

STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION



SPECIFICATIONS

Design: Load and Resistance Factor Design per AASHTO LRFD Bridge Design Specifications, Sixth Edition 2012 with interims through 2013. Design live load modified as noted below.

DESIGN LOADING

Live Load ..... Maine Legal Loads

TRAFFIC DATA

Current (2010) AADT ..... 3,320  
DHV - % of AADT ..... 13  
Design Hour Volume ..... 430  
Design Speed (mph) ..... 25

MATERIALS

Concrete ..... See Specifications

Structural Steel:  
All Material (except as noted) ..... ASTM A 709, Grade 50  
High Strength Bolts ..... ASTM A 325, Type 1 (Galvanized)

BASIC DESIGN STRESSES

Concrete ..... f 'c = 3,500 psi

Structural Steel:  
ASTM A 709, Grade 50 ..... F y = 50,000 psi  
ASTM A 325 ..... F μ = 120,000 psi

SOUTHPORT-BOOTHBAY HARBOR  
LINCOLN COUNTY  
SOUTHPORT BRIDGE  
OVER  
TOWNSEND GUT/ATLANTIC OCEAN  
BRIDGE STRENGTHENING  
ROUTE 27  
STATE PROJECT NO.: 18480.00  
PROJECT LENGTH 0.034 mi.  
BRIDGE NO. 2789

LIST OF DRAWINGS

Title Sheet .....	1
Quantities & General Notes .....	2
Framing Plan and Elevation .....	3
Typical Bridge Section .....	4
Floorbeam Strengthening Details I .....	5
Floorbeam Strengthening Details II .....	6
Miscellaneous Repair Details .....	7

SCOPE OF WORK

Bridge strengthening at six floorbeam locations including the installation of shear connectors, partially filling the steel grid deck with concrete, and installing steel cover plates; structural steel repairs including the removal and replacement of lateral bracing and connection plates; and associated work including surface preparation of existing steel, field painting and maintenance of traffic.

UTILITIES

Central Maine Power Company      Time Warner Cable  
Fairpoint Communications      MaineDOT Electrical Department

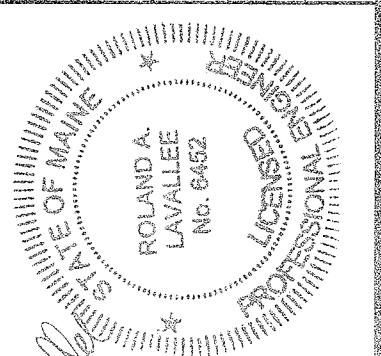
MAINTENANCE OF TRAFFIC

Open to vehical and marine traffic during construction.  
Short-term lane and bridge closures with flaggers will be required.

PROJECT LOCATION:	Route 27 over Townsend Gut/Atlantic Ocean at Southport-Boothbay Harbor Town Line Lat./Long. 43°50'33" N, 69°39'15" N
PROGRAM AREA:	Bridge
OUTLINE OF WORK:	Bridge Strengthening



STATE OF MAINE DEPARTMENT OF TRANSPORTATION	APPROVED 	DATE 3/27/14
	COMMISSIONER 	CHIEF ENGINEER 3-27-14



SIGNATURE 	P.E. NUMBER 6452	DATE 3/27/14
---------------	---------------------	-----------------

PROGRAM BRIDGE	PROJECT MANAGER STEPHEN BOODE, P.E.	DESIGNER TIM COTE, P.E.	CONSULTANT HNTB CORP.	PROJECT RESIDENT CONTRACTOR	PROJECT COMPLETION DATE
-------------------	--	----------------------------	--------------------------	--------------------------------	-------------------------

SOUTHPORT-BOOTHBAY HARBOR SOUTHPORT BRIDGE	TITLE SHEET
---	-------------

SHEET NUMBER 1 OF 7
---------------------------

WIN 18480.00

Date:3/18/2014

Username:

Division:

Filename:001\_Title\_C2.dgn



\* = Undetermined Location

Bidders and Contractors shall note that existing bridge plans may be accessed at the web address below. The plans are reproductions of the original drawings as prepared for the construction of the bridges. It is very unlikely that the plans will show any construction field changes or any alterations which may have been made to the bridge.

<http://www.maine.gov/mdot/comprehensive-list-projects/project-information.php>

2. The existing plans were developed from as-built drawings and supplemented by limited field measurements and are not guaranteed to be correct. All existing bridge information shall be verified in the field by the Contractor prior to commencing any work.

3. Utilities in this contract are listed in Special Provision Section 104, Utilities.

4. All utility facilities shall be adjusted by the respective utilities unless otherwise noted. No utility adjustment is anticipated.

5. The locations of the existing utilities, bridge wiring and monitoring instruments are not shown on these plans. The Contractor shall verify the location of all existing utilities and special equipment prior to starting work. The Contractor shall protect existing utilities and special equipment during construction and shall provide temporary supports where required by his operations. Temporary supports shall be approved by the utility or special equipment owner prior to their installation and use. The cost of this work shall be considered incidental to the work required under Item 559.10 Mobilization.

5. All work shall conform to MaineDOT Standard Specifications and Standard Details for Highways and Bridges, unless otherwise noted here-in.

7. All existing materials which are removed from the work area shall be removed from the site and properly disposed of by the Contractor in a manner approved by the Resident. These existing materials include, but are not limited to, concrete, steel, silt and other debris on or attached to the structure within the work areas. The cost of removal and disposal shall be incidental to the cost of the work items for which these removals are required.

3. No separate payment for Superintendent or Foreman will be made for the supervision of the equipment being paid for under the equipment rental items.

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 the estimated quantities for lump sum pay items, price adjustments will be made in accordance with Standard Specifications Section 109.7, Equitable Adjustments to Compensation.

0. All work shall be done in accordance with the Maine Department of Transportation's Best Management Practices for the Erosion Control & Sediment Control, February 2008.

11. The Contractor shall take care to avoid damaging the portions of the existing members to remain. Any damage to existing members caused by the Contractor's operations shall be repaired or replaced at the Department's discretion at the Contractor's sole expense. Repair materials and methods shall be approved by the Resident.

2. Wide load restrictions shall be in place for the construction duration. Advanced wide load signing shall be provided and located as approved by the Resident. The Contractor shall contact the Maine Department of Motor Vehicles, oversized Load Section at 207-624-9063 to coordinate the wide load restrictions, prior to the start of the work. Work shall be coordinated with the Resident. Payment for wide load signage shall be paid under item 652.35, Construction Signs.

3. The Contractor shall submit a Traffic Control Plan (TCP) in accordance with the Standard Specification, Section 552.

4. All traffic control shall be in accordance with the Manual for Uniform Traffic Control Devices for Streets and Highways, USDOT, FHWA, Latest Edition.

5. Contractor shall note that construction time restrictions exist. See Special Provisions 105 and 107 for specific time restrictions and limitations of operations.

6. The Contractor shall provide one ten foot minimum width travel lane through the work zone at all times except during bridge closures as allowed under Special Provisions 105 General Scope of Work (Limitations of Operations) and 652 "Maintenance of Traffic".

7. The structural steel portions of the existing bridge were repainted in 2005 to replace the original lead-based paint system. It is not known whether all lead based paint was removed from all portions of the structure. The Contractor shall be responsible for the containment, proper management and disposal of any lead-contaminated hazardous waste generated by the process of strengthening the bridge. The Contractor is responsible for implementing appropriate OSHA mandated personal protection standards related to this process. Once removed, the Contractor is solely responsible for the care, custody and control of the components of the existing bridge and any hazardous waste generated as a result of the storage, recycling or disposal of the bridge components, including lead-coated steel. The Contractor shall recycle or reuse the steel in accordance with the Maine Department of Environmental Protection's "Maine Hazardous Waste Management Regulations", Chapter 850. A copy of this regulation is available at MaineDOT's offices on Child Street in Augusta. Payment for all labor, material, equipment and other costs required to remove and dispose of the existing bridge will be considered incidental to the removal pay items.

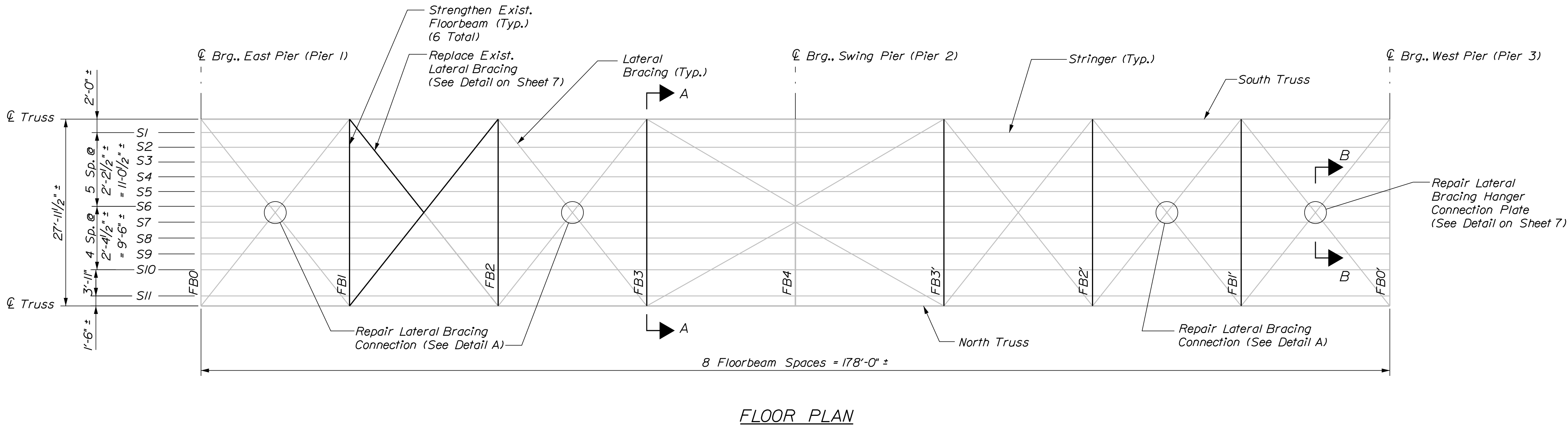
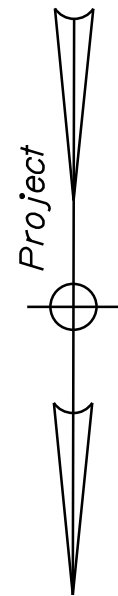
8. The Contractor is not allowed to stockpile or store materials and equipment not required for each day or night's work on the bridge deck. See Special Provision 105, Limitations of Operations, for additional information.

9. The bridge is required to operate for marine traffic throughout the duration of the contract except during periods of bridge closure. The Contractor shall plan the work accordingly. See Special Provision 105, Limitations of Operations, for additional information.

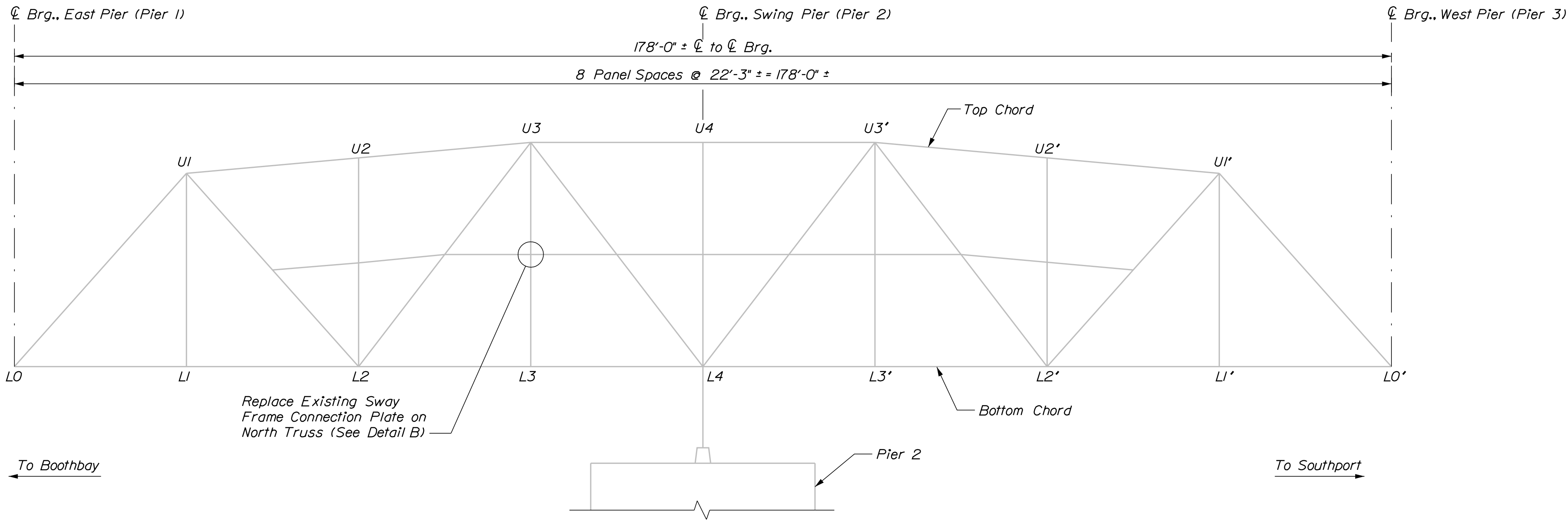
OF 7

NOTES:

1. Approach spans not shown.
2. For Section A-A see Sheet 5.
3. For Section B-B and Details A and B see Sheet 7.

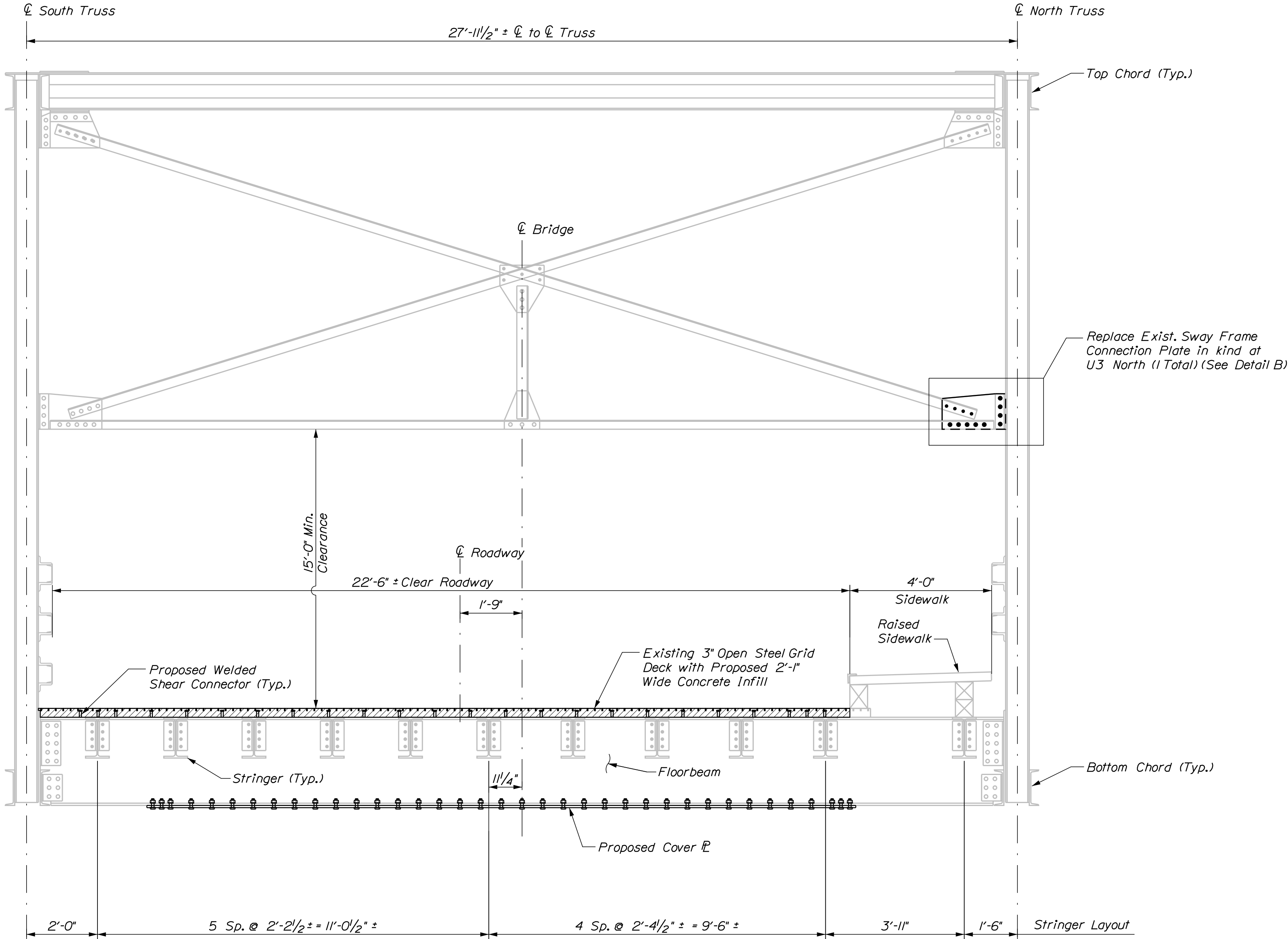


FLOOR PLAN



ELEVATION

STATE OF MAINE DEPARTMENT OF TRANSPORTATION						BRIDGE NO. 2789  BRIDGE PLANS
	SIGNATURE					
	P.E. NUMBER					
	DATE					
	WIN 18480.00					
SHEET NUMBER						
3						
OF 7						



TYPICAL SECTION AT FLOORBEAM  
(Looking toward Southport)

NOTE:  
For Detail B see Sheet 7.



SHEET NUMBER  4  OF 7	SOUTHPORT BRIDGE  TOWNSEND GUT\ATLANTIC OCEAN  SOUTHPORT-BOOTHBAY HARBOR LINCOLN  TYPICAL BRIDGE SECTION	PROJ. MANAGER		STEPHEN BOODE P.E.	BY	DATE
		DESIGN-DETAILED		J. WALSH	D. BURGESS	03-21-14
		CHECKED-REVIEWED		K. BRATLEY	T. COTE	03-21-14
		DESIGN2-DETAILED2		-	-	-
		DESIGN3-DETAILED3		-	-	-
		REVISIONS 1		-	-	P.E. NUMBER
		REVISIONS 2		-	-	
		REVISIONS 3		-	-	
		REVISIONS 4		-	-	DATE
		FIELD CHANGES		-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	
				-	-	

SHEET NUMBER

4

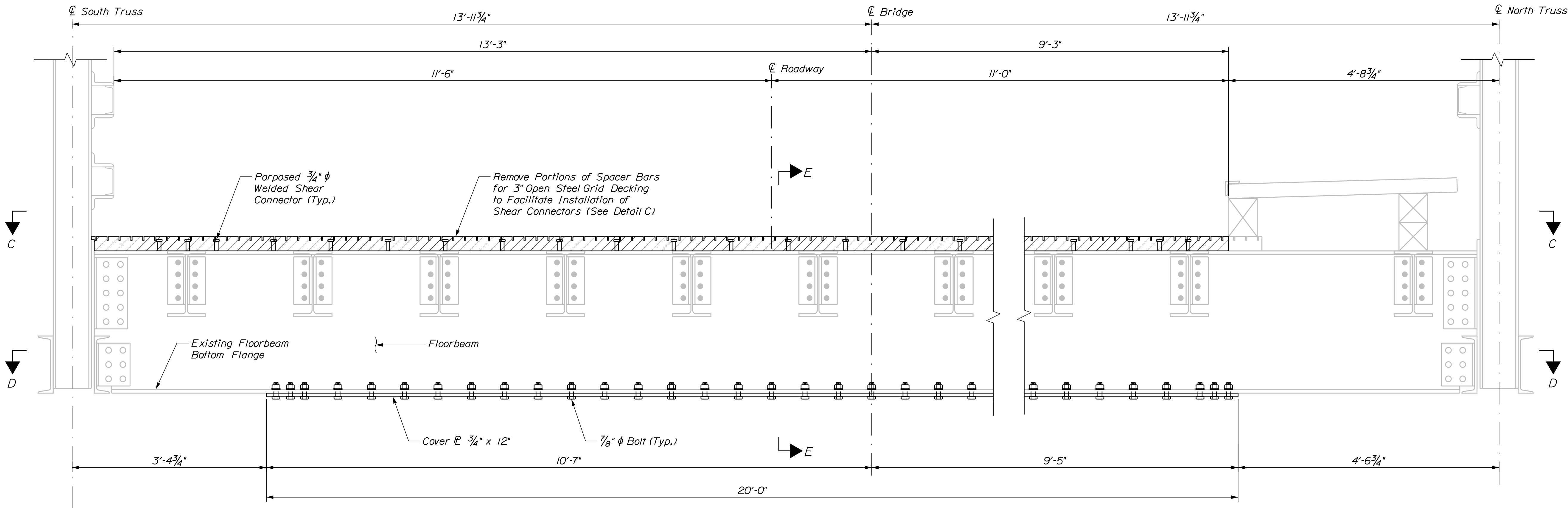
OF 7

Date: 3/21/2014

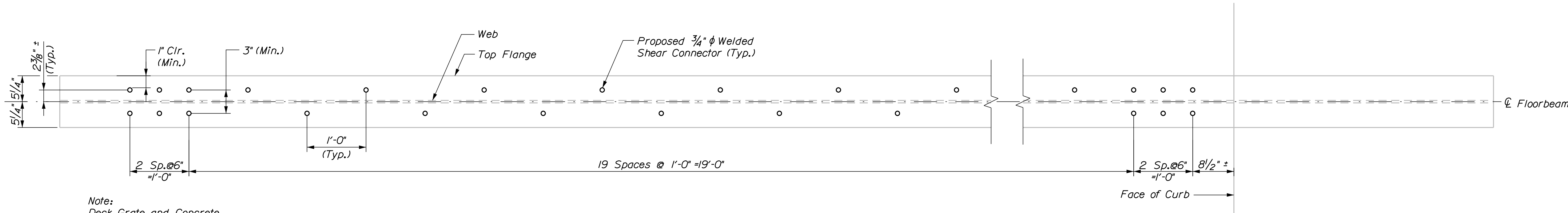
Username: common

Division: BRIDGE

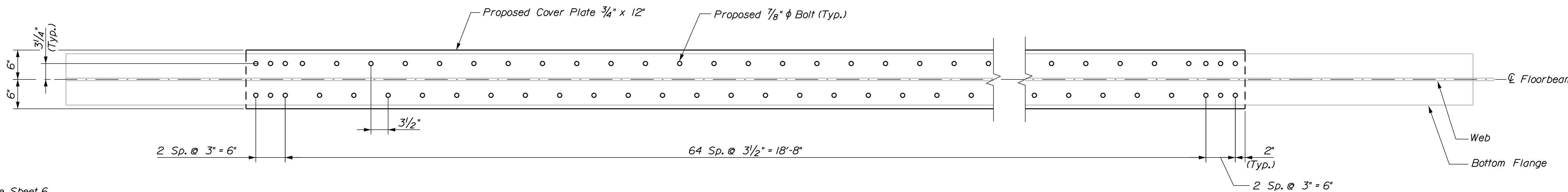
Filename: ... \MSTAN005\_Details\_C2\_001.dgn



SECTION A-A  
(Typical at FBI, FB2, FB3, FB3', FB2' and FB1')



SECTION C-C



SECTION D-D

- NOTES:
1. For Notes see Sheet 6.
  2. For Section E-E and Detail C, see Sheet 6.
  3. Shear connector spacing along the centerline of the floorbeam may be adjusted by  $\pm 2$ " from the dimensions shown to facilitate installation. In no case shall the spacing between three consecutive shear connectors exceed two feet.

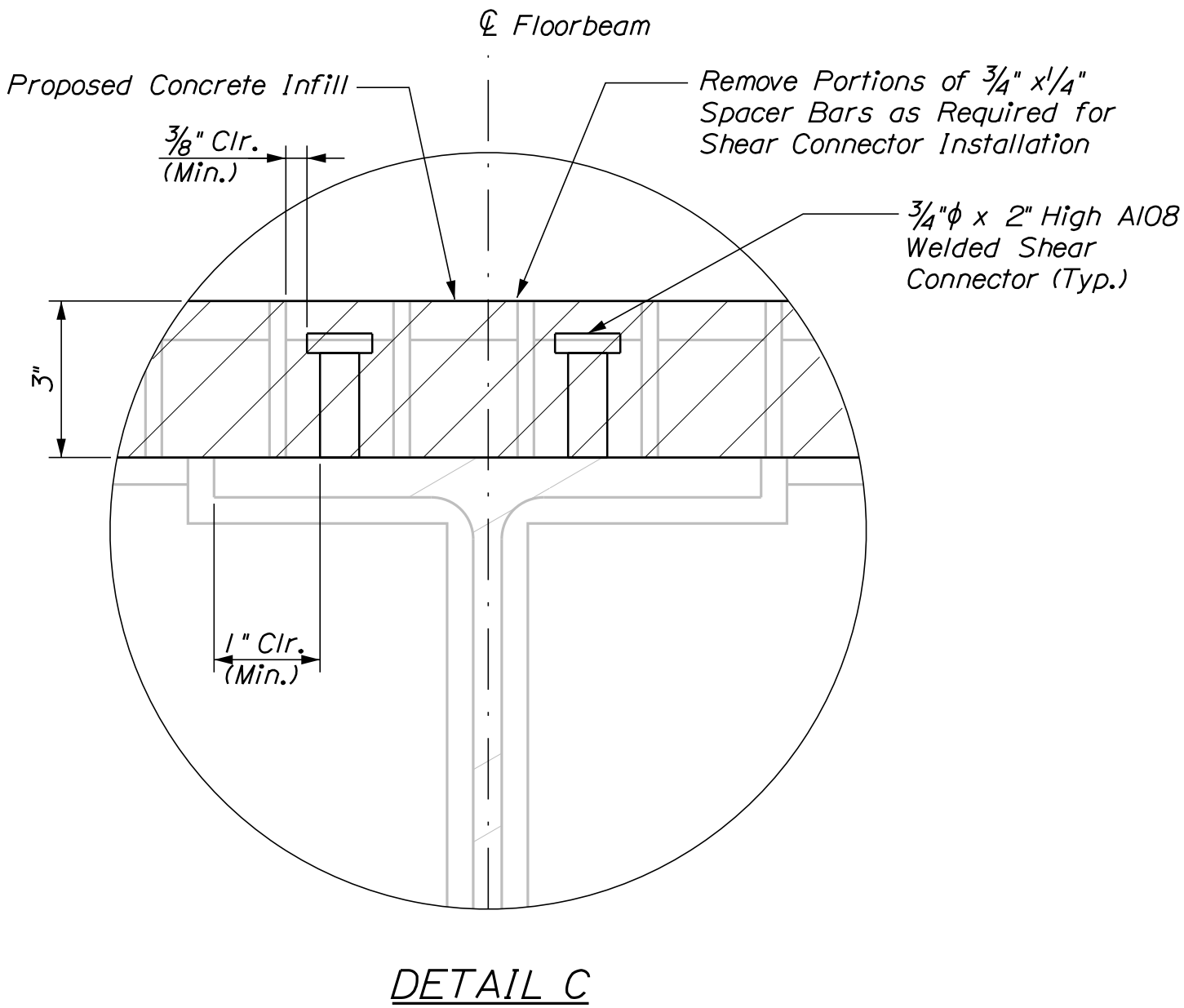
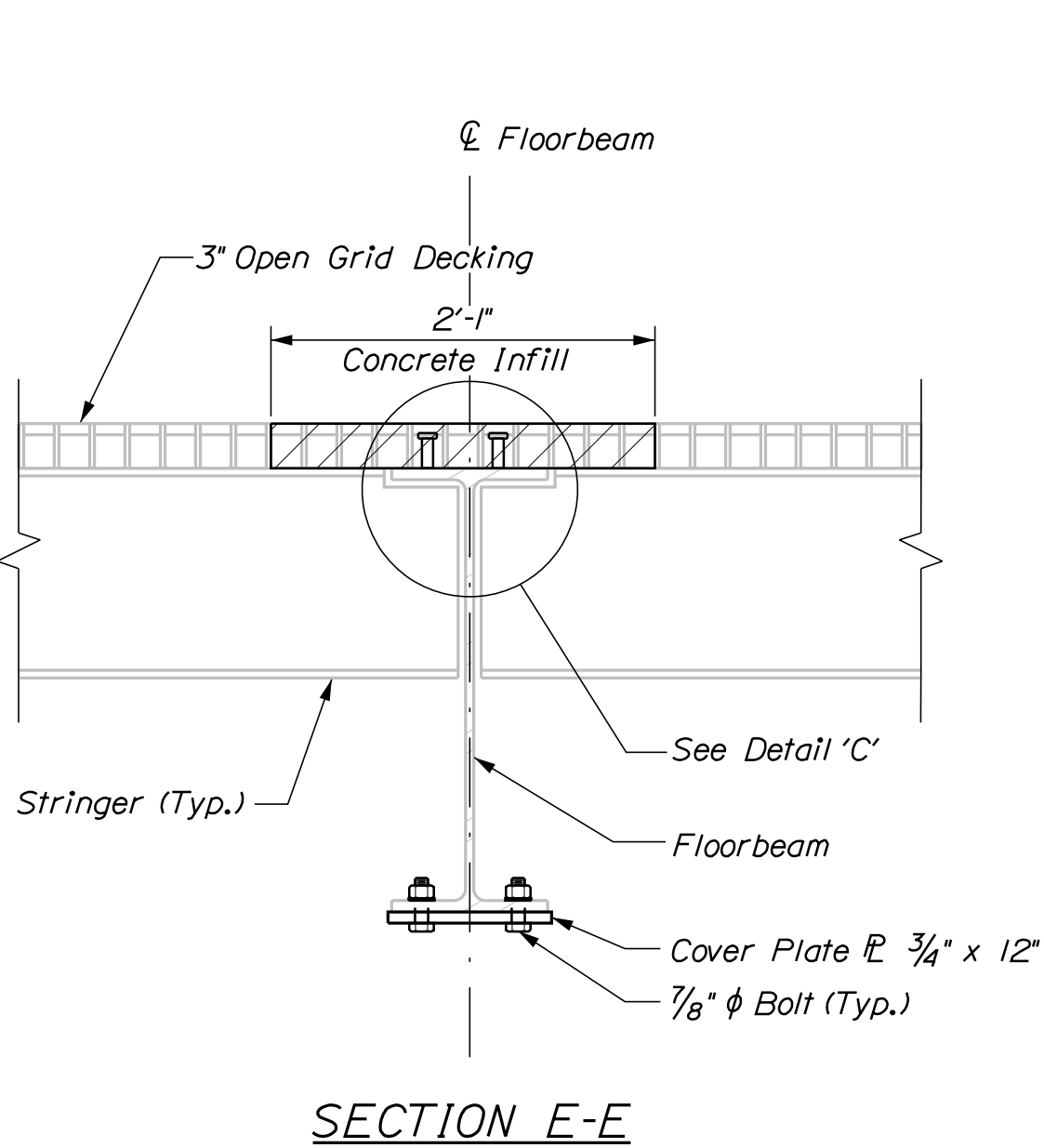


STATE OF MAINE DEPARTMENT OF TRANSPORTATION	SIGNATURE		DATE
	P.E. NUMBER		DATE
	BRIDGE NO. 2789		BRIDGE PLANS
WIN 18480.00		WIN 18480.00	
SOUTHPORT BRIDGE TOWNSEND GUT\ATLANTIC OCEAN SOUTHPORT-BOOTHBAY HARBOR LINCOLN		FLOORBEAM STRENGTHENING DETAILS I	
SHEET NUMBER		5	
		OF 7	

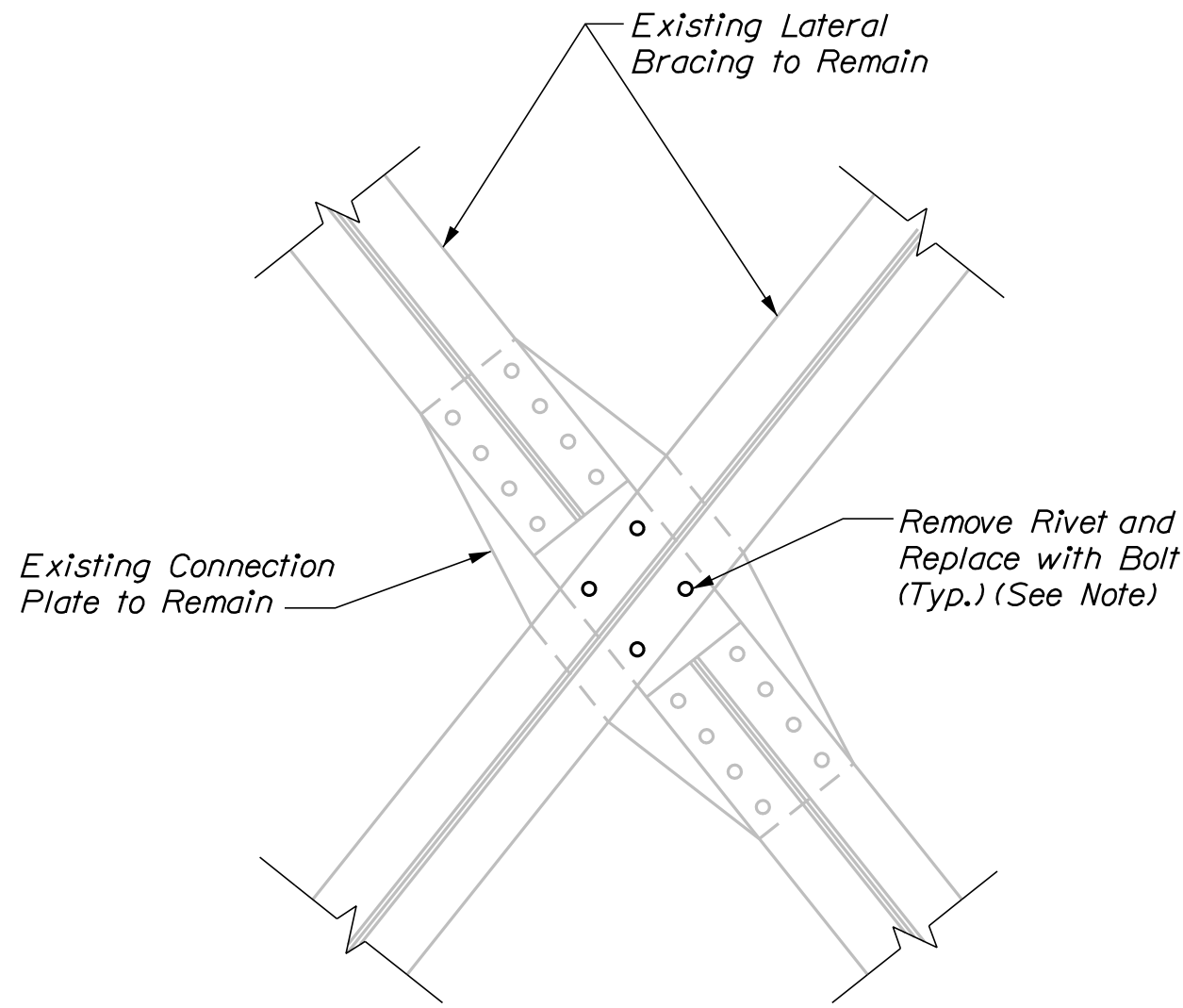


NOTES:

1. All new structural steel shall be coated with a zinc-rich protective coating meeting the requirement of Special Provision 506.
2. Concrete material for infilling concrete deck shall meet the requirements of Special Provision 502.
3. At each floorbeam to be strengthened the proposed concrete infill shall be placed and cured a minimum of 6 hours prior to field drilling the bottom flange.
4. Installation and bolting of proposed cover plates shall be completed in accordance with the requirements and procedures provided in Special Provisions 105 "Limitations of Operations" and 504 "Structural Steel".
5. All bolts shall be 7/8" diameter ASTM A325 hot dip galvanized in accordance with ASTM A153. Threads shall be excluded from the shear plane.
6. Bolt holes in cover plates shall be shop drilled and may be up to 1/8" oversized. Holes in existing floorbeam flanges shall be 15/16" diameter field drilled.
7. Existing flange surfaces in contact with cover plates shall have the existing paint system removed and the surface prepared and primed in accordance with Special Provision 506 "Protective Coatings".
8. Cover plate bolts shall be installed with heads down as shown.
9. Concrete infill shall not project above the top of the steel grid deck.
10. Ceramic ferrules for shear connectors shall be completely removed prior to placing concrete infill.

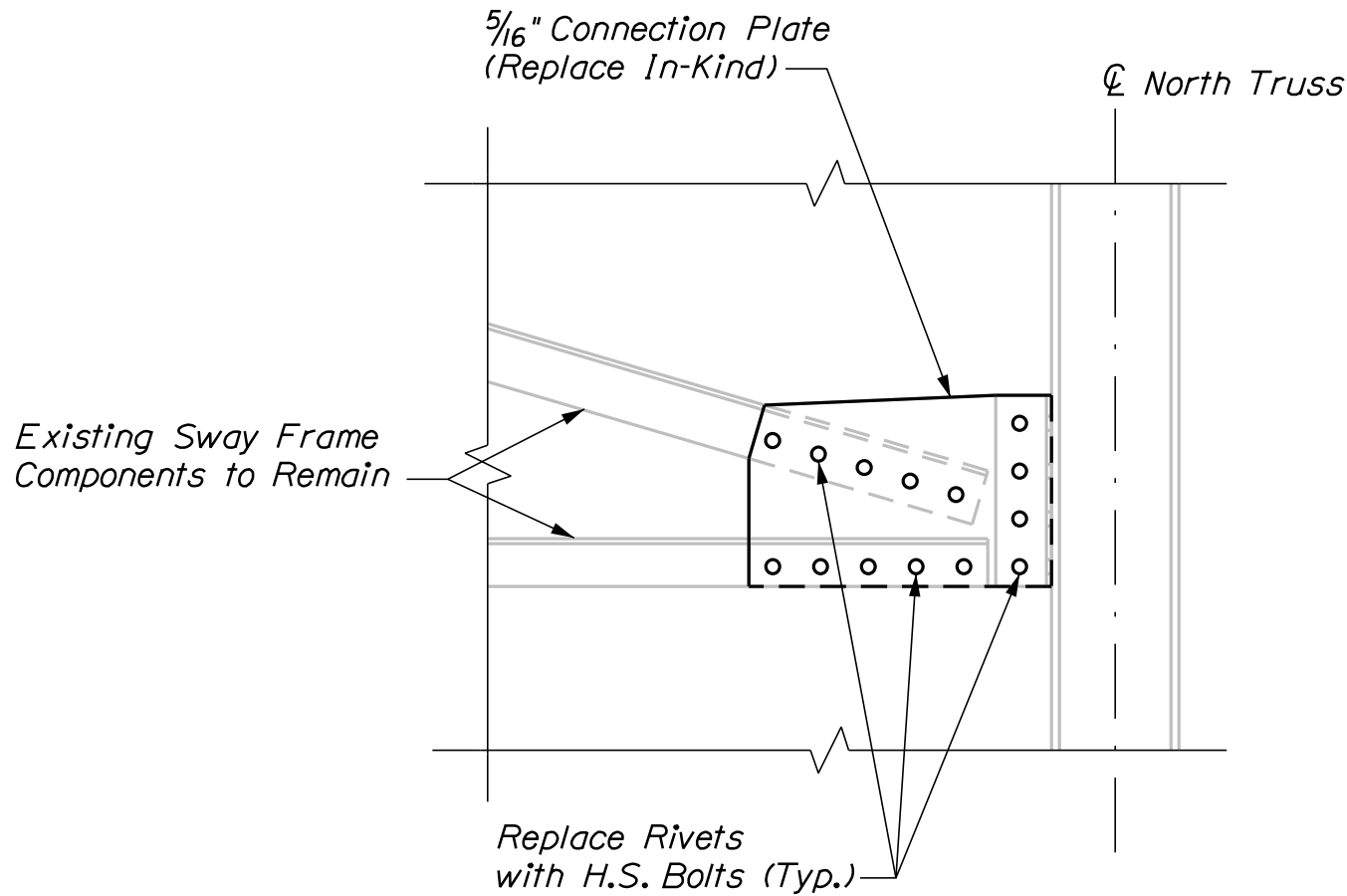


SOUTHPORT BRIDGE					PROJ. MANAGER		STEPHEN BODGE	BY	DATE	STATE OF MAINE					
TOWNSEND GUT\ATLANTIC OCEAN					DESIGN-DETAILED	J.WAUGH	D.BURGESS	03-21-14	DEPARTMENT OF TRANSPORTATION						
SOUTHPORT-BOOTHBAY HARBOR LINCOLN					CHECKED-REVIEWED	K.BRAVELLY	T.COYE	03-21-14							
FLOORBEAM STRENGTHENING DETAILS II					DESIGN2-DETAILED2	-	-	-	SIGNATURE						
					DESIGN3-DETAILED3	-	-	-	P.E. NUMBER						
					REVISIONS 1	-	-	-							
					REVISIONS 2	-	-	-							
					REVISIONS 3	-	-	-							
					REVISIONS 4	-	-	-	DATE						
					FIELD CHANGES	-	-	-							
SHEET NUMBER					BRIDGE NO. 2789							WIN 18480.00		BRIDGE PLANS	
6															
OF 7															

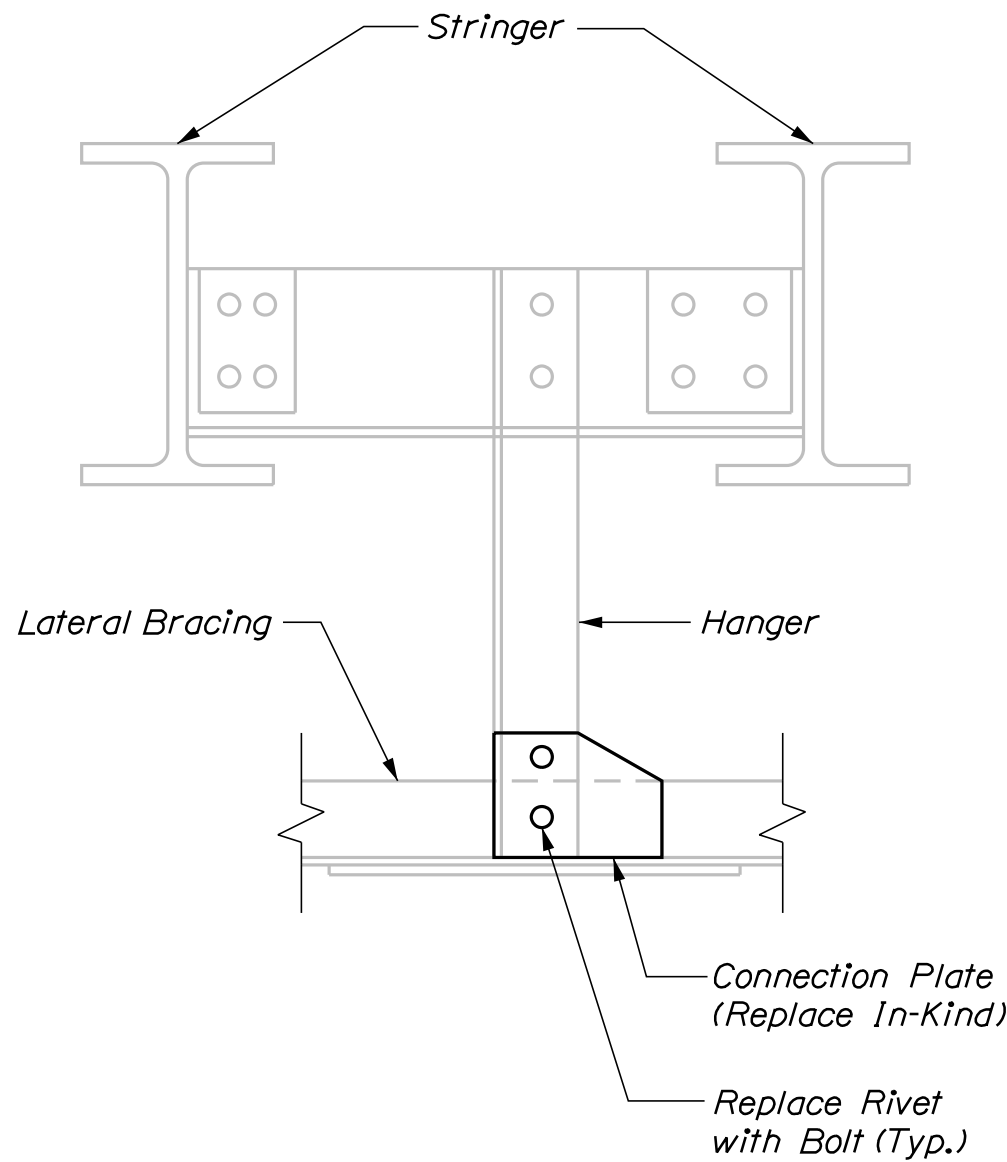


Note:  
Existing rivet head has been sheared off.  
Contractor shall drive out rivet shaft and  
install new bolts. Work shall be paid under  
Item 504.81, Remove Rivet and Repace with  
High Strength Bolt.

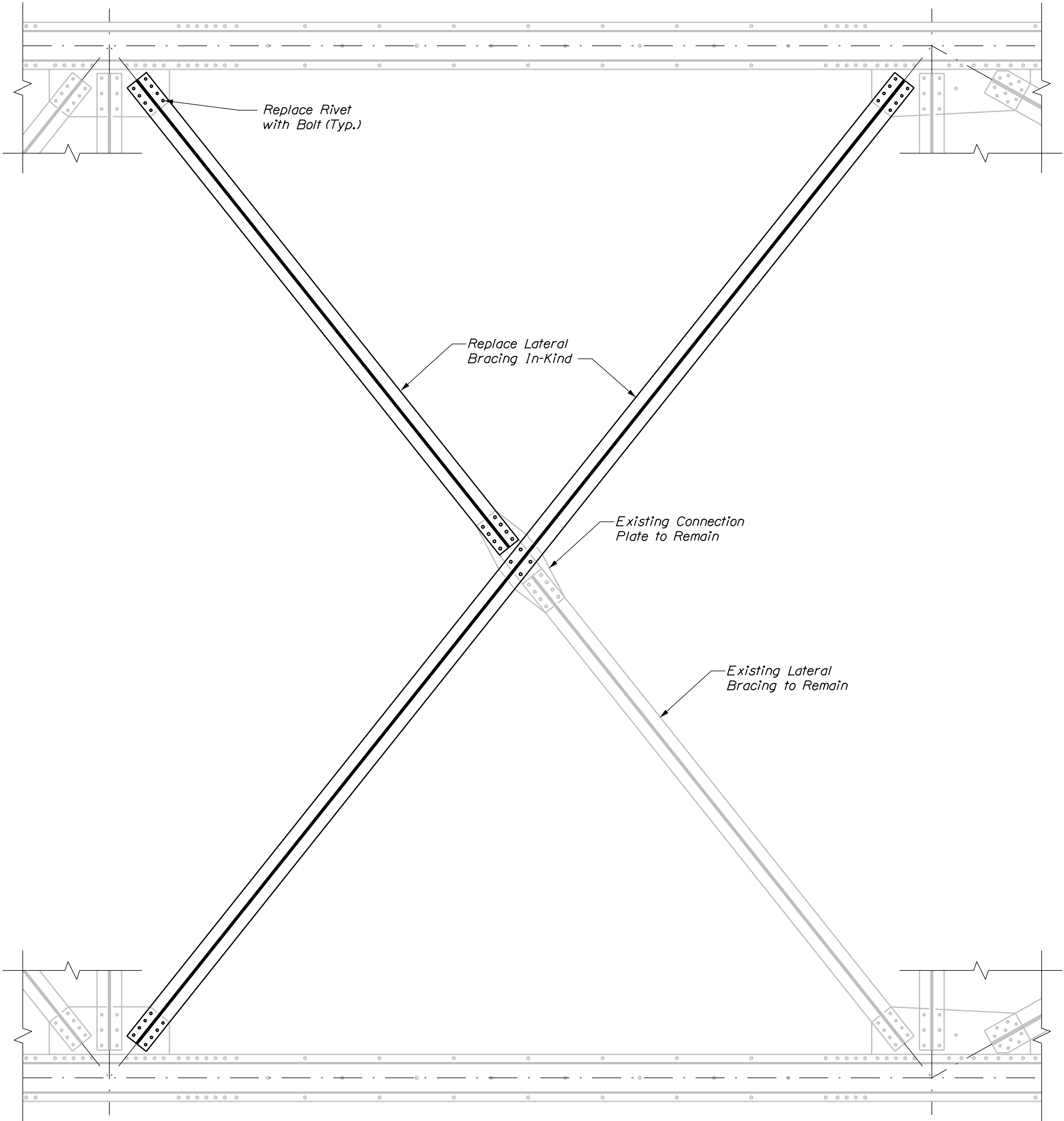
DETAIL A



DETAIL B



SECTION B-B



LATERAL BRACING REPLACEMENT DETAIL

Notes:  
1. Except where noted otherwise the removal of rivets  
and installation of high strength bolts shall be  
incidental to Pay Item 504.81, Structural Steel Repair.



SOUTHPORT BRIDGE TOWNSEND GUT\ATLANTIC OCEAN SOUTHPORT-BOOTHBAY HARBOR LINCOLN	PROJ. MANAGER	STEPHEN BOOSE	BY	DATE
	DESIGN-DETAILED	J.WAUGH	D.BURGESS	03-21-14
	CHECKED-REVIEWED	K.BRAYLEY	T.COTE	03-21-14
	DESIGN2-DETAILED2	-	-	-
	DESIGN3-DETAILED3	-	-	-
MISCELLANEOUS REPAIR DETAILS	REVISIONS 1	-	-	P.E. NUMBER
	REVISIONS 2	-	-	-
	REVISIONS 3	-	-	-
	REVISIONS 4	-	-	DATE
	FIELD CHANGES	-	-	-
STATE OF MAINE DEPARTMENT OF TRANSPORTATION				
WIN 18480.00				
BRIDGE NO. 2789				
WIN 18480.00				
BRIDGE PLANS				