

**PROJECT MANUAL**

**FOR**

**CRAVATH & TRIPP LAKE DREDGING  
CITY OF WHITEWATER  
WALWORTH COUNTY, WI**

**OCTOBER 2021**



10/04/2021

**AYRES**

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Ayres Project No. 26-1199.00

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**CRAVATH & TRIPP LAKE DREDGING  
CITY OF WHITEWATER  
WALWORTH COUNTY, WISCONSIN**

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# **Bidding Requirements**

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## ADVERTISEMENT FOR BIDS

**PROJECT:** Cravath & Tripp Lake Dredging  
City of Whitewater  
Walworth County, Wisconsin

**BID DEADLINE:** November 11, 2021  
3:00 pm, Local Time

### NOTICE

Sealed bids for the above project will be received by the City of Whitewater until the Bid Deadline. Bids shall be submitted in electronic format through Quest vBid.

The bid opening for this project will be conducted using Microsoft Teams. Bidders and other interested parties may call the teleconference number: 715.318.5006, conference ID: 676900553# on Thursday, November 11, 2021 at 3:00 pm, Local Time. The teleconference line will be open 15 minutes prior to the scheduled meeting time. Bids will be opened and read aloud. No in-person attendance at the bid opening will be possible.

In general, the project consists of mechanically dredging approximately 89,500 cubic yards of sediment from the beds of Cravath and Tripp lakes and disposing of those sediments at specified nearby disposal sites.

A pre-bid meeting to examine the project site will be held on Tuesday, October 26th at 11:00 a.m. Meet at Cravath Lakefront Park, 341 S Fremont Street, Whitewater, WI 53190.

A single prime bid will be received for the work.

### BID SECURITY

Bids must be accompanied by bid security in the amount of 10% of the maximum bid amount. Bid and bid security may not be withdrawn for a period of 45 days after the Bid Deadline.

Bid security will be retained if the Bidder is awarded the Work and fails to execute the Agreement and furnish 100% Performance and Payment Bonds.

### QUALIFICATIONS

Bidders shall prequalify by submitting a Bidder's Proof of Responsibility to the Owner no later than five days prior to the Bid Deadline in accordance with Wis. Stat. 66.0901(2). Bids from non-qualified bidders will not be opened.

### RIGHTS RESERVED

Owner reserves the right to reject any or all bids and to waive informalities in any bid.

### BIDDING DOCUMENTS

Bidding documents may be examined at Builders Exchanges in Appleton, Eau Claire, La Crosse, and Wausau, Wisconsin; and Minneapolis and Rochester, Minnesota.

Bidding documents may be obtained in PDF electronic format by download from the Quest Construction Data Network website, accessible via [www.AyresAssociates.com](http://www.AyresAssociates.com) by clicking on the "Bidding" link, for a non-refundable fee of \$45.00.

Published by authority of: City of Whitewater

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## **INSTRUCTIONS TO BIDDERS**

### **1. SUMMARY**

- A. Prequalification is required prior to submitting a bid. Refer to Bidder's Proof of Responsibility form.
- B. After receiving prequalification from Owner, the following documents shall be completed and submitted using Quest vBid:
  - 1. Bid Form (uploaded in PDF format).
  - 2. Quest vBid "Bid Worksheet" (completed online).
  - 3. Bid Security (uploaded in PDF format).
- C. Submitted bids from non-prequalified bidders will not be opened.

### **2. PREPARATION OF BIDS**

- A. Electronic Format Bids Through Quest vBid:
  - 1. To obtain bidding documents from QuestCDN and participate in electronic bidding through Quest vBid, bidder must have a QuestCDN account.
  - 2. From the QuestCDN project advertisement page, click on the "On-Line Bid" button to go to Quest vBid.
  - 3. A detailed description of the required steps to submit an online bid can be found in Appendix B of this Project Manual.
- B. Bids may be rejected for the following reasons: alterations or additions to any form, alternates not specified, incomplete bids, unbalanced prices, and irregularities of any kind. The term "unbalanced prices" shall mean the use of one or more unit prices that do not reflect the reasonable actual costs of labor, equipment, materials, profit, overhead costs, and indirect costs of the bidder for the item(s).

### **3. WITHDRAWAL OR MODIFICATION OF BID**

- A. Withdrawal of Bid: A bid may be withdrawn at any time prior to the Bid Deadline by clicking the "Unsubmit Bid" button at Quest vBid.
- B. Modification of Bid: If a bidder wishes to modify its bid prior to the Bid Deadline, bidder must withdraw its initial bid in the manner specified above and submit a new bid prior to the Bid Deadline.
- C. After the Bid Deadline, a bid may not be withdrawn or modified during the bid holding period specified in the Advertisement for Bids.

### **4. BID SECURITY**

- A. Form of Bid Security: Bid shall be accompanied by a scanned PDF copy of a bid bond. Upon request after the Bid Deadline, the apparent low bidder shall submit the original signed copy of the bid bond to Owner.
- B. Bid security shall be in the amount specified in the Advertisement for Bids made payable to Owner as a guarantee that the bidder will enter into a contract and furnish bonds. Bid bonds shall be executed by the bidder and by a surety corporation licensed to transact business in the state where the project is located. Bidders shall require Attorneys-in-fact who execute bid bonds to affix thereto a certified and current copy of their power of attorney.
- C. Bid security of the three lowest bidders will be released when the contract has been executed or, if no award has been made within the specified bid holding period, upon demand of the bidder at any time thereafter so long as bidder has not been notified of acceptance of its bid. All other bid securities will be released within 10 days after the opening of bids.

## **5. LIQUIDATED DAMAGES FOR FAILURE TO ENTER INTO CONTRACT**

A. The successful bidder, upon failure or refusal to execute and deliver the contract and bonds required within 10 days after receiving Notice of Award, shall forfeit the bid security to Owner as liquidated damages for such failure or refusal.

## **6. QUALIFICATIONS OF BIDDER**

A. Bidders shall formally prequalify with the Owner by filing a Bidder's Proof of Responsibility form. Bidder's Proof of Responsibility form according to Wis. Stat. 66.0901(2) shall be filed with the Owner no later than five days before the Bid Deadline.

## **7. ADDENDA AND INTERPRETATIONS**

A. No binding interpretation of the meaning or intent of the drawings, specifications, or other bidding documents will be made to any bidder orally. Requests for such interpretation shall be made to Ayres in writing. Requests received less than 7 days prior to the Bid Deadline may not be answered. Interpretations or clarifications considered necessary by A/E in response to such requests will be issued by addenda via QuestCDN.com to all parties recorded as having downloaded the bidding documents. All addenda so issued shall become part of the bidding documents and shall be acknowledged with the bid. Failure of any bidder to receive any such addendum or interpretation shall not relieve such bidder from any obligation under this bid as submitted.

B. Contact Adam Schneider at [SchneiderA@AyresAssociates.com](mailto:SchneiderA@AyresAssociates.com) with questions.

## **8. SUBSTITUTIONS (BID PHASE)**

A. Bids shall be based on those products, materials, and equipment specified or described in the bidding documents, or those substitute or "or equal" items approved by addendum.

B. Products, materials, and equipment identified in the bidding documents by reference to a manufacturer's name, catalog number, or model are identified for the purpose of establishing a standard of type, function, appearance, and quality. Bidders desiring to submit bids for manufacturers or products not previously named shall submit a substitution request for approval not later than 10 days prior to the Bid Deadline.

C. Requests for substitution of alternate products or use of "or equal" items shall be submitted with complete references to manufacturer's product identification and specification data indicating composition, guarantee, availability, applicable standards or agency approvals met or exceeded, restrictions imposed on product, and manufacturer's recommended method of application or installation. A substitution or an "or equal" item will be considered acceptable if the product will perform adequately the duties imposed by the general design and, in the opinion of the A/E, is of equal substance, quality, appearance, and function, unless the named item is necessary for interchangeability or if the named product has been demonstrated to be most cost-effective. If approved by addendum, the requested substitution or "or equal" item may be included in the Contract Bid amount.

D. All prices that bidder sets forth in its bid shall be based on the presumption that the Contractor will furnish the materials and equipment specified or described in the Bidding Documents, as supplemented by Addenda. Any assumptions regarding the possibility of post-bid approvals of "or-equal" or substitution requests are made at bidder's sole risk.

## **9. LIST OF SUBCONTRACTORS**

A. Bidders are required to submit, with the Bid Form, a list of subcontractors. Failure to complete this list may be considered cause to recommend rejection of the bid.

B. Bidders are specifically advised that any person, firm or other party to whom it is proposed to award a subcontract under this contract must be acceptable to Owner. If Owner, after due investigation, has reasonable objection to any proposed subcontractor or supplier, Owner may, before the Notice of Award is given, request apparent successful bidder to submit a substitute without an increase in the bid. If

apparent successful bidder declines to make any such substitution, Owner may award the Contract to the next lowest bidder that proposes to use acceptable subcontractors and suppliers. Declining to make requested substitutions will not constitute grounds for forfeiture of the bid security of any bidder.

## **10. AWARD OF CONTRACT**

A. A single prime contract will be awarded on the basis of lowest responsible, responsive total bid amount in the Owner's best interests.

B. The Owner reserves the right to reject any or all bids, including bids which, in the opinion of Owner, are excessive or not sufficient to properly carry out the work. The Owner reserves the right to reject the bid of bidders who have previously failed to properly perform or complete on time contracts of similar nature.

C. Bidder shall, if awarded a contract, deliver executed agreement forms within 10 days of the date of the Notice of Award, including satisfactory bonds which shall remain in effect for one year after acceptance of the work and component parts by the Owner. Said bonds shall be 100% Performance Bond and 100% Labor and Material Payment Bond in the amount of Bid and on forms furnished by Owner.

## **11. SEDIMENT SAMPLING INFORMATION**

A. Sediment sampling and testing have been performed pertaining to this project site. A copy of the sediment sampling report is contained in Appendix A of this Project Manual.

B. The cover page to Appendix A indicates the extent to which information on existing physical conditions can be relied upon for bidding purposes.

## **12. PRE-BID MEETING**

A. A pre-bid meeting will be held at the place and time indicated in the Advertisement for Bids/Invitation to Bid. Representatives of Owner and A/E will be present to discuss the project. Bidders are encouraged to attend and participate in the meeting. A/E will transmit to all bidding document holders of record such Addenda as A/E considers necessary in response to questions arising at the meeting.

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## BID FORM

**PROJECT:** Cravath & Tripp Lake Dredging  
City of Whitewater  
Walworth County, Wisconsin

**BID DEADLINE:** November 11, 2021  
3:00pm, Local Time

To: City of Whitewater

We \_\_\_\_\_ (Name of Bidder) acknowledge that we have received the Contract Documents, prepared by Ayres and dated October 2021, that are listed in the Project Manual Table of Contents and Drawing Sheet Index. We hereby agree to provide all labor, materials, equipment, and services required to complete the work in strict accordance with the Contract Documents for the following stated amount(s).

### BID SCHEDULE

*[Submit bids by completing the online Quest vBid "Bid Worksheet".]*

### BID SECURITY

Accompanying this bid is bid security payable to Owner in the form stipulated in the Instructions to Bidders, which is at least 10% of the maximum bid amount, and will be retained by Owner as liquidated damages if the undersigned fails to execute agreements and furnish bonds (if specified) within 10 days after Notice of Award.

### WITHDRAWAL OF BID

It is agreed that this bid and any required bid security may not be withdrawn for a period of 45 days after the Bid Deadline.

### TIME OF COMPLETION

The undersigned agrees, if awarded the contract, to start work after "Notice to Proceed" and to substantially complete the work on or before June 1, 2022.

Failure to substantially complete the work within the stated time will result in liquidated damages of \$100 per calendar day thereafter until substantial completion.

### BIDDER'S WARRANTY

By the act of submitting a bid for the proposed work, the bidder warrants that:

1. Bidder and its subcontractors have carefully and thoroughly reviewed the Contract Documents and have found them complete, free of ambiguities, and sufficient for the purpose intended; further that,
2. Bidder and all workers, employees, and subcontractors are skilled and experienced in the type of work represented by the Contract Documents; further that,
3. Bid is based solely upon the Contract Documents and properly issued written addenda and not upon any other representation; further that,
4. Bidder has carefully examined the site of the work and from its investigations is satisfied as to the nature and location of work, the character, quality, quantities of materials, and difficulties to be encountered, the kind and extent of equipment and other facilities needed for performance of the work,

the general and local conditions, and other items which may, in any way, affect the work or its performance; and further that,

5. Neither the bidder nor its employees, agents, prospective suppliers, or subcontractors have relied upon any verbal representations allegedly authorized or unauthorized from the Owner, its employees or agents, including architects, engineers, and consultants, in assembling the bid.

**LIST OF SUBCONTRACTORS**

The following is a list of subcontractors whose bids were used in this bid. It is agreed that after submission of this list, no change may be made in subcontractors as listed without submitting change for Owner review in accordance with the conditions of the contract. If there are no subcontractors, state "None."

Subcontract:

Subcontractor:

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**ADDENDA**

The undersigned acknowledges receipt of addenda \_\_\_\_\_ to \_\_\_\_\_ inclusive.

**ORGANIZATION AND AUTHORITY**

The undersigned hereby certifies that the bidder is organized as indicated below and that all statements herein are made on behalf of such bidder.

Business Name \_\_\_\_\_

Business Address \_\_\_\_\_

Telephone Number \_\_\_\_\_

Fax Number \_\_\_\_\_

E-Mail Address \_\_\_\_\_

State Contractor Registration/License No. (if applicable) \_\_\_\_\_

(Complete applicable paragraph 1, 2, 3, or 4.)

- 1. Corporation. Bidder is a corporation organized under the laws of the state of \_\_\_\_\_. Its corporate president is \_\_\_\_\_ and its corporate secretary is \_\_\_\_\_. The \_\_\_\_\_ is authorized to submit bids and sign construction contracts for the bidder by action of the board of directors.
- 2. Limited Liability Corporation. Bidder is a limited liability corporation organized under the laws of the state of \_\_\_\_\_. Its members are \_\_\_\_\_. The \_\_\_\_\_ is authorized to submit bids and sign construction contracts for the bidder.
- 3. Partnership. Bidder is a partnership consisting of partners \_\_\_\_\_ and \_\_\_\_\_.
- 4. Sole Trader. Bidder is an individual doing business as \_\_\_\_\_.

**SWORN STATEMENT**

I, being duly sworn, hereby certify that I have examined and carefully prepared this bid from the Contract Documents and have checked the same in detail before submitting this bid; that I have full authority to make such statements and submit this bid on behalf of the above bidder; and that said statements are true and correct.

Signature \_\_\_\_\_

Name and Title \_\_\_\_\_

(Seal, if bid is by a corporation)

Subscribed and sworn to before me this \_\_\_\_\_

day of \_\_\_\_\_, 20 \_\_\_\_\_

\_\_\_\_\_ Notary Public

\_\_\_\_\_ County, \_\_\_\_\_

My Commission expires \_\_\_\_\_

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**Cravath Tripp Lake Dredging  
City of Whitewater  
Walworth County, Wisconsin  
BID SCHEDULE**

**NAME OF BIDDER:** \_\_\_\_\_

<b>LINE ITEM</b>	<b>ITEM CODE</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>APPROX. QUANTITY</b>	<b>UNIT PRICE</b>	<b>EXTENSION</b>
1	1	Mobilization	LS	1	_____	_____
2	2	Mechanical Dredging	CY	89500	_____	_____
3	3	Hauling Dredge Sediment	LS	1	_____	_____
4	4	Disposal Site Spreading	CY	89500	_____	_____
5	5	Seeding and Restoration	LS	1	_____	_____
6	6	Swamp Mats	LF	8060	_____	_____
<b>TOTAL BID AMOUNT (LINE ITEMS 1 THRU 6)</b>						=====

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## BID BOND (DAMAGES FORM)

<b>Bidder</b> Name: Address <i>(principal place of business)</i> :	<b>Surety</b> Name: Address <i>(principal place of business)</i> :
<b>Owner</b> Name: Address <i>(principal place of business)</i> :	<b>Bid</b> Project <i>(name and location)</i> :  Bid Due Date:
<b>Bond</b> Bond Amount: Date of Bond:	
Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth in this Bid Bond, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.	
Bidder	Surety
<i>(Full formal name of Bidder)</i>	<i>(Full formal name of Surety) (corporate seal)</i>
By: _____ <i>(Signature)</i>	By: _____ <i>(Signature) (Attach Power of Attorney)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
Attest: _____ <i>(Signature)</i>	Attest: _____ <i>(Signature)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
<i>Notes: (1) Note: Addresses are to be used for giving any required notice. (2) Provide execution by any additional parties, such as joint venturers, if necessary.</i>	

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder any difference between the total amount of Bidder's Bid and the total amount of the Bid of the next lowest, responsible Bidder that submitted a responsive Bid, as determined by Owner, for the work required by the Contract Documents, provided that:
  - 1.1. If there is no such next Bidder, and Owner does not abandon the Project, then Bidder and Surety shall pay to Owner the bond amount set forth on the face of this Bond, and
  - 1.2. In no event will Bidder's and Surety's obligation hereunder exceed the bond amount set forth on the face of this Bond.
  - 1.3. Recovery under the terms of this Bond will be Owner's sole and exclusive remedy upon default of Bidder.
2. Default of Bidder occurs upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.
3. This obligation will be null and void if:
  - 3.1. Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or
  - 3.2. All Bids are rejected by Owner, or
  - 3.3. Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions will not in the aggregate exceed 120 days from Bid due date without Surety's written consent.
6. No suit or action will be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety, and in no case later than one year after the Bid due date.
7. Any suit or action under this Bond must be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder must be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Postal Service registered or certified mail, return receipt requested, postage pre-paid, and will be deemed to be effective upon receipt by the party concerned.
9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.
10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond will be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute governs and the remainder of this Bond that is not in conflict therewith continues in full force and effect.
11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.



**BIDDER'S PROOF OF RESPONSIBILITY**

This bidder's proof of responsibility shall be submitted via email to Adam Schneider, PE of Ayres Associates, Inc (SchneiderA@AyresAssociates.com) no later than five days prior to the Bid Deadline. Mr. Schneider will provide acknowledgement of receipt via email. Bidder will then be notified of Owner's prequalification decision or if additional information is required.

On all contracts the bidder shall submit a full and complete statement sworn to before an officer authorized to administer oaths, of financial ability, equipment, experience in the work prescribed, and such other matters as the Owner may require for the protection and welfare of the public and itself.

The object of the questionnaire is not to discourage bidding or make it difficult for qualified bidders to file bids. Neither is it intended to discourage beginning contractors. It is intended to make it possible for the Owner to have exact information on financial ability, equipment, and experience in the field of the contracts at hand in order to reduce the hazards involved in awarding contracts to parties apparently not qualified to perform them. The Owner reserves the right to require additional information before awarding the contract in order to determine qualification for the work.

The contents of this questionnaire will be considered confidential to the extent allowed by applicable laws and regulations.

If the Owner is not satisfied with the sufficiency of the answers to the questionnaire and financial statement, it may reject the bid or disregard the same or require additional information.

**STATEMENT OF BIDDER'S QUALIFICATIONS**

1. Name of Bidder \_\_\_\_\_

2. Bidder's Address \_\_\_\_\_

3. Check One: Corporation \_\_\_ Partnership \_\_\_ Individual \_\_\_

4. For Corporation: Date of incorporation \_\_\_\_\_

Phone \_\_\_\_\_ Fax \_\_\_\_\_

Incorporators and Titles \_\_\_\_\_

5. For Partnership: When formed \_\_\_\_\_

Partners \_\_\_\_\_

6. For Individual: How long in business \_\_\_\_\_

7. Type of Principal Construction \_\_\_\_\_

8. Attach a schedule of all present contracts showing location, work being done, amount of contract, and percentage complete.

9. Contractual Responsibility:

A. Has the firm ever failed in the past ten years to complete, on time, work awarded to it? \_\_\_

1. Date \_\_\_\_\_

2. OWNER \_\_\_\_\_

3. OWNER's mailing address \_\_\_\_\_

4. Full particulars in each instance \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

B. Has any officer or partner of firm ever failed in the past ten years to complete a construction contract on time handled in his/her own name? \_\_\_\_\_

1. Date \_\_\_\_\_

2. Name of officer or partner \_\_\_\_\_

3. OWNER \_\_\_\_\_

4. OWNER's mailing address \_\_\_\_\_

5. Full particulars in each instance \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

C. Has any officer or partner of firm ever been an officer or partner of some other organization during the past ten years that failed to complete a construction project on time? \_\_\_\_\_

1. Date \_\_\_\_\_

2. Name of officer or partner \_\_\_\_\_

3. Name of organization \_\_\_\_\_

4. Organization's mailing address \_\_\_\_\_

5. Full particulars in each instance \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

D. Has the firm asked to be relieved from a bid submitted by it, to a public awarding authority, during the past ten years? \_\_\_\_\_

1. Date \_\_\_\_\_

2. OWNER \_\_\_\_\_

3. OWNER's mailing address \_\_\_\_\_

4. Full particulars in each instance \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

E. Has the firm ever been charged with or convicted of a violation of any wage schedule? \_\_\_\_

1. Date \_\_\_\_\_

2. Claimant \_\_\_\_\_

3. Claimant's mailing address \_\_\_\_\_

4. Full particulars in each instance \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

10. Have any of your contracts resulted in a lawsuit? Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, explain \_\_\_\_\_

11. Has your firm, or any member thereof, while performing work of the nature to which is being bid, ever filed for bankruptcy? Yes \_\_\_\_\_ No \_\_\_\_\_

12. Bonding Responsibility

A. Names and addresses of bonding companies which generally execute bid and surety

bonds: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

B. Names and addresses of all bonding companies other than those listed in A above that have written bid and surety bonds during the last five years: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

C. Has any bonding company ever taken over a contract or made any payments because of firm's failure to carry out a contract? \_\_\_\_\_

If so, state:

1. Date: \_\_\_\_\_

2. Name of bonding company: \_\_\_\_\_

3. Bonding company's address: \_\_\_\_\_

4. Full particulars in each instance: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

13. Name of your principal bank and officer: \_\_\_\_\_

Address and phone number: \_\_\_\_\_

\_\_\_\_\_

14. A complete financial statement shall be attached hereto prepared not more than six months before scheduled opening date of Bids. (Dunn & Bradstreet rating may be used.)

15. A schedule of all major equipment owned by CONTRACTOR and available for the project shall be attached.

16. A statement of the principal personnel and its experience available for the project shall be attached.

17. A statement of the Contracts in excess of \$1,000,000 completed in the last three years, where located, type, and amount of contract shall be attached.

18. A statement describing two mechanical dredging projects completed within the last five years, dates, references, and amount of contract shall be attached.

All questions shall be answered as completely as possible. When a question does not apply, you shall so state. Answers must be typewritten or in ink. Any additional information not included in the questionnaire but of importance to determine your qualification may be presented in letter form attached to the questionnaire and made a part thereof.

Dated this \_\_\_\_\_ day of \_\_\_\_\_ 20 \_\_\_\_\_.

\_\_\_\_\_ being duly sworn

says that he/she is \_\_\_\_\_

of \_\_\_\_\_  
(Name of Organization)

and that the answers to the foregoing questions and all statements contained herein are true and correct.

Signed \_\_\_\_\_

Title \_\_\_\_\_

Subscribed and sworn to before me this \_\_\_\_\_

day of \_\_\_\_\_, 20 \_\_\_\_\_

\_\_\_\_\_ Notary Public

\_\_\_\_\_ County, \_\_\_\_\_

My Commission expires \_\_\_\_\_

Attachments: \_\_\_\_\_ Sheets

Return this form and all attachments electronically via email by 3 pm on Saturday, November 6 to:

Adam Schneider, PE

Senior Project Manager

Ayres Associates Inc

[SchneiderA@AyresAssociates.com](mailto:SchneiderA@AyresAssociates.com)

# **Contracting Requirements**

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# AGREEMENT BETWEEN OWNER AND CONTRACTOR FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)

This Agreement is dated as of the \_\_\_\_\_ day of \_\_\_\_\_ in the year \_\_\_\_\_ by and between \_\_\_\_\_ (“Owner”) and \_\_\_\_\_ (“Contractor”).

Terms used in this Agreement have the meanings stated in the General Conditions and the Supplementary Conditions.

Owner and Contractor hereby agree as follows:

## ARTICLE 1—WORK

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

## ARTICLE 2—THE PROJECT

2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows:

## ARTICLE 3—ENGINEER

3.01 The Owner has retained \_\_\_\_\_ (“Engineer”) to act as Owner’s representative, assume all duties and responsibilities of Engineer, and have the rights and authority assigned to Engineer in the Contract.

3.02 The part of the Project that pertains to the Work has been designed by Engineer.

## ARTICLE 4—CONTRACT TIMES

4.01 *Time is of the Essence*

A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 *Contract Times: Dates*

A. The Work will be substantially complete on or before \_\_\_\_\_, \_\_\_\_\_, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before \_\_\_\_\_, \_\_\_\_\_.

4.02 *Contract Times: Days*

A. The Work will be substantially complete within \_\_\_\_\_ days after the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions, and

completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions within \_\_\_\_\_ days after the date when the Contract Times commence to run.

#### 4.03 *Milestones*

- A. Parts of the Work must be substantially completed on or before the following Milestone(s):
1. Milestone 1:
  2. Milestone 2:

#### 4.04 *Liquidated Damages*

- A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the Contract Times, as duly modified. The parties also recognize the delays, expense, and difficulties involved in proving, in a legal or arbitration proceeding, the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):
1. *Substantial Completion:* Contractor shall pay Owner \$\_\_\_\_\_ for each day that expires after the time (as duly adjusted pursuant to the Contract) specified above for Substantial Completion, until the Work is substantially complete.
  2. *Completion of Remaining Work:* After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner \$\_\_\_\_\_ for each day that expires after such time until the Work is completed and ready for final payment.
  3. *Milestone 1:* Contractor shall pay Owner \$\_\_\_\_\_ for each day that expires after the time (as duly adjusted pursuant to the Contract) specified above for achievement of Milestone 1, until Milestone 1 is achieved, or until the time specified for Substantial Completion is reached, at which time the rate indicated in Paragraph 4.05.A.1 will apply, rather than the Milestone rate.
  4. *Milestone 2:* Contractor shall pay Owner \$\_\_\_\_\_ for each day that expires after the time (as duly adjusted pursuant to the Contract) specified above for achievement of Milestone 2, until Milestone 2 is achieved, or until the time specified for Substantial Completion is reached, at which time the rate indicated in Paragraph 4.05.A.1 will apply, rather than the Milestone rate.
  5. Liquidated damages for failing to timely attain Milestones, Substantial Completion, and final completion are not additive, and will not be imposed concurrently.
- B. If Owner recovers liquidated damages for a delay in completion by Contractor, then such liquidated damages are Owner's sole and exclusive remedy for such delay, and Owner is precluded from recovering any other damages, whether actual, direct, excess, or consequential, for such delay, except for special damages (if any) specified in this Agreement.

## ARTICLE 5—CONTRACT PRICE

5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents, the amounts that follow, subject to adjustment under the Contract:

A. For all Work other than Unit Price Work, a lump sum of:

All specific cash allowances are included in the above price in accordance with Paragraph 13.02 of the General Conditions.

B. For all Unit Price Work, an amount equal to the sum of the extended prices (established for each separately identified item of Unit Price Work by multiplying the unit price times the actual quantity of that item). **The extended prices are as indicated in Contractor's Bid, attached hereto as an exhibit. The estimated total of all extended prices for Unit Price Work is:**

The extended prices for Unit Price Work set forth as of the Effective Date of the Contract are based on estimated quantities. As provided in Paragraph 13.03 of the General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by Engineer.

## ARTICLE 6—PAYMENT PROCEDURES

6.01 *Submittal and Processing of Payments*

A. Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

6.02 *Progress Payments; Retainage*

A. Owner shall make progress payments on the basis of Contractor's Applications for Payment ~~on or about the \_\_\_\_\_ day of~~ **once** each month during performance of the Work as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract.
  - a. 95 percent of the value of the Work completed (with the balance being retainage); and
  - b. 95 percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).

- c. **At 50 percent completion, no additional amounts will be retained unless Engineer certifies that the Work is not proceeding satisfactorily, but amounts previously retained will not be paid to Contractor. At 50 percent completion or any time thereafter when the progress of the Work is not satisfactory, additional amounts may be retained but in no event will total retainage be more than 10 percent of the Work completed and materials and equipment delivered, suitably stored, and accompanied by required documentation.**
- B. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to 98 percent of the ~~Work completed~~ **Contract Price (with the balance being retainage)**, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less ~~\_\_\_\_\_ percent of~~ Engineer's estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.
- 6.03 *Final Payment*
- A. Upon final completion and acceptance of the Work, Owner shall pay the remainder of the Contract Price in accordance with Paragraph 15.06 of the General Conditions.
- 6.04 *Consent of Surety*
- A. Owner will not make final payment, ~~or return or release retainage at Substantial Completion or any other time,~~ unless Contractor submits written consent of the surety to such payment, ~~return, or release.~~
- 6.05 *Interest*
- A. All amounts not paid when due will bear interest at the rate of 12 percent per annum.

## ARTICLE 7—CONTRACT DOCUMENTS

- 7.01 *Contents*
- A. The Contract Documents consist of all of the following:
1. This Agreement.
  2. General Conditions, **which are bound separately in Project Manual.**
  3. Supplementary Conditions, **which are bound separately in Project Manual.**
  4. Specifications as listed in the Project Manual Table of Contents **and bound separately.**
  5. Drawings as listed on the Drawing Sheet Index **and bound separately.**
  6. Addenda (numbers \_\_\_\_\_ to \_\_\_\_\_, inclusive), **which are bound separately.**
  7. Exhibits to this Agreement (enumerated as follows):
    - a. **Contractor's Bid, marked Exhibit \_\_\_\_\_.**
    - b. **Project Manual Table of Contents, marked Exhibit \_\_\_\_\_.**
    - c. **Drawing Sheet Index, marked Exhibit \_\_\_\_\_.**
    - d. **Performance Bond (together with power of attorney), marked Exhibit \_\_\_\_\_.**
    - e. **Payment Bond (together with power of attorney), marked Exhibit \_\_\_\_\_.**

8. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
  - a. Notice to Proceed.
  - b. Work Change Directives.
  - c. Change Orders.
  - d. Field Orders.
- B. The Contract Documents listed in Paragraph 7.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 7.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in the Contract.

## **ARTICLE 8—REPRESENTATIONS, CERTIFICATIONS, AND STIPULATIONS**

### **8.01 Contractor's Representations**

- A. In order to induce Owner to enter into this Contract, Contractor makes the following representations:
  1. Contractor has examined and carefully studied the Contract Documents, including Addenda.
  2. Contractor has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
  3. Contractor is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.
  4. Contractor has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, with respect to the Technical Data in such reports and drawings.
  5. Contractor has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, with respect to Technical Data in such reports and drawings.
  6. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (c) Contractor's safety precautions and programs.

7. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
8. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
9. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
10. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
11. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

#### 8.02 *Contractor's Certifications*

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 8.02:
  1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Contract execution;
  2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
  3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
  4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

#### 8.03 *Standard General Conditions*

- A. Owner stipulates that if the General Conditions that are made a part of this Contract are EJCDC® C-700, Standard General Conditions for the Construction Contract (2018), published by the Engineers Joint Contract Documents Committee, and if Owner is the party that has furnished said General Conditions, then Owner has plainly shown all modifications to the standard wording of such published document to the Contractor, through a process such as highlighting or "track changes" (redline/strikeout), or in the Supplementary Conditions.

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement.

This Agreement will be effective **as of the date first written on Page 1 of the Agreement** (which is the Effective Date of the Contract).

Owner:

\_\_\_\_\_  
*(typed or printed name of organization)*

By: \_\_\_\_\_  
*(individual's signature)*

Date: \_\_\_\_\_  
*(date signed)*

Name: \_\_\_\_\_  
*(typed or printed)*

Title: \_\_\_\_\_  
*(typed or printed)*

Attest: \_\_\_\_\_  
*(individual's signature)*

Title: \_\_\_\_\_  
*(typed or printed)*

Address for giving notices:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Contractor:

\_\_\_\_\_  
*(typed or printed name of organization)*

By: \_\_\_\_\_  
*(individual's signature)*

Date: \_\_\_\_\_  
*(date signed)*

Name: \_\_\_\_\_  
*(typed or printed)*

Title: \_\_\_\_\_  
*(typed or printed)*

*(If Contractor is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)*

Attest: \_\_\_\_\_  
*(individual's signature)*

Title: \_\_\_\_\_  
*(typed or printed)*

Address for giving notices:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

License No.: \_\_\_\_\_  
*(where applicable)*

State: \_\_\_\_\_

To Be Completed Upon Contract Award

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## PERFORMANCE BOND

<b>Contractor</b> Name: Address <i>(principal place of business)</i> :	<b>Surety</b> Name: Address <i>(principal place of business)</i> :
<b>Owner</b> Name: Mailing address <i>(principal place of business)</i> :	<b>Contract</b> Description <i>(name and location)</i> :  Contract Price: Effective Date of Contract:
<b>Bond</b> Bond Amount: Date of Bond: <i>(Date of Bond cannot be earlier than Effective Date of Contract)</i> Modifications to this Bond form: <input type="checkbox"/> None <input type="checkbox"/> See Paragraph 16	
Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Performance Bond, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.	
Contractor as Principal	Surety
_____ <i>(Full formal name of Contractor)</i>	_____ <i>(Full formal name of Surety) (corporate seal)</i>
By: _____ <div style="text-align: center;"><i>(Signature)</i></div>	By: _____ <div style="text-align: center;"><i>(Signature)(Attach Power of Attorney)</i></div>
Name: _____ <div style="text-align: center;"><i>(Printed or typed)</i></div>	Name: _____ <div style="text-align: center;"><i>(Printed or typed)</i></div>
Title: _____	Title: _____
Attest: _____ <div style="text-align: center;"><i>(Signature)</i></div>	Attest: _____ <div style="text-align: center;"><i>(Signature)</i></div>
Name: _____ <div style="text-align: center;"><i>(Printed or typed)</i></div>	Name: _____ <div style="text-align: center;"><i>(Printed or typed)</i></div>
Title: _____	Title: _____
<i>Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.</i>	

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.
2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond will arise after:
  - 3.1. The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice may indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 will be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement does not waive the Owner's right, if any, subsequently to declare a Contractor Default;
  - 3.2. The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and
  - 3.3. The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.
4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 does not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.
5. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:
  - 5.1. Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;
  - 5.2. Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;
  - 5.3. Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or
  - 5.4. Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:

- 5.4.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or
  - 5.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.
- 6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 5.4, and the Owner refuses the payment, or the Surety has denied liability, in whole or in part, without further notice, the Owner shall be entitled to enforce any remedy available to the Owner.
- 7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner will not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety will not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:
  - 7.1. the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
  - 7.2. additional legal, design professional, and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and
  - 7.3. liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.
- 8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.
- 9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price will not be reduced or set off on account of any such unrelated obligations. No right of action will accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.
- 10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
- 11. Any proceeding, legal or equitable, under this Bond must be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and must be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit will be applicable.
- 12. Notice to the Surety, the Owner, or the Contractor must be mailed or delivered to the address shown on the page on which their signature appears.
- 13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement will be deemed deleted therefrom and provisions conforming to such

statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.

14. Definitions

- 14.1. *Balance of the Contract Price*—The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.
  - 14.2. *Construction Contract*—The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.
  - 14.3. *Contractor Default*—Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.
  - 14.4. *Owner Default*—Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
  - 14.5. *Contract Documents*—All the documents that comprise the agreement between the Owner and Contractor.
15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.
16. Modifications to this Bond are as follows: **[Describe modification or enter “None”]**

## PAYMENT BOND

<p><b>Contractor</b></p> <p>Name: _____</p> <p>Address <i>(principal place of business)</i>: _____</p>	<p><b>Surety</b></p> <p>Name: _____</p> <p>Address <i>(principal place of business)</i>: _____</p>
<p><b>Owner</b></p> <p>Name: _____</p> <p>Mailing address <i>(principal place of business)</i>: _____</p>	<p><b>Contract</b></p> <p>Description <i>(name and location)</i>: _____</p> <p>Contract Price: _____</p> <p>Effective Date of Contract: _____</p>
<p><b>Bond</b></p> <p>Bond Amount: _____</p> <p>Date of Bond: _____</p> <p><i>(Date of Bond cannot be earlier than Effective Date of Contract)</i></p> <p>Modifications to this Bond form:</p> <p><input type="checkbox"/> None <input type="checkbox"/> See Paragraph 18</p>	
<p>Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Payment Bond, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.</p>	
Contractor as Principal	Surety
_____	_____
<i>(Full formal name of Contractor)</i>	<i>(Full formal name of Surety) (corporate seal)</i>
By: _____	By: _____
<i>(Signature)</i>	<i>(Signature)(Attach Power of Attorney)</i>
Name: _____	Name: _____
<i>(Printed or typed)</i>	<i>(Printed or typed)</i>
Title: _____	Title: _____
Attest: _____	Attest: _____
<i>(Signature)</i>	<i>(Signature)</i>
Name: _____	Name: _____
<i>(Printed or typed)</i>	<i>(Printed or typed)</i>
Title: _____	Title: _____
<p><i>Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.</i></p>	

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.
2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond will arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.
4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.
5. The Surety's obligations to a Claimant under this Bond will arise after the following:
  - 5.1. Claimants who do not have a direct contract with the Contractor
    - 5.1.1. have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
    - 5.1.2. have sent a Claim to the Surety (at the address described in Paragraph 13).
  - 5.2. Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).
6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.
7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:
  - 7.1. Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
  - 7.2. Pay or arrange for payment of any undisputed amounts.
  - 7.3. The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 will not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

8. The Surety's total obligation will not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond will be credited for any payments made in good faith by the Surety.
9. Amounts owed by the Owner to the Contractor under the Construction Contract will be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfying obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.
10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.
11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
12. No suit or action will be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit will be applicable.
13. Notice and Claims to the Surety, the Owner, or the Contractor must be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, will be sufficient compliance as of the date received.
14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement will be deemed deleted here from and provisions conforming to such statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.
15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.
16. Definitions
  - 16.1. *Claim*—A written statement by the Claimant including at a minimum:
    - 16.1.1. The name of the Claimant;
    - 16.1.2. The name of the person for whom the labor was done, or materials or equipment furnished;
    - 16.1.3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
    - 16.1.4. A brief description of the labor, materials, or equipment furnished;

- 16.1.5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
  - 16.1.6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
  - 16.1.7. The total amount of previous payments received by the Claimant; and
  - 16.1.8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.
- 16.2. *Claimant*—An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic’s lien or similar statute against the real property upon which the Project is located. The intent of this Bond is to include without limitation in the terms of “labor, materials, or equipment” that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor’s subcontractors, and all other items for which a mechanic’s lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.
  - 16.3. *Construction Contract*—The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.
  - 16.4. *Owner Default*—Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
  - 16.5. *Contract Documents*—All the documents that comprise the agreement between the Owner and Contractor.
17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.
  18. Modifications to this Bond are as follows: **[Describe modification or enter “None”]**



# STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared By



Endorsed By



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# STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

## ARTICLE 1—DEFINITIONS AND TERMINOLOGY

### 1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
  2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.
  3. *Application for Payment*—The document prepared by Contractor, in a form acceptable to Engineer, to request progress or final payments, and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
  4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
  5. *Bidder*—An individual or entity that submits a Bid to Owner.
  6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.
  7. *Bidding Requirements*—The Advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.
  8. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.
  9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.
  10. *Claim*
    - a. A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment of Contract Price or Contract Times; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract.
    - b. A demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a

Change Proposal, or seeking resolution of a contractual issue that Engineer has declined to address.

- c. A demand or assertion by Owner or Contractor, duly submitted in compliance with the procedural requirements set forth herein, made pursuant to Paragraph 12.01.A.4, concerning disputes arising after Engineer has issued a recommendation of final payment.
  - d. A demand for money or services by a third party is not a Claim.
11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), lead-based paint (as defined by the HUD/EPA standard), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to Laws and Regulations regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
  12. *Contract*—The entire and integrated written contract between Owner and Contractor concerning the Work.
  13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.
  14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents.
  15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.
  16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.
  17. *Cost of the Work*—See Paragraph 13.01 for definition.
  18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
  19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.
  20. *Electronic Document*—Any Project-related correspondence, attachments to correspondence, data, documents, drawings, information, or graphics, including but not limited to Shop Drawings and other Submittals, that are in an electronic or digital format.
  21. *Electronic Means*—Electronic mail (email), upload/download from a secure Project website, or other communications methods that allow: (a) the transmission or communication of Electronic Documents; (b) the documentation of transmissions, including sending and receipt; (c) printing of the transmitted Electronic Document by the recipient; (d) the storage and archiving of the Electronic Document by sender and recipient; and (e) the use by recipient of the Electronic Document for purposes permitted by this Contract. Electronic Means does not include the use of text messaging, or of Facebook, Twitter, Instagram, or similar social media services for transmission of Electronic Documents.
  22. *Engineer*—The individual or entity named as such in the Agreement.
  23. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.
  24. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto.



- a. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated into the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, is not a Hazardous Environmental Condition.
  - b. The presence of Constituents of Concern that are to be removed or remediated as part of the Work is not a Hazardous Environmental Condition.
  - c. The presence of Constituents of Concern as part of the routine, anticipated, and obvious working conditions at the Site, is not a Hazardous Environmental Condition.
25. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and binding decrees, resolutions, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
  26. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
  27. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date, or by a time prior to Substantial Completion of all the Work.
  28. *Notice of Award*—The written notice by Owner to a Bidder of Owner’s acceptance of the Bid.
  29. *Notice to Proceed*—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.
  30. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.
  31. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising Contractor’s plan to accomplish the Work within the Contract Times.
  32. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.
  33. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative (RPR) includes any assistants or field staff of Resident Project Representative.
  34. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.
  35. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer’s review of the submittals.
  36. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor’s Applications for Payment.
  37. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.

38. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands or areas furnished by Owner which are designated for the use of Contractor.
39. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.
40. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.
41. *Submittal*—A written or graphic document, prepared by or for Contractor, which the Contract Documents require Contractor to submit to Engineer, or that is indicated as a Submittal in the Schedule of Submittals accepted by Engineer. Submittals may include Shop Drawings and Samples; schedules; product data; Owner-delegated designs; sustainable design information; information on special procedures; testing plans; results of tests and evaluations, source quality-control testing and inspections, and field or Site quality-control testing and inspections; warranties and certifications; Suppliers' instructions and reports; records of delivery of spare parts and tools; operations and maintenance data; Project photographic documentation; record documents; and other such documents required by the Contract Documents. Submittals, whether or not approved or accepted by Engineer, are not Contract Documents. Change Proposals, Change Orders, Claims, notices, Applications for Payment, and requests for interpretation or clarification are not Submittals.
42. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion of such Work.
43. *Successful Bidder*—The Bidder to which the Owner makes an award of contract.
44. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.
45. *Supplier*—A manufacturer, fabricator, supplier, distributor, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.
46. *Technical Data*
- a. Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (1) existing subsurface conditions at or adjacent to the Site, or existing physical conditions at or adjacent to the Site including existing surface or subsurface structures (except Underground Facilities) or (2) Hazardous Environmental Conditions at the Site.
  - b. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then Technical Data is defined, with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06, as the data contained in boring logs, recorded measurements of subsurface water levels, assessments of the condition of subsurface facilities, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical, environmental, or other Site or facilities conditions report prepared for the Project and made available to Contractor.

- c. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data, and instead Underground Facilities are shown or indicated on the Drawings.
47. *Underground Facilities*—All active or not-in-service underground lines, pipelines, conduits, ducts, encasements, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or systems at the Site, including but not limited to those facilities or systems that produce, transmit, distribute, or convey telephone or other communications, cable television, fiber optic transmissions, power, electricity, light, heat, gases, oil, crude oil products, liquid petroleum products, water, steam, waste, wastewater, storm water, other liquids or chemicals, or traffic or other control systems. An abandoned facility or system is not an Underground Facility.
48. *Unit Price Work*—Work to be paid for on the basis of unit prices.
49. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.
50. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

## 1.02 Terminology

- A. The words and terms discussed in Paragraphs 1.02.B, C, D, and E are not defined terms that require initial capital letters, but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives*: The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.
- C. *Day*: The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.
- D. *Defective*: The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
  - 1. does not conform to the Contract Documents;
  - 2. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
  - 3. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or Paragraph 15.04).

E. *Furnish, Install, Perform, Provide*

1. The word “furnish,” when used in connection with services, materials, or equipment, means to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
  2. The word “install,” when used in connection with services, materials, or equipment, means to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
  3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, means to furnish and install said services, materials, or equipment complete and ready for intended use.
  4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words “furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.
- F. *Contract Price or Contract Times*: References to a change in “Contract Price or Contract Times” or “Contract Times or Contract Price” or similar, indicate that such change applies to (1) Contract Price, (2) Contract Times, or (3) both Contract Price and Contract Times, as warranted, even if the term “or both” is not expressed.
- G. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

**ARTICLE 2—PRELIMINARY MATTERS**

2.01 *Delivery of Performance and Payment Bonds; Evidence of Insurance*

- A. *Performance and Payment Bonds*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner the performance bond and payment bond (if the Contract requires Contractor to furnish such bonds).
- B. *Evidence of Contractor’s Insurance*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each additional insured (as identified in the Contract), the certificates, endorsements, and other evidence of insurance required to be provided by Contractor in accordance with Article 6, except to the extent the Supplementary Conditions expressly establish other dates for delivery of specific insurance policies.
- C. *Evidence of Owner’s Insurance*: After receipt of the signed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each additional insured (as identified in the Contract), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

2.02 *Copies of Documents*

- A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully signed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.
- B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

2.03 *Before Starting Construction*

- A. *Preliminary Schedules:* Within 10 days after the Effective Date of the Contract (or as otherwise required by the Contract Documents), Contractor shall submit to Engineer for timely review:
1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract;
  2. a preliminary Schedule of Submittals; and
  3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work, and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other Submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.05 *Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review the schedules submitted in accordance with Paragraph 2.03.A. No progress payment will be made to Contractor until acceptable schedules are submitted to Engineer.
1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.
  2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
  3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.
  4. If a schedule is not acceptable, Contractor will have an additional 10 days to revise and resubmit the schedule.

2.06 *Electronic Transmittals*

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may send, and shall accept, Electronic Documents transmitted by Electronic Means.
- B. If the Contract does not establish protocols for Electronic Means, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. Subject to any governing protocols for Electronic Means, when transmitting Electronic Documents by Electronic Means, the transmitting party makes no representations as to long-term compatibility, usability, or readability of the Electronic Documents resulting from the recipient's use of software

application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the Electronic Documents.

### **ARTICLE 3—CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE**

#### **3.01 *Intent***

- A. The Contract Documents are complementary; what is required by one Contract Document is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents.
- C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic versions of the Contract Documents (including any printed copies derived from such electronic versions) and the printed record version, the printed record version will govern.
- D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.
- E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.
- F. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation will be deemed stricken, and all remaining provisions will continue to be valid and binding upon Owner and Contractor, which agree that the Contract Documents will be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.
- G. Nothing in the Contract Documents creates:
  - 1. any contractual relationship between Owner or Engineer and any Subcontractor, Supplier, or other individual or entity performing or furnishing any of the Work, for the benefit of such Subcontractor, Supplier, or other individual or entity; or
  - 2. any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity, except as may otherwise be required by Laws and Regulations.

#### **3.02 *Reference Standards***

- A. *Standards Specifications, Codes, Laws and Regulations*
  - 1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, means the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
  - 2. No provision of any such standard specification, manual, reference standard, or code, and no instruction of a Supplier, will be effective to change the duties or responsibilities of Owner, Contractor, or Engineer from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner or Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

### 3.03 *Reporting and Resolving Discrepancies*

#### A. *Reporting Discrepancies*

1. *Contractor's Verification of Figures and Field Measurements:* Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict, error, ambiguity, or discrepancy is resolved by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.
2. *Contractor's Review of Contract Documents:* If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.
3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

#### B. *Resolving Discrepancies*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:
  - a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); or
  - b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

### 3.04 *Requirements of the Contract Documents*

- A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer in writing all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work.
- B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.
- C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly notify Owner and Contractor in writing that Engineer is unable to

provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

3.05 *Reuse of Documents*

- A. Contractor and its Subcontractors and Suppliers shall not:
  - 1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media versions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or
  - 2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.
- B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein precludes Contractor from retaining copies of the Contract Documents for record purposes.

**ARTICLE 4—COMMENCEMENT AND PROGRESS OF THE WORK**

4.01 *Commencement of Contract Times; Notice to Proceed*

- A. The Contract Times will commence to run on the 30th day after the Effective Date of the Contract or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Contract. In no event will the Contract Times commence to run later than the 60th day after the day of Bid opening or the 30th day after the Effective Date of the Contract, whichever date is earlier.

4.02 *Starting the Work*

- A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work may be done at the Site prior to such date.

4.03 *Reference Points*

- A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.
  - 1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.
  - 2. Proposed adjustments in the Progress Schedule that will change the Contract Times must be submitted in accordance with the requirements of Article 11.
- B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work will be delayed or postponed pending resolution of any disputes



or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

#### 4.05 *Delays in Contractor's Progress*

- A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times.
- B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.
- C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Such an adjustment will be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:
  - 1. Severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
  - 2. Abnormal weather conditions;
  - 3. Acts or failures to act of third-party utility owners or other third-party entities (other than those third-party utility owners or other third-party entities performing other work at or adjacent to the Site as arranged by or under contract with Owner, as contemplated in Article 8); and
  - 4. Acts of war or terrorism.
- D. Contractor's entitlement to an adjustment of Contract Times or Contract Price is limited as follows:
  - 1. Contractor's entitlement to an adjustment of the Contract Times is conditioned on the delay, disruption, or interference adversely affecting an activity on the critical path to completion of the Work, as of the time of the delay, disruption, or interference.
  - 2. Contractor shall not be entitled to an adjustment in Contract Price for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor. Such a concurrent delay by Contractor shall not preclude an adjustment of Contract Times to which Contractor is otherwise entitled.
  - 3. Adjustments of Contract Times or Contract Price are subject to the provisions of Article 11.
- E. Each Contractor request or Change Proposal seeking an increase in Contract Times or Contract Price must be supplemented by supporting data that sets forth in detail the following:
  - 1. The circumstances that form the basis for the requested adjustment;
  - 2. The date upon which each cause of delay, disruption, or interference began to affect the progress of the Work;
  - 3. The date upon which each cause of delay, disruption, or interference ceased to affect the progress of the Work;
  - 4. The number of days' increase in Contract Times claimed as a consequence of each such cause of delay, disruption, or interference; and
  - 5. The impact on Contract Price, in accordance with the provisions of Paragraph 11.07.

Contractor shall also furnish such additional supporting documentation as Owner or Engineer may require including, where appropriate, a revised progress schedule indicating all the activities affected

by the delay, disruption, or interference, and an explanation of the effect of the delay, disruption, or interference on the critical path to completion of the Work.

- F. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5, together with the provisions of Paragraphs 4.05.D and 4.05.E.
- G. Paragraph 8.03 addresses delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.

## **ARTICLE 5—SITE; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS**

### **5.01 Availability of Lands**

- A. Owner shall furnish the Site. Owner shall notify Contractor in writing of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.
- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

### **5.02 Use of Site and Other Areas**

- A. *Limitation on Use of Site and Other Areas*
  - 1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas, or to improvements, structures, utilities, or similar facilities located at such adjacent lands or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.
  - 2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.13, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or in a court of competent jurisdiction; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused

directly or indirectly, in whole or in part by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.

- B. *Removal of Debris During Performance of the Work*: During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris will conform to applicable Laws and Regulations.
- C. *Cleaning*: Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.
- D. *Loading of Structures*: Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent structures or land to stresses or pressures that will endanger them.

### 5.03 *Subsurface and Physical Conditions*

- A. *Reports and Drawings*: The Supplementary Conditions identify:
  - 1. Those reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data;
  - 2. Those drawings of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data; and
  - 3. Technical Data contained in such reports and drawings.
- B. *Underground Facilities*: Underground Facilities are shown or indicated on the Drawings, pursuant to Paragraph 5.05, and not in the drawings referred to in Paragraph 5.03.A. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data.
- C. *Reliance by Contractor on Technical Data*: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b.
- D. *Limitations of Other Data and Documents*: Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:
  - 1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto;
  - 2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings;
  - 3. the contents of other Site-related documents made available to Contractor, such as record drawings from other projects at or adjacent to the Site, or Owner's archival documents concerning the Site; or
  - 4. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

5.04 *Differing Subsurface or Physical Conditions*

- A. *Notice by Contractor:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site:
1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate;
  2. is of such a nature as to require a change in the Drawings or Specifications;
  3. differs materially from that shown or indicated in the Contract Documents; or
  4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;
- then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.
- B. *Engineer's Review:* After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine whether it is necessary for Owner to obtain additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- C. *Owner's Statement to Contractor Regarding Site Condition:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.
- D. *Early Resumption of Work:* If at any time Engineer determines that Work in connection with the subsurface or physical condition in question may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the condition in question has been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.
- E. *Possible Price and Times Adjustments*
1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
    - a. Such condition must fall within any one or more of the categories described in Paragraph 5.04.A;
    - b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,
    - c. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E.

2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
    - a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise;
    - b. The existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or
    - c. Contractor failed to give the written notice required by Paragraph 5.04.A.
  3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.
  4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.
- F. *Underground Facilities; Hazardous Environmental Conditions:* Paragraph 5.05 governs rights and responsibilities regarding the presence or location of Underground Facilities. Paragraph 5.06 governs rights and responsibilities regarding Hazardous Environmental Conditions. The provisions of Paragraphs 5.03 and 5.04 are not applicable to the presence or location of Underground Facilities, or to Hazardous Environmental Conditions.

5.05 *Underground Facilities*

- A. *Contractor's Responsibilities:* Unless it is otherwise expressly provided in the Supplementary Conditions, the cost of all of the following are included in the Contract Price, and Contractor shall have full responsibility for:
1. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
  2. complying with applicable state and local utility damage prevention Laws and Regulations;
  3. verifying the actual location of those Underground Facilities shown or indicated in the Contract Documents as being within the area affected by the Work, by exposing such Underground Facilities during the course of construction;
  4. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
  5. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.
- B. *Notice by Contractor:* If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated on the Drawings, or was not shown or indicated on the Drawings with reasonable accuracy, then Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing regarding such Underground Facility.
- C. *Engineer's Review:* Engineer will:
1. promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated on the Drawings, or was not shown or indicated with reasonable accuracy;

2. identify and communicate with the owner of the Underground Facility; prepare recommendations to Owner (and if necessary issue any preliminary instructions to Contractor) regarding the Contractor's resumption of Work in connection with the Underground Facility in question;
3. obtain any pertinent cost or schedule information from Contractor; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and
4. advise Owner in writing of Engineer's findings, conclusions, and recommendations.

During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

- D. *Owner's Statement to Contractor Regarding Underground Facility:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.
- E. *Early Resumption of Work:* If at any time Engineer determines that Work in connection with the Underground Facility may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the Underground Facility in question and conditions affected by its presence have been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.
- F. *Possible Price and Times Adjustments*
  1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, to the extent that any existing Underground Facility at the Site that was not shown or indicated on the Drawings, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
    - a. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;
    - b. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E; and
    - c. Contractor gave the notice required in Paragraph 5.05.B.
  2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.
  3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.
  4. The information and data shown or indicated on the Drawings with respect to existing Underground Facilities at the Site is based on information and data (a) furnished by the owners of such Underground Facilities, or by others, (b) obtained from available records, or (c) gathered in an investigation conducted in accordance with the current edition of ASCE 38, Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data, by the American Society of Civil Engineers. If such information or data is incorrect or incomplete, Contractor's remedies are limited to those set forth in this Paragraph 5.05.F.

5.06 *Hazardous Environmental Conditions at Site*

- A. *Reports and Drawings*: The Supplementary Conditions identify:
1. those reports known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site;
  2. drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and
  3. Technical Data contained in such reports and drawings.
- B. *Reliance by Contractor on Technical Data Authorized*: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:
1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto;
  2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
  3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.
- C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.
- D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.
- E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.
- F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.

- G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, as a result of such Work stoppage, such special conditions under which Work is agreed to be resumed by Contractor, or any costs or expenses incurred in response to the Hazardous Environmental Condition, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off. Entitlement to any such adjustment is subject to the provisions of Paragraphs 4.05.D, 4.05.E, 11.07, and 11.08.
- H. If, after receipt of such written notice, Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.
- I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court, arbitration, or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.I obligates Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J obligates Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

## **ARTICLE 6—BONDS AND INSURANCE**

### **6.01 *Performance, Payment, and Other Bonds***

- A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of Contractor's obligations under the Contract. These bonds must remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the terms of a prescribed bond form, the Supplementary Conditions, or other provisions of the Contract.
- B. Contractor shall also furnish such other bonds (if any) as are required by the Supplementary Conditions or other provisions of the Contract.



- C. All bonds must be in the form included in the Bidding Documents or otherwise specified by Owner prior to execution of the Contract, except as provided otherwise by Laws or Regulations, and must be issued and signed by a surety named in “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies” as published in Department Circular 570 (as amended and supplemented) by the Bureau of the Fiscal Service, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual’s authority to bind the surety. The evidence of authority must show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.
- D. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue bonds in the required amounts.
- E. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer in writing and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which must comply with the bond and surety requirements above.
- F. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner’s termination rights under Article 16.
- G. Upon request to Owner from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Owner shall provide a copy of the payment bond to such person or entity.
- H. Upon request to Contractor from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Contractor shall provide a copy of the payment bond to such person or entity.

6.02 *Insurance—General Provisions*

- A. Owner and Contractor shall obtain and maintain insurance as required in this article and in the Supplementary Conditions.
- B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized in the state or jurisdiction in which the Project is located to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.
- C. Alternative forms of insurance coverage, including but not limited to self-insurance and “Occupational Accident and Excess Employer’s Indemnity Policies,” are not sufficient to meet the insurance requirements of this Contract, unless expressly allowed in the Supplementary Conditions.
- D. Contractor shall deliver to Owner, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Contractor has obtained and is maintaining the policies and coverages required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, full disclosure of all relevant exclusions, and evidence of insurance required to be purchased and maintained by Subcontractors or Suppliers. In any documentation furnished under this provision, Contractor, Subcontractors, and Suppliers may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those applicable to this Contract.
- E. Owner shall deliver to Contractor, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Owner has obtained and is maintaining the policies and coverages required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any),

including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, and full disclosure of all relevant exclusions. In any documentation furnished under this provision, Owner may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those relevant to this Contract.

- F. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, will not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.
- G. In addition to the liability insurance required to be provided by Contractor, the Owner, at Owner's option, may purchase and maintain Owner's own liability insurance. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.
- H. Contractor shall require:
  - 1. Subcontractors to purchase and maintain worker's compensation, commercial general liability, and other insurance that is appropriate for their participation in the Project, and to name as additional insureds Owner and Engineer (and any other individuals or entities identified in the Supplementary Conditions as additional insureds on Contractor's liability policies) on each Subcontractor's commercial general liability insurance policy; and
  - 2. Suppliers to purchase and maintain insurance that is appropriate for their participation in the Project.
- I. If either party does not purchase or maintain the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.
- J. If Contractor has failed to obtain and maintain required insurance, Contractor's entitlement to enter or remain at the Site will end immediately, and Owner may impose an appropriate set-off against payment for any associated costs (including but not limited to the cost of purchasing necessary insurance coverage), and exercise Owner's termination rights under Article 16.
- K. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect (but is in no way obligated) to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price will be adjusted accordingly.
- L. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests. Contractor is responsible for determining whether such coverage and limits are adequate to protect its interests, and for obtaining and maintaining any additional insurance that Contractor deems necessary.
- M. The insurance and insurance limits required herein will not be deemed as a limitation on Contractor's liability, or that of its Subcontractors or Suppliers, under the indemnities granted to Owner and other individuals and entities in the Contract or otherwise.
- N. All the policies of insurance required to be purchased and maintained under this Contract will contain a provision or endorsement that the coverage afforded will not be canceled, or renewal refused, until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured and Engineer.

6.03 *Contractor's Insurance*

- A. *Required Insurance*: Contractor shall purchase and maintain Worker's Compensation, Commercial General Liability, and other insurance pursuant to the specific requirements of the Supplementary Conditions.
- B. *General Provisions*: The policies of insurance required by this Paragraph 6.03 as supplemented must:
  - 1. include at least the specific coverages required;
  - 2. be written for not less than the limits provided, or those required by Laws or Regulations, whichever is greater;
  - 3. remain in effect at least until the Work is complete (as set forth in Paragraph 15.06.D), and longer if expressly required elsewhere in this Contract, and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract;
  - 4. apply with respect to the performance of the Work, whether such performance is by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable; and
  - 5. include all necessary endorsements to support the stated requirements.
- C. *Additional Insureds*: The Contractor's commercial general liability, automobile liability, employer's liability, umbrella or excess, pollution liability, and unmanned aerial vehicle liability policies, if required by this Contract, must:
  - 1. include and list as additional insureds Owner and Engineer, and any individuals or entities identified as additional insureds in the Supplementary Conditions;
  - 2. include coverage for the respective officers, directors, members, partners, employees, and consultants of all such additional insureds;
  - 3. afford primary coverage to these additional insureds for all claims covered thereby (including as applicable those arising from both ongoing and completed operations);
  - 4. not seek contribution from insurance maintained by the additional insured; and
  - 5. as to commercial general liability insurance, apply to additional insureds with respect to liability caused in whole or in part by Contractor's acts or omissions, or the acts and omissions of those working on Contractor's behalf, in the performance of Contractor's operations.

6.04 *Builder's Risk and Other Property Insurance*

- A. *Builder's Risk*: Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the Work's full insurable replacement cost (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). The specific requirements applicable to the builder's risk insurance are set forth in the Supplementary Conditions.
- B. *Property Insurance for Facilities of Owner Where Work Will Occur*: Owner is responsible for obtaining and maintaining property insurance covering each existing structure, building, or facility in which any part of the Work will occur, or to which any part of the Work will attach or be adjoined. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, providing coverage consistent with that required for the builder's risk insurance, and will be maintained until the Work is complete, as set forth in Paragraph 15.06.D.
- C. *Property Insurance for Substantially Complete Facilities*: Promptly after Substantial Completion, and before actual occupancy or use of the substantially completed Work, Owner will obtain property insurance for such substantially completed Work, and maintain such property insurance at least until

the Work is complete, as set forth in Paragraph 15.06.D. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, and provide coverage consistent with that required for the builder's risk insurance. The builder's risk insurance may terminate upon written confirmation of Owner's procurement of such property insurance.

- D. *Partial Occupancy or Use by Owner:* If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work, as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide advance notice of such occupancy or use to the builder's risk insurer, and obtain an endorsement consenting to the continuation of coverage prior to commencing such partial occupancy or use.
- E. *Insurance of Other Property; Additional Insurance:* If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, then the entity or individual owning such property item will be responsible for insuring it. If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.04, it may do so at Contractor's expense.

6.05 *Property Losses; Subrogation*

- A. The builder's risk insurance policy purchased and maintained in accordance with Paragraph 6.04 (or an installation floater policy if authorized by the Supplementary Conditions), will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors.
  - 1. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils, risks, or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all individuals or entities identified in the Supplementary Conditions as builder's risk or installation floater insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused.
  - 2. None of the above waivers extends to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.
- B. Any property insurance policy maintained by Owner covering any loss, damage, or consequential loss to Owner's existing structures, buildings, or facilities in which any part of the Work will occur, or to which any part of the Work will attach or adjoin; to adjacent structures, buildings, or facilities of Owner; or to part or all of the completed or substantially completed Work, during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06, will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them, and that the insured is allowed to waive the insurer's rights of subrogation in a written contract executed prior to the loss, damage, or consequential loss.
  - 1. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from fire or any of the perils, risks, or causes of loss covered by such policies.

- C. The waivers in this Paragraph 6.05 include the waiver of rights due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other insured peril, risk, or cause of loss.
- D. Contractor shall be responsible for assuring that each Subcontract contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from fire or other peril, risk, or cause of loss covered by builder's risk insurance, installation floater, and any other property insurance applicable to the Work.

6.06 *Receipt and Application of Property Insurance Proceeds*

- A. Any insured loss under the builder's risk and other policies of property insurance required by Paragraph 6.04 will be adjusted and settled with the named insured that purchased the policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.
- B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.04 shall maintain such proceeds in a segregated account, and distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.
- C. If no other special agreement is reached, Contractor shall repair or replace the damaged Work, using allocated insurance proceeds.

**ARTICLE 7—CONTRACTOR'S RESPONSIBILITIES**

7.01 *Contractor's Means and Methods of Construction*

- A. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.
- B. If the Contract Documents note, or Contractor determines, that professional engineering or other design services are needed to carry out Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures, or for Site safety, then Contractor shall cause such services to be provided by a properly licensed design professional, at Contractor's expense. Such services are not Owner-delegated professional design services under this Contract, and neither Owner nor Engineer has any responsibility with respect to (1) Contractor's determination of the need for such services, (2) the qualifications or licensing of the design professionals retained or employed by Contractor, (3) the performance of such services, or (4) any errors, omissions, or defects in such services.

7.02 *Supervision and Superintendence*

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who will not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.03 *Labor; Working Hours*

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall maintain good discipline and order at the Site.
- B. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of Contractor's employees; of Suppliers and Subcontractors, and their employees; and of any other individuals or entities performing or furnishing any of the Work, just as Contractor is responsible for Contractor's own acts and omissions.
- C. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site will be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

7.04 *Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.
- B. All materials and equipment incorporated into the Work must be new and of good quality, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications will expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.
- C. All materials and equipment must be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

7.05 *"Or Equals"*

- A. *Contractor's Request; Governing Criteria:* Whenever an item of equipment or material is specified or described in the Contract Documents by using the names of one or more proprietary items or specific Suppliers, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material, or items from other proposed Suppliers, under the circumstances described below.
  - 1. If Engineer in its sole discretion determines that an item of equipment or material proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer will deem it an "or equal" item. For the purposes of this paragraph, a proposed item of equipment or material will be considered functionally equal to an item so named if:
    - a. in the exercise of reasonable judgment Engineer determines that the proposed item:
      - 1) is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

- 2) will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;
  - 3) has a proven record of performance and availability of responsive service; and
  - 4) is not objectionable to Owner.
- b. Contractor certifies that, if the proposed item is approved and incorporated into the Work:
- 1) there will be no increase in cost to the Owner or increase in Contract Times; and
  - 2) the item will conform substantially to the detailed requirements of the item named in the Contract Documents.
- B. *Contractor's Expense:* Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.
- C. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal," which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.
- D. *Effect of Engineer's Determination:* Neither approval nor denial of an "or-equal" request will result in any change in Contract Price. The Engineer's denial of an "or-equal" request will be final and binding, and may not be reversed through an appeal under any provision of the Contract.
- E. *Treatment as a Substitution Request:* If Engineer determines that an item of equipment or material proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer consider the item a proposed substitute pursuant to Paragraph 7.06.

#### 7.06 Substitutes

- A. *Contractor's Request; Governing Criteria:* Unless the specification or description of an item of equipment or material required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material under the circumstances described below. To the extent possible such requests must be made before commencement of related construction at the Site.
1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of equipment or material from anyone other than Contractor.
  2. The requirements for review by Engineer will be as set forth in Paragraph 7.06.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.
  3. Contractor shall make written application to Engineer for review of a proposed substitute item of equipment or material that Contractor seeks to furnish or use. The application:
    - a. will certify that the proposed substitute item will:
      - 1) perform adequately the functions and achieve the results called for by the general design;
      - 2) be similar in substance to the item specified; and
      - 3) be suited to the same use as the item specified.
    - b. will state:
      - 1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times;

- 2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item; and
  - 3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.
- c. will identify:
    - 1) all variations of the proposed substitute item from the item specified; and
    - 2) available engineering, sales, maintenance, repair, and replacement services.
  - d. will contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.
- B. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.
- C. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- D. *Reimbursement of Engineer's Cost:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.
- E. *Contractor's Expense:* Contractor shall provide all data in support of any proposed substitute at Contractor's expense.
- F. *Effect of Engineer's Determination:* If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request will be final and binding, and may not be reversed through an appeal under any provision of the Contract. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.06.D, by timely submittal of a Change Proposal.

7.07 *Concerning Subcontractors and Suppliers*

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner. The Contractor's retention of a Subcontractor or Supplier for the performance of parts of the Work will not relieve Contractor's obligation to Owner to perform and complete the Work in accordance with the Contract Documents.
- B. Contractor shall retain specific Subcontractors and Suppliers for the performance of designated parts of the Work if required by the Contract to do so.
- C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor or Supplier to furnish or perform any of the Work against which Contractor has reasonable objection.



- D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within 5 days.
- E. Owner may require the replacement of any Subcontractor or Supplier. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors or Suppliers for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor or Supplier so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor or Supplier.
- F. If Owner requires the replacement of any Subcontractor or Supplier retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.
- G. No acceptance by Owner of any such Subcontractor or Supplier, whether initially or as a replacement, will constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.
- H. On a monthly basis, Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.
- I. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors and Suppliers.
- J. The divisions and sections of the Specifications and the identifications of any Drawings do not control Contractor in dividing the Work among Subcontractors or Suppliers, or in delineating the Work to be performed by any specific trade.
- K. All Work performed for Contractor by a Subcontractor or Supplier must be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract for the benefit of Owner and Engineer.
- L. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor for Work performed for Contractor by the Subcontractor or Supplier.
- M. Contractor shall restrict all Subcontractors and Suppliers from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed in this Contract.

7.08 *Patent Fees and Royalties*

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If an invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights will be disclosed in the Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors, from and against all claims, costs, losses, and damages (including but not limited to all

fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.

- C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

7.09 *Permits*

- A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits, licenses, and certificates of occupancy. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of the submission of Contractor's Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

7.10 *Taxes*

- A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

7.11 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work or other action. It is not Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this does not relieve Contractor of its obligations under Paragraph 3.03.
- C. Owner or Contractor may give written notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such written notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.12 *Record Documents*

- A. Contractor shall maintain in a safe place at the Site one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved Shop Drawings. Contractor shall keep such record documents in good order and annotate them to show changes made during construction. These record documents, together with all approved Samples, will be available to Engineer for reference. Upon completion of the Work, Contractor shall deliver these record documents to Engineer.

7.13 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations.
- B. Contractor shall designate a qualified and experienced safety representative whose duties and responsibilities are the prevention of Work-related accidents and the maintenance and supervision of safety precautions and programs.
- C. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:
  - 1. all persons on the Site or who may be affected by the Work;
  - 2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
  - 3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- D. All damage, injury, or loss to any property referred to in Paragraph 7.13.C.2 or 7.13.C.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
- E. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection.
- F. Contractor shall notify Owner; the owners of adjacent property; the owners of Underground Facilities and other utilities (if the identity of such owners is known to Contractor); and other contractors and utility owners performing work at or adjacent to the Site, in writing, when Contractor knows that prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.
- G. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. Any Owner's safety programs that are applicable to the Work are identified or included in the Supplementary Conditions or Specifications.
- H. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.

- I. Contractor's duties and responsibilities for safety and protection will continue until all the Work is completed, Engineer has issued a written notice to Owner and Contractor in accordance with Paragraph 15.06.C that the Work is acceptable, and Contractor has left the Site (except as otherwise expressly provided in connection with Substantial Completion).
- J. Contractor's duties and responsibilities for safety and protection will resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.14 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of safety data sheets (formerly known as material safety data sheets) or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

7.15 *Emergencies*

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused by an emergency, or are required as a result of Contractor's response to an emergency. If Engineer determines that a change in the Contract Documents is required because of an emergency or Contractor's response, a Work Change Directive or Change Order will be issued.

7.16 *Submittals*

A. *Shop Drawing and Sample Requirements*

- 1. Before submitting a Shop Drawing or Sample, Contractor shall:
  - a. review and coordinate the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
  - b. determine and verify:
    - 1) all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect to the Submittal;
    - 2) the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
    - 3) all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto;
  - c. confirm that the Submittal is complete with respect to all related data included in the Submittal.
- 2. Each Shop Drawing or Sample must bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that Submittal, and that Contractor approves the Submittal.
- 3. With each Shop Drawing or Sample, Contractor shall give Engineer specific written notice of any variations that the Submittal may have from the requirements of the Contract Documents. This notice must be set forth in a written communication separate from the Submittal; and, in addition, in the case of a Shop Drawing by a specific notation made on the Shop Drawing itself.

- B. *Submittal Procedures for Shop Drawings and Samples:* Contractor shall label and submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals.
1. *Shop Drawings*
    - a. Contractor shall submit the number of copies required in the Specifications.
    - b. Data shown on the Shop Drawings must be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide, and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.C.
  2. *Samples*
    - a. Contractor shall submit the number of Samples required in the Specifications.
    - b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the Submittal for the limited purposes required by Paragraph 7.16.C.
  3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.
- C. *Engineer's Review of Shop Drawings and Samples*
1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the accepted Schedule of Submittals. Engineer's review and approval will be only to determine if the items covered by the Submittals will, after installation or incorporation in the Work, comply with the requirements of the Contract Documents, and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
  2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction, or to safety precautions or programs incident thereto.
  3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
  4. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Contract Documents in a Field Order or other appropriate Contract modification.
  5. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for complying with the requirements of Paragraphs 7.16.A and B.
  6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, will not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.
  7. Neither Engineer's receipt, review, acceptance, or approval of a Shop Drawing or Sample will result in such item becoming a Contract Document.
  8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.C.4.

D. *Resubmittal Procedures for Shop Drawings and Samples*

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous Submittals.
2. Contractor shall furnish required Shop Drawing and Sample submittals with sufficient information and accuracy to obtain required approval of an item with no more than two resubmittals. Engineer will record Engineer's time for reviewing a third or subsequent resubmittal of a Shop Drawing or Sample, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges.
3. If Contractor requests a change of a previously approved Shop Drawing or Sample, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

E. *Submittals Other than Shop Drawings, Samples, and Owner-Delegated Designs*

1. The following provisions apply to all Submittals other than Shop Drawings, Samples, and Owner-delegated designs:
  - a. Contractor shall submit all such Submittals to the Engineer in accordance with the Schedule of Submittals and pursuant to the applicable terms of the Contract Documents.
  - b. Engineer will provide timely review of all such Submittals in accordance with the Schedule of Submittals and return such Submittals with a notation of either Accepted or Not Accepted. Any such Submittal that is not returned within the time established in the Schedule of Submittals will be deemed accepted.
  - c. Engineer's review will be only to determine if the Submittal is acceptable under the requirements of the Contract Documents as to general form and content of the Submittal.
  - d. If any such Submittal is not accepted, Contractor shall confer with Engineer regarding the reason for the non-acceptance, and resubmit an acceptable document.
2. Procedures for the submittal and acceptance of the Progress Schedule, the Schedule of Submittals, and the Schedule of Values are set forth in Paragraphs 2.03, 2.04, and 2.05.

- F. Owner-delegated Designs: Submittals pursuant to Owner-delegated designs are governed by the provisions of Paragraph 7.19.

7.17 *Contractor's General Warranty and Guarantee*

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer is entitled to rely on Contractor's warranty and guarantee.
- B. Owner's rights under this warranty and guarantee are in addition to, and are not limited by, Owner's rights under the correction period provisions of Paragraph 15.08. The time in which Owner may enforce its warranty and guarantee rights under this Paragraph 7.17 is limited only by applicable Laws and Regulations restricting actions to enforce such rights; provided, however, that after the end of the correction period under Paragraph 15.08:
  1. Owner shall give Contractor written notice of any defective Work within 60 days of the discovery that such Work is defective; and
  2. Such notice will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the notice.

- C. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
  - 1. abuse, or improper modification, maintenance, or operation, by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
  - 2. normal wear and tear under normal usage.
- D. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents is absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents, a release of Contractor's obligation to perform the Work in accordance with the Contract Documents, or a release of Owner's warranty and guarantee rights under this Paragraph 7.17:
  - 1. Observations by Engineer;
  - 2. Recommendation by Engineer or payment by Owner of any progress or final payment;
  - 3. The issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
  - 4. Use or occupancy of the Work or any part thereof by Owner;
  - 5. Any review and approval of a Shop Drawing or Sample submittal;
  - 6. The issuance of a notice of acceptability by Engineer;
  - 7. The end of the correction period established in Paragraph 15.08;
  - 8. Any inspection, test, or approval by others; or
  - 9. Any correction of defective Work by Owner.
- E. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract will govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

**7.18 Indemnification**

- A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from losses, damages, costs, and judgments (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising from third-party claims or actions relating to or resulting from the performance or furnishing of the Work, provided that any such claim, action, loss, cost, judgment or damage is attributable to bodily injury, sickness, disease, or death, or to damage to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable.
- B. In any and all claims against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A will not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

7.19 *Delegation of Professional Design Services*

- A. Owner may require Contractor to provide professional design services for a portion of the Work by express delegation in the Contract Documents. Such delegation will specify the performance and design criteria that such services must satisfy, and the Submittals that Contractor must furnish to Engineer with respect to the Owner-delegated design.
- B. Contractor shall cause such Owner-delegated professional design services to be provided pursuant to the professional standard of care by a properly licensed design professional, whose signature and seal must appear on all drawings, calculations, specifications, certifications, and Submittals prepared by such design professional. Such design professional must issue all certifications of design required by Laws and Regulations.
- C. If a Shop Drawing or other Submittal related to the Owner-delegated design is prepared by Contractor, a Subcontractor, or others for submittal to Engineer, then such Shop Drawing or other Submittal must bear the written approval of Contractor's design professional when submitted by Contractor to Engineer.
- D. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, and approvals performed or provided by the design professionals retained or employed by Contractor under an Owner-delegated design, subject to the professional standard of care and the performance and design criteria stated in the Contract Documents.
- E. Pursuant to this Paragraph 7.19, Engineer's review, approval, and other determinations regarding design drawings, calculations, specifications, certifications, and other Submittals furnished by Contractor pursuant to an Owner-delegated design will be only for the following limited purposes:
  - 1. Checking for conformance with the requirements of this Paragraph 7.19;
  - 2. Confirming that Contractor (through its design professionals) has used the performance and design criteria specified in the Contract Documents; and
  - 3. Establishing that the design furnished by Contractor is consistent with the design concept expressed in the Contract Documents.
- F. Contractor shall not be responsible for the adequacy of performance or design criteria specified by Owner or Engineer.
- G. Contractor is not required to provide professional services in violation of applicable Laws and Regulations.

**ARTICLE 8—OTHER WORK AT THE SITE**

8.01 *Other Work*

- A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.
- B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any third-party utility work that Owner has arranged to take place at or adjacent to the Site, Owner shall provide such information to Contractor.
- C. Contractor shall afford proper and safe access to the Site to each contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with



Owner's employees, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work.

- D. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.
- E. If the proper execution or results of any part of Contractor's Work depends upon work performed by others, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.
- F. The provisions of this article are not applicable to work that is performed by third-party utilities or other third-party entities without a contract with Owner, or that is performed without having been arranged by Owner. If such work occurs, then any related delay, disruption, or interference incurred by Contractor is governed by the provisions of Paragraph 4.05.C.3.

#### 8.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:
  - 1. The identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;
  - 2. An itemization of the specific matters to be covered by such authority and responsibility; and
  - 3. The extent of such authority and responsibilities.
- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

#### 8.03 *Legal Relationships*

- A. If, in the course of performing other work for Owner at or adjacent to the Site, the Owner's employees, any other contractor working for Owner, or any utility owner that Owner has arranged to perform work, causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment will take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract, and any remedies available to Contractor under Laws or Regulations concerning utility action or inaction. When applicable, any such equitable adjustment in Contract Price will be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times or Contract Price is subject to the provisions of Paragraphs 4.05.D and 4.05.E.

- B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site.
  - 1. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this Paragraph 8.03.B.
  - 2. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due Contractor.
- C. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

## **ARTICLE 9—OWNER'S RESPONSIBILITIES**

### **9.01 *Communications to Contractor***

- A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

### **9.02 *Replacement of Engineer***

- A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer's status under the Contract Documents will be that of the former Engineer.

### **9.03 *Furnish Data***

- A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

### **9.04 *Pay When Due***

- A. Owner shall make payments to Contractor when they are due as provided in the Agreement.

### **9.05 *Lands and Easements; Reports, Tests, and Drawings***

- A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.
- B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.

- C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

9.06 *Insurance*

- A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.

9.07 *Change Orders*

- A. Owner's responsibilities with respect to Change Orders are set forth in Article 11.

9.08 *Inspections, Tests, and Approvals*

- A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.

9.09 *Limitations on Owner's Responsibilities*

- A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

9.10 *Undisclosed Hazardous Environmental Condition*

- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.

9.11 *Evidence of Financial Arrangements*

- A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract (including obligations under proposed changes in the Work).

9.12 *Safety Programs*

- A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.
- B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

**ARTICLE 10—ENGINEER'S STATUS DURING CONSTRUCTION**

10.01 *Owner's Representative*

- A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract.

10.02 *Visits to Site*

- A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe, as an experienced and qualified design professional, the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On

the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.

- B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 10.07. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.03 *Resident Project Representative*

- A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in the Supplementary Conditions and in Paragraph 10.07.
- B. If Owner designates an individual or entity who is not Engineer's consultant, agent, or employee to represent Owner at the Site, then the responsibilities and authority of such individual or entity will be as provided in the Supplementary Conditions.

10.04 *Engineer's Authority*

- A. Engineer has the authority to reject Work in accordance with Article 14.
- B. Engineer's authority as to Submittals is set forth in Paragraph 7.16.
- C. Engineer's authority as to design drawings, calculations, specifications, certifications and other Submittals from Contractor in response to Owner's delegation (if any) to Contractor of professional design services, is set forth in Paragraph 7.19.
- D. Engineer's authority as to changes in the Work is set forth in Article 11.
- E. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.05 *Determinations for Unit Price Work*

- A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

10.06 *Decisions on Requirements of Contract Documents and Acceptability of Work*

- A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.07 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, will create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.
- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and

programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Engineer's review of the final Application for Payment and accompanying documentation, and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Contractor under Paragraph 15.06.A, will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.
- E. The limitations upon authority and responsibility set forth in this Paragraph 10.07 also apply to the Resident Project Representative, if any.

#### 10.08 *Compliance with Safety Program*

- A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs of which Engineer has been informed.

### **ARTICLE 11—CHANGES TO THE CONTRACT**

#### 11.01 *Amending and Supplementing the Contract*

- A. The Contract may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.
- B. If an amendment or supplement to the Contract includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order.
- C. All changes to the Contract that involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, must be supported by Engineer's recommendation. Owner and Contractor may amend other terms and conditions of the Contract without the recommendation of the Engineer.

#### 11.02 *Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders covering:
  - 1. Changes in Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;
  - 2. Changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;
  - 3. Changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.05, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters; and
  - 4. Changes that embody the substance of any final and binding results under: Paragraph 11.03.B, resolving the impact of a Work Change Directive; Paragraph 11.09, concerning Change Proposals; Article 12, Claims; Paragraph 13.02.D, final adjustments resulting from allowances; Paragraph 13.03.D, final adjustments relating to determination of quantities for Unit Price Work; and similar provisions.

- B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of Paragraph 11.02.A, it will be deemed to be of full force and effect, as if fully executed.

#### 11.03 *Work Change Directives*

- A. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.07 regarding change of Contract Price.
- B. If Owner has issued a Work Change Directive and:
  - 1. Contractor believes that an adjustment in Contract Times or Contract Price is necessary, then Contractor shall submit any Change Proposal seeking such an adjustment no later than 30 days after the completion of the Work set out in the Work Change Directive.
  - 2. Owner believes that an adjustment in Contract Times or Contract Price is necessary, then Owner shall submit any Claim seeking such an adjustment no later than 60 days after issuance of the Work Change Directive.

#### 11.04 *Field Orders*

- A. Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly.
- B. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

#### 11.05 *Owner-Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Changes involving the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters will be supported by Engineer's recommendation.
- B. Such changes in the Work may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work must be performed under the applicable conditions of the Contract Documents.
- C. Nothing in this Paragraph 11.05 obligates Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

#### 11.06 *Unauthorized Changes in the Work*

- A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.C.2.

11.07 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment of Contract Price must comply with the provisions of Article 12.
- B. An adjustment in the Contract Price will be determined as follows:
  - 1. Where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03);
  - 2. Where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.07.C.2); or
  - 3. Where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.07.C).
- C. *Contractor's Fee*: When applicable, the Contractor's fee for overhead and profit will be determined as follows:
  - 1. A mutually acceptable fixed fee; or
  - 2. If a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
    - a. For costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee will be 15 percent;
    - b. For costs incurred under Paragraph 13.01.B.3, the Contractor's fee will be 5 percent;
    - c. Where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.07.C.2.a and 11.07.C.2.b is that the Contractor's fee will be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of 5 percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted Work the maximum total fee to be paid by Owner will be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the Work;
    - d. No fee will be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;
    - e. The amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in Cost of the Work will be the amount of the actual net decrease in Cost of the Work and a deduction of an additional amount equal to 5 percent of such actual net decrease in Cost of the Work; and
    - f. When both additions and credits are involved in any one change or Change Proposal, the adjustment in Contractor's fee will be computed by determining the sum of the costs in each of the cost categories in Paragraph 13.01.B (specifically, payroll costs, Paragraph 13.01.B.1; incorporated materials and equipment costs, Paragraph 13.01.B.2; Subcontract costs, Paragraph 13.01.B.3; special consultants costs, Paragraph 13.01.B.4; and other costs, Paragraph 13.01.B.5) and applying to each such cost category sum the appropriate fee from Paragraphs 11.07.C.2.a through 11.07.C.2.e, inclusive.

11.08 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment in the Contract Times must comply with the provisions of Article 12.
- B. Delay, disruption, and interference in the Work, and any related changes in Contract Times, are addressed in and governed by Paragraph 4.05.

11.09 *Change Proposals*

- A. *Purpose and Content:* Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; contest an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; challenge a set-off against payment due; or seek other relief under the Contract. The Change Proposal will specify any proposed change in Contract Times or Contract Price, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents. Each Change Proposal will address only one issue, or a set of closely related issues.

B. *Change Proposal Procedures*

- 1. *Submittal:* Contractor shall submit each Change Proposal to Engineer within 30 days after the start of the event giving rise thereto, or after such initial decision.
- 2. *Supporting Data:* The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal.
  - a. Change Proposals based on or related to delay, interruption, or interference must comply with the provisions of Paragraphs 4.05.D and 4.05.E.
  - b. Change proposals related to a change of Contract Price must include full and detailed accounts of materials incorporated into the Work and labor and equipment used for the subject Work.

The supporting data must be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event.

- 3. *Engineer's Initial Review:* Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal. If in its discretion Engineer concludes that additional supporting data is needed before conducting a full review and making a decision regarding the Change Proposal, then Engineer may request that Contractor submit such additional supporting data by a date specified by Engineer, prior to Engineer beginning its full review of the Change Proposal.
- 4. *Engineer's Full Review and Action on the Change Proposal:* Upon receipt of Contractor's supporting data (including any additional data requested by Engineer), Engineer will conduct a full review of each Change Proposal and, within 30 days after such receipt of the Contractor's supporting data, either approve the Change Proposal in whole, deny it in whole, or approve it in part and deny it in part. Such actions must be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.
- 5. *Binding Decision:* Engineer's decision is final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.



- C. *Resolution of Certain Change Proposals*: If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties in writing that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice will be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.
- D. *Post-Completion*: Contractor shall not submit any Change Proposals after Engineer issues a written recommendation of final payment pursuant to Paragraph 15.06.B.

#### 11.10 *Notification to Surety*

- A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

### **ARTICLE 12—CLAIMS**

#### 12.01 *Claims*

- A. *Claims Process*: The following disputes between Owner and Contractor are subject to the Claims process set forth in this article:
  - 1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;
  - 2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents;
  - 3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters; and
  - 4. Subject to the waiver provisions of Paragraph 15.07, any dispute arising after Engineer has issued a written recommendation of final payment pursuant to Paragraph 15.06.B.
- B. *Submittal of Claim*: The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim rests with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.
- C. *Review and Resolution*: The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim will be stated in writing and submitted to the other party, with a copy to Engineer.
- D. *Mediation*
  - 1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate will stay the Claim submittal and response process.
  - 2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal

and decision process will resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal and decision process will resume as of the date of the conclusion of the mediation, as determined by the mediator.

3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.
- E. *Partial Approval*: If the party receiving a Claim approves the Claim in part and denies it in part, such action will be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.
- F. *Denial of Claim*: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim will be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.
- G. *Final and Binding Results*: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim will be incorporated in a Change Order or other written document to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

## **ARTICLE 13—COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK**

### **13.01 Cost of the Work**

- A. *Purposes for Determination of Cost of the Work*: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:
  1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or
  2. When needed to determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.
- B. *Costs Included*: Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work will be in amounts no higher than those commonly incurred in the locality of the Project, will not include any of the costs itemized in Paragraph 13.01.C, and will include only the following items:
  1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor in advance of the subject Work. Such employees include, without limitation, superintendents, foremen, safety managers, safety representatives, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work will be apportioned on the basis of their time spent on the Work. Payroll costs include, but are not limited to, salaries and wages plus the cost of fringe benefits, which include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, sick leave, and vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, will be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts will accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment will accrue to Owner, and Contractor shall make provisions so that they may be obtained.
3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, which will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee will be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.
4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed or retained for services specifically related to the Work.
5. Other costs consisting of the following:
  - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
  - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.
    - 1) In establishing included costs for materials such as scaffolding, plating, or sheeting, consideration will be given to the actual or the estimated life of the material for use on other projects; or rental rates may be established on the basis of purchase or salvage value of such items, whichever is less. Contractor will not be eligible for compensation for such items in an amount that exceeds the purchase cost of such item.
  - c. *Construction Equipment Rental*
    - 1) Rentals of all construction equipment and machinery, and the parts thereof, in accordance with rental agreements approved by Owner as to price (including any surcharge or special rates applicable to overtime use of the construction equipment or machinery), and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs will be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts must cease when the use thereof is no longer necessary for the Work.
    - 2) Costs for equipment and machinery owned by Contractor or a Contractor-related entity will be paid at a rate shown for such equipment in the equipment rental rate book specified in the Supplementary Conditions. An hourly rate will be computed by dividing the monthly rates by 176. These computed rates will include all operating costs.
    - 3) With respect to Work that is the result of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price ("changed Work"), included costs will be based on the time the equipment or machinery is in use on the changed Work and the costs of transportation, loading, unloading, assembly, dismantling, and removal when directly attributable to the changed Work. The cost of any such equipment or machinery, or parts thereof, must cease to accrue when the use thereof is no longer necessary for the changed Work.

- d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
- e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
- f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of builder's risk or other property insurance established in accordance with Paragraph 6.04), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses will be included in the Cost of the Work for the purpose of determining Contractor's fee.
- g. The cost of utilities, fuel, and sanitary facilities at the Site.
- h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.
- i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.

C. *Costs Excluded:* The term Cost of the Work does not include any of the following items:

- 1. Payroll costs and other compensation of Contractor's officers, executives, principals, general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.
- 2. The cost of purchasing, renting, or furnishing small tools and hand tools.
- 3. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
- 4. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
- 5. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
- 6. Expenses incurred in preparing and advancing Claims.
- 7. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.

D. *Contractor's Fee*

- 1. When the Work as a whole is performed on the basis of cost-plus-a-fee, then:
  - a. Contractor's fee for the Work set forth in the Contract Documents as of the Effective Date of the Contract will be determined as set forth in the Agreement.

- b. for any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work, Contractor's fee will be determined as follows:
  - 1) When the fee for the Work as a whole is a percentage of the Cost of the Work, the fee will automatically adjust as the Cost of the Work changes.
  - 2) When the fee for the Work as a whole is a fixed fee, the fee for any additions or deletions will be determined in accordance with Paragraph 11.07.C.2.
- 2. When the Work as a whole is performed on the basis of a stipulated sum, or any other basis other than cost-plus-a-fee, then Contractor's fee for any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work will be determined in accordance with Paragraph 11.07.C.2.
- E. *Documentation and Audit*: Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor and pertinent Subcontractors will establish and maintain records of the costs in accordance with generally accepted accounting practices. Subject to prior written notice, Owner will be afforded reasonable access, during normal business hours, to all Contractor's accounts, records, books, correspondence, instructions, drawings, receipts, vouchers, memoranda, and similar data relating to the Cost of the Work and Contractor's fee. Contractor shall preserve all such documents for a period of three years after the final payment by Owner. Pertinent Subcontractors will afford such access to Owner, and preserve such documents, to the same extent required of Contractor.

#### 13.02 Allowances

- A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.
- B. *Cash Allowances*: Contractor agrees that:
  - 1. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
  - 2. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment for any of the foregoing will be valid.
- C. *Owner's Contingency Allowance*: Contractor agrees that an Owner's contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.
- D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor for Work covered by allowances, and the Contract Price will be correspondingly adjusted.

#### 13.03 Unit Price Work

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.

- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, and the final adjustment of Contract Price will be set forth in a Change Order, subject to the provisions of the following paragraph.
- E. *Adjustments in Unit Price*
  - 1. Contractor or Owner shall be entitled to an adjustment in the unit price with respect to an item of Unit Price Work if:
    - a. the quantity of the item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and
    - b. Contractor's unit costs to perform the item of Unit Price Work have changed materially and significantly as a result of the quantity change.
  - 2. The adjustment in unit price will account for and be coordinated with any related changes in quantities of other items of Work, and in Contractor's costs to perform such other Work, such that the resulting overall change in Contract Price is equitable to Owner and Contractor.
  - 3. Adjusted unit prices will apply to all units of that item.

**ARTICLE 14—TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCEPTANCE OF DEFECTIVE WORK**

14.01 *Access to Work*

- A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and authorities having jurisdiction have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply with such procedures and programs as applicable.

14.02 *Tests, Inspections, and Approvals*

- A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.
- B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work will be governed by the provisions of Paragraph 14.05.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.
- D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:
  - 1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;

2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;
3. by manufacturers of equipment furnished under the Contract Documents;
4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

Such inspections and tests will be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

- E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.
- F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering will be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to cover the same and Engineer had not acted with reasonable promptness in response to such notice.

#### 14.03 *Defective Work*

- A. *Contractor's Obligation:* It is Contractor's obligation to assure that the Work is not defective.
- B. *Engineer's Authority:* Engineer has the authority to determine whether Work is defective, and to reject defective Work.
- C. *Notice of Defects:* Prompt written notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.
- D. *Correction, or Removal and Replacement:* Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.
- E. *Preservation of Warranties:* When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.
- F. *Costs and Damages:* In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs, losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

#### 14.04 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final

payment, the necessary revisions in the Contract Documents with respect to the Work will be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

14.05 *Uncovering Work*

- A. Engineer has the authority to require additional inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.
- B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.
- C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.
  - 1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.
  - 2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

14.06 *Owner May Stop the Work*

- A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work will not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

14.07 *Owner May Correct Defective Work*

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace defective Work as required by Engineer, then Owner may, after 7 days' written notice to Contractor, correct or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.



- C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.
- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

## **ARTICLE 15—PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD**

### **15.01 *Progress Payments***

- A. *Basis for Progress Payments:* The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments for Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.
- B. *Applications for Payments*
  - 1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents.
  - 2. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment must also be accompanied by: (a) a bill of sale, invoice, copies of subcontract or purchase order payments, or other documentation establishing full payment by Contractor for the materials and equipment; (b) at Owner's request, documentation warranting that Owner has received the materials and equipment free and clear of all Liens; and (c) evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.
  - 3. Beginning with the second Application for Payment, each Application must include an affidavit of Contractor stating that all previous progress payments received by Contractor have been applied to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
  - 4. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.
- C. *Review of Applications*
  - 1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
  - 2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of

the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

- a. the Work has progressed to the point indicated;
  - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and
  - c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
- a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or
  - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.
4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
- a. to supervise, direct, or control the Work;
  - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto;
  - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work;
  - d. to make any examination to ascertain how or for what purposes Contractor has used the money paid by Owner; or
  - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.
6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:
- a. the Work is defective, requiring correction or replacement;
  - b. the Contract Price has been reduced by Change Orders;
  - c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
  - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or
  - e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

D. *Payment Becomes Due*

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.

E. *Reductions in Payment by Owner*

1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:
  - a. Claims have been made against Owner based on Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages resulting from Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;
  - b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;
  - c. Contractor has failed to provide and maintain required bonds or insurance;
  - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;
  - e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
  - f. The Work is defective, requiring correction or replacement;
  - g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
  - h. The Contract Price has been reduced by Change Orders;
  - i. An event has occurred that would constitute a default by Contractor and therefore justify a termination for cause;
  - j. Liquidated or other damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;
  - k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens; or
  - l. Other items entitle Owner to a set-off against the amount recommended.
2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed will be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.
3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld will be treated as an amount due as determined by Paragraph 15.01.D.1 and subject to interest as provided in the Agreement.

15.02 *Contractor's Warranty of Title*

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than 7 days after the time of payment by Owner.

15.03 *Substantial Completion*

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.
- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which will fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have 7 days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.
- D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.
- E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.
- F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 *Partial Use or Occupancy*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that

can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:

1. At any time, Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through 15.03.E for that part of the Work.
2. At any time, Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.
4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.04 regarding builder's risk or other property insurance.

15.05 *Final Inspection*

- A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

15.06 *Final Payment*

A. *Application for Payment*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, annotated record documents (as provided in Paragraph 7.12), and other documents, Contractor may make application for final payment.
2. The final Application for Payment must be accompanied (except as previously delivered) by:
  - a. all documentation called for in the Contract Documents;
  - b. consent of the surety, if any, to final payment;
  - c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.
  - d. a list of all duly pending Change Proposals and Claims; and
  - e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in

liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.

- B. *Engineer's Review of Final Application and Recommendation of Payment:* If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within 10 days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the final Application for Payment to Owner for payment. Such recommendation will account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.
- C. *Notice of Acceptability:* In support of its recommendation of payment of the final Application for Payment, Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to stated limitations in the notice and to the provisions of Paragraph 15.07.
- D. *Completion of Work:* The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment and issuance of notice of the acceptability of the Work.
- E. *Final Payment Becomes Due:* Upon receipt from Engineer of the final Application for Payment and accompanying documentation, Owner shall set off against the amount recommended by Engineer for final payment any further sum to which Owner is entitled, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions of this Contract with respect to progress payments. Owner shall pay the resulting balance due to Contractor within 30 days of Owner's receipt of the final Application for Payment from Engineer.

#### 15.07 *Waiver of Claims*

- A. By making final payment, Owner waives its claim or right to liquidated damages or other damages for late completion by Contractor, except as set forth in an outstanding Claim, appeal under the provisions of Article 17, set-off, or express reservation of rights by Owner. Owner reserves all other claims or rights after final payment.
- B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted as a Claim, or appealed under the provisions of Article 17.

#### 15.08 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the Supplementary Conditions or the terms of any applicable special guarantee required by the Contract Documents), Owner gives Contractor written notice that any Work has been found to be defective, or that Contractor's repair of any damages to the Site or adjacent areas has been found to be defective, then after receipt of such notice of defect Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
  - 1. correct the defective repairs to the Site or such adjacent areas;
  - 2. correct such defective Work;
  - 3. remove the defective Work from the Project and replace it with Work that is not defective, if the defective Work has been rejected by Owner, and

4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting from the corrective measures.
- B. Owner shall give any such notice of defect within 60 days of the discovery that such Work or repairs is defective. If such notice is given within such 60 days but after the end of the correction period, the notice will be deemed a notice of defective Work under Paragraph 7.17.B.
- C. If, after receipt of a notice of defect within 60 days and within the correction period, Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others). Contractor's failure to pay such costs, losses, and damages within 10 days of invoice from Owner will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the failure to pay.
- D. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- E. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.
- F. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph are not to be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

## **ARTICLE 16—SUSPENSION OF WORK AND TERMINATION**

### **16.01 *Owner May Suspend Work***

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times directly attributable to any such suspension. Any Change Proposal seeking such adjustments must be submitted no later than 30 days after the date fixed for resumption of Work.

### **16.02 *Owner May Terminate for Cause***

- A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:
  1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment, or failure to adhere to the Progress Schedule);
  2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
  3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or
  4. Contractor's repeated disregard of the authority of Owner or Engineer.

- B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) 10 days' written notice that Owner is considering a declaration that Contractor is in default and termination of the Contract, Owner may proceed to:
  - 1. declare Contractor to be in default, and give Contractor (and any surety) written notice that the Contract is terminated; and
  - 2. enforce the rights available to Owner under any applicable performance bond.
- C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.
- D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within 7 days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.
- E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.
- F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.
- G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond will govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

**16.03 *Owner May Terminate for Convenience***

- A. Upon 7 days' written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
  - 1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
  - 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and
  - 3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.
- B. Contractor shall not be paid for any loss of anticipated profits or revenue, post-termination overhead costs, or other economic loss arising out of or resulting from such termination.



16.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon 7 days' written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.
- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, 7 days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

**ARTICLE 17—FINAL RESOLUTION OF DISPUTES**

17.01 *Methods and Procedures*

- A. *Disputes Subject to Final Resolution:* The following disputed matters are subject to final resolution under the provisions of this article:
  - 1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full, pursuant to Article 12; and
  - 2. Disputes between Owner and Contractor concerning the Work, or obligations under the Contract Documents, that arise after final payment has been made.
- B. *Final Resolution of Disputes:* For any dispute subject to resolution under this article, Owner or Contractor may:
  - 1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions;
  - 2. agree with the other party to submit the dispute to another dispute resolution process; or
  - 3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

**ARTICLE 18—MISCELLANEOUS**

18.01 *Giving Notice*

- A. Whenever any provision of the Contract requires the giving of written notice to Owner, Engineer, or Contractor, it will be deemed to have been validly given only if delivered:
  - 1. in person, by a commercial courier service or otherwise, to the recipient's place of business;
  - 2. by registered or certified mail, postage prepaid, to the recipient's place of business; or
  - 3. by e-mail to the recipient, with the words "Formal Notice" or similar in the e-mail's subject line.

18.02 *Computation of Times*

- A. When any period of time is referred to in the Contract by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

18.03 *Cumulative Remedies*

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

18.04 *Limitation of Damages*

- A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.05 *No Waiver*

- A. A party's non-enforcement of any provision will not constitute a waiver of that provision, nor will it affect the enforceability of that provision or of the remainder of this Contract.

18.06 *Survival of Obligations*

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract, as well as all continuing obligations indicated in the Contract, will survive final payment, completion, and acceptance of the Work or termination of the Contract or of the services of Contractor.

18.07 *Controlling Law*

- A. This Contract is to be governed by the law of the state in which the Project is located.

18.08 *Assignment of Contract*

- A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party to this Contract of any rights under or interests in the Contract will be binding on the other party without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract.

18.09 *Successors and Assigns*

- A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

18.10 *Headings*

- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

## SUPPLEMENTARY CONDITIONS

These Supplementary Conditions amend or supplement EJCDC® C-700, Standard General Conditions of the Construction Contract (2018). The General Conditions remain in full force and effect except as amended.

The terms used in these Supplementary Conditions have the meanings stated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

The address system used in these Supplementary Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added—for example, "Paragraph SC-4.05."

### ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

#### 1.01 *Defined Terms*

SC-1.01.A.37 Add the following language at the end of Paragraph 1.01.A.37:

The term Shop Drawings, and the procedures related to Shop Drawings, also includes Submittals identified as "product data" in the Specifications.

SC-1.01.A.51 Add the following new paragraph immediately after Paragraph 1.01.A.50:

51. *Project Manual* - The written documents prepared for, or made available for, procuring and constructing the Work, including but not limited to the Bidding Documents or other construction procurement documents, geotechnical and existing conditions information, the Agreement, bond forms, General Conditions, Supplementary Conditions, and Specifications. The contents of the Project Manual may be bound in one or more volumes.

### ARTICLE 2 – PRELIMINARY MATTERS

#### 2.02 *Copies of Documents*

SC-2.02.A Amend the first sentence of Paragraph 2.02.A to read as follows:

Owner shall furnish to Contractor one copy of the Contract Documents (including one fully executed counterpart of the Agreement) in electronic portable document format (PDF).

#### 2.06 *Electronic Transmittals*

SC-2.06 Delete Paragraphs 2.06.B and 2.06.C in their entirety and insert the following in their place:

- B. *Electronic Documents Protocol*: The parties shall conform to the following provisions in Paragraphs 2.06.B and 2.06.C, together referred to as the Electronic Documents Protocol ("EDP" or "Protocol") for exchange of electronic transmittals.
  1. *Basic Requirements*
    - a. Electronic Documents as exchanged by this Protocol may be used in the same manner as the printed versions of the same documents that are exchanged using non-electronic format and methods, subject to the same governing requirements, limitations, and restrictions, set forth in the Contract Documents.
    - b. When transmitting Electronic Documents, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the receiving party's use of software application packages, operating systems, or computer hardware differing from those established in this Protocol.
    - c. Nothing herein negates any obligation 1) in the Contract to create, provide, or maintain an original printed record version of Drawings and Specifications, signed

and sealed according to applicable Laws and Regulations; 2) to comply with any applicable Law or Regulation governing the signing and sealing of design documents or the signing and electronic transmission of any other documents; or 3) to comply with the notice requirements of Paragraph 18.01 of the General Conditions.

2. *System Infrastructure for Electronic Document Exchange*

- a. Each party will provide hardware, operating system(s) software, internet, e-mail, and large file transfer functions (“System Infrastructure”) at its own cost and sufficient for complying with the EDP requirements.
- b. Each party will operate and maintain industry-standard, industry-accepted, ISO-standard, commercial-grade security software and systems that are intended to protect the other party from: software viruses and other malicious software like worms, trojans, adware; data breaches; loss of confidentiality; and other threats in the transmission to or storage of information from the other parties, including transmission of Electronic Documents by physical media such as CD/DVD/flash drive/hard drive. To the extent that a party maintains and operates such security software and systems, it shall not be liable to the other party for any breach of system security.
- c. Each party is responsible for its own back-up and archive of documents sent and received during the term of the contract under this EDP.
- d. If a receiving party receives an obviously corrupted, damaged, or unreadable Electronic Document, the receiving party will advise the sending party of the incomplete transmission.

C. *Software Requirements for Electronic Document Exchange*

- 1. Each party will acquire the software and software licenses necessary to create and transmit Electronic Documents and to read and to use any Electronic Documents received from the other party, using the software formats required in this section of the EDP. Prior to using any updated version of the software required in this section for sending Electronic Documents to the other party, the originating party will first notify and receive concurrence from the other party for use of the updated version or adjust its transmission to comply with this EDP.
- 2. Software and data formats for exchange of Electronic Documents will conform to the requirements set forth below.

<b>Item</b>	<b>Electronic Documents</b>	<b>Transmittal Means</b>	<b>Data Format</b>	<b>Note (1)</b>
1	General communications, transmittal covers, meeting notices and responses to general information requests for which there is no specific prescribed form.	Email	Email	
2	Meeting agendas, meeting minutes, RFI's and responses to RFI's, and Contract forms.	Email w/ Attachment	PDF	(2)
3	Contactors Submittals (Shop Drawings, “or equal” requests, substitution requests, documentation accompanying Sample submittals and other submittals) to Owner and Engineer, and Owner's and Engineer's responses to Contractor's Submittals, Shop Drawings, correspondence, and Applications for Payment.	Email w/ Attachment	PDF	
4	Correspondence; milestone and final version Submittals of reports, layouts, Drawings, maps, calculations and spreadsheets, Specifications, Drawings and other Submittals from Contractor to Owner or Engineer and for	Email w/ Attachment or LFE	PDF	

	responses from Engineer and Owner to Contractor regarding Submittals.			
5	Correspondence, reports and Specifications to be submitted to Owner for future word processing use and modification.	Email w/ Attachment or LFE	DOC	
6	Spreadsheets and data to be submitted to Owner for future data processing use and modification.	Email w/ Attachment or LFE	EXC	
Notes				
(1)	All exchanges and uses of transmitted data are subject to the appropriate provisions of Contract Documents.			
(2)	Transmittal of written notices is governed by Paragraph 18.01 of the General Conditions.			
Key				
Email	Standard Email formats (.htm, .rtf, or .txt). Do not use stationery formatting or other features that impair legibility of content on screen or in printed copies			
LFE	Agreed upon Large File Exchange method (FTP, CD, DVD, hard drive)			
PDF	Portable Document Format readable by Adobe® Acrobat Reader Version 11 or later			
DOC	Microsoft® Word .docx format Version 2016			
EXC	Microsoft® Excel .xls or .xml format Version 2016			

#### **ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK**

##### *4.01 Commencement of Contract Times; Notice to Proceed*

SC-4.01.A Delete Paragraph 4.01.A in its entirety and insert the following in its place:

- A. The Contract Times will commence to run on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within thirty days after the Effective Date of the Agreement, unless otherwise stated in the Agreement.

#### **ARTICLE 5 – SITE; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS**

##### *5.06 Hazardous Environmental Conditions at Site*

SC-5.06 Add the following new paragraphs immediately after Paragraph 5.06.A.3:

- 4. The following lists the reports known to Owner relating to Hazardous Environmental Conditions at or adjacent to the Site, and the Technical Data (if any) upon which Contractor may rely: See Appendix A of this Project Manual. The Technical Data contained in such report on which Contractor may rely is as indicated in the definition of Technical Data in the General Conditions.
- 5. The following lists the drawings known to Owner relating to Hazardous Environmental Conditions at or adjacent to the Site, and Technical Data (if any) contained in such Drawings upon which Contractor may rely: None.

#### **ARTICLE 6 – BONDS AND INSURANCE**

##### *6.01 Performance, Payment, and Other Bonds*

SC-6.01.C Add the following language at the end of Paragraph 6.01.C:

The performance and payment bonds furnished for the project are for a public improvement contract. The bonds shall be construed to comply with Wis. Stats., s. 779.14.

6.03 *Contractor's Insurance*

SC-6.03 Supplement Paragraph 6.03 with the following provisions after Paragraph 6.03.C:

- D. *Supplement to Additional Insureds:* As a supplement to the provisions of Paragraph 6.03.C of the General Conditions, the commercial general liability, automobile liability, umbrella or excess, and (if applicable) pollution liability policies must include as additional insureds the following:
1. Owner: City of Whitewater
  2. Engineer: Ayres Associates Inc
  3. Other: None
- E. *Workers' Compensation and Employer's Liability:* Contractor shall purchase and maintain workers' compensation and employer's liability insurance, including, as applicable, United States Longshoreman and Harbor Workers' Compensation Act coverage.

<b>Workers' Compensation and Related Policies</b>	<b>Policy limits of not less than:</b>
<b>Workers' Compensation</b>	
State	Statutory
Applicable Federal (e.g., Longshoreman's)	Statutory
<b>Employer's Liability</b>	
Each accident	\$100,000
Disease, each employee	\$100,000
Disease, policy limit	\$500,000

- F. *Commercial General Liability—Claims Covered:* Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against claims for:
1. damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees,
  2. damages insured by reasonably available personal injury liability coverage, and
  3. damages because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.
- G. *Commercial General Liability—Form and Content:* Contractor's commercial liability policy must be written on a 1996 (or later) Insurance Services Organization, Inc. (ISO) commercial general liability form (occurrence form) and include the following coverages and endorsements:
1. Products and completed operations coverage.
    - a. Such insurance must be maintained for three years after final payment.
    - b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.
  2. Blanket contractual liability coverage, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.
  3. Severability of interests and no insured-versus-insured or cross-liability exclusions.
  4. Underground, explosion, and collapse coverage.
  5. Personal injury coverage.

6. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together). If Contractor demonstrates to Owner that the specified ISO endorsements are not commercially available, then Contractor may satisfy this requirement by providing equivalent endorsements.
  7. For design professional additional insureds, ISO Endorsement CG 20 32 07 04 “Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured” or its equivalent.
- H. *Commercial General Liability—Excluded Content:* The commercial general liability insurance policy, including its coverages, endorsements, and incorporated provisions, must not include any of the following:
1. Any modification of the standard definition of “insured contract” (except to delete the railroad protective liability exclusion if Contractor is required to indemnify a railroad or others with respect to Work within 50 feet of railroad property).
  2. Any exclusion for water intrusion or water damage.
  3. Any provisions resulting in the erosion of insurance limits by defense costs other than those already incorporated in ISO form CG 00 01.
  4. Any exclusion of coverage relating to earth subsidence or movement.
  5. Any exclusion for the insured’s vicarious liability, strict liability, or statutory liability (other than worker’s compensation).
  6. Any limitation or exclusion based on the nature of Contractor’s work.
  7. Any professional liability exclusion broader in effect than the most recent edition of ISO form CG 22 79.
- I. *Commercial General Liability—Minimum Policy Limits*

<b>Commercial General Liability</b>	<b>Policy limits of not less than:</b>
General Aggregate	\$2,000,000
Products—Completed Operations Aggregate	\$2,000,000
Personal and Advertising Injury	\$1,000,000
Bodily Injury and Property Damage—Each Occurrence	\$1,000,000

- J. *Automobile Liability:* Contractor shall purchase and maintain automobile liability insurance for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy must be written on an occurrence basis.

<b>Automobile Liability</b>	<b>Policy limits of not less than:</b>
<b>Combined Single Limit</b>	
Combined Single Limit (Bodily Injury and Property Damage)	\$1,000,000

- K. *Umbrella or Excess Liability:* Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer’s liability, commercial general liability, and automobile liability insurance described in the Paragraphs above. The coverage afforded must be at least as broad as that of each and every one of the underlying policies.

<b>Excess or Umbrella Liability</b>	<b>Policy limits of not less than:</b>
Each Occurrence	\$2,000,000

<b>Excess or Umbrella Liability</b>	<b>Policy limits of not less than:</b>
General Aggregate	\$2,000,000

- L. *Contractor's Pollution Liability Insurance:* Contractor shall purchase and maintain a policy covering third-party injury and property damage, including cleanup costs, as a result of pollution conditions arising from Contractor's operations and completed operations. This insurance must be maintained for no less than three years after final completion.

<b>Contractor's Pollution Liability</b>	<b>Policy limits of not less than:</b>
Each Occurrence/Claim	\$1,000,000
General Aggregate	\$1,000,000

- M. *Contractor's Professional Liability Insurance:* If Contractor will provide or furnish professional services under this *Contract*, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance must cover negligent acts, errors, or omissions in the performance of professional design or related services by the insured or others for whom the insured is legally liable. The insurance must be maintained throughout the duration of the *Contract* and for a minimum of two years after Substantial Completion. The retroactive date on the policy must pre-date the commencement of furnishing services on the Project.

<b>Contractor's Professional Liability</b>	<b>Policy limits of not less than:</b>
Each Claim	\$1,000,000
Annual Aggregate	\$1,000,000

#### 6.04 *Builder's Risk and Other Property Insurance*

SC-6.04 Supplement Paragraph 6.04 of the General Conditions with the following provisions:

- F. *Builder's Risk Requirements:* The builder's risk insurance must:
1. be written on a builder's risk "all risk" policy form that at a minimum includes insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment stored and in transit, and must not exclude the coverage of the following risks: fire; windstorm; hail; flood; earthquake, volcanic activity, and other earth movement; lightning; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; and water damage (other than that caused by flood).
    - a. Such policy will include an exception that results in coverage for ensuing losses from physical damage or loss with respect to any defective workmanship, methods, design, or materials exclusions.
    - b. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake, volcanic activity, and other earth movement; or flood, are not commercially available under builder's risk policies, by endorsement or otherwise, such insurance will be provided through other insurance policies acceptable to Owner and Contractor.
  2. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication,



construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.

3. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of contractors, engineers, and architects).
4. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).
5. extend to cover damage or loss to insured property while in transit.
6. allow for the waiver of the insurer's subrogation rights, as set forth in this Contract.
7. allow for partial occupancy or use by Owner by endorsement, and without cancellation or lapse of coverage.
8. include performance/hot testing and start-up, if applicable.
9. be maintained in effect until the Work is complete, as set forth in Paragraph 15.06.D of the General Conditions, or until written confirmation of Owner's procurement of property insurance following Substantial Completion, whichever occurs first.
10. include as named insureds the Owner, Contractor, Subcontractors (of every tier), and any other individuals or entities required by this Contract to be insured under such builder's risk policy. For purposes of Paragraphs 6.04, 6.05, and 6.06 of the General Conditions, and this and all other corresponding Supplementary Conditions, the parties required to be insured will be referred to collectively as "insureds."

## **ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES**

### *7.05 "Or Equals"*

SC-7.05 Add the following new paragraph immediately after Paragraph 7.05.E:

- F. "Or equal" items proposed after Contract award are subject to the restrictions, if any, specified in Section 01 01 00.

### *7.06 Substitutes*

SC-7.06 Add the following new paragraph immediately after Paragraph 7.06.F:

- G. Substitutions proposed after Contract award are subject to the restrictions, if any, specified in Section 01 01 00.

### *7.07 Concerning Subcontractors and Suppliers*

SC-7.07.A Add the following new paragraphs immediately after Paragraph 7.07.A:

1. Contractor shall submit a list of subcontractors as indicated on the Bid Form.
2. In accordance with Wis. Stats., s. 779.14, Contractor agrees, to the extent practicable, to maintain a list of all subcontractors and suppliers performing labor or furnishing materials to Contractor for the project.

## 7.20 *Nonresident Contractors*

SC-7.20 Add the following new paragraph after Paragraph 7.19:

### 7.20 *Nonresident Contractors*

- A. The State of Wisconsin requires nonresident persons, whether incorporated or not, engaging in construction contracting in the State as a contractor or subcontractor to file a surety bond with the Wis. Dept. of Revenue or (if approved) a cash deposit with the Wis. Dept. of Administration to guarantee the payment of certain taxes. The bond or deposit is required where the amount of the contract or subcontract (or the aggregate amount of two or more contracts or subcontracts in one year) is \$50,000 or more. The bond or deposit must be filed within 60 days after construction is begun. Refer to Wis. Stats., s. 71.80(16), for complete requirements.
- B. Nonresident contractors and subcontractors are responsible for making their own arrangements to meet this requirement.

## **ARTICLE 10 – ENGINEER'S STATUS DURING CONSTRUCTION**

### 10.03 *Resident Project Representative*

SC-10.03 Delete Paragraph 10.03 in its entirety and insert the following in its place:

[Deleted]

## **ARTICLE 13 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK**

### 13.03 *Unit Price Work*

SC-13.03.E.1.b Add the following language at the end of Paragraph 13.03.E.1.b:

"Materially and significantly" shall be defined in accordance with the provisions of Section 01 22 50.

## **ARTICLE 15 – PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD**

### 15.01 *Progress Payments*

SC-15.01.B.1 Amend the first sentence of Paragraph 15.01.B.1 by changing "20 days" to "30 days."

SC-15.01.B.4 Delete Paragraph 15.01.B.4 in its entirety and insert the following new paragraphs in its place:

4. Retainage shall be accumulated at 5% of the value of the Work completed, and 5% of the value of materials and equipment delivered and suitably stored, until 50% completion. At 50% completion, no additional amounts shall be retained unless Engineer certifies that the Work is not proceeding satisfactorily, but amounts previously retained shall not be paid to Contractor. At 50% completion or any time thereafter when the progress of the Work is not satisfactory, additional amounts may be retained but in no event shall total retainage be more than 10% of the value of the Work completed and material and equipment delivered and suitably stored.
5. Upon Substantial Completion, payments shall be increased to 98% of the Contract Price (i.e. retainage will be reduced to 2% of the Contract Price), less an allowance for incomplete Work and other amounts that may be withheld in accordance with the General Conditions.

SC-15.01.D.1 Delete Paragraph 15.01.D.1 and insert the following in its place:

Twenty days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.

SC-15.01.E.4 Add the following new paragraph immediately after Paragraph 15.01.E.3:

4. In the event Owner receives notice from any person, subcontractor, supplier, or other third party, that Contractor has failed to pay such party for Work performed in accordance with the Contract Documents, Contractor shall, at request of Owner, and in no more than 10 calendar days, provide all documentation Owner believes necessary to determine whether such payment is due, or reasons for non-payment of disputed amounts. In the event Owner determines a claim to be valid, Owner may withhold from Contractor's unpaid compensation a sum of money deemed reasonably sufficient to pay such claim until satisfactory documentation is furnished that the liability has been fully discharged or reasons for non-payment of disputed amounts are provided by Contractor. In the event a claim is valid and payment is due, or in the absence of the requested documentation, Owner may authorize direct or two-party payment of any unpaid bills. In no event shall this provision be construed to impose any obligations upon Owner or Engineer to either Contractor or Contractor's surety (if any).

#### **ARTICLE 17 – FINAL RESOLUTION OF DISPUTES**

SC-17.02 Add the following new paragraph immediately after Paragraph 17.01:

[insert Owner's alternative dispute resolution process, if any]

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# Specifications

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## SECTION 01 01 00

### GENERAL REQUIREMENTS

#### PART 1 GENERAL

##### 1.01 PROJECT DESCRIPTION

- A. In general, the project consists of mechanically dredging in the winter approximately 89,500 cubic yards of sediment from the bed of Cravath and Tripp Lakes within the designated areas shown on the Drawings. The Owner has identified disposal sites for the dredged sediment. These disposal sites are also shown on the Drawings.

##### 1.02 WORK BY OTHERS

- A. Owner (through individual property owners) will be responsible for removing docks where they interfere with the dredging limits. If Owner (through individual property owners) does not remove a dock before Contractor is ready to dredge, Contractor must avoid dock with a 10-foot buffer.
- B. Contractor is responsible for maintaining adequate buffer around personal property of the shoreline owners. In event that personal property is left in the lake, Contractor is responsible for any damages to personal property that has not been removed from the dredging areas. Contractor is not responsible for dredging the areas that they cannot access due to personal property impeding the work space.

##### 1.03 WORK SEQUENCE

- A. The work shall be performed in accordance with general sequence or phasing outlined below. Contractor shall be responsible of the specific sequence of work within this general outline.
  - 1. Prepare haul routes and erosion control.
  - 2. Strip and save topsoil at disposal sites.
  - 3. Remove and temporarily stockpile large pieces of driftwood from dredge areas.
  - 4. Dredge sediment within dredge areas.
  - 5. Load and transport sediment to disposal sites.
  - 6. Dispose of sediments.
  - 7. Return stockpiled driftwood to lake beds.
  - 8. Remove construction haul routes and restore disturbed areas to original conditions.
  - 9. Spread salvaged topsoil and seed at disposal sites.

##### 1.04 PROJECT MEETINGS

- A. A preconstruction conference will be scheduled after award of contract and prior to beginning work. This meeting shall be attended by A/E, Owner, and an authorized representative of Contractor.
- B. Periodic progress meetings will be held at project site at times designated by Owner or A/E. A responsible representative of Contractor who can bind Contractor to decisions shall attend.

##### 1.05 WORK HOURS

- A. Work shall be conducted between the hours of 7:00 a.m. to 6:00 p.m. on Monday through Saturday, unless approved for unusual circumstances.
- B. Give written notice to A/E whenever it is desired to perform work at night, or on a Sunday, or holiday, or to vary period of hours during which work is carried on each day. If approved, such work shall be subject to requirements furnished in writing by A/E, and no extra compensation will be allowed.

## **1.06 SUBMITTAL PROCEDURES**

- A. See Section 01 33 00.

## **1.07 PERMITS AND CODES**

- A. Owner will obtain the following permits, licenses, and approvals:
  - 1. WDNR Chapter 30 dredging permit.
  - 2. USACE authorization to work in waters of the US.
- B. Contractor shall comply with the requirements of the above permits, licenses, and approvals. If a copy of a permit, license, or approval is not available for review prior to the Bid Deadline, and if it contains a requirement not covered by the Contract Documents, such a requirement will be considered extra work if Contractor makes a claim under the terms of the General Conditions. Work shall not begin on items applicable to the above until the required permit, license, or approval is received.
- C. Contractor shall provide all other necessary permits and licenses and pay all fees, taxes, and royalties, unless otherwise indicated.
- D. Comply with local and municipal ordinances and applicable state and national codes.

## **1.08 TEMPORARY UTILITIES**

- A. Contractor shall be responsible for providing temporary electric power as required for construction purposes. Provide portable power supply or make arrangements with local utility company.
- B. Contractor shall be responsible for obtaining water for its needs. Pay cost of water used and meter rental, if applicable.
- C. Contractor shall provide temporary outside toilets sufficient for construction workers. Toilets shall be self-contained chemical type and shall comply with applicable Codes. Maintain sanitary facilities in a clean and sanitary condition; supply toilet paper until completion of project.

## **1.09 PROTECTION**

- A. Furnish and maintain proper barricades, fences, signal lights, warning signs, and personnel as required to properly protect and safeguard the work, persons, animals, and property against injury.
- B. No fluid-containing (gas, diesel, hydraulic oil, engine oil, etc.) equipment may be stored unattended in lake bed overnight.

## **1.10 ENVIRONMENTAL CONTROLS**

- A. See Section 01 57 19.

## **1.11 TRAFFIC CONTROL**

- A. Conduct operations to ensure minimum interference with streets, walks, and adjacent facilities not part of construction project.
- B. Do not close or obstruct streets, walks, or other occupied or used facilities without permission from authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.



- C. Contractor shall abide by weight restrictions placed on roads by local municipalities. If desired, Contractor may arrange for temporary access to disposal sites to simplify access and to avoid using roads with weight restrictions.

#### **1.12 PRODUCT REQUIREMENTS**

- A. General: Provide new products manufactured and conditioned for the particular application as recommended by manufacturer, unless otherwise noted. Transport, handle, store, and protect products as specified and in accordance with manufacturer's recommendations.
- B. Acceptable Manufacturers: Products, materials, and equipment identified by reference to a manufacturer's name, catalog number, or model are identified for the purpose of establishing a standard of type, function, appearance, and quality. Unless otherwise noted, any other product, material, or equipment which will perform adequately the duties imposed by the general design will be considered for substitution in accordance with the provisions below.
- C. Bid Phase Substitutions: Substitutions and "or equal" items proposed prior to the Bid Deadline shall be submitted in accordance with the Instructions to Bidders.
- D. Construction Phase Substitutions: Substitutions and "or equal" items proposed after Contract has been awarded shall be submitted for approval prior to their use. Consideration will be given only to proposed substitutions and "or equal" items where:
  - 1. The products named in the Contract Documents are no longer available or cannot be provided within the Contract Time.
  - 2. The manufacturers' standard products are no longer in conformance with the specified requirements.
  - 3. Owner's interests may be adversely affected.
- E. Substitution Procedures: Requests for substitution of alternate products or use of "or equal" items shall be submitted with complete references to manufacturer's product identification and product data indicating composition, guarantee, availability, applicable standards or agency approvals met or exceeded, restrictions imposed on product, and manufacturer's recommended method of application or installation. A substitution or an "or equal" item will be considered acceptable if the product will perform adequately the duties imposed by the general design and, in opinion of A/E, is of equal substance, quality, appearance, and function, unless the named item is necessary for interchangeability or if the named product has been demonstrated to be most cost-effective.

#### **1.13 SURVEYS, STAKING, LINE AND GRADE**

- A. Owner will provide baseline reference points and benchmarks as indicated on Drawings. Contractor shall provide all other survey staking and layout as required to complete the Work.

#### **1.14 FIELD MEASUREMENTS AND INSPECTION OF SURFACES**

- A. Contractor shall layout its Work based on reference points furnished by Owner and shall be solely responsible for the accuracy of its measurements. Verify grades, lines, levels, locations, and dimensions as shown on Drawings, and inspect surfaces that are to receive work before proceeding with fabricating, assembling, fitting, or erecting. Notify A/E in writing in case of unsuitable conditions, defective substrates, or discrepancies in Contract Documents. Starting of work shall imply acceptance of conditions.
- B. Correct any errors or defects due to faulty measurements, improper layout, or failure to report discrepancies.

#### **1.15 CONSTRUCTION CLEANING**

- A. Keep work area free of accumulations of surplus materials, rubbish, and debris.

### **1.16 PUNCH LIST**

- A. A "punch list" will be prepared and distributed to Contractor at Substantial Completion. Items on punch list shall be completed within 30 days. Required submittals (see below) shall be completed prior to or when requesting final payment.

### **1.17 CLOSEOUT SUBMITTALS**

- A. Submit the following items to A/E prior to or with final Application for Payment:
  - 1. Project record drawings marked to show all changes made during construction. Dimension underground and concealed work and utilities from permanent reference points; record vertical distances. Make and record measurements to the nearest 0.5 ft on a clean drawing set.
  - 2. Evidence of continuing insurance coverage complying with insurance requirements (see Conditions of the Contract).
  - 3. Contractor's affidavit, along with final releases and waivers of liens as required by Owner, indicating that all debts and claims against project (less amounts withheld by Owner) have been paid in full or otherwise satisfied.
  - 4. Consent of surety company to final payment.

### **1.18 DEFINITIONS**

- A. Dimensions on drawings and details are subject to field measurements.
- B. The term "working days" shall exclude weekends (Saturday and Sunday) and holidays.
- C. References to "Division 00" shall mean the Bidding Requirements and Contracting Requirements.
- D. References to "WDNR" shall mean Wisconsin Department of Natural Resources.
- E. References to "WisDOT Std. Spec." shall mean Wisconsin Department of Transportation, Standard Specifications for Highway and Structure Construction, latest edition.
- F. References to "A/E", "Architect", or "Engineer" shall mean Ayres.
- G. References to "Owner" shall mean City of Whitewater.
- H. References to "USACE" shall mean US Army Corps of Engineers.

**END OF SECTION**

## SECTION 01 22 50

### MEASUREMENT AND PAYMENT

#### PART 1 GENERAL

##### 1.01 GENERAL REQUIREMENTS

- A. Payment for all work done in compliance with the Contract Documents, including all labor, equipment, materials, and performance of operations relative to construction of this project, will be made under the Bid Items listed below. Work required by the Contract Documents for which there is not a Bid Item will be considered incidental to the Contract and no additional compensation will be allowed.
- B. Owner reserves the right to alter Drawings, modify incidental work as may be necessary, and increase or decrease quantities of work to be performed, including deduction or cancellation of any one or more Bid Items. Changes in the Work shall not be considered as a waiver of any conditions of the Contract nor invalidate any provisions thereof. When changes result in revised quantities of work to be performed, Contractor shall accept payment according to contract unit prices appearing in the original Contract. A supplemental agreement between Contractor and Owner may be requested by either party when cumulative changes involve a net increase or decrease of more than 20 percent in total contract amount, except for use of Swamp Mats (see item D below).
- C. Final measured quantities determined in field by A/E at time of construction shall govern over approximate quantities shown on the Bid Schedule, unless otherwise noted. Contractor shall take no advantage of any apparent error or omission in Drawings or Specifications, and A/E shall be permitted to make corrections and interpretations as may be deemed necessary for fulfillment of the intent of the Contract Documents.
- D. Swamp Mats may be required to access the site and complete the dredging as planned if soft, unfrozen soils are encountered. Contractor shall accept payment for Swamp Mats according to the contract unit prices appearing in the original Contract. Owner will not agree to a supplemental agreement should Swamp Mat quantities vary by any percentage from the estimated quantity shown in the Bid Schedule.

#### PART 2 (NOT USED)

#### PART 3 EXECUTION

##### 3.01 MOBILIZATION

- A. This work consists of work and operations necessary for movement of personnel, equipment, supplies, and incidentals to project site and for establishment of Contractor's offices and other temporary facilities necessary for work on project; and of all other work and operations which must be performed, or for which costs must be incurred before beginning work on various items on project site; and demobilization at completion of work. Site preparation measures in accordance with Section 31 05 10 are also part of this work.
- B. Measurement for payment will be as a complete unit of work acceptably performed.
- C. Payment will be made at the contract lump sum price for MOBILIZATION, payable to Contractor in accordance with the following schedule:
  - 1. When 5 percent or more of original contract amount is earned, 40 percent of amount bid for mobilization will be paid.

2. When 25 percent or more of original contract amount is earned, 80 percent of amount bid for mobilization will be paid.
3. When 90 percent or more of original contract amount is earned, 100 percent of amount bid for mobilization will be paid.

### **3.02 MECHANICAL DREDGING**

- A. This work consists of mechanically dredging in accordance with Section 35 24 52. Applicable temporary environmental control measures in accordance Section 01 57 19 are also part of this work.
- B. Measurement for payment will be the volume of dredged material removed from the lake bed measured and computed to the nearest cubic yard. See Section 35 24 52 for specifications on the surveying plan, methods, and submittal requirements.
- C. Payment will be made at the contract unit price per cubic yard for MECHANICAL DREDGING.
- D. Payment for dredging beyond the depth shown on the Drawings will be made only if dredging outside specified lines and grades is authorized to remove unsuitable material and if unsuitable material condition is not a result of Contractor's operations.

### **3.03 HAULING DREDGE SEDIMENT**

- A. This work consists of hauling and placing dredged material in accordance with Sections 35 24 52 and 31 22 00.
- B. Measurement for payment will be the volume of dredged material removed from the lake bed measured and computed to the nearest cubic yard. The measurement will be based on the amount of material dredged as described in the "Mechanical Dredging" article of this Section. No other measurement will be used for the hauling and dewatering payment.
- C. Payment will be made at the contract unit price per cubic yard for HAULING DREDGE SEDIMENT.

### **3.04 DISPOSAL SITE SPREADING**

- A. This work consists of grading the site to final reclaimed grades in accordance with Section 31 22 00. Applicable temporary environmental control measures in accordance Section 01 57 19 are also part of this work.
- B. Measurement for payment will be as a complete unit of work acceptably performed.
- C. Payment will be made at contract lump sum price for DISPOSAL SITE SPREADING.

### **3.05 SEEDING AND RESTORATION**

- A. This work consists of turf replacement in accordance with Section 32 99 10 and any other restoration work required for the project (repair of damaged surfaces or features, if applicable).
- B. Measurement for payment will be as a complete unit of work acceptably performed.
- C. Payment will be made at the contract lump sum price for SEEDING AND RESTORATION.

### **3.06 SWAMP MATS**

- A. This work consists of placing and removing swamp mats, as needed, in accordance with Section 01 57 19.

- B. Measurement for payment will be the linear feet of swamp mats installed to complete the work. Contractor shall provide a site plan with payment application(s) showing locations where swamp mats were installed so that quantity can be verified.
- C. Payment will be made at the contract unit price per linear foot for SWAMP MATS.

**END OF SECTION**

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## SECTION 01 33 00

### SUBMITTAL PROCEDURES

#### PART 1 GENERAL

##### 1.01 SUMMARY

- A. Submit items to A/E for review as required by the various Contract Documents. Refer to individual specification sections, General Conditions, Supplementary Conditions, and sections of Division 01 - General Requirements for submittal requirements.

##### 1.02 GENERAL PROCEDURES

- A. Follow the requirements for each submittal type as specified below.
- B. Submittals shall be identified with project name, numbered consecutively, and bear the stamp of approval of Contractor as evidence of accuracy, compatibility, and conformance with contract requirements. Submittals not so stamped will be returned without being examined.
- C. Give specific written notice of each variation that submittals may have from requirements of the Contract Documents.
- D. Partial submittals will not be considered. Submit each portion of work complete in one submittal.
- E. Products subject to submittal review shall not be used in the work until submittals have been reviewed and bear the stamp and signature of A/E. Submittals will only be reviewed for general conformance with the design concept of the project and general compliance with the information given in the Contract Documents. Contractor shall be responsible for confirming and correlating all quantities and dimensions, selecting fabrication processes and the means and methods of construction, coordinating its work with that of all other trades, and performing all work in a safe and satisfactory manner. Corrections or comments made on submittals shall not relieve Contractor from compliance with requirements of Drawings and Specifications and shall not be considered an order for extra work.
- F. If information on previously reviewed shop drawings is altered, submit changes for review.
- G. Maintain complete copies of all final submittals at the project site.

##### 1.03 SAMPLES

- A. Prior to fabrication, delivery, or installation, submit samples as designated in the various specification sections. Allow reasonable time for review and testing.
  - 1. Submit samples in sufficient quantity and of adequate size to show quality, type, and extremes of color range, finish, and texture. Submit a minimum of two sets of appearance and color samples.
- B. Label each sample stating material, description, project name, and Contractor's name. Expedite submittal of appearance and color samples following Notice to Proceed.
- C. Submit samples with transmittal letter requesting review; prepay transportation charges. Samples shall become Owner's property, unless otherwise designated.
- D. Samples will be reviewed for acceptability or selection of color, pattern, and texture only. Compliance with specifications is the responsibility of Contractor.

- E. Order no materials subject to sample review until receipt of written notice of completion of review. Installed materials shall match reviewed samples. No review of samples shall be taken in itself to change contract requirements.

#### **1.04 PERMITS AND APPROVALS**

- A. Submit permits, code inspections, and agency approval documents as designated in the various specification sections in one of the following formats:
  - 1. PDF electronic file.
  - 2. One paper copy.

#### **1.05 PROJECT RECORD DOCUMENTS**

- A. Keep a current set of paper documents at project site that are marked to show all changes made during construction. Dimension underground and concealed work and utilities from permanent reference points; record vertical distances. Make and record measurements to the nearest 0.5 ft. Submit project record documents upon completion of Work.

**PART 2 (NOT USED)**

**PART 3 (NOT USED)**

**END OF SECTION**



## SECTION 01 57 19

### TEMPORARY ENVIRONMENTAL CONTROLS

#### PART 1 GENERAL

##### 1.01 SUMMARY

- A. Provide temporary environmental controls as shown and as specified. Comply with applicable provisions of Divisions 00 and 01.

##### 1.02 DEFINITIONS

- A. References to "WDNR Technical Standards" shall mean Wisconsin Department of Natural Resources Conservation Practice Standards (available on the WDNR web site at [http://dnr.wi.gov/topic/stormwater/standards/const\\_standards.html](http://dnr.wi.gov/topic/stormwater/standards/const_standards.html)).

##### 1.03 SUBMITTALS

- A. WPDES Permit: Submit copy of WPDES permit application, permit when issued, and Contractor-prepared site erosion control and storm water management plan.
- B. Inspection Reports: Submit one copy of weekly inspection reports for erosion and sediment controls.

##### 1.04 PERMITS

- A. Contractor shall:
  1. File WPDES Construction Site Storm Water Runoff General Permit Notice of Intent Application for work at disposal site at least 14 working days prior to the start of construction.
  2. Provide Owner and A/E with a copy of the notice of General Permit coverage and the site erosion control and storm water management plan.
  3. Comply with the requirements of the General Permit and the site erosion control and storm water management plan and keep a copy of these documents at project site during construction.
  4. Post a copy of the Certificate of Permit Coverage in a conspicuous place on the construction site.
  5. File Notice of Termination after construction site has undergone final stabilization.

#### PART 2 PRODUCTS

##### 2.01 SILT FENCE

- A. Geotextile fabric and support system complying with the requirements of WisDOT Std. Spec., Subsection 628.2.6, except geotextile fabric shall have a maximum flow rate of 10 gal/minute/sq ft at 50 mm constant head as determined by multiplying permittivity in 1/second as determined by ASTM D4491 by a conversion factor of 74.

##### 2.02 EROSION BALES

- A. Straw or weed-free hay, in good condition, with rectangular surfaces, tightly bound with twine (not wire) and nominal dimensions of 30 in. x 18 in. x 14 in.

### **2.03 SEDIMENT LOGS**

- A. Sediment logs shall consist of an exterior containment fabric filled with an interior filtering material and shall be as approved in the WisDOT Erosion Control Product Acceptability List (PAL).

### **2.04 SAND BAGS**

- A. Sand bags complying with the requirements of WisDOT Std. Spec., Subsection 628.2.8.

### **2.05 INLET PROTECTION FABRIC**

- A. Woven polypropylene material complying with the requirements of WisDOT Std. Spec., Subsection 628.2.12.

### **2.06 TRACKOUT CONTROL MATERIALS**

- A. Manufactured trackout control device or constructed tracking pad complying with WDNR Technical Standard 1057-Trackout Control Practices (July 2018 edition).
- B. If furnishing manufactured trackout control devices, use aggregate as recommended by pad manufacturer. If furnishing stone tracking pads, use Technical Standard 1057, Table 1, stone for tracking pads used by smaller, private vehicles and WisDOT Std. Spec., Section 312, select crushed material for larger-wheeled or tracked construction vehicles.
- C. Geotextile fabric for tracking pads shall be WisDOT Std. Spec., Section 645, Type R fabric.

### **2.07 TURBIDITY BARRIERS**

- A. Turbidity barriers shall conform to the WDNR Technical Standard 1069-Turbidity Barrier.

### **2.08 TEMPORARY SEED**

- A. Temporary seed mixture complying with requirements of WisDOT Std. Spec., Subsection 630.2.1.5.1.2.

### **2.09 PERMANENT SEED**

- A. See Section 32 99 10.

### **2.10 EROSION MAT**

- A. See Section 32 99 10.

## **PART 3 EXECUTION**

### **3.01 EROSION CONTROL**

- A. General: Maintain erosion control measures to protect the project site and prevent sediment pollution of adjacent water courses and properties. At a minimum, provide erosion control measures as indicated on the Drawings.
- B. Applicable Standards: Unless otherwise shown or specified, erosion control measures shall comply with:
  - 1. "General Permit to Discharge Under the Wisconsin Pollutant Discharge Elimination System (WPDES)" for storm water discharges associated with construction activities.
  - 2. WDNR Technical Standards.

- C. Time Period: Install erosion control measures prior to start of construction and maintain them until final completion of work. Unless otherwise instructed, remove temporary erosion control measures prior to final application for payment.
- D. Stripping: Strive to limit stripping of sod and vegetation to a period that will expose bare soil to the least possibility of erosion that construction requirements will allow.
- E. Diversions: Construct and maintain dams, channels, flumes, sumps, surface roughening, and other temporary diversion and protective works to divert streamflow and other surface water through or around construction site and away from work while construction is in progress. Unless otherwise specified, a diversion must discharge into the same natural drainage way in which its head waters are located.
- F. Sediment Barriers: Construct and maintain one or more sediment barriers to receive runoff leaving site.
  - 1. Affix silt fence to ground and maintain in suitable structural condition to last until vegetation establishes.
  - 2. Affix sediment logs to ground, either by wood stakes (recommended method) or by equivalent anchorage if frozen winter subgrade prevents driving stakes. Equivalent anchorages include using steel posts (removed after vegetation establishes) or erosion bales spaced at same intervals as planned stakes or other approved equivalent method.
- G. Storm Drain Protection: Protect storm drain inlets by using inlet protection of the type shown on the Drawings. If not shown, use inlet protection fabric, silt fence barriers, erosion bale barriers, or equivalent.
- H. Trackout Control: Prevent tracking of soils and sediments onto public and private streets by constructing and maintaining stabilized work surfaces and trackout controls in accordance with WDNR Technical Standards. Check dual tire vehicles for picked up tracking pad materials prior to leaving site. Refresh and loosen tracking pad as needed to allow stones to contact full tire tread (at least up to start of sidewall) of exiting vehicles. If a vehicle or tire washing station is established, water from washing shall drain into a suitable sediment trap or settling device. Remove at the end of each work day soils and sediment reaching public and private streets not part of the construction site.
- I. Re-establishment of Vegetation: Re-establish temporary or permanent vegetation on disturbed areas within the time limits allowed by applicable standards.
- J. Sediment Deposits: Remove and dispose of sediment deposits when deposits reach one-half the volume capacity of sediment barrier, unless otherwise indicated.

### **3.02 TURBIDITY BARRIER INSTALLATION AND MAINTENANCE**

- A. Turbidity barrier shall be installed, operated, and maintained in accordance with WDNR Technical Standard 1069-Turbidity Barrier. Do not remove turbidity barrier until water behind barrier has equal or greater clarity than waterway.

### **3.03 EROSION CONTROL MONITORING AND REPORTING**

- A. Contractor shall conduct the following inspections:
  - 1. Weekly inspections of implemented erosion and sediment controls.
  - 2. Inspections of erosion and sediment controls within 24 hours after a precipitation event that produces 0.5 in. of rain or more during a 24 hour period.
- B. Contractor shall prepare weekly written reports of all inspections that include:
  - 1. Date, time, and exact place of inspection.

2. Name of individual who performed inspection.
3. An assessment of condition of erosion and sediment controls.
4. A description of any erosion and sediment control implementation and maintenance performed.
5. A description of the present phase of construction at site.

#### **3.04 DUST CONTROL**

- A. Minimize dispersion of dust from construction operations by application of water or other dust control materials. Controls shall confine dust and dirt within the immediate area of project. Masonry and debris shall be thoroughly soaked during demolition and loading operations.

#### **3.05 NOISE CONTROL**

- A. Provide noise control measures to limit the amount of noise and prevent nuisance. Properly equip all equipment with mufflers. Limit construction activities generating significant noise to normal working hours.

#### **3.06 MATERIAL HANDLING AND SPILL PREVENTION**

- A. Hazardous materials shall be handled and stored in accordance with the recommendations of the manufacturer and Material Safety Data Sheets (MSDS). Containers or equipment leaking any contaminants shall be repaired, removed from the site, or utilize drip pans for containment purposes.
- B. Spills of any contaminants shall be immediately reported to the WDNR Hazardous Waste Substance Spill Hotline at 800.943.0003. Contractor shall maintain an emergency spill kit at the project site containing contaminant containment products and absorbent materials (inlet socks, dry absorbent materials, and similar products).

#### **3.07 HAZARDOUS ENVIRONMENTAL CONDITIONS**

- A. If underground petroleum storage tanks, petroleum contaminated soils, or other hazardous environmental conditions are encountered, and are not identified to be part of the work, Contractor shall immediately stop all work in connection with the hazardous condition and shall notify Owner and A/E. (See the General Conditions of the Contract for specific procedures that may apply.)

#### **3.08 SWAMP MATS**

- A. Swamp mats may be installed across dry or flowing streams and unfrozen soils, as necessary to access the site and complete the work. No fill material shall be placed under the ordinary high-water mark without written approval by WDNR and Corps of Engineers.
- B. Swamp mats shall consist only of engineered panels of timber, plastic, or resin such that the maximum bearing pressure shall allow for transport of equipment over the stream channel without channel deformation.
- C. Swamp mats shall only be placed within the dredging footprint. Swamp mats shall not be placed on portions of the lakebed where dredging will not occur.
- D. Contact A/E prior to placing swamp mats so there is a general understanding among Contractor, Owner, and A/E as to the extent that swamp mats will be needed to complete the work.
- E. Following construction, completely remove swamp mat.

**END OF SECTION**

## SECTION 31 05 10

### SITE PREPARATION

#### PART 1 GENERAL

##### 1.01 SUMMARY

- A. Provide site preparation as shown and as specified. Comply with applicable provisions of Divisions 00 and 01.
- B. Work includes, but is not limited to:
  - 1. Protection of improvements, plants, and utilities.
  - 2. Removal and replacement of improvements.
  - 3. Location of utilities and coordination with utility companies.
  - 4. Clearing and grubbing trees and vegetation from dredge area.
  - 5. Topsoil salvage.
  - 6. Restoration.

#### PART 2 (NOT USED)

#### PART 3 EXECUTION

##### 3.01 PROTECTION

- A. Protect improvements on site and on adjoining properties. Provide barricades, coverings, or other types of protection as necessary to prevent damage and to safeguard against injury. Restore to original condition improvements damaged by the work or improvements which required temporary removal during construction.
- B. Protect existing vegetation indicated to remain against unnecessary cutting, breaking, bruising, or smothering by stockpiling excavated materials or parking of vehicles within drip line. Provide temporary fences, tree wells, barricades, or guards; repair or replace trees and vegetation damaged by construction operations.
- C. Maintain survey monuments, reference points, and benchmarks; notify Owner of disturbance to markers.
- D. No extra payment or time will be allowed for protection work that could have been suspected or anticipated by site inspection and interpretation of bidding documents prior to execution of contract.

##### 3.02 LOCATING EXISTING UTILITIES

- A. Location and description of underground utilities and structures shown on drawings are approximate and are based on records available to Owner or surface features indicating their existence. There may be other utilities within project area that are not shown.
- B. Notify all affected utility companies of construction operations at least three working days before beginning work near their facilities. Do not begin excavation work until underground utility locations have been marked.
- C. Use caution when excavating so that exact location of underground utilities, both known and unknown, may be determined. Provide adequate protection and support for utilities during construction operations.

- D. If uncharted or incorrectly charted utilities are encountered during excavation work, or if proposed construction conflicts with existing utilities, give prompt notice and submit proposed solution to A/E for approval. Cooperate with Owner and public and private utility companies to keep their services and facilities in operation. Repair damaged utilities to satisfaction of utility owner.

### **3.03 SITE CLEARING**

- A. Remove trees, stumps, snags, shrubs, brush, heavy growths of grass, weeds and other vegetation, improvements, rubbish and debris, and obstructions that interfere with proposed construction; remove items only as necessary for completion of work.
- B. Cut brush and vegetation flush with ground. Grub out stumps, roots having a diameter of 2 in. or larger, and root clusters to a depth of at least 2 ft below subgrade elevation for pavements, structures, and embankments and 6 in. below ground surface in other areas.
- C. Carefully and cleanly cut roots and branches of trees indicated to be left standing, where such roots and branches obstruct new construction. Cut back roots a minimum of 1 ft from concrete work, paving, and structures and to a depth of not less than 2 ft below structures, foundations, and embankments.

### **3.04 TOPSOIL STRIPPING**

- A. Topsoil shall include all friable, fertile, loam soil suitable for grass and plants, found at surface, reasonably free of subsoil, clay lumps, stones, objects over 2-in. diameter, weeds, large roots, root clusters, and other objectionable material.
- B. Strip topsoil from project area to whatever depths encountered; prevent intermingling with underlying subsoil or other objectionable material. Remove heavy growths of grass from areas before stripping topsoil.
- C. Where trees are indicated to remain, terminate stripping a sufficient distance from such trees to prevent damage to root system.
- D. Stockpile topsoil in storage piles in areas where designated. Construct storage piles to freely drain surface water. Cover or sprinkle water on storage piles to prevent windblown dust.

### **3.05 TEMPORARY HAUL ROUTE PREPARATION**

- A. Construct temporary haul routes and culvert crossings as needed. Comply with permit conditions. See Drawing details.

### **3.06 DEBRIS DISPOSAL**

- A. Remove debris and excess materials from site and legally dispose of it; do not burn debris.

### **3.07 REPAIR OF DAMAGES**

- A. At the project conclusion, restore work areas to smooth grade, free of ruts and with similar condition to that before project started.
- B. Conduct street sweeping operations to remove sediment/ice from roadways. Excessive sediment from dredging haul trucks that enters City stormwater system will be removed by Owner at Contractor's expense.
- C. Restore damages to fencing, private lawns, or other appurtenances damaged by Contractor's failure to take reasonable precautions against damage. Restoration costs shall be responsibility of Contractor.

**END OF SECTION**

**SECTION 31 22 00**  
**DISPOSAL SITE GRADING**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. Provide grading as shown and as specified. Comply with applicable provisions of Divisions 00 and 01.

**1.02 RELATED SECTIONS**

31 05 10 Site Preparation.

**1.03 CLASSIFICATION**

- A. Excavation of materials encountered under this work will be unclassified without regard to type, difficulty to remove, or suitability for use in construction.

**1.04 PROTECTION**

- A. Protect existing improvements, utilities, trees and shrubs, and reference marks in accordance with Section 31 05 10.

**PART 2 (NOT USED)**

**PART 3 EXECUTION**

**3.01 DREDGE SEDIMENT PREPARATION**

- A. Remove metal objects and rocks larger than 12 in. along longest dimension. Dispose of these materials at landfill or recycling center in accordance with applicable laws.

**3.02 GRADING**

- A. Grade areas within disposal site limits as shown on the Drawings. Finish surface to be reasonably smooth and free from irregular surface changes. Provide a smooth transition between adjacent existing grades and new grades.

**3.03 MAINTENANCE**

- A. Protect newly graded areas from traffic and erosion, and keep free of trash and debris. Repair and re-establish grades in settled, eroded, and rutted areas to specified tolerances.
- B. Maintain erosion control measures to prevent run-off and sediment pollution of adjacent water courses.

**3.04 DISPOSAL OF EXCESS AND WASTE MATERIALS**

- A. Remove excess excavated material, trash, debris, and other waste materials and legally dispose of them off-site.

**END OF SECTION**

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## SECTION 32 99 10

### TURF REPLACEMENT

#### PART 1 GENERAL

##### 1.01 SUMMARY

- A. Replace turf and appurtenant improvements disturbed by construction as shown and as specified. Comply with applicable provisions of Divisions 00 and 01.
- B. Restore surfaces as near as practical to condition existing prior to construction and as designated. Clean site and remove equipment, salvaged material, unused materials, cleared brush and trees, and debris resulting from construction. Repair or replace turf, shrubs, trees, and other items within and beyond construction limits damaged or destroyed through carelessness or failure to follow reasonable safeguards.
- C. Unless otherwise indicated, locations and types of Turf Replacement shall be in accordance with Part 4 Schedules.

##### 1.02 RELATED SECTIONS

31 05 10 Site Preparation: For topsoil removal.

#### PART 2 PRODUCTS

##### 2.01 IMPORTED TOPSOIL

- A. Loam, sandy loam, silt loam, silty clay loam, or clay loam humus-bearing surface soil; 100% passing the 1 in. sieve and at least 90% passing the No. 10 sieve; pH range of 6.0 to 7.0; minimum organic material content of 3 percent; reasonably free of subsoil, clay lumps, brush, and weeds; and free of extraneous matter harmful to plant growth.
- B. Obtain imported topsoil from naturally well-drained local sources; do not obtain from bogs or marshes.

##### 2.02 SALVAGED TOPSOIL

- A. Loam, sandy loam, silt loam, silty clay loam, or clay loam humus-bearing surface soil; 100% passing the 2 in. sieve; neither excessively acid, nor excessively alkaline; reasonably free of subsoil, clay lumps, brush, and weeds; and free of extraneous matter harmful to plant growth.
- B. Obtain salvaged topsoil from within work area. If necessary to supplement insufficient quantities of salvaged topsoil, obtain additional topsoil as specified in article 2.01 IMPORTED TOPSOIL.

##### 2.03 LIME

- A. Agricultural grade limestone complying with requirements of WisDOT Std. Spec., Section 629.

##### 2.04 FERTILIZER

- A. Solid or liquid form, commercial fertilizer complying with WisDOT Std. Spec., Section 629, for Type A fertilizer.

## **2.05 SOD**

- A. Sod complying with WisDOT Std. Spec., Section 631, for lawn sod.

## **2.06 GRASS SEED**

- A. Seed complying with WisDOT Std. Spec., Section 630, for the seed mixtures indicated in Part 3 Execution for each type of turf replacement.

## **2.07 MULCH**

- A. Mulch materials complying with WisDOT Std. Spec., Section 627.

## **2.08 EROSION MAT**

- A. Erosion mat complying with WisDOT Std. Spec., Section 628, and WisDOT Erosion Control Product Acceptability List (PAL) for class and type of erosion mat indicated on the Drawings. If not indicated provide Class I, Type B, erosion mat.

## **PART 3 EXECUTION**

### **3.01 TURF REPLACEMENT, GENERAL**

- A. Comply with construction methods of WisDOT Std. Spec., unless otherwise indicated.
- B. Place topsoil to depth indicated for type of turf replacement.
- C. Apply lime to salvaged topsoil at a uniform rate of 100 lb per 1000 sq ft (based on index zone of 60-69) unless optional Contractor-furnished soil test results permit less. Liming is not required for imported topsoil meeting specified pH range.
- D. Immediately prior to seeding or sodding, apply fertilizer at a rate of 7 lb per 1000 sq ft.

### **3.02 TYPE "A" TURF REPLACEMENT**

- A. Place 4 in. of imported topsoil, prepare soil, grade smooth, and lay sod.

### **3.03 TYPE "B" TURF REPLACEMENT**

- A. Place 4 in. of imported topsoil, prepare soil, and seed with WisDOT Std. Spec. Mixture No. 40 at the rate of 3 lb per 1000 sq ft. Seed using WisDOT Std. Spec., Section 630, Method A or Method B.

### **3.04 TYPE "C" TURF REPLACEMENT**

- A. Place 4 in. of salvaged topsoil, prepare soil, and seed with WisDOT Std. Spec. Mixture No. 10 (where average loam, heavy clay, or moist soils predominate) or WisDOT Std. Spec. Mixture No. 20 (where light, dry, well-drained, sandy or gravelly soils predominate) at a rate of 3 lb per 1000 sq ft. Seed using WisDOT Std. Spec., Section 630, Method A or Method B.

### **3.05 TYPE "D" TURF REPLACEMENT**

- A. Place 4 in. of salvaged topsoil, prepare soil, and seed with WisDOT Std. Spec. Mixture No. 20 at rate of 3 lb per 1000 sq ft. Seed using WisDOT Std. Spec., Section 630, Method A or Method B. Install erosion mat.

**3.06 FIELD RESTORATION**

- A. Restoration of cultivated lands shall include salvaging full depth of topsoil, stockpiling, and replacing topsoil in an even layer at least 6 in. thick following backfilling.

**3.07 MULCHING**

- A. Mulch all seeded areas at a uniform rate of 1/2 to 3 ton per acre (loose depth 1/2 to 1-1/2 in.), except where erosion mat is used. Anchor mulch using WisDOT Std. Spec., Section 627, Method A, B, or C.

**3.08 EROSION MAT INSTALLATION**

- A. Where shown or specified, provide erosion mats installed and stapled according to manufacturer's recommendations.

**3.09 MAINTENANCE**

- A. Owner will maintain seeded/sodded areas after placement of seed/sod. Contractor shall instruct Owner on required maintenance work.

**PART 4 SCHEDULES**

**4.01 TURF REPLACEMENT SCHEDULE**

<u>Location</u>	<u>Turf Replacement</u>
Residential Lawns	Type A or B
Boulevards and Other Mowed Areas	Type B
Haul Routes and Disposal Sites	Type C
Slopes Greater Than 3H:1V	Type D

**END OF SECTION**

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## SECTION 35 24 52

### MECHANICAL DREDGING

#### PART 1 GENERAL

##### 1.01 SUMMARY

- A. Provide mechanical dredging as shown and as specified. Comply with applicable provisions of Divisions 00 and 01.

##### 1.02 CLASSIFICATION

- A. Excavation of materials encountered under this work will be unclassified without regard to type or difficulty to remove.

##### 1.03 SUBMITTALS

- A. Work Plan: Prior to beginning work, submit for information only a complete schedule of dredging operations, equipment to be utilized, and procedures. Include a plan for quality control covering methods, tests, frequency, and reports. Include an estimate of the number of cubic yards able to be dredged per day.
- B. Surveyor and Survey Plan: Prior to beginning surveys as required in "Dredging Area Surveys" article below, submit the name and credentials of the third-party surveyor completing the work and their survey plan to A/E for review. Surveys shall comply with the requirements detailed in "Dredging Area Surveys" article.
- C. Survey Results and Quantity Computations: Submit pre-, intermediate, and post-dredging survey .xml files and dredging quantity computations as specified in the "Dredging Area Surveys" article. Pre-dredging survey .xml file shall be submitted prior to the start of dredging.
- D. Photos: Submit photos of access points as specified in "Access" article below.
- E. Weekly Reports: Submit weekly reports detailing hours of excavation and quantities of sediment removed.
- F. Make submittals in accordance with Section 01 33 00.

##### 1.04 PERMITS

- A. Owner will furnish copy of dredging permits. Contractor shall post permits on site where directed by Owner. Permits shall be posted at least 5 days prior to beginning work and shall remain in place at least 5 days after completion of work.
- B. Contractor shall comply with all conditions of permits including, but not limited to, requirements related to decontamination of equipment and total suspended solids concentration (if included in permit).

##### 1.05 DREDGING AREA SURVEYS

- A. Contractor shall arrange and pay for the services of a surveyor, acceptable to Owner and independent of Contractor, to perform pre-, intermediate-, and post-dredging surveys and determine the quantities of work performed. Surveyor shall be registered in the state where the project is located.
- B. Perform the following surveys and computations:

1. Pre-dredging and post-dredging surveys and computation of total quantities of work performed.
  2. Intermediate surveys as needed and computation of quantities of work performed during each progress payment period.
  3. Surveys shall reference the same datum and coordinates and use the same benchmarks, units, and orientation as shown on the Drawings.
  4. Pre-dredging surveys shall extend beyond limits of post-dredging surveys, and a dredge boundary shall be provided. The pre- and post-dredging surveys shall cover entire dredge area. No payment will be made for any volume not covered by a pre-dredge survey.
  5. At a minimum, surveys shall be conducted with lines no further apart than 50 ft (upstream to downstream) and points no farther apart than 10 ft (side to side).
  6. Accuracy of survey measurements shall be better than 2 in. vertically and 24 in. horizontally.
- C. Surveys shall be submitted under seal of surveyor as .xml files along with written descriptions of areas surveyed. Each submittal shall include a cover memo with a table of the files included clearly outlined and a summary of the volume for the applicable time period.
1. Pre-dredging survey .xml file shall cover entire planned dredge area and shall show Contractor's planned dredging limits. File shall include waterline. Planned dredging limits shall reflect the intent of the Drawings.
- D. Minimum time for A/E to review submitted surveys and process payment applications shall be no less than 10 calendar days.

#### **1.06 ACCESS**

- A. Owner will furnish access easements to dredge site and easements between disposal area and dredging area.
- B. Take digital color photos (JPG-Format) of access points prior to start of work to document original conditions.
- C. Contractor shall be responsible for any damage or deterioration of the access route(s) between the disposal site(s) and project location.

#### **1.07 SITE CONDITIONS**

- A. Mechanical dredging is dependent on the occurrence of suitable winter weather conditions to freeze the lake/river bed sufficiently to allow the construction of haul roads with standard size dump trucks, graders, and dozers.
- B. If the lake/river bed does not freeze sufficiently to allow for construction of haul roads, Contractor shall use Swamp Mats in accordance with Section 01 57 19.
- C. Do not mobilize for mechanical dredging work until specifically authorized to proceed with this part of the Work.
- D. Turbidity barriers shall be used while dredging within water (creek inflow) in accordance with Section 01 57 19.

#### **1.08 PROTECTION**

- A. Provide sufficient barricades and protective devices around excavations to safeguard against injury. Provide and maintain sufficient safety lanterns at night. Comply with Section 31 05 10.
- B. Comply with applicable Federal, State, and local laws and regulations concerning environmental pollution control and abatement.

## **1.09 EXPLOSIVES**

- A. Use of explosives is not permitted.

## **PART 2 (NOT USED)**

## **PART 3 EXECUTION**

### **3.01 DREDGING EQUIPMENT**

- A. Types and capacities of equipment suitable for use at the site and production rates to be obtained are the responsibility of Contractor.

### **3.02 LAYOUT OF WORK**

- A. Lay out work from Owner-furnished baseline(s) and benchmark(s) as indicated on the Drawings and be responsible for all measurements. Drawings show design intent only; and therefore, dredge limits must incorporate existing shoreline and bathymetry conditions found during the pre-dredge survey. Furnish stakes, templates, platforms, equipment, range markers, and labor as required to lay out work. Contractor shall be responsible for execution of work to such lines and grades and shall monitor grades daily.
- B. Maintain and preserve stakes and other marks until authorized to remove them. Marks destroyed by Contractor or through its negligence prior to their authorized removal may be replaced by Owner at its discretion; expense of replacement will be deducted from amounts due or to become due Contractor.

### **3.03 DREDGING**

- A. Provide dredging to depths and widths as shown. Blend slopes of dredged area into existing bank slopes.
- B. Provide and maintain necessary temporary access roads, haul roads, signal lights, buoys, and environment protection; costs shall be incidental to contract.
- C. Dredge depth tolerance shall be elevation shown on Drawings, plus or minus 6 in. Contractor is expected to dredge within this tolerance to achieve the total authorized dredging volume as closely as practicable.
- D. Remove and separately stockpile driftwood from lake/river bed on shore within work limits. After dredging, return driftwood (not man-made items) to lake/river bed. Spread material similar to original distribution.

### **3.04 DISPOSAL**

- A. Dispose of dredged material in designated disposal area(s) as shown on the Drawings. Distribute dredged material uniformly over entire disposal area to provide adequate drainage and avoid disrupting natural drainage if possible or in a manner approved by Owner.
- B. Final placement of material shall be in lifts not exceeding 2 ft thick. Compaction by uniform travel of grading equipment is considered adequate for compaction.
- C. Contractor shall be responsible for drainage or removal of water from above-water-level disposal areas.
- D. Remove and dispose of snags and fallen trees that will extend above top of spoil.

- E. In the event disposal areas have insufficient capacity due to excessive overdredging, Contractor shall be responsible for obtaining additional disposal areas.
- F. Leakage or spillage of hauled materials on to public roads and streets will not be permitted, and if unavoidably done, shall be removed daily in a manner acceptable to Owner. Material boxes of hauling equipment shall be of watertight construction and shall not be loaded over their rated capacity; nor shall loads exceed limits of local thoroughfares over which they operate. Comply with laws and regulations pertaining to operation of vehicles.

### **3.05 POST-CONSTRUCTION CLEANUP AND REPAIR**

- A. Obliterate all signs of temporary construction facilities such as haul roads, work areas, buildings, stockpiles of excess or waste materials, and other vestiges of construction.
- B. Restore disturbed areas to smooth grade, free of ruts and with similar condition to that before project started.
- C. Leave erosion control measures in place until disturbed vegetation is reestablished as specified in Section 32 99 10.
- D. Conduct street sweeping operations as soon as temperatures permit to clean sediment left by haul trucks on paved roads. Excessive sediment from dredging haul trucks that enters community stormwater system will be removed by Owner at Contractor's expense.
- E. Restore damages to fencing, private lawns, or other appurtenances damaged by Contractor's failure to take reasonable precautions against damage. Restoration costs shall be at Contractor's expense.

### **3.06 FINAL EXAMINATION AND ACCEPTANCE**

- A. As soon as practicable after completion of project or completion of any section that will not be subject to further operations, A/E will review the survey data submitted by Contractor's surveyor. If shoals, lumps, or other lack of depth are disclosed by this examination, Contractor will be required to remove same by dragging bottom or by dredging; however if bottom is soft and shoal areas are small and form no material obstruction, removal of such shoal may be waived.
- B. When an area is found to be in a satisfactory condition, it will receive final acceptance.

**END OF SECTION**



# Appendices

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# Appendix A

## **APPENDIX A**

### **SEDIMENT SAMPLING INFORMATION**

Sampling and testing of the sediments in Tripp and Cravath lakes were completed in July 2018. Please read the following information before using this report.

The purpose of the assessment was to identify suspect materials at the site to be used in planning purposes for sediment disposal. The report is furnished as a guidance document for bidders and shall not be solely relied upon for bid submission.

Bidder may rely upon the accuracy of the technical data contained in the report, but not upon nontechnical data, interpretations, or opinions contained therein or for the completeness thereof for Bidder's purposes. The assessment report is not a Contract Document.

May 25, 2018

Craig Helker  
Water Resources Management Specialist  
Wisconsin Department of Natural Resources  
[craig.helker@wisconsin.gov](mailto:craig.helker@wisconsin.gov)

Re: Cravath and Tripp Lake Sediment Sampling and Analysis Plan

Dear: Mr. Helker,

The purpose of this letter is to submit a sampling and analysis plan for the dredging of Cravath and Tripp Lake in the City of Whitewater, Wisconsin. The sampling is planned to occur concurrently with a sediment profile survey. We are tentatively planning on sampling and surveying in mid to late June. The sediment profile survey will provide a basis for estimating a potential volumetric range of sediment that could be dredged from the two lakes.

Please approve or advise modifications to the attached sediment sampling and analysis plan.

If the plan is approved, the completed sampling report and analytical results will be submitted to your office.

Sincerely,

Ayres Associates Inc



Rob Wayne  
Environmental Scientist  
715.831.7506  
[WayneR@AyresAssociates.com](mailto:WayneR@AyresAssociates.com)

**Sediment Sampling and Analysis Plan  
Cravath and Tripp Lake Dredging – Walworth County, WI**

**Preliminary Application Summary, per NR 347.05:**

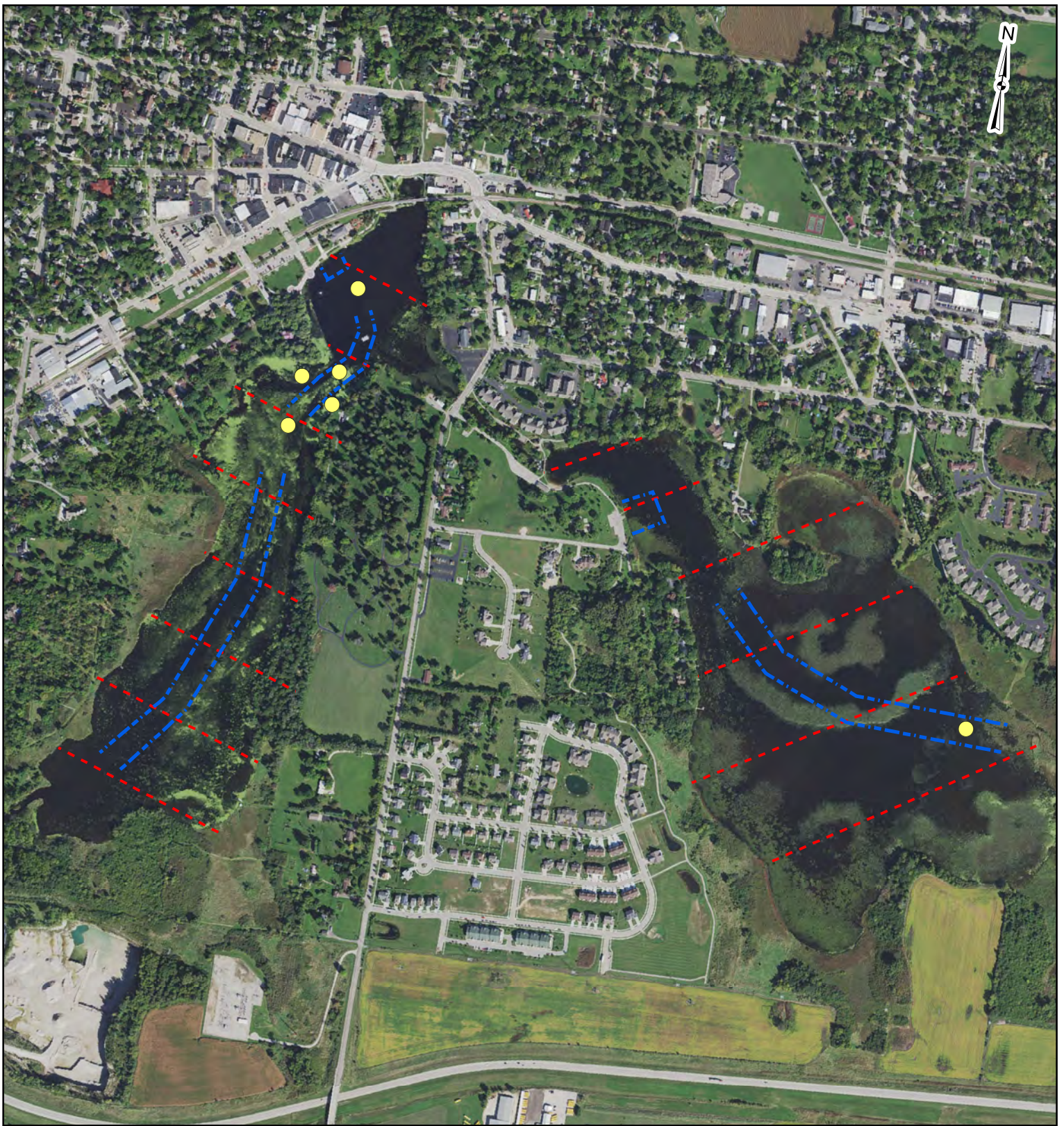
- Name of waterbody and project location:
  - Cravath and Tripp Lake – Located in City of Whitewater, WI
- Volume of material to be dredged:
  - We estimate approximately 18,000 CY from Cravath Lake and 22,000 CY from Tripp Lake. These estimates were determined from plans created by Nahn and Associates, LLC. We will complete a bathymetric survey to accurately determine the volumetric build-up of sediment and dredging amounts in Cravath and Tripp Lake.
- Dredging method and equipment:
  - TBD.
- Disposal method:
  - TBD.
- Brief description of known historical chemical use in the waterbody for vegetation / algae control, including year, chemical, and amount applied:
  - It is unknown if any chemicals were used.
  - Most land within the two watersheds has historically been agriculture and residential.
- Any previous sediment sampling:
  - Unknown.
- Copy of a map showing area to be dredged, depth of cut, and proposed sediment sampling site, bathymetry of area to be dredged:
  - See attached map for proposed sediment sampling locations. A hydrosurvey will be completed to map out the existing lake bed.
- Anticipated starting and completion dates of the proposed project:
  - Preliminary Design by January 2019.

**Sampling and Analysis Plan:**

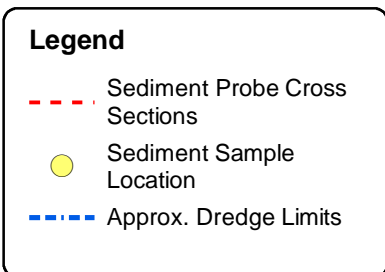
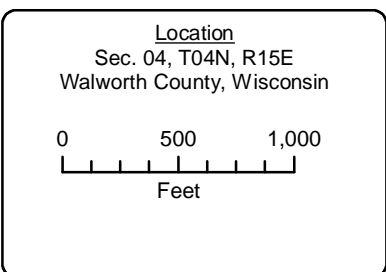
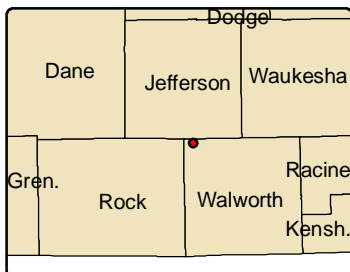
- Parameters to be analyzed for, including analytical methods and detection levels:
  - See highlighted rows in attached Table 1.
- Updated sampling location map:
  - See attached map. Proposed locations for sediment sampling and analysis as well as sediment survey profiling are outlined on the map. Exact locations may vary due to field conditions.
- Planned sectioning of cores at each sample location:
  - Five samples will be taken in Cravath Lake with 4 samples taken around the sample taken by Nahn Associates that had some contaminations. The other sample will be taken between the dredging areas that has no sampling by the previous engineering company. One sample will be taken in Tripp Lake where no samples were taken by the previous engineering company.

- At each cross-section line, a probe will be extended to the bottom of the impoundment to measure elevation of the bed. Then, the probe will be hand-pushed into the sediment until refusal to measure depth to 'hard bottom'. The sediment will be visually classified and logged.
- Sampling methods and sample handling procedures:
  - Sampling will be done from a boat in June 2018.
  - Sampling will be completed in accordance with section 6.2 of the attached document, *Guidance for Applying the Sediment Sampling and Analysis Requirements of Chapter NR 347, Wisconsin Administrative Code*.
- Analytical laboratory certified under NR 149, Adm. Code to conduct parameter analysis.
  - Samples will be tested at a WI DNR approved lab.
    - Pace Analytical Services, LLC in Minneapolis, MN





**Sediment Sample Plan  
Cravath and Tripp Lake**



**AYRES ASSOCIATES**  
Sustainable solutions since 1959

3433 Oakwood Hills Parkway  
Eau Claire, Wisconsin 54701



**Cravath & Tripp Lake Sediment Sampling - Planned Samples include all highlighted fields.**

Table 1. Sediment Sampling Parameters with Suggested Methods and Analyses

Parameter	Suggested Analytical Method (Suggested Detection Level) (mg/kg, dry weight unless noted)	Suggested Base Parameter Analyses <sup>1</sup>	
		Great Lakes or Urban/ Industrial	Inland Waters (Rural/ Forested)
<b>Inorganics - Metals</b>			
<b>Arsenic</b>	SW-846 3050B/6010B EPA 6010 or 7060 (5)	X	X
Barium	SW-846 3050B/6010B (0.2)		
<b>Cadmium</b>	SW-846 3050B/6010B EPA 7131 (0.6)	X	X
<b>Chromium (total)</b>	SW-846 3050B/6010B EPA 6010 or 7191 (0.6)	X	X
<b>Copper</b>	SW-846 3050B/6010B EPA 6010 or 7211 (0.5)	X	X
Cyanide	SW-846 9010B/9014 (0.4)		
<b>Lead</b>	SW-846 3050B/6010B EPA 6010 or 7421 (3)	X	X
Manganese	SW-846 3050B/6010B (0.1)		
<b>Mercury</b>	SW-846 7471A EPA 7471 (0.015)	X	X
<b>Nickel</b>	SW-846 3050B/6010B EPA 6010 (2)	X	X
Selenium	SW-846 3050B/6010B (8)	X	
<b>Zinc</b>	SW-846 3050B/6010B EPA 6010 or 7951 (2)	X	X
<b>Inorganics - Nutrients</b>			
Oil & Grease	SW-846 9070	X	
<b>Total Phosphorus</b>	EPA 365.2/365.3 or USGS I-6600-85 (9.9)	X	X
<b>Nitrate + Nitrite</b>	LACHAT 12-107-04-1-B (0.25)	X	X
<b>Ammonia-Nitrogen</b>	LACHAT 12-107-06-1-A (0.16)	X	X
<b>Total Kjeldahl Nitrogen</b>		X	X
<b>Organics</b>			
Aldrin	SW-846 8081 EPA 8081, 354440B, 3541 (0.01)		
Chlordane	SW-846 8081 EPA 8081, 354440B, 3541 (0.009)	X	
Dieldrin	SW-846 8081 EPA 8081, 354440B, 3541 (0.01)		
Endrin	SW-846 8081 EPA 8081, 354440B, 3541 (0.01)		
Heptachlor	SW-846 8081 EPA 8081, 354440B, 3541 (0.01)		
Lindane (Gamma BHC)	SW-846 8081 EPA 8081, 354440B, 3541 (0.01)		

<sup>1</sup> Suggested base parameter list reflects additions to NR347 Table 1, based on scientific research and experience with dredging projects.

Parameter	Suggested Analytical Method (Suggested Detection Level) (mg/kg, dry weight unless noted)	Suggested Base Parameter Analyses <sup>1</sup>	
		Great Lakes or Urban/ Industrial	Inland Waters (Rural/ Forested)
DDT	SW-846 8081 EPA 8081, 354440B, 3541 (0.01)	X	
DDD & DDE	SW-846 8081 EPA 8081, 354440B, 3541 (0.01)	X	
Toxaphene	SW-846 8081 (0.01)		
PCBs (Total)	SW-846 8081 EPA 8081, 3540B, 3541 (0.04)	X	X
		Tied to Fish Advisories	
2,3,7,8-dioxin, 2,3,7,8-furan and 15 2,3,7,8-substituted dioxin and furan congeners	EPA 8290 (1 – 10 pg/g)		
Total Organic Carbon	SW 846 8081 SW846-EPA 9060 (0.2%)	X	X
Polycyclic Aromatic Hydrocarbons (PAHs)	EPA 8310	X	
Naphthalene	(0.019)		
Phenanthrene	(0.017)		
Pyrene	(0.012)		
Fluorene	(0.058)		
2-Methylnaphthelene			
Acenaphthene	(0.017)		
Acenaphthylene	(0.021)		
Anthracene	(0.0071)		
Benzo (a) anthracene	(0.019)		
Benzo (a) pyrene	(0.023)		
Benzo (e) pyrene			
Benzo (b) fluoranthene	(0.032)		
Benzo (g,h,i) perylene	(0.022)		
Benzo (k) fluoranthene	(0.021)		
Chrysene	(0.0074)		
Dibenzo(a,h)anthracene	(0.008)		
Fluoranthene	(0.029)		
Indeno (1,2,3-cd) pyrene	(0.034)		
Physical Tests			
Particle Size Analysis – Sieve and Hydrometer Analysis	ASTM D-422 (%)	X	X
Moisture Content	ASTM D-2216 (%)	X	X
Atterburg Limits (Liquid Limit and Plastic Limit)	ASTM D4318 (as moisture content)		
Specific Gravity	ASTM D-854 (Ratio, unitless)		

**From:** [Helker, Craig D - DNR](#)  
**To:** [Wayne, Robert](#)  
**Subject:** RE: Sediment Sampling for Cravath and Tripp Lakes in City of Whitewater  
**Date:** Friday, June 1, 2018 12:36:13 PM  
**Attachments:** [image001.png](#)  
[image002.png](#)  
[image003.png](#)  
[image004.png](#)  
[image005.png](#)  
[image006.png](#)

---

Good Afternoon Robert,  
Thank you for sending this over.  
Good luck with the sampling event, and I look forward to seeing the results.  
Sincerely,  
Craig

Craig Helker

Water Resources Biologist - East District  
Wisconsin Department of Natural Resources  
Phone: (262) 884-2357  
Fax: (262) 884-2307  
[craig.helker@wi.gov](mailto:craig.helker@wi.gov)



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---

**From:** Wayne, Robert [mailto:WayneR@AyresAssociates.com]  
**Sent:** Thursday, May 31, 2018 11:25 AM  
**To:** Helker, Craig D - DNR <Craig.Helker@wisconsin.gov>  
**Subject:** RE: Sediment Sampling for Cravath and Tripp Lakes in City of Whitewater

Hi Craig,  
Attached is the table, sorry about that!  
Thanks,

**Robert J Wayne**

Environmental Scientist

Office: 715.834.3161 • Direct: 715.831.7506  
[WayneR@AyresAssociates.com](mailto:WayneR@AyresAssociates.com)  
[www.AyresAssociates.com](http://www.AyresAssociates.com)

---

**From:** Helker, Craig D - DNR <Craig.Helker@wisconsin.gov>  
**Sent:** Wednesday, May 30, 2018 4:29 PM  
**To:** Wayne, Robert <WayneR@AyresAssociates.com>  
**Subject:** RE: Sediment Sampling for Cravath and Tripp Lakes in City of Whitewater

Good Afternoon Robert,  
Thank you for sending this over. Could you send over table 1., or the list of analytes? I couldn't find it in the attachment.  
Sincerely,  
Craig

---

**From:** Wayne, Robert [mailto:WayneR@AyresAssociates.com]  
**Sent:** Friday, May 25, 2018 10:58 AM  
**To:** Helker, Craig D - DNR <Craig.Helker@wisconsin.gov>  
**Subject:** RE: Sediment Sampling for Cravath and Tripp Lakes in City of Whitewater

Craig,  
Attached is the revised sampling/surveying plan for Cravath and Tripp Lake in Whitewater, WI.  
We plan to take four samples in Cravath around sample #6 taken by Nahn that showed contaminants to determine the extent of contamination.  
In Tripp Lake we will take one sample in an area that was not sampled by Nahn. The city wants to change the dredging extent slightly towards Whitewater Creek.  
Let us know if anything needs to be changed.  
Thanks,  
Rob

**Robert J Wayne**

Environmental Scientist

Office: 715.834.3161 • Direct: 715.831.7506  
[WayneR@AyresAssociates.com](mailto:WayneR@AyresAssociates.com)  
[www.AyresAssociates.com](http://www.AyresAssociates.com)

---

**From:** Wayne, Robert  
**Sent:** Friday, May 04, 2018 2:21 PM

**To:** 'Helker, Craig D - DNR' <Craig.Helker@wisconsin.gov>  
**Cc:** Goodwin, Chris <Goodwinc@AyresAssociates.com>  
**Subject:** RE: Sediment Sampling for Cravath and Tripp Lakes in City of Whitewater

Craig,  
Below are rough estimates for sediment removal based on the 2016 preliminary plans created by Nahn and Associates.  
Cravath = 18,000 CY  
Tripp = 22,000 CY  
Total = 40,000 CY  
Let us know if you need anything else.

**Robert J Wayne**

Environmental Scientist

Office: 715.834.3161 • Direct: 715.831.7506

[WayneR@AyresAssociates.com](mailto:WayneR@AyresAssociates.com)

[www.AyresAssociates.com](http://www.AyresAssociates.com)

---

**From:** Helker, Craig D - DNR [<mailto:Craig.Helker@wisconsin.gov>]  
**Sent:** Friday, May 04, 2018 8:53 AM  
**To:** Wayne, Robert <[WayneR@AyresAssociates.com](mailto:WayneR@AyresAssociates.com)>

**Subject:** FW: Sediment Sampling for Cravath and Tripp Lakes in City of Whitewater

Good Morning Robert,  
Here is the information from the 2016 sampling. I will give you a call this afternoon to talk.  
Sincerely,

Craig

Craig Helker

Water Resources Biologist - East District  
Wisconsin Department of Natural Resources  
Phone: (262) 884-2357  
Fax: (262) 884-2307  
[craig.helker@wi.gov](mailto:craig.helker@wi.gov)



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**From:** Chuck Nahn [<mailto:cnahn@tds.net>]  
**Sent:** Tuesday, January 31, 2017 11:12 AM  
**To:** Helker, Craig D - DNR <[Craig.Helker@wisconsin.gov](mailto:Craig.Helker@wisconsin.gov)>

**Cc:** Johnson, Elaine M - DNR <[Elaine.Johnson@wisconsin.gov](mailto:Elaine.Johnson@wisconsin.gov)>

**Subject:** RE: Sediment Sampling for Cravath and Tripp Lakes in City of Whitewater

Mr. Helker,

Enclosed are the results of the sediment sampling conducted on Cravath and Tripp Lakes in late October and early November of 2016 within the City of Whitewater, WI based on the requirements in your September 9, 2016 letter.

I have included:

- Map showing location of sediment samples collected,
- Test America sampling results,
- Pictures of sediment samples collected at Tripp and Cravath Lakes.
  - [https://dl.dropboxusercontent.com/u/108705387/whitewater%20dredge%20pictures/20161027\\_100341.jpg](https://dl.dropboxusercontent.com/u/108705387/whitewater%20dredge%20pictures/20161027_100341.jpg)
  - [https://dl.dropboxusercontent.com/u/108705387/whitewater%20dredge%20pictures/20161027\\_105918.jpg](https://dl.dropboxusercontent.com/u/108705387/whitewater%20dredge%20pictures/20161027_105918.jpg)
  - [https://dl.dropboxusercontent.com/u/108705387/whitewater%20dredge%20pictures/20161027\\_114559\\_resized.jpg](https://dl.dropboxusercontent.com/u/108705387/whitewater%20dredge%20pictures/20161027_114559_resized.jpg)
  - [https://dl.dropboxusercontent.com/u/108705387/whitewater%20dredge%20pictures/20161027\\_134436.jpg](https://dl.dropboxusercontent.com/u/108705387/whitewater%20dredge%20pictures/20161027_134436.jpg)
  - [https://dl.dropboxusercontent.com/u/108705387/whitewater%20dredge%20pictures/20161116\\_111418.jpg](https://dl.dropboxusercontent.com/u/108705387/whitewater%20dredge%20pictures/20161116_111418.jpg)
  - [https://dl.dropboxusercontent.com/u/108705387/whitewater%20dredge%20pictures/20161116\\_114207.jpg](https://dl.dropboxusercontent.com/u/108705387/whitewater%20dredge%20pictures/20161116_114207.jpg)
  - [https://dl.dropboxusercontent.com/u/108705387/whitewater%20dredge%20pictures/20161116\\_121405.jpg](https://dl.dropboxusercontent.com/u/108705387/whitewater%20dredge%20pictures/20161116_121405.jpg)

Based on these results, we request on-site sediment disposal utilizing local undeveloped areas adjacent to the lake.

Please also note my e-mail address has changed to [chucknahn@gmail.com](mailto:chucknahn@gmail.com). Please direct all future correspondence to my new e-mail address. Please also contact me directly with any questions you have on the sediment sampling.

Thank you, Mr. Helker.

Chuck

Charles E Nahn III, P.E.  
Nahn and Associates, LLC  
5623 Sandhill Drive  
Middleton, WI 53562  
(608) 712-9199

---

**From:** Helker, Craig D - DNR [<mailto:Craig.Helker@wisconsin.gov>]  
**Sent:** Friday, September 09, 2016 4:58 PM  
**To:** [cnahn@tds.net](mailto:cnahn@tds.net)  
**Cc:** Johnson, Elaine M - DNR  
**Subject:** Sediment Sampling for Cravath and Tripp Lakes in City of Whitewater

Good Afternoon Mr. Nahn,

Please find attached a pdf scan of a letter outlining sediment sampling for your project that will meet the requirements of the Department. However, depending on sampling results and the ultimate dredging or dewatering method chosen, elutriate testing may also be needed.

If you have any questions regarding the attached letter, please do not hesitate to contact me.

Sincerely,

Craig

**Craig Helker**

Water Resources Biologist - East District

Wisconsin Department of Natural Resources

Phone: (262) 884-2357

Fax: (262) 884-2307

[craig.helker@wi.gov](mailto:craig.helker@wi.gov)



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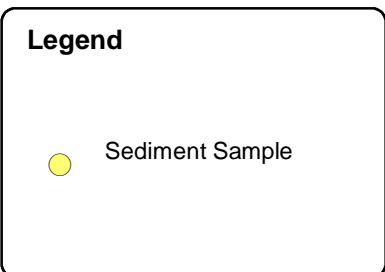
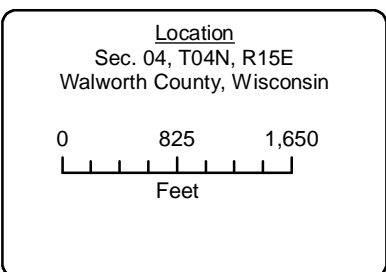
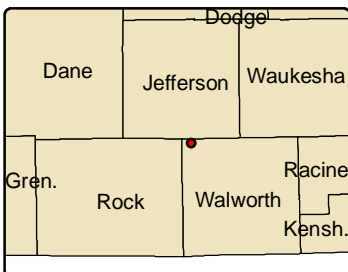
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**Sediment Sample Plan  
Cravath and Tripp Lake**



**AYRES ASSOCIATES**  
Sustainable solutions since 1959  
3433 Oakwood Hills Parkway  
Eau Claire, Wisconsin 54701



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<b>Sample ID</b>	<b>Approx. Depth of Sediment</b>	<b>Approx. Depth of Sediment Sample</b>	<b>Field Description</b>	<b>Grain Size (PaceLabs)</b>
Cravath Lake - Sediment Site 1	6.0'	3 to 4'	Black silt (mucky)	Silt (ML)
Cravath Lake - Sediment Site 2	5.5'	1.5 to 2.5'	Black silt (mucky)	Silt (ML)
Cravath Lake - Sediment Site 3	7.5'	2 to 3'	Black silt (mucky)	Silt (ML)
Cravath Lake - Sediment Site 4	5'	3 to 4'	Black silt (mucky)	Silt (ML)
Cravath Lake - Sediment Site 5	5.75'	1.5 to 2.5'	Black silt (mucky)	Silt (ML)
Tripp (Trapp) Lake - Sediment Site 1	3'	2-3'	Black silt (mucky)	Silt (ML)



**Cravath and Tripp Lake Sediment Sampling Results**

	Cravath Lake Sediment Samples					Tripp Lake	GW RCL	NI RCL	I RCL	BTV
	CSS1	CSS2	CSS3	CSS4	CSS5	TSS1				
<b>PAHs (detects only)</b>										
Benzo[a]pyrene	<b>0.349</b>		<b>0.149</b>	0.0805			<b>0.47</b>	<b>0.115</b>	<u>2.11</u>	
Acenaphthylene	0.128		0.0649							
Benz[a]anthracene	0.293		0.117	0.0489				<b>1.14</b>	<u>20.8</u>	
Benzo[b]fluoranthene	0.459	0.0468	0.216	0.113	0.0358		<b>0.4781</b>	<b>1.15</b>	<u>21.1</u>	
Benzo[g,h,i]perylene	0.269		0.133	0.0661						
Benzo[k]fluoranthene	0.246		0.111	0.0489				<b>11.5</b>	<u>211</u>	
Chrysene	<b>0.357</b>		<b>0.161</b>	0.0678	0.0272		<b>0.1442</b>	<b>115</b>	<u>2,110</u>	
Fluoranthene	0.639	0.0405	0.267	0.129	0.0603		<b>88.8778</b>	<b>2,390</b>	<u>30,100</u>	
Ideno[1,2,3-cd]pyrene	0.224		0.107	0.0542				<b>1.15</b>	<u>21.1</u>	
Phenanthrene	0.225		0.0911	0.0286	0.0588					
Pyrene	0.603	0.0359	0.279	0.0997	0.0572		<b>54.5455</b>	<b>1,790</b>	<u>22,600</u>	
<b>Metals (detects only)</b>										
Chromium, Total	19.9	30.3	30.7	14.7	29	8.8	<b>360,000</b>	<b>100,000 (III)</b>	<u>100,000 (III)</u>	44
Copper	25.6	29.7	25.5	14.8	29.3	19.9	<b>91.6</b>	<b>3,130</b>	<u>46,700</u>	35
Mercury	0.11			0.085	0.18		<b>0.208</b>	<b>3.13</b>	<u>3.13</u>	
Lead	<b>58.4</b>	<b>57</b>	41.5	18.4	<b>316</b>	4.5	<b>27</b>	<b>400</b>	<u>800</u>	52
Nickel	14.3	23.2	21.8	11.8	12.4	14.8	<b>13.0612</b>	<b>1,550</b>	<u>22,500</u>	31
Zinc	144	148	82	62	107	24.8		<b>23500</b>	<u>100,000</u>	150
<b>Cumulative</b>										
Exceedance Count	<b>1</b>	0	<b>1</b>	0	0	0			<b>1</b>	
Hazard Index	0.5284	0.6556	0.55	0.4009	<b>1.2041</b>	0.484			<b>1</b>	
Cumulative Cancer Risk	<b>2.2E-06</b>	<b>2.5E-05</b>	<b>2.8E-05</b>	<b>2.0E-05</b>	<b>2.0E-05</b>	<b>2.4E-05</b>			<b>1.0E-05</b>	

NR 720 Groundwater RCL Exceedance

NR 720 Non Industrial RCL Exceedance

NR 720 Industrial RCL Exceedance

All results in mg/kg, equivalent to PPM

BTV replaces RCLs if BTV>RCL

August 28, 2018

Rob Wayne  
Ayres & Associates  
3433 Oakwood Hills Parkway  
Eau Claire, WI 54701

RE: Project: Cravath + Tripp Lake  
Pace Project No.: 10441061

Dear Rob Wayne:

Enclosed are the analytical results for sample(s) received by the laboratory on July 26, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Bob Michels  
bob.michels@pacelabs.com  
(612)709-5046  
Project Manager

Enclosures

cc: Peter Haug, Ayres Associates



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Cravath + Tripp Lake  
Pace Project No.: 10441061

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### Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485	Minnesota Certification #: 027-053-137
A2LA Certification #: 2926.01	Minnesota Dept of Ag Certification #: via MN 027-053-137
Alabama Certification #: 40770	Minnesota Petrofund Certification #: 1240
Alaska Contaminated Sites Certification #: 17-009	Mississippi Certification #: MN00064
Alaska DW Certification #: MN00064	Montana Certification #: CERT0092
Arizona Certification #: AZ0014	Nebraska Certification #: NE-OS-18-06
Arkansas DW Certification #: MN00064	Nevada Certification #: MN00064
Arkansas WW Certification #: 88-0680	New Hampshire Certification #: 2081
California Certification #: 2929	New Jersey Certification #: MN002
CNMI Saipan Certification #: MP0003	New York Certification #: 11647
Colorado Certification #: MN00064	North Carolina DW Certification #: 27700
Connecticut Certification #: PH-0256	North Carolina WW Certification #: 530
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137	North Dakota Certification #: R-036
Florida Certification #: E87605	Ohio DW Certification #: 41244
Georgia Certification #: 959	Ohio VAP Certification #: CL101
Guam EPA Certification #: MN00064	Oklahoma Certification #: 9507
Hawaii Certification #: MN00064	Oregon NwTPH Certification #: MN300001
Idaho Certification #: MN00064	Oregon Secondary Certification #: MN200001
Illinois Certification #: 200011	Pennsylvania Certification #: 68-00563
Indiana Certification #: C-MN-01	Puerto Rico Certification #: MN00064
Iowa Certification #: 368	South Carolina Certification #:74003001
Kansas Certification #: E-10167	Tennessee Certification #: TN02818
Kentucky DW Certification #: 90062	Texas Certification #: T104704192
Kentucky WW Certification #: 90062	Utah Certification #: MN00064
Louisiana DEQ Certification #: 03086	Virginia Certification #: 460163
Louisiana DW Certification #: MN00064	Washington Certification #: C486
Maine Certification #: MN00064	West Virginia DW Certification #: 9952 C
Maryland Certification #: 322	West Virginia DEP Certification #: 382
Massachusetts Certification #: M-MN064	Wisconsin Certification #: 999407970
Michigan Certification #: 9909	Wyoming UST Certification #: via A2LA 2926.01

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### Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792	Minnesota Dept of Health Certification #: 027-137-445
Alaska Certification UST-107	North Dakota Certification: # R-203
California Certification #2973	Wisconsin DNR Certification #: 998027470
Alaska Certification UST-107	WA Department of Ecology Lab ID# C1007
Montana Certificate #CERT0103	Nevada DNR #MN010842018-1
California Certification #2973	Oklahoma Department of Environmental Quality
Alaska Certification #MN01084	California Certification #2973
Arizona Department of Health Certification #AZ0785	

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### Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302	Virginia VELAP ID: 460263
Florida/NELAP Certification #: E87948	South Carolina Certification #: 83006001
Illinois Certification #: 200050	Texas Certification #: T104704529-14-1
Kentucky UST Certification #: 82	Wisconsin Certification #: 405132750
Louisiana Certification #: 04168	Wisconsin DATCP Certification #: 105-444
Minnesota Certification #: 055-999-334	USDA Soil Permit #: P330-16-00157
New York Certification #: 12064	Federal Fish & Wildlife Permit #: LE51774A-0
North Dakota Certification #: R-150	

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## SAMPLE SUMMARY

Project: Cravath + Tripp Lake

Pace Project No.: 10441061

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10441061001	Cravath - Sediment Sample 1	Solid	07/24/18 11:45	07/26/18 09:30
10441061002	Cravath - Sediment Sample 2	Solid	07/24/18 12:00	07/26/18 09:30
10441061003	Cravath - Sediment Sample 3	Solid	07/24/18 12:15	07/26/18 09:30
10441061004	Cravath - Sediment Sample 4	Solid	07/24/18 12:30	07/26/18 09:30

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### SAMPLE ANALYTE COUNT

Project: Cravath + Tripp Lake

Pace Project No.: 10441061

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10441061001	Cravath - Sediment Sample 1	EPA 6010	AJT	7	PASI-G
		EPA 7471B	LMW	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270D by SIM	STB	20	PASI-M
		EPA 350.1	JJH	1	PASI-V
		EPA 351.2	JJH	1	PASI-V
		EPA 353.2	MCT	1	PASI-V
		EPA 365.1	JLB	1	PASI-V
10441061002	Cravath - Sediment Sample 2	EPA 9060 Modified	TJJ	4	PASI-G
		EPA 6010	AJT	7	PASI-G
		EPA 7471B	LMW	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270D by SIM	STB	20	PASI-M
		EPA 350.1	JJH	1	PASI-V
		EPA 351.2	JJH	1	PASI-V
		EPA 353.2	MCT	1	PASI-V
10441061003	Cravath - Sediment Sample 3	EPA 365.1	JLB	1	PASI-V
		EPA 9060 Modified	TJJ	4	PASI-G
		EPA 6010	AJT	7	PASI-G
		EPA 7471B	LMW	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270D by SIM	STB	20	PASI-M
		EPA 350.1	JJH	1	PASI-V
		EPA 351.2	JJH	1	PASI-V
10441061004	Cravath - Sediment Sample 4	EPA 353.2	MCT	1	PASI-V
		EPA 365.1	JLB	1	PASI-V
		EPA 9060 Modified	TJJ	4	PASI-G
		EPA 6010	AJT	7	PASI-G
		EPA 7471B	LMW	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270D by SIM	STB	20	PASI-M
		EPA 350.1	JJH	1	PASI-V
EPA 351.2	JJH	1	PASI-V		
EPA 353.2	MCT	1	PASI-V		
EPA 365.1	JLB	1	PASI-V		
EPA 9060 Modified	TJJ	4	PASI-G		

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Cravath + Tripp Lake

Pace Project No.: 10441061

**Sample:** Cravath - Sediment Sample **Lab ID:** 10441061001 **Collected:** 07/24/18 11:45 **Received:** 07/26/18 09:30 **Matrix:** Solid  
1

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>									
Analytical Method: EPA 6010 Preparation Method: EPA 3050									
Arsenic	ND	mg/kg	11.8	2.5	1	08/20/18 07:29	08/23/18 22:23	7440-38-2	
Cadmium	ND	mg/kg	1.2	0.32	1	08/20/18 07:29	08/23/18 22:23	7440-43-9	
Chromium	19.9	mg/kg	2.4	0.66	1	08/20/18 07:29	08/23/18 22:23	7440-47-3	
Copper	25.6	mg/kg	5.9	1.9	1	08/20/18 07:29	08/23/18 22:23	7440-50-8	
Lead	58.4	mg/kg	3.1	1.0	1	08/20/18 07:29	08/23/18 22:23	7439-92-1	
Nickel	14.3	mg/kg	2.4	0.55	1	08/20/18 07:29	08/23/18 22:23	7440-02-0	
Zinc	144	mg/kg	9.5	2.2	1	08/20/18 07:29	08/23/18 22:23	7440-66-6	
<b>7471B Mercury</b>									
Analytical Method: EPA 7471B Preparation Method: EPA 7471B									
Mercury	0.11	mg/kg	0.065	0.019	1	08/02/18 05:03	08/05/18 18:12	7439-97-6	
<b>Dry Weight / %M by ASTM D2974</b>									
Analytical Method: ASTM D2974									
Percent Moisture	59.9	%	0.10	0.10	1		08/06/18 16:14		
<b>8270D MSSV PAH by SIM</b>									
Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550									
Acenaphthene	ND	ug/kg	16.9	5.1	5	07/30/18 13:47	08/02/18 22:27	83-32-9	
Acenaphthylene	128	ug/kg	20.5	6.1	5	07/30/18 13:47	08/02/18 22:27	208-96-8	
Anthracene	ND	ug/kg	19.3	5.8	5	07/30/18 13:47	08/02/18 22:27	120-12-7	
Benzo(a)anthracene	293	ug/kg	44.6	13.4	5	07/30/18 13:47	08/02/18 22:27	56-55-3	
Benzo(a)pyrene	349	ug/kg	28.4	8.5	5	07/30/18 13:47	08/02/18 22:27	50-32-8	
Benzo(b)fluoranthene	459	ug/kg	15.4	4.6	5	07/30/18 13:47	08/02/18 22:27	205-99-2	
Benzo(e)pyrene	254	ug/kg	29.7	8.9	5	07/30/18 13:47	08/02/18 22:27	192-97-2	N2
Benzo(g,h,i)perylene	269	ug/kg	26.2	7.9	5	07/30/18 13:47	08/02/18 22:27	191-24-2	
Benzo(k)fluoranthene	246	ug/kg	34.9	10.5	5	07/30/18 13:47	08/02/18 22:27	207-08-9	
Chrysene	357	ug/kg	56.2	16.9	5	07/30/18 13:47	08/02/18 22:27	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	19.1	5.7	5	07/30/18 13:47	08/02/18 22:27	53-70-3	
Fluoranthene	639	ug/kg	17.7	5.3	5	07/30/18 13:47	08/02/18 22:27	206-44-0	
Fluorene	ND	ug/kg	12.9	3.9	5	07/30/18 13:47	08/02/18 22:27	86-73-7	
Indeno(1,2,3-cd)pyrene	224	ug/kg	27.7	8.3	5	07/30/18 13:47	08/02/18 22:27	193-39-5	
2-Methylnaphthalene	ND	ug/kg	20.9	6.3	5	07/30/18 13:47	08/02/18 22:27	91-57-6	
Naphthalene	ND	ug/kg	31.9	9.6	5	07/30/18 13:47	08/02/18 22:27	91-20-3	
Phenanthrene	225	ug/kg	79.3	23.8	5	07/30/18 13:47	08/02/18 22:27	85-01-8	
Pyrene	603	ug/kg	63.2	19.0	5	07/30/18 13:47	08/02/18 22:27	129-00-0	
<b>Surrogates</b>									
2-Fluorobiphenyl (S)	71	%	42-125		5	07/30/18 13:47	08/02/18 22:27	321-60-8	D3
p-Terphenyl-d14 (S)	81	%	57-125		5	07/30/18 13:47	08/02/18 22:27	1718-51-0	
<b>350.1 Ammonia</b>									
Analytical Method: EPA 350.1 Preparation Method: EPA 350.1									
Nitrogen, Ammonia	264	mg/kg	20.4	9.8	1	08/07/18 15:06	08/08/18 14:45	7664-41-7	
<b>351.2 Total Kjeldahl Nitrogen</b>									
Analytical Method: EPA 351.2 Preparation Method: EPA 351.2									
Nitrogen, Kjeldahl, Total	1210	mg/kg	499	219	1	08/09/18 19:32	08/10/18 12:06	7727-37-9	

## REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: Cravath + Tripp Lake

Pace Project No.: 10441061

**Sample:** Cravath - Sediment Sample **Lab ID:** 10441061001 **Collected:** 07/24/18 11:45 **Received:** 07/26/18 09:30 **Matrix:** Solid  
1

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>353.2 Nitrogen, NO2/NO3</b>	Analytical Method: EPA 353.2 Preparation Method: EPA 353.2								
Nitrogen, NO2 plus NO3	ND	mg/kg	1.2	0.29	1	08/06/18 15:00	08/07/18 09:29		N3
<b>365.1 Phosphorus, Total</b>	Analytical Method: EPA 365.1 Preparation Method: SM 4500P B								
Phosphorus	<b>554</b>	mg/kg	70.0	33.2	5	08/03/18 13:00	08/06/18 10:49	7723-14-0	
<b>Total Organic Carbon</b>	Analytical Method: EPA 9060 Modified								
<b>Surrogates</b>									
RPD%	<b>2.0</b>	%	0.10	0.10	1		08/07/18 13:46		
Total Organic Carbon	<b>39300</b>	mg/kg	4680	1400	1		08/07/18 13:46	7440-44-0	
Total Organic Carbon	<b>38500</b>	mg/kg	4700	1410	1		08/07/18 13:52	7440-44-0	
Mean Total Organic Carbon	<b>38900</b>	mg/kg	4690	1410	1		08/07/18 13:46	7440-44-0	

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## ANALYTICAL RESULTS

Project: Cravath + Tripp Lake

Pace Project No.: 10441061

**Sample:** Cravath - Sediment Sample **Lab ID:** 10441061002 **Collected:** 07/24/18 12:00 **Received:** 07/26/18 09:30 **Matrix:** Solid  
2

**Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.**

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>									
Analytical Method: EPA 6010 Preparation Method: EPA 3050									
Arsenic	ND	mg/kg	17.0	3.6	1	08/20/18 07:29	08/23/18 22:25	7440-38-2	
Cadmium	ND	mg/kg	1.7	0.45	1	08/20/18 07:29	08/23/18 22:25	7440-43-9	
Chromium	<b>30.3</b>	mg/kg	3.4	0.95	1	08/20/18 07:29	08/23/18 22:25	7440-47-3	
Copper	<b>29.7</b>	mg/kg	8.5	2.8	1	08/20/18 07:29	08/23/18 22:25	7440-50-8	
Lead	<b>57.0</b>	mg/kg	4.4	1.5	1	08/20/18 07:29	08/23/18 22:25	7439-92-1	
Nickel	<b>23.2</b>	mg/kg	3.4	0.79	1	08/20/18 07:29	08/23/18 22:25	7440-02-0	
Zinc	<b>148</b>	mg/kg	13.6	3.2	1	08/20/18 07:29	08/23/18 22:25	7440-66-6	
<b>7471B Mercury</b>									
Analytical Method: EPA 7471B Preparation Method: EPA 7471B									
Mercury	ND	mg/kg	0.087	0.026	1	08/02/18 05:03	08/05/18 18:14	7439-97-6	
<b>Dry Weight / %M by ASTM D2974</b>									
Analytical Method: ASTM D2974									
Percent Moisture	<b>71.9</b>	%	0.10	0.10	1		08/06/18 16:15		
<b>8270D MSSV PAH by SIM</b>									
Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550									
Acenaphthene	ND	ug/kg	4.8	1.4	1	07/30/18 13:47	08/02/18 21:46	83-32-9	
Acenaphthylene	ND	ug/kg	5.8	1.8	1	07/30/18 13:47	08/02/18 21:46	208-96-8	
Anthracene	ND	ug/kg	5.5	1.7	1	07/30/18 13:47	08/02/18 21:46	120-12-7	
Benzo(a)anthracene	ND	ug/kg	12.7	3.8	1	07/30/18 13:47	08/02/18 21:46	56-55-3	
Benzo(a)pyrene	ND	ug/kg	8.1	2.4	1	07/30/18 13:47	08/02/18 21:46	50-32-8	
Benzo(b)fluoranthene	<b>46.8</b>	ug/kg	4.4	1.3	1	07/30/18 13:47	08/02/18 21:46	205-99-2	
Benzo(e)pyrene	ND	ug/kg	8.5	2.5	1	07/30/18 13:47	08/02/18 21:46	192-97-2	N2
Benzo(g,h,i)perylene	ND	ug/kg	7.5	2.2	1	07/30/18 13:47	08/02/18 21:46	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	10	3.0	1	07/30/18 13:47	08/02/18 21:46	207-08-9	
Chrysene	ND	ug/kg	16.0	4.8	1	07/30/18 13:47	08/02/18 21:46	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	5.4	1.6	1	07/30/18 13:47	08/02/18 21:46	53-70-3	
Fluoranthene	<b>40.5</b>	ug/kg	5.0	1.5	1	07/30/18 13:47	08/02/18 21:46	206-44-0	
Fluorene	ND	ug/kg	3.7	1.1	1	07/30/18 13:47	08/02/18 21:46	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	7.9	2.4	1	07/30/18 13:47	08/02/18 21:46	193-39-5	
2-Methylnaphthalene	ND	ug/kg	6.0	1.8	1	07/30/18 13:47	08/02/18 21:46	91-57-6	
Naphthalene	ND	ug/kg	9.1	2.7	1	07/30/18 13:47	08/02/18 21:46	91-20-3	
Phenanthrene	ND	ug/kg	22.6	6.8	1	07/30/18 13:47	08/02/18 21:46	85-01-8	
Pyrene	<b>35.9</b>	ug/kg	18.0	5.4	1	07/30/18 13:47	08/02/18 21:46	129-00-0	
<b>Surrogates</b>									
2-Fluorobiphenyl (S)	79	%	42-125		1	07/30/18 13:47	08/02/18 21:46	321-60-8	
p-Terphenyl-d14 (S)	89	%	57-125		1	07/30/18 13:47	08/02/18 21:46	1718-51-0	
<b>350.1 Ammonia</b>									
Analytical Method: EPA 350.1 Preparation Method: EPA 350.1									
Nitrogen, Ammonia	<b>374</b>	mg/kg	33.7	16.3	1	08/07/18 15:06	08/08/18 14:46	7664-41-7	
<b>351.2 Total Kjeldahl Nitrogen</b>									
Analytical Method: EPA 351.2 Preparation Method: EPA 351.2									
Nitrogen, Kjeldahl, Total	<b>1380</b>	mg/kg	593	260	1	08/09/18 19:32	08/10/18 12:07	7727-37-9	

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## ANALYTICAL RESULTS

Project: Cravath + Tripp Lake

Pace Project No.: 10441061

**Sample: Cravath - Sediment Sample 2**    **Lab ID: 10441061002**    Collected: 07/24/18 12:00    Received: 07/26/18 09:30    Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>353.2 Nitrogen, NO2/NO3</b>	Analytical Method: EPA 353.2    Preparation Method: EPA 353.2								
Nitrogen, NO2 plus NO3	ND	mg/kg	1.8	0.43	1	08/06/18 15:00	08/07/18 09:27		N3
<b>365.1 Phosphorus, Total</b>	Analytical Method: EPA 365.1    Preparation Method: SM 4500P B								
Phosphorus	<b>788</b>	mg/kg	103	48.7	5	08/03/18 13:00	08/06/18 10:50	7723-14-0	
<b>Total Organic Carbon</b>	Analytical Method: EPA 9060 Modified								
<b>Surrogates</b>									
RPD%	<b>10.7</b>	%	0.10	0.10	1		08/07/18 13:58		
Total Organic Carbon	<b>56900</b>	mg/kg	10700	3200	1		08/07/18 13:58	7440-44-0	
Total Organic Carbon	<b>51100</b>	mg/kg	10400	3110	1		08/07/18 14:03	7440-44-0	
Mean Total Organic Carbon	<b>54000</b>	mg/kg	10500	3160	1		08/07/18 13:58	7440-44-0	

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## ANALYTICAL RESULTS

Project: Cravath + Tripp Lake

Pace Project No.: 10441061

**Sample: Cravath - Sediment Sample** Lab ID: **10441061003** Collected: 07/24/18 12:15 Received: 07/26/18 09:30 Matrix: Solid  
3

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>									
Analytical Method: EPA 6010 Preparation Method: EPA 3050									
Arsenic	ND	mg/kg	17.8	3.7	1	08/20/18 07:29	08/23/18 22:28	7440-38-2	
Cadmium	ND	mg/kg	1.8	0.47	1	08/20/18 07:29	08/23/18 22:28	7440-43-9	
Chromium	<b>30.7</b>	mg/kg	3.6	0.99	1	08/20/18 07:29	08/23/18 22:28	7440-47-3	
Copper	<b>25.5</b>	mg/kg	8.9	2.9	1	08/20/18 07:29	08/23/18 22:28	7440-50-8	
Lead	<b>41.5</b>	mg/kg	4.6	1.5	1	08/20/18 07:29	08/23/18 22:28	7439-92-1	
Nickel	<b>21.8</b>	mg/kg	3.6	0.82	1	08/20/18 07:29	08/23/18 22:28	7440-02-0	
Zinc	<b>82.0</b>	mg/kg	14.3	3.3	1	08/20/18 07:29	08/23/18 22:28	7440-66-6	
<b>7471B Mercury</b>									
Analytical Method: EPA 7471B Preparation Method: EPA 7471B									
Mercury	ND	mg/kg	0.093	0.028	1	08/02/18 05:03	08/05/18 18:16	7439-97-6	
<b>Dry Weight / %M by ASTM D2974</b>									
Analytical Method: ASTM D2974									
Percent Moisture	<b>74.5</b>	%	0.10	0.10	1		08/06/18 16:15		
<b>8270D MSSV PAH by SIM</b>									
Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550									
Acenaphthene	ND	ug/kg	5.3	1.6	1	07/30/18 13:47	08/02/18 22:06	83-32-9	
Acenaphthylene	<b>64.9</b>	ug/kg	6.4	1.9	1	07/30/18 13:47	08/02/18 22:06	208-96-8	
Anthracene	ND	ug/kg	6.1	1.8	1	07/30/18 13:47	08/02/18 22:06	120-12-7	
Benzo(a)anthracene	<b>117</b>	ug/kg	14.1	4.2	1	07/30/18 13:47	08/02/18 22:06	56-55-3	
Benzo(a)pyrene	<b>149</b>	ug/kg	8.9	2.7	1	07/30/18 13:47	08/02/18 22:06	50-32-8	
Benzo(b)fluoranthene	<b>216</b>	ug/kg	4.9	1.5	1	07/30/18 13:47	08/02/18 22:06	205-99-2	
Benzo(e)pyrene	<b>132</b>	ug/kg	9.4	2.8	1	07/30/18 13:47	08/02/18 22:06	192-97-2	N2
Benzo(g,h,i)perylene	<b>133</b>	ug/kg	8.2	2.5	1	07/30/18 13:47	08/02/18 22:06	191-24-2	
Benzo(k)fluoranthene	<b>111</b>	ug/kg	11.0	3.3	1	07/30/18 13:47	08/02/18 22:06	207-08-9	
Chrysene	<b>161</b>	ug/kg	17.7	5.3	1	07/30/18 13:47	08/02/18 22:06	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	6.0	1.8	1	07/30/18 13:47	08/02/18 22:06	53-70-3	
Fluoranthene	<b>267</b>	ug/kg	5.6	1.7	1	07/30/18 13:47	08/02/18 22:06	206-44-0	
Fluorene	ND	ug/kg	4.1	1.2	1	07/30/18 13:47	08/02/18 22:06	86-73-7	
Indeno(1,2,3-cd)pyrene	<b>107</b>	ug/kg	8.7	2.6	1	07/30/18 13:47	08/02/18 22:06	193-39-5	
2-Methylnaphthalene	ND	ug/kg	6.6	2.0	1	07/30/18 13:47	08/02/18 22:06	91-57-6	
Naphthalene	ND	ug/kg	10.0	3.0	1	07/30/18 13:47	08/02/18 22:06	91-20-3	
Phenanthrene	<b>91.1</b>	ug/kg	25.0	7.5	1	07/30/18 13:47	08/02/18 22:06	85-01-8	
Pyrene	<b>279</b>	ug/kg	19.9	6.0	1	07/30/18 13:47	08/02/18 22:06	129-00-0	
<b>Surrogates</b>									
2-Fluorobiphenyl (S)	84	%	42-125		1	07/30/18 13:47	08/02/18 22:06	321-60-8	
p-Terphenyl-d14 (S)	93	%	57-125		1	07/30/18 13:47	08/02/18 22:06	1718-51-0	
<b>350.1 Ammonia</b>									
Analytical Method: EPA 350.1 Preparation Method: EPA 350.1									
Nitrogen, Ammonia	<b>1400</b>	mg/kg	177	85.2	5	08/07/18 15:06	08/08/18 14:50	7664-41-7	
<b>351.2 Total Kjeldahl Nitrogen</b>									
Analytical Method: EPA 351.2 Preparation Method: EPA 351.2									
Nitrogen, Kjeldahl, Total	<b>13500</b>	mg/kg	1960	860	5	08/08/18 13:11	08/09/18 13:19	7727-37-9	

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## ANALYTICAL RESULTS

Project: Cravath + Tripp Lake

Pace Project No.: 10441061

**Sample: Cravath - Sediment Sample 3**    **Lab ID: 10441061003**    Collected: 07/24/18 12:15    Received: 07/26/18 09:30    Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>353.2 Nitrogen, NO2/NO3</b>	Analytical Method: EPA 353.2    Preparation Method: EPA 353.2								
Nitrogen, NO2 plus NO3	ND	mg/kg	1.9	0.46	1	08/06/18 15:00	08/07/18 09:19		N3
<b>365.1 Phosphorus, Total</b>	Analytical Method: EPA 365.1    Preparation Method: SM 4500P B								
Phosphorus	<b>685</b>	mg/kg	112	53.3	5	08/03/18 13:00	08/06/18 10:45	7723-14-0	
<b>Total Organic Carbon</b>	Analytical Method: EPA 9060 Modified								
<b>Surrogates</b>									
RPD%	<b>5.0</b>	%	0.10	0.10	1		08/08/18 09:01		
Total Organic Carbon	<b>64000</b>	mg/kg	10400	3110	1		08/08/18 09:01	7440-44-0	
Total Organic Carbon	<b>67300</b>	mg/kg	10300	3100	1		08/08/18 09:07	7440-44-0	
Mean Total Organic Carbon	<b>65600</b>	mg/kg	10300	3100	1		08/08/18 09:01	7440-44-0	

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## ANALYTICAL RESULTS

Project: Cravath + Tripp Lake

Pace Project No.: 10441061

**Sample:** Cravath - Sediment Sample **Lab ID:** 10441061004 **Collected:** 07/24/18 12:30 **Received:** 07/26/18 09:30 **Matrix:** Solid  
4

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>									
Analytical Method: EPA 6010 Preparation Method: EPA 3050									
Arsenic	ND	mg/kg	13.0	2.7	1	08/20/18 07:29	08/23/18 22:30	7440-38-2	
Cadmium	ND	mg/kg	1.3	0.34	1	08/20/18 07:29	08/23/18 22:30	7440-43-9	
Chromium	14.7	mg/kg	2.6	0.72	1	08/20/18 07:29	08/23/18 22:30	7440-47-3	
Copper	14.8	mg/kg	6.5	2.1	1	08/20/18 07:29	08/23/18 22:30	7440-50-8	
Lead	18.4	mg/kg	3.4	1.1	1	08/20/18 07:29	08/23/18 22:30	7439-92-1	
Nickel	11.8	mg/kg	2.6	0.60	1	08/20/18 07:29	08/23/18 22:30	7440-02-0	
Zinc	62.0	mg/kg	10.4	2.4	1	08/20/18 07:29	08/23/18 22:30	7440-66-6	
<b>7471B Mercury</b>									
Analytical Method: EPA 7471B Preparation Method: EPA 7471B									
Mercury	0.085	mg/kg	0.071	0.021	1	08/02/18 05:03	08/05/18 18:18	7439-97-6	
<b>Dry Weight / %M by ASTM D2974</b>									
Analytical Method: ASTM D2974									
Percent Moisture	63.4	%	0.10	0.10	1		08/06/18 16:15		
<b>8270D MSSV PAH by SIM</b>									
Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550									
Acenaphthene	ND	ug/kg	3.7	1.1	1	07/30/18 13:47	08/03/18 13:02	83-32-9	
Acenaphthylene	ND	ug/kg	4.5	1.3	1	07/30/18 13:47	08/03/18 13:02	208-96-8	
Anthracene	ND	ug/kg	4.2	1.3	1	07/30/18 13:47	08/03/18 13:02	120-12-7	
Benzo(a)anthracene	48.9	ug/kg	9.8	2.9	1	07/30/18 13:47	08/03/18 13:02	56-55-3	
Benzo(a)pyrene	80.5	ug/kg	6.2	1.9	1	07/30/18 13:47	08/03/18 13:02	50-32-8	
Benzo(b)fluoranthene	113	ug/kg	3.4	1.0	1	07/30/18 13:47	08/03/18 13:02	205-99-2	
Benzo(e)pyrene	64.1	ug/kg	6.5	2.0	1	07/30/18 13:47	08/03/18 13:02	192-97-2	N2
Benzo(g,h,i)perylene	66.1	ug/kg	5.7	1.7	1	07/30/18 13:47	08/03/18 13:02	191-24-2	
Benzo(k)fluoranthene	48.9	ug/kg	7.7	2.3	1	07/30/18 13:47	08/03/18 13:02	207-08-9	
Chrysene	67.8	ug/kg	12.3	3.7	1	07/30/18 13:47	08/03/18 13:02	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	4.2	1.3	1	07/30/18 13:47	08/03/18 13:02	53-70-3	
Fluoranthene	129	ug/kg	3.9	1.2	1	07/30/18 13:47	08/03/18 13:02	206-44-0	
Fluorene	ND	ug/kg	2.8	0.85	1	07/30/18 13:47	08/03/18 13:02	86-73-7	
Indeno(1,2,3-cd)pyrene	54.2	ug/kg	6.1	1.8	1	07/30/18 13:47	08/03/18 13:02	193-39-5	
2-Methylnaphthalene	ND	ug/kg	4.6	1.4	1	07/30/18 13:47	08/03/18 13:02	91-57-6	
Naphthalene	ND	ug/kg	7.0	2.1	1	07/30/18 13:47	08/03/18 13:02	91-20-3	
Phenanthrene	28.6	ug/kg	17.4	5.2	1	07/30/18 13:47	08/03/18 13:02	85-01-8	
Pyrene	99.7	ug/kg	13.9	4.2	1	07/30/18 13:47	08/03/18 13:02	129-00-0	
<b>Surrogates</b>									
2-Fluorobiphenyl (S)	81	%	42-125		1	07/30/18 13:47	08/03/18 13:02	321-60-8	
p-Terphenyl-d14 (S)	83	%	57-125		1	07/30/18 13:47	08/03/18 13:02	1718-51-0	
<b>350.1 Ammonia</b>									
Analytical Method: EPA 350.1 Preparation Method: EPA 350.1									
Nitrogen, Ammonia	314	mg/kg	22.3	10.8	1	08/07/18 15:06	08/08/18 14:44	7664-41-7	
<b>351.2 Total Kjeldahl Nitrogen</b>									
Analytical Method: EPA 351.2 Preparation Method: EPA 351.2									
Nitrogen, Kjeldahl, Total	1920	mg/kg	210	92.0	1	08/08/18 13:11	08/09/18 11:27	7727-37-9	

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## ANALYTICAL RESULTS

Project: Cravath + Tripp Lake

Pace Project No.: 10441061

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**Sample: Cravath - Sediment Sample 4**    **Lab ID: 10441061004**    Collected: 07/24/18 12:30    Received: 07/26/18 09:30    Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>353.2 Nitrogen, NO2/NO3</b>	Analytical Method: EPA 353.2    Preparation Method: EPA 353.2								
Nitrogen, NO2 plus NO3	ND	mg/kg	1.4	0.32	1	08/06/18 15:00	08/07/18 09:20		N3
<b>365.1 Phosphorus, Total</b>	Analytical Method: EPA 365.1    Preparation Method: SM 4500P B								
Phosphorus	<b>547</b>	mg/kg	78.0	37.1	5	08/03/18 13:00	08/06/18 10:48	7723-14-0	
<b>Total Organic Carbon</b>	Analytical Method: EPA 9060 Modified								
<b>Surrogates</b>									
RPD%	<b>5.1</b>	%	0.10	0.10	1		08/07/18 14:24		
Total Organic Carbon	<b>32800</b>	mg/kg	9880	2960	1		08/07/18 14:24	7440-44-0	
Total Organic Carbon	<b>34600</b>	mg/kg	9740	2920	1		08/07/18 14:29	7440-44-0	
Mean Total Organic Carbon	<b>33700</b>	mg/kg	9810	2940	1		08/07/18 14:24	7440-44-0	

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### QUALITY CONTROL DATA

Project: Cravath + Tripp Lake

Pace Project No.: 10441061

QC Batch: 553341

Analysis Method: EPA 7471B

QC Batch Method: EPA 7471B

Analysis Description: 7471B Mercury Solids

Associated Lab Samples: 10441061001, 10441061002, 10441061003, 10441061004

METHOD BLANK: 3006646

Matrix: Solid

Associated Lab Samples: 10441061001, 10441061002, 10441061003, 10441061004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/kg	ND	0.027	08/05/18 18:00	

LABORATORY CONTROL SAMPLE: 3006647

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	.47	0.51	109	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3006648 3006649

Parameter	Units	10441036001		MS		MSD		MS		MSD		% Rec Limits	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Mercury	mg/kg	0.18	1.3	1.3	1.8	1.6	118	105	75-125	10	20			

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Cravath + Tripp Lake

Pace Project No.: 10441061

QC Batch: 297524 Analysis Method: EPA 6010  
QC Batch Method: EPA 3050 Analysis Description: 6010 MET  
Associated Lab Samples: 10441061001, 10441061002, 10441061003, 10441061004

METHOD BLANK: 1737518 Matrix: Solid  
Associated Lab Samples: 10441061001, 10441061002, 10441061003, 10441061004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/kg	ND	5.0	08/23/18 22:04	
Cadmium	mg/kg	ND	0.50	08/23/18 22:04	
Chromium	mg/kg	ND	1.0	08/23/18 22:04	
Copper	mg/kg	ND	2.5	08/23/18 22:04	
Lead	mg/kg	ND	1.3	08/23/18 22:04	
Nickel	mg/kg	ND	1.0	08/23/18 22:04	
Zinc	mg/kg	ND	4.0	08/23/18 22:04	

LABORATORY CONTROL SAMPLE: 1737519

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	50	47.8	96	80-120	
Cadmium	mg/kg	50	47.8	96	80-120	
Chromium	mg/kg	50	48.5	97	80-120	
Copper	mg/kg	50	47.6	95	80-120	
Lead	mg/kg	50	50.6	101	80-120	
Nickel	mg/kg	50	49.9	100	80-120	
Zinc	mg/kg	50	51.0	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1737520 1737521

Parameter	Units	10441036001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.	MS Result	MSD Result						
Arsenic	mg/kg	ND	134	134	133	131	94	93	75-125	1	20	
Cadmium	mg/kg	ND	134	134	127	125	94	93	75-125	1	20	
Chromium	mg/kg	29.0	134	134	152	149	92	90	75-125	2	20	
Copper	mg/kg	29.3	134	134	155	153	93	93	75-125	1	20	
Lead	mg/kg	316	134	134	491	568	131	188	75-125	15	20	M0
Nickel	mg/kg	12.4	134	134	140	137	95	93	75-125	2	20	
Zinc	mg/kg	107	134	134	240	245	99	103	75-125	2	20	

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**QUALITY CONTROL DATA**

Project: Cravath + Tripp Lake

Pace Project No.: 10441061

QC Batch: 554904

Analysis Method: ASTM D2974

QC Batch Method: ASTM D2974

Analysis Description: Dry Weight / %M by ASTM D2974

Associated Lab Samples: 10441061001, 10441061002, 10441061003, 10441061004

SAMPLE DUPLICATE: 3014472

Parameter	Units	10441078016 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	22.7	18.9	18	30	

SAMPLE DUPLICATE: 3014695

Parameter	Units	10441078001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	29.2	30.0	3	30	

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### QUALITY CONTROL DATA

Project: Cravath + Tripp Lake  
Pace Project No.: 10441061

QC Batch: 553463 Analysis Method: EPA 8270D by SIM  
QC Batch Method: EPA 3550 Analysis Description: 8270D Solid PAH by SIM MSSV  
Associated Lab Samples: 10441061001, 10441061002, 10441061003, 10441061004

METHOD BLANK: 3007028 Matrix: Solid  
Associated Lab Samples: 10441061001, 10441061002, 10441061003, 10441061004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/kg	ND	1.7	08/02/18 16:12	
Acenaphthene	ug/kg	ND	1.4	08/02/18 16:12	
Acenaphthylene	ug/kg	ND	1.6	08/02/18 16:12	
Anthracene	ug/kg	ND	1.6	08/02/18 16:12	
Benzo(a)anthracene	ug/kg	ND	3.6	08/02/18 16:12	
Benzo(a)pyrene	ug/kg	ND	2.3	08/02/18 16:12	
Benzo(b)fluoranthene	ug/kg	ND	1.2	08/02/18 16:12	
Benzo(e)pyrene	ug/kg	ND	2.4	08/02/18 16:12	N2
Benzo(g,h,i)perylene	ug/kg	ND	2.1	08/02/18 16:12	
Benzo(k)fluoranthene	ug/kg	ND	2.8	08/02/18 16:12	
Chrysene	ug/kg	ND	4.5	08/02/18 16:12	
Dibenz(a,h)anthracene	ug/kg	ND	1.5	08/02/18 16:12	
Fluoranthene	ug/kg	ND	1.4	08/02/18 16:12	
Fluorene	ug/kg	ND	1.0	08/02/18 16:12	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	2.2	08/02/18 16:12	
Naphthalene	ug/kg	ND	2.6	08/02/18 16:12	
Phenanthrene	ug/kg	ND	6.4	08/02/18 16:12	
Pyrene	ug/kg	ND	5.1	08/02/18 16:12	
2-Fluorobiphenyl (S)	%	90	42-125	08/02/18 16:12	
p-Terphenyl-d14 (S)	%	98	57-125	08/02/18 16:12	

LABORATORY CONTROL SAMPLE: 3007029

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Methylnaphthalene	ug/kg	33.3	29.2	87	40-125	
Acenaphthene	ug/kg	33.3	27.6	83	52-125	
Acenaphthylene	ug/kg	33.3	28.1	84	50-125	
Anthracene	ug/kg	33.3	30.7	92	65-125	
Benzo(a)anthracene	ug/kg	33.3	31.2	93	60-125	
Benzo(a)pyrene	ug/kg	33.3	29.7	89	69-125	
Benzo(b)fluoranthene	ug/kg	33.3	33.7	101	61-125	
Benzo(e)pyrene	ug/kg	33.3	30.2	91	71-125	N2
Benzo(g,h,i)perylene	ug/kg	33.3	31.9	96	60-125	
Benzo(k)fluoranthene	ug/kg	33.3	27.3	82	67-125	
Chrysene	ug/kg	33.3	27.9	84	67-125	
Dibenz(a,h)anthracene	ug/kg	33.3	32.0	96	63-125	
Fluoranthene	ug/kg	33.3	30.6	92	75-125	
Fluorene	ug/kg	33.3	28.3	85	54-125	
Indeno(1,2,3-cd)pyrene	ug/kg	33.3	34.0	102	63-125	
Naphthalene	ug/kg	33.3	28.4	85	49-125	

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### QUALITY CONTROL DATA

Project: Cravath + Tripp Lake

Pace Project No.: 10441061

LABORATORY CONTROL SAMPLE: 3007029

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phenanthrene	ug/kg	33.3	29.6	89	65-125	
Pyrene	ug/kg	33.3	30.8	92	64-125	
2-Fluorobiphenyl (S)	%			84	42-125	
p-Terphenyl-d14 (S)	%			93	57-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3007030 3007031

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		12112833001 Result	Spike Conc.	Spike Conc.	Conc.								
2-Methylnaphthalene	ug/kg	ND	34.4	34.4	34.4	30.8	33.8	90	98	30-125	9	30	
Acenaphthene	ug/kg	ND	34.4	34.4	34.4	29.1	30.6	85	89	30-125	5	30	
Acenaphthylene	ug/kg	ND	34.4	34.4	34.4	34.1	61.3	99	178	30-133	57	30	M1,R1
Anthracene	ug/kg	ND	34.4	34.4	34.4	34.2	47.3	100	137	30-150	32	30	R1
Benzo(a)anthracene	ug/kg	34.5	34.4	34.4	34.4	55.0	124	60	261	30-150	77	30	M1,R1
Benzo(a)pyrene	ug/kg	42.8	34.4	34.4	34.4	55.9	148	38	305	30-150	90	30	M1,R1
Benzo(b)fluoranthene	ug/kg	57.5	34.4	34.4	34.4	73.2	162	46	305	30-150	76	30	M1,R1
Benzo(e)pyrene	ug/kg	35.7	34.4	34.4	34.4	54.4	117	54	235	30-150	73	30	M1,N2,R1
Benzo(g,h,i)perylene	ug/kg	37.9	34.4	34.4	34.4	55.7	117	52	230	30-150	71	30	M1,R1
Benzo(k)fluoranthene	ug/kg	29.5	34.4	34.4	34.4	46.1	93.0	48	184	30-150	67	30	M1,R1
Chrysene	ug/kg	43.2	34.4	34.4	34.4	57.3	150	41	309	30-150	89	30	M1,R1
Dibenz(a,h)anthracene	ug/kg	ND	34.4	34.4	34.4	35.2	53.2	102	155	30-131	41	30	M1,R1
Fluoranthene	ug/kg	85.8	34.4	34.4	34.4	81.7	280	-12	564	30-150	110	30	M1,R1
Fluorene	ug/kg	ND	34.4	34.4	34.4	30.1	47.6	88	138	30-147	45	30	R1
Indeno(1,2,3-cd)pyrene	ug/kg	33.1	34.4	34.4	34.4	52.7	102	57	201	30-150	64	30	M1,R1
Naphthalene	ug/kg	ND	34.4	34.4	34.4	31.0	33.4	90	97	30-131	7	30	
Phenanthrene	ug/kg	57.0	34.4	34.4	34.4	57.1	293	0	686	30-150	135	30	M1,R1
Pyrene	ug/kg	76.8	34.4	34.4	34.4	79.1	342	7	772	30-150	125	30	M1,R1
2-Fluorobiphenyl (S)	%							82	80	42-125			
p-Terphenyl-d14 (S)	%							90	87	57-125			

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### QUALITY CONTROL DATA

Project: Cravath + Tripp Lake

Pace Project No.: 10441061

QC Batch: 149554

Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1

Analysis Description: 350.1 Ammonia

Associated Lab Samples: 10441061001, 10441061002, 10441061003, 10441061004

METHOD BLANK: 591316

Matrix: Solid

Associated Lab Samples: 10441061001, 10441061002, 10441061003, 10441061004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/kg	ND	9.0	08/08/18 14:29	

LABORATORY CONTROL SAMPLE: 591315

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/kg	158	163	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 591317 591318

Parameter	Units	10441788001		591317		591318		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result				
Nitrogen, Ammonia	mg/kg	92.1	164	157	247	233	94	90	90-110	6	10

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### QUALITY CONTROL DATA

Project: Cravath + Tripp Lake

Pace Project No.: 10441061

QC Batch: 149608 Analysis Method: EPA 351.2  
QC Batch Method: EPA 351.2 Analysis Description: 351.2 TKN  
Associated Lab Samples: 10441061003, 10441061004

METHOD BLANK: 591568 Matrix: Solid

Associated Lab Samples: 10441061003, 10441061004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/kg	ND	76.9	08/09/18 10:48	

LABORATORY CONTROL SAMPLE: 591567

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/kg	741	770	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 591569 591570

Parameter	Units	10440905033		MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Conc.	Result	Result	% Rec	% Rec						
Nitrogen, Kjeldahl, Total	mg/kg	179	887	1110	1030	1220	96	94	90-110	17	15	1M, R1			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 591571 591572

Parameter	Units	10440905043		MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Conc.	Result	Result	% Rec	% Rec						
Nitrogen, Kjeldahl, Total	mg/kg	217	1040	951	1210	1190	96	102	90-110	2	15	1M			

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### QUALITY CONTROL DATA

Project: Cravath + Tripp Lake

Pace Project No.: 10441061

QC Batch: 149770

Analysis Method: EPA 351.2

QC Batch Method: EPA 351.2

Analysis Description: 351.2 TKN

Associated Lab Samples: 10441061001, 10441061002

METHOD BLANK: 592261

Matrix: Solid

Associated Lab Samples: 10441061001, 10441061002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/kg	ND	64.5	08/10/18 11:54	

LABORATORY CONTROL SAMPLE: 592260

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/kg	1050	959	91	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 592262

592263

Parameter	Units	10441032003		MS		MSD		MS		MSD		% Rec Limits	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Nitrogen, Kjeldahl, Total	mg/kg	748	2540	2770	3780	4120	119	122	90-110	9	15	M1		

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### QUALITY CONTROL DATA

Project: Cravath + Tripp Lake  
Pace Project No.: 10441061

QC Batch: 149460 Analysis Method: EPA 353.2  
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite  
Associated Lab Samples: 10441061001, 10441061002, 10441061003, 10441061004

METHOD BLANK: 590946 Matrix: Solid  
Associated Lab Samples: 10441061001, 10441061002, 10441061003, 10441061004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/kg	ND	0.50	08/07/18 09:08	N3

LABORATORY CONTROL SAMPLE: 590945

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/kg	10	10.1	101	90-110	N3

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 590947 590948

Parameter	Units	10441774002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/kg	143	11	10.9	178	145	317	22	90-110	20	10	N3,P6, R1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 590949 590950

Parameter	Units	10440905043 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, NO2 plus NO3	mg/kg	53.5	11.3	11.4	77.1	89.3	210	314	90-110	15	10	1M,N3, P6,R1

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### QUALITY CONTROL DATA

Project: Cravath + Tripp Lake

Pace Project No.: 10441061

QC Batch: 149279

Analysis Method: EPA 365.1

QC Batch Method: SM 4500P B

Analysis Description: 365.1 Phosphorus, Total

Associated Lab Samples: 10441061001, 10441061002, 10441061003, 10441061004

METHOD BLANK: 590431

Matrix: Solid

Associated Lab Samples: 10441061001, 10441061002, 10441061003, 10441061004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Phosphorus	mg/kg	ND	6.0	08/06/18 10:24	

LABORATORY CONTROL SAMPLE: 590430

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phosphorus	mg/kg	24.8	25.9	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 590432 590433

Parameter	Units	12113276001		MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	%	Spike Conc.	Conc.	Result	Result	% Rec	% Rec						
Phosphorus	mg/kg	0.59	%	1100	1120	7940	7590	183	149	90-110	4	10	M1		

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### QUALITY CONTROL DATA

Project: Cravath + Tripp Lake  
Pace Project No.: 10441061

QC Batch: 296525 Analysis Method: EPA 9060 Modified  
QC Batch Method: EPA 9060 Modified Analysis Description: 9060 TOC Average  
Associated Lab Samples: 10441061001, 10441061002, 10441061003, 10441061004

METHOD BLANK: 1732203 Matrix: Solid  
Associated Lab Samples: 10441061001, 10441061002, 10441061003, 10441061004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mean Total Organic Carbon	mg/kg	ND	668	08/07/18 12:29	

LABORATORY CONTROL SAMPLE: 1732204

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mean Total Organic Carbon	mg/kg	120000	111000	92	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1732205 1732206

Parameter	Units	10441036001		MS		MSD		MS		MSD		% Rec Limits	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Mean Total Organic Carbon	mg/kg	61900	72000	72000	72000	112000	124000	70	86	50-150	10	30		

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## QUALIFIERS

Project: Cravath + Tripp Lake

Pace Project No.: 10441061

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor and percent moisture.

LOQ - Limit of Quantitation adjusted for dilution factor and percent moisture.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### LABORATORIES

PASI-G Pace Analytical Services - Green Bay  
PASI-M Pace Analytical Services - Minneapolis  
PASI-V Pace Analytical Services - Virginia

### ANALYTE QUALIFIERS

1M The samples were kept frozen: thawed and extracted within the 6 month holding time as indicated by the Minnesota Department of Agriculture Guidance Document 11 for extraction and analysis.

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

N2 The lab does not hold NELAC/TNI accreditation for this parameter.

N3 Accreditation is not offered by the relevant laboratory accrediting body for this parameter.

P6 Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

R1 RPD value was outside control limits.

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Cravath + Tripp Lake  
Pace Project No.: 10441061

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10441061001	Cravath - Sediment Sample 1	EPA 3050	297524	EPA 6010	297793
10441061002	Cravath - Sediment Sample 2	EPA 3050	297524	EPA 6010	297793
10441061003	Cravath - Sediment Sample 3	EPA 3050	297524	EPA 6010	297793
10441061004	Cravath - Sediment Sample 4	EPA 3050	297524	EPA 6010	297793
10441061001	Cravath - Sediment Sample 1	EPA 7471B	553341	EPA 7471B	554704
10441061002	Cravath - Sediment Sample 2	EPA 7471B	553341	EPA 7471B	554704
10441061003	Cravath - Sediment Sample 3	EPA 7471B	553341	EPA 7471B	554704
10441061004	Cravath - Sediment Sample 4	EPA 7471B	553341	EPA 7471B	554704
10441061001	Cravath - Sediment Sample 1	ASTM D2974	554904		
10441061002	Cravath - Sediment Sample 2	ASTM D2974	554904		
10441061003	Cravath - Sediment Sample 3	ASTM D2974	554904		
10441061004	Cravath - Sediment Sample 4	ASTM D2974	554904		
10441061001	Cravath - Sediment Sample 1	EPA 3550	553463	EPA 8270D by SIM	554394
10441061002	Cravath - Sediment Sample 2	EPA 3550	553463	EPA 8270D by SIM	554394
10441061003	Cravath - Sediment Sample 3	EPA 3550	553463	EPA 8270D by SIM	554394
10441061004	Cravath - Sediment Sample 4	EPA 3550	553463	EPA 8270D by SIM	554394
10441061001	Cravath - Sediment Sample 1	EPA 350.1	149554	EPA 350.1	149669
10441061002	Cravath - Sediment Sample 2	EPA 350.1	149554	EPA 350.1	149669
10441061003	Cravath - Sediment Sample 3	EPA 350.1	149554	EPA 350.1	149669
10441061004	Cravath - Sediment Sample 4	EPA 350.1	149554	EPA 350.1	149669
10441061001	Cravath - Sediment Sample 1	EPA 351.2	149770	EPA 351.2	149817
10441061002	Cravath - Sediment Sample 2	EPA 351.2	149770	EPA 351.2	149817
10441061003	Cravath - Sediment Sample 3	EPA 351.2	149608	EPA 351.2	149746
10441061004	Cravath - Sediment Sample 4	EPA 351.2	149608	EPA 351.2	149746
10441061001	Cravath - Sediment Sample 1	EPA 353.2	149460	EPA 353.2	149485
10441061002	Cravath - Sediment Sample 2	EPA 353.2	149460	EPA 353.2	149485
10441061003	Cravath - Sediment Sample 3	EPA 353.2	149460	EPA 353.2	149485
10441061004	Cravath - Sediment Sample 4	EPA 353.2	149460	EPA 353.2	149485
10441061001	Cravath - Sediment Sample 1	SM 4500P B	149279	EPA 365.1	149439
10441061002	Cravath - Sediment Sample 2	SM 4500P B	149279	EPA 365.1	149439
10441061003	Cravath - Sediment Sample 3	SM 4500P B	149279	EPA 365.1	149439
10441061004	Cravath - Sediment Sample 4	SM 4500P B	149279	EPA 365.1	149439
10441061001	Cravath - Sediment Sample 1	EPA 9060 Modified	296525		
10441061001	Cravath - Sediment Sample 1	EPA 9060 Modified	296526		
10441061002	Cravath - Sediment Sample 2	EPA 9060 Modified	296525		
10441061002	Cravath - Sediment Sample 2	EPA 9060 Modified	296526		
10441061003	Cravath - Sediment Sample 3	EPA 9060 Modified	296525		
10441061003	Cravath - Sediment Sample 3	EPA 9060 Modified	296526		
10441061004	Cravath - Sediment Sample 4	EPA 9060 Modified	296525		
10441061004	Cravath - Sediment Sample 4	EPA 9060 Modified	296526		

### REPORT OF LABORATORY ANALYSIS

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Document Name:  
**Sample Condition Upon Receipt Form**

Document No.:  
**F-MN-L-213-rev.23**

Document Revised: 02May2018  
Page 1 of 2

Issuing Authority:  
Pace Minnesota Quality Office

**Sample Condition Upon Receipt**

Client Name: Ayres Project #: \_\_\_\_\_

**WO#: 10441061**

PM: BM2 Due Date: 08/02/18  
CLIENT: AYRES ASSOC.

Courier:  Fed Ex  UPS  USPS  Client  
 Commercial  Pace  SpeedDee  Other: \_\_\_\_\_  
Tracking Number: 12 583 184 03 7533 6000

Custody Seal on Cooler/Box Present?  Yes  No Seals Intact?  Yes  No  
Optional: Proj. Due Date: \_\_\_\_\_ Proj. Name: \_\_\_\_\_

Packing Material:  Bubble Wrap  Bubble Bags  None  Other: \_\_\_\_\_ Temp Blank?  Yes  No

Thermometer  G87A9170600254  G87A9155100842  
Used: \_\_\_\_\_ Type of Ice:  Wet  Blue  None  Dry  Melted

Cooler Temp Read (°C): 4.0 Cooler Temp Corrected (°C): 4.1 Biological Tissue Frozen?  Yes  No  N/A  
Temp should be above freezing to 6°C Correction Factor: +0.1 Date and Initials of Person Examining Contents: 7/26/18 LT

USDA Regulated Soil (  N/A, water sample)  
Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)?  Yes  No  
Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)?  Yes  No  
If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

			COMMENTS:
Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		1.
Chain of Custody Filled Out?	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <u>7/20/18</u>		2. NO ANALYSES ON COC
Chain of Custody Relinquished?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		3.
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		4.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		5.
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		6.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		7.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		8.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		9.
-Pace Containers Used?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		10.
Filtered Volume Received for Dissolved Tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		11. Note if sediment is visible in the dissolved container
Is sufficient information available to reconcile the samples to the COC? Matrix: <u>SL</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		12. NO ANALYSIS ON COC - USE DDBITUB URCON FOR LOW
All containers needing acid/base preservation have been checked?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		13. <input type="checkbox"/> HNO <sub>3</sub> <input type="checkbox"/> H <sub>2</sub> SO <sub>4</sub> <input type="checkbox"/> NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide) Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		Sample # Initial when completed: _____ Lot # of added preservative: _____
Headspace in VOA Vials (>6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		14.
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		15.
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Pace Trip Blank Lot # (if purchased):			

**CLIENT NOTIFICATION/RESOLUTION**

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
Comments/Resolution: \_\_\_\_\_

Field Data Required?  Yes  No

Project Manager Review: BA W Date: 7/30/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers).

**Cravath & Tripp Lake Sediment Sampling - Planned Samples include all highlighted fields.**

Table 1. Sediment Sampling Parameters with Suggested Methods and Analyses

Parameter	Suggested Analytical Method (Suggested Detection Level) (mg/kg, dry weight unless noted)	Suggested Base Parameter Analyses <sup>1</sup>	
		Great Lakes or Urban/ Industrial	Inland Waters (Rural/ Forested)
<b>Inorganics - Metals</b>			
<b>Arsenic</b>	SW-846 3050B/6010B EPA 6010 or 7060 (5)	X	X
Barium	SW-846 3050B/6010B (0.2)		
<b>Cadmium</b>	SW-846 3050B/6010B EPA 7131 (0.6)	X	X
<b>Chromium (total)</b>	SW-846 3050B/6010B EPA 6010 or 7191 (0.6)	X	X
<b>Copper</b>	SW-846 3050B/6010B EPA 6010 or 7211 (0.5)	X	X
Cyanide	SW-846 9010B/9014 (0.4)		
<b>Lead</b>	SW-846 3050B/6010B EPA 6010 or 7421 (3)	X	X
Manganese	SW-846 3050B/6010B (0.1)		
<b>Mercury</b>	SW-846 7471A EPA 7471 (0.015)	X	X
<b>Nickel</b>	SW-846 3050B/6010B EPA 6010 (2)	X	X
Selenium	SW-846 3050B/6010B (8)	X	
<b>Zinc</b>	SW-846 3050B/6010B EPA 6010 or 7951 (2)	X	X
<b>Inorganics - Nutrients</b>			
Oil & Grease	SW-846 9070	X	
<b>Total Phosphorus</b>	EPA 365.2/365.3 or USGS I-6600-85 (9.9)	X	X
<b>Nitrate + Nitrite</b>	LACHAT 12-107-04-1-B (0.25)	X	X
<b>Ammonia-Nitrogen</b>	LACHAT 12-107-06-1-A (0.16)	X	X
<b>Total Kjeldahl Nitrogen</b>		X	X
<b>Organics</b>			
Aldrin	SW-846 8081 EPA 8081, 354440B, 3541 (0.01)		
Chlordane	SW-846 8081 EPA 8081, 354440B, 3541 (0.009)	X	
Dieldrin	SW-846 8081 EPA 8081, 354440B, 3541 (0.01)		
Endrin	SW-846 8081 EPA 8081, 354440B, 3541 (0.01)		
Heptachlor	SW-846 8081 EPA 8081, 354440B, 3541 (0.01)		
Lindane (Gamma BHC)	SW-846 8081 EPA 8081, 354440B, 3541 (0.01)		

<sup>1</sup> Suggested base parameter list reflects additions to NR347 Table 1, based on scientific research and experience with dredging projects.

Parameter	Suggested Analytical Method (Suggested Detection Level) (mg/kg, dry weight unless noted)	Suggested Base Parameter Analyses <sup>1</sup>	
		Great Lakes or Urban/ Industrial	Inland Waters (Rural/ Forested)
DDT	SW-846 8081 EPA 8081, 354440B, 3541 (0.01)	X	
DDD & DDE	SW-846 8081 EPA 8081, 354440B, 3541 (0.01)	X	
Toxaphene	SW-846 8081 (0.01)		
PCBs (Total)	SW-846 8081 EPA 8081, 3540B, 3541 (0.04)	X	X
		Tied to Fish Advisories	
2,3,7,8-dioxin, 2,3,7,8-furan and 15 2,3,7,8-substituted dioxin and furan congeners	EPA 8290 (1 – 10 pg/g)		
Total Organic Carbon	SW 846 8081 SW846-EPA 9060 (0.2%)	X	X
Polycyclic Aromatic Hydrocarbons (PAHs)	EPA 8310	X	
Naphthalene	(0.019)		
Phenanthrene	(0.017)		
Pyrene	(0.012)		
Fluorene	(0.058)		
2-Methylnaphthelene			
Acenaphthene	(0.017)		
Acenaphthylene	(0.021)		
Anthracene	(0.0071)		
Benzo (a) anthracene	(0.019)		
Benzo (a) pyrene	(0.023)		
Benzo (e) pyrene			
Benzo (b) fluoranthene	(0.032)		
Benzo (g,h,i) perylene	(0.022)		
Benzo (k) fluoranthene	(0.021)		
Chrysene	(0.0074)		
Dibenzo(a,h)anthracene	(0.008)		
Fluoranthene	(0.029)		
Indeno (1,2,3-cd) pyrene	(0.034)		
<b>Physical Tests</b>			
Particle Size Analysis – Sieve and Hydrometer Analysis	ASTM D-422 (%)	X	X
Moisture Content	ASTM D-2216 (%)	X	X
Atterburg Limits (Liquid Limit and Plastic Limit)	ASTM D4318 (as moisture content)		
Specific Gravity	ASTM D-854 (Ratio, unitless)		



# Intra-Regional Chain of Custody



Workorder: 10441061      Workorder Name: Cravath + Tripp Lake      Owner Received Date: 7/26/2018      Due Date: 8/9/2018

**Received at:**  
 Pace Analytical Minnesota  
 1700 Elm Street  
 Suite 200  
 Minneapolis, MN 55414  
 Phone (612)709-5046

**Send To Lab:**  
 Pace Analytical Billings MT  
 150 N Ninth Street  
 Billings, MT 59101  
 Phone (406)254-7226

**Report To:**  
 Bob Michels

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers		LAB USE ONLY
						Other	ASTM D422	
1	Cravath - Sediment Sample 1	PS	7/24/2018 11:45	10441061001	Solid		X	
2	Cravath - Sediment Sample 2	PS	7/24/2018 12:00	10441061002	Solid		X	
3	Cravath - Sediment Sample 3	PS	7/24/2018 12:15	10441061003	Solid		X	
4	Cravath - Sediment Sample 4	PS	7/24/2018 12:30	10441061004	Solid		X	

Transfers	Released By	Date/Time	Received By	Date/Time	Received on Ice	Y or N	Samples Intact	Y or N
1	<i>[Signature]</i>	7/30/18 10:10	<i>[Signature]</i>	7/31/18 0930	Y	Y	Y	N
2	<i>[Signature]</i>		<i>[Signature]</i>					
3								
4								

Cooler Temperature on Receipt 1.4 °C      Custody Seal Y or N      Received on Ice Y or N      Samples Intact Y or N

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.  
 This chain of custody is considered complete as is since this information is available in the owner laboratory.

**Sample Condition Upon Receipt**

Client Name: Pace-MT Project #: 10441061

Courier:  Fed Ex     UPS     USPS     Client  
 Commercial     Pace     Other: \_\_\_\_\_

Tracking Number: 747598341903

Custody Seal on Cooler/Box Present?  Yes     No    Seals Intact?  Yes     No    Optional: Proj. Due Date: \_\_\_\_\_ Proj. Name: \_\_\_\_\_

Packing Material:  Bubble Wrap     Bubble Bags     None     Other: \_\_\_\_\_    Temp Blank?  Yes     No

Thermometer Used:  160285052     140279186    Type of Ice:  Wet     Blue     None     Samples on ice, cooling process has begun

Cooler Temp Read: 1.6

Date and Initials of Person Examining Contents: MW 7/31/18

Cooler Temp Corrected: 1.4

Biological Tissue Frozen?     Yes     No

USDA Regulated Soil     Yes     No

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, IA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA? Check maps & Circle State

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)?     Yes     No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

	Comments:
Chain of Custody Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name and Signature on COC? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72 hr)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered Volume Received for Dissolved Tests? Note if sediment is visible in the dissolved container. <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels Match COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes Date/Time/ID/Analysis Matrix: <u>Soil</u>	
All containers needing acid/base preservation have been checked? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13. <input type="checkbox"/> HNO <sub>3</sub> <input type="checkbox"/> H <sub>2</sub> SO <sub>4</sub> <input type="checkbox"/> NaOH <input type="checkbox"/> HCl
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH >9 Sulfide, NaOH>12 Cyanide) <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Sample #
Exceptions: VOA, Coliform, TOC, Oil and Grease, WI-DRO (water) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed: _____ Lot # of added preservative: _____
Headspace in VOA Vials (>6mm)? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Trip Blank Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Custody Seals Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased): <u>NA</u>	

**CLIENT NOTIFICATION/RESOLUTION**

Field Data Required?     Yes     No

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/Resolution: \_\_\_\_\_

Project Manager Review: \_\_\_\_\_ Date: \_\_\_\_\_

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office ( i.e. out of hold, incorrect preservative, out of temp, incorrect containers)



# Chain of Custody

Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WI

WI

MO#: 12113288  
  
 12113288

Workorder: 10441061      Workorder Name: Cravath + Tripp Lake      Owner Received Date: 7/26/2018      Results Requested By: 8/9/2018

**Report To**  
 Bob Michels  
 Pace Analytical Minnesota  
 1700 Elm Street  
 Suite 200  
 Minneapolis, MN 55414  
 Phone (612)709-5046

**Subcontract To**  
 Pace Analytical Virginia MN  
 315 Chestnut Street  
 Virginia, MN 55792  
 Phone (218)742-1042

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers		Nitrate + Nitrite	Nitrogen, Ammonia	Total Kjeldahl Nitrogen	Total Phosphorus	LAB USE ONLY
						Unpreserved	Preserved					
1	Cravath - Sediment Sample 1	PS	7/24/2018 11:45	10441061001	Solid	2		X	X	X	X	
2	Cravath - Sediment Sample 2	PS	7/24/2018 12:00	10441061002	Solid	2		X	X	X	X	
3	Cravath - Sediment Sample 3	PS	7/24/2018 12:15	10441061003	Solid	2		X	X	X	X	
4	Cravath - Sediment Sample 4	PS	7/24/2018 12:30	10441061004	Solid	2		X	X	X	X	
Comments												
Transfers		Released By	Date/Time	Received By	Date/Time	Received on Ice		Y or N		Samples Intact		
		YBD	8/18/20	YBD	8/18/20	Y		Y		Y		
		Pace	8/18/20	YBD	8/18/20	Y		Y		Y		
						Y		Y		Y		
						Y		Y		Y		

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.  
 This chain of custody is considered complete as is since this information is available in the owner laboratory.

**Sample Condition Upon Receipt**

Client Name: Pace Mpls Project #:

**WO#: 12113288**  
 PM: HRZ Due Date: 08/09/18  
 CLIENT: PACE MPLS

Courier:  Fed Ex  UPS  USPS  Client  
 Commercial  Pace  Other: \_\_\_\_\_

Tracking Number: \_\_\_\_\_

Custody Seal on Cooler/Box Present?  Yes  No Seals Intact?  Yes  No Optional: Proj. Due Date: Proj. Name:

Packing Material:  Bubble Wrap  Bubble Bags  None  Other: \_\_\_\_\_ Temp Blank?  Yes  No

Thermometer Used:  140792808 Type of Ice:  Wet  Blue  None  Samples on ice, cooling process has begun

Cooler Temp Read °C: 3.3 Cooler Temp Corrected °C: 3.6 Biological Tissue Frozen?  Yes  No  NA  
 Temp should be above freezing to 6°C Correction Factor: 10.3 Date and Initials of Person Examining Contents: Bm 8/2/18

Comments:

Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name and Signature on COC?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5. If Fecal: <input type="checkbox"/> <8 hours <input type="checkbox"/> >8, <24 hours <input type="checkbox"/> >24 hours
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered Volume Received for Dissolved Tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes Date/Time/ID/Analysis Matrix: <u>SL</u>		
All containers needing acid/base preservation will be checked and documented in the pH logbook.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
Headspace in VOA Vials (>6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

CLIENT NOTIFICATION/RESOLUTION

Field Data Required?  Yes  No

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/Resolution: \_\_\_\_\_

FECAL WAIVER ON FILE Y N

TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: Caitlin Jensen Date: 8/2/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)



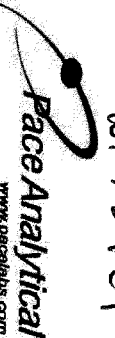
# Chain of Custody

Samples were sent directly to the Subcontracting Laboratory.

*Handwritten signature*

State Of Origin: WI

40173429



Workorder: 10441061      Workorder Name: Cravath + Tripp Lake

Owner Received Date: 7/26/2018      Results Requested By: 8/9/2018

Bob Michels  
Pace Analytical Minnesota  
1700 Elm Street  
Suite 200  
Minneapolis, MN 55414  
Phone (612)709-5046

Pace Analytical Green Bay  
1241 Bellevue Street  
Suite 9  
Green Bay, WI 54302  
Phone (920)469-2436

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers		Total Organic Carbon 9060	LAB USE ONLY																																				
						Unpreserved	Preserved																																						
1	Cravath - Sediment Sample 1	PS	7/24/2018 11:45	10441061001	Solid	1		X																																					
2	Cravath - Sediment Sample 2	PS	7/24/2018 12:00	10441061002	Solid	1		X																																					
3	Cravath - Sediment Sample 3	PS	7/24/2018 12:15	10441061003	Solid	1		X																																					
4	Cravath - Sediment Sample 4	PS	7/24/2018 12:30	10441061004	Solid	1		X																																					
<table border="1"> <thead> <tr> <th>Transfers</th> <th>Released By</th> <th>Date/Time</th> <th>Received By</th> <th>Date/Time</th> <th>Received on Ice</th> <th>Y or N</th> <th>Samples Intact</th> <th>Y or N</th> </tr> </thead> <tbody> <tr> <td>1</td> <td><i>PSD</i></td> <td><i>8/1/18</i></td> <td><i>Peace</i></td> <td><i>7/21/18</i></td> <td><i>Y</i></td> <td><i>N</i></td> <td><i>Y</i></td> <td><i>N</i></td> </tr> <tr> <td>2</td> <td><i>Fedor</i></td> <td><i>7/21/18</i></td> <td><i>Peace</i></td> <td><i>7/21/18</i></td> <td><i>Y</i></td> <td><i>N</i></td> <td><i>Y</i></td> <td><i>N</i></td> </tr> <tr> <td>3</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>										Transfers	Released By	Date/Time	Received By	Date/Time	Received on Ice	Y or N	Samples Intact	Y or N	1	<i>PSD</i>	<i>8/1/18</i>	<i>Peace</i>	<i>7/21/18</i>	<i>Y</i>	<i>N</i>	<i>Y</i>	<i>N</i>	2	<i>Fedor</i>	<i>7/21/18</i>	<i>Peace</i>	<i>7/21/18</i>	<i>Y</i>	<i>N</i>	<i>Y</i>	<i>N</i>	3								
Transfers	Released By	Date/Time	Received By	Date/Time	Received on Ice	Y or N	Samples Intact	Y or N																																					
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3																																													

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.





**Sample Condition Upon Receipt Form (SCUR)**

**Client Name:** Pace MN  
**Courier:**  CS Logistics  Fed Ex  Speedee  UPS  Walco  
 Client  Pace Other: \_\_\_\_\_

**Project #:** \_\_\_\_\_  
**WO# : 40173429**  
  
 40173429

**Tracking #:** 4525 3214 7741  
**Custody Seal on Cooler/Box Present:**  yes  no Seals intact:  yes  no  
**Custody Seal on Samples Present:**  yes  no Seals intact:  yes  no  
**Packing Material:**  Bubble Wrap  Bubble Bags  None  Other \_\_\_\_\_  
**Thermometer Used** SR - 71 **Type of Ice:**  Wet  Blue  Dry  None  
**Cooler Temperature** Uncorr: \_\_\_\_\_ ICorr: \_\_\_\_\_  Samples on ice, cooling process has begun

**Temp Blank Present:**  yes  no **Biological Tissue is Frozen:**  yes  no  
 Temp should be above freezing to 6°C.  
 Biota Samples may be received at ≤ 0°C.

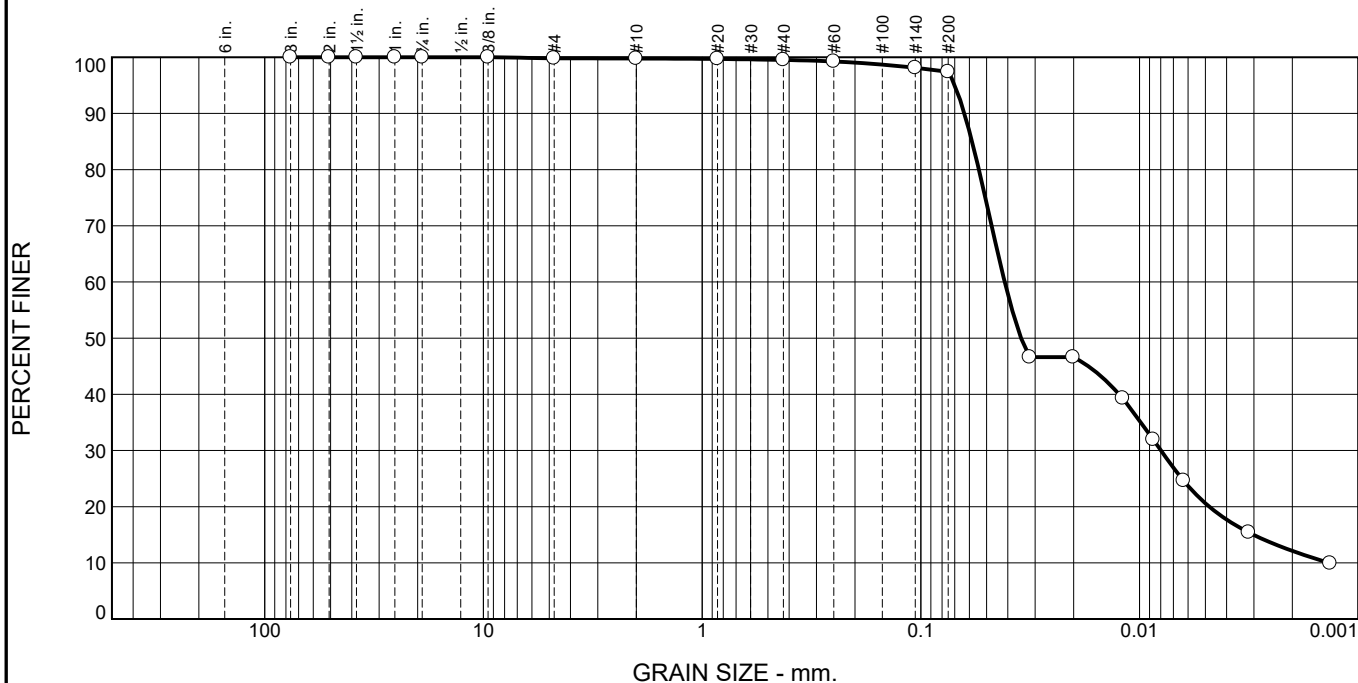
**Person examining contents:**  
 Date: 8/21/18  
 Initials: [Signature]

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	4. <u>RWJ</u>
Samples Arrived within Hold Time: - VOA Samples frozen upon receipt	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No	5. Date/Time: _____
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7.
Sufficient Volume: For Analysis: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No MS/MSD: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		8.
Correct Containers Used: -Pace Containers Used: -Pace IR Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	9.
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix: <u>5</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
Trip Blank Present: Trip Blank Custody Seals Present Pace Trip Blank Lot # (if purchased):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.

**Client Notification/ Resolution:**  
 Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_ If checked, see attached form for additional comments   
 Comments/ Resolution: Pace, MN covered All original client ID, etc when labeled. 8-21-18 [Signature]

**Project Manager Review:** [Signature] **Date:** 8/21/18

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	0	0	0	3	76	21

TEST RESULTS (ASTM D422)			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3	100		
2	100		
1.5	100		
1	100		
.75	100		
.375	100		
#4	100		
#10	100		
#20	100		
#40	100		
#60	99		
#140	98		
#200	97		
0.0318 mm.	47		
0.0201 mm.	47		
0.0119 mm.	39		
0.0087 mm.	32		
0.0063 mm.	25		
0.0032 mm.	15		
0.0013 mm.	9.9		

\* (no specification provided)

**Material Description**

silt

**Atterberg Limits (ASTM D 4318)**

PL= NP                      LL= NV                      PI=

**Classification**

USCS (D 2487)= ML                      AASHTO (M 145)= A-4(0)

**Coefficients**

D<sub>90</sub>= 0.0632                      D<sub>85</sub>= 0.0583                      D<sub>60</sub>= 0.0413  
D<sub>50</sub>= 0.0348                      D<sub>30</sub>= 0.0080                      D<sub>15</sub>= 0.0030  
D<sub>10</sub>= 0.0014                      C<sub>u</sub>= 30.34                      C<sub>c</sub>= 1.13

Remarks


---

Date Received: 7/26/18                      Date Tested: 8/7/18  
Tested By: Kimberly Pohlman  
Checked By: Rhonda Johnson  
Title: Lab Manager

**Location:** Cravath - Sediment Sample 1  
**Sample Number:** 10441061-1

**Date Sampled:** 7/24/18

**Pace Analytical Services, Inc.**

**Client:** Ayers Associates  
**Project:** Cravath + Tripp Lake

**Billings, MT**

**Project No:**

**Figure**

**GRAIN SIZE DISTRIBUTION TEST DATA**

8/8/2018

**Client:** Ayers Associates

**Project:** Cravath + Tripp Lake

**Location:** Cravath - Sediment Sample 1

**Sample Number:** 10441061-1

**Material Description:** silt

**Sample Date:** 7/24/18

**Date Received:** 7/26/18      **PL:** NP

**LL:** NV

**PI:** NP

**USCS Classification:** ML

**AASHTO Classification:** A-4(0)

**Grain Size Test Method:** ASTM D422

**Tested By:** Kimberly Pohlman

**Test Date:** 8/7/18

**Checked By:** Rhonda Johnson

**Title:** Lab Manager

**Sieve Test Data**

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer		
709.50	576.10	3	0.00	0.00	100		
		2	0.00	0.00	100		
		1.5	0.00	0.00	100		
		1	0.00	0.00	100		
		.75	0.00	0.00	100		
		.375	0.00	0.00	100		
		#4	0.25	0.00	100		
		#10	0.05	0.00	100		
		53.09	0.00	#20	0.04	0.00	100
				#40	0.10	0.00	100
#60	0.14			0.00	99		
#140	0.60			0.00	98		
#200	0.38			0.00	97		

**Hydrometer Test Data**

Hydrometer test uses material passing #200

Percent passing #200 based upon complete sample = 97

Weight of hydrometer sample = 53.09

Automatic temperature correction

Composite correction (fluid density and meniscus height) at 20 deg. C = -5

Meniscus correction only = 0.0

Specific gravity of solids = 2.65

Hydrometer type = 152H

Hydrometer effective depth equation:  $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	22.0	30.0	25.4	0.0133	30.0	11.4	0.0318	46.6
5.00	22.0	30.0	25.4	0.0133	30.0	11.4	0.0201	46.6
15.00	22.0	26.0	21.4	0.0133	26.0	12.0	0.0119	39.3
30.00	22.0	22.0	17.4	0.0133	22.0	12.7	0.0087	31.9
60.00	22.0	18.0	13.4	0.0133	18.0	13.3	0.0063	24.6
250.00	22.0	13.0	8.4	0.0133	13.0	14.2	0.0032	15.4
1440.00	22.0	10.0	5.4	0.0133	10.0	14.7	0.0013	9.9

**Pace Analytical Services, Inc.**



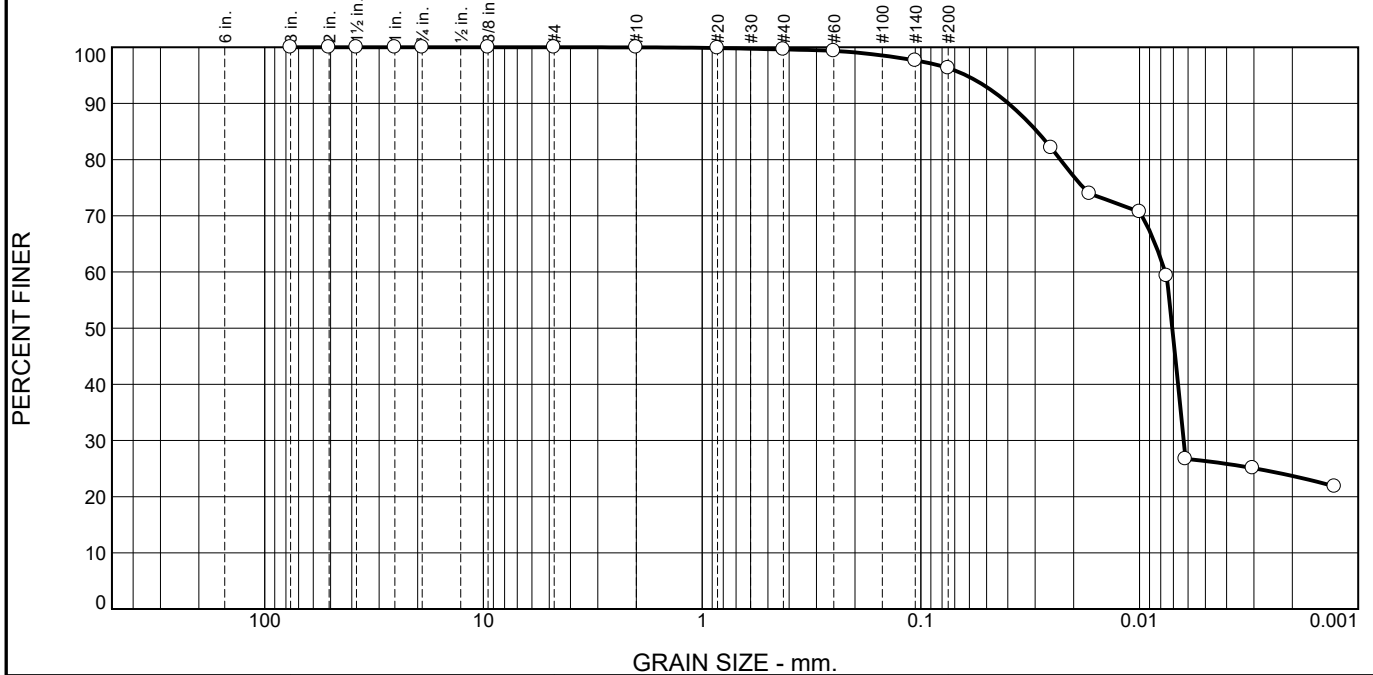
**Fractional Components**

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0	0	0	0	0	0	3	3	76	21	97

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
	0.0014	0.0030	0.0048	0.0080	0.0124	0.0348	0.0413	0.0543	0.0583	0.0632	0.0699

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
0.03	30.34	1.13

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	0	0	0	4	70	26

TEST RESULTS (ASTM D422)			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3	100		
2	100		
1.5	100		
1	100		
.75	100		
.375	100		
#4	100		
#10	100		
#20	100		
#40	100		
#60	99		
#140	98		
#200	96		
0.0254 mm.	82		
0.0169 mm.	74		
0.0100 mm.	71		
0.0075 mm.	59		
0.0062 mm.	27		
0.0030 mm.	25		
0.0013 mm.	22		

\* (no specification provided)

**Material Description**

silt

**Atterberg Limits (ASTM D 4318)**

PL= NP                      LL= NV                      PI=

**Classification**

USCS (D 2487)= ML                      AASHTO (M 145)= A-4(0)

**Coefficients**

D<sub>90</sub>= 0.0397                      D<sub>85</sub>= 0.0294                      D<sub>60</sub>= 0.0076  
D<sub>50</sub>= 0.0071                      D<sub>30</sub>= 0.0063                      D<sub>15</sub>=  
D<sub>10</sub>=                                      C<sub>u</sub>=                                      C<sub>c</sub>=

Remarks


---

Date Received: 7/26/18                      Date Tested: 8/7/18  
Tested By: Kimberly Pohlman  
Checked By: Rhonda Johnson  
Title: Lab Manager

**Location:** Cravath - Sediment Sample 2  
**Sample Number:** 10441061-2

**Date Sampled:** 7/24/18

**Pace Analytical Services, Inc.**

**Client:** Ayers Associates  
**Project:** Cravath + Tripp Lake

**Billings, MT**

**Project No:**

**Figure**

**GRAIN SIZE DISTRIBUTION TEST DATA**

8/8/2018

**Client:** Ayers Associates

**Project:** Cravath + Tripp Lake

**Location:** Cravath - Sediment Sample 2

**Sample Number:** 10441061-2

**Material Description:** silt

**Sample Date:** 7/24/18

**Date Received:** 7/26/18      **PL:** NP

**LL:** NV

**USCS Classification:** ML

**AASHTO Classification:** A-4(0)

**Grain Size Test Method:** ASTM D422

**Tested By:** Kimberly Pohlman

**Test Date:** 8/7/18

**Checked By:** Rhonda Johnson

**Title:** Lab Manager

**Sieve Test Data**

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer		
770.91	623.71	3	0.00	0.00	100		
		2	0.00	0.00	100		
		1.5	0.00	0.00	100		
		1	0.00	0.00	100		
		.75	0.00	0.00	100		
		.375	0.00	0.00	100		
		#4	0.01	0.00	100		
		#10	0.02	0.00	100		
		59.12	0.00	#20	0.07	0.00	100
				#40	0.15	0.00	100
#60	0.15			0.00	99		
#140	1.01			0.00	98		
#200	0.80			0.00	96		

**Hydrometer Test Data**

**Hydrometer test uses material passing #200**

**Percent passing #200 based upon complete sample = 96**

**Weight of hydrometer sample = 59.12**

**Automatic temperature correction**

**Composite correction (fluid density and meniscus height) at 20 deg. C = -5**

**Meniscus correction only = 0.0**

**Specific gravity of solids = 2.65**

**Hydrometer type = 152H**

**Hydrometer effective depth equation:  $L = 16.294964 - 0.164 \times R_m$**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	22.0	55.0	50.4	0.0133	55.0	7.3	0.0254	82.1
5.00	22.0	50.0	45.4	0.0133	50.0	8.1	0.0169	74.0
15.00	22.0	48.0	43.4	0.0133	48.0	8.4	0.0100	70.7
30.00	22.0	41.0	36.4	0.0133	41.0	9.6	0.0075	59.3
60.00	22.0	21.0	16.4	0.0133	21.0	12.9	0.0062	26.7
250.00	22.0	20.0	15.4	0.0133	20.0	13.0	0.0030	25.1
1440.00	22.0	18.0	13.4	0.0133	18.0	13.3	0.0013	21.8

**Pace Analytical Services, Inc.**

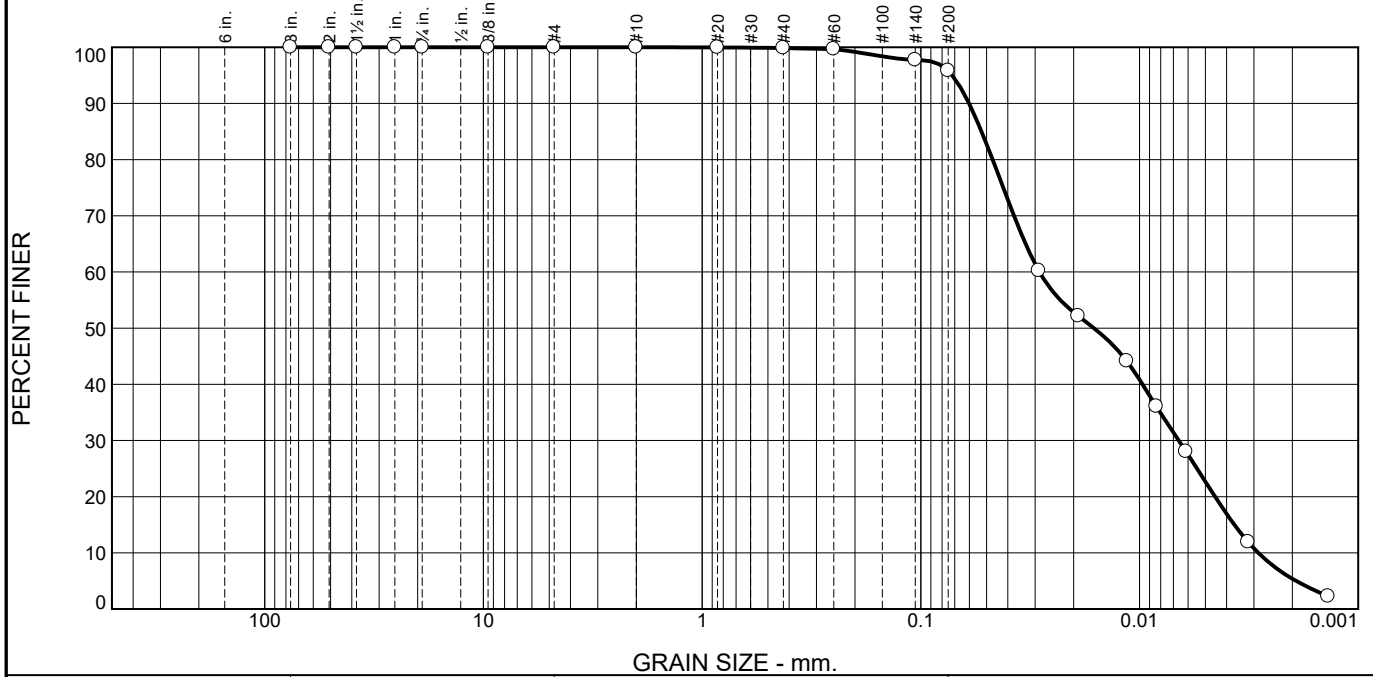
**Fractional Components**

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0	0	0	0	0	0	4	4	70	26	96

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
				0.0063	0.0067	0.0071	0.0076	0.0230	0.0294	0.0397	0.0621

<b>Fineness Modulus</b>
0.02

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	0	0	0	4	73	23

TEST RESULTS (ASTM D422)			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3	100		
2	100		
1.5	100		
1	100		
.75	100		
.375	100		
#4	100		
#10	100		
#20	100		
#40	100		
#60	100		
#140	98		
#200	96		
0.0289 mm.	60		
0.0190 mm.	52		
0.0114 mm.	44		
0.0084 mm.	36		
0.0061 mm.	28		
0.0032 mm.	12		
0.0014 mm.	2.3		

\* (no specification provided)

**Material Description**

silt

**Atterberg Limits (ASTM D 4318)**

PL= NP                      LL= NV                      PI=

**Classification**

USCS (D 2487)= ML                      AASHTO (M 145)= A-4(0)

**Coefficients**

D<sub>90</sub>= 0.0602                      D<sub>85</sub>= 0.0528                      D<sub>60</sub>= 0.0287  
D<sub>50</sub>= 0.0162                      D<sub>30</sub>= 0.0066                      D<sub>15</sub>= 0.0037  
D<sub>10</sub>= 0.0029                      C<sub>u</sub>= 10.01                      C<sub>c</sub>= 0.53

Remarks


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Date Received: 7/26/18                      Date Tested: 8/7/18  
Tested By: Kimberly Pohlman  
Checked By: Rhonda Johnson  
Title: Lab Manager

**Location:** Cravath - Sediment Sample 3  
**Sample Number:** 10441061-3

**Date Sampled:** 7/24/18

**Pace Analytical Services, Inc.**  
**Billings, MT**

**Client:** Ayers Associates  
**Project:** Cravath + Tripp Lake  
**Project No:**  
**Figure**

**GRAIN SIZE DISTRIBUTION TEST DATA**

8/8/2018

**Client:** Ayers Associates

**Project:** Cravath + Tripp Lake

**Location:** Cravath - Sediment Sample 3

**Sample Number:** 10441061-3

**Material Description:** silt

**Sample Date:** 7/24/18

**Date Received:** 7/26/18      **PL:** NP

**LL:** NV

**USCS Classification:** ML

**AASHTO Classification:** A-4(0)

**Grain Size Test Method:** ASTM D422

**Tested By:** Kimberly Pohlman

**Test Date:** 8/7/18

**Checked By:** Rhonda Johnson

**Title:** Lab Manager

**Sieve Test Data**

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer		
843.85	642.12	3	0.00	0.00	100		
		2	0.00	0.00	100		
		1.5	0.00	0.00	100		
		1	0.00	0.00	100		
		.75	0.00	0.00	100		
		.375	0.00	0.00	100		
		#4	0.00	0.00	100		
		#10	0.00	0.00	100		
		59.54	0.00	#20	0.02	0.00	100
				#40	0.07	0.00	100
#60	0.12			0.00	100		
#140	1.14			0.00	98		
#200	1.14			0.00	96		

**Hydrometer Test Data**

**Hydrometer test uses material passing #200**

**Percent passing #200 based upon complete sample = 96**

**Weight of hydrometer sample = 59.54**

**Automatic temperature correction**

**Composite correction (fluid density and meniscus height) at 20 deg. C = -5**

**Meniscus correction only = 0.0**

**Specific gravity of solids = 2.65**

**Hydrometer type = 152H**

**Hydrometer effective depth equation:  $L = 16.294964 - 0.164 \times R_m$**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	22.0	42.0	37.4	0.0133	42.0	9.4	0.0289	60.2
5.00	22.0	37.0	32.4	0.0133	37.0	10.2	0.0190	52.2
15.00	22.0	32.0	27.4	0.0133	32.0	11.0	0.0114	44.1
30.00	22.0	27.0	22.4	0.0133	27.0	11.9	0.0084	36.1
60.00	22.0	22.0	17.4	0.0133	22.0	12.7	0.0061	28.0
250.00	22.0	12.0	7.4	0.0133	12.0	14.3	0.0032	11.9
1440.00	22.0	6.0	1.4	0.0133	6.0	15.3	0.0014	2.3

**Pace Analytical Services, Inc.**

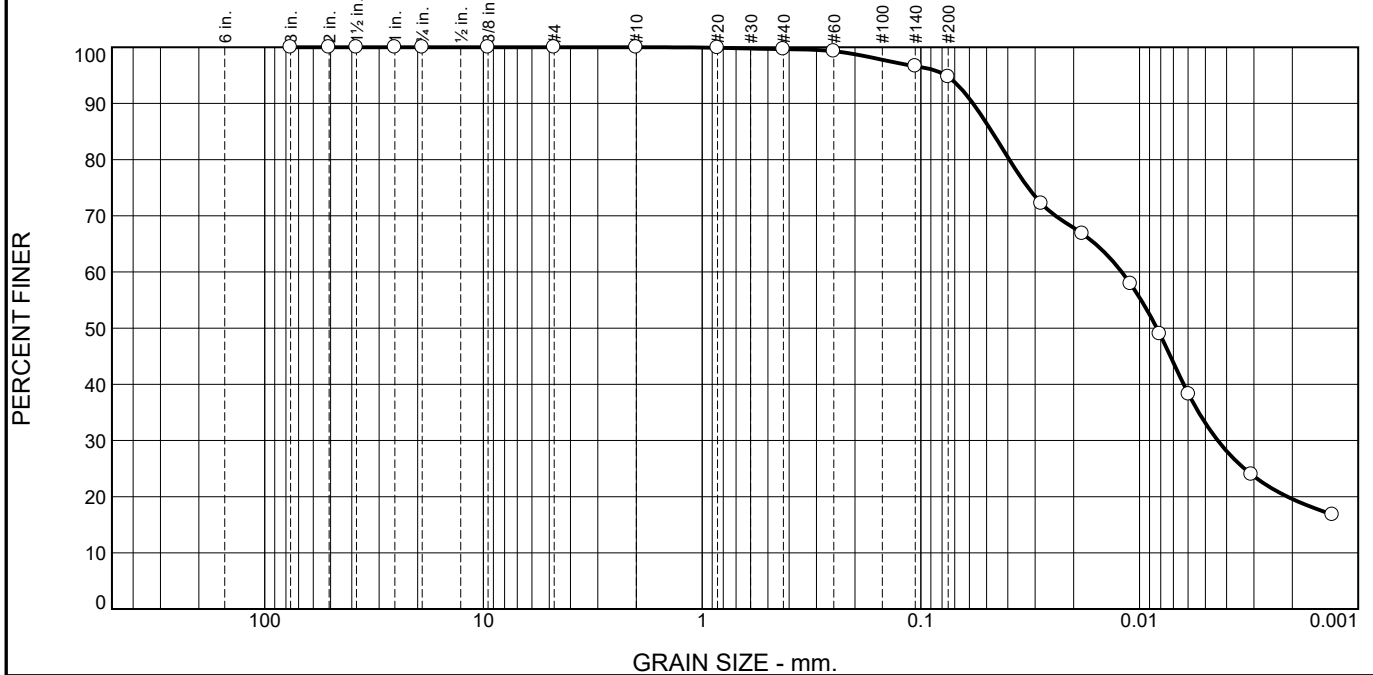
**Fractional Components**

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0	0	0	0	0	0	4	4	73	23	96

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
0.0019	0.0029	0.0037	0.0045	0.0066	0.0097	0.0162	0.0287	0.0470	0.0528	0.0602	0.0718

Fineness Modulus	C <sub>u</sub>	C <sub>c</sub>
0.02	10.01	0.53

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	0	0	0	5	62	33

TEST RESULTS (ASTM D422)			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3	100		
2	100		
1.5	100		
1	100		
.75	100		
.375	100		
#4	100		
#10	100		
#20	100		
#40	100		
#60	99		
#140	97		
#200	95		
0.0281 mm.	72		
0.0183 mm.	67		
0.0110 mm.	58		
0.0081 mm.	49		
0.0060 mm.	38		
0.0031 mm.	24		
0.0013 mm.	17		

\* (no specification provided)

**Material Description**

silt

**Atterberg Limits (ASTM D 4318)**

PL= NP                      LL= NV                      PI=

**Classification**

USCS (D 2487)= ML                      AASHTO (M 145)= A-4(0)

**Coefficients**

D<sub>90</sub>= 0.0577                      D<sub>85</sub>= 0.0474                      D<sub>60</sub>= 0.0121  
D<sub>50</sub>= 0.0083                      D<sub>30</sub>= 0.0044                      D<sub>15</sub>=  
D<sub>10</sub>=                                      C<sub>u</sub>=                                      C<sub>c</sub>=

Remarks


---

Date Received: 7/26/18                      Date Tested: 8/7/18  
Tested By: Kimberly Pohlman  
Checked By: Rhonda Johnson  
Title: Lab Manager

Location: Cravath - Sediment Sample 4  
Sample Number: 10441061-4

Date Sampled: 7/24/18

**Pace Analytical Services, Inc.**

Client: Ayers Associates  
Project: Cravath + Tripp Lake

**Billings, MT**

Project No:

Figure



**GRAIN SIZE DISTRIBUTION TEST DATA**

8/8/2018

**Client:** Ayers Associates

**Project:** Cravath + Tripp Lake

**Location:** Cravath - Sediment Sample 4

**Sample Number:** 10441061-4

**Material Description:** silt

**Sample Date:** 7/24/18

**Date Received:** 7/26/18      **PL:** NP

**LL:** NV

**USCS Classification:** ML

**AASHTO Classification:** A-4(0)

**Grain Size Test Method:** ASTM D422

**Tested By:** Kimberly Pohlman

**Test Date:** 8/7/18

**Checked By:** Rhonda Johnson

**Title:** Lab Manager

**Sieve Test Data**

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer		
864.33	652.66	3	0.00	0.00	100		
		2	0.00	0.00	100		
		1.5	0.00	0.00	100		
		1	0.00	0.00	100		
		.75	0.00	0.00	100		
		.375	0.00	0.00	100		
		#4	0.00	0.00	100		
		#10	0.00	0.00	100		
		53.02	0.00	#20	0.05	0.00	100
				#40	0.13	0.00	100
#60	0.19			0.00	99		
#140	1.42			0.00	97		
#200	1.01			0.00	95		

**Hydrometer Test Data**

**Hydrometer test uses material passing #200**

**Percent passing #200 based upon complete sample = 95**

**Weight of hydrometer sample = 53.02**

**Automatic temperature correction**

**Composite correction (fluid density and meniscus height) at 20 deg. C = -5**

**Meniscus correction only = 0.0**

**Specific gravity of solids = 2.65**

**Hydrometer type = 152H**

**Hydrometer effective depth equation:  $L = 16.294964 - 0.164 \times R_m$**

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	22.0	45.0	40.4	0.0133	45.0	8.9	0.0281	72.2
5.00	22.0	42.0	37.4	0.0133	42.0	9.4	0.0183	66.8
15.00	22.0	37.0	32.4	0.0133	37.0	10.2	0.0110	57.9
30.00	22.0	32.0	27.4	0.0133	32.0	11.0	0.0081	49.0
60.00	22.0	26.0	21.4	0.0133	26.0	12.0	0.0060	38.2
250.00	22.0	18.0	13.4	0.0133	18.0	13.3	0.0031	24.0
1440.00	22.0	14.0	9.4	0.0133	14.0	14.0	0.0013	16.8

**Pace Analytical Services, Inc.**

**Fractional Components**

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0	0	0	0	0	0	5	5	62	33	95

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
			0.0021	0.0044	0.0063	0.0083	0.0121	0.0394	0.0474	0.0577	0.0769

<b>Fineness Modulus</b>
0.03

August 28, 2018

Rob Wayne  
Ayres & Associates  
3433 Oakwood Hills Parkway  
Eau Claire, WI 54701

RE: Project: Cravath + Tripp Lake  
Pace Project No.: 10441036

Dear Rob Wayne:

Enclosed are the analytical results for sample(s) received by the laboratory on July 26, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Bob Michels  
bob.michels@pacelabs.com  
(612)709-5046  
Project Manager

Enclosures

cc: Peter Haug, Ayres Associates



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Cravath + Tripp Lake  
Pace Project No.: 10441036

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### Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485  
A2LA Certification #: 2926.01  
Alabama Certification #: 40770  
Alaska Contaminated Sites Certification #: 17-009  
Alaska DW Certification #: MN00064  
Arizona Certification #: AZ0014  
Arkansas DW Certification #: MN00064  
Arkansas WW Certification #: 88-0680  
California Certification #: 2929  
CNMI Saipan Certification #: MP0003  
Colorado Certification #: MN00064  
Connecticut Certification #: PH-0256  
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137  
Florida Certification #: E87605  
Georgia Certification #: 959  
Guam EPA Certification #: MN00064  
Hawaii Certification #: MN00064  
Idaho Certification #: MN00064  
Illinois Certification #: 200011  
Indiana Certification #: C-MN-01  
Iowa Certification #: 368  
Kansas Certification #: E-10167  
Kentucky DW Certification #: 90062  
Kentucky WW Certification #: 90062  
Louisiana DEQ Certification #: 03086  
Louisiana DW Certification #: MN00064  
Maine Certification #: MN00064  
Maryland Certification #: 322  
Massachusetts Certification #: M-MN064  
Michigan Certification #: 9909

Minnesota Certification #: 027-053-137  
Minnesota Dept of Ag Certification #: via MN 027-053-137  
Minnesota Petrofund Certification #: 1240  
Mississippi Certification #: MN00064  
Montana Certification #: CERT0092  
Nebraska Certification #: NE-OS-18-06  
Nevada Certification #: MN00064  
New Hampshire Certification #: 2081  
New Jersey Certification #: MN002  
New York Certification #: 11647  
North Carolina DW Certification #: 27700  
North Carolina WW Certification #: 530  
North Dakota Certification #: R-036  
Ohio DW Certification #: 41244  
Ohio VAP Certification #: CL101  
Oklahoma Certification #: 9507  
Oregon NwTPH Certification #: MN300001  
Oregon Secondary Certification #: MN200001  
Pennsylvania Certification #: 68-00563  
Puerto Rico Certification #: MN00064  
South Carolina Certification #: 74003001  
Tennessee Certification #: TN02818  
Texas Certification #: T104704192  
Utah Certification #: MN00064  
Virginia Certification #: 460163  
Washington Certification #: C486  
West Virginia DW Certification #: 9952 C  
West Virginia DEP Certification #: 382  
Wisconsin Certification #: 999407970  
Wyoming UST Certification #: via A2LA 2926.01

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### Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792  
Alaska Certification UST-107  
Montana Certificate #CERT0103  
Minnesota Dept of Health Certification #: 027-137-445

North Dakota Certification: # R-203  
Wisconsin DNR Certification #: 998027470  
WA Department of Ecology Lab ID# C1007

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### Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302  
Florida/NELAP Certification #: E87948  
Illinois Certification #: 200050  
Kentucky UST Certification #: 82  
Louisiana Certification #: 04168  
Minnesota Certification #: 055-999-334  
New York Certification #: 12064  
North Dakota Certification #: R-150

Virginia VELAP ID: 460263  
South Carolina Certification #: 83006001  
Texas Certification #: T104704529-14-1  
Wisconsin Certification #: 405132750  
Wisconsin DATCP Certification #: 105-444  
USDA Soil Permit #: P330-16-00157  
Federal Fish & Wildlife Permit #: LE51774A-0

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## SAMPLE SUMMARY

Project: Cravath + Tripp Lake

Pace Project No.: 10441036

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10441036001	Cravath-Sediment Sample 5	Solid	07/24/18 12:45	07/26/18 09:30
10441036002	Tripp-Sediment Sample 1	Solid	07/24/18 14:15	07/26/18 09:30

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: Cravath + Tripp Lake

Pace Project No.: 10441036

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10441036001	Cravath-Sediment Sample 5	EPA 6010	AJT	7	PASI-G
		EPA 7471B	LMW	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270D by SIM	STB	20	PASI-M
		EPA 350.1	DMB	1	PASI-V
		EPA 351.2	JJH	1	PASI-V
		EPA 353.2	MCT	1	PASI-V
		EPA 365.1	DMB	1	PASI-V
		EPA 9060 Modified	TJJ	4	PASI-G
10441036002	Tripp-Sediment Sample 1	EPA 6010	AJT	7	PASI-G
		EPA 7471B	LMW	1	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270D by SIM	STB	20	PASI-M
		EPA 350.1	DMB	1	PASI-V
		EPA 351.2	JJH	1	PASI-V
		EPA 353.2	MCT	1	PASI-V
		EPA 365.1	DMB	1	PASI-V
		EPA 9060 Modified	TJJ	4	PASI-G

### REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Cravath + Tripp Lake

Pace Project No.: 10441036

**Sample:** Cravath-Sediment Sample **Lab ID:** 10441036001 **Collected:** 07/24/18 12:45 **Received:** 07/26/18 09:30 **Matrix:** Solid  
5

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>									
Analytical Method: EPA 6010 Preparation Method: EPA 3050									
Arsenic	ND	mg/kg	13.4	2.8	1	08/20/18 07:29	08/23/18 22:09	7440-38-2	
Cadmium	ND	mg/kg	1.3	0.36	1	08/20/18 07:29	08/23/18 22:09	7440-43-9	
Chromium	29.0	mg/kg	2.7	0.74	1	08/20/18 07:29	08/23/18 22:09	7440-47-3	
Copper	29.3	mg/kg	6.7	2.2	1	08/20/18 07:29	08/23/18 22:09	7440-50-8	
Lead	316	mg/kg	3.5	1.2	1	08/20/18 07:29	08/23/18 22:09	7439-92-1	M0
Nickel	12.4	mg/kg	2.7	0.62	1	08/20/18 07:29	08/23/18 22:09	7440-02-0	
Zinc	107	mg/kg	10.7	2.5	1	08/20/18 07:29	08/23/18 22:09	7440-66-6	
<b>7471B Mercury</b>									
Analytical Method: EPA 7471B Preparation Method: EPA 7471B									
Mercury	0.18	mg/kg	0.068	0.020	1	08/02/18 05:03	08/05/18 18:04	7439-97-6	
<b>Dry Weight / %M by ASTM D2974</b>									
Analytical Method: ASTM D2974									
Percent Moisture	62.9	%	0.10	0.10	1		08/06/18 15:31		
<b>8270D MSSV PAH by SIM</b>									
Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550									
Acenaphthene	ND	ug/kg	3.7	1.1	1	07/30/18 13:47	08/02/18 21:04	83-32-9	
Acenaphthylene	ND	ug/kg	4.4	1.3	1	07/30/18 13:47	08/02/18 21:04	208-96-8	
Anthracene	ND	ug/kg	4.2	1.3	1	07/30/18 13:47	08/02/18 21:04	120-12-7	
Benzo(a)anthracene	ND	ug/kg	9.7	2.9	1	07/30/18 13:47	08/02/18 21:04	56-55-3	
Benzo(a)pyrene	ND	ug/kg	6.2	1.8	1	07/30/18 13:47	08/02/18 21:04	50-32-8	
Benzo(b)fluoranthene	35.8	ug/kg	3.3	1.0	1	07/30/18 13:47	08/02/18 21:04	205-99-2	
Benzo(e)pyrene	ND	ug/kg	6.4	1.9	1	07/30/18 13:47	08/02/18 21:04	192-97-2	N2
Benzo(g,h,i)perylene	ND	ug/kg	5.7	1.7	1	07/30/18 13:47	08/02/18 21:04	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	7.6	2.3	1	07/30/18 13:47	08/02/18 21:04	207-08-9	
Chrysene	27.2	ug/kg	12.2	3.7	1	07/30/18 13:47	08/02/18 21:04	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	4.1	1.2	1	07/30/18 13:47	08/02/18 21:04	53-70-3	
Fluoranthene	60.3	ug/kg	3.8	1.2	1	07/30/18 13:47	08/02/18 21:04	206-44-0	
Fluorene	ND	ug/kg	2.8	0.84	1	07/30/18 13:47	08/02/18 21:04	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	6.0	1.8	1	07/30/18 13:47	08/02/18 21:04	193-39-5	
2-Methylnaphthalene	ND	ug/kg	4.5	1.4	1	07/30/18 13:47	08/02/18 21:04	91-57-6	
Naphthalene	ND	ug/kg	6.9	2.1	1	07/30/18 13:47	08/02/18 21:04	91-20-3	
Phenanthrene	58.8	ug/kg	17.2	5.2	1	07/30/18 13:47	08/02/18 21:04	85-01-8	
Pyrene	57.2	ug/kg	13.7	4.1	1	07/30/18 13:47	08/02/18 21:04	129-00-0	
<b>Surrogates</b>									
2-Fluorobiphenyl (S)	80	%	42-125		1	07/30/18 13:47	08/02/18 21:04	321-60-8	
p-Terphenyl-d14 (S)	92	%	57-125		1	07/30/18 13:47	08/02/18 21:04	1718-51-0	
<b>350.1 Ammonia</b>									
Analytical Method: EPA 350.1 Preparation Method: EPA 350.1									
Nitrogen, Ammonia	489	mg/kg	24.3	11.7	1	08/01/18 15:35	08/02/18 11:04	7664-41-7	
<b>351.2 Total Kjeldahl Nitrogen</b>									
Analytical Method: EPA 351.2 Preparation Method: EPA 351.2									
Nitrogen, Kjeldahl, Total	1220	mg/kg	490	215	1	08/09/18 19:32	08/10/18 12:04	7727-37-9	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Cravath + Tripp Lake

Pace Project No.: 10441036

**Sample: Cravath-Sediment Sample 5**    **Lab ID: 10441036001**    Collected: 07/24/18 12:45    Received: 07/26/18 09:30    Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>353.2 Nitrogen, NO2/NO3</b>	Analytical Method: EPA 353.2    Preparation Method: EPA 353.2								
Nitrogen, NO2 plus NO3	ND	mg/kg	1.3	0.32	1	08/06/18 15:00	08/07/18 09:39		N3
<b>365.1 Phosphorus, Total</b>	Analytical Method: EPA 365.1    Preparation Method: SM 4500P B								
Phosphorus	<b>770</b>	mg/kg	154	73.2	10	08/01/18 12:02	08/02/18 13:29	7723-14-0	
<b>Total Organic Carbon</b>	Analytical Method: EPA 9060 Modified								
<b>Surrogates</b>									
RPD%	<b>2.6</b>	%	0.10	0.10	1		08/07/18 12:53		
Total Organic Carbon	<b>61100</b>	mg/kg	7940	2380	1		08/07/18 12:53	7440-44-0	
Total Organic Carbon	<b>62700</b>	mg/kg	8150	2450	1		08/07/18 12:59	7440-44-0	
Mean Total Organic Carbon	<b>61900</b>	mg/kg	8040	2410	1		08/07/18 12:53	7440-44-0	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Cravath + Tripp Lake

Pace Project No.: 10441036

Sample: **Tripp-Sediment Sample 1** Lab ID: **10441036002** Collected: 07/24/18 14:15 Received: 07/26/18 09:30 Matrix: Solid

*Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.*

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>6010 MET ICP</b>									
Analytical Method: EPA 6010 Preparation Method: EPA 3050									
Arsenic	ND	mg/kg	15.9	3.3	1	08/20/18 07:29	08/23/18 22:21	7440-38-2	
Cadmium	ND	mg/kg	1.6	0.42	1	08/20/18 07:29	08/23/18 22:21	7440-43-9	
Chromium	<b>8.8</b>	mg/kg	3.2	0.88	1	08/20/18 07:29	08/23/18 22:21	7440-47-3	
Copper	<b>19.9</b>	mg/kg	7.9	2.6	1	08/20/18 07:29	08/23/18 22:21	7440-50-8	
Lead	<b>4.5</b>	mg/kg	4.1	1.4	1	08/20/18 07:29	08/23/18 22:21	7439-92-1	
Nickel	<b>14.8</b>	mg/kg	3.2	0.73	1	08/20/18 07:29	08/23/18 22:21	7440-02-0	
Zinc	<b>24.8</b>	mg/kg	12.7	3.0	1	08/20/18 07:29	08/23/18 22:21	7440-66-6	
<b>7471B Mercury</b>									
Analytical Method: EPA 7471B Preparation Method: EPA 7471B									
Mercury	ND	mg/kg	0.085	0.026	1	08/02/18 05:03	08/05/18 18:10	7439-97-6	
<b>Dry Weight / %M by ASTM D2974</b>									
Analytical Method: ASTM D2974									
Percent Moisture	<b>70.5</b>	%	0.10	0.10	1		08/06/18 15:31		
<b>8270D MSSV PAH by SIM</b>									
Analytical Method: EPA 8270D by SIM Preparation Method: EPA 3550									
Acenaphthene	ND	ug/kg	4.6	1.4	1	07/30/18 13:47	08/02/18 21:25	83-32-9	
Acenaphthylene	ND	ug/kg	5.6	1.7	1	07/30/18 13:47	08/02/18 21:25	208-96-8	
Anthracene	ND	ug/kg	5.3	1.6	1	07/30/18 13:47	08/02/18 21:25	120-12-7	
Benzo(a)anthracene	ND	ug/kg	12.2	3.6	1	07/30/18 13:47	08/02/18 21:25	56-55-3	
Benzo(a)pyrene	ND	ug/kg	7.7	2.3	1	07/30/18 13:47	08/02/18 21:25	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	4.2	1.3	1	07/30/18 13:47	08/02/18 21:25	205-99-2	
Benzo(e)pyrene	ND	ug/kg	8.1	2.4	1	07/30/18 13:47	08/02/18 21:25	192-97-2	N2
Benzo(g,h,i)perylene	ND	ug/kg	7.1	2.1	1	07/30/18 13:47	08/02/18 21:25	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	9.5	2.9	1	07/30/18 13:47	08/02/18 21:25	207-08-9	
Chrysene	ND	ug/kg	15.3	4.6	1	07/30/18 13:47	08/02/18 21:25	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	5.2	1.6	1	07/30/18 13:47	08/02/18 21:25	53-70-3	
Fluoranthene	ND	ug/kg	4.8	1.4	1	07/30/18 13:47	08/02/18 21:25	206-44-0	
Fluorene	ND	ug/kg	3.5	1.1	1	07/30/18 13:47	08/02/18 21:25	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	7.5	2.3	1	07/30/18 13:47	08/02/18 21:25	193-39-5	
2-Methylnaphthalene	ND	ug/kg	5.7	1.7	1	07/30/18 13:47	08/02/18 21:25	91-57-6	
Naphthalene	ND	ug/kg	8.7	2.6	1	07/30/18 13:47	08/02/18 21:25	91-20-3	
Phenanthrene	ND	ug/kg	21.6	6.5	1	07/30/18 13:47	08/02/18 21:25	85-01-8	
Pyrene	ND	ug/kg	17.2	5.2	1	07/30/18 13:47	08/02/18 21:25	129-00-0	
<b>Surrogates</b>									
2-Fluorobiphenyl (S)	76	%	42-125		1	07/30/18 13:47	08/02/18 21:25	321-60-8	
p-Terphenyl-d14 (S)	83	%	57-125		1	07/30/18 13:47	08/02/18 21:25	1718-51-0	
<b>350.1 Ammonia</b>									
Analytical Method: EPA 350.1 Preparation Method: EPA 350.1									
Nitrogen, Ammonia	<b>544</b>	mg/kg	30.6	14.7	1	08/01/18 15:35	08/02/18 11:05	7664-41-7	
<b>351.2 Total Kjeldahl Nitrogen</b>									
Analytical Method: EPA 351.2 Preparation Method: EPA 351.2									
Nitrogen, Kjeldahl, Total	<b>3910</b>	mg/kg	617	270	1	08/09/18 19:32	08/10/18 12:05	7727-37-9	

## REPORT OF LABORATORY ANALYSIS

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## ANALYTICAL RESULTS

Project: Cravath + Tripp Lake

Pace Project No.: 10441036

**Sample: Tripp-Sediment Sample 1    Lab ID: 10441036002    Collected: 07/24/18 14:15    Received: 07/26/18 09:30    Matrix: Solid**

**Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.**

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>353.2 Nitrogen, NO2/NO3</b>									
Analytical Method: EPA 353.2    Preparation Method: EPA 353.2									
Nitrogen, NO2 plus NO3	ND	mg/kg	1.7	0.40	1	08/06/18 15:00	08/07/18 09:41		N3
<b>365.1 Phosphorus, Total</b>									
Analytical Method: EPA 365.1    Preparation Method: SM 4500P B									
Phosphorus	<b>389</b>	mg/kg	19.8	9.4	1	08/01/18 12:02	08/02/18 13:19	7723-14-0	
<b>Total Organic Carbon</b>									
Analytical Method: EPA 9060 Modified									
<b>Surrogates</b>									
RPD%	<b>3.8</b>	%	0.10	0.10	1		08/07/18 13:34		
Total Organic Carbon	<b>152000</b>	mg/kg	13400	4010	1		08/07/18 13:34	7440-44-0	
Total Organic Carbon	<b>146000</b>	mg/kg	13500	4050	1		08/07/18 13:40	7440-44-0	
Mean Total Organic Carbon	<b>149000</b>	mg/kg	13400	4030	1		08/07/18 13:34	7440-44-0	

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: Cravath + Tripp Lake  
Pace Project No.: 10441036

QC Batch: 553341 Analysis Method: EPA 7471B  
QC Batch Method: EPA 7471B Analysis Description: 7471B Mercury Solids  
Associated Lab Samples: 10441036001, 10441036002

METHOD BLANK: 3006646 Matrix: Solid  
Associated Lab Samples: 10441036001, 10441036002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/kg	ND	0.027	08/05/18 18:00	

LABORATORY CONTROL SAMPLE: 3006647

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	.47	0.51	109	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3006648 3006649

Parameter	Units	10441036001		3006648		3006649		% Rec Limits	RPD	Max RPD	Qual	
		MS Result	MSD Spike Conc.	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result					MS % Rec
Mercury	mg/kg	0.18	1.3	1.3	1.3	1.8	1.6	118	105	75-125	10	20

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### QUALITY CONTROL DATA

Project: Cravath + Tripp Lake

Pace Project No.: 10441036

QC Batch: 297524      Analysis Method: EPA 6010  
 QC Batch Method: EPA 3050      Analysis Description: 6010 MET  
 Associated Lab Samples: 10441036001, 10441036002

METHOD BLANK: 1737518      Matrix: Solid

Associated Lab Samples: 10441036001, 10441036002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/kg	ND	5.0	08/23/18 22:04	
Cadmium	mg/kg	ND	0.50	08/23/18 22:04	
Chromium	mg/kg	ND	1.0	08/23/18 22:04	
Copper	mg/kg	ND	2.5	08/23/18 22:04	
Lead	mg/kg	ND	1.3	08/23/18 22:04	
Nickel	mg/kg	ND	1.0	08/23/18 22:04	
Zinc	mg/kg	ND	4.0	08/23/18 22:04	

LABORATORY CONTROL SAMPLE: 1737519

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	50	47.8	96	80-120	
Cadmium	mg/kg	50	47.8	96	80-120	
Chromium	mg/kg	50	48.5	97	80-120	
Copper	mg/kg	50	47.6	95	80-120	
Lead	mg/kg	50	50.6	101	80-120	
Nickel	mg/kg	50	49.9	100	80-120	
Zinc	mg/kg	50	51.0	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1737520      1737521

Parameter	Units	10441036001		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	% Rec	% Rec					
Arsenic	mg/kg	ND	134	134	133	131	94	93	75-125	1	20		
Cadmium	mg/kg	ND	134	134	127	125	94	93	75-125	1	20		
Chromium	mg/kg	29.0	134	134	152	149	92	90	75-125	2	20		
Copper	mg/kg	29.3	134	134	155	153	93	93	75-125	1	20		
Lead	mg/kg	316	134	134	491	568	131	188	75-125	15	20	M0	
Nickel	mg/kg	12.4	134	134	140	137	95	93	75-125	2	20		
Zinc	mg/kg	107	134	134	240	245	99	103	75-125	2	20		

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### QUALITY CONTROL DATA

Project: Cravath + Tripp Lake

Pace Project No.: 10441036

QC Batch: 554891

Analysis Method: ASTM D2974

QC Batch Method: ASTM D2974

Analysis Description: Dry Weight / %M by ASTM D2974

Associated Lab Samples: 10441036001, 10441036002

SAMPLE DUPLICATE: 3014427

Parameter	Units	10445175001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	25.2	23.6	7	30	

SAMPLE DUPLICATE: 3014686

Parameter	Units	10441032003 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	34.2	38.4	12	30	

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### QUALITY CONTROL DATA

Project: Cravath + Tripp Lake

Pace Project No.: 10441036

QC Batch: 553463

Analysis Method: EPA 8270D by SIM

QC Batch Method: EPA 3550

Analysis Description: 8270D Solid PAH by SIM MSSV

Associated Lab Samples: 10441036001, 10441036002

METHOD BLANK: 3007028

Matrix: Solid

Associated Lab Samples: 10441036001, 10441036002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/kg	ND	1.7	08/02/18 16:12	
Acenaphthene	ug/kg	ND	1.4	08/02/18 16:12	
Acenaphthylene	ug/kg	ND	1.6	08/02/18 16:12	
Anthracene	ug/kg	ND	1.6	08/02/18 16:12	
Benzo(a)anthracene	ug/kg	ND	3.6	08/02/18 16:12	
Benzo(a)pyrene	ug/kg	ND	2.3	08/02/18 16:12	
Benzo(b)fluoranthene	ug/kg	ND	1.2	08/02/18 16:12	
Benzo(e)pyrene	ug/kg	ND	2.4	08/02/18 16:12	N2
Benzo(g,h,i)perylene	ug/kg	ND	2.1	08/02/18 16:12	
Benzo(k)fluoranthene	ug/kg	ND	2.8	08/02/18 16:12	
Chrysene	ug/kg	ND	4.5	08/02/18 16:12	
Dibenz(a,h)anthracene	ug/kg	ND	1.5	08/02/18 16:12	
Fluoranthene	ug/kg	ND	1.4	08/02/18 16:12	
Fluorene	ug/kg	ND	1.0	08/02/18 16:12	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	2.2	08/02/18 16:12	
Naphthalene	ug/kg	ND	2.6	08/02/18 16:12	
Phenanthrene	ug/kg	ND	6.4	08/02/18 16:12	
Pyrene	ug/kg	ND	5.1	08/02/18 16:12	
2-Fluorobiphenyl (S)	%	90	42-125	08/02/18 16:12	
p-Terphenyl-d14 (S)	%	98	57-125	08/02/18 16:12	

LABORATORY CONTROL SAMPLE: 3007029

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Methylnaphthalene	ug/kg	33.3	29.2	87	40-125	
Acenaphthene	ug/kg	33.3	27.6	83	52-125	
Acenaphthylene	ug/kg	33.3	28.1	84	50-125	
Anthracene	ug/kg	33.3	30.7	92	65-125	
Benzo(a)anthracene	ug/kg	33.3	31.2	93	60-125	
Benzo(a)pyrene	ug/kg	33.3	29.7	89	69-125	
Benzo(b)fluoranthene	ug/kg	33.3	33.7	101	61-125	
Benzo(e)pyrene	ug/kg	33.3	30.2	91	71-125	N2
Benzo(g,h,i)perylene	ug/kg	33.3	31.9	96	60-125	
Benzo(k)fluoranthene	ug/kg	33.3	27.3	82	67-125	
Chrysene	ug/kg	33.3	27.9	84	67-125	
Dibenz(a,h)anthracene	ug/kg	33.3	32.0	96	63-125	
Fluoranthene	ug/kg	33.3	30.6	92	75-125	
Fluorene	ug/kg	33.3	28.3	85	54-125	
Indeno(1,2,3-cd)pyrene	ug/kg	33.3	34.0	102	63-125	
Naphthalene	ug/kg	33.3	28.4	85	49-125	

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### QUALITY CONTROL DATA

Project: Cravath + Tripp Lake

Pace Project No.: 10441036

LABORATORY CONTROL SAMPLE: 3007029

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phenanthrene	ug/kg	33.3	29.6	89	65-125	
Pyrene	ug/kg	33.3	30.8	92	64-125	
2-Fluorobiphenyl (S)	%			84	42-125	
p-Terphenyl-d14 (S)	%			93	57-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3007030 3007031

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		12112833001 Result	Spike Conc.	Spike Conc.	Conc.								
2-Methylnaphthalene	ug/kg	ND	34.4	34.4	34.4	30.8	33.8	90	98	30-125	9	30	
Acenaphthene	ug/kg	ND	34.4	34.4	34.4	29.1	30.6	85	89	30-125	5	30	
Acenaphthylene	ug/kg	ND	34.4	34.4	34.4	34.1	61.3	99	178	30-133	57	30	M1,R1
Anthracene	ug/kg	ND	34.4	34.4	34.4	34.2	47.3	100	137	30-150	32	30	R1
Benzo(a)anthracene	ug/kg	34.5	34.4	34.4	34.4	55.0	124	60	261	30-150	77	30	M1,R1
Benzo(a)pyrene	ug/kg	42.8	34.4	34.4	34.4	55.9	148	38	305	30-150	90	30	M1,R1
Benzo(b)fluoranthene	ug/kg	57.5	34.4	34.4	34.4	73.2	162	46	305	30-150	76	30	M1,R1
Benzo(e)pyrene	ug/kg	35.7	34.4	34.4	34.4	54.4	117	54	235	30-150	73	30	M1,N2,R1
Benzo(g,h,i)perylene	ug/kg	37.9	34.4	34.4	34.4	55.7	117	52	230	30-150	71	30	M1,R1
Benzo(k)fluoranthene	ug/kg	29.5	34.4	34.4	34.4	46.1	93.0	48	184	30-150	67	30	M1,R1
Chrysene	ug/kg	43.2	34.4	34.4	34.4	57.3	150	41	309	30-150	89	30	M1,R1
Dibenz(a,h)anthracene	ug/kg	ND	34.4	34.4	34.4	35.2	53.2	102	155	30-131	41	30	M1,R1
Fluoranthene	ug/kg	85.8	34.4	34.4	34.4	81.7	280	-12	564	30-150	110	30	M1,R1
Fluorene	ug/kg	ND	34.4	34.4	34.4	30.1	47.6	88	138	30-147	45	30	R1
Indeno(1,2,3-cd)pyrene	ug/kg	33.1	34.4	34.4	34.4	52.7	102	57	201	30-150	64	30	M1,R1
Naphthalene	ug/kg	ND	34.4	34.4	34.4	31.0	33.4	90	97	30-131	7	30	
Phenanthrene	ug/kg	57.0	34.4	34.4	34.4	57.1	293	0	686	30-150	135	30	M1,R1
Pyrene	ug/kg	76.8	34.4	34.4	34.4	79.1	342	7	772	30-150	125	30	M1,R1
2-Fluorobiphenyl (S)	%							82	80	42-125			
p-Terphenyl-d14 (S)	%							90	87	57-125			

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### QUALITY CONTROL DATA

Project: Cravath + Tripp Lake  
Pace Project No.: 10441036

QC Batch: 149092 Analysis Method: EPA 350.1  
QC Batch Method: EPA 350.1 Analysis Description: 350.1 Ammonia  
Associated Lab Samples: 10441036001, 10441036002

METHOD BLANK: 589628 Matrix: Solid  
Associated Lab Samples: 10441036001, 10441036002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/kg	ND	9.5	08/02/18 10:56	

LABORATORY CONTROL SAMPLE: 589627

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/kg	130	139	107	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 589629 589630

Parameter	Units	10441032001		MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec						
Nitrogen, Ammonia	mg/kg	237	234	234	224	439	453	86	97	90-110	3	10	E,M1		

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### QUALITY CONTROL DATA

Project: Cravath + Tripp Lake  
Pace Project No.: 10441036

QC Batch: 149770 Analysis Method: EPA 351.2  
QC Batch Method: EPA 351.2 Analysis Description: 351.2 TKN  
Associated Lab Samples: 10441036001, 10441036002

METHOD BLANK: 592261 Matrix: Solid  
Associated Lab Samples: 10441036001, 10441036002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/kg	ND	64.5	08/10/18 11:54	

LABORATORY CONTROL SAMPLE: 592260

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/kg	1050	959	91	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 592262 592263

Parameter	Units	10441032003		MS		MSD		% Rec		Max		Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD	
Nitrogen, Kjeldahl, Total	mg/kg	748	2540	2770	3780	4120	119	122	90-110	9	15	M1

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**QUALITY CONTROL DATA**

Project: Cravath + Tripp Lake

Pace Project No.: 10441036

QC Batch: 149460 Analysis Method: EPA 353.2  
 QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite  
 Associated Lab Samples: 10441036001, 10441036002

METHOD BLANK: 590946 Matrix: Solid  
 Associated Lab Samples: 10441036001, 10441036002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, NO2 plus NO3	mg/kg	ND	0.50	08/07/18 09:08	N3

LABORATORY CONTROL SAMPLE: 590945

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, NO2 plus NO3	mg/kg	10	10.1	101	90-110	N3

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 590947 590948

Parameter	Units	10441774002		MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Conc.	Result	Result	% Rec	% Rec						
Nitrogen, NO2 plus NO3	mg/kg	143	11	10.9	178	145	317	22	90-110	20	10	N3,P6, R1			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 590949 590950

Parameter	Units	10440905043		MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Conc.	Result	Result	% Rec	% Rec						
Nitrogen, NO2 plus NO3	mg/kg	53.5	11.3	11.4	77.1	89.3	210	314	90-110	15	10	1M,N3, P6,R1			

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### QUALITY CONTROL DATA

Project: Cravath + Tripp Lake

Pace Project No.: 10441036

QC Batch: 149036

Analysis Method: EPA 365.1

QC Batch Method: SM 4500P B

Analysis Description: 365.1 Phosphorus, Total

Associated Lab Samples: 10441036001, 10441036002

METHOD BLANK: 589428

Matrix: Solid

Associated Lab Samples: 10441036001, 10441036002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Phosphorus	mg/kg	ND	6.0	08/02/18 13:12	

LABORATORY CONTROL SAMPLE: 589427

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phosphorus	mg/kg	25	25.8	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 589429 589430

Parameter	Units	10441032001		MS		MSD		MS		MSD		% Rec Limits	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Phosphorus	mg/kg	3300	3.96	3.96	4080	2890	19800	-10100	90-110	34	10	E,M6, R1		

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**QUALITY CONTROL DATA**

Project: Cravath + Tripp Lake

Pace Project No.: 10441036

QC Batch: 296525 Analysis Method: EPA 9060 Modified  
 QC Batch Method: EPA 9060 Modified Analysis Description: 9060 TOC Average  
 Associated Lab Samples: 10441036001, 10441036002

METHOD BLANK: 1732203 Matrix: Solid

Associated Lab Samples: 10441036001, 10441036002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mean Total Organic Carbon	mg/kg	ND	668	08/07/18 12:29	

LABORATORY CONTROL SAMPLE: 1732204

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mean Total Organic Carbon	mg/kg	120000	111000	92	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1732205 1732206

Parameter	Units	10441036001		1732205		1732206		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec				
Mean Total Organic Carbon	mg/kg	61900	72000	72000	112000	124000	70	86	50-150	10	30

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## QUALIFIERS

Project: Cravath + Tripp Lake

Pace Project No.: 10441036

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor and percent moisture.

LOQ - Limit of Quantitation adjusted for dilution factor and percent moisture.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### LABORATORIES

PASI-G Pace Analytical Services - Green Bay  
PASI-M Pace Analytical Services - Minneapolis  
PASI-V Pace Analytical Services - Virginia

### ANALYTE QUALIFIERS

1M The samples were kept frozen: thawed and extracted within the 6 month holding time as indicated by the Minnesota Department of Agriculture Guidance Document 11 for extraction and analysis.

E Analyte concentration exceeded the calibration range. The reported result is estimated.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

N2 The lab does not hold NELAC/TNI accreditation for this parameter.

N3 Accreditation is not offered by the relevant laboratory accrediting body for this parameter.

P6 Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

R1 RPD value was outside control limits.

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Cravath + Tripp Lake

Pace Project No.: 10441036

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10441036001	Cravath-Sediment Sample 5	EPA 3050	297524	EPA 6010	297793
10441036002	Tripp-Sediment Sample 1	EPA 3050	297524	EPA 6010	297793
10441036001	Cravath-Sediment Sample 5	EPA 7471B	553341	EPA 7471B	554704
10441036002	Tripp-Sediment Sample 1	EPA 7471B	553341	EPA 7471B	554704
10441036001	Cravath-Sediment Sample 5	ASTM D2974	554891		
10441036002	Tripp-Sediment Sample 1	ASTM D2974	554891		
10441036001	Cravath-Sediment Sample 5	EPA 3550	553463	EPA 8270D by SIM	554394
10441036002	Tripp-Sediment Sample 1	EPA 3550	553463	EPA 8270D by SIM	554394
10441036001	Cravath-Sediment Sample 5	EPA 350.1	149092	EPA 350.1	149232
10441036002	Tripp-Sediment Sample 1	EPA 350.1	149092	EPA 350.1	149232
10441036001	Cravath-Sediment Sample 5	EPA 351.2	149770	EPA 351.2	149817
10441036002	Tripp-Sediment Sample 1	EPA 351.2	149770	EPA 351.2	149817
10441036001	Cravath-Sediment Sample 5	EPA 353.2	149460	EPA 353.2	149485
10441036002	Tripp-Sediment Sample 1	EPA 353.2	149460	EPA 353.2	149485
10441036001	Cravath-Sediment Sample 5	SM 4500P B	149036	EPA 365.1	149225
10441036002	Tripp-Sediment Sample 1	SM 4500P B	149036	EPA 365.1	149225
10441036001	Cravath-Sediment Sample 5	EPA 9060 Modified	296525		
10441036001	Cravath-Sediment Sample 5	EPA 9060 Modified	296526		
10441036002	Tripp-Sediment Sample 1	EPA 9060 Modified	296525		
10441036002	Tripp-Sediment Sample 1	EPA 9060 Modified	296526		

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
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**WO# : 10441036**

**CHAIN-OF-CUSTODY / Anal**  
The Chain-of-Custody is a LEGAL DOCUMENT. All



**Section A** Required Client Information: Company: Ayes Associates Report To: Rob Wayne Copy To: \_\_\_\_\_  
 Address: 3433 Oakwood Hills Pkwy Purchase Order No.: \_\_\_\_\_  
Evan Claire, WI 54701 Project Name: Crawfish + Trip Lake Project Number: \_\_\_\_\_  
 Email To: Wayner@ayessociates.com Project Manager: \_\_\_\_\_  
 Phone: 715-831-7506 Fax: \_\_\_\_\_  
 Requested Due Date/TAT: Standard

**Section B** Required Project Information: Invoice Information: Attention: Margann Gasper - Sewitz Company Name: Ayes Associates Address: \_\_\_\_\_  
 Pace Quote Reference: \_\_\_\_\_ Pace Project Manager: \_\_\_\_\_ Pace Profile #: 38173

**Section C** Regulatory Agency: NPDES  GROUND WATER  DRINKING WATER   
UST  RCRA  OTHER   
 Site Location: \_\_\_\_\_ STATE: \_\_\_\_\_

ITEM #	Section D Required Client Information	Matrix Codes MATRIX / CODE	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	RELINQUISHED BY / AFFILIATION		DATE		TIME	ACCEPTED BY / AFFILIATION	DATE		TIME	SAMPLE CONDITIONS		
			COMPOSITE START	COMPOSITE END/GRAB			DATE	TIME	DATE	TIME			DATE	TIME				
1	SAMPLE ID (A-Z, 0-9 / .) Sample IDs MUST BE UNIQUE	Drinking Water				SL G												
2		Water				SL G												
3		Waste Water																
4		Product																
5		Soil/Solid																
6		Oil																
7		Wipe																
8		Air																
9		Tissue																
10		Other																
11																		
12																		

**Requested Analysis Filtered (Y/N)**

**Preservatives**

Unpreserved	
H <sub>2</sub> SO <sub>4</sub>	
HNO <sub>3</sub>	
HCl	
NaOH	
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	
Methanol	
Other	

**# OF CONTAINERS**

**SAMPLE TEMP AT COLLECTION**

**Temp in °C**

**Received on**

**Sealed Cooler**

**Custody**

**Samples Intact**

**DATE SIGNED (MM/DD/YYYY)**: 7/25/18

**PRINT NAME OF SAMPLER**: Rob Wayne

**SIGNATURE OF SAMPLER**: *[Signature]*

**SAMPLER NAME AND SIGNATURE**

**Sample Condition Upon Receipt**

Client Name: Ayres Associates Project #: \_\_\_\_\_

**WO#: 10441036**  
 PM: BM2 Due Date: 07/31/18  
 CLIENT: AYRES ASSOC.

Courier:  Fed Ex  UPS  USPS  Client  
 Commercial  Pace  Speedee  Other:  
 Tracking Number: 1Z5885 18403 7585 3219

Custody Seal on Cooler/Box Present?  Yes  No Seals Intact?  Yes  No  
 Optional: Proj. Due Date: Proj. Name:

Packing Material:  Bubble Wrap  Bubble Bags  None  Other: Temp Blank?  Yes  No

Thermometer Used:  G87A9170600254  G87A9155100842 Type of Ice:  Wet  Blue  None  Dry  Melted

Cooler Temp Read (°C): 5.8 Cooler Temp Corrected (°C): 5.9 Biological Tissue Frozen?  Yes  No  N/A  
 Temp should be above freezing to 6°C Correction Factor: 0.1 Date and Initials of Person Examining Contents: AS 7/26/18

USDA Regulated Soil (  N/A, water sample)  
 Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)?  Yes  No  
 Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)?  Yes  No  
 If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

	COMMENTS:
Chain of Custody Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Filled Out? <u>7/26/18 SO</u> <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No	2. No analysis listed. Bottle order used
Chain of Custody Relinquished? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	3.
Sampler Name and/or Signature on COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4. <u>AS</u>
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <u>AS 7/26/18</u>	5.
Short Hold Time Analysis (<72 hr)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
-Pace Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	10.
Filtered Volume Received for Dissolved Tests? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11. Note if sediment is visible in the dissolved container
Is sufficient information available to reconcile the samples to the COC? Matrix: <u>SL</u> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	12. Sorted samples based on bag they came in w/ label on it
All containers needing acid/base preservation have been checked? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13. <input type="checkbox"/> HNO <sub>3</sub> <input type="checkbox"/> H <sub>2</sub> SO <sub>4</sub> <input type="checkbox"/> NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , <2pH, NaOH >9 Sulfide, NaOH >12 Cyanide) Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Sample #
Headspace in VOA Vials (>6mm)? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Initial when completed: Lot # of added preservative:
Trip Blank Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Trip Blank Custody Seals Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Pace Trip Blank Lot # (if purchased):	

**CLIENT NOTIFICATION/RESOLUTION**

Field Data Required?  Yes  No

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/Resolution: \_\_\_\_\_

Project Manager Review: BA VC Date: 7/30/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers).



**Cravath & Tripp Lake Sediment Sampling - Planned Samples include all highlighted fields.**

Table 1. Sediment Sampling Parameters with Suggested Methods and Analyses

Parameter	Suggested Analytical Method (Suggested Detection Level) (mg/kg, dry weight unless noted)	Suggested Base Parameter Analyses <sup>1</sup>	
		Great Lakes or Urban/ Industrial	Inland Waters (Rural/ Forested)
<b>Inorganics - Metals</b>			
<b>Arsenic</b>	SW-846 3050B/6010B EPA 6010 or 7060 (5)	X	X
Barium	SW-846 3050B/6010B (0.2)		
<b>Cadmium</b>	SW-846 3050B/6010B EPA 7131 (0.6)	X	X
<b>Chromium (total)</b>	SW-846 3050B/6010B EPA 6010 or 7191 (0.6)	X	X
<b>Copper</b>	SW-846 3050B/6010B EPA 6010 or 7211 (0.5)	X	X
Cyanide	SW-846 9010B/9014 (0.4)		
<b>Lead</b>	SW-846 3050B/6010B EPA 6010 or 7421 (3)	X	X
Manganese	SW-846 3050B/6010B (0.1)		
<b>Mercury</b>	SW-846 7471A EPA 7471 (0.015)	X	X
<b>Nickel</b>	SW-846 3050B/6010B EPA 6010 (2)	X	X
Selenium	SW-846 3050B/6010B (8)	X	
<b>Zinc</b>	SW-846 3050B/6010B EPA 6010 or 7951 (2)	X	X
<b>Inorganics - Nutrients</b>			
Oil & Grease	SW-846 9070	X	
<b>Total Phosphorus</b>	EPA 365.2/365.3 or USGS I-6600-85 (9.9)	X	X
<b>Nitrate + Nitrite</b>	LACHAT 12-107-04-1-B (0.25)	X	X
<b>Ammonia-Nitrogen</b>	LACHAT 12-107-06-1-A (0.16)	X	X
<b>Total Kjeldahl Nitrogen</b>		X	X
<b>Organics</b>			
Aldrin	SW-846 8081 EPA 8081, 354440B, 3541 (0.01)		
Chlordane	SW-846 8081 EPA 8081, 354440B, 3541 (0.009)	X	
Dieldrin	SW-846 8081 EPA 8081, 354440B, 3541 (0.01)		
Endrin	SW-846 8081 EPA 8081, 354440B, 3541 (0.01)		
Heptachlor	SW-846 8081 EPA 8081, 354440B, 3541 (0.01)		
Lindane (Gamma BHC)	SW-846 8081 EPA 8081, 354440B, 3541 (0.01)		

<sup>1</sup> Suggested base parameter list reflects additions to NR347 Table 1, based on scientific research and experience with dredging projects.

Parameter	Suggested Analytical Method (Suggested Detection Level) (mg/kg, dry weight unless noted)	Suggested Base Parameter Analyses <sup>1</sup>	
		Great Lakes or Urban/ Industrial	Inland Waters (Rural/ Forested)
DDT	SW-846 8081 EPA 8081, 354440B, 3541 (0.01)	X	
DDD & DDE	SW-846 8081 EPA 8081, 354440B, 3541 (0.01)	X	
Toxaphene	SW-846 8081 (0.01)		
PCBs (Total)	SW-846 8081 EPA 8081, 3540B, 3541 (0.04)	X	X
		Tied to Fish Advisories	
2,3,7,8-dioxin, 2,3,7,8-furan and 15 2,3,7,8-substituted dioxin and furan congeners	EPA 8290 (1 – 10 pg/g)		
Total Organic Carbon	SW 846 8081 SW846-EPA 9060 (0.2%)	X	X
Polycyclic Aromatic Hydrocarbons (PAHs)	EPA 8310	X	
Naphthalene	(0.019)		
Phenanthrene	(0.017)		
Pyrene	(0.012)		
Fluorene	(0.058)		
2-Methylnaphthelene			
Acenaphthene	(0.017)		
Acenaphthylene	(0.021)		
Anthracene	(0.0071)		
Benzo (a) anthracene	(0.019)		
Benzo (a) pyrene	(0.023)		
Benzo (e) pyrene			
Benzo (b) fluoranthene	(0.032)		
Benzo (g,h,i) perylene	(0.022)		
Benzo (k) fluoranthene	(0.021)		
Chrysene	(0.0074)		
Dibenzo(a,h)anthracene	(0.008)		
Fluoranthene	(0.029)		
Indeno (1,2,3-cd) pyrene	(0.034)		
<b>Physical Tests</b>			
Particle Size Analysis – Sieve and Hydrometer Analysis	ASTM D-422 (%)	X	X
Moisture Content	ASTM D-2216 (%)	X	X
Atterburg Limits (Liquid Limit and Plastic Limit)	ASTM D4318 (as moisture content)		
Specific Gravity	ASTM D-854 (Ratio, unitless)		

# Intra-Regional Chain of Custody



Workorder: 10441036      Workorder Name: Cravath + Tripp Lake      Owner Received Date: 7/26/2018      Due Date: 8/9/2018

Received at:		Send To Lab:		Requested Analysis													
Pace Analytical Minnesota 1700 Elm Street Suite 200 Minneapolis, MN 55414 Phone (612)709-5046		Pace Analytical Billings MT 150 N Ninth Street Billings, MT 59101 Phone (406)254-7226															
Report To:		Preserved Containers		Comments													
Bob Michels		1															
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	ASTM D422					LAB USE ONLY						
1	Cravath-Sediment Sample 5	PS	7/24/2018 12:45	10441036001	Solid	X											
2	Tripp-Sediment Sample 1	PS	7/24/2018 14:15	10441036002	Solid	X											
3																	
4																	
5																	
Transfers	Released By	Date/Time	Received By	Date/Time													
1	<i>Wendy Vels</i>	7/30/18	<i>RD</i>														
2	<i>Bob Ex</i>		<i>M. Walter - Pace</i>	7/31/18 09:30													
3																	
4																	
Cooler Temperature on Receipt		1.4 °C	Custody Seal	<input checked="" type="radio"/> Y	<input type="radio"/> N	Received on Ice	<input checked="" type="radio"/> Y	<input type="radio"/> N	Samples Intact	<input checked="" type="radio"/> Y	<input type="radio"/> N						

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.  
 This chain of custody is considered complete as is since this information is available in the owner laboratory.



**Sample Condition Upon Receipt**

Client Name: Pace - M10 Project #: 10441036

Courier:  Fed Ex  UPS  USPS  Client  
 Commercial  Pace  Other: \_\_\_\_\_

Tracking Number: 7475 9834 1903

Custody Seal on Cooler/Box Present?  Yes  No Seals Intact?  Yes  No Optional: Proj. Due Date: \_\_\_\_\_ Proj. Name: \_\_\_\_\_

Packing Material:  Bubble Wrap  Bubble Bags  None  Other: \_\_\_\_\_ Temp Blank?  Yes  No

Thermometer Used:  160285052  140279186 Type of Ice:  Wet  Blue  None  Samples on ice, cooling process has begun

Cooler Temp Read: 1.6

Date and Initials of Person Examining Contents: MW 7/31/18

Cooler Temp Corrected: 1.4

Biological Tissue Frozen?  Yes  No

USDA Regulated Soil  Yes  No

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA? Check maps & Circle State

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)?  Yes  No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

	Comments:
Chain of Custody Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name and Signature on COC? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72 hr)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered Volume Received for Dissolved Tests? Note if sediment is visible in the dissolved container. <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels Match COC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes Date/Time/ID/Analysis Matrix: <u>Soil</u>	
All containers needing acid/base preservation have been checked? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13. <input type="checkbox"/> HNO <sub>3</sub> <input type="checkbox"/> H <sub>2</sub> SO <sub>4</sub> <input type="checkbox"/> NaOH <input type="checkbox"/> HCl
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH >9 Sulfide, NaOH>12 Cyanide) <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Sample #
Exceptions: VOA, Coliform, TOC, Oil and Grease, WI-DRO (water) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed: _____ Lot # of added preservative: _____
Headspace in VOA Vials (>6mm)? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Trip Blank Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Custody Seals Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased): <u>NA</u>	

**CLIENT NOTIFICATION/RESOLUTION**

Field Data Required?  Yes  No

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/Resolution: \_\_\_\_\_

Project Manager Review: \_\_\_\_\_ Date: \_\_\_\_\_

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

# Chain of Custody

Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WI

WI

40173294  
**Pace Analytical**  
 www.pacelabs.com  
 Page 27 of 38

Workorder: 10441036      Workorder Name: Cravath + Tripp Lake

Owner Received Date: 7/26/2018

Results Requested By: 8/9/2018

Report To: Bob Michels  
 Pace Analytical Minnesota  
 1700 Elm Street  
 Suite 200  
 Minneapolis, MN 55414  
 Phone (612)709-5046

Subcontract To: Pace Analytical Green Bay  
 1241 Bellevue Street  
 Suite 9  
 Green Bay, WI 54302  
 Phone (920)469-2436

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers		Total Organic Carbon 9060	Comments
						Unpreserved	Preserved		
1	Cravath-Sediment Sample 5	PS	7/24/2018 12:45	10441036001	Solid	1		X	LAB USE ONLY 001
2	Tripp-Sediment Sample 1	PS	7/24/2018 14:15	10441036002	Solid	1		X	002
3									
4									
5									

Transfers	Released By	Date/Time	Received By	Date/Time	Cooler Temperature on Receipt	Custody Seal	Y or N	Received on Ice	Y or N	Samples Intact	Y or N
1	<i>[Signature]</i>	7/30/18 15:58	<i>[Signature]</i>	7/31/18 09:00	0.0 °C	Y	N	Y	N	Y	N
2	<i>[Signature]</i>	7/31/18 09:00	<i>[Signature]</i>								
3											

\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.  
 This chain of custody is considered complete as is since this information is available in the owner laboratory.

# Chain of Custody

Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WI



Workorder: 10441036      Workorder Name: Cravath + Tripp Lake      Owner Received Date: 7/26/2018      Results Requested By: 8/30/2018

Report To: **Bob Michels**  
 Pace Analytical Minnesota  
 1700 Elm Street  
 Suite 200  
 Minneapolis, MN 55414  
 Phone (612)709-5046

Subcontract To: **Pace Analytical Green Bay**  
 1241 Bellevue Street  
 Suite 9  
 Green Bay, WI 54302  
 Phone (920)469-2436

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers		Requested Analysis	Comments
						Unpreserved	Preserved		
1	Cravath-Sediment Sample 5	PS	7/24/2018 12:45	10441036001	Solid	1		Metals by 6010 ICP	
2	Tripp-Sediment Sample 1	PS	7/24/2018 14:15	10441036002	Solid	1		Total Organic Carbon 9060	
3									
4									
5									
Transfers									
1	Released By		Date/Time	Received By		Date/Time			
2									
3									
Cooler Temperature on Receipt      °C      Custody Seal      Y      or      N      Received on Ice      Y      or      N      Samples Intact      Y      or      N									
6010: As, Cd, Cr, Cu, Pb, Ni, Zn									

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.  
 This chain of custody is considered complete as is since this information is available in the owner laboratory.



1241 Bellevue Street, Green Bay, WI 54302

Document Name:  
Sample Condition Upon Receipt (SCUR)

Document No.:  
F-GB-C-031-Rev.07

Document Revised: 25Apr2018

Issuing Authority:  
Pace Green Bay Quality Office

### Sample Condition Upon Receipt Form (SCUR)

Project #:

WO#: 40173294



40173294

Client Name: PACE-MN

Courier:  CS Logistics  Fed Ex  Speedee  UPS  Waltco  
 Client  Pace Other: \_\_\_\_\_

Tracking #: 1789786

Custody Seal on Cooler/Box Present:  yes  no Seals intact:  yes  no

Custody Seal on Samples Present:  yes  no Seals intact:  yes  no

Packing Material:  Bubble Wrap  Bubble Bags  None  Other \_\_\_\_\_

Thermometer Used SR-22 Type of Ice:  Blue  Dry  None  Samples on ice, cooling process has begun

Cooler Temperature Uncorr: 0.0 / Corr: 0.0

Temp Blank Present:  yes  no Biological Tissue is Frozen:  yes  no

Temp should be above freezing to 6°C.

Biota Samples may be received at ≤ 0°C.

Person examining contents:

Date: 7/11/18

Initials: JM

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	4. <u>IRWO</u> <u>Jan 7/11/18</u>
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5.
- VOA Samples frozen upon receipt	<input type="checkbox"/> Yes <input type="checkbox"/> No	Date/Time:
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7.
Sufficient Volume:		8.
For Analysis: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No MS/MSD: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
-Pace Containers Used:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
-Pace IR Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	12. <u>Client label ≠ IRWO label - ID:001 as "CEAATH - SAMPLE 5"; ID:002 as "TR: PP-SAMPLE 1"</u> <u>Jan 7/13/18</u>
-Includes date/time/ID/Analysis Matrix: <u>S</u>		
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

#### Client Notification/ Resolution:

If checked, see attached form for additional comments

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: [Signature]

Date: 7/31/18





# Chain of Custody

Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WI

**MO# : 12113054**  
  
**12113054**

Workorder: 10441036      Workorder Name: Cravath + Tipp Lake      Owner Received Date: 7/26/2018      Results Requested By: 8/9/2018  
 Report To: Subcontract To: Requested Analysis:

Bob Michels  
 Pace Analytical Minnesota  
 1700 Elm Street  
 Suite 200  
 Minneapolis, MN 55414  
 Phone (612)709-5046

Pace Analytical Virginia MN  
 315 Chestnut Street  
 Virginia, MN 55792  
 Phone (218)742-1042

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers		Nitrate + Nitrite	Nitrogen, Ammonia	Total Kjeldahl Nitrogen	Total Phosphorus	LAB USE ONLY
						Unpreserved						
1	Cravath-Sediment Sample 5	PS	7/24/2018 12:45	10441036001	Solid	2		X	X	X	X	
2	Tipp-Sediment Sample 1	PS	7/24/2018 14:15	10441036002	Solid	2		X	X	X	X	
3												
4												
5												

Transfers	Released By	Date/Time	Received By	Date/Time	Cooler Temperature on Receipt	Custody Seal	Received on Ice	Samples Intact
1	<i>[Signature]</i>	7/30/18	B Mathews	7/31/18	1.4°C	Door N	Door N	Y or N
2	<i>[Signature]</i>	7/30/18	B Mathews	7/31/18				
3								

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.  
 This chain of custody is considered complete as is since this information is available in the owner laboratory.

**Sample Condition Upon Receipt**

Client Name: Pace Mpls Project #: \_\_\_\_\_

**WO#: 12113054**  
 PM: HRZ Due Date: 08/09/18  
 CLIENT: PACE MPLS

Courier:  Fed Ex  UPS  USPS  Client  
 Commercial  Pace  Other: SD

Tracking Number: \_\_\_\_\_

Custody Seal on Cooler/Box Present?  Yes  No Seals Intact?  Yes  No

Packing Material:  Bubble Wrap  Bubble Bags  None  Other: \_\_\_\_\_ Temp Blank?  Yes  No

Thermometer Used:  140792808 Type of Ice:  Wet  Blue  None  Samples on ice, cooling process has begun

Cooler Temp Read °C: 1.1 Cooler Temp Corrected °C: 1.4 Biological Tissue Frozen?  Yes  No  NA  
 Temp should be above freezing to 6°C Correction Factor: 10.3 Date and Initials of Person Examining Contents: BM 7/31/18

Comments: \_\_\_\_\_

Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name and Signature on COC?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5. If Fecal: <input type="checkbox"/> <8 hours <input type="checkbox"/> >8, <24 hours <input type="checkbox"/> >24 hours
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered Volume Received for Dissolved Tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes Date/Time/ID/Analysis Matrix: <u>SL</u>		
All containers needing acid/base preservation will be checked and documented in the pH logbook.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
Headspace in VOA Vials (>6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

**CLIENT NOTIFICATION/RESOLUTION**

Field Data Required?  Yes  No

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/Resolution: \_\_\_\_\_

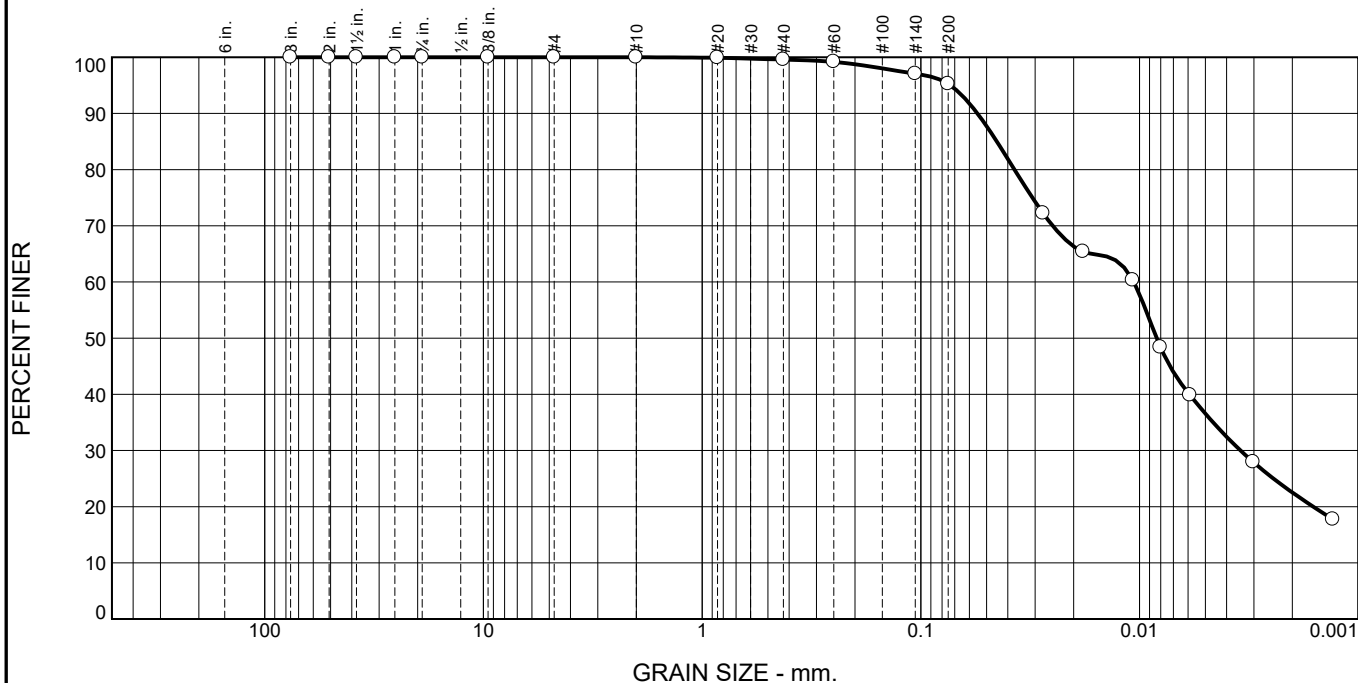
FECAL WAIVER ON FILE Y N

TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: Carrigan Date: 8/1/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	0	0	0	5	58	37

TEST RESULTS (ASTM D422)			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3	100		
2	100		
1.5	100		
1	100		
.75	100		
.375	100		
#4	100		
#10	100		
#20	100		
#40	100		
#60	99		
#140	97		
#200	95		
0.0276 mm.	72		
0.0181 mm.	65		
0.0107 mm.	60		
0.0080 mm.	48		
0.0059 mm.	40		
0.0030 mm.	28		
0.0013 mm.	18		

\* (no specification provided)

**Material Description**

silt

**Atterberg Limits (ASTM D 4318)**

PL= NP                      LL= NV                      PI=

**Classification**

USCS (D 2487)= ML                      AASHTO (M 145)= A-4(0)

**Coefficients**

D<sub>90</sub>= 0.0551                      D<sub>85</sub>= 0.0449                      D<sub>60</sub>= 0.0106  
D<sub>50</sub>= 0.0083                      D<sub>30</sub>= 0.0035                      D<sub>15</sub>=  
D<sub>10</sub>=                                      C<sub>u</sub>=                                      C<sub>c</sub>=

Remarks


---

Date Received: 7/26/18                      Date Tested: 8/7/18  
Tested By: Kimberly Pohlman  
Checked By: Rhonda Johnson  
Title: Lab Manager

Location: Cravath-Sediment Sample 5  
Sample Number: 10441036-1

Date Sampled: 7/24/18

**Pace Analytical Services, Inc.**

Client: Ayers Associates  
Project: Cravath + Tripp Lake

**Billings, MT**

Project No:

Figure



**GRAIN SIZE DISTRIBUTION TEST DATA**

8/8/2018

**Client:** Ayers Associates

**Project:** Cravath + Tripp Lake

**Location:** Cravath-Sediment Sample 5

**Sample Number:** 10441036-1

**Material Description:** silt

**Sample Date:** 7/24/18

**Date Received:** 7/26/18      **PL:** NP

**LL:** NV

**PI:** NP

**USCS Classification:** ML

**AASHTO Classification:** A-4(0)

**Grain Size Test Method:** ASTM D422

**Tested By:** Kimberly Pohlman

**Test Date:** 8/7/18

**Checked By:** Rhonda Johnson

**Title:** Lab Manager

**Sieve Test Data**

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer		
728.81	582.18	3	0.00	0.00	100		
		2	0.00	0.00	100		
		1.5	0.00	0.00	100		
		1	0.00	0.00	100		
		.75	0.00	0.00	100		
		.375	0.00	0.00	100		
		#4	0.00	0.00	100		
		#10	0.00	0.00	100		
		55.94	0.00	#20	0.05	0.00	100
				#40	0.18	0.00	100
#60	0.23			0.00	99		
#140	1.18			0.00	97		
#200	1.01			0.00	95		

**Hydrometer Test Data**

Hydrometer test uses material passing #200

Percent passing #200 based upon complete sample = 95

Weight of hydrometer sample = 55.94

Automatic temperature correction

Composite correction (fluid density and meniscus height) at 20 deg. C = -5

Meniscus correction only = 0.0

Specific gravity of solids = 2.65

Hydrometer type = 152H

Hydrometer effective depth equation:  $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	22.0	47.0	42.4	0.0133	47.0	8.6	0.0276	72.2
5.00	22.0	43.0	38.4	0.0133	43.0	9.2	0.0181	65.4
15.00	22.0	40.0	35.4	0.0133	40.0	9.7	0.0107	60.3
30.00	22.0	33.0	28.4	0.0133	33.0	10.9	0.0080	48.4
60.00	22.0	28.0	23.4	0.0133	28.0	11.7	0.0059	39.9
250.00	22.0	21.0	16.4	0.0133	21.0	12.9	0.0030	27.9
1440.00	22.0	15.0	10.4	0.0133	15.0	13.8	0.0013	17.7

**Pace Analytical Services, Inc.**

**Hydrometer Test Data (continued)**

<b>Elapsed Time (min.)</b>	<b>Temp. (deg. C.)</b>	<b>Actual Reading</b>	<b>Corrected Reading</b>	<b>K</b>	<b>Rm</b>	<b>Eff. Depth</b>	<b>Diameter (mm.)</b>	<b>Percent Finer</b>
----------------------------	------------------------	-----------------------	--------------------------	----------	-----------	-------------------	-----------------------	----------------------

**Fractional Components**

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0	0	0	0	0	0	5	5	58	37	95

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
			0.0016	0.0035	0.0059	0.0083	0.0106	0.0373	0.0449	0.0551	0.0733

<b>Fineness Modulus</b>
0.03



**GRAIN SIZE DISTRIBUTION TEST DATA**

8/8/2018

**Client:** Ayers Associates

**Project:** Cravath + Tripp Lake

**Location:** Tripp-Sediment Sample 1

**Sample Number:** 10441036-2

**Material Description:** silt

**Sample Date:** 7/24/18

**Date Received:** 7/26/18      **PL:** NP

**LL:** NV

**USCS Classification:** ML

**AASHTO Classification:** A-4(0)

**Grain Size Test Method:** ASTM D422

**Tested By:** Kimberly Pohlman

**Test Date:** 8/7/18

**Checked By:** Rhonda Johnson

**Title:** Lab Manager

**Sieve Test Data**

Dry Sample and Tare (grams)	Tare (grams)	Sieve Opening Size	Weight Retained (grams)	Sieve Weight (grams)	Percent Finer		
722.67	578.50	3	0.00	0.00	100		
		2	0.00	0.00	100		
		1.5	0.00	0.00	100		
		1	0.00	0.00	100		
		.75	0.00	0.00	100		
		.375	0.00	0.00	100		
		#4	0.00	0.00	100		
		#10	0.00	0.00	100		
		52.92	0.00	#20	0.12	0.00	100
				#40	0.30	0.00	99
#60	0.44			0.00	98		
#140	1.73			0.00	95		
#200	1.51			0.00	92		

**Hydrometer Test Data**

Hydrometer test uses material passing #200

Percent passing #200 based upon complete sample = 92

Weight of hydrometer sample = 52.92

Automatic temperature correction

Composite correction (fluid density and meniscus height) at 20 deg. C = -5

Meniscus correction only = 0.0

Specific gravity of solids = 2.65

Hydrometer type = 152H

Hydrometer effective depth equation:  $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	22.0	41.0	36.4	0.0133	41.0	9.6	0.0291	63.5
5.00	22.0	37.0	32.4	0.0133	37.0	10.2	0.0190	56.5
15.00	22.0	31.0	26.4	0.0133	31.0	11.2	0.0115	46.0
30.00	22.0	22.0	17.4	0.0133	22.0	12.7	0.0087	30.3
60.00	22.0	22.0	17.4	0.0133	22.0	12.7	0.0061	30.3
250.00	22.0	16.0	11.4	0.0133	16.0	13.7	0.0031	19.9
1440.00	22.0	11.0	6.4	0.0133	11.0	14.5	0.0013	11.2

**Pace Analytical Services, Inc.**

**Fractional Components**

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0	0	0	0	0	1	7	8	65	27	92

D <sub>5</sub>	D <sub>10</sub>	D <sub>15</sub>	D <sub>20</sub>	D <sub>30</sub>	D <sub>40</sub>	D <sub>50</sub>	D <sub>60</sub>	D <sub>80</sub>	D <sub>85</sub>	D <sub>90</sub>	D <sub>95</sub>
		0.0023	0.0031	0.0060	0.0104	0.0126	0.0248	0.0481	0.0559	0.0670	0.1034

<b>Fineness Modulus</b>
0.05



# Appendix B

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**Quest Construction Data Network**  
**VirtuBid™ Online Bidding User Guide**

**Contact Support – 952-233-1632**

**Support@QuestCDN.com**

Welcome to VirtuBid™ with the Quest Construction Data Network! VirtuBid™ (vBid™) is a state-of-the-art electronic bidding service that benefits the bidder by allowing more time for last minute price adjustments. Bidders can now submit their numbers and forms within seconds of bid closing to ensure the most competitive bids, simply by the push of a button.

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‘Bidder must download, complete, and submit (or replace) the following files for bid submission.’ ...	9
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## YOU MUST CREATE YOUR 'ONLINE BID ID CODE' BEFORE ACCESSING ONLINE BIDDING.

Prior to participating in Online Bidding, be sure to set up your company's 'Online Bid ID Code'. Your 'Online Bid ID Code' is your digital signature. You may also need to update your QuestCDN password to higher security if needed (*Online Bidding new password minimum is 8 characters with one uppercase, one lowercase and one numeral*).

**Updating passwords and creating an 'Online Bid ID Code' can only be done by the main account holder.**

## What is the 'Online Bid ID Code' and **where can I find it on QuestCDN?**

The 'Online Bid ID Code' is a passcode required at bid submission and is the digital signature for the company. The code is created by the main account holder **before** account users can access VirtuBid™. The code can be accessed, viewed or updated by logging into QuestCDN with the main account holder username and password.

**Make sure to write down the code or obtain the code from the main account holder before submitting a bid.**

## FINDING THE COMPANY ONLINE BID ID CODE

There are two ways to access the 'Online Bid ID Code'.

1. A link to access the code is located on the bid submission page. (*Illustration 1.*) Click **'My Account'** on the submission page of VirtuBid™. A new browser window will open. Sign into QuestCDN using the main account holder username and password. Under the 'User Info & Online Bid ID Code' tab, (*Illustration 2*) click the eye icon to view an existing code. Click the VirtuBid™ opened browser tab to go back to the online bid submission window. Enter the code, check 'I Agree' and click 'Submit'

**Only the main account holder username and password can access the 'Online Bid ID Code'.**

**A link to access the code is located on the bid submission page.**

Print

**Illustration 1** QUESTCDN'S TERMS OF USE FOR BIDDERS

This Terms of Use for Bidders Agreement ("Agreement") is between Quest Construction Data Network, LLC, P.O. Box 412, Spring Park, Minnesota 55384-0412 ("QUESTCDN") and you (which may be identified in this agreement as "You," "Your," or "User"). By accepting this Agreement you are accepting its terms on behalf of both you personally and any entity for which you are an agent of or appear to represent as indicated by the information you provide in registering with the QUESTCDN Web site and the Quest VirtuBid (hereafter vBid) services, and the terms "You," "Your," and "User" shall include both you personally and that entity.

This Agreement is in addition to any other terms and conditions or other agreements QUESTCDN presents to You in writing either on QUESTCDN's Web site or as a part of the Quest vBid services and You agree to as a part of using its Web site or the Quest vBid services, including without limitation the Construction Data Network, LLC Web site Terms of Use, contain the terms and conditions that govern Your use of the QUESTCDN Web site and the Quest vBid services. These agreements constitute the entire agreement among the parties.

Enter your company's On-Line Bid ID code:  Enter On-Line Bid ID Code Here   This ID code is your company's On-Line Bid ID Code. If you do not remember your company's ON LINE BID ID Code, you may view or change it at QuestCDN.com. For quick login access to your account, click this link My Account Info tab. Only the account administrator has access to this page.

I Agree Check 'I Agree'

By clicking the I Agree checkbox and entering your On-Line Bid ID code you are agreeing to the terms displayed

Click 'My Account' to access the 'Online Bid ID Code'

BID POSTINGS MESSAGE CENTER ONLINE BIDDING INDUSTRY DIRECTORY HELP **MY ACCOUNT**

**Illustration 2**

Company Info **User Info & Online Bid ID Code** Membership Profile Payment Transactions & Receipts

Username : test free \*

Password : ..... \*

Minimum eight characters including one uppercase, one lowercase, and one number. Meets Quest requirements

Confirm Password : Confirm password

Online Bid ID Code (This code is used to publish or submit a vBid)

On-line Bid ID Code : Password1 ..... \*

Minimum eight characters including one uppercase, one lowercase, and one number. Meets Quest requirements

Confirm On-line Bid ID Code : Confirm Online Bid Id Code

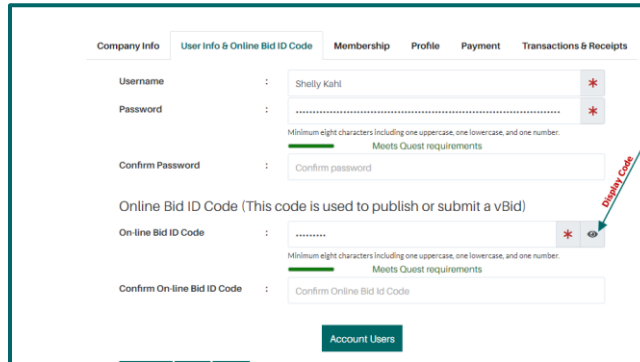
Log into

- QuestCDN using the main account holder username and password, click 'My Account' at the top of the page. Select 'User Info & Online Bid ID Code' tab and click the eye icon to view or edit an existing code (Illustration 2.)

## VirtuBid™ (vBid) Online Bidding

### Create an Online Bid ID Code

Log into QuestCDN at <https://questcdn.com/auth/login>. Click 'My Account' at the top of the page. Click the 'User Info & Online Bid ID Code' tab. Add or update your 'Online Bid ID Code'. Click the eye icon symbol to view the code when black dots are populated in the fields. *(Only the QuestCDN main account holder can access 'My Account' and update/view the code).*

The image shows a screenshot of the QuestCDN user management interface. At the top, there are tabs for 'Company Info', 'User Info & Online Bid ID Code', 'Membership', 'Profile', 'Payment', and 'Transactions & Receipts'. The 'User Info & Online Bid ID Code' tab is active. The form contains several input fields: 'Username' with the value 'Shelly Kaht', 'Password', 'Confirm Password', 'Online Bid ID Code (This code is used to publish or submit a vBid)', and 'Confirm On-line Bid ID Code'. Each of these fields has a red asterisk icon to its right. Below the 'Online Bid ID Code' field, there is a green progress bar and the text 'Meets Quest requirements'. A red arrow points to the eye icon next to the 'Online Bid ID Code' field, with the text 'Display Code' written next to it. At the bottom of the form, there is a blue button labeled 'Account Users'.

### Online Bid ID Code Explanation

The 'Online Bid ID Code' is a passcode and acts as your digital signature. It is required to submit an online bid through the QuestCDN online bidding system, VirtuBid™.

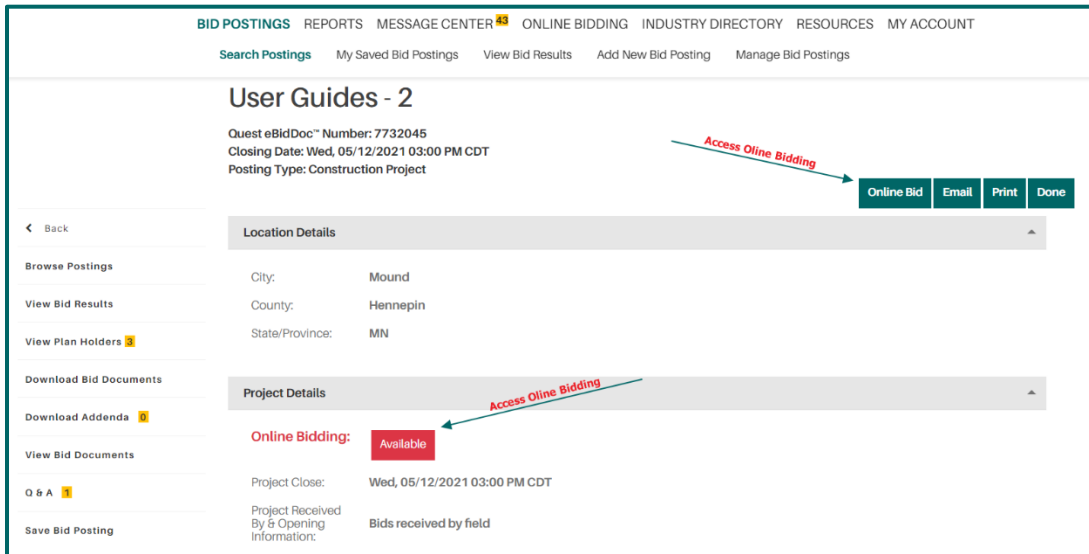
- An 'Online Bid ID Code' must be created before users can access VirtuBid™. The code is established, modified and viewable by QuestCDN main account holder.
- This code is the digital signature that allows submission of a bid on behalf of the company. QuestCDN does not have access to codes for security purposes.
- The code is found in 'My Account,' in the 'User Info & Online Bid ID Code' tab. QuestCDN also provides a link to 'My Account' located in the 'Submit Bid' page within VirtuBid™ to retrieve the 'Online Bid ID Code'.
- The VirtuBid™ login page may prompt to update the current QuestCDN password due to higher security. *(Online Bidding new password minimum is 8 characters with at least one uppercase, one lowercase and one numeral).*
- The VirtuBid™ login page will prompt a message if a code is not created.

### Accessing Online Bidding

There are two ways to access QuestCDN online bidding:

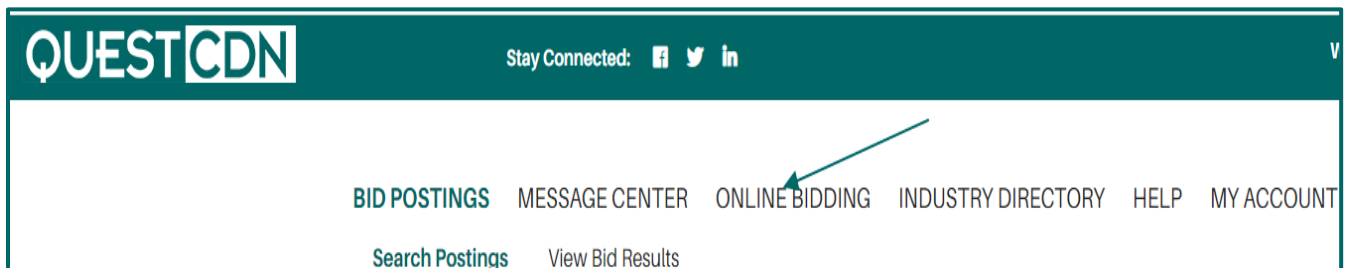
1. **Online bidding through the bid posting page**

Enter project number and click the search button. To submit an electronic bid and access the VirtuBid™ system, companies must be a plan holder. Download the eBidDoc™ from the bid posting page. On the 'Bid Posting' page, click the red Online Bidding 'Available' button under the 'Project Document Information' section or the 'Online Bid' button at the top of the page and log into VirtuBid™ (vBid) using your username and password. A password update may be required due to security requirements *(the password must contain a minimum of 8 characters with one uppercase, one lowercase and one numeral. If needed, go to 'My Account' and 'User Info & Online Bid ID Code' to update the password.)*



## 2. Online bidding through the VirtuBid home page

Current and past electronic bid postings (eBidDoc™ that has been downloaded) will display on this page. Click 'Online Bidding' from the main navigation to log into VirtuBid™ (vBid) home page to access online bids. Log in using the QuestCDN username and password. A password update may be required due to security requirements (*the password must contain a minimum of 8 characters with one uppercase, one lowercase and one numeral. If needed, go to 'My Account' and 'User Info & Online Bid ID Code' to update the password.*)






## VirtuBid™ (vBid) Home Page

The VirtuBid™ (vBid) home page is grouped by searchable sections. Current and past bid opportunities are located on the page. Qualification and bid worksheet information is sorted and saved by section for future reference. Click the +/- to expand/contract the section lists. Click the underlined project name to access the qualification, bid worksheet and submit pages.

1. 'Bids Started'
2. 'Bids Available'
3. 'Bids Submitted'
4. 'Bids Closed (Bid submitted)'
5. 'Bids Closed (No bid submitted)'


Contact Quest    Logout

Providing State-of-the-Art Bid Management Systems for Public Construction, RFPs, and General Goods & Services Procurement since 1999

Home
QuestCDN Support

**Bids Started** (Click the +/- to expand/contract the list)

Name	City	County	State	Bid Date	Solicitor	Owner	Last Modified	User
<a href="#">BID VIEW BID-MEMBER</a>	City	County	MN	12/31/2030 01:00:00 PM U		Project Owner	03/31/2020 08:43 A	QuestCDN Suj
<a href="#">V-Bid Training Demo - PUB</a>	City	County	MN	12/20/2050 02:00:00 PM U		Project Owner	05/13/2021 12:19 A	QuestCDN Suj
<a href="#">Fairview Bridge Demo</a>	Fairview	Denton	TX	05/19/2022 05:00:00 PM U		City of Fairvie	01/22/2021 02:39 F	Robert Morga
<a href="#">vBid Video</a>	Watertown	Hennepin	MN	07/02/2021 12:00:00 PM U		Matt	02/17/2021 04:46 F	QuestCDN Suj

**Bids Available** (Click the +/- to expand/contract the list)

No projects meet this criteria

**Bids Submitted** (Click the +/- to expand/contract the list)

Name	City	County	State	Bid Date	Solicitor	Owner	Last Submitted	User
<a href="#">BID PUBLISHED</a>	City	County	MN	12/31/2030 03:00:00 PM U		Project Owner	03/17/2021 09:19 A	QuestCDN Suj

**Bids Closed (Bid submitted)** (Click the +/- to expand/contract the list)

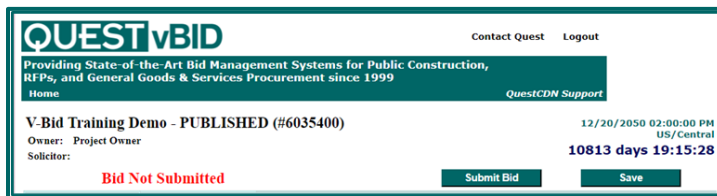
Name	City	County	State	Bid Date	Solicitor	Owner	Last Submitted	User
<a href="#">Mock Bid</a>	Center City	Chisago	MN	12/10/2020 11:00:00 AM U		Chisago Count	12/09/2020 03:40 F	QuestCDN Suj
<a href="#">BID CLOSED EXAMPLE</a>	City	County	MN	01/10/2020 12:00:00 PM U		Project Owner	01/09/2020 10:50 A	QuestCDN Suj
<a href="#">Test Solicitor Pays ALL</a>	City	County	MN	01/06/2020 01:15:00 PM U		Test Owner	01/06/2020 02:02 F	QuestCDN Suj
<a href="#">TEST - Solicitor Pays vBid</a>	City	County	MN	01/06/2020 12:30:00 PM U		Owner Test	01/06/2020 01:25 F	QuestCDN Suj
<a href="#">MOCK BID(TEST)- Not Acti</a>	County	Mississippi	MS	02/15/2018 01:30:00 PM U		Mississippi Co	02/13/2018 10:55 A	QuestCDN Suj
<a href="#">Dekalb Street Repair 5th th</a>	DeKalb	Dekalb	IL	06/20/2019 02:00:00 PM U		Dekalb IL, Cit	06/07/2019 08:12 A	QuestCDN Suj
<a href="#">CT Consultants Demo</a>	Demo	Demo	OH	03/21/2018 12:00:00 PM U		CT Consultant	03/19/2018 05:14 F	QuestCDN Suj
<a href="#">ZN-19-XX - Test Project</a>	Fargo	Cass	ND	11/15/2019 10:00:00 AM U		Fargo ND, Cit	11/14/2019 10:29 A	Robert Morga
<a href="#">DEMO 1 - Carbe Colony Co</a>	Fort Wayne	Allen	IN	07/30/2019 02:00:00 PM U		Fort Wayne IN	06/25/2019 10:05 A	QuestCDN Suj
<a href="#">Test Fridley Bid One</a>	Fridley	Anoka	MN	06/19/2020 10:03:00 AM U		City of Fridley	06/19/2020 10:00 A	QuestCDN Suj

**Bids Closed (No bid submitted)** (Click the +/- to expand/contract the list)

Name	City	County	State	Bid Date	Solicitor	Owner	User
<a href="#">2018 County Wide Route C</a>		Ward	ND	02/27/2018 02:00:00 PM U		Ward County,	QuestCDN Suj
<a href="#">503493 - Marston Treatme</a>		Dnever	CO	07/31/2018 01:00:00 PM U		Denver Water	QuestCDN Suj
<a href="#">503196 - 2018 Aerial Cross</a>		Arapahoe & D	CO	08/08/2018 10:00:00 AM U		Denver Water	QuestCDN Suj
<a href="#">2019 County Wide Culvert</a>		Ward	ND	01/08/2019 02:00:00 PM U		Ward County,	QuestCDN Suj
<a href="#">2019 County Wide Culvert</a>		Ward	ND	01/08/2019 02:00:00 PM U		Ward County,	QuestCDN Suj
<a href="#">2019 Gravel Hauling &amp; Res</a>		Ward	ND	03/07/2019 02:00:00 PM U		Ward County,	QuestCDN Suj
<a href="#">Replacement of 72</a>		Ward	ND	04/30/2020 02:00:00 PM U		Ward County,	QuestCDN Suj
<a href="#">2021 Water Base Pavemen</a>		Ward	ND	03/03/2021 02:00:00 PM U		Ward County,	QuestCDN Suj
<a href="#">Fueling Station Installation</a>		Ward	ND	03/18/2021 02:00:00 PM U		Ward County,	QuestCDN Suj
<a href="#">DEMO -Grayson County Ro</a>	Clarkson	Grayson	KY	06/04/2020 10:00:00 AM U		Kentucky Trar	QuestCDN Suj
<a href="#">DEMO - Jefferson County C</a>	Louisville	Jefferson	KY	08/31/2020 10:00:00 AM U		Kentucky Trar	QuestCDN Suj
<a href="#">PLATTEVILLE WRRF - BLOV</a>	Platteville	Grant County	WI	02/04/2021 02:00:00 PM U		City of Plattev	QuestCDN Suj
<a href="#">503037 Conduit No 16 W. S</a>	--	Jefferson	CO	03/22/2018 10:00:00 AM U		Denver Water	QuestCDN Suj
<a href="#">Contract 503229 - Foothills</a>	-----	Douglas	CO	08/23/2018 10:00:00 AM U		Denver Water	QuestCDN Suj
<a href="#">Abbotsford 2018 Street &amp; U</a>	Abbotsford	Marathon Cou	WI	04/02/2018 10:00:00 AM U		City of Abbbot	QuestCDN Suj

## VirtuBid™ (vBid)

Bid title, QuestCDN eBidDoc™ number, owner, solicitor, bid closing date, time, time zone, a running bid countdown date/time clock and submitted/not submitted bid status are located at the top of VirtuBid™. The 'Home' tab returns to the VirtuBid™ home page. Click the save button periodically to save work and refresh the page. There is a 60-minute security time out. Information not saved will be lost. All uploaded and entered information will be saved. Log out of VirtuBid and re-enter as many times as needed to revise the work.



## Qualification Information

### Bid Bond Section

Upload a completed bid bond file and/or enter the Surety 2000 'Bond id' number to complete the bid bond information. (This information depends on the solicitor requirements.) Submit only one if both options are offered.

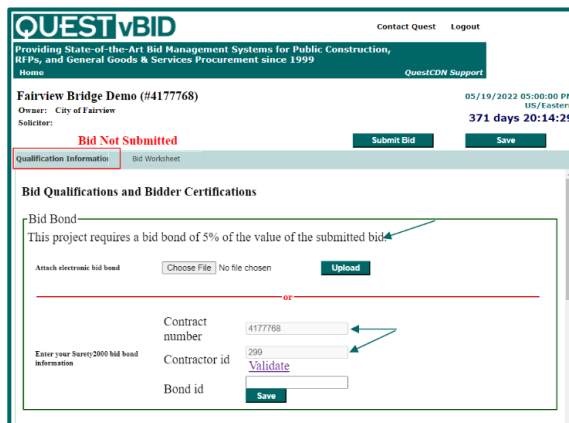
### Electronic Bid Bond

- Upload file containing signed bid bond information

### Surety2000 Bid Bond

- 'Contract Number' (QuestCDN eBidDoc™ number)
- 'Contractor ID' (QuestCDN member number)

Provide the 'Contract number' and 'Contractor id' to the insurance agency. The agent must use these two numbers when requesting a Surety2000 'Bond Id' validation number. The 'Contractor id' (Surety2000 refers to this as the "State vendor ID number") is the QuestCDN member number and will always stay the same. The 'Contract number' will change with each project and is the QuestCDN bid posting eBidDoc™ No. Both the 'Contract number' and 'Contractor id' are displayed in the Bid Bond fields. The contractor number can also be found in 'My Account' under the 'Company Info & Online Bid ID' tab.



### 'Bidder must download the following files for bid submission' (DOWNLOAD ONLY)

Each required download has a file name and download link. Download all documents listed by clicking the 'download' link. Save the document. Click VirtuBid™ 'Save' button on the top or bottom right of the page to update and refresh the information. A red 'x' indicates the requirement is not complete. Files may be downloaded and saved multiple times.



The downloaded date of the file will display after downloading the documents and refreshing the page. A green check mark '✓' replaces the previous red 'x'. The green check indicates the requirement has been completed.



### 'Bidder must download, complete, and submit (or replace) the following files for bid submission.'

Click the 'download' link to download each document. Save the document to the computer. A red 'x' indicates the requirement is not complete. Click the VirtuBid™ 'Save' button on the top or bottom right of the page to update the page with the downloaded date. If the file is in a fillable format, complete all information and save each document to your computer. If the file is not in a fillable format, print and complete the forms manually. Scan and save documents to the computer. Select '**Choose File/Browse**' button to retrieve each file from the computer. Select the '**Upload**' button to upload the file. Click the VirtuBid™ '**Save**' button. Exit VirtuBid™ after saving the completed work. All information will be saved upon return. **Note: If needed, click 'Choose File/Browse' to retrieve a new file that replaces the existing uploaded file.**

- **Completed Upload** - The name of the uploaded document is displayed on the right side of the 'Upload' button. A green check mark '✓' indicates the process has been successfully completed. (**Arrow A**)
- **Download File** – 'downloading required then click vBid Save' message indicates the file is not downloaded. Download, complete and upload the completed file before submitting a bid. A red 'x' will indicate the process is incomplete. (**Arrow C**)
- **Downloaded Date** - Downloaded date of the documents is shown on the right side of the 'Upload' button. Upload the completed file before submitting a bid. A red 'x' indicates the process is incomplete. (**Arrow B**)
- **Check or Replace File** – Click the uploaded underlined document name to review uploaded documents for accuracy and completion. Click '**Choose File/Browse**' to retrieve a new file that replaces the existing uploaded file. Select '**Upload**' to upload the replacement file and click '**Save**'. (**Arrow A**)

Bidder must download, complete, and submit (or replace) the following files for bid submission.

✓ Responsible Contractor Forms- complete and sign.pdf	<a href="#">download</a>	Choose File	No file chosen	Upload	<a href="#">Responsible Contractor Forms- complete and sign.pdf</a> uploaded 21-May-2019
✗ Affidavit of Organization and Authority - complete and sign.pdf	<a href="#">download</a>		downloading required then click vBid SAVE	Upload	
✗ Qualification Insurance - fillout and upload.pdf	<a href="#">download</a>	Choose File	No file chosen	Upload	<a href="#">downloaded 21-May-2019</a>
✓ A. Document 004547 - Certification of compliance MN Statute.pdf	<a href="#">download</a>	Choose File	No file chosen	Upload	<a href="#">A. Verification of Compliance with MN Statue 16c.285.pdf</a> uploaded 21-May-2019

Cancel      Submit Bid      Save

**'Bidder must upload the following files for bid submission'**

Select **'Choose File/Browse'** button to retrieve and attach a required file from the computer. Select the **'Upload'** button to upload the file. Click the VirtuBid™ **'Save'** button on the top or bottom right of the page. All information will be saved upon exiting the VirtuBid™ system. Click the uploaded underlined document to review the file for accuracy and completion. If needed, click 'Choose File/Browse' to retrieve a new file that **replaces** the existing uploaded file. Select **'Upload'** to upload a replacement file and click VirtuBid™ **'Save'**. A red 'x' indicates the requirement is not complete. . A green check mark '✓' indicates the requirement has been successfully completed.

Bidder must upload the following files for bid submission.

✓ 1. Introductory Letter	Choose File	<b>Introductory Letter.pdf</b>	Upload	<a href="#">Introductory Letter.pdf</a> uploaded 06-Jan-2021
✗ 2. Narrative of Vendor's Approach	Choose File	No file chosen	Upload	
✗ 3. Qualifications Section	Choose File	No file chosen	Upload	
✗ 4. Project Approach	Choose File	No file chosen	Upload	
✗ 5. Demonstration of Ability	Choose File	No file chosen	Upload	
✗ 6. References	Choose File	No file chosen	Upload	
✗ 7. Consultant's Expectations	Choose File	No file chosen	Upload	
✗ 8. Cost Proposal	Choose File	No file chosen	Upload	

## Post Letting Information

Post letting information allows submission of documents requested after the bid close and is similar to the sections above. There may be a post letting 'Deadline' date and time entered. All documents must be uploaded before the date/time expires. A red 'x' indicates the requirement is not complete. A green check mark '✓' indicates the requirement has been successfully completed. **There is no submit process required upon completion of the upload**. Documents are available to the solicitor/owner immediately. Submitting post letting documents after the bid close is not allowed if a successful bid was not submitted.

Post letting information submittals Deadline: 21-JUL-2021 12:00 PM

Download, complete, and submit (or replace) the following files.

A.Complete List of Subcontractors- complete and sign.pdf download Choose File No file chosen Upload downloaded 21-May-2019

Upload the following files.

Business Licence Choose File No file chosen Upload

Cancel Submit Bid Save

## Download Addenda

Bids will not be submitted if all addenda are not downloaded from the **main QuestCDN** system. A field on the qualification page indicates 'There are (#) unread addenda for this project. Follow ['this link'](#) to download them on QuestCDN'. (opens new window)'

There are 1 unread addenda for this project. Follow [this link](#) to download them on QuestCDN (opens new window).

6. Click ['this link'](#) to open/return to the bid posting page and download any missed addenda.
7. Download all addenda and review the information if unsure of missed addendum to download.
8. Choose the VirtuBid™ open browser tab. May need to refresh/reload the page to update the addenda information. To refresh/reload the page, click the refresh icon symbol at the top of the browser or right click the mouse and choose 'reload'/'refresh' option from the drop-down box. The VirtuBid™ qualification page will update and read 'All Addenda have been downloaded'.

QUESTvBID

Providing State-of-the-Art Bid Management Systems for Public Construction, RFPs, and General Goods & Services Procurement since 1999

V-Bid Training Demo - PUBLISHED (#6035400) 12/20/2050 02:00:00 PM

Owner: Project Owner US/Central

Solicitor: 10813 days 19:12:08

Bid Not Submitted Submit Bid Save

Qualification Information Bid Worksheet

Bid Qualifications and Bidder Certifications

Bid Bond

This project requires a bid bond of 5% of the value of the submitted bid.

Attach electronic bid bond Choose File No file chosen Upload Bid Bond.pdf

Saney2008 is not available in this project

All addenda have been downloaded. Addenda Requirement Complete

## Bid Worksheet Page

Click the Bid Worksheet tab to access the electronic bid form.



### Worksheet Sections

1. White colored sections are added to the base bid total, have a subsection total and require a unit price entry for each item before submitting.
2. Pink colored sections are optional, have a subsection total and completion may or may not be mandatory to submit a bid (please follow the instructions specified by the solicitor/owner). Items in this section will not add to the base bid total.
3. Peach colored sections are mandatory, have a subsection total and completion is required to submit a bid. Items in this section will not add to the base bid total.
4. Purple colored sections have a fixed unit price added by the solicitor/owner. Unit prices cannot be changed and are added to or subtracted from the base bid total.
5. Click the appropriate unit price field within the line item. Fill in the unit price excluding the dollar sign. The 'Unit Price' field will only display two digits after the decimal point. The 'Extension' field is calculated using the entered value (example - Qty 20 x unit price 2.558 = Extension = 51.16). Use the enter key, up/down arrows or click each unit price field to move to the next unit price field.
6. vBid will time out and log out after 60 minutes. Click the 'Save' button often to update and save the work.
7. Click 'Submit Bid' once the qualification requirements and bid worksheet page are complete. (The 'Online Bid ID Code' is required. Accept the terms on the submit page to submit the bid to the owner.)

Line Item	Item Code	Item Description	UofM	Quantity	Unit Price	Extension
1	100	Mobilization/ Prep. Work	LS	1		
3	102	Furnish & Install Piles	LS	320		
<b>Carson Lane Bridge Total:</b>						<b>\$0.00</b>
Litening Barn RD Bridge						
9	200	Mobilization/ Prep. Work	LS	1		
11	202	Furnish & Install Precast Concrete A	LS	1		
<b>Litening Barn RD Bridge Total:</b>						<b>\$0.00</b>
Clopton Lane Bridge						
16	300	Mobilization/ Prep. Work	LS	1		
18	302	Furnish & Install Precast Concrete A	LS	1		
<b>Clopton Lane Bridge Total:</b>						<b>\$0.00</b>
Deducts						
19	Labor	Work Estimated for Owner Labor	ea	1	\$10,000.00	\$10,000.00
<b>Deducts Total:</b>						<b>\$10,000.00</b>
<b>Base Bid Total:</b>						<b>\$10,000.00</b>

■ Sections shown in this color are not included in the Base Bid Total - *Mandatory* completion  
■ Sections shown in this color are not included in the Base Bid Total - *Optional* completion  
■ Sections shown in this color are fixed and cannot be edited by the bidder

White Section = Required Base Bid  
Peach Section = Mandatory. Does not add to the Base Bid Total.  
Pink Section = Optional Does not add to the Base Bid Total  
Purple Section = Fixed Unit Price – adds or subtracts from the Base Bid Total



## Import & Export CSV

1. The 'Export to CSV' button is used to export the bid worksheet into an Excel CSV spreadsheet which can be helpful to configure additional calculations, formulas and percentage markups on unit prices.
2. The 'Import from CSV' button is used to import the Excel CSV spreadsheet into the bid worksheet.

**\*\* Changes are allowed only to the 'Unit Price' field. DO NOT add or make changes to the header, descriptions or move/add/delete line items on the exported worksheet. The spreadsheet will fail to upload correctly if changes are made causing the system to error on bid submission or the bid may be incorrect.**

## Bid Submission & On-Line Bid ID Code

### Submit the Bid

Click the 'Submit Bid' button and enter the '**Online Bid ID Code**'. Check '**I Agree**' box to accept the 'QuestCDN Terms of Use for Bidders'. Click '**Submit**' button at the bottom of the page to submit the bid to the owner/solicitor.

The screenshot shows a web form titled "QUESTCDN's TERMS OF USE FOR BIDDERS". The form contains the following text:

**QUESTCDN's TERMS OF USE FOR BIDDERS**

This Terms of Use for Bidders Agreement ("Agreement") is between Quest Construction Data Network, LLC, P.O. Box 412, Spring Park, Minnesota 55384-0412 ("QUESTCDN") and you (which may be identified in this agreement as "You," "Your," or "User"). By accepting this Agreement you are accepting its terms on behalf of both you personally and any entity for which you are an agent of or appear to represent as indicated by the information you provide in registering with the QUESTCDN Web site and the Quest VirtuBid (hereafter vBid) services, and the terms "You," "Your," and "User" shall include both you personally and that entity.

This Agreement is in addition to any other terms and conditions or other agreements QUESTCDN presents to You in writing either on QUESTCDN's Web site or as a part of the Quest vBid services and You agree to as a part of using its Web site or the Quest vBid services, including without limitation the Construction Data Network, LLC Web site Terms of Use, contain the terms and conditions that govern Your use of the QUESTCDN Web site and the Quest vBid services. These agreements constitute the entire agreement among the parties relating to this subject matter, and these agreements supersede

Enter your company's On-Line Bid ID code:  This ID code is your company's digital signature.

**If you do not remember your company's ON LINE BID ID Code, you may view or change it by logging in at QuestCDN.com. For quick login access to your account, click this link [My Account](#) under User Info tab. Only the account administrator has access to this page.**

I Agree clicking the I Agree checkbox and entering your On-Line Bid ID code you are agreeing to the terms displayed

1. There is an option to unsubmit or remove a bid in its entirety (all data will remain saved). Re-submit bid before the end of the bid closing.
2. Leave bid submitted, revise the bid worksheet and re-submit the revisions.

## What is the 'Online Bid ID Code' and where can I find it on QuestCDN?

The 'Online Bid ID Code' is a passcode required at bid submission and is the digital signature for the company. The code is created by the main account holder before account users can access VirtuBid™. The code can be accessed, viewed or updated by logging into QuestCDN with the main account holder username and password. There are two ways to access the 'Online Bid ID Code'.

1. Only the main account holder username and password can access the 'Online Bid ID Code'. A link to access the code is located on the bid submission page. Click 'My Account' and a new browser window will open. Sign into QuestCDN using the main account holder username and password. Under the 'User Info & Online Bid ID Code' tab, click the eye icon to view an existing code. Click the VirtuBid™ open browser tab to go back to the online bid submission window. Enter the code, check 'I Agree' and click 'Submit' (*Illustration 1*.)
2. Log into QuestCDN using the main account holder username and password, click 'My Account' at the top of the page. Select 'User Info & Online Bid ID Code' tab and click the eye icon to view or edit an existing code (*Illustration 2*.)

**Illustration 1** QUESTCDN'S TERMS OF USE FOR BIDDERS

This Terms of Use for Bidders Agreement ("Agreement") is between Quest Construction Data Network, LLC, P.O. Box 412, Spring Park, Minnesota 55384-0412 ("QUESTCDN") and you (which may be identified in this agreement as "You," "Your," or "User"). By accepting this Agreement you are accepting its terms on behalf of both you personally and any entity for which you are an agent or appear to represent as indicated by the information you provide in registering with the QUESTCDN Web site and the Quest VirtuBid (hereafter vBid) services, and the terms "You," "Your," and "User" shall include both you personally and that entity.

This Agreement is in addition to any other terms and conditions or other agreements QUESTCDN presents to You in writing either on QUESTCDN's Web site or as a part of the Quest vBid services and You agree to as a part of using its Web site or the Quest vBid services, including without limitation the Construction Data Network, LLC Web site Terms of Use, contain the terms and conditions that govern Your use of the QUESTCDN Web site and the Quest vBid services. These agreements constitute the entire agreement among the parties

Enter your company's On-Line Bid ID code: [input field] This ID code is your company's digital signature.

If you do not remember your company's ON LINE BID ID Code, you may view or change it by logging in at QuestCDN.com. For quick login access to your account, click this link My Account under User Info tab. Only the account administrator has access to this page.

I Agree [Check 'I Agree']

By clicking the I Agree checkbox and entering your On-Line Bid ID code you are agreeing to the terms displayed

[Cancel] [Submit the bid to Owner] [Submit]

BID POSTINGS MESSAGE CENTER ONLINE BIDDING INDUSTRY DIRECTORY HELP MY ACCOUNT

**Illustration 2**

Company Info User Info & Online Bid ID Code Membership Profile Payment Transactions & Receipts

Username : test free \*

Password : \*  
Minimum eight characters including one uppercase, one lowercase, and one number.  
Meets Quest requirements

Confirm Password : Confirm password

Online Bid ID Code (This code is used to publish or submit a vBid)

On-line Bid ID Code : password123 \*  
Minimum eight characters including one uppercase, one lowercase, and one number.  
Meets Quest requirements

Confirm On-line Bid ID Code : Confirm Online Bid ID Code

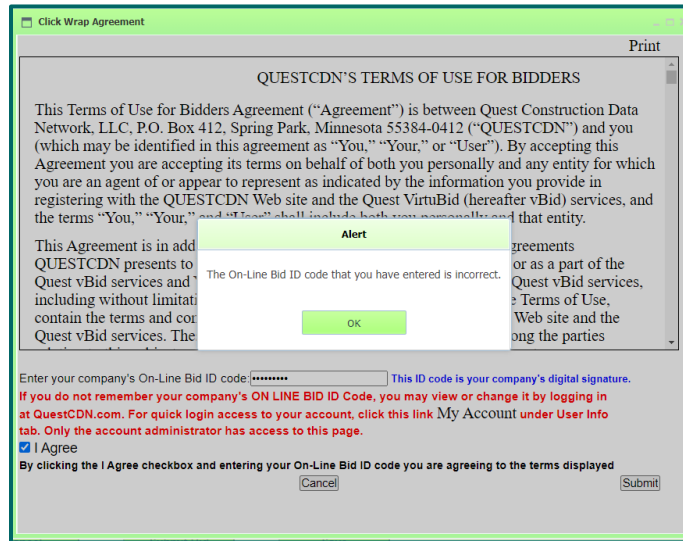
Account Users

Previous Next Save



### Incorrect Online Bid ID Code

A correct 'Online Bid ID Code' must be entered before the VirtuBid™ system can verify completion of requirements. When a correct code is entered and required fields are complete, the bid will be submitted to the owner/solicitor. If an incorrect code is entered, an 'Alert' error window will display 'The Online Bid ID code that you have entered is incorrect'. Retype a correct code, click 'I Agree' and click 'Submit'. To retrieve the code, click 'My Account' and a new browser window will open. Sign into QuestCDN using the main account holder username and password. Under the 'User Info & Online Bid ID Code' tab, click the eye icon to view an existing code. Click the VirtuBid™ open browser tab to go back to the online bid submission window. Enter the code, check 'I Agree' and click 'Submit' (*Illustration 1.*)

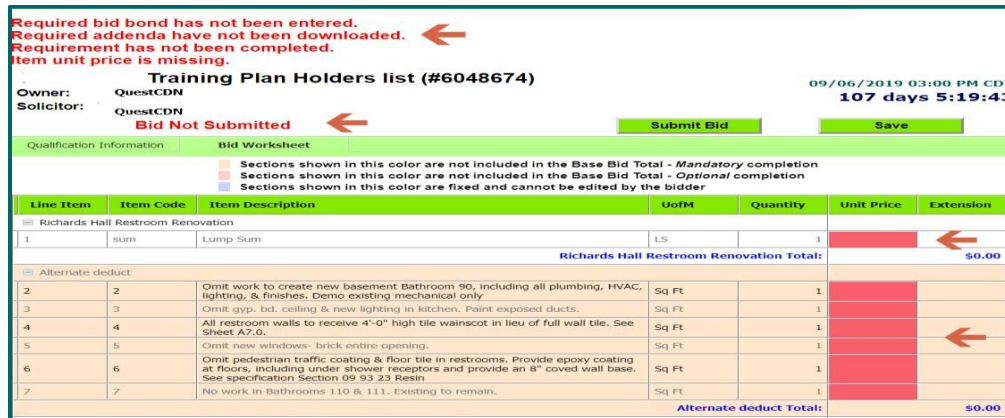


### Unsuccessful Bid Submission Error Messages

The VirtuBid™ system verifies the completion of bid requirements after the 'Online Bid ID Code' is accepted. 'Bid Not Submitted' error message(s) will display if information is missing or incomplete.

#### Examples of Error Messages

- Required bid bond has not been entered
- Required addenda have not been downloaded
- Requirement has not been completed (qualification area not complete)
- Item unit price is missing



## Bid Submitted

### Successfully Submitted Bid

A message displaying 'Bid Submitted by' (with date/ time and username stamp (shown in red)) will display.

**QUEST vBID** Contact Quest Logout

Providing State-of-the-Art Bid Management Systems for Public Construction, RFPs, and General Goods & Services Procurement since 1999

Home QuestCDN Support

**V-Bid Training Demo - PUBLISHED (#6035400)** 12/20/2050 02:00:00 PM  
US/Central

Owner: Project Owner  
Solicitor: 10813 days 19:58:44

**Bid Submitted by QuestCDN Support 03/17/2021 03:46 AM CDT** Edit Worksheet Unsubmit Bid Save

Qualification Information Bid Worksheet

- Sections shown in this color are not included in the Base Bid Total - Mandatory completion
- Sections shown in this color are not included in the Base Bid Total - Optional completion
- Sections shown in this color are fixed and cannot be edited by the bidder

Line Item	Item Code	Item Description	UoM	Quantity	Unit Price	Extension
Spec						
1	2021.501	MOBILIZATION	LS	1	\$1.00	\$1.00
2	2104.501	REMOVE CONCRETE CURB AND GUTTER	LF	900	\$1.00	\$900.00
3	2104.503	REMOVE CONCRETE PAVEMENT - DRIVEWAYS	SF	80	\$2.00	\$160.00
4	2104.505	REMOVE BITUMINOUS PAVEMENT - DRIVEWAYS	SY	15	\$1.00	\$15.00
5	2104.505	REMOVE BITUMINOUS PAVEMENT	SY	73	\$1.00	\$73.00
6	2104.505	REMOVE CONCRETE VALLEY GUTTER	SY	19	\$2.00	\$38.00
7	2104.511	SAWING CONCRETE PAVEMENT - FULL DEPTH	LF	292	\$1.00	\$292.00
8	2104.513	SAWING BITUMINOUS PAVEMENT - FULL DEPTH	LF	340	\$1.00	\$340.00
9	2105.501	COMMON EXCAVATION (EV)	CY	23	\$1.00	\$23.00
10	2112.501	SUBGRADE PREPARATION	RDST	34	\$1.00	\$34.00
11	2105.507	SUBGRADE EXCAVATION, REMOVE UNSUITABLE MATERIAL (EV)	CY	500	\$1.00	\$500.00
12	2105.522	SELECT GRANULAR BORROW (CV)	CY	600	\$1.00	\$600.00
<b>Base Bid Total:</b>					<b>\$24,408.00</b>	

Import from CSV Export to CSV Cancel Unsubmit Bid Save

A bid submitted confirmation message receipt is sent to the individual's 'Message Center' on QuestCDN.

Helpful Notes

Inbox (Click the +/- to expand contract #)

Priority	Type	From
Normal	Bid Submission	Administrator
High	Bid Unsubmit	Administrator
Normal	Bid Notification	Administrator
Normal	User Email	Jon Hunt, Met
Normal	Results Posted	, Bolton & Me
Normal	Results Posted	Penny Pray, M
Normal	Results Posted	Deb Dowling,
Normal	Bid Notification	Administrator
Normal	Results Posted	Jill Ferenc, Br
High	Addendum Notic	Donna Koontz
Normal	User Email	Kimberley Rus
Normal	User Email	Philip Larson,
High	Addendum Notic	Philip Larson,
High	Addendum Notic	Deborah Burt,
High	Addendum Notic	LACSD Purcha
Normal	Results Posted	Lisa Siefken,

View Message

Previous Next Reply Forward Print Delete

From: Administrator  
Recipient: QuestCDN Support  
Type: Bid Submission  
Priority: Normal  
Received: 01/02/2021 10:04:18 AM  
Subject: Project Name and eBidDoc number

**Dear QuestCDN member,**

**This message is sent to notify you that your bid QuestCDN ##### "Project Name" has been submitted at (date/time/time zone).**

Cordially,  
The QuestCDN team

## Making Changes After Successful Bid Submission

The owner/solicitor does not have access to the bid information until after the bid closes. Qualification requirements and the bid worksheet can be revised before the bid clock closes.

## Changing Prices

Make changes while the original bid is submitted. Resubmit bid as many times as needed before the bid closes.

From the 'Bid Worksheet' tab select 'Edit Worksheet' button to revise unit prices. Enter revised unit prices under the populated 'Edited' column. When completed, select 'Submit Bid', enter Online Bid Id code, check 'I agree' and 'Submit'. The owner/solicitor of the project will receive the last bid submission with the revised unit prices. The changes will not be updated if the bid is not resubmitted.

**QUESTvBID** Contact Quest Logout

Providing State-of-the-Art Bid Management Systems for Public Construction, RFPs, and General Goods & Services Procurement since 1999

Home *Shelly Kahl - PREMIER*

The bid was successfully submitted.

**Arcadia-Sierra Madre Trunk Sewer Sections 2&5 (#7445524)** 08/20/2021 09:54:00 AM US/Central  
Owner: Los Angeles County Sanitation Dist. Engineering  
Solicitor: **92 days 17:15:12**

**Bid Submitted by Shelly Kahl - PREMIER 05/19/2021 04:38 PM CDT**

Revise Unit Prices  
Edit Worksheet Unsubmit Bid Save

Qualification Information Bid Worksheet

- Sections shown in this color are not included in the Base Bid Total - Mandatory completion
- Sections shown in this color are not included in the Base Bid Total - Optional completion
- Sections shown in this color are fixed and cannot be edited by the bidder

Line Item	Item Code	Item Description	UoM	Quantity	Unit Price	Extension	Submitted
1	1	Mobilization	LS	1	\$100,000.00	\$100,000.00	
2	2	"12" Cured-In-Place Piper Liner"	LF	395	\$125.00	\$49,375.00	
3	3	"15" Cured-In-Place Pipe Liner"	LF	7255	\$93.00	\$674,715.00	
4	4	"15" Cured-In-Place Pipe Liner"	LF	8847	\$93.00	\$822,771.00	
5	5	House Connection - Re-Establishment to Sewer Ipe Liner	EA	307	\$115.00	\$35,305.00	
6	6	Manhole Rehabilitation - CAC	EA	109	\$3,000.00	\$327,000.00	
9	9	Cleanouts - Verify and Locate	EA	67	\$650.00	\$43,550.00	
10	10	Cleanout	EA	67	\$8,500.00	\$569,500.00	
11	11	Flow Bypass	LS	1	\$250,000.00	\$250,000.00	
12	12	Rain Events/Reinstall Flow Diversion/Bypass	ea	2	\$3,500.00	\$7,000.00	
13	13	Temporary AC	TN	24	\$55.00	\$1,320.00	
14	14	Asphalt Concrete Pavement	SF	6078	\$6.00	\$36,468.00	
<b>Base Bid Total:</b>						<b>\$2,972,504.00</b>	

Import from CSV Export to CSV Cancel Unsubmit Bid Save

**QUESTvBID** Contact Quest Logout

Providing State-of-the-Art Bid Management Systems for Public Construction, RFPs, and General Goods & Services Procurement since 1999

Home *QuestCDN Support*

**V-Bid Training Demo - PUBLISHED (#6035400)** 12/20/2020 02:00:00 PM US/Central  
Owner: Project Owner  
Solicitor: **10813 days 19:56:15**

**Bid Submitted by QuestCDN Support 03/17/2021 03:46 AM CDT**

Submit Changes Unsubmit Bid Save

Qualification Information Bid Worksheet

- Sections shown in this color are not included in the Base Bid Total - Mandatory completion
- Sections shown in this color are not included in the Base Bid Total - Optional completion
- Sections shown in this color are fixed and cannot be edited by the bidder

Line Item	Item Code	Item Description	UoM	Quantity	Unit Price	Extension	Submitted
1	2021.501	MOBILIZATION	LS	1	\$1.00	\$1.00	\$1.00
2	2104.501	REMOVE CONCRETE CURB AND GUTTER	LF	900	\$2.00	\$1,800.00	\$1.00 \$900.00
3	2104.503	REMOVE CONCRETE PAVEMENT - DRIVEWAYS	SF	80	\$2.00	\$160.00	\$2.00 \$160.00
4	2104.505	REMOVE BITUMINOUS PAVEMENT - DRIVEWAYS	SY	15	\$1.00	\$15.00	\$1.00 \$15.00
5	2104.505	REMOVE BITUMINOUS PAVEMENT	SY	73	\$1.00	\$73.00	\$1.00 \$73.00
6	2104.505	REMOVE CONCRETE VALLEY GUTTER	SY	19	\$25.00	\$475.00	\$2.00 \$38.00
7	2104.511	SAWING CONCRETE PAVEMENT - FULL DEPTH	LF	292	\$1.00	\$292.00	\$1.00 \$292.00
8	2104.513	SAWING BITUMINOUS PAVEMENT - FULL DEPTH	LF	340	\$1.00	\$340.00	\$1.00 \$340.00
9	2105.501	COMMON EXCAVATION (EV)	CY	23	\$1,500.00	\$34,500.00	\$1.00 \$23.00
10	2112.501	SUBGRADE PREPARATION	RDST	34	\$61.00	\$2,074.00	\$1.00 \$34.00
11	2105.502	SUBGRADE EXCAVATION, REMOVE	PY	678	\$4.00	\$2,712.00	\$1.00 \$678.00
<b>Base Bid Total:</b>						<b>\$62,262.00</b>	<b>\$24,408.00</b>

Import from CSV Export to CSV Cancel Unsubmit Bid Save

Qualification Information Bid Worksheet

- Sections shown in this color are not included in the Base Bid Total - Mandatory completion
- Sections shown in this color are not included in the Base Bid Total - Optional completion
- Sections shown in this color are fixed and cannot be edited by the bidder

**Edit Column**

Line Item	Item Code	Item Description	UoM	Quantity	Unit Price	Extension	Submitted
1	1	Mobilization	LS	1	\$15,000.00	\$15,000.00	\$100,000.00
2	2	"12" Cured-In-Place Piper Liner"	LF	395	\$125.00	\$49,375.00	\$125.00 \$49,375.00
3	3	"15" Cured-In-Place Pipe Liner"	LF	7255	\$93.00	\$674,715.00	\$93.00 \$674,715.00
4	4	"15" Cured-In-Place Pipe Liner"	LF	8847	\$95.00	\$840,465.00	\$93.00 \$822,771.00
5	5	House Connection - Re-Establishment to Sewer Ipe Liner	EA	307	\$115.00	\$35,305.00	\$115.00 \$35,305.00
6	6	Manhole Rehabilitation - CAC	EA	109	\$3,000.00	\$327,000.00	\$3,000.00 \$327,000.00
9	9	Cleanouts - Verify and Locate	EA	67	\$650.00	\$43,550.00	\$650.00 \$43,550.00
10	10	Cleanout	EA	67	\$10,000.00	\$670,000.00	\$8,500.00 \$569,500.00
11	11	Flow Bypass	LS	1	\$25,000.00	\$25,000.00	\$250,000.00 \$250,000.00
12	12	Rain Events/Reinstall Flow Diversion/Bypass	ea	2	\$3,500.00	\$7,000.00	\$3,500.00 \$7,000.00
13	13	Temporary AC	TN	24	\$55.00	\$1,320.00	\$55.00 \$1,320.00
14	14	Asphalt Concrete Pavement	SF	6078	\$6.00	\$36,468.00	\$6.00 \$36,468.00
<b>Base Bid Total:</b>						<b>\$2,780,698.00</b>	<b>\$2,972,504.00</b>

Import from CSV Export to CSV Cancel Unsubmit Bid Save

## Unsubmit Bid

Click 'Unsubmit Bid' to remove bid in its entirety (all data entered will remain saved.) Make changes to the qualification and/or bid worksheet page. Re-submit bid before the end of the bid closing. The bid will not be received by the owner/solicitor if the bid is not resubmitted.

A 'Bid Unsubmitted' email is sent to the individual's email address and a confirmation message is sent to the individuals 'Message Center'.

Example Bid Unsubmitted by user.

### BID UNSUBMITTED

Dear \_\_\_\_\_

This message is sent to notify you that you UNSUBMITTED your bid for 7638906 eBidDoc number vBid User Guides. at 5/18/21 2:33PM CDT

You must resubmit our bid before the bid close date for it to be available at the bid letting.

## Transactions & Receipts

'Transactions & Receipts' contain a record of downloaded transactions and receipts. Click the highlighted column name to sort. Searchable fields include the 'Date', 'Amount', 'Reason', 'Quest eBidDoc™ No', 'Created By User', 'Status', 'Type' and 'Receipt'. Change the calendar 'Beginning Date' and 'Ending Date' to select a specific date range. Click the 'Print Page' button to print to pdf or save. Click on the highlighted transaction number to access and print detailed receipt and bid posting information.

The screenshot shows the 'Transactions & Receipts' section of a user interface. At the top, there are navigation tabs: 'Company Info', 'User Info & Online Bid ID Code', 'Membership', 'Profile', 'Payment', and 'Transactions & Receipts'. Below the tabs, there are two date pickers for 'Beginning Date' (05/01/2021) and 'Ending Date' (07/28/2021). A 'Show' dropdown is set to '25' entries, and a 'Print Page' button is visible. Below this is a table with the following columns: Date, Amount, Reason, Quest eBidDoc™ No, Created By User, Status, Type, and Receipt. Each column has a small upward arrow icon. Below the table are search filters for each column: 'search date...', 'search amount...', 'search reason...', 'search quest eb...', 'search created ...', 'search status...', 'search type...', and 'search receipt...'. The table contains one entry: Date: 05/13/2021 08:57 AM, Amount: 15.00, Reason: eBidDoc download fee 7732066.pdf, Quest eBidDoc™ No: 7732066, Created By User: Robin Pinegar, Status: auto void, Type: download, Receipt: 63034332736. At the bottom, it says 'Showing 1 to 1 of 1 entries' and has 'Previous', '1', and 'Next' buttons. There are also 'Previous' and 'Save' buttons at the very bottom left.

Date	Amount	Reason	Quest eBidDoc™ No	Created By User	Status	Type	Receipt
05/13/2021 08:57 AM	15.00	eBidDoc download fee 7732066.pdf	7732066	Robin Pinegar	auto void	download	63034332736

## Resources

The resource tab contains frequently asked questions and answers, user guides and instructional videos. Click on the question name to open the field and view the answer. Click 'Support@QuestCDN' link to request assistance by sending an email to QuestCDN Customer Support team. Click on a guide or video link to access and download information.

# Drawings

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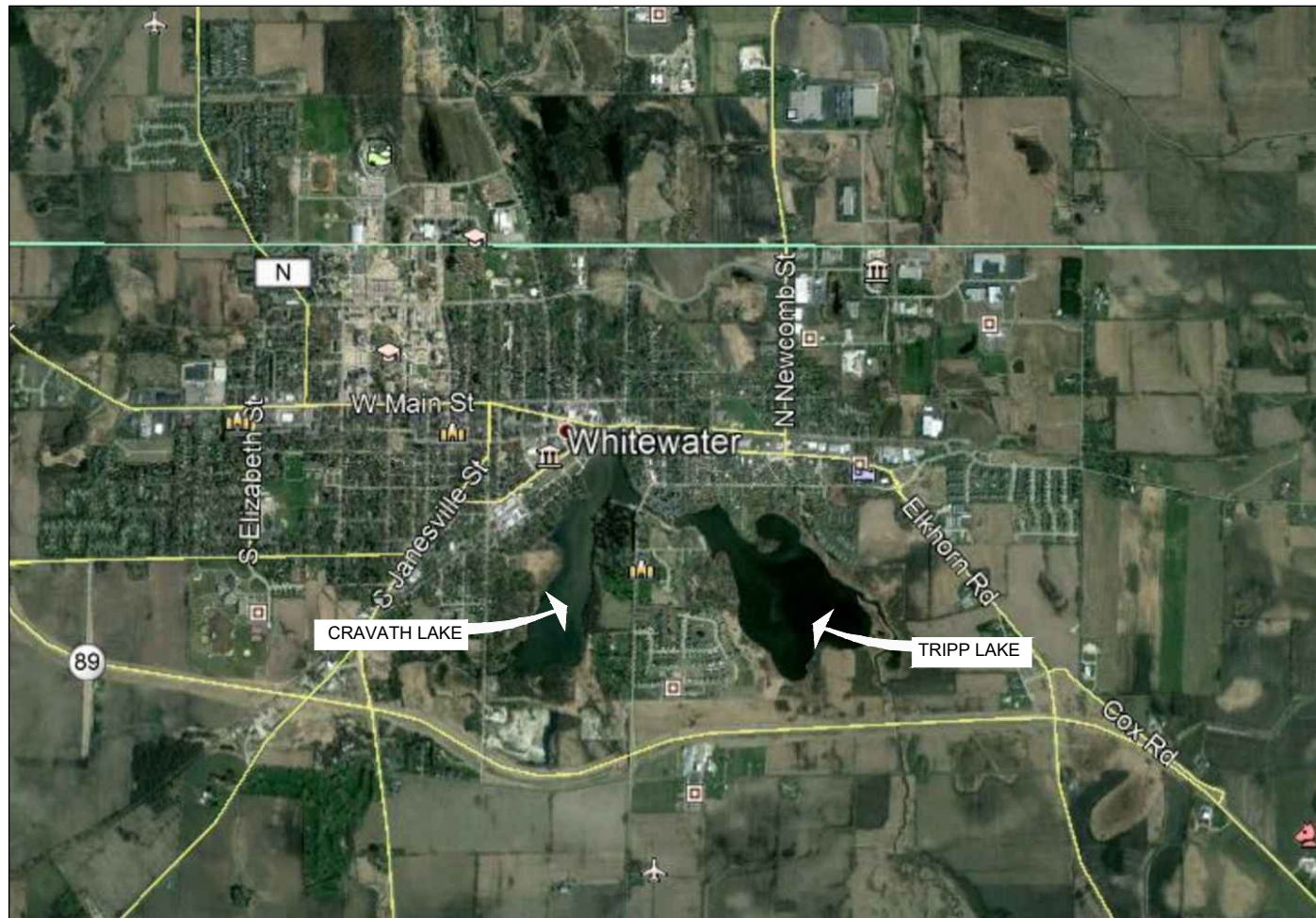
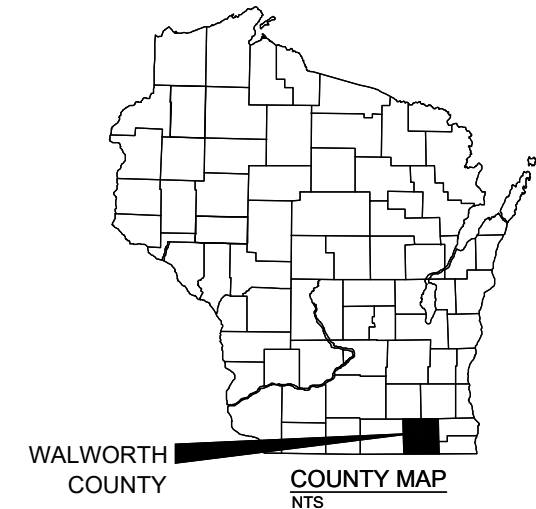


# CRAVATH & TRIPP LAKE DREDGING

## CITY OF WHITEWATER

### WALWORTH COUNTY, WISCONSIN

## AUGUST 2021



WALWORTH COUNTY, WISCONSIN



Sheet Index	
Sheet Number	Sheet Title
1	TITLE SHEET
2	LEGEND
3	EXISTING CONTOURS & STAGING
4	SAMPLE LOCATIONS
5	DREDGING AREA
6	CRAVATH CROSS SECTIONS
7	TRIPP CROSS SECTIONS
8	DISPOSAL SITE LOCATION MAP
9	DISPOSAL SITE 1 - INNOVATION PARK
10	DISPOSAL SITE 2 - HALE PROPERTY
11	DETAILS



*Adam J. Schneider*  
08/10/2021

AA-Standard.snb  
8/11/2021  
I:\261\Whitewater\26-1199-00 2020 Dredging Both Dames\CAOT\Title.dwg, Layout: TITLE SHEET

DES BY	AJS	FOR PERMIT REVIEW			
DR BY	RJW	PROJ NO	26-1199.00		
CHK BY	CTG	DATE	AUGUST 2021	NO	DATE
		REVISION		NO	DATE
		REVISION			

CRAVATH & TRIPP LAKE DREDGING  
CITY OF WHITEWATER  
WALWORTH COUNTY, WISCONSIN



TITLE SHEET

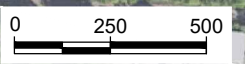
SHEET NO.  
1





NOTE:  
 1. CRAVATH LAKE WATER SURFACE ELEVATION (7/24/2018) = 811.9'  
 2. TRIPP LAKE WATER SURFACE ELEVATION (7/24/2018) = 821.64'  
 3. CONTOURS CREATED FROM 7/24/2018 SOUNDING DATA.

NGS BENCHMARK (PID: DF9449)  
 BRASS PLATE, NE CORNER OF BRIDGE  
 ELEVATION: 819.87 NAVD88



STONE TRACKING PAD AT BOAT LAUNCH

CRAVATH LAKEFRONT PARK STAGING AREA

BENCHMARK  
 DOWNSTREAM RIGHT SIDE OF SPILLWAY  
 ELEVATION: 822.49 NAVD88

STONE TRACKING PAD AT BOAT LAUNCH

TRIPP LAKE PARK STAGING AREA

AA-Standard.dwg  
 8/11/2021  
 I:\261\WhiteWater\26-1199.00\2020 Dredging Both Dams\CADE\existing.dwg, Layout: EXISTING

DES BY	AJS	PROJ NO	26-1199.00				
DR BY	RJW	DATE	AUGUST 2021	NO	DATE	REVISION	
CHK BY	CTG						

CRAVATH & TRIPP LAKE DREDGING  
 CITY OF WHITEWATER  
 WALWORTH COUNTY, WISCONSIN

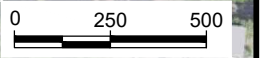


EXISTING CONTOURS

SHEET NO.  
 3



NOTE:  
 1. SEDIMENT SAMPLES COLLECTED WITH AN AMS MULTI-STAGE SEDIMENT SAMPLER.  
 2. RANGE POLES WERE USED TO PROBE SEDIMENT DEPTH.



AA-Standard.dwg  
 8/11/2021  
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DES BY	AJS	PROJ NO	26-1199-00						
DR BY	RJW	DATE	AUGUST 2021	NO	DATE	REVISION	NO	DATE	REVISION
CHK BY	CTG								

**CRAVATH & TRIPP LAKE DREDGING**  
 CITY OF WHITEWATER  
 WALWORTH COUNTY, WISCONSIN



SAMPLE LOCATIONS

SHEET NO.  
4



**NOTE:**

1. BOTH LAKES WILL BE DRAWN DOWN TO ALLOW FOR SEDIMENT TO FREEZE.
2. CONTRACTOR TO INSTALL STREAM CROSSINGS AS NEEDED.
3. IF UNFROZEN AREAS ARE ENCOUNTERED, SWAMP MATS WILL BE USED.
4. REMOVE AND STOCKPILE DRIFT WOOD TO REINCORPORATED AFTER DREDGING.
5. REMOVE DREDGING EQUIPMENT FROM LAKE BED AT END OF EACH DAY.
6. CONTRACTOR RESPONSIBLE FOR LOCATING UTILITIES AND TO RESTORE ALL DISTURBED AREAS TO ORIGINAL CONDITION.



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 8/11/2021  
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DR BY	RJW	DATE	AUGUST 2021	NO	DATE	REVISION	NO	DATE	REVISION
CHK BY	CTG								

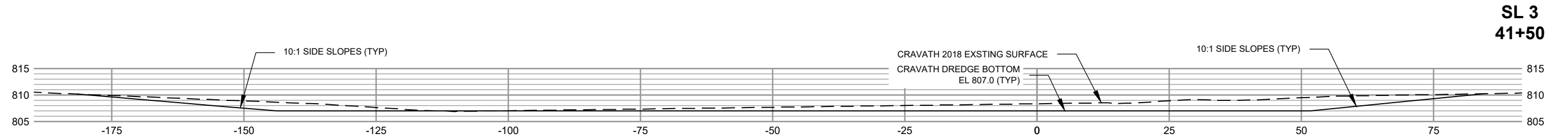
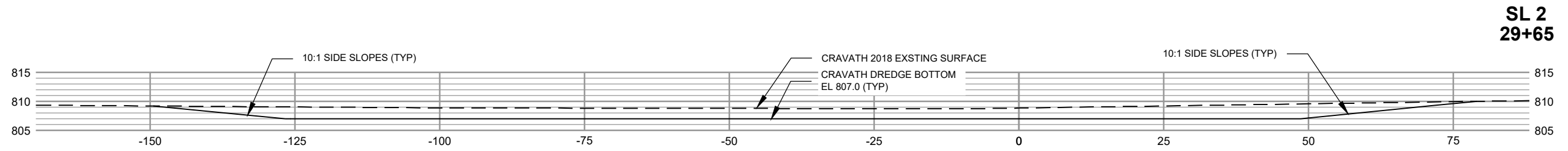
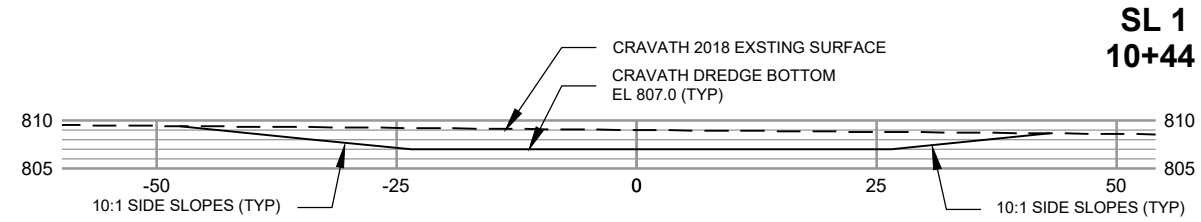
**CRAVATH & TRIPP LAKE DREDGING**  
 CITY OF WHITEWATER  
 WALWORTH COUNTY, WISCONSIN



DREDGING AREAS

SHEET NO.  
**5**





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 8/11/2021  
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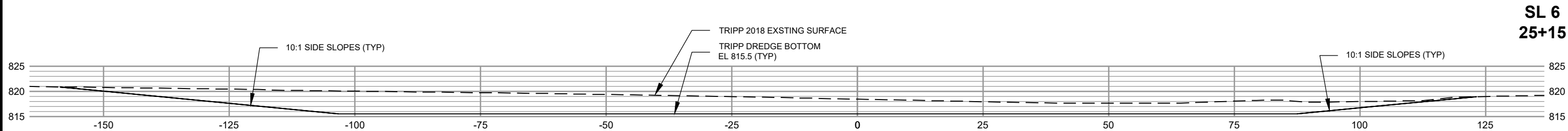
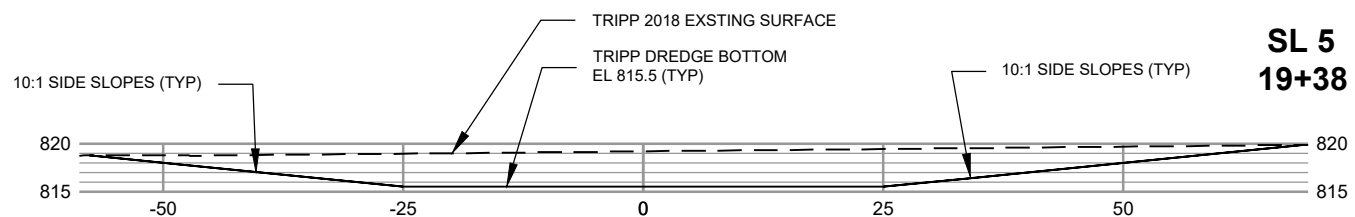
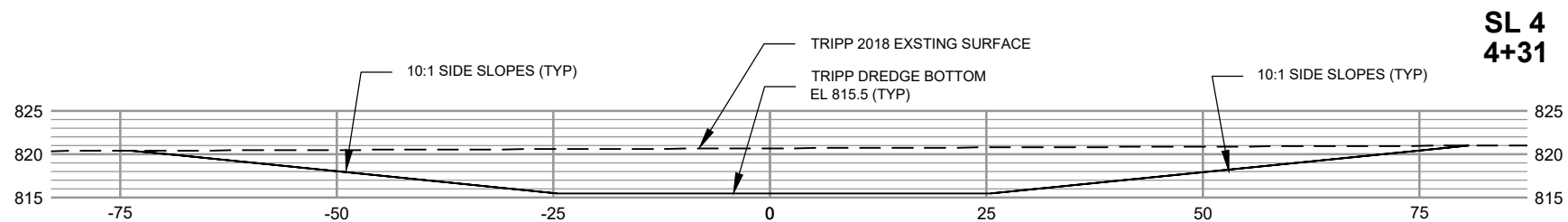
DES BY	AJS	PROJ NO	26-1199.00				
DR BY	RJW	DATE	AUGUST 2021	NO	DATE	REVISION	
CHK BY	CTG						

CRAVATH & TRIPP LAKE DREDGING  
 CITY OF WHITEWATER  
 WALWORTH COUNTY, WISCONSIN



CRAVATH CROSS SECTIONS

SHEET NO.  
6



AA-Standard.dwg  
 8/11/2021  
 I:\261\WhiteWater\26-1199.00 2020 Dredging Both Dams\CAD\PROPOSED.dwg, Layout: Tripp.Xs

DES BY	AJS	PROJ NO	26-1199.00				
DR BY	RJW	DATE	AUGUST 2021	NO	DATE	REVISION	
CHK BY	CTG						

CRAVATH & TRIPP LAKE DREDGING  
 CITY OF WHITEWATER  
 WALWORTH COUNTY, WISCONSIN

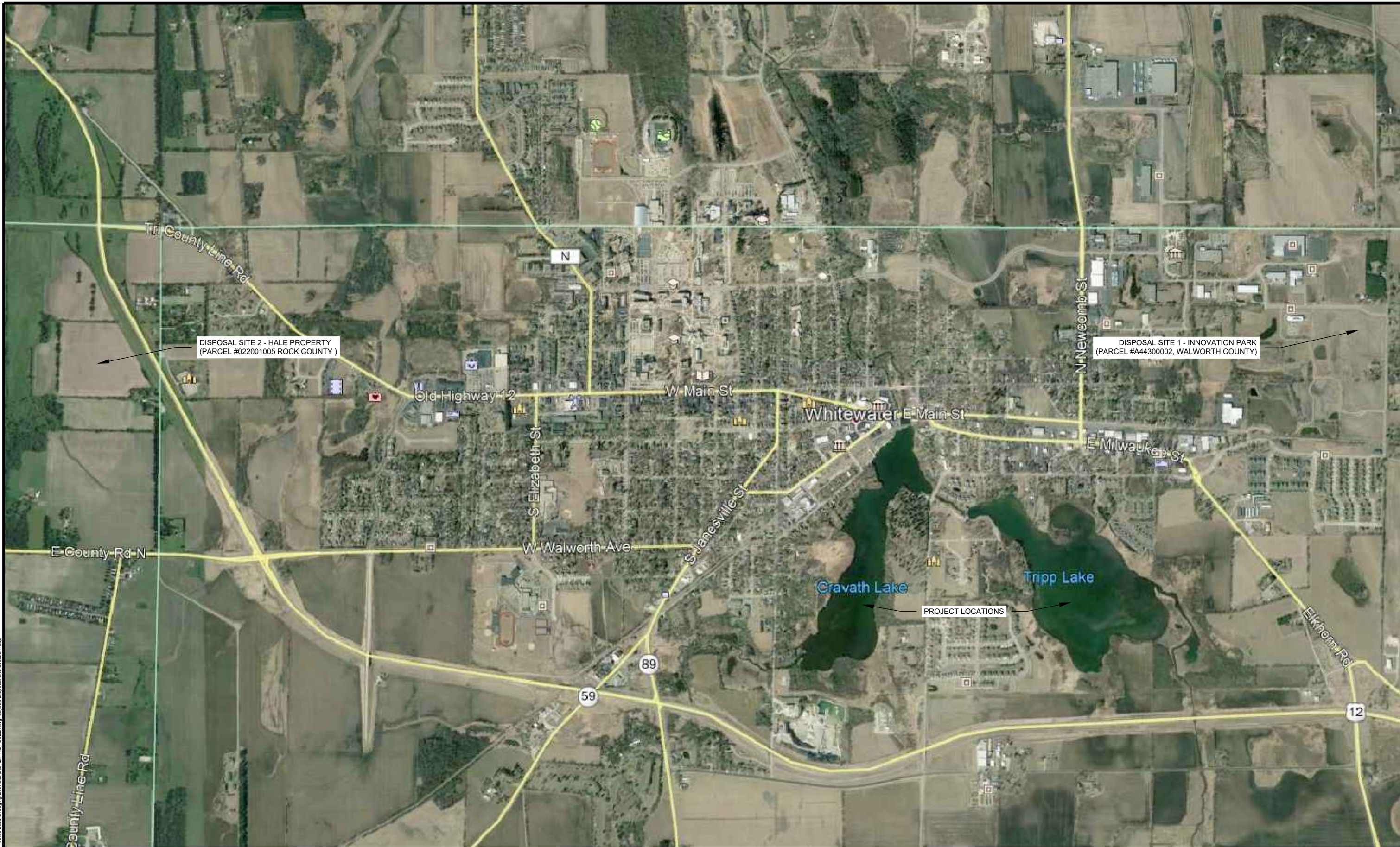


TRIPP CROSS SECTIONS

SHEET NO.

7





AA-Standard.dwg  
 8/11/2021  
 I:\261\Whitewater\26-1199-00 2020 Dredging Both Dams\CAD\PROPOSED.dwg, Layout: Disposal Site Location Map

DES BY	AJS								
DR BY	RJW	PROJ NO	26-1199-00						
CHK BY	CTG	DATE	AUGUST 2021	NO	DATE	REVISION	NO	DATE	REVISION

CRAVATH & TRIPP LAKE DREDGING  
 CITY OF WHITWATER  
 WALWORTH COUNTY, WISCONSIN

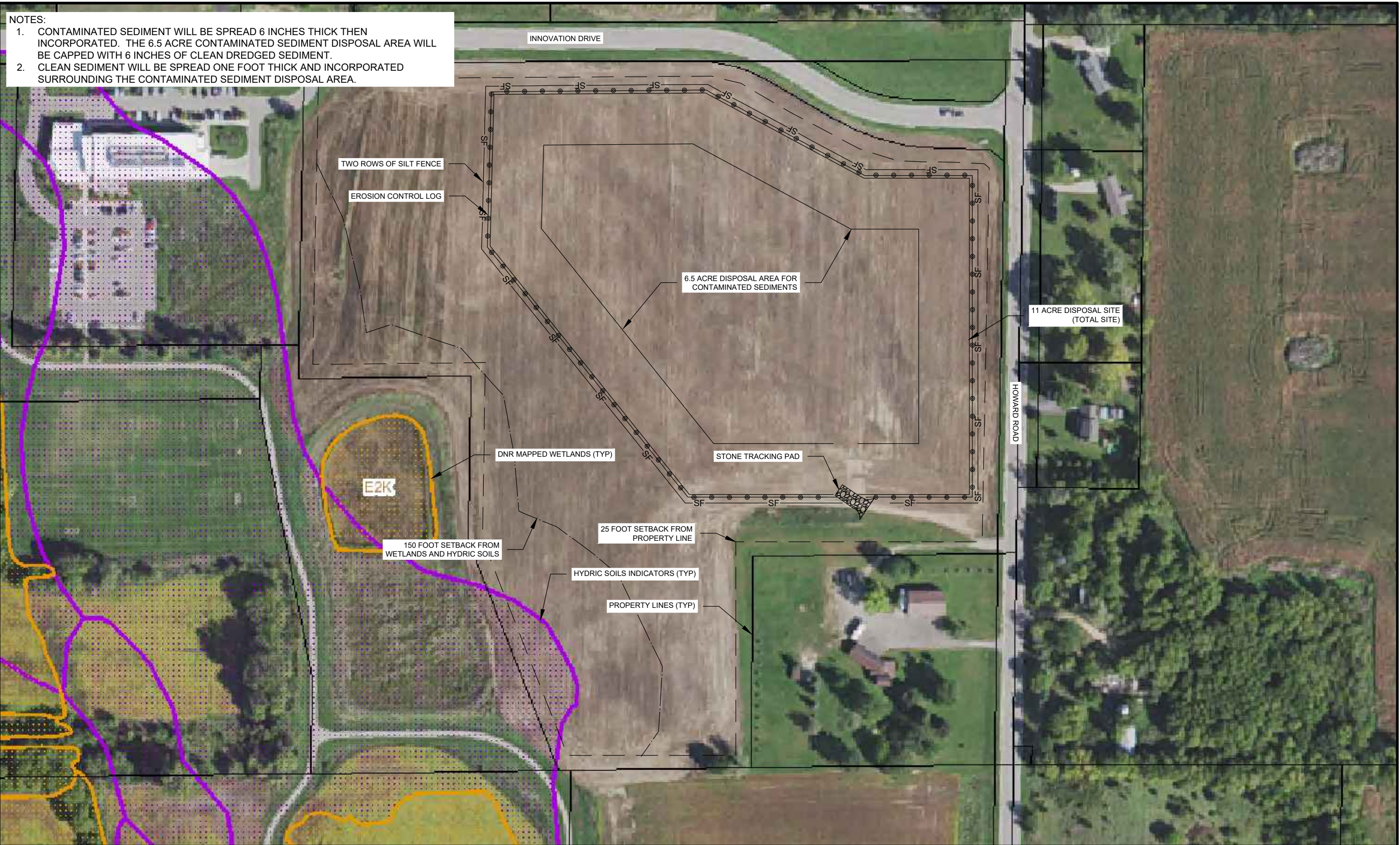


DISPOSAL SITE LOCATION MAP

SHEET NO.  
8



- NOTES:
1. CONTAMINATED SEDIMENT WILL BE SPREAD 6 INCHES THICK THEN INCORPORATED. THE 6.5 ACRE CONTAMINATED SEDIMENT DISPOSAL AREA WILL BE CAPPED WITH 6 INCHES OF CLEAN DREDGED SEDIMENT.
  2. CLEAN SEDIMENT WILL BE SPREAD ONE FOOT THICK AND INCORPORATED SURROUNDING THE CONTAMINATED SEDIMENT DISPOSAL AREA.



AA-Standard.sbf  
 8/11/2021  
 I:\261\WhiteWater\26-1199-00\2020 Dredging Both Dams\CAD\PROPOSED.dwg, Layout: Disposal Site (Innovation Park)

DES BY	AJS	PROJ NO	26-1199.00						
DR BY	RJW	DATE	AUGUST 2021	NO	DATE	REVISION	NO	DATE	REVISION
CHK BY	CTG								

CRAVATH & TRIPP LAKE DREDGING  
 CITY OF WHITEWATER  
 WALWORTH COUNTY, WISCONSIN



DISPOSAL SITE 1 - INNOVATION PARK

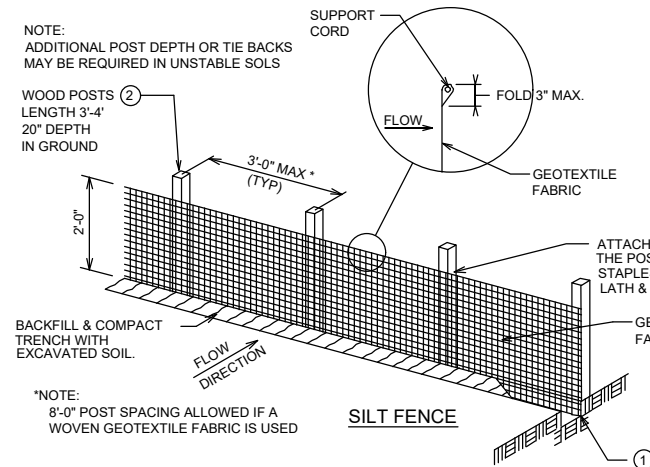




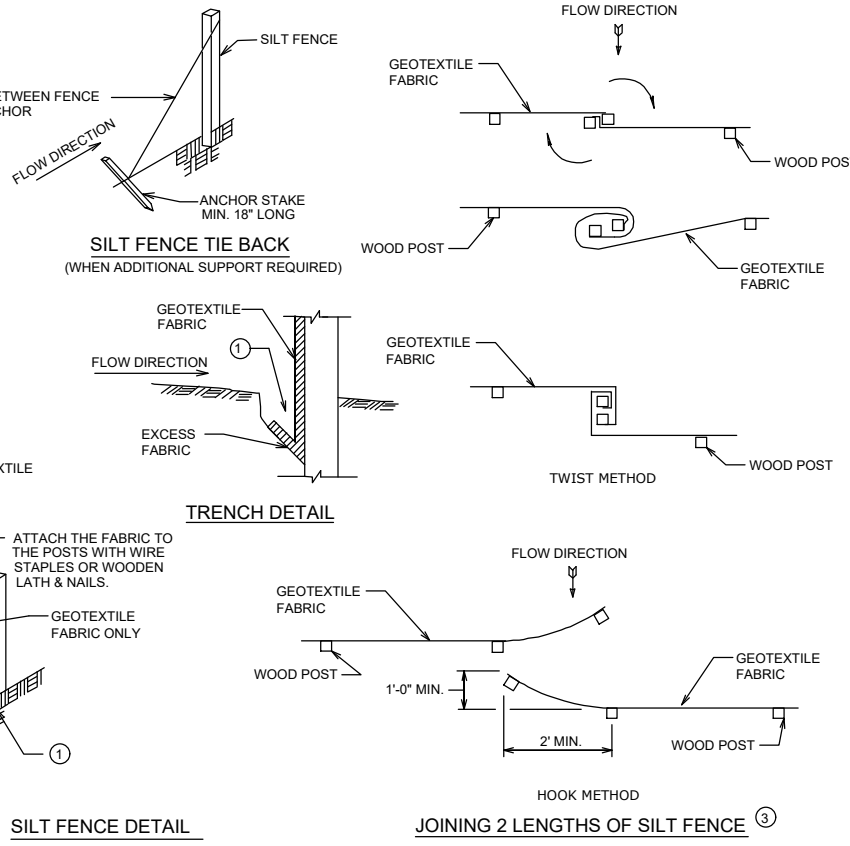


**GENERAL NOTES:**

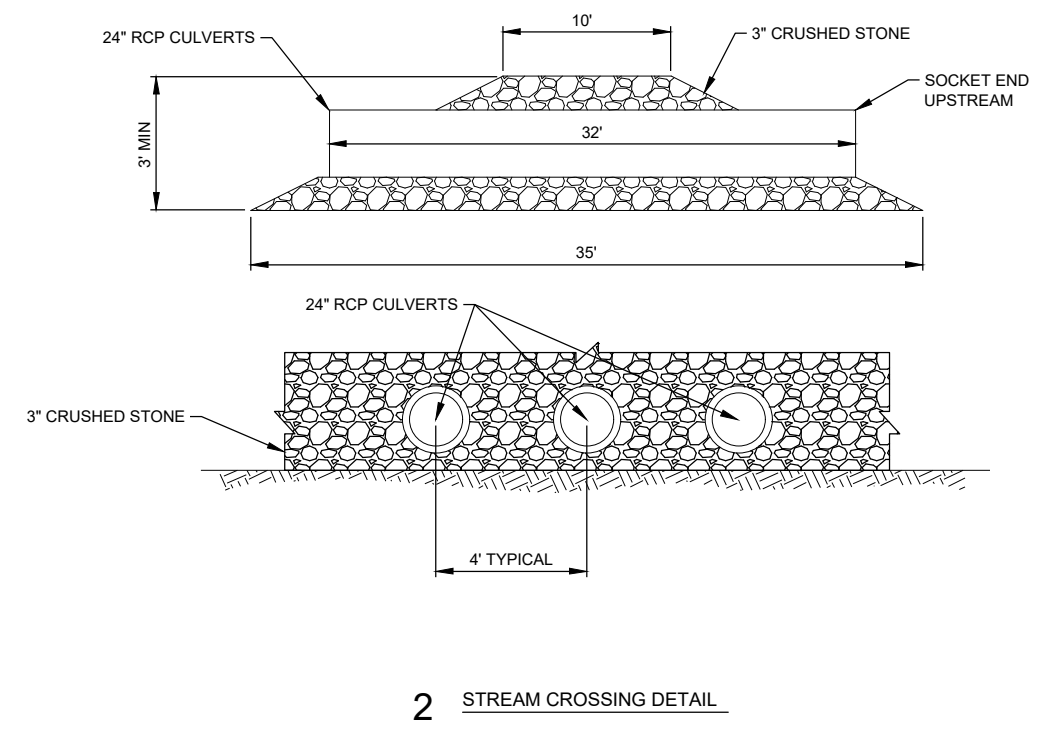
- ① TRENCH SHALL BE A MIN OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC, FOLD THE MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL. TIE BACK BETWEEN FENCE POST & ANCHOR
- ② WOOD POSTS SHALL BE A MIN SIZE OF 1 1/2" x 1 1/2" OAK OR HICKORY.
- ③ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY, USE ONE OF THE FOLLOWING TWO METHODS:
  - A. TWIST METHOD -- OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES.
  - B. HOOK METHOD -- HOOK THE END OF EACH SILT FENCE LENGTH.



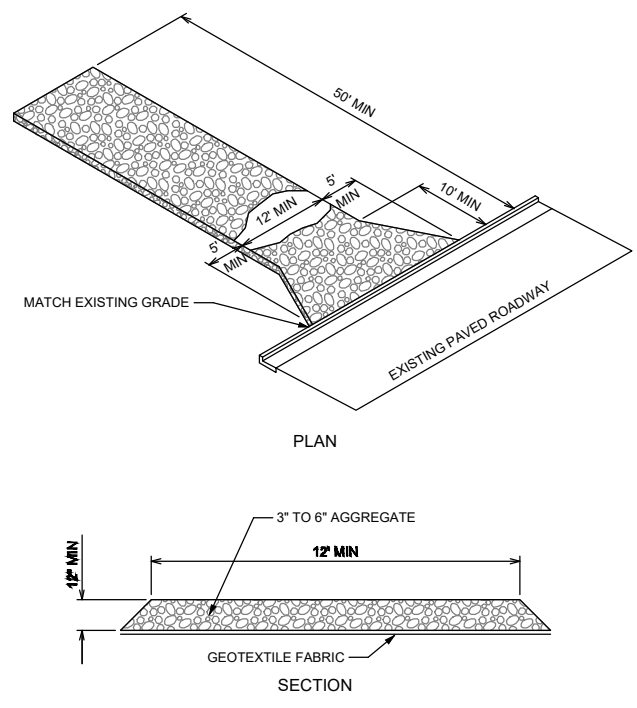
**1 SILT FENCE DETAIL**



**JOINING 2 LENGTHS OF SILT FENCE ③**



**2 STREAM CROSSING DETAIL**



**3 STONE TRACKING PAD**

AA-Standard.snb 8/11/2021 I:\261\WhiteWater\26-1199.00 2020 Dredging Both Dams\CADD\Details.dwg Layout: DETAILS

DES BY	AJS	PROJ NO	26-1199.00				
DR BY	RJW	DATE	AUGUST 2021	NO	DATE	REVISION	
CHK BY	CTG						

**CRAVATH & TRIPP LAKE DREDGING  
CITY OF WHITEWATER  
WALWORTH COUNTY, WISCONSIN**



**DETAILS**

SHEET NO.  
**11**

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