TIP PROJECT: 17BP.14.R.33

CONTRACT: DN00166

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

JACKSON COUNTY

LOCATION: BRIDGE NO. 279 ON SR 1371 (BRUSHY FORK RD) OVER BRUSHY FORK CREEK.

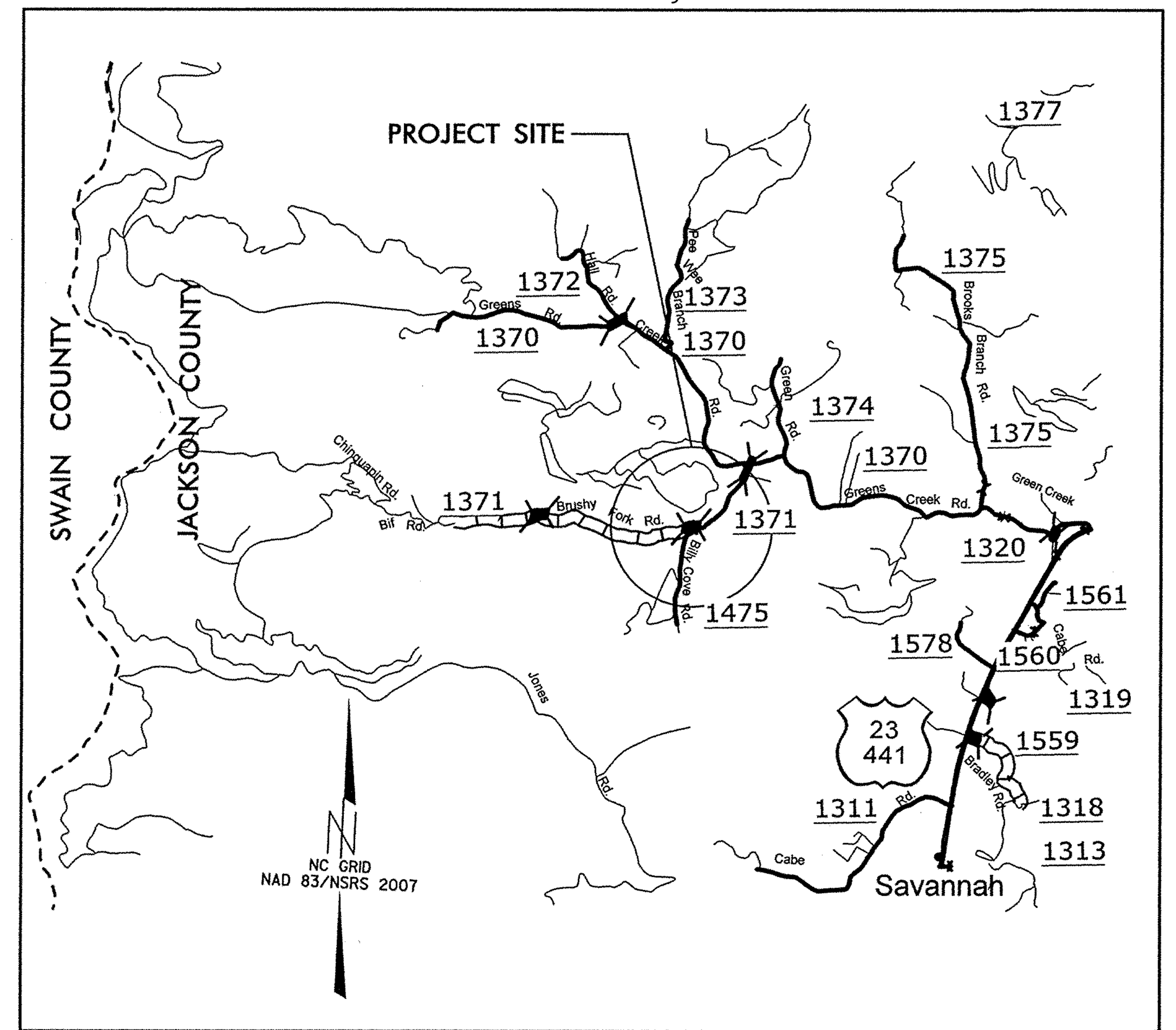
TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE.

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.14.R.33	1	

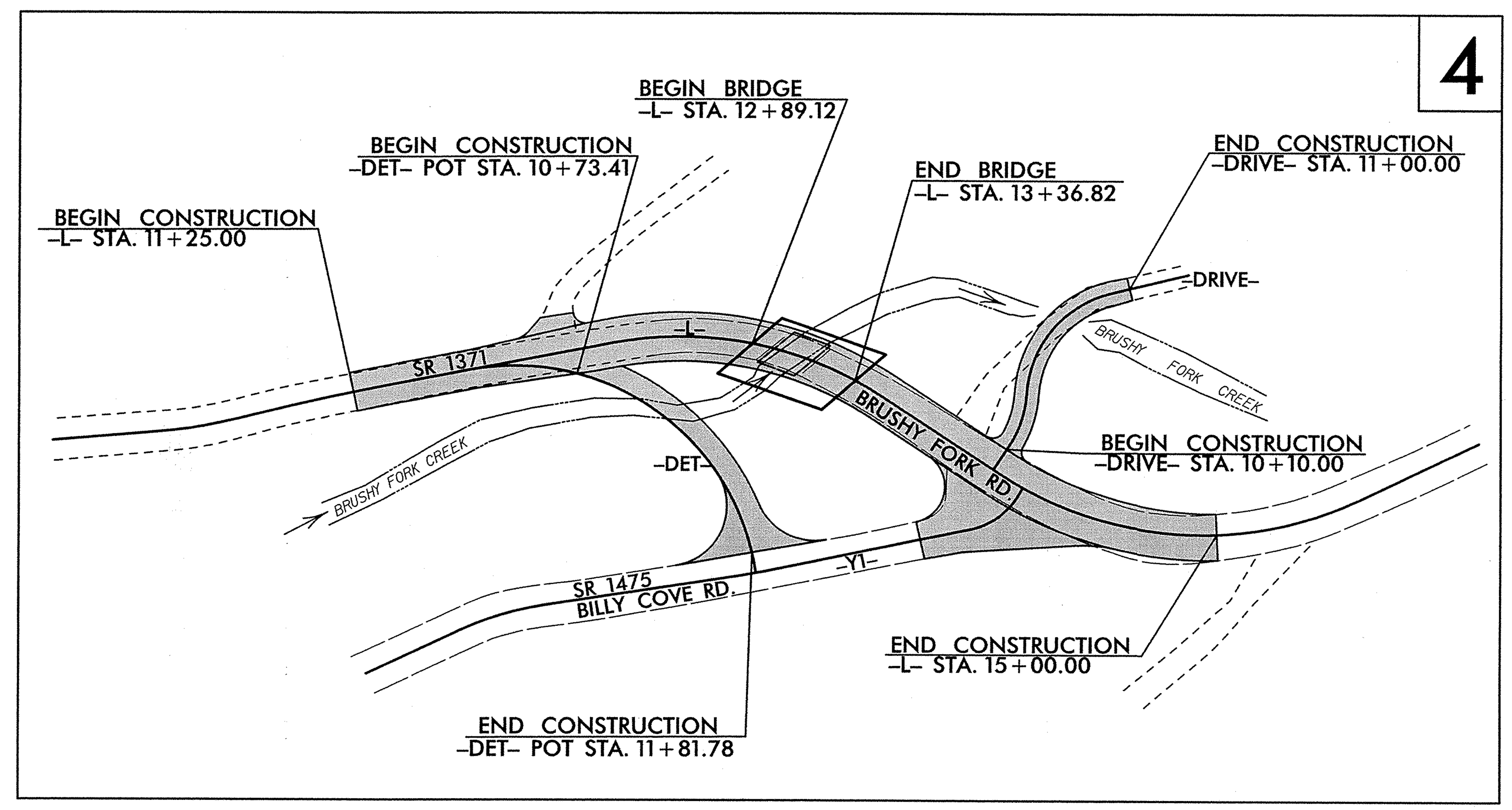
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
17BP.14.R.33		PE, R/W
17BP.14.R.33		CONST.

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)

Prepared in the Office of: Ecological Engineering — NC FIRM LICENSE No: F-1148, 128 Raleigh Street, Holly Springs, NC 27540, (919) 557-0929



VICINITY MAP



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 2010 = 270 VPD
V = 35 MPH
FUNC CLASS = LOCAL RURAL SUB-REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY STATE PROJECT 17BP.14.R.33	= 0.062 MILES
LENGTH STRUCTURES STATE PROJECT 17BP.14.R.33	= 0.009 MILES
TOTAL LENGTH STATE PROJECT 17BP.14.R.33	= 0.071 MILES

NCDOT CONTACT: JOSHUA DEYTON, PE — *PROJECT ENGINEER*

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)

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: APRIL, 2013

LETTING DATE: APRIL 8, 2014

TRACY N. PARROTT, PE — *PROJECT ENGINEER*

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

HYDRAULICS ENGINEER

SIGNATURE: 4/2/14 P.E.

NORTH CAROLINA PROFESSIONAL SEAL 25506 ENGINEER JENNY SUMMERLIN FLEMING

ROADWAY DESIGN ENGINEER

SIGNATURE: 4/2/14 P.E.

NORTH CAROLINA PROFESSIONAL SEAL 034371 ENGINEER BRANDON W. JOHNSON

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION

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09/08/99

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.33	1-A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034371 4/2/14 ENGINEER BRANDON W. JOHNSON

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)

INDEX OF SHEETS

GENERAL NOTES:

2012 SPECIFICATIONS
EFFECTIVE: 01-17-12
REVISED: 07/30/12

GRADING AND SURFACING OR RESURFACING AND WIDENING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING:

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

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

SHOULDER CONSTRUCTION:

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

SIDE ROADS:

THE CONTRACTOR WILL BE REQUIRED TO DO ALL NECESSARY WORK TO PROVIDE SUITABLE CONNECTIONS WITH ALL ROADS, STREETS, AND DRIVES ENTERING THIS PROJECT. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE PARTICULAR ITEMS INVOLVED.

GUARDRAIL:

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

TEMPORARY SHORING:

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

SUBSURFACE PLANS:

SUBSURFACE PLANS WILL BE AVAILABLE FOR THE CONTRACTORS USE.

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 FRONTIER COMMUNICATIONS AND DUKE POWER. 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 CONTRACT IN ACCORDANCE WITH SECTION 801 OF THE 2012 NORTH CAROLINA STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.

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 8 - INCIDENTALS	
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets

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PROJECT REFERENCE NO.	SHEET NO.
17BPJ4.R.33	1-B

Note: Not to Scale

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- 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
- Known Soil Contamination: Area or Site
- Potential Soil Contamination: Area or Site

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign — 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:

- Baseline Control Point
- Existing Right of Way Marker
- Existing Right of Way Line
- Proposed Right of Way Line — R/W
- Proposed Right of Way Line with Iron Pin and Cap Marker
- Proposed Right of Way Line with Concrete or Granite R/W Marker
- Proposed Control of Access Line with Concrete C/A Marker
- Existing Control of Access — C/A
- Proposed Control of Access — C/A
- Existing Easement Line — E
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Drainage / Utility Easement — DUE
- Proposed Permanent Utility Easement — PUE
- Proposed Temporary Utility Easement — TUE
- Proposed Aerial Utility Easement — AUE
- Proposed Permanent Easement with Iron Pin and Cap Marker

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut — C
- Proposed Slope Stakes Fill — F
- Proposed Curb Ramp — CR
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

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
- Recorded U/G Power Line — P
- Designated U/G Power Line (S.U.E.*) — P

TELEPHONE:

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

WATER:

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

TV:

- TV Satellite Dish
- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — H
- Recorded U/G TV Cable — TV
- Designated U/G TV Cable (S.U.E.*) — TV
- Recorded U/G Fiber Optic Cable — TV FO
- Designated U/G Fiber Optic Cable (S.U.E.*) — TV FO

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line — ?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 (S.U.E.*)
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

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SURVEY CONTROL SHEET 49-0279
-FINAL-

BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	BL-1	598724.8705	721874.1699	2345.85	10+16.17	11.69 RT
2	BL-2	598949.8771	722034.7907	2323.17	12+88.72	11.02 LT
3	BL-3	599020.5590	722229.6600	2320.04	15+03.17	12.67 LT
4	BL-4	599134.8247	722320.3718	2323.61	OUTSIDE PROJECT LIMITS	

BY1

POINT	DESC.	NORTH	EAST	ELEVATION	Y1 STATION	OFFSET
5	BY1-5	598768.1980	722052.2370	2341.50	10+46.49	21.16 RT
33	BL-3	599020.5590	722229.6600	2320.04	OUTSIDE PROJECT LIMITS	

****

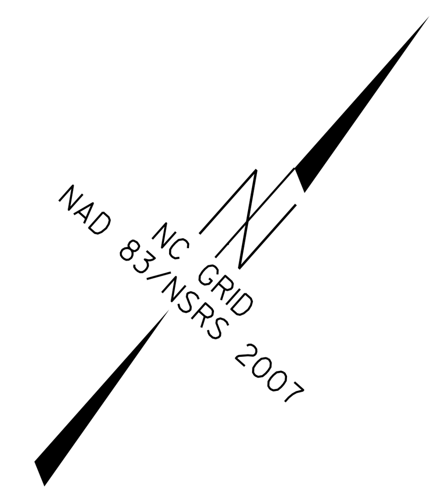
BM1 ELEVATION = 2327.42
N 598833 E 721999
BL STATION 6+60.69 38.98' RIGHT
8" SPIKE SET IN THE ROOT OF A 10" WHITE OAK TREE

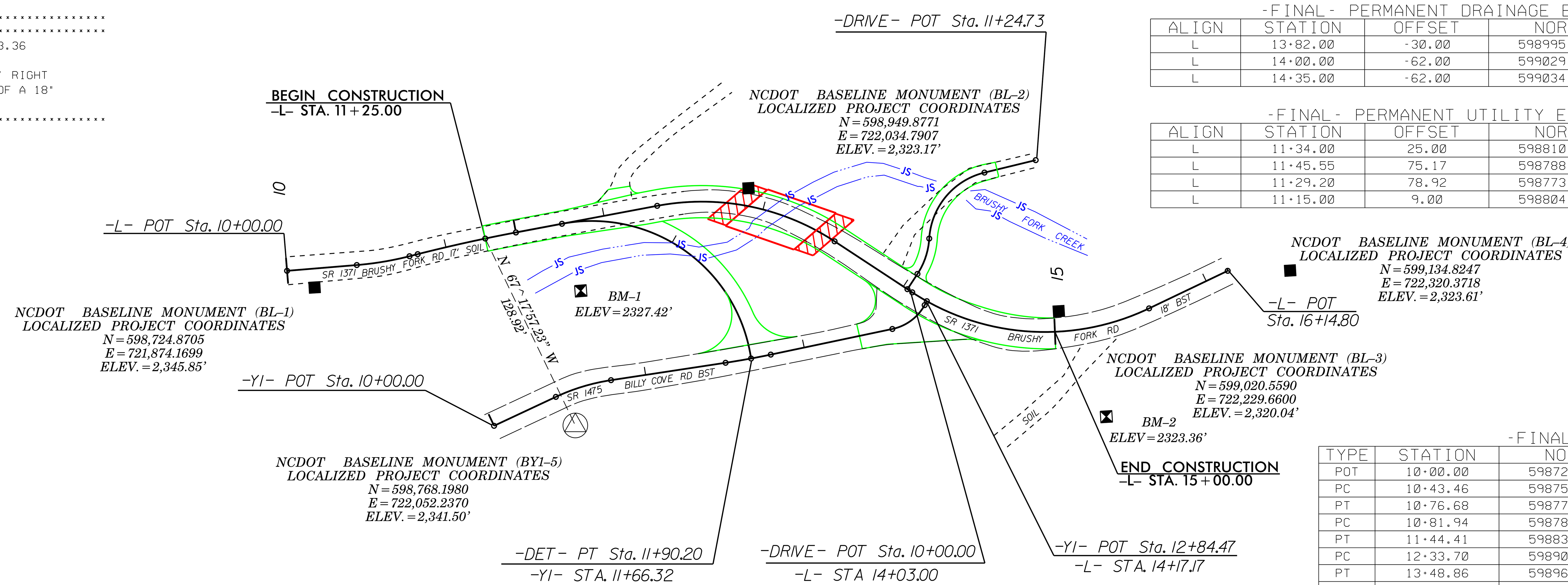
****

****

BM2 ELEVATION = 2323.36
N 598991 E 722295
BL STATION 10+01.54 69.68' RIGHT
8" SPIKE SET IN THE ROOT OF A 18" POPLAR TREE

****





-FINAL- ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	11+25.00	-9.00	598823.3207	721926.0810
L	11+25.00	-25.00	598832.8670	721913.2409
L	11+44.41	-25.00	598848.7149	721925.2641
L	12+33.70	-25.00	598919.3227	721979.9190
L	13+00.00	-25.00	598968.2239	722039.0411
L	13+00.00	-30.00	598972.6816	722036.7764
L	13+48.86	-30.00	598990.3323	722092.4168
L	14+06.57	-30.00	598998.6320	722149.5257
L	14+20.00	-30.00	599000.6510	722160.0757
L	14+20.00	-25.00	598995.7871	722161.2344
L	15+00.00	-25.00	599027.4019	722219.0322
L	15+00.00	-21.92	599025.1848	722221.1701
L	13+67.30	25.00	598938.5559	722118.5735
L	13+48.86	25.00	598935.9041	722100.3269
L	12+33.70	25.00	598888.7172	722019.4577
L	11+44.41	25.00	598818.1094	721964.8028
L	11+25.00	25.00	598803.0346	721953.3661
L	11+25.00	9.00	598812.5810	721940.5261

-FINAL- PERMANENT DRAINAGE EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	13+82.00	-30.00	598995.0985	722125.2124
L	14+00.00	-62.00	599029.3546	722138.4231
L	14+35.00	-62.00	599034.2435	722161.1045

-FINAL- PERMANENT UTILITY EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	11+34.00	25.00	598810.0530	721958.6333
L	11+45.55	75.17	598788.3051	722005.1728
L	11+29.20	78.92	598773.9671	721998.9540
L	11+15.00	9.00	598804.5988	721934.6531

-FINAL- L

TYPE	STATION	NORTH	EAST
POT	10+00.00	598721.2548	721854.5476
PC	10+43.46	598752.6814	721884.5601
PT	10+76.68	598778.5017	721905.4109
PC	10+81.94	598782.8506	721908.3623
PT	11+44.41	598833.4121	721945.0334
PC	12+33.70	598904.0199	721999.6883
PT	13+48.86	598960.6442	722096.7314
PC	14+06.57	598968.9439	722153.8403
PT	15+60.69	599059.1107	722270.4852
POT	16+14.80	599108.9724	722291.5073

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "BY1-5"
WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 598768.1980(ft) EASTING: 722052.2370(ft)
ELEVATION: 2341.50(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9997662935
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "BY-5" TO -L- STATION 11+25.00 IS
N 67°17'57.23" W 128.92'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

-FINAL- Y1

TYPE	STATION	NORTH	EAST
POT	10+00.00	598734.5411	722014.6253
PC	10+42.38	598773.4584	722031.4042
PT	10+78.29	598803.9546	722050.1311
PC	11+50.26	598859.2609	722096.1829
PT	11+78.79	598881.6937	722113.8032
PC	12+55.95	598943.7074	722159.7140
PT	12+81.67	598968.1111	722164.8782
POT	12+84.47	598970.8377	722164.2678

GEOID MODEL - G09NC

NOTE: DRAWING NOT TO SCALE

NOTES:

1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
   HTTPS://CONNECT.NCDOT.GOV/RESOURCES/LOCATION/

   THE FILES TO BE FOUND ARE AS FOLLOWS:
   490279_LS_CONTROL.TXT

   SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

△ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.

PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

PROJECT REFERENCE NO.	SHEET NO.
17BPJ4.R.33	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

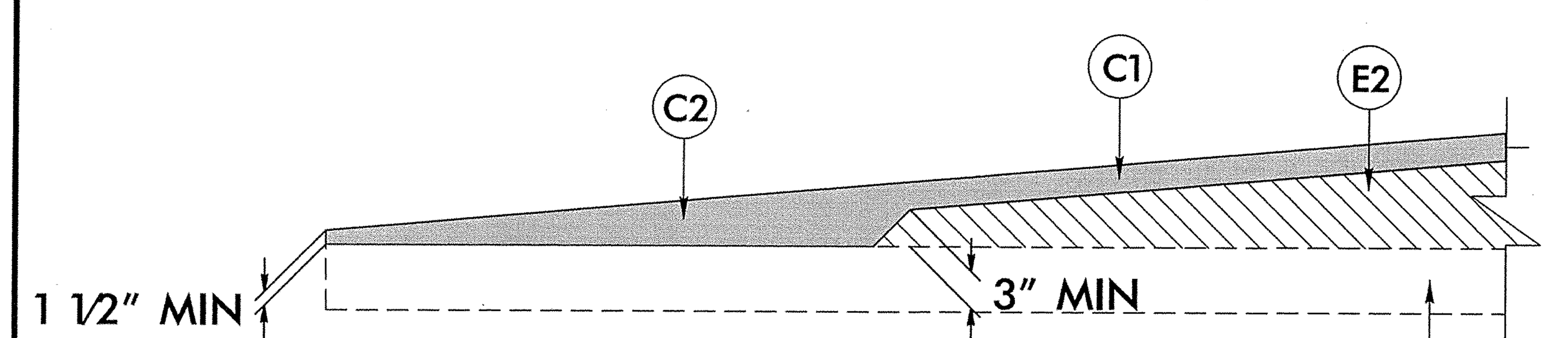
NORTH CAROLINA PROFESSIONAL SEAL 034371 ENGINEER BRANDON W. JOHNSON 4/2/14

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)

PAVEMENT SCHEDULE

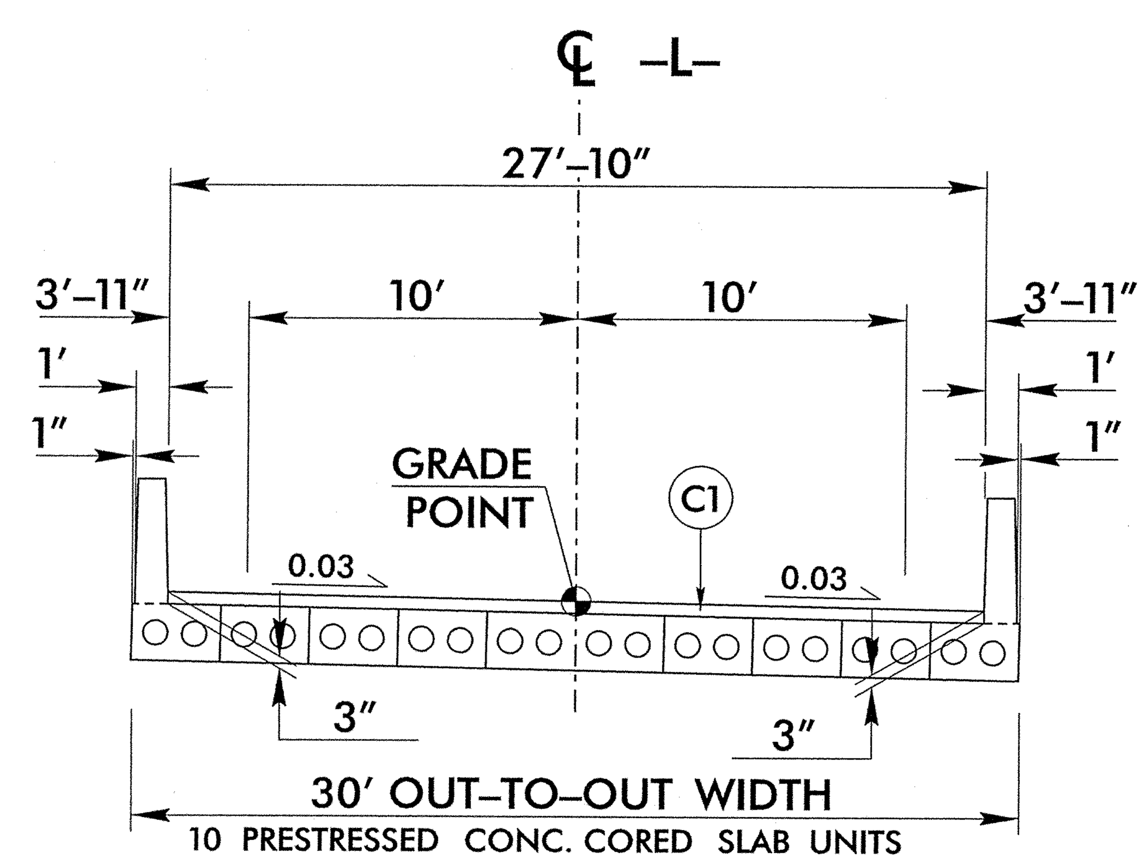
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.
C3	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH LAYER.
E1	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
J1	8" AGGREGATE BASE COURSE.
J2	VARIABLE AGGREGATE BASE COURSE.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL ON THIS SHEET)

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



WEDGING DETAIL FOR RESURFACING

USE IN CONJUNCTION WITH TYPICAL SECTION NO. 3

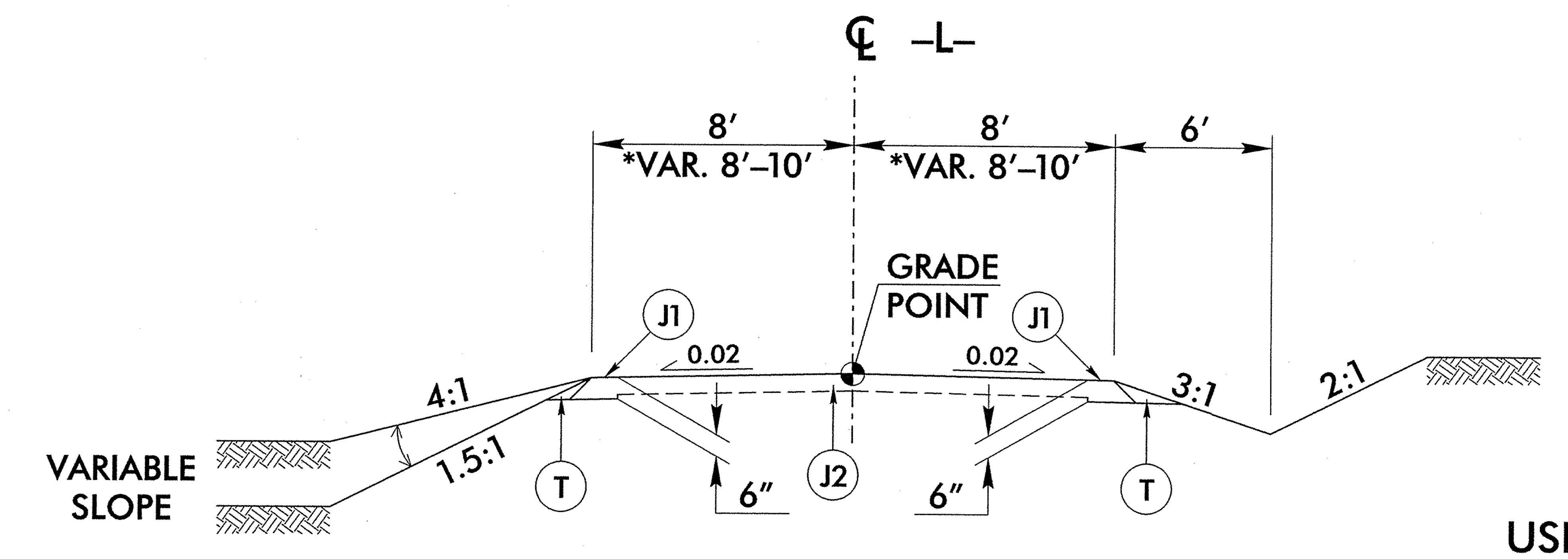


BRIDGE TYPICAL SECTION

FOR BRIDGE OVER BRUSHY FORK CREEK

USE BRIDGE TYPICAL SECTION

-L- STA 12+89.12 (BEG BRIDGE) TO STA 13+36.82 (END BRIDGE)



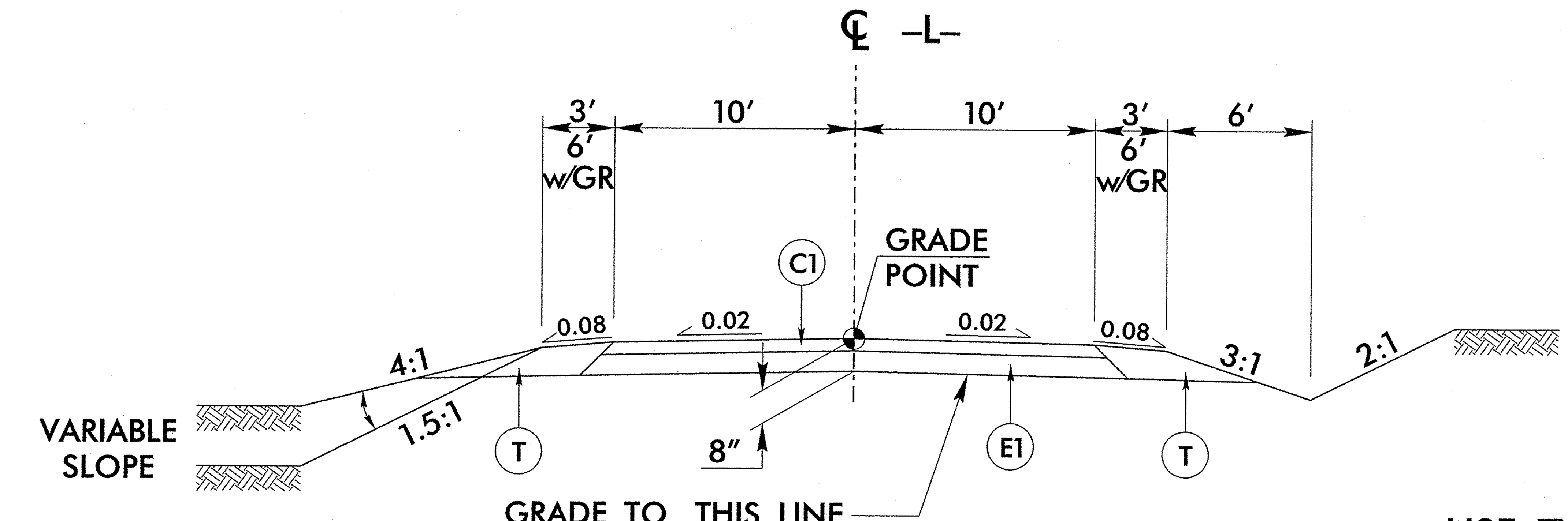
TYPICAL SECTION NO. 1

-L- (BRUSHY FORK RD)

USE TYPICAL SECTION NO. 1

-L- STA 11+25.00 TO STA 11+75.00

*-L- STA 11+75.00 TO STA 12+35.00



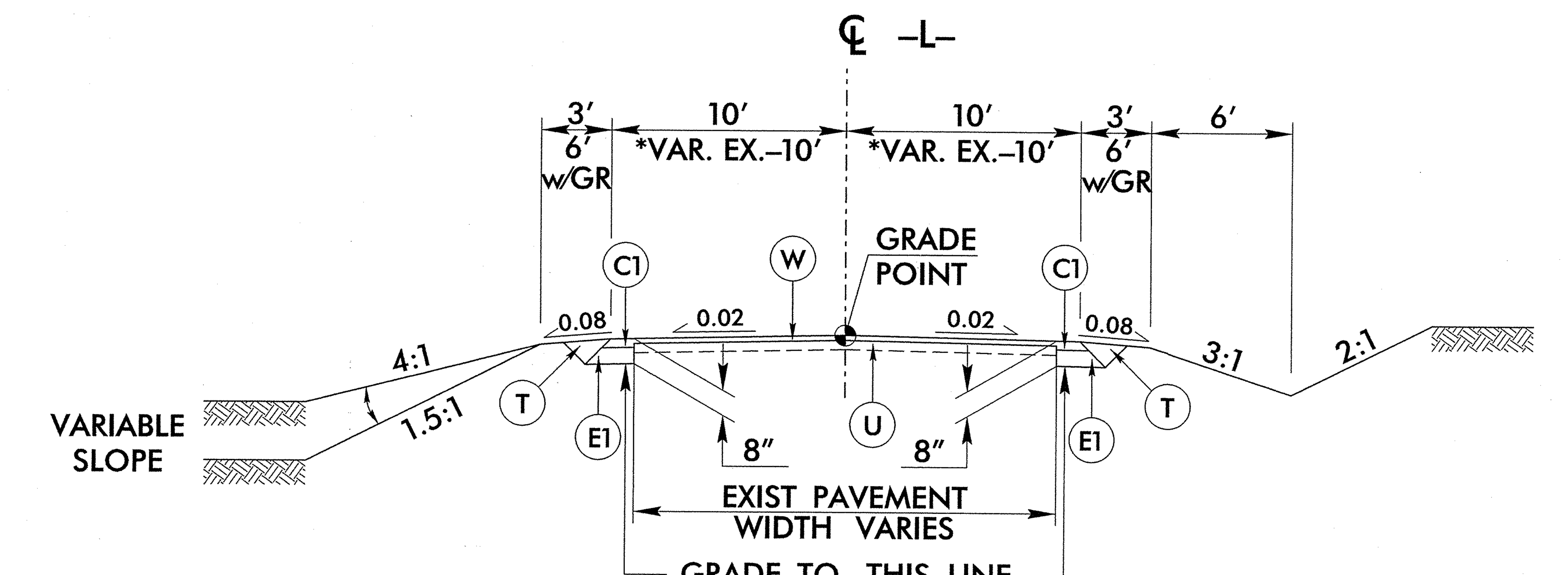
TYPICAL SECTION NO. 2

-L- (BRUSHY FORK RD)

USE TYPICAL SECTION NO. 2

-L- STA 12+35.00 TO STA 12+89.12(BEGIN BRIDGE)

-L- STA 13+36.82(END BRIDGE) TO STA 13+86.82



TYPICAL SECTION NO. 3

-L- (BRUSHY FORK RD)

USE TYPICAL SECTION NO. 3

-L- STA 13+86.82 TO STA 15+00.00

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Brandon Johnson

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.33	2A

ROADWAY DESIGN ENGINEER

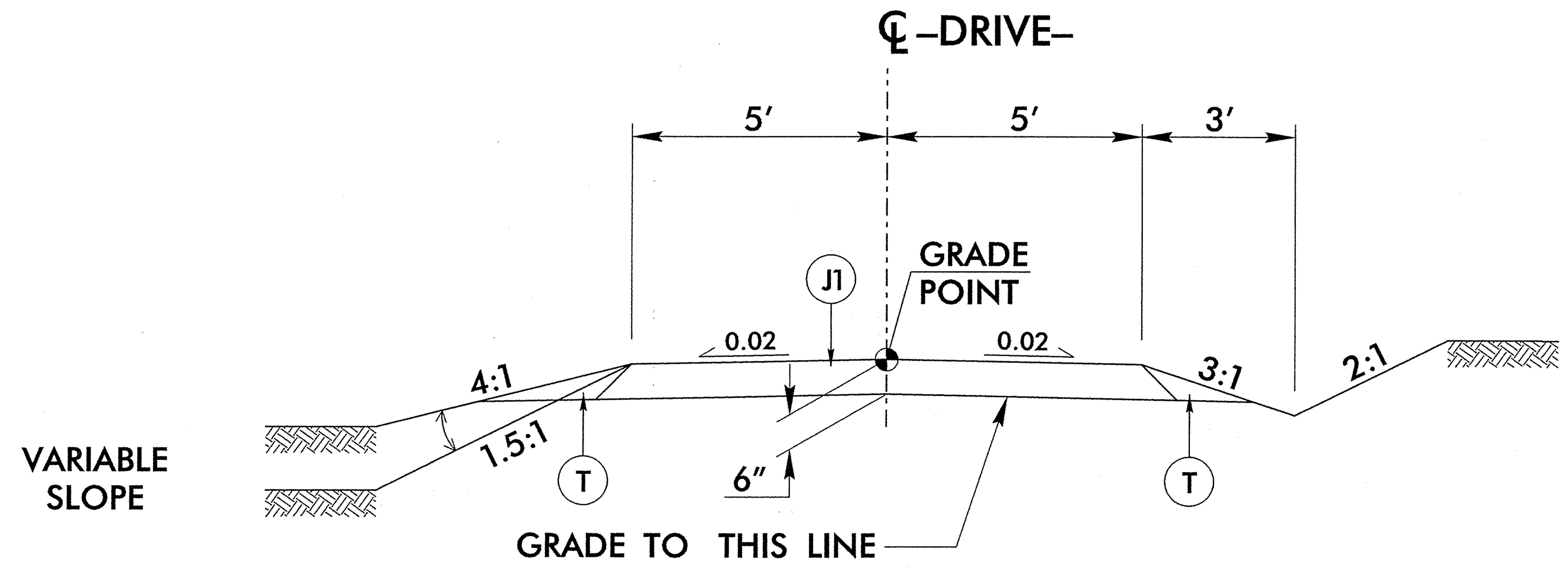
NORTH CAROLINA PROFESSIONAL SEAL 034371 ENGINEER BRANDON W. JOHNSON 4/2/14

PAVEMENT DESIGN ENGINEER

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)

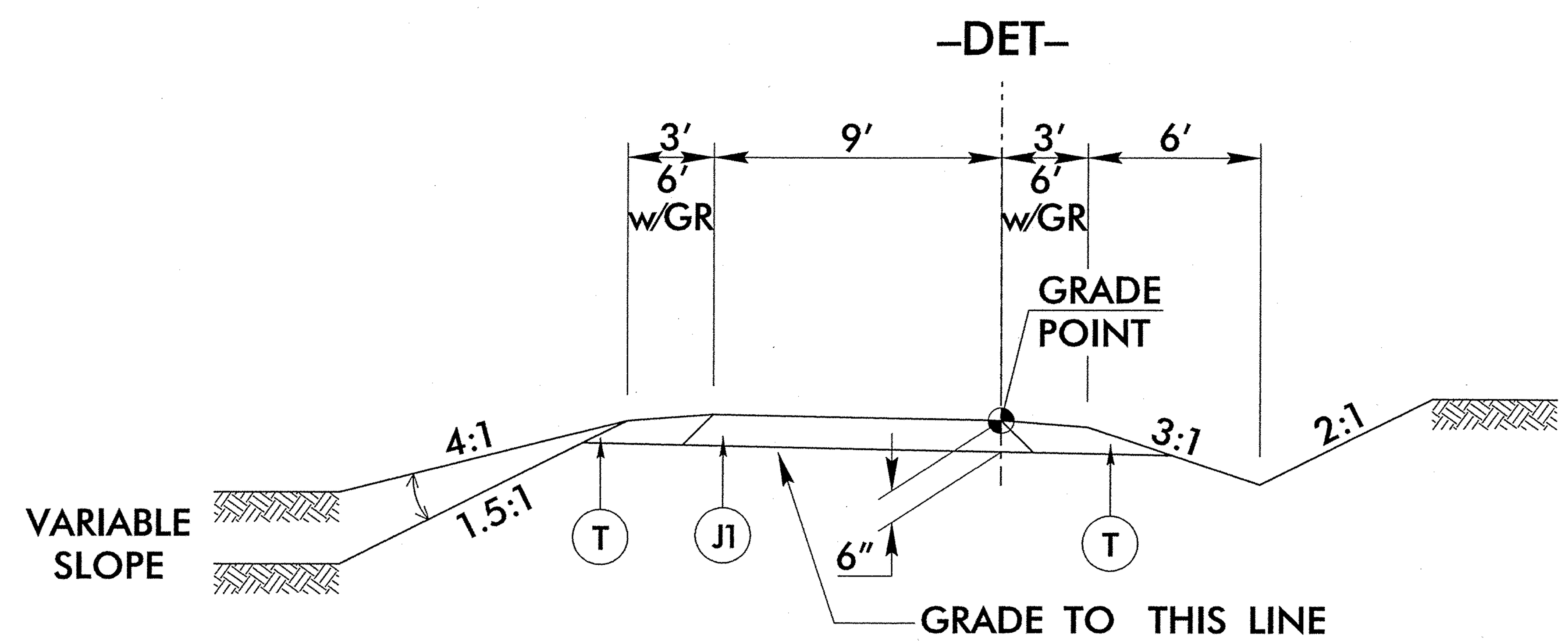
PAVEMENT SCHEDULE	
C1	3.0" S9.5B
C2	VARIABLE S9.5B
C3	1.5" S9.5B
E1	5" B25.0B
E2	VARIABLE B25.0B
J1	6" AGGREGATE BASE
J2	VAR. AGGREGATE BASE
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING

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



TYPICAL SECTION NO. 4
-DRIVE-

USE TYPICAL SECTION NO. 4
-DRIVE- STA 10+10.00 TO STA 11+00.00



TYPICAL SECTION NO. 5
-DET-

USE TYPICAL SECTION NO. 5
-DET- STA 10+73.41 TO STA 11+81.78

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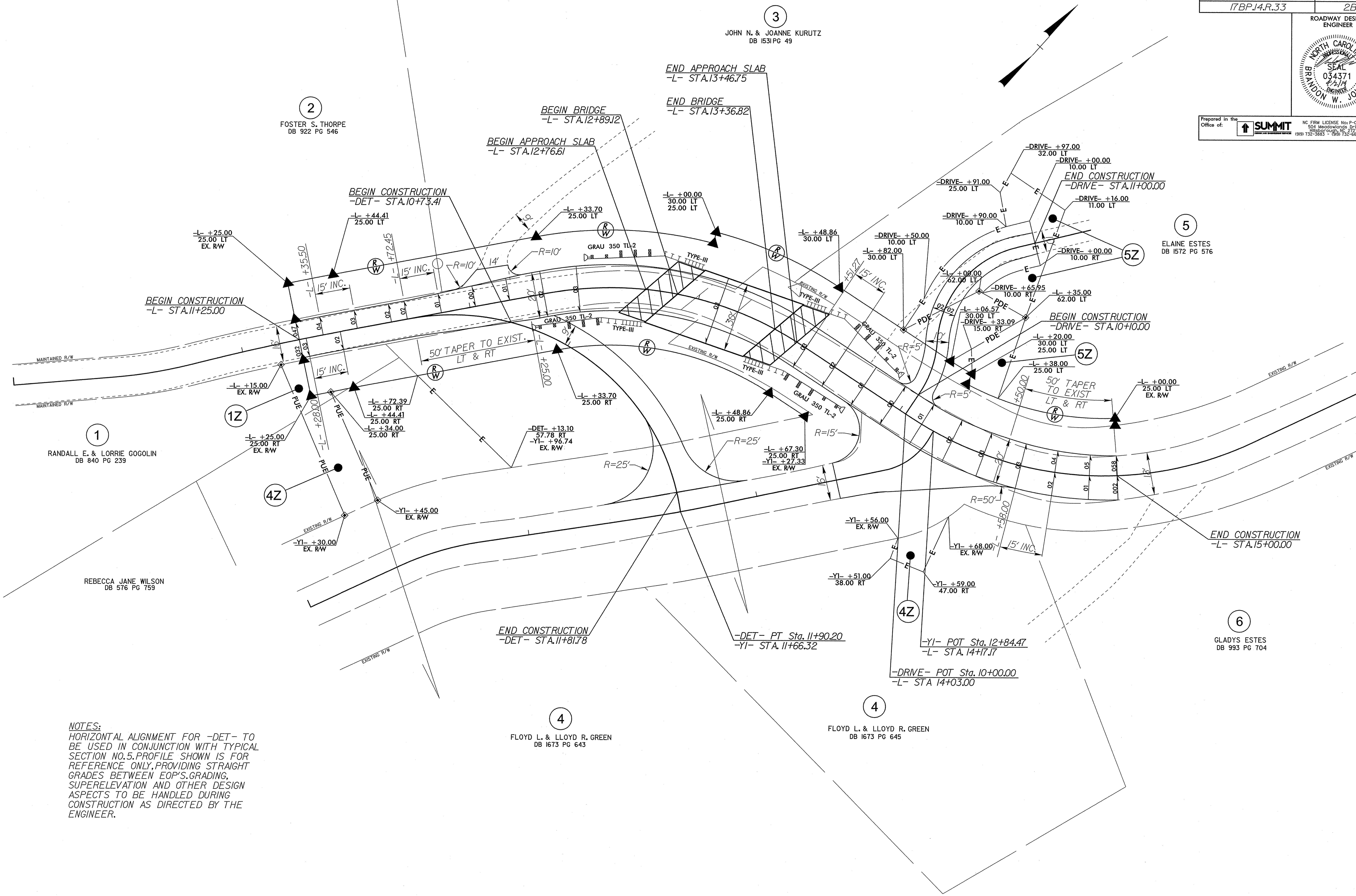
PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.33	2B

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 034371 ENGINEER BRANDON W. JOHNSON

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)

REVISIONS



NOTES:
HORIZONTAL ALIGNMENT FOR -DET- TO BE USED IN CONJUNCTION WITH TYPICAL SECTION NO.5. PROFILE SHOWN IS FOR REFERENCE ONLY, PROVIDING STRAIGHT GRADES BETWEEN EOP'S. GRADING, SUPERELEVATION AND OTHER DESIGN ASPECTS TO BE HANDLED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER.

20 10 0 20 40
SCALE

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)

5/28/99

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF QUANTITIES

ITEM NUMBER	SECTION	QUANTITY	UNIT	DESCRIPTION
0000100000-N	800	1	LS	MOBILIZATION
0000400000-N	801	1	LS	CONSTRUCTION SURVEYING
0008000000-E	200	1.000	ACR	SUPP CLEARING & GRUBBING
0036000000-E	225	50.000	CY	UNDERCUT EXCAVATION
0043000000-N	226	1	LS	GRADING
0195000000-E	265	50.000	CY	SELECT GRANULAR MATERIAL
0196000000-E	270	50.000	SY	GEOTEXTILE SOIL STABILIZATION
0318000000-E	300	40.000	TON	FND CONDIT MATL MINOR STRS
0320000000-E	300	120.000	SY	FND CONDIT GEOTEXTILE
0335300000-E	305	124.000	LF	18" DRAINAGE PIPE
0344000000-E	310	60.000	LF	18" SIDE DRAIN PIPE
6045000000-E	SP	52.000	LF	18" TEMPORARY PIPE
6045000000-E	SP	152.000	LF	36" TEMPORARY PIPE
1099700000-E	505	50.000	TON	CLASS IV SUBGRD STABILIZATION
1121000000-E	520	171.000	TON	AGGREGATE BASE COURSE
1220000000-E	545	50.000	TON	INCIDENTAL STONE BASE
1489000000-E	610	160.000	TON	ASP CONC BASE CRS B25.0B
1519000000-E	610	150.000	TON	ASP CONC SURF CRS S9.5B
1575000000-E	620	20.000	TON	ASP FOR PLANT MIX
3030000000-E	862	25.000	LF	STL BM GUARDRAIL
3150000000-N	862	4	EA	ADDIT GUARDRAIL POSTS
3180000000-N	862	4	EA	GR ANCHOR TYPE 350 TL-2
3215000000-N	862	4	EA	GR ANCHOR TYPE III
3628000000-E	876	6.000	TON	RIP RAP, CLASS I
3649000000-E	876	4.000	TON	RIP RAP, CLASS B
3656000000-E	876	14.000	SY	GEOTEXTILE FOR DRAINGE
6000000000-E	1605	1015.00	LF	TEMPORARY SILT FENCE
6009000000-E	1610	25.000	TON	EROS CONTRL STONE CL B
6012000000-E	1610	10.000	TON	SEDIMENT CONTROL STONE
6015000000-E	1615	0.700	ACR	TEMPORARY MULCHING
6018000000-E	1620	100.000	LB	SEED FOR TEMP SEEDING
6021000000-E	1620	0.500	TON	FERT FOR TEMP SEEDING
6024000000-E	1622	200.000	LF	TEMPORARY SLOPE DRAINS
6030000000-E	1630	30.000	CY	SILT EXCAVATION
6036000000-E	1631	6250.000	SY	MATTING FOR EROS CONTROL
6037000000-E	SP	100.000	SY	COIR FIBER MAT
6042000000-E	1632	50.000	LF	1/4" HARDWARE CLOTH
6071013000-E	SP	180.000	LF	WATTLE BARRIER
6084000000-E	1660	1.100	ACR	SEEDING AND MULCHING
6090000000-E	1661	50.000	LB	SEED FOR REPAIR SEEDING
6093000000-E	1661	0.250	TON	FERT FOR REPAIR SEEDING
6096000000-E	1662	50.000	LB	SEED FOR SUPP SEEDING
6108000000-E	1665	1.000	TON	FERTILIZER TOPDRESSING
6117000000-N	SP	13	EA	RESPONSE FOR EROS CONTROL
6123000000-E	1670	0.200	ACR	REFORESTATION

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
I7BPJ4.R.33	3A

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)

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-2	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-	12+27.85	12+77.85	RT	6.25			12+27.85	12+77.85	3	6	25		0.5			1	1													
-L-	12+49.66	12+99.66	LT	6.25			12+49.66	12+99.66	3	6	25		0.5			1	1													
-L-	13+28.22	13+78.22	RT	6.25			13+28.22	13+78.22	3	6		25		0.5		1	1													
-L-	13+40.85	13+90.85	LT	6.25			13+40.85	13+90.85	3	6		25		0.5		1	1													
TOTALS				25												4	4													

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

STATION	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"	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE	PIPE REMOVAL LIN.FT.	REMARKS
-L- 12+23.63	CL	401															60		41	REMOVE EXISTING 18" CMP
-L- 13+88.27	CL	404			2318.9	2314.7					76								56	REMOVE EXISTING 18" CMP
-DET-	CL	402			2321.9	2318.7								76						TEMPORARY TO BE REMOVED
-DET-	CL	402			2321.9	2318.7								76						TEMPORARY TO BE REMOVED
-DET-	CL	403			2322.1	2320.6					48									TEMPORARY TO BE REMOVED
TOTALS											124			152			60		56	

Other column headings of this table (no entries): C.S. PIPE (UNLESS NOTED OTHRWISE) 12" .064, 15" .064, 18" .064, 24" .064, 30" .079, 36" .079, 42" .109, 48" .109; CLASS III R.C. PIPE (UNLESS OTHERWISE NOTED) 12", 15", 18", 24", 30", 36", 42", 48"; 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 * TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL. 'B') 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; CORR. STEEL ELBOWS NO. & SIZE; CONC. COLLARS CL. "B" C.Y. STD. 840.72; CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71.

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+15%	BORROW	WASTE
-L- STATION 11+25.00 TO 12+89.12	10 CU. YDS.		56 CU. YDS.	46 CU. YDS.	
-L- STATION 13+36.82 TO 15+00.00	21 CU. YDS.		22 CU. YDS.	1 CU. YDS.	
-DRIVE- STATION 10+10.00 TO 11+00.00			54 CU. YDS.	54 CU. YDS.	
-DET- (ESTIMATE)	559 CU. YDS.		559 CU. YDS.	559 CU. YDS.	559 CU. YDS.
SUB-TOTAL:	590 CU. YDS.		691 CU. YDS.	660 CU. YDS.	559 CU. YDS.
ESTIMATE 5% FOR TOPSOIL REPLACEMENT				37 CU. YDS.	
SHOULDER MATERIAL +15%			81 CU. YDS.	81 CU. YDS.	
GRAND TOTALS:	590 CU. YDS.		772 CU. YDS.	778 CU. YDS.	559 CU. YDS
SAY:	600 CU. YDS.			800 CU. YDS.	

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD^2
-L-	12+50	13+04	CL	76
-L-	13+13	13+87	CL	130
			TOTAL:	206
			SAY:	210 SQ. YDS.

CONTINGENCY ITEMS

SECTION	DESCRIPTION	QUANTITY	UNIT
225	UNDERCUT EXCAVATION	50	CU. YDS.
265	SELECT GRANULAR MATERIAL	50	CU. YDS.
270	GEOTEXTILE FOR SOIL STABILIZATION	50	SQ. YDS.
505	CLASS IV SUBGRADE STABILIZATION	50	TONS
545	INCIDENTAL STONE BASE	50	TONS
862	ADDITIONAL GUARDRAIL POSTS	4	EACH

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PROJECT REFERENCE NO.	SHEET NO.
17BPJ4.R.33	4
RW SHEET NO.	

ROADWAY DESIGN ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 034371 BRANDON W. JOHNSON 4/2/14

HYDRAULICS ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 25506 JENNY SUMMERLIN FLEMING 4/2/14

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)

Prepared in the Office of: Ecological Engineering — NC FIRM LICENSE No: F-848, 1151 SE Cary Parkway, Suite 101, Cary, NC 27518, (919) 557-0929

BRIDGE APPROACH SLAB

-L-

PI Sta 10+60.11
Δ = 9° 31' 06.9" (LT)
D = 28° 38' 52.4"
L = 33.23'
T = 16.65'
R = 200.00'

PI Sta 11+13.18
Δ = 3° 34' 45.4" (RT)
D = 5° 43' 46.5"
L = 62.47'
T = 31.25'
R = 1,000.00'
SE = 02
DS = 25mph

PI Sta 12+94.28
Δ = 43° 59' 20.1" (RT)
D = 38° 11' 49.9"
L = 115.16'
T = 60.59'
R = 150.00'
SE = 03
DS = 15mph

PI Sta 14+91.21
Δ = 58° 52' 13.4" (LT)
D = 38° 11' 49.9"
L = 154.12'
T = 84.64'
R = 150.00'
SE = 03
DS = 15mph

-YI-

PI Sta 10+60.46
Δ = 16° 27' 36.6" (RT)
D = 45° 50' 11.8"
L = 35.91'
T = 18.08'
R = 125.00'

PI Sta 11+64.53
Δ = 3° 16' 09.2" (LT)
D = 11° 27' 33.0"
L = 28.53'
T = 14.27'
R = 500.00'

PI Sta 12+69.66
Δ = 49° 07' 52.6" (LT)
D = 190° 59' 09.4"
L = 25.73'
T = 13.71'
R = 30.00'

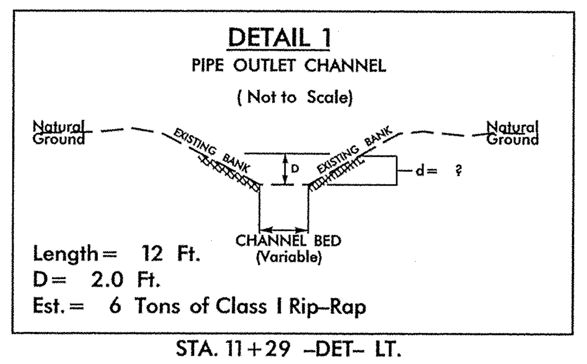
-DRIVE-

PI Sta 10+67.99
Δ = 72° 52' 01.4" (RT)
D = 127° 19' 26.2"
L = 57.23'
T = 33.22'
R = 45.00'

PI Sta 10+23.33
Δ = 29° 49' 48.8" (LT)
D = 127° 19' 26.2"
L = 23.43'
T = 11.99'
R = 45.00'

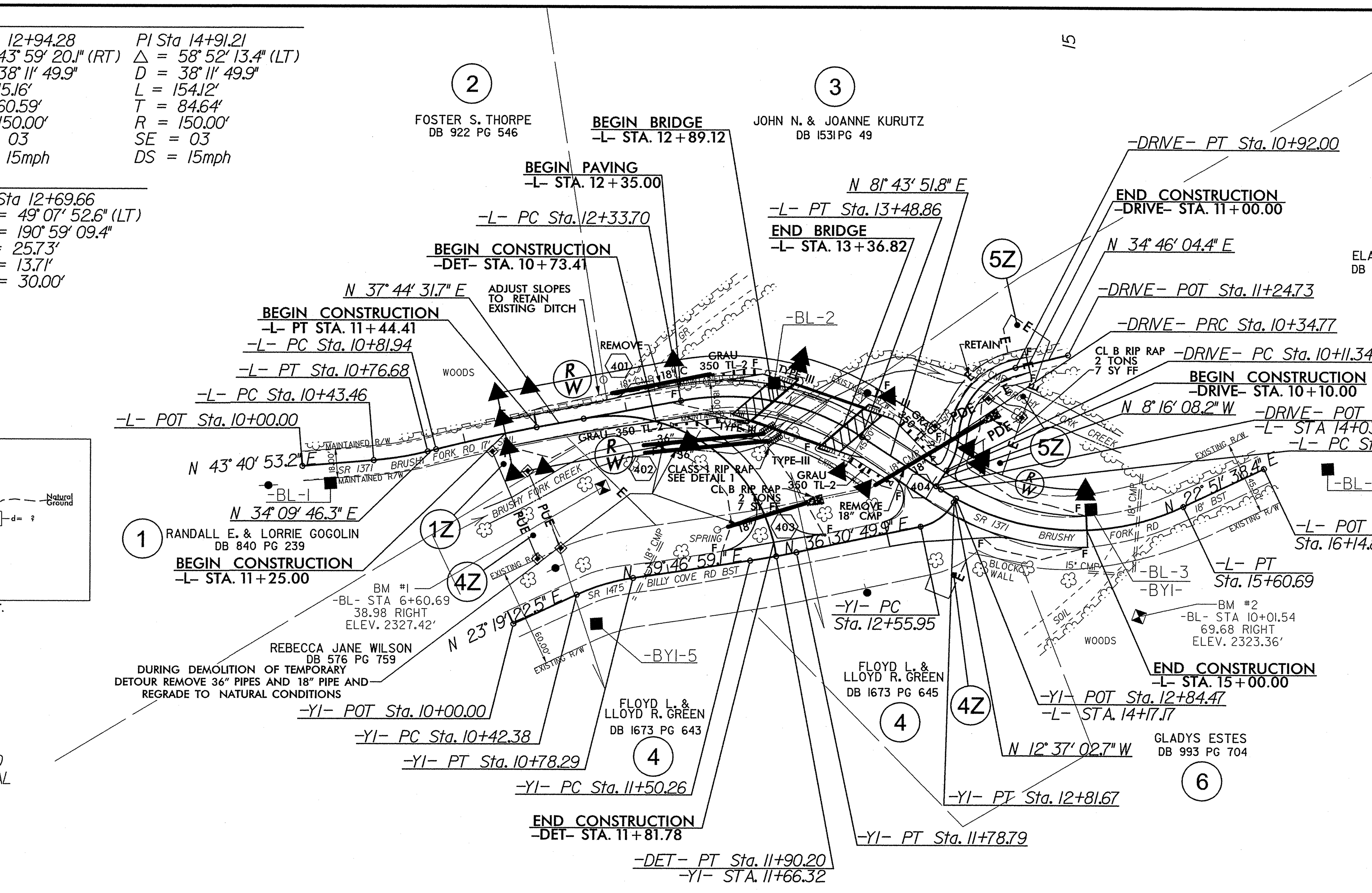
-DET-

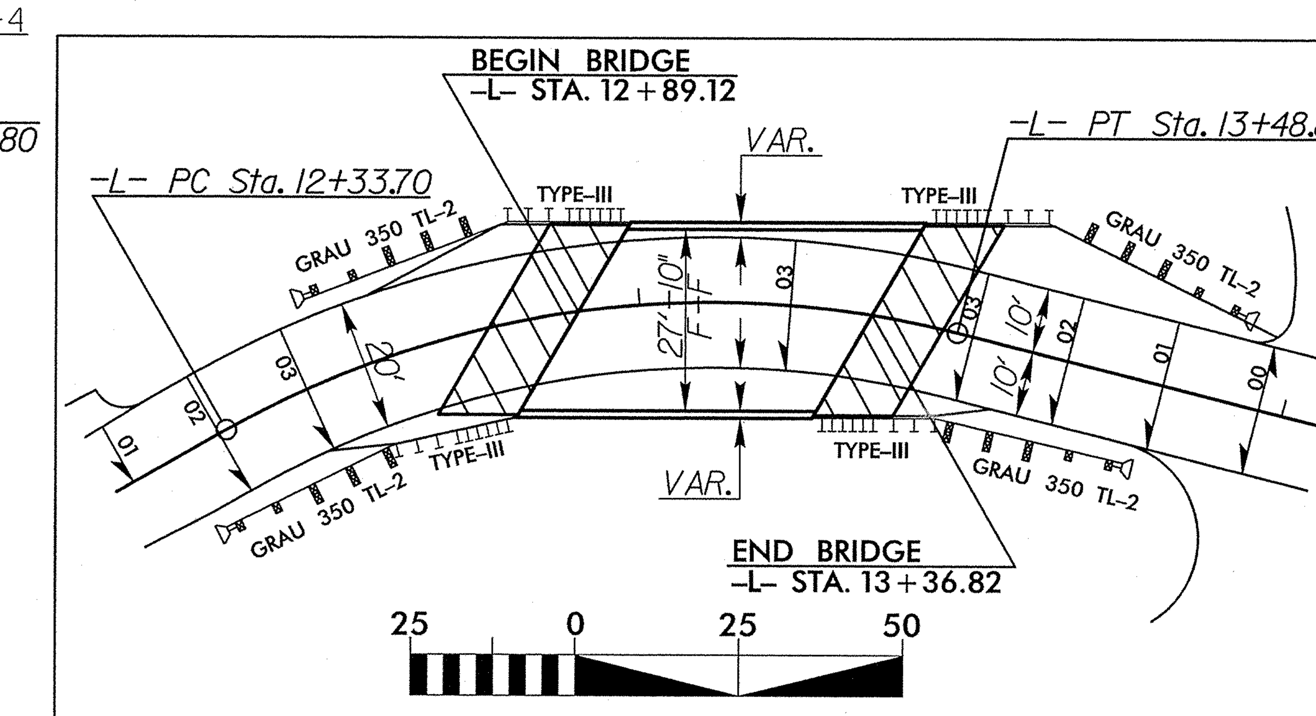
PI Sta 11+33.20
Δ = 92° 18' 07.7" (RT)
D = 57° 17' 44.8"
L = 161.10'
T = 104.10'
R = 100.00'
SE = 03
DS = 15mph



NOTES:

1. SEE SHEET 2-B FOR DIMENSIONING, SUPER ELEVATIONS AND ROW STA./OFFSET LABELS.
2. SEE SHEETS SN-01 THRU SN-14 FOR STRUCTURE PLANS
3. HORIZONTAL ALIGNMENT FOR -DET- TO BE USED IN CONJUNCTION WITH TYPICAL SECTION NO.5. PROFILE SHOWN IS FOR REFERENCE ONLY, PROVIDING STRAIGHT GRADES BETWEEN EOP'S. GRADING, SUPERELEVATION AND OTHER DESIGN ASPECTS TO BE HANDLED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER.

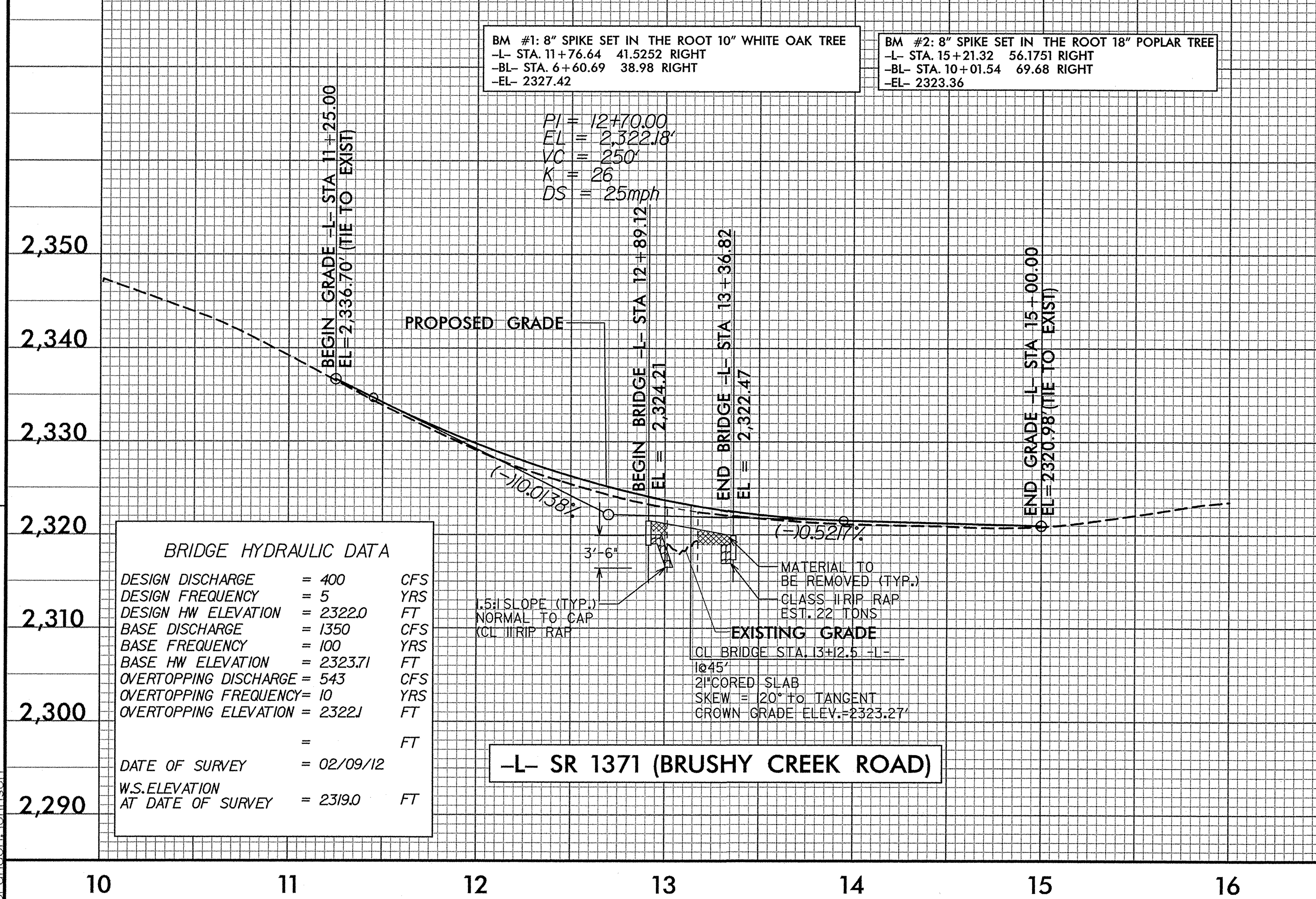




SKETCH SHOWING THE RELATIONSHIP OF THE BRIDGE TO THE PAVEMENT

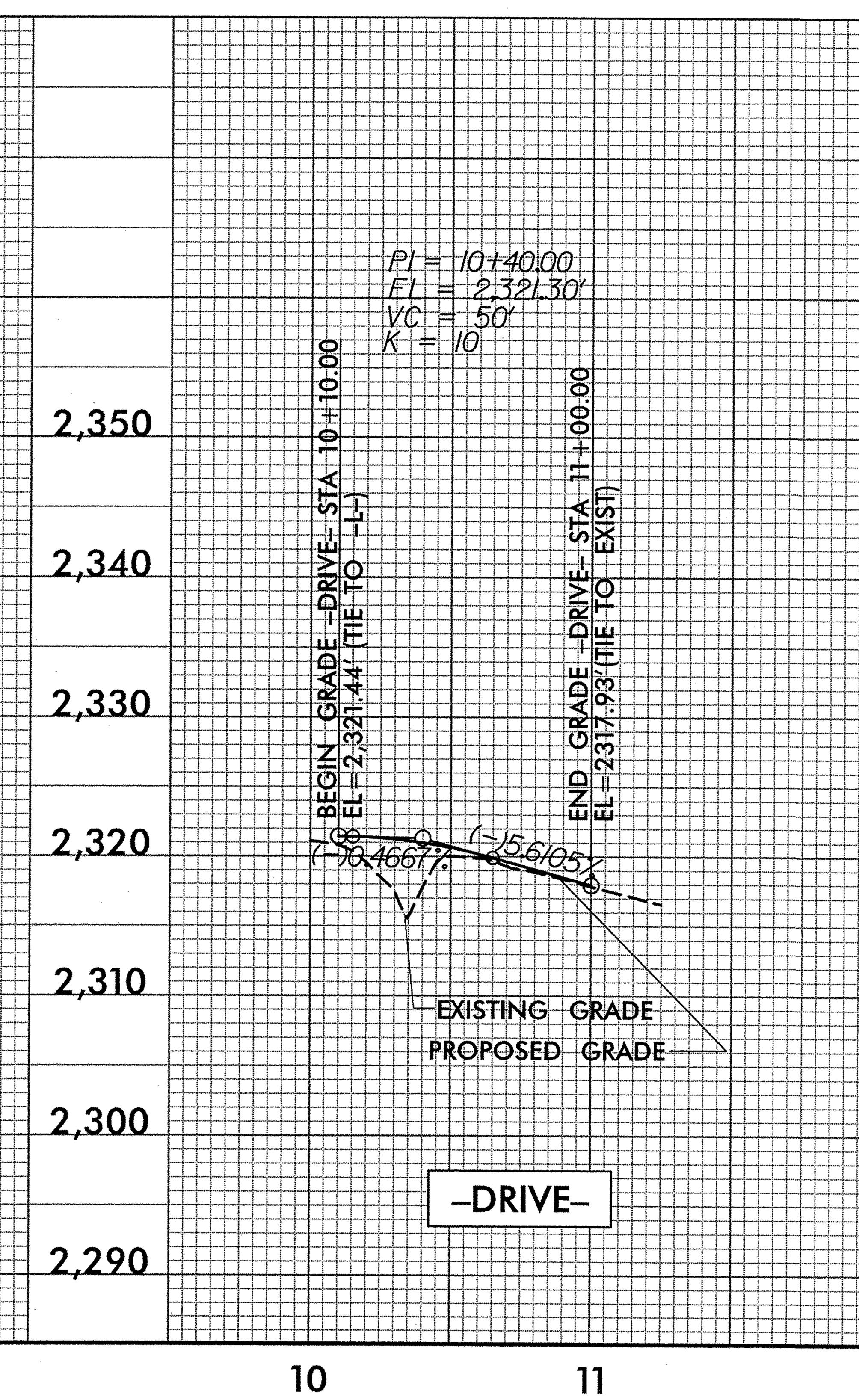
BM #1: 8" SPIKE SET IN THE ROOT 10" WHITE OAK TREE
-L- STA. 11+76.64 41.5252 RIGHT
-BL- STA. 6+60.69 38.98 RIGHT
-EL- 2327.42

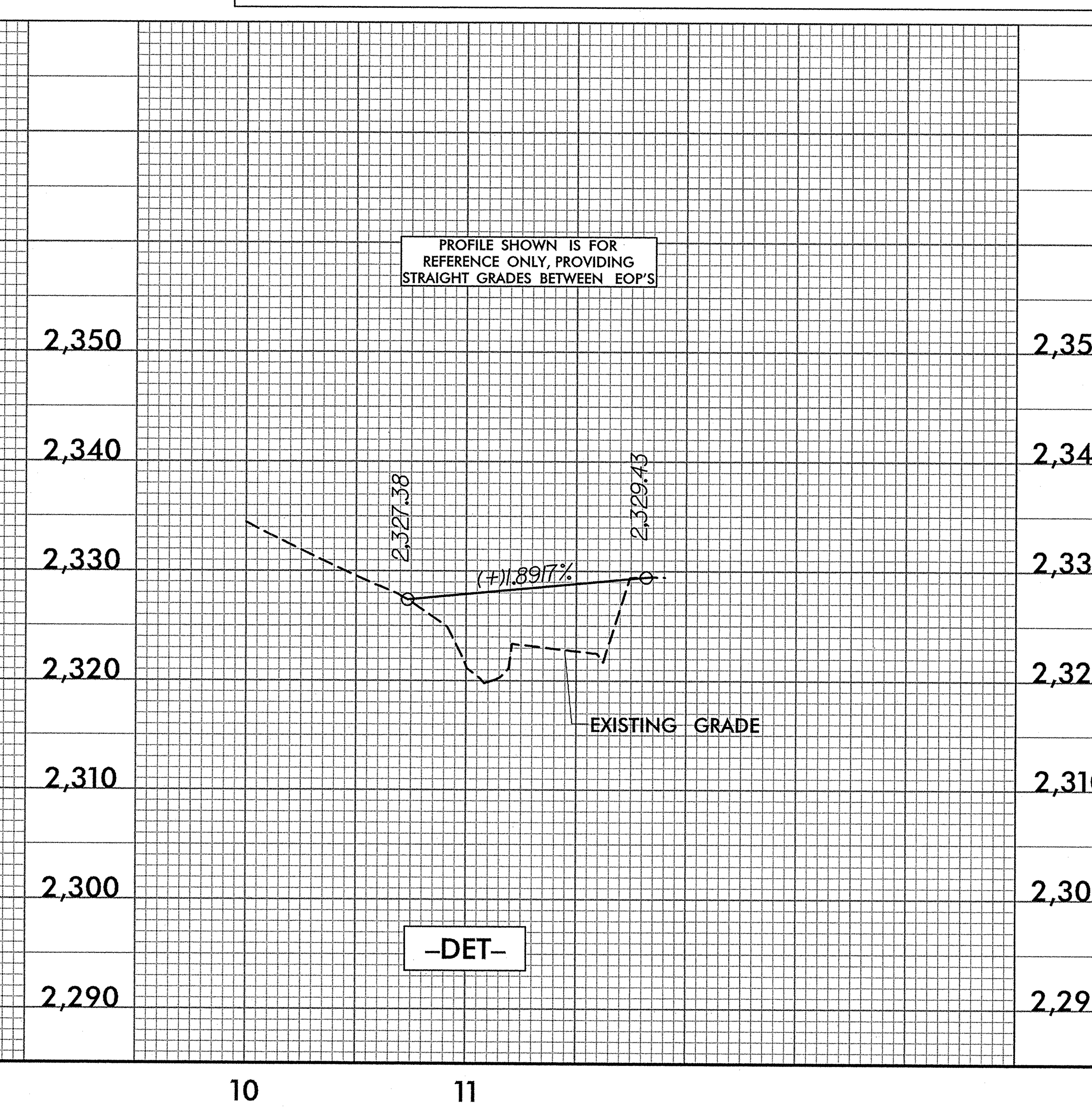
BM #2: 8" SPIKE SET IN THE ROOT 18" POPLAR TREE
-L- STA. 15+21.32 56.1751 RIGHT
-BL- STA. 10+01.54 69.68 RIGHT
-EL- 2323.36



BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 400	CFS
DESIGN FREQUENCY	= 5	YRS
DESIGN HW ELEVATION	= 2322.0	FT
BASE DISCHARGE	= 1350	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 2323.71	FT
OVERTOPPING DISCHARGE	= 543	CFS
OVERTOPPING FREQUENCY	= 10	YRS
OVERTOPPING ELEVATION	= 2322.1	FT
	=	FT
DATE OF SURVEY	= 02/09/12	
W.S. ELEVATION AT DATE OF SURVEY	= 2319.0	FT





REVISIONS

8/17/99

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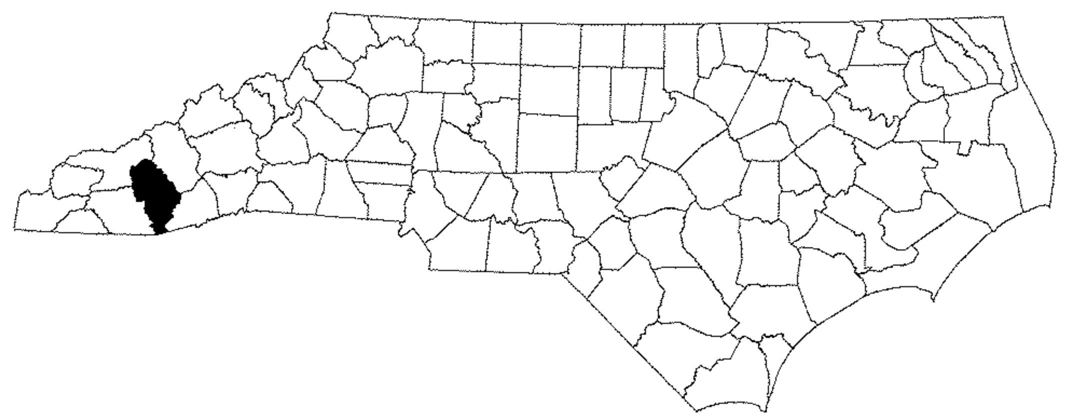
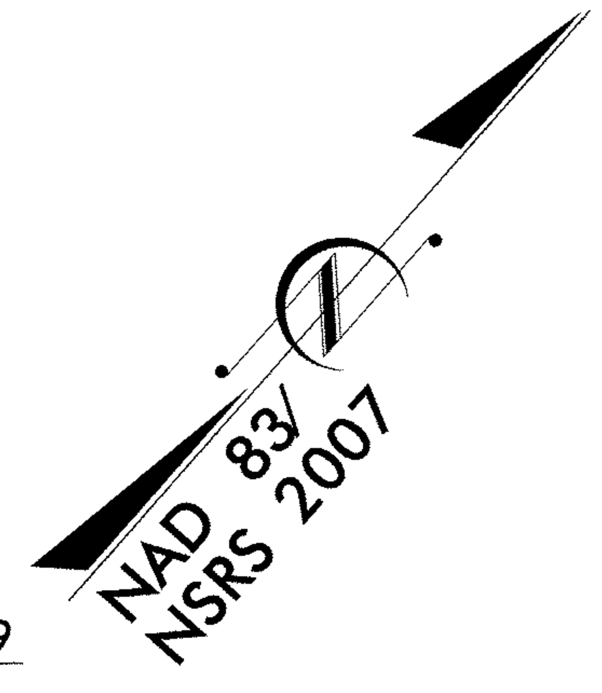
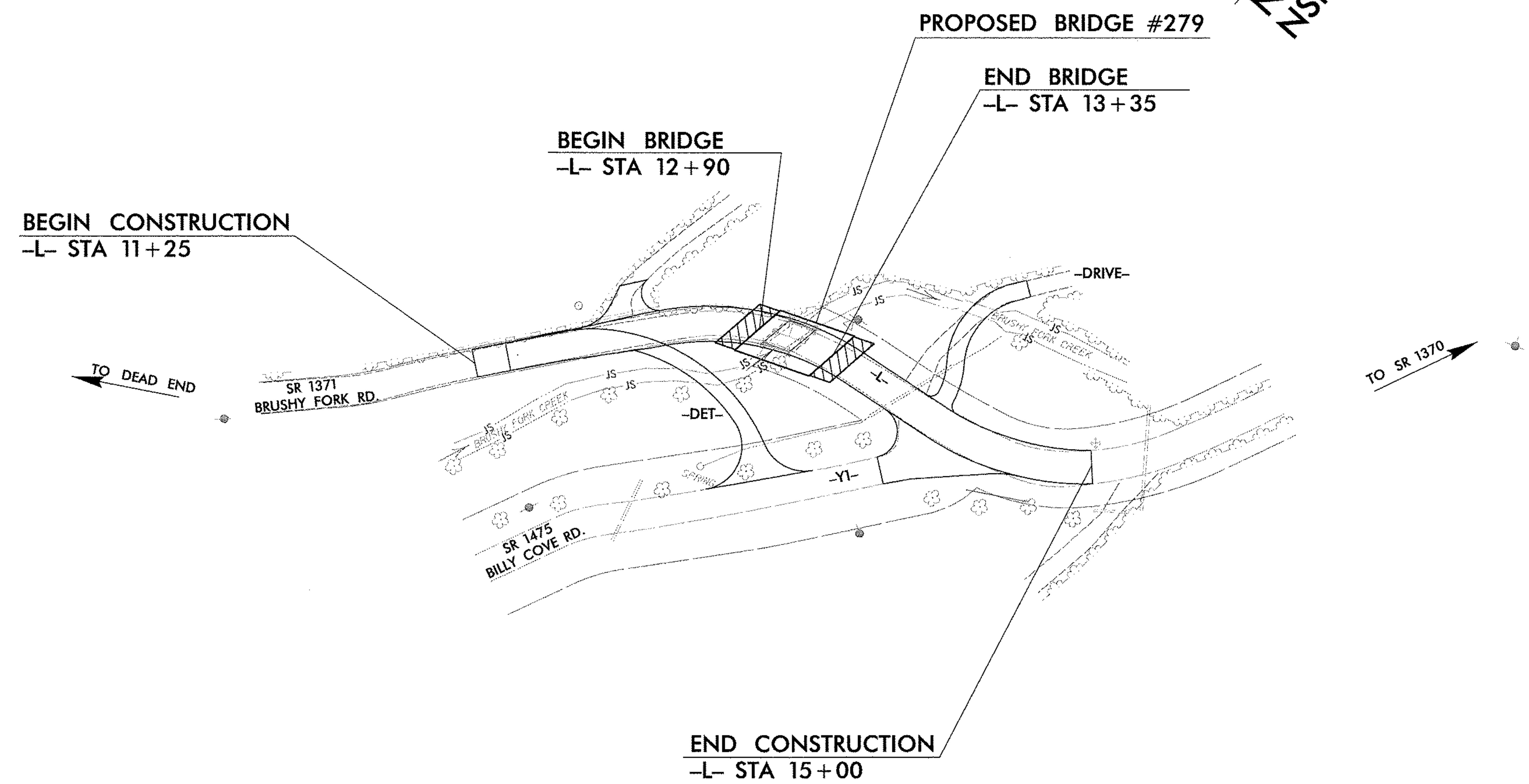
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

JACKSON COUNTY







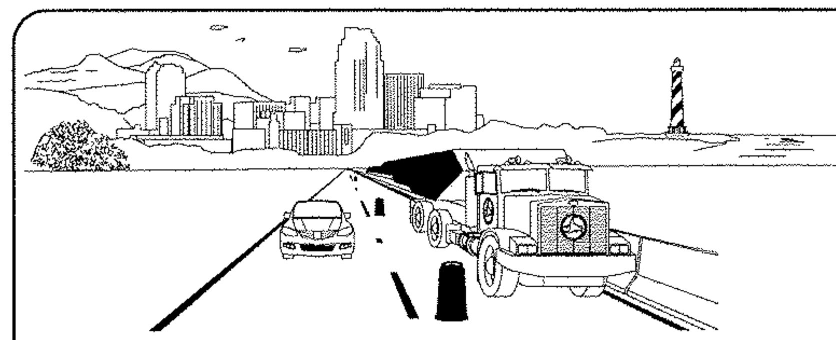
INDEX OF SHEETS

NOTE: WRITTEN PHASING FOR THE TRAFFIC CONTROL PLAN APPEARS ON THE OVERVIEW SHEETS

ROADWAY STANDARD DRAWINGS

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
1101.01	WORK ZONE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1130.01	DRUMS
1145.01	BARRICADES - TYPE III
1150.01	FLAGGING DEVICES
1160.01	TEMPORARY CRASH CUSHION
1170.01	PORTABLE CONCRETE BARRIER
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES



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
K.J. VAN METRE, PE TRAFFIC CONTROL PROJECT ENGINEER
T.E. HILDEBRAND, PE TRAFFIC CONTROL PROJECT DESIGN ENGINEER
_______________ TRAFFIC CONTROL DESIGN ENGINEER

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

AECOM
NC Firm License No.: F-0342
701 Corporate Center Drive
Suite 475 Raleigh, NC 27607
Phone: 919-854-6200

APPROVED:
DATE: 4/7/14

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 038501 ENGINEER THOMAS E. HILDEBRAND

SHEET NO. TMP-1

TIP PROJECT: 17BP.14.R.33

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hildebrandt

PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.33	TMP-1A

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS 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.

TIME RESTRICTIONS

A) DO NOT CLOSE OR NARROW TRAVEL LANES AS FOLLOWS:

ROAD NAME — DAY AND TIME RESTRICTIONS

BRUSHY FORK RD 7:00AM - 9:00AM AND 4:00PM - 6:00PM, MONDAY THRU FRIDAY.

B) DO NOT CLOSE OR NARROW TRAVEL LANES DURING HOLIDAYS AND SPECIAL EVENTS AS FOLLOWS:

BRUSHY FORK RD

TO BE DETERMINED BY DIVISION PERSONNEL.

LANE AND SHOULDER CLOSURE REQUIREMENTS

C) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.

D) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

E) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.

F) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

G) PROVIDE TRAFFIC CONTROL FOR APPROPRIATE LANE CLOSURES FOR SURVEYING DONE BY THE DEPARTMENT.

PAVEMENT EDGE DROP OFF REQUIREMENTS

H) BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAS AN EDGE OF PAVEMENT DROP-OFF AS FOLLOWS:

BACKFILL DROP-OFFS THAT EXCEED 2 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.

BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.

BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.

I) DO NOT EXCEED A DIFFERENCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (W8-11) 100 FT IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

J) NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

K) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

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

PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRAFFIC CONTROL PLANS.

M) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.

COVER OR REMOVE ALL SIGNS REQUIRED FOR THE OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION.

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

O) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

TRAFFIC BARRIER

P) INSTALL TEMPORARY BARRIER ACCORDING TO THE TRANSPORTATION MANAGEMENT PLANS A MAXIMUM OF TWO (2) WEEKS PRIOR TO BEGINNING WORK IN ANY LOCATION. ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION PROCEED IN A CONTINUOUS MANNER TO COMPLETE THE PROPOSED WORK IN THAT LOCATION UNLESS OTHERWISE STATED IN THE TRANSPORTATION MANAGEMENT PLANS OR AS DIRECTED BY THE ENGINEER.

DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE.

ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION AND NO WORK IS PERFORMED BEHIND THE TEMPORARY BARRIER FOR A PERIOD LONGER THAN TWO (2) MONTHS, REMOVE / RESET TEMPORARY BARRIER AT NO COST TO THE DEPARTMENT UNLESS OTHERWISE STATED IN THE TRANSPORTATION MANAGEMENT PLANS, TEMPORARY BARRIER IS PROTECTING A HAZARD, OR AS DIRECTED BY THE ENGINEER.

INSTALL TEMPORARY BARRIER WITH THE TRAFFIC FLOW BEGINNING WITH THE UPSTREAM SIDE OF TRAFFIC. REMOVE TEMPORARY BARRIER AGAINST THE TRAFFIC FLOW BEGINNING WITH THE DOWNSTREAM SIDE OF TRAFFIC.

INSTALL AND SPACE DRUMS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH) TO CLOSE OR KEEP THE SECTION OF THE ROADWAY CLOSED UNTIL THE TEMPORARY BARRIER CAN BE PLACED OR AFTER THE TEMPORARY BARRIER IS REMOVED.

Q) PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER AT ALL TIMES DURING THE INSTALLATION AND REMOVAL OF THE BARRIER BY EITHER A TRUCK MOUNTED ATTENUATOR (MAXIMUM 72 HOURS) OR A TEMPORARY CRASH CUSHION.

PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER FROM ONCOMING TRAFFIC AT ALL TIMES BY A TEMPORARY CRASH CUSHION UNLESS THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER IS OFFSET FROM ONCOMING TRAFFIC AS FOLLOWS OR AS SHOWN IN THE PLANS: (SEE ALSO 1101.05)

POSTED SPEED LIMIT	MINIMUM OFFSET
40 OR LESS	15 FT
45 - 50	20 FT
55	25 FT
60 MPH or HIGHER	30 FT

TRAFFIC CONTROL DEVICES

R) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.

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

T) PLACE ADDITIONAL SETS OF THREE CHANNELIZING DEVICES PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 500 FT CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.

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

MISCELLANEOUS

V) IN THE EVENT A TIE-IN CANNOT BE MADE IN ONE DAY'S TIME, BRING THE TIE-IN AREA TO AN APPROPRIATE ROADWAY ELEVATION AS DETERMINED BY THE ENGINEER. PLACE BLACK ON ORANGE "LOOSE GRAVEL" SIGNS (W8-7) AND BLACK ON ORANGE "PAVEMENT ENDS" SIGNS (W8-3) 50 FT AND 100 FT RESPECTIVELY IN ADVANCE OF THE UNEVEN AREAS. USE DRUMS TO DELINEATE THE EDGE OF ROADWAY ALONG UNPAVED AREAS.

AECOM
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701 Corporate Center Drive
Suite 475 Raleigh, NC 27607
Phone: 919-854-6200

APPROVED: DATE:

NORTH CAROLINA PROFESSIONAL SEAL 038501 ENGINEER

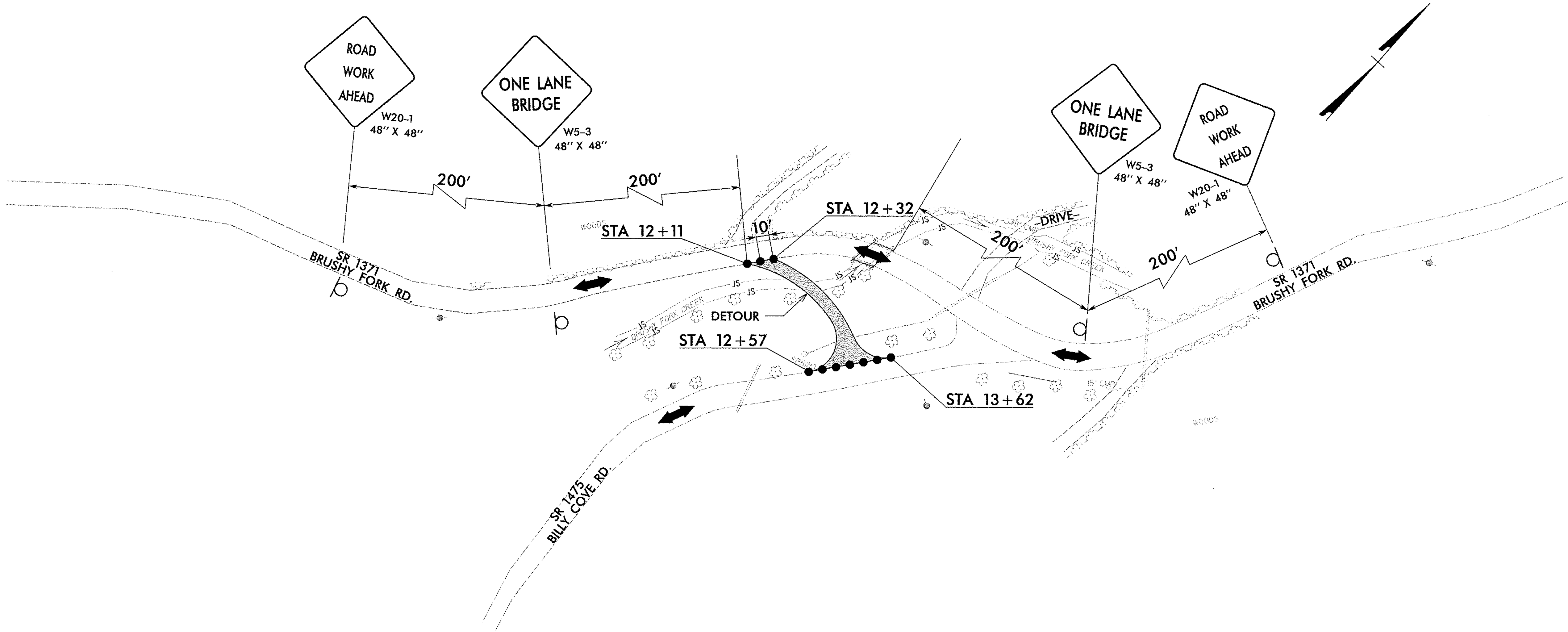
DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

GENERAL NOTES

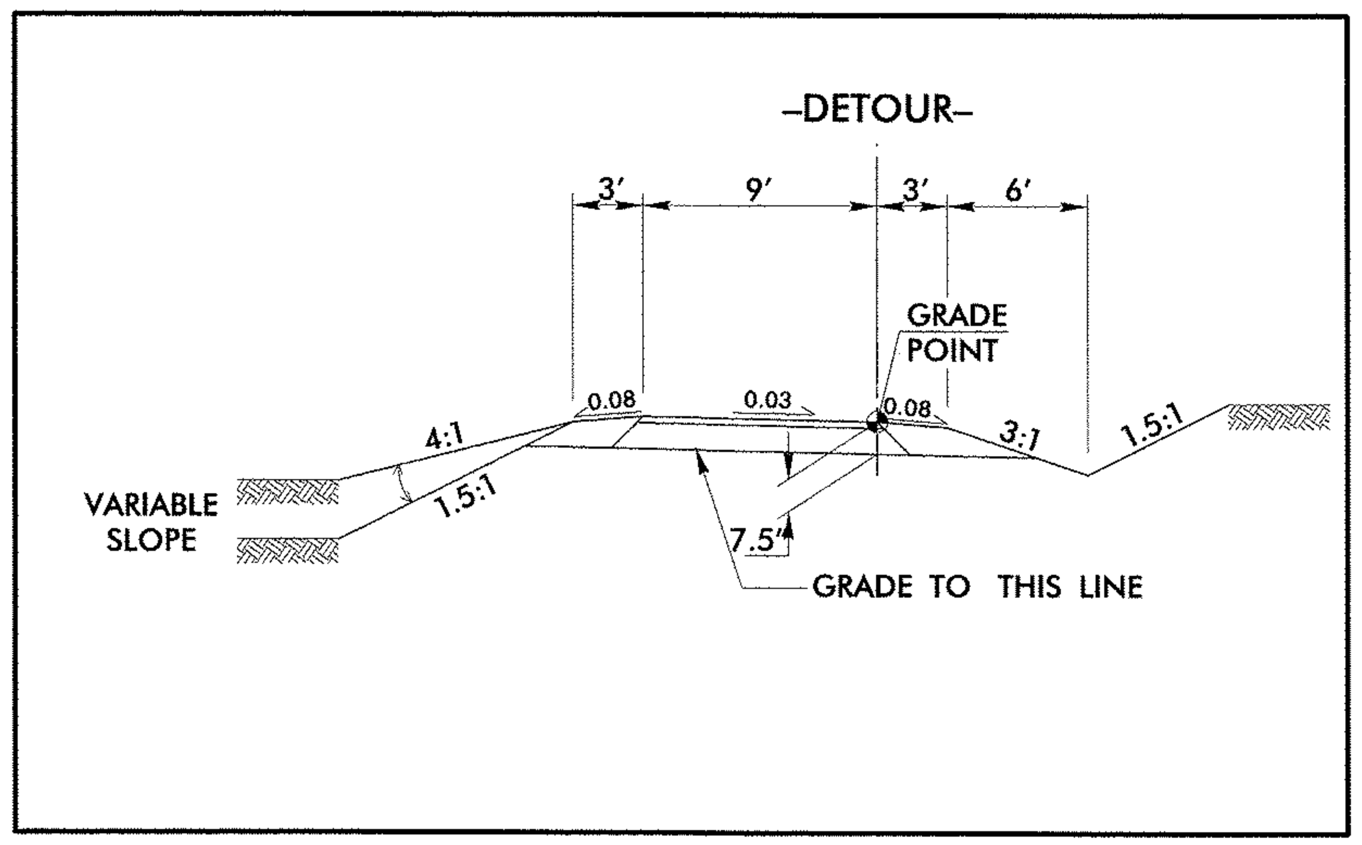
SCALE:
DATE: 4/7/2014
DWG. BY: TEH
DESIGN BY: KJV
REVIEWED BY:

REVISIONS

Q:\60238772\400_Tech_Info_Disc_Files\450_NCDOTStdTechDesFiles\BRG_279_EE\Traffic\TrafficControl\TCP\49-0279_tcp_psh1A_Notes_General.dgn
hildebrandt



TYPICAL SECTION VIEW



PHASING NOTES

STAGE 1: MAINTAIN TRAFFIC ON EXISTING ROADWAY.

STAGE 2: PLACE ADVANCED WARNING SIGNS, AND TRAFFIC CONTROL DEVICES.

STAGE 3: CONSTRUCT DETOUR.

LEGEND

EXISTING ROADWAY

PROPOSED CONSTRUCTION

COMPLETED ROADWAY

GRAPHIC SCALE
50 25 0 50 100
PLANS

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NC Firm License No.: F-0342
701 Corporate Center Drive
Suite 475 Raleigh, NC 27607
Phone: 919-854-6200

APPROVED: DATE:

NORTH CAROLINA PROFESSIONAL SEAL 038501 ENGINEER THOMAS E. HILDEBRAND

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

PHASE I DETAIL

DATE: 4/7/2014
DRWN. BY: TEH
DESIGN BY: KJV
REVIEWED BY:
REVISIONS

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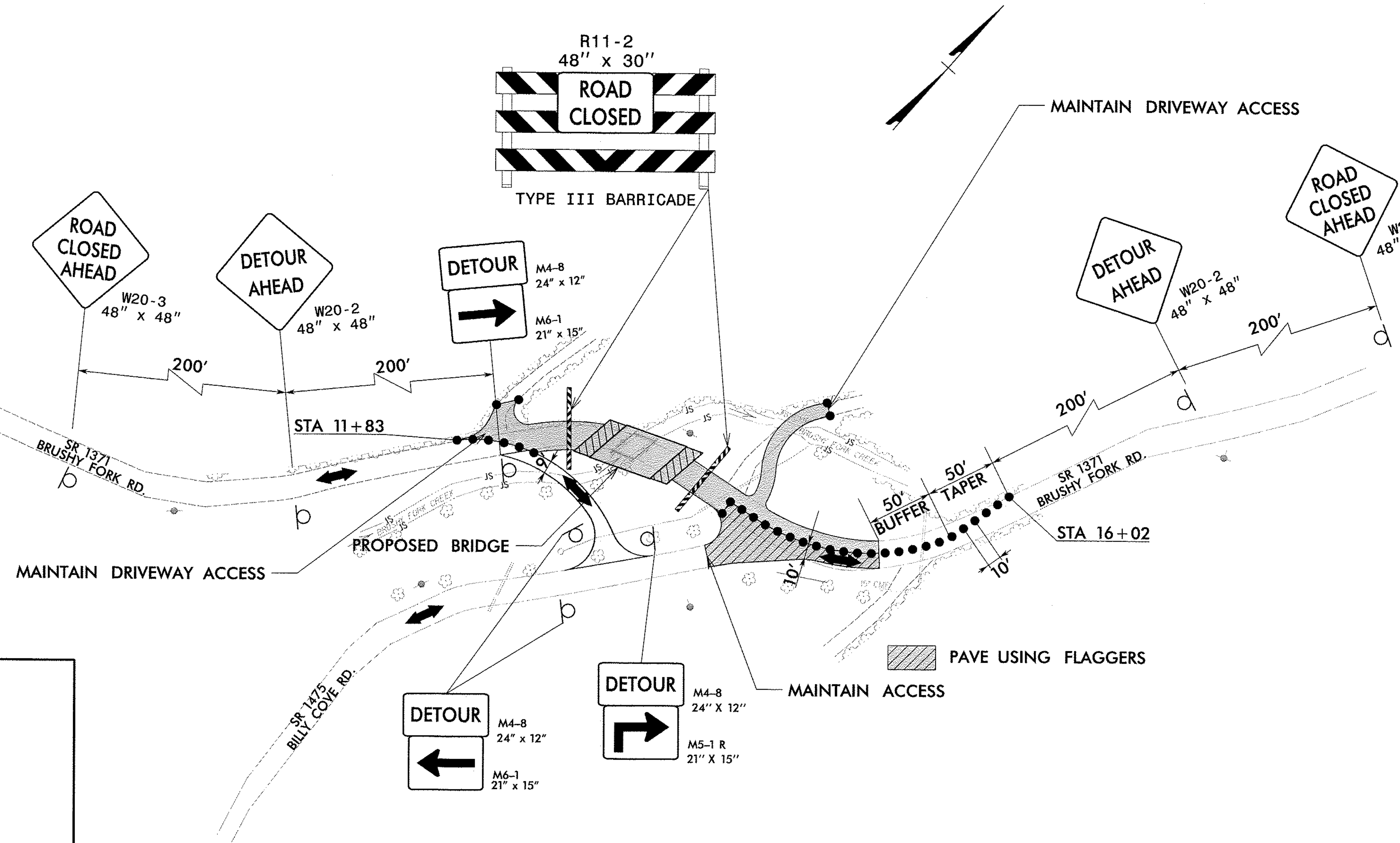
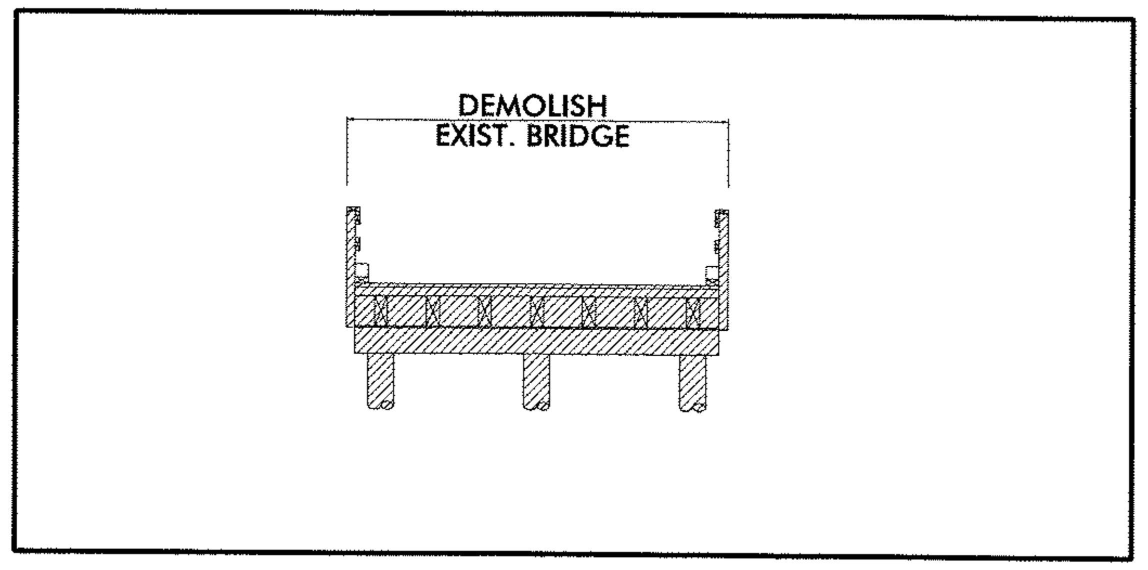
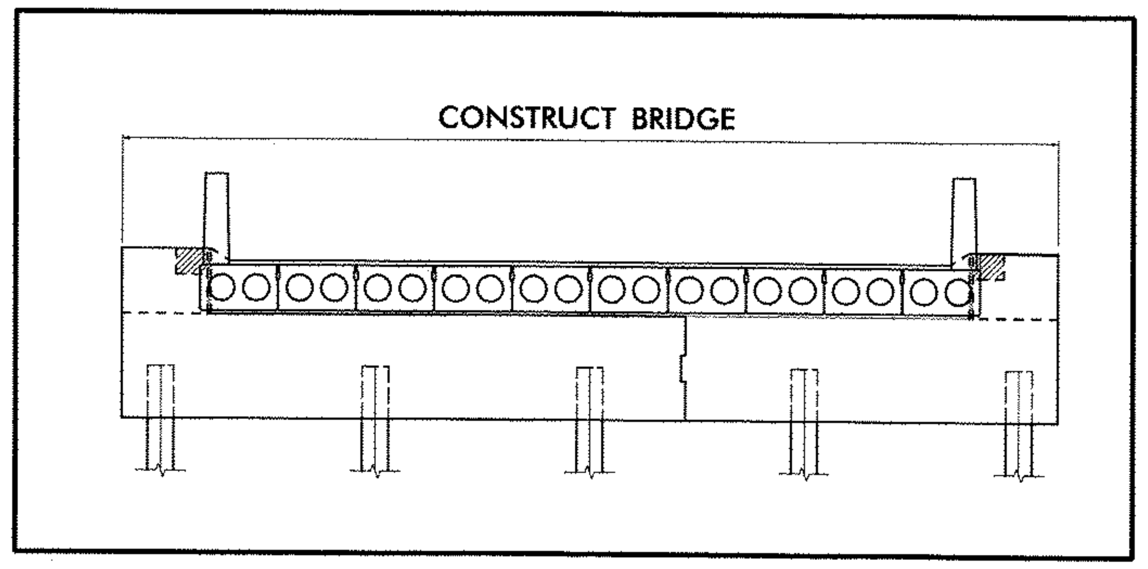
hildebrandt

PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.33	TMP-3



TYPICAL SECTION VIEW





PHASING NOTES

STAGE 1: INSTALL ADVANCED WARNING SIGNS AND TRAFFIC CONTROL DEVICES.

STAGE 2: SHIFT TRAFFIC TO DETOUR CONSTRUCTED DURING PHASE I.

STAGE 3: REMOVE EXISTING BRIDGE.

STAGE 4: CONSTRUCT BRIDGE, PORTION OF PROPOSED ROADWAY AND DRIVEWAYS.

LEGEND

EXISTING ROADWAY

PROPOSED CONSTRUCTION

COMPLETED ROADWAY

GRAPHIC SCALE
50 25 0 50 100
PLANS

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Suite 475 Raleigh, NC 27607
Phone: 919-854-6200

APPROVED: DATE:

NORTH CAROLINA PROFESSIONAL SEAL 038501 ENGINEER THOMAS E. HILDEBRAND

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

PHASE II DETAIL

SCALE:
DATE: 4/7/2014
DWG BY: TEH
DESIGN BY: KJV
REVIEWED BY:

REVISIONS

11:09:20 AM
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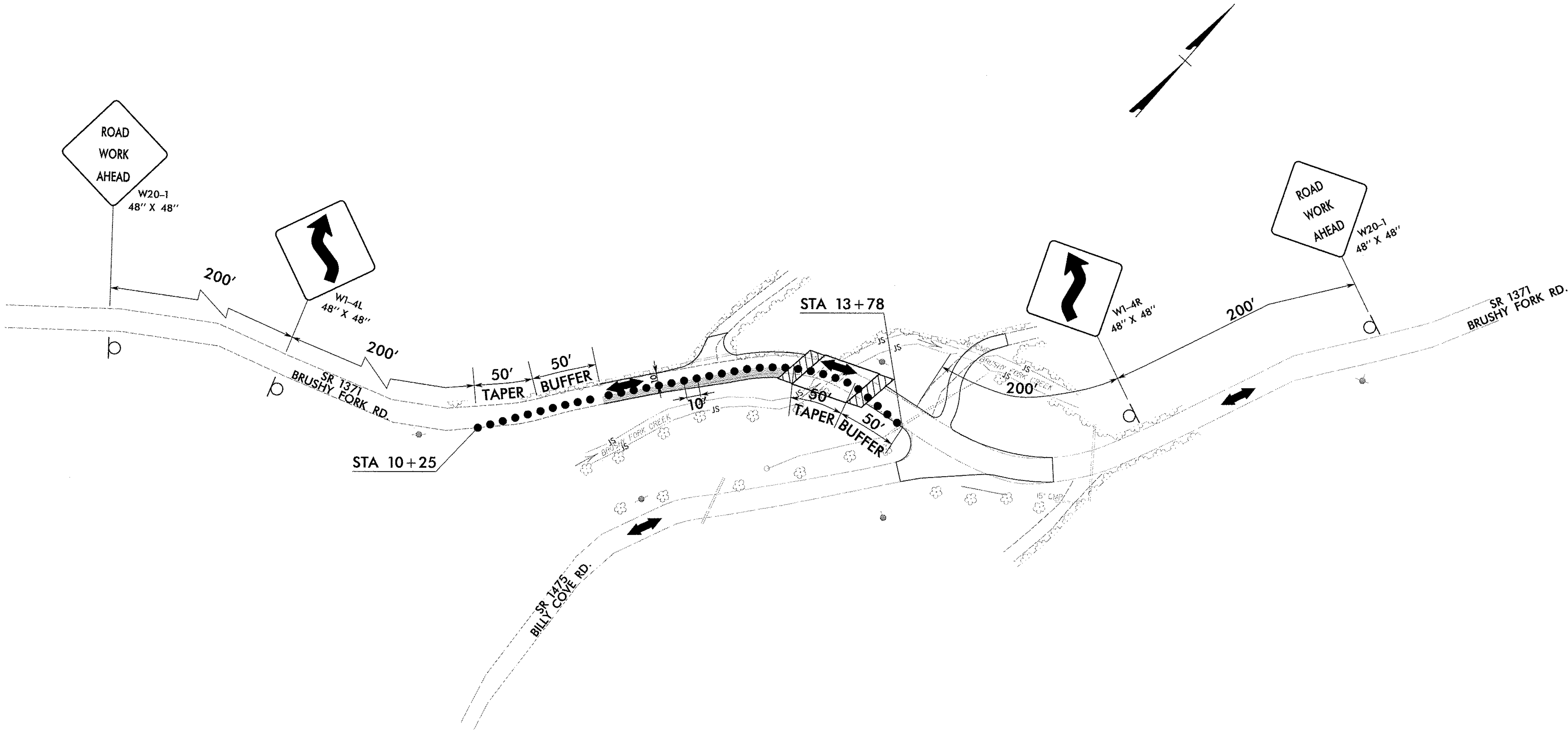
bilderback

PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.33	TMP-4



PHASING NOTES

STAGE 1: SHIFT TRAFFIC TO ROADWAY AND BRIDGE CONSTRUCTED DURING PHASE II.

STAGE 2: CONSTRUCT REMAINING PORTION OF PROPOSED ROADWAY UTILIZING FLAGGERS.

STAGE 3: REMOVE ADVANCED WARNING SIGNS, TRAFFIC CONTROL DEVICES AND DETOUR.

STAGE 4: OPEN PROJECT TO FINAL TRAFFIC PATTERN.

LEGEND

EXISTING ROADWAY

PROPOSED CONSTRUCTION

COMPLETED ROADWAY

GRAPHIC SCALE
50 25 0 50 100
PLANS

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701 Corporate Center Drive
Suite 475 Raleigh, NC 27607
Phone: 919-854-6200

APPROVED: DATE:

NORTH CAROLINA PROFESSIONAL SEAL 038501 ENGINEER THOMAS E. HILDEBRANDT

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

PHASE III DETAIL

DATE: 4/7/2014
DWG. BY: TEH
DESIGN BY: KJV
REVIEWED BY:

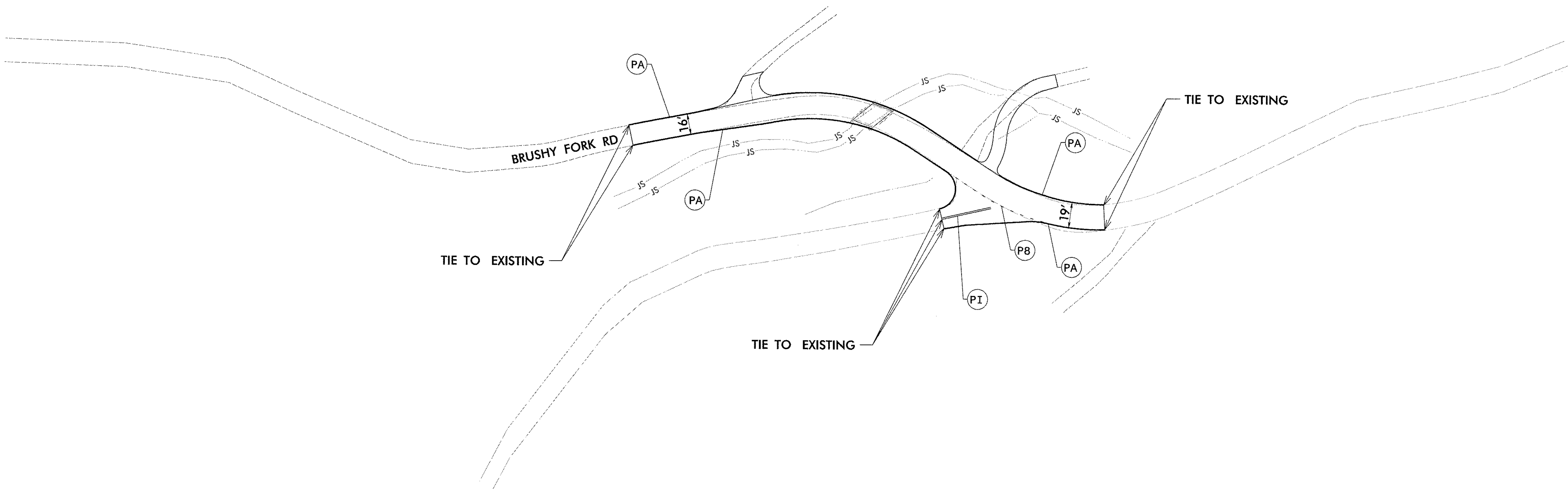
REVISIONS

PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.33	PMP-1

PROJECT MARKING SCHEDULE

BRIDGE 279

SYMBOL	DESCRIPTION	PAY ITEM	PAY ITEM QUANTITY
		PAINT(4")(TWO APPLICATIONS)	
P8	2FT - 6FT WHITE MINISKIP		50 LF
PA	WHITE EDGELINE		1560 LF
PI	YELLOW DOUBLE CENTER		160 LF
	TOTAL		1770 LF



P8 2FT - 6FT WHITE MINISKIP
PA WHITE EDGELINE
PI YELLOW DOUBLE CENTER

NOTE(S):

1. NO YELLOW DOUBLE CENTER APPLIED TO BRUSHY FORK RD DUE TO ROADWAY WIDTH.

GRAPHIC SCALE
40 20 0 40 80
PLANS

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Suite 475 Raleigh, NC 27607
Phone: 919-854-6200

APPROVED: DATE:

NORTH CAROLINA PROFESSIONAL SEAL 038501 ENGINEER

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

PAVEMENT MARKING PLAN

DATE: 4/7/2014
DWG. BY: TEH
DESIGN BY: KJV
REVIEWED BY:
REVISIONS

TIP PROJECT: 17BP.14.R.33

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.14.R.33	EC-1	

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

Environmentally Sensitive Areas:

This project is located in an "Environmentally Sensitive Area." This designation requires special procedures to be used for clearing and grubbing, temporary stream crossings, and grading operations within the area identified on the plans. This also requires special procedures to be used for seeding and mulching and staged seeding within the project.

Clearing and Grubbing:

In areas identified on the erosion control plans as "Environmentally Sensitive Areas", the Contractor may perform clearing operations, but not grubbing operations until immediately prior to beginning grading operations as described in Section 200, Article 200–1, in the Standard Specifications. The "Environmentally Sensitive Area" shall be defined as a 50 foot buffer zone on both sides of the stream (or depression), measured from top of streambank, (or center of depression). Only clearing operations (not grubbing) shall be allowed in this buffer zone until immediately prior to beginning grading operations. Erosion control devices shall be installed immediately following the clearing operation.

Grading:

Once grading operations begin in identified "Environmentally Sensitive Areas", work will progress in a continuous manner until complete. All construction within these areas must progress in a continuous manner such that each phase is complete and areas permanently stabilized prior to beginning of next phase. Failure on the part of the Contractor to complete any phase of construction in a continuous manner in "Environmentally Sensitive Areas" as specified will be just cause for the Engineer to direct the suspension of work in accordance with Section 108–7 of the Standard Specifications.

Temporary Stream Crossings:

Any crossing of streams within the limits of this project must be accomplished in accordance with Section 107–13(b) of the Standard Specifications.

Seeding and Mulching:

Seeding and mulching shall be performed in accordance with Section 1660 of the Standard Specifications and vegetative cover sufficient to restrain erosion shall be installed immediately following grade establishment.

Seeding and mulching shall be performed on the areas disturbed by construction immediately following final grade establishment. No appreciable time shall lapse into the contract time without stabilization of slopes, ditches and other areas within the "Environmentally Sensitive Areas" as indicated on the erosion control plans.

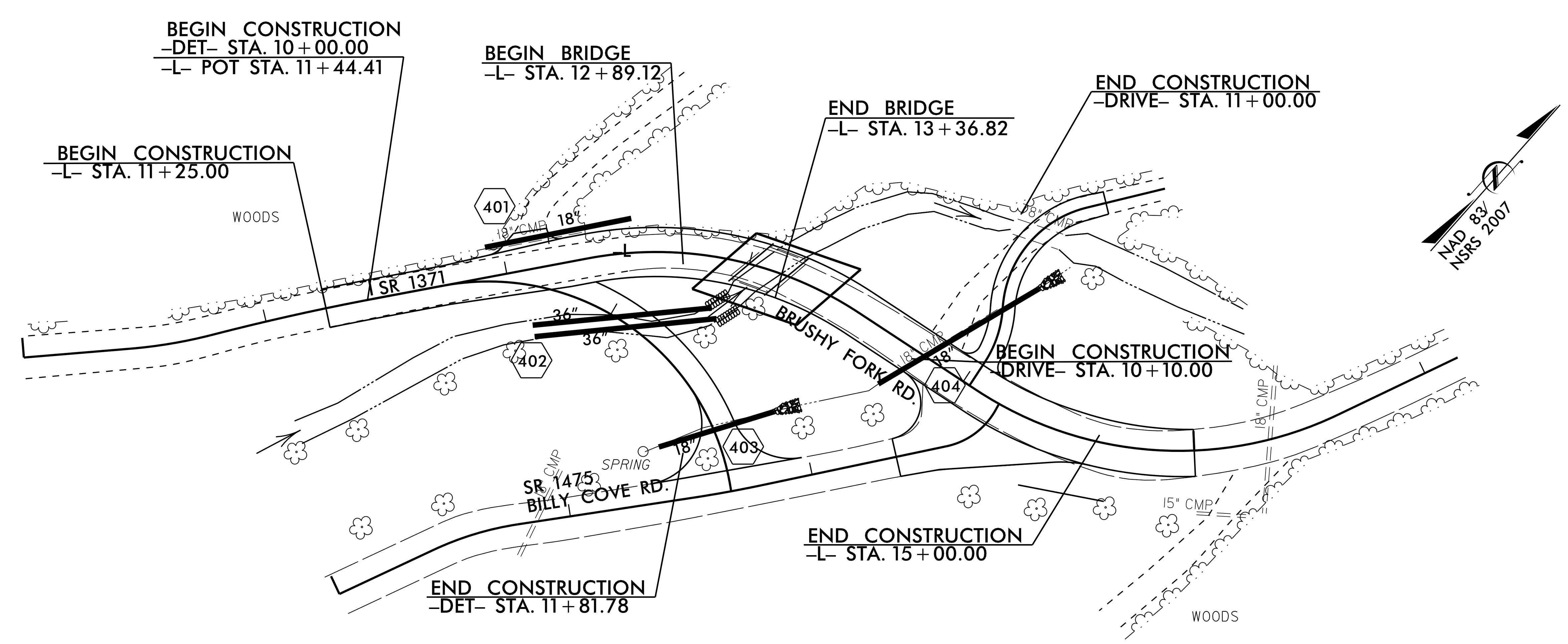
Stage Seeding:

The work covered by this section shall consist of the establishment of a vegetative cover on cut and fill slopes as grading progresses. Seeding and mulching shall be done in stages on cut and fill slopes which are greater than 20 feet in height measured along the slope, or greater than 2 acres in area. Each stage shall not exceed the limits stated above.

All work described above will be paid for at the contract price for "Lump Sum for Erosion Control" established in the contract for the work involved. Additional payments will not be made for the requirements of this section as the cost for this work should be included in the contract price for "Lump Sum for Erosion Control" for the work involved.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL



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	FW / 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.

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

Jenny Fleming, PE
LEVEL IIIA NAME

534
LEVEL IIIA CERTIFICATION NO.

GRAPHIC SCALE

0
PLANS

0
PROFILE (HORIZONTAL)

0
PROFILE (VERTICAL)

ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

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

Prepared in the Office of:

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

2012 STANDARD SPECIFICATIONS

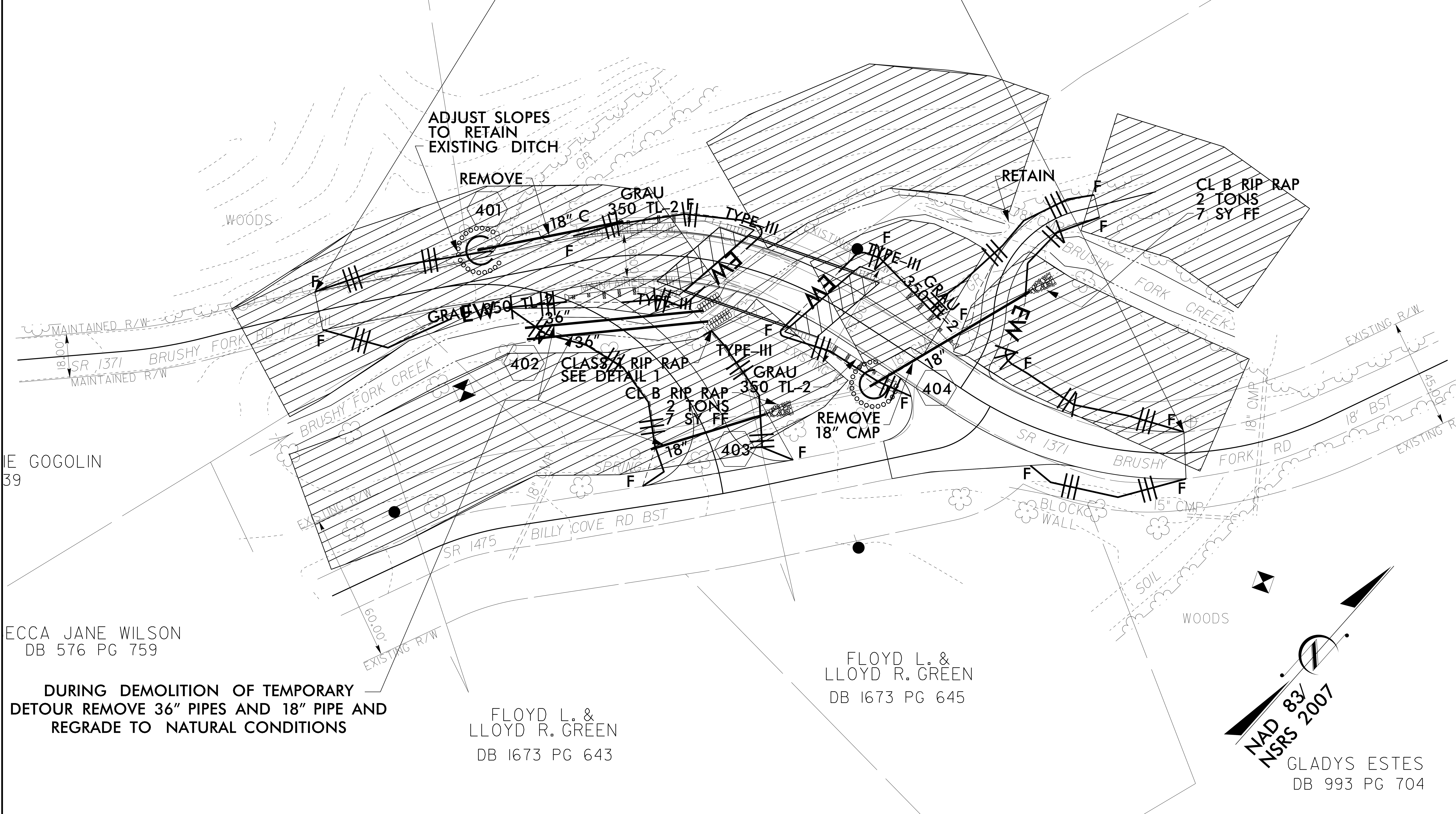
Roadway Standard Drawings

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.
17BPJ4.R.33	EC-2/CONST.4
R/W SHEET NO.	
Prepared in the Office of: Ecological Engineering — NC FIRM LICENSE No.: F-1148, 1151 SE Cary Parkway, Cary, NC 27518, (919) 557-0929	

Place Permanent Soil Reinforcment Matting on Slopes as Work Allows.



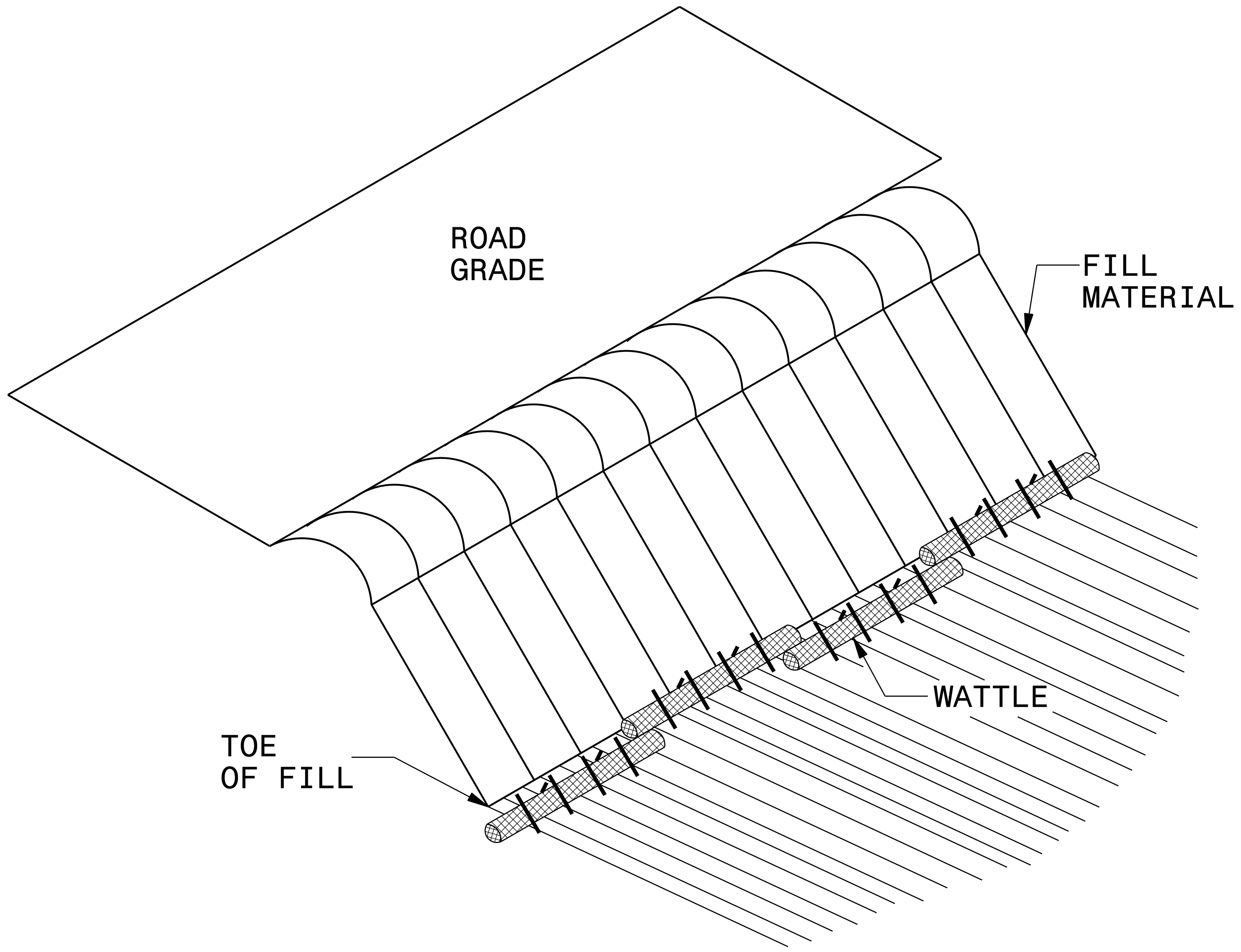
TROUT STREAM BUFFER ZONE

SCALE

20 10 0 20 40

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.33	EC-3
R/W SHEET NO.	
Prepared in the Office of: Ecological Engineering LLP	NC FIRM LICENSE No: F-1148 1151 SE Cary Parkway Cary, NC 27518 (919) 557-0929

WATTLE BARRIER DETAIL



ISOMETRIC VIEW

NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE AND LENGTH OF 10 FT.

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

DO NOT PLACE WATTLES ON TOE OF SLOPE.

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

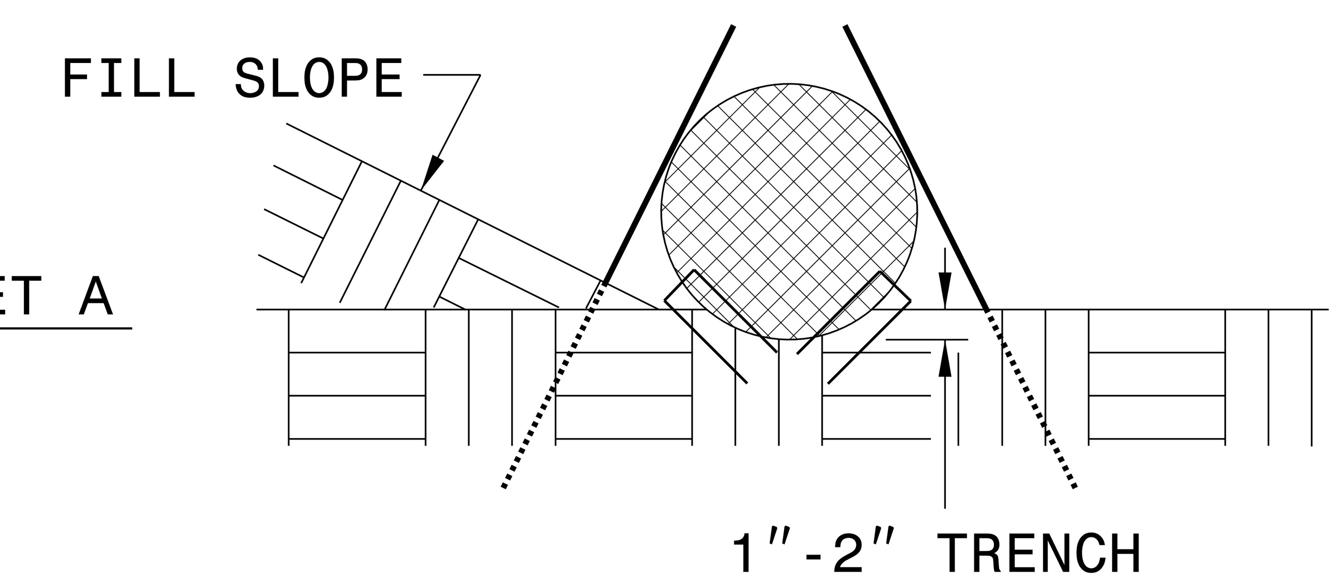
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.

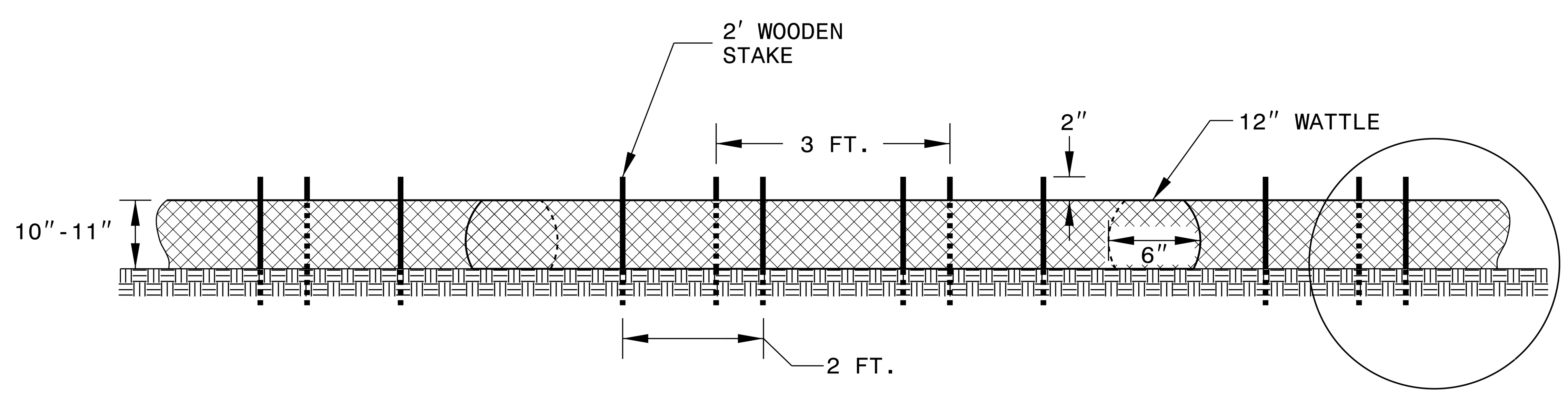
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

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

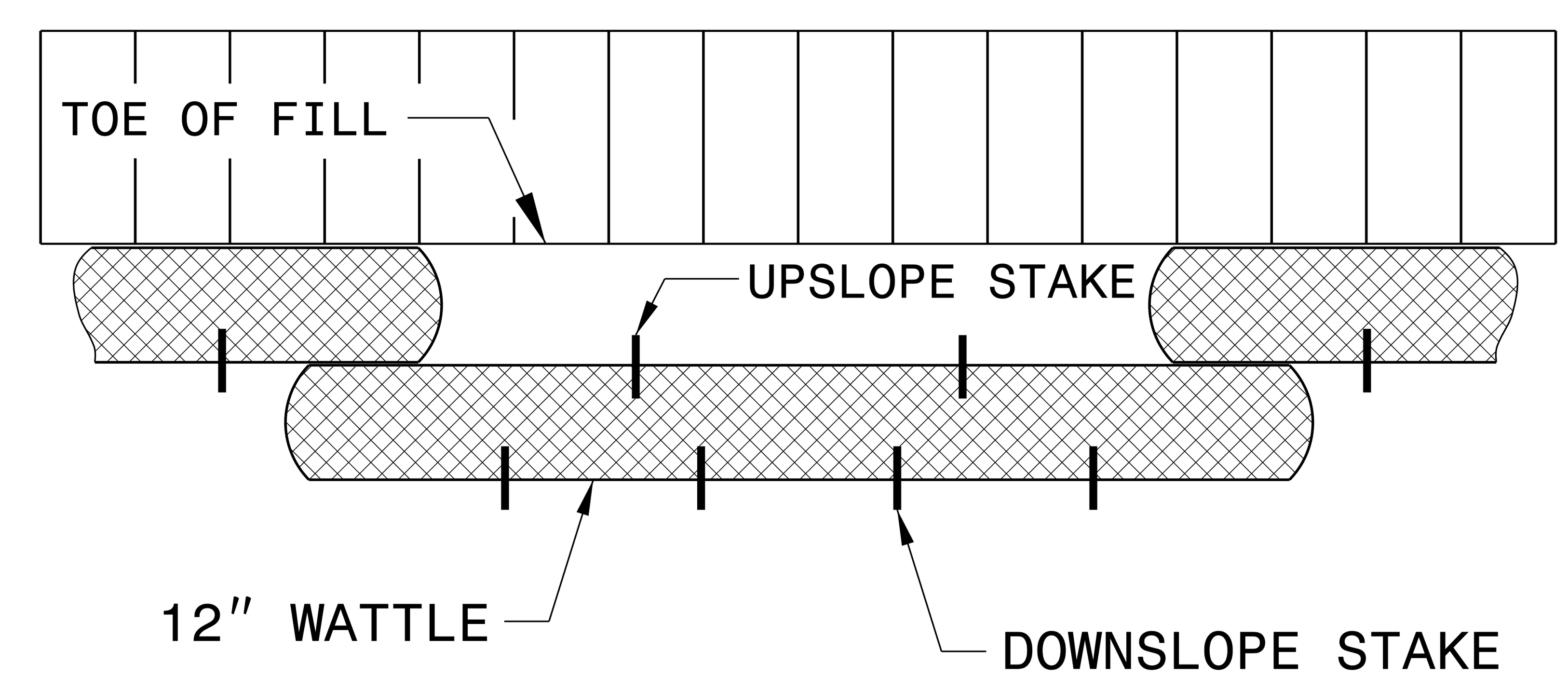
FOR BREAKS ALONG LARGE SLOPES, USE MAXIMUM SPACING OF 20 FT.

INSET A





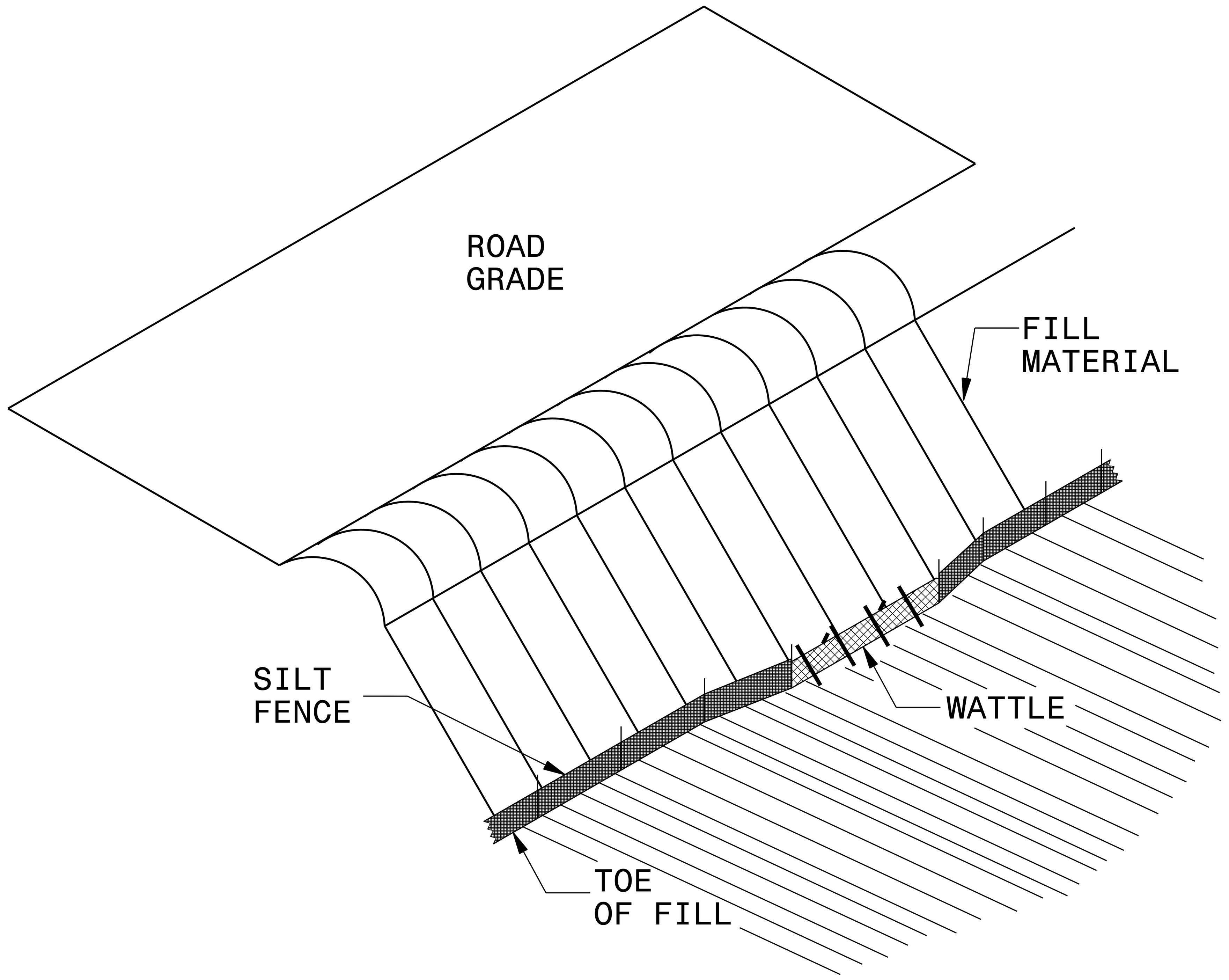
FRONT VIEW



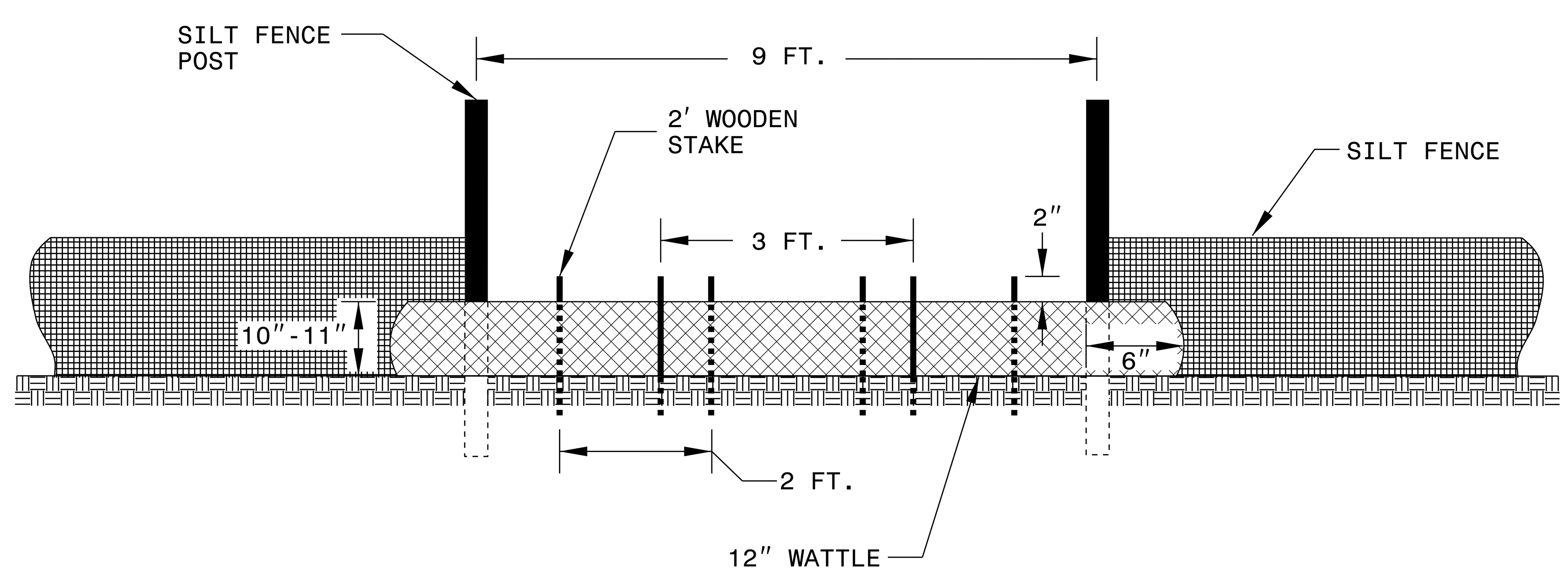
TOP VIEW

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.33	EC-4
R/W SHEET NO.	
Prepared in the Office of: ECOLOGICAL ENGINEERING	NC FIRM LICENSE No: F-1148 1151 SE Cary Parkway Suite 101 Cary, NC 27518 (919) 557-0929

SILT FENCE WATTLE BREAK DETAIL



ISOMETRIC VIEW



VIEW FROM SLOPE

NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE AND LENGTH OF 10 FT.

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

DO NOT PLACE WATTLE ON TOE OF SLOPE.

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

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

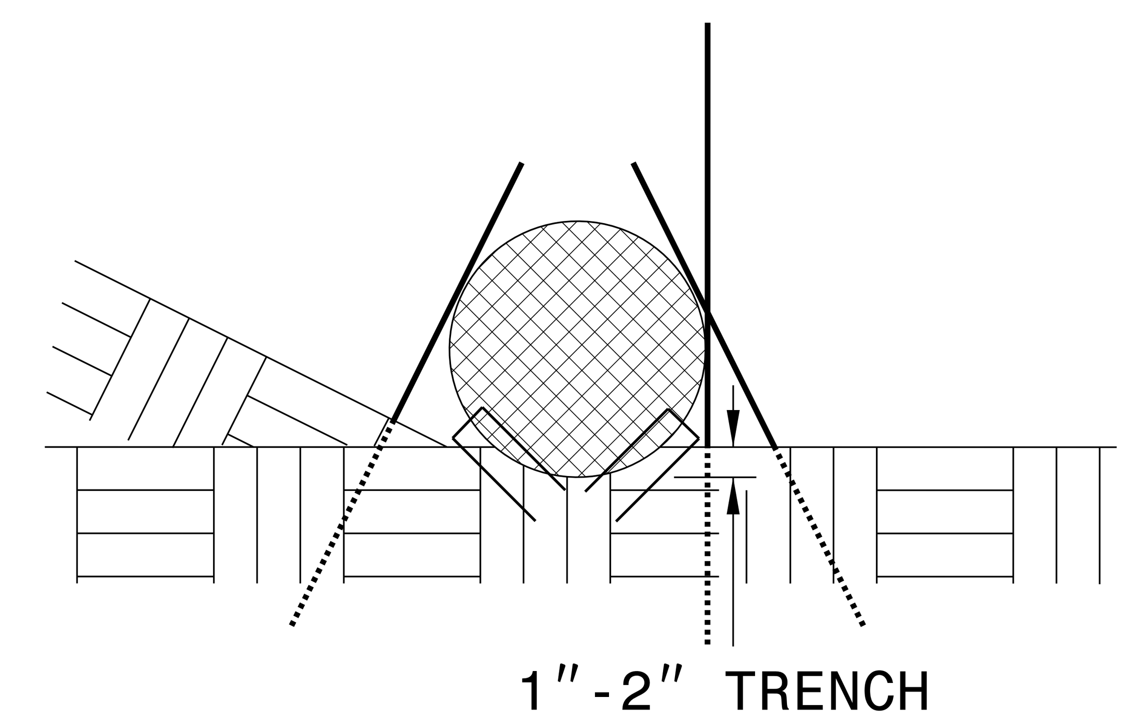
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

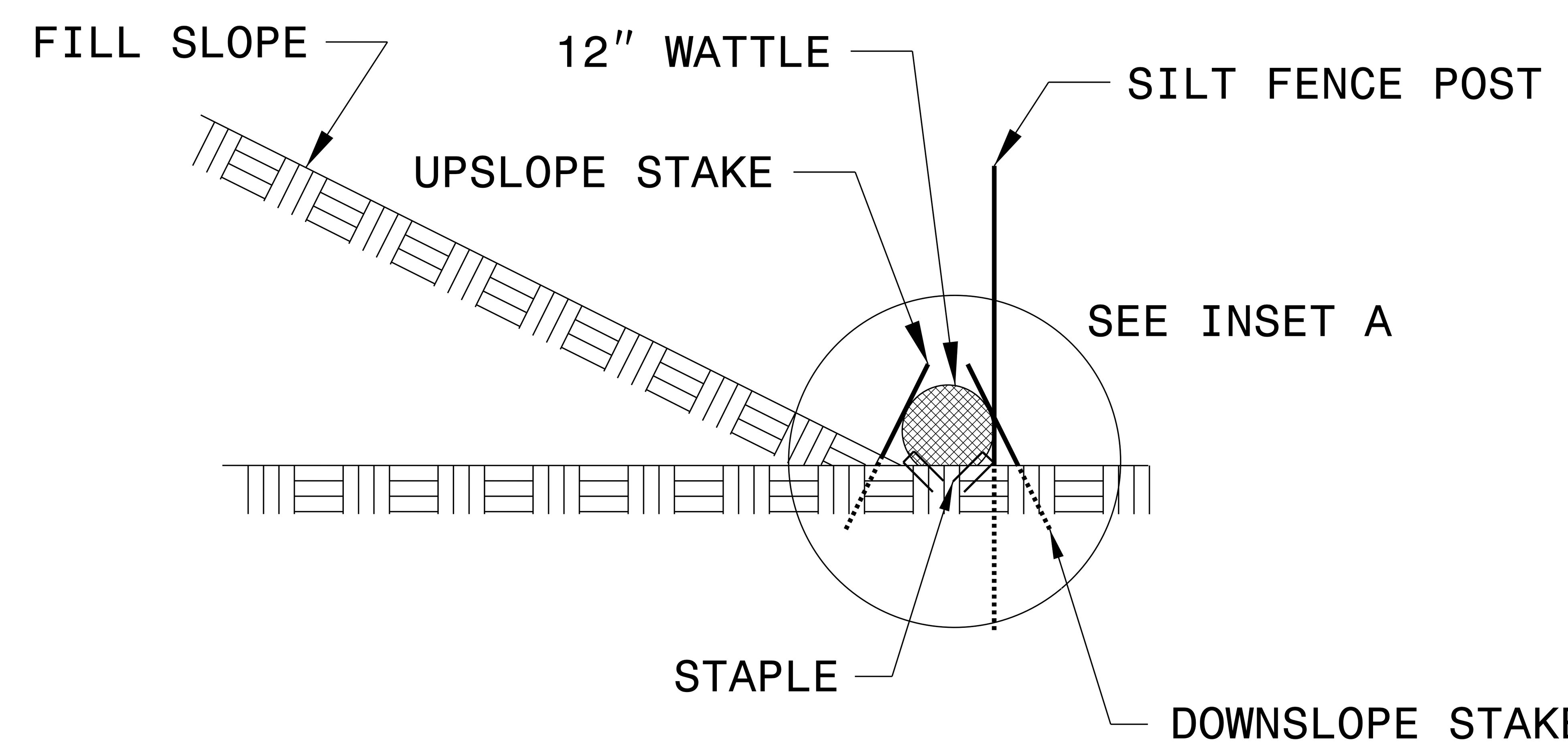
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

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

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

INSET A





SIDE VIEW

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.33	EC-5

Prepared in the Office of: Ecological Engineering LLP
NC FIRM LICENSE No: F-1148
1151 SE Cary Parkway
Cary, NC 27518
(919) 557-0929

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.

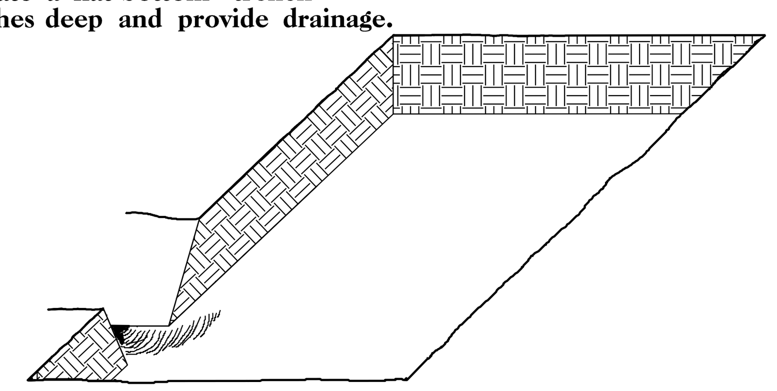
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.14.R.33	RF-1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	

PLANTING DETAILS

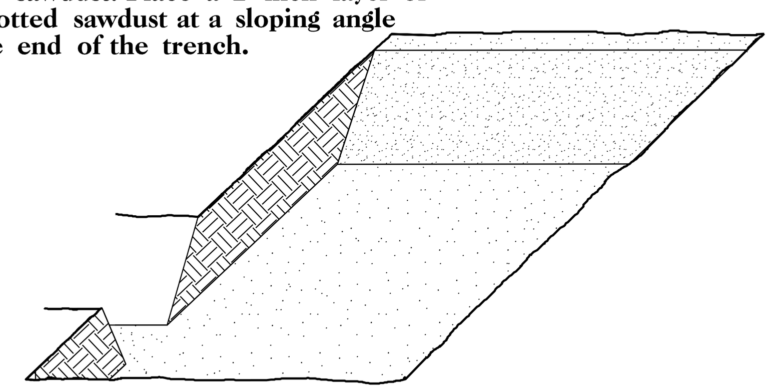
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

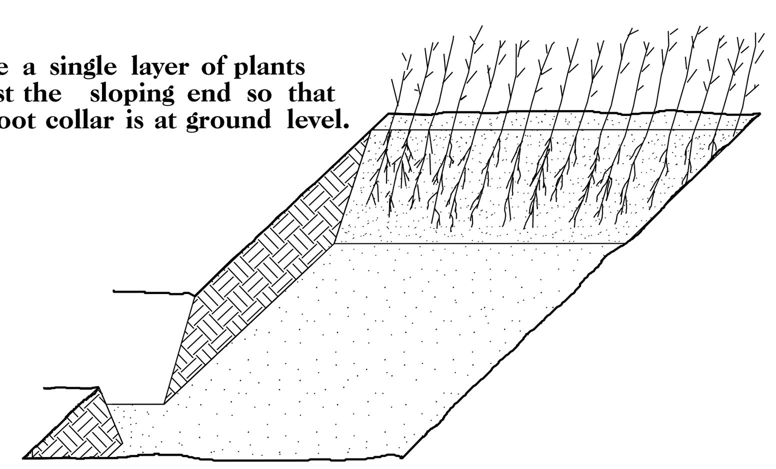
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



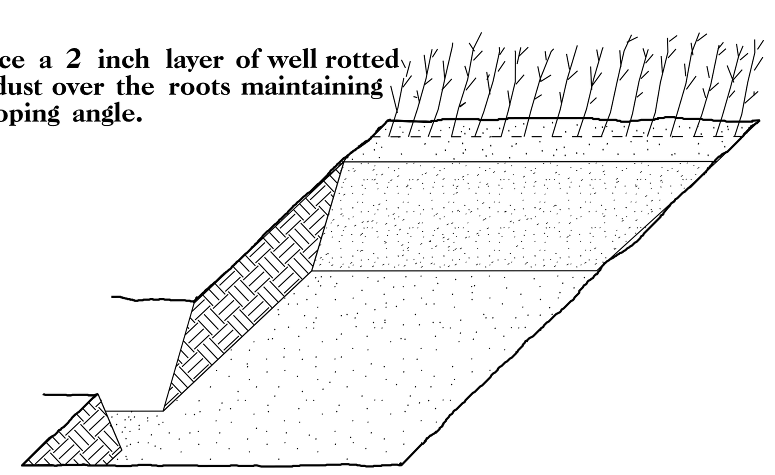
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



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

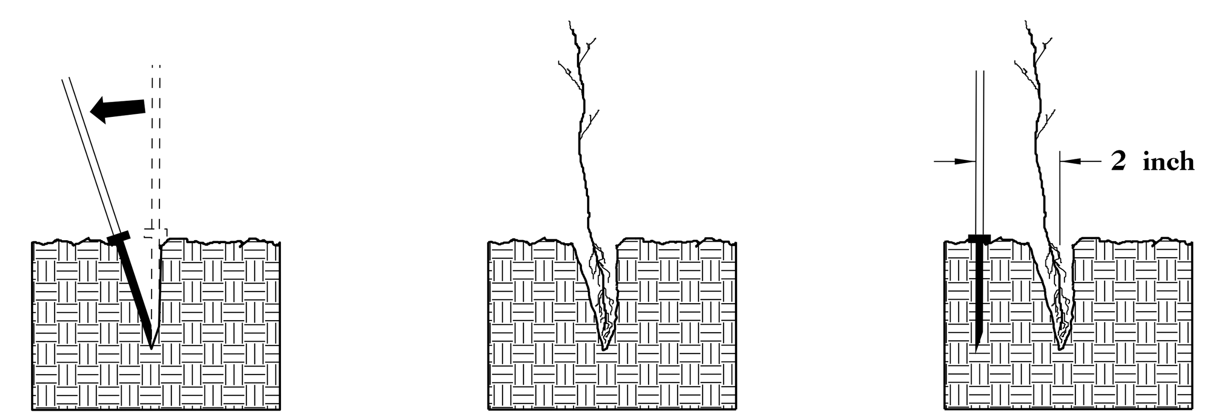


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.



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

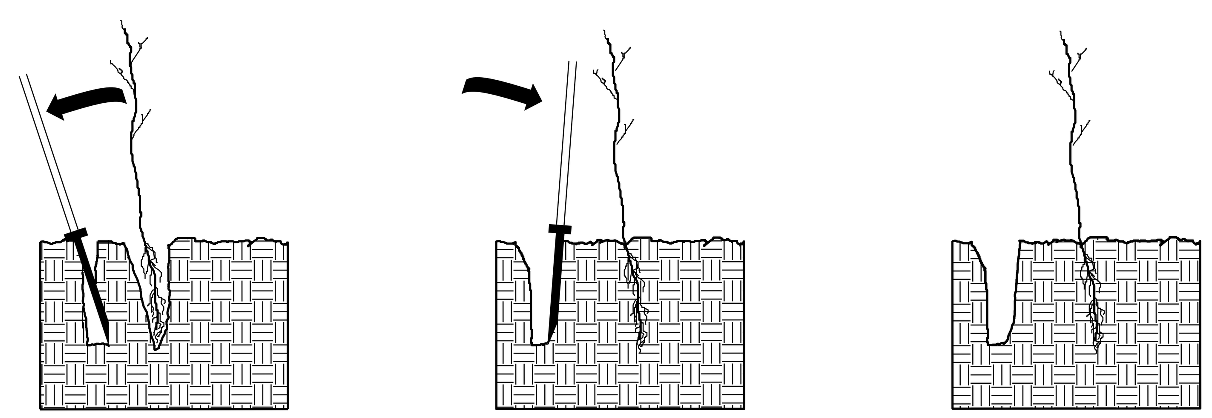
DIBBLE PLANTING METHOD
USING THE KBC PLANTING BAR



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.

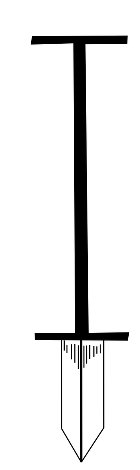
5. Push handle forward firming soil at top.

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	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

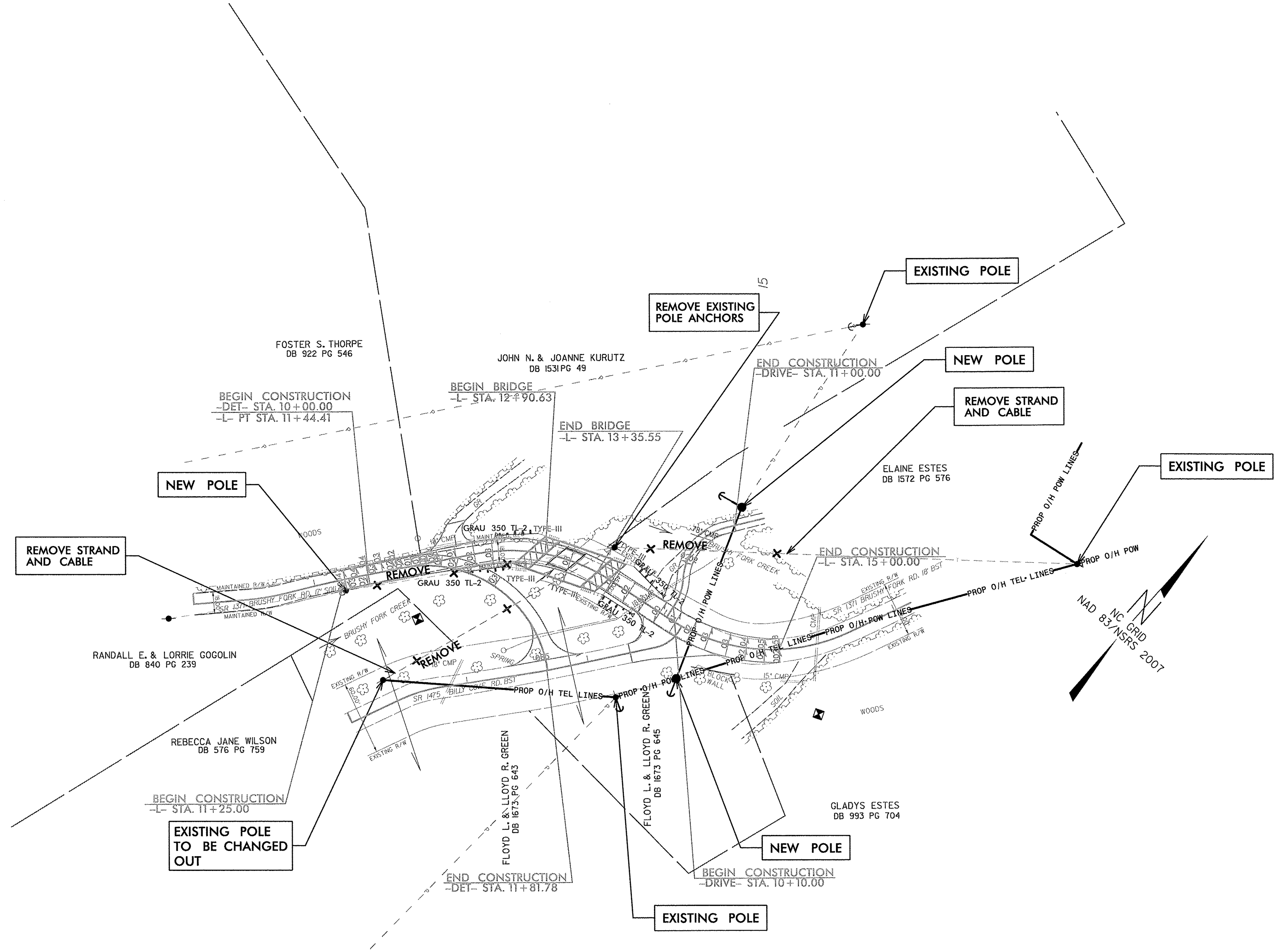
PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.33	UO-1
R/W SHEET NO.	

Prepared in the Office of: AECOM NC FIRM LICENSE No: F-0342 701 Corporate Center Drive, Suite 475 Raleigh, NC 27607 (919) 854-6200 • (919) 854-6259(FAX)

UTILITIES BY OTHERS BRIDGE #279

REVISIONS

8/17/99



USER: hlin
DATE: 1/9/2013
TIME: 2:33:24 PM
DGN: 279_uo_psh.dgn

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CROSS-SECTION SUMMARY

NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT

Station L	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
11+25.00	0	0
11+50.00	3	3
11+75.00	4	4
12+00.00	1	1
12+25.00	1	4
12+50.00	1	10
12+75.00	0	16
12+89.12	0	11

Station L	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
13+36.82	0	0
13+50.00	3	5
13+75.00	6	10
14+00.00	5	2
14+25.00	5	0
14+50.00	2	0
14+75.00	0	1
15+00.00	0	1

Station Drive	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
10+10.00	0	0
10+20.00	0	10
10+40.00	0	21
10+60.00	0	16
10+80.00	0	0

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".

PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.33	X-1

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)

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."

8/23/99

31-MAR-2014 13:42
279_Rdy_xpl_L.dgn
brandon.johnson

PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.33	X-2

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)

8/23/99

31-MAR-2014 13:42
279_Rdy_xpl_L.dgn
brandon.johnson

PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.33	X-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)

0 2.5 5

8/23/99

31-MAR-2014 13:42
279_Rdy_xpl_L.dgn
brandon.johnson

PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.33	X-4

Prepared in the Office of: SUMMIT DESIGN AND ENGINEERING SERVICES

NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
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8/23/99

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brandon.johnson

PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.33	X-5

Prepared in the Office of: SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
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31-MAR-2014 13:42
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brandon.johnson

PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.33	X-6

Prepared in the Office of: SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: P-0339
504 Meadowlands Drive
Hillsborough, NC 27278
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8/23/99
31-MAR-2014 13:42
279_Rdy_xpl_L.dgn
brandon.johnson

8/23/99

31-MAR-2014 13:42
279_Rdy_xpl_L.dgn
brandon.johnson

PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.33	X-8

Prepared in the Office of: SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: P-0339
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Hillsborough, NC 27278
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PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.33	X-9

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

PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.33	X-10

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.14.R.33	X-11

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)

8/23/99

31-MAR-2014 13:42
279_Rdy_xpl_drive.dgn
brandon.johnson

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.14.R.33	TS-01	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
17BP.14.R.33		PE, R/W

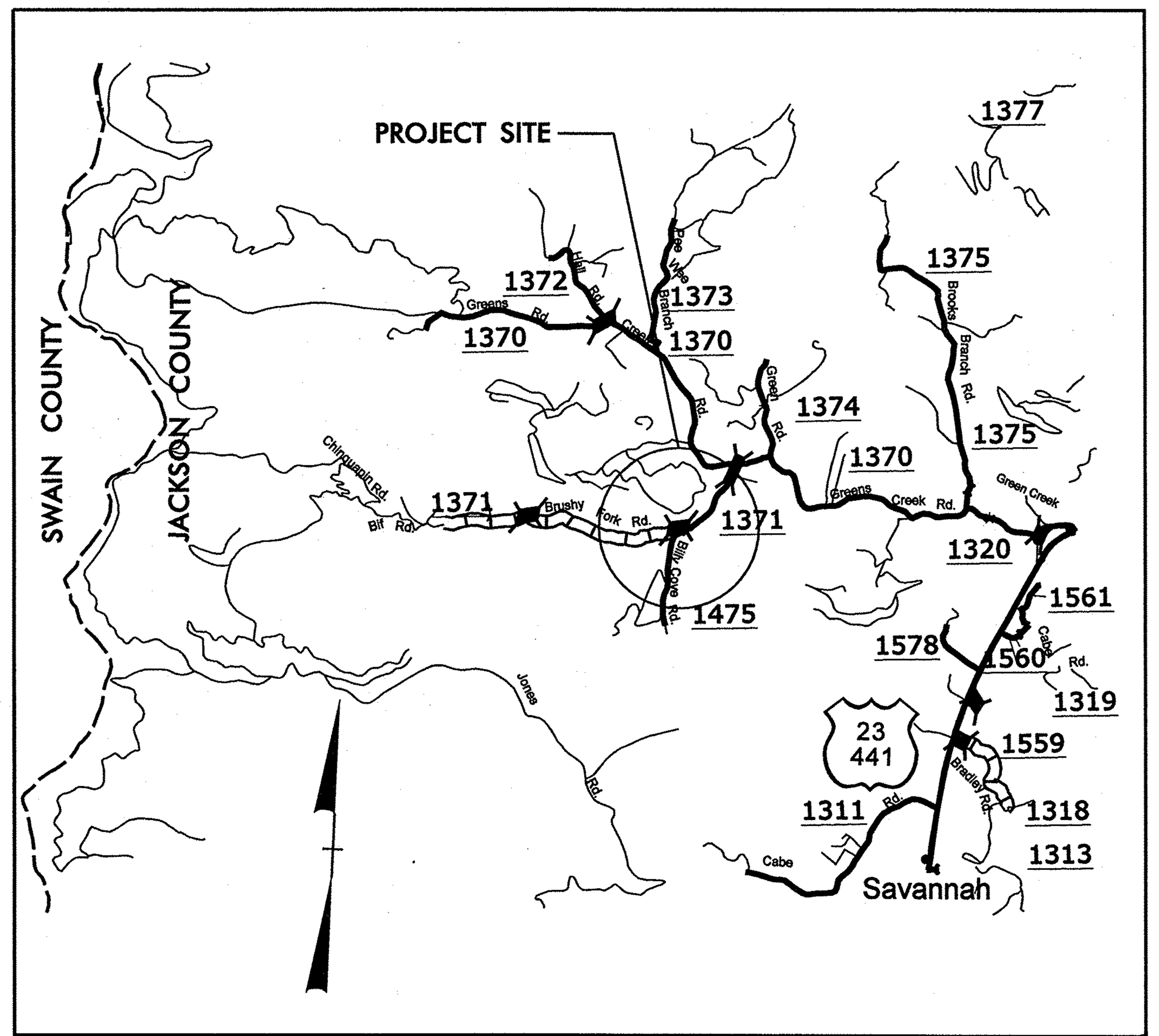
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

JACKSON COUNTY

LOCATION: BRIDGE NO. 279 ON SR 1371 (BRUSHY FORK RD) OVER BRUSHY FORK CREEK.

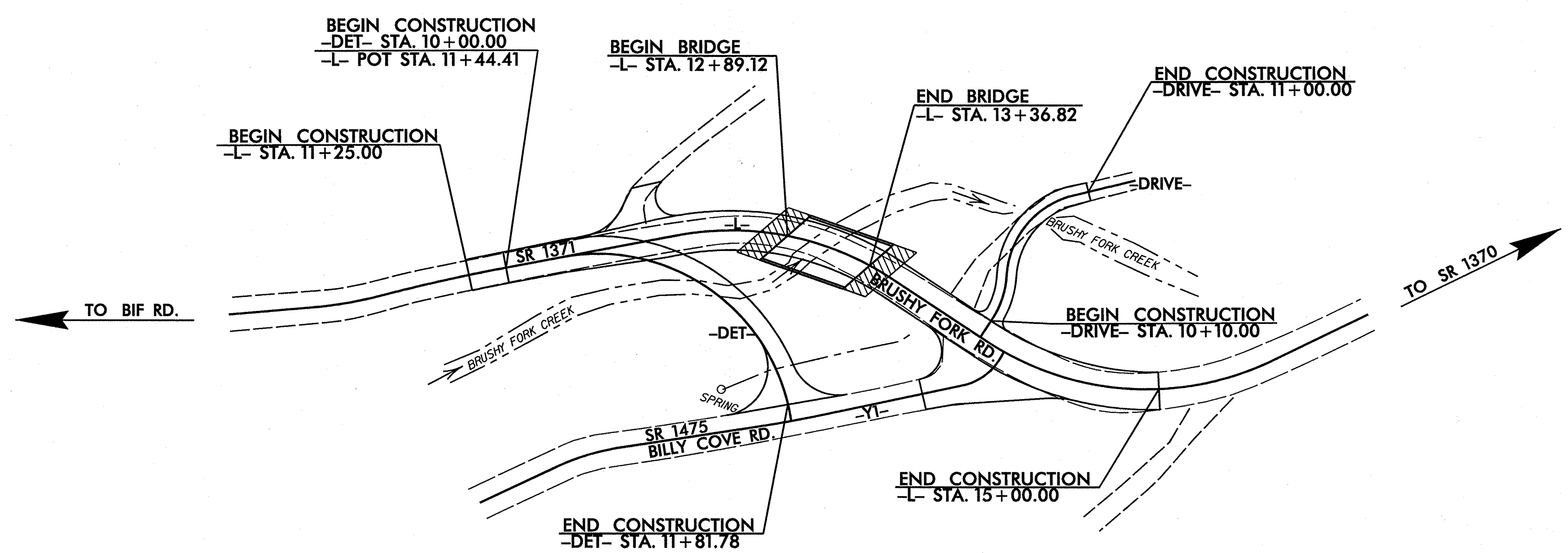
TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE.

TIP PROJECT: 17BP.14.R.33



VICINITY MAP

STRUCTURE



CONTRACT:

DESIGN DATA

ADT XXXX = 270 VPD
V = 35 MPH
FUNC CLASS = LOCAL
SUB-REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY STATE PROJECT 17BP.14.R.33	= 0.062 MILES
LENGTH STRUCTURE STATE PROJECT 17BP.14.R.33	= 0.009 MILES
TOTAL LENGTH STATE PROJECT 17BP.14.R.33	= 0.071 MILES

NCDOT CONTACT: JOSHUA DEYTON, PE
PROJECT ENGINEER

Prepared in the Office of:

AECOM
NC FIRM LICENSE No: F-0342
701 Corporate Center Drive, Suite 475
Raleigh, NC 27607
(919) 854-6200 - (919) 854-6259(FAX)

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JULY 25, 2012

LETTING DATE: FY 2013

TRACY N. PARROTT, PE
PROJECT ENGINEER

BRANDON W. JOHNSON, PE
PROJECT DESIGN ENGINEER

BRIDGE ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030474 JOHN C. MORRISON 3/27/14

John C. Morrison P.E.
SIGNATURE:

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

8:52:50 AM
Q:\60238772\400_Tech_Info_Disc_Files\450_NCDOTS+dTechDesFiles\BRG_279_EE\Structures\B279_Str_TitleSht.dgn
beltsiem

I HEARBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

HORIZONTAL CURVE DATA -L-

PI STA. 12+94.28
△ = 43°59'20.1" (RT)
D = 38°11'49.9"
L = 115.16'
T = 60.59'
R = 150.00'

HYDRAULIC DATA

DESIGN DISCHARGE	400 CFS
FREQUENCY OF DESIGN FLOOD	5 YR.
DESIGN HIGH WATER ELEVATION	2322.00
DRAINAGE AREA	2.37 SQ. MI.
BASE DISCHARGE (Q 100)	1,350 CFS
BASE HIGH WATER ELEVATION	2323.71

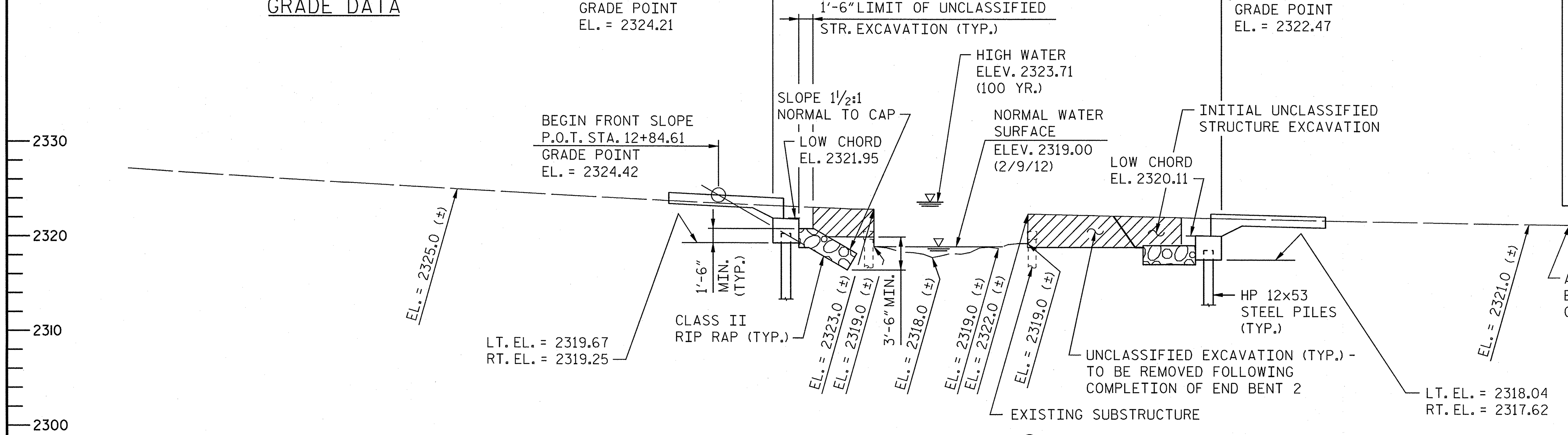
OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	543 CFS
FREQUENCY OF OVERTOPPING FLOOD	10- YR.
OVERTOPPING FLOOD ELEVATION	2322.10

GRADE DATA

(-)10.0138% (-)0.5217%

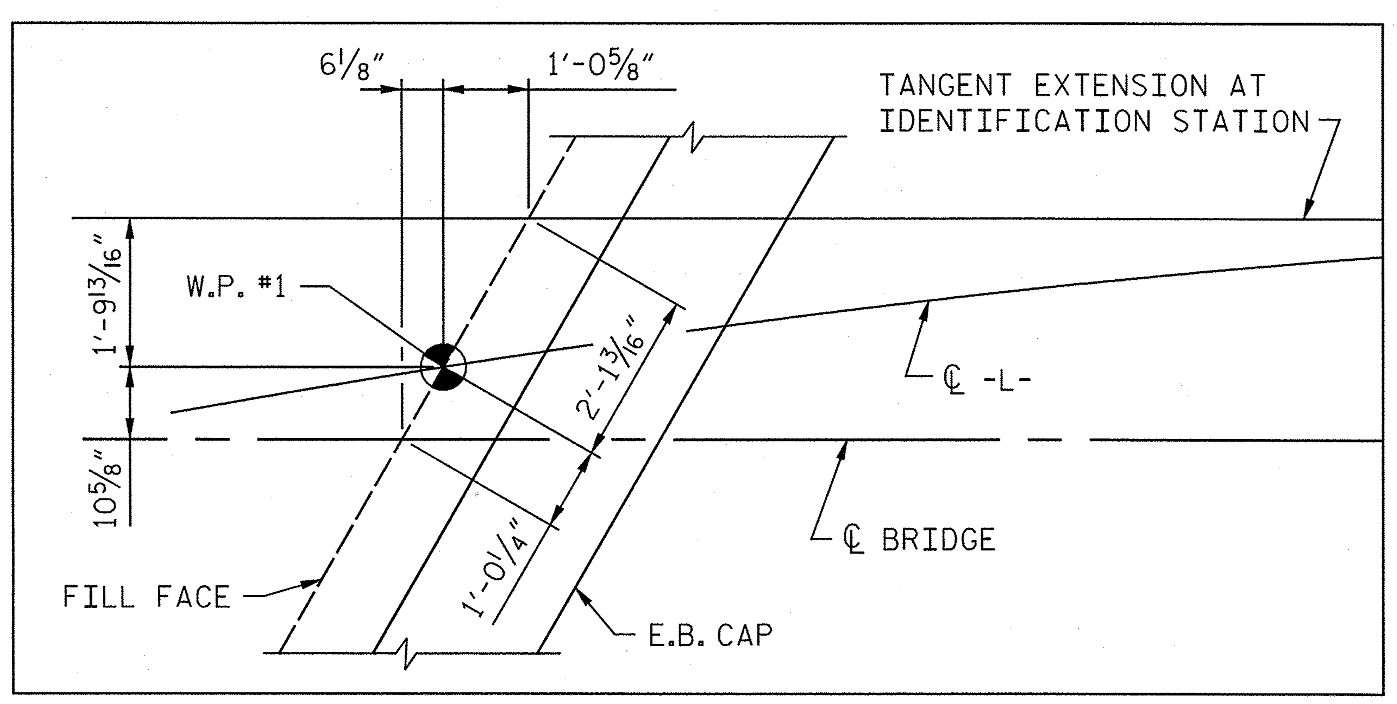
PI = 12+70.00 -L-
EL = 2322.18'
VC = 250'



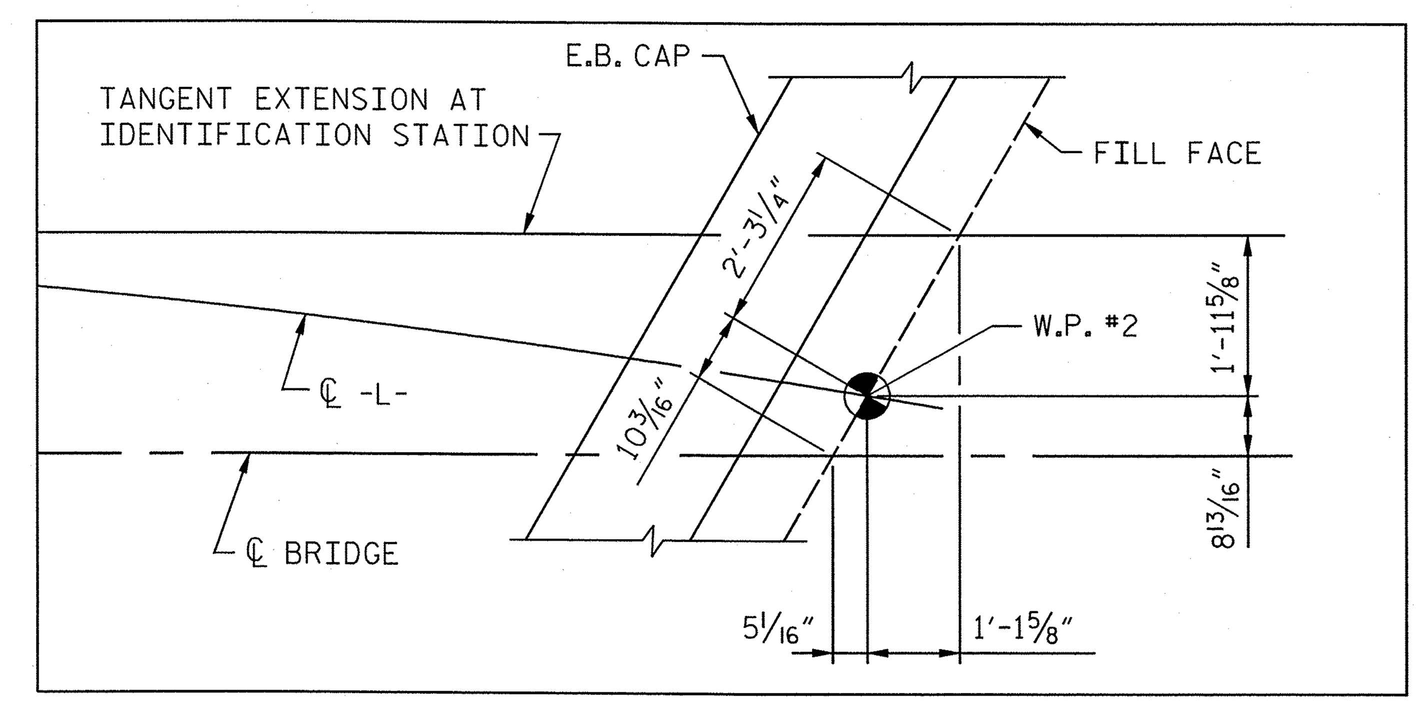
SECTION ALONG ℄ -L-

(SECTIONS AT END BENTS ARE AT RIGHT ANGLES)

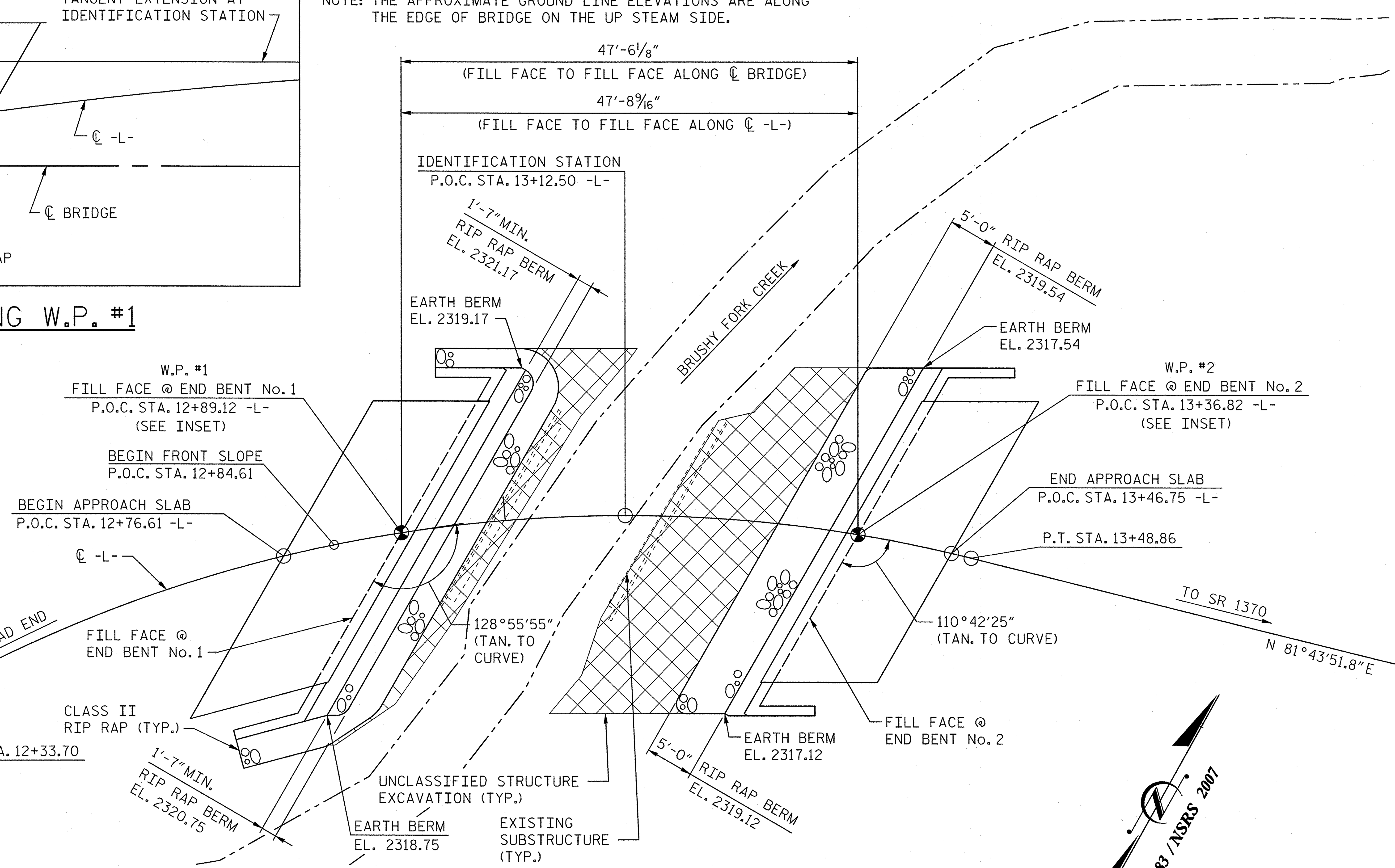
NOTE: THE APPROXIMATE GROUND LINE ELEVATIONS ARE ALONG THE EDGE OF BRIDGE ON THE UP STEAM SIDE.



INSET SHOWING W.P. #1



INSET SHOWING W.P. #2



PLAN

(PILES NOT SHOWN FOR CLARITY)

PROJECT NO. 17BP.14.R.33

JACKSON COUNTY

STATION: 13+12.50 -L-

SHEET 1 OF 2 REPLACES BRIDGE NO. 279

AECOM

AECOM TECHNICAL SERVICES, INC.
701 CORPORATE CENTER DRIVE, SUITE 475
RALEIGH, NC 27607
(919) 854-6200 www.aecom.com
AECOM License No. F-0342

NORTH CAROLINA PROFESSIONAL SEAL 030474 ENGINEER JOHN C. MORRISON

3/27/14

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE ON SR 1371
OVER BRUSHY FORK CREEK
BETWEEN SR 1370 & DEAD END ROAD

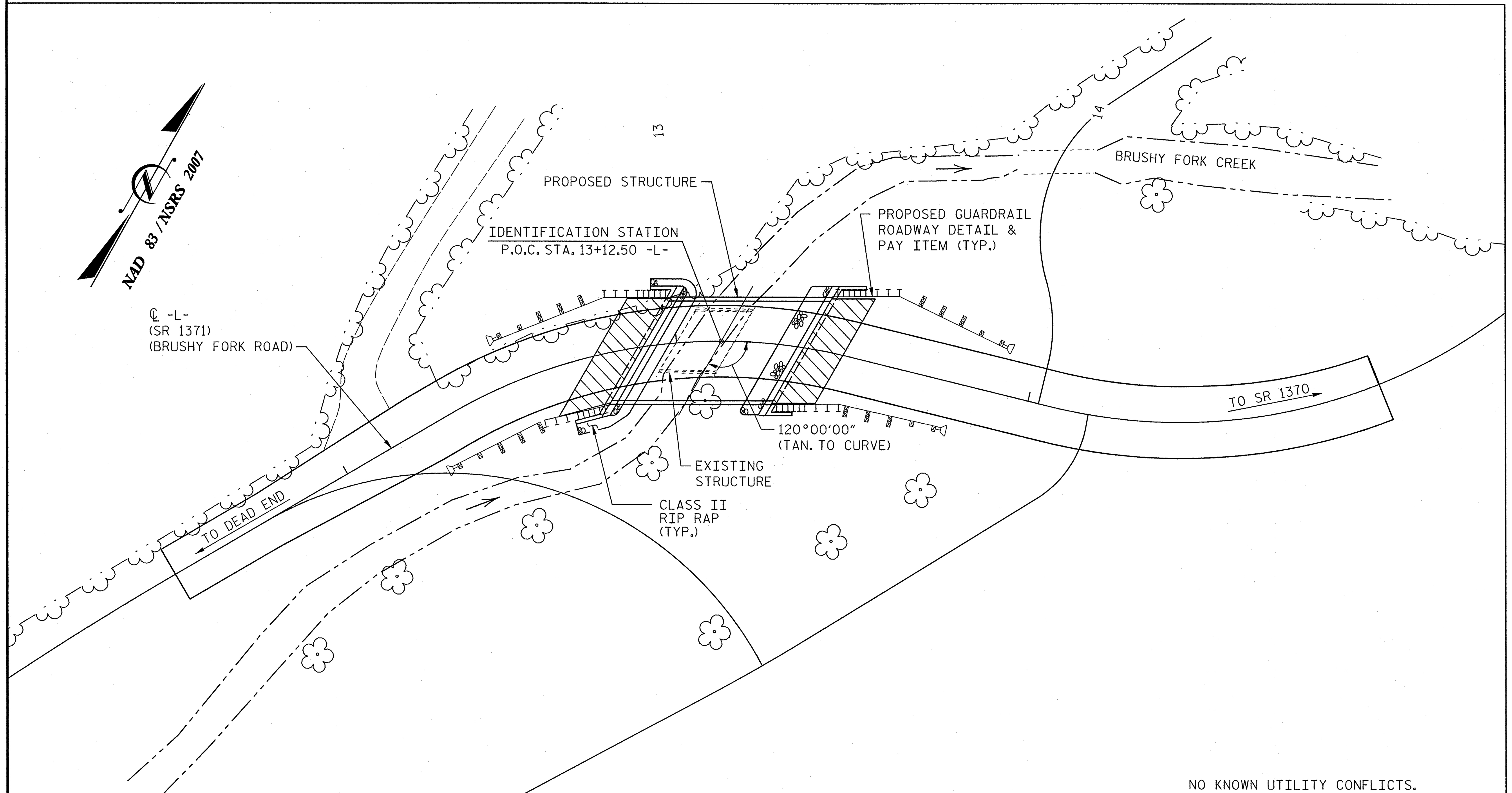
27'-10" CLEAR ROADWAY - 120° SKEW

REVISIONS								SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:			S-01
1			3					TOTAL SHEETS
2			4					

DRAWN BY : MTB DATE : 03/14
CHECKED BY : JCM DATE : 03/14

DATE: 3/27/2014 TIME: 8:07:43 AM
USER: bellsteen
DGN: G:\60283677\2.400_Tech_Info_Disc_Files\450_NCDOT\SdTechDesFiles\BRG_279_EE\Structures\B279_PlanElev.dgn

BENCH MARK: BM#1 - 8" SPIKE SET IN THE ROOT 10" WHITE OAK TREE,
-L- STA. 11+76.64, 41.5252' RIGHT
(-BL- STA. 6+60.69, 38.98' RIGHT)
ELEV. 2327.42, NAVD 1988



LOCATION SKETCH

NOTES:

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

THE BRIDGE IS LOCATED IN SEISMIC ZONE 1.

THE EXISTING STRUCTURE CONSISTING OF 1 @ 16'-6" SPAN, 17.0'± CLEAR ROADWAY WIDTH, TIMBER FLOOR ON TIMBER JOIST, ON TIMBER CAPS W/ TIMBER POSTS AND SILLS AND LOCATED AT EXISTING CROSSING FOR PROPOSED STRUCTURE, SHALL BE REMOVED.

REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL REMOVE THE BRIDGE AND SUBMIT PLANS FOR DEMOLITION IN ACCORDANCE WITH ARTICLE 401-2 OF THE STANDARD SPECIFICATIONS.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 20.5 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 COSTS INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

PILES AT END BENT NO. 1 AND END BENT NO. 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 75 TONS PER PILE.

DRIVE PILES AT END BENT NO. 1 AND END BENT NO. 2 TO A REQUIRED DRIVING RESISTANCE OF 125 TONS PER PILE.

PREDRILLING FOR PILES IS REQUIRED AT END BENT NO. 1. PREDRILL PILE LOCATIONS TO EL. 2311.0 FT. WITH EQUIPMENT THAT WILL RESULT IN A MAXIMUM PREDRILLING DIAMETER OF 12 INCHES. FOR PREDRILLING FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

STEEL H-PILE POINTS ARE REQUIRED FOR ALL STEEL H-PILES AT END BENT NO. 1 AND END BENT NO. 2. FOR STEEL PILE POINTS, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

TESTING PILES WITH THE 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. FOR PILE DRIVING CRITERIA, SEE PILE DRIVING CRITERIA PROVISION.

ASPHALT WEARING SURFACE IS INCLUDED IN ROADWAY QUANTITY ON ROADWAY PLANS.

THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH "HEC 18-EVALUATING SCOUR AT BRIDGES."

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE	UNCLASSIFIED STRUCTURE EXCAVATION	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	HP 12x53 STEEL PILES		STEEL PILE POINTS	VERTICAL CONCRETE BARRIER RAIL	PREDRILLING FOR PILES	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" x 1'-9" PRESTRESSED CONCRETE CORED SLAB UNITS	
	LUMP SUM	LUMP SUM	CU. YDS.	LUMP SUM	LBS.	NO.	LIN. FT.	EACH	LIN. FT	LIN. FT.	TONS	SQ. YD.	LUMP SUM	NO.	LIN. FT.
SUPERSTRUCTURE				LUMP SUM					90.29'				LUMP SUM	10	450'-0"
END BENT No. 1		LUMP SUM	14.8		2497	5	75	5		50	34	38			
END BENT No. 2		LUMP SUM	14.7		2218	5	90	5			21	23			
TOTAL	LUMP SUM	LUMP SUM	29.5	LUMP SUM	4715	10	165	10	90.29'	50	55	61	LUMP SUM	10	450'-0"

PROJECT NO. 17BP.14.R.33
JACKSON COUNTY
STATION: 13+12.50 -L-

SHEET 2 OF 2 REPLACES BRIDGE NO. 279

AECOM
AECOM TECHNICAL SERVICES, INC.
701 CORPORATE CENTER DRIVE, SUITE 475
RALEIGH, NC 27607
(919) 854-6200 www.aecom.com
AECOM License No. F-0342

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030474 JOHN C. MORRISON
3/27/14

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE ON SR 1371
OVER BRUSHY FORK CREEK
BETWEEN SR 1475 & DEAD END ROAD
27'-10" CLEAR ROADWAY - 120° SKEW

REVISIONS								SHEET NO.
NO.	BY:	DATE:		NO.	BY:	DATE:		S-02
1				3				TOTAL SHEETS
2				4				

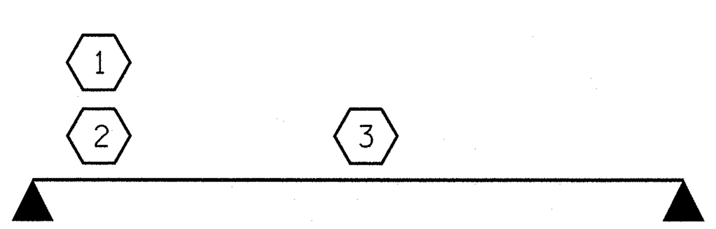
DRAWN BY : MTB DATE : 03/14
CHECKED BY : JCM DATE : 03/14

DATE: 3/27/2014
TIME: 8:06:41 AM

USER: bellstein
DGN: G:\60283772\400_Tech_Info_Disc_Files\450_NCDOTStdTechDesFiles\BRG_279_EE\Structure\B279_LocSketch.dgn

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

LEVEL		VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING	MINIMUM RATING FACTORS (RF)	TONS = W X RF	STRENGTH I LIMIT STATE											SERVICE III LIMIT STATE						COMMENT NUMBER
							LIVELOAD FACTORS	MOMENT					SHEAR					LIVELOAD FACTORS	MOMENT					
								DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)		DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING		HL-93(Inv)	N/A	1	1.179	--	1.75	0.251	1.48	45′	EL	21.923	0.654	1.18	45′	EL	8.769	0.80	0.251	1.20	45′	EL	21.923	
		HL-93(Opr)	N/A	--	1.529	--	1.35	0.251	1.92	45′	EL	21.923	0.654	1.53	45′	EL	8.769	N/A	--	--	--	--	--	
		HS-20(Inv)	36.000	2	1.36	48.973	1.75	0.251	1.82	45′	EL	21.923	0.654	1.36	45′	EL	8.769	0.80	0.251	1.47	45′	EL	21.923	
		HS-20(Opr)	36.000	--	1.763	63.484	1.35	0.251	2.36	45′	EL	21.923	0.654	1.76	45′	EL	8.769	N/A	--	--	--	--	--	
LEGAL LOAD RATING	SV	SNSH	13.500	--	2.873	38.783	1.4	0.251	4.44	45′	EL	21.923	0.654	3.59	45′	EL	8.769	0.80	0.251	2.87	45′	EL	21.923	
		SNGARBS2	20.000	--	2.321	46.427	1.4	0.251	3.59	45′	EL	21.923	0.654	2.69	45′	EL	8.769	0.80	0.251	2.32	45′	EL	21.923	
		SNAGRIS2	22.000	--	2.277	50.09	1.4	0.251	3.48	45′	EL	17.538	0.654	2.55	45′	EL	8.769	0.80	0.251	2.28	45′	EL	21.923	
		SNCOTTS3	27.250	--	1.434	39.088	1.4	0.251	2.22	45′	EL	21.923	0.654	1.81	45′	EL	8.769	0.80	0.251	1.43	45′	EL	21.923	
		SNAGGRS4	34.925	--	1.266	44.231	1.4	0.251	1.96	45′	EL	21.923	0.654	1.6	45′	EL	8.769	0.80	0.251	1.27	45′	EL	21.923	
		SNS5A	35.550	--	1.234	43.856	1.4	0.251	1.91	45′	EL	21.923	0.654	1.67	45′	EL	8.769	0.80	0.251	1.23	45′	EL	21.923	
		SNS6A	39.950	--	1.162	46.437	1.4	0.251	1.8	45′	EL	21.923	0.654	1.57	45′	EL	8.769	0.80	0.251	1.16	45′	EL	21.923	
		SNS7B	42.000	3	1.108	46.54	1.4	0.251	1.71	45′	EL	21.923	0.654	1.61	45′	EL	8.769	0.80	0.251	1.11	45′	EL	21.923	
	TTST	TNAGRIT3	33.000	--	1.427	47.083	1.4	0.251	2.21	45′	EL	21.923	0.654	1.83	45′	EL	8.769	0.80	0.251	1.43	45′	EL	21.923	
		TNT4A	33.075	--	1.442	47.687	1.4	0.251	2.23	45′	EL	21.923	0.654	1.74	45′	EL	8.769	0.80	0.251	1.44	45′	EL	21.923	
		TNT6A	41.600	--	1.21	50.352	1.4	0.251	1.87	45′	EL	21.923	0.654	1.71	45′	EL	8.769	0.80	0.251	1.21	45′	EL	21.923	
		TNT7A	42.000	--	1.234	51.826	1.4	0.251	1.91	45′	EL	21.923	0.654	1.59	45′	EL	8.769	0.80	0.251	1.23	45′	EL	21.923	
		TNT7B	42.000	--	1.285	53.952	1.4	0.251	1.99	45′	EL	21.923	0.654	1.52	45′	EL	8.769	0.80	0.251	1.28	45′	EL	21.923	
		TNAGRIT4	43.000	--	1.224	52.616	1.4	0.251	1.89	45′	EL	21.923	0.654	1.46	45′	EL	8.769	0.80	0.251	1.22	45′	EL	21.923	
		TNAGT5A	45.000	--	1.138	51.23	1.4	0.251	1.76	45′	EL	21.923	0.654	1.52	45′	EL	8.769	0.80	0.251	1.14	45′	EL	21.923	
		TNAGT5B	45.000	--	1.111	50.015	1.4	0.251	1.72	45′	EL	21.923	0.654	1.38	45′	EL	8.769	0.80	0.251	1.11	45′	EL	21.923	



LRFR SUMMARY
FOR SPAN 'A'

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

PROJECT NO. 17BP.14.R.33
JACKSON COUNTY
STATION: 13+12.50 -L-

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701 CORPORATE CENTER DRIVE, SUITE 475
RALEIGH, NC 27607
(919) 854-6200 www.aecom.com
AECOM License No. F-0342

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030474 JOHN C. MORRISON
3/27/14

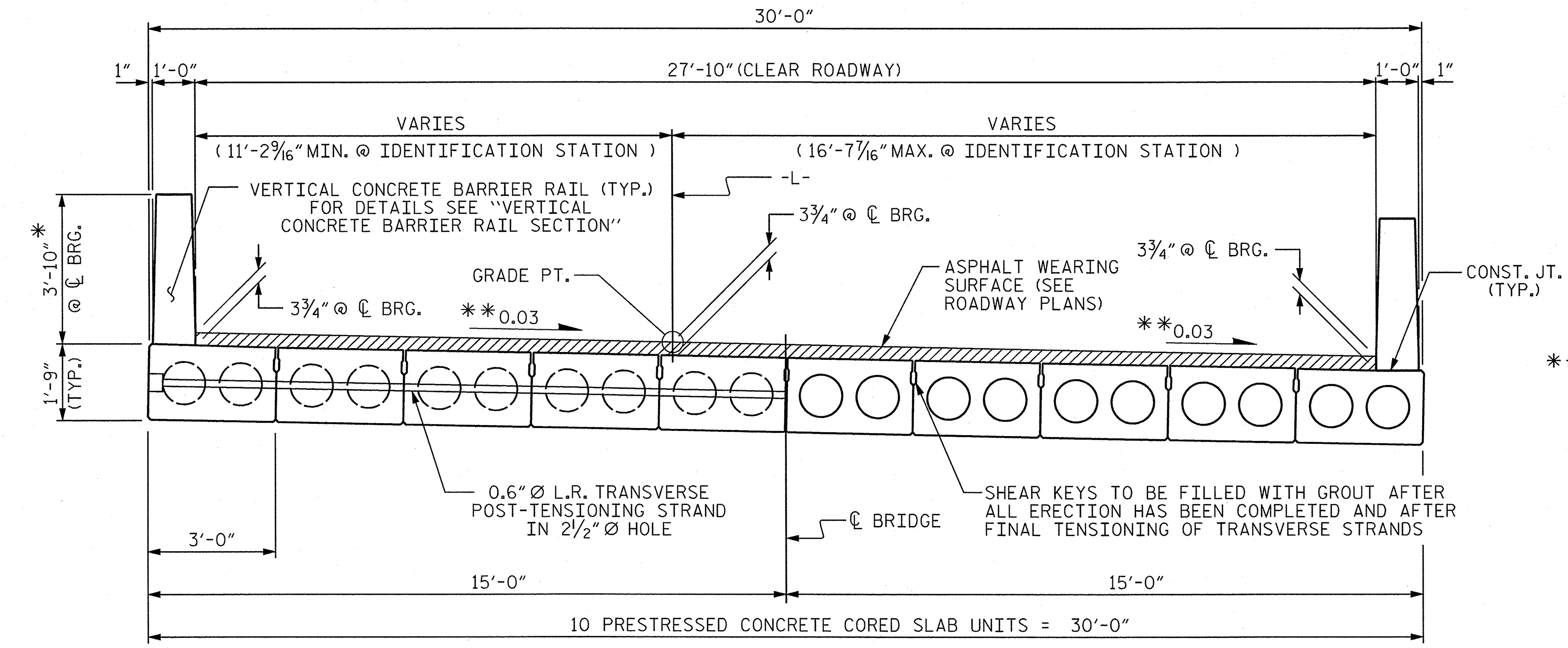
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
LRFR SUMMARY FOR
45′ CORED SLAB UNIT
60° SKEW & 120° SKEW
(NON-INTERSTATE TRAFFIC)

REVISIONS								SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:			S-03
1			3					TOTAL SHEETS
2			4					

ASSEMBLED BY :	MTB	DATE :	03/14
CHECKED BY :	JCM	DATE :	03/14
DRAWN BY :	CVC	6/10	
CHECKED BY :	DNS	6/10	

STD. NO. 21LRFR1_60&120S_45L



HALF SECTION
AT INTERMEDIATE DIAPHRAGMS

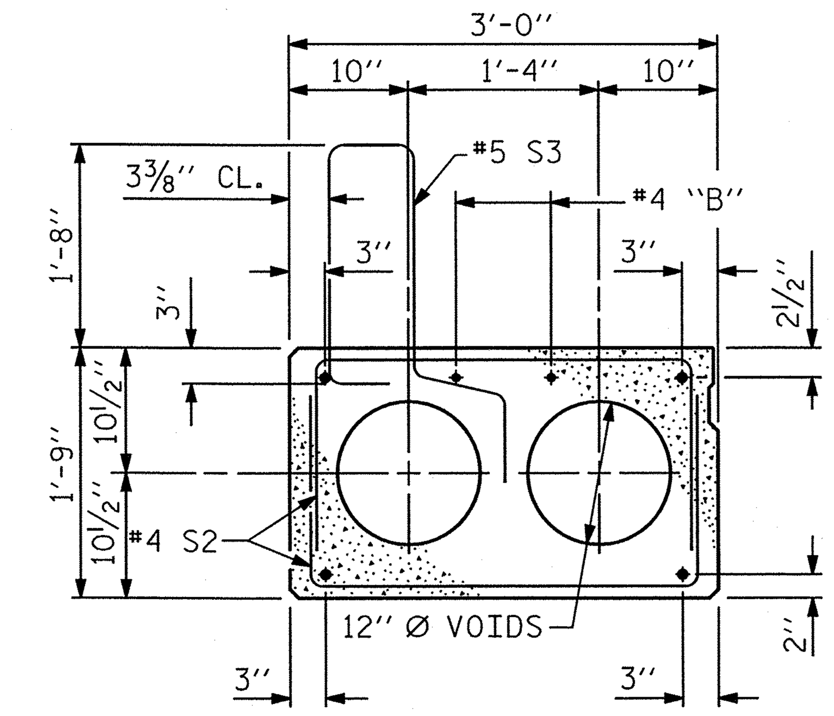
HALF SECTION
THROUGH VOIDS

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.

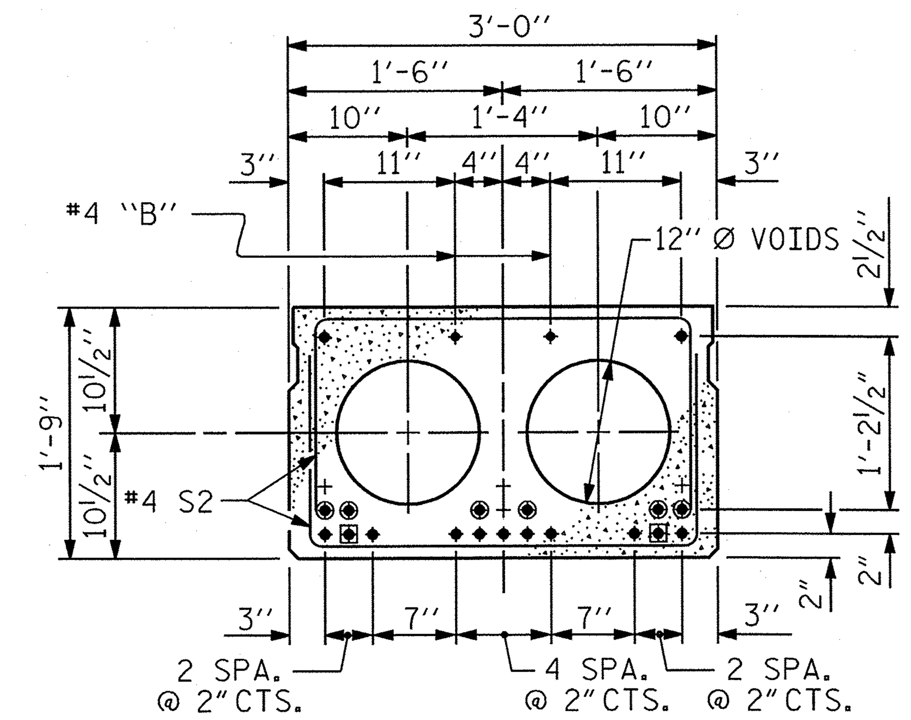
FIXED END

** APPROXIMATE VALUE (ACTUAL CROSS SLOPE VARIES SLIGHTLY DUE TO GEOMETRIC CONSTRAINTS).



EXT. SLAB SECTION

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



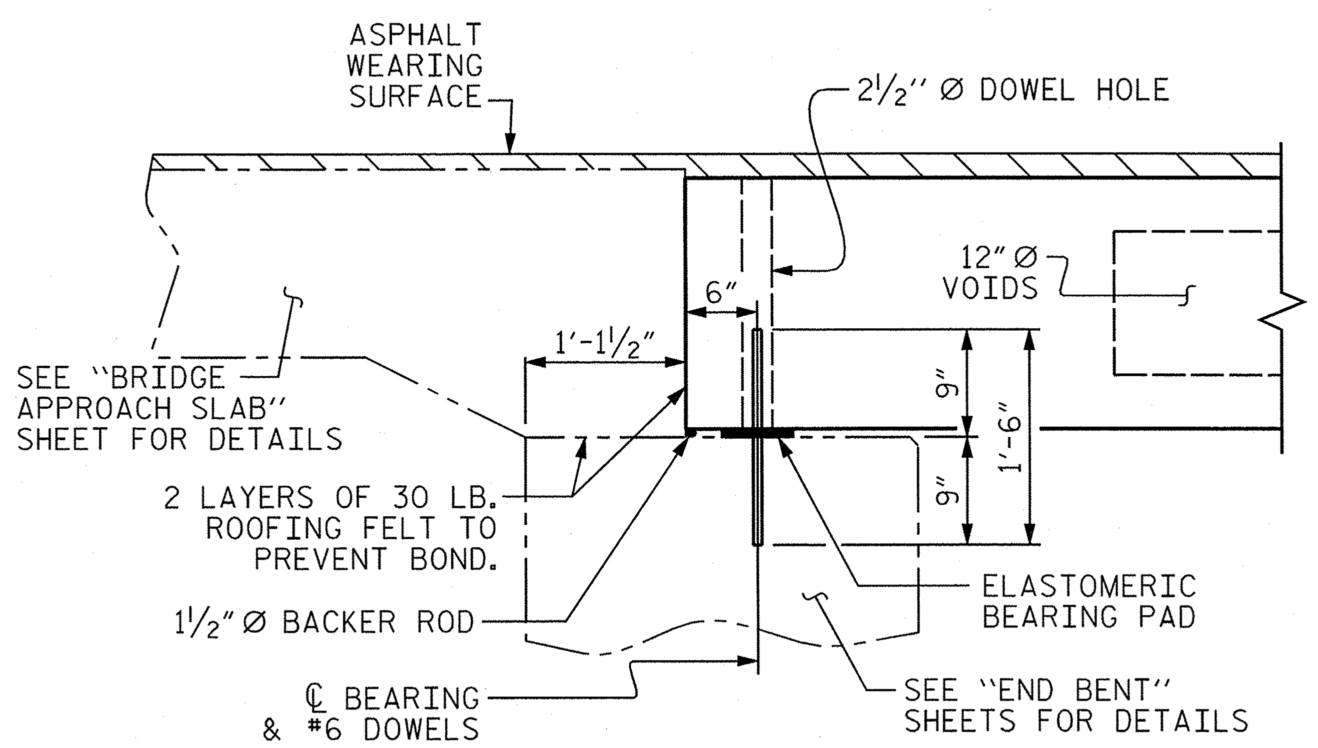
INTERIOR SLAB SECTION
(40' & 45' UNIT)
(13 STRANDS REQUIRED)

0.6" Ø LOW RELAXATION STRAND LAYOUT

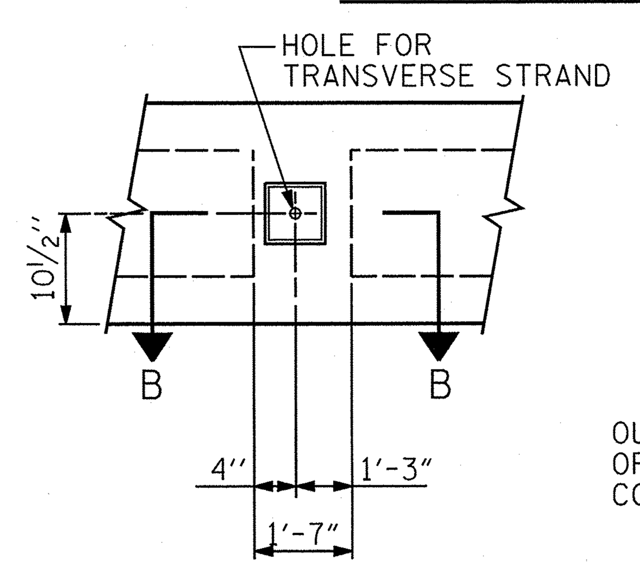
▣ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 2'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

◉ OPTIONAL FULL LENGTH DEBONDED STRANDS. THESE STRANDS ARE NOT REQUIRED. IF THE FABRICATOR CHOOSES TO INCLUDE THESE STRANDS IN THE CORED SLAB UNIT, THE STRANDS SHALL BE DEBONDED FOR THE FULL LENGTH OF THE UNIT AT NO ADDITIONAL COST. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

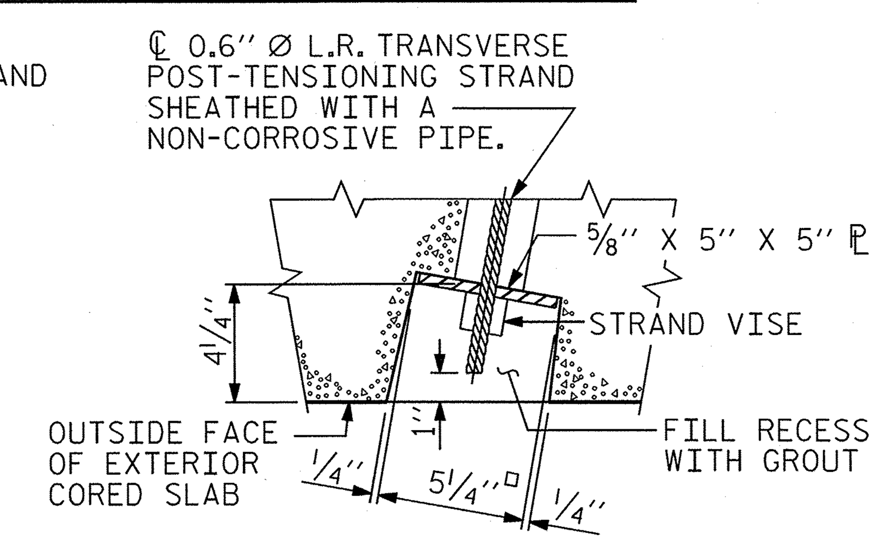
DEBONDING LEGEND



SECTION AT END BENT

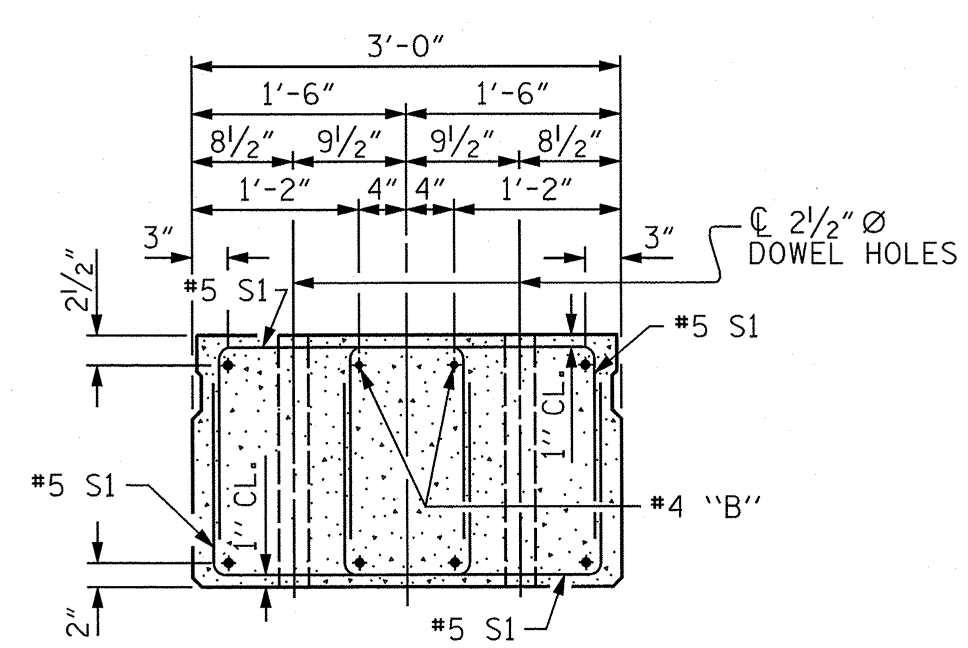


ELEVATION VIEW



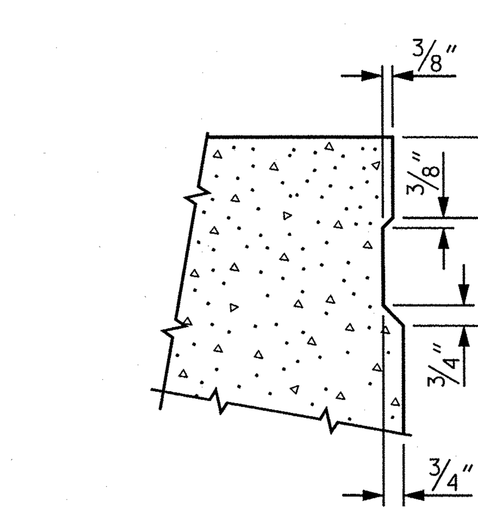
SECTION B-B

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



END ELEVATION

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



SHEAR KEY DETAIL

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

PROJECT NO. 17BP.14.R.33
JACKSON COUNTY
STATION: 13+12.50 -L-

SHEET 1 OF 3

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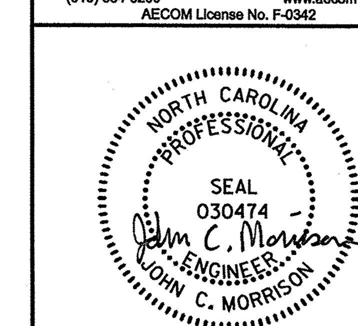


3/27/14

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

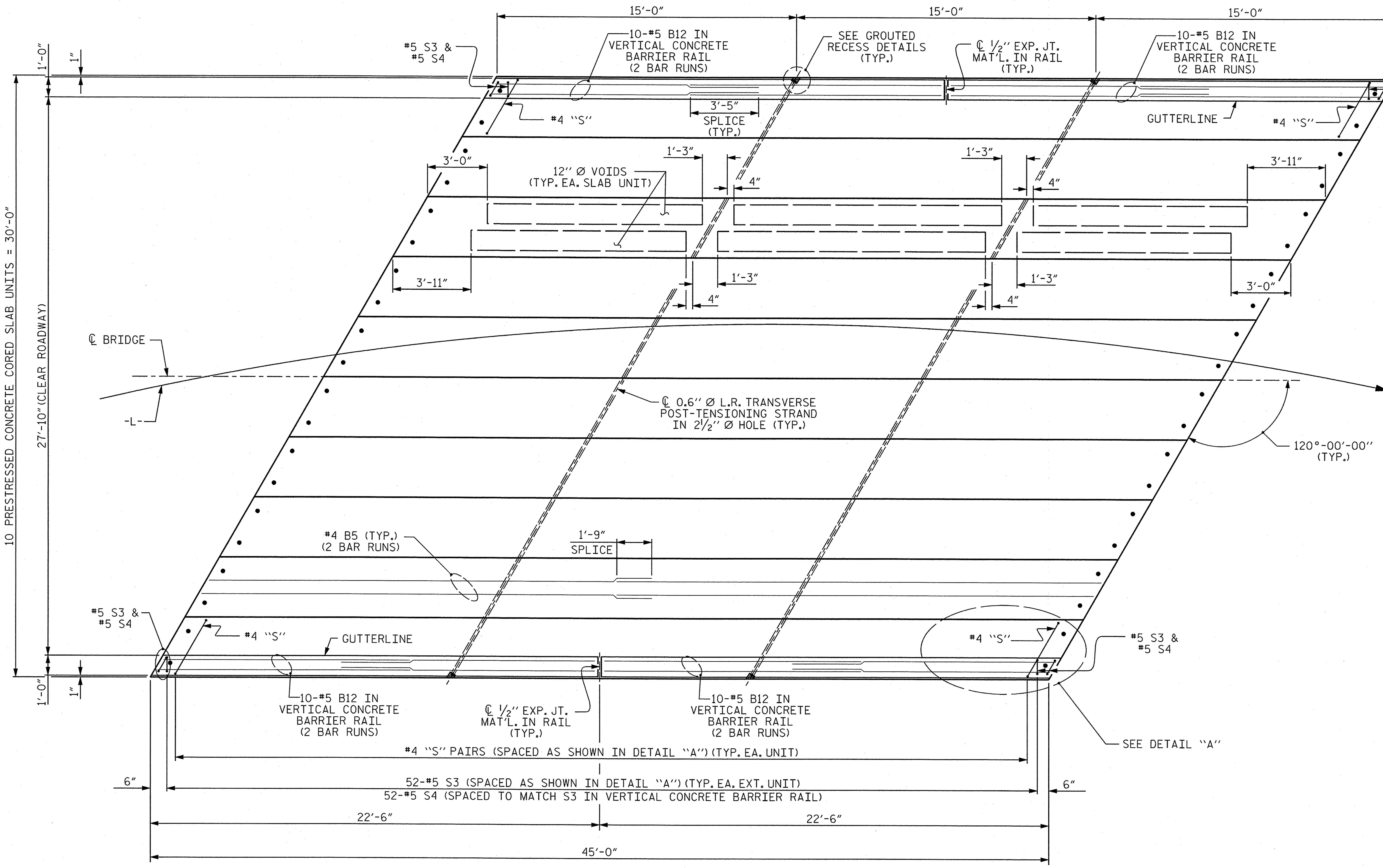
3'-0" X 1'-9"
PRESTRESSED CONCRETE
CORED SLAB UNIT
120° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-04
1			3			TOTAL SHEETS
2			4			

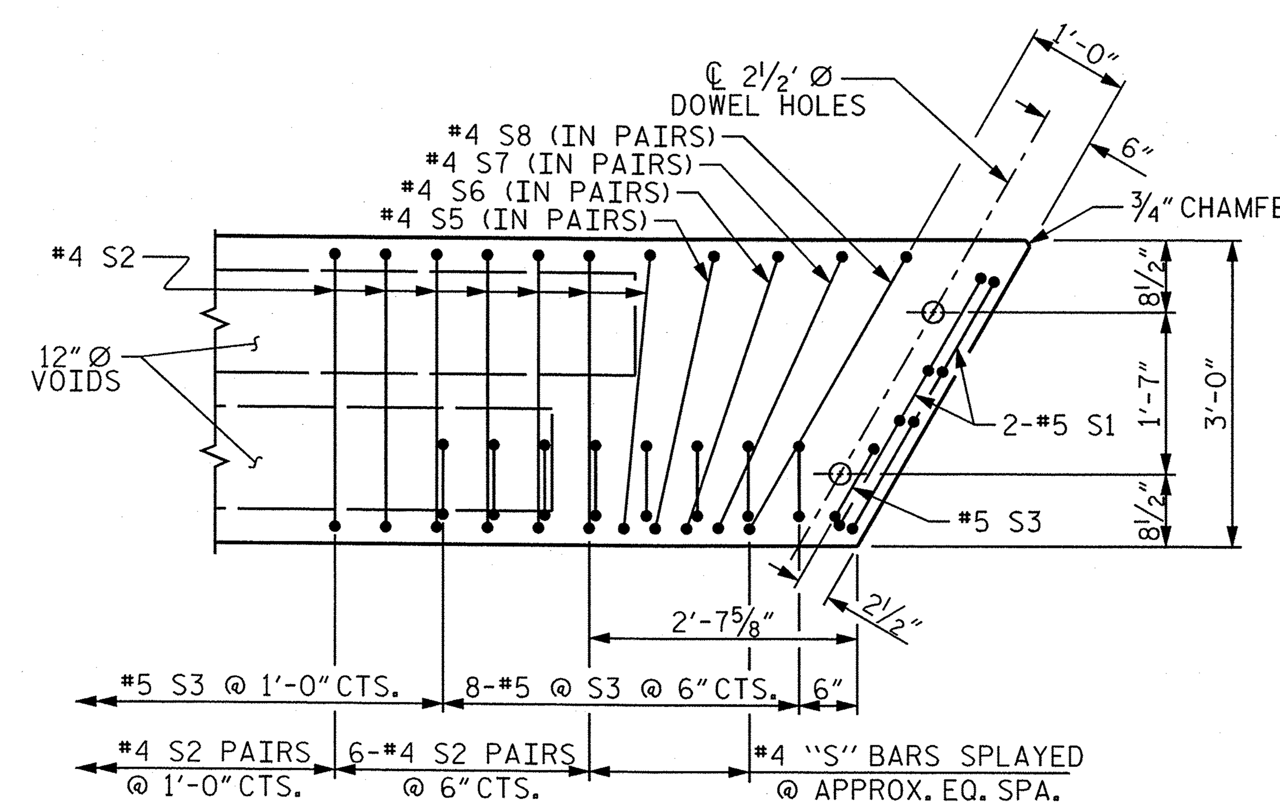
DRAWN BY :	MTB	DATE :	03/14
CHECKED BY :	JCM	DATE :	03/14

DATE: 3/27/2014
TIME: 8:45:47 AM

USER: bellstem
DGN: G:\60238772\400_Tech\Info_Disc_Files\450_NCDOT\50\TeDel\Files\BRG_279_EE\Structures\B279_TypSect.dgn



PLAN OF UNIT



DETAIL "A"

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

PROJECT NO. 17BP.14.R.33

JACKSON COUNTY

STATION: 12+12.50 -L-

SHEET 2 OF 3

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF 45' UNIT
27'-10" CLEAR ROADWAY
120° SKEW

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030474 JOHN C. MORRISON

3/27/14

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-05
1			3			TOTAL SHEETS
2			4			

STD. NO. 21" PCS_30_120S_45L

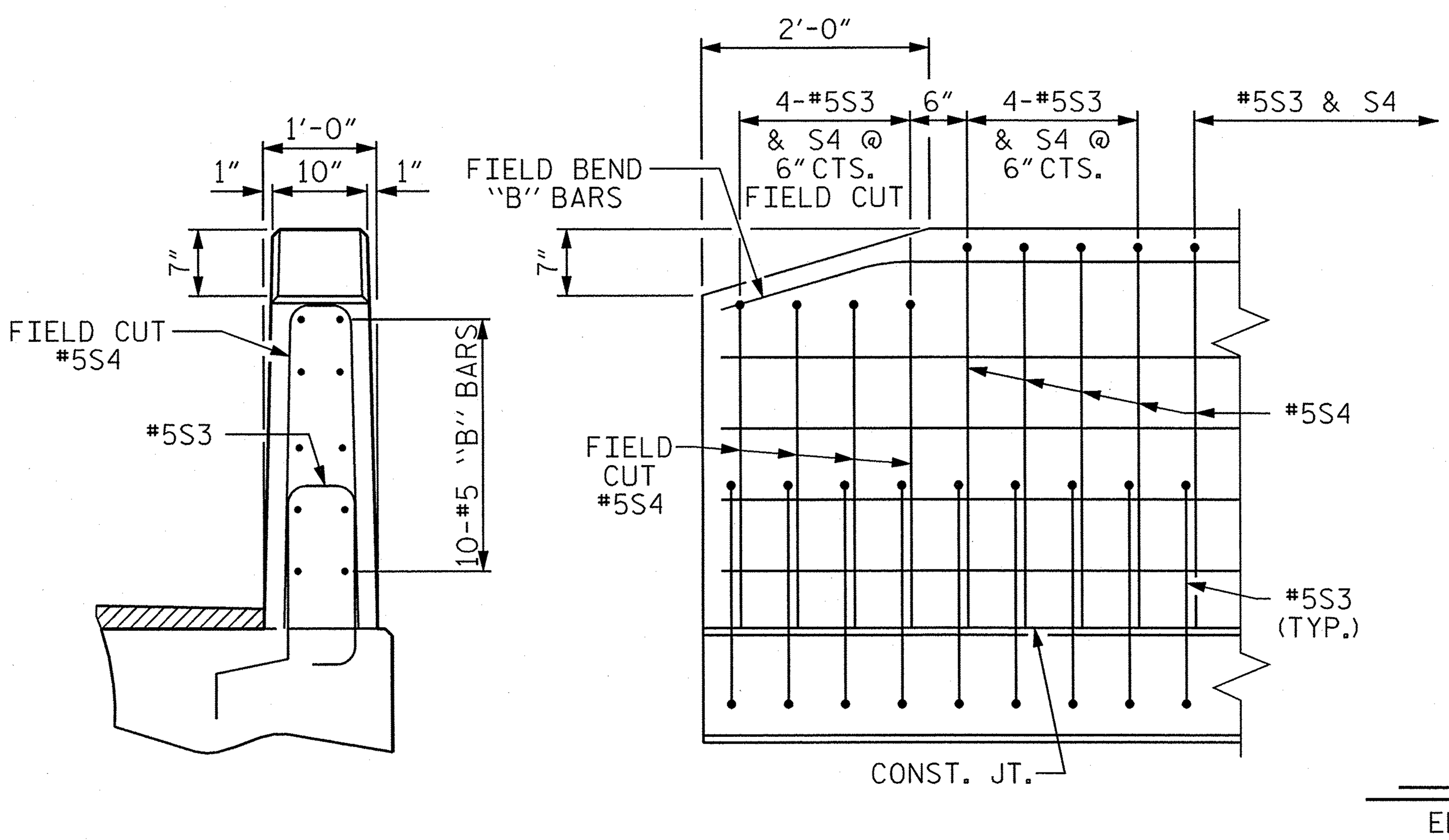
ASSEMBLED BY :	MTB	DATE :	03/14
CHECKED BY :	JCM	DATE :	03/14
DRAWN BY : DGE 3/09	REV. 12/5/11	MAA/AAC	
CHECKED BY : BCH 3/09			

DATE: 3/27/2014
TIME: 8:55:45 AM

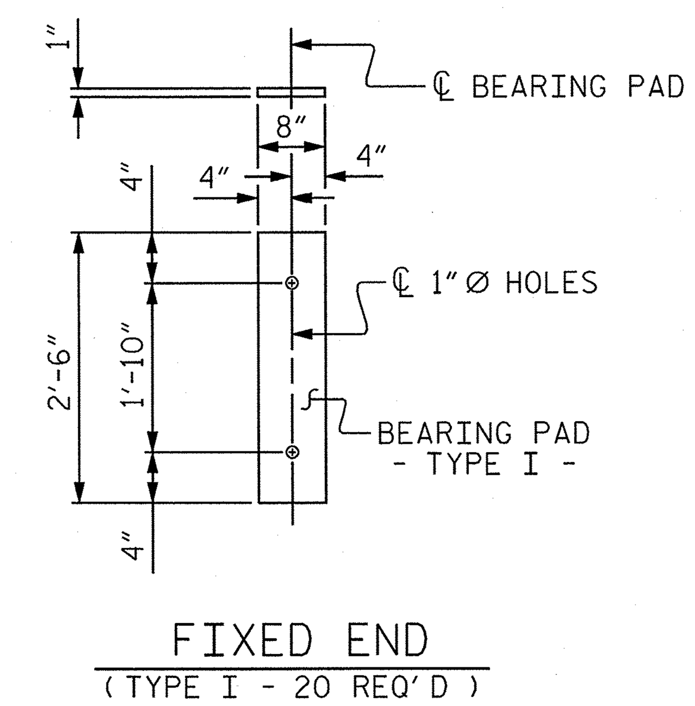
USER: bellslem
DGN: 06\6239772\400_Tech_Info_Disc_Files\450_NCDOT Std Tech Des Files\BRG_279_EE\Structures\B279_S.dgn

CORED SLABS REQUIRED			
	NUMBER	LENGTH	TOTAL LENGTH
45′ UNIT			
EXTERIOR C.S.	2	45′-0″	90′-0″
INTERIOR C.S.	8	45′-0″	360′-0″
TOTAL	10	45′-0″	450

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



END OF RAIL DETAILS

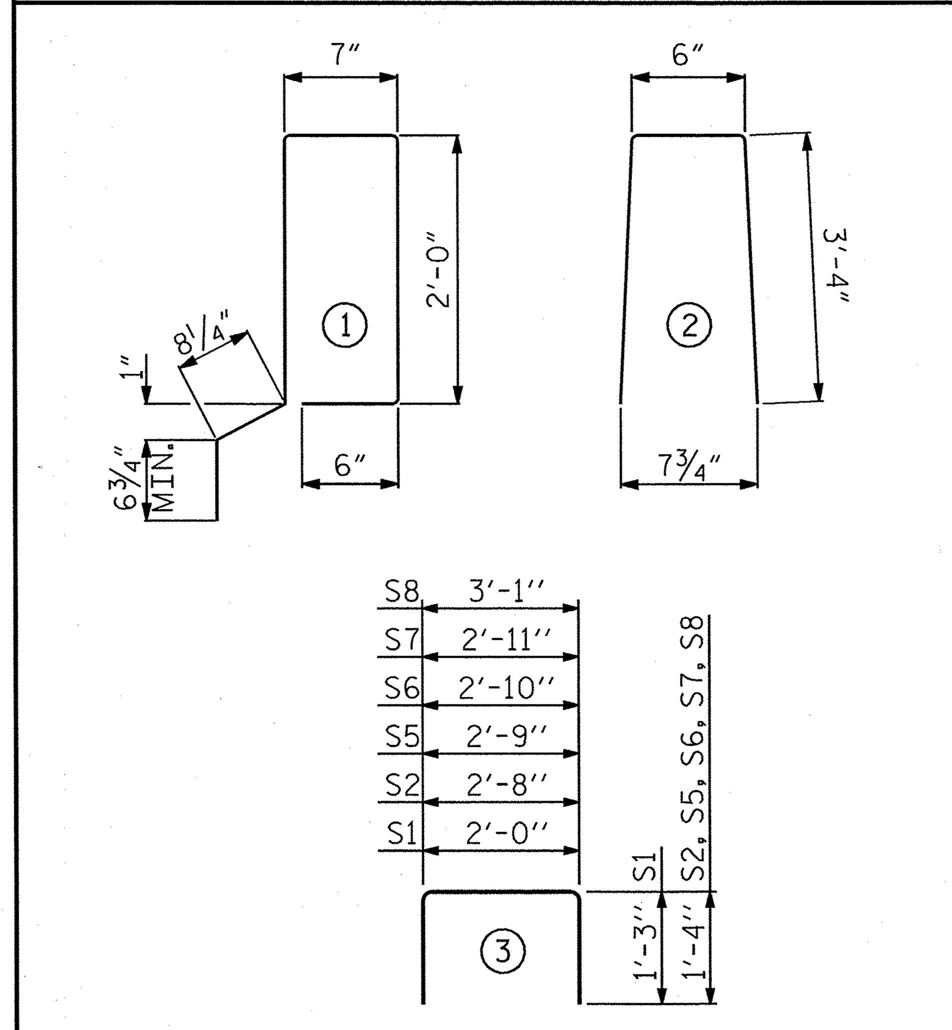


FIXED END
(TYPE I - 20 REQ'D)

ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 50 DUROMETER HARDNESS.

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

NOTES

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

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

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

THE 2½″ Ø DOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE FILLED WITH NON-SHRINK GROUT.

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

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

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

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

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

GROOVED CONTRACTION JOINTS, ½″ IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. A CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED AT MIDPOINT OF BARRIER RAIL SEGMENTS LESS THAN 20 FEET IN LENGTH AND NO CONTRACTION JOINTS ARE REQUIRED FOR THOSE SEGMENTS LESS THAN 10 FEET IN LENGTH.

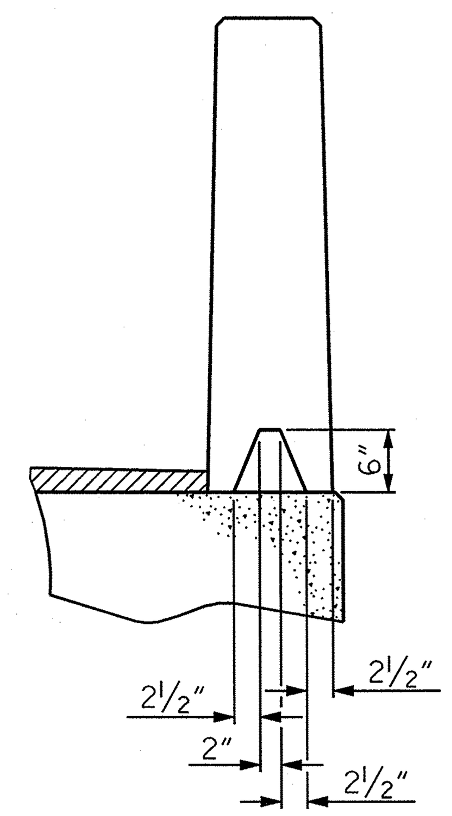
TRANSVERSE POST TENSIONING OF THE CORED SLAB UNITS SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

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

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

BILL OF MATERIAL FOR ONE 45′ CORED SLAB UNIT

BAR	NUMBER	SIZE	TYPE	EXTERIOR UNIT LENGTH	EXTERIOR UNIT WEIGHT	INTERIOR UNIT LENGTH	INTERIOR UNIT WEIGHT
B5	4	#4	STR	23′-2″	62	23′-2″	62
S1	8	#5	3	4′-6″	38	4′-6″	38
S2	92	#4	3	5′-4″	328	5′-4″	328
* S3	54	#5	1	6′-2″	347		
S5	4	#4	3	5′-5″	14	5′-5″	14
S6	4	#4	3	5′-6″	15	5′-6″	15
S7	4	#4	3	5′-7″	15	5′-7″	15
S8	4	#4	3	5′-9″	15	5′-9″	15
REINFORCING STEEL			LBS.		487		487
* EPOXY COATED REINFORCING STEEL			LBS.		347		
6500 P.S.I. CONCRETE			CU. YDS.		6.6		6.6
0.6″ Ø L.R. STRANDS			No.		13		13

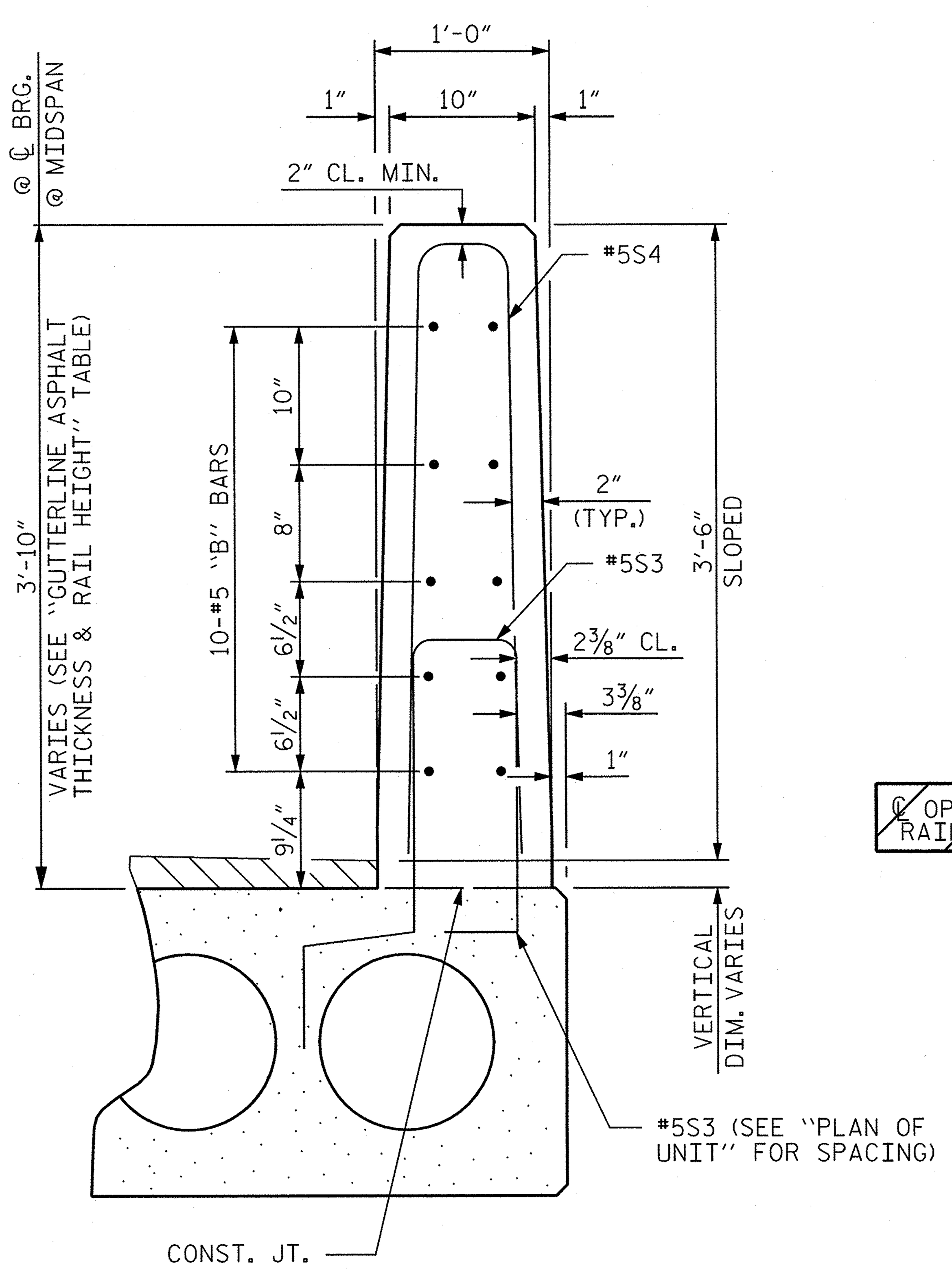


SECTION S-S
AT DAM IN OPEN JOINT
(THIS IS TO BE USED ONLY WHEN SLIP FORM IS USED)

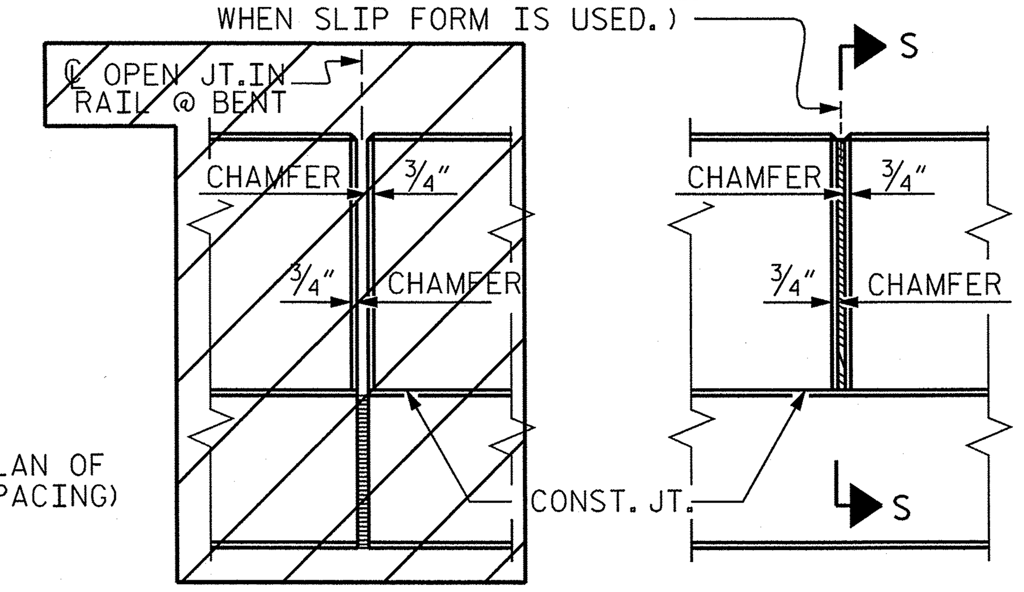
CONCRETE RELEASE STRENGTH	
UNIT	PSI
~~25′, 30′ & 35′ UNITS~~	~~4000~~
~~40′ &~~ 45′ UNITS	4000
~~50′ & 55′ UNITS~~	~~4900~~

GUTTERLINE ASPHALT THICKNESS & RAIL HEIGHT

27′-10″ CLEAR ROADWAY	ASPHALT OVERLAY THICKNESS	RAIL HEIGHT
	@ MID-SPAN	@ MID-SPAN
	SUPERED SECTION	
~~25′, 30′ & 35′ UNITS~~	~~3⅜″~~	~~3′-9⅝″~~
~~40′ &~~ 45′ UNITS	2⅝″	3′-8⅞″
~~50′ & 55′ UNITS~~	~~1½″~~	~~3′-7¾″~~



VERTICAL CONCRETE BARRIER RAIL DETAILS



ELEVATION AT EXPANSION JOINTS

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL

BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
	45′ UNIT					
* B12	64	64	#5	STR	13′-0″	1085
* S4	108	108	#5	2	7′-2″	807
* EPOXY COATED REINFORCING STEEL				LBS.		1892
CLASS AA CONCRETE				CU.YDS.		11.8
TOTAL VERTICAL CONCRETE BARRIER RAIL				LN. FT.		90.29

DEAD LOAD DEFLECTION AND CAMBER

	3′-0″ × 1′-9″
~~40′ &~~ 45′ CORED SLAB UNIT	0.6″ Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	1¼″ ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD **	⅛″ ↓
FINAL CAMBER	1⅛″ ↑

** INCLUDES FUTURE WEARING SURFACE

PROJECT NO. 17BP.14.R.33
JACKSON COUNTY
STATION: 12+12.50 -L-

SHEET 3 OF 3

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AECOM License No. F-0342

NORTH CAROLINA PROFESSIONAL SEAL 030474 ENGINEER JOHN C. MORRISON
3/27/14

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
3′-0″ X 1′-9″ PRESTRESSED CONCRETE CORED SLAB UNIT 120° SKEW

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

SHEET NO. S-06
TOTAL SHEETS

ASSEMBLED BY :	MTB	DATE :	03/14
CHECKED BY :	JCM	DATE :	03/14
DRAWN BY : DGE 5/09	REV. 12/11		MAA/AAC
CHECKED BY : BCH 6/09			

STD. NO. 21″PCS3_30_120S

USER: beillstern
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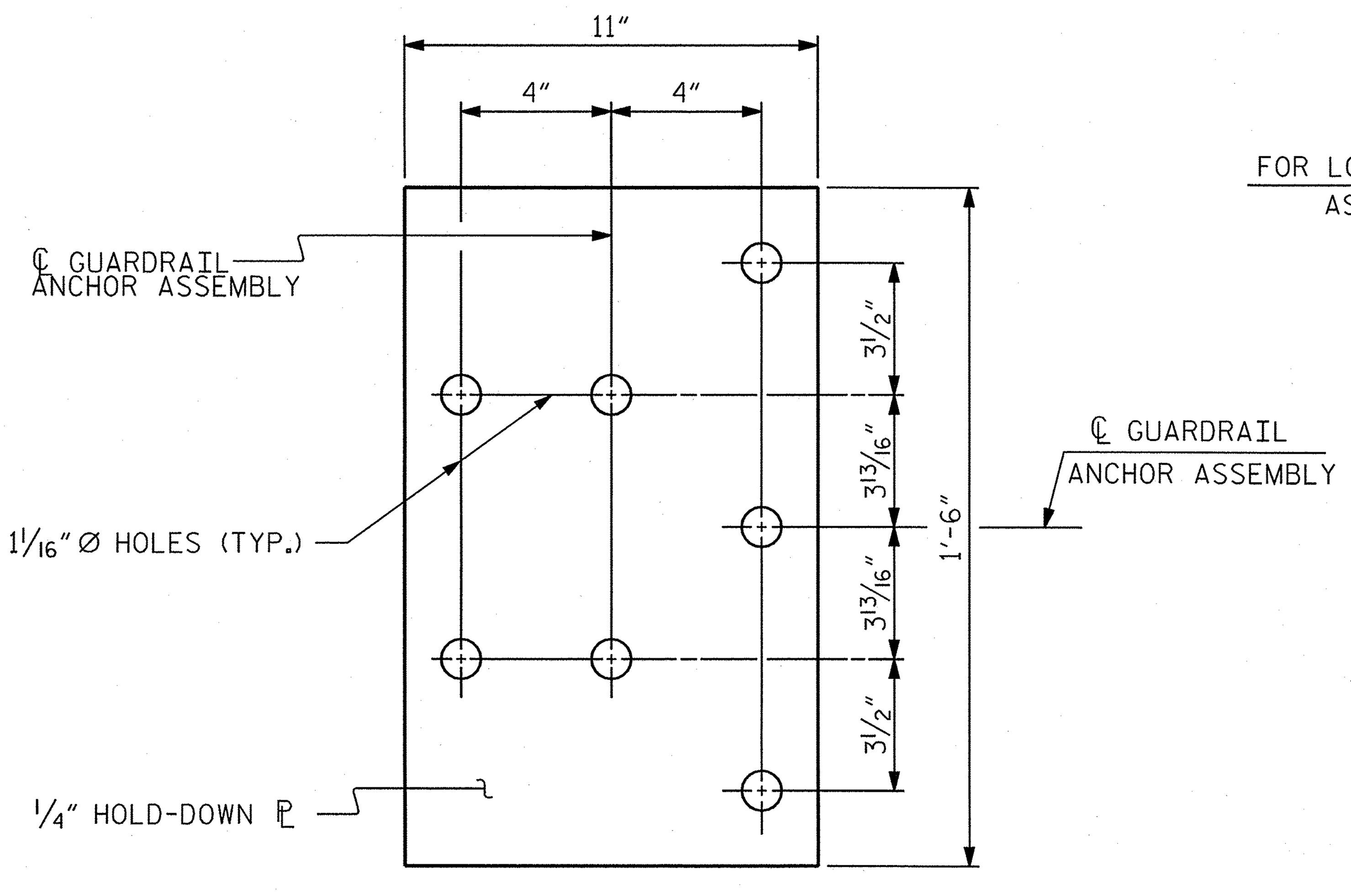
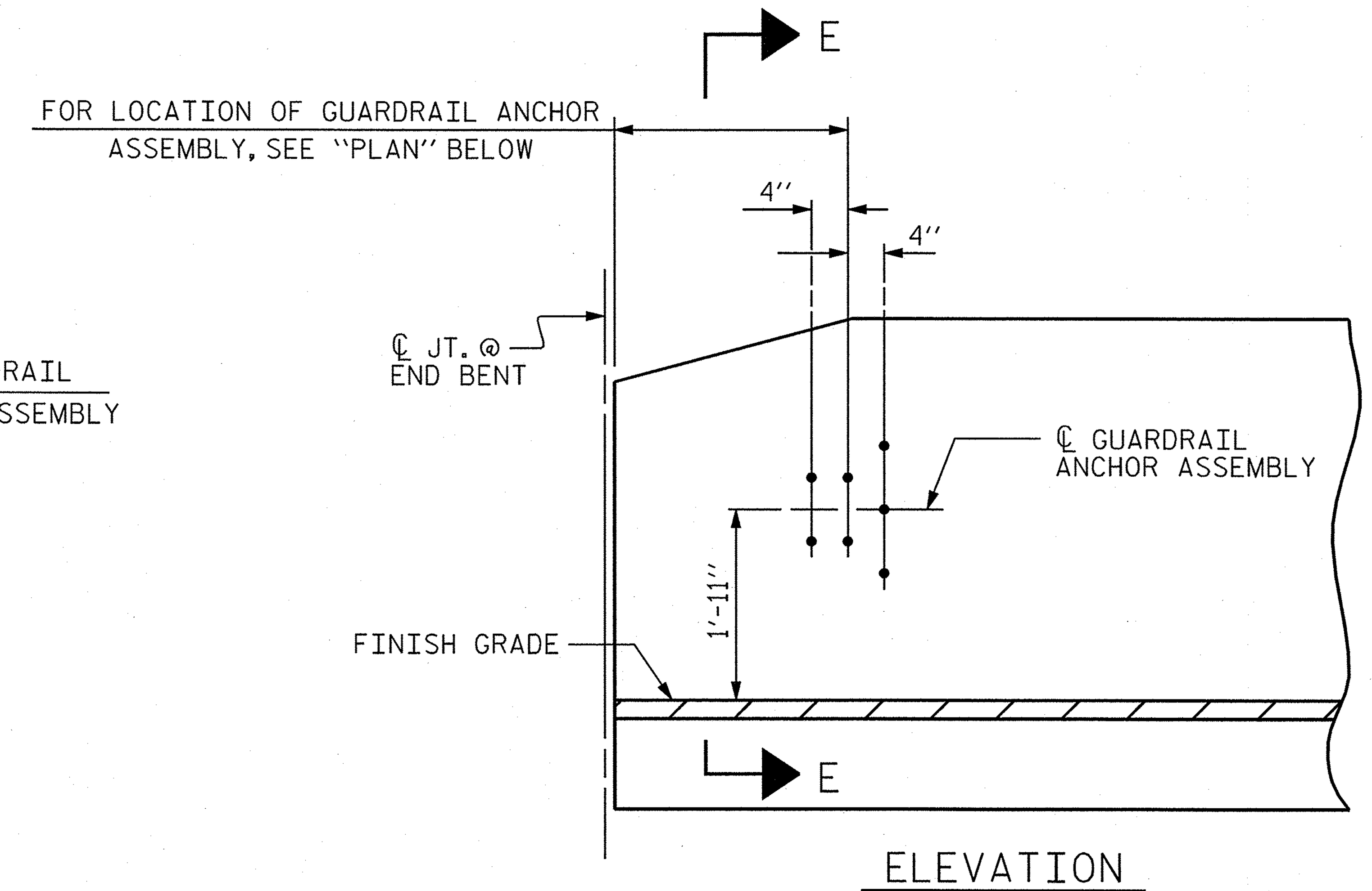
DATE: 3/27/2014
TIME: 8:39:53 AM



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.)

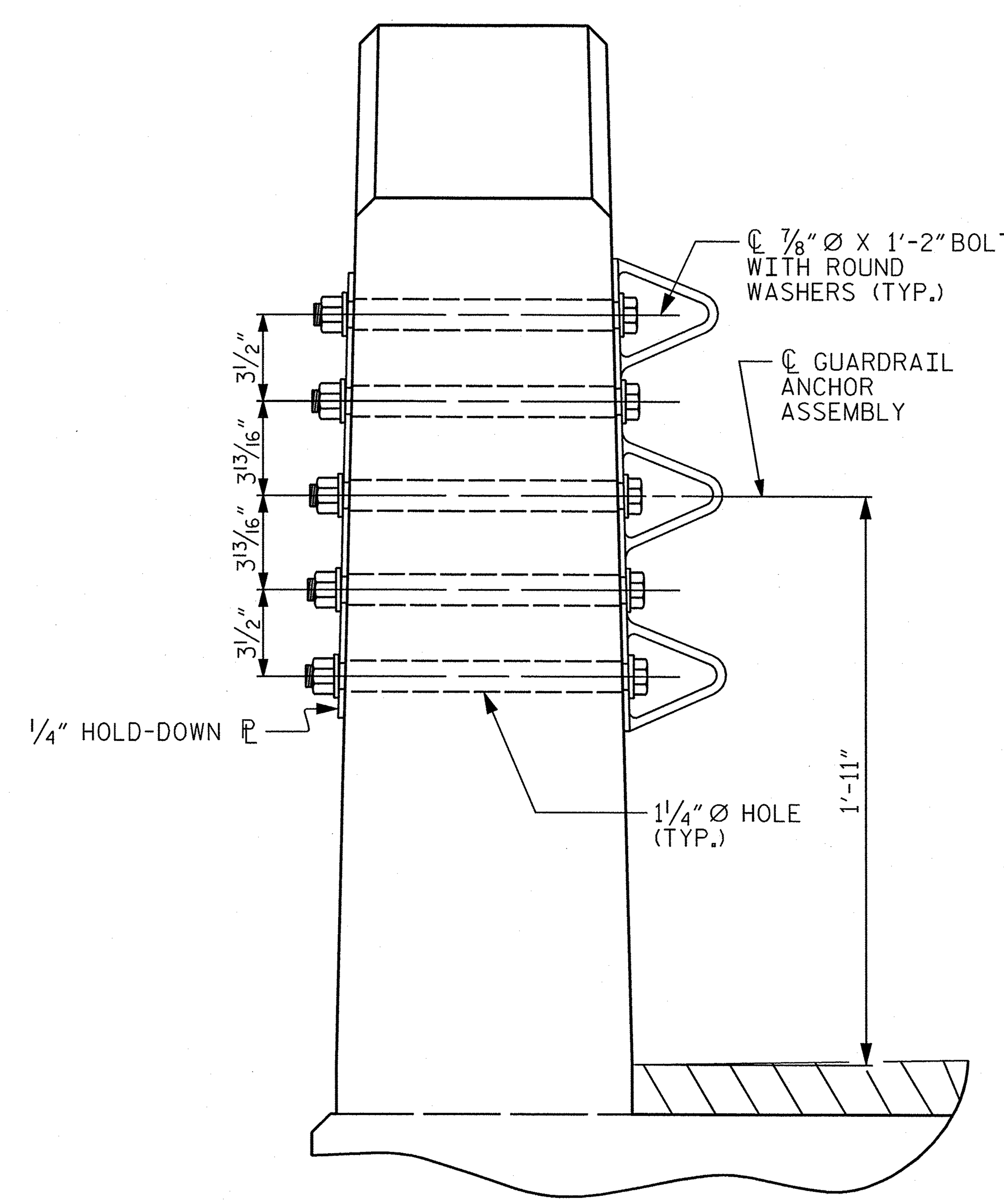
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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.

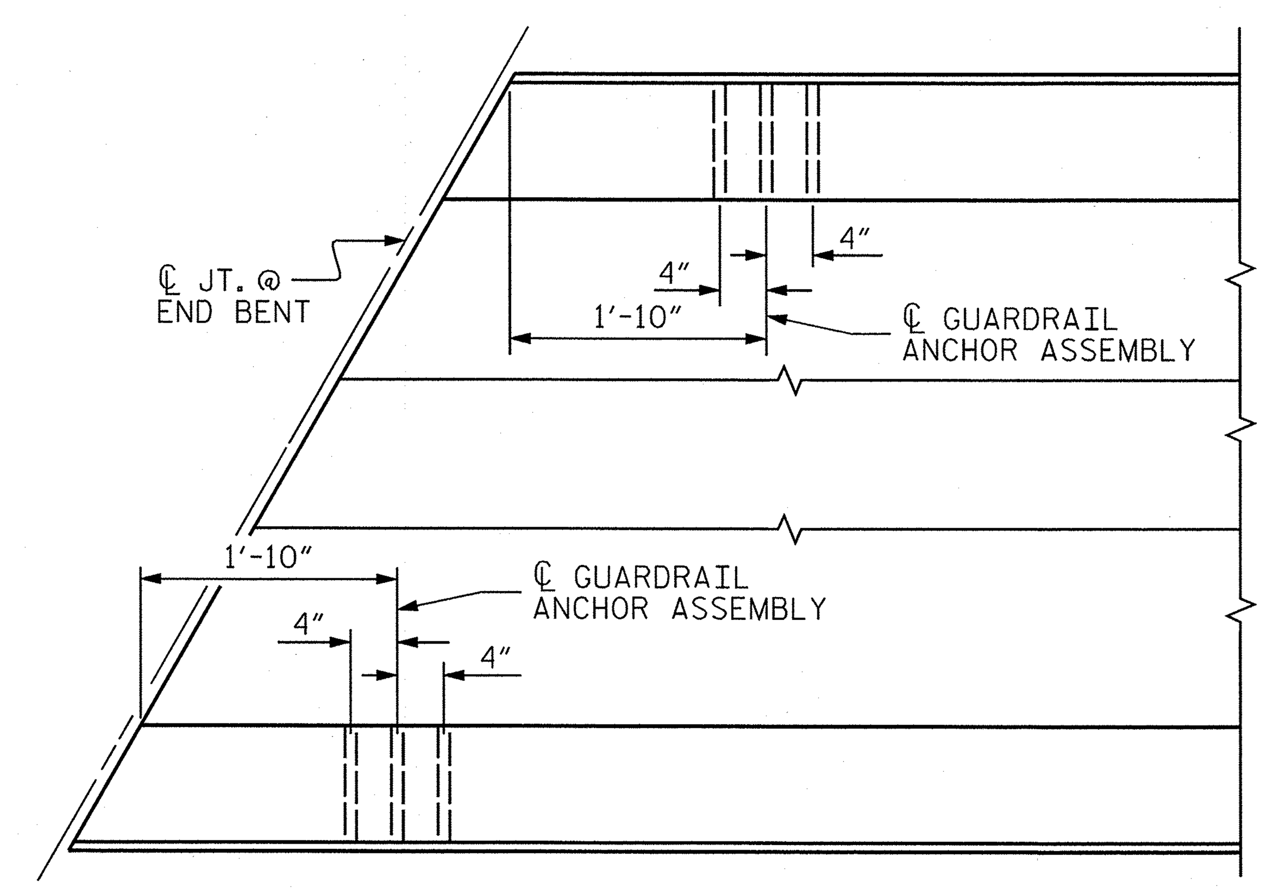
THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE VERTICAL CONCRETE BARRIER RAIL TO CLEAR ASSEMBLY BOLTS.

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

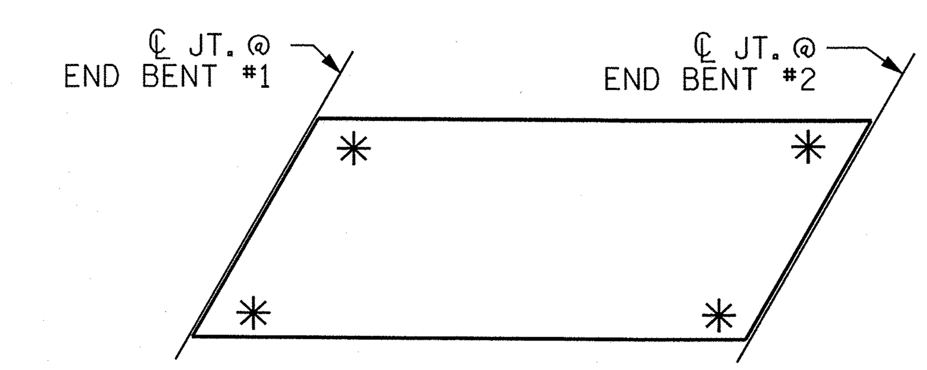
GUARDRAIL ANCHOR ASSEMBLY DETAILS



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.14.R.33

JACKSON COUNTY

STATION: 13+12.50 -L-

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3/27/14

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

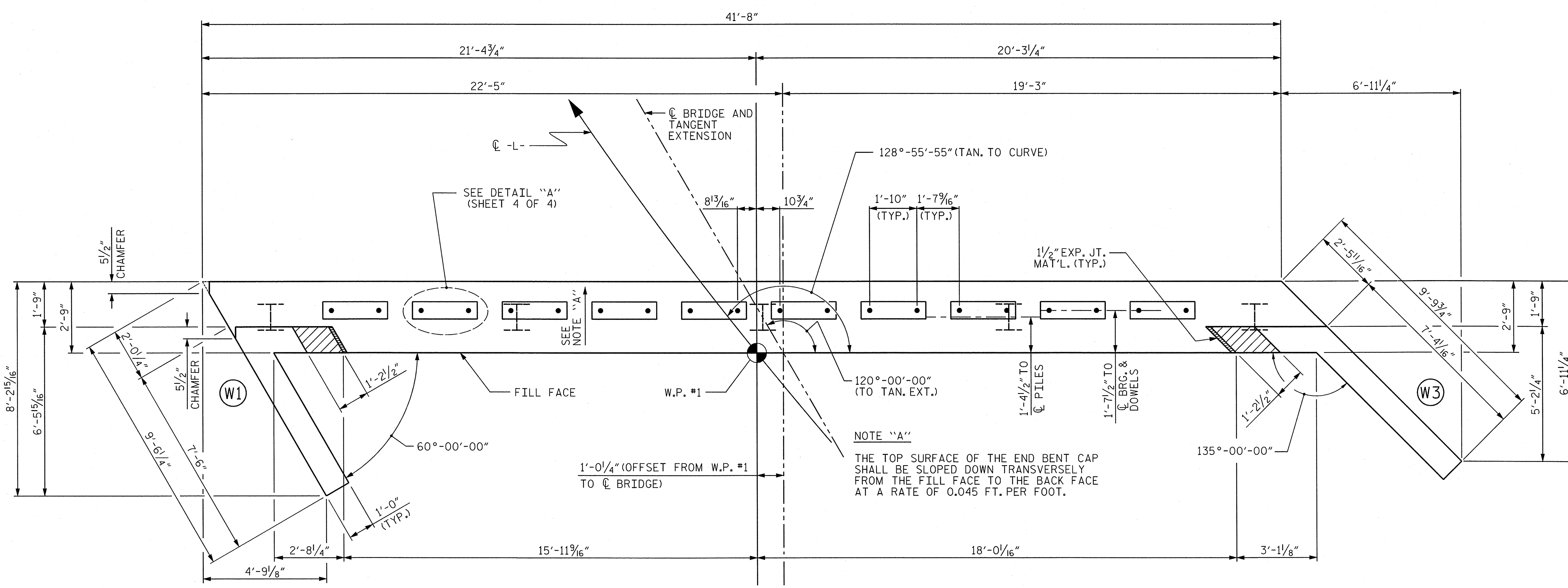
STANDARD
GUARDRAIL ANCHORAGE FOR VERTICAL CONCRETE BARRIER RAIL

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

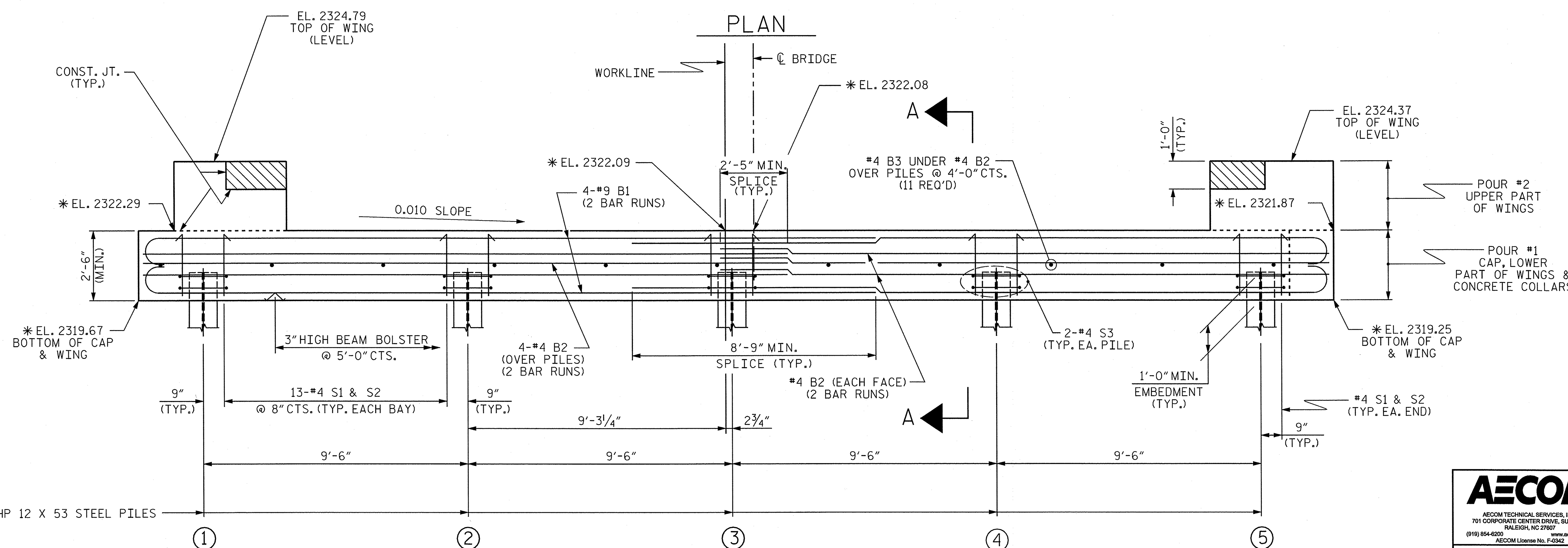
SHEET NO. S-07
TOTAL SHEETS

ASSEMBLED BY :	MTB	DATE :	03/14
CHECKED BY :	JCM	DATE :	03/14
DRAWN BY : MAA 5/10		REV. 10/1/11	MAA/GM
CHECKED BY : GM 5/10		REV. 12/5/11	MAA/GM
		REV. 6/13	MAA/GM

STD. NO. GRA3 (Sht. 2)



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 5 OF 5.

FOR WING DETAILS, SEE SHEETS 3 & 4 OF 5.

INSTALL THE 4" DIA. DRAIN PIPE THROUGH THE WING WALL AS REQUIRED. FOR REINFORCED BRIDGE APPROACH FILLS, SEE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE. THE 4" DIA. DRAIN PIPE SHALL BE PLACED AT SUCH A HEIGHT AS TO PROMOTE DRAINAGE.

TOP OF PILE ELEVATIONS	
1	2320.65
2	2320.56
3	2320.46
4	2320.37
5	2320.27

* ELEVATIONS PROJECTED ALONG FILL FACE.

PROJECT NO. 17BP.14.R.33
JACKSON COUNTY
STATION: 13+12.50 -L-

SHEET 1 OF 5

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030474 JOHN C. MORRISON
3/27/14

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT No. 1

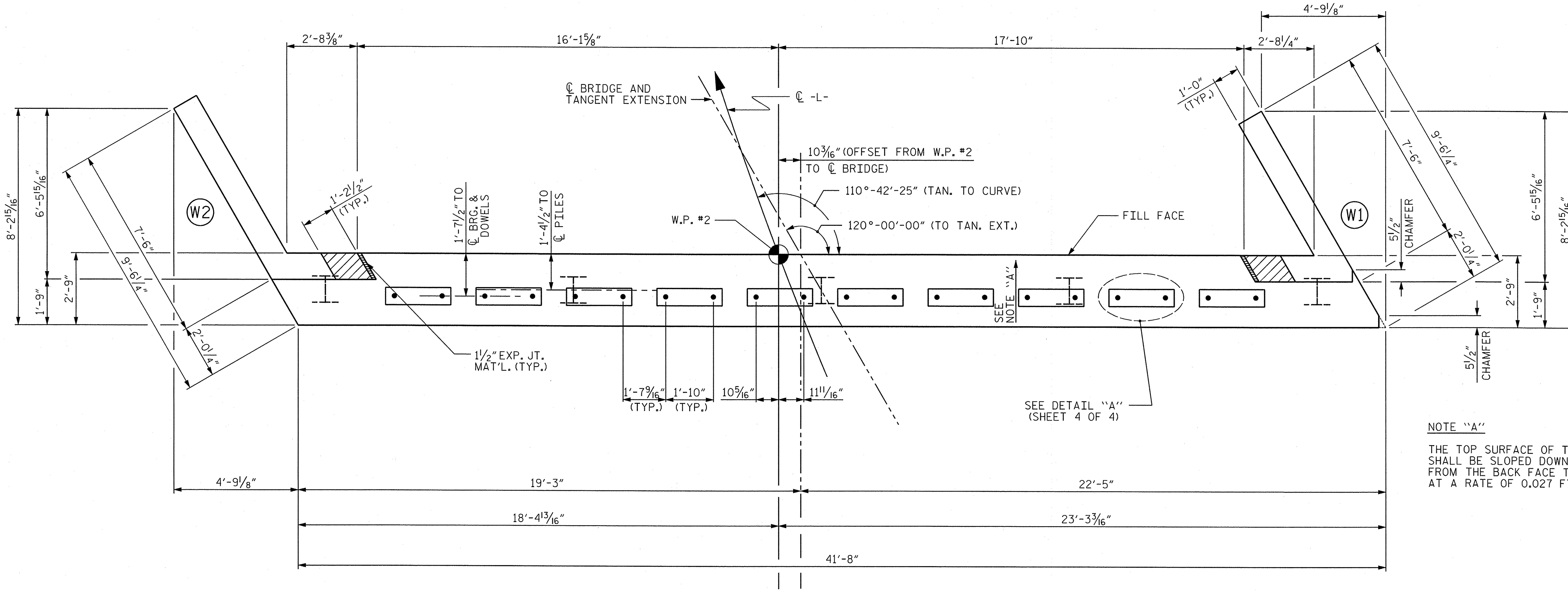
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO. S-08
TOTAL SHEETS

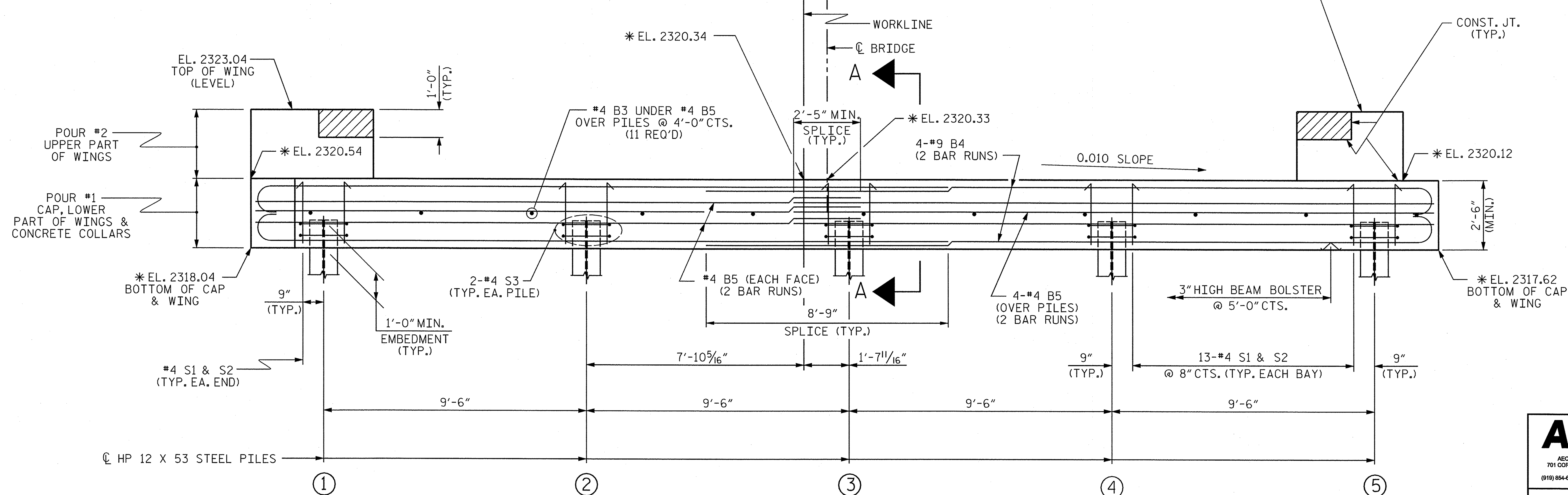
ASSEMBLED BY : MTB	DATE : 03/14
CHECKED BY : JCM	DATE : 03/14
DRAWN BY : DGE 02/10	
CHECKED BY : MKT 02/10	

STD. NO. EB_30_120S

DATE: 3/27/2014
TIME: 7:52:44 AM



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 5 OF 5.

FOR WING DETAILS, SEE SHEETS 3 OF 5.

INSTALL THE 4" DIA. DRAIN PIPE THROUGH THE WING WALL AS REQUIRED. FOR REINFORCED BRIDGE APPROACH FILLS, SEE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE. THE 4" DIA. DRAIN PIPE SHALL BE PLACED AT SUCH A HEIGHT AS TO PROMOTE DRAINAGE.

NOTE "A"

THE TOP SURFACE OF THE END BENT CAP SHALL BE SLOPED DOWN TRANSVERSELY FROM THE BACK FACE TO THE FILL FACE AT A RATE OF 0.027 FT. PER FOOT.

TOP OF PILE ELEVATIONS	
1	2319.02
2	2318.92
3	2318.83
4	2318.74
5	2318.64

∗ELEVATIONS PROJECTED ALONG FILL FACE.

PROJECT NO. 17BP.14.R.33
JACKSON COUNTY
STATION: 13+12.50 -L-

SHEET 2 OF 5

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DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT No. 2

NORTH CAROLINA PROFESSIONAL SEAL 030474 ENGINEER JOHN C. MORRISON
John C. Morrison
3/27/14

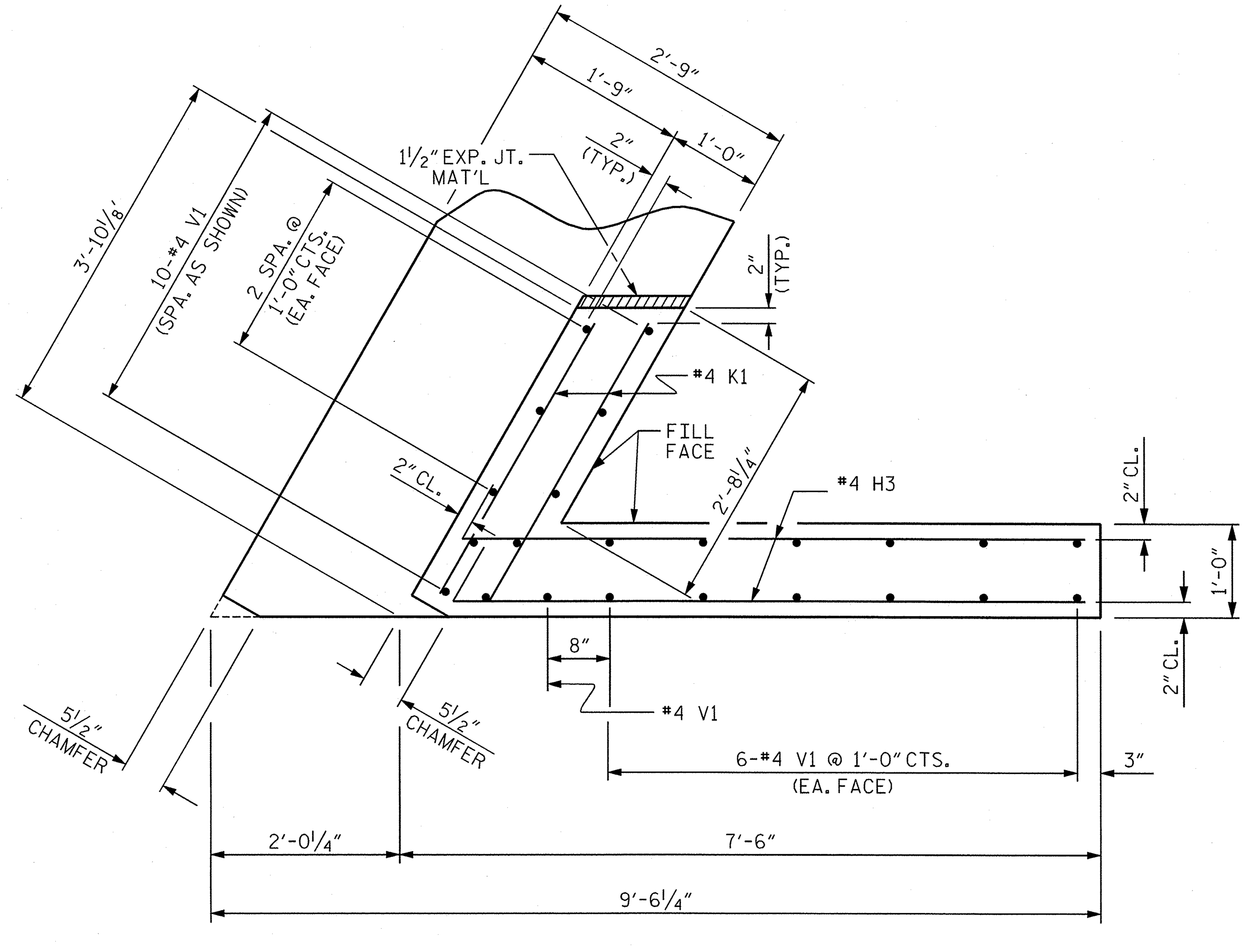
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-09
1			3			TOTAL SHEETS
2			4			

STD. NO. EB_30_120S

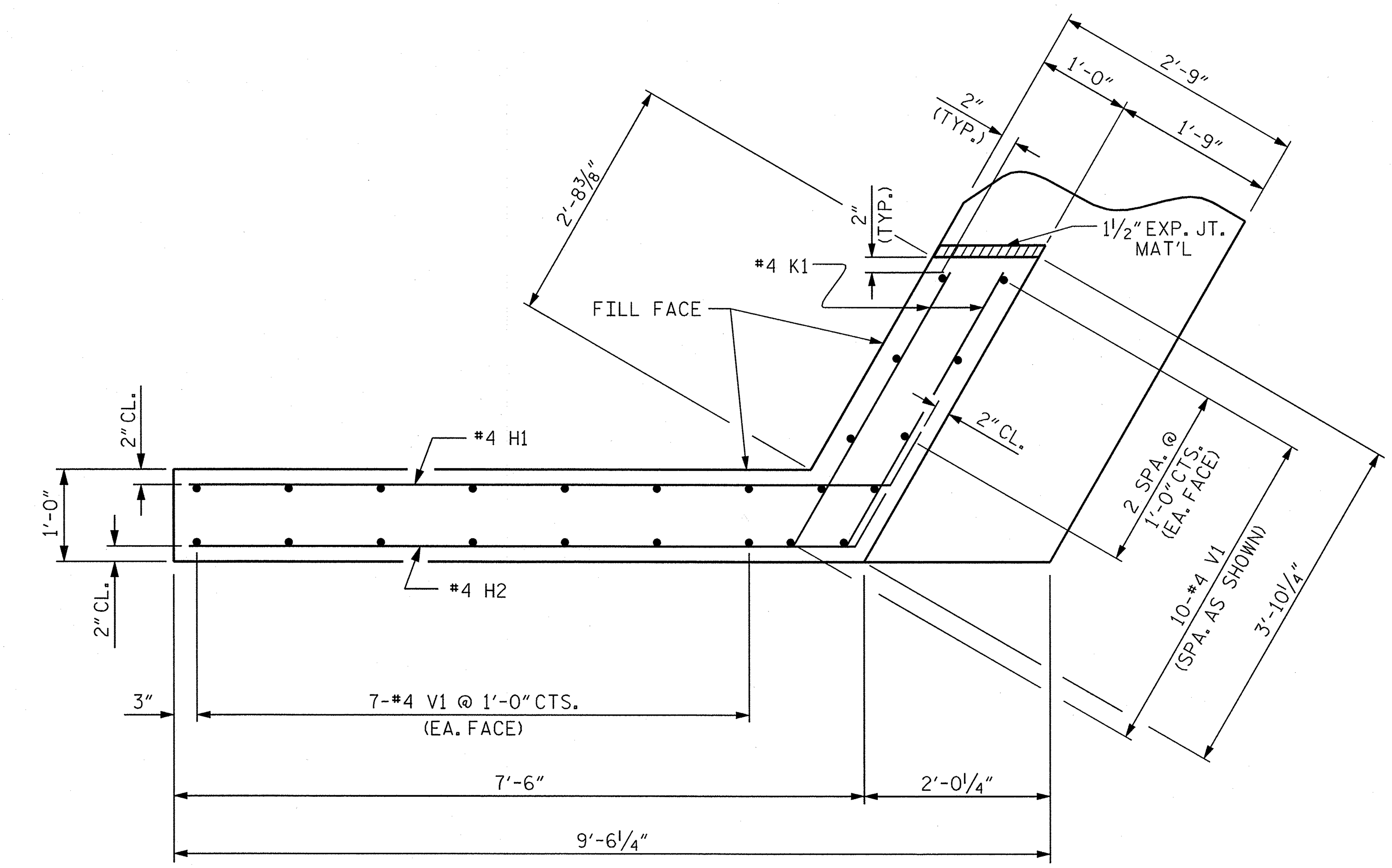
ASSEMBLED BY : MTB	DATE : 03/14
CHECKED BY : JCM	DATE : 03/14
DRAWN BY : DGE 02/10	
CHECKED BY : MKT 02/10	

DATE: 3/27/2014
TIME: 1:53:43 AM

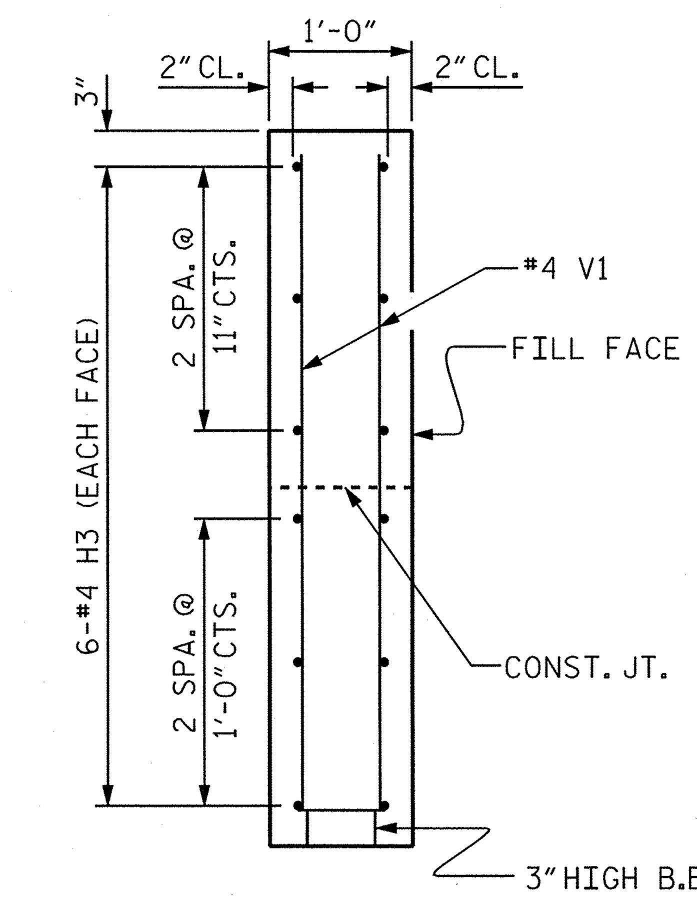
USER: bellsten



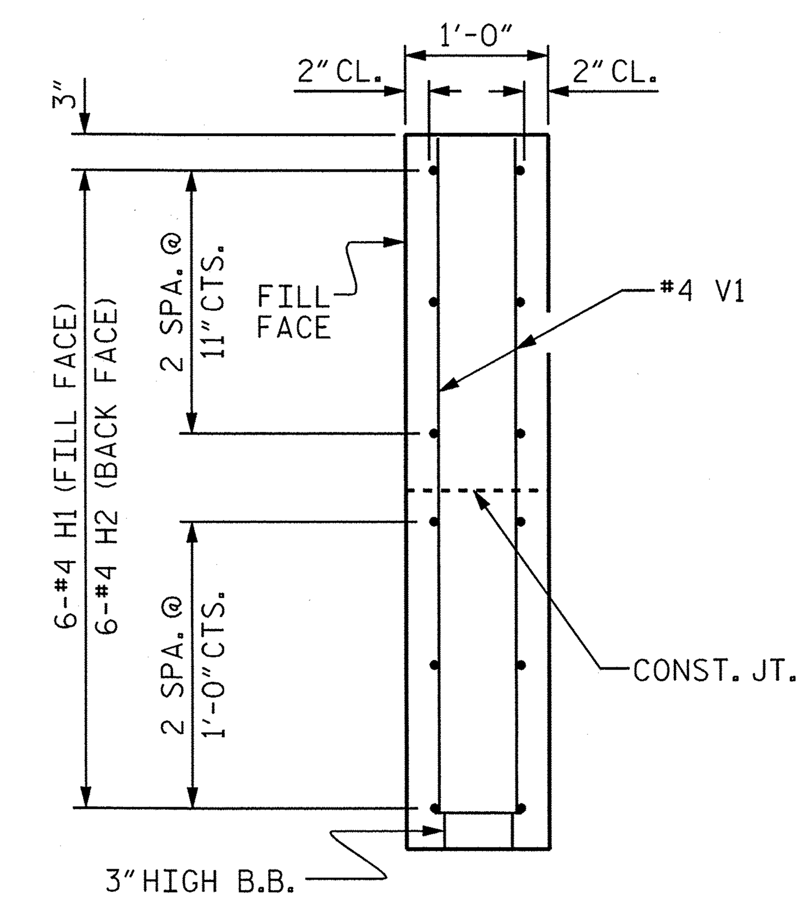
PLAN OF WING (W1)



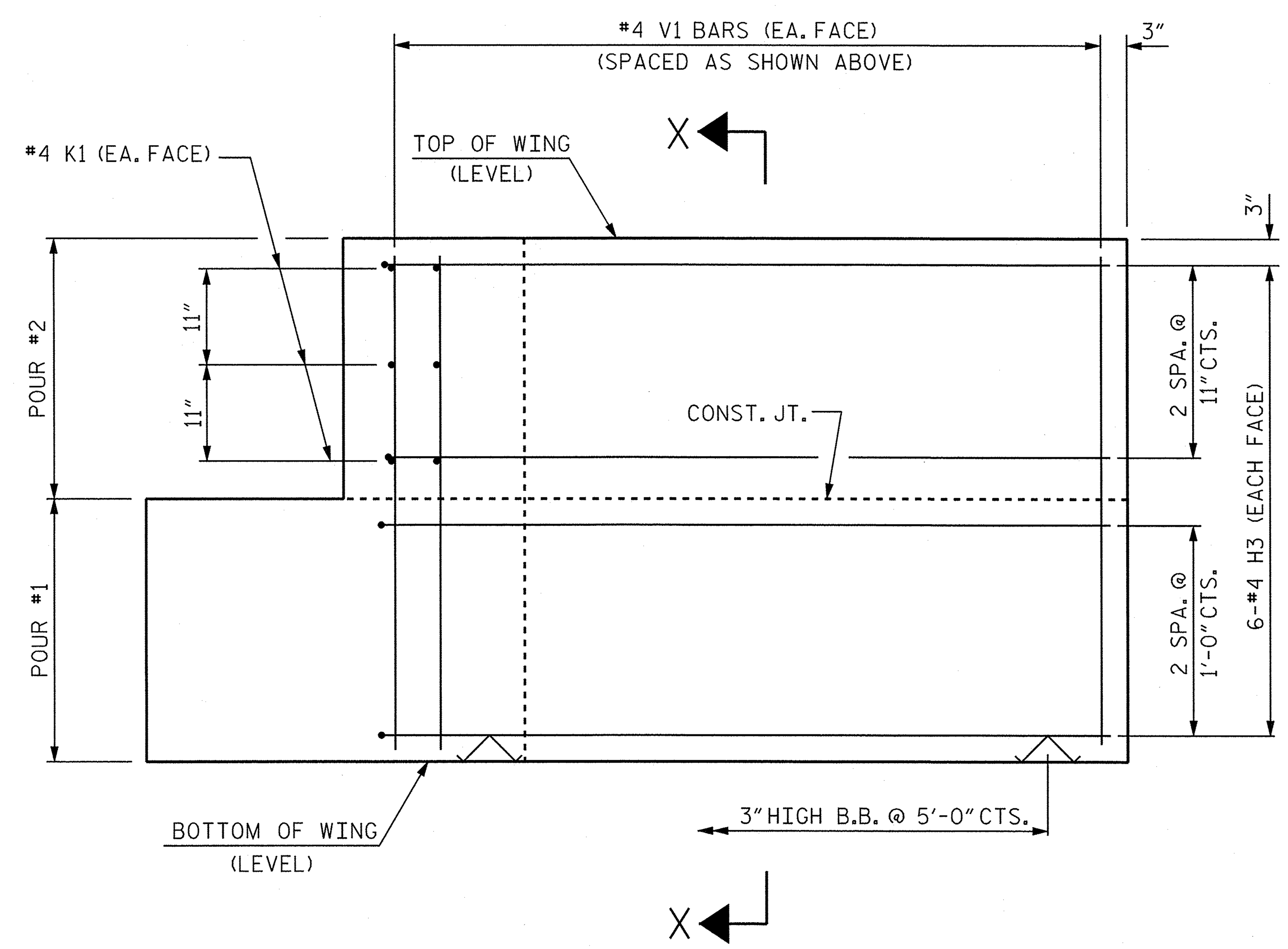
PLAN OF WING (W2)



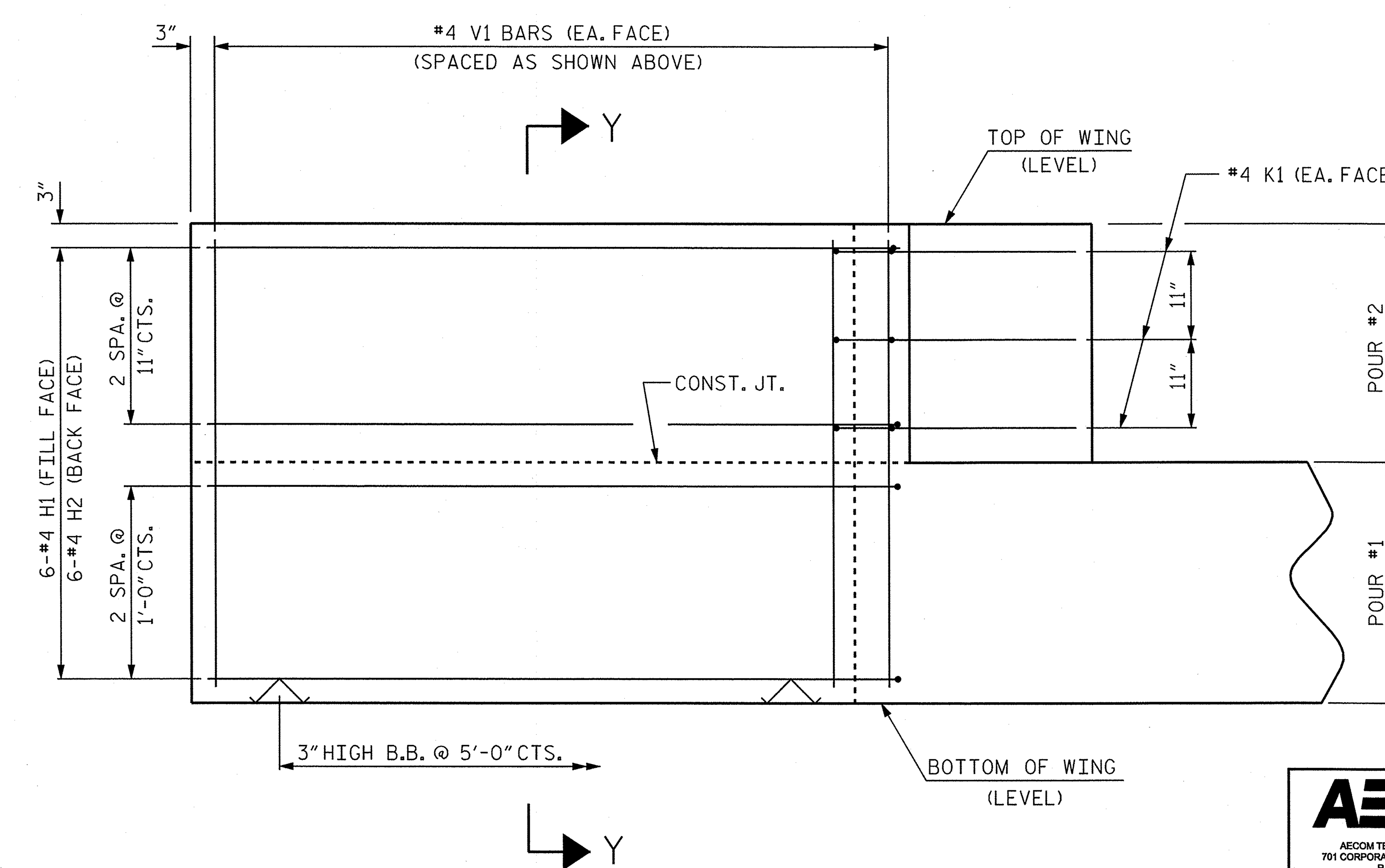
SECTION X-X



SECTION Y-Y



ELEVATION OF WING (W1)



ELEVATION OF WING (W2)

WING DETAILS

PROJECT NO. 17BP.14.R.33

JACKSON COUNTY

STATION: 13+12.50 -L-

SHEET 3 OF 5

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030474 JOHN C. MORRISON

3/27/14

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT
WING DETAILS

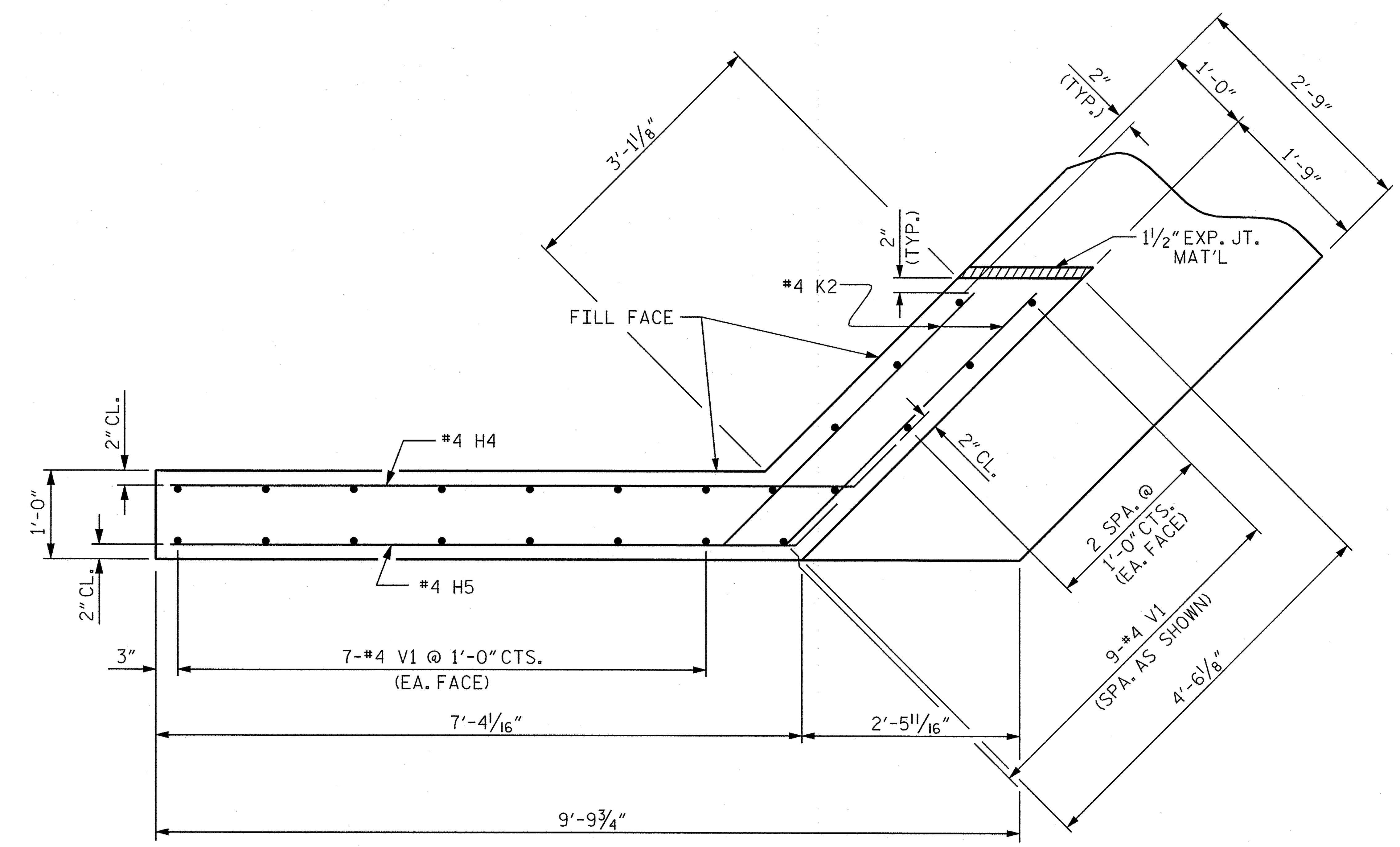
REVISIONS							
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

SHEET NO. S-10

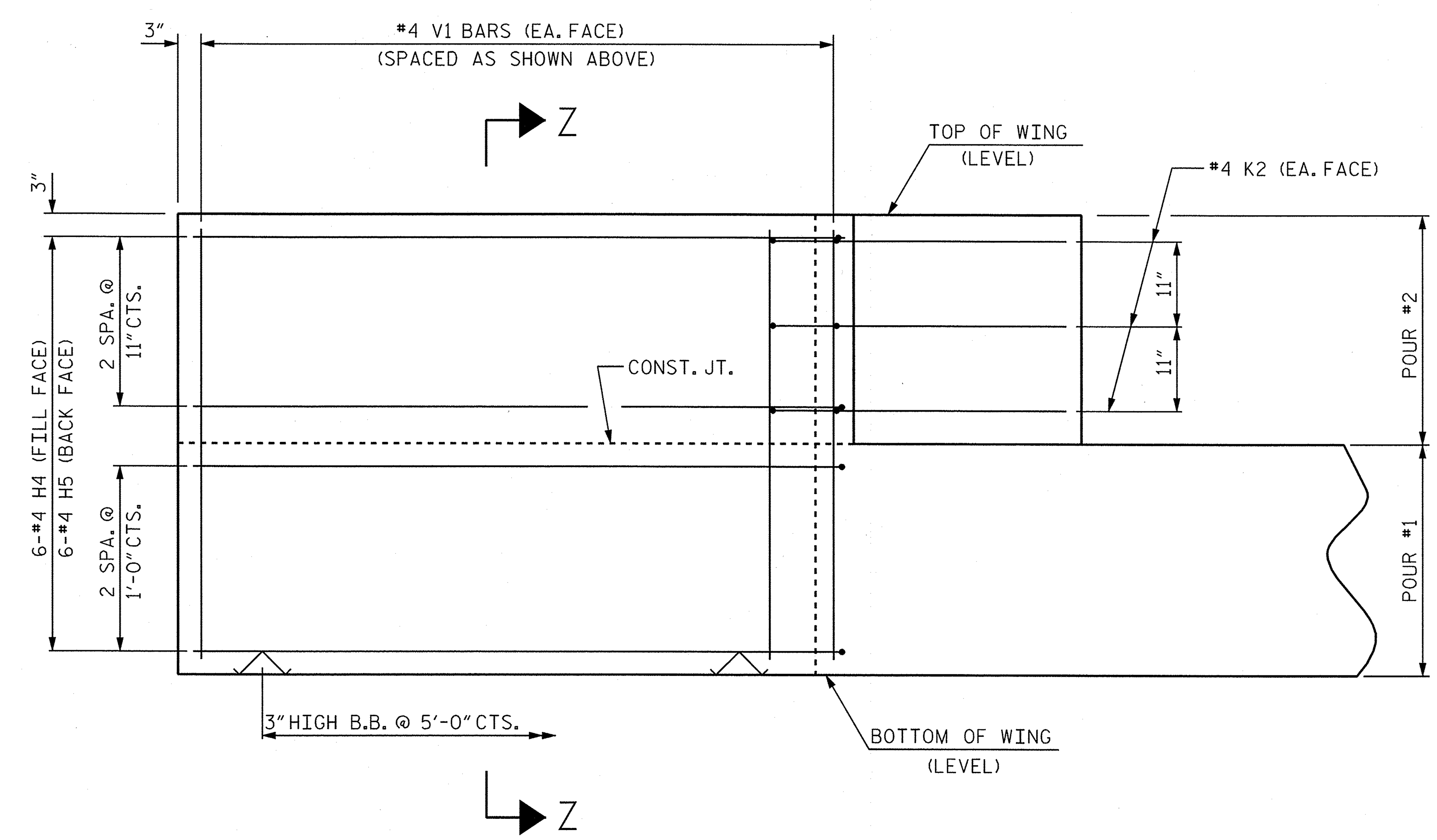
TOTAL SHEETS

ASSEMBLED BY :	MTB	DATE :	03/14
CHECKED BY :	JCM	DATE :	03/14
DRAWN BY :	DGE	12/09	
CHECKED BY :	MKT	01/10	

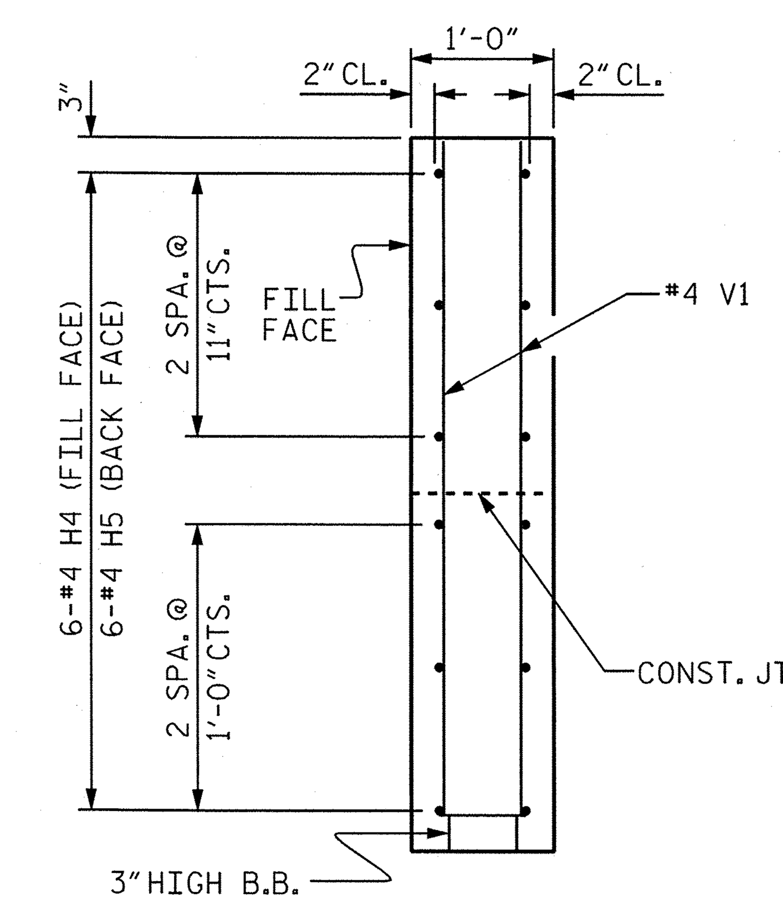
STD. NO. EB_30_120S



PLAN OF WING (W3)



ELEVATION OF WING (W3)



SECTION Z-Z

WING DETAILS

PROJECT NO. 17BP.14.R.33

JACKSON COUNTY

STATION: 13+12.50 -L-

SHEET 4 OF 5

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3/27/14

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT
WING DETAILS

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

STD. NO. EB_30_120S

ASSEMBLED BY :	MTB	DATE : 03/14
CHECKED BY :	JCM	DATE : 03/14
DRAWN BY : DGE	12/09	
CHECKED BY : MKT	01/10	

DATE: 3/27/2014
TIME: 8:04:27 AM

USER: bellstein
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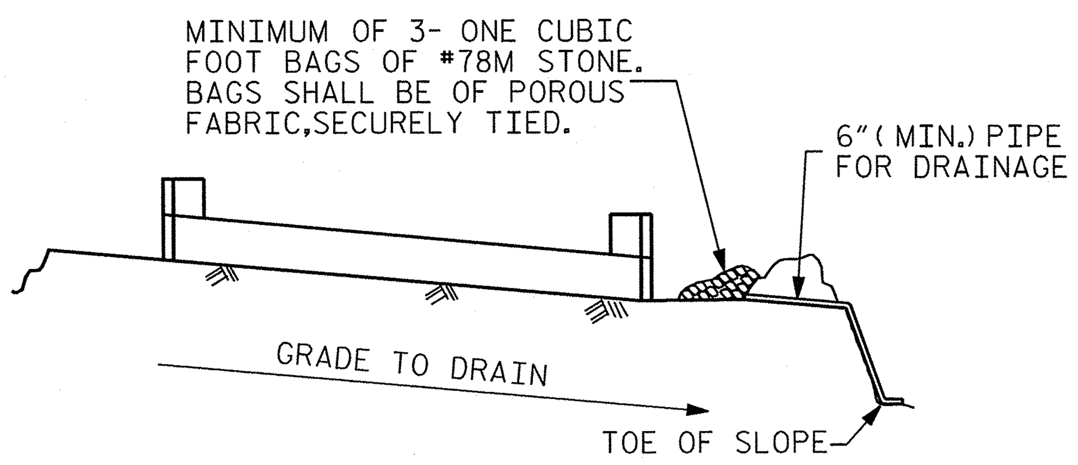
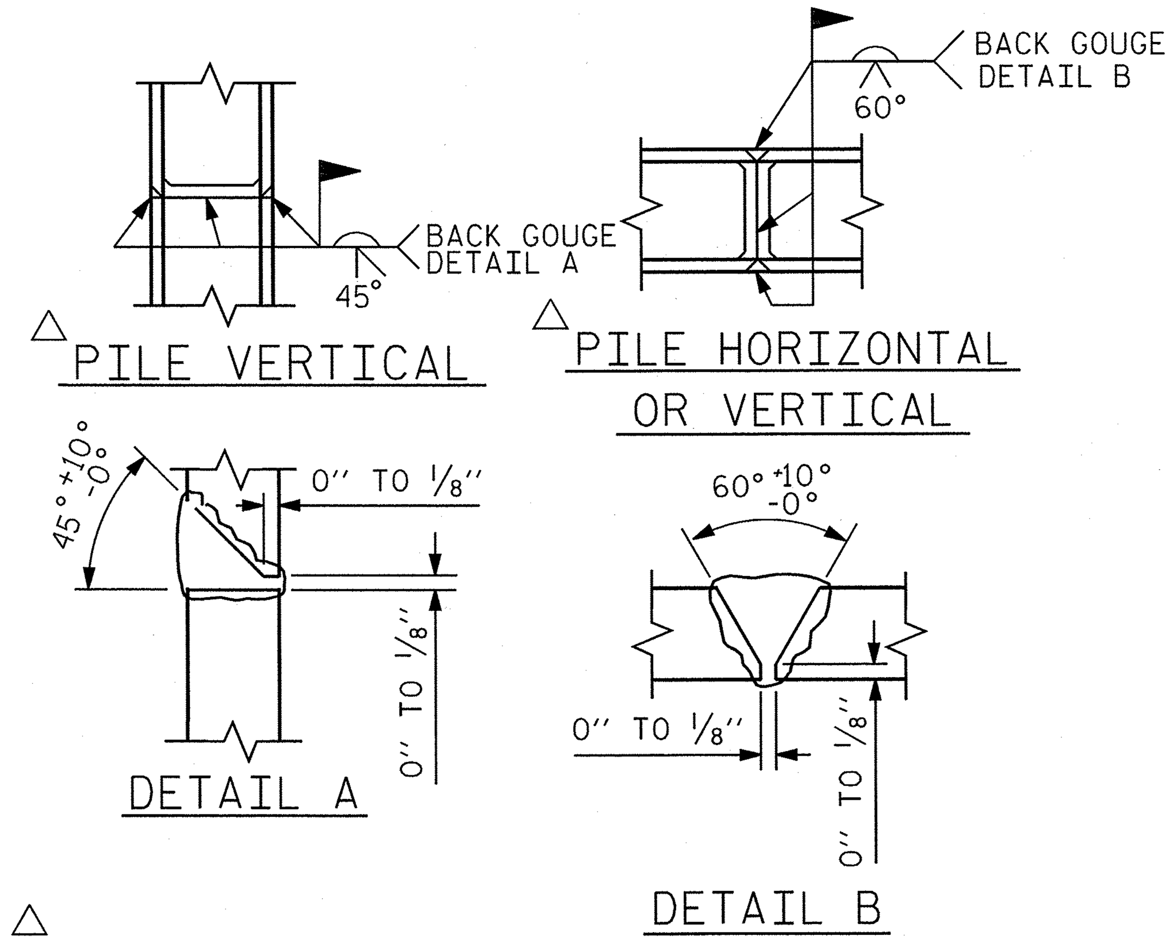


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.

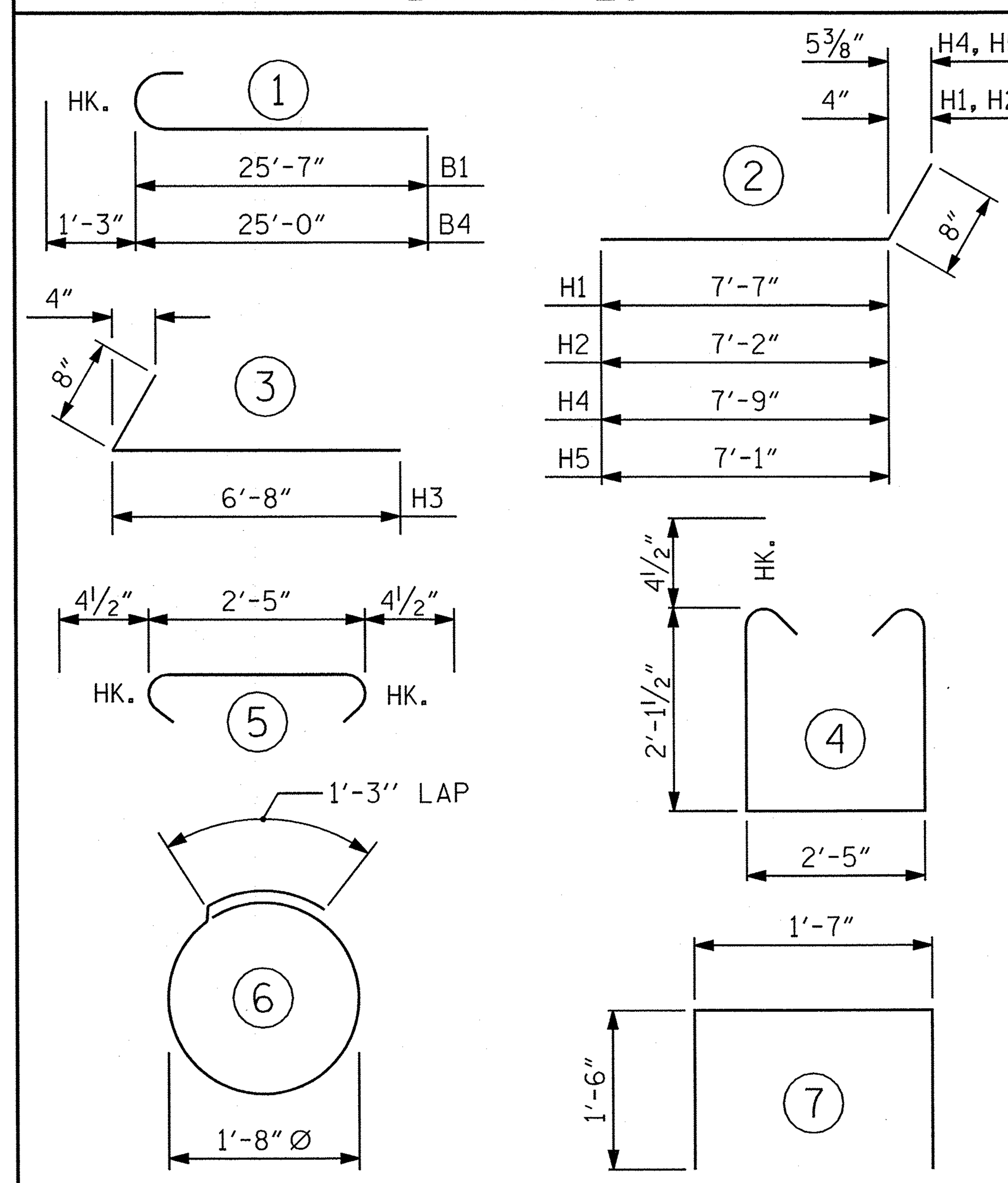
TEMPORARY DRAINAGE AT END BENT



△ POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

END BENT No. 1	END BENT No. 2
HP 12 X 53 STEEL PILES	HP 12 X 53 STEEL PILES
NO: 5 LIN. FT.= 75	NO: 5 LIN. FT.= 90
STEEL PILE POINTS NO: 5	STEEL PILE POINTS NO: 5

BILL OF MATERIAL FOR END BENT No. 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	16	#9	1	26-10"	1460
B2	16	#4	STR	22'-6"	240
B3	11	#4	STR	2'-5"	18
D1	20	#6	STR	1'-6"	45
H3	12	#4	3	7'-4"	59
H4	6	#4	2	8'-5"	34
H5	6	#4	2	7'-9"	31
K1	6	#4	STR	3'-3"	13
K2	6	#4	STR	3'-11"	16
S1	54	#4	4	7'-5"	268
S2	54	#4	5	3'-2"	114
S3	10	#4	6	6'-6"	43
V1	46	#4	STR	4'-8"	143

REINFORCING STEEL (FOR END BENT No. 1) 2484 LBS.

CLASS A CONCRETE BREAKDOWN (FOR END BENT No. 1)

POUR #1	CAP, LOWER PART OF WINGS & COLLARS	12.8 C.Y.
POUR #2	UPPER PART OF WINGS	1.9 C.Y.
TOTAL CLASS A CONCRETE		14.7 C.Y.

PREDRILLING FOR PILES 50 L.F.

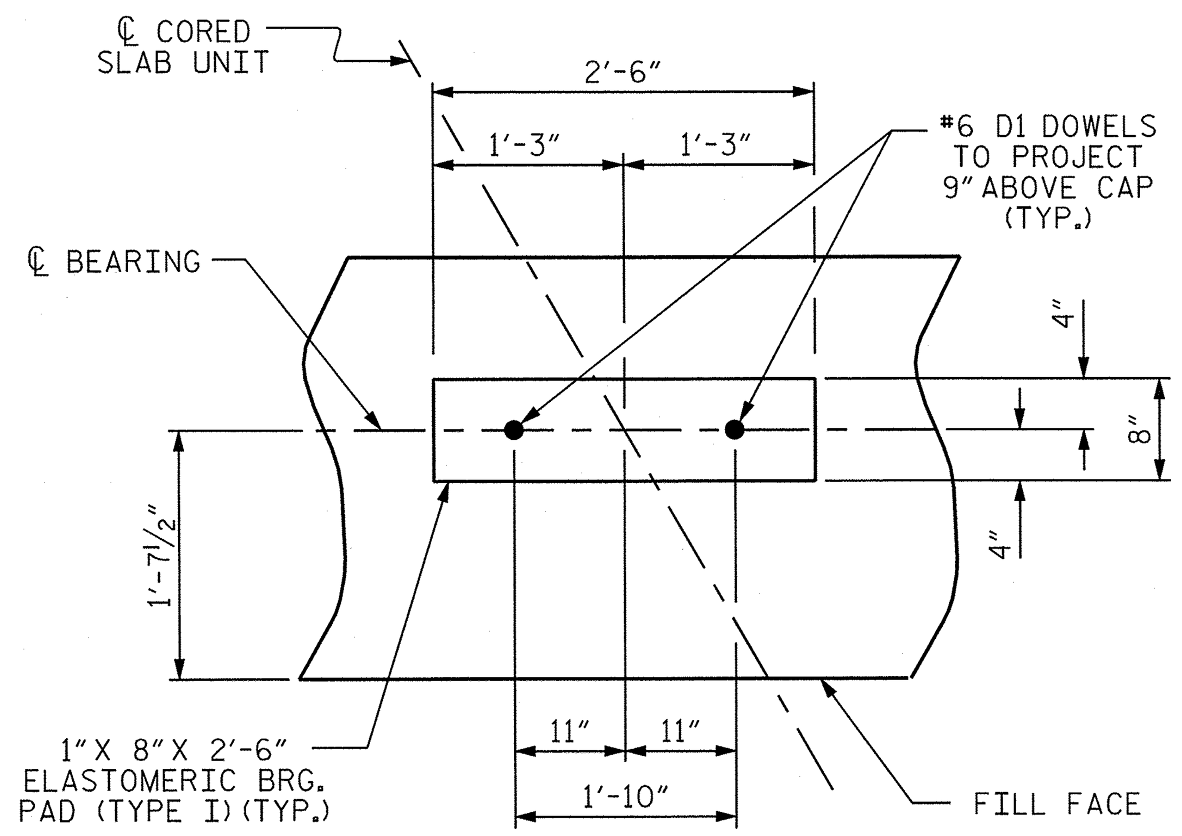
BILL OF MATERIAL FOR END BENT No. 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B3	11	#4	STR	2'-5"	18
B4	16	#9	1	26'-3"	1428
B5	16	#4	STR	21'-11"	234
D1	20	#6	STR	1'-6"	45
H1	6	#4	2	8'-3"	33
H2	6	#4	2	7'-10"	31
H3	12	#4	3	7'-4"	59
K1	12	#4	STR	3'-3"	26
S1	54	#4	4	7'-5"	268
S2	54	#4	5	3'-2"	114
S3	10	#4	6	6'-6"	43
V1	47	#4	STR	4'-8"	147

REINFORCING STEEL (FOR END BENT No. 2) 2446 LBS.

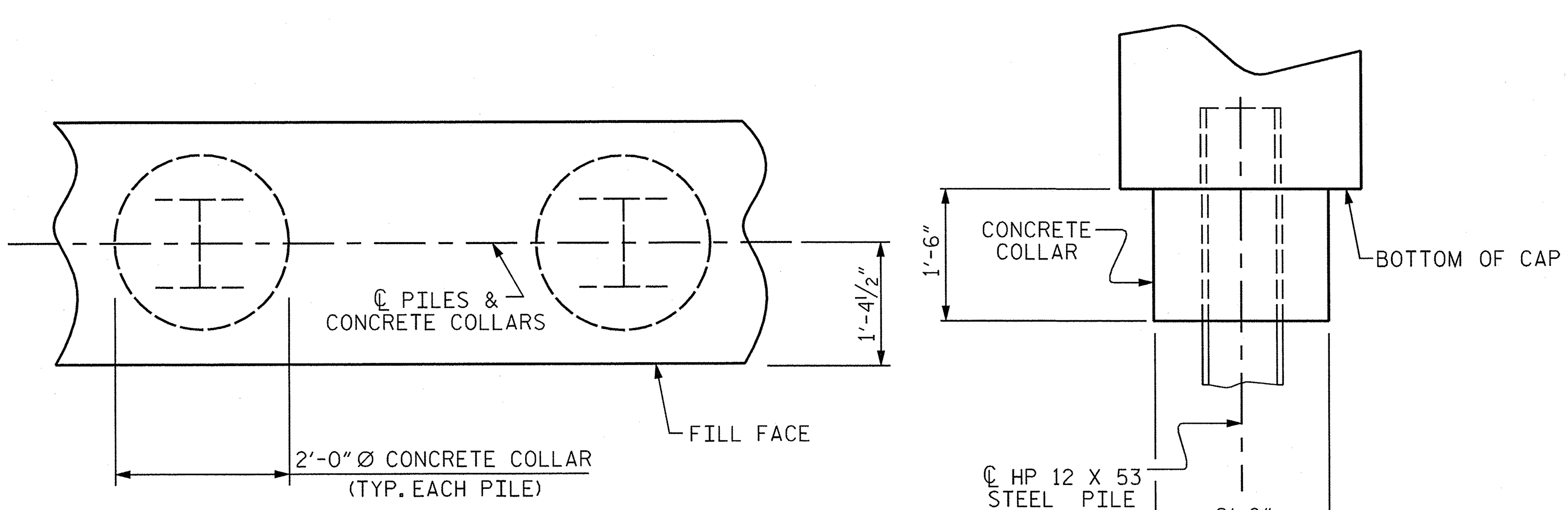
CLASS A CONCRETE BREAKDOWN (FOR END BENT No. 2)

POUR #1	CAP, LOWER PART OF WINGS & COLLARS	12.7 C.Y.
POUR #2	UPPER PART OF WINGS	1.9 C.Y.
TOTAL CLASS A CONCRETE		14.6 C.Y.



DETAIL "A"

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

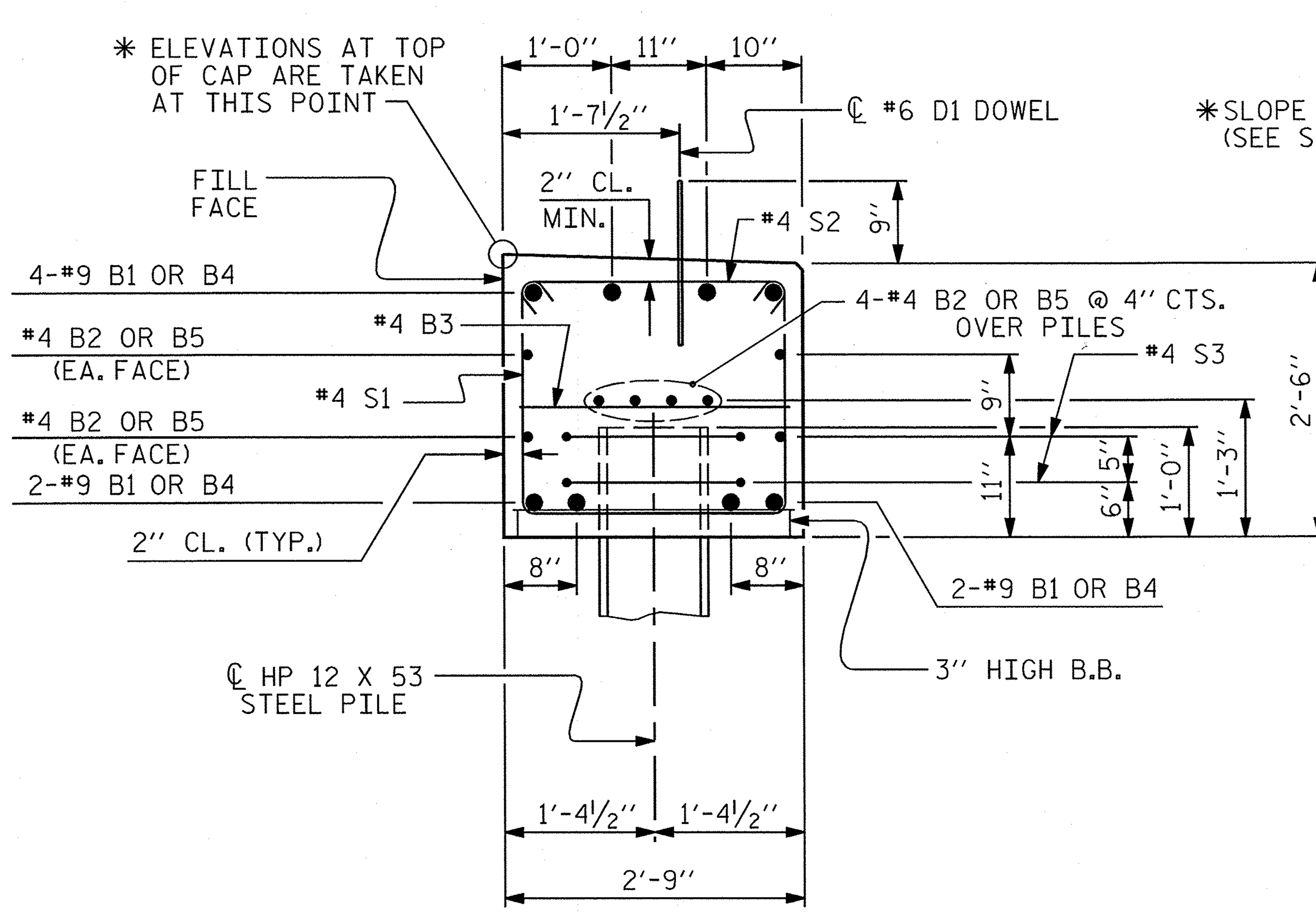


PLAN

ELEVATION

CORROSION PROTECTION FOR STEEL PILES DETAIL

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



*SLOPE TOP OF CAP TRANSVERSELY, (SEE SHEETS 1 & 2 OF 5).

SECTION A-A

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

ASSEMBLED BY :	MTB	DATE :	03/14
CHECKED BY :	JCM	DATE :	03/14
DRAWN BY : DGE	12/09		
CHECKED BY : MKT	01/10		

PROJECT NO. 17BP.14.R.33

JACKSON COUNTY

STATION: 13+12.50 -L-

SHEET 5 OF 5

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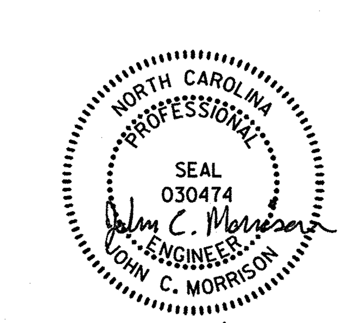

3/27/14

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT No. 1 & 2 DETAILS

REVISIONS

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

SHEET NO. S-12

TOTAL SHEETS

STD. NO. EB_30_120S

DATE: 3/27/2014
TIME: 11:51:36 AM

USER: bellisiem
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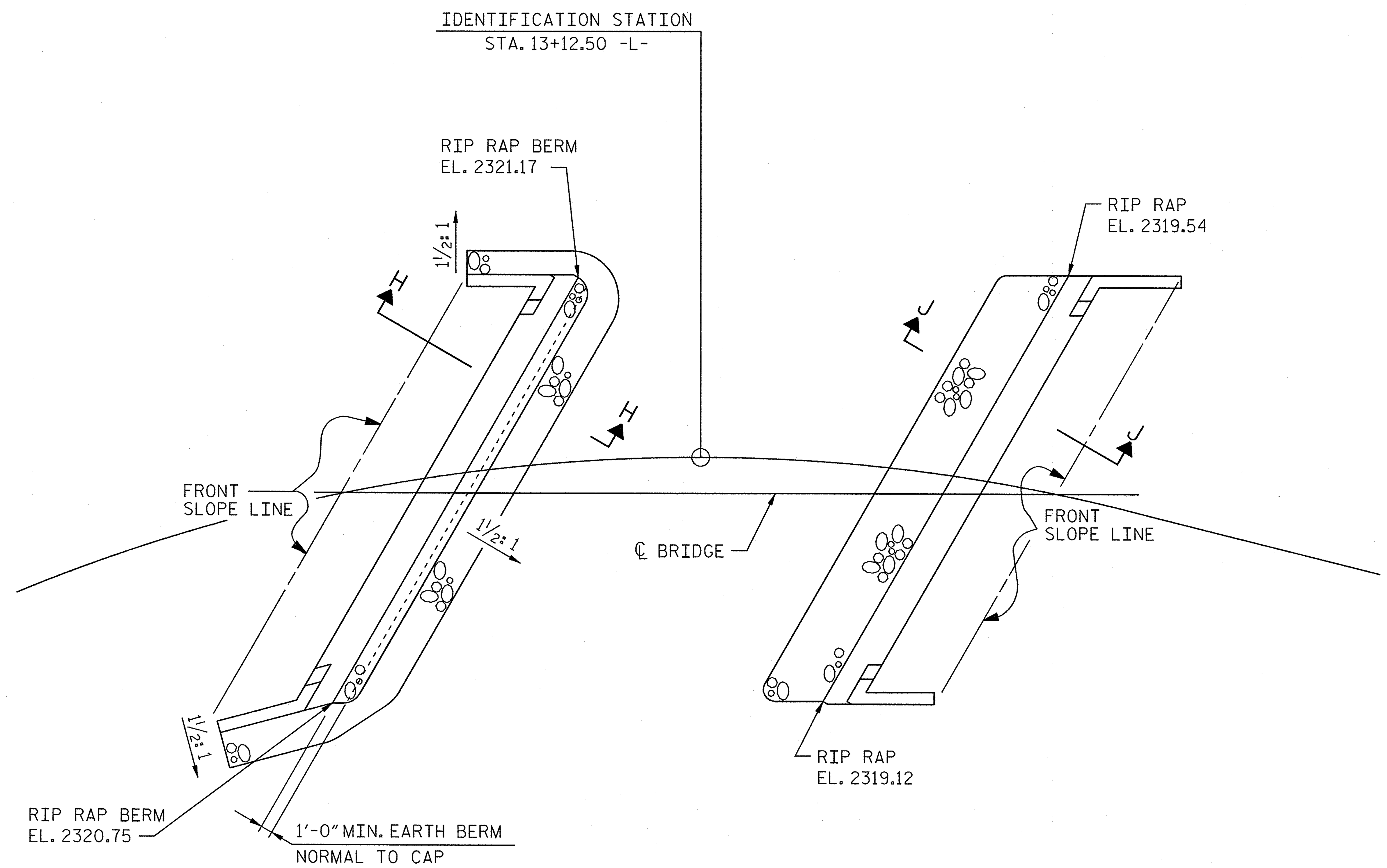
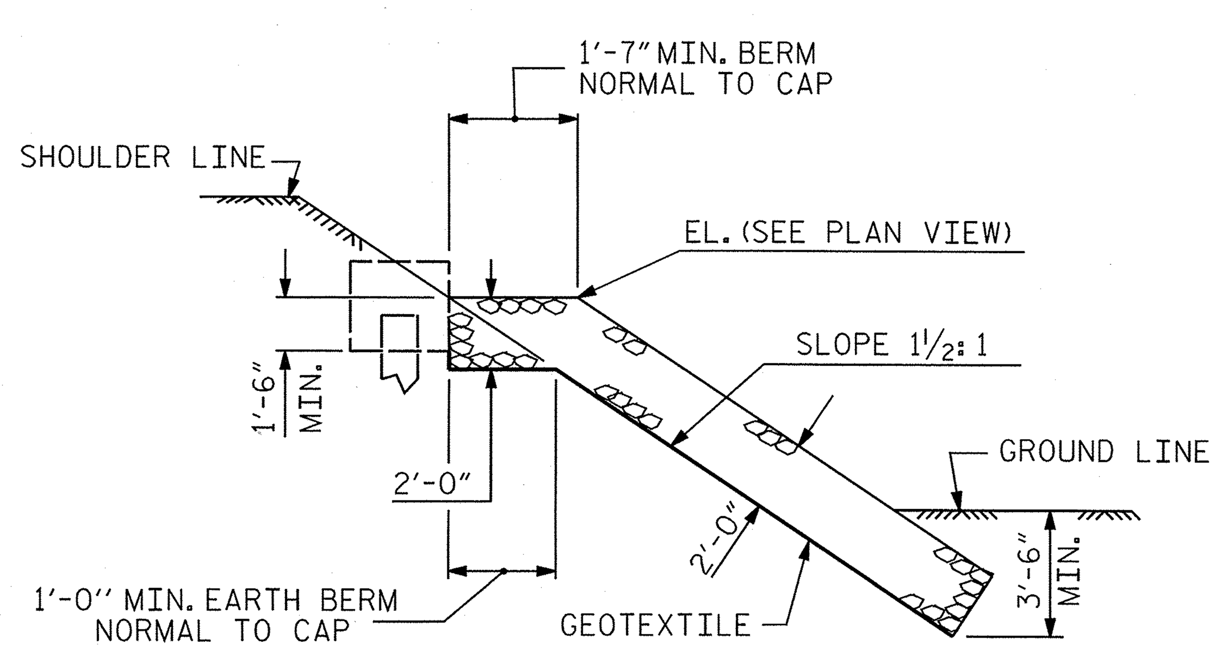


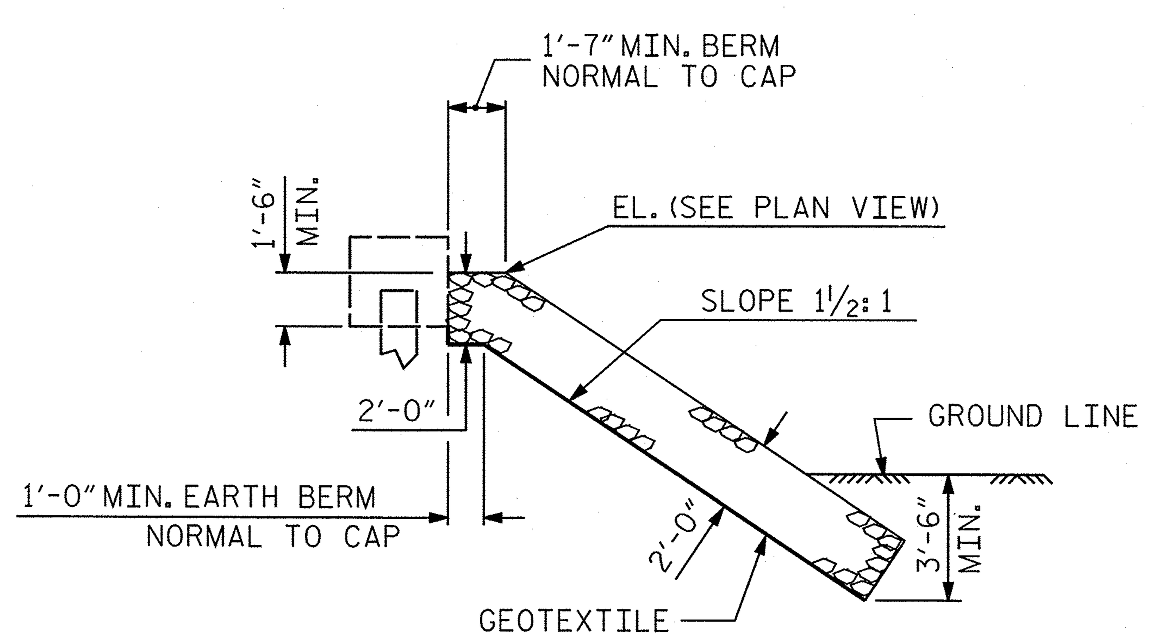
BERM RIP RAPPED
AT END BENT No. 1

RIP RAP
AT END BENT No. 2

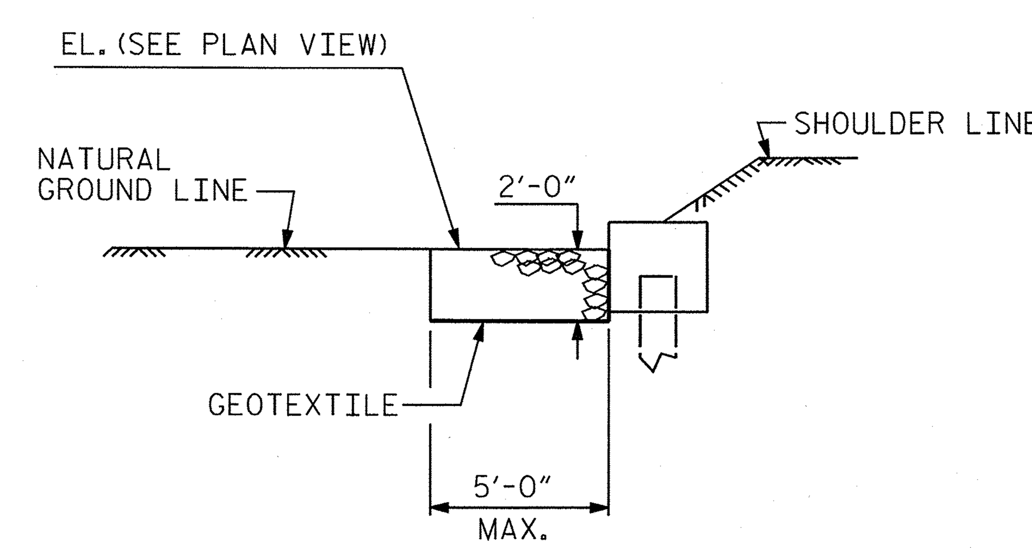
ESTIMATED QUANTITIES		
BRIDGE @ STA. 13+12.50 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	38	42
END BENT 2	21	23



SECTION H-H



℄ SECTION
BERM RIP RAPPED



SECTION J-J
℄ SECTION - SIM.

PROJECT NO. 17BP.14.R.33
JACKSON COUNTY
STATION: 13+12.50 -L-

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AECOM License No. F-0342

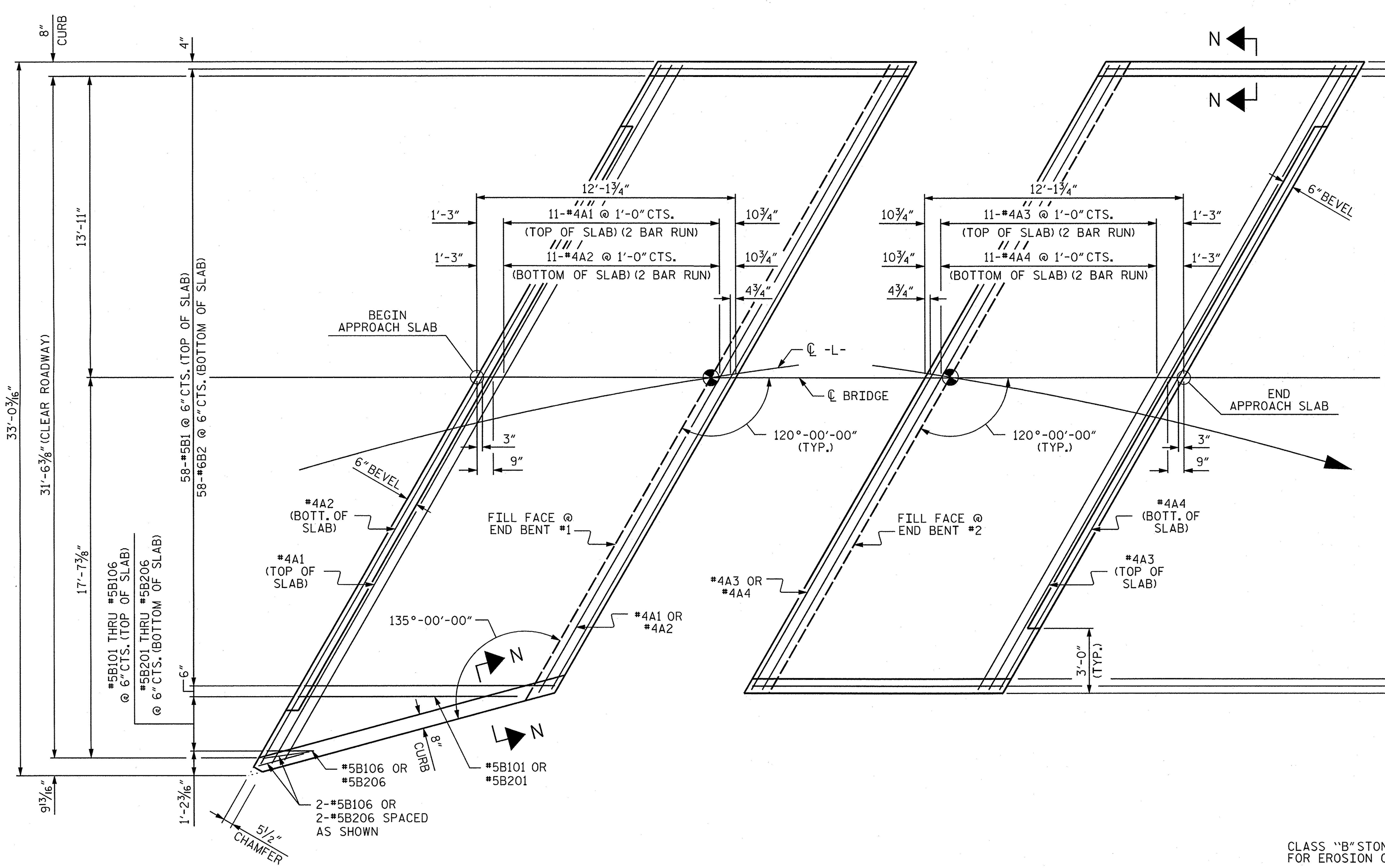
NORTH CAROLINA PROFESSIONAL SEAL 030474 ENGINEER JOHN C. MORRISON
3/27/14

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

RIP RAP DETAILS

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

DRAWN BY :	MTB	DATE :	03/14
CHECKED BY :	JCM	DATE :	03/14



NOTES

FOR BRIDGE APPROACH FILL INCLUDING GEOTEXTILE, 4" Ø DRAINAGE PIPE, AND #78M STONE BACKFILL, SEE ROADWAY PLANS.

GEOTEXTILE SHALL BE TYPE 1 IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS SECTION 1056.

#78M STONE BACKFILL (CLASS V SELECT MATERIAL) SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 1016.

#78M STONE BACKFILL IS TO BE CONTINUOUS ALONG FILL FACE OF BACKWALL FROM OUTSIDE EDGE TO OUTSIDE EDGE OF APPROACH SLAB.

FOR THE 4" Ø DRAINAGE PIPE OUTLET(S), SEE ROADWAY STANDARD DRAWINGS.

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.

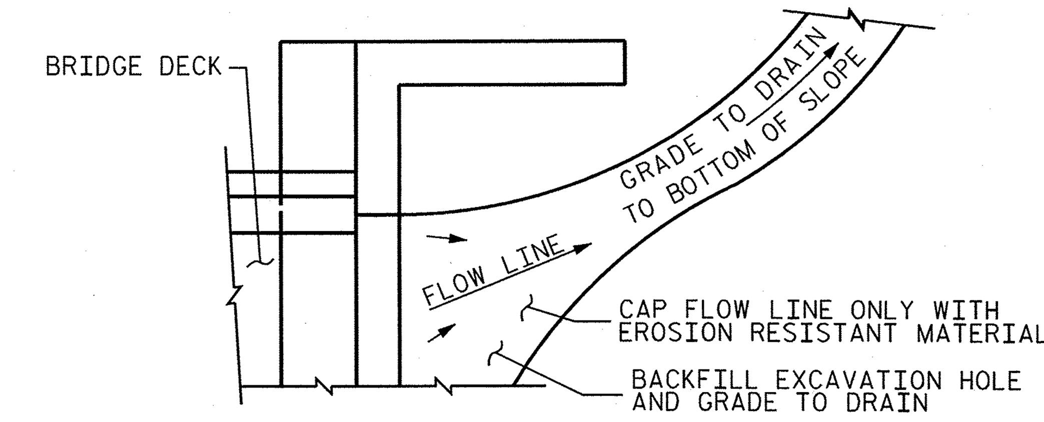
BILL OF MATERIAL

APPROACH SLAB AT EB #1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	26	#4	STR	19'-11"	345
A2	26	#4	STR	19'-10"	344
* B1	58	#5	STR	11'-1"	670
* B101	1	#5	STR	9'-11"	10
* B102	1	#5	STR	8'-4"	9
* B103	1	#5	STR	6'-9"	7
* B104	1	#5	STR	5'-2"	5
* B105	1	#5	STR	3'-7"	4
* B106	3	#5	STR	2'-0"	6
B2	58	#6	STR	11'-7"	1009
B201	1	#5	STR	10'-5"	11
B202	1	#5	STR	8'-10"	9
B203	1	#5	STR	7'-3"	8
B204	1	#5	STR	5'-8"	6
B205	1	#5	STR	4'-1"	4
B206	3	#5	STR	2'-6"	8
REINFORCING STEEL				LBS.	1399
* EPOXY COATED REINFORCING STEEL				LBS.	1056
CLASS AA CONCRETE				C.Y.	18.1

APPROACH SLAB AT EB #2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A3	26	#4	STR	17'-8"	307
A4	26	#4	STR	17'-7"	305
* B1	58	#5	STR	11'-1"	670
B2	58	#6	STR	11'-7"	1009
REINFORCING STEEL				LBS.	1314
* EPOXY COATED REINFORCING STEEL				LBS.	977
CLASS AA CONCRETE				C.Y.	17.1

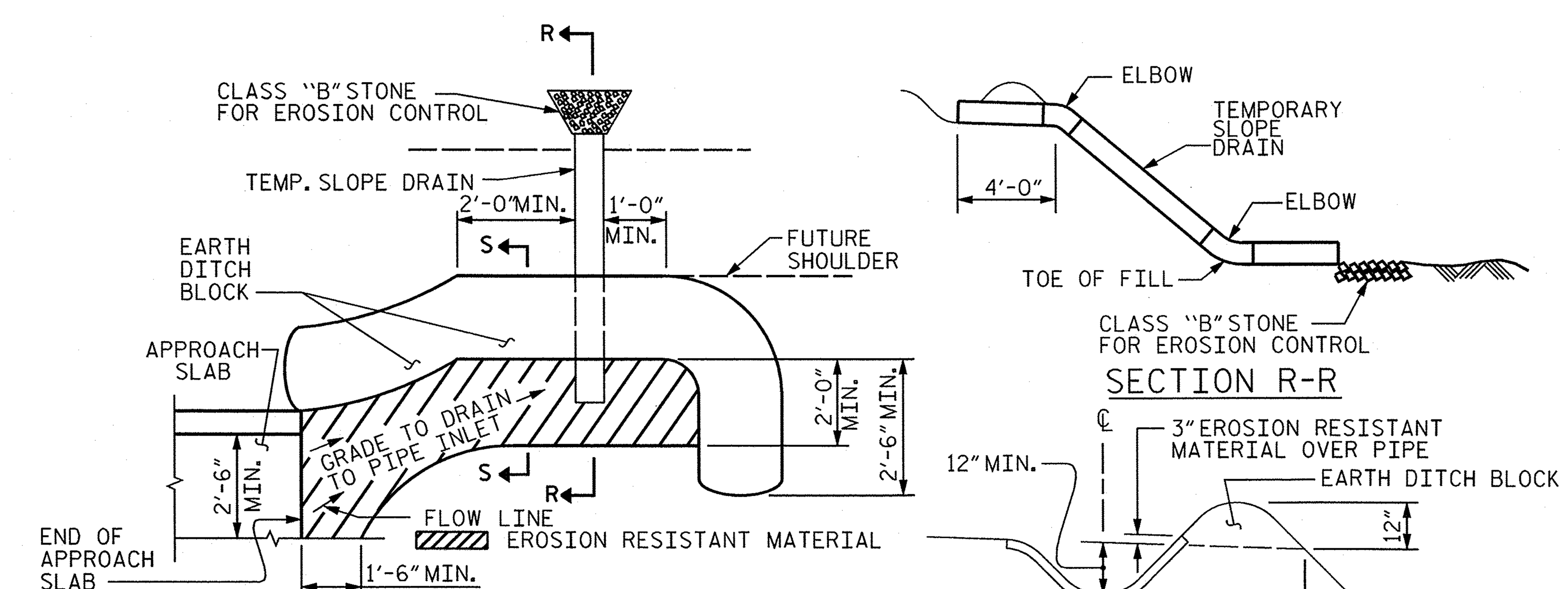


NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT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

TEMPORARY DRAINAGE DETAIL

SPLICE LENGTHS

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

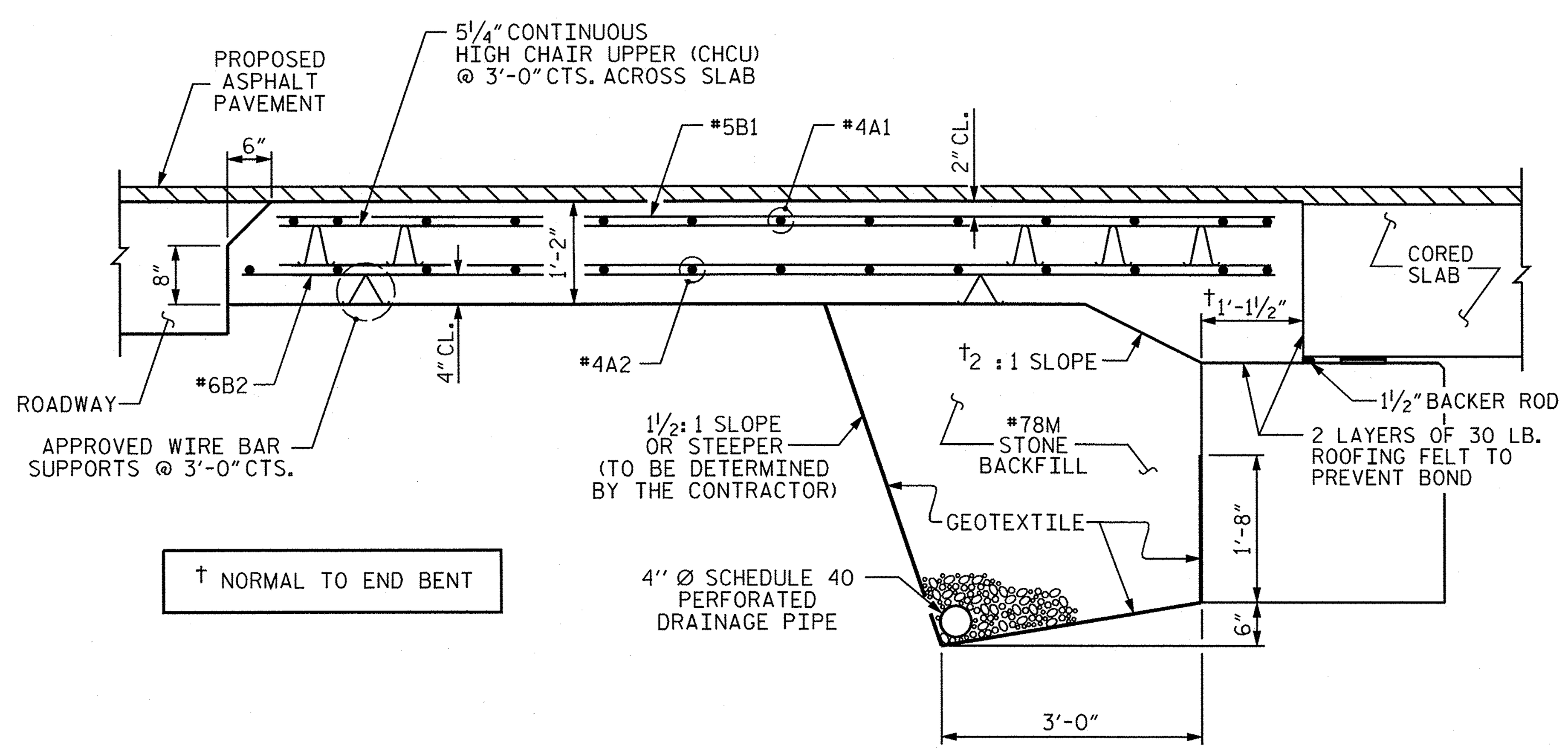


NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN.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

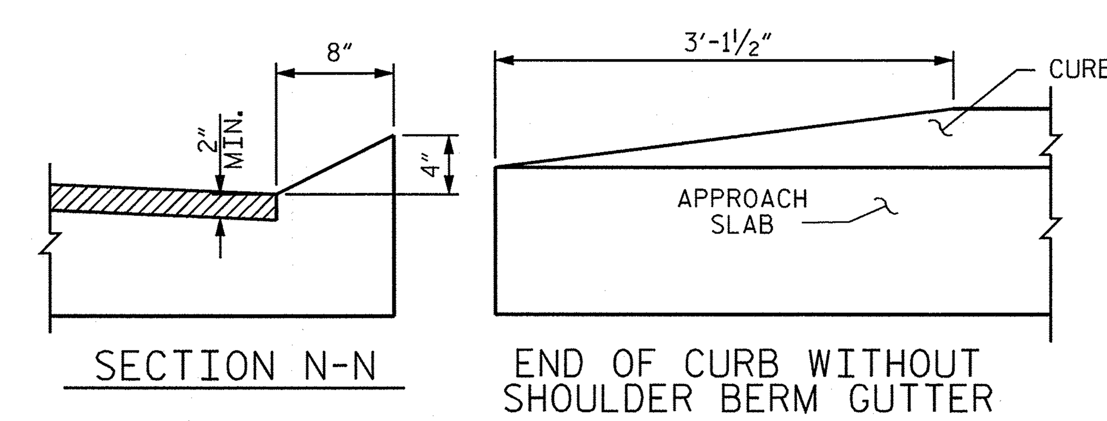
TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



† NORMAL TO END BENT

SECTION THRU SLAB



CURB DETAILS

PROJECT NO. 17BP.14.R.33

JACKSON COUNTY

STATION: 13+12.50 -L-

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3/27/14

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
BRIDGE APPROACH SLAB
FOR PRESTRESSED CONCRETE
CORED SLAB UNIT
(SUB-REGIONAL TIER)
120° SKEW

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

ASSEMBLED BY :	MTB	DATE :	03/14
CHECKED BY :	JCM	DATE :	03/14
DRAWN BY : SHS/MAA 5-09	REV. 12-11	MAA/AAC	
CHECKED BY : BCH 5-09			

STD. NO. BAS_30_120S

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 ¾"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