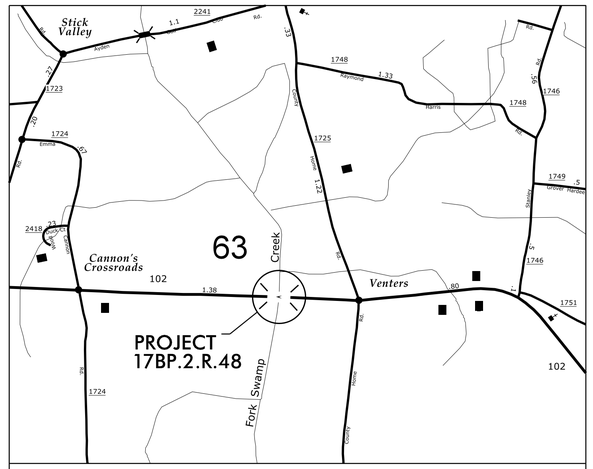
09/08/99

CONTRACT: TIP PROJECT: 17BP.2.R.48

See Sheet 1-A For Index of Sheets



VICINITY MAP
(NOT TO SCALE)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PITT COUNTY

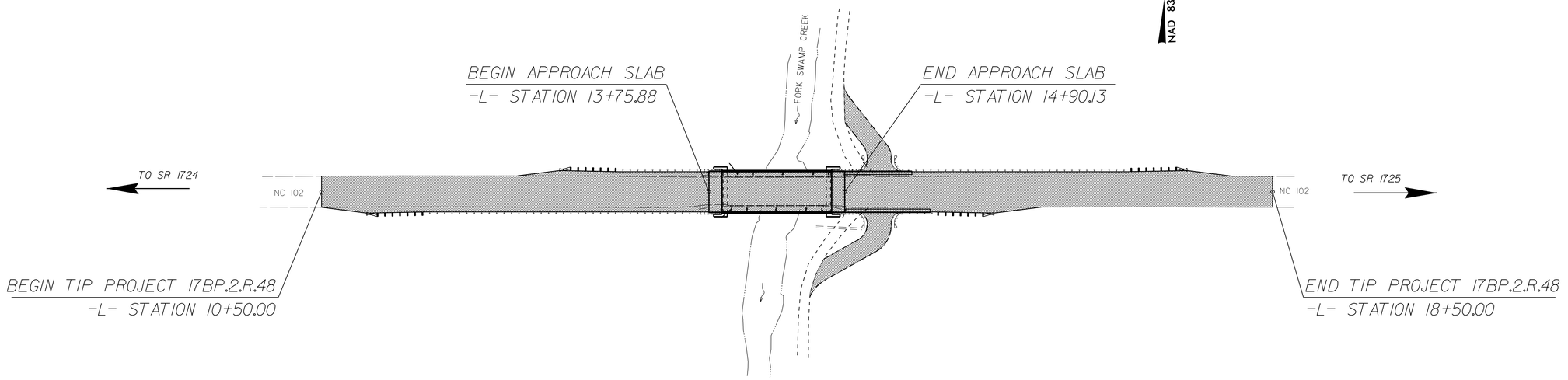
LOCATION: BRIDGE NO. 63 OVER FORK SWAMP CREEK ON NC 102

TYPE OF WORK: BRIDGE REPLACEMENT, GUARDRAIL, PAVING, GRADING AND DRAINAGE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.2.R.48	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
		PE
		RW
		CONST

NAD 83/NSRS 2007



GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT 17BP.2.R.48 = 0.135 MILES
LENGTH STRUCTURE TIP PROJECT 17BP.2.R.48 = 0.017 MILES
TOTAL LENGTH TIP PROJECT 17BP.2.R.48 = 0.152 MILES

Prepared in the Office of:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:

LETTING DATE:
OCTOBER 2013

DWAYNE H. ALLIGOOD, PE
PROJECT ENGINEER

LANG JONES
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 16710 ENGINEER DWAYNE H ALLIGOOD
Dwayne H. Alligood, P.E.
SIGNATURE: 09/24/2013

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 16710 ENGINEER DWAYNE H ALLIGOOD
Dwayne H. Alligood, P.E.
SIGNATURE: 09/24/2013

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

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$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
17BP.2.R.48	1A

INDEX OF SHEETS

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 projectand 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
DIVISION 4 - MAJOR STRUCTURES	
422.10	Reinforced Bridge Approach Fills
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
815.03	Pipe Underdrain and Blind Drain
840.00	Concrete Base Pad for Drainage Structures
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet
840.45	Precast Drainage Structure
840.66	Drainage Structure Steps
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
876.02	Guide for Rip Rap at Pipe Outlets

GENERAL NOTES:

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

GRADE LINE:
GRADING AND SURFACING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AS DIRECTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING:

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

SUPERELEVATION:

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

SHOULDER CONSTRUCTION:

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

UNDERDRAINS:

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

DRIVEWAYS:

DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.02 USING 3' RADII OR RADII AS SHOWN ON THE PLANS. LOCATIONS OF DRIVES WILL BE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

GUARDRAIL:

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

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:

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

RIGHT-OF-WAY MARKERS:

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

8/15/08

Note: Not to Scale

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

PROJECT REFERENCE NO.	SHEET NO.
17BP.2.R.48	1B

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
- Property Corner
- Property Monument
- Parcel/Sequence Number
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary
- Proposed Wetland Boundary
- Existing Endangered Animal Boundary
- Existing Endangered Plant Boundary

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

- Standard Gauge
- RR Signal Milepost
- Switch
- RR Abandoned
- RR Dismantled

RIGHT OF WAY:

- Baseline Control Point
- Existing Right of Way Marker
- Existing Right of Way Line
- Proposed Right of Way Line
- Proposed Right of Way Line with Iron Pin and Cap Marker
- Proposed Right of Way Line with Concrete or Granite Marker
- Existing Control of Access
- Proposed Control of Access
- Existing Easement Line
- Proposed Temporary Construction Easement
- Proposed Temporary Drainage Easement
- Proposed Permanent Drainage Easement
- Proposed Permanent Utility Easement
- Proposed Temporary Utility Easement
- Proposed Permanent Easement with Iron Pin and Cap Marker

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut
- Proposed Slope Stakes Fill
- Proposed Wheel Chair Ramp
- 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

EXISTING STRUCTURES:

MAJOR:

- Bridge, Tunnel or Box Culvert
- Bridge Wing Wall, Head Wall and End Wall

MINOR:

- Head and End Wall
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB
- Paved Ditch Gutter
- Storm Sewer Manhole
- Storm Sewer

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole
- H-Frame Pole
- Recorded U/G Power Line
- Designated U/G Power Line (S.U.E.*)

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box
- Utility Unknown U/G Line
- U/G Tank; Water, Gas, Oil
- A/G Tank; Water, Gas, Oil
- U/G Test Hole (S.U.E.*)
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

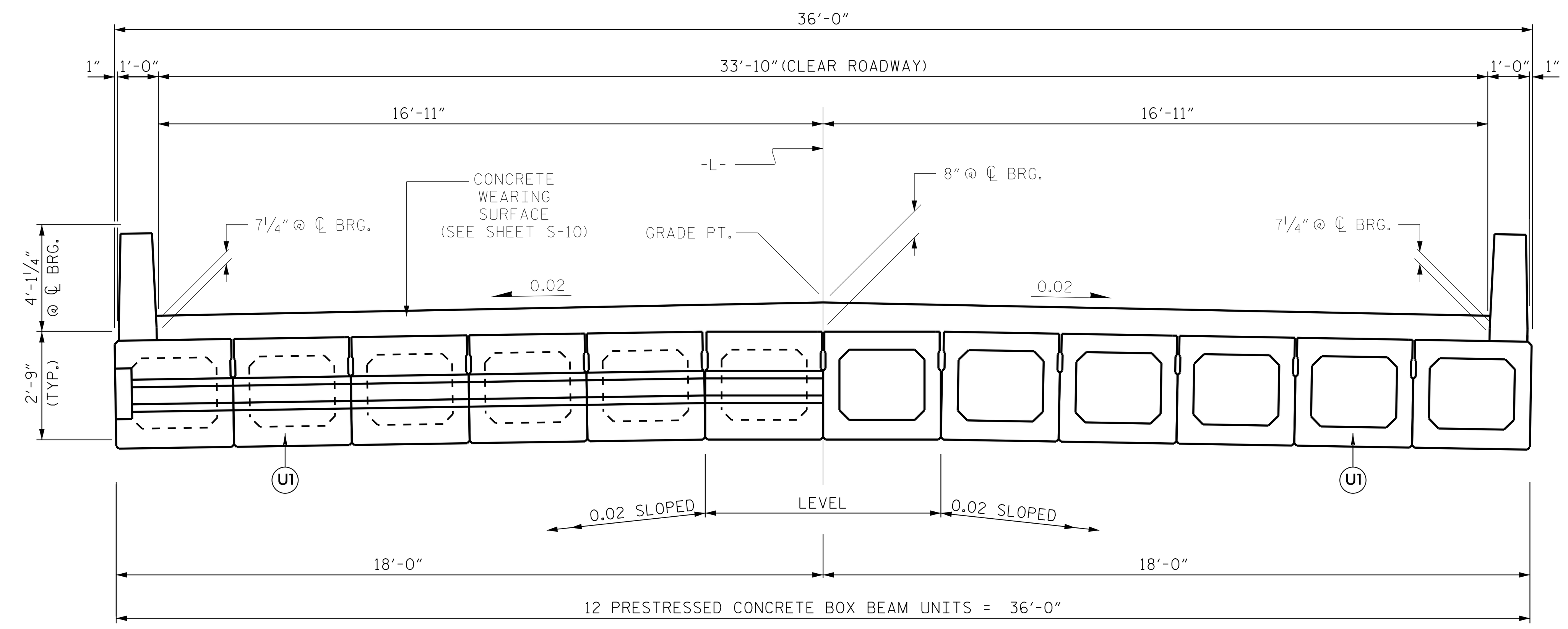
PROJECT REFERENCE NO.	SHEET NO.
17BP.2.R.48	2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16710 ENGINEER DWAYNE H. ALLIGOOD 09/24/2013

NORTH CAROLINA PROFESSIONAL SEAL 16710 ENGINEER DWAYNE H. ALLIGOOD 09/24/2013

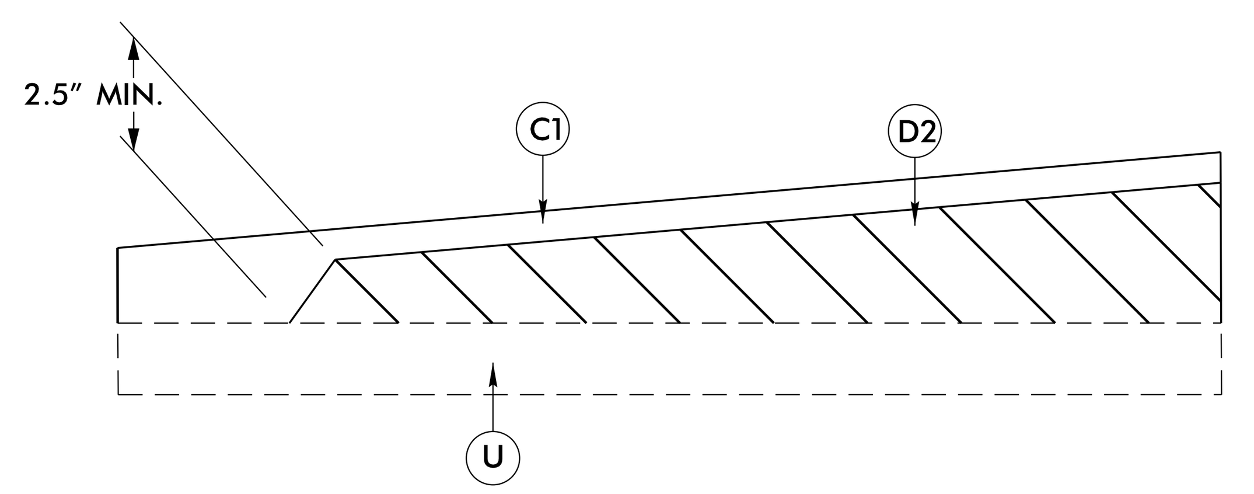
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 336 LBS. PER SQ.YD. IN EACH OF TWO LAYERS.
D1	PROP. APPROX. 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
D2	PROPOSED VARIABLE DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, TO BE PLACED IN LAYERS NOT LESS THAN 2.5" OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
U1	CONCRETE BOX BEAM

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



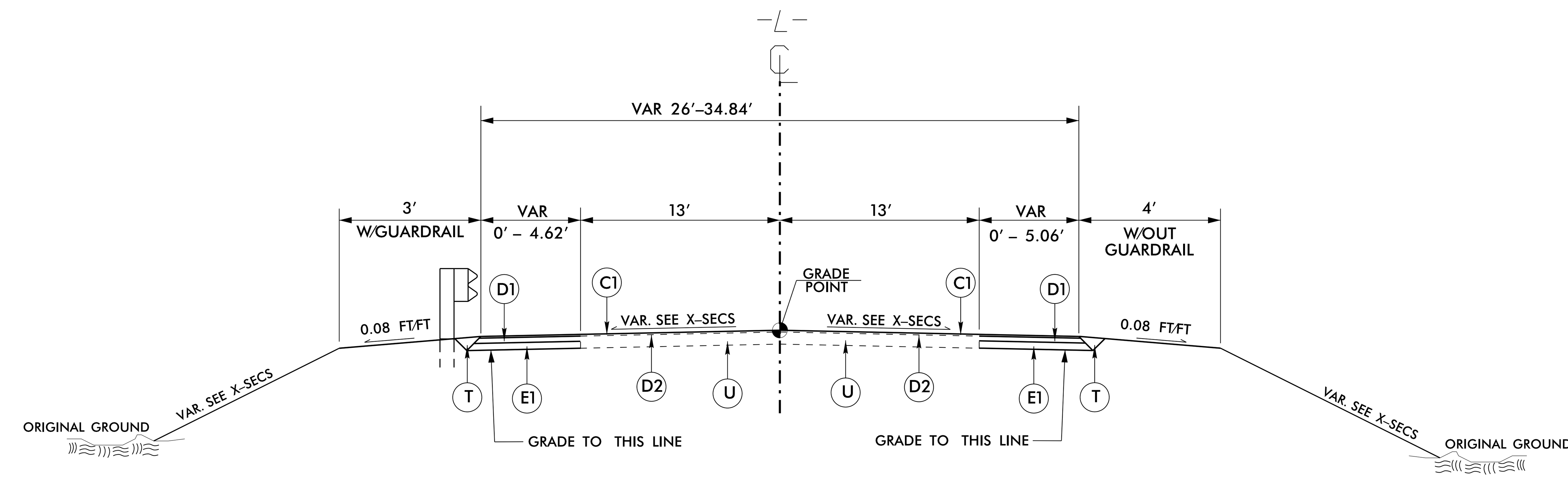
TYPICAL BRIDGE SECTION (NTS)

-L- STA 13+86.88 TO -L- STA 14+79.13



WEDGING DETAIL

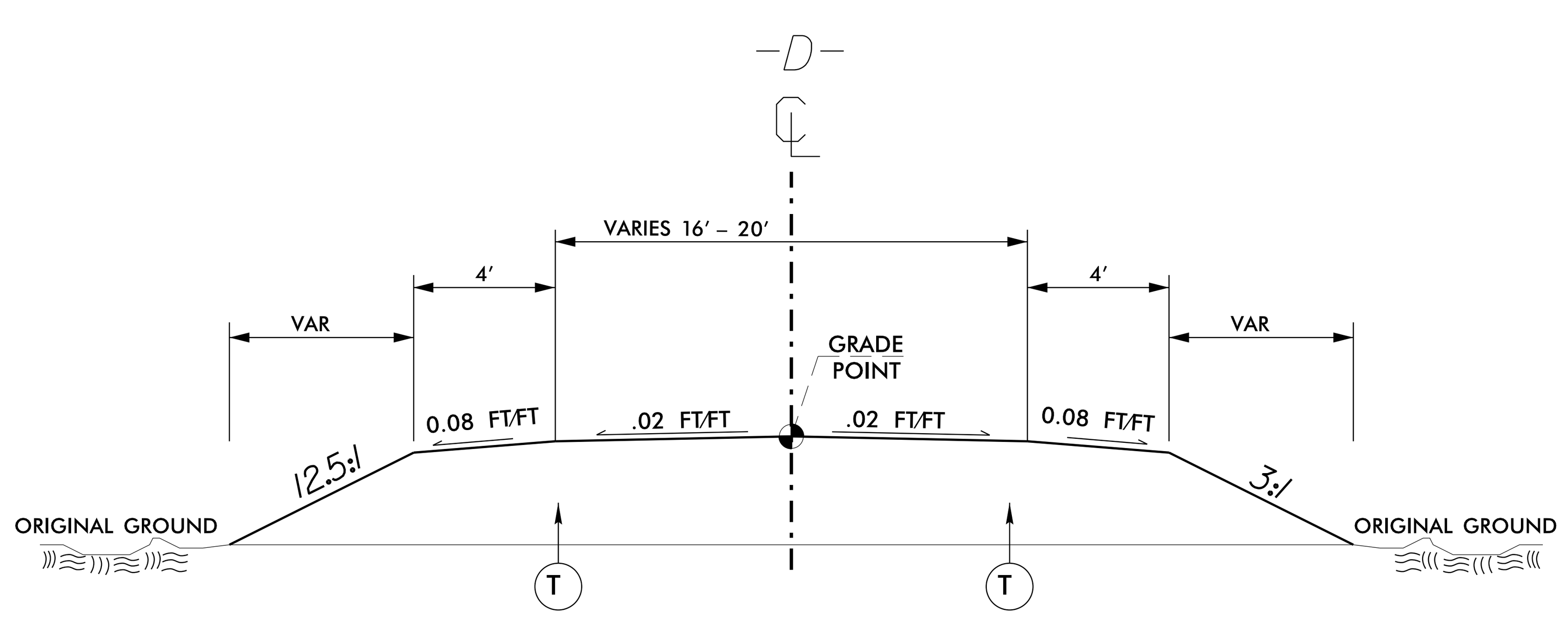
NOT TO SCALE



USE TYPICAL SECTION #1 (NTS)

-L- 10+50.00 - 13+75.88

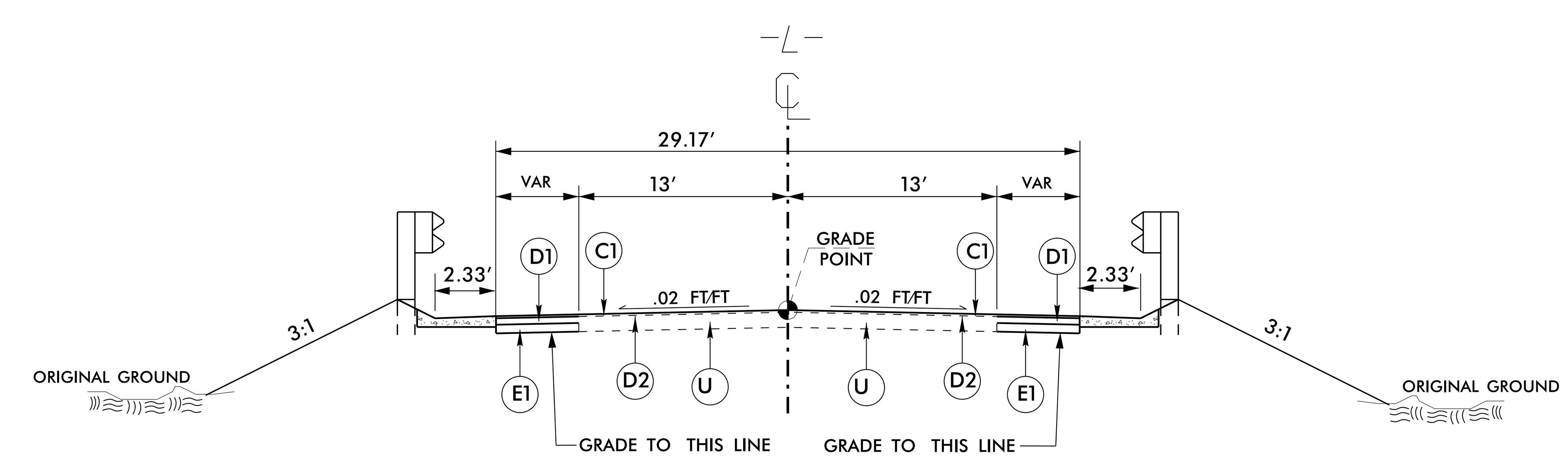
-L- 15+46.63 - 18+50.00



USE TYPICAL SECTION #3

-D- 10+00.00 - 10+75.66

-D- 11+31.38 - 11+91.94



USE TYPICAL SECTION #2

-L- 14+90.13 - 15+46.63

REVISIONS

8/17/99

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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
SUMMARY OF QUANTITIES

ITEM	SECT	QUANTITY	UNIT	ITEM DESCRIPTION
1	800	1	LS	MOBILIZATION
2	801	1	LS	CONSTRUCTION SURVEYING
3	SP	1	LS	REINFORCED BRIDGE APPROACH FILL,-L- STA 14+83.20
4	226	1	LS	GRADING
5	226	200	CY	UNDERCUT EXCAVATION
6	300	30	TON	FOUNDATION CONDITIONING MATERIAL,MINOR STRUCTURES
7	300	80	SY	FOUNDATION CONDITIONING GEOTEXTILE
8	310	112	LF	15" R.C.PIPE CULVERTS,CLASS III
9	310	30	LF	15" R.C.PIPE CULVERTS,CLASS IV
10	310	72	LF	18" C.A.A.PIPE CULVERT,0.064" THICK
11	610	110	TON	ASPHALT CONCRETE BASE COURSE,TYPE B25.0B
12	610	230	TON	ASPHALT CONCRETE INTERMEDIATE COURSE,TYPE I19.0B
13	610	475	TON	ASPHALT CONCRETE SURFACE COURSE,TYPE S9.5B
14	620	45	TON	ASPHALT BINDER FOR PLANT MIX
15	840	5	EA	MASONRY DRAINAGE STRUCTURES
16	840	5	EA	FRAME WITH GRATE,STD 840.29
17	846	130	LF	SHOULDER BERM GUTTER
18	862	510.50	LF	STEEL BEAM GUARDRAIL
19	862	52	LF	STEEL BEAM GUARDRAIL,SHOP CURVED
20	862	10	EA	ADDITIONAL GUARDRAIL POSTS
21	862	4	EA	GUARDRAIL ANCHOR UNITS,TYPE III
22	862	4	EA	GUARDRAIL ANCHOR UNITS,TYPE 350
23	862	4	EA	GUARDRAIL ANCHOR UNITS,CAT-I
24	876	5	TON	RIP RAP,CLASS I
25	876	10	TON	RIP RAP,CLASS B
26	876	20	SY	GEOTEXTILE FOR DRAINAGE
27	1605	1700	LF	TEMPORARY SILT FENCE
28	1610	5	TON	SEDIMENT CONTROL STONE
29	1610	5	TON	STONE FOR EROSION CONTROL,CLASS B
30	1615	1	ACRE	TEMPORARY MULCHING
31	1620	50	LB	SEED FOR TEMPORARY SEEDING
32	1620	0.2	TON	FERTILIZER FOR TEMPORARY SEEDING
33	1622	200	LF	TEMPORARY SLOPE DRAINS
34	SP	400	LF	SAFETY FENCE
35	1630	5	CY	SILT EXCAVATION
36	1631	1500	SY	MATTING FOR EROSION CONTROL
37	1632	160	LF	1/4" HARDWARE CLOTH
38	SP	60	SY	FLOATING TURBIDITY CURTAIN
39	SP	400	LF	WATTLE
40	1660	1	ACRE	SEEDING AND MULCHING
41	1661	50	LB	SEED FOR REPAIR SEEDING
42	1661	0.2	TON	FERTILIZER FOR REPAIR SEEDING
43	402	1	LS	REMOVAL OF EXISTING STRUCTURE AT -L- STA 14+33.00
44	450	1	EA	PDA TESTING
45	412	1	LS	UNCLASSIFIED STRUCTURE EXCAVATION AT STA 14+33.00
46	SP	3049	SF	CONCRETE WEARING SURFACE
47	420	3454	SF	GROOVING BRIDGE FLOOR
48	420	48.6	CY	CLASS A CONCRETE (BRIDGE)
49	422	1	LS	BRIDGE APPROACH SLABS AT STA 14+33.00
50	425	9218	LB	REINFORCING STEEL (BRIDGE)
51	450	1050	LF	HP 12 X 53 STEEL PILES
52	452	4510	SF	STEEL SHEET PILES
53	460	180.0	LF	VERTICAL CONCRETE BARRIER RAIL
54	876	400	TON	RIP RAP,CLASS II (2'-0" THICK)
55	876	445	SY	GEOTEXTILE FOR DRAINAGE
56	430	1	LS	ELASTOMETRIC BEARINGS
57	SP	1	LS	FOAM JOINT SEALS
58	430	1080	LF	3'-0" X 2'-9" PRESTRESSED CONCRETE BOX BEAMS

REVISIONS

COMPUTED BY: VT	DATE: 3-15-13
CHECKED BY: LJ	DATE: 3-15-13

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
17BP.2.R.48	3A

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

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

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL
-L- 14+94.19	LT	1		39.95	36.95		
-L- 15+41.26	LT	2		39.89	36.75		
-L- 15+41.26	RT	3		39.89	36.60		
-L- 14+94.19	RT	4		39.95	36.95		
-L- 15+56.64	RT	5		39.90	36.55		
-L- 15+17.72	LT	1	2		36.95	36.75	0.004
-L- 15+41.26	CL	2	3		36.75	36.60	0.005
-L- 15+17.72	RT	4	3		36.95	36.60	0.008
-L- 15+41.26	RT	3	5		36.60	36.55	0.004
-L- 15+56.64	RT	5	OUT		36.55	36.45	0.004
-L- 15+02.16	RT	6			36.00	34.53	0.020
TOTALS							

STATION	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	CORRUGATED ALUMINUM PIPE 12" (.064)	15" (.064)	18" (.064)	24" (.064)	36" (.079)	42" (.109)	48" (.109)
-L- 14+94.19																			
-L- 15+41.26																			
-L- 15+41.26																			
-L- 14+94.19																			
-L- 15+56.64																			
-L- 15+17.72																			
-L- 15+41.26																			
-L- 15+17.72																			
-L- 15+41.26																			
-L- 15+56.64																			
-L- 15+02.16															72				
TOTALS															72				

STATION	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"	R.C. PIPE (CLASS IV) 12"	15"	18"	24"	30"	36"	42"	48"	**" R. C. PIPE (CLASS V)	**" R. C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE	**" R. C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE
-L- 14+94.19																				
-L- 15+41.26																				
-L- 15+41.26																				
-L- 14+94.19																				
-L- 15+56.64																				
-L- 15+17.72	44																			
-L- 15+41.26									30											
-L- 15+17.72	44																			
-L- 15+41.26	12																			
-L- 15+56.64	12																			
-L- 15+02.16																				
TOTALS	112								30											

STATION	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	* TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL. 'B') 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		CONCRETE TRANSITIONAL SECTION CATCH BASIN	DROP INLET		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. 840.29	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	T.B.D.I. STD. 840.35	DRAINAGE PIPE ELBOWS	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
-L- 14+94.19			1													1		1					
-L- 15+41.26			1													1		1					
-L- 15+41.26			1													1		1					
-L- 14+94.19			1													1		1					
-L- 15+56.64			1													1		1					
-L- 15+17.72																							
-L- 15+41.26																							
-L- 15+17.72																							
-L- 15+41.26																							
-L- 15+56.64																							
-L- 15+02.16																							
TOTALS			5													5		5					

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

"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 (WITH ANCHOR DEDUCTIONS) STRAIGHT	SHOP CURVED	DOUBLE FACED	WARRANT POINT APPROACH END	TRAILING END	"N" DIST. FROM E.O.L.	TOTAL SHOULDER WIDTH	FLARE LENGTH APPROACH END	TRAILING END	W APPROACH END	TRAILING END	ANCHORS TYPE 350	TYPE III	CAT-1	IMPACT ATTENUATOR TYPE 350 NO.	PERMITTED G	NG	SINGLE FACED GUARDRAIL	REMOVE AND RESET EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
-L-	12+50.38	13+87.88	LT	68.75				13+87.88	2.4	5.33		50		1.0	1	1								
-L-	10+87.88	13+87.88	RT	231.25			13+87.88		2.4	5.33	50		1.0		1	1								
-L-	14+78.13	17+78.13	LT	186.50	26		14+78.13		2.4	5.33	50		1.0		1	1	2							
-L-	14+78.13	16+15.63	RT	24	26			14+78.13	2.4	5.33		50		1.0	1	1	2							
TOTAL				510.50	52										4	4	4							

SUMMARY OF EARTHWORK
IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT+%	BORROW	WASTE
-L- 11+00.00 - 13+86.88	35		171	136	
-L- 14+79.13 - 18+00.00	41		183	142	
-D- 10+17.33 - 10+75.66			228	228	
-D- 11+31.38 - 11+73.97			103	103	
UNDERCUT (CONTINGENCY)		200	240	240	200
UNCLASSIFIED STRUCTURE EXCAVATION	170				170
SUB TOTAL	246	200	925	849	370
SAY	250	200	930	850	370

PAVEMENT REMOVAL SUMMARY
IN SQUARE YARDS

LINE	STATION - STATION	LOCATION	REMOVAL (SY)
-L-	13+75.88 - 14+00.11	CL	57
-L-	14+70.93 - 14+90.13	CL	46
TOTAL			103
		SAY	105

NOTE:

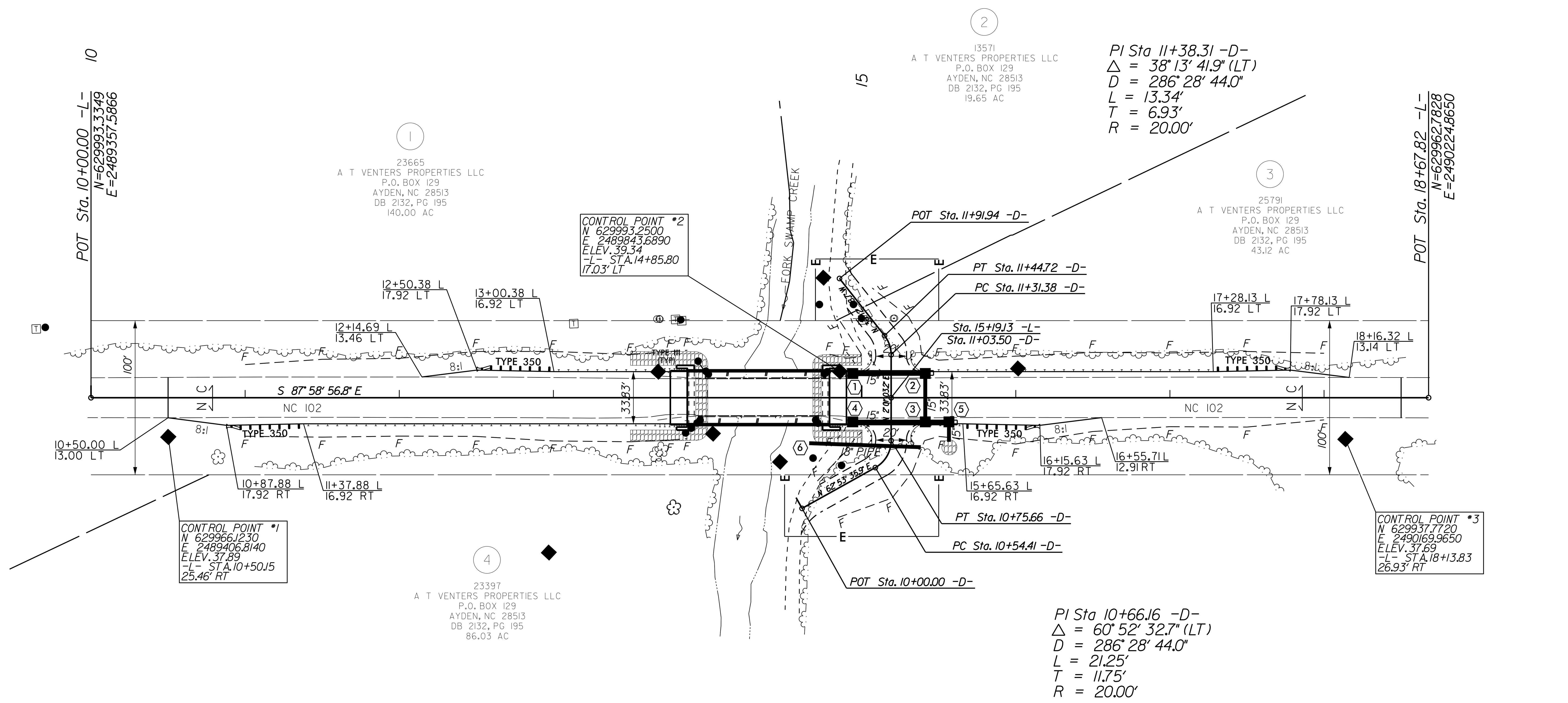
APPROXIMATE QUANTITIES ONLY, UNCLASSIFIED EXCAVATION, STRUCTURE EXCAVATION, BORROW EXCAVATION, FINE GRADING, CLEARING AND GRUBBING, BREAKING OF EXISTING PAVEMENT AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "GRADING."

PROJECT REFERENCE NO.	SHEET NO.
17BP.2.R.48	4
RW SHEET NO.	

ROADWAY DESIGN ENGINEER — HYDRAULICS ENGINEER

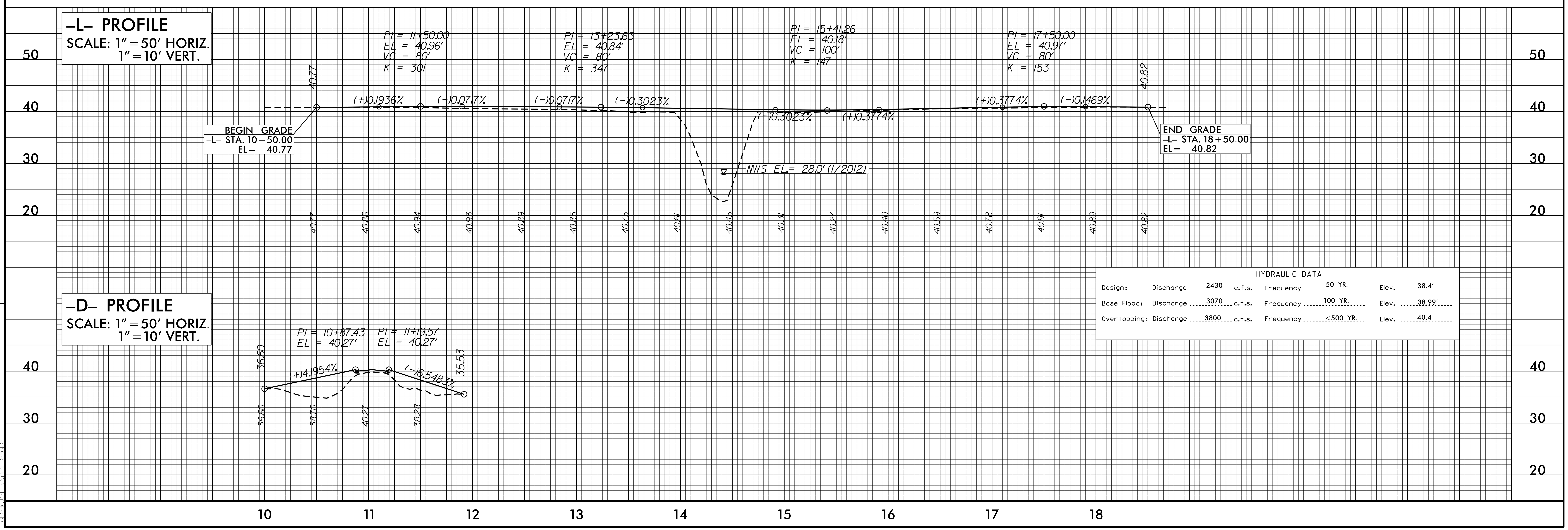
NORTH CAROLINA PROFESSIONAL SEAL 16710 ENGINEER DWAYNE H. ALLIGOOD 09/24/2013

NORTH CAROLINA PROFESSIONAL SEAL 16710 ENGINEER DWAYNE H. ALLIGOOD 09/24/2013



SHOULDER BERM GUTTER
-L- STA 14+90.13 - 15+46.63 LT
-L- STA 14+90.13 - 15+62.00 RT

WORK POINT DESCRIPTION	
WORK POINT #1	-L- STATION 13+86.88 CL
WORK POINT #2	-L- STATION 14+79.13 CL



HYDRAULIC DATA

	Discharge	Frequency	Elev.
Design:	2430 c.f.s.	50 YR.	38.4'
Base Flood:	3070 c.f.s.	100 YR.	38.99'
Overtopping:	3800 c.f.s.	≤500 YR.	40.4

REVISIONS

8/17/99

24-SEP-2013 15:51 ...\Pitt63.ddc2.psh_4.dgn $$$$USERNAME$$$$

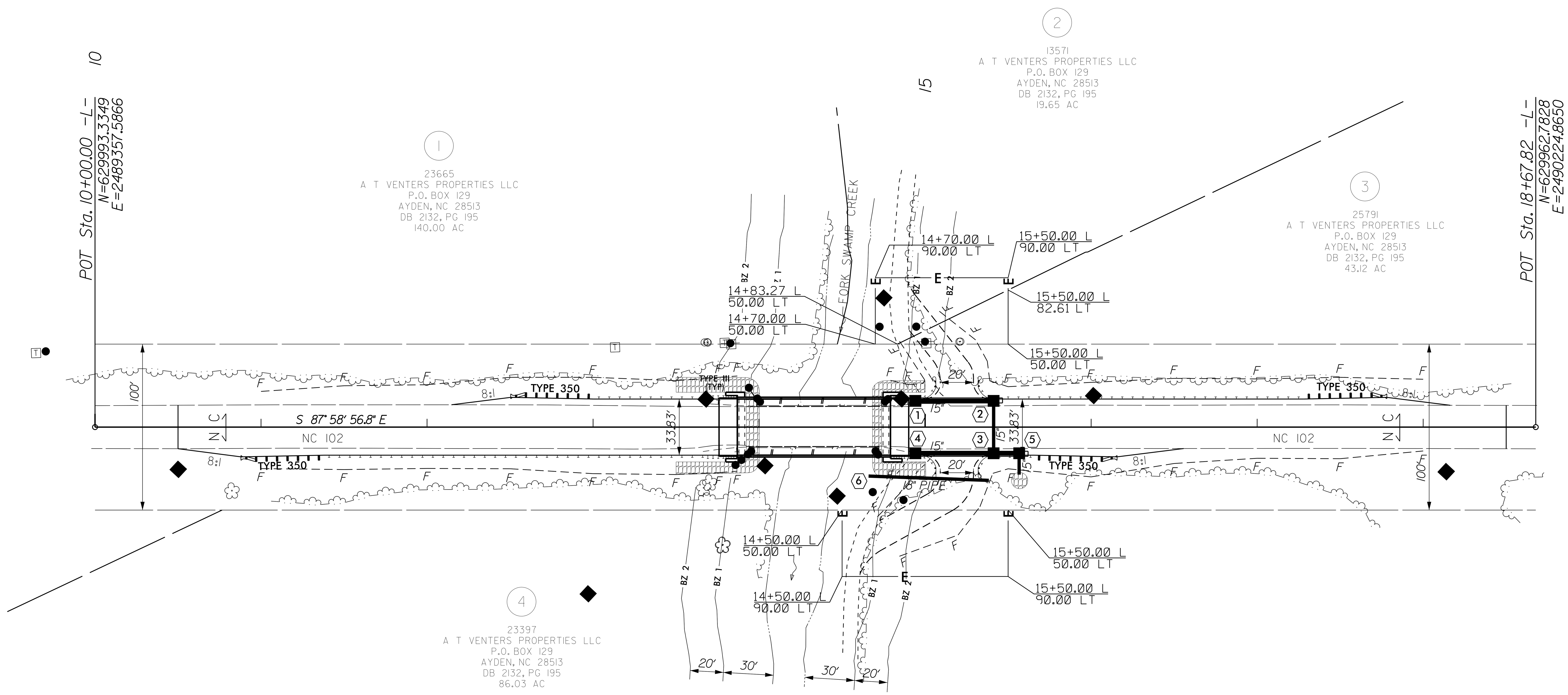
PROJECT REFERENCE NO.	SHEET NO.
17BP.2.R.48	4A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 16710 ENGINEER DWAYNE H. ALLIGOOD 09/24/2013	NORTH CAROLINA PROFESSIONAL SEAL 16710 ENGINEER DWAYNE H. ALLIGOOD 09/24/2013

RIGHT OF WAY AREA SUMMARY

PARCEL NO.	PROPERTY OWNER NAME	LOCATION	TOTAL PARCEL AREA [ACRES]	AREA TO BE DEDICATED (CONST. EASEMENT) [ACRES]	AREA TO BE PURCHASED (RIGHT OF WAY) [ACRES]	PARCEL AREA REMAINING [ACRES]
2	A T VENTERS PROPERTIES LLC	LT	19.65	0.048		19.60
3	A T VENTERS PROPERTIES LLC	LT	43.12	0.025		43.10
4	A T VENTERS PROPERTIES LLC	RT	86.03	0.092		85.94

NAD 83/NSRS 2007

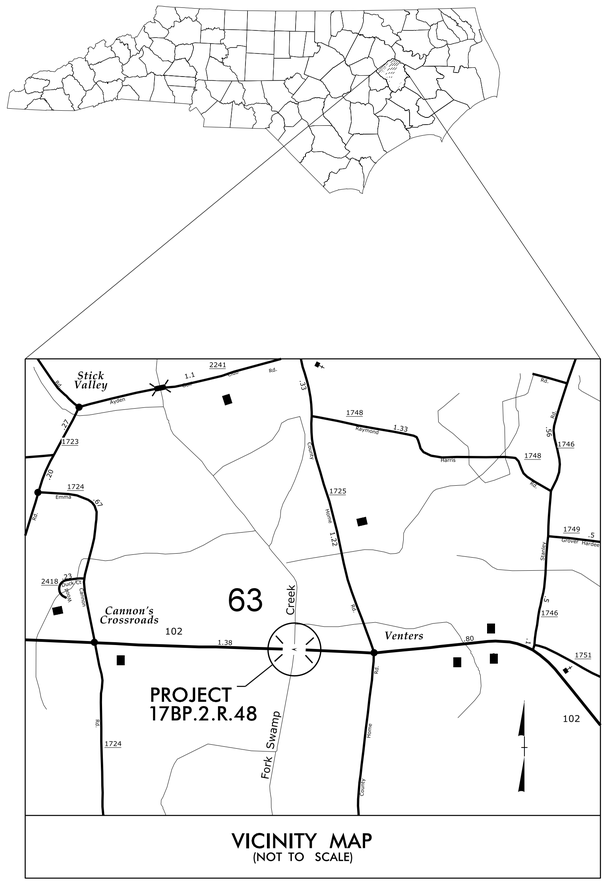
40 20 0 40 80
PLANS



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

PITT COUNTY



VICINITY MAP
(NOT TO SCALE)

INDEX OF SHEETS

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- NORTH ARROW
- PROPOSED PVMT.
- EXIST. PVMT.
- WORK AREA

TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE III)

N.C.D.O.T. WORK ZONE TRAFFIC CONTROL
P.O. BOX 1587, GREENVILLE, NC 27835
105 PACTOLUS HWY. (NC 33), GREENVILLE, NC 27835
PHONE: (252) 830-3490 FAX: (252) 830-3352

STEVEN HAMILTON, PE — *TRAFFIC ENGINEER*
D. H. ALLIGOOD, PE — *TRAFFIC CONTROL PROJECT ENGINEER*
D. H. ALLIGOOD, PE — *TRAFFIC CONTROL PROJECT DESIGN ENGINEER*
LANG JONES — *TRAFFIC CONTROL DESIGN ENGINEER*

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

APPROVED: Dwayne H. Alligood
DATE: 09/26/2013

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 16710 ENGINEER DWAYNE H. ALLIGOOD

SHEET NO.
TMP-1

17BP.2.R.48

PROJECT:

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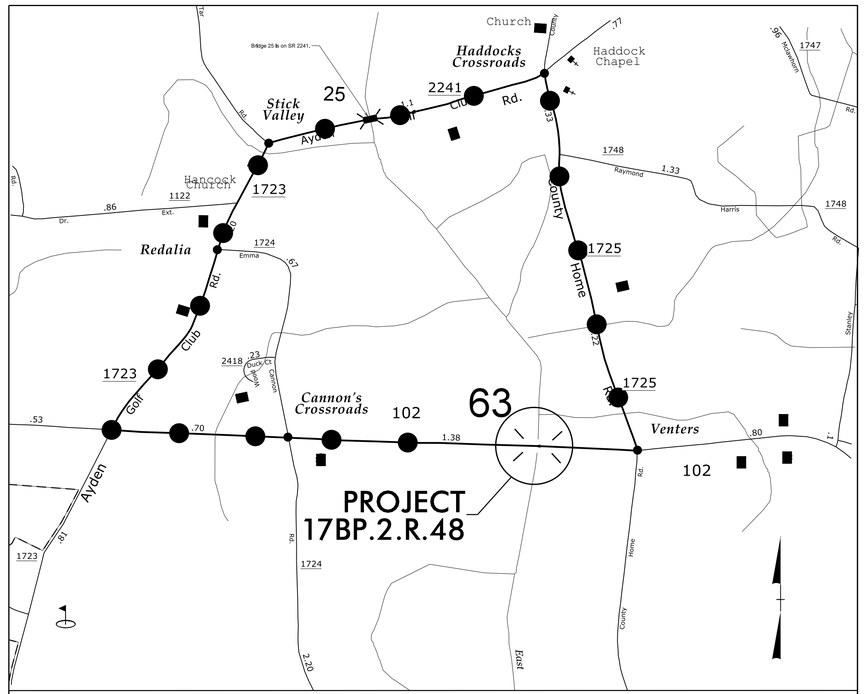
PROJ. REFERENCE NO.	SHEET NO.
17BP.2.R.48	TMP-2

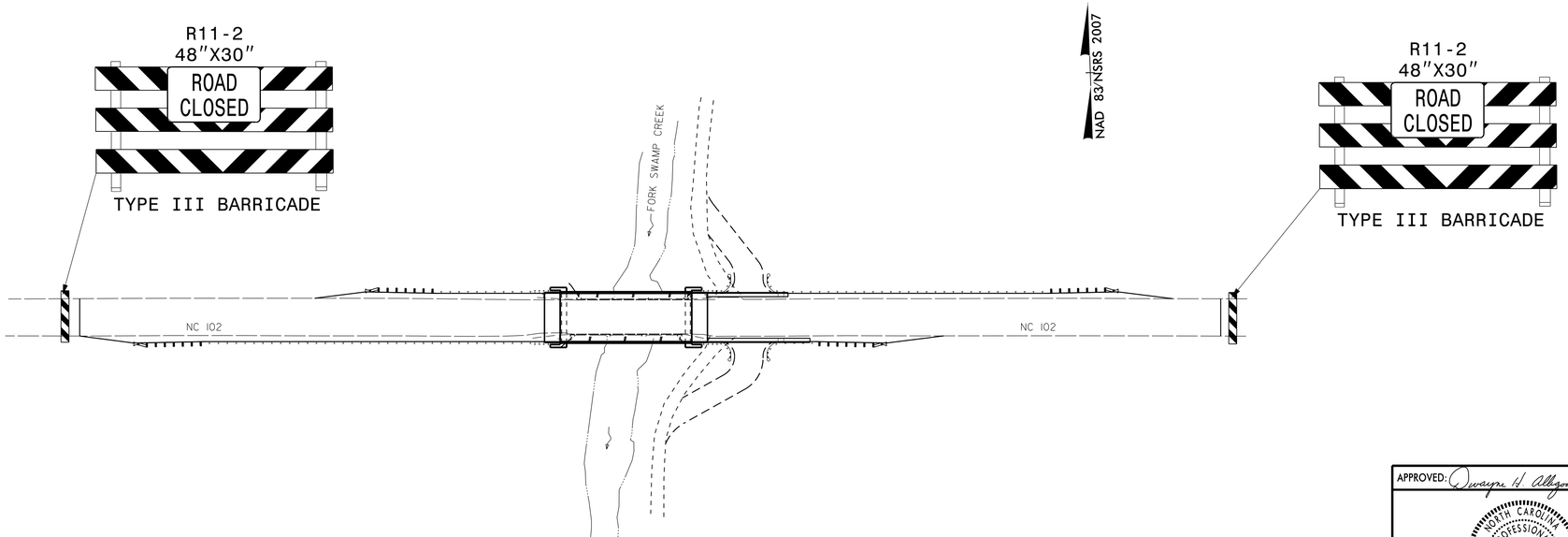
GENERAL NOTES

IMPLEMENT TRAFFIC CONTROL IN ACCORDANCE WITH THE ROADWAY STANDARD DRAWINGS LISTED ON TMP-1.

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.

STATE FORCES WILL INSTALL AND MAINTAIN THE PROJECT DETOUR AND THE TYPE III BARRICADES AT THE PROJECT LIMITS.
STATE FORCES WILL INSTALL PAINT AND MARKERS ON THE FINISHED PROJECT.
CALL JIM EVANS AT 252-830-3493 FOR COORDINATION.





APPROVED: Dwayne H Allbgood

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 16710 ENGINEER DWAYNE H. ALLIGOOD

09/24/2013

PROJECT NOTES, DETOUR AND PLANS

SCALE:	NONE
DATE:	8/4/2013
DWG. BY:	VT
DESIGN BY:	LJ
REVIEWED BY:	DA

REVISIONS

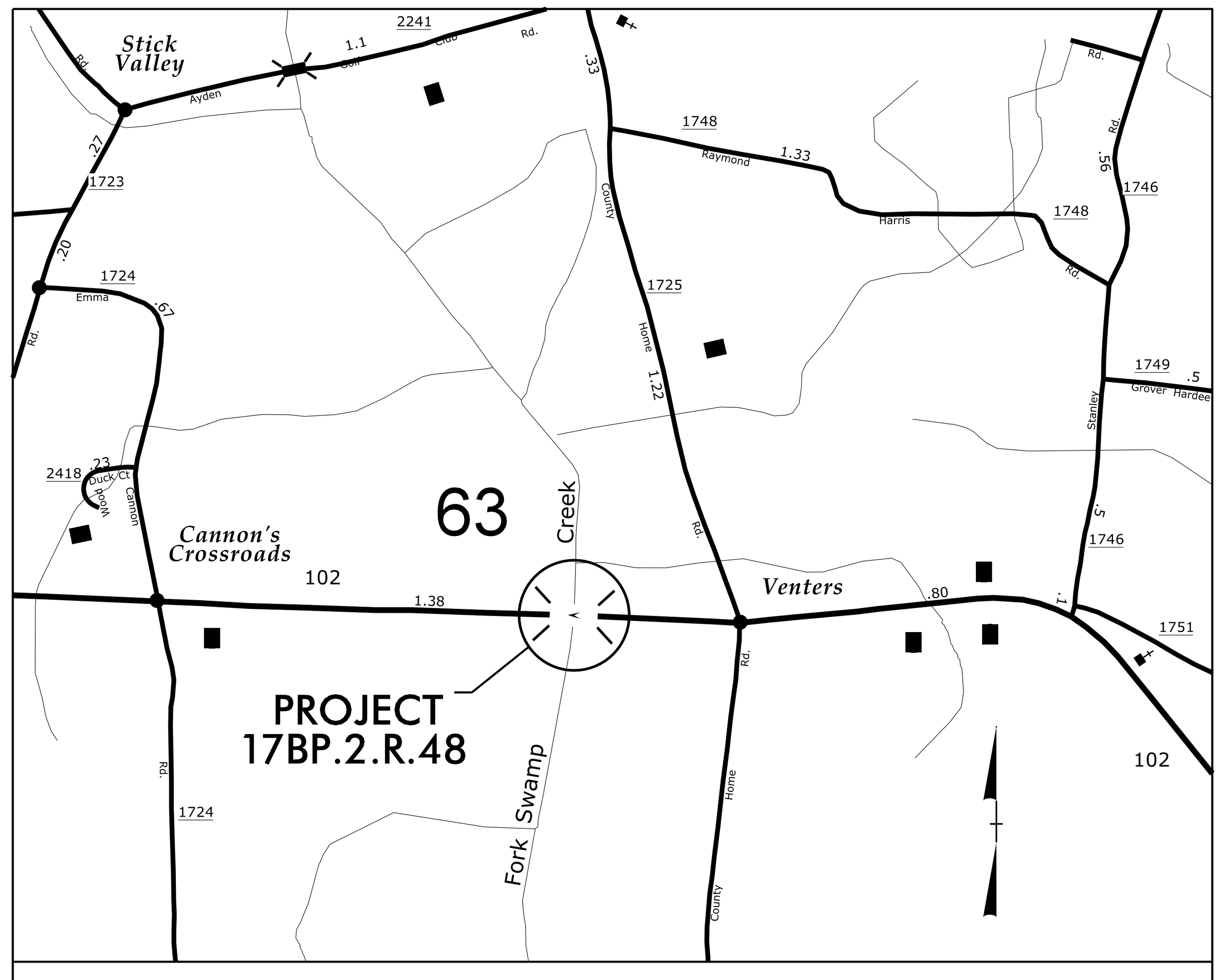
CADD FILE

24-SEP-2013 15:51
G:\PROJECTS\PITT\Pitt#63\Pitt#63_ddc2_psh_tcp2.dgn
$$$$USERNAME$$$$

TIP PROJECT: 17BP.2.R.48

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.2.R.48	EC-1	

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



VICINITY MAP
(NOT TO SCALE)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

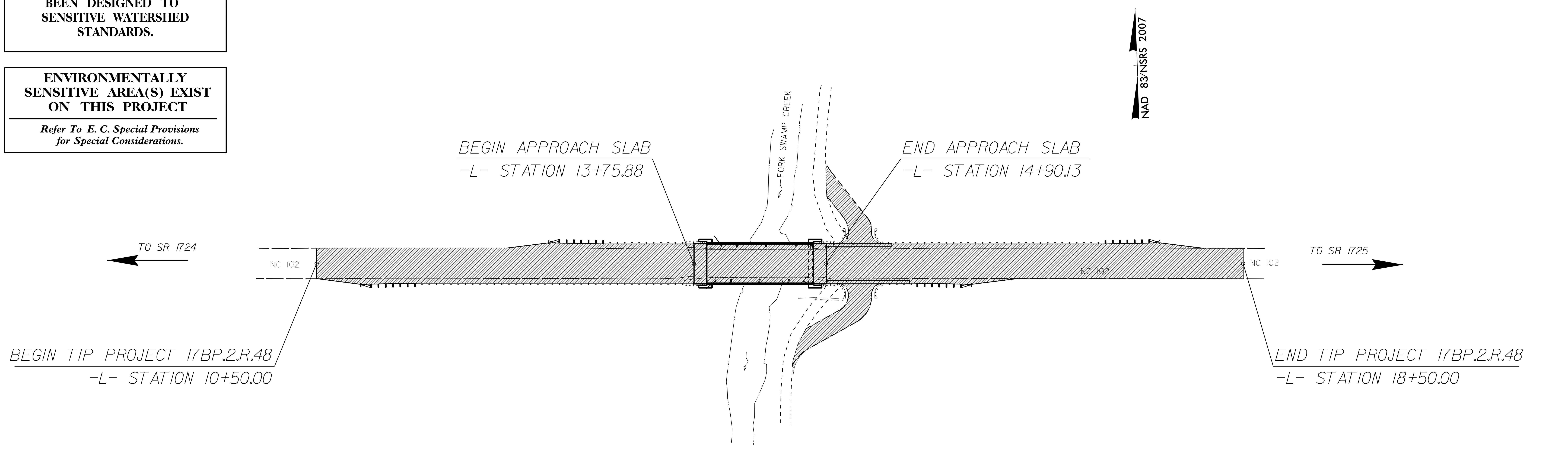
EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1605.01	High Vis. Temporary Silt Fence	
1632.03	Rock Inlet Sediment Trap Type C	
	Wattle / Coir Fiber Wattle	

THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT

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



GRAPHIC SCALE

40 20 0 40

PLANS

DIVISION 2 — DDC 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:

DIVISION 2 - DDC UNIT

1704 N. Greene St.
Greenville, NC 27834

2012 STANDARD SPECIFICATIONS

Lang Jones, DDC Engineer
Level III
Certification #276

Roadway Standard Drawings

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

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

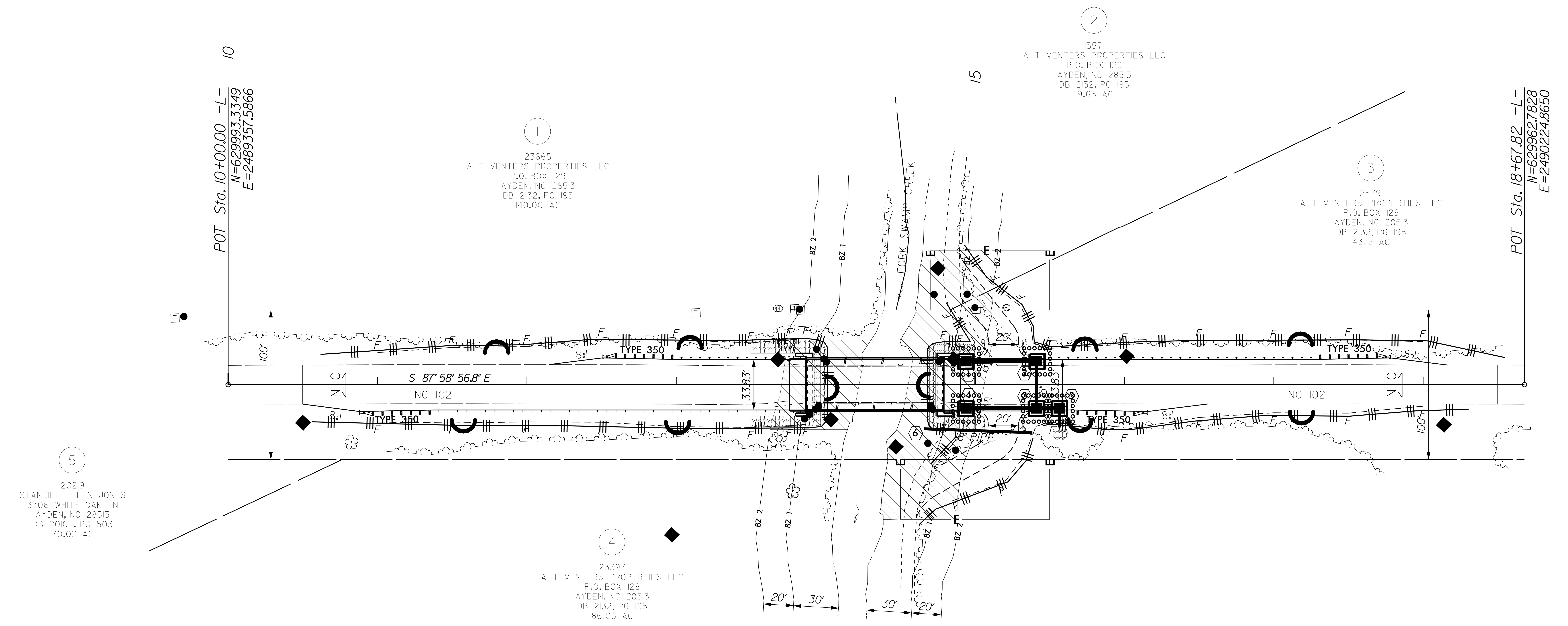
PROJECT REFERENCE NO.	SHEET NO.
17BP.2.R.48	EC2

Std. #	Description	Symbol
1605.01	High Vis Temporary Silt Fence	
1632.03	Rock Inlet Sediment Trap Type C	
SP	Wattle	

ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

NAD 83/NSRS 2007

40 20 0 40 80
PLANS



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.

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

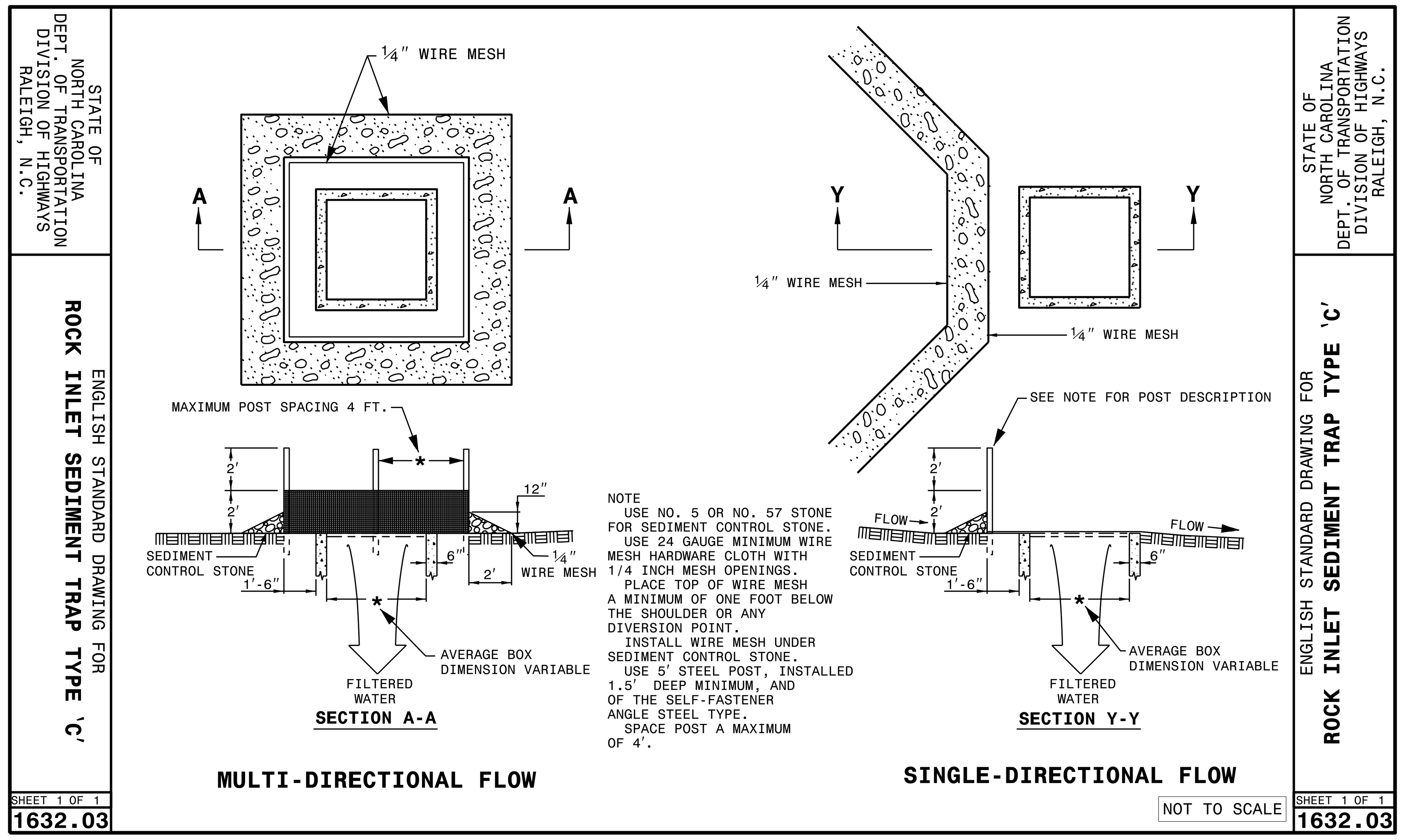
ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

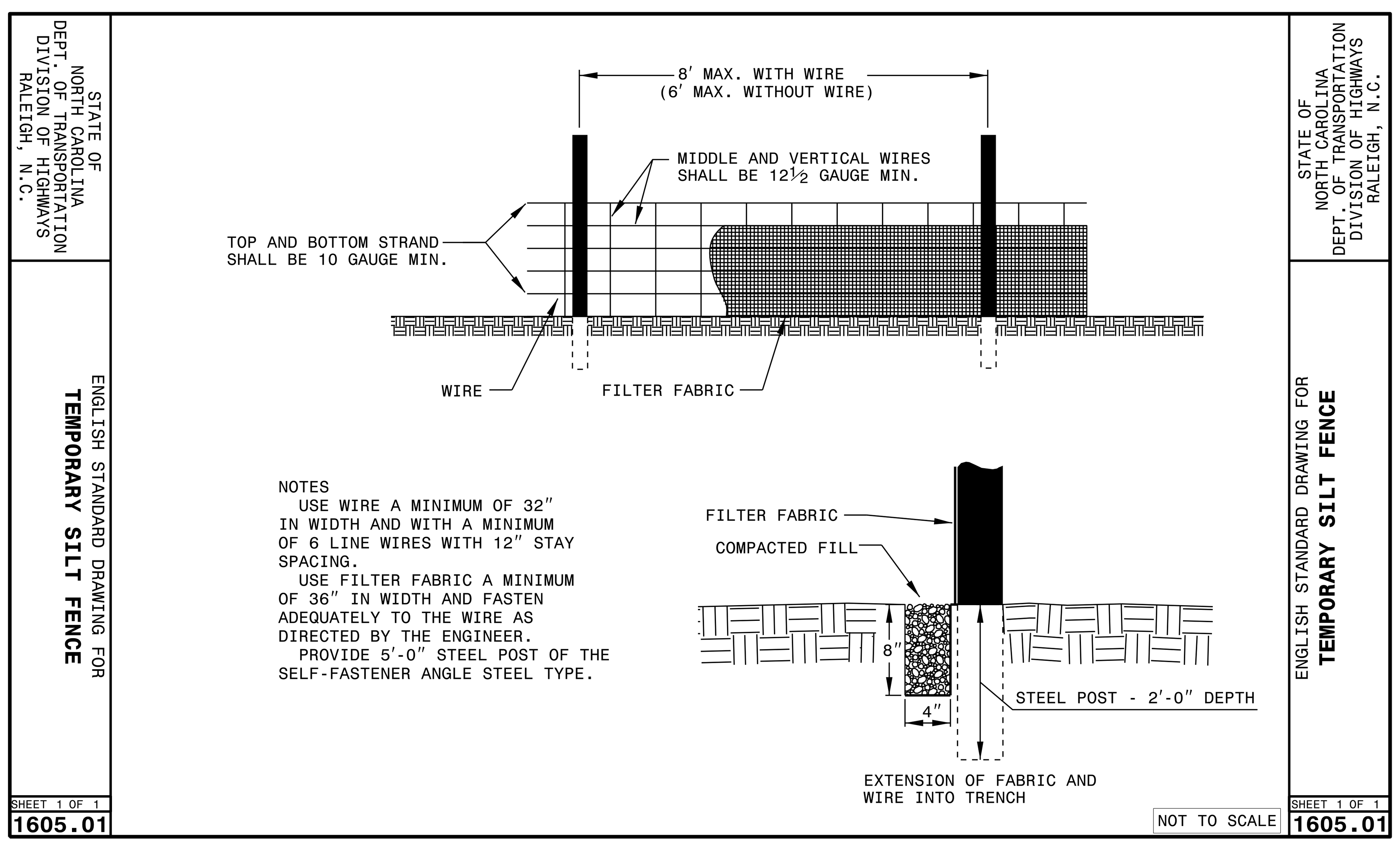
CONTRACTOR SHALL INSTALL SPECIAL SEDIMENT CONTROL FENCE OR WATTLES IN LOW AREAS OF SILT FENCE AS NEEDED OR DIRECTED BY THE ENGINEER.

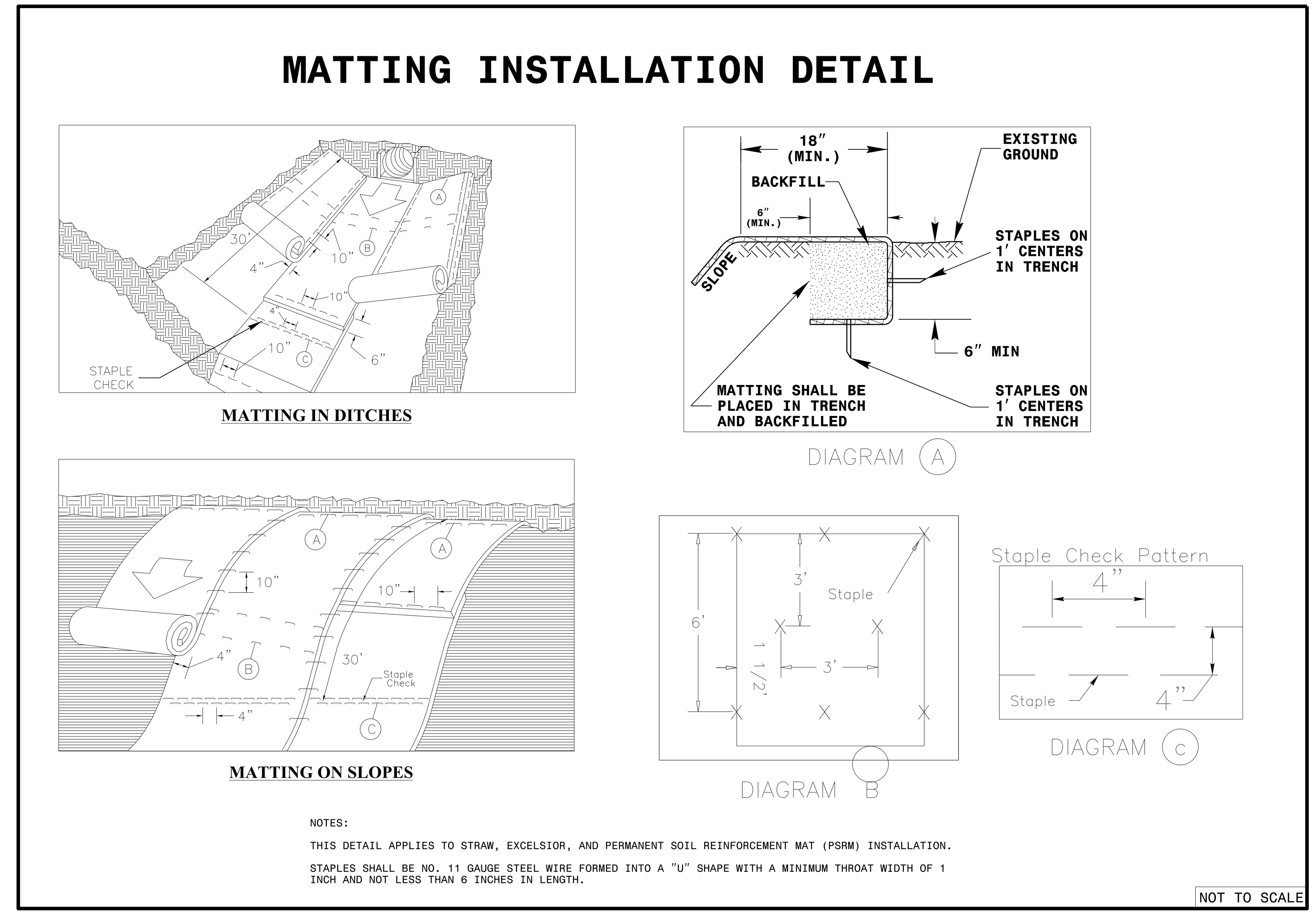
REVISIONS

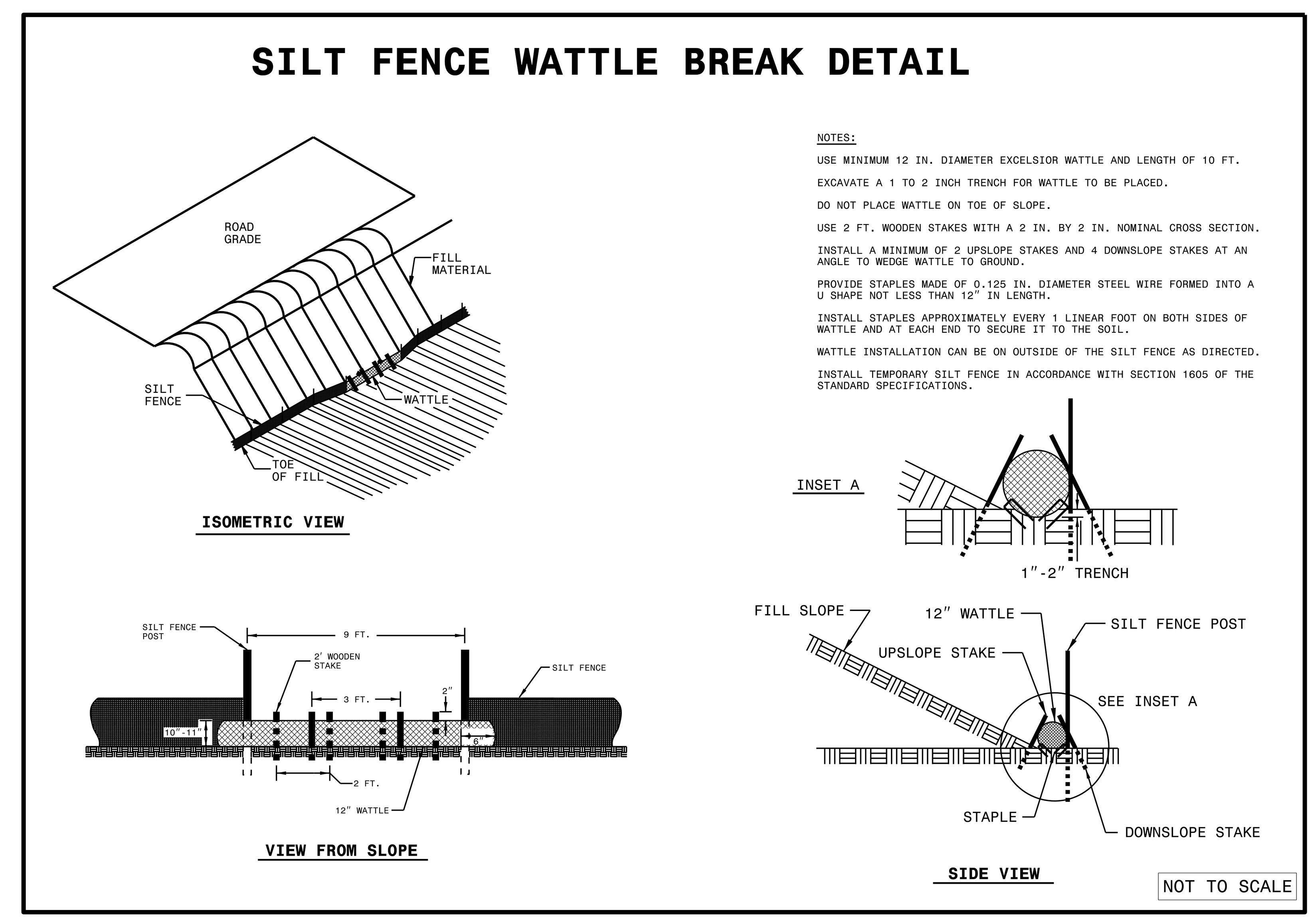
PROJECT REFERENCE NO.	SHEET NO.
17BP.2.R.48	EC3

REVISIONS









PROJECT REFERENCE NO.	SHEET NO.
17BP.2.R.48	X1A

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

CROSS–SECTION SUMMARY

IN CUBIC YARDS

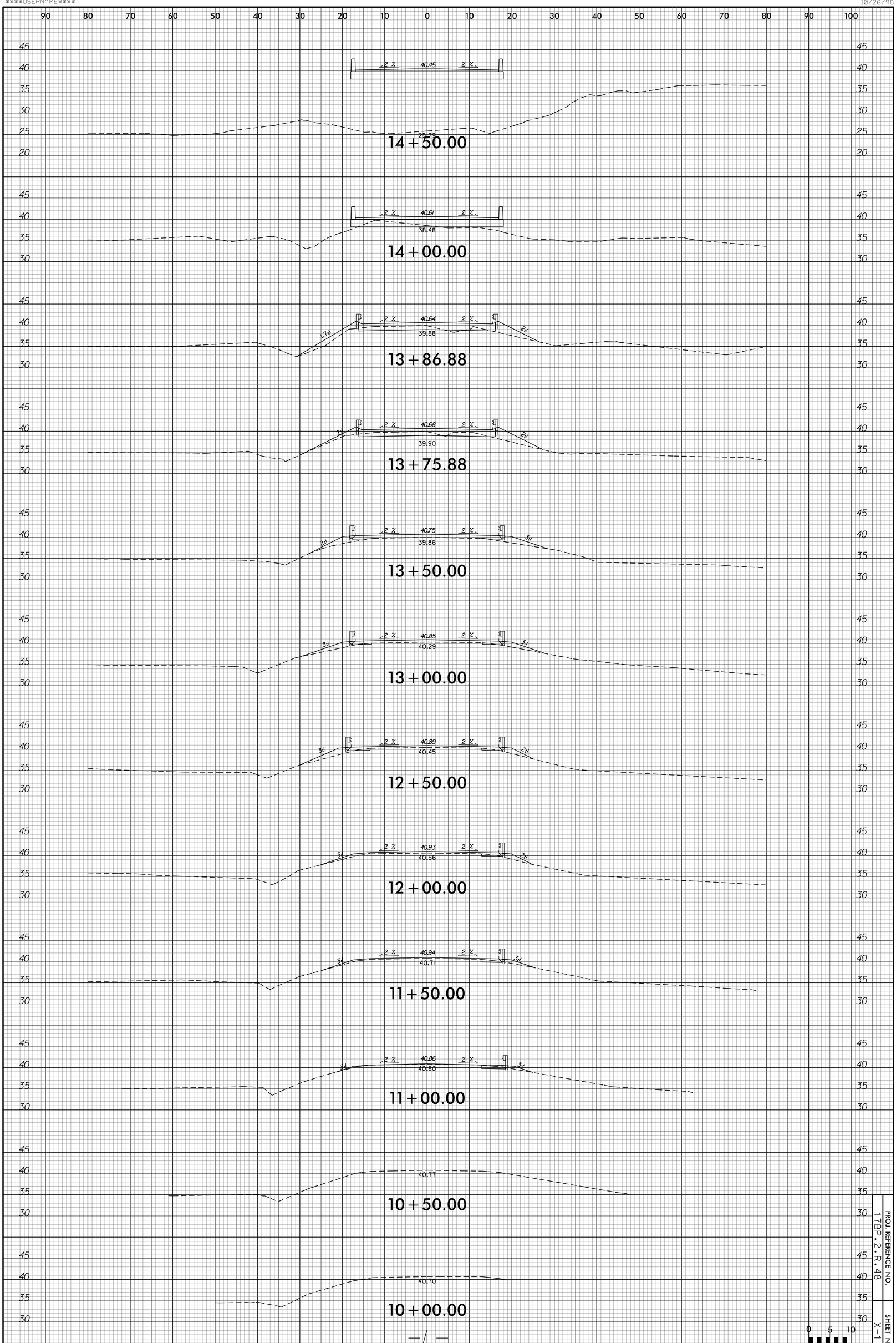
NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT.

LOCATION (–LREV–)	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBANKMENT
11 + 00.00	*0*	*0*	*0*
11 + 50.00	*5*	*0*	*9*
12 + 00.00	*3*	*0*	*14*
12 + 50.00	*3*	*0*	*23*
13 + 00.00	*3*	*0*	*29*
13 + 50.00	*1*	*0*	*33*
13 + 75.88	*11*	*0*	*21*
13 + 86.88	*9*	*0*	*11*
	BRIDGE		
14 + 79.13	*0*	*0*	*0*
14 + 90.00	*16*	*0*	*7*
14 + 94.19	*3*	*0*	*2*
15 + 00.00	*0*	*0*	*4*
15 + 41.26	*1*	*0*	*34*
15 + 50.00	*1*	*0*	*5*
16 + 00.00	*7*	*0*	*20*
16 + 50.00	*7*	*0*	*22*
17 + 00.00	*3*	*0*	*19*
17 + 50.00	*1*	*0*	*19*
18 + 00.00	*2*	*0*	*20*

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

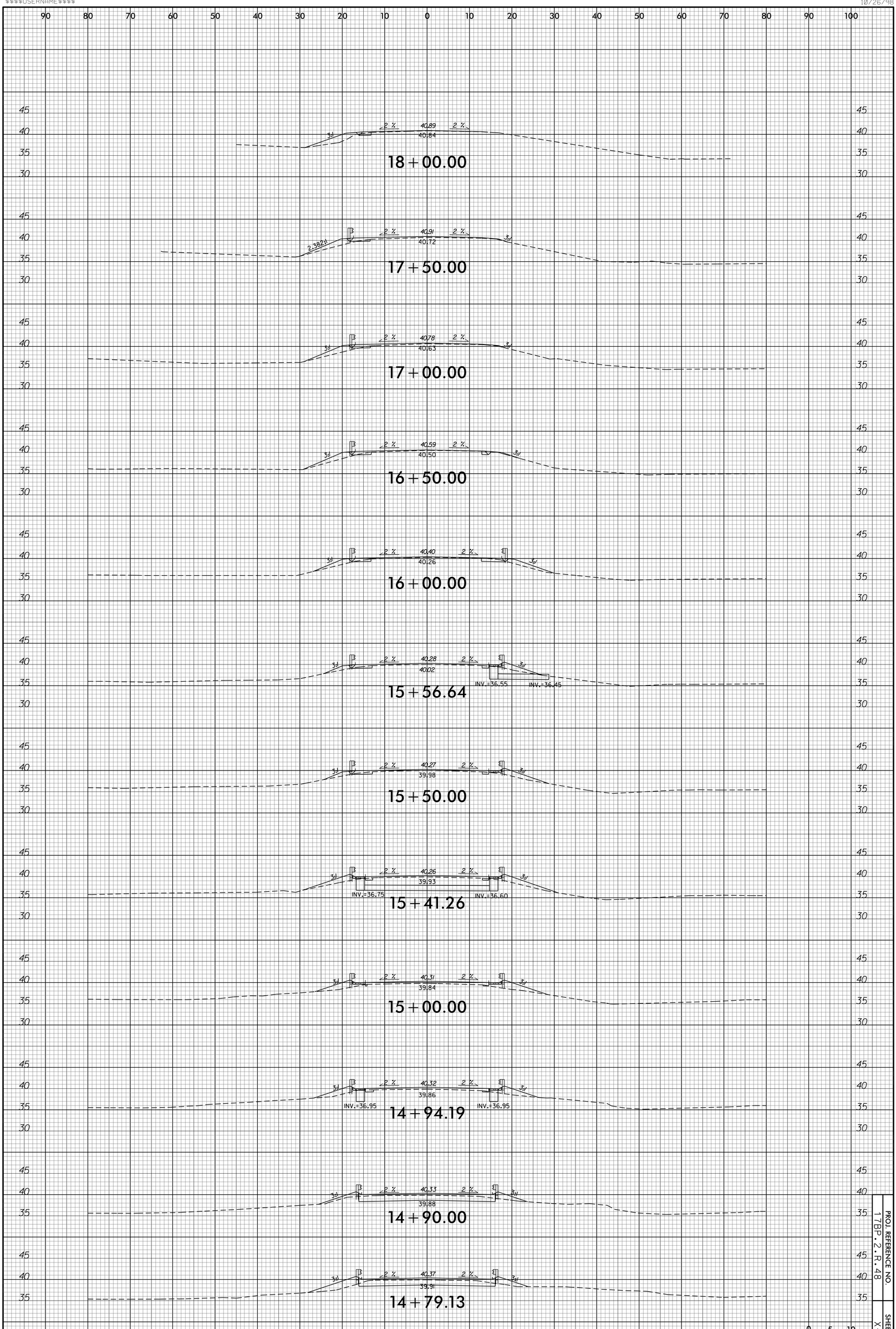
REVISIONS

8/17/99



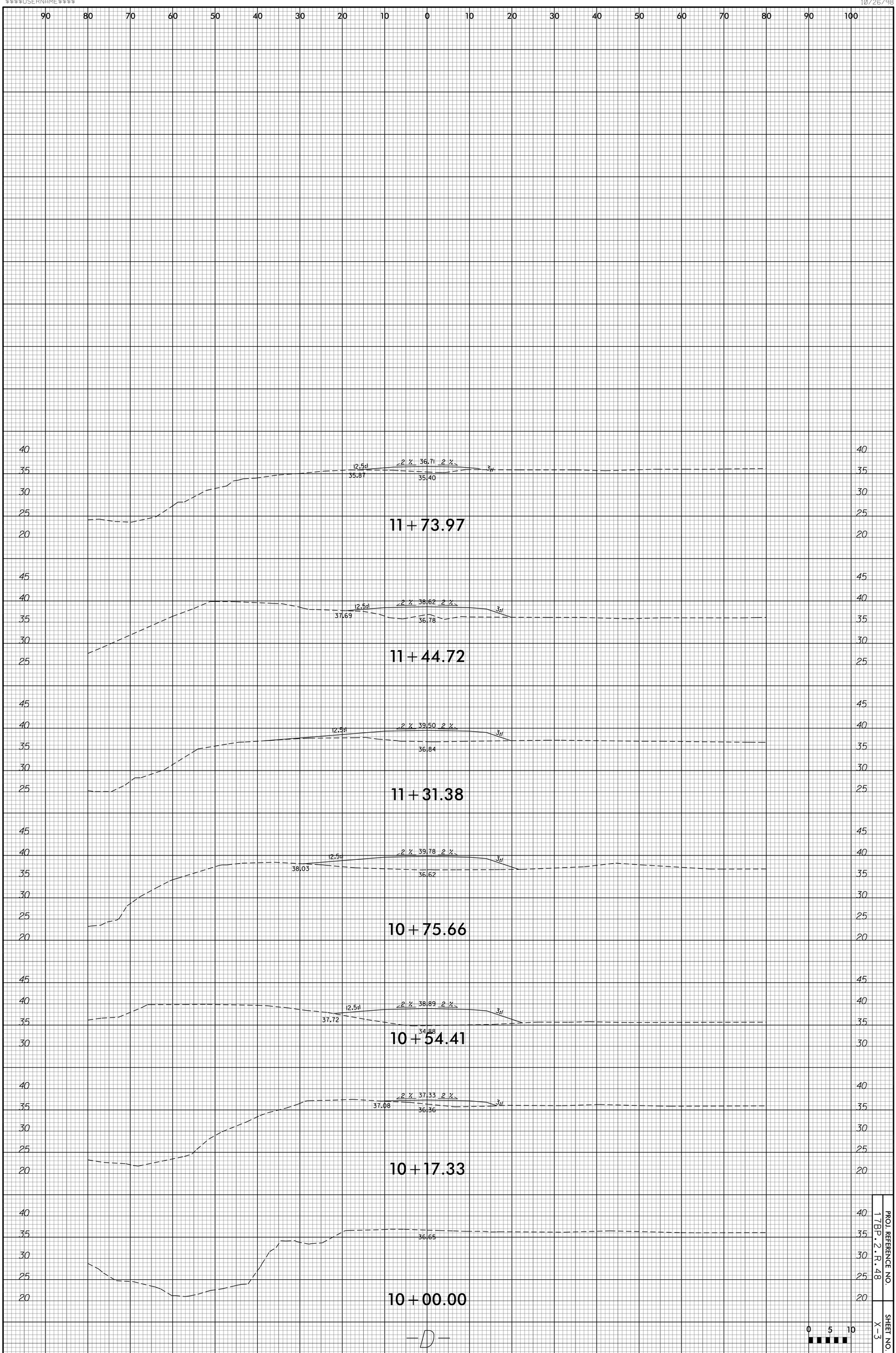
PROJ. REFERENCE NO. 17BP.2.R.48

SHEET NO. X-1



PROJ. REFERENCE NO. 17BP.2.R.48

SHEET NO. X-2



PROJ. REFERENCE NO. 17BP.2.R.48

SHEET NO. X-3

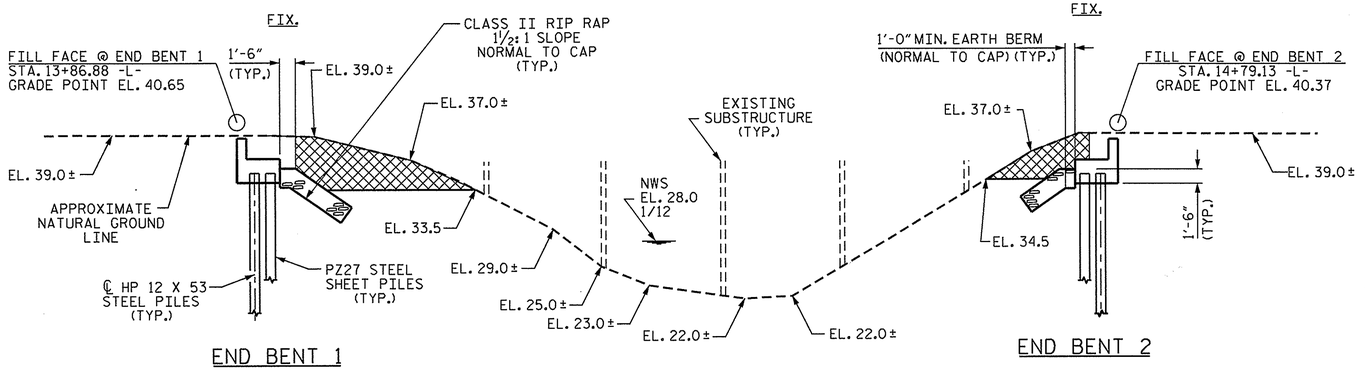
13+25 13+50 13+75 14+00 14+25 14+50 14+75 15+00 15+25 15+50

50 40 30 20

-0.0717% △ -0.3023%

PI = 13+23.63 -L-
EL = 40.84'
VC = 80'

GRADE DATA



END BENT 1 END BENT 2

-0.3023% △ +0.3774%

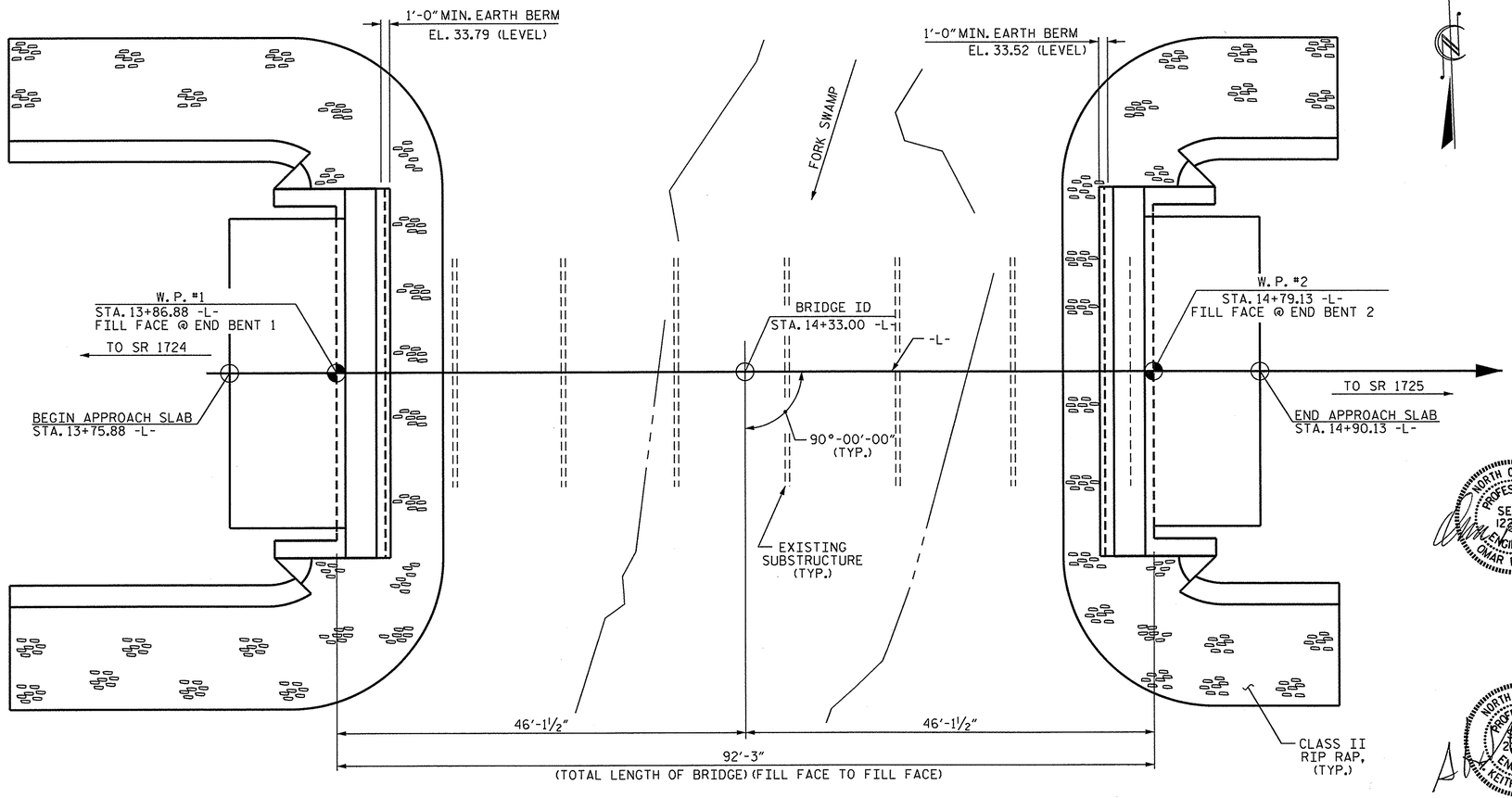
PI = 15+41.26 -L-
EL = 40.18'
VC = 100'

GRADE DATA

UNCLASSIFIED STRUCTURE EXCAVATION

I HEREBY CERTIFY THESE PLANS
ARE THE AS-BUILT PLANS

SECTION ALONG -L-



PLAN

(PILES NOT SHOWN FOR CLARITY)

NORTH CAROLINA PROFESSIONAL SEAL 12274 ENGINEER OMAR R. AZIZI
4/18/13

NORTH CAROLINA PROFESSIONAL SEAL 20095 ENGINEER KEITH PASCHAL
4-18-13

PROJECT NO. 17BP.2.R.48

PITT COUNTY

STATION: 14+33.00 -L-

SHEET 1 OF 3 REPLACES BRIDGE NO. 63

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

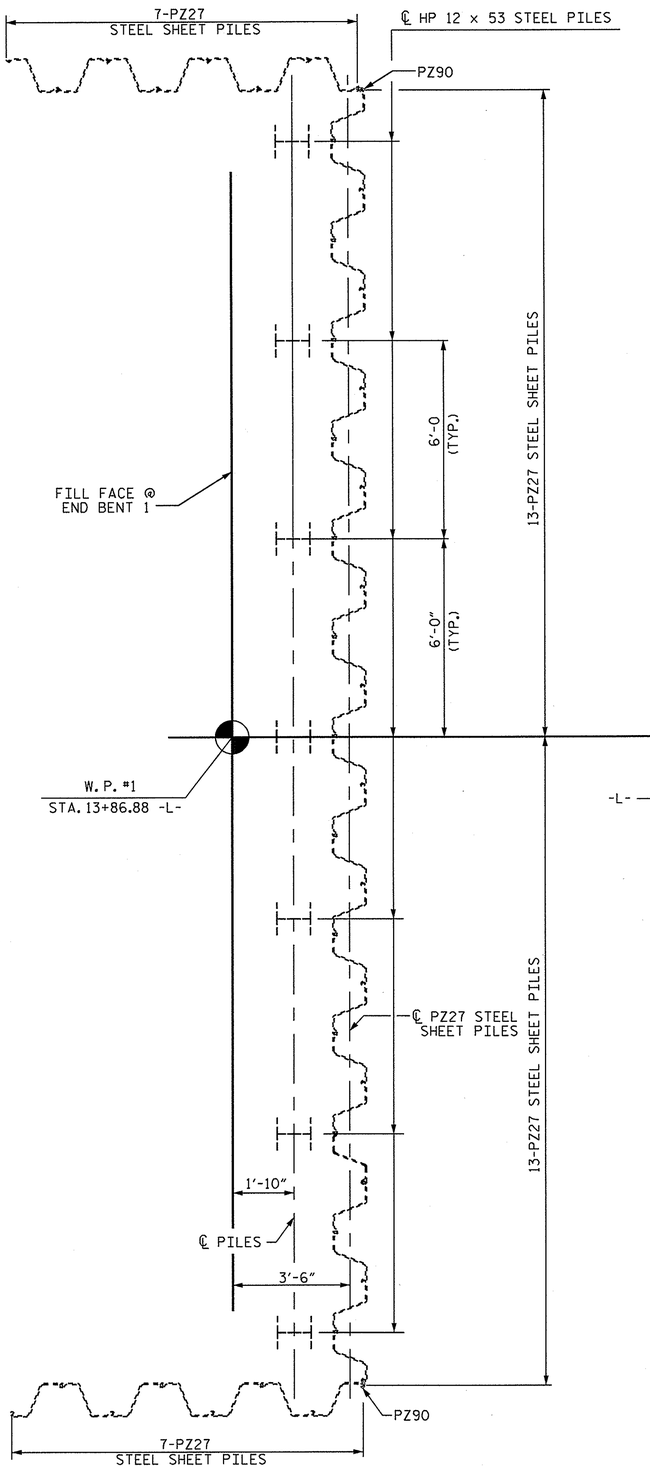
FOR BRIDGE OVER FORK SWAMP
ON NC 102 BETWEEN
SR 1724 AND SR 1725

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

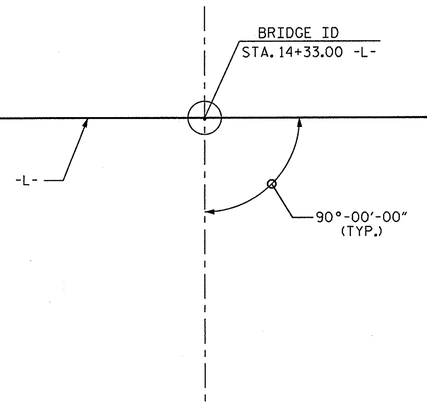
DRAWN BY : O. PUIGCERVER DATE : 3-28-13
CHECKED BY : N. D'AIUTO DATE : 4-4-13
DESIGN ENGINEER OF RECORD: O. PUIGCERVER DATE : 4-8-13

18-APR-2013 10:15
kpaschal

S:\DPGI\Keith\17BP.2.R.48\opuigcerver\ncbds\17BP.2R.48_SD_BX.dgn

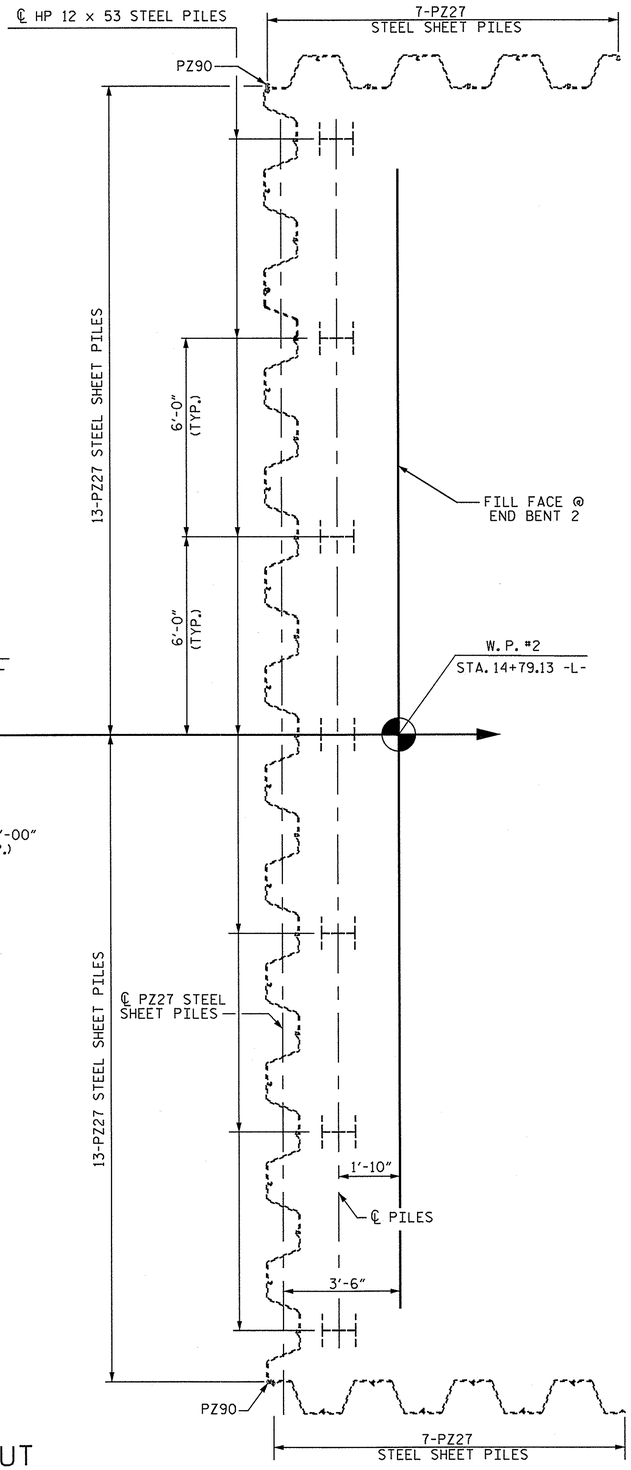


END BENT 1



FOUNDATION LAYOUT

DIMENSIONS LOCATING PILES ARE SHOWN TO THE PILE CENTERLINE.



END BENT 2

NOTES

FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

PILES AT END BENT 1 AND 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 110 TONS PER PILE.

DRIVE PILES AT END BENT 1 AND 2 TO REQUIRED DRIVING RESISTANCE OF 185 TONS PER PILE.

IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 40 TO 60 FT-KIPS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT END BENT 1 AND END BENT 2. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH SUBARTICLE 450-3(D)(2) OF THE STANDARD SPECIFICATIONS.

TESTING PILES WITH THE PDA DURING DRIVING, RESTRIKEING OR REDRIVING MAY BE REQUIRED. THE ENGINEER WILL DETERMINE THE NEED FOR PDA TESTING. FOR PDA TESTING, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS AND FOR PILE DRIVING CRITERIA, SEE GEOTECH PROVISION.

INSTALL BOTH END BENT SHEET PILE WALLS TO A TIP ELEVATION NO HIGHER THAN 0.0 FT.

INSTALL STEEL SHEET PILES BEFORE INSTALLING PILES AT END BENT 1 AND END BENT 2.

NORTH CAROLINA PROFESSIONAL SEAL 22005 ENGINEER KEITH PASCHAL
4-18-13

PROJECT NO. 17BP.2.R.48
PITT COUNTY
STATION: 14+33.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

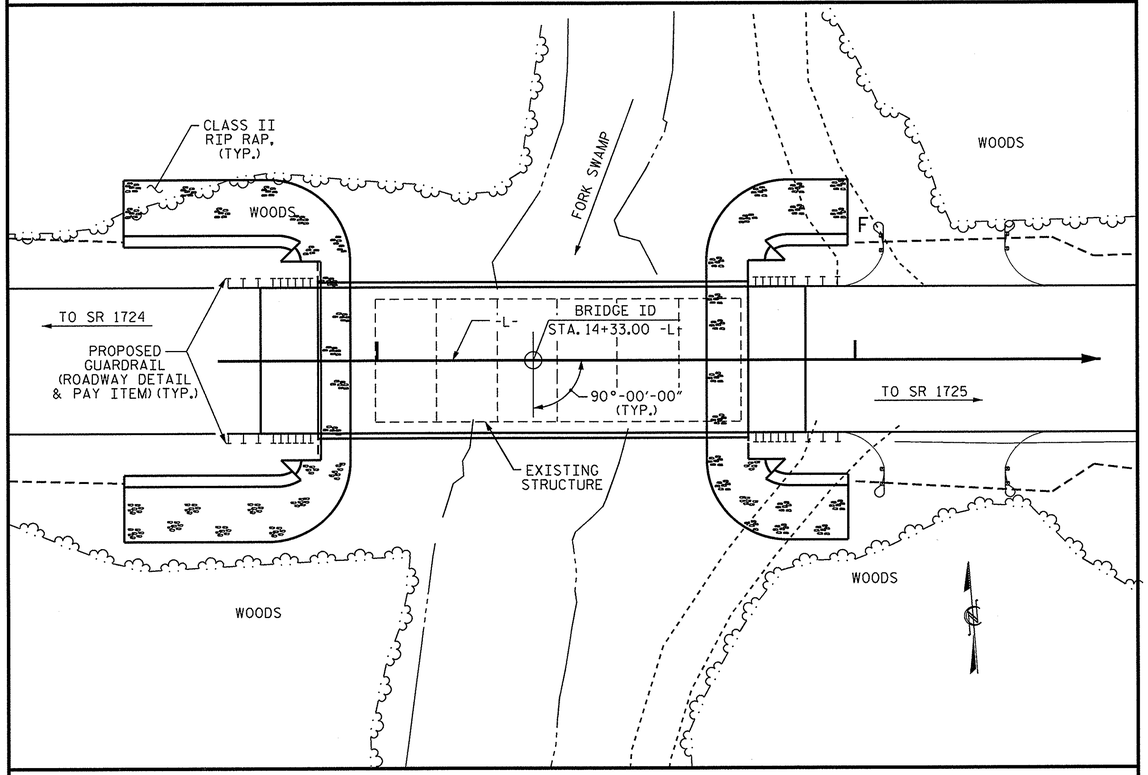
FOR BRIDGE OVER FORK SWAMP
ON NC 102 BETWEEN
SR 1724 AND SR 1725

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

DRAWN BY : O. PUIGCERVER DATE : 3-22-13
CHECKED BY : N. D'AIUTO DATE : 4-4-13
DESIGN ENGINEER OF RECORD: O. PUIGCERVER DATE : 4-8-13

18-APR-2013 10:15
S:\DPG1\Keith\17BP.2.R.48\opuigcerver\ncbds\17BP.2.R.48_SD_BX.dgn
kpaschal

REBAR AND CAP AT 15+11.20 -L-, 9.77 FT. LEFT. ELEV. 39.35', NAVD 88



LOCATION SKETCH

NOTES:

ASSUMED LIVE LOAD = HL 93 OR ALTERNATE LOADING.

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

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

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

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

THE EXISTING STRUCTURE CONSISTING OF 2 SPAN @ 12'-9", 2 SPANS @ 12'-5½" AND 2 SPAN @ 13'-0" WITH A CLEAR ROADWAY WIDTH OF 24.0', A REINFORCED CONCRETE DECK ON I-BEAMS SUPPORTED BY TIMBER CAPS AND TIMBER PILES AND STEEL CRUTCH BENTS LOCATED AT THE SITE OF THE PROPOSED STRUCTURE SHALL BE REMOVED.

REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL REMOVE THE BRIDGE AND SUBMIT PLANS FOR DEMOLITION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 24 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. FOR UNCLASSIFIED STRUCTURE EXCAVATION, SEE SPECIAL PROVISIONS.

THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE AT STATION 14+33.00 -L-.

FOR STEEL SHEET PILES, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

HYDRAULIC DATA

DESIGN DISCHARGE	=	2430 C.F.S.
FREQUENCY OF DESIGN FLOOD	=	50 YR.
DESIGN HIGH WATER ELEVATION	=	38.4'
DRAINAGE AREA	=	20.9 SQ. MI.
BASE DISCHARGE (Q100)	=	3070 C.F.S.
BASE HIGH WATER ELEVATION	=	38.99'

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	=	3800 C.F.S.
FREQUENCY OF OVERTOPPING FLOOD	=	<500 YR.
OVERTOPPING FLOOD ELEVATION	=	40.4'

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE	PDA TESTING	UNCLASSIFIED STRUCTURE EXCAVATION	CONCRETE WEARING SURFACE	GROOVING BRIDGE FLOOR	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	HP 12 X 53 STEEL PILES		STEEL SHEET PILES		VERTICAL CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	FOAM JOINT SEALS	3'-0" X 2'-9" PRESTRESSED CONCRETE BOX BEAMS	
	LUMP SUM	EA.	LUMP SUM	SQ. FT.	SQ. FT.	CU. YDS.	LUMP SUM	LBS.	NO.	LIN.FT.	NO.	SQ. FT.	LIN.FT.	TONS	SQ. YDS.	LUMP SUM	LUMP SUM	NO.	LIN.FT.
SUPERSTRUCTURE				3049	3454		LUMP SUM						180.0			LUMP SUM	LUMP SUM	12	1080.0
END BENT 1			LUMP SUM			24.3		4609	7	525	42	2255		265	295				
END BENT 2			LUMP SUM			24.3		4609	7	525	42	2255		135	150				
TOTAL	LUMP SUM	1	LUMP SUM	3049	3454	48.6	LUMP SUM	9218	14	1050	84	4510	180.0	400	445	LUMP SUM	LUMP SUM	12	1080.0

PROJECT NO. 17BP.2.R.48

PITT COUNTY

STATION: 14+33.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

FOR BRIDGE OVER FORK SWAMP
ON NC 102 BETWEEN
SR 1724 AND SR 1725

NORTH CAROLINA PROFESSIONAL SEAL 22008 ENGINEER K. KEITH PASCHAL
4-18-13

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

DRAWN BY : O. PUIGCERVER DATE : 4-2-13
CHECKED BY : N. D'AIUTO DATE : 4-4-13
DESIGN ENGINEER OF RECORD: O. PUIGCERVER DATE : 4-8-13

18-APR-2013 10:14
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kpaschal

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
								MOMENT					SHEAR					MOMENT						
							LIVELOAD FACTORS	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	LIVELOAD FACTORS	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING		HL-93(Inv)	N/A	1	1.16	--	1.75	0.27	1.51	A	EL	44.25	0.493	1.29	A	EL	4.425	0.80	0.27	1.16	A	EL	44.250	
		HL-93(Opr)	N/A	--	1.67	--	1.35	0.27	1.95	A	EL	44.25	0.493	1.67	A	EL	4.425	N/A	--	--	--	--	--	
		HS-20(Inv)	36.000	2	1.58	56.907	1.75	0.27	2.05	A	EL	44.25	0.493	1.69	A	EL	4.425	0.80	0.27	1.58	A	EL	44.250	
		HS-20(Opr)	36.000	--	2.18	78.639	1.35	0.27	2.66	A	EL	44.25	0.493	2.18	A	EL	4.425	N/A	--	--	--	--	--	
LEGAL LOAD RATING	SV	SNSH	13.500	--	3.69	49.823	1.4	0.27	5.98	A	EL	44.25	0.493	5.15	A	EL	4.425	0.80	0.27	3.69	A	EL	44.250	
		SNGARBS2	20.000	--	2.7	53.945	1.4	0.27	4.37	A	EL	44.25	0.493	3.62	A	EL	4.425	0.80	0.27	2.70	A	EL	44.250	
		SNAGRIS2	22.000	--	2.53	55.719	1.4	0.27	4.1	A	EL	44.25	0.493	3.34	A	EL	4.425	0.80	0.27	2.53	A	EL	44.250	
		SNCOTTS3	27.250	--	1.84	50.004	1.4	0.27	2.97	A	EL	44.25	0.493	2.57	A	EL	4.425	0.80	0.27	1.84	A	EL	44.250	
		SNAGGRS4	34.925	--	1.51	52.844	1.4	0.27	2.45	A	EL	44.25	0.493	2.1	A	EL	4.425	0.80	0.27	1.51	A	EL	44.250	
		SNS5A	35.550	--	1.48	52.649	1.4	0.27	2.4	A	EL	44.25	0.493	2.11	A	EL	4.425	0.80	0.27	1.48	A	EL	44.250	
		SNS6A	39.950	--	1.35	53.949	1.4	0.27	2.19	A	EL	44.25	0.493	1.91	A	EL	4.425	0.80	0.27	1.35	A	EL	44.250	
		SNS7B	42.000	--	1.29	54.000	1.4	0.27	2.08	A	EL	44.25	0.493	1.87	A	EL	4.425	0.80	0.27	1.29	A	EL	44.250	
	TTST	TNAGRIT3	33.000	--	1.64	54.262	1.4	0.27	2.66	A	EL	44.25	0.493	2.29	A	EL	4.425	0.80	0.27	1.64	A	EL	44.250	
		TNT4A	33.075	--	1.65	54.550	1.4	0.27	2.67	A	EL	44.25	0.493	2.24	A	EL	4.425	0.80	0.27	1.65	A	EL	44.250	
		TNT6A	41.600	--	1.34	55.769	1.4	0.27	2.17	A	EL	44.25	0.493	1.96	A	EL	4.425	0.80	0.27	1.34	A	EL	44.250	
		TNT7A	42.000	--	1.34	56.411	1.4	0.27	2.18	A	EL	44.25	0.493	1.92	A	EL	4.425	0.80	0.27	1.34	A	EL	44.250	
		TNT7B	42.000	--	1.38	57.929	1.4	0.27	2.23	A	EL	44.25	0.493	1.83	A	EL	4.425	0.80	0.27	1.38	A	EL	44.250	
		TNAGRIT4	43.000	--	1.32	56.746	1.4	0.27	2.14	A	EL	44.25	0.493	1.78	A	EL	4.425	0.80	0.27	1.32	A	EL	44.250	
		TNAGT5A	45.000	--	1.25	56.154	1.4	0.27	2.02	A	EL	44.25	0.493	1.75	A	EL	4.425	0.80	0.27	1.25	A	EL	44.250	
		TNAGT5B	45.000	3	1.24	55.619	1.4	0.27	2	A	EL	44.25	0.493	1.69	A	EL	4.425	0.80	0.27	1.24	A	EL	44.250	

LOAD FACTORS:

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

NOTES:

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

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

COMMENTS:

1.
2.
3.
4.

⟨#⟩ CONTROLLING LOAD RATING

⟨1⟩ DESIGN LOAD RATING (HL-93)

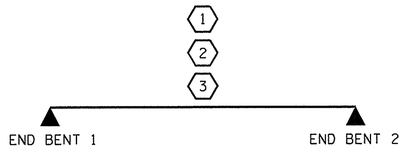
⟨2⟩ DESIGN LOAD RATING (HS-20)

⟨3⟩ LEGAL LOAD RATING **

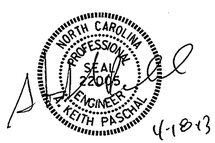
** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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



LRFR SUMMARY



PROJECT NO. 17BP.2.R.48

PITT COUNTY

STATION: 14+33.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

LRFR SUMMARY FOR PRESTRESSED CONCRETE GIRDERS (NON-INTERSTATE TRAFFIC)

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

STD. NO. LRFR1

ASSEMBLED BY : O. PUIGCERVER	DATE : 12-28-12
CHECKED BY : K. P. SEDAI	DATE : 2-14-13
DRAWN BY : TMG	II/II
CHECKED BY : AAC	II/II

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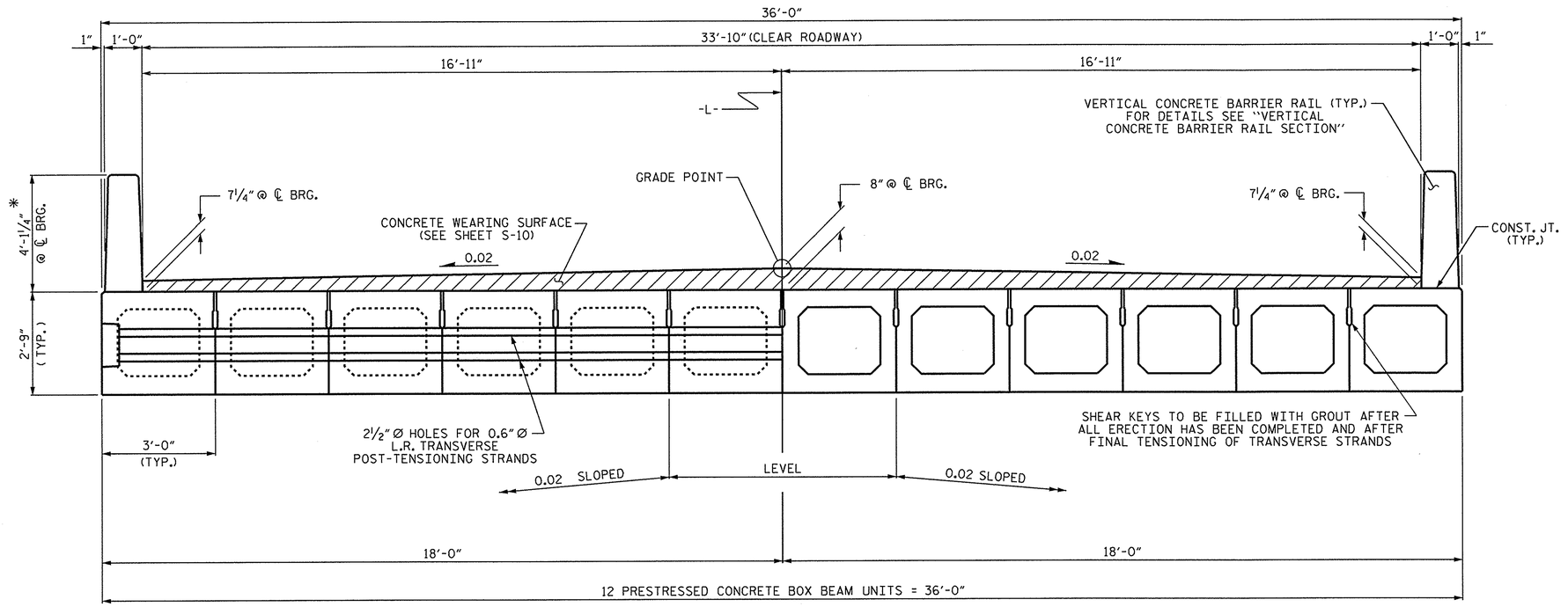
kpaschal



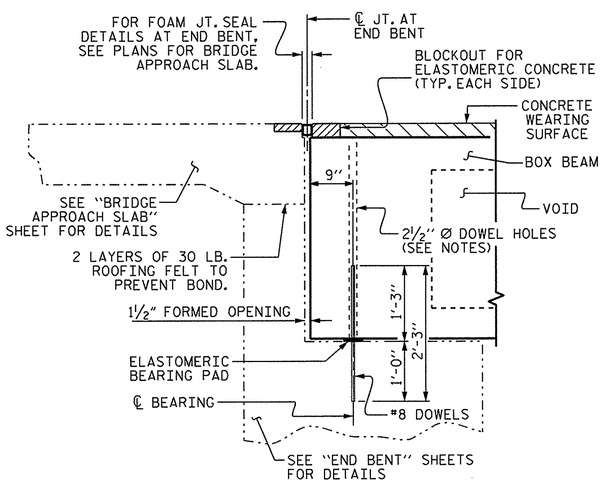
HALF SECTION
AT INTERMEDIATE DIAPHRAGMS

HALF SECTION
THROUGH VOIDS

TYPICAL SECTION

*THE MAXIMUM BARRIER RAIL HEIGHT AND CONCRETE THICKNESS IS SHOWN. THE HEIGHT OF THE BARRIER RAIL AND CONCRETE THICKNESS VARIES WHILE THE TOP OF THE BARRIER RAIL FOLLOWS THE PROFILE OF THE GUTTERLINE. FOR RAIL HEIGHT DETAILS AND CONCRETE THICKNESS, SEE THE "VERTICAL CONCRETE BARRIER RAIL SECTION" DETAIL.

FIXED END



SECTION AT END BENT

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 BOX BEAM SECTIONS SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE BOX BEAMS.

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

THE 2½" Ø DOWEL HOLES AT FIXED ENDS OF BOX BEAM SECTIONS SHALL BE FILLED WITH NON-SHRINK GROUT.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE BOX BEAM UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 6000 PSI.

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

PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE BOX BEAM UNIT ENDS.

APPLY EPOXY PROTECTIVE COATING TO BOX BEAM UNIT ENDS.

VERTICAL 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 VERTICAL 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.

THE LOCATION OF THE VOID DRAINS MAY BE SHIFTED SLIGHTLY WHERE NECESSARY TO CLEAR PRESTRESSING STRANDS OR TRANSVERSE REINFORCING STEEL.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

PLACEMENT OF THE CONCRETE WEARING SURFACE SHALL OCCUR AFTER CASTING THE CONCRETE RAIL. THE COST OF THE #3 BARS CAST WITH THE CONCRETE WEARING SURFACE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONCRETE WEARING SURFACE. FOR CONCRETE WEARING SURFACE, SEE SPECIAL PROVISIONS.

ASSEMBLED BY : O. PUIGCERVER DATE : 2-12-13
CHECKED BY : K. P. SEDAI DATE : 2-14-13
DRAWN BY : DGE 8/11
CHECKED BY : TMG 11/11

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kpaschal

PROJECT NO. 17BP.2.R.48
PITT COUNTY
STATION: 14+33.00 -L-

SHEET 1 OF 6

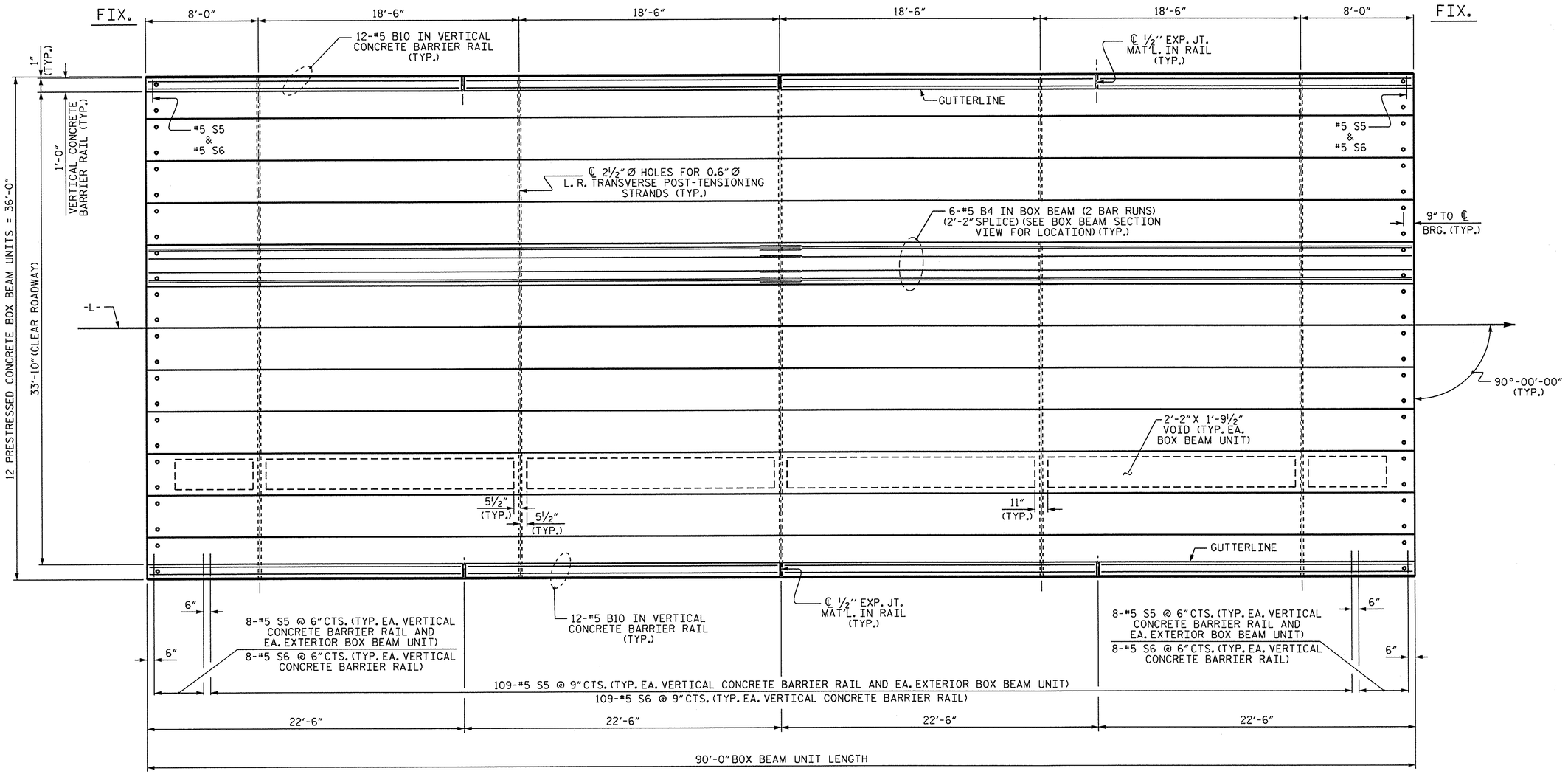
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

3'-0" X 2'-9" PRESTRESSED CONCRETE BOX BEAM UNIT

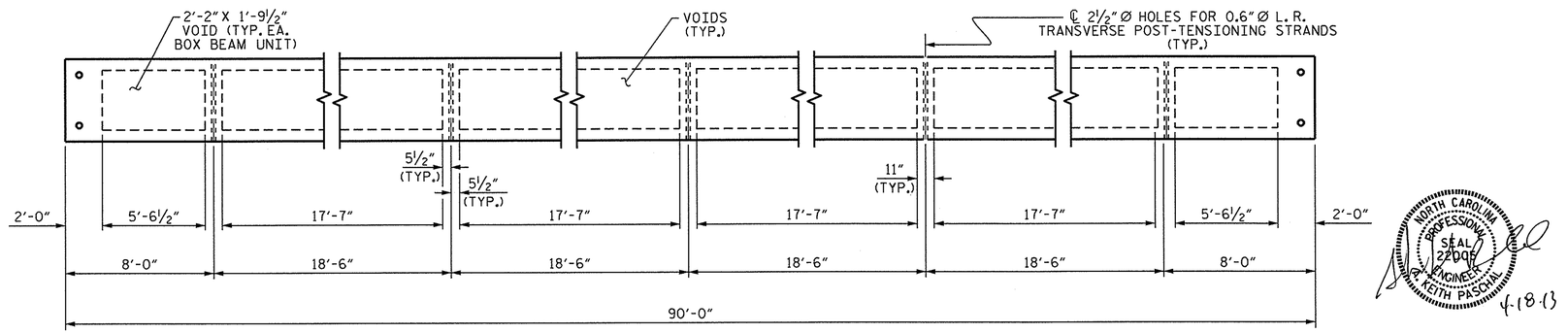
NORTH CAROLINA PROFESSIONAL SEAL 20045 ENGINEER KEITH PASCHAL
4-18-13

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			18

STD. NO. STD.33PCBB_36_90S



PLAN OF UNIT



DIAPHRAGM AND VOID LAYOUT

NORTH CAROLINA PROFESSIONAL SEAL 22008 ENGINEER KEITH PASCHAL
4-18-13

PROJECT NO. 17BP.2.R.48
PITT COUNTY
STATION: 14+33.00 -L-

SHEET 2 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF 90' UNIT 33'-10" CLEAR ROADWAY 90° SKEW

ASSEMBLED BY : O. PUIGCERVER	DATE : 11-30-12
CHECKED BY : K. P. SEDAI	DATE : 2-14-13
DRAWN BY : DGE 8/10	
CHECKED BY : TMG 11/11	

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			18

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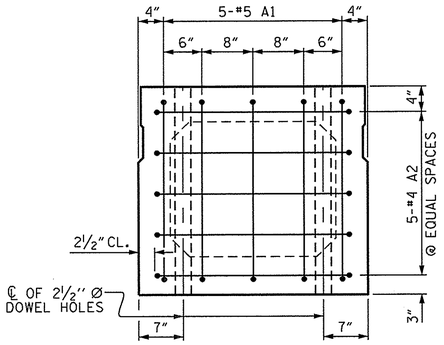
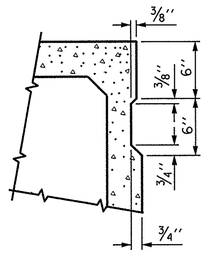
kpaschal

STD.NO.33PCBB_36_90S_90L



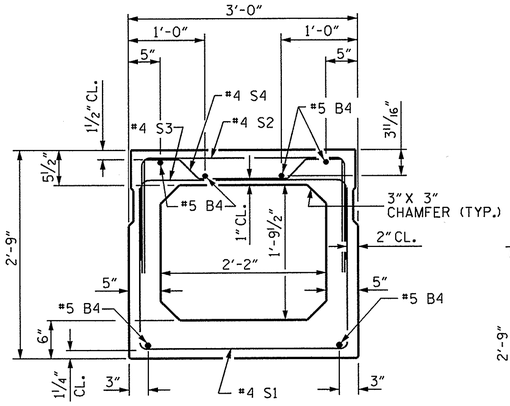
END ELEVATION

SHOWING PLACEMENT OF #5 & #4 "A" BARS AND LOCATION OF DOWEL HOLES. (INTERIOR BOX BEAM SECTION SHOWN-EXTERIOR SECTION SIMILAR EXCEPT SHEAR KEY LOCATION. STRAND LAYOUT NOT SHOWN.)



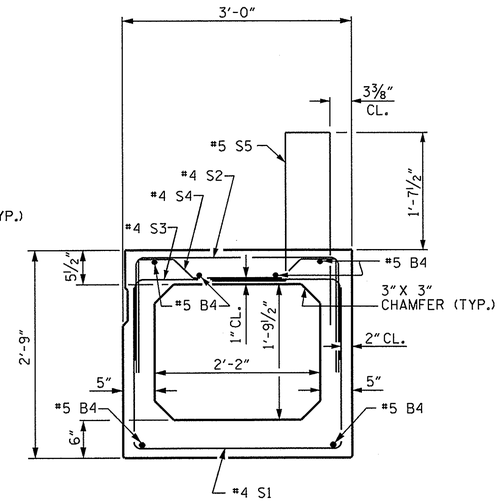
SHEAR KEY DETAIL

NOTE: OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR BOX BEAMS.



INTERIOR BOX BEAM SECTION

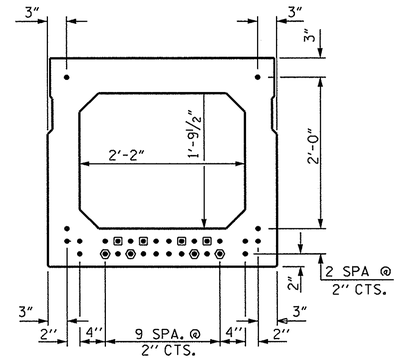
(STRAND LAYOUT NOT SHOWN)



EXTERIOR BOX BEAM SECTION

(STRAND LAYOUT NOT SHOWN)

0.6" Ø LOW RELAXATION STRAND LAYOUT



TYPICAL STRAND LOCATION

(30 STRANDS REQUIRED)

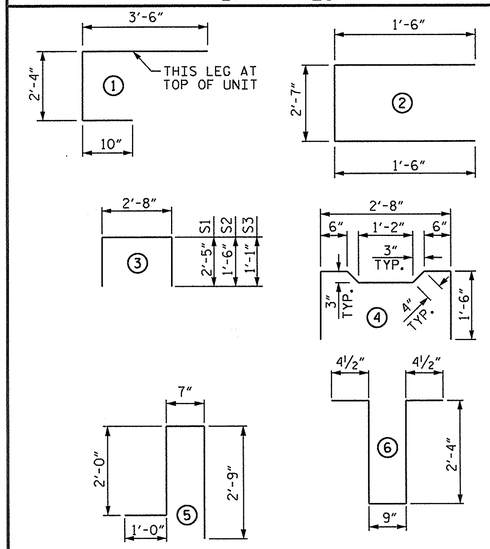
DEBONDING LEGEND

- ● FULLY BONDED STRANDS
- ◘ STRANDS DEBONDED FOR 4'-0" FROM END OF GIRDER
- ⬢ STRANDS DEBONDED FOR 12'-0" FROM END OF GIRDER

BOND SHALL BE BROKEN ON STRANDS AS SHOWN FOR THE SPECIFIED LENGTH FROM EACH END OF THE BOX BEAM. SEE STANDARD SPECIFICATIONS ARTICLE 1078-7.

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

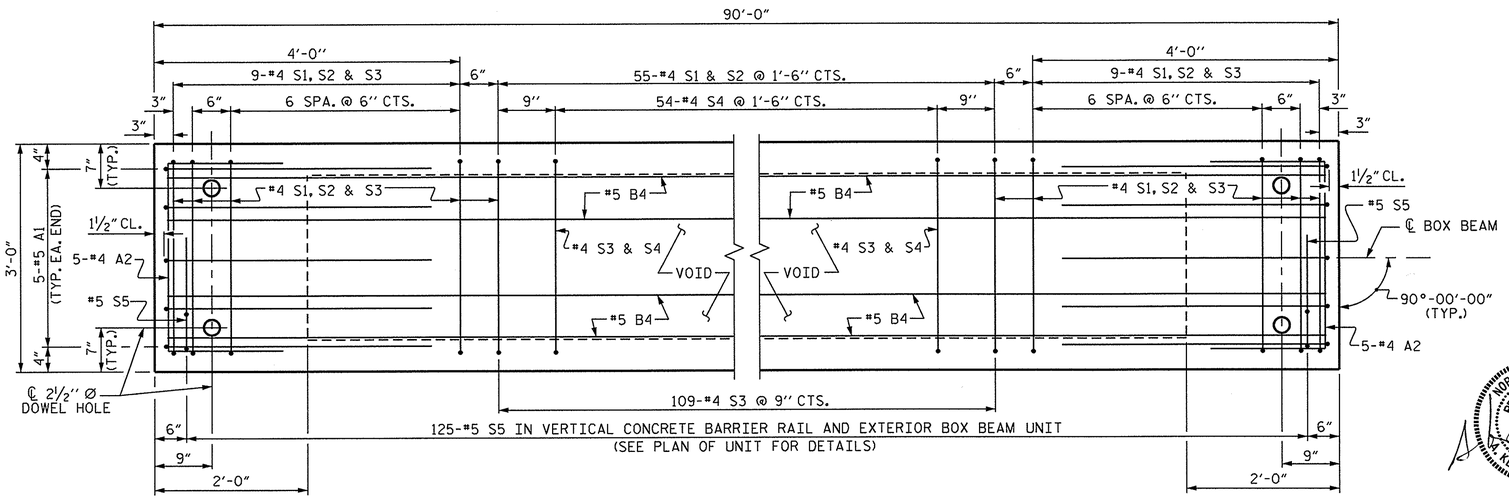
BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL FOR ONE BOX BEAM SECTION

				EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
A1	10	#5	1	6'-8"	70	6'-8"	70
A2	40	#4	2	5'-7"	149	5'-7"	149
B4	12	#5	STR	45'-11"	575	45'-11"	575
K1	15	#4	6	6'-2"	62	6'-2"	62
K2	10	#4	STR	2'-7"	17	2'-7"	17
S1	73	#4	3	7'-6"	366	7'-6"	366
S2	73	#4	3	5'-8"	276	5'-8"	276
S3	127	#4	3	4'-10"	410	4'-10"	410
S4	54	#4	4	5'-10"	210	5'-10"	210
✳ S5	125	#5	5	6'-4"	826	--	--
REINFORCING STEEL					2135 LBS.		2135 LBS.
✳ EPOXY COATED REINF. STEEL					826 LBS.		
8000 P.S.I. CONCRETE					16.0 CU. YDS.		15.9 CU. YDS.
0.6" Ø L.R. STRANDS					No. 30		No. 30



PLAN OF BOX BEAM

EXTERIOR UNIT SHOWN, INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S5 BARS.
FOR LOCATION OF DIAPHRAGMS, SEE PLAN OF UNIT.
FOR REINFORCING STEEL IN DIAPHRAGMS, SEE DIAPHRAGM DETAILS.

NORTH CAROLINA PROFESSIONAL SEAL 22005 ENGINEER K. KEITH PASCHAL 4-18-13

PROJECT NO. 17.BP.2.R.48
PITT COUNTY
STATION: 14+33.00 -L-

SHEET 3 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

3'-0" X 2'-9" PRESTRESSED CONCRETE BOX BEAM UNIT

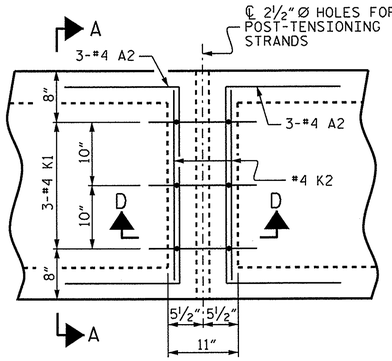
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS
2			4			18

ASSEMBLED BY : O. PUIGCERVER DATE : 11-30-12
CHECKED BY : K. P. SEDAI DATE : 2-14-13

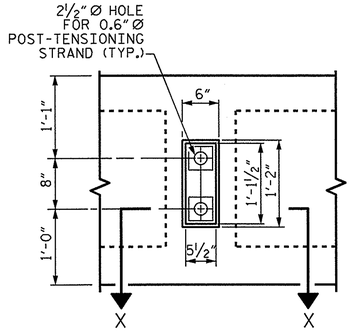
DRAWN BY : DGE 10/11
CHECKED BY : TMG 11/11

18-APR-2013 10:13
S:\DPG1\Keith\17BP.2.R.48\opuigcerver\ncbds\17BP_2R_48_SD_BX.dgn
kpaschal

STD. NO. 33PCBB4_90S_90L

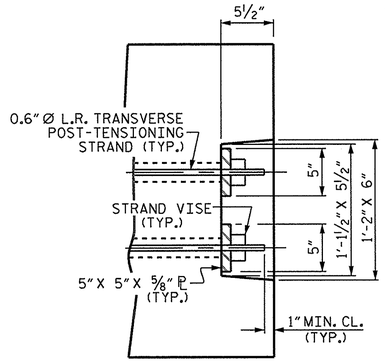


PLAN

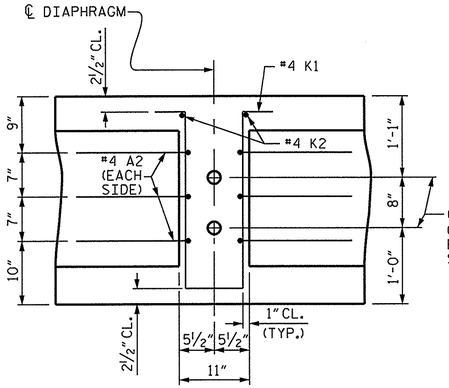


VIEW Y-Y

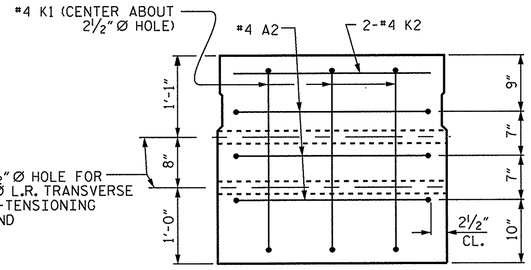
SHOWING ELEVATION VIEW OF GROUTED RECESS



DETAIL "C"

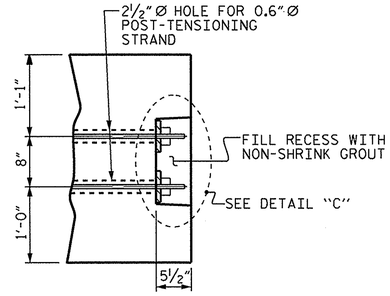


SECTION D-D

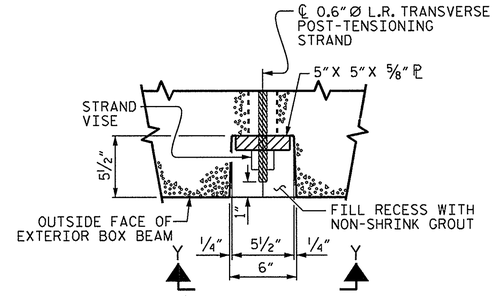


SECTION A-A

VOIDS NOT SHOWN



PART SECTION AT RECESS

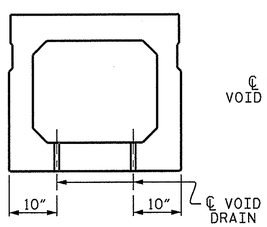


SECTION X-X

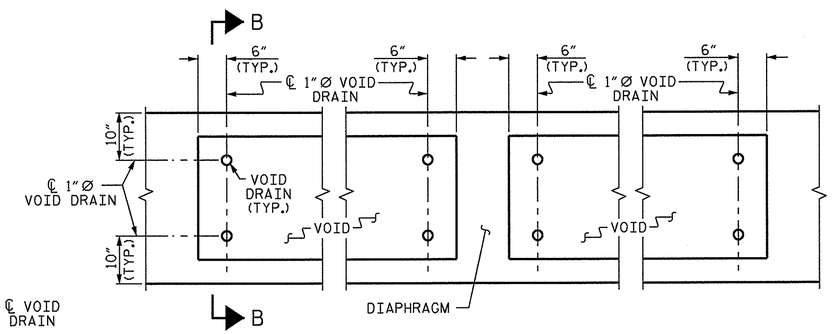
SHOWING PLAN VIEW OF GROUTED RECESS

DOUBLE DIAPHRAGM DETAILS

#4 "S" BARS NOT SHOWN. #4 "S" BARS MAY BE SHIFTED SLIGHTLY TO CLEAR 2½" Ø HOLE.



SECTION B-B



PART PLAN

VOID DRAIN DETAILS

(DIMENSIONS SHOWN ARE TYPICAL FOR EACH VOID)

GROUTED RECESS DETAIL AT END OF POST-TENSIONED STRANDS OF EXTERIOR BOX BEAM

DEAD LOAD DEFLECTION AND CAMBER	
	3'-0" x 2'-9"
90' BOX BEAM UNIT	0.6"Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	4⅝" ↑
DEFLECTION DUE TO CONCRETE WEARING SURFACE	½" ↓
FINAL CAMBER	4⅛" ↑

PROJECT NO. 17BP.2.R.48

PITT COUNTY

STATION: 14+33.00 -L-

SHEET 4 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

3'-0" X 2'-9" PRESTRESSED CONCRETE BOX BEAM UNIT

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8
1			3			TOTAL SHEETS
2			4			18

NORTH CAROLINA PROFESSIONAL SEAL 22005 ENGINEER KEITH PASCHAL

4-18-13

ASSEMBLED BY : O. PUIGCERVER DATE : 11-30-12	
CHECKED BY : K. P. SEDAI DATE : 2-15-13	
DRAWN BY : DGE 10/11	
CHECKED BY : TMG 11/11	

18-APR-2013 10:13
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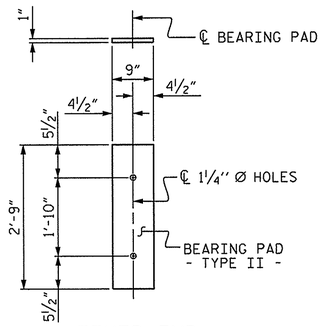
kpaschal

STD.NO.33PCBB5_90S

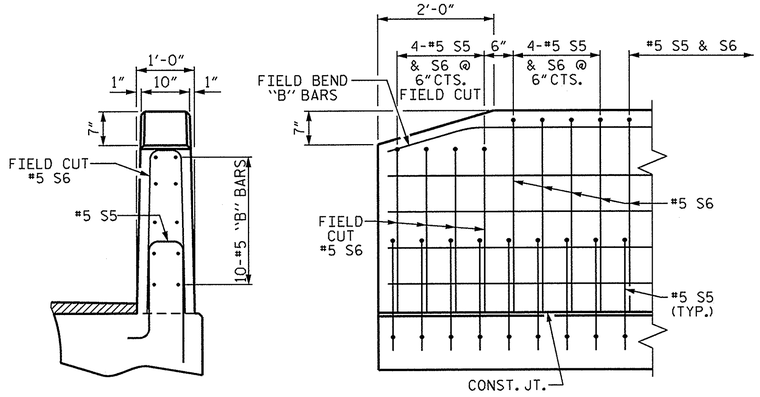


FIXED END

(TYPE II - 24 REQ'D)

ELASTOMERIC BEARING DETAILS

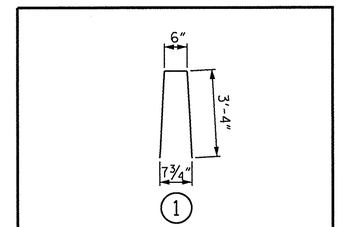
ELASTOMER IN ALL BEARINGS SHALL BE 60 DUROMETER HARDNESS.



END VIEW

SIDE VIEW

END OF RAIL DETAILS



BAR TYPE

BAR DIMENSIONS ARE OUT TO OUT

GUTTERLINE CONCRETE THICKNESS & RAIL HEIGHT

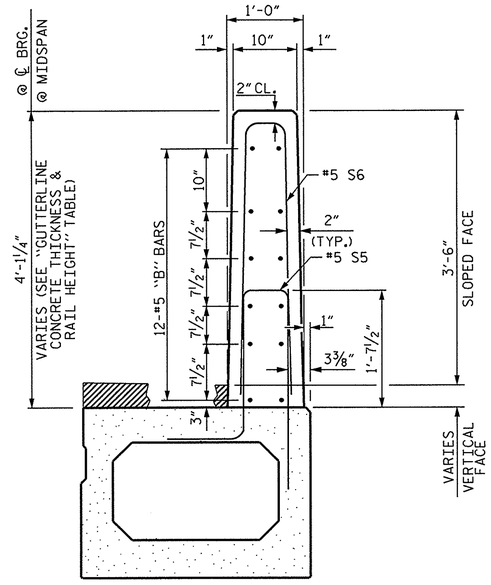
	CONCRETE OVERLAY THICKNESS @ MID-SPAN	RAIL HEIGHT @ MID-SPAN
90' UNITS	3½"	3'-9½"

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL

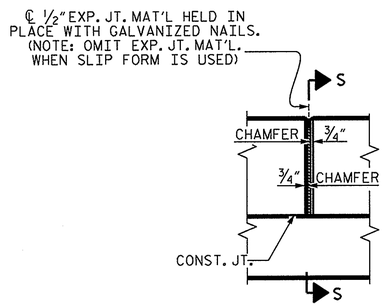
BAR	BARS PER PAIR OF EXTERIOR UNITS	SIZE	TYPE	LENGTH	WEIGHT
	90' UNIT				
*B10	96	#5	STR	22'-1"	2211
* S6	250	#5	1	7'-2"	1869
*EPOXY COATED REINFORCING STEEL			LBS.		4080
CLASS AA CONCRETE			CU.YDS.		24.2
TOTAL VERTICAL CONCRETE BARRIER RAIL			LN. FT.		180.0

BOX BEAM UNITS REQUIRED

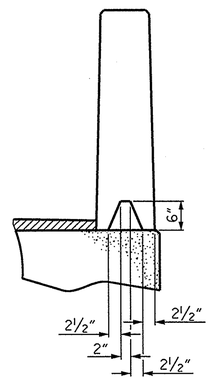
	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR B.B.	2	90'-0"	180'-0"
INTERIOR B.B.	10	90'-0"	900'-0"
TOTAL	12	———	1080'-0"



SECTION THRU RAIL



ELEVATION AT EXPANSION JOINTS



SECTION S-S

AT DAM IN OPEN JOINT

(THIS IS TO BE USED ONLY WHEN SLIP FORM IS USED)

VERTICAL CONCRETE BARRIER RAIL DETAILS

PROJECT NO. 17BP.2.R.48

PITT COUNTY

STATION: 14+33.00 -L-

SHEET 5 OF 6

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

RALEIGH

3'-0" X 2'-9" PRESTRESSED CONCRETE BOX BEAM UNIT

NORTH CAROLINA PROFESSIONAL SEAL 22005 ENGINEER K. KEITH PASCHAL

4.18.13

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			18

STD. NO. 33PCBB8_90S

ASSEMBLED BY : O. PUIGCERVER DATE : 2-13-13	
CHECKED BY : K. P. SEDAI DATE : 2-15-13	
DRAWN BY : DGE 10/11	
CHECKED BY : TMG 11/11	

18-APR-2013 10:13
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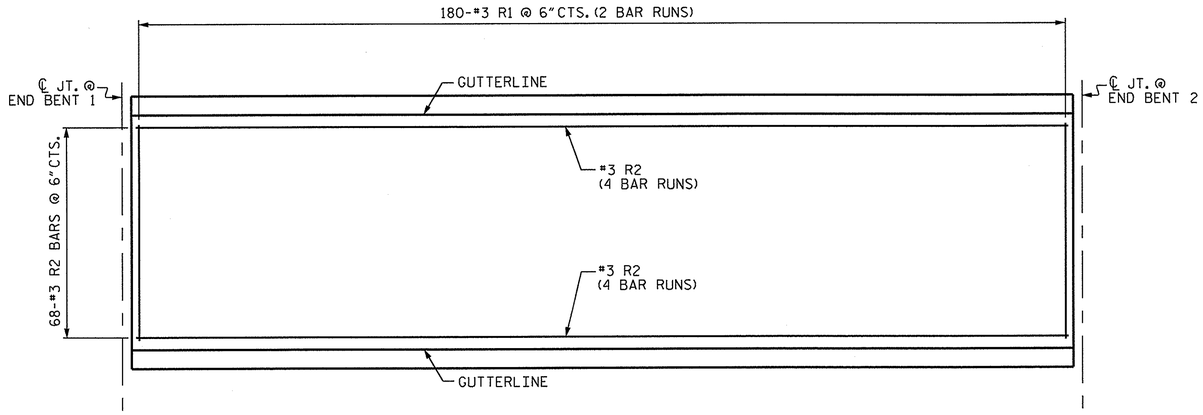
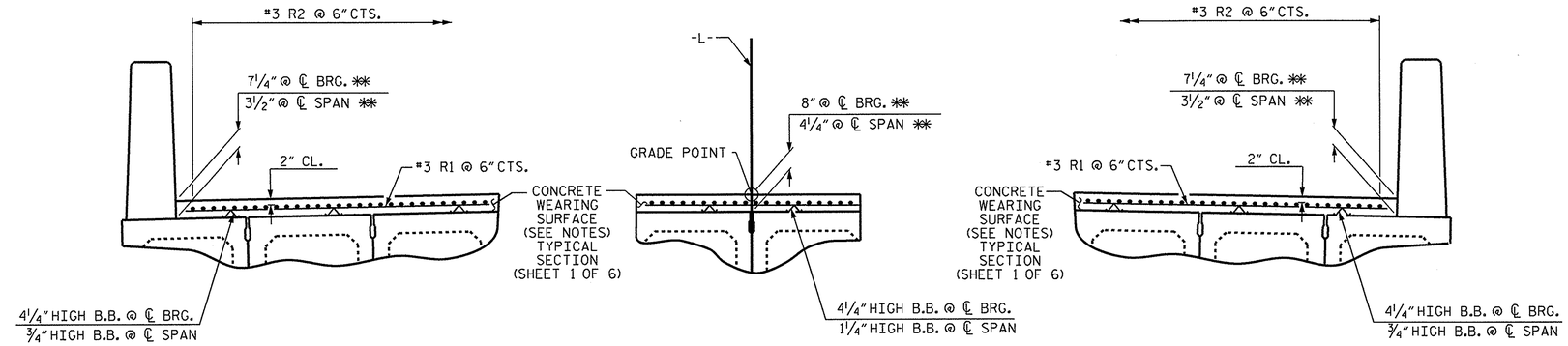
kpaschal



PLAN SHOWING CONCRETE WEARING SURFACE REINFORCING STEEL



REINFORCING STEEL FOR CONCRETE WEARING SURFACE

** BASED ON PREDICTED FINAL CAMBER AND THEORETICAL GRADE LINE ELEVATIONS
*** BEAM BOLSTERS (B.B.) SHALL BE SPACED AT 2'-0" CENTERS SET 1'-0" FROM GUTTERLINE.

BILL OF MATERIAL FOR CONCRETE WEARING SURFACE

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*R1	360	#3	STR	17'-6"	2369
*R2	272	#3	STR	23'-7"	2412
* EPOXY COATED REINFORCING STEEL				LBS.	4781
CONCRETE WEARING SURFACE				SQ. FT.	3049

GROOVING BRIDGE FLOORS

APPROACH SLABS	689	SQ.FT.
BRIDGE DECK	2765	SQ.FT.
TOTAL	3454	SQ.FT.

SPLICE LENGTH CHART

BAR SIZE	EPOXY COATED
#3 R2	1'-6"

DRAWN BY : B.N.BARODAWALA DATE : 1-11-13
CHECKED BY : K.P.SEDAI DATE : 2-15-13
DESIGN ENGINEER OF RECORD: O. PUIGCERVER DATE : 3-27-13

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kpaschal

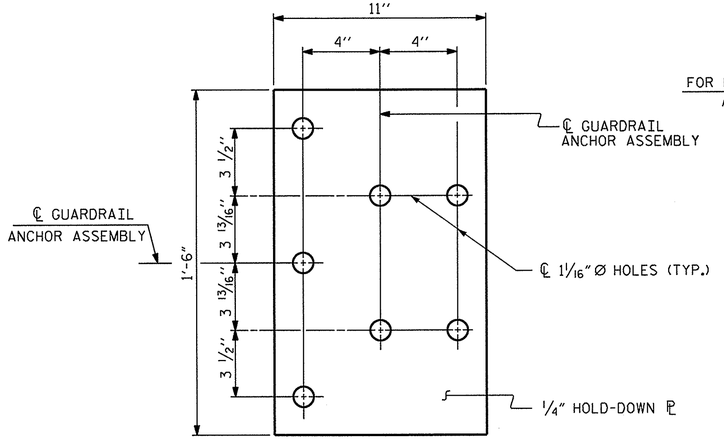
PROJECT NO. 17BP.2.R.48
PITT COUNTY
STATION: 14+33.00 -L-

SHEET 6 OF 6

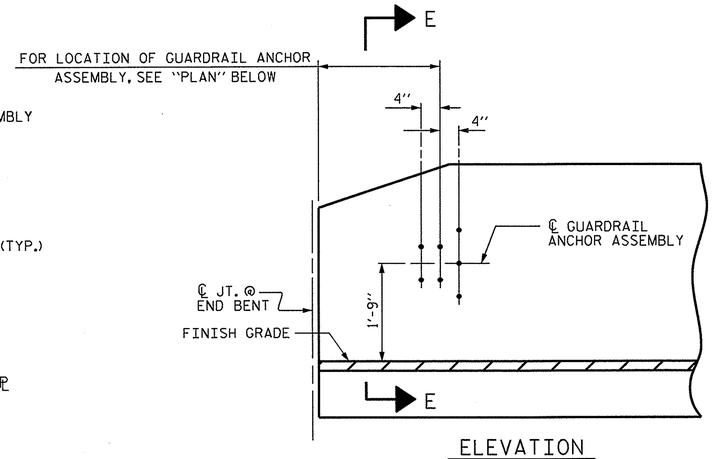
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CONCRETE WEARING SURFACE DETAILS

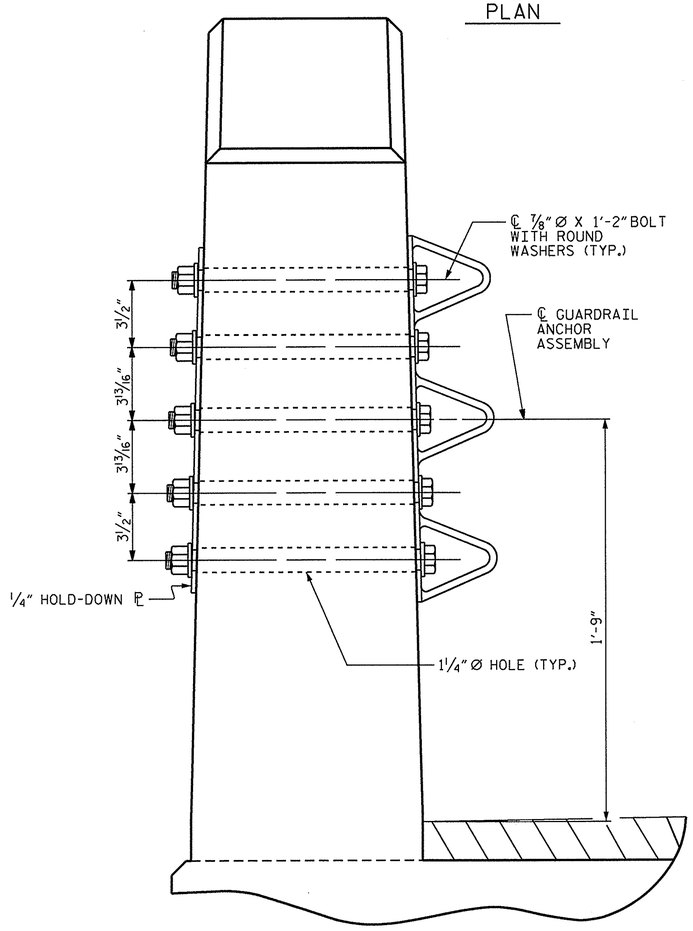
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS
2			4			18



PLAN



ELEVATION



SECTION E-E

GUARDRAIL ANCHOR ASSEMBLY DETAILS

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.)

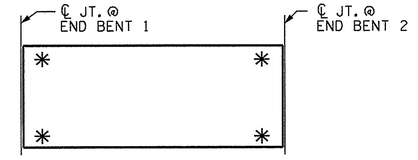
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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.

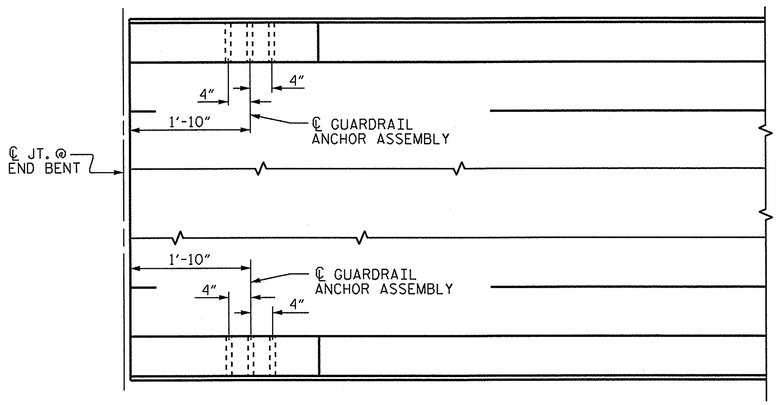
THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE VERTICAL CONCRETE BARRIER RAIL TO CLEAR ASSEMBLY BOLTS.

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.



SKETCH SHOWING POINTS OF ATTACHMENT

*LOCATION OF GUARDRAIL ATTACHMENT



PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

END BENT 1 SHOWN, END BENT 2 SIMILAR.

NORTH CAROLINA PROFESSIONAL SEAL 23005 ENGINEER KEITH PASCHAL

4-18-13

PROJECT NO. 17BP.2.R.48

PITT COUNTY

STATION: 14+33.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GUARDRAIL ANCHORAGE DETAILS FOR METAL RAILS & VERTICAL CONCRETE BARRIER RAIL

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS
2			4			18

ASSEMBLED BY :	O. PUIGCERVER	DATE : 2-13-13
CHECKED BY :	K. P. SDEAI	DATE : 2-15-13
DESIGN ENGINEER OF RECORD:	O. PUIGCERVER	DATE : 3-27-13

18-APR-2013 10:12
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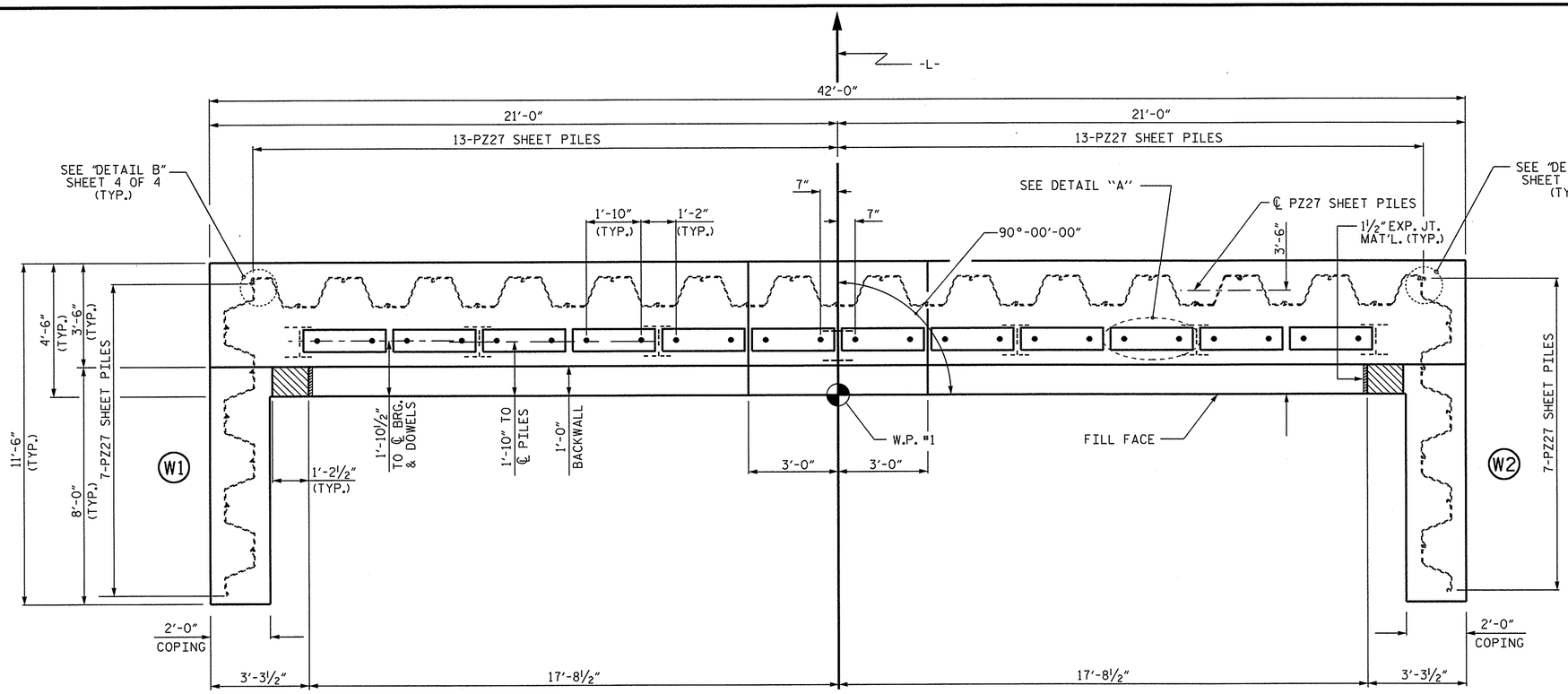
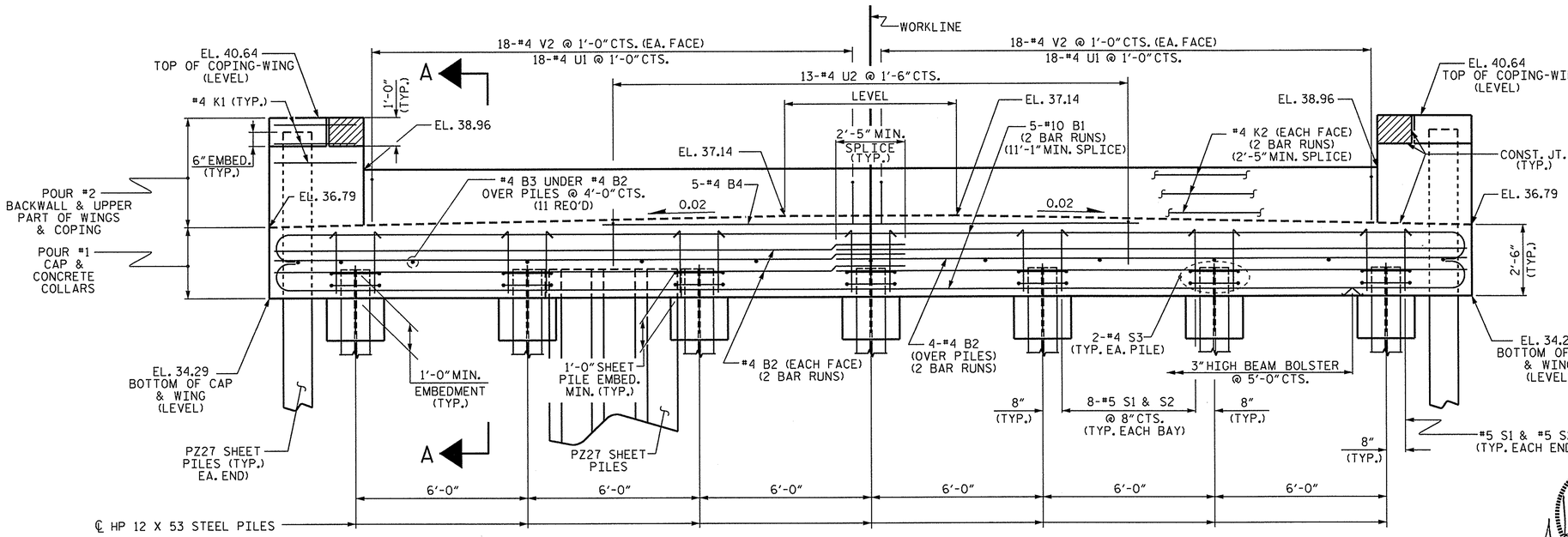
kpaschal

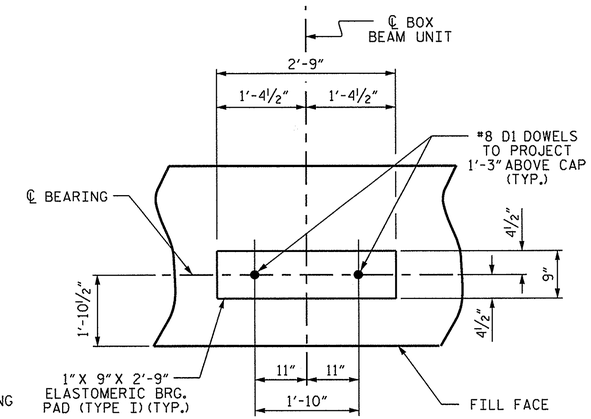


PLAN



ELEVATION

NOT ALL SHEET PILING SHOWN FOR CLARITY



DETAIL "A"

NOTES

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

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

FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.

INSTALL THE 4"DIA. DRAIN PIPE THROUGH THE STEEL SHEET PILE WALL WALL AS REQUIRED, FOR REINFORCED BRIDGE APPROACH FILLS, SEE THE ROADWAY PLANS.

ALL 2"Ø MAX. HOLES IN STEEL SHEET PILING TO BE DRILLED AND NOT BURNED.

PROJECT NO. 17BP.2.R.48

PITT COUNTY

STATION: 14+33.00 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT 1

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12
1			3			TOTAL SHEETS
2			4			18

NORTH CAROLINA PROFESSIONAL SEAL 22005 ENGINEER A. KEITH PASCHAL 4-18-13

ASSEMBLED BY :	O. PUIGCERVER	DATE : 3-19-13
CHECKED BY :	N. D'AIUTO	DATE : 4-4-13
DESIGN ENGINEER OF RECORD:	O. PUIGCERVER	DATE : 4-10-13

18-APR-2013 10:12
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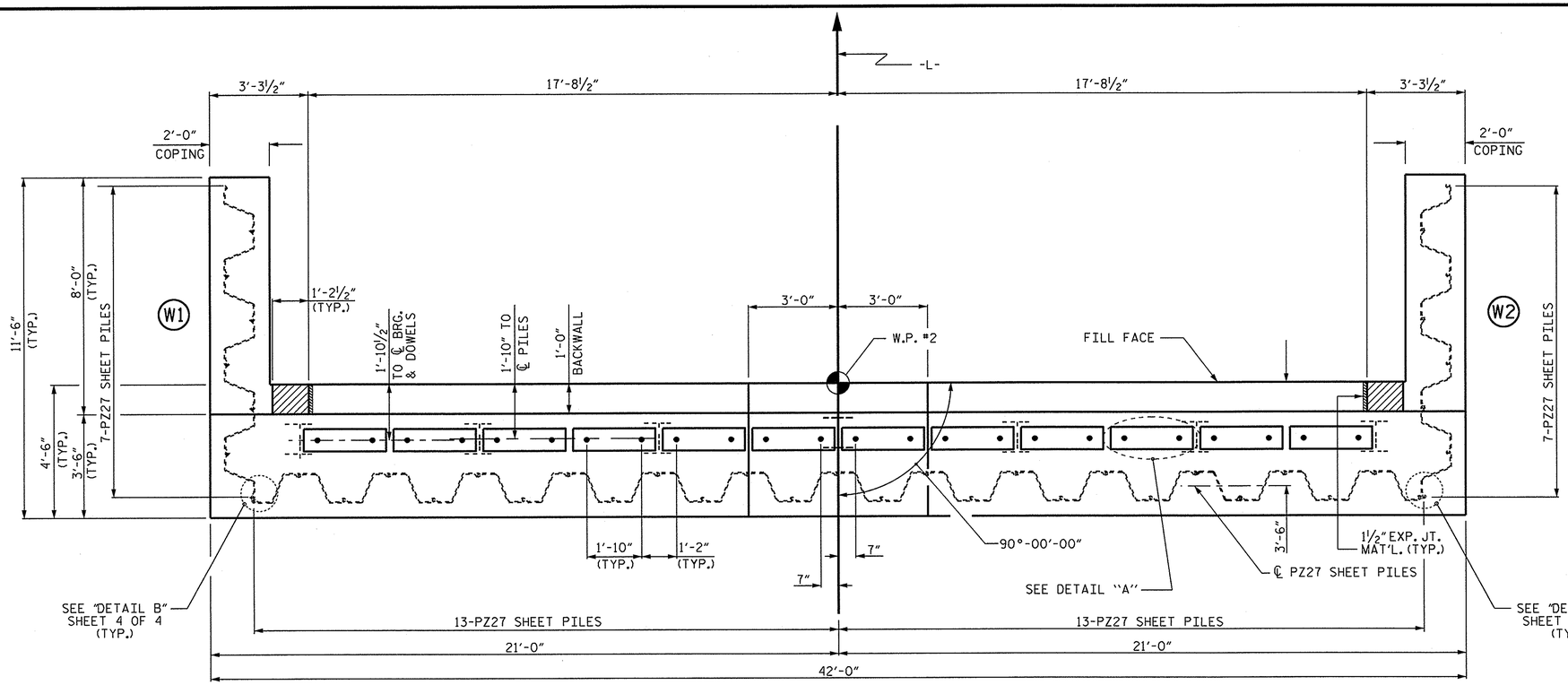
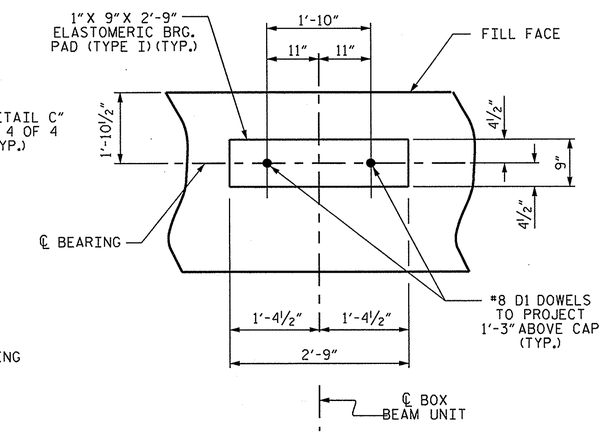
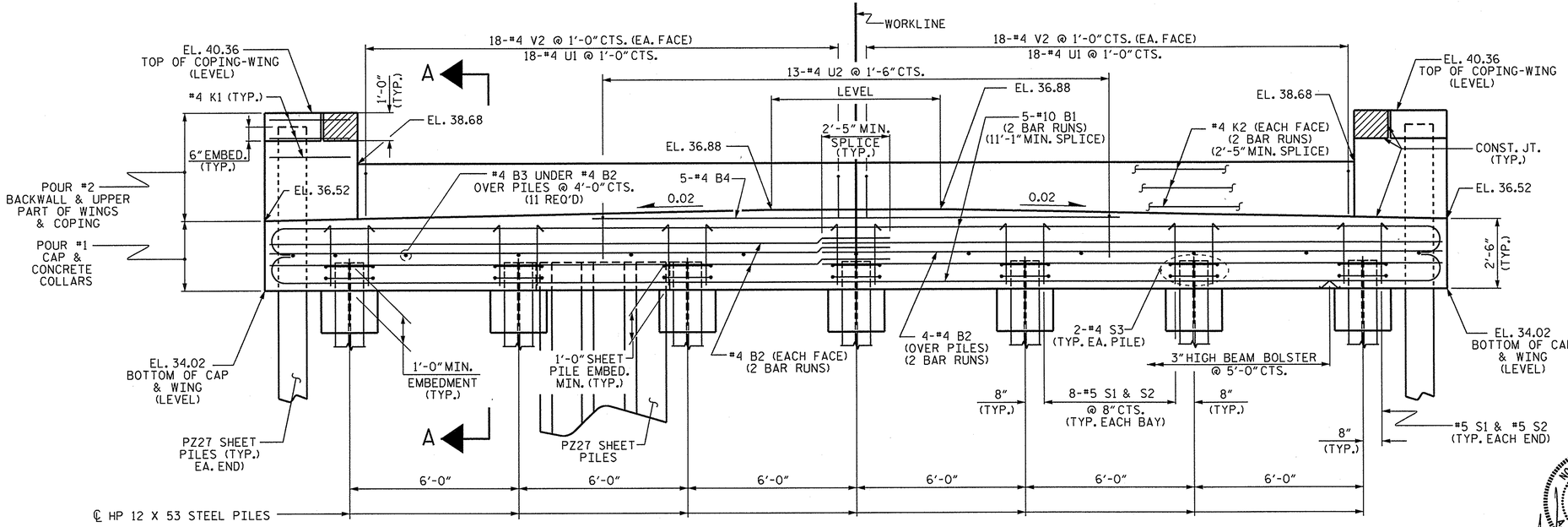
kpaschal



PLAN



DETAIL "A"



ELEVATION

NOT ALL SHEET PILING SHOWN FOR CLARITY

NOTES

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

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

FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.

INSTALL THE 4"DIA. DRAIN PIPE THROUGH THE STEEL SHEET PILE WALL WALL AS REQUIRED, FOR REINFORCED BRIDGE APPROACH FILLS, SEE THE ROADWAY PLANS.

ALL 2"Ø MAX. HOLES IN STEEL SHEET PILING TO BE DRILLED AND NOT BURNED.

PROJECT NO. 17BP.2.R.48

PITT COUNTY

STATION: 14+33.00 -L-

SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT 2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS
2			4			18

NORTH CAROLINA PROFESSIONAL SEAL 22805 ENGINEER A. KEITH PASCHAL

4-18-13

ASSEMBLED BY : O. PUIGCERVER DATE : 3-19-13
CHECKED BY : N. D'AIUTO DATE : 4-4-13
DESIGN ENGINEER OF RECORD: O. PUIGCERVER DATE : 4-10-13

18-APR-2013 10:11
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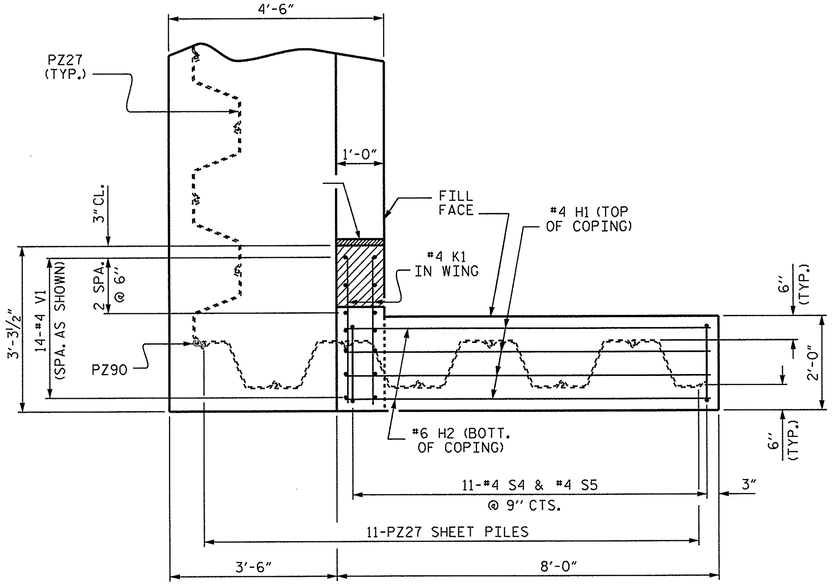
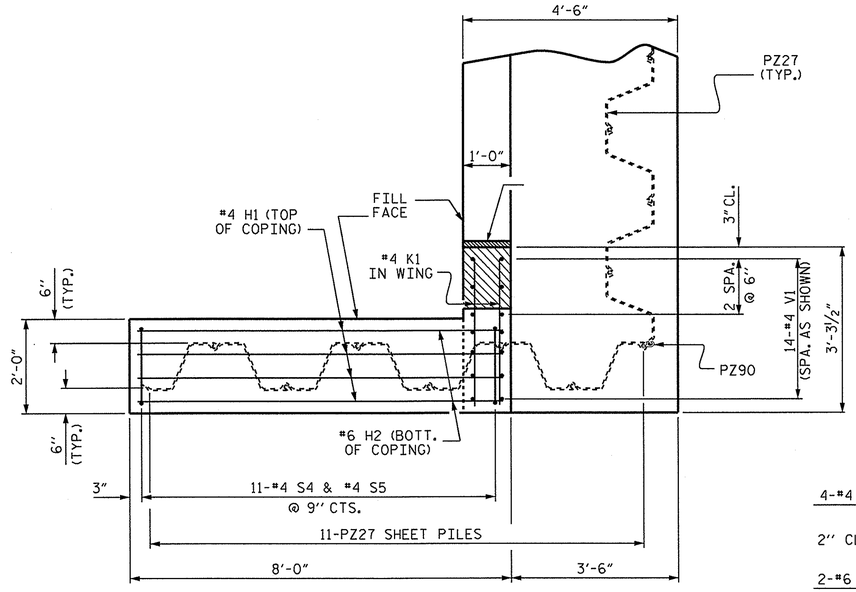
kpaschal



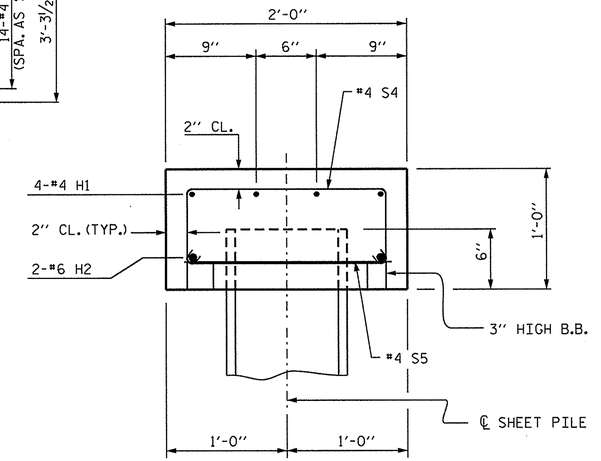
PLAN - COPING (W1)

DRILL 2" Ø MAX. HOLE IN SHEET PILE FOR #10 B1, #5 B2, #4 K1, AND #4 S5 BARS (TYP.)



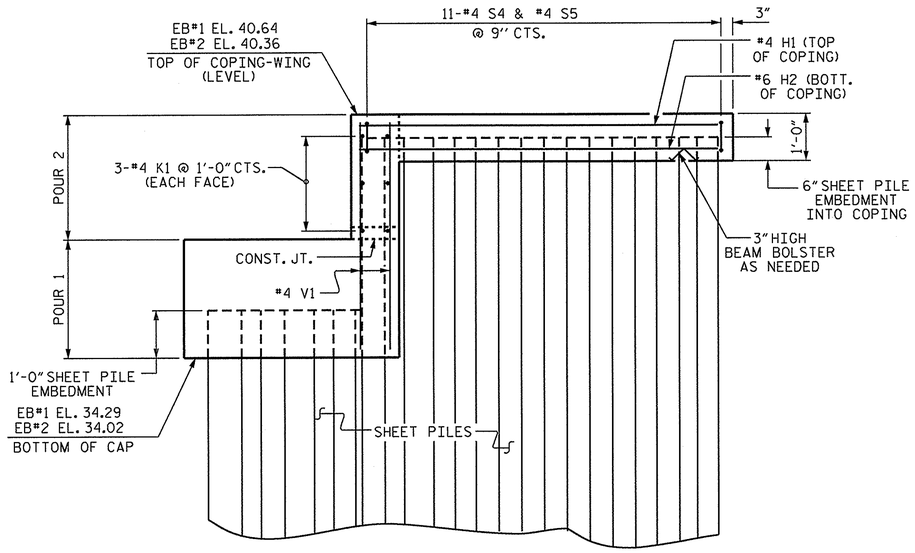
PLAN - COPING (W2)

DRILL 2" Ø MAX. HOLE IN SHEET PILE FOR #10 B1, #5 B2, #4 K1, AND #4 S5 BARS (TYP.)



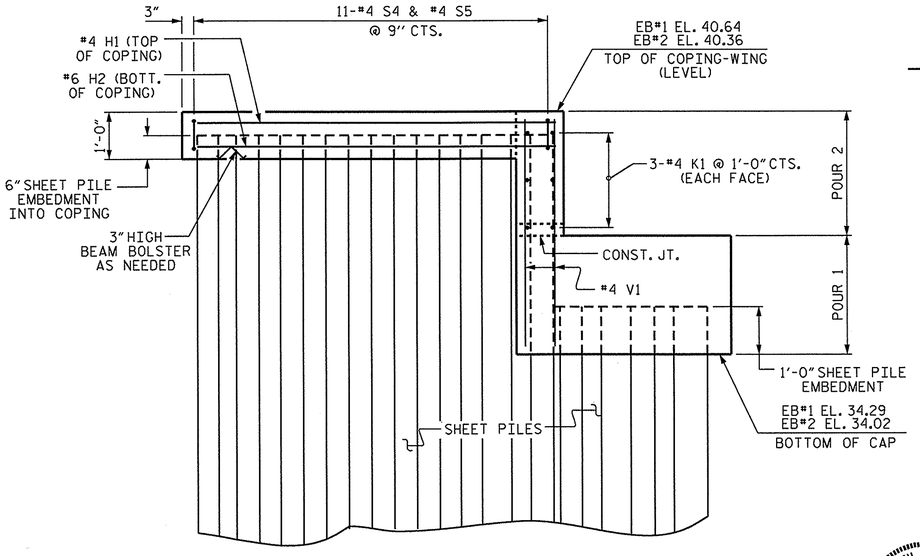
SECTION THRU COPING

DRILL 2" Ø MAX HOLE IN SHEET PILES FOR #4 S5 BAR (TYP.)



ELEVATION - COPING (W1)

DRILL 2" Ø MAX. HOLE IN SHEET PILE FOR #10 B1, #5 B2, #4 K1, AND #4 S5 BARS (TYP.)
"V" BARS MAY BE SHIFTED SLIGHTLY TO AVOID SHEET PILES



ELEVATION - COPING (W2)

DRILL 2" Ø MAX. HOLE IN SHEET PILE FOR #10 B1, #5 B2, #4 K1, AND #4 S5 BARS (TYP.)
"V" BARS MAY BE SHIFTED SLIGHTLY TO AVOID SHEET PILES

NORTH CAROLINA PROFESSIONAL SEAL 22005 ENGINEER KEITH PASCHAL
4-18-13

PROJECT NO. 17.BP.2.R.48
PITT COUNTY
STATION: 14+33.00 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT
WING DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-14
1			3			TOTAL SHEETS
2			4			18

DRAWN BY :	O. PUIGCERVER	DATE : 3-22-12
CHECKED BY :	N. D'AIUTO	DATE : 4-4-13
DESIGN ENGINEER OF RECORD:	O. PUIGCERVER	DATE : 4-10-13

18-APR-2013 10:11
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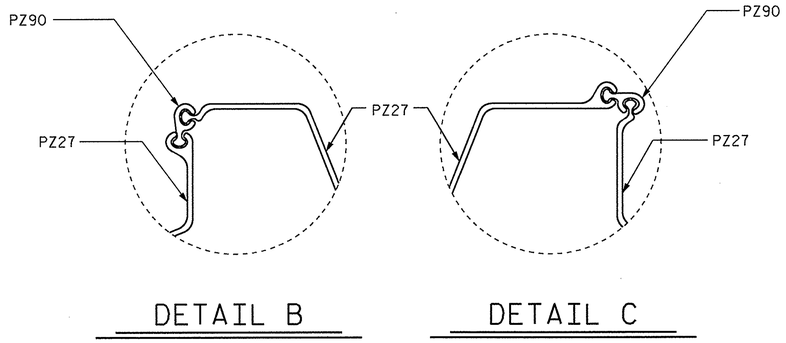
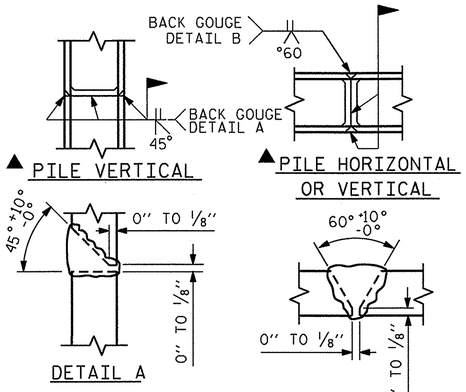
kpaschal



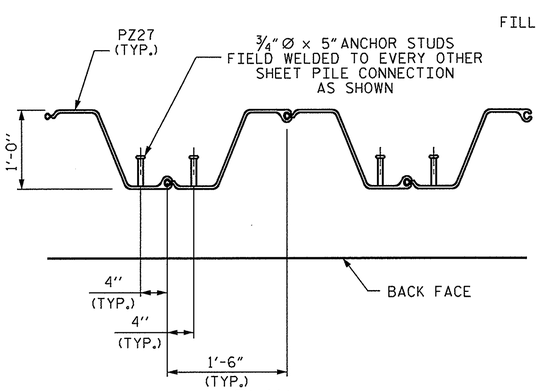
DETAIL B

DETAIL C

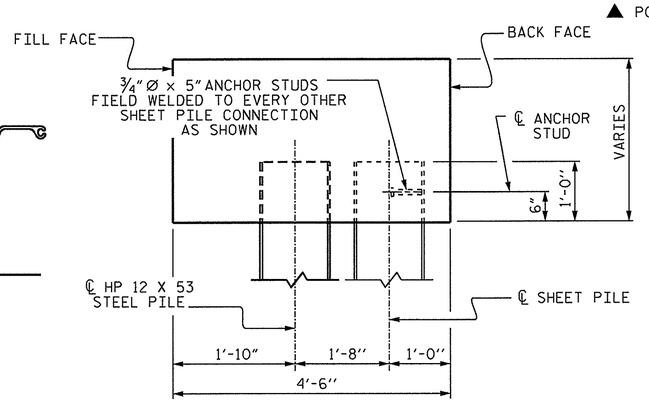


▲ POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS

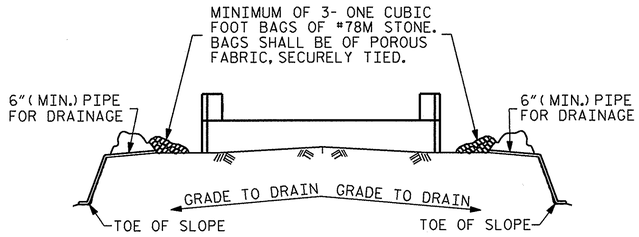


PLAN



SECTION

SHEET PILE ANCHOR STUD DETAILS

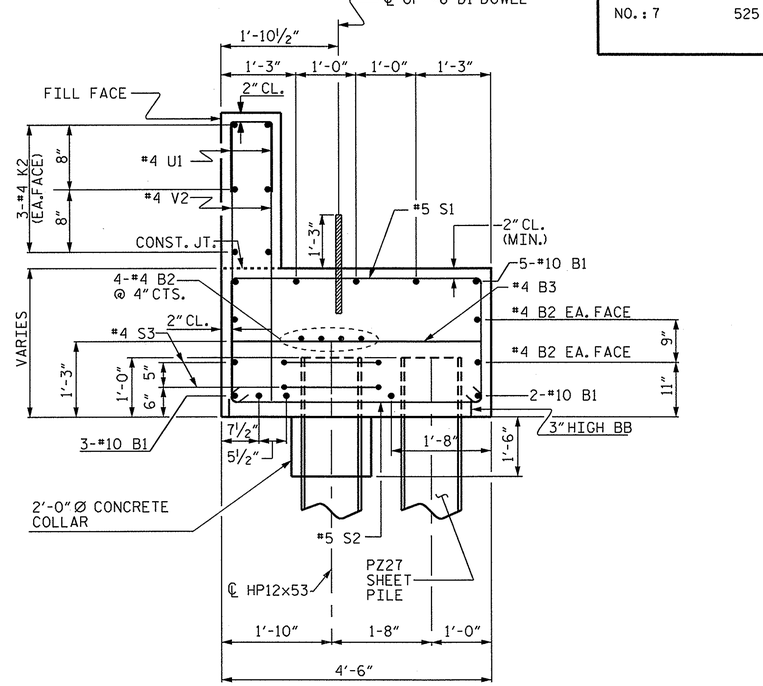


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.

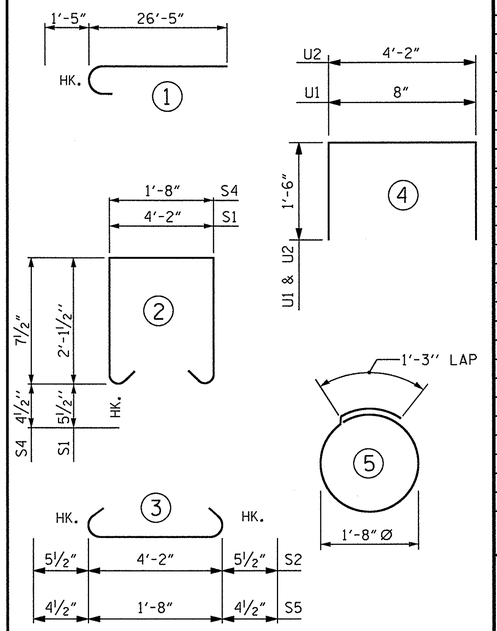
TEMPORARY DRAINAGE AT END BENT



SECTION A-A

DRILL 2" Ø MAX. HOLE IN SHEET PILE FOR #10 B1, #5 B2, AND #5 S2 BARS (TYP.)

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

END BENT 1	END BENT 2
HP 12 X 53 STEEL PILES	HP 12 X 53 STEEL PILES
NO.: 7 525 LIN. FT.	NO.: 7 525 LIN. FT.

BILL OF MATERIAL

FOR ONE END BENT

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	20	#10	1	27'-10"	2395
B2	16	#4	STR	22'-1"	236
B3	11	#4	STR	4'-2"	31
B4	5	#4	STR	18'-9"	63
D1	24	#8	STR	2'-3"	144
H1	8	#4	STR	7'-8"	41
H2	4	#6	STR	7'-8"	46
K1	12	#4	STR	2'-11"	23
K2	12	#4	STR	22'-1"	177
S1	50	#5	2	9'-4"	487
S2	50	#5	3	5'-1"	265
S3	14	#4	5	6'-6"	61
S4	22	#4	2	3'-8"	54
S5	22	#4	3	2'-5"	36
U1	36	#4	4	3'-8"	88
U2	13	#4	4	7'-2"	62
V1	48	#4	STR	6'-0"	192
V2	72	#4	STR	4'-4"	208

REINFORCING STEEL	LBS	4609

CLASS A CONCRETE BREAKDOWN (FOR ONE END BENT)

POUR 1 : CAP & COLLARS	C.Y.	20.2
POUR 2 : (UPPER PART OF WINGS, BACKWALL & COPINGS)	C.Y.	4.1
TOTAL	C.Y.	24.3

STEEL SHEET PILES

No. PZ27 =	40	SQ. FT.	2220
No. PZ90 =	2	SQ. FT.	35
TOTAL NO. =	42	SQ. FT.	2255

PROJECT NO. 17BP.2.R.48

PITT COUNTY

STATION: 14+33.00 -L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT 1 & 2 DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-15
1			3			TOTAL SHEETS
2			4			18

NORTH CAROLINA PROFESSIONAL SEAL 42005 ENGINEER KEITH PASCHAL

4-18-13

DRAWN BY :	O. PUIGCERVER	DATE : 3-19-13
CHECKED BY :	N. D'AIUTO	DATE : 4-4-13
DESIGN ENGINEER OF RECORD:	O. PUIGCERVER	DATE : 4-10-13

18-APR-2013 11:00
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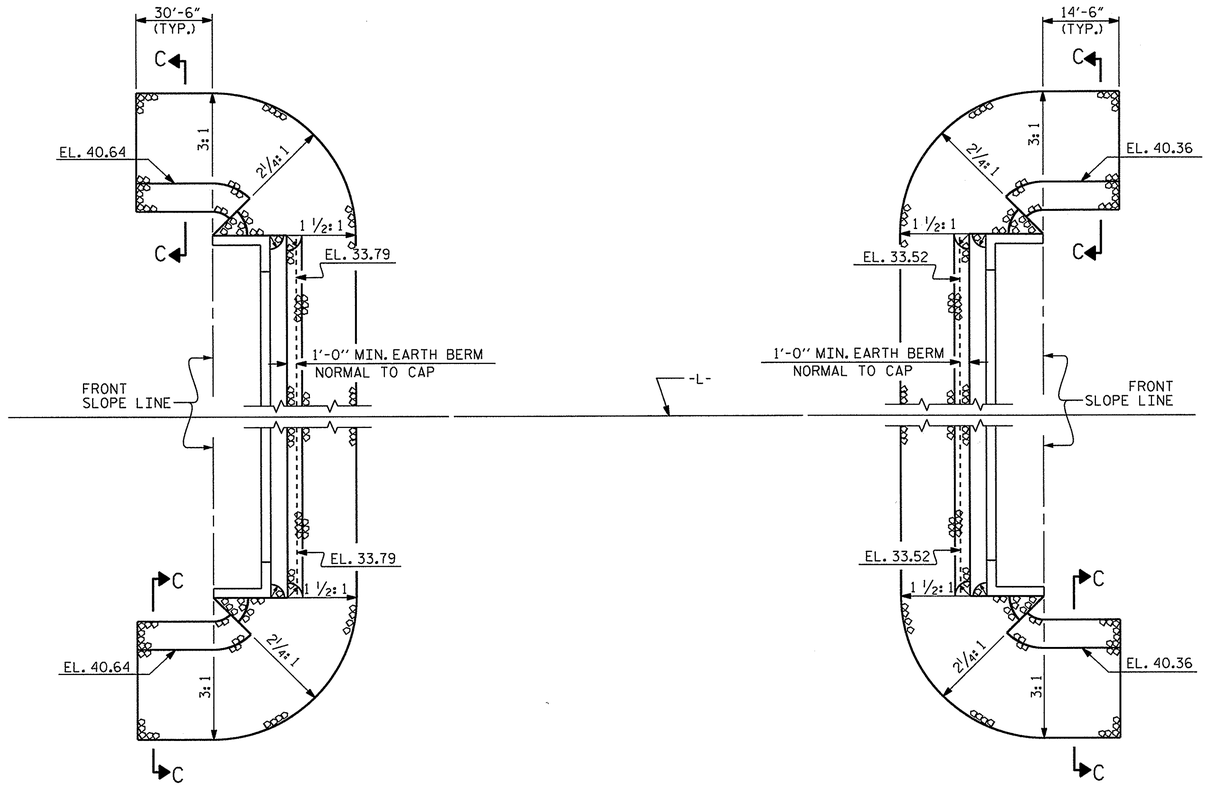
kpaschal



@ END BENT 1

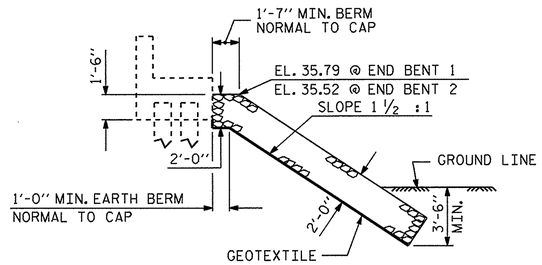
@ END BENT 2

PLAN

NOTES :

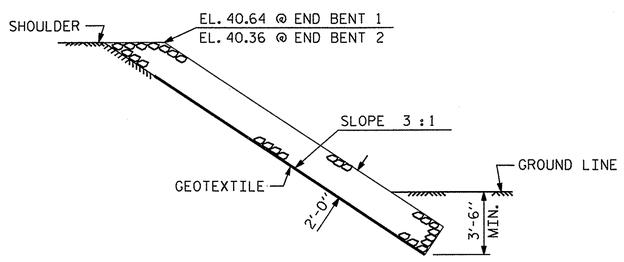
FOR BERM WIDTH DIMENSIONS, SEE GENERAL DRAWING.

ESTIMATED QUANTITIES		
BRIDGE @ STA. 14+33.00 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	265	295
END BENT 2	135	150



℄ SECTION

BERM RIP RAPPED



SECTION C-C

PROJECT NO. 17BP.2.R.48

PITT COUNTY

STATION: 14+33.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

RIP RAP DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 22005 ENGINEER KEITH PASCHAL

4-18-13

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16
1			3			TOTAL SHEETS
2			4			18

ASSEMBLED BY :	O. PUIGCERVER	DATE :	3-28-13
CHECKED BY :	K. P. SEDAI	DATE :	4-2-13
DRAWN BY : REK 1/84	REV. 5/1/06R		TLA/GM
CHECKED BY : RDU 1/84	REV. 10/1/11		MAA/GM
	REV. 12/21/11		MAA/GM

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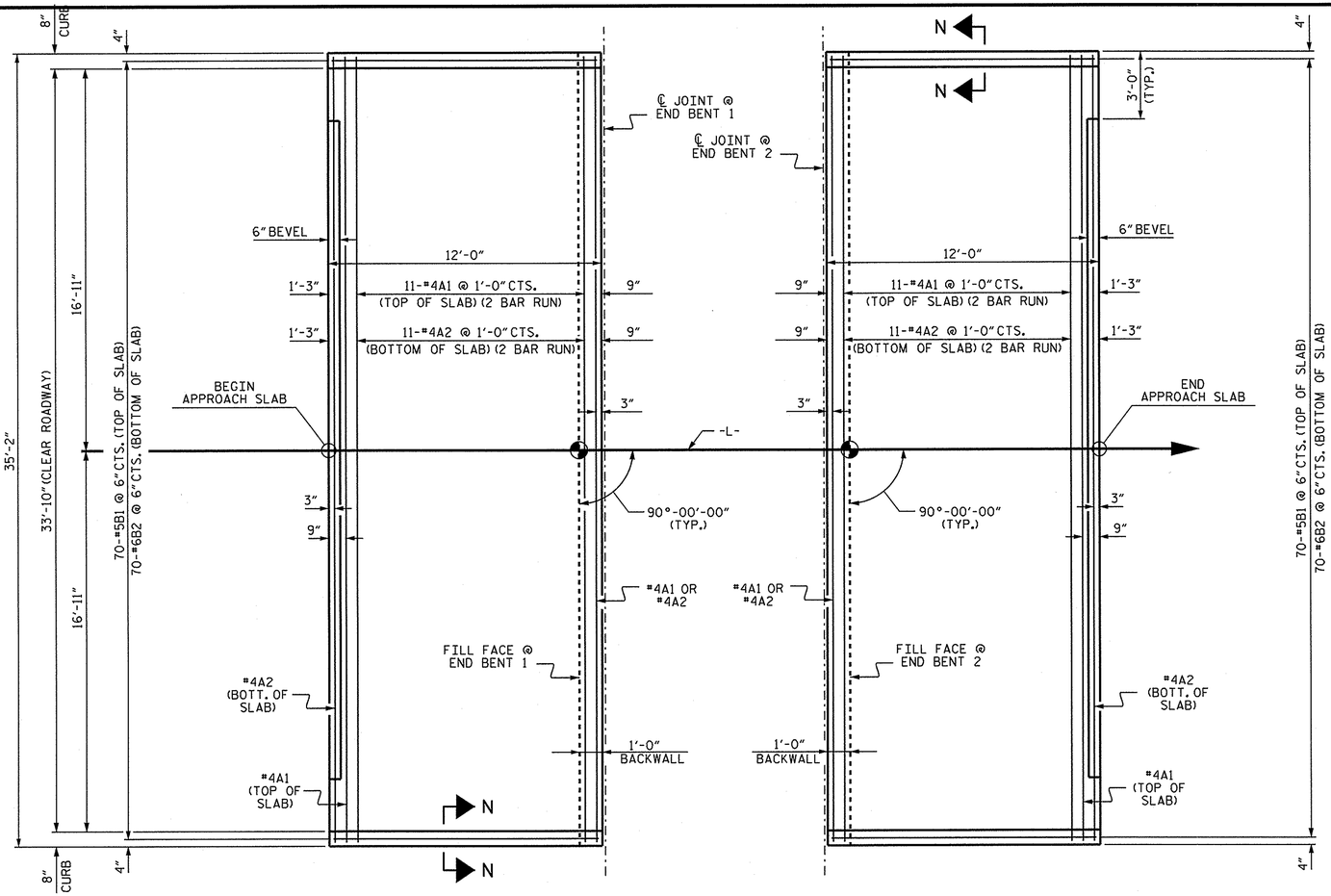
kpaschal

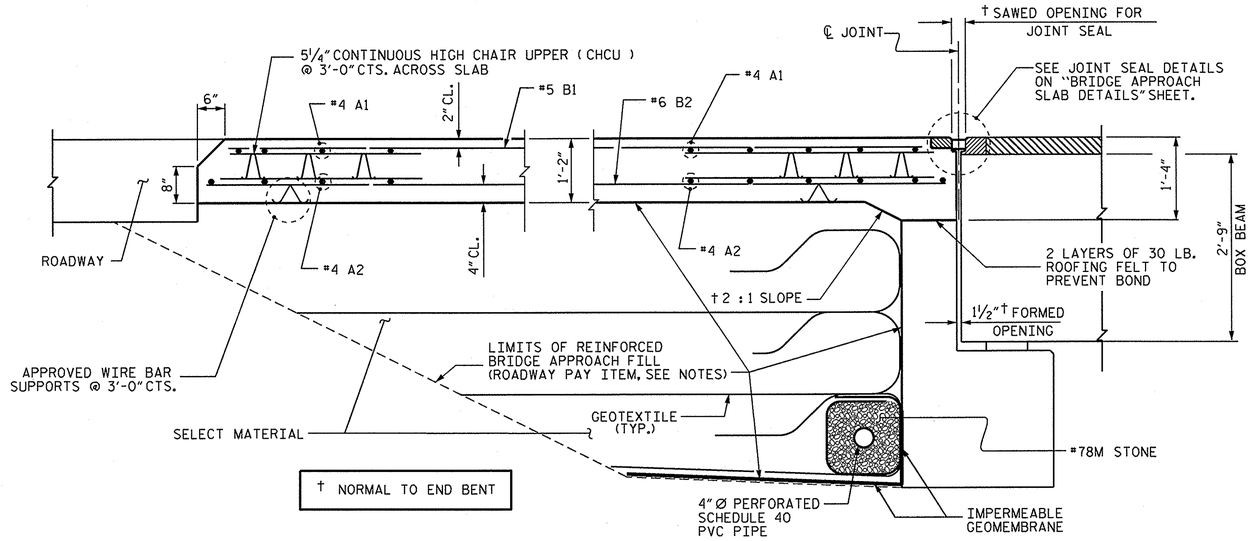
STD. NO. RR1 (Sht 2)



PLAN @ END BENT 1

PLAN @ END BENT 2

DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS



SECTION THRU SLAB

NOTES

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

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

WITH FOAM JOINT SEAL

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE FOAM JOINT SEAL SHALL BE 3".

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

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

BILL OF MATERIAL

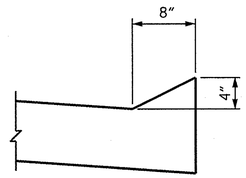
APPROACH SLAB AT EB 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	26	#4	STR	18'-6"	321
A2	26	#4	STR	18'-4"	318
* B1	70	#5	STR	11'-2"	815
B2	70	#6	STR	11'-8"	1227
REINFORCING STEEL				LBS.	1545
* EPOXY COATED REINFORCING STEEL				LBS.	1136
CLASS AA CONCRETE				C.Y.	18.8

APPROACH SLAB AT EB 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	26	#4	STR	18'-6"	321
A2	26	#4	STR	18'-4"	318
* B1	70	#5	STR	11'-2"	815
B2	70	#6	STR	11'-8"	1227
REINFORCING STEEL				LBS.	1545
* EPOXY COATED REINFORCING STEEL				LBS.	1136
CLASS AA CONCRETE				C.Y.	18.8

FOR GROOVING QUANTITY, SEE SHEET S-10



SECTION N-N

CURB DETAILS

PROJECT NO. 17BP.2.R.48

PITT COUNTY

STATION: 14+33.00 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE APPROACH SLAB FOR PRESTRESSED CONCRETE BOX BEAM UNIT

90° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-17
1			3			TOTAL SHEETS
2			4			18

NORTH CAROLINA PROFESSIONAL SEAL 32005 ENGINEER KEITH PASCHAL 4-18-13

DRAWN BY : O. PUIGCERVER DATE : 2-13-13
CHECKED BY : K. P. SEDAI DATE : 2-18-13
DESIGN ENGINEER OF RECORD: O. PUIGCERVER DATE : 4-10-13

18-APR-2013 10:10
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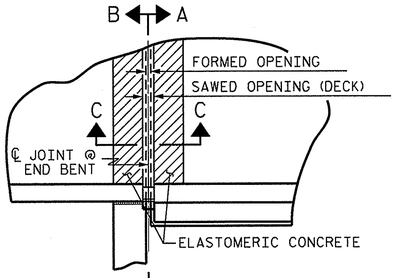
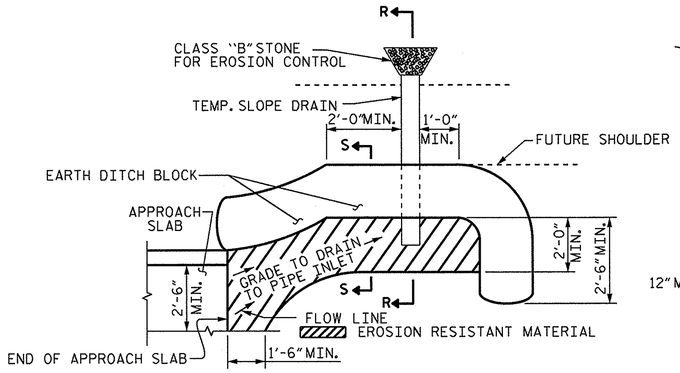
kpaschal

STD. NO. BAS_BB_36_90S

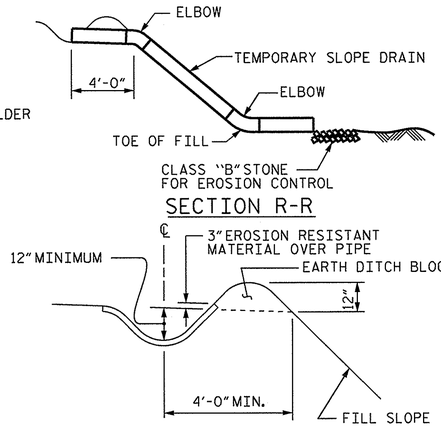


PLAN



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

PLAN VIEW

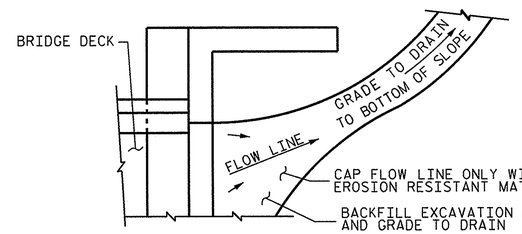


SECTION R-R

SECTION S-S

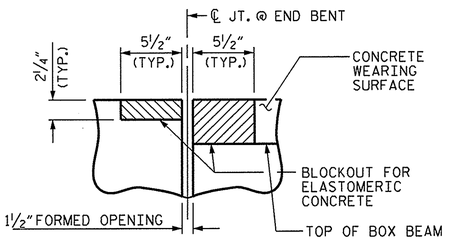
TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



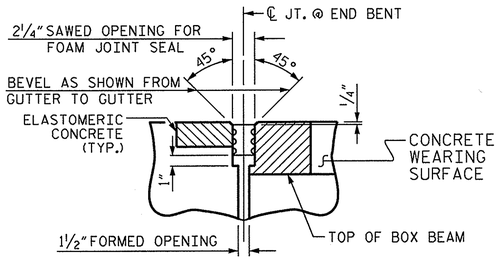
NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT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

TEMPORARY DRAINAGE DETAIL



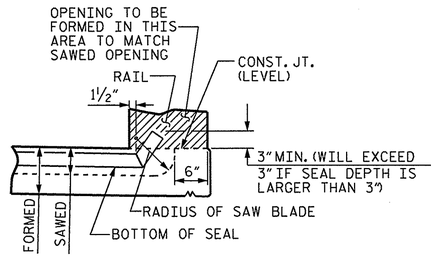
SECTION C-C

FOAM JOINT SEAL
(PRE-SAWED ELASTOMERIC CONCRETE DIMENSIONS)

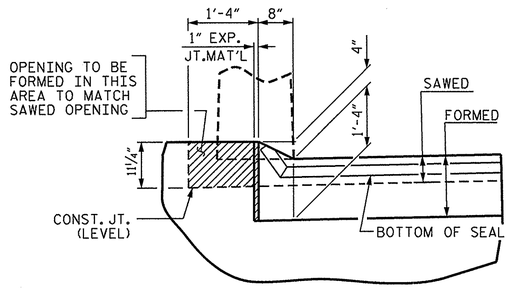


SECTION C-C

FOAM JOINT SEAL
(FIXED)



SECTION A-A



SECTION B-B

JOINT SEAL DETAILS @ END BENT

FOAM JOINT SEAL TO BE CUT, HEAT WELDED AND TURNED UP PARALLEL TO SLOPED FACE OF THE BARRIER RAIL.

THE JOINT SHALL BE SAWED PRIOR TO THE CASTING OF THE BARRIER RAIL.

ELASTOMERIC CONCRETE	
END BENT NO.	ELASTOMERIC CONCRETE * (CU. FT.)
1	12.4
2	12.4
TOTAL	24.8

* BASED ON THE MINIMUM BLOCKOUT SHOWN.

PROJECT NO. 17BP.2.R.48

PITT COUNTY

STATION: 14+33.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE APPROACH SLAB DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 22008 ENGINEER KEITH PASCHAL

4.18.13

ASSEMBLED BY : O. PUIGCERVER	DATE : 2-13-13
CHECKED BY : K. P. SEDAI	DATE : 2-18-30

DRAWN BY : FCJ 11/88	REV. 10/1/11 MAA/GM
CHECKED BY : ARB 11/88	REV. 7/12 MAA/GM
	REV. 10/12 MAA/GM

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

STD. NO. BAS4 (SHT 1)

18-APR-2013 10:18
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kpaschal

STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

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

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

CONCRETE:

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

CONCRETE CHAMFERS:

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

DOWELS:

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

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

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE.

ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER.

IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.

WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE 7/8" Ø SHEAR STUDS FOR THE 3/4" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8" Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 5/16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16 INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB.

METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

SPECIAL NOTES:

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

ENGLISH

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