STATE OF MAINEx
DEPARTMENT OF TRANSPORTATION

SPECIFICATIONS

DESIGN LOADING
Live Load M20
Site Specific Load Posting

TRAFFIC DATA
Current (2005) AADT 3,470
Future (2025) AADT 5,210
DIV % of AADT 12%
Design Hour Volume 625
Heavy Trucks (% of ADT) 7%
Heavy Trucks (% of DIV) 50%
Directional Distribution (% of DIV) 50%
18 kip Equivalent F 2.0 104
18 kip Equivalent P 2.5 100
Design Speed (mph) 25

HYDROLOGIC DATA
Mean High Water (MHW) 6.4 ft
Mean High Water (MHW) 5.3 ft
Mean Low Water (MLW) 4.7 ft
Mean Lower Low Water (MLLW) 5.1 ft
* Elevations based on NGVD 29.

MATERIALS
Concrete (Using Fiber) Class LP (Self
Reinforced Polymer Consolidating
Stay-in-Place Forms Concrete
Concrete
Epoxy Coated Reinforcing Steel AASHTO M284 (ASTM A775)

UTILITIES
Emera
FairPoint Communications
PHWA Aerodynamics Laboratory
Grees Systems
MaineDOT Bridge Maintenance
MaineDOT Electrical Department
Time Warner Cable

BASIC DESIGN STRESSES
Concrete (Self Consolidating) 5,000 PSI
Concrete (All Other) 4,350 PSI

MAINTENANCE OF TRAFFIC
Traffic to be maintained during construction. Contractor will not be allowed to place equipment or obstructions on the bridge deck.

DEER ISLE-SEDGWICK
HANCOCK COUNTY
DEER ISLE-SEDGWICK BRIDGE
OVER
EGGEMOGGIN REACH
STATE ROUTE 15
PROJECT LENGTH 0.539 mi.
BRIDGE SUBSTRUCTURE REHABILITATION
BRIDGE NO. 3257

PROJECT LOCATION:
Deer Isle-Sedgwick Bridge which carries State Route 15 over Eggemoggin Reach. Lat./Long. 44°7'39"N 68°41'19"W

PROGRAM AREA:
Bridge Program

OUTLINE OF WORK:
Bridge Substructure Rehabilitation
GENERAL NOTES:

1. The contractor shall be, in accordance with the Maine Department of Transportation Standard Specifications, November 2014 and Standard Details, November 2014, including all supplemental specifications and the special provisions of this contract.

2. Dimensions, angles, stationing and elevations shown on existing details are taken from the construction drawings dated September 14, 2013 through June 24, 2019, supplemented by limited field measurements and are not guaranteed to be correct. The contractor shall be responsible for verifying the accuracy of all such measurements and shall have no recourse against the owner for any costs or damages arising from the use of such dimensions, angles, stationing and elevations shown on existing details. The contractor shall be responsible for correcting any errors found.

3. Elevations from the original design drawings, which serve as the basis for elevations shown on this contract plans and specifications, are assumed to be referenced to vertical datum NGVD 29.

4. All dirt, rock, slate, sawdust, vegetation, wartime debris, rocks or other foreign matter shall be removed from the existing structure in the vicinity of and remain clear of the work for a distance of 50 feet in all directions.

5. Where permanent and temporary forms are required, the contractor shall provide adequate drainage, access, and support for forms to prevent form damage.

6. All metal portions of the existing bridge may be coated with a lead-based paint system. The contractor shall be responsible for the containment, proper management, and disposal of all lead-containing hazardous waste generated as a result of this process. The contractor is responsible for implementing appropriate, OSHA mandated personal protective equipment standards. Adequate ventilation is required.

7. The contractor is responsible for the care, installation, and operation of the work area. The contractor is also responsible for the safe and proper installation of all temporary and permanent work protection, as required.

8. The contractor shall submit a construction sequence in writing to the Resident Engineer for approval before starting work on this project.

SUGGESTED SEQUENCE OF CONSTRUCTION

The following construction sequence is intended as a suggestion of one feasible method, in order to provide a uniform basis for bidding. The contractor shall submit a construction sequence in writing to the Resident Engineer for approval before starting work on this project.

1. Remove cofferdams at Piers 2, 3, 6 and 7.
2. Install mats for access to Piers 2 and 3.
3. Install staging/scabbling at each pier as required.
4. Remove existing steel trash-repair forms.
5. Place concrete repair materials.
6. Place reinforcing steel trash-repair forms.
7. Place fiberglass reinforced plastic trash-repair forms
8. Install cofferdams at Piers 2, 3, 6 and 7.
9. PERFORM CONCRETE AND CRACK REPAIRS.
10. REMOVE STAGING/SCAFFOLDING AT EACH PIER.
11. MAINTENANCE OF TRAFFIC

REPAIR OF VERTICAL SURFACES > 8 INCHES

REPAIR OF VERTICAL SURFACES < 8 INCHES

EPOXY-COATED REINFORCING STEEL, PLACING

FOOTINGS

CONCRETE REPAIRS AND CRACK REPAIRS IN LOCATIONS ABOVE ELEVATION 8.0± AS REQUIRED.

PLACE PROTECTIVE COATING FOR CONCRETE SURFACES.

PERFORM CONCRETE AND CRACK REPAIRS.

MAINTENANCE OF TRAFFIC

CONSTRUCTION SEQUENCE

THE FOLLOWING CONSTRUCTION SEQUENCE IS INTENDED AS A SUGGESTION OF ONE FEASIBLE METHOD, IN ORDER TO PROVIDE A UNIFORM BASIS FOR BIDDING. THE CONTRACTOR SHALL SUBMIT A CONSTRUCTION SEQUENCE IN WRITING TO THE RESIDENT ENGINEER FOR APPROVAL BEFORE STARTING WORK ON THIS PROJECT.

CHECKS 3 AND 7

1. INSTALL COFFERDAM AT PIER 6 AND 7.
2. INSTALL MATS FOR ACCESS TO PIERS 2 AND 3.
3. INSTALL STAGING/SCAFFOLDING AT EACH PIER AS REQUIRED.
4. REMOVE EXISTING STEEL TRASH-REPAIR FORMS.
5. PLACE CONCRETE REPAIRS TO THE LIMITS SHOWN AND TO REMOVE DETERIORATED CONCRETE.
6. PLACE AND REPLACE DETERIORATED REINFORCING STEEL.
7. PLACE PATCH MATERIAL TO REPAIR DEEP Voids.
8. INSTALL FIBER REINFORCED PLASTIC TRASH-REPAIR FORMS.
9. PLACE PVC CONCRETE REPAIR MATERIAL.
10. PERFORM CONCRETE REPAIRS AND CRACK REPAIRS IN LOCATIONS ABOVE ELEVATION 8.0± AS REQUIRED.
11. PLACE PROTECTIVE COATING FOR CONCRETE SURFACES.
12. REMOVE STAGING/SCAFFOLDING AT EACH PIER.
13. REMOVE MATS INSTALLED FOR ACCESS TO PIERS 2 AND 3.
14. REMOVE COPPERDAMS AT PIERS 6 AND 7.

APPLICATIONS AND ADDENDUMS

1. PERFORM CONCRETE AND CRACK REPAIRS.
2. PLACE PROTECTIVE COATING FOR CONCRETE SURFACES.

DEER ISLE-SEDGWICK BRIDGE

DEPARTMENT OF TRANSPORTATION

STATE OF MAINE

Derry, New Hampshire

Printed by: TranSystems 91502-146103
NOTES:

1. FOR GENERAL NOTES SEE SHEET 2.
2. FOR ABUTMENT LOCATION SEE SHEET 3.
3. FOR DEMOLITION AND TYPICAL REPAIR DETAILS SEE SHEET 6.
4. ESTIMATED CONCRETE REPAIR QUANTITIES INCLUDE "UP & AHEAD" LOCATIONS TO BE REPAIRED AS NECESSARY AS DETERMINED BY THE RESIDENT.

LEGEND:

- CONCRETE REPAIR AREA (SF)
- PROTECTIVE COATING FOR CONCRETE SURFACES (SY)

ESTIMATED CONCRETE REPAIR QUANTITIES

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
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<tbody>
<tr>
<td>Upward Facing Surfaces (Item 518.50)</td>
<td>0 SF</td>
</tr>
<tr>
<td>Vertical Surfaces (Item 518.60)</td>
<td>200 SF</td>
</tr>
<tr>
<td>Overhead Surfaces (Item 518.70)</td>
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</tr>
<tr>
<td>Protective Coating for Concrete Surfaces (515.20)</td>
<td>60 SY</td>
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</table>
NOTES:
1. FOR GENERAL NOTES SEE SHEET 2.
2. FOR ABUTMENT LOCATION SEE SHEET 3.
3. FOR DEMOLITION AND REPAIR DETAILS SEE SHEET 4.
4. ESTIMATED CONCRETE REPAIR QUANTITIES INCLUDE "IF & WHERE" LOCATIONS TO BE REPAIRED AS NECESSARY AS DETERMINED BY THE RESIDENT.
NOTES:
1. FOR GENERAL NOTES SEE SHEET 2.
2. FOR PIER LOCATION SEE SHEET 3.
3. FOR DEMOLITION & TYPICAL REPAIR DETAILS SEE SHEET 11.
4. FOR PIERS 2 & 7 REPAIR DETAILS SEE SHEET 12.
5. ESTIMATED CONCRETE REPAIR QUANTITIES INCLUDE "IF & WHERE" LOCATIONS TO BE REPAIRED AS NECESSARY AS DETERMINED BY THE RESIDENT.
THE RESIDENT. LOCATIONS TO BE REPAIRED AS NECESSARY AS DETERMINED BY ESTIMATED CONCRETE REPAIR QUANTITIES INCLUDE "IF & WHERE" FOR PIERS 3 & 6 REPAIR DETAILS SEE SHEET 13. FOR DEMOLITION & TYPICAL REPAIR DETAILS SEE SHEET 11. FOR PIER LOCATION SEE SHEET 3. FOR GENERAL NOTES SEE SHEET 2.

NOTES:
1. FOR GENERAL NOTES SEE SHEET 2.
2. FOR PIER LOCATION SEE SHEET 3.
3. FOR DEMOLITION & TYPICAL REPAIR DETAILS SEE SHEET 11.
4. FOR PIERS 3 & 6 REPAIR DETAILS SEE SHEET 15.
5. ESTIMATED CONCRETE REPAIR QUANTITIES INCLUDE "IF & WHERE" LOCATIONS TO BE REPAIRED AS NECESSARY AS DETERMINED BY THE RESIDENT.
THE RESIDENT.
LOCATIONS TO BE REPAIRED AS NECESSARY AS DETERMINED BY

ESTIMATED CONCRETE REPAIR QUANTITIES

<table>
<thead>
<tr>
<th>Category</th>
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<tr>
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<td>Vertical Surfaces (Item 518.60)</td>
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<td>10 SF</td>
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<tr>
<td>Protective Coating for Concrete Surfaces (Item 515.20)</td>
<td>10 SY</td>
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<tr>
<td>PIER STRENGTHENING (Item 531.221)</td>
<td>370 CF</td>
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</table>

NOTES:

1. FOR GENERAL NOTES SEE SHEET 2.
2. FOR PIER LOCATION SEE SHEET 3.
3. FOR DEMOLITION & TYPICAL REPAIR DETAILS SEE SHEET 4.
4. FOR PIERS 3 & 6 REPAIR DETAILS SEE SHEET 5.

ESTIMATED CONCRETE REPAIR QUANTITIES INCLUDE "IF & WHERE" LOCATIONS TO BE REPAIRED AS NECESSARY AS DETERMINED BY THE RESIDENT.
NOTES:

1. FOR GENERAL NOTES SEE SHEET B.
2. FOR PIER LOCATION SEE SHEET 3.
3. FOR DEMOLITION & TYPICAL REPAIR DETAILS SEE SHEET K.
4. FOR PIER 2 & 7 REPAIR DETAILS SEE SHEET L.
5. ESTIMATED CONCRETE REPAIR QUANTITIES INCLUDE "IF & WHERE" LOCATIONS TO BE REPAIRED AS NECESSARY AS DETERMINED BY THE RESIDENT.

PIER 7

ESTIMATED CONCRETE REPAIR QUANTITIES

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
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<tbody>
<tr>
<td>Upward Facing Surfaces (Item 515.50)</td>
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</tr>
<tr>
<td>Vertical Surfaces (Item 515.60)</td>
<td>0 SF</td>
</tr>
<tr>
<td>Overhead Surfaces (Item 515.70)</td>
<td>0 SF</td>
</tr>
<tr>
<td>Protective Coating for Concrete Surfaces (Item 515.20)</td>
<td>40 SF</td>
</tr>
<tr>
<td>PLayer Strengthening (Item 531.221)</td>
<td>170 CF</td>
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</tbody>
</table>
1. For general notes see sheet 2.
2. For abutment location see sheet 3.
3. For demolition and typical repair details see sheet 4.
4. Estimated concrete repair quantities include "if & where" locations to be repaired as necessary as determined by the resident.

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>SQ FT</th>
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<tbody>
<tr>
<td>Upward facing surfaces (item 518.50)</td>
<td>10 SQ FT</td>
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<tr>
<td>Vertical surfaces (item 518.60)</td>
<td>20 SQ FT</td>
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<tr>
<td>Overhead surfaces (item 518.70)</td>
<td>0 SQ FT</td>
</tr>
<tr>
<td>Protective coating for concrete surfaces (item 515.20)</td>
<td>10 SQ SY</td>
</tr>
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**NORTH ELEVATION**

**WEST ELEVATION**

**SOUTH ELEVATION**

**EAST ELEVATION**

**PLAN**

**NOTES:**

- ISOLATED CONCRETE REPAIR AREAS THROUGHOUT VERTICAL FACE
- FACE AREAS THROUGHOUT VERTICAL ISOLATED CONCRETE REPAIR
- ESTIMATED CONCRETE REPAIR QUANTITIES
- UPWARD FACING SURFACES (ITEM 518.50)
- VERTICAL SURFACES (ITEM 518.60)
- OVERHEAD SURFACES (ITEM 518.70)
- PROTECTIVE COATING FOR CONCRETE SURFACES (ITEM 515.20)

**LEGEND:**

- CONCRETE REPAIR AREA (SF)
- PROTECTIVE COATING FOR CONCRETE SURFACES (ITEM 515.20)
**CONCRETE REPAIRS OF UPWARD-FACING SURFACES**

**ITEMS 518.50 & 518.60**

1. Prior to removing existing metal stay-in-place forms or concrete, contractor shall provide access to all work areas to the resident. The repairs shall be executed according to special provision section 53 and as outlined below.

2. Using the contract drawings as a guide, the contractor shall remove the existing steel and wood form, concrete forms, and form metal. 3 inches of concrete from the existing repair area. The contractor shall provide access to all work areas and the resident and contractor shall perform an inspection and hammer sound the concrete surface. Identification areas of unsound concrete to be removed. Add 3 inches to the repair depth with the removal of concrete.

3. Equipment used for removal of unsound concrete shall be equipped with a maximum of 35 lbs. Only choice point bits will be allowed.

4. Unit demolished area of concrete, deeper than 8 ft. no more than 12 ft. of the circumference of the pier or column to prevent clogging the structure.

5. Concrete shall be removed within the marked areas to sound substrate or a maximum depth of 12 inches.

6. Concrete that is removed from concrete shall be placed within a maximum depth of 12 inches.

7. For areas where concrete has been removed from 8 ft. and under apply concrete pier patching material as specified.

8. Prior to additional concrete removal within 5 feet of a new patch, apply concrete pier patching material to cure for 3 days.

9. Contractor shall collect all demolished concrete, steel, wrought iron, and other debris and legally dispose of it off-site in a manner and approved by the resident.

10. Contractor shall place secure steel used for reinforcement, polymer stay-in-place forms after surface preparation is approved. When the stay-in-place form is in place, contractor shall remove the concrete repair area. The concrete repair area shall have 24 hours to allow the stay-in-place form placement.

11. Contractor shall place concrete according to special provision section 53. The stay-in-place form shall be approved by the resident. The surfaces to receive repair shall be prepared according to the standard specifications. The repair of concrete shall be completed within the time period specified as directed by the resident in accordance with the standards specifications.

12. All reinforcing steel exposed in concrete, repair shall be cleaned of all loose material by methods approved by the resident.

13. Existing reinforcing steel that has been broken or lost greater than 25% of the cross-sectional area shall be supplemented with reinforcing steel of the same cross-sectional area. Steel shall be installed at a maximum space less than 2 inches apart. Using the standard specifications, the repair of concrete shall be completed within the time period specified as directed by the resident in accordance with the standards specifications.

14. The concrete repairs shall conform to the lines and grades of the original concrete surface.

15. Protective coating to be applied at each pier only after completion and acceptance of all other concrete and pier repair items. Contractor shall provide protective coating for reinforced forms, so that protective coating does not run or splatter onto forms during coating application.

**REPAIR DEPTH BEYOND REINFORCEMENT**

1. Repair depth beyond reinforcement of concrete repairs shall be 8 inches.

2. Repair depth beyond reinforcement of concrete repairs shall be 8 inches.

**CONCRETE REPAIRS OF VERTICAL SURFACES**

**ITEMS 518.50 & 518.60**

1. Prior to removing deteriorated concrete, contractor shall provide access to all work areas and the resident and contractor shall perform an inspection and hammer sound the concrete surface. Identification areas of unsound concrete to be removed. Add 3 inches to the repair depth with the removal of concrete.

2. Equipment used for removal of unsound concrete shall be equipped with a maximum of 35 lbs. Only choice point bits will be allowed.

3. All reinforcing steel exposed in concrete, repair shall be cleaned of all loose material by methods approved by the resident.

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5. The concrete repairs shall conform to the lines and grades of the original concrete surface.

6. Protective coating to be applied at each pier only after completion and acceptance of all other concrete and pier repair items. Contractor shall provide protective coating for reinforced forms, so that protective coating does not run or splatter onto forms during coating application.

**PIER DEMOLITION DETAIL**

1. Prior to removing existing metal stay-in-place forms or concrete, contractor shall provide access to all work areas to the resident. The repairs shall be executed according to special provision section 53 and as outlined below.

2. Using the contract drawings as a guide, the contractor shall remove the existing steel and wood form, concrete forms, and form metal. 3 inches of concrete from the existing repair area. The contractor shall provide access to all work areas and the resident and contractor shall perform an inspection and hammer sound the concrete surface. Identification areas of unsound concrete to be removed. Add 3 inches to the repair depth with the removal of concrete.

3. Equipment used for removal of unsound concrete shall be equipped with a maximum of 35 lbs. Only choice point bits will be allowed.

4. Unit demolished area of concrete, deeper than 8 ft. no more than 12 ft. of the circumference of the pier or column to prevent clogging the structure.

5. Concrete shall be removed within the marked areas to sound substrate or a maximum depth of 12 inches.

6. Concrete that is removed from concrete shall be placed within a maximum depth of 12 inches.

7. For areas where concrete has been removed from 8 ft. and under apply concrete pier patching material as specified.

8. Prior to additional concrete removal within 5 feet of a new patch, apply concrete pier patching material to cure for 3 days.

9. Contractor shall collect all demolished concrete, steel, wrought iron, and other debris and legally dispose of it off-site in a manner and approved by the resident.

10. Contractor shall place secure steel used for reinforcement, polymer stay-in-place forms after surface preparation is approved. When the stay-in-place form is in place, contractor shall remove the concrete repair area. The concrete repair area shall have 24 hours to allow the stay-in-place form placement.

11. Contractor shall place concrete according to special provision section 53. The stay-in-place form shall be approved by the resident. The surfaces to receive repair shall be prepared according to the standard specifications. The repair of concrete shall be completed within the time period specified as directed by the resident in accordance with the standards specifications.

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