

U.S. Department of
Homeland Security

United States
Coast Guard



Headquarters Truman-Hobbs Tactics, Techniques, and Procedures (TTP)



Force Readiness Command
(FORCECOM)

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COAST GUARD TACTICS, TECHNIQUES, AND PROCEDURES 3-71.14

Subj: HEADQUARTERS TRUMAN-HOBBS

- Ref:
- (a) Bridge Administration Manual (BAM), COMDTINST M16590.5 (series)
 - (b) The Act of June 21, 1940, As Amended (Truman-Hobbs Act) (54 Stat. 497; 33 U.S.C. 511-524)
 - (c) Alteration of Unreasonably Obstructive Bridges, 33 CFR 116
 - (d) 42 U.S.C. Part VI Civil Rights Act of 1964
 - (e) Water Resources Policies and Authorities: Navigation Policy: Cost Apportionment of Bridge Alterations, 33 CFR 277
 - (f) American Association of State Highway and Transportation Officials (AASHTO) LRFD Bridge Design Specifications, Section 1, Design Life
 - (g) Public Law 93-251 Title I-Water Resources Development
 - (h) Valuing Mortality Risk Reductions in Homeland Security Analysis June 2008

1. PURPOSE. To provide Office of Bridge Programs (CG-BRG) with tactics, techniques, and procedures (TTP) on established internal processes critical for ensuring bridges potentially unreasonably obstructive to navigation are thoroughly investigated, and design and construction phases are properly managed and documented from the initial project planning stage to project close out.
2. ACTION. This CGTTP publication applies to CG-BRG. Internet release is authorized.
3. DIRECTIVES/TTP AFFECTED. None.
4. DISCUSSION. This publication provides CG-BRG guidance to adhere to various bridge statutes of the United States to make decisions, and follow processes and procedures related to the investigation and alteration of bridges under reference (b).
5. DISCLAIMER. This guidance is not a substitute for applicable legal requirements, nor is itself a rule. It provides guidance for Coast Guard personnel and does not impose legally-binding requirements on any party outside the Coast Guard.
6. ENVIRONMENTAL ASPECT AND IMPACT CONSIDERATIONS. While developing this publication, Integrated Process Team (IPT) members examined environmental considerations under the National Environmental Policy Act (NEPA) and determined they are not applicable.

7. DISTRIBUTION. FORCECOM TTP Division posts an electronic version of this TTP publication to the CGTTP Library on CGPortal. In CGPortal, navigate to the CGTTP Library by selecting **References > Tactics, Techniques, and Procedures (TTP)**. FORCECOM TTP Division does not provide paper distribution of this publication.
8. RECORDS MANAGEMENT CONSIDERATIONS. Integrated Process Team (IPT) members thoroughly reviewed this publication during the TTP coordinated approval process and determined there are no further records scheduling requirements per Federal Records Act, 44 U.S.C. Chapter 31 § 3101 et seq., National Archives and Records Administration (NARA) requirements, and Information and Life Cycle Management Manual, COMDTINST M5212.12 (series). This publication does not have any significant or substantial change to existing records management requirements.
9. FORMS/REPORTS. None.
10. REQUEST FOR CHANGES. Submit recommendations for TTP improvements or corrections via email to FORCECOM-PI@uscg.mil or through the TTP Request form on CGPortal. In CGPortal, navigate to the TTP Request form by selecting **References > Tactics, Techniques, and Procedures (TTP) > TTP Request**.

Send lessons learned applicable to this TTP publication via command email to FORCECOM TTP Division at CMD-SMB-CG-FORCECOM.

PATRICK J. SHAW
Commander, U.S. Coast Guard
Acting Chief, FORCECOM TTP Division (FC-P)
By Direction of Commander,
Force Readiness Command

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Chapter 1: Introduction

Introduction

This chapter overviews the contents of this tactics, techniques, and procedures (TTP) publication. It also defines the use of notes, cautions, and warnings in TTP publications.

In This Chapter

This chapter contains the following sections:

Section	Title	Page
A	Introduction	1-2
B	Notes, Cautions, and Warnings	1-4

Section A: Introduction

A.1. Introduction United States Coast Guard (USCG) policy ensures that bridges crossing the navigable waters of the United States do not unreasonably obstruct waterway traffic.

A.2. Purpose This TTP establishes Office of Bridge Programs (CG-BRG) guidance and internal processes ranging from initial project planning stage to project close out. Establishing internal processes ensures thorough investigation of bridges that (potentially) unreasonably obstruct navigation. If determined unreasonably obstructive, internal processes properly manage and document the design and construction phases while adhering to reference (a), Bridge Administration Manual (BAM), COMDTINST M16590.5 (series).

A.3. Roles and Responsibilities The USCG approves location and plans of bridges and causeways constructed across navigable waters of the United States. In addition, the USCG approves location and plans of international bridges and the alteration of bridges found to be unreasonable obstructions to navigation.

A.3.a. Office of Bridge Programs (CG-BRG) CG-BRG administers various United States bridge statutes and is responsible for decisions, processes, and policies related to investigating and altering bridges under reference (b), The Act of June 21, 1940, As Amended (Truman-Hobbs Act) (54 Stat. 497; 33 U.S.C. 511-524).

To maintain navigation safety and freedom of mobility, the CG-BRG Chief administers reference (b) to ensure bridges provide sufficient navigation clearances which meet today's as well as future navigation needs.

A.3.b. Bridge Operations and Engineering Division (CG-BRG-1) The Bridge Operations and Engineering Division (CG-BRG-1) has primary oversight and stewardship of federal funding during all phases of a Truman-Hobbs (T-H) project. In doing so CG-BRG-1 is accountable to effectively manage the project including managing schedule, cost, quality, etc. throughout the investigation and alteration processes.

A.3.c. Bridge Operations and Engineering Division Chief (CG-BRG-1) The CG-BRG-1 Division Chief manages and assigns CG-BRG-1 staff to tasks during the investigation and alteration of bridges under reference (b). The Division Chief maintains final oversight of all T-H Program projects, decisions, and CG-BRG-1 staff.

A.3.d. CG-BRG-1 Bridge Management Specialist (BMS)	CG-BRG-1 Bridge Management Specialist (BMS) is a CG-BRG-1 staff member who manages the investigation process of T-H projects. The BMS provides final investigation reviews of any complaints into unreasonably obstructive bridges and conducts benefit to cost (B/C) analysis under the reference (b), The Act of June 21, 1940, As Amended (Truman-Hobbs Act) (54 Stat. 497; 33 U.S.C. 511-524). Also, the BMS provides Quality Control review for invoices throughout all T-H project phases.
A.3.e. CG-BRG-1 Project Manager (PM)	The CG-BRG-1 Project Manager (PM) manages the design and construction phases of a T-H project. The PM provides engineering and technical information during the investigation process and manages projects throughout the design and construction phases including, schedule, cost, quality, etc.
A.3.f. St. Louis, Missouri Bridge Office (CGD8(dwb))	St. Louis, Missouri Bridge Office (CGD8(dwb)) administers T-H investigations nationwide, with district support, CG-BRG oversight, and policy requirements.

Section B: Notes, Cautions, and Warnings

B.1. Overview The following definitions apply to notes, cautions, and warnings found in TTP publications.

NOTE: **An emphasized statement, procedure, or technique.**

CAUTION: **A procedure, technique, or action that, if not followed, carries the risk of equipment damage.**

WARNING: *A procedure, technique, or action that, if not followed, carries the risk of personnel injury or death.*

Chapter 2: Truman-Hobbs Investigation Phase

Introduction This chapter discusses the investigation process for bridges potentially unreasonably obstructing navigation.

In This Chapter This chapter contains the following sections:

Section	Title	Page
A	Investigation Process	2-2

Section A: Investigation Process

A.1. Background Since 1 October 1999, T-H investigations have been centralized in CGD8(dwb) to maximize limited program resources. CGD8(dwb) administers T-H investigations nationwide, with district support, CG-BRG oversight, and policy requirements. Each district maintains an open line of communication with CGD8(dwb) and CG-BRG about specific bridges that are candidates for a T-H investigation. See [Figure 2-2 Investigation phase process](#).

A.2. Reviewing Potential Bridge Candidates The District Commander conducts a preliminary review by evaluating all written complaints about bridges being unreasonably obstructive. Without a written complaint, the District Commander can use criteria such as a bridge's allision history to determine a bridge an unreasonable obstruction requiring a preliminary review.

Each district bridge manager (DBM) reviews the situation and determines if there is enough information to support these complaints. If a DBM decides the evidence supports an unreasonable obstruction case, the DBM forwards the bridge case file to CG-BRG-1, who reviews and analyzes the bridge for possible inclusion on the T-H backlog list.

CG-BRG-1 receives the bridge case file electronically and maintains the record per section [Chapter 2: Truman-Hobbs Investigation Phase, Section A: Investigation Process, subsection A.13. Record Keeping](#).

A.3. Prioritizing Truman-Hobbs Bridge Candidates CG-BRG-1 reviews each bridge recommended for consideration on the T-H backlog list for compliance with reference (c), Alteration of Unreasonably Obstructive Bridges, 33 CFR 116. If the request does not comply with reference (c), CG-BRG-1 notifies the district that the bridge will not be included in the T-H backlog list. If the request complies with reference (c), CG-BRG-1 independently evaluates the bridge case using [Appendix B: Truman-Hobbs Investigation Ranking Criteria](#).

Each criteria has a rating of 0-3, and depends on the amount and content of the information the district provides. The results are averaged and the final ranking score determined on the following:

- Complaints (i.e., type and number);
- Allisions (i.e., number of hits, amount of monetary damages). Absent complaints, the district has discretion as to whether a bridge's allision history warrants initiating a preliminary review;

- Economic value (i.e., vessel transit times and the cost, types, and tonnages of products (cargo) or services that transit the bridge);
- Clearance (i.e., adequacy of vertical and horizontal navigation clearances, angle of navigation span, bridge channel width, and pier locations);
- Critical waterway (i.e., significance of the waterway's role in the national transportation infrastructure in terms of the economy, intermodal safety, and/or national security);
- Water flow (i.e., currents, tides, snowmelts);
- Geographic location (i.e., in relation to bends and/or nearby bridges and difficulty in transit lineups);
- Vessel (i.e., specific types, amounts and/or their size);
- T-H eligibility (i.e., if bridge is a railroad or publicly owned highway bridge);
- Status (i.e., a bridge's active use for transportation purposes); and
- If the district has unique issues that are not mentioned, those remarks are included for consideration.

The CG-BRG-1 Division Chief appoints a BMS to evaluate and consolidate individual results. After CG-BRG-1 evaluates the bridge, the BMS develops the Preliminary Review Ranking Criteria Rationale Report, which summarizes the ranking of the bridge on the T-H backlog list. [Appendix C: Preliminary Review Ranking Criteria Rationale Report](#) is the template for the report.

A.4. Letter of Transmittal to District Bridge Office

When CG-BRG-1 completes the evaluation and determines the bridge's ranking, the BMS updates the backlog list and drafts a memorandum for the CG-BRG-1 Division Chief's signature with the revised backlog list as an enclosure. See [Appendix D: Truman-Hobbs Backlog List Example](#). The BMS mails the signed memorandum and revised backlog list to CGD8(dwb).

A.5. Benefit to Cost (B/C) Analysis

CG-BRG-1 conducts a benefit to cost (B/C) analysis to determine the B/C ratio. The B/C ratio necessary for a bridge to qualify as an unreasonable obstruction is one to one or greater. [Appendix E: Navigation Benefits and Benefit to Cost Ratio](#) provides detailed instructions on how to develop the B/C analysis.

CG-BRG-1 conducts two B/C analyses during a T-H investigation:

1. Compares the benefits identified in the preliminary investigation to the government costs in the Preliminary Engineering Report to determine need for a detailed investigation.
2. Compares the detailed investigation benefits with a more detailed engineering report to make a final determination about whether to issue the bridge owner (BO) an Order to Alter (OTA).

A.6. Preliminary Investigation

CGD8(dwb) conducts a preliminary investigation with assistance from the DBM in whose district the bridge is located. CGD8(dwb) prepares a Preliminary Investigation Report summarizing the findings following the template found in [Appendix F: Truman-Hobbs Preliminary Investigation Report Format and Content](#), [Appendix F](#) and [Appendix E: Navigation Benefits and Benefit to Cost Ratio](#) have details for developing a Preliminary Investigation Report.

Once CGD8(dwb) completes the preliminary investigation, CGD8(dwb) forwards the Preliminary Investigation Report to CG-BRG-1 for review to determine if there is sufficient evidence to warrant conducting a detailed investigation and public meeting. If the bridge is located outside CGD8(dwb)'s area of responsibility (AOR), CGD8(dwb) forwards the report to the District Commander in which the bridge is located for review and comment before sending to CG-BRG-1.

The BMS reviews the Preliminary Investigation Report for completeness and correctness (mathematical and grammatical), and reviews district recommendations. When the report is received, the CG-BRG-1 Division Chief appoints a PM, and provides a hardcopy of the report's executive summary and other pertinent waterway information the PM may need to prepare a Preliminary Engineering Report. The BMS withholds the sections of the report that include the Benefits to Navigation from the PM.

A.7. Preliminary Engineering Report

The PM prepares the Preliminary Engineering Report, which includes the following:

- A preliminary engineering study of the bridge alteration presenting the most economical alternatives to alter the bridge, and accomplishes the USCG's requirements addressed in the OTA;
- The estimated total project cost;
- The PM develops the Preliminary Apportionment of Cost (AOC). This is necessary as the B/C analysis compares the benefits to navigation to the Government's cost (see [Chapter 3: Truman-Hobbs Design Phase, Section E: Apportionment of Cost](#)); and
- A drawing showing the existing bridge and proposed alternative(s).

The BMS conducts a B/C analysis comparing the Preliminary Investigation Report (Benefits to Navigation) with the Preliminary Engineering Report (Federal Government share of the bridge alteration costs), prepared by the PM, and only if a 1:1 or better B/C ratio is generated will a detailed investigation and public meeting be authorized.

If CG-BRG-1 determines the bridge does not qualify for alteration under reference (b), The Act of June 21, 1940, As Amended (Truman-Hobbs Act) (54 Stat. 497; 33 U.S.C. 511-524), the BMS prepares a decision analysis outlining the reasons the bridge is not recommended for further investigation. CG-BRG-1 prepares a memo to CGD8(dwb) notifying them the investigation is terminated and advises CGD8(dwb) to notify the BO of rights to appeal per reference (c), Alteration of Unreasonably Obstructive Bridges, 33 CFR 116.

A.8. Detailed Investigation

CGD8(dwb) conducts a detailed investigation with assistance from the DBM in which the bridge is located. CGD8(dwb) prepares a Detailed Investigation Report summarizing the findings following the template found in [Appendix F: Truman-Hobbs Preliminary Investigation Report Format and Content](#). See [Appendix E: Navigation Benefits and Benefit to Cost Ratio](#) for details on how to develop a Detailed Investigation Report.

Once the detailed investigation is complete, CGD8(dwb) forwards the report to CG-BRG-1 for review to determine if there is sufficient evidence to warrant recommending the USCG Commandant issues an OTA. If the bridge is located outside CGD8(dwb)'s AOR, CGD8(dwb) forwards the report to the District Commander in which the bridge is located for review and comment before sending to CG-BRG-1.

The BMS reviews the Detailed Investigation Report for completeness and correctness (mathematical and grammatical), and reviews the district recommendation. When the report is received, the BMS provides the PM a copy of the report's Executive Summary and any other pertinent waterway information the PM may need to prepare the Engineering Report. The BMS withholds the sections of the report that include the Benefits to Navigation from the PM.

The BMS conducts a B/C analysis comparing the Detailed Investigation Report (Benefits to Navigation) with the Engineering Report (Federal Government share of the costs of bridge alteration), prepared by the PM, and only if a 1:1 or better B/C ratio is generated is an OTA recommended.

If CG-BRG determines the bridge does not qualify for alteration under reference (b), the BMS prepares a decision analysis outlining the reasons the bridge is not recommended for an OTA. The BMS prepares a memo to CGD8(dwb) notifying them the investigation is terminated and advises

CGD8(dwb) to notify the BO of rights to appeal per reference (c), Alteration of Unreasonably Obstructive Bridges, 33 CFR 116. The BMS sends both the memo and the decision analysis to CGD8(dwb).

A.9. Developing the Engineering Report

The PM prepares the Engineering Report, which includes the following:

- A more detailed engineering study of the bridge alteration presenting multiple alternatives and identifying the most economical alternative to alter the bridge, while accomplishing the USCG's navigational requirements as identified in the detailed investigation report;
 - The estimated total project cost;
 - The Preliminary AOC; and
 - A drawing showing the existing bridge and proposed alteration(s).
-

A.10. Decision Analysis and 60-Day Notice Letter

The BMS prepares a decision analysis to accompany the bridge case folder for CG-BRG's signature. If CG-BRG-1, with CG-BRG concurrence, recommends the bridge for an OTA, the BMS prepares the 60-day Notification Letter to the BO. This letter gives the BO an opportunity to respond to the government before the OTA is issued (see [Appendix G: 60-Day Notification Letter](#)) and contains the preliminary AOC. If the BO comments on the 60-day letter, CG-BRG reevaluates the situation based on the BO's additional information. There is no timeframe specified for this CG-BRG reevaluation in statute or regulation, but 90 days is recommended.

A.11. Appeals

Except for the decision to issue an OTA, if a complainant disagrees with a recommendation regarding obstruction or eligibility made by a District Commander or CG-BRG, the complainant may appeal that decision to the USCG Deputy Commandant for Operations (CG-DCO). The BO submits the appeal in writing to the CG-DCO within 60 days after the District Commander's or the CG-BRG's decision. CG-DCO makes a decision on the appeal within 90 days after receipt of the appeal. CG-DCO's appeal decision constitutes final agency action.

A.12. Order to Alter

If the bridge qualifies for alteration under the T-H Act and the BO does not respond to the 60-day letter with any objections or any objections have been discussed and reconciled, the BMS drafts and routes the OTA and accompanying documents through the Chain of Command for signature (see [Appendix H: Order to Alter Example](#) and [Appendix I: Order to Alter – Congressional Example](#)).

The OTA package to the Commandant includes:

- A digest;
- An OTA cover letter;
- The OTA;
- A copy of the decision analysis;
- The 60-day letter with any BO responses; and
- Any other pertinent documentation.

The BMS prepares these documents and routes them through the Chain of Command for approval as per [Appendix J: Truman-Hobbs Case Evaluation Checklist](#). The Commandant signs the OTA.

After the Commandant signs the OTA, the BMS sends the original OTA with a memorandum of instruction to CGD8(dwb) for service on the BO. If the bridge is outside of CGD8(dwb) AOR, the BMS sends a copy of the OTA and memorandum to the district where the bridge is located. When the OTA is served, CGD8(dwb) provides a copy of record of service for Headquarters (HQ) files.

A.13. Record Keeping

Throughout the process, the BMS maintains the T-H Case Evaluation Checklist (see [Appendix J: Truman-Hobbs Case Evaluation Checklist](#)) and keeps it as part of the bridge case folder and electronic file.

The BMS files all documentation for a T-H bridge project in a standard electronic folder on the CG-BRG Shared Drive. Figure 2-1 shows a possible scheme for organizing electronic folders for T-H documents.

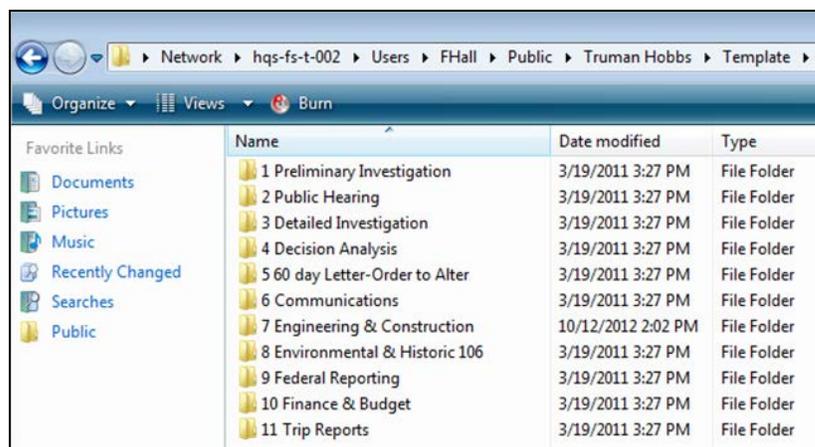


Figure 2-1 Electronic folder organization on CG-BRG shared drive

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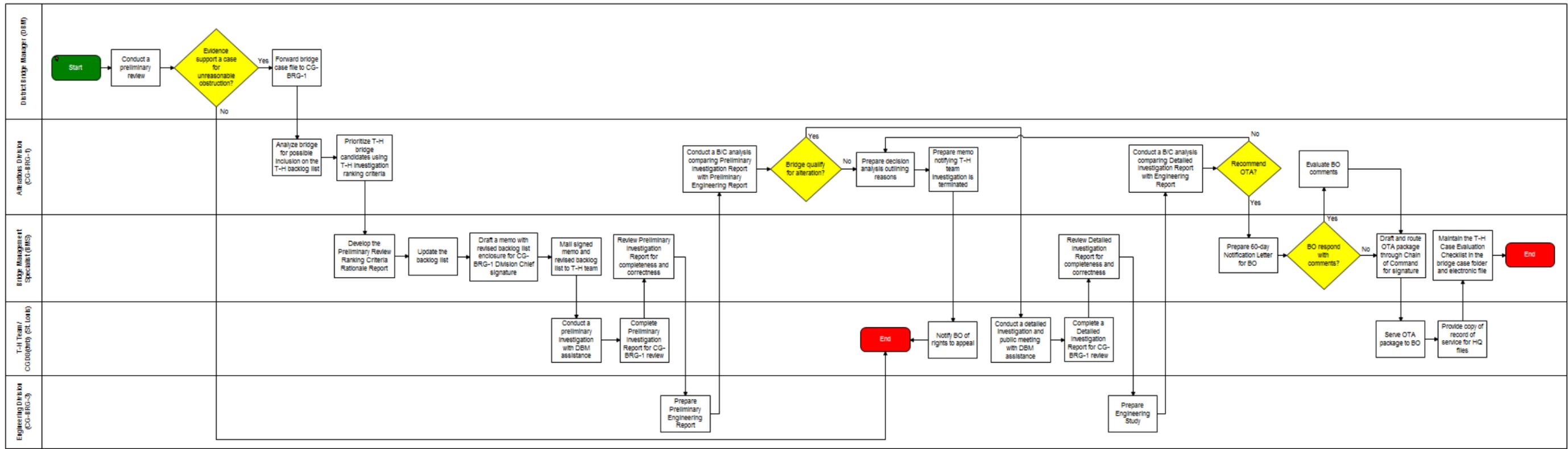


Figure 2-2 Investigation phase process

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Chapter 3: Truman-Hobbs Design Phase

Introduction

This chapter discusses the design phase of T-H bridge alterations projects. CG-BRG-1 oversees T-H projects during the design phase and works with the BO in executing the T-H design.

In This Chapter

This chapter contains the following sections:

Section	Title	Page
A	Coordination with the District Bridge Office	3-2
B	Letter of Technical Engineering Instruction	3-3
C	Contract Selection	3-5
D	USCG Permit Amendment	3-8
E	Apportionment of Cost	3-9
F	Submittal Review	3-14
G	Invoice Review	3-17
H	Documentation	3-21

Section A: Coordination with the District Bridge Office

A.1. Background CG-BRG manages funding for T-H projects. It is imperative that all decisions related to a T-H project go through the CG-BRG office for final approval. It is also important to recognize the district bridge office (DBO) role in managing the navigation impacts during construction and throughout the lifecycle of the bridge.

A.2. Navigation Items The PM coordinates with the DBO to ensure full consideration of navigation needs and any requirements unique to the waterway in the project requirements provided to the BO.

The PM coordinates the following navigation items with the DBO:

- Navigation lights;
- Bridge protection system;
- Clearance gauges;
- Navigation channel closure periods required to construct the new bridge; and
- Other items related to navigation needs.

A.3. Navigation Impacts Consult and involve the DBO in any decisions related to navigation impacts e.g., navigation restrictions, water closures, etc. during construction. Throughout the project's design and construction phases, the DBO serves as the subject matter expert (SME) on projects' navigation impacts; however, CG-BRG makes any decisions directly impacting costs and/or schedules of the T-H projects.

Section B: Letter of Technical Engineering Instruction

B.1. Background Once CGD8(dwb) serves the BO the signed OTA and the project receives sufficient funding to cover the design cost, CG-BRG-1 prepares a Letter of Technical Engineering Instruction and sends it to the BO. See [Appendix K: Letter of Technical Engineering Instruction Example](#). Appendix K is not a comprehension example. Follow guidance in the publication for writing a Letter of Technical Engineering Instruction.

The Letter of Technical Engineering Instruction gives the BO necessary information to select a design engineering consultant (DEC) to prepare the project plans and specifications. Also, the Letter of Technical Engineering Instruction includes USCG recommendations for evaluating bids including the selection criteria for a DEC. The BO selects the DEC based on the selection criteria; a pass/fail analysis of each selection criteria is satisfactory. The BO may add additional selection criteria if accepted by CG-BRG-1.

The Letter of Technical Engineering Instruction and supporting documents sent to the BO must include sufficient detail regarding the USCG's requirements for the BO to select a DEC and develop the project plans and specifications.

**B.2. Letter of
Technical
Engineering
Instruction
Topics**

The Letter of Technical Engineering Instruction addresses the following topics:

- Brief description of the project;
- Project schedule;
- Requirements for the solicitation of engineering services;
- Requirements for solicitation advertisement method (2 national publications);
- Items included in the DEC scope of work provided in the solicitation (including but not limited to):
 - Existing plans review;
 - Load rating and condition analysis of existing bridge;
 - Estimate of the remaining service life of the existing bridge;
 - Inspection report of existing bridge completed within the previous two years;

- Conduct field survey required for the design;
 - Prepare environmental documents and obtain required permits;
 - Prepare the plan sheets for the USCG permit amendment;
 - Perform geotechnical investigation and submit geotechnical report;
 - Attend meetings requested by CG-BRG-1 to review the plans and specifications and prepare meeting minutes;
 - Develop plans and specifications for the new signal and communication systems;
 - Develop design criteria, notes, plans, cost estimates and specifications; and
 - Optional construction solicitation services.
- Recommendation for evaluating proposals;
 - Process for DEC selection;
 - Requirements for the engineering services contract language; and
 - Other requirements unique to the project.

B.3. Supporting Documents

In addition, CG-BRG-1 provides the BO with the following supporting documents as attachments to the Letter of Technical Engineering Instruction (these files are located on the CG-BRG Shared Drive):

- Design Phase Guidelines – Provides information on key stages and milestones of the project design, how the USCG communicates key decisions throughout the project, and other project design requirements;
 - Provisions and Clauses for Contract for Engineering Services - Provisions and mandatory clauses to include in contracts or agreements for engineering services;
 - Construction Contract Clauses – Clauses the DEC includes in the construction specifications;
 - Compliance with reference (d), 42 USC Part VI Civil Rights Act of 1964 – agreement from the BO that the project will comply with the titled act; and
 - Design Engineer Consultant Selection Criteria – List of recommended criteria and weighting system for the BO to use when evaluating design proposals for selection.
-

Section C: Contract Selection

- C.1. Background** The BO must advertise solicitation for proposals and select the DEC to perform the design; however, the BO cannot award the design contract unless USCG approves of the selected firm and authorizes award of the design contract.
-
- C.2. Bid Document Package** The BO prepares the Bid Document Package to include the scope of work, the details provided at the Letter of Technical Engineering Instruction, and other required bidding documents. The BO forwards the Bid Document Package to CG-BRG-1 for review and concurrence.
-
- C.3. Advertisements** If CG-BRG-1 approves the Bid Document Package, CG-BRG-1 authorizes the BO to make it available to consulting firms through proposal advertising and solicitation. CG-BRG-1 reviews advertisements and other related correspondence to ensure they meet USCG standards and needs as set forth in the Letter of Technical Engineering Instruction. The BO publishes the advertisement in at least two national industry publications. See [Figure 3-1 Design phase advertisement example](#).

CLASSIFIEDS To advertise call 1-800-251-5176 or 212-904-2815.

set, plus \$6.00 per set shipping and handling fee, by calling the following toll free number (877) 647-7526 or by mail from the Plan Sales Unit, 35th Fl., Corning Tower, Empire state Plaza, Albany, NY 12242 (deposits less than \$50.00 are non-refundable). Make check payable to the Office of General Services and Write Fed.ID # and phone # on check.
William F. O'Connor, AIA
Deputy Commissioner

**Galveston County, Texas
Alteration Of Galveston
Causeway Railway Bridge**

Galveston County, Texas is seeking Statements of Qualifications from interested engineering consultants for the alteration of the Galveston Causeway Railway Bridge over the Intracoastal Waterway, at mile 357.2, near Galveston, Texas. The United States Coast Guard, under the provision of the Truman-Hobbs Act, issued an Order to Alter this bridge.

The portion of the existing bridge to be altered consists of:

- 1) a 125 foot single track steel rolling lift span;
- 2) portions of reinforced concrete arch approaches designed for 3 railway tracks plus roadway; and
- 3) substructure units functioning as arch abutments and as pivot pier and rest pier for the movable span; and
- 4) associated structures including two potable water mains, electrical transmission lines and rail track.

The affected arches have clear spans of 70'-0". The present navigational channel provides a clear width of 109'-3" and is not obstructed vertically by the railway bridge in its open position.

The altered structure will be a single track vertical lift span providing a minimum unobstructed horizontal clearance of 300 feet measured normal to the channel and minimum vertical clearances above mean high water of 73 feet in the open position and eight feet in the closed position. The navigation opening shall align, as closely as engineering considerations will permit, with the navigation opening of the proposed Interstate Highway 45 bridge designed by the Texas Department of Transportation.

Interruption of the extremely intense waterway traffic during construction must be limited. Interruption to rail traffic for periods of four hours or less will be possible on most days. One interruption of waterway, potable water mains and rail traffic in the order of 24 hours for removal of existing span and installation of new span will be possible.

The scope of Engineering Services to be considered by consultants shall include:

1. Review of existing plans and other documents, including design criteria;
2. Rating of existing bridge;
3. Preliminary design of replacement span, arch-bridge modifications, complying with applicable articles of the 2002

AREMA recommended practices, including all provisions of Part 6 of Chapter 15, and incorporating a 10 foot maintenance roadway on top of the ties designed for H 20 live load and preparation of cost estimate for such a span.

4. Performance of field surveys necessary for design.

5. Preparation of plans and specifications for subsurface borings and soil tests.

6. Preparation of plans and specifications for high tension electrical lines and towers to provide required navigation clearance.

7. Preparation of plans and specifications for two water main replacements.

8. Preparation of outline plans and design criteria to serve as a basis for development of final plans and specifications.

9. Preparation of final plans and specifications

10. Preparation of construction cost estimate.

11. Development and updating of Apportionment of Cost in accordance with provisions of Section 6 of the Truman-Hobbs Act.

12. Determination and preparation of necessary environmental and historic documentation and securing all related permits and releases.

13. Design of necessary signal work.

14. Design of necessary track work.

15. Review of shop and contractor drawings and other required submittals.

16. Performance of material testing and inspection.

17. Performance of construction engineering.

The following time schedule will consist of the following four phases that will govern the design of the alteration:

1. Phase 1 - Outline plans and design criteria - 90 days from the date of notice to proceed.

2. Phase 2 - Preliminary plans, cost estimate and Apportionment of Cost - 180 days from the date of notice to proceed.

3. Phase 3 - Historic and environmental documentation and all required permits, releases and approvals - 365 days from the date of notice to proceed.

4. Phase 4 - Final plans and specifications and revised Apportionment of Cost - 450 days from the date of notice to proceed.

Each of the above four phases are dependent upon adequate funding through the Truman-Hobbs Act. Accordingly notice to proceed on one or more phases may be delayed as determined necessary by Galveston County.

The consultant's submittal should stress those attributes of its organization that qualifies it by ability and experience to effectively perform the engineering to alter the subject structure. Specific items that will be considered in the selection process and the points they will be assigned are:

- Criteria/Points
1. Experience in Design of movable bridges/lift bridges. - 20 points

2. Experience in construction engineering/supervision of movable bridges. - 20 points

3. Familiarity and recent experience with Truman-Hobbs projects. - 20 points

4. Qualifications and Experience of key personnel. - 20 points

5. Methodology and engineering approach to alter the existing bridge. - 30 points

6. In-house capability to handle electrical, mechanical and signal work. - 10 points

7. Present workload and ability to meet the schedule. - 10 points

8. Sub-consultant qualifications and experience. - 10 points

9. Financial capability and quality assurance approach to accomplish the work. - 5 points

10. Past performance - 20 points

11. Knowledge of local conditions. - 5 points

12. Experience in railroad bridge work. - 20 points

Total Possible: 190 points

The selection process will follow that recommended in the American Society of Civil Engineers Manual No. 45.

Eight copies of the Statement of Qualifications shall be submitted to:

Mr. Mike Fitzgerald, P.E.
County Engineer
Galveston County
123 Rosenberg, Suite 4157
Galveston, Texas 77550
Fax - (409) 770-5559
E-mail-judy.davis@co.galveston.tx.us
by close of business (5:00 p.m.) on August 28, 2003.

**The Port Authority Of New York
And New Jersey
Request For Qualifications/
Request For Proposals -
Performance Of Expert
Professional Services For The
Development Of The
Environmental Analysis And
Documentation For The
Permanent World Trade Center
Path Terminal**

The Port Authority of New York and New Jersey is soliciting consultants to respond to a Request for Qualifications (RFQ)/Request for Proposals (RFP).

The environmental documentation shall be prepared in accordance with the National Environmental Policy Act (NEPA) and NEPA implementing regulations. The Federal Transit Administration (FTA) will be the federal lead agency for the performance of this work.

Proposals will only be considered from consultants who meet the following criteria:

- A minimum of ten (10) years experience in the development of NEPA environmental

Figure 3-1 Design phase advertisement example

C.4. Government Cost Estimate of the Design Contract	CG-BRG-1 prepares the government cost estimate of the design contract based on their estimate of man-hours required to complete the design and the hourly rate.
C.5. CG-BRG-1 Evaluation	Per the Letter of Technical Engineering Instruction, the BO provides CG-BRG-1 a copy of all received proposals. Once received, CG-BRG-1 independently evaluates the proposals based on the criteria set forth in the Letter of Technical Engineering Instruction. Use the evaluation: <ul data-bbox="451 636 1425 783" style="list-style-type: none">• To determine which proposal packages meet solicitation qualifications;• To rank the proposals based on their qualifications; and• To accept or reject the BO's recommendation.
C.6. BO Evaluation	<p>The BO evaluates all proposals in terms of the technical criteria provided in the Bid Document Package and forwards to CG-BRG-1 the names of the top three ranked consulting firms for review and concurrence. If there are any discrepancies between the BO's recommendation and CG-BRG-1's evaluation of the proposals, CG-BRG-1 works with the BO to resolve inconsistencies. The BO interviews the top three ranked consulting firms. CG-BRG-1 attends the interview.</p> <p>The BO requests the top three ranked DEC's to submit a sealed cost proposal no later than seven (7) calendar days before the selection interview. The cost proposal must include a detailed breakdown of tasks and associated hours (task-hour breakdown) to demonstrate the anticipated levels of effort, an understanding of the resource needs, and the total estimated fee. The BO selects a DEC and sends a letter to CG-BRG-1 requesting USCG approval to award the design contract and attaches to the letter the cost proposals received from the three DEC's. CG-BRG-1 evaluates the BO's selection and compares the proposed costs with the government cost estimate of the design contract.</p>
C.7. USCG Concurrence	If CG-BRG-1 concludes that awarding the contract to the BO selected DEC is in the best interest of the government, CG-BRG-1 sends a letter to the BO informing them of the USCG's concurrence and authorizes the BO to award the design contract. If CG-BRG-1 does not concur with the BO's recommendation, CG-BRG-1 sends a letter to the BO with a detailed explanation of why the USCG does not concur and provides further instruction on how to proceed. Regardless of CG-BRG-1's decision, include in the letter appropriate instruction for the BO's next action.

Section D: USCG Permit Amendment

D.1. Background Modifying bridges over navigable waters that affect the approved navigation clearances or approved configuration requires a bridge permit amendment to reflect the new conditions. While it is the BO's responsibility to request the permit amendment, CG-BRG-1 must communicate this requirement to the BO. See the [Coast Guard Bridge Permit Application Guide](#).

**D.2.
Environmental
and Permitting
Process**

The USCG serves as the Lead Federal Agency for the project's environmental review.

During the design phase, the PM ensures completion of the following steps in the environmental and permitting process:

- Reevaluate Preliminary Navigational Determination completed for the OTA;
- National Environmental Policy Act (NEPA) Draft Document considering alternatives;
- Public notice for environmental comments;
- Findings of fact (FOF);
- Water Quality Certification (WQC);
- Documentation for Coastal Zone Management (CZM) concurrence;
- Final NEPA Document;
- Other documentation necessary to complete the final NEPA document; and
- Plan sheets for the USCG permit amendment.

NOTE:

The bridge permit amendment issuance will not occur until construction funding is appropriated and all plans and documents are up-to-date for construction. See [Chapter 4: Truman-Hobbs Construction Phase](#) for additional guidance on completing the permit amendment.

Section E: Apportionment of Cost

E.1. Purpose and Format

The AOC determines the proportionate shares of the project's total cost borne by the United States and by the BO.

The PM prepares, at a minimum, three AOC documents during the project's life:

- Preliminary AOC: Attached to the engineering reports; prior to starting the design work.
- As-bid AOC: Generates Order of AOC; prior to starting construction work.
- Final AOC: Prepared at the end of the construction work and after all project expenses and actual construction costs and change orders are known; prior to starting audit work.

The principles and procedures followed when developing the AOC are based on the provision of reference (b), The Act of June 21, 1940, As Amended (Truman-Hobbs Act) (54 Stat. 497; 33 U.S.C. 511-524).

E.2. Explanation of Tables

The AOC includes:

- A summary table titled "Tabulation of Proportionate Shares of Costs to be Borne by the United States and the Bridge Owner";
- [Tables I-VII](#) as listed in reference (e), Water Resources Policies and Authorities: Navigation Policy: Cost Apportionment of Bridge Alterations, 33 CFR 277;
- [Table A](#): Summary of Costs;
- [Table B](#): Cost of Bridge Construction;
- [Table C](#): Bridge Owner's Force Account Work; and
- [Table D](#): Fixed Charges.

See [Appendix L: Final Apportionment of Cost \(AOC\) Example](#) for tables' format examples.

E.2.a. Table A: Summary of Estimated Project Costs

This table summarizes total project cost. It shows the following breakdown of the total project cost:

- Cost of bridge construction, provided in [Table B](#);
- Cost of bridge owner’s force account, provided in [Table C](#); and
- Cost of fixed charges, provided in [Table D](#).

E.2.b. Table B: Cost of Bridge Construction

This table presents the cost of bridge construction. It matches the contractor’s charges according to its original construction contract and approved change orders.

For the final AOC, the items provided in [Table B](#) must be the same items listed in the construction contracts and change orders.

E.2.c. Table C: Bridge Owner’s Force Account Work

This table is the cost of the BO’s force account work. It lists the cost of the work items the BO’s staff conducts.

NOTE:

Per reference (b), The Act of June 21, 1940, As Amended (Truman-Hobbs Act) (54 Stat. 497; 33 U.S.C. 511-524), CG-BRG-1 must authorize force account cost before the BO’s use.

E.2.d. Table D: Fixed Charges

This table is the cost of fixed charges. It contains the cost of the design and construction engineering services charged by consultants according to their contracts authorized by CG-BRG-1. Also, [Table D](#) contains the BO’s cost of the design and construction engineering services and project administration authorized by CG-BRG-1.

E.2.e. Other Tables

For an explanation of all other tables, see reference (e), Water Resources Policies and Authorities: Navigation Policy: Cost Apportionment of Bridge Alterations, 33 CFR 277.

E.3. Determining Service Life

The PM uses the service life for bridge components described in reference (e) or an independent analysis using current inspection reports, load and condition ratings, and maintenance and repair records to determine the service life.

**E.4.
Determining
Present Worth
Factor**

The present worth factor comes from standard engineering economy equations. Obtain the interest rate from the U.S. Army Corps of Engineers (USACE) Economic Guidance Memo listing the Federal Interest Rates for Corps of Engineers Projects:

<http://planning.usace.army.mil/toolbox/library.cfm?Option=Listing&Type=EGM&Search=Policy&Sort=Default>.

Determine the factor current at the time of preparing each AOC. Use the present worth to determine the BO's liability of removal cost by reducing the BO's share to account for any remaining service life of the bridge being removed.

**E.5.
Determining
Expectable
Savings in
Repair or
Maintenance
Costs**

The BO gives the PM the maintenance and repair records and future plans to rehabilitate the existing bridge to determine anticipated savings in repair and maintenance cost.

The PM determines savings in repair costs, which are the amount the BO will not have to pay to restore an existing bridge that might be damaged, or might be dilapidated at the time of its removal.

CG-BRG-1 determines maintenance cost savings by performing a life cycle cost analysis of the expected future maintenance cost of the existing and new bridges, and determines the difference between the two cases. Develop the lifecycle cost profile of the existing bridge on the basis of the bridge maintenance history and the expected rate of its deterioration.

Retain records and calculations as part of the project file.

See reference (e), Water Resources Policies and Authorities: Navigation Policy: Cost Apportionment of Bridge Alterations, 33 CFR 277, for further explanation on repair and maintenance cost.

**E.6.
Determining
Expenditure for
Increased
Carrying
Capacity**

The PM obtains from the design engineering consultant the current load and condition rating of the existing bridge and reviews it for accuracy. CG-BRG-1 uses the load and condition ratings to determine the current load carrying capacity. If the current load carrying capacity of the existing bridge is less than the load carrying capacity of the new bridge, the PM calculates the expenditure for increased carrying capacity the BO pays.

The PM considers the following elements to determine the cost associated with the increased carrying capacity of the bridge:

- Load bearing superstructure elements (beams, truss members, etc);
- Substructure and foundation elements; and

- Other components of the existing bridge needing to be replaced or altered to accommodate the new capacity that would not be necessary to accommodate the needs of navigation.

Retain the determination and calculations as part of the project file.

See reference (e), Water Resources Policies and Authorities: Navigation Policy: Cost Apportionment of Bridge Alterations, 33 CFR 277, for further explanation on the expenditure for increased carrying capacity.

**E.7.
Determining
Original Cost**

Determine the original cost of the existing bridge from the BO's construction records. If cost records are not available, estimate the cost based on available data (as-built drawings, historic material costs, etc.). Provide the source used to determine the cost in the footnotes of [Table VII](#).

**E.8.
Determining
Salvage Value**

The salvage value of materials removed from the existing bridge is either:

- The amount of bid if the materials are retained by the contractor; or
- The fair market value at the time of removal if the materials are either disposed of as scrap or retained by the BO for use elsewhere.

If the PM determines, by analysis or by condition and load rating, the structure is not salvageable for use, determine the salvage value to be the scrap value of the material removed. The salvage value reflects any special cost(s) associated with material removal and disposal, such as remediation of lead based paint.

If the PM determines, through analysis or by other means, there is useful value remaining to the removed portion of the structure, perform an independent analysis and/or research to determine the fair market value of the salvaged structure.

In either case, document the determination and calculations as part of the project file.

To determine the actual capital cost ([Table VII](#)), deduct the salvage value from the original cost of the existing bridge. Also deduct it from the total estimated cost of the bridge alteration ([Table A](#)) to determine the cost to be appropriated per reference (e), Water Resources Policies and Authorities: Navigation Policy: Cost Apportionment of Bridge Alterations, 33 CFR 277. Accordingly, the salvage value benefits the BO and reduces their share. The BO gets full benefit of the salvage value if the service life of the existing bridge is considered expired.

**E.9.
Determining
Contingency**

The PM prepares the Summary Table as described in reference (e), Water Resources Policies and Authorities: Navigation Policy: Cost Apportionment of Bridge Alterations, 33 CFR 277.

The contingency used for the preliminary AOC should be appropriately high, between 15% and 20%, given the uncertainty of project design and cost at this stage.

Reduce the contingency for the As-bid AOC based on the particular project parameters and past projects; an appropriate contingency at this stage is between 8% and 10 %.

There is no contingency for the Final AOC.

Section F: Submittal Review

F.1. Verify Submittal Package for Completeness

For any submittal received from the BO, the PM marks the submittal package with the received date and logs the package and received date in the project submittal tracking list. The PM reviews the submittal package for completeness verifying the BO included all required components.

If the package is incomplete, the PM returns the package to the BO with a letter explaining the package is incomplete. The PM includes a list of missing documents and requests a resubmittal.

F.2. Coordinate Review with DBO

After receiving a complete submittal package, CG-BRG-1 reviews the submittal to ensure the work is complete, and is the best use of federal funds to develop the most economical design that serves the needs of navigation. CG-BRG-1 coordinates reviews with the DBO for those elements requiring district review (see [Section A: Coordination with the District Bridge Office](#)). The review includes, but is not limited to the following items:

- Safety of marine and surface transportation;
- Compliance with current applicable design standards;
- Compliance with the design criteria approved by CG-BRG-1;
- Adequacy and completeness of the plans and specifications;
- Constructability;
- Economical design;
- USCG requirements for navigation; and
- Completion of all necessary environmental and permitting reviews and documents.

F.3. Determine BO's Share of Cost

At the first design submittal, CG-BRG-1 and the BO discuss and agree to:

- Terms and costs of direct and special benefits;
- Expected savings in repair or maintenance;
- Railroad/highway traffic requirements;
- Expenditure for increased carrying capacity; and
- Other items which comprise the BO's share of the cost of the project per reference (b), The Act of June 21, 1940, As Amended (Truman-Hobbs Act) (54 Stat. 497; 33 U.S.C. 516).

CG-BRG-1 informs the BO the USCG has no financial participation in these items and the BO bears the full cost of these items. CG-BRG-1 requests and receives a letter from the BO indicating they understand the USCG does not share the cost of these items.

**F.3.a. Monitor
Design Plans and
Specifications
Development**

CG-BRG-1 monitors the development of the design plans and specifications to ensure no additional items are added to the design for which the USCG will not share cost.

If the BO adds items, CG-BRG-1 immediately notifies the BO and requests and receives a written acceptance that the USCG does not share the cost of these items.

**F.4. Resolve
Comments with
BO**

CG-BRG-1 prepares a list of the review comments for each submittal and sends it to the BO with all supporting documents. CG-BRG-1 meets with the BO and their consultant to review the submittal package and discuss USCG comments. Before the meeting, the BO provides CG-BRG-1 a written response to the comments. After resolving all comments, CG-BRG-1 authorizes the BO in writing to proceed with the design and move forward to the next design stage.

**F.5. Design
Completion
Concurrence**

At the completion of design, the BO sends the final plans and specifications to CG-BRG-1 with an approval and acceptance letter. If CG-BRG-1 concurs the design is satisfactory, CG-BRG-1 sends a letter to the BO giving concurrence of the completion of the design and accepting the plans as final. Once CG-BRG-1 accepts the plans as final, the plans are binding for all parties unless the USCG and BO approve future changes. [See Appendix M: Design Acceptance Letter Example.](#)

CG-BRG-1 obtains from the BO the following documents:

- Final design computation;
- Three copies of the final project specifications; and
- Four copies of the final project plans (half-size drawings).

The PM:

- Provides CG-BRG-1 Division Chief with one copy of the final plans and specifications;
 - Retains one copy of the final plans and specifications for use throughout the project; and
 - Files one complete design package (final plans, specifications, and computations).
-

**F.6. Record
Keeping**

At the conclusion of each design stage, CG-BRG-1 submits a written report summarizing all key decisions made. CG-BRG-1 reviews comments, BO's response, minutes from meetings with the BO, and CG-BRG-1 decisional determination to CG-BRG.

Make available all supporting documentation in relation to the summary report on the CG-BRG Shared Drive for CG-BRG review.

Section G: Invoice Review

G.1. Review Invoice for Completeness

When a BO submits an invoice, CG-BRG reviews it for completeness to verify supporting documentation. Return incomplete invoices to the BO with a letter explaining the invoice is incomplete, and provide a list of missing documents and a request for resubmittal.

G.2. Verify Charges

Once CG-BRG receives a complete invoice, CG-BRG-1 verifies invoice charges are consistent with work performed and all charges are linked to billable tasks as outlined in the contract.

Any charges by the BO should be consistent with the approved force account work described in the AOC. If the invoice includes unauthorized charges, contact the BO promptly to determine if the invoice should be corrected and resubmitted or partially approved. See [Figure 3-3 Invoice review process](#).

G.3. Perform QA/QC

Once the invoice is approved in whole or in part, the PM prepares the Payment Authorization Memo and Approval Form and routes the invoice along with a Payment Authorization Memo and Payment Authorization Approval Form to the BMS for Quality Assurance/Quality Control (QA/QC). After the BMS performs QA/QC, the BMS forwards the packet to CG-BRG-1 for final review.

G.4. Route Packet for Signature

Once CG-BRG-1 determines the packet is complete and correct, CG-BRG-1 forwards to CG-BRG for signature, then routes to Large Contracting, Reimbursable and Special Appropriations Execution Division (DCO-832) for review. Once DCO-832 completes review, DCO-832 forwards the packet to the Finance Center (FINCEN) for payment to the BO with a copy back to PM for record keeping. See [Appendix N: Signed and Routed Invoice Packet Example](#). See [Figure 3-2 Invoice payment routing process](#).

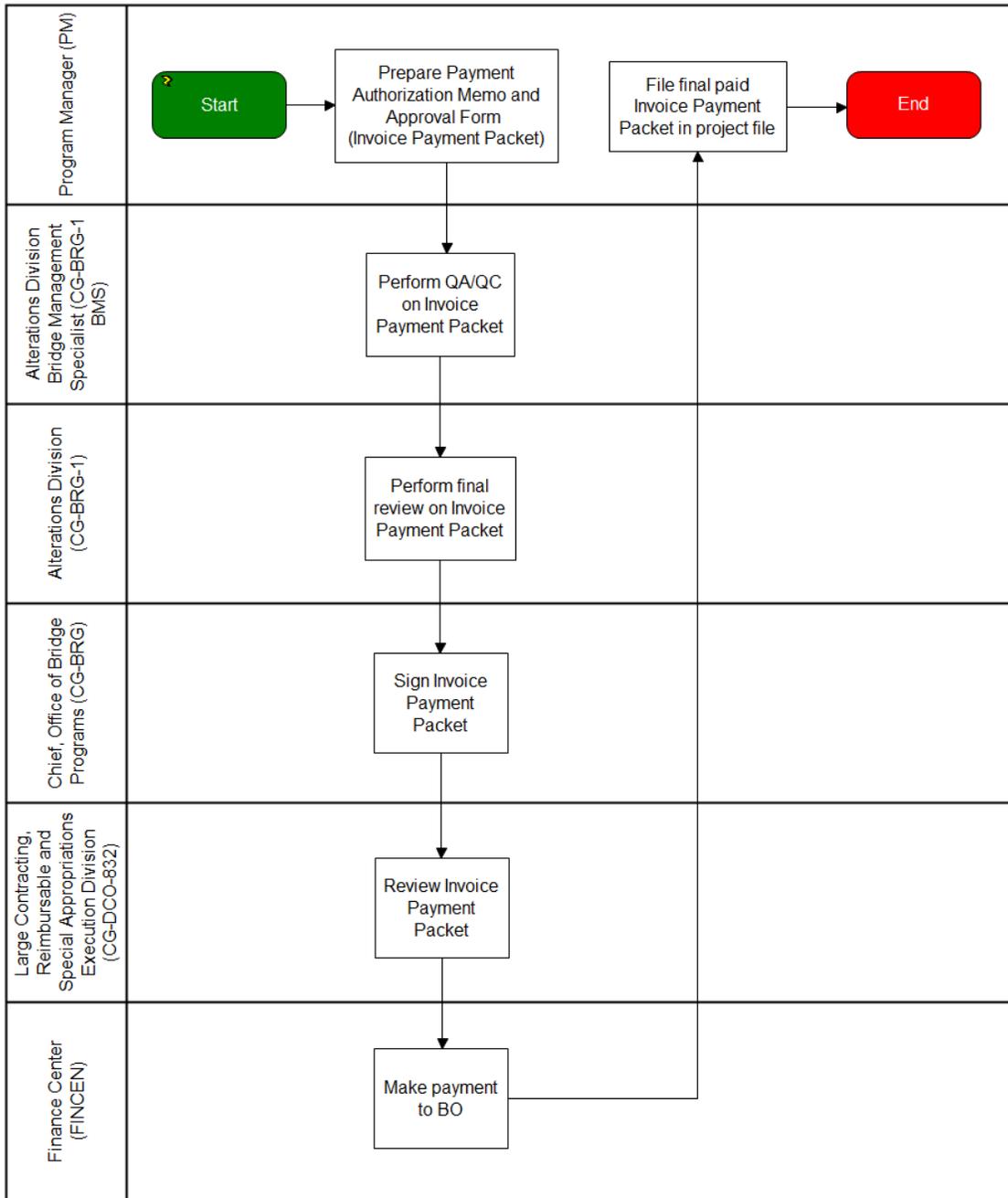


Figure 3-2 Invoice payment routing process

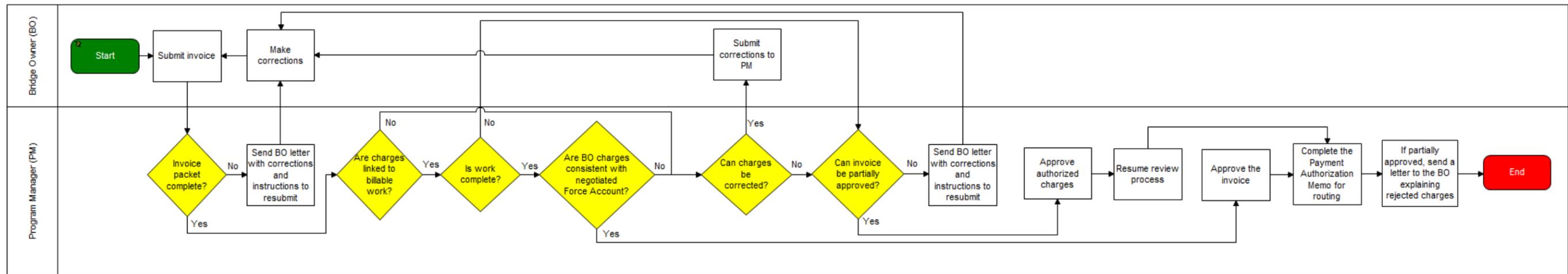


Figure 3-3 Invoice review process

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Section H: Documentation

H.1. Background Documentation is an important part of managing any project and it is vital to keep accurate records of all decisions made and official communications to provide project history, support future decisions, and provide support for the project close out audit. It is also important to file all vital documentation in a manner that any CG-BRG staff member can locate necessary files if the PM is not available.

**H.2.
Documentation
Requirements**

At a minimum, the PM maintains the files for the project's design phase:

- Letter of Technical Engineering Instruction and attachments;
- Final solicitation along with CG-BRG-1 review and approval of solicitation;
- List of agreed upon criteria used for evaluating proposals;
- Copy of all proposals;
- CG-BRG-1 evaluation of all proposals;
- BO recommendation for the winning proposal;
- CG-BRG-1 concurrence or instruction regarding BO's recommendation for the winning proposal;
- Copy of all contract documents;
- All submittal packages from the BO;
- CG-BRG-1 review comments on the submittal packages;
- BO's response to review comments;
- Final resolution to review comments;
- CG-BRG-1 acceptance letters of the design phase submittal packages;
- Trip reports and meeting minutes prepared by CG-BRG-1, BO, and consultants;
- Letter from BO accepting the cost of items that determine their share of the project;
- Final Plan package (including plans, specifications, quantities, calculations and estimate);
- Final Navigation Lighting and Clearance Gauge Plans;
- CG-BRG-1 approval of the final plans and specifications;
- Environmental and permitting documents;

- Invoice submittal packages;
- CG-BRG-1 invoice review documents and payment forms and memos;
- Vital communication with the BOs including letters, e-mails, and summary of phone and personal communication;
- Decisional communication with the DBO;
- Other communication vital to support the USCG decisional document;

The PM also retains the following documents for the AOC:

- Preliminary AOC with backup calculations including this supporting information:
 - As-built drawings of the existing bridge;
 - Current bridge inspection report including Mechanical/Electrical Inspection;
 - Current bridge load rating analysis;
 - Original bridge construction cost;
 - CG-BRG-1 computation of savings in repair and maintenance cost with all supporting documents including maintenance and repair history;
 - CG-BRG-1 computation of salvage value with all supporting documents; and
 - CG-BRG-1 computation of BO's cost of increased bridge carrying capacity, betterments, existing bridge removal cost, and items required by the BO for train traffic.
- Order of AOC with backup calculations to support each data field;
- Owner acceptance of Order of AOC;
- USCG letters approving force account work and fixed charges; and
- Vital communication with the BOs including letters, e-mails, and summary of phone and personal communication.

The PM maintains a list of all submittals and invoices received throughout the project.

For all submittals or official communication received from the BO, the PM marks the submittal package with the received date and logs it in the project submittal tracking list.

The information included in the log list for each item includes:

- Submittal or invoice number;
- Submittal or invoice title (if used);
- Received date;
- File name, if stored electronically;
- Brief description of the contents of the submittal (this should not be longer than two sentences);
- Date returned to BO;
- CG-BRG-1 decision on the submittal/invoice (concurrence, approval, reject, etc.); and
- File name for CG-BRG-1 decision, if stored electronically.

Retain all email communication related to the project in a project personal storage (PST) file. Retaining emails in a PST file allows all CG-BRG staff to easily access, sort, and search project emails through Microsoft Outlook. See instructions for creating a PST file on the CG-BRG Shared Drive. Keep the PST file in the project directory as described in the office guidance for filing structure. If email is used to communicate official decision or guidance to the BO, it is recommended that a memo of the decision or guidance be attached to the email as a portable document format (PDF).

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Chapter 4: Truman-Hobbs Construction Phase

Introduction The construction phase starts when the project receives sufficient federal funding covering the estimated government share of the total project cost. This chapter provides CG-BRG-1 guidance in managing and monitoring bridge construction work.

In This Chapter This chapter contains the following sections:

Section	Title	Page
A	Construction Letter of Instruction	4-2
B	Independent Government Estimate	4-4
C	Solicitation of Construction Contract	4-5
D	Selection of Construction Engineering Consultant	4-7
E	Communication Liaison	4-9
F	Bridge Site Visit and Pre-bid Meeting	4-10
G	Contractors' Inquiries	4-11
H	Project Amendments	4-12
I	Bid Opening	4-13
J	Bid Evaluation and Awarding of Contract	4-14
K	Preconstruction Meeting and Issuance of Notice to Proceed	4-16
L	Coordinate Communication with District	4-17
M	Managing and Monitoring Construction Work	4-18
N	Trip Reports	4-20
O	Invoice Review	4-21
P	Construction Completion Notice	4-22
Q	Bridge Project Account Closeout and Audit	4-23
R	Documentation	4-24

Section A: Construction Letter of Instruction

A.1. Background CG-BRG-1 prepares the Construction Letter of Instruction and sends it to the BO. The Construction Letter of Instruction provides the BO with information necessary to proceed with selecting a contractor to alter the bridge as well as selecting a construction engineering consultant (CEC).

**A.2.
Construction
Letter of
Instruction
Topics**

It is vital that the Construction Letter of Instruction and its attachments include sufficient detail regarding USCG requirements for the BO to select a contractor and the USCG's role in managing the construction work. See [Appendix O: Construction Letter of Instruction Example](#). Appendix O is not a comprehension example. Follow guidance in the publication for writing a Construction Letter of Instruction. The following is a list of some of the topics the Construction Letter of Instruction addresses:

- Requirements for the solicitation of the construction work:
 - Type of bid (sealed bid);
 - Contractor and team experience;
 - Distribution of work between the construction firm and subcontractors;
 - Pre-bid meeting attendance;
 - Bid Bond and deposit requirements;
 - Method of submitting questions;
 - Method of obtaining plans and other necessary documents; and
 - Construction duration.
- Requirements for the solicitation of a CEC;
- Requirements for solicitation advertisement method (two national publications);
- Construction time limits;
- Recommendation for evaluating proposals;
- Process of the selection of the construction contractor and CG-BRG-1 role in the selection process;
- Requirements for the BO to submit Guaranty of Cost;

- Process of awarding the construction contract and CG-BRG-1 role in awarding;
 - Explanation of Order of AOC issued by the USCG and the necessity of the BO accepting it in order to receive USCG reimbursement;
 - USCG role in managing the construction activities;
 - Instruction to prepare a construction estimate that is to remain confidential; and
 - Other requirements unique to the project.
-

**A.3.
Construction
Letter of
Instruction
Attachments**

CG-BRG-1 provides the BO with the following supporting documents as attachments to the Construction Letter of Instruction (these files are located on the CG-BRG Shared Drive):

- A list of recommended criteria for the BO to use when evaluating bids and selecting the successful contractor. The BO may add additional selection criteria if accepted by CG-BRG-1;
 - Procedure Memorandum prescribing USCG policy, practice, and procedure the BO and USCG follow in the administration of the construction phase. Also, it addresses the USCG's role in monitoring and managing the construction work; and
 - Provisions and clauses for Contract for Engineering Services.
-

**A.4. Additional
Instruction**

The Construction Letter of Instruction might also address the need to hire a solicitation consultant (SC) to update plans and provide services throughout the solicitation process. This is typically necessary when there has been a significant delay between design and construction, or some other situation, making it not in the best interest of the government to retain the DEC for construction solicitation. In this situation, include additional instruction for soliciting and hiring a SC to provide engineering services required throughout the construction solicitation period.

Section B: Independent Government Estimate

B.1. Reconcile Estimates

CG-BRG-1 prepares an independent government estimate concurrently with the BO preparing a construction estimate. CG-BRG-1 compares the two estimates and reconciles any differences with the BO. The reconciled estimate is the basis for bid analysis during the evaluation process.

Section C: Solicitation of Construction Contract

C.1. Review Solicitation

Per the Construction Letter of Instruction, the BO advertises the construction work in at least two national industry publications where such announcements are generally available to interested contractors.

CG-BRG-1 reviews the advertisement before publication to ensure it includes a description of the project, summary of the scope of the construction work, construction duration, and the criteria used to evaluate bids. See [Figure 4-1 Construction of work advertisement example](#).

It is recommended the solicitation remains open for at least two months to allow contractors sufficient time to contact their subcontractors and the material suppliers and prepare an accountable bid that fairly represents the real cost of the construction work.

INVITATION TO SUBMIT BIDS

American Recovery and Reinvestment Project to Replace Existing Swing Span with Vertical Lift Span
BNSF Bridge over Upper Mississippi River, Burlington, IA

Sealed bids will be received by the BNSF Railway Company, Mr. Byron T. Burns, Director Bridge Engineering, 4515 Kansas Avenue, Kansas City, Kansas 66106, on June 5, 2009 until 2:00 P.M., local time.

The work to be performed consists of the removal and replacement of the existing 356-foot swing span with a new 356-foot lift span. The work includes steel towers, modifying existing piers, drilled shafts, channel dredging, new deck and modifications of approach spans, complete with all other work incidental thereto. The project site is located at Burlington, Iowa, near Mississippi River mile 403.

All bids must be in accordance with the Bidding documents on file with the BNSF Railway. Qualified contractors may obtain contract documents through an FTP site. Contractors wishing to bid on the project can obtain the contract documents by contacting John Hronek with HNTB Corporation by email at: jhronek@hntb.com. Information on accessing the FTP site will be sent via return email. Contract documents will be available on April 28, 2009.

Only qualified contractors, licensed to do work in the States of Iowa and Illinois are requested to bid on this project. Proposals/Bids will be evaluated based on contractor's qualifications, proposed contract time, and cost. In order to be considered qualified for this project the bidder shall submit the following information along with their proposal/bid. Bidders failing to provide sufficient evidence of similar project experience and an understanding of the requirements of this project will be considered non-responsive and their proposal/bid will be rejected at the sole discretion of BNSF. Bidders will not be reimbursed for cost associated with preparing their proposal/bid.

1. Examples of comparable railroad moveable bridge projects completed within the last ten years including the manufacturing, fabrication, erection, float-in and float-out process. Include project name, description, location, completion date and contract values. Provide a reference for each project.
2. A statement giving the recent experience of key subcontractors on comparable railroad moveable bridge projects. Key subcontractors shall include Mechanical, Electrical, Controls, Steel Fabricator and Drilled Shafts. Specifically, provide recent relevant experience with large-diameter drilled shaft installation similar to the requirements of this project.
3. The names of proposed superintendent and construction manager along with a statement giving their recent relevant experience and a commitment that key staff will be available for this project.
4. A detailed list of the plant and equipment, which the bidder and his subcontractors propose to use, indicating which portions they already have available for the work. The work shall be done with off-track equipment except as otherwise may be provided. Any work proposed with on-track equipment must be clearly identified.
5. A detailed description of the schedule, method and program of work the bidder and his subcontractors propose to follow including ways of managing work around rail traffic and work windows provided by rail operations. Bidder must submit a construction schedule/staging plan with enough detail to determine the duration of construction, span installation procedures and when BNSF installed materials would be required.

General contractors shall perform with their own organization, work amounting to at least one fourth of the original contract amount, excluding structural steel and machinery fabrication. The Contractor must indicate with the bid proposal if any:

- (a) Directors, owners, officers or employees of the Contractor's firm are in any way associated with BNSF or any parent company of BNSF Company.
- (b) Employee of BNSF is associated or affiliated with the Contractor.

Bidders are required to attend a pre-bid conference to be held on May 20, 2009, in Burlington, Iowa, at a location to be determined, followed by a bridge site visit. Interested bidders shall contact John W. Hronek at HNTB Corporation, for further information. Bidders are advised that attendees shall have OSHA approved safety glasses with permanently attached side shields, hard hats and above the ankle, lace up hard toed safety boots with a defined heel, and high visibility retro reflective orange vests.

A deposit of five percent (5%) of the bid by certified check, or cashier's check, or by bid bond is required and the bidder to whom the contract is awarded shall also be required to furnish a performance bond in the total amount of the bid. Bid bonds will be returned to unsuccessful bidders.

The Railroad reserves the right to reject any or all bids, including without limitation, the right to reject any or all nonconforming, non-responsive, unbalanced or conditional bids and to reject the bid of any Bidder if the Railroad believes that it would not be in the best interest of the Project to make an award to that Bidder, whether because the bid is not responsive or the bidder is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by the Railroad.

If a contract is awarded, it will be awarded to the Bidder whose evaluation by the Railroad indicates that the award will be in the best interests of the project.

The United States Government will participate in the cost of the construction of the new bridge under the authorization of the Bridge Alteration Act (Truman-Hobbs) (33 U.S.C. 511-523) approved 21 June 1940 as amended; with the United States Coast Guard, 2100 Second Street, S.W., Washington, DC 20593-0001, acting as the Federal Agency. A portion of the federal funding of the construction contract will be provided through P.L. 111-5, American Recovery and Reinvestment Act of 2009.

Figure 4-1 Construction of work advertisement example

Section D: Selection of Construction Engineering Consultant (CEC)

D.1. Review Advertisement Solicitation

The BO submits to CG-BRG-1 the solicitation for proposals for CECs to provide construction engineering services. CG-BRG-1 reviews the advertisement solicitation to ensure it meets the standards and needs of the USCG as set forth in the Construction Letter of Instruction. Once CG-BRG-1 completes their review of the advertisement, CG-BRG-1 provides the BO a response with concurrence and instruction to advertise or instruction on suggested changes and appropriate follow-up.

D.2. Evaluate Proposals

The BO provides CG-BRG-1 a copy of all proposals as detailed in the Construction Letter of Instruction. CG-BRG-1 conducts an independent evaluation of the proposals based on the criteria set out in the Construction Letter of Instruction.

Use the evaluation to:

- Determine which proposal packages meet the qualifications of the solicitation;
- Rank the proposals based on their qualifications; and
- Determine whether to accept or reject the BO's recommendation.

The BO evaluates all proposals and sends to CG-BRG-1 a letter requesting USCG concurrence to award the construction engineering services contract to the consulting firm the BO recommends. Once CG-BRG-1 receives the recommendation from the BO, they compare the selection to their own evaluation of all proposals and compare the proposed cost with the reconciled estimate. If there are any discrepancies between the BO's recommendation and CG-BRG-1's evaluation of the proposals, CG-BRG-1 works with the BO to resolve these inconsistencies.

**D.3. Concur with
BO
Recommendation**

If the USCG concurs with the BO's recommendation, CG-BRG-1 sends a letter to the BO informing them of the USCG's concurrence and authorizing the BO to award the construction engineering services contract.

If the USCG does not concur with the BO's recommendation, CG-BRG-1 sends a letter with a detailed explanation of why the USCG does not concur with the BO's recommendation and provides further instruction on how to proceed. Regardless of the USCG's decision, the letter should include appropriate instruction for the BO's next action.

This process occurs simultaneously with the construction contract solicitation and selection process.

Section E: Communication Liaison

E.1. Contractor Questions

The BO and the SC should not answer any of the contractors' questions before the pre-bid meeting. Answers to the contractors' questions and any clarification or other information regarding the contract documents will be provided to all contractors at the pre-bid meeting.

E.2. Communication Liaison's Role

CG-BRG and/or USCG employees are not allowed to communicate directly with contractors at any time during the bid solicitation period and should direct communication through the communication liaison.

At the pre-bid meeting, the BO announces the name of the communication liaison. The communication liaison is the only person allowed to communicate with contractors. The communication liaison provides answers to any question raised by a contractor to all other contractors at the same time. The communication liaison will also provide any contract amendments or other new information to all contractors at the same time. The communication liaison seeks in writing USCG approval prior to sending answers or any information to the contractors; emails are acceptable methods to record USCG approval.

Section F: Bridge Site Visit and Pre-bid Meeting

F.1. Bridge Site Visit

The BO arranges a bridge site visit so prospective contractors have an opportunity to raise concerns regarding the construction of the new bridge under the site restrictions. The bridge site visit occurs before the meeting on the same day of the meeting.

F.2. Attend the Pre-bid Meeting

The BO schedules pre-bid meetings two weeks after advertising the project. CG-BRG-1 attends the meeting to answer contractors' inquiries related to navigation; BO and the SC address any other inquiries.

All contractors must attend the pre-bid meeting to submit their bids. The pre-bid meeting is generally used to brief prospective contractors, explain USCG and BO requirements, and answer contractors' questions.

F.3. Prepare and Send Meeting Minutes

After the meeting, the SC prepares the meeting minutes, which include all contractors' questions, answers, and any information provided to the contractors during the meeting.

The SC sends the meeting minutes to CG-BRG-1 and the BO for review and acceptance.

The communication liaison sends, within the time limit agreed upon between CG-BRG-1 and the BO, the meeting minutes to all the contractors who attended the pre-bid meeting.

Section G: Contractors' Inquiries

G.1. Responding to Contractors' Inquiries

Contractors submit questions to the BO no later than three business days before the pre-bid meeting. Questions submitted before the pre-bid meeting are answered during the meeting, while new questions may not be answered if the BO is not prepared to provide their answers instantly.

The communication liaison sends the answers to all the pre-bid attendees within the agreed upon time after the meeting.

Contractors can continue sending their inquiries up to seven business days prior to the closing day of the bid. No inquiries are accepted after this day.

The communication liaison sends answers to all the pre-bid meeting attendees within the agreed upon time after receiving the question.

Section H: Project Amendments

H.1. Project Amendments

Amendments of the plans and specifications are allowed during the solicitation period if CG-BRG-1 and BO determines they are necessary.

Amendments may:

- Enhance competition if changes are significant (i.e., impact quantity, specifications, or delivery);
- Better clarify the plans and specifications; and
- Downsize unreasonable restrictions that would not enable the contractors to bid the construction work, etc.

The BO issues the amendment after negotiating it with CG-BRG-1 and receiving USCG concurrence.

The communication liaison sends the amendments to all the pre-bid meeting attendees at the same time and requests a receive receipt.

Section I: Bid Opening

I.1. Bid Opening The BO must receive bids no later than the time specified in the solicitation for the receipt of bids. No bids are accepted after this time.

The BO arranges a bid opening meeting and invites only contractors whose bids were received within the specified time. The BO opens the bids in this meeting and announces the name of the bidder and his or her bid amount. The lowest bidder is not necessarily the winning proposal as the BO and CG-BRG-1 must still evaluate all bids and select the winning proposal based on the selection criteria and not only the bid cost.

CG-BRG-1 attends the bid opening meeting to observe it's activities.

The SC prepares the meeting minutes and sends it to the BO and CG-BRG-1 for review and concurrence

Section J: Bid Evaluation and Awarding of Contract

- J.1. Background** The BO forwards one original copy of all bids to CG-BRG-1 for an independent government evaluation. The BO and CG-BRG-1 concurrently prepare their independent evaluation of the bids within three weeks of the bid opening date.
-
- J.2. Evaluation Topics** The independent government evaluation of the bids cover many topics including:
- Evaluation of the contractors and subcontractors' experience and the qualifications of their key personnel;
 - Response to the bid evaluation criteria;
 - Bid price and its breakdown;
 - Accuracy of the bids;
 - Contractor's understanding to the scope of work; and
 - Contractor's ability to complete the work on time and without the need of many subcontractors, etc.
-
- J.3. Bid Tab Sheet** If necessary, CG-BRG-1 meets with the BO to discuss and evaluate bids. CG-BRG-1 prepares a bid tab sheet that:
- Provides a comparison between all bids and the reconciled estimate of the construction cost;
 - Provides analysis of all bids; and
 - Includes justification for any bid items which differ from the reconciled estimate by more than fifteen percent.
-
- J.4. Unacceptable Bids** If CG-BRG-1 determines bids are not acceptable due to lack of contractors' qualifications, cost, or any other reasons, CG-BRG-1 instructs the BO in writing to reject all bids. CG-BRG-1 provides the BO with the reasons of the government decision. Also, CG-BRG-1 prepares a written justification and forwards it to CG-BRG explaining the reasons of rejecting all bids.
-
- J.5. Contractor Selection** The BO completes the evaluation of bids and selects a contractor based on the selection criteria. A pass/fail analysis of each selection criteria is satisfactory. The BO sends a letter to CG-BRG-1 requesting USCG concurrence with the selection of the contractor.

The BO attaches the Guaranty of Cost to their letter. The Guaranty of Cost is a letter from the BO addressed to CG-BRG guarantying the total project cost will not exceed a certain amount. See [Appendix P: Guaranty of Cost Example](#). The BO's calculation includes the cost of the construction proposal recommended by the BO and the cost of all other work required to complete the project that received USCG approval such as consultants' fees and force account.

Based on the results of the independent government evaluation of bids, CG-BRG-1 may concur with the BO's selection of the contractor or reject it.

The USCG issues an Order of AOC signed by the Commandant and sends it to the BO for signature and acceptance. The Guarantee of Cost letter is attached to the Order of AOC. The BO's acceptance to the Order of AOC is mandatory to support the obligation of the federal funds and the reimbursement of the government's share of the project cost. See [Chapter 3: Design Phase, Section E: Apportionment of Cost](#) for more information on preparing the AOC.

The Commandant signs two original Orders of AOC. CG-BRG-1 sends both original orders to the BO. The BO signs both original orders, keeps one original order, and sends the other original order to CG-BRG-1 for their record and file.

If CG-BRG-1 concurs with the BO selection, CG-BRG-1 sends a letter to BO informing them with USCG concurrence of contractor selection and authorizing them to award the construction contract to the selected contractor.

If CG-BRG-1 rejects the BO selection, CG-BRG-1 directs the BO to the next step to take to continue with the project.

Section K: Preconstruction Meeting and Issuance of Notice to Proceed

K.1. Background The pre-construction meeting provides the opportunity for all parties involved to sit down together and discuss each other's involvement in the project and any concerns.

K.2. Attend Meeting The BO organizes a pre-construction meeting as specified in the Construction Letter of Instruction prior to the issuance of Notice to Proceed. See [Appendix Q: Notice to Proceed Example](#). CG-BRG-1, BO, and CEC attend this meeting.

K.3. Comment or Concur with Meeting Minutes The CEC prepares the meeting minutes and sends it to CG-BRG-1 and the BO for review and comments prior to sending it to the contractor. CG-BRG-1 provides written comments or concurrence to the meeting minutes back to the BO along with instruction to issue a Notice to Proceed.

Section L: Coordinate Communication with District

L.1. Background As T-H projects receive federal funding and funding CG-BRG manages, it is imperative to route all decisions related to a T-H project, including decisions related to navigation matters, through CG-BRG for final approval.

L.2. Coordinate Communication CG-BRG-1 notifies the district when construction begins and requests the DBO to attend all the meetings where navigation issues are discussed.

CG-BRG-1 coordinates with the district and the specific Sector or Captain of the Port having jurisdiction for all matters concerning:

- Actual river closures including the issue of Local Notice to Mariners (LNM);
- Establishment of a safety zone;
- Durations of span change-out; and
- Removal of the existing bridge.

Also, CG-BRG-1 coordinates with the district all the matters concerning:

- Bridge operation;
 - Navigational lights;
 - Marine traffic control; and
 - Clearance gauges.
-

Section M: Managing and Monitoring Construction Work

M.1. Background In managing a T-H project, CG-BRG-1 has a primary role of oversight and stewardship of the federal funding during construction. In doing so, CG-BRG-1 is accountable to effectively manage the project including management of schedule, cost, quality stakeholders, etc. CG-BRG-1 takes necessary actions to ensure construction work progresses on schedule while avoiding unnecessary increase in the cost over the approved contract amount.

M.2. CG-BRG-1 Functions during Construction Phase

The following is a list of some of CG-BRG-1 functions during the construction phase (not an exhaustive list):

- Attend monthly construction progress meetings and make a bridge site visit with the BO, contractor, and CEC to monitor construction and ensure it is progressing as scheduled; discuss problems and other issues related to the construction;
- Ensure completed work is in compliance with the project plans and specifications;
- Visit steel and machinery manufacture plants and ensure that all material used meet controlling specifications;
- Participate in weekly conference calls with the BO, contractor, and CEC to discuss progress, contractor's plans, status of the receipt of material, schedule, change orders, invoices, and other ongoing construction issues;
- Review the contractor Requests for Payment and assure it meets the contract conditions and covers only the completed work the BO and CG-BRG-1 accepted;
- Review contractors' requests for change orders and extension of the construction period. Approve these requests only if found legitimate and acceptable to CG-BRG-1. Negotiate change orders' price with the BO and ensure it is developed per project specification;
- Ensure contractor submits all documents required from them per their contract and maintain a record of all project correspondences;
- Be alert for possible difficulties that could arise either during the construction or in the final function of the project and make necessary corrections before the situation digresses; and
- Attend final inspection to ensure all work items are completed per the plans and specifications and provide concurrence with the BO's acceptance of the final project as appropriate.

NOTE:

CG-BRG-1 does not supervise the contractor's work, but ensures the BO and contractor remain responsible on all construction work and the quality of the final product.

Section N: Trip Reports

N.1. Background CG-BRG-1 staff completes trip reports for all their trips to the bridge site or the BO's office within three business days after the trip.

N.2. Trip Report Items Trip reports:

- Address CG-BRG-1 activities;
 - Provide a summary of all the issues discussed;
 - Provide decisions made during the trip;
 - Include photos the CEC took during the trip; and
 - Follow standard USCG Memorandum format.
-

Section O: Invoice Review

**O.1.
Construction
Phase Invoice
Review**

The process of reviewing construction invoices are similar to the design invoices. See [Chapter 3: Design Phase, Section G: Invoice Review](#).

Section P: Construction Completion Notice

P.1. Completion Report (CG-4599)

CG-BRG-1 notifies the DBO when construction is completed by preparing the [Bridges over Navigable Waters of the United States Completion Report \(CG-4599\) \(Rev. 3-11\)](#).

CG-BRG-1 sends the report to the DBO and copies to:

- USACE district office; and
- National Oceanographic and Atmospheric Agency (NOAA), National Ocean Service (NOS) headquartered in Silver Spring, MD.

DEPARTMENT OF HOMELAND SECURITY United States Coast Guard									
BRIDGES OVER NAVIGABLE WATERS OF THE UNITED STATES COMPLETION REPORT								APPROVED RCN-16590-2	
To: <u> </u> COMMANDANT, Bridge Program			INSTRUCTIONS						
BRIDGE NAME: <u> </u>			LOCATION: Indicate name of waterway, latitude and longitude to the nearest tenth of a minute, nearest town, route number if a highway bridge and local name of bridge.						
<input type="checkbox"/> NEW CONSTRUCTION <input type="checkbox"/> MODIFICATION <input type="checkbox"/> RELOCATION <input type="checkbox"/> CONVERSION TO (FIXED) (DRAW) BRIDGE <input type="checkbox"/> REMOVAL <input type="checkbox"/> OTHER (Specify in remarks)			TYPE OF BRIDGE: Abbreviate type of bridge: B- Bascule, F - Fixed (except a suspension Bridge), P - Pontoon, TR - Trestle, VL - Vertical lift, SUS - Suspension, SW - Swing, RSP - Removable Span, R - Retractable, AT - Aerial Tram, CB - Conveyor Belt.						
DATE COMMENCED		DATE COMPLETED		MISLE ID		TYPE OF TRAFFIC: Abbreviate type of traffic: HWY - Highway, HWY-RR - Highway/Railroad, RR - Railroad, FB - Foot Bridge, PL - Pipeline, PR - Private Road. Indicate other types of traffic or use by plain language in remarks.			
			VERTICAL CLEARANCE: Indicate the plane of reference used for measuring the vertical clearance, i.e. MHW, MLW, 2% flowline, NPE, etc. If additional space is required, use remarks column.						
			HORIZONTAL CLEARANCE: Distance between structural members (piers, bents, fenders, protection cells, etc.) measured perpendicular to the axis of the waterway.						
			NOTE: If the Vertical or Horizontal clearances differ from those approved in the permit, note the difference in the remarks section.						
MILES ABOVE MOUTH	LOCATION	OWNER	TYPE OF BRIDGE	CLEARANCE		CLEAR- ANCE GAUGES (Enter Yes or No)	PIER PROTEC- TION (Enter Yes or No)	DATE PLANS APPROVED AND PERMIT NUMBER	TYPE OF TRAFFIC
				HORIZONTAL	VERTICAL				
REMARKS									
COPY: Army Corps of Engineers District (____) National Ocean Service Headquarters									
From <u> </u> Commander, <u> </u> Coast Guard District			Signature <u> </u>				Date <u> </u>		

CG-4599 (3/11) Previous Edition is Obsolete Page 1 of 1
Reset

Figure 4-2 Bridges over navigable waters of the United States completion report (CG-4599)

Section Q: Bridge Project Account Closeout and Audit

Q.1. Background Upon final invoicing, payment confirmation, and completion of the bridge project, CG-BRG sends a letter to Department of Homeland Security (DHS) Office of Inspector General (OIG) requesting an audit of the BO accounting file. If requested by auditors, CG-BRG-1 provides information and documents to the auditors that will facilitate their audit process.

Q.2. Prepare Final AOC DHS IG audits the BO account file located at the BO office and submits an audit report to CG-BRG. Upon receipt of completed audit report, CG-BRG-1 prepares the Final AOC and sends it to the BO specifying the final proportionate shares of the total project cost to be borne by the federal government and the BO. See [Chapter 3: Design Phase, Section E: Apportionment of Cost](#) for information on preparing the AOC.

Q.3. Notify CG-DCO-832 and CG-831 Based on the final government's share of the project cost, the USCG has authority to:

- Require sending final payment to the BO to complete the federal share of the project cost; or
- Request the BO to refund the overpayment of the federal share.

The BO submits a letter to CG-BRG-1 indicating acceptance to the Final AOC and certifying that all work is complete and all invoices paid.

If the project account still contains unused funds, CG-BRG-1:

- Notifies DCO-832 and Budget Execution Division (CG-831) of its amount; and
- Requests DCO-832 and CG-831 to:
 - Reprogram unused funds to other pending bridge projects; and
 - Close the project Line of Account (LOA).

DCO-832 coordinates with CG-831 on any financial transfers for the unused funds.

Section R: Documentation

R.1. Documentation Requirements

Maintain the following documentation as a minimum for the construction phase of the project:

- Construction Letter of Instruction;
 - Notice-to-Proceed, bid documents including all e-mails, letters, pre-bid meeting minutes, contract amendments, and other new documents collected during bid stage;
 - Original copy of all received bids and USCG evaluation of bids;
 - Guarantee of Cost letter and signed Order of AOC;
 - BO letter requesting the award of the construction contract and CG-BRG-1 authorization of construction contract award letter;
 - USCG approval of the SC and CEC engineering firms;
 - USCG approval of BO construction management services, if applicable;
 - Requests for Information (RFI), Construction Submittals, Requests of Payment, As-built drawings, progress photos, and other documents submitted by the contractor;
 - Minutes of all monthly meetings, weekly conference calls, and other miscellaneous project meetings prepared by the consultants;
 - All communication between CG-BRG and the BO;
 - USACE acceptance of a clear navigation channel;
 - CG-BRG-1 trip reports;
 - Change orders and associated documents;
 - Invoices and associated documents;
 - Form CG-4599;
 - Audit report;
 - Final AOC and BO letter accepting it;
 - BO letter indicating all invoices were paid and no other charges will be made against the project; and
 - Final Inspection and Acceptance of Project letter.
-

**R.2. Record
Keeping**

Retain all email communication related to the project in a project PST file. Keep the PST file in the project directory as described in the office guidance for filing structure. If email is used to communicate official decision or guidance to the BO, it is recommended to attach a memo of the decision or guidance to the email as a PDF.

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Chapter 5: Truman-Hobbs Change Orders

Introduction

A change order is a written order from the BO to the contractor detailing changes that may add or delete from the original contract's scope of work, which alters the original contract amount and/or completion date. Once the BO executes and the contractor accepts the change order, it becomes part of the contract. See [Appendix R: Change Order Example](#).

The contract terms govern change order procedures and requirements. CG-BRG-1 ensures project specifications clearly outline how change orders are priced and the rate of labor, material, rental or self-owned equipment, insurance, overhead and profit, etc. are charged. Also, the specifications detail the change order process.

In This Chapter

This chapter contains the following sections:

Section	Title	Page
A	Common Causes for Change Orders	5-2
B	Steps Issuing and Approving Change Orders	5-3
C	Documentation	5-7

Section A: Common Causes for Change Orders

A.1. Common Causes

BOs write change orders:

- To correct errors in plans and specifications;
 - When essential design work is inadvertently omitted;
 - To correct design work when concealed site conditions of the existing bridge are exposed during the construction and are found to differ from the assumptions made during the design;
 - When unavoidable events or extreme weather conditions cause delays or require additional work to complete construction; and
 - If additional features or options are perceived during construction and requested by the USCG or BO.
-

Section B: Steps Issuing and Approving Change Orders

B.1. Change Order Steps

Use the following steps to issue and approve change orders (see [Figure 5-1 Change order review and concurrence process](#)):

1. The BO submits a request describing the need for change to CG-BRG-1. CG-BRG-1 reviews the request and makes a preliminary determination of whether the change is necessary to meet USCG requirements for the project.
 - a. If the USCG determines the change is necessary, CG-BRG-1 sends a letter to the BO to proceed with the change order process.
 - b. If the USCG determines the change is not necessary to meet USCG requirements, it is therefore a betterment item.
2. If CG-BRG-1 finds the work of the change order to be betterment, CG-BRG-1 can authorize the BO to proceed and conduct the work only under the following conditions:
 - a. The BO agrees the cost of the change order is fully covered by them.
 - b. The scope of work has no impact on the navigation benefits that will be gained from the project.
 - c. There is no impact on the project's schedule or target completion date.

The BO sends a letter to CG-BRG-1 indicating full responsibility for the cost of the change order, and the final cost of the change order work used in preparing the final AOC. The BO should keep CG-BRG-1 informed on the progress of the change order work to ensure no impact to the project schedule, and the work does not lead to any other changes that the USCG might have to participate in.

3. After receiving USCG permission to proceed, the BO submits to CG-BRG-1 an evaluation of all viable options with the estimated cost and BO recommendation as well as plans detailing the recommended change. CG-BRG-1 reviews the options and plans to determine if the proposed change meets USCG requirements.
 - a. If CG-BRG-1 concurs with the BO's recommendation, the PM sends a letter providing USCG authorization to proceed.
 - b. If CG-BRG-1 does not concur with the BO's recommendation, the PM sends a letter with recommended changes or a preferred USCG option.

4. After CG-BRG-1 issues an authorization to proceed, the BO prepares and submits a change order request. The request includes the following supporting documents:
 - The reasons and the needs of the change order;
 - Scope of work and clear explanation of what needs to be done;
 - Cost breakdown of the work required by the change order with supporting documents ;
 - Schedule and date of completing the work;
 - Effect on the contract time if any with reasons and supporting documents; and
 - Any additional data the contractor believes is useful in the decision making process.
 5. CG-BRG-1 reviews the change order request to ensure it includes all supporting documents and is correctly prepared according to the contract specifications. CG-BRG-1 can request the BO to provide additional information or documentation if necessary to complete USCG review.
 6. CG-BRG-1 evaluates the change order cost and schedule; this might require an independent government estimate if the cost is not determined by the contract specifications or a previously agreed upon unit cost. If CG-BRG-1 determines the change order is not priced or scheduled correctly based on the contract specifications, CG-BRG-1 requests the BO revise the cost or schedule and resubmit the change order request. If necessary, CG-BRG-1 meets with the BO to discuss the scope of work and negotiate the cost or schedule.
 7. When CG-BRG-1 determines the change order request acceptable, CG-BRG-1 sends a letter to the BO providing USCG concurrence and authorizing the BO to proceed with the work.
-

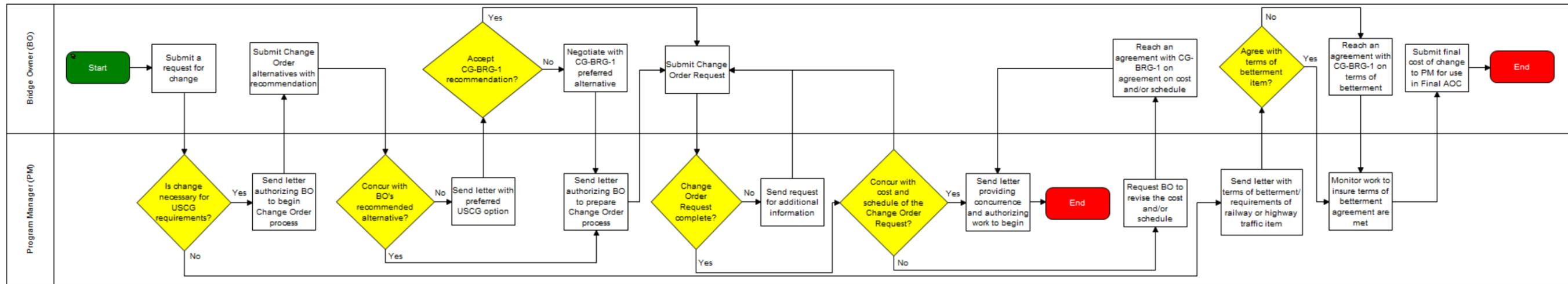


Figure 5-1 Change order review and concurrence process

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Section C: Documentation

C.1. Documentation Requirements

The PM maintains all files and supporting documents associated with the change orders according to the office guidance for filing structure located on the CG-BRG Shared Drive. Maintain the following minimum documentation:

- All submittals from the BO;
- USCG concurrence or rejection letters;
- Supporting documents and CG-BRG-1 calculations of change orders' cost used for the evaluation of change order requests;
- Any written communication between the USCG and BO; and
- An executed copy of the change order signed by the BO and the contractor as well as associated plans and supporting documents.

C.2. Item Information to Include in the Log List

The PM maintains a list of all change order submittals received throughout the project. For all submittals or official communication received from the BO, the PM marks the submittal package with the received date and logs in the project submittal tracking list. Include the following information in the log list for each item:

- Submittal number;
 - Submittal title (if used);
 - Received date;
 - File name if stored electronically;
 - Brief description of the contents of the submittal; this should not be longer than two sentences;
 - Date returned to BO;
 - CG-BRG-1 decision on the submittal/invoice (concurrence, approval, reject, etc); and
 - File name for CG-BRG-1 decision if stored electronically.
-

**C.3. Record
Keeping**

Retain all email communication related to the project in a project PST file. Retaining emails in a PST file allows CG-BRG-1 to easily access, sort, and search project emails through Microsoft Outlook. See instructions for creating a PST file on the CG-BRG Shared Drive. Keep the PST file in the project directory as described in the office guidance for filing structure. If using email to communicate official decisions or guidance to the BO, attach a letter of the decision or guidance to the email as a PDF.

Appendix A: Glossary and Acronyms

AAF	Acceptable annual frequency.
AASHTO	American Association of State Highway and Transportation Officials.
AF	Annual frequency.
AOC	Apportionment of cost.
AOR	Area of responsibility.
B/C	Benefit to cost.
BMS	Bridge management specialist.
BO	Bridge owner.
BP	Bridge Program.
CEC	Construction engineering consultant.
CG-4599	Bridges over Navigable Waters of the United States Completion Report.
CG-831	Budget Execution Division.
CG-BRG	Office of Bridge Programs.
CG-BRG-1	Bridge Operations and Engineering Division.
CGD8(dwb)	St. Louis, Missouri Bridge Office.
CG-DCO	Deputy Commandant for Operations, U.S. Coast Guard.
CGTTP	Coast Guard Tactics, Techniques, and Procedures publication.
COS	Certain other savings.

CZM	Coast zone management.
DBM	District bridge manager.
DBO	District bridge office.
DCO-832	Large Contracting, Reimbursable and Special Appropriations Execution Division.
DEC	Design engineering consultant.
DHS	Department of Homeland Security.
FINCEN	Finance Center.
FOF	Findings of fact.
HQ	Headquarters.
LNM	Local notice to mariners.
LOA	Line of account.
NB	Navigation benefit.
NEPA	National Environmental Policy Act.
NOAA	National Oceanographic and Atmospheric Agency.
NOS	National Ocean Service.
OIG	Office of Inspector General.
OTA	Order to alter.
PDF	Portable document format.
PM	Project manager.

PST	Personal storage.
QA/QC	Quality assurance/quality control.
RFI	Request for information.
SC	Solicitation consultant.
SME	Subject matter expert.
T-H	Truman-Hobbs.
TTP	Tactics, techniques, and procedures.
TTS	Transit time savings.
USACE	U.S. Army Corps of Engineers.
USCG	United States Coast Guard.
WARS	Water accident reduction savings.
WQC	Water quality certification.

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Appendix B: Truman-Hobbs Investigation Ranking Criteria

B.1. Complaints	(TTS) (WARS) (COS) 0 = No information provided. 1 = Complaints mentioned with no details. 2 = Complaints mentioned (“numerous” or type or avg.<1 comp./yr. from information provided). 3 = Complaints mentioned (provide numbers with avg.> or = 1 comp./yr. from information period) and type.
B.2. Allisions	(WARS) 0 = No information provided. 1 = Allisions mentioned with no details. 2 = Allisions with minimal detail (product, tonnage, or transit times). 3 = Allisions with detail (cost of damage to vessel and/or bridge) or hits avg.>or = 1 hit/yr. from information provided.
B.3. Economic Value (EV)	(TTS) (COS) 0 = No information provided. 1 = EV mentioned with no details. 2 = EV with minimal details (product, tonnage, or transit times). 3 = EV with details (costs, products, and tonnage and/or transit times).
B.4. Clearance	(TTS) 0 = No information provided. 1 = Clearance mentioned with no details. 2 = Clearance with minimal details (mentions “vertical” or “horizontal”). 3 = Clearance with details (mentions vertical and/or horizontal with distances).

B.5. Critical Waterway

(COS)

0 = No information provided.

1 = Waterway is mentioned as critical with no details.

2 = Information mentions something dealing with economics and/or safety and/or national security.

B.6. Water Flow (WF)

(currents, tides, etc.) (COS)

0 = No information provided.

1 = WF mentioned with no details.

2 = Only information provided is mention of current, tide, or some single factor.

3 = Information provided has more detail or mentions other factors such as cross currents, tides, and snowmelts.

B.7. Geographic Location (GL)

(where bridge is in relation to obstacles) (TTS)

0 = No information provided.

1 = Mentions location problems with no details.

2 = Mentions bends and/or bridge nearby, transit difficult to line up.

3 = Mentions exact location in relation to bends and/or bridges (distances to obstacles).

B.8. Vessels

(numbers of, types, size) (COS)

0 = No information provided.

1 = "Various" or an amount of vessels.

2 = Mentions specific types of vessels with amounts of those vessels and/or their size.

B.9. Cargo Type

(COS)

0 = No information provided.

1 = Mentions tonnage or one type of cargo.

2 = Mentions more than one type of cargo or one cargo and its tonnage.

Appendix C: Preliminary Review Ranking Criteria Rationale Report

<p><u><Insert Bridge Name Here></u> <u>TRUMAN-HOBBS INVESTIGATION RANKING CRITERIA</u></p> <p>Complaints: <i>(TTS)(WARS)(COS) 0-3</i></p> <p>Allisions: <i>(WARS) 0-3</i></p> <p>Economic Value (EV): <i>(TTS)(COS) 0-3</i></p> <p>Clearance: <i>(TTS) 0-3</i></p> <p>Critical Waterway: <i>(COS) 0-2</i></p> <p>Water Flow (WF): (currents, tides, etc.) <i>(COS) 0-3</i></p> <p>Geographic Location (GL): (where bridge is in relation to obstacles) <i>(TTS) 0-3</i></p> <p>Vessels: (numbers of, types, size) <i>(COS) 0-2</i></p> <p>Cargo Type: <i>(COS) 0-2</i></p>
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Appendix D: Truman-Hobbs Backlog List Example

Backlog List for Truman-Hobbs Investigation by CG District					
District	Bridge Name	Waterway & Mile Point	City	State	Year ID'd for Alteration
1	Brightman Street	Taunton River, mile 1.8	Fall River	MA	2008
1	Pelham Bay Pkwy	Hutchinson River, mile 0.4	New York City	NY	1999
1	Pelham Bay RR	Hutchinson River, mile 0.5	New York City	NY	1998
1	NJ Transit RR	Raritan River, mile 0.5	Amboy	NJ	1998
1	McArdle Bridge	Chelsea Creek, mile 0.3	Boston	MA	2011
8(dpb)	Kerner Bridge	Barataria Bayou, mile 35.7	Lafitte	LA	2012
8(dwb)	Dubuque RR	Upper Mississippi River, mile 579.9	Dubuque	IA	1982
8(dwb)	Belt Line RR	Upper Mississippi River, mile 835.7	St. Paul	MN	1982
8(dwb)	Cass St. RR	Illinois Waterway, mile 288.1	Joliet, IL	IL	2005
8(dwb)	Ruby St.	Illinois Waterway, mile 288.7	Joliet	IL	2005
8(dwb)	Jefferson St.	Illinois Waterway, mile 287.9	Joliet	IL	2005
8(dwb)	Jackson St.	Illinois Waterway, mile 288.4	Joliet	IL	2005
8(dwb)	McDonough St.	Illinois Waterway, mile 287.3	Joliet	IL	2005
8(dwb)	Crescent RR	Upper Mississippi River, mile 481.4	Rock Island	IL	1999
8(dwb)	Florence Hwy	Illinois Waterway, mile 56.0	Florence	IL	1988
8(dwb)	Chessie RR	Illinois Waterway, mile 254.1	Seneca	IL	1988
8(dwb)	Burlington Northern RR	Illinois Waterway, mile 239.4	Ottawa	IL	1982
8(dwb)	L&N RR	Cumberland River, mile 126.5	Clarksville	TN	1999
11	Blackpoint RR Bridge	Petaluma River, mile 0.8	Novato	CA	2011
11	Haystack Landing	Petaluma River, mile 12.4	Petaluma	CA	2011
11	Fruitvale Avenue	Oakland Inner Harbor, mile 5.6	Alameda	CA	2011
11	Union Pacific RR	Carquinez Strait, mile 7.0	Benicia County	CA	1999
13	Duwamish RR	Duwamish West Waterway, mile 0.4	Seattle	WA	1998

11/8/2012

<p>NOTES</p> <p>1. L&I Railroad Bridge, Ohio River, mile 604.4, Preliminary Investigation being updated</p> <p>2. Ongoing Preliminary Investigation: Atchafalaya River: 1) Krotz Springs, MM95.7, 2) Melville, MM107.4, and 3) Morgan City, NM0.4, Berwick Bay Bayou Sorrel, MM38.4, Lower Grand River</p>
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Appendix E: Navigation Benefits and Benefit to Cost Ratio

E.1. Navigation Benefit

Determine the total navigation benefit by summing the tangible annual savings related to navigation that would result from removing the bridge's unreasonably obstructive features. Add the benefits to navigation together to ascertain the total navigation benefits. The benefit falls into three categories:

- Eliminating commercial and recreational vessel delays from limited bridge clearances (or TTS), resulting in reduced time to clear the bridge zone.
- Eliminating collision damage (or WARS) from accidents caused by the bridge's limited navigation clearances. This also includes the cost of damages resulting from pilot error (that did not involve recklessness, substance abuse, or mechanical failure) and damages caused by escaped hazardous materials.
- Certain other savings (COS) to navigation, such as:
 - Eliminating the need for extra pilots, crew, and tugs;
 - Eliminating environmental delays (i.e., tide, wind, currents, darkness, and visibility) or unsafe conditions for navigation directly attributable to the bridge's limited clearance;
 - Eliminating multiple trips, because the size of the barges is no longer limited;
 - Eliminating environmental costs—if quantifiable—involving oil, chemicals, and hazardous cargo; and/or
 - Eliminating certain dockage costs for vessel delays attributable to the bridge.
- Apply these savings to current traffic projections for the waterway. Projections are made for a period of 75 years (per reference (f), American Association of State Highway and Transportation Officials (AASHTO) LRFD Bridge Design Specifications, Section 1, Design Life).

E.2. Benefit to Cost (B/C) Ratio

CGD8(dwb) determines the accrued annual navigation benefits from altering the unreasonably obstructive bridge. Concurrently, CG-BRG estimates the present construction costs of altering the unreasonably obstructive bridge by applying the principles of cost apportionment per the T-H Act. The Administrator, Bridge Program (BP) also estimates the

Federal Government's share (i.e., percentage) of the project cost. Using the government's share of the construction cost, the Administrator, BP derives the annual government amortization based on the current discount rate of interest over a period of 75 years, the expected service life of the bridge. This rate of discount is established annually by the USACE per reference (g), Public Law 93-251 Title I-Water Resources Development, and is used in the evaluation of water and related land resources plans for the purpose of discounting future benefits and computing costs, or otherwise converting benefits and costs to a common time basis. To arrive at the B/C ratio, the annualized navigation benefit is divided by the annualized government cost of the bridge alteration. If this ratio is equal to or greater than 1.0, the Administrator, BP declares the bridge unreasonably obstructive.

E.3. Calculations

E.3.a. Navigation Benefit (NB)

The Navigation Benefit (NB) is the sum of the total annual benefits derived from TTS for each class of vessel passing the bridge zone, WARS, and COS. Therefore:

$$\mathbf{NB = TTS + WARS + COS}$$

E.3.a.(1). Transit Time Savings (TTS)

- **General:** Increased bridge clearances normally result in a transit time reduction within the bridge zone. This in turn reduces the operating expenses within the bridge zone.

$$\mathbf{TTS = P(t_b - t_a)C}$$

Where:

P = existing as well as projected number of passages per year per class vessel.

t_b = hours per passage through present bridge zone.

t_a = hours per passage (estimated) after bridge alteration.

C = operating cost per hour per each class of vessel.

Derive “**P**” from information obtained through navigation interests and USACE. Verify information by sampling the drawtender's logs and, where possible, ascertain by taking actual field counts.

Obtain “**t_b**” by taking on-site measurements of, and querying vessel owners for, the time required for vessels to transit the bridge zone. The bridge zone is the distance on the waterway within which the vessel's operating speed is influenced by transiting the bridge.

Determine “ t_a ” by taking readings of the time vessels require to pass a clear reach of the waterway, equal in length to the bridge zone, or “ t_b ” and compute from the vessel’s velocity, in miles per hour. Take time measurements for up bound and down bound traffic where currents exist.

Obtain “ C ” by collecting data from waterway operators and by contacting CG-BRG. Sum up and add the operating costs of barges in tow to the operation cost of the towboat upon determining the average number of barges in each type of tow.

- **Special Considerations – Multiple Tripping:** The time (t_b) required for multiple tripping (tows too large to transit the existing bridge in a single tow unit) is:

$$t_b = \frac{(p)(d)}{v} + (n)(t_m)$$

Where:

t_b = hours per passage before bridge alteration.

p = number of passages between barge tie-off positions.

d = distance between barge tie-off positions (in miles).

n = number of times barges are broken-down and made-up at tie-off positions.

v = velocity (speed in m.p.h.) of towboat during double tripping.

t_m = estimated time (in hours) for dropping off or picking up barges and making up the tow.

- **Recreational Vessel Benefits:** Determine recreational vessel benefits using the same procedures, which are applicable to commercial vessels. Use on-site surveys and drawtender logs to determine the amount and type of traffic flow of recreational vessels passing through the bridge. Categorize these vessels, and then calculate the annualized number of bridge transits and average delay time per transit for each recreational vessel.
- **Operating Cost Information Collection:** Collect operating cost information for each recreational vessel class, which includes:
 - Annual fuel costs.
 - Annual marina docking and haul-out costs.
 - Annual maintenance and repair costs.

- Annual insurance costs.
 - Annual depreciation costs of vessels, assuming a 10-year life.
 - **Average Hourly Annual Operating Costs:** Translate the average annual operating cost derived to an average hourly operating cost for each recreational vessel class. Collect this cost information from boat owners or operators, marina, operators, boat repair professionals, insurance agents, new/used boat salespersons, and others. Typical methodology for data collection includes personal interviews, postcards surveys, and letter inquiries.
 - **Annualized Recreational Vessel Transits:** Use the annualized number of bridge transits, average delay time per transit in hours, and average hourly operating cost for each recreational vessel class to calculate the annualized recreational vessel benefits.
-

E.3.a.(2).
Waterway
Accident
Reduction
Savings (WARS)

- **General:** Increasing the navigation clearances through the bridge greatly reduces damage to the bridge, its fenders, and vessels. Estimate the benefits from previously recorded information on the cost and frequency of accidents. The savings are:

$$\text{WARS} = (f)(D)$$

Where:

f = Percentage of accidents assumed to be eliminated after the bridge alteration.

D = Statistical median cost of all recorded accidents at the bridge for a statistically valid time period.

- **Median Cost:** The median cost “D” includes the expense of any rerouting of trains and/or highway traffic while the bridge is inoperable as a result of an accident, and the cost to vessels waiting while repairs to the bridge are being affected. When computing the average repair costs of the bridge and vessels, select recorded data for a statistically valid time period of 20 years, but not less than 10 years if information is not available for a longer period. Costs normally are updated to present-day prices using this structure; index of price trends for Federal-Aid Highway construction computed by the Federal Highway Administration.
 - **“f” Factor:** Assume the factor “f” to equal 95%.
-

E.3.a.(3). Certain
Other Savings
(COS)

-
- **General:** Examine additional cost to navigation resulting from the restricted navigation opening and express savings in the following form:

$$\text{COS} = \text{S}_1 + \text{S}_2 + \text{S}_n$$

Where:

S = the individual savings item.

- **Savings Examples:** Examples of savings derived from the elimination of certain costs after alteration include but are not limited to:
 - Extra pilots, crew, or tugs required.
 - Environmental delays (tide, wind, currents, darkness, visibility) directly attributable to the bridge itself.
 - **Loss of Life Due to Vessel-Bridge Allisions:** Per reference (h), Valuing Mortality Risk Reductions in Homeland Security Analyses June 2008, the interim value of human life for economic analysis purposes has been established at \$6.3 million.
 - **Risk Avoidance Savings:** Savings due to avoidance of risk of a catastrophic bridge-ship allision with the potential costs of human lives lost, disruption of marine traffic, and personal and property damage resulting from the accidental release of hazardous substance(s). Compute this savings by first establishing the Acceptable Annual Frequency of Collapse (AAF) and then computing the Probability of Annual Frequency of Collapse (AF). If AF is less than or equal to the AAF, this savings is zero. If the AF is greater than AAF, then calculate the savings due to this.
 - **Increased Trips:** Restrictive bridge clearances prohibit use of larger barges.
 - **Environmental Costs:** Resulting from navigational accidents, such as oil, chemical, and hazardous cargo cleanup costs.
 - **Certain Dockage Costs:** For vessel delays attributable to bridge navigation clearances.
-

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Appendix F: Truman-Hobbs Preliminary Investigation Report Format and Content

F.1. Cover Letter	The report preparer (Chief, CGD8(dwb)) signs and dates a cover letter. The district commander submits it to the Administrator, BP with the district commander's approval and recommendation, and the estimated annual navigation benefit. The preliminary investigation report is included as an enclosure.
F.2. Title Pages	Title pages state the name of the bridge and the waterway it crosses, at what mile point, at or near what city/town or in what county/parish, in what state, and gives the name and address of the DBO with jurisdiction over the bridge in question and the date the report was completed/approved by the district commander.
F.3. Table of Content	Self-explanatory.
F.4. List of Enclosures	Self-explanatory.
F.5. Executive Summary	Executive summary includes the authority for the study, the purpose and extent of the study, a brief description of the existing bridge (i.e., clearances, use, type), the land and waterway traffic using the bridge, the surrounding area (including major industries and products), the annual navigation benefit, and the district commander's recommendation.
F.6. Summary of Complaint(s)	All complaints received on the navigational obstructiveness of the bridge.
F.7. Description of Bridge	Description of bridge including the existing permit (if available), bridge clearances, use, type, live load capacity, year built, and present owner.
F.8. Description of Navigational Problems	Description of navigational problems encountered at the bridge and photographic evidence of the existing bridge and navigation showing the unreasonably obstructive features of the bridge.
F.9. Description of Waterway in Vicinity of Bridge	Description of waterway in vicinity of bridge including local maps and charts and any physical features that affect navigation such as authorized or anticipated waterway improvements by the USACE, existing or planned commercial development, importance of the waterway to the nation,

national defense considerations, and environmental navigational costs in case of accidents. List other bridges in the vicinity of the bridge under study or having an effect on the type of navigation on the waterway.

F.10. Data on Bridge Openings

Data on bridge openings to establish the amount of vessel use and type, amount, and value of commerce/cargo (e.g., grain, chemicals, fuel, gravel) that transits through the bridge, and other costs associated with the need to alter for the benefit of navigation (e.g., the costs of “double-tripping” and helper boats).

F.11. Data on Allisions

Data on allisions attributed to restrictive navigational clearances documented over at least 10 consecutive years, with damage estimates for both the bridge and the vessels involved. Include the commerce affected, and all other costs associated with allisions (including costs of all damages resulting from hazardous materials), and accidents attributed to human error (if any).

F.12. Computation of Benefits

Transit time savings (TTS), water accident reduction savings (WARS), COS.

F.13. District Recommendation

District recommendation whether bridge is considered unreasonably obstructive and, if so, the type of bridge and proposed clearances needed.

F.14. Enclosures

- Photos of existing bridge and navigation showing the bridge’s unreasonably obstructive features, and examples of the commerce that passes through the bridge site.
 - Charts and Maps.
 - Satellite Images (if available).
 - Engineering Studies (reserved for Administrator, BP).
 - Cost Estimates (reserved for Administrator, BP).
 - Environmental Documentation.
 - Letters of Complaint.
 - Other Documents.
-

F.15. Detailed Investigation Report

Follows the same format and content as the Preliminary Investigation Report with these exceptions:

- Summary of Complaints includes reference to and briefly summarizes the public meeting;
 - The Public Meeting transcript is submitted as an enclosure; and
 - CG-BRG determination will follow the district commander’s recommendation.
-

Appendix G: 60-Day Notification Letter

U.S. Department of
Homeland Security

United States
Coast Guard



COMMANDANT (CG-551)
US COAST GUARD
2100 2ND ST SW STOP 7580
WASHINGTON DC 20593-7580
Phone: (202) 372-1511
Fax: (202) 372-1914

16592
September 28, 2011

Mr. Gerry Gates
President
Genesee and Wyoming, Inc., Southern Region
13901 Sutton Park Drive South
Jacksonville, FL 32224

SUBJ: NAHEOLA RAILROAD DRAWBRIDGE ACROSS THE BLACK WARRIOR-TOMBIGBEE
WATERWAY, MILE 173.5, NEAR NAHEOLA, AL

Dear Mr. Gates:

Pursuant to Section 3 of the Truman-Hobbs Act, as amended, a public hearing was held in Spanish Fort, Alabama, on May 21, 2008. At this hearing, opportunity was afforded to all interested parties to be heard and to offer evidence as to whether alteration of the Naheola Railroad Drawbridge across the Black Warrior-Tombigbee Waterway, mile 173.5, is needed to render navigation through or under the bridge free, easy, and reasonably unobstructed.

Based on analysis of information collected by the Coast Guard's investigation, including comments and data received at a public meeting, it has been determined that the existing bridge is an unreasonable obstruction to navigation. Therefore, alteration of the bridge under the provisions of the Truman-Hobbs Act is planned to allow for full utilization of the navigable channel.

The proposed alteration plan provides for construction of a new on-line vertical lift bridge. The new lift span over the navigable channel will provide a minimum unobstructed horizontal clearance of 350 feet. The new lift span should provide at least 75 feet of vertical clearance above normal pool in the open position.

The estimated cost is \$71,718,300 with contingency. A preliminary apportionment of this amount has been prepared, giving due allowance to such features as expired service life, removal costs and cost of engineering services, arriving at a tentative allocation of \$2,661,127 to Meridian and Bigbee Railroad, LLC and \$69,057,173 to the United States. It must be realized that these amounts are preliminary and are subject to revision as additional data becomes available. The above apportionment is based on principles of Section 6 of the Truman-Hobbs Act. Further details in connection with the above apportionment and with engineering requirements will be furnished in the near future.

In conformance with established policy to afford the bridge owner full opportunity to be heard before an Order to Alter is issued, I invite you to submit within 60 days of the date of this letter any statement of facts that you may wish to make. Following receipt of this letter, any questions concerning the Coast Guard's determination should be directed to the Coast Guard Bridge Program at (202) 372-1511.

Sincerely,

A handwritten signature in black ink that reads "Hala Elgaaly".

HALA ELGAALY, P.E.
Administrator, Bridge Program
U. S. Coast Guard
By direction of the Commandant

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Appendix H: Order to Alter Example

DEPT OF HOMELAND SECURITY, USCG CG-3854	CLEARANCE SHEET																																								
	COMMANDANT (CG-BRG) US COAST GUARD 2100 2 ND ST SW STOP 7580 WASHINGTON DC 20593-7580 Phone: (202) 372-1511 Fax: (202) 372-1914																																								
ORDER TO ALTER																																									
<p>WHEREAS by an act of Congress approved June 21, 1940, known as the "Truman-Hobbs Act," as amended (33 U.S.C. §§ 511-523), the Secretary of Homeland Security, by operation of 6 U.S.C § 552(d), was authorized to order the alteration of certain bridges across the navigable waters of the United States which have been determined to be unreasonable obstructions to navigation;</p>																																									
<p>AND WHEREAS, the Secretary of Homeland Security has delegated the authority of that act to the Commandant, U.S. Coast Guard, by the Department of Homeland Security Delegation No. 0170.1;</p>																																									
<p>AND WHEREAS, in conformity with the provisions of the Truman-Hobbs Act, notice was given to interested parties and a public hearing was held on May 21, 2008, at Spanish Fort, Alabama for the purpose of obtaining testimony as to whether the Naheola Railroad Drawbridge across the Black Warrior-Tombigbee Waterway, mile 173.5, near Naheola, Alabama is an unreasonable obstruction to free navigation;</p>																																									
<p>AND WHEREAS, after giving consideration to the testimony and the facts presented at the public hearing and to the investigations subsequently made, the Commandant has determined that the bridge is an unreasonable obstruction to navigation;</p>																																									
<p>AND WHEREAS, Genesee and Wyoming, Inc. is the owner of the bridge;</p>																																									
<p>NOW THEREFORE, the Commandant directs Genesee and Wyoming, Inc. to alter this bridge by reconstructing it on the same general alignment as the existing bridge subject to the following conditions:</p>																																									
<p>1. The movable span over the navigable channel shall provide a minimum unobstructed horizontal clearance of 350 feet measured normal to the channel. The lift span will also afford at least 75 feet of unobstructed vertical clearance above normal pool in the open position. These clearances are necessary for the reasonable needs of navigation.</p>																																									
<p>2. No deviation from the approved clearances may be made either before or after completion of the structure unless the modification of said clearances has previously been submitted to and received the approval of the Commandant.</p>																																									
<p>3. All actions undertaken by Genesee and Wyoming, Inc. pursuant to this Order must satisfy the requirements of all federal, state, and local laws and regulations pertaining to the protection of the environment.</p>																																									
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">OFFICE OR DIVISION</td> <td style="width: 10%;">CG-BRG</td> <td style="width: 10%;">CG-0941</td> <td style="width: 10%;">CG-094</td> <td style="width: 10%;">CG-5PW</td> <td style="width: 10%;">CG-5</td> <td style="width: 10%;">CG-DCO</td> <td style="width: 10%;">CG-01</td> <td style="width: 10%;">CG-09</td> <td style="width: 10%;">CG-00</td> </tr> <tr> <td>INITIALS OF RESPONSIBLE OFFICERS</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>INTRA-OFFICE OR DIVISION INITIALS</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>DATE OUT</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>		OFFICE OR DIVISION	CG-BRG	CG-0941	CG-094	CG-5PW	CG-5	CG-DCO	CG-01	CG-09	CG-00	INITIALS OF RESPONSIBLE OFFICERS										INTRA-OFFICE OR DIVISION INITIALS										DATE OUT									
OFFICE OR DIVISION	CG-BRG	CG-0941	CG-094	CG-5PW	CG-5	CG-DCO	CG-01	CG-09	CG-00																																
INITIALS OF RESPONSIBLE OFFICERS																																									
INTRA-OFFICE OR DIVISION INITIALS																																									
DATE OUT																																									

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Appendix I: Order to Alter – Congressional Example

U.S. Department of Homeland Security United States Coast Guard		Commandant United States Coast Guard	2100 Second Street, S.W. Washington, DC 20593-0001 Staff Symbol: CG-3PWB Phone: (202) 372-1511 Fax: (202) 372-1914
COPY			FEB 5 2007
ORDER TO ALTER			
<p>WHEREAS by an act of Congress approved June 21, 1940, known as the "Truman-Hobbs Act," as amended (33 U.S.C. §§ 511-523), the Secretary of Homeland Security, by operation of 6 U.S.C § 552(d), was authorized to order the alteration of certain bridges across the navigable waters of the United States which have been determined to be unreasonable obstructions to navigation;</p>			
<p>AND WHEREAS, the Secretary of Homeland Security has delegated the authority of that act to the Commandant, U.S. Coast Guard, by the Department of Homeland Security Delegation No. 0170.1;</p>			
<p>AND WHEREAS, by Section 22 of Public Law 102-241, dated December 19, 1991, Congress has determined that the bridge across the Cumberland River, mile 185.2, at Bordeaux, Tennessee, is an unreasonable obstruction to navigation;</p>			
<p>AND WHEREAS, the Cheatham County Railroad Authority is the owner of the bridge;</p>			
<p>NOW THEREFORE, the Commandant directs Cheatham County Rail Authority to alter this bridge by reconstructing it on the same general alignment as the existing bridge or constructing a new bridge on a new location as agreed upon by the Cheatham County Rail Authority and the U.S. Coast Guard and as prescribed by 33 USC § 523, subject to the following conditions:</p>			
<ol style="list-style-type: none">1. The movable span over the navigable channel shall provide a minimum unobstructed horizontal clearance of 300 feet measured normal to the channel. The lift span will also afford at least 57 feet of unobstructed vertical clearance above normal summer pool or 40 feet above maximum regulated flood, whichever is greater, in the open position and a minimum vertical clearance of 18 feet above maximum regulated flood in the closed position. These clearances are necessary for the reasonable needs of navigation.2. No deviation from the approved clearances may be made either before or after completion of the structure unless the modification of said clearances has previously been submitted to and received the approval of the Commandant.3. All actions undertaken by Cheatham County Rail Authority pursuant to this Order must satisfy the requirements of all federal, state, and local laws and regulations pertaining to the protection of the environment.			
			
THAD W. ALLEN Admiral, U.S. Coast Guard Commandant			

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Appendix J: Truman-Hobbs Case Evaluation Checklist

TRUMAN-HOBBS
CASE EVALUATION
CHECK LIST

CASE NAME: _____.

DATE: TASK:

- _____ • Receipt of Preliminary Investigation (PI) Report dated _____.
- _____ • BRG acknowledgment of receipt of PI Report.
- _____ • Produce two photocopies of PI Report:
- one photocopy from BRG-1 to BRG-3 w/Route Slip DOT Form 1320.9, dated _____, and
 - the other photocopy is an BRG-1 working copy for evaluating the following:
 - check calculations for accuracy,
 - check writing for logic,
 - check for completeness of supporting information/references, and
 - calculate preliminary Benefit to Cost (B/C) Ratio, _____ to 1.00, IF preliminary estimate of Federal portion (\$ _____) of total cost (\$ _____) of bridge alteration received from BRG-3 in report dated, _____.
- _____ • Establish T-H Case File:
- create envelope file folder,
 - add to T-H Project Status Chart, and
 - case filed in X2 cabinet in chronological order,
- _____ • PI Report review memo to BRG via BRG-1; signed by Project Manager _____ and initialed by BRG-1 _____.
- _____ • Letter, signed by BRG, to District authorizing Detailed Investigation and proceed w/Public Hearing, OR
- _____ • If insufficient information, end of investigation;

- **Public Notification.**
 - **Public Hearing:**
 - date _____,
 - time _____, and
 - location _____
_____.

- _____ ● **Receipt of Federal Register (FR) submission to G-LRA for publication:**
 - FR date _____ (must be at least 30 days prior to date of Public Hearing),
 - FR volume _____, and
 - FR page _____.
 - PDF printout of FR _____.

- _____ ● **Receipt of Detailed Investigation (DI) Report dated _____.**

- **Produce two photocopies of DI Report:**
 - one photocopy to BRG-3 w/Route Slip DOT Form 1320.9, BRG-1 to BRG-3, dated _____, requesting a cost estimate of replacement bridge; signed by BRG-1, and
 - the other photocopy is an BRG-1 working copy for evaluating the following:
 - check calculations for accuracy,
 - check writing for logic,
 - check for completeness of supporting information/references, and
 - calculate B/C Ratio _____ to 1.00 upon obtaining necessary preliminary estimate of Federal portion (\$ _____) of total cost (\$ _____) of bridge alteration received (date _____) from BRG-3 in report dated, _____.

- _____ ● **Decision Analysis.**
 - Signed by Project Manager _____.
 - Signed by BRG-1 _____.
 - Signed by BRG _____.

_____	• Letter to District notifying them of results of analysis and pending 60-day letter; Signed by BRG.
_____	• 60-Day Letter: <ul style="list-style-type: none">• estimated 60 day tickler is _____.• BRG-1 draft dated _____.• BRG-1 memo, dated _____, to BRG-3 via BRG requesting review of BRG-1 by BRG-3 with suspense date _____.• Receipt by BRG-1 of requested review from BRG-3 _____.• BRG-1 60-day letter, via BRG-3, to BRG for signature _____ w/courtesy copy to District.• _____ Date receipt of bridge owner response, dated _____ agree/disagree (circle one).
_____	• Order to Alter. <ul style="list-style-type: none">• Digest (to the Commandant) completed by BRG-1.• Copy of Digest to BRG Digest File.• Digest with Order to Alter to Commandant (CG-00) for Signature via CG-5PW _____, CG-0944 _____, CG-094 _____, CG-5P _____, CG-5 _____, CG-DCO _____, CG-01 _____, CG-09 _____, and CG-00 _____.• Order to Alter signed by the Commandant.
_____	• BRG-1 Cover Letter with signed Order to Alter Enclosure w/cc to BRG-3; BRG-1 Signature.
_____	• Draft Order to Alter event for SECDOT Report.
_____	• Copy of Signed Order to Alter to BRG-1 Order to Alter File.
_____	• Copy of Order to Alter to Readers' File.
_____	• Receipt and filing of Delivery of Order to Alter by District dated _____.

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Appendix K: Letter of Technical Engineering Instruction Example

U.S. Department of
Homeland Security

United States
Coast Guard



Commandant
United States Coast Guard

2100 Second St S.W.
WASHINGTON DC 20593-0001
Staff Symbol: G-NBR/14
Phone: (202) 267-0368

16592
January 14, 2000

Mr. George P. Burdell
Director Structures
Georgia Transit Railroad Company
1885 Rambling Way
Atlanta, GA 12345

Mr. Burdell:

Reference is made to the Georgia Transit Railroad Company (GTRC) Bridge over the Yellow River, near mile 629.4, near Techwood, GA. It is my understanding that you were served with the Order to Alter for the subject bridge by the Eighth Coast Guard District on January 6, 2000. The Order to Alter dated December 28, 1999 stipulates the horizontal and vertical clearances of the bridge by reconstructing the movable bridge in the same general alignment as the existing bridge.

This letter is to provide you with information necessary to proceed with selecting a consulting firm to provide the engineering services required to prepare the project plans and specifications. We request that you prepare a Bid Document Package that will include the scope of work, additional details as provided in Enclosure 1 "Design Phase Guidelines", and other bidding documents required by GTRC that may impact a firm's ability to complete the design or accurately prepare their bids. Please send us a copy of the Bid Document Package when you complete it for our review and comments. After the receipt of Coast Guard's concurrence to the Bid Document Package, make it available to consulting firms through a solicitation for proposals. The solicitation's advertisement should be published in at least two national industry publications and as a minimum contains a summary of the project and its scope and instruction on how to submit proposals. The scope of work included at the Bid Document Package should address in detail the work to be performed by the consultants as described below:

- Prepare outline plans and design criteria.
- Review of existing plans and other data.
- Conduct load rating capacity of the existing bridge based on its current condition and estimate its remaining service life.
- Prepare environmental documents and obtain required permits.
- Perform geotechnical investigation and submit geotechnical report.
- Perform field survey to complete the design.
- Develop preliminary plans and cost estimates in accordance with the Truman-Hobbs Act.
- Prepare the plans and specifications of the new signal and communication system.
- Prepare final plans and specifications and updated cost estimate.

The project schedule shall not exceed the following timeframe and should be included in the Bid Document Package:

- Design Contract – Signed 60 days from date of selection.
- Outline Plans and Design Criteria – Submitted 90 days from Notice to Proceed

- Preliminary Plans and Cost Estimate – Submitted 210 days from Notice to Proceed
- Final Plans and Specifications – Submitted 300 days from Notice to Proceed
- Construction PS&E – Submitted 360 days from Notice to Proceed

Also, it is required that consulting firms include in their proposals a separate item to provide services in preparation and throughout the construction solicitation process. This separate item will be at the option of GTRC and the U.S. Coast Guard depending on funding for construction at the termination of the design contract and should include the following:

- Preparation of construction solicitation announcement
- Preparation of construction engineering services solicitation announcement
- Point of contact for handling contractor inquiries throughout the solicitation period
- Providing answers to technical inquiries throughout the solicitation period
- Preparation of amendments to plans and specifications as needed
- Attend the pre-bid meeting and provide approved meeting minutes to all parties in attendance

Please provide us with a copy of all the consulting firms' proposals for independent government evaluation. Also, we request that you evaluate all proposals to select the consulting firm GTRC believes to be best qualified. Enclosure 2 "Recommended Design Consultant Evaluation Criteria" is Coast Guard approved criteria to evaluate the proposals and select the consulting firm. An interview with the top three ranked consulting firms is recommended to discuss their qualifications and investigate their ability to accomplish the project. The firm considered to be best qualified will be awarded the engineering service contract. GTRC must inform the Coast Guard via a letter with their recommended selection. Coast Guard authorization is required to make the final selection of the consulting firm and to award the design contract.

If you have any questions or need assistance, please do not hesitate to call us.

Sincerely,

Chief, Bridge Operation and Engineering Division
Bridge Program, U.S. Coast Guard
By direction of the Commandant

Encl: (1) Design Phase Guidelines
(2) Recommended Design Consultant Evaluation Criteria

Appendix L: Final Apportionment of Cost (AOC) Example

FINAL
APPORTIONMENT OF COST
FOR ALTERATION OF
THE GALVESTON CAUSEWAY RAILROAD BRIDGE
ACROSS THE GULF INTRACOASTAL WATERWAY, MILE 357.2
GALVESTON, TEXAS

Engineering Division
Office of Bridge Programs
U.S. Coast Guard
November, 2013

PRINCIPALS OF APPORTIONMENT OF COST

1. GENERAL

a. The cost for altering the Galveston Causeway Railroad Bridge across the Gulf Intracoastal Waterway at mile 357.2, near Galveston, Texas, and the apportionment of such costs between the bridge owner (the Galveston County) and the United States are presented herein.

b. The bridge was replaced under the Truman-Hobbs Act. The principles and procedures followed in the development of this final apportionment of cost are based on the provision of Section 6 of the Act of Congress of June 21, 1940 (Truman-Hobbs Act), as amended (33 U.S.C. § 516). In conformity with the provisions of this Act, the federal government's participation in the cost of a project has been limited to providing a functional facility equal in every respect, as near as possible, to the existing facility, while also providing navigational clearances in the Order to Alter to meet the reasonable needs of navigation.

2. COST OF ALTERATION TO BE APPORTIONED \$90,448,838

This apportionment of cost is based on the actual and mutually agreed final cost of altering the Galveston Causeway Railroad Bridge. The project comprised the replacement of existing 124'-5" rolling lift bascule span with a new 382'-8" vertical lift span adjacent to the existing single track bridge. The work generally entails the construction of a 382'-8" vertical lift span, lift towers, flanking deck girder spans within and adjacent to the tower spans, complete lifting and locking mechanical system, complete power supply and control system, two new steel pile support piers, modification of two existing arch spans, bridge deck and trackwork, control house platform and house atop new pier, three new steel sheet pile dolphins and fender system, and related work. Also included is the relocation of two waterlines and removal of the existing 124'-5" rolling lift bascule span and flanking arch abutments and spans, integral counterweights, two dolphins, fender system, existing waterlines, and other related work. The total cost of alteration to be apportioned includes the cost of construction, including change orders; railroad force account work such as track work, signaling and communication, and flagging; and fixed charges, including engineering, design, and inspection.

3. SALVAGE \$9,000

This figure represents the value of salvageable material removed from the old bridge. The value of salvageable materials in the old bridge or part thereof is deducted from the original cost to determine the actual capital cost and is used to reduce the total cost of construction (See TABLE VII).

4. DIRECT AND SPECIAL BENEFITS

a. Removing Old Bridge (Owner's Share) \$2,337,028

Section 6 of the Act requires the bridge owner, among other things, to pay for the used service life of the old bridge. The Congress, by inserting the used service life provision, intended that the bridge owner should bear all expenses in connection with the portion of the old bridge which had been used and which is being replaced. The principle adopted, therefore, is that the bridge owner should pay a share of the removal cost computed as that part of the removal costs that the used service life bears to the total estimated service life. The share of the bridge owner, thus computed, represents an obligation incurred by the owner now by reason of the needs of navigation which otherwise would not have to be met until the bridge had reached the end of its useful life. Accordingly, the present worth of the amount is computed deferred over the remaining service life at the current annual interest rate, as established by the US Army Corps of Engineers for FY 2012, the time of bridge removal. (See Table I)

b. Fixed Charges (Owner's Share) \$366,320

Fixed charges such as engineering, design, inspection costs, real estates, legal counsel's fees, and the bridge owner's administrative expenses are undistributed cost, shared in the ratio that each party shares in the cost of construction less fixed charges. In computing the bridge owner's share of the fixed charges, all other financial liabilities assigned to the bridge owner shall be included in the computation. (See TABLE II)

c. Contribution \$0

There is no third party with an interest in replacing the bridge.

d. Betterments \$0

Items desired by the bridge owner, but which have no counterpart in the old bridge or are of higher quality than similar items in the old bridge are included under this heading. There is no betterment items have been identified under this heading. (See TABLE III)

5. EXPECTABLE SAVINGS IN REPAIR OR MAINTENANCE COST \$0

The cost of repair and maintenance for the new lift span will be greater than that for the old bascule span for the following reasons:

- a) The larger quantity of structural steel requiring more expensive maintenance than that in the existing bridge.
- b) The increased sophistication of the bridge operating machinery and electrical system in the new bridge will be more expensive to maintain.

Accordingly, there will be no savings in repair and maintenance costs. (See TABLE IV)

6. COSTS ATTRIBUTABLE TO REQUIREMENTS OF RAIL ROAD **\$51,160**

Items desired by the bridge owner to meet the requirements of railway traffic, but which have no counterpart in the old bridge or higher quality than similar items in the old bridge are included under this heading. (See TABLE V)

7. EXPENDITURES FOR INCREASED CARRYING CAPACITY **\$0**

Section 6 of the Act requires the bridge owner to pay the difference in cost between a bridge meeting the Order to Alter with the same live loading capacity as the old bridge and the new or altered bridge having any increased live loading capacity desired by the owner. The existing bascule span has a live load rating of E-80, and the approach spans also have rating of E-80. The bridge owner desired the new construction to have a live load rating of E-80 with diesel impact. Therefore, there will be no expenditures for increased carrying capacity. (See TABLE VI)

8. EXPIRED SERVICE LIFE OF OLD BRIDGE **\$2,757,177**

Section 6 of the Act requires, among other things, that the bridge owner shall bear such proportion of the actual capital cost of the old bridge or such part of the old bridge as may be altered or rebuilt, as the used service life of the whole or a part bears to the total estimated service life of the whole or such part. The straight-line method of computing accrued depreciation is used in determining the value of expired service life, using the actual capital costs, less salvage. The accrued depreciation value is an item of participation by the bridge owner toward the cost of the new construction. Service life of 100 years of concrete arches and substructure; 75 years for bascule span superstructure; 80 years for steel waterlines; and 50 years for dolphins are considered reasonable. The service life of machinery and electrical items is considered expired with the removal of the structure. The bridge owner furnished the available records of original cost and cost of major additions to the several parts of the existing bridge. (See TABLE VII)

**TABULATION OF PROPORTIONATE SHARES OF COSTS
TO BE BORNE BY THE UNITED STATES AND THE BRIDGE OWNER
FINAL APPORTIONMENT OF COST**

Galveston Causeway Railroad Bridge
Gulf ICWW Mile 357.2, Galveston, TX

Total Cost of Project	\$90,457,838.42
Less Salvage	<u>\$9,000.00</u>
Cost of Alteration to be Apportioned	\$90,448,838.42
 Share to be borne by the Bridge Owner:	
Direct and Special Benefits:	
a. Removing Old Bridge	\$2,337,027.86
b. Fixed Charges	\$366,319.66
c. Betterments	\$0.00
 Expected Savings in Repair and/or Maintenance Costs:	
a. Repair	\$0.00
b. Maintenance	\$0.00
 Costs Attributable to Requirements of Railroad	 \$51,159.71
Expenditure for Increased Carrying Capacity	\$0.00
 Expired Service Life of Old Bridge	 \$2,757,176.68
Total Share to be borne by the Bridge Owner	<u>\$5,511,683.91</u>
 Share to be borne by the United States	 <u>\$84,937,154.51</u>
 Share to be borne by the Bridge Owner	 <u>\$5,511,683.91</u>

TABLE I
BRIDGE OWNER'S SHARE OF REMOVING OLD BRIDGE
Replacement Year 2012

Galveston Causeway Railroad Bridge
Gulf ICWW Mile 357.2, Galveston, TX

ITEMS TO BE REMOVED	YEAR BUILT	ESTIMATED SERVICE LIFE (YEARS)	AGE AT TIME OF REMOVAL (YEARS)	OWNER'S SHARE (PERCENT)	REMOVAL COST	OWNER'S SHARE OF REMOVAL COST (5) x (6)	YEARS REMAINING (3)-(4)	PRESENT WORTH FACTOR ¹	OWNER'S PRESENT LIABILITY (7)x(9)
(1)	(2)	(3)	(4)	(4)/(3)	(6)	(7)	(8)	(9)	(10)
30" Waterline	1912	80	100	100%	\$250,000.00	\$250,000.00	0.00	1.00	\$250,000.00
36" Waterline ²	2001	80	11	14%	\$443,923.55	\$61,039.49	69.00	0.07	\$4,076.72
Bascule Span ³	1988	75	24	32%	\$750,000.00	\$240,000.00	51.00	0.14	\$32,472.14
Substructure ⁴	1912	100	100	100%	\$1,858,000.00	\$1,858,000.00	0.00	1.00	\$1,858,000.00
Protection Cell (Mainland Side) ⁵	1970	50	42	84%	\$174,000.00	\$146,160.00	8.00	0.73	\$106,797.68
Protection Cell (Island Side) ⁵	1990	50	22	44%	\$126,000.00	\$55,440.00	28.00	0.33	\$18,487.99
Existing Obstructions ⁶	1912	100	100	100%	\$67,193.33	\$67,193.33	0.00	1.00	\$67,193.33
TOTAL					\$3,669,116.88	\$2,677,832.82			\$2,337,027.86

Notes:

- ¹ Present Worth Factor is based on 4 percent interest rate for FY 2012 as established by the US Army Corps of Engineers in accordance with Section 80 of P.L. 93-251.
- ² Cost of removal of 36" Waterline includes contract bid cost of removal, covered by Bid Item 29 (\$350,000) and an extra work, covered by WCD #30 (\$93,923.55).
- ³ Cost of removal of bascule span includes removal cost of machinery and counterweight, covered by Bid Item 22 for a bid cost of \$750,000.
- ⁴ Cost of removal of substructure includes removal of arches required for span float-in and tower construction, covered by Bid Item 2 (\$900,000), removal of remainder of concrete arches after span change -out, covered by Bid Item 22 (\$150,000), and removal of rest and lift abutments to EL -25, and removal of abandoned & existing control houses, covered by Bid Item 25 (\$808,000).
- ⁵ Cost of removal of protection cells includes removal of existing pier fenders, covered by Bid Item 26.
- ⁶ Cost of removal of timber, debris, and ripraps at Pier 14A & 13A, covered by WCD #11 (\$ 37,117.92) and WCD #13 (\$ 30,075.41).

TABLE II
FIXED CHARGES TO BE PAID BY BRIDGE OWNER

Galveston Causeway Railroad Bridge
 Gulf ICWW Mile 357.2, Galveston, TX

Cost of Alteration to be Apportioned	\$90,448,838.42
Less Fixed Charges	\$6,011,445.60
Cost of Construction Less Fixed Charges	\$84,437,392.82
Owners' Share Less Fixed Charges:	
Removing Old Bridge	\$2,337,027.86
Betterment	\$0.00
Expected Savings in Repair and Maintenance Costs	\$0.00
Cost Attributable to requirements of Railroad Traffic	\$51,159.71
Expenditure for increased carrying capacity	\$0.00
Expired service life of old bridge	\$2,757,176.68
TOTAL	\$5,145,364.25
Fixed Charges by Owner	\$366,319.66
\$5,145,364.25	
----- X \$6,011,445.60 = \$366,319.66	
\$84,437,392.82	

TABLE III

BETTERMENT

Galveston Causeway Railroad Bridge
Gulf ICWW Mile 357.2, Galveston, TX

No betterment have been identified	\$0.00
<hr/>	
TOTAL	\$0.00

TABLE IV

EXPECTED SAVING IN REPAIR OR MAINTENANCE COSTS

Galveston Causeway Railroad Bridge
Gulf ICWW Mile 357.2, Galveston, TX

Repair Costs:	\$0.00
Maintenance Costs:	\$0.00
Because of increased sophistication of the bridge control system and machinery and the increased steel area no saving in maintenance costs are expected.	
<hr/> TOTAL	<hr/> \$0.00

TABLE V
COST ATTRIBUTABLE TO REQUIREMENTS OF RAILROAD

Galveston Causeway Railroad Bridge
Gulf ICWW Mile 357.2, Galveston, TX

DESCRIPTION	AMOUNT
Trainman Walkway Connections	\$4,650.49 (1)
Horn Automation	\$1,874.25 (2)
Pier Top Stairs & Protective Mesh	\$44,634.97 (3)
TOTAL	\$51,159.71

Notes:

- (1) Work performed by contractor as Change Order # 11 (WCD # 24) in TABLE B.
- (2) Work performed by contractor as Change Order # 11 (WCD # 25) in TABLE B.
- (3) Work performed by contractor as Change Order # 12 (WCD # 29) in TABLE B.

TABLE VI

EXPENDITURE FOR INCREASED CARRYING CAPACITY

Galveston Causeway Railroad Bridge
Gulf ICWW Mile 357.2, Galveston, TX

The new lift bridge and tower spans have a Cooper E-80 rating. The existing bascule bridge and arches have rating of Cooper E-80. Therefore, there is no need to increase the carrying capacity of the portion of the causeway affected by alteration.	\$0.00
TOTAL	\$0.00

TABLE VII
VALUE OF EXPIRED SERVICE LIFE OF OLD BRIDGE
Replacement Year 2012

Galveston Causeway Railroad Bridge
 Gulf ICWW Mile 357.2, Galveston, TX

ITEM TO BE REMOVED	YEAR BUILT	ORIGINAL COST	SALVAGE VALUE	ACTUAL CAPITAL COST (3) - (4)	ESTIMATED SERVICE LIFE (6)	EXPIRED SERVICE LIFE YEARS (7)	TOTAL SERVICE LIFE (7) / (6) (8)	VALUE OF EXPIRED SERVICE LIFE (5) X (8) (9)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
30" Waterline	1912	\$50,000		\$50,000	80	100	100%	\$50,000.00
36" Waterline	2001	\$1,500,000		\$1,500,000	80	11	14%	\$206,250.00
Superstructure (Two Arches) ¹	1912	\$50,000		\$50,000	100	100	100%	\$50,000.00
Bascule Span ²	1988	\$7,000,000	\$3,000	\$6,997,000	75	24	32%	\$2,239,040.00
Substructure ¹	1912	\$70,000	\$3,000	\$67,000	100	100	100%	\$67,000.00
Protection Cell (Mainland Side)	1970	\$46,682	\$3,000	\$43,682	50	42	84%	\$36,692.88
Protection Cell (Island Side)	1990	\$245,895		\$245,895	50	22	44%	\$108,193.80
TOTAL		\$8,962,577	\$9,000	\$8,953,577				\$2,757,176.68

Notes:

¹ Construction cost in the year of 1912 of \$979,434 for 28 arches, 66' wide superstructure and substructure was provided by the owner. However, breakdown costs are not available and therefore, those costs are assumed as follow:

28 Arches @ \$25,000 =	\$700,000
Superstructure =	\$209,434
Substructure =	\$70,000
Total =	\$979,434
Two Arches = 2 x \$25,000 =	\$50,000

² Construction cost of the new bascule span built in 1988 was \$7,000,000 per information from BNSF

TABLE A
SUMMARY OF COSTS

Galveston Causeway Railroad Bridge
 Gulf ICWW Mile 357.2, Galveston, TX

<u>TABLE</u>	<u>DESCRIPTION</u>	<u>COST</u>	<u>SALVAGE</u>	<u>TOTAL</u>
B	Cost of Bridge Construction	\$81,111,951.84	(\$9,000.00)	\$81,102,951.84
C	Bridge Owner's Force Account Work	\$3,334,440.98	\$0.00	\$3,334,440.98
D	Fixed Charges	\$6,011,445.60	\$0.00	\$6,011,445.60
	TOTAL	\$90,457,838.42	(\$9,000.00)	\$90,448,838.42
TOTAL COST OF PROJECT				\$90,457,838.42
Less Salvage				(\$9,000.00)
Less Right-of-Way				\$0.00
COST OF ALTERATION TO BE APPORTIONED				\$90,448,838.42

TABLE B
COST OF BRIDGE CONSTRUCTION

Galveston Causeway Railroad Bridge
Gulf ICWW Mile 357.2, Galveston, TX

<u>ITEM NO.</u>	<u>ITEM DESCRIPTION</u>	<u>BID</u> <u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>TOTAL COST</u>
B-01	Mobilization	ALL	LPSM	\$1,000,000.00	\$1,000,000.00
B-02	Modification of Arch Spans	ALL	LPSM	\$4,000,000.00	\$4,000,000.00
B-03	45' Diameter Sheet Pile Dolphin (No.3)	1.0	EACH	\$700,000.00	\$700,000.00
B-04	Cofferdams	2.0	EACH	\$2,500,000.00	\$5,000,000.00
B-05	HP 117 Steel H-Piles	45,000.0	LF	\$67.00	\$3,015,000.00
B-06	Class T, Tremie Concrete	1,681.0	CY	\$600.00	\$1,008,600.00
B-07	Class A Concrete - Piers	9,334.75	CY	\$700.00	\$6,534,325.00
B-08	Class A Conc - Control House	138.0	CY	\$2,500.00	\$345,000.00
B-09	Reinforcing Steel	351,934.0	LB	\$0.75	\$263,950.50
B-10	Fabricated Structural Metalwork in Bridge Superstructure and Counterweights	ALL	LPSM	\$24,287,568.50	\$24,287,568.50
B-11	Temporary RR Spans	ALL	LPSM	\$1,000,000.00	\$1,000,000.00
B-12	Bridge Electrical Control System	ALL	LPSM	\$1,700,000.00	\$1,700,000.00
B-13	Bridge Mechanical Operating System	ALL	LPSM	\$9,000,000.00	\$9,000,000.00
B-14	Lift Span Balancing	ALL	LPSM	\$250,000.00	\$250,000.00
B-15	Class CW Counterweight Concrete	690.0	CY	\$450.00	\$310,500.00
B-16	Wire Ropes and Sockets	ALL	LPSM	\$400,000.00	\$400,000.00
B-17	Maintenance Lift	2.0	EACH	\$300,000.00	\$600,000.00
B-18	Emergency Generators	ALL	LPSM	\$130,000.00	\$130,000.00
B-19	Control House	ALL	LPSM	\$600,000.00	\$600,000.00
B-20	Machinery Enclosures	ALL	LPSM	\$200,000.00	\$200,000.00
B-21	Railway Deck & Trackwork	ALL	LPSM	\$750,000.00	\$750,000.00
B-22	Span Change-Out	ALL	LPSM	\$3,000,000.00	\$3,000,000.00
B-23	35' Diameter Sheet Pile Dolphins 1&2	2.0	EACH	\$500,000.00	\$1,000,000.00
B-24	Fender System	ALL	LPSM	\$1,100,000.00	\$1,100,000.00
B-25	Removal of Bascule Abutments	ALL	LPSM	\$808,000.00	\$808,000.00
B-26	Removal of Fenders & Dolphins (Northside)	ALL	LPSM	\$300,000.00	\$300,000.00
B-27	Relocation of 36" Waterline	ALL	LPSM	\$6,250,000.00	\$6,250,000.00
B-28	Relocation of 30" Waterline	ALL	LPSM	\$6,000,000.00	\$6,000,000.00
B-29	Removal Of 36" Line From Channel	ALL	LPSM	\$350,000.00	\$350,000.00
B-30	Removal of 30" Line From Channel	ALL	LPSM	\$250,000.00	\$250,000.00
SUB TOTAL ALL ABOVE ITEMS					\$80,152,944.00
B-31	Salvage Credit- Rmvd Basc Span	ALL	LPSM	(\$3,000.00)	(\$3,000.00)
B-32	Salvage Credit- Rmvd Bascule abutments	ALL	LPSM	(\$3,000.00)	(\$3,000.00)
B-33	Salvage Credit- Rmvd Fenders & Dolphins	ALL	LPSM	(\$3,000.00)	(\$3,000.00)
SUB TOTAL SALVAGE CREDITS					(\$9,000.00)
COST OF BRIDGE CONSTRUCTION AS BID					\$80,143,944.00

CHANGE ORDERS

<u>ITEM NO.</u>	<u>ITEM DESCRIPTION</u>	<u>ACTUAL QUANTITY</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>TOTAL COST</u>
C-01	Establish Allowable Contractor Markups	ALL	LPSM	\$0.00	\$0.00
C-02	WCD #1, 3, 5, 8 & 9	ALL	LPSM	(\$75,182.52)	(\$75,182.52)
C-03	WCD #11 & 13	ALL	LPSM	\$67,193.33	\$67,193.33
C-04	WCD # 2, 4, 6, 7, 10, & 12	ALL	LPSM	\$39,121.86	\$39,121.86
C-05	WCD # 15	ALL	LPSM	\$16,391.72	\$16,391.72
C-06	WCD # 14	ALL	LPSM	\$742,705.30	\$742,705.30
C-07	WCD # 16, 17, & 18	ALL	LPSM	\$419,374.70	\$419,374.70
C-08	Float In Liquidated Damages Backcharges	ALL	LPSM	(\$31,916.63)	(\$31,916.63)
C-09	Liquidated Damages Provision Modifications	ALL	LPSM	\$0.00	\$0.00
C-10	WCD # 19, 20, 21, & 22	ALL	LPSM	\$206,954.71	\$206,954.71
C-11	WCD # 23, 24, 25, & 26	ALL	LPSM	\$26,751.83	\$26,751.83
C-12	WCD # 27, 28, & 29	ALL	LPSM	\$127,710.76	\$127,710.76
C-13	Partial Release of Contract Retainage from 5% to 2.5%	ALL	LPSM	\$0.00	\$0.00
C-14	WCD # 27R & 30	ALL	LPSM	\$87,926.11	\$87,926.11
C-15	Final Quantity Adjustments Items 6, 7 and 9	ALL	LPSM	\$203,119.38	\$203,119.38
C-16	Final Quantity Adjustments of Item 7	ALL	LPSM	\$35.00	\$35.00
SUB TOTAL CHANGE ORDERS:					\$1,830,185.55
ACTUAL LIQUIDATED DAMAGES CONTRACT TIME ¹ :					(\$880,956.21)
ADDITIONAL QC LAB TESTING COST :					\$9,778.50
TOTAL TABLE B					\$81,102,951.84

Note:

¹ Galveston County, USCG, and BNSF were agreed, in an effort of team spirit and partnering, to reduce the liquidated damage amount to the actual damages suffered by the Stakeholders; Per the original contract Specification Section 4.31A, the liquidated damage amount was \$25,000/calendar day beyond agreed contract time. The amount includes the actual damages suffered by the Stakeholders due to contract time extension from 06.21.2012 to 04.01.2013. The amount includes Construction Engineering Services by M&M, Waterline Inspection by HRV, Construction Management by BNSF, and RR Flagging cost by BNSF.

LIST OF WORK CHANGE DIRECTIVES

<u>NO.</u>	<u>ITEM DESCRIPTION</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>TOTAL COST</u>
WCD # 1	Additional Rope Castings & Field Reaming	LPSM	\$269,163.00	\$269,163.00
WCD # 2	Procurement of Materials for Revised PLC System	LPSM	\$40,980.00	\$40,980.00
WCD # 3	Waterline Design Changes	LPSM	\$0.00	\$0.00
WCD # 4	Removal of the CCTV work item from the Contract	LPSM	(\$39,833.00)	(\$39,833.00)
WCD # 5	Installation of T&S rebar at Piers 13A & 14A	LPSM	\$2,898.00	\$2,898.00
WCD # 6	Upsize Generator A from 150 KW to 230 KW	LPSM	\$14,518.80	\$14,518.80
WCD # 7	Additional Droop Cables	LPSM	\$8,328.37	\$8,328.37
WCD # 8	Min. Pile Tip Elevation Changed from EL. -200 to -175	LPSM	(\$403,072.00)	(\$403,072.00)
WCD # 9	Compensation for Fixed Costs related to H-pile Quantity Underrun	LPSM	\$55,828.48	\$55,828.48
WCD # 10	Compensation for JV's Costs from Revised PLC System	LPSM	\$29,406.00	\$29,406.00
WCD # 11	Timber & Debris Removal at Pier 14A & 13A	LPSM	\$37,117.92	\$37,117.92
WCD # 12	Removal of Rail detection System & Proximity Switches from the Contract	LPSM	(\$14,278.31)	(\$14,278.31)
WCD # 13	Riprap Removal @ Pier 13A	LPSM	\$30,075.41	\$30,075.41
WCD # 14	Signal Design Changes	LPSM	\$742,705.30	\$742,705.30
WCD # 15	Waterline Obstruction Investigation	LPSM	\$16,391.72	\$16,391.72
WCD # 16	Navigation Lights Modifications and Trainman's Walkway	LPSM	\$328,080.00	\$328,080.00
WCD # 17	BNSF Telecom & Signal	LPSM	\$24,635.79	\$24,635.79
WCD # 18	Various Items	LPSM	\$66,658.91	\$66,658.91
WCD # 19	Furnish and Install Clearance Gauges	LPSM	\$59,915.69	\$59,915.69
WCD # 20	Span Height Paint Stripes	LPSM	\$3,313.60	\$3,313.60
WCD # 21	Lift Span & Tower Ladder Modifications	LPSM	\$25,263.42	\$25,263.42
WCD # 22	Installation of (2) Temporary Pipe Pile Fenders	LPSM	\$118,462.00	\$118,462.00
WCD # 23	Droop Cable Bundling Modifications	LPSM	\$13,329.19	\$13,329.19
WCD # 24	Trainman Walkway Connections	LPSM	\$4,650.49	\$4,650.49
WCD # 25	Horn Automation	LPSM	\$1,874.25	\$1,874.25
WCD # 26	Relocate OT Bumpers and Fill Voids in Cage Ladder	LPSM	\$6,897.90	\$6,897.90
WCD # 27	Main Disconnect Relocation	LPSM	\$76,234.20	\$76,234.20
WCD # 27R	Adjustment of Prices on Main Disconnect Relocation (WCD #27)	LPSM	(\$5,997.44)	(\$5,997.44)
WCD # 28	Encoder Modifications	LPSM	\$6,841.59	\$6,841.59
WCD # 29	Pier Top Stairs & Protective Mesh @ El 90.9	LPSM	\$44,634.97	\$44,634.97
WCD # 30	Excavation for Removal of 36" Waterline	LPSM	\$93,923.55	\$93,923.55
	Final Quantity Adjustment of Class T, Tremie Concrete (18.4 CY)	CY	\$600.00	\$11,040.00
	Final Quantity Adjustment of Class A Concrete - Piers (271.3 CY)	CY	\$700.00	\$189,910.00
	Final Quantity Adjustment of Reinforcing Steel (2,892.5 LB)	LB	\$0.75	\$2,169.38
	Final Quantity Adjustment of Class A Concrete -Piers (0.05 CY)	CY	\$700.00	\$35.00
WORK CHANGE DIRECTIVES TOTALS:				\$1,862,102.18

TABLE C
BRIDGE OWNER'S FORCE ACCOUNT WORK

Galveston Causeway Railroad Bridge
 Gulf ICWW Mile 357.2, Galveston, TX

<u>ITEM NO.</u>	<u>DESCRIPTION</u>	<u>COST</u>
C-1	Track work BNSF Track General & Redesign including Hand Rail Installation on Bridge Approaches	\$420,851.07 (1)
C-2	Signaling & Communication BNSF Signal BNSF Communications Signal Relocation During Pile Driving (Site Condition)	\$1,425,789.54 \$29,515.65 \$125,181.59
C-3	Flagging	\$1,333,103.13 (2)
C-4	Detour Cost	\$0.00
C-5	Right-of-Way	\$0.00
C-6	Utilities	\$0.00
C-7	Misc. Support Services - (Monitor Removals: Leads, Asbestos, etc)	\$0.00
TOTAL TABLE C		\$3,334,440.98

Notes:

- (1) Includes \$37,225.07 for handrail installation on bridge approaches for fall protection.
- (2) Includes \$283,526.12 paid by liquidated damage assessment from contract work

TABLE D

FIXED CHARGES

Galveston Causeway Railroad Bridge
 Gulf ICWW Mile 357.2, Galveston, TX

<u>ITEM NO.</u>	<u>DESCRIPTION</u>	<u>COST</u>
D-1	Surveying, Borings & Soil Analysis, Engineering Design, Analysis, CADD, Environmental Compliance, and Advertisement	\$1,966,977.00
	Amendment No. 1 (Inflation Adjustment due to delay)	\$286,253.00
	Amendment No. 2 (Value Engineering)	\$11,395.35
	Amendment No. 3 (Added Advertising & other cost due to ARRA)	\$37,592.51
	Amendment No. 4 (Revised Plans for Re-bid)	\$170,768.20
D-3	Construction Engineering and Administration (by Bridge Owner)	\$393,837.62 (1)
D-2 & D-4	Construction Engineering & Review of Shop Drawings (Amendment No. 5)	\$1,939,806.00
	Amendment No. 6 (Additional Engineering Services)	\$76,657.34
	Amendment No. 7 (Additional Service for 3 months)	\$120,000.00 (2)
	Amendment No. 8 (Additional Service for 5 months)	\$140,000.00 (3)
	Amendment No. 9 (Additional Service for 1 month)	\$31,500.00 (3)
	Amendment No. 10 (Additional Service for 15 days)	\$12,500.00 (3)
	Amendment No. 11 (Additional Engineering Services)	\$272,257.65 (4)
D-5 & D-6	Testing Materials & Shop Inspection	\$551,900.93
TOTAL TABLE D		\$6,011,445.60

Notes:

- (1) Includes \$ 102,886.38 paid by liquidated damage assessment from contract work
- (2) Includes \$ 80,000.00 paid by liquidated damage assessment from contract work
- (3) Paid by liquidated damage assessment from contract work
- (4) Includes \$ 230,543.71 paid by liquidated damage assessment from contract work

Appendix M: Design Acceptance Letter Example

U.S. Department of
Homeland Security



United States
Coast Guard

Commandant
United States Coast Guard

2100 Second St S.W.
WASHINGTON DC 20593-0001
Staff Symbol: G-NBR/14
Phone: (202) 267-0368

16592
December 17, 2013

Mr. George P. Burdell
Chief Engineer, Bridges and Structures
Georgia Transit Railroad Company
1885 Rambling Way
Atlanta, GA 12345

Mr. Burdell:

The design drawings and specifications received by our office on October 14, 2013, for the alteration of the bridge over the Yellow River, near mile 629.4, near Techwood, GA, are hereby approved. Such approval shall be final and binding on all parties unless changes herein are approved by the Commandant, U.S. Coast Guard, or his duly authorized representative. It shall be understood that in giving this approval, the government assumes no responsibility for the adequacy of design or integrity of the structure.

Sincerely,

Chief, Bridge Operation and Engineering Division
Bridge Program
U.S. Coast Guard
By direction of the Commandant

EXAMPLE

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Appendix N: Signed and Routed Invoice Packet Example

U.S. Department of Homeland Security United States Coast Guard		Commandant United States Coast Guard	2703 Martin Luther King Jr. Ave. SE Washington, DC 20593-7418 Staff Symbol: CG-BRG Phone: (202) 372-1511 Email: Brian.Dunn@uscg.mil
			16592
MEMORANDUM			17 JUN 2015
From: B. L. Dunn COMDT (CG-BRG)	Reply to: CG-BRG-3 Attn of: Kamal Elnahal		
To: Commanding Officer USCG Finance Center (OPA-4B)			
Thru: Chief, Contracting & Special Appropriations Division (DCO-832)			
Subj: BURLINGTON NORTHERN SANTA FE RAILROAD BRIDGE, ACROSS THE UPPER MISSISSIPPI RIVER, MILE 383.9, NEAR FORT MADISON, IA; PAYMENT CONTROL NO. 33-09-G89HXM031			
Ref: (a) P.L. 91-605, Section 118, December 31, 1970, amending 33 U.S.C. 517 (Truman-Hobbs Act)	Initials		
1. Enclosed for your review and scheduling for payment is a proper payment approval form for Invoice No. 90114045. Invoice acceptance date as stated on payment approval form is 06/08/2015.	Date		
2. These bills are subject to audit and discrepancies noted will be adjusted in subsequent billings.	Initials		
3. We appreciate your prompt action in this matter.	Date		
#	CG-551		
Enclosures: (1) USCG Alteration of Bridges/Truman-Hobbs Payment Approval Form (2) Invoice No. 90114045 w/supporting documentation	B.L.D. Initials		
	6/17/2015 Date		
	Chief		
	K.B. Initials		
	6-17-15 Date		
	Finalizer		
	[Signature] Initials		
	6-17-15 Date		
	Originator		
	A.P. Initials		
	6.17.15 Date		
\Hqs-nas-t-001\CG-5\CG-55\CG-551\0 PROJECTS\Truman-Hobbs\2a_Ft Madison\Finance & Budget\Invoices\90114045\Payment MEMO T-H AR 90114045.docx			

U.S. Department of
Homeland Security
United States
Coast Guard



Commandant
United States Coast Guard

2703 Martin Luther King Jr. Ave. SE
Washington, DC 20593-7418
Staff Symbol: CG-BRG
Phone: (202) 372-1511
Email: Brian.Dunn@uscg.mil

16592

MEMORANDUM

17 JUN 2015

From: 
B. E. Dunn
COMDT (CG-BRG)

Reply to: CG-BRG-3
Attn of: Kamal Elnahal

To: Commanding Officer
USCG Finance Center (OPA-4B)

Thru: Chief, Contracting & Special Appropriations Division (DCO-832)

Subj: BURLINGTON NORTHERN SANTA FE RAILROAD BRIDGE, ACROSS THE
UPPER MISSISSIPPI RIVER, MILE 383.9, NEAR FORT MADISON, IA;
PAYMENT CONTROL NO. 33-09-G89HXM031

Ref: (a) P.L. 91-605, Section 118, December 31, 1970, amending 33 U.S.C. 517 (Truman-Hobbs Act)

1. Enclosed for your review and scheduling for payment is a proper payment approval form for Invoice No. 90114045. Invoice acceptance date as stated on payment approval form is 06/08/2015.

2. These bills are subject to audit and discrepancies noted will be adjusted in subsequent billings.

3. We appreciate your prompt action in this matter.

#

Enclosures: (1) USCG Alteration of Bridges/Truman-Hobbs Payment Approval Form
(2) Invoice No. 90114045 w/supporting documentation



INVOICE

CUSTOMER NUMBER : 6002575
INVOICE NUMBER : 90114045
AMOUNT : \$7,510.89
DATE : 05/08/2015

MAKE CHECKS PAYABLE TO:
BNSF RAILWAY COMPANY
3115 SOLUTIONS CENTER
CHICAGO, ILLINOIS 60677-3001

UNITED STATES COAST GUARD
ATTN: KAMAL ELNAHAL
CHIEF BRIDGE ENGINEERING DIVISION
2703 MARTIN LUTHER KING AVE SE
WASHINGTON D.C DC 20593
USA

FOR FURTHER INFORMATION:
MARSHA HERBERT
(817)352-4837
MARSHA.HERBERT@BNSF.COM

CONTRACT NO: BF10006814

BNSF TIN NO.41-6034000

** PLEASE SHOW ABOVE INVOICE NUMBER ON YOUR REMITTANCE TO ASSURE PROPER CREDIT TO YOUR ACCOUNT **

MONTHS ACCOUNTS : 05/2015
SERVICE FROM : 04/01/2015
SERVICE TO : 04/30/2015

FORT MADISON BRIDGE DESIGN

90% BILLABLE TO USCG

WBS 7-0670-14

PARTIAL # 3

Total Costs:	\$8,345.44 ✓
Billable Pct :	90.00 %
Invoice Total :	\$7,510.89 ✓

Payment due within 30 days of invoice date unless otherwise authorized by contract or other written agreement.

5/08/2015		RRR Detail Report		1	
INVOICE NUMBER: 90114045					
Labor, Bill Preparation					
DESCRIPTION		HOURS		AMOUNT	
Bill Prep Labor		1.000		33.76	
Labor, Bill Preparation TOTAL:				33.76	
Labor Additive, Bill Preparation:				22.26	
SA Voucher Payment					
VOUCHER #		DESCRIPTION		AMOUNT	
219823		MODJESKI & MASTERS INC		8,289.42	
VOUCHERS TOTAL:				8,289.42	
WBS 7067014 TOTAL:				8,345.44	
Billable Percentage 90.00 %:				7,510.89	
INVOICE SUBTOTAL:				7,510.89	
INVOICE TOTAL:				7,510.89	

Modjeski and Masters, Inc.
 Consulting Engineers
 1055 St. Charles Avenue
 Suite 400
 New Orleans, LA 70130

March 12, 2015
 Invoice No: 219823

BNSF Railway Company
 4515 Kansas Avenue
 Kansas City, KS 68106

Vendor: 2024930 Center: 14901
 AFE: 7007014

Project 3363 Fort Madison Value Engineering Evaluatio
 Value engineering of previously completed M&M replacement bridge plans - Contract Number BF10004484 - Task Order ID
 RB06555

Professional Services from January 26, 2015 to February 22, 2015
 Professional Personnel

	Hours	Rate	Amount
Engineers			
Ouyang, Yu	46.50	62.77	2,918.81
Totals	46.50		2,918.81
Total Labor		2.84 times	2,918.81
			8,289.42
			\$8,289.42

Billings to Date

	Current	Prior	Total	Received	A/R Balance
Labor	8,289.42	11,485.61	19,775.03		
Expense	0.00	9.16	9.16		
Totals	8,289.42	11,494.77	19,784.19	8,910.03	10,874.16

Outstanding Invoices

Number	Date	Balance	
219851	2/5/2015	2,584.74	
Total		2,584.74	
		Total Now Due	\$10,874.16

O.K. to pay
 R. Kelly
 4/17/15

PLEASE NOTE: Invoice is due and payable upon receipt

Project	3363	Fort Madison Value Engineering Evaluatio	Invoice	219823
---------	------	--	---------	--------

Billing Backup

Modjeski and Masters, Inc.

Invoice 219823 Dated 3/12/2015

Thursday, March 12, 2015

10:56:43 AM

Project	3363	Fort Madison Value Engineering Evaluatio
---------	------	--

Professional Personnel

			Hours	Rate	Amount	
Engineers						
1062	Ouyang, Yu	1/26/2015	3.00	62.77	188.31	
1062	Ouyang, Yu	1/27/2015	2.00	62.77	125.54	
1062	Ouyang, Yu	1/28/2015	3.00	62.77	188.31	
1062	Ouyang, Yu	2/2/2015	2.00	62.77	125.54	
1062	Ouyang, Yu	2/3/2015	2.00	62.77	125.54	
1062	Ouyang, Yu	2/5/2015	1.00	62.77	62.77	
1062	Ouyang, Yu	2/9/2015	1.00	62.77	62.77	
1062	Ouyang, Yu	2/10/2015	1.00	62.77	62.77	
1062	Ouyang, Yu	2/12/2015	6.00	62.77	376.62	
1062	Ouyang, Yu	2/13/2015	8.00	62.77	502.16	
1062	Ouyang, Yu	2/14/2015	8.00	62.77	502.16	
1062	Ouyang, Yu	2/17/2015	6.00	62.77	376.62	
1062	Ouyang, Yu	2/18/2015	3.50	62.77	219.70	
	Totals		46.50		2,918.81	
	Total Labor			2.84 times	2,918.81	8,289.42
				Total this Project		\$8,289.42
				Total this Report		\$8,289.42

PLEASE NOTE: Invoice is due and payable upon receipt

Page 2

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Appendix O: Construction Letter of Instruction Example

U.S. Department of
Homeland Security

United States
Coast Guard



Commandant
United States Coast Guard

2100 Second St. SW
WASHINGTON DC 20593-0001
Staff Symbol: G-OPT/35
Phone: (202) 267-0368
Fax: (202) 267-4048

16592
July 20, 2015

Mr. George P. Burdell
Director Structures
Georgia Transit Railroad Company
1885 Rambling Way
Atlanta, GA 12345

Mr. Burdell:

Pursuant to 33 U.S.C. 513, on December 18, 1999, an Order to Alter signed by the Commandant, U.S. Coast Guard, was served on the Georgia Transit Railroad Company GTRC, requiring the GTRC to alter its bridge over the Yellow River, near mile 629.4, near Techwood, GA in order to provide clearances for the reasonable needs of navigation.

This letter is to confirm that as of July 17, 2015, and pursuant to 33 U.S.C. 517 sufficient funding based on estimated project cost accepted by the Coast Guard and GTRC has been appropriated and is available for payment to the GTRC as reimbursement of the federal share for work which has been and will be performed under this Order to Alter and as described below:

- Engineering design/construction supervision by A/E
- Force Account Work
- Engineering and Administration by GTRC.
- Alteration of GTRC Bridge

Coast Guard approval is mandatory for all work that will be undertaken for this bridge alteration project by GTRC, including what is described in this letter.

Pursuant to the provisions of 33 U.S.C. 515, you are authorized to proceed with the bridge alteration in accordance with the plans and specifications approved by the Coast Guard on December 17, 2013. We request that GTRC assembles the project plans and specifications, documents the GTRC may require for the construction contract as well as information from Enclosure 1 "Procedure Memorandum" which may impact a firm's ability to complete the bridge alteration or accurately prepare their bids; into one package (Bid Documents Package). The Bid Documents Package should be made available to any firm capable of performing the work required for this type of movable bridge project through advertising for bids. GTRC must publish the advertisement in at least two national industry publications and as a minimum contain the following items:

- A summary of the required work to alter the bridge.
- Instruction for obtaining the Bid Documents Package and submitting sealed bids to GTRC
- A date and location of a pre-bid meeting and statement informing contractors that attending the pre-bid meeting is mandatory to submit their bids.
- Bid evaluation criteria, see attached recommended evaluation criteria
- Bid bond and deposit requirement
- Construction duration limits
- Last date of accepting bids and the date and location of bid opening

The Coast Guard must approve the advertisement prior of publishing. Also, the Coast Guard requires that the pre-bid meeting is scheduled two weeks after the advertisement date and the bid solicitation to remain open for 8 weeks. A Copy of all bids should be provided to the Coast Guard shortly after closing of the solicitation for independent government evaluation. Please see

the attached Procedure Memorandum for other Coast Guard instructions during bid solicitation and construction periods. The Coast Guard is available on July 27, 2015 to meet with GTRC to go over these instructions.

GTRC must inform the Coast Guard via a letter with their selection of a contractor for Coast Guard approval prior to awarding the construction contract. Also, GTRC must provide the Coast Guard a letter which furnishes GTRC's guaranty that the total project cost will not exceed the amount of the selected bid and the cost of all other project items approved earlier by the Coast Guard such as consultant fee and force account. Pursuant to the provisions of 33 U.S.C. 516, the Coast Guard will issue to GTRC the Order of Apportionment of Cost (AOC). GTRC's acceptance to the Order of AOC is mandatory to proceed to the construction phase, award the construction contract, and receive federal reimbursement.

In addition to the solicitation for construction, we request GTRC to prepare a separate solicitation for proposal for construction engineering services. The solicitation for construction engineering services should be prepared and made available in a manner similar to the process described above for the construction work. The scope of work for the construction engineering services should include:

- Shop and Fabrication drawing review
- Technical Review of proposed changes throughout construction
- Evaluation of material testing during construction
- Construction Management
- Other engineering services as needed

The evaluation and selection process for construction engineering services will be similar to those outlined above for the construction contractor. Please refer to Enclosure 3 "Recommended Engineering Evaluation Criteria" for additional guidance on evaluating proposals for construction engineering services. Please send a copy of the solicitation and the scope of work when you complete them for our review and comments.

If you have any questions or need assistance, please do not hesitate to call us..

Sincerely,

Chief, Bridge Operation and Engineering Division
Bridge Program, U.S. Coast Guard
By direction of the Commandant

Encl: (1) Procedure Memorandum
(2) Recommended Construction Evaluation Criteria
(3) Recommended Engineering Evaluation Criteria

Appendix P: Guaranty of Cost Example



409-766-2244
281-316-8300 Ext. 2244
Fax 409-766-4590

JAMES D. YARBROUGH
COUNTY JUDGE
COUNTY OF GALVESTON

COUNTY COURTHOUSE
722 MOODY
GALVESTON, TEXAS
77550

April 29, 2010

Ms. Hala Elgaaly, P.E.
Commandant (CG-5411)
US Coast Guard
2100 2nd Street SW Stop 7581
Washington DC 20593-7581

Re: Galveston Causeway Railroad Bridge

Dear Ms. Elgaaly:

Reference is made to the alteration of the Galveston County (County), Galveston Causeway Railroad Bridge, Intracoastal Waterway at mile 357.2 Galveston, Texas. Pursuant to the provisions of Section 5 of the Truman-Hobbs Act, County hereby guarantees that the total cost of replacement of the existing bascule span with a vertical lift span, shall not exceed the sum of \$97,624,307. This guarantee of cost is based on the actual bid cost of the Bridge alteration and the current estimated cost of all other work needed to complete the project including engineering services, engineering design, construction management, force account work and a 9.2% contingency. The County will not incur such costs without first obtaining approval from the United States Coast Guard.

Sincerely,


James D. Yarbrough
JDY:mf:bjb

Email: james.yarbrough@co.galveston.tx.us

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Appendix Q: Notice to Proceed Example



Byron T. Burns
Director Bridge Engineering

BNSF Railway Company
4515 Kansas Avenue
Kansas City, KS 66106
Tel: 913-551-4176
Fax: 913-551-4646
Email: byron.burns@bnsf.com

September 2, 2009

Mr. Ron Ames
Ames Construction, Inc.
2000 Ames Drive
Burnsville, MN 55306

**RE: BNSF Contract BF 55575 Bridge 204.66 Burlington Bridge Swing Span
Replacement for BNSF**

Dear Mr. Ames:

All permits necessary for construction work on the project site have been received by BNSF Railway for this project. Therefore, by this letter, I am giving you Final Notice to Proceed for this contract. Work covered by this Final Notice to Proceed is as described in the bid documents.

September 3, 2009, shall be the Starting Date of Work for determination of the Proposed Contract Completion Date for this contract.

Please acknowledge receipt of this Final Notice to Proceed.

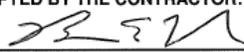
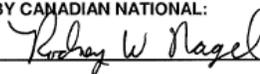
Respectfully,

Byron T. Burns

cc: Jerry Volz, Ames Construction
Steve Millsap, BNSF
Victor Meyers, BNSF
John Hronek, HNTB
Kamal Elnahal, US Coast Guard

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Appendix R: Change Order Example

CANADIAN NATIONAL RAILWAY COMPANY	
ELGIN, JOLIET AND EASTERN RAILWAY COMPANY	
<u>CHANGE ORDER</u>	
CHANGE ORDER NO. <u>011</u>	DATE: <u>December 23, 2010</u>
PROJECT: <u>EJE Bridge No. 552, Divine, IL</u>	CONTRACT DATE: <u>October 1, 2009</u>
CONTRACTOR: <u>James McHugh Construction Co.</u>	NOTICE TO PROCEED: <u>October 19, 2009</u>
CONTRACT FOR: <u>General Construction for Bridge Replacement</u>	
<hr/> <hr/>	
YOU ARE DIRECTED TO MAKE THE FOLLOWING CHANGES IN THE SUBJECT CONTRACT:	
<p>Per discussions related to Submittal 141 and proposed Change Order 019, please use billet steel to aid the balance of the counterweights. Billet steel will be paid at a unit price of \$1.46 per pound, to include materials and all labor relevant to its acquisition and installation. The current estimated quantity of billet steel is 112,000 pounds, but this quantity is subject to change.</p> <p>Additional weight required by elective changes by the Contractor is not eligible for compensation under this change order.</p> <p>The estimated total cost for the subject extra work is \$ 163,250.00</p>	
BASIS FOR PRICE CHANGE:	
Attached Documents:	
<ul style="list-style-type: none"> 1 - JMCC's proposed change order 019 2 - Submittal 123 sequence 3 - Submittal 141 sequence 	
<hr/> <hr/>	
TIME CHANGE PER THIS CHANGE ORDER:	<u>0</u> CALENDAR DAYS
<hr/> <hr/>	
CONTRACT PRICE PRIOR TO THIS CHANGE ORDER	<u>\$ 44,313,904.64</u>
NET CHANGE RESULTING FROM THIS CHANGE ORDER	<u>\$ 163,250.00</u>
NEW CONTRACT PRICE INCLUDING THIS CHANE ORDER	<u>\$ 44,477,154.64</u>
<hr/> <hr/>	
*ACCEPTED BY THE CONTRACTOR:	APPROVED BY CANADIAN NATIONAL:
	
TITLE: <u>PRES</u>	ROD NAGEL CONSTRUCTION ENGINEER
DATE: <u>1-5-11</u>	DATE: <u>1-27-11</u>
*Indicate acceptance by signing and returning all copies to Canadian National Railway Company.	
BY 	

**CANADIAN NATIONAL RAILWAY COMPANY
 ELGIN, JOLIET AND EASTERN RAILWAY COMPANY
 CHANGE ORDER**

CHANGE ORDER NO. 011 DATE: December 23, 2010
 PROJECT: EJE Bridge No. 552, Divine, IL CONTRACT DATE: October 1, 2009
 CONTRACTOR: James McHugh Construction Co. NOTICE TO PROCEED: October 19, 2009
 CONTRACT FOR: General Construction for Bridge Replacement

YOU ARE DIRECTED TO MAKE THE FOLLOWING CHANGES IN THE SUBJECT CONTRACT:

Per discussions related to Submittal 141 and proposed Change Order 019, please use billet steel to aid the balance of the counterweights. Billet steel will be paid at a unit price of \$1.46 per pound, to include materials and all labor relevant to its acquisition and installation. The current estimated quantity of billet steel is 112,000 pounds, but this quantity is subject to change.

Additional weight required by elective changes by the Contractor is not eligible for compensation under this change order.

The estimated total cost for the subject extra work is \$ 163,250.00

BASIS FOR PRICE CHANGE:

Attached Documents:

- 1 - JMCC's proposed change order 019
- 2 - Submittal 123 sequence
- 3 - Submittal 141 sequence

TIME CHANGE PER THIS CHANGE ORDER: 0 CALENDAR DAYS

CONTRACT PRICE PRIOR TO THIS CHANGE ORDER	<u>\$ 44,313,904.64</u>
NET CHANGE RESULTING FROM THIS CHANGE ORDER	<u>\$ 163,250.00</u>
NEW CONTRACT PRICE INCLUDING THIS CHANE ORDER	<u>\$ 44,477,154.64</u>

*ACCEPTED BY THE CONTRACTOR:

APPROVED BY CANADIAN NATIONAL:

TITLE: _____

ROD NAGEL
 CONSTRUCTION ENGINEER

DATE: _____

DATE: _____

*Indicate acceptance by signing and returning all copies to Canadian National Railway Company.





James McHugh Construction Co.
1737 South Michigan Avenue
Chicago, Illinois 60616-1211
P 312.986.8000
F 312.451.8518

November 23, 2010

JMCC – PCO #019

Ralph Eppheimer
Modjeski & Masters, Inc.
1055 St. Charles Ave. Ste. 400
New Orleans, LA 70130

RE: CN: Elgin, Joliet, & Eastern Railway Company Bridge No. 552

Subject: PCO: Additional Embedded Steel in Counterweight
(Reference Submittal 123-1)

Dear Mr. Eppheimer:

In following with the M&M review of the preliminary balance calculations submittal, the total quantity of embedded steel in the counterweight boxes will need to be increased by approximately 112,000 pounds.

To accomplish this, we hereby submit the following agreed unit price:

<u>Item Description</u>	<u>Quantity</u>	<u>Unit of Measure</u>	<u>Unit Price</u>	<u>Total</u>
Additional Embedded Steel	112,000	Pounds	\$1.46 / LB	\$163,250.00

This price includes furnishing the steel material, detailing and fabrication, hoisting and erection / installation of this additional embedded steel in the counterweights as per a separate design submittal. The actual final weight of the additional embedded steel to be paid will be based upon the reviewed and approved revised balance weight submittal to be agreed upon before the placement of embedded steel and concrete.

Please proceed with review and processing of a change order for this additional work. Feel free to contact us if you have any questions or require additional information.

Sincerely,
James McHugh Construction Co.

Joseph Bodzioch, P.E.
Senior Project Manager

CC: Peter Campagnolo, JMCC
Rod Nagel, CN
Phil Chiu, USCG
Correspondence File
PCO File



MEMORANDUM

DATE: December 17, 2010
TO: Peter Campagnolo, McHugh
FROM: Dave A. Kanger, P.E.
RE: Submittal 123-2: Balance Calculations (Submittal 2) dated November 24, 2010

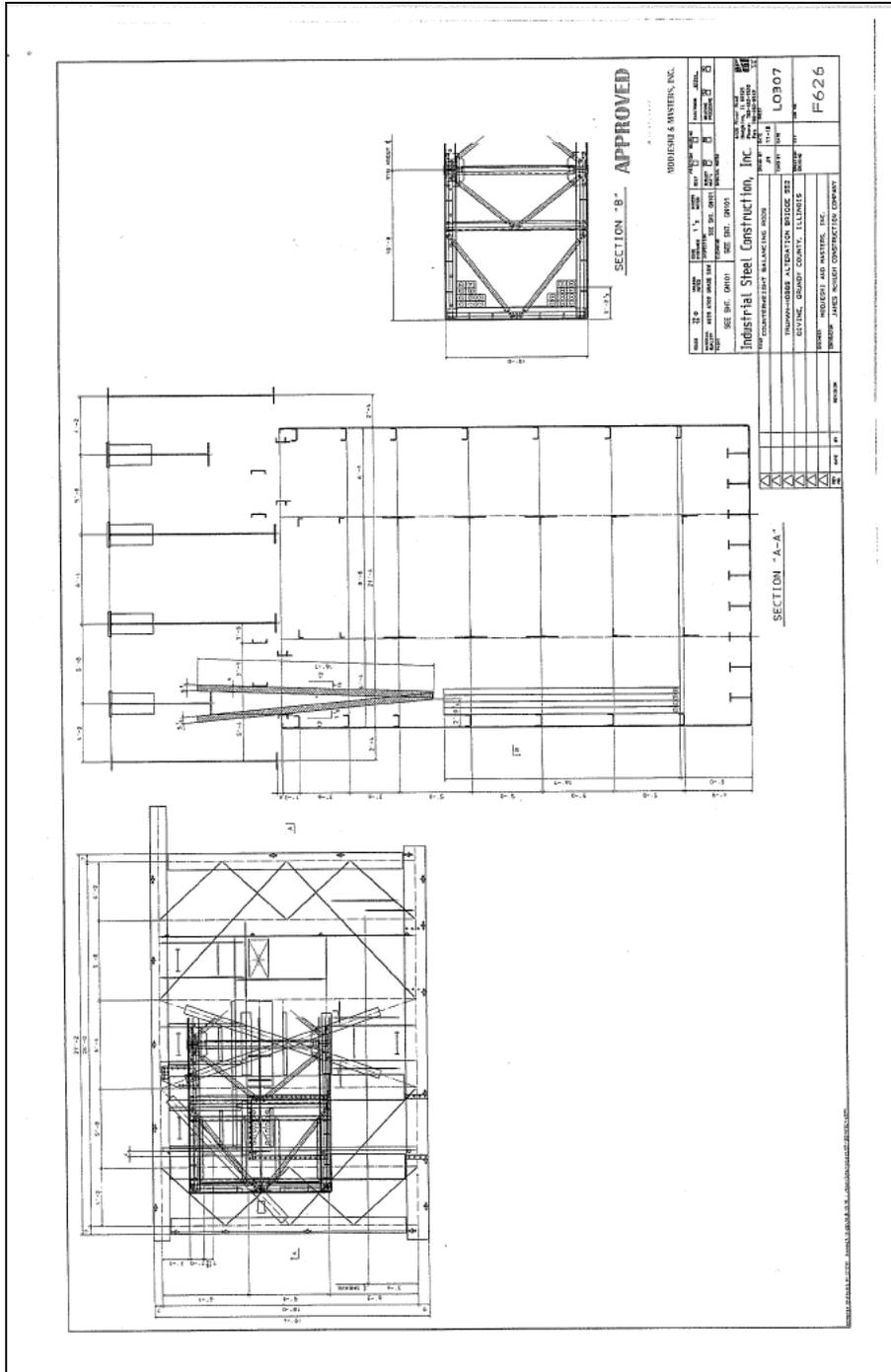
Modjeski and Masters has examined the "Submittal 2" balance calculations dated November 24 2010 and notes the following:

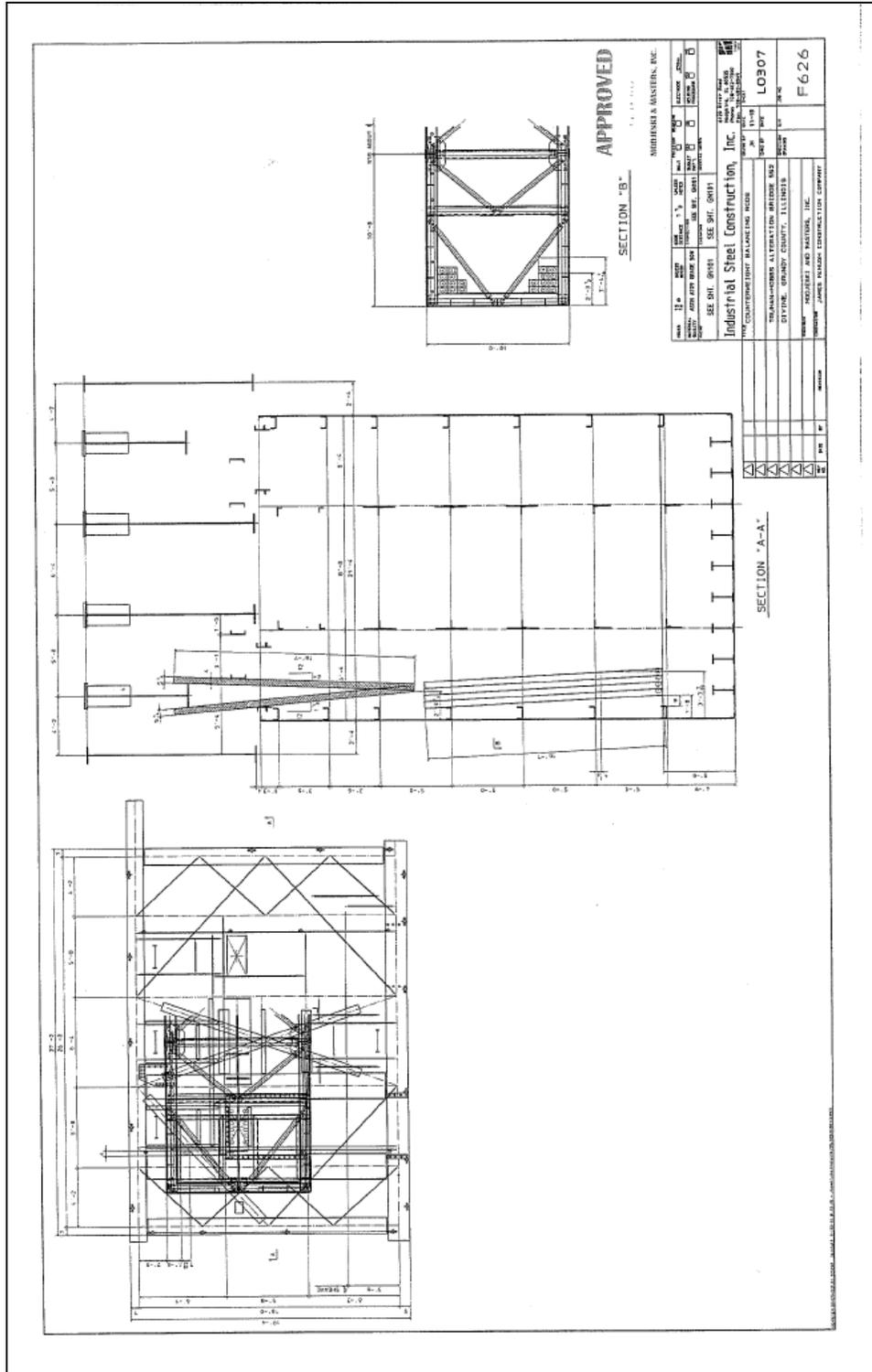
1. Modjeski and Masters generally accepts the Submittal 2 balance tabulations. Modjeski and Masters has remaining comment on the following:
 - a. Machinery Weight Calculations: It is Modjeski and Masters' understanding that agreement on two issues remains open at this time: the operating drum weight calculation, and the weight calculation for the changes to the machinery supports under the reducers. Relating to the changed reducer machinery support, Modjeski and Masters' 3-piece independent supports have been calculated to be about 2,700 lbs. lighter than the substituted one-piece support.
2. Contractor (fabricator) Caused Weight Differences: Reference supplemental correspondence dated 12/02/2010 regarding fabricator-generated weight modifications. Modjeski and Masters accepts McHugh's conclusion that: "It appears that the changes that ISC made have lessened the additional embedded steel required to achieve balance, and no weight credit is due from ISC." Modjeski and Masters has stamped the weight tabulations "EXAMINED" without exception.

Modjeski and Masters accepts use of reinforcing billet steel to provide the required counterweight balance.

Modjeski and Masters confirms that the Contract specified imbalance of +11,900 lb. span heavy when seated shall be required balance condition. This will result in a -11,255 lb. counterweight heavy condition in the fully open position.

DAK





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