1. WATERWAY PASSAGE AND SIGNING (Revised 2-23-10)

General. Provide and sign at all times during the bridge work a passable waterway channel for waterway users.

Construction Requirements.

Construct falsework and work bridges to provide a minimum 20 ft-wide by 6 ft-high waterway opening. Construct the falsework opening and work bridge piers parallel to the stream flow. Review the site with the Project Manager to determine the best placement of the opening considering channel depth and current. Establish the vertical clearance using hydrological data for the month having the highest flows that the falsework will be in place. Monitor the six foot clearance daily and immediately remove the structure over the 20 ft opening if rising water reduces the clearance to less than six feet.

Submit a work barge plan to the Project Manager for approval five days prior to beginning barge work. Detail in the plan the barge mooring, barge dimensions, operations to be performed from the barge, and the period of use including the estimated calendar dates. Do not permit the barge or its moorings to encroach into the channel marked by the buoys as described in this provision.

Signing. Sign the waterway for the bridge work as follows:

Install "6-FOOT MAXIMUM CLEARANCE AT       BRIDGE" signs at the following waterway access sites:

|  |  |  |  |
| --- | --- | --- | --- |
| Site(s) | Controlling Entity | Town | Phone |
|       |       |       |       |

Install 5 ½ ft x 3 ft "NAVIGATION RESTRICTION AHEAD" signs on both banks at approximately 500 feet and 1500 feet upstream of the structure work. Sign the downstream side if waterway traffic warrants signing. Attach two Type C Steady burn lights to the top corners of each sign. Place the signs at a point above the high water level, or as directed, facing oncoming waterway users.

Contact the MDT Traffic Section, (406) 444-0463 (Butte, Billings or Glendive) (406) 444-6222 (Great Falls or Missoula) for sign design calculations. (USE ONLY THE PHONE No., CORRESPONDING TO PROJECT LOCATION)

Channel Marker Buoys. Furnish and install hanging can or anchor buoys to delineate a channel to the falsework opening. Use buoys having the hazard-warning symbol with the "HAZARD AREA" message.

For downstream river traffic only, space the buoys on 25 ft centers starting from the falsework and/or bridge to at least 100 feet upstream, measured normal from the upstream structure face.

For downstream and upstream river traffic, space the buoys on 25 ft centers starting from the falsework and/or bridge to at least 250 feet upstream and downstream, measured normal from the structure faces.

Follow the buoy manufacturer's installation recommendations. Consult with the Project Manager and determine a mutually agreeable date for removing and installing buoys due to river icing. Use buoys and channel markers following the U.S. Aids to Navigation (ATON) system. Contact the U.S. Coast Guard District Aids to Navigation office at (206) 220 – 7270.

Hanging Can Buoys. Use an aerial cable to suspend the hanging can buoys approximately two feet from the water's surface.

Flare the cables out from both sides of the falsework/bridge opening to both shorelines.

Surface Buoys. Lay and anchor the cables to the river/stream bottom for attaching the buoy mooring lines. Ensure the anchor cable is ballasted to prevent it from rising from the river/stream bottom. Flare the cable out from both sides of the falsework/bridge opening to both shorelines.

Falsework and Bridge Opening Lighting. Install Type C Steady burn lights, spaced on maximum 3 ft centers, on the top and sides of the false work opening or bridge opening to be used by waterway users.

Public Notice. Submit at the preconstruction conference, one copy of the draft public notice for the Project Manager's approval. Once approved, place the notice in the nearest town newspaper and forward copies to local radio station(s) four weeks and two weeks before work restricts the waterway. Include the following in the notice: name of waterway and location of the bridge work, the dimensions of the waterway opening, the time period the restricted waterway opening is anticipated to be in place, and the phone number to call for additional information.

Method of Measurement and Basis of Payment. Waterway passage and signing is not measured for payment. Include the cost of this work in other contract items.