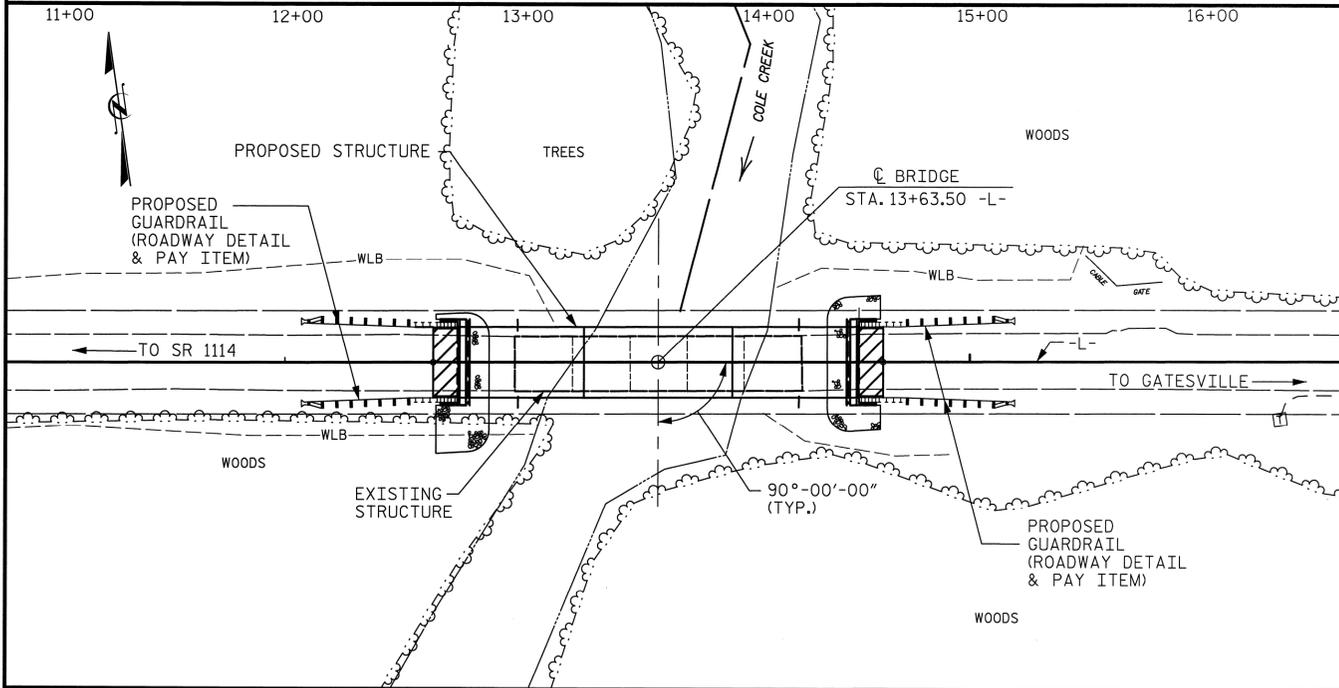


BENCHMARK: NAIL IN BASE OF 20" Ø BLACK GUM 14+24.30 -L- 51.96' RIGHT EL. 2.85



LOCATION SKETCH

HYDRAULIC DATA

DESIGN DISCHARGE _____ = 2920 CFS.
 FREQUENCY OF DESIGN FLOOD _____ = 50 YR.
 DESIGN HIGH WATER ELEVATION _____ = 5.2 FT.
 DRAINAGE AREA _____ = 42.3 SQ. MI.
 BASE DISCHARGE (Q100) _____ = 3895 CFS.
 BASE HIGH WATER ELEVATION _____ = 5.98 FT.

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE _____ = 5460 CFS
 FREQUENCY OF OVERTOPPING FLOOD _____ = > 500 YR.
 OVERTOPPING FLOOD ELEVATION _____ = 7.0 FT.

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE AT STA 13+63.50 -L-	UNCLASSIFIED STRUCTURE EXCAVATION	BRIDGE APPROACH SLABS	HP 12 X 53 GALVANIZED STEEL PILES		▲ HP 14 X 73 GALVANIZED STEEL PILES		RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	CONSTRUCTION OF SUBSTRUCTURE	CONSTRUCTION OF SUPERSTRUCTURE
				NO.	LIN. FT.	NO.	LIN. FT.				
SUPERSTRUCTURE	LUMP SUM	LUMP SUM	LUMP SUM								
END BENT 1				7	525			115	128		
BENT 1						8	840				
BENT 2						8	800				
END BENT 2				7	560			109	121		
TOTAL	LUMP SUM	LUMP SUM	LUMP SUM	14	1085	16	1640	224	249	LUMP SUM	LUMP SUM

▲ FOR BENTS 1 AND 2, ONLY PARTIAL GALVANIZING OF THE PILES IS REQUIRED. SEE INTERIOR BENT SHEETS FOR REQUIRED GALVANIZED LENGTHS. PAYMENT FOR PARTIALLY GALVANIZED PILES WILL BE MADE UNDER THE CONTRACT UNIT PRICE FOR GALVANIZED STEEL PILES.

NOTES

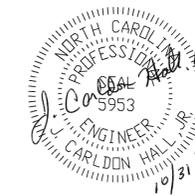
ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.
 THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE AASTHO LRFD BRIDGE DESIGN SPECIFICATIONS.
 THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.
 REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR 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 45 FT. EACH SIDE OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.
 THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.
 AFTER SERVING AS A TEMPORARY STRUCTURE THE EXISTING STRUCTURE CONSISTING OF 5 @ 25'-0" RC SLAB ON I-BEAM SPANS WITH A CLEAR ROADWAY WIDTH OF 24'-0" SUPPORTED BY RC CAP AND PILE END BENTS AND BENTS AND LOCATED AT THE PROPOSED STRUCTURE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED BELOW THE LEGAL LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE FURTHER DETERIORATE, THIS LOAD LIMITATION MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.
 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 13+63.50 -L-.'

THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH HEC 18, "EVALUATING SCOUR AT BRIDGES", MAY, 2001.
 THIS BRIDGE SHALL BE CONSTRUCTED USING TOP-DOWN CONSTRUCTION METHODS. THE USE OF TEMPORARY CAUSEWAY OR WORK BRIDGE IS NOT PERMITTED.
 FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
 FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
 FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
 FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.
 FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
 FOR EROSION CONTROL MEASURES SEE EROSION CONTROL PLANS.

FOUNDATION NOTES

PILES AT END BENTS 1 AND 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 75 TONS PER PILE.
 PILES AT BENTS 1 AND 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 125 TONS PER PILE.
 DRIVE PILES AT END BENTS 1 AND 2 TO A REQUIRED DRIVING RESISTANCE OF 125 TONS PER PILE.
 DRIVE PILES AT BENTS 1 AND 2 TO A REQUIRED DRIVING RESISTANCE OF 220 TONS PER PILE. THIS REQUIRED DRIVING RESISTANCE INCLUDES ADDITIONAL RESISTANCE FOR DOWNDRAW OR SCOUR.
 INSTALL PILES AT BENTS 1 AND 2 TO A TIP ELEVATION NO HIGHER THAN -31 FT.
 THE SCOUR CRITICAL ELEVATIONS FOR BENTS 1 AND 2 ARE -10 FT AND -12 FT, RESPECTIVELY. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.
 IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 20 TO 30 FT-KIPS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT END BENTS 1 AND 2. THE ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH SUB ARTICLE 450-3(D)(2) OF THE STANDARD SPECIFICATIONS.
 IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 100 TO 110 FT-KIPS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT BENTS 1 AND 2. THE ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH SUB ARTICLE 450-3(D)(2) 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 (AND FOR PILE DRIVING CRITERIA, SEE PILE DRIVING CRITERIA PROVISION).
 FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

DRAWN BY : K.H. COMPTON DATE : 8/14/12
 CHECKED BY : R.L. WHITCHER DATE : 8/21/12



PROJECT NO. 17BP.1.R.16
 GATES COUNTY
 STATION: 13+63.50-L-

SHEET 2 OF 2 REPLACES BRIDGE NO. 25

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
GENERAL DRAWING FOR BRIDGE ON NC 137 OVER COLE CREEK					
30'-10" CLEAR ROADWAY - 90° SKEW					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. 2
					TOTAL SHEETS 30

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	1.018	--	1.75	0.274	1.05	65'	EL	32	0.513	1.2	65'	EL	6.4	0.80	0.274	1.02	65'	EL	32		
	HL-93(0pr)	N/A	--	1.358	--	1.35	0.274	1.36	65'	EL	32	0.513	1.56	65'	EL	6.4	N/A	--	--	--	--	--		
	HS-20(Inv)	36.000	2	1.306	47.014	1.75	0.274	1.34	65'	EL	32	0.513	1.48	65'	EL	6.4	0.80	0.274	1.31	65'	EL	32		
	HS-20(0pr)	36.000	--	1.742	62.706	1.35	0.274	1.74	65'	EL	32	0.513	1.92	65'	EL	6.4	N/A	--	--	--	--	--		
LEGAL LOAD RATING	SV	SNSH	13.500	--	2.868	38.725	1.4	0.274	3.69	65'	EL	32	0.513	4.33	65'	EL	6.4	0.80	0.274	2.87	65'	EL	32	
		SNGARBS2	20.000	--	2.171	43.424	1.4	0.274	2.79	65'	EL	32	0.513	3.11	65'	EL	6.4	0.80	0.274	2.17	65'	EL	32	
		SNAGRIS2	22.000	--	2.071	45.552	1.4	0.274	2.66	65'	EL	32	0.513	2.89	65'	EL	6.4	0.80	0.274	2.07	65'	EL	32	
		SNCOTTS3	27.250	--	1.428	38.924	1.4	0.274	1.84	65'	EL	32	0.513	2.17	65'	EL	6.4	0.80	0.274	1.43	65'	EL	32	
		SNAGGRS4	34.925	--	1.206	42.136	1.4	0.274	1.55	65'	EL	32	0.513	1.81	65'	EL	6.4	0.80	0.274	1.21	65'	EL	32	
		SNS5A	35.550	--	1.179	41.911	1.4	0.274	1.52	65'	EL	32	0.513	1.85	65'	EL	6.4	0.80	0.274	1.18	65'	EL	32	
		SNS6A	39.950	--	1.087	43.43	1.4	0.274	1.4	65'	EL	32	0.513	1.69	65'	EL	6.4	0.80	0.274	1.09	65'	EL	32	
	SNS7B	42.000	--	1.035	43.489	1.4	0.274	1.33	65'	EL	32	0.513	1.67	65'	EL	6.4	0.80	0.274	1.04	65'	EL	32		
	TTST	TNAGRIT3	33.000	--	1.327	43.8	1.4	0.274	1.71	65'	EL	32	0.513	2.01	65'	EL	6.4	0.80	0.274	1.33	65'	EL	32	
		TNT4A	33.075	--	1.335	44.142	1.4	0.274	1.72	65'	EL	32	0.513	1.95	65'	EL	6.4	0.80	0.274	1.33	65'	EL	32	
		TNT6A	41.600	--	1.096	45.613	1.4	0.274	1.41	65'	EL	32	0.513	1.8	65'	EL	6.4	0.80	0.274	1.10	65'	EL	32	
		TNT7A	42.000	--	1.105	46.4	1.4	0.274	1.42	65'	EL	32	0.513	1.74	65'	EL	6.4	0.80	0.274	1.10	65'	EL	32	
		TNT7B	42.000	--	1.15	48.298	1.4	0.274	1.48	65'	EL	32	0.513	1.62	65'	EL	6.4	0.80	0.274	1.15	65'	EL	32	
		TNAGRIT4	43.000	--	1.089	46.815	1.4	0.274	1.4	65'	EL	32	0.513	1.57	65'	EL	6.4	0.80	0.274	1.09	65'	EL	32	
TNAGT5A		45.000	--	1.024	46.084	1.4	0.274	1.32	65'	EL	32	0.513	1.57	65'	EL	6.4	0.80	0.274	1.02	65'	EL	32		
TNAGT5B	45.000	3	1.01	45.431	1.4	0.274	1.3	65'	EL	32	0.513	1.49	65'	EL	6.4	0.80	0.274	1.01	65'	EL	32			

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)

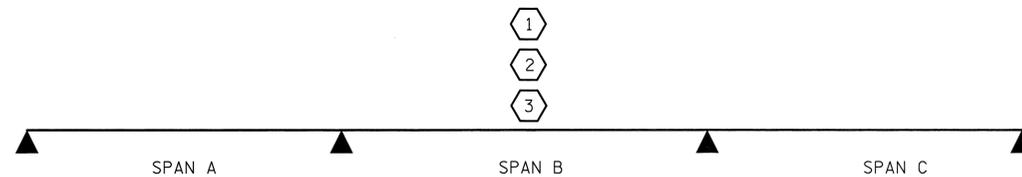
2 DESIGN LOAD RATING (HS-20)

3 LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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

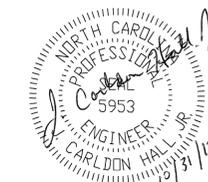


LRFR SUMMARY

PROJECT NO. 17BP.1.R.16
GATES COUNTY
STATION: 13+63.50 -L-

ASSEMBLED BY : K.H. COMPTON DATE : 8/14/12
CHECKED BY : R.L. WHITCHER DATE : 8/22/12
DRAWN BY : CVC 6/10
CHECKED BY : DNS 6/10

Prepared by
URS
URS Corporation - North Carolina
1600 Perimeter Park Drive, Suite 400
Morrisville, NC 27560
PHONE: 919/461-1100 FAX: 919/461-1415
NC LIC. # C-2243



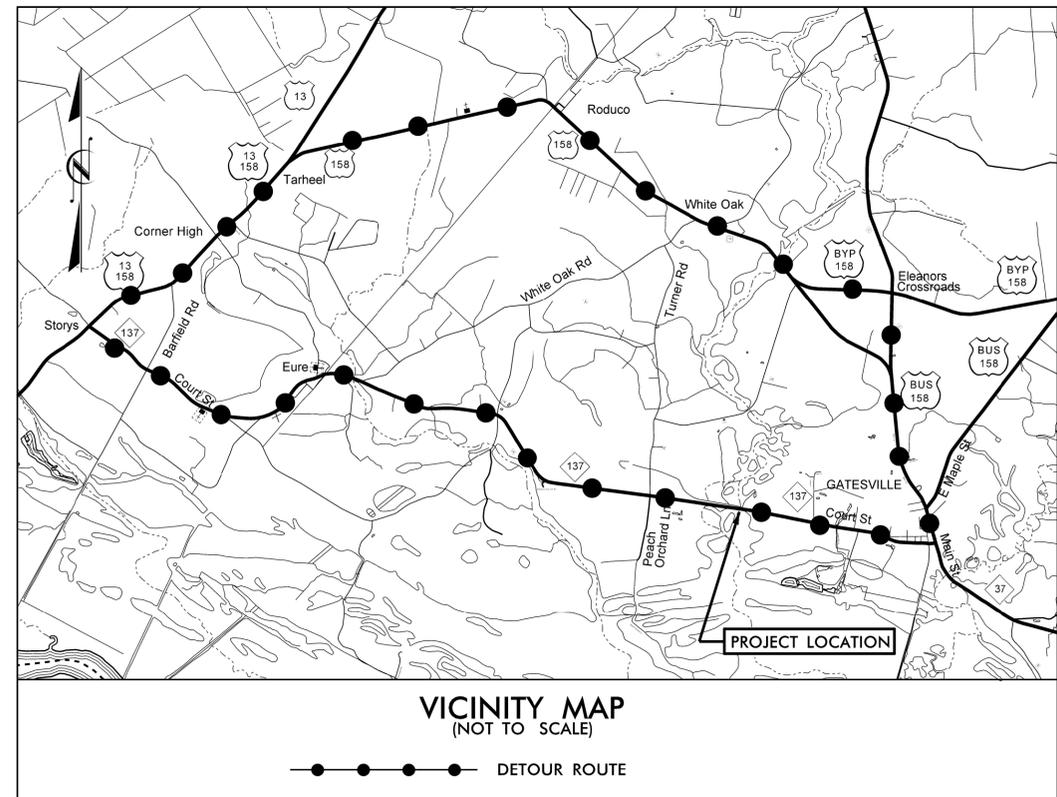
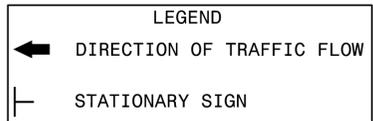
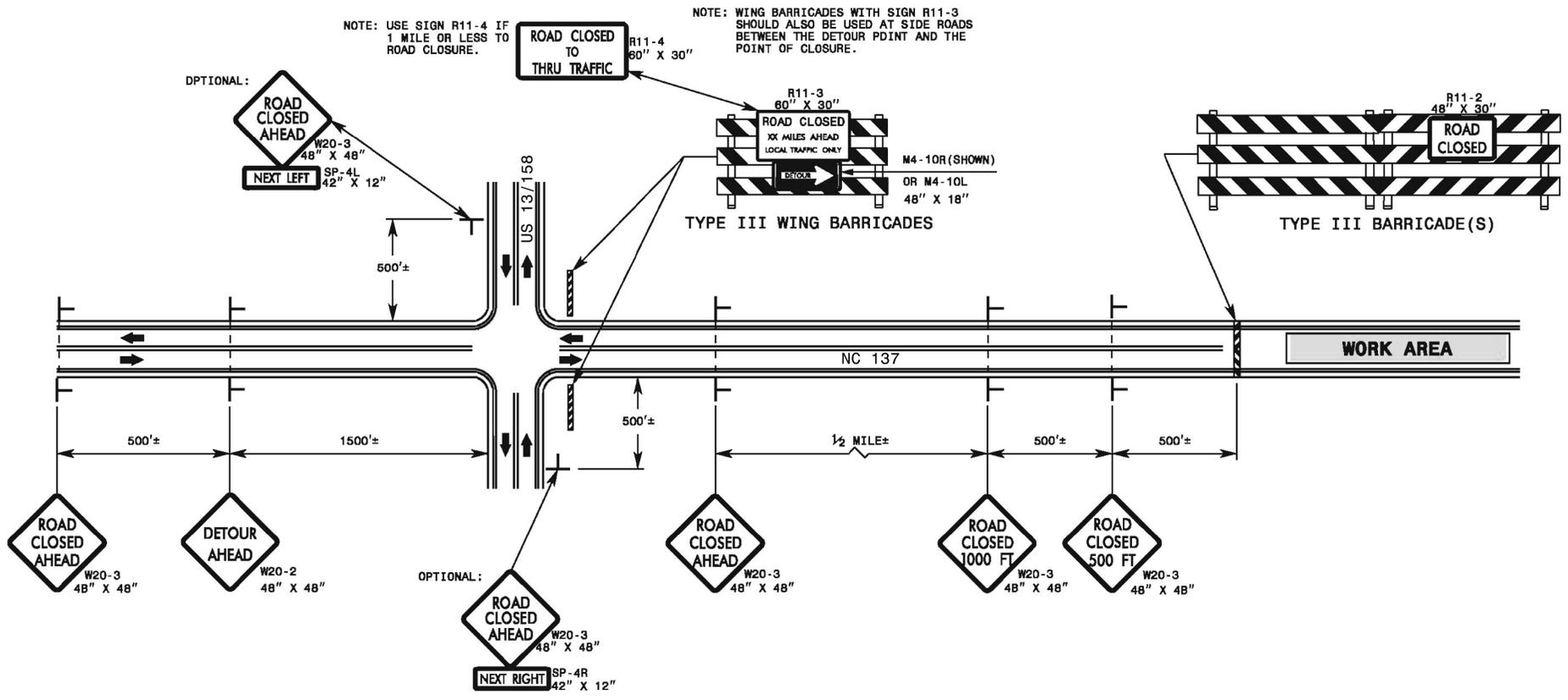
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
LRFR SUMMARY FOR
65' CORED SLAB UNIT
90° SKEW
(NON-INTERSTATE TRAFFIC)

REVISIONS						SHEET NO. 3
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 30
2			4			

WBS # 17BP.I.R.16

CONTRACT #:

TRAFFIC MANAGEMENT FOR TEMPORARY ROAD CLOSURE



GENERAL NOTES

- 1- IF NECESSARY USE THIS STD. FOR TWO-LANE, TWO-WAY, AND MULTILANE DIVIDED AND UNDIVIDED ROADWAYS.
- 2- INSTALLATION OF DETOUR ROUTING PANELS, TEMPORARY ROUTE MARKERS, DESTINATION SIGNS, AND ANY NECESSARY MODIFICATIONS TO EXISTING OR PROPOSED REGULATORY OR WARNING SIGNS WILL BE MADE BY OTHERS (STATE OR CITY FORCES) UNLESS OTHERWISE DESIGNATED IN THE PLANS. PROVIDE A MINIMUM 21 CALENDAR DAY NOTICE TO STATE FORCES BEFORE A ROADWAY IS CLOSED TO TRAFFIC SUCH THAT THE NECESSARY PROVISIONS CAN BE MADE TO INSTALL DETOUR ROUTE SIGNS, INFORM LOCAL EMERGENCY AND LAW ENFORCEMENT PERSONNEL, SCHOOLS, OR ANY OTHER PARTIES AFFECTED BY THE ROAD CLOSURE.
- 3- INSTALL SIGNS BEFORE THE BARRICADES WHEN CLOSING THE ROADWAY TO TRAFFIC. REMOVE BARRICADES BEFORE SIGNS WHEN OPENING THE ROADWAY TO TRAFFIC. INSTALL/REMOVE SIGNS AND BARRICADES WITHIN THE SAME CALENDAR DAY.
- 4- USE ADDITIONAL TYPE III BARRICADES IN STAGGERED LOCATIONS SUPPLEMENTED WITH SIGN R11-4 "ROAD CLOSED TO THRU TRAFFIC" IN THE EVENT THAT TRAFFIC MUST BE MAINTAINED BEYOND THE DETOUR POINT.
- 5- DO NOT DISPLAY FRACTIONS OR DECIMALS ON SIGN R11-3 "ROAD CLOSED XX MILES AHEAD".
- 6- POSITION WING BARRICADES ON THE SHOULDERS AND SLOPE THE STRIPES DOWNWARD IN THE DIRECTION TOWARD WHICH TRAFFIC MUST TURN IN DETOURING.
- 7- USE PORTABLE SIGNS IF ROAD CLOSURE IS TO BE IMPLEMENTED FOR LESS THAN ONE DAY OR FOR EMERGENCIES.

PROJECT: 17BP.I.R.16
 GATES COUNTY
 STATION: 13+63.50 -L-

REPLACES BRIDGE NO. 360025
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

TRAFFIC MANAGEMENT PLAN

30'-10" CLEAR ROADWAY - 90° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	5
1			1			TOTAL SHEETS
2			2			30

DRAWN BY: LHM DATE: 10/03/12
 CHECKED BY: JAK DATE: 10/03/12

Prepared by

URS

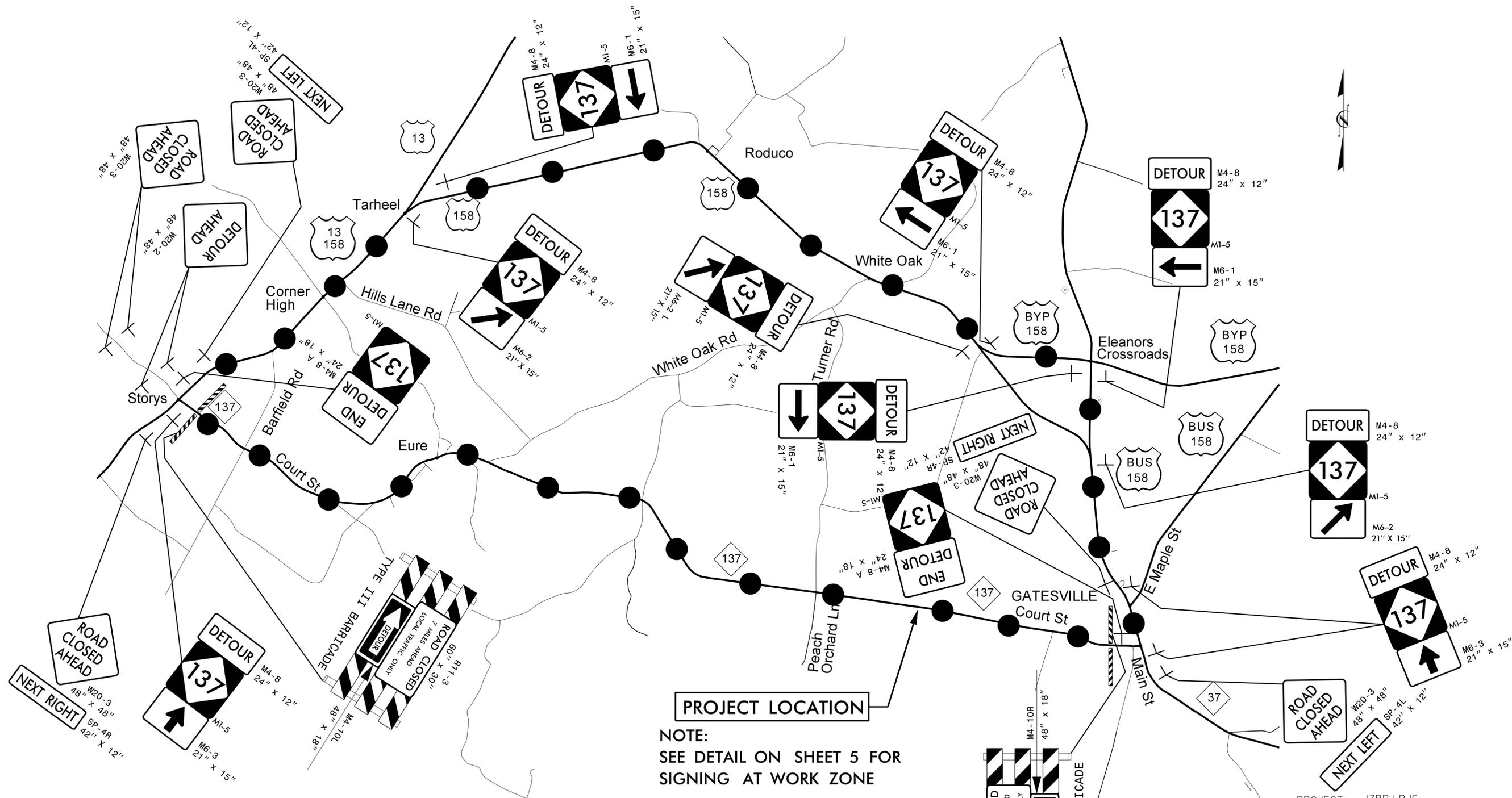
URS Corporation - North Carolina
 1600 Perimeter Park Drive, Suite 400
 Morrisville, NC 27560
 PHONE: 919.461-1100 FAX: 919.461-1415
 NC LIC. # C-2243



WBS # 17BP.I.R.16

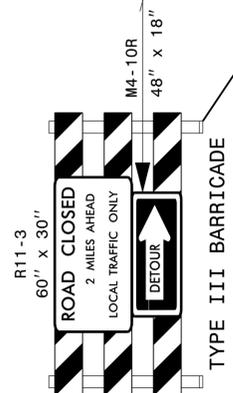
CONTRACT #:

DRAWN BY: LHM DATE: 10/03/12
CHECKED BY: JAK DATE: 10/03/12



DETOUR SIGNING

(NOT TO SCALE)



Prepared by
URS
URS Corporation - North Carolina
1600 Perimeter Park Drive, Suite 400
Morrisville, NC 27560
PHONE: 919/461-1100 FAX: 919/461-1415
NC LIC. C-2243



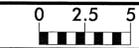
PROJECT: 17BP.I.R.16
GATES COUNTY
STATION: 13+63.50 -L-
REPLACES BRIDGE NO. 360025
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TRAFFIC MANAGEMENT PLAN

30'-10" CLEAR ROADWAY - 90° SKEW

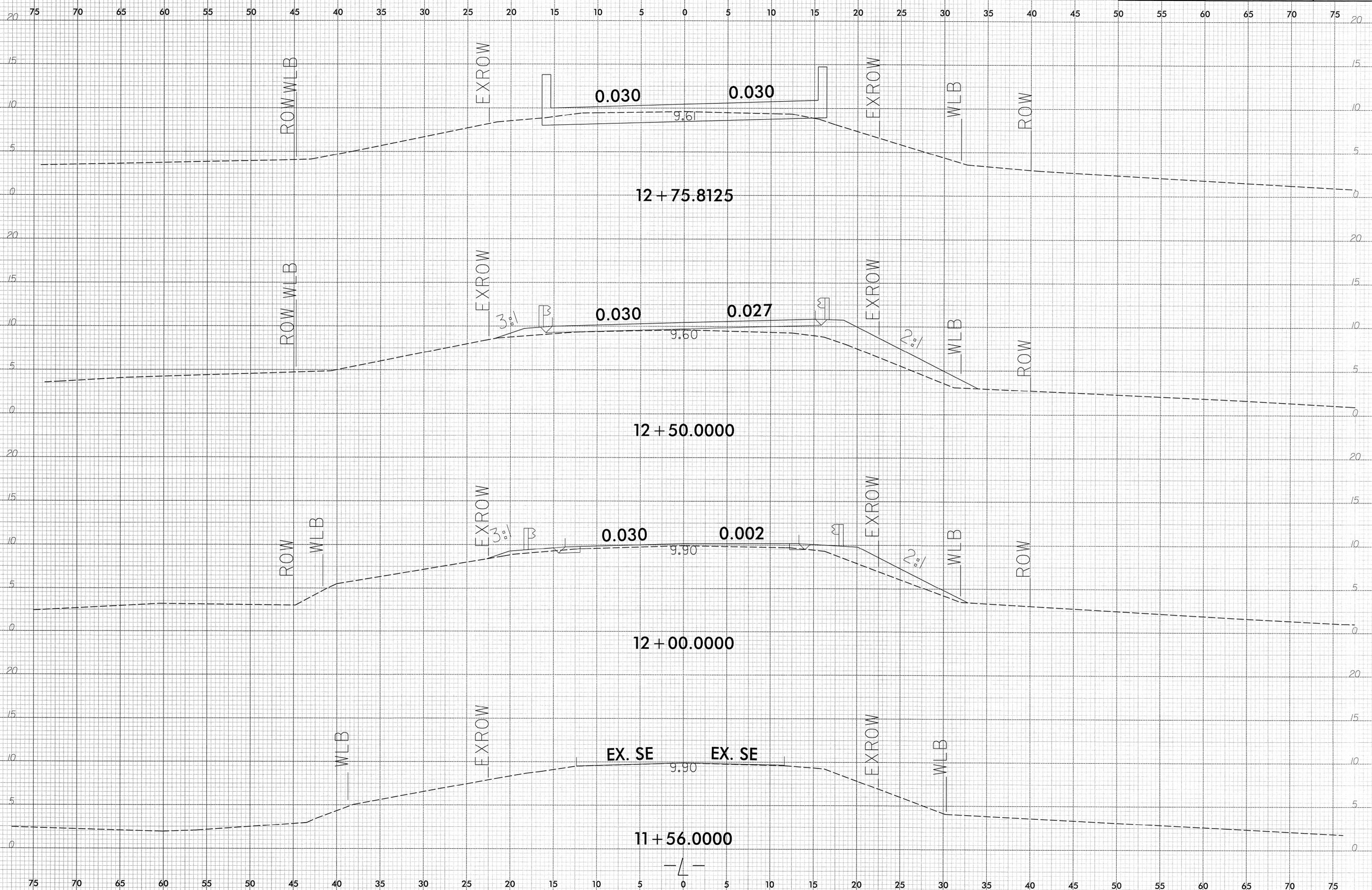
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			1			6
2			2			30

8/23/99



PROJ. REFERENCE NO.
17BP.1.R.16

SHEET NO.
7



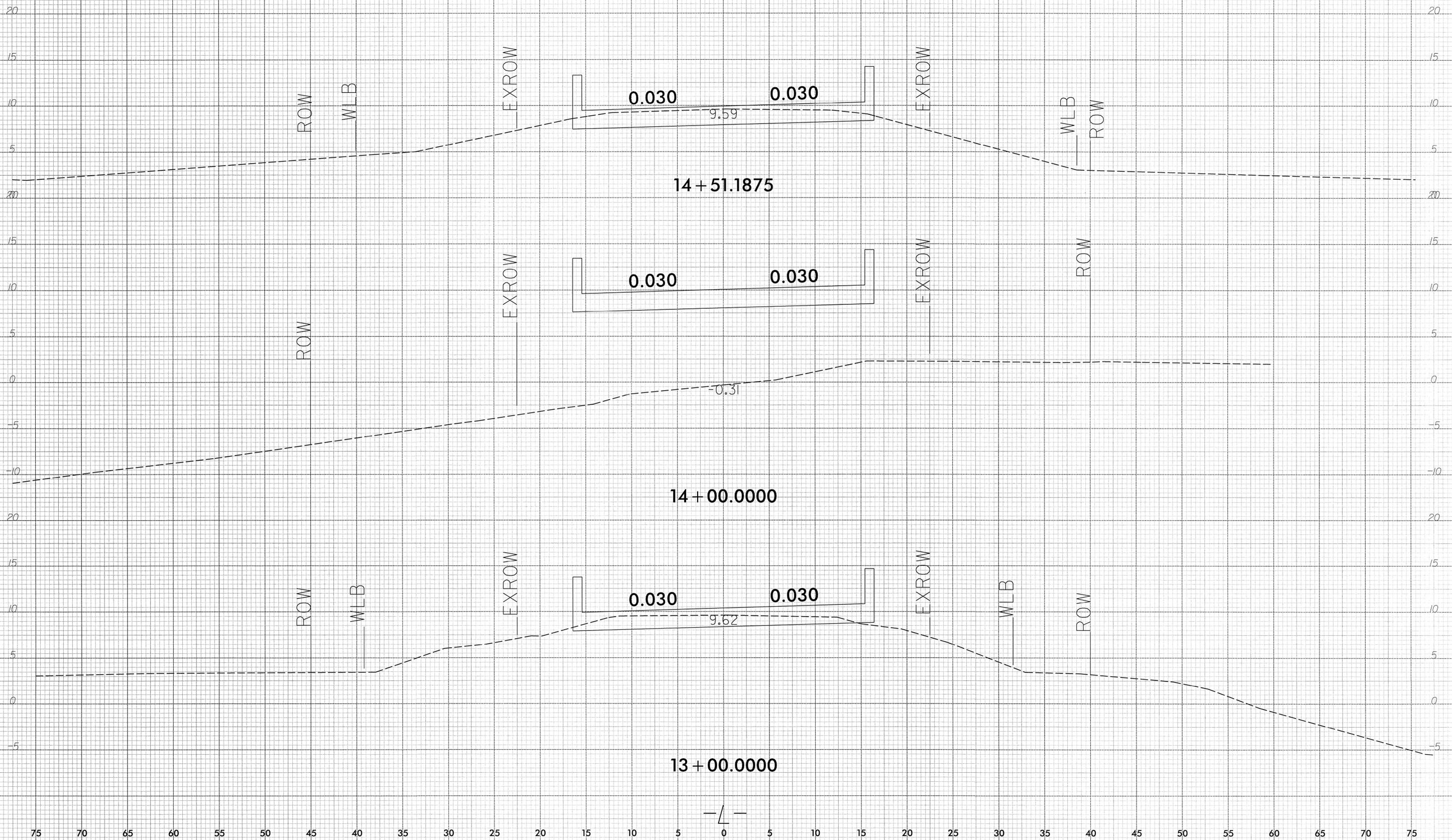
I:\2016\2016 Group A Bridge Replacements\Gates Bridge 025\Roadway\XSC\Gates025.rdy.xpl.L.dgn
 10/26/2016
 Lisa.mcarthur

8/23/99



PROJ. REFERENCE NO.	SHEET NO.
17BP.1.R.16	8

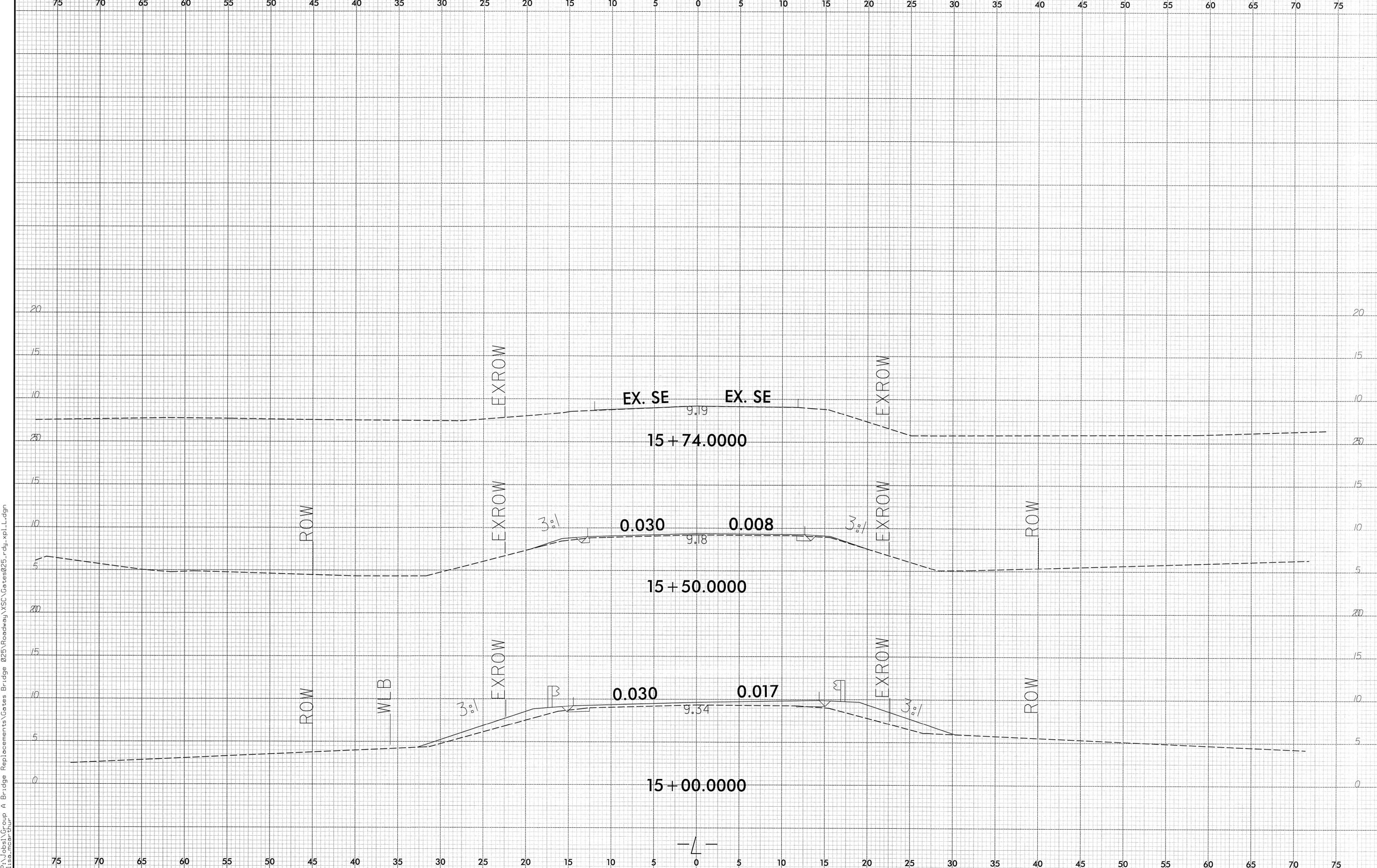
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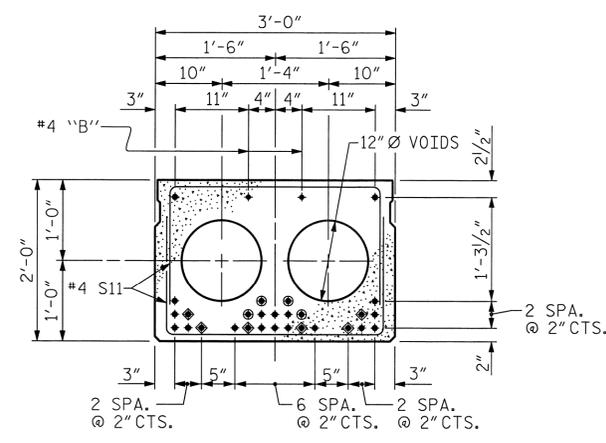
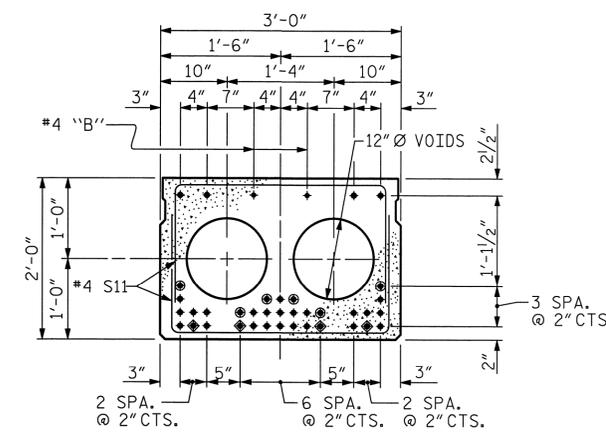
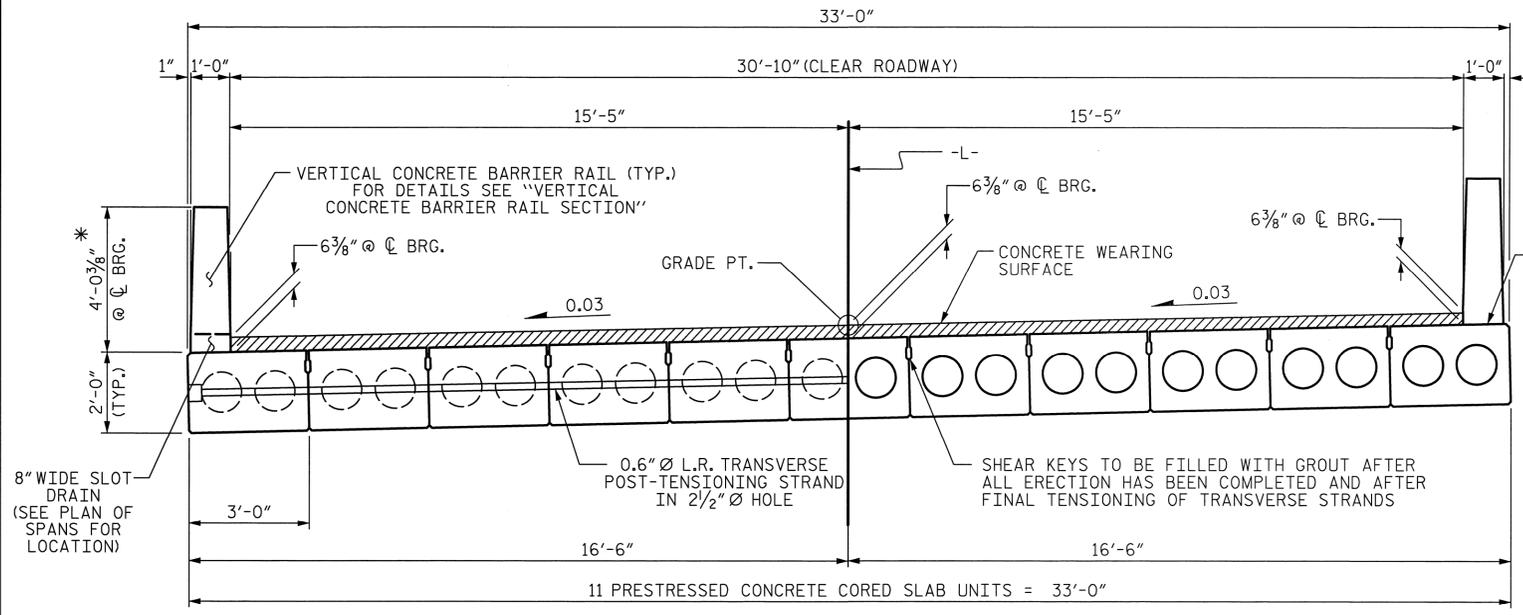
D:\26\2002\Group A Bridge Replacements\Gates Bridge 025\Roadway\XSC\Gates025.rdy.xpl.L.dgn
Lisa.Lucas@ch2m

8/23/99

0 2.5 5	PROJ. REFERENCE NO. 17BP.1.R.16	SHEET NO. 9
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10/26/2002
P:\Jobs\Group A Bridge Replacements\Gates Bridge 025\Roadway\XSC\Gates025.rdy.xpl.L.dgn
Lisa_mca-thur



INTERIOR SLAB SECTION (55' UNIT)
(THIS UNIT IS DESIGNED FOR TOP DOWN CONSTRUCTION)
(31 STRANDS REQUIRED)

INTERIOR SLAB SECTION (65' UNIT)
(THIS UNIT IS NOT DESIGNED FOR TOP DOWN CONSTRUCTION)
(24 STRANDS REQUIRED)

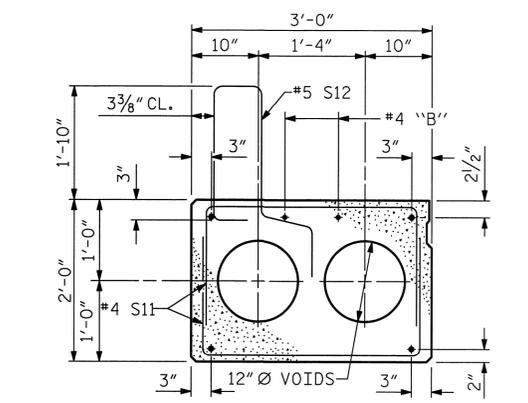
HALF SECTION AT INTERMEDIATE DIAPHRAGMS
TYPICAL SECTION
HALF SECTION THROUGH VOIDS

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

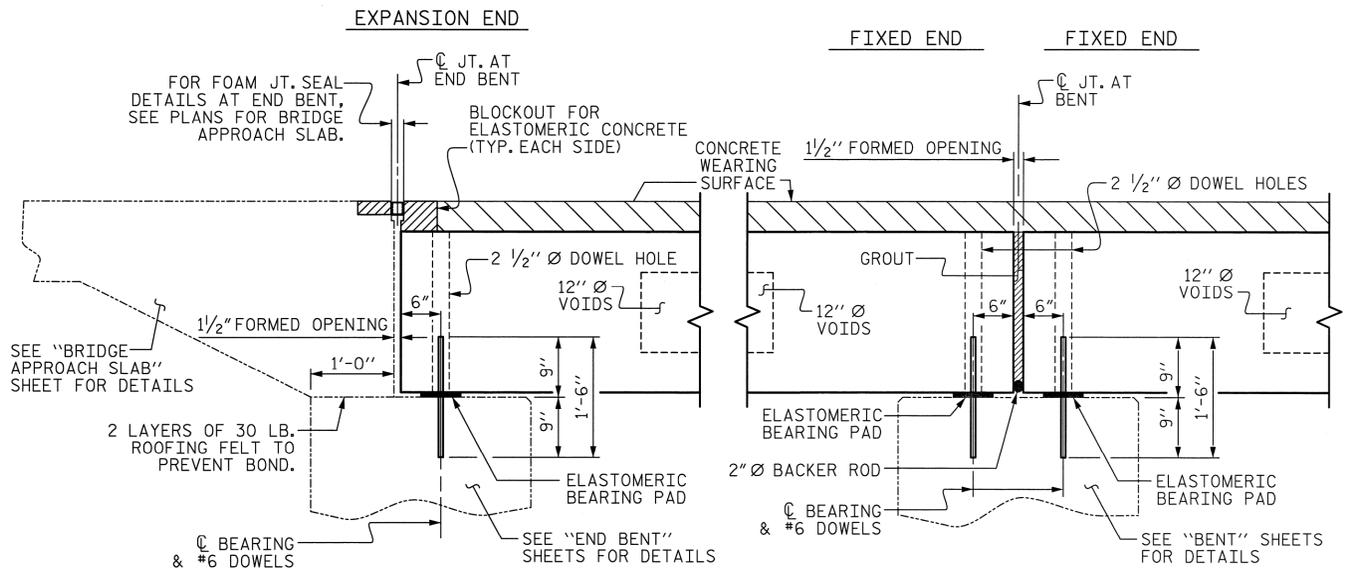
0.6" Ø LOW RELAXATION STRAND LAYOUT

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

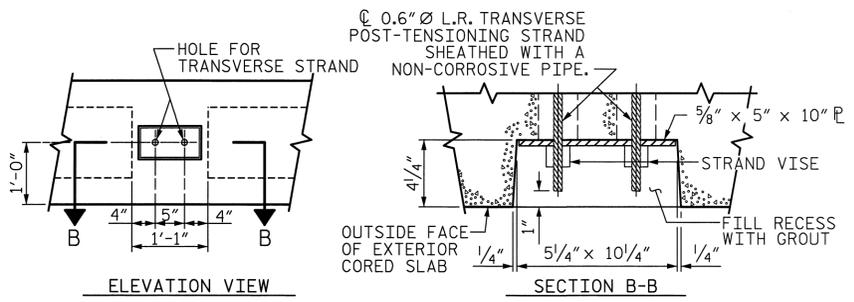


EXTERIOR SLAB SECTION
(FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTION.)

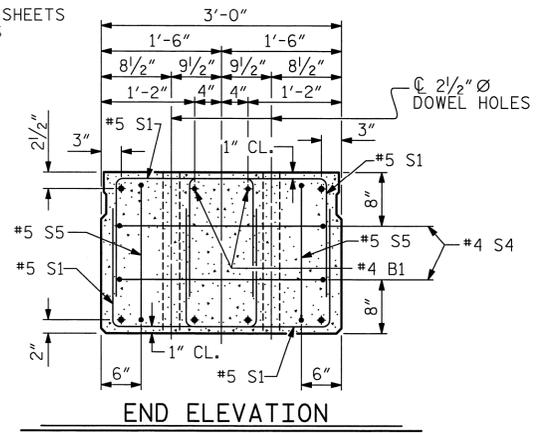


SECTION AT END BENT

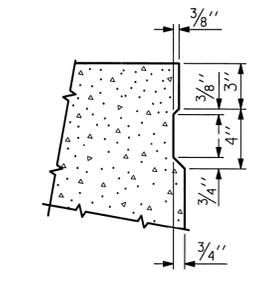
SECTION AT BENT



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



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



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

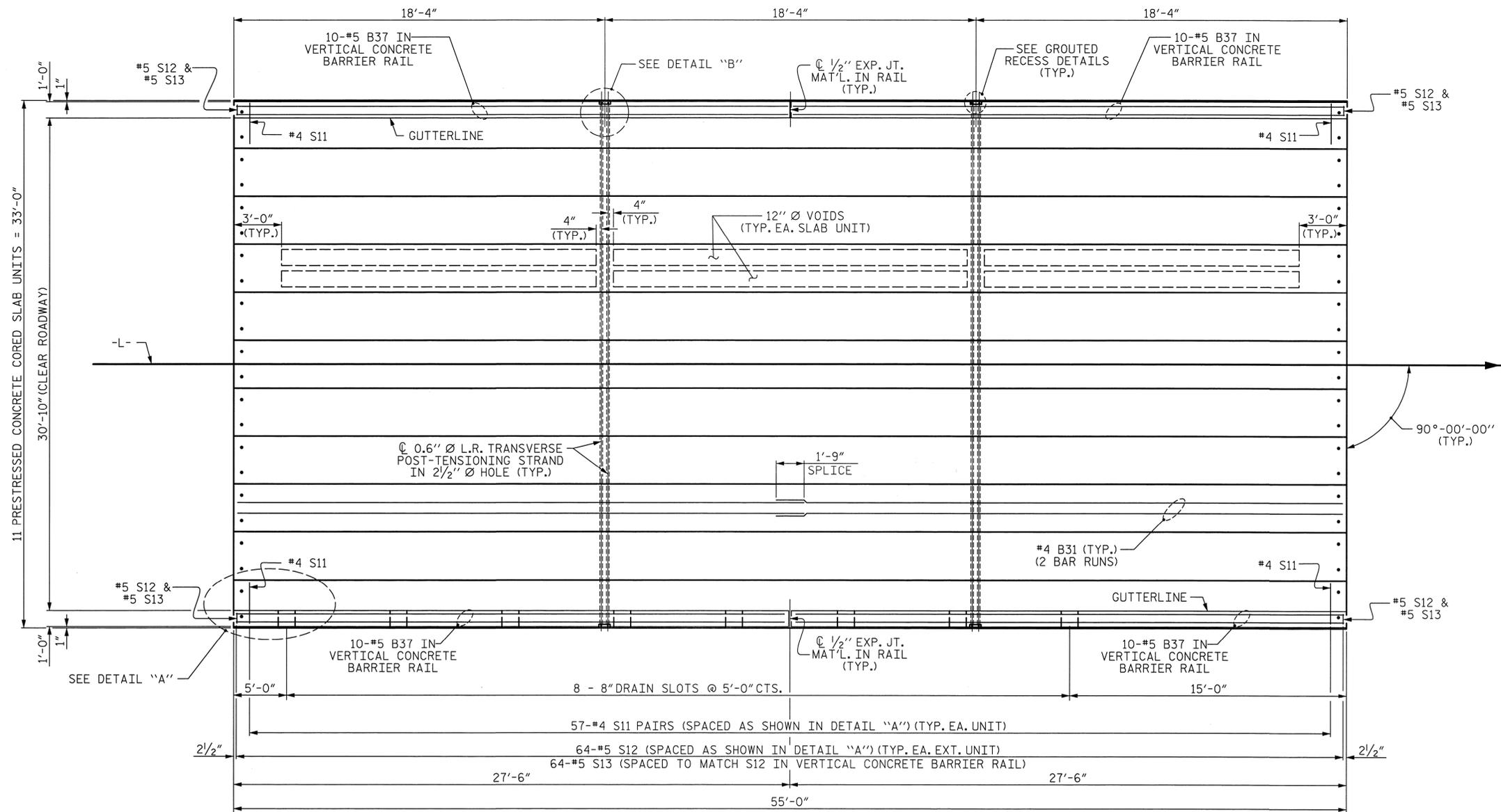
Prepared by
URS
URS Corporation - North Carolina
1600 Perimeter Park Drive, Suite 400
Morrisville, NC 27560
PHONE: 919/461-1100 FAX: 919/461-1415
NC LIC. # C-2243

NORTH CAROLINA PROFESSIONAL ENGINEER
5953
CARLTON HALL DR.
10/31/12

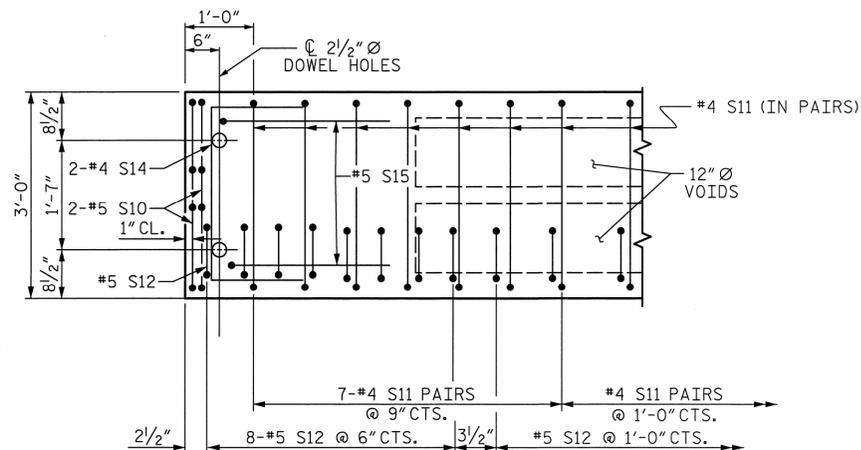
PROJECT NO. 17BP.1.R.16
GATES COUNTY
STATION: 13+63.50 -L-
SHEET 1 OF 5

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO. 10
STANDARD 3'-0" X 2'-0" PRESTRESSED CONCRETE CORED SLAB UNIT 90° SKEW						
REVISIONS						TOTAL SHEETS 30
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			

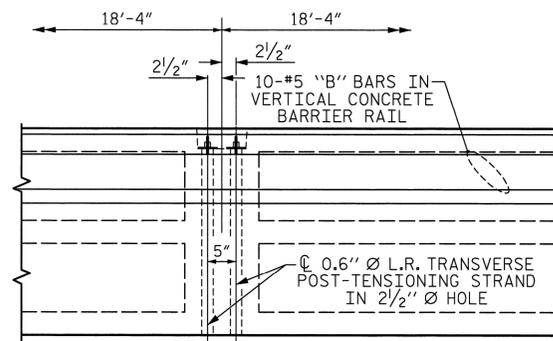
ASSEMBLED BY : K.H. COMPTON	DATE : 8/14/12
CHECKED BY : R.L. WHITCHER	DATE : 8/22/12
DRAWN BY : MAA	5/10
CHECKED BY : GM	5/10
ADDED	5/6/10
REV. 10/1/11	MAA/GM



PLAN OF UNIT



DETAIL "A"



DETAIL "B"

#4 S11 BARS MAY BE SHIFTED AS NECESSARY TO MAINTAIN 1" CLEAR TO GROUDED RECESS AND 2-1/2" Ø TRANSVERSE POST-TENSIONING STRAND HOLES

NOTE: EXTERIOR UNIT SHOWN - INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S12 BARS.

ASSEMBLED BY : K.H. COMPTON DATE : 8/14/12
 CHECKED BY : R.L. WHITCHER DATE : 8/22/12
 DRAWN BY : MAA 7/10 REV. 12/5/11 MAA/AAC
 CHECKED BY : MKT 8/10

10/31/2012
 P:\Jobs\Group A Bridge Replacements\Gates Bridge 025\Structures\Final Drawings\360025.SD.S1.dgn
 kvie.compton

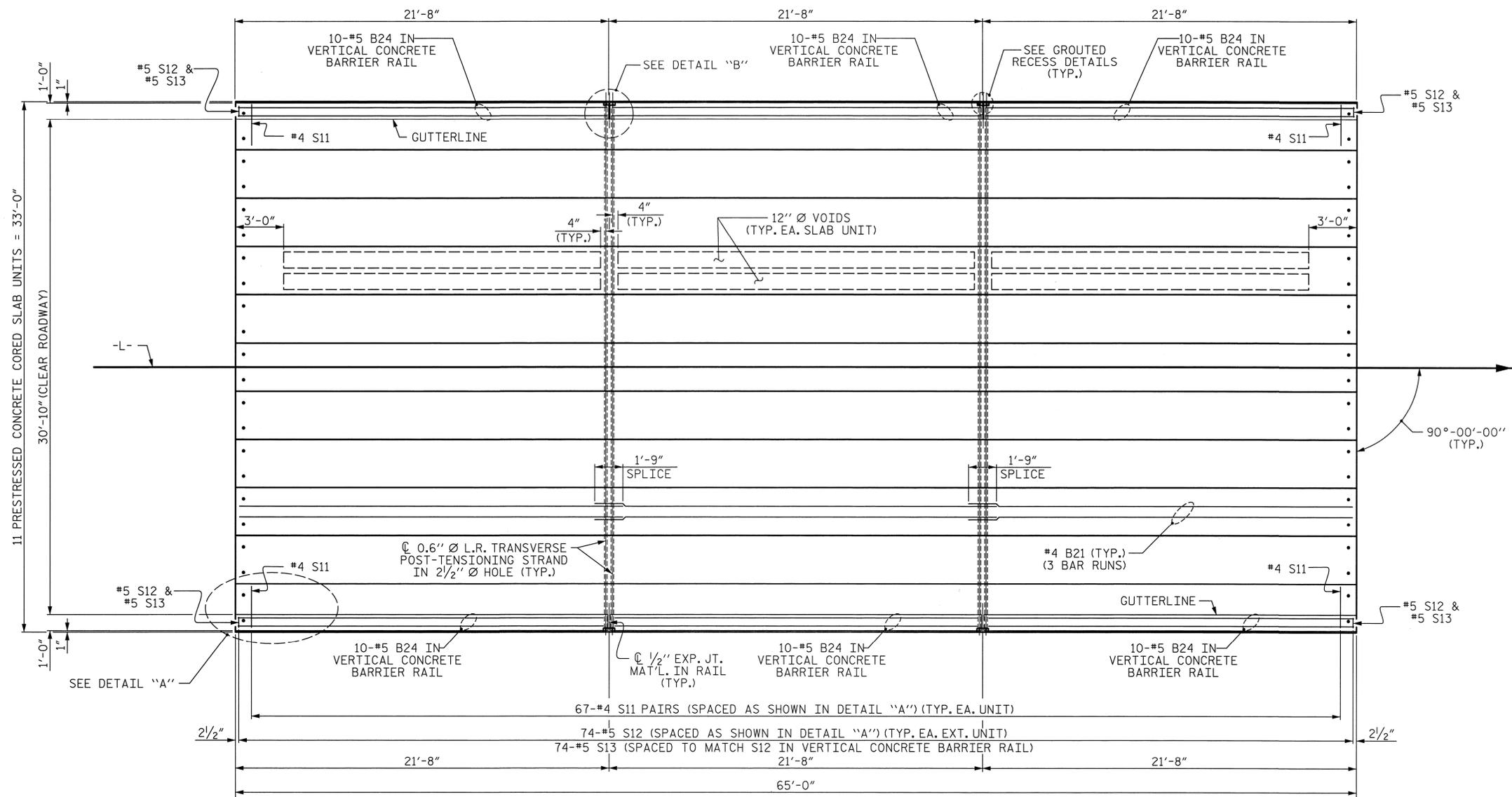


PROJECT NO. 17BP.1.R.16
 GATES COUNTY
 STATION: 13+63.50 -L-

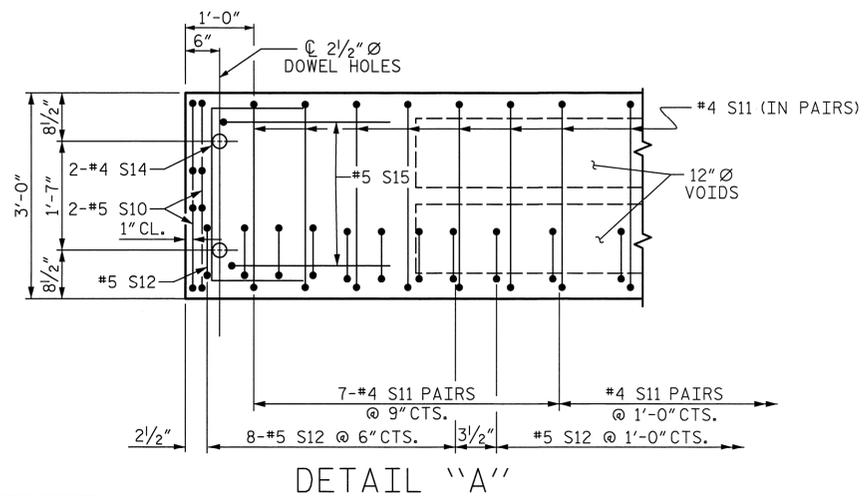
SHEET 2 OF 5

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
PLAN OF 55' UNIT 30'-10" CLEAR ROADWAY 90° SKEW SPAN A					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					11
					TOTAL SHEETS
					30

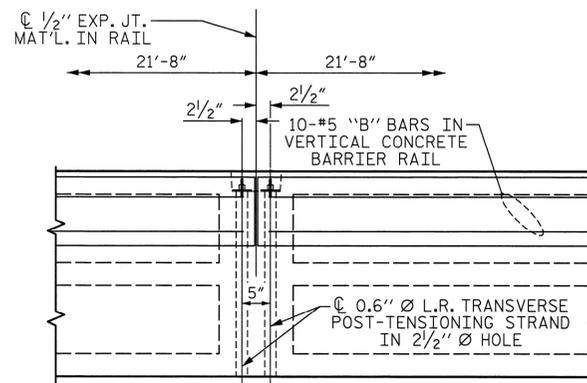
STD. NO. 24PCS_33_90S_55L (TOP DOWN)



PLAN OF UNIT



DETAIL "A"



DETAIL "B"

*4 S11 BARS MAY BE SHIFTED AS NECESSARY TO MAINTAIN 1" CLEAR TO GROUDED RECESS AND 2 1/2" Ø TRANSVERSE POST-TENSIONING STRAND HOLES

ASSEMBLED BY : K.H. COMPTON DATE : 8/14/12
 CHECKED BY : R.L. WHITCHER DATE : 8/22/12
 DRAWN BY : MAA 6/10 REV. 12/5/11 MAA/AAC
 CHECKED BY : MKT 7/10

NOTE: EXTERIOR UNIT SHOWN - INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S12 BARS.

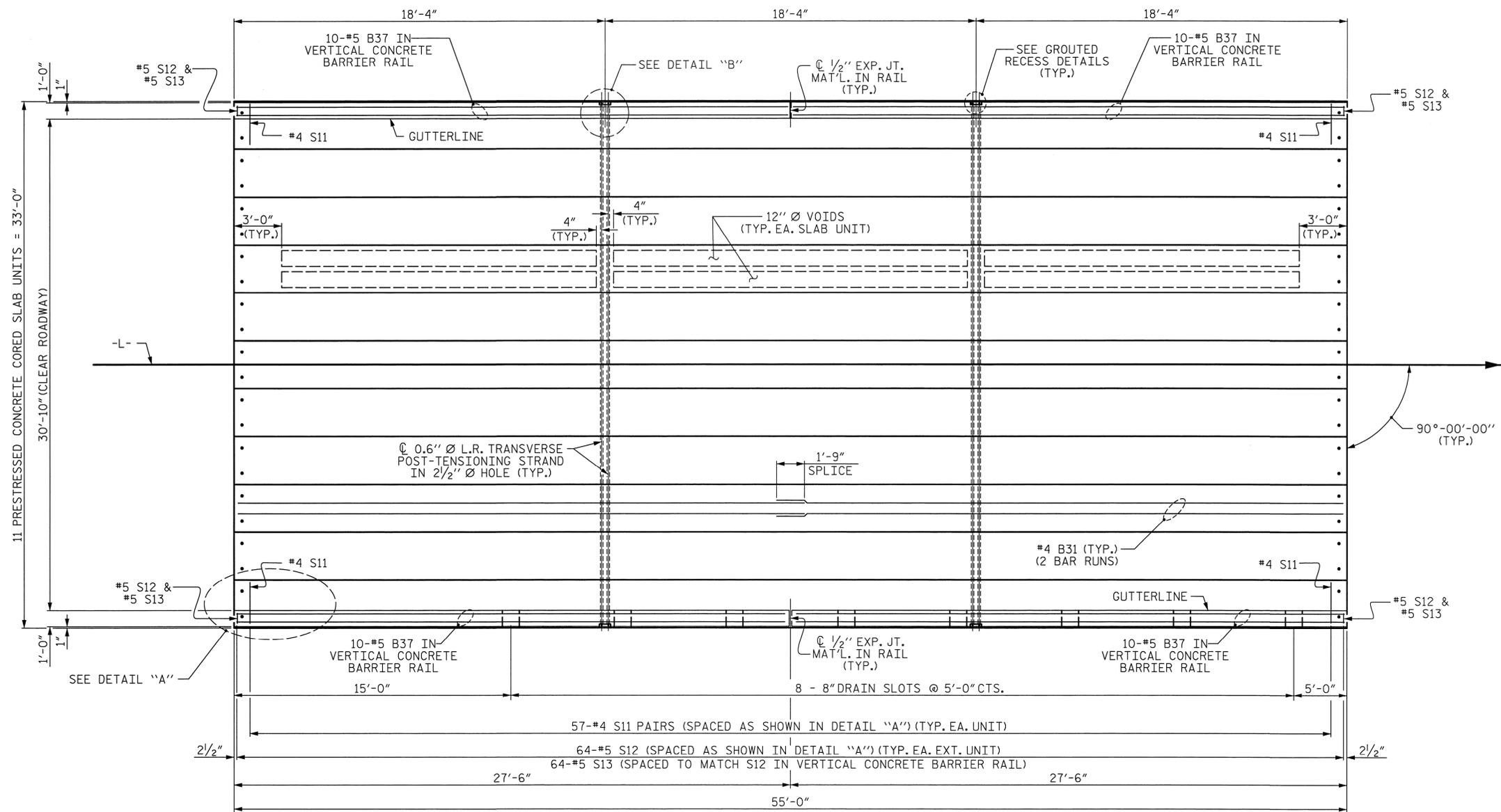
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 PHONE: 919/461-1100 FAX: 919/461-1415
 NC LIC. # C-2243



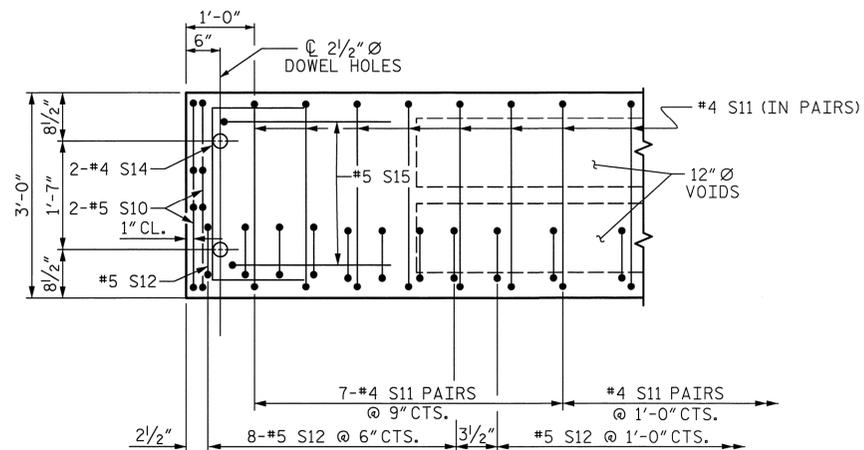
PROJECT NO. 17BP.1.R.16
 GATES COUNTY
 STATION: 13+63.50 -L-

SHEET 3 OF 5

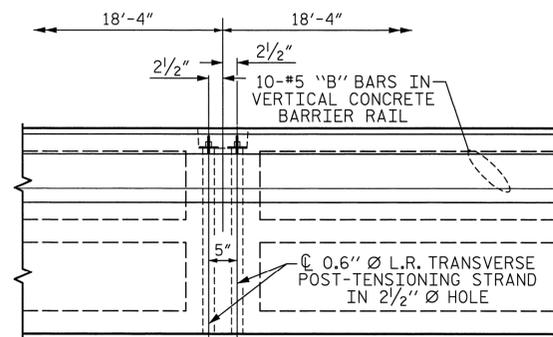
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO.
PLAN OF 65' UNIT 30'-10" CLEAR ROADWAY 90° SKEW SPAN B						12
REVISIONS						TOTAL SHEETS
NO.	BY:	DATE:	NO.	BY:	DATE:	30
1			3			
2			4			



PLAN OF UNIT

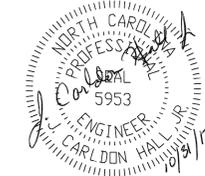


DETAIL "A"



DETAIL "B"

#4 S11 BARS MAY BE SHIFTED AS NECESSARY TO MAINTAIN 1" CLEAR TO GROUDED RECESS AND 2 1/2" Ø TRANSVERSE POST-TENSIONING STRAND HOLES



PROJECT NO. 17BP.1.R.16
 GATES COUNTY
 STATION: 13+63.50 -L-

SHEET 2 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

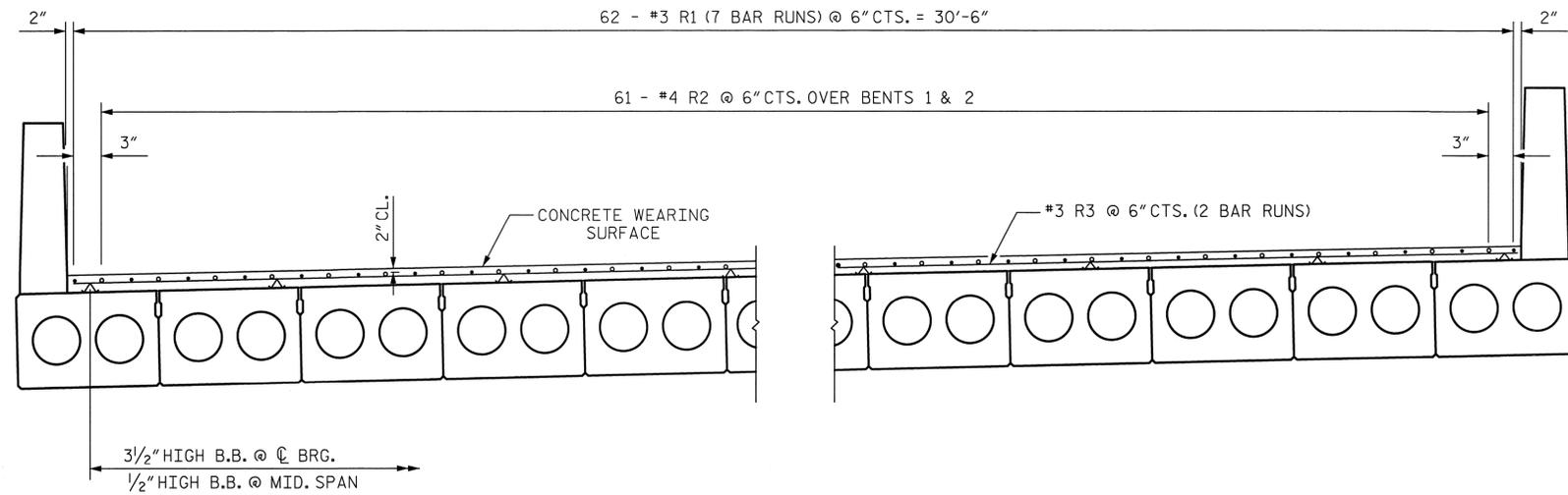
PLAN OF 55' UNIT
 30'-10" CLEAR ROADWAY
 90° SKEW
 SPAN C

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	13
1			3			TOTAL SHEETS
2			4			30

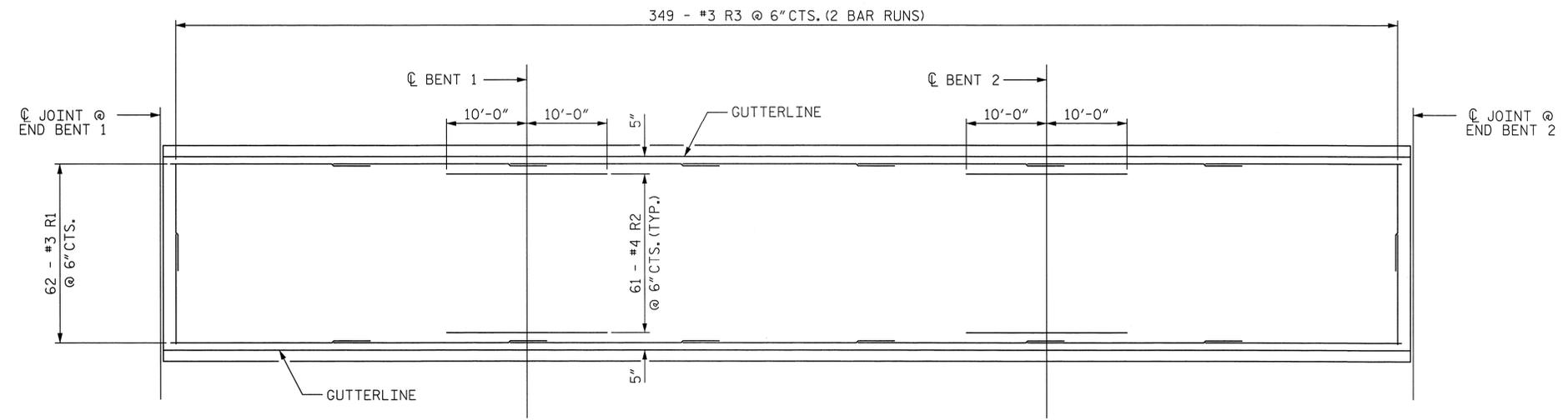
ASSEMBLED BY: K.H. COMPTON DATE: 8/14/12
 CHECKED BY: R.L. WHITCHER DATE: 8/22/12
 DRAWN BY: MAA 7/10 REV. 12/5/11 MAA/AAC
 CHECKED BY: MKT 8/10

BILL OF MATERIAL					
CONCRETE WEARING SURFACE					
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT
*R1	434	#3	STR	26'-1"	4256
*R2	122	#4	STR	20'-0"	1630
*R3	698	#3	STR	15'-11"	4177
* EPOXY COATED REINF. STEEL =				10,063	LBS.
CONCRETE WEARING SURFACE =				5,375	SQ. FT.

SPlice LENGTH CHART	
BAR SIZE	EPOXY COATED
#3	1'-3"



REINFORCING STEEL FOR
CONCRETE WEARING SURFACE



PLAN OF CONCRETE WEARING SURFACE

NOTES:

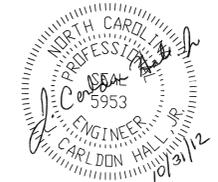
PLACEMENT OF CONCRETE WEARING SURFACE SHALL OCCUR AFTER CASTING THE VERTICAL CONCRETE BARRIER RAILS. THE COST OF THE REINFORCING STEEL CAST WITH THE CONCRETE WEARING SURFACE AND THE CONCRETE WEARING SURFACE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF SUPERSTRUCTURE. FOR CONCRETE WEARING SURFACE, SEE SPECIAL PROVISIONS.

ALL REINFORCING FOR THE CONCRETE WEARING SURFACE SHALL BE EPOXY COATED.

FOR ELASTOMERIC CONCRETE SEE "BRIDGE APPROACH SLAB DETAILS" SHEET.

FOR DETAILS OF CONCRETE BARRIER, SEE "3'-0" X 2'-0" PRESTRESSED CORED SLAB UNIT" SHEET.

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PROJECT NO. 17BP.1.R.16
GATES COUNTY
STATION: 13+63.50 -L-

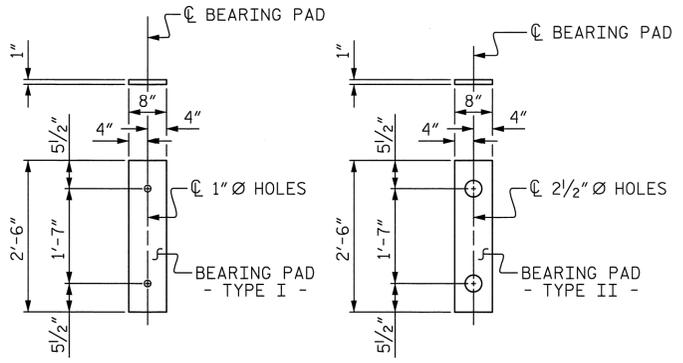
SHEET 4 OF 5

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**CONCRETE WEARING
SURFACE DETAILS**

REVISIONS						SHEET NO. 14
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 30
2			4			

ASSEMBLED BY : K.H. COMPTON	DATE : 8/14/12
CHECKED BY : R.L. WHITCHER	DATE : 8/22/12
DRAWN BY : MAA	5/10
CHECKED BY : GM	5/10
ADDED	5/6/10
REV. 10/11/11	MAA/GM



FIXED END
(TYPE I - 44 REQ'D)

EXPANSION END
(TYPE II - 22 REQ'D)

ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 60 DUROMETER HARDNESS.

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

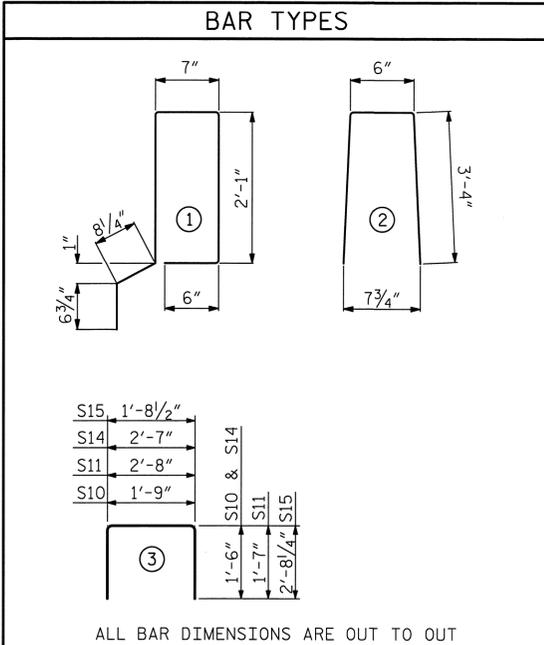
CONCRETE RELEASE STRENGTH	
UNIT	PSI
55' UNITS	6200
65' UNITS	4800

GUTTERLINE CONCRETE THICKNESS & RAIL HEIGHT		
	CONCRETE OVERLAY THICKNESS @ MID-SPAN	RAIL HEIGHT @ MID-SPAN
55' UNITS	3 11/16"	3'-9 11/16"
65' UNITS	3 1/2"	3'-9 1/2"

DEAD LOAD DEFLECTION AND CAMBER	
	3'-0" x 2'-0"
55' CORED SLAB UNIT	0.6" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	3" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	5/16" ↓
FINAL CAMBER	2 11/16" ↑

DEAD LOAD DEFLECTION AND CAMBER	
	3'-0" x 2'-0"
65' CORED SLAB UNIT	0.6" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	3 3/8" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	1/2" ↓
FINAL CAMBER	2 7/8" ↑

BILL OF MATERIAL FOR ONE 55' CORED SLAB UNIT							
BAR	NUMBER	SIZE	TYPE	EXTERIOR UNIT LENGTH	EXTERIOR UNIT WEIGHT	INTERIOR UNIT LENGTH	INTERIOR UNIT WEIGHT
B31	4	#4	STR	28'-3"	75	28'-3"	75
S10	8	#5	3	4'-9"	40	4'-9"	40
S11	114	#4	3	5'-10"	444	5'-10"	444
*S12	64	#5	1	6'-6"	434		
S14	4	#4	3	5'-7"	15	5'-7"	15
S15	4	#5	3	7'-1"	30	7'-1"	30
REINFORCING STEEL			LBS.		604		604
*EPOXY COATED REINFORCING STEEL			LBS.		434		
8500 P.S.I. CONCRETE			CU. YDS.		9.4		9.4
0.6" Ø L.R. STRANDS			No.		31		31



ALL BAR DIMENSIONS ARE OUT TO OUT

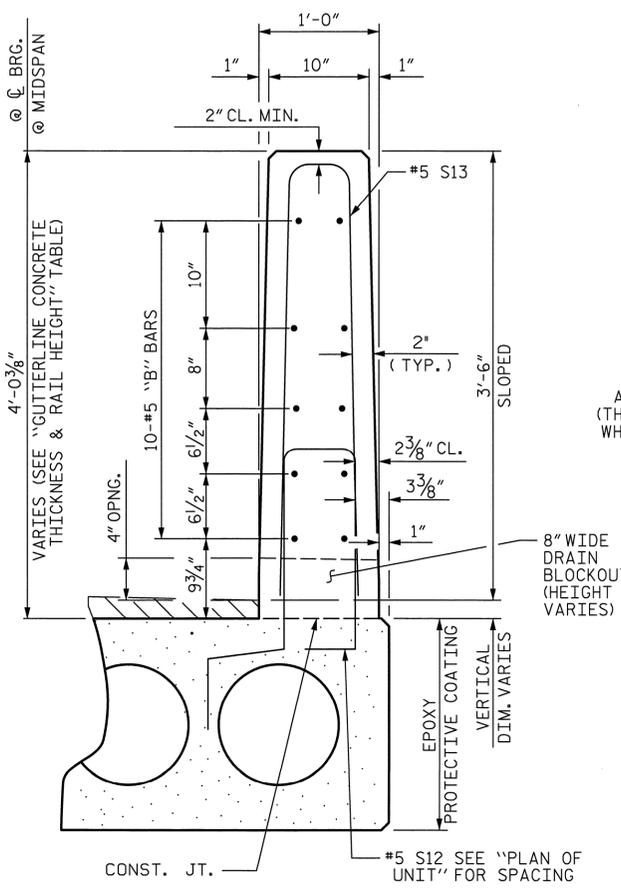
CORED SLABS REQUIRED			
55' UNIT	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.	4	55'-0"	220'-0"
INTERIOR C.S.	18	55'-0"	990'-0"
TOTAL			1210'-0"

CORED SLABS REQUIRED			
65' UNIT	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.	2	65'-0"	130'-0"
INTERIOR C.S.	9	65'-0"	585'-0"
TOTAL			715'-0"

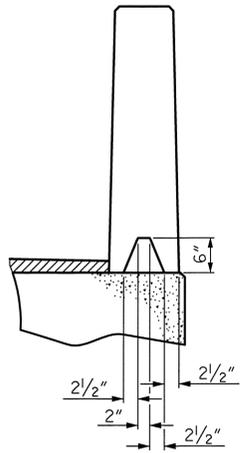
BILL OF MATERIAL FOR ONE 65' CORED SLAB UNIT							
BAR	NUMBER	SIZE	TYPE	EXTERIOR UNIT LENGTH	EXTERIOR UNIT WEIGHT	INTERIOR UNIT LENGTH	INTERIOR UNIT WEIGHT
B21	6	#4	STR	22'-10"	92	22'-10"	92
S10	8	#5	3	4'-9"	40	4'-9"	40
S11	134	#4	3	5'-10"	522	5'-10"	522
*S12	74	#5	1	6'-6"	502		
S14	4	#4	3	5'-7"	15	5'-7"	15
S15	4	#5	3	7'-1"	30	7'-1"	30
REINFORCING STEEL			LBS.		699		699
*EPOXY COATED REINFORCING STEEL			LBS.		502		
6000 P.S.I. CONCRETE			CU. YDS.		11.0		11.0
0.6" Ø L.R. STRANDS			No.		24		24

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL						
BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
*B37	40	80	#5	STR	27'-1"	2260
*S13	128	256	#5	2	7'-2"	1914
*EPOXY COATED REINFORCING STEEL				LBS.		4178
CLASS AA CONCRETE				CU. YDS.		29.8
TOTAL VERTICAL CONCRETE BARRIER RAIL				LN. FT.		220.5

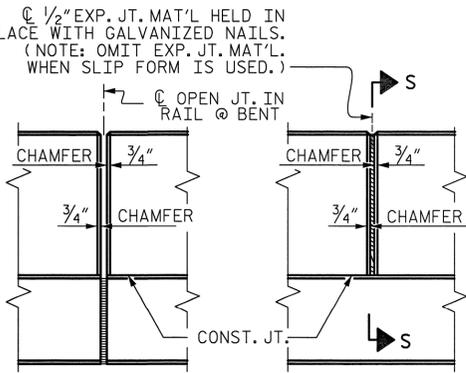
BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL						
BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
*B24	60	60	#5	STR	21'-3"	1330
*S13	148	148	#5	2	7'-2"	1106
*EPOXY COATED REINFORCING STEEL				LBS.		2436
CLASS AA CONCRETE				CU. YDS.		17.6
TOTAL VERTICAL CONCRETE BARRIER RAIL				LN. FT.		130.25



SECTION THRU RAIL



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



ELEVATION AT EXPANSION JOINTS

VERTICAL CONCRETE BARRIER RAIL DETAILS

ASSEMBLED BY : K.H. COMPTON DATE : 8/14/12
 CHECKED BY : R.L. WHITCHER DATE : 8/22/12
 DRAWN BY : MAA 6/10 REV. 12/11 MAA/AAC
 CHECKED BY : MKT 7/10

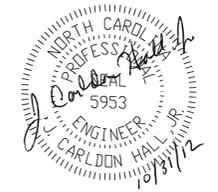
NOTES

- ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO AASHTO M203 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
- ALL REINFORCING STEEL CAST WITH THE CORED SLAB SECTIONS SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE CORED SLABS.
- RECESSES FOR TRANSVERSE STRANDS SHALL BE GROUTED AFTER THE TENSIONING OF THE STRANDS.
- THE 2 1/2" Ø DOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE FILLED WITH NON-SHRINK GROUT.
- THE BACKER RODS SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER. SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS.
- WHEN CORED SLABS ARE CAST, AN INTERNAL HOLD-DOWN SYSTEM SHALL BE EMPLOYED TO PREVENT VOIDS FROM RISING OR MOVING SIDWAYS. AT LEAST SIX WEEKS PRIOR TO CASTING CORED SLABS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW AND COMMENT, DETAILED DRAWINGS OF THE PROPOSED HOLD-DOWN SYSTEM. IN ADDITION TO STRUCTURAL DETAILS, LOCATION AND SPACING OF THE HOLD-DOWNS SHALL BE INDICATED.
- THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE CORED SLAB UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN THE REQUIRED STRENGTH SHOWN IN THE "CONCRETE RELEASE STRENGTH" TABLE.
- ALL REINFORCING STEEL IN VERTICAL CONCRETE BARRIER RAILS SHALL BE EPOXY COATED.
- PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE CORED SLAB UNIT ENDS.
- APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.
- GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOoled IN ALL EXPOSED FACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. A CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED AT MIDPOINT OF BARRIER RAIL SEGMENTS LESS THAN 20 FEET IN LENGTH AND NO CONTRACTION JOINTS ARE REQUIRED FOR THOSE SEGMENTS LESS THAN 10 FEET IN LENGTH.
- TRANSVERSE POST TENSIONING OF THE CORED SLAB UNITS SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
- MAINTAIN A SYMMETRIC TENSION FORCE BETWEEN EACH PAIR OF TRANSVERSE POST TENSIONING STRANDS IN THE DIAPHRAGM.
- THE #4 S11 STIRRUPS MAY BE SHIFTED AS NECESSARY TO MAINTAIN 1" CLEAR TO THE GROUTED RECESS.
- FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

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 NC LIC. # C-2243

PROJECT NO. 17BP.1.R.16
 GATES COUNTY
 STATION: 13+63.50 -L-
 SHEET 5 OF 5

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH			
STANDARD 3'-0" X 2'-0" PRESTRESSED CONCRETE CORED SLAB UNIT 90° SKEW			
REVISIONS			
NO.	BY:	DATE:	SHEET NO.
1			15
2			TOTAL SHEETS 30



NOTES

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

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

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

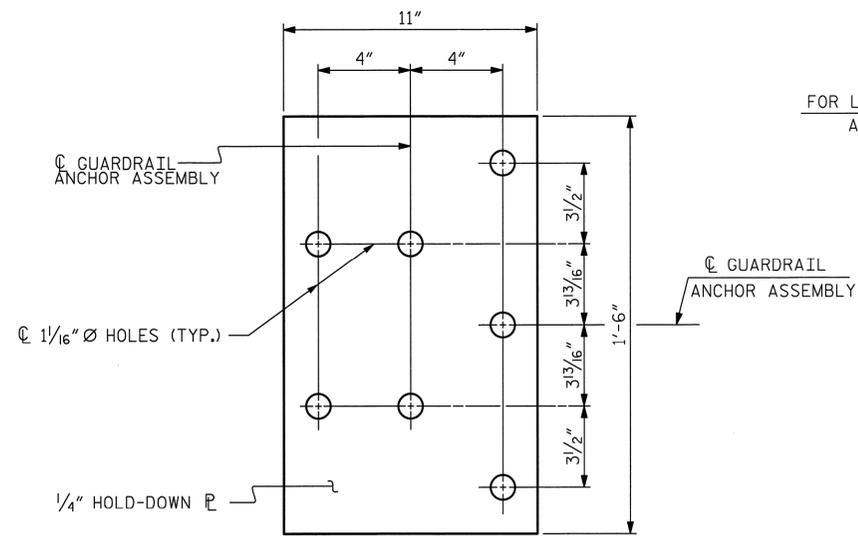
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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

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

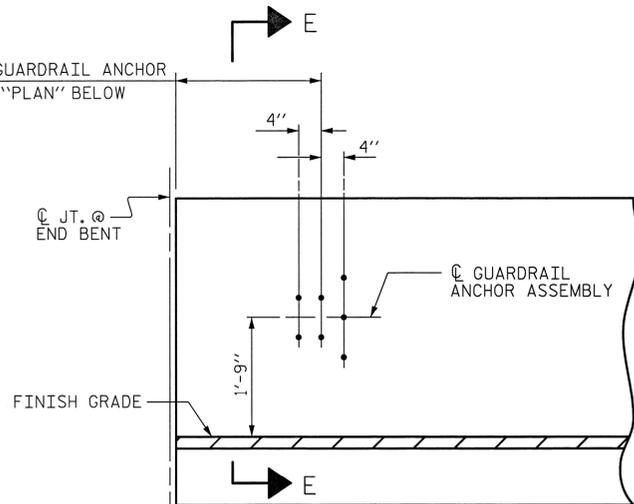
THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE VERTICAL CONCRETE BARRIER RAIL TO CLEAR ASSEMBLY BOLTS.

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

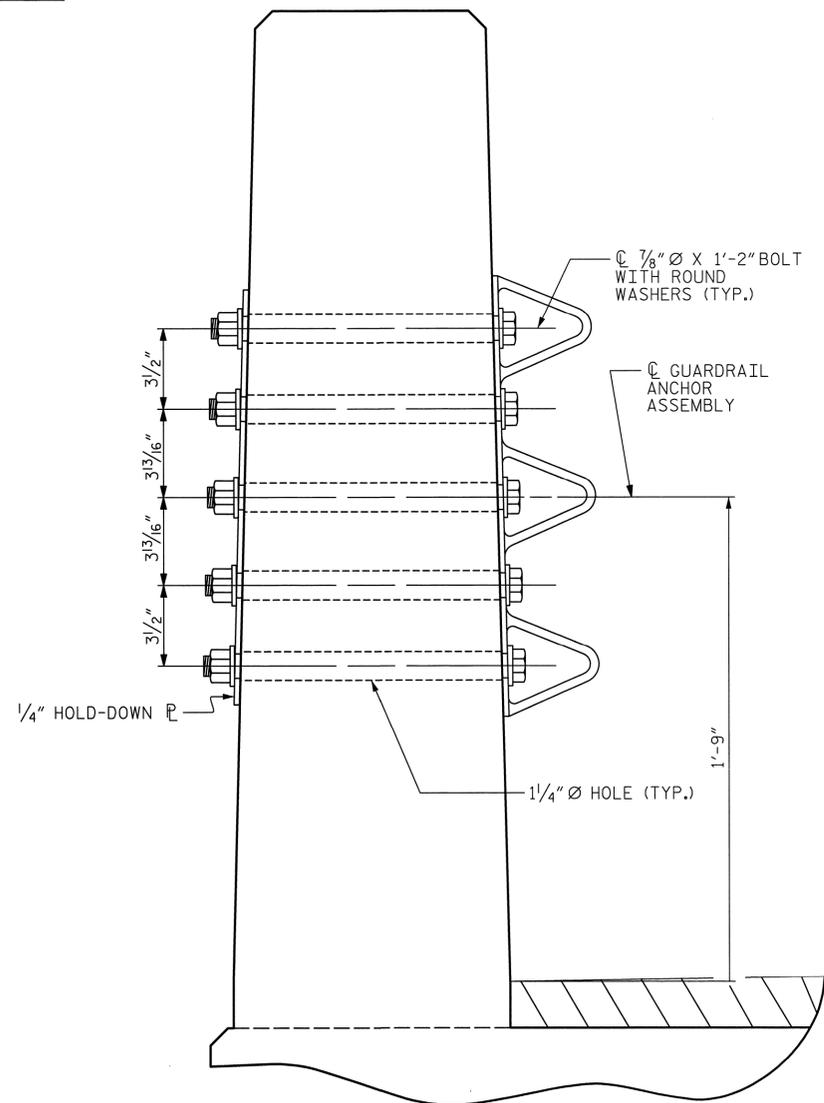


PLAN

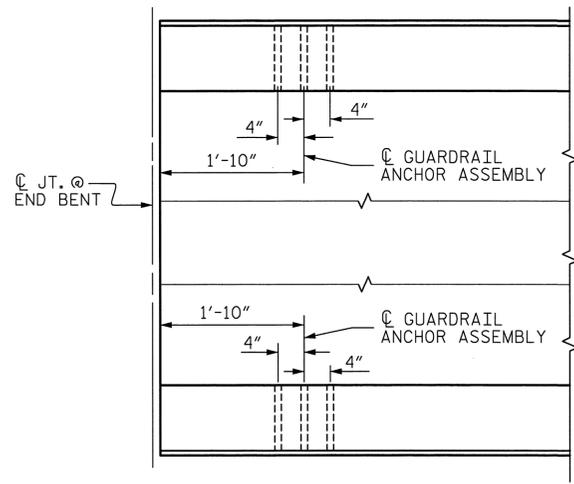
FOR LOCATION OF GUARDRAIL ANCHOR ASSEMBLY, SEE "PLAN" BELOW



ELEVATION

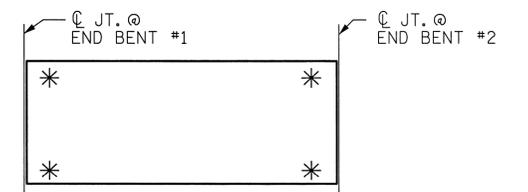


SECTION E-E
GUARDRAIL ANCHOR ASSEMBLY DETAILS



LOCATION OF ANCHORS FOR GUARDRAIL

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



SKETCH SHOWING POINTS OF ATTACHMENT

* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. 17BP.1.R.16
GATES COUNTY
STATION: 13+63.50-L-

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

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS	
1			3			16	30
2			4				

(SHT 1) STD. NO. GRA3

ASSEMBLED BY : K.H. COMPTON DATE : 8/14/12
CHECKED BY : R.L. WHITCHER DATE : 8/22/12
DRAWN BY : MAA 7/09 ADDED 8/01/09
CHECKED BY : CM 7/09

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URS Corporation - North Carolina
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Morrisville, NC 27560
PHONE: 919/461-1100 FAX: 919/461-1415
NC LIC. # C-2243



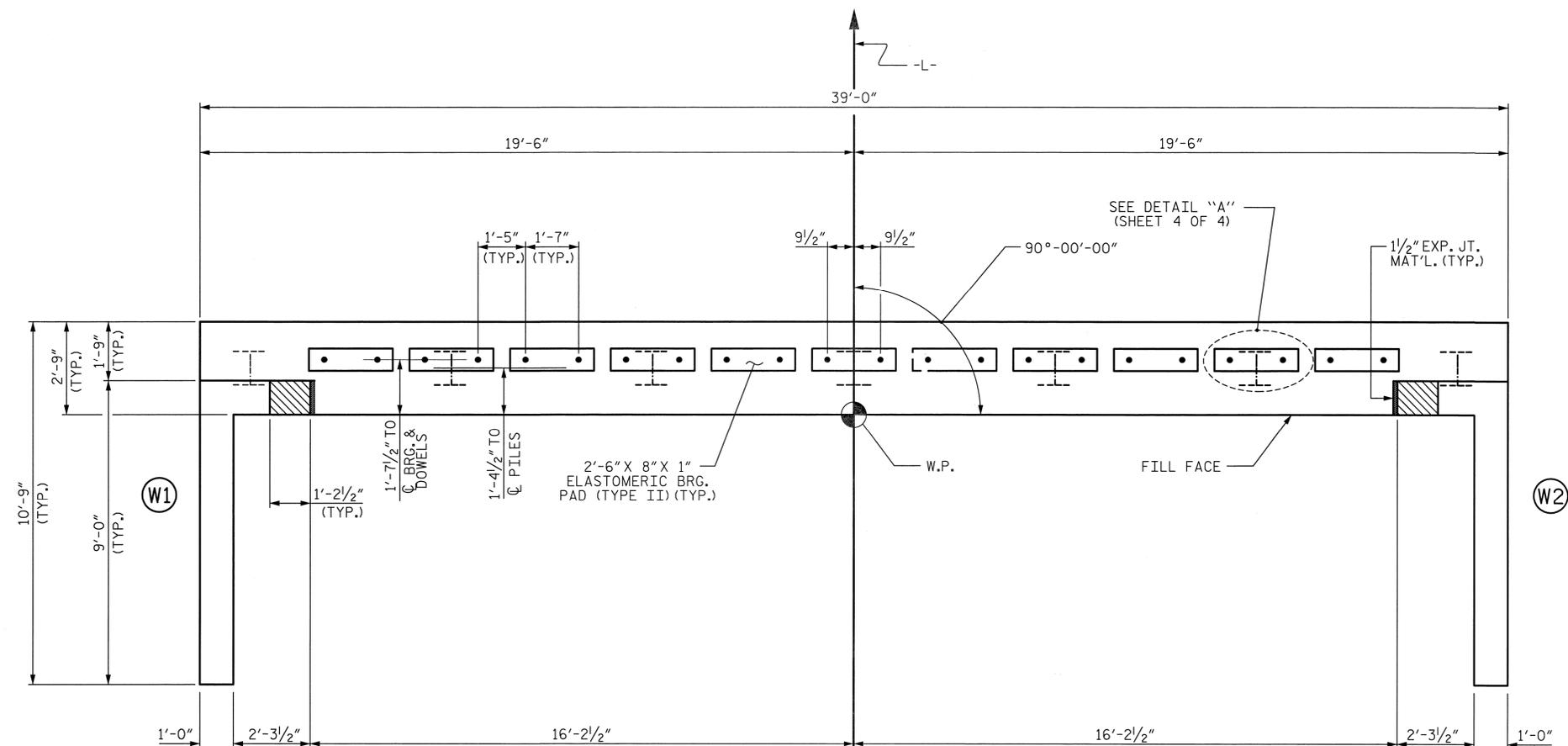
NOTES

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.

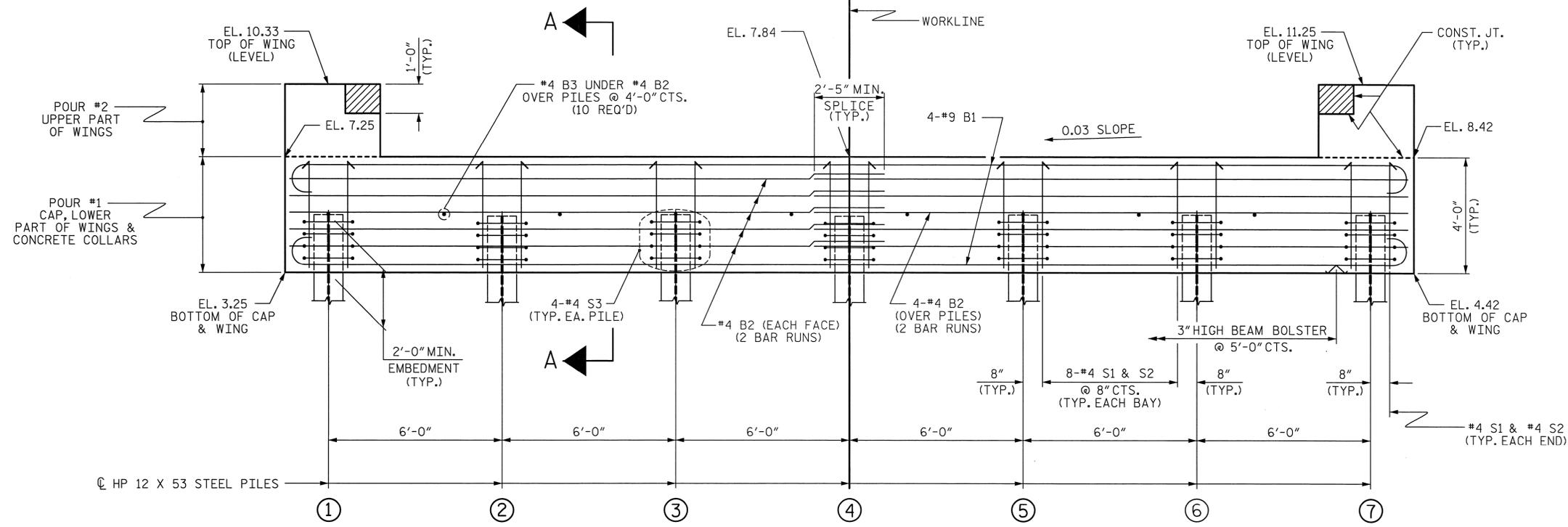
FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.



PLAN

TOP OF PILE ELEVATIONS	
①	5.30
②	5.48
③	5.66
④	5.84
⑤	6.02
⑥	6.20
⑦	6.38



ELEVATION

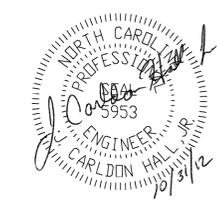
WINGS NOT SHOWN FOR CLARITY.
 FOR SECTION A-A, SEE SHEET 4 OF 4.
 CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.
 SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 4 OF 4.



PROJECT NO. 17BP.1.R.16
 GATES COUNTY
 STATION: 13+63.50 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO. 17 TOTAL SHEETS 30
SUBSTRUCTURE END BENT No. 1						
REVISIONS						
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			



ASSEMBLED BY : K.H. COMPTON DATE : 8/14/12
 CHECKED BY : R.L. WHITCHER DATE : 8/22/12
 DRAWN BY : WJH 12/11
 CHECKED BY : AAC 12/11

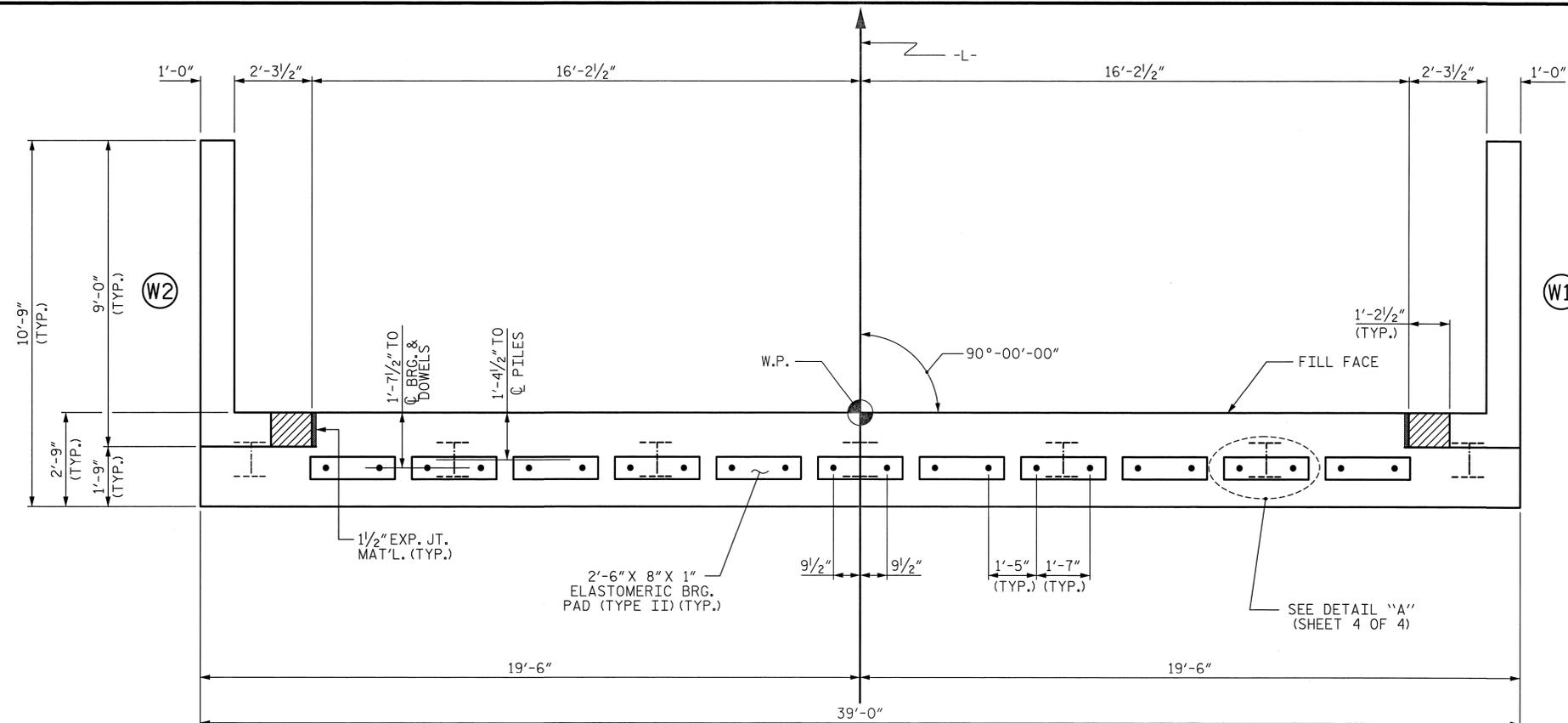
NOTES

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

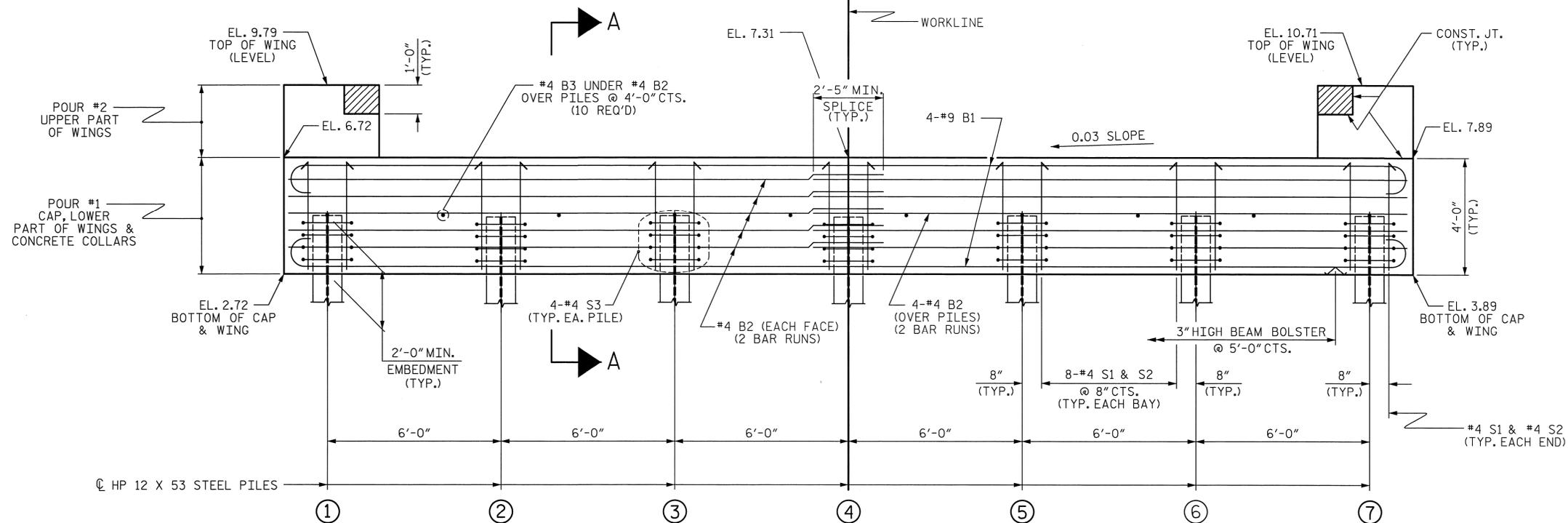
THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.



PLAN



ELEVATION

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

TOP OF PILE ELEVATIONS	
①	4.77
②	4.95
③	5.13
④	5.31
⑤	5.49
⑥	5.67
⑦	5.85



PROJECT NO. 17BP.1.R.16
GATES COUNTY
STATION: 13+63.50 -L-

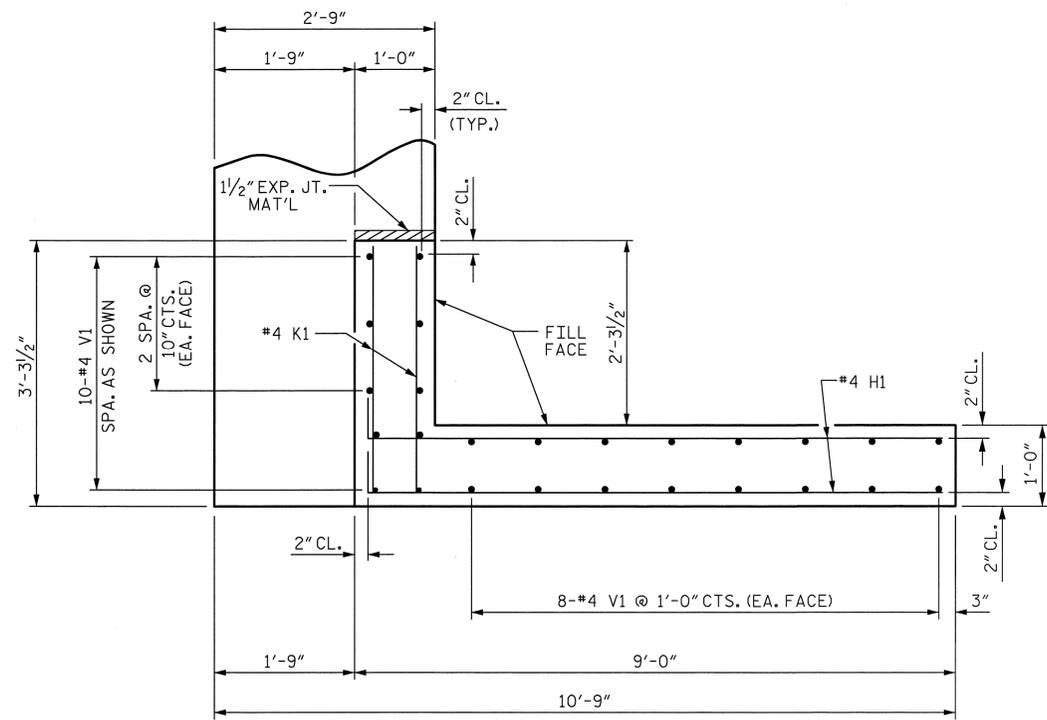
SHEET 2 OF 4

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE END BENT No. 2					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

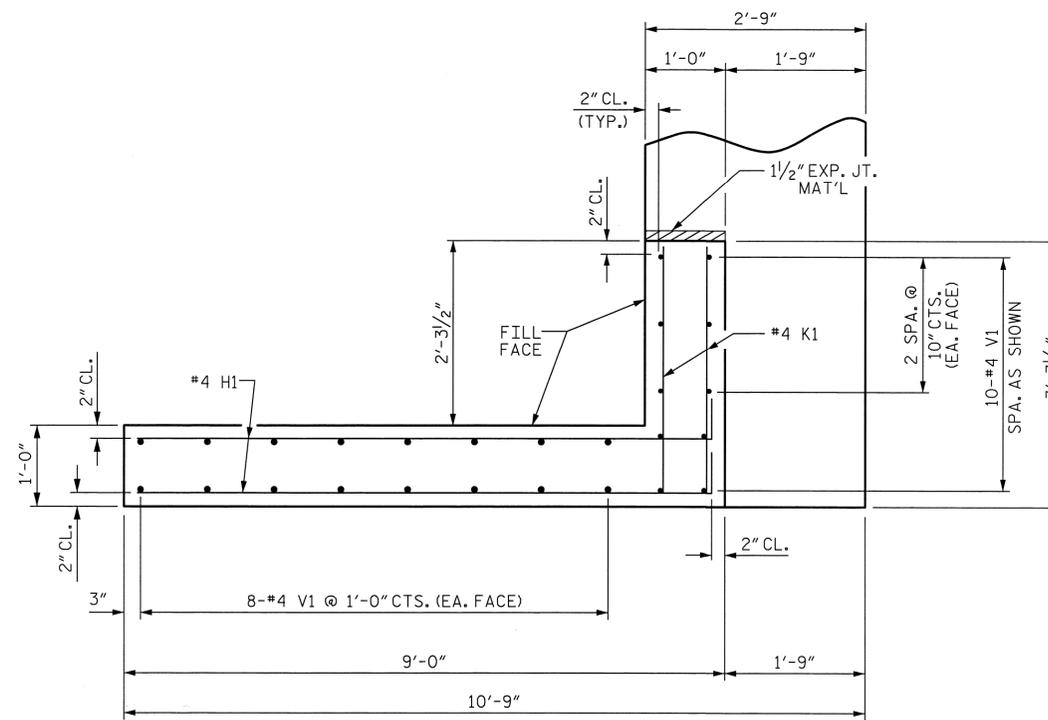
SHEET NO.
18
TOTAL SHEETS
30



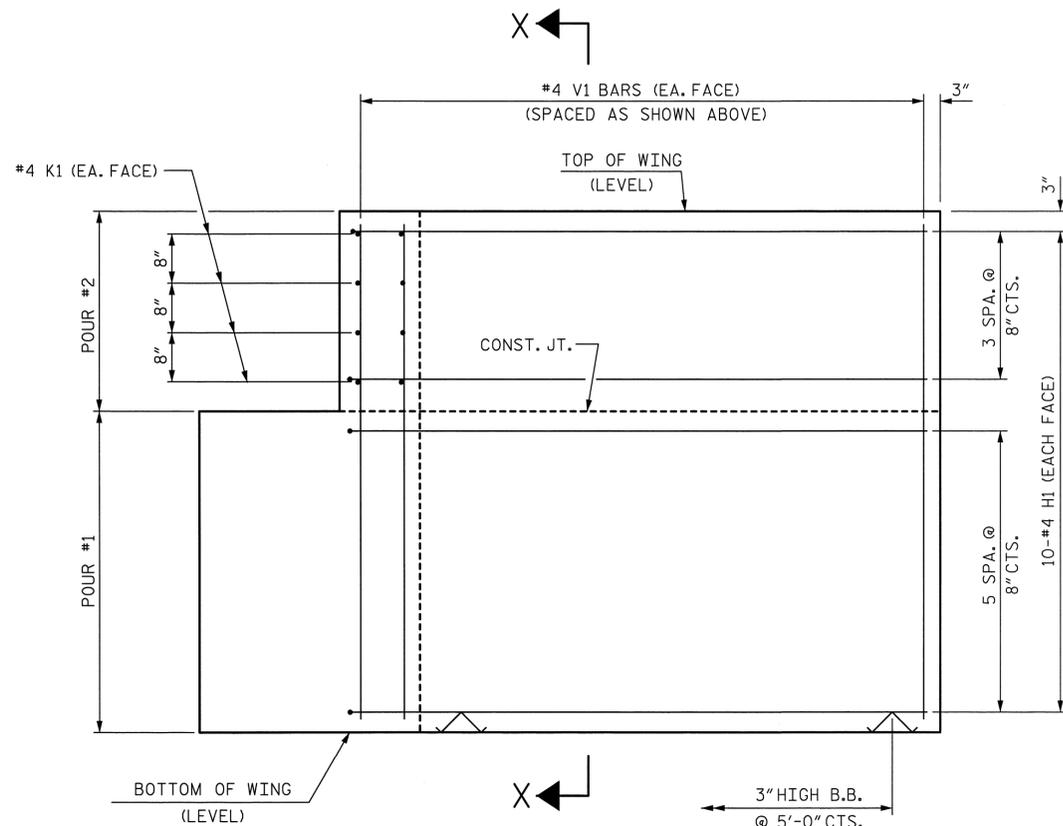
ASSEMBLED BY : K.H. COMPTON DATE : 8/14/12
CHECKED BY : R.L. WHITCHER DATE : 8/22/12
DRAWN BY : WJH 12/11
CHECKED BY : AAC 12/11



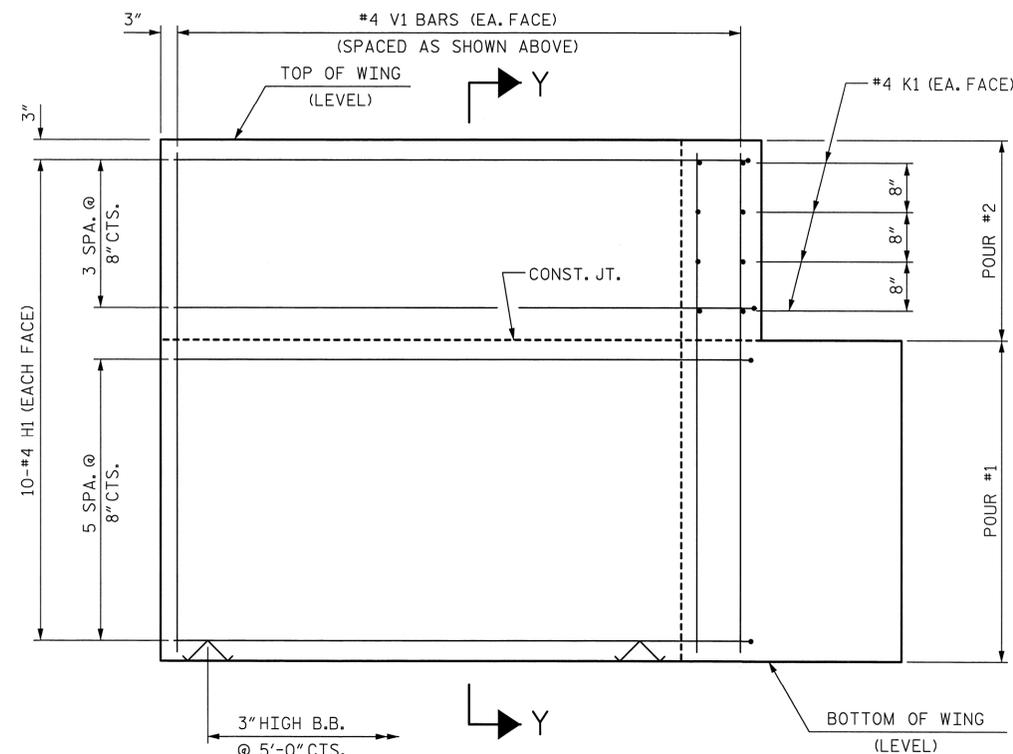
PLAN OF WING (W1)



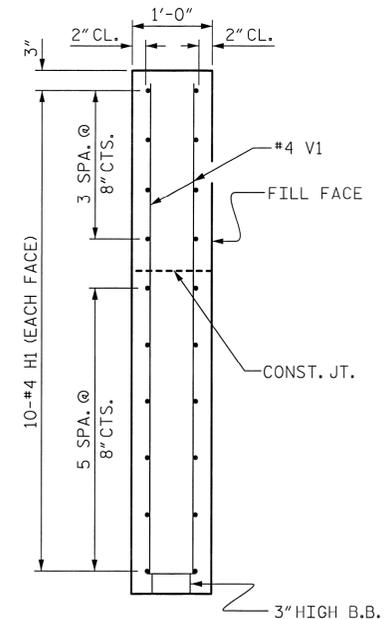
PLAN OF WING (W2)



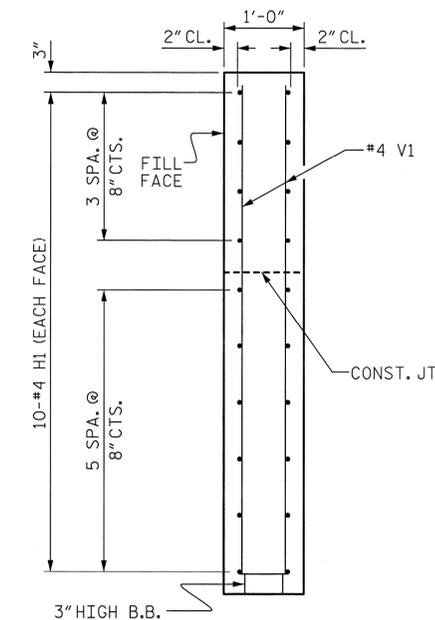
ELEVATION OF WING (W1)



ELEVATION OF WING (W2)



SECTION X-X



SECTION Y-Y

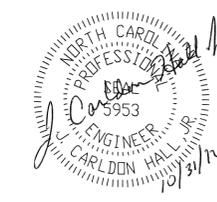
PROJECT NO. 17BP.1.R.16
 GATES COUNTY
 STATION: 13+63.50 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

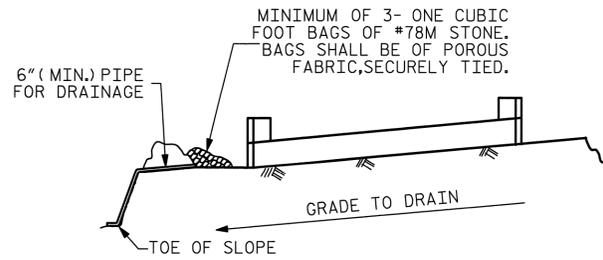
SUBSTRUCTURE
 END BENT
 WING DETAILS

REVISIONS						SHEET NO. 19
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 30
2			4			



ASSEMBLED BY : K.H. COMPTON DATE : 8/14/12
 CHECKED BY : R.L. WHITCHER DATE : 8/22/12
 DRAWN BY : WJH 12/II
 CHECKED BY : AAC 12/II

WING DETAILS

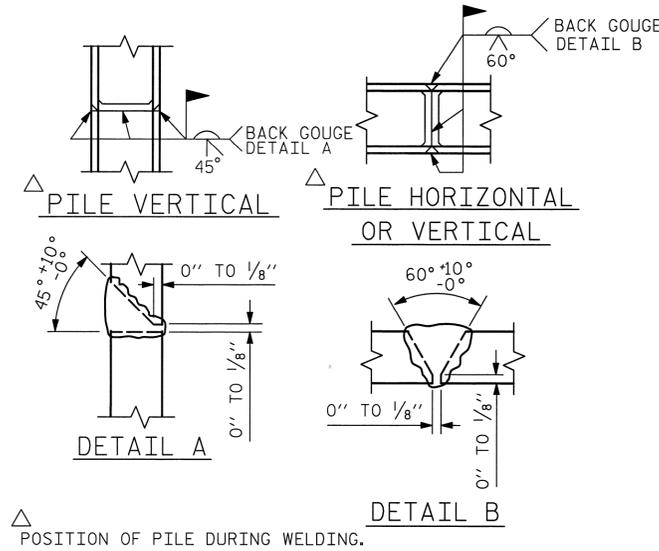


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.

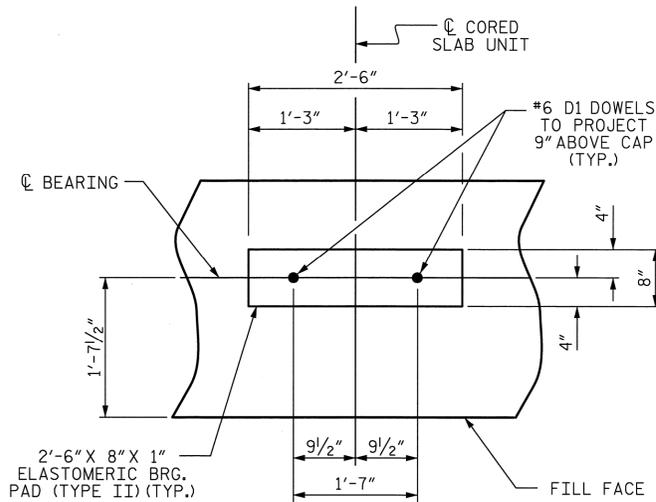
TEMPORARY DRAINAGE AT END BENT



PILE SPLICE DETAILS

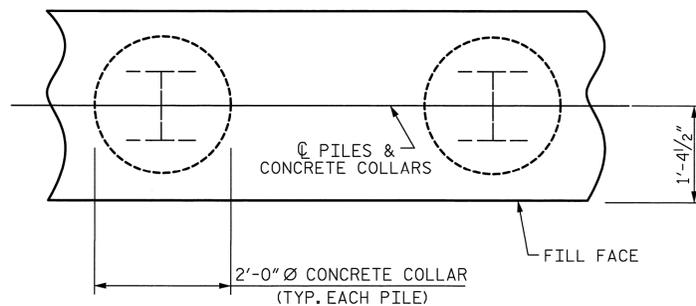
BAR TYPES					BILL OF MATERIAL FOR ONE END BENT						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9		41'-0"	1115	D1	22	#6	STR	1'-6"	50
B2	28	#4	STR	20'-7"	385	H1	40	#4		9'-4"	249
B3	10	#4	STR	2'-5"	16	K1	16	#4	STR	2'-11"	31
						S1	50	#4	3	10'-5"	348
						S2	50	#4	4	3'-2"	106
						S3	28	#4	5	6'-6"	122
						V1	52	#4	STR	6'-2"	214
REINFORCING STEEL (FOR ONE END BENT)										2636 LBS.	
CLASS A CONCRETE BREAKDOWN (FOR ONE END BENT)											
POUR #1 CAP, LOWER PART OF WINGS & COLLARS										19.5 C.Y.	
POUR #2 UPPER PART OF WINGS										2.3 C.Y.	
TOTAL CLASS A CONCRETE										21.8 C.Y.	

END BENT No. 1	END BENT No. 2
HP 12 X 53 STEEL PILES	HP 12 X 53 STEEL PILES
NO: 7	NO: 7
LIN. FT.= 525	LIN. FT.= 560



DETAIL "A"

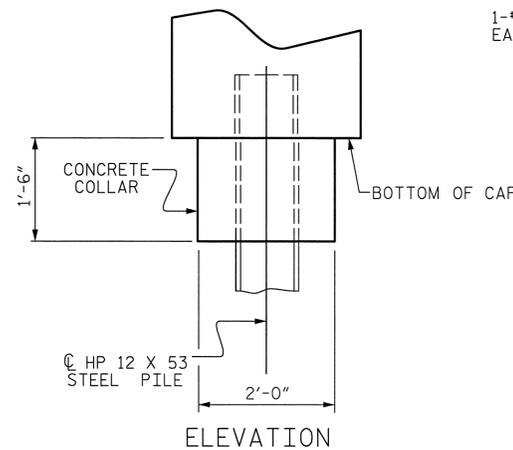
(END BENT No. 1 SHOWN, END BENT No. 2 SIMILAR BY ROTATION)



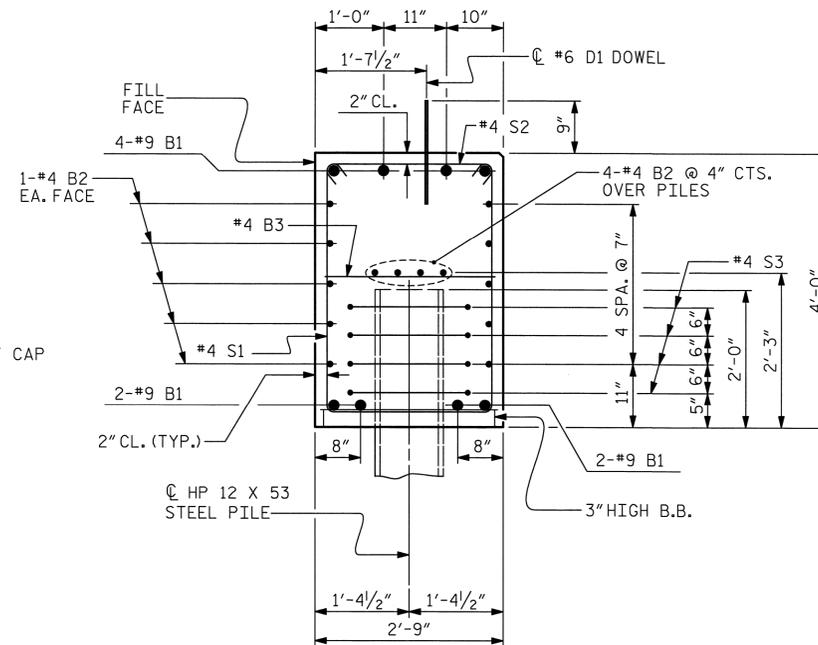
PLAN

CORROSION PROTECTION FOR STEEL PILES DETAIL

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



ELEVATION



SECTION A-A

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



PROJECT NO. 17BP.1.R.16
GATES COUNTY
STATION: 13+63.50 -L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE
END BENT No. 1 & 2
DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	20
1			3			TOTAL SHEETS 30
2			4			

ASSEMBLED BY: K.H. COMPTON DATE: 8/14/12
CHECKED BY: R.L. WHITCHER DATE: 8/22/12

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

NOTES

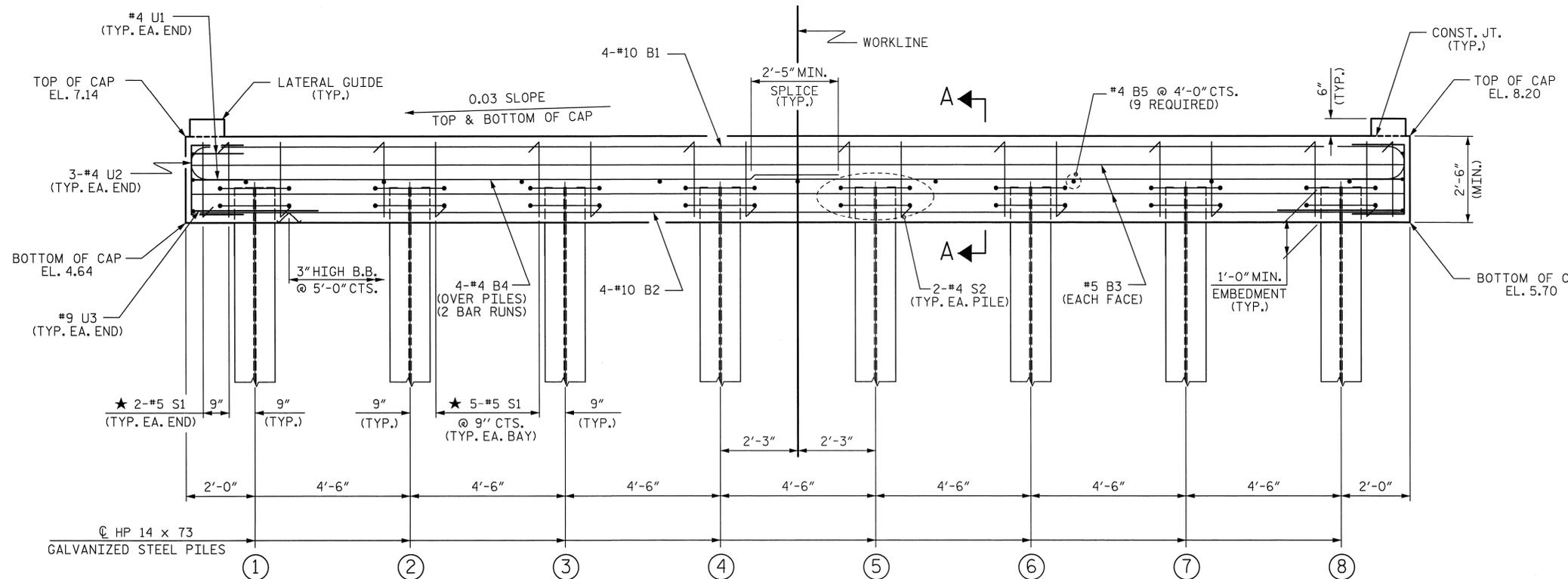
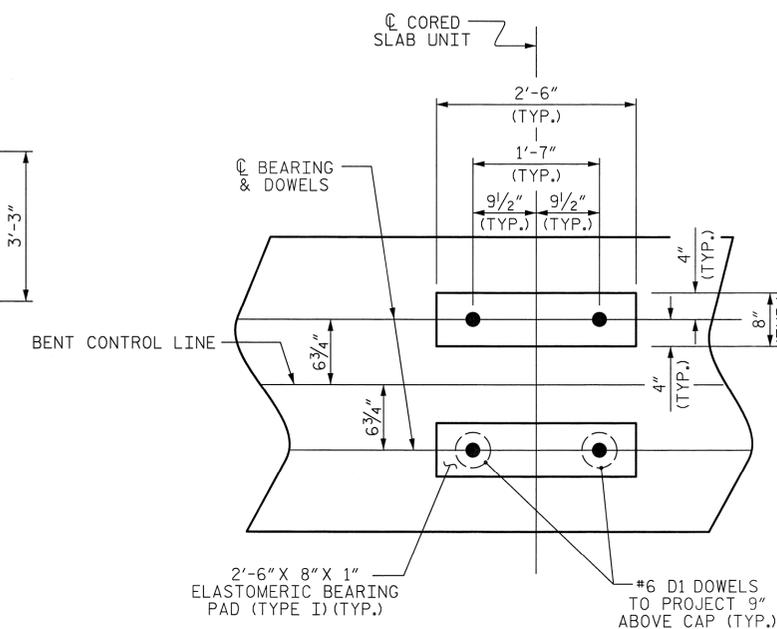
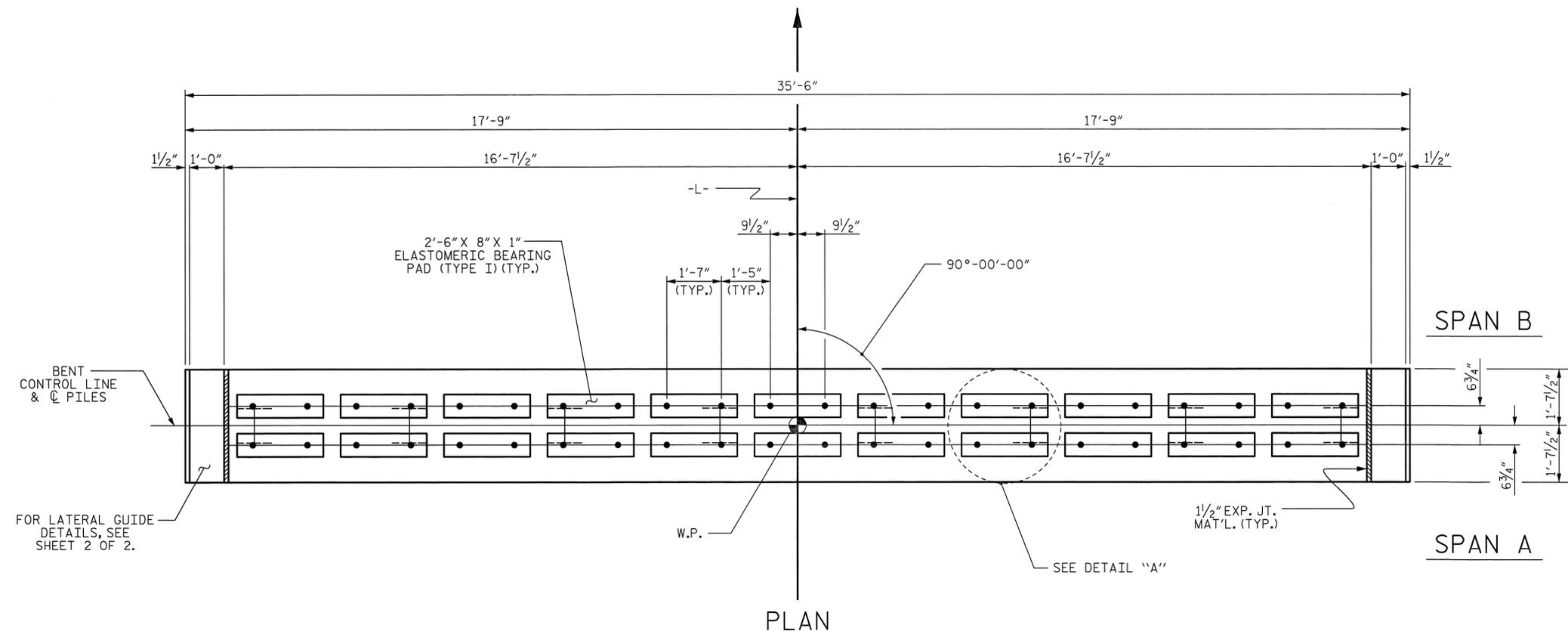
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

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

★ INVERT ALTERNATE STIRRUPS.

GALVANIZE THE TOP OF EACH INTERIOR BENT PILE A MINIMUM OF 40 FEET. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

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



TOP OF PILE ELEVATIONS

①	5.70
②	5.83
③	5.97
④	6.10
⑤	6.24
⑥	6.37
⑦	6.51
⑧	6.64

PROJECT NO. 17BP.1.R.16
 GATES COUNTY
 STATION: 13+63.50 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

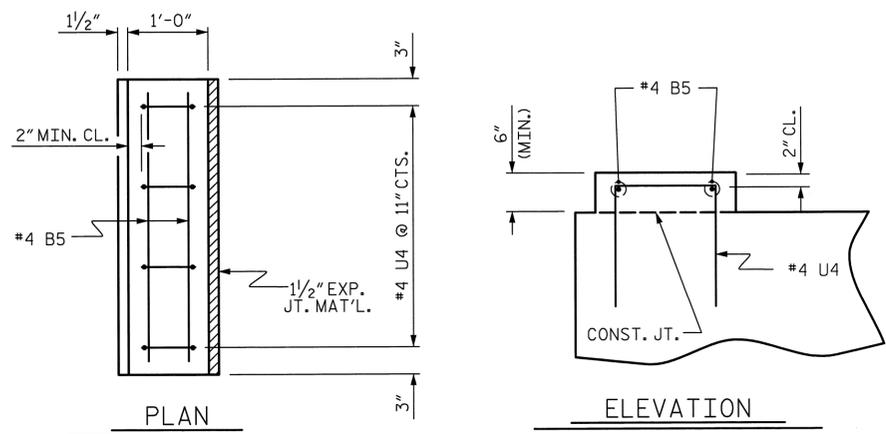
SUBSTRUCTURE
 BENT No. 1

REVISIONS						SHEET NO. 21
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 30
2			4			

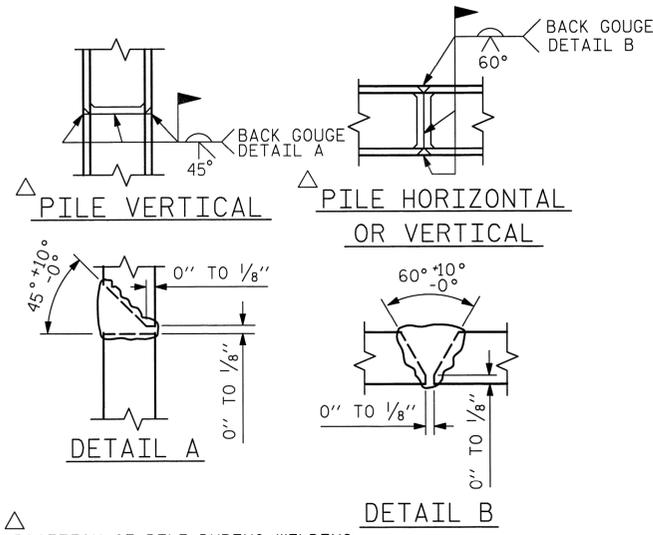
Prepared by
URS
 URS Corporation - North Carolina
 1600 Perimeter Park Drive, Suite 400
 Morrisville, NC 27560
 PHONE: 919/461-1100 FAX: 919/461-1415
 NC LIC. # C-2249



ASSEMBLED BY : K.H. COMPTON DATE : 8/14/12
 CHECKED BY : R.L. WHITCHER DATE : 8/22/12
 DRAWN BY : DGE 05/10
 CHECKED BY : MKT 05/10

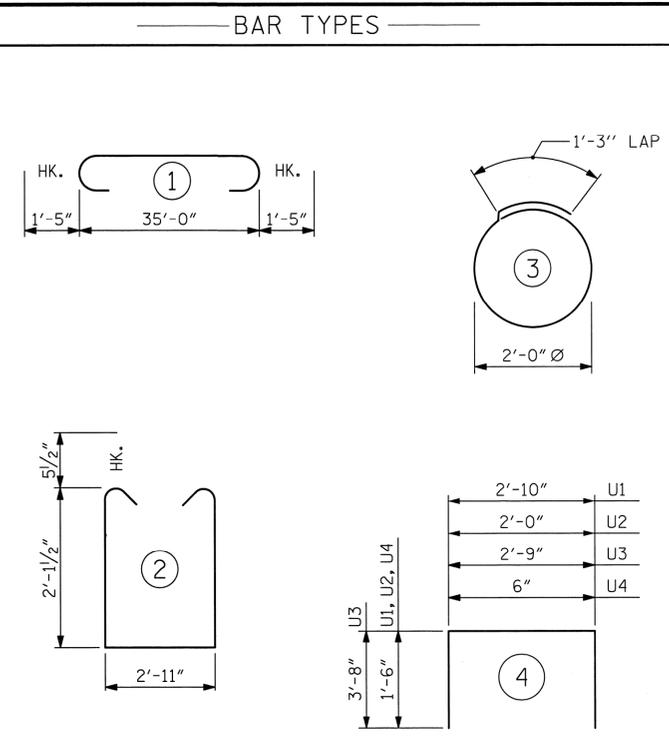


LATERAL GUIDE DETAILS
(LEFT LATERAL GUIDE SHOWN, RIGHT SIDE SIMILAR)



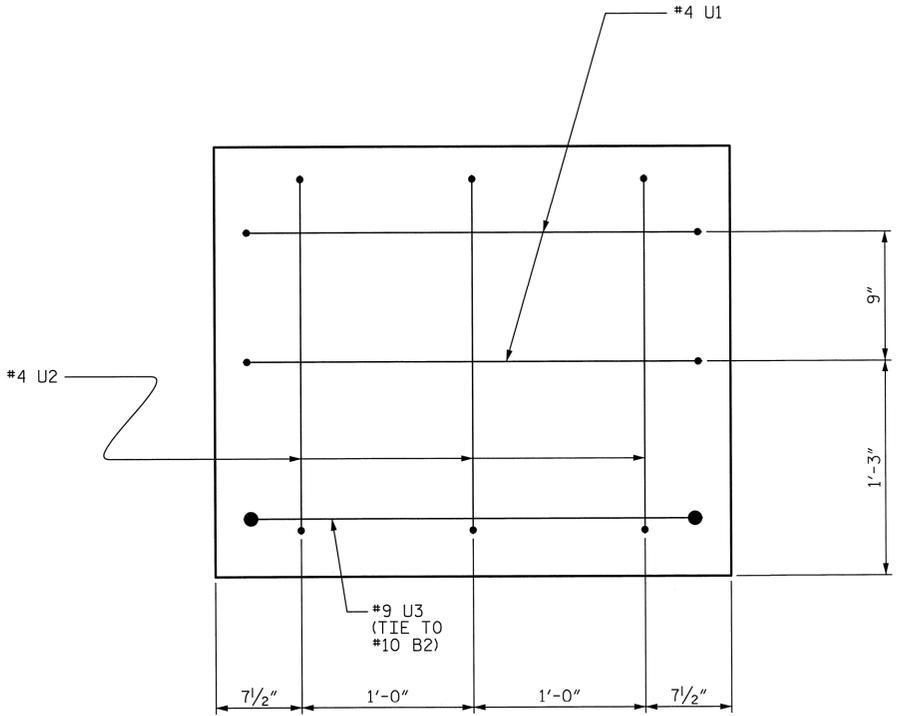
PILE SPLICE DETAILS

POSITION OF PILE DURING WELDING.

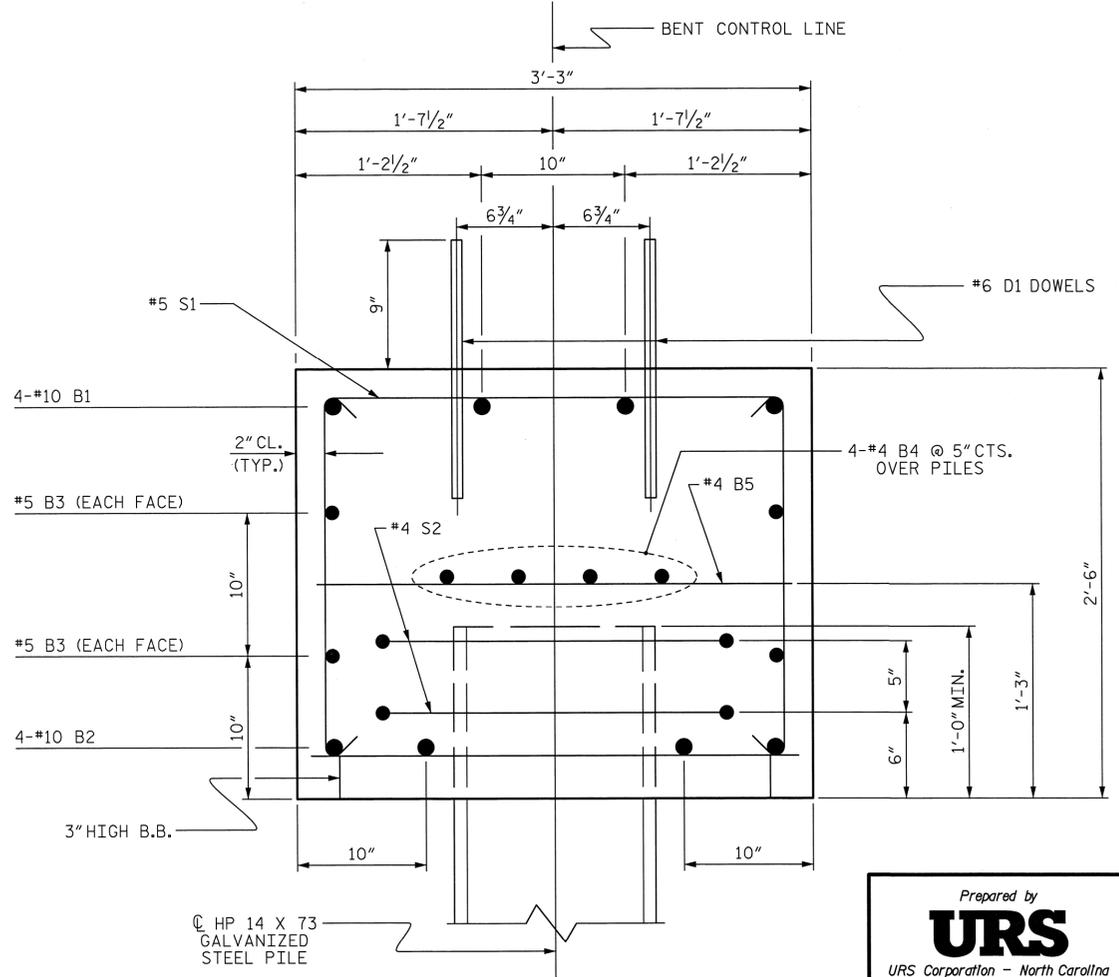


ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL					
FOR ONE BENT					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#10	1	37'-10"	651
B2	4	#10	STR	35'-2"	605
B3	4	#5	STR	35'-2"	147
B4	8	#4	STR	18'-10"	101
B5	13	#4	STR	2'-11"	25
D1	44	#6	STR	1'-6"	99
S1	39	#5	2	8'-1"	329
S2	16	#4	3	7'-7"	81
U1	4	#4	4	5'-10"	16
U2	6	#4	4	5'-0"	20
U3	2	#9	4	10'-1"	69
U4	8	#4	4	3'-6"	19
REINFORCING STEEL (FOR ONE BENT)					2162 LBS
CLASS A CONCRETE BREAKDOWN (FOR ONE BENT)					
POUR #1 (CAP)					10.7 C.Y.
POUR #2 (LATERAL GUIDES)					0.1 C.Y.
TOTAL CLASS A CONCRETE					10.8 C.Y.
HP 14 X 73 GALVANIZED STEEL PILES (FOR ONE BENT)					
No. 8					LIN. FT. 840



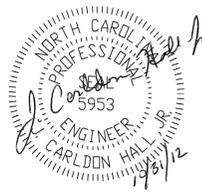
END OF CAP VIEW
(TYPICAL BOTH ENDS)



SECTION A-A

HP 14 X 73 GALVANIZED STEEL PILE

Prepared by
URS
URS Corporation - North Carolina
1600 Perimeter Park Drive, Suite 400
Morrisville, NC 27560
PHONE: 919/461-1100 FAX: 919/461-1415
NC LIC. # C-2243



PROJECT NO. 17BP.1.R.16
GATES COUNTY
STATION: 13+63.50 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
BENT No. 1

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	22
1			3			TOTAL SHEETS 30
2			4			

DRAWN BY : K.H. COMPTON	DATE : 8/14/12
CHECKED BY : R.L. WHITCHER	DATE : 8/22/12
DRAWN BY : DGE 05/10	
CHECKED BY : MKT 05/10	

NOTES

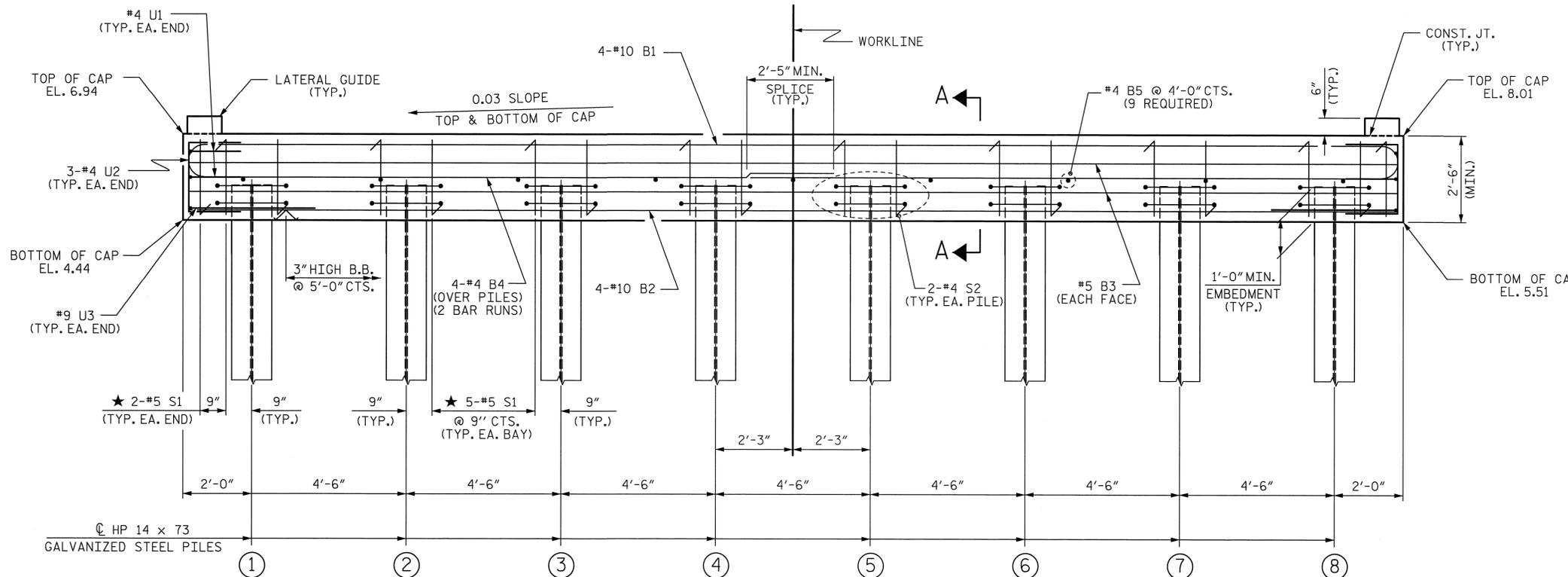
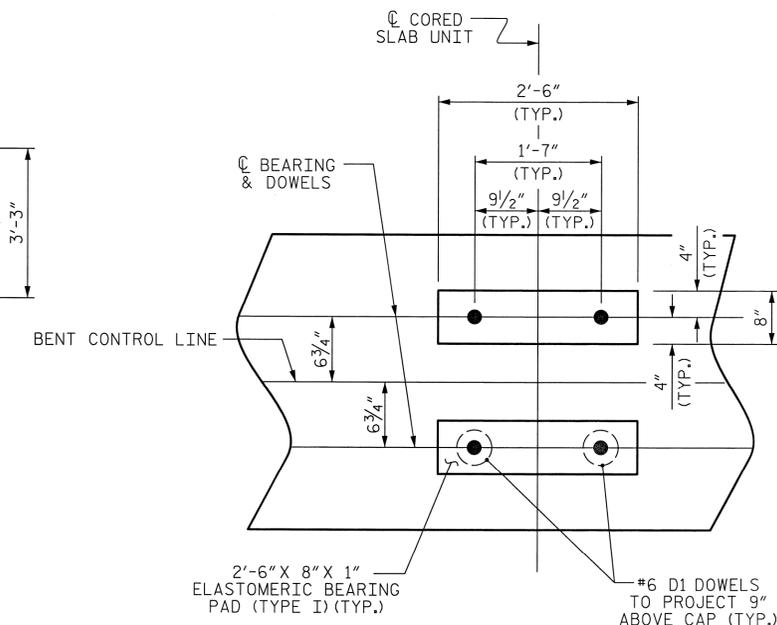
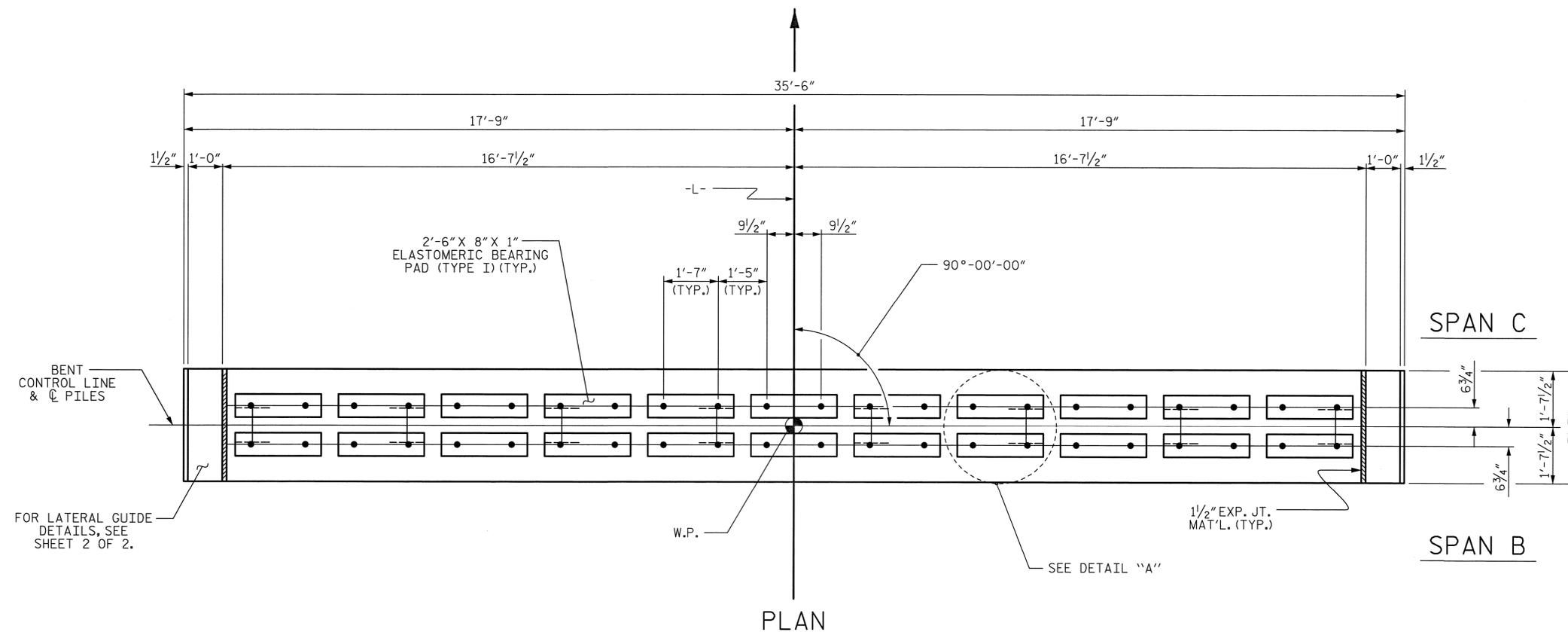
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

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

★ INVERT ALTERNATE STIRRUPS.

GALVANIZE THE TOP OF EACH INTERIOR BENT PILE A MINIMUM OF 40 FEET. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

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



TOP OF PILE ELEVATIONS

①	5.50
②	5.63
③	5.77
④	5.90
⑤	6.04
⑥	6.17
⑦	6.31
⑧	6.44

PROJECT NO. 17BP.1.R.16
 GATES COUNTY
 STATION: 13+63.50 -L-

SHEET 1 OF 2

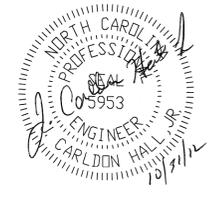
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 BENT No. 2

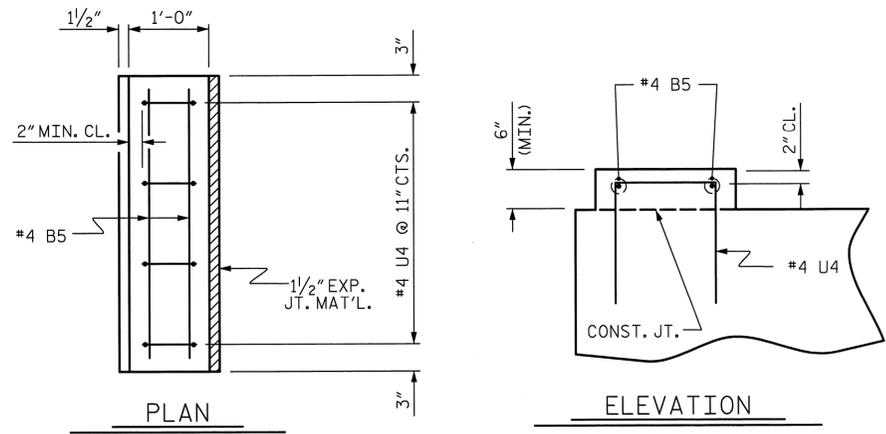
REVISIONS			SHEET NO.		
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

TOTAL SHEETS 30

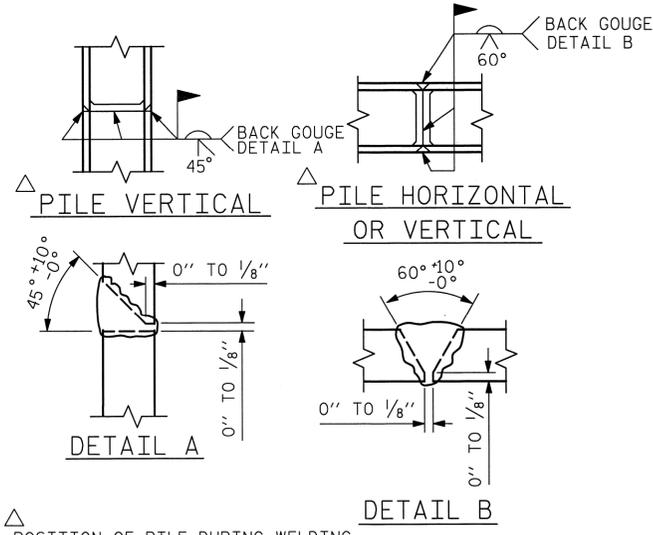
Prepared by
URS
 URS Corporation - North Carolina
 1600 Perimeter Park Drive, Suite 400
 Morrisville, NC 27560
 PHONE: (919) 461-1100 FAX: (919) 461-1415
 NC LIC. # C-2249



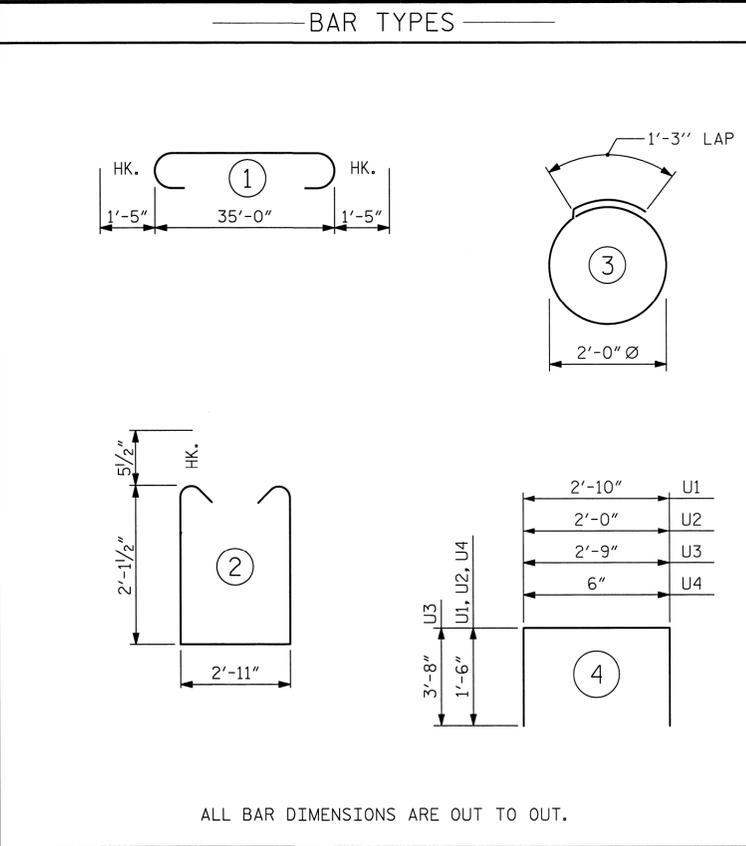
ASSEMBLED BY : K.H. COMPTON DATE : 8/14/12
 CHECKED BY : R.L. WHITCHER DATE : 8/22/12
 DRAWN BY : DGE 05/10
 CHECKED BY : MKT 05/10



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

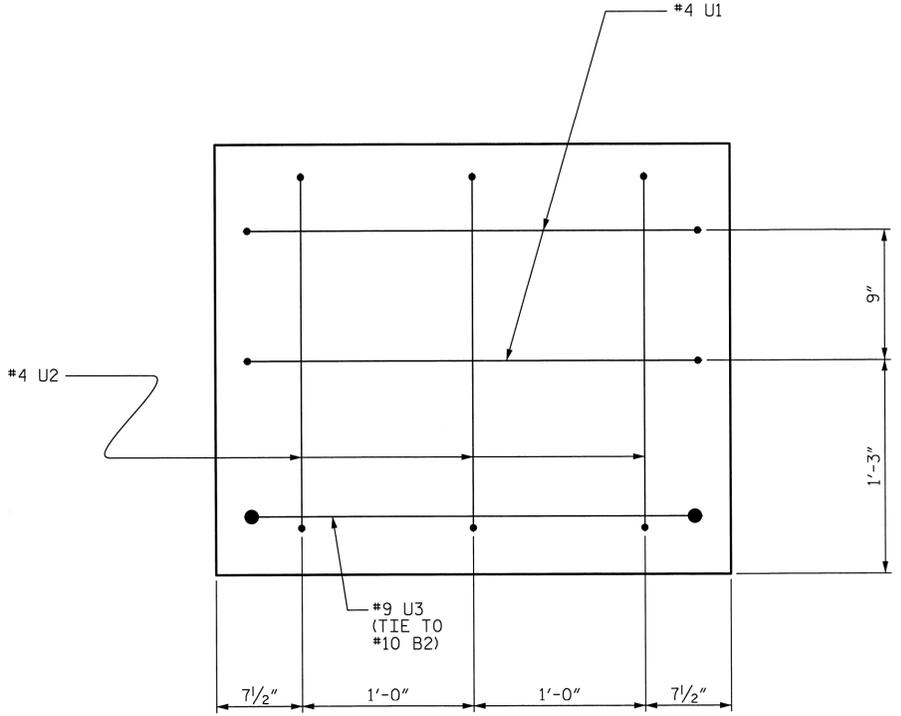


PILE SPLICE DETAILS

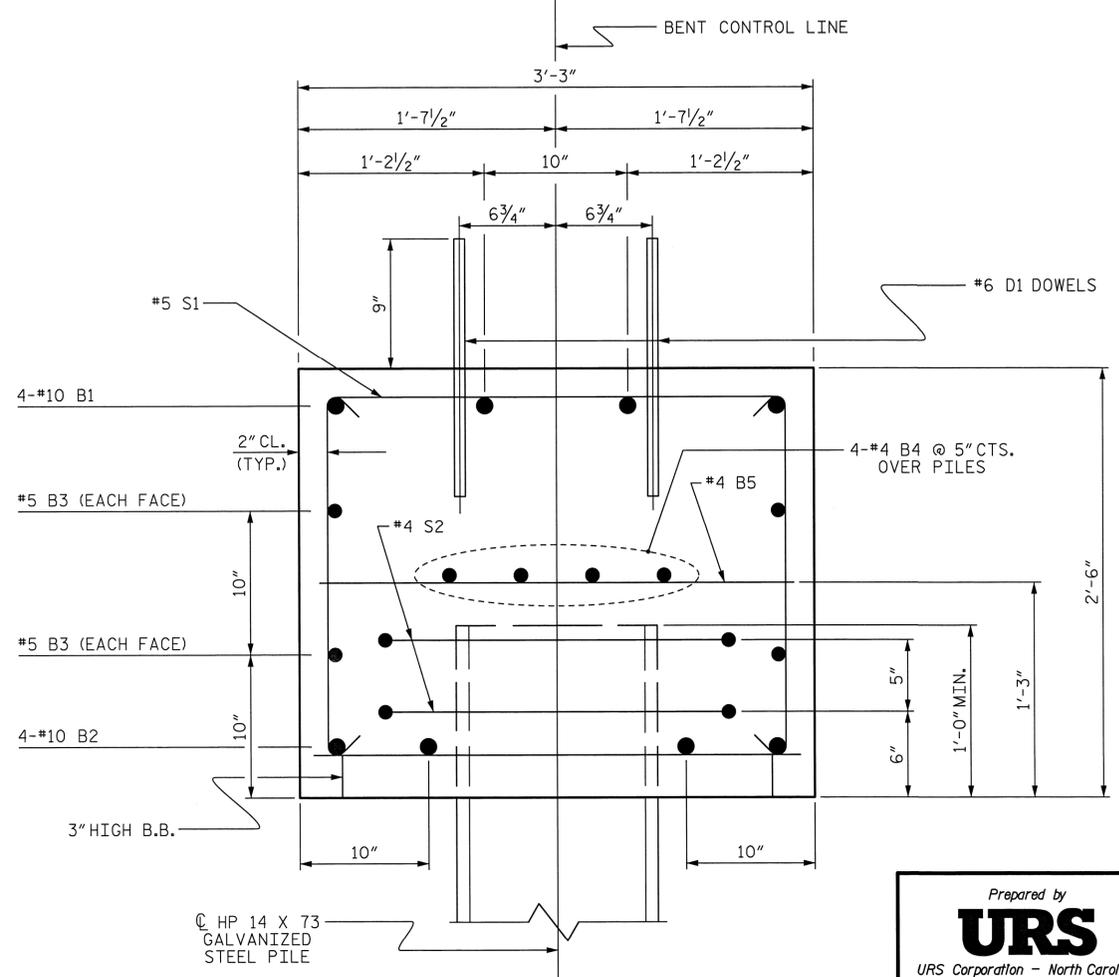


ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL					
FOR ONE BENT					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#10	1	37'-10"	651
B2	4	#10	STR	35'-2"	605
B3	4	#5	STR	35'-2"	147
B4	8	#4	STR	18'-10"	101
B5	13	#4	STR	2'-11"	25
D1	44	#6	STR	1'-6"	99
S1	39	#5	2	8'-1"	329
S2	16	#4	3	7'-7"	81
U1	4	#4	4	5'-10"	16
U2	6	#4	4	5'-0"	20
U3	2	#9	4	10'-1"	69
U4	8	#4	4	3'-6"	19
REINFORCING STEEL (FOR ONE BENT)					2162 LBS
CLASS A CONCRETE BREAKDOWN (FOR ONE BENT)					
POUR #1 (CAP)					10.7 C.Y.
POUR #2 (LATERAL GUIDES)					0.1 C.Y.
TOTAL CLASS A CONCRETE					10.8 C.Y.
HP 14 X 73 GALVANIZED STEEL PILES (FOR ONE BENT)					
No. 8					LIN. FT. 800

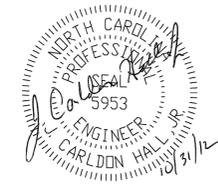


END OF CAP VIEW
(TYPICAL BOTH ENDS)



SECTION A-A

Prepared by
URS
URS Corporation - North Carolina
1600 Perimeter Park Drive, Suite 400
Morrisville, NC 27560
PHONE: 919.461.1100 FAX: 919.461.1415
NC LIC # C-2243



PROJECT NO. 17BP.1.R.16
GATES COUNTY
STATION: 13+63.50 -L-
SHEET 2 OF 2

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE BENT No. 2					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. 24
					TOTAL SHEETS 30

DRAWN BY : K.H. COMPTON DATE : 8/14/12
CHECKED BY : R.L. WHITCHER DATE : 8/22/12
DRAWN BY : DGE 05/10
CHECKED BY : MKT 05/10

NOTES

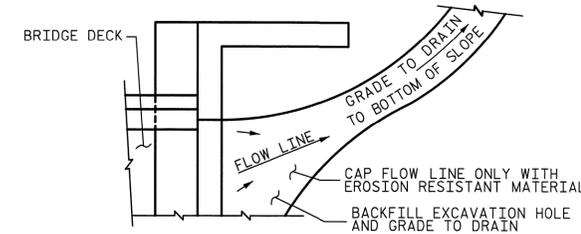
FOR REINFORCED BRIDGE APPROACH FILL INCLUDING GEOTEXTILE, IMPERMEABLE GEOMEMBRANE, 4" Ø DRAINAGE PIPE, #78M STONE, AND SELECT MATERIAL, SEE ROADWAY PLANS.

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

APPROACH SLAB GROOVING IS REQUIRED.

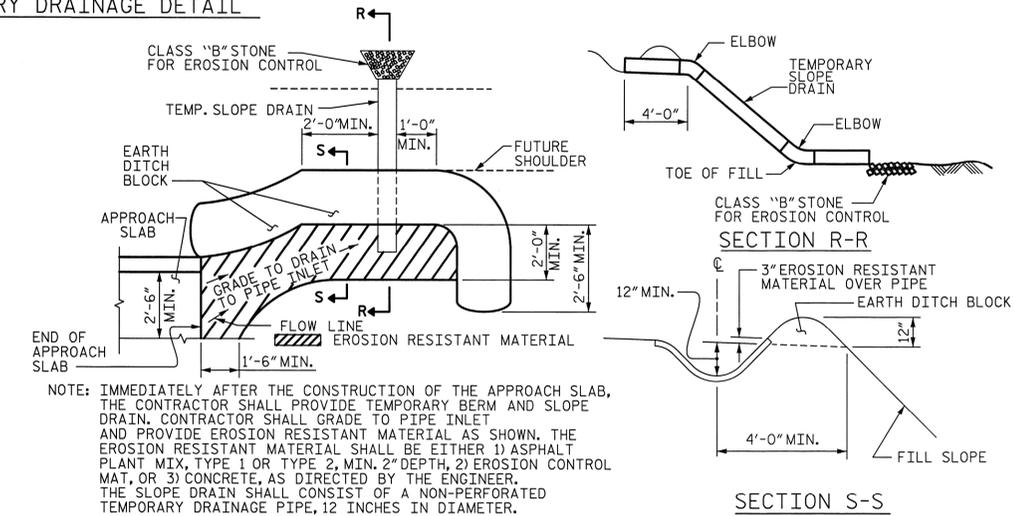
FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.



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

TEMPORARY DRAINAGE DETAIL



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

PLAN VIEW

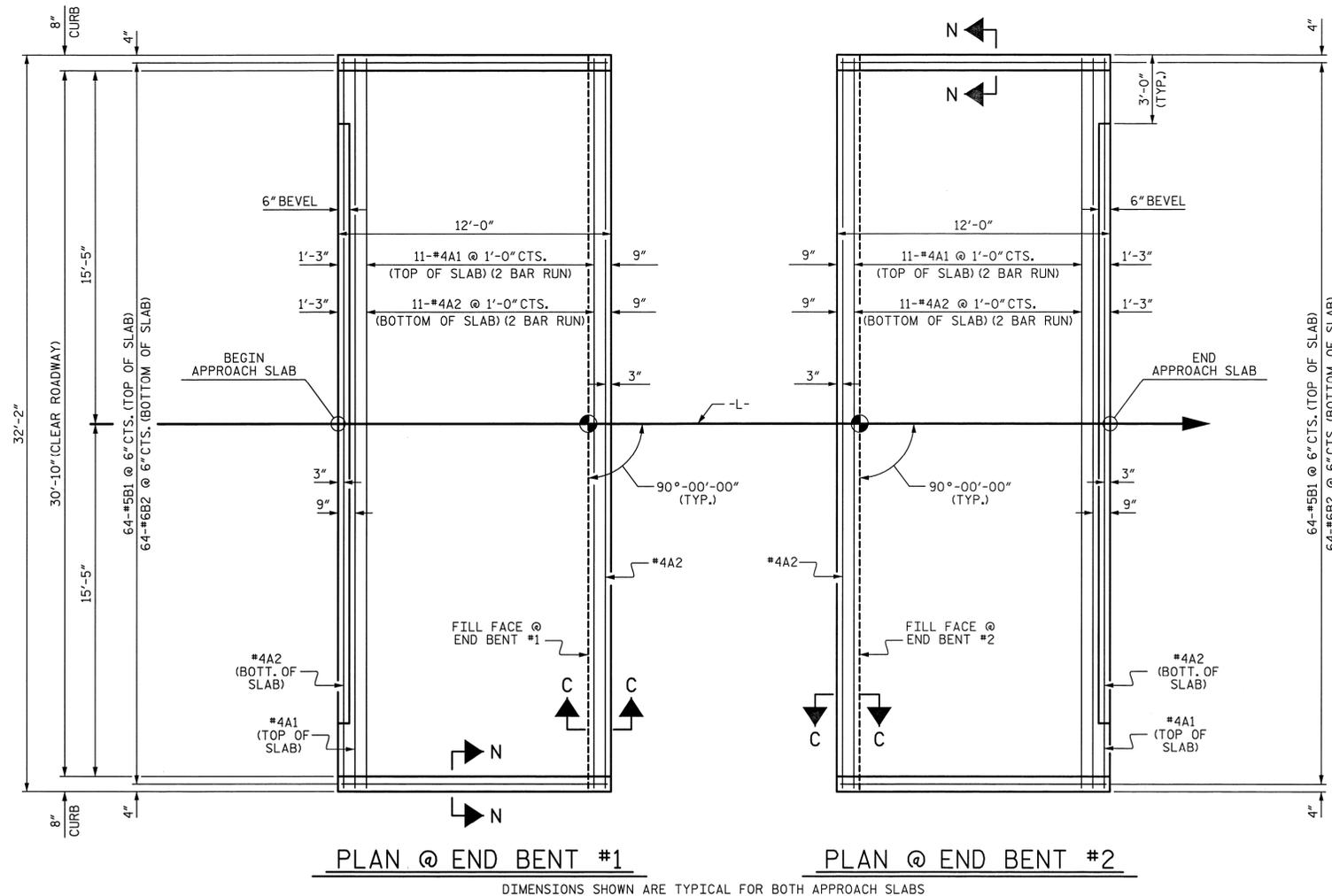
TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)

PROJECT NO. 17BP.1.R.16
GATES COUNTY
STATION: 13+63.50 -L-

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

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	25	
1			3			TOTAL SHEETS 30	
2			4				



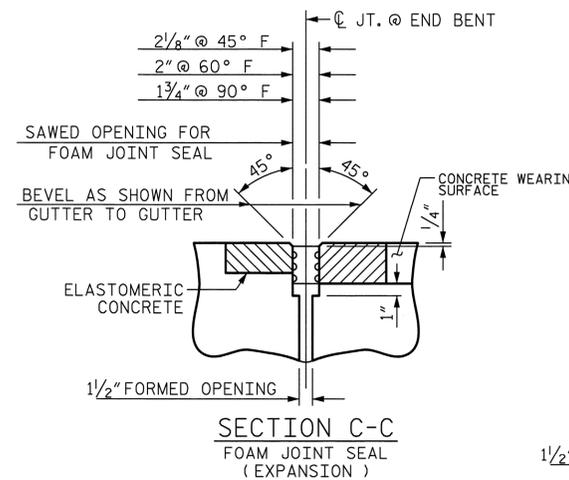
PLAN @ END BENT #1

PLAN @ END BENT #2

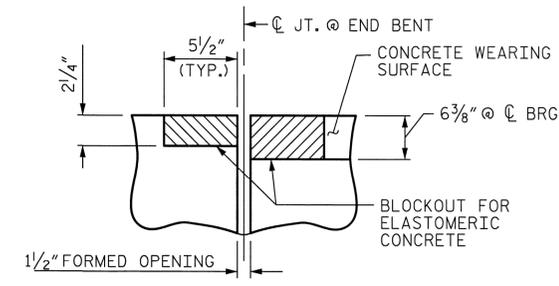
DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS

ELASTOMERIC CONCRETE	
END BENT NO.	ELASTOMERIC CONCRETE * (CU. FT.)
1	10.2
2	10.2
TOTAL	20.4

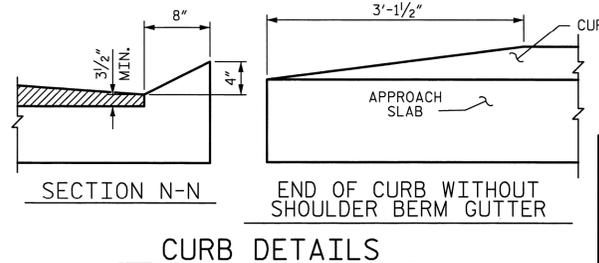
* BASED ON THE MINIMUM BLOCKOUT SHOWN.



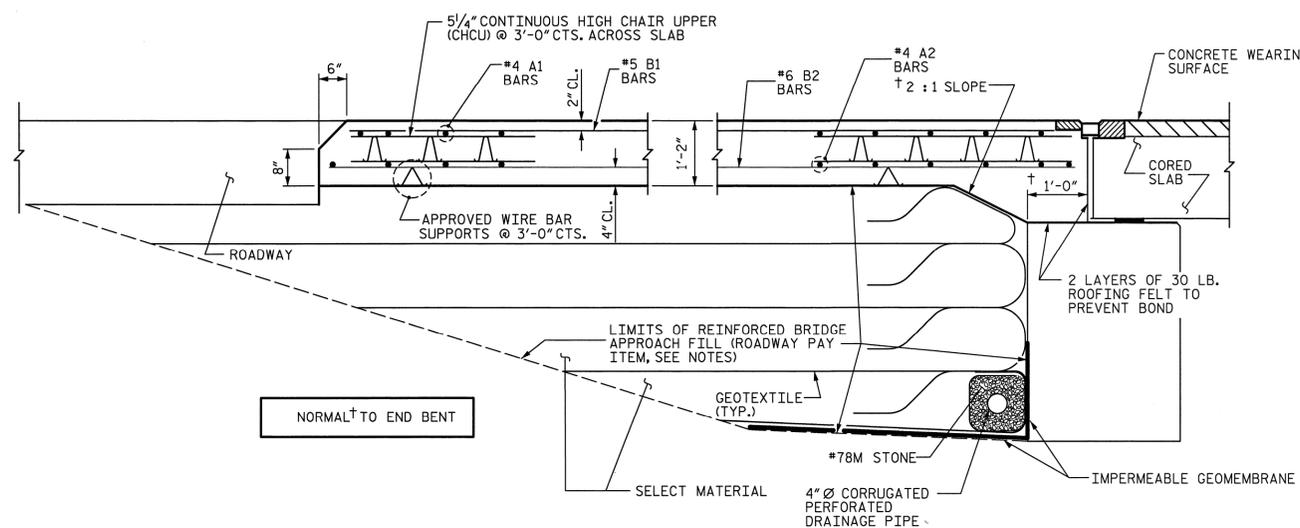
SECTION C-C
FOAM JOINT SEAL (EXPANSION)



SECTION C-C
FOAM JOINT SEAL (PRE-SAWED ELASTOMERIC CONCRETE DIMENSIONS)



CURB DETAILS



SECTION THRU SLAB

ASSEMBLED BY: K.H. COMPTON DATE: 8/14/12
CHECKED BY: R.L. WHITCHER DATE: 8/22/12
DRAWN BY: SHS/MAA 5-09 REV. 12-11 MAA/AAC
CHECKED BY: BCH 5-09

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		
OF TIMBER	-----	375 LBS. PER SQ. IN.
EQUIVALENT FLUID PRESSURE OF EARTH		
	-----	30 LBS. PER CU. FT.
		(MINIMUM)

MATERIAL AND WORKMANSHIP:

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

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

CONCRETE:

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

CONCRETE CHAMFERS:

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

DOWELS:

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

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

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

REINFORCING STEEL:

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

STRUCTURAL STEEL:

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

HANDRAILS AND POSTS:

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

SPECIAL NOTES:

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

ENGLISH

JANUARY, 1990

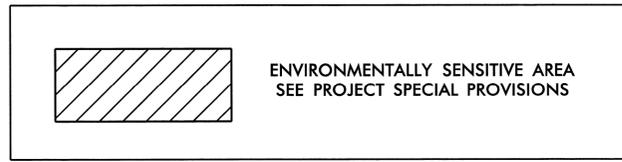
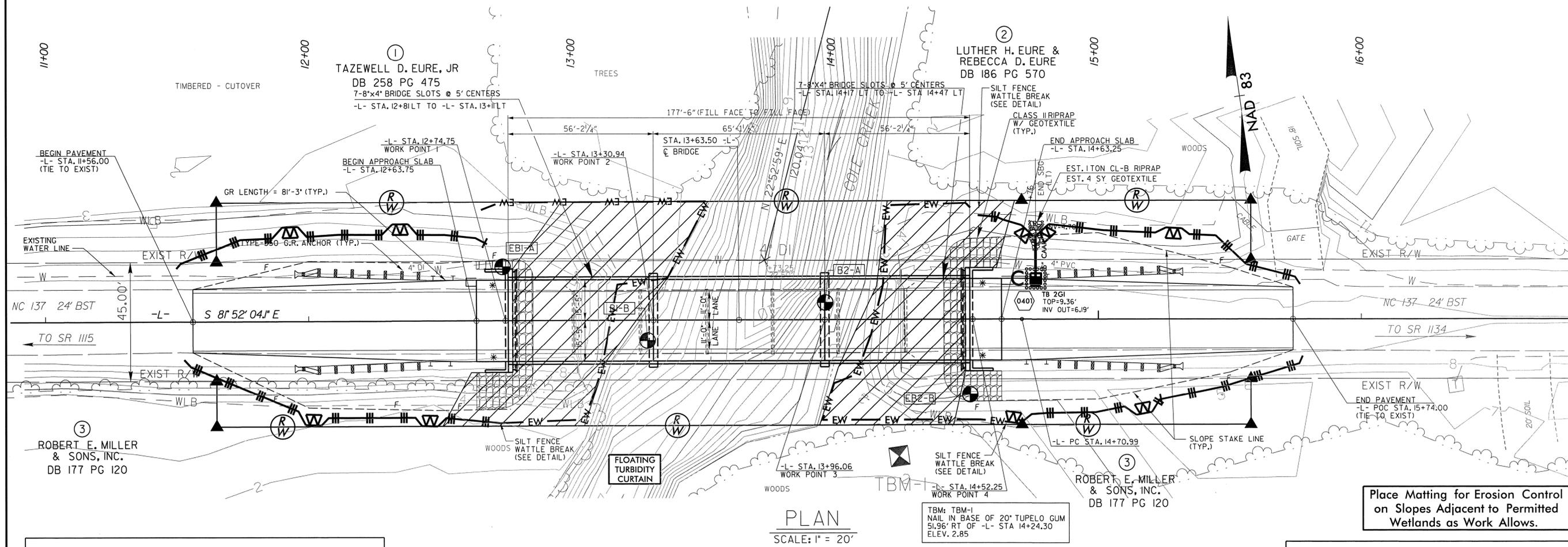
STD. NO. SN

WBS # 17BP.I.R.16

CONTRACT #:

EXIST BRIDGE NO. 360025
24'-0" CLEAR ROADWAY
SPANS: 5@25'
CONC. DECK ON STEEL GIRDERS
CONC. PILINGS W/ CONC. WINGWALLS

EROSION CONTROL PLAN



NOTE:
TEMPORARY SILT FENCE SHALL BE INSTALLED A MINIMUM OF 3 FEET FROM TOE OF FILL IN WETLAND AREAS

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.

MEME A. DIAZ, P.E.
LEVEL IIIA NAME

675 EXP. 12/31/14
LEVEL IIIA CERTIFICATION NO.

THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

DRAWN BY: LHM DATE: 10/03/12
CHECKED BY: MAD DATE: 10/03/12

CAMA JURISDICTIONAL WETLAND
PUBLIC TRUST WATERS
IN-WATER MORATORIUM FROM
FEBRUARY 15 THROUGH JUNE 30

METHOD II MODIFIED CLEARING

ROADSIDE ENVIRONMENTAL UNIT
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

2012 STANDARD SPECIFICATIONS

Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1632.03	Rock Inlet Sediment Trap Type C	
N/A	Excelsior Wattle	

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
1	-L-	11+76	12+00	RT	130
SUBTOTAL					130
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					14
TOTAL					152
\$AY					150

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.

Place Matting for Erosion Control on Slopes Adjacent to Permitted Wetlands as Work Allows.

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

Prepared by
URS
URS Corporation - North Carolina
1600 Perimeter Park Drive, Suite 400
Morrisville, NC 27560
PHONE: 919.461.1100 FAX: 919.461.1415
NC LIC. # C-2243

PROJECT: 17BP.I.R.16
GATES _____ COUNTY _____
STATION: 13+63.50 -L-

REPLACES BRIDGE NO. 360025
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

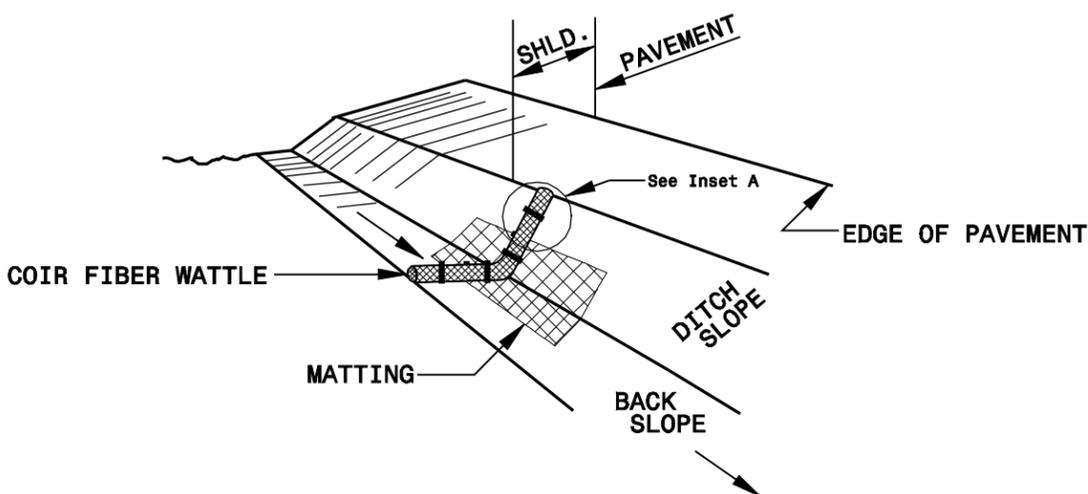
BRIDGE ON NC 137 OVER COLE CREEK

30'-10" CLEAR ROADWAY - 90° SKEW

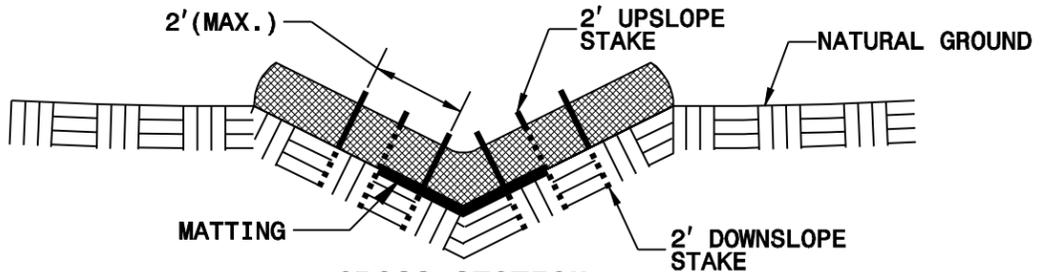
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	EC-2
1			1			TOTAL SHEETS
2			2			30

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

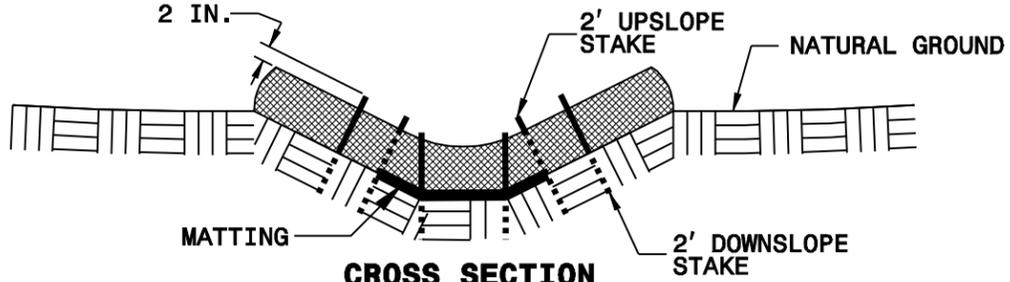
COIR FIBER WATTLE DETAIL



ISOMETRIC VIEW

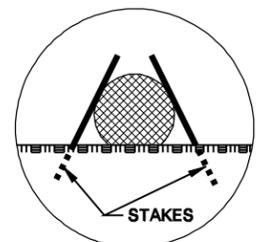


CROSS SECTION VEE DITCH

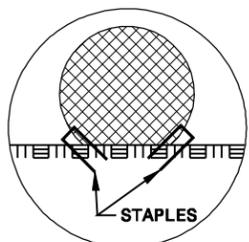


CROSS SECTION TRAPEZOIDAL DITCH

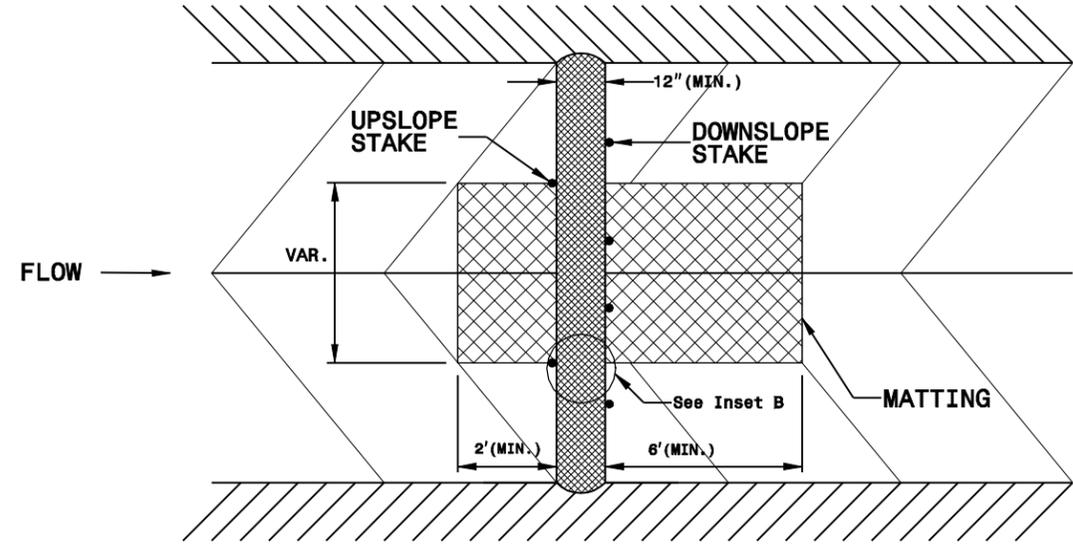
- NOTES:**
- USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE.
 - USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.
 - ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.
 - INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.
 - PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.
 - INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.
 - INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.



INSET A



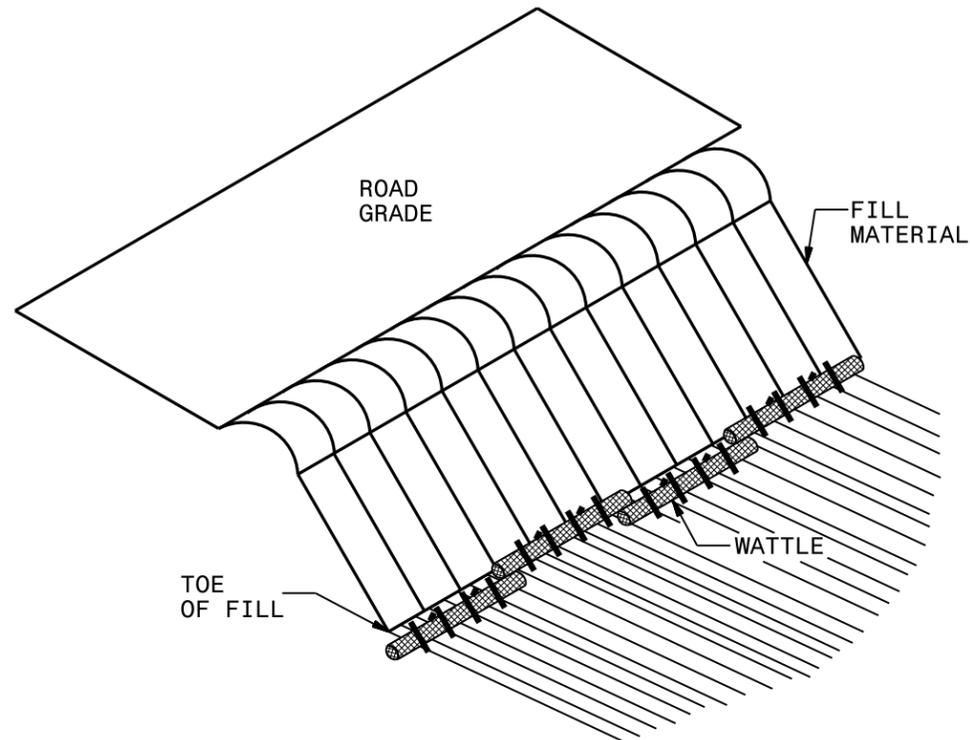
INSET B



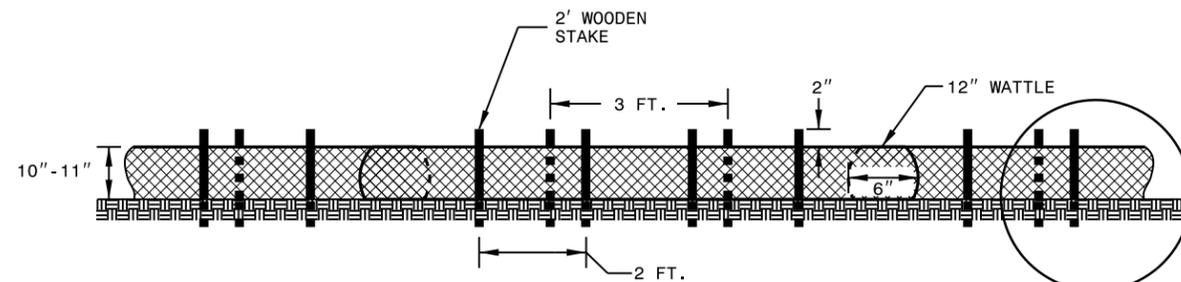
TOP VIEW

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

COIR FIBER WATTLE BARRIER DETAIL



ISOMETRIC VIEW



FRONT VIEW

NOTES:

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

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

DO NOT PLACE WATTLES ON TOE OF SLOPE.

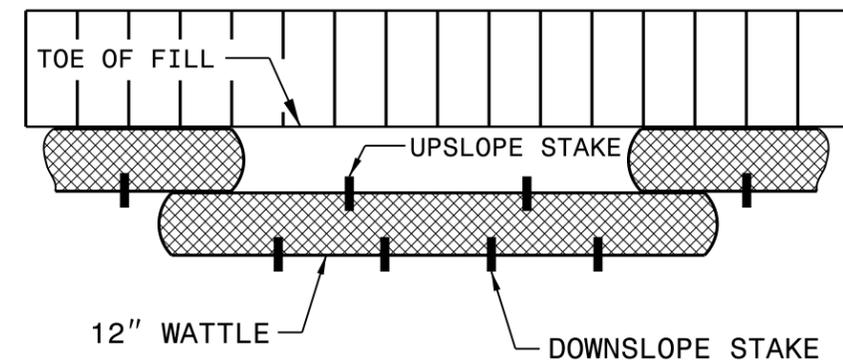
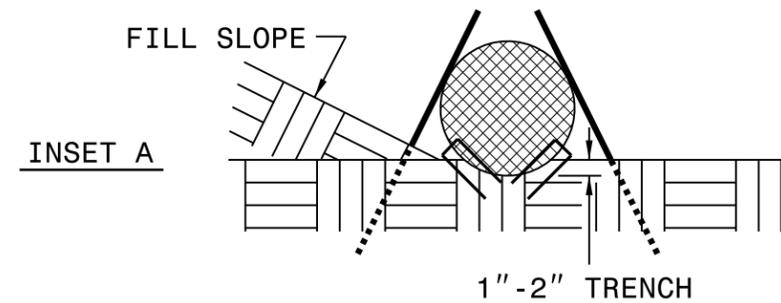
USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

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

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

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

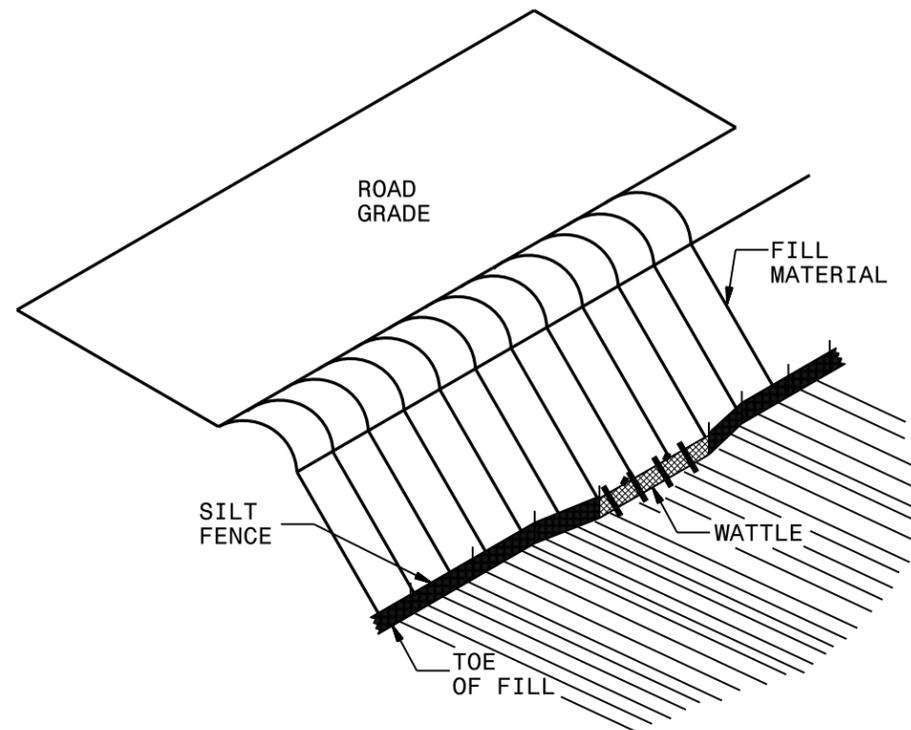
FOR BREAKS ALONG LARGE SLOPES, USE MAXIMUM SPACING OF 20 FT.



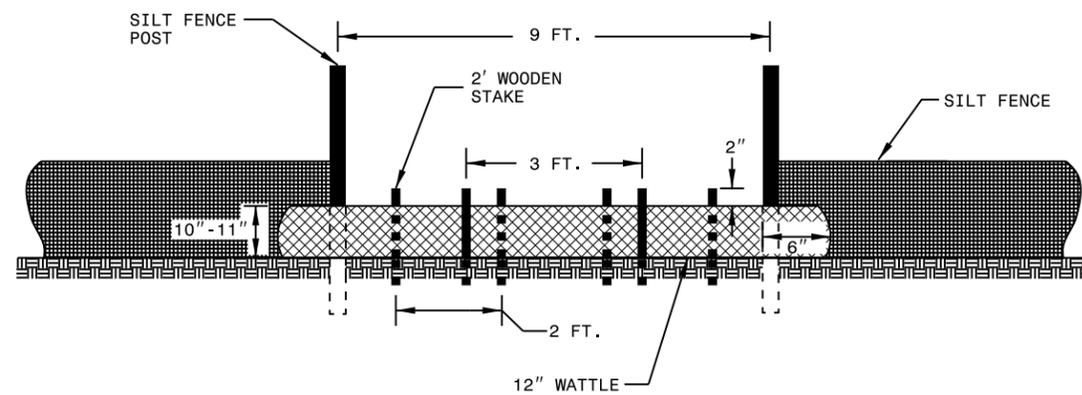
TOP VIEW

SILT FENCE COIR FIBER WATTLE BREAK DETAIL

PROJECT REFERENCE NO. <i>X-XXXX</i>		SHEET NO. <i>EC-26</i>	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	



ISOMETRIC VIEW



VIEW FROM SLOPE

NOTES:

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

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

DO NOT PLACE WATTLE ON TOE OF SLOPE.

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

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

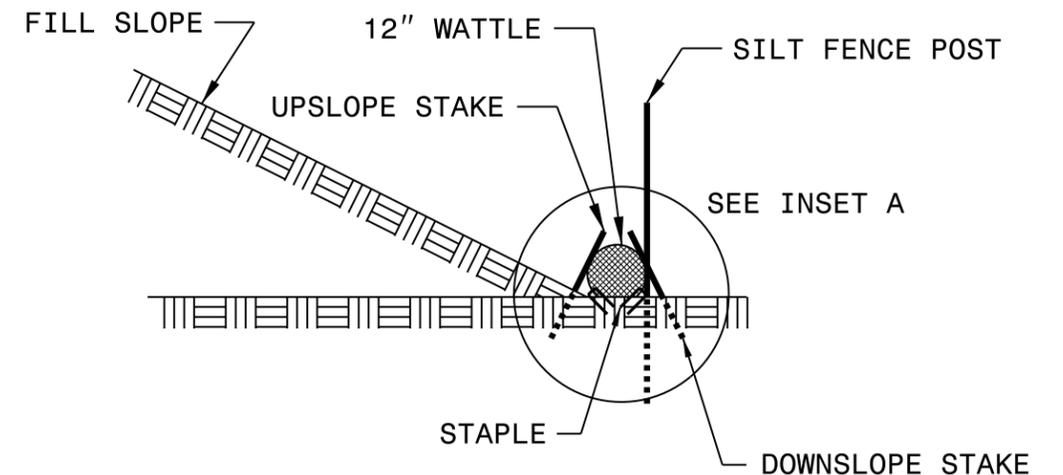
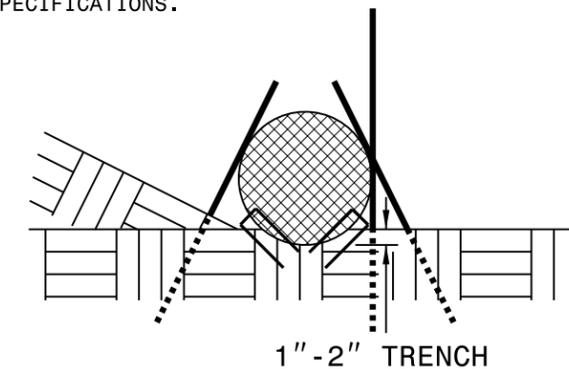
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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

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

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

INSET A



SIDE VIEW