

55.1 BRIDGE MAINTENANCE

55.1.1 GENERAL

Bridges include bridge structures, round culverts with diameter greater than 1500 mm, or elliptical culverts with capacity equal to or greater than that of a 1500 mm diameter round culvert. In addition, several smaller culverts (in the same watercourse) which together provide capacity equal to or greater than that of a 1500 mm diameter round culvert may also be considered a "bridge".

For this specification, the term "Work Order" will include "Bridge Authorization".

In general, the current Specifications for Bridge Construction, Applicable Standard and Typical Bridge Drawings, and Bridge Materials Specifications will apply to the Work.

Generally, routine minor repair and maintenance of bridges will be of an amount no greater than \$ 100,000 per site, and will consist of but not be limited to the following:

55.1.1.1 Bridge Structures

joint repair (cover plates/seals)	resetting bearings
touch-up painting	backwall sheeting
corbel/cap replacement	wheelguard repair
subdeck replacement	temporary abutment and pier support
retrofit drain installations	concrete sealer application
repair of wing sheeting, piling	accident damage repair
repair/replacement of structural steel members	repair/replace stripdeck
deck patching (epoxy polymers, silica fume, etc.)	approach slab repairs
concrete patching	epoxy injections
galvanizing handrail	

55.1.1.2 Culverts

culvert strutting	bulkheads
culvert extensions	pressure grouting
reinforced concrete floor repair and installation	headwalls
shot-crete repairs	concrete collar repair and replacement
"partial" tunnel liners	

55.1.1.3 Waterway

drift removal
rip-rap replacement and installation (with associated geotextile fabric repair and installation)
minor headslope restoration

55.1.2 MATERIALS

Materials incorporated into the Work shall conform with the Bridge Materials Specifications, or be selected from the Alberta Transportation Recognized Product lists (paints, concrete sealers and patching materials, etc.) unless otherwise specified.

All waste materials shall be disposed of in a manner acceptable to the Engineer. Upon the request of the Engineer, the Contractor shall provide a written acceptance from the receiver of any disposed of materials.

55.1.3 PLANNING AND AWARDING WORK

55.1.3.1 Awarding Work

When the scope of the Work is identified, the Contractor shall submit a written quotation for the Work. Quotations will generally be requested on a unit price, lump sum basis, or on an hourly rate basis in accordance with the Extra Work Section of Specification 51.2, General (For Maintenance Work). For projects that involve work on more than one bridge site, the quotation shall detail the cost for each individual site.

If the quotation is acceptable the Engineer will issue a Work Order, usually with the following information and the Work may then commence in accordance with the specified terms and conditions.

- ! bridge file number job number (required for payment purposes)
- ! structure location
- ! structure type, including length, width, etc.
- ! environmental permits/licenses (if required)
- ! written instructions and sketches, any applicable work details describing the work to be done
- ! time to complete
- ! supplemental information, such as engineering drawings, standard drawings, approved material lists, etc.

If the quotation is initially unacceptable to the Engineer, the Contractor will be allowed the opportunity to justify his submission or explore innovations or scope changes. If at this stage, the quotation continues to be unacceptable to the Engineer, the quotation will be rejected and the Department will consider other alternatives for the completion of the Work, including contracting with others in accordance with

Specification 51.2, General (For Maintenance Work) regarding Contracting of Other Work.

During the progress of the Work, if it becomes apparent that the scope of Work or quantity of Work changes significantly, the Contractor shall immediately notify the Engineer who may:

- ! Direct the Contractor to continue with the Work at the existing unit prices,
- ! Negotiate new unit prices or a revised lump sum cost,
- ! Direct the Contractor to discontinue the Work and make the structure safe. The Work may then be completed by separate contract in accordance with Specification 51.2, General (For Maintenance Work).

55.1.3.2 Emergency Work

The Contractor will immediately advise the Engineer, or be immediately advised by the Engineer of urgent or emergency work such as:

- ! oversize load collisions
- ! overload damage
- ! hazards created by other types of accident damage
- ! loose or protruding deck joint plates
- ! severe deflection of culverts
- ! any item or condition on a bridge structure that presents a danger to the travelling public

and immediately take the appropriate action to protect the travelling public and/or make repairs in accordance with Specification 51.2, General (For Maintenance Work) regarding Emergency Situations.

55.1.3.3 Non-Emergency Work

The Engineer, in consultation with the Contractor, will program the non-emergency work, considering:

- ! weather constraints
- ! environmental constraints
- ! irrigation and flow constraints
- ! work volumes, types and lead times to permit the Contractor to plan the delivery of the Work in a cost-effective and efficient manner.

55.1.4 ACCEPTANCE SAMPLING AND TESTING

The Contractor is responsible for quality control on workmanship and materials incorporated into the Work, and shall, unless otherwise directed by the Engineer, perform quality assurance checks, inspections and acceptance of fabricated materials in accordance with:

- ! Specifications for Bridge Construction,
- ! Applicable Standard and Typical Bridge Drawings,
- ! Bridge Materials Specifications.

55.1.5 RESPONSE TIME AND TIME TO COMPLETE

For emergency situations, the response times shall be immediate. In all other cases, the Work shall be completed by the completion date shown on the Work Order.

A request for an extension to the completion date will be considered in situations where there is a delay in availability of the site, scheduling difficulties resulting from other Work being performed by the Contractor or where the scope of the Work is increased by the Engineer. Any request for extension shall be submitted to the Engineer in writing within 3 days of the start of the delay or of the commencement of the extra or additional work.

55.1.6 MEASUREMENT AND PAYMENT

The Contractor will complete all requested work records, such as:

- ! technical data (i.e. concrete strength reports, pile data, surveys/profiles, etc.)
- ! pictures, sketches, or drawings
- ! bridge inspection reports
- ! as-constructed drawings
- ! diaries (when required)

Payment shall be on the basis shown on the Work Order for all the completed Work therein described. Where no specific provision is made for progress payments, payment shall be made only upon the Engineer's acceptance of the Work.

55.1.7 WARRANTY

The warranty period shall be as shown on the Work Order and shall commence on the date of the final acceptance of the Work as determined by the Engineer.