



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

Paul R. LePage
GOVERNOR

David Bernhardt
COMMISSIONER

February 27, 2012
Subject: **Richmond**
Federal Project No: 019264.00
State PIN: 019264.00
Amendment No. 2

Dear Sir/Ms:

The following questions have been received:

Question: Are methods other than the one mentioned in the Specs for cofferdam construction allowed for this project? For Example, placing sand bags across the stream bed to prevent flow through the site.

Response: Sandbags can be used, if so chosen by the Contractor, the following minimums must be met:

Cofferdams constructed of various materials (e.g. sheet pile, sandbag, industrial sandbag, inflatable dam) will be placed to keep water out of the work area by blocking flow both upstream and downstream. This isolation technique has the added benefit of keeping all sediment released by construction in the dry work area where it can be removed before stream flow is restored.

Sandbag cofferdams

- a. The upstream cofferdam will be installed first. Heavy duty plastic sheeting is laid along the width of the stream when practicable. The sand bags are then placed on the plastic up to a height somewhat higher than the current level of the stream, working from the stream bank to the center.
- b. The excess plastic will then be folded over the dam in the upstream direction and another layer of sand bags will be laid on the plastic to help seal the dam from infiltration. The plastic will be extended along the stream bottom as far upstream as practicable. Fish screen that meet criteria specified by the National Marine Fisheries Service (2008) will be installed on the intake hose ends to prevent injury to fish and other aquatic organisms within the work area. Square screen face openings shall not exceed 3/32" on a diagonal. The number and size of pumps used may vary depending on the water level present when the work is being conducted.



The intake screen(s) shall be sufficient in size for the approach velocity at the intakes to be not greater than 0.20 ft/sec in order to minimize juvenile fish/screen contact.

c. The downstream cofferdam will then be installed. This second dam is a safeguard against a failure of the upstream dam. Most cofferdams leak somewhat, so a pump is placed within the work area to catch accumulating water, which is then pumped into the “Dirty water” Treatment System (described below).

Stream Diversion

When cofferdams block the entire channel, the stream will need to be continually diverted around the work area. If there is a large volume of water in the stream, a culvert may be placed adjacent to the existing structure to carry the stream flow during construction. Generally, however, stream flow is diverted around the work area using the following procedure:

a. The intake hose will be placed at the upstream end of the culvert, just upstream of the cofferdam. In order to minimize impact on the streambed, the hose end will be placed in a bucket and/or the stream bottom will be lined with geotextile fabric.

b. The gasoline diversion pumps will then be placed as far away from the stream as possible. The number and size of pumps used varies depending on the water level present when the work is being conducted.

c. The downstream discharge point within the stream channel will be protected from high velocity scour by outleting on to ledge, large boulder, or if needed, a geotextile fabric.

Install “Dirty Water” Treatment System

After the cofferdams have been established, it will be necessary to dewater the work area. The water from within the cofferdam will be pumped into a sediment basin for filtration.

a. The system will be installed according to MaineDOT’s BMP Manual.

b. The basin will either be comprised of hay bales or “dirt bags”. Sometimes erosion control fabric is placed under the hay bale filter to catch sediment. These sediments will be disposed of away from the stream in a manner that they cannot erode back into the stream.

c. The sedimentation basin will be located close to the project location with adequate vegetation between it and the stream to act as a filter.

d. The “dirty water” pump(s) will then be started in the downstream scour pool. The work area will then be pumped dry.

e. If there is leakage around the cofferdam, or upwelling in the work area, pockets will be excavated in the work area to collect the water. This water will be pumped into the “dirty water” system for treatment, prior to its release back into the stream.

Closeout Procedures

After all work within the dam has been completed the cofferdam can be removed and stream flow can be restored through the structure.

- a. The diversion pump system will be stopped and the upstream coffer dam will slowly be breached. The first flush of dirty water will be captured by the downstream “dirty water” pump, which will then pump the water into the sediment treatment system.
- b. When the water behind the remaining intact cofferdam is clean, that dam will be breached as well.
- c. The remainder of the upstream cofferdam and the diversion pump system will then be removed.
- d. All disturbed areas will be stabilized, and all permanent erosion control BMPs will be installed.
- e. Sandbag cofferdams will be removed by hand, if they are small, or by an excavator working from the stream banks, if they are the large industrial-sized sandbags.

Once the pumps are running and the work area is dewatered the culvert replacement can commence. At this point, the crews are working in the dry and there is no sediment release into the stream. All pumps, hoses, dams, and the sediment basin are monitored closely and maintained throughout construction. The old culvert will be removed and the new one replaced in the dry. When the culvert and rip rap installation is complete, all headwalls, disturbed areas, and permanent drainage ditches are stabilized with final treatments, utilizing temporary erosion control BMPs as necessary.

Question: Will the movement of utility poles and wiring be done in a way to help facilitate placing of the box culvert? Due to the PUC law that work cannot be performed within 10’ of a power line, this poses a challenge in the placing and installation of the box culvert sections if these lines are to remain live and in place during that phase of construction.

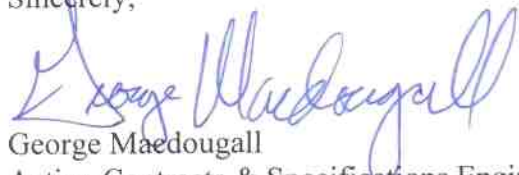
Response: The utility pole relocation will consist of a taller pole in a new offset and removing two existing poles, this should obtain the necessary clearances needed to place the box.

Question: What are the limits for pay item 0170 – 606.754, Widen Shoulder for Guardrail 350 flared terminal? Are we to include all fill, aggregate base, and paving under this pay item?

Response: Please reference section 606.09 Basis of Payment in the Standard Specifications book.

Consider these changes and information prior to submitting your bid on February 29, 2012.

Sincerely,



George Maedougall
Acting Contracts & Specifications Engineer