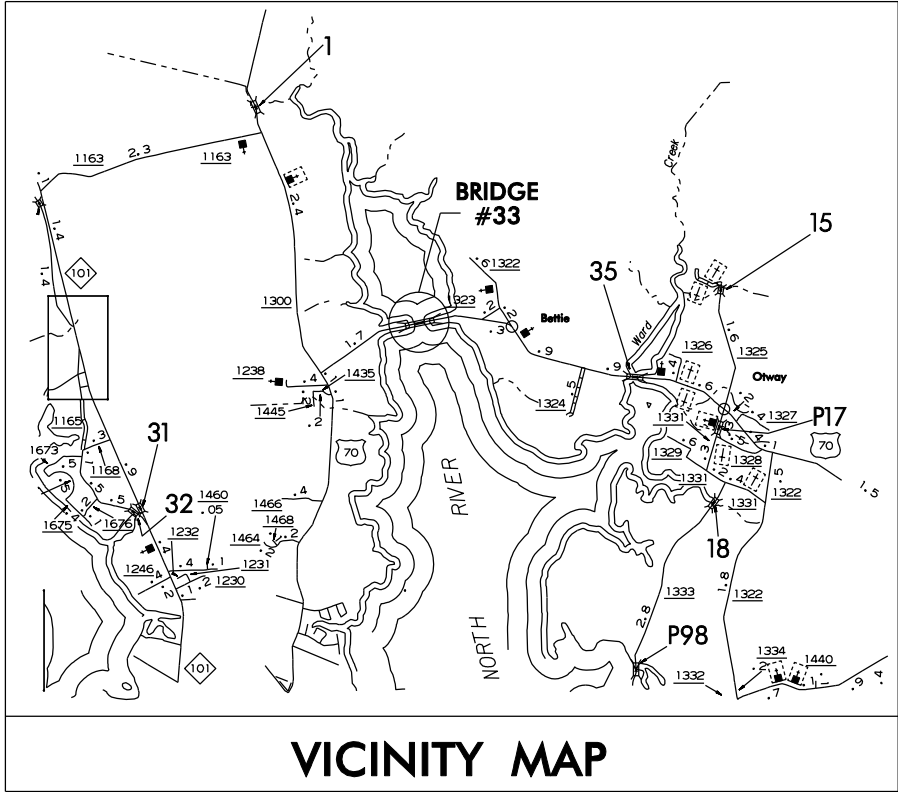


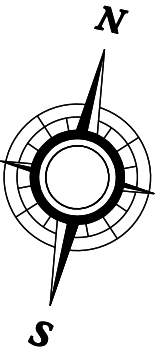
CONTRACT NO. D000065  
TIP# BK-5127



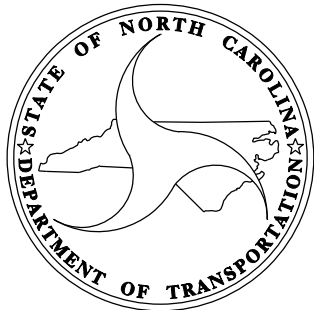
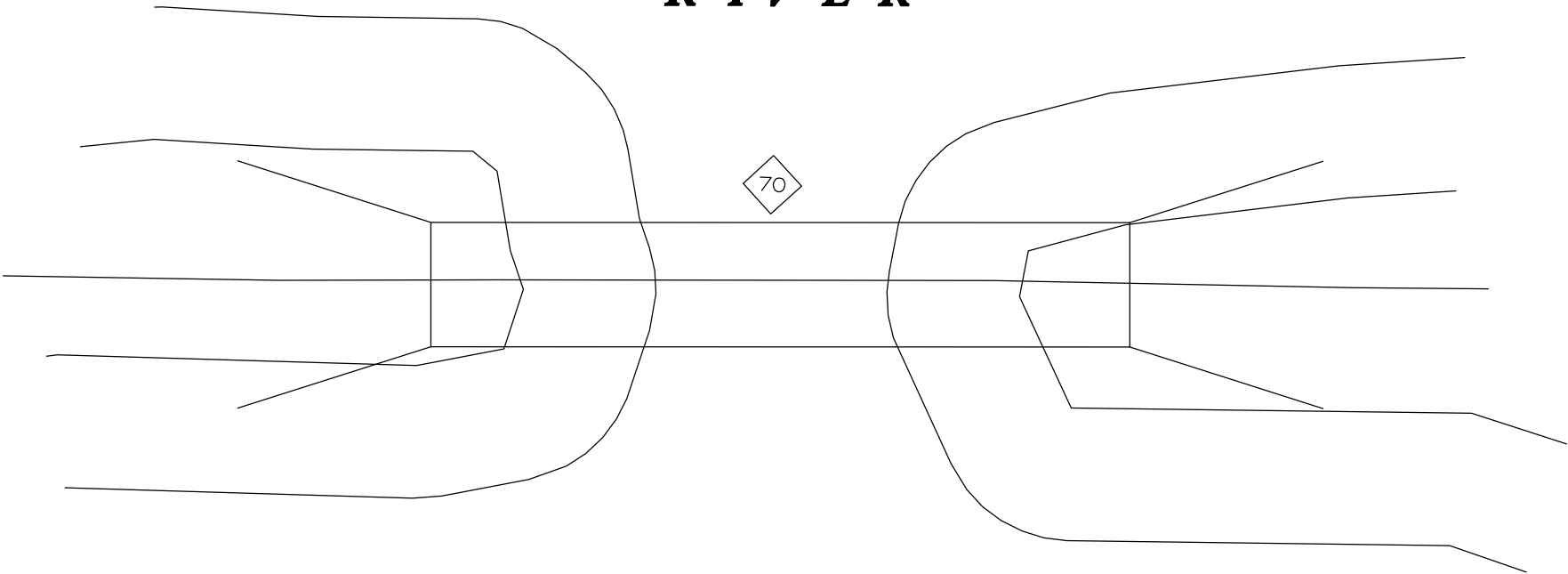
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

CARTERET COUNTY

LOCATION: BRIDGE #33, ON US70, OVER NORTH RIVER  
TYPE OF WORK: REPAIR OF PILES, END BENT CAPS AND DECKS



NORTH  
RIVER



DESIGN DATA

ADT 2007 = 9400  
ADT 2025 = 18800

PROJECT LENGTH

LENGTH OF STRUCTURE = 1028 FEET

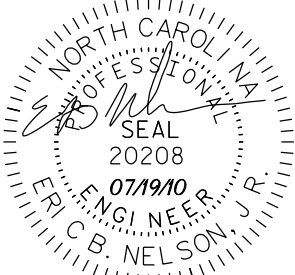
Prepared In the Office of:  
**BRIDGE MANAGEMENT UNIT**  
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2006 STANDARD SPECIFICATIONS

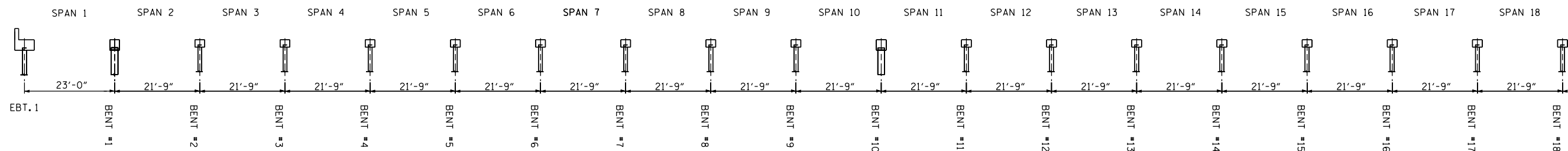
LETTING DATE:  
AUGUST 19, 2010

DAN HOLDERMAN, PE  
STATE BRIDGE  
MANAGEMENT ENGINEER

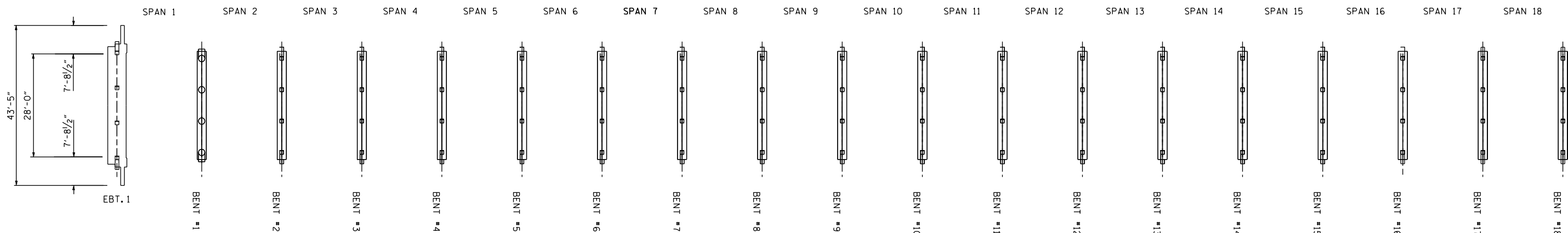
MIKE SUMMERS  
BRIDGE MANAGEMENT  
PROJECT MANAGER



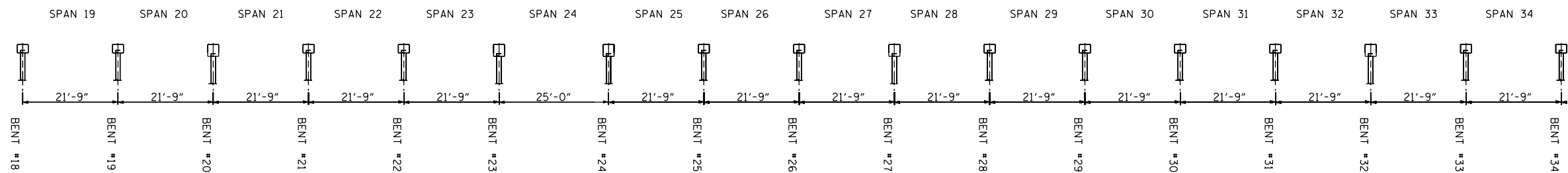
RICK NELSON, PE  
DESIGN ENGINEER



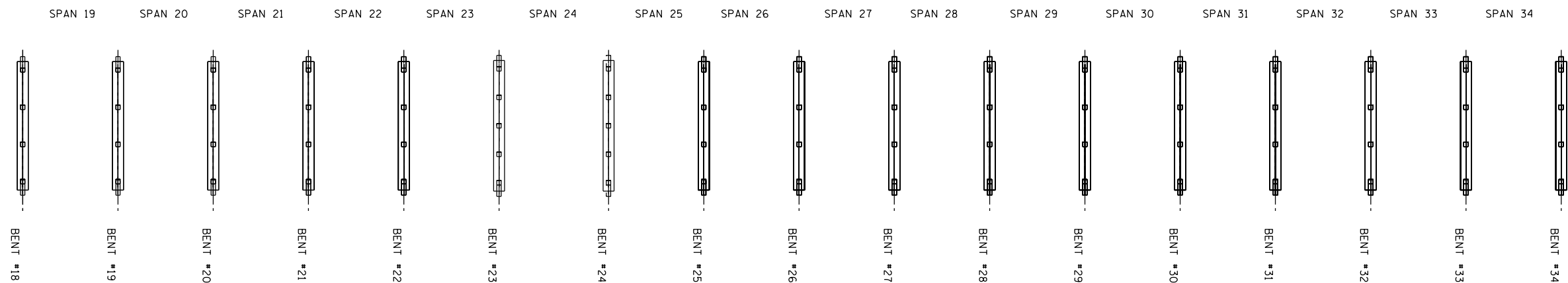
PROFILE OF BRIDGE



PLAN OF BRIDGE



PROFILE OF BRIDGE

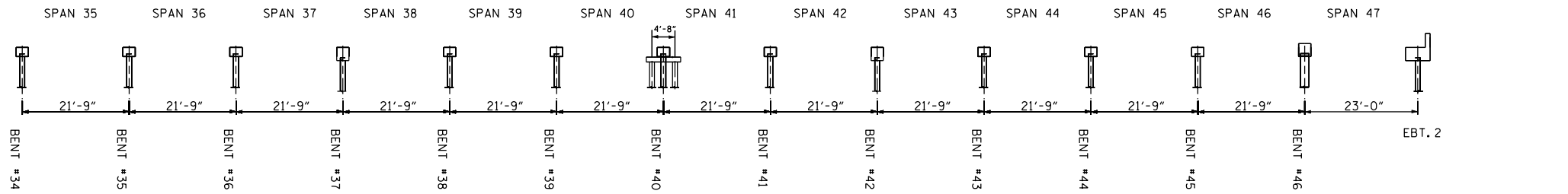


PLAN OF BRIDGE

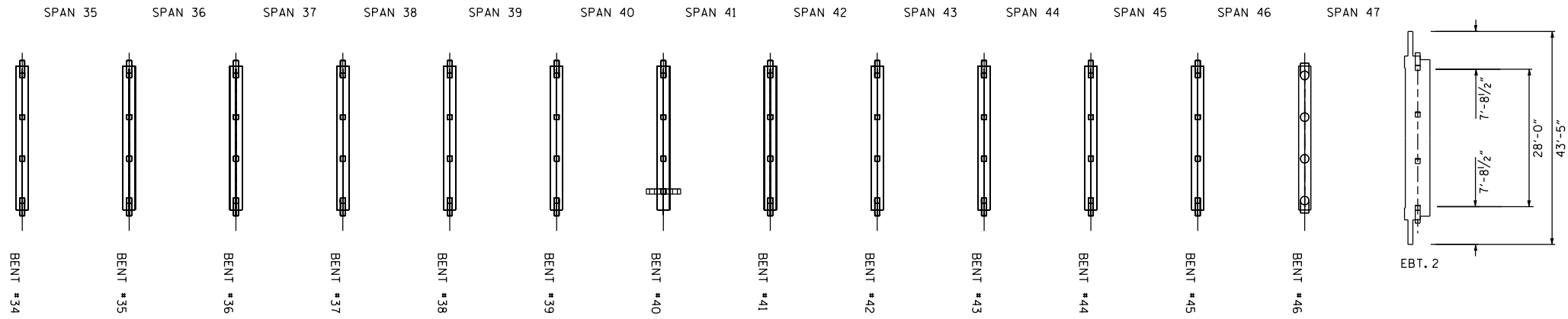
PROJECT NO. BK-5127  
COUNTY: CARTERET  
STATION: \_\_\_\_\_  
BRIDGE REPAIR 33

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
PLAN & PROFILE OF BRIDGE #33 ON US 70 OVER NORTH RIVER					
REVISIONS					
BY	DATE	NO.	BY	DATE	
		3			
		4			
					SHEET NO. 2
					TOTAL SHEETS 16

DRAWN BY : R. WEISZ DATE : 3/10  
CHECKED BY : A. ABRAHA DATE : 3/10



PROFILE OF BRIDGE



PLAN OF BRIDGE

BILL OF MATERIAL						
	MOBILIZATION	PILE ENCAPSULATION	PILE JACKETS	DECK AND CAP REPAIR	REINFORCING STEEL	STRUCTURAL STEEL
UNIT	LUMP SUM	LF	LF	CF	LBS	LBS
TOTAL	LUMP SUM	357	104	253	200	815

PROJECT NO. BK-5127  
COUNTY: CARTERET  
STATION:  
BRIDGE REPAIR 33

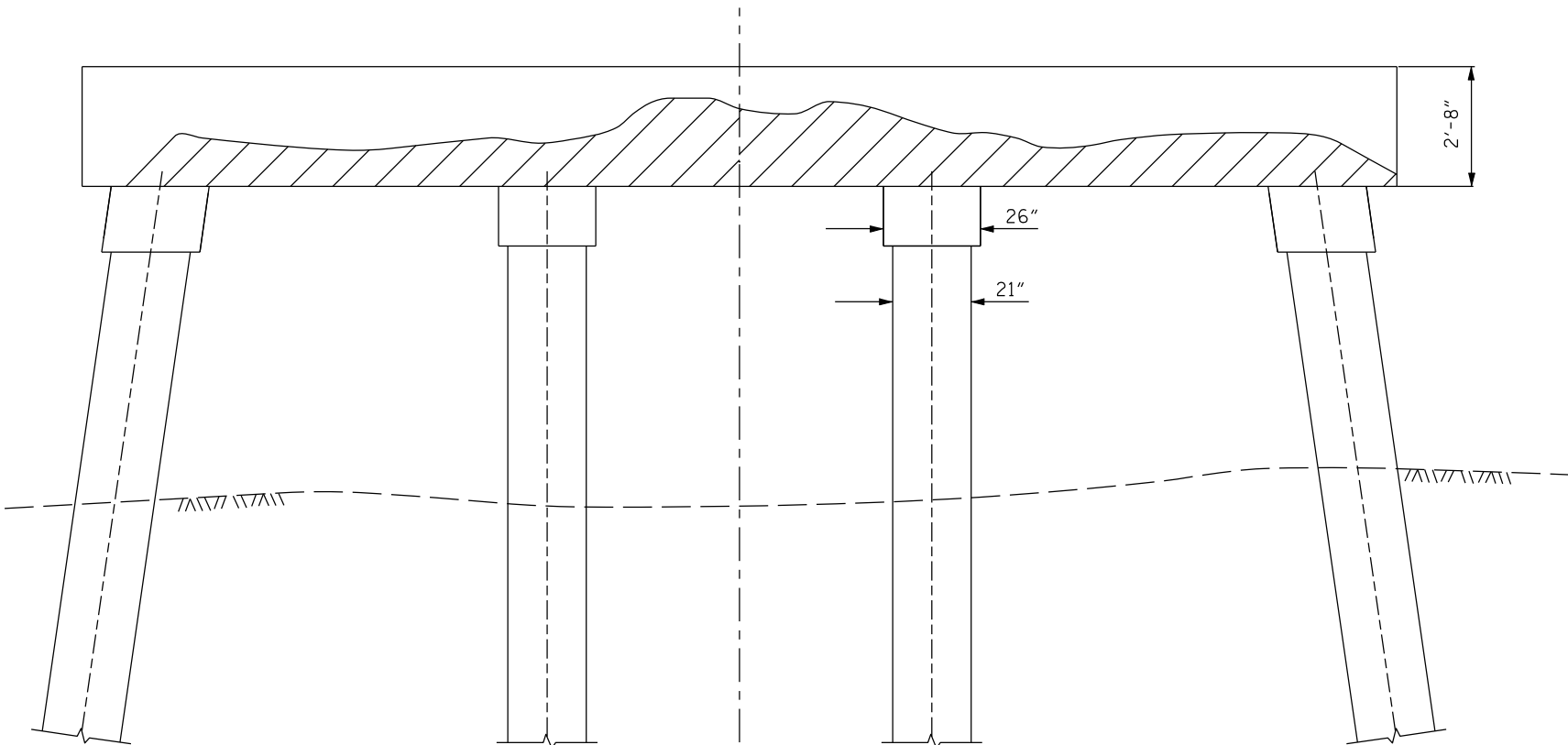
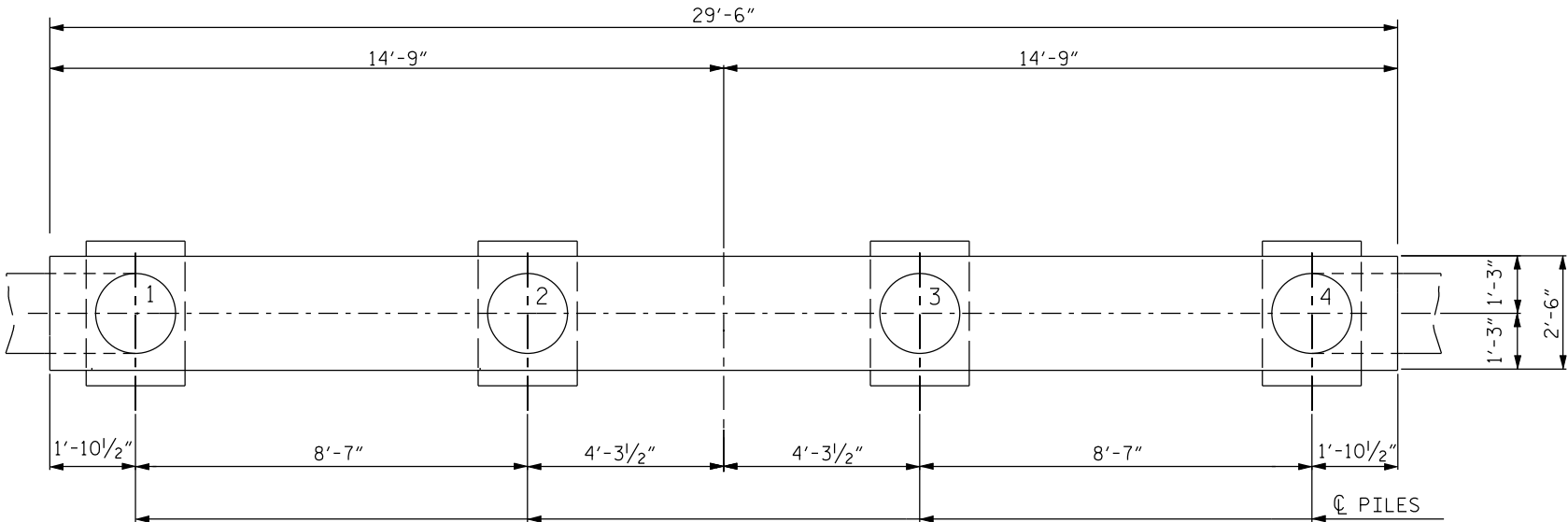
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
PLAN & PROFILE OF BRIDGE #33 ON US 70 OVER NORTH RIVER					
REVISIONS					SHEET NO.
BY	DATE	NO.	BY	DATE	3
		3			TOTAL SHEETS
		4			16

NOTES:

EXISTING PILES ARE 21" DIA. REINFORCED CONCRETE COLLARS.  
FOR TYPICAL CAP REPAIRS SEE SHEET #7.

BENT CAP REPAIRS

BENT	DESCRIPTION	LENGTH (FEET)	WIDTH (FEET)	DEPTH (FEET)	VOLUME (CU.FT.)
1	ABOVE AND ALONG PILES 1-4	28.5	0.6-2	0.167	5.6



(BENT 1&46)

PROJECT NO. BK-5127  
COUNTY: CARTERET  
STATION:  
BRIDGE REPAIR NO. 33

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
CAP REPAIRS BENT 1					
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		
SHEET NO. 4					TOTAL SHEETS 16

DRAWN BY: R. WEISZ  
CHECKED BY:  
DATE: 03/10  
DATE:

\*\*\*\*\*SYSTIME\*\*\*\*\* \*\*\*\*\*USERNAME\*\*\*\*\* \*\*\*\*\*\$DGN\*\*\*\*\*\$\*\*\*\*\*

NOTES:

EXISTING PILES ARE 12" SQUARE REINFORCED CONCRETE.

ALL PILE JACKETS AND ENCAPSULATIONS ARE ESTIMATED TO BE BETWEEN 7'-10' IN LENGTH. SOME PILE JACKET AND ENCAPSULATION LOCATIONS ARE DEEP AND THOSE AREAS THE PILE JACKET WILL ONLY NEED TO EXTEND 2 FEET BELOW MUD LINE FOR JACKETS AND 1' BELOW FOR ENCAPSULATIONS.

FOR PILE JACKETING METHOD SEE SHEETS 8,9&10

FOR PILE ENCAPSULATION METHOD SEE SHEETS 11&12

FOR CAP REPAIR METHOD SEE SHEET 7

BENT CAP REPAIRS

BENT	DESCRIPTION	LENGTH (FEET)	WIDTH (FEET)	DEPTH (FEET)	VOLUME (CU.FT.)
2	ABOVE PILE 1	3.00	1.50	0.17	0.80
3	ABOVE PILES 1 & 2	10.00	1.50	0.17	2.55
4	ALONG ENTIRE CAP	29.33	1.50	0.17	7.50
5	ABOVE PILES 3&4	8.00	1.50	0.17	2.04
6	ABOVE PILES 1&2	8.00	1.50	0.17	2.04
7	ABOVE PILES 3&4	8.00	1.50	0.17	2.04
8	ABOVE PILES 3&4	8.00	1.50	0.17	2.04
9	ABOVE PILE 1	4.00	1.50	0.17	1.02
10	ABOVE PILES 1,2,3&4	24.00	1.00	0.17	4.08
14	ABOVE PILES 3&4	16.00	1.50	0.17	4.08
15	ABOVE PILES 2&3	8.00	1.00	0.17	1.36
18	ABOVE PILE 3	3.00	1.50	0.17	0.80
28	ABOVE PILES 1&3	8.00	1.50	0.17	2.04
29	ABOVE PILES 1&2	8.00	1.50	0.17	2.04
35	ABOVE PILE 2	4.00	1.50	0.17	1.02
37	ABOVE PILES 1,2,3&4	26.00	1.00	0.17	4.42
43	ABOVE PILES 2&3	10.00	1.50	0.17	2.55
44	ABOVE PILE 1	4.00	1.50	0.17	1.02
TOTAL					43.44

PILE ENCAPSULATION LOCATIONS

BENT	PILE
2	2
2	3
2	4
3	2
3	3
3	4
4	4
5	1
5	2
6	4
7	3
7	4
8	3
8	4
9	2
9	4
10	1
11	1
11	4
12	2
12	4
13	2
14	1
15	1
16	1
16	2
20	1

BENT	PILE
22	1
22	4
26	1
26	4
29	4
32	1
32	2
34	2
34	4
35	4
36	1
37	1
38	3
41	1
41	3
41	4
42	1
42	3
43	4
45	4

PILE JACKET LOCATIONS

BENT	PILE
16	4
26	2
29	2
30	3
39	1
41	2
43	3
44	2
44	3
45	1
45	2

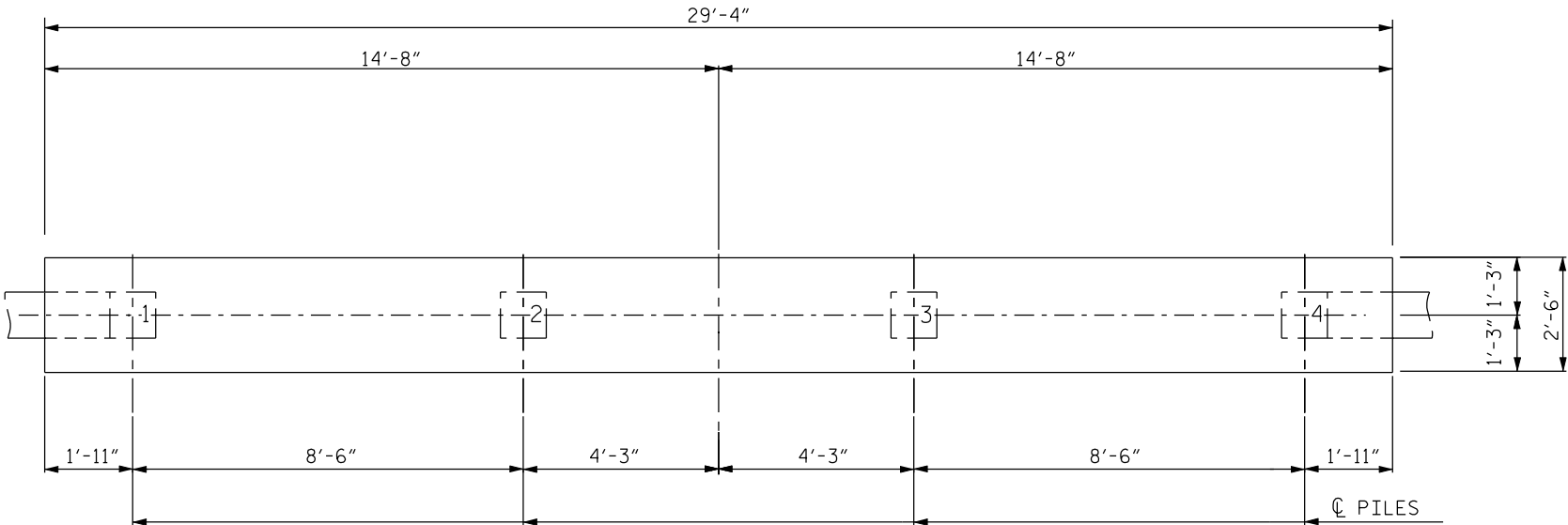
PROJECT NO. BK-5127

COUNTY: CARTERET

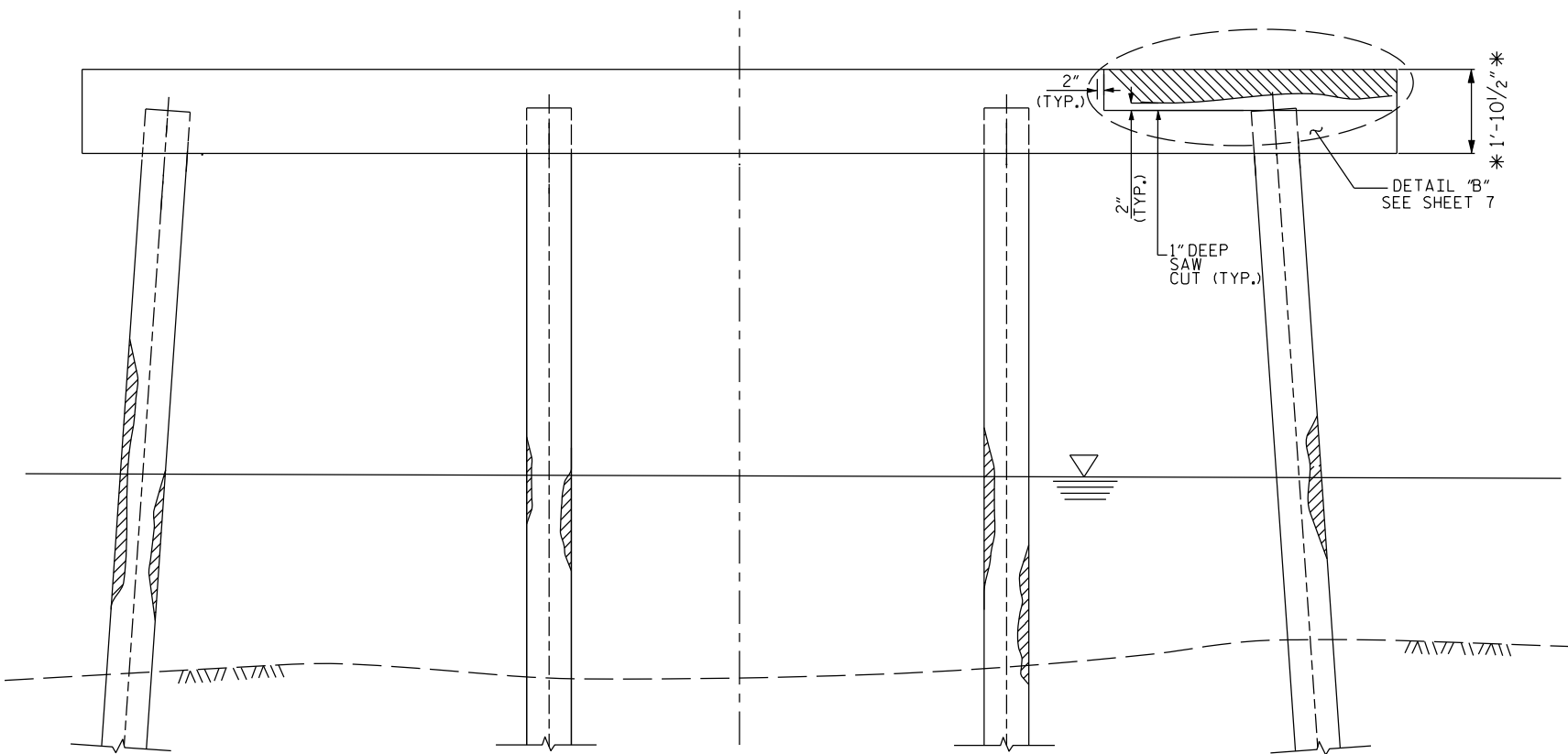
STATION:

BRIDGE REPAIR NO. 33

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
PILE REPAIRS BENTS 2-22 & 25-45					
REVISIONS					SHEET NO.
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		
					TOTAL SHEETS
					5
					16



PLAN VIEW OF BENT CAPS



ELEVATION VIEW

\* BENTS 10,20,27,32,37, AND 42  
HAVE A 2'-8" TALL CAP

DRAWN BY: R. WEISZ DATE: 03/10  
CHECKED BY: A. ABRAHA DATE: 03/10

\*\*\*\*\*SYSTEM\*\*\*\*\* \*\*\*\*\*USER\*\*\*\*\* \*\*\*\*\*DCN\*\*\*\*\*

EXISTING PILES ARE 12" SQUARE  
REINFORCED CONCRETE.

ALL PILE JACKETS AND ENCAPSULATIONS  
ARE ESTIMATED TO BE BETWEEN 7'-10' IN LENGTH.

FOR PILE JACKETING METHOD SEE SHEETS 8,9&10

FOR PILE ENCAPSULATION METHOD SEE SHEETS 10&11



BENT	PIL
23	1

BENT	PIL
24	2
24	4

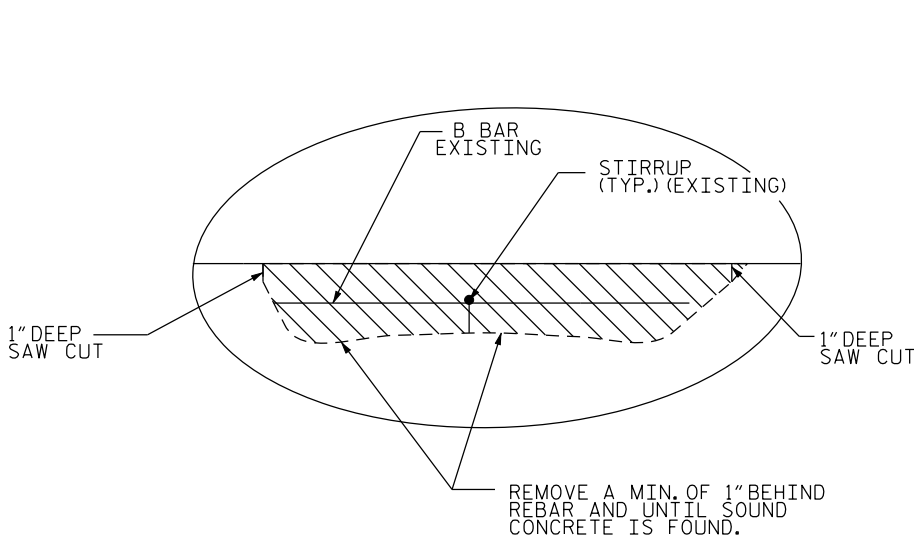
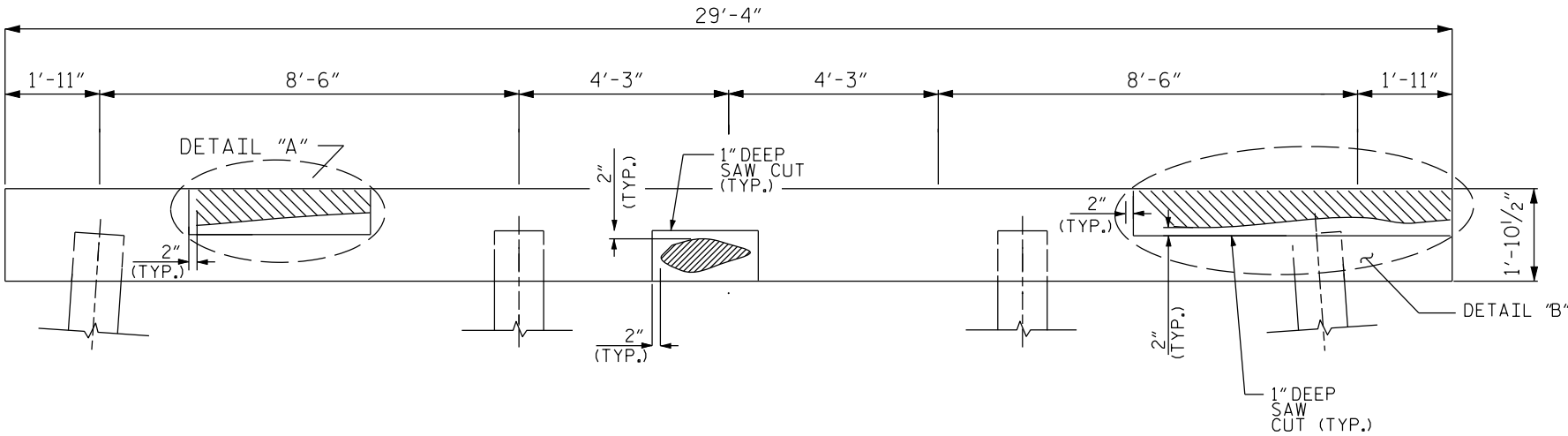
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	6
1			3			TOTAL SHEETS
2			4			16

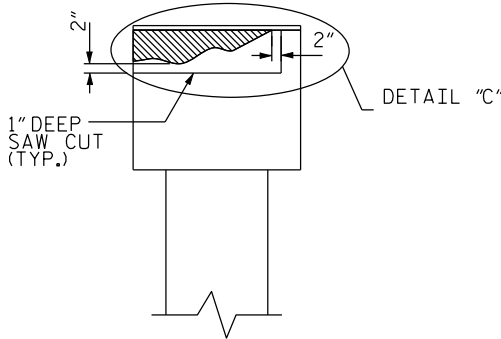
\$SYTIME\$\$\$\$\$ \$USERNAME\$\$\$\$\$ \$DGN\$\$\$\$\$

GENERAL NOTES

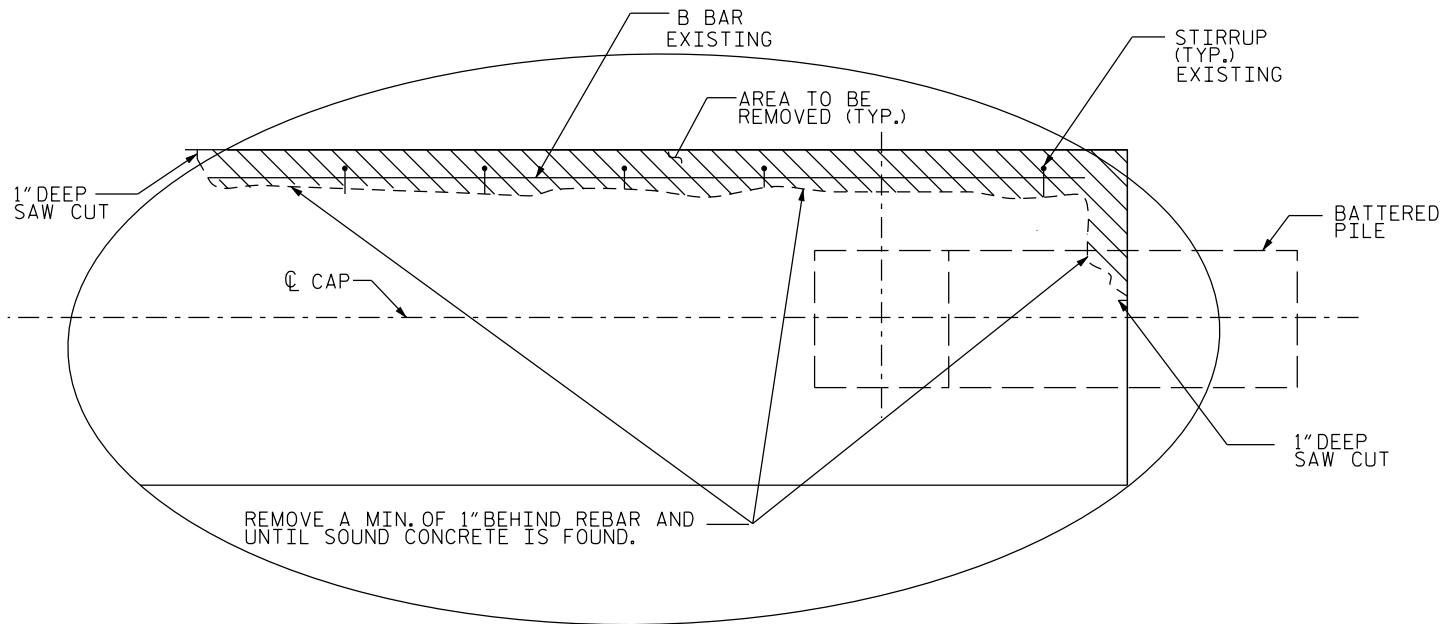
1. SPALL DIMENSIONS SHOWN ARE APPROXIMATE.
2. REPAIR MATERIAL FOR CAP SPALLS SHALL BE SHOTECRETE.



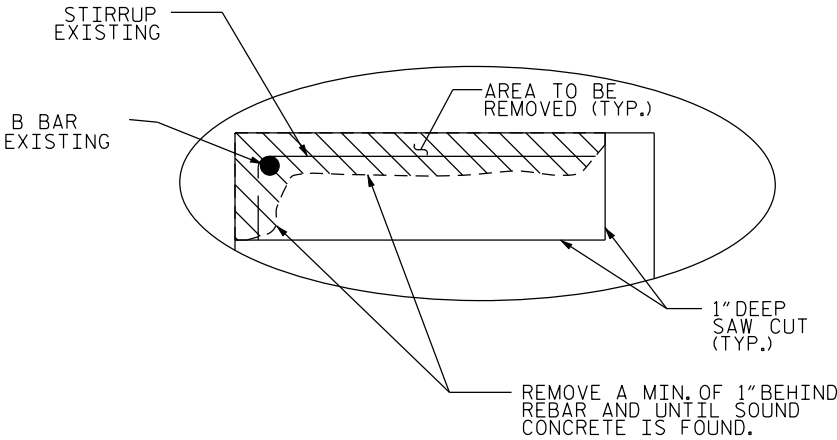
DETAIL "A"



SECTION A-A



DETAIL "B"



DETAIL "C"

PROJECT NO. BK-5127  
COUNTY: CARTERET  
BRIDGE NO. 33

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

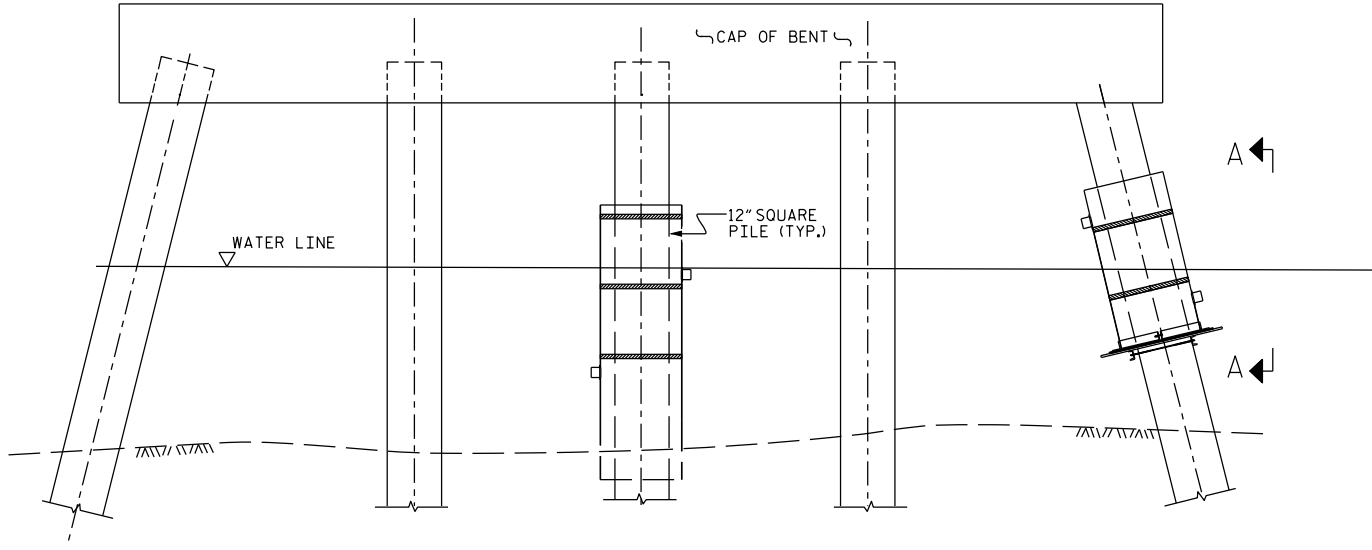
TYPICAL BENT CAP  
REPAIR DETAILS

DRAWN BY: S. T. SANDOR DATE: 02/2010  
CHECKED BY: A. ABRAHA DATE: 02/2010

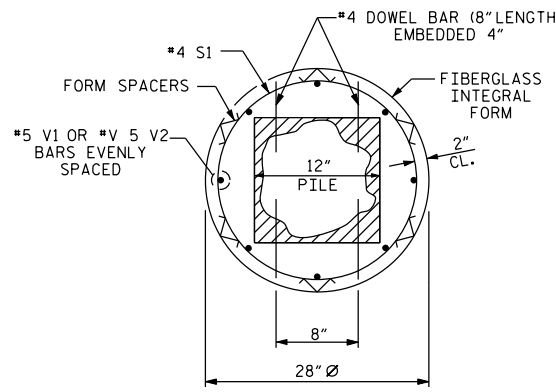
\*\*\*\*\*SYTIME\*\*\*\*\* \*\*\*\*\*USERNAME\*\*\*\*\* \*\*\*\*\*DCN\*\*\*\*\*

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	7
1			3			TOTAL SHEETS
2			4			16

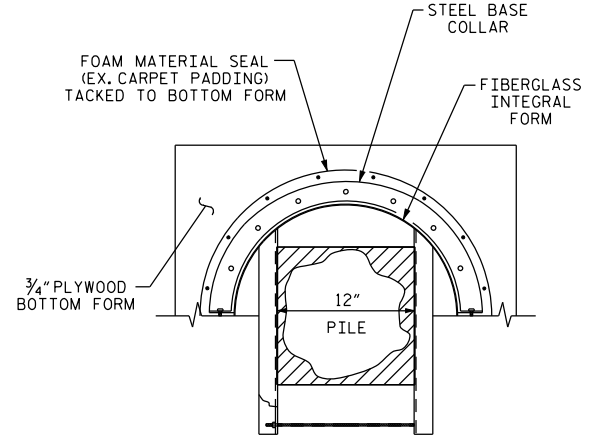
NOTES:  
PILE JACKETS TO BE INSTALLED ON 12" SQUARE PILES.



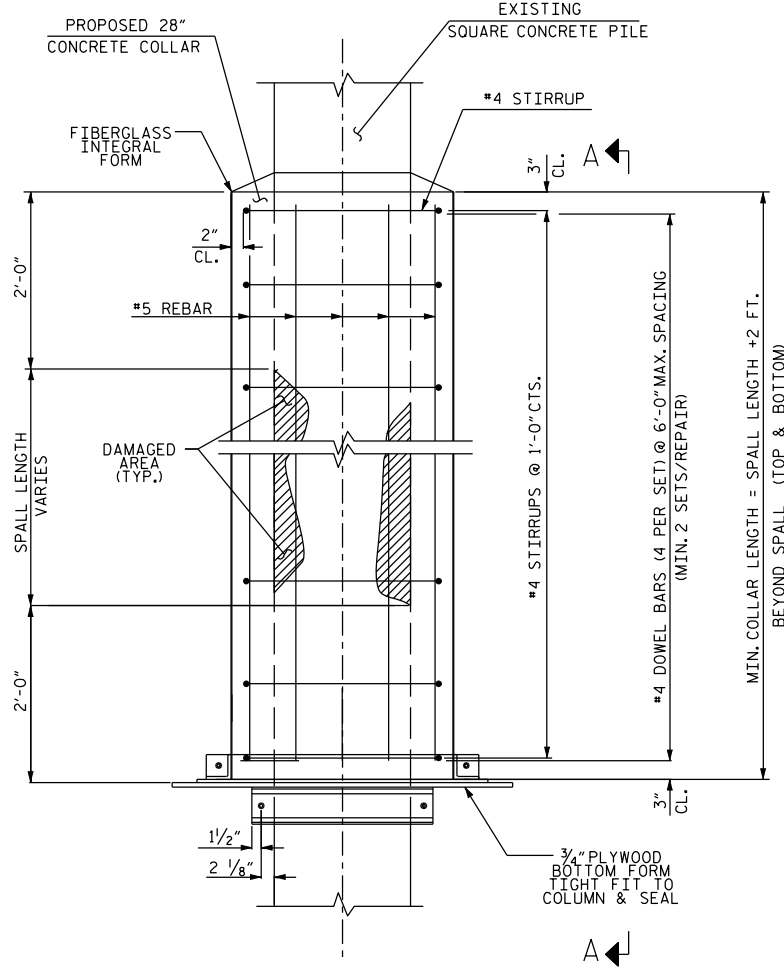
ELEVATION VIEW



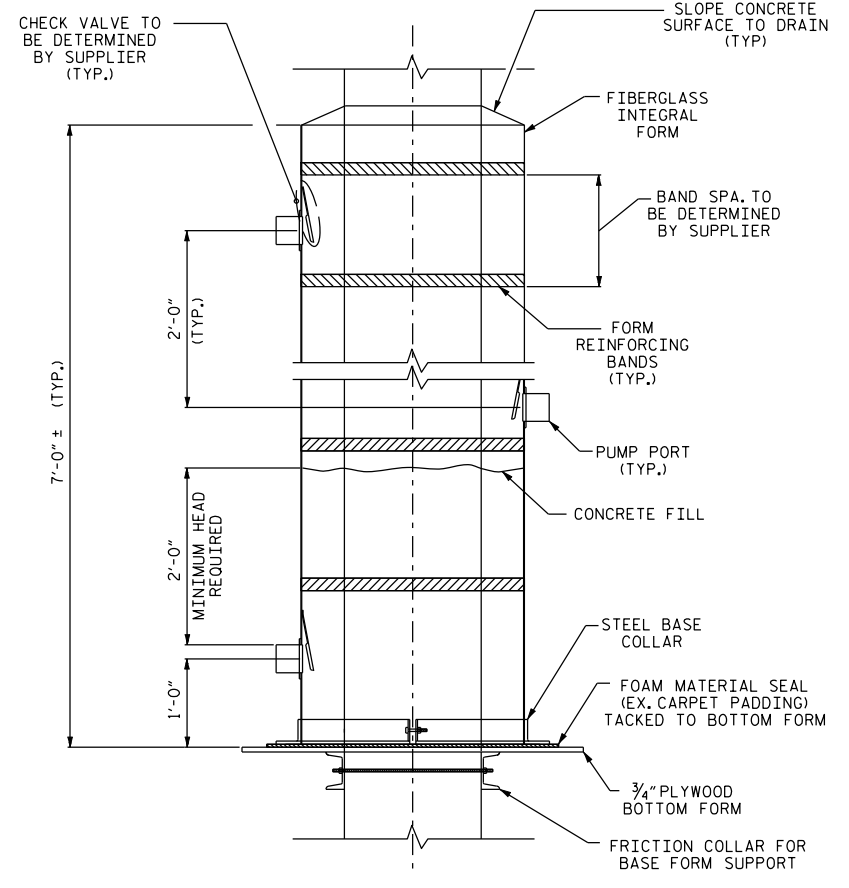
JACKET DETAIL



PLATFORM DETAIL



JACKET ELEVATION  
(ABOVE GRADE/WATER APPLICATIONS)



SECTION A-A

PILE JACKET W/ PUMP PORTS  
(ABOVE GRADE REPAIR)

PROJECT: BK-5127  
COUNTY: CARTERET  
REPLACES BRIDGE NO. 33

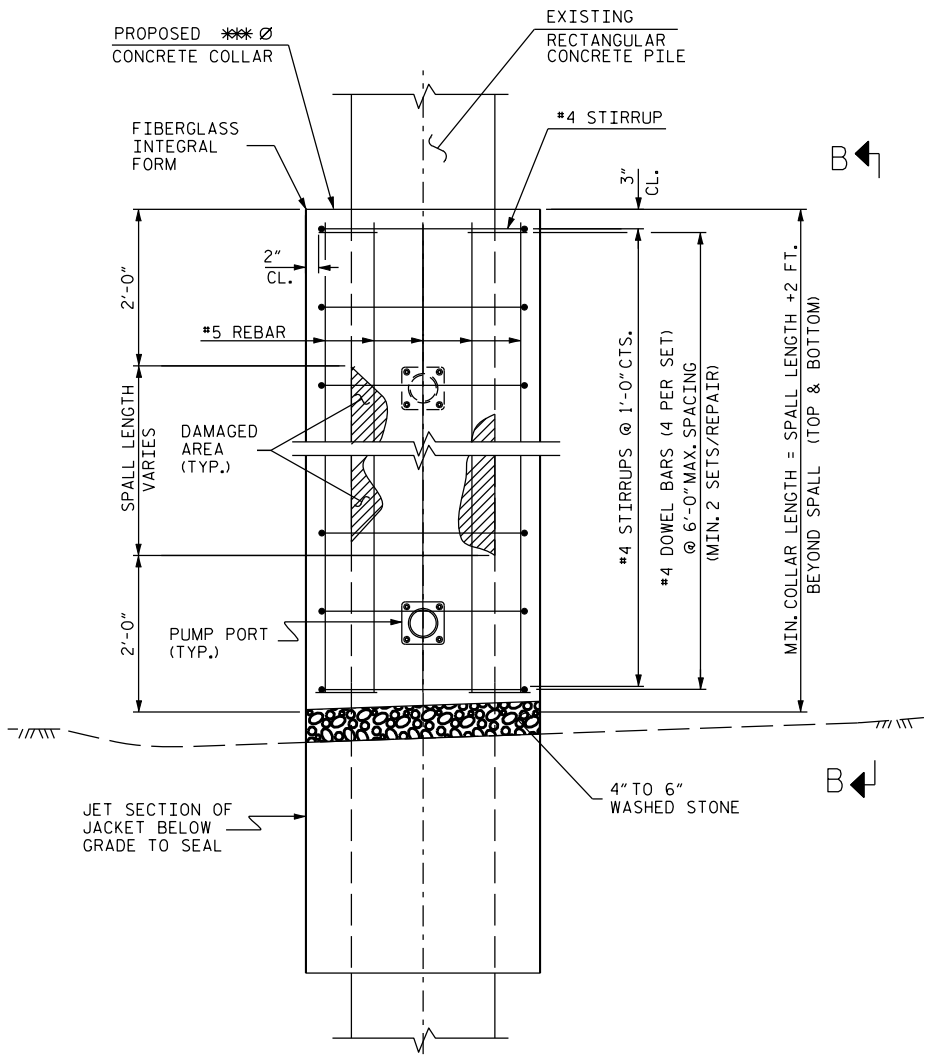
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
PILE JACKET DETAILS					
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		
SHEET NO. 8					TOTAL SHEETS 16

DRAWN BY: S. T. SANDOR DATE: 02/10  
CHECKED BY: A. ASTER DATE: 02/10

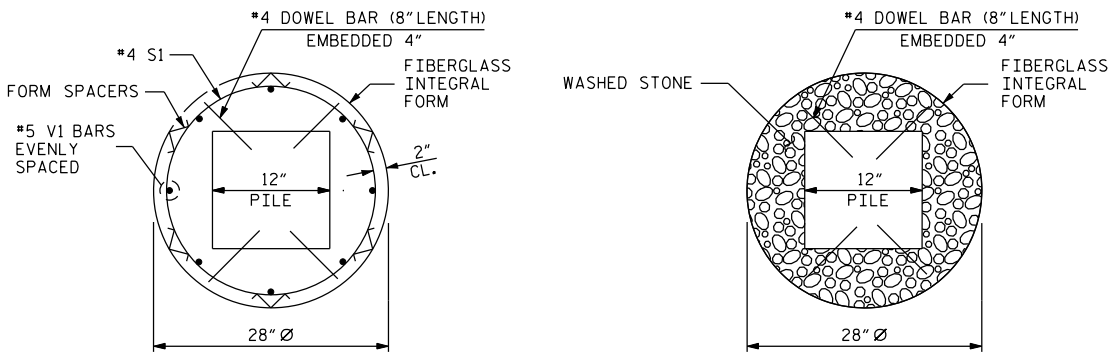
\*\*\*\*\*SYSTEM\*\*\*\*\* \*\*\*\*\*USER\*\*\*\*\* \*\*\*\*\*DCN\*\*\*\*\*



PILE JACKET		
Below Grade Repair		
Application	To strengthen Pile	
Materials	R/F Steel 8"- #4 Rebar Dowels #4 Stirrups	Class A Concrete 2" Spacers Fiberglass Jacket Epoxy Grout Neoprene Foam Dam
Equipment	Chipping Hammer Hammer Drill	Concrete Pump Vibrator
Preparation	As shown in drawing	

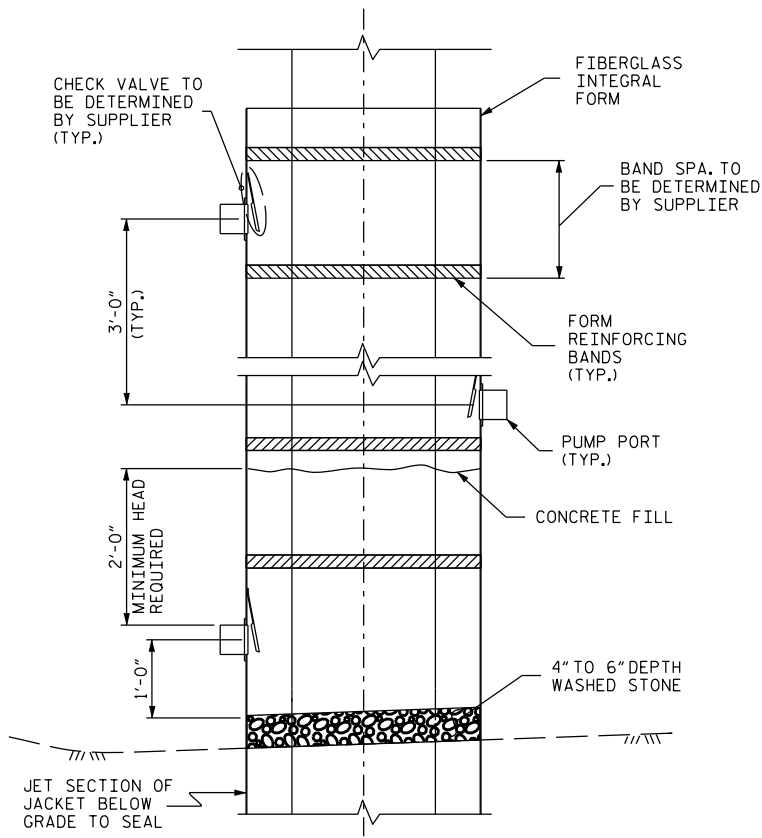


COLLAR ELEVATION  
(BELOW GRADE APPLICATIONS)

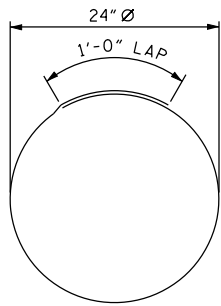


JACKET DETAIL

BOTTOM DETAIL



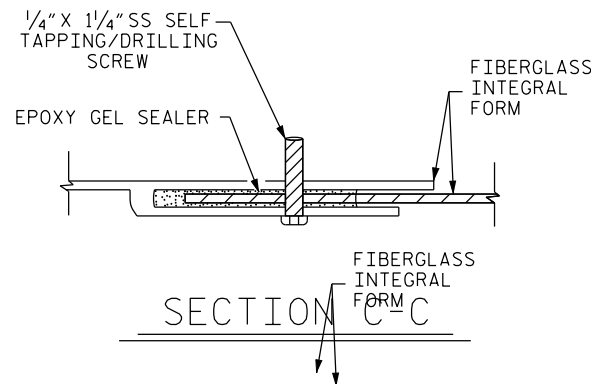
SECTION B-B



PILE JACKET W/ PUMP PORTS  
(BELOW GRADE REPAIR)

PROJECT NO. BK-5127  
COUNTY: CARTERET  
STATION:  
REPLACES BRIDGE NO. 33

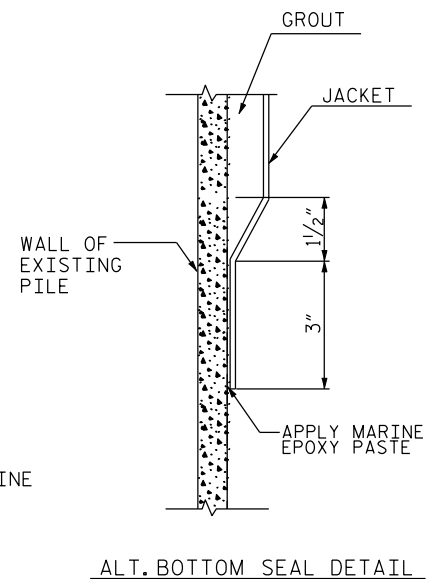
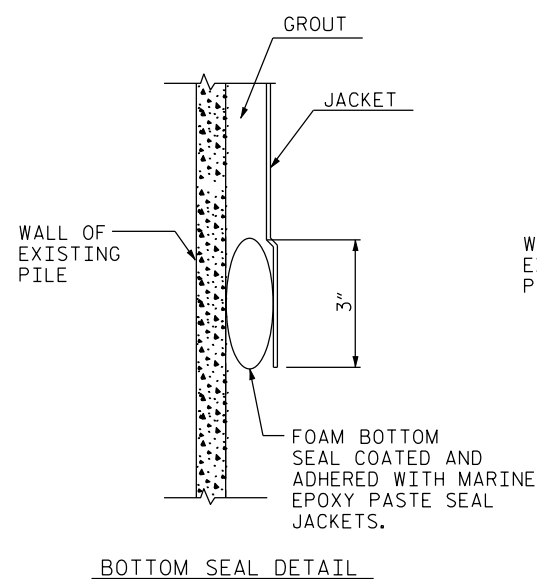
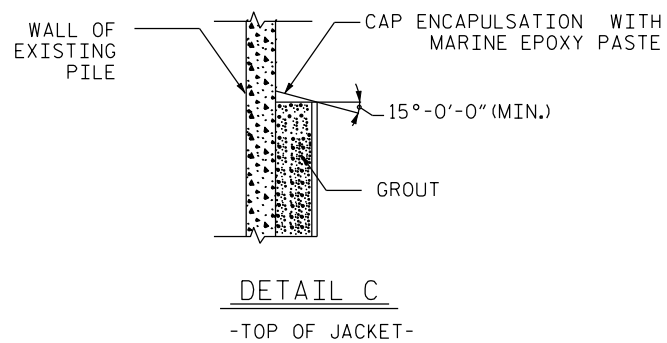
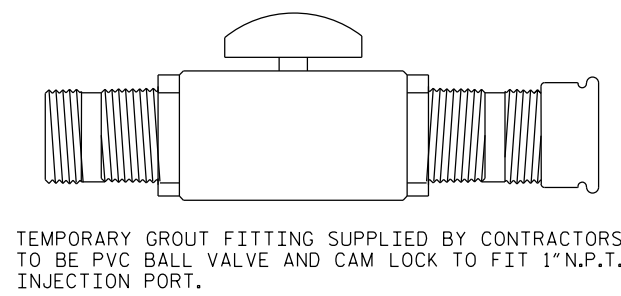
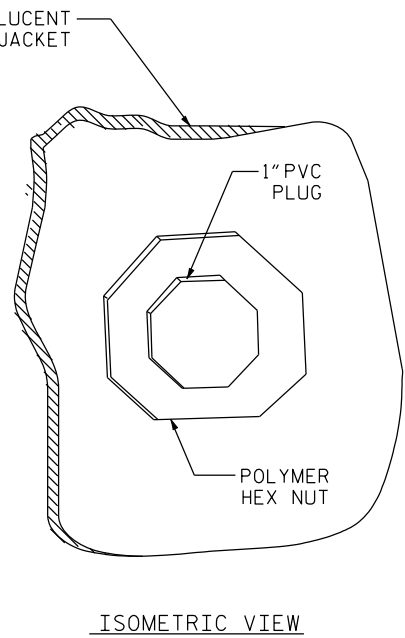
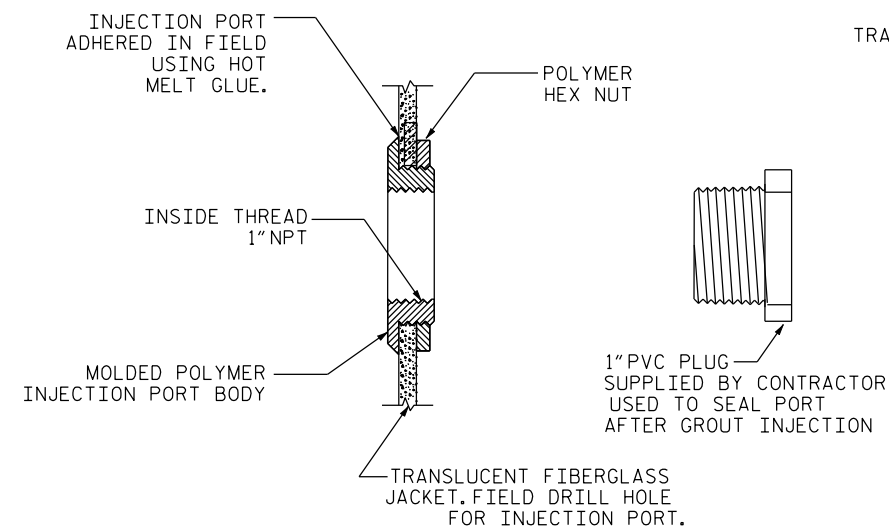
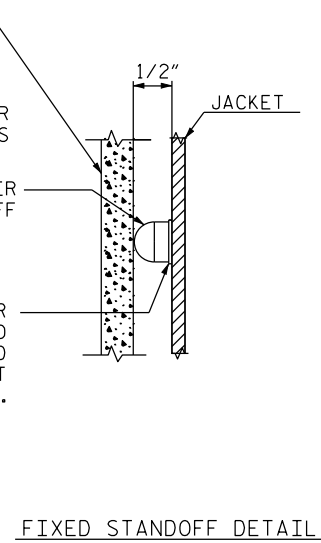
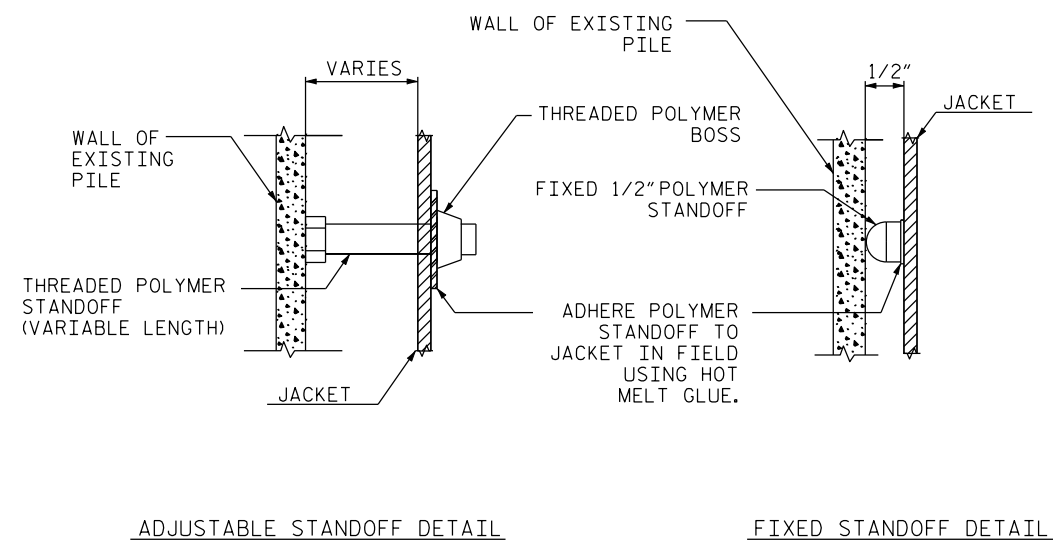
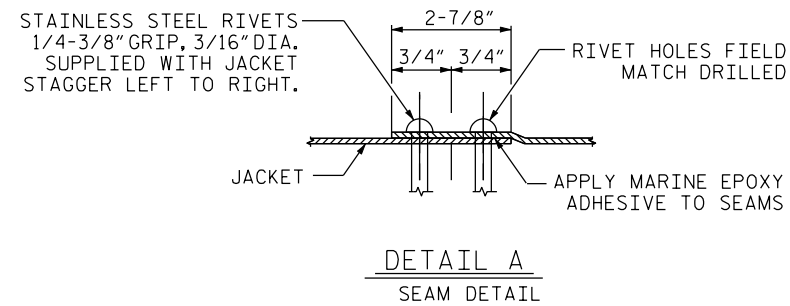
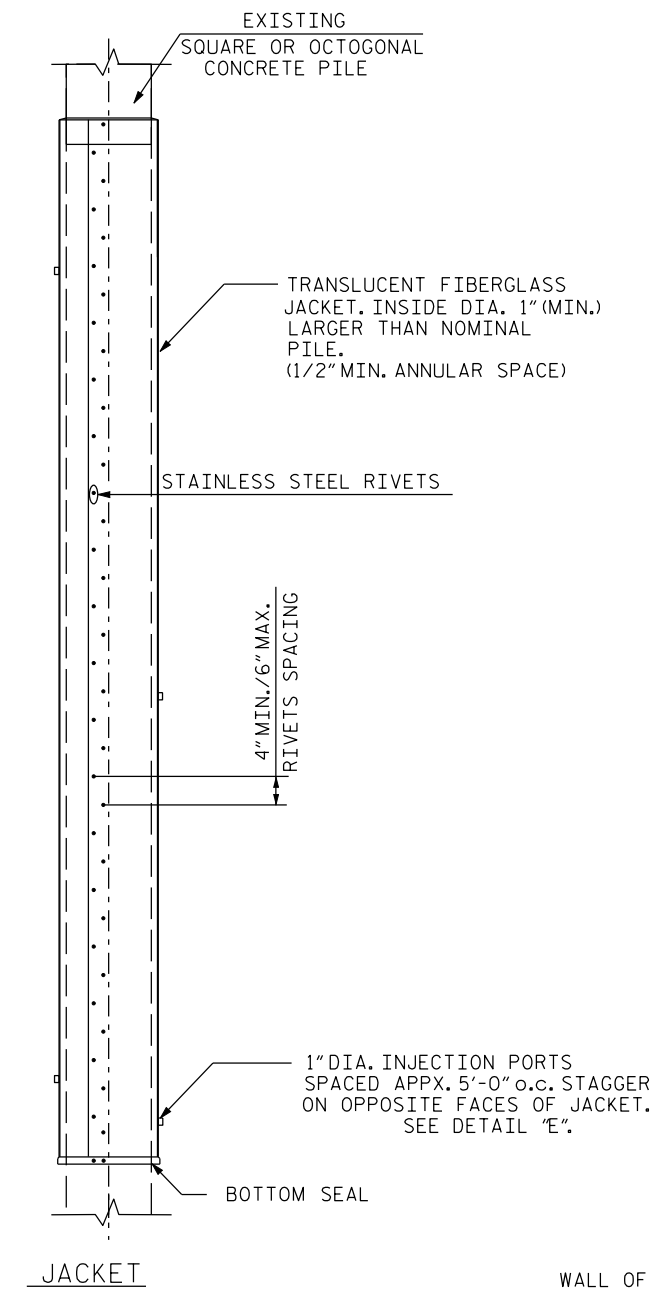
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
PILE JACKETS  
REPAIR (BELOW GRADE)



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

PILE JACKET  
DETAILS

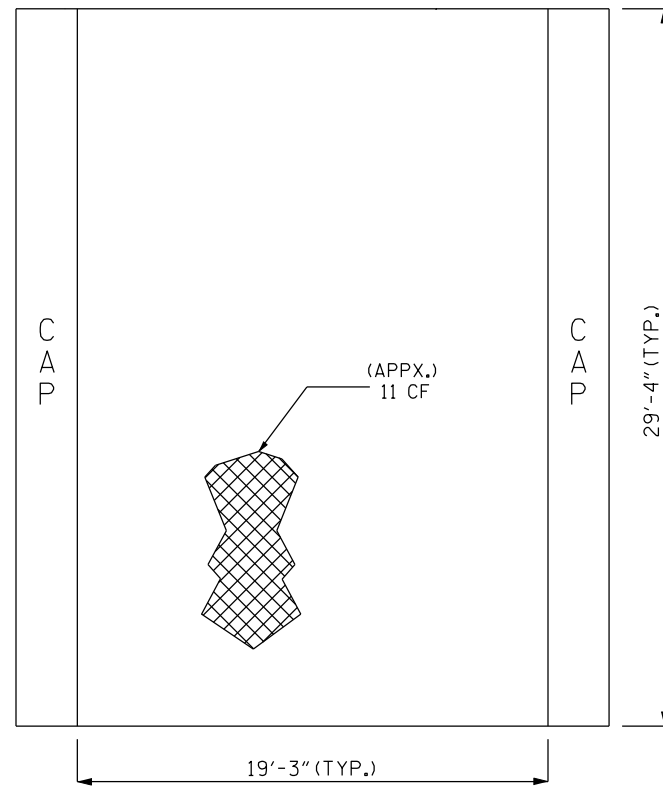




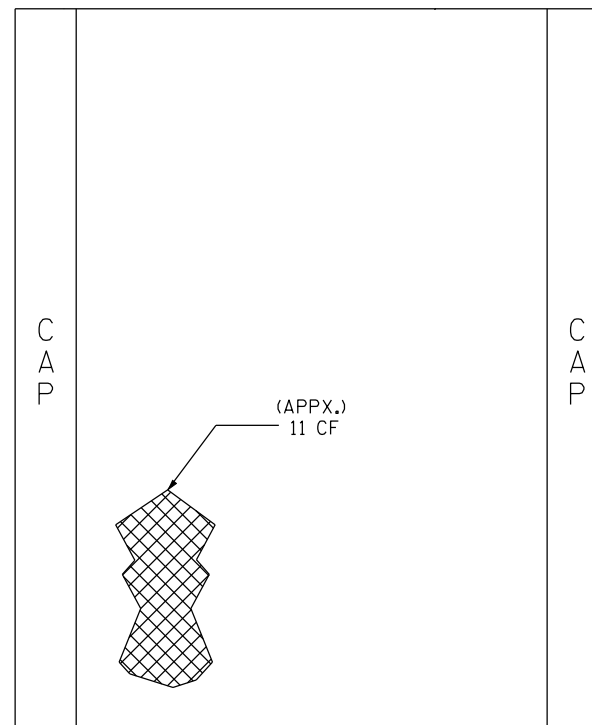
PROJECT NO. BK-5127  
 COUNTY: CARTERET  
 BRIDGE NO. 33

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO.
PILE ENCAPSULATION DETAILS						12
REVISIONS						TOTAL SHEETS
NO.	BY	DATE	NO.	BY	DATE	16
1			3			
2			4			

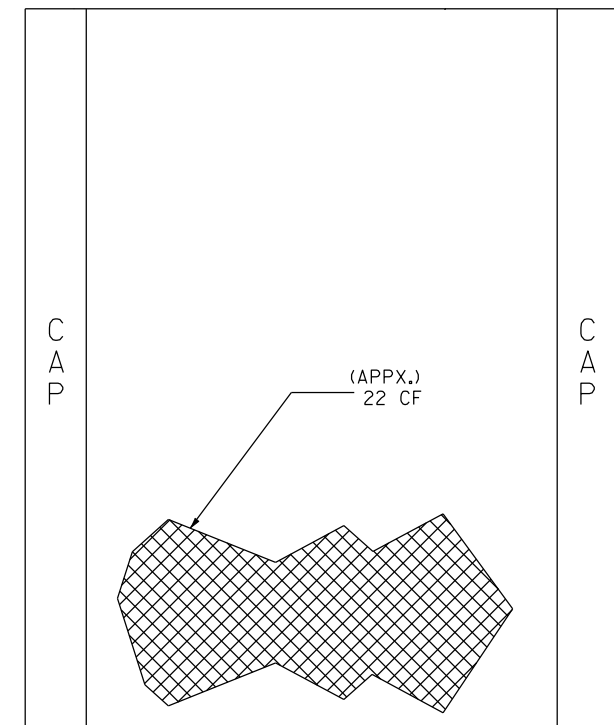
SPAN 6  
UNDERSIDE



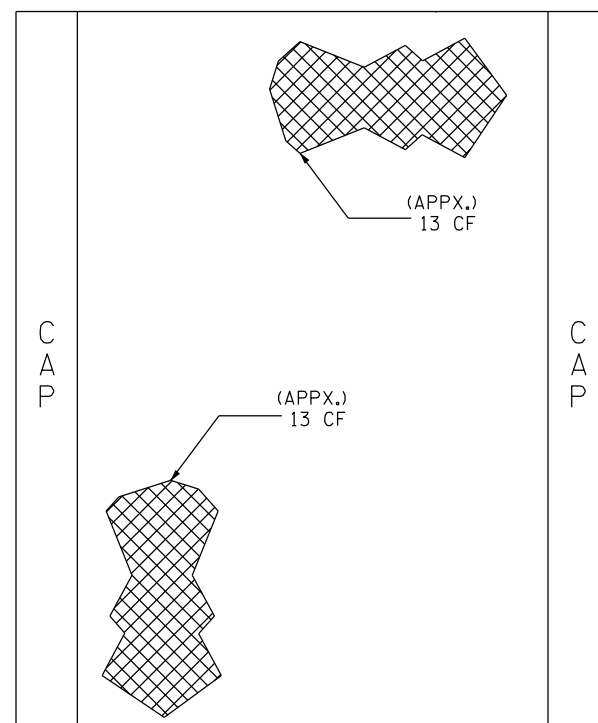
SPAN 11  
UNDERSIDE



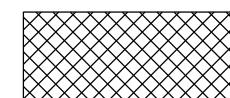
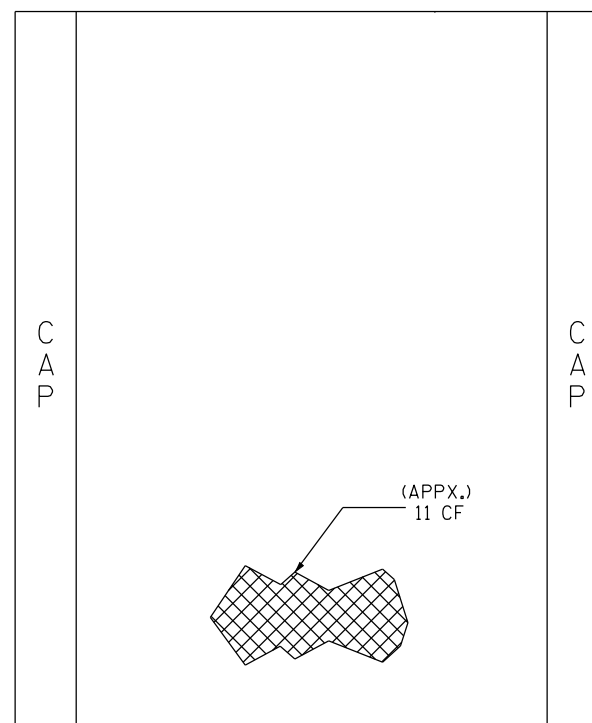
SPAN 28  
UNDERSIDE



SPAN 32  
UNDERSIDE



SPAN 33  
UNDERSIDE

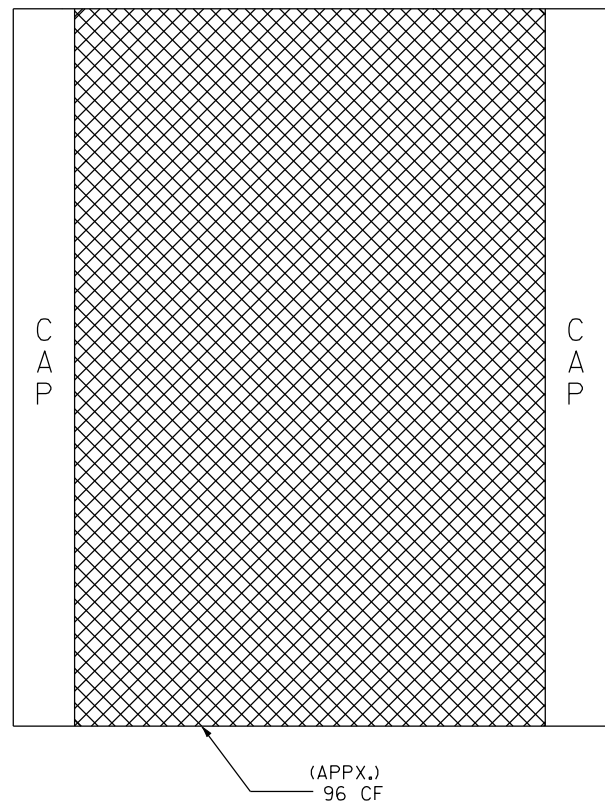


APPROX. LOCATION OF DAMAGED CONCRETE

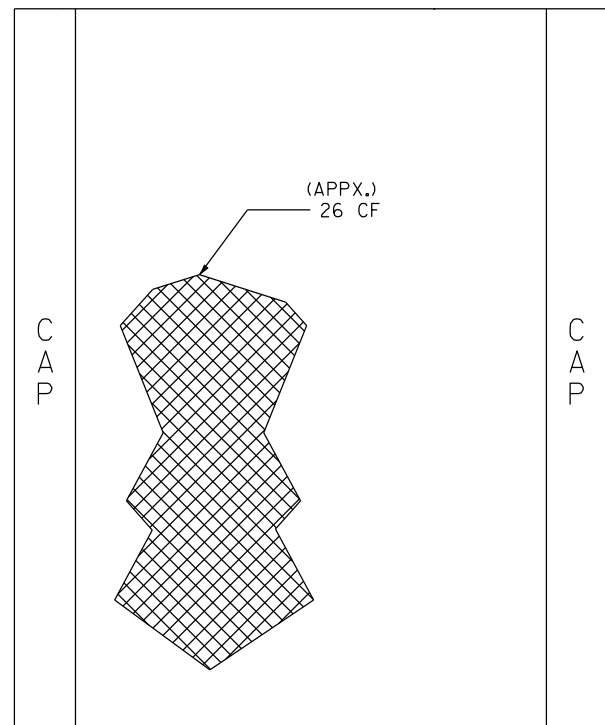
PROJECT NO. BK-5127  
COUNTY: CARTERET  
STATION:   
BRIDGE REPAIR NO. 33

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			13
2			4			16

SPAN 38  
UNDERSIDE

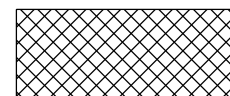


SPAN 43  
UNDERSIDE



GENERAL NOTES:

1. DAMAGED CONCRETE DIMENSIONS AND LOCATIONS ARE APPROXIMATE.
2. PREPARE AREAS TO BE REPAIRED BY CHIPPING AWAY ALL LOOSE MATIERIAL (INCLUDING CONCRETE BACK TO CUT LINES), WIRE BRUSH (BLAST WHERE CALLED FOR), AND REMOVE DUST IMMEDIATELY PRIOR TO PATCHING.
3. REPAIR MATERIAL SHALL BE SHOTCRETE.
4. FINISH SHOTCRETE SURFACES NEXT TO ORIGINAL LINES.

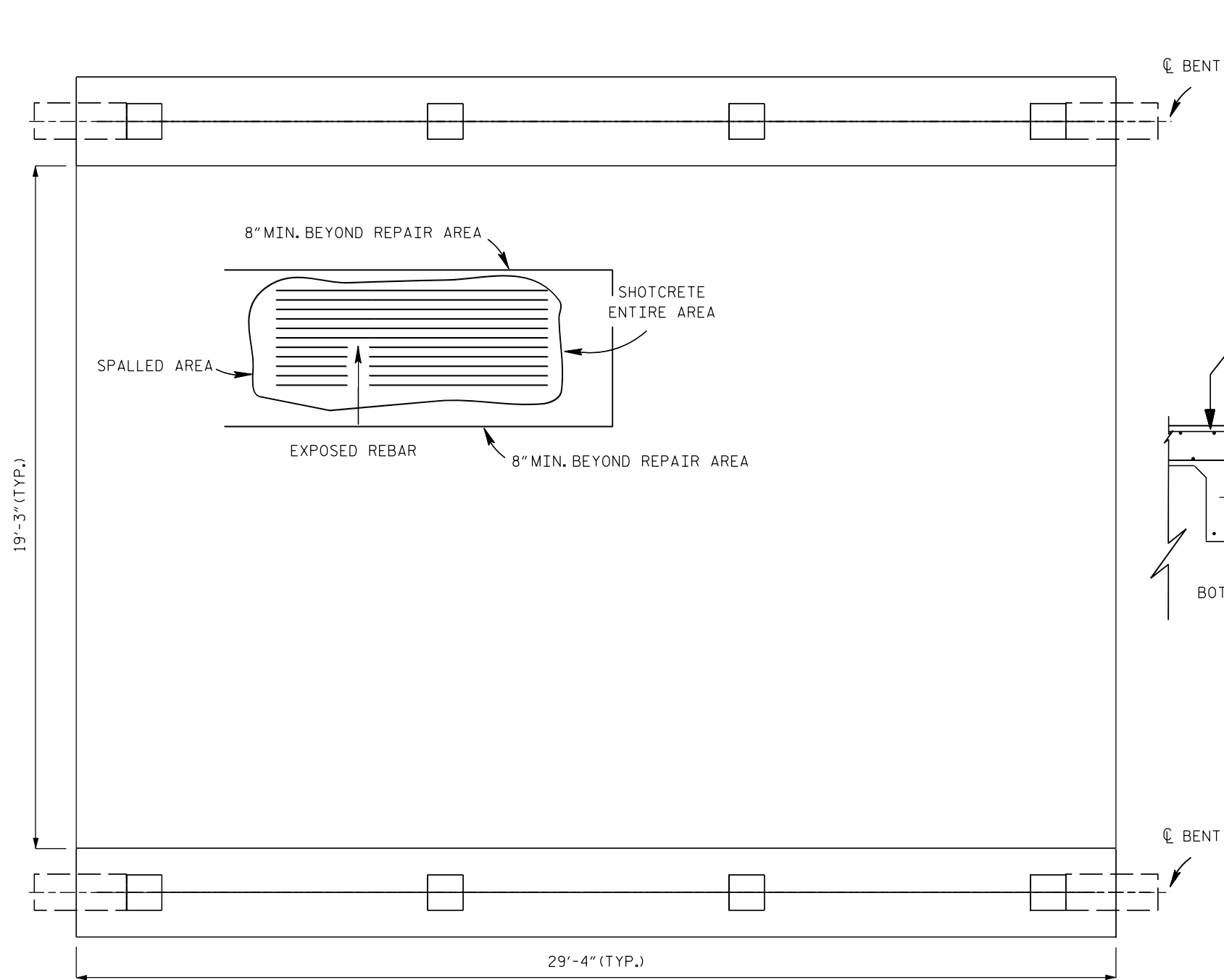


APPROX. LOCATION OF DAMAGED CONCRETE

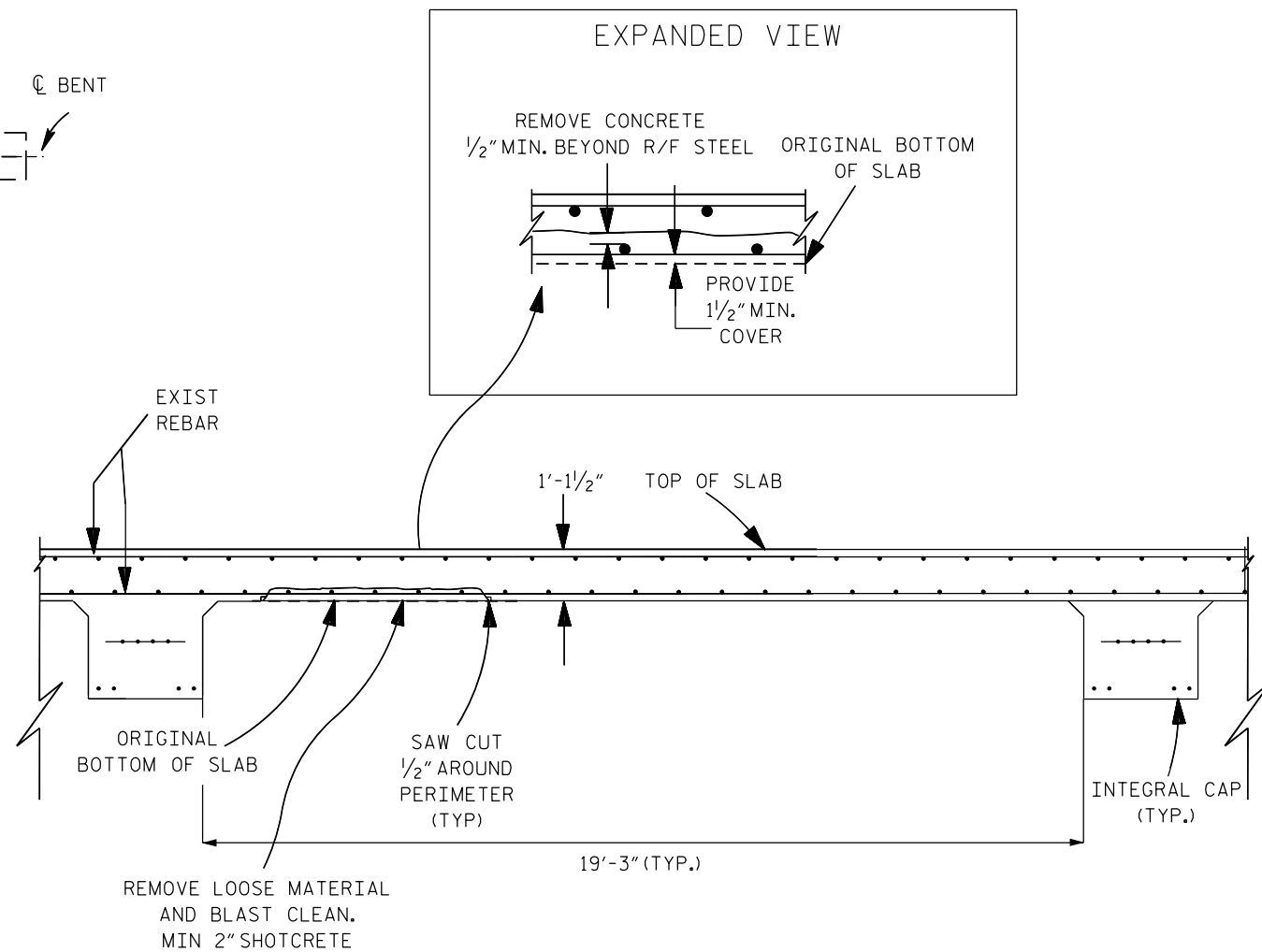
PROJECT NO. BK-5127  
COUNTY: CARTERET  
STATION:                       
BRIDGE REPAIR NO. 33

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO.
REVISIONS						14
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS
1			3			16
2			4			

DRAWN BY: R. WEISZ      DATE: 4/10  
CHECKED BY: R. NELSON      DATE: 4/10



TYPICAL PLAN VIEW OF BOTTOM  
OF DECK SLAB



TYPICAL DECK SECTION

PROJECT NO. BK-5127  
COUNTY: CARTERET  
STATION:                       
BRIDGE REPAIR NO. 33

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

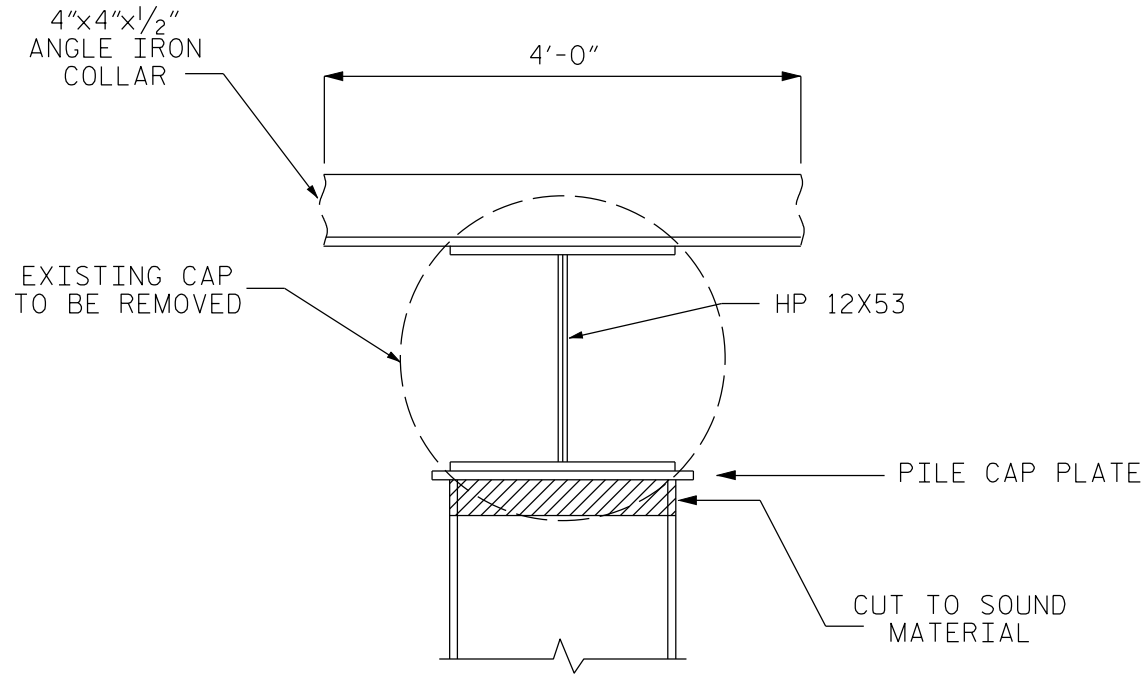
DECK REPAIR  
DETAILS

DRAWN BY: R. WEISZ      DATE: 4/10  
CHECKED BY: R. NELSON      DATE: 4/10

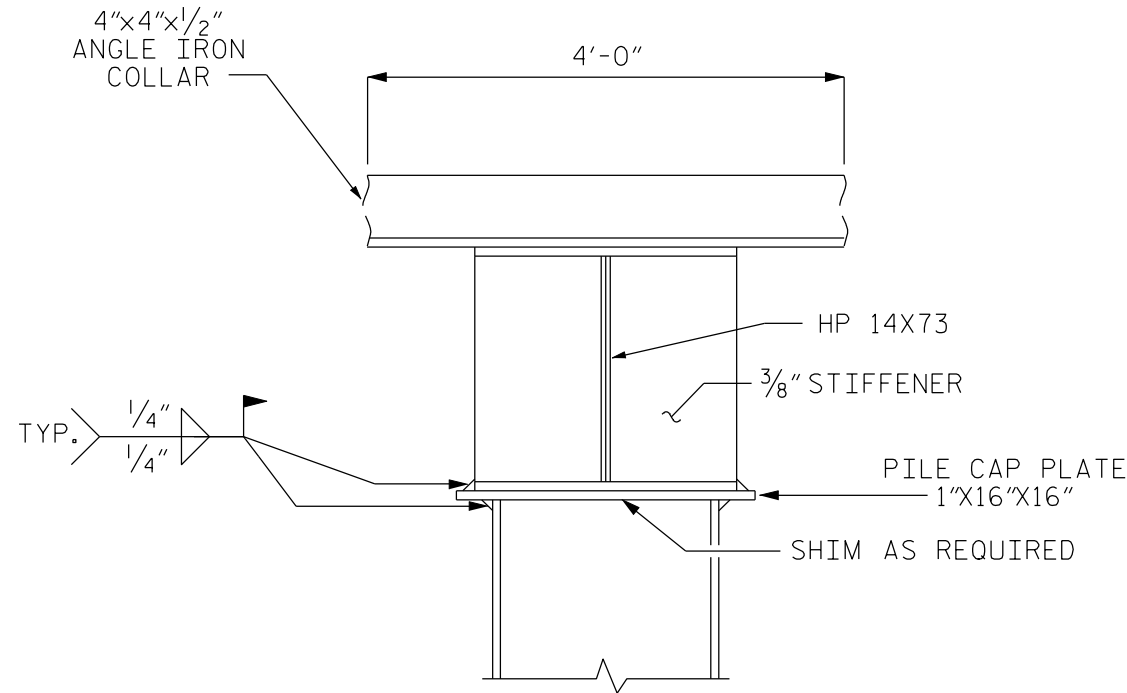
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	15
1			3			TOTAL SHEETS 16
2			4			

NOTES

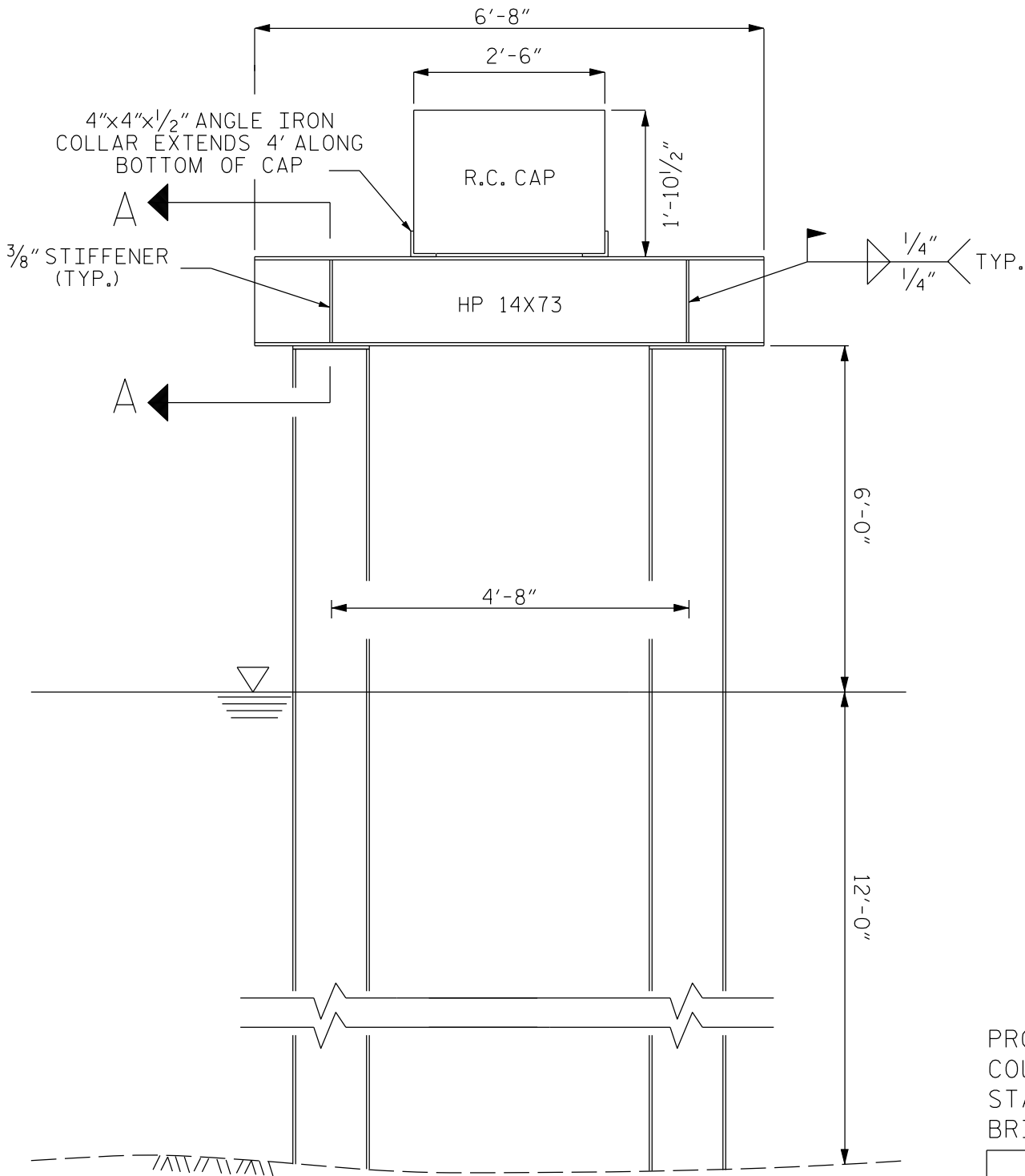
PAINT SUBCAP AND PILE CAP PLATE IN ACCORDANCE WITH SYSTEM 1 OF THE STANDARD SPECIFICATIONS.



EXISTING SADDLE  
SECTION A-A



PROPOSED REPAIR  
SECTION A-A



ELEVATION VIEW

PROJECT NO. BK-5127  
COUNTY: CARTERET  
STATION:  
BRIDGE REPAIR NO. 33

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

BENT 40 CRUTCH  
BENT REPAIR



7/22/2010  
UsTrafficTrafficControl\Bk-5127 Carteret\TCP\Plan Sheets\Bk-5127\_tcp.psh.0ldgn  
rcullen

TIP PROJECT: BK-5127 WBS 47063.3.1

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED  
TRAFFIC CONTROL  
CARTERET COUNTY

LOCATION: BRIDGE NO.33 ON US 70 OVER NORTH RIVER

TYPE OF WORK: TRAFFIC CONTROL FOR BRIDGE REPAIR

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" -  
PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C.,  
DATED JULY 2006 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE  
CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.02	TEMPORARY LANE CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.02	PORTABLE WORK ZONE SIGNS
1130.01	DRUMS
1135.01	CONES
1150.01	FLAGGING DEVICES
1180.01	SKINNY DRUMS

INDEX OF SHEETS

SHEET NO.	TITLE
TCP-1	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND, AND INDEX OF SHEETS
TCP-2	GENERAL NOTES AND PHASING
TCP-3	TEMPORARY LANE CLOSURE DETAIL

STATE PROJECT REFERENCE NO.

BK-5127

SHEET NO.

TCP-1

LEGEND

GENERAL

- ← DIRECTION OF TRAFFIC FLOW  
→ NORTH ARROW  
■ WORK AREA

TRAFFIC CONTROL DEVICES

- ▬ TYPE III BARRICADE  
▲ CONE  
● DRUM ● SKINNY DRUM  
⚡ FLASHING ARROW PANEL (TYPE C)  
├ STATIONARY SIGN  
└ PORTABLE SIGN  
○ STATIONARY OR PORTABLE SIGN  
~ TEMPORARY CRASH CUSHION  
◀ CHANGEABLE MESSAGE SIGN  
▬ TRUCK MOUNTED IMPACT ATTENUATOR (TMIA)  
⚡ POLICE  
■ FLAGGER

APPROVED: *Betsy L. Watson*  
DATE: 7/23/10



PLAN PREPARED BY:



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License No. F-0672

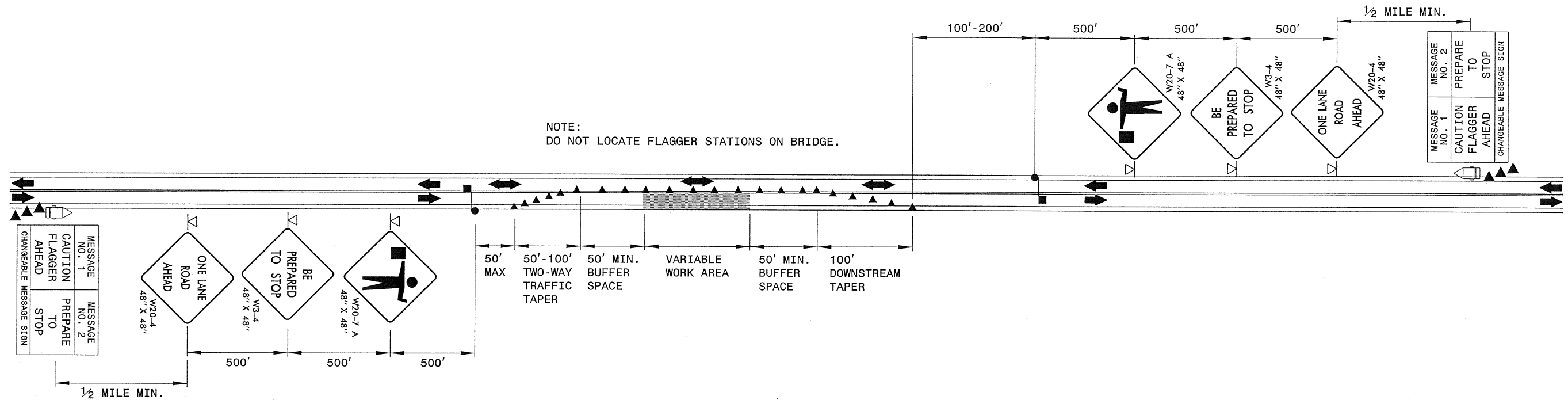
BETSY L. WATSON, PE

TRAFFIC CONTROL ENGINEER

GEORGE KARAGEORGE

TRAFFIC CONTROL DESIGNER





NOTES

1. INSTALL LANE CLOSURES WITH THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE UPSTREAM SIDE OF TRAFFIC.
2. REMOVE LANE CLOSURES AGAINST THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE DOWNSTREAM SIDE OF TRAFFIC.
3. PLACE CONE CHANNELIZING DEVICES THRU THE WORK AREA AT THE MAXIMUM SPACING EQUAL IN FEET TO 2 TIMES THE POSTED SPEED LIMIT.
4. DRUMS OR SKINNY DRUM CHANNELIZING DEVICES MAY BE USED INSTEAD OF CONES.
5. IF THE TRAVELWAY WIDTH IS 22' OR LESS, OR IF A PILOT CAR IS USED, CHANNELIZING DEVICES MAY NOT BE REQUIRED ALONG THE WORK AREA. CHANNELIZING DEVICES ARE ALWAYS REQUIRED IN THE TWO-WAY TRAFFIC TAPER AND DOWNSTREAM TAPER.
6. DO NOT INSTALL MORE THAN ONE (1) MILE OF LANE CLOSURE, MEASURED FROM THE BEGINNING OF THE TWO-WAY TRAFFIC TAPER TO THE END OF THE LANE CLOSURE.
7. EXTEND LANE CLOSURES AT THE BUFFER SPACE SUCH THAT STOPPING SIGHT DISTANCE IS PROVIDED TO THE FLAGGER. (REFER TO MINIMUM STOPPING SIGHT DISTANCE TABLE ON ROADWAY STD. DWG. 1101.11, SHEET 2)
8. DO NOT STOP TRAFFIC IN ANY ONE DIRECTION FOR MORE THAN 5 MINUTES AT A TIME.
9. USE FLAGGERS TO CONTROL TRAFFIC AT INTERSECTIONS AFFECTED BY THE LANE CLOSURE. SUPPLEMENT FLAGGERS LOCATED AT INTERSECTIONS WITH FLAGGER AHEAD SIGNS (W20-7a) PLACED APPROXIMATELY 250 FT. IN ADVANCE OF THE FLAGGER. WHERE INTERSECTIONS ARE SIGNALIZED PLACE SIGNALS IN THE FLASH MODE, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
10. FLAGGERS SHALL NOT STAND IN A LANE USED BY MOVING TRAFFIC. FLAGGERS SHALL STAND ON THE SHOULDER, WITHIN A CLOSED LANE, OR IN A LANE ONLY ONCE TRAFFIC IS STOPPED.
11. USE THE PILOT CAR METHOD WHEN DIRECTED BY THE ENGINEER. MOUNT SIGN G20-4 "PILOT CAR FOLLOW ME" AT A VISIBLE LOCATION ON THE REAR OF THE PILOT VEHICLE.
12. ADVISE RESIDENTS AND BUSINESSES WITHIN OR NEAR THE LANE CLOSURE LIMITS ABOUT METHODS OF SAFE EGRESS AND INGRESS FROM DRIVEWAYS DURING LANE CLOSURE OPERATIONS.
13. CHANGEABLE MESSAGE SIGN WORD MESSAGES AND LOCATIONS ARE TO BE APPROVED BY THE ENGINEER. ADDITIONAL MESSAGES MAY BE REQUIRED SUCH AS FOR PUBLIC INFORMATION OR DURING SPECIAL EVENTS.

LEGEND

- FLAGGER
- PORTABLE SIGN
- CONE
- CHANGEABLE MESSAGE SIGN
- DIRECTION OF TRAFFIC FLOW

 Stantec Consulting Services Inc. 801 Jones Franklin Road Suite 300 Raleigh, NC 27606 Tel. (919) 851-6866 Fax. (919) 851-7024 www.stantec.com License No. F-0672		TEMPORARY LANE CLOSURE TWO-LANE, TWO-WAY ROADWAY					
		SCALE: NONE DATE: JUNE 2010 DWG. BY: GK DESIGN BY: GK REVIEWED BY: BLW	REVISIONS <table><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr></table>				