



# APPLICATION FOR COAST GUARD BRIDGE PERMITS



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## **PREFACE**

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This Bridge Permit Application Pamphlet Supplements Coast Guard Publication COMDT PUB P16591.3B “Bridge Application Guide,” and is designed to provide:

- Guidance for successfully preparing applications for Coast Guard Bridge Permits to construct or alter bridges and causeway across navigable waters of the United States.
- Guidance in submitting construction plans for approval.
- Bridge Permit information specific to the Western Rivers area of the Eighth Coast Guard District.
- Guidance on requirements for preparing environmental documents to support program actions.

## CHAPTER 1: INTRODUCTION TO THE BRIDGE ADMINISTRATION PROGRAM

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### A. Who Must Apply for a Bridge Permit

1. Any individual, partnership, corporation, or local, state, or federal legislative body, agency, or authority planning to construct or modify a bridge or causeway across a navigable waterway of the United States must apply for a Coast Guard bridge permit. This includes all temporary bridges used for construction access or traffic detour.
2. For bridges constructed by state or municipal agencies, primary authority to apply for a permit for the construction of a bridge project will be presumed without proof.
3. If state law does not require a license, primary authority may be granted in the charter of a corporation or the authority inherent in ownership of the land where the structure will be placed. In these cases, an extract from the charter and evidence of sufficient real estate interest to allow construction of the bridge should be submitted with the application.
4. Failure to obtain a bridge permit before commencing bridge construction or modification work is a federal offense, punishable by civil and criminal penalties.
5. Submit bridge applications to Commander (dwb), Eighth Coast Guard District, Bridge Branch, Room 2.107F, 1222 Spruce Street, St. Louis, MO 63103-2832. For further information contact Commander (dwb), Eighth Coast Guard District, Bridge Branch, at (314) 269-2378, or Fax (314) 269-2737.

### B. Requirements and Laws

1. A bridge permit is the written approval of the location and plans of the bridge or causeway to be constructed or modified. The purpose of this handbook is to assist you, the applicant, in applying for a Coast Guard bridge permit to:
  - a. Construct a new bridge or causeway, or
  - b. Reconstruct or modify an existing bridge or causeway across navigable waters of United States.
2. Federal law prohibits the construction of these structures unless the Coast Guard first authorizes them. By following the procedures in this handbook, you can help the Coast Guard efficiently process your application.

### **C. Authority and Pertinent Laws**

1. In 1967, the Coast Guard was transferred to the Department of Transportation. One of the Coast Guards newly assigned duties was to issue bridge permits.
2. In 2002, the Coast Guard preserved its assigned duties under the Homeland Security Act of 2002 when transferred from the Department of Transportation to the Department of Homeland Security. The Coast Guard approves bridge location and plans under the authority of several Acts pertaining to bridges.

### **D. Legislation Pertaining to Bridges**

1. These Acts include Section 9 of the Rivers and Harbors Act of 1899 and the General Bridge Act of 1946.
2. The purpose of these Acts is to preserve the public right of navigation and to prevent interference with interstate and foreign commerce. The General Bridge Act of 1946, as amended, the Rivers and Harbors Act of 1899, as amended, and the Act of March 23, 1906, as amended, all require that the location and plans of bridges and causeways across the navigable waters of the United States be submitted to and approved by the Secretary of the Homeland Security prior to construction. The General Bridge Act of 1946 is cited as the legislative authority for bridge construction in most cases.
3. These Acts placed the navigable waters of the United States under the exclusive control of the U.S. Coast Guard to prevent any interference with their navigability by bridges or other obstructions except by express permission of the United States Government.

### **E. Bridge Administration Program Policy**

1. Under the previously mentioned Acts, the Coast Guard's mission is to administer the Bridge Administration Program. The Coast Guard approves the location and plans of bridges and causeways and imposes any necessary conditions relating to the construction, maintenance, and operation of these bridges in the interest of public navigation.
2. The Coast Guard is also required by law to ensure that environmental considerations are given careful attention and importance in each bridge permitting decision.
3. As explained further in Chapter 3, relevant environmental statutes and executive orders for bridge project compliance include:
  - a. National Environmental Policy Act (NEPA) of 1969, (42 U.S.C. 4321)
  - b. Protection of Wetlands (E.O. 11990)
  - c. Floodplain Management and Protection (E.O. 11988)
  - d. Endangered Species Act of 1973 (16 U.S.C. 1531)

- e. Clean Water Act of 1977 (33 U.S.C. 1251)
  - f. Wild and Scenic Rivers Act of 1968 (16 U.S.C. 1271)
  - g. Farmlands Protection Policy Act of 1981 (7 U.S.C. 4201)
  - h. Clean Air Act of 1990 (42 U.S.C. 7401)
  - i. Noise Control Act of 1972 (42 U.S.C. 4331)
  - j. Uniform Relocation Assistance and Real Property Acquisition Act of 1970 (42 U.S.C. 4601)
  - k. Fish and Wildlife Coordination Act of 1956 (16 U.S.C. 661)
  - l. National Historic Preservation Act of 1966, Section 106 (16 U.S.C. 470)
  - m. Indian Tribal Governments (E.O. 13175)
  - n. Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (E.O. 12898).
  - o. Migratory Bird Treaty Act of 1918.
4. The Coast Guard is obligated to consult with and obtain comments from any federal agency with legal jurisdiction or special expertise concerning any environmental or navigational impact involved. Such comments are generally obtained through direct coordination with affected agencies, responses to the public notice, and the Local Notice to Mariners (LNM).
  5. The established policy of the Coast Guard Bridge Administration Program mission is to protect the freedom of navigation and the quality of the environment by taking a balanced approach to total transportation systems, both land and water modes, in all program actions.
  6. The bridge statutes and subsequent court interpretations require that bridges provide for the reasonable needs of navigation, not for all the needs of navigation. The reasonable needs of land traffic (highway and rail) must also be met. The construction of essential land transportation projects must not be unreasonably delayed while navigational impacts are under consideration.
  7. Therefore, Coast Guard bridge permit actions consider the overall goals of the U.S. Department of Homeland Security in a balanced manner to accommodate the needs of all modes of transportation.

8. Rules and regulations governing the U. S. Coast Guard bridge permit program are listed in Parts 114 and 115 of Title 33, Code of Federal Regulations (CFR). A copy may be found in your local library or purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

**F. Navigable Waters**

1. For Coast Guard bridge permitting purposes, a navigable waterway is defined as follows (unless specifically declared otherwise by Congress), as found at 33 CFR, Subpart 2.36:
  - a) Territorial seas of the United States;
  - b) Internal waters of the United States that are subject to tidal influence; and
  - c) Internal waters of the United States not subject to tidal influence that:
    - (1) Are or have been used, or are or have been susceptible for use, by themselves or in connection with other waters, as highways for substantial interstate or foreign commerce, notwithstanding natural or man-made obstructions that require portage, or
    - (2) A governmental or non-governmental body, having expertise in waterway improvement, determines to be capable of improvement at a reasonable cost (a favorable balance between cost and need) to provide, by themselves or in connection with other waters, as highways for substantial interstate or foreign commerce.
2. Bridges are structures erected across navigable waters of the United States, and include causeways, approaches, fenders, and other appurtenances thereto.
3. If you are uncertain whether or not a waterway is susceptible to improvement for navigation, is tidal, or is considered navigable, contact the Coast Guard to obtain information regarding a navigability determination.
4. Construction in these waters continues to be subject to other Coast Guard authorities, such as the approval of navigation lights and signals and timely notice to local mariners of construction in the waterway.
5. The classification of certain waterways or portions of waterways as navigable occasionally changes. Therefore, the information required for applicants also changes with the particular situation.

6. For these reasons, if you are planning to construct a new bridge or causeway or modify an existing bridge or causeway over a canal, channel, stream, river, lake, bay, other body of water or waterway, contact your local Coast Guard District Bridge Branch before submitting a formal permit application.

**G. Bridge Construction Work Which Does Not Require a Permit**

1. Coast Guard permits are *not required* for the following projects:

- a) Construction of bridges crossing non-tidal water NOT presently used as or susceptible to use as a means of transporting interstate or foreign commerce.

**NOTE:** Contact Commander (dwb), Eighth Coast Guard District, Bridge Branch for this information.

- b) Removal of an existing bridge that will not be replaced by another bridge.

**NOTE:** If you plan to remove or modify any part of a bridge so that it loses its capacity to transport people or physical matter, you must first notify Commander (dwb), Eighth Coast Guard District, Bridge Branch. They will determine if your removal operations will affect navigation. As appropriate, the Coast Guard will then issue an LNM notifying waterway users of the removal or modification and clearance work. The Coast Guard may require the submittal of a demolition plan.

- c) Repair or replacement of worn or obsolete parts on an existing bridge.

**NOTE:** Replacement of bridge parts includes replacing wood with steel, steel with concrete, guard rails with solid materials, changing pavement type, or adding or replacing pipelines within the bridge structure. However, you must NOT: alter the structural configuration or navigational clearances; significantly modify any substructure or superstructure components; or violate any navigational conditions of the original permit.

- d) You MUST also obtain Coast Guard approval if you are changing the design or makeup of the fender system (i.e., going from a wood surface to steel).

- e) If you have any questions about bridge permit requirements, contact Commander (dwb), Eighth Coast Guard District, Bridge Branch.

**H. Local Notice to Mariners**

The Coast Guard publishes LNM's to inform waterway users of work in progress that may affect navigation. You must promptly notify the Coast Guard of the start of construction, any events affecting navigation during construction, and the completion of major phases of construction.

## **I. Transfer of Permits**

1. Although a permit is issued to a specific party, the approval granted for a bridge permit is not restricted to construction, operation, or maintenance of the bridge by that party.
2. The permit passes with the title when it is transferred to an assignee or purchaser of the bridge. The new owner or assignee must strictly comply with the terms and conditions of the permit.

## **J. Maintenance**

1. Bridges constructed under a Coast Guard permit must be maintained according to the permit conditions and approved plans. No further authorization is required for routine maintenance. Commander (dwb), Eighth Coast Guard District, Bridge Branch must be provided advance notification regarding any maintenance that will affect navigation to allow timely issuance of a LNM.
2. However, the Commander (dwb), Eighth Coast Guard District, Bridge Branch must authorize a major renovation or a change in the size or type of structure that deviates from the approved plans.

## **K. Bridge Navigational Lighting**

1. Bridges across waterways which support significant nighttime navigation are required to display navigational lights in accordance of Title 33 CFR, Part 118.
2. Navigational lights and other required signals will be prescribed, prior to construction by the District Commander.
3. The bridge owner is responsible to maintain proper temporary navigational lighting and other such markings, as prescribed, on bridges during construction. Permanent lighting must be maintained on the bridges after the completion of construction.
4. The District Commander may exempt bridges over minor streams where there is no traffic or very little nighttime traffic from the requirement to display navigational lights.

## **L. Bridge Lighting Features**

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3. The bridge owner is responsible to maintain proper temporary navigational lighting and other such markings, as prescribed, on bridges during construction. Permanent lighting must be maintained on the bridges after the completion of construction.
4. The District Commander may exempt bridges over minor streams where there is no traffic or very little nighttime traffic from the requirement to display navigational lights.

## CHAPTER 2: PERMITTING PROCESS

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The Coast Guard bridge permitting process is directed by several laws, policies, professional standards, and other requirements. During the processing of a permit application, the Coast Guard uses this guidance in deciding to either issue or deny the bridge permit. The remainder of this chapter describes the bridge permitting process and provides guidance on the information required in the bridge permit application package. Additional information may be found at 33 CFR, Parts 114 and 115.

### A. The Application Package

1. Processing a bridge permit application results in a Coast Guard decision either to issue or to deny a permit.
2. When you apply for a bridge permit, you must submit an application package to the Coast Guard. You should send your bridge application to Commander (dwb), Eighth Coast Guard District, Bridge Branch, Room 2.107F, 1222 Spruce Street, St. Louis, MO 63103-2832. Remember to include any approvals or other permits that you have already received
3. The application may be in letter format. Your application should cite or include the following information:
  - a) Applicant information:
    - (1) Name
    - (2) Address
    - (3) Telephone number
  - b) Consultant information (if employed):
    - (1) Name
    - (2) Address
    - (3) Telephone Number
    - (4) Written authorization for the consultant to represent the applicant. On interstate bridges, a copy of the agreement between the states outlining the division of responsibilities and authority should be submitted.

c) Project Information:

- (1) Location
- (2) Name of the waterway to be bridged
- (3) Number of miles above the mouth of the waterway where the bridge is located
- (4) Nearest city, county, and state where the bridge is located at, near, or between
- (5) Description
- (6) Purpose
- (7) For moveable bridges, such as swing bridges, bascule bridges, and vertical lift bridges, describe how the bridge will be operated and attended.

d) Authority information:

- (1) The primary authority for the construction of the bridge and under what legislative authority the bridge is being built. The General Bridge Act of 1946 may be cited as the legislative in most cases. If a bridge will cross a navigable waterway entirely within one state, a copy of the state law(s) under which it will be built should be included.

**NOTE:** This is a state permit, charter, or statement of ownership of lands.

- (2) The legislative authority for the existing bridge if it is to be replaced.
- (3) If you do not own the existing bridge which is being replaced or modified, include a signed statement from the bridge owner authorizing the removal or modification work.

e) Proposed Clearances and Elevations:

- (1) Horizontal and vertical clearances, in the navigation spans(s) measured at mean high water, 2% flowline, mean sea level (m.s.l.), or other appropriate datum.

**NOTE:** State clearances in U.S. linear feet.

- (2) Elevation of low steel should be shown at the channelward face of each pier, at the mid-point of the span, and in the case of a haunched bridge, 25 feet channelward of each channel pier.

- (3) Where appropriate, vertical clearance should be dimensioned above normal pool elevation and the 2% flowline elevation or, on a free-flowing river, above low water elevation and the 2% flowline elevation. Show elevation of 100-year flood in all cases.
  - (4) Depth and Width of the waterway at the appropriate elevation.
  - (5) For moveable drawbridges the vertical clearance should be dimensioned in both open and closed positions of the navigation span
  - (6) The vicinity map and the plan and elevation views of the bridge shall be drawn to scale
  - (7) Identify the water surface elevation reference datum used in plans
  - (8) Only those structural details necessary to illustrate the effect of the proposed structure on navigation, such as, length and width of bridge, number and length of spans, size of pier protection, distance between dual bridges, approach fills in flood plain, etc., need to be shown.
  - (9) Profile river bed from bank-to-bank. Dimensions of the navigation channel. If stream is navigable from bank-to-bank, omit channel dimensions.
  - (10) Soundings and elevations of the riverbed at bridge, in feet, with respect to the established government datum.
- f) Existing bridge structure at the bridge site:
- (1) Owner of the bridge.
  - (2) Type of bridge, i.e., Drawbridge, Fixed, etc.
  - (3) Mile point and navigational clearances, in U.S. linear feet.
- g) Removal of a bridge (if applicable):
- (1) Extent of removal, including pier footings and bearing piles, proposed pier cut-off elevations if owner does not plan to remove the entire structure.
  - 2) Time needed for removal.

**NOTE:** The safety of navigation is of paramount importance; therefore, the Coast Guard makes the final decision concerning the extent of bridge removal.

- h) Construction Activity:
  - (1) Scheduled construction commencement date
  - (2) Summary of maintenance of traffic during construction activities
  - (3) Anticipated completion date
  - (4) Type and source of project funding, describe Federal project funding, if any
  
- i) Environmental Effects:
  - (1) Significant effect(s) on the environment
  - (2) Environmental documentation, including all the requirements of the National Environment Policy Act of 1969 and the Federal Water Pollution Control Act (Public Law 92-500). Furnish the date that any Final Environmental Impact Statements were filed with EPA and the Record of Decision.
  
- NOTE:** Consider the construction phase of the bridge project also.
  
- j) Required Authorizations:
  - (1) State and local authorizations
  - (2) You must obtain water quality certification before a bridge permit may be issued
  
- k) Other federal agencies with jurisdiction over the proposed project:
  - (1) Agency
  - (2) Permits or type of approvals required for the project
  
- l) Fill (if applicable):
  - (1) General Composition of fill
  - (2) Amount of fill above and below Mean High Water (MHW) or Ordinary High Water (OHW) in U.S. linear feet
  - (3) Acreage of wetlands impacted and types of vegetation affected
  - (4) Cubic yards of material to be excavated and filled below the 100-year flood contours.

**NOTE:** For proposed bridge construction which may require dredging or filling in the navigable waters of the United States, the U.S. Army Corps of Engineers may require the applicant to obtain a Section 404 permit. It is your responsibility to obtain this permit.

m) Adjacent Property owners:

- (1) Names
- (2) Addresses

n) Underlying studies, reports, and other information:

- (1) Estimated cost of proposed project and estimated cost of similar low level bridge without navigational increment.
- (2) Estimated total value of yearly commercial shipping on the waterway affected by the bridge.
- (3) Describe alternate bridge designs and purpose, if any

o) Drawings of your proposed project with your permit application. You must submit one reproducible original and three copies of the location and plan sheets. (Do not submit mylar originals.) All drawings must be drawn to scale and include the following information:

- (1) Scale(s) of the drawing(s) indicated by a bar graphic(s).
- (2) Arrow indicating true North.
- (3) Arrow indicating direction of the current.
- (4) Title block located in the lower right corner of each sheet identifying:
  - (a) Applicant/Agent and Owner.
  - (b) Waterway.
  - (c) Bridge location milepoint on the waterway.
  - (d) City, County, and State.
  - (e) Date of plans.
  - (f) Sheet number of the total number of sheets in the set.

4. The checklist in Appendix C refers to the specific required items that must be included on the location map, plan view, and elevation view of your bridge drawing set. Your bridge plan set must conform to the requirements in Appendix E and generally follow the format of the sample drawings included in Appendix E. (Sheet size should be no larger than 8 ½” x 11”.) Be sure that your plans show navigational clearances above the appropriate water surface elevations, and the 100-year flood elevation. The bridge navigational clearances should be specified in U.S. linear feet.
5. Enclose completed U.S. Coast Guard checklist for preparation of applications (see Appendix C).

6. Vicinity Map and Plans:

A vicinity map with a reproducible original and three copies. This map should also include an arrow indicating North, show other bridges in proximity to the proposed bridge, and sufficient local characteristics to permit ready identification.

7. Plans of the bridge, showing the bridge from abutment to abutment in both plan and elevation views. The navigation opening(s) shall be outlined in red (see sample drawings, Appendix E). Navigational clearances should be described as follows:
  - a) The maximum horizontal clearance, normal to the axis of the navigation channel, between the faces of the channel piers or inside any required protection works. Show measurements in feet.
  - b) The minimum vertical clearance, with respect to the appropriate recognized datum at the site, of the lowest part of the superstructure (low steel) of the navigation span(s) shall be clearly indicated.
  - c) Only those structural details necessary to illustrate the effect of the proposed structure on navigation, such as, length and width of bridge, number and length of spans, size of pier protection, distance between dual bridges, approach fills in flood plain etc. need be shown. Drawings should be on 8 ½” X 11” sheets and each sheet will have a simple title block in the lower right-hand corner. The title block should identify the applicant, location of the proposed bridge, river, river mile, county, state, and show the date of plans and sheet number.
  - d) Other related data shall be shown as appropriate, including:
    - (1) Profile river bed from bank-to-bank. Dimensions of the navigation channel. If stream is navigable from bank-to-bank omit channel dimensions.
    - (2) Soundings and elevations of the riverbed at bridge, in feet, with respect to the established government datum.

## **B. Temporary Bridges**

1. Any proposal temporary bridge requires a bridge permit prior to construction. You should follow the same procedures and information requirements as for a permanent bridge.
2. A temporary bridge is often used during the construction of a permanent bridge. Your request for the approval of this type of temporary bridge should be included in the application for the permanent bridge.

## **C. Time Limits for Construction**

1. Based on the estimate given in the application, a reasonable period of time will allowed for the construction of the bridge project covered by the permit.
2. Coast Guard bridge permits specify that the permit becomes null and void unless construction of the bridge is commenced and completed by certain dates. This time period is usually five years and eight years, respectively, from the date of the permit.
3. If the authorized work is not completed within the time specified in the permit, the permit is voided. A new application and approval are required before construction work can continue.
4. However, if a written request for a time extension is submitted at least 30 days before the expiration date of the permit, the existing permit will remain in effect during processing. Work may continue until the final agency action is taken on the time extension request.

## **D. Applications for Extensions of Time**

1. An application for an extension of time for starting and/or completing bridge construction should be in letter form. You should request an extension of the date(s) for starting and/or completing bridge construction for a definite number of years coinciding with the present construction schedule.
2. The Coast Guard decision to grant an extension of time is based primarily on a review and evaluation of any project changes or conditions which impact navigation or the environment that were unknown when the original bridge permit was issued. In addition, the project must be reviewed in accordance with any current laws that were not in force when the original permit was issued.
3. If the bridge is under construction, you must furnish a brief description of the status of the work. You must also include the percentage of the project completed to date and a description of the remaining work.

## **E. Required Updated Environmental Documentation**

1. When applying for a time extension, the environmental documentation for the last Coast Guard permit action must be reviewed and updated.
2. On Federal-Aid projects, submit any impact statements, supplemental studies, Finding of No Significant Impact (FONSI), reevaluations, etc., required by the “lead agency” subsequent to the issuance of the bridge permit, or state that none of these items have been required.
3. The application should include a copy of the current water quality certifications from the appropriate state agency.
4. If the water quality certification was previously furnished for the project, state that those certifications have not expired, been modified, or rescinded by the certifying agency.
5. Follow these time extension procedures for the removal of existing or temporary bridges when they are part of a permit for new bridge construction.

## **F. Bridge Fender Systems**

1. When considering an application for a bridge permit, the Coast Guard may require fenders to provide navigation safety.
2. The permit application must consider the possible need for a fendering system that would promote safer navigation through the bridge and protect the bridge structure.
3. The need for a bridge fendering system is based on present and future navigation transiting the proposed bridge site.
4. When required, fendering system plan must include the following information:
  - a) A description of the proposed type of fendering system. (Include a description of the construction methods and materials from the standpoint of navigation safety).
  - b) The dimensions and minimum clear horizontal distance normal to the channel axis measured between the most restrictive parts of the fendering system.
5. The Coast Guard does not usually require the installation of pier fenders on existing bridges unless provided in a permit condition. However, when changes in navigation affect the safety of navigation and the bridge structure, the District Commander may require the installation of fender systems at the bridge owner’s expense.

## G. Clearance Gauges

1. The installation of clearance gauges on bridges across navigable waters is subject to the following requirements:
  - a) Clearance gauges must indicate the vertical distance between “low steel” of the bridge channel span and level of the water.
  - b) Clearance gauges must read from top to bottom, measured from low steel to the bottom of the footmarks.
  - c) Clearance gauges must face approaching traffic and extend to a reasonable height above high water which is meaningful to the mariner.
  - d) Clearance gauges must be installed on the end of the right channel pier or pier protection structure facing approaching marine traffic.
  - e) The District Commander may approve other locations for clearance gauge installations, due to particular conditions or circumstances.
  - f) Clearance gauges must be made of durable material, permanently fixed to the bridge pier, or pier protection structure, and resistant to weather, tide, and current.
  - g) Clearance gauges may be painted directly on the bridge channel pier if the face of the pier is flat and wide enough to accommodate the footmarks (graduations) and numerals.
  - h) Clearances must be marked by black numerals and footmarks on a white background. Paint should be of good exterior quality, resistant to chalking or bleeding.
  - i) Manufactured numerals and background material may be used. The size, type and spacing of numerals conforming with those published in “Standard Alphabets for Highway Signs,” Federal Highway Administration (FHWA), U.S. Department of Transportation must be used as follows:

Nominal Day Visibility Distance (feet)	Height of Numerals (inches)	Type Standard Alphabet	Vertical Spacing of Numerals (feet)
Less than 500	12	Series C	2
500 to 750	18	Series C	2
750 to 1,000	24	Series D	5
1,000 to 2,000	30	Series E	5
More than 2,000	36	Series E	10

- (1) The length of the footmarks must be no less than the width of a single numeral used (except numerals 1 and 4), and the thickness must be the same as the width of stroke of the numeral. The footmarks should extend to the margin of the white background.
  - (2) Footmarks must be spaced every foot for the nominal day visibility of more than 500 feet but less than 1,000 feet, and every 5 feet for nominal day visibility of more than 1,000 feet.
- j) Intermediate footmarks may be used when more precise determination of actual clearance is necessary.
- (1) These intermediate footmarks must be one-half the width of the stroke required for the numeral and three-quarters as long as the primary footmarks.
  - (2) The horizontal distance between the numeral and nearest edge of white background must be no less than one-half the width of a single numeral except numerals 1 and 4).
- k) The minimum width of the white background must not be less than three times the width of a single numeral (except numerals 1 and 4) plus the width of each additional numeral (when multiple numerals are used), plus numeral spacing.
- l) The vertical distance between the top and bottom ends of the clearance gauge and “low steel” must be established by the District Commander after a determination of the navigation requirements.
- m) The owner is responsible for the accuracy of the gauge. The vertical distance of the numerals and footmarks below “low steel” of the bridges should be re-measured when the gauge is repainted or the structure is repaired.
- n) The bridge owner is responsible for the costs of installation and maintenance of clearance gauges.

## **H. Approval of Falsework and Construction Procedures**

1. The clearances provided for navigation through or under the bridge spans must be approved by Commander (dwb), Eighth Coast Guard District, Bridge Branch. This authority includes the construction, modification, operation, maintenance, and removal of bridges. The Coast Guard authorizes the temporary restriction of passage through or under a bridge by use of falsework, pilings, floating equipment, closure of draws, or any work or activities which temporarily reduce the navigational clearances and design flood flows, including obstruction of any or all spans of the bridge.

2. A Coast Guard bridge permit normally includes a condition stating that the plans for cofferdams, falsework, or any other temporary structures that are to be placed in the water to facilitate the bridge construction, must be submitted to and approved by Commander (dwb), Eighth Coast District, Bridge Branch before the start of construction.
3. Approval of a temporary reduction of previously approved navigational clearances for any of these temporary structures varies greatly. Approval depends on the location of the bridge, type of river traffic, the time of year that the structures will be in place, etc.
4. Requests for approval of the plans for temporary structures and erection schemes should be made in writing to Commander (dwb), Eighth Coast Guard District, Bridge Branch. This request should be supported with reproducible tracings and two (2) copies of plans, including tentative work scheduled for the temporary structures and any other temporary hazards to navigation, such as a moored floating plant.
5. Plans for cofferdams, falsework bents, brackets, temporary dolphins, survey towers, test piles, work dikes, etc., should be submitted to Commander (dwb), Eighth Coast Guard District, Bridge Branch for approval prior to commencement of construction.

#### **I. Pre-Construction Conferences**

Coast Guard, Bridge Branch, personnel are available upon request to attend pre-construction conferences for a bridge permitted by the Coast Guard. The Coast Guard appreciates the opportunity to explain procedures and answer any questions concerning our requirements. Invitations for Coast Guard personnel to attend pre-construction conferences should be made by phoning or writing to Commander (dwb), Eighth Coast Guard District, Bridge Branch, Room 2.107F, 1222 Spruce Street, St. Louis, MO 63103-2832, Phone (314) 269-2378, Fax (314) 269-2737.

## CHAPTER 3: ENVIRONMENTAL PROCEDURE

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### A. Coast Guard Policy

Implementing the Bridge Administration Program includes assessing the social, economic, environmental, and other interrelated effects that may result from the project. The following section describes the information required to document the environmental effects resulting from bridge projects.

### B. Policy

1. Coast Guard policy ensures that efforts are made to improve the relationship between man and his environment and to preserve the natural beauty of the countryside, coastal areas, and natural and cultural resources. Coast Guard investigations include consultations with local, state, and federal agencies and the public. Recommendations and decisions are based on providing for the reasonable needs of navigation and consideration of these social, economic, and environmental goals.
2. Coast Guard environmental considerations extend beyond the bridge and approaches to include the causally related primary and secondary environmental impacts of the proposed bridge project. When the Coast Guard is the lead federal agency in a project involving a bridge, the National Environmental Policy Act (NEPA) jurisdiction extends to the logical termini on both sides of the bridge or the bridge and road sections independent of utility.

### C. Requirements

1. Before issuing a bridge permit, the Coast Guard must comply with various federal laws and regulations relating to the environment. Section D of this chapter contains a list of requirements that you must comply with. Your responses to these requirements must be submitted with the formal bridge permit application.
2. Using the information from these responses, the Coast Guard District bridge administration staff can determine what is required to complete the environmental document.
3. If the District staff determines that additional information is required to complete the environmental analysis documentation, they will contact you. The Coast Guard will use this information to support the final action of either issuing or denying a bridge permit.

### D. Information for Environmental Investigation

Provide the following required information in the application package:

## 1. Alternatives:

The National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. 4321), as amended and its implementing instructions (40 CFR 1500-1508), require all federal agencies to use a systematic, interdisciplinary, scientific approach when analyzing project impacts under their respective jurisdictions.

- a. These studies must assess: primary and causally related impacts due to the construction of the proposed bridge project, irreversible or irretrievable commitments of resources, comments of federal, state and local government agencies having jurisdiction by law or expertise, and comments of other interested parties or groups.
- b. The following information is required to document alternatives:
  - 1) Identification of the alternatives for your proposed project.
  - 2) Location.
  - 3) Design.
  - 4) Probable impacts of each alternative on the quality of the human environment.
  - 5) Commitments of resources.
  - 6) Comments of federal, state and local government agencies, and other interested parties or groups. (For further information contact Commander (dwb), Eighth Coast Guard District, Bridge Branch.

## 2. Wetlands:

Wetlands are defined as either permanently or intermittently covered or saturated with water. Wetlands usually have at least three main characteristics in common:

- a. Wetlands lie between terrestrial (upland) and aquatic (water) systems, and have unique traits and characteristics.
- b. Wetlands are flooded or have saturated soils for significant time periods.
- c. Wetlands grow special vegetation because of their wet soil conditions.
- d. Wetlands generally include, but are not limited to, swamps, marshes, bogs, sloughs, estuarine areas, mudflats, and shallow lakes and ponds with emergent vegetation.

- e. Executive Order 11990, Protection of Wetlands, states that no federally approved project shall occur in wetlands unless there is no practical alternative to constructing in the wetlands. As a result, the Coast Guard must analyze alternative locations which avoid taking wetlands. If no alternative locations or designs are practicable, then the Coast Guard must ensure that the project design includes all practicable measures to minimize wetland impacts.
- f. If proposed project is located in or adjacent (within 500 feet) to a wetland, the following information is required:
  - 1) The amount of wetlands that will be used or affected.
  - 2) Alternatives that avoid taking any wetlands.
  - 3) Mitigation efforts.

### 3. Floodplain:

The base floodplain is the area that would be inundated by a base flood or 100-year flood. The base flood is defined as that flood having a one-percent chance of being exceeded in any given year. Executive Order 11988, Floodplain Management and Protection, requires federal agencies to avoid authorizing projects in the base floodplain unless there is no practical alternative. By their very nature, most bridges are located within the base floodplain. Therefore, the Coast Guard must ensure that the project design includes all measures practicable to minimize floodplain impacts and to protect the natural and beneficial values of the floodplain.

- a. If the proposed project is located in a base floodplain, be sure that your application package includes the following information:
- b. Discussion of the proposed project impacts on natural and beneficial floodplain values.
- c. The degree that your action supports development in the floodplain.
- d. Any risk to human safety. (For further information, contact the regional office of the Federal Emergency Management Agency (FEMA).

### 4. Threatened and Endangered Species:

The Endangered Species Act of 1973 (16 U.S.C. 1531), as amended, prohibits any activity threatening the continued existence of a federally designated endangered or threatened species. If threatened or endangered species are potentially present in the proposed project area, then you must:

- a. Contact the State Fish and Game Commission or the U.S. Fish and Wildlife Service (USFWS) representative for assistance in determining whether the project is located in the range or habitat of endangered or threatened species.
- b. If the project is within the range of such species, contact Commander (dwb), Eighth Coast Guard District, Bridge Branch.

5. Water Quality Certification:

Section 401 of the Clean Water Act of 1977 (33 U.S.C. 1251), as amended, prohibits federal permitting or licensing agencies from issuing authorizations for construction activities having discharges into navigable waters, until the appropriate water quality certifying agency has issued a water quality certification or waiver procedures have been satisfied.

If applicable to the proposed project:

- a. Obtain a Water Quality Certification (WQC) or waiver from the appropriate federal, interstate, or state agency.
- b. Include the WQC or waiver in your permit application package.

6. Wild and Scenic Rivers:

Section 7 of the Wild and Scenic Rivers Act of 1968 (16 U.S.C. 1271), as amended, prohibits the issuance of any federal permit for construction of projects having the adverse impacts on a river, or a proposed river, with values qualifying it for protection under this act.

To determine whether there are any designated or proposed wild, scenic, or recreational rivers located in or within a ½ mile radius of the proposed project, you must:

- a. Contact the U.S. National Park Service (NPS) representative with jurisdiction over the geographic area of the proposed bridge for assistance in identifying wild and scenic rivers in the project area.
- b. If proposed project will affect a wild and scenic river, contact Commander (dwb), Eighth Coast Guard District, Bridge Branch, for further guidance.

7. Prime and Unique Farmland:

The Council on Environmental Quality directed federal agencies authorizing construction projects to evaluate impacts on prime and unique farmlands. Agencies should ensure that such farmlands are not irreversibly converted to uses which eliminate their productivity, scenic or wildlife habitat values, or benefit as open space.

If prime and unique farmlands are within the proposed project area, then you must:

- a. Contact the U.S. National Resources Conservation Service (NRCS) representative with jurisdiction over the geographic area of the proposed project for information regarding prime and unique farmlands under the Farmlands Protection Policy Act of 1981 (7 U.S. C. 4201).
- b. State the number of acres of designated prime or unique farmlands being taken by the proposed project.
- c. Contact Commander (dwb), Eighth Coast Guard District, Bridge Branch, for further guidance if project will affect prime and unique farmlands.

8. Clean Air:

The Clean Air Act (CAA), (41 U.S.C. 7401), as amended, requires that any new activity engaged in or approved by federal agencies must conform to an applicable air quality implementation plan, if in an area designated “non-attainment” or “maintenance.” The Coast Guard must ensure that projects under its jurisdiction meet the National Ambient Air Quality Standards (NAAQS) before issuing a bridge permit.

- a. Those standards were established pursuant to Section 109 of the CAA and include standards for the following criteria pollutants:
  - 1) Carbon monoxide (CO)
  - 2) Lead (Pb)
  - 3) Nitrogen Oxide (NO<sub>x</sub>)
  - 4) Ozone (O<sub>3</sub>)
  - 5) Particulate matter (PM<sub>10</sub>)
  - 6) Sulfur Dioxide (SO<sub>2</sub>)
- b. The General Conformity Rule (40 CFR 93.150) applies to general projects in areas designated “non-attainment” or “maintenance.” An air quality conformity analysis and determination is required for each of the criteria pollutants.
- c. Transportation plans, programs and projects funded or approved under Title 23, United States Code, or the Federal Transit Act require air quality conformity analyses and determinations pursuant to 40 CFR Part 15 and 93, Subpart T (51.390, 93.100), the Transportation Conformity Rule. This determination is normally completed by the FHWA or the FTA, as appropriate, for Title 23 Projects.

- d. The Transportation Conformity Rule applies to projects in areas designated “attainment” and “non-attainment.” The criteria pollutants and time periods may vary from those in the General Conformity Rule.
- e. Certain projects may generate low levels of direct or indirect emissions of the criteria pollutants. They are likely to be below minimum allowable levels and may be exempt from the General Conformity Rule air quality assessment.
- f. During the bridge permitting process, early coordination and consultation with the state and local air quality agencies is important to determine whether the project is consistent with an approved Federal or State Implementation Plan (FIP or SIP) governing the ambient air quality at the proposed bridge project location.

## 9. Noise Levels

All authorized bridge construction work must comply with the provisions of the Noise Control Act of 1972 (42 U.S.C. 4331), as amended. Under the Noise Control Act, the adverse impacts on existing activities or land uses that may result from the bridge, its related highway sections, or its construction must be considered.

- a. Include the following information in application packet concerning noise levels:
  - 1) The anticipated design noise levels for the proposed project.
  - 2) A description of all possible measures to minimize the noise impact if there is no alternative to avoid the adverse effects.
  - 3) The FHWA’s Federal-Aid Highway Program Manual (Volume 7, Chapter 7, Section 3) and any state standards may be used as guides for noise levels for particular activity categories. (For further information, contact the Local Highway Department).

## 10. Residential or Business Displacement

All bridge actions must comply with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (42 U.S.C. 4601). The Act applies to projects that involve federal funding.

- a. When applicable, the following information is required for displaced residences or businesses:
  - 1) A determination of whether your proposed project requires the displacement of residences or businesses.

2) The calculations and cost schedule under the regulation (42 CFR Part 24) of the Act that will provide relocation and compensation if the proposed project requires the displacement of residences or businesses.

b. Bridge actions must also comply with the Native American Graves Protection and Repatriation Act of 1990 (24 U.S.C. 3001) and Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. (For further information, contact Commander (dwb), Eighth Coast Guard District, Bridge Branch.

#### 11. Migratory Bird Treaty Act:

The Migratory Bird Treaty Act (MBTA) of 1918 is a domestic law that protects species or families of birds that live, reproduce or migrate within or across international borders at some point in their annual life cycle.

Executive Order 13186, dated 17 January 2001, requires that federal agencies avoid or minimize the negative impacts of their actions on migratory birds and take active steps to protect birds and their habitat. It requires federal agencies to have regulatory authorization from the U.S. Fish and Wildlife Service before “taking” any migratory birds. A “take” is any action that has or is likely to have a measurable negative effect on migratory bird populations. This also includes actions that merely disturb or startle a migratory bird.

#### 12. For More Information:

As stated throughout this manual, Commander (dwb), Eighth Coast Guard District, Bridge Branch, is available to provide information regarding any of your questions in the bridge permit application process. Also refer to the appendices in the last section of this document for guidelines and other sources of information.

## APPENDIX A GLOSSARY

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**Abutment:** A substructure composed of stone, concrete, brick or timber supporting the ends of a single span bridge or the extreme end of a multi-span bridge. Usually it also supports the approach embankment.

**Advance Approval:** (Title 33, Code of Federal Regulations, Section 115.70, as amended): The Commandant, U.S. Coast Guard has given advance approval to the location and plans of bridges to be constructed across reaches of waterways navigable-in-law, but not actually navigated other than by logs, log rafts, rowboats, canoes and small motorboats. In such cases, the clearances provided for high water stages will be considered adequate to meet the reasonable needs of navigation. The term “small motorboats” shall be interpreted in the light of the things and conditions with which it is associated. The term means rowboats, canoes, and other similar craft with outboard motors. It does not include sailing or cabin cruiser craft. The term is used to distinguish such craft from the definition of “motorboat” in the Motorboat Act of June 25, 1940 (46 U.S.C. 526), which includes craft up to 65 feet in length.

**Alteration of Bridge:** Any repairs, relocation, reconstruction, additions, or modifications to a bridge which will change any of the information shown on the plans (permit drawings) attached to the Federal Bridge Permit is considered an alteration of the bridge and requires prior approval of the U.S. Coast Guard.

**Axis of the Channel:** An imaginary line representing the usual line of travel by a vessel through a bridge, usually the center marked by an arrangement of two green 360-degree lights suspended just below the outermost edges of the upstream and downstream bottom chords.

**Bascule Bridge:** A bridge superstructure on which one or two movable roadway spans are counterbalanced by weights and raised from a horizontal position to almost vertical (open) position for the passage of river traffic.

**Base Flood:** A flood having a one percent chance of being exceeded in any given year (commonly known as a 100-year flood).

**Base Floodplain:** The area adjacent to the waterway which would be inundated by a base flood.

**Bowboat:** A small towboat or “tug” that is engaged to help a large tow to maneuver, usually by pushing or pulling on the head or “bow” of the tow.

**Bridge:** Any structure over, on, or in the navigable waters of the United States used for transporting persons, vehicles, commodities or other physical matter and providing for the passage or flow of water through or under the structure.

The term “bridge” includes all integral bridge elements: approaches and appurtenances, regardless of the materials used, whether natural or manufactured, or the construction methodology.

Types of “bridges” include: highway bridges, railroad bridges, pedestrian bridges, aqueducts, aerial tramways and conveyors, overhead pipelines, and similar structures of the same function with their approaches, finders, pier protection systems, foundations, and appurtenances (integral features).

The definition of “bridges” does not include: aerial power transmission lines, submerged pipelines, and other similar structures and works unless they are integral features of a bridge used in its construction, maintenance, operation or removal; or they are affixed to the bridge and affect the bridge clearances.

**Bridge Permit:** An authorization issued by the U.S. Coast Guard, approving the location and plans of a bridge across a navigable waterway of the United States. A “bridge permit” includes the approved bridge project plans.

A “bridge permit” expresses the assent of the Federal Government as far as the project affects the public right of navigation, giving due consideration to the impacts on the quality of the human environment.

A “bridge permit” does not give any property rights, in either real estate or materials, or authorize any injury to private property or invasion of private rights. It does not remove the necessity of obtaining the assent of other agencies with cognizance of any aspect of the location, construction, or maintenance of a bridge.

Permits for completed bridges remain valid indefinitely, unless otherwise conditioned or amended, as long as the bridge remains in place, continues to be used for transportation purposes, and conforms to the original approved plans.

**Categorically Excluded Federal Action:** Certain Bridge Permit actions under consideration by the Coast Guard are categorically excluded from meeting the requirements of the Nations Environmental Policy Act (NEPA) of 1969. Projects and permit actions classified as categorical exclusions are not subject to Section 102(2)(C) of NEPA. Although not subject to NEPA, categorically excluded actions are reviewed for compliance with the other environmental protections Acts, and require preparation of an environmental assessment.

**Causeway:** A raised road of solid fill across water or marshland, constructed so that the water or marshland is on both sides of the road and water is unable to pass through.

A raised road with any openings is a “bridge” with solid fill approaches, not a “causeway.”

Congressional approval is required before the Coast Guard may approve a “causeway” across waters which are regularly navigated.

**Clearance Gauges:** A series of markings painted on or attached to bridge piers to indicate the vertical clearance available beneath the navigation span between “low steel” and various water levels. They may also be authorized electronic displays serving the same purposes.

**Commencement of Construction:** Coast Guard Bridge Permits specify that construction of the bridge must be started by a certain date, usually five years from the date of the permit. Commencement of construction is normally considered to be the date upon which work actually commences at the site of the proposed bridge, its approaches or ancillary works. However, in cases where construction will be carried out under a construction contract with performance guaranteed by bond or other surety, the date of the contract should be the date of commencement.

**Completion of Construction:** Normally considered as the date when the structure completely spans the waterway as specified in the plans with the installation of any required navigational lights. At this time, the bridge is open to traffic or placed in operation, and all temporary falsework has been removed from the waterway.

**Corridor:** The lateral space occupied by a vessel as it travels in a given direction.

**Dolphin:** A group or cluster of piles banded together to form protection of a part of a bridge. Usually timber piles, but may be of steel or concrete.

**Drawtender:** The person who operates the movable span(s) on drawbridges of any type.

**Environmental Assessment:** An analysis of the environmental impacts of a proposed activity that identifies the type, degree of effect, and probability of occurrence respecting primary, secondary and cumulative potential impacts (positive and negative) of that action, including alternative courses of action and if possible mitigative measures to minimize adverse impacts. Environmental assessments in support of application for U.S. Coast Guard bridge permits should be prepared following the guidelines in Appendix D.

**Erection Scheme:** The start-to-finish plan that is expected to be followed to erect a bridge or any portion of a bridge. The erection scheme should accompany falsework plans submitted to Commander (dwb), Eighth Coast Guard District for approval prior to commencement of work. It should include a step-by-step description of the work and the expected times for commencing and completing each step.

**Falsework:** Insofar as the Coast Guard’s interest in a bridge is concerned, falsework is a general term used to identify any temporary structure that may be used to facilitate the construction, alteration, or demolition of a bridge. This includes temporary bents, erection towers, cofferdams, and the like. Plans for falsework must be submitted to Commander (dwb), Eighth Coast Guard District for approval prior to commencement of work.

**Fender:** A structure usually consisting of a row of piling or a row of pile dolphins, often connected with walers and back-braced to fend off vessels from collision with the bridge.

**Flanking:** The maneuvering action of a downbound tow (towboat and barges) sometimes used when approaching bridge, locks or sharp bends. The current only is used for headway and the engines and rudders are used to maintain the proper angle until just before the lead barge reaches the bridge span, at which time the engines are backed and the head of the tow is swung gently in line with the opening. Then power is applied to drive through the opening. This is the safest way that a heavy tow can make tight passages. Flanking often increases the transit time through a bridge by three or four hundred percent.

**Guide Clearances:** Guide clearances have been established for bridges over certain waterways. Guide clearances are the minimum acceptable clearances for bridges over a waterway or a reach of a waterway.

**Lead Agency:** The federal agency which has primary authority for committing the Federal Government to a course of action with significant environmental impact.

**Low Steel:** That point on a bridge which is the lowest part of the superstructure or the navigation span.

**Margin of Channel:** The outside limits of a channel when it does not extend from pier to pier because of the depth of the water or structural impediments. The margin(s) of channel beneath a bridge span are usually marked with red lights suspended just below the outermost edge of the bridge span structure.

**Marine Navigational Lighting:** The lights maintained on a bridge for the protection of marine navigation.

**Marine Radio Broadcasts:** The Eighth Coast Guard District broadcasts information to mariners pertaining to navigation conditions on the Western Rivers. Information is broadcast over the Coast Guard network and/or by commercial marine radio stations at scheduled intervals twenty-four hours a day. Bridge owners should keep the Coast Guard informed of any problems and activities at bridges, particularly during construction, for dissemination to mariners. Telephone number during business hours is 314-269-2378. At night and on weekends call the appropriate Sector; Sector Upper Mississippi River in St. Louis, MO; Sector Lower Mississippi River in Memphis, TN; or Sector Ohio Valley in Louisville, KY.

**Modifications to the Bridge:** Deviations from the approved bridge location or plans that require a new or amended bridge permit. This requirement applies to “modifications” required both before and after the bridge is constructed.

Repair or replacement of parts in-kind does not require a bridge permit unless the proposed work will affect the approved navigational clearances or configuration of the bridge.

**Navigable waters of the United States:** For bridge administration purposes: waters subject to tidal influence, waterways with a history of substantial commercial navigation, waterways that presently have commercial navigation, or waterways that are susceptible to commercial development.

**Notices to Mariners:** Commander (dwb), Eighth Coast Guard District issues Notices to Mariners as circumstances prescribe. These notices include information about changes or deficiencies in aids to navigation, deficiencies in bridge navigation lights, notices of work in progress in the waterway and cautionary information. Written notices, called Local Notices to Mariners are published weekly or as circumstances require. Broadcast notices are made when immediate dissemination of marine information is necessary for the safety of navigation. Notices to Mariners are broadcast over Coast Guard radio stations. Broadcast notices are later confirmed by repetition in published Local Notices to Mariners when the original subject is still valid.

**Normal Pool Elevation:** Height in feet above sea level at which a section of the river is normally maintained behind a dam.

**Open River:** Any river or reach of a river having no obstructions, such as dams.

**Open River Conditions:** Certain rivers are impounded by movable dams with wickets. When the river stage is high enough for traffic to clear the dam, the wickets are lowered for the passage of river traffic over the dam bypassing the lock and the river is said to be in “open river conditions.”

**Pier:** A structure usually composed of stone, concrete, or steel used to support the ends of the spans of a multi-span bridge at intermediate locations between its abutments.

**Pier Protection:** A sheet pile steel cell, pile dolphin, sheerfence, or walers attached to or separated from a bridge pier designed to protect the pier from damage due to collisions.

**Pivot Pier:** The center pier which supports the swing span on a drawbridge. A large circular gear (bull gear) is mounted on top of the pivot pier and is used to rotate the swing span horizontally until it is perpendicular to the axis of the bridge. In this position (open), river traffic passes on both sides of the pivot pier through the draw span.

**Protection Cell:** A steel sheet-piling cell, usually round and filled with stone, sand, or concrete. The cell is strategically located to protect a bridge.

**Repairs (Replacement-in-Kind):** Plans for repairs to bridges which will result in a permanent reduction in the existing navigational clearances or conditions for navigation must be approved by the Coast Guard prior to commencing work. Title 33 CFR provides that repairs to a bridge which do not permanently alter the clearances, type of structure, or navigation conditions, but the substructure or superstructure or navigation conditions, but which consist only in the replacement or worn or obsolete parts, may, if the bridge is a legally approved structure, be made as routine maintenance without approval of the U.S. Coast Guard. However, Coast Guard approval is required for any temporary falsework such as scaffolding, cofferdams or bents that will be used to facilitate the repairs if these temporary structures will reduce the clearance for navigation.

**Sheerboom:** A timber fence similar in appearance to a sheerfence except that it floats on timber rather than being secured to piling driven into the riverbed. A sheerboom is usually in sections chained or hinged together. It is moored at upstream and downstream ends to protection cells. The lateral movement of the boom is restrained by chains attached to the boom at intervals and to sinkers beneath it much like the moorings on buoys.

**Sheerfence:** A timber fence, usually extending from a protection cell to or past a bridge pier to protect the bridge and facilitate navigation through a span. So named because its purpose is to “sheer” vessels away from the structures.

**Swing Bridge:** A bridge with a span (swing span) that rotates horizontally on a pivot pier to a position perpendicular to the axis of the bridge. In this position (open), river traffic passes on either side of the pivot pier without overhead obstructions.

**Superstructure:** The structure of a bridge above the piers except the roadway.

**Tow** (Noun): An assembly of barges or other floating vessels being towed (pushed) by a self-propelled vessel (towboat) and under the charge of the vessel (towboat). A “tow” may be a towboat and one or more barges.

**Tow** (Verb): On the Mississippi River System the verb “tow” usually means pushing barges.

**Towboat:** On the Mississippi River System the word “towboat” usually means a self-propelled vessel designed to push barges. Small towboats are often called “switchboats.”

**Two Percent Flowline:** The water surface elevation that is not expected to be exceeded more than two percent of the time at a particular location.

**Walers:** The horizontal heavy timbers that face sheerbooms, sheerfences, and other protection work to prevent direct contact with the structure itself. Walers, or comparable non-sparking materials, may be required on steel structures to prevent steel-to-steel contact between a barge and a steel structure.

**APPENDIX B SAMPLE LETTER OF APPLICATION FOR A PERMIT**

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Commander (dwb)  
Eighth Coast Guard District  
Bridge Branch, Room 2.107F  
1222 Spruce Street  
St. Louis, MO 63103-2832

(Date)

Dear Sir:

Application is hereby made by **(name of applicant, consultant or engineering firm representing the applicant)**, at **(address of correspondent)** for approval by the Commandant, U.S. Coast Guard, for the location and plans for a bridge to be constructed **(modified)** across the **(name of waterway)**, mile **(miles above the mouth of the waterway)**, at/near **(city, county, state)**.

Enclosed herein is a letter of authorization from **(structure owner)** and an extract of **(the motions from corporate meetings, etc.)** authorizing me to make this application.

**(Editor's Note: This paragraph is required when an entity other than the owner of the bridge is applying for the bridge permit on behalf of the owner.)**

It is estimated that the bridge from abutment to abutment will cost \$\_\_\_\_\_. A similar low level bridge at this location without navigational increment, which would provide only sufficient clearance to safely pass flood waters and drift, would cost about \$\_\_\_\_\_.

Choose one of the two statements below:

Federal funds will be used for this project and **(have been/will be)** applied for.

Federal funds will **NOT** be used for this project.

An environmental analysis describing these effects has been prepared as prescribed by Section 102(2)(C) of the National Environmental Policy Act of 1969, as amended, and is enclosed.

The project **(will/will not)** result in displacements or relocations (residences, businesses, people) and **(will/will not)** affect minority or low-income populations under Environmental Justice requirements. Also enclosed is the water quality certificate issued by \_\_\_\_\_ pursuant to P.L. 92-500. This FEIS was filed with EPA on \_\_\_\_\_. A copy of the Record of Decision is enclosed.

Legal authority for the bridge is found in the General Bridge Act of 1946, as amended. The laws of the State of \_\_\_\_\_ do not require us to obtain a state permit for the work. **(Or enclose the state permits.)**

This bridge will replace the existing \_\_\_\_\_ Bridge, mile **(miles above the mouth of the waterway)**, at **(city, state)**, which will be removed when the new bridge is completed. **(if applicable)**. All parts of the existing bridge will be completely removed from the waterway (or submit cutoff elevations for piers, abutments, etc. for approval).

Approximately \_\_\_\_\_ cubic yards of material will be excavated and \_\_\_\_\_ cubic yards of fill will be placed below the 100-year flood contours. (Do not include concrete as fill). A list of names and address of property owners adjacent of the proposed bridge and its approaches is enclosed.

There are no wildlife waterfowl refuges, recreation areas, public parts or historic sites in the vicinity of or in the way of the bridge or its approaches.

Sincerely,

- Enclosures:
- (1) Original and three copies of the map, vicinity and plans of the bridge
  - (2) Environmental Analysis (or two copies of FHWA Final EIS, FONSI, or CE determination) as appropriate
  - (3) Authorization for applicant to make application
  - (4) Evidence of ownership of existing bridge
  - (5) Water Quality Certification under 33 U.S.C. 1251 (or copy of letter requesting it)
  - (6) List of adjacent property owners

## APPENDIX C BRIDGE PERMIT APPLICATION CHECKLISTS

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### Enclosures to Application Form (as applicable)

- Letter authorizing agent to act in applicant's behalf
- Letter authorizing modification or removal of another's bridge
- State License to construct the proposed bridge
- Extract from corporation's charter
- Proof of ownership of the land where the proposed bridge will be located
- Extracts of motions from meetings authorizing construction of the proposed bridge
- Water Quality Certificate
- Environmental documentation, including the following items, if applicable:
  - Alternatives
  - Wetlands
    - Acreage of wetlands impacted and types of vegetation affected
  - Floodplain
  - Threatened and Endangered Species
  - Water Quality
  - Wild and Scenic Rivers
  - Prime and Unique Farmland
  - Clean Air
  - Noise Levels
  - Residential or Business Displacement
    - Impact on minority and low-income populations

- Environmental Justice
- Indian Tribal Governments
- Migratory Birds
- Other Federal, state, and local permits
- Fendering system description
- Extent of removal of existing bridge, if applicable
- Names and addresses of adjacent property owners within ½ mile radius to the proposed bridge site

### **Drawings**

- Original and three copies of the vicinity map and plans

### **Location map**

#### **Show the following items in your location map:**

- Location of the existing bridge
- Graphic bar scale
- North arrow
- Direction of stream flow using an arrow
- Towns in the project vicinity

### **Plan View**

#### **Show the following items in your plan view drawings:**

- Properties adjacent to the proposed bridge and identify respective owners
- Length and width of bridge, in **U.S. linear feet** (proposed and, as appropriate, existing bridge)
- Fendering system
- Banks of the waterway

- Navigation channel limits (dimensions)
- Structures immediately adjacent of the proposed bridge and their pier alignment in relation to the proposed bridge
- Graphic bar scale
- North arrow
- Horizontal clearance normal to the channel axis, in **U.S. linear feet**
- Channel axis

### **Elevation View**

#### **Show the following items in your elevation view drawings:**

- Location of the proposed navigational openings of the proposed bridge outlined in red
- Datum used to determine clearances
- Horizontal clearance normal to the channel, in **U.S. linear feet**
- Vertical clearance above the appropriate datum, in **U.S. linear feet**
- Fendering System:
  - Dimensions
  - Minimum clear horizontal distance normal to the channel axis between most restrictive parts of the fendering system
- Falsework/Temporary structures:
  - Minimum navigational clearances
- 100-Year flood elevation
- Elevation of the waterway bottom
- Amount of fill below mean high water
- Graphic bar scale

## **Title Blocks**

**Show the following items in the title blocks located in the lower right-hand corner on all of your drawings:**

- Applicant/Agent and Owner
- Waterway name
- Mile point of bridge location, **in miles**
- City, County and State
- Date of Plans
- Sheet number of total number of sheets in set

## **Applications for Extensions of Time**

- Description of remaining construction
- Status of the construction work
  - State why the project was not completed on time
  - State why an extension is needed
- Percentage of project completed to date
- Projected completion date
- Water Quality Certificate
- Environmental documentation
  - For Federal Aid projects: any impact statements, supplemental studies, FONSI, reevaluations, etc. required by the lead agency.
  - For Federal Aid projects: updated environmental assessment

## APPENDIX D BRIDGE PERMIT PROCESSING PROCEDURES

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1. Pre-application meeting and consultation
2. Receipt of the application by the Coast Guard
3. Review Process
  - a. Within 30 days of receipt of the application, Commander (dwb), Eighth Coast Guard District sends letter to applicant requesting any additional information, if required.
  - b. When application is complete, Commander (dwb), Eighth Coast Guard District issues public notice, coordination letters/Local Notice to Mariners.
  - c. Public Notice/Coordination Letters/Local Notice to Mariners.
  - d. Review of Comments
    - 1) Applicant provided opportunity to respond to comments.
    - 2) Commander (dwb), Eighth Coast Guard District holds scoping/coordination meetings, public hearings, if necessary.
  - e. Coast Guard Findings and Recommendations
    - 1) Navigability documentation
    - 2) Environmental Documentation
      - a) Alternatives
      - b) Wetlands
      - c) Floodplain
      - d) Water Quality Certification
      - e) Threatened and Endangered Species
      - f) Wild and Scenic Rivers
      - g) Prime and Unique Farmland
      - h) Clean Air

- i) Noise Levels
  - j) Residential or Business Displacement
  - k) Environmental Justice
  - l) Civil Justice Reform
  - m) Indian Tribal Governments
  - n) Migratory Birds
4. Final Coast Guard Agency Action
- a. Coast Guard District action
    - 1) Evaluation/Findings of Fact
    - 2) Recommendation to issue or deny permit
    - 3) Permit issuance or denial, only in certain areas
  - b. Coast Guard Headquarters final agency action
    - 1) Review and evaluation
    - 2) Permit issuance or denial

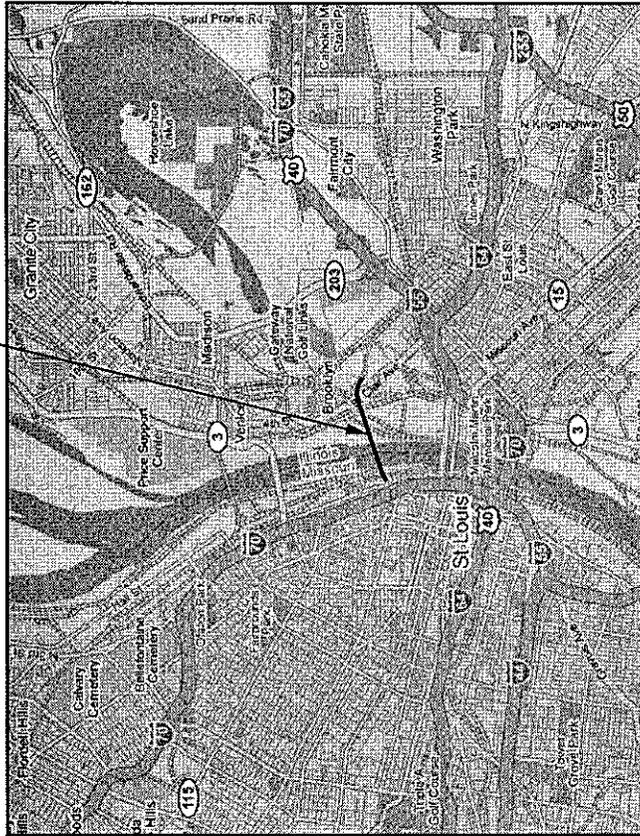
## **APPENDIX E SAMPLE PLANS SUBMITTED FOR APPROVAL**

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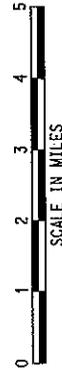
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The plans submitted with your bridge permit application become an official permanent part of the permit or permit amendment when issued. Therefore, the plans must be legible, accurate and contain the information needed for the Coast Guard to evaluate the bridge project and its location. If the plans are not legible enough or do not contain the required information they will be returned to the applicant for repair. The permit process will be halted until the plans are resubmitted. Plan requirements are stated in Appendix C. Remember that all drawings will be on letter-size sheets. As few sheets will be used as necessary to show clearly what is proposed. Examples follow.

Proposed Bridge

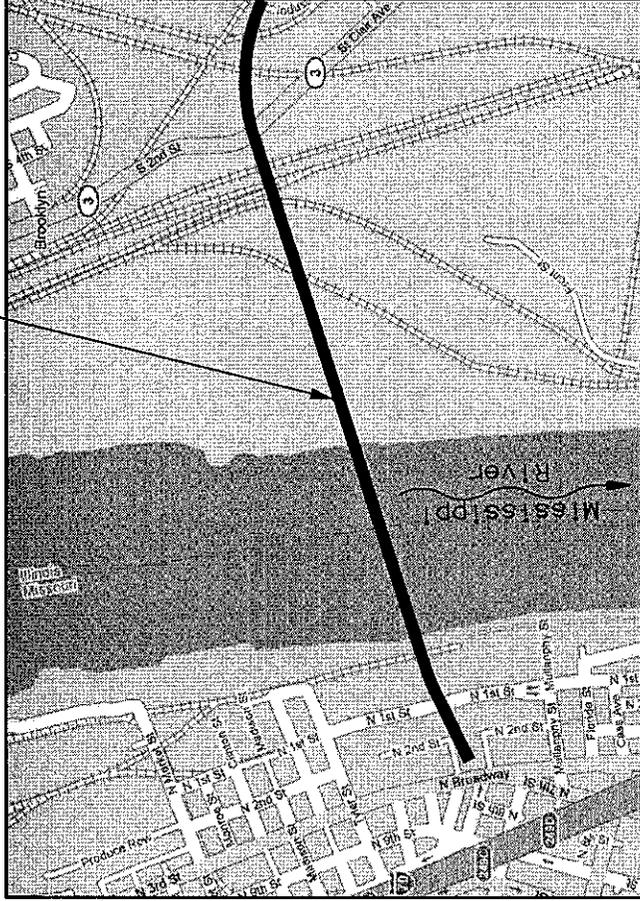


### VICINITY MAP



Notes: There are no wildlife or waterfowl refuges, recreation areas or public parks in the vicinity of the proposed bridge.  
Elevations shown on these plans are based on NAVD 88.

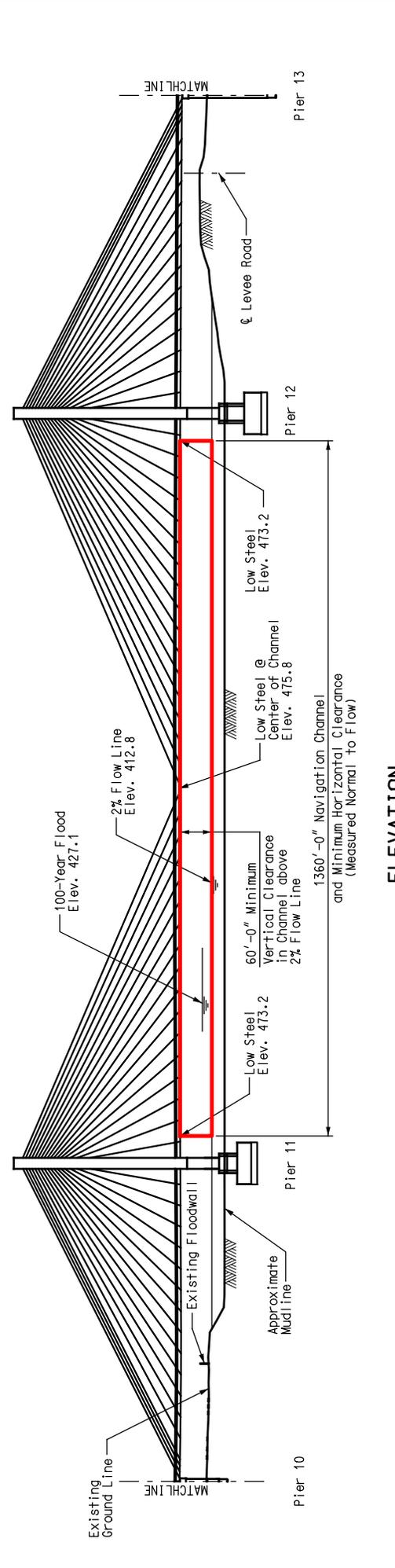
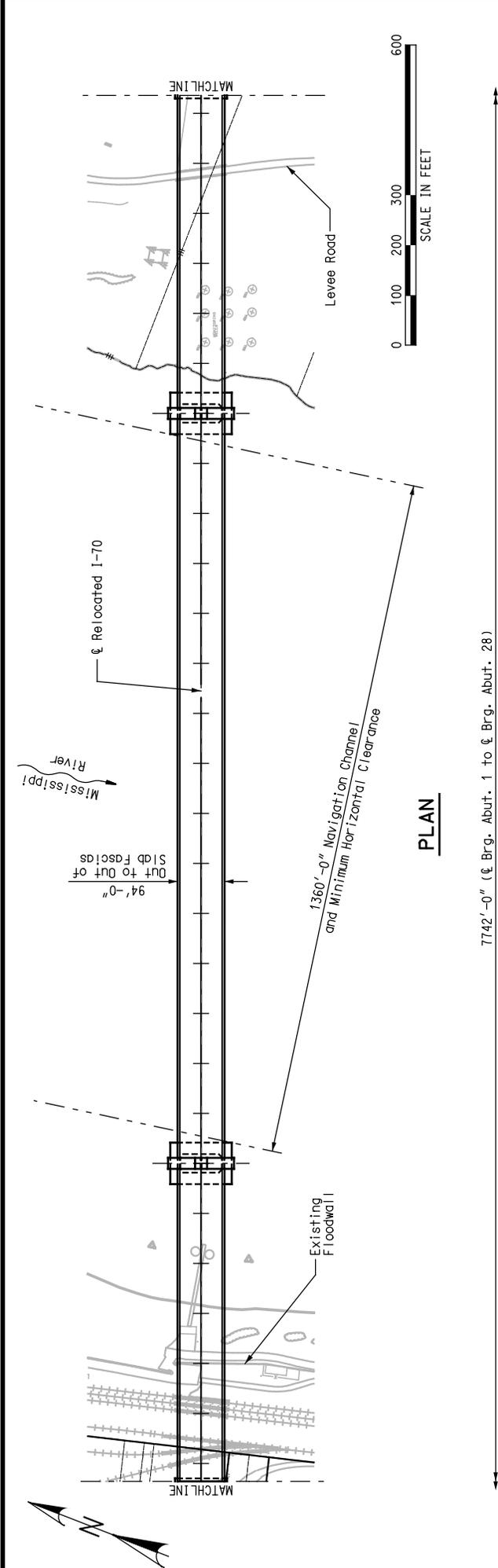
Proposed Bridge



### LOCATION MAP



PROPOSED I-70 MISSISSIPPI RIVER BRIDGE  
INTERSTATE 70 OVER UPPER MISSISSIPPI RIVER, MILE 181.2  
AT ST. LOUIS, MISSOURI (ST. LOUIS CITY)  
AND EAST ST. LOUIS, ILLINOIS (ST. CLAIR COUNTY)  
APPLICATION BY  
MISSOURI DEPARTMENT OF TRANSPORTATION  
SHEET 1 OF 5, REVISION 1  
APRIL 2009

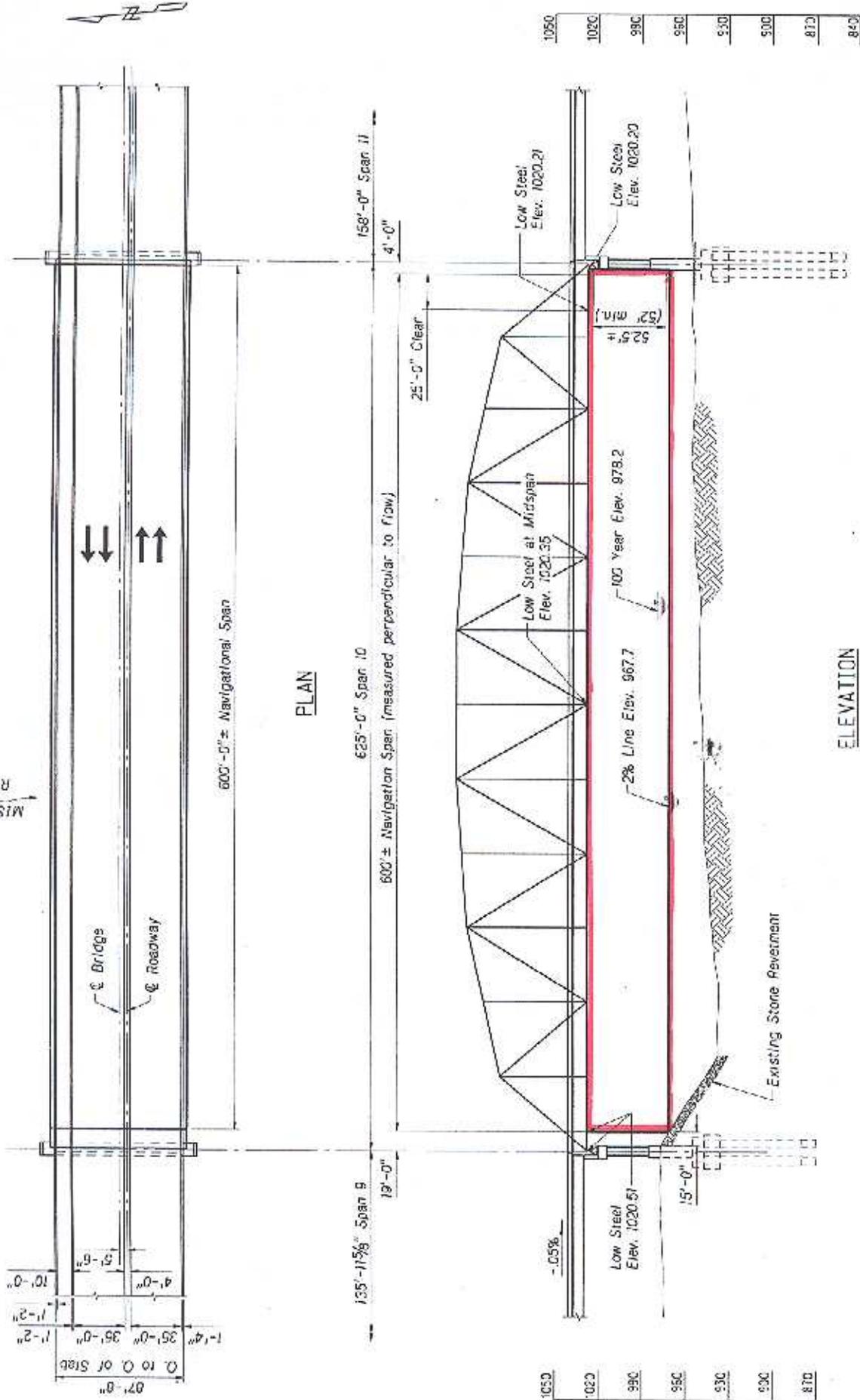


PROPOSED I-70 MISSISSIPPI RIVER BRIDGE  
 INTERSTATE 70 OVER UPPER MISSISSIPPI RIVER, MILE 181.2  
 AT ST. LOUIS, MISSOURI (ST. LOUIS CITY)  
 AND EAST ST. LOUIS, ILLINOIS (ST. CLAIR COUNTY)  
 APPLICATION BY  
 MISSOURI DEPARTMENT OF TRANSPORTATION

SHEET 3 OF 5, REVISION 1

APRIL 2009

MISSOURI RIVER



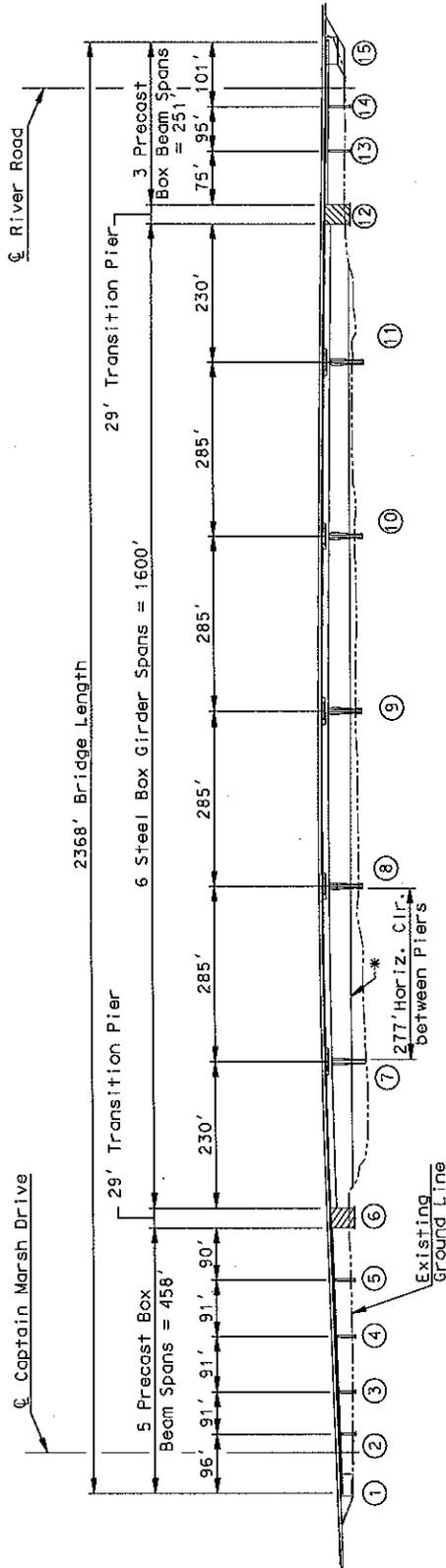
PLAN

ELEVATION

Notes: Elevations shown on these drawings are referenced to 1929 NGVD.



SOUTH OMAHA VETERANS MEMORIAL BRIDGE REPLACEMENT  
 U.S. ROUTE 275  
 OVER MISSOURI RIVER, MILE 612.2  
 AT OMAHA, NEBRASKA AND COUNCIL BLUFFS, IOWA  
 DOUGLAS COUNTY, NEBRASKA TO POTTAWATTAMIE COUNTY, IOWA



\* 100-Year Flood Elevation = 1637.6

**ELEVATION**  
Steel Alternate



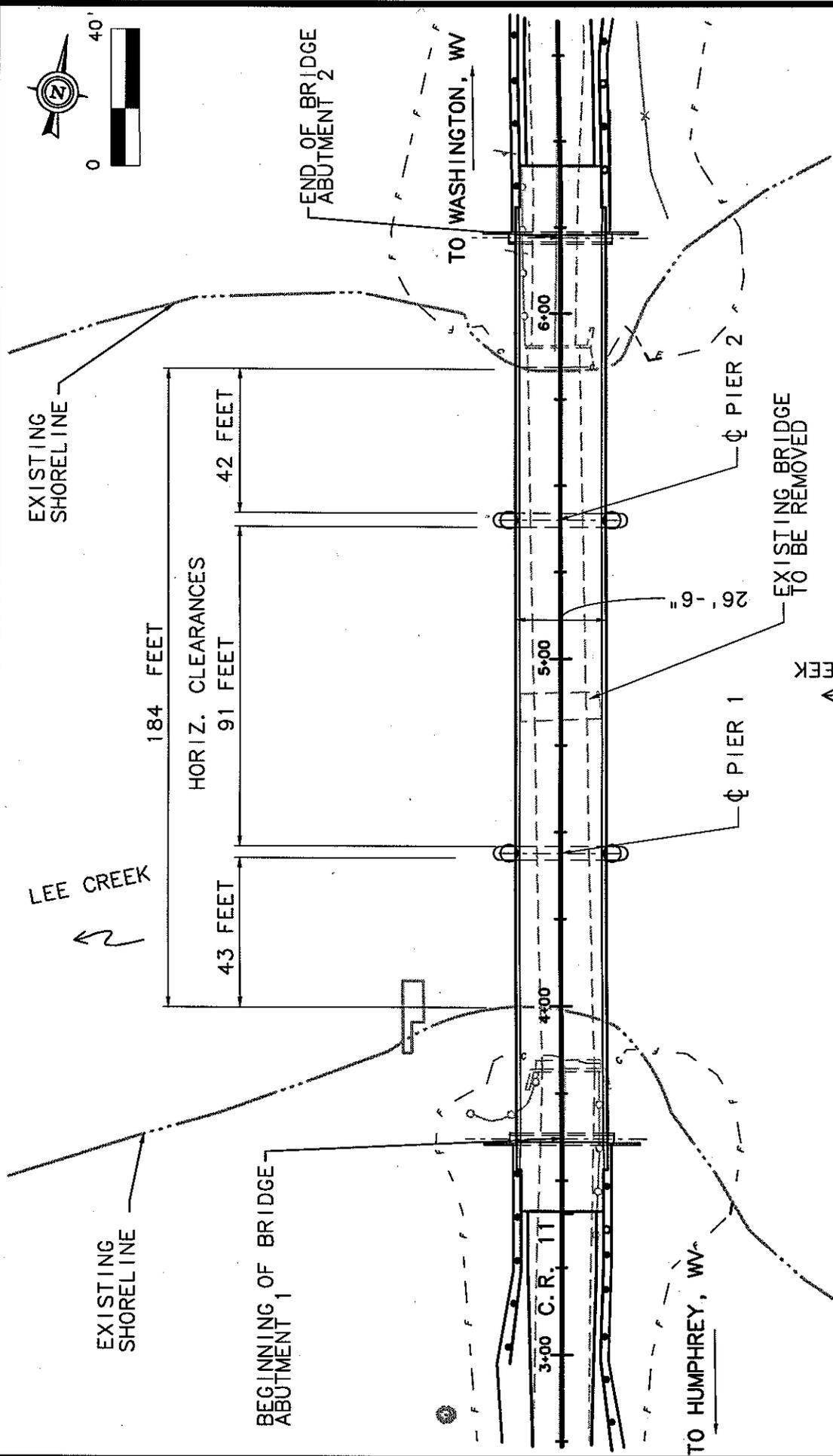
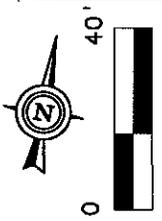
NOTES:  
Elevations are above Mean Sea Level.

NORTH DAKOTA  
DEPARTMENT OF TRANSPORTATION

MEMORIAL BRIDGE REPLACEMENT  
MISSOURI RIVER,  
M.P. 1314.2  
BISMARCK & MANDAN  
BURLEIGH & MORTON COUNTIES  
STATE OF NORTH DAKOTA

APPLICATION BY:  
NORTH DAKOTA  
DEPARTMENT OF TRANSPORTATION  
MEMORIAL HIGHWAY

SHEET 5 OF 6 DATE: MAY 2005



WEST VIRGINIA  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
BRIDGE NO. 6429  
ROBIN HOOD ROAD BRIDGE REPLACEMENT  
OVER LEE CREEK (Mi. Pt. 0.3)  
NEAR BELLEVILLE, WOOD COUNTY,  
WEST VIRGINIA

OCT. 17, 2007 SHEET 2 OF 3

## APPENDIX F GUIDE CLEARANCES

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Guide clearances for bridges over certain waterways have been formally established with publication in Federal Register of May 25, 1984 of the adoption of guide clearances for bridges across navigable waters of the United States.

Guide clearances are defined as the minimum acceptable clearances for bridges located over a waterway or a reach of a waterway. It is emphasized that the guide clearances are the minimum acceptable for bridges in ideal locations for navigation. Proposed bridges to be located in bends, crossings or near obstructions such as docks could require much greater clearances.

The following is the list of minimum vertical guide clearances established for bridges over waterways in this District. Horizontal clearance is a function of the channel pier locations, and will be determined by the Coast Guard after a site inspection has been completed.

### 1. ALLEGHENY RIVER

- |                                      |  |
|--------------------------------------|--|
| a. Emsworth Pool                     | 40' above level pool created by moveable crest of Emsworth Dam |
| b. Dam 2 to East Brady, Pennsylvania | 47' above level pool created by fixed crest dams               |

### 2. MCCLELLAN-KERR ARKANSAS RIVER NAVIGATION SYSTEM

- |   |                       |
|---|-----------------------|
| a. White River                          |                       |
| Mouth to Mile 9.8                       | 52' above 2% flowline |
| b. Arkansas Post Canal                  | 52' above 2% flowline |
| c. Arkansas River                       | 52' above 2% flowline |
| Mile 9.8 to mouth of Verdigris River    |                       |
| d. Verdigris River to Catoosa, Oklahoma | 52' above 2% flowline |

NOTE: The 2 percent flowline is defined as the water surface elevation that is not exceeded more than 2 percent of the time.

- |                                    |                       |
|------------------------------------|-----------------------|
| 3. <u>BLACK AND OUACHITA RIVER</u> | 52' above 2% flowline |
| To Camden, Arkansas                |                       |

4. CLINCH RIVER

- a. Mouth to Mile 48.0 42' above normal pool or 32' above above regulated high water, whichever is greater
- b. Mile 48.0 to Mile 67.0 35' above normal pool

5. CUMBERLAND RIVER

- a. Barkley Reservoir
  - 1. Main Stream 57' above normal summer pool or 40' above maximum regulated flood, whichever is greater
  - 2. Major Tributaries 42' above normal summer pool or 25' above maximum regulated flood, whichever is greater
- b. Cheatham Reservoir
  - 1. Main Stream 57' above normal summer pool or 40' above maximum regulated flood, whichever is greater
  - 2. Major Tributaries 42' above normal summer pool or 25' above maximum regulated flood, whichever is greater
- c. Old Hickory Reservoir
  - 1. Main Stream 57' above normal summer pool or 40' above maximum regulated flood, whichever is greater
  - 2. Major Tributaries 42' above normal summer pool or 25' above maximum regulated flood, whichever is greater
- d. Cordell Hull Reservoir
  - 1. Main Stream 57' above normal summer power discharge water surface or 40' above maximum regulated flood, whichever is greater

- |  |  |
|--|--|
| 2. Major Tributaries                   | 42' above normal water surface power discharge on Cumberland River or 25' above above maximum regulated flood, whichever is greater                          |
| <br>                                   |  |
| 6. <u>EMORY RIVER</u>                  |  |
| a. Mouth to Mile 12.1                  | 42' above normal pool or 32' above regulated high water, whichever is greater  |
| b. Mile 12.1 to Mile 13.0              | 35' above normal pool  |
| 7. <u>HIWASSEE RIVER</u>               | 42' above normal pool or 32' above regulated high water, whichever is greater  |
| 8. <u>ILLINOIS WATERWAY</u>            |  |
| a. Mouth to Upper Limits of            | 55' above 2% flowline or 63' above normal pool Peoria, Illinois, Mile 180.0 stage (8000 c.f.s. flow), whichever is greater                                   |
| b. Peoria, Illinois to Starved Rock    | 50' above 2% flowline or 56' above normal pool Mile 231.0 stage (8000 c.f.s. flow), whichever is greater   |
| c. Starved Rock to Joliet, Mile 286.0  | 47' above pool stage (8000 c.f.s. flow)  |
| d. Joliet to Lockport Lock, Mile 291.0 | 35' above computed high water  |
| 9. <u>J. PERCY PRIEST RESERVOIR</u>    |  |
| Main Stream                            | 40' above minimum power pool or 30' above top power and recreation pool or 15.5' above maximum flood or record, whichever is greater                         |
| 10. <u>KASKASKIA RIVER</u>             | 25' above a line joining the 2% elevation at New Athens, Illinois and an elevation at the mouth of the waterway equivalent to 38 feet on the St. Louis gauge |

11. LITTLE TENNESSEE RIVER
- a. Mouth to Mile 18.5 42' above normal pool or 32' above regulated high water, whichever is greater
  - b. Mile 18.5 to Mile 29.0 35' above normal pool
12. LOWER MISSISSIPPI RIVER
- Vicksburg to Cairo 55' above maximum river level
13. MINNESOTA RIVER
- a. Mouth to Lyndale Avenue Bridge, I-35, Mile 10.8 55' above normal pool
  - b. Lyndale Avenue Bridge to Chaska, Minnesota 30.8' above 1881 high water
14. MISSOURI RIVER
- a. Mouth to Gavins Pt. Dam 52' above 2% flowline
  - b. Gavins Pt. Dam to Montana State Line 30' above bridge reference plane
15. MONONGAHELA RIVER 42.5' above normal pool stage
16. OHIO RIVER 55' above 2% flowline or 69' above normal pool (average June flow), whichever is greater
17. RED RIVER to Shreveport, Louisiana 52' above 2% flowline
18. SANS BOIS CREEK 30' above 2% flowline
19. ST. CROIX RIVER to Stillwater, Minnesota 52' above 2% flowline or 60' above normal pool, whichever is greater
20. TELLICO RIVER 35' above normal pool
21. TENNESSEE RIVER 57' above normal pool or 47' above high water regulated for navigation, whichever is greater

- |   |   |
|---|---|
| 22. <u>TENSAS RIVER</u> to Mile 81.0                              | 50' above maximum high water prior to June 1931   |
| 23. <u>TENNESSEE-TOMBIGBEE</u>                                    | 52' above normal pool or 40' above 1% flowline, whichever is greater  |
| 24. <u>UPPER MISSISSIPPI RIVER</u>                                |   |
| a. Mouth to Illinois River, Mile 217.5                            | 60' above 2% flowline   |
| b. Mouth Illinois River to Burlington Northern Bridge, Mile 853.0 | 52' above 2% flowline or 60' above normal pool, whichever is greater  |
| c. Mile 853.0 to Mile 857.6                                       | 21.4' above river stage of 40,000 c.f.s.  |
| 25. <u>WHITE RIVER</u>  |   |
| Mile 0.0 to Mile 295.7  | 52' above 2% flowline   |
| 26. <u>YAZOO RIVER</u> to Greenwood,                              | 43' above project flowline. Project flowline data Mississippi revised as a result of the 1973 flood: Redwood (Hwy 61) = 113.4 m.s.l., Belzone (Hwy 12) = 116.2 m.s.l. |