

The following changes to the tender documents are effective immediately and will form part of the contract documents:

Add: Specification 01 14 25 – Designated Substance Report

Add: Specification 31 61 13 – Pile Foundations, General Requirements

Specification 01 52 00.1.12.1

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

Replace with: It is the responsibility of the Contractor to secure the site and its contents for the duration of the Contract.

Specification 01 52 00.1.20.1

Delete: The Contractor shall provide an unmanned aerial vehicle (UAV) flyover of the entire project site during each stage of construction as well as following completion of the project. Supply high resolution jpg images of the project site to the Departmental Representative as per Specification 01 33 00 – Submittal Procedures. The UAV flyover shall be completed by an experienced operator with the appropriate certificates, permissions, and registrations for conduction UAV operations.

Replace with: The Contractor shall provide an unmanned aerial vehicle (UAV) flyover of the entire project site prior to start of works, during each stage of construction as well as following completion of the project for a total of five (5) flyovers. Supply high resolution jpg images of the project site to the Departmental Representative as per Specification 01 33 00 – Submittal Procedures. The UAV flyover shall be completed by an experienced operator with the appropriate certificates, permissions, and registrations for conduction UAV operations.

Enquiries received during the Solicitation Period:

1. Specification Section 01 14 25 Designated Substance Report, and Section 31 61 13 Pile Foundations, General Requirements do not appear to have been provided with the tender documents.
 - The missing sections have been added with this Addendum.
2. There is a note on the drawings “existing 15 m to be confirmed by the department representative if not salvageable or does not meet the minimum lap requirements, direction will be provided by the department representative”. Please confirm if you wish us to include for additional reinforcement Or will this be considered a change item per R2860D GC6.
 - This will be considered a change item per R286D GC6.

3. Due to the complexity and staging requirements of the works, an onsite visit is essential to determine best practice and coordination with the structural steel and other trades. Please advise of when an onsite visit can be arranged.
 - Given current COVID 19 precautions in the Province of Manitoba that include a mandatory 14 day quarantine for out of province visitors, no onsite visits will be permitted. A virtual site visit that includes video footage of key areas is being offered on 23 and 30 Mar 2021. This video footage along with Dam Operations Manual will also accessible in the Electronic Media Package noted at SI18.
4. Please confirm if GC can make use of the existing Frame Cranes and/or the Curtain Crane during construction works onsite.
 - Use of the existing site equipment during construction works is prohibited.
5. Please provide As-Built drawings of the existing bridge spans.
 - As-Built drawings have been added to the Electronic Media Package noted at SI18. PSPC provides these materials and information “as is” without warranty of any kind, implied or express, as to the information being accurate or complete.
6. Please confirm if CCTV remotely monitored can be an alternative for the security personnel required at Section 01 52 00 item 1.12.
 - See amended Section 01 52 00 item 1.12.1 above.
7. Please confirm how many UAV flyovers should be carried out for Section 01 52 00 item 1.20.
 - See amended Section 01 52 00 item 1.20.1 above.

END OF ADDENDUM NO. 1

Part 1 General**1.1 SECTION INCLUDES**

- .1 This Section clarifies Contractor's responsibilities and obligations to review the information provided in the "Designated Substances Report (DSR) – Revised Hazardous Building Materials Assessment", pertaining to the St. Andrews Lock and Dam Site located at 625 River Road, Lockport, Manitoba, prepared by Pinchin Ltd. dated September 3, 2020.
- .2 This Section is to be read in conjunction with the Site specific DSR September 3, 2020.
 - .1 A copy of the Site specific DSR September 3, 2020 is attached under a separate cover forming part of tender documents as Appendix B.

1.2 REFERENCE STANDARDS

- .1 Refer to laws, by laws, ordinances, rules, regulations and orders of authority having jurisdictions, and other legally enforceable requirements applicable to Work at that area; or become in force during Work performance.
- .2 Comply with specified standards and regulations to ensure safe operations at site containing hazardous or toxic materials.
 - .1 Canadian Environmental Protection Act, 1999 (CEPA 1999)
 - .2 Canada Labour Code, Part 2, Canada Occupational Health and Safety Regulations
 - .3 Province of Manitoba Workplace Safety and Health Act - Updated 2017.

1.3 DEFINITIONS

- .1 Designated Substances: Are those substances designated as hazardous by the Ministry of Labour under the Occupational Health and Safety Act. The following substances have been identified as designated substances:
 - .1 Lead
 - .2 Silica
 - .3 Polychlorinated Biphenyls (PCBs)
 - .4 Mould and Water Damage
 - .5 Other Hazardous Materials; such as formaldehyde, cadmium, styrene, nickel and coal tar products
- .2 Hazardous Materials: dangerous substances, dangerous goods, hazardous commodities, and hazardous products, including but not limited to: corrosive agents, flammable substances, ammunition, explosives, radioactive substances, or other material which has the potential to cause harm to humans, animals, or the environment, either by itself or through interaction with other factors.
- .3 Polychlorinated Biphenyls (PCBs): includes chlorobiphenyls referred to in Column I of item 1 of the List of Toxic Substances in Schedule I of Canadian Environmental Protection Act (CEPA).

- .4 Toxic: substance is considered toxic if it is listed on Toxic Substances List found in Schedule 1 of CEPA.
- .5 List of Toxic Substances: found in Schedule 1 of CEPA, lists substances that have been assessed as toxic. Federal Government can make regulations with respect to a substance specified on List of Toxic Substances. Column II of this list identifies type of regulation applicable to each substance.

1.4 RELATED REQUIREMENTS

- .1 Section 01 35 29.06 – Health and Safety Requirements
- .2 Section 01 35 43 – Environmental Procedures
- .3 Section 01 41 00 – Regulatory Requirements
- .4 Section 01 56 00 – Temporary Barriers and Enclosures
- .5 Section 01 74 21 – Construction/Demolition Waste Management and Disposal
- .6 Section 02 41 13 – Selective Site Demolition
- .7 Section 02 56 13 – Waste Containment
- .8 Section 02 81 00 – Lead Surface Coatings – General Provisions
- .9 Section 02 83 12 – Lead Abatement – Maximum Precautions
- .10 Section 02 85 11 – Silica Moderate Risk Precautions

1.5 ADMINISTRATIVE REQUIREMENTS

- .1 Before start of Work arrange for Site visit with Departmental Representative to examine existing Site conditions.
- .2 Departmental Representative will ensure that Contractor has received a copy of the Site specific DSR September 3, 2020 before binding on supplying Work for this project.

1.6 RESPONSIBILITY

- .1 Contractor shall be responsible for reading and evaluating the information provided in DSR September 3, 2020 for the Site.
- .2 Contractor shall incorporate any recommendations in the Site DSR September 3, 2020 as they pertain to the health and safety of workers on Site, in accordance with Section 01 35 29.06– Health and Safety Requirements, and in compliance with authority having jurisdictions for that area.
- .3 Contractor shall ask Departmental Representative should they have any questions related to the Site specific DSR September 3, 2020.
- .4 Contractor shall exercise every reasonable precaution for the protection of each worker on Site.
- .5 Contractor shall furnish the Site specific DSR September 3, 2020 to all subcontractors who will be performing work on Site.

1.7 REGULATORY REQUIREMENTS

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

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- .2 Site Description – Truss Span 7 and east approach were coated in Bridgecote in 1996, Truss Spans 1 – 6 were metallized in 1998-1999, lead may be present on encased members. Silica is a presumed component of poured or pre-cast concrete, masonry and mortar, stone and asphalt.
 - .3 It is assumed that the top of floor beams and portions of Truss A and Truss B top chords will have lead paint present which is to be removed following demolition of the concrete deck.

1.8 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit Site-specific Health and Safety Plan, within 14 days after date of Notice to proceed and before mobilization to Site. List relevant hazardous or contaminated materials or substances required by the authority having jurisdiction which need to be included in the Contractor's Health and Safety Plan.

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 RELATED REQUIREMENTS

- .1 Section 31 62 13 - Steel H Piles.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00- Submittal Procedures.
- .2 Product Data: submit manufacturer's printed product literature, specifications and datasheet.
- .3 Sub-surface investigation report: when site conditions differ from those indicated, submit written notification to Departmental Representative and await further instructions.
- .4 Submit schedule of planned sequence of driving to Departmental Representative for review, as specified.
- .5 Equipment:
 - .1 Submit prior to pile installation for review by Departmental Representative, list and details of equipment for use in installation of piles.
 - .2 Impact hammers: submit manufacturer's written data as specified.
 - .3 Non-impact methods; submit characteristics to evaluate performance.
- .6 Quality assurance submittals:
 - .1 Test reports: submit electronic copies of certified test reports for piles from approved independent testing laboratories, indicating compliance with specifications for specified performance characteristics and physical properties.
 - .2 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.

1.3 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Protect piles from damage due to excessive bending stresses, impact, abrasion or other causes during delivery, storage and handling.
- .3 Replace damaged piles as directed by Departmental Representative.

1.4 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials for recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

1.5 EXISTING CONDITIONS

- .1 Sub-surface investigation report is bound into specification following Appendix A.
- .2 Notify Departmental Representative in writing if subsurface conditions at site differ from those indicated and await further instructions from Departmental Representative.

1.6 SCHEDULING

- .1 Provide schedule of planned sequence of driving to Departmental Representative for review, not less than 14 days prior to commencement of pile driving.

Part 2 Products**2.1 MATERIALS**

- .1 Material requirements for piles are specified in Section 31 62 13 - Steel H Piles.

2.2 EQUIPMENT

- .1 Provide pile driving equipment capable of installing the piles to the required capacities and anticipated tip elevations shown on the Contract Drawings and to complete Pile Analyzer (PDA) testing in accordance with the requirements of this section.
- .2 Prior to pile installation submit to Departmental Representative for review, details of equipment for installation of piles.
 - .1 Impact hammers: provide manufacturer's name, type, rated energy per blow at normal working rate, mass of striking parts of hammer, mass of driving cap and type and elastic properties of hammer and pile cushions.

Part 3 Execution**3.1 PREPARATION**

- .1 Protection:
 - .1 Protect adjacent structure, services and work of other sections from hazards due to pile driving operations.
 - .2 Arrange sequencing of pile driving operations and methods to avoid damages to adjacent existing structure.
 - .3 When damages occur, remedy damaged items to restore to original or better condition at own expense.
- .2 Ensure that ground conditions at pile locations are adequate to support pile driving operation and load testing operation.
 - .1 Make provision for access and support of piling equipment during performance of Work.
- .3 Pre-boring of holes may be acceptable to facilitate pile alignment control if provided in writing by the Departmental Representative.
- .4 Ensure that ground conditions at pile locations are adequate to support pile driving operation and load testing operation. Make provision for access and support of piling equipment during performance of Work.

3.2 FIELD MEASUREMENT

- .1 Maintain accurate records of driving for each pile, including:
 - .1 Type and make of hammer, stroke or related energy.
 - .2 Other driving equipment including water jet, driving cap and cushion.
 - .3 Pile size and length, location of pile in pile group, location or designation of pile group.
 - .4 Sequence of driving piles in group.
 - .5 Number of blows per metre for entire length of pile and number of blows per 100 mm for last 1000 mm.
 - .6 Final tip and cut-off elevations.
 - .7 Other pertinent information such as interruption of continuous driving, pile damage.
 - .8 Record elevation taken on adjacent piles during, before and after driving of each pile.
- .2 All measurements, observations and calculations associated with pile driving analyzer and wave equation analysis.
- .3 Provide Departmental Representative with three (3) copies of records.

3.3 DRIVING

- .1 Use driving caps and cushions to protect piles. Reinforce pile heads as required by Departmental Representative. Piles with damaged heads as determined by Departmental Representative will be rejected.
- .2 Hold piles securely and accurately in position while driving.
- .3 Deliver hammer blows along axis of pile.
- .4 Restrike already driven piles lifted during driving of adjacent piles to assure set.
- .5 The Contractor shall plan to restrike a minimum of 25% of the all installed piles to be incorporated into the work to check for any relaxation of the end bearing stratum.
- .6 Re-striking of these piles shall occur a minimum of 24 hours after achieving refusal during the initial driving.
- .7 Remove loose and displaced material from around piles after completion of driving, and leave clean, solid surfaces to receive foundation concrete.
- .8 Cut off piles neatly and squarely at elevations as indicated. Provide sufficient length above cut-off elevation so that part damaged during driving is cut off. Do not cut tendons or other reinforcement which will be used to tie pile caps to pile.
- .9 Remove cut-off lengths from site on completion of work.

3.4 DRIVING TOLERANCES

- .1 Refer to Specification 31 62 16.16 – Steel H Piles for driving tolerances.
- .2 Any pile driven outside the maximum tolerance is subject to review by the Departmental Representative.

3.5 OBSTRUCTIONS

- .1 Where obstruction is encountered that causes sudden unexpected change in penetration resistance or deviation from specified tolerances, proceed as directed by Departmental Representative.

3.6 REPAIR/ RESTORATION

- .1 Remove rejected pile and replace with a new, and if necessary, a longer pile or as otherwise directed by Departmental Representative.
- .2 No extra compensation will be made for removing and replacing or other work made necessary through rejection of defective piles.

3.7 PROTECTION

- .1 Protect adjacent structures, services and work of other sections from hazards due to pile driving operations.
- .2 Arrange sequencing of pile driving operations and methods to avoid damages to adjacent existing structures. When damages occur, remedy damaged items to restore to original or better condition at own expense.

3.8 FIELD QUALITY CONTROL

- .1 Pile Driving Analyzer:
 - .1 Use Pile Driving Analyzer and Wave Equation Analysis to determine and confirm driving criteria such as hammer size and variation in impact, suitability of driving cap and cushions and penetration resistance relative to set on at least 50% of piles.
 - .1 Confirm criteria during pile installation by using Pile Driving Analyzer and Wave Equation Analysis on 50% of piles.
 - .2 Departmental Representative to select piles.
 - .3 Work to be performed by Geotechnical Departmental Representative registered or licensed in the Province of Manitoba, Canada.
 - .2 Testing Agency appointed by Departmental Representative will use Pile Driving Analyzer and Wave Equation Analysis to confirm driving criteria. Included are: hammer size and variation in impact, suitability of driving cap and cushions, and penetration resistance relative to set for initial driving and restriking.
 - .1 Departmental Representative to select piles for testing.
- .3 The Contractor shall prepare piles to be instrumented by drilling and tapping holes for installation of strain transducers and accelerometers, as directed by Departmental Representative.
- .4 The Contractor shall provide assistance, as required, in instrumentation process during initial set-up and during test.
 - .1 Such assistance will include: attaching of test equipment leads to transducers and accelerometers when pile is positioned in leads prior to driving, replacing of transducers and accelerometers, if required, during driving.
- .5 Make allowance for probable interruption in driving for:

- .1 Changing/modifying hammer, cap, cushions, or other equipment;
- .2 Replacing/adjusting of transducers and accelerometers;
- .3 Assessing of monitored results.

- .6 Replace/adjust hammer and modify cap, cushions, and other equipment, as directed by Departmental Representative.
- .7 Confirm that final set has been achieved, when instructed by restriking instrumented piles.
- .8 Provide Departmental Representative with electronic copies of all records associated with pile driving.

3.9 CLEANING

- .1 Proceed in accordance with Section 01 74 11- Cleaning.
- .2 On completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.

END OF SECTION