													Series/Size		J	A	C	K	S	O	N						Text Length		9.3	3.9	4.6	4.6	4.1	4.3	4.7	3.4	9.3				C 2000														29.5			S	P	R	I	N	G	S		R	D		C 2000		3.3	4.4	4.6	4.4	2.2	4.6	4.3	3.4	6.0	4.4	3.4	3.3	41.4
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 620025\_TC\_SD-1.dgn  
 faith.johnke

<p>APPROVED: <u>Brandon W. Johnson</u>  <small>REGISTERED PROFESSIONAL ENGINEER</small></p> <p>DATE: 2/16/2017</p> <p style="text-align: center;">SEAL</p>			<p><b>SPECIAL SIGN DESIGN</b></p>
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



**PROJECT: 17BP.8.R.116**

**CONTRACT:**

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**MOORE COUNTY**

**LOCATION: BRIDGE NO. 620025 ON SR 1122 (JACKSON SPRINGS RD.)  
OVER JACKSON CREEK  
TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE.**

TIP NO. <b>17BP.8.R.116</b>	SHEET NO. <b>PMP-1</b>
APPROVED: <b>Brandon W. Johnson</b> <small>DATE: 2/16/2017</small>	
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	

**ROADWAY STANDARD DRAWING**

THE FOLLOWING ROADWAY STANDARDS AS APPEAR 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
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	RAISED PAVEMENT MARKERS
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL & BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

**PAVEMENT MARKING SCHEDULE**

SYMBOL	DESCRIPTION	QUANTITY
THERMO(4", 1 COAT)		
TI	YELLOW DOUBLE CENTER	560 LF
TI	YELLOW SOLID SKIP RT	213 LF
TA	WHITE EDGE LINE	900 LF
RAISED MARKERS		9 EA

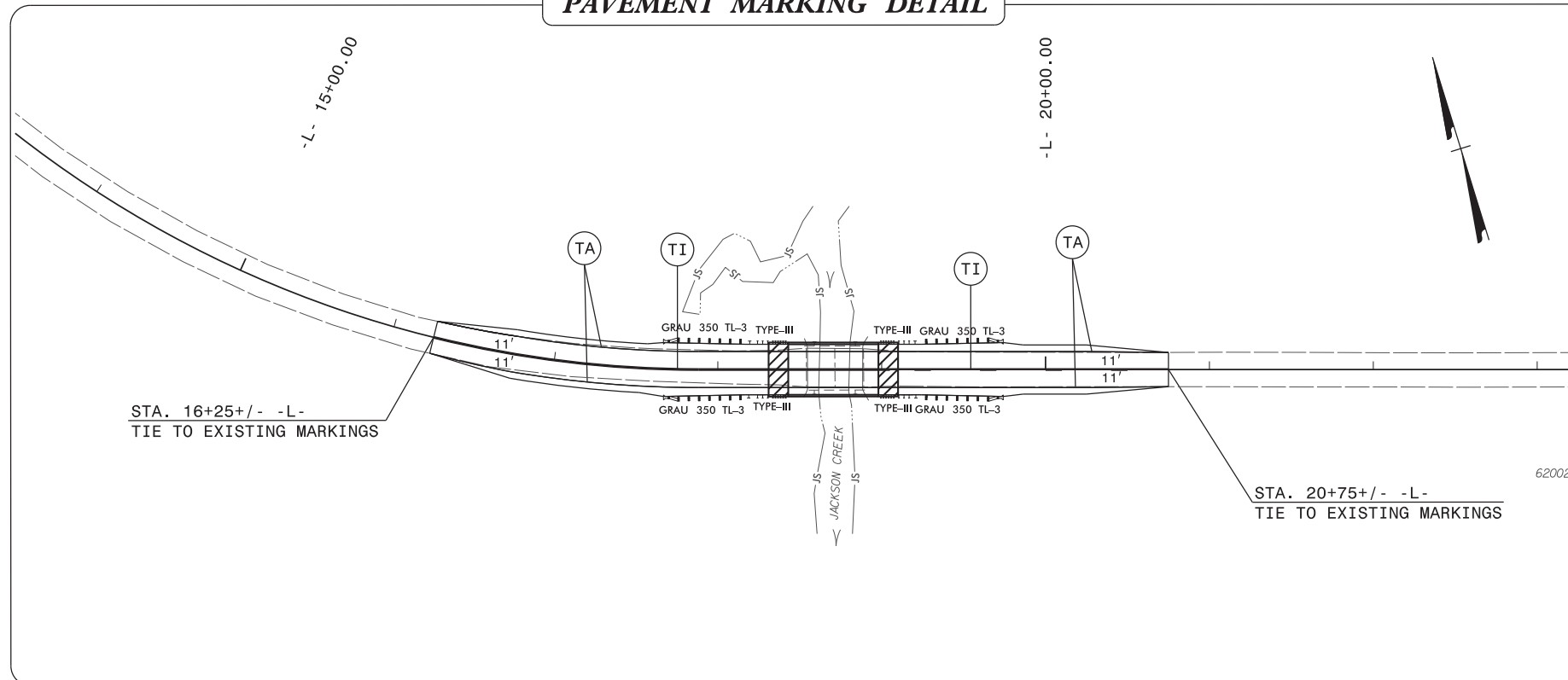
**GENERAL NOTES**

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

- A) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:
 

<u>ROAD NAME</u>	<u>MARKING</u>	<u>MARKER</u>
JACKSON SPRINGS RD	THERMO	RAISED
- B) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- C) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.
- D) PASSING ZONES WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.

**PAVEMENT MARKING DETAIL**

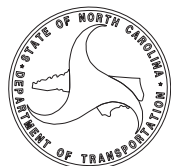


Prepared in the Office of:

**SUMMIT**  
DESIGN AND ENGINEERING SERVICES

NC FIRM LICENSE No: P-0339  
504 Meadowlands Drive  
Hillsborough, NC 27278  
(919) 732-3883  
(919) 732-6676 (FAX)

**BRANDON W. JOHNSON, PE** PROJECT ENGINEER  
**FAITH E. JAHNKE, EI** PROJECT DESIGNER



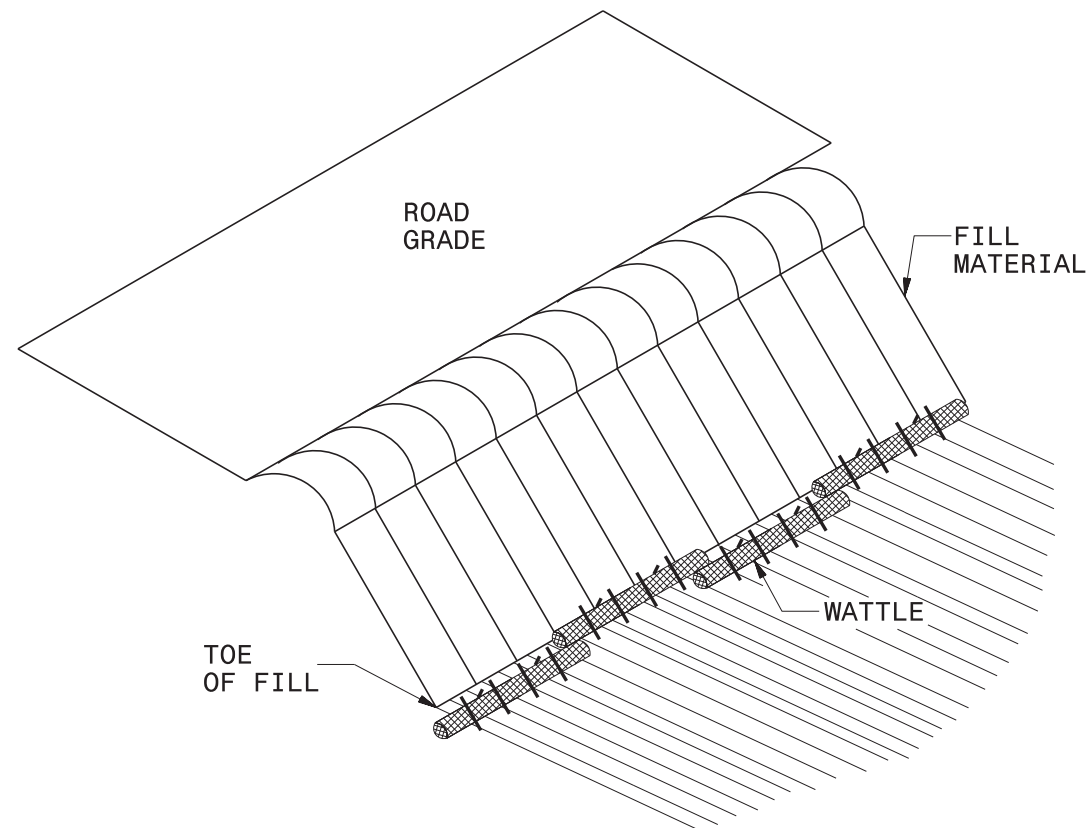
**INDEX**

PMP-1 PAVEMENT MARKING PLAN TITLE, SCHEDULE, QUANTITIES AND PAVEMENT MARKING DETAIL.

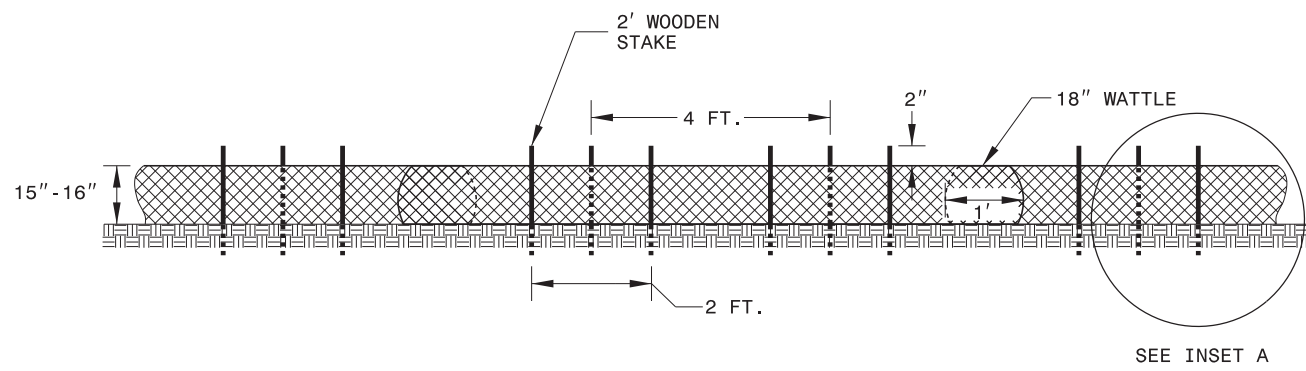


PROJECT REFERENCE NO. 17BP.B.R.116	SHEET NO. EC-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# WATTLE BARRIER DETAIL



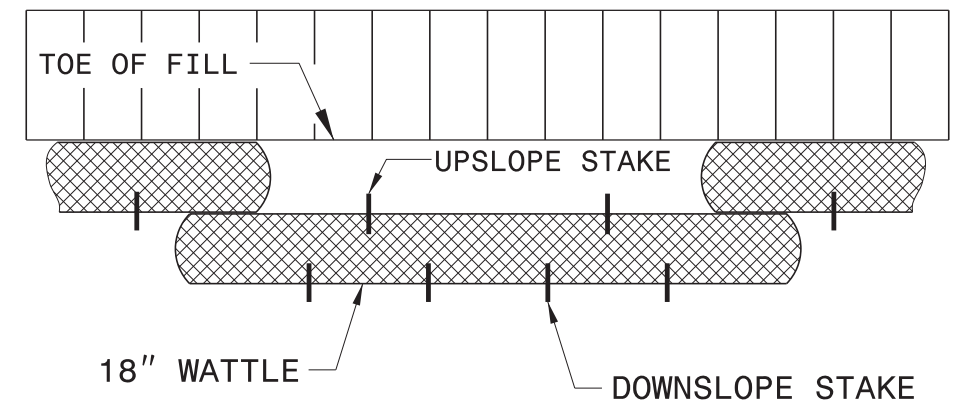
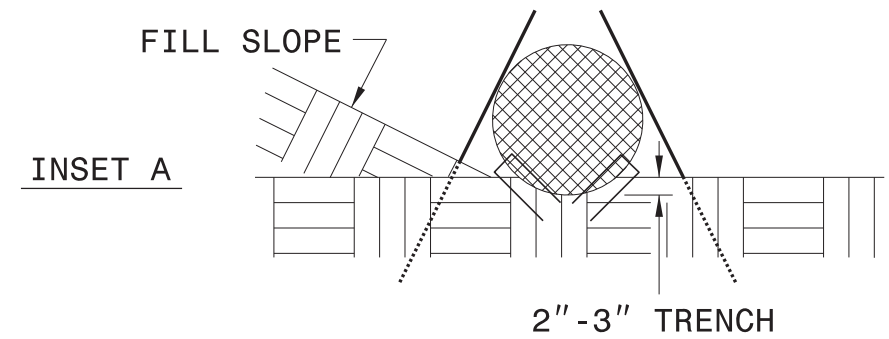
**ISOMETRIC VIEW**



**FRONT VIEW**

**NOTES:**

- USE MINIMUM 18 IN. NOMINAL DIAMETER EXCELSIOR WATTLE AND LENGTH OF 10 FT.
- EXCAVATE A 2 TO 3 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 25 FT.



**TOP VIEW**

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

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PROJECT REFERENCE NO. <i>17BP.8.R.116</i>	SHEET NO. <i>EC-3</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

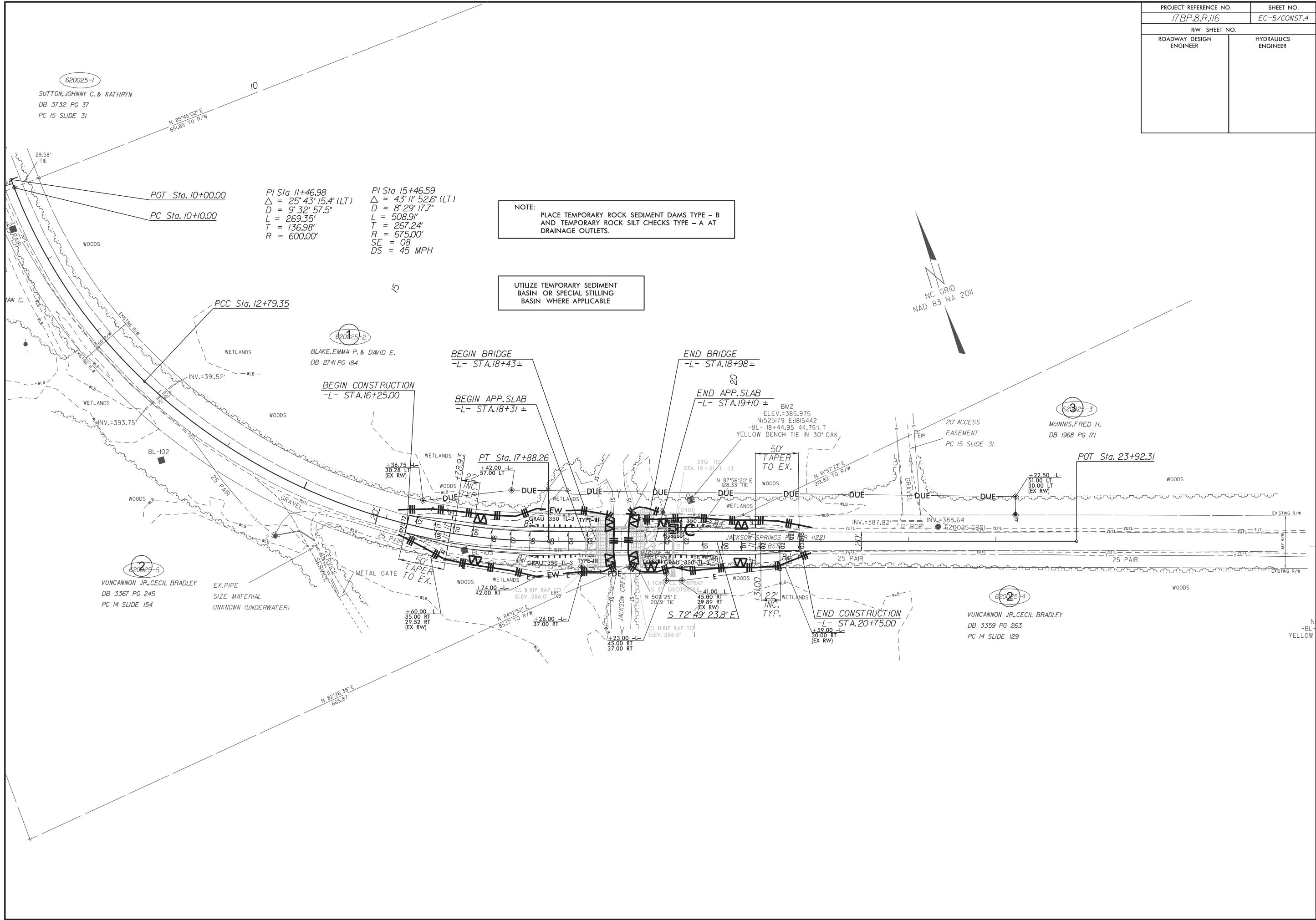
# ***SOIL STABILIZATION TIMEFRAMES***

<i>SITE DESCRIPTION</i>	<i>STABILIZATION TIME</i>	<i>TIMEFRAME EXCEPTIONS</i>
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.





PROJECT REFERENCE NO.	SHEET NO.
17BP.B.R.116	EC-5/CONST.4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER





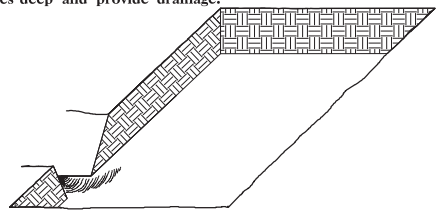
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.8.R.116	RF-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

## PLANTING DETAILS

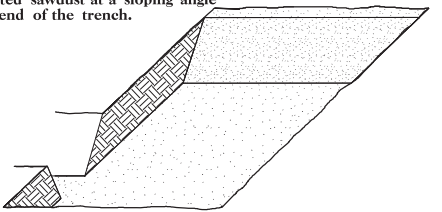
### SEEDLING / LINER BAREROOT PLANTING DETAIL

#### HEALING IN

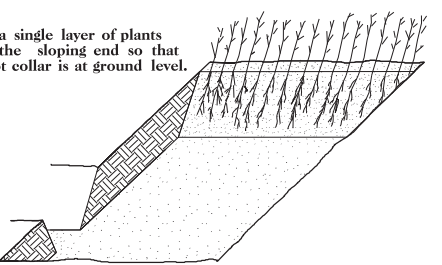
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



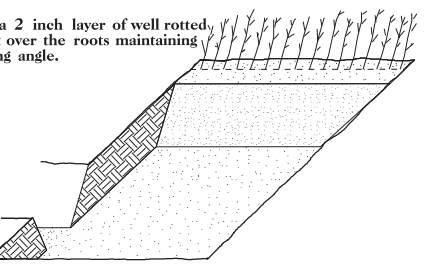
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



4. Place a single layer of plants against the sloping end so that the root collar is at ground level.

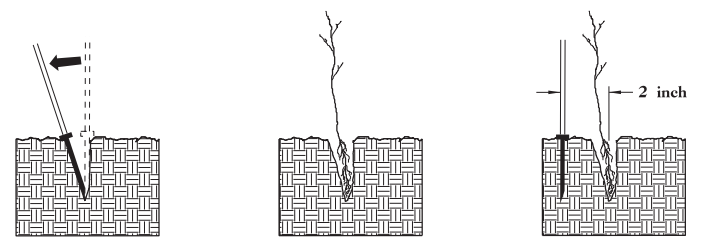


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

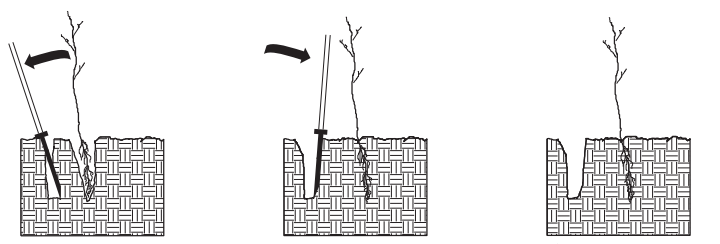


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

#### DIBBLE PLANTING METHOD USING THE KBC PLANTING BAR



1. Insert planting bar as shown and pull handle toward planter.
2. Remove planting bar and place seedling at correct depth.
3. Insert planting bar 2 inches toward planter from seedling.



4. Pull handle of bar toward planter, firming soil at bottom.
5. Push handle forward firming soil at top.
6. Leave compaction hole open. Water thoroughly.

#### PLANTING NOTES:

**PLANTING BAG**  
During planting, seedlings shall be kept in a moist canvas bag or similar container to prevent the root systems from drying.



**KBC PLANTING BAR**  
Planting bar shall have a blade with a triangular cross section, and shall be 12 inches long, 4 inches wide and 1 inch thick at center.



**ROOT PRUNING**  
All seedlings shall be root pruned, if necessary, so that no roots extend more than 10 inches below the root collar.

## REFORESTATION

TREE REFORESTATION SHALL BE PLANTED 6 FT. TO 10 FT. ON CENTER, RANDOM SPACING, AVERAGING 8 FT. ON CENTER, APPROXIMATELY 680 PLANTS PER ACRE.

REFORESTATION			
MIXTURE, TYPE, SIZE, AND FURNISH SHALL CONFORM TO THE FOLLOWING:			
25%	LIRIODENDRON TULIPIFERA	TULIP POPLAR	12 in - 18 in BR
25%	PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	12 in - 18 in BR
25%	FRAXINUS PENNSYLVANICA	GREEN ASH	12 in - 18 in BR
25%	BETULA NIGRA	RIVER BIRCH	12 in - 18 in BR

## REFORESTATION DETAIL SHEET

N.C.D.O.T. - ROADSIDE ENVIRONMENTAL UNIT

28-FEB-2017 08:44 N:\infr\gstructure\Jobs\2016 Projects\LS-0083.100 Div 8 On CallBridges Package 2\620025\Utilities\Ray\_UT\Proj\620025\_UT\_U0\_tsh.dgn

09/08/99

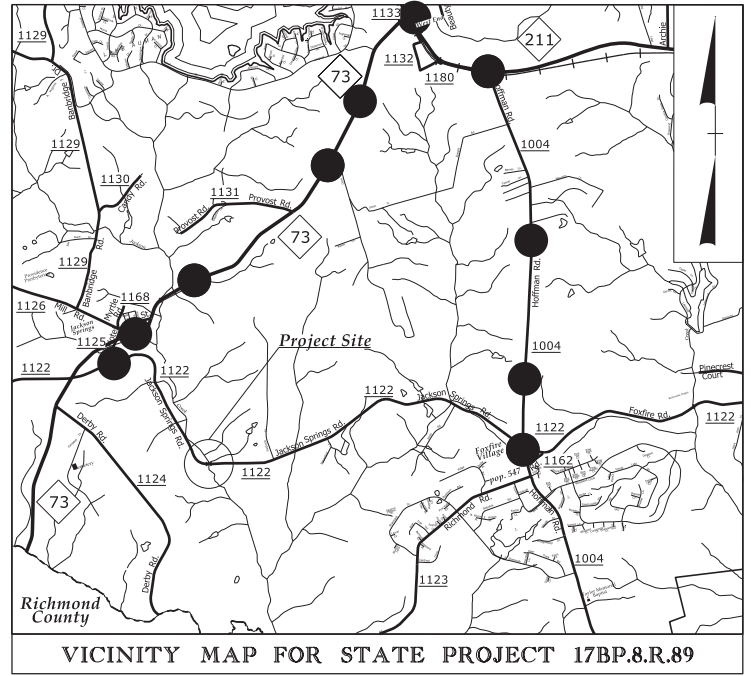
**CONTRACT:**

**PROJECT: 17BP.8.R.116**

PROJECT NO.	SHEET NO.
17BP.8.R.116	UO-1

**NOTE:**  
 ALL UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR UTILITY WORK SHOWN ON THIS SHEET.

Existing Power Pole ..... ●  
 Proposed Power Pole ..... ○



● DETOUR ROUTE

STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS

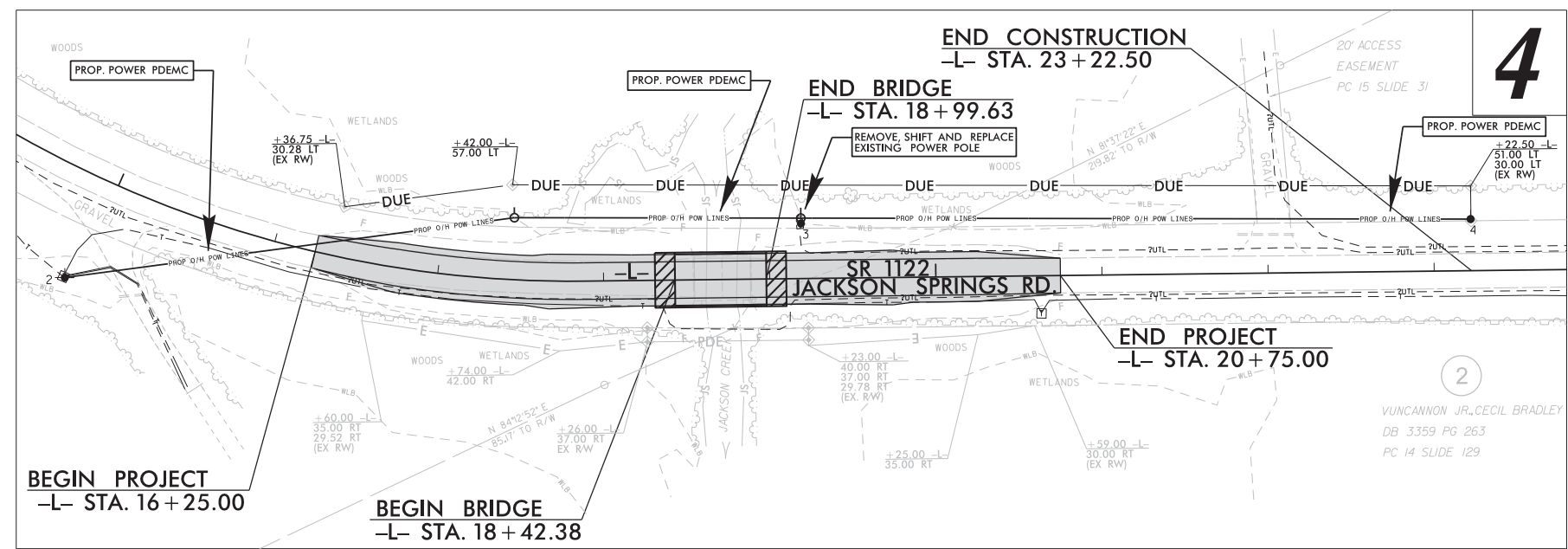
**UTILITIES BY OTHERS PLANS  
 MOORE COUNTY**

**LOCATION: BRIDGE NO. 620025 ON SR 1122 (JACKSON SPRINGS RD.)  
 OVER JACKSON CREEK**

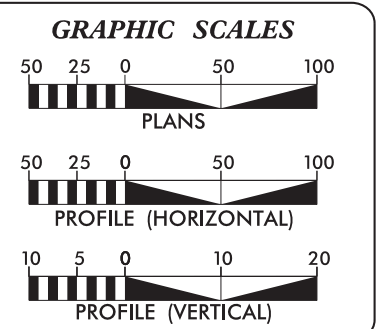
**TYPE OF WORK: RELOCATION OF POWER**



TO NC 73



TO SR 1004  
 (HOFFMAN RD.)



**INDEX OF SHEETS**

SHEET NO.	DESCRIPTION
UO-1	UTILITY BY OTHERS TITLE SHEET/PLAN SHEET

**UTILITY OWNERS ON PROJECT**

(A) PEE DEE EMC (POWER)

Prepared in the Office of:

**SUMMIT**  
 DESIGN AND ENGINEERING SERVICES  
 FIRM NO. P-0339

504 Meadowland Drive  
 Hillsborough, NC 27278-8551  
 Voice: (919) 732-3883  
 Fax: (919) 732-6776  
 www.summit-engineer.com

2012 STANDARD SPECIFICATIONS

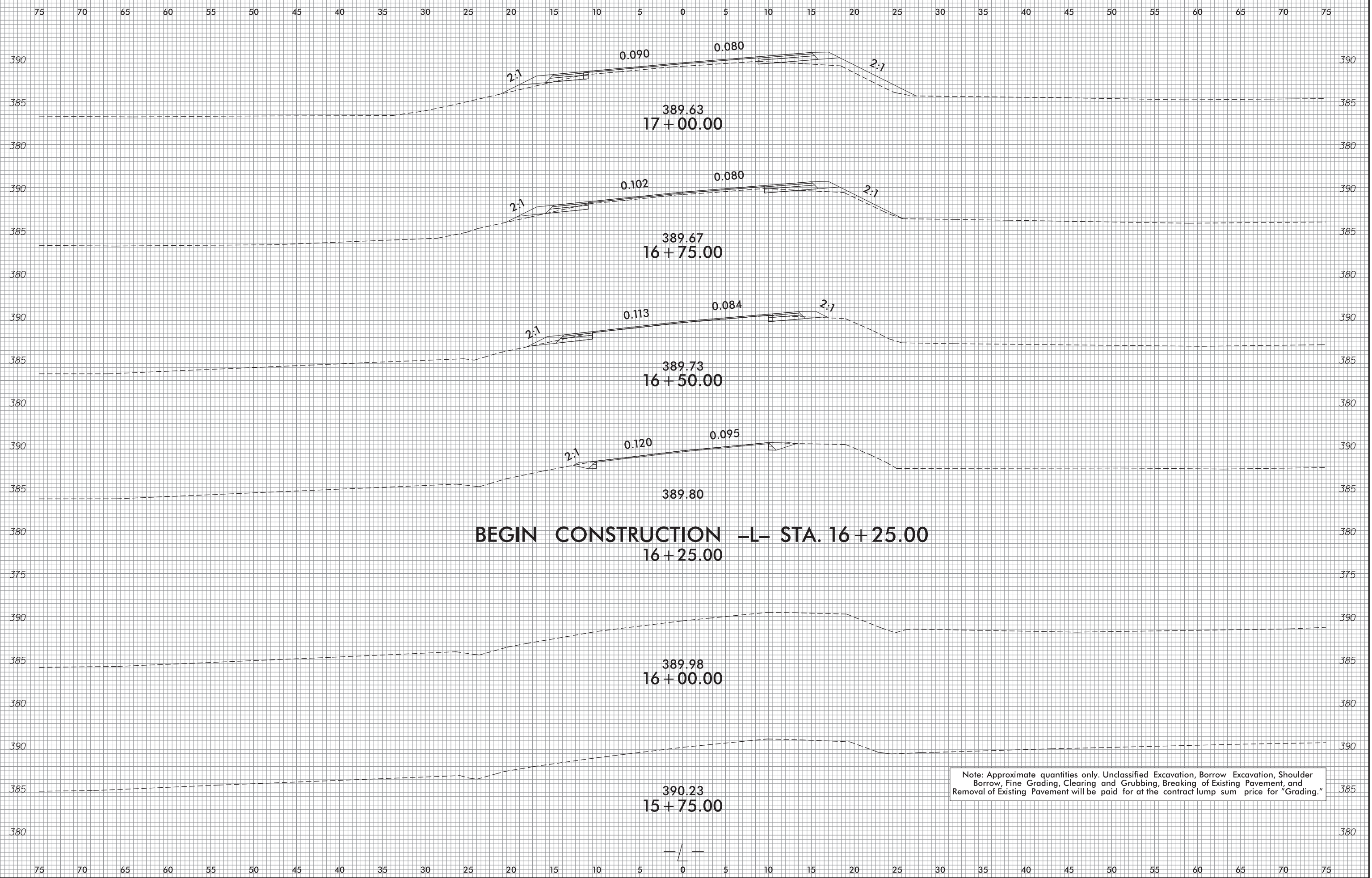
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**LETTING DATE:** \_\_\_\_\_

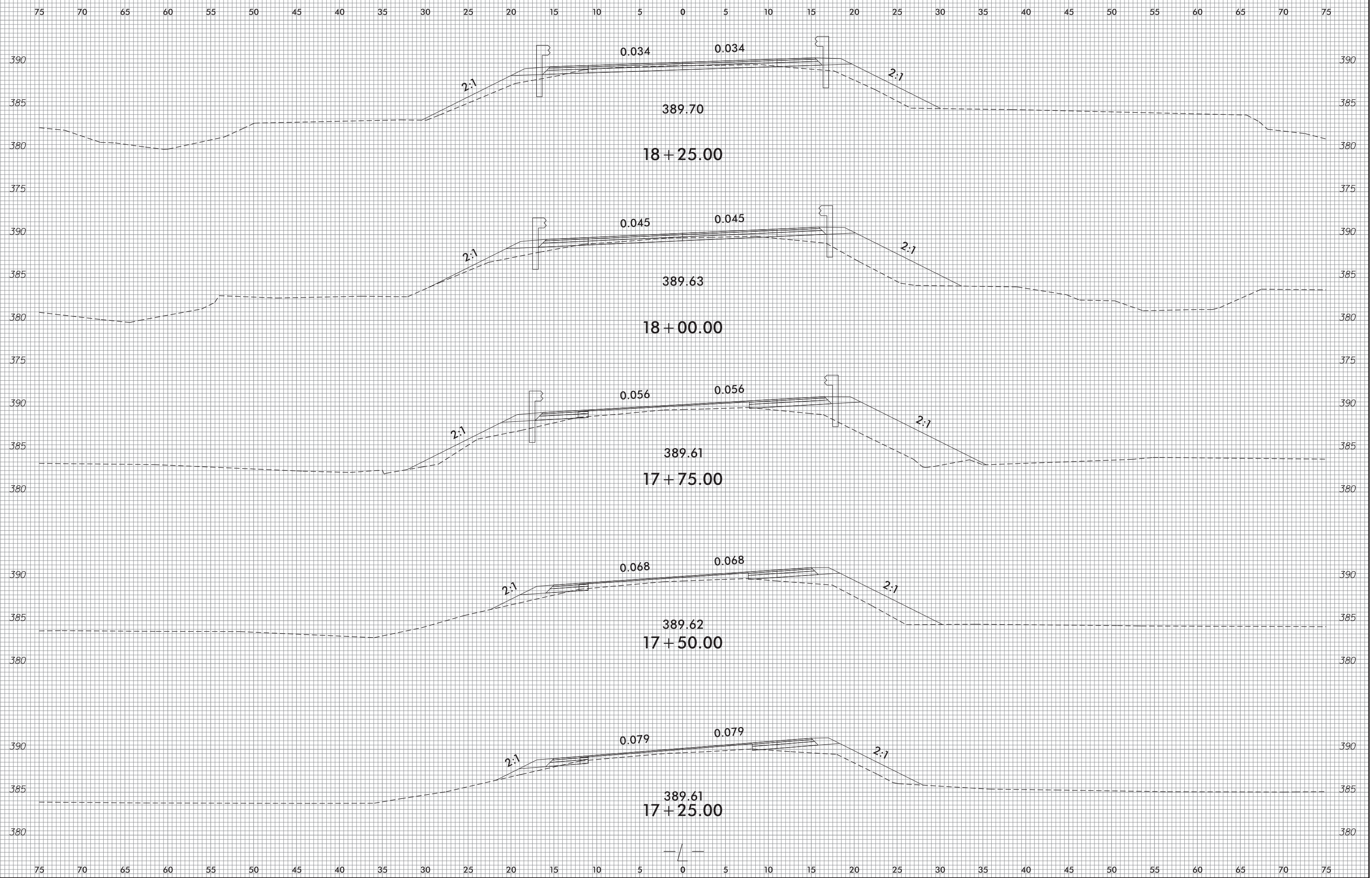
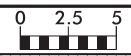
**TRACY N. PARROTT, PE**  
 PROJECT ENGINEER

**BRANDON W. JOHNSON, PE**  
 PROJECT DESIGN ENGINEER



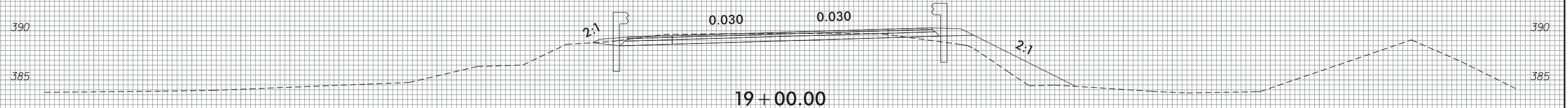
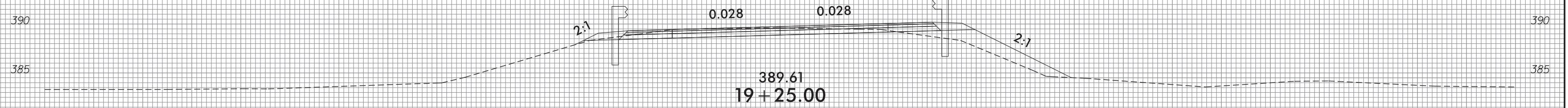


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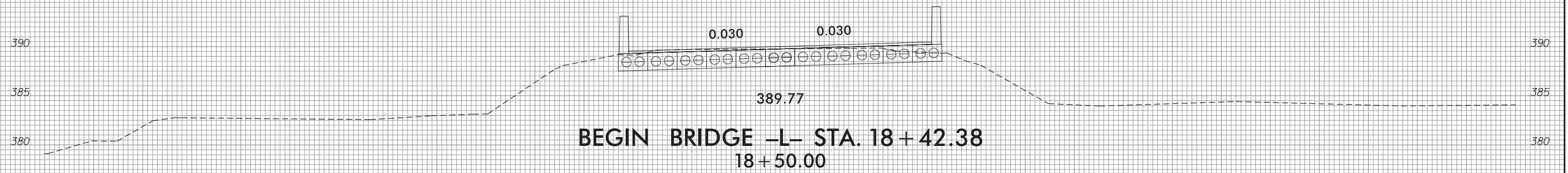
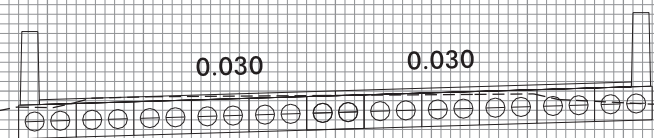
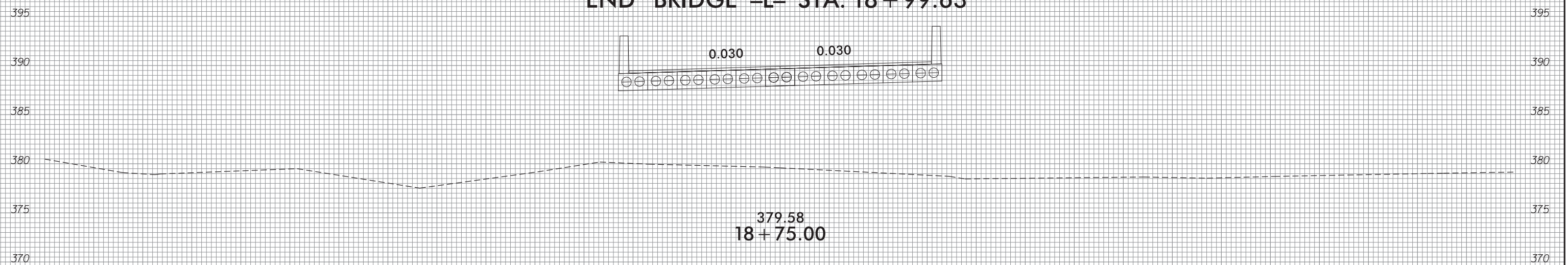
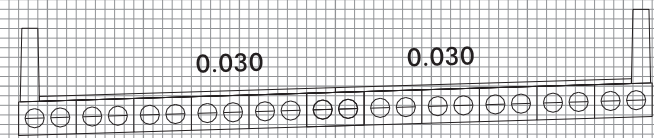


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fath, jehmk

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**END BRIDGE -L- STA. 18+99.63**

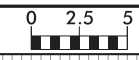


**BEGIN BRIDGE -L- STA. 18+42.38**

18+50.00

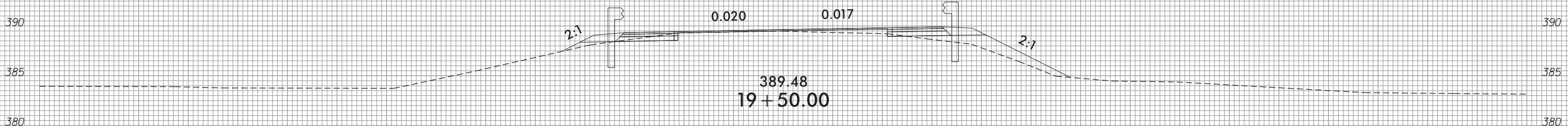
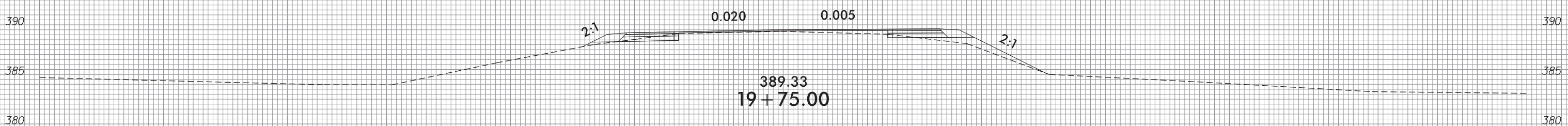
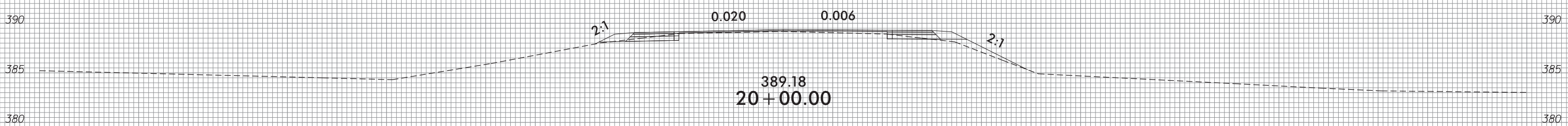
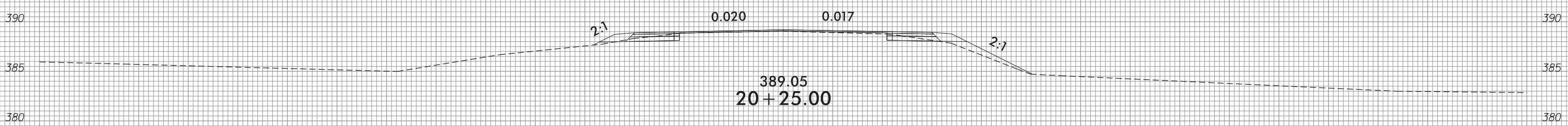
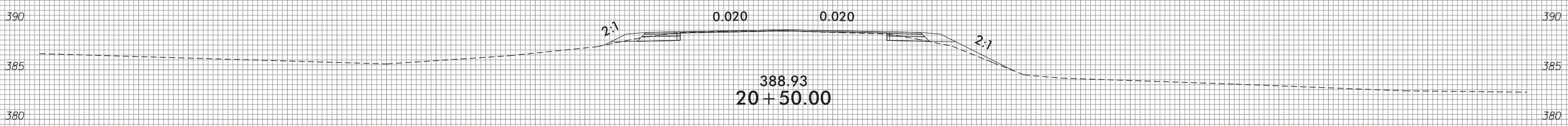
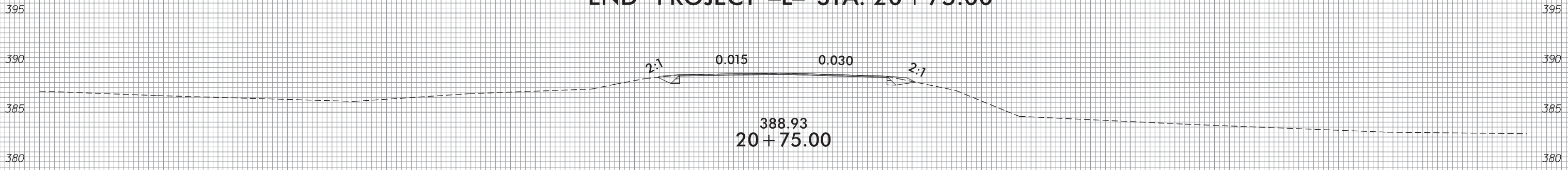
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### END PROJECT -L- STA. 20+75.00



— / —

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fath, jehmke

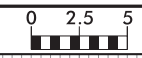


BRIDGE NO. 620025

Prepared in the  
Office of:



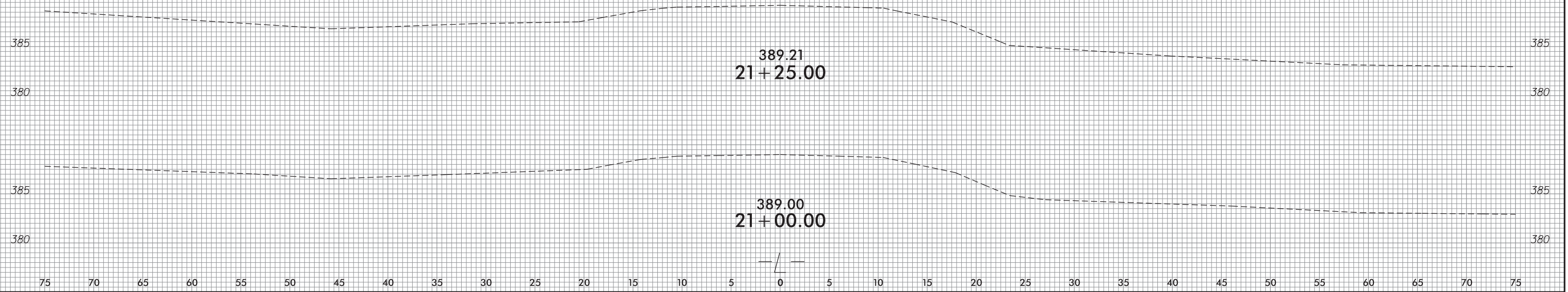
NC FIRM LICENSE No. P-0339  
504 Meadows Drive  
Raleigh, NC 27618  
(919) 552-5883  
(919) 732-6676 (Fax)



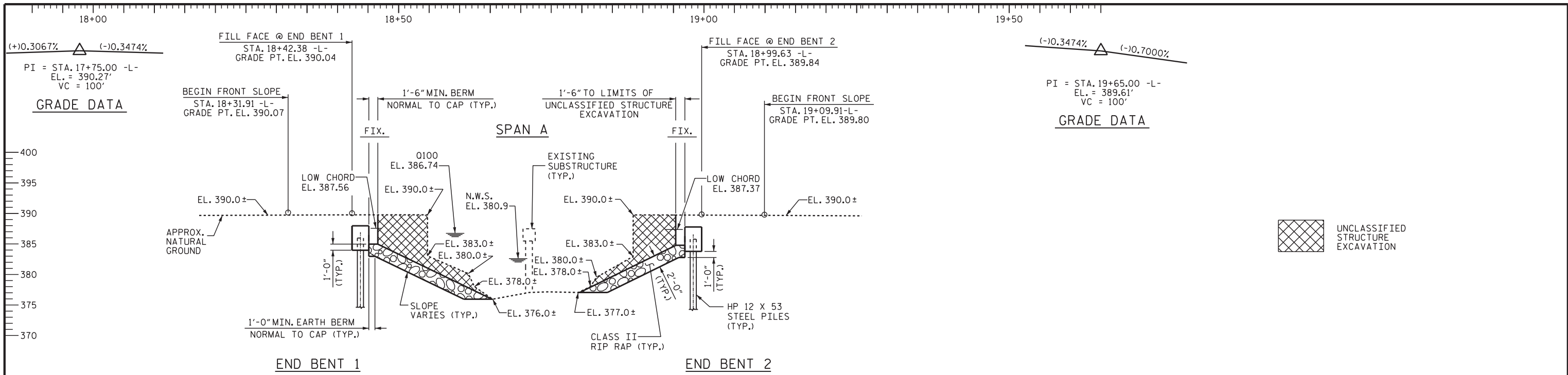
PROJ. REFERENCE NO.  
17BP.8.R.116

SHEET NO.  
X-5

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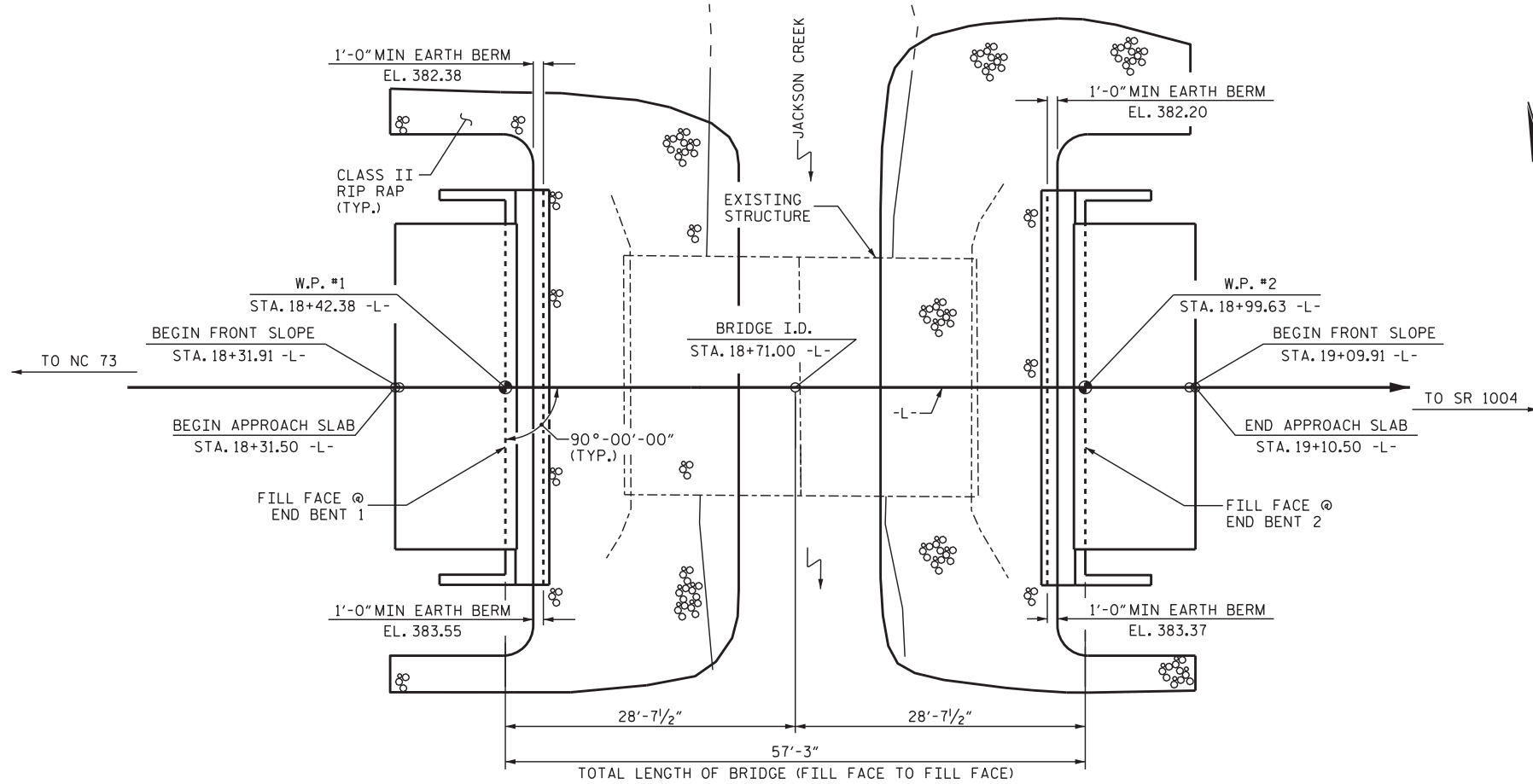
SECTION ALONG -L-

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 PI = STA. 19+65.00 -L-  
 EL. = 389.61'  
 VC = 100'

GRADE DATA  
 (+)0.3067% (-)0.3474%  
 PI = STA. 17+75.00 -L-  
 EL. = 390.27'  
 VC = 100'

UNCLASSIFIED  
 STRUCTURE  
 EXCAVATION

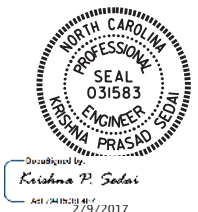
I HEREBY CERTIFY THESE PLANS  
 ARE THE AS-BUILT PLANS



PLAN

DRAWN BY : H. B. DESAI DATE : 8-05-16  
 CHECKED BY : T. L. AVERETTE DATE : 2-7-17  
 DESIGN ENGINEER OF RECORD : K. P. SEDA I DATE : 2-8-17

(PILES NOT SHOWN FOR CLARITY)



Drawn by:  
 Krishna P. Sedai  
 2/9/2017

PROJECT NO. 17BP.8.R.116  
 MOORE COUNTY  
 STATION: 18+71.00-L-

SHEET 1 OF 3 REPLACES BRIDGE NO. 0025

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 GENERAL DRAWING  
 FOR BRIDGE OVER  
 JACKSON CREEK ON  
 SR 1122 BETWEEN  
 NC 73 AND SR 1004

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-1
1			3			TOTAL SHEETS
2			4			14

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

**NOTES**

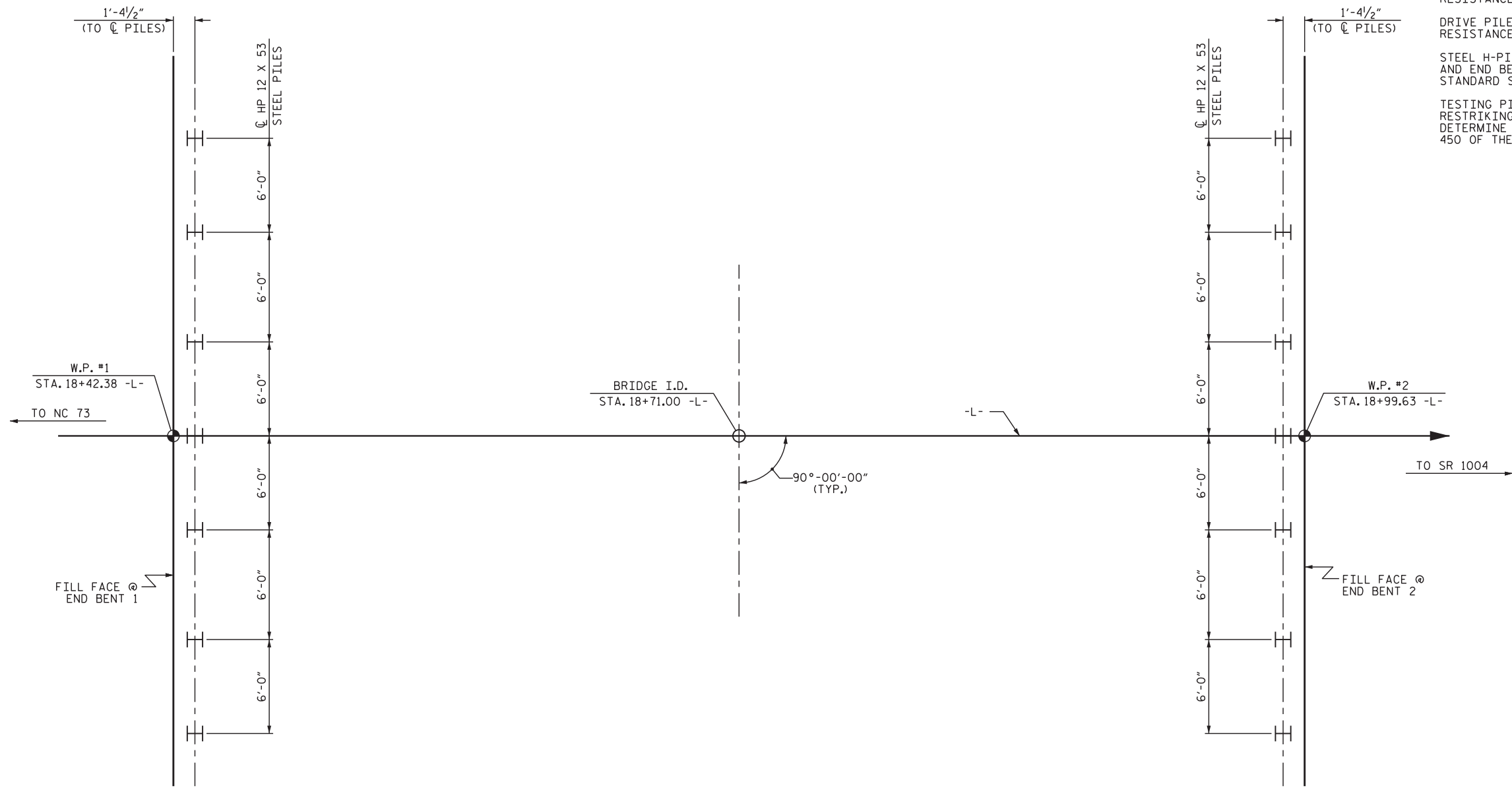
FOR PILES, SEE GEOTECHNICAL SPECIAL PROVISIONS AND SECTION 450 OF THE STANDARD SPECIFICATIONS.

PILES AT END BENT 1 AND END BENT 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 75 TONS PER PILE.

DRIVE PILES AT END BENT 1 AND END BENT 2 TO A REQUIRED DRIVING RESISTANCE OF 120 TONS PER PILE.

STEEL H-PILE POINTS ARE REQUIRED FOR ALL STEEL H-PILES AT END BENT 1 AND END BENT 2. FOR STEEL PILE POINTS, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

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.



END BENT 1

END BENT 2

**FOUNDATION LAYOUT**

DIMENSIONS LOCATING PILES ARE SHOWN TO THE CENTERLINE OF PILES.

PROJECT NO. 17BP.8.R.116  
MOORE COUNTY  
 STATION: 18+71.00 -L-

SHEET 2 OF 3



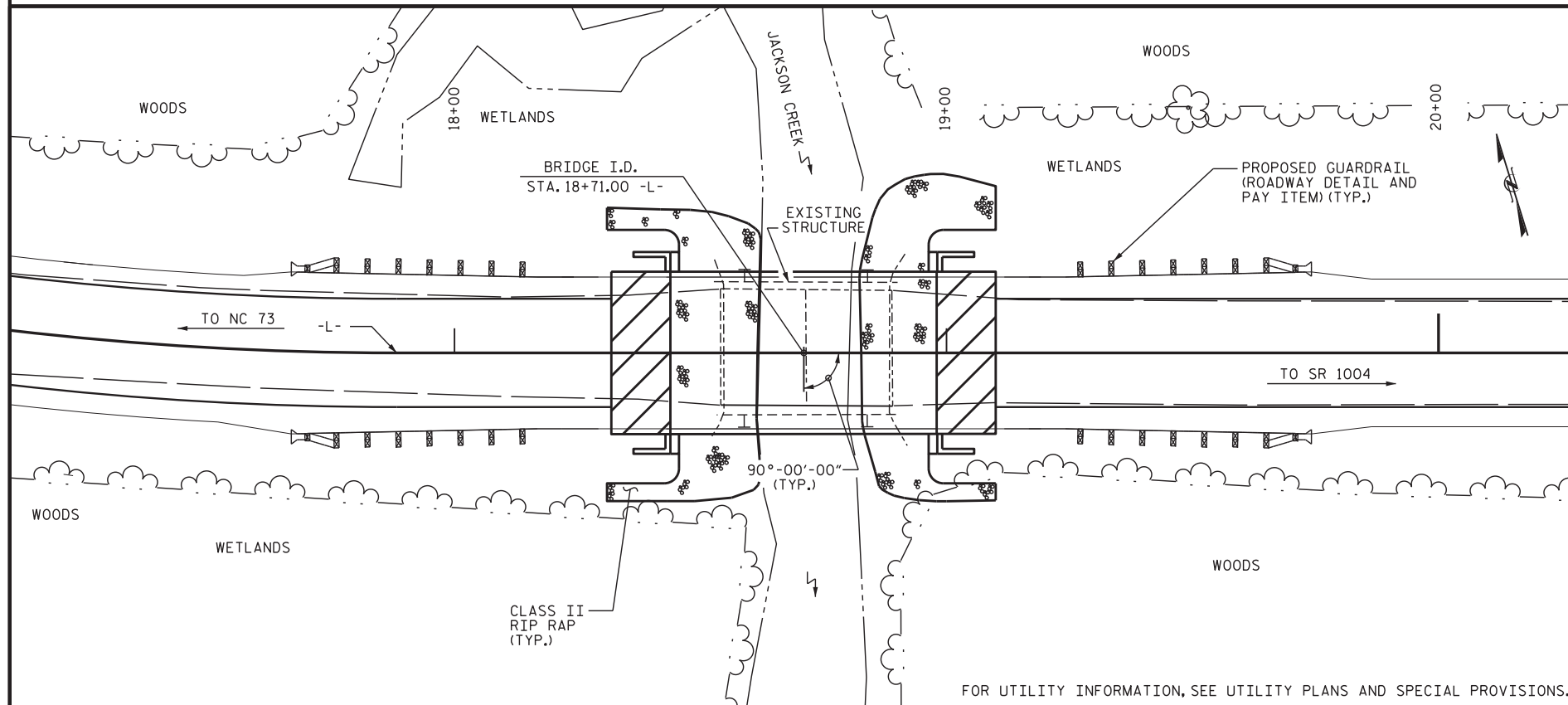
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
**GENERAL DRAWING**  
 FOR BRIDGE OVER  
 JACKSON CREEK ON  
 SR 1122 BETWEEN  
 NC 73 AND SR 1004

DRAWN BY : H. B. DESAI DATE : 8-09-16  
 CHECKED BY : T. L. AVERETTE DATE : 2-7-17

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2	
1			3			TOTAL SHEETS	14
2			4				

B.M. #2: YELLOW BENCH TIE IN 30" Ø OAK, 44.75' LEFT OF STA. 18+44.95 -BL-, EL 385.975



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.
- THE EXISTING STRUCTURE CONSISTING OF 2 CONTINUOUS SPANS (1 @ 17'-4" AND 1 @ 18'-0") WITH A TIMBER DECK ON I-BEAMS AND TIMBER CAPS ON TIMBER PILES AT THE END BENTS AND INTERIOR BENTS, WITH A CLEAR ROADWAY WIDTH OF 25'-1" AND LOCATED AT THE PROPOSED STRUCTURE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED BELOW THE LEGAL LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE FURTHER DETERIORATE, THIS LOAD LIMITATION MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.
- REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED IN A MANNER THAT PREVENTS DEBRIS FROM FALLING INTO THE WATER. THE CONTRACTOR SHALL SUBMIT DEMOLITION PLANS FOR REVIEW AND REMOVE THE BRIDGE IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.
- THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA ON SHEET S-1 SHALL BE EXCAVATED FOR A DISTANCE OF 30 FT. LEFT AND RIGHT OF CENTERLINE ROADWAY AS DIRECTED BY THE 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 DIFFERENCES 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.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK & FORMWORK, SEE SPECIAL PROVISIONS.
- FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
- THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH "HEC 18-EVALUATING SCOUR AT BRIDGES."
- INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE AT STATION 18+71.00-L".
- THIS BRIDGE IS LOCATED IN SEISMIC ZONE 2.
- FOR ASBESTOS ASSESSMENT FOR BRIDGE DEMOLITION AND RENOVATION ACTIVITIES, SEE SPECIAL PROVISIONS.
- AT THE CONTRACTOR'S OPTION, PRESTRESSED CONCRETE END BENT CAPS MAY BE SUBSTITUTED IN PLACE OF THE CAST-IN-PLACE CAPS. THE CONTRACTOR SHALL COORDINATE WITH THE RESIDENT ENGINEER TO RECEIVE REVISED PLANS AND DETAILS FROM THE STRUCTURES MANAGEMENT UNIT. THE REDESIGN AND ANY ADDITIONAL MATERIALS NEEDED WILL BE AT NO ADDITIONAL COST TO THE CONTRACTOR.

**HYDRAULIC DATA**

DESIGN DISCHARGE.....	650 C.F.S.
FREQUENCY OF DESIGN DISCHARGE....	25 YRS
DESIGN HIGH WATER ELEVATION.....	385.0
DRAINAGE AREA.....	18 SQ. MI.
BASE DISCHARGE(Q100).....	1236 C.F.S.
BASE HIGH WATER ELEVATION.....	386.74

**OVERTOPPING DATA**

OVERTOPPING DISCHARGE.....	2600 C.F.S.
FREQUENCY OF OVERTOPPING.....	500+ YRS.
OVERTOPPING ELEVATION.....	388.9

**TOTAL BILL OF MATERIAL**

	REMOVAL OF EXISTING STRUCTURE	PDA TESTING	UNCLASSIFIED STRUCTURE EXCAVATION	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	HP 12X53 STEEL PILES	STEEL PILE POINTS	VERTICAL CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLABS	ASBESTOS ASSESSMENT
	LUMP SUM	EACH	LUMP SUM	CU. YDS.	LUMP SUM	LBS.	NO. LIN.FT.	EA.	LIN.FT.	TONS	SQ. YDS.	LUMP SUM	NO. LIN.FT.	LUMP SUM
SUPERSTRUCTURE					LUMP SUM				110.00			LUMP SUM	11 605.00	
END BENT NO. 1			LUMP SUM	23.1		2767	7 105	7		335	370			
END BENT NO. 2			LUMP SUM	23.1		2767	7 70	7		280	310			
TOTAL	LUMP SUM	1	LUMP SUM	46.2	LUMP SUM	5534	14 175	14	110.00	615	680	LUMP SUM	11 605.00	LUMP SUM

PROJECT NO. 17BP.8.R.116  
MOORE COUNTY  
 STATION: 18+71.00-L-

SHEET 3 OF 3



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**GENERAL DRAWING**

FOR BRIDGE OVER  
 JACKSON CREEK ON  
 SR 1122 BETWEEN  
 NC 73 AND SR 1004

DRAWN BY : H.B. DESAI DATE : 8/09/16  
 CHECKED BY : T.L. AVERETTE DATE : 2/7/17  
 DESIGN ENGINEER OF RECORD: K.P. SEDA DATE : 2/8/17

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS
2			4			14



LOAD AND RESISTANCE FACTOR RATING (LRFR) 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			
						MOMENT					SHEAR					MOMENT								
						LIVELOAD FACTORS	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)	LIVELOAD FACTORS	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING	HL-93(Inv)	N/A	1	1.055	--	1.75	0.275	1.23	55'	EL	27	0.523	1.23	55'	EL	5.4	0.80	0.275	1.05	55'	EL	27		
	HL-93(0pr)	N/A	--	1.591	--	1.35	0.275	1.59	55'	EL	27	0.523	1.59	55'	EL	5.4	N/A	--	--	--	--	--		
	HS-20(Inv)	36.000	2	1.322	47.585	1.75	0.275	1.54	55'	EL	27	0.523	1.47	55'	EL	5.4	0.80	0.275	1.32	55'	EL	27		
	HS-20(0pr)	36.000	--	1.900	68.396	1.35	0.275	1.99	55'	EL	27	0.523	1.90	55'	EL	5.4	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SV	SNSH	13.500	--	2.776	37.476	1.40	0.275	4.04	55'	EL	27	0.523	4.17	55'	EL	5.4	0.80	0.275	2.78	55'	EL	27	
		SNGARBS2	20.000	--	2.155	43.095	1.40	0.275	3.14	55'	EL	27	0.523	3.02	55'	EL	5.4	0.80	0.275	2.15	55'	EL	27	
		SNAGRIS2	22.000	--	2.079	45.734	1.40	0.275	3.03	55'	EL	27	0.523	2.83	55'	EL	5.4	0.80	0.275	2.08	55'	EL	27	
		SNCOTTS3	27.250	--	1.384	37.708	1.40	0.275	2.01	55'	EL	27	0.523	2.09	55'	EL	5.4	0.80	0.275	1.38	55'	EL	27	
		SNAGGRS4	34.925	--	1.189	41.527	1.40	0.275	1.73	55'	EL	27	0.523	1.77	55'	EL	5.4	0.80	0.275	1.19	55'	EL	27	
		SNS5A	35.550	--	1.160	41.255	1.40	0.275	1.69	55'	EL	27	0.523	1.82	55'	EL	5.4	0.80	0.275	1.16	55'	EL	27	
		SNS6A	39.950	--	1.079	43.102	1.40	0.275	1.57	55'	EL	27	0.523	1.68	55'	EL	5.4	0.80	0.275	1.08	55'	EL	27	
	SNS7B	42.000	--	1.028	43.175	1.40	0.275	1.50	55'	EL	27	0.523	1.67	55'	EL	5.4	0.80	0.275	1.03	55'	EL	27		
	TTST	TNAGRIT3	33.000	--	1.320	43.556	1.40	0.275	1.92	55'	EL	27	0.523	1.98	55'	EL	5.4	0.80	0.275	1.32	55'	EL	27	
		TNT4A	33.075	--	1.330	43.979	1.40	0.275	1.94	55'	EL	27	0.523	1.91	55'	EL	5.4	0.80	0.275	1.33	55'	EL	27	
		TNT6A	41.600	--	1.101	45.811	1.40	0.275	1.60	55'	EL	27	0.523	1.83	55'	EL	5.4	0.80	0.275	1.10	55'	EL	27	
		TNT7A	42.000	--	1.114	46.804	1.40	0.275	1.62	55'	EL	27	0.523	1.71	55'	EL	5.4	0.80	0.275	1.11	55'	EL	27	
		TNT7B	42.000	--	1.163	48.848	1.40	0.275	1.69	55'	EL	27	0.523	1.62	55'	EL	5.4	0.80	0.275	1.16	55'	EL	27	
		TNAGRIT4	43.000	--	1.101	47.330	1.40	0.275	1.60	55'	EL	27	0.523	1.56	55'	EL	5.4	0.80	0.275	1.10	55'	EL	27	
TNAGT5A		45.000	--	1.031	46.405	1.40	0.275	1.50	55'	EL	27	0.523	1.58	55'	EL	5.4	0.80	0.275	1.03	55'	EL	27		
TNAGT5B	45.000	3	1.013	45.582	1.40	0.275	1.47	55'	EL	27	0.523	1.48	55'	EL	5.4	0.80	0.275	1.01	55'	EL	27			

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	$\gamma_{dc}$	$\gamma_{Dw}$
	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.

# CONTROLLING LOAD RATING

1 DESIGN LOAD RATING (HL-93)

2 DESIGN LOAD RATING (HS-20)

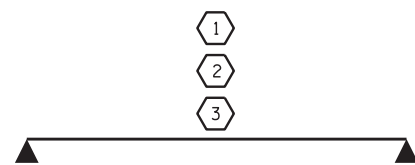
3 LEGAL LOAD RATING \*\*

\*\* SEE CHART FOR VEHICLE TYPE

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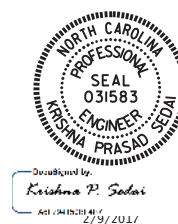
GIRDER LOCATION

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



LRFR SUMMARY  
FOR SPAN A

PROJECT NO. 17BP.8.R.116  
MOORE COUNTY  
STATION: 18+71.00 -L-



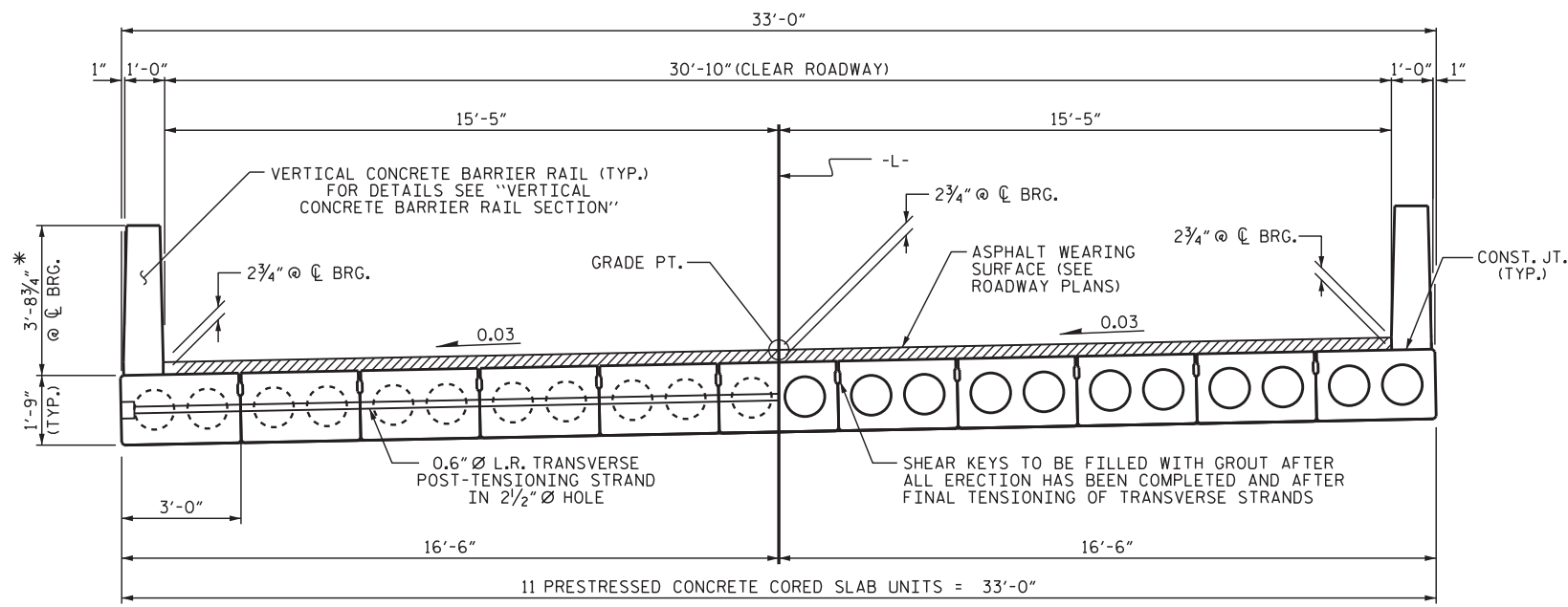
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

STANDARD  
LRFR SUMMARY FOR  
55' CORED SLAB UNIT  
90° SKEW  
(NON-INTERSTATE TRAFFIC)

ASSEMBLED BY : H. B. DESAI	DATE : 8-11-16
CHECKED BY : T. L. AVERETTE	DATE : 2-7-17
DRAWN BY : CVC	6/10
CHECKED BY : DNS	6/10

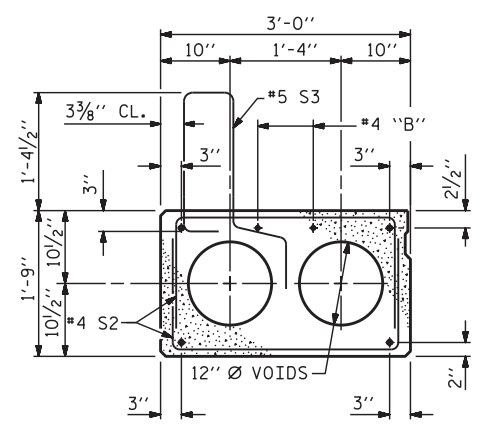
DOCUMENT NOT CONSIDERED  
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SIGNATURES COMPLETED

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NO.	BY:	DATE:	NO.	BY:	DATE:	S-4
1			3			TOTAL SHEETS
2			4			14

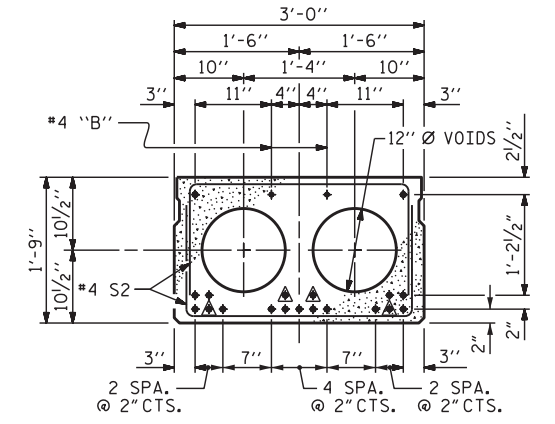


HALF SECTION AT INTERMEDIATE DIAPHRAGMS  
 HALF SECTION THROUGH VOIDS  
**TYPICAL SECTION**

\* - 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.



**EXT. SLAB SECTION**  
 (FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTION.)

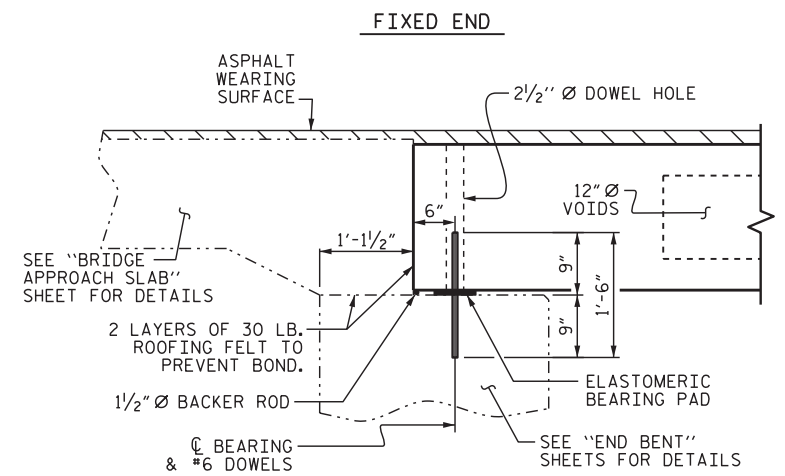


**INTERIOR SLAB SECTION (55' UNIT)**  
 (19 STRANDS REQUIRED)

**0.6" Ø LOW RELAXATION STRAND LAYOUT**

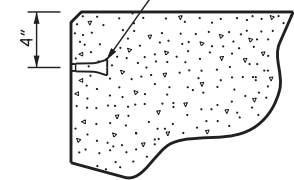
▲ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 6'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

**DEBONDING LEGEND**

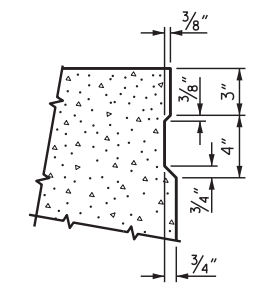


**SECTION AT END BENT**

PERMITTED THREADED INSERT CAST IN OUTSIDE FACE OF EXTERIOR UNIT AND RECESSED 3/8". SIZE TO BE DETERMINED BY CONTRACTOR.

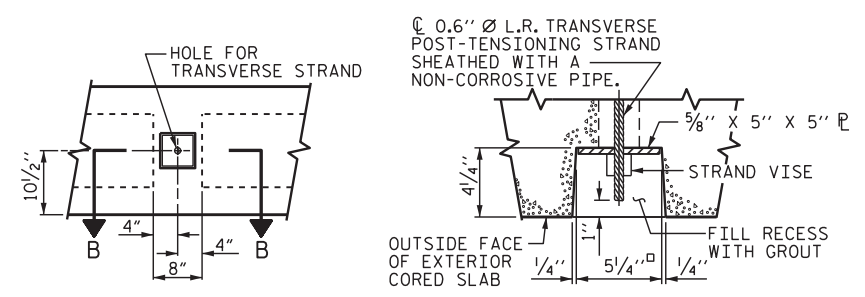


**THREADED INSERT DETAIL**

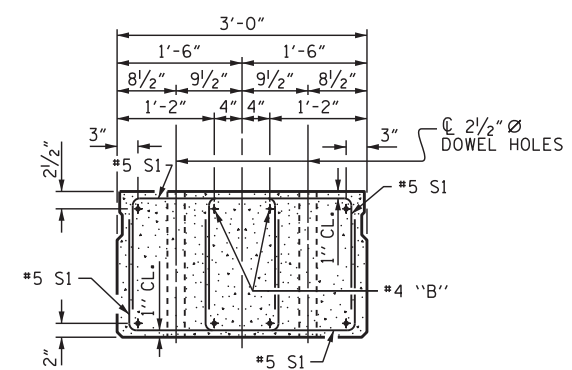


**SHEAR KEY DETAIL**

NOTE: OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR CORED SLABS.



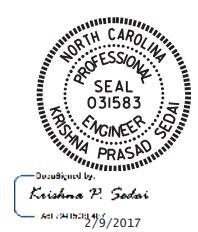
**ELEVATION VIEW**  
**SECTION B-B**  
**GROUTED RECESS AT END OF POST-TENSIONED STRAND OF CORED SLABS**



**END ELEVATION**  
 SHOWING PLACEMENT OF DOUBLE STIRRUPS AND LOCATION OF DOWEL HOLES. (STRAND LAYOUT NOT SHOWN.)  
 INTERIOR SLAB UNIT SHOWN-EXTERIOR SLAB UNIT SIMILAR EXCEPT SHEAR KEY LOCATION.

PROJECT NO. 17BP.8.R.116  
 MOORE COUNTY  
 STATION: 18+71.00 -L-

SHEET 1 OF 3

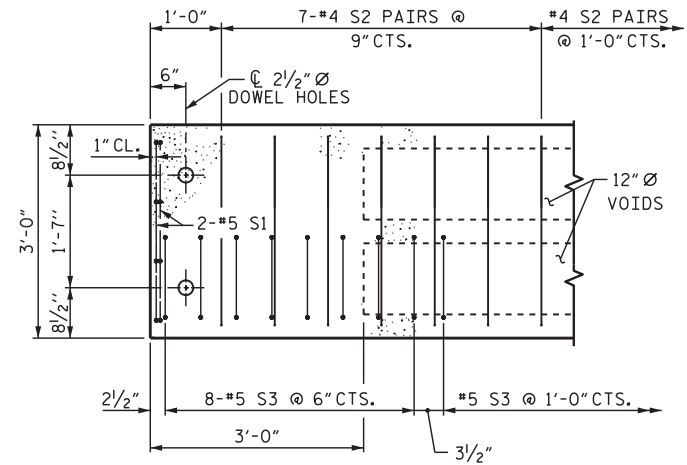
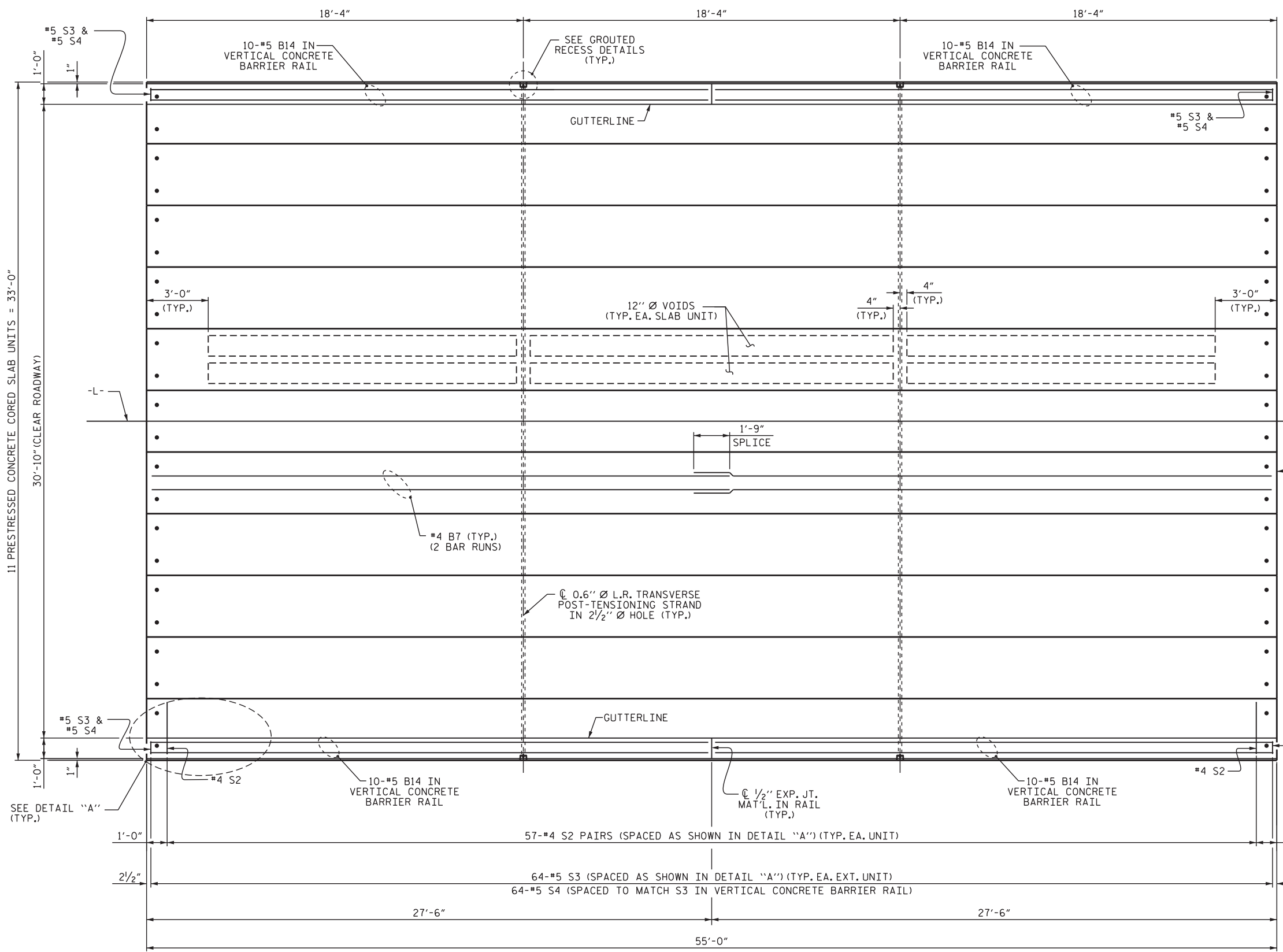


STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 STANDARD  
 3'-0" X 1'-9"  
 PRESTRESSED CONCRETE  
 CORED SLAB UNIT  
 90° SKEW

ASSEMBLED BY : H. B. DESAI	DATE : 8-11-16
CHECKED BY : T. L. AVERETTE	DATE : 2-7-17
DRAWN BY : DGE 5/09	
CHECKED BY : BCH 6/09	
REV. 9/14	MAA/TMG

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2		4	



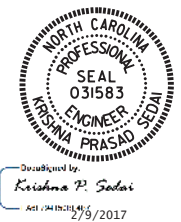
**DETAIL "A"**  
 (TYPICAL EACH END OF UNIT)  
 NOTE: EXTERIOR UNIT SHOWN - INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S3 BARS.

**PLAN OF UNIT**

PROJECT NO. 17BP.8.R.116  
 MOORE COUNTY  
 STATION: 18+71.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 PLAN OF 55' UNIT  
 30'-10" CLEAR ROADWAY  
 90° SKEW



ASSEMBLED BY : H. B. DESAI	DATE : 8-11-16
CHECKED BY : T. L. AVERETTE	DATE : 2-7-17
DRAWN BY : DGE	3/09
REV. 12/5/11	MAA/AAC
CHECKED BY : BCH	3/09
REV. 8/14	MAA/TMG

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REVISIONS						SHEET NO.	
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1			3			TOTAL SHEETS 14	
2			4				

BILL OF MATERIAL FOR ONE 55' CORED SLAB UNIT							
		EXTERIOR UNIT			INTERIOR UNIT		
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
B7	4	#4	STR	28'-3"	75	28'-3"	75
S1	8	#5	3	4'-3"	35	4'-3"	35
S2	114	#4	3	5'-4"	406	5'-4"	406
* S3	64	#5	1	5'-7"	373		
REINFORCING STEEL				LBS.	516		516
* EPOXY COATED REINFORCING STEEL				LBS.	373		
6500 P.S.I. CONCRETE				CU. YDS.	7.8		7.8
0.6" Ø L.R. STRANDS				No.	19		19

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

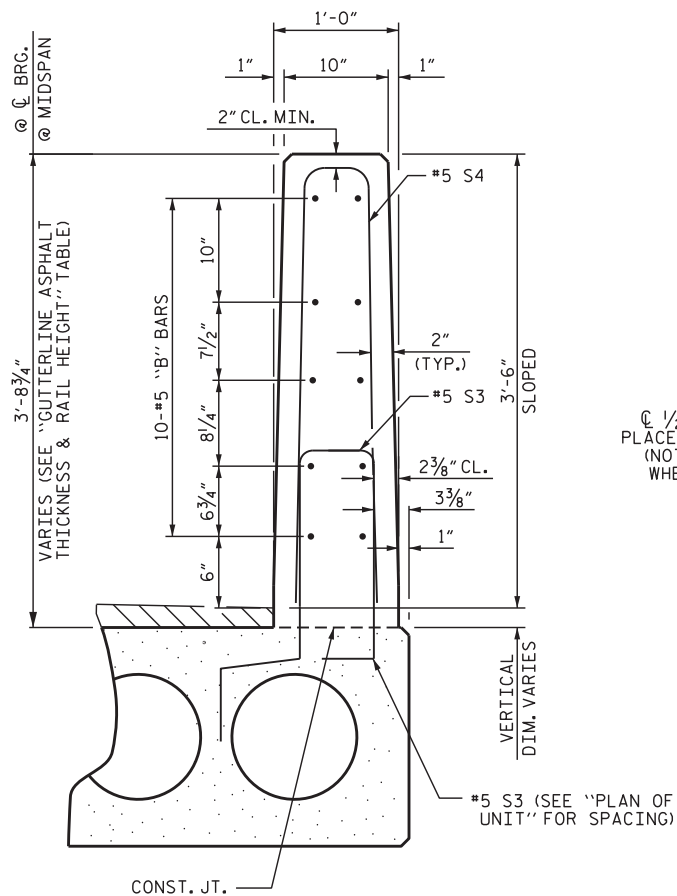
GRADE 270 STRANDS	
	0.6" Ø L.R.
AREA (SQUARE INCHES)	0.217
ULTIMATE STRENGTH (LBS. PER STRAND)	58,600
APPLIED PRESTRESS (LBS. PER STRAND)	43,950

CORED SLABS REQUIRED			
55' UNIT	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.	2	55'-0"	110'-0"
INTERIOR C.S.	9	55'-0"	495'-0"
TOTAL	11		605'-0"

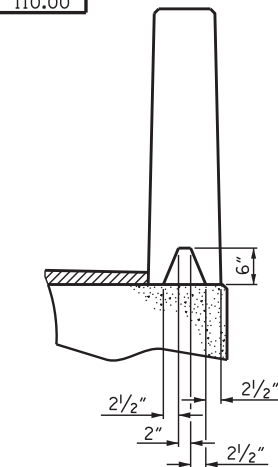
BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL						
BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
55' UNIT						
* B14	40	40	#5	STR	27'-1"	1130
* S4	128	128	#5	2	7'-2"	957
* EPOXY COATED REINFORCING STEEL				LBS.	2087	
CLASS AA CONCRETE				CU. YDS.	14.1	
TOTAL VERTICAL CONCRETE BARRIER RAIL				LN. FT.	110.00	

CONCRETE RELEASE STRENGTH	
UNIT	PSI
55' UNITS	4900

GUTTERLINE ASPHALT THICKNESS & RAIL HEIGHT		
	ASPHALT OVERLAY THICKNESS	RAIL HEIGHT
	@ MID-SPAN	@ MID-SPAN
55' UNITS	1 5/8"	3'-7 5/8"

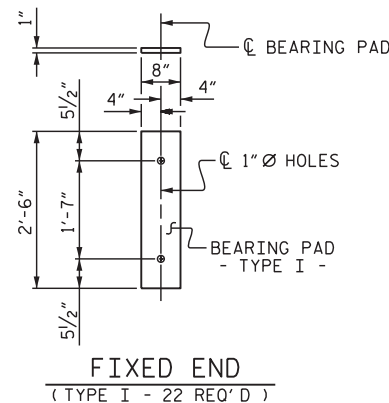


① 1/2" EXP. JT. MAT'L HELD IN PLACE WITH GALVANIZED NAILS. (NOTE: OMIT EXP. JT. MAT'L. WHEN SLIP FORM IS USED)



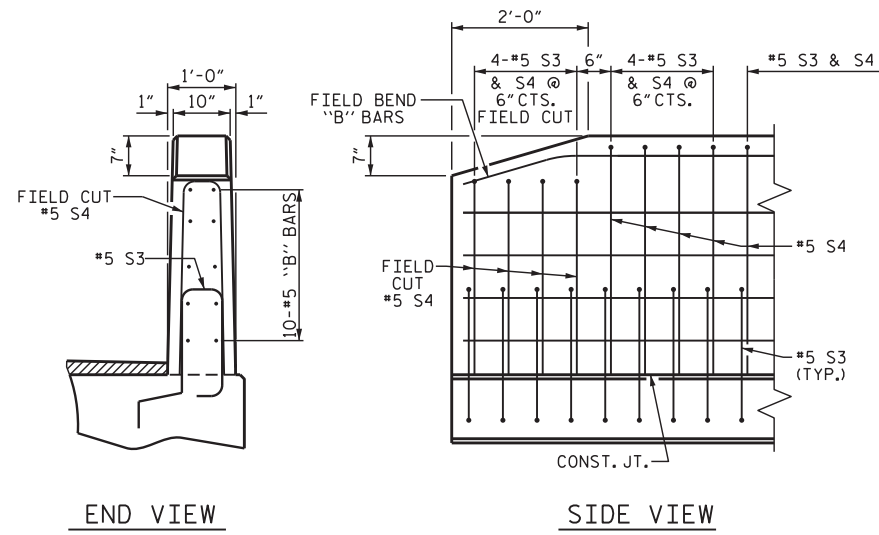
SECTION S-S  
AT DAM IN OPEN JOINT  
(THIS IS TO BE USED ONLY WHEN SLIP FORM IS USED)

ELEVATION AT EXPANSION JOINTS



ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 50 DUROMETER HARDNESS.

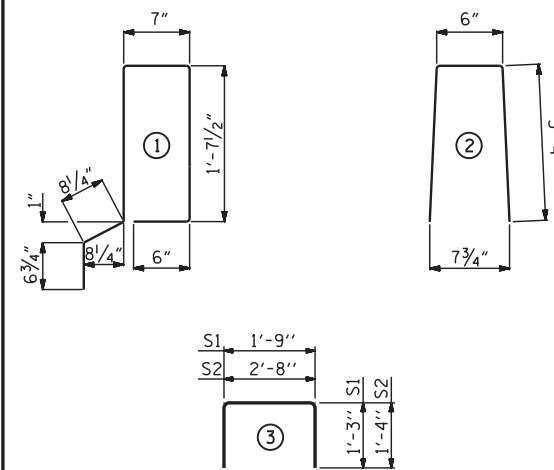


END VIEW

SIDE VIEW

END OF RAIL DETAILS

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

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.

FLAME CUTTING OF THE TRANSVERSE POST-TENSIONING STRAND IS NOT ALLOWED.

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.

THE PERMITTED THREADED INSERTS ARE DETAILED AS AN OPTION FOR THE CONTRACTOR TO ATTACH FALSEWORK AND FORMWORK DURING CONSTRUCTION.

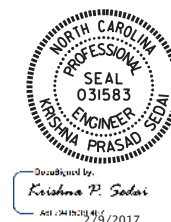
THE PERMITTED THREADED INSERTS IN THE EXTERIOR UNITS SHALL BE SIZED BY THE CONTRACTOR, SPACED AT 4'-0" CENTERS AND GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS. STAINLESS STEEL THREADED INSERTS MAY BE USED AS AN ALTERNATE.

THE PERMITTED THREADED INSERTS SHALL BE GROUTED BY THE CONTRACTOR IMMEDIATELY FOLLOWING REMOVAL OF THE FALSEWORK.

THE COST OF THE PERMITTED THREADED INSERTS SHALL BE INCLUDED IN THE PRICE BID FOR THE PRECAST UNITS.

PROJECT NO. 17BP.8.R.116  
MOORE COUNTY  
STATION: 18+71.00 -L-

SHEET 3 OF 3



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
STANDARD  
3'-0" X 1'-9"  
PRESTRESSED CONCRETE  
CORED SLAB UNIT  
90° SKEW

ASSEMBLED BY : H. B. DESAI	DATE : 8-11-16
CHECKED BY : T. L. AVERETTE	DATE : 2-7-17
DRAWN BY : DGE 5/09	REV. 11/14
CHECKED BY : BCH 6/09	MAA/TMG

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NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS 14
2			4			

STD. NO. 21" PCS3\_33\_90S



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.)

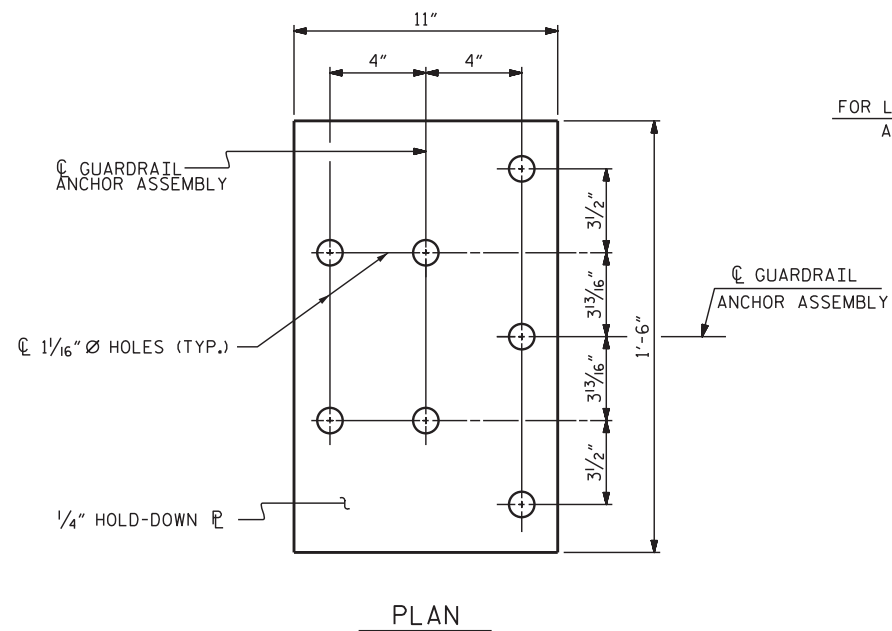
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

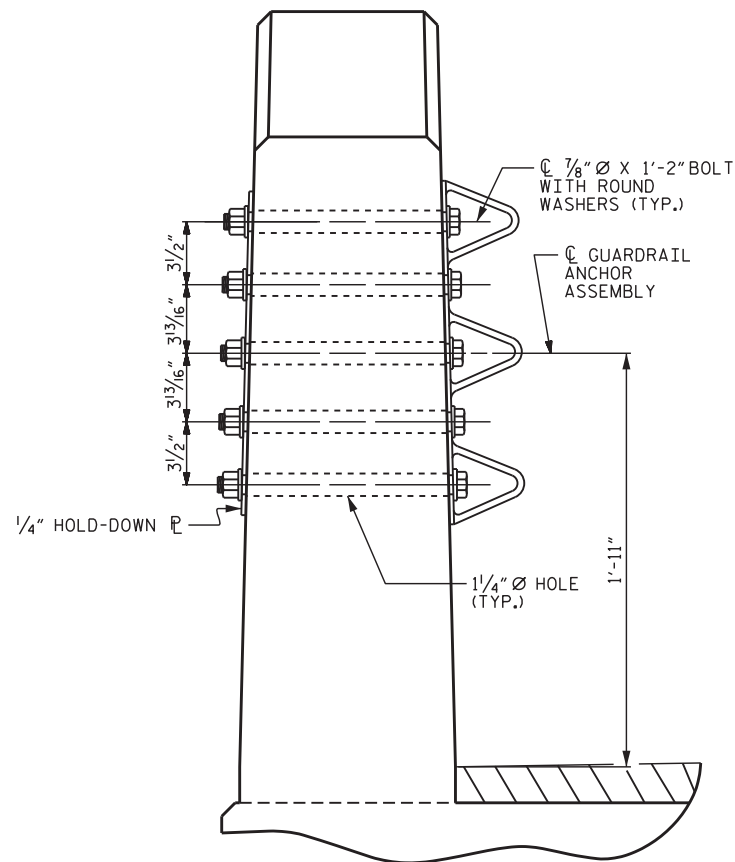
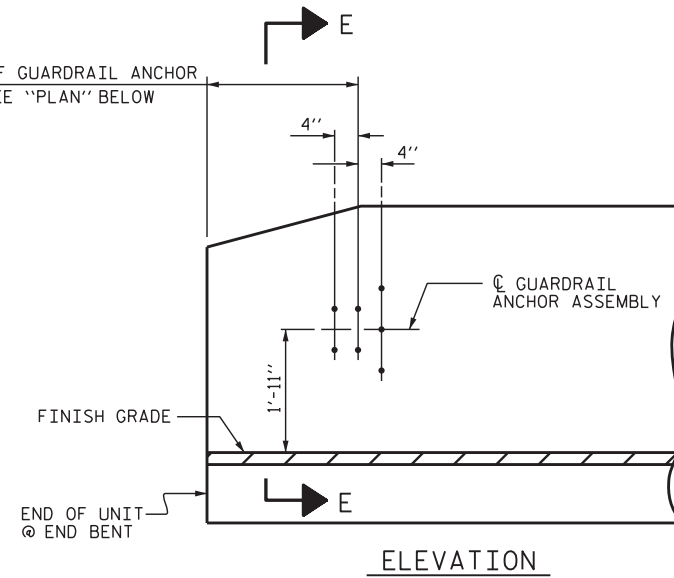
THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR VERTICAL CONCRETE BARRIER RAIL.

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.

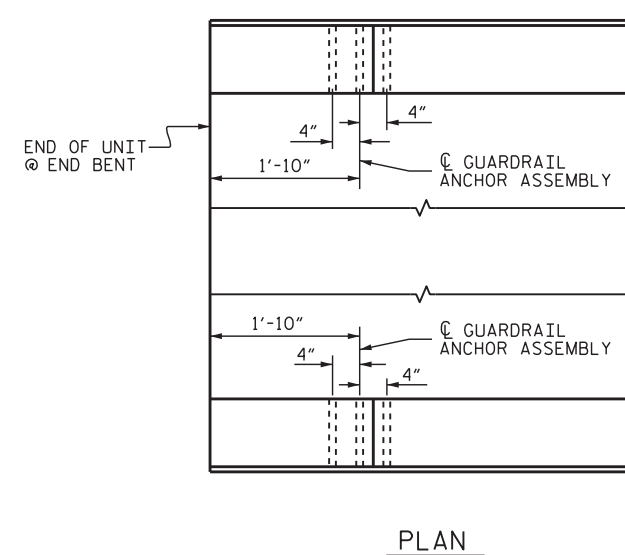


FOR LOCATION OF GUARDRAIL ANCHOR ASSEMBLY, SEE "PLAN" BELOW



SECTION E-E

GUARDRAIL ANCHOR ASSEMBLY DETAILS



LOCATION OF ANCHORS FOR GUARDRAIL

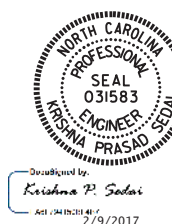
END BENT #1 SHOWN, END BENT #2 SIMILAR.



SKETCH SHOWING POINTS OF ATTACHMENT

\* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. 17BP.8.R.116  
 MOORE COUNTY  
 STATION: 18+71.00 -L-



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

ASSEMBLED BY :	H.B. DESAI	DATE :	8/11/16
CHECKED BY :	T.L. AVERETTE	DATE :	2/7/17
DRAWN BY :	MAA	5/10	REV. 12/5/11
CHECKED BY :	GM	5/10	REV. 6/13
			REV. 1/15

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8
1			3			TOTAL SHEETS
2			4			14

**NOTES**

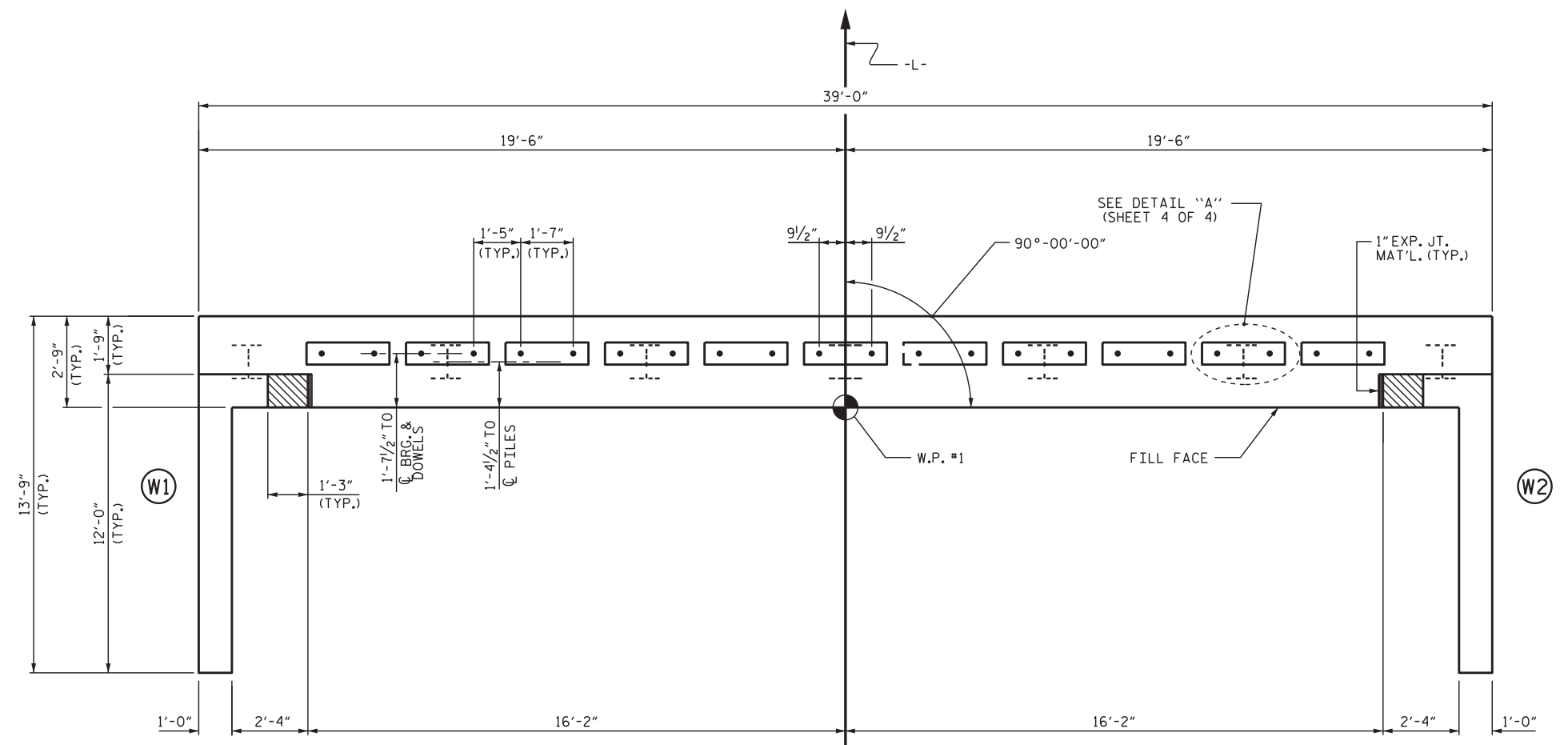
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

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.

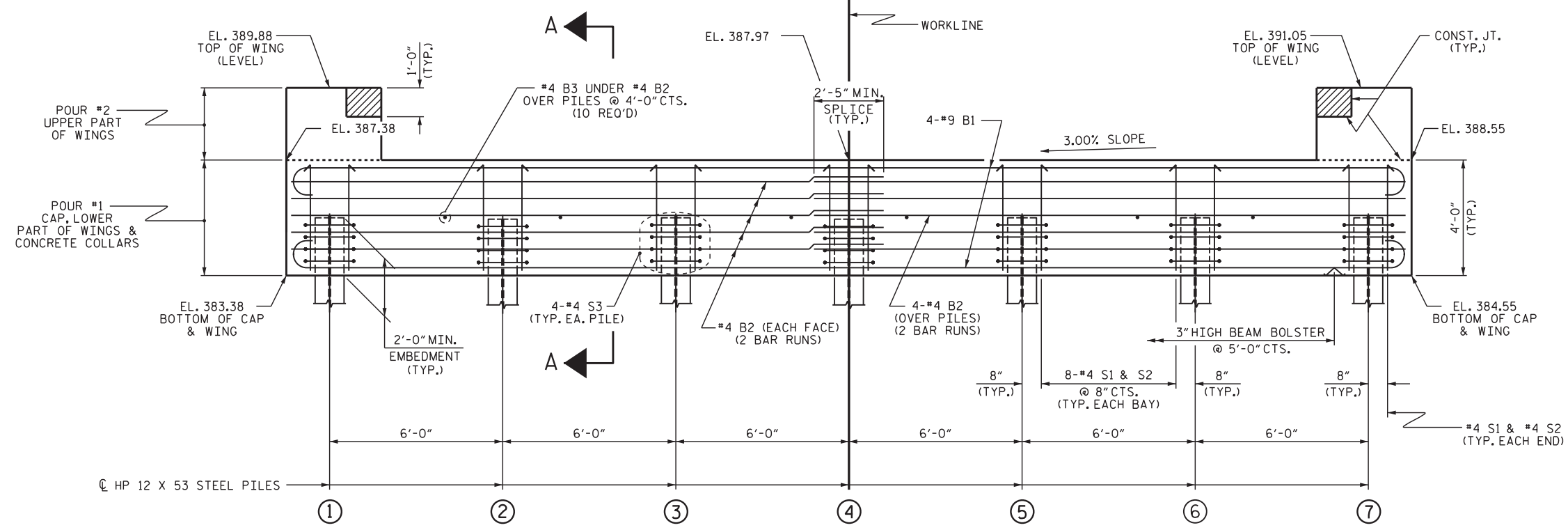
FOR WING DETAILS, SEE SHEET 3 OF 4.

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.



**PLAN**

TOP OF PILE ELEVATIONS	
①	385.44
②	385.62
③	385.80
④	385.98
⑤	386.16
⑥	386.34
⑦	386.52

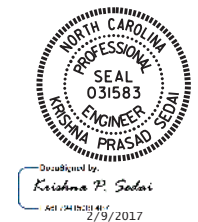


**ELEVATION**

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.

PROJECT NO. 17BP.8.R.116  
MOORE COUNTY  
 STATION: 18+71.00 -L-

SHEET 1 OF 4



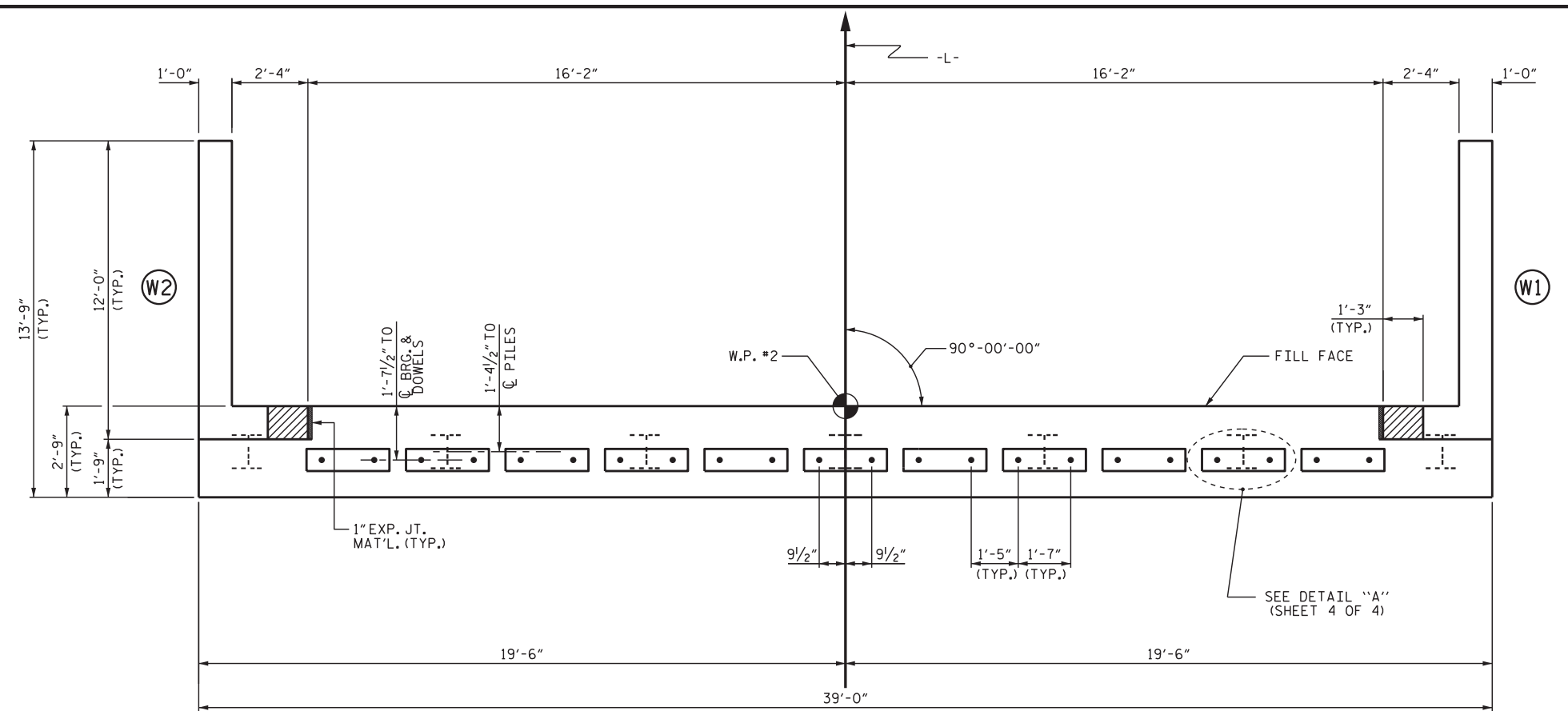
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**SUBSTRUCTURE**  
**END BENT No. 1**

ASSEMBLED BY : H. B. DESAI	DATE : 8-11-16
CHECKED BY : T. L. AVERETTE	DATE : 2-7-17
DRAWN BY : WJH	12/11
CHECKED BY : AAC	12/11
REV. 4/15	MAA/TMG

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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS 14
2			4			



**NOTES**

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

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.

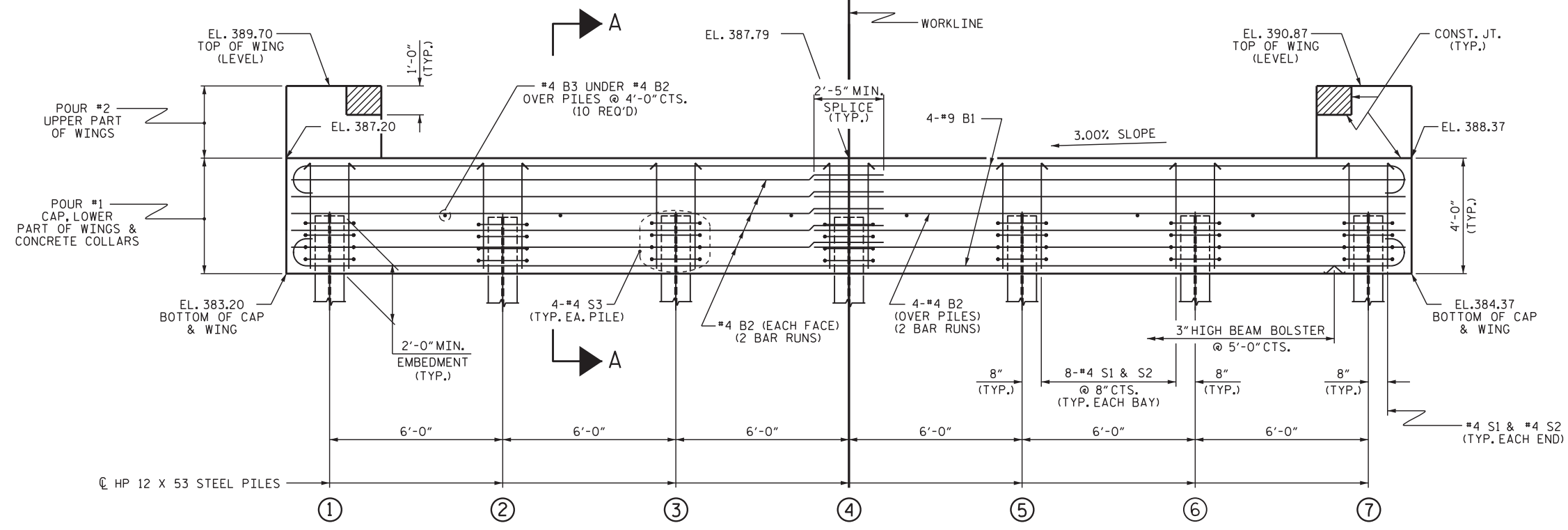
FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.

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.

TOP OF PILE ELEVATIONS	
①	385.26
②	385.44
③	385.62
④	385.80
⑤	385.98
⑥	386.16
⑦	386.34

**PLAN**

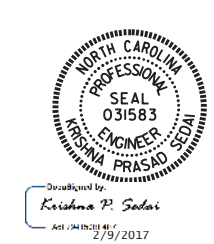


**ELEVATION**

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.

PROJECT NO. 17BP.8.R.116  
MOORE COUNTY  
 STATION: 18+71.00 -L-

SHEET 2 OF 4



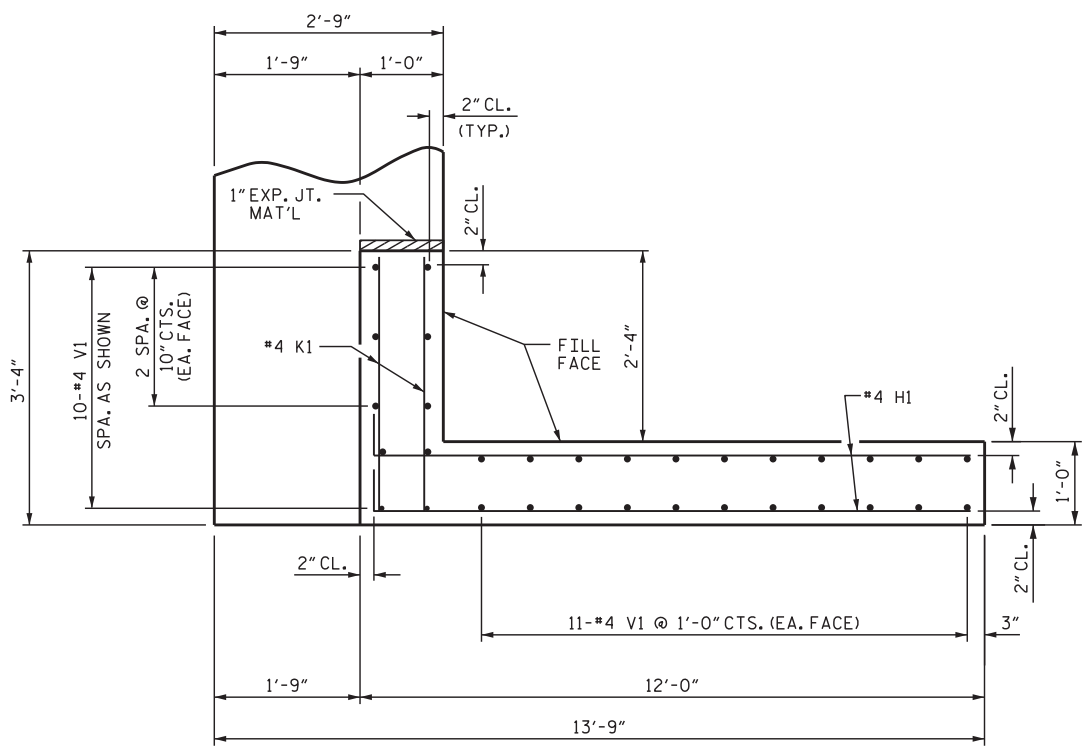
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**SUBSTRUCTURE**  
**END BENT No. 2**

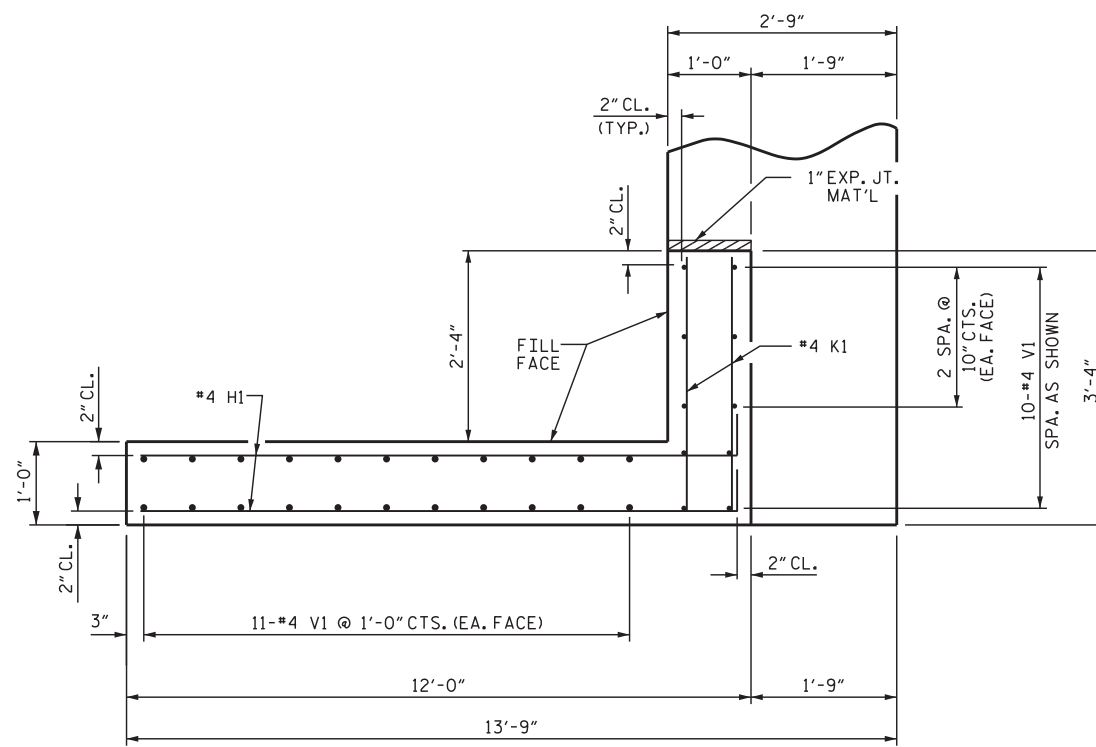
ASSEMBLED BY : H. B. DESAI	DATE : 8-11-16
CHECKED BY : T. L. AVERETTE	DATE : 2-7-17
DRAWN BY : WJH	12/11
CHECKED BY : AAC	12/11
REV. 4/15	MAA/TMG

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS
2			4			14

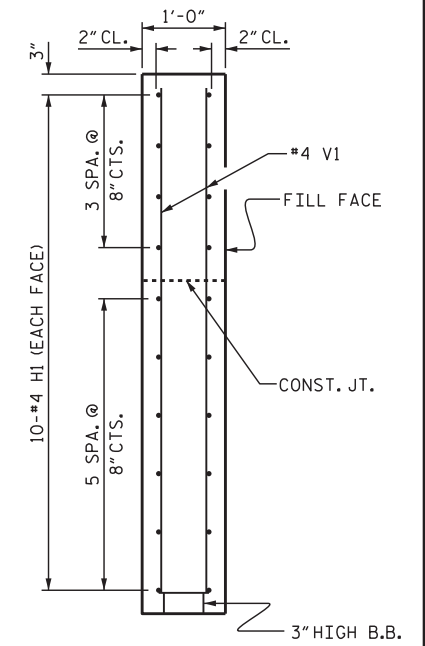
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



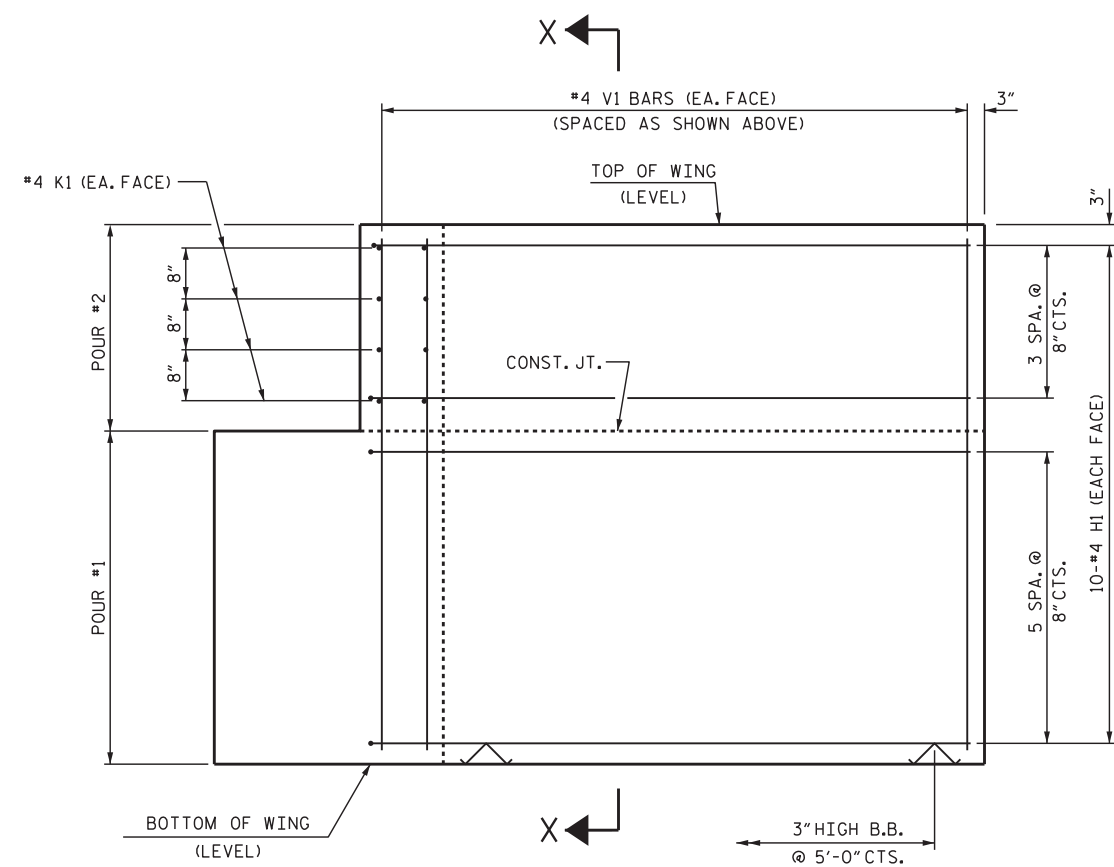
PLAN OF WING (W1)



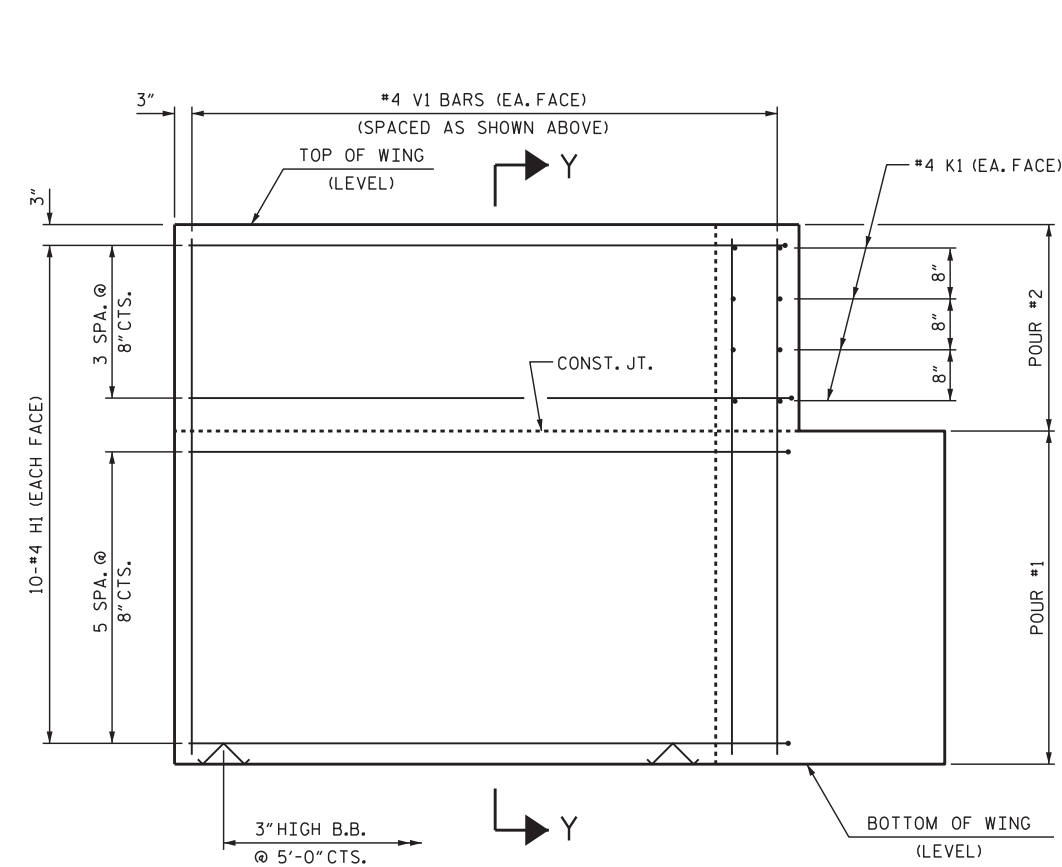
PLAN OF WING (W2)



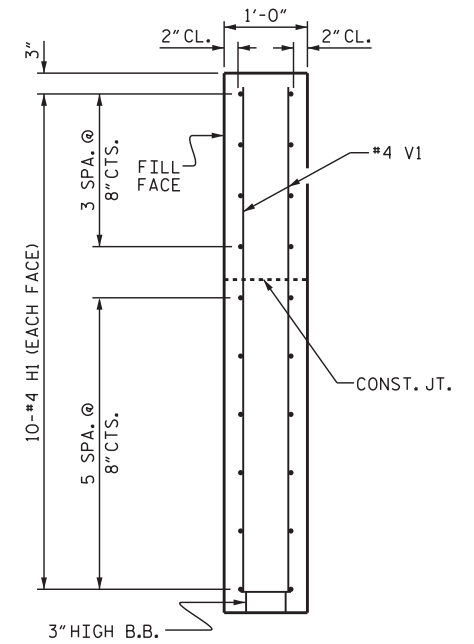
SECTION X-X



ELEVATION OF WING (W1)



ELEVATION OF WING (W2)



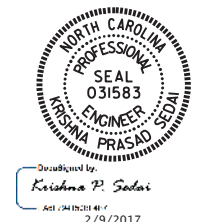
SECTION Y-Y

PROJECT NO. 17BP.8.R.116  
 MOORE COUNTY  
 STATION: 18+71.00 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SUBSTRUCTURE  
 END BENT  
 WING DETAILS

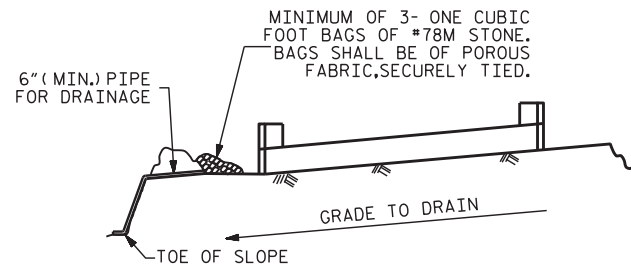


ASSEMBLED BY : H. B. DESAI	DATE : 8-11-16
CHECKED BY : T. L. AVERETTE	DATE : 2-7-17
DRAWN BY : WJH 12/11	REV. 4/15
CHECKED BY : AAC 12/11	MAA/TMG

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 SIGNATURES COMPLETED

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11	
1			3			TOTAL SHEETS	
2			4			14	



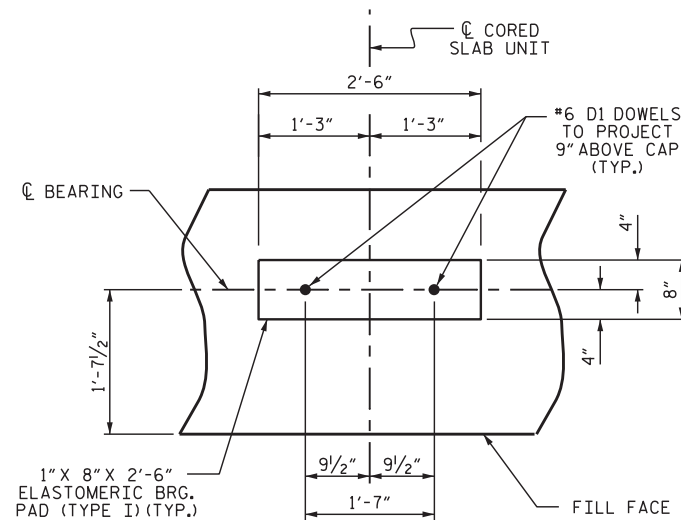


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.

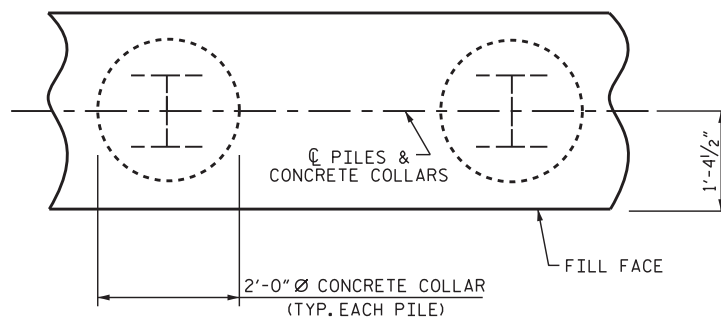
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

### TEMPORARY DRAINAGE AT END BENT



DETAIL "A"

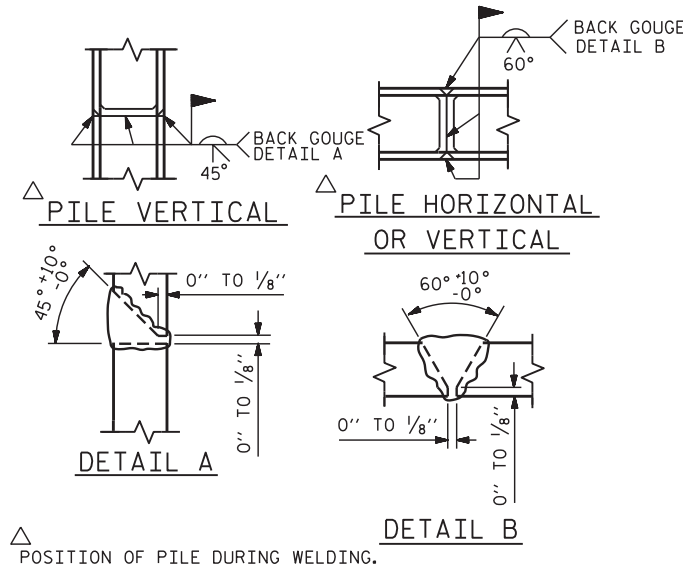
(END BENT No. 1 SHOWN, END BENT No. 2 SIMILAR BY ROTATION)



PLAN

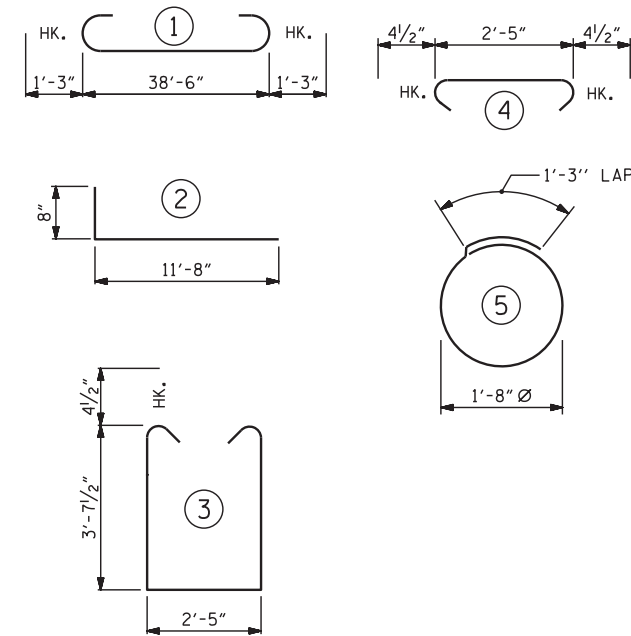
### CORROSION PROTECTION FOR STEEL PILES DETAIL

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



### PILE SPLICE DETAILS

### BAR TYPES



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: 7	LIN. FT. = 105	NO: 7	LIN. FT. = 70
STEEL PILE POINTS EA. = 7		STEEL PILE POINTS EA. = 7	

### BILL OF MATERIAL

#### FOR ONE END BENT

BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	41'-0"	1115
B2	28	#4	STR	20'-7"	385
B3	10	#4	STR	2'-5"	16
D1	22	#6	STR	1'-6"	50
H1	40	#4	2	12'-4"	330
K1	16	#4	STR	2'-11"	31
S1	50	#4	3	10'-5"	348
S2	50	#4	4	3'-2"	106
S3	28	#4	5	6'-6"	122
V1	64	#4	STR	6'-2"	264

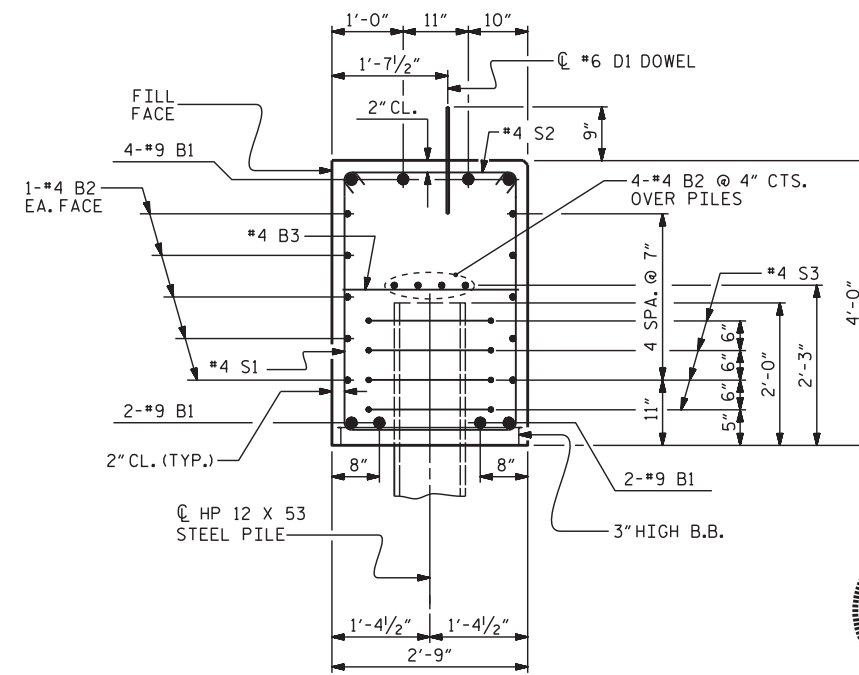
REINFORCING STEEL (FOR ONE END BENT) 2767 LBS.

CLASS A CONCRETE BREAKDOWN (FOR ONE END BENT)

POUR #1 CAP, LOWER PART OF WINGS & COLLARS 20.4 C.Y.

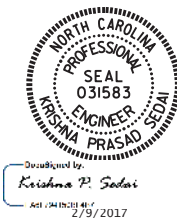
POUR #2 UPPER PART OF WINGS 2.7 C.Y.

TOTAL CLASS A CONCRETE 23.1 C.Y.



### SECTION A-A

(CONCRETE COLLAR NOT SHOWN FOR CLARITY. SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL.")



PROJECT NO. 17BP.8.R.116

MOORE COUNTY

STATION: 18+71.00 -L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

SUBSTRUCTURE

END BENT No. 1 & 2  
DETAILS

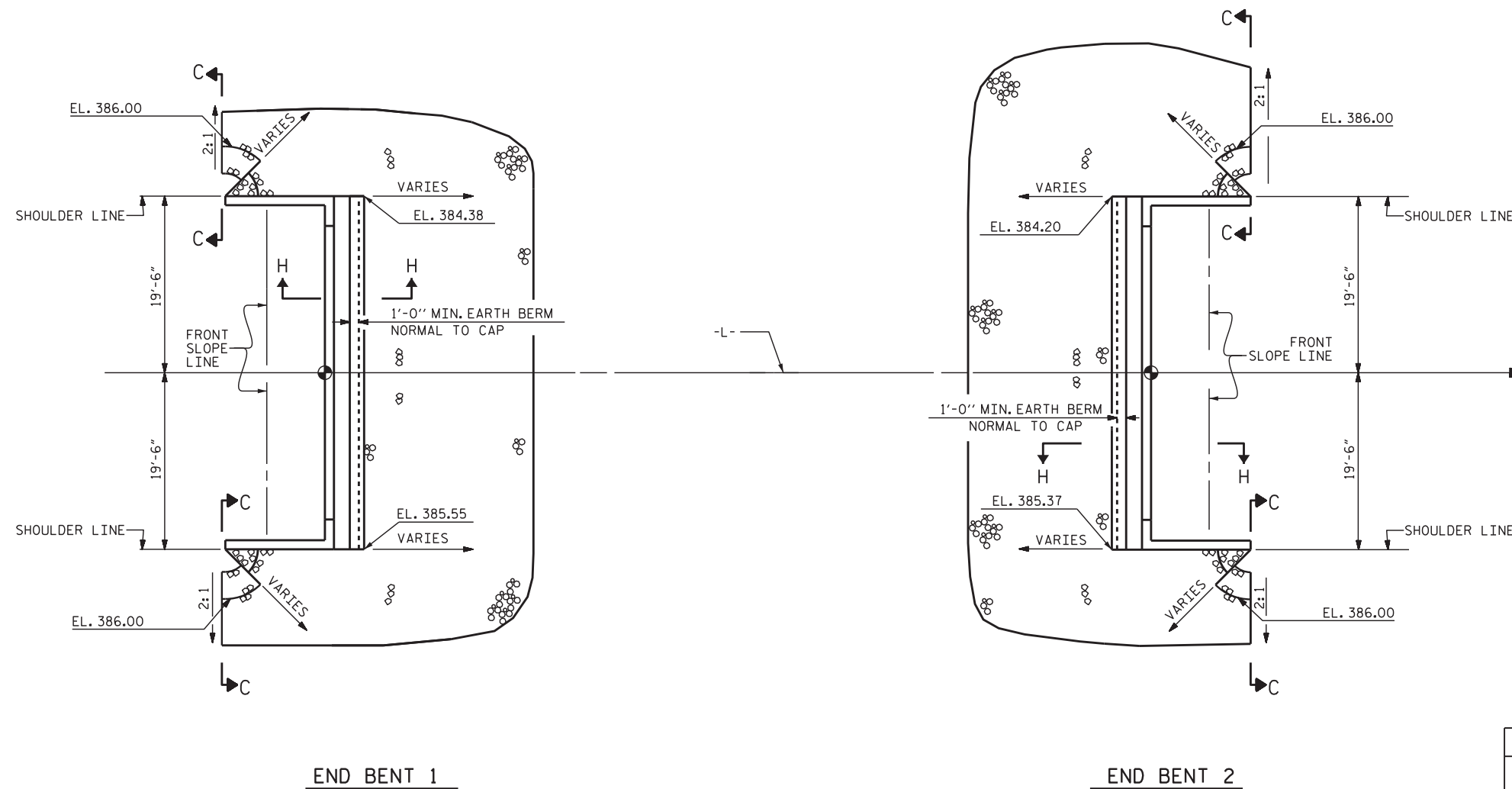
ASSEMBLED BY : H. B. DESAI	DATE : 8-11-16
CHECKED BY : T. L. AVERETTE	DATE : 2-7-17
DRAWN BY : WJH 12/11	
CHECKED BY : AAC 12/11	

09-FEB-2017 08:48  
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REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12	
1			3			TOTAL SHEETS 14	
2			4				

STD. NO. EB\_33\_90S4

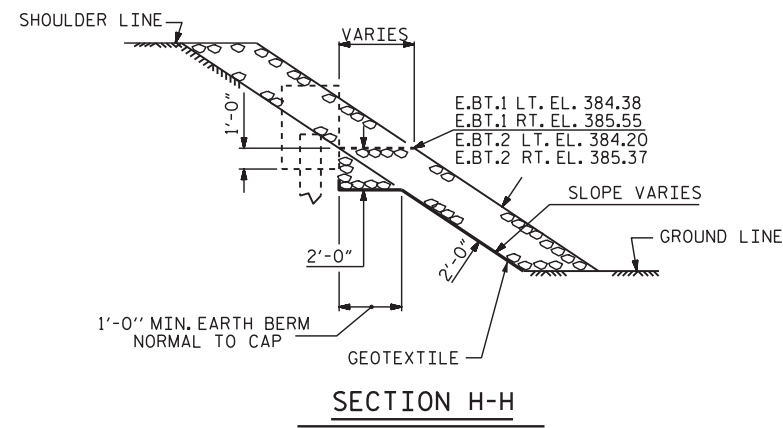


END BENT 1

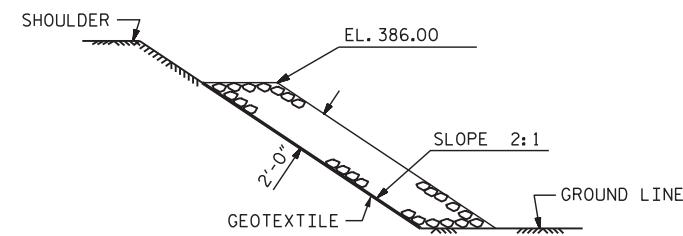
END BENT 2

PLAN

ESTIMATED QUANTITIES		
BRIDGE @ STA. 18+71.00 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	335	370
END BENT 2	280	310

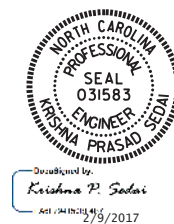


SECTION H-H



SECTION C-C

PROJECT NO. 17BP.8.R.116  
MOORE COUNTY  
 STATION: 18+71.00 -L-

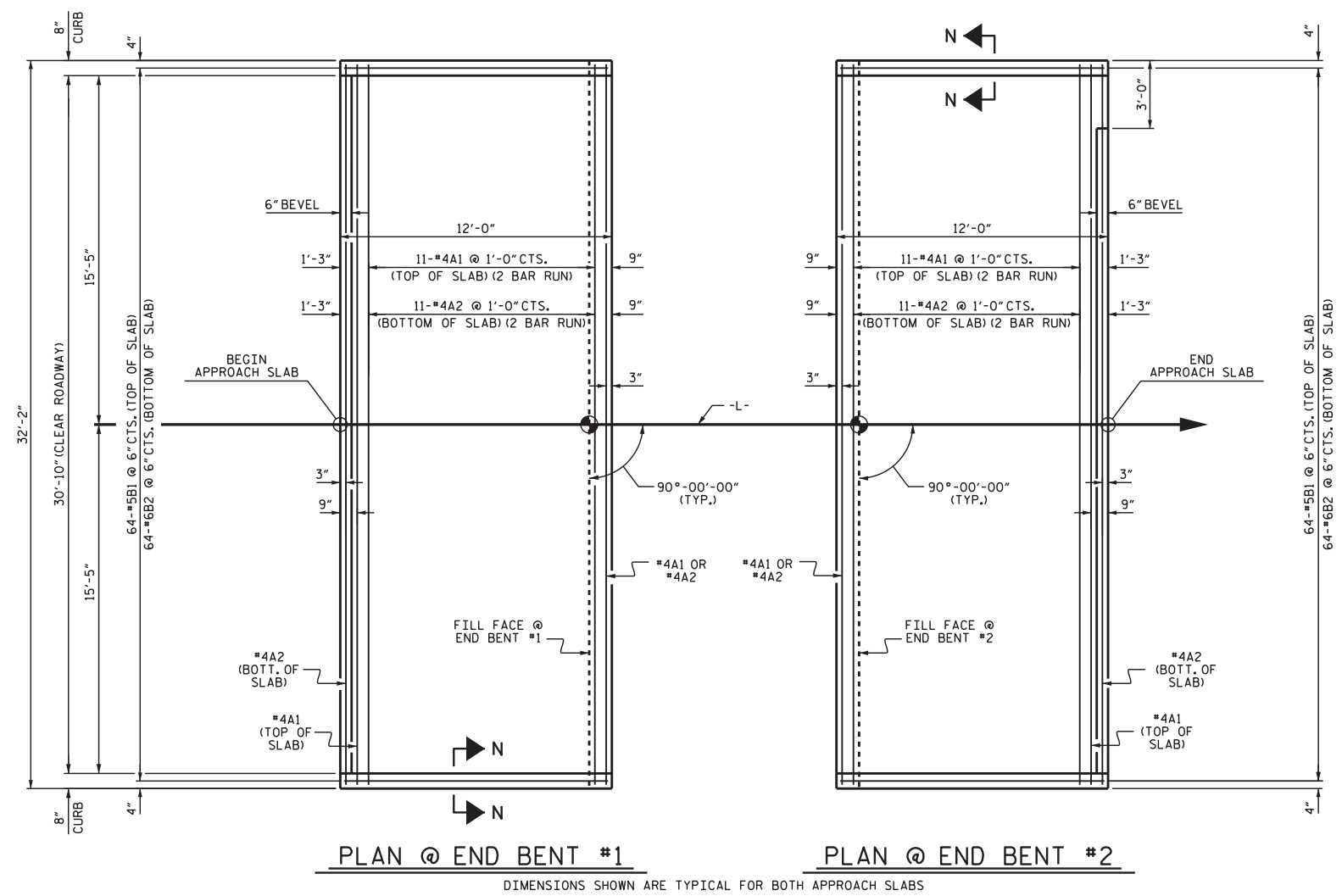


STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 STANDARD  
 = RIP RAP DETAILS =

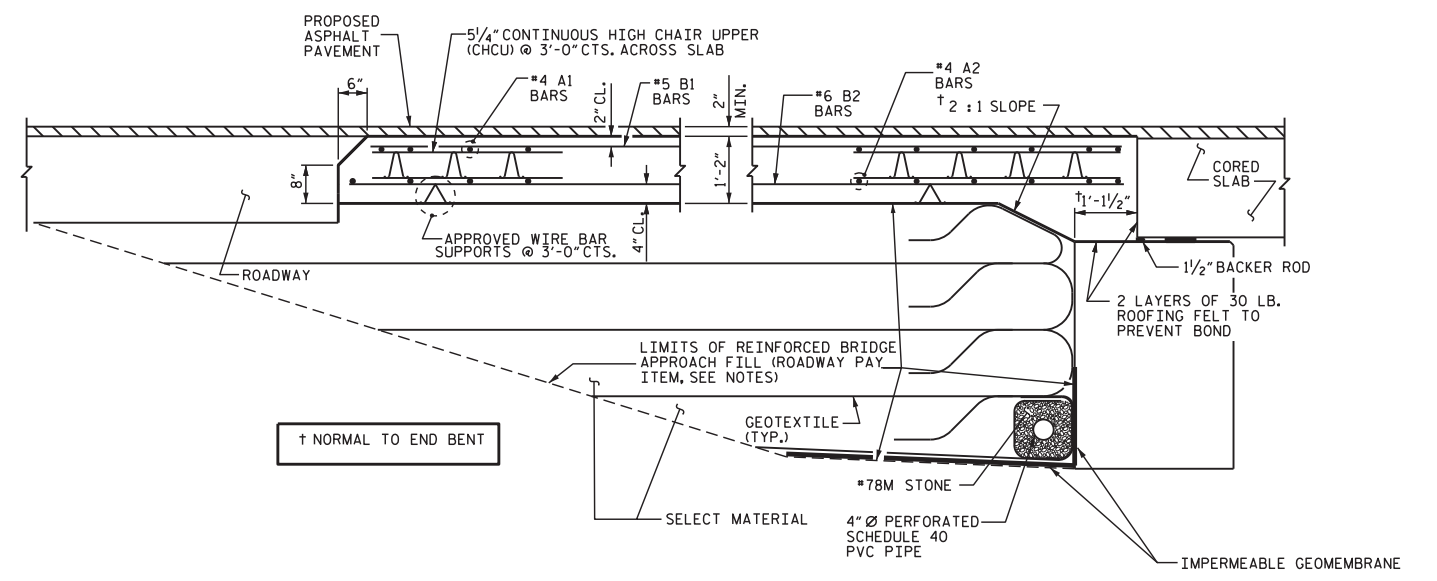
ASSEMBLED BY : H.B. DESAI	DATE : 8/12/16
CHECKED BY : T. L. AVERETTE	DATE : 2/7/17
DRAWN BY : REK 1/84	REV. 5/1/06R TLA/GM
CHECKED BY : ROU 1/84	REV. 10/1/11 MAA/GM
	REV. 12/21/11 MAA/GM

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS 14
2			4			

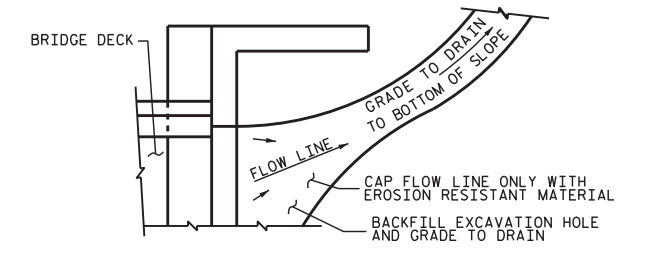


**PLAN @ END BENT #1**      **PLAN @ END BENT #2**  
 DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS



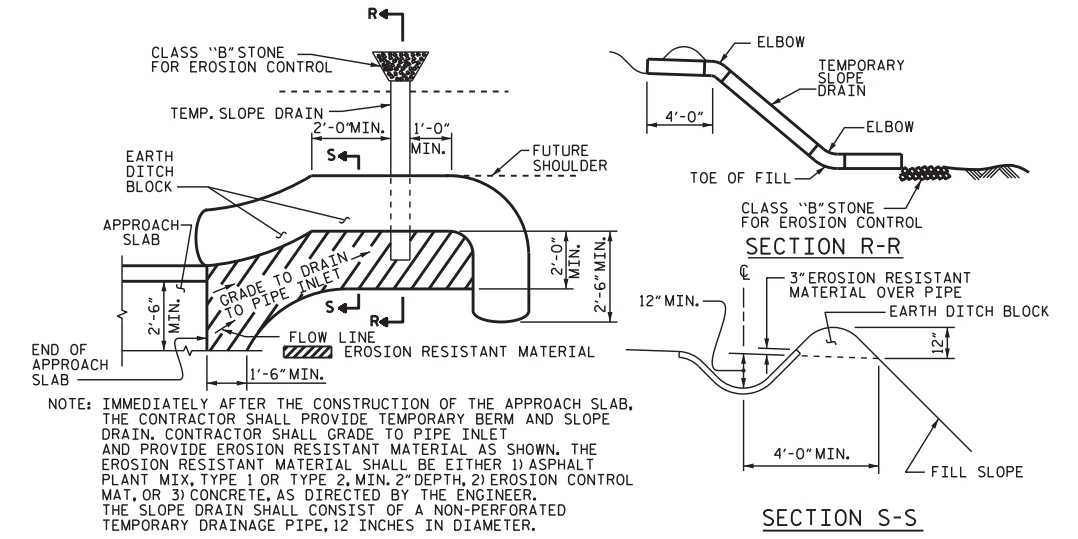
**SECTION THRU SLAB**

**NOTES**  
 FOR REINFORCED BRIDGE APPROACH FILL INCLUDING GEOTEXTILE, IMPERMEABLE GEOMEMBRANE, 4" Ø DRAINAGE PIPE, #78M STONE, AND SELECT MATERIAL, SEE ROADWAY PLANS.  
 AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.  
 APPROACH SLAB GROOVING IS NOT REQUIRED.



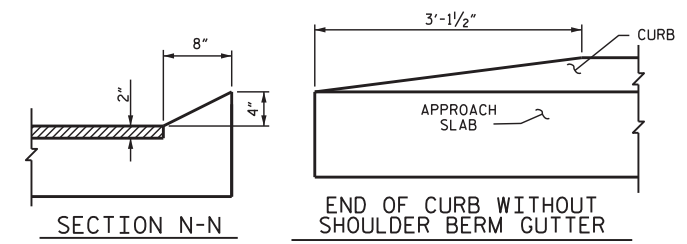
**NOTE:** IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT TO THE STRUCTURE. THE CONTRACTOR WILL BE REQUIRED TO REMOVE THESE MATERIALS PRIOR TO CONSTRUCTION OF THE APPROACH SLAB.

**TEMPORARY DRAINAGE DETAIL**



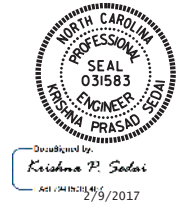
**NOTE:** IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN. 2" DEPTH, 2) EROSION CONTROL MAT, OR 3) CONCRETE, AS DIRECTED BY THE ENGINEER. THE SLOPE DRAIN SHALL CONSIST OF A NON-PERFORATED TEMPORARY DRAINAGE PIPE, 12 INCHES IN DIAMETER.

**TEMPORARY BERM AND SLOPE DRAIN DETAILS**  
 (TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



**CURB DETAILS**

SPLICE LENGTHS		
BAR SIZE	EPOXY COATED	UNCOATED
#4	2'-0"	1'-9"
#5	2'-6"	2'-2"
#6	3'-10"	2'-7"



BILL OF MATERIAL						
APPROACH SLAB AT EB #1						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
*A1	26	#4	STR	16'-11"	294	
A2	26	#4	STR	16'-9"	291	
*B1	64	#5	STR	11'-2"	745	
B2	64	#6	STR	11'-8"	1121	
REINFORCING STEEL					LBS.	1412
*EPOXY COATED REINFORCING STEEL					LBS.	1039
CLASS AA CONCRETE					C. Y.	18.4
APPROACH SLAB AT EB #2						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
*A1	26	#4	STR	16'-11"	294	
A2	26	#4	STR	16'-9"	291	
*B1	64	#5	STR	11'-2"	745	
B2	64	#6	STR	11'-8"	1121	
REINFORCING STEEL					LBS.	1412
*EPOXY COATED REINFORCING STEEL					LBS.	1039
CLASS AA CONCRETE					C. Y.	18.4

ASSEMBLED BY : H. B. DESAI DATE : 8-11-16  
 CHECKED BY : T. L. AVERETTE DATE : 2-7-17  
 DRAWN BY : SHS/MAA 5-09  
 CHECKED BY : BCH 5-09

REV. 9-15      MAA/TMG

PROJECT NO. 17BP.8.R.116  
MOORE COUNTY  
 STATION: 18+71.00 -L-

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 STANDARD  
 BRIDGE APPROACH SLAB  
 FOR PRESTRESSED CONCRETE  
 CORED SLAB UNIT  
 (SUB-REGIONAL TIER)  
 90° SKEW

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

DOCUMENT NOT CONSIDERED  
 FINAL UNLESS ALL  
 SIGNATURES COMPLETED

## STANDARD NOTES

### DESIGN DATA:

SPECIFICATIONS	-----	A.A.S.H.T.O. (CURRENT)
LIVE LOAD	-----	SEE PLANS
IMPACT ALLOWANCE	-----	SEE A.A.S.H.T.O.
STRESS IN EXTREME FIBER OF		
STRUCTURAL STEEL - AASHTO M270 GRADE 36	-	20,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50W	-	27,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50	-	27,000 LBS. PER SQ. IN.
REINFORCING STEEL IN TENSION		
GRADE 60	--	24,000 LBS. PER SQ. IN.
CONCRETE IN COMPRESSION	-----	1,200 LBS. PER SQ. IN.
CONCRETE IN SHEAR	-----	SEE A.A.S.H.T.O.
STRUCTURAL TIMBER - TREATED OR		
UNTREATED - EXTREME FIBER STRESS	-----	1,800 LBS. PER SQ. IN.
COMPRESSION PERPENDICULAR TO GRAIN OF TIMBER	-----	375 LBS. PER SQ. IN.
EQUIVALENT FLUID PRESSURE OF EARTH	-----	30 LBS. PER CU. FT.
		(MINIMUM)

### MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2012 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

STEEL SHEET PILING FOR PERMANENT OR TEMPORARY APPLICATIONS SHALL BE HOT ROLLED.

### CONCRETE:

UNLESS OTHERWISE REQUIRED ON PLANS, CLASS A CONCRETE SHALL BE USED FOR ALL PORTIONS OF ALL STRUCTURES WITH THE EXCEPTION THAT: CLASS AA CONCRETE SHALL BE USED IN BRIDGE SUPERSTRUCTURES, ABUTMENT BACKWALLS, AND APPROACH SLABS; AND CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP.

### CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED 3/4" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1-1/2" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A 1/4" FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A 1/4" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

### DOWELS:

DOWELS WHEN INDICATED ON PLANS AS FOR CULVERT EXTENSIONS, SHALL BE EMBEDDED AT LEAST 12" INTO THE OLD CONCRETE AND GROUTED INTO PLACE WITH 1:2 CEMENT MORTAR.

### ALLOWANCE FOR DEAD LOAD DEFLECTION, SETTLEMENT, ETC. IN CASTING SUPERSTRUCTURES:

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE.  
ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER.  
IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER.  
DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

### REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.  
WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

### STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE 7/8" Ø SHEAR STUDS FOR THE 3/4" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8" Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".  
EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 5/16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.  
WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16" INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

### HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB.  
METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINIS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

### SPECIAL NOTES:

GENERALLY, IN CASE OF DISCREPANCY, THIS STANDARD SHEET OF NOTES SHALL GOVERN OVER THE SPECIFICATIONS, BUT THE REMAINDER OF THE PLANS SHALL GOVERN OVER NOTES HEREON, AND SPECIAL PROVISIONS SHALL GOVERN OVER ALL. SEE SPECIFICATIONS ARTICLE 105-4.

# ENGLISH

JANUARY, 1990

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