RENAUD BROS., INC.

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Wardsboro BRF 013-1(15)

Conceptual Value Engineering Proposal

General Description

This conceptual value engineering proposal is to use built-up welded plate girders in lieu of the W40 x 149 Rolled Beams. We will utilize the plate sizes as shown on attached marked up Contract Sheet 26 and use a 5/16" fillet weld web to flange.

Advantages and Disadvantages

The W40 x 149's have a higher cost per pound for raw material as well as a higher cost per pound shop labor to induce the camber. Plate girders can have the camber burned right into the web which will produce a much better end product.

Impacts to Permits and/or Third Party Agreements

There are no impacts to permits or third party agreements for this proposal.

Identification of Prior Similar CVEP's

On an emergency bridge replacement for Emergency Project Hartford STRB(6) the original design was WF members which were successfully VE to plate girders.

Known Use or Testing

The use of plate girders in lieu of WF members has been used numerous times prior and will yield a much better end product.

Estimate of Net Savings

There is a nine thousand dollar savings in the switch from W40 to a plate girder option. This savings is within the saving on cost of raw material as well as lower fabrication cost to do away with inducing heat into the W40 for camber.

Schedule Impact

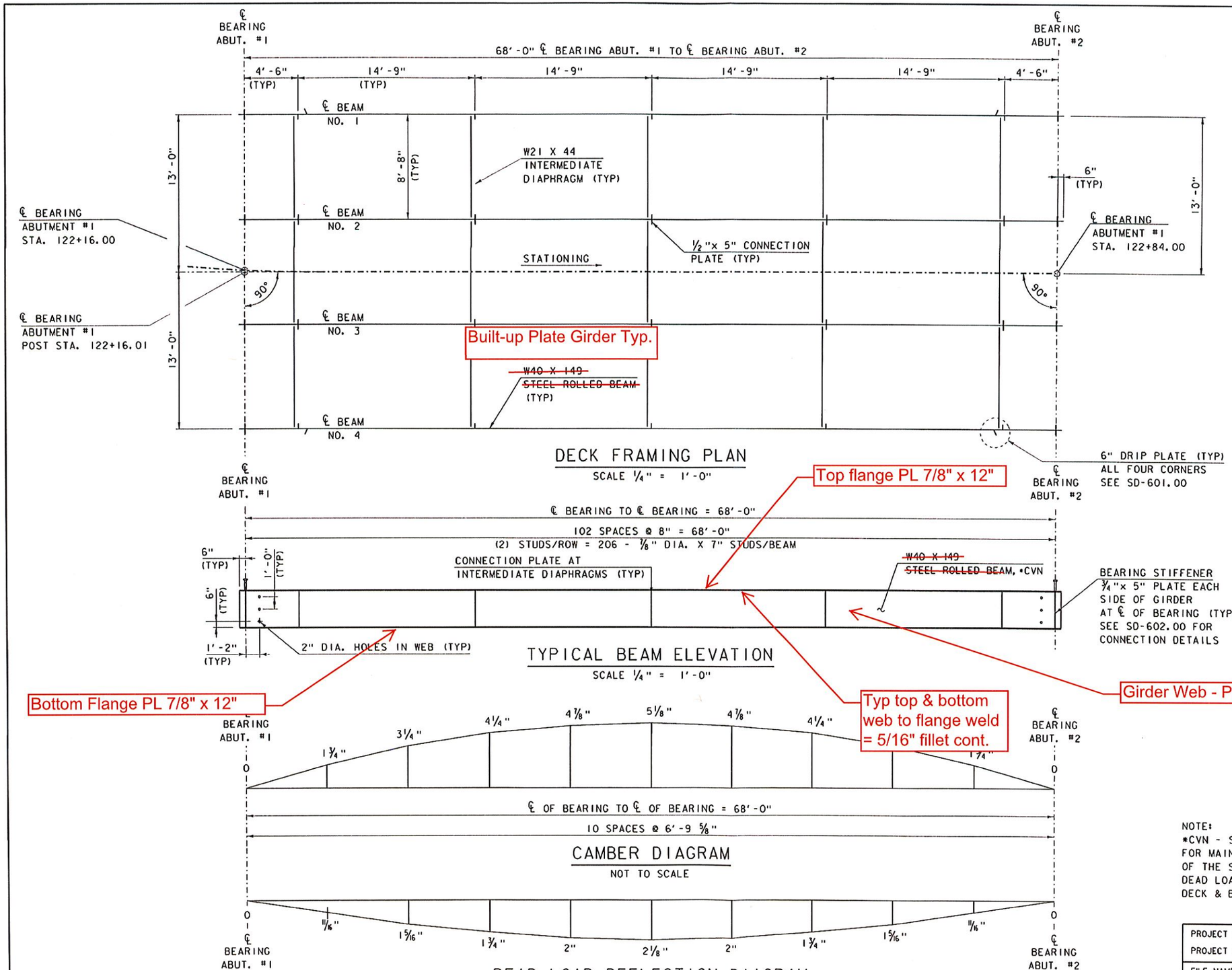
There is a no negative impact of delivery schedule using the plate girder option.

Conclusion

This proposal will allow for a lower cost in raw material as well as lower cost in shop labor to fabricate. This will produce a better end product.

Wardsboro BRF 013-1 (15)
Estimate of Development Costs

Item Number	Item Description	VE Quantity	Original Quantity	Units	Original Cost	Proposed Cost	Cost
Removed							
506.50	Structural Steel - Rolled Beams	-48,320	48,320	LBS	$2.50	-	-$120,800.00
							-$120,800.00
New							
506.55	Structural Steel - Plate Girder	52,830	0	LBS	-	$2.12	$111,999.60
							$111,999.60
Savings to Split							**-$8,800.40**



NOTE:
*CVN - SHALL MEET CHARPY V-NOTCH REQUIREMENTS FOR MAIN MEMBERS AS INDICATED IN SECTION 714 OF THE STANDARD SPECIFICATION.
DEAD LOAD DEFLECTION INCLUDES: BEAM, DIAPHRAGMS, DECK & BRIDGE RAIL.

PROJECT NAME: WARDSBORO	
PROJECT NUMBER: BRF 013-1(15)	
FILE NAME: s92b283sup.dgn	PLOT DATE: 15-JUL-2015
PROJECT LEADER: C. CARLSON	DRAWN BY: D. KARABEGOVIC
DESIGNED BY: D. PETERSON	CHECKED BY: D. PETERSON
DECK FRAMING PLAN	SHEET 26 OF 51