

SECTION 1 - GENERAL

1.1 Scope of Work

The work of this contract consists of the supply of all labour, services, equipment and materials, except as may be otherwise specified herein, Eastend Dam - Contract 16 – Riprap Supply and Stockpiling. Eastend Dam is located on NW 25-06-22W3M approximately 3 km west of the community of Eastend, SK.

The work shall include but shall not necessarily be limited to:

1. The locating, developing, operating and reclamation of a source of boulder materials to produce riprap materials of the specified quality and volume.
2. The sorting of the harvested rock by a grizzly or similar operation to produce the specified size range of riprap.
3. The loading, transporting and unloading of all riprap.
4. The construction of stockpiles of riprap at Eastend Dam.

1.2 Approximate Quantities

The following are the main items of work and the approximate quantities of each:

- | | |
|----------------------------------|--------------------|
| 1. Mobilization & Demobilization | 1 lump sum |
| 2. Supply Riprap Zone 4A | 750 m ³ |

1.3 Drawings

1.3.1 Drawings Supplied by Canada

The following drawings are made a part of these specifications:

- 208939 Eastend Irrigation Project – Contract 16: Riprap Supply and Stockpiling, Vicinity Map and Site Plan.

This drawing shows the approximate dimensions and general arrangement of the principal features of the work, and is in sufficient detail to serve as a basis for the preparation of bids for establishing unit prices. Additional drawings showing further details or alterations may be furnished to the Contractor during the progress of the work, where determined necessary by the Departmental Representative.

1.4 Completion of the Work

The Contractor shall complete the supply and stockpiling of rocks at Eastend Dam by March 1, 2015.

1.5 Construction Program

The capacity of the Contractor's construction equipment, sequence of operations, and methods of operation shall be such as to ensure the completion of the work within the period of time specified in Section 1.4.

Within seven (7) calendar days after the Contractor has been advised in writing of the acceptance of his tender, he shall furnish the Engineer with his proposed program of operations. This program shall include a schedule in the form of a program chart of suitable scale to indicate approximately the percentage of work scheduled for completion at any time. Subsequently, when proposed changes are envisioned, the Contractor shall immediately advise the Departmental Representative of these changes in his construction program. If, in the opinion of the Departmental Representative, any construction program as submitted is inadequate to secure the completion of the work within the specified period of time, or is otherwise not in accordance with the specifications, or if the work is not being adequately or properly prosecuted in any respect, the Departmental Representative shall have the right to require the Contractor to submit and adhere to a new construction program providing for proper and timely completion of the work, and the Contractor shall be entitled to no claim for additional compensation on account of such requirements.

1.6 Materials Furnished by Canada

Canada will furnish to the Contractor, without charge, the following items for the prosecution of the work:

1. Site areas within the boundaries of the land shown on the drawings as being owned or controlled by Canada which, in the opinion of the Departmental Representative, are necessary for the performance of the work.

1.7 Materials Furnished by the Contractor

The Contractor shall be required to furnish all materials and supplies necessary for the satisfactory completion of the contract, except such items as are specified in Section 1.6. The costs of hauling, storing, processing, handling and caring for all materials and supplies furnished by the Contractor shall be included in the prices bid in the Price Table for the work for which the materials and hauling are required.

Materials used in the work shall meet the requirements of the specifications, or where not detailed in the specifications, shall be to the satisfaction of the Departmental Representative.

1.8 Lines and Grades

The Departmental Representative will establish reference points in the field for the location of riprap stockpiles.

The Contractor shall exercise care in the preservation of reference points or base lines set for his use. The Contractor shall pay for re-establishment if they are displaced or removed.

1.9 Protection of Persons and Property

The Contractor shall use due care and take all necessary precautions to ensure the protection of persons and property and shall comply with the provision of the applicable federal and provincial government agencies including but not limited to the Workers' Compensation Board and the Provincial Labour Occupational Health and Safety Board.

The Contractor shall have a site safety management plan prior to mobilizing to site. This plan shall include provisions to ensure the safety of the public, those engaged in the work under this contract, and those employed by other agencies or contractors who may require access to the site against accident and injury. The Contractor shall post on site all necessary and applicable signs regarding safety hazards, and the required personal safety equipment. The Contractor shall appoint a competent site supervisor who shall be responsible for all daily construction activities with authority over all contractors, subcontractors, and workers on site, including the implementation of the site safety management plan.

The Contractor shall without additional instructions, supply and maintain at all times during the progress or suspension of the work, suitable barricades, fences, signs, signal lights, and flagmen as are necessary to ensure the safety of the public, those engaged in the work under this contract, and those employed by other agencies or contractors who may require access to the site against accident and injury.

Notwithstanding the provisions of the General Conditions, in any emergency affecting the safety of life, or of the work, or of adjoining property, the Contractor, without direction from the Departmental Representative, shall act in a reasonable manner to prevent loss or injury.

1.10 Work by Others and Use of Construction Facilities

There may be other contractors or agencies working on the site and in the area of this contract. The Contractor shall coordinate his activities with others in the working areas so that the work of all concerned shall proceed with efficiency and dispatch. No claim for additional payment will be considered on account of delays, changes in construction schedules, or any other reason whatsoever, due to the fact that others are operating in the area. The Contractor shall permit full use, without charge therefore, of roads, bridges, and of any other facilities usable jointly by the Contractor, other agencies or other contractors, as are available for such use without additional cost to the Contractor. As outlined in Section 1.9 of these specifications, the Contractor shall assume full responsibility for the direction of the on-site safety of other Contractors or agencies that are required to work on the site during this contract.

1.11 Equipment, Camp and Construction Areas

The Contractor will be permitted to use only those areas shown on the drawing or modified by the Departmental Representative which have been designated for equipment, camp or construction areas that are within the boundaries of land controlled by Canada except as may be otherwise specified herein, provided that such use will not interfere with any part of the work or the work of other contractors or other agencies in the vicinity. The Contractor shall take every reasonable precaution to prevent damage to the Environment at his equipment and other work areas. The Contractor will not be allowed to store equipment or supplies in the immediate proximity of existing structures, reservoirs, or creek channels, where the possibilities of contamination of water can exist.

In the event the Contractor finds it necessary to utilize additional area, which is not owned or controlled by Canada for the performance of the contract, the Contractor shall make all necessary arrangements for the utilization of the required area at no expense to Canada.

It is not intended that the assignment of certain equipment and construction areas shall imply that others may not have access to or perform other work in the designated areas or in other areas in which work is required under these specifications. The use of such areas by others will be limited by the Departmental Representative to the minimum considered consistent with efficient prosecution of the work under this and other contracts in force. However, the Departmental Representative shall be the sole judge in all matters of access and area utilization by the Contractor and others. In accordance with the provisions of Section 1.10, the Contractor shall assume full responsibility for the direction of the on-site safety for all those required to enter the construction site for the duration of this Contract.

All grading in the equipment area shall be done at the Contractor's expense and shall be subject to the approval of the Departmental Representative. All necessary haul roads within the boundaries of the area owned or controlled by Canada shall be built and maintained by the Contractor. After completion of the work in any area, the Contractor shall remove all temporary structures and haul roads and clear away all rubbish, surplus and waste materials and shall comply with all instructions by the Departmental Representative regarding the cleanup of such areas.

If private land is used by the Contractor, he shall make all necessary arrangements with the owner of the private land, and shall pay all rentals and other costs connected therein.

1.12 Roads and Fences

Access to work areas is located on roads not necessarily maintained by the Rural Municipality. As such access shall be provided by the Contractor at his own expense. The main access routes are shown on the drawings. Canada assumes no responsibility for the condition and maintenance of any road or structure that may be used by the Contractor in performing the work under these specifications, or in travelling to and from the sites of work. For the duration of the contract, all roads damaged by the Contractor's heavy vehicles and equipment traffic shall be maintained and repaired by the Contractor to the satisfaction of the Departmental Representative at no additional cost to Canada.

The Contractor will be held responsible for damages to crops and shall make his own arrangements with crop owners for passage through crops, where necessary.

As noted in Section 1.9, the Contractor shall assume full responsibility for the direction of public safety in connection with any operations performed in prosecution of this contract. Public and private roads subject to interference by the work shall be kept open or suitable detours shall be provided by the Contractor. The Contractor shall provide, erect, and maintain all necessary barricades, suitable and sufficient red lights, danger signals and signs, and shall take all necessary precautions for the protection of the work and the safety of the public.

Where existing fences are encountered, which interfere with the work and which are not to be removed under this contract, such fences shall be moved by the Contractor and reset so that no inconvenience will result to the owner of the fence. The Contractor shall make such arrangements with the owner of the fence and shall replace the fence, if required, upon completion of the work.

No allowance will be made for the cost to the Contractor of providing access roads and road detours, or of moving and replacing fences. These costs must be included in the unit prices bid on items appearing in the Price Table.

1.13 Permits, Licenses, Regulations and Acts

The Contractor shall be responsible for obtaining and paying for all permits or licenses that are required for completion of the Contract. The Contractor shall comply with all applicable Municipal, Provincial Government and Government of Canada regulations. The Contractor shall comply with all Workers' Compensation Board regulations as they apply to the work of this contract.

1.14 Existing Utilities

The Contractor shall be responsible for determining the exact location of all utilities or other structures and shall pay for all services supplied for locating such utilities or other structures. The Contractor will be held responsible for damage to and for maintenance and protection of existing structures and utilities, including location markers and telephone pedestals.

1.15 Relics and Antiques

Relics, antiques, and archaeological resources such as cornerstones and contents, inscribed tablets, projectiles, tools or objects of historical significance found on site remain the property of Canada or as governed by any federal, provincial or municipal law. The Contractor shall protect such articles and request directions from the Departmental Representative.

1.16 Protection of Constructed Works

The Contractor shall confine his equipment, the storage of materials and the operations of his workmen to limits indicated by law, ordinances, permits or directions of the Departmental Representative and shall not unreasonably encumber the work area with his materials.

The Contractor shall be responsible for the protection of all material, equipment and constructed works until acceptance of the work.

1.17 Site Maintenance and Clean-Up

Clean-up shall be a continuous process from the start of the work to final acceptance of the project. The Contractor shall, at all times, and without additional instructions, keep property on which work is in progress free from accumulations of waste materials or rubbish caused by employees or by the work. Accumulations of waste materials which might constitute a fire hazard will not be permitted. Spillage from the Contractor's hauling vehicles on travelled public or private roads shall be promptly cleaned up. On completion of construction, the Contractor shall remove all temporary structures, rubbish, and waste materials resulting from his operations.

All clean-up operations shall be subject to the approval of the Departmental Representative.

1.18 Night Work

Night work will only be allowed if prior written permission is issued by the Departmental Representative. When work is carried out at night, the Contractor shall supply, at his own cost, a sufficient number of electric or other approved lights to enable the work to be done in an efficient and satisfactory manner. No work shall be done if, in the opinion of the Departmental Representative, there is insufficient light to perform the work safely and satisfactorily.

1.19 Mobilization & Demobilization

“Mobilization & Demobilization” is defined as the cost of preparatory work and operations including those necessary for the movement of material, labour, and equipment to and from the project site. The work covered under Mobilization and Demobilization shall include all other work or costs incurred prior to beginning the work and following the completion of the work on various items on the project sites for which payment is not otherwise provided for in the bid schedule.

The bid price for Mobilization & Demobilization shall not exceed 10 per cent of the total tender price.

1.20 Payment

“Mobilization & Demobilization” shall be paid for as follows:

1. When 5 percent of the original contract amount of the total of the work is earned, 50 percent of the lump sum bid for Mobilization and Demobilization will be paid.
2. When 50 percent of the original contract amount for the total of the work is earned, an additional 20 percent, to total 70 percent of the lump sum bid for Mobilization and Demobilization will be paid.
3. Upon completion of all work on the project, the remaining 30 percent, to a total of 100 percent of the lump sum bid for Mobilization and Demobilization will be paid.

No separate payment will be made for other work specified in this section. All costs incurred by the Contractor in meeting the requirements of this section shall be included in the Mobilization and Demobilization.

SECTION 2 - RIPRAP MATERIALS

2.1 General

The work covered in this section consists of furnishing all plant, labour and equipment and performing all operations in connection with the procuring, processing, loading, transporting, stockpiling and placement of riprap materials, in accordance with the drawing and these specifications. Stockpile is to be located at Eastend Dam site.

2.2 Materials

Riprap shall consist of fieldstone and/or rock fragments, cobbles or mixtures of cobbles and fieldstone and/or rock fragments placed on surfaces adjacent to structures for protection against erosion by wave action and against fast-flowing water. All riprap shall consist of hard, dense, durable field stone or rock fragments having a specific gravity of not less than 2.6, and absorption not more than 2.0 percent.

Fieldstone or rock fragments of native sandstone or shale, or of clay ironstone nodules of the type found in the bedrock, will not be permitted for use as riprap. Flat, slabby rocks shall be excluded. Any rocks having a maximum dimension more than four (4) times a minimum dimension shall be removed to waste at no expense to Canada. Riprap shall be reasonably clean and dirt shall be excluded from the rock to be used as riprap.

The Contractor shall select the source of riprap. Riprap may be obtained from harvesting sources such as boulder deposits, field stone or gravel pits.

Riprap Zone 4A shall be used as erosion protection for the upstream embankment of Eastend Dam. The stone shall have a D_{50} of 315 mm and conform to the following gradation limits:

Riprap Zone 4A Gradation		
Percent less than (by Mass)	Rock Mass (Kg)	Rock Diameter (mm)
100	230	545
50 – 100	77	380
20 – 50	25	260
15 – 40	15	220
8 – 15	5.0	150
0 – 8	1.5	100
0	0.5	70

The Contractor shall be responsible for obtaining the necessary rights and for paying all costs associated with developing, operating and reclaiming sources of boulder deposit or field stone.

2.3 Tests

Materials will be subject to inspection and testing by the Departmental Representative to check conformity with all specified requirements. Specific gravity and absorption for riprap will

be determined by testing in accordance with ASTM C97 / C97M - 09 Standard Test Methods for Absorption and Bulk Specific Gravity of Dimension Stone.

The method of checking rock sizes for riprap zones will be by diameter measurement and/or by determining the mass of the rocks at the Departmental Representative's discretion. For this purpose, the Contractor shall provide a suitable scale for measuring the riprap gradation. Particles smaller than the minimum size specified will be permitted up to a maximum of three (3) percent by mass. Such undersize particles will not be included for the purpose of checking the specified gradation. Material particles smaller than the minimum size specified for that zone will not be accepted for payment. Diameter measurements shall be the average of the maximum dimension on three (3) mutually perpendicular axes through a common point of each rock.

For the purpose of checking gradation, all rocks from any area which have been stockpiled, containing 100 or more rocks in number, shall be considered as representative. Alternatively, by mutual agreement between the Contractor and the Departmental Representative, random loads of riprap containing 100 or more rocks may be checked for gradation, and these may be considered as representative at the discretion of the Departmental Representative.

2.4 Procurement of Riprap

The Contractor will be responsible for all arrangements in connection with procuring, stripping, excavating, processing, crushing if necessary, hauling, stockpiling and placing rock riprap materials. The suitability and disposition of all materials shall be subject to the approval of the Departmental Representative.

The Contractor shall notify the Departmental Representative in advance before removing any rock from any source area. No rock materials shall be delivered to the site area until such time as the Contractor has submitted to Canada proof that he has made satisfactory arrangements with all Municipalities and private landowners involved regarding the use of roads for hauling these materials and the procurement of these materials. The method of excavating, processing and cleanup in areas from which riprap is harvested will be subject to the approval of the Departmental Representative; areas used for harvesting, processing or hauling riprap shall be left in a reasonably level condition suitable for agricultural purposes of the type carried on before being used by the Contractor.

It is the general intent that each zone shall be reasonably well graded within the limits specified for that zone.

In order to produce a stockpile that is clean and to the specified gradation, the sorting of the harvested rock must be by a grizzly.

2.5 Stockpiling

Stockpiling methods shall ensure that segregation, particle breakdown, deterioration and contamination with deleterious materials or substances do not occur. The riprap material shall be placed in approximately uniform shapes to facilitate measurement and, in such a manner that segregation of the material into zones of uniform size particles does not occur.

The larger rock particles shall be uniformly distributed throughout the stockpile with the smaller rock particles filling the voids between the larger particles to produce a uniform layer of particles.

If, during the delivery of the material to the stockpiles, a particular load is found not to satisfy the specified gradation requirements, it shall be dumped in a suitable location in the stockpile area well clear of the riprap stockpiles. The additional material required to make up the deficient sizes shall be added to this load until the combination meets the Specifications. The material can then be stockpiled.

The following quantities of riprap will be stockpiled (see Drawing #208939):

- Eastend Dam - 750m³ of Riprap Zone 4A

Riprap material shall not be dropped from a height greater than 1.5m.

2.6 Measurement

“Supply Riprap - Zone 4A” stockpiles will be surveyed by Canada. The payment per cubic metre will be based on the volume as determined by the survey.

2.7 Payment

“Supply Riprap - Zone 4A” will be paid for at the applicable unit price per cubic metre bid therefore in the Price Table. The price shall include all costs of procuring, loading, hauling, stockpiling, placing and all other items incidental to the completion of the work. If re-handling of riprap is required, all costs of such re-handling shall be included in the unit price bid for riprap.