Government of Canada
New Building
Issue for Tender
Elk Point, Alberta

Addendum No. 3

March 08, 2016

Stantec

The Bidding Documents are amended as noted in this Addendum, which consists of one (1) page and the following attachments:

1. Added Addendums:
    a. Architectural Addendum A-02, (1) pages, Dated March 8, 2016.

This addendum is issued prior to bid closing to amend the bid documents. This Addendum will form part of the Contract Documents. Include in the Bid price all such revisions which will become part of the Work. Perform all such Work in accordance with the contract documents.

Acknowledge receipt of this Addendum by reference in the Bid Form submitted by the bidding Contractors. Ensure that all parties submitting bids are aware of all items included in this addendum.

END OF ADDENDUM NO. THREE

The Bidding Documents are amended as noted in this Addendum, which consists of one (1) pages and the following attachments:

1. Added Drawings:
    a. N/A
2. Specifications:
    a. 11 24 23 – Fall Arrest and Restraint Devices, (10) pages.

This addendum is issued prior to bid closing to amend the bid documents. This Addendum will form part of the Contract Documents. Include in the Bid price all such revisions which will become part of the Work. Perform all such Work in accordance with the contract documents.

Acknowledge receipt of this Addendum by reference in the Bid Form submitted by the bidding Contractors. Ensure that all parties submitting bids are aware of all items included in this addendum.

1.

SPECIFICATIONS

.1 11 24 23 – Fall Arrest and Restraint Devices

.1 Replace with the section attached to this addendum.

2. DRAWINGS

.1 Drawing A201 – Exterior Elevations & A202 – Exterior Elevations

.1 Refer to Keynotes General – Exterior Elevations. Revise as the Description of Keynote C1 with the following; "CEMENTITIOUS SLAT WALL PANEL, PANEL SIZE TO BE 1800mmL x 147mmH x 13mmD, PATTERN 1/3 SHIFTED, COLOUR – POLAR WHITE."

END OF ARCHITECTURAL ADDENDUM NO. TWO

Part 1 General

1.1 RELATED REQUIREMENTS

.1 Section 07 52 00 - Modified Bituminous Roofing

1.2 REFERENCES

.1 Alberta Occupational Health and Safety Part 9 2009 July 1 Revision.

.2 Alberta Roofing Contractors' Association (ARCA):
- .1 Roofing Manual, Good Roofing Practice and Accepted Roofing Systems.

.3 ASTM International:
- .1 ASTM A36/A36M-14: Standard Specification for Carbon Structural Steel.
- .2 ASTM A53/A53M-12: Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.
- .3 ASTM A123/A123M-13: Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
- .4 ASTM A153/A153M-09: Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
- .5 ASTM A276-15: Standard Specification for Stainless Steel Bars and Shapes.
- .6 ASTM A307-14: Steel bolts and studs, 60,000 psi, Tensile Strength.
- .7 ASTM A325-14: Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength.
- .8 ASTM A325M-14: Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength [Metric].
- .9 ASTM A385/A385M-11e1: Standard Practice for Providing High-Quality Zinc Coatings (Hot-Dip).
- .10 ASTM A484/A484M-15: Standard Specification for General Requirements for Stainless Steel Bars, Billets, and Forgings.
- .11 ASTM A780/A780M-09(2015): Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings.
- .12 ASTM A999/A999M-14: Standard Specification for General Requirements for Alloy and Stainless Steel Pipe.
- .13 ASTM A1011/A1011M-14: Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability.
- .14 ASTM B209-14: Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
- .15 ASTM B209M-14: Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate [Metric].
- .16 ASTM B221-14: Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
- .17 ASTM B221M-13: Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes [Metric].
- .18 ASTM D1056-14: Standard Specification for Flexible Cellular Materials-Sponge or Expanded Rubber.

.19 ASTM D2000-12: Standard Classification System for Rubber Products in Automotive Applications.
.20 ASTM E488/E488M-15: Standard Test Methods for Strength of Anchors in Concrete and Masonry Elements.
.21 ASTM F593-13a: Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs.
.22 ASTM F594-09e1: Standard Specification for Stainless Steel Nuts.

.4 Occupational Health And Safety:
.1 29 CFR 1910.23: Occupational Health and Safety Standards for General Industry.
.2 29 CFR 1926: Safety and Health Regulations for Construction, Subpart M-Fall Protection.

.5 CSA Standards:
.1 CAN/CSA-G40.20-13: General Requirements for Rolled or Welded Structural Quality Steel.
.2 CAN/CSA-G40.21-13: Structural Quality Steels.
.3 CAN/CSA-S16-14: Design of Steel Structures.
.4 CSA-S136-12 PACKAGE: Consists of S136.12 - North American Specification for the Design of Cold-Formed Steel Structural Members and S136.1-12 - Commentary on North American Specification for the Design of Cold-Formed Steel Structural Members.
.5 CSA W47.1-09(R2014): Certification of Companies for Fusion Welding of Steel.
.6 CSA W48-14: Filler Metals and Allied Materials for Metal Arc Welding.
.7 CSA W55.3-08(R2013): Certification of companies for resistance welding of steel and aluminum.
.8 CSA W59-13: Welded Steel Construction (Metal-Arc Welding).
.9 CSA W178.1-14: Certification of Welding Inspection Organizations.
.10 CSA W178.2-14: Certification of Welding Inspectors (Developed in cooperation with the Canadian Welding Bureau).
.11 CAN/CSA-Z91-02(R2013): Safety Code for Suspended Equipment Operations.
.12 CAN/CSA Z259.1-05 (R2015): Body Belts and Saddles for Work Positioning and Travel Restraints.
.13 CAN/CSA Z259.2.2-14: Self-Retracting Devices for Personal Fall-Arrest Systems.
.14 CAN/CSA Z259.2.3-12: Descent Devices (Adopted ISO 22159:2007, first edition, 2007-05-13 with Canadian Deviations).
.15 CAN/CSA Z259.10-12: Full Body Harnesses.
.16 CAN/CSA Z259.11-05 (R2015): Energy Absorbers and Lanyard Format(s).
.17 CAN/CSA Z259.12-11: Connecting Components for Personal Fall Arrest Systems (PFAS).
.18 CAN/CSA Z271-10: Safety Code for Suspended Platforms.
.19 CSA Z259.16-04 (R2014): Design of Active Fall Protection Systems.

1.3 DESIGN REQUIREMENTS

.1 Engineer and design a fall arrest and fall restraint systems, and building maintenance system, that meets the requirements of the Alberta Occupational and Health Safety Codes and Regulations, and as follows:

- .1 Design the fall protection systems to allow users to walk uninterrupted, for the entire length of the system without having to unhitch from the system to pass through intermediate support points.
- .2 Fall Arrest and Fall Restraint System: Roof top maintenance system permitting free movement of persons over roof areas as required by CAN/CSA-Z91, and other standards referenced in item 1.2 above; where differences occur, the more restrictive requirement govern.
- .3 Upright Anchors: As instructed by manufacture in layout and design acceptable to Departmental Representative.
- .4 Free Fall Distance: Limit maximum free fall vertical distance of 1220 mm with a fixed lanyard and 1980 mm with energy absorbing lanyard.
- .5 Travel Restraint Systems: Design for two persons on roof, and having an ultimate load capacity of a minimum 22.2 kN (5,000 lb-force) in any direction that a load may be applied.
- .6 Fall Arrest System: Design for one person, without shock absorber and capable of supporting a minimum of 22.2 kN (5,000 lb-force) per worker attached.
- .7 Design structural connections to roof deck and additional reinforcement as required to prevent damage to roof deck; submit load requirements to the Departmental Representative for their use in design the primary structures.
- .8 Design connections to supporting structural framing as required to resist pullout force and reinforce structure against damage and carry pull out force back to structural framing; submit load requirements to the Departmental Representative for their use in design the primary structures.
- .9 Arrest Force: Limit to 8 kN (1,800 lb-force) or less.
- .10 Equip each worker with a certified full body harness and shock absorbing lanyard.
- .11 Design fall arrest and fall restraint systems with a safety factor of 2.0.

.2 Have the manufacturer’s delegated design engineer design and verify the installed system, any modification or additional anchor requirements, devices, and equipment required to complete the building maintenance system, and include costs in the contract price.

1.4 ACTION AND INFORMATIONAL SUBMITTALS

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

.2 Product Data:

- .1 Submit manufacturer's instructions, printed product literature and data sheets for fall arrest and restraint devices and include product characteristics, performance criteria, physical size, finish and limitations.
- .2 Indicate preparation instructions and recommendations.
- .3 Indicate storage and handling requirements and recommendations.

.4 Indicate installation methods.

.3 Shop Drawings:
- .1 Submit drawings stamped and signed by professional engineer registered or licensed in Province of Alberta, Canada.
- .2 Indicate plans and details of entire fall protection layout, showing member sizes and part identification, fasteners, anchors, fittings and evidence of compliance with structural performance requirements.
- .3 Provide manufacturer's certifications that the ultimate strength of the fall protection system is equal to or greater than those specified.

.4 Test Reports: certified test reports showing compliance with specified performance characteristics and physical properties.

.5 Manufacturer's Instructions: submit manufacturer's installation instructions.

1.5 CLOSEOUT SUBMITTALS

.1 Submit in accordance with Section 01 78 00 - Closeout Submittals.

.2 Operation and Maintenance Data: submit operation and maintenance data for fall arrest and restraint devices for incorporation into manual.

.3 Operation and Maintenance Data:
- .1 Include parts catalog with complete list of equipment replacement parts; identify each entry with equipment description and identifying part numbers.
- .2 Include technical information for servicing equipment.
- .3 Include legible as-built schematic of installed system. Include manufacturer's serial number, name and part number of each individual component used in the systems.
- .4 Include detailed operating procedures indicating proper use of equipment for safe operation of the system. Provide fall protection plan, and rescue plan as dictated by OH&S Alberta Part 9 (143.1). Training to be provided in conjunction of the design, and supply of all required equipment.
- .5 Installer to be an approved fall protection trainer and provide ACSA approved Industrial End User Fall protection Training for up to 16 workers. In addition, the Installer to provide two on-site system orientations for up to 16 workers. Training to be completed before system certified for use. Training to be completed within 1 month of project completion.
- .6 Rescue training to be provided upon turnover of project to the Departmental Representative.
- .7 All training will be schedule at the discretion of the Departmental Representative.

1.6 QUALITY ASSURANCE

.1 Design Requirements:
- .1 Design rooftop safety system in accordance with the local codes and regulations including CSA and Alberta OH&S and to the requirements specified in item 1.3 of this Section. Ensure shop drawings and design are signed and sealed by a professional engineer registered in the Province of Alberta and who is employed/contracted by a firm that has designed and installed at least five projects of similar construction and scope.
- .2 Installer Company must have a minimum of five years incorporated experience in fall arrest and restraint device design and installation.

.2 Manufacturer Qualifications: Manufacturer ISO Certification: ISO Certification certifying manufacturer's quality management system is currently registered to ISO 9001 quality standards.

.3 Installer Qualifications: Specializing in the Work of this section and trained and certified by the fall protection system manufacturer.

.4 Installation company to provide current manufacturer’s certification, and have comprehensive liability insurance of $ 5 000 000 specifically for fall protection design and installation. WCB coverage to be indicative for installation and inspection of fall arrest systems under WCB Industry Code 42109.

.5 All Fall Protection Training to be in accordance with applicable Alberta Construction Safety Association requirements and meet the Oil Sands Safety Association guidelines as well.

1.7 DELIVERY, STORAGE AND HANDLING

.1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.

.2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.

.3 Storage and Handling Requirements:
- .1 Store materials off ground, in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
- .2 Store and protect fall arrest and restraint devices from damage.
- .3 Protect prefinished surfaces with wrapping.
- .4 Replace defective or damaged materials with new.

1.8 PRE-INSTALLATION MEETINGS

.1 Convene minimum one week prior to commencing work of this Section.

.2 Require attendance of persons directly involved with Work of this Section.

.3 Review schedule of installation, installation procedures and conditions, and coordination with related Work.

1.9 FIELD MEASUREMENTS

.1 Verify field measurements prior to fabrication.

1.10 MAINTENANCE SERVICE

.1 Furnish service and maintenance for fall protection system and components for a period of two years from Date of Substantial Performance of the Work with an option for extending maintenance service on an annual basis thereafter. Include all costs for such maintenance service, in the Contract.

.2 All maintenance and service to be completed by an approved and currently certified manufacturer's representative. Company to be qualified in high angle rescue in the event of an emergency.

.3 Subcontractor to provide ACSA/OSSA Fall Protection training and re-certification for up to16 workers as required and incorporate costs into Contract price.

Part 2 Products

2.1 GENERAL

.1 Requests for fall arrest and restaint system component substitutions will be considered in accordance with provisions of manufacturer and accepted by the Departmental Repesentative.

2.2 STEEL PLATE AND UPRIGHT MATERIALS

.1 Exposed Structural Units: Stainless steel, Type 304, 290 MPa, (42 ksi) yield strength.

.2 Single Insert: stainless steel, Type 304.

.3 Steel Pipe for Upright Anchors: ASTM A53 Schedule 40, Type S, Grade A or B to suit strength requirements, galvanized for exposed locations, black for protected locations, heavy wall construction.

.4 Steel Plate: ASTM A1011 Grade 45, minimum 10 mm thick.

.5 Steel D-Ring Eyelets, Attachment Rings, and Other Hardware: In accordance with ASTM F887; drop forged, 22.2 kN (5,000 lb-force) proof load, 10 mm x 50 mm steel.

.6 Thru-Bolt Wall Anchors (where applicable): conforming to CAN/CSA Z91, and Federal O.S.H.A. standard 1910.66; stainless steel spiral loop welded to stainless steel plate, complete with stainless steel hex nuts and lock washers, 19 mm diameter stainless steel rod, stainless steel back plate and hole, rated safe working load 4.4kN (1,000 lbs) and ultimate load of 24 kN (5,400 lbs), without failure in any direction.

.7 Welding Materials: in accordance with CSA W59.

2.3 FASTENERS

.1 Non-Exposed Structural Components: ASTM A36 or CSA G40.20/21, Type 360W, mild steel, 350 MPa yield strength for high strength steel and 300 MPa for plate and other shapes; galvanized to the requirements of ASTM A123/A123M.

.2 Exposed Non-Structural Items: Seamless spun 6061-T6 aluminum alloy and temper, conforming to ASTM B221 and ASTM B209, A9.

.3 Cold Rolled Non-Exposed Structural Steel Sections: CAN/CSA S136, 380 MPa yield strength, 460 MPa tensile strength.

.4 Bolts, Nuts, and Washers: In accordance with ASTM A325 or hot-dip galvanized in accordance with ASTM A153, Class C or D, as appropriate to installation.

.5 Exposed Fasteners: Stainless steel Type 304, engineered by manufacturer for design loads and type of use; gasket with EPDM washers where penetrating roofing membrane.

2.4 SAFETY CABLE

.1 Fall arrest cable: stainless steel of size and type as designed by the Fall protection system manufacturer’s engineer.

2.5 FABRICATION

.1 Fabricate all components prior to delivery so that only limited assembly and drilling is required on site.

.2 Provide system components of same material unless otherwise indicated.

.3 Ensure exposed work is true to line and level with accurate angles, surfaces and with straight square edges.

.4 Coordinate and confirm system location with the Departmental Representative.

.5 Fabricate anchoring devices as recommended by the manufacturer to provide adequate support for intended use.

.6 Fabricate joints in a manner to discourage water accumulation. Provide weep holes to drain any water, which could accumulate in the exposed joints.

.7 All exposed metals onsite to be provided with anti corrosion paint.

.8 Connections: Weld and grind smooth in accordance with Canadian Welding Bureau (CWB) requirements.

.9 Fabricate engineered fall restraint and fall arrest system suitable for roof and deck mounting with welded steel base plate and steel plate uprights or steel pipe uprights.

.10 Fill steel pipe uprights with urethane foam insulation or other accepted filler.

.11 Size uprights for a minimum 203 mm exposure above roof membrane in accordance with ARCA good roofing practices.

2.6 FINISHES

.1 Shop Preparation and Shop Primer: Track, supports, and other structural components: SSPC-SP6 ready for application of CAN/CGSB 1.40, anticorrosive primer.

.2 Anchors Fabricated from Steel Pipe Uprights, Base Plates, and D-rings:
- .1 Mild Steel Components: Hot-dip galvanize after fabrication, as follows:
  - .1 Pipe: ASTM A53.
  - .2 Plate: ASTM 123/A123M.
  - .3 D-Rings: ASTM A153.
- .2 Stainless Steel Components: Manufacturers standard.

.3 Galvanizing Repair Compound: 95% zinc cold galvanizing compound in accordance with ASTM A780; field touch-up damaged galvanizing surface finishes with galvanizing repair compound.

.4 Grind all exposed welds smooth, including painted steel.

.5 Clean, prepare, prime and paint safety yellow all structural steel and anchor plates.

.6 Touch-up field welds, connections, abrasions to match shop primer.

Part 3 Execution

3.1 EXAMINATION

.1 Do not begin installation until substrates have been properly prepared.

.2 Verify that fall arrest system is a minimum of 2 m from any edge and that the design coincides with manufacturer’s design protocols and CSA Z259.16 Design of Active Fall Arrest Systems.

.3 Verify that roof surface is suitable for intended purpose.

.4 If substrate preparation is the responsibility of another installer, notify Departmental Representative of unsatisfactory preparation before proceeding.

3.2 PREPARATION

.1 Clean surfaces thoroughly prior to installation.

.2 Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

.1 Use manufacturer's authorized, trained and certified personnel to install all fall protection systems.

.2 Install building fall arrest and fall restraint systems in accordance with manufacturers written instructions and provisions of the Contract Documents.

.3 Before installation, inspect all parts to insure no damaged parts are used.

.4 Have the manufacturer's engineer coordinate their activities with, and notify the Departmental Representative where conflicts arise, or where site conditions require a modification to the engineered design indicated on the shop drawings.

.5 Lay out and install fall arrest and fall restraint systems in accordance with reviewed shop drawings.

.6 Install equipment with no irregularities or projections capable of inflicting personal injury. Finished surfaces and edges of all accessible parts must be regular and smooth.

.7 Isolate dissimilar materials as required to prevent electrolytic corrosion.

.8 After installation, check system for signs of corrosion, wear, deformation and other defects to all system components.

3.4 MANUFACTURER'S FIELD SERVICES

.1 Provide testing and certification under supervision of the fall protection manufacturer or original installer.

.2 Examine system components annually. Clean, inspect and adjust and recertify the equipment and overall system in accordance with manufacturer's requirements.

.3 Repair or replace parts whenever required. Use manufacturer's parts produced by manufacturer of original equipment. NO SUBSTITUION ALLOWED.

.4 Provide emergency call back service at all hours for this maintenance period.

.5 Perform maintenance work using competent and qualified personnel under supervision of the fall protection manufacturer or original installer.

3.5 OPERATOR TRAINING

.1 Conform with the training requirements specified in item 1.5 of this Section, providing a minimum of 4 hours for each session of operator training after system has been installed and tested. Training is to be for the users of the system conducted at the installation site.

3.6 PROTECTION

.1 Protect installed products until completion of project.

.2 Touch-up, repair or replace damaged products before Substantial Performance of the Work.

.3 Ensure all surfaces exposed by Installer are properly protected.

3.7 CLEANING

.1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
- .1 Leave Work area clean at end of each day.
- .2 Remove protective material from materials where present.
- .3 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

END OF SECTION