

ANNEX “A” – SPECIFICATIONS

MONITORING STATION REBUILD

SOUTH SASKATCHEWAN RIVER AT MEDICINE HAT – 05AJ001– ALBERTA

1. Introduction

The Water Survey of Canada (WSC) / Environment and Climate Change Canada - National Hydrological Service (ECCC - NHS) was established in 1908 to provide water level and flow data to all Canadians. WSC is the lead agency responsible for the collection, interpretation and dissemination of standardized water resource data and information in Canada. In partnership with the Provinces, Territories, and other agencies, there are over 400 active gauging stations in the Alberta Hydrometric Network operated under the Canada-Alberta Memorandum of Agreement for Water Quantity Surveys between WSC and Alberta Environment and Parks (AEP).

1.1. Objective

The objective of this project is to construct a monitoring station in a timely manner allowing continuous production of discharge data. The construction services are to be carried out in accordance with all applicable guidelines and standards, and result in minimal impact to the environment.

1.2. Background

The monitoring station at 05AJ001 South Saskatchewan River at Medicine Hat is due for infrastructural upgrades. Due to soil pressures from the berm, fatigue, and weathering, the shelter has deteriorated and requires repair/replacement. For the continued production of discharge data and operation safety, a new building is required.

The required services of this project will be the installation of a new monitoring building at this site, in the same location as the existing structure, and of a new conduit from the building to the South Saskatchewan River.

1.3. Project Location

- Station Number and Name: 05AJ001 South Saskatchewan River at Medicine Hat
- Legal Land Description: NW-31-12-05-W4
- Coordinates: 50.04209°N, -110.67754°W
- Municipality: Medicine Hat
- Land Ownership: Road reserve

- 1.3.1. The existing concrete shelter is under the Finlay Bridge on 6th Ave. near River Rd. SE in Medicine Hat. Parking is located on the south side of River Road downstream of the gauge. Access to the gauge is on the downstream side of Finlay Bridge.

1.4. Existing Infrastructure

The existing infrastructure will be demolished. Refer to Appendix 1 for photos of the existing site.

1.5. Reference Documents

The Drawings show the existing site conditions and the proposed design for the placement of completed structure. Annex “A” must be read in conjunction with the Drawings provided by Technical Authority. For conditions not explicitly shown, the Contractor must immediately request clarifications from the ECCC Project Authority. In the event of discrepancies in the Annex “A”, Drawings, or contract documents, the most stringent requirements apply.

1.6. Roles and Responsibilities

The general roles and responsibilities shall be as follows:

Role	Responsibility
Project Authority (Environment and Climate Change Canada)	<ul style="list-style-type: none"> - General inquiries - Pre-construction Deliverables - Mobilization and Miscellaneous Deliverables and Tasks - Operational Health and Safety Plan Review - Environmental Protection Plan Review - Budget, Schedule, and Scope-related change approvals
Technical Authority (McElhanney Ltd.)	<ul style="list-style-type: none"> - Field reviews - Technical approvals

2. Scope

ECCC is seeking a qualified Contractor to conduct construction activities to build a new monitoring station building at the hydrometric station 05AJ001 South Saskatchewan River at Medicine Hat including a new conduit from the building to the South Saskatchewan River.

The Contractor must provide construction services for the project, including mobilization and demobilization, all labour and materials, supervision/project management, equipment and supplies, as required. The scope of work encompasses the following deliverables and tasks:

Item	Deliverables and Tasks
1.	Mobilization and Miscellaneous: <ul style="list-style-type: none"> - Mobilization, site preparation and demobilization, - Site restoration to existing grading conditions, as per City of Medicine Hat requirements. - Pre-construction and post-construction submittals, including submission to City of Medicine Hat for approval. - Project Management and Coordination of required regulatory permitting and permission, as per City of Medicine Hat requirements - Alberta One-Call and private utility locates.
2.	Site Preparation: <ul style="list-style-type: none"> - Temporary disconnection and relocation of existing utilities (Gel Cell, Telus Telephone Line, Hydrometric Metering Line, Alternating Current Power, charging system). - Temporary excavation of slope.
3.	Installation of new conduit <ul style="list-style-type: none"> - Install new conduit from proposed building site to South Saskatchewan River via directional drilling
4.	Installation of new concrete building <ul style="list-style-type: none"> - Prepare subgrade for new building including installation of granular base. - Install new building (reinforced concrete base, walls and roof) including metal door with multi-point locking mechanism. - Install perimeter drain including cleanouts, drain rock and geotextile wrap.

	<ul style="list-style-type: none"> - Backfill with suitable material, compact backfill, cover with topsoil and seed with grass. - Reinstall existing utilities (Gel Cell, Telus Telephone Line, Hydrometric Metering Line, Alternating Current Power, charging system).
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The Contractor must comply with design and specifications, federal and provincial regulatory requirements, occupational health and safety regulation, as well as other applicable codes and industry standards.

3. Deliverables and Tasks

3.1. Prior to Construction

- 3.1.1. The Contractor must fully understand all provided and relevant documents prior to the Work and create a work plan to carry out the construction.
- 3.1.2. The Contractor must ensure that all pre-construction deliverables listed below are completed **within ten (10) business days** after the contract is awarded, but not later than **fifteen (15) business days** prior to commencement of work. All pre-construction deliverables must be provided to the ECCC Project Authority for review, acceptance and/or approval. The ECCC Project Authority has **five (5) business days** to review and provide comments.
- 3.1.3. The Contractor must attend an official kick-off meeting with all key personnel and verify project requirements once pre-construction deliverables are completed.
- 3.1.4. Authorization from the ECCC Project Authority is required by the Contractor before mobilization to the work site. The Contractor should notify the ECCC Project Authority in advance about the date of mobilization and commencement of work.
- 3.1.5. The Contractor must provide Project Management and Coordination throughout the project, required regulatory permitting and permissions, as per City of Medicine Hat (CMH) requirements, retaining environmental professional to assess and secure permits, including but not limited to:
 - a. Environmental Strategy and Compliance - Regulatory Requirements: Regarding any work being conducted on City of Medicine Hat owned land, Federal and Provincial Regulatory Requirements shall be followed including, but not limited to:
 - Water Act applications and approvals if required (when working within and around surface water), and Wildlife sweeps (see below for detail).
 - b. Impact to wildlife: Due to the location of the project a wildlife sweep including migratory birds is required if construction/demolition is to occur between April 8th and August 24th, on City owned land, and to be conducted by a qualified professional prior to commencement of construction. Birds have been known to nest under the City bridges, as well as a number of species at risk including snakes and amphibians local to the area.
 - c. Vehicle Access Permit: Contractor will be responsible for applying for a Vehicle Access Permit, as required by Parks and Recreation.
 - d. Outfall Storm Sewer: A protection plan should be in place for sediment control for City of Medicine Hat catch basins and storm sewers.
 - e. Historical Resource Value (HRV): Contractor project management is required to complete all requirements as they pertain to Historical Resource Value.
- 3.1.6. The ECCC Project Authority will provide City of Medicine Hat (CMH) contacts and existing information received from City of Medicine Hat.
- 3.1.7. Pre-construction submittals include:
 - a. Confirmation of names of the supervisory personnel and other key staff designated for the assignment;
 - The Contractor is responsible for providing personnel trained in the following certifications alongside any additional Occupational Health and Safety requirements:
 - Standard First Aid – Level C CPR/AED

- Spill Response Training
 - Ground Disturbance Training
- b. Site-specific Health and Safety Plan; including On-site Contingency and Emergency Response Plan.
- c. Schedule of Health and Safety meeting with the ECCC Project Authority;
- d. Work plan outlining construction methodology in detail, and quality control plan;
- Work plan must take into consideration the following recommendations and comments from the City of Medicine Hat:
 - Prior to any excavation or work, submit a Service or Subdivision Development Request with proposed service/changes with supporting documents, including work plan. Application website is: <https://www.medicinehat.ca/en/homeproperty-and-utilities/electricapplications.aspx>
 - Any conflicts with electrical infrastructure in proposed Work Plan is not permitted. Conflicts can be identified by completing utility locates and site visits.
 - Any excavations around existing infrastructure that effect the integrity of the infrastructure will need a mitigation plan (examples: relocation or temporary supports, etc.)
 - Contractor must complete Alberta One Call Utility Locate (and private locates if required) – which will initiate the agreements which will dictate the procedures and work methods acceptable. Particular care must be made in the Asbestos Cement (AC) water main underneath River Road SE – which is brittle and does not respond well to disturbance.
 - Grade Change: All grade changes (greater than 6”) around/over/under existing electrical infrastructure must be reviewed by UDS – Electric Utility. No decrease in grade around the base of the pole nor change in grade greater than 0.5m increase for the under the footprint of the overhead conductors.
 - Asbestos Cement: A steel conduit is shown being installed via Horizontal Directional Drilling (HDD) across River Road SE and the AC water main within this roadway. It should be noted that the water main is the primary feed to the River Flats area, and loss of service will result in loss of fire protection and potentially loss of service to significant portions of the neighborhood. AC pipe is known to be brittle, does not respond well to disturbance, and tends to fail catastrophically. As such, CMH Environmental Utilities (EU) requires that the AC lines be daylighted via hydrovac to confirm their actual depth prior to any drilling taking place. At least 1 meter clearance is required from the bottom of the drill reamer to the top of pipe of the water main, per CMH code of practice. This minimum 1-meter separation is crucial for the fragile AC water lines and must be maintained at all times. Additional requirements for the crossing, including the potential requirement for EU representation on site, will be triggered and communicated at the time locates are submitted.
- e. City of Medicine Hat Parks and Recreation Infrastructure Requirements
- Vehicle Access Permit
 - Contractor will be responsible for applying for a Vehicle Access Permit (permit on City website: <https://forms.medicinehat.ca/Parks-And-Rec/Vehicle-Access-Permit>; Contact Parks@medicinehat.ca for further information).
 - Vehicle Access Permit shall be submitted for review and approval a minimum of 10 business days prior to the date that work is scheduled to start. Please refer to the application form for all requirements. Applicant to provide pre-access photographs to document any above ground existing damage and existing conditions prior to construction work. Contractor will be responsible for arranging a post-construction inspection of the disturbed area by contacting the Parks and Recreation representative.
 - Material Laydown Area and Work Area
 - Lay down areas to be designated on plans. If the proposed laydown area is an area managed by Parks and Recreation, then the department liaison should be contacted 2 weeks in advance to review terms and conditions for use of land. Lease fees may apply. Drawings shall outline construction/work area and contractors will be limited to the work

area. No parking of equipment or vehicles outside the designated work area will be allowed.

- Irrigation System Locates
 - Developers/contractors will need to request irrigation locates from Parks and Recreation prior to start of work in the park. Please contact Elden Roth, Irrigation Foreman thru the Parks and Recreation General Number (403) 529-8333, a minimum of 3 working days in advance of the start of this project, for irrigation locates.
- Irrigation Systems Turned Off During Construction
 - The contractor will likely require the irrigation system to be turned off while building construction is in progress. The contractor is to contact Parks and Recreation Operations minimum of 3 working days in advance to turn off irrigation (use department general number (403) 529-8333) and shall provide a proposed schedule for the duration of the irrigation system to be turned off. The contractor shall ensure that the amount of time the system is turned off is minimized as turf and trees need to be watered on a regular basis during the summer months and extended dry periods could have an adverse effect on the plant material.
- f. Electrical Permit/Service Communications
 - Review any electrical permit requirements with Safety Code Services.
 - Contact Gary @ 403-977- 0853 or garchr@medicinehat.ca for permit requirements.
 - If upgrades or alterations to the existing service are required, then the Contractor will be required to coordinate with Utility Distribution Services– Electric to review the primary service.
- g. Project Schedule;
- h. Construction Standard Operating Procedure (SOP);
- i. Environmental Protection Plan (EPP)
 - EPP must be developed, approved, and stamped by a Registered Professional (e.g. Qualified Environmental Specialist (QES)) in the Province of Alberta
 - QES must identify, apply, and obtain any environmental permits as required by Federal, Provincial, or Municipal regulations.
 - The EPP shall include a comprehensive overview of known or potential environmental issues to be addressed on site during construction.
 - Address topics at level of detail commensurate with environmental issue and required construction tasks.
 - Include in Environmental Protection Plan (EPP), at a minimum:
 - Name[s] of person[s] responsible for ensuring adherence to EPP.
 - Name[s] and qualifications of person[s] responsible for manifesting hazardous waste to be removed from site.
 - Name[s] and qualifications of person[s] responsible for training site personnel.
 - Description of environmental protection personnel training program.
 - Submit a site-specific Erosion and Sediment Control Plan (ESCP) identifying the type and location of erosion and sediment control measures to be provided on site. Include monitoring and reporting requirements to ensure that erosion and sediment control measures are in compliance with ESCP, Federal and Provincial regulations, and Municipal by-laws.
 - Submit drawings indicating locations of proposed temporary excavations or embankments for haul roads, stream crossings, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials including methods to control runoff and to contain materials on site.
 - Submit a Site Work Plan (SWP) showing work areas for proposed activities in each portion of area and identifying areas of limited use or non-use.
 - Include measures for marking limits of use areas and methods for protection of features to be preserved within authorized work areas.

- Submit a Spill Control Plan (SCP) including procedures, instructions, and reports to be used in the event of unforeseen spill of regulated substance.
 - Submit a Solid Waste Disposal Plan (SWDP) for non-hazardous solid wastes, identifying methods and locations for solid waste disposal, including clearing debris.
 - Submit a Waste Management Plan (WMP) in accordance with applicable regulations, for identifying methods and procedures for management waste which are derived from construction activities. ECCC's goal is to re-use and recycle as much as possible.
 - Disposal of unused admixtures and additive materials into sewer systems, lakes, streams, onto the ground or in other locations to pose a health or environmental hazard is prohibited.
 - Prevent grout materials from entering drinking water supplies or streams.
 - Using appropriate safety precautions, collect liquid or solidify liquid with inert, non-combustible material and remove for disposal.
 - Submit a site-specific Contaminant Prevention Plan (CPP) identifying the proper procedures and actions to be implemented to prevent, potentially or expected hazardous substances due to the presence of any hazardous substances within the project site.
- j. Shop drawings for formwork and falsework.
- Prepare shop drawings in accordance with Canadian Standards Association (CSA) S269.1 for formwork and falsework
 - Indicate method and schedule of construction, shoring, stripping and re-shoring procedures, materials, arrangement of joints, special architectural exposed finishes, ties, liners and locations of temporary embedded parts.
 - Indicate sequence of erection and removal.
- k. Shop drawings for reinforcement details.
- Design, materials, practices, fabrication are to refer and conform to reference standards:
 - National Building Code – 2019 Alberta Edition
 - CSA A23.1/A23.2. - Concrete Materials and Methods of Concrete Construction/Test Methods and Standard Practices for Concrete
 - CSA A23.3 - Design of Concrete Structures
 - CSA G30.18 - Carbon Steel Bars for Concrete Reinforcement
 - Reinforcing Steel Institute of Canada (RISC) Manual of Standard Practice
 - Indicate materials, core thicknesses, finishes, connections, joints, method of anchorage, number of anchors, supports, reinforcement, details, and accessories.
 - Indicate on shop drawings the bar bending details, lists, quantities of reinforcement, sizes, spacings, locations of reinforcement and mechanical splices. Include identifying code marks to permit correct placement without reference to structural drawings. Prepare reinforcement drawings in accordance with Reinforcing Steel Manual of Standard Practice – by RISC.
- l. Testing results and reports for concrete mix design and certification for review and acceptance.

3.1.8. Environmental Considerations

a. Drainage

- Ensure that the ESCP measures are provided and that its recommendations are followed on site at all times during construction.
- Provide temporary drainage and pumping as required to keep excavations on site free of standing water.
 - Obtain the ECCC Project Authority's approval before pumping standing water, which is free of suspended materials, into waterways, sewer or drainage systems.
 - Control disposal or runoff of water containing suspended materials or other harmful substances in compliance with the requirements of authorities having jurisdiction.

b. Site Clearing and Plant Protection

- Protect trees and plants on site and adjacent properties (if applicable).

- Protect trees and shrubs adjacent to construction. Ensure that control measures used for protection are in compliance with laws and regulations.
 - Minimize stripping of topsoil and vegetation.
- c. Work Adjacent to Waterways
- Construction equipment is to be operated on land only.
 - Keep waterways free of excavated fill, waste material and debris.
- d. Historical/Archaeological Control
- Protect archeological materials in accordance with the *Alberta Historical Resources Act*. If Archeological materials are exposed or discovered during Work, stop all Work and notify the ECCC Project Authority immediately.

3.2. During Construction

- 3.2.1. The Contractor must ensure all the construction activities are performed to meet the requirements of Drawings and Specifications, taking Technical Authority and the ECCC Project Authority's recommendations into consideration. The Contractor is required to have sufficient equipment and experience to carry out the Work. Full documentation throughout the project must be maintained on-site by the Contractor and made available for inspection by the ECCC Project Authority and Technical Authority.

The following documents will be maintained on-site by the Contractor, one copy of each document as follows:

- a. Current Contract Documents, including but not limited to Specifications and Drawings
 - b. Health and Safety Plan; including On-site Contingency and Emergency Response Plan
 - c. Submittals
 - d. Written permission from landowner(s), provided by the ECCC Project Authority
 - e. Regulatory permits
 - f. Environmental reports
 - g. Records of meetings, including meeting minutes
 - h. Change Orders and other modifications to Contract
 - i. Reviewed shop drawings, product data and samples
 - j. Manufacturer's instructions and certificates
 - k. Incident reports
- 3.2.2. Property belonging to ECCC, a private entity on-site, or related to the project must not be damaged. Any damage must be repaired prior to demobilization at the Contractor's expense. Care must be taken to notify the ECCC Project Authority when the Contractor or its subcontractors are on-site.
- 3.2.3. Mobilization and Demobilization consists of preparatory work and operations including, but not limited to, those for the movement of personnel, equipment, materials, offices, supplies and incidentals to and from the project sites.
- 3.2.4. Site clearing:
- a. All clearing works must be done to minimize damage to the environment. A Qualified Environmental Specialist (QES) is required for an impact assessment to determine requirements and limitations of work. A QES must be provided by the Contractor. Any trees removed must remain on site, in a location indicated by the ECCC Project Authority, unless otherwise approved by the ECCC Project Authority.
 - b. Work area and access must be kept clear of snow and ice.
- 3.2.5. Site preparation:

- a. Protect native soils from softening and frost. Remove all softened or frost damaged soils prior to placement of foundation. Protect bearing soils from freezing after footing construction.
- b. Excavations to be free of water prior to and during concrete placement. Provide adequate means of removing water from excavations and trenches.
- c. Loose or wet sub-base under foundation may require removal, sub excavation, and replacement with structural fill.
- d. Compact fills in maximum lifts and to required densities, and test for compaction at sufficient intervals to verify conformance.
- e. Temporarily disconnect and secure existing electrical infrastructure (AC Power) and Telus telecommunications line for construction, which will be re-connected after the construction of the concrete shelter
 - Any modifications or alterations to the existing service will require a submission of Service or Subdivision Development Request to the City of Medicine Hat at: <https://www.medicinehat.ca/en/homeproperty-and-utilities/electricapplications.aspx>
- f. Safety Signage
 - Contractor must ensure safety signage is in place for public/ park users for access during construction (High Public use park area).

3.2.6. Supply ready-mix concrete and concrete formwork.

a. Measurement procedures:

- Heating of water and aggregates and providing cold weather protection will not be measured but considered incidental to work. Cooling of concrete and providing hot weather protection will not be measured but considered incidental to work.
- Supply and installation of anchor bolts, nuts, washers and bolt grouting not measured but considered incidental to work.
- Provide testing results and reports for review by Technical Authority and do not proceed without written approval when deviations from mix design or parameters are found.

3.2.7. Supply reinforcement

- a. Supply components in accordance with Drawings
- b. Fabricate the work square, true, straight, and accurate to required size, with joints closely fitted and properly secured. Erect metalwork square, plumb, straight, and true, accurately fitted, with tight joints and intersections.
- c. Deliver, store and handle materials with manufacturer's written instructions. Store materials in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
- d. Replace defective or damaged materials with new.

3.2.8. Excavation and installation of concrete foundation

a. Excavation

- Standby and project timelines will be dependent on the precedent task of environmental remediation of site, which will be undertaken by another Contractor. Timelines are subject to change based on progress of precedent task.
- Before commencing work, verify and establish the location of buried services (utilities, communications lines, pipelines, gas lines) on and adjacent to site. Contractor to complete Alberta One Call prior to work; Alberta One Call will initiate the agreements which will dictate the procedures and methods acceptable. Conduct line locates for a ticket regarding the excavation area. Safely expose utilities within 1.0 m of work. Protect buried services that are to remain undisturbed. Private locates will be required due to the extensive utilities in the area.
- Remove vegetation from project area for access, compaction, leveling, regrading, and any groundworks required. Begin topsoil stripping of areas after area has been cleared of grass and removed from site. Do not mix topsoil with subsoil.

- The Contractor must excavate as deep as required for proper placement of infrastructure per requirements as shown on Drawings. This includes removal of all rock regardless of size from the required area for proper placement of anchors.
- Hand trip, make firm and remove loose material and debris from excavations.
- Earth bottoms of excavations to be undisturbed soil, level, free from loose, soft or organic matter. Where material at bottom of excavation is disturbed, compact foundation soil to density at least equal to undisturbed soil.
- Keep excavation clean and free of standing water and loose soil. Protect open excavations against flooding and damage due to surface run-off.
- Excavation must still be completed if groundwater is encountered. However, avoid excavation below groundwater table if quick condition or heave is likely to occur.
 - Encountered groundwater and any pooling water must be disposed of in an approved manner not detrimental to public and private property. The Contractor must ensure that open excavations must be protected/enclosed for public health and safety considerations.
 - Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff and prevent any sediment release into water bodies.
 - Inspect, repair, and maintain erosion and sedimentation control measures during construction.
 - Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

b. Placement and installation of reinforcement

- Place reinforcement as per Drawings.
- Do not drop or drag bars. Store on suitable non-metallic supports. For lifting, use nylon lifting slings, padded slings, separators, or other means recommended by epoxy coated reinforcing steel supplier.
- Do not field bend or weld except where authorized by the Technical Authority. When authorized bend without heat.
- Any changes to approved shop drawings in the field must have written approval from the Technical Authority.
- Replace any bars that develop cracks or splits.
- Cutting or puncturing vapors retarder is not permitted; repair damage and reseal vapour retarder before placing concrete.
- Protect epoxy and paint coated portions of bars with covering during transportation and handling.
- Touch up damaged and cut ends of epoxy coated or galvanized reinforcing steel with compatible finish to provide continuous coating.
- The Technical Authority shall be notified at least 72 hours in advance of concreting for inspection and approval of reinforcement placement. Concrete shall not be poured until reinforcing steel has been reviewed by the engineer and found to be in general conformance with the drawings and contract documents.

c. Cast-in-Place Concrete

- Materials:
 - Cement: to CAN/CSA-A3001.
 - Supplementary cementing materials: to CAN/CSA-A3001.
 - Water: to CSA A23.1.
 - Aggregates: to CSA A23.1. Coarse aggregates to be normal density.
 - Admixtures:
 - Air entraining admixture: to ASTM C260.
 - Chemical admixture: to ASTM C494. Technical Authority to approve accelerating or set retarding admixtures during cold and hot weather placing.

- Mixes
 - Proportion concrete in accordance with CAN/CSA-A23.1 and Structural Specifications.
 - Site conditions:
 - Placing concrete during rain or weather events that could damage concrete is prohibited. Protect newly placed concrete from rain or weather events.
 - Sufficient protection for concrete pouring and curing must be maintained if temperatures fall below 10 °C or rise above 27 °C in accordance with CSA A23.1.
 - Cold weather protection: Maintain protection equipment, in readiness on Site. Placing concrete upon or against surface at temperature below 10°C is prohibited.
 - Hot weather protection: Protect concrete from direct sunlight when ambient temperature above 27°C. Prevent forms from getting too hot before concrete placed. Apply accepted methods of cooling not to affect concrete adversely. Protect from drying.
 - Delivery and handling:
 - Concrete hauling time: provide for review by Technical Authority deviations exceeding maximum allowable time of one-hundred-twenty (120) minutes for concrete delivered to site of Work and discharged after batching.
 - Ensure concrete delivery and handling facilitate placing with minimum of re-handling, and without damage to existing structure or Work.
 - Installation and removal of formwork:
 - Clean formwork in accordance with CSA A23.1/A23.2, before placing concrete.
 - Fabricate and erect formwork in accordance with CAN/CSA S269.3. To produce finished concrete conforming to tolerances required by CSA A23.1/A23.2.
 - Align form joints and make watertight. Keep form joints to minimum.
 - Build in anchors, sleeves, and other inserts required to accommodate Work specified in other sections. Ensure that anchors and inserts will not protrude beyond surfaces designated to receive applied finishes, including painting.
 - Remove formwork once concrete has attained sufficient strength to support its own weight and construction loads.
 - During concreting operations:
 - Development of cold joints not allowed.
 - Pumping of concrete permitted only after approval of equipment and mix.
 - Disturbing reinforcement and inserts during concrete placement is prohibited.
 - Prior to placing of concrete obtain Technical Authority approval of proposed method for protection of concrete during placing and curing.
 - Clean and remove stains prior to application for concrete finishes.
 - Maintain accurate records of poured concrete items to indicate date, location of pour, quality, workability, air content, temperature and test samples taken.
 - Do not place load upon new concrete until authorized by Technical Authority.
 - Maintain cover to reinforcement during concrete pour.
- d. Backfilling
- Place backfill material in uniform layers not exceeding one-hundred-fifty (150) mm. Compact each layer before placing succeeding layer.
 - Protect fill materials from contamination, including freezing, ice, snow and other debris.
 - The excavated local soil will be used for backfilling.
 - Removal of concrete formwork is required prior to backfilling. Along with removal of shoring and bracing. Backfill the voids with satisfactory soil material.
 - Do not backfill around or over cast-in-place concrete within 24 hours after placing of concrete.
 - Ensure backfilled areas are free from debris, snow, ice, water and frozen ground.
- e. Conduit

- The installation of the conduit must be done with care regarding the nearby utilities
 - The conduit is to be installed across River Road SE and there is a 400 mm diameter Asbestos Cement (AC) water main within this roadway – this water main is the primary feed to the nearby neighbourhood, and loss of service will result in loss of fire protection and potentially loss of service to significant portions of the neighbourhood. AC pipe is known to be brittle, does not respond well to disturbance, and tends to fail catastrophically. As such, EU requires that the AC lines be daylighted via hydrovac to confirm their actual depth prior to any drilling taking place.
 - At least 1 meter clearance is required from the bottom of the drill reamer to the top of pipe of the water main, per City of Medicine Hat code of practice. This minimum 1-meter separation is crucial for the fragile AC water lines and must be maintained at all times. Additional requirements for the crossing, including the potential requirement for City of Medicine Hat representation on site, will be triggered and communicated at the time locates are submitted.
- f. Provide mill test for reinforcing steel, and certificate of concrete strength from supplier for review and approval by Technical Authority.
- g. Notify Technical Authority when excavation is completed.
- 3.2.9. The building door and its associated hardware shall be installed according to manufacturer specifications.
- 3.2.10. Utilities shall be reconnected to their pre-construction conditions. Ensure the connections are operational prior to project close out.
- 3.2.11. Site clean-up and restoration as per pre-construction condition
- a. Site restoration as per Drawings and pre-construction conditions.
- b. Ensure positive drainage away from the building.
- c. Dispose of waste off site at the proper locations and provide receipts or permits if necessary.
- d. Irrigation System Repairs
- Contractor shall restore irrigation system infrastructure to original condition
 - Submit to City of Medicine Hat Parks and Recreation employees/sub-Contractor qualifications prior to their work on these irrigation systems.
 - The contractor shall contact the department representative to discuss planned methodology and materials for repairs.
 - All irrigation repairs to be completed as per the Departments approved specifications (located on City website): <https://www.medicinehat.ca/en/business-and-development/construction-standards-and-specifications.aspx#Irrigation>
 - All irrigation repairs need to be inspected by Parks and Recreation Irrigation staff prior to trenches being backfilled. Parks and Recreation shall be given a minimum of 2 working days notice of final irrigation repairs so the system testing can occur prior to landscape restoration (topsoil and sod installation).
- e. Ground Disturbance Clean-Up
- All ground disturbance in a manicured turf area whether it is outcome of construction, laydown area and/or vehicle and equipment access, shall require remediation to preconstruction conditions.
 - The contractor shall meet the following requirements: -
 - All disturbances shall be sodded unless approval is received from the department representative to hydroseed. -
 - The contractor shall place 6 inches of amended topsoil prior to the installation of the sod.
 - Prior to the placement of the sod, the contractor shall contact the department representative to ensure that the irrigation system is fully functional and arrange for an irrigation schedule. - Once the sod is laid, the contractor will once again contact the department representative and arrange for the irrigation to be turned on. -
 - The contractor will be responsible for mowing/watering/maintaining/monitoring the condition of the sod until acceptance by the Parks and Recreation department. -

- Full restoration of trail and turf should follow City of Medicine Hat Parks and Recreation Specifications. City Website link – <https://www.medicinehat.ca/en/business-anddevelopment/construction-standards-and-specifications.aspx> .
- Landscape areas shall be maintained according to section 1.6 of the Maintenance and Guarantee Specifications. Requirements for acceptance are outlined in Section 2.6, which is contained in the link below: <https://www.medicinehat.ca/en/business-and-development/resources/Documents/Standards-and-Specifications/MaintenanceGuarantee.pdf>

3.2.12. Project management and documentation

- a. Collect photographs and videos throughout the construction process. Ensure progress photos and updates are documented daily and when each itemized installation is completed.

3.2.13. Parking

- a. Contractor is not permitted to park or temporarily park vehicles or equipment on the park area or boulevard unless it is identified as part of the construction zone or laydown area.

3.3. Post-Construction

- 3.3.1. Photographs and Videos
- 3.3.2. Construction Daily Site Log (if applicable)
- 3.3.3. Health and Safety Incident Report Log (if applicable)
- 3.3.4. Red-lined drawings noting any changes from Drawings.

4. Government Supplied Material

ECCC will not provide any materials or supplies. The Contractor is responsible for supplying all equipment, labour and materials for construction.

5. Project Requirements and Desirable Provisions

5.1. Regulatory Framework, Protocols, Guidelines and Standards

The Contractor must ensure that all project activities are carried out in accordance with all applicable Federal and Provincial guidelines, standards and criteria, and result in minimal impact to the environment. Actions may be necessary to be compliant with the following Acts and other applicable to the site-specific conditions:

- Fisheries Act
- Water Act
- Canadian Environmental Protection Act (CEPA)
- Canadian Environmental Assessment Act (CEAA)
- Canadian Wildlife Act (CWA)
- Transportation of Dangerous Goods Act (TDGA)
- Species at Risk Act (SARA)
- Migratory Birds Convention Act (MBCA)

5.2. Environmental Sensitivities

5.2.1. Waterbody

There must be no in-stream works at any point of this project during any time of the year, unless otherwise permitted by the ECCC Technical Authority.

Whirling disease is a relatively new problem in Alberta affecting salmonid fish and can cause high mortality rates. Yellow zone represents a moderate to high risk of whirling's disease. For this reason, decontamination of all equipment, including boots and clothes, is essential. There are no in-stream works involved in this project.

5.2.2. Historical Resource Value

This area is within the region that has historical resource value. The Contractor is to ensure that if there is any discovery, that work is halted and the ECCC Project Authority be notified immediately. No further work can occur until authorized by the ECCC Project Authority.

5.3. Safe Work Procedures

- 5.3.1. The Contractor must remain in compliance with the Canada Labour Code, National Joint Council Occupational Health and Safety Directive, and Worker's Compensation Board guidelines.
- 5.3.2. The Contractor must provide the ECCC Project Authority with details of a safe work plan for each construction task.
- 5.3.3. The Contractor is responsible for circulation of the Health and Safety Plan to all individuals on site and ensuring that all individuals are in adherence to the Health and Safety Plan.
- 5.3.4. The Contractor is expected to follow safe work procedures, including use of proper Personal Protective Equipment (PPE) at all times.
- 5.3.5. A Personal Flotation Device must be worn if there is a risk of drowning.
- 5.3.6. A complete Basic First Aid Kit must be carried by the Contractor and on-site at all times during construction.
- 5.3.7. Protection against wildlife is included within EPP.

6. **Contractor Responsibilities**

- Provide temporary bracing of all building elements against construction loading conditions and construction erection procedures.
- Obtain all required permissions, agreements, authorizations and permits from the various regulatory bodies at the Federal and Provincial levels involved, in order to undertake the work at the site location.
- Conduct inspection of work, identify deficiencies and defects, and repair as required. Notify Technical Authority of completion of Contractor's inspection and corrections.
- Fully understand the construction specifications documents.
- Check and verify all dimensions, quantities, grades, and site conditions and notify Technical Authority of any errors or discrepancies prior to commencing any work.
- Maintain close coordination and communication with ECCC Project Authority and Technical Authority.
- Provide construction services required as outlined in the scope of work.
- All work must be carried out in accordance with current Alberta Construction Standards of Practice and meet all relevant Federal, Provincial and Municipal codes and guidelines.
- Comply with all permissions, agreements, permits, and access restrictions issued in order to undertake the scope of work, including but not limited to: Water Act, Public Lands Act temporary access agreements, letters of consent, mutually agreed to terms and conditions and all relevant statutory provisions in the Province of Alberta and with various Federal Government Departments.
- Abide by all relevant health and safety regulations and perform work in accordance with generally accepted safety practices. The use of personal protective equipment is required.

7. **ECCC Responsibilities**

- Provide documents specified under Section 3.2.1.
- Provide the Contractor with copies of field authorization documents obtained by ECCC and required by granting authorities to be kept on site by the Contractor during construction activities.
- Act as a liaison with any involved parties, including the landowner(s) for site access.
- Provide Drawings and Specifications related to the work.
- Provide support and guidance during all phases of the project and as required.
- A certificate of completion will be provided by the ECCC Project Authority to the Contractor upon satisfactory completion and acceptance of the work.

8. **Schedule**

8.1. Completion of the scope of work

- 8.1.1. Completion of the scope of work is anticipated within **fifteen (15) weeks** as described in the following:

- 8.1.2. Concrete work to be completed within **four (4) weeks** after pre-construction deliverables are accepted by the ECCC Project Authority. However, concrete work should be scheduled during the construction season to the best possible extent.
- 8.1.3. The remaining construction deliverables are to be completed within **four (4) weeks** after concrete work is completed.
- 8.1.4. Post-construction deliverables are to be completed within **three (3) weeks** of construction completion.
- 8.1.5. The project must be completed by **March 31, 2025** at the latest.

8.2. Hours of Work

- 8.2.1. A standard construction workday, used in the estimated project length, is considered 8 hours per day.
- 8.2.2. Project and Technical Authority will provide remote support during the length of the project from Monday to Friday 8AM to 5PM.
- 8.2.3. 48-hour notice must be provided for a requirement outside regular hours, however, ECCC cannot guarantee the availability of a representative outside regular work hours.

9. **Notifications of Non-Compliance**

The following procedures will be followed in the case that non-compliance is observed by ECCC.

- The ECCC Project Authority will notify the Contractor in writing of observed non-compliance related to health and safety, environment, private property, or any other regulations and requirements.
- After receipt of such notice, the Contractor must inform the ECCC Project Authority of proposed corrective action(s) within one (1) day to obtain acceptance from the ECCC Project Authority. The ECCC Project Authority will provide review and direction in one (1) day.
- Once acceptance has been provided by the ECCC Project Authority, the Contractor may proceed with the proposed action(s).
- If warranted, the ECCC Project Authority will issue a Stop Work Order until satisfactory corrective action has been taken by the Contractor.
- Suspension will be lifted once the corrective action(s) have been proposed and taken by the Contractor, with the acceptance of the ECCC Project Authority.
- No time extensions will be granted or equitable adjustments will be given to the Contractor for such suspensions.
- In the case where there is immediate danger to the health and safety of a worker or integrity of infrastructure, the Contractor must take immediate actions.

10. **Official Language**

The work will be completed in English.

Appendix 1 of Annex A: Photos of Existing Site



Figure 1: Existing structure - this will be removed by other Contractor



Figure 2: Existing site, looking towards South



Figure 3: Existing site, looking towards West