

# STATE OF MAINE DEPARTMENT OF TRANSPORTATION



## NEW GLOUCESTER CUMBERLAND COUNTY COBBS BRIDGE OVER ROYAL RIVER COBBS BRIDGE ROAD PROJECT NO. STP-1927(500) PROJECT LENGTH 0.028 mi. BRIDGE #3137

### SPECIFICATIONS

Design: Load and Resistance Factor Design per AASHTO LRFD Bridge Design Specifications, Sixth Edition 2012 with 2013 interims.

### DESIGN LOADING

Live Load \_\_\_\_\_ MaineDOT Legal Loads

### TRAFFIC DATA

Current (2012) AADT	270
Future (2032) AADT	320
DHV - % of AADT	11
Design Hour Volume	35
Heavy Trucks (% of AADT)	6
Heavy Trucks (% of DHV)	4
Directional Distribution (% of DHV)	55
18 kip Equivalent P 2.0	6
18 kip Equivalent P 2.5	6
Design Speed (mph)	45

### HYDROLOGIC DATA

Drainage Area	28.4 sq mi
Design Discharge (Q50)	2167 cfs
Check Discharge (Q100)	2495 cfs
Headwater Elevation (Q50)	123.99 ft
Headwater Elevation (Q100)	124.67 ft
Discharge Velocity (Q50)	6.66 fps
Discharge Velocity (Q100)	7.06 fps
Headwater Elevation (Q2)	117.29 ft
Discharge Velocity (Q2)	389.2 fps
Headwater Elevation (Q25)	123.30 ft

### MATERIALS

Concrete: \_\_\_\_\_ Class "A"  
 Reinforcing Steel \_\_\_\_\_ ASTM A 615/A 615M, Grade 60  
 Post Tensioning Bars \_\_\_\_\_ ASTM A722, Type II

### BASIC DESIGN STRESSES

Concrete \_\_\_\_\_  $f'c = 4350$  psi  
 Reinforcing Steel \_\_\_\_\_  $f_y = 60,000$  psi  
 Post Tensioning Bar \_\_\_\_\_  $f_{pu} = 150,000$  psi

### LIST OF DRAWINGS

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### UTILITIES

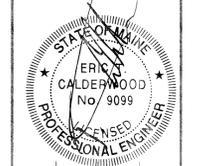
TIME WARNER CABLE, TOWN OF NEW GLOUCESTER,  
 CENTRAL MAINE POWER CO.  
 OTT COMMUNICATIONS,  
 ST. LAWRENCE AND ATLANTIC RAILROAD CO. (MAINE DOT OWNED)

### MAINTENANCE OF TRAFFIC

BRIDGE SHALL BE CLOSED TO TRAFFIC FOR A PERIOD OF TIME SPECIFIED IN THE SPECIAL PROVISIONS. DURING THE CLOSURE TRAFFIC WILL BE MAINTAINED WITH A SIGNED DETOUR.

<b>PROJECT LOCATION:</b>	Cobbs Bridge Road over the Royal River. Located 1.44 miles North of Route 231 Latitude: 43° - 58' - 48" N Longitude: 70° - 15' - 55" W
<b>PROGRAM AREA:</b>	Bridge Program
<b>OUTLINE OF WORK:</b>	Bridge Rehabilitation including concrete tee beam repair, concrete pier cap repair, and bridge deck/joint repair.

STATE OF MAINE	DEPARTMENT OF TRANSPORTATION	DATE
APPROVED		1/3/14
COMMISSIONER		1-3-14
CHIEF ENGINEER		



SIGNATURE: \_\_\_\_\_  
 No. 9099  
 P.E. NUMBER: \_\_\_\_\_  
 DATE: November, 2013

PROJECT INFORMATION
PROGRAM: BRIDGE
PROJECT MANAGER: M. PARLIN
DESIGNER: CALDERWOOD ENGINEERING
PROJECT RESIDENT CONTRACTOR: _____
PROJECT COMPLETION DATE: _____

NEW GLOUCESTER  
 COBBS BRIDGE  
 TITLE SHEET

SHEET NUMBER  
**1**

Date: 12/18/2013  
 Username: common  
 Division: BRIDGE  
 Filename: Final\Plans\001\_Title.dgn

WIN 019275.00  
 STP-1927(500)

ESTIMATED QUANTITIES			
ITEM NO.	DESCRIPTION	QUANTITY	UNIT
304.103	AGG SUBBASE COURSE - GRAVEL - TRUCK MEAS.	10	CY
461.31	LIGHT CAPITAL PAVING	5	T
502.23	STRUCTURAL CONCRETE PIERS	30	CY
502.70	BRIDGE DRAIN - TYPE A	4	EA
503.12	REINFORCING STEEL, FAB & DEL	2700	LB
503.13	REINFORCING STEEL, PLACING	2700	LB
503.172	WELDED REINFORCEMENT REPAIR	18	EA
515.20	PROTECTIVE COATING FOR CONCRETE SURFACES	540	SY
518.50	REPAIR OF UPWARD FACING SURFACE - TO REINF. STEEL	10	SF
518.51	REPAIR OF UPWARD FACING SURFACE - BELOW REINF. STEEL	10	SF
518.511	FULL DEPTH CONCRETE REPAIR	42	SF
518.60	REPAIR OF VERTICAL SURFACES < 7.9 IN	465	SF
518.70	REPAIR OF OVERHEAD SURFACES < 7.9 IN	20	SF
518.71	REPAIR OF OVERHEAD SURFACES > 7.9 IN	5	CY
520.24	BRIDGE JOINT MODIFICATION	2	EA
524.30	TEMPORARY STRUCTURAL SUPPORT	4	EA
526.301	TEMPORARY CONCRETE BARRIER TYPE I (60 LF)	1	LS
535.64	POST TENSIONING SYSTEM	1	LS
610.08	PLAIN RIPRAP	360	CY
629.05	HAND LABOR, STRAIGHT TIME	40	HR
631.12	ALL PURPOSE EXCAVATOR (INC OPERATOR)	20	HR
631.14	GRADER (INC OPERATOR)	20	HR
631.171	TRUCK-SMALL (INC OPERATOR)	20	HR
639.19	FIELD OFFICE TYPE B	1	EA
652.312	TYPE III BARRICADES	6	EA
652.33	DRUM	20	EA
652.34	CONE	20	EA
652.35	CONSTRUCTION SIGNS	259	SF
652.361	MAINTENANCE OF TRAFFIC CONTROL DEVICES (200 CD)	1	LS
652.38	FLAGGER	800	HR
655.511	EMBEDDED GALVANIC ANODE	70	EA
656.75	TEMP. SOIL EROSION AND WATER POLL. CONTROL	1	LS
659.10	MOBILIZATION	1	LS

### GENERAL CONSTRUCTION NOTES

1. All Utility Facilities shall be adjusted by the respective Utilities unless otherwise noted.
2. For Easements, Construction Limits, and Right-Of-Way lines, refer to Right of Way Map.
3. Protective Coating for Concrete Surfaces shall be applied to the following areas:  
Wearing Surface,  
Curb and Bridge Rail,  
Fascia to Bottom of Stem
4. Quantities included for pay items measured and paid for by Lump Sum are estimated quantities and are provided by MaineDOT for informational purposes only. Lump Sum pay items will be paid for at the Contract Bid amount, with no addition or reduction in payment to the Contractor if the actual final quantities are different from the MaineDOT provided estimated quantities, except as follows:
  - a. If a Lump Sum pay item is eliminated, the requirements of Standard Specifications Section 109.2, Elimination of Items, will take precedence.
  - b. If other Contract Documents specifically allow a change in payment for a Lump Sum pay item, those requirements will be followed.
  - c. If a design change results in changes to estimated quantities for Lump Sum pay items, price adjustments will be made in accordance with Standard Specifications Section 109.7, Equitable Adjustments to Compensation.
5. The Contractor shall submit a Temporary Support Plan to the Resident at least 30 business days prior to the start of the rehabilitation work. The plan shall outline the methods and equipment to be used to support the bridge (during both the pier repair and the beam repair) and dispose of all material cleaned off of the bridge. No work related to the rehabilitation of the bridge shall be undertaken by the Contractor until MaineDOT has reviewed the Temporary Support Plan for appropriateness and completeness. Payment for all work necessary for developing, submitting, and finalizing, the Temporary Support Plan will be considered incidental to the Temporary Support pay item.
6. The existing bridge shall be supported and rehabilitated to the limits indicated in the plans. Once the rehabilitation work is complete the Contractor is responsible for removing and appropriate disposal of components not re-used in the completed work.
7. The Contractor shall submit a Rehabilitation Plan to the Resident at least 30 business days prior to the start of the rehabilitation work. The plan shall outline the methods and equipment to be used for removal, forming and casting rehabilitation to the existing structure. It shall also include containment methods and sequence and schedule specific to rehab items. No work related to the rehabilitation of the existing structure shall be undertaken by the Contractor until MaineDOT has reviewed the Rehabilitation Plan for appropriateness and completeness. Payment for all work necessary for developing, submitting, and finalizing, the Rehabilitation Plan will be considered incidental to related items.
8. During construction the road will be closed to traffic for a time period specified in the Special Provisions.
9. Prior to submitting a bid the Contractor shall conduct a site inspection.
10. Repair areas indicated in plans are anticipated areas based on site inspection. Areas and locations are subject to change based on actual field conditions and the results of the concrete removal process, as determined by the Resident. Prior to the rehabilitation work the Resident and the Contractor shall go over and agree on all areas that will receive repair. The Contractor shall report to the Resident any deviations from agreed upon repair areas prior to conducting repairs..
11. All dimensions, elevations and other information shown on the contract plans to define the structure are based upon the original construction drawings and are not guaranteed to represent as-built conditions. The contractor shall verify all conditions and dimensions as required for the completion of the work under the contract. The contractor shall be responsible for the accuracy and for the correct fit of all construction.
12. All work is to be performed with care so that materials which are to remain in place are not damaged. Areas not agreed upon between the Resident and the Contractor for rehabilitation that are damaged shall be repaired at no additional cost to the Department.
13. Reinforcement shown in the reinforcement schedule shall be paid for under items 503.12 and 503.13. All other reinforcement required for the repair of the beams and the piers, including stirrups, shall be considered incidental to related repair items.
14. Contractor shall provide silt fence to prevent turtle passage and egg laying within the construction limits. Silt fence shall be as described in Best Management Practices. Payment for silt fence used as turtle barrier shall be considered incidental to item 656.75 Temporary Soil Erosion and Water Pollution Control.
15. Galvanic anodes shall be placed at a maximum spacing of 30 inches in the pier locations and 20 inches in the beam locations.
16. Contractor shall restore all areas disturbed by construction activities to neat limits and shall place loam, mulch and seed as required to restore areas and as directed by the Resident. Payment for restoring disturbed areas will be considered incidental to related construction activities.
17. After the bridge is completely open to traffic any necessary repairs to the detour roadway shall be done as determined and directed by the Resident. Payment shall be made under the applicable contract items. No testing will be required for any asphalt that may be placed.

STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION

STP-1927(500)

WIN  
19275.00  
BRIDGE NO. 3137  
BRIDGE PLANSDATE  
NOV 2013  
BY  
CK  
M. PARLIN  
CK  
PROJ. MANAGER  
DESIGN-DETAILED  
OK  
CHECKED-REVIEWED  
DESIGN-DETAILED  
DESIGN-DETAILED  
REVISIONS 1  
REVISIONS 2  
REVISIONS 3  
REVISIONS 4  
FIELD CHANGESSIGNATURE  
9099P.E. NUMBER  
77203DATE  
7/2013COBBS BRIDGE  
OVER ROYAL RIVER  
NEW GLOUCESTER CUMBERLAND COUNTY

ESTIMATED QUANTITIES

SHEET NUMBER

2

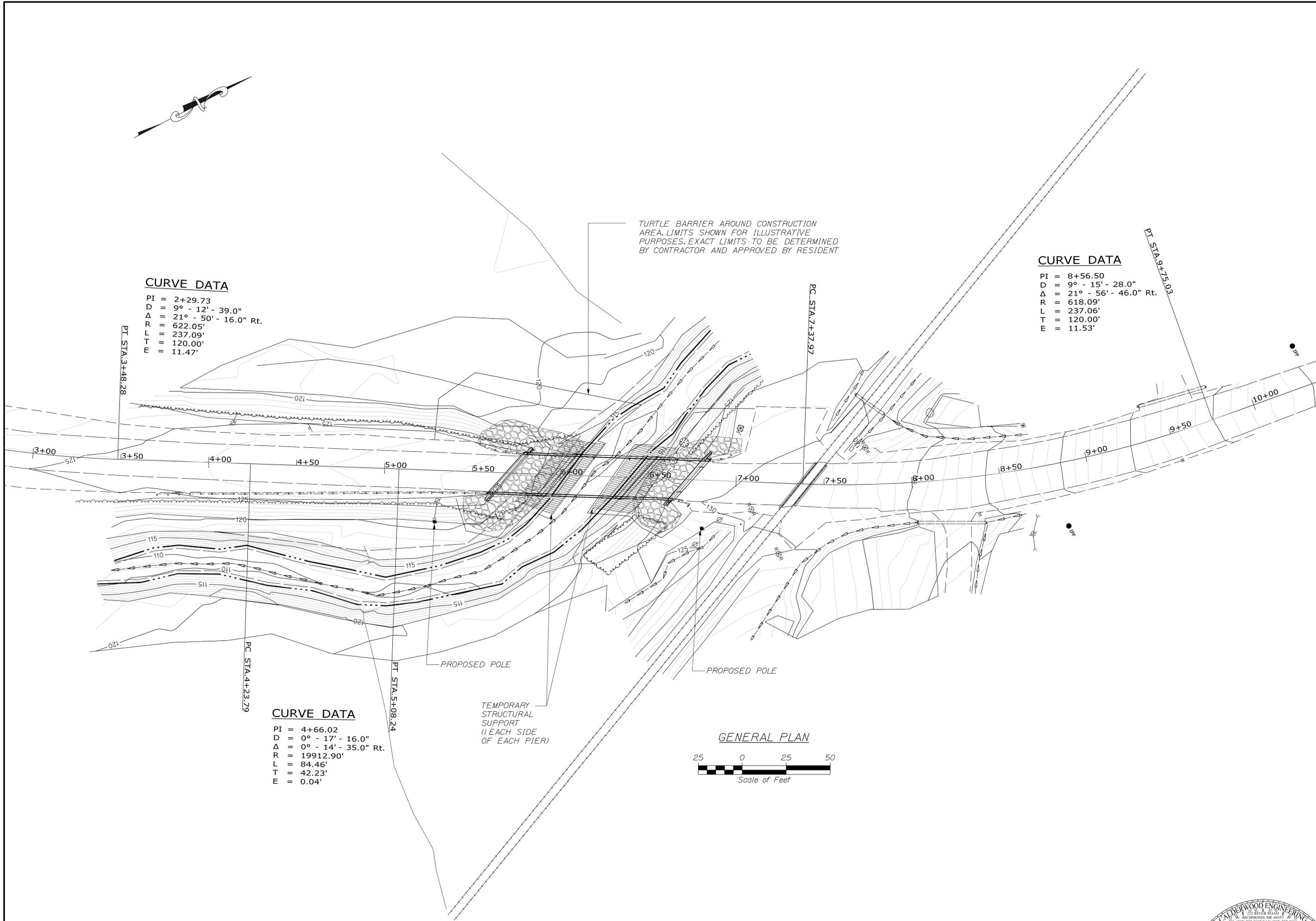


Date: 1/10/2014

Username: common

Division: BRIDGE

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**CURVE DATA**

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 Δ = 21° - 50' - 16.0" Rt.  
 R = 622.05'  
 L = 237.09'  
 T = 120.00'  
 E = 11.47'

**CURVE DATA**

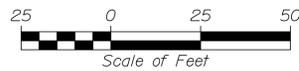
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 Δ = 0° - 14' - 35.0" Rt.  
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 L = 84.46'  
 T = 42.23'  
 E = 0.04'

**CURVE DATA**

PI = 8+56.50  
 D = 9° - 15' - 28.0"  
 Δ = 21° - 56' - 46.0" Rt.  
 R = 618.09'  
 L = 237.06'  
 T = 120.00'  
 E = 11.53'

TURTLE BARRIER AROUND CONSTRUCTION  
 AREA. LIMITS SHOWN FOR ILLUSTRATIVE  
 PURPOSES. EXACT LIMITS TO BE DETERMINED  
 BY CONTRACTOR AND APPROVED BY RESIDENT

**GENERAL PLAN**



STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 3137  
WIN  
19275.00  
BRIDGE PLANS

STP-1927(500)

SIGNATURE

P.E. NUMBER

DATE

PROJ. MANAGER	M. PARLIN	BY	DATE
DESIGN-DETAILED	OK		NOV 2013
CHECKED-REVIEWED			
DESIGN-D-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

COBBS BRIDGE  
OVER ROYAL RIVER  
NEW GLOUCESTER CUMBERLAND COUNTY

GENERAL PLAN

SHEET NUMBER

3

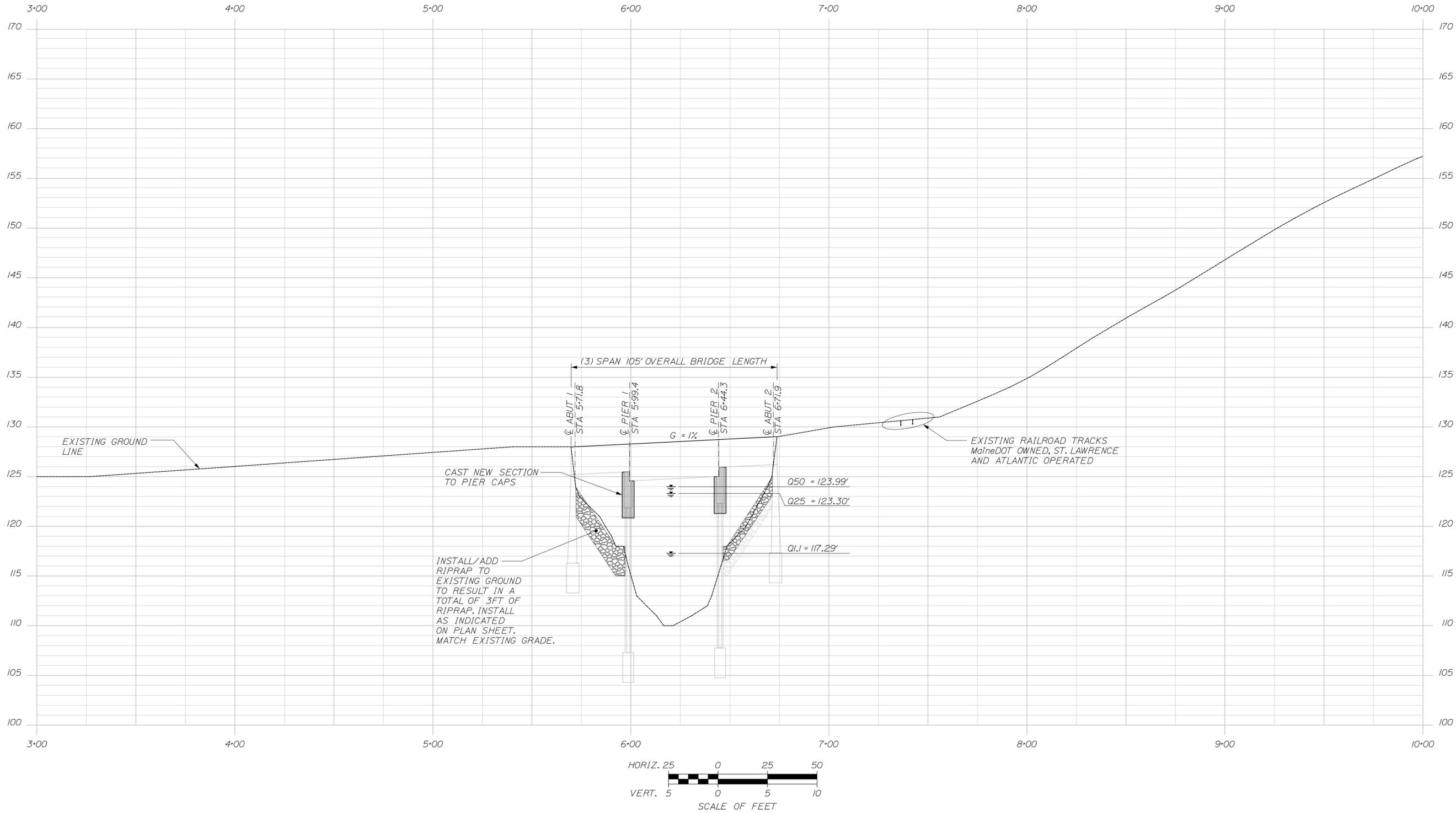


Date: 1/10/2014

Username: common

Division: BRIDGE

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PROFILE

STATE OF MAINE  
 DEPARTMENT OF TRANSPORTATION  
 STP-1927(500)

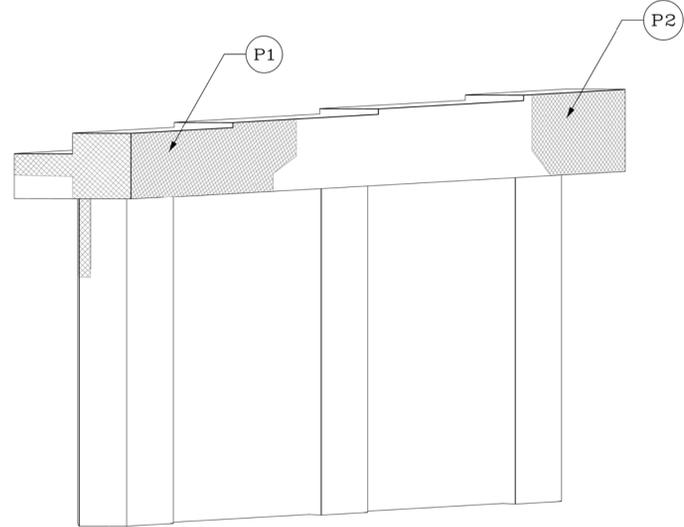
PROJ. MANAGER	M. PARLIN	BY	OCK	DATE	NOV 2013
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CHECKED-REVIEWED					
DESIGN-DETAILED					
DESIGN-DETAILED					
REVISIONS 1					
REVISIONS 2					
REVISIONS 3					
REVISIONS 4					
FIELD CHANGES					

COBBS BRIDGE  
 OVER ROYAL RIVER  
 NEW GLOUCESTER CUMBERLAND COUNTY  
 PROFILE

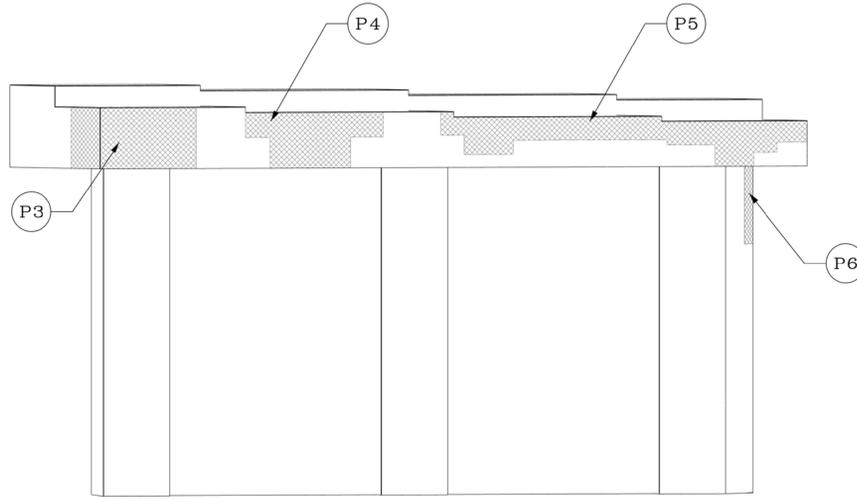
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BRIDGE NO. 3137  
 WIN 19275.00  
 BRIDGE PLANS



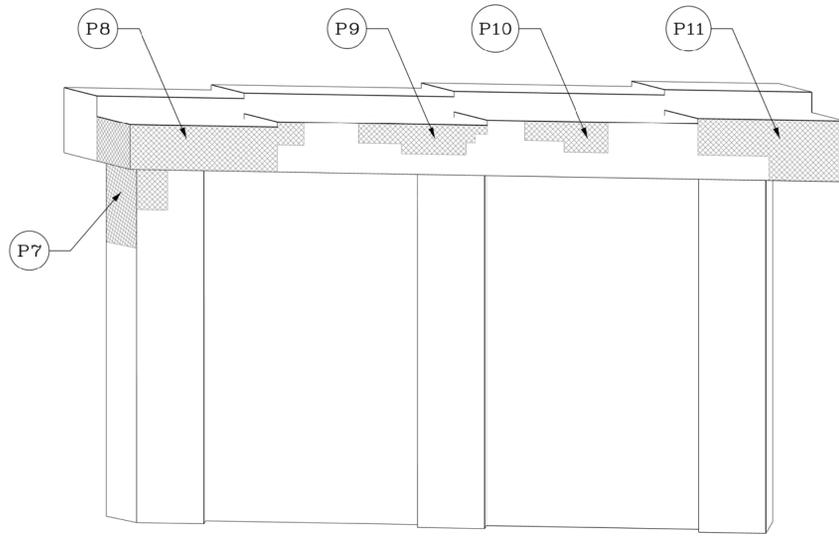


PIER 1



DESIGNATION	PIER	SIDE	AREA
P1	1	SOUTH	35 SF
P2	1	SOUTH	22 SF
P3	1	NORTH	17 SF
P4	1	NORTH	12 SF
P5	1	NORTH	21 SF
P6	1	NORTH	3 SF
P7	2	SOUTH	8 SF
P8	2	SOUTH	18 SF
P9	2	SOUTH	6 SF
P10	2	SOUTH	5 SF
P11	2	SOUTH	31 SF

TOTAL AREA OF PIER REMOVAL OF 223 SF. TOTAL QUANTITY INCLUDES AN ADDITIONAL 25% FOR UNDETERMINED LOCATIONS



PIER 2

PIER REMOVAL NOTES

- Contractor shall set up a temporary structural support for the existing beams prior to the removal of any pier concrete. Temporary structural support shall be designed and stamped by a Professional Engineer, licensed to practice in the State of Maine.
- Set up a contamination/debris collection system.
- Areas listed are approximations of unsound concrete. The total area of estimated removal is 223 SF, including an additional 25% for undetermined locations.
- Saw cut 1" around designated areas to prevent excess removal. Indicated areas are the approximate anticipated removal limits and are subject to change in the field as agreed upon by Contractor and Resident.
- Maximum jackhammer weight shall be 30lb.
- After the removal of the concrete the surface area should be cleaned of loose debris using high pressure water or air. If air is used care must be taken to prevent airborne oil contamination of concrete to remain.
- Install sacrificial galvanic anodes along all exposed rebar locations at a maximum of 30 inches O.C.

STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 3137  
WIN 19275.00  
BRIDGE PLANS

SIGNATURE  
P.E. NUMBER  
DATE

PRCL. MANAGER	M. PARLIN	BY	DATE
DESIGN-DETAILED	OK	OK	NOV 2013
CHECK-REVIEWED			
DESIGN-DETAILED			
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

COBBS BRIDGE  
OVER ROYAL RIVER  
NEW GLOUCESTER CUMBERLAND COUNTY  
SUBSTRUCTURE REPAIR

SHEET NUMBER

5

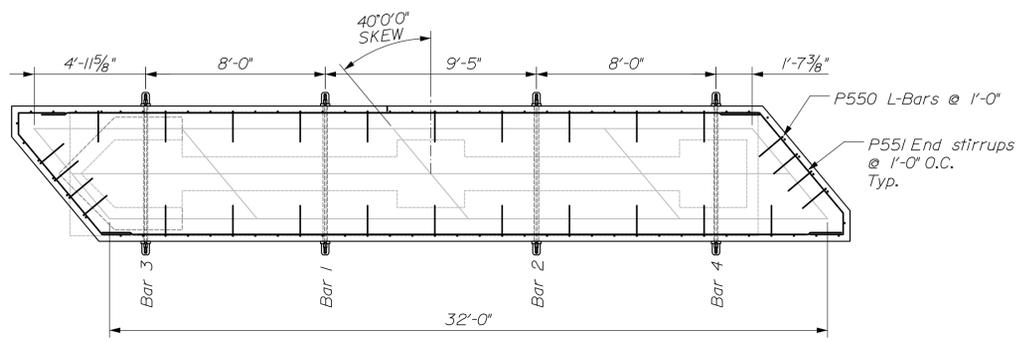
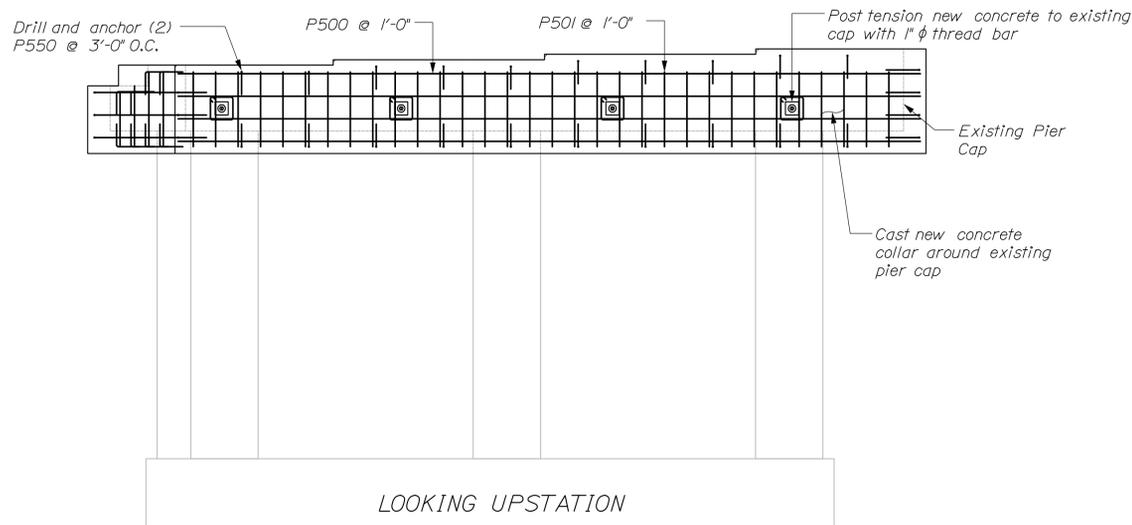


Date: 1/10/2014

Username: common

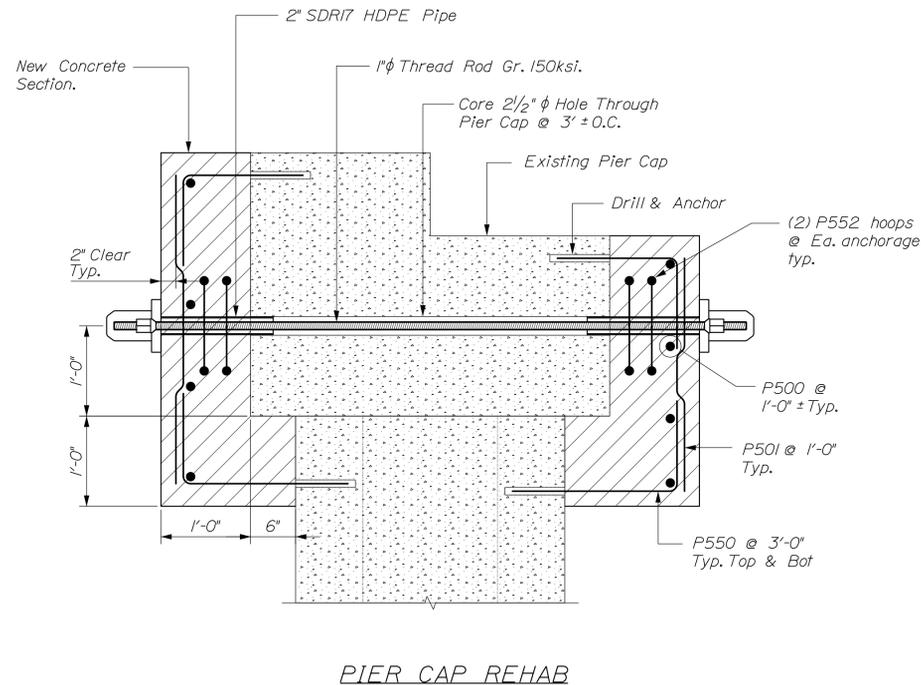
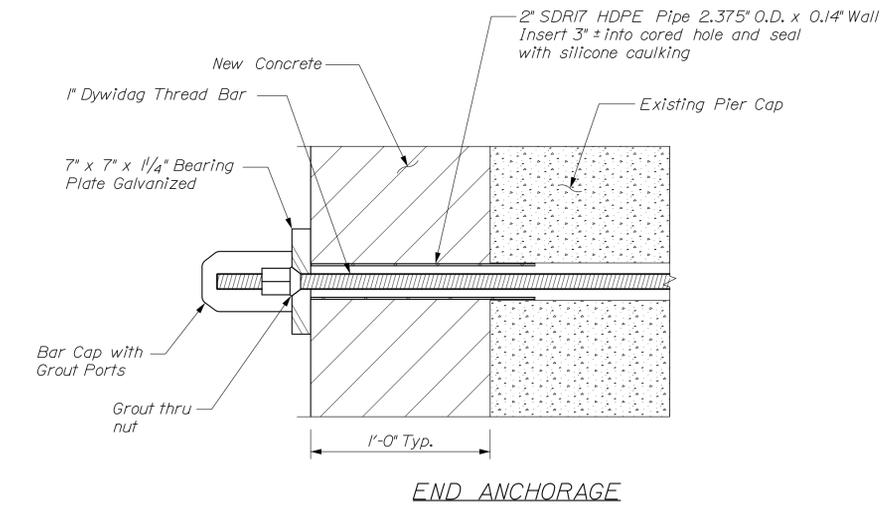
Division: BRIDGE

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**PROPOSED PIER NO.1 REPAIR**

Pier No. 1 Shown, Pier No. 2 Similar



**PIER REPAIR NOTES**

1. Payment for the removal of unsound concrete shall be made under pay item 518.60. Payment for the placement of new pier concrete and reinforcement shall be made under pay item 502.23. Quantity of new pier concrete does not include volume of replaced existing concrete. Additional volume required to be considered incidental to related repair items.
2. The contractor shall provide an acceptable means of access at each pier to allow the Resident to safely perform an inspection of all repair work to the concrete. Payment for access shall be considered incidental to related items.
3. Chamfer all exposed edges 3/4" unless noted otherwise.
4. All unsound concrete shall be removed prior to the placement of concrete.
5. All post tensioning bars are to be 1" phi Grade 150ksi, and conform to the requirements of ASTM A722, Type II, or approved equal.
6. Thread rods shall be tensioned and locked off at 65k.
7. All anchor plates shall conform to ASTM A709, Grade 50ksi and shall be galvanized in accordance with ASTM A123.
8. All cable grout shall conform to one of the following:  
SikaGrout 300PT  
Master Flow 816  
Five Star Special Grout 400  
Approved Equal
9. Concrete shall reach a compressive strength of 4350psi before bars may be tensioned.

**PIER REPAIR PROCEDURE**

1. Set up a contamination/debris collection system.
2. Saw cut 1" around designated areas to prevent excess removal and to prevent feathered edges of repair. Indicated areas are the approximate anticipated removal limits and are subject to change.
3. After the removal of the concrete the surface area should be cleaned of loose debris using high pressure water or air.
4. Exposed rebar shall be cleaned of foreign material and loose scaly rust. If it is determined by the Resident that the rust is tight and bonded then the cleaning may be omitted.
5. Core 2 1/2" phi Holes as shown for post tensioning. Insert 2" HDPE duct.
6. Drill and Anchor #5 Bars at 3'-0" O.C. as indicated. Bars shall be embedded as recommended by grout manufacturer. Grout shall be from MaineDOT approved materials list.
7. Once all new anchored rebar and ducts are in place the surface shall be cleaned of loose debris prior to the placement of any new concrete.
8. Install all new additional reinforcement.
9. Construct and place forms and block outs. Install thread bar or similar bar shape through duct to act as mandrel to help maintain alignment.
10. Place new concrete. Formwork shall be placed in a manner to allow the concrete to be vibrated and reach all locations. Formwork shall be inspected and approved by the Resident prior to the placement of concrete. (2) Layers of roofing felt shall be placed between pier and existing beams.
11. Allow concrete to cure to 4350 psi.
12. Install E anchorage assembly and thread bars.
13. Tension bars in order (i.e. Bar 1, then Bar 2, then Bar 3 etc.) to 5000 lbs. each bar.
14. Tension bars in order (i.e. Bar 1, then Bar 2, then Bar 3 etc.) to 65,000 lbs each bar, lock off.
15. Grout duct through grout tubes using an approved cable grout. Grout from one end only. Only grout one bar at a time. Remove nipple after the grout has hardened and insert plug.

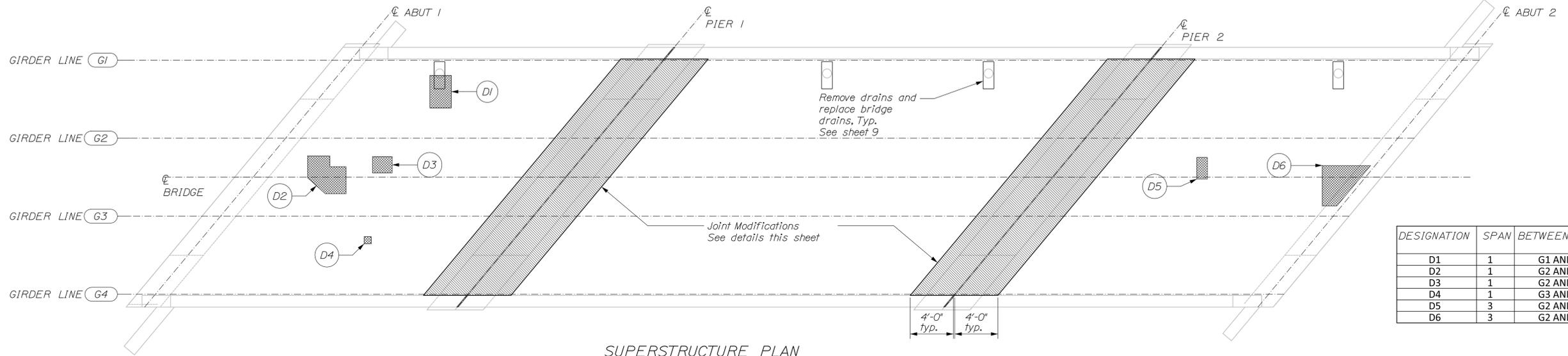
STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION  
STP-1927(500)  
WIN  
19275.00  
BRIDGE NO. 3137  
BRIDGE PLANS

DATE	BY	PROJ. MANAGER	DESIGN-DETAILED	CHECKED-REVIEWED	DESIGN-D-DETAILED	REVISIONS 1	REVISIONS 2	REVISIONS 3	REVISIONS 4	FIELD CHANGES
NOV 2013	OK	M. PARLIN	OK							

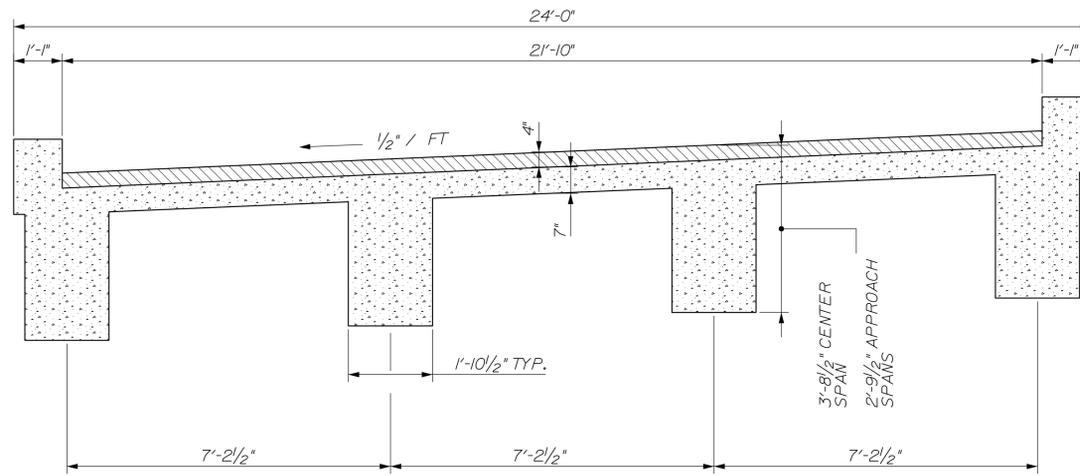
COBBS BRIDGE  
OVER ROYAL RIVER  
NEW GLOUCESTER  
CUMBERLAND COUNTY  
SUBSTRUCTURE REPAIR

SHEET NUMBER  
6

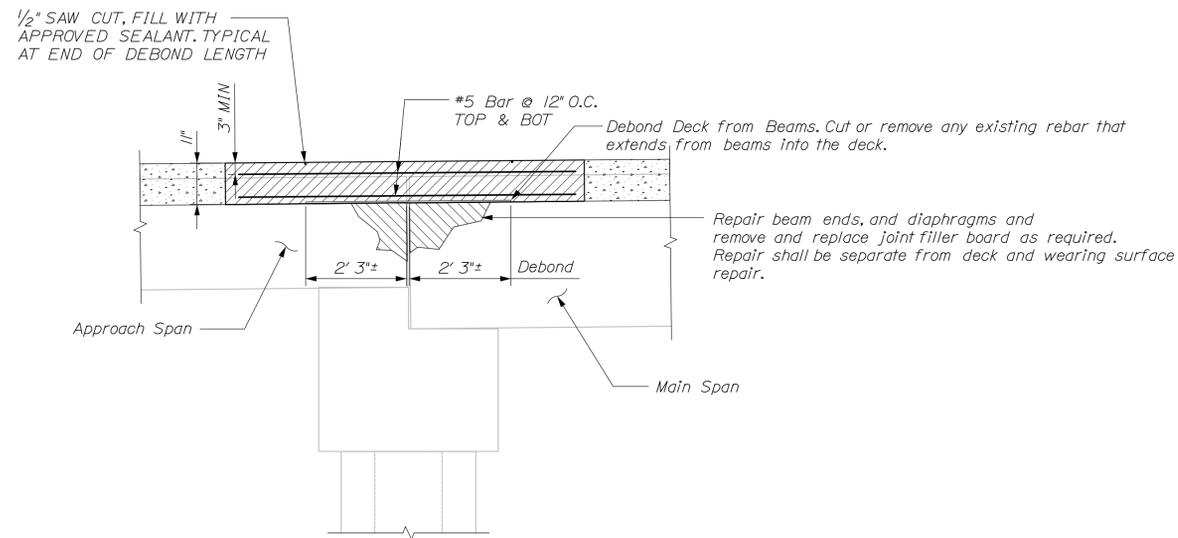




**SUPERSTRUCTURE PLAN**  
3/16" = 1'-0"



**TRANSVERSE SECTION**  
1/2" = 1'-0"



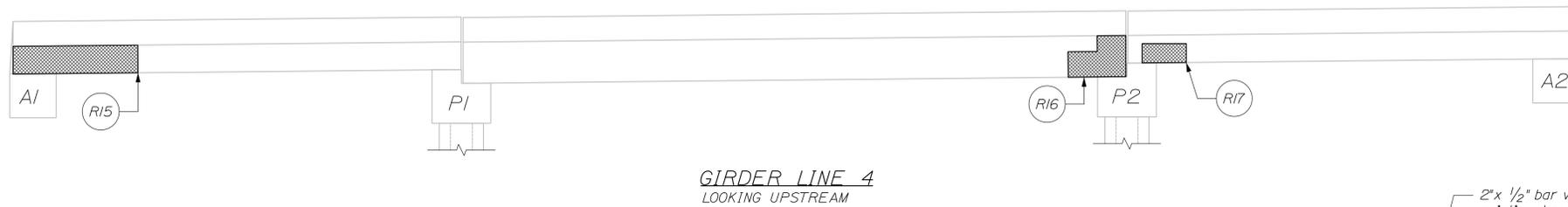
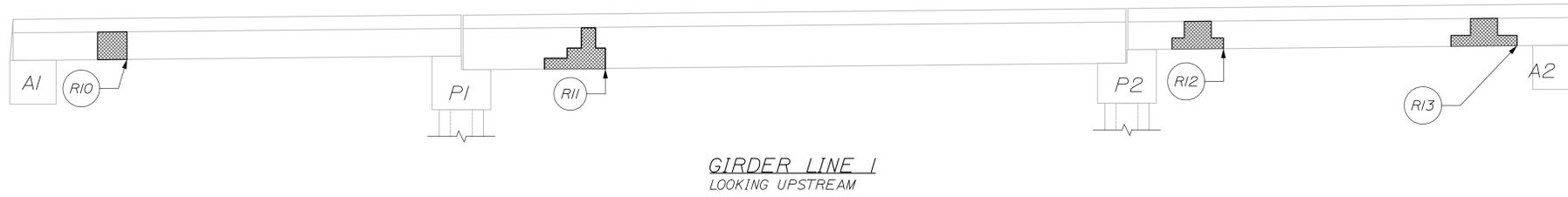
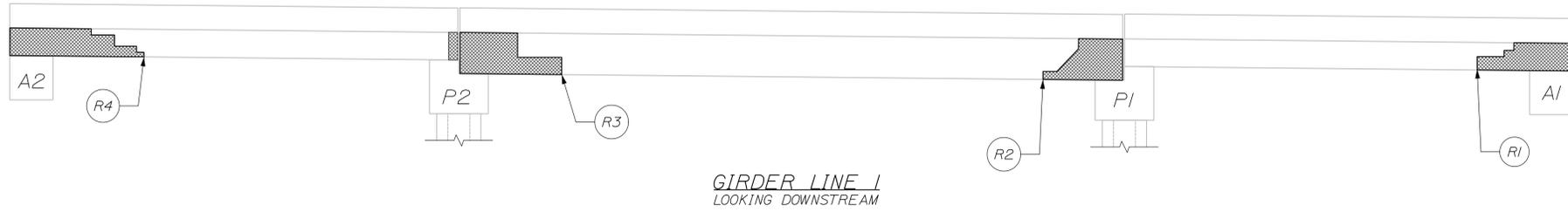
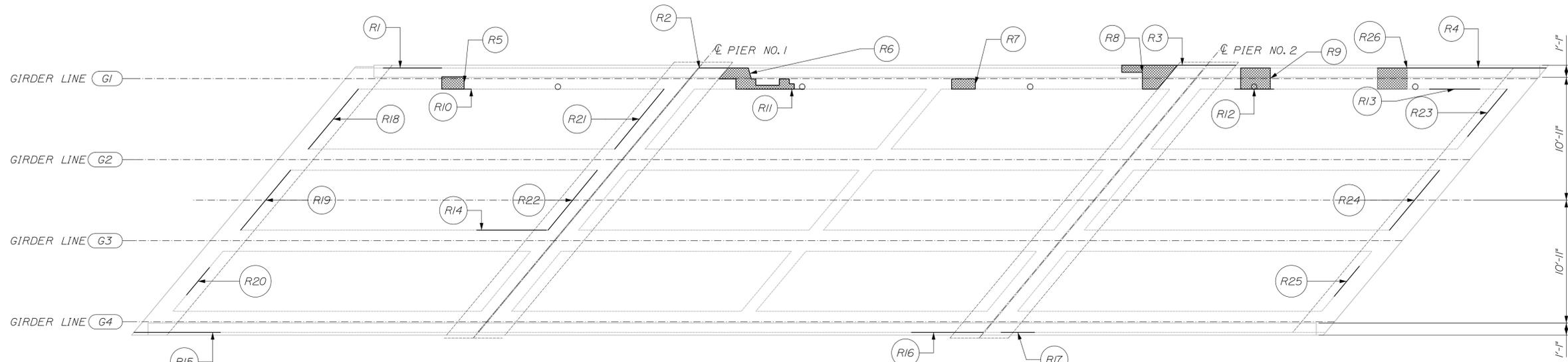
**TYPICAL JOINT MODIFICATION**

**SUPERSTRUCTURE DECK NOTES**

1. Approximate total deck repair area = 42 square feet, including 25% additional quantity for undetermined locations. All deck area repairs to be full depth.
2. Approximate joint closure repair area = 350 square feet.
3. Reinforcing Steel shall have a minimum cover of 2" unless otherwise noted.
4. During the removal of the joint wearing surface it is anticipated that additional concrete will be loose and will need to be removed, especially towards the upstream fascia. Contractor shall remove all loose debris to the satisfaction of the Resident.
5. If it is determined that the reinforcing stirrups in the end diaphragm have more than 50% section loss they shall be replaced.
6. Casting of removed sections of diaphragm and the deck/wearing surface at Piers shall be separate in order to allow debonding between the deck and the beams.

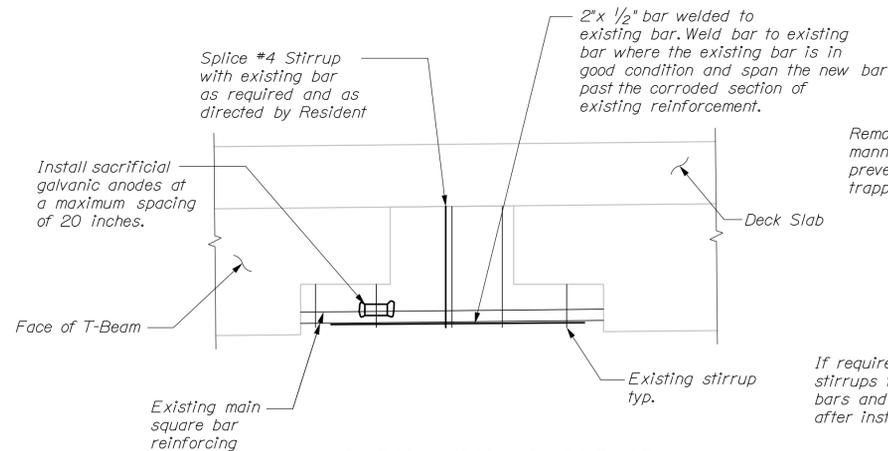
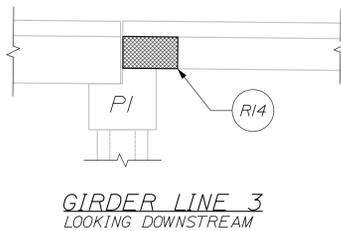
PROJ. MANAGER	DATE	BY	DATE
M. PARLIN	NOV. 2013	OK	
DESIGN-DETAILED		OK	
CHECKED-REVIEWED			
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			





**SUPERSTRUCTURE NOTES**

1. Beam shall be temporarily supported prior to the removal of concrete.
2. At every repair section the main reinforcing bars must be repaired if the individual bar has greater than 25% section loss, 75% remaining; or if the group of bars has greater than 15% section loss, 85% remaining. Supplemental bars sufficient to increase the area of the group of reinforcing bars beyond 85% of the initial area remaining are not required.
3. All repair areas shall be cleaned of loose debris. Reinforcing steel shall be cleaned of all rust.
4. Areas shall be repaired in a similar fashion as that outlined in the substructure repair plan sheet and the special provisions.
5. Stirrups exposed in repair areas that have less than 25% loss in section may remain unsupplemented. Stirrups with greater than 25% loss in section area shall be supplemented with a new #4 rebar stirrup. Vertical legs of the supplemented stirrup shall be drilled and anchored or shall be lapped with the existing stirrup for a minimum of 12". 12" shall be measured along each leg where section loss in the existing bar is less than 50%.
6. Install sacrificial galvanic anodes at a maximum spacing of 20 inches.

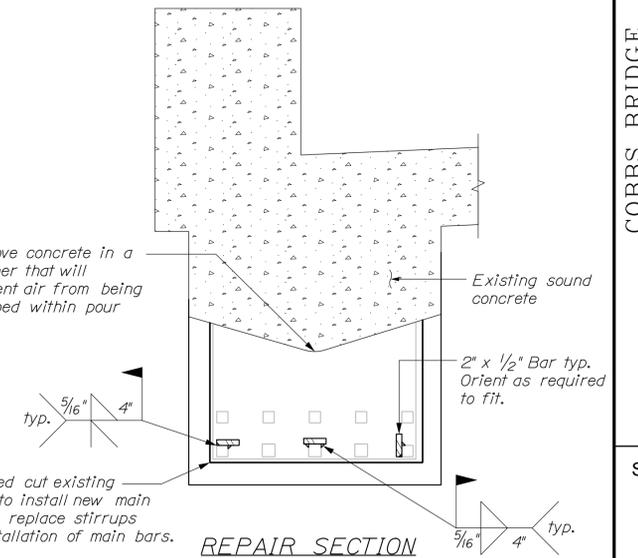


DESIGNATION	SPAN	BEAM LINE	SIDE	AREA SF
R1	1	G1	UPSTREAM	10
R2	2	G1	UPSTREAM	11
R3	2	G1	UPSTREAM	15
R4	3	G1	UPSTREAM	14
R5	1	G1	BOTTOM	2
R6	2	G1	BOTTOM	6
R7	2	G1	BOTTOM	2
R8	2	G1	BOTTOM	6
R9	3	G1	BOTTOM	5
R10	1	G1	DOWNSTREAM	4
R11	2	G1	DOWNSTREAM	6
R12	3	G1	DOWNSTREAM	5
R13	3	G1	DOWNSTREAM	6
R14	1	G3	UPSTREAM	7
R15	1	G4	DOWNSTREAM	16
R16	2	G4	DOWNSTREAM	9
R17	3	G4	DOWNSTREAM	4
R18	1	G1 - G2	DIAPHRAGM	13
R19	1	G2 - G3	DIAPHRAGM	13
R20	1	G3 - G4	DIAPHRAGM	3
R21	1	G1 - G2	DIAPHRAGM	13
R22	1	G2 - G3	DIAPHRAGM	13
R23	3	G1 - G2	DIAPHRAGM	11
R24	3	G2 - G3	DIAPHRAGM	13
R25	3	G3 - G4	DIAPHRAGM	7
R26	3	G1	BOTTOM	5

Approximate total beam repair areas are as follows:

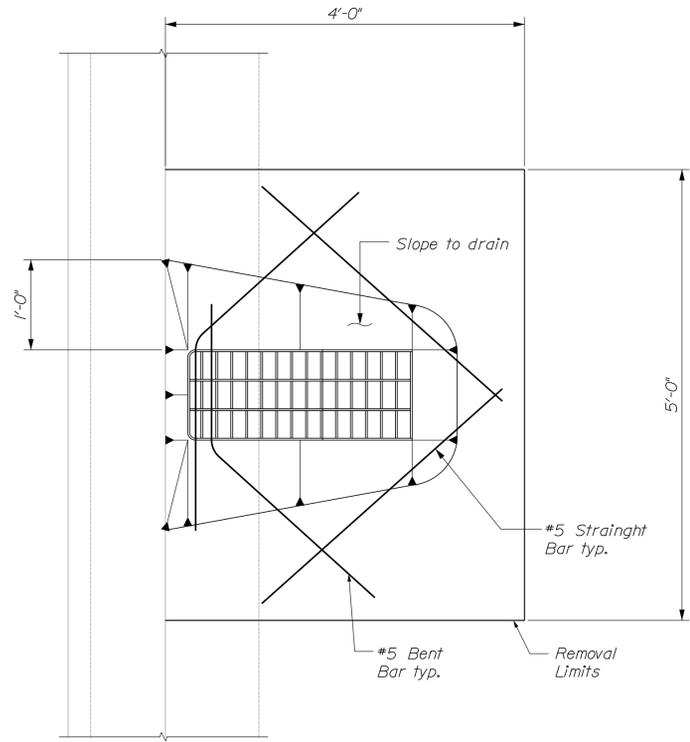
Vertical < 7.9 inch: 242 sf  
Overhead < 7.9 inch: 20 sf  
Overhead > 7.9 inch: 5 cy

Total quantities include an additional 25% to account for undetermined locations.

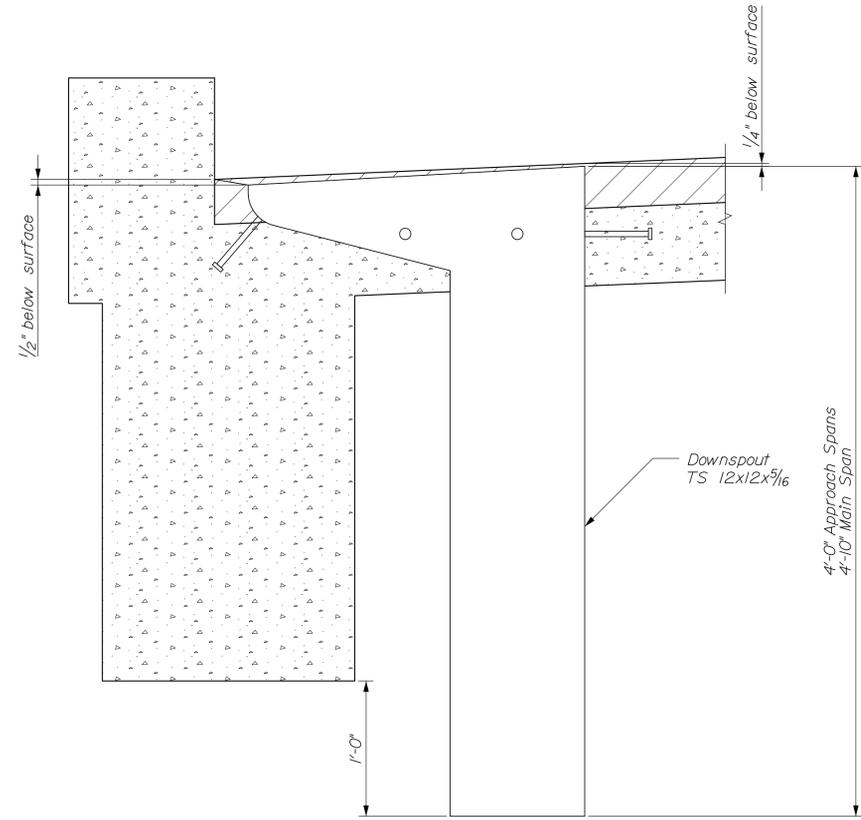


STATE OF MAINE DEPARTMENT OF TRANSPORTATION <b>STP-1927(500)</b>	BRIDGE NO. 3137 WIN 19275.00 BRIDGE PLANS
COBBS BRIDGE OVER ROYAL RIVER NEW GLOUCESTER CUMBERLAND COUNTY	SUPERSTRUCTURE REPAIR
SHEET NUMBER <span style="font-size: 2em; font-weight: bold;">8</span>	

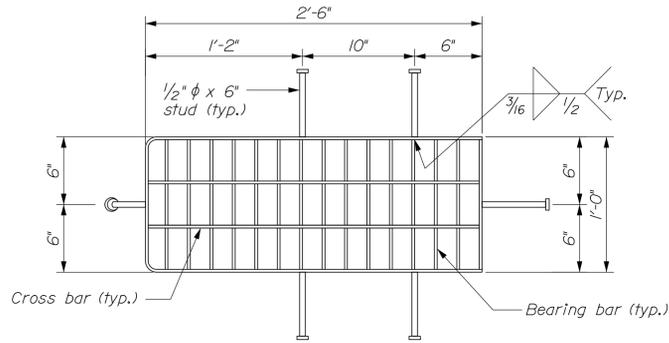
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DESIGN-DETAILED	OK	NOV 2013	OK	
CHECK-REVIEWED				
DESIGN-DETAILED				
DESIGN-REVIEWED				
REVISIONS 1				
REVISIONS 2				
REVISIONS 3				
REVISIONS 4				
FIELD CHANGES				



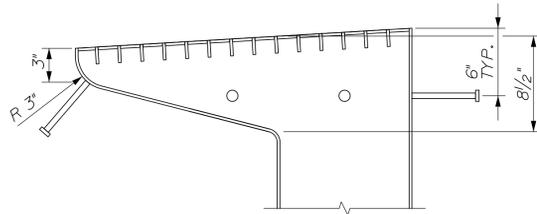
Bridge Drain Plan



BRIDGE DRAIN ELEVATION



DRAIN TOP VIEW



DRAIN SECTION  
BRIDGE DRAIN

BRIDGE DRAIN NOTES

1. All plates shall be 1/4" thick
2. The grating shall be commercial heavy - duty grating with 1/2" x 5/16" bearing bars spaced at 2 3/8" inches and 3/8" phi cross bars spaced at 4 inches. The grating shall be centered in the drain top.
3. Drains shall be galvanized.
4. Adjust reinforcing steel to fit around Bridge Drains in a manner approved by the Resident. Do not cut transverse reinforcing bars.

BRIDGE DRAIN MATERIALS

1. Downspouts ..... ASTM A 500, Grade B
2. Shapes & plates ..... AASHTO M 270m/m 270, Grade 50

STATE OF MAINE  
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BRIDGE NO. 3137  
WIN  
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BRIDGE PLANS

COBBS BRIDGE  
OVER ROYAL RIVER  
NEW GLOUCESTER  
CUMBERLAND COUNTY

BRIDGE DRAIN  
SIGNATURE  
P.E. NUMBER  
DATE

PROJ. MANAGER	BY	DATE
M. PARLIN	OKK	NOV. 2013
DESIGN-DETAILED	OKK	
CHECKED-REVIEWED		
DESIGN-D-DETAILED2		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

COBBS BRIDGE  
OVER ROYAL RIVER  
NEW GLOUCESTER  
CUMBERLAND COUNTY  
BRIDGE DRAIN

SHEET NUMBER

9



Date: 1/10/2014

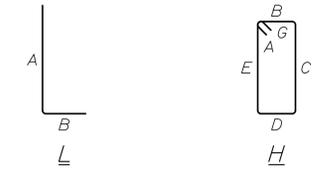
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Division: BRIDGE

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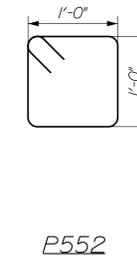
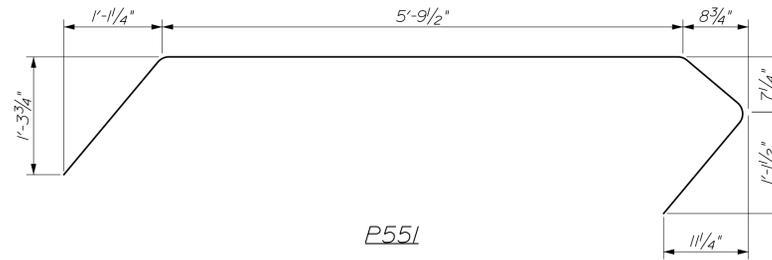
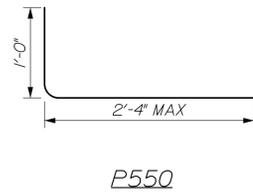
STRAIGHT BARS				BENT BARS																		
MARK	QTY.	LENGTH	LOCATION	MARK	QTY.	LENGTH	LOCATION	MARK	QTY.	LENGTH	TYPE	A	B	C	D	E	F	G	H	O	R	LOCATION
Pier Cap				Pier Cap																		
P500	16	33' - 2"	Horizontal Pier Cap	P550	112	3' - 3/4"	L	1'-0"	2'-4"													Pier Cap L-Bar
P501	156	Varies	Vertical Pier Cap - See Sketch	P551	17	9' - 10"	SEE SKETCH															Pier Cap - End Stirrup
				P552	32	4' - 9/4"	H	3 3/4"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"					3 3/4"				Pier Cap - Tension Bar Stirrup
DECK																						
S500	88	7' - 11"	DECK REINFORCEMENT																			
MARK	QTY.	LENGTH	LOCATION	MARK	QTY.	LENGTH	LOCATION	MARK	QTY.	LENGTH	TYPE	A	B	C	D	E	F	G	H	O	R	LOCATION

TYPE - BENDING DIAGRAMS



REINFORCING NOTES

1. Rebar dimensions and quantities shown are estimations. Contractor shall field verify pier cap dimensions prior to ordering reinforcement.
2. P550 L-Bar shown is with a maximum 2'-4" leg. This L-Bar will need to be modified for each location depending on the amount of existing concrete removed and the required depth of anchorage per grout manufacturers recommendation.
3. P501 Bar shown will vary in length. Maximum length required is 4'-3" and the minimum is 2'-8".
4. Contractor may field measure and verify exact lengths required or field cut bars as required.



All dimensions are out-to-out of bar.  
 Bending details and hooks shall conform to the recommendations of the current revision of ACI Standard 315 and ACI Standard 318.  
 Reinforcing Bar: ASTM A 615/A 615M, Grade 60

GENERAL NOTES

1. The first two digits following the letter(s) of the mark indicate the size of the bar:

- Mark "A502" = bar size #5
- Mark "P805" = bar size #8
- Mark "S650" = bar size #6

STATE OF MAINE  
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BRIDGE NO. 3137  
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 BRIDGE PLANS

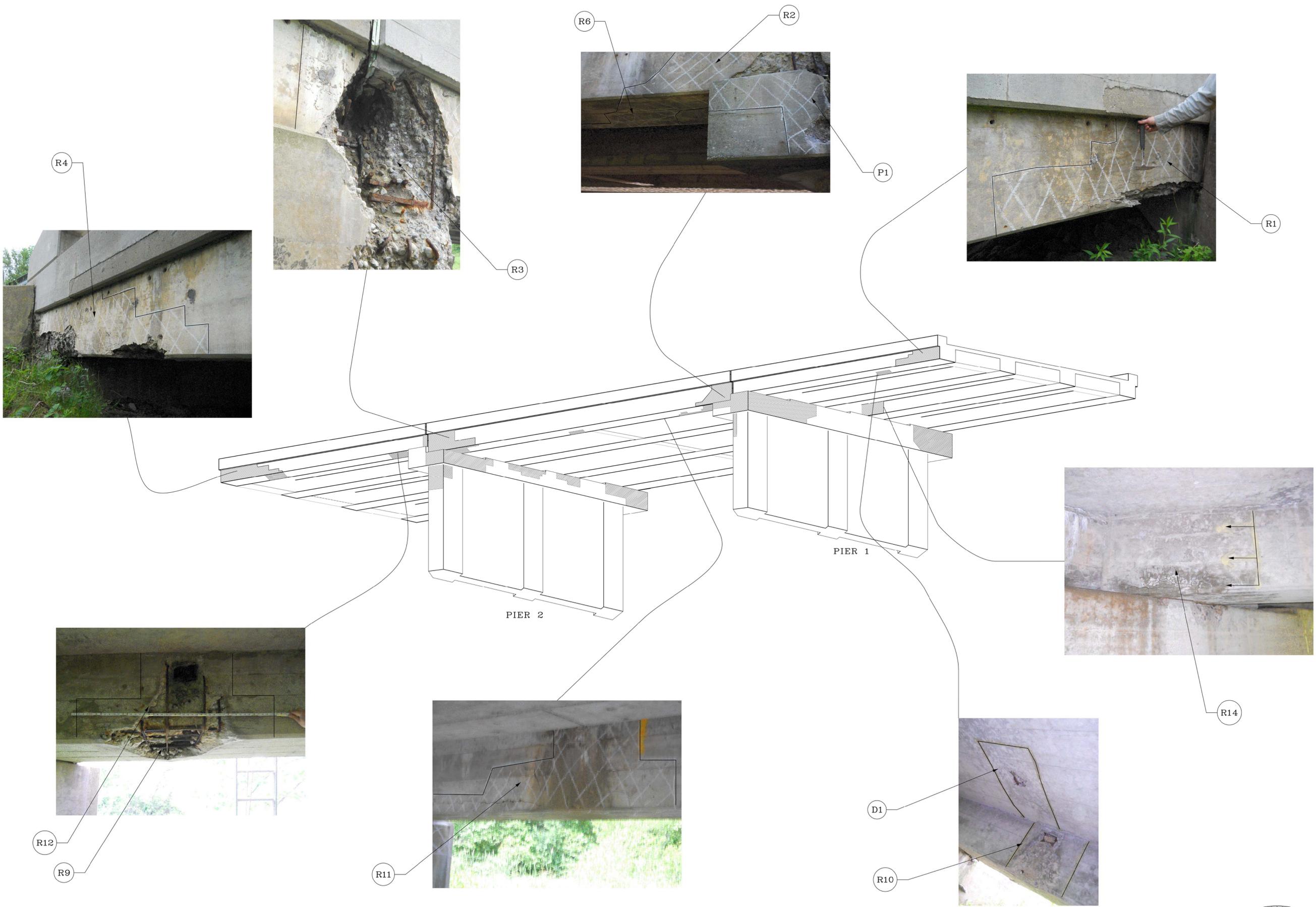
STP-1927(500)

PROJ. MANAGER M. PARLIN  
 DESIGN-Detailed OK  
 CHECKED-Reviewed OK  
 DESIGN-Checked OK  
 REVISIONS 1  
 REVISIONS 2  
 REVISIONS 3  
 REVISIONS 4  
 FIELD CHANGES

DATE NOV 2013  
 BY OK  
 COBBS BRIDGE  
 OVER ROYAL RIVER  
 NEW GLOUCESTER CUMBERLAND COUNTY

REBAR SCHEDULE  
 SHEET NUMBER  
 10





STATE OF MAINE		DEPARTMENT OF TRANSPORTATION	
COBBS BRIDGE		STP-1927(500)	
OVER ROYAL RIVER		BRIDGE NO. 3137	
NEW GLOUCESTER CUMBERLAND COUNTY		WIN 19275.00	
BRIDGE REPAIR		BRIDGE PLANS	
PRJ. MGR.	M. PARLIN	BY	OCK
DESIGN-DETAILED	OCK	DATE	NOV 2013
CHECKED-REVIEWED		SIGNATURE	
DESIGN-DETAILED		P.E. NUMBER	
REVISIONS 1		DATE	
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			
SHEET NUMBER		11	

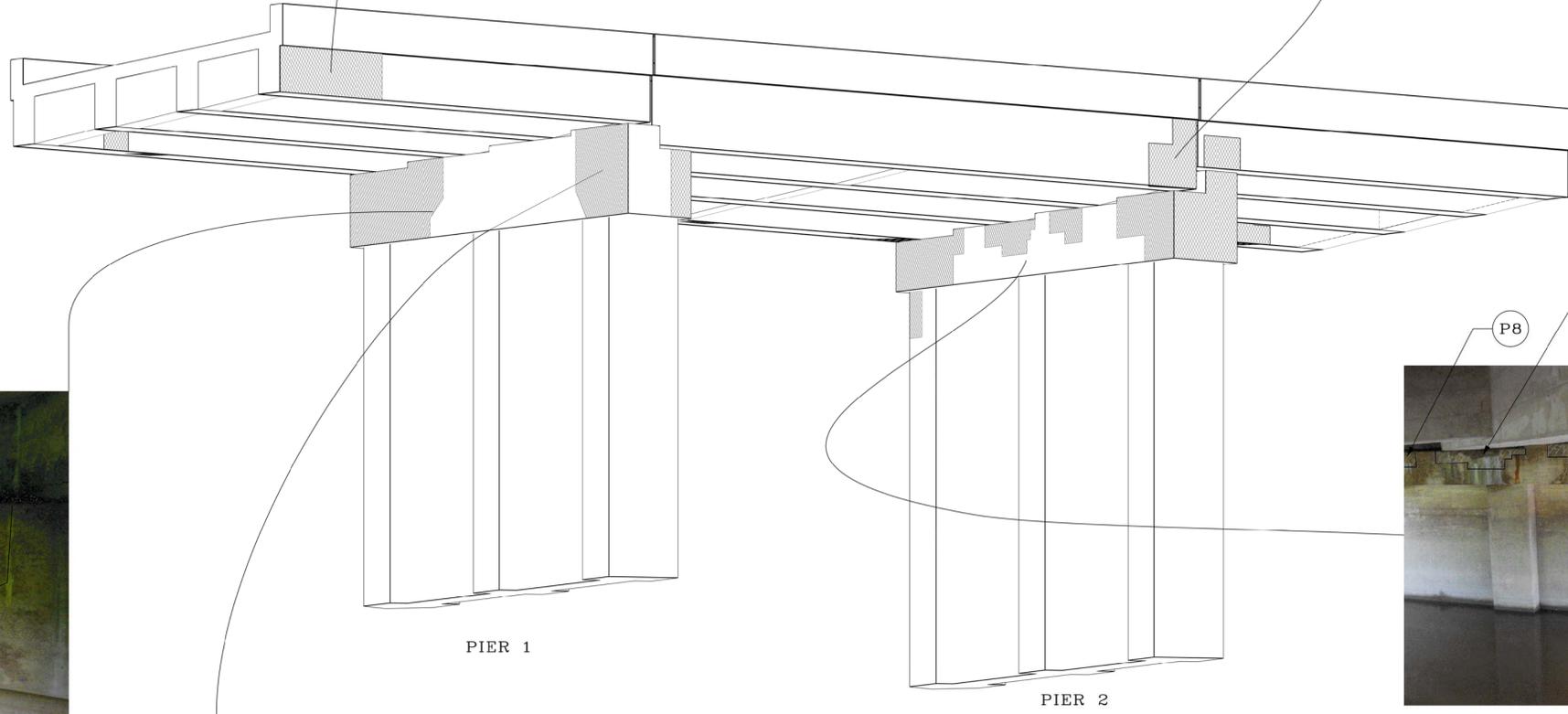




P1



R15



PIER 1

PIER 2



P2



R16



P8

P9

P10

P11

R17



SHEET NUMBER

12

COBBS BRIDGE  
OVER ROYAL RIVER  
NEW GLOUCESTER CUMBERLAND COUNTY  
BRIDGE REPAIR

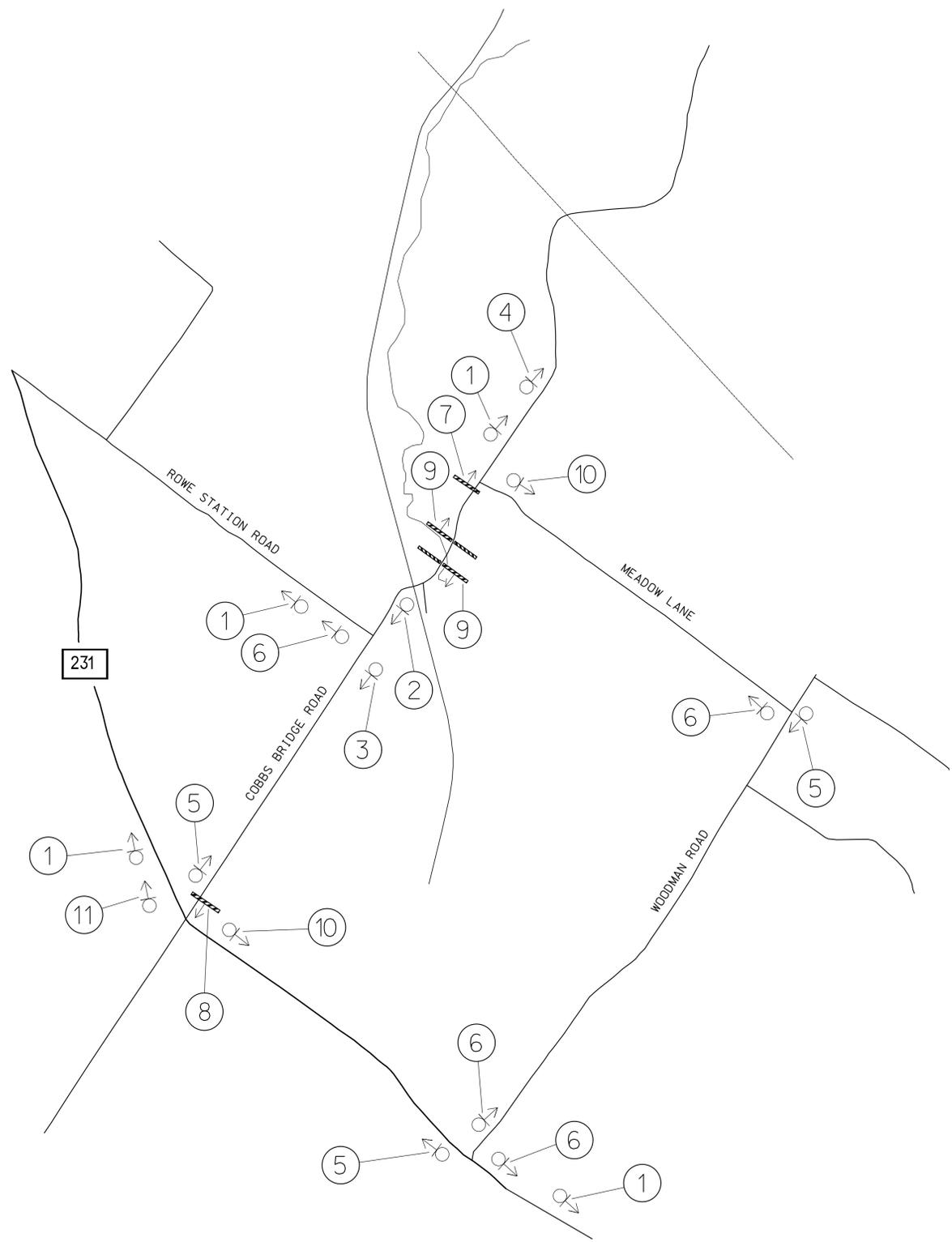
PRJ. MANAGER	M. PARLIN	BY	DATE
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CHECK-REVIEWED			
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DESIGN-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			
SIGNATURE		P.E. NUMBER	
DATE		DATE	

STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION  
STP-1927(500)  
BRIDGE NO. 3137  
WIN 19275.00  
BRIDGE PLANS

- ①
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- ⑨
- ⑩
- ⑪

COBBS BRIDGE RD.  
END  
DETOUR

COBBS BRIDGE RD.  
DETOUR  
↑



During the period of road closure the contractor shall block off the road with 30ft of temporary concrete barrier located behind the Type III Barricades (#9)

NOT TO SCALE

STATE OF MAINE		DEPARTMENT OF TRANSPORTATION	
COBBS BRIDGE OVER ROYAL RIVER		STP-1927(500)	
NEW GLOUCESTER CUMBERLAND COUNTY		BRIDGE NO. 3137	
DETOUR PLAN		WIN 19275.00	
SHEET NUMBER		BRIDGE PLANS	
13			
PROJ. MANAGER	M. FARLIN	DATE	
DESIGN-DETAILED		BY	
CHECKED-REVIEWED		SIGNATURE	
DESIGN-DETAILED2		P.E. NUMBER	
DESIGN-DETAILED3		DATE	12/2013
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			