



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
16 STATE HOUSE STATION
AUGUSTA, MAINE
04333-0016

JOHN ELIAS BALDACCI
GOVERNOR

DAVID A. COLE
COMMISSIONER

May 30, 2008
Subject: **Norridgewock**
Project No. BH-6900(01) X
Pin No.006900.01
Amendment No. 8

Dear Sir/Ms:

The following questions have been received:

Question: In Special Provision, Section 502, Structural Concrete (Span 2), there is a substantial list of items to be addressed in falsework calculations. We can find no similar list of calculations and documentation to accompany the Construction Procedures to substantiate that the permanent structural elements are OK during construction and in final condition. We have no design parameters. Please comment.

The above question leads to this one; we find no contractual "turnaround" time for submittals or review of the Construction Procedure. Will this be in accordance with Section 105.7 of the Standards? With no guidance as to content of the Construction Procedures submittal we foresee the possibility of several iterations. Will the Contractor still be responsible for the cost after the second one?

In Amendment #3, the response to question 1, about modifications to the falsework scheme, includes "in any case, the Contractor shall be responsible for demonstrating that the proposed change does not adversely affect the design as proposed". How is the Contractor to demonstrate that the design is not adversely affected when design parameters are not provided (reflected by your answer to Question 2)? How can the Contractor determine when "the Contractor shall be responsible for full redesign of the structure"?

We feel the above issues place an inordinate amount of risk on the Contractor. Please comment.

Response: The list of items in Special Provision Section 502 Structural Concrete (Span 2) is provided to show the comprehensive nature of the calculations that will be necessary for the Department to review the Contractor's falsework design computations. This list is not intended to be all-encompassing, nor is it intended to provide design parameters for the falsework design. Since the design of the permanent structure involved checking the intermediate and cumulative stresses of each component of the span during all stages of



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construction, changes to the Designer's Assumed Construction Sequence will require redesign of the structure. The design parameter is that this redesign meets all applicable AASHTO LRFD design criteria for all construction stages.

To help reduce the Contractor's risk associated with the unknown amount of analysis that may result from modifications to the Designers Assumed Construction Sequence shown on Plan Sheets 53 and 54, the Department offers the Contractor the option of working with the Designer to perform an analysis of the permanent bridge components based on these modifications. The Contractor will remain responsible for the design of all temporary piers / falsework.

This is intended to be a collaborative process with the Department, Designer, and Contractor working together to find an acceptable alternative. The Designers will first need to perform a cursory check of the construction sequence submitted by the Contractor to determine if the proposal is feasible, as determined by whether an adequate design of the permanent structure can be achieved; if it is determined to be feasible, then the falsework design can begin by the Contractor and a detailed analysis of the structural components can be made by the Designer, based on the Contractor's proposed construction procedure, possibly requiring redesign of some, or all of the permanent structural components. If the Designers determine that the Contractor's proposed construction sequence is not feasible a different construction sequence (iteration) would be warranted. The Designers will ultimately remain responsible for the design of the permanent structure.

Due to the amount of analysis involved in performing the cursory check and the detailed analysis, the Department will limit the design services to three iterations of the cursory review of the Contractor's proposed construction sequence. The Contractor can expect the cursory review to take up to 21 days; the time required for the detailed analysis will depend on the amount of change to the Designers Assumed Construction Sequence and will be negotiated with the Contractor after the cursory review. These submissions will be reviewed at no cost to the Contractor.

All other project submissions will follow the requirements of Standard Specification Section 105.7 Working Drawings.

Question: Special Provision, Section 510.07 states that the contractor is responsible for snow removal on the temporary detour "in accordance with Section 105 – General Scope of Work". Standard Specification 105.4.3 seems to indicate that the State will plow, salt, and sand. Please clarify. If we are to plow, since the State plows Rte. 201 anyway, would it not make sense for the State to provide plowing?

Response: The Department will be responsible for sanding, salting and snow removal on the temporary detour; however the Department will not be responsible for any damage to the temporary detour caused by these operations.

Question: Not including the bars in the pipe pile alternate, Bid Items 520.261 & 526.34, is the balance of the reinforcing steel to be paid under Bid Item 503.12?

Response: No, some of the rebar is incidental to related contract items. See attached summary for Item 503.12 Reinforcing Steel, fabricated and Delivered (**REFERENCE #1**). The total includes all rebar that is not imbedded in precast members, with line items excluding that rebar not paid for under this item.

Question: Are the mechanical couplers & threaded bars incidental to Bid Item 503.12?

Response: Yes, all couplers within cast in place concrete are considered incidental to Item 503.12 Reinforcing Steel, fabricated and Delivered. On sheet 97, change the note to read that payment for couplers in the end beams and intermediate diaphragms shall be considered incidental to Item 503.12 Reinforcing Steel, Fabricated and Delivered. The following couplers are found on the plans:

- Intermediate Floor Beam--half that is imbedded in precast is incidental to Item 535.62 Prestressed Structural Concrete Box Beam, half that is threaded rebar incidental to Item 503.12 Reinforcing Steel, Fabricated and Delivered.
- New England Bulb T --half that is imbedded in precast is incidental to 535.61 Prestressed Structural Concrete I Girder, half that is threaded rebar incidental to 503.12 Reinforcing Steel, Fabricated and Delivered.
- Within Arch End Connection—Incidental to 503.12 Reinforcing Steel, Fabricated and Delivered.
- Within Arch Rib—Incidental to 503.12 Reinforcing Steel, Fabricated and Delivered.
- Within CIP Diaphragms and End Beams—Incidental to 503.12 Reinforcing Steel, Fabricated and Delivered.

Question: Will the existing aerial utility lines that cross over Route 201A/Route 8, on both ends of the existing bridge be removed for construction?

Response: The aerial utilities will be relocated approximately 250' downriver which will clear the immediate ends of the existing bridge for construction. Please refer to the attached Utility Plan (**REFERENCE #2**) which shows the approximate locations of the aerial utilities.

Question: can the one piece stirrups in the intermediate floor beams be replaced with a two piece stirrup?

Response: No, AASHTO LRFD code requires a one piece stirrup for the torsion in the intermediate floor beams.

Question: Is the current intermediate beam design (beams F4 to F22) adequate to allow for stripping and handling forces encountered at the manufacturing facility without the final post-tensioning as noted on page 101 of 134?

Response: The intermediate beams are designed to support themselves when supported or picked from within three feet of the beam ends. They have not been designed for other pick points.

Question: Will rigid metal hangers be allowed to hold the 3" diameter corrugated plastic tendon ducts in place during casting?

Response: Rigid metal hangers will be allowed as long as they do not encroach on the concrete cover requirements.

Attachments:

Reference #1 – Item #503.12; Reinforcing Steel, Fabricated & Delivered – 1 page.

Reference #2 – Approximate location of Utilities – 2 pages

Consider this information prior to submitting your bid on **June 4, 2008**.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Bickford". The signature is written in a cursive, flowing style.

Scott Bickford
Contracts & Specifications Engineer

PROJECT

Norridgewock Covered
 Bridge

PROJECT NO.

6900.01

ITEM NO

503.12

SHEET NO.

OF

SUBJECT

Reinforcing Steel, Fab & Del

BY:

DATE:

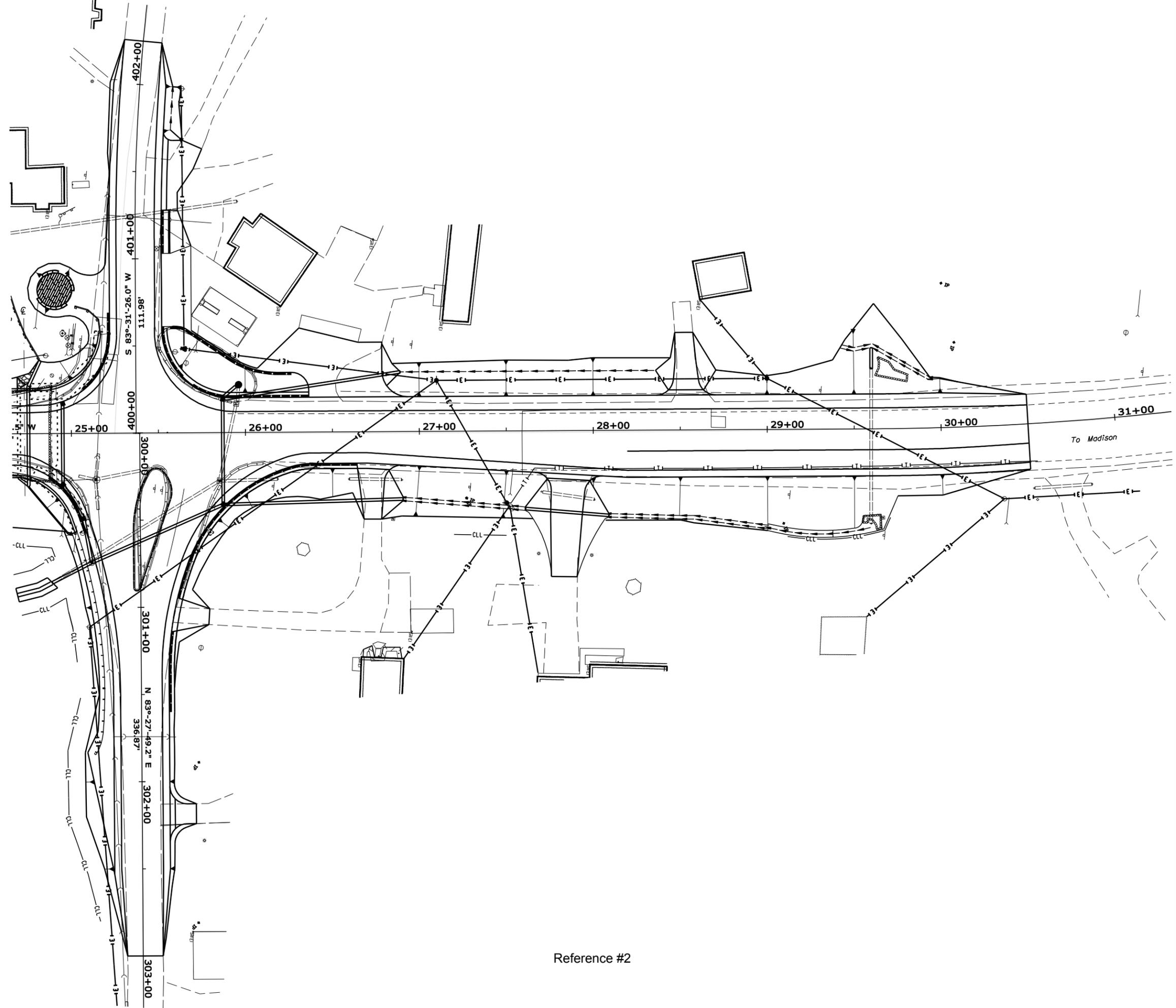
CHECKED BY:

DATE:

	Bar mark		Quantity		
Abutment 1	A		12650	LB	
Abutment 2	B		12600	LB	
Approach Slab	AS		2450	LB	
	BS		2765	LB	
Moment Slab	M		3190	LB	
	M__X		575	LB	incidental to 526.324 Concrete Barrier Rail
	N		4000	LB	
	N__X		800	LB	incidental to 526.324 Concrete Barrier Rail
Pier	P650 & P850	(rock socketed pile foundation optic	62000	LB	incidental to 501.701 Steel Pipe Piles in Place
	Remaining P bars		246150	LB	
Slab	S		10050	LB	incidental to 502.261 Structural Concrete Rdwy & Conc Slab on Conc Bridge
	S__X		135850	LB	incidental to 502.261 Structural Concrete Rdwy & Conc Slab on Conc Bridge
Rail	CR__X		22680	LB	incidental to 526.324 Concrete Barrier Rail
Arch Rib	AR		127100	LB	
Transverse Brace	TB		58550	LB	
Tie Girder	TG		91300	LB	
End Beam	EB		36800	LB	
Arch End Connection AC			42580	LB	
Arch End Connection AC__X			980	LB	incidental to 502.381 Structural Concrete Tie Girder
Diaphragms	D		19550	LB	
Terrace	T		950	LB	

TOTAL	893,570 LB
MMFX (incidental)	160,885
other incidental	72,050
total incidental	232,935
TOTAL Item 503.12	660,635

Say 660,640 LB



Reference #2