This electronic collection of documents is provided for the convenience of the user and is Not a Certified Document –

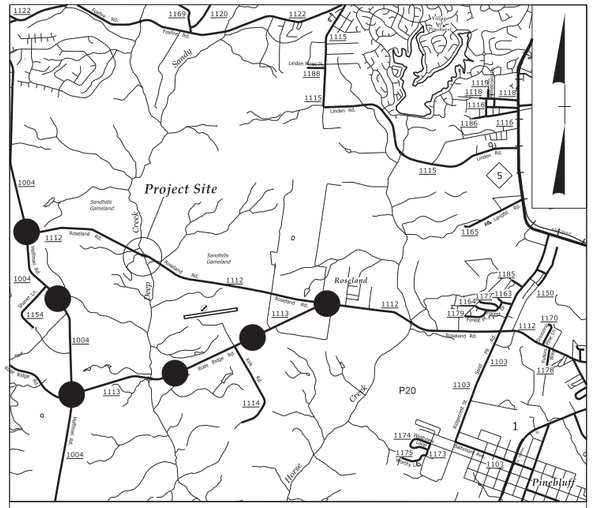
The documents contained herein were originally issued and sealed by the individuals whose names and license numbers appear on each page, on the dates appearing with their signature on that page.
This file or an individual page shall not be considered a certified document.

SUMMIT
DESIGN AND ENGINEERING SERVICES

09/08/99

PROJECT: 17BP.8.R.89

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.8.R.89	1	

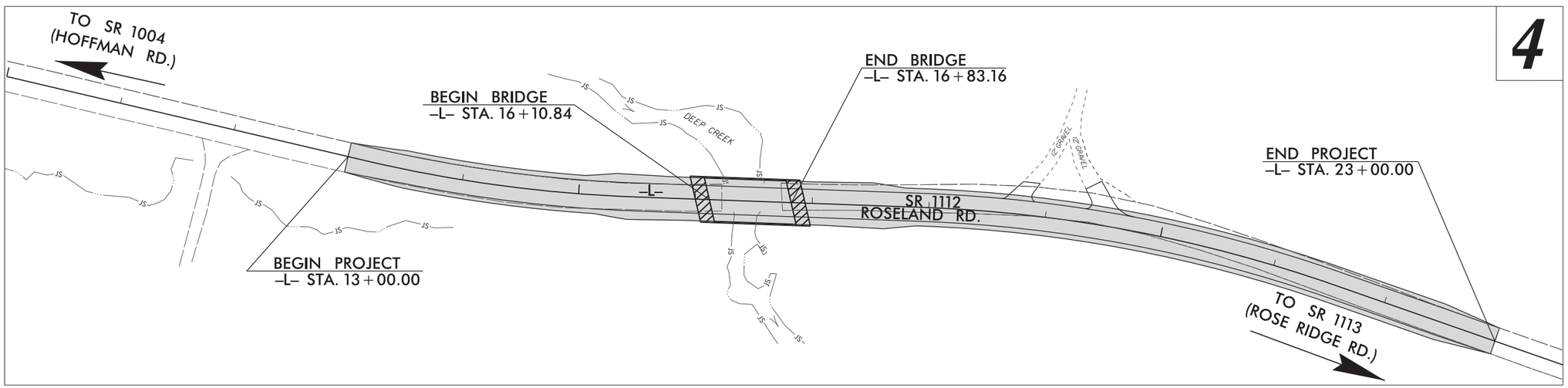
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
17BP.8.R.89	NA	PE
17BP.8.R.89	NA	ROW/UTILITIES
17BP.8.R.89	NA	CONST

LOCATION: BRIDGE NO. 620019 ON SR 1112 (ROSELAND RD.) OVER DEEP CREEK

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

NC GRID
NAD 83 NA 2011

4



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CONTRACT:

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2012 = 1800
ADT 2025 = 3600
T = 8 % *
V = 55 MPH
* TTST = 4% DUAL = 4%
FUNC CLASS =
MAJOR COLLECTOR

SUB–REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY PROJECT = 0.175 MILES
LENGTH STRUCTURES PROJECT = 0.014 MILES
TOTAL LENGTH PROJECT = 0.189 MILES

NCDOT CONTACT: TIM WELCH, PE
NCDOT HWY DIV 8

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.summitde.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
NORTH CAROLINA PROFESSIONAL SEAL 040744 ENGINEER JAMES A. CROUSE P.E.
DocuSigned by: James A. Crouse
SIGNATURE:

ROADWAY DESIGN ENGINEER
2/28/2017
NORTH CAROLINA PROFESSIONAL SEAL 034371 ENGINEER BRANDON W. JOHNSON P.E.
DocuSigned by: Brandon W. Johnson
SIGNATURE:

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

27-FEB-2017 15:56
019_Rdy_tsh_ldn
spencer.merritt

8/17/99

BRIDGE NO.620019

PROJECT REFERENCE NO.	SHEET NO.
17BP.8.R.89	1A

ROADWAY DESIGN ENGINEER
2/16/2017

NORTH CAROLINA PROFESSIONAL SEAL 034371 ENGINEER BRANDON W JOHNSON

Drawn by: Brandon W. Johnson

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Office of: SUMMIT ENGINEERING SERVICES
NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

INDEX OF SHEETS

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-11	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 PDEMC and CENTURY LINK

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.

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

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
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
DIVISION 4 - MAJOR STRUCTURES	
422.11	Reinforced Bridge Approach Fills - Sub Regional Tier
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 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
840.36	Traffic Bearing Grated Drop Inlet - for Steel (840.37) Double Frame and Grates
840.46	Traffic Bearing Precast Drainage Structure
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

16-FEB-2017 13:33
019_Rdy_tsh_1A_1.dgn
Keith.Blinke

12/2/2016

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale **S.U.E. = Subsurface Utility Engineering*

BRIDGE NO. 620019

PROJECT REFERENCE NO.	SHEET NO.
17BP.8.R.89	1B

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin (EIP)
- Computed Property Corner
- Property Monument (ECM)
- Parcel/Sequence Number (123)
- Existing Fence Line
- 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 (S)
- 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 (FLOW)
- False Sump

RAILROADS:

- Standard Gauge (CSX TRANSPORTATION)
- RR Signal Milepost (MILEPOST 35)
- Switch (SWITCH)
- RR Abandoned
- RR Dismantled

RIGHT OF WAY & PROJECT CONTROL:

- Secondary Horiz and Vert Control Point
- Primary Horiz Control Point
- Primary Horiz and Vert Control Point
- Exist Permanent Easment 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 R/W Marker (RW)
- New Control of Access Line with Concrete C/A 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 (S)
- Storm Sewer (S)

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole (P)
- 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 (T)
- Telephone Pedestal (T)
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole (HH)
- 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 (W)
- Water Meter
- Water Valve
- Water Hydrant
- U/G Water Line LOS B (S.U.E.*) (W)
- U/G Water Line LOS C (S.U.E.*) (W)
- U/G Water Line LOS D (S.U.E.*) (W)
- Above Ground Water Line (A/G Water)

TV:

- TV Pedestal (C)
- TV Tower
- U/G TV Cable Hand Hole (HH)
- 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 (S)
- Utility Unknown U/G Line LOS B (S.U.E.*) (?UTL)
- 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.89
MOORE COUNTY #620019

PROJECT REFERENCE NO.	SHEET NO.
17BP.8.R.89	IC-1
Location and Surveys	

Prepared in the Office of: SUMMIT
NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-3883 - (919) 732-6676 (FAX)

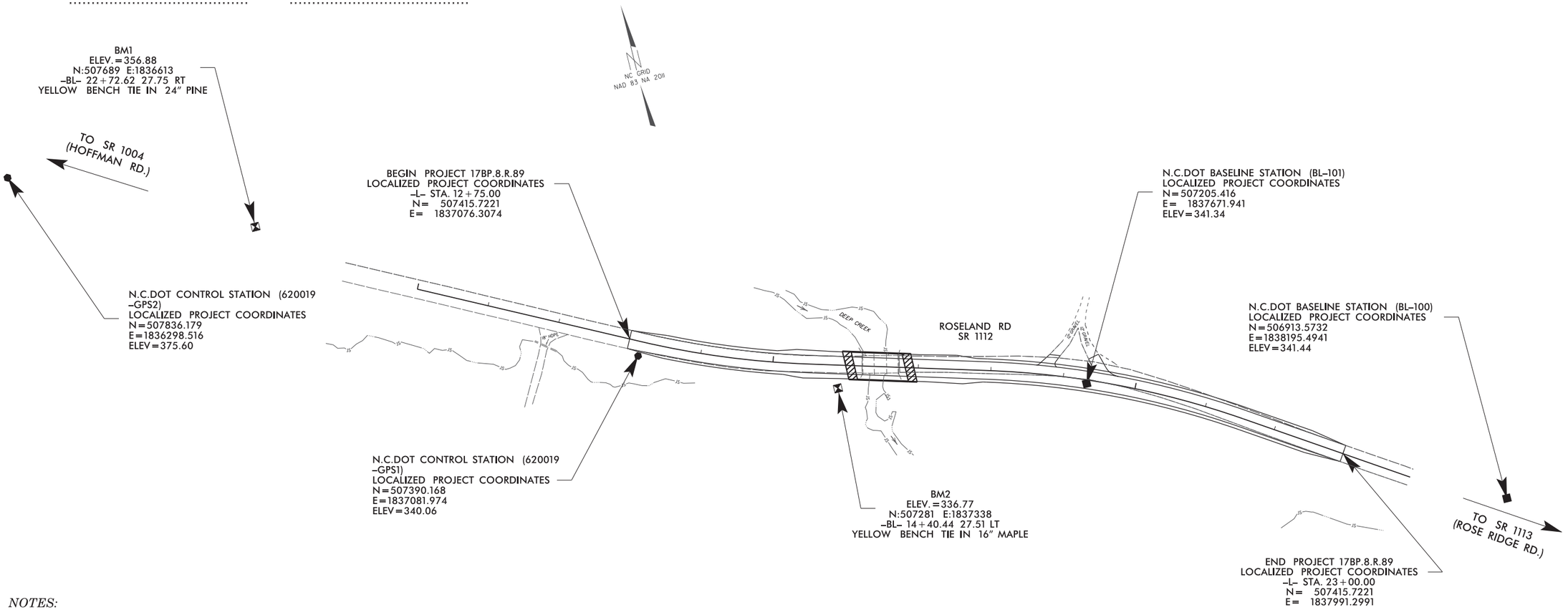
8/17/99

REVISIONS

BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
100	BL-100	506913.573	1838195.494	341.44	OUTSIDE PROJECT LIMITS	
101	BL-101	507205.416	1837671.941	341.34	19+33.14	5.04 RT
1	620019-1	507390.168	1837081.974	340.06	13+16.66	20.18 RT
2	620019-2	507836.179	1836298.516	375.60	OUTSIDE PROJECT LIMITS	

BM*1 ELEVATION = 356.88
N:507689 E:1836613
-BL- 22+72.62 27.75 RT
YELLOW BENCH TIE IN 24" PINE

BM*2 ELEVATION = 336.77
N:507281 E:1837338
-BL- 14+40.44 27.51 LT
YELLOW BENCH TIE IN 16" MAPLE



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).

NOTE: DRAWING NOT TO SCALE

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "620019-GPS2" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 507836.179(ft) EASTING: 1836298.516(ft) ELEVATION: 375.60(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99986132
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "620019-GPS2" TO -EL- STATION 10+00 IS S 60°27'59" E 476.64'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

13-FEB-2017 15:06
620019_TS_IC1.dgn
faith.lohnke

ITEMIZED PROPOSAL FOR BRIDGE 620019

Type	Item Number	Section	Description	Quantity	Unit
M	0000100000-N	801	Mobilization	1	LS
G	0030000000-N	SP	Bridge App. Fill-Subregional Tier at Sta. 16+47	1	LS
G	0036000000-E	225	Undercut Excavation	100	CY
G	0043000000-N	226	Grading	1	LS
G	0050000000-E	226	Supplementary Clearing and Grubbing	1	AC
D	0134000000-E	240	Drainage Ditch Excavation	10	CY
G	0195000000-E	265	Select Granular Material	100	CY
G	0196000000-E	270	Geotextile for Soil Stabilization	100	SY
D	0318000000-E	300	Foundation Cond. Material, Minor Struct.	10	TON
D	0320000000-E	300	Foundation Conditioning Geotextile	30	SY
D	0335200000-E	305	15" Drainage Pipe	80	LF
D	0335850000-E	305	15" Drainage Pipe Elbows	1	EA
P	1121000000-E	520	Aggregate Base Course	31	TON
G	1220000000-E	545	Incidental Stone Base	100	TON
P	1330000000-E	607	Incidental Milling	140	SY
P	1489000000-E	610	Asphalt Conc Base Course, Type B25.0B	1,020	TON
P	1498000000-E	610	Asphalt Conc Interm. Course, Type I19.0B	550	TON
P	1525000000-E	610	Asphalt Conc Surface Course, Type SF9.5A	410	TON
P	1575000000-E	620	Asphalt Binder for Plant Mix, PG 64-22	100	TON
D	2286000000-N	840	Masonry Drainage Structures	1	EA
D	2367000000-N	840	Frame with Two Grates, Std. 840.29	1	EA
P	2556000000-E	846	Shoulder Berm Gutter	24	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	580	TON
G	3649000000-E	876	Rip Rap, Class B	40	TON
D	3656000000-E	876	Geotextile for Drainage	64	SY
Y	4400000000-E	1110	Work Zone Signs (Stationary)	449	SF
Y	4410000000-E	1110	Work Zone Signs (Barricade Mounted)	114	SF
Y	4445000000-E	1145	Barricades (Type III)	64	LF
PM	4685000000-E	1205	Thermoplastic Pvmt Marking (4",90 Mils)	1,000	LF
PM	4686000000-E	1205	Thermoplastic Pvmt Marking (4",120 Mils)	1,000	LF
L	6000000000-E	1605	Temporary Silt Fence	1,400	LF
L	6006000000-E	1610	Erosion Control Stone, Class A	75	TON
L	6009000000-E	1610	Erosion Control Stone, Class B	135	TON
L	6012000000-E	1610	Sediment Control Stone	75	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	120	CY
L	6036000000-E	1631	Matting for Erosion Control	8,910	SY
L	6037000000-E	SP	Coir Fiber Mat	100	SY
L	6042000000-E	1632	1/4" Hardware Cloth	195	LF
L	6071010000-E	SP	Wattle	90	LF
L	6071014000-E	SP	Wattle Barrier	440	LF
L	6071020000-E	SP	Polyacrylamide (PAM)	15	LB
L	6084000000-E	1660	Seeding and Mulching	0.5	AC

Type	Item Number	Section	Description	Quantity	Unit
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	0.5	TON
L	6111000000-E	SP	Impervious Dike	140.0	LF
L	6114500000-N	1667	Specialized Hand Mowing	10	MHR
L	6117000000-N	1675	Response for Erosion Control	25	EA
L	6123000000-E	1670	Reforestation	0.1	ACR
L	6132000000-N	SP	Generic EC Item- Concrete Washout Structure	2.00	EA
B	8035000000-N	402	Removal of Existing Structure at Station 16+47	1	LS
B	8112730000-N	450	PDA Testing	1	EA
B	8121000000-N	412	Unclassified Structure Excavation at Station 16+47	1	LS
B	8182000000-E	420	Class A Concrete (Bridge)	50	CY
B	8210000000-N	422	Bridge Approach Slabs, Station 16+47	1	LS
B	8217000000-E	425	Reinforcing Steel (Bridge)	6,014	LBS
B	8364000000-E	450	HP 12 x 53 Steel Piles	780	LF
B	8505000000-E	460	Vertical Concrete Barrier Rail	140.00	LF
B	8608000000-E	876	Rip Rap Class II (2'-0" Thick)	270	TON
B	8622000000-E	876	Geotextile For Drainage	295	SY
B	8657000000-N	430	Elastomeric Bearings	1	LS
B	8763000000-E	430	3'-0" x 2'-0" Prestressed Concrete Cored Slabs	910	LF
B	8860000000-N	SP	Generic Structure Item (Asbestos Assessment, Sta 16+47)	1	LS

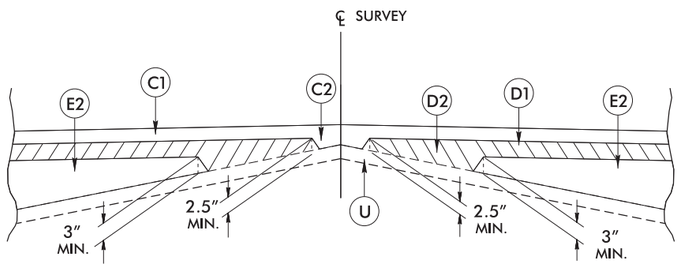
8/17/99

17-FEB-2017 14:24
019_Rdy_tsh_IE.dgn
keith.jahnke

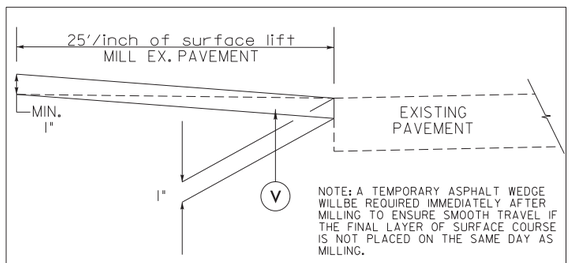
6/2/99

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.



Detail Showing Method of Wedging



INCIDENTAL MILLING PAVEMENT KEY–IN DETAIL (TIE–IN)

–L– STA 13+00.00 TO 13+25.00
–L– STA 22+75.00 TO 23+00.00

STATION RANGES ARE APPROXIMATE ONLY.
GRADE MAY BE ADJUSTED BY ENGINEER
TO ENSURE A PROPER TIE–IN.

13-FEB-2017 15:06
019_Rdy_typ_L.dgn
cathy.hanke

BRIDGE NO. 620019

PROJECT REFERENCE NO.	SHEET NO.
17BP.8.R.89	2A-1

ROADWAY DESIGN ENGINEER
2/14/2017

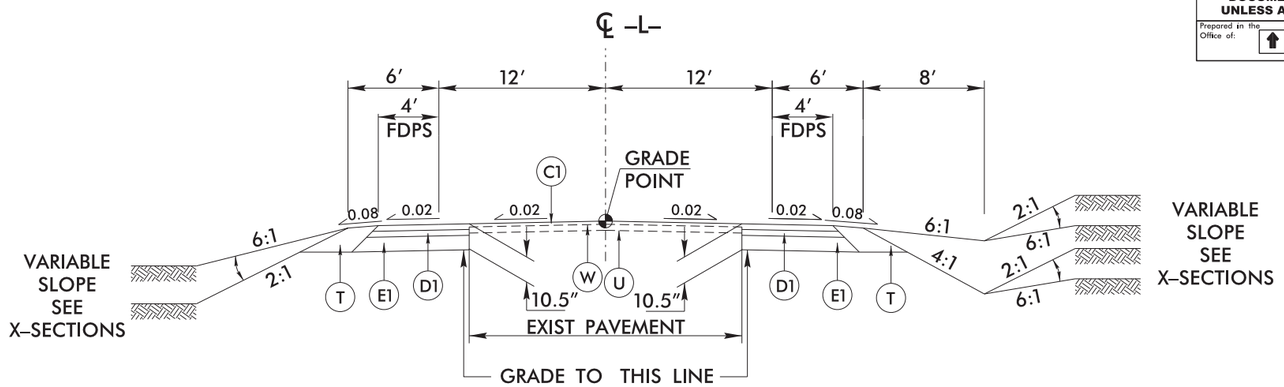
NORTH CAROLINA PROFESSIONAL SEAL 034371 ENGINEER BRANDON W JOHNSON

Documents not considered final unless all signatures completed

Brandon W. Johnson

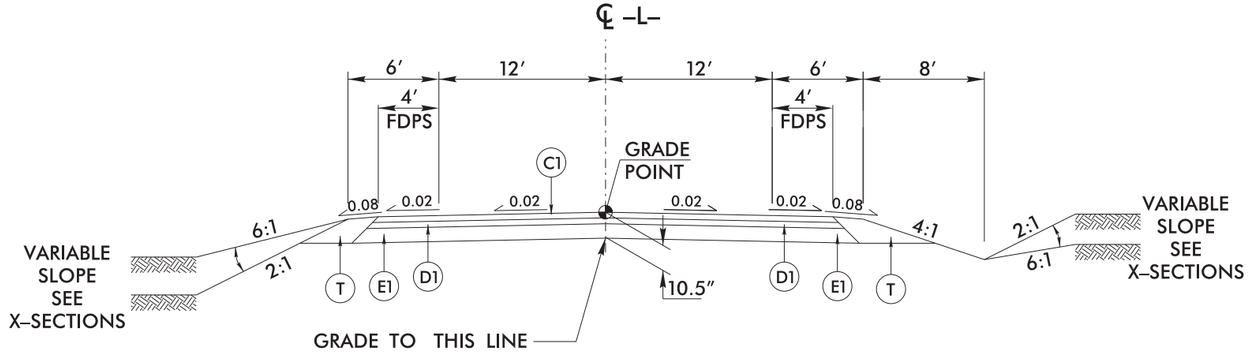
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Office of: SUMMIT
NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-3883 - (919) 732-6676 (FAX)



TYPICAL SECTION NO. 1
–L– (SR 1112)

USE TYPICAL SECTION NO. 1
–L– STA 13+00.00 TO STA 13+50.00
–L– STA 22+50.00 TO STA 23+00.00



TYPICAL SECTION NO. 2
–L– (SR 1112)

USE TYPICAL SECTION NO. 2
–L– STA 13+50.00 TO STA 15+37.00
–L– STA 17+60.00 TO STA 22+50.00

SR 1112 (ROSELAND RD) IS A PART OF
NC BICYCLE ROUTE, NC9 – SANDHILLS SECTOR

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
17BP.8.R.89	2A-2

ROADWAY DESIGN ENGINEER

2/14/2017

NORTH CAROLINA PROFESSIONAL SEAL 034371 ENGINEER BRANDON W. JOHNSON

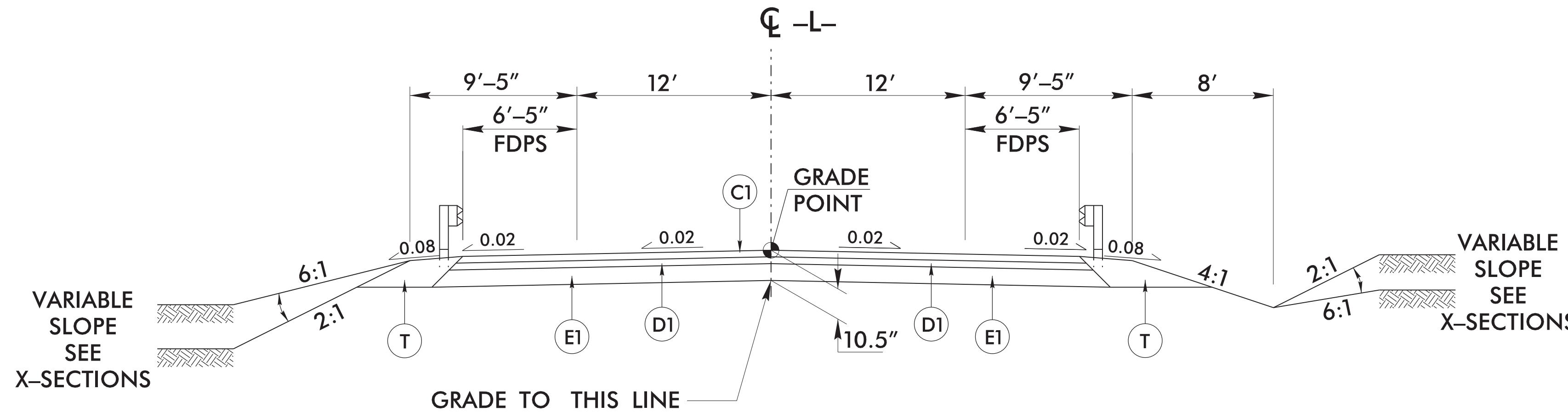
DocuSigned by: Brandon W. Johnson

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Office of: SUMMIT — NC FIRM LICENSE No: P-0339, 504 Meadowlands Drive, Hillsborough, NC 27278, (919) 732-3883 - (919) 732-6676 (FAX)

BRIDGE NO. 620019

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

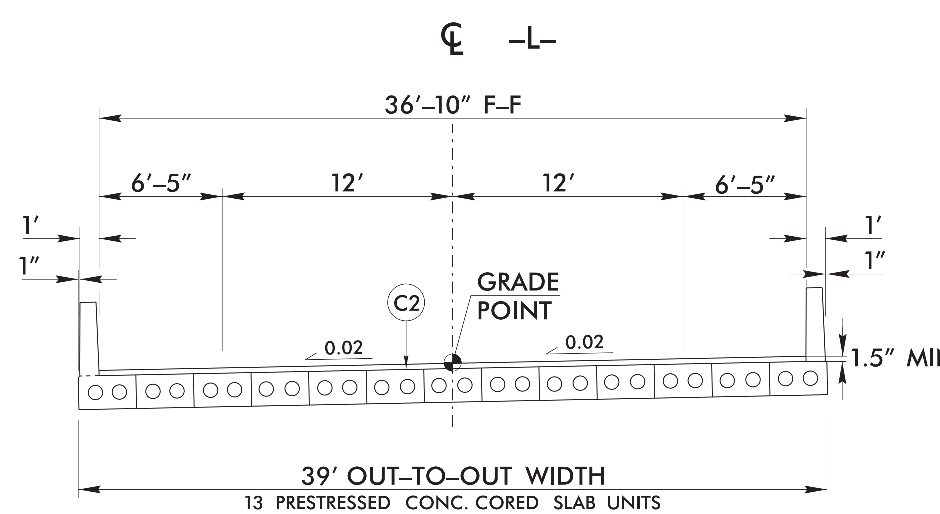


TYPICAL SECTION NO. 3

-L- (SR 1112)

USE TYPICAL SECTION NO. 3

-L- STA 15+37.00 TO STA 16+10.84 (BEGIN BRIDGE)
-L- STA 16+83.16 (END BRIDGE) TO STA 17+60.00



BRIDGE TYPICAL SECTION

FOR BRIDGE OVER DEEP CREEK

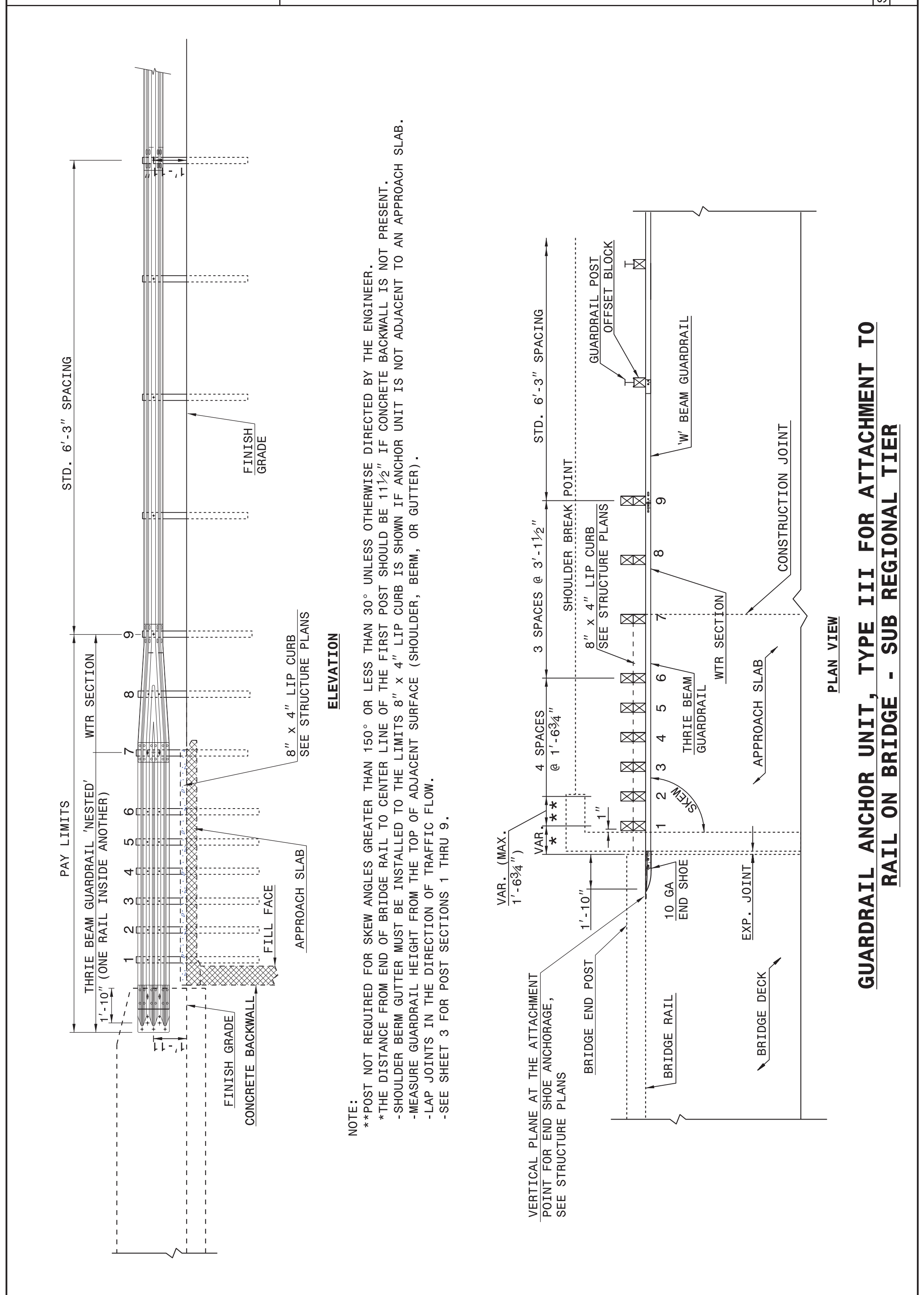
USE BRIDGE TYPICAL SECTION

-L- STA 16+10.84 (BEGIN BRIDGE) TO STA 16+83.16 (END BRIDGE)

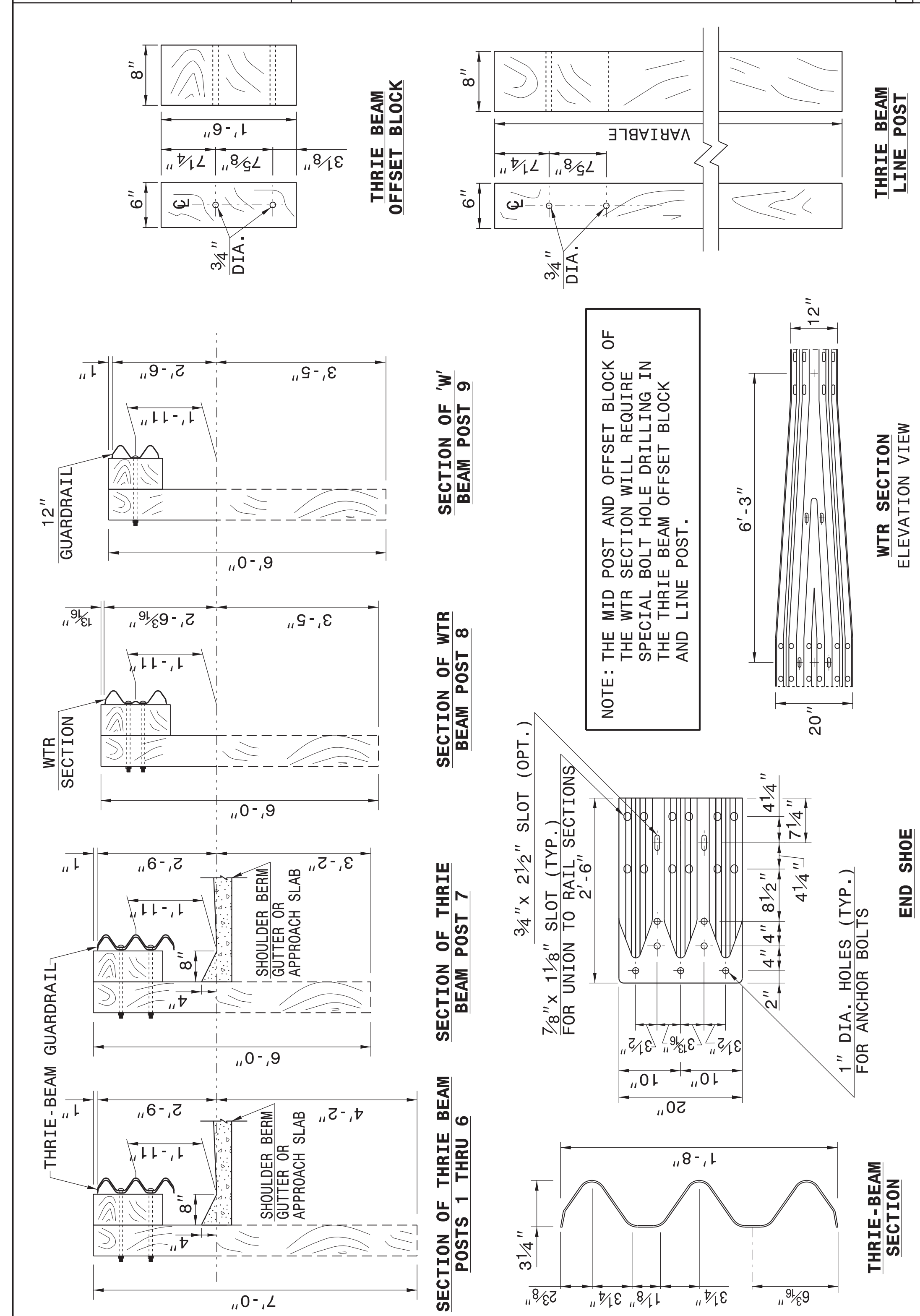
13-FEB-2017 15:06
919_Rdy_typ_2A_L.dgn

PROJECT REFERENCE NO.	SHEET NO.
17BP.8.R.89	2C-1

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.
ENGLISH DETAIL DRAWING FOR STRUCTURE ANCHOR UNITS GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE - SUB REGIONAL TIER
SHEET 2 OF 7 862d03



STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.
ENGLISH DETAIL DRAWING FOR STRUCTURE ANCHOR UNITS GUARDRAIL ANCHOR UNIT, TYPE III
SHEET 3 OF 7 862d03



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

ENGLISH DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE - SUB REGIONAL TIER

SHEET 2 OF 7 **862d03**

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

ENGLISH DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III

SHEET 3 OF 7 **862d03**

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER Joel S. Howerton

2/14/2017

DocuSigned by: Joel S. Howerton

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

SEE TITLE BLOCK

ORIGINAL BY: J HOWERTON DATE: 06-22-12
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.:

$$$$SYSTIME$$$$
$$$$$DGN$$$$
$$$$USERNAME$$$$

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
17BP.8.R.89	3B-1

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)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

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

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

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH STRAIGHT	LENGTH SHOP CURVED	LENGTH DOUBLE FACED	WARRANT POINT APPROACH END	WARRANT POINT TRAILING END	"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH APPROACH END	FLARE LENGTH TRAILING END	W APPROACH END	W TRAILING END	ANCHORS XI MOD	ANCHORS TYPE-III	ANCHORS GRAU 350 TL-3	ANCHORS M-350	ANCHORS XIII	ANCHORS CAT-1	ANCHORS VI MOD	ANCHORS BIC	ANCHORS AT-1	IMPACT ATTENUATOR TYPE 350 EA	G	NG	SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
-L-	15+32.00	16+07.00	LT	6.25				16+07.00	6"–5"	9"–5"		50				1	1													
-L-	15+42.00	16+17.00	RT	6.25			16+17.00		6"–5"	9"–5"	50					1	1													
-L-	16+77.00	17+52.00	LT	6.25			16+77.00		6"–5"	9"–5"	50					1	1													
-L-	16+87.00	17+62.00	RT	6.25				16+87.00	6"–5"	9"–5"		50				1	1													
TOTALS				25												4	4													

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

STATION / SIZE / THICKNESS OR GAUGE	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) 8"	12"	15"	18"	24"	30"	36"	42"	C.S. PIPE (UNLESS NOTED OTHRWISE) 12" .064	15" .064	18" .064	24" .064	24"	30" .079	30"	36" .079	36"	42" .109	42"	48" .109	48"	CLASS III R.C. PIPE (UNLESS OTHERWISE NOTED) 12"	15"	18"	24"	30"	36"	42"	48"
15+86.00	LT	0401		340.46	336.54					16																										
15+86.00		0401	0402	386.03																																
TOTALS																																				

STATION	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	LIN. *FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G		D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH GRATE STD. 840.22	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	G.D.I STD. 840.35 AND 340.20							CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
15+86.00																																			
15+86.00																																			
TOTALS																																			

* TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B')

ABBREVIATIONS

- C.B. CATCH BASIN
- N.D.I. NARROW DROP INLET
- D.I. DROP INLET
- G.D.I. GRATED DROP INLET
- G.D.I. (N.S.) GRATED DROP INLET (NARROW SLOT)
- J.B. JUNCTION BOX
- M.H. MANHOLE
- T.B.D.I. TRAFFIC BEARING DROP INLET
- T.B.J.B. TRAFFIC BEARING JUNCTION BOX

SUMMARY OF EARTHWORK

IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT+25%	BORROW	WASTE
-L- STA. 13+00.00 TO 16+10.84	56		149	93	
-L- STA. 16+83.16 TO 23+00.00	410		1285	875	
TOTAL	466		1434	968	
ESTIMATED SHOULDER CONSTRUCTION			240	240	
PROJECT TOTALS	466		1674	1208	
5% TO REPLACE TOP SOIL			1674	60	
GRAND TOTALS	466		1674	1268	
SAY	470		1675	1270	

PARCEL INDEX

PARCEL NO.	OWNER	TYPE	AREA (SF)	AREA (AC)
1	BAERJE, GUENTHER AND EVELYN DB 1847 PG 529 PARCEL #1 PC 8 PG 955	ROW	4341.66	0.010
1	BAERJE, GUENTHER AND EVELYN DB 1847 PG 529 PARCEL #1 PC 8 PG 955	TCE	22996.59	0.528
1	BAERJE, GUENTHER AND EVELYN DB 1847 PG 529 PARCEL #1 PC 8 PG 955	PDE	5505.46	0.126

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD^2
-L-	15+59.00	16+22.00	CL	730
-L-	16+74.00	21+08.00	CL	1554
			TOTAL:	2284
			SAY:	2290

13-FEB-2017 15:06
019_Rdy_sum_L.dgn
faith.jahnke

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
17BP.8.R.89	4
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
2/14/2017
NORTH CAROLINA PROFESSIONAL SEAL 034371 ENGINEER BRANDON W JOHNSON
Documents by: Brandon W. Johnson
EMAIL: BJOHNSON@SUMMITDESIGN.NET

HYDRAULICS ENGINEER
2/14/2017
NORTH CAROLINA PROFESSIONAL SEAL 040744 ENGINEER JAMES A CROUSE
Documents by: James A. Crouse
EMAIL: JCROUSE@SUMMITDESIGN.NET

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Office of: SUMMIT
NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-3883 - (919) 732-6676 (FAX)

-L-

PI Sta 14+32.66
△ = 11° 07' 01.8" (LT)
D = 4° 46' 28.7"
L = 232.84'
T = 116.79'
R = 1,200.00'
SE = 05
DS = 55 MPH

PI Sta 19+75.85
△ = 17° 10' 40.2" (RT)
D = 4° 46' 28.7"
L = 359.77'
T = 181.25'
R = 1,200.00'
SE = 05
DS = 55 MPH

POT Sta. 10+00.00

BEGIN PROJECT
-L- STA.13+00.00
S 62° 56' 12.5" E

BEGIN BRIDGE
-L- STA.16+10.84

PC Sta. 13+15.88

PT Sta. 15+48.72

PC Sta. 17+94.60

END BRIDGE
-L- STA.16+83.16

PT Sta. 21+54.37

END PROJECT
-L- STA.23+00.00

POT Sta. 23+97.91

BEGIN APPROACH SLAB
-L- STA.16+00

END APPROACH SLAB
-L- STA.16+94

BRIDGE NO.620019

NC GRID
NAD 83 NA 2011

BM2
ELEV.=336.77
N:507281 E:1837338
-BL- 14+40.44 27.51LT
YELLOW BENCH TIE IN 16" MAPLE

BM #2:
-BL- STA 14+40.44, 27.51' LT
-L- STA 15+90.62, 31.91' RT
EL 336.77'

BAERJE, GUENTHER AND EVELYN
DB 1847 PG 529
PARCEL #1
PC 8 PG 955

BAERJE, GUENTHER AND EVELYN
DB 1847 PG 529
PARCEL #2
PC 8 PG 955

STATE OF NORTH CAROLINA
DB 166 PG 1

DETAIL 1
SPECIAL ROCK CHECK DAM
(Not to Scale)
3 TONS CLASS B STONE
STA. 18+28, 18+41, 18+53 LT
18+66, 18+79, 18+92 RT

DETAIL 2
LATERAL 'V' DITCH
(Not to Scale)
Min. D = 1 Ft.
Max. d = 1 Ft.
b = 2 Ft.
Type of Liner = Class B Rip-Rap
FROM L STA. 18+28 TO STA. 19+00 RT

DETAIL 3
SPECIAL CUT DITCH
(Not to Scale)
Min. D = 1 Ft.
Max. d = 0.5 Ft
Type of Liner = Class B Rip-Rap
FROM L STA. 19+00 TO STA. 19+75 RT

DETAIL 4
CUT DITCH
(Not to Scale)
Min. D = 1 Ft.
FROM L STA. 22+50 TO STA. 23+00 LT

SKETCH SHOWING BRIDGE TO PAVEMENT RELATIONSHIP

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 800	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 338.4	FT
BASE DISCHARGE	= 1450	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 338.71	FT
OVERTOPPING DISCHARGE	= 2200	CFS
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING ELEVATION	= 340J	FT
	=	FT
DATE OF SURVEY	= 3/29/16	
W.S.ELEVATION AT DATE OF SURVEY	= 332.8	FT

-L- SR 1112 (ROSELAND RD.)

PI = 14+40.00
EL = 339.07'
VC = 180'
K = 85
DS > 45MPH

PI = 17+50.00
EL = 342.80'
VC = 100'
K = 134
DS > 55MPH

PI = 21+35.00
EL = 344.55'
VC = 150'
K = 70
DS > 45MPH

PI = 22+60.00
EL = 342.45'
VC = 80'
K = 144
DS > 60MPH

BEGIN GRADE
-L- STA 13+00.00
EL= 340.34

BEGIN BRIDGE
-L- STA 16+10.84
EL= 341.13

STA 16+47 -L-
℄ ELEV. 341.51'
SKEW = 75°
10@70' 24" CORED SLAB
4.0' CAPS UTILIZED

LOW STEEL AT LOW SIDE OF BRIDGE

END BRIDGE
-L- STA 16+83.16
EL= 342.00

END GRADE
-L- STA 23+00.00
EL= 342.00

(−)0.9071%
(+)1.2032%
(+)0.4545%
(+)1.4533%
(+)7.8750%
(−)1.6800%
(−)11.1250%
(−)0.4800%

EXCAVATE TO ELEV. 334.6' EST. 144 CY
CLASS III RIPRAP KEYED IN 3.5' (TYP)
EXCAVATE TO ELEV. 334.6' EST. 128 CY
BANK ARMORING (TYP)

EXISTING GRADE
(−) 2.03

BEGIN DITCH GRADE
-L- 18+28.00 RT
EL = 334.10'

PI =19+00.000
EL = 339.77

BEGIN DITCH GRADE
-L- 19+75.00 RT
EL = 340.86'

BEGIN DITCH GRADE
-L- 22+50.00 LT
EL = 341.01'

END DITCH GRADE
-L- 23+00.00 LT
EL = 340.77'

EXISTING GRADE
(−) 1.47

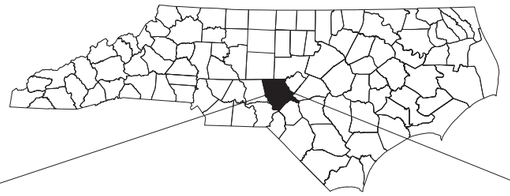
RIGHT DITCH ----------
LEFT DITCH -·-·-·-·-·-

14-FEB-2017 10:14
@19_Rdy_psh_L.dgn
File: jarnke

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

MOORE COUNTY
(BRIDGE NO. 620019)



VICINITY MAP

DETOUR ROUTE

INDEX OF SHEETS

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

SHEET NO.
TMP-1

17BP.8.R.89

PROJECT:

WORK ZONE SAFETY & MOBILITY
"from the MOUNTAINS to the COAST"

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
J. L. PUSZYNSKI, E.I. — TRAFFIC CONTROL DESIGNER

DIVISION OF HIGHWAYS * STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION * WORK ZONE TRAFFIC CONTROL

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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: Brandon W. Johnson — DocuSigned by: [illegible]

DATE: 2/14/2017

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 034371 ENGINEER BRANDON W. JOHNSON

14-FEB-2017 08:46
62009_TC_TMP_1.dgn
Faith.Janike

Prepared in the Office of: SUMMIT
NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

PROJ. REFERENCE NO.	SHEET NO.
17BP.8.R.89	TMP-1A

MANAGEMENT STRATEGIES

BRIDGE #620019 ON SR 1112 (ROSELAND ROAD) 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 #620019 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 1112 AT BRIDGE #620019 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 1112 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 1112 TO TRAFFIC.

LOCAL NOTES

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

NOTIFY MOORE 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.

APPROVED: Digitally signed by Brandon W. Johnson — DATE: 2/14/2017

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 034371 ENGINEER BRANDON W. JOHNSON

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

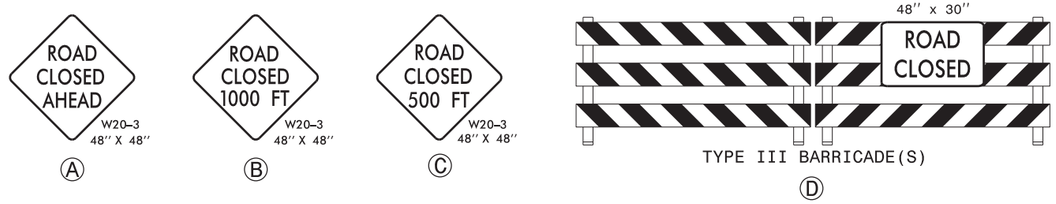
DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

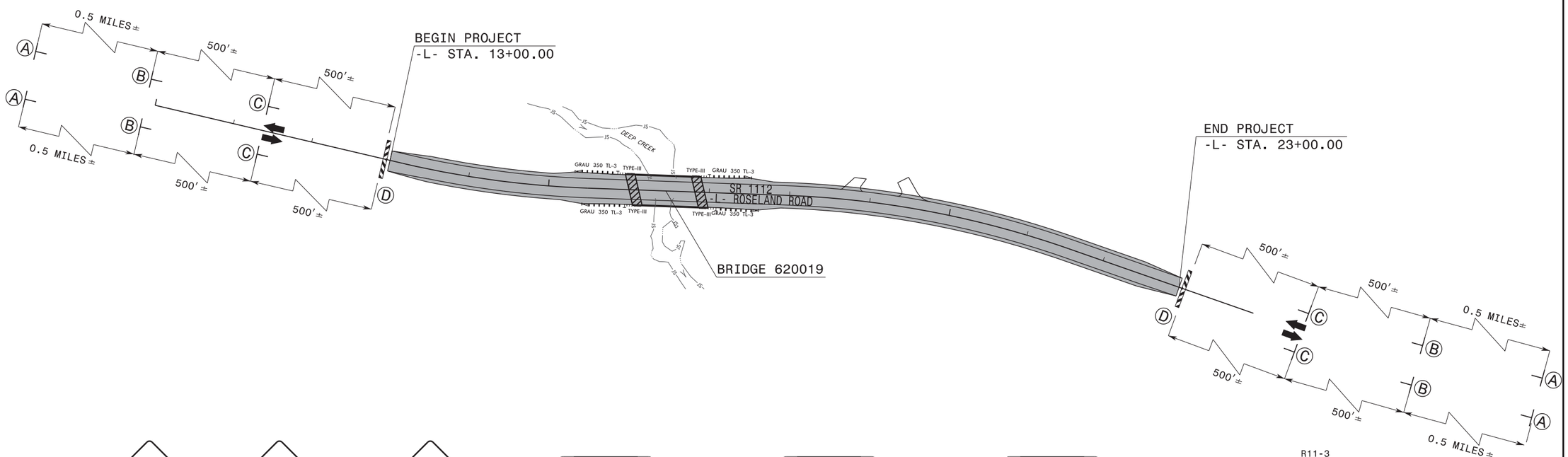
TRANSPORTATION OPERATIONS PLAN

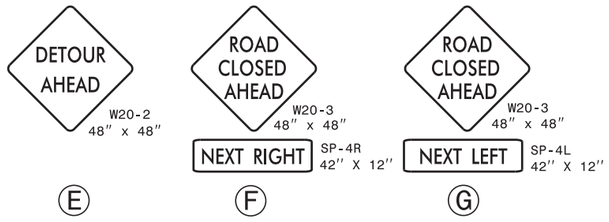
14-FEB-2017 08:46
6209BTC_TMP_1A.dgn
faith.johnke

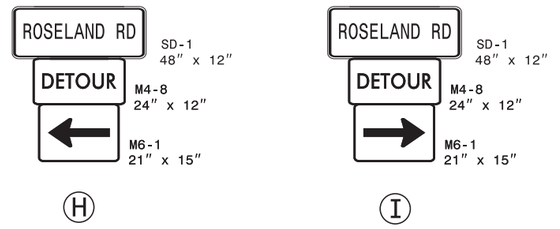
Prepared in the Office of: SUMMIT ENGINEERING AND ENVIRONMENTAL SERVICES
NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

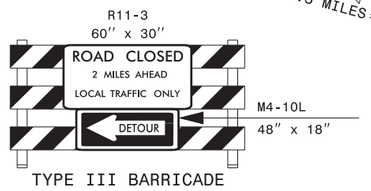
PROJ. REFERENCE NO.	SHEET NO.
17BP.8.R.89	TMP-2

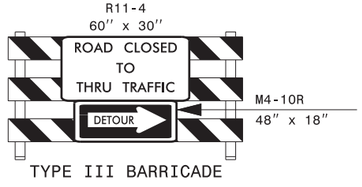




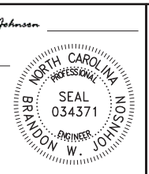




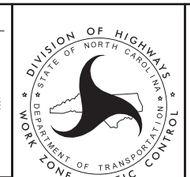




APPROVED: Brandon W. Johnson
DATE: 2/14/2017
SEAL



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

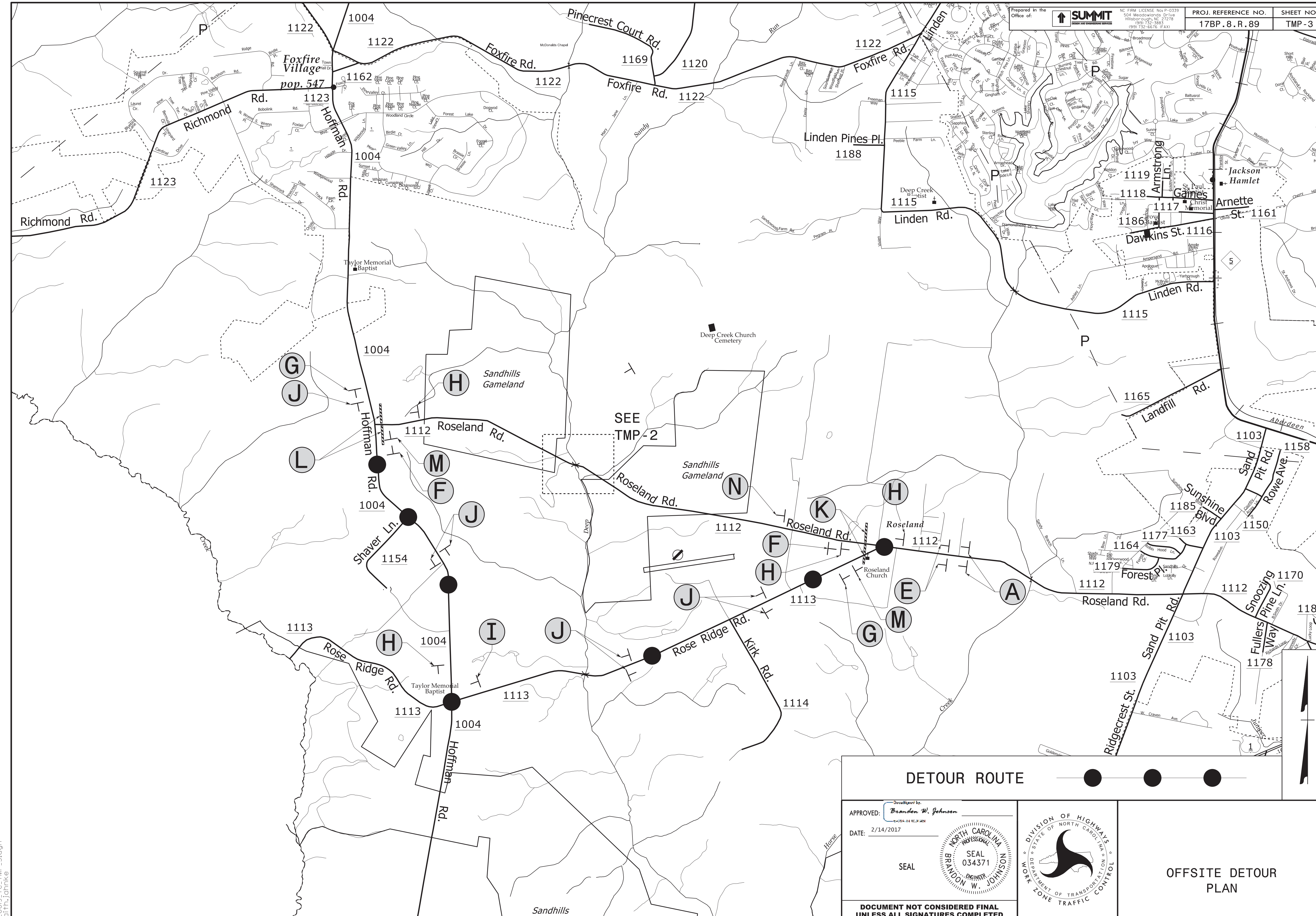


PHASE 1 DETAIL DRAWING

14-FEB-2017 08:46
6209BC TMP_2.dgn
faith.johnke

PROJ. REFERENCE NO.	SHEET NO.
17BP.8.R.89	TMP-3

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)



Foxfire Village pop. 547
Richmond Rd.
Hoffman Rd.
Foxfire Rd.
Pinecrest Court Rd.
Linden Pines Pl.
Linden Rd.
Deep Creek Baptist
Jackson Hamlet
Arnette St.
Dawkins St.
Taylor Memorial Baptist
Deep Creek Church Cemetery
Sandhills Gameland
SEE TMP-2
Roseland Rd.
Roseland
Roseland Church
Shaver Ln.
Rose Ridge Rd.
Kirk Rd.
Landfill Rd.
Sand Pit Rd.
Sunshine Blvd.
Rowe Ave.
Forest Pl.
Snoozing Pine Ln.
Fullers Way
Ridgecrest St.
Aberdeen
1004
1112
1113
1114
1115
1122
1103
1154
DETOUR ROUTE

APPROVED: Brandon W. Johnson

DATE: 2/14/2017

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 034371 ENGINEER BRANDON W. JOHNSON

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

OFFSITE DETOUR PLAN

14-FEB-2017 12:02
62009_TC_TMP_3.dgn
faith.jahnke

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)

PROJ. REFERENCE NO.	SHEET NO.
17BP.8.R.89	SD-1

SIGN NUMBER: SD-1
TYPE: STATIONARY
QUANTITY: SEE PLANS

BACKG COLOR: Fluorescent Orange
COPY COLOR: Black

SIGN WIDTH: 4′-0″
HEIGHT: 1′-0″
TOTAL AREA: 4.00 SF

BORDER TYPE: INSERT
RECESS: 0.375″
WIDTH: 0.438″
RADII: 1.50″

NO. Z BARS: N/A
LENGTH: N/A

SYMBOL	X	Y	WID	HT

MAT′L: 0.125″ ALUMINUM

USE NOTES: 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.

DESIGN BY: JLP
PROJECT ID: 17BP.8.R.89
CHECKED BY: BWJ
DIV: 8
DATE: Mar 2016

BORDER
R=1.50"
TH=0.438"
IN=0.375"

Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter spacings are to start of next letter

		R	O	S	E	L	A	N	D		R	D														Series/Size Text Length
	4.15	3.7	3.4	3.3	3.4	4.0	3.8	4.0	2.8	5.0	3.7	2.8	4.15													C 2000 39.7

FILENAME: 620019_TC_SD-1.dgn

SUMMIT DESIGN & ENGINEERING SIGN DETAIL

APPROVED: DocuSigned by: Brandon W. Johnson
DATE: 2/14/2017
SEAL

NORTH CAROLINA PROFESSIONAL SEAL 034371 ENGINEER BRANDON W. JOHNSON

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

SPECIAL SIGN DESIGN

14-FEB-2017 08:47
620019_TC_TMP_SD-1.dgn
faith.johnke

PROJECT: 17BP.8.R.89

CONTRACT:

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

MOORE COUNTY

LOCATION: BRIDGE NO. 620019 ON SR 1112 (ROSELAND RD.)
OVER DEEP CREEK
TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE.

TIP NO.	SHEET NO.
17BP.8.R.89	PMP–1

APPROVED: Documents by, Brandon W. Johnson

DATE: 2/14/2017

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 034371 ENGINEER BRANDON W. JOHNSON

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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	2000 LF
TA	WHITE EDGE LINE	2000 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:

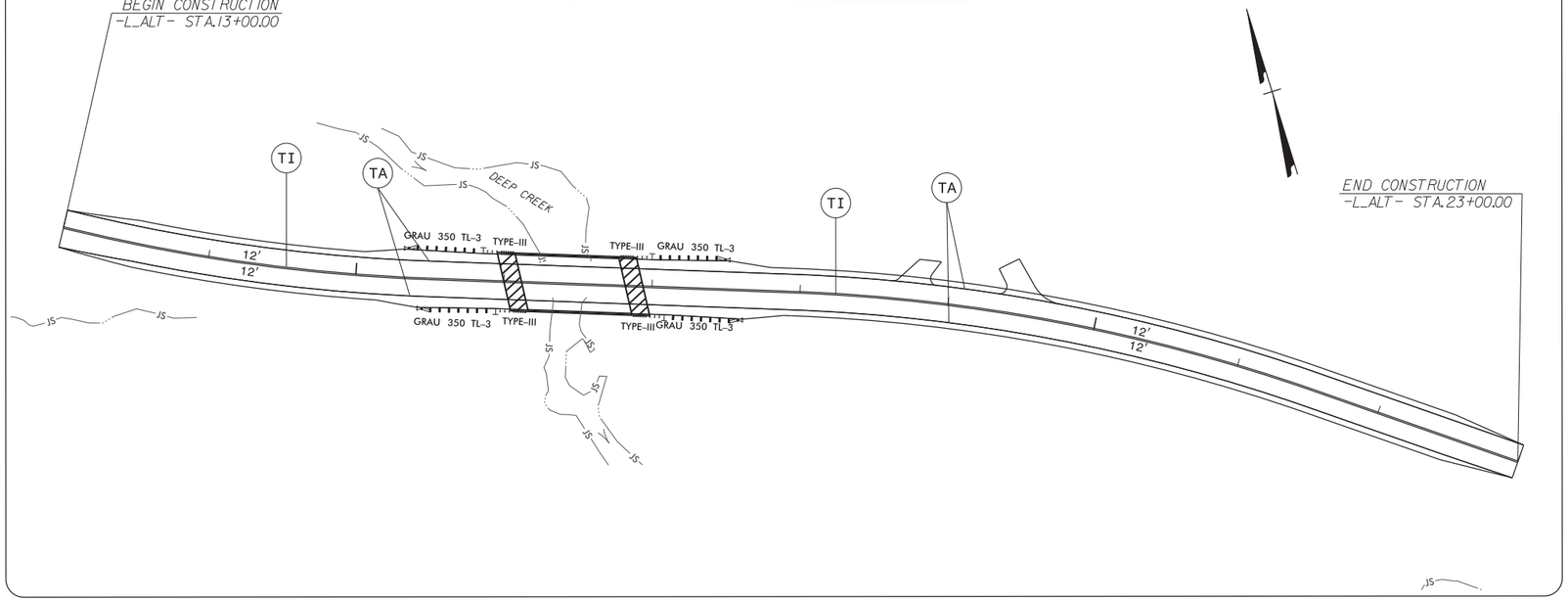
ROAD NAME	MARKING	MARKER
ROSELAND RD	THERMO	RAISED

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*

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION

INDEX

14-FEB-2017 12:02
620019_TC_PMP_1.dgn
faith.jahnke

TIP PROJECT: 17BP.8.R.89

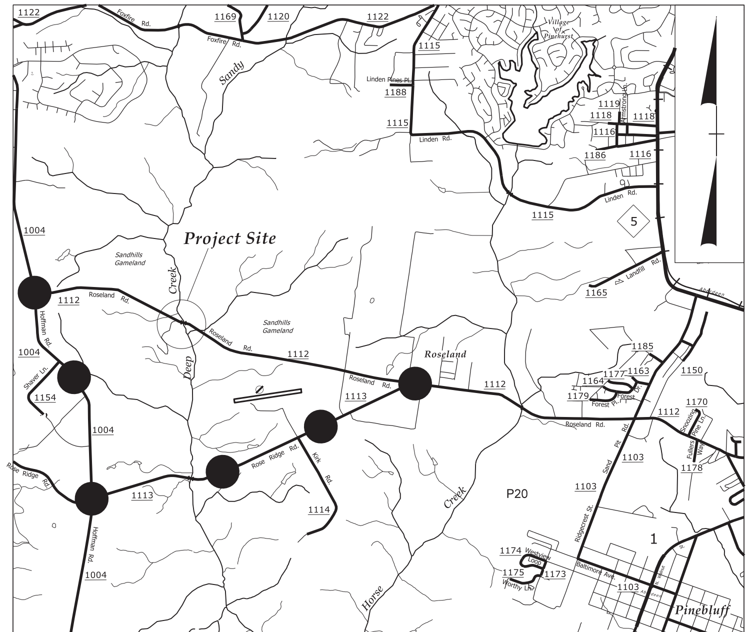
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.8.R.89	EC-1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

MOORE COUNTY



VICINITY MAP

● DETOUR ROUTE

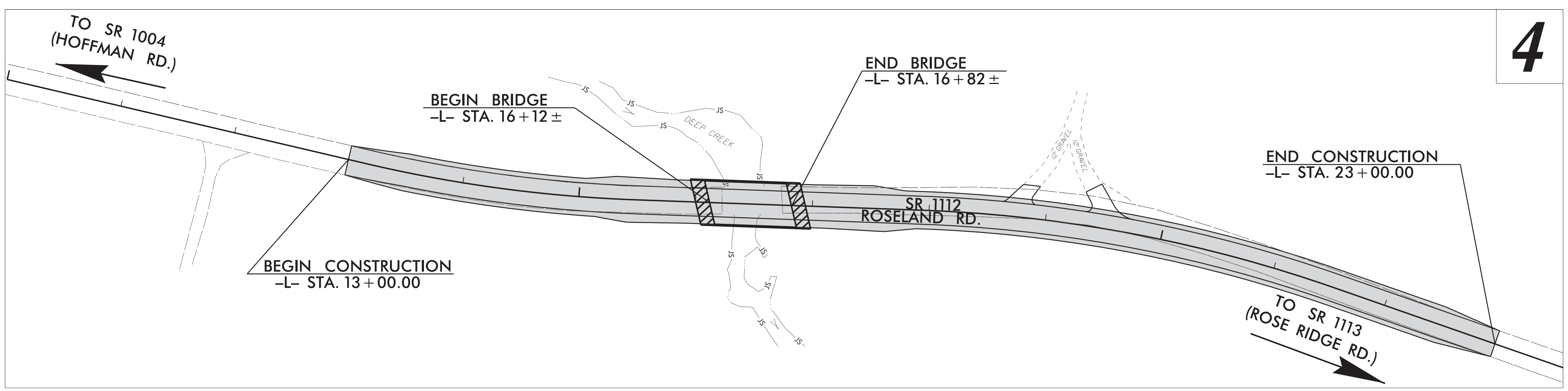
LOCATION: BRIDGE NO. 620019 ON SR 1112 (ROSELAND RD.) OVER DEEP CREEK

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

NC GRID NAD 83 NA 2011

ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT

Refer To E. C. Special Provisions for Special Considerations.



EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TSD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	
1633.02	Temporary Rock Silt Check Type-B	
	Wattle / Coir Fiber Wattle	EW / CFW
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	
1634.01	Temporary Rock Sediment Dam Type-A	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	
1635.02	Rock Pipe Inlet Sediment Trap Type-B	
1630.04	Stilling Basin	
1630.06	Special Stilling Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	
	Tiered Skimmer Basin	
	Infiltration Basin	

THIS PROJECT CONTAINS EROSION CONTROL PLANS FOR CLEARING AND GRUBBING PHASE OF CONSTRUCTION.

THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

HIGH QUALITY WATER(S) EXIST ON THIS PROJECT

High Quality Water Zone(s) Exist
From Sta. Begin
to Sta. End
Refer To E. C. Special Provisions for Special Considerations.

GRAPHIC SCALE

25 0 50

PLANS

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 1, 2016 AND ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER RESOURCES.

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.summitde.net

Designed by:

James A. Crouse, PE 3267
NAME LEVEL III CERTIFICATION NO.

Reviewed In the Office of:

ROADSIDE ENVIRONMENTAL UNIT
1 South Wilmington St.
Raleigh, NC 27611

2012 STANDARD SPECIFICATIONS

Reviewed by:

Jennifer Parish

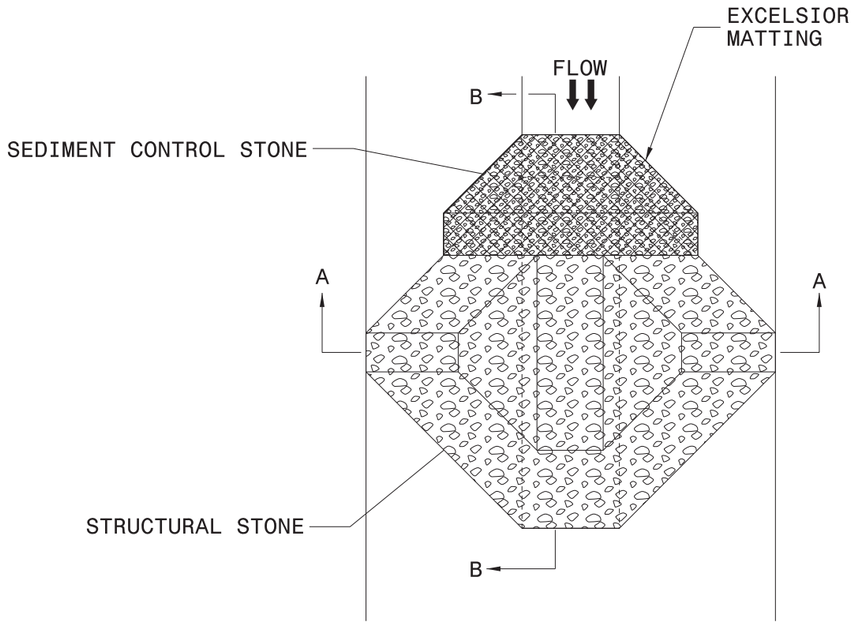
Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2012 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

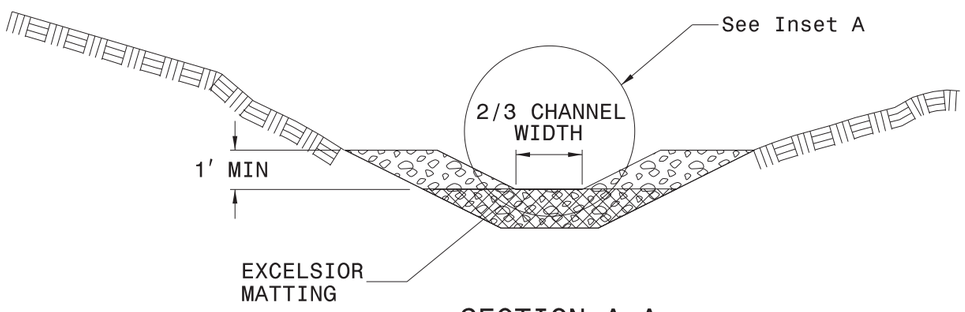
1604.01	Railroad Erosion Control Detail
1605.01	Temporary Silt Fence
1606.01	Special Sediment Control Fence
1607.01	Gravel Construction Entrance
1622.01	Temporary Berms and Slope Drains
1630.01	Riser Basin
1630.02	Silt Basin Type B
1630.03	Temporary Silt Ditch
1630.04	Stilling Basin
1630.05	Temporary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

PROJECT REFERENCE NO.	SHEET NO.
17BP.8.R.89	EC-2
R/W SHEET NO.	___
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TEMPORARY ROCK SILT CHECK TYPE 'A' WITH EXCELSIOR MATTING AND POLYACRYLAMIDE (PAM)



PLAN



SECTION A-A

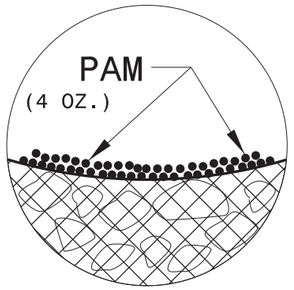
NOTES:

INSTALL TEMPORARY ROCK SILT CHECK TYPE A IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1633.01.

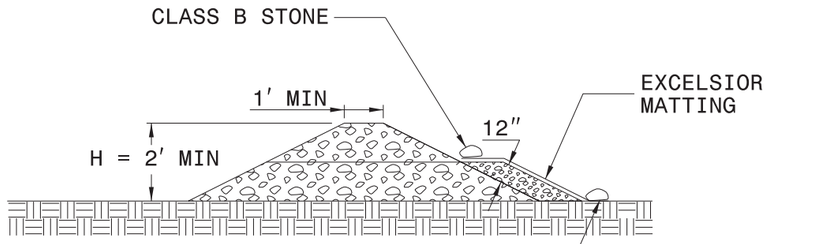
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH ROCK SILT CHECK.

INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A

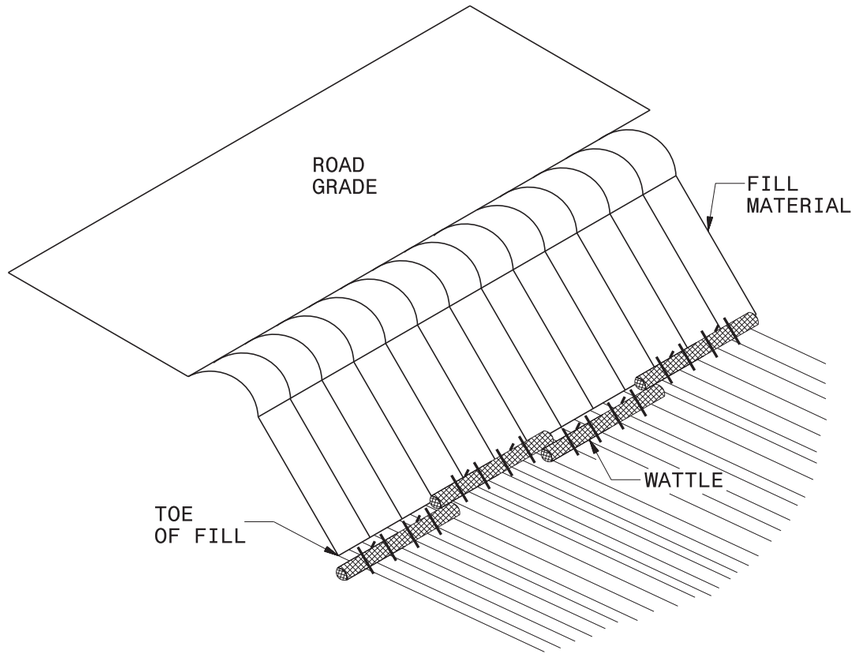


SECTION B-B

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
17BP.8.R.89	EC-2A
R/W SHEET NO.	___
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

WATTLE BARRIER DETAIL



ISOMETRIC 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.

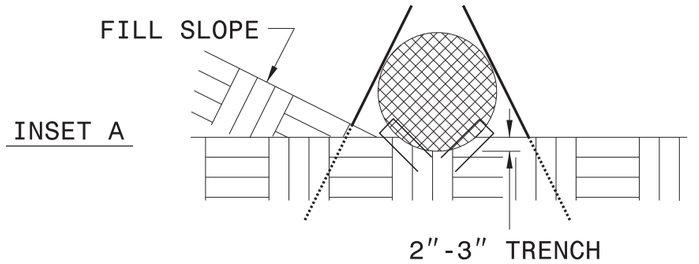
USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

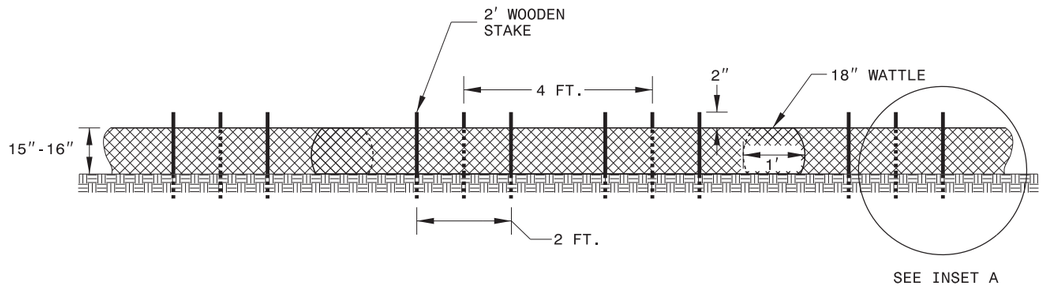
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.

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

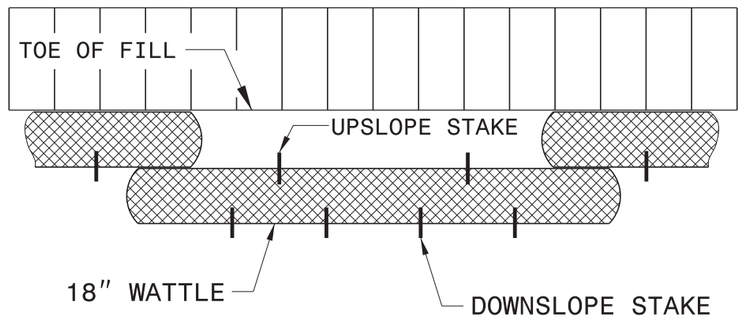
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

FOR BREAKS ALONG LARGE SLOPES, USE MAXIMUM SPACING OF 25 FT.





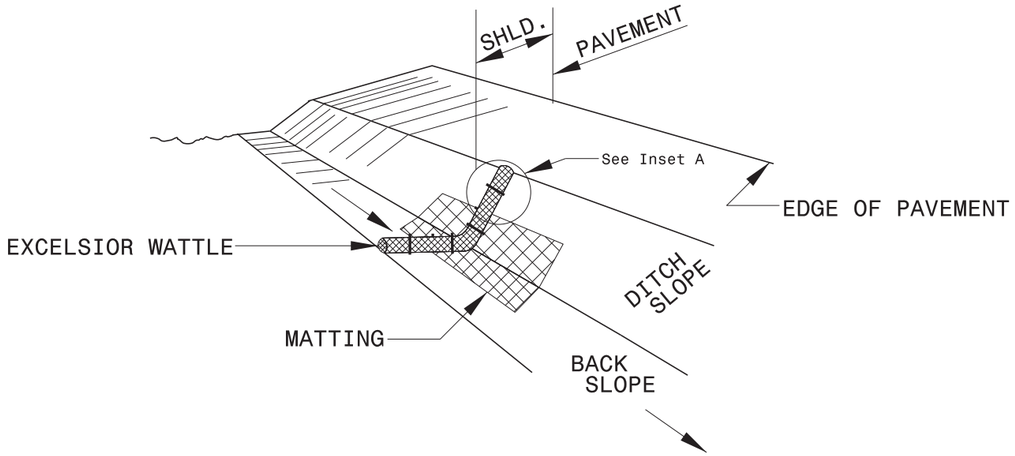
FRONT VIEW



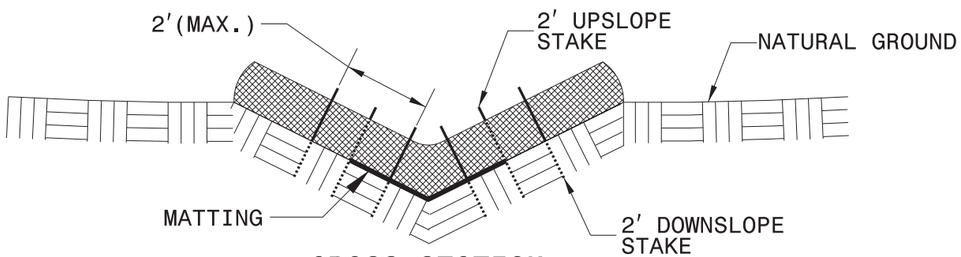
TOP VIEW

PROJECT REFERENCE NO.	SHEET NO.
17BP.8.R.89	EC-2B
R/W SHEET NO.	___
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

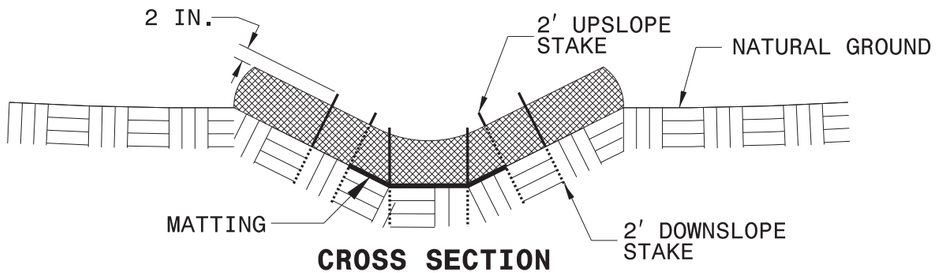
WATTLE DETAIL



ISOMETRIC VIEW



CROSS SECTION VEE DITCH



CROSS SECTION TRAPEZOIDAL DITCH

NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.

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

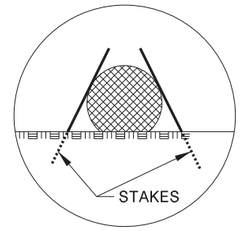
ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

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

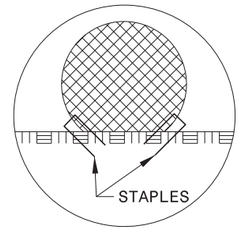
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

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

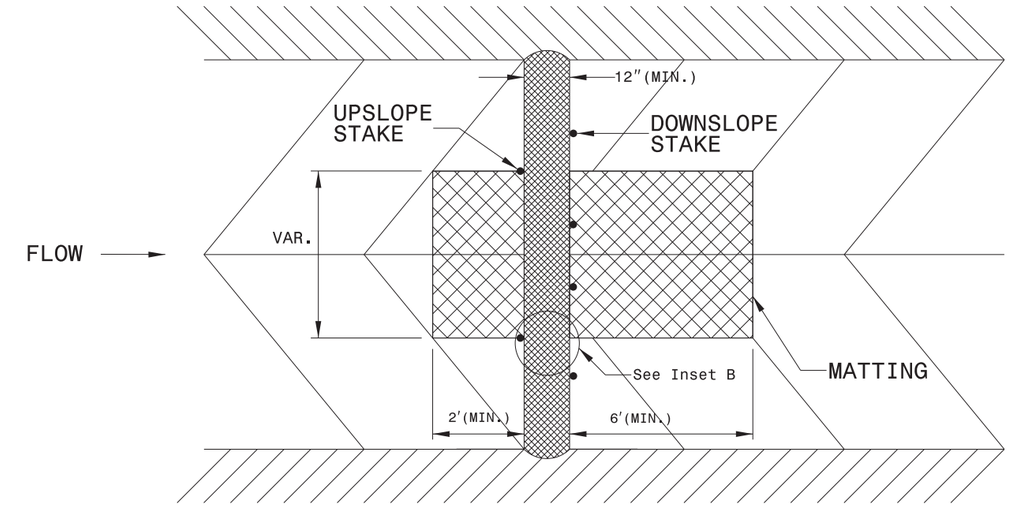
INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.



INSET A



INSET B



TOP VIEW

PROJECT REFERENCE NO.	SHEET NO.
17BP.8.R.89	EC-3
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

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

PROJECT REFERENCE NO.	SHEET NO.
17BP.8.R.89	EC-4/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

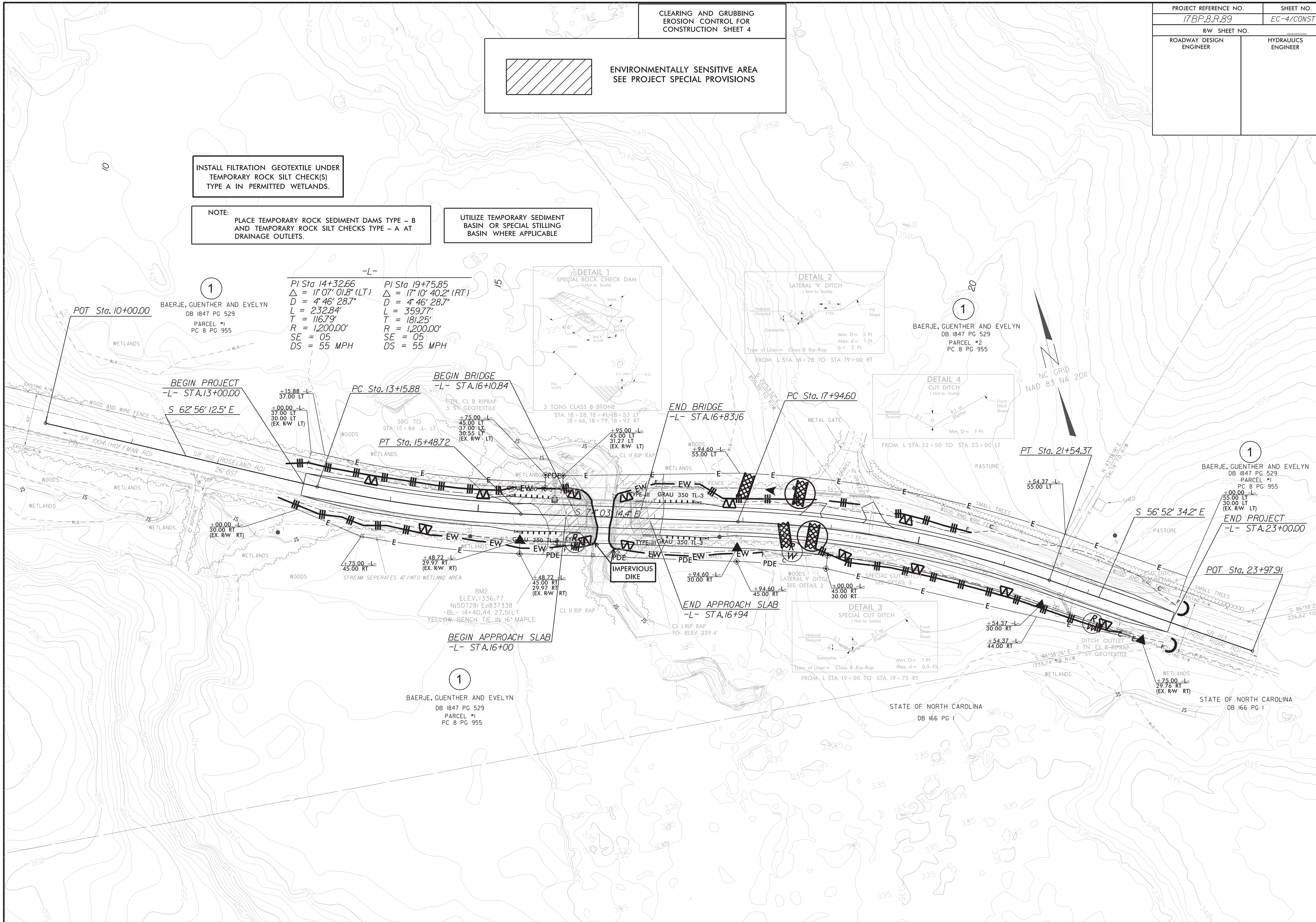
CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

INSTALL FILTRATION GEOTEXTILE UNDER TEMPORARY ROCK SILT CHECK(S) TYPE A IN PERMITTED WETLANDS.

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

UTILIZE TEMPORARY SEDIMENT BASIN OR SPECIAL STILLING BASIN WHERE APPLICABLE



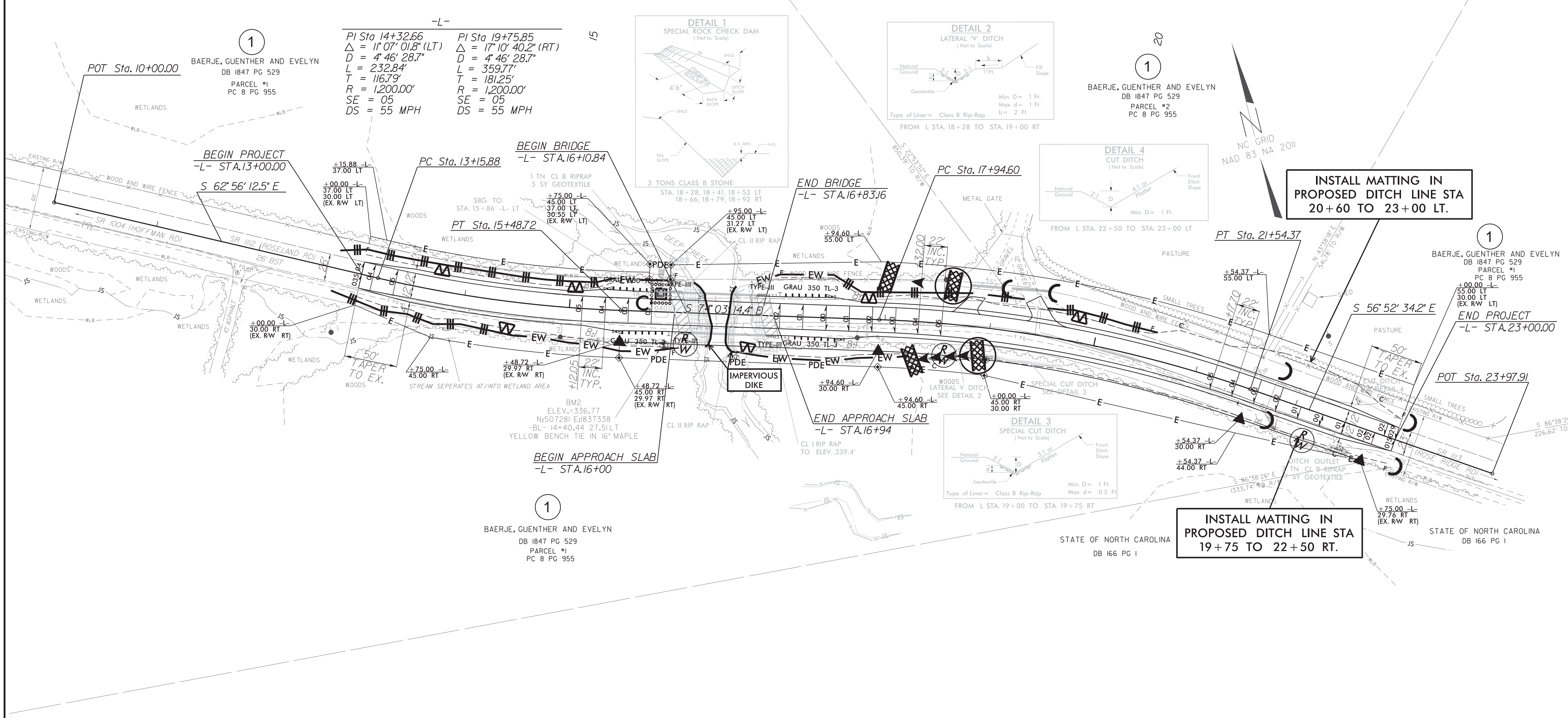
-L-
PI Sta 14+32.66
△ = 11° 07' 01.8" (LT)
D = 4° 46' 28.7"
L = 232.84'
T = 116.79'
R = 1,200.00'
SE = 05
DS = 55 MPH
PI Sta 19+75.85
△ = 17° 10' 40.2" (RT)
D = 4° 46' 28.7"
L = 359.77'
T = 181.25'
R = 1,200.00'
SE = 05
DS = 55 MPH
POT Sta. 10+00.00
BEGIN PROJECT -L- STA.13+00.00
S 62° 56' 12.5" E
PC Sta. 13+15.88
PT Sta. 15+48.72
BEGIN BRIDGE -L- STA.16+10.84
END BRIDGE -L- STA.16+83.16
PC Sta. 17+94.60
PT Sta. 21+54.37
S 56° 52' 34.2" E
END PROJECT -L- STA.23+00.00
POT Sta. 23+97.91
BEGIN APPROACH SLAB -L- STA.16+00
END APPROACH SLAB -L- STA.16+94
IMPERVIOUS DIKE
BAERJE, GUENTHER AND EVELYN
DB 1847 PG 529
PARCEL #1
PC 8 PG 955
PARCEL #2
STATE OF NORTH CAROLINA
DB 166 PG 1
DETAIL 1
SPECIAL ROCK CHECK DAM
3 TONS CLASS B STONE
DETAIL 2
LATERAL 'V' DITCH
FROM -L- STA. 18+28 TO STA. 19+00 RT
DETAIL 3
SPECIAL CUT DITCH
FROM -L- STA. 19+00 TO STA. 19+75 RT
DETAIL 4
CUT DITCH
FROM -L- STA. 22+50 TO STA. 23+00 LT
BM2
ELEV.=336.77
N:507281 E:1837338
-BL- 14+40.44 27.51 LT
YELLOW BENCH TIE IN 16" MAPLE
NC GRID NAD 83 NA 2011
SR 1004 (HOFFMAN RD)
SR 1112 (ROSELAND RD)
SR 1113 (ROSE RIDGE RD)
STREAM SEPERATES AT/INTO WETLAND AREA
DITCH OUTLET
2 TN CL B RIPRAP
7 SY GEOTEXTILE

PROJECT REFERENCE NO.	SHEET NO.
17BP.8.R.89	EC-5/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INSTALL FILTRATION GEOTEXTILE UNDER TEMPORARY ROCK SILT CHECK(S) TYPE A IN PERMITTED WETLANDS.

NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

UTILIZE TEMPORARY SEDIMENT BASIN OR SPECIAL STILLING BASIN WHERE APPLICABLE



-L-
PI Sta 14+32.66
△ = 11° 07' 01.8" (LT)
D = 4° 46' 28.7"
L = 232.84'
T = 116.79'
R = 1,200.00'
SE = .05
DS = 55 MPH
PI Sta 19+75.85
△ = 17° 10' 40.2" (RT)
D = 4° 46' 28.7"
L = 359.77'
T = 181.25'
R = 1,200.00'
SE = .05
DS = 55 MPH
POT Sta. 10+00.00
BEGIN PROJECT -L- STA.13+00.00
S 62° 56' 12.5" E
PC Sta. 13+15.88
PT Sta. 15+48.72
BEGIN BRIDGE -L- STA.16+10.84
END BRIDGE -L- STA.16+83.16
PC Sta. 17+94.60
PT Sta. 21+54.37
S 74° 03' 14.4" E
S 56° 52' 34.2" E
END PROJECT -L- STA.23+00.00
POT Sta. 23+97.91
BEGIN APPROACH SLAB -L- STA.16+00
END APPROACH SLAB -L- STA.16+94
IMPERVIOUS DIKE
BAERJE, GUENTHER AND EVELYN DB 1847 PG 529 PARCEL #1 PC 8 PG 955
BAERJE, GUENTHER AND EVELYN DB 1847 PG 529 PARCEL #2 PC 8 PG 955
STATE OF NORTH CAROLINA DB 166 PG 1
DETAIL 1 SPECIAL ROCK CHECK DAM (Not to Scale)
3 TONS CLASS B STONE STA. 18+28, 18+41, 18+53 LT 18+66, 18+79, 18+92 RT
DETAIL 2 LATERAL 'V' DITCH (Not to Scale)
Type of Liner= Class B Rip-Rap
FROM L STA. 18+28 TO STA. 19+00 RT
DETAIL 3 SPECIAL CUT DITCH (Not to Scale)
FROM L STA. 19+00 TO STA. 19+75 RT
DETAIL 4 CUT DITCH (Not to Scale)
FROM L STA. 22+50 TO STA. 23+00 LT
INSTALL MATTING IN PROPOSED DITCH LINE STA 20+60 TO 23+00 LT.
INSTALL MATTING IN PROPOSED DITCH LINE STA 19+75 TO 22+50 RT.
NC GRID NAD 83 NA 2011
BM2 ELEV.=336.77 N:507281 E:1837338 -BL- 14+40.44 27.51 LT YELLOW BENCH TIE IN 16" MAPLE
SR 1004 (HOFFMAN RD)
SR 1112 (ROSELAND RD)
SR 1113 (ROSE RIDGE RD)
50' TAPER TO EX.
22' INC. TYP.
WETLANDS
WOODS
PASTURE
SMALL TREES
METAL GATE
WOOD AND WIRE FENCE
DEEP CREEK
DITCH OUTLET 1 TN CL B RIPRAP 5 SY GEOTEXTILE
STREAM SEPERATES AT/INTO WETLAND AREA

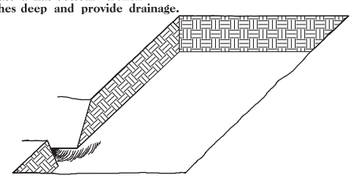
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.8.R.89	RF-1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	

PLANTING DETAILS

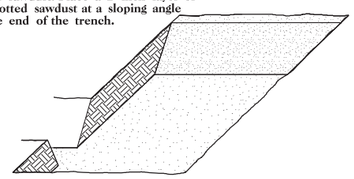
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

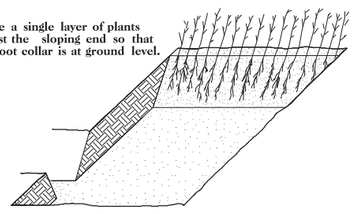
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



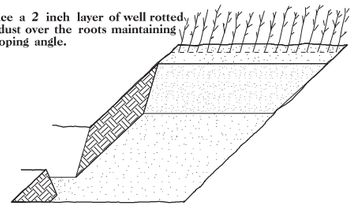
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



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

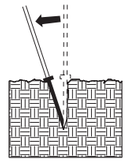


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

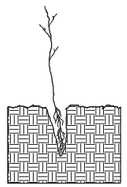


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

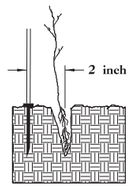
DIBBLE PLANTING METHOD
USING THE KBC PLANTING BAR



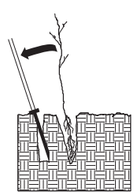
1. Insert planting bar as shown and pull handle toward planter.



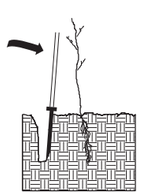
2. Remove planting bar and place seedling at correct depth.



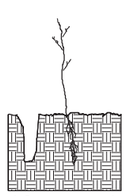
3. Insert planting bar 2 inches toward planter from seedling.



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

09/08/99

PROJECT: 17BP.8.R.89

CONTRACT:

PROJECT NO.	SHEET NO.
17BP.8.R.89	UO–1

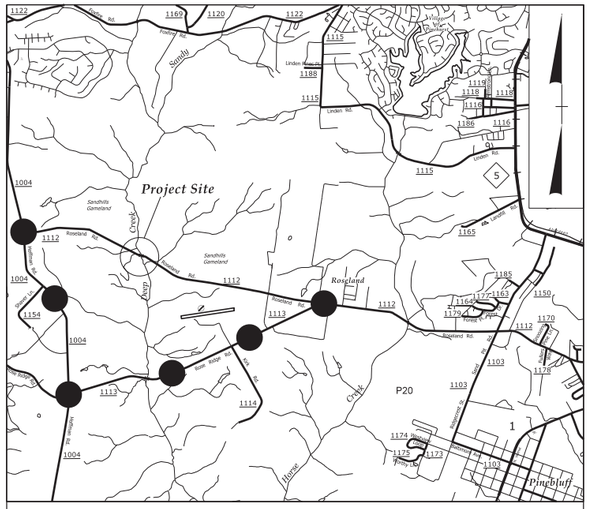
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES BY OTHERS PLANS
MOORE COUNTY

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.

LOCATION: BRIDGE NO. 620019 ON SR 1112 (ROSELAND RD.) OVER DEEP CREEK

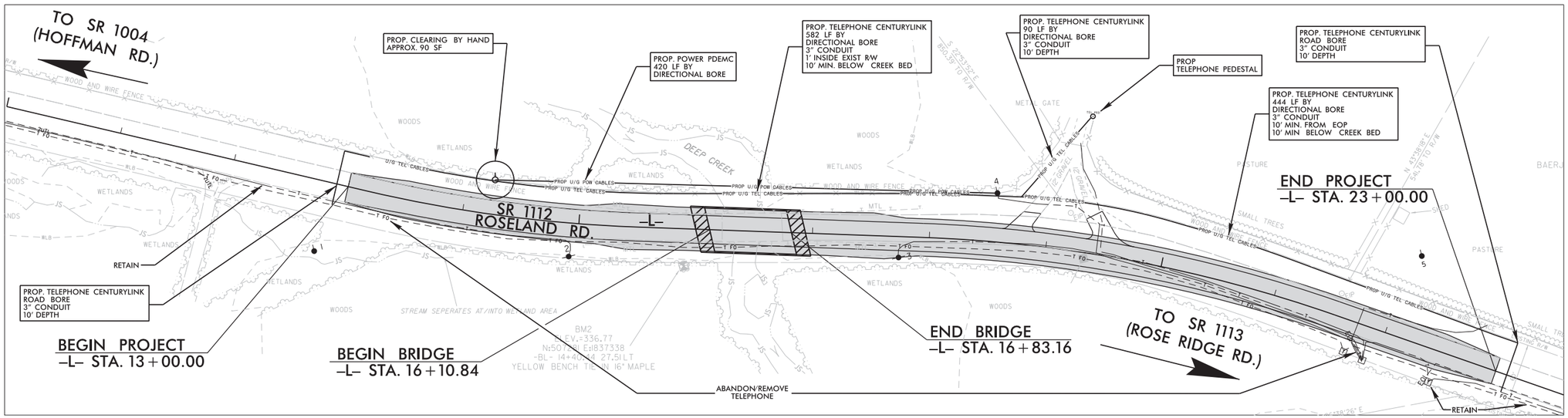
TYPE OF WORK: RELOCATION OF POWER



VICINITY MAP FOR STATE PROJECT 17BP.8.R.89

DETOUR ROUTE

NC GRID
NAD 83 NA 2011



GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

INDEX OF SHEETS

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

UTILITY OWNERS ON PROJECT

(A) PEE DEE EMC – (POWER)
CONTACT: CHRIS WILLIAMS
PHONE: 704–694–2114

(B) CENTURYLINK (WINSTREAM) – (TELEPHONE)
CONTACT: JOY MATTHEWS
PHONE: 501–748–7654

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

RIGHT OF WAY DATE:

LETTING DATE:

TRACY N. PARROTT, PE
PROJECT ENGINEER

BRANDON W. JOHNSON, PE
PROJECT DESIGN ENGINEER

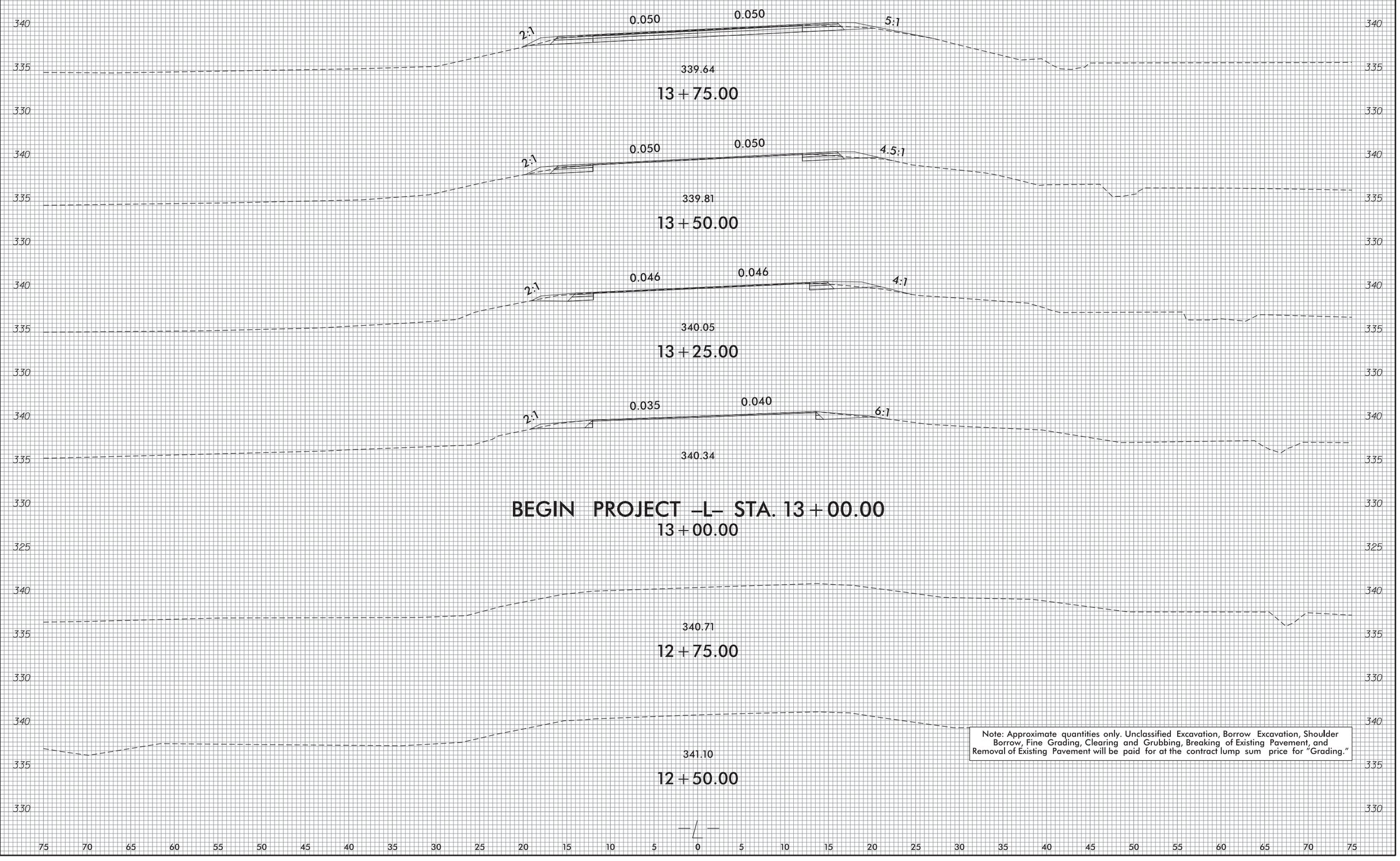
28-FEB-2017 08:41
N:\Infrastructure Jobs\2016 Projects\LS-0083.100 Div 8 On Call Bridges Package 2\620019\Utilities\Rdy_Ut\Proj\019_Ut_UO_tsh.dgn
$$$$USERNAME$$$$

BRIDGE NO. 620019

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)

0 2.5 5

PROJ. REFERENCE NO.	SHEET NO.
17BP.8.R.89	X-1



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

13-FEB-2017 15:07
@19_Rdy_xpl_L.dgn
Faith.Jahnke

BRIDGE NO. 620019

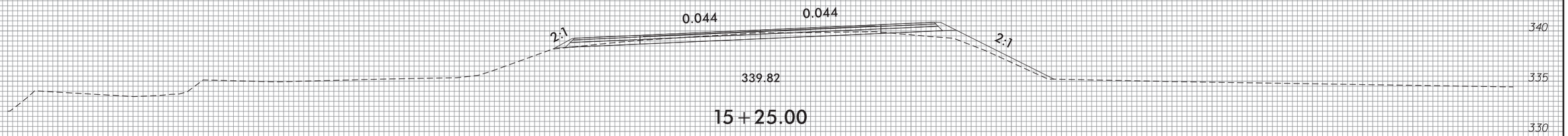
Prepared in the Office of:
SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

0 2.5 5

PROJ. REFERENCE NO.	SHEET NO.
17BP.8.R.89	X-2

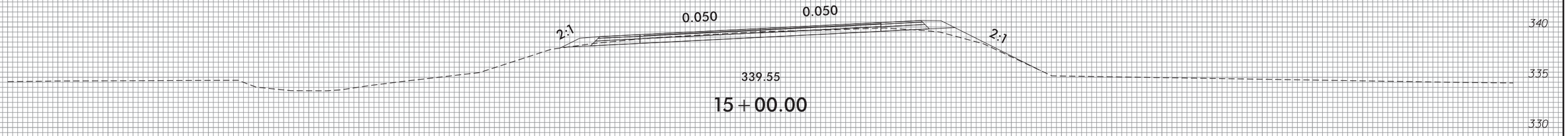
75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

340 335 330



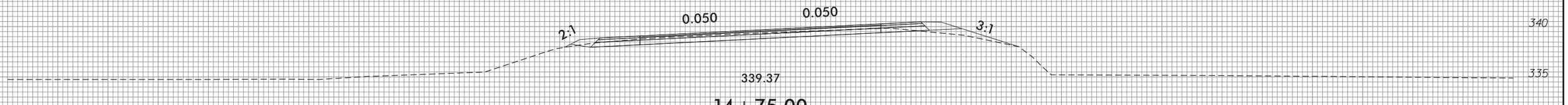
339.82

15+25.00



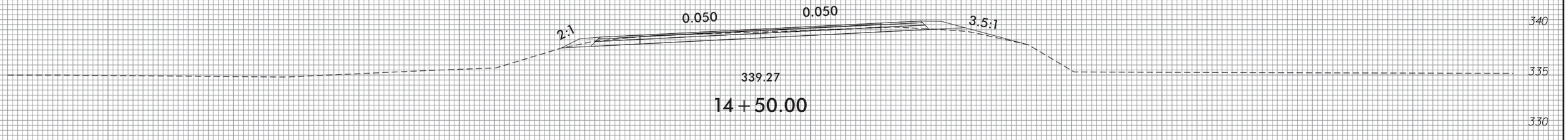
339.55

15+00.00



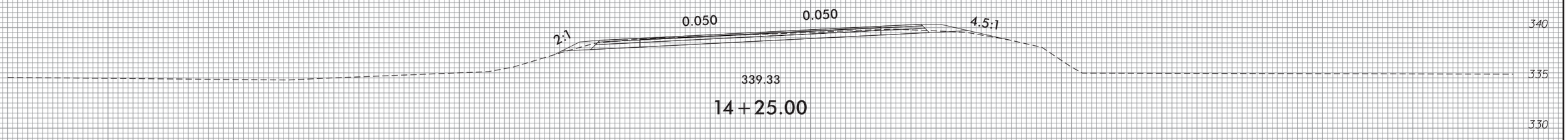
339.37

14+75.00



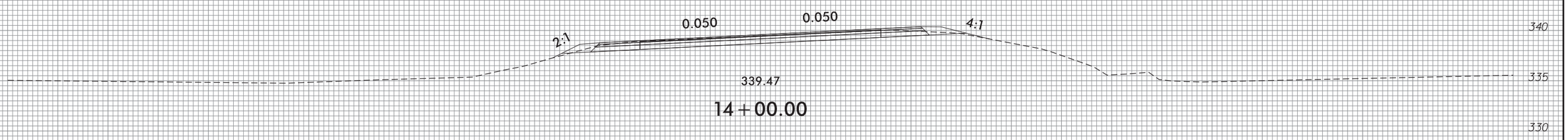
339.27

14+50.00



339.33

14+25.00



339.47

14+00.00

13-FEB-2017 15:07
@19_Rdy_xpl_L.dgn
faith.jahnke

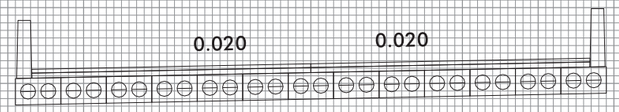
Prepared in the Office of: SUMMIT
NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

0 2.5 5

PROJ. REFERENCE NO.	SHEET NO.
17BP.8.R.89	X-3

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

340 335 330 325 350 345 340 335 330



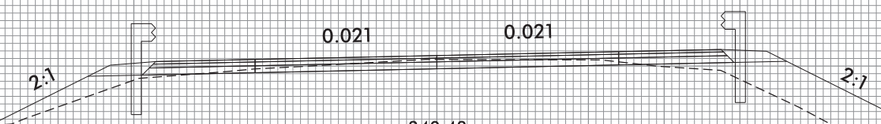
335.23

16+25.00

BEGIN BRIDGE –L– STA. 16+10.84

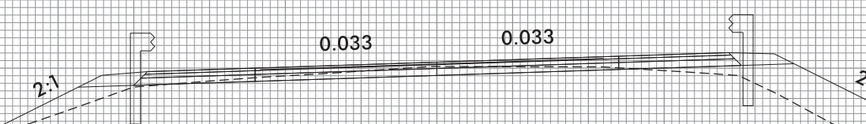
340.77

16+00.00



340.43

15+75.00



340.11

15+50.00

340 335 330

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

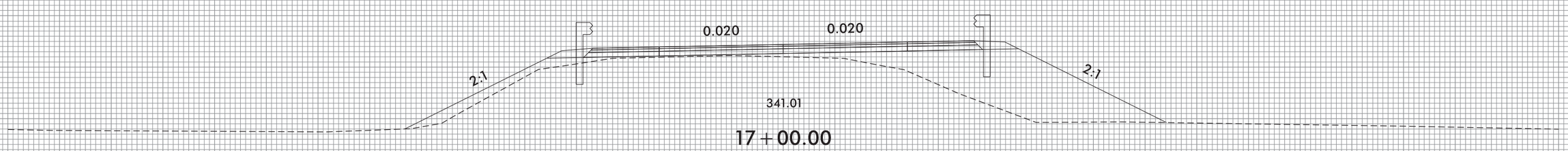
13-FEB-2017 15:07
919_Rdy_xpl_L.dgn
tasin.jahnke

BRIDGE NO. 620019

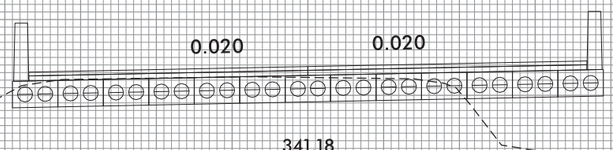
Prepared in the Office of:
SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

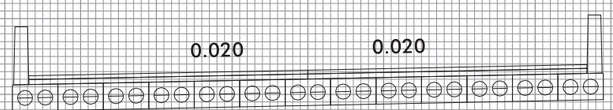
0 2.5 5

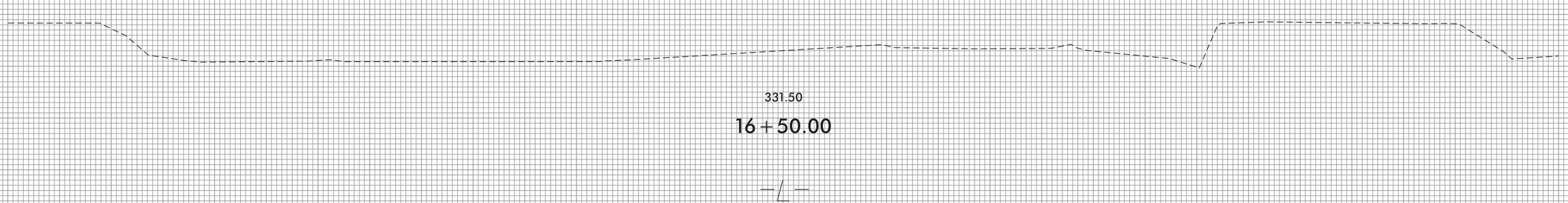
PROJ. REFERENCE NO.	SHEET NO.
17BP.8.R.89	X-4



END BRIDGE –L– STA. 16+83.16







13-FEB-2017 15:07
@19_Rdy_xpl_L.dgn
Faith.Jahnke

BRIDGE NO. 620019

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)

0 2.5 5

PROJ. REFERENCE NO.	SHEET NO.
17BP.8.R.89	X-5

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

345
340
335
330

0.025 0.025
2:1 2:1
340.98
18+00.00

0.014 0.014
2:1 2:1
340.86
17+75.00

0.003 0.003
2:1 2:1
340.87
17+50.00

0.009 0.009
2:1 2:1
340.92
17+25.00

13-FEB-2017 15:07
@19_Rdy_xpl_L.dgn
Faith.Jahnke

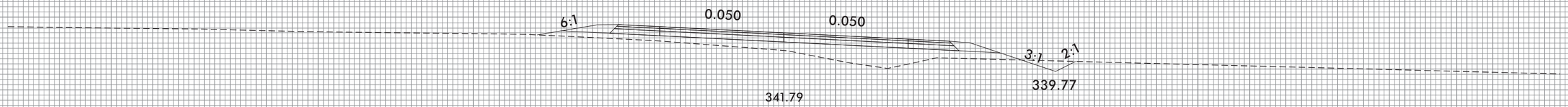
Prepared in the Office of:
SUMMIT
NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

0 2.5 5

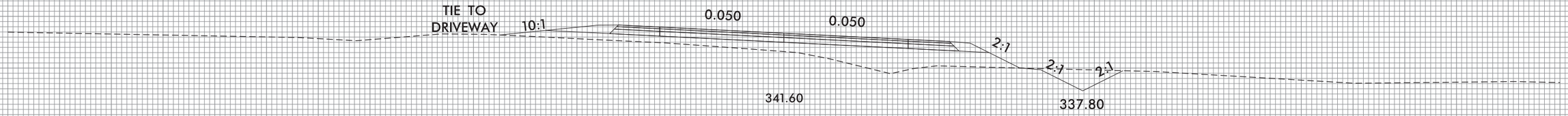
PROJ. REFERENCE NO.	SHEET NO.
17BP.8.R.89	X-6

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

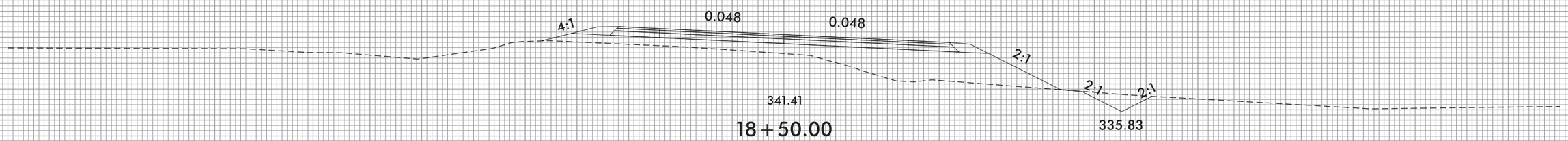
345 340 335 330



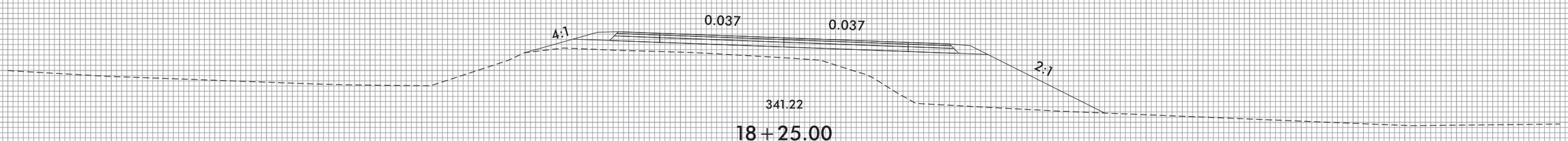
19+00.00



18+75.00



18+50.00



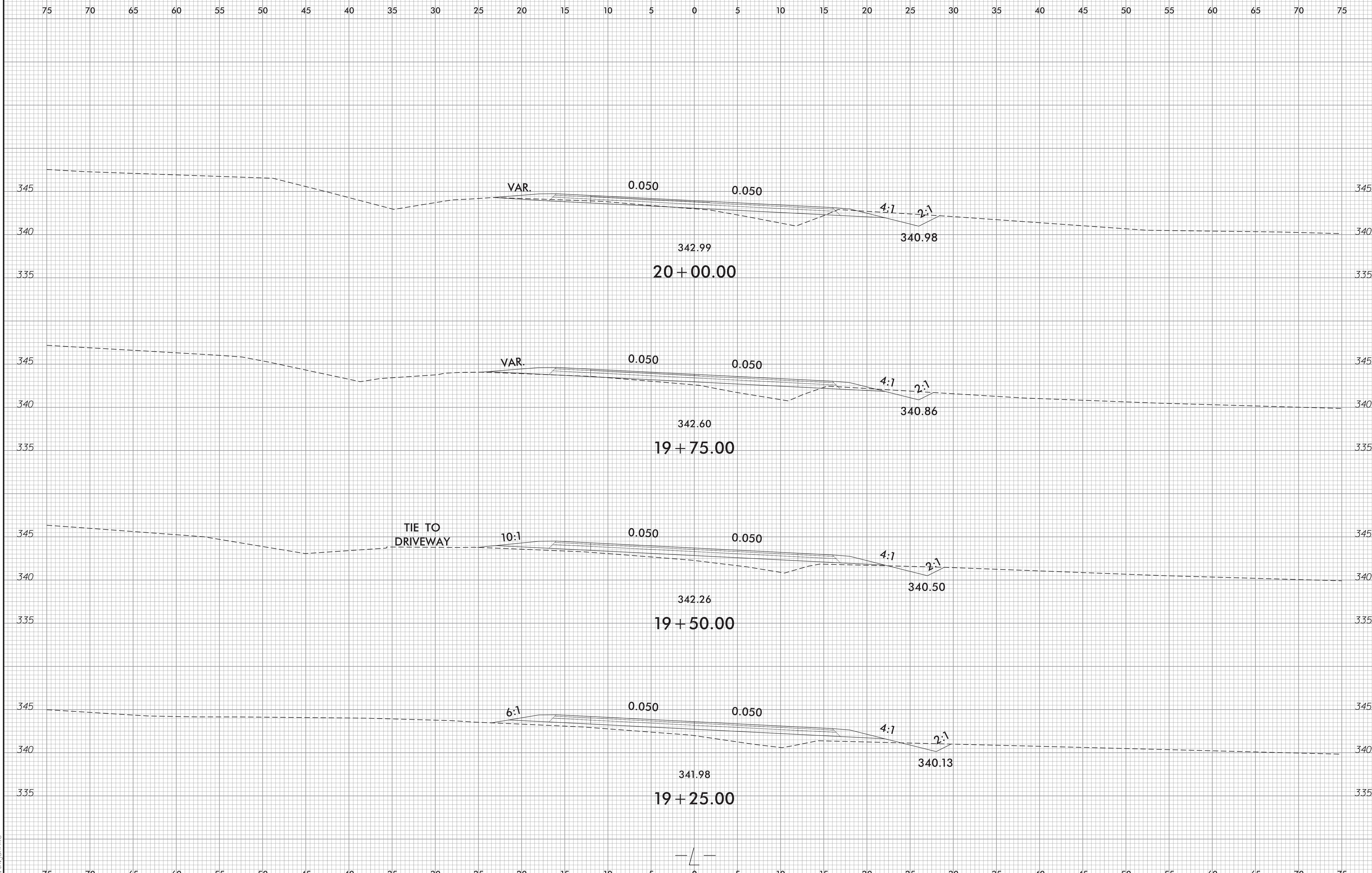
18+25.00

13-FEB-2017 15:07
@19_Rdy_xpl_L.dgn
faith.behnke

BRIDGE NO. 620019

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)

PROJ. REFERENCE NO.	SHEET NO.
17BP.8.R.89	X-7



13-FEB-2017 15:07
019_Rdy_xpl_L.dgn
faith.jahnke

BRIDGE NO. 620019

Prepared in the Office of:
SUMMIT
NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

0 2.5 5

PROJ. REFERENCE NO.	SHEET NO.
17BP.8.R.89	X-8

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

350
345
340
335

2:1 6:1 0.050 0.050 4:1 2:1

343.72 344.01 341.32

21+00.00

345
340
335

2:1 6:1 0.050 0.050 4:1 2:1

343.71 343.94 341.30

20+75.00

345
340
335

VAR. 0.050 0.050 4:1 2:1

343.75 341.20

20+50.00

345
340
335

VAR. 0.050 0.050 4:1 2:1

343.43 341.09

20+25.00

BRIDGE NO. 620019

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)

0 2.5 5

PROJ. REFERENCE NO.	SHEET NO.
17BP.8.R.89	X-9

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

350 345 340 335

2:1 6:1 0.013 0.020 4:1 2:1

342.22 343.28 340.97

22+00.00

2:1 6:1 0.024 0.024 4:1 2:1

342.77 343.59 341.25

21+75.00

2:1 6:1 0.035 0.035 4:1 2:1

343.22 343.86 341.32

21+50.00

2:1 6:1 0.047 0.047 4:1 2:1

343.59 344.00 341.30

21+25.00

13-FEB-2017 15:07
@19_Rdy_xpl_L.dgn
Faith.Jahnke

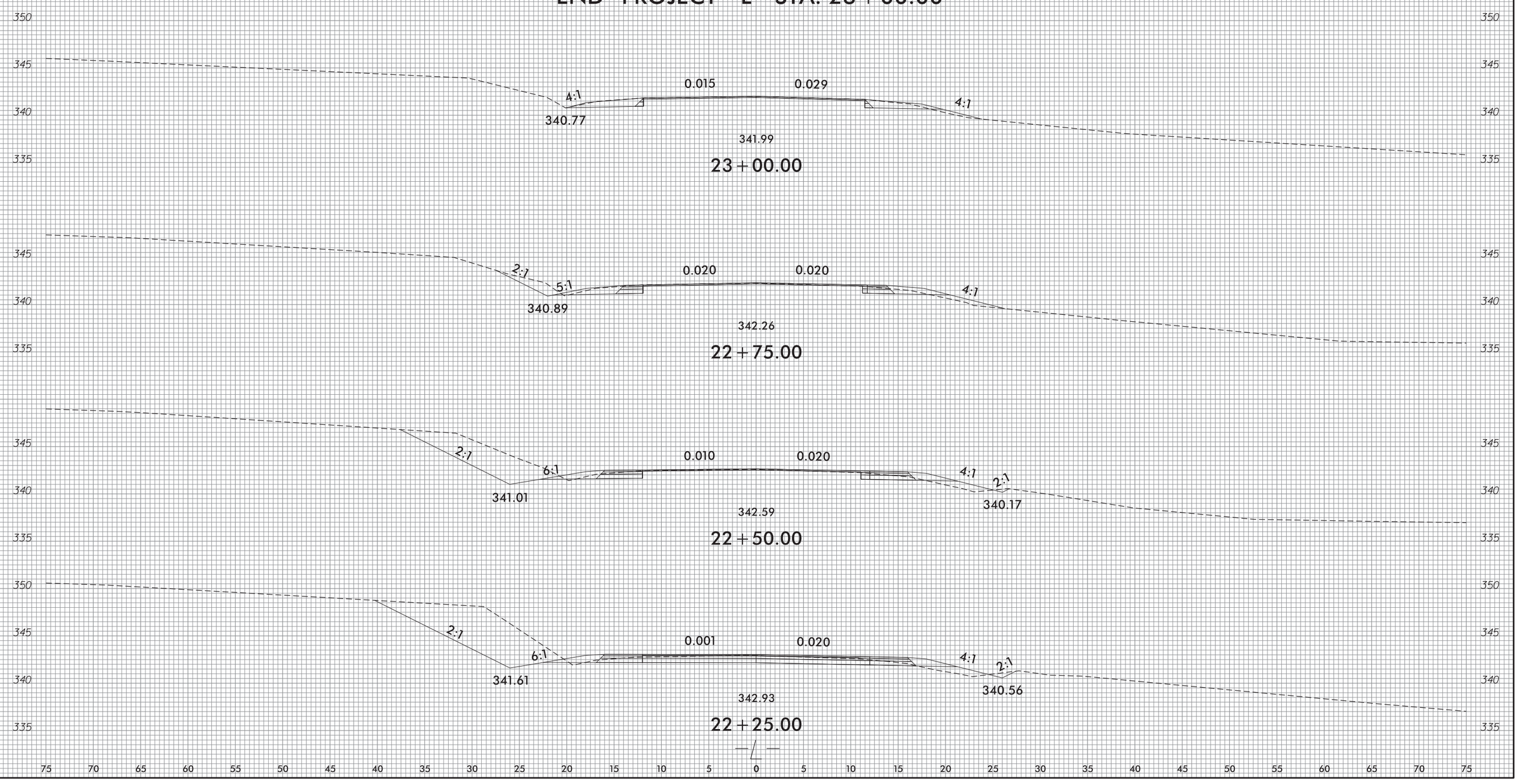
BRIDGE NO. 620019

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)

0 2.5 5

PROJ. REFERENCE NO.	SHEET NO.
17BP.8.R.89	X-10

END PROJECT –L– STA. 23+00.00



13-FEB-2017 15:07
@19_Rdy_xpl_L.dgn
faith.behnke

BRIDGE NO. 620019

Prepared in the Office of:
SUMMIT
NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

0 2.5 5

PROJ. REFERENCE NO.	SHEET NO.
17BP.8.R.89	X-11

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

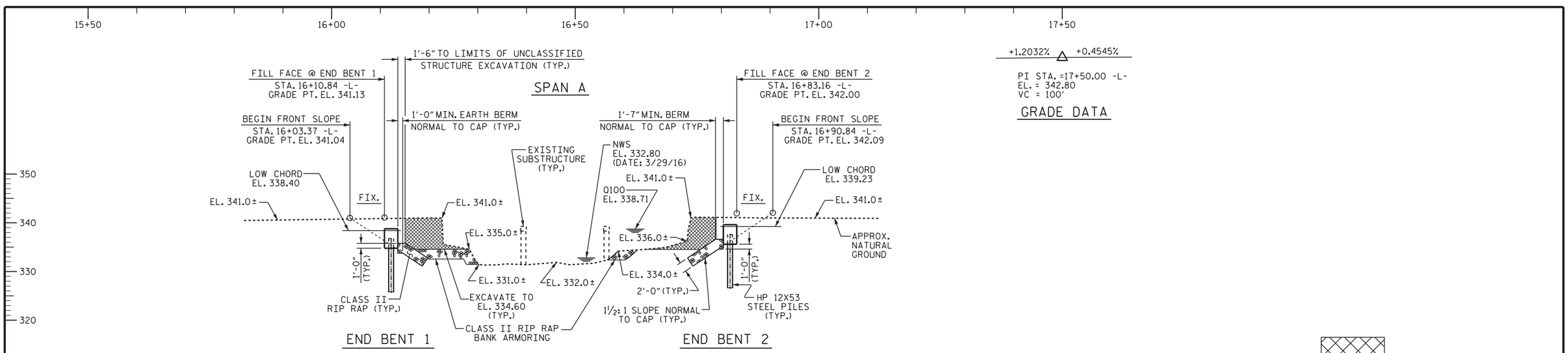
340
335
330
345
340
335

341.70
23+50.00

341.79
23+25.00

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

13-FEB-2017 15:07
@19_Rdy_xpl_L.dgn
Faith.Jahnke



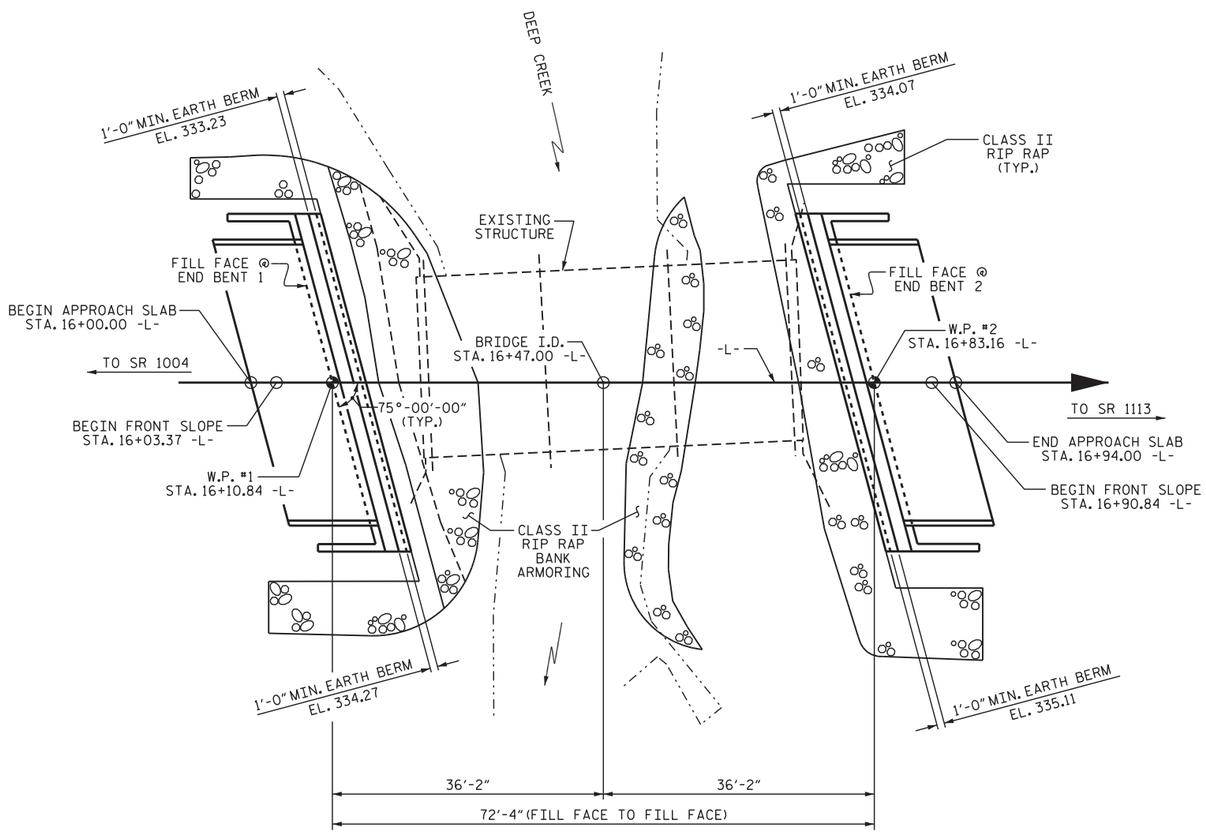
SECTION ALONG -L-

+1.2032% △ +0.4545%

PI STA. =17+50.00 -L-
EL. = 342.80
VC = 100'

GRADE DATA

UNCLASSIFIED STRUCTURE EXCAVATION



PLAN

PILES NOT SHOWN FOR CLARITY

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

NORTH CAROLINA PROFESSIONAL SEAL 031583 ENGINEER KRISHNA PRASAD SEDAI

Krishna P. Sedai
2/8/2017

PROJECT NO. 17BP.8.R.89

MOORE COUNTY

STATION: 16+47.00 -L-

SHEET 1 OF 3 REPLACES BRIDGE No. 19

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

FOR BRIDGE OVER DEEP CREEK ON SR 1112 (ROSELAND RD.) BETWEEN SR 1004 AND SR 1113

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

DRAWN BY :	K. P. SEDAI	DATE : 8/9/16
CHECKED BY :	J. P. McCARTHA	DATE : 8/15/16
DESIGN ENGINEER OF RECORD:	K. P. SEDAI	DATE : 11/30/16

08-FEB-2017 14:35
O:\Division08\620019\Structures\Design\STR00-PEF\Final Plans DGN\17BP8R89_19_SMU_GD.dgn
ksedai

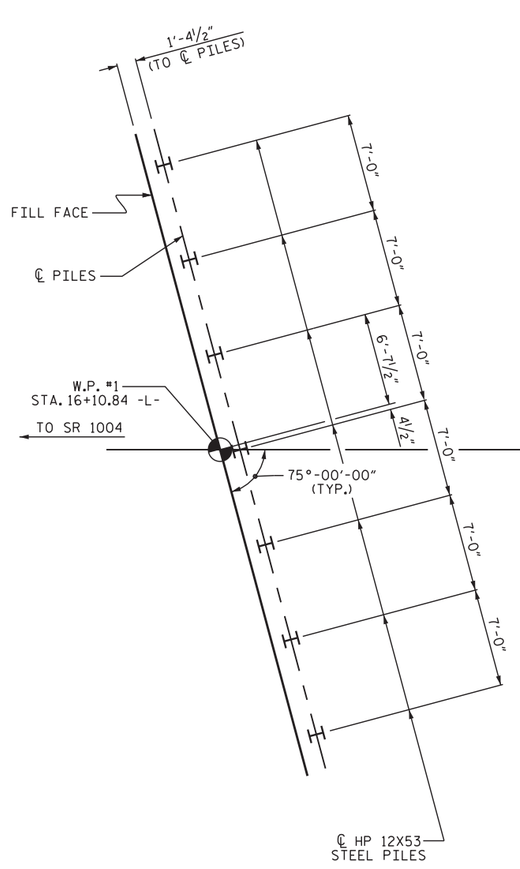
NOTES

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

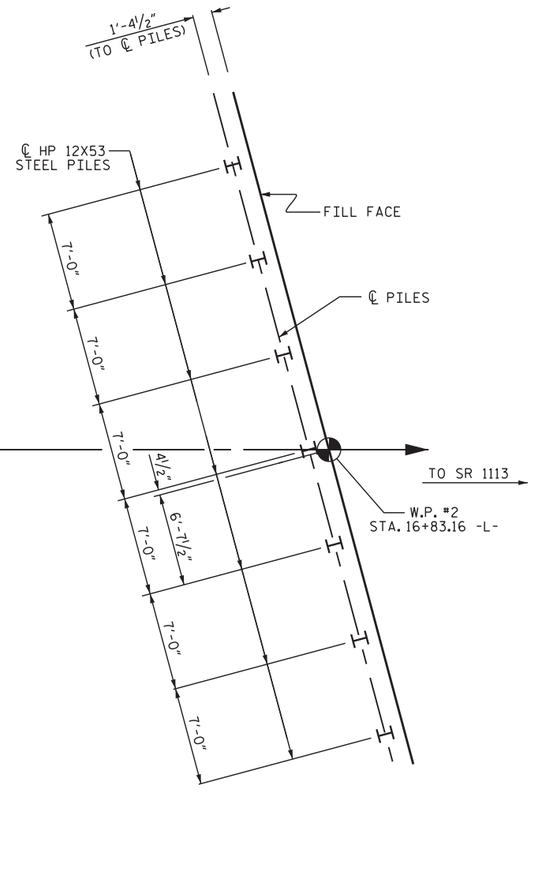
PILES AT END BENT 1 AND END BENT 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 90 TONS PER PILE.

DRIVE PILES AT END BENT 1 AND END BENT 2 TO A REQUIRED DRIVING RESISTANCE OF 150 TONS PER PILE.

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 PILE CENTERLINE.

PROJECT NO. 17BP.8.R.89

MOORE COUNTY

STATION: 16+47.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

FOR BRIDGE OVER DEEP CREEK
ON SR 1112 (ROSELAND RD.)
BETWEEN SR 1004 AND SR 1113

NORTH CAROLINA PROFESSIONAL SEAL 031583 ENGINEER KRISHNA PRASAD SEDAI

Documents not for construction or bidding purposes.
Krishna P. Sedai
2/8/2017

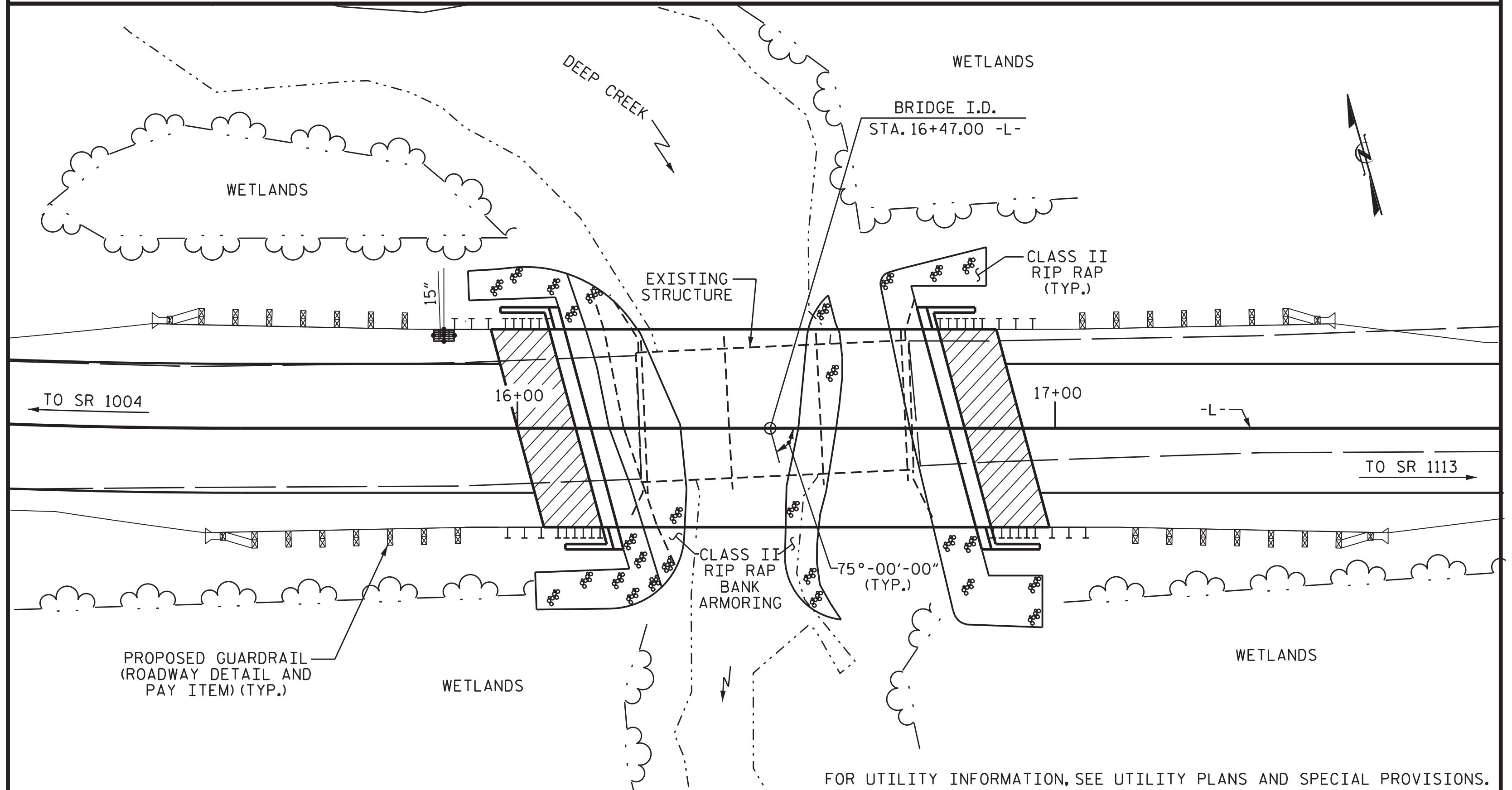
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

DRAWN BY : K. P. SEDAI DATE : 8/10/16
CHECKED BY : J. P. McCARTHA DATE : 8/15/16

08-FEB-2017 14:35
O:\Division08\620019\Structures\Design\STR00-PEF\Final Plans DGN\17BP8R89_19_SMU_GD.dgn
ksedai

B.M. #2: YELLOW BENCH TIE IN 16"Ø MAPLE TREE, STA. 15+90.62 -L-, 31.91' RIGHT, EL. 336.77



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 1 SIMPLE SPAN @ 16'-10", 2 CONTINUOUS SPANS @ 17'-3" WITH A STEEL PLANK DECK ON I-BEAMS ON TIMBER CAPS AND PILES, TIMBER BULKHEADS AT THE END BENTS AND INTERIOR BENTS, WITH A CLEAR ROADWAY WIDTH OF 24'-2" LOCATED AT THE PROPOSED STRUCTURE, SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY NOT POSTED FOR LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE DETERIORATE DURING CONSTRUCTION OF THE PROPOSED BRIDGE, A LOAD LIMIT MAY BE POSTED AND MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT. FOR REMOVAL OF EXISTING STRUCTURE, SEE SPECIAL PROVISIONS.

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 EACH SIDE 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 16+47.00-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 .... 800 C.F.S.
FREQUENCY OF DESIGN DISCHARGE .... 25 YRS.
DESIGN HIGH WATER ELEVATION 338.40
DRAINAGE AREA .... 15.5 SQ. MI.
BASE DISCHARGE (Q100) .... 1,450 C.F.S.
BASE HIGH WATER ELEVATION 338.71

OVERTOPPING DATA

OVERTOPPING DISCHARGE .... 2,200 C.F.S.
FREQUENCY OF OVERTOPPING .... 500+ YRS.
OVERTOPPING ELEVATION .... 340.1 @ SAG STA. 14+27.00 -L-

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		VERTICAL CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" X 2'-0" PRESTRESSED CONCRETE CORED SLABS		ASBESTOS ASSESSMENT
	LUMP SUM	EACH	LUMP SUM	CU. YDS.	LUMP SUM	LBS.	NO.	LIN.FT.	LIN.FT.	TONS	SQ. YDS.	LUMP SUM	NO.	LIN.FT.	LUMP SUM
SUPERSTRUCTURE					LUMP SUM				140.00			LUMP SUM	13	910.00	
END BENT NO. 1			LUMP SUM	24.9		3007	7	390		130	140				
END BENT NO. 2			LUMP SUM	24.9		3007	7	390		140	155				
TOTAL	LUMP SUM	1	LUMP SUM	49.8	LUMP SUM	6014	14	780	140.00	270	295	LUMP SUM	13	910.00	LUMP SUM

PROJECT NO. 17BP.8.R.89
MOORE COUNTY
STATION: 16+47.00 -L-

SHEET 3 OF 3

NORTH CAROLINA PROFESSIONAL SEAL 031583 ENGINEER KRISHNA PRASAD SEDAI

Krishna P. Sedai
2/8/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

FOR BRIDGE OVER DEEP CREEK
ON SR 1112 (ROSELAND RD.)
BETWEEN SR 1004 AND SR 1113

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DRAWN BY : K. P. SEDAI DATE : 8/10/16
CHECKED BY : J. P. McCARTHA DATE : 8/16/16
DESIGN ENGINEER OF RECORD: K. P. SEDAI DATE : 11/30/16

08-FEB-2017 14:35
O:\Division08\620019\Structures\Design\STR00-PEF\FinalPlans DGN\17BP8R89_19_SMU_GD.dgn
ksedai

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

LEVEL		VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING	MINIMUM RATING FACTORS (RF)	TONS = W X RF	STRENGTH I LIMIT STATE: LIVELOAD FACTORS	MOMENT: DISTRIBUTION FACTORS (DF)	MOMENT: RATING FACTOR	MOMENT: SPAN	MOMENT: GIRDER LOCATION	MOMENT: DISTANCE FROM LEFT END OF SPAN (ft)	SHEAR: DISTRIBUTION FACTORS (DF)	SHEAR: RATING FACTOR	SHEAR: SPAN	SHEAR: GIRDER LOCATION	SHEAR: DISTANCE FROM LEFT END OF SPAN (ft)	SERVICE III LIMIT STATE: LIVELOAD FACTORS	MOMENT: DISTRIBUTION FACTORS (DF)	MOMENT: RATING FACTOR	MOMENT: SPAN	MOMENT: GIRDER LOCATION	MOMENT: DISTANCE FROM LEFT END OF SPAN (ft)	COMMENT NUMBER
DESIGN LOAD RATING		HL-93(Inv)	N/A	1	1.014	--	1.75	0.269	1.04	70'	EL	34.482	0.608	1.10	70'	EL	3.448	0.80	0.269	**1.01**	70'	EL	**34.482**	
		HL-93(Opr)	N/A	--	1.355	--	1.35	0.269	1.35	70'	EL	34.482	0.608	1.43	70'	EL	3.448	N/A	--	--	--	--	--	
		HS-20(Inv)	36.000	2	1.315	47.356	1.75	0.269	1.36	70'	EL	34.482	0.608	1.38	70'	EL	3.448	0.80	0.269	**1.32**	70'	EL	**34.482**	
		HS-20(Opr)	36.000	--	1.757	63.236	1.35	0.269	1.76	70'	EL	34.482	0.608	1.79	70'	EL	3.448	N/A	--	--	--	--	--	
LEGAL LOAD RATING	SV	SNSH	13.500	--	2.938	39.656	1.40	0.269	3.78	70'	EL	34.482	0.608	4.12	70'	EL	3.448	0.80	0.269	2.94	70'	EL	34.482	
	SV	SNGARBS2	20.000	--	2.203	44.052	1.40	0.269	2.84	70'	EL	34.482	0.608	2.93	70'	EL	3.448	0.80	0.269	2.20	70'	EL	34.482	
	SV	SNAGRIS2	22.000	--	2.092	46.016	1.40	0.269	2.69	70'	EL	34.482	0.608	2.72	70'	EL	3.448	0.80	0.269	2.09	70'	EL	34.482	
	SV	SNCOTTS3	27.250	--	1.462	39.844	1.40	0.269	1.88	70'	EL	34.482	0.608	2.06	70'	EL	3.448	0.80	0.269	1.46	70'	EL	34.482	
	SV	SNAGGRS4	34.925	--	1.227	42.856	1.40	0.269	1.58	70'	EL	34.482	0.608	1.71	70'	EL	3.448	0.80	0.269	1.23	70'	EL	34.482	
	SV	SNS5A	35.550	--	1.200	42.646	1.40	0.269	1.54	70'	EL	34.482	0.608	1.73	70'	EL	3.448	0.80	0.269	1.20	70'	EL	34.482	
	SV	SNS6A	39.950	--	1.103	44.058	1.40	0.269	1.42	70'	EL	34.482	0.608	1.58	70'	EL	3.448	0.80	0.269	1.10	70'	EL	34.482	
	SV	SNS7B	42.000	--	1.050	44.113	1.40	0.269	1.35	70'	EL	34.482	0.608	1.55	70'	EL	3.448	0.80	0.269	1.05	70'	EL	34.482	
	TTST	TNAGRIT3	33.000	--	1.345	44.401	1.40	0.269	1.73	70'	EL	34.482	0.608	1.88	70'	EL	3.448	0.80	0.269	1.35	70'	EL	34.482	
	TTST	TNT4A	33.075	--	1.352	44.717	1.40	0.269	1.74	70'	EL	34.482	0.608	1.83	70'	EL	3.448	0.80	0.269	1.35	70'	EL	34.482	
	TTST	TNT6A	41.600	--	1.108	46.073	1.40	0.269	1.43	70'	EL	34.482	0.608	1.65	70'	EL	3.448	0.80	0.269	1.11	70'	EL	34.482	
	TTST	TNT7A	42.000	--	1.114	46.794	1.40	0.269	1.43	70'	EL	34.482	0.608	1.62	70'	EL	3.448	0.80	0.269	1.11	70'	EL	34.482	
	TTST	TNT7B	42.000	--	1.155	48.526	1.40	0.269	1.49	70'	EL	34.482	0.608	1.51	70'	EL	3.448	0.80	0.269	1.16	70'	EL	34.482	
	TTST	TNAGRIT4	43.000	--	1.097	47.174	1.40	0.269	1.41	70'	EL	34.482	0.608	1.46	70'	EL	3.448	0.80	0.269	1.10	70'	EL	34.482	
	TTST	TNAGT5A	45.000	--	1.033	46.505	1.40	0.269	1.33	70'	EL	34.482	0.608	1.45	70'	EL	3.448	0.80	0.269	1.03	70'	EL	34.482	
	TTST	TNAGT5B	45.000	3	1.020	45.905	1.40	0.269	1.31	70'	EL	34.482	0.608	1.39	70'	EL	3.448	0.80	0.269	**1.02**	70'	EL	**34.482**	

LOAD FACTORS:

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

NOTES:

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

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

CONTROLLING LOAD RATING

1 DESIGN LOAD RATING (HL-93)

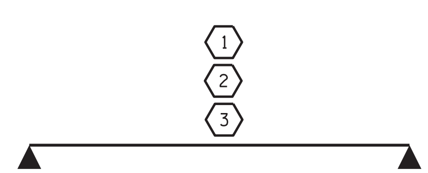
2 DESIGN LOAD RATING (HS-20)

3 LEGAL LOAD RATING ✱✱

✱✱ SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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



LRFR SUMMARY

FOR SPAN 'A'

PROJECT NO. 17BP.8.R.89
MOORE COUNTY
STATION: 16+47.00 -L-

SHEET 1 OF 1

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
LRFR SUMMARY FOR 70' CORED SLAB UNIT 75° SKEW
(NON-INTERSTATE TRAFFIC)

NORTH CAROLINA PROFESSIONAL SEAL 031583 ENGINEER KRISHNA PRASAD SEDAI
Krishna P. Sedai 2/8/2017

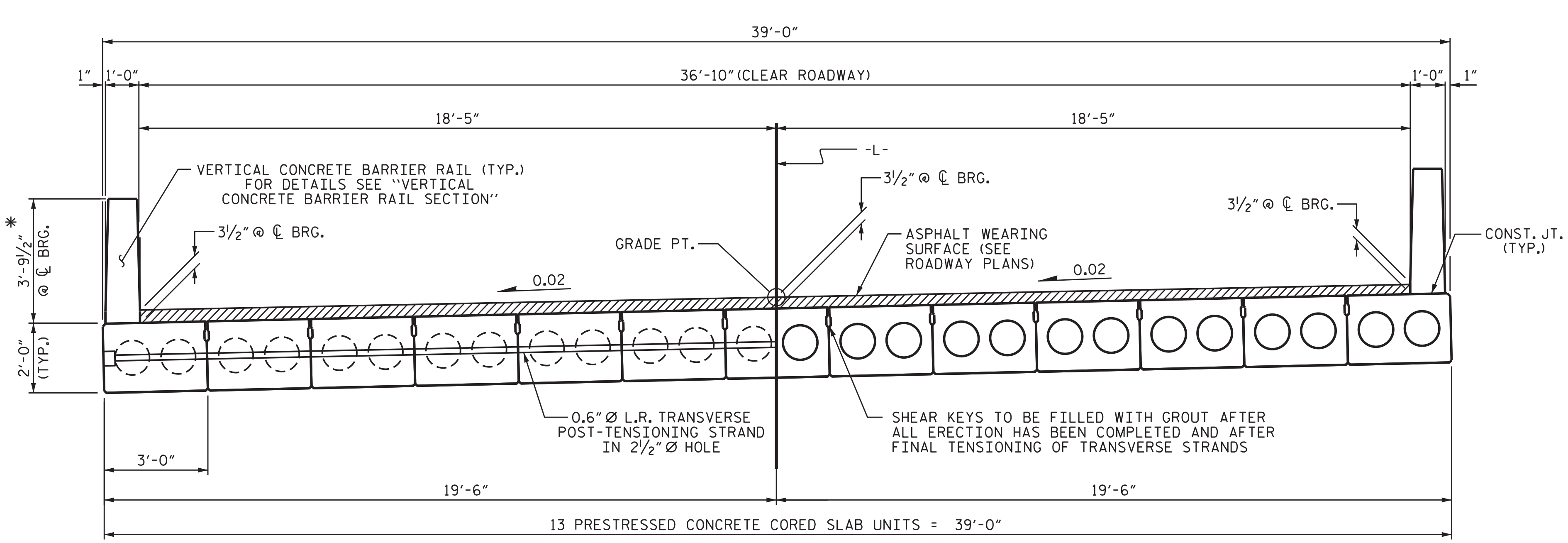
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

ASSEMBLED BY : K. P. SEDAI DATE : 8/2/16
CHECKED BY : J. P. McCARTHA DATE : 8/16/16
DRAWN BY : CVC 6/10
CHECKED BY : DNS 6/10

08-FEB-2017 14:35
O:\Division08\620019\Structures\Design\STR00-PEF\FinalPlans DGN\17BP8R89_19_SMU_LR.dgn
ksedai

STD. NO. 24LRFR1_75&105S_70L

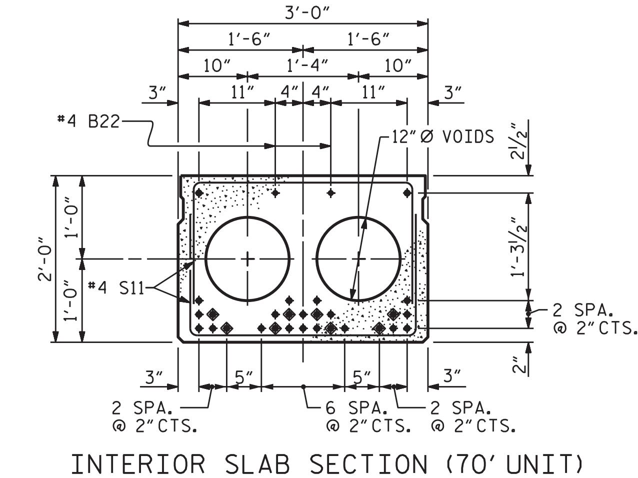


HALF SECTION
AT INTERMEDIATE DIAPHRAGMS

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.



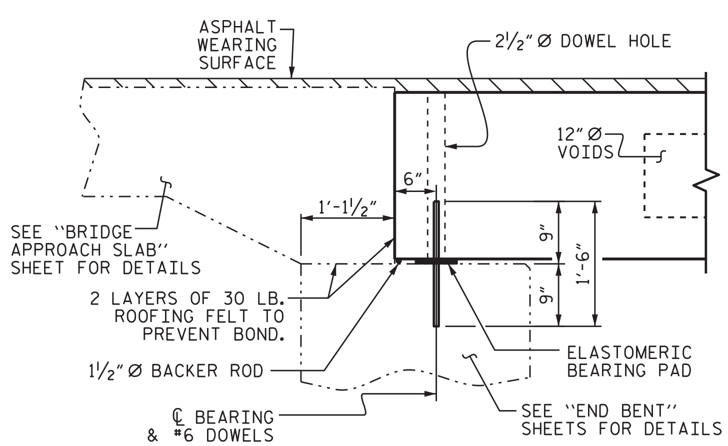
INTERIOR SLAB SECTION (70' UNIT)
(28 STRANDS REQUIRED)

0.6" Ø LOW RELAXATION STRAND LAYOUT

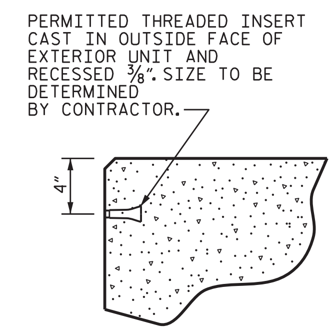
◈ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 12'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

DEBONDING LEGEND

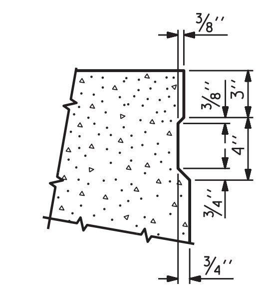
FIXED END



SECTION AT END BENT

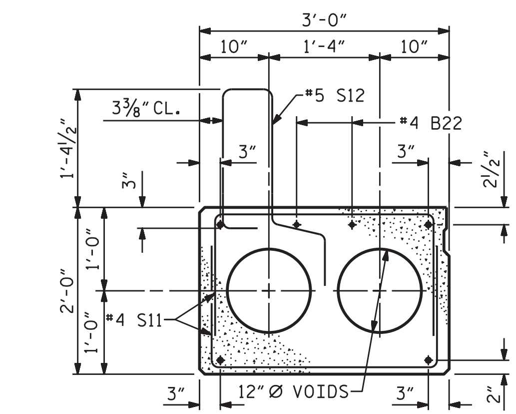


THREADED INSERT DETAIL



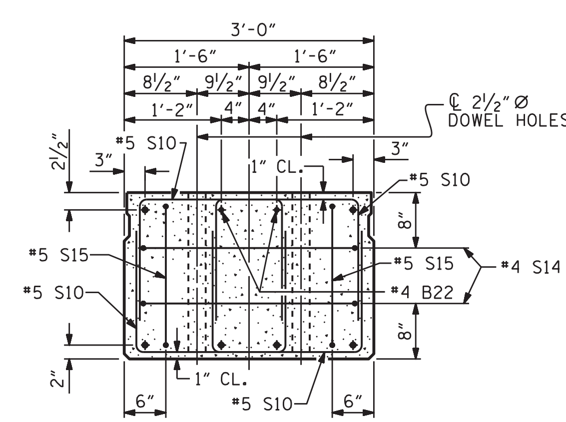
SHEAR KEY DETAIL

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



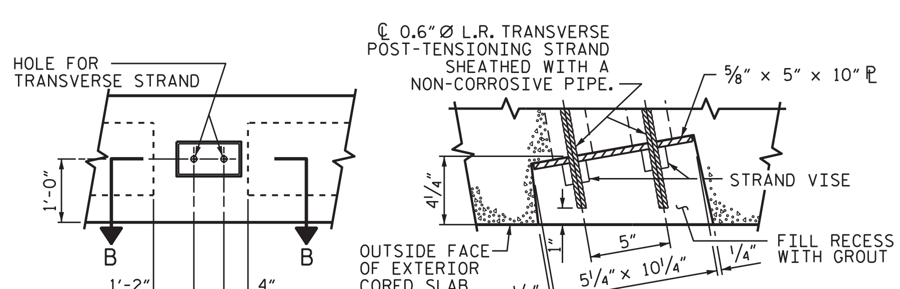
EXTERIOR SLAB SECTION

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



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.



ELEVATION VIEW

SECTION B-B

GROUTED RECESS AT END OF POST-TENSIONED STRAND·CORED SLABS

PROJECT NO. 17BP.8.R.89

MOORE COUNTY

STATION: 16+47.00 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

3'-0" X 2'-0" PRESTRESSED CONCRETE CORED SLAB UNIT

Krishna P. Sedai
2/8/2017

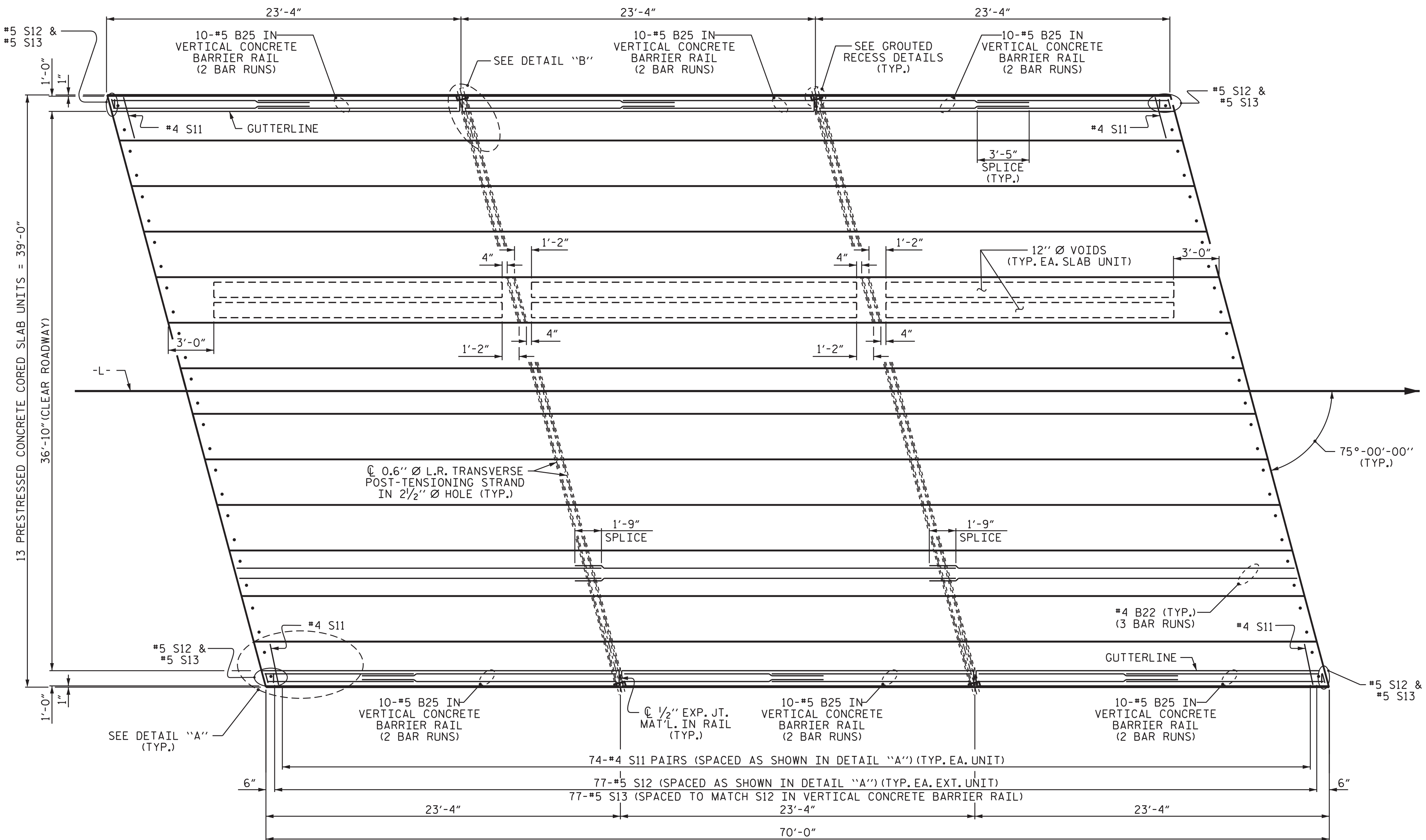
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS								SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:			S-5
1			3					TOTAL SHEETS
2			4					14

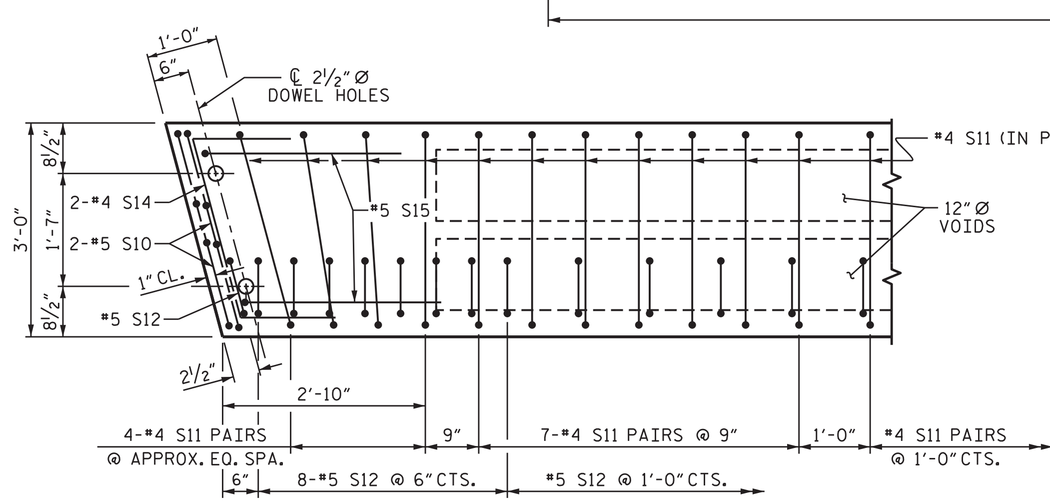
ASSEMBLED BY : K. P. SEDAI	DATE : 8/3/16	
CHECKED BY : J. P. McCARTHA	DATE : 8/16/16	
DRAWN BY : MAA 6/10	REV. 8/14	MAA/TMG
CHECKED BY : MKT 7/10		

08-FEB-2017 14:35
O:\Division08\620019\Structures\Design\STR00-PEF\Final Plans DGN\17BP8R89_19_SMU_TS.dgn
ksedai

STD. NO. 24PCS4_39_75S

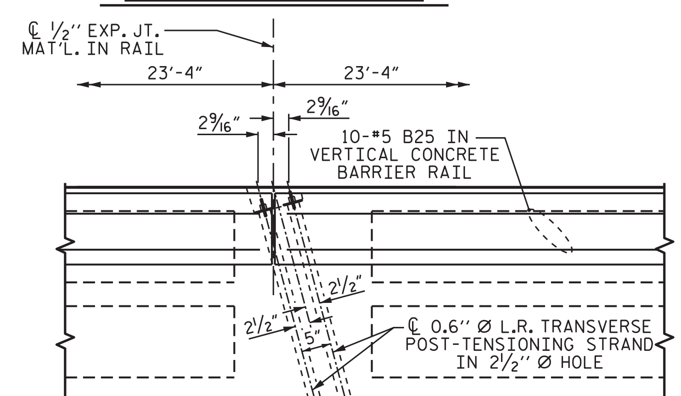


PLAN OF UNIT



DETAIL "A"

(SIMILAR EACH END OF UNIT)
NOTE: EXTERIOR UNIT SHOWN - INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S12 BARS.



DETAIL "B"

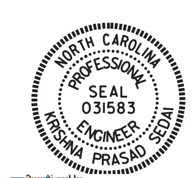
#4 S11 BARS MAY BE SHIFTED AS NECESSARY TO MAINTAIN 1" CLEAR TO GROUTED RECESS AND 2½" Ø TRANSVERSE POST-TENSIONING STRAND HOLES

PROJECT NO. 17BP.8.R.89
MOORE COUNTY
STATION: 16+47.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF 70' UNIT 36'-10" CLEAR ROADWAY 75° SKEW



Krishna P. Sedai
2/8/2017

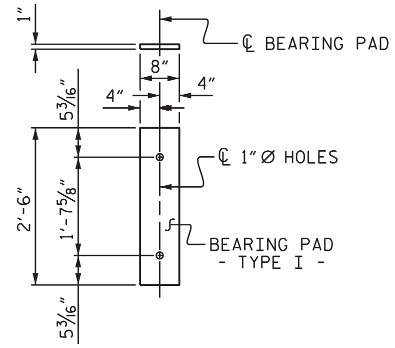
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS								SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:			S-6
1			3					TOTAL SHEETS
2			4					14

ASSEMBLED BY : K. P. SEDAI	DATE : 8/3/16
CHECKED BY : J. P. McCARTHA	DATE : 8/17/16
DRAWN BY : MAA 6/10	REV. 12/5/11 MAA/AAC
CHECKED BY : MKT 7/10	REV. 8/14 MAA/TMG

08-FEB-2017 14:35
O:\Division08\620019\Structures\Design\STR00-PEF\FinalPlans DGN\17BP8R89_19_SMU_PS.dgn
ksedai

STD. NO. 24PCS_39_75S_70L



FIXED END
(TYPE I - 26 REQ'D.)

ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 60 DUROMETER HARDNESS.

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL

BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
	70' UNIT					
✱B25	120	120	#5	STR	13'-8"	1711
✱S13	158	158	#5	2	7'-2"	1181
✱ EPOXY COATED REINFORCING STEEL			LBS.			2892
CLASS AA CONCRETE			CU.YDS.			18.1
TOTAL VERTICAL CONCRETE BARRIER RAIL			LN.FT.			140.00

GUTTERLINE ASPHALT THICKNESS & RAIL HEIGHT

UNIT	ASPHALT OVERLAY THICKNESS @ MID-SPAN	RAIL HEIGHT @ MID-SPAN
70' UNITS	2"	3'-8"

DEAD LOAD DEFLECTION AND CAMBER

	3'-0" x 2'-0"	
70' CORED SLAB UNIT	0.6" Ø L.R. STRAND	
CAMBER (SLAB ALONE IN PLACE)	2 1/4"	↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD✱✱	3/4"	↓
FINAL CAMBER	1 1/2"	↑

✱✱ INCLUDES FUTURE WEARING SURFACE

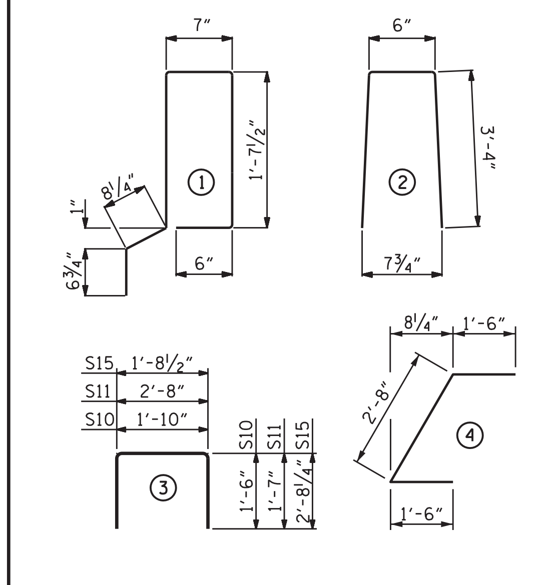
CONCRETE RELEASE STRENGTH

UNIT	PSI
70' UNITS	5500

CORED SLABS REQUIRED

	NUMBER	LENGTH	TOTAL LENGTH
70' UNIT			
EXTERIOR C.S.	2	70'-0"	140'-0"
INTERIOR C.S.	11	70'-0"	770'-0"
TOTAL	13	—	910'-0"

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL FOR ONE 70' CORED SLAB UNIT

BAR	NUMBER	SIZE	TYPE	EXTERIOR UNIT LENGTH	EXTERIOR UNIT WEIGHT	INTERIOR UNIT LENGTH	INTERIOR UNIT WEIGHT
B22	6	#4	STR	24'-6"	98	24'-6"	98
S10	8	#5	3	4'-10"	40	4'-10"	40
S11	148	#4	3	5'-10"	577	5'-10"	577
✱S12	79	#5	1	5'-7"	460		
S14	4	#4	4	5'-8"	15	5'-8"	15
S15	4	#5	3	7'-1"	30	7'-1"	30
REINFORCING STEEL		LBS.			760		760
✱ EPOXY COATED REINFORCING STEEL		LBS.			460		
7000 P.S.I. CONCRETE		CU. YDS.			12.0		12.0
0.6" Ø L.R. STRANDS		No.			28		28

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.

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.

ALL REINFORCING STEEL IN VERTICAL CONCRETE BARRIER RAILS 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.

MAINTAIN A SYMMETRIC TENSION FORCE BETWEEN EACH PAIR OF TRANSVERSE POST TENSIONING STRANDS IN THE DIAPHRAGM.

THE #4 S11 STIRRUPS MAY BE SHIFTED AS NECESSARY TO MAINTAIN 1" CLEAR TO THE GROUTED RECESS.

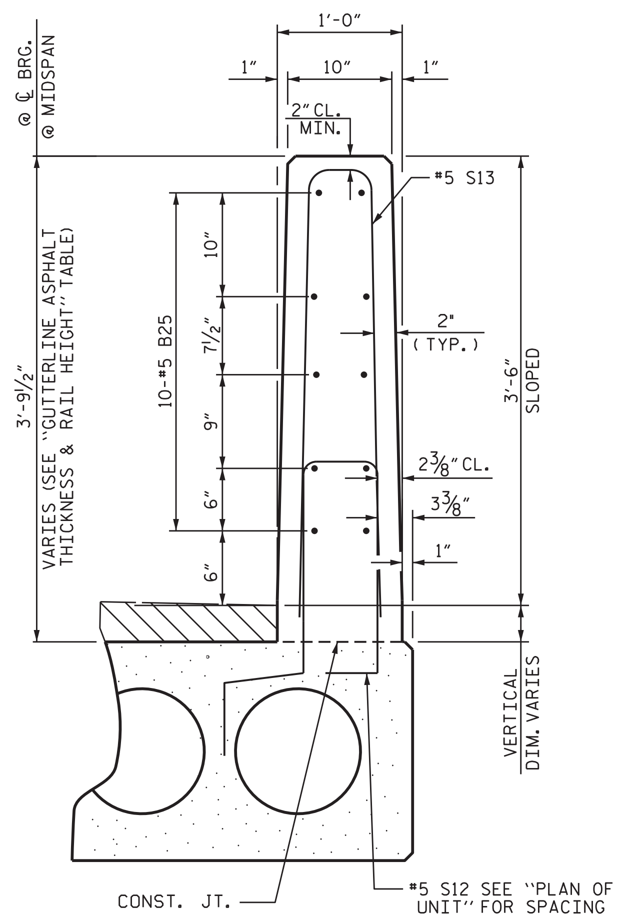
FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

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

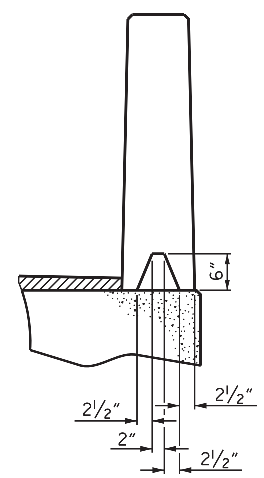
THE PERMITTED THREADED INSERTS IN THE EXTERIOR UNITS SHALL BE SIZED BY THE CONTRACTOR, SPACED AT 4'-0" CENTERS AND GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS. STAINLESS STEEL THREADED INSERTS MAY BE USED AS AN ALTERNATE.

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

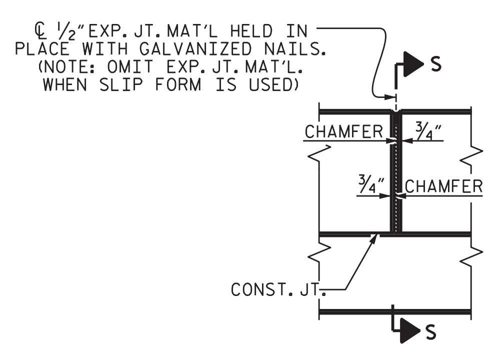
THE COST OF THE PERMITTED THREADED INSERTS SHALL BE INCLUDED IN THE PRICE BID FOR THE PRECAST UNITS.



SECTION THRU RAIL

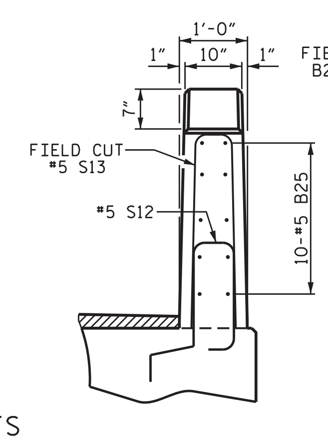


SECTION S-S
AT DAM IN OPEN JOINT
(THIS IS TO BE USED ONLY WHEN SLIP FORM IS USED)

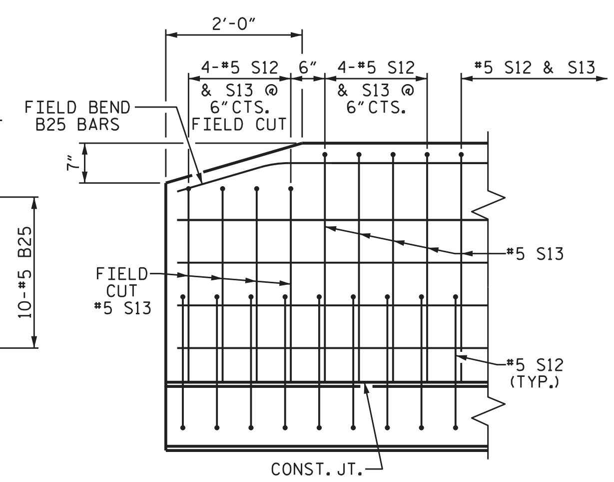


ELEVATION AT EXPANSION JOINTS

VERTICAL CONCRETE BARRIER RAIL DETAILS



END VIEW



SIDE VIEW

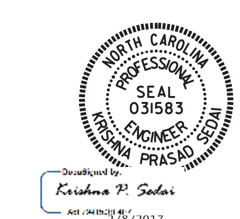
END OF RAIL DETAILS

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

PROJECT NO. 17BP.8.R.89
MOORE COUNTY
STATION: 16+47.00 -L-

SHEET 3 OF 3



Krishna P. Sedai
2/8/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
3'-0" X 2'-0"
PRESTRESSED CONCRETE
CORED SLAB UNIT

ASSEMBLED BY : K. P. SEDAI	DATE : 8/3/16
CHECKED BY : J. P. McCARTHA	DATE : 8/17/16
DRAWN BY : MAA 6/10 / CHECKED BY : MKT 7/10	REV. 11/14 MAA/TMG

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

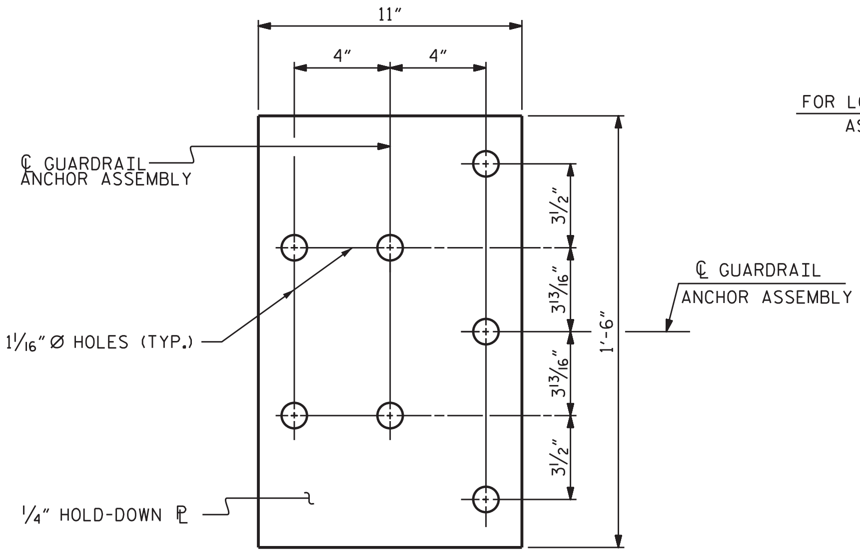
REVISIONS

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

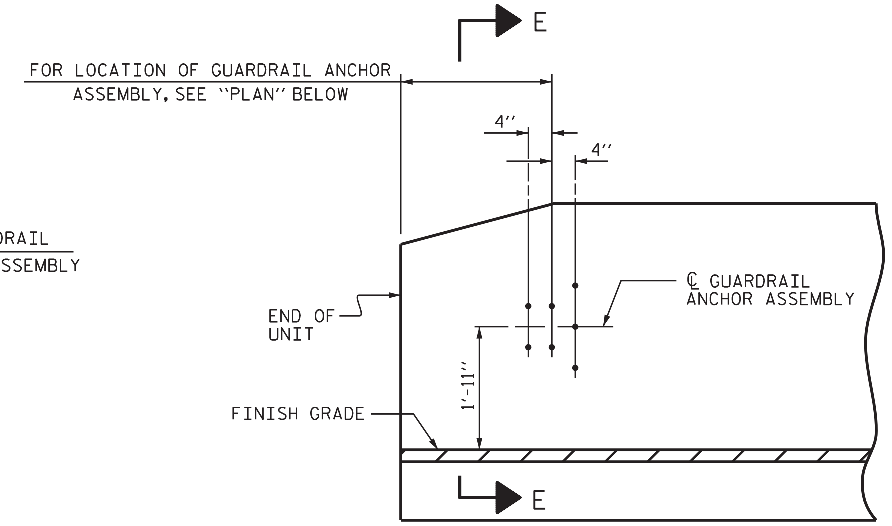
SHEET NO. S-7
TOTAL SHEETS 14

08-FEB-2017 14:35
O:\Division08\620019\Structures\Design\STR00-PEF\FinalPlans DGN\17BP8R89_19_SMU_CS.dgn
ksedai

STD. NO. 24PCS3_39_75&105S



PLAN



ELEVATION

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.)

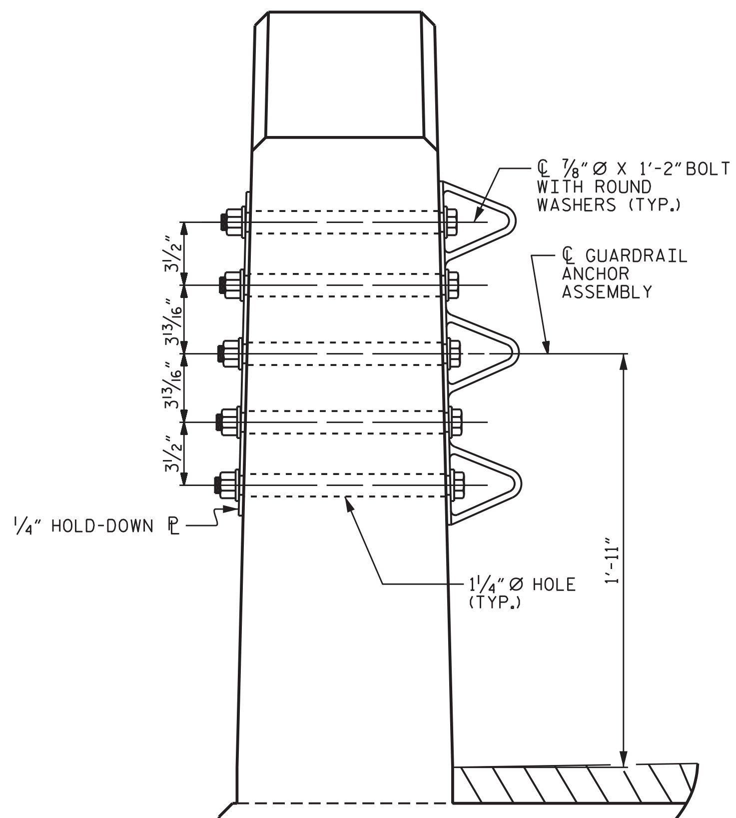
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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.

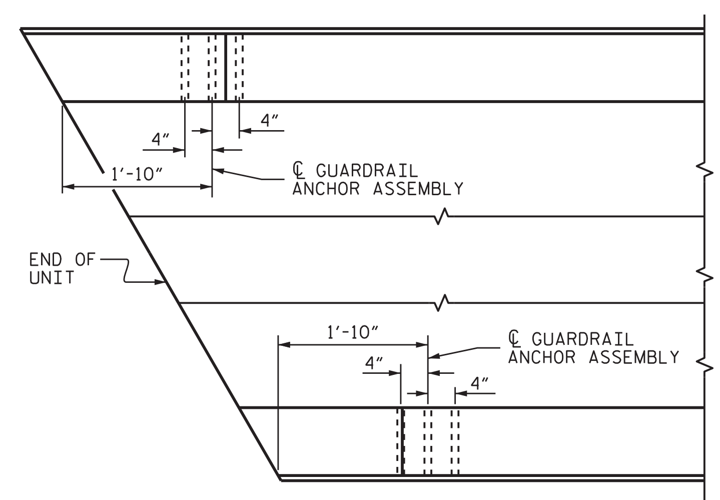
THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE VERTICAL CONCRETE BARRIER RAIL TO CLEAR ASSEMBLY BOLTS.

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.



SECTION E-E

GUARDRAIL ANCHOR ASSEMBLY DETAILS



PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

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

SKETCH SHOWING POINTS OF ATTACHMENT

✳ DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. 17BP.8.R.89

MOORE COUNTY

STATION: 16+47.00 -L-

Krishna P. Sedai
2/8/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
GUARDRAIL ANCHORAGE DETAILS FOR VERTICAL CONCRETE BARRIER RAIL

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ASSEMBLED BY : K. P. SEDAI DATE : 8/5/16
CHECKED BY : J. P. McCARTHA DATE : 8/17/16

DRAWN BY : MAA 5/10	REV. 12/5/11 MAA/GM
CHECKED BY : GM 5/10	REV. 6/13 MAA/GM
	REV. 1/15 MAA/TMG

(SHT 1b) STD. NO. GRA3

08-FEB-2017 14:35
O:\Division08\620019\Structures\Design\STR00-PEF\Final Plans DGN\17BP8R89_19_SMU_GR.dgn
ksedai

NOTES

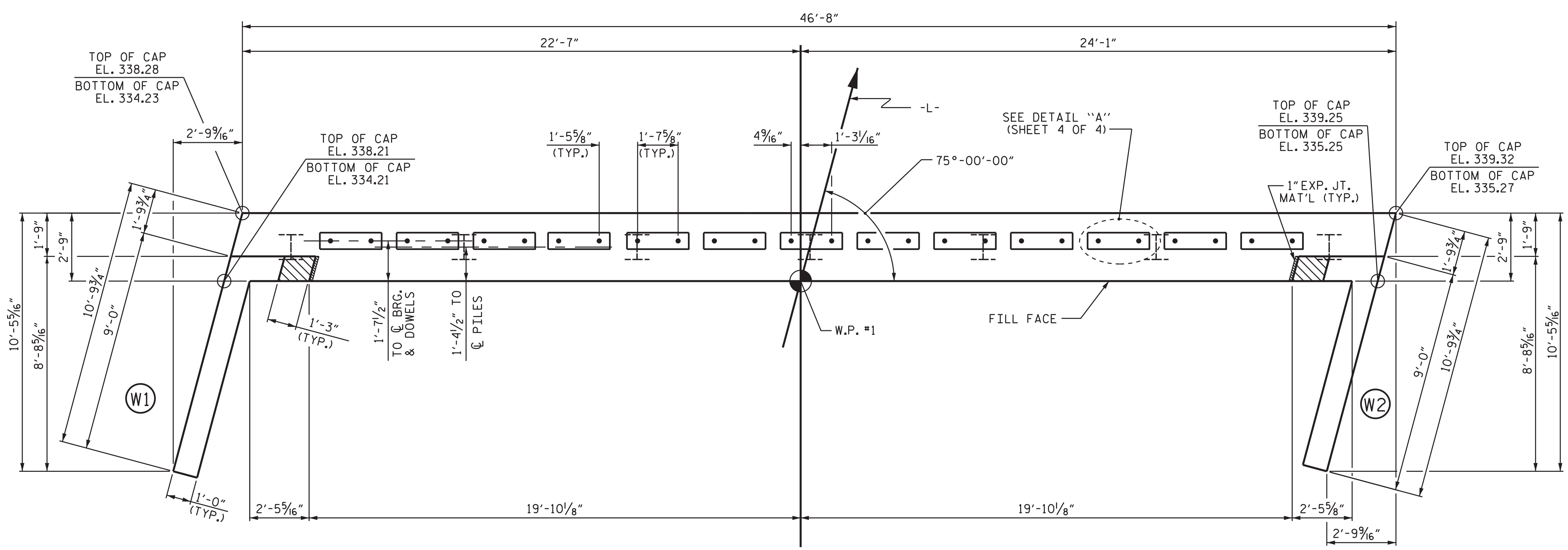
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

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.

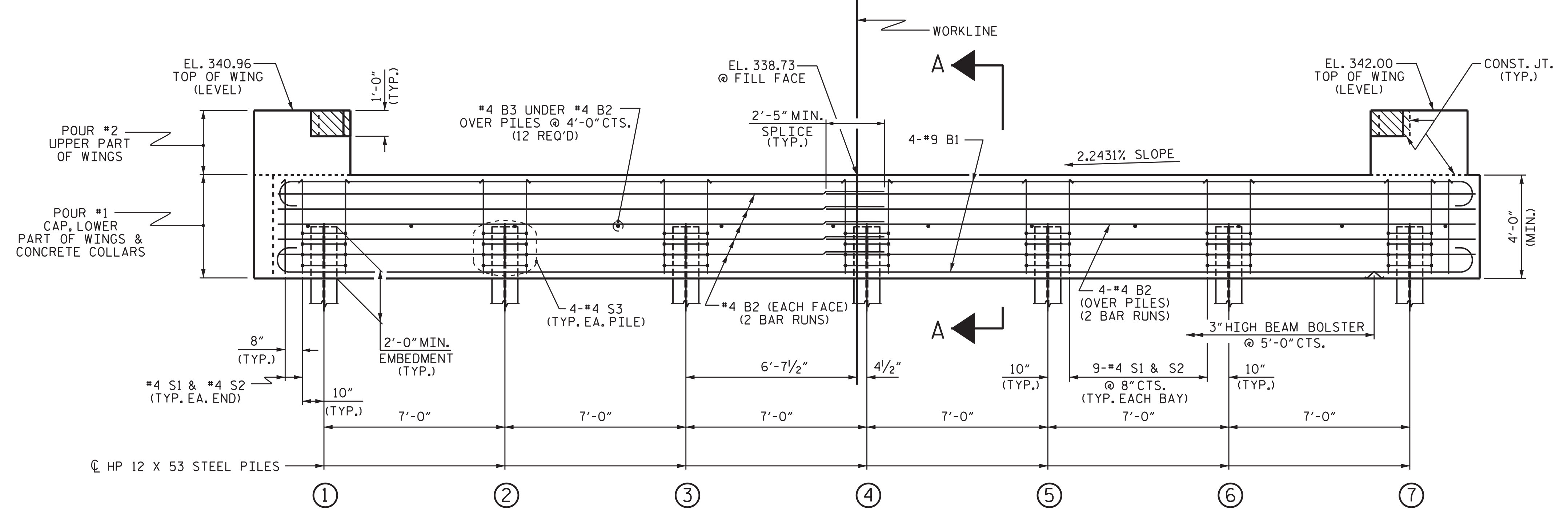
FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

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



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.

TOP OF PILE ELEVATIONS	
1	336.31
2	336.47
3	336.62
4	336.78
5	336.94
6	337.09
7	337.25

PROJECT NO. 17BP.8.R.89
MOORE COUNTY
STATION: 16+47.00 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT No. 1

NORTH CAROLINA PROFESSIONAL SEAL 031583 ENGINEER KRISHNA PRASAD SEDAI
Krishna P. Sedai
2/8/2017

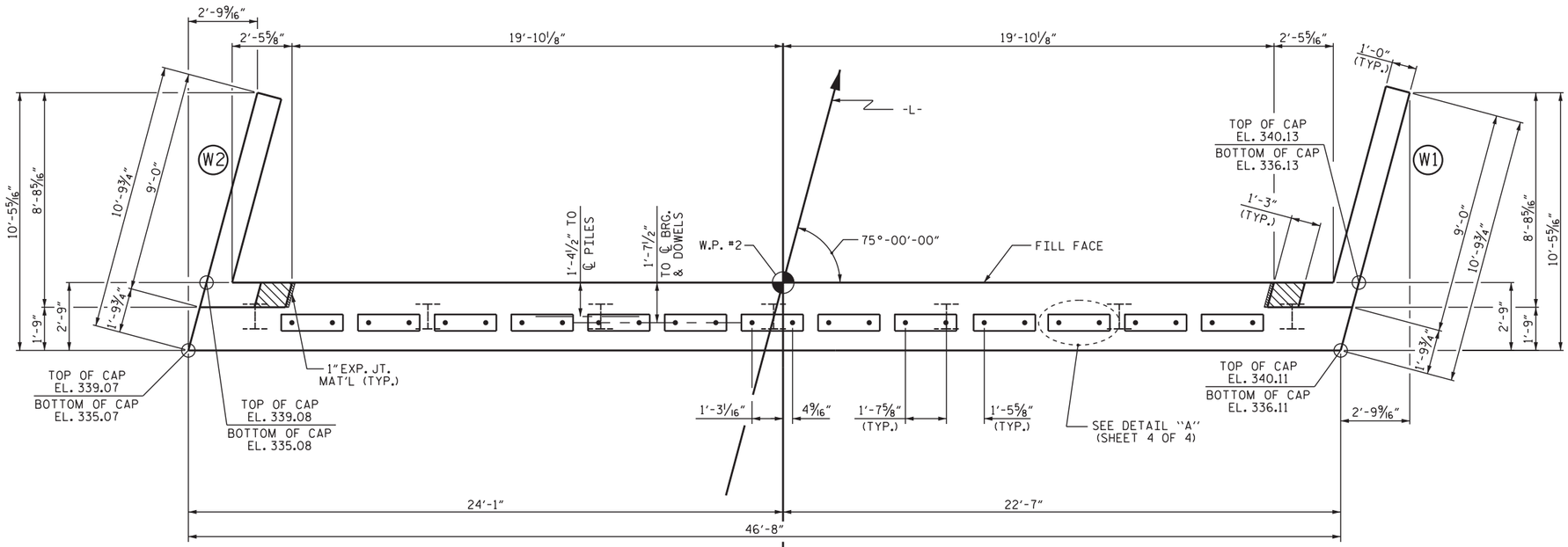
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

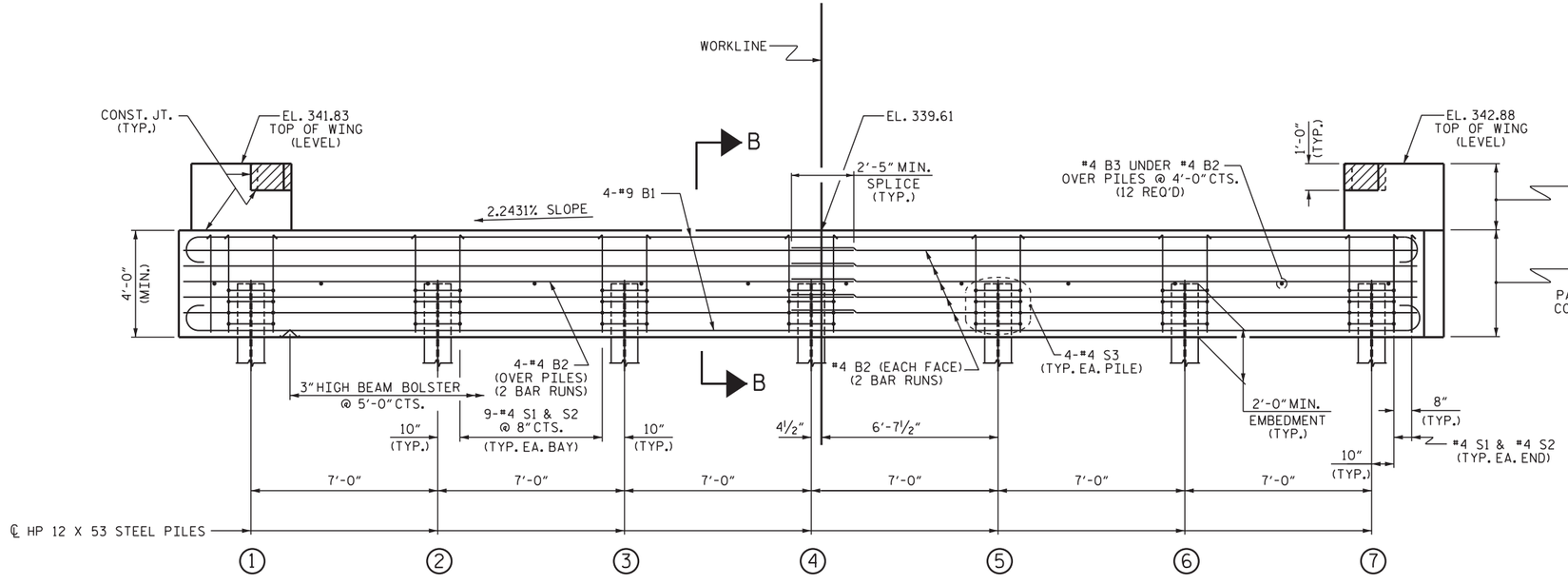
ASSEMBLED BY : K. P. SEDAI	DATE : 8/3/16	
CHECKED BY : J. P. McCARTHA	DATE : 8/17/16	
DRAWN BY : WJH 12/11 / CHECKED BY : AAC 12/11	REV. 4/15	MAA/TMG

08-FEB-2017 14:35
O:\Division08\620019\Structures\Design\STR00-PEF\FinalPlans DGN\17BP8R89_19_SMU_E1.dgn
ksedai

STD. NO. EB_39_75S4



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.

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	337.14
②	337.30
③	337.45
④	337.61
⑤	337.77
⑥	337.92
⑦	338.08

PROJECT NO. 17BP.8.R.89
MOORE COUNTY
STATION: 16+47.00 -L-

SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT No. 2

NORTH CAROLINA PROFESSIONAL SEAL 031583 ENGINEER KRISHNA PRASAD SEDAI
Developed by Krishna P. Sedai
2/8/2017

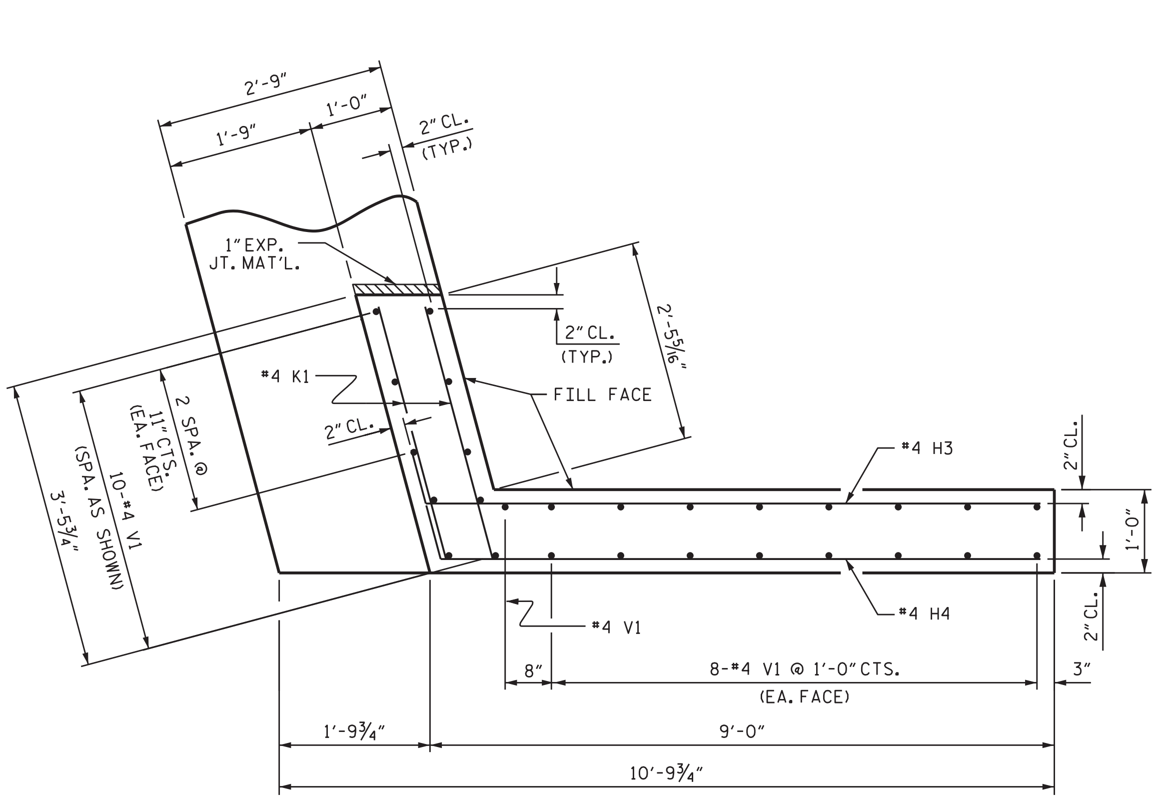
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

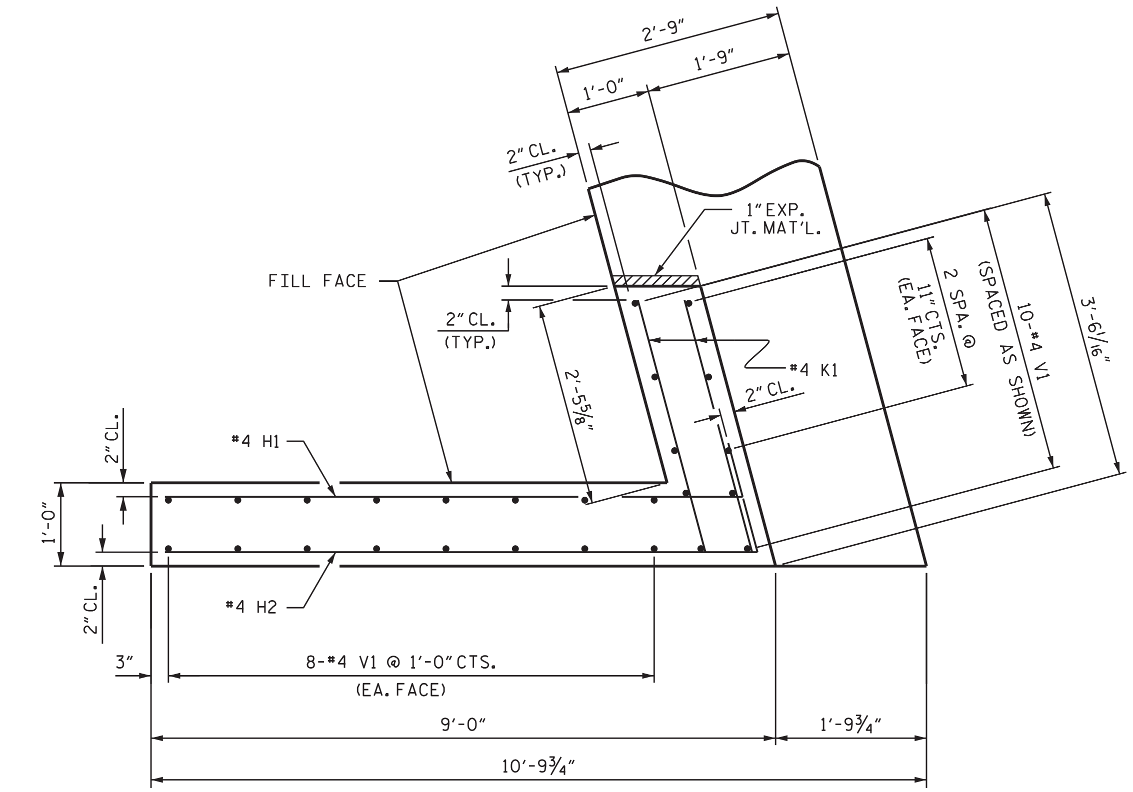
ASSEMBLED BY : K. P. SEDAI	DATE : 8/3/16	
CHECKED BY : J. P. McCARTHA	DATE : 8/19/16	
DRAWN BY : WJH 12/11	REV. 4/15	MAA/TMG
CHECKED BY : AAC 12/11		

08-FEB-2017 14:35
O:\Division08\620019\Structures\Design\STR00-PEF\Final Plans DGN\17BP8R89_19_SMU_E1.dgn
ksedai

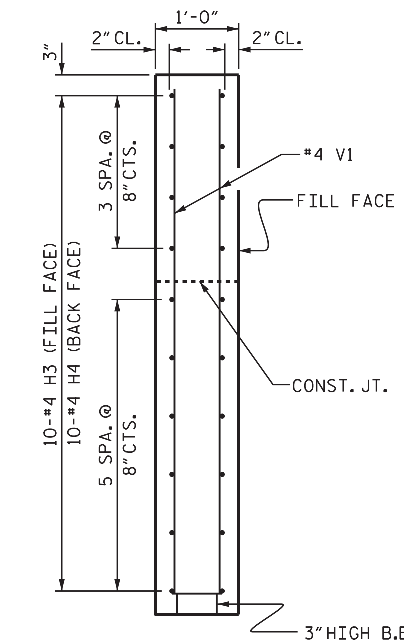
STD. NO. EB_39_75S4



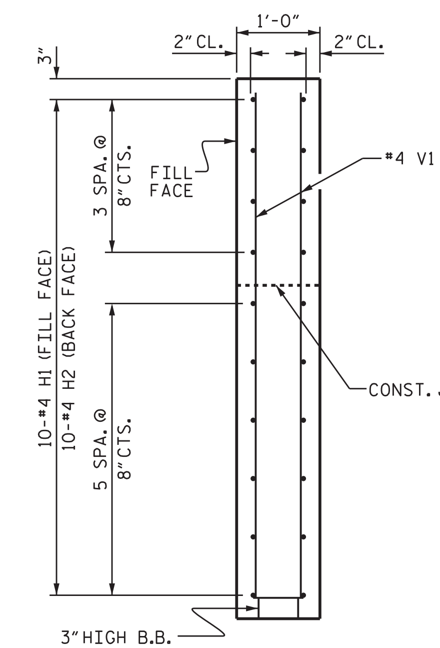
PLAN OF WING (W1)



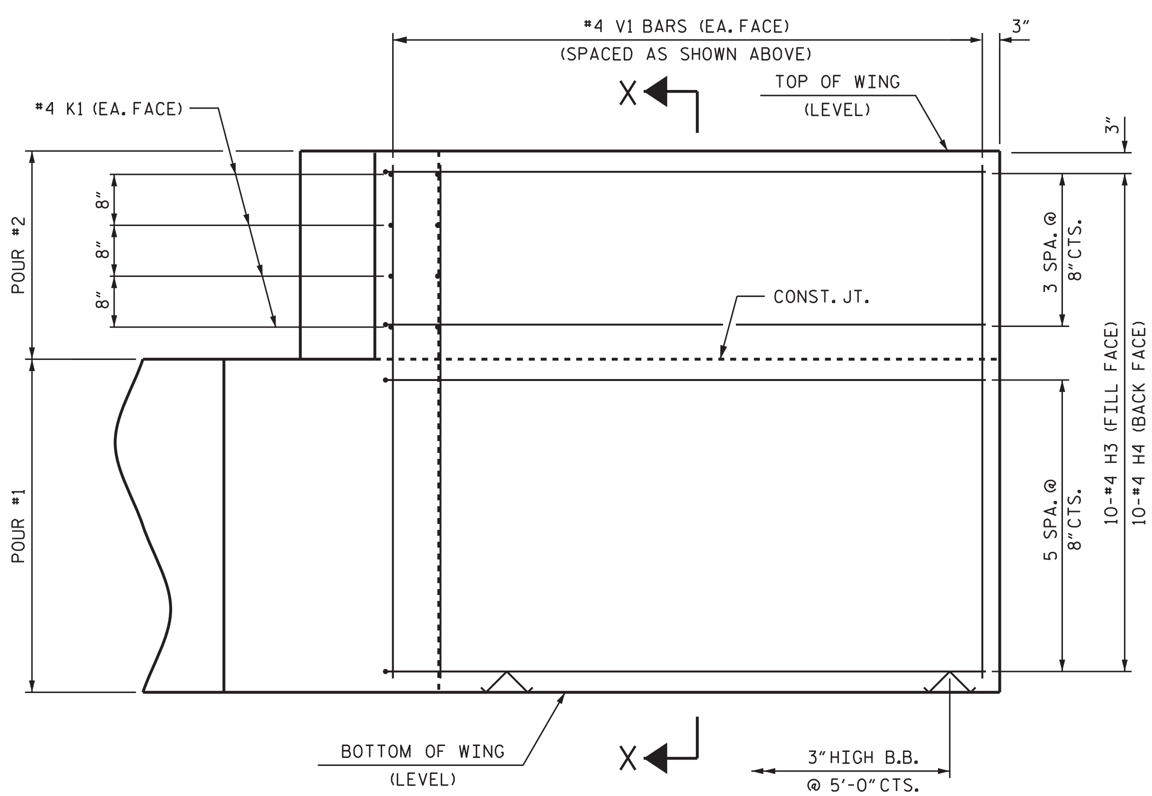
PLAN OF WING (W2)



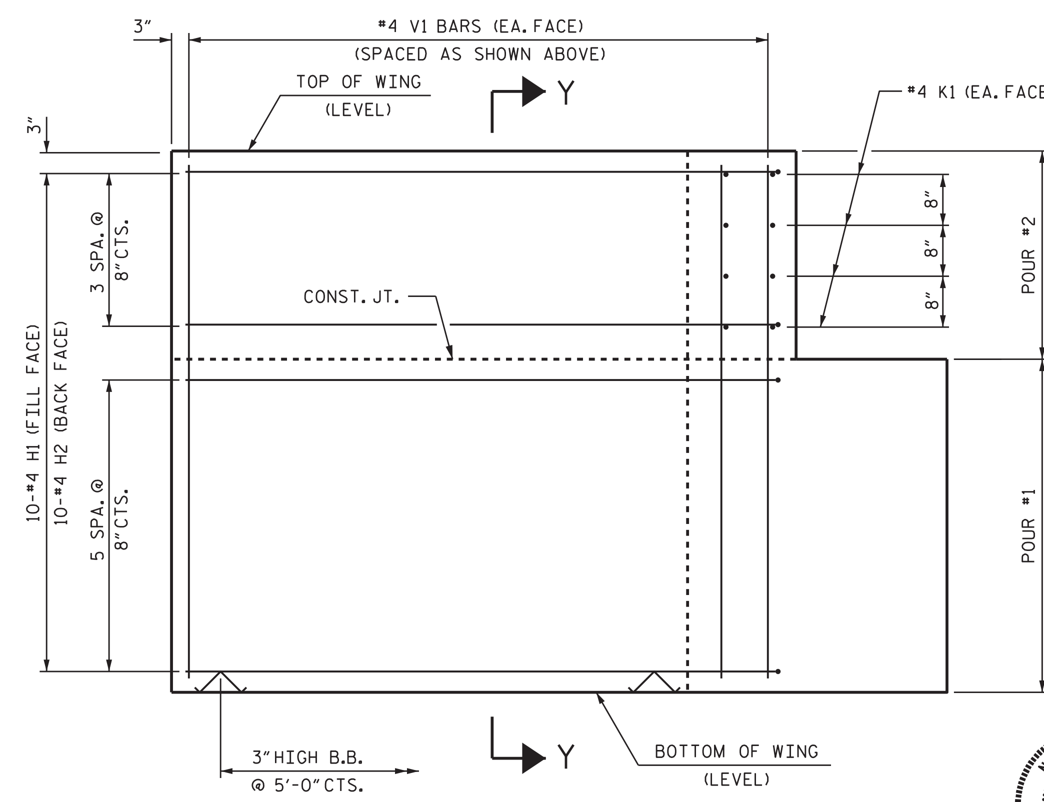
SECTION X-X



SECTION Y-Y



ELEVATION OF WING (W1)



ELEVATION OF WING (W2)

WING DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 031583 ENGINEER KRISHNA PRASAD SEDAI

Krishna P. Sedai 2/8/2017

PROJECT NO. 17BP.8.R.89
MOORE COUNTY
STATION: 16+47.00 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT
WING DETAILS

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

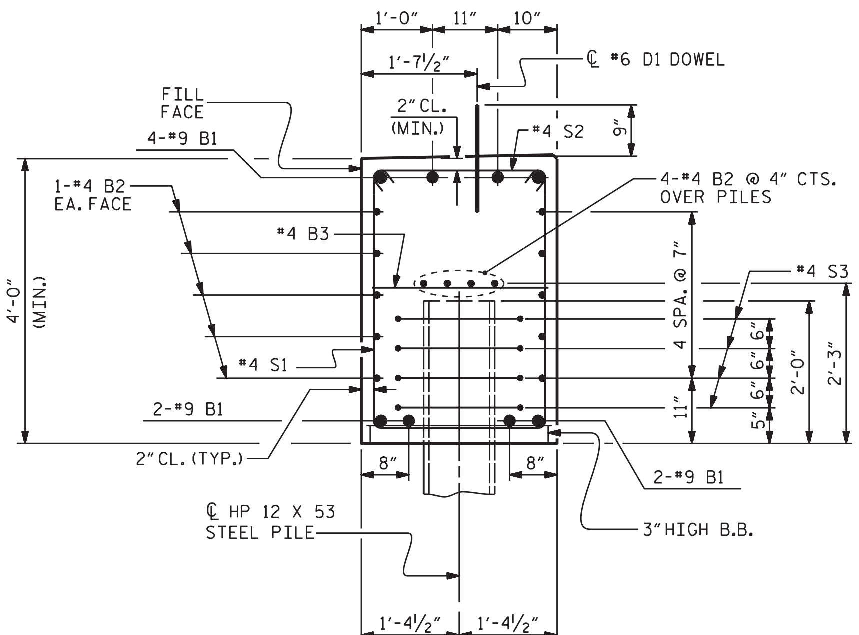
SHEET NO. S-11
TOTAL SHEETS 14

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ASSEMBLED BY : K. P. SEDAI	DATE : 8/3/16	
CHECKED BY : J. P. McCARTHA	DATE : 8/18/16	
DRAWN BY : WJH 12/11	REV. 4/15	MAA/TMG
CHECKED BY : AAC 12/11		

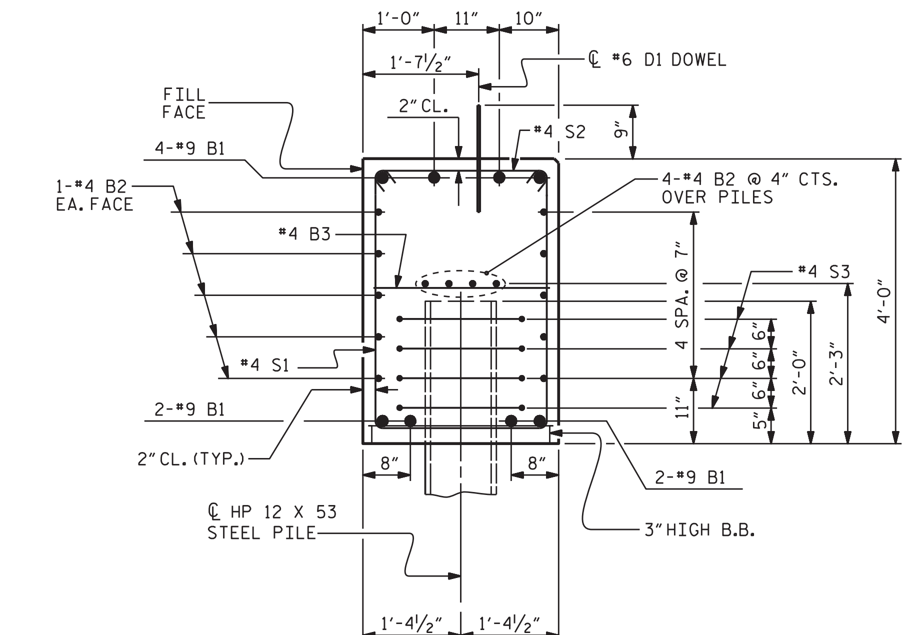
08-FEB-2017 14:35
O:\Division08\620019\Structures\Design\STR00-PEF\FinalPlans DGN\17BP8R89_19_SMU_E1.dgn
ksedai

STD. NO. EB_39_75S4



SECTION A-A

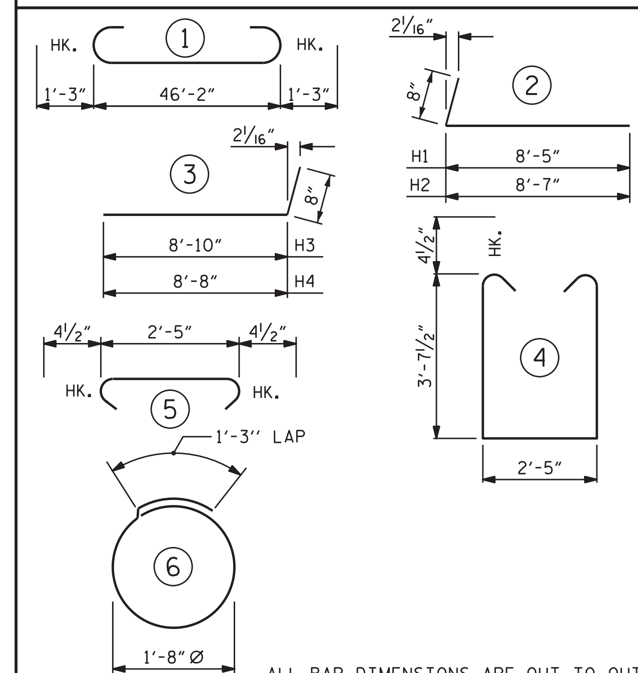
(CONCRETE COLLAR NOT SHOWN FOR CLARITY. SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL.")



SECTION B-B

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

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.= 390	NO: 7 LIN. FT.= 390

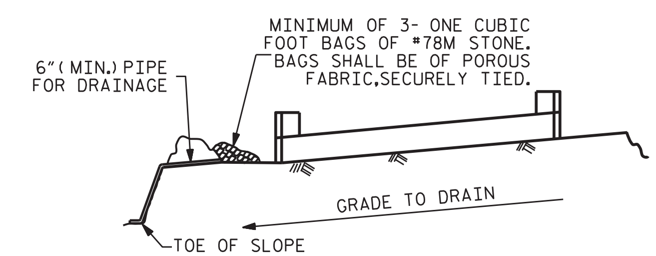
BILL OF MATERIAL
FOR ONE END BENT

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	48'-8"	1324
B2	28	#4	STR	24'-5"	457
B3	12	#4	STR	2'-5"	19
D1	26	#6	STR	1'-6"	59
H1	10	#4	2	9'-1"	61
H2	10	#4	2	9'-3"	62
H3	10	#4	3	9'-6"	63
H4	10	#4	3	9'-4"	62
K1	16	#4	STR	3'-1"	33
S1	58	#4	4	10'-5"	404
S2	58	#4	5	3'-2"	123
S3	28	#4	6	6'-6"	122
V1	53	#4	STR	6'-2"	218

REINFORCING STEEL (FOR ONE END BENT) 3007 LBS.

CLASS A CONCRETE BREAKDOWN (FOR ONE END BENT)

POUR #1	CAP, LOWER PART OF WINGS & COLLARS	22.6 C.Y.
POUR #2	UPPER PART OF WINGS	2.3 C.Y.
TOTAL CLASS A CONCRETE		24.9 C.Y.

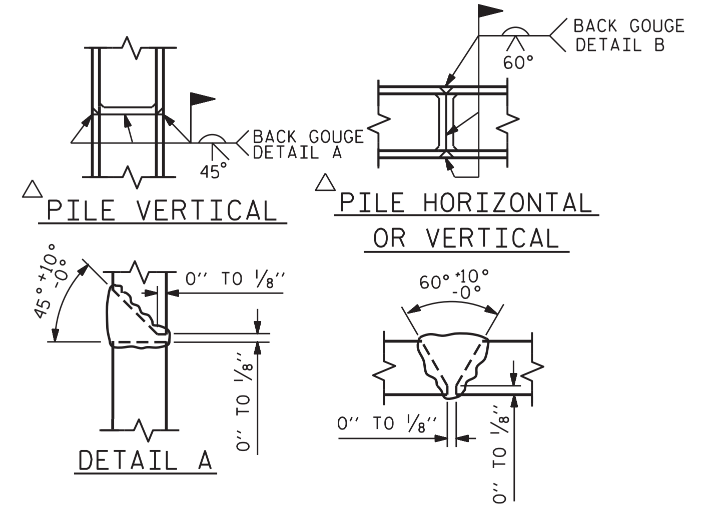


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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



△ PILE VERTICAL

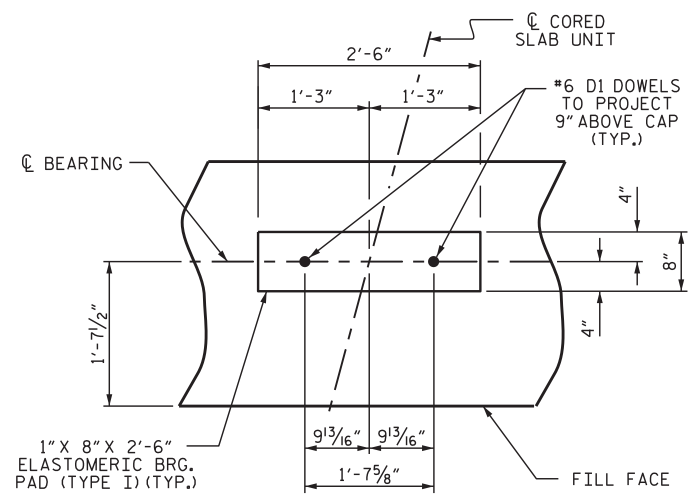
△ PILE HORIZONTAL OR VERTICAL

DETAIL A

DETAIL B

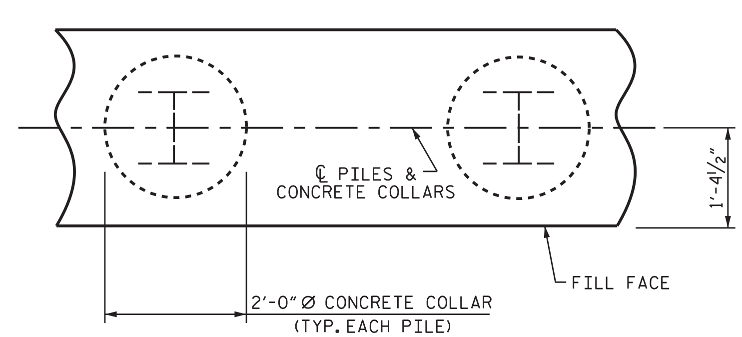
△ POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS

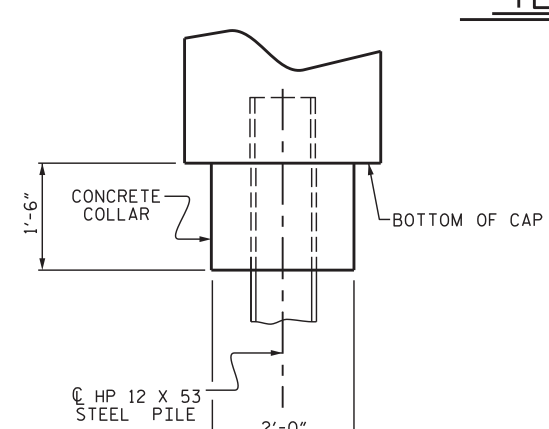


DETAIL "A"

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



PLAN



ELEVATION

CORROSION PROTECTION FOR STEEL PILES DETAIL

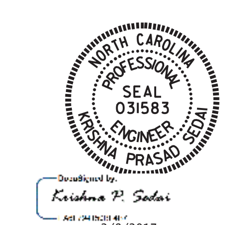
(END BENT No. 1 SHOWN, END BENT No. 2 SIMILAR BY ROTATION)

PROJECT NO. 17BP.8.R.89

MOORE COUNTY

STATION: 16+47.00 -L-

SHEET 4 OF 4



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT No. 1 & 2 DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12
1			3			TOTAL SHEETS
2			4			14

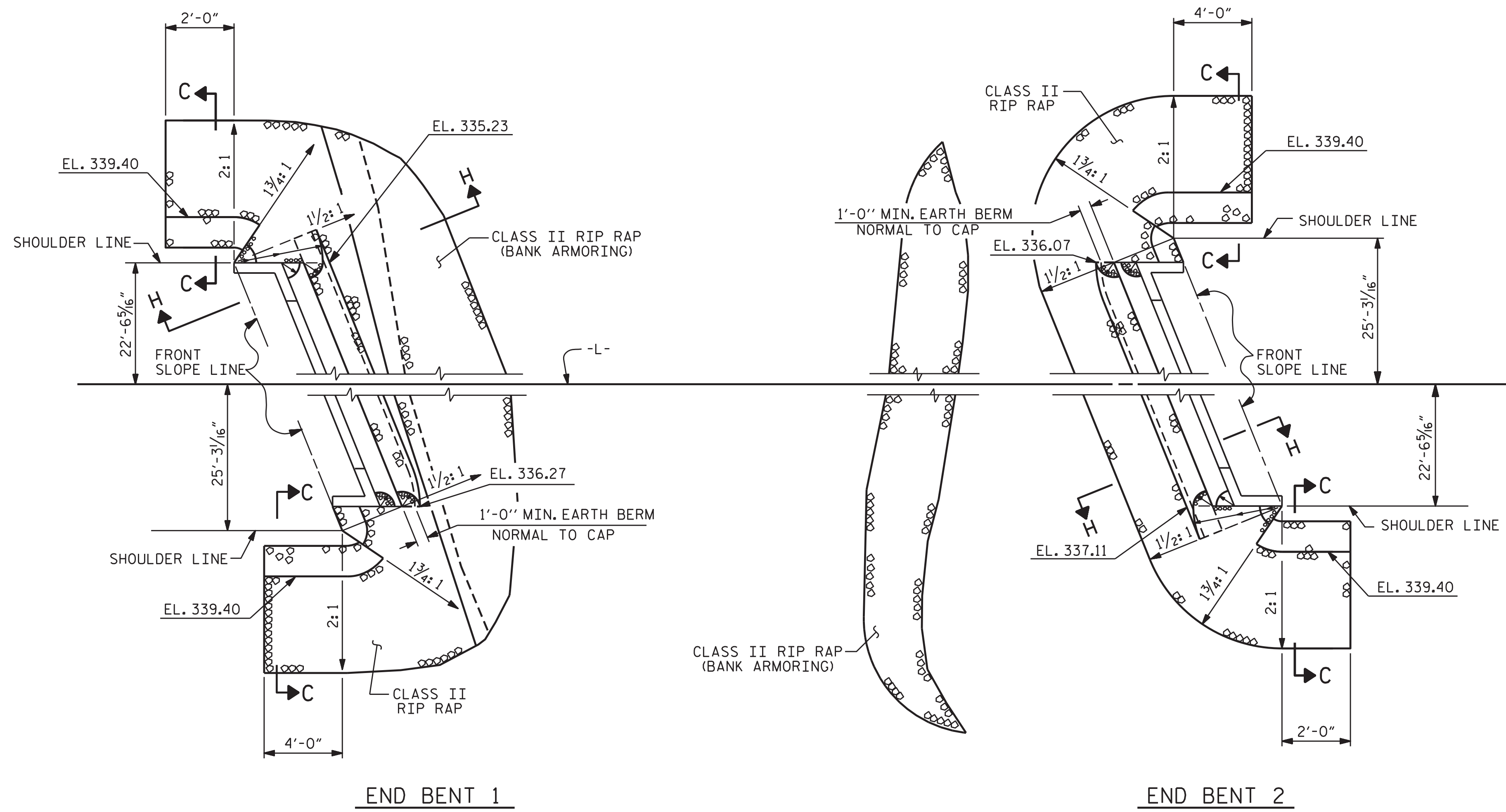
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ASSEMBLED BY : K. P. SEDAI DATE : 8/3/16
CHECKED BY : J. P. McCARTHA DATE : 8/18/16

DRAWN BY : WJH 12/11
CHECKED BY : AAC 12/11

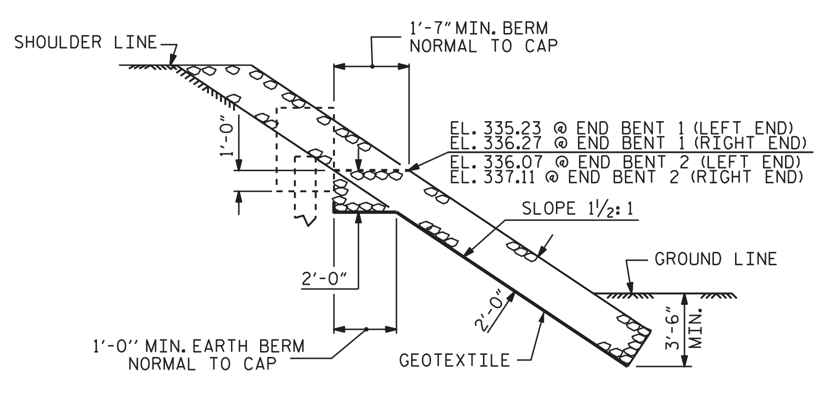
08-FEB-2017 14:35
O:\Division08\620019\Structures\Design\STR00-PEF\FinalPlans DGN\17BP8R89_19_SMU_E1.dgn
ksedai

STD. NO. EB_39_75S4

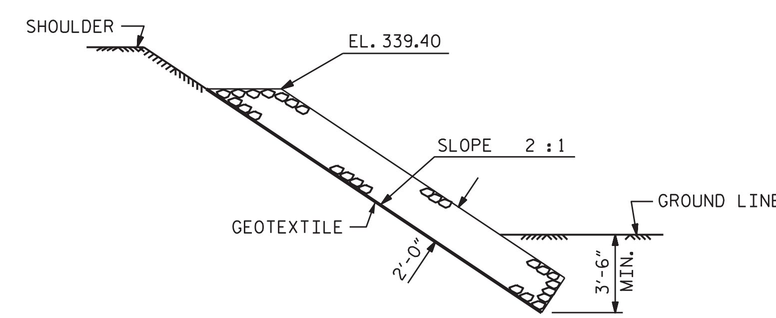


ESTIMATED QUANTITIES

BRIDGE @ STA. 16+47.00 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	130	140
END BENT 2	140	155



SECTION H-H



SECTION C-C

PROJECT NO. 17BP.8.R.89

MOORE COUNTY

STATION: 16+47.00 -L-

NORTH CAROLINA PROFESSIONAL SEAL 031583 ENGINEER KRISHNA PRASAD SEDAI

Krishna P. Sedai 2/8/2017

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

RIP RAP DETAILS

ASSEMBLED BY : K. P. SEDAI	DATE : 8/8/16
CHECKED BY : J. P. McCARTHA	DATE : 8/18/16

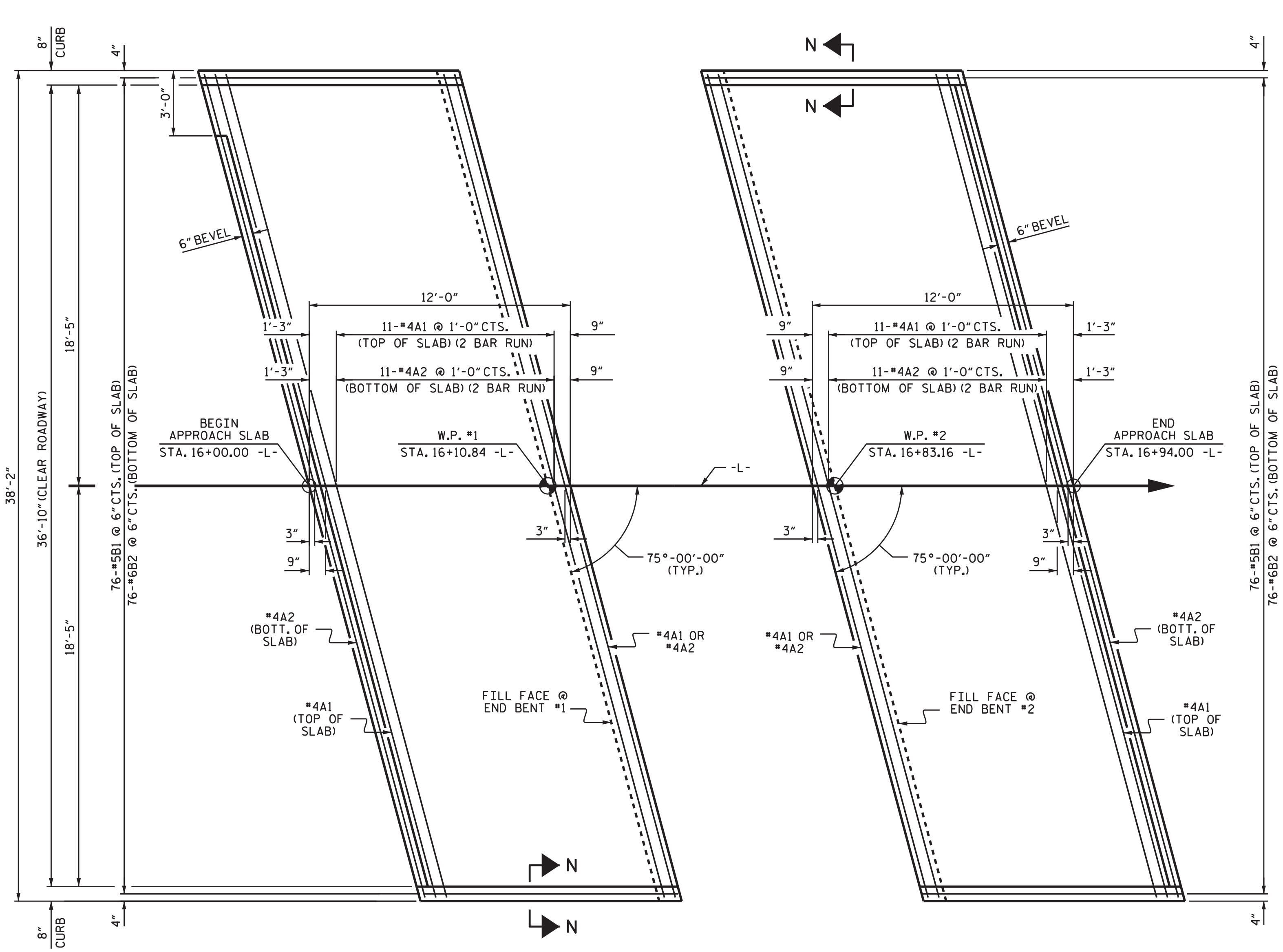
DRAWN BY : REK 1/84	REV. 5/1/06R	TLA/GM
CHECKED BY : RDU 1/84	REV. 10/1/11	MAA/GM
	REV. 12/21/11	MAA/GM

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

08-FEB-2017 14:35
O:\Division08\620019\Structures\Design\STR00-PEF\FinalPlans DGN\17BP8R89_19_SMU_RR.dgn
ksedai

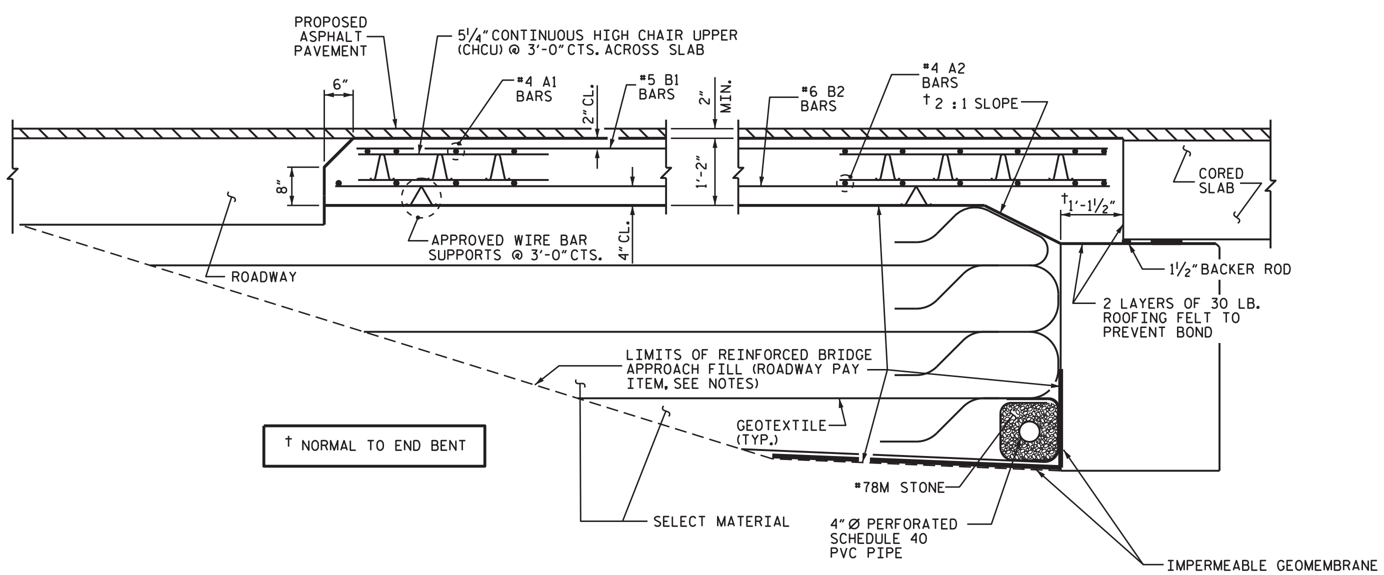
STD. NO. RR1 (Sht 1)



PLAN @ END BENT #1

PLAN @ END BENT #2

DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS



† NORMAL TO END BENT

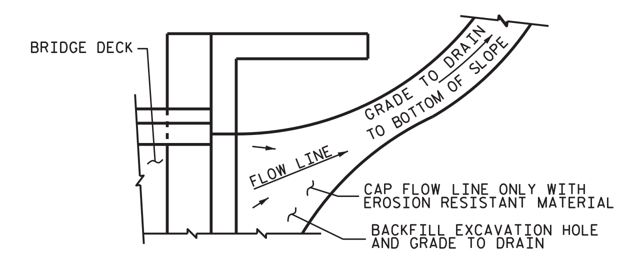
SECTION THRU SLAB

NOTES

FOR REINFORCED BRIDGE APPROACH FILL INCLUDING GEOTEXTILE, IMPERMEABLE GEOMEMBRANE, 4" Ø DRAINAGE PIPE, #78M STONE, AND SELECT MATERIAL, SEE ROADWAY PLANS.

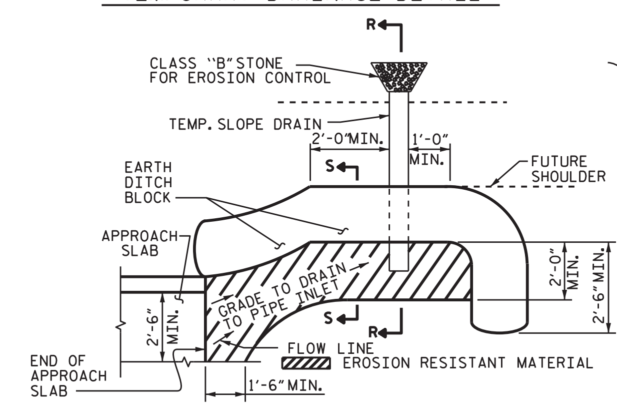
AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

APPROACH SLAB GROOVING IS NOT REQUIRED.



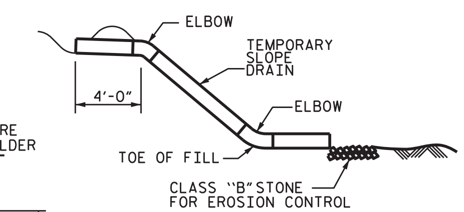
NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT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

TEMPORARY DRAINAGE DETAIL

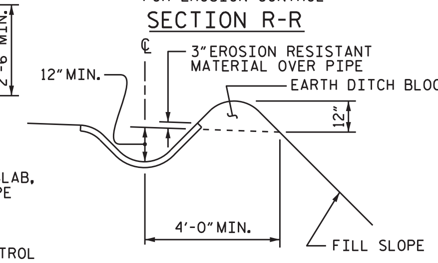


NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN. 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.

PLAN VIEW



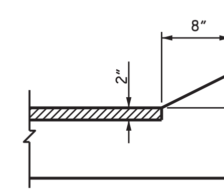
SECTION R-R



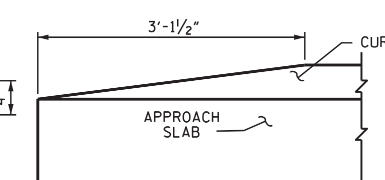
SECTION S-S

TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



SECTION N-N



END OF CURB WITHOUT SHOULDER BERM GUTTER

CURB DETAILS

BILL OF MATERIAL

APPROACH SLAB AT EB #1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	26	#4	STR	20'-8"	359
A2	26	#4	STR	20'-6"	356
* B1	76	#5	STR	11'-1"	879
B2	76	#6	STR	11'-7"	1322
REINFORCING STEEL				LBS.	1678
* EPOXY COATED REINFORCING STEEL				LBS.	1238
CLASS AA CONCRETE				C. Y.	23.1

APPROACH SLAB AT EB #2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	26	#4	STR	20'-8"	359
A2	26	#4	STR	20'-6"	356
* B1	76	#5	STR	11'-1"	879
B2	76	#6	STR	11'-7"	1322
REINFORCING STEEL				LBS.	1678
* EPOXY COATED REINFORCING STEEL				LBS.	1238
CLASS AA CONCRETE				C. Y.	23.1

SPLICE LENGTHS

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

PROJECT NO. 17BP.8.R.89
MOORE COUNTY
STATION: 16+47.00 -L-

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 031583 KRISHNA PRASAD SEDAI
Krishna P. Sedai 2/8/2017

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
BRIDGE APPROACH SLAB
FOR PRESTRESSED CONCRETE
CORED SLAB UNIT
(SUB-REGIONAL TIER)
75° SKEW

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

ASSEMBLED BY : K. P. SEDAI	DATE : 8/4/16
CHECKED BY : J. P. McCARTHA	DATE : 8/19/16
DRAWN BY : SHS/MAA 5-09 CHECKED BY : BCH 5-09	REV. 9-15 MAA/TMG

08-FEB-2017 14:35
O:\Division08\620019\Structures\Design\STR00-PEF\FinalPlans DGN\17BP8R89_19_SMU_AS.dgn
ksedai

STD. NO. BAS_39_75S

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. FINS 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

STD. NO. SN

REV. 6-16-95 EEM (J) RGW REV. 5-7-03 RWW (J) JTE REV. 10-1-11 MAA (J) GM
REV. 8-16-99 RWW (J) LES REV. 5-1-06 TLA (J) GM

08-FEB-2017 14:35
O:\Division08\620019\Structures\Design\STR00-PEF\Final Plans DGN\17BP8R89_19_SMU_SN.dgn
ksedal