

**NEW HAMPSHIRE DEPARTMENT OF
TRANSPORTATION
AND
MAINE DEPARTMENT OF TRANSPORTATION
REQUEST FOR PROPOSAL (RFP)**

DESIGN-BUILD SERVICES FOR

**Memorial Bridge Replacement Project
PORTSMOUTH, NH – KITTERY, MAINE**

13678F, A000(911)

Volume II – Book 3

Special Provisions



NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION

7 Hazen Drive
Concord, NH 03302
Mailing Address: P.O. Box 483
Concord, NH 03302-0483
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ADDENDUM NO. 1

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SPECIAL PROVISION

SECTION 801.3 – COUNTERWEIGHT AND OPERATING ROPES

Description

1.1 Wire Rope and Sockets

1.1.1 Wire rope and sockets shall conform to the requirements of Section 6.8.3.3 of the AASHTO specifications, as well as AASHTO M 277-06, “Standard Specification for Wire Rope and Sockets for Movable Bridges”. Wire ropes shall be uncoated and shall not be galvanized. Every possible effort shall be made to fabricate wire ropes of uniform physical properties and all similar ropes shall be cut from a minimum number of reels.

1.1.2 Counterweight ropes shall conform to the requirements of the most current AASHTO LRFD Movable Highway Bridge Design Specifications.

1.1.3 Operating ropes shall conform to the requirements of the most current AASHTO LRFD Movable Highway Bridge Design Specifications.

1.1.4 Rope and rope assemblies shall be tested in accordance with the procedure prescribed in AASHTO 6.8.3.3 and M 277.

1.1.5 Rope sockets shall be steel castings conforming to ASTM A148 Standard Specification for Steel Castings, High Strength, for Structural Purposes, and shall be of the Grade required. During testing of wire rope assemblies, socket performance shall be as specified in AASHTO 6.8.3.3.

1.1.6 After erection of counterweight suspending ropes, the free ends shall be temporarily held in position by approved means until lift span is in place and ready to receive the ropes.

1.2 Wire Ropes

1.2.1 When erecting counterweight rope and operating wire ropes, care shall be taken to see that each rope has no twist, but that it has exactly the same number of turns and that the strands and sockets occupy exactly the same relation to each other, which existed when the rope was measured. Twisted counterweight ropes are not acceptable and shall be cause for removal and reinstallation of the ropes.

1.2.2 It is important to note that the wire ropes will be pre-stretched by the manufacturer prior to placing the completed rope on the spool. Once the rope has been placed on the spool, the rope will relax and shorten. The amount of relaxation and shrinking varies depending on the length of rope and the time the rope is kept on the spool. This information is provided to advise the Design-Builder that it may be necessary to either pre-stretch the ropes in the field to a lesser degree or to assure that the counterweight jacking system has sufficient range in order to ensure the counterweight suspending ropes can be properly attached to the lift span. It may also be necessary to readjust the operating ropes after initial installation and adjustment. All shall be done at no additional cost to the Owner.

1.2.3 Counterweight ropes shall be adjusted such that the tension in each rope is within 1,500 lbs., or approximately 5%, of the average tension of the group of ropes in that corner of the lift span. The anticipated average tension in each counterweight rope is approximately 45,000 lbs., which could vary somewhat due to variation in the as-built weight of the span, and variations between quadrants. The stripe painted on the rope in the shop shall be straight after the rope is erected. The tension in the operating ropes shall be equal at all four corners of the lift span. The anticipated tension in each operating rope is approximately 23,000 lbs. per uphaul rope when the span is held by the brakes just above the seated position, and approximately 23,000 lbs. per downhaul rope when the span is held by the brakes just below the full open position, based solely on the unbalance of the span with respect to the counterweight in each position. The slack side of the operating rope shall have only slight tension, in each case.

1.2.4 After the lift span is in operating condition, the Design-Builder shall properly clean all ropes of foreign material and shall furnish and apply, in an approved manner, and when weather conditions are suitably dry and warm, one coat of Wire Rope Dressing. Rope dressing shall be as recommended by Wire Rope manufacturer.