

Part 1 General

1.1 PRECEDENCE

- .1 For Federal Government projects, Division 1 Sections take precedence over technical specification sections in other divisions of this specification

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- .1 Work of this Contract comprises includes: removal and replacement of asphalt roadway, removal and replacement of concrete sidewalks including curb and gutter and wheelchair ramps, water line demolition and replacement, sanitary sewer line demolition and replacement, water line and sanitary service connections to homes and other park facilities, sanitary lift station and force main installation, storm sewer replacement and catch basin installation, tree planting, pavement markings, and other work.
- .2 Approximate quantities are as follows:
 - .1 Water Mains – 2,095 m
 - .2 Sanitary Sewer Mains – 1,910 m
 - .3 Sanitary Forceman – 160 m
 - .4 Concrete Sidewalks – 1,725 m
 - .5 Asphalt Concrete Pavement – 19,500 m²

1.3 WORK SCHEDULE

- .1 This project will be undertaken in two distinct phases:
 - .1 Phase A1 – Evergreen Ave south of Cameron Falls, Anemone Road, Columbine Avenue
 - .1 Commence – September 8th, 2015
 - .2 Completion – June 20th, 2016
 - .3 Surface Works – September 6, 2016 – December 15, 2016
 - .2 Phase A2 – Waterton Avenue
 - .1 Commence – Spring, 2016
 - .2 Completion – June 20th, 2016
 - .3 Surface Works - September 6, 2016 – December 15, 2016
 - .3 Phase B – Evergreen Avenue north of Cameron Falls, Fern Street, Firgrove Street (including surface works)
 - .1 Commence – Spring, 2016
 - .2 Completion – December 15, 2016
 - .4 Landscaping (if necessary):
 - .1 Commence – Spring, 2017
 - .2 Completion – June 19, 2017
- .2 No construction will be allowed during the long weekends; “no work” periods as follows:

- .1 Thanksgiving Day 2015
 - .1 Friday, October 9th to Monday, October 12th
 - .2 Victoria Day 2016
 - .1 Friday, May 20th to Monday May 23rd
 - .3 Canada Day 2016
 - .1 Thursday, June 30th to Sunday, July 3rd
 - .4 Civic Holiday 2016
 - .1 Friday July 29th to Monday, August 1st
 - .5 Labour Day 2016
 - .1 Friday, September 2nd to Monday, September 5th
 - .6 Thanksgiving Day 2016
 - .1 Friday, October 7th to Monday, October 10th
 - .7 Victoria Day 2017
 - .1 Friday, May 19th to Monday May 22nd
- .3 Construction equipment will operate only between 08:00 and 18:00 on weekends and between 08:00 and 19:00 on weekdays to minimize disturbance to residents and businesses.
 - .4 No additional compensation will be provided to the Contractor for cold weather work or other weather-related delays or costs.

1.4 WORK SEQUENCE

- .1 Contractor shall proceed with Phase A utility/underground work immediately upon contract award and work must be completed by June 20th, 2016. All surface works must be completed by December 15, 2016. Contractor is made aware there is a possibility of encountering ground frost during April in Waterton.
- .2 No construction activities shall occur between June 21st and September 5th, 2016 for all Phase A work. Contractor shall not begin any new or additional construction activities that cannot be completed prior to June 20th, 2016.
- .3 Construct Work in stages to provide for continuous public usage. Do not close off public usage of facilities until use of one stage of Work will provide alternate usage. All Phase A surfaces disrupted during the spring phase of construction shall be returned to a finished, safe and useable condition, approved by Departmental Representative, prior to June 20th, 2016.
- .4 Contractor shall prepare a meaningful bar chart or network diagram showing proposed schedule of major works which shall be provided to Departmental Representative within one week of Contract award and prior to commencement of any work.
- .5 When schedule has been approved by Departmental Representative, take necessary measures to complete work within scheduled time. Do not change schedule without Departmental Representative's approval.

1.5 CONTRACTOR USE OF PREMISES

- .1 For the purpose of this contract, Contractor will not be permitted to set up camp in Waterton Lakes National Park

- .2 Parks Canada regulations prohibit anyone working with the Park from using campground facilities.

1.6 NATIONAL PARK REGULATIONS

- .1 Contractor and all sub-contractors shall ensure that all work is performed in accordance with ordinances, laws, rules and regulations set out in the National Park Act.
- .2 Contractor and all sub-contractors shall obtain business licenses from Parks Canada Administration Office prior to commencement of work.
- .3 Contractor and all sub-contractors shall comply with all laws and government regulations applicable to work under this contract.
- .4 All Contractor's and all sub-contractor's business and private vehicles are required to obtain vehicle passes from Parks Canada Administration Office.
- .5 Contractor to equip all service vehicles and supervisory vehicles with Emergency Spill Kit DOT-E-10102 or equivalent.
- .6 Contractor is responsible to ensure all sub-contractors comply with the National Park Regulations

1.7 EXISTING SERVICES

- .1 Notify Departmental Representative and utility companies of intended interruption of services and obtain required permission.
- .2 Where Work involves breaking into or connecting to existing services, give Departmental Representative 72 hours notice for necessary interruption of residential services throughout course of work. Minimize duration of interruptions. Carry out work at times as directed by governing authorities with minimum disturbance to residents
- .3 Provide alternative routes for pedestrian and vehicular traffic.
- .4 Establish location and extent of residential service lines in area of work before starting Work. Notify Departmental Representative of findings.
- .5 Submit schedule to and obtain approval from Departmental Representative for any shutdown or closure of active service or facility including water, sewer, power and communications services. Adhere to approved schedule and provide notice to affected parties.
- .6 Provide temporary services when directed by Departmental Representative to maintain critical building and tenant systems for any shutdown over two (2) hours.
- .7 Provide adequate bridging over trenches which cross sidewalks or roads to permit normal traffic.
- .8 Where unknown services are encountered, immediately advise Departmental Representative and confirm findings in writing.
- .9 Protect, relocate or maintain existing active services. When inactive services are encountered, cap off in manner approved by authorities having jurisdiction.
- .10 Record locations of maintained, re-routed and abandoned service lines.
- .11 Construct barriers in accordance with Section [01 56 00 - Temporary Barriers and Enclosures].

1.8 DOCUMENTS REQUIRED

- .1 Maintain at job site, one copy each document as follows:
 - .1 Contract Drawings.
 - .2 Specifications.
 - .3 Addenda.
 - .4 Reviewed Shop Drawings.
 - .5 List of Outstanding Shop Drawings.
 - .6 Change Orders.
 - .7 Other Modifications to Contract.
 - .8 Field Test Reports.
 - .9 Copy of Approved Work Schedule.
 - .10 Health and Safety Plan and Other Safety Related Documents.
 - .11 Other documents as specified.

Part 2 Products

2.1 NOT USED

- .1 Not used.

Part 3 Execution

3.1 NOT USED

- .1 Not used.

END OF SECTION

Part 1 General

1.1 WATER

- .1 The unit price bid for “150 mm dia. SDR 18 PVC” shall be considered full compensation for all materials, labour and equipment required for the installation of water line including: temporary water services, supply and delivery of pipe, excavation and trenching to the required depth, supply and placement of granular bedding material, pipe installation to the specified line and grade, fittings, connections, tracer wire, thrust blocks, mechanical thrust protection, bends, reducers, tees, couplings, plugs, backfilling to roadway subgrade elevation, compaction, soil conditioning, dewatering, care of water, disposal of excess material off site, pressure testing, flushing, chlorinating and all other work necessary to complete the Work to the satisfaction of the Departmental Representative.
 - .1 Pipe will be measured horizontally, along the top of the pipe, from centreline of connection to centreline of connection.
 - .2 Payment will be made for each field measured lineal metre of pipe installed, pending approval of pressure, chlorination and bacterial testing results.
- .2 The unit price bid for “200 mm dia. SDR 18 PVC” shall be considered full compensation for all materials, labour and equipment required for the installation of water line including: temporary water services, supply and delivery of pipe, excavation and trenching to the required depth, supply and placement of granular bedding material, pipe installation to the specified line and grade, connections, tracer wire, thrust blocks, mechanical thrust protection, beds, tees, couplings, plugs, backfilling to roadway subgrade elevation, compaction, soil conditioning, dewatering, care of water, disposal of excess material off site, pressure testing, flushing, chlorinating and all other work necessary to complete the Work to the satisfaction of the Departmental Representative.
 - .1 Pipe will be measured horizontally, along the top of the pipe, from centreline of connection to centreline of connection.
 - .2 Payment will be made for each field measured lineal metre of pipe installed, pending approval of pressure, chlorination and bacterial testing results.
- .3 The unit price bid for “Water Line Tie-In – Mains” shall be considered full compensation for all materials, labour and equipment required for tie-ins of new water lines to existing water lines including: digging, trenching, placing, backfilling to roadway subgrade elevation, compacting, disposal of excess material off site, coordination and notification required for water service interruption, flushing, testing, chlorination and all work incidental to the completed tie-in.
 - .1 Each tie-in will be counted.
 - .2 Payment will be made for each completed connection to an existing water line.
- .4 The unit price bid for “Water Line Service – 25 mm” shall be considered full compensation for all materials, labour and equipment required for tie-ins of new water lines to existing services including: digging, trenching, placing, backfilling to subgrade elevation, compacting, disposal of excess material off site, coordination and notification required for water service interruption, supply and installation of new curb stop, supply and install pipe, supply and install union and connect to existing, supply and install of

saddle and connection to the watermain, flushing, testing, chlorination and all work incidental to the completed tie-in.

- .1 Each tie-in will be counted.
 - .2 Payment will be made for each completed connection to an existing service.
- .5 The unit price bid for “Water Line Service – 50 mm” shall be considered full compensation for all materials, labour and equipment required for tie-ins of new water lines to existing services including: digging, trenching, placing, backfilling to subgrade elevation, compacting, disposal of excess material off site, coordination and notification required for water service interruption, supply and installation of new curb stop, supply and install pipe, supply and install union and connect to existing, supply and install of saddle and connection to the watermain, flushing, testing, chlorination and all work incidental to the completed tie-in.
- .1 Each tie-in will be counted.
 - .2 Payment will be made for each completed connection to an existing service.
- .6 The unit price bid for “150 mm dia. Gate Valve” shall be considered full compensation for the supply off all materials, labour and equipment required for the installation of gate valves including: supply of valves, supports, operating rods, valve boxes and cathodic protection, excavation and trenching to the required depth, supply and placement of granular bedding material, valve insertion to the specified line and grade, connections, thrust blocking, mechanical thrust protection, backfilling to plan subgrade, compactions, soil conditioning, dewatering, care of water, testing, flushing, chlorination, and all work incidental to the completed valve installation.
- .1 Each valve will be counted.
 - .2 Payment will be made for each valve supplied and installed.
- .7 The unit price bid for “200 mm dia. Gate Valve” shall be considered full compensation for the supply off all materials, labour and equipment required for the installation of gate valves including: supply of valves, supports, operating rods, valve boxes and cathodic protection, excavation and trenching to the required depth, supply and placement of granular bedding material, valve insertion to the specified line and grade, connections, thrust blocking, mechanical thrust protection, backfilling, compactions, soil conditioning, dewatering, care of water, testing, flushing, chlorination, and all work incidental to the completed valve installation.
- .1 Each valve will be counted.
 - .2 Payment will be made for each valve supplied and installed
- .8 The unit price bid for “Fire Hydrant incl. Valve” shall be considered full compensation for the supply off all materials, labour and equipment required for the installation of fire hydrants including: supply and delivery of hydrants, excavating and trenching to the required depth, supply and placement of granular bedding material, hydrant installation to the specified line and grade, connections, thrust blocking, mechanical thrust protections, cathodic protection, supply and install of mainline tee, PVC lead and hydrant isolation valve, backfilling to subgrade elevation, compaction, soil conditioning, dewatering, care of water, testing, flushing, disposal of excess material off site, and all work incidental to the completed hydrant installation.
- .1 Each hydrant will be counted.

- .2 Payment will be made for each hydrant installed.
- .9 The unit price bid for “Drain Valve in Chamber” shall be considered full compensation for the supply off all materials, labour and equipment required for the installation of the Drain Valve in Chambers including: supply and delivery of chamber materials, excavating and trenching to the required depth, supply and placement of granular bedding material, chamber installation to the specified line and grade, connections, thrust blocking, mechanical thrust protection, cathodic protection, mainline tee, supply and install PVC lead, drain isolation valve, backfilling to subgrade elevation, compaction, soil conditioning, dewatering, care of water, testing, flushing, disposal of excess material off site, and all work incidental to the completed drain valve chamber installation.
 - .1 Each Drain Valve Chamber will be counted.
 - .2 Payment will be made for each Drain Valve Chamber installed.
- .10 The unit price bid for “25 mm Standpipe Installation” shall be considered full compensation for the supply off all materials, labour and equipment required for the installation of the Standpipes as shown on the drawings and/or location determined by Departmental Representative including: supply and delivery of materials, excavating and trenching to the required depth, supply and placement of granular bedding material, standpipe installation to the specified line and grade, saddle connection to water main, connections, mechanical thrust protection, cathodic protection, supply and install tee with 2 19 mm hose bibs, supply and install curb stop and copper lead, supply and install irrigation box, backfilling, compaction, soil conditioning, dewatering, care of water, testing, flushing, and all work incidental to the completed drain valve chamber installation.
 - .1 Each Standpipe will be counted.
 - .2 Payment will be made for each Standpipe installed.
- .11 The unit price bid for “Pipe Bursting” shall be considered full compensation for all materials, labour and equipment required to replace mains by pipe bursting, including: supply and placement of pipe, insertions and retrieval pits, machine pits, pavement removal and replacement, testing and all work incidental to the completed pipe replacing.
 - .1 Pipe will be measured horizontally, by GPS survey, from centreline of connection to centreline of connection.
 - .2 Payment will be made for each field measured lineal metre of pipe replaced by pipe bursting.
- .12 The unit price bid for “Decommissioning of Valve/Hydrant” shall be considered full compensation for all materials, labour and equipment required for the decommissioning of an existing valve or hydrant, including: removal to 1 metre below finish grade, removal of stems, filling remaining structure with pipe bedding material, backfilling with compacted free draining native material, rehabilitation of disturbed area to match immediate surrounding terrain, cleaning and all work incidental to the decommissioning of an existing valve or hydrant.
 - .1 Each decommissioned valve or hydrant will be counted.
 - .2 Payment will be made for each valve or hydrant successfully decommissioned.

- .13 The unit price bid for “150 mm dia. DR 11 HDPE” shall be considered full compensation for all materials, labour and equipment required for the supply of 150 mm DR 11 HDPE including: procuring, loading, hauling, handling, and all work incidental to the installation of DR 11 HDPE Pipe.
 - .1 Pipe will be measured horizontally, along the top of the pipe, from end to end.
 - .2 Payment will be made for each field measured lineal metre of pipe supplied.

1.2 SANITARY SEWER

- .1 The unit price bid for “150 mm dia. SDR 35 PVC Pipe” shall be considered full compensation for all materials, labour and equipment required for the installation of sanitary sewer line including: confirmation of existing tie-in inverts, supplying, loading, hauling, unloading of pipe, trenching to the required depth, supply and placement of granular bedding material, pipe installation to the specified line and grade, backfilling to roadway subgrade elevation, trench compaction, disposal of excess materials off site, connection to manholes or sanitary pipes, flushing, cleaning and all work incidental to the completed installation of sanitary sewer line. This item will be used for services extending beyond 15 metres from the sanitary sewer main, and will be paid only for pipe beyond this 15 metres.
 - .1 Pipe will be measured horizontally, along the top of the pipe, from 15 metres from the centreline of the sanitary main of connection to centreline of connection.
 - .2 Payment will be made for each field measured lineal metre of pipe installed.
- .2 The unit price bid for “200 mm dia. SDR 35 PVC Pipe” shall be considered full compensation for all materials, labour and equipment required for the installation of sanitary sewer line including: confirmation of existing tie-in inverts, supplying, loading, hauling, unloading of pipe, trenching to the required depth, supply and placement of granular bedding material, pipe installation to the specified line and grade, backfilling to roadway subgrade elevation, trench compaction, disposal of excess materials off site, connection to manholes, flushing, cleaning, CCTV inspection, and all work incidental to the completed installation of sanitary sewer line.
 - .1 Pipe will be measured horizontally, along the top of the pipe, from centreline of connection to centreline of connection.
 - .2 Payment will be made for each field measured lineal metre of pipe installed.
- .3 The unit price bid for “300 mm dia. SDR 35 PVC Pipe” shall be considered full compensation for all materials, labour and equipment required for the installation of sanitary sewer line including: confirmation of existing tie-in inverts, supplying, loading, hauling, unloading of pipe, trenching to the required depth, supply and placement of granular bedding material, pipe installation to the specified line and grade, backfilling to roadway subgrade elevation, trench compaction, disposal of excess materials off site, connection to manholes, flushing, cleaning, CCTV inspection, and all work incidental to the completed installation of sanitary sewer line.
 - .1 Pipe will be measured horizontally, along the top of the pipe, from centreline of connection to centreline of connection.
 - .2 Payment will be made for each field measured lineal metre of pipe installed.

- .4 The unit price bid for “Type I Manhole” shall be considered full compensation for all materials, labour and equipment required for the installation of Type I manholes, including: excavation, disposal of waste excavation off-site, supply and install granular material, manhole base, manhole barrel, slab top, collars, frame & cover, grouting, all pipe tie-ins to manholes, backfilling, associated cleanup and all items incidental to complete the work.
 - .1 Each new manhole installed will be measured vertically in metres from top of cover (rim) to lowest pipe invert..
 - .2 Payment will be made for total vertical metres of manhole installed.
- .5 The unit price bid for “Sanitary Sewer Line Tie-In –Main” shall be considered full compensation for all materials, labour and equipment required for tie-ins of new sanitary sewer lines to existing manholes including: digging, trenching, placing, supply and install couplers, sealing, backfilling, compacting, coordination and notification required for sanitary sewer service interruption, testing, and all work incidental to the completed tie-in.
 - .1 Each tie-in will be counted.
 - .2 Payment will be made for each completed connection to an existing manhole.
- .6 The unit price bid for “Sanitary Sewer Service – 100 mm” shall be considered full compensation for all materials, labour and equipment required for tie-ins of new sanitary sewer lines to existing services including: digging, trenching, placing, backfilling to subgrade, compacting, disposal of excess material off site, coordination and notification required for sanitary sewer service interruption, supply and install pipe, supply and install saddle and connection to the sewer main, supply and install coupler to connect existing service to new service pipe, flushing, testing, and all work incidental to the completed tie-in.
 - .1 Each tie-in will be counted.
 - .2 Payment will be made for each completed connection to an existing service.
- .7 The unit price bid for “Sanitary Sewer Service – 150 mm” shall be considered full compensation for all materials, labour and equipment required for tie-ins of new sanitary sewer lines to existing services including: digging, trenching, placing, backfilling to subgrade, compacting, disposal of excess material off site, coordination and notification required for sanitary sewer service interruption, supply and install 15 lineal metres of pipe, supply and install saddle and connection to the sewer main, supply and install coupler to connect existing service to new service pipe, flushing, testing, and all work incidental to the completed tie-in.
 - .1 Each tie-in will be counted.
 - .2 Payment will be made for each completed connection to an existing service.
- .8 The unit price bid for “Adjust Existing Manhole to Grade” shall be considered full compensation for all materials, labour and equipment required to adjust an existing manhole to new asphalt grade including: special fittings, disposal of waste material off-site, and all work incidental to the completed manhole adjustment.
 - .1 Each manhole adjusted will be counted.
 - .2 Payment will be made for each adjusted manhole to final asphalt grades.

- .9 The unit price bid for “Packaged Sewage Lift Station” shall be considered full compensation for all materials, labour and equipment required to supply and install a sanitary sewage lift station, including: excavation regardless of material encountered, sheathing and shoring, supply and install the complete packaged lift station and a concrete base designed by Contractor, including all piping, valves, instruments, electrical & controls system, backfill to subgrade elevation, compaction, disposal of waste and surplus material off site, flushing, cleaning, start-up and commissioning of packaged lift station, and all work incidental to the new lift station.
 - .1 The entire lift station will be counted as a unit.
 - .2 Payment will be made for a lift station successfully installed and commissioned.
- .10 The unit price bid for “100 mm dia. DR 11 HDPE Forcemain” shall be considered full compensation for all materials, labour and equipment required for the installation of sanitary force main including: excavation regardless of material encountered, confirmation of existing tie-in inverts, supplying, loading, hauling, unloading of pipe, trenching to required depth, sheathing and shoring, supply and install granular bedding, supply and install all bends, tees, crosses, couplings, reducers, plugs and concrete blocking, thrust blocks, pipe crossings, #8 tracer wire and any special fitting, backfill to subgrade elevation, compaction, and surface restoration, disposal of waste and surplus material off-site, flushing, cleaning, and pressure testing of force mains, and all work incidental to the installation of new force main.
 - .1 Pipe will be measured horizontally, along the top of the pipe, from centreline of connection to centreline of connection.
 - .2 Payment will be made for each field measured lineal metre of pipe installed.
- .11 The unit price bid for “Decommissioning of Manhole” shall be considered full compensation for all materials, labour and equipment required for the decommissioning of an existing manhole, including: removal to 1 metre below finish grade, power washing, plugging pipes with concrete, introduction of six 4 inch dia. holes in the base, backfilling with compacted free draining native material, disposal of waste and surplus material off-site, rehabilitation of disturbed area to match immediate surrounding terrain, cleaning and all work incidental to the decommissioning of an existing manhole.
 - .1 Each decommissioned manhole will be counted.
 - .2 Payment will be made for each manhole successfully decommissioned.
- .12 The unit price bid for “Dump Station” shall be considered full compensation for all materials, labour and equipment required for the dump station, including: removal of existing dump station to 1 metre below finish grade, construction of new dump station as show in the plans including sewer pipe and connection to manhole, concrete works, steel flex beam guide rail, bollards structure, pipe bedding material, backfilling with compacted free draining native material, rehabilitation of disturbed area to match immediate surrounding terrain.
 - .1 The entire dump station will be counted as a unit.
 - .2 Lump Sum payment will be made for Dump Station installed.

1.3 **STORM SEWER**

- .1 The unit price bid for “300 mm dia. SDR 35 PVC Pipe” shall be considered full compensation for all materials, labour and equipment required for the installation of

storm sewer line including: confirmation of existing tie-in inverts, supplying, loading, hauling, unloading of pipe, trenching to the required depth, supply and placement of granular bedding material, pipe installation to the specified line and grade, backfilling to roadway subgrade elevation, trench compaction, disposal of excess materials off site, connection to manholes and catch basins, and all work incidental to the completed installation of storm sewer line.

- .1 Pipe will be measured horizontally, along the top of the pipe, from centreline of connection to centreline of connection.
- .2 Payment will be made for each field measured lineal metre of pipe installed.
- .2 The unit price bid for “New Catch Basin – Type 1 Rolled c/w Frame and Grate” shall be considered full compensation for all materials, labour and equipment required for the installation of a catch basins, including: excavation, disposal of waste excavation off-site, supply and install granular material, catch basin base, barrel, weep holes, filter cloth, slab top, collars, concrete benching, mortar, pre-cast frames, block out(s), grouting, covers, bricks, all pipe tie-ins, bedding, backfilling, associated cleanup and all items incidental to complete the work.
 - .1 Each new catch basin installed will be counted.
 - .2 Payment will be made for each catch basin installed.
- .3 The unit price bid for “Core Hole into Existing Manhole for 300 mm Catch Basin Lead” shall be considered full compensation for all materials, labour and equipment required for tie-ins of new storm sewer lines to existing manholes or catch basins including: disconnecting, sealing, testing, disposal of waste material off-site, and all work incidental to the completed tie-in.
 - .1 Each tie-in will be counted.
 - .2 Payment will be made for completed connection to an existing manhole or catch basin.

1.4 CONCRETE

- .1 The unit price bid for “Remove and Dispose Concrete Surfaces” shall be considered full compensation for all materials, labour and equipment required for the removal of concrete surfaces, including: cutting, jackhammering, excavating, breaking, demolishing, loading, hauling, disposal of waste material off-site, cleaning, and all work incidental to the removal of concrete.
 - .1 Each surface will be measured individually in neat horizontal lines to the nearest square metre.
 - .2 Payment will be made for each square metre of concrete removed and disposed.
- .2 The unit price bid for “Combined Sidewalk and Rolled Curb & Gutter” shall be considered full compensation for all materials, labour and equipment required to supply and install combined sidewalk and curb & gutter structures in accordance with the sections, alignments and grades specified, including: excavation, subgrade preparation, supply and install 100 mm depth of granular base, extruding, forming, tie-bar, doweling, placement, vibrating, finishing, stripping, curing and protection of the concrete, control joints expansion joints, isolation joints, backfilling between concrete and property line to subgrade elevation, compaction, associated clean up , and all work incidental to the installation of concrete sidewalk and curb & gutter.

- .1 Each surface will be measured individually along the top of the curb.
- .2 Payment will be made for each metre of combined sidewalk and curb & gutter installed.
- .3 The unit price bid for “Wheelchair Ramp – Type 1” shall be considered full compensation for all materials, labour and equipment required to construct wheel chair ramps as shown on the drawings, including: excavation, subgrade preparation, supply and install 100 mm depth granular base, extruding, forming, tie-bar, doweling, placement, vibrating, finishing, stripping, curing and protection of the concrete, backfilling between concrete and property line to subgrade elevation, compaction, associated clean up, and all work incidental to the installation of wheelchair ramps.
 - .1 Each wheelchair ramp will be counted.
 - .2 Payment will be made for each wheelchair ramp installed.
- .4 The unit price bid for “Wheelchair Ramp – Type 2” shall be considered full compensation for all materials, labour and equipment required to construct wheel chair ramps as shown on the drawings, including: excavation, subgrade preparation, supply and install 100 mm depth granular base, extruding, forming, tie-bar, doweling, placement, vibrating, finishing, stripping, curing and protection of the concrete, backfilling between concrete and property line to subgrade elevation, compaction, associated clean up, and all work incidental to the installation of wheelchair ramps.
 - .1 Each wheelchair ramp will be counted.
 - .2 Payment will be made for each wheelchair ramp installed.
- .5 The unit price bid for “Rolled Curb & Gutter” shall be considered full compensation for all materials, labour and equipment required to supply and install standard curb & gutter structures in accordance with the sections, alignments and grades specified, including: excavation, subgrade preparation, supply and install 100 mm depth granular base, extruding, forming, tie-bar, doweling, placement, vibrating, finishing, stripping, curing and protection of the concrete, control joints expansion joints, isolation joints, backfilling between concrete and property line to subgrade elevation, compaction, associated clean up, and all work incidental to the installation of concrete curb & gutter.
 - .1 Each surface will be measured individually along the top of the curb.
 - .2 Payment will be made for each metre of standard curb & gutter installed.
- .6 The unit price bid for “Lane Crossing” shall be considered full compensation for all materials, labour and equipment required to construct lane crossings as shown on the drawings, including: excavation, subgrade preparation, supply and install 100 mm depth granular base, extruding, forming, tie-bar, doweling, placement, vibrating, finishing, stripping, curing and protection of the concrete, control joints expansion joints, isolation joints, backfilling between concrete and property line to subgrade elevation, compaction, associated clean up, and all work incidental to the installation of lane crossings.
 - .1 Each lane crossing will be counted.
 - .2 Payment will be made for each lane crossing installed.
- .7 The unit price bid for “Separate Sidewalk – 130 mm Depth” shall be considered full compensation for all materials, labour and equipment required to supply and install sidewalk structures in accordance with the sections, alignments and grades specified, including: excavation, subgrade preparation, supply and install 100 mm depth granular

base, extruding, forming, tie-bar, doweling, placement, vibrating, finishing, stripping, curing and protection of the concrete, control joints expansion joints, isolation joints, backfilling between concrete and property line to subgrade elevation, compaction, associated clean up, and all work incidental to the installation of concrete sidewalk.

- .1 Each surface will be measured individually along the top of the sidewalk.
 - .2 Payment will be made for each metre of sidewalk installed.
- .8 The unit price bid for “Concrete Surfacing – 130 mm Depth” shall be considered full compensation for all materials, labour and equipment required to supply and install concrete structures in accordance with the sections, alignments and grades specified, including: excavation, subgrade preparation, supply and install 100 mm depth granular base, extruding, forming, tie-bar, doweling, placement, vibrating, finishing, stripping, curing and protection of the concrete, control joints expansion joints, isolation joints, backfilling between concrete and property line to subgrade elevation, compaction, associated clean up, and all items incidental to complete the work.
- .1 Each area of approved granular base course will be measured by length and average width to produce an area in square metres.
 - .2 Payment will be made for each area of approved granular base course.

1.5 SURFACE WORKS

- .1 The unit price bid for “Saw Cutting” shall be considered full compensation for all materials, labour and equipment required for cutting, excavating, removing, breaking, loading, hauling, disposal off-site, associated clean-up and all work incidental to saw cutting asphalt.
 - .1 Saw cuts will be measured down the centreline of the cut.
 - .2 Payment will be made for each metre of saw cut.
- .2 The unit price bid for “Asphalt Removal” shall be considered full compensation for all materials, labour and equipment required for removing all asphalt as shown on the drawings, including: removing, breaking, crushing or milling to 25 mm minus for use as road bed, loading, hauling, stockpile on-site as directed by Departmental Representative, associated clean-up and all work incidental to asphalt milling. Estimated quantity is 20,500 m².
 - .1 All milling will be counted as a unit.
 - .2 Lump sum payment will be made for asphalt milling.
- .3 The unit price bid for “Subgrade Preparation” shall be considered full compensation for all materials, labour and equipment required for preparing the subgrade surface for surfacing, including scarifying, placing, blading, mixing, shaping, grading, moisture conditioning, compacting, maintaining, proof rolling, associated clean up and all work incidental to complete the work. This shall include the undercut and subsequent prep of minor “soft spots” to ensure an approved subgrade surface.
 - .1 Each area of approved prepared subgrade will be measured by length and average width to produce an area in square metres.
 - .2 Payment will be made for each square metre of approved prepared subgrade surface.

- .4 The unit price bid for “Type III Asphalt Concrete Paving – 100 mm Depth” shall be considered full compensation for all materials, labour and equipment required for preparation of the job mix design and job mix formula, supply and placement of prime coat and tack coat where required, supply of aggregates and asphalt cement, mixing, transporting, placing, spreading, shaping, raking, ramping around appurtenances and compacting the asphalt to the specified thickness and density, associated clean up and all work incidental to complete the work.
 - .1 Each area will be measured by GPS survey.
 - .2 Payment will be made for each area of asphalt correctly placed to specifications.
- .5 The unit price bid for “Granular Base Course – 75 mm Depth” shall be considered full compensation for all materials, labour and equipment required for the supply, placement and compaction of granular base course in accordance with limit lines, compacted depths, densities, moisture content and grades specified, including: procurement, loading, processing, hauling, placing, shaping, grading, compacting, applying blotting sand when required, moisture conditioning, proof rolling, maintaining, interim lane marking, material certification, quality control, associated clean up and all items incidental to complete the work.
 - .1 Each area of approved granular base course will be measured by length and average width to produce an area in square metres.
 - .2 Payment will be made for each area of approved granular base course.
- .6 The unit price bid for “Recycled Asphalt Base Course – 75 mm Depth” shall be considered full compensation for all materials, labour and equipment required for RAP surfacing, including processing, loading, hauling, placing and compacting of millings on the road surface, associated clean up and all items incidental to complete the work.
 - .1 Recycled Asphalt Pavement Surfacing will be measured by length and average width of approved surface.
 - .2 Payment will be made for each area of approved recycled asphalt pavement surfacing.
- .7 The unit price bid for “100 mm Wide Line Painting – White Parking Stalls” shall be considered full compensation for all materials, labour and equipment required for completing 100 mm wide line painting, including inspecting the areas to be painted, sweeping and cleaning of surfaces, supplying of paint and glass beads, completing temporary markings, traffic accommodation, painting to the specified locations and colours, associated clean up and all items incidental to complete the work.
 - .1 Lines will be measured along the centreline of the completed painted 100 mm line.
 - .2 Payment will be made for each lineal metre of painted 100 mm line.
- .8 The unit price bid for “600 mm Wide Line Painting” shall be considered full compensation for all materials, labour and equipment required for completing 600 mm wide line painting, including inspecting the areas to be painted, sweeping and cleaning of surfaces, supplying of paint and glass beads, completing temporary markings, traffic accommodation, painting to the specified locations and colours, associated clean up and all items incidental to complete the work.
 - .1 Lines will be measured along the centreline of EACH 600 mm line.

- .2 Payment will be made for each lineal metre of painted 600 mm line.
- .9 The unit price bid for “100 mm Wide Line Painting – Yellow Directional Dividing” shall be considered full compensation for all materials, labour and equipment required for completing 100 mm wide line painting, including inspecting the areas to be painted, sweeping and cleaning of surfaces, supplying of paint and glass beads, completing temporary markings, traffic accommodation, painting to the specified locations and colours, associated clean up and all items incidental to complete the work.
 - .1 Lines will be measured along the centreline of the completed painted 100 mm line.
 - .2 Payment will be made for each lineal metre of painted 100 mm line.
- .10 The unit price bid for “2.5 m Asphalt Pathway” shall be full payment for the preparation of the job mix design and job mix formula, subgrade preparation, supply and placement of granular base course, supply and placement of a prime coat and/or tack coat as required, supply of aggregates and asphalt cement, mixing, transporting, placing, spreading, shaping, raking, ramping around appurtenances and compacting the granular and asphalt concrete to the specified thickness and density, and all items incidental to complete the work. This item shall also include the adjustment of all utility structures, unless noted to be measured and paid for separately. Construction joints will be considered incidental to paving
 - .1 Each area will be measured by length and average width.
 - .2 Payment will be made for each area of asphalt pathway correctly placed to specifications.

1.6 MISCELLANEOUS

- .1 The unit price bid for “Remove and Reinstall Fence” shall be considered full compensation for all materials, labour and equipment required for the removal, salvage, and reinstallation of existing fence, including: removal, safeguarding, loading, hauling, storing, reinstallation, associated clean up and all items incidental to complete the work.
 - .1 Measurement will be taken along the centreline of reinstalled fence.
 - .2 Payment will be made for each lineal metre of reinstalled fence.
- .2 The unit price bid for “Remove and Reinstall Wooden Bollard Fence” shall be considered full compensation for all materials, labour and equipment required for the removal, salvage, and reinstallation of existing bollard fence, including: removal, safeguarding, loading, hauling, storing, reinstallation, associated clean up and all items incidental to complete the work.
 - .1 Measurement will be taken along the centreline of reinstalled fence.
 - .2 Payment will be made for each lineal metre of reinstalled fence.
- .3 The unit price bid for “Remove and Reinstall Wooden Bollard” shall be considered full compensation for all materials, labour and equipment required for the removal, salvage, and reinstallation of existing wooden bollards, including: removal, safeguarding, loading, hauling, storing, reinstallation, associated clean up and all items incidental to complete the work.
 - .1 Each reinstalled bollard will be counted.
 - .2 Payment will be made for each bollard reinstalled.

- .4 The unit price bid for “Remove and Dispose Tree” shall be considered full compensation for all materials, labour and equipment required for the removal and off-site disposal of roots, stumps and branches under 75 mm diameter, including: cutting of all wood 75 mm diameter and greater into 400 mm lengths to be hauled to an area designated by the Departmental Representative, excavating roots to a 1 metre depth, excavating, loading, hauling, backfilling, compacting, associated clean up and all items incidental to complete the work.
 - .1 Each removed tree will be counted.
 - .2 Payment will be made for each tree removed.
- .5 The unit price bid for “Remove and Dispose Bush” shall be considered full compensation for all materials, labour and equipment required for the removal and off-site disposal of existing bushes, including: cutting, excavating, excavating roots to a 1 metre depth, loading, hauling, backfilling, compacting, associated clean up and all items incidental to complete the work.
 - .1 Each area of bushes removed will be measured by length and average width to produce an area in square metres.
 - .2 Payment will be made for each square metre of bushed removed.
- .6 The unit price bid for “Supply and Plant Approved Tree” shall be considered full compensation for all materials, labour and equipment required for the supply and planting of bushes, including: procurement, loading, hauling, handling, safeguarding, transporting, excavation, planting, backfilling, compacting, watering, staking, associated clean up and all items incidental to complete the work.
 - .1 Each planted bush will be counted.
 - .2 Payment will be made for each bush planted.
- .7 The unit price bid for “Supply and Plant Approved Bush” shall be considered full compensation for all materials, labour and equipment required for the supply and planting of trees, including: procurement, loading, hauling, handling, safeguarding, transporting, excavation, planting, backfilling, compacting, watering, staking, associated clean up and all items incidental to complete the work.
 - .1 Each planted tree will be counted.
 - .2 Payment will be made for each tree planted.
- .8 The unit price bid for “Remove and Reinstall Garbage Bin” shall be considered full compensation for all materials, labour and equipment required for the removal and reinstallation of bear-proof garbage bins, including: excavating, loading, hauling, handling, safeguarding, transporting, excavation, construction of concrete base, backfilling, compacting, installing, associated clean up and all items incidental to complete the work.
 - .1 Each reinstalled garbage bin will be counted.
 - .2 Payment will be made for each relocated garbage bin.
- .9 The unit price bid for “Remove and Reinstall Sign” shall be considered full compensation for all materials, labour and equipment required for the removal and reinstallation of signs, including: removing, loading, hauling, handling, safeguarding, transporting, backfilling, compacting, installing, shaping, associated clean up and all items incidental to complete the work.

- .1 Each reinstalled sign will be counted.
- .2 Payment will be made for each relocated sign.
- .10 The unit price bid for “Remove and Reinstall Street Light” shall be considered full compensation for all materials, labour and equipment required for the removal and reinstallation of street lights, including: disconnecting, removing, loading, hauling, handling, safeguarding, transporting, backfilling, compacting, installing, connecting, shaping, associated clean up and all items incidental to complete the work.
 - .1 Each reinstalled street light will be counted.
 - .2 Payment will be made for each relocated street light.
- .11 The unit price bid for “Topsoil and Seeding” shall be considered full compensation for all materials, labour and equipment required for the placement of topsoil and hydroseeding, including: spreading, trimming, blading, shaping finishing, hydroseeding with an approved seed mixture, watering, associated clean up and all items incidental to complete the work. Topsoil stripping shall be considered incidental to the work.
 - .1 Each topsoiled and seeded area will be measured by length and average width to produce an area in square metres.
 - .2 Payment will be made for each square metre of topsoiled and seeded area.

1.7 LUMP SUM AMOUNT

- .1 This item will be full compensation for all items not identified in the bid items, such as mobilization and demobilization; and other costs deemed necessary by the Contractor.
 - .1 The amount will be counted as one unit.
 - .2 Payment will be made monthly based on percentage of work complete at the time of application. (Example: 30% of work complete = 30% of Lump Sum Amount eligible for payment.)

1.8 APPLICATIONS FOR PROGRESS PAYMENT

- .1 Date applications for payment last day of agreed monthly payment period and ensure amount claimed is for value, proportionate to amount of Contract, of Work performed and Products delivered to Place of Work at that date.
- .2 Support claims for products delivered to Place of Work but not yet incorporated into Work by such evidence as Departmental Representative may reasonably require to establish value and delivery of products.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 ADMINISTRATIVE

- .1 Submit to Departmental Representative submittals listed for review. Submit promptly and in orderly sequence to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .2 Do not proceed with Work affected by submittal until review is complete.
- .3 Present shop drawings, product data, samples and mock-ups in SI Metric units.
- .4 Where items or information is not produced in SI Metric units converted values are acceptable.
- .5 Review submittals prior to submission to Departmental Representative. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-ordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and considered rejected.
- .6 Notify Departmental Representative in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .7 Verify field measurements and affected adjacent Work are co-ordinated.
- .8 Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representatives review of submittals.
- .9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative's review.
- .10 Keep one reviewed copy of each submission on site.

1.2 SHOP DRAWINGS AND PRODUCT DATA

- .1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.
- .2 Submit drawings stamped and signed by professional Departmental Representative registered or licensed in Alberta of Canada.
- .3 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been co-ordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.
- .4 Allow 7 days for Departmental Representative's review of each submission.
- .5 Adjustments made on shop drawings by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Departmental Representative prior to proceeding with Work.

- .6 Make changes in shop drawings as Departmental Representative may require, consistent with Contract Documents. When resubmitting, notify Departmental Representative in writing of revisions other than those requested.
- .7 Accompany submissions with transmittal letter, in [duplicate], containing:
 - .1 Date.
 - .2 Project title and number.
 - .3 Contractor's name and address.
 - .4 Identification and quantity of each shop drawing, product data and sample.
 - .5 Other pertinent data.
- .8 Submissions include:
 - .1 Date and revision dates.
 - .2 Project title and number.
 - .3 Name and address of:
 - .1 Subcontractor.
 - .2 Supplier.
 - .3 Manufacturer.
 - .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
 - .5 Details of appropriate portions of Work as applicable:
 - .1 Fabrication.
 - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
 - .3 Setting or erection details.
 - .4 Capacities.
 - .5 Performance characteristics.
 - .6 Standards.
 - .7 Operating weight.
 - .8 Wiring diagrams.
 - .9 Single line and schematic diagrams.
 - .10 Relationship to adjacent work.
- .9 After Departmental Representative's review, distribute copies.
- .10 Submit 6 prints of shop drawings for each requirement requested in specification Sections and as Departmental Representative may reasonably request.
- .11 Submit 6 copies of product data sheets or brochures for requirements requested in specification Sections and as requested by Departmental Representative where shop drawings will not be prepared due to standardized manufacture of product.
- .12 Submit 6 copies of Operation and Maintenance Data for requirements requested in specification Sections and as requested by Departmental Representative
- .13 Delete information not applicable to project.

- .14 Supplement standard information to provide details applicable to project.
- .15 If upon review by Departmental Representative no errors or omissions are discovered or if only minor corrections are made, copies will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.
- .16 The review of shop drawings by Public Works and Government Services Canada (PWGSC) is for sole purpose of ascertaining conformance with general concept.
 - .1 This review shall not mean that PWGSC approves detail design inherent in shop drawings, responsibility for which shall remain with Contractor submitting same, and such review shall not relieve Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting requirements of construction and Contract Documents.
 - .2 Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of Work of sub-trades.

1.3 SAMPLES

- .1 Submit for review samples in duplicates requested in respective specification Sections. Label samples with origin and intended use.
- .2 Deliver samples prepaid to Departmental Representative's site office
- .3 Notify Departmental Representative in writing, at time of submission of deviations in samples from requirements of Contract Documents.
- .4 Where colour, pattern or texture is criterion, submit full range of samples.
- .5 Adjustments made on samples by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Departmental Representative prior to proceeding with Work.
- .6 Make changes in samples which Departmental Representative may require, consistent with Contract Documents.
- .7 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.

1.4 PHOTOGRAPHIC DOCUMENTATION

- .1 Submit electronic copy of colour digital photography in jpeg, standard resolution in accordance with Section 01 33 000.
- .2 Take daily photographs of all utility and underground work
- .3 Take photographs of site conditions before, during, and after construction. Take photographs of any unique or unusual items.
- .4 Photographs to be submitted on CD. All photographs to be labelled with meaningful titles.

1.5 CERTIFICATES AND TRANSCRIPTS

- .1 Immediately after award of Contract, submit Workers' Compensation Board status.
- .2 Submit transcription of insurance immediately after award of Contract.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

- .1 Not Used.

END OF SECTION

PART1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Mechanics and administration of the submittal process for:
 - a. Operation and Maintenance Manuals.
 - 2. Content requirements for Operation and Maintenance Manuals.

1.2 DEFINITIONS

- A. Operation and Maintenance (O&M) Manuals:
 - 1. Contain the information required for proper installation and maintenance of building materials and finishes.
 - 2. Contain the technical information required for proper installation, operation and maintenance of process, electrical and mechanical equipment and systems.

1.3 SUBMITTAL SCHEDULE

- A. Operation and Maintenance Manuals and Completed Equipment Record Sheets:
Initial submittal within 30 working days after date Shop Drawings are approved.

1.4 PREPARATION OF SUBMITTALS

- A. General:
 - 1. All submittals and all pages of all copies of a submittal shall be completely legible.
 - 2. Submittals which, in the Departmental Representative's sole opinion, are illegible will be returned without review.
- B. Operation and Maintenance Manuals:
 - 1. Owner's use of manufacturer's Operation and Maintenance materials:
 - a. Materials are provided for Owner's use, reproduction and distribution as training and reference materials within Owner's organization.
 - 1) Applicable to hard copy or electronic media.
 - 2) Applicable to materials containing copyright notice as well as those with no copyright notice.
 - b. Notify manufacturer of this intended use of materials provided under the Contract.
 - 2. Number each Operation and Maintenance Manual transmittal with the original root number of the associated Shop Drawing.
 - a. Identify resubmittals with the original number plus a suffix letter starting with "A."
 - 3. Submittal format:
 - a. Interim submittals: Submit two (2) paper copies until manual is approved.
 - b. Final submittals:
 - 1) Within 20 days of receipt of approval, submit one (1) additional paper copy and two (2) electronic copies on Compact Disc (CD-ROM) in Portable Document Format (PDF).
 - a) Compact discs to be secured in jewel cases.
 - 2) Electronic copies will be reviewed for conformance with the approved paper copy and the electronic copy (PDF) requirements of this Specification.
 - 3) Non-conforming CDs will be returned with comments.
 - a) Provide final CDs within 20 days of receipt of comments.
 - 4. Paper copy submittals:
 - a. Submit Operation and Maintenance Manuals printed on 8-1/2 x 11 IN size heavy first quality paper with standard three-hole punching and bound in appropriately sized three-

- ring (or post) vinyl view binders with clear overlays front, spine and back.
- 1) Provide binders with titles inserted under clear overlay on front and on spine of each binder.
 - a) As space allows, binder titles shall include, but not necessarily be limited to, Project Name and number, related Specification Number and Equipment Name(s) & Tag Numbers.
 - 2) Provide a Cover Page for each manual with the following information:
 - a) Manufacturer(s).
 - b) Date.
 - c) Project Owner and Project Name.
 - d) Specification Section.
 - e) Project Equipment Tag Numbers.
 - f) Model Numbers.
 - g) Engineer.
 - h) Contractor.
 - 3) Provide a Table of Contents or Index for each manual.
 - 4) Use plastic-coated dividers to tab each section of each manual per the manual's Table of Contents/Index for easy reference.
 - 5) Provide plastic sheet lifters prior to first page and following last page.
- b. Reduce Drawings or diagrams bound in manuals to an 8-1/2 x 11 IN or 11 x 17 IN size.
- 1) Where reduction is not practical to ensure readability, fold larger Drawings separately and place in vinyl envelopes which are bound into the binder.
 - 2) Identify vinyl envelopes with Drawing numbers.
- c. Mark each sheet to clearly identify specific products and component parts and data applicable to the installation for the Project.
- 1) Delete or cross out information that does not specifically apply to the Project.
5. Electronic copy submittals:
- a. Electronic copies of the approved paper copy Operation and Maintenance Manuals are to be produced in Adobe Acrobat's Portable Document Format (PDF) Version 5.0 or higher.
 - b. Do not password protect and/or lock the PDF document.
 - c. Create one (1) PDF document (PDF file) for each equipment O&M Manual.
 - d. Drawings or other graphics must be converted to PDF format and made part of the one (1) PDF document.
 - 1) Scanning to be used only where actual file conversion is not possible.
 - e. Rotate pages that must be viewed in landscape to the appropriate position for easy reading.
 - f. Images only shall be scanned at a resolution of 300 dpi or greater.
 - 1) Perform Optical Character Recognition (OCR) capture on all images.
 - 2) Achieve OCR with the "original image with hidden text" option.
 - 3) Word searches of the PDF document must operate successfully to demonstrate OCR compliance.
 - g. Create bookmarks in the navigation frame, for each entry in the Table of Contents/Index.
 - 1) Normally three levels deep (i.e., "Chapter," "Section," "Sub-section").
 - h. Thumbnails must be generated for each PDF file.
 - i. Set the opening view for PDF files as follows:
 - 1) Initial view: Bookmarks and Page.2) Magnification: Fit in Window.
 - 3) Page layout: Single page.
 - 4) Set the file to open to the cover page of the manual with bookmarks to the left, and the first bookmark linked to the cover page.

- j. All PDF documents shall be set with the option "Fast Web View" to open the first pages of the document for the viewer while the rest of the document continues to load.
- k. File naming conventions:
 - 1) File names shall use a "ten dot three" convention (XXXXXX-YY-Z.PDF) where XXXXX is the Specification Section number, YY is the Shop Drawing Root number and Z is an ID number used to designate the associated volume.
 - a) Example 1:
 - (1) Two (2) pumps submitted as separate Shop Drawings under the same Specification Section:
 - (a) Pump 1 = 11061-01-1.pdf.
 - (b) Pump 2 = 11061-02-1.pdf.
 - b) Example 2:
 - (1) Control system submitted as one (1) Shop Drawing but separated into two (2) O&M volumes:
 - (a) Volume 1 = 13440-01-1.pdf.
 - (b) Volume 2 = 13440-01-2.pdf.
 - l. Labeling:
 - 1) As a minimum, include the following labeling on all CD-ROM discs and jewel cases:
 - a) Project Name.
 - b) Equipment Name and Project Tag Number.
 - c) Project Specification Section.
 - d) Manufacturer Name.
 - e) Vendor Name.
 - m. Binding:
 - 1) Include labeled CD(s) in labeled jewel case(s).
 - a) Bind jewel cases in standard three-ring binder Jewel Case Page(s), inserted at the front of the Final paper copy submittal.
 - b) Jewel Case Page(s) to have means for securing Jewel Case(s) to prevent loss (e.g., flap and strap).

6. Operation and Maintenance Manuals for Materials and Finishes:

 - a. Building Products, Applied Materials and Finishes:
 - 1) Include product data, with catalog number, size, composition and color and texture designations.
 - 2) Provide information for re-ordering custom manufactured products
 - b. Instructions for Care and Maintenance:
 - 1) Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods and recommended schedule for cleaning and maintenance.
 - c. Moisture Protection and Weather Exposed Products:
 - 1) Include product data listing, applicable reference standards, chemical composition, and details of installation.
 - 2) Provide recommendations for inspections, maintenance and repair.
 - d. Additional requirements as specified in individual product specifications.

7. Operation and Maintenance Manuals for Equipment and Systems:

 - a. Submission of Operation and Maintenance Manuals for equipment and systems is applicable but not necessarily limited to:
 - 1) Major equipment.
 - 2) Equipment powered by electrical, pneumatic or hydraulic systems.
 - 3) Specialized equipment and systems including instrumentation and control systems and system components for HVAC process system control.4) Valves and water control gates.

- b. Equipment and Systems Operation and Maintenance Manuals shall include, but not necessarily be limited to, the following completed forms and detailed information, as applicable:
 - 1) Fully completed type-written copies of the associated Equipment Record(s), Exhibits B1, B2 and B3, shall be included under the first tab following the Table of Contents of each Operation and Maintenance Manual.
 - a) Each section of the Equipment Record must be completed in detail.
 - (1) Simply referencing the related manual for nameplate, maintenance, spare parts or lubricant information is not acceptable.
 - b) For equipment items involving components or subunits, a fully completed Equipment Record Form is required for each operating component or subunit.
 - c) Submittals that do not include the associated Equipment Record(s) will be rejected without further content review.
 - d) Electronic copies of the Exhibits may be obtained by contacting the Project Manager.
 - 2) Equipment function, normal operating characteristics, limiting operations.
 - 3) Assembly, disassembly, installation, alignment, adjustment, and checking instructions.
 - 4) Operating instructions for start-up, normal operation, control, shutdown, and emergency conditions.
 - 5) Lubrication and maintenance instructions.
 - 6) Troubleshooting guide.
 - 7) Parts lists:
 - a) Comprehensive parts and parts price lists.
 - b) A list of recommended spare parts.
 - c) List of spare parts provided as specified in the associated Specification Section.
 - 8) Outline, cross-section, and assembly Drawings; engineering data; and electrical diagrams, including elementary diagrams, wiring diagrams, connection diagrams, word description of wiring diagrams and interconnection diagrams.
 - 9) Test data and performance curves.
 - 10) As-constructed fabrication or layout Drawings and wiring diagrams.
 - 11) Instrumentation or tag numbers assigned to the equipment by the Contract Documents are to be used to identify equipment and system components.
 - 12) Additional information as specified in the associated equipment or system Specification Section.

1.5 TRANSMITTAL OF SUBMITTALS

- A. Operation and Maintenance Manuals:
 1. Submit to Contract Administrator. Submit with reasonable promptness and in an orderly sequence as to not cause delay of work:
 2. All submittals must be from Contractor.
 - a. Submittals will not be received from or returned to subcontractors.
 - b. Operation and Maintenance Manual submittal stamp may be Contractor's standard approval stamp.
 4. Provide submittal information defining specific equipment or materials utilized on the Project.
 - a. Generalized product information, not clearly defining specific equipment or materials to be provided, will be rejected.
- B. Expedited Return Delivery:
 1. Include prepaid express envelope or airbill in submittal transmittal package for any submittals Contractor expects or requires express return mail.

2. Inclusion of prepaid express envelope or airbill does not obligate Engineer to conduct expedited review of submittal.
- C. Electronic submittals will not be accepted except for approved Operation and Maintenance Manuals as required by this Specification.
- D. Fax Transmittals:
 1. Permitted on a case-by-case basis to expedite review when approved by Departmental Representative.
 2. Requires hard copy transmittal to immediately follow.
 - a. Departmental Representative will proceed with review of fax transmittal.
 - b. Departmental Representative's approval or rejection comments will be recorded and returned on hard copy transmittal.
3. Provisions apply to both:
 - a. Initial transmittal contents.
 - b. Supplemental information required to make initial transmittal contents complete.

1.6 DEPARTMENTAL REPRESENTATIVE'S REVIEW ACTION

- A. Operation and Maintenance Manuals:
 1. Departmental Representative will review and indicate one of the following review actions:
 - a. A - ACCEPTABLE.
 - b. B - REVISE AND RESUBMIT.
 2. Acceptable paper copy submittals will be retained with the transmittal form returned with a request for one (1) additional paper copy and two (2) electronic copies on CD-ROM.
 3. Deficient submittals (paper copy and/or electronic copy) will be returned along with the transmittal form which will be marked to indicate deficient areas.

2 - PRODUCTS – (Not Applicable to this Section)

3 - EXECUTION – (Not Applicable to this Section)

END OF SECTION

Part 1 General

1.1 MEASUREMENT PROCEDURES

- .1 Cost of traffic control will not be paid for directly, but shall be considered incidental to contract unit prices tendered

1.2 REFERENCES

- .1 Alberta Infrastructure and Transportation
 - .1 Traffic Accommodation in Work Zones - 2008.

1.3 PROTECTION OF PUBLIC TRAFFIC

- .1 Comply with requirements of Acts, Regulations and By-Laws in force for regulation of traffic or use of roadways upon or over which it is necessary to carry out Work or haul materials or equipment.
- .2 When working on travelled way:
 - .1 Place equipment in position to minimize interference and hazard to travelling public.
 - .2 Keep equipment units as close together as working conditions permit and preferably on same side of travelled way.
 - .3 Do not leave equipment on travelled way overnight.
- .3 Close lanes of road only after receipt of written approval from Departmental Representative
 - .1 Before re-routing traffic erect suitable signs and devices in accordance to Manual of Uniform Traffic Control Devices for Streets and Highways
- .4 Keep travelled way graded, free from pot holes and of sufficient width for required number of lanes of traffic.
 - .1 Provide 7m wide minimum temporary roadway for traffic in two-way sections through Work and on detours.
 - .2 Provide 5m wide minimum temporary roadway for traffic in one-way sections through Work and on detours.
- .5 Provide and maintain road access and egress to property fronting along Work under Contract and in other areas as indicated, except where other means of road access exist that meet approval of Departmental Representative.

1.4 INFORMATIONAL AND WARNING DEVICES

- .1 Contractor shall submit a Traffic Accommodation Strategy (TAS) prior to commencement of work.
- .2 Provide and maintain signs, flashing warning lights and other devices required to indicate construction activities or other temporary and unusual conditions resulting from Project Work which requires road user response.

- .3 Supply and erect signs, delineators, barricades and miscellaneous warning devices as specified in Manual of Uniform Traffic Control Devices for Streets and Highways.
- .4 Place signs and other devices in locations recommended in Manual of Uniform Traffic Control Devices for Streets and Highways.
- .5 Meet with Departmental Representative prior to commencement of Work to prepare list of signs and other devices required for project. If situation on site changes, revise list to approval of Departmental Representative.
- .6 Continually maintain traffic control devices in use:
 - .1 Check signs daily for legibility, damage, suitability and location. Clean, repair or replace to ensure clarity and reflectance.
 - .2 Remove or cover signs which do not apply to conditions existing from day to day.

1.5 CONTROL OF PUBLIC TRAFFIC

- .1 Provide competent flag personnel, trained in accordance with, and properly equipped as specified in Manual of Uniform Traffic Control Devices for Streets and Highways for situations as follows:
 - .1 When public traffic is required to pass working vehicles or equipment that block all or part of travelled roadway.
 - .2 When it is necessary to institute one-way traffic system through construction area or other blockage where traffic volumes are heavy, approach speeds are high and traffic signal system is not in use.
 - .3 When workmen or equipment are employed on travelled way over brow of hills, around sharp curves or at other locations where oncoming traffic would not otherwise have adequate warning.
 - .4 Where temporary protection is required while other traffic control devices are being erected or taken down.
 - .5 For emergency protection when other traffic control devices are not readily available.
 - .6 In situations where complete protection for workers, working equipment and public traffic is not provided by other traffic control devices.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

- .1 Not Used.

END OF SECTION

Part 1 General

1.1 REFERENCES

- .1 Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations
- .2 Province of Alberta
 - .1 Occupational Health and Safety Act, R.S.A. - Updated 2013.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit site-specific Health and Safety Plan: Within 7 days after date of Notice to Proceed and prior to commencement of Work. Health and Safety Plan must include:
 - .1 Results of site specific safety hazard assessment.
 - .2 Results of safety and health risk or hazard analysis for site tasks and operation.
- .3 Submit 1 copy of Contractor's authorized representative's work site health and safety inspection reports to Departmental Representative weekly, including minutes of safety toolbox meetings.
- .4 Submit copies of reports or directions issued by Federal, Provincial and Territorial health and safety inspectors.
- .5 Submit copies of incident and accident reports.
- .6 Submit WHMIS MSDS - Material Safety Data Sheets to Departmental Representative.
- .7 Departmental Representative will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within 3 days after receipt of plan. Revise plan as appropriate and resubmit plan to Departmental Representative within 3 days after receipt of comments from Departmental Representative.
- .8 Departmental Representative's review of Contractor's final Health and Safety plan should not be construed as approval and does not reduce the Contractor's overall responsibility for construction Health and Safety.
- .9 Medical Surveillance: where prescribed by legislation, regulation or safety program, submit certification of medical surveillance for site personnel prior to commencement of Work, and submit additional certifications for any new site personnel to Departmental Representative.
- .10 On-site Contingency and Emergency Response Plan: address standard operating procedures to be implemented during emergency situations.
 - .1 Emergencies: In the event of emergency call (403) 859-2636.
 - .2 All other inquiries: Parks Canada Switch Board (403) 859-2224.

1.3 FILING OF NOTICE

- .1 File Notice of Project with Provincial authorities prior to beginning of Work.

1.4 SAFETY ASSESSMENT

- .1 Perform site specific safety hazard assessment related to project.

1.5 MEETINGS

- .1 Schedule and administer Health and Safety meeting with Departmental Representative prior to commencement of Work.

1.6 REGULATORY REQUIREMENTS

- .1 Do Work in accordance with Section 01 41 00 - Regulatory Requirements.

1.7 GENERAL REQUIREMENTS

- .1 Develop written site-specific Health and Safety Plan based on hazard assessment prior to beginning site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications.
- .2 Departmental Representative may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns.

1.8 RESPONSIBILITY

- .1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.
- .2 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

1.9 COMPLIANCE REQUIREMENTS

- .1 Comply with Occupational Health and Safety Act, General Safety Regulation, Alberta Reg.
- .2 Comply with R.S.Q., c. S-2.1, an Act respecting Health and Safety, and c. S-2.1, r.4 Safety Code for the Construction Industry.
- .3 Comply with Occupational Health and Safety Regulations, 1996.
- .4 Comply with Canada Labour Code, Canada Occupational Safety and Health Regulations.

1.10 UNFORSEEN HAZARDS

- .1 When unforeseen or peculiar safety-related factor, hazard, or condition occur during performance of Work, follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations of Province having jurisdiction and advise Departmental Representative verbally and in writing.

1.11 POSTING OF DOCUMENTS

- .1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of Province having jurisdiction, and in consultation with Departmental Representative.

1.12 CORRECTION OF NON-COMPLIANCE

- .1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by Departmental Representative.
- .2 Provide Departmental Representative with written report of action taken to correct non-compliance of health and safety issues identified.
- .3 Departmental Representative may stop Work if non-compliance of health and safety regulations is not corrected.

1.13 WORK STOPPAGE

- .1 Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for Work.

Part 2 Products

2.1 NOT USED

- .1 Not used.

Part 3 Execution

3.1 NOT USED

- .1 Not used.

END OF SECTION

1.1 NATIONAL PARKS ACT

- .1 Perform work in accordance with the ordinances and laws set out in the National Parks Act and Regulations.

1.2 CANADIAN ENVIRONMENTAL ASSESSMENT ACT

- .1 Execution of work is subject to provisions within the Canadian Environmental Assessment Act, 2012.
- .2 Failure to comply with or observe environmental protection measures, as identified in these specifications, may result in work being suspended pending rectification of problem(s).

1.3 RELICS AND ANTIQUITIES

- .1 Give immediate notice to the Departmental Representative if evidence archaeological finds are encountered during construction, and await Departmental Representative's written instructions before proceeding with work in this area.
- .2 Relics, antiquities, items of historical or scientific interest such as cornerstones and contents, commemorative plaques, inscribed tablets, and similar objects found on site shall remain Department's property. Protect such articles and request directives from Departmental Representative.
- .3 Provide 48 hours notice to Departmental Representative prior to commencing any work that may interfere with or affect an identified historical or archaeological site. Commence work only upon written instructions from Departmental Representative.

1.4 WILDLIFE

- .1 Avoid or terminate activities on site that attract or harass wildlife.
- .2 Immediately notify Departmental Representative who will notify Park Warden Service of bear activity or encounters on or around site. Other wildlife encounters should be reported within 24 hours.

1.5 FIRES

- .1 Fires and burning of rubbish on site not permitted.

1.6 DISPOSAL OF WASTE

- .1 All garbage must be stored and handled in conformance with National Parks Garbage Regulations.
- .2 All domestic garbage should be stored over the short term in wildlife-proof dumpsters. Domestic recycling should be put in appropriate facilities. Contaminated materials are to be taken out of the Park.
- .3 Do not bury rubbish and waste materials on site.
- .4 Maintain the site in a tidy condition, free of waste material, debris and litter.

1.7 DRAINAGE

- .1 Provide temporary drainage and pumping as necessary to keep excavations and site free from water.
- .2 Dewatering of a construction site will require a special permit.
- .3 Do not pump water containing suspended materials into waterways, sewer or drainage systems.
- .4 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with Parks Canada requirements and in conformance with the Environmental Contaminants Act and applicable provincial regulations while observing the Code of Good Practice for Management of Hazardous and Toxic Wastes at Federal Establishments.

1.8 SITE CLEARING AND PLANT PROTECTION

- .1 Protect trees and plants on site and adjacent properties where indicated or as directed by Departmental Representative.
- .2 Where absolutely necessary to work adjacent to existing trees and shrubs, Contractor shall exercise all possible care to avoid injury to vegetation. Where roots or limbs over 25 mm in diameter and bark are damaged during operations, trim damaged portion and immediately inform Departmental Representative for inspection and approval.
- .3 Permits are required from Park Warden Service if a tree is to be removed. Contact Warden Office at (403) 859-5140. Municipal Officer may also give permission for a dead tree to be removed without the consent of Park Warden Service. Three young trees, from Waterton's native species or approved introduced species list, must be planted for each tree removed.
- .4 Park Warden Service (and the Municipal Officer) has a list of native grasses, shrubs, flowers and trees for appropriate revegetating.

1.9 WORK ADJACENT TO WATERWAYS

- .1 Do not operate construction equipment in waterways.
- .2 Do not use waterway beds for borrow material.
- .3 Do not dump excavated fill, waste material or debris in waterways.
- .4 Design and construct temporary crossings to minimize erosion to waterways.
- .5 Do not skid logs or construction materials across waterways.
- .6 Avoid indicated spawning beds when constructing temporary crossings of waterways.
- .7 Do not blast under water or within 100 m of indicated spawning beds.
- .8 Fueling operations and fuel storage shall be at least 200 m away from watercourses, or as directed by Departmental Representative in consultation with Park Warden Service.

1.10 CONTRACTOR'S OPERATIONS

- .1 Confine all operations to work limits as staked or designated by Departmental Representative. No activities of any kind may be carried out beyond those work limits without Departmental Representative's written permission.

- .2 Do not store or stockpile construction materials in trees bordering, or being preserved on site. Do not unreasonably encumber site with products.
- .3 Equipment maintenance shall only be carried out in designated areas or as approved by Departmental Representative and Park Warden Service. Use of turnouts, campgrounds, picnic areas, work camps, etc., for equipment oil changes and other servicing will not be permitted.
- .4 Used oil, filter and grease cartridges, lubrication containers and other products of equipment maintenance shall be collected and disposed of at nearest industrial waste facility.
- .5 Provide sufficient sanitary facilities and maintain in a clean condition.
- .6 Obtain permit from Park Warden Service for storage of fuel or other inflammable liquids. Observe all restrictions and conditions imposed by permit regarding special protection and berming to control spills and tank damage; fire protection considerations; provisions for disposal of fouled material and used petroleum products
- .7 Conduct operations at all times in such a manner as to preserve natural features and vegetation in area. Cut and fill slopes shall be blended with adjoining topography. Material from fill slopes will not be permitted to slough or roll into surrounding tree cover or to bury any plant material designated to be retained.
- .8 When, in opinion of Departmental Representative, negligence on part of Contractor results in damage or destruction of vegetation, or other environmental or aesthetic features beyond staked or designated work areas, Contractor shall be responsible, at his expense, for complete restoration of trees including replacement of trees, shrubs, topsoil, grass, etc. to Departmental Representative's satisfaction.
- .9 As no non-native vegetation is allowed in Park, all construction equipment shall be thoroughly washed before entering Waterton National Park.

1.11 CONTRACTOR'S EMPLOYEE BRIEFING

- .1 Conduct briefing sessions for all employees and sub-contractor employees highlighting requirements of this section, including operation of equipment strictly.
- .2 Initial site meeting with Contractor, Departmental Representative, Park Project Manager and Park Warden Service will occur prior to construction commencing.
- .3 Contract documents have been developed in accordance with Canadian Environmental Assessment Act screening requirements. Construction methods which are directly affected by CEAA screening will be reviewed at initial site meeting. Contractor will be expected to comply with and ensure construction practices meet the CEAA Standards. Failure to comply may lead to cessation of work.

1.12 COMPLIANCE WITH PARKS CANADA DEVELOPMENT PERMIT

- .1 Read, understand and comply with Parks Canada Development Permit and all stipulations provided therein.

1.13 MEASUREMENT AND PAYMENT

- .1 Cost of environmental and aesthetic protection will not be paid for directly, but shall be considered incidental to contract unit prices tendered.

END OF SECTION

Part 1 General

1.1 REFERENCES AND CODES

- .1 Perform Work in accordance with National Building Code of Canada (NBC) including amendments up to tender closing date and other codes of provincial or local application provided that in case of conflict or discrepancy, more stringent requirements apply.
- .2 Meet or exceed requirements of:
 - .1 Contract documents.
 - .2 Specified standards, codes and referenced documents.

1.2 WHMIS

- .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labelling and provision of material safety data sheets acceptable to Labour Canada and Health and Welfare Canada.

1.3 BUILDING SMOKING ENVIRONMENT

- .1 Comply with smoking restrictions and municipal by-laws.

1.4 NATIONAL PARKS ACT

- .1 Perform Work in accordance with National Parks Act when projects are located within boundaries of National Park.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

- .1 Not Used.

END OF SECTION

Approved: 2006-09-30

Part 1 General

1.1 INSPECTION

- .1 Allow Departmental Representative access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.
- .2 Give timely notice requesting inspection if Work is designated for special tests, inspections or approvals by Departmental Representative instructions, or law of Place of Work.
- .3 If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.
- .4 Departmental Representative will order part of Work to be examined if Work is suspected to be not in accordance with Contract Documents. If, upon examination such work is found not in accordance with Contract Documents, correct such Work and pay cost of examination and correction. [If such Work is found in accordance with Contract Documents, Departmental Representative shall pay cost of examination and replacement.

1.2 INDEPENDENT INSPECTION AGENCIES

- .1 Independent Inspection/Testing Agencies will be engaged by the Departmental Representative for purpose of inspecting and/or testing portions of Work.
- .2 Provide equipment required for executing inspection and testing by appointed agencies.
- .3 Employment of inspection/testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.
- .4 If defects are revealed during inspection and/or testing, appointed agency will request additional inspection and/or testing to ascertain full degree of defect. Correct defect and irregularities as advised by Departmental Representative at no cost to Departmental Representative. Pay costs for retesting and reinspection.

1.3 ACCESS TO WORK

- .1 Allow inspection/testing agencies access to Work, off site manufacturing and fabrication plants.
- .2 Co-operate to provide reasonable facilities for such access.

1.4 PROCEDURES

- .1 Notify appropriate agency and Departmental Representative in advance of requirement for tests, in order that attendance arrangements can be made.
- .2 Submit samples and/or materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in orderly sequence to not cause delays in Work.
- .3 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.

1.5 REJECTED WORK

- .1 Remove defective Work, whether result of poor workmanship, use of defective products or damage and whether incorporated in Work or not, which has been rejected by Departmental Representative as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.
- .2 Make good other Contractor's work damaged by such removals or replacements promptly.
- .3 If in opinion of Departmental Representative it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Owner will deduct from Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which will be determined by Departmental Representative.

1.6 REPORTS

- .1 Submit 1 copy of inspection and test reports to Departmental Representative.

1.7 TESTS AND MIX DESIGNS

- .1 Furnish test results and mix designs as requested.
- .2 Cost of tests and mix designs beyond those called for in Contract Documents or beyond those required by law of Place of Work will be appraised by Departmental Representative and may be authorized as recoverable.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

- .1 Not Used.

END OF SECTION

Part 1 General

1.1 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.

1.2 INSTALLATION AND REMOVAL

- .1 Provide temporary utilities controls in order to execute work expeditiously.
- .2 Remove from site all such work after use.

1.3 DEWATERING

- .1 Provide temporary drainage and pumping facilities to keep excavations and site free from standing water.

1.4 WATER SUPPLY

- .1 Contractor will provide continuous supply of potable water to all homes, businesses and facilities disrupted by construction activities.
- .2 Arrange for connection with appropriate utility company and pay costs for installation, maintenance and removal.
- .3 Costs for temporary water services and considered incidental to the work and no separate or additional payment will be made.

1.5 SANITARY SEWER

- .1 Contractor will provide continuous sanitary sewer to all homes, businesses and facilities disrupted by construction activities.
- .2 Arrange for connection with appropriate utility company and pay costs for installation, maintenance and removal.
- .3 Costs for temporary sanitary sewer services and considered incidental to the work and no separate or additional payment will be made.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 TEMPORARY EROSION AND SEDIMENTATION CONTROL

- .1 Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

- .2 Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.
- .3 Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

END OF SECTION

Part 1 General

1.1 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.

1.2 INSTALLATION AND REMOVAL

- .1 Prepare site plan indicating proposed location and dimensions of area to be fenced and used by Contractor, number of trailers to be used, avenues of ingress/egress to fenced area and details of fence installation.
- .2 Identify areas which have to be gravelled to prevent tracking of mud.
- .3 Indicate use of supplemental or other staging area.
- .4 Provide construction facilities in order to execute work expeditiously.
- .5 Remove from site all such work after use.

1.3 SITE STORAGE/LOADING

- .1 Confine work and operations of employees by Contract Documents. Do not unreasonably encumber premises with products.
- .2 Do not load or permit to load any part of Work with weight or force that will endanger Work.

1.4 CONSTRUCTION PARKING

- .1 Parking will be permitted on site provided it does not disrupt performance of Work or normal operations of the National Park. Parking areas must be approved by Departmental Representative.
- .2 Provide and maintain adequate access to project site.

1.5 SECURITY

- .1 Provide and pay for responsible security personnel to guard site and contents of site after working hours and during holidays.

1.6 OFFICES

- .1 If required by Contractor, provide office of sufficient size to accommodate required work activities of Contractor and all Sub-Contractors. Departmental Representative to approve location of trailer.
- .2 Provide marked and fully stocked first-aid case in a readily available location.

1.7 EQUIPMENT, TOOL AND MATERIALS STORAGE

- .1 Provide and maintain, in clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.
- .2 Locate materials not required to be stored in weatherproof sheds on site in manner to cause least interference with work activities.

1.8 SANITARY FACILITIES

- .1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.
- .2 Post notices and take precautions as required by local health authorities. Keep area and premises in sanitary condition.

1.9 PROTECTION AND MAINTENANCE OF TRAFFIC

- .1 Provide access and temporary relocated roads as necessary to maintain traffic.
- .2 Maintain and protect traffic on affected roads during construction period except as otherwise specifically directed by Departmental Representative.
- .3 Provide measures for protection and diversion of traffic, including provision of watch-persons and flag-persons, erection of barricades, placing of lights around and in front of equipment and work, and erection and maintenance of adequate warning, danger, and direction signs
- .4 Protect travelling public from damage to person and property.
- .5 Contractor's traffic on roads selected for hauling material to and from site to interfere as little as possible with public traffic.
- .6 Verify adequacy of existing roads and allowable load limit on these roads. Contractor: responsible for repair of damage to roads caused by construction operations.
- .7 Provide necessary lighting, signs, barricades, and distinctive markings for safe movement of traffic.
- .8 Dust control: adequate to ensure safe operation at all times.
- .9 Provide snow removal during period of Work.

1.10 CLEAN-UP

- .1 Remove construction debris, waste materials, packaging material from work site daily.
- .2 Clean dirt or mud tracked onto paved or surfaced roadways.
- .3 Store materials resulting from demolition activities that are salvageable.
- .4 Stack stored new or salvaged material not in construction facilities.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 TEMPORARY EROSION AND SEDIMENTATION CONTROL

- .1 Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.
- .2 Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.
- .3 Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

END OF SECTION

Part 1 General

1.1 INSTALLATION AND REMOVAL

- .1 Provide temporary controls in order to execute Work expeditiously.
- .2 Remove from site all such work after use.

1.2 GUARD RAILS AND BARRICADES

- .1 Provide secure, rigid guard rails and barricades around deep excavations.

1.3 ACCESS TO SITE

- .1 Provide and maintain access roads, sidewalk crossings, ramps and construction runways as may be required for access to Work.

1.4 PUBLIC TRAFFIC FLOW

- .1 Provide and maintain competent signal flag operators, traffic signals, barricades and flares, lights, or lanterns as required to perform Work and protect public.

1.5 FIRE ROUTES

- .1 Maintain access to property including overhead clearances for use by emergency response vehicles.

1.6 PROTECTION FOR OFF-SITE AND PUBLIC PROPERTY

- .1 Protect surrounding private and public property from damage during performance of Work.
- .2 Be responsible for damage incurred.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

- .1 Not Used.

END OF SECTION

Approved: 2006-03-31

Part 1 General

1.1 REFERENCES

- .1 If there is question as to whether products or systems are in conformance with applicable standards, Departmental Representative reserves right to have such products or systems tested to prove or disprove conformance.
- .2 Cost for such testing will be born by Departmental Representative in event of conformance with Contract Documents or by Contractor in event of non-conformance.

1.2 QUALITY

- .1 Products, materials, equipment and articles incorporated in Work shall be new, not damaged or defective, and of best quality for purpose intended. If requested, furnish evidence as to type, source and quality of products provided.
- .2 Procurement policy is to acquire, in cost effective manner, items containing highest percentage of recycled and recovered materials practicable consistent with maintaining satisfactory levels of competition. Make reasonable efforts to use recycled and recovered materials and in otherwise utilizing recycled and recovered materials in execution of work.
- .3 Defective products, whenever identified prior to completion of Work, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility, but is precaution against oversight or error. Remove and replace defective products at own expense and be responsible for delays and expenses caused by rejection.
- .4 Should disputes arise as to quality or fitness of products, decision rests strictly with Departmental Representative based upon requirements of Contract Documents.
- .5 Unless otherwise indicated in specifications, maintain uniformity of manufacture for any particular or like item throughout building.
- .6 Permanent labels, trademarks and nameplates on products are not acceptable in prominent locations, except where required for operating instructions, or when located in mechanical or electrical rooms.

1.3 AVAILABILITY

- .1 Immediately upon signing Contract, review product delivery requirements and anticipate foreseeable supply delays for items. If delays in supply of products are foreseeable, notify Departmental Representative of such, in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of Work.
- .2 In event of failure to notify Departmental Representative at commencement of Work and should it subsequently appear that Work may be delayed for such reason, Departmental Representative reserves right to substitute more readily available products of similar character, at no increase in Contract Price or Contract Time.

1.4 STORAGE, HANDLING AND PROTECTION

- .1 Handle and store products in manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions when applicable.
- .2 Store packaged or bundled products in original and undamaged condition with manufacturer's seal and labels intact. Do not remove from packaging or bundling until required in Work.
- .3 Store products subject to damage from weather in weatherproof enclosures.
- .4 Remove and replace damaged products at own expense and to satisfaction of Departmental Representative.

1.5 TRANSPORTATION

- .1 Pay costs of transportation of products required in performance of Work.

1.6 MANUFACTURER'S INSTRUCTIONS

- .1 Unless otherwise indicated in specifications, install or erect products in accordance with manufacturer's instructions. Do not rely on labels or enclosures provided with products. Obtain written instructions directly from manufacturers.
- .2 Notify Departmental Representative in writing, of conflicts between specifications and manufacturer's instructions, so that Departmental Representative will establish course of action.
- .3 Improper installation or erection of products, due to failure in complying with these requirements, authorizes Departmental Representative to require removal and re-installation at no increase in Contract Price or Contract Time.

1.7 QUALITY OF WORK

- .1 Ensure Quality of Work is of highest standard, executed by workers experienced and skilled in respective duties for which they are employed. Immediately notify Departmental Representative if required Work is such as to make it impractical to produce required results.
- .2 Do not employ anyone unskilled in their required duties. Departmental Representative reserves right to require dismissal from site, workers deemed incompetent or careless.
- .3 Decisions as to standard or fitness of Quality of Work in cases of dispute rest solely with Departmental Representative, whose decision is final.

1.8 CO-ORDINATION

- .1 Ensure co-operation of workers in laying out Work. Maintain efficient and continuous supervision.

1.9 SETTING OUT OF WORK

- .1 Departmental Representative will supply horizontal reference control points benchmark elevations only for this project.
- .2 Contractor will set grades and layout work in detail from control points established by Departmental Representative.

- .3 Contractor shall employ competent survey staff for complete detailed layout of work.
- .4 Survey supervisor shall have experience in urban field survey work, including obtaining horizontal and vertical measurements, record keeping and calculation of quantities, generally associated with 3 to 5 years related experience.
- .5 Contractor will be responsible for correction of any error associated with his layout.
- .6 Contractor shall supply such devices as straight edges and templates required to facilitate Departmental Representative's inspection of work.
- .7 Contractor shall supply stakes and other survey markers required for laying out the work.
- .8 Cost of setting out of work will not be paid for directly but shall be considered incidental to contract unit prices tendered.

1.10 REMEDIAL WORK

- .1 Perform remedial work required to repair or replace parts or portions of Work identified as defective or unacceptable. Co-ordinate adjacent affected Work as required.
- .2 Perform remedial work by specialists familiar with materials affected. Perform in a manner to neither damage nor put at risk any portion of Work.

1.11 EXISTING UTILITIES

- .1 When breaking into or connecting to existing services or utilities, execute Work at times directed by local governing authorities, with minimum of disturbance to Work, building occupants and pedestrian and vehicular traffic.
- .2 Protect, relocate or maintain existing active services. When services are encountered, cap off in manner approved by authority having jurisdiction. Stake and record location of capped service.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

- .1 Not Used.

END OF SECTION

Part 1 General

1.1 PROJECT CLEANLINESS

- .1 Maintain Work in tidy condition, free from accumulation of waste products and debris.
- .2 Remove waste materials from site at daily regularly scheduled times or dispose of as directed by Departmental Representative. Do not burn waste materials on site.
- .3 Clear snow and ice as required. Pile snow in designated areas only.
- .4 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .5 Provide on-site containers for collection of waste materials and debris.
- .6 Dispose of waste materials and debris outside of Waterton Lakes National Park.

1.2 FINAL CLEANING

- .1 When Work is Substantially Performed remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.
- .2 Remove waste products and debris, and leave Work clean and suitable for occupancy.
- .3 Prior to final review remove surplus products, tools, construction machinery and equipment.
- .4 Broom clean and wash exterior walks, steps and surfaces; rake clean other surfaces of grounds.
- .5 Remove dirt and other disfiguration from exterior surfaces.
- .6 Sweep and wash clean paved areas.

1.3 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials for reuse and recycling.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

- .1 Not Used.

END OF SECTION

Part 1 General

1.1 ADMINISTRATIVE REQUIREMENTS

- .1 Acceptance of Work Procedures:
 - .1 Contractor's Inspection: Contractor: conduct inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.
 - .1 Notify Departmental Representative in writing of satisfactory completion of Contractor's inspection and submit verification that corrections have been made.
 - .2 Request Departmental Representative's inspection.
 - .2 Departmental Representative's Inspection:
 - .1 Departmental Representative and Contractor to inspect Work and identify defects and deficiencies.
 - .2 Contractor to correct Work as directed.
 - .3 Completion Tasks: submit written certificates that tasks have been performed as follows:
 - .1 Work: completed and inspected for compliance with Contract Documents.
 - .2 Defects: corrected and deficiencies completed.
 - .3 Equipment and systems: tested, adjusted and fully operational.
 - .4 Certificates required by Utility companies: submitted.
 - .5 Operation of systems: demonstrated to Owner's personnel.
 - .6 Work: complete and ready for final inspection.
 - .4 Final Inspection:
 - .1 When completion tasks are done, request final inspection of Work by Departmental Representative, and Contractor.
 - .2 When Work incomplete according to Departmental Representative, complete outstanding items and request re-inspection.
 - .5 Declaration of Substantial Performance: when Departmental Representative considers deficiencies and defects corrected and requirements of Contract substantially performed, make application for Certificate of Substantial Performance.
 - .6 Commencement of Lien and Warranty Periods: date of Owner's acceptance of submitted declaration of Substantial Performance to be date for commencement for warranty period and commencement of lien period unless required otherwise by lien statute of Place of Work.
 - .7 Final Payment:
 - .1 When Departmental Representative considers final deficiencies and defects corrected and requirements of Contract met, make application for final payment.

- .8 Payment of Holdback: after issuance of Certificate of Substantial Performance of Work, submit application for payment of holdback amount in accordance with contractual agreement.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

- .1 Not Used.

END OF SECTION

Part 1 General

1.1 ADMINISTRATIVE REQUIREMENTS

- .1 Pre-warranty Meeting:
 - .1 Convene meeting one week prior to contract completion with Departmental Representative, to:
 - .1 Verify Project requirements.
 - .2 Review warranty requirements.
 - .2 Departmental Representative to establish communication procedures for:
 - .1 Notifying construction warranty defects.
 - .2 Determine priorities for type of defects.
 - .3 Determine reasonable response time.
 - .3 Contact information for bonded and licensed company for warranty work action: provide name, telephone number and address of company authorized for construction warranty work action.
 - .4 Ensure contact is located within local service area of warranted construction, is continuously available, and is responsive to inquiries for warranty work action.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 One week prior to Substantial Performance of the Work, submit to the Departmental Representative, two final copies of operating and maintenance manuals in English.
- .3 Provide spare parts, maintenance materials and special tools of same quality and manufacture as products provided in Work.
- .4 Provide evidence, if requested, for type, source and quality of products supplied.

1.3 FORMAT

- .1 Organize data as instructional manual.
- .2 Binders: vinyl, hard covered, 3 'D' ring, loose leaf [219 x 279] mm with spine and face pockets.
- .3 When multiple binders are used correlate data into related consistent groupings.
 - .1 Identify contents of each binder on spine.
- .4 Cover: identify each binder with type or printed title 'Project Record Documents'; list title of project and identify subject matter of contents.
- .5 Arrange content under Section numbers and sequence of Table of Contents.
- .6 Text: manufacturer's printed data, or typewritten data.
- .7 Drawings: provide with reinforced punched binder tab.

1.4 AS -BUILT DOCUMENTS AND SAMPLES

- .1 Maintain, at site for Departmental Representative one record copy of:
 - .1 Contract Drawings.
 - .2 Specifications.
 - .3 Addenda.
 - .4 Change Orders and other modifications to Contract.
 - .5 Reviewed shop drawings, product data, and samples.
 - .6 Field test records.
 - .7 Inspection certificates.
 - .8 Manufacturer's certificates.
- .2 Store record documents and samples in field office apart from documents used for construction.
 - .1 Provide files, racks, and secure storage.
- .3 Label record documents and file in accordance with Section number listings in List of Contents of this Project Manual.
 - .1 Label each document "PROJECT RECORD" in neat, large, printed letters.
- .4 Maintain record documents in clean, dry and legible condition.
 - .1 Do not use record documents for construction purposes.
- .5 Keep record documents and samples available for inspection by Departmental Representative.

1.5 RECORDING INFORMATION ON PROJECT RECORD DOCUMENTS

- .1 Record information on set of drawings, provided by Departmental Representative.
- .2 Use felt tip marking pens, maintaining separate colours for each major system, for recording information.
- .3 Record information concurrently with construction progress.
 - .1 Do not conceal Work until required information is recorded.
- .4 Contract Drawings and shop drawings: mark each item to record actual construction, including:
 - .1 Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - .2 Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of construction.
 - .3 Field changes of dimension and detail.
 - .4 Changes made by change orders.
 - .5 Details not on original Contract Drawings.
 - .6 References to related shop drawings and modifications.
- .5 Specifications: mark each item to record actual construction, including:

- .1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.
- .2 Changes made by Addenda and change orders.
- .6 Other Documents: maintain manufacturer's certifications, inspection certifications, field test records, required by individual specifications sections.
- .7 Provide digital photos, if requested, for site records.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

- .1 Not Used.

END OF SECTION