

NORTH END SEWAGE TREATMENT PLANT (NEWPCC) HEADEND DISCHARGE WELL
STRUCTURAL UPGRADES
BID OPPORTUNITY NO. 366-2016

SECTION 01 11 00

SUMMARY OF WORK

PART 1 GENERAL

1.1 SUMMARY

- A. This section outlines in general the work to be done under the Contract at the North End Sewage Treatment Plant (NEWPCC).
- B. The Work includes structural upgrades within the Discharge Well of the headend area of an existing wastewater treatment plant that must be kept in continuous operation. Refer to Section 01 52 10, Construction Sequencing for additional constraints and requirements.
- C. Construct and test foundations, structures and other facilities shown on the Contract Drawings and specified herein.
- D. Supervise, organize, coordinate and direct construction operations of sub-trades and suppliers.
- E. Supply, install, and put in continuous successful operation equipment and appurtenances specified herein.
- F. In addition to constructing the works shown on the Drawings, design, construct, and maintain, unless otherwise specified or shown on the Contract drawings, temporary works and facilities required for the construction of the works. Remove temporary works and facilities when construction is completed. Refer to Section 01 50 00, Temporary Facilities and Controls for additional requirements. Temporary works and facilities include, but are not limited to the following:
 - 1. All security fencing whether permanent or temporary
 - 2. Falsework and bracing for formwork or for other parts of the works while under construction
 - 3. Scaffolding
 - 4. Snow removal
 - 5. Grass cutting
 - 6. Temporary vehicular access and parking development, maintenance, and restoration

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- A. The completed Work will provide The City with structural related upgrades including the installation of new FRP railings, gratings and platform in the Discharge Well at the North End Sewage Treatment Plant (NEWPCC). Refer to Drawings and individual discipline Specifications for further details.

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- B. The major components of the Work are as follows:
1. Provide temporary heating, ventilation and gas monitoring complete with associated wiring and conduits for Discharge Well interior work suitable for a confined space as well as a hazardous area. Ensure any tools used in this area are rated appropriately.
 2. Temporarily remove Bypass to Outfall Sluice Gate Operator (M174) for increased access into the Discharge Well.
 3. Perform demolition work in to the Discharge Well according to the Drawings.
 4. Clean and refinish existing metal work as noted on the Drawings.
 5. Provide scaffolding and safety provisions (netting, fall protection, temporary work platforms, anchoring, tie-off points) in the Discharge Well to allow for installation of the permanent structural appurtenances described in the Drawings. Do not damage or use precast roof slabs for attachments or anchorage.
 - a. Portions of the work will be immediately above the raw sewage flow, and it is essential from a safety and operations perspective to prevent materials from entering the flow.
 6. Install new FRP railings, gratings and platform according to the Drawings.
 7. Clean and reinstall Bypass to Outfall Sluice Gate Operator (M174) upon completion of the work.

1.3 EQUIPMENT, MATERIAL, AND SERVICES PROVIDED BY THE CITY

- A. The Contract allows for an on-Site Work area for the Contractor's use. The Contractor's Work area must be strictly adhered to. If additional space is required, obtain agreement in writing from The City.
- B. Contractor is responsible for providing power. Make arrangements for obtaining temporary electrical power service or provide portable generators.
- C. The cost of telephone, gas, or other utilities, whether temporary or permanent, fencing, security, and conveniences, will be the responsibility of the Contractor.
- D. Provide storage facilities, unloading of equipment or materials, maintenance while in storage, installation, labour and maintenance after installation.

1.4 CONTRACT DRAWINGS

- A. The Drawings are prepared in SI metric units.
- B. Read the Drawings as a whole, since details applicable to one Section may appear on the Drawings of another Section or Sections.
- C. Additional drawings showing details in accordance with which the Work is to be constructed may be supplied from time to time by the Contract Administrator. Such drawings are for the information of and assistance to the Contractor and will not become a basis for extra payment. The Contract Administrator may supply drawings covering additional work. These will be identified as additional work.

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1.5 DEFINITIONS

- A. Engineer: Where the word Engineer appears in reference to contract administration, it shall mean the Contract Administrator.
- B. Owner: Means the City, as defined in Part C: General Conditions.
- C. General Requirements: Refer to Division 1 of these specifications.

1.6 CONTRACT SPECIFICATIONS

- A. For easy reference, the Contract Specifications are divided into divisions. Read the Specifications as a whole as details applicable to one division may appear in another division or divisions.
- B. Coordinate and be responsible for the work done by Subcontractors.

1.7 WORK COMPLIANCE

- A. Provide Work conforming to the lines, levels and grades specified or shown on the Contract Drawings.
- B. Build Work in a thoroughly substantial and workmanlike manner, in accordance with the Contract Drawings and Specifications, subject to such modifications and additions as may be deemed necessary during its execution. In no case will payment be made for Work in excess of the requirements of the Drawings and Specifications, unless approved in writing by Contract Administrator.

1.8 ENGINEER DESIGN

- A. Where specifications require work to be designed by an engineer, engage an engineer licensed in the Province of Manitoba to design such work.

1.9 EXAMINATION OF EXISTING CONDITIONS

- A. The Contractor's attention is directed to the difficulty of the Work, including and not necessarily limited to: demolition, access, condition of existing components. The contract documents indicate the extent of work. However, it is the Contractor's responsibility to examine on Site conditions during the time of tendering to develop a full appreciation of the scope of work.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

SECTION 01 31 13

PROJECT COORDINATION

PART 1 GENERAL

1.1 SUBMITTALS

- A. Informational:
 - 1. Photographs:
 - a. Digital Images: Submit CD ROM or other newest electronic storage media within seven (7) days of being taken.
- B. Action:
 - 1. Construction Sequencing Plan for Discharge Well Upgrades.

1.2 RELATED WORK AT SITE

- A. General:
 - 1. The NEWPCC will be in service during the construction period. Other Contractors and City forces will require unrestricted access to the facility. The Contractor shall not interfere with the daily operation of the plant and shall not impede others from completing their work
 - 2. Numerous vehicles access the Site on a continual basis and require clear access. The Contractor shall not impede any vehicle traffic.
 - 3. The Contractor is advised that other work on Site includes work by other contractors in different process areas, and ongoing operation and maintenance activities. The Contractor is to confine his activities to the designated areas to avoid disruption of work by others.

1.3 UTILITY NOTIFICATION AND COORDINATION

- A. Coordinate the Work with various utilities within Project limits. Notify applicable utilities prior to commencing Work, if damage occurs, or if conflicts or emergencies arise during Work.

1.4 PROJECT MILESTONES

- A. General: Include the Milestones specified in the Supplemental Conditions as a part of the Work Schedule required under Section 01 32 00, Construction Progress Documentation.

1.5 FACILITY OPERATIONS

- A. Contractor access to the NEWPCC is generally restricted, except as required for the completion of the specified Work or as otherwise approved by the Contract Administrator.

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- B. Continuous operation of the NEWPCC is of critical importance. Schedule and conduct activities to enable existing facilities to operate continuously, unless otherwise specified. In the event of conflict between construction activities and facility operations, facility operations have priority unless otherwise specified.
1. The NEWPCC functions in response to incoming sewage flows, which are generated by domestic sewage and runoff from rainfall and snowmelt. The flow rates are variable depending on the time of day, the season of the year and weather conditions.
 2. Raw sewage pumping shall not be shut down, but the pump operation can be sequenced for partial (individual pump) shutdowns. Coordinate short pumping shutdowns in advance with the City and Contract Administrator. The six raw sewage pumps in the Main Building are the only means of maintaining flow through the plant and avoiding raw sewage from spilling into the river. At low flow periods two to three pumps and their control components can be taken out of service, and must be coordinated with the City and Contract Administrator.
 3. The Discharge Well provides a free discharge for the six raw sewage pumps and for the sump pump and is located on the east side of the Main Building with an above grade location and 2nd story access via ladder. The Discharge Well environment is corrosive and potentially noxious environment. Existing structures and equipment are in very poor condition. From the Discharge Well the raw sewage can be directed to either or both the Pre-Aeration and Grit Removal Building through two underground conduits or to the outfall. The flow is never directed to the outfall except under extreme emergency conditions. Normally all flow is directed to the Pre-Aeration and Grit Removal Building. Only when the flow exceeds the capacity of the Pre-Aeration and Grit Removal process would sewage be directed to the outfall. If the flow exceeds the capacity of the Pre-Aeration and Grit Building, the excess sewage will spill over the weirs in the Discharge Well and out to the outfall. The elevation of the weirs is 12.74 meters. Zero elevation is the normal winter ice level just downstream of the Forks (221.760 m above sea level) James Avenue datum.
- C. The Work within the Discharge Well is considered hazardous and requires suitable attention to detail with respect to safety and constructability issues within the Contractor's Construction Sequencing Plan. For construction constraints and suggested sequence of construction, refer to Section 01 52 10, Construction Sequencing.
- D. Many components within the Discharge Well are not structurally sound for prolonged load bearing work or construction activity and should be replaced with permanent structural framing as expeditiously as possible. Appropriate work procedures are required to ensure safety and avoid unplanned interruptions to its operation.
- E. The Discharge Well shall be considered as restricted access and shall be accessible only to personnel properly trained in confined space entry and fall protection.
- F. Existing electrically powered components within the Discharge Well are not explosion proof and should not be used during construction.

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- G. Perform Work continuously during critical connections and changeovers, and as required to prevent interruption of The City's operations.
- H. When necessary, plan, design, and provide various temporary services, utilities, connections, temporary piping and heating, access, and similar items to maintain continuous operations of The City's facility.
- I. Do not close lines, open or close valves, or take other action which would affect the operation of existing systems, except as specifically required by the Contract Documents and after authorization by The City and Contract Administrator. Such authorization will be considered within 48 hours after receipt of Contractor's written request.
- J. Install and maintain temporary connections required to keep The City's operations on line. Sequences of construction will be considered upon written request to the Contract Administrator, provided they afford equivalent continuity of operations.
- K. Do not proceed with Work affecting a facility's operation without obtaining The City's and Contract Administrator's advance approval of the need for and duration of such Work.

1.6 ADJACENT FACILITIES AND PROPERTIES

- A. Examination:
 - 1. After Effective Date of the Agreement and before Work at Site is started, Contractor, Contract Administrator, and affected property owners and utility owners shall make a thorough examination of pre-existing conditions including existing buildings, structures, and other improvements in vicinity of Work, as applicable, which could be damaged by construction operations.
 - 2. Periodic reexamination shall be jointly performed to include, but not limited to, cracks in structures, settlement, leakage, and similar conditions.
- B. Documentation:
 - 1. Record and submit documentation of observations made on examination inspections in accordance with paragraph CONSTRUCTION PHOTOGRAPHS.
 - 2. Upon receipt, Contract Administrator will review, sign, and return one record copy of documentation to Contractor to be kept on file in field office.
 - 3. Such documentation shall be used as indisputable evidence in ascertaining whether and to what extent damage occurred as a result of Contractor's operations, and is for the protection of adjacent property owners, Contractor, and The City.

1.7 CONSTRUCTION PHOTOGRAPHS

- A. The Contractor must photographically document all phases of the project including preconstruction, construction progress, and post-construction.
 - 1. Provide a digital camera at the Site for Contractor's use and for the use of the Contract Administrator.

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- B. Preconstruction and Post-construction:
 - 1. After Effective Date of the Agreement and before Work at Site is started, and again upon issuance of Substantial Performance, take a minimum of 100 pictures of construction Site and property adjacent to perimeter of construction Site.
 - 2. Particular emphasis shall be directed to structures both inside and outside the Site.

- C. Digital Images:
 - 1. Archive using a commercially available photograph management system.
 - 2. Label each storage media with Project and The City's name, and week and year images were produced.

1.8 REFERENCE POINTS

- A. Location and elevation of benchmarks are shown on Drawings for reference.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION

3.1 SALVAGE OF MATERIALS

- A. Prior to demolition or removal of material or equipment, Contract Administrator will identify equipment and material to be retained by The City for salvage.
 - 1. Remove material with extreme care so as not to damage for future use.
 - 2. Promptly remove from Work area salvaged materials.
 - 3. Store materials where instructed by The City.

- B. Meet with Contract Administrator prior to starting to dismantle equipment or piping designated to be salvaged. Contract Administrator will indicate locations where equipment is to be disconnected.

- C. Provide new or repair damaged equipment or material specified or indicated to be salvaged. Clean and protect equipment from dust, dirt, natural elements, and store as directed.

3.2 CUTTING, FITTING, AND PATCHING

- A. Cut, fit, adjust, or patch Work and work of others, including excavation and backfill as required, to make Work complete.

- B. Obtain prior written authorization of Contract Administrator before commencing Work to cut or otherwise alter:
 - 1. Structural or reinforcing steel, structural column or beam, elevated slab, trusses, or other structural member.
 - 2. Weather- or moisture-resistant elements.
 - 3. Efficiency, maintenance, or safety of element.

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- 4. Work of others.
- C. Refinish surfaces to provide an even finish.
 - 1. Refinish continuous surfaces to nearest intersection.
 - 2. Refinish entire assemblies.
 - 3. Finish restored surfaces to such planes, shapes, and textures that no transition between existing work and Work is evident in finished surfaces.
- D. Restore existing work, Underground Facilities, and surfaces that are to remain in completed Work including concrete-embedded piping, conduit, and other utilities as specified and as shown.
- E. Make restorations with new materials and appropriate methods as specified for new Work of similar nature; if not specified, use recommended practice of manufacturer or appropriate trade association.
- F. Fit Work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces and fill voids.

END OF SECTION

SECTION 01 31 19

PROJECT MEETINGS

PART 1 GENERAL

1.1 GENERAL

- A. Contract Administrator will schedule physical arrangements for meetings throughout progress of the Work, prepare meeting agenda with regular participant input and distribute with written notice of each meeting, preside at meetings, record minutes to include significant proceedings and decisions, and reproduce and distribute copies of minutes within four (4) days after each meeting to participants and parties affected by meeting decisions.

1.2 PRECONSTRUCTION CONFERENCE

- A. Contractor shall be prepared to discuss the following subjects, as a minimum:
1. Required schedules.
 2. Status of Bonds and insurance.
 3. Sequencing of critical path work items.
 4. Progress payment procedures.
 5. Project changes and clarification procedures.
 6. Requirements for use of Site, access, office and storage areas, security, utilities, hoarding and temporary facilities.
 7. Major product delivery and priorities.
 8. Contractor's safety plan and representative.
 9. Contractor's environmental management plan
 10. Required Submittals.
 11. Quality Control Plan.
 12. Permits obtained by The City.
 13. Permits obtained by the Contractor.
- B. The Preconstruction Meeting shall take place no later than ten (10) Working Days after the issuance of the Notice to Commence and shall be held at the NEWPCC.
- C. Attendees will include:
1. The City's representatives.
 2. Contractor's office representative.
 3. Contractor's resident superintendent.
 4. Contractor's quality control representative.
 5. Subcontractors' representatives whom Contractor may desire or Contract Administrator may request to attend.
 6. Contract Administrator's representatives.
 7. Others as appropriate.

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1.3 PRELIMINARY SCHEDULES REVIEW MEETING

- A. As set forth in Section 01 32 00, Construction Progress Documentation.

1.4 PROGRESS MEETINGS

- A. Contract Administrator will schedule regular progress meetings at Site, conducted weekly to review the following:
1. Health and safety issues
 2. Review of any comments on the previous meeting summaries,
 3. Review of the progress of the Work including comments regarding the progress schedule
 4. Schedule and status of Shop Drawing and Sample submittals
 5. Status of Contractor-issued requests for information
 6. Status of The City-issued requests for quotation
 7. Status of change orders
 8. Status of Contractor claims
 9. Status of Payment Certificates
 10. Other matters needing discussion and resolution
- B. Attendees will include:
1. The City's representative.
 2. Contractor, Subcontractors, and Suppliers, as appropriate.
 3. Contract Administrator.
 4. Others as appropriate.

1.5 OTHER MEETINGS

- A. In accordance with Contract Documents and as may be required by The City and Contract Administrator.
- B. The City reserves the right to call additional Site meetings, or to request the attendance of particular personnel at any meeting.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

SECTION 01 32 00

CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 GENERAL

1.1 SUBMITTALS

- A. Informational Submittals:
 - 1. Preliminary Work Schedule: Submit at least five (5) days prior to preconstruction meeting.
 - 2. Detailed Work Schedule:
 - a. Submit initial detailed progress schedule within time specified in the Supplemental Conditions.
 - b. Submit an updated progress schedule at each update, in accordance with Article Detailed Work Schedule.
 - 3. Progress Updates:
 - a. Submit actual work update at each progress meeting.
 - b. Provide hard copies for all attendees of the Progress Meetings.
 - c. Submit Narrative Progress Report at each Progress Meetings. Same number of copies as specified for progress schedule.

1.2 PRELIMINARY WORK SCHEDULE

- A. Show a detailed schedule, beginning with Notice to Proceed, and other major activities through to Completion.
- B. Show activities including, but not limited to the following:
 - 1. Notice to Proceed.
 - 2. Bonds, Insurance and Permits.
 - 3. Mobilizations summary.
 - 4. Submittals, with review time. Contractor may use schedule of Shop Drawings and Samples specified in Section 01 33 00, Submittal Procedures
 - 5. Early procurement activities for long lead equipment and materials.
 - 6. Specified Work sequences and construction constraints.
 - 7. Contract Milestone and Completion Dates.
 - 8. Work within the Discharge Well.
 - 9. Project close-out summary.
 - 10. Demobilization summary.

1.3 DETAILED WORK SCHEDULE

- A. In addition to requirements of the Supplemental Conditions, submit detailed progress schedule beginning with Notice to Proceed and continuing through Completion.
- B. Operations requiring actions such as partial pump shutdown sequencing, submit a written request for such scheduled operations to Contract Administrator a minimum of 14 days in

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advance, for consideration by Contract Administrator, describing the reasons for, anticipated duration of, and areas affected by any process and power outages.

- C. Show the duration and sequences of activities required for complete performance of the Work reflecting means and methods chosen by Contractor.
- D. When accepted by Contract Administrator, detailed work schedule will replace preliminary progress schedule and become baseline schedule. Subsequent revisions will be considered as updated progress schedules.
- E. Update weekly to reflect actual progress and occurrences to date.

1.4 PROGRESS OF THE WORK

- A. Progress Updates for each task are to be plotted on the Detailed Work Schedule Gantt Chart for a comparison of planned to actual work.
- B. Progress Updates shall reflect:
 - 1. Progress of Work to within 5 working days prior to submission.
 - 2. Approved changes in Work scope and activities modified since submission.
 - 3. Delays in submittals or resubmittals, deliveries, or Work.
 - 4. Adjusted or modified sequences of Work.
 - 5. Other identifiable changes.
 - 6. Revised projections of progress and completion.
 - 7. Report of changed logic.
- C. Produce detailed sub-schedules during Project, upon request of The City or Contract Administrator, to further define critical portions of the Work such as facility shutdowns.
- D. Work outside of normal working hours and on weekends will be permitted through advanced approval and only for work that must be coordinated outside of normal working hours. Provide a minimum of 72 hours advance notice so The City can schedule overtime.
- E. Do not initiate work outside normal working hours without the Contract Administrator's approval except when the Work is unavoidable or absolutely necessary for:
 - 1. Preventing injury to any person or saving the life of any person; or
 - 2. Preventing damage to property where the circumstances placing the property in danger could not reasonably have been foreseen and where the immediate carrying out of such Work is necessary in order to prevent damage to that property; in which case the Contractor shall immediately advise the Contract Administrator in writing that such Work outside the normal working hours is necessary and of the reasons for this. He shall also state the nature and extent of Work to be carried out.
- F. If Contractor fails to complete activity by its latest scheduled completion date and this failure is anticipated to extend Contract Times (or Milestones), Contractor shall, within seven (7) days of such failure, submit a written statement as to how Contractor intends to correct nonperformance and return to acceptable current progress schedule. Actions by

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Contractor to complete the Work within Contract Times (or Milestones) will not be justification for adjustment to Contract Price or Contract Times.

- G. The City may order Contractor to increase plant, equipment, labour force, or working hours if Contractor fails to:
1. Complete a Milestone activity by its completion date.
 2. Maintain work progress in accordance with the Detailed Work Schedule and fails to submit a written plan acceptable to the Contract Administrator on corrective issues.
 3. Satisfactorily execute Work as necessary to prevent delay to overall completion of Project, at no additional cost to The City.

1.5 SCHEDULE ACCEPTANCE

- A. Contract Administrator will review progress updates as information and review is not intended to modify the Detailed Work Schedule.
1. Contract Administrator's review shall not be interpreted as acceptance. Lack of comment on any aspect of schedule that is not in accordance with the Contract Documents will not thereby indicate acceptance of that change. Schedule remains Contractor's responsibility and Contractor retains responsibility for performing all activities, for activity durations, and for activity sequences required to construct Work in accordance with the Contract Documents.
- B. Unacceptable Preliminary Work Schedule:
1. Make requested corrections; resubmit within four (4) days.
- C. Unacceptable Detailed Work Schedule:
1. Make requested corrections; resubmit within four (4) days.
 2. Until acceptable to Contract Administrator as baseline progress schedule, continue review and revision process.
- D. Narrative Report: All changes to activity duration and sequences, including addition or deletion of activities subsequent to Contract Administrator's acceptance of baseline progress schedule, shall be delineated in Narrative Report current with proposed updated progress schedule.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 DEFINITIONS

- A. Action Submittal: Written and graphic information submitted by Contractor, that requires Contract Administrator's review.
- B. Informational Submittal: Information submitted by Contractor, that does not require Contract Administrator's review. Submittals not meeting conditions of the Contract will be returned.
- C. Shop Drawings: Custom drawings, product data, diagrams, illustrations, schedules, performance charts, brochures and other data, which are to be provided by the Contractor to illustrate details of a portion of the Work.

1.2 PROCEDURES

- A. Direct submittals to Contract Administrator unless specified otherwise.
- B. The Contractor will be required to follow the City's procedures regarding submittals of electronic files in the City Document Management System (DMS), transmission of electronic submittals and identification of project specific documents and equipment at no cost to the City. Submittals shall follow the Winnipeg Sewage Treatment Program (WSTP) Technical Document Number System. Examples of the numbering system will be provided to the Contractor.
- C. Electronic Submittals: Submittals made in electronic format shall be as follows.
 - 1. Each submittal shall be electronic file in Adobe Acrobat Portable Document Format (PDF) and native files (e.g. Word, Excel, AutoCad, etc.). Use latest version available at time of execution of Agreement.
 - 2. Electronic files that contain more than 10 pages in PDF format shall contain internal book marking from index page to major sections of document.
 - 3. PDF files shall be set to open "Bookmarks and Page" view.
 - 4. Add general information to each PDF file, including title, subject, author, and keywords.
 - 5. PDF files shall be set up to print legibly at 8.5 inches by 11 inches, or 11 inches by 17 inches. No other paper sizes will be accepted.
 - 6. Submit new electronic files for each resubmittal.
 - 7. Include copy of Transmittal of Contractor's Submittal form, located at end of section, with each electronic file.
 - 8. Limit size of each electronic transmission to 8 MB.

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- D. Transmittal of Submittal:
1. Contractor shall:
 - a. Review each submittal and check for compliance with Contract Documents.
 - b. Stamp each submittal with uniform approval stamp before submitting to Contract Administrator.
 - 1) Stamp to include Project name, submittal number, Specification number, Contractor's reviewer name, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with Contract Documents.
 - 2) Contract Administrator will not review submittals that do not bear Contractor's approval stamp and will return them without action.
 - 3) Contract Administrator will not review submittals received directly from a Subcontractor or Supplier and will return them without action.
 2. Complete, sign, and transmit with each submittal package, one Transmittal of Contractor's Submittal form Supplement-1 attached at end of this section or in format approved by Contract Administrator.
 3. Identify each submittal with the following:
 - a. Numbering and Tracking System:
 - 1) Sequentially number each submittal.
 - 2) Resubmission of submittal shall have original number with sequential alphabetic suffix.
 - b. Specification section and paragraph to which submittal applies.
 - c. Project title and Contract Administrator's project number.
 - d. Date of transmittal.
 - e. Names of Contractor, Subcontractor or Supplier, and manufacturer as appropriate.
 4. Identify and describe each deviation or variation from Contract Documents.
 5. Include Contractor's written response to each of Contract Administrator's review comments with resubmission of submittals stamped "Exceptions Noted, Resubmit".
 6. Submit Contractor's written acknowledgement and acceptance of each of Contract Administrator's review comments on submittals stamped "Exceptions Noted".
- E. Format:
1. Do not base Shop Drawings on reproductions of Contract Documents.
 2. Package submittal information by individual Specification section. Do not combine different Specification sections together in submittal package, unless otherwise directed in Specification.
 3. Present in a clear and thorough manner and in sufficient detail to show kind, size, arrangement, and function of components, materials, and devices, and compliance with Contract Documents.
 4. Index with labeled tab dividers in orderly manner.

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- F. Timeliness:
1. Schedule and submit in accordance with schedule of Shop Drawing and Sample submittals, and requirements of individual Specification sections.
 2. Submit Shop Drawings and Samples well in advance of scheduled delivery date for associated equipment or material.
 3. Coordinate submittals prepared by multiple trades such that information is available to allow prior review and sufficient review time where work of one trade interfaces with or affects work of another.
- G. Processing Time:
1. Time for review shall commence on Contract Administrator's receipt of submittal.
 2. Contract Administrator will act upon Contractor's submittal and transmit response to Contractor not later than 15 days after receipt, unless otherwise specified. Contract Administrator will endeavor to act upon submittals in accordance with work schedules and Contractor identified priorities.
 3. Resubmittals will be subject to same review time.
 4. Allow additional review time for complex equipment and systems.
 5. No adjustment of Contract times or price will be allowed due to delays in progress of work caused by rejection and subsequent resubmittals.
- H. Resubmittals:
1. Clearly identify each correction or change made and include revision date.
 2. Provide clear response to each itemized comment by Contract Administrator on the submittal, whether or not action has been taken, and description of action.
 3. No adjustment of Contract Times or Price will be allowed due to delays in progress of Work caused by rejection and subsequent resubmittals.
- I. Incomplete Submittals:
1. Contract Administrator will return entire submittal for Contractor's revision if preliminary review deems it incomplete.
 2. When any of the following are missing, submittal will be deemed incomplete:
 - a. Contractor's review stamp, completed and signed.
 - b. Transmittal of Contractor's Submittal, completed and signed.
 - c. Insufficient number of copies.
 - d. All requested information is not provided.
 - e. Submittals missing Professional Engineer's seal and signature, where it is required.
- J. Submittals not required by Contract Documents:
1. Will not be reviewed and will be returned stamped "Not Subject to Review."
 2. Contract Administrator will keep one copy and return all remaining copies to Contractor.
- K. Do not revise submittals after they have been reviewed and stamped "No Exceptions Taken" or "Exceptions Noted".

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- L. Contract Administrator will complete up to two reviews of each submittal at no cost to Contractor. The City will deduct cost of additional reviews from Contract Price.

1.3 ACTION SUBMITTALS

A. General:

1. Prepare and submit Action Submittals required by individual Specification sections.
2. Contract Administrator will review Action Submittals only for general conformance with design concept and general compliance with Contract Documents. Contract Administrator's review does not relieve Contractor from compliance with requirements of Contract Documents nor from errors in submittals or Contractor's design.
3. Contractor is responsible for confirmation of dimensions at jobsite; fabrication processes; means, methods techniques, sequences and procedures of construction; coordination of Work of all trades; and performance of Work in safe and satisfactory manner.
4. At Contract Administrator's option, Contract Administrator's review comments and review stamp will be placed either directly on submitted copies of Shop Drawings or on separate submittal review comment form.

B. Shop Drawings:

1. Copies: One (1) hardcopy of final approved shop drawing materials. One (1) electronic copy.
2. Identify and Indicate:
 - a. Applicable Contract Drawing and Detail number, products, units and assemblies, and system or equipment identification or tag numbers.
 - b. Equipment and Component Title: Identical to title shown on Drawings.
 - c. Critical field dimensions and relationships to other critical features of Work. Note dimensions established by field measurement.
 - d. Project-specific information drawn accurately to scale.
3. Manufacturer's standard schematic drawings and diagrams as follows:
 - a. Modify to delete information that is not applicable to the Work.
 - b. Supplement standard information to provide information specifically applicable to the Work.
4. Product Data: Provide as specified in individual Specifications.
5. Foreign Manufacturers: When proposed, include following additional information:
 - a. Names and addresses of at least two companies that maintain technical service representatives close to Project.
 - b. Complete list of spare parts and accessories for each piece of equipment.
6. Units: Submit all Shop Drawings in SI metric units.
7. Required submittals include but are not limited to:
 - a. Catalogue Drawings: Include reprints of catalogue drawings of proprietary articles of standard fabrication and manufacture for the work.
 - b. Shop Drawings: Include dimensioned line drawings and related specifications, information and literature for custom fabricated articles and equipment.

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- c. ISA data sheets for all instruments.
- C. Samples:
- 1. Copies: Two (2), unless otherwise specified in individual Specifications.
 - 2. Preparation: Mount, display, or package Samples in manner specified to facilitate review of quality. Attach label on unexposed side that includes the following:
 - a. Manufacturer name.
 - b. Model number.
 - c. Material.
 - d. Sample source.
 - 3. Manufacturer's Color Chart: Units or sections of units showing full range of colors, textures, and patterns available.
 - 4. Full-size Samples:
 - a. Size as indicated in individual Specification section.
 - b. Prepared from same materials to be used for the Work.
 - c. Cured and finished in manner specified.
 - d. Physically identical with product proposed for use.
- D. Action Submittal Dispositions: Contract Administrator will review, mark, and stamp as appropriate, and distribute marked-up copies or submittal review comment forms as noted:
- 1. No Exceptions Taken (NET):
 - a. Contractor may incorporate product(s) or implement Work covered by submittal.
 - b. Distribution:
 - 1) One (1) copy furnished The City.
 - 2) One copy furnished Resident Project Representative.
 - 3) One copy retained in Contract Administrator's file.
 - 4) Remaining copies returned to Contractor appropriately annotated.
 - 2. Exceptions Noted (EN):
 - a. Contractor may incorporate product(s) or implement Work covered by submittal, in accordance with Contract Administrator's notations.
 - b. Distribution:
 - 1) One (1) copy furnished The City.
 - 2) One copy furnished Resident Project Representative.
 - 3) One copy retained in Contract Administrator's file.
 - 4) Remaining copies returned to Contractor appropriately annotated.
 - 3. Exceptions Noted, Resubmit (ENR):
 - a. Make corrections or obtain missing portions, and resubmit.
 - b. Contractor may not incorporate product(s) or implement Work covered by submittal, except portions where indicated Contractor may begin to incorporate product(s) or implement Work covered by the submittal in accordance with the Contract Administrator's notations.
 - c. Distribution:
 - 1) One (1) copy furnished The City.
 - 2) One copy furnished Resident Project Representative.

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- 3) One copy retained in Contract Administrator's file.
- 4) Remaining copies returned to Contractor appropriately annotated.

1.4 INFORMATIONAL SUBMITTALS

A. General:

1. Copies: Submit three (3) copies, unless otherwise indicated in individual Specification section.
2. Refer to individual Specification sections for specific submittal requirements.
3. Where work is to be designed by Contractor, comply with applicable codes and submit Shop Drawings signed and sealed by professional engineer licensed in province of Work.
4. Contract Administrator will review each submittal for general conformance with design intent and general compliance with Contract Documents. Contract Administrator's review does not relieve the Contractor from compliance with requirements of Contract documents nor from errors in the submittal or Contractor's design.

B. Certificates:

1. General:
 - a. Provide notarized statement that includes signature of entity responsible for preparing certification.
 - b. Signed by officer or other individual authorized to sign documents on behalf of that entity.
2. Welding: In accordance with individual Specification sections.
3. Installer: Prepare written statements on manufacturer's letterhead certifying that installer complies with requirements as specified in individual Specification sections.

C. Construction Photographs: In accordance with Section 01 31 13, Project Coordination, and as may otherwise be required in Contract Documents.

D. Contract Closeout Submittals: In accordance with Section 01 77 00, Closeout Procedures.

E. Contractor-Design Data:

1. Written and graphic information.
2. List of assumptions.
3. List of performance and design criteria.
4. Summary of loads or load diagram, if applicable.
5. Calculations.
6. List of applicable codes and regulations.
7. Information requested in individual Specification section.
8. Seal and signature of professional engineer licensed or registered in the province of Manitoba.

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- F. Manufacturer's Instructions: Written or published information that documents manufacturer's recommendations, guidelines, and procedures in accordance with individual Specification sections.
- G. Schedules:
1. Schedule of Shop Drawing and Sample Submittals: Prepare separately or in combination with Progress Schedule as specified in Section 01 32 00, Construction Progress Documentation.
 - a. Show for each, at a minimum, the following:
 - 1) Specification section number.
 - 2) Identification by numbering and tracking system as specified under Paragraph Transmittal of Submittal.
 - 3) Estimated date of submission to Contract Administrator, including reviewing and processing time.
 - b. On a monthly basis, submit updated schedule to Contract Administrator if changes have occurred or resubmittals are required.
 2. Work Schedules: In accordance with Section 01 32 00, Construction Progress Documentation
- H. Special Guarantee: Supplier's written guarantee as required in individual Specification sections.
- I. Statement of Qualification: Evidence of qualification, certification, or registration as required in Contract Documents to verify qualifications of engineer, materials testing laboratory, specialty Subcontractor, trade, Specialist, consultant, installer, and other professionals.
- J. Submittals Required by Laws, Regulations, and Governing Agencies:
1. Submit promptly notifications, reports, certifications, payrolls, and otherwise as may be required, directly to the applicable federal, provincial, or local governing agency or their representative.
 2. Transmit to Contract Administrator for The City's records one copy of correspondence and transmittals (to include enclosures and attachments) between Contractor and governing agency.
- K. As-Built Documents: In accordance with Section 01 77 00, Closeout Procedures.
- L. Shop Drawings for Temporary Works:
1. Submit for review shop drawings of temporary works which:
 - a. Control the dimensions and locations of any part of the structures to be constructed under the contract.
 - b. Impose loads on parts of the works which are still under construction or on existing structures.
 2. Submit six (6) copies of shop drawings for temporary works for review. Payment will not be made for work started or completed without the required drawing review. Submit shop drawings well in advance of the time when they are required for construction. Coordinate shop drawings prepared by different trades so that

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information is available to prevent conflict or errors where the work of one trade affects the work of another.

3. Of the six (6) copies submitted, two (2) will be returned to the Contractor after review.
4. Shop drawings will be reviewed for general conformity with the required arrangement and dimensions of the permanent structures and for general conformity with the specifications.
5. If resubmittal is requested, discuss the comments made and resolve all issues raised by them, then resubmit the shop drawings amended accordingly.
6. Do not begin construction of temporary works until after the completion of review of the shop drawings.
7. Review of the Contractor's drawings does not relieve the Contractor of the responsibility for the results arising from errors or omissions of design or from the use or abuse of the temporary work.
8. Keep one (1) copy of each stamped, reviewed shop drawing at the Site of the work for reference during the time the construction work is in progress.
9. Make no change in drawings after they have been reviewed.
10. Submit shop drawings in SI metric units.

M. Tender Breakdown:

1. Submit within 48 hours after award of the contract, a complete breakdown of the total bid tender price by Sections of Divisions 2 to 44, inclusive. Show separately the costs for mobilization, demobilization, bonds, and insurance.
2. This breakdown will be used for progress payment draws. As such, the breakdown will be subject to the review of the Contract Administrator.

N. Bills of Materials:

1. Provide two (2) copies of complete Bill of Materials for all equipment, valves, valve operators, and instrumentation.
2. Provide copies on letter size paper arranged and bound together alphabetically in separate three-ring binders.

O. Information Submittal Dispositions:

1. If submittal meets requirements of Contract, Contract Administrator will forward copies to appropriate parties. Some copies will be marked "For Information Only" (FIO).
2. If Contract Administrator determines that submittal does not meet requirements of Contract, submittal will be considered unacceptable. Contract Administrator will retain one copy and return remaining copies with review comments to Contractor for correction and resubmission.

1.5 SUPPLEMENTS

- A. The supplements listed below, following "End of Section", are part of this Specification.
1. Forms: Transmittal of Contractor's Submittal


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PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

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	TRANSMITTAL OF CONTRACTOR'S SUBMITTAL (ATTACH TO EACH SUBMITTAL)	DATE: _____
TO: _____ _____ _____ _____ _____	Submittal No.: _____ <input type="checkbox"/> New Submittal <input type="checkbox"/> Resubmittal Project: _____ Project No.: _____ Specification Section No.: _____ (Cover only one section with each transmittal) Schedule Date of Submittal: _____	FROM: _____ Contractor _____ _____ _____
SUBMITTAL TYPE: <input type="checkbox"/> Shop Drawing <input type="checkbox"/> Sample <input type="checkbox"/> Informational		

The following items are hereby submitted:

Number of Copies	Description of Item Submitted (Type, Size, Model Number, Etc.)	Spec. and Para. No.	Drawing or Brochure Number	Contains Variation to Contract	
				No	Yes

Contractor hereby certifies that (i) Contractor has complied with the requirements of Contract Documents in preparation, review, and submission of designated Submittal and (ii) the Submittal is complete and in accordance with the Contract Documents and requirements of laws and regulations and governing agencies.

By: _____
Contractor (Authorized Signature)

SECTION 01 35 13

SPECIAL PROJECT PROCEDURES

PART 1 GENERAL

1.1 ALTERATIONS TO EXISTING FACILITIES

- A. Modify and connect to existing facilities as shown and specified.
- B. Make good and refinish all areas affected by work.
- C. All areas to be cleaned to the condition of the area prior to the work being done.

1.2 HEALTH AND SAFETY PROCEDURES AND REQUIRMENTS

- A. Refer to Section 01 35 29, Health and Safety.

1.3 PROTECTION, SOUNDNESS, AND REPAIR OF NEW CONSTRUCTION

- A. Protect newly constructed work from damage. Prevent heavy loading of newly constructed work and repair damage. Construct works watertight and correct rejected work.
- B. If, in the final inspection, deficiencies are found, repair or replace defective work. Be responsible for satisfactory maintenance and repair of work undertaken for the specified warranty period. Protect and store equipment supplied under this Contract.

1.4 DISPOSAL OF MATERIAL OFF-SITE

- A. Material designated to be removed from the Site must be promptly removed.
- B. Make necessary arrangements for environmentally safe transportation and ultimate disposal in compliance with all applicable Ministry Regulations and Guidelines at no cost to The City, unless noted otherwise.
- C. Contractor is encouraged to recycle materials where possible, instead of disposing of materials off-site at an approved disposal sites. Advise the Contract Administrator of the recycling centres to be used. Follow all applicable local and provincial waste reduction guidelines.
- D. Remove unwanted material, as classified by The City or designated representative, from the Site and dispose of same at acceptable sites outside of the worksite.

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1.5 RELAMPING

- A. If permanent lighting fixtures and lamps are used during the construction period prior to the date of Substantial Performance, supply and install new lamps in fixtures or turn over to The City spare lamps.
 - 1. Replace incandescent lamps except in emergency lighting system, or turn over to The City a complete set of lamps.
- B. Replace fluorescent lamps or supply that number of lamps as spares, which is proportional to the approximate hours used. Supply lamps of equal lifetime rating.
- C. Replace high intensity discharge or similar lamps which fail during the one year warranty period.

1.6 ENVIRONMENTAL CONSIDERATIONS DURING CONSTRUCTION

- A. Perform the Work in accordance with construction and restoration guidelines established by Manitoba Conservation.
- B. The City's Environmental Preservation and Compliance Statement shall be included in the environmental protection requirements (See Appendix B).
- C. Equipment Fueling:
 - 1. Designate an area within the working limits, a minimum of 30 metres away from open water courses, to be used exclusively for fueling construction equipment.
 - 2. Submit for review a plan for the interception and rapid clean up of fuel spills should they occur.
 - 3. Maintain the apparatus for cleaning up fuel spills on Site.
- D. Cleaning Equipment:
 - 1. Keep construction equipment clean so that no debris is deposited on the plant roadways or any public roadway.
 - 2. Contain construction debris in a designated area within the working limits.
 - 3. Debris such as concrete, cable ties, cuttings etc. are not to be introduced into the sewage flow.
 - 4. Dispose of debris off-site as specified.
- E. Noise Control:
 - 1. Use only vehicles and equipment equipped with effective muffling devices. Provide noise barriers on stationary engines and compressors.
 - 2. Comply with City of Winnipeg Neighbourhood Liveability By-law #No.1/2008.
 - 3. Consider noise attenuation measures in the approach and submissions for noise generating activities.
- F. Dust Control:
 - 1. Control dust on the Site at times by suitable means.
 - 2. Submit dust control plan detailing proposed methods to control dust on Site to the Contract Administrator for The City.

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1.7 MAINTAINING EXISTING FLOWS

- A. Be responsible for maintaining existing storm, sanitary sewage flows and treatment throughout the construction period and until the new works are secure.
- B. Provide and maintain temporary pumps and generator sets of number and capacity sufficient to handle expected flows and treatment requirements. Determine expected flows by contacting the authority which operates the sewer system.

1.8 STORAGE AND PROTECTION OF MATERIALS AND EQUIPMENT

- A. Protect materials and equipment after unloading from weather, dust, dirt, and moisture both before and after erection and placing. Observe manufacturer's printed instructions for temporary storage.
- B. Provide dry heated 10 degrees C temporary housing for equipment or materials which may be injured by weather, dust, dirt, or moisture.
- C. Provide manufacturer's printed instructions for the storing of materials and equipment during the construction period well in advance of materials and equipment delivery.
- D. Store specialty items to ensure protection from damage to materials or finish.
- E. Store materials subject to water absorption off the ground, in accordance with manufacturer's printed instructions. Protect materials from other damage due to environmental conditions under waterproof covers.
- F. Promptly as work proceeds and upon completion, clean up and remove from Site surplus materials resulting from foregoing work.
- G. Storage of equipment and materials within the existing facility or on top of existing structures will not be permitted, unless noted otherwise on the contract documents.

1.9 PROTECTION OF EXISTING STRUCTURES

- A. The Contractor will be held fully responsible by The City for any damage to structures adjacent to or in the general area of the work, through settlement of ground, vibration or shock resulting from any cause relating to the work carried out under this Contract. Make good and repair such damage at own expense.
- B. Sustain and support structures that are uncovered, weakened, endangered, or threatened.
- C. Prevent dust and dirt from entering existing buildings or areas where equipment is stored or is operating.
- D. Prevent dust, water, or other deleterious substances from entering areas with existing electrical, heating ventilating, pumping, and other equipment.

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1.10 PROTECTION AGAINST FREEZING

- A. Furnish necessary equipment and fuel for heating buildings and structures during construction. Maintain a minimum temperature of 13 degrees C in interior areas for mechanical, electrical, masonry, painting, and other work susceptible to frost damage.

1.11 SMOKING IN DESIGNATED AREAS

- A. Smoking is not permitted on Site except in designated smoking areas.
- B. Provide a fenced in designated smoking area at locations coordinated with and acceptable to the Contract Administrator.

1.12 WORKING HOURS

- A. Access to the interior of the NEWPCC is restricted to the following times with the exception noted below:
 - 1. Monday to Friday, 8:00am to 3:30pm.
 - 2. Saturdays and Sunday, no access will be permitted.
 - 3. The NEWPCC can be accessed outside the times noted by special arrangement and additional coordination with The City. Provide a minimum of 72 hours advance notice to The City.
 - 4. Refer to General Conditions and Section 01 32 00, Construction Progress Documentation for further details.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

SECTION 01 35 29.01

HEALTH AND SAFETY

PART 1 GENERAL

1.1 REFERENCES

- A. The City of Winnipeg Safe Work Plan Document template available on the Information Connection page at the City of Winnipeg, Corporate Finance, Materials Management Division website at <http://www.winnipeg.ca/matmgt/Safety/default.stm>.
- B. Manitoba Workplace Safety and Health Act and associated regulations.
- C. Applicable National Fire Protection Association Codes and Standards.
- D. City of Winnipeg Contractor Safety Health and Environment Orientation Plan - CD-PM-PC-03 (See Appendix A)

1.2 CONSTRUCTION – SAFETY MEASURES

- A. The Contractor shall be designated as the “Prime Constructor” as defined by the Manitoba Workplace Safety and Health Act.
- B. Observe and enforce all construction safety measures required by code, Workers' Compensation Board, Manitoba Workplace Safety and Health, and all applicable statutes. Appoint a suitably qualified employee who has sole responsibility on Site on behalf of the Contractor, for compliance with the requirements and so advise the City in writing with copy to the Contract Administrator.
- C. In case of an emergency, the Contractor shall immediately contact the shift operator at 204-794-4468 (7:00 AM to 4:30 PM) or the North End Sewage Treatment Plant (NEWPCC) Contact Number 204-986-4798 (4:30 PM to 7:00 AM).
- D. Meet or exceed the latest revision of all local, federal, provincial laws, regulations, standards, and industry best practices relating to health and safety.
- E. Be solely responsible for safety of the Work under this Contract and for complying with and ensuring that every person on the Site complies with the requirements contained within the Contract documents and regulatory requirements.
- F. Perform the Work, or ensure that it is performed, in a manner to avoid risk of injury, security or damage to persons or property, adjacent property, or environment.
- G. Perform a health and safety pre-qualification of all lower-tiered subcontractors prior to contract award and only accept lower-tiered subcontractors that have demonstrated an ability to comply with health and safety requirements and are below industry average for incidents.

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- H. Provide safe access, egress, and equipment in accordance with Occupational Health and Safety Regulations for entry into all areas by employees, subcontractors, The City, and Contract Administrator. Where hazardous areas or confined space entry exists, implement procedures defined by the latest revision of the applicable regulations.
- I. Designate a qualified safety representative at the Project Site with responsibility for preventing accidents and implementing and supervising the Safe Work Plan and other safety programs. The safety representative shall attend all project safety meetings, participate fully in all activities outlined in the Safe Work Plan and shall devote whatever time is necessary to perform such duties properly. Contractor's safety representative shall provide The City and Contract Administrator with requested information and shall have the authority to immediately correct safety deficiencies.
- J. Prior to the commencement of the Work, review and become fully familiarized with all local, provincial, and federal regulatory requirements.
- K. In event of a conflict between any provisions of the various regulatory requirements, the most stringent provision shall govern.
- L. Ensure that all employees and subcontractors are competent, as prescribed by the applicable legislation, in performing the Work and have been trained accordingly.
- M. Prior to commencement of any Work, throughout the Work as required, and at The City's request, make the following documentation available:
 - 1. A copy of the Contractor's project specific Safe Work Plan.
 - 2. A copy of the Contractor's updated COR Certificate or Annual Letter of Good Standing.
 - 3. Emergency response and evacuation procedures, including local contact names and numbers.
 - 4. Procedures in the event of a spill including local contact names and numbers.
 - 5. Training and orientation training records of employees or subcontractors.
 - 6. Applicable Material Safety Data Sheets.
- N. Provide and maintain first aid, hygiene, washrooms, potable water, and fire prevention equipment, at the Site in accordance with the applicable regulatory requirements.
- O. Establish, maintain, and mark clear paths of access and egress for routine and emergency personnel and vehicles. Contractor to submit an emergency access plan to be reviewed and accepted by the Contract Administrator.
- P. Erect signage acceptable to the Contract Administrator at all entry points to the Site identifying the name, address, and telephone number of the Contractor and to advise personnel and visitors entering the Site of the requirements respecting entry.
- Q. Ensure adequate coordination and communication between all parties on Site in regards to safety.
- R. In addition to Manitoba Workplace Safety and Health Act and applicable regulations reporting requirements, report all incidents, near misses, spills, environmental damage,

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and property damage to the Contract Administrator immediately. An incident investigation must be conducted and a copy of the complete report provided to the Contract Administrator within 24 hours.

- S. Provide a copy of all Ministry of Labour and Immigration inspection reports, orders, and charges to the Contract Administrator immediately.
- T. Minimize hot work including but not limited to operations involving open flames, heat, or sparks such as brazing, cutting, grinding, soldering, and torching. If there is a practical and safer way to do the work without hot work, the alternative method shall be used. Where hot work is required, as a minimum, follow the City's hot work requirements, including but not limited to, hot work permitting procedures. See appended City of Winnipeg - Hot Work Permit.
- U. Hot work shall end no less than one (1) hour prior to end of shift and area inspected prior to departure by the Contractor's Site supervisor and or tradesman.

1.3 SPECIAL PROTECTION AND PRECAUTIONS

- A. Comply with the North End Sewage Treatment Plant (NEWPCC) Health and Safety Procedures where necessary. The City will provide the Contractor with facility orientation materials to use when orienting his own and subcontractors employees.

1.4 WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM

- A. Comply with applicable health and safety regulatory requirements, including but not limited to Workplace Hazardous Materials Information System (WHMIS) regulations.
- B. Maintain a copy of the current Material Safety Data Sheets (MSDSs) for all hazardous chemicals or substances brought onsite by Contractor or any lower-tiered subcontractors.
- C. If such materials or substances are part of any item requiring a shop drawing or other submittal, provide the MSDS with the submittal.
- D. Provide and maintain a copy of MSDSs to The City and Contract Administrator.
- E. Ensure compliance with the requirements of the Technical Standards and Safety Association (TSSA) and applicable safety codes when working on, or in the area of, fuel oil, diesel, gasoline, or natural gas lines.

1.5 MATERIAL HANDLING

- A. Store, stack, place, remove, and handle materials on Site in a stable and secure manner so as not to endanger the safety of personnel or cause damage to property.
- B. Secure materials which, by virtue of their configuration or weight, cannot be stored or stacked in a secure and stable manner, against tipping, collapse, or falling by use of appropriate bracing systems, structures, or equipment.

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- C. Ensure that vehicles, construction machinery, and materials handling equipment are only operated on the Project by persons suitably qualified to do so.

1.6 CITY'S HEALTH AND SAFETY AUDITOR

- A. The Contractor acknowledges that The City may employ the services of an Occupational Health and Safety Auditor, an Environmental Inspector, or other authorized inspector knowledgeable in the local statutes, laws, or by laws for the purpose of conducting inspections of the Site.
- B. Grant the Auditor, Inspector, or any other inspector full and unimpeded access to the Site, at all times, and immediately comply with any direction issued by the Auditor, Inspector, The City, or any other inspector.
- C. This provision does not change the Contractor's role and responsibilities as Prime Contractor. The auditor is the City's method for ensuring due diligence is exercised.
- D. The Contractor's Health and Safety representative shall accompany the Safety Auditor on Site visits where requested.
- E. The Safety Auditor will report any observations made during inspections and audits and assign these to the Contractor. The Contractor will be granted access to these documents. It will be the responsibility of the Contractor to review these documents and take whatever action is necessary to fulfill its responsibility as the Prime Contractor.

1.7 WORK IN HAZARDOUS AREAS

- A. Work in Confined Spaces:
 - 1. The Discharge Well at the North End Sewage Treatment Plant (NEWPCC) for the purpose of this Contract are considered to be a confined space.
 - 2. The Discharge Well shall be considered as restricted access and shall be accessible only to personnel properly trained in confined space entry and fall protection.
 - 3. The Contractor shall be aware that the Discharge Well level is considered a confined space and shall follow the "Guidelines for confined Entry Work" as published by the Manitoba Workplace Safety and Health Division.
 - 4. The Discharge Well shall be considered restricted access and shall be accessible only to personnel properly trained in confined space entry and fall protection.
 - 5. Unistrut mounts or other anchorage points for fall arrest are not available within the Discharge Well. The Contractor is expected to install and secure their own fall arrest anchorage in order to safely complete the Work.
 - 6. The Contractor shall be aware of the potential hazards that can be encountered in the Discharge Well such as explosive gases, toxic gases and oxygen deficiency. The Contractor's Safe Work Plan should address these issues.
 - 7. The air in a confined space must be tested before entry and continuously during the time that personnel are inside the space. Equipment for continuous monitoring of gases must be explosion-proof and equipped with a visible and audible alarm. The principal tests are for oxygen deficiency, explosion range and

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toxic gases. Testing equipment must be calibrated in accordance with manufacturer's specifications.

8. The Contractor is responsible for all testing requirements.
9. The Contractor shall ventilate all confined spaces as required and approved by the Manitoba Workplace Safety and Health Act (the "Act"). If no ventilation is supplied, a worker must wear a respirator or supplied air to enter the confined space.
10. Workers must wear a respirator or supplied air at all times when entering the Discharge Well where live sewage is present.
11. The Contractor shall provide a photo-ionization detector (PID) and toxic gas detector on Site at all times to monitor potential hydrocarbon vapours and hydrogen sulphide in the confined spaces. The gas detector and safety equipment conforming to the Act shall be made available to the Contract Administrator for his use during inspections.
12. The Contract Administrator may issue a stop work order to the Contractor if the above guidelines are not being followed. The Contractor shall not resume operations until the Contract Administrator is satisfied the Contractor is following the appropriate procedures. The Contractor shall have no claim for extra time or costs due to the stop work order for not following these safety guidelines.
13. Work activities in confined spaces must be in accordance with the latest revision of the Occupational Health and Safety Act and applicable Regulations.

B. Hazardous Areas in Existing Structures:

1. The Discharge Well at the North End Sewage Treatment Plant (NEWPCC) for the purpose of this Contract are considered to be a hazardous area.
2. Follow City of Winnipeg Safety Requirements, including carrying a gas monitoring device while in this area.
3. Existing electrically powered components within the Discharge Well are not explosion proof and should not be used during construction.
4. All work must be performed in accordance with Manitoba Department of Labour requirements.
5. All tools must be appropriately rated for the hazardous area.
6. General lighting within the Discharge Well is poor and additional lighting may be required to complete the Work. It is the Contractor's responsibility to assess the existing lighting and install temporary lighting to enable the completion of the Work. Lighting must be explosion proof suitable for the hazardous area.
7. Use explosion proof equipment suitable for a hazardous area.

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- C. Work Areas with Asbestos-Containing Materials:
 - 1. The Discharge Well at the North End Sewage Treatment Plant (NEWPCC) is considered to have asbestos containing materials in the 458mm foul air duct (refer to Appendix C for HMIS report location #43 Discharge Well Floor). It is the Contractor's responsibility to avoid damaging any asbestos containing materials during completion of the Work.

1.8 EXPLOSION-PROOF CONSTRUCTION

- A. Certain areas may be designated as "hazardous", or may be classified under CSA C22.1, Canadian Electrical Code. Where areas have such designation, provide explosion proof electrical equipment which meets the requirements of CSA C22.1, Canadian Electrical Code.
- B. Provide intrinsically safe mechanical devices and equipment such as non-sparking aluminum wheels for fans, and pneumatic operators for dampers.
- C. Temporary structures such as fabrication shops, storage areas, and offices will not be permitted within existing facility structures unless approved by the Contract Administrator and the City.

1.9 SUPPLEMENTS

- A. The supplements listed below, following "End of Section", are part of this Specification.
 - 1. Forms: City of Winnipeg Water and Waste Department Safety Branch Hot Work Permit

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION



Water and Waste Department
 Safety Branch
 Safety Management System
Hot Work Permit

Project:

Building:

**Staff Member or Contractor
 Performing the Work**

Date

WO #

Contract Administrator

Scope of Work

**Specific Work
 Location**

Work Date & Times (Permit valid for duration of work only)

Permit must be re-issued if any working conditions change (ie: change of shift, new hazard identified, etc.)

Emergency Response Procedures

Emergency Phone Number – 911 Nearest hospital: _____

Identify first aiders: _____

Fire extinguisher on site: Yes Location: _____

Emergency Contacts: _____

Hazard identification (check all). If applicable, identify hazard reduction strategy.

Fumes/Smoke _____

Protect Adjacent Surfaces _____

Fire Alarm Shutdown yes no

Electrical Coordination: _____

Fire Watch yes no Conducted by: _____

Combustibles/Flammable products within hot zone _____

Electrical Hazards yes no _____

Asbestos yes no _____

Working at heights yes no _____

Protect Public and Other Workers _____

Other: _____

Prior to Start of Work:

- 1) Fax permit to Contract Administrator by noon on the day before the work
- 2) City staff: Fax permit to your Supervisor
- 3) Original permit must be posted at the work area for the duration of the work.

Emergency Repairs:

- 1) Permit is filled out on site and posted in work area.
- 2) Fax permit to Safety Branch when work is complete (986-3860).

After work is complete: Forward original permit to the Contract Administrator (City staff, forward to your Supervisor)

Final Review Before Starting Work (check all) - Contractors and City Staff

- Scope of work discussed.
- Contractor's person in charge has been identified.
- Adequate ventilation is implemented
- All hazards identified and appropriate safe work procedures implemented.
- PPE selected to mitigate the hazard(s).
- All required safety gear in on-site.
- All required tools and equipment on-site
- All required documentation is on-site (Permit, safe work procedure, MSDS, manuals, prints etc)

Contractors

Contractors are responsible for their own personal protection equipment, staff training, ventilation, tools and equipment and protecting existing property, other workers, building staff and the general public from any hazards related to the Work. Contractors must fill out the permit, perform the work and send completed copies to the Contract Administrator,

Project Contacts (please print)

Contract administrator: _____ Phone #: _____

Contractor site supervisor: _____ Phone #: _____

Sign-off

Contractor's person in charge is satisfied all safe-work conditions have been met.

Name: _____

Signature: _____

NORTH END SEWAGE TREATMENT PLANT (NEWPCC) HEADEND DISCHARGE WELL
STRUCTURAL UPGRADES
BID OPPORTUNITY NO. 366-2016

SECTION 01 41 00

REGULATORY REQUIREMENTS

PART 1 GENERAL

1.1 APPLICABLE CODES

- A. Comply with the latest edition of the codes and standards referenced in Contract Documents and following statutes and codes and all amendments thereto:
1. The Manitoba Nuisance Act
 2. The Public Health Act
 3. The Manitoba Building Code Act and Regulations.
 4. National Building Code of Canada.
 5. Occupational Health and Safety Act and Regulations for Construction Projects, covering safety, hazardous materials, and Workplace Hazardous Material Information.
 6. Manitoba Plumbing Code
 7. Manitoba Fire Code
 8. The Winnipeg Electrical By-Law
 9. City of Winnipeg Building By-Laws
 10. Canadian Environmental Protection Act
 11. Canadian Electrical Code.
 12. Manitoba Workplace Safety and Health Act
- B. For purposes of the Occupational Health and Safety Act, the Contractor will be designated the “constructor” and assumes the responsibility of the Prime Contractor as set out in the Act and its regulations.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.1 REFERENCES

- A. Comply with the latest edition of the following statutes codes and standards and all amendments thereto.
1. Manitoba Workplace Safety and Health Act.
 2. Public Health Act.
 3. City of Winnipeg Building By-Laws.
 4. NFPA, National Fire Prevention Standard for Safeguarding Building Construction Operations.

1.2 SUBMITTALS

- A. Informational Submittals:
1. Temporary Construction Submittals:
 - a. Parking area plans.
 - b. Contractor's field office, storage yard, and storage building plans.
 - c. Security, fencing and protective barrier locations and details.
 - d. Contract Administrator's field office plans.
 - e. Staging area location plan.
 - f. Traffic Control and Routing Plans.
 - g. Temporary enclosures, ventilation and heating plans.
 - h. Plan for maintenance of existing plant operations.

1.3 MOBILIZATION

- A. Mobilization shall include, but not be limited to, these principal items:
1. Obtaining required permits that are not obtained by the City.
 2. Moving Contractor's field office and equipment onto Site.
 3. Installing temporary construction power, wiring, ventilation and lighting facilities.
 4. Providing on Site communication facilities, including telephones.
 5. Providing on Site sanitary facilities and potable water facilities as specified and as required by Laws and Regulations, and governing agencies.
 6. Arranging for and erection of Contractor's work and storage yard.
 7. Posting Manitoba Workplace Health and Safety Act notices and establishing safety programs and procedures.
 8. Having Contractor's superintendent at Site full time.
- B. Use area designated for Contractor's temporary facilities as shown on Drawings or otherwise directed by Contract Administrator

NORTH END SEWAGE TREATMENT PLANT (NEWPCC) HEADEND DISCHARGE WELL
STRUCTURAL UPGRADES
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1.4 ACCESS TO SITE

- A. The Contractor will not be given keys for the existing facilities and will organize access with the Contract Administrator.

1.5 FIRST AID ROOM

- A. The Contractor shall provide and maintain on the Site in a clean orderly condition, a completely equipped first aid room readily accessible at all times to everyone on the job Site in accordance with Manitoba Workplace Safety and Health Act W210/MR217.
- B. Designate properly instructed employees to be in charge of first aid. At least one such employee shall always be available on Site while work is in progress.
- C. Conspicuously post a telephone list for summoning aid, such as doctors, ambulance, and rescue squads.

1.6 PROTECTION OF WORK AND PROPERTY

- A. Comply with The City's safety rules for Contractors while working on The City's property.
- B. Erect a barrier fence around work areas to restrict pedestrian access.
- C. Keep The City informed of serious on Site accidents and related claims.
- D. Use of Explosives: No blasting or use of explosives will be allowed on Site.

PART 2 PRODUCTS

2.1 CONTRACTOR'S FIELD OFFICES

- A. Contractor shall provide and maintain a field office of suitable size, suitability lighted, heated, ventilated and equipped, for own use.
- B. Include a general meeting room with a table and chairs adequate to accommodate project meetings.
- C. Equip field office with first aid equipment to a minimum as recommended by regulations.

2.2 CONTRACT ADMINISTRATOR'S FIELD OFFICES

- A. Provide an office for the Contract Administrator.
- B. If the Contract Administrator's office is to be located in same structure as superintendent's office, it shall be partitioned off.
- C. Furnish equipment specified for use of Contract Administrator and its representatives.

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- D. Ownership of equipment furnished under this article will remain, unless otherwise specified, that of Contractor.
- E. Office Equipment – General:
 - 1. Bottled Water Service.
 - 2. Hand Sanitizer Liquid and Dispenser.
 - 3. Paper Towel Dispenser with towels.
 - 4. Office Desk.
 - 5. Office Chair.
 - 6. Steel Folding Chairs.
 - 7. First Aid Kit.
 - 8. Carbon Dioxide (10-Pound) Fire Extinguisher.

PART 3 EXECUTION

3.1 FIELD OFFICE

- A. Make available for use prior to start of the Work at Site.
- B. Locate where directed by Contract Administrator; level, block, tie down, skirt, provide stairways, and relocate when necessary and approved. Construct on proper foundations, provide proper surface drainage and connections for utility services.
- C. Raise grade under field office, as necessary, to elevation adequate to avoid flooding.
- D. Provide sanitary facilities in compliance with provincial and local health authorities.
- E. Maintain in good repair and appearance, and provide weekly cleaning service and replenishment, as required, of paper towels, paper cups, hand soap, toilet paper, first-aid kit supplies, and bottled water.

3.2 TEMPORARY UTILITIES

- A. Power:
 - 1. Contractor is responsible for providing power. Make arrangements for obtaining temporary electrical power service or provide portable generators.
 - 2. All equipment must be explosion proof construction.
 - 3. Prior to commencement of the Work, provide and check all necessary temporary services required to ensure that the existing facility will operate in an uninterrupted fashion during the construction period. Prior to proceeding, provide a schedule with a written description of each operation for Contract Administrator's review.
- B. Lighting:
 - 1. Provide temporary lighting to meet all applicable safety requirements to allow erection, application, or installation of materials and equipment, and observation or inspection of the Work.

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- a. Additional lighting may be required to complete the Work. It is the Contractor's responsibility to assess the existing lighting and install temporary lighting to enable the completion of the Work. Lighting must be explosion proof suitable for the hazardous area.
 2. The Contractor shall secure all temporary lighting and wiring from damage, falling or tripping hazards.
- C. Heating, Cooling, and Ventilating:
1. Provide temporary ventilation during construction period, including attendance and maintenance.
 2. Provide all temporary HVAC equipment and appurtenances for Discharge Well including supply fans, exhaust fans, flexible duct, heating, gas detection as necessary to execute the work in a safe manner as specified.
 3. All equipment must be explosion proof construction.
 4. Provide as required to maintain adequate environmental conditions to facilitate progress of the Work, to meet specified minimum conditions for installation of materials. Costs for temporary heat shall be borne by Contractor.
 5. Provide adequate forced air ventilation of enclosed areas to cure installed materials, and to prevent hazardous accumulations of dust, fumes, vapors, or gases.
 6. Pay all costs of installation, maintenance, operation, removal, and fuel consumed to execute the Work.
 7. Provide portable unit heaters, complete with controls, oil- or gas-fired, and suitably vented to outside as required for protection of health and property.
 8. The Contractor shall provide 24-hour monitoring of temporary heating, cooling and ventilating equipment.
 9. Maintain temperatures of minimum 10°C in areas where construction is in progress, unless indicated otherwise in specifications, (painting requirements may dictate higher temperatures).
 10. Ventilate heated areas and keep building free of welding exhaust or other combustion gases and paint off-gassing solvent vapors.
 11. Permanent heating system of building or portions thereof may be used when available. Be responsible for damage thereto.
 12. Provide all temporary ventilation required and dictated by legislation to safely work in confined space-areas.
 13. Submit temporary ventilation plans and calculations for review and approval.
 14. Provide a minimum of 6 ACH to the Discharge Well space.
- D. Water:
1. No construction or potable water is available at Site. Make arrangements for and bear costs of providing water required for construction purposes and for drinking by construction personnel during construction.
 2. Provide temporary facilities and piping required to bring water to point of use, and remove when no longer needed. Install an acceptable metering device and pay for water used at The City's current rate.
 3. The Contractor shall provide hoses as required. The Contractor shall repair any damage caused during use of existing water outlets.

NORTH END SEWAGE TREATMENT PLANT (NEWPCC) HEADEND DISCHARGE WELL
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- E. Sanitary and Personnel Facilities:
1. Provide and maintain facilities for Contractor's employees and Subcontractors, in accordance with Manitoba Workplace Safety and Health Act W210/MR217. Service, clean, and maintain facilities and enclosures.
 2. Use of The City's existing sanitary facilities by construction personnel will not be allowed.
- F. Communication Services:
1. Contractor: Provide on Site telephone service for the sole use of the Contractor during construction. Pay costs of installation and monthly bills. Contractor shall reinstate service outages resulting from construction activities within one business day.
- G. Fire Protection:
1. Furnish and maintain on Site adequate firefighting equipment capable of extinguishing incipient fires. Comply with applicable parts of National Fire Prevention Standard for Safeguarding Building Construction Operations.
 2. Do not introduce combustibles into any facility until full fire protection is in service.
 3. Maintain existing fire protection systems, fire walls, fire doors, and other separations in service. Notify Contract Administrator in writing minimum 14 days prior to disrupting or dismantling existing fire protection services.
 4. Place new fire protection systems in service as soon as possible and notify Contract Administrator upon completion of new fire protection services.
 5. Provide adequate supplementary fire protection facilities including but not limited to ample hand-operated 15 to 20 pound multipurpose dry chemical extinguishers in each facility. Provide temporary hose lines in areas where construction is in progress until the permanent fire protection is placed into service. Do not block hydrant hose connections and other firefighting equipment by construction equipment and make readily accessible at all times.
 6. Dispose of all combustible rubbish promptly and safely. Prompt disposal is particularly needed for material subject to spontaneous ignition such as oily waste and paint rags.
 7. Monitor and control probable ignition sources as necessary to prevent the threat of fire.

3.3 PROTECTION OF WORK AND PROPERTY

- A. General:
1. Maintain in continuous service all existing gas pipelines, underground power, telephone or communication cable, water mains, irrigation lines, sewers, poles and overhead power, and all other utilities encountered along line of the Work, unless other arrangements satisfactory to owners of said utilities have been made.
 2. Where completion of the Work requires temporary or permanent removal and/or relocation of existing utility, coordinate all activities with owner of said utility and perform all work to their satisfaction.

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3. Protect, shore, brace, support, and maintain underground pipes, conduits, drains, and other underground utility construction uncovered or otherwise affected by construction operations.
 4. Keep fire hydrants and water control valves free from obstruction and available for use at all times.
 5. In areas where Contractor's operations are adjacent to or near a utility, such as gas, telephone, television, electric power, water, sewer, or irrigation system, and such operations may cause damage or inconvenience, suspend operations until arrangements necessary for protection have been made by Contractor.
 6. Notify property owners and utility offices that may be affected by construction operation at least 2 days in advance.
 - a. Before exposing a utility, obtain utility owner's permission. Should service of utility be interrupted due to Contractor's operation, notify proper authority immediately. Cooperate with said authority in restoring service as promptly as possible and bear costs incurred.
 7. Do not impair operation of existing sewer system. Prevent construction material, pavement, concrete, earth, volatile and corrosive wastes, and other debris from entering sewers, pump stations, or other sewer structures.
 8. Maintain original Site drainage wherever possible.
 9. Prevent dust and dirt from entering existing buildings or areas where equipment is stored or is operating. Prevent dust, water or other deleterious substances from entering areas with existing electrical, heating ventilating, pumping, and other equipment.
- B. Site Security:
1. Erect a temporary security fence for protection of existing facilities. Maintain fence throughout construction period. Obtain Contract Administrator's written permission before removal of temporary security fencing.
 2. Provide and maintain additional temporary security fences as necessary to protect the Work and Contractor-furnished products not yet installed.
- C. Barricades and Lights:
1. Provide as necessary to prevent unauthorized entry to construction areas and affected roads, streets, and alleyways, inside and outside of fenced area, and as required to ensure public safety and the safety of Contractor's employees, other employer's employees, and others who may be affected by the Work.
 2. Provide to protect existing facilities and adjacent properties from potential damage.
 3. Protect streets, roads, highways, and other public thoroughfares that are closed to traffic by effective barricades with acceptable warning signs.
 4. Locate barricades at the nearest intersecting public thoroughfare on each side of the blocked section.
- D. Signs and Equipment:
1. Portable TOW-AWAY-NO STOPPING Signs: Place where approved by police department and The City.
 2. Traffic Cones: Provide to delineate traffic lanes to guide and separate traffic movements.

NORTH END SEWAGE TREATMENT PLANT (NEWPCC) HEADEND DISCHARGE WELL
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- E. Equipment Cleaning: Keep construction equipment clean so that no debris is deposited on plant roadways or any public roadway. Contain construction debris in designated area within working limits. Dispose of debris off-site as specified.
- F. Trees and Plantings:
 - 1. Protect from damage and preserve trees, shrubs, and other plants outside limits of the Work and within limits of the Work, which are designated on the Drawings to remain undisturbed.
 - a. Dispose of removed trees in a legal manner off the Site.
- G. Finished Construction: Protect finished floors and concrete floors exposed as well as those covered with composition tile or other applied surfacing.

3.4 TEMPORARY CONTROLS

- A. Air Pollution Control:
 - 1. Minimize air pollution from construction operations.
 - 2. Burning:
 - a. Of waste materials, rubbish, or other debris will not be permitted on or adjacent to Site.
 - b. Control escape of odourous air from the wastewater treatment facilities.
- B. Noise Control:
 - 1. Provide acoustical barriers so noise emanating from tools or equipment will not exceed legal noise levels.
 - 2. Use only vehicles and equipment equipped with effective muffling devices.
- C. Water Pollution Control:
 - 1. Do not cause or permit action to occur which would cause an overflow to existing waterway.
 - 2. Do not dispose of volatile wastes such as mineral spirits, oil, chemicals, or paint thinner in storm or sanitary drains. Disposal of wastes into streams or waterways is prohibited. Provide acceptable containers for collection and disposal of waste materials, debris, and rubbish.

3.5 STORAGE YARDS

- A. Temporary Storage Yards: Construct temporary storage yards for storage of products that are not subject to damage by weather conditions.

3.6 ACCESS ROADS

- A. Upon completion of construction, leave access roads in condition suitable for future use by The City.

3.7 PARKING AREAS

- A. Park only in areas designated for the Contractor, or as otherwise instructed by the City or Contract Administrator.

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- B. Control vehicular parking to preclude interference with public traffic or parking, access by emergency vehicles, The City's operations, or construction operations.
- C. Provide parking facilities for personnel working on the Project. No employee or equipment parking will be permitted on The City's existing paved areas, except as specifically designated for Contractor's use.

3.8 VEHICULAR TRAFFIC

- A. Conduct the Work to interfere as little as possible with public travel, whether vehicular or pedestrian.
- B. The existing roadway may for designated periods of time be barricaded and designated for the exclusive use of the Contractor. Coordinate requirements with Contract Administrator before road closure.

3.9 CLEANING DURING CONSTRUCTION

- A. In accordance with the General Conditions, as may be specified in Specification sections and as required herein.

END OF SECTION

SECTION 01 52 10

CONSTRUCTION SEQUENCING

PART 1 GENERAL

1.1 DEFINITIONS

- A. Clean or Cleaning: The removal and disposal of material remaining in a tank, channel, pipe, or other structure by the Contractor after removal from service by such methods and to such condition as required to execute the Work in accordance with the Contract and to prevent a safety or health hazard to the personnel of Contractor, The City, and Contract Administrator.
- B. Demolish or Demolition: Remove and dispose of as specified in Section 02 41 13, Selective Site Demolition.

1.2 SUBMITTALS

- A. Administrative Submittals: Proposed sequence of construction.
- B. The Contractor shall incorporate the sequence of construction into their Work Schedule – Refer to Section 01 32 00 Construction Progress Documentation. The Contractor may propose an alternative sequence of construction to accelerate the construction schedule for review and approval by the Contract Administrator.

1.3 INTENT

- A. The suggested sequence of construction described herein is general in nature and illustrates the design intent with respect to execution of the Work. Prepare and submit a proposed sequence of construction for review by Contract Administrator. This review will serve to satisfy Contract Administrator that all mandatory construction sequencing constraints have been properly addressed by the Contractor in the proposed sequence of construction but shall in no way absolve Contractor of complete responsibility for execution of the Work in accordance with the requirements of the Contract Documents.
- B. The suggested sequence of construction described herein outlines the intent of the design with respect to the general progress of Work. The descriptions of construction activities as outlined in this Section are not intended to be comprehensive or all-inclusive.

1.4 COORDINATION

- A. The facility will be maintained in continuous operation without interruption throughout the duration of the Contract. Do not interfere unnecessarily with the day-to-day operations of the facility. At all times provide the City with unhindered access to all portions of the facility that are in operation where possible. Inform the City and Contract Administrator in writing at least 14 days in advance if unhindered access to certain areas is not possible due to hazards or safety concerns.

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- B. Coordinate the requirements of this Section with the other requirements of the Contract Documents.

1.5 SERVICES PROVIDED BY CONTRACTOR

- A. Provide all necessary temporary power supply, ventilation, as required during construction.
- B. Be responsible for cleaning areas affected by the Work.

1.6 SUGGESTED SEQUENCE OF CONSTRUCTION

- A. The suggested sequence of construction described herein is based on Contract Administrator's knowledge of the design components of the Project and not on experience in the construction of such Work. Contract Administrator assumes no responsibility for the time required to construct the Work following the suggested sequence of construction.
- B. Contractor may on his own initiative submit an alternate proposed sequence of construction to Contract Administrator for review. Such review shall in no way make Contract Administrator responsible for the time or costs required to construct the Work following Contractor's alternate sequence of construction.
- C. Construct the Work in stages to allow for The City's continuous occupancy and uninterrupted operation and maintenance of the water treatment processes of the existing facilities during construction.
- D. Include in the sequence of construction and Detailed Work Schedule operations requiring actions, and short-term ventilation and power outages.
- E. Do not open or close valves, isolate pipes or channels, or take any other action that may affect the operation of new or existing facilities without written approval from the Contract Administrator. Give the Contract Administrator at least 14 days written notice of any activities that may affect the operations of the facilities.

PART 2 PRODUCTS

2.1 GENERAL

- A. Unless specifically stated otherwise, provide all labour, materials, and equipment necessary to accomplish the work of this Section.

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PART 3 EXECUTION

3.1 CONSTRAINTS

- A. Construct Work to allow for The City's continuous occupancy and for uninterrupted operation during construction.
- B. Many of the existing components within the Discharge Well are regularly exposed to corrosive gases and are considered to be in poor condition. Many components are not considered structurally sound for any load bearing work or prolonged construction activity and should be replaced with permanent structural framing as expeditiously as possible. The Discharge Well should be consider as restricted access to personnel properly trained in confined space entry and fall protection.
- C. Existing electrically powered components within the Discharge Well are not explosion proof and should not be used during construction.

3.2 SUGGESTED SEQUENCE OF CONSTRUCTION

- A. The following example is a suggested general sequence of construction and is intended for illustration purposes only. The Contractor is to investigate the Site and construction requirements and develop a final construction sequence to complete the Work.
- B. Discharge Well Upgrades:
 - 1. Provide temporary heating, ventilation and gas monitoring complete with associated wiring and conduits for Discharge Well interior work suitable for a confined space as well as a hazardous area. Ensure any tools used in this area are rated appropriately.
 - 2. Temporarily remove Bypass to Outfall Sluice Gate Operator (M174) for increased access to Discharge Well.
 - 3. Perform demolition work to the Discharge Well according to the Drawings.
 - 4. Clean and refinish existing metal work as noted on Drawings.
 - 5. Provide scaffolding and safety provisions (netting, fall protection, temporary work platforms, anchoring, tie-off points) in the Discharge Well to allow for installation of the permanent structural appurtenances described in the Drawings. Do not damage or use precast roof slabs for attachments or anchorage.
 - a. Portions of the work will be immediately above the raw sewage flow, and it is essential from a safety and operations perspective to prevent materials from entering the flow.
 - 6. Install new railing, grating and platform according to the Drawings.
 - 7. Clean and reinstall Bypass to Outfall Sluice Gate Operator (M174) upon completion of the work.

END OF SECTION

SECTION 01 77 00

CLOSEOUT PROCEDURES

PART 1 GENERAL

1.1 SUBMITTALS

- A. Informational Submittals:
 - 1. Submit prior to application for final payment.
 - a. As-Built Documents: As required in General Conditions.
 - b. Approved Shop Drawings and Samples: As required in the General Conditions.
 - c. Photos and Videos.
 - d. Special Bonds, Special Guarantees, and Service Agreements.
 - e. Releases or Waivers of Liens and Claims: As required in General Conditions.
 - f. Releases from Agreements.

1.2 AS-BUILT DOCUMENTS

- A. Quality Assurance:
 - 1. Furnish qualified and experienced person, whose duty and responsibility shall be to maintain as-built documents.
 - 2. Accuracy of Records:
 - a. Coordinate changes within as-built documents, making legible and accurate entries on each sheet of Drawings and other documents where such entry is required to show change.
 - b. Purpose of Project as-built documents is to document factual information regarding aspects of the Work, both concealed and visible, to enable future modification of the Work to proceed without lengthy and expensive Site measurement, investigation, and examination.
 - 3. Make entries within 24 hours after receipt of information that a change in the Work has occurred.
 - 4. Prior to submitting each request for progress payment, request Contract Administrator's review and approval of current status of as-built documents. Failure to properly maintain, update, and submit as-built documents may result in a deferral by Contract Administrator to recommend whole or any part of Contractor's Application for Payment, either partial or final.

1.3 RELEASES FROM AGREEMENTS

- A. Furnish The City written releases from property owners or public agencies where side agreements or special easements have been made, or where Contractor's operations have not been kept within the The City's construction right-of-way.
- B. In the event Contractor is unable to secure written releases:
 - 1. Inform The City of the reasons.

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2. The City or its representatives will examine the Site, and The City will direct Contractor to complete the Work that may be necessary to satisfy terms of the side agreement or special easement.
3. Should Contractor refuse to perform this Work, The City reserves right to have it done by separate contract and deduct cost of same from Contract Price, or require Contractor to furnish a satisfactory Bond in a sum to cover legal claims for damages.
4. When The City is satisfied that the Work has been completed in agreement with Contract Documents and terms of side agreement or special easement, right is reserved to waive requirement for written release if: (i) Contractor's failure to obtain such statement is due to grantor's refusal to sign, and this refusal is not based upon any legitimate claims that Contractor has failed to fulfill terms of side agreement or special easement, or (ii) Contractor is unable to contact or has had undue hardship in contacting grantor.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION

3.1 MAINTENANCE OF AS-BUILT DOCUMENTS

- A. General:
 1. Promptly following commencement of Contract Times, secure from Contract Administrator at no cost to Contractor, one complete set of Contract Documents. Drawings will be full size.
 2. Delete Engineer title block and seal from all documents.
 3. Label or stamp each as-built document with title, "AS-BUILT DOCUMENTS," in neat large printed letters.
 4. Record information concurrently with construction progress and within 24 hours after receipt of information that change has occurred. Do not cover or conceal Work until required information is recorded.
- B. Preservation:
 1. Maintain documents in a clean, dry, legible condition and in good order. Do not use as-built documents for construction purposes.
 2. Make documents and Samples available at all times for observation by Contract Administrator.
- C. Making Entries on Drawings:
 1. Using an erasable colored pencil (not ink or indelible pencil), clearly describe change by graphic line and note as required.
 - a. Color Coding:
 - 1) Green when showing information deleted from Drawings.
 - 2) Red when showing information added to Drawings.
 - 3) Blue and circled in blue to show notes.
 2. Date entries.
 3. Call attention to entry by "cloud" drawn around area or areas affected.

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4. Legibly mark to record actual changes made during construction, including, but not limited to:
 - a. Depths of various elements of foundation in relation to finished first floor data if not shown or where depth differs from that shown.
 - b. Horizontal and vertical locations of existing and new Underground Facilities and appurtenances, and other underground structures, equipment, or Work. Reference to at least two measurements to permanent surface improvements.
 - c. Location of internal utilities and appurtenances concealed in the construction referenced to visible and accessible features of the structure.
 - d. Locate existing facilities, piping, equipment, and items critical to the interface between existing physical conditions or construction and new construction.
 - e. Changes made by Addenda and Field Orders, Work Change Directive, Change Order, Written Amendment, and Contract Administrator's written interpretation and clarification using consistent symbols for each and showing appropriate document tracking number.
5. Dimensions on Schematic Layouts: Show on as-built drawings, by dimension, the centerline of each run of items such as are described in previous subparagraph above.
 - a. Clearly identify the item by accurate note such as "cast iron drain," "galv. water," and the like.
 - b. Show, by symbol or note, vertical location of item ("under slab," "in ceiling plenum," "exposed," and the like).
 - c. Make identification so descriptive that it may be related reliably to Specifications.

3.2 FINAL CLEANING

- A. At completion of the Work or of a part thereof and immediately prior to Contractor's request for Certificate of Substantial Performance; or if no certificate is issued, immediately prior to Contractor's notice of completion, clean entire Site or parts thereof, as applicable.
 1. Leave the Work and adjacent areas affected in a cleaned condition satisfactory to Contract Administrator.
 2. Remove grease, dirt, dust, paint or plaster splatter, stains, labels, fingerprints, and other foreign materials from exposed surfaces.
 3. Repair, patch, and touch up marred surfaces to specified finish and match adjacent surfaces.
 4. Clean all windows.
 5. Clean and wax wood, vinyl, or painted floors.
 6. Broom clean exterior paved driveways and parking areas.
 7. Hose clean sidewalks, loading areas, and others contiguous with principal structures.
 8. Rake clean all other surfaces.
 9. Repair any damage to roadways, accesses and grassed areas.
 10. Remove snow and ice from access to buildings.

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11. Replace air-handling filters and clean ducts, blowers, and coils of ventilation units operated during construction.
 12. Leave water courses, gutters, and ditches open and clean.
- B. Use only cleaning materials recommended by manufacturer of surfaces to be cleaned.

3.3 RELAMPING

- A. If permanent lighting fixtures and lamps are used during construction period prior to Substantial Performance, supply and install new lamps in fixtures or turn over spare lamps to The City.
- B. Replace incandescent lamps, except in emergency lighting systems, or turn over complete set of spare lamps to The City.
- C. Replace fluorescent lamps, or turn over spare lamps to The City, in quantity proportional to the approximate hours used. Supply lamps of equal lifetime rating.
- D. Replace high intensity discharge (HID) or similar type lamps that fail during Period of Guaranteed Maintenance.

END OF SECTION