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Columbia County, City of Portage, and Wisconsin Department of Natural Resources

Owner's Representative:
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REQUEST FOR PROPOSAL

PORTAGE CANAL SEGMENT 1 DREDGING

PORTAGE, WISCONSIN



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1. INFORMATION FOR BIDDERS

1.1 Definitions

- A. Owner: Group bound by Intergovernmental Agreement (IGA) consisting of Wisconsin Department of Natural Resources, City of Portage and Columbia County.
- B. Owner Representative: J.H. Findorff & Son Inc. (Findorff)
- C. Engineer: Ramboll Environ US Corporation (Ramboll Environ)

1.2 Introduction

Findorff, on behalf of Columbia County, City of Portage and the Wisconsin Department of Natural Resources Bureau for Remediation and Redevelopment and the Office of Great Lakes (WDNR or the "Department") ("Owner"), is issuing this Request for Proposal (RFP) to solicit proposals for dredging, sediment dewatering and sand capping at the Portage Canal. The scope of work includes mobilization, sediment dredging, sediment dewatering, placement of sand cap and site restoration associated with the portion of Portage Canal from DeWitt Street to Adams Street in the City of Portage, Wisconsin (referred as Segment 1 of the Portage Canal).

Columbia County is relocating the Health & Human Services and non-court related County administrative departments to the southeast side of downtown Portage. The proposed buildings (which straddle Segment 1 of Portage Canal) and associated parking and green space are located between DeWitt Street and Adams Street ("the site").

Contaminated sediments exist within Segment 1 of the Portage Canal (also referred to herein as the "Canal") and will require special handling procedures. The sediments have been found to contain metals (most notably mercury and lead), polynuclear aromatic hydrocarbons (PAHs), and polychlorinated biphenyls (PCBs). The sediments will be dewatered on site for beneficial re-use beneath paved parking lots in predetermined areas of the site. In addition to sediment, wastes to be removed and managed for disposal include special waste debris located within the canal.

Findorff is the Owner's Representative and Ramboll Environ will serve as the Engineer on-site for the dredging and capping activities. The Engineer will be present to monitor dredging and capping activities as necessary and perform quality assurance.

1.3 Site Location

The 17-acre Portage Canal Site is located in the City of Portage in Columbia County, Wisconsin. It is approximately 2.5 miles long and runs through and out of the City, passing through commercial, industrial, residential, historical, and rural settings. The Canal has received urban storm water runoff and industrial discharges since its creation. Over time, these discharges have resulted in elevated levels of metals, PAHs and PCBs in sediments. In particular, mercury (Hg) and lead (Pb) have been identified above WDNR action levels. Based on previous investigations and proposed remedial planning, the Canal was split into four segments as follows:

- Segment 1 - extends from the Wisconsin River lock to Adams Street;
- Segment 2 - extends from Adams Street to Canadian Pacific Railroad Bridge;
- Segment 3 - extends from the CPR Bridge to STH 33; and
- Segment 4 - extends from STH 33 to former Fort Winnebago Lock.

This proposal is limited to sediment removal, dewatering, sand capping and beneficial reuse for a portion of Segment 1 from Dewitt Street to Adams Street. The location of this portion of Segment 1 and the site is depicted on Sheet C-10.

2. INSTRUCTIONS TO BIDDERS

2.1 General Comments

In general, the work consists of the following items:

- Site activities will consist of sediment removal and dewatering as well as thin layer sand capping between Dewitt Street and Adams Street (Segment 1).
- Coincident activities will consist of surface water management and protection of surrounding structures and pavement.

The work under this contract shall begin immediately upon Findorff's written notice to proceed. As described in the technical specifications, the work shall include preparation and submittal of various contractor work plans, which will be used by the Owner to obtain necessary project permits. Following receipt of necessary permits and Owner's issuance of notice to proceed with construction, the Contractor shall expeditiously mobilize and begin field activities. The field work under this contract shall be completed and ready for final payment within 60 days of Owner's receipt of necessary permits and issuance of notice to proceed with construction, but no later than July 30, 2016, and may only be extended through a mutual agreement between the Owner and the Contractor.

Any questions concerning the Project or Bidding Documents must be submitted **in writing** to Findorff. Questions should be submitted to Steve Klaven at JH Findorff and Son Inc. via email sklaven@findorff.com.

2.2 Notification of Intent to Respond

Potential Bidders intending to respond to this RFP must notify Findorff of their intent at the address listed below no later than April 8, 2016. This will ensure that all interested Bidders are provided with amendments, modifications, and responses to questions. Electronic notification is to be made to:

JH Findorff and Son Inc.
300 South Bedford Street
Madison, WI 53703
Attn: Steve Klaven
Email: sklaven@findorff.com

2.3 Bidder's Responsibility

At the time of the opening of proposals, each Bidder will be presumed to have had the opportunity to inspect the site of the proposed work and adjacent areas, and to have read and become thoroughly familiar with the contract documents and other information necessary to properly perform the work.

2.4 Pre-Bid Meeting

A mandatory Pre-Bid Meeting and Site Inspection has been scheduled for April 12, 2016 at 1:00 PM at Lower Level - City of Portage Municipal Building located at 115 West Pleasant Street, Portage, Wisconsin. The mandatory Site Inspection will follow immediately after the Pre-Bid Meeting. Failure to attend the Pre-Bid Meeting or Site Inspection may result in rejection of the Bid. Interested Bidders should send a meeting confirmation to JH Findorff Attn: Steve Klaven at sklaven@findorff.com. Please provide the names and contact numbers of all persons planning to attend the Pre-Bid Meeting.

2.5 Proposal Due Date

The due date for the submittal of proposals is April 22, 2016 at 2:00 p.m. CST. Any proposal received after the time and date specified may not be considered. Owner may consider as incomplete any proposal not prepared and submitted in accordance with the provisions hereof.

Any proposal may be withdrawn by the Bidder prior to the above-scheduled time for the submittal of proposals or authorized postponement thereof.

The Bidder, by submitting a proposal, agrees that it is satisfied with and at no time will dispute the estimated quantities stated in the proposal as a proper means of comparing the proposals. Payment basis shall be as described in the proposal items.

2.6 Interpretation

The Contract Documents governing the work proposed herein consist of the Bidding Requirements, Contract Forms, Conditions of the Contract, Specifications, Figures, Tables, Appendices, and Plan Sheets. All parts of the Contract Documents are intended to be compatible and to provide all details reasonably required for the execution of the proposed work. Any person contemplating the submission of a Bid shall thoroughly examine all parts of these Contract Documents and should there be any doubt as to the meaning or intent of said Contract Documents, the Bidder should request in writing or electronically an interpretation thereof from JH Findorff Attn: Steve Klaven at sklaven@findorff.com. Any interpretations of said Contract Documents will be supplied to all Bidders of record by written Addendum. Bidders shall submit with their Bids, or indicate in the space provided on the Bid, receipt of all Addenda. Failure to submit or acknowledge receipt of Addenda with the Bid may result in rejection of a Bid as nonresponsive.

2.7 Qualifications of Bidders

Before Award of the Contract, the Owner shall be satisfied that the Bidder involved meets the requirements below. The responsible Bidder must provide documentation of similar and recent dredging project experience. Failure to provide a Statement of Bidders Qualifications will result in the rejection of the Bid.

Upon request, the Bidder shall submit such additional information not specifically requested herein, as deemed necessary by the Owner or Owner's Representative to evaluate the Bidder's qualifications.

The Owner reserves the right to reject any Bid if the evidence submitted by, or investigation of, the Bidder fails to satisfy the Owner that the Bidder is responsible and qualified to carry out the obligations of the Contract and to complete the work contemplated therein.

- A. The Bidder must maintain a permanent place of business.
- B. The Bidder is not on a debarment list maintained by the Department of Industry, Labor and Human Relations for noncompliance with wage rate requirements.
- C. The Bidder has completed construction of one or more contaminated sediment removal projects or similar remediation projects, of at least 50% of the size or value of the work being bid, within the past three years.
- D. The Bidder has access to all necessary equipment and has organization capacity and technical competence (i.e., equipment certification and training) necessary to do the work. The Bidder shall demonstrate their capability to provide a response time to the site within 24 hours should a situation occur during non-working hours requiring rapid attention. List major equipment, including their ownership, to be used for all principle components on this project.

- E. List previous or on-going projects performed within the last three years and current staff experience for working in contaminated environments such as the Portage Canal Dredging Project, or other projects with similarly contaminated environments.

2.8 Type of Bid

The types of bid for the work specified in these Contract Documents shall be as follows:

- A. LUMP SUM - When the Bid for all or part of the work is to be submitted on a lump sum basis, a lump sum price shall be inserted in the appropriate place. The total amount to be paid the Contractor shall be the amount of the lump sum Bid as adjusted for additions or deletions resulting from approved changes in the work. Bidders shall provide a detailed breakdown of the lump sum prices if required in the Bid.
- B. UNIT PRICES - Unit prices requested on the Bid shall be given and, if included in the Contract, will be used for additions to or deductions from the amount of work required under the Contract. Unit prices shall include all costs of materials, labor, insurance, taxes, overhead and profit. The Bidder shall refer to the Bid and the applicable technical section to determine the basis of unit measure and the detailed information related to each unit price item requested.

2.9 Taxes

The Bidder shall include in the bid, all sales, consumer, use and other similar taxes required by law.

2.10 Special Hazards Coverage

Work under this contract may involve hazards such as hazardous liquids, solids, and gases. The Bidder shall provide the necessary insurance for such work as required in General Conditions.

2.11 Preparation of Bids

- A. All Bids shall be submitted on the standard Bid Forms bound herein and only Bids which are made on these Bid Forms will be considered. The entire Bid and other supporting documents, if any, shall be filled out and submitted in the manner specified hereinafter.
- B. No Bids for any subdivision or any subclassification of this work, except as indicated, will be accepted. Any conditional Bid, amendment to the Bid or appendant thereto, or the inclusion of any correspondence, written or printed matter, or details of any nature other than that specifically called for, which would alter any essential provision of the contract documents, or require consideration of unsolicited material or data in determining the award of the contract, will disqualify the Bid.
- C. Telecommunication alterations to the Bid will not be accepted.
- D. Bid amounts shall be inserted in words and in figures in spaces provided on the Bid; in case of conflict, written word amounts will govern.
- E. Addenda issued during the time of bidding shall become a part of the Contract Documents. Bidders shall acknowledge receipt of such addenda by submitting copies with the Bid or by acknowledging receipt in the appropriate space provided on the Bid. Bids may be rejected if receipt of an addendum applicable to the award of contract has not been acknowledged on the Bid.

2.12 Submission of Bids

- A. Electronic or Sealed written bids will be received at the Columbia County Clerk's Office 400 DeWitt Street, Portage, WI 53901. Sealed bids shall be labeled "Confidential Bid Enclosed" with Project Name clearly identified. Bids submitted in any other type of envelope run the risk of not being identified as a Bid. Electronic bids should be submitted to sklaven@findorff.com with Project Name in the subject line.

- B. All Bids must be submitted by the time, at the place and in the manner prescribed. The standard Bid Forms bound herein and other supporting documents may be submitted apart from the Contract Documents.
- C. Bids shall be signed, sealed, and delivered at the place and before the time of closing designated above in Section 2.5 Proposal Due Date, and identified with the Project Name, Project Number, Location, Bid Date, and Name and Address of Bidder. The Bidder shall be responsible for the Sealed Bid being delivered to the place designated for the Bid Opening on or before the date and time specified. Receipt of a Bid by the mail system does not constitute receipt of the Bid by the Owner. Bids received after the time of closing will be rejected and returned to the Bidder unopened. Electronic Bids will be accepted as discussed above.
- D. Bid submissions will be considered invalid and will be rejected if the standard Bid Forms are not signed by the Bidder in the required places indicated on the forms.

2.13 Withdrawal of Bid

- A. Bids may be withdrawn by written request received from the Bidder or an authorized representative thereof prior to the time fixed for opening of Bids, without prejudice to the right of the Bidder to file a new Bid. Withdrawn Bids will be returned unopened. Negligence on the part of the Bidder in preparing the Bid confers no right of withdrawal of the Bid after it has been opened.
- B. No Bid may be withdrawn for a period of 60 days after the date set for the opening thereof.
- C. If a Bid contains an error, omission or mistake, the Bidder may limit liability to the amount of the Bidder's guarantee by giving written Notice of Intent not to execute the Contract to the Owner within 72 hours of the Bid Opening.

2.14 Method of Award

- A. The Notice of Award of the Contract will be made within 14 days of the Opening of Bids.
- B. The Owner reserves the right to reject all Bids or any Bid, or to waive any informality in any bid, or to accept any bid which will best serve the interests of the Owner.

2.15 Performance and Payment Bond

- A. Simultaneously with the delivery of the signed Contract, the Bidder shall furnish a Performance-Payment Bond. The Surety Company shall be licensed to do business in Wisconsin as required by Section 779.14, Wisconsin Statutes. The Bond must be dated the same date or subsequent to the date of the Contract.
- B. A certified copy of power of attorney shall be provided by the Surety Company showing that the agent who signs the Bond has the power of attorney to so sign for the Surety Company. This certification must be signed by the Secretary or Assistant Secretary of the company and not be an attorney-in-fact. The certification must bear the same or later date as the bond.
- C. If the Bidder is a partnership or a joint venture, a certified list providing the names of individuals constituting the partnership or joint venture must be furnished. The Contract itself may be signed by one partner of the partnership, or one partner of each firm comprising the joint venture, but the Performance-Payment Bond must be signed by all of the partners.
- D. If the Bidder is a corporation, it is necessary that a current certified copy of the resolution or other official act of the directors of the corporation be submitted showing that the person who signed the contract is authorized to sign contracts for the corporation. It is also necessary that the corporate seal be affixed to the Resolution, Contract, and Performance-Payment Bond. If

your corporation has no seal, it is required that the above documents include a statement or notation to the effect that the corporation has no seal.

2.16 Certificate of Insurance

- A. The Bidder shall provide current Certificates of Insurance indicating the company's coverage for the following:
- Worker's Compensation;
 - Employer's Liability;
 - Automotive Liability (covering vehicles, bodily injury, and property damage);
 - Comprehensive General Liability (including specific coverage for contractual liability, property damage liability, and personal damage liability);
 - Umbrella Comprehensive Excess Liability;
 - Professional Liability/Offeror's Pollution Liability; and
 - Specific coverage requirements are presented in Section 25 of the Contract.
- B. The OWNER, Owners Representative and the Engineer, shall be listed as additional named insureds.

2.17 Award of Contract and Notice to Proceed

- A. Contract Award shall be effective as of the date the Notice of Award is delivered to the successful Bidder, or if mailed, the postmark date. Award shall be made within 14 days after the Opening of Bids.
- B. The successful Bidder shall within 5 working days after receiving Notice of Award, sign and deliver three copies of the Contract to the Owner together with the Performance and Payment Bonds and the Certificate of Insurance.
- C. Within 10 working days of receipt of all properly signed Contracts with acceptable bonds and certificates of insurance for this Project, the Owner will sign the Contract and issue a Notice to Proceed. Signature by both parties constitutes execution of the Contract.

3. PROPOSAL REQUIREMENTS

The following information must be addressed in the complete proposal submittal package. A complete package must include all of the elements in this section. Please provide responses in the order presented.

3.1 Technical Approach

The Bidder shall submit a narrative technical approach for completing the work described in the Statement of Work (SOW), Site Plan Drawings, and other Contract Documents. Technical proposals should include the following;

- Describe in appropriate detail your means and methods of operations, to remove the contaminated sediments from the Canal to the upland staging and dewatering area, including dredge production rates and the means and methods by which the contractor will monitor dredging progress. This should include the equipment used for dredging and if the equipment is owned or rented.
- Describe in appropriate detail your means and methods of dewatering sediments, and the expected duration of dewatering.

- Describe in appropriate detail your means and methods for achieving target dredging depths and tolerance quality control.
- Describe in appropriate detail your means and method of controlling the Canal water, including controlling negative dredging impacts to water column turbidity, and pumping of water as needed based on your chosen means and methods for sediment removal.
- Describe in appropriate detail your means and method of capturing sediment contact water and treating the water to achieve compliance with the project specifications before discharge to the City Sanitary system.
- Describe in appropriate detail your means and methods of operations, to place the sand cap, including production rates and the means and methods by which the contractor will monitor capping progress. This should include the equipment used for sand capping and if the equipment is owned or rented.
- Describe your means and methods to ensure that excess loads will not be placed on or near the existing Canal walls.

3.2 Project Staff Organization

The Bidder shall provide resumes of the key personnel selected for this project, including their experience in performing similar projects. Project personnel should have the proper training and medical clearance to perform the project work.

A project staffing and organizational chart showing the Bidder's proposed staffing, both in the field and in the office must be included. The staffing and organizational chart should clearly identify the proposed Project Manager, the Health and Safety Coordinator (HSC), and the primary point of contact. In addition, the Bidder shall identify the proposed level of staffing for all field activities for this project.

Changes to the proposed staffing and organizational chart will only be accepted if approved in advance of the start of work by Owner's Representative, Engineer and the OWNER.

3.3 List of Subcontractors

The Bidder shall provide a list of all subcontractors anticipated to perform work on this project, including the type amount and cost of work to be completed by each subcontractor and their relevant experience to the selected task.

3.4 Construction Schedule

The Contractor shall develop a Gantt-type project schedule that shows anticipated mobilization dredging and capping production rates, the anticipated time required to complete each phase of the work, and the duration of the entire project. Note that the work described herein (including restoration) must be completed before **July 30, 2016**.

3.5 Related Experience and References

Technical proposals shall describe the capability of the Bidder to satisfactorily perform the work outlined in this proposal package. The Bidder shall provide a listing of recent related project experience (no more than three projects) with a brief narrative description of the work performed. The location, date, type of work performed, contract dollar amount, and name of the principal project manager must be included in the submittal. For each project experience listed, an owner representative should be identified as a reference with address and current phone number. Owner's Representative may make those inquiries deemed necessary to determine the qualifications of the Bidder to perform the work.

The Bidder shall also provide a brief description of the firm's history and organizational structure. The description shall include the number of years the organization has been involved in excavation, grading, and site remediation work.

3.6 Health and Safety Program

The Bidder shall indicate whether their company has an ongoing corporate health and safety program for hazardous waste/hazardous substance site work that is compliant with U.S. Department of Labor, the Occupational Safety and Health Administration (OSHA) regulations under 29 CFR 1910.120.

The Bidder shall describe the company's corporate health and safety policy and organization as it relates to construction or hazardous waste sites. The individual who will be the HSC for this project must be identified. Additionally, any other persons who will serve as Site Safety Officers must be identified if different from the project HSC.

The Bidder shall indicate what percentage of field personnel are trained (with up-to-date certificates) under the OSHA 1910.120 requirements. A description of the company's ongoing medical surveillance program for field employees and drug screening program must also be included.

The Bidder shall list OSHA total reportable and lost-time accident rates for each of the last 3 years. If construction services are provided by a separate business unit, include both corporate and business unit statistics.

3.7 Proposal Cost Form

All blank spaces in the Proposal Cost Form must be appropriately filled in. The cost proposal must be properly executed. If a corporation submits a cost proposal, the official corporation name shall be given, and an authorized officer of the corporation shall sign the cost proposal. If the cost proposal is made by an entity other than a corporation, the official name as it appears on the Assumed Name Certificate shall be given, and an authorized official shall sign the cost proposal.

All attachments, certifications, or acknowledgements attached to the cost proposal shall be executed in the same manner as the cost proposal.

The Bidder shall also provide its most current price schedule for: a) labor, and b) equipment rental rates, which may be used in establishing the cost associated with the proposal items and any subsequent Change Orders. The rate schedule will be used by Owner's Representative, Engineer and Owner as a basis for evaluating any contract price changes in response to any subsequent Change Orders for out-of-scope services, provided that Owner or Owner's Representative has approved such work. This rate schedule shall include the overhead and profit markup for the Bidder and any subcontractor services. The rate schedule shall be valid through the period of performance of the project.

The Bidder is required to include all elements of: a) the Base Cost Proposal Items, b) Additional Proposal Items, and c) Unit Cost Additional Proposal Items on the attached Proposal Cost Form. The Bidder's price should include all the labor, equipment, materials, travel expenses, taxes, reporting, home office support, and other costs to complete the level of effort for each work task. No additional expenses will be paid by Owner, unless previously approved in writing.

The Bidder shall include in their proposals any and all costs necessary to obtain the required Permits, Licenses and/or Approvals and give all Notices as required to perform their work and include and pay for any and all applicable taxes, including sales, excise, or use taxes.

The Bidder shall conform to all applicable Federal and State Laws, Municipal Ordinances, rules and regulations of all authorities having jurisdiction over the construction, including all construction and safety Codes which may apply and whichever is more stringent. Bidder will be held responsible for knowledge of the State of Wisconsin and City of Portage codes.

Any exceptions to the RFP, Proposal Cost Form, or other contractual requirements should be clearly described in an attachment to the Proposal Cost Form identified as "Exceptions to the RFP."

4. AWARD OF CONTRACT

It is the intent of Owner that the work will be awarded on or about May 2, 2016. Proposals will remain valid through the completion of the project. The award of the contract will be made by Owner at their sole judgment and discretion based in part, but not exclusively, on Owner's opinions of the proposal, the Bidder's qualifications to perform the work reliably and responsibly and the total price of the Cost Proposal.

Owner's Representative and Engineer will review all bids with the Owner. After review selected Bidder(s) may be notified to attend an informal meeting at the Owner's Representative or Owner's office, at which time Bidder(s) will be asked to review specifics of their bids.

Bidder agrees, if awarded a Contract, to enter into a Contract with the Owner on the attached Contract forms. These forms will in no way be modified by the Bidder without approval of the Owner.

5. STATEMENT OF WORK

5.1 Introduction

This SOW describes the Contract requirements for all work to be performed by the selected Contractor associated with the Portage Canal Segment 1 Dredging from Dewitt to Adams Street in Portage, Wisconsin (Sheet C-10).

The WDNR is currently working with Columbia County and the City of Portage to remediate the 600-foot contaminated portion of Segment 1 concurrently and collaboratively with Columbia County's development project in 2016.

5.2 Existing Site Conditions

- A. Sediments within the Portage Canal contain metals, PAHs and PCBs resulting from unidentified historic releases. Analytical data is provided in Appendix A1. Geotechnical data for the sediment is provided in Appendix A2. Bike path installation and canal wall improvements along Segment 1 were performed in 2006 by contractors for the City and Wisconsin Department of Transportation. Design drawings prepared by Mead & Hunt for this work in the subject area are included in Appendix B.
- B. Overhead and underground utilities are present at the site.
- C. The asphalt bike path, above-grade block retaining walls, decorative fencing/railing, restored Portage Canal retaining/revetment walls, and existing public and private utilities are to be protected during construction. A Revetment Wall Stability Analysis Report prepared by Mead & Hunt is included in Appendix C.

- D. Canal water levels were observed and a test pit was excavated on August 6, 2009, to evaluate depth to groundwater and the condition of the Canal following removal of the stop logs at Adams Street. Field notes from the August 6, 2009 site visit are provided in Appendix A.
- E. Four temporary groundwater table wells were installed in December 2009, two on each side of the Canal, to measure groundwater elevation near the project area. Well construction forms and groundwater elevation data are also provided in Appendix A3.
- F. Dewatering bench testing was performed on the sediment in January 2016. The bench test report and analytical data is included in Appendix A.

5.3 Project Overlap

In 2016, the Owner intends to concurrently and collaboratively execute the remediation in conjunction with the County's Project. The need for this work is related to the overlap between these projects. Each of these projects is described separately in the subsections below.

5.3.1 County Project

The scope of the County Project consists of relocating Health & Human Services and the non-court related County administrative departments to the Canal site. The proposed site is located on the southeast side of downtown Portage and straddles the canal between DeWitt Street and Adams Street. The plan also includes an enclosed connector over the Canal to allow for the public and staff to travel between buildings.

All parking will be accommodated on surface lots in lieu of parking structures. The current site plan has multiple surface lots surrounding the structures. Dewatered sediment is planned to be placed below one or more of the surface lots.

5.3.2 Remediation Project

The remediation project includes dredging the center of the canal to a design elevation while maintaining a 10-foot horizontal offset from the existing walls, with a 2H to 1V slope from the 10 foot horizontal offset. Following dredging, the entire area will be capped with a 6-inch sand layer. The dredged sediment will be transported to an on-site processing location. From there, dredged sediment will be dewatered.

The Contractor shall perform the following Work:

- A. Furnish all labor, materials, services, equipment and perform all necessary work for activities as indicated on the Contract Drawings and as specified herein:
 - 1. preparing the site with a dewatering pad, as necessary. The preparation of the dewatering pad must be coordinated with the existing site contractor (Gierke Excavating);
 - 2. excavating/dredging, and transport of sediment from the canal to the designated dewatering location;
 - 3. dewatering of the sediment, as necessary;
 - 4. installing and operating a water pre-treatment system, as necessary, in compliance with Section 02241: Water Management;
 - 5. connection and pumping wastewater to the City of Portage sanitary system; and
 - 6. placing a sand cap.

7. Install and maintain best management practices for storm water, spill prevention, environmental controls and housekeeping to protect the site and the canal.

It shall be the Contractor's responsibility to obtain the necessary information as to the field work involved in the remedy construction in order to submit a complete and comprehensive bid. Under no circumstances shall the Contractor make any claims for any additional expenses incurred due to his failure to obtain a complete understanding of detailed scope of work involved during the bid period, after award, or after the Work is in progress. The summary of work described above is an overall summary of work to be performed and is the responsibility of the Contractor. It does not supersede specific requirements of other Contract Documents.

TECHNICAL SPECIFICATIONS

Section 01001: Definitions

- A. Owner: Group bound by Intergovernmental Agreement consisting of Wisconsin Department of Natural Resources, City of Portage and Columbia County.
- B. Owner's Representative: Findorff
- C. Department: Wisconsin Department of Natural Resources (WDNR or the "Department")
- D. City: City of Portage
- E. Engineer: Ramboll Environ US Corporation (Ramboll Environ)
- F. County: Columbia County
- G. Contractor: The Contractor(s) performing the Work described herein.
- H. Dredging Contractor: A specific contractor performing Work described herein.
- I. Earthwork Contractor: A specific contractor performing Work described herein.
- J. Contract Drawings: Set of construction drawings titled, "Portage Canal Dredging Project, Dewitt Street to Adams Street, Wisconsin Department of Natural Resources, City of Portage, Wisconsin"
- K. Specifications: Exhibit A – Technical specifications of which this is the first Section
- L. Work: All labor, supplies, and materials for completing remedy construction, as shown and specified
- M. Site: As shown on Contract Drawings

END OF SECTION

Section 01015: General Requirements

Section Includes

- Section 01015.01 - Abbreviations
- Section 01015.02 - Contractor's Responsibilities
- Section 01015.03 - Other's Responsibilities
- Section 01015.04 - Work on Properties Owned by Others

Section 01015.01 -	Abbreviations
ANSI	American National Standard Institute
ASTM	American Society for Testing and Materials
EPA	Environmental Protection Agency

NEC	National Electric Code; latest edition
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
OSHA	Occupational Safety and Health Association
USACE	United States Army Corps of Engineers
WDNR	Wisconsin Department of Natural Resources
WDOT	Wisconsin Department of Transportation

Section 01015.02 - Contractor's Responsibilities

- A. Become familiar with conditions relating to execution of Work. Neglect of this requirement will not be accepted as a basis for additional compensation.
- B. Schedule operations to coordinate work of Contractor's forces, subcontractors and suppliers to meet project schedule and completion date of July 30, 2016.
- C. Obtain complete data of site and inspect areas scheduled to receive Work before proceeding with such Work.
- D. Perform work in a manner such that the integrity and structural stability of the existing retaining walls, revetment walls along the Canal, and other shoreline structures are not compromised. Refer to the Revetment Wall Stability Analysis Report prepared by Mead & Hunt presented in Appendix C, and the groundwater elevation data presented in Appendix A3. In addition, precautions shall be taken to maintain integrity of the railing, bike path, and other improvements along the Canal.
- E. Repair or replace railing, retaining walls, and revetment walls following incurred damage.
- F. Correct deficiencies, errors or defects due to faulty measurements taken, information obtained, layout, or due to failure to report discrepancies.
- G. Immediately notify Engineer and Owner's Representative in writing in case of discrepancies between existing work and drawings or defects on such surfaces that are to receive work prior to project commencement. Starting of work or failure to notify Engineer and Owner's Representative of such discrepancies and/or defects shall be done at expense of Contractor who applied work to defective surfaces.

Section 01015.03 - Other's Responsibilities

- A. Owner shall be responsible for coordinating public relation efforts.
- B. Engineer or Owners Representative shall be responsible to maintain daily contact with Contractor during progress of work and to facilitate communication between Contractor and Owner.
- C. Engineer or Owners Representative will be responsible for construction inspection and construction quality assurance (CQA) activities, including pre- and post-dredging/excavation and post-backfilling bathymetry surveys to determine pay quantities, and post-dredging/excavation sediment sampling to confirm cleanup goals have been achieved.
- D. Owner will supply granular backfill soil for the Canal capping.
- E. City of Portage WWTP will be used to treat sediment contact and decontamination water.
- F. Owner will designate a suitable Contractor staging area.
- G. Owner will obtain all WDNR and USACE permits as necessary (Appendix D).

Section 01015.04 - Work on Properties Owned by Others

- A. Contractor shall be familiar with property boundaries and those of the adjacent properties at the site where work is to be conducted.
- B. Storage of materials or equipment on property owned by others is not allowed unless previously authorized by the Owners Representative.
- C. Notify and receive advance approval of Owners Representative of need to remove or disturb materials not addressed by these documents.

END OF SECTION

Section 01040: Project Administration

Section Includes

- 01040.01 - Related Sections
- 01040.02 - Contractor Supervision and Subcontracted Work
- 01040.03 - Submittals
- 01040.04 - Project Meetings
- 01040.05 - Construction Schedule
- 01040.06 - Work Hours and Coordination
- 01040.07 - Reports

01040.01 - Related Sections

Section 01300: Submittals

Section 01400: Quality Assurance and Control

01040.02 - Contractor Supervision and Subcontracted Work

- A. Assign one superintendent or foreman to be on site continuously during working hours from start to finish of project. Submit site superintendent/foreman's name and phone number prior to project start. The superintendent shall be the primary contact with the Engineer and Owners Representative and shall be responsible for all negotiated change orders. In the event of a proposed change in supervisory staff, the Owner shall be provided a minimum of 2 days' notice prior to making the change. If Contractor changes superintendent or foreman assigned to the site, Contractor shall make transition seamless to avoid lost work.
- B. Use an adequate number of skilled workers who are thoroughly trained and experienced in necessary crafts and who are completely familiar with specified requirements and methods needed for performance of Work.
- C. Use experienced professional personnel for that work which requires judgment, knowledge and expertise of qualified professionals and who are familiar with all aspects of Work.
- D. Contractor's superintendent/foreman shall maintain communication between subcontracted personnel and retained personnel, and shall be on-site when subcontractors are on-site performing work.
- E. Contractor shall direct and supervise all Subcontractors.
- F. Contractor shall submit with bid the names and roles of all Subcontractors who will be performing any work.

01040.03 - Submittals

As required in accordance with this Section, Section 01300: Submittals, and Table 1.

01040.04 - Project Meetings

- A. A Pre-Construction Meeting will be conducted by the Owners Representative. Meeting shall be held at the site unless otherwise announced. At a minimum, the following personnel shall attend: Contractor, including site superintendent/foreman, Owner, Engineer, Owner's Representative. Purpose for meeting is:
1. Review work scope.
 2. Discuss Contractor's schedule.
 3. Review status of submittals required to be transmitted prior to project commencement.
 4. Discuss Contractor's Work Plan and construction sequencing and staging.
 5. Discuss project administration prior to start of work.
 6. Schedule progress meetings, as necessary.
 7. Discuss the coordination and scheduling of each major element of the project construction to include, but not be limited to, site preparation, dredging/excavation, dewatering, water treatment, cap placement, and site restoration.
 8. Discuss the Department's emergency notification and operating practices for emergency situations.
- B. The Owners Representative and Engineer for purpose of coordinating and inspecting Work will conduct weekly progress meetings at the site unless otherwise announced. All parties at the Pre-Construction Meeting will agree upon day of week and hour of day. Contractor and requested subcontractors will be in attendance at weekly progress meetings during the duration of each contractor's site work.
- C. Owner, Owner's Representative and Engineer will conduct a final inspection meeting, for purpose of confirming project is complete and consistent with Contract Documents. Meeting will be scheduled when Contractor has submitted written certification that the Contract Documents have been reviewed, Work has been inspected, and Work is Substantially Complete in accordance with Contract Documents and ready for Engineer's inspection (Section 01700: Project Closeout).
- D. A principal member of Contractor's staff, authorized to make decisions on his behalf, shall represent the Contractor at each meeting. The Owner's Representative or Engineer may direct certain subcontractors to attend meetings as needed. Failure to attend a meeting does not relieve Contractor from acting on contents of meetings.
- E. Engineer will take minutes of job meetings to record all pertinent topics discussed or other items. Engineer shall distribute meeting minutes to all interested parties prior to the next meeting.
- F. Special meetings may be called at discretion of the Owner's Representative or Engineer for purpose of resolving problems or other purposes concerning Work. Attendance at special meetings is mandatory for Contractor, subcontractors, or other parties notified by Owner's Representative or Engineer to attend.

01040.05 - Construction Schedule

- A. Overall work is to be completed as indicated in these Technical Specifications.
- B. Within 10 days of notice of award, Contractor shall submit to Owner's Representative and Engineer for review a Construction Schedule to complete the work described herein before July 31, 2016. Schedule shall be time-scaled and shall show work activities, including sequences of performance and interdependency. Each activity shall be labeled and include an estimated duration in working days. Construction Schedule shall comply with required contract completion date stated in Contract Documents and any work restrictions, including restrictions on days or

hours of work, stated in Technical Specifications. Construction Schedule shall be discussed at Pre-Construction Meeting. This schedule may be an updated and more detailed version of the schedule for the proposal discussed in 3.4 Construction Schedule.

- C. Owner's Representative and/or Engineer shall review the Contractor's Construction Schedule. Comments made on Schedule, lack of such comments, or rejection or non-rejection of Contractor's Schedule, does not relieve Contractor from compliance with Contract Documents. This review, whether accompanied by comments, rejection or neither, is only for general conformance with information provided in the Contract Documents.
- D. Failure to submit Construction Schedule shall be considered cause for withholding any partial payments due or that may become due under Contract, in accordance with General Conditions.
- E. Contractor shall furnish material and labor at proper time and in sufficient quantities to correspond with actual job progress whether or not such actual progress is in conformance with subsequent Progress Schedules.
- F. Should Contractor fail to adhere to the Construction Schedule or revised Progress Schedules, Contractor shall promptly adopt appropriate methods of construction necessary to regain conformance with such schedules, at no additional cost to the Owner. Addition of equipment or construction forces, increase in working hours, or any other method, manner or procedure to return to Schedule shall not be considered justification for a request for additional compensation or treated as an acceleration order. If, in the opinion of the Owner, methods prove unsuccessful in compensating for lost time, the Owner shall have right to pursue remedies, as described in Agreement and General Conditions of Contract Documents.

01040.06 - Work Hours and Coordination

- A. Contractor shall perform work within a regular work week of twelve hours per day, Monday through Friday. Working hours will be 7:00 a.m. to 7:00 p.m. Saturday work and hours may be approved by the Owner's Representative if requested in advance.
- B. Contractor shall keep the Owner's Representative and Engineer informed, at reasonable time in advance or as required by specific sections of Technical Specifications, of times and places where work is to be done, so that any checking or oversight deemed necessary may be done with minimum inconvenience to the Owner's Representative and Engineer.

01040.07 - Reports

- A. Contractor shall be responsible for submitting a progress report each week one work day prior to regularly scheduled progress meeting. Weekly report shall include following:
 - 1. brief description of work completed each week;
 - 2. quantities and volumes of work completed each week;
 - 3. Contractor's summary of work completed and estimate of percentage of completion for each work item;
 - 4. erosion control inspection records (if necessary);
 - 5. list of work scheduled for the following week;
 - 6. quantities and volumes of work anticipated for the following week;
 - 7. list and number of supervision and craft people on-site by craft; and
 - 8. review of conditions affecting execution of work, including encountered or anticipated problem areas, potential delays and causes.

- B. Contractor shall be required to submit the following special reports:
1. Accident Reports
 2. Work Stoppage/Dispute Records
 3. Contractor's Invoices

END OF SECTION

Section 01050: Field Engineering and Surveying

Section Includes

01050.01 - Contractor's Responsibilities and Submittals

01050.02 - Survey Data for Construction Documentation

01050.01 - Contractor's Responsibilities and Submittals

- A. Upon commencement of construction work, become familiar with the location of existing reference benchmarks and control points. Maintain their accuracy and prevent disturbance or destruction. Contractor is responsible for re-establishing control points and benchmarks at no cost to Owner if such items are destroyed.
- B. Contractor shall assist Owner's Representative in providing smooth transition between construction activities and review, approval of surveys, such that the schedule for performing the work is not impaired.
- C. Contractor shall verify its own work with respect to required grades prior to documentation surveys. Areas deficient will be corrected and resurveyed at Contractor's expense.

01050.02 - Survey Data for Construction Documentation

- A. Frequency of surveys is summarized in relevant Sections of the Technical Specifications.
- B. Survey data associated with sediment dredging (pre- and post-) and sand placement (post) shall be obtained by Owner, and a copy will be provided to Contractor in one of the following formats:
1. Topographic map (hard copy and electronic compatible for import into AutoCAD)
 2. Tabular (northing, easting, and elevation)
- C. Contractor will be notified by Owner's Representative or Engineer of areas to be adjusted based on survey results.

END OF SECTION

Section 01300: Submittals

Section Includes

01300.01 - General Requirements

01300.02 - Submittal Format

01300.03 - Submittal Procedures

01300.01 - General Requirements

- A. Procedures and format for submittals required by the Technical Specifications that may include but are not limited to:
1. Health and Safety Plan, refer to Section 01505: Mobilization and Demobilization and Decontamination
 2. Construction Schedules, refer to Section 01040.05 - Construction Schedule

3. Site Management Plan, refer to 02050.03 - Submittals
 4. Dredging and Dewatering Plan, refer to 02325.03 - Submittals
 5. Capping Plan, refer to 02350.06 - Submittals
 6. Progress reports, refer to 01040.07 - Reports
 7. Daily Dredging Reports, 02325.01 - 02300.05.1 - Daily Dredging Reports
 8. Daily Capping Reports, 02350.06 - Submittals
- B. Refer to Technical Specifications and Table 1 for list of submittals.

01300.02 - Submittal Format

- A. All submittals shall be transmitted by Contractor with the following identified on the cover sheet:
1. Project name and contract number;
 2. Applicable Technical Specification (Section) and submittal number;
 3. Date (or revision number);
- B. Stamp, sign or initial submittal certifying products or field dimensions, whichever pertains, in accordance with requirements of Work and Contract Documents.

01300.03 - Submittal Procedures

- A. Provide all submittals and information as identified in Technical Specifications to named individuals in the time frames as summarized in Table 1. Payments may be withheld, in whole or in part, at discretion of the Owner's Representative in the event that submittals are not made in times specified unless previously requested in writing by the Contractor (to Engineer or Owner's Representative) and approved in writing by Engineer or Owner's Representative.
- B. Transmit submittals by appropriate means to expedite review of submittal. Submittals delivered by hand, facsimile, or mail service are acceptable. Business addresses of project representatives will be provided at the Pre-Construction Meeting.
- C. Submittals shall be made far enough in advance of the scheduled approval dates to allow adequate time for reviews, approvals and revisions.
- D. Submittals shall identify variations from Contract Documents and product or system limitations that may be detrimental to successful performance of completed work.

END OF SECTION

Section 01400: Quality Assurance and Control

Section Includes

- 01400.01 - Construction Quality Assurance
- 01400.02 - Contractor's Role
- 01400.03 - Engineer's Role
- 01400.04 - Owner Representative's Role

01400.01 - Construction Quality Assurance

- A. The Owner shall arrange for construction oversight and inform of inspection and testing activities to confirm that the construction activities and completed project complies with Technical Specifications and Contract Drawings.
- B. The Owner will retain subcontractor's to perform the following:
- 1) Perform pre dredging bathymetric surveys.

- 2) Perform interim bathymetric surveys as needed including post dredging survey.
- 3) Perform post capping bathymetric survey
- 4) Perform additional surveys, as required.
- 5) Upon confirmation that dredging goals have been achieved, Owner's Representative will inform Dredging Contractor so that Dredging Contractor can proceed with sand placement.
- 6) On-site visual material inspection and testing.
- 7) Verify compliance with Technical Specifications and Drawings and project changes.

01400.02 - Contractor's Role

- A. Perform work in strict accordance with Technical Specifications and Drawings, using necessary construction procedures and techniques. Coordinate, supervise and oversee subcontractors as needed to perform construction activities.
- B. Perform testing as deemed necessary to satisfy requirements of Technical Specifications related to contractor supplied materials prior to delivery to site. Materials that do not meet specifications shall be removed from site at Contractor's expense.
- C. Furnish material samples and provide assistance in on-site inspection and test activities.
- D. Assure submittals required by Contract Documents are completed within times specified. Failure to do so will result in withholding of payment.
- E. Perform or arrange survey and layout work using trained personnel to construct Work in accordance with Drawings and applicable sections of Technical Specifications.
- F. Request clarification from Engineer before proceeding if manufacturer's instructions conflict with Technical Specifications or Drawings.
- G. Communicate any pertinent issues with the Owner's Representative or Engineer.

01400.03 - Engineer's Role

- A. Provide clarifications to Technical Specifications and Drawings, as well as any necessary design changes requested by the Owner. Review as-built documentation surveying data, review material test reports, and prepare Construction Documentation Report and Documentation Drawings.
- B. Issue a Field Directive in cases where deviation from specified design or failure to meet design criteria, Technical Specifications and Drawings is necessary.
- C. Communicate any pertinent issues with the Owner, Owner's Representative and/or Contractor.
- D. Confirm construction compliance with Technical Specifications and Drawings by performing observations, inspections, verifications and documentation activities.
- E. Provide photo documentation and daily written reports documenting construction according to the Technical Specifications and Drawings.
- F. Communicate and coordinate work with Owner and Owner's Representative on daily basis.

01400.04 - Owner Representative's Role

- A. Approve/reject Contractor's submittals after input from Owner.
- B. Progress payment approval, change order approval and approval of field job orders.
- C. Communicate any pertinent issues with Contractor and/or Engineer.

D. Maintain communication with Owner.

END OF SECTION

Section 01500: Construction Facilities and Temporary Controls

Section Includes

- 01500.01 - Use of Site Facilities
- 01500.02 - Security
- 01500.03 - Access Roads and Parking
- 01500.04 - Archaeological or Historic Relics
- 01500.05 - Temporary Utilities
- 01500.06 - Sanitary Facilities
- 01500.07 - Equipment Storage Locations
- 01500.08 - Dust and Mud Controls
- 01500.09 - Construction Noise
- 01500.10 - Water and Erosion Controls
- 01500.11 - Barriers and Protection of Installed Work
- 01500.12 - Site Progress Cleaning
- 01500.13 - Fuel Storage
- 01500.14 - Fuel Handling
- 01500.15 - Protection of the Environment
- 01500.16 - Public Road Requirements
- 01500.17 - Additional Requirements

01500.01 - Use of Site Facilities

A. Use of Site

1. Contractor shall consult with the Owner's Representative regarding locations for material storage, access roads, fences, gates and areas within construction limits for use by Contractor.
2. Confine equipment, storage of materials, and operations of workmen to designated areas as shown on construction drawings. Do not bring materials onto site until reasonably required for progress of work. No area outside of construction limit or staging area may be used for any purpose by Contractor or subcontractors unless expressly approved by the Owner's Representative in writing.
3. Store, place and handle material and equipment to protect from any damage. Contractor shall move materials, sheds, or storage platforms, as necessary or when required for continuing construction at Contractor's expense.
4. Contractor assumes full responsibility for damage due to storing of materials.
5. Contractor is responsible to schedule work, storage of materials, etc., to minimize interference with other site construction activities.

B. Contractor, prior to start of work, shall inspect site with Owner's Representative and Engineer to determine existing conditions in conjunction with Pre-Construction Meeting (Section 01040).

01500.02 - Security

A. Owner will be responsible for temporary chain link fencing for security of the entire site as indicated in the Contract Drawings. Contractor is responsible for replacement or repair of any fencing damaged by Contractor.

- B. Contractor is responsible for loss or injury to persons or property where his work is involved, and shall provide security and take precautionary measures as deemed necessary to protect Contractor's and Owner's interests.

01500.03 - Access Roads and Parking

- A. Maintain access to construction areas or as directed by the Owner's Representative.
- B. Parking areas for Contractor's personal vehicles shall be in the designated area on site. If more parking is needed, it shall be so designated by the Owner's Representative. No Contractor work trucks or equipment shall be parked on public streets or right-of-way unless pre-approved by the Owner's Representative.

01500.04 - Archaeological or Historic Relics

- A. Native American relics or items with an apparent archaeological or historical value discovered during construction shall not be moved or otherwise disturbed.
- B. Report existence of these items to Engineer and Owner's Representative immediately upon discovery.

01500.05 - Temporary Utilities

- A. Electricity
 - 1. Contractor is responsible for costs associated with any temporary electrical distribution and usage during construction
 - 2. OSHA regulations require that employers shall use either ground fault circuit interrupters or assured equipment grounding conductor program in addition to any other regulations for equipment grounding conductors.
 - 3. Utilize and remove upon completion of project, a new temporary electric distribution system for temporary light and power during construction, if necessary.
- B. Water
 - 1. Contractor may not use water from the Portage Canal for dust suppression. Dust suppression may be necessary for haul roads, stockpile areas and within construction limits.
 - 2. Contractor shall provide potable water, containers and ice for Contractor's employees as necessary.

01500.06 - Sanitary Facilities

Owner shall provide sanitary facilities on-site conforming to state and local health and sanitation regulations. Contractor will work with Owner's Representative to determine sufficient number for use of Contractor's employees.

01500.07 - Equipment Storage Locations

- A. Park equipment and store materials only in areas proposed by Contractor and approved by Owner's Representative.
- B. Restoration of disturbed areas will be pre-determined by Owner's Representative based on future use of area.

01500.08 - Dust and Mud Controls

- A. Conduct operations and maintain site at all times to minimize creation and dispersion of dust and mud.

- B. Provide equipment necessary to control dust generation resulting from wind effects on open stockpiles, excavations, and from Contractor's vehicle and equipment traffic at all times. Control dust by application of water to affected areas, such that surfaces are moistened to prevent dust from becoming a nuisance to public, neighbors and concurrent performance of other work at site. Water application must not result in runoff from the construction limits. Contractor shall prevent dusting associated with the project work 24 hours a day from project commencement to substantial completion of the work.
- C. Control mud and tracking of mud on site access roads and public roads along haul routes. Provide tracking pads at entrances and exits to prevent tracking, as shown on Contract Drawings. Maintain surfaces in proper condition to facilitate removal efficiency.
- D. The Engineer or Owner's Representative shall monitor site conditions related to dust and mud generation on a daily basis and direct Contractor to take actions as necessary to address observed deficient practices or conditions deleterious to construction and/or public.
- E. Coordinate with City to clean public right-of-ways and streets as deemed necessary.

01500.09 - Construction Noise

The Contractor shall take all necessary precautions to minimize construction noise. All equipment shall be fitted with suitable noise reduction devices such as mufflers, inlet and exhaust silencers and engine covers that shall be maintained in good working order.

01500.10 - Water and Erosion Controls

Refer to Section 02111 for required erosion control measures.

01500.11 - Barriers and Protection of Installed Work

- A. Protect installed work and provide special protection as stated in Technical Specifications.
- B. Construction traffic shall be prohibited on completed and/or landscaped areas.
- C. Provide barriers to prevent unauthorized entry to construction and staging areas as necessary. Protect existing facilities and adjacent properties from damage during construction operations.

01500.12 - Site Progress Cleaning

- A. Maintain areas free of waste materials, debris and rubbish. Site shall be maintained in clean and orderly condition.
- B. Owner and shall provide an on-site dumpster for general waste materials and rubbish during site activities for Contractor.

01500.13 - Fuel Storage

Store fuel according to local, state and federal laws.

01500.14 - Fuel Handling

At no time shall overtopping fuel tank or spillage to ground surface be allowed.

01500.15 - Protection of the Environment

- A. Trash burning not permitted on site.
- B. All areas for handling and storage of fuels, oils and other potentially hazardous liquids shall have spill containment or release prevention measures. Maintenance of equipment on-site shall be with prior approval of the Owner's Representative.
- C. All waste materials other than contaminated sediment and debris encountered during sediment removal, shall be recycled, hauled to a licensed solid waste landfill, or otherwise disposed of in

an environmentally sound manner and in compliance with all applicable local, state, and federal rules.

- D. All spills or leaks of fuels, oil, or other WDNR-reportable liquids resulting from handling or equipment malfunctions shall be reported immediately to the Owner's Representative and Engineer. Affected soils shall be properly removed from limits of construction. Fuel spills in public waterways shall be properly contained with containment booms and removed with appropriate absorbent materials, as necessary to minimize off-site discharge. All affected soils and other affected materials/debris shall be disposed in accordance with applicable local, state and federal rules as well, at the sole expense of the Contractor and as agreed by the Owner's Representative and Engineer. A copy of manifests, if necessary, shall be provided to Engineer within 5 working days of disposal. Waste Generator Manifests shall not state Owner as Generator. The Owner's Representative reserves right to order leaking equipment removed from site.
- E. The Wisconsin spill law, Chapter 292.11(2) Wis. Stats. requires that a person who possesses or controls a hazardous substance or who causes the discharge of a hazardous substance shall notify the DNR immediately of the discharge that is not exempted. Spill reporting requirements are contained in NR706 Wis. Admin. Code. The Spill Hotline telephone number is (800-943-0003). Detailed information on spill reporting requirements is available in the Hazardous Substance Spills Reporting Requirements PUB-RR-558 fact sheet.

01500.16 - Public Road Requirements

- A. Contractor shall comply with Local Weight Limits.
- B. The Earthwork Contractor shall conduct his operations on the site in a manner that will minimize interference with the normal operation of adjoining public and private roads and parking lots, and shall implement all specified and other appropriate measures to ensure the safety of all users of the adjoining public and private roads and parking lots. Earthwork Contractor shall conform to the on-site truck route and other safety measures in accordance with Earthwork Contractor's Sediment Stabilization, Transportation, and Disposal Plan in **Error! Reference source not found.**
- C. When construction activities occur near public roadways, the Contractor shall provide sufficient flag persons to direct construction equipment and safeguard vehicular traffic. At the close of each workday, the Contractor shall leave the site in a safe condition. The Contractor shall furnish and place portable barricades to keep vehicles from entering active areas under construction. At night, barricades shall be equipped with amber flashing lights. Barricades shall have alternating colors of international orange and white.
- E. At no time during construction shall any contaminated sediment be permitted to leave the site. In the event of contaminated sediment migrating outside of the cleanup site area, through tracking, spillage, or any other means, the Contractor shall be responsible for immediate clean-up, and all direct and indirect costs associated with the cleanup.

01500.17 - Additional Requirements

- A. No firearms or explosives are allowed on site.
- B. Possession and/or use of intoxicating beverages and nonprescription drugs are prohibited at all times. Persons caught in possession or under the influence of drugs or alcohol will be immediately dismissed and removed from the site.
- C. Smoking will be allowed in designated areas only.

- D. The Owner's Representative and Engineer reserve the right to require that any of the Contractor's personnel be excluded from work at the site at any time.

END OF SECTION

Section 01505: Mobilization and Demobilization and Decontamination

- A. Mobilization consists of the Work and operations necessary for the movement of personnel, equipment, supplies and incidentals to the project Site. Includes all labor, equipment and materials necessary to fulfill the requirements of all Specifications. Such items as project administration, notifications, meetings, submittals, and preparing the Work and Health and Safety Plans are included.
- B. Demobilization shall include all Work and operations to vacate the Site, including movement of personnel, equipment, supplies and incidentals from the Site. Demobilization shall include the removal of the equipment staging area and truck access road if required.
- C. Decontamination of personnel clothing, equipment and disposition of decontamination wastes is an integral part of the overall Health and Safety Program. The selection of protective clothing, respirators, and equipment to prevent human contact and the spread of contaminants shall be addressed in the Contractor's HASP. Decontamination consists of physically removing contaminants or changing their chemical nature to innocuous substances. This item consists of all Work and operations necessary for the Contractor to safely enter and exit the Site and perform the Work contained in these Contract Documents.

All equipment used for the project including but not limited to tracked vehicles, barges, boats, hoses, sheet pile and pumps shall be de-contaminated for invasive and exotic viruses and species prior to use and after use.

The following steps must be taken *every time* you move your equipment to avoid transporting invasive and exotic viruses and species. To the extent practicable, equipment and gear used on infested waters shall not be used on other non-infested waters.

1. **Inspect and remove** aquatic plants, animals, and mud from your equipment.
2. **Drain all water** from your equipment that comes in contact with infested waters, including but not limited to tracked vehicles, barges, boats, hoses, sheet pile and pumps.
3. **Dispose** of aquatic plants, animals in the trash. Never release or transfer aquatic plants, animals or water from one waterbody to another.
4. **Wash your equipment** with hot (>104° F) and/or high pressure water,

- OR -

Allow your equipment to **dry thoroughly for 5 days**.

END OF SECTION

Section 01700: Project Closeout

Section Includes

- 01700.01 - Description of Work
- 01700.02 - Procedures
- 01700.03 - Record Documents

01700.01 - Description of Work

To provide an orderly and efficient transfer of the completed Work to the Owner.

01700.02 - Procedures

- A. Remove temporary above grade or buried utilities, equipment, and materials prior to final application or payment inspection and clean and repair damage caused by installation or use of temporary facilities.
- B. Substantial Completion: When all work described in the contract documents is completed:
 - 1. Owner's Representative and Engineer will prepare and submit a punch list of items to be completed for Contractor review and completion.
 - 2. Should the Owner's Representative and/or Engineer determine that the Work is not substantially complete; Contractor will remedy the deficiencies and notify the Owner's Representative or Engineer when ready for re-inspection.
- C. Final Completion
 - 1. Remove waste and surplus materials, rubbish, and construction facilities from site.
 - 2. Prepare and submit the notice that all Work is complete.
 - 3. Certify in writing that the Work is complete and ready for final inspection.
 - 4. Engineer and/or Owner's Representative will make a final inspection to verify status of completion

01700.03 - Record Documents

- A. Contractor will maintain on-site, one set of following record documents of all items of work; record actual revisions of all items of work:
 - 1. Drawings;
 - 2. Technical Specifications;
 - 3. Change Orders and other modifications to contract;
 - 4. copy of approvals of work performed; and
 - 5. record documents.
 - 6. all permits and regulatory approvals
- B. Engineer and Contractor will record information concurrent with construction progress including changes made by addenda and modifications.
- C. Contractor will maintain a Daily Field Log including inclusive work times, personnel on site, equipment used, and other essential information of the operations progress.

END OF SECTION

Section 01900: Site Health and Safety

Section Includes

- 01900.01 - General Health and Safety Issues
- 01900.02 - Disclosure - Chemical Characteristics And Subsurface Conditions
- 01900.03 - Public Safety
- 01900.04 - Accident Reports
- 01900.05 - Fire Protection And Emergencies
- 01900.06 - Working In Proximity To Overhead Transmission Lines
- 01900.07 - Decontamination Operations

- 01900.01 - General Health and Safety Issues

- A. Contractor is responsible for implementation and enforcement of health and safety requirements and shall take necessary precautions and provide protection for the following:
 - 1. Personnel working on or visiting project Site, irrespective of employer.
 - 2. Work and materials or equipment to be incorporated in Work area on- or off-site.
 - 3. Other property at or adjacent to project Site.
 - 4. Public exposed to job-related operations or potential release of toxic or hazardous materials.
- B. Contractor shall prepare and comply with a project specific HASP. Submit a signed copy to Owner's Representative and Engineer prior to pre-construction meeting. The Contractor's HASP does not supersede or in any way relieve the Contractor of obligations under any applicable OSHA regulations including 29 CFR 1910: Occupational Safety and Health Standards and 29 CFR 1926: Health and Safety Regulations for Construction. At minimum, the Contractor HASP shall include the following:
 - 1. site description;
 - 2. project activities and coordination with other subcontractors;
 - 3. hazard evaluation;
 - 4. on-site safety responsibilities;
 - 5. work zones;
 - 6. personnel training;
 - 7. personal protection, clothing, and equipment; and
 - 8. emergency procedures.
- C. Contractor shall be and remain liable for compliance by employees, agents and subcontractors with Contractor's HASP and procedures for Site and shall not hold Owner and/or Engineer accountable to any claims, damages, suits, losses and expenses in any way arising from noncompliance with HASP. It is Contractor's responsibility to enforce all necessary safety rules.
- D. Engineer's HASP is for reference by employees of Engineer working on-site. Contractor may request copy of Engineer's HASP for reference.
- E. Notify Engineer of any chemical products to be used by Contractor while on Site premises. Furnish Material Safety Data Sheets (MSDS) for chemical products to Engineer before any such chemicals are brought on premises throughout duration of project. Comply with standards set in 29 CFR 1910.120 in providing such notifications and MSDS.
- F. Provide all necessary safety equipment needed to perform required work. Provide and properly utilize adequate ventilation and personal protection equipment, including respirators as required according to OSHA regulations.
- G. Train personnel in use, limitations, and proper fit of all necessary safety equipment. General Site workers expected to be in contact with contaminated soil or water shall have received 40-hour Hazardous Waste Operations and Emergency Response training in accordance with 29 CFR 1910.120.
- H. Exclusion Zone: The Exclusion Zone is the area within the temporary security fence installed and maintained by Contractor. Visitors are not allowed inside the Exclusion Zone until they have been informed and understand the health and safety issues at the site and have signed the HASP. Within the Exclusion Zone, visitors must be in the escort of the Contractor, or Engineer or Owner's Representative, at all times. Unauthorized personnel and personal vehicles are not

allowed inside the exclusion zone. Equipment inside the exclusion zone may not go outside the exclusion zone until the equipment is properly decontaminated. Hard hats, eye protection and traffic vests are required in the Exclusion Zone. No eating or smoking is permitted inside the Exclusion Zone, unless an area is so designated by the Contractor with appropriate safety measures and controls (e.g., inside a project trailer).

- I. Conform to OSHA Safety and Health Regulations for construction.

01900.02 - Disclosure - Chemical Characteristics And Subsurface Conditions

- A. The Owner will furnish or make available to Contractor documents and information available that relate to identity, location, quantity, nature or characteristics of hazardous substances near work Site. The Owner, however, assumes no responsibility or liability for accuracy or completeness of such documents or information, and all such documents and information will remain property of the Owner.
- B. Sediment within the Canal: Contaminated sediments observed at the site are generally comprised of silty sand with some gravel and little clay and are dark brown/black in color. These sediments at the site are underlain by apparent, native brown sand containing little fines, which are visually distinct from the overlying sediments. Refer to sediment analytical data in Appendix A1.

01900.03 - Public Safety

- A. Protect finished and unfinished work against any damage, loss, or injury during performance of and up to completion day of work.
- B. Provide adequate protection around all openings wherever required to safeguard work or public.
- C. Protect all openings and surface obstructions with fencing, barricades, signs, and warning devices in accordance with local, state and federal requirements.
- D. No smoking or eating will be allowed within Site boundaries except in locations agreed upon by the Owner's Representative and Contractor.

01900.04 - Accident Reports

If a death, serious injury, or damage occurs, the Contractor shall report the accident immediately by telephone to the Owner's Representative and appropriate local authorities. In addition, the Contractor must promptly report in writing to the Owner's Representative all accidents occurring in connection with the Work, giving full details, names and statements of witnesses.

01900.05 - Fire Protection And Emergencies

- A. Contractor shall execute all Work in a fire-safe manner. Furnish and maintain a suitable type and amount of portable fire extinguishers on-site and in each piece of equipment as applicable.
- B. Abide by the Owner's Representative's emergency notification and operating practices for emergency situations. Practices will be discussed at Pre-Construction Meeting (Section 01040).

01900.06 - Working In Proximity To Overhead Transmission Lines

- A. Contractor shall conform, when, performed in proximity to energized electrical conductors, to the provisions and requirements, with any amendments hereto, of OSHA. Safety and Health Regulations for Construction, in particular, but not limited to subpart 1926.550 and the provisions of the Wisconsin State Electrical Code and any amendments thereto.
- B. Contractor shall not stockpile below transmission lines.
- C. No transmission line outages will be allowed.

01900.07 - Decontamination Operations

- A. Trucks and heavy equipment with noticeable surface contamination or contaminated soil/sediment shall be decontaminated prior to leaving the site and may include other vehicles not belonging to the Contractor.
- B. Decontamination shall be conducted inside within the Contractor's equipment laydown area, as indicated on Contract Drawings. Decontamination shall be achieved by scraping, brushing, or other mechanical means to the extent practical to remove soil/sediment contaminants from equipment. Soil/sediment and debris removed during the decontamination operations shall be contained and transported to the designated disposal location.
- C. Contractor shall provide high-pressure, low-volume washing equipment with steam capabilities for the purpose of decontamination, if requested by Engineer. Equipment may also be used for decontamination of debris and structures encountered during excavation.
- D. Decontamination liquids shall be contained at all times and shall be treated using the on-site dewatering treatment system prior to discharge to the City's sanitary sewer in compliance with the City's permit.

END OF SECTION

Section 02050: Site Preparation

Section Includes

- 02050.01 - Related Sections
- 02050.02 - Definitions
- 02050.03 - Submittals
- 02050.04 - Miscellaneous Materials (As Needed)
- 02050.05 - Protection of Utilities and Structures
- 02050.06 - Site Security
- 02050.07 - Sanitary Facilities
- 02050.08 - Site Office Space
- 02050.09 - Street Sweeping
- 02050.10 - Utility Abandonments and Protection
- 02050.11 - Dumpster
- 02050.12 - Preparation of Dewatering Pad

02050.01 - Related Sections

- Section 02111: Erosion Control
- Section 02241: Water Management
- Section 02325: Dredging and Dewatering
- Section 02940: Site Restoration

02050.02 - Definitions

- A. Structures and Surface Features: Existing structures and surface features including above-grade and below-grade retaining walls, buildings, signs, posts, utility poles, monitoring wells, fences, trees, shrubs, landscaped surface features, and other miscellaneous items.
- B. Utilities: Existing gas mains, water mains, electric lines, roof drains, storm sewers and conduits, telephone and other communication lines and conduits, sanitary sewer pipe, cable television, other utilities, and appurtenances.

02050.03 - Submittals

- A. Submit in accordance with Section 01300: Submittals.

- B. Provide the Owner's Representative and Engineer written notice of construction start date at least 10 working days prior to beginning site activities.
- C. Submit a Site Management Plan within 10 days of notice of award that includes, but is not limited to, the following:
 - 1. coordination with Owner's Representative regarding site security, temporary controls for preventing and minimizing mud and dust;
 - 2. location and description of access locations, equipment laydown area;
 - 3. other temporary site preparation measures the Dredging Contractor will employ to execute the Work in an efficient and safe manner; and
 - 4. sequence of work.
- D. Engineer will take photographs or video of the site prior to commencement of Work to show existing conditions of adjoining construction and site improvements. Documentation shall include revetment wall, retaining wall, railing, bike path, landscaping, ground surface of the equipment laydown and material management areas, and other elements that might be misconstrued as damage caused by Work. Photographs shall have an automatic date stamp on the photo to be used as evidence against damage.

02050.04 - Miscellaneous Materials (As Needed)

- A. 3-inch clear stone for tracking pad shall be free of foreign objects, debris, or organic matter.
- B. liner for base of dewatering pad

02050.05 - Protection of Utilities and Structures

- A. Contact utilities' "Diggers Hot Line" (414-259-1181) and locate underground utilities at least three days before beginning site preparation.
- B. Protect existing utilities not specified for removal against damage.
- C. Locate existing underground utilities by hand excavation.
- D. If uncharted utilities are encountered during excavation, stop work, place work in a safe condition, and notify Engineer.
- E. Preserve and protect benchmarks and other structures. If damaged during construction, notify Engineer and Owner immediately. If determined by Engineer that the benchmark and/or other structures integrity is compromised, Contractor shall repair damaged structures at Contractor's expense under observation of Engineer or Department.
- F. Protect, support, and maintain conduits, wires, pipes or other utilities that are to remain in place during work as indicated in the Contract Drawings.
- G. Generally, contractors shall not place any vehicles, equipment, or stockpiles of soil exerting a ground pressure in excess of 30 pounds per square feet (psf) within 25 feet of existing Canal revetment walls. In certain circumstances, with Engineer written approval based on wall loading analysis, contractors may be allowed to exceed this criteria.

02050.06 - Site Security

Prior to mobilization to the site by the Dredging Contractor, a chain link fence (fence) will be installed around the entirety of the County's project site including Segment 1 as part of the County's project. The Dredging Contractor will be responsible for security of their equipment and materials.

02050.07 - Sanitary Facilities

The Dredging Contractor may use sanitary facilities provided as part of the County's project.

02050.08 - Site Office Space

The Owner will be providing an office building on the south side of the site that will have space available for the Dredging Contractor.

02050.09 - Street Sweeping

The City will be responsible for Street Sweeping as necessary; minimal tracking on public roads is expected based upon on site material management.

02050.10 - Utility Abandonments and Protection

Existing utilities within the Segment 1 dredging footprint area will be identified through Wisconsin Diggers Hotline and protected as necessary for safe execution of the work.

Where necessary, the Dredging Contractor shall verify utility locations prior to any subsurface activities via public line locating services and municipal utility services. All subsurface utilities will be marked and flagged. In addition, the location of any low-hanging utilities that may be contacted shall be clearly identified for all drivers and operators.

The underground utility information is based, in part, on the recorded information furnished by the utility companies or the local municipality. The accuracy and completeness cannot be guaranteed or certified. It is the responsibility of the Dredging Contractor and any of their subcontractors to verify the location of all services, structures, pipes, lines, poles, etc. and obstacles shown on the plans.

Unknown utilities encountered during excavation will be marked and brought to the attention of Engineer and Owner's Representative prior to disconnecting. No unidentified utilities will be purposefully disconnected without the express consent of Engineer and Owner's Representative and Owner.

02050.11 - Dumpster

A dumpster will be supplied by the Owner. The Dredging Contractor may dispose of miscellaneous trash in the dumpster. At the current time, no major trash is expected as part of the remediation project and this item is considered an incidental.

02050.12 - Preparation of Dewatering Pad

The sediments will require dewatering prior to disposal. Prior to the Dredging Contractor mobilizing to the site, the Earthwork Contractor will provide a generally flat and obstruction free area to construct a dewatering pad in the location of the former Mill building (as was the status as the pre-bid meeting). A dewatering pad to collect water from the dewatering system will be required at the location shown on Figure C-20. The pad shall be constructed to inhibit water infiltration beneath the pad and constructed with exterior containment berms to contain water within the pad area. The pad shall be sized to allow dewatering of all sediment with collection of the decanted water at a sump for pretreatment if necessary prior to disposal to the City of Portage Waste Water Treatment Plant.

END OF SECTION

Section 02111: Erosion Control

Erosions controls will be existing as a result of the County Development Project at the time of the remediation, as shown on the drawings. However, those erosion control measures represent a minimum requirement. The Dredging Contractor is responsible for determining any additional erosion control measures needed to protect adjacent properties and water bodies from non-contact water. If

additional erosion controls are necessary, they shall follow the specifications and stormwater requirements contained in the existing site stormwater permit issued for the County Project.

END OF SECTION

Section 02241: Water Management

Section Includes

- 02241.01 - Definitions
- 02241.02 - Related Sections
- 02241.03 - References
- 02241.04 - Performance Requirements
- 02241.05 - Submittals
- 02241.06 - Quality Assurance
- 02241.07 - Work By Others
- 02241.08 - Materials
- 02241.09 - Pumping Equipment
- 02241.10 - Execution
 - 02241.10.1 - Preparation
 - 02241.10.2 - Equipment Installation and Initial Testing
 - 02241.10.3 - Surface Drainage
 - 02241.10.4 - Sediment Contact Water Treatment System
 - 02241.10.5 - Sediment Dewatering Area
 - 02241.10.6 - Water Storage and Conveyance

02241.01 - Definitions

- A. "Sediment contact water" water that drains by gravity or mechanical means from dredged/excavated sediment, or surface water (e.g., precipitation runoff) that comes into contact with dredged/excavated sediment. Sediment contact water must be captured and managed according to the performance requirements of this section. Decontamination Water is also considered contact water.
- B. Sediment "non-contact water" includes surface water that does not come into contact with the dredged/excavated sediment or work surfaces used to manage the dredged/excavated sediment. This also includes water pumped from other Segments of the canal that is not within 1-ft of the sediment water interface of contaminated sediment. Sediment non-contact water does not require treatment, but must still comply with best management practices and the existing stormwater permit issued for the County Project.

02241.02 - Related Sections

- Section 02050: Site Preparation
- Section 02111: Erosion Control
- Section 02325: Dredging and Dewatering

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02241.03 - References

- A. Wisconsin Pollutant Discharge Elimination System (WPDES) Permit requirements.
- B. State of Wisconsin Storm Water Construction and Post-Construction Technical Standards (WDNR Technical Standards).

02241.04 - Performance Requirements

- A. Dredging Contractor shall manage water consistent with Engineer-approved Water Management Plan.
- 1) Provide a method of control, handling, and storage (as necessary) of sediment contact water from within the project area, and from material management areas, including sediment dewatering area, by whatever means necessary and in conformance with this Section to obtain satisfactory working conditions and maintain progress of Work.
 - 2) Dredging Contractor shall comply with the applicable rules and regulations of the City of Portage (Chapter 78 of the City's Municipal Code) and the Wisconsin Department of Natural Resources relative to construction site dewatering and discharge.
 - 3) Provide adequate backup systems to accomplish control of water.
 - 4) Exercise reasonable means for minimizing production of run-on water into the material management and project areas to reduce discharge volumes.
 - 5) Dredging Contractor shall provide a temporary water pretreatment system, which may include portable tanks, bag filters, sand filters, carbon filters, or any other treatment technology, as necessary to treat water to the discharge requirements below. In addition, the pretreatment system shall include an effluent flow meter and effluent sample tap.

The contact water shall be discharged to the City of Portage sanitary sewer system and shall meet the following requirements:

- i) A total suspended solids concentration of 20 mg/L.
- ii) Available flow rates are subject to field conditions at the time of dredging and shall not cause the City's Wastewater Treatment Plant (WWTP) to exceed 2.1 Million Gallons per Day (MGD) of total influent, including all sources (project flows + normal influent). For reference, the City's WWTP influent averaged 1.55 MGD for the months of April to July from 2010 to 2015, summary tables are included in Appendix E. Based on these averages, there would be capacity for 0.55 MGD of discharge from the project on a given day. Instantaneous flow rates may be higher (i.e. during dredging) as long as the total discharge per day does not cause the WWTP influent to be greater than 2.1 million gallons and does not exceed the capacity of the sewer main.
 - (1) Water discharged to sanitary sewer system can be connected to the 20" VCP sewer main located along Edgewater Street or the 8" VCP located along Mullet Street as shown on Drawing C-10. The flow rate cannot exceed the available capacity of the VCP sewer mains, the City has estimated the 20" VCP capacity to be 400 gallons per minute.
- iii) Any active operations known to cause additional flows beyond geotube weeping (i.e. dredging) shall be suspended 1-day prior to a rain event forecasted 1-inch or more.
- iv) Contractor must suspend any active operations known to cause additional flows beyond geotube weeping (i.e. dredging) for 48 hours after a rainfall event greater than 1" or more, unless otherwise approved by the City.
- v) The temporary water pretreatment system effluent shall be grab sampled and analyzed at startup (first 3-days of operation with at least one sample being during full dredging production rates) and 1x per week thereafter. During startup, samples must be analyzed on a quick turn to sufficiently inform of the efficacy of the pretreatment system. The list of parameters includes the following parameters:
 - (1) total suspended solids using USEPA Method 2540C,

(2) total recoverable mercury using USEPA Method 1631 - Contractor is required to collect and analyze all mercury samples according to the data quality requirements of ss. NR 106.145(9) and (10), Wisconsin Administrative Code. The limit of quantitation (LOQ) used for the effluent and field blank shall be less than 1.3 ng/L, unless the samples are quantified at levels above 1.3 ng/L. The contractor would be required to collect at least one mercury field blank for each set of mercury samples. The contractor shall report the results of samples and field blanks to the Department and Engineer.

(3) pH using USEPA Method 4500H.

vi) Any traffic control required for connection to the City of Portage Sanitary Sewer system is the responsibility of the Contractor. Means of traffic control must be approved by the City of Portage.

02241.05 - Submittals

A. In accordance with Section 01300.

B. The Water Management Plan should be included as part of the Dredging and Dewatering and should include the following:

- 1) Methods, equipment and power supply;
- 2) Process flow diagram of sediment contact water treatment process;
- 3) Narrative description of proposed temporary, sediment contact water treatment system; and
- 4) Figures or drawings showing the site layout plan for installation of sediment contact water treatment system which may include, but is not limited to, details for the following: tanks, screening equipment, pumps and piping, filtering methods for solids removal, effluent flow meter and sample tap, effluent discharge location, and energy dissipation measures (also provide calculations and information on the anticipated flow rates and operating times to achieve project requirements).
- 5) Areas of sediment contact water and non-contact water.

C. If changes occur prior to construction, submittal shall be revised no later than 10 days prior to start of construction or installation of sediment contact water treatment system.

02241.06 - Quality Assurance

Contractor shall comply with requirements of Section 404 of Clean Water Act and Navigable Waters Protection.

02241.07 - Work By Others

A. Owner will obtain the necessary City permit for discharge.

B. City will work with Contractor to determine discharge location for contact water into the City system.

C. City will treat the sediment contact water once the water meets the Pre-treatment requirements of the City's Permit.

D. Earthwork Contractor is responsible for solidification, loading, and disposal of dredge material, as discussed in **Error! Reference source not found.**

02241.08 - Materials

Pumping, conveyance and temporary sump equipment and materials selected by Contractor to accomplish Work of this Section.

02241.09 - Pumping Equipment

- A. Utilize equipment specifically applicable to water treatment work.
- B. Equipment shall be operated and maintained in an efficient manner to produce acceptable results.
- C. The Contractor shall have on hand at all times sufficient pumping equipment and machinery in good working condition for all ordinary emergencies, and shall have available at all times competent workmen for the operation of the pumping equipment.

02241.10 - Execution

02241.10.1 - Preparation

- A. Verify that effluent from the sediment contact water treatment system will be in compliance with this section.
- B. Provide additional facilities and maintain existing facilities to prevent any leaks, spills, or other losses of sediment, contact water or other contaminated substances on the site.
- C. Cleanup any contamination from leaks or spills to pre-existing conditions and background levels.

02241.10.2 - Equipment Installation and Initial Testing

- A. Install sediment contact water pretreatment system and facilities in general conformance with Contractor's approved Water Management Plan.
- B. Test all equipment, piping and fittings for leaks prior to beginning dredging. Repair all leaks found.

02241.10.3 - Surface Drainage

- A. Design surface drainage systems so that they do not cause erosion on- or off-site.
- B. Remove surface drainage systems when no longer needed.
- C. Prevent any and all discharge of site runoff into the project and material management areas.

02241.10.4 - Sediment Contact Water Treatment System

- A. The water treatment system shall be located as shown on the Contract Drawings.
- B. All costs associated with the operation and maintenance are the responsibility of the Dredging Contractor. Dredging Contractor shall provide the operation and maintenance of the water pretreatment system throughout the duration of the project (as long as sediment contact water is being generated), unless the Owner's Representative accepts responsibility managing for the system. Owner's Representative would consider managing sediment contact water under the following conditions:
 - 1. The Dredging Contractor is substantially complete with all other works tasks and completed a punch list, following the procedures outlined in 01700.02 - Procedures.
 - 2. Managing the sediment contact water system is within the capabilities of the Owner's Representative, as determined by the Owner's Representative.
- C. Operate the system in compliance with the City's permit requirements.

- D. Contaminated filter media or other waste products shall be stored and managed in accordance with all applicable laws, regulations, rules and standards. These filter media and wastes (e.g., sand, carbon, and bag filters) shall be disposed at a licensed disposal facility.

02241.10.5 - Sediment Dewatering Area

Sediment dewatering area shall be lined to prevent contact of sediment with underlying soils, and to control and capture sediment contact water in a sump area for treatment in accordance with Dredging Contractor's Sediment Dredging and Dewatering Plan (see 02325.03 - Submittals).

02241.10.6 - Water Storage and Conveyance

- A. Sediment contact water and non-contact water removed from the project and material management areas shall be discharged through pipe or hoses to the temporary storage facilities or discharge points, as appropriate. Conveying water in open ditches or trenches will not be allowed.
- B. Install the conveyance system to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities in accordance with Dredging Contractor's Water Management Plan. Do not close or obstruct streets, walks, or other adjacent occupied or use facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.
- C. Discharge to and from storage tanks shall be done in a manner that minimizes re- suspension of solids.
- D. Install and maintain temporary, portable piping from water treatment system to the City's sanitary sewer.
- E. Upon completion of the Work, Dredging Contractor (unless directed otherwise by Owner's Representative) shall demobilize and decontaminate sediment contact water treatment system, equipment and materials. Disposal of any decontamination wash waters shall be properly handled and disposed in accordance with all applicable laws, regulations, rules and standards.

END OF SECTION

Section 02300: Earthwork

Section Includes

- 02300.01 - Description
- 02300.02 - Related Sections
- 02300.03 - References
- 02300.04 - Performance Requirements
- 02300.05 - Execution
- 02300.05.1 - Preparation

02300.01 - Description

- A. Preparation of Dewatering Pad.
- B. Erosion control measures necessary to stabilize the surface and prevent loss of soil particles from disturbed excavation and grading areas at the site.
- C. Sediment control measures necessary to prevent suspended soil particles from disturbed excavation and grading areas to enter the waterways or to run-off outside of the construction limits.

02300.02 - Related Sections

Section 02050: Site Preparation

Section 02111: Erosion Control

Section 02325: Dredging and Dewatering

Section 02940: Site Restoration

02300.03 - References

- A. State of Wisconsin, Department of Transportation, Standard Specifications for Highway and Structure Construction, current edition
- B. Wisconsin Department of Natural Resources Storm Water Construction and Post- Construction Technical Standards (WDNR Technical Standards).

02300.04 - Performance Requirements

- A. Excavation and grading shall be done in accordance with OSHA Construction Safety and Health Standards. Slopes of constructed elements shall be constructed such that they remain stable throughout the duration of their use.
- B. Excavation and grading shall be done without damage to adjacent property or structures.

02300.05 - Execution

02300.05.1 - Preparation

Erosion Controls and Storm Water: While the Owner is responsible for site wide erosion control, the Contractor is responsible for management and maintenance of surface and storm water, and installation and maintenance of erosion and sediment control measures related to the dewatering pad in accordance with Section 02111 and in conformance with the approved Erosion Control and Water Management Plan.

END OF SECTION

Section 02325: Dredging and Dewatering

Section Includes

- 02325.01 - Description
- 02325.02 - Permits
- 02325.03 - Submittals
- 02325.01 - 02300.05.1 - Daily Dredging Reports
- 02325.05 - Personnel
- 02325.06 - Quality Control And Quality Assurance
- 02325.07 - Project Conditions
- 02325.08 - Preparation
- 02325.09 - Dredging Construction Requirements
- 02325.10 - Dredging Equipment
- 02325.11 - Dredging
- 02325.12 - Debris Removal
- 02325.13 - Water Turbidity
- 02325.14 - Dewatering
- 02325.15 - Dewatering Construction Requirements
- 02325.15.1 - Equipment
- 02325.15.2 - Installation
- 02325.15.3 - Polymer Additives
- 02325.15.4 - Removal
- 02325.15.5 - Inspection and Maintenance
- 02325.15.6 - Acceptance

02325.15.7 - Performance

02325.01 - Description

- A. This Section describes pre-dredge setup, dredging to remove contaminated sediment, and dewatering, in accordance with approved permits and these Contract Documents.
- B. Dredging Contractor shall furnish all labor, materials, equipment, transportation, and supervision necessary to perform dredging at the site, in accordance with these Contract Documents, and to exercise control and abatement of pollution resulting, or likely to result from dredging operations.
- C. The Contract Drawings depict a flat bottom trapezoidal channel to be dredged down the center of the Canal to a maximum target design elevation of 777 feet North American Vertical Datum of 1988 (NAVD88) with an allowable 0.5 foot overdredge to elevation 776.5 feet NAV88. The flat bottom is variable in width, correlating to the width of the Canal to remove the maximum practicable amount of contaminated sediment. Channel sides shall be sloped no steeper than 2H:1V and shall daylight to existing grade with a 10-foot offset from the existing walls.

02325.02 - Permits

Contractor shall comply with all permit conditions and requirements related to this Work (Appendix D).

02325.03 - Submittals

- A. In accordance with Section 01300: Submittals.
- B. Dredging and Dewatering Plan
 - 1) Dredging Contractor shall submit a Dredging and Dewatering Plan within 10 days of notice of award to the Engineer and Department including, but not limited to, the elements below. Dredging Contractor shall choose the dredging means and methods – hydraulic or mechanical, as well as the dewatering means and methods – passive or active. Mechanical dredging/excavation may only be performed “in the wet” from the canal. Provide detailed narrative describing basis of dredging and dewatering methods proposed to achieve project requirements in a cost-effective manner given site conditions:
 - a. All planned dredging and dewatering equipment (e.g., hydraulic dredge type, manufacturer, and pump size; mechanical backhoe or crane size/capacity and manufacturer; mechanical bucket type and capacity; number of geotubes, dimensions, capacity, and manufacturer; etc.)
 - b. Methods for placing equipment within the canal (access).
 - c. Dredging process steps, including means and methods of moving sediment from the Canal to upland staging and dewatering area(s).
 - d. Dredging production rates.
 - e. Sequence of Canal dredging operations.
 - f. Procedure of debris removal.
 - g. Methods for achieving dredging depth and tolerance quality control.
 - h. Method of Dredging Contractor QC bathymetry surveys.
 - i. Values assumed for in-situ density and percent solids of sediment to be dredged.
 - j. Means and methods to dewater sediment removed from the Canal.

- k. Area/size of dewatering pad, including liner system to prevent contact of sediment with underlying soil and to control and capture sediment contact water for treatment.
- l. Dewatering production rates and any polymers and dosage rates.
- m. Sediment load out process and equipment.
- n. Number of Dredging Contractor personnel including equipment operators, their specific roles and responsibilities, and qualifications to perform the work. Provide resumes of key staff.
- o. Procedures to protect existing Canal, bike path improvements and nearby structures.
- p. Method of cleaning equipment at project completion.
- q. Other information as needed to fully explain dredging and sediment dewatering means and methods.
- r. Method to maintain the water level within the project area required to facilitate the Work.
- s. The name and location of all sources that will be used to obtain the materials specified in this Section.

02325.04 - Daily Dredging Reports

- 1. Dredging Contractor shall submit daily reports to the Engineer addressing for each day the progress of work. The report shall be submitted no later than 11:00 a.m. of the next calendar day following the reported day.
- 2. Daily Work Report of Dredging Activity:
 - a. day and date;
 - b. project name;
 - c. weather conditions;
 - d. location/area of dredging (e.g., station-to-station);
 - e. crew size and hours worked;
 - f. approximate volume and character of materials dredged (including debris), particularly any changes in sediment characteristics and/or debris encountered;
 - g. quality control depth soundings taken;
 - h. accidents, spills, and mishaps, etc. and actions taken to contain and correct incident; and
 - i. name of individual making report.
 - j. dredge slurry pipeline status, if applicable

02325.05 - Personnel

Provide competent personnel to perform the work. Personnel shall be trained and have prior experience using all of the equipment, meeting environmental requirements, and achieving dredging tolerance limits.

02325.06 - Quality Control And Quality Assurance

- A. Comply with conditions and substantive requirements of all applicable permits and permit requirements: Corps of Engineers 404 Permit and State of Wisconsin Chapter 30 Permit (Appendix D).

- B. Dredging equipment shall be equipped with real-time kinematic global positioning system (RTK GPS) equipment that continuously measures and records the horizontal and vertical position of the bucket or cutterhead in accordance with the following tolerance requirements:
1. Horizontal Tolerance: 0.5 feet
 2. Vertical Tolerance: 0.5 feet
 3. Site control points shall be established and be accurate within 0.05 feet horizontally and 0.1 feet vertically as determined by GPS equipment using static observations or by kinematic techniques.
 4. Site control points shall be clear of obstacles that may cause GPS multi-path problems or radio signal interference such as fences, buildings, and radio masts to the extent possible.
 5. Horizontal positions shall be referenced to Columbia County Coordinate System.
 6. Elevations shall be referenced to the North American Vertical Datum of 1988 (NAVD88).
 7. Dredging Contractor shall demonstrate compliance with specified tolerance intervals as directed by Owner/Engineer, by calibration with a site benchmark or control point.
- C. As an alternative to RTK equipped dredging equipment, the Dredging Contractor may propose alternative methods of dredge cutter head quality control for approval by Engineer. Dredging Contractor must indicate and demonstrate the horizontal and vertical accuracy of alternative methods and use the same datum and coordinate system listed in paragraph B above.
- D. Dredging Contractor QC Bathymetric Surveys
1. Inform Engineer when target elevations have been reached and the sub-area and/or dredge management units are ready for Owner's QA bathymetric survey.
 2. Perform QC bathymetric surveys as necessary to track progress in achieving target elevations.
- E. Owner QA Bathymetric Surveys
1. Owner will perform a pre-dredging bathymetric survey and post-dredging bathymetric survey(s) to serve as the basis for the quantity of material removed for payment. The QA survey shall also be used verify that dredging to target elevations has been met, unless the Engineer or Owner's representative accepts the Contracts QC survey(s).
 2. A single-beam echo sounder sonar system will be used, with surveying transects located approximately 5 feet apart to create an approximate 5 foot x 5 foot grid. In the event that the shallow water depths If there are portions of the project area that are not accessible for the marine survey equipment to access (i.e., water is too shallow), bathymetric measurements may be collected using conventional survey methods (e.g., a survey rod with a flat end (versus point). Each bathymetric survey shall be completed with the same procedures and equipment to ensure consistency of results.
- F. Sediment Post Dredge Sampling
- Once the specifications for the target elevations have been confirmed, the Owner will collect post dredge sediment samples for analysis. Dredging Contractor shall provide access for Owner to collect sediment samples, if necessary. The Owner may request to use the Dredging Contractor's marine equipment to collect said samples. Note that the Owner will use the post dredge samples for its own purposes, but results will not be used to direct additional dredging.

02325.07 - Project Conditions

- A. Characteristics of Sediment Material to be Removed

1. Sediment material consists primarily of dark brown to black silty sand containing variable amounts of organics, clay, and gravel, and with a Unified Soil Classification Symbol (USCS) of SM (see Appendix A). Material under the sediment is anticipated to be native brown sand with fewer fines, and be visually distinct from the overlying sediment.
2. Sediment physical characteristics:
 - a. A small number of samples were analyzed and variations in the physical characteristics of the sediment will probably occur.
 - b. Dredging Contractor shall make independent interpretations and conclusions of the extent and variability of physical characteristics.
3. During poling and core sampling, the sediment was observed to contain a nominal amount of debris. However, given the urban setting and the City of Portage's experience in dredging the Canal segment west of Dewitt Street in the recent past, the Dredging Contractor should anticipate debris while dredging.

B. Debris

Debris includes, but is not limited to, material such as posts, stumps, logs, wood, tires, strapping, cable, chain, rocks, glass bottles, beverage cans, etc., that are larger than 4 inches in any one dimension.

02325.08 - Preparation

- A. Provide controls as necessary to protect structures from damage during the dredging operation.
- B. Provide best management practices necessary to control the re-suspension of sediments in the Canal.
- C. Environmental Protection:
 1. Wherever possible, use biodegradable hydraulic oil.
 2. Provide necessary controls to comply with Federal, State and local requirements concerning air, noise and water pollution.
 3. Protect against discharge of any oils, fuels, bitumens, garbage, trash, sewage, or other materials which may be harmful to fish, wildlife, or vegetation into the waters of the Canal. Should the Dredging Contractor spill, dump, lose, throw off the dredge or sink any material, plant, machinery or appliance, which in the opinion of the Engineer or Department, may be dangerous to the environment or hazardous to navigation, the Dredging Contractor shall promptly recover or correct any fuel or oil leaks in equipment at Dredging Contractor expense.
- D. Provide and properly place water safety markers or other devices as to meet all local, State and Federal requirements.

02325.09 - Dredging Construction Requirements

- A. Generally, contractors shall not place any vehicles, equipment, or stockpiles of soil exerting a ground pressure in excess of 30 pounds per square feet (psf) within 25 feet of existing Canal revetment walls. In certain circumstances, with Engineer written approval based on wall loading analysis, contractors may be allowed to exceed this criteria.
- B. Contaminated sediments and debris may only be located within the Exclusion Zone following construction of a containment system consisting of a bottom liner and perimeter dikes, as approved by Engineer.

02325.10 - Dredging Equipment and Method

- A. Hydraulic Dredging: Hydraulic dredging was selected as the base bid for this project based on the need to protect the existing revetment walls, timing of the overall County project, and corresponding access on top of the walls. The dredging can be performed by a suitably-sized, cutterhead or horizontal auger-type, amphibious hydraulic dredge, or an approved alternate. The dredge discharge pipe will have a check valve to prevent blow back of the pipe contents and recontamination of the dredged Canal bottom. Provide hydraulic dredging equipment or other techniques capable of removing sediments from the dredge area working from the water.
1. Provide sufficiently safe and efficient equipment to meet the requirements of the Work.
 2. Maintain equipment in satisfactory operating condition.
 3. Make equipment available for inspection by Engineer or Owner's Representative at any time.
- B. Dredge Slurry Pipeline (as needed)
1. Provide and maintain pipelines for hydraulic dredging in good condition free from leaks at all times during use.
 - a. Suspend dredging operation immediately upon any pipeline leak or break.
 - b. Repair breaks or leaks immediately upon identification.
 - c. Record pipeline breaks on daily reports.
 - d. Remove any material spilled during a pipeline break.
 2. Mark and protect pipelines.
- C. Mechanical Dredging Option: The Owner will accept a water based mechanical dredging option in the bid package as an alternative bid item. The dredging can be performed by wet excavation with a dredge working from the water equipped with an environmental bucket or other approved bucket. Means and methods shall be provided to move dredged sediments to upland staging area for dewatering.
- D. Dry Excavation: Dry excavation is currently not an option the Owner will consider because of wall stability concerns based on the previous geotechnical analysis.

02325.11 - Dredging

A. Dredging Limits, Target Depth, and Volumes

1. Remove sediments to the target elevation, as shown on Contract Drawings. The target elevation and overdredge allowance result in 2.4 feet and 2.9 feet of sediment removal on average, respectively, from the center of the canal.
2. Remove a total of approximately 1,150 cubic yards of contaminated sediment from Canal between Dewitt Street and Adams Street, as shown on Contract Drawings. This volume includes an estimated 900 cubic yards to the target depths/elevations (neatline) and an additional 250 cubic yards of overdredge allowance.
3. Existing bathymetry (top of sediment) as of the date of survey and dredge target elevations are shown on the attached Drawings. Dredge volumes are estimates only, and payment will be made for actual quantities based on project pre- and post-dredge QA bathymetric surveys. QA survey data (point files) will be provided to Owner's Representative. The Owner's Representative or Engineer will independently generate surfaces and volume take-offs as a check on Dredging Contractor's calculations. Owner results will be used as the

basis for Dredging Contractor pay requests, unless Owner's Representative or Engineer accepts Dredging Contractor's results.

4. Contractor is allowed up to 0.5 foot of dredge overcut beyond the target elevations as shown on the Contract Drawings.
 - a. Areas that have been dredged greater than 0.5 feet beyond the target elevation, shall be the Dredging Contractor's responsibly for costs incurred for dredging, dewatering, stabilization, loading, transport, and disposal at license solid waste disposal facility.

B. Dredging Operations

1. Do not dredge sediments outside the dredge area.
2. Do not dredge within 10 feet of the existing revetment walls.
3. Immediately stop dredging and notify the Engineer in the event that something is encountered which is unanticipated or outside the scope of this specification.
4. The Engineer or Owner's Representative will be present during dredging activities.
5. Unless otherwise directed, dredge from the west (upstream) to the east (downstream) and in sloped areas first. Dredge in a manner that prevents sloughing of contaminated sediments into dredged areas.
6. Preserve stable side slopes and avoid leaving residual sediment above the target elevations in areas where dredging has been performed.
7. Control dredge speed and operations to minimize the re-suspension of sediment into the water column and to minimize the settling out of re-suspended solids in areas previously dredged.
8. Overlap dredge cuts to avoid leaving ridges or windrows of contaminated sediments between adjacent cuts.
9. Establish final side slopes to a maximum steepness of 2H:1V.
10. Control points are marks used as a base from which control for the project is established. Refer to the Contract Drawings for known control points.

C. Dredging Performance

1. Dredging will be considered complete when:
 - a. Post dredge bathymetric survey(s) indicate that target design elevation has been achieved in 95% or more of the work area, as approved by the Owner's Representative or Engineer.
 - b. Those areas that remain above the target design elevation shall be relatively isolated (i.e., non- contiguous). No areas remaining above the target elevation shall exceed the target elevation by greater than 0.3 foot, unless as a result of an unknown obstruction and as approved by the Owner's Representative or Engineer.
 - c. Post dredge samples have been collected.
 - d. Owner's Representative or Engineer approves the Dredging Contractor to proceed with sand placement.

As is necessary, remove debris prior to and/or during dredging. All debris shall be loaded and transported to a licensed landfill approved for special waste. Debris must be adequately dewatered prior to disposal. Earthwork Contractor shall provide truck or container liners, tarps, and/or absorbent material, as needed.

02325.13 - Water Turbidity

- A. Visual turbidity will be monitored by the Owner or Engineer, and numeric turbidity may be measured. Turbidity observations and results will be provided to Dredging Contractor.
- B. Dredging Contractor shall employ best management practices and conduct dredging operations in a manner to prevent releases of excess turbidity outside the work area (i.e., in Canal downstream/east of Adams Street culvert) as well as recontamination of dredged areas within the work area. Best practices can include adding additional stop log(s) to the Adams Street structure and placing a partial height silt curtain in front of the Adams Street Culvert.

02325.14 - Dewatering

- A. Use Dewatering Bags composed of a UV resistant, high tenacity polypropylene. The material shall be inert to biological degradation and resistant to naturally encountered chemicals, alkalis, and acids. Use Dewatering Bags that have a sewn-in sleeve to receive the pump discharge hose. Dewatering Bags shall meet the following minimum requirements;

Property	Test Method	Requirement
Grab Tensile Strength	ASTM D4632	205 lbs
Grab Tensile Elongation	ASTM D4632	50 %
CBR Puncture Strength	ASTM D6241	500 lbs
Trapezoid Tear Strength	ASTM D4533	80 lbs
Apparent Opening Size	ASTM D4751	80 US Sieve
Permittivity	ASTM 4491	1.4 sec-1
Flow Rate	ASTM 4491	95 gal/min/sf
UV Resistance (at 500 hours)	ASTM D4355	70 % strength retained

- B. Provide the Engineer with the following information:

- Manufacturer's name and location.
- Dewatering Bag name, model, and/or serial number.
- Dewatering Bag dimensions.
- Certification that the Dewatering Bag meets the physical and performance criteria of this specification.

02325.15 - Dewatering Construction Requirements

02325.15.1 - Equipment

Ensure that the equipment necessary for the proper installation of the work is on site, in acceptable working condition, and approved by the Engineer as to both type and condition before the start of work. Provide sufficient equipment to enable prosecution of the work in accordance with the project schedule and completion of the work in the specified time.

02325.15.2 - Installation

- A. Install the Dewatering Bag on a mild slope (up to a 0.5% grade) to ensure incoming water flows downhill through the Dewatering Bag. Secure the hose to bag connection using a heavy duty pipe clamp, rope, or other suitable means to prevent leakage. When using a rope to attach the pump hose to the Dewatering Bag, make a minimum of 6 wraps around the hose over a 6-inch width of the bag and fasten with a secure rope knot.
- B. Monitor the Dewatering Bag at all times while the pump is running. While monitoring, ensure the hose to bag connection is secure with only minimal leaking. Use the following guidelines and any specific guidelines provided by the manufacturer for Dewatering Bag installations.
 - Transport and place Dewatering Bags with care to prevent ripping or tearing the fabric.
 - Avoid installing on more than a 0.5% grade as the bag may roll, causing failure.
 - Insert the discharge hose a minimum of 1-foot inside the Dewatering Bag.
 - Do not insert more than one discharge hose into the Dewatering Bag.
 - Avoid use of excessive flow rates or overfilling the Dewatering Bag. This may cause the bag to rupture or cause failure to the hose to bag connection.

02325.15.3 - Polymer Additives

- A. Based on bench test results, a dual product application of Watersolve LLC of Solve 426 (33-ppm, 0.7-lbs/dry) followed by Solve 161 (67-ppm, 1.4-lbs/dry ton) or equivalent is recommended to be injected into the hydraulically dredged material prior to placement in the Dewatering Bags. Alternatively, a single product application of Solve 137 (133-ppm, 2.7-lbs/dry ton) or equivalent may be used. The dose may vary based on the solids concentration in the pumped line. If the dual application is used, Solve 426 should be fed neat prior to Solve 161. Solve 161 and Solve 137 are required to be made-down at 0.5-percent with a polymer make-down unit or aged in batch/feed tanks prior to injection into the residual line. Bench scale test results are included in Appendix D.
- B. Moderate mixing energy is required between the polymer introduction points and the Dewatering Bag (e.g., two to three bends in the discharge line and/or inline static mixers).

02325.15.4 - Removal

Disposal of the Dewatering Bag will be completed by others.

02325.15.5 - Inspection and Maintenance

Follow all manufacturer recommendations for inspection and maintenance guidelines. Dewatering Bags are full when they no longer efficiently filter sediment or pass water at a reasonable rate. Incoming flow rates will vary depending on the size of the Dewatering Bag, the type and amount of sediment discharged into the Dewatering Bag, the permeability of the underlying aggregate, and the degree of slope on which the bag lies.

02325.15.6 - Acceptance

Obtain Engineer acceptance and approval of Dewatering Bag installations.

02325.15.7 - Performance

Based on bench scale dewatering performance testing, sediment needs to achieve 59% solids content to pass a paint filter test. Note that bench scale testing achieved 54% solids in 4-days and was projected to achieve 59% solids in 12 days. Dewatered sediment shall pass a paint filter test as determined by SW-846 Method 9095B, within 14-days of completion of dredging, as determined by Dredging Contractor testing. If the dewatered sediment does not pass a paint filter test within 14-

days, the Dredging Contractor shall be responsible for the costs associated with solidification amendments as discussed in Section 02610: Stabilization, Transportation, and Disposal of Dredge Material, as well as the associated transportation and tipping fee costs for the weight of the amendments.

END OF SECTION

Section 02350: Sand Placement

Section Includes

- 02350.01 - Description
- 02350.02 - References
- 02350.03 - Equipment
- 02350.04 - Materials
- 02350.06 - Submittals
- 02350.07 - Personnel
- 02350.08 - Quality Control and Quality Assurance
- 02350.09 - Performance Requirements

02350.01 - Description

- A. This Section describes setup, placement of Owner supplied sand to cap entire area of Segment 1 from DeWitt to Adams Street.
- B. Dredging Contractor shall furnish all labor, materials, equipment, transportation, and supervision necessary to perform sand capping at the site, in accordance with these Contract Documents
- C. Following achievement of the target design elevation specifications and the Owner completing post-dredge sampling, a 6-inch sand layer will be placed with a spreader type system or other Engineer approved means for a uniform sand cap. The thickness of the sand will be measured and verified with core tubes or measurement plates. Following placement of the sand layer and achievement of project specifications, the Owner's surveyor will perform a post sand placement survey. The post sand placement survey will be the final survey that documents the final conditions of the bathymetry.

02350.02 - References

American Society for Testing and Materials (ASTM) C136 Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates

ASTM D2216 Standard Test Method for Laboratory Determination of Water (Moisture) Content in Soil or Rock by Mass

ASTM D2487 Standard Test Methods for Classification of Soils for Engineering Purposes

02350.03 - Equipment

- A. Provide material transfer equipment, and associated equipment needed to load, transport, and spread and/or place materials at designated locations.
- B. Provide equipment and devices for monitoring/surveying of material placement thicknesses.
- C. Provide silt curtains or turbidity barriers for turbidity control if necessary.

02350.04 - Materials

Sand: The Owner will provide the sand source for sand. The Owner will also transport the sand to the site. The temporary stockpile location for the sand is shown on Sheet C-20. Results from

gradation tests performed and particle size distribution of the sand as well as chemical analysis of the sand is attached in Appendix E.

02350.05 - Permits

Dredging Contractor shall comply with all permit conditions and requirements related to this Work (Appendix D).

02350.06 - Submittals

A. In accordance with Section 01300: Submittals.

B. Capping Plan

1. Dredging Contractor shall submit a Capping Plan within 10 working days of notice of award to the Engineer or Owner's Representative including, but not limited to, the elements below. Dredging Contractor shall choose the placement means and methods. Provide detailed narrative describing basis of placement method proposed to achieve project requirements in a cost-effective manner given site conditions:
 - a. All planned placement equipment (e.g., sand conveyance system, broadcast or other type spreader).
 - b. Capping process steps, including means and methods of moving sand from stockpile to Canal and placement process.
 - c. Capping production rates.
 - d. Methods for achieving cap thickness and tolerance quality control.
 - e. Number of Dredging Contractor personnel including equipment operators, their specific roles and responsibilities, and qualifications to perform the work.
 - f. Other information as needed to fully explain movement and placement of sand cap.
 - g. The quantity of sand the Owner needs to provide.

C. Daily Capping Reports

1. Dredging Contractor shall submit daily reports to the Engineer addressing for each day the progress of work. The report shall be submitted no later than 11:00 a.m. of the next calendar day following the reported day.
2. Daily Work Report of Capping Activity:
 - a. day and date;
 - b. project name;
 - c. weather conditions;
 - d. location/area of dredging (e.g., station-to-station);
 - e. hours worked;
 - f. approximate volume of material placed;
 - g. quality control depth soundings taken;
 - h. accidents, spills, and mishaps, etc. and actions taken to contain and correct incident; and
 - i. name of individual making report.

02350.07 - Personnel

Provide competent personnel to perform the work. Personnel shall be trained and have prior experience using all of the equipment, meeting environmental requirements, and achieving capping tolerance limits.

02350.08 - Quality Control and Quality Assurance

A. Dredging Contractor QC

1. Comply with conditions and substantive requirements of all applicable permits and permit requirements: Corps of Engineers 404 Permit and State of Wisconsin Chapter 30 Permit (Appendix D).
2. Monitor the volume of material placed based on volumes measured by the sand transfer mechanisms to compare with pre- and post-cap survey volumes.
3. Dredging Contractor shall measure verify the thickness of the placed sand layer at a rate of 1 core for every 2,500 sf of material placed. Alternative methods may be used, as approved by Engineer.

B. QA Surveys

1. The Owner will perform post capping depth measurements to document as-built elevations and as a second line of evidence for sand placement quantities. Engineer may audit Dredging Contractor QC survey data for use in lieu of a QA survey.
2. Coordinate and provide access to the Canal for the Owner or Engineer to perform post-capping bathymetric survey and/or depth measurements.

02350.09 - Performance Requirements

A. Place sand to achieve a minimum of a 6-inch thick uniform and unmixed sand layer as verified by QC sampling.

1. The mixed zone (where > 50% of the material is sand layer material, mixed into pre-existing sediment) will not be considered as additional thickness of the placed sand layer.

B. The maximum allowable thickness (includes the mixed zone) and varies depending on the area of placement:

1. Undredged, shallow areas adjacent to the existing walls = 10-inches
2. 2:1 Slopes, from midpoint to top of slope = 11-inches
3. 2:1 Slopes, from midpoint to bottom of slope and flat bottom area = 13-inches

C. Over Placement Penalty: Dredging Contractor shall pay for the cost of material placed beyond the maximum thickness described above at a unit price of \$10/ton. Measurement of thickness will be based on QC sampling. Quantity of material will be determined by multiplying thickness of sand layer beyond the maximum allowable thickness by the appropriate area. This volume will be converted to tonnage based on a density of 1.7 tons per cubic yard.

D. A uniform sand layer shall be achieved by:

- 1) Placing sand gradually, in relatively uniform and thin lifts, over a minimum 100 ft² area at any given time, unless otherwise approved by the Engineer.
- 2) The sand placement speed shall be controlled such that mixing of sand and the underlying sediment shall be limited.
- 3) Sand particles shall be thinly spread out over the top of the water surface and fall through the water column to reduce the settling velocity.

- E. Appropriate construction techniques will be required to ensure proper cap placement, thereby limiting the potential for slope stability failures from cap construction. This will involve the placement of materials in a "bottom up" fashion on slopes, whereby materials are first placed at the toe of a slope and construction proceeds towards the top of slope. A toe berm can be used to provide an initial platform for the capped materials to be placed without sloughing. In this way, cap materials will be continually placed against a firm toe support and are not allowed to slump towards the base.
- F. Sand payment quantities will be based on the cubic yards of sand cap placed. The estimated volume of sand is 600 cubic yards based on a uniform layer 6 inches thick. These are estimates only; Dredging Contractor is responsible for informing the Owner the quantity of sand necessary to be delivered to the site to meet Quality Control Requirements.
- G. Capping shall generally be conducted in an upstream-to- downstream direction (Starting at DeWitt Street towards Adams Street).
- H. Rip rap placement will be required at the storm sewer outlet adjacent to Dewitt Street into the Canal. The existing rip rap will be tied in and placed to minimize future erosion of the sand cap layer. It is estimated that 10 tons of rip rap material will be required.

END OF SECTION

Section 02610: Stabilization, Transportation, and Disposal of Dredge Material

Section Includes

- 02610.01 - Description
- 02610.02 - Equipment
- 02610.03 - Submittals
- 02610.04 - Products
- 02610.05 - Solidification Requirements
- 02610.06 - Loading, Staging, and Haul Routes
- 02610.07 - Transportation and Disposal
- 02610.08 - Spills

02610.01 - Description

- A. This Section describes solidification, loading, transportation, and disposal of dredge material. This section does not include dewatering, which is included in Section 02325: Dredging and Dewatering.
- B. Work within section 2610 to be performed by the current on site earthwork contractor

02610.02 - Equipment

- A. Provide material transfer equipment, and associated equipment needed to mix, load, transport, and dispose of dredge material at a licensed solid waste disposal facility.

02610.03 - Submittals

- A. In accordance with Section 01300: Submittals.
- B. Sediment Stabilization, Transportation, and Disposal Plan
 - 1. Earthwork Contractor shall submit a Sediment Stabilization, Transportation, and Disposal Plan within 15 working days of receiving this document including, but not limited to, the elements below. Provide detailed narrative describing the basis of stabilization, transportation, and disposal proposed to achieve project requirements in a cost-effective manner given site conditions:

- a. All planned mixing, loading, and hauling equipment.
- b. Means and methods to stabilize sediment removed from the Canal, as necessary such that the dredge material is of sufficient integrity to be accepted by the licensed disposal facility. Include the planned location of stabilization activities, additives to be used (product, mix percentage, and if the percentage is on a wet or dry basis).
- c. A layout for loading and staging of trucks.
- d. Number of Contractor personnel including equipment operators, their specific roles and responsibilities, and qualifications to perform the work.
- e. Other information as needed to fully explain the solidification, handling, transportation, and disposal of the dredge material.
- f. The name and location of all sources that will be used to obtain the products specified in this Section.

02610.04 - Products

02610.04.1 - Spill Response Materials

- A. Provide appropriate spill response materials including, but not limited to the following: containers, adsorbents, adsorbent booms and pads, shovels, and personal protective equipment. Spill response materials shall be available at all times when contaminated materials/wastes are being handled or transported. Spill response materials shall be compatible with the type of materials and contaminants being handled.

02610.04.2 - Solidification Amendments

- A. Fly Ash- WPS will provide fly ash from their Weston 3 Plant to the site at no cost to the project. Contact Dawn DeJardin at 930-433-5787 for information. A different source of fly ash would require approval by the Department.
- B. Sawdust – Contractor to find source.
- C. Calciment® - Contractor to find source.
- D. Ground corn cobs – Contractor to find source.
- E. Other products require approval by ENGINEER.

02610.05 - Solidification Requirements

- A. Contractor shall dry or solidify, using the amendments listed in 02610.04.2 - , the dredge material, as necessary, to be accepted by a licensed solid waste disposal facility.
- B. Contractor shall demonstrate that the dredge material will pass the paint filter test (SW-846 Method 9095B). Engineer or Department may perform independent sampling and testing to confirm Contractor supplied results.
- C. Contractor shall demonstrate that the dredge material can be stockpiled, under its own weight, once received at the landfill.
- D. Dredge material must be adequately dewatered prior to transportation for disposal per WDOT requirements. Contractor shall provide truck bed liners, tarps, and/or absorbent material, as needed

02610.06 - Loading, Staging, and Haul Routes

- A. Loading of trucks shall be performed over a spill-apron with care taken to control the speed of loading such that spills are prevented.

- B. Trucks shall not be overloaded and obey all weight restrictions for the haul route.
- C. Loading and staging of trucks shall follow appropriate procedures for site control (exclusion, contaminate reduction, and support zones). Trucks that pass through the exclusion zone or contaminated areas shall require decontamination prior to leaving the site.
 - 1. Temporary staging of trucks on City of Portage streets may be allowed by the CITY with prior written request. No trucks are allowed to stage on Dewitt Street (U.S. Highway 51) or Wisconsin Street (State Trunk Highway 16) under any circumstances.
- D. Haul routes shall be as shown on the attached map, unless OWNER approves of alternate haul routes in writing.
- E. Contractor shall transport sediment to the designated disposal facility indicated in 02610.07 - . Contractor shall provide truck bed liners, tarps, and/or absorbent material, as needed.

02610.07 - Transportation and Disposal

- A. Furnish labor, materials, and equipment necessary to store, transport, and dispose of contaminated material in accordance with State, and local requirements. Prepare and maintain waste shipment records and manifests required by the State transportation department.
- B. Transportation
 - 1. Transport dredge material in vehicles designed to carry PCB contaminated materials in accordance with State requirements. In addition to those requirements:
 - a. Inspect and document vehicles and containers for proper operation and covering. Repair or replace damaged containers.
 - b. Inspect vehicles and containers for proper markings, manifest documents, and other requirements for waste shipment.
 - c. Perform and document decontamination procedures prior to leaving the worksite and again before leaving the disposal site.
- C. Disposal Location
 - A. Unless otherwise approved in writing by the ENGINEER or OWNER, dredge materials shall be taken to:

Madison Prairie Landfill
6002 Nelson Rd.
Sun Prairie, WI 53590
- D. Shipping Documentation
 - A. Before transporting the waste, OWNER's REPRESENTATIVE will sign and date the manifests. CONTRACTOR shall return a signed copy to the OWNER's REPRESENTATIVE that documents acceptance to the disposal facility, before leaving the job site. Ensure that the manifest accompanies the waste at all times. Within 35 days from shipment date, the transporter shall provide a copy of the manifest signed and dated by the disposer.
- E. Certification of Disposal
 - A. Submit certificate of disposal to the OWNER within 30 calendar days of the date that the disposal of the contaminated sediment and debris waste identified on the manifest was completed. Include:
 - a. The identity of the disposal facility, by name, address, and license number.

- b. The identity of the waste affected by the Certificate of Disposal including reference to the manifest number for the shipment.
- c. A statement certifying the fact of disposal of the identified waste, including the date(s) of disposal, and identifying the disposal process used.

02610.08 - Spills

- A. In the event of a spill or release of a hazardous substance, notify the OWNER immediately. Immediate containment actions shall be taken to minimize the effect of any spill or leak. Cleanup shall be in accordance with applicable federal, state, and local regulations. As directed by the OWNER, additional sampling and testing shall be performed to verify spoils have been cleaned up. Spill cleanup and testing shall be done at no additional cost to the OWNER.

END OF SECTION

Section 02940: Site Restoration

Section Includes

- 2940.01 - Related Work
- 2940.02 - References
- 2940.03 - General Site Restoration
- 2940.04 - Final Erosion Controls and Final Cleanup

2940.01 - Related Work

- Section 02050: Site Preparation
- Section 02111: Erosion Control
- Section 02241: Water Management
- Section 02325: Dredging and Dewatering

2940.02 - References

State of Wisconsin, Department of Transportation, Standard Specifications for Highway and Structure Construction (SSHSC), current edition.

2940.03 - General Site Restoration

- A. Restore pavement, topsoil, landscaping, and utilities which are disturbed during the performance of the Work to preconstruction condition.
- B. Earthwork Contractor to remove the tracking pad(s), dewatering pad, access road, and other soil or gravel material used during construction activities, as necessary. Depending on County construction, these may remain in place.
- C. Earthwork Contractor shall remove and transport dewatering pad liner components, and other project wastes (e.g., silt fence, turbidity curtain, etc.), as necessary to licensed waste disposal facility approved by the Department as construction debris.

2940.04 - Final Erosion Controls and Final Cleanup

- A. Trash, rubbish or other debris generated by Contractor shall be removed and transported off-site for disposal.
- B. Any temporary chain link security fence installed by Contractor shall be removed.
- C. Temporary erosion and storm water control measures installed by contractor shall be removed.
- D. The Contractor shall correct, at no additional expense to the Owner, any damage to buildings, telephone or other cables, overhead and underground utilities or their structures as a result of his construction, whether or not the item is shown on the Contract Drawings.

- E. All Contractor equipment and materials shall be removed from the site.

END OF SECTION

FIGURES

APPENDIX A

APPENDIX B

APPENDIX C

APPENDIX D

APPENDIX E