

## CONTRACT

THIS CONTRACT is between the CITY OF ANN ARBOR, a Michigan Municipal Corporation, 301 East Huron Street, Ann Arbor, Michigan 48104 ("City") and Anglin Civil, LLC ("Contractor") a corporation, 13000 Newburgh Road, Livonia, MI 48150.

Based upon the mutual promises below, the Contractor and the City agree as follows:

### ARTICLE I - Scope of Work

The Contractor agrees to furnish all of the materials, equipment and labor necessary; and to abide by all the duties and responsibilities applicable to it for the project titled **Wheeler Facility Pond Dredging ITB# 4665** in accordance with the requirements and provisions of the following documents, including all written modifications incorporated into any of the documents, all of which are incorporated as part of this Contract:

Non-discrimination and Living Wage Declaration of Compliance Forms (if applicable)	General Conditions
Vendor Conflict of Interest Form	Standard Specifications
Prevailing Wage Declaration of Compliance Form (if applicable)	Detailed Specifications
Bid Forms	Plans
Contract and Exhibits	Addenda
Bonds	

### ARTICLE II - Definitions

**Administering Service Area/Unit** means **Public Services Area/Systems Planning Unit**

**Project** means **Wheeler Facility Pond Dredging ITB# 4665**

**Supervising Professional** means the person acting under the authorization of the manager of the Administering Service Area/Unit. At the time this Contract is executed, the Supervising Professional is: **Jennifer Lawson** whose job title is **Water Quality Manager**. If there is any question concerning who the Supervising Professional is, Contractor shall confirm with the manager of the Administering Service Area/Unit.

**Contractor's Representative** means **Joseph Merolla** whose job title is **Project Manager**.

### ARTICLE III - Time of Completion

- (A) The work to be completed under this Contract shall begin immediately on the date specified in the Notice to Proceed issued by the City.
- (B) The entire work for this Contract shall be completed within ninety (90) consecutive

calendar days.

- (C) Failure to complete all the work within the time specified above, including any extension granted in writing by the Supervising Professional, shall obligate the Contractor to pay the City, as liquidated damages and not as a penalty, an amount equal to **\$800** for each calendar day of delay in the completion of all the work. If any liquidated damages are unpaid by the Contractor, the City shall be entitled to deduct these unpaid liquidated damages from the monies due the Contractor.

The liquidated damages are for the non-quantifiable aspects of any of the previously identified events and do not cover actual damages that can be shown or quantified nor are they intended to preclude recovery of actual damages in addition to the recovery of liquidated damages.

#### **ARTICLE IV - The Contract Sum**

- (A) The City shall pay to the Contractor for the performance of the Contract, the unit prices as given in the Bid Form for the estimated bid total of:

Nine hundred fifty-eight thousand, seven hundred ninety-three dollars, and ninety-nine cents (\$958,793.99)

#### **ARTICLE V - Assignment**

This Contract may not be assigned or subcontracted any portion of any right or obligation under this contract without the written consent of the City. Notwithstanding any consent by the City to any assignment, Contractor shall at all times remain bound to all warranties, certifications, indemnifications, promises and performances, however described, as are required of it under this contract unless specifically released from the requirement, in writing, by the City.

#### **ARTICLE VI - Choice of Law**

This Contract shall be construed, governed, and enforced in accordance with the laws of the State of Michigan. By executing this Contract, the Contractor and the City agree to venue in a court of appropriate jurisdiction sitting within Washtenaw County for purposes of any action arising under this Contract. The parties stipulate that the venue referenced in this Contract is for convenience and waive any claim of non-convenience.

Whenever possible, each provision of the Contract will be interpreted in a manner as to be effective and valid under applicable law. The prohibition or invalidity, under applicable law, of any provision will not invalidate the remainder of the Contract.

#### **ARTICLE VII - Relationship of the Parties**

The parties of the Contract agree that it is not a Contract of employment but is a Contract to accomplish

a specific result. Contractor is an independent Contractor performing services for the City. Nothing contained in this Contract shall be deemed to constitute any other relationship between the City and the Contractor.

Contractor certifies that it has no personal or financial interest in the project other than the compensation it is to receive under the Contract. Contractor certifies that it is not, and shall not become, overdue or in default to the City for any Contract, debt, or any other obligation to the City including real or personal property taxes. City shall have the right to set off any such debt against compensation awarded for services under this Contract.

#### **ARTICLE VIII - Notice**

All notices given under this Contract shall be in writing, and shall be by personal delivery or by certified mail with return receipt requested to the parties at their respective addresses as specified in the Contract Documents or other address the Contractor may specify in writing. Notice will be deemed given on the date when one of the following first occur: (1) the date of actual receipt; or (2) three days after mailing certified U.S. mail.

#### **ARTICLE IX - Indemnification**

To the fullest extent permitted by law, Contractor shall indemnify, defend and hold the City, its officers, employees and agents harmless from all suits, claims, judgments and expenses including attorney's fees resulting or alleged to result, in whole or in part, from any act or omission, which is in any way connected or associated with this Contract, by the Contractor or anyone acting on the Contractor's behalf under this Contract. Contractor shall not be responsible to indemnify the City for losses or damages caused by or resulting from the City's sole negligence. The provisions of this Article shall survive the expiration or earlier termination of this contract for any reason.

#### **ARTICLE X - Entire Agreement**

This Contract represents the entire understanding between the City and the Contractor and it supersedes all prior representations, negotiations, agreements, or understandings whether written or oral. Neither party has relied on any prior representations in entering into this Contract. No terms or conditions of either party's invoice, purchase order or other administrative document shall modify the terms and conditions of this Contract, regardless of the other party's failure to object to such form. This Contract shall be binding on and shall inure to the benefit of the parties to this Contract and their permitted successors and permitted assigns and nothing in this Contract, express or implied, is intended to or shall confer on any other person or entity any legal or equitable right, benefit, or remedy of any nature whatsoever under or by reason of this Contract. This Contract may be altered, amended or modified only by written amendment signed by the City and the Contractor.

#### **ARTICLE XI – Electronic Transactions**

The City and Contractor agree that signatures on this Contract may be delivered electronically in lieu of an original signature and agree to treat electronic signatures as original signatures that bind them to this Contract. This Contract may be executed and delivered by facsimile and upon such delivery, the facsimile signature will be deemed to have the same effect as if the original signature had been delivered to the other party.

**FOR CONTRACTOR**

By \_\_\_\_\_

Its: \_\_\_\_\_

**FOR THE CITY OF ANN ARBOR**

By \_\_\_\_\_  
Christopher Taylor, Mayor

By \_\_\_\_\_  
Jacqueline Beaudry, City Clerk

**Approved as to substance**

By \_\_\_\_\_  
Milton Dohoney, Interim City Administrator

By \_\_\_\_\_  
Craig Hupy, P.E., Public Services Area  
Administrator

**Approved as to form and content**

\_\_\_\_\_  
Stephen K. Postema, City Attorney

# RLI Insurance Company

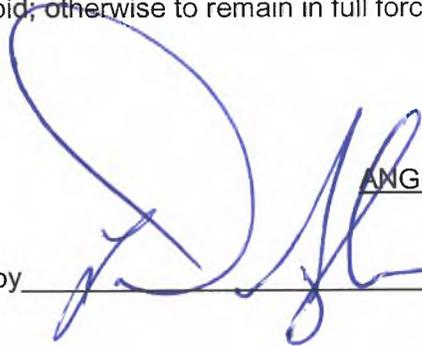
## BID BOND

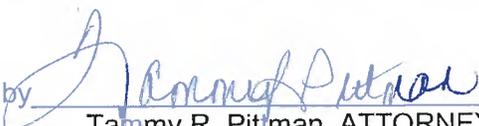
KNOW BY ALL MEN THAT THESE PRESENTS: That we ANGLIN CIVIL, LLC. of 13000 Newburgh Road , Livonia, MI 48150, hereinafter referred to as Principal, and RLI Insurance Company as Surety, are held and firmly bound unto City Of Ann Arbor of 301 E. Huron St. , Ann Arbor, MI 48107, hereinafter referred to as Obligee, in the sum of FIVE AND 00/100 PERCENT Dollars (5.00%) for the payment of which we bind ourselves, our legal representatives, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal has submitted or is about to submit a proposal to Obligee on a contract for Wheeler Facility Pond Dredging

NOW, THEREFORE, if the said contract be awarded to Principal and Principal shall, within such time as may be specified, enter into the contract in writing and give such bond or bonds as may be specified in the bidding or contract documents with surety acceptable to Obligee; or if Principal shall fail to do so, pay to Obligee the damages which Obligee may suffer by reason of such failure not exceeding the penalty of this bond, then this obligation shall be void; otherwise to remain in full force and effect.

Signed and sealed this 23<sup>rd</sup> day of March, 2021.

by  ANGLIN CIVIL, LLC.  
(Principal)  
\_\_\_\_\_ (Seal)

RLI Insurance Company  
(Surety)  
by  \_\_\_\_\_ (Seal)  
Tammy R. Pittman, ATTORNEY-IN-FACT

# POWER OF ATTORNEY

## RLI Insurance Company Contractors Bonding and Insurance Company

9025 N. Lindbergh Dr. Peoria, IL 61615  
Phone: 800-645-2402

### Know All Men by These Presents:

That this Power of Attorney is not valid or in effect unless attached to the bond which it authorizes executed, but may be detached by the approving officer if desired.

That **RLI Insurance Company** and/or **Contractors Bonding and Insurance Company**, each an Illinois corporation, (separately and together, the "Company") do hereby make, constitute and appoint:

Angelo G. Zervos, Gus E. Zervos, Donald W. Burden, Michael Zervos, Stephen M. Zervos, Tammy R. Pittman, jointly or severally

in the City of Southfield, State of Michigan its true and lawful Agent(s) and Attorney(s) in Fact, with full power and authority hereby conferred, to sign, execute, acknowledge and deliver for and on its behalf as Surety, in general, any and all bonds and undertakings in an amount not to exceed Twenty Five Million Dollars (\$25,000,000.00) for any single obligation.

The acknowledgment and execution of such bond by the said Attorney in Fact shall be as binding upon the Company as if such bond had been executed and acknowledged by the regularly elected officers of the Company.

**RLI Insurance Company** and/or **Contractors Bonding and Insurance Company**, as applicable, have each further certified that the following is a true and exact copy of a Resolution adopted by the Board of Directors of each such corporation, and is now in force, to-wit:

"All bonds, policies, undertakings, Powers of Attorney or other obligations of the corporation shall be executed in the corporate name of the Company by the President, Secretary, any Assistant Secretary, Treasurer, or any Vice President, or by such other officers as the Board of Directors may authorize. The President, any Vice President, Secretary, any Assistant Secretary, or the Treasurer may appoint Attorneys in Fact or Agents who shall have authority to issue bonds, policies or undertakings in the name of the Company. The corporate seal is not necessary for the validity of any bonds, policies, undertakings, Powers of Attorney or other obligations of the corporation. The signature of any such officer and the corporate seal may be printed by facsimile."

IN WITNESS WHEREOF, the **RLI Insurance Company** and/or **Contractors Bonding and Insurance Company**, as applicable, have caused these presents to be executed by its respective Vice President with its corporate seal affixed this 25th day of January, 2021.



**RLI Insurance Company  
Contractors Bonding and Insurance Company**

By: B. W. Davis  
Barton W. Davis Vice President

State of Illinois }  
County of Peoria } SS

### CERTIFICATE

On this 25th day of January, 2021, before me, a Notary Public, personally appeared Barton W. Davis, who being by me duly sworn, acknowledged that he signed the above Power of Attorney as the aforesaid officer of the **RLI Insurance Company** and/or **Contractors Bonding and Insurance Company** and acknowledged said instrument to be the voluntary act and deed of said corporation.

I, the undersigned officer of **RLI Insurance Company** and/or **Contractors Bonding and Insurance Company**, do hereby certify that the attached Power of Attorney is in full force and effect and is irrevocable; and furthermore, that the Resolution of the Company as set forth in the Power of Attorney, is now in force. In testimony whereof, I have hereunto set my hand and the seal of the **RLI Insurance Company** and/or **Contractors Bonding and Insurance Company** this 23rd day of March, 2021.

By: Catherine D. Glover  
Catherine D. Glover Notary Public

**RLI Insurance Company  
Contractors Bonding and Insurance Company**

By: Jeffrey D. Fick  
Jeffrey D. Fick Corporate Secretary



**CITY OF ANN ARBOR  
PREVAILING WAGE DECLARATION OF COMPLIANCE**

The "wage and employment requirements" of Section 1:320 of Chapter 14 of Title I of the Ann Arbor City Code mandates that the city not enter any contract, understanding or other arrangement for a public improvement for or on behalf of the city unless the contract provides that all craftsmen, mechanics and laborers employed directly on the site in connection with said improvements, including said employees of subcontractors, shall receive the prevailing wage for the corresponding classes of craftsmen, mechanics and laborers, as determined by statistics for the Ann Arbor area compiled by the United States Department of Labor. Where the contract and the Ann Arbor City Code are silent as to definitions of terms required in determining contract compliance with regard to prevailing wages, the definitions provided in the Davis-Bacon Act as amended (40 U.S.C. 278-a to 276-a-7) for the terms shall be used. Further, to the extent that any employees of the contractor providing services under this contract are not part of the class of craftsmen, mechanics and laborers who receive a prevailing wage in conformance with section 1:320 of Chapter 14 of Title I of the Code of the City of Ann Arbor, employees shall be paid a prescribed minimum level of compensation (i.e. Living Wage) for the time those employees perform work on the contract in conformance with section 1:815 of Chapter 23 of Title I of the Code of the City of Ann Arbor.

At the request of the city, any contractor or subcontractor shall provide satisfactory proof of compliance with this provision.

The Contractor agrees:

- (a) To pay each of its employees whose wage level is required to comply with federal, state or local prevailing wage law, for work covered or funded by this contract with the City,
- (b) To require each subcontractor performing work covered or funded by this contract with the City to pay each of its employees the applicable prescribed wage level under the conditions stated in subsection (a) or (b) above.
- (c) To provide to the City payroll records or other documentation within ten (10) business days from the receipt of a request by the City.
- (d) To permit access to work sites to City representatives for the purposes of monitoring compliance, and investigating complaints or non-compliance.

The undersigned states that he/she has the requisite authority to act on behalf of his/her employer in these matters and has offered to provide the services in accordance with the terms of the wage and employment provisions of the Chapter 14 of the Ann Arbor City Code. The undersigned certifies that he/she has read and is familiar with the terms of Section 1:320 of Chapter 14 of the Ann Arbor City Code and by executing this Declaration of Compliance obligates his/her employer and any subcontractor employed by it to perform work on the contract to the wage and employment requirements stated herein. The undersigned further acknowledges and agrees that if it is found to be in violation of the wage and employment requirements of Section 1:320 of the Chapter 14 of the Ann Arbor City Code it shall be deemed a material breach of the terms of the contract and grounds for termination of same by the City.

Anglin Civil, LLC

Company Name



Signature of Authorized Representative

3/30/2021

Date

Cody Blunt, Estimator

Print Name and Title

13000 Newburgh Rd., Livonia, MI 48150

Address, City, State, Zip

734-464-2600 cody@anglincivil.com

Phone/Email address

Questions about this form? Contact Procurement Office City of Ann Arbor Phone: 734/794-6500

**CITY OF ANN ARBOR  
LIVING WAGE ORDINANCE DECLARATION OF COMPLIANCE**

The Ann Arbor Living Wage Ordinance (Section 1:811-1:8 of Chapter 23 of Title I of the Code) requires that an employer who is (a) a contractor providing services to or for the City for a value greater than \$10,000 for any twelve-month contract term, or (b) a recipient of federal, state, or local grant funding administered by the City for a value greater than \$10,000, or (c) a recipient of financial assistance awarded by the City for a value greater than \$10,000, shall pay its employees a prescribed minimum level of compensation (i.e., Living Wage) for the time those employees perform work on the contract or in connection with the grant or financial assistance. The Living Wage must be paid to these employees for the length of the contract/program.

*Companies employing fewer than 5 persons and non-profits employing fewer than 10 persons are exempt from compliance with the Living Wage Ordinance. If this exemption applies to your company/non-profit agency please check here  No. of employees*

The Contractor or Grantee agrees:

- (a) To pay each of its employees whose wage level is not required to comply with federal, state or local prevailing wage law, for work covered or funded by a contract with or grant from the City, no less than the Living Wage. The current Living Wage is defined as \$13.91/hour for those employers that provide employee health care (as defined in the Ordinance at Section 1:815 Sec. 1 (a)), or no less than \$15.51/hour for those employers that do not provide health care. The Contractor or Grantor understands that the Living Wage is adjusted and established annually on April 30 in accordance with the Ordinance and covered employers shall be required to pay the adjusted amount thereafter to be in compliance with Section 1:815(3).

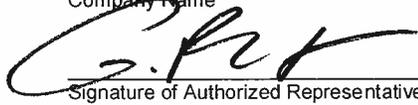
<b>Check the applicable box below which applies to your workforce</b>	
<input type="checkbox"/>	Employees who are assigned to any covered City contract/grant will be paid at or above the applicable living wage without health benefits
<input checked="" type="checkbox"/>	Employees who are assigned to any covered City contract/grant will be paid at or above the applicable living wage with health benefits

- (b) To post a notice approved by the City regarding the applicability of the Living Wage Ordinance in every work place or other location in which employees or other persons contracting for employment are working.
- (c) To provide to the City payroll records or other documentation within ten (10) business days from the receipt of a request by the City.
- (d) To permit access to work sites to City representatives for the purposes of monitoring compliance, and investigating complaints or non-compliance.
- (e) To take no action that would reduce the compensation, wages, fringe benefits, or leave available to any employee covered by the Living Wage Ordinance or any person contracted for employment and covered by the Living Wage Ordinance in order to pay the living wage required by the Living Wage Ordinance.

The undersigned states that he/she has the requisite authority to act on behalf of his/her employer in these matters and has offered to provide the services or agrees to accept financial assistance in accordance with the terms of the Living Wage Ordinance. The undersigned certifies that he/she has read and is familiar with the terms of the Living Wage Ordinance, obligates the Employer/Grantee to those terms and acknowledges that if his/her employer is found to be in violation of Ordinance it may be subject to civil penalties and termination of the awarded contract or grant of financial assistance.

Anglin Civil, LLC  
Company Name

13000 Newburgh Rd.  
Street Address



\_\_\_\_\_  
Signature of Authorized Representative

3/30/21  
Date

Livonia, MI 48150  
City, State, Zip

Cody Blunt, Estimator  
Print Name and Title

734-464-2600 cody@anglincivil.com  
Phone/Email address

# CITY OF ANN ARBOR LIVING WAGE ORDINANCE

**RATE EFFECTIVE APRIL 30, 2020 - ENDING APRIL 29, 2021**

**\$13.91 per hour**

If the employer provides health care benefits\*

**\$15.51 per hour**

If the employer does **NOT** provide health care benefits\*

Employers providing services to or for the City of Ann Arbor or recipients of grants or financial assistance from the City of Ann Arbor for a value of more than \$10,000 in a twelve-month period of time must pay those employees performing work on a City of Ann Arbor contract or grant, the above living wage.

## ENFORCEMENT

The City of Ann Arbor may recover back wages either administratively or through court action for the employees that have been underpaid in violation of the law. Persons denied payment of the living wage have the right to bring a civil action for damages in addition to any action taken by the City.

Violation of this Ordinance is punishable by fines of not more than \$500/violation plus costs, with each day being considered a separate violation. Additionally, the City of Ann Arbor has the right to modify, terminate, cancel or suspend a contract in the event of a violation of the Ordinance.

\* Health Care benefits include those paid for by the employer or making an employer contribution toward the purchase of health care. The employee contribution must not exceed \$.50 an hour for an average work week; and the employer cost or contribution must equal no less than \$1/hr for the average work week.

**The Law Requires Employers to Display This Poster Where Employees Can Readily See It.**

**For Additional Information or to File a Complaint contact  
Colin Spencer at 734/794-6500 or [cspencer@a2gov.org](mailto:cspencer@a2gov.org)**



## Vendor Conflict of Interest Disclosure Form

All vendors interested in conducting business with the City of Ann Arbor must complete and return the Vendor Conflict of Interest Disclosure Form in order to be eligible to be awarded a contract. Please note that all vendors are subject to comply with the City of Ann Arbor's conflict of interest policies as stated within the certification section below.

If a vendor has a relationship with a City of Ann Arbor official or employee, an immediate family member of a City of Ann Arbor official or employee, the vendor shall disclose the information required below.

1. No City official or employee or City employee's immediate family member has an ownership interest in vendor's company or is deriving personal financial gain from this contract.
2. No retired or separated City official or employee who has been retired or separated from the City for less than one (1) year has an ownership interest in vendor's Company.
3. No City employee is contemporaneously employed or prospectively to be employed with the vendor.
4. Vendor hereby declares it has not and will not provide gifts or hospitality of any dollar value or any other gratuities to any City employee or elected official to obtain or maintain a contract.
5. Please note any exceptions below:

Conflict of Interest Disclosure*	
Name of City of Ann Arbor employees, elected officials or immediate family members with whom there may be a potential conflict of interest.	<input type="checkbox"/> Relationship to employee <hr/> <input type="checkbox"/> Interest in vendor's company <input type="checkbox"/> Other (please describe in box below)
N/A	

\*Disclosing a potential conflict of interest does not disqualify vendors. In the event vendors do not disclose potential conflicts of interest and they are detected by the City, vendor will be exempt from doing business with the City.

<b>I certify that this Conflict of Interest Disclosure has been examined by me and that its contents are true and correct to my knowledge and belief and I have the authority to so certify on behalf of the Vendor by my signature below:</b>		
Anglin Civil, LLC	734-464-2600	
<b>Vendor Name</b>	<b>Vendor Phone Number</b>	
	3/30/21	Cody Blunt, Estimator
<b>Signature of Vendor Authorized Representative</b>	<b>Date</b>	<b>Printed Name of Vendor Authorized Representative</b>

Questions about this form? Contact Procurement Office City of Ann Arbor Phone: 734/794-65    procurement@a2gov.org

**CITY OF ANN ARBOR  
DECLARATION OF COMPLIANCE**

Non-Discrimination Ordinance

The "non discrimination by city contractors" provision of the City of Ann Arbor Non-Discrimination Ordinance (Ann Arbor City Code Chapter 112, Section 9:158) requires all contractors proposing to do business with the City to treat employees in a manner which provides equal employment opportunity and does not discriminate against any of their employees, any City employee working with them, or any applicant for employment on the basis of actual or perceived age, arrest record, color, disability, educational association, familial status, family responsibilities, gender expression, gender identity, genetic information, height, HIV status, marital status, national origin, political beliefs, race, religion, sex, sexual orientation, source of income, veteran status, victim of domestic violence or stalking, or weight. It also requires that the contractors include a similar provision in all subcontracts that they execute for City work or programs.

In addition the City Non-Discrimination Ordinance requires that all contractors proposing to do business with the City of Ann Arbor must satisfy the contract compliance administrative policy adopted by the City Administrator. A copy of that policy may be obtained from the Purchasing Manager

The Contractor agrees:

- (a) To comply with the terms of the City of Ann Arbor's Non-Discrimination Ordinance and contract compliance administrative policy, including but not limited to an acceptable affirmative action program if applicable.
- (b) To post the City of Ann Arbor's Non-Discrimination Ordinance Notice in every work place or other location in which employees or other persons are contracted to provide services under a contract with the City.
- (c) To provide documentation within the specified time frame in connection with any workforce verification, compliance review or complaint investigation.
- (d) To permit access to employees and work sites to City representatives for the purposes of monitoring compliance, or investigating complaints of non-compliance.

The undersigned states that he/she has the requisite authority to act on behalf of his/her employer in these matters and has offered to provide the services in accordance with the terms of the Ann Arbor Non-Discrimination Ordinance. The undersigned certifies that he/she has read and is familiar with the terms of the Non-Discrimination Ordinance, obligates the Contractor to those terms and acknowledges that if his/her employer is found to be in violation of Ordinance it may be subject to civil penalties and termination of the awarded contract.

Anglin Civil, LLC

Company Name



Signature of Authorized Representative

3/30/21

Date

Cody Blunt, Estimator

Print Name and Title

13000 Newburgh Rd., Livonia, MI 48150

Address, City, State, Zip

734-464-2600 cody@anglincivil.com

Phone/Email Address

**Questions about the Notice or the City Administrative Policy, Please contact:**  
Procurement Office of the City of Ann Arbor  
(734) 794-650

## INVITATION TO BID

City of Ann Arbor  
Guy C. Larcom Municipal Building  
Ann Arbor, Michigan 48107

Ladies and Gentlemen:

The undersigned, as Bidder, declares that this Bid is made in good faith, without fraud or collusion with any person or persons bidding on the same Contract; that this Bidder has carefully read and examined the bid documents, including City Nondiscrimination requirements and Declaration of Compliance Form, Living Wage requirements and Declaration of Compliance Form, Prevailing Wage requirements and Declaration of Compliance Form, Vendor Conflict of Interest Form, Notice of Pre-Bid Conference, Instructions to Bidders, Bid, Bid Forms, Contract, Bond Forms, General Conditions, Standard Specifications, Detailed Specifications, all Addenda, and the Plans (if applicable) and understands them. The Bidder declares that it conducted a full investigation at the site and of the work proposed and is fully informed as to the nature of the work and the conditions relating to the work's performance. The Bidder also declares that it has extensive experience in successfully completing projects similar to this one.

The Bidder acknowledges that it has not received or relied upon any representations or warrants of any nature whatsoever from the City of Ann Arbor, its agents or employees, and that this Bid is based solely upon the Bidder's own independent business judgment.

The undersigned proposes to perform all work shown on the plans or described in the bid documents, including any addenda issued, and to furnish all necessary machinery, tools, apparatus, and other means of construction to do all the work, furnish all the materials, and complete the work in strict accordance with all terms of the Contract of which this Bid is one part.

In accordance with these bid documents, **and Addenda numbered 1-2,34**, the undersigned, as Bidder, proposes to perform at the sites in and/or around Ann Arbor, Michigan, all the work included herein for the amounts set forth in the Bid Forms.

The Bidder declares that it has become fully familiar with the liquidated damage clauses for completion times and for compliance with City Code Chapter 112, understands and agrees that the liquidated damages are for the non-quantifiable aspects of non-compliance and do not cover actual damages that may be shown and agrees that if awarded the Contract, all liquidated damage clauses form part of the Contract.

The Bidder declares that it has become fully familiar with the provisions of Chapter 14, Section 1:320 (Prevailing wages) and Chapter 23 (Living Wage) of the Code of the City of Ann Arbor and that it understands and agrees to comply, to the extent applicable to employees providing services to the City under this Contract, with the wage and reporting requirements stated in the City Code provisions cited. Bidder certifies that the statements contained in the City Prevailing Wage and Living Wage Declaration of Compliance Forms are true and correct. Bidder further agrees that the cited provisions of Chapter 14 and Chapter 23 form a part of this Contract.

The Bidder declares that it has become familiar with the City Conflict of Interest Disclosure Form and certifies that the statement contained therein is true and correct.

The Bidder encloses a certified check or Bid Bond in the amount of 5% of the total of the Bid Price. The Bidder agrees both to contract for the work and to furnish the necessary Bonds and insurance documentation within 10 days after being notified of the acceptance of the Bid.

If this Bid is accepted by the City and the Bidder fails to contract and furnish the required Bonds and insurance documentation within 10 days after being notified of the acceptance of this Bid, then the Bidder shall be considered to have abandoned the Contract and the certified check or Bid Bond accompanying this Bid shall become due and payable to the City.

If the Bidder enters into the Contract in accordance with this Bid, or if this Bid is rejected, then the accompanying check or Bid Bond shall be returned to the Bidder.

In submitting this Bid, it is understood that the right is reserved by the City to accept any Bid, to reject any or all Bids, to waive irregularities and/or informalities in any Bid, and to make the award in any manner the City believes to be in its best interest.

SIGNED THIS 23RD DAY OF MARCH, 2021.

ANGLIN CIVIL, LLC  
Bidder's Name

  
Authorized Signature of Bidder

13000 NEWBURGH RD, LIVONIA, MI 48150  
Official Address

CODY BLUNT  
(Print Name of Signer Above)

734-464-2600  
Telephone Number

CODY@ANGLINCIVIL.COM  
Email Address for Award Notice

**LEGAL STATUS OF BIDDER**

(The Bidder shall fill out the appropriate form and strike out the other three.)

Bidder declares that it is:

~~\* A corporation organized and doing business under the laws of the State of \_\_\_\_\_, for whom \_\_\_\_\_, bearing the office title of \_\_\_\_\_, whose signature is affixed to this Bid, is authorized to execute contracts.~~

**NOTE: If not incorporated in Michigan, please attach the corporation's Certificate of Authority**

• A limited liability company doing business under the laws of the State of MICHIGAN, whom CODY BLUNT bearing the title of ESTIMATOR whose signature is affixed to this proposal, is authorized to execute contract on behalf of the LLC.

~~\* A partnership, organized under the laws of the state of \_\_\_\_\_ and filed in the county of \_\_\_\_\_, whose members are (list all members and the street and mailing address of each) (attach separate sheet if necessary):~~

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

~~\* An individual, whose signature with address, is affixed to this Bid: \_\_\_\_\_ (initial here)~~

Authorized Official



Date MARCH 23, 2021

(Print) Name CODY BLUNT Title ESTIMATOR

Company: ANGLIN CIVIL, LLC

Address: 13000 NEWBURGH RD., LIVONIA, MI 48150

Contact Phone (734) 464-2600 Fax ( ) N/A

Email CODY@ANGLINCIVIL.COM

# BID FORM

## Section 1 – Schedule of Prices

\* UPDATED BID  
SHEET w/  
REVISED QTY \*

Company: Anglin Civil

Project: **ITB# 4665 - Wheeler Facility Pond Dredging**

**Unit Price Bid –**

Base Bid					
	Item	Estimated Quantity	Unit	Unit Price	Total Cost
1.	Mobilization, Max 5%	1	LS	47,000	= 47,000
2.	Construction Fence, As Needed	200	Ft	40.25	= 8,050.00
3.	Silt Sock	8,310	Ft	3.45	= 28,669.50
4.	Stone Filter	4	EA	575.00	= 2,300.00
5.	Sediment Removal and Earth Excavation	14,400	CY	21.19	= 305,137.71
6.	Sediment Disposal - Landfill	14,400	CY	17.60	= 253,368.00
7.	Hydric Soils, Stockpile	4,500	CY	17.25	= 77,625.00
8.	Level Spreader Rip-Rap	8	CY	575.00	= 4,600.00
9.	15" N-12 Pipe	30	Ft	133.64	= 4,009.13
10.	Trench undercut and Refill	20	CY	57.50	= 1,150.00
11.	Live Stake Shrubs Plugs	708	EA	13.80	= 9,770.40
12.	Seed Mix A	3.50	Acre	4,600.00	= 16,100.00
13.	Seed Mix B	2.42	Acre	4,025.00	= 9,740.50
14.	Seed Mix C	0.67	Acre	3,750.00	= 2,512.50
15.	Erosion Blanket	286,713	SF	.44	= 125,293.58
16.	Compacted Topsoil/Compost	700	CY	17.94	= 12,558.00
17.	Light Storm Sewer Cleaning (12"-24")	103	FT	10.21	= 1,051.84
18.	Light Storm Sewer Cleaning (30"-60")	311	FT	22.70	= 7,060.01
19.	Heavy Storm Sewer Cleaning (12"-24")	103	FT	19.41	= 1,999.44
20.	Heavy Storm Sewer Cleaning (30"-60")	311	FT	29.76	= 9,255.98
21.	Relocation and Replacement of Concrete Pads	3	EA	4,025.00	= 12,075.00
22.	Topsoil Stripping and Stockpile	14,955	SY	1.15	= 17,198.25
	<b>PROJECT TOTAL</b>				

ESTIMATED TOTAL

\$ 957,864.84

# BID FORM

## Section 2 – Material, Equipment and Environmental Alternates

The Base Bid proposal price shall include materials and equipment selected from the designated items and manufacturers listed in the bidding documents. This is done to establish uniformity in bidding and to establish standards of quality for the items named.

If the Contractor wishes to quote alternate items for consideration by the City, it may do so under this Section. A complete description of the item and the proposed price differential must be provided. Unless approved at the time of award, substitutions where items are specifically named will be considered only as a negotiated change in Contract Sum.

If an environmental alternative is bid the City strongly encourages bidders to provide recent examples of product testing and previous successful use for the City to properly evaluate the environmental alternative. Testing data from independent accredited organizations are strongly preferred.

<u>Item Number</u>	<u>Description</u>	<u>Add/Deduct Amount</u>
--------------------	--------------------	--------------------------

If the Bidder does not suggest any material or equipment alternate, the Bidder **MUST** complete the following statement:

For the work outlined in this request for bid, the bidder does NOT propose any material or equipment alternate under the Contract.

Signature of Authorized Representative of Bidder



Date 3/23/2021

# BID FORM

## Section 3 - Time Alternate

If the Bidder takes exception to the time stipulated in Article III of the Contract, Time of Completion, page C-2, it is requested to stipulate below its proposed time for performance of the work. Consideration will be given to time in evaluating bids.

If the Bidder does not suggest any time alternate, the Bidder **MUST** complete the following statement:

For the work outlined in this request for bid, the bidder does NOT propose any time alternate under the Contract.

Signature of Authorized Representative of Bidder  Date 3/23/2021

# BID FORM

## Section 4 - Major Subcontractors

For purposes of this Contract, a Subcontractor is anyone (other than the Contractor) who performs work (other than or in addition to the furnishing of materials, plans or equipment) at or about the construction site, directly or indirectly for or on behalf of the Contractor (and whether or not in privity of Contract with the Contractor), but shall not include any individual who furnishes merely the individual's own personal labor or services.

Contractor agrees that all subcontracts entered into by the Contractor shall contain similar wage provision to Section 4 of the General Conditions covering subcontractor's employees who perform work on this contract.

For the work outlined in these documents the Bidder expects to engage the following major subcontractors to perform the work identified:

<u>Subcontractor (Name and Address)</u>	<u>Work</u>	<u>Amount</u>
GM+ Sons 6784 Whitmore Lake Rd. Whitmore Lake, MI 48189	Concrete	\$ 3500.00
Natural Community Services 248-513-1909	Plantings	\$ 175,000.00

If the Bidder does not expect to engage any major subcontractor, the Bidder **MUST** complete the following statement:

For the work outlined in this request for bid, the bidder does NOT expect to engage any major subcontractor to perform work under the Contract.

Signature of Authorized Representative of Bidder



Date 3/23/2021

# BID FORM

## Section 5 – References

Include a minimum of **5** reference from similar project completed within the past **10** years.

[Refer also to Instructions to Bidders for additional requirements, if any]

1) See Attached \_\_\_\_\_  
Project Name Cost Date Constructed

\_\_\_\_\_  
Contact Name Phone Number

2) \_\_\_\_\_  
Project Name Cost Date Constructed

\_\_\_\_\_  
Contact Name Phone Number

3) \_\_\_\_\_  
Project Name Cost Date Constructed

\_\_\_\_\_  
Contact Name Phone Number

4) \_\_\_\_\_  
Project Name Cost Date Constructed

\_\_\_\_\_  
Contact Name Phone Number

5) \_\_\_\_\_  
Project Name Cost Date Constructed

\_\_\_\_\_  
Contact Name Phone Number



4. If applicable, please provide a list of all bidder's litigation and arbitrations currently pending and within the past five years, including an explanation of each (parties, court/forum, legal claims, damages sought, and resolution).

N/A

5. Qualifications of management and supervisory personnel to be assigned by the bidder:

See Attached

6. State and local licenses and license numbers held by the bidder:

N/A

7. Will all subcontractors, employees and other individuals working on the construction project maintain current applicable licenses required by law for all licensed occupations and professions?

Yes

No

8. Will contractors, subcontractors, employees, and other individuals working on the construction project be misclassified by bidder as independent contractors in violation of state or federal law?

Yes

No

9. Submit a statement as to what percentage of your work force resides within the City of Ann Arbor, and what percentage resides in Washtenaw County, Michigan, and the same information for any major subcontractors.

Ann Arbor - 0% Washtenaw County - <2%

10. Submit documentation as to employee pay rates.

*Will follow prevailing wage guide lines*

11. Submit a statement whether bidder provides health insurance, pension or other retirement benefits, paid leave, or other benefits to its employees.

Medical, Dental, Vision, 401k, Flexible Health Spending Account, Tuition Reimbursement, Referral Program, PTO

12. Submit a statement explaining bidder's Equal Employment Opportunity Programs for minorities, women, veterans, returning citizens, and small businesses along with supporting documentation or other evidence.

If apparent low bidder will provide

13. Has bidder had any violations of state, federal or local laws or regulations, including OSHA or MIOSHA violations, state or federal prevailing wage laws, wage and hour laws, worker's compensation or unemployment compensation laws, rules or regulations, issued to or against the bidder within the past five years?

Yes

No

If you answered "yes" to the question above, for each violation provide an explanation of the nature of the violation, the agency involved, a violation or reference number, any other individual(s) or party(ies) involved, and the status or outcome and resolution.

14. Does bidder have an existing Fitness for Duty Program (drugs and alcohol testing) of each employee working on the proposed jobsite?

Yes

No

15. By attachment, please provide the following:

- Disclosure of any debarment by any federal, state or local governmental unit and/or findings of non-responsibility or non-compliance with respect to any public or private construction project performed by the bidder. Proof of insurance, including certificates of insurance, confirming existence and amount of coverage for liability, property damage, workers compensation, and any other insurances required by the proposed contract documents.

16. Does bidder have an on-going MIOSHA-approved safety-training program for employees to be used on the proposed job site?

Yes  No

17. Does bidder have evidence of worker's compensation Experience Modification Rating ("EMR")?

Yes  No

EMR = .95

18. Can bidder provide a ratio of masters and journeypersons to apprentices proposed to be used on the construction project job site, documentation of master or journeyperson certification or status and the source for same, and if not, the qualifications of employees who will be assigned to work on the project?

\*\*See Attached Yes  No

If, yes, Ratio = \_\_\_\_\_

19. Can bidder provide documentation that it participates in a Registered Apprenticeship Program (RAP) that is registered with the United States Department of Labor Office of Apprenticeship or by a State Apprenticeship Agency recognized by the Office of Apprenticeship?

Yes  No

If bidder answered "yes" to the question above and is selected for this project, bidder will be required to submit the RAP to the City.

If bidder answered "no" to the question above, please provide details on how your organization assess the skills and qualifications of any employees who do not have master or journeyperson certification or status, or are not participants in a Registered Apprenticeship Program identified above.

Resumes, interviews and on-site performance evaluation

20. Will bidder comply with all applicable state and federal laws and visa requirements regarding the hiring of non-US citizens, and disclosure of any work visas sought or obtained by the bidder, any of the bidder's subcontractors, or any of the bidder's employees or independent contractors, in order to perform any portion of the project?

Yes  No

21. Can bidder provide audited financial information current within the past twelve (12) months, such as a balance sheet, statement of operations, and bonding capacity?

Yes

No

*(Evidence that bidder has financial resources to start up and follow through on the project(s) and to respond to damages in case of default as shown by written verification of bonding capacity equal to or exceeding the amount of the bidder's scope of work on the project. The written verification must be submitted by a licensed surety company rated "B+" (or better) in the current A.M. Best Guide and qualified to do business within the State of Michigan, and the same audited financial information for any subcontractor estimated to be paid more than \$100,000.00 related to any portion of the project.)*

22. Can bidder provide evidence of a quality assurance program used by the bidder and the results of any such program on the bidder's previous projects?

Yes

No



January 4, 2021

To Whom it may Concern,

Cody Blunt, Estimator, at Anglin Civil is duly authorized to sign in the name of Anglin Civil LLC.

Respectfully,

L Doug Anglin II – President



**ZERVOS GROUP, INC.**  
INSURANCE & BONDS



March 1<sup>st</sup>, 2021

Re: *Workers Compensation - EMR*  
*Anglin Civil, LLC*  
*13000 Newburgh Rd*  
*Livonia, MI 48150*

*To Whom It May Concern:*

*The Experience Modification Rate (EMR) for Anglin Civil is as follows:*

<u>Year</u>	<u>Rate</u>
<i>4/30/20-5/1/21</i>	<i>0.95</i>
<i>4/30/19-5/1/20</i>	<i>0.97</i>
<i>4/30/18-5/1/19</i>	<i>0.98</i>
<i>4/30/17-5/1/18</i>	<i>0.90</i>

*If you have any questions or need additional information, please feel free to contact our office.*

*Sincerely,*

*Michael G. Zervos*  
*President of Operations*





**ZERVOS GROUP, INC.**  
INSURANCE & BONDS



January 8, 2020

Anglin Civil, LLC  
13000 Newburgh Road  
Livonia, MI 48150

To Whom It May Concern,

We have had a working relationship with Anglin Civil, LLC for many years. Their surety company is RLI Insurance Company (*A.M. Best Rating A+ XI and is listed in the Department of the Treasury's Circular 570 and is licensed to transact business in all states*). Anglin Civil, LLC has a \$15,000,000 single limit and a \$30,000,000 aggregate bonding limit. This program is to meet the contractor's every day needs and by all means, does not limit the contractor to any certain amount.

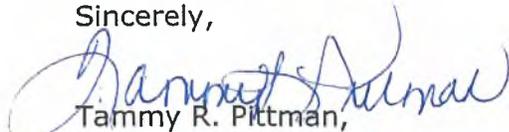
All of the principals related to this organization are well-experienced and highly capable individuals. It is our opinion that any project regardless of size or nature undertaken by this firm will be handled with dispatch and to the complete satisfaction of the owner.

We are confident that your investigation has confirmed the fact that Anglin Civil, LLC is an exceptionally well-managed and financially sound company; with a credit rating with all suppliers and subcontractors that is a model for the industry.

We would expect that the execution of any final bonds would be subject to a review of the final contract terms, conditions and financing by our client and RLI Insurance Company, as well as the satisfactory evaluation of the surety's normal underwriting requirements at the time the bond is requested.

Please do not hesitate to contact our office if we can be of further assistance.

Sincerely,

  
Tammy R. Pittman,  
Attorney-in-Fact

# POWER OF ATTORNEY

## RLI Insurance Company Contractors Bonding and Insurance Company

9025 N. Lindbergh Dr. Peoria, IL 61615  
Phone: 800-645-2402

### Know All Men by These Presents:

That this Power of Attorney is not valid or in effect unless attached to the bond which it authorizes executed, but may be detached by the approving officer if desired.

That **RLI Insurance Company and/or Contractors Bonding and Insurance Company**, each an Illinois corporation, (separately and together, the "Company") do hereby make, constitute and appoint:

Angelo G. Zervos, Gus E. Zervos, Donald W. Burden, Michael Zervos, Stephen M. Zervos, Tammy R. Pittman, jointly or severally

in the City of Southfield, State of Michigan its true and lawful Agent(s) and Attorney(s) in Fact, with full power and authority hereby conferred, to sign, execute, acknowledge and deliver for and on its behalf as Surety, in general, any and all bonds and undertakings in an amount not to exceed Twenty Five Million Dollars (\$25,000,000.00) for any single obligation.

The acknowledgment and execution of such bond by the said Attorney in Fact shall be as binding upon the Company as if such bond had been executed and acknowledged by the regularly elected officers of the Company.

**RLI Insurance Company and/or Contractors Bonding and Insurance Company**, as applicable, have each further certified that the following is a true and exact copy of a Resolution adopted by the Board of Directors of each such corporation, and is now in force, to-wit:

"All bonds, policies, undertakings, Powers of Attorney or other obligations of the corporation shall be executed in the corporate name of the Company by the President, Secretary, any Assistant Secretary, Treasurer, or any Vice President, or by such other officers as the Board of Directors may authorize. The President, any Vice President, Secretary, any Assistant Secretary, or the Treasurer may appoint Attorneys in Fact or Agents who shall have authority to issue bonds, policies or undertakings in the name of the Company. The corporate seal is not necessary for the validity of any bonds, policies, undertakings, Powers of Attorney or other obligations of the corporation. The signature of any such officer and the corporate seal may be printed by facsimile."

IN WITNESS WHEREOF, the **RLI Insurance Company and/or Contractors Bonding and Insurance Company**, as applicable, have caused these presents to be executed by its respective Vice President with its corporate seal affixed this 20th day of August, 2019.



**RLI Insurance Company  
Contractors Bonding and Insurance Company**  
By: B. W. Davis  
Barton W. Davis Vice President

State of Illinois }  
County of Peoria } SS

### CERTIFICATE

On this 20th day of August, 2019, before me, a Notary Public, personally appeared Barton W. Davis, who being by me duly sworn, acknowledged that he signed the above Power of Attorney as the aforesaid officer of the **RLI Insurance Company and/or Contractors Bonding and Insurance Company** and acknowledged said instrument to be the voluntary act and deed of said corporation.

I, the undersigned officer of **RLI Insurance Company and/or Contractors Bonding and Insurance Company**, do hereby certify that the attached Power of Attorney is in full force and effect and is irrevocable; and furthermore, that the Resolution of the Company as set forth in the Power of Attorney, is now in force. In testimony whereof, I have hereunto set my hand and the seal of the **RLI Insurance Company and/or Contractors Bonding and Insurance Company** this 8th day of January, 2020.

By: Gretchen L. Johnnigk  
Gretchen L. Johnnigk Notary Public

**RLI Insurance Company  
Contractors Bonding and Insurance Company**  
By: Jean M. Stephenson  
Jean M. Stephenson Corporate Secretary





## Projects in Progress-

### **Galloway Creek Ecosystem**

Owner: US Army Corps  
Architect/ Engineer: USACE  
Contract Amount: \$2,784,493.87  
Percent Complete: 98%  
Scheduled Completion Date: 2021

### **Johnson Creek Restoration**

Owner: City of Northville  
Architect/ Engineer: ECT  
Contract Amount: \$963,089.94  
Percent Complete: 85%  
Scheduled Completion Date: 2021

### **Normandy Oaks**

Owner: City of Royal Oak  
Architect/ Engineer: Norwak & Fraus  
Contract Amount: \$3,159,599.55  
Percent Complete: 75%  
Scheduled Completion Date: 2021

### **Belle Isle Flatwood Restoration**

Owner: State of MI DTMB  
Architect/ Engineer: EA Science and  
Technology  
Contract Amount: \$2,700,386.41  
Percent Complete: 1%  
Scheduled Completion Date: 2023

### **Oudolf Garden**

Owner: Friends of Oudolf Garden (FOG)  
Architect/ Engineer: Insite Studio  
Contract Amount: \$1,300,000.00  
Percent Complete: 90%  
Scheduled Completion Date: 2021

### **Lansing Rivertrail Repair**

Owner: City of Lansing  
Architect/ Engineer: NTH Consultants  
Contract Amount: \$ 1,177,526.25  
Percent Complete: 80%  
Scheduled Completion Date: 2021

### **Brandenburg Park Shoreline Restoration**

Owner: Charter Township of Chesterfield  
Architect/ Engineer: OHM  
Contract Amount: \$987,091.75  
Percent Complete: 20%  
Scheduled Completion Date: 2021

### **Torch Lake Benthic Restoration**

Owner: State of MI DTMB  
Architect/ Engineer: The Mannik & Smith  
Group, Inc.  
Contract Amount: \$427,653.85  
Percent Complete: 1%  
Scheduled Completion Date: 2021



## Projects Completed-

### **Bishop Creek**

Owner: City of Novi  
Architect/ Engineer: Spalding DeDecker  
Contract Amount: \$734,453.75  
Self-Performed: 99%  
Completion Date: 2018

### **ITC Trail – Phase 2**

Owner: City of Novi  
Architect/ Engineer: AECOM  
Contract Amount: \$2,258,147.05  
Self-Performed: 93%  
Completion Date: 2019

### **Clinton River Corridor Habitat Restoration**

Owner: City of Sterling Heights  
Architect/ Engineer: HRC  
Contract Amount: \$ 3,319,848.13  
Self-Performed: 99%  
Completion Date: 2019  
(Prevailing Wage/General Contractor)

### **Clinton River Spillway Habitat Restoration**

Owner: Great Lakes Habitat Restoration Program  
Architect/ Engineer: HRC  
Contract Amount: \$2,542,400.00  
Self-Performed: 94%  
Completion Date: 2019  
(Prevailing Wage/General Contractor)

### **Bosco Fields**

Owner: City of Novi  
Architect/ Engineer: Spalding DeDecker  
Contract Amount: \$1,931,663.68  
Self-Performed: 85%  
Completion Date: 2020

### **Veterans Drive**

Owner: City of Ypsilanti  
Architect/ Engineer: OHM Advisors  
Contract Amount: \$1,004,457.44  
Self-Performed: 90%  
Completion Date: 2015  
(Prevailing Wage/General Contractor)

### **Wabash Slope Restoration**

Owner: City of Milan  
Architect/ Engineer: OHM  
Contract Amount: \$ 599,977.87  
Self-Performed: 94%  
Completion Date: 2019

### **Rogell & Lucas Dr. Landscaping**

Owner: Wayne County Airport Authority  
Architect/ Engineer: HRC  
Contract Amount: \$3,694,753.86  
Self-Performed: 55%  
Completion Date: 2019

### **Bird Road Retaining Wall**

Owner: City of Ann Arbor  
Architect/Engineer: Ann Arbor  
Contract Amount: \$207,330.00  
Self-Performed: 100%  
Completion Date: 2020  
(Prevailing Wage/General Contractor)

### **Erie Marsh Dike**

Owner: City of Monroe  
Architect/Engineer: The Nature Conservancy  
Contract Amount: \$ 567,675.00  
Self-Performed: 90%  
Completion Date: 2019



## Construction Experience of key individuals

### Steve Smith

- 15+ years' experience as a superintendent/project manager
- Experience in all aspects of construction

### Ken O'Connor

- 7+ years' experience with Anglin Civil
- On-site foreman
- Specializes in Wetland Mitigation, Stream Restoration, and Embankment Stabilization

### Mickey Clarke

- 15+ years' experience with Anglin Civil and Anglin Civil Constructors
- On-site foreman with experience in heavy civil construction projects



## References

### ITC Trail – Phase II

\$2,300,000

#### **Mark Koskinen**

*Engineer AECOM*

248-794-3905

Mark.koskinen@aecom.com

### Wabash Slope Stabilization Project

\$600,000

#### **Stan Kirton**

*Milan DPW*

(734) 985-5833

### Galloway Creek Ecosystem

\$2,700,000.00

#### **Phil Mlinarich**

*US Army Corps of Engineers - DARO*

(313) 806-6731

Philip.M.Mlinarich@usace.army.mil

### Clinton River Mouth Habitat Restoration

\$1,173,000.00

#### **Keith Kropfreiter**

*Project Engineer- Detroit Area Office*

(313) 720-7883

keith.e.kropfreiter@usace.army.mil

### Johnson Creek Habitat Restoration Project

\$963,000.00

#### **Alice Bailey**

*Senior Engineer – Environmental Consulting  
& Technology, Inc.*

(734) 769-3004 Ext. 23322

abailey@ectinc.com

# Request for Taxpayer Identification Number and Certification

▶ Go to [www.irs.gov/FormW9](http://www.irs.gov/FormW9) for instructions and the latest information.

**Give Form to the  
 requester. Do not  
 send to the IRS.**

Print or type. See Specific Instructions on page 3.	<p><b>1</b> Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.          Anglin Civil, LLC</p> <p><b>2</b> Business name/disregarded entity name, if different from above</p>	
	<p><b>3</b> Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only <b>one</b> of the following seven boxes.</p> <p> <input type="checkbox"/> Individual/sole proprietor or single-member LLC               <input type="checkbox"/> C Corporation               <input type="checkbox"/> S Corporation               <input type="checkbox"/> Partnership               <input type="checkbox"/> Trust/estate  <input checked="" type="checkbox"/> Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ▶ <u>S</u>  <small>Note: Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is not disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner.</small>  <input type="checkbox"/> Other (see Instructions) ▶         </p>	<p><b>4</b> Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):          Exempt payee code (if any) _____          Exemption from FATCA reporting code (if any) _____  <small>(Applies to accounts maintained outside the U.S.)</small></p>
	<p><b>5</b> Address (number, street, and apt. or suite no.) See instructions.          13000 Newburgh</p>	<p>Requester's name and address (optional)</p>
	<p><b>6</b> City, state, and ZIP code          Livonia, MI 48150</p>	
	<p><b>7</b> List account number(s) here (optional)</p>	

## Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

**Note:** If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

<b>Social security number</b>										
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-	-	-	-							
<b>or</b>										
<b>Employer identification number</b>										
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4	2	-	1	7	5	6	2	6	8	

## Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

**Certification instructions.** You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

<b>Sign Here</b>	Signature of U.S. person ▶	Date ▶ <u>3/1/2019</u>
------------------	----------------------------	------------------------

## General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

**Future developments.** For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to [www.irs.gov/FormW9](http://www.irs.gov/FormW9).

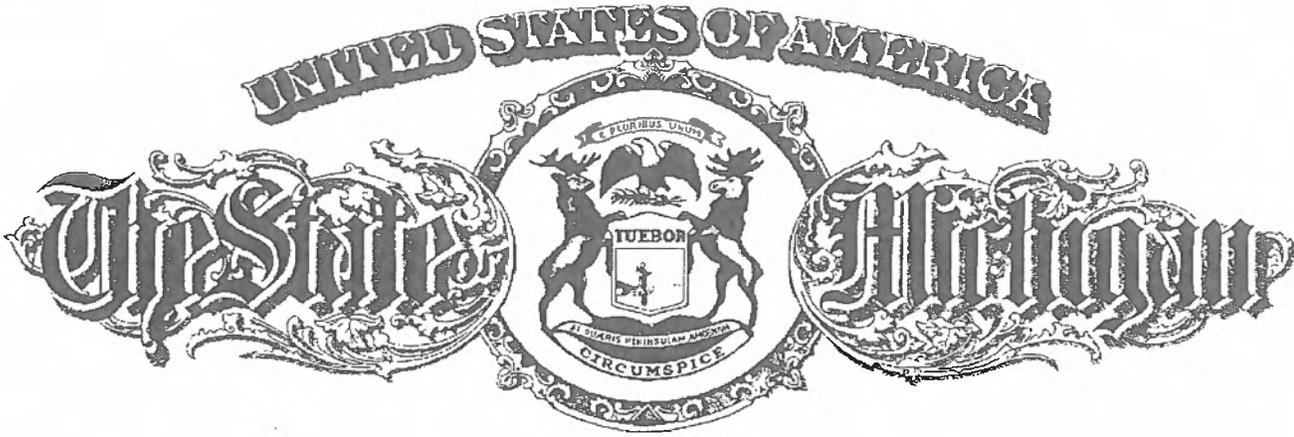
## Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-INT (interest earned or paid)

- Form 1099-DIV (dividends, including those from stocks or mutual funds)
  - Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
  - Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
  - Form 1099-S (proceeds from real estate transactions)
  - Form 1099-K (merchant card and third party network transactions)
  - Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
  - Form 1099-C (canceled debt)
  - Form 1099-A (acquisition or abandonment of secured property)
- Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

*If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding, later.*



**Department of Licensing and Regulatory Affairs**

Lansing, Michigan

*This is to Certify That*

**ANGLIN CIVIL, LLC**

*was validly organized on February 13, 2008 as a Limited Liability Company. Said Limited Liability Company is validly in existence under the laws of this state and has satisfied its annual filing obligations.*

*This certificate is issued pursuant to the provisions of 1993 PA 23, as amended, to attest to the fact that the company is in good standing in Michigan as of this date.*

*This certificate is in due form, made by me as the proper officer, and is entitled to have full faith and credit given it in every court and office within the United States.*



Sent by Facsimile Transmission  
1453666

*In testimony whereof, I have hereunto set my hand, in the City of Lansing, this 30th day of May, 2017*

*Julia Dale*

Julia Dale, Director  
Corporations, Securities & Commercial Licensing Bureau

## PERFORMANCE BOND

- (1) \_\_\_\_\_ of \_\_\_\_\_ (referred to as "Principal"), and \_\_\_\_\_, a corporation duly authorized to do business in the State of Michigan (referred to as "Surety"), are bound to the City of Ann Arbor, Michigan (referred to as "City"), for \$ \_\_\_\_\_, the payment of which Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, by this bond.
- (2) The Principal has entered a written Contract with the City entitled \_\_\_\_\_  
\_\_\_\_\_, for ITB No. \_\_\_\_\_ and this bond is given for that Contract in compliance with Act No. 213 of the Michigan Public Acts of 1963, as amended, being MCL 129.201 *et seq.*
- (3) Whenever the Principal is declared by the City to be in default under the Contract, the Surety may promptly remedy the default or shall promptly:
- (a) complete the Contract in accordance with its terms and conditions; or
  - (b) obtain a bid or bids for submission to the City for completing the Contract in accordance with its terms and conditions, and upon determination by Surety of the lowest responsible bidder, arrange for a Contract between such bidder and the City, and make available, as work progresses, sufficient funds to pay the cost of completion less the balance of the Contract price; but not exceeding, including other costs and damages for which Surety may be liable hereunder, the amount set forth in paragraph 1.
- (4) Surety shall have no obligation to the City if the Principal fully and promptly performs under the Contract.
- (5) Surety agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the work to be performed thereunder, or the specifications accompanying it shall in any way affect its obligations on this bond, and waives notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the work, or to the specifications.
- (6) Principal, Surety, and the City agree that signatures on this bond may be delivered electronically in lieu of an original signature and agree to treat electronic signatures as original signatures that bind them to this bond. This bond may be executed and delivered by facsimile and upon such delivery, the facsimile signature will be deemed to have the same effect as if the original signature had been delivered to the other party.

**SIGNED AND SEALED** this \_\_\_\_\_ day of \_\_\_\_\_, 202\_.

\_\_\_\_\_  
(Name of Surety Company)  
By \_\_\_\_\_  
(Signature)

Its \_\_\_\_\_  
(Title of Office)

Approved as to form:

\_\_\_\_\_  
Stephen K. Postema, City Attorney

\_\_\_\_\_  
(Name of Principal)  
By \_\_\_\_\_  
(Signature)

Its \_\_\_\_\_  
(Title of Office)

Name and address of agent:

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

## LABOR AND MATERIAL BOND

- (1) \_\_\_\_\_  
of \_\_\_\_\_ (referred to as  
"Principal"), and \_\_\_\_\_, a corporation duly authorized  
to do business in the State of Michigan, (referred to as "Surety"), are bound to the City of Ann Arbor,  
Michigan (referred to as "City"), for the use and benefit of claimants as defined in Act 213 of Michigan  
Public Acts of 1963, as amended, being MCL 129.201 et seq., in the amount of  
\$ \_\_\_\_\_, for the payment of which Principal and Surety bind themselves, their heirs,  
executors, administrators, successors and assigns, jointly and severally, by this bond.
- (2) The Principal has entered a written Contract with the City entitled \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_, for ITB No. \_\_\_\_\_; and this bond is  
given for that Contract in compliance with Act No. 213 of the Michigan Public Acts of 1963 as amended;
- (3) If the Principal fails to promptly and fully repay claimants for labor and material reasonably required  
under the Contract, the Surety shall pay those claimants.
- (4) Surety's obligations shall not exceed the amount stated in paragraph 1, and Surety shall have no  
obligation if the Principal promptly and fully pays the claimants.
- (5) Principal, Surety, and the City agree that signatures on this bond may be delivered electronically in lieu  
of an original signature and agree to treat electronic signatures as original signatures that bind them to  
this bond. This bond may be executed and delivered by facsimile and upon such delivery, the facsimile  
signature will be deemed to have the same effect as if the original signature had been delivered to the  
other party.

**SIGNED AND SEALED** this \_\_\_\_\_ day of \_\_\_\_\_, 202\_\_

\_\_\_\_\_  
(Name of Surety Company)

By \_\_\_\_\_  
(Signature)

Its \_\_\_\_\_  
(Title of Office)

Approved as to form:

\_\_\_\_\_  
Stephen K. Postema, City Attorney

\_\_\_\_\_  
(Name of Principal)

By \_\_\_\_\_  
(Signature)

Its \_\_\_\_\_  
(Title of Office)

Name and address of agent:

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

# **GENERAL CONDITIONS**

## **Section 1 - Execution, Correlation and Intent of Documents**

The contract documents shall be signed in 2 copies by the City and the Contractor.

The contract documents are complementary and what is called for by any one shall be binding. The intention of the documents is to include all labor and materials, equipment and transportation necessary for the proper execution of the work. Materials or work described in words which so applied have a well-known technical or trade meaning have the meaning of those recognized standards.

In case of a conflict among the contract documents listed below in any requirement(s), the requirement(s) of the document listed first shall prevail over any conflicting requirement(s) of a document listed later.

(1) Addenda in reverse chronological order; (2) Detailed Specifications; (3) Standard Specifications; (4) Plans; (5) General Conditions; (6) Contract; (7) Bid Forms; (8) Bond Forms; (9) Bid.

## **Section 2 - Order of Completion**

The Contractor shall submit with each invoice, and at other times reasonably requested by the Supervising Professional, schedules showing the order in which the Contractor proposes to carry on the work. They shall include the dates at which the Contractor will start the several parts of the work, the estimated dates of completion of the several parts, and important milestones within the several parts.

## **Section 3 - Familiarity with Work**

The Bidder or its representative shall make personal investigations of the site of the work and of existing structures and shall determine to its own satisfaction the conditions to be encountered, the nature of the ground, the difficulties involved, and all other factors affecting the work proposed under this Contract. The Bidder to whom this Contract is awarded will not be entitled to any additional compensation unless conditions are clearly different from those which could reasonably have been anticipated by a person making diligent and thorough investigation of the site.

The Bidder shall immediately notify the City upon discovery, and in every case prior to submitting its Bid, of every error or omission in the bidding documents that would be identified by a reasonably competent, diligent Bidder. In no case will a Bidder be allowed the benefit of extra compensation or time to complete the work under this Contract for extra expenses or time spent as a result of the error or omission.

## **Section 4 - Wage Requirements**

Under this Contract, the Contractor shall conform to Chapter 14 of Title I of the Code of the City of Ann Arbor as amended; which in part states "...that all craftsmen, mechanics and laborers employed directly on the site in connection with said improvements, including said employees of

subcontractors, shall receive the prevailing wage for the corresponding classes of craftsmen, mechanics and laborers, as determined by statistics for the Ann Arbor area compiled by the United States Department of Labor. At the request of the City, any contractor or subcontractor shall provide satisfactory proof of compliance with the contract provisions required by the Section.

Pursuant to Resolution R-16-469 all public improvement contractors are subject to prevailing wage and will be required to provide to the City payroll records sufficient to demonstrate compliance with the prevailing wage requirements. A sample Prevailing Wage Form is provided in the Appendix herein for reference as to what will be expected from contractors. Use of the Prevailing Wage Form provided in the Appendix section or a City-approved equivalent will be required along with wage rate interviews.

Where the Contract and the Ann Arbor City Ordinance are silent as to definitions of terms required in determining contract compliance with regard to prevailing wages, the definitions provided in the Davis-Bacon Act as amended (40 U.S.C. 278-a to 276-a-7) for the terms shall be used.

If the Contractor is a "covered employer" as defined in Chapter 23 of the Ann Arbor City Code, the Contractor agrees to comply with the living wage provisions of Chapter 23 of the Ann Arbor City Code. The Contractor agrees to pay those employees providing Services to the City under this Contract a "living wage," as defined in Section 1:815 of the Ann Arbor City Code, as adjusted in accordance with Section 1:815(3); to post a notice approved by the City of the applicability of Chapter 23 in every location in which regular or contract employees providing services under this Contract are working; to maintain records of compliance; if requested by the City, to provide documentation to verify compliance; to take no action that would reduce the compensation, wages, fringe benefits, or leave available to any employee or person contracted for employment in order to pay the living wage required by Section 1:815; and otherwise to comply with the requirements of Chapter 23.

Contractor agrees that all subcontracts entered into by the Contractor shall contain similar wage provision covering subcontractor's employees who perform work on this contract.

## **Section 5 - Non-Discrimination**

The Contractor agrees to comply, and to require its subcontractor(s) to comply, with the nondiscrimination provisions of MCL 37.2209. The Contractor further agrees to comply with the provisions of Section 9:158 of Chapter 112 of Title IX of the Ann Arbor City Code, and to assure that applicants are employed and that employees are treated during employment in a manner which provides equal employment opportunity.

## **Section 6 - Materials, Appliances, Employees**

Unless otherwise stipulated, the Contractor shall provide and pay for all materials, labor, water, tools, equipment, light, power, transportation, and other facilities necessary or used for the execution and completion of the work. Unless otherwise specified, all materials incorporated in the permanent work shall be new, and both workmanship and materials shall be of the highest quality. The Contractor shall, if required, furnish satisfactory evidence as to the kind and quality of materials.

The Contractor shall at all times enforce strict discipline and good order among its employees, and shall seek to avoid employing on the work any unfit person or anyone not skilled in the work

assigned.

Adequate sanitary facilities shall be provided by the Contractor.

## **Section 7 - Qualifications for Employment**

The Contractor shall employ competent laborers and mechanics for the work under this Contract. For work performed under this Contract, employment preference shall be given to qualified local residents.

## **Section 8 - Royalties and Patents**

The Contractor shall pay all royalties and license fees. It shall defend all suits or claims for infringements of any patent rights and shall hold the City harmless from loss on account of infringement except that the City shall be responsible for all infringement loss when a particular process or the product of a particular manufacturer or manufacturers is specified, unless the City has notified the Contractor prior to the signing of the Contract that the particular process or product is patented or is believed to be patented.

## **Section 9 - Permits and Regulations**

The Contractor must secure and pay for all permits, permit or plan review fees and licenses necessary for the prosecution of the work. These include but are not limited to City building permits, right-of-way permits, lane closure permits, right-of-way occupancy permits, and the like. The City shall secure and pay for easements shown on the plans unless otherwise specified.

The Contractor shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the work as drawn and specified. If the Contractor observes that the contract documents are at variance with those requirements, it shall promptly notify the Supervising Professional in writing, and any necessary changes shall be adjusted as provided in the Contract for changes in the work.

## **Section 10 - Protection of the Public and of Work and Property**

The Contractor is responsible for the means, methods, sequences, techniques and procedures of construction and safety programs associated with the work contemplated by this contract. The Contractor, its agents or sub-contractors, shall comply with the "General Rules and Regulations for the Construction Industry" as published by the Construction Safety Commission of the State of Michigan and to all other local, State and National laws, ordinances, rules and regulations pertaining to safety of persons and property.

The Contractor shall take all necessary and reasonable precautions to protect the safety of the public. It shall continuously maintain adequate protection of all work from damage, and shall take all necessary and reasonable precautions to adequately protect all public and private property from injury or loss arising in connection with this Contract. It shall make good any damage, injury or loss to its work and to public and private property resulting from lack of reasonable protective precautions, except as may be due to errors in the contract documents, or caused by agents or employees of the City. The Contractor shall obtain and maintain sufficient insurance to cover damage to any City property at the site by any cause.

In an emergency affecting the safety of life, or the work, or of adjoining property, the Contractor is, without special instructions or authorization from the Supervising Professional, permitted to act at its discretion to prevent the threatened loss or injury. It shall also so act, without appeal, if authorized or instructed by the Supervising Professional.

Any compensation claimed by the Contractor for emergency work shall be determined by agreement or in accordance with the terms of Claims for Extra Cost - Section 15.

## **Section 11 - Inspection of Work**

The City shall provide sufficient competent personnel for the inspection of the work.

The Supervising Professional shall at all times have access to the work whenever it is in preparation or progress, and the Contractor shall provide proper facilities for access and for inspection.

If the specifications, the Supervising Professional's instructions, laws, ordinances, or any public authority require any work to be specially tested or approved, the Contractor shall give the Supervising Professional timely notice of its readiness for inspection, and if the inspection is by an authority other than the Supervising Professional, of the date fixed for the inspection. Inspections by the Supervising Professional shall be made promptly, and where practicable at the source of supply. If any work should be covered up without approval or consent of the Supervising Professional, it must, if required by the Supervising Professional, be uncovered for examination and properly restored at the Contractor's expense.

Re-examination of any work may be ordered by the Supervising Professional, and, if so ordered, the work must be uncovered by the Contractor. If the work is found to be in accordance with the contract documents, the City shall pay the cost of re-examination and replacement. If the work is not in accordance with the contract documents, the Contractor shall pay the cost.

## **Section 12 - Superintendence**

The Contractor shall keep on the work site, during its progress, a competent superintendent and any necessary assistants, all satisfactory to the Supervising Professional. The superintendent will be responsible to perform all on-site project management for the Contractor. The superintendent shall be experienced in the work required for this Contract. The superintendent shall represent the Contractor and all direction given to the superintendent shall be binding as if given to the Contractor. Important directions shall immediately be confirmed in writing to the Contractor. Other directions will be confirmed on written request. The Contractor shall give efficient superintendence to the work, using its best skill and attention.

## **Section 13 - Changes in the Work**

The City may make changes to the quantities of work within the general scope of the Contract at any time by a written order and without notice to the sureties. If the changes add to or deduct from the extent of the work, the Contract Sum shall be adjusted accordingly. All the changes shall be executed under the conditions of the original Contract except that any claim for extension of time caused by the change shall be adjusted at the time of ordering the change.

In giving instructions, the Supervising Professional shall have authority to make minor changes in

the work not involving extra cost and not inconsistent with the purposes of the work, but otherwise, except in an emergency endangering life or property, no extra work or change shall be made unless in pursuance of a written order by the Supervising Professional, and no claim for an addition to the Contract Sum shall be valid unless the additional work was ordered in writing.

The Contractor shall proceed with the work as changed and the value of the work shall be determined as provided in Claims for Extra Cost - Section 15.

## **Section 14 - Extension of Time**

Extension of time stipulated in the Contract for completion of the work will be made if and as the Supervising Professional may deem proper under any of the following circumstances:

- (1) When work under an extra work order is added to the work under this Contract;
- (2) When the work is suspended as provided in Section 20;
- (3) When the work of the Contractor is delayed on account of conditions which could not have been foreseen, or which were beyond the control of the Contractor, and which were not the result of its fault or negligence;
- (4) Delays in the progress of the work caused by any act or neglect of the City or of its employees or by other Contractors employed by the City;
- (5) Delay due to an act of Government;
- (6) Delay by the Supervising Professional in the furnishing of plans and necessary information;
- (7) Other cause which in the opinion of the Supervising Professional entitles the Contractor to an extension of time.

The Contractor shall notify the Supervising Professional within 7 days of an occurrence or conditions which, in the Contractor's opinion, entitle it to an extension of time. The notice shall be in writing and submitted in ample time to permit full investigation and evaluation of the Contractor's claim. The Supervising Professional shall acknowledge receipt of the Contractor's notice within 7 days of its receipt. Failure to timely provide the written notice shall constitute a waiver by the Contractor of any claim.

In situations where an extension of time in contract completion is appropriate under this or any other section of the contract, the Contractor understands and agrees that the only available adjustment for events that cause any delays in contract completion shall be extension of the required time for contract completion and that there shall be no adjustments in the money due the Contractor on account of the delay.

## Section 15 - Claims for Extra Cost

If the Contractor claims that any instructions by drawings or other media issued after the date of the Contract involved extra cost under this Contract, it shall give the Supervising Professional written notice within 7 days after the receipt of the instructions, and in any event before proceeding to execute the work, except in emergency endangering life or property. The procedure shall then be as provided for Changes in the Work-Section I3. No claim shall be valid unless so made.

If the Supervising Professional orders, in writing, the performance of any work not covered by the contract documents, and for which no item of work is provided in the Contract, and for which no unit price or lump sum basis can be agreed upon, then the extra work shall be done on a Cost-Plus-Percentage basis of payment as follows:

- (1) The Contractor shall be reimbursed for all reasonable costs incurred in doing the work, and shall receive an additional payment of 15% of all the reasonable costs to cover both its indirect overhead costs and profit;
- (2) The term "Cost" shall cover all payroll charges for employees and supervision required under the specific order, together with all worker's compensation, Social Security, pension and retirement allowances and social insurance, or other regular payroll charges on same; the cost of all material and supplies required of either temporary or permanent character; rental of all power-driven equipment at agreed upon rates, together with cost of fuel and supply charges for the equipment; and any costs incurred by the Contractor as a direct result of executing the order, if approved by the Supervising Professional;
- (3) If the extra is performed under subcontract, the subcontractor shall be allowed to compute its charges as described above. The Contractor shall be permitted to add an additional charge of 5% percent to that of the subcontractor for the Contractor's supervision and contractual responsibility;
- (4) The quantities and items of work done each day shall be submitted to the Supervising Professional in a satisfactory form on the succeeding day, and shall be approved by the Supervising Professional and the Contractor or adjusted at once;
- (5) Payments of all charges for work under this Section in any one month shall be made along with normal progress payments. Retainage shall be in accordance with Progress Payments-Section 16.

No additional compensation will be provided for additional equipment, materials, personnel, overtime or special charges required to perform the work within the time requirements of the Contract.

When extra work is required and no suitable price for machinery and equipment can be determined in accordance with this Section, the hourly rate paid shall be 1/40 of the basic weekly rate listed in the Rental Rate Blue Book published by Dataquest Incorporated and applicable to the time period the equipment was first used for the extra work. The hourly rate will be deemed to include all costs of operation such as bucket or blade, fuel, maintenance, "regional factors", insurance, taxes, and the like, but not the costs of the operator.

## **Section 16 - Progress Payments**

The Contractor shall submit each month, or at longer intervals, if it so desires, an invoice covering work performed for which it believes payment, under the Contract terms, is due. The submission shall be to the City's Finance Department - Accounting Division. The Supervising Professional will, within 10 days following submission of the invoice, prepare a certificate for payment for the work in an amount to be determined by the Supervising Professional as fairly representing the acceptable work performed during the period covered by the Contractor's invoice. To insure the proper performance of this Contract, the City will retain a percentage of the estimate in accordance with Act 524, Public Acts of 1980. The City will then, following the receipt of the Supervising Professional's Certificate, make payment to the Contractor as soon as feasible, which is anticipated will be within 15 days. The City will retain 10% and up to 50% of the total contract value until 50% completion. After 50% completion, until final completion, the City will retain 5% of the total contract value.

An allowance may be made in progress payments if substantial quantities of permanent material have been delivered to the site but not incorporated in the completed work if the Contractor, in the opinion of the Supervising Professional, is diligently pursuing the work under this Contract. Such materials shall be properly stored and adequately protected. Allowance in the estimate shall be at the invoice price value of the items. Notwithstanding any payment of any allowance, all risk of loss due to vandalism or any damages to the stored materials remains with the Contractor.

In the case of Contracts which include only the Furnishing and Delivering of Equipment, the payments shall be; 60% of the Contract Sum upon the delivery of all equipment to be furnished, or in the case of delivery of a usable portion of the equipment in advance of the total equipment delivery, 60% of the estimated value of the portion of the equipment may be paid upon its delivery in advance of the time of the remainder of the equipment to be furnished; 30% of the Contract Sum upon completion of erection of all equipment furnished, but not later than 60 days after the date of delivery of all of the equipment to be furnished; and payment of the final 10% on final completion of erection, testing and acceptance of all the equipment to be furnished; but not later than 180 days after the date of delivery of all of the equipment to be furnished, unless testing has been completed and shows the equipment to be unacceptable.

With each invoice for periodic payment, the Contractor shall enclose a Contractor's Declaration - Section 43, and an updated project schedule per Order of Completion - Section 2.

## **Section 17 - Deductions for Uncorrected Work**

If the Supervising Professional decides it is inexpedient to correct work that has been damaged or that was not done in accordance with the Contract, an equitable deduction from the Contract price shall be made.

## **Section 18 - Correction of Work Before Final Payment**

The Contractor shall promptly remove from the premises all materials condemned by the Supervising Professional as failing to meet Contract requirements, whether incorporated in the work or not, and the Contractor shall promptly replace and re-execute the work in accordance with the Contract and without expense to the City and shall bear the expense of making good all work of other contractors destroyed or damaged by the removal or replacement.

If the Contractor does not remove the condemned work and materials within 10 days after written notice, the City may remove them and, if the removed material has value, may store the material at the expense of the Contractor. If the Contractor does not pay the expense of the removal within 10 days thereafter, the City may, upon 10 days written notice, sell the removed materials at auction or private sale and shall pay to the Contractor the net proceeds, after deducting all costs and expenses that should have been borne by the Contractor. If the removed material has no value, the Contractor must pay the City the expenses for disposal within 10 days of invoice for the disposal costs.

The inspection or lack of inspection of any material or work pertaining to this Contract shall not relieve the Contractor of its obligation to fulfill this Contract and defective work shall be made good. Unsuitable materials may be rejected by the Supervising Professional notwithstanding that the work and materials have been previously overlooked by the Supervising Professional and accepted or estimated for payment or paid for. If the work or any part shall be found defective at any time before the final acceptance of the whole work, the Contractor shall forthwith make good the defect in a manner satisfactory to the Supervising Professional. The judgment and the decision of the Supervising Professional as to whether the materials supplied and the work done under this Contract comply with the requirements of the Contract shall be conclusive and final.

## **Section 19 - Acceptance and Final Payment**

Upon receipt of written notice that the work is ready for final inspection and acceptance, the Supervising Professional will promptly make the inspection. When the Supervising Professional finds the work acceptable under the Contract and the Contract fully performed, the Supervising Professional will promptly sign and issue a final certificate stating that the work required by this Contract has been completed and is accepted by the City under the terms and conditions of the Contract. The entire balance found to be due the Contractor, including the retained percentage, shall be paid to the Contractor by the City within 30 days after the date of the final certificate.

Before issuance of final certificates, the Contractor shall file with the City:

- (1) The consent of the surety to payment of the final estimate;
- (2) The Contractor's Affidavit in the form required by Section 44.

In case the Affidavit or consent is not furnished, the City may retain out of any amount due the Contractor, sums sufficient to cover all lienable claims.

The making and acceptance of the final payment shall constitute a waiver of all claims by the City except those arising from:

- (1) unsettled liens;
- (2) faulty work appearing within 12 months after final payment;
- (3) hidden defects in meeting the requirements of the plans and specifications;
- (4) manufacturer's guarantees.

It shall also constitute a waiver of all claims by the Contractor, except those previously made and still unsettled.

## **Section 20 - Suspension of Work**

The City may at any time suspend the work, or any part by giving 5 days notice to the Contractor in writing. The work shall be resumed by the Contractor within 10 days after the date fixed in the written notice from the City to the Contractor to do so. The City shall reimburse the Contractor for expense incurred by the Contractor in connection with the work under this Contract as a result of the suspension.

If the work, or any part, shall be stopped by the notice in writing, and if the City does not give notice in writing to the Contractor to resume work at a date within 90 days of the date fixed in the written notice to suspend, then the Contractor may abandon that portion of the work suspended and will be entitled to the estimates and payments for all work done on the portions abandoned, if any, plus 10% of the value of the work abandoned, to compensate for loss of overhead, plant expense, and anticipated profit.

## **Section 21 - Delays and the City's Right to Terminate Contract**

If the Contractor refuses or fails to prosecute the work, or any separate part of it, with the diligence required to insure completion, ready for operation, within the allowable number of consecutive calendar days specified plus extensions, or fails to complete the work within the required time, the City may, by written notice to the Contractor, terminate its right to proceed with the work or any part of the work as to which there has been delay. After providing the notice the City may take over the work and prosecute it to completion, by contract or otherwise, and the Contractor and its sureties shall be liable to the City for any excess cost to the City. If the Contractor's right to proceed is terminated, the City may take possession of and utilize in completing the work, any materials, appliances and plant as may be on the site of the work and useful for completing the work. The right of the Contractor to proceed shall not be terminated or the Contractor charged with liquidated damages where an extension of time is granted under Extension of Time - Section 14.

If the Contractor is adjudged a bankrupt, or if it makes a general assignment for the benefit of creditors, or if a receiver is appointed on account of its insolvency, or if it persistently or repeatedly refuses or fails except in cases for which extension of time is provided, to supply enough properly skilled workers or proper materials, or if it fails to make prompt payments to subcontractors or for material or labor, or persistently disregards laws, ordinances or the instructions of the Supervising Professional, or otherwise is guilty of a substantial violation of any provision of the Contract, then the City, upon the certificate of the Supervising Professional that sufficient cause exists to justify such action, may, without prejudice to any other right or remedy and after giving the Contractor 3 days written notice, terminate this Contract. The City may then take possession of the premises and of all materials, tools and appliances thereon and without prejudice to any other remedy it may have, make good the deficiencies or finish the work by whatever method it may deem expedient, and deduct the cost from the payment due the Contractor. The Contractor shall not be entitled to receive any further payment until the work is finished. If the expense of finishing the work, including compensation for additional managerial and administrative services exceeds the unpaid balance of the Contract Sum, the Contractor and its surety are liable to the City for any excess cost incurred. The expense incurred by the City, and the damage incurred through the Contractor's default, shall be certified by the Supervising Professional.

## **Section 22 - Contractor's Right to Terminate Contract**

If the work should be stopped under an order of any court, or other public authority, for a period of 3 months, through no act or fault of the Contractor or of anyone employed by it, then the Contractor may, upon 7 days written notice to the City, terminate this Contract and recover from the City payment for all acceptable work executed plus reasonable profit.

## **Section 23 - City's Right To Do Work**

If the Contractor should neglect to prosecute the work properly or fail to perform any provision of this Contract, the City, 3 days after giving written notice to the Contractor and its surety may, without prejudice to any other remedy the City may have, make good the deficiencies and may deduct the cost from the payment due to the Contractor.

## **Section 24 - Removal of Equipment and Supplies**

In case of termination of this Contract before completion, from any or no cause, the Contractor, if notified to do so by the City, shall promptly remove any part or all of its equipment and supplies from the property of the City, failing which the City shall have the right to remove the equipment and supplies at the expense of the Contractor.

The removed equipment and supplies may be stored by the City and, if all costs of removal and storage are not paid by the Contractor within 10 days of invoicing, the City upon 10 days written notice may sell the equipment and supplies at auction or private sale, and shall pay the Contractor the net proceeds after deducting all costs and expenses that should have been borne by the Contractor and after deducting all amounts claimed due by any lien holder of the equipment or supplies.

## **Section 25 - Responsibility for Work and Warranties**

The Contractor assumes full responsibility for any and all materials and equipment used in the construction of the work and may not make claims against the City for damages to materials and equipment from any cause except negligence or willful act of the City. Until its final acceptance, the Contractor shall be responsible for damage to or destruction of the project (except for any part covered by Partial Completion and Acceptance - Section 26). The Contractor shall make good all work damaged or destroyed before acceptance. All risk of loss remains with the Contractor until final acceptance of the work (Section 19) or partial acceptance (Section 26). The Contractor is advised to investigate obtaining its own builders risk insurance.

The Contractor shall guarantee the quality of the work for a period of one year. The Contractor shall also unconditionally guarantee the quality of all equipment and materials that are furnished and installed under the contract for a period of one year. At the end of one year after the Contractor's receipt of final payment, the complete work, including equipment and materials furnished and installed under the contract, shall be inspected by the Contractor and the Supervising Professional. Any defects shall be corrected by the Contractor at its expense as soon as practicable but in all cases within 60 days. Any defects that are identified prior to the end of one year shall also be inspected by the Contractor and the Supervising Professional and shall be corrected by the Contractor at its expense as soon as practicable but in all cases within 60 days. The Contractor shall assign all manufacturer or material supplier warranties to the City prior to final payment. The assignment shall not relieve the Contractor of its obligations under this

paragraph to correct defects.

## **Section 26 - Partial Completion and Acceptance**

If at any time prior to the issuance of the final certificate referred to in Acceptance and Final Payment - Section 19, any portion of the permanent construction has been satisfactorily completed, and if the Supervising Professional determines that portion of the permanent construction is not required for the operations of the Contractor but is needed by the City, the Supervising Professional shall issue to the Contractor a certificate of partial completion, and immediately the City may take over and use the portion of the permanent construction described in the certificate, and exclude the Contractor from that portion.

The issuance of a certificate of partial completion shall not constitute an extension of the Contractor's time to complete the portion of the permanent construction to which it relates if the Contractor has failed to complete it in accordance with the terms of this Contract. The issuance of the certificate shall not release the Contractor or its sureties from any obligations under this Contract including bonds.

If prior use increases the cost of, or delays the work, the Contractor shall be entitled to extra compensation, or extension of time, or both, as the Supervising Professional may determine.

## **Section 27 - Payments Withheld Prior to Final Acceptance of Work**

The City may withhold or, on account of subsequently discovered evidence, nullify the whole or part of any certificate to the extent reasonably appropriate to protect the City from loss on account of:

- (1) Defective work not remedied;
- (2) Claims filed or reasonable evidence indicating probable filing of claims by other parties against the Contractor;
- (3) Failure of the Contractor to make payments properly to subcontractors or for material or labor;
- (4) Damage to another Contractor.

When the above grounds are removed or the Contractor provides a Surety Bond satisfactory to the City which will protect the City in the amount withheld, payment shall be made for amounts withheld under this section.

## **Section 28 - Contractor's Insurance**

- (1) The Contractor shall procure and maintain during the life of this Contract, including the guarantee period and during any warranty work, such insurance policies, including those set forth below, as will protect itself and the City from all claims for bodily injuries, death or property damage that may arise under this Contract; whether the act(s) or omission(s) giving rise to the claim were made by the Contractor, any subcontractor, or anyone employed by them directly or indirectly. Prior to commencement of any work under this contract, Contractor shall provide to the City documentation satisfactory to the City, through

City-approved means (currently myCOI), demonstrating it has obtained the required policies and endorsements. The certificates of insurance endorsements and/or copies of policy language shall document that the Contractor satisfies the following minimum requirements. Contractor shall add registration@mycoitracking.com to its safe sender's list so that it will receive necessary communication from myCOI. When requested, Contractor shall provide the same documentation for its subcontractor(s) (if any).

Required insurance policies include:

- (a) Worker's Compensation Insurance in accordance with all applicable state and federal statutes. Further, Employers Liability Coverage shall be obtained in the following minimum amounts:

Bodily Injury by Accident - \$500,000 each accident  
Bodily Injury by Disease - \$500,000 each employee  
Bodily Injury by Disease - \$500,000 each policy limit

- (b) Commercial General Liability Insurance equivalent to, as a minimum, Insurance Services Office form CG 00 01 04 13 or current equivalent. The City of Ann Arbor shall be named as an additional insured. There shall be no added exclusions or limiting endorsements specifically for the following coverages: Products and Completed Operations, Explosion, Collapse and Underground coverage or Pollution. Further there shall be no added exclusions or limiting endorsements that diminish the City's protections as an additional insured under the policy. The following minimum limits of liability are required:

\$1,000,000	Each occurrence as respect Bodily Injury Liability or Property Damage Liability, or both combined.
\$2,000,000	Per Project General Aggregate
\$1,000,000	Personal and Advertising Injury
\$2,000,000	Products and Completed Operations Aggregate

- (c) Motor Vehicle Liability Insurance, including Michigan No-Fault Coverages, equivalent to, as a minimum, Insurance Services Office form CA 00 01 10 13 or current equivalent. Coverage shall include all owned vehicles, all non-owned vehicles and all hired vehicles. The City of Ann Arbor shall be named as an additional insured. There shall be no added exclusions or limiting endorsements that diminish the City's protections as an additional insured under the policy. Further, the limits of liability shall be \$1,000,000 for each occurrence as respects Bodily Injury Liability or Property Damage Liability, or both combined.

- (d) Umbrella/Excess Liability Insurance shall be provided to apply excess of the Commercial General Liability, Employers Liability and the Motor Vehicle coverage enumerated above, for each occurrence and for aggregate in the amount of \$1,000,000.

- (2) Insurance required under subsection (1)(b) and (1)(c) above shall be considered primary as respects any other valid or collectible insurance that the City may possess, including any self-insured retentions the City may have; and any other insurance the City does possess shall be considered excess insurance only and shall not be required to contribute with this insurance. Further, the Contractor agrees to waive any right of recovery by its

insurer against the City for any insurance listed herein.

- (3) Insurance companies and policy forms are subject to approval of the City Attorney, which approval shall not be unreasonably withheld. Documentation must provide and demonstrate an unconditional and un-qualified 30-day written notice of cancellation in favor of the City of Ann Arbor. Further, the documentation must explicitly state the following: (a) the policy number(s); name of insurance company(s); name and address of the agent(s) or authorized representative(s); name(s), email address(es), and address of insured; project name; policy expiration date; and specific coverage amounts; (b) any deductibles or self-insured retentions which may be approved by the City, in its sole discretion; (c) that the policy conforms to the requirements specified Contractor shall furnish the City with satisfactory certificates of insurance and endorsements prior to commencement of any work. Upon request, the Contractor shall provide within 30 days a copy of the policy(ies) and all required endorsements to the City. If any of the above coverages expire by their terms during the term of this Contract, the Contractor shall deliver proof of renewal and/or new policies and endorsements to the Administering Service Area/Unit at least ten days prior to the expiration date.
- (4) Any Insurance provider of Contractor shall be authorized to do business in the State of Michigan and shall carry and maintain a minimum rating assigned by A.M. Best & Company's Key Rating Guide of "A-" Overall and a minimum Financial Size Category of "V". Insurance policies and certificates issued by non-authorized insurance companies are not acceptable unless approved in writing by the City.
- (5) City reserves the right to require additional coverage and/or coverage amounts as may be included from time to time in the Detailed Specifications for the Project.
- (6) The provisions of General Condition 28 shall survive the expiration or earlier termination of this contract for any reason.

## **Section 29 - Surety Bonds**

Bonds will be required from the successful bidder as follows:

- (1) A Performance Bond to the City of Ann Arbor for the amount of the bid(s) accepted;
- (2) A Labor and Material Bond to the City of Ann Arbor for the amount of the bid(s) accepted.

Bonds shall be executed on forms supplied by the City in a manner and by a Surety Company authorized to transact business in Michigan and satisfactory to the City Attorney.

## **Section 30 - Damage Claims**

The Contractor shall be held responsible for all damages to property of the City or others, caused by or resulting from the negligence of the Contractor, its employees, or agents during the progress of or connected with the prosecution of the work, whether within the limits of the work or elsewhere. The Contractor must restore all property injured including sidewalks, curbing, sodding, pipes, conduit, sewers or other public or private property to not less than its original condition with new work.

## **Section 31 - Refusal to Obey Instructions**

If the Contractor refuses to obey the instructions of the Supervising Professional, the Supervising Professional shall withdraw inspection from the work, and no payments will be made for work performed thereafter nor may work be performed thereafter until the Supervising Professional shall have again authorized the work to proceed.

## **Section 32 - Assignment**

Neither party to the Contract shall assign the Contract without the written consent of the other. The Contractor may assign any monies due to it to a third party acceptable to the City.

## **Section 33 - Rights of Various Interests**

Whenever work being done by the City's forces or by other contractors is contiguous to work covered by this Contract, the respective rights of the various interests involved shall be established by the Supervising Professional, to secure the completion of the various portions of the work in general harmony.

The Contractor is responsible to coordinate all aspects of the work, including coordination of, and with, utility companies and other contractors whose work impacts this project.

## **Section 34 - Subcontracts**

The Contractor shall not award any work to any subcontractor without prior written approval of the City. The approval will not be given until the Contractor submits to the City a written statement concerning the proposed award to the subcontractor. The statement shall contain all information the City may require.

The Contractor shall be as fully responsible to the City for the acts and omissions of its subcontractors, and of persons either directly or indirectly employed by them, as it is for the acts and omissions of persons directly employed by it.

The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work to bind subcontractors to the Contractor by the terms of the General Conditions and all other contract documents applicable to the work of the subcontractors and to give the Contractor the same power to terminate any subcontract that the City may exercise over the Contractor under any provision of the contract documents.

Nothing contained in the contract documents shall create any contractual relation between any subcontractor and the City.

## **Section 35 - Supervising Professional's Status**

The Supervising Professional has the right to inspect any or all work. The Supervising Professional has authority to stop the work whenever stoppage may be appropriate to insure the proper execution of the Contract. The Supervising Professional has the authority to reject all work and materials which do not conform to the Contract and to decide questions which arise in the execution of the work.

The Supervising Professional shall make all measurements and determinations of quantities. Those measurements and determinations are final and conclusive between the parties.

## **Section 36 - Supervising Professional's Decisions**

The Supervising Professional shall, within a reasonable time after their presentation to the Supervising Professional, make decisions in writing on all claims of the City or the Contractor and on all other matters relating to the execution and progress of the work or the interpretation of the contract documents.

## **Section 37 - Storing Materials and Supplies**

Materials and supplies may be stored at the site of the work at locations agreeable to the City unless specific exception is listed elsewhere in these documents. Ample way for foot traffic and drainage must be provided, and gutters must, at all times, be kept free from obstruction. Traffic on streets shall be interfered with as little as possible. The Contractor may not enter or occupy with agents, employees, tools, or material any private property without first obtaining written permission from its owner. A copy of the permission shall be furnished to the Supervising Professional.

## **Section 38 - Lands for Work**

The Contractor shall provide, at its own expense and without liability to the City, any additional land and access that may be required for temporary construction facilities or for storage of materials.

## **Section 39 - Cleaning Up**

The Contractor shall, as directed by the Supervising Professional, remove at its own expense from the City's property and from all public and private property all temporary structures, rubbish and waste materials resulting from its operations unless otherwise specifically approved, in writing, by the Supervising Professional.

## **Section 40 - Salvage**

The Supervising Professional may designate for salvage any materials from existing structures or underground services. Materials so designated remain City property and shall be transported or stored at a location as the Supervising Professional may direct.

## **Section 41 - Night, Saturday or Sunday Work**

No night or Sunday work (without prior written City approval) will be permitted except in the case of an emergency and then only to the extent absolutely necessary. The City may allow night work which, in the opinion of the Supervising Professional, can be satisfactorily performed at night. Night work is any work between 8:00 p.m. and 7:00 a.m. No Saturday work will be permitted unless the Contractor gives the Supervising Professional at least 48 hours but not more than 5 days notice of the Contractor's intention to work the upcoming Saturday.

## **Section 42 - Sales Taxes**

Under State law the City is exempt from the assessment of State Sales Tax on its direct purchases. Contractors who acquire materials, equipment, supplies, etc. for incorporation in City projects are not likewise exempt. State Law shall prevail. The Bidder shall familiarize itself with the State Law and prepare its Bid accordingly. No extra payment will be allowed under this Contract for failure of the Contractor to make proper allowance in this bid for taxes it must pay.

## Section 43

### CONTRACTOR'S DECLARATION

I hereby declare that I have not, during the period \_\_\_\_\_, 20\_\_\_\_, to \_\_\_\_\_, 20\_\_\_\_, performed any work, furnished any materials, sustained any loss, damage or delay, or otherwise done anything in addition to the regular items (or executed change orders) set forth in the Contract titled \_\_\_\_\_, for which I shall ask, demand, sue for, or claim compensation or extension of time from the City, except as I hereby make claim for additional compensation or extension of time as set forth on the attached itemized statement. I further declare that I have paid all payroll obligations related to this Contract that have become due during the above period and that all invoices related to this Contract received more than 30 days prior to this declaration have been paid in full except as listed below.

There is/is not (Contractor please circle one and strike one as appropriate) an itemized statement attached regarding a request for additional compensation or extension of time.

\_\_\_\_\_  
Contractor

\_\_\_\_\_  
Date

By \_\_\_\_\_  
(Signature)

Its \_\_\_\_\_  
(Title of Office)

Past due invoices, if any, are listed below.



## **STANDARD SPECIFICATIONS**

All work under this contract shall be performed in accordance with the Public Services Department Standard Specifications in effect at the date of availability of the contract documents stipulated in the Bid. All work under this Contract which is not included in these Standard Specifications, or which is performed using modifications to these Standard Specifications, shall be performed in accordance with the Detailed Specifications included in these contract documents.

Standard Specifications are available online:

<https://www.a2gov.org/departments/engineering/Pages/Engineering-and-Contractor-Resources.aspx>

## DETAILED SPECIFICATIONS

The primary work for this contract is the dredging of multiple ponds at the Wheeler Compost Facility and creation of or improvement of pond buffer areas for the improvement of water quality and removal of debris.

**Means and Methods:** As part of the bid form, the contractor shall describe, in writing, the means and methods proposed for the completion of this project. The means and methods will be reviewed and approved by the City prior to the award of a contract or any work commencing.

**Soil Erosion and Sedimentation Control:** SESC Measures needed for this project are to be determined by the contract based on their proposed means and methods. The contractor will be responsible for adhering to City of Ann Arbor and Pittsfield Township SESC standards and ensuring that the site is in compliance with all applicable SESC rules and regulation for the duration of the contract.

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GENERAL CONDITIONS – ENGINEER LAYOUT  
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## GENERAL CONDITIONS

### 1. CONTRACT DOCUMENTS

The original and three copies of the Contract shall be signed by the Owner and the Contractor, unless otherwise required.

The work under this Contract shall consist of the items listed in the proposal, including all incidentals necessary to fully complete the project in accordance with the contract Documents. The Contract documents shall consist of the Advertisement, Instructions to Bidders, Proposal, Specifications, General Conditions, General Supplementary Conditions, Contract, Bonds and Contract Drawings.

### 2. CONTRACT DRAWINGS AND SPECIFICATIONS

The work to be done is shown on the accompanying set of original drawings prepared by Hubbell, Roth & Clark, Inc., Consulting Engineers, Bloomfield Hills, Michigan, and are hereby made a part of this Contract, it being mutually understood and agreed that when taken together, the drawings and contract documents, including the specifications and the general conditions, are complementary, and what is called for by any one shall be binding as if called for by all. The intent of the Contract documents is to include in the contract price the cost of all labor and materials, water, fuel, tools, plant, equipment, light, transportation, and all other expenses as may be necessary for the proper execution and completion of the work.

These original drawings may be supplemented by other drawings furnished by the contractor and approved by the Engineer or supplied to the Contractor by the Engineer during the progress of the work as he may deem to be necessary or expedient. All such supplementary contract drawings or instructions are intended to be consistent with the Contract Documents, true developments thereof and reasonably inferable therefrom. Therefore, no extra charge will be allowed on a claim that particular supplemental contract drawings or instructions differed from the Contract Documents, incurring extra work, unless the Contractor has first brought the matter, in writing, to the Engineer's attention for proper adjustment before starting on the work covered by such and has received from the Engineer an order in writing to so proceed.

These original and supplementary drawings constitute the drawings according to which the work is to be done. The Contractor shall keep at the site of the work an approved or conformed copy of all drawings and specifications and shall at all times give the Engineer or Owner access thereto.

In case any inconsistency, omission or conflict shall be discovered in either specifications or drawings, or if in any place, the meaning of either or both shall be obscure, or uncertain, or in dispute, the Engineer shall decide as to the true intent and his decision shall be final and binding.

### 3. ENGINEER'S STATUS

The Engineer shall furnish consultation and advice to the Owner during construction. He may advise the Owner to stop the work whenever such stoppage may be necessary to insure that the finished work will be in accordance with the plans and specifications. He may advise the Owner to reject all work and material which do not conform to the drawings and specifications. The engineer may stop work only under the

written direction of the owner.

4. CONSTRUCTION OBSERVER STATUS

The Owner may appoint on the job construction observer(s) who shall be under the direction of the Engineer. The construction observer on the work will inform the Engineer as to the progress of the work, the manner in which it is being done, and the quality of the materials being used. The construction observer will call to the attention of the Contractor any failure to follow the drawings and specifications that may be observed. The construction observer shall advise the Engineer to reject materials suspend the work until any questions on the performance of the work can be referred to and decided by the Owner. The construction observer shall have no authority to determine the means and methods used to complete the work, direct the Contractor's work or workmen, to supervise the Contractor's operations, to stop work on the project or to change the Contract Drawings or Specifications.

In no instance shall any action or omission on the part of the construction observer release the Contractor of the responsibility of completing the work in accordance with the drawings, specifications and/or, municipal ordinances or established prior practices of the owner, in the municipality in which the project resides.

5. CONTRACTOR'S RESPONSIBILITY

The Contractor shall assume full responsibility for the work, specifically including jobsite safety, and take all precautions for preventing injuries to persons and property on or about the work; shall bear all losses resulting to him on account of the amount or character of the work or because the conditions under which the work is done are different, or because the nature of the ground in which the work is done is different from what was estimated or expected, or on account of the weather, floods, elements or other causes, and the Contractor shall assume the defense and save harmless the Owner, the Engineer and their individual officers and agents from all claims relating to labor provided and materials furnished for the work; to inventions, patents, and patent rights used in doing the work; to injuries to any persons or property received or sustained by or from the Contractor, the Contractor's agents or employees in doing the work or arising out of the work performed or to be performed; and to any act, or neglect of the Contractor, the Contractor's agents or employees.

The mention of any specific duty or liability of the contractor in this or in any part of the Contract documents shall not be construed as a limitation or restriction upon any general liability or duty imposed on the contractor by the Contract Documents.

6. PERMITS AND REGULATIONS

The Contractor shall secure, at no cost to the Owner, all permits and licenses necessary for the prosecution of the work. The Contractor shall keep fully informed of all laws, ordinances, and regulations in any manner affecting those engaged or employed in the work, or the materials used in the work, or in any way affecting the conduct of the work, and of all orders and decrees of bodies or tribunals having any jurisdiction or authority over the same.

The Contractor shall at all times observe and comply with, and shall cause all agents and employees to observe and comply with all existing and future laws, ordinances, regulations, orders, and decrees. Provided that if the drawings and specifications are at variance therewith, the Contractor shall promptly

notify the Engineer in writing and any necessary changes shall be adjusted as provided in the Contract Documents.

7. SUBCONTRACTS

The Contractor shall not sublet, assign, or transfer this Contract or any portion thereof or any payments due thereunder, without the written consent of the Owner.

Assignment or subletting the whole or any portion of this contract shall not operate to release the Contractor or the Contractor's bondsmen hereunder from any of the contract obligations.

The Contractor shall, as soon as practicable after the signing of the Contract, notify the Owner in writing of the names of subcontractors proposed for the work and shall not employ any that the Owner may object to as incompetent or unfit.

If the Contractor shall cause any part of the work under this Contract to be performed by a subcontractor, the provisions of this Contract shall apply to such subcontractor and the subcontractor's officers and employees in all respects as if the subcontractor and they were employees of the Contractor, and the Contractor shall not be in any manner thereby relieved from any obligation and liabilities; and the work and materials furnished by the subcontractor shall be subject to the same provisions as if furnished by the Contractor.

8. INFORMATION BY THE CONTRACTOR

The Contractor shall submit to the Engineer full information as to the materials, equipment, and arrangements which the Contractor proposes to furnish. This information shall be complete to the extent that the Engineer may intelligently judge if the proposed materials, equipment, and arrangements will meet the contract requirements.

Prior to the approval of materials, equipment, and arrangements by the Engineer based on the information submitted by the Contractor, any work done by the Contractor shall be at his own risk.

The approval of information covering materials, equipment, and arrangements by the Engineer shall in no way release the Contractor from his responsibility for the proper design, installation, and performance of any material, equipment, or arrangement, or from his liability to replace same should it prove defective.

9. GENERAL REQUIREMENTS FOR MATERIALS & WORKMANSHIP

In the specifications where a particular material or piece of equipment is specified by reference to some particular make or type, or equal, it is not the intent to limit competition but to set up by such reference a standard of quality most easily understood and defined. If materials or equipment of other make or type than that specified by name are offered by the Contractor, they will be given full consideration by the Engineer and the Engineer's decision will be final as to whether the materials or equipment offered are equal to those specified.

Unless otherwise stipulated in the specifications, all equipment, materials, and articles incorporated in the work covered by this Contract are to be new and of the best grade of their respective kinds for the

purpose. The Contractor shall, if required, furnish such evidence as to kinds and quality of materials as the Engineer may require.

The Contractor shall furnish suitable tools and building appliances and employ competent labor to perform the work to be done, and any labor or tools or appliances that shall not, in the judgment of the Engineer, be suitable or competent to produce this result may be ordered from the work by the Owner, at the advice of the Engineer, and such labor or tools or appliances shall be substituted therefor by the Contractor as will meet with the approval of the Engineer/Owner.

If not otherwise provided, material or work called for in this contract shall be furnished and performed in accordance with well known established practice and standards recognized by architects, engineers and the trade.

#### 10. TESTING AND SAMPLING

Where called for in the specifications, samples of materials in the quantity named shall be submitted to the Engineer for approval. Where tests are required they shall be made at the expense of the Contractor, except as otherwise called for in the specifications. For materials covered by ASTM or Federal Specifications, unless otherwise stipulated, the required tests are to be made by the manufacturer and the manufacturer's certificate therefor submitted to the Engineer.

#### 11. LINES AND GRADES

Principal reference lines or points and bench marks shall be given by the Engineer at such time as may be deemed necessary; or if the Contractor shall be in need of such reference lines or bench marks, the Contractor shall notify the Engineer forty-eight (48) hours in advance, excluding Saturdays, Sundays and holidays. The Engineer will set suitable stakes and marks showing the locations and elevations of new underground utilities as part of the work and will furnish the Contractor with "cut sheets" referred to the reference points. No work shall be undertaken until such stakes and marks shall have been set by the Engineer. The Contractor shall take due and proper precautions for the preservation of these stakes and marks, and shall see to it that the work at all times proceeds in accordance therewith and shall provide all labor and material to set control and locate the work accurately with reference to the above points. All lines and grades for new above grade structures and appurtenances shall be established by the Contractor. Establishment of principal reference lines, transfer of line and grade into facilities, location of all piping and equipment shall be the responsibility of the Contractor.

#### 12. PROTECTION OF WORK AND PROPERTY

The Contractor shall continuously maintain adequate protection of all work from damage and shall protect all public property and private abutting property from injury or loss arising in connection with this Contract. The Contractor shall, without delay, make good any such damage, injury or loss, and shall defend and save the Owner and Engineer harmless from all such damages or injuries occurring because of the Contractor's work. The Contractor shall furnish and maintain all passageways, barricades, guard fences, lights and danger signals, provide watchmen and other facilities for protection required by public authority or by local conditions, all at no additional cost to the Owner.

In an emergency affecting the safety of life or of the work or of adjoining property, the Contractor, without special instruction or authorization from the Owner, shall take such action as may be necessary

to prevent such threatened damage, injury or loss.

The Contractor shall assume full responsibility of loss or damage to the work during the entire construction period resulting from caving earth and from storms, floods, frosts, and other adverse weather conditions, and from all other causes whatsoever, not directly due to the acts or neglect of the Owner, including fire, vandalism and malicious mischief, and shall turn the finished work over to the Owner in good condition and repair, at the time of the final estimate.

13. RESPONSIBILITY FOR ADJOINING STRUCTURES & TREES

The Contractor shall assume full responsibilities for the protection of all pavements, curbs, bridges, railroads, poles and any other surface structures and all water mains, sewers, telephone, gas mains, and other underground services and structures along or near the work which may be affected by the Contractor's operations, and shall indemnify, defend, and save harmless the Owner against all damages or alleged damages to any such structure arising out of the Contractor's work. The Contractor shall bear the cost of repair or replacement of any such structure damaged as a result of the Contractor's operations.

No trees or shrubbery of any kind shall be removed or destroyed by the Contractor without the written permission of the Owner, and the Contractor will be held fully responsible for any damages caused by the Contractor's work to adjoining trees and shrubs. Ample precautions shall be taken by the Contractor to protect such trees and shrubs as are to remain in place by surrounding them with fences or other protection before construction work begins. Shrubby that has to be removed shall be preserved and replaced in a manner acceptable to the Owner.

14. MAINTENANCE OF SERVICE

Drainage through existing sewers and drains shall be maintained at all times during construction and all nearby gutters shall be kept open for drainage. Where existing sewers are encountered in the line of the work which interfere with the construction, the flow in the sewers, including both dry weather flow and storm flow, shall be maintained.

All detours shown on the drawings or required because of the Contractors operations shall be built and maintained at the Contractor's expense.

Safety precautions shall be followed at all street openings, substantial barricades shall be erected as deemed necessary to prevent accidents to vehicular or pedestrian traffic and red flags by day and yellow lights by night shall be diligently posted by the Contractor at all points of possible danger. In case detours or other traffic instructions are necessary, suitable warning or direction signs shall be erected and maintained by the Contractor. Contractor shall be responsible for insuring that all barricades, flags, lights, etc. are in place and functional at the end of each day.

During the progress of the work, the Contractor shall accommodate both vehicular and foot traffic and shall provide free access to fire hydrants, water and gas valves. Except as otherwise specified herein or as noted on the drawings, street intersections may be blocked but one-half at a time, and the contractor shall lay and maintain temporary driveways, bridges and crossings, such as in the opinion of the Owner are necessary to reasonably accommodate the public.

In the event of the Contractor's failure to comply with these provisions, the Owner may with or without notice, cause the same to be done; and will deduct the cost of such work from any money due or to

become due the Contractor under this Contract, but the performance of such work by the Owner or at the Owner's instance, shall serve in no way to release the Contractor from general or particular liability for the safety of the public or the work.

15. STORAGE OF MATERIALS

Materials and equipment distributed, stored and placed upon or near the site of the work shall at all times be so disposed as not to interfere with work being prosecuted by other contractors in the employ of the Owner, or with street drainage, or with fire hydrants or with access thereto, and not to hinder, any more than may be necessary, the ordinary traffic of the street.

16. RELATION TO OTHER CONTRACTORS

The Contractor shall so conduct operations as not to interfere with or injure the work of other contractors or workmen employed on adjoining or related work and the Contractor shall promptly make good any injury or damage which may be done to such work by him or his employees or his agent. Should a contract for adjoining work be awarded to another contractor, and should the work of one of these contracts interfere with that of the other, the Owner shall decide which contractor shall cease work for the time being and which shall continue or whether the work in both contracts shall continue at the same time and in what manner.

17. CONTRACTOR'S SUPERVISION AND ORIGINATION

The work under this Contract shall be under the direct charge and direction of the Contractor. The Contractor shall give efficient superintendence to the work, using his best skill and attention. The Contractor shall at all times keep on the site of the work, during its progress, a competent superintendent and any and all necessary foremen and assistants. The superintendent shall represent and have full authority to act for the Contractor in the latter's absence, and all directions given to him shall be as binding as if given to the Contractor. On written request in each case, all such directions will be confirmed in writing to the Contractor.

The Contractor shall employ only competent, efficient workmen and shall not use on the work any unfit person or one not skilled in the work assigned, and the Contractor shall at all times enforce strict discipline and good order among all employees. Whenever the Owner shall notify the Contractor, in writing, that any person on the work is, in the opinion of the Owner, careless, incompetent, disorderly, or otherwise unsatisfactory, such person shall be discharged from work and shall not again be employed on it except with the written consent of the Owner.

The Contractor shall establish and maintain an office on the site of the work or at some convenient point adjacent thereto, during the continuance of this Contract and shall have at all times during working hours, a representative authorized to receive and execute any and all orders, when given by the Engineer; and such order, when given out and received by said representative shall be deemed to have been given to and received by the Contractor. Copies of the drawings and specifications shall at all times be kept on file by the Contractor at readily accessible points near the work.

18. FACILITIES FOR INSPECTION

The Owner, the Engineer, and their employees shall at all times have the right to enter upon the premises

upon which work is being done, or upon which material is stored for the work under this Contract, and to inspect the work under this Contract, and to inspect the work and materials, and to ascertain whether or not the construction is carried out in accordance with this Contract, and the Contractor shall furnish all reasonable facilities, and give ample time for such inspection. All materials shall be subject to mill and shop inspection, as provided in the specifications.

The Contractor shall promptly remove from the premises all materials rejected by the Engineer as failing to meet contract requirements, whether incorporated in the work or not, and the Contractor shall promptly replace and re-execute the work in accordance with the Contractor and without expense to the Owner and shall bear the expense of making good all work of other contractors destroyed or damaged by such removal or replacement.

If the Contractor does not remove such rejected work and materials promptly, after written notice, the Owner may remove them and store the material at the expense of the Contractor.

The Engineer has the right to have removed by the Contractor such portion of the work as may be deemed necessary for the discovery of improper work or material, and the Contractor must restore such work at the Contractor's own expense if improperly done and at the expense of the party of the first part if found to be in proper condition. Any work which, during its progress and before its final acceptance, may become damaged from any cause, shall be removed and replaced by good, satisfactory work at the Contractor's expense.

#### 19. SHOP DRAWINGS

Where called for in the specifications, the Contractor shall submit to the Engineer for review copies of details, specifications, cuts, and drawings of such equipment and structural work as may be required. The Contractor shall make any changes or alterations required by the Engineer and re-submit same without delay. The review of the Engineer shall not relieve the Contractor of responsibility for errors in the drawings, as the Engineer's checking is intended to cover compliance with the drawings and specifications and not to enter into every detail of the shop work. No work shall be undertaken until the Engineer has reviewed the shop drawings.

#### 20. ERRORS AND CORRECTIONS IN DRAWINGS AND SPECIFICATIONS

The Contractor shall examine and check all drawings and specifications furnished by the Owner for dimensions, quantities, and coordination with other parts of the work on this or related contracts and shall notify, in writing, the Engineer of any and all errors, omissions, or discrepancies he may discover by examining and checking of same. The Contractor shall not be allowed to take advantage of any such error, omission, or discrepancy, as full instructions will be furnished by the Engineer, and the Contractor shall carry out such instructions as if originally specified. In no case shall the Contractor proceed with the work in uncertainty, and any work done by the Contractor after the discovery of any error, omission, or discrepancy, until authorized, will be at the Contractor's risk and responsibility. The work is to be made complete and to the satisfaction of the Engineer, notwithstanding any minor omissions in the specifications or drawings.

#### 21. CHANGES IN THE WORK

The Owner shall have the right to require, by written order, changes in, additions to, or deductions from

the work required by the contractor documents; provided that if changes, additions, or deductions are made, the general character of the work as a whole is not changed thereby. Adjustments in the contract price, if any, because of any change, addition, or deduction in the work shall be determined as hereinafter provided, and any claim for extension of time for completion shall be adjusted at the time of ordering the change, addition, or deduction. No claim for change, addition, or deduction, or adjustment of price, or extension of time for completion thereof, shall be made or allowed unless done in pursuance of a written order from the Owner specifically authorizing such change, addition, or deduction. Drawings without a written order shall not be considered such authority. Written notice of such claims shall be made to the Engineer before the commencement of work. Where the written notice of such claims shall be made to the Engineer before the commencement of work. Where the written order diminished the quantity of work to be done, this shall not constitute a basis for a claim for damages or anticipated profits on the work that may be deleted.

Under circumstances which, in the judgment of the Engineer, so necessitate, the Engineer shall have authority to require, by written order, changes in, additions to, or deductions from the work. Such written order by the Engineer shall be subject to later confirmation by the Owner when the extent and cost have been established.

It is understood and agreed that in case any change in, addition to, or deduction from the work is required, said change shall in no way invalidate the Contract and shall not affect or discharge the bonds furnished by the Contractor.

The Contractor, without extra charge, shall make such slight alternations as may be necessary to make adjustable parts fit to fixed parts, leaving all complete and in proper shape when done.

## 22. BASIS FOR DETERMINING COST OF CHANGES IN THE WORK

Adjustments, if any, in the contract price by reason of change in the work shall be limited to the amount specified in the written order authorizing the change in the work. Adjustments shall be determined by one or more of the following methods, the Owner reserving the right to select the method or methods at the time the written order is issued:

- A. An acceptable lump sum proposal: To facilitate checking and acceptance, the proposal shall be itemized with quantities and prices given for the various items.
- B. Unit Prices: The unit prices may be the "Unit Price" set in the Agreement, or fixed by subsequent agreement between the Owner and the Contractor.
- C. On a cost-plus-limited basis not to exceed a specified maximum limit of cost:
- D. "COST" as herein used shall be the actual and necessary cost incurred by the Contractor by reasons of the change in the work for:
  1. Labor
  2. Materials
  3. Equipment Rental
  4. Insurance Premium

5. Labor costs shall be the amount shown on the Contractor's payroll with payroll taxes added when such taxes can be shown to have been incurred. In no case shall be rates charged for labor exceed the rates paid by the Contractor for the same class of labor employed by him to perform work under the regular items of the Contract.
6. Material costs shall be the net price paid for material delivered to the site of the work. If any material previously required is omitted by the written order of the Owner after it has been delivered to or partially worked on by the Contractor and consequently will not retain its full value for other uses, the Contractor shall be allowed the actual cost of the omitted material less a fair market value of the material as determined by the Owner.
7. Equipment Rental shall be the actual additional costs incurred for necessary equipment. Costs shall not be allowed in excess of usual rental charged in the area for similar equipment of like size and condition, including the cost of necessary supplies and repairs for operating the equipment. No costs, however, shall be allowed for the use of equipment on the site in connection with other work unless its use incurs actual and additional costs to the Contractor. If equipment not on the site is required for the change in the work only, the cost of transporting such equipment to and from the site shall be allowed.
8. Insurance Premium shall be limited to those based on labor payroll and to the types of insurance required by the Contract. The amount allowed shall be limited to the net costs incurred as determined from the labor payroll covering the work. The Contractor shall, upon request of the Owner, submit verification of the applicable insurance rates and premium computations.

"PLUS" as herein is defined as a percentage to be added to the items of "Cost" to cover superintendence, use of ordinary tools, bonds, overhead expense and profit. The percentage shall not exceed 15 percent on work done entirely by the Contractor and shall not exceed an aggregate total of 20 percent on work done by a subcontractor.

"SPECIFIED MAXIMUM LIMIT OF COST" is the amount stated in the written order of the Owner authorizing the change in the work. The amount to be allowed the Contractor shall be the "cost" and "plus" the percentage or the specified maximum, whichever is the lesser amount.

The Contractor shall keep complete, accurate, daily record of the net actual cost of changes in the work, and shall present such information in such form and at such times as the Owner may request.

23. PATENTS

The Contractor shall pay all royalties and license fees and shall hold and save the Owner and the Owner's agent harmless from all liability of any nature or kind, including cost and expenses, for, or on account of, any patented or unpatented invention, process, article, or appliance manufactured or used in the performance of the Contract, including its use by the owner, unless otherwise specifically stipulated in the Contract Documents. In this respect, the Contractor shall defend all suits or claims for infringement of any patent or license right.

In the event that any claim, suit, or action at law or in equity of any kind, whatsoever, is brought against the Owner, involving any such patents or license rights, then the Owner shall have the right to, and may, retain from any money due or to become due to the Contractor, such sufficient sum as is considered necessary to protect said Owner, against loss, and such sum maybe retained by the Owner until such claim or suit shall have been settled and satisfactory evidence to that effect shall have been furnished the Owner.

24. "OR EQUAL" CLAUSE

Whenever, in any of the Contract Documents, material, or equipment is defined by describing a proprietary product, or by using the name of a manufacturer or vendor, the term "or equal," if not inserted, shall be implied. The specific article, material, or equipment mentioned shall be understood as indicating the type, function, minimum standard of design, efficiency, and quality desired and shall not be construed in such a manner as to exclude manufacturers' products of comparable quality, design and efficiency. The Contractor shall comply with the requirements of the Contract Documents relative to the Owner's approval of materials and equipment before they are incorporated in the work.

25. CLEANING UP

The Contractor shall remove at his own expense from the Owner's property and from all public and private property, all temporary structures, rubbish and waste materials resulting from the Contractor's operations. This requirement shall not apply to property used for permanent disposal of rubbish or waste materials in accordance with permission of such disposal granted to the Contractor by the Owner thereof.

26. USE OF COMPLETE PORTIONS OF THE WORK

The Owner may, at any time during progress of the work, after written notice to the Contractor, take over and place in service any completed portions of the work which are ready for service, although the entire work of the Contract is not fully completed, and notwithstanding the time for completion of the entire work or such portion may not have expired. In such event, the Contractor will be relieved of further work on or maintenance of said portion, except as covered by his guarantee of same.

27. PAYMENT WITHHELD

The Owner may withhold or, on account of subsequently discovered evidence, nullify the whole or a part of any certificate for progress payment to such extent as may be necessary to protect itself from loss on account of:

- A. Defective work not remedied.
- B. Claims filed or reasonable evidence indicating probable filing of claims.
- C. Failure of the contractor to make payments properly to subcontractors or for material or labor.
- D. A reasonable doubt that the Contract can be completed for the balance then unpaid.
- E. Damage to another contractor.

When the above grounds are removed, payment shall be made for amounts withheld because of them.

28. CONTRACTOR'S RIGHT TO STOP WORK

If the work should be stopped under an order of any court, or other public authority for a period of three months, through no act or fault of the Contractor or of anyone employed by the Contractor, or if the Owner should fail to pay to the Contractor within sixty days of its maturity and presentation any sum certified by the Engineer, provided no appeal is taken, the Contractor may, upon seven days written notice to the Owner and the Engineer, stop work or terminate this Contract,, and shall receive from the Owner payment in full for all work executed, as determined from the prices contained in the approved detailed estimate as computed by the Engineer, but no claim for extra compensation or damages shall be made or allowed because of such termination of the Contract.

29. FAIR EMPLOYMENT PRACTICES ACT

Neither the Contractor nor the Contractor's subcontractor will discriminate against any employee or applicant for employment, to be employed in the performance of this Contract, with respect to hire, tenure, terms, conditions, or privileges of employment, or any matter directly or indirectly related to employment, because of race, color, religion, national origin or ancestry. Breach of this covenant may be regarded as a material breach of this Contract.

30. AUTHORITY

No agent of the Owner shall have power to revoke, alter, enlarge, or relax the stipulation or requirements of these specifications, except insofar as such authority may be specifically conferred by the specifications themselves, without the formal authorization to do so, conferred by the Contract of which the specifications are a part, or by ordinance, resolution, or other usual official action by the Owner.

31. STARTING WORK

Material shall be ordered and work shall begin on the ground within thirty (30) days after the Contract is signed, unless otherwise stated.

32. SANITARY REGULATIONS

Necessary sanitary conveniences for the use of laborers on the work, properly secluded from public observation, shall be constructed and maintained in sanitary condition by the Contractor, and their use shall be strictly enforced.

33. SUNDAY AND NIGHT WORK

The Contractor is required to prosecute work done under this Contract during the hours of daylight, and work will be permitted at night or on Sundays if it is in the best interest of the owner to accommodate traffic, service disruptions, and to keep the project on schedule. Contractor is required to get owner approval at least 48 hours prior to requesting night work. Also this provision is superseded if work is required to save property or life or as specifically authorized or directed by the Owner. Tunnel work may be prosecuted at night except on Sundays.

34. PROGRESS OF WORK

The work shall be prosecuted regularly and uninterruptedly, unless the Owner shall otherwise specifically direct, with such force and at such points as to ensure its full completion within the time herein stated.

If, in the opinion of the Owner, it is necessary or advisable that certain portions of the work be done immediately, the Contractor, upon written order, shall proceed with such work without delay. Should he fail to so proceed, the Owner may do or cause to be done, such work, and the cost of the same will be deducted from any money due or to become due the Contractor under this Contract.

35. TIME OF COMPLETION

The time allowed for completion of the work contemplated in this Contract shall be as stated in the proposal or specifications.

36. EXTENSION OF TIME

All days in which work is suspended by order of the Owner, or in accordance with these specifications, shall automatically extend the time for completion an equal number of days.

37. TIME IS ESSENCE OF CONTRACT

It is distinctly understood and agreed to by the parties hereto that the time specified for the completion of the work is the essence of this Contract, and the Contractor shall not be entitled to claim performance of this agreement unless the work is satisfactorily completed, in every respect, within the time herein specified.

38. ESTIMATED QUANTITIES

The quantities of the various classes of work to be done and materials to be furnished under this Contract which have been estimated as stated elsewhere herein, are approximate and only for the purpose of comparing, on a uniform basis, the bids offered for the work under this Contract; and neither the Owner nor his agents is to be held responsible should any of the said estimated quantities be found incorrect during the construction of the work; and the Contractor shall make no claim for anticipated profit, nor for loss of profit, because of a difference between the quantities of the various classes of work actually done or materials actually delivered and the estimated quantities as herein stated.

39. FORFEITURE OF CONTRACT

If the work to be done under the Contract shall be abandoned by the Contractor, or if any time in the judgment of the Owner, the contractor shall fail to prosecute the work at a reasonable rate of progress, or to comply with all or any of the terms and requirements herein set forth, then the Owner shall have the right to take possession of the work, including Contractor's plant, supplies, and materials, at any time after having notified the Contractor in writing to discontinue the work under this Contract for said cause or causes, and such action shall not affect the right of the Owner to recover damages resulting from such failure. Upon receiving such notice, the Contractor shall and will, upon demand, immediately give the Owner to recover damages resulting from such failure. Upon receiving such notice, the Contractor shall and will, upon demand, immediately give the Owner safe and peaceable possession of the work, including the plant, and shall then cease to have control over any portion thereof or the men employed thereon.

The Owner may then proceed to complete the work herein specified, by contract or otherwise; and the entire cost of the same shall be charged to the Contractor and deducted from any sum or sums due or to become due under the contract; the excess cost, if any, to be paid by the Contractor or the Contractor's sureties, to said Owner.

40. NO WAIVER OF CONTRACT

Neither the acceptance of the whole or any part of the work by the Owner or his Engineer, or any of its agents, nor any order, measurements, or certificate by the Engineer, nor any order by the Owner for the payment of money, nor any payment for the whole or any part of the work by the Owner, nor any extension of time, nor any possession taken by the Owner or its agents, shall operate as a waiver for any portion of the Contract or any power therein provided; nor shall any waiver of any breach of the Contract be held to be a waiver of any other or subsequent breach.

41. PAYMENT NOT TO BE STOPPED

The Owner shall not, nor shall any officer thereof, be precluded or stopped by any return or certificate made or given by the Engineer, or other officer, agent or appointee, under the provisions of this agreement, at any time (either before or after the final completion and acceptance of the work and payment made therefor pursuant to any such return or certificates showing the true and correct amount of money due therefor, notwithstanding any such return or certificate, or any payment made in accordance therewith) from demanding and receiving from the Contractor or the Contractor's sureties, separately or collectively, such sums as may have been improperly paid said Contractor by reason of any such return or certificate which has been untrue or incorrectly compiled.

42. GUARANTEE

The Contractor, as a condition precedent to final payment, shall execute a guarantee to the Owner warranting for a period of one year from the date of final payment to keep in good order and repair any defect in all the work done under the contract, either by the Contractor or the Contractor's subcontractors, or the material suppliers, that may develop during said period due to improper materials,

defective equipment,, workmanship, or arrangements, and any other work affected in making good such imperfections shall also be made good, all without expense to the Owner, and the Contractor shall execute, in favor of the Owner, the attached Maintenance and Guarantee Bond.

When the specifications call for a guarantee period greater than one year, the Contractor shall provide such longer guarantee period.

#### 43. ESTIMATES AND PAYMENTS

The Owner shall pay and the Contractor receive the prices bid in the proposal, or agreed upon, less any deduction for any uncompleted portion, based upon measurements made by the Engineer or as otherwise herein stipulated, and such measurements shall be final and conclusive.

As aid to the Owner in preparing estimates for progress payments, the Contractor may be required to submit to the Owner for approval a breakdown of some or all contract unit prices into their essential component parts. The sum of the component parts shall not exceed the total contract price per unit and the breakdown shall not overrule the contract price per unit.

The Contractor shall submit to the Owner a written request for each payment and a Contractor's Declaration declaring that he has not performed any work, furnished any material, sustained any loss, damage or delay, for any reasons, including soil conditions encountered or created, or otherwise done anything for which he will ask, demand, sue for, or claim compensation from the Owner other than, as indicated on the Contractor's Declaration. When requested by the Owner, the Contractor shall submit receipts or other vouchers showing his payments for materials and labor, including payments to subcontractors.

Payments based on progress estimates will be made on a monthly basis for work completed during the preceding month or since the date of the last preceding progress payment. Payments will be in accordance with the provision of Act 524 of the Michigan Public Acts of 1980 and in accordance with the terms of this Contract. No allowance will be made for materials furnished which are not incorporated in the finished work, unless otherwise stated.

Partial Payment for materials and/or equipment stored on the jobsite may be allowed on the basis of 90% of the invoice cost of the material providing materials are properly stored. Partial Payment will be allowed on the basis of 90% of the invoice cost less the cost of delivery for materials and/or equipment stored off the jobsite providing the following conditions are met:

- Materials can be inspected by the OWNER and are clearly identifiable for the project.
- Items are properly stored in the opinion of the OWNER.
- Evidence of clear title transfer to the OWNER upon such partial payment can be provided.
- Insurance coverage against loss or damage is provided including certificates guaranteeing same.

Pursuant to Act 524, Michigan Public Acts of 1980, the Owner shall designate a person representing it to whom written requests for payments shall be submitted. The Contractor shall designate a person who shall submit written requests for payment to the Owner.

In the event a dispute arises over an avoidable or unacceptable delay in the performance of the work as described in Section 4(3) of Act 524 of Michigan Public Acts of 1980 [MCLA125.1564(3)], the dispute may, at the option of the Owner, be submitted for resolution in accordance with the provisions of Section

4 of Act 524 of the Michigan Public Acts of 1980 to an agent designated pursuant to Section 4(2) of the Act. The dispute resolution process described above shall be used only for the purpose of determining the rights of the parties to retained funds and interest earned on retained funds.

The Owner may withhold the payment of any estimate or portion of estimate until the Contractor shall have furnished satisfactory evidence that all claims of every nature have been paid.

No payment shall be considered as acceptance of the work or any portion thereof prior to the final completion of the work, and the payment of the final estimate.

Within thirty (30) days after the completion of the work under this Contract to the satisfaction of the Owner and the Engineer, in accordance with all and singular terms and stipulations herein contained, the Owner shall make final payment, from a final estimate made by the Engineer. Before final payment is made, the Contractor shall, as directed by the Owner, furnish a Contractor's Affidavit that he has paid or satisfactorily secured all claims of every nature. Also, the Contractor shall furnish a release from the surety or sureties and permit agencies as applicable, approving payment of final estimate by the Owner. The final payment, when made, shall be considered as final approval and acceptance of the completed work herein specified.

The acceptance by the Contractor of the final payment aforesaid shall operate as, and shall be, a release to the Owner and the Owner's agents, from all claim and liability to the Contractor for anything done or furnished for, relating to the work, or for any act or neglect of the Owner or of any person relating to or affecting the work.

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CONTRACTOR'S DECLARATION

I hereby declare that I have not, during the period \_\_\_\_\_  
to \_\_\_\_\_ A.D., 20\_\_\_, performed any work, furnished any material, sustained any loss, damage or  
delay for any reason, including soil conditions encountered or created, or otherwise done anything for which I  
shall ask, demand, due for, or claim compensation from \_\_\_\_\_

\_\_\_\_\_

the Owner, or his agents, in addition to the regular items set forth in the contract numbered \_\_\_\_\_ and dated \_\_\_\_\_

\_\_\_\_\_

A.D., 20\_\_\_, for \_\_\_\_\_

\_\_\_\_\_

executed between myself and the Owner, and in the Change Orders for work issued by the Owner in writing as  
provided thereunder, except as I hereby make claim for additional compensation and/or extension of time as set  
forth on the itemized statement attached hereto.

There (is) (is not) an itemized statement attached.

Date: \_\_\_\_\_

Company: \_\_\_\_\_

By: \_\_\_\_\_

Position: \_\_\_\_\_



SECTION 01005

ADMINISTRATIVE PROVISIONS

PART 1 GENERAL

1.1 REQUIREMENTS INCLUDED

- 1.2 Related Sections
- 1.3 Summary of work.
- 1.4 Work sequence.
- 1.5 Alternatives.
- 1.6 Coordination
- 1.7 Cleanliness of the work and streets.
- 1.8 Fire protection.
- 1.9 Historical specimens.
- 1.10 Abbreviations.
- 1.11 References.

1.2 RELATED REQUIREMENTS

- A. Instructions to Bidders.
- B. Contract.
- C. General Conditions.
- D. Standard Specifications
- E. Section 01310 - Progress Schedules.
- F. Section 01700 - Contract Closeout.
- G. Section 01950 - Sequence of Construction and Special Project Requirements.

1.3 SUMMARY OF WORK

- A. The work consists of the dredging of the existing basins at the Wheeler Facility and improvements to ponds to improve water quality.

#### 1.4 WORK SEQUENCE

- A. The Contractor shall arrange his work so that at no time will it cause unnecessary interruption to the operation of existing facilities. To this end, the Contractor shall prepare and submit to the Engineer for approval a complete detailed working schedule setting forth the sequencing of operations he proposes to follow.

#### 1.5 ALTERNATIVES

- A. Contract Drawings indicate the extent and general arrangement of the work. If any departures from the Contract Drawings are deemed necessary by the Contractor to accommodate the material and equipment he proposes to furnish, details of such departures and reasons thereof shall be submitted as soon as practicable to the Engineer for approval.
- B. The Contractor shall refer to Section 01300, SUBMITTALS, for complete requirements regarding Alternates, Substitutions.

#### 1.6 COORDINATION

- A. Contract Documents:
  - 1. It is not the intent nor shall it be so construed that work included in any one Section of the Specifications must be performed by a particular trade or by subcontract. The work to be performed by a particular trade is not necessarily restricted to that of any one Section.
  - 2. Any item mentioned under any heading must be supplied even though it is not called for again under the heading for the respective work.
- B. Existing Facilities:
  - 1. All existing facilities and operations shall be uninterrupted by the Contractor's performances unless otherwise allowed in the Contract Documents.
  - 2. All proposed interruptions or tie-ins to existing facilities or utilities or other activities affecting the operations shall be scheduled.
  - 3. The Engineer shall approve the scheduling of all such activities.

#### 1.7 CLEANLINESS OF THE WORK AND STREETS

- A. The work itself, and all public and private property used therewith, shall be kept in a neat orderly condition at all times. Excess excavation, waste and rejected materials, rubbish, and debris shall not be allowed to accumulate. The newly constructed work shall be cleared of all temporary construction of facilities when such are entirely free of all debris and the premises left in a condition that will not be susceptible to soil erosion and that will not create a situation problem.
- B. Trucks hauling loose materials to or from the site shall be tightly covered and their loads shall be trimmed to prevent spillage on the public streets or roads. This requirement likewise applies to suppliers making deliveries to the site. The Contractor shall promptly clean streets or roads dirtied by any cause arising from his operations or that of his Subcontractors or his suppliers. Should the Contractor fail to maintain proper street or road cleanliness, the Owner will take necessary steps to perform such cleaning and will charge the Contractor for all cost thereof.

- C. The Contractor shall control dust from his operations to meet the requirements of the jurisdictional authorities. Control measures shall include but are not limited to sprinkling, applying calcium chloride, wheel washing, street sweeping, street washing, load covering, and the like.

#### 1.8 FIRE PROTECTION

- A. The Contractor shall take all necessary precautions to prevent fires and shall provide adequate equipment for extinguishing fires. No burning of trash or debris will be permitted.
- B. When fire or explosion hazards are created in the vicinity of the work as a result of the locations of fuel tanks or similar hazardous utilities or devices, the Contractor shall immediately alert the local Fire Marshal, the Engineer, and the Owner. The Contractor shall exercise all safety precautions and shall comply with all instructions issued by the Fire Marshal and shall cooperate with the Owner of the tank or device to prevent the occurrence of fire or explosion.

#### 1.9 HISTORICAL SPECIMENS

- A. Any and all specimens of historical or scientific value or interest encountered in the Work shall be preserved and delivered to the Engineer.

#### 1.10 REFERENCES

- A. Specifications by Reference:
  - 1. Where reference is made in the specifications to specifications or standards of any technical society, association, governmental agency, etc., it is understood and agreed that such specifications or standards are as much a part of the specifications as though fully repeated therein.
- B. Materials by Reference:
  - 1. A material included in more than one section of the specifications will be specified in detail in only one of the Sections.
  - 2. In other sections, the material is specified by reference to the section containing the specifications for the same material, and such specifications shall be considered as much a part of the other sections as if they were therein repeated in full.

#### PART 2 PRODUCTS

Not Used.

#### PART 3 EXECUTION

Not Used.

END OF SECTION

1 SECTION 01039  
2 COORDINATION AND MEETINGS

3 PART 4 GENERAL

4 4.1 SECTION INCLUDES

- 5 A. Related Sections
- 6 B. Coordination.
- 7 C. Pre-Bid Meeting.
- 8 D. Preconstruction Meeting.
- 9 E. Progress Meetings.
- 10 F. Preinstallation Meetings.

11 4.2 RELATED SECTIONS

- 12 A. Instructions for Bidders.
- 13 B. General Conditions.
- 14 C. Supplemental General Conditions.
- 15 D. Section 01005 - Administration Provisions.
- 16 E. Section 01300 - Submittals.
- 17 F. Section 01310 - Progress Schedules.

18 4.3 COORDINATION

- 19 A. Coordinate scheduling, submittals, and Work of the various sections of the Project to assure  
20 efficient and orderly sequence of installation of interdependent construction elements, with  
21 provisions for accommodating items installed later.
- 22 B. Verify utility requirements and characteristics of operating equipment are compatible with  
23 building utilities. Coordinate work of various sections having interdependent responsibilities  
24 for installing, connecting to, and placing in service, such equipment.
- 25 C. Coordinate work with Wheeler Facility Operator, We Care, for access and removal of  
26 materials. At no time shall contractor operations adversely impact facility operations.
- 27 D. Coordinate completion and clean up of Work of separate sections in preparation for  
28 Substantial Completion and for portions of Work designated for Owner's occupancy.

29 E. After Owner occupancy of premises, coordinate access to site for correction of defective Work  
30 and Work not in accordance with Contract Documents, to minimize disruption of Owner's  
31 activities.

32 4.4 PRE-BID MEETING

33 A. Engineer will schedule a meeting as noted in the Information for Bidders.

34 B. Attendance Required: Owner, Engineer, and Bidders.

35 C. Attendance Requested: Regulatory Agencies, Utility Representatives, Subcontractors.

36 D. Agenda:

- 37 1. Review of Permits Required.
- 38 2. Review of Special Project Requirements.
- 39 3. Regulatory requirements affecting the project.
- 40 4. Review of Contract Documents.
- 41 5. Critical work sequencing.
- 42 6. Use of premises by Owner and Contractors
- 43 7. Construction facilities and controls provided by Owner.
- 44 8. Temporary utilities provided by Contractor and by Owner.
- 45 9. Survey and layout.
- 46 10. Security and housekeeping procedures.
- 47 11. Responsibility for testing.

48 E. Record minutes and distribute copies within two days after meeting to participants, with one  
49 copy to all participants, and those affected by decisions made.

50 4.5 PRECONSTRUCTION MEETING

51 A. Engineer will schedule a meeting prior to issuing Notice of Award.

52 B. Attendance Required: Owner, Engineer, major subcontractors and Contractor.

53 C. Agenda:

- 54 1. Review of Execution of Owner-Contractor Agreement.
- 55 2. Review of Regulatory requirements affecting the project.
- 56 3. Distribution of Control Documents.
- 57 4. Submission of progress construction schedule.
- 58 5. Designation of personnel representing the parties in Contract, and the Engineer.
- 59 6. Procedures and processing of field decisions, submittals, substitutions, applications  
60 for payments, proposal request, Change Orders, and Contract closeout procedures.
- 61 7. Critical work sequencing.
- 62 8. Use of premises by Owner and Contractor
- 63 9. Construction facilities and controls provided by Owner.
- 64 10. Mobilization
- 65 11. Project Coordination
- 66 12. Temporary utilities provided by Contractor and Owner.
- 67 13. Survey and layout.
- 68 14. Security and housekeeping procedures.
- 69 15. Procedures for testing.

- 70                    16.     Procedures for maintaining record documents.
- 71                    D.       Record minutes and distribute copies within two days after meeting to participants, with one  
72                            copy to all participants, and those affected by decisions made.
- 73    4.6     PROGRESS MEETINGS
- 74                    A.       The Engineer will schedule and administer meetings throughout progress of the Work at  
75                            maximum monthly intervals.
- 76                    B.       Engineer will make arrangements for meetings, prepare agenda with copies for participants,  
77                            and preside at meetings.
- 78                    C.       Attendance Required: Job superintendent, major Subcontractors and Suppliers, Owner,  
79                            Engineer, as appropriate to agenda topics for each meeting.
- 80                    D.       Agenda:
- 81                            1.       Review minutes of previous meetings.
- 82                            2.       Review of Work progress.
- 83                            3.       Field observations, problems, and decisions.
- 84                            4.       Identification of problems which impede planned progress.
- 85                            5.       Review of submittals schedule and status of submittals.
- 86                            6.       Review of on site and off-site fabrication and delivery schedules.
- 87                            7.       Maintenance of progress schedule.
- 88                            8.       Corrective measures to regain projected schedules.
- 89                            9.       Planned progress during succeeding work period.
- 90                            10.      Coordination of projected progress.
- 91                            11.      Maintenance of quality and work standards.
- 92                            12.      Effect of proposed changes on progress schedule and coordination.
- 93    4.7     PREINSTALLATION MEETING
- 94                    A.       When required in individual specification sections, convene a preinstallation meeting at work  
95                            site prior to commencing work of the section.
- 96                    B.       Require attendance of parties directly affecting, or affected by, work of the specific section.
- 97                    C.       Notify Engineer four days in advance of meeting date.
- 98                    D.       Prepare agenda and preside at meeting:
- 99                            1.       Review conditions of installation, preparation and installation procedures.
- 100                            2.       Review coordination with related work.
- 101                    E.       Record minutes and distribute copies within two days after meeting to participants, with  
102                            copies to Engineer, Owner, participants, and those affected by decisions made.

103 PART 5 PRODUCTS

104 Not Used.

105 PART 6 EXECUTION

106 Not Used.

107 END OF SECTION

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SECTION 01270

MEASUREMENT AND PAYMENT

PART 7 GENERAL

7.1 SUMMARY

- A. This Section includes administrative and procedural requirements for unit prices.

7.2 DEFINITIONS

- A. Unit price is stated on the Bid Form, as a price per unit of measurement for materials or services added to or deducted from the Contract Sum by appropriate modification, if estimated quantities of Work required by the Contract Documents are increased or decreased.

7.3 PROCEDURES

- A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.
- B. Measurement and Payment: as described in list below.
- C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.
- D. List of Unit Prices: A list of unit prices is included in Part 3. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.
- E. Incidental Items: Any items of work indicated as incidental or included shall be considered as part of the project work and shall be completed at no additional expense to the Owner. Incidental or included items shall include labor, materials, and equipment that may not be specifically listed in the Bid Form or in the drawings or specifications, but which are necessary to complete the work.

PART 8 PRODUCTS

Not Used.

PART 9 EXECUTION

9.1 LIST OF UNIT PRICE PAY ITEMS

**1. Mobilization, Max 5%**

The completed work as measured for MOBILIZATION, MAX 5% will be paid for al the contract unit price for the following contract item (pay item):

<u>Pay Item</u>	<u>Pay Unit</u>
Mobilization, Max 5%	LS (Lump Sum)

The lump sum price shall be payment in full for all preparatory work and operations which may include, but is not limited to, the following items:

- a. The movement of personnel, equipment, supplies, and incidentals to the project site including traffic control.
- b. The establishment of the Contractor’s offices, buildings, and other facilities to work on the project.
- c. Other work and operations that must be performed.
- d. Expenses incurred, prior to beginning work on the various contract items on the project site.
- e. Pre-construction costs, exclusive of bidding costs, which are necessary direct costs to the project rather than directly attributable to other pay items under the contract.
- f. Permits, bonds, etc.

The pay item will state the maximum amount that can be bid. When the percentage of the original contract amount earned is less than 5 percent, the costs of project specific bonding, insurances, and permits will be reimbursed when a paid invoice is received by the Engineer. The costs of these will then be made in accordance with the Partial Payment Schedule shown below. The original contract amount is the total value of all contract items including the mobilization item. The percentage earned is exclusive of the mobilization item. The total sum of all payments for this item shall not exceed the original contract amount bid for mobilization, regardless of the fact that the Contractor may have, for any reason, shut down his work on the project, moved equipment away from the project and then back again, or for additional quantities or items of work added to the contract.

<u>Partial Payment Schedule</u>	
Percentage of Original Contract Amount Earned	Percentage of Bid Price for Mobilization Allowed
5	50
10	75
25	100

When a pay item for mobilization is not included in the proposal, payment for any such work is considered to have been included in payments made for other items of work.

**2. Construction Fence, As Needed**

The completed work as measured for CONSTRUCTION FENCE, AS NEEDED will be paid for at the contract unit price for the following contract item (pay item):

<u>Pay Item</u>	<u>Pay Unit</u>
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Construction Fence, As Needed FT (Foot)

Construction Fence shall be measured in place horizontally by linear feet. The length shall be measured along the top of fence from end of fence to end of fence.

The contract unit price shall be payment in full for all labor, materials, and equipment necessary to furnish, install, and maintain the protective fence in accordance with the plan notes and details. The fence shall be maintained through the project and shall be restored to its full extents at the end of each work day. Removal of the construction fence upon final completion of the project shall be considered as included in the work.

### 3. Silt Sock

The completed work as measured for SILT SOCK will be paid for at the contract unit price for the following contract items (pay items):

<u>Pay Item</u>	<u>Pay Unit</u>
Silt Sock	FT (Foot)

Silt Sock shall be measured in place horizontally by linear feet. The length shall be measured along the top of sock from end of sock to end of sock.

The contract unit price shall be payment in full for all labor, materials, and equipment necessary to furnish, install, and maintain the silt sock in accordance with the plan notes, details and SESC permits from both the City of Ann Arbor and Pittsfield Township. The silt sock shall be maintained through the project and shall be restored to its full extents at the end of each work day. Removal of the silt sock upon final completion of the project shall be considered as included in the work.

### 4. Stone Filter

The completed work as measured for STONE FILTER will be paid for at the contract unit price for the following contract items (pay items):

<u>Pay Item</u>	<u>Pay Unit</u>
Stone Filter	EA (Each)

Stone filter will be measured by each and includes all materials, labor, and equipment necessary to complete the work in accordance with the conditions and requirements given in the project plans, details and SESC permits from both the City of Ann Arbor and Pittsfield Township. The work shall include placing the nonwoven geotextile filter fabric and 6A aggregate filter material over the structure casing.

### 5. Sediment Removal and Earth Excavation

The completed work as measured for SEDIMENT REMOVAL AND EARTH EXCAVATION will be paid for at the contract unit price for the following contract items (pay items):

<u>Pay Item</u>	<u>Pay Unit</u>
Sediment Removal and Earth Excavation	CY (Cubic Yard)

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Sediment Removal and Earth Excavation shall be measured in place by cubic yard and includes all materials, labor, and equipment necessary to complete the work in accordance with the conditions and requirements given in the project plans. As part of this pay item, all invasives (phragmites, etc.) shall be removed and disposed of off-site along with dredge and excavated material.

#### **6. Sediment Disposal - Landfill**

The completed work as measured for SEDIMENT DISPOSAL - LANDFILL will be paid for at the contract unit price for the following contract items (pay items):

<u>Pay Item</u>	<u>Pay Unit</u>
Sediment Disposal - Landfill	CY (Cubic Yard)

Sediment Disposal shall be measured in place by cubic yard and includes all materials, labor, and equipment necessary to complete the work in accordance with the conditions and requirements given in the project plans. The work shall include transportation and disposal at a Type II Landfill.

#### **7. Hydric Soils, Stockpile**

The completed work as measured for HYDRIC SOILS, STOCKPILE will be paid for at the contract unit price for the following contract items (pay items):

<u>Pay Item</u>	<u>Pay Unit</u>
Hydric Soils, Stockpile	CY (Cubic Yard)

Hydric soils shall be measured in place by cubic yard and includes all materials, labor, and equipment necessary to complete the work in accordance with the conditions and requirements given in the project plans.

#### **8. Level Spreader Rip-Rap**

The completed work as measured for LEVEL SPREADER RIP-RAP will be paid for at the contract unit price for the following contract item (pay item):

<u>Pay Item</u>	<u>Pay Unit</u>
Level Spreader Rip-Rap	CY (Cubic Yard)

Riprap will be measured in place by cubic yard and includes all materials, labor, and equipment necessary to complete the work in accordance with the conditions and requirements given in the project plans. The work shall include removing any impacted vegetation or trees, excavating and leveling the ground surface, placing riprap and backfilling the excavation. Finish grading of the area around the rip rap will not be paid for separately but is included in the contract item.

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### 9. 15" N-12 Pipe

The completed work as measured for 15" N-12 PIPE will be paid for at the contract unit price for the following contract items (pay items):

<u>Pay Item</u>	<u>Pay Unit</u>
15" N-12 Pipe	FT (Foot)

Culverts shall be measured in place horizontally by linear feet. The length shall be measured along the centerline of the pipe from end of pipe to end of pipe or to center of structure. The measurement shall include the length of end sections, which will not be paid for separately.

The contract unit price shall be payment in full for all labor, materials, and equipment necessary to construct the culvert. The payment for culvert shall include the following (except such items for which separate prices are received on the Bid Form): clearing; excavating; trenching; disposal of items from clearing; disposal of unsuitable or excess excavated materials; temporary sheeting, bracing and shoring of excavations; support, relocation, replacement, connection or reconnection of existing pipe lines, building leads and utilities; furnishing and placing of pipe, jointing materials, fittings, bulkheads, plugs, adaptors; furnishing and placing of required bedding, backfill, and fill materials; complete cleanup and surface restoration. Removal of an existing culvert shall be considered as included in the price for the new culvert construction if the new culvert is being constructed in the same trench as the existing culvert.

Payment for culvert shall also include up to 18 inches of trench undercut and refill with compacted MDOT 6A crushed gravel or 6A crushed concrete unless otherwise shown in the plan details. If additional undercut is required beyond 18 inches, then it shall be paid for separately as Trench Undercut and Refill.

### 10. Trench Undercut and Refill

The completed work as measured for Trench Undercut and Refill will be paid for at the contract unit price for the following contract item (pay item):

<u>Pay Item</u>	<u>Pay Unit</u>
Trench Undercut and Refill	Cubic Yard

Trench Undercut and Refill will be measured in place by cubic yard and includes all materials, labor, and equipment necessary to complete the work in accordance with the conditions and requirements given in the project plans. The work shall include undercutting an excavated trench due to poor soils, leveling the ground surface, placing MDOT 6A crushed gravel or 6A crushed concrete in the excavation.

### 11. Live Stake Shrub Plugs

The completed work as measured for LIVE STAKE SHRUBS PLUGS will be paid for at the contract unit price for the following contract items (pay items):

<u>Pay Item</u>	<u>Pay Unit</u>
Live Stake Shrubs Plug	EA (Each)

Live Stake Shrub Plugs shall be measured in place by each and includes all materials, labor, and equipment necessary to complete the work in accordance with the conditions and requirements given

in the project plans. Watering shrubs until sufficiently established shall be considered as incidental to the work unless a separate pay item for water is included in the Bid Form.

**12. Seed Mix A**

The completed work as measured for SEED MIX A will be paid for at the contract unit price for the following contract item (pay item):

<u>Pay Item</u>		<u>Pay Unit</u>
Seed Mix A	Acre	

Seed Mix A shall be measured in place by the acre and shall be based upon the average length and width measurements of the seeded area as determined by Engineer.

The contract unit price shall be payment in full for all labor, materials, and equipment necessary to furnish and place the seed as called for on the plans and specifications. The seed mix shall be a wetland mixture as noted in the specifications. Watering seed until vigorous turf growth is established shall be considered as incidental to the work unless a separate pay item for water is included in the Bid Form. Seed Mix placement for each site shall commence immediately upon completion of work.

**13. Seed Mix B**

The completed work as measured for SEED MIX B will be paid for at the contract unit price for the following contract item (pay item):

<u>Pay Item</u>		<u>Pay Unit</u>
Seed Mix B	Acre	

Seed Mix B shall be measured in place by the acre and shall be based upon the average length and width measurements of the seeded area as determined by Engineer.

The contract unit price shall be payment in full for all labor, materials, and equipment necessary to furnish and place the seed as called for on the plans and specifications. The seed mix shall be a native upland mixture as noted in the specifications. Watering seed until vigorous turf growth is established shall be considered as incidental to the work unless a separate pay item for water is included in the Bid Form. Seed Mix placement for each site shall commence immediately upon completion of work.

**14. Seed Mix C**

The completed work as measured for SEED MIX C will be paid for at the contract unit price for the following contract item (pay item):

<u>Pay Item</u>		<u>Pay Unit</u>
Seed Mix C	Acre	

Seed Mix C shall be measured in place by the acre and shall be based upon the average length and width measurements of the seeded area as determined by Engineer.

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The contract unit price shall be payment in full for all labor, materials, and equipment necessary to furnish and place the seed as called for on the plans and specifications. The seed mix shall be a lawn mixture as noted in the specifications. Watering seed until vigorous turf growth is established shall be considered as incidental to the work unless a separate pay item for water is included in the Bid Form. Seed Mix placement for each site shall commence immediately upon completion of work.

### **15. Erosion Blanket**

The completed work as measured for EROSION BLANKET will be paid for at the contract unit price for the following contract item (pay item):

<u>Pay Item</u>	<u>Pay Unit</u>
Erosion Blanket	SF (Square Foot)

Erosion blanket shall be measured in place by the square foot and shall be based upon the average length and width measurements of the seeded area as determined by Engineer.

The contract unit price shall be payment in full for all labor, materials, and equipment necessary to furnish and place the blanket as called for on the plans and specifications. The erosion blanket shall be NAG C125bn or an approved equal as noted in the specifications. Erosion blanket placement for each site shall commence immediately upon completion of work

### **16. Compacted Topsoil/Compost**

The completed work as measured for COMPACTED TOPSOIL/COMPOST will be paid for at the contract unit price for the following contract items (pay items):

<u>Pay Item</u>	<u>Pay Unit</u>
Compacted Topsoil/Compost	CY (Cubic Yard)

Compacted Topsoil/Compost shall be measured in place by cubic yard and includes all materials, labor, and equipment necessary to complete the work in accordance with the conditions and requirements given in the project plans. The material shall be purchased and acquired from the site facility.

### **17. Light Storm Sewer Cleaning (12"-24")**

The completed work as measured for LIGHT STORM SEWER CLEANING (12"-24") will be paid for at the contract unit price for the following contract items (pay items):

<u>Pay Item</u>	<u>Pay Unit</u>
Light Storm Sewer Cleaning (12"-24")	FT (Foot)

Light Storm Sewer Cleaning shall be measured in place horizontally by linear feet. The length shall be measured along the top of pipe from end of pipe to end of pipe.

The contract unit price shall be payment in full for all labor, materials, and equipment necessary to furnish, clean, and maintain the sewer in accordance with the plan notes and details. The sewer cleaning shall include a "three-pass" cleaning utilizing high pressure jetting equipment, brushes and

swabs to remove small amounts of loose debris such as gravel, sand, small rocks, grease and other deleterious materials as well as disposal of material removed from pipes.

**18. Light Storm Sewer Cleaning (30"-60")**

The completed work as measured for LIGHT STORM SEWER CLEANING (30"-60") will be paid for at the contract unit price for the following contract items (pay items):

<u>Pay Item</u>	<u>Pay Unit</u>
Light Storm Sewer Cleaning (30"-60")	FT (Foot)

Light Storm Sewer Cleaning shall be measured in place horizontally by linear feet. The length shall be measured along the top of pipe from end of pipe to end of pipe.

The contract unit price shall be payment in full for all labor, materials, and equipment necessary to furnish, clean, and maintain the sewer in accordance with the plan notes and details. The sewer cleaning shall include a "three-pass" cleaning utilizing high pressure jetting equipment, brushes and swabs to remove small amounts of loose debris such as gravel, sand, small rocks, grease and other deleterious materials as well as disposal of material removed from pipes.

**19. Heavy Storm Sewer Cleaning (12"-24")**

The completed work as measured for HEAVY STORM SEWER CLEANING (12"-24") will be paid for at the contract unit price for the following contract items (pay items):

<u>Pay Item</u>	<u>Pay Unit</u>
Heavy Storm Sewer Cleaning (12"-24")	Foot

Heavy Storm Sewer Cleaning shall be measured in place horizontally by linear feet. The length shall be measured along the top of pipe from end of pipe to end of pipe.

The contract unit price shall be payment in full for all labor, materials, equipment and disposal necessary to furnish, clean, and maintain the sewer in accordance with the plan notes and details. Should the sewer line have too much debris for the Light Storm Sewer Cleaning, an additional "three-pass" cleaning of pipelines utilizing high pressure jetting equipment, and mechanical cleaners such as bucket machines, scrapers, cutters, and augers will commence.

**20. Heavy Storm Sewer Cleaning (30"-60")**

The completed work as measured for HEAVY STORM SEWER CLEANING (30"-60") will be paid for at the contract unit price for the following contract items (pay items):

<u>Pay Item</u>	<u>Pay Unit</u>
Heavy Storm Sewer Cleaning (30"-60")	Foot

Heavy Storm Sewer Cleaning shall be measured in place horizontally by linear feet. The length shall be measured along the top of pipe from end of pipe to end of pipe.

The contract unit price shall be payment in full for all labor, materials, equipment and disposal necessary to

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furnish, clean, and maintain the sewer in accordance with the plan notes and details. Should the sewer line have too much debris for the Light Storm Sewer Cleaning, an additional “three-pass” cleaning of pipelines utilizing high pressure jetting equipment, and mechanical cleaners such as bucket machines, scrapers, cutters, and augers will commence.

## **21. Relocation and Replacement of Concrete Pads**

The completed work as measured for RELOCATION AND REPLACEMENT OF CONCRETE PADS will be paid for at the contract unit price for the following contract items (pay items):

<u>Pay Item</u>	<u>Pay Unit</u>
Relocation and Replacement of Concrete Pads	EA (Each)

Relocation and Replacement of Concrete Pads shall be measured in place by each and includes all materials, labor, and equipment necessary to complete the work in accordance with the conditions and requirements given in the project plans. The concrete pads are meant to be left in place and should only be relocated and replaced if necessary.

## **22. Topsoil Stripping and Stockpiling**

The completed work as measured for TOPSOIL STRIPPING AND STOCKPILING will be paid for at the contract unit price for the following contract items (pay items):

<u>Pay Item</u>	<u>Pay Unit</u>
TOPSOIL STRIPPING AND STOCKPILING	SY (Square Yard)

Topsoil shall be removed in areas of disturbance prior to other work taking place and stockpiled in dedicated soil stockpile area. Adequate erosion control shall be utilized as necessary to comply with both City of Ann Arbor and Pittsfield Township SESC permits. Once construction is complete, topsoil shall be replaced in disturbed areas as directed.

END OF SECTION

SECTION 01300

SUBMITTALS

PART 10 GENERAL

10.1 SCHEDULE FOR SUBMISSION

- A. Submittal procedures
- B. Submittal Review
- C. Proposed Products list
- D. Shop Drawings, Product Data, and Samples
- E. Manufacture's installation instructions
- F. Manufacture's certificates

10.2 RELATED SECTIONS

- A. General Conditions
- B. Standard Specifications
- C. Section 01310 Construction Schedule
- D. Section 01400 - Quality Control
- E. Section 01700 - Contract Closeout

10.3 SCHEDULE FOR SUBMISSION

- A. Prior to submitting any shop drawings, product data, portfolios, samples, etc. the Contractor shall prepare a Schedule of Submittals, listing all items in the project which he will submit for review by the Engineer. Identify all critical path submittals.
- B. The summary shall be submitted within twenty (20) calendar days after receipt of Notice to Proceed and shall be updated once per month thereafter.
- C. The summary shall include the proposed dates for submittal for each item for control purposes. The summary shall be prepared in coordination with the Project Schedule for Construction and adequate time shall be allowed therein for review and possible resubmittal.
- D. The summary and schedule for submittals shall not relieve the Contractor of his obligation to comply with specification requirements for items not listed on the schedule.

- E. Nothing herein shall be construed as allowing additional time for completion of the project in the event resubmittal is required for shop drawings or the other items to be submitted.

#### 10.4 SUBMITTAL PROCEDURES

- A. Transmit each submittal with Engineer approved transmittal form.
- B. Sequentially number the transmittal form. Re-submittals shall have original specification number and a sequential alphabetic suffix.
- C. Identify Project, Contractor, Subcontractor and supplier; pertinent drawing and detail number, and specification section number, as appropriate.
- D. Apply Contractor's stamp, signed or initialed certifying that review, verification of Products required, field dimensions, adjacent construction Work, and coordination of information, is in accordance with the requirements of the Work and Contract Documents.
- E. Schedule submittals to expedite the Project, and deliver to the Engineer in a manner to allow sufficient time for review and processing by the Engineer so as to not cause delays in the Work. Coordinate submission of related items.
- F. All drawings, information and documentation shall be prepared and submitted with all words in the English language and dimensions in American units. No foreign language or metric units will be permitted.
- G. Identify variations from Contract Documents and Products and system limitations which may be detrimental to successful performance of the completed work.
- H. Provide space for Contractor and Engineer review stamps.
- I. Revise and resubmit submittals as required and identify all changes made since previous submission.
- J. Distribute copies of reviewed submittals to all concerned and related parties. Instruct parties to promptly report any inability to comply with provisions.
- K. The Engineer reserves the right to refuse to check or review any submittal of a subcontractor or manufacturer which is not presented in compliance with the foregoing requirements.
- L. Electronic Submittals:
  - 1. All electronic submittals shall follow the procedures outlined above.
  - 2. Electronic submittal procedures are only applicable to Shop Drawings and product data submittals.
  - 3. Electronic submittals shall be made in .PDF format
  - 4. Reviewed submittals shall be returned in PDF electronic format for the Contractor's printing and distribution.

## 10.5 SUBMITTAL REVIEW

- A. All subcontractors and manufacturers' drawings shall first be sent directly to the Contractor, who shall keep a record of the drawing numbers and the dates of receipt. The Contractor shall check thoroughly all such drawings, as regards measurements, sizes of members, materials, and all other details to assure himself that they conform to the intent of the drawings and the specification, and shall promptly return to the subcontractors and/or manufacturers for correction such drawings as are found inaccurate or otherwise in error.
- B. The Engineer will review the Contractor's, subcontractors' and manufacturers' drawings within a reasonable time after receipt thereof and will return one copy endeavoring to indicate, by notation thereon or written instructions, any correction which may be necessary to meet the Contract requirements. The Contractor shall then review such notations and/or instructions and if he concurs therein, shall make or have made such required corrections, and shall, when so noted on the drawings or requested by the Engineer, resubmit corrected drawings to the Engineer as soon as possible, for final review. Such further review by the Engineer will be limited to the corrections only, and the Contractor, by such re-submission shall be held to have represented that such drawings contain no other alterations, additions or deletions, unless the Contractor (in writing) directs the Engineer's specific attention to same. Should the Contractor question, or dissent from, such notations and/or instructions, he shall so inform the Engineer and request further clarification before resubmitting the drawings.
- C. The review of Contractor's, subcontractors', and manufacturers' drawings by the Engineer is for coordination and assistance, and the Engineer does not thereby assume responsibility for errors or omissions. Such errors or omissions must be made good by the Contractor, irrespective of the receipt, review of the drawings by the Engineer, and even though the work is done in accordance with such drawings.

## 10.6 PROPOSED PRODUCTS LIST

- A. Within 15 days after date of Owner-Contractor Agreement submit list of all major products proposed for use, including those previously called for to be submitted in the Proposal, with name of manufacturer, trade name, and model number of each product.
- B. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.

## 10.7 SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

- A. While the contract drawings and specifications propose to be complete in all respects as to layout, type of equipment and materials, they are not intended to serve as detailed installation drawings and the preparation of such drawings required or necessary for this purpose, or to set equipment accurately, shall be the responsibility of the Contractor.
- B. These Contract Documents shall be supplemented by other drawings, product data, samples and portfolios of all equipment, components, apparatus, materials, anchors/fasteners, etc. furnished by the Contractor and reviewed by the Engineer. All such supplementary drawings or instructions are intended to be consistent with the Contract Documents, true developments thereof and reasonably inferable therefrom. Therefore, no extra charge will be allowed on a claim that particular supplemental drawings or instructions differed from the Contract

documents, incurring extra work, unless the Contractor has first brought the matter, in writing, to the Engineer's attention for proper adjustment before starting on the work covered by such and has received from the Engineer an order in writing to so proceed.

- C. These original and supplementary drawings constitute the drawings according to which the work is to be done. The Contractor shall keep at the site of the work, copies of all drawings and specifications and shall at all times give the Engineer or Owner access thereto.
- D. Shop Drawings are drawings, diagrams, schedules other data specifically prepared for the Work by the Contractor or a subcontractor, Subcontractor manufacturer, supplier or distributor to illustrate some portion of the Work.
- E. Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents. The purpose of these submittals is to demonstrate for those portions of the Work for which submittals are required the way the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents.
- F. Product Data are illustrations, standard schedules, performance charts, instructions, catalog cuts, brochures, diagrams, materials lists and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.
- G. Samples are physical examples which illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.
- H. The Contractor shall review, approve, and submit to the Engineer, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents requested by the Engineer or Owner or otherwise necessary for the proper execution of the work, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors. Submittals made by the Contractor which are not required by the Contract Documents may be returned without action.
- I. The Contractor shall perform no portion of the Work requiring submittal, resubmittal, and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been reviewed by the Engineer. Such Work shall be in accordance with reviewed submittals.
- J. By approving and submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents that the Contractor has determined and verified materials, field measurements and field construction criteria related thereto, or contained within such submittals with the requirements of the Work and of the Contract Documents.
- K. The Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Engineer's review of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Engineer in writing of such deviation at the time of submittal and the Engineer has given written approval to the specific deviation. The Contractor shall not be relieved of responsibility for errors or omissions in the Shop Drawings, Product Data, Samples or similar submittals by the Engineer's review thereof, as the Engineer's review is intended to cover compliance with the Contract Document and not to enter into every detail of the shop work.

- L. The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those required by the Engineer on previous submittals.
- M. When professional certification of performance criteria of materials systems or equipment is required by the Contract Documents, the Engineer shall be entitled to rely upon the accuracy and completeness of such calculations and certifications.
- N. Shop Drawings
  - 1. Submit in the form of legible PDFs
- O. Product Data
  - 1. Submit in the form of legible PDFs
  - 2. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information unique to this Project.
  - 3. Product data shall include an index sheet containing a space at least 5" x 8" for review stamps and notes.
  - 4. After review distribute in accordance with the Submittal Procedures article above and provide copies for record documents described in Section 01700 - CONTRACT CLOSEOUT.
- P. Samples
  - 1. Submit samples to illustrate functional and aesthetic characteristics of the Product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
  - 2. Submit samples of sufficient size and representative of finishes indicating textures, and patterns for Owner selection.
  - 3. Include identification on each sample, with full Project information.
  - 4. Submit the number of samples specified in individual specification sections; two of which will be retained by the Engineer.
  - 5. Reviewed samples which may be used in the work are indicated in individual specification sections.

#### 10.8 MANUFACTURER INSTALLATION INSTRUCTIONS

- A. When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, operating, maintaining and finishing to the Engineer in quantities specified for Product Data.
- B. Identify conflicts between manufacturer's instructions and contract documents.

#### 10.9 MANUFACTURER CERTIFICATES

- A. When specified in individual sections, submit certification by manufacturer to Engineer, in quantities specified for Product Data.
- B. Indicate material or Product meets or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.

PART 11 PRODUCTS

Not Used.

PART 12 EXECUTION

Not Used.

END OF SECTION

SECTION 01310  
PROGRESS SCHEDULES

PART 13 GENERAL

13.1 SECTION INCLUDES

- A. Format.
- B. Content.
- C. Revisions to schedules.
- D. Submittals.

13.2 RELATED SECTIONS

- A. General Conditions
- B. Standard Specifications
- C. Section 01005 – Administrative Provisions
- D. Section 01300 - Submittals

13.3 FORMAT

- A. Prepare schedules using a recognized scheduling software package for construction projects, Primavera, MS Project or Equal. Provide precedence network schedule which identifies a single critical path and associated activities for the duration of the project.
- B. Sequence of Listings: The chronological order of the start of each item of Work.
- C. Scale and Spacing: To provide space for notations and revisions.
- D. Sheet Size: Multiples of 11 x 17 inches

13.4 CONTENT

- A. Show contractual dates, including Notice to Proceed, Substantial Completion(s) and Final Completion
- B. Show Critical Path Submittals, including review time and re-submittal
- C. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.
- D. Show Critical Path in Red

- E. Identify each item by specification section number.
- F. Identify work of separate stages and other logically grouped activities.
- G. Provide sub-schedules to define critical portions of the entire schedule.
- H. Show float from each contractual date
- I. Provide separate schedule of submittal dates for shop drawings, product data, and samples, and dates reviewed submittals will be required from Architect/Engineer. Indicate decision dates for selection of finishes.

#### 13.5 REVISIONS TO SCHEDULES

- A. Indicate progress of each activity to date of submittal, and projected completion date of each activity.
- B. Identify activities modified since previous submittal, major changes in scope, and other identifiable changes.
- C. Provide narrative report to define problem areas, anticipated delays, and impact on Schedule. Report corrective action taken, or proposed, and its effect, on schedules of separate contractors.
- D. Revise Schedule once a month and provide 4-week look-ahead schedule with each revision.

#### 13.6 SUBMITTALS

- A. Submit initial schedules within 30 days after date established in Notice to Proceed. After review, resubmit required revised data within ten days.
- B. Submit the number of opaque reproductions which Contractor requires, plus four copies which will be retained by Engineer or, submit one opaque reproduction and one reproducible transparency.

#### 13.7 DISTRIBUTION

- A. Distribute .PDF files of reviewed schedules to Engineer provided Project site file, Subcontractors, suppliers, and other concerned parties.

PART 14 PRODUCTS

Not Used.

PART 15 EXECUTION

Not Used.

END OF SECTION

SECTION 01400  
QUALITY CONTROL

PART 16 GENERAL

16.1 SECTION INCLUDES

- A. Quality assurance - control of installation.
- B. Tolerances
- C. References.
- D. Mockup.
- E. Inspecting and testing laboratory services.
- F. Manufacturers' field services and reports.

16.2 RELATED SECTIONS

- A. Section 01300 - Submittals: Submission of manufacturers' instructions and certificates.
- B. Section 01600 – Material, Products, and Equipment

16.3 QUALITY ASSURANCE - CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, Products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.
- D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Perform work by persons qualified to produce workmanship of specified quality.
- F. Secure Products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

16.4 TOLERANCES

- A. Monitor tolerance control of installed Products to produce acceptable Work. Do not permit tolerances to accumulate.

- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.
- C. Adjust Products to appropriate dimensions; position before securing Products in place.

#### 16.5 REFERENCES

- A. For Products or workmanship specified by association, trade, or other consensus standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard by date of issue current on date specified in the individual specification sections, except where a specific date is established by code.
- C. Obtain copies of standards where required by product specification sections.
- D. The contractual relationship, duties, and responsibilities of the parties in Contract nor those of the Architect/Engineer shall not be altered from the Contract Documents by mention or inference otherwise in any reference document.

#### 16.6 MANUFACTURERS' FIELD SERVICES AND REPORTS

- A. When specified in individual specification sections, require material or Product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment and as applicable, and to initiate instructions when necessary.
- B. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.
- C. Submit report in duplicate within 30 days of observation to Engineer for information.

#### PART 17 PRODUCTS

Not Used.

#### PART 18 EXECUTION

Not Used.

END OF SECTION

SECTION 01600

MATERIALS, PRODUCTS AND EQUIPMENT

PART 19 GENERAL

19.1 SECTION INCLUDES

- A. General Provisions.
- B. Transportation and handling.
- C. Storage and protection.
- D. "Or Equal" Clause
- E. Product options.
- F. Substitutions.
- G. Installation of Equipment.
- H. Damage during tests and instruction period.
- I. Services of manufacturer's engineers.
- J. Equipment manufacturer certification.

19.2 RELATED SECTIONS

- A. BF-2 - Bid Form, Section 2
- B. IB-1 - Instructions to Bidders
- C. Section 01400 - Quality Control

19.3 GENERAL PROVISIONS

- A. Products (including all materials, machinery, equipment, and systems) shall be carefully designed and installed to insure that all required functions are adequately performed within specified degrees of precision and that each unit shall operate with every other part, furnished or existing, to provide a complete integrated system which shall operate to the satisfaction of the Engineer. Any changes or revisions of existing work made necessary by the type and dimensions of furnished products shall be made at the expense of the Contractor, and he shall furnish detail drawings showing such changes or revisions for the approval of the Engineer.
- B. Submit to the Engineer ample proof that each and every part of the products to be furnished is of a reliable make and of a type which has been in successful operation within the continental

United States. Installation of any experimental or untried type of apparatus, material, or machinery will not be allowed.

- C. Each major item of equipment shall have the manufacturer's nameplate securely affixed in a conspicuous place. The nameplate shall show the manufacturer's name, address, model number, rating, and any other pertinent data such as speed, horsepower, etc.
- D. All materials, equipment, and accessories shall be new and unused and shall be essentially the products of a manufacturer regularly engaged in the production of such material or equipment and shall essentially duplicate material or equipment that has been in satisfactory operation at least 5 years.
- E. The owner reserves the right to reject any material or equipment manufacturer who, although he meets the above requirements, does not provide satisfactory evidence indicating adequate and prompt post-installation repair and maintenance service as required to suit the operational requirements of Owner. Items of any one type of materials or equipment shall be the product of a single manufacturer.
- F. All piping and equipment furnished under this contract shall be fabricated of such materials that under normal operating conditions harmful substances are not imparted to the water supply system.

#### 19.4 TRANSPORTATION AND HANDLING

- A. All parts of the equipment shall be carefully crated to facilitate shipping and handling. The crates shall be constructed to completely protect the equipment and shall be sufficiently strong to permit lifting and skidding without requiring additional bracing or reinforcement.
  - 1. Packages or materials showing evidence of damage or contamination, regardless of cause, will be rejected.
- B. Transport and handle Products in accordance with manufacturer's instructions.
- C. Transport and handle all materials in such a manner to avoid breakage, inclusion of foreign materials, and/or damage by water or other causes.
- D. Deliver packaged materials in original unopened containers. Packages or materials showing evidence of damage or contamination regardless of cause will be rejected.
- E. Promptly inspect shipments to ensure that Products comply with requirements, quantities are correct, and Products are undamaged.
- F. Repair or replace all items damaged or broken as a result of the Contractor's operation at no cost to the Owner.
- G. When specified in the individual Section, equipment shall be made available for conditional acceptance by the Engineer at the factory prior to shipment.
- H. Equipment shall not be delivered unless it can be immediately incorporated into the work or proper storage facilities are available.

- I. Provide equipment and personnel to handle Products by methods to prevent soiling, disfigurement, or damage.
- J. Notify the Engineer at least two days in advance of the delivery of equipment.

#### 19.5 STORAGE AND PROTECTION

- A. All materials and equipment shall be handled in a manner to avoid damage, breakage, soiling, disfigurement, shock, denting, marring of surfaces or delay in the completion of the work.
  - 1. The Contractor shall coordinate delivery of equipment with his construction program so that an undue amount of storage space is not required. Space for contractor's use will be designated by the Owner.
  - 2. The Contractor shall exercise care in the protection of materials and equipment furnished and/or installed under this contract while they are in storage at the site and during and after installation prior to final acceptance.
  - 3. The Contractor shall repair or replace, without cost to the Owner and to the satisfaction of the Owner, all items damaged or broken as a result of his operation.
  - 4. Provide bonded off-site storage and protection when site does not permit on-site storage or protection.
  - 5. All materials which have been stored shall be subject to retest and shall meet the requirements of these Specifications at the time they are used in the work and at the time of final acceptance of the work.
  - 6. Arrange storage of Products to permit access for inspection. Periodically inspect to verify Products are undamaged and are maintained in acceptable condition.
- B. Store and protect Products in accordance with manufacturers' instructions, with seals and labels intact and legible.
  - 1. Store sensitive Products in weather tight, climate controlled enclosures.
  - 2. Cover Products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation or potential degradation of Product.
  - 3. All machined surfaces of the equipment subject to corrosion shall be protected by coating with grease immediately after finishing.
  - 4. All flanges shall be protected prior to installation by means of wooden flanges bolted in place.
  - 5. Pump casings shall be thoroughly drained of all water.
  - 6. All unpainted steel surfaces shall be prevented from rusting by an Owner approved method.
  - 7. Plate and sheet metal work shall be handled and stored with care to prevent permanent deformations or crimps in the material.
  - 8. Whenever the shop coat of protective paint is damaged, spot coating shall be made immediately to prevent rusting.
  - 9. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
  - 10. Equipment and materials stored outdoors shall be placed on sloped supports, up at least six inches above the ground.
- C. Openings in tanks, valves and pipe shall be kept covered to prevent dirt, rubbish or water from entering, with machined surfaces such as flange faces, pipe threads, machined weld ends of pipe, and fittings protected from corrosion by proper Owner approved compounds.

#### 19.6 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Any Product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers with the provision "No Substitutions": Products of manufacturers named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with a Provision for "or Equal" or Substitutions: Submit a request for substitution for any manufacturer not named in accordance with the following article and Section 01300.

#### 19.7 "OR EQUAL" CLAUSE

- A. Specifying an article, material, or piece of equipment by reference to a proprietary product or by using the name of a manufacturer or vendor followed by the clause "or equal" shall be understood to indicate the type, function, minimum standard of design, efficiency, and quality desired and shall not be construed in such a manner as to exclude products of comparable quality, design, and efficiency.
- B. Comparable products shall be capable of performing equal function and shall be compatible with other equipment, materials, or systems to which they connect or will become an integral part of.
- C. The clause "or approved equal" which may appear elsewhere in the documents shall mean the same as "or equal".
- D. Wherever in the documents an article, material, or piece of equipment is defined by specifying a proprietary product or using the name of a manufacturer or vendor the term "or equal" if not included shall be implied.
- E. Substitutions of "or equal" products are subject to approval of the Engineer.

#### 19.8 SUBSTITUTIONS OR ALTERNATIVES

- A. For the purposes of this Specification, Alternatives and Substitutions are the same.
- B. Alternatives are required to be submitted in the Bid Form, Section 2 – Material, Equipment and Environmental Alternatives. Alternatives submitted on that form must follow the provisions herein, and will be evaluated following the Bid opening. (They will not be considered during the Bid process.) Alternatives proposed following the bid will not be considered.
- C. Refer also to Section 01300.
- D. Document each alternative identified on the Bid Form with complete data substantiating compliance of proposed Substitution with Contract Documents.

- E. Each request shall include the credit amount for the alternative. This amount must include all cost adjustments to any other trade as a result of this alternative.
- F. A request constitutes a representation that the Contractor:
  - 1. Has investigated proposed Product and determined that it meets or exceeds the quality level of the specified Product.
  - 2. Will provide the same warranty for the Substitution as for the specified Product.
  - 3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.
  - 4. Waives claims for additional costs or time extension which may subsequently become apparent.
- G. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.
- H. Substitution Submittal Procedure:
  - 1. Submit three copies of request for Substitution for consideration. Limit each request to one proposed Substitution.
  - 2. Submit shop drawings, product data, and certified test results attesting to the proposed Product equivalence. Also provide information required by Section 01300 for substitutions. Burden of proof is on proposer.
  - 3. The Engineer will notify Contractor in writing of decision to accept or reject request.

#### 19.9 INSTALLATION OF EQUIPMENT

- A. General
  - 1. Contractor shall have on hand sufficient personnel, proper equipment, and machinery of ample capacity to facilitate the work.
  - 2. Contractor shall be responsible for locating, aligning, and leveling all equipment.
  - 3. Complete manufacturer's installation instructions including permissible tolerances shall be furnished with each unit of equipment.
  - 4. All equipment shall be installed in accordance with the approved manufacturer's specifications, drawings, and tolerances under the direct supervision of the required manufacturer's engineer.
  - 5. Equipment shall be erected in a neat and workman-like manner on the foundations at the locations and elevations shown on the drawings unless directed otherwise by the Engineer during installation.
- B. Installation
  - 1. Special care shall be used in locating, aligning and, leveling all equipment and parts thereof to ensure that each item is in the proper position relative to other equipment and that all parts are aligned within allowable tolerances. The Contractor shall be responsible for this accuracy and shall notify the Engineer of any conditions in prior work which would prevent this alignment before proceeding with the work. The Contractor shall employ a competent surveyor to set all lines and levels of equipment to the accuracy required.
  - 2. All blocking and wedging required for the proper support and leveling of equipment during installation shall be furnished by the Contractor. All temporary supports shall

be removed except steel wedges and bronze shims which may be left in place with the approval of the Engineer.

3. Each piece of equipment or supporting base bearing on concrete foundations shall be bedded in grout. The Contractor shall provide a minimum of 1-1/2" thick grouting or as indicated on Contract Drawings.

#### 19.10 DAMAGE DURING TESTS AND INSTRUCTION PERIODS

- A. Contractor shall be fully responsible for the proper operation of equipment during tests and instruction periods and he shall neither have nor make any claim for damage which may occur to equipment prior to the time when the Owner formally takes over the operation thereof.

#### 19.11 SERVICES OF MANUFACTURER'S ENGINEERS

- A. The contract price shall include the cost of furnishing competent engineers or superintendents from each company manufacturing equipment for the Project to:
  1. Assist the Contractor to install, adjust, and test the equipment in conformity with the Contract Documents.
  2. Supervise start-up operations and adequately instruct designated employees of the Owner in the proper operation and maintenance procedures when requested by the Owner throughout the guarantee period of the equipment. A report on each visit shall be filed by the manufacturer's representative with the Engineer.

#### 19.12 EQUIPMENT MANUFACTURER CERTIFICATION

- A. The Contractor will provide Engineer with written certification obtained from each company manufacturing equipment for the Project that the equipment is installed and does operate in accordance with the manufacturer's recommendations.

### PART 20 PRODUCTS

Not Used.

### PART 21 EXECUTION

Not Used.

END OF SECTION

SECTION 01700  
CONTRACT CLOSEOUT

PART 22 GENERAL

22.1 SECTION INCLUDES

- A. Closeout procedures.
- B. Final cleaning.
- C. Adjusting.
- D. Project record documents.
- E. Spare parts and special tools.
- F. Equipment startup services.
- G. Substantial completion.
- H. Warranties.

22.2 RELATED SECTIONS

- A. Section 01300 - Submittals.

22.3 SUBMITTALS

- A. As-Built Drawings
- B. Final Change Order
- C. Final Application for Payment, including
  - 1. Waiver of Liens
  - 2. Contractor's Affidavit
  - 3. Contractors Declaration
  - 4. Release of Surety
- D. Manufacturers extended warranties, with the date of Substantial Completion and warranty end date identified
- E. Occupancy Permit (when required)
- F. Confirmation that all submittals were approved, and that no outstanding re-submittals are required
- G. Satisfactory evidence that all claims have been resolved

#### 22.4 CLOSEOUT PROCEDURES

- A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Engineer's review.
- B. Provide submittals to Engineer that are required by governing or other authorities.
- C. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.
- D. Submit As-Built drawings to Engineer for scanning. Engineer to provide project AutoCAD Record Drawings

#### 22.5 FINAL CLEANING

- A. Complete final cleaning and restoration prior to final project inspection.
- B. Remove all temporary labels, stains and foreign substances. Wash or clean by approved methods all surfaces on which dust and dirt has collected.
- C. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
- D. Clean debris from drainage systems.
- E. Clean site; sweep paved areas, rake clean landscaped surfaces.
- F. Remove waste and surplus materials, rubbish, and construction facilities from the site.
- G. Restore disturbed area. Lawn area may be seeded unless otherwise noted. Paved area shall be restored to their original condition, compatible with the surrounding area, using like materials and workmanship.
- H. Touchup painted surface. Clean and repaint with matching color all scratched, marred or otherwise damaged painted surfaces of all equipment and enclosures.

#### 22.6 ADJUSTING

- A. Adjust operating Products and equipment to ensure smooth and unhindered operation.

#### 22.7 PROJECT RECORD DOCUMENTS

- A. Maintain on site, one set of the following record documents:
  - 1. Drawings.
  - 2. Specifications.
  - 3. Addenda.
  - 4. Change Orders and other modifications to the Contract.
  - 5. Reviewed Shop Drawings, Product Data, and Samples.
  - 6. Manufacturer's instruction for assembly, installation, and adjusting.

- B. As the work progresses, keep a complete and accurate record of all changes in the Contract Documents (including Drawings, Shop Drawings, Product Data, and Specifications) indicating the work as actually installed. All changes shall be neatly shown on blue-line prints of the drawings effected or in the specifications which shall be kept at the job site for inspection by the Owner and the Engineer.
- C. Ensure entries are complete and accurate, enabling future reference by Owner.
- D. Store record documents separate from documents used for construction.
- E. Record information concurrent with construction progress.
- F. Specifications: Legibly mark and record at each Product section description of actual Products installed, including the following:
  - 1. Manufacturer's name and product model and number.
  - 2. Product substitutions or alternates utilized.
  - 3. Changes made by Addenda, Field Modifications and Change Orders.
- G. Record Documents and Shop Drawings: Legibly mark each item to record actual construction including:
  - 1. Measured depths of foundations, slabs, platforms in relation to finish main floor datum.
  - 2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
  - 3. Measured locations of internal utilities, conduits and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
  - 4. Field changes of dimension and detail.
  - 5. Details not on original Contract drawings.
- H. On completion of the work, prior to the Contractor's application for final payment and as a condition to its approval by the Engineer and Owner, the Contractor shall arrange such site records in order in accordance with the various sections of the specifications bind them together and index them and deliver them to the Engineer. In addition, the Contractor shall request a complete set of reproducible contract Drawings, and transfer all as-built revisions and changes to them and deliver them to the Engineer. These drawings shall be dated and marked "As-Built".
- I. All reproducible tracings made by the Contractor, equipment manufacturers, and/or material suppliers shall be corrected to show the work as actually completed or installed and a reproducible copy of these drawings shall then be turned over to the Engineer.
- J. Written approval or other evidence satisfactory to the Engineer of the final conditions of the work shall be obtained from:
  - 1. Detroit Edison Company
  - 2. All public authorities or agencies having jurisdiction over any portion of the work
  - 3. Any others as requested by the Engineer in writing.
- K. All public authorities or agencies having jurisdiction over any part of the work shall be determined, and all the requirements of these authorities or agencies with respect to but not limited to inspection, permits, fees, approval, and the like regardless of whether they are listed above or not shall be met.

- L. Submit all documents to Engineer for approval prior to submittal of final Application for Payment.

## 22.8 SPARE PARTS AND SPECIAL TOOLS

- A. Spare Parts
  - 1. As soon as practicable after approval of the list of equipment, the Contractor shall furnish spare parts data for each different item of equipment listed. The data shall include a complete list of parts and supplies with current unit prices and source of supply.
  - 2. Contractor shall also furnish a list of parts and supplies that are either normally furnished at no extra cost with the purchase of the equipment or specified to be furnished a part of the Contract and a list of additional items recommended by the manufacturer to assure efficient operation for a period of 1 year at the particular installation.
  - 3. The foregoing shall not relieve the Contractor of any responsibilities under the guarantee provisions of these Specifications.
  - 4. The Contractor shall deliver all spare parts required by this contract to the Engineer or as directed by the Engineer.

## 22.9 EQUIPMENT START-UP SERVICES

- A. Equipment start-up period for the training of plant personnel shall begin after satisfactory completion and acceptance of the field tests and coincidentally with the certified date of substantial completion for that part of the work for which the equipment is included. If the equipment is not covered by a certificate of substantial completion for a part of the work, the period shall begin upon substantial completion of the project.
- B. During the equipment start-up period, the Contractor shall furnish at no additional cost to the Owner the services of factory trained representatives of the equipment manufacturers for the equipment designated in the Specifications to:
  - 1. Assist in the start-up and operations of the equipment.
  - 2. Assist in the training of facility personnel, designated by the Owner, in the proper operation and maintenance of the equipment.
- C. The Owner shall:
  - 1. Provide the necessary personnel to be instructed in the operation and maintenance of the equipment. The Owner's personnel shall operate all equipment.
  - 2. Pay for all fuel, power and chemicals consumed beyond quantities specified or in the Contract Documents or required due to Contractor's fault. The Contractor shall pay for fuel, power, and chemicals consumed up to the date of "certified substantial completion" except as otherwise specified herein.
- D. Contractor shall be available to promptly repair all work during the start-up period so as to cause minimum disruption to the total facility operation.
- E. In the event a system, equipment, or component proves defective or is unable to meet specified performance criteria, the Contractor shall replace the defective item and the one year guarantee period for the item shall start after satisfactory replacement and testing of the item.

## 22.10 SUBSTANTIAL COMPLETION

- A. Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so the Owner can occupy and utilize the facilities for its intended use.
- B. When the Contractor considers that the Work, or portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Engineer a comprehensive list of items to be completed or corrected. The Contractor shall proceed promptly to complete and correct items on the list. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. Upon receipt of the Contractor's list, the Engineer will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Engineer's inspection discloses any item, whether or not included on the Contractor's list, which is not in accordance with the requirements of the Contract Documents, the Contractor shall complete or correct such item upon notification by the Engineer. The Contractor shall then submit a request for another inspection by the Engineer to determine Substantial Completion. When the Work or designated portion thereof is substantially complete, the Engineer will prepare a Certificate of Substantial Completion which shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion. The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate.

## 22.11 WARRANTIES

- A. Provide duplicate copies of all extended warranties.
- B. Execute and assemble transferable warranty documents from Subcontractors, suppliers, and manufacturers with a Table of Contents in three D side ring binder with durable plastic cover.
- C. Submit warranty documents prior to final Application for Payment.
- D. For items of Work delayed beyond date of Substantial Completion, provide updated submittal within 10 days after acceptance, listing date of acceptance as start of warranty period.
- E. All parts of the work or equipment which is in the opinion of the Engineer prove defective in material, workmanship, or operation within the warranty period shall be removed and replaced or repaired in a manner satisfactory to the Engineer and at no cost to the Owner.
- F. Any service material or equipment required because of the defect shall be supplied without charge.
- G. All work specified to be designed by the Contractor shall be guaranteed to perform as specified.
- H. The Warranty period shall be one year from the date of Substantial Completion unless:

1. A greater period is specified elsewhere.
  2. Owner chooses to take over and use a portion of the Work as provided for in the Specifications; in which case the warranty shall be one year from said takeover and use.
- I. Equipment or work replaced and/or repaired during the warranty period shall be guaranteed for one year from the date of acceptance of the repair or replacement or until expiration of the original warranty period whichever comes later.

#### PART 23 PRODUCTS

Not Used.

#### PART 24 EXECUTION

Not Used.

END OF SECTION

## SECTION 01950

### SPECIAL PROJECT REQUIREMENTS AND SEQUENCE OF CONSTRUCTION

#### PART 1 - GENERAL

##### 1.1 GENERAL

- A. In general, work on the facilities may proceed on a schedule established by the Contractor to meet the completion date, agreed to in the Proposal. However, all scheduling shall be subject to the approval of the Owner.
- B. The Contractors' work hours must comply with the work hours allowed by City of Ann Arbor and Pittsfield Township Ordinances. If a conflict between ordinances applies, the more strict of the two shall be utilized.
- C. The Contractor shall be totally responsible for the construction of the project under scheduling conditions outlined herein and any other scheduling which may be necessary. All work shall be completed for the total bid price submitted in the Contractor's proposal. No additional compensation will be allowed for delays in the work necessary to prevent interruption of service whether specifically spelled out in this section or not.
- D. The Contractor shall note the construction site area limitations as they impact storage of excavated and construction materials. The Contractor shall make all necessary provisions for off-site storage as required for his operations. Prior to commencement of site excavation, the contractor shall provide the names and locations of the off-site disposal and storage area to be used for excess excavated materials.
- E. Construction sites are located within an existing compost facility that has significant truck traffic as well as retail traffic. Contractor activities shall take these locations into account and Contractor shall keep the sites, roads and parking areas clean and free of construction materials, rubbish and tracked soil.

##### 1.2 PROJECT DESCRIPTION

- A. The project involves work at the Wheeler Compost Facility in Ann Arbor.
- B. The work at the Wheeler Compost Facility generally consists of the following items of work:
  - 1. Dredging of existing ponds within the property.
  - 2. Installation of wetland shelves and buffer strips to improve water quality.

##### 1.3 COORDINATION

- A. Prior to commencing any work, temporary construction fencing or barricades shall be installed to protect the planned excavation area. All fencing or barricades shall be removed when final grading and site restoration begins.

- B. A dewatering procedure plan shall be submitted for review, if necessary as part of the contractors means and methods. Once this plan is approved, it shall be implemented to dewater the basins for the completion of work.
- C. Prepare the site for construction, as described on the Drawings and in Division 2 of these Specifications.

#### 1.4 SPECIAL PROJECT REQUIREMENTS

- A. Dust Control
  - 1. The site, haul roads, detour roads, and other public and private roads, driveways and parking lots used by the Contractor must be maintained in a dust free condition during the life of this Contract. The control of the dust shall be accomplished by the application of dust control materials and methods of application as approved and as directed by the Owner. Such dust control materials shall be applied as often as is necessary to control the dust.
  - 2. Should the Contractor be negligent of his duties in providing dust control, the Owner may, with or without notice, cause the same to be done and deduct the cost of such work from any monies due or to become due the Contractor under this contract, but the performance of such work by the Owner, or at his insistence, shall serve in no way to release the contractor from his liability for dust control.
  - 3. Dust Palliative may be any of the following:
    - a. Water, as required.
    - b. Other methods as approved by the Owner.

#### PART 2 - PRODUCTS

Not used.

#### PART 3 - EXECUTION

##### 3.1 GENERAL

- A. The Contractor shall assume full responsibility for performing the work and scheduling with the Owner for access and use of the site. The Contractor shall be completely responsible for conducting construction operations to maintain site drainage throughout the progress of work.
- B. The Contractor shall be responsible for the submission of a detailed sequence of construction operations to the Owner within fourteen days from the Notice to Proceed. The contractor shall schedule his or her operations such that the Owner will be afforded a minimum of two weeks to review the submitted detailed sequence of construction operations. Any and all deviation from the submitted sequence of construction must be re-submitted to the Owner for review a minimum of seven working days in advance of scheduling the specific item of work.
- C. The Contractor shall prepare the bid based on a thorough and complete understanding of the extent of the multiple phasing of scheduling working operations to complete the work as shown

on the Drawings, whether specifically described in this sequence or not. All work shall be performed at no additional cost to the Owner, regardless of alternate construction sequences proposed by the Contractor or determined to be necessary to accomplish the complete equipment removal and installation, in accordance with the project Drawings and Specifications.

- D. The Contractor shall conduct work operations and demonstrate adequately in the detailed sequence of construction, that the ability for sanitary sewage pumping shall be maintained.
- E. In no case shall the Contractor proceed with any work in uncertainty, and all work to be performed to accomplish the complete equipment removal and installation with any temporary equipment or handling that may be determined to be necessary, will be at the Contractor's sole cost, risk and responsibility.
- F. This section includes a suggested sequence of construction. This sequence shall not be construed as mandatory, nor shall the Contractor rely on it solely for the basis of determining his or her operations as required to accomplish all of the work as shown on the Drawings or described in the project Specifications. The Contractor shall assume full responsibility for scheduling and performing the work with partial and temporary shutdowns when absolutely necessary, in accordance with the submitted sequence of construction, while having contingency plans to keep pumping systems in operation. Where specifically mentioned, work associated with a particular item may be completed only after prerequisite work items have been completed. Work items which are not dependent on prerequisite items may be completed concurrently with other work items. Other sequences may be proposed by the Contractor and will be reviewed and commented on by the Owner.

### 3.2 CONSTRUCTION SEQUENCE ARBOR LANDING LIFT STATION

Proposed construction sequence is to be submitted for review and approval 14 days prior to commencement of work

END OF SECTION

## SECTION 01960

### SUPPLEMENTAL PROJECT NOTES

#### 1. GENERAL

These specifications form a part of the Specifications and Contract Documents for the Wheeler Facility Pond Dredging project, in the City of Ann Arbor, with the requirements herein specified supplementing and/or superseding those contained in the balance of the Specifications and Contract documents. Construction specifications not addressed herein on the balance of the specifications shall be in accordance with the 2012 MDOT Standard Specifications for Construction.

#### 2. MOBILIZATION

A lump sum unit price has been provided in the proposal for "Mobilization, Max 5%". This pay item shall be made with the first pay estimate after the construction has been started for compensation to the Contractor for initial project start-up costs including material orders, equipment transportation to the site, demobilizations and remobilizations, etc. Additional unit prices will not be paid for the Contractor to remobilize to the site regardless of the staging or sequence of construction preferred by the Contractor.

The contract unit price for Mobilization **shall not exceed five (5) percent** of the Total Amount of Bid for a given division of work, less the amount for this pay item.

The total sum of all payments for this item shall not exceed the original contract amount bid for "Mobilization, Max 5% - LS" regardless of the fact that the Contractor may have, for any reason, shut down work on the project, transported equipment away from the project and then back again, or for additional quantities or items of work added to the contract.

#### 3. NON-COLLUSION

In signing and submitting this proposal, the bidder states that his bid is genuine and not collusive or a sham; such bidder has not colluded, conspired, connived, or agreed, directly or indirectly, with any bidder or person, to put in a sham bid, or that such other person shall refrain from bidding and has not in any manner, directly or indirectly, colluded, conspired, connived, or agreed, with any person, to fix the bid price of affiant or any other bidder, or to fix any overhead, profit or cost element of said bid price.

#### 4. M.I.O.S.H.A. STANDARDS

All work performed by the Contractor must conform to the current M.I.O.S.H.A. standards and requirements for confined space entry. If required by the Association, the Contractor will be required to sign a waiver stating that he has read, understood and will comply with M.I.O.S.H.A. requirements.

#### 5. ADDITIONAL BIDS - QUANTITY CHANGES

Additional quotations may be requested during the term of this Contract, separately from the original bid and are subject to the same terms and conditions of the original bid. Also, there will be no adjustment in the contract unit prices regardless of the percentage increase or decrease above or below the contract quantity for any item of work.

#### 6. NON-DISCRIMINATION CLAUSE

By signing and submitting this proposal for consideration by the Owner, the Contractor covenants not to discriminate against an employee or applicant for employment with respect to hire, tenure, terms, conditions or privileges of

employment or a matter directly or indirectly related to employment, because of race, color, religion, national origin, age, sex, height, weight, marital status or a handicap that is unrelated to the individual's ability to perform the duties of a particular job or position. Breach of this covenant may be regarded as a material breach of the contract.

7. EXISTING CONDITIONS

Each bidder shall personally visit the site(s) of the project and pay particular attention to the existing conditions and the salient features of the project in order to assure him of the amount of equipment, materials, and work required to satisfy the requirements of the project.

All dimensions, locations, elevations, etc. in the project area shall be field verified by the Contractor prior to the submittal of the bid and prior to construction. No extra compensation will be approved due to field conditions encountered in this area.

8. EXISTING UTILITY LOCATIONS

The Contractor is responsible for verifying the location of any and all utilities (electrical, cable, irrigation, gas, etc.) located within the limits of the work area. The Contractor is responsible for any damage to existing utilities as a result of his operations, regardless of whether the location of a given utility was properly marked. The Contractor shall immediately repair or have repaired by the utility owner any damaged utility lines at his own expense, with no additional compensation to be provided by the Owner.

9. MAINTAINING SOLID WASTE (COMPOST) SERVICES

Compost collection shall not be interfered with by the Contractor's operations. If access to certain areas is blocked by the Contractor's operations, the Contractor shall transport the compost to a location accessible to the collection crews, incidental to the project. The Contractor must provide the Wheeler staff, owners, patrons, and compost collection services uninterrupted access to any and all compost receptacles for the duration of the project.

10. EXPOSING EXISTING UTILITIES

Contractor shall verify the depth of existing utilities throughout the project length in order to permit the Engineer to adjust grades to avoid conflicts with existing utilities. Should the Contractor fail to expose the existing utilities **Prior to Construction**, the Contractor shall be responsible for removing and reinstalling any proposed utility with which a conflict arises from his failure to perform this item.

11. COOPERATION WITH OTHER CONTRACTORS

The Contractor shall make every effort to cooperate and coordinate with all other contractors working in the area at the time of construction.

12. PERMITS

An EGLE/USACE (Michigan Department of Environment, Great Lakes & Energy/United States Army Corps of Engineers) Joint Permit Application (JPA) for construction activities where the land meets the water has been applied for. The Contractor shall adhere to all requirements and conditions contained within the permit. Dredging operations may not

begin until this application has been approved, the permit obtained, and authorization to proceed is issued by the Engineer.

An Ann Arbor SESC (Soil Erosion and Sediment Control) permit, Pittsfield Township SESC permit, and wetland permits are also required prior to beginning work, and the Owner may require that the permit be applied for by the Contractor. The Contractor shall adhere to all requirements and conditions contained within the permit, as well as any additional conditions and/or requirements by the permitting agency during the course of the project.

All permits for this project will be paid for by the City of Ann Arbor. There will be no cost to the contractor for permits from the City of Ann Arbor, Pittsfield Township or EGLE. Contractor will be responsible for picking up permits and providing any necessary documentation such as, but not limited to, proof of insurance.

### 13. HOURS OF OPERATION

The City of Ann Arbor permits construction between the hours of 7:00 A.M. and 7:00 P.M., Monday through Saturday, unless otherwise authorized. No work on Sunday is allowed. Should an emergency arise which would require working beyond the hours mentioned, the Contractor shall contact the City Engineer for approval for work beyond the permitted hours.

### 14. MISC. SPRINKLER AND LIGHTING REPAIR

The contractor shall make every effort to preserve and protect any existing irrigation systems and lighting facilities. However, impacts to the system may be unavoidable. All time, materials, subcontractors, etc. for the contractor to immediately restore the system to its existing condition or temporarily modify the overall system to keep irrigation zones unimpacted during construction shall be considered incidental to the project.

### 15. RESIDENT COMPLAINTS

The Contractor will be required to immediately address any resident complaints or concerns. Should the Contractor not be able to answer the resident, they must be directed to the City or Project Engineer.

### 16. MAINTAINANCE OF SITE TRAFFIC

On-site traffic shall be maintained so as to not interfere or interrupt the operations of the composting facility operators or users. The contractor shall coordinate with the site operations manager and Public Works Operations prior to start of construction.

### 17. MAINTAINING FLOW

The Contractor shall perform the work so that the flow in the existing sewers or open ditches, streams, etc. is at no time hindered or interrupted. The Contractor will be liable for any and all damages caused by his failure to maintain the flow in existing sewers or watercourses.

### 18. CONTRACTOR'S LIABILITY

The Contractor shall be solely responsible for any damages to buildings by sewage backups due to his operations. The Contractor shall indemnify and hold harmless the Owner and the Engineer in this regard.

### 19. SUBSURFACE CONDITIONS

The Contractor shall be solely responsible for making his own subsurface soils investigations and shall assume all risks and responsibility for his conclusions pertaining to the potential difficulties which may be encountered during the course of work. Limited soil boring data has been provided for the Contractor's reference. The Contractor shall complete the work, in whatever material and under whatever ground conditions he may encounter or create, without

additional cost to the Owner.

## 20. DISPOSAL OF EXCAVATED MATERIALS

All materials removed that are not to be stockpiled and used in other areas of the project shall be disposed of off-site at an approved Type II landfill. NO exceptions will be considered, and all costs associated with transporting, disposing, etc. shall be considered incidental unless specifically noted herein.

## 21. WATER

If the Contractor desires to use City water for construction, they shall obtain the required permit from the City. A hydrant connection will then be issued to the Contractor by the Water Department. The Contractor must deposit the required fee as charged by the Water Department for the use of the hydrant connection. The unused portion of the deposited fee will be refunded to the Contractor upon the return of the connection. The use of privately owned hydrant connections is prohibited. When connections are made to hydrants, the Contractor shall promptly notify the City of Ann Arbor Fire Department. Not all City hydrants may be available for use. The Contractor will be responsible for discussing their intended hydrant use with the City and get their approval for the use of designated hydrants.

## 22. DEWATERING

Any dewatering necessary to construct this project shall be considered incidental and all costs included in the unit bid price for the affected area of pond dredging. The dewatering outlet shall be approved by the Project Engineer and the receiving property shall be protected from erosion.

## 23. TEMPORARY MAINTENANCE OF DRAINAGE

All natural drainage within the project limits must be maintained at all times. It shall be left to the discretion of the Contractor as to the type and extent of work and materials necessary to accomplish this.

## 24. SOIL EROSION AND SEDIMENT CONTROL MEASURES

Unless a bid item is specifically provided in the Project Documents, all material, labor, and equipment costs associated with providing all soil erosion and sedimentation control devices and measures required and/or directed by the SESC Permitting Agency shall be considered incidental to other bid items, and will not be paid for separately. SESC devices and measures may include (but not be limited to) silt fence, mud mats, and turbidity curtains, per specifications herein. It shall be the Contractor's responsibility to install erosion control devices should it be deemed necessary by the SESC Permitting Agency. The work shall include all labor, material, and equipment required to furnish, install, maintain, and remove all appropriate devices and measures required by the SESC Permitting Agency. Maintenance of devices and measures shall include the inspection, and removal and disposal of all accumulated debris and sediment, at least once per week, and immediately following a rain event, for the duration of the project. At the time of completion of the project, it will be the responsibility of the Contractor to remove temporary devices.

## 25. TRAFFIC MAINTENANCE AND CONTROL

The Contractor shall provide all labor, materials, and equipment necessary for the installation, relocation, covering, supplementing, and removing any and all traffic control measures necessary to maintain traffic for the duration of the project, including any specialized project signage, barricades, and other traffic control devices as required per these project specifications or the City. In addition, the Contractor shall also provide necessary flag control to protect the safety of the general public and the work. All labor, materials, and equipment necessary for this work shall meet the requirements of the Specification 02550 Maintaining Traffic. This work shall be considered incidental to the project construction and not paid for separately.

## 26. TREE PROTECTION

Keep clear all debris or fill, equipment and material from influence of the tree root system, which is typically the drip line. If directed by the Owner/Engineer, snow fencing (4 ft high, orange or red) shall be installed around the drip line of trees as directed.

During construction, the Contractor shall not cause or permit the cleaning of equipment or material or the storage or disposal of waste material such as paints, oils, solvents, asphalt, concrete, mortar, or any other material harmful to the life of a tree within the drip line of any protected tree or group of trees.

All labor, material, and equipment costs related to the protection of trees in accordance with the requirements and conditions of these project specifications shall be considered incidental to other bid items, and shall not be paid for separately.

#### 27. DREDGING

The proposed dredging is to be completed by means of mechanical or hydraulic dredging, and shall conform to the proposed cross-sections (and respective limits) given in the accompanying project drawings. All labor, material, and equipment costs associated with dredging the drain and outlet area to the proposed cross section(s) are to be included in the unit price for "Sediment Removal and Earth Excavation."

#### 28. DRAIN SEDIMENT TRANSPORT AND DISPOSAL IN A TYPE II LANDFILL

All costs associated with the necessary labor, material, and equipment required to remove dredge spoils from the dewatering area and properly transport said spoils to a certified Type II landfill for disposal shall be considered included in the bid item "Sediment Disposal – Landfill" The Contractor shall provide the landfill name and location to which the material is to be transported at the preconstruction meeting.

#### 29. STOCKPILING OF HYDRIC SOILS

Unless otherwise directed by the Owner/Engineer, all dredging and bank grading spoils shall be collected, transported to, and stockpiled at designated areas on site for dewatering. All labor and material costs associated with these operations shall be incidental to the bid item "Hydric Soils, Stockpile." Payment shall be made after the stockpiled material has been satisfactorily dewatered, and determined by estimating the volume of the stockpiled material using the equation for the volume of a coned pile:

$$V = \left( \frac{C^2 \times h}{12\pi} \right) \div 27$$

where V = volume of the stockpile, in cyd  
C = the circumference of the base of the stockpile, in ft  
H = the height of the stockpile, in ft

Following the completion of the dredging and the satisfactory dewatering of the stockpiled material (as determined by the Owner/Engineer), the stockpiled material shall be collected, transported, and disposed of in a certified Type II landfill. All labor, material, and equipment costs associated with the collection, transportation, and disposal of said material shall be included in the bid item "Sediment Disposal – Landfill" and shall not be paid for separately.

#### 30. MOBILIZATION AND SITE RESTORATION

The bid item "Mobilization" shall be inclusive for site staging and mobilization and shall include all costs incurred with the establishment, maintenance and clean up of the work areas, including all labor, equipment and materials needed to collect and dispose of any and all debris produced by the contractor during work operations. This includes, but is not limited to removal of haul roads, material stockpiles, removal of construction fencing, and cleaning of paved surfaces.

The unit price for all seed and plantings shall include all required site restoration required. This shall be inclusive for all costs incurred with the establishment, maintenance, and clean-up of staging areas and shall include all labor, equipment, and materials needed to seed, blanket, plant and repair any damage to lawn areas (such as rutting) prior to turf restoration operations.

### 31. RESTORATION OF DISTURBED AREAS

The bid item "Seed Mix A" has been included in the proposal, and shall be payment in full for all labor, material, and equipment costs associated with restoring all disturbed wetland areas in accordance with the conditions and requirements of these project specifications. All disturbed areas, unless otherwise specified, shall be restored with three (3") inches of topsoil, Class A fertilizer, seed, and mulch blankets. All disturbed areas shall be restored and stabilized with adequate vegetation to prevent erosion. The contractor will be responsible for maintaining the water level of all ponds to facilitate seed growth. The compost operator must provide written certification to the City that acknowledges his satisfaction and acceptance of the project restoration.

The bid item "Seed Mix B" has been included in the proposal, and shall be payment in full for all labor, material, and equipment costs associated with restoring all disturbed upland areas in accordance with the conditions and requirements of these project specifications. All disturbed areas, unless otherwise specified, shall be restored with three (3") inches of topsoil, Class A fertilizer, seed, and mulch blankets. All disturbed areas shall be restored and stabilized with adequate vegetation to prevent erosion. The contractor will be responsible for maintaining the water level of all ponds to facilitate seed growth. The compost operator must provide written certification to the City that acknowledges his satisfaction and acceptance of the project restoration.

The bid item "Seed Mix C" has been included in the proposal, and shall be payment in full for all labor, material, and equipment costs associated with restoring all disturbed non-wetland areas in accordance with the conditions and requirements of these project specifications. All disturbed areas, unless otherwise specified, shall be restored with three (3") inches of topsoil, Class A fertilizer, seed, and mulch blankets. All disturbed areas shall be restored and stabilized with adequate vegetation to prevent erosion. The compost operator must provide written certification to the City that acknowledges his satisfaction and acceptance of the project restoration.

The unit price bid for all restoration items included in the proposal shall also include the cost of watering the seeded restored areas for a period of 14 days. The technical specifications for seeding, topsoil, fertilizer, straw blankets etc. are contained in the balance of these specifications. The restoration of any disturbed areas located outside the construction influence area shall be considered incidental to the project and restored to the standards and conditions of these specifications at the Contractor's own expense.

### 32. POND/WETLAND ACCESS

The Contractor shall use equipment suitable for work in the pond and wetland areas, and shall minimize the area and duration of disturbance. The City and/or Project Engineer reserves the right to exclude any equipment he deems unacceptable to go into the pond and wetland areas due to leaking fluids, accumulated sediment, or other potential hazards to water quality. Timber mats or other means as necessary shall be used to protect the edge of the banks when entering/exiting the pond and wetland areas. Access paths will be graded and stabilized by the Contractor in means to support his operations at no additional cost to the City. The Contractor shall provide access plans and details for City and receive approval prior to beginning construction operations. All costs associated with the Contractor's chosen means of access shall be incidental to the project and included in other line items as necessary. The City will not compensate the Contractor for excess clearing, grading, or restoration due to the Contractor's operations selected. All

remaining materials shall be properly disposed of off-site by the Contractor.

### 33. WATERING

The contractor shall water the plantings and seeded areas daily for a minimum of 14 days with an additional 4 watering events as necessary in the following 2 weeks after the daily watering. Watering shall not occur on Saturdays, Sundays or immediately after rain events. All exceptions shall be approved by the Project Engineer. Water can be taken from the ponds for the plantings. Watering shall be included in the unit prices for “Seed Mix A”, “Seed Mix B”, “Seed Mix C”, “Wetland Plants”, and “Live Stake Shrubs” and shall not be paid for separately.

### 34. INSURANCE FOR PLANT/GRASS GROWTH

This contract will not be final and accepted by the City of Ann Arbor until all work is completed and all disturbed landscape is restored to the same approximate condition as existed prior to construction. Grass restoration shall be per the specifications.

To ensure a dense growth of grass along all landscaped areas, a minimum amount of \$5,000.00 or additional amount as deemed warranted by the Engineer, may be withheld from payment to the Contractor. Upon satisfactory grass growth defined as 80% coverage, the City will promptly make payment to the Contractor.

### 35. PROJECT SCHEDULE

Advertisement	Thursday, February 8, 2021
On-Site Pre-Bid Meeting	Wednesday, February 10, 2021, at 1:00 p.m.
Questions Due	Tuesday, February 16, 2021
Addendum Posted	Friday, February 19, 2021
Bids Due	Tuesday, February 23, 2021
Council Meeting	Monday, April 5, 2021
Notice of Award	TBD
Begin Construction – Not in Compost Areas	June, 2021
Substantial Completion	September 2021

END OF SECTION

SECTION 02110

SITE CLEARING

PART 25 GENERAL

25.1 SECTION INCLUDES

- A. Removal of surface debris.
- B. Removal of paving, curbs, and gravel roadway materials, as required.
- C. Removal of trees, shrubs, and other plant life, including root system.
- D. Topsoil excavation and stockpiling.

25.2 RELATED SECTIONS

- A. Section 01005 - Administrative Provisions
- B. Section 02200 – Earthwork
- C. Section 02221 - Soil Erosion and Sedimentation Control
- D. Section 02910 – Seeding
- E. Section 02950 – Trees, Plants and Ground Cover

25.3 REGULATORY REQUIREMENTS

- A. Conform to applicable code for disposal of debris.
- B. Coordinate clearing Work with utility companies.

25.4 SITE INFORMATION

- A. The Contractor shall be held to have compared the conditions of the site where work is to be performed with the drawings and specifications and to have satisfied himself as to the conditions of the site, existing conditions, and any other conditions affecting the carrying out of the work, before delivery of his proposal. It is expressly understood that he will obtain first hand information concerning the available facilities for receiving, transporting, handling and storing construction equipment and materials and concerning other local conditions that may affect his work.
- B. The contractor shall draw his own conclusions as to soil conditions, including possible presence of groundwater, to be encountered, and he shall complete the work under any job or field condition which was present and/or ascertainable prior to bidding.

- C. He shall also complete the work under whatever conditions he may create by his own sequence of construction, construction methods, or other condition he may create at no additional cost to the Owner.
- D. No allowance or extra consideration on behalf of the Contractor will subsequently be allowed by reason of error or oversight on the part of the Contractor.

## PART 26 PRODUCTS

Not Used.

## PART 27 EXECUTION

### 27.1 WORK INCLUDED

- A. The work included under this section consists of providing all labor, equipment and services to execute all items of clearing, demolition, soil erosion control and removal as shown on the drawings, including all incidental work obviously required to effect complete work to the full intent of the drawings and specifications.

### 27.2 PREPARATION

- A. Verify that existing plant life designated to remain is tagged or identified.
- B. Identify the waste area for disposing of removed materials off site.

### 27.3 PROTECTION

- A. Locate, identify and protect utilities that remain, from damage.
- B. Protect trees, plant growth, and features designated to remain as final landscaping.
- C. Protect bench marks, survey control points, and existing structures from damage or displacement.
- D. Tree removal shall be approved by owner.

### 27.4 CLEARING

- A. Clear areas required for access to site and execution of Work, as shown on the Contract Drawings.
- B. Remove trees and shrubs as indicated. Remove stumps, roots, and other debris to depths indicated on the Drawings.
- C. Clear undergrowth and deadwood, without disturbing subsoil.
- D. Remove topsoil and grass as indicated.

27.5 REMOVAL

- A. Remove debris, rock and extracted plant life from site, and dispose of in accordance with all Federal, State and Local Ordinances.
- B. Removing paving, curbs, and gravel base, as required, and dispose of off site. Neatly saw cut edges at right angle to surface.
- C. Do not burn any waste material.
- D. All combustible materials resulting from the clearing and grubbing operations shall be removed promptly from the site to a solid waste disposal site properly licensed under the latest revision, Act 87 of the Public Acts of 1965 of the State of Michigan. No open burning of debris or rubbish will be permitted at the site.

27.6 TOPSOIL EXCAVATION

- A. Excavate or strip topsoil from cleared areas without mixing with foreign or underlying materials.
- B. Do not excavate wet topsoil.
- C. Stockpile in area designated on site or off site as approved by the Engineer; construct piles to drain freely, and protect from erosion.
- D. Remove excess topsoil not intended for reuse from site.

END OF SECTION

SECTION 02140

DEWATERING

PART 28 GENERAL

28.1 GENERAL

- A. All dewatering, well pointing, pumping, bailing and cleaning shall be performed that is necessary to complete the work as specified and as shown on the Drawings under this Contract.
- B. The Contractor will be held to have compared the conditions of the site where work is to be performed with the Drawings and Specifications and to have satisfied himself as to the conditions of the site, existing conditions, and any other conditions affecting the carrying out of the work, before delivery of his proposal. It is expressly understood that he will obtain first hand information concerning the available facilities for receiving, transporting, handling and storing construction equipment and materials and concerning other local conditions that may affect his work.
- C. The Contractor shall draw his own conclusions as to soil and groundwater conditions to be encountered and he shall complete the work under any job or field condition which was present and/or ascertainable prior to bidding.
- D. He shall also complete the work under whatever conditions he may create by his own sequence of construction, construction methods, or other condition he may create at no additional cost to the Owner.
- E. The Contractor shall be solely responsible for evaluating the suitability of his dewatering methods with the Plans, Specifications and Soil Information provided by the Owner for bidding purposes. All costs associated with the supplying of water shall be incidental to the work as bid.
- F. No allowance or extra consideration on behalf of the Contractor will subsequently be allowed by reason of error or oversight on the part of the Contractor.
- G. All work shall be done in a thorough and workmanlike manner and in conformance with accepted good practices and all requirements of local, state, and federal authorities having jurisdiction.
- H. The requirements of the EGLE permit, Soil Erosion Control Permit and the Wetlands Permit shall be adhered to at all times.

28.2 RELATED SECTIONS

- A. Section 01000 - General Specifications
- B. Section 02221 - Soil Erosion Control and Sedimentation Control

PART 29 PRODUCTS

Not Used.

PART 30 EXECUTION

30.1 REMOVAL OF WATER

- A. Ample means and devices shall be provided and maintained at all times during the life of this Contract to remove and properly dispose of all ground water and drainage water within, around, and entering the excavated area. The excavation and the structures within shall be kept dry until the work is completed, or as approved by the Owner.
- B. The water level within and below work areas shall be so maintained that there is no unbalanced upward pressure on the bottom of structures, sewers, or open excavations during the construction period. The Contractor shall provide means within the excavation to enable the Owner to monitor the elevation of the artesian groundwater, if present. The level of the artesian groundwater shall be maintained by the Contractor's methods to prevent the possibility of upward movement of the structure or earth within the excavation area. Water levels shall be maintained to meet the approval of the Owner.
- C. In addition, water that may occur during excavation for base slabs, pipe trenches, etc., shall be channeled to accumulate in certain low points and disposed of through a filtering device before entering into sewers, streams, or rivers in accordance with Section 02221 – Soil Erosion and Sedimentation Control, the Soil Erosion Control Permit, and as specified by the EGLE.
- D. The Contractor shall determine the extent of dewatering required to complete the work, and shall include all dewatering costs as incidental to the work as bid, unless provided otherwise in the Proposal.

All excavation dewatering shall be routed as necessary so as not to impede construction. In any event, all pumping and drainage shall be done without damage to any other property, public or private, and without interference with the rights of the public or private property owners. All pumping and drainage shall comply with Section 02221 - Soil Erosion and Sedimentation Control and with the requirements of the Soil Erosion Control Permit.
- E. The Contractor shall receive no extra compensation for providing, maintaining or operating any dewatering or drainage facilities. The removal or stoppage of artesian water which, if any, might occur in the work shall be deemed to be covered by this Section of the Specifications unless provided for otherwise in the Proposal.
- F. On completion of this project the Contractor shall fill all dewatering depressions and withdraw all dewatering facilities and drainage devices and restore the area to an acceptable condition, as approved by the Owner.

END OF SECTION

SECTION 02200

EARTHWORK

PART 31 GENERAL

31.1 SECTION INCLUDES

- A. General
- B. Site Preparation
- C. Excavations
- D. Unauthorized Excavation
- E. Subgrade
- F. Slopes, Sheeting and Bracing
- G. Backfill
- H. Flowable Fill
- I. Finish Grading

31.2 RELATED SECTIONS

- A. Section GC - General Conditions
- B. Section 01400 - Quality Control
- C. Section 02110 - Site Clearing
- D. Section 02140 - Dewatering
- E. Section 02221 - Soil Erosion and Sedimentation Control

31.3 GENERAL

- A. All excavation and backfilling shall be performed that is necessary to complete the work under this Contract. Excavation shall include the loosening, loading, removing, transporting, stockpiling, and disposing of all materials of every sort, necessary to be removed for purposes of construction; the furnishing, placing, and maintaining of all sheeting, bracing, and timbering; the care of existing roads, existing structures, utilities; and all incidental and collateral work necessary to complete the entire work as specified and as shown on the Drawings.

- B. Backfilling shall include the filling of the excavated and void spaces around and over the outside of completed structures and pipes. It is also the intention of these specifications to provide that backfill shall be so compacted that no appreciable subsequent settlement will occur, and so that sidewalks, driveways, roads and berms may be placed or replaced shortly after completion of backfilling.
- C. The Contractor will be held to have compared the conditions of the site where work is to be performed with the drawings and specifications and to have satisfied himself as to the conditions of the site, existing conditions, and any other conditions affecting the carrying out of the work, before delivery of his proposal. It is expressly understood that he will obtain first hand information concerning the available facilities for receiving, transporting, handling and storing construction equipment and materials and concerning other local conditions that may affect his work.
- D. The Contractor shall draw his own conclusions as to soil and/or rock conditions to be encountered, and he shall complete the work under any job or field condition which was present and/or ascertainable prior to bidding.
- E. He shall also complete the work under whatever conditions he may create by his own sequence of construction, construction methods, or other condition he may create at no additional cost to the Owner.
- F. The Contractor shall be responsible for evaluating the compatibility of his construction methods with the Plans, Specifications and Soil Information provided by the Owner for bidding purposes.
- G. No allowance or extra consideration on behalf of the Contractor will subsequently be allowed by reason of error or oversight on the part of the Contractor.
- H. This contractor shall grade all areas within his work area and provide slopes, shoulders, berms, and level surfaces defined according to existing and established grades.
- I. Care shall be taken to retain, at all times, normal flow of drainage water on the property and all present above ground and underground utilities.
- J. All work shall be done in a thorough and workmanlike manner and in conformance with accepted good practices and all requirements of local, state, and federal authorities having jurisdiction.

#### 31.4 REGULATORY REQUIREMENTS

- A. Conform to applicable state and local codes for disposal of excavated materials judged not suitable for backfill.
- B. Obtain disposal permit from Local Enforcing Agency.

#### 31.5 QUALITY ASSURANCE

- A. Comply with all code, laws, ordinances, and regulations of governmental authorities having jurisdiction over this part of the work.

- B. Backfill materials shall be compacted to not less than specified percentage of optimum dry density as determined by ASTM D 698.
- C. Testing of backfill material will be done in accordance with ASTM D 2922, ASTM D 1556, and ASTM D 3017.
- D. Unsuitably compacted backfill materials shall be removed and recompacted.

#### 31.6 SITE CONDITIONS

- A. Provide and maintain barricades, warning lights, warning signs, and other protection required by applicable laws for safety of persons and property.
- B. Protect excavations by shoring, bracing, sheet piling, underpinning, or other methods required to prevent earth movement.
- C. Notify Owner of unexpected subsurface conditions and discontinue affected work area until notified to resume work.

#### 31.7 HAZARDOUS/CONTAMINATED MATERIAL

- A. The following indicators shall be used by Owner onsite observers during excavation to identify materials suspected of being hazardous or contaminated and requiring disposal in a Type I or Type II landfill.
  - 1. Materials other than general construction debris of a color not consistent with the natural soils observed in the area;
  - 2. Materials other than general construction debris of a consistency that is not consistent with the natural soils observed in the area;
  - 3. Man-made containers, vessels, tanks, or barrels;
  - 4. Electric devices;
  - 5. Insulation or fibrous material that may contain asbestos;
  - 6. Material that emits a chemical or petroleum odor.

Based on these observations, materials in question shall be stockpiled separately, inspected, and representative samples should be collected and screened in the field. Materials should be stored on plastic sheeting at the predesignated, secure location on the parcel or an adjacent parcel and covered with plastic sheeting until disposal is determined.

- B. Potentially hazardous materials should be screened in the field by qualified personnel for the presence of volatile organic compounds (VOC) using a photoionization (PI) meter. It is assumed that the presence of VOCs should provide a general indicator of the presence of other potentially hazardous chemicals.

Materials to be subjected to further laboratory analysis should be selected based on the results of the field screening and observations made by the person monitoring the excavation.

- C. Based on the field screening and laboratory analysis, the Contractor will be advised by the Owner as to the required method of disposal.
- D. The Owner will be responsible for testing of hazardous/contaminated material.

## PART 32 PRODUCTS

### 32.1 BACKFILL

- A. All material necessary to complete the backfill as shown on the drawings or to replace excavated unsuitable material shall be furnished by the Contractor. Backfill at the structures, unless otherwise indicated on the Drawings, backfill replacing unsuitable material, backfill under gravel or stone and paved roads, shall all be granular material conforming to Michigan Department of Transportation (MDOT) Granular Materials Class II. If suitable material for backfilling is not available on site then suitable material shall be brought in from an off-site borrow pit by the Contractor at no additional cost to the Owner.
- B. The Owner shall have the right to reject any backfill material which when used in the work, does not accomplish the required compaction.
- C. All backfill material shall be free from large or frozen lumps, concrete rubble, clay, sod, wood, debris, and other extraneous material.

## PART 33 EXECUTION

### 33.1 EXCAVATIONS

- A. The Contractor shall make all excavation necessary for the construction of all work called for by the drawings or specified herein.
- B. Excavations shall be made to the line and grade shown on the drawings including removal of unsuitable soils from under structures or roads, or as required to meet MIOSHA regulations. Side slopes of unbraced excavations shall be such as to prevent slides which might injure the work. The Contractor shall conduct his excavation and other operations in such a manner as to ensure that the bed for footings and foundations remains free from rutting, trampling, or other undue disturbance. The beds for footings and foundations shall be true to grade and free of all loose material before any concrete is put in place. All unauthorized excavation below grade of any structure shall be backfilled with concrete to the proper grade at the Contractor's expense. The Contractor shall make all necessary fills to bring grade to finished grade shown on the drawings. Fills and cuts shall be graded to a uniform, smooth, and even grade to grades as shown on the Drawings to meet Owner's approval. Existing underground utilities that are to remain in place shall be protected and any damage caused by excavating shall be made good.
- C. Control the grading in the vicinity of excavated areas so that the surface of the ground will be properly sloped to prevent water from running into the excavated areas. Such areas shall be kept reasonably dry at all times. Accumulated water in the excavated areas shall be removed by pumping.
- D. Broken concrete or rubbish unsuitable for backfill shall be disposed of by the Contractor. Borrow material shall be graded in such a way that surface water will continue to drain in a

manner similar to the drainage patterns present before filling occurred. Broken concrete and rubbish shall be disposed of off-site.

### 33.2 UNAUTHORIZED EXCAVATIONS

- A. Whenever the excavation is carried beyond the lines and grades established by the drawings or as approved by the Owner, the Contractor shall, at his own expense, fill all such excavated space with an approved material and in such a manner as to meet the approval of the Owner.
- B. Unauthorized excavation beneath structures shall be filled with plain concrete, or flowable fill as determined by the Owner.

### 33.3 SUBGRADE

- A. The subgrade for all structures shall be prepared so as to have as near as practicable a uniform density throughout the entire area. The subgrade shall be compacted to 95% maximum density at optimum moisture content as specified in AASHTO-180 or by Michigan Cone density, whichever is greater, by rolling or by other approved methods. After being prepared, the subgrade shall be maintained until concrete has been placed thereon.
- B. If, through neglect or delay on the part of the Contractor, the earth at subgrade elevation becomes unsuitable for the support of the work to be constructed thereon, the Contractor shall excavate down to solid earth, and shall backfill to the required subgrade elevation with plain concrete, compacted sand, or other suitable material as required to meet the Owner's approval. Unstable subgrade soil under all concrete foundations shall be replaced with plain concrete.
- C. All subgrades shall be approved by the Engineer before proceeding with backfilling and compaction, landscaping, or other construction work.
- D. Subgrades shall be level and clean of all loose rock, dirt, and debris and free of standing water prior to placing concrete.

### 33.4 SLOPES, SHEETING, AND BRACING

- A. All slopes shall be cut and maintained to the proper degree required for stability. Sheeting and bracing shall be placed and maintained as indicated and/or whenever required for safety to men and the work. The degree of slope for all excavations shall be fixed by the Contractor, and shall comply with all State and Federal safety requirements.
- B. The Contractor shall provide, install, and maintain all shoring, sheet piling, and bracing required to maintain banks of excavations and other construction, and assume full responsibility for same. The design of all shoring systems shall be performed by an Engineer registered in the State of Michigan utilizing loading diagrams as provided in Section 1900 of the Specifications. The shoring system design computations shall be sealed by the Engineer who prepared them and forwarded to the Owner for review.
- C. Sheeting, bracing and timbering shall be so placed as to allow the work to be constructed to the lines and grades shown on the drawings.

Size and placing of members shall be subject to review by the Owner but the design of members and safety of the excavation shall be the responsibility of the Contractor.

Exact areas to be sheet piled and final weight of sheet piling shall be determined by the Contractor unless otherwise indicated for permanent sheet piling. Actual quantity and location of all sheet piling required for this project shall be determined by the Contractor.

- D. The Contractor's Vibration Consultant will develop a detailed vibration monitoring program for the site. The Vibration Consultant will install down hole vibration monitoring geophones for the purposes of monitoring during vibration inducing but not limited to the operations including braced excavation installation. Geophones shall be connected with wireless technology to an on-site monitoring station provided by the vibration consultant and located within the limits of the project. The contractor shall protect the monitoring station for the duration of the project.
- E. Vibration Action Limits:
1. When vibration readings exceed 1.0 in. / sec. peak particle velocity (ppv), the Contractor must temporarily suspend operations. The Contractor and the Engineer will inspect the site for signs of settlement or damage. The Contractor shall resume operations only after it has been verified by the Engineer that the adjacent utilities have not been damaged or adversely impacted by construction activities. Should the Engineer determine that ground vibration levels exceeding 1.0 in. / sec. ppv present a risk to adjacent utilities, the Contractor shall submit a Corrective Action Plan (CAP) outlining proposed changes to means and methods such that vibration levels shall be reduced to acceptable levels and adjacent utilities are protected at all times. An acceptable level shall be 1.0 in. / sec. ppv.
  2. When vibration readings exceed 2.0 in. / sec. ppv or when damage to existing utilities is detected, the Contractor must cease all operations pending a review of field conditions by the Engineer. Changes to means and methods will be required. The Contractor shall submit a CAP outlining proposed changes to means and methods such that vibration levels shall be reduced to acceptable levels and adjacent utilities are protected at all times. An acceptable level shall be 1.0 in. / sec. ppv or less or some greater value less than 2.0 in. / sec. ppv as determined by the Engineer.
- F. The Corrective Action Plan (CAP) shall be developed by the Contractor and shall identify any necessary changes in equipment or procedures associated with but not limited to the installation of braced excavation. The Contractor shall not be granted additional expenses or additional time for shut down associated with preparation of the CAP including time required for review and approval of the cap by the Engineer and / or representatives of the Owner. The Contractor shall not be granted additional expenses associated with changes to means and methods as identified in the approved CAP including changing equipment, materials, or means of demolition, installation, or construction. The Contractor cannot resume operations until the cap is approved and the contractor is instructed to do so by the Engineer.
- G. The Contractor shall select hammer or hammers to be used on sheet piling based on length, weight, type of pile, and depth of penetration and submit data on the hammer selected to the Owner for review. Braced excavation installation shall be by impact hammer. Double-acting hammers may be used on sheet piling. The use of a vibratory hammer shall not be permitted.

Approximate weight of hammer shall be 2-1/2 times the weight of a sheet of piling to be driven.

- H. Sheet piling shall be driven to depths and lengths required by the Contractor unless otherwise indicated for permanent sheet piling. Level measurements, utilizing previously specified bench marks, shall also be made at existing structures, in the presence of the Owner's designated representative, during all driving of sheet piling to record any change in the level of present structures or utilities caused by the Contractor's Operations.
- I. Permanent sheet piling where indicated on the drawings shall be of weight, area and depth shown on the drawings and shall remain in place.
- J. Temporary sheet piling may not be withdrawn from any area until concrete within the zone influenced by vibrations set up by withdrawal operations, has attained its 28 day design strength.
- K. If the sheeting and bracing cannot be removed without detriment to the finished structure or existing structures, then the sheeting and bracing shall be left in place temporarily or permanently as the Owner shall approve. Sheeting and bracing left in place permanently shall be cut off at the required level so as not to interfere with subsequent construction. The cost of materials left in place less the eliminated expense of removal work shall be paid as an extra. No extra payment shall be allowed for the cost of placing the material.
- L. All bracing used shall be so arranged as to place no stress on any portion of the completed work until such work shall have developed sufficient strength, as determined by the Owner. Any damage to any structures occurring through settlements, water or earth pressure, slides, cave-ins, or other causes shall be repaired by the Contractor at his own expense.

All materials used for earth bracing or support shall be structurally sound, uniform in quality, and adequate in size and strength for the use intended.

### 33.5 BACKFILL AND COMPACTION

- A. It is the intent of these Specifications that backfill shall be so placed and consolidated that no appreciable subsequent settlement will occur.
- B. Backfill shall be placed in uniform layers not exceeding 12 inches in depth when measured loose and each layer shall be thoroughly compacted by tamping, sheepsfoot-roller, mechanical vibrators, or by other effective means approved by the Owner. All backfill in all areas shall be compacted to at least 95% of maximum density, at optimum moisture content as specified in MDOT Standard Specifications for Construction Controlled Density Method. Compaction by flooding will not be permitted.

The Owner shall have the right to reject any backfill material which when used in the work, does not accomplish the required compaction.

- C. The Contractor shall furnish all necessary assistance and test pits as required for the Contractor to conduct compaction density tests.

- D. No backfill material shall be placed on areas where free water is standing or on frozen subsoil areas.
- E. Clean areas and excavations to be backfilled of all trash and debris before placement of backfill. In placing backfill, take special care to prevent any wedge action, eccentric loading, damage, or overloading of any adjacent structures, piping, and equipment by equipment used in compacting backfill material.
- F. Heavy equipment for spreading and compacting fill and backfill shall not be operated closer to a wall than a distance equal to the height of the fill or backfill to be placed. Power-driven hand operated equipment shall be used against walls and where space limits the use of heavy equipment.
- G. If compaction tests indicate work does not meet specified requirements, remove work, replace and retest at no cost to the Owner.

### 33.6 FINISH GRADING

- A. The Contractor shall grade the entire site as indicated on the drawings to a smooth and even grade, meeting existing grades and/or the grades indicated on the drawings.
- B. Excavated material suitable and approved for backfilling shall be stored on the site in areas approved by the Owner. Reusable topsoil that is displaced shall also be stored on the site in separate area from the backfill.
- C. Finish grade under gravel road areas and under paved areas shall be limited to 1/2 inch in 10 feet from true profile, and shall be maintained until succeeding layer or surface course is placed.
- D. Finish grading shall slope uniformly to contour lines shown on the Drawings, and to meet existing adjacent levels. The Contractor shall grade all areas within his work site and provide slopes, shoulders, berms, and level surfaces defined according to existing and established grades. The work shall also include all adjacent areas disturbed by construction and as required by new pavement installation.
- E. The subgrade for all slabs and pavements shall be prepared so as to have as near as practicable a uniform density throughout the entire area. The subgrade shall be compacted to 95% maximum density at optimum moisture content, as specified under BACKFILL AND COMPACTION herein, by rolling or by other approved methods. After being prepared, the subgrade shall be maintained until concrete or pavement has been placed thereon.
- F. If, through neglect or delay on the part of the Contractor, the earth at subgrade elevation becomes unsuitable for the support of the work to be constructed thereon, the Contractor shall excavate down to solid earth, and shall backfill to the required subgrade elevation with plain concrete, or other suitable material as required to meet the Owner's approval.

Soil found to be unstable in the subgrade shall, when required to meet the Owner's approval, be excavated to firm soil and replaced with MDOT Granular Material, Class II, as specified above thoroughly compacted. Subgrade area supporting structures shall have unstable material replaced with Owner approved concrete.

33.7 INSTALLATION OF PERIMETER DRAINS

- A. Install at locations where drains are shown on Contract Drawings.
- B. Install aggregate and filter cloth as shown on details on Contract Drawings.
- C. Compact aggregate as specified and complete filter cloth installation prior to completion of backfill.

END OF SECTION

SECTION 02202

DRAINAGE GEOTEXTILES

PART 34 GENERAL

34.1 RELATED SECTIONS

- A. Section 02200 –Earthwork

34.2 REGULATORY REQUIREMENTS

- A. Conform to ASTM D4759

PART 35 PRODUCTS

35.1 DESCRIPTION

- A. This work shall consist of furnishing and placing a geotextile for drainage applications as needed or as proposed by the contractor. The geotextile shall be designed to allow passage of water while retaining insitu soil without clogging. The quantities of drainage geotextiles as required may be increased or decreased at the direction of the Engineer based on construction procedures and actual site conditions that occur during construction of the project. Such variations in quantity will not be considered as alterations in the details of construction or a change in the character of the work.

35.2 MATERIALS

- A. Fibers used in the manufacture of geotextiles, and the threads used in joining geotextiles by sewing, shall consist of long chain synthetic polymers composed of at least 85% by weight polyolefins, polyesters, or polyamides. They shall be formed into a network such that the filaments or yarns retain dimensional stability relative to each other, including selvages. These materials shall conform to the physical requirements of Table 1.
- B. Geotextile rolls shall be furnished with suitable wrapping for protection against moisture and extended ultraviolet exposure prior to placement. Each roll shall be labeled or tagged to provide product identification sufficient for inventory and quality control purposes. Rolls shall be stored in a manner which protects them from the elements. If stored outdoors, they shall be elevated and protected with a waterproof cover.

35.3 TABLE 1 – PHYSICAL REQUIREMENTS FOR DRAINAGE GEOTEXTILES

<u>PROPERTY</u>	<u>CLASS A4</u>	<u>CLASS B5</u>	<u>TEST METHOD</u>
Grab Strength Lbs.	180	80	ASTM D 4632
Elongation (%)	N/A	N/A	ASTM D 4632
Sewn Seam Strength <sup>6</sup> Lbs.	160	70	ASTM D 4632
Puncture Strength Lbs.	80	25	ASTM D 4833
Burst Strength psi	290	130	ASTM D 3786
Trapezoid Tear Lbs.	50	25	ASTM D 4533
Apparent Opening Size	1. Soil with 50% or less particles by weight passing U.S. No. 200 Sieve, AOS less than 0.6mm (greater than #30 U.S. Std. Sieve)  2. Soil with more than 50% particles by weight passing U.S. No. 200 Sieve, AOS less than 0.297mm (greater than #50 U.S. Std. Sieve).		ASTM D 4751
Permeability <sup>7</sup> (cm/sec)	k fabric >k soil for all classes		ASTM D 4491
Ultraviolet Degradation at 150 Hours	70% Strength retained for all classes		ASTM D 4355

1. Acceptance of geotextile material shall be based on ASTM D 4759.
2. Contracting agency may require a letter from the supplier certifying that its geotextile meets specification requirements.
3. Minimum - use value in weaker principal direction. All numerical values represent minimum average roll value (i.e., test results from any sampled roll in a lot shall meet or exceed the minimum values in the Table). Stated values are for non-critical, non-severe applications. Lots samples according to ASTM D 4354.
4. Class A Drainage applications for fabrics are where installation stresses are more severe than Class B applications; i.e., very coarse, sharp angular aggregate is used, a heavy degree of compaction (95% AASHTO T99) is specified or depth of trench is greater than 10 feet.

5. Class B Drainage applications are those where fabric is used with smooth graded surfaces having no sharp angular projections, no sharp angular aggregate is used; compaction requirements are light (<95% AASHTO T99) and trenches are less than 10 feet in depth.
6. Values apply to both field and manufactured seams.
7. A nominal coefficient of permeability may be determined by multiplying permittivity value by nominal thickness. The k value of the fabric should be greater than the k value of the soil.

## PART 36 EXECUTION

### 36.1 CONSTRUCTION REQUIREMENTS

- A. Geotextile Exposure Following Placement: Exposure of geotextiles to the elements between laydown and cover shall be a maximum of fourteen (14) days to minimize damage potential.
- B. Geotextile Placement: Successive sheets of geotextiles shall be overlapped a minimum of 12 inches in the direction of flow.
- C. Seams: Where seams are required in the longitudinal trench direction, they shall be joined by either sewing or overlapping. All seams shall be subject to the approval of the Engineer.
- D. Overlapped seams shall have a minimum overlap equal to the width of the trench.
- E. Repair: A geotextile patch shall be placed over the damaged area and extend three (3) feet beyond the perimeter of the tear or damage.

END OF SECTION

SECTION 02221

SOIL EROSION AND SEDIMENT CONTROL

PART 37 GENERAL

The purpose of this specification is to provide certain requirements, techniques and measures to minimize erosion damage to the construction site. In general, the contractor shall conduct his operations in such a manner as to limit any exposed area or any disturbed land for the shortest practicable period of time and any sediment caused by soil erosion due to his operations shall be restricted and reduced to a non-polluting minimum before it leaves the site. All SESC measures must comply with City of Ann Arbor and/or Pittsfield Township requirements and standards. Permits from both agencies will be required. SESC measures for this project are on an as-needed basis as the contractor means and methods will determine SESC requirements.

37.1 TEMPORARY SEDIMENT CONTROL

- A. The Contractor shall construct the sediment filter in the outlet drain in order to provide for erosion control, before any construction begins. Ground water from the excavation shall be directed through the settling basin or other BMP in order to reduce or eliminate turbidity.
- B. Silt traps shall be placed between all catch basin, and inlet frames and covers, as well as stubs, during construction, and until contributing disturbed areas are permanently stabilized. During the growing season, the area within a 10' radius of the catch basin shall be stabilized with sod within 5 days of the installation of the structure. During the non-growing season, a sediment pit (12" to 18" deep) shall be excavated around the structure to be backfilled and replaced with a 10' radius of sod upon commencement of the next growing season.
- C. It shall be the Contractor's responsibility to maintain both the sediment filter, settling basin and silt traps and remove all trapped sediment periodically throughout the time of construction in such a manner that there will be adequate solids storage volume upstream of these devices. In addition, the Contractor shall, at the completion of construction and when directed by the Owner, remove said devices and all trapped sediment. Additionally, outlet pipes shall be cleaned as necessary if sediment is found post construction.
- D. If dewatering of ponds is specified as part of the contractors means and methods, it shall be the contractor's responsibility to make sure no sediment leaves the site and is contained to the construction area.

37.2 EROSION PROTECTION

- A. In order to limit the length of time that the exposed area is subject to the elements and the subsequent conditions causing erosion, the contractor shall adhere to the following requirement:
- B. The stabilization of disturbed areas shall begin within fifteen (15) days of date that area has been rough graded and shall be completed within the next fifteen (15) days, in accordance with the following temporary or permanent stabilization.

### 37.3 TEMPORARY STABILIZATION

- A. Temporary stabilization shall be required for all disturbed areas during the following periods:
- B. Temporary stabilization shall be provided during the non-growing season for all areas to be sodded. This time period is generally from October 20 through May 1.
- C. Temporary stabilization shall be provided during the non-growing season for all areas to be seeded. This time period is generally from October 1 through April 20. (If unseasonably warm weather exists after October 1, seeding may be permitted).
- D. If for any reason Permanent Stabilization cannot be provided within 15 days of the completion of final grading operations, temporary stabilization shall be provided for all disturbed areas.
- E. On all disturbed areas, provide either small grain straw (preferably wheat) or grass hay spread at the rate of 1-1/2 to 2 tons per acre or wood chips spread at a rate of 6 to 9 tons per acre. Mulch shall be anchored in place to prevent it from being blown or washed away.
- F. It shall be the contractor's responsibility to provide Permanent Stabilization as soon as practicable.
- G. Temporary stabilization shall be repeated when and as often as required by the Engineer or Owner.

### 37.4 PERMANENT STABILIZATION

- A. All areas which have been temporarily stabilized shall be permanently stabilized immediately upon commencement of next seasonal planting period. All straw or hay shall be removed or deeply incorporated into the soil.
- B. Seeding
  - 1. All vegetated areas other than lawn areas disturbed by the contractor's operation shall be restored as follows:
  - 2. Backfill to be suitable excavated material mechanically compacted in 12 inch layers to prevent settlement.
  - 3. The area to be seeded shall be made smooth and shall be covered with not less than 4 inches of approved top soil/compost uniformly spread over the scarified ground surface.
  - 4. Compost, as available, can be tilled into the soil to assist in germination and growth of grass.
  - 5. Fertilize (**phosphate free** fertilizer only) all areas with N-P-K applied at a rate of 400 lbs./acre.
  - 6. Pond slopes are to be seeded according to plan with Seed Mix A, B, or D or plants.
  - 7. Immediately after seeding, all areas shall be mulched with unweathered small grain straw or hay applied at the rate of 2 tons/acre.
  - 8. Mulch shall be anchored in place to prevent it from being blown or washed away.
  - 9. It shall be the contractor's responsibility for the establishment of the seed growth regardless of weather conditions.
  - 10. Seed may be sown between April 20 and October 1.
  - 11. Erosion blanket shall be placed on all slopes as specified by the engineer.

37.5 ENFORCEMENT

- A. Should the requirements of the preceding sections be violated, the Owner shall require the contractor to cease all other operations and to apply his forces to meet these requirements.

37.6 BASIS OF PAYMENT

- A. All costs associated with above stated requirements shall be included in the unit prices bid.

END OF SECTION

## SECTION 02226

### HYDRAULIC EROSION CONTROL PRODUCTS

#### PART 1 – GENERAL

##### 1.1 DESCRIPTION

This work shall consist of providing all necessary materials, labor, and equipment required for hydro-seeding and applying Hydraulic Erosion Control Products (HECPs). An HECP is a manufactured, temporary, degradable, fibrous matrix that is mixed with water and hydraulically-applied as a slurry. HECPs are designed to provide temporary erosion protection on upland slopes until vegetation become established. The site seeding and mulching is a two or three step process as specified on the Project Plans. Work includes, but is not limited to, the following major items:

- A. Install and maintain all temporary sedimentation controls as specified until vegetation is given final acceptance.
- B. Final grading of slopes as shown on the Project Plans.
- C. Work shall be staged and timed to limit sedimentation impacts and to have soil exposed for the shortest time possible.
- D. Apply hydro-seeding application per specifications.
- E. Furnish and install all erosion control and planting materials.
- F. Protection of all work until Provisional Acceptance. Maintenance and watering until end of guarantee period.

##### 1.2 RELATED SECTIONS

- A. Section 02200 – Earthwork
- B. Section 02221 – Soil Erosion and Sedimentation Control
- C. Section 02910 – Seeding

##### 1.3 DEFINITIONS

- A. **Hydraulic erosion control product (HECP):** A manufactured, temporary degradable, pre-packaged fibrous material that is mixed with water and hydraulically applied as a slurry designed to reduce soil erosion and assist in the establishment and growth of vegetation.
- B. **Polyacrylamide (PAM):** A water-soluble anionic form of polyacrylamide that is frequently used as a soil conditioner on construction sites for erosion control.

##### 1.4 SUBMITALS

Contractor shall submit manufacturer’s product data, installation instructions, and certification that the product meets all performance properties found in this specification.

PART 2 – MATERIALS

Different classes of Hydraulic Erosion Control Products (HECPs) are described in this Section, but are not equivalent. The Contractor must use the specific HECPs listed on the Plans and approved by the Engineer. Products of a different class or that do not meet the specifications will not be allowed. The following table is for general reference only. Actual application rates shall be as specified in the appropriate subsections for various materials (Part 3 of this Section).

**Hydraulic Erosion Control Products Specification Chart (ECTC, 2010)**

Hydraulic Erosion Control							
Type <sup>2</sup>	Term	Functional	Typical Application Rates	Typical Maximum Slope Gradient	Maximum Uninterrupted Slope Length	Maximum C Factor <sup>4,5</sup>	Minimum Vegetation Establishment <sup>6</sup>
		Longevity <sup>3</sup>	Lb/acre (kg/ha)	(H:V)	(ft)	(3:1 test)	
1	Ultra Short Term	1 month	1500–2500 (1700–2800)	≤ 4:1	20	0.75	150 %
2	Short Term	2 month	2000–3000 (2250–3400)	≤ 3:1	25	0.5	150 %
3	Moderate Term	3 month	2000–3500 (2250–3900)	≤ 2:1	50	0.15	200 %
4	Extended Term	6 month	2500–4000 (2800–4500)	≤ 1:1	75	0.1	300 %
5	Long Term	12 month	3000–4500 (3400–5100)	≤ 0.5:1	100	0.02	400 %

<sup>1</sup> This table is for general guidelines only. Refer to manufacturer for application rates, instructions, gradients, maximum continuous slope lengths and other site specific recommendations.

<sup>2</sup> These categories are independent of rolled erosion control products (RECPs) categories, despite the identical names.

<sup>3</sup> A manufacturer’s estimated time period, based upon field observations, that a materials can be anticipated to provide erosion control as influenced by its composition and site-specific conditions.

<sup>4</sup> “C” Factor calculated as ratio of soil loss from HECP protected slope (tested at specified or greater gradient, h:v) to ratio of soil loss from unprotected (control) plot based on large-scale testing.

<sup>5</sup> Acceptable large-scale test methods may include ASTM D 6459, or other independent testing deemed acceptable by the engineer.

<sup>6</sup> Minimum vegetation establishment is calculated as outlined in ASTM D 7322 being a percentage by dividing the plant mass per area of the protected plot by the plant mass per area of the control plot.

2.0 SEED MIXTURE MATERIALS

See the Project Planting Plan and/or Section 02910 – Seeding for seed material descriptions and application rates. All seed mixes and mulches must be weed-free.

## 2.1 HYDRAULIC MULCH MATERIAL DESCRIPTIONS

Hydraulic mulch consists of a mixture of shredded wood fiber, paper mulch, and additives in a hydraulic matrix with a stabilizing emulsion or tackifier with hydroseeding equipment which provides temporary soil erosion control until vegetation becomes established.

### A. Wood Fiber/Paper Mulch Material Description

- 50% virgin hardwood fiber
- 50% post-consumer recycled paper

Available manufacturers and types:

1. GeoPro Basis,
2. Conwed Fibers Enviro-Blend

### B. Wood Fiber Mulch Material Description

- 100% virgin hardwood fiber

Available manufacturers and types:

1. GeoPro Wood,
2. Conwed Fibers 1000 or 2000

### C. Bonded Fiber Matrix (BFM) Material Description

- 66±% virgin hardwood fiber
- 29±% post-consumer recycled paper
- 5±% jute fiber
- 0.6±% Silt Stop 745 soil stabilizer
- Or other comparable, pre-approved BFM mixes

Available manufacturers and types:

1. GeoPro Matrix
2. Conwed Fibers Hydro-Blanket BFM
3. Profile Flexterra

### D. Other Mulch Materials

See Section 02220 for information on straw, wood chips, or hardwood mulching if specified.

## 2.2 ADDITIVES

### A. Tackifiers

Biodegradable liquid concentrate diluted with water to form a transparent 3-dimensional film-like crust permeable to water and air and containing no agents toxic to seed germination. Use organic, non-asphalt

tackifiers such as guar or psyllium-based products unless otherwise specified on the Plans. Binders in BFMs typically include an acrylic copolymer or other binders and must be non-toxic.

Available manufacturers and types:

1. 100% guar-gum based ConTack Organic Tackifier by Profile Products or equal,
2. Profile Products, Hydro-Colloid Polymer Binder, 3% ± 0.5% as manufactured in EcoFibre Plus Tackifier,
3. Approved anionic polyacrylamides (Subsection 2.3 B).

**B. Polyacrylamide (PAM)**

PAM soil tackifiers shall consist of a solid anionic polymer. The polymeric compound should be handled and mixed in a manner that will not cause foaming or should contain an anti-foaming agent. The polymeric emulsion should have a minimum shelf life of one year. Polymeric soil stabilizer should be readily miscible in water, non-injurious to seed or animal life, non-flammable, should provide surface soil stabilization for various soil types without totally inhibiting water infiltration, and should not re-emulsify when cured. The applied compound should air cure within a maximum of 36 to 48 hours. The PAM shall be Applied Polymer Systems (APS) Silt Stop 705 or approved equal as determined by field testing.

**C. Compost Blanket Material Description**

The compost, as provided by the Contractor, shall meet all MDOT specifications as well as the following requirements:

pH range:	5.0-8.5 std. units
Conductivity:	max. 10 dS/m (mmhos/cm)
Moisture content:	30-60 %, wet weight basis
Organic matter content:	30-65 %, dry weight basis
Particle size:	98% pass through ¾" screen or smaller, dry weight basis
Physical contaminants (inerts):	<1%, dry weight basis

Compost shall be mature/stabilized, humus-like material derived from the aerobic decomposition of yard clippings or other compostable materials as designated in Part 115 of P.A. 451 of 1995 as amended and shall be in compliance with all federal and state laws. The compost shall have a dark brown or black color, be capable of supporting plant growth without ongoing addition of fertilizers or other soil amendments and shall not have an objectionable odor. The compost shall be free of plastic, glass, metal or other physical contaminants (<1%), as well as viable weed seeds and other plant parts capable of reproducing (except airborne weed species). The compost shall be visually inspected and approved for physical contaminants by the City's representative prior to application. The compost moisture content shall be such that no visible free water or dust is produced when handling it.

**D. Fertilizers**

Lawn areas must use an organic fertilizer or synthetic fertilizer with 40% or more water insoluble nitrogen, 40% controlled-release component, or stabilized nitrogen fertilizer with equivalent performance capacity such as:

<u>BRAND NAME</u>	<u>N-P-K</u>	<u>% Slow-Release Nitrogen</u>
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ACO Fall Lawn Food	21-0-4	50%
Corn Gluten Products	9-0-0	85%
Clean Green Soy Fertilizer	7-0-0	High
Espoma Organic Weed Preventer	9-0-0	91%
Fertrell Lawn Fertilizers	9-1-4 or 8-1-8	70% - 85%
Greenview Fairway Formula Fall Fertilizer	30-0-12	40%
Greenview Lawn Fertilizer with NutriLife	22-0-4	100%
Nature Safe	27-2-2	with UFLEXX
Ringer Lawn Restore	10-2-6	76%
Scotts Organic Choice Lawn Food	11-2-2	91%
Soil Science	5-0-7	High
Turf Nurture	15-2-7	75%
Organica Lawn Booster	8-1-1	94%

The City of Ann Arbor has a Zero Phosphate Ordinance. Organic fertilizer with no Phosphate should be used.

E. Mycorrhizae Inoculant Material Description

If specified on the Plans, the mycorrhizae inoculant shall consist of MycoApply Endo-Ecto Plus as manufactured by Rocky Mountain BioProducts, Inc. or approved equal applied at a rate of 60 lb/acre.

F. Water

Water shall be free of substance harmful to seed growth. Hoses or other methods of transportation shall be furnished by Contractor.

PART 3 – EXECUTION

3.1 GENERAL

Establishing vegetation from seed is a multi-step process that includes soil preparation, seeding, and temporary stabilization with either: 1) hydraulic erosion control products, 2) rolled erosion control products, or 3) mulches that are secured by crimping, tackifiers, or mulch netting (see Section 02221).

- A. Examine finish surfaces, grades, topsoil quality, and depth. Do not start seeding work until unsatisfactory conditions are corrected.
- B. Do not apply hydraulic mulch to frozen soil surfaces.

3.2 PREPARATION

- A. Finish grade or otherwise break up crusted soils. Limit preparation to areas which will be immediately seeded.
- B. Clear weeds and underbrush as directed in the field as incidental to seeding preparation. Remove stones over 1/2” in any dimension and sticks, roots, rubbish, and extraneous matter.
- C. Grade to a smooth, free draining even surface with a loose, moderately coarse texture. Roll and rake, remove ridges, and fill depressions as required.

- D. Restore prepared areas to the specified condition if eroded, settled, or otherwise disturbed after fine grading and prior to seeding.

### 3.3 HYDRO-SEEDING PROCEDURES

- A. Seed immediately after preparation of the seedbed.
- B. Use hydroseeding equipment to apply 50% of the specified seed mix with fertilizer (if specified), and a small amount of wood fiber/paper mulch for metering. Sow fringe areas and small areas by hand.
- C. Use only organic and/or slow-release fertilizers. Synthetic fertilizers are not approved.
- D. Apply spring seeding between April 1 and June 1 and fall seeding between August 15 and October 15 or at such other times acceptable to the Engineer.
- E. Following seeding mixes, application rates, and watering requirements in Section 02913.

### 3.4 HYDRAULIC MULCH INSTALLATION PROCEDURES

- A. Use only mechanically agitated equipment. Hydraulically agitated equipment is not approved.
- B. Mix the balance of seed with water and the specified mulch materials and tackifiers. Apply wood fiber/paper mulch at a rate of 2,000-2,500 lb/acre. Apply 100% wood fiber mulch at a rate of 2,500-3,000 lb/acre. Apply bonded fiber matrix at a rate of 3,500-4,000 lb/acre. Application rates should not exceed that maximum amount rated by the manufacturer.

### 3.5 POLYACRYLAMIDE (PAM) APPLICATION

Dry Form – The powder form of PAMs may be mixed with dry silica sand to aid in spreading. PAM powders may be hand spread or hand sown in small application areas.

Mixing – slowly add PAM powder to water to avoid clumping. After 3-5 minutes of mechanical mixing, apply at the specified rate with hydro-seeding equipment or use PAMs as part of the hydraulic mulching mix as indicated on the Plans.

#### Application Rates (if not specified on the Plans)

- 10 – 20 lb powder / Acre – gentle to moderate slopes (flat to 4:1) Dry Spread Application
- 20 – 50 lb powder / Acre – steep slopes (3:1 to 1:1) Dry Spread Application
- 3.5 – 5 lb powder / 1000 gallons water / 0.33 Acre Hydroseed Applications

### 3.6 COMPOST BLANKET

Apply compost with seed mix using a pneumatic blower. Compost blankets may be applied manually to small areas. Mechanically incorporate compost into the upper 6 inches of soil when applied to the floodplain bench. If a 50/50 compost/mulch mix is specified, use dark brown, triple ground hardwood mulch. Compost blanket is to be paid on a per unit area basis at the thickness specified on the Plans.

Minimum application rates should be between 2 to 3 inches in depth (270 to 405 cubic yards per acre) with greater depths for steeper slopes. The following compost blanket thickness applies if not otherwise specified on the Plans:

<u>Slope</u>	<u>Application Thickness</u>
2:1 (H:V)	4 inches
3:1	3 inches
4:1	2 inches

### 3.7 CLEANING

- A. Clean spills promptly using a broom, rake, or shovel. Do not hose down paved surfaces. Remove from site all excess materials, debris, and equipment.
- B. Do not wash out equipment into waterways or storm sewer catch basins.
- C. Repair damage resulting from seeding operations.

END OF SECTION

SECTION 02483

GEOTEXTILE FILTER BAGS FOR DREDGE MATERIAL CONTAINMENT AND DEWATERING

1.0 GENERAL

A. SECTION INCLUDES

1. The work covered by this section consists of furnishing all labor, equipment, and materials, and performing all operations in connection with the use of high strength woven geotextile bags or tubes for the containment and dewatering of dredged material as shown on the Plans.

B. UNIT PRICES

1. "Geotextile Fabric – 6 sy" shall be payment for all materials, equipment labor, etc. for the furnishing, placement, use and disposal of geotextile filter bags meeting the requirements herein.
2. The Contractor shall be solely responsible for determining the size and quantity of the geotextile bags needed to complete this project.

C. REFERENCES

1. AASHTO Test Standards:
  - a. T 88 – Standard Test Method for Particle Size Analysis of Soils
  - b. T 90 – Standard Test Method for Determining the Plastic Limit and Plasticity Index of Soils
  - c. T 99 – Standard Practice for Determination of the Moisture Density Relations of Soils Using a 5.5 lb hammer and 12 in drop (Standard Proctor)
2. American Society for Testing and Materials (ASTM):
  - a. D 422 -Test Method for Particle Size Analysis of Soils
  - b. D 4354 -Test Method for Sampling of Geosynthetics for Testing
  - c. D 4355 Test Method for Deterioration of Geotextiles from Exposure to Ultraviolet Light and Water (Xenon-Arc Type Apparatus)
  - d. D 4491 -Test Method for Water Permeability of Geotextiles by Permittivity
  - e. D 4533 -Test Method for Trapezoid Tearing Strength of Geotextiles
  - f. D 4595 -Test Method for Tensile Properties of Geotextiles by the Wide-Width Strip Method
  - g. D 4751 -Test Method for Determining the Apparent Opening Size of a Geotextile
  - h. D 4759 -Test Method for Determining the Specification Performance of Geosynthetics
  - i. D 4833 -Test Method for Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products
  - j. D 4873 -Test Method for Identification, Storage, and Handling of Geotextiles
  - k. D 4884 -Test Method for Seam Strength of Sewn Geotextiles

3. Geosynthetic Research Institute (GRI) Standards:
  - a. GT10 – Standard Specification for Test Methods, Properties and Frequencies for High Strength Geotextile Tubes used as Coastal and Riverine Structures
  - b. GT11 – Standard Practice for Installation of Geotextile Tubes as Coastal and Riverine Structures
4. Light Projection Analysis - Lumite Test Method for Measuring Light Projection Through Fabric.
5. Geosynthetic Accreditation Institute - Laboratory Accreditation Program (GAI-LAP).
6. International Standards Organization (ISO) 9002 - Quality System Certification.

D. DEFINITIONS

1. Minimum Average Roll Value (MARV): Property value calculated as typical minus two standard deviations. Statistically, it yields a 97.7 percent degree of confidence that any sample taken during quality assurance testing will exceed value reported.
2. Typical Roll Value: Property value calculated from average or mean obtained from test data.
3. Geotextile Tube - A large tube [greater than 4.6 m (15 ft) in circumference] fabricated from high strength woven geotextile in lengths greater than 6.1 m (20 ft). Geotextile tubes used in dewatering applications are most often filled hydraulically using a dredge or pump.
4. Fill Port - Also called a fill spout or fill nozzle, fill ports are sleeves sewn into the top of the geotextile tube into which the pump discharge pipe is inserted. Ports are typically 450 mm (18 in) in diameter and 0.9 to 1.5 m (3 to 5 ft) in length. Ports are spaced along the top of the tube to provide access to the contractor. Spacing is usually no closer than 7.6 m (25 ft) to accommodate sand slurry but can be as far apart as 30 m (100 ft) for some viscous fill materials. After pumping, ports are to be closed by tying, sewing or gluing shut, depending on the permanence of the installation. Fill ports are fabricated from the same geotextile as the main tube.
5. Manufacturing Quality Control (MQC) - A planned system of inspections that is used to directly monitor and control the manufacture of a material which is factory originated. MQC is normally performed by the manufacturer of geosynthetic materials and is necessary to ensure minimum (or maximum) specified values in the manufactured product. MQC refers to measures taken by the manufacturer to determine compliance with the requirements for materials and workmanship as stated in certification documents and contract specifications [ref. EPA/600/R-93/182]. This definition is expanded herein for geotextile tubes and scour aprons to include fabrication, including sewing and packaging by the fabricator.

6. Manufacturing Quality Assurance (MQA) - A planned system of activities that provides assurance that the materials were constructed as specified in the certification documents and contract specifications. MQA includes manufacturing facility inspections, verifications, audits and evaluation of the raw materials (resins and additives) and finished geosynthetic products to assess the quality of the manufactured materials. MQA refers to measures taken by the MQA organization to determine if the manufacturer is in compliance with the product certification and contract specifications for the project [ref. EPA/600/R-93/182].
7. *In Situ* Sediment – Sediment as it exists in the lagoon, pond, lake, river or other water body, at the existing percent solids and percent moisture content.

E. SUBMITTALS

1. Submit the following information at the preconstruction meeting.
  - a. Certification:
    - 1) *The Contractor shall provide the Engineer a certificate stating the name of the geotextile tube manufacturer, product name, style, chemical compositions of filaments or yarns and other pertinent information to fully describe the geotextile. With this certification, submit one properly identified 205 by 255 mm (8 by 10 in) minimum size sample of geotextile to be used for the geotextile tube and all other geotextiles required for construction of the geotextile tube section.*
    - 2) *The Manufacturer is responsible for establishing and maintaining a quality control program to assure compliance with the requirements of the specification. Documentation describing the quality control program shall be made available upon request.*
    - 3) *The manufacturer's certificate shall state that the furnished geotextile meets requirements of the specification as evaluated under the manufacturer's quality control program. The certificate shall be attested to by a person having legal authority to bind the Manufacturer.*
    - 4) *The Contractor shall provide a description of the seam assembly to be used in tube fabrication along with the sample of the seam to the Engineer upon request. The description shall include the seam type, sewing thread, and stitch density. If seams are to be sewn in both directions, samples of seams from both directions shall be provided.*
    - 5) *GAI-LAP accreditation of the testing laboratory shall be submitted to the engineer.*
  - b. Manufacturing Quality Control (MQC) - MQC test results shall be provided by the Manufacturer upon request by the Engineer and/or Owner.

- c. Experience Level - Geotextile tubes shall be installed by contractors having demonstrated successful experience filling at least 1,000 linear feet (300 m) of large geotextile tubes, under the direction of a manufacturer's representative, with fine-grained sludges or dredged material having greater than 50% passing the No. 200 sieve. The contractor shall be required to prove this experience with a letter provided by the manufacturer. If chemical polymers are used to aid in dewatering, the contractor shall be required to prove this experience.
- d. Manufacturer's Representative - If the contractor can not satisfy the requirements of Paragraph 1.6.A.3 above, the contractor shall fill one demonstration tube on site, under the direction of an on-site representative of the geotextile tube manufacturer at the contractor's expense. The manufacturer's representative shall be required to prove demonstrated successful experience filling at least 1,000 linear feet (300 m) of large geotextile tubes with fine-grained sludges or dredged material having greater than 50% passing the No. 200 sieve. If chemical polymers are used to aid in dewatering, the manufacturer's representative shall be required to prove this experience.
  - 1) *After the demonstration tube is filled, the manufacturer's representative will remain on-site at the contractor's expense as necessary to assure that the requirements of these specifications are satisfied.*
  - 2) *The mobilization and filling of the demonstration tube are to be paid for by the project owner as part of this contract.*
- e. Plan of Construction - The contractor shall submit a Plan of Construction describing the sequence of operations for the filling and dewatering of the geotextile tubes. The plan shall address site preparation, deployment and filling of tubes, water management and pump-out, {removal of dewatered material} and dewatering site restoration. Equipment to be used shall be specified. Any proposed changes to the Soil Erosion Control Plan shall be resubmitted to the appropriate agency for review and modification of permit.

F. DELIVERY, STORAGE, AND HANDLING

- 1. Geotextile tubes shall be delivered only after the required submittals have been received and approved by the Engineer.
- 2. Geotextile labeling, shipment and storage shall follow ASTM D 4873.
- 3. Each packaged segment of geotextile tube shall be labeled with the manufacturer's name, geotextile type, and tube dimensions (length, diameter, gross weight, etc.).
- 4. Each shipping document shall include a notation certifying that the material is in accordance with the manufacturer's certificate.

5. Each segment of geotextile tube shall be wrapped in an opaque and waterproof layer of protective plastic during shipment and storage. Since polyester geotextile absorbs water, it is important to keep polyester tubes out of the rain.
6. The protective wrapping shall be maintained during periods of shipment and storage.
7. No hooks, tongs or other sharp instruments shall be used for handling geotextile. Geotextile shall not be dragged along the ground.
8. During storage, geotextile tubes shall be elevated off the ground and adequately covered to protect them from the following: Rain, site construction damage, extended exposure to ultraviolet (UV) radiation, precipitation, chemicals that are strong acids or strong bases, flames, sparks, temperatures in excess of 71 deg C (160 deg F) and any other environmental condition that might damage the geotextile.

G. QUALITY ASSURANCE SAMPLING, TESTING, AND ACCEPTANCE

1. Geotextile:
  - a. Geotextiles used to construct the tubes shall be subject to sampling and testing to verify conformance with this specification. All sampling and testing shall be in accordance with ASTM D 4354 and shall be performed at a laboratory accredited by GAI-LAP for tests required for the geotextile, at frequency exceeding ASTM D 4354.
2. Acceptance shall be in accordance with ASTM D 4759 based on testing of either conformance samples obtained using Procedure A of ASTM D 4354, or based on manufacturer's certifications and testing of quality control samples obtained using Procedure B of ASTM D 4354.
  - a. Quality Assurance Sampling and Testing will be waived for ISO 9002 Certified Manufacturing Facilities. Documentation of ISO 9002 Certification shall be provided upon request.

3. Sewn Seams:

- a. Factory seams shall be provided to the engineer at the engineer's request and shall be at random from a roll of geotextile representative of that which is to be used on the project.
- b. All factory sewn seams shall be 401 lock stitch using high tenacity polyester sewing thread.

2.0 PRODUCTS

A. MATERIALS

1. Geotextile Tubes:

- a. Shall be constructed using high strength woven polypropylene or polyester geotextile in accordance with the following requirements.
- b. The geotextile tubes shall have a length of [30.5, 45.7, or 91.5 m (100, 150, or 300 ft)], having a nominal circumference equal to [4.6, 9.1, or 13.7 m (15, 30, or 45 ft)],
- c. The geotextiles used to construct the tubes shall be resistant to ultraviolet degradation and to biological and chemical environments normally found in soils *and specifically resistant to {note here any known petrochemical constituents of the dredge material or high pH}*.
- d. The geotextile used for tube fabrication shall have the following properties, all are MARV values unless otherwise noted:

Property	Notes	Test Method	Units	Required Value
				Geotextile Tube
Fill Port Diameter*		Measured	mm (in)	300 or 450 (12 or 18)
Wide Width Tensile Strength	Minimum Value	ASTM D 4595	kN/m (lbs/in)	175 x 175 (1000 x 1000)
Wide Width Elongation**	Maximum Value	ASTM D 4595	percent	15 x 15
Puncture Strength		ASTM D 4833	N (lbs)	2000 (450)
Seam Strength		ASTM D 4595	kN/m (lbs/in)	105 (600)
Apparent Opening Size	Value must be within the stated range	ASTM D 4751	mm (US Std. Sieve)	0.425 - 0.250 (40 - 60)
Water Flow Rate	Minimum Value	ASTM D 4491	l/min/m <sup>2</sup> (gpm/ft <sup>2</sup> )	200 (5)

Property	Notes	Test Method	Units	Required Value
				Geotextile Tube
UV Resistance (percent retained at 150 hrs)		ASTM D 4355	percent	65

\* Typical value

\*\* Maximum average roll value.

2. The geotextile used for tube fabrication shall have the following properties, all are MARV values unless otherwise noted:

Property	Notes	Test Method	Units	Required Value
				Geotextile Tube
Fill Port Diameter*		Measured	mm (in)	300 or 450 (12 or 18)
Wide Width Tensile Strength	Minimum Value in both directions	ASTM D 4595	kN/m (lbs/in)	70 x 105 (400 x 600)
Wide Width Elongation**		ASTM D 4595	percent	20 x 20
Puncture Strength		ASTM D 4833	N (lbs)	1155 (260)
Seam Strength	Minimum value	ASTM D 4595	kN/m (lbs/in)	70 (400)
Apparent Opening Size	Values smaller than 40 sieve (i.e. looser) are not permitted	ASTM D 4751	mm (US Std. Sieve)	0.425 (40)
Water Flow Rate	Maximum value	ASTM D 4491	l/min/m <sup>2</sup> (gpm/ft <sup>2</sup> )	810 (20)
UV Resistance (percent retained at 500 hrs)		ASTM D 4355	percent	80

\* Typical value

\*\* Maximum average roll value.

3. Manufacturing Quality Control: Testing shall be performed at a laboratory accredited by GAI-LAP for tests required for the geosynthetic, at frequency exceeding ASTM D 4354, with following minimum acceptable testing frequency:

Property	Test Method	Test Frequency per sq m (sq yd)
Wide Width Tensile Strength	ASTM D 4595	1/7,500 (1/10,000)
Wide Width Elongation	ASTM D 4595	1/7,500 (1/10,000)
Puncture Strength	ASTM D 4833	1/7,500 (1/10,000)
Trapezoidal Tear	ASTM D 4533	1/7,500 (1/10,000)
Seam Strength	ASTM D 4595	1/40,000 (1/50,000)
Apparent Opening Size <sup>2</sup> .	ASTM D 4751	1/40,000 (1/50,000)
Water Flow Rate	ASTM D 4491	1/40,000 (1/50,000)
UV Resistance (percent retained at 500 hrs)	ASTM D 4355	1/year

4. Polymer Addition:

- a. To aid in dewatering and consolidation, certain dredged materials require polymer addition. The use of such polymers will be as recommended by the geotextile tube manufacturer and the dosage set by the manufacturer's field representative.
- b. Polymers must be approved for use by a state regulatory agency, and prior use in similar dredge dewatering applications must be documented.
- c. The combination of specific polymer and specific geotextile tube fabric (Class I or Class II) must be shown to be effective, either by prior dredge dewatering application, or by bench scale testing.
- d. Polymer addition will be by means of a Milton Roy metering pump or equivalent, tapped into the pump discharge line at the appropriate distance from the tube to insure proper mixing.
- e. The cost of polymer and pump will be included in the unit cost to the owner as outlined in General Section 1.3.

5. Fill Materials:

- a. Fill Material – *In situ* sediment percent solids must be sampled and measured immediately prior to the start of the project. Percent solids at the dredge or pump discharge must be sampled and measured at least once daily.
- b. Quality Control - Gradation testing of hydraulic fill materials shall be conducted in accordance with ASTM D 422.

6. Equipment:

- a. The plant and equipment used for the work required by this section of the specifications shall be determined by the Contractor, identified in the Plan of Construction, and shall be approved by the Engineer.
- b. Dredge or pump discharge pressures at the tube fill port shall not exceed 33 kPa (5.0 psi) at any time.

3.0 EXECUTION

A. PREPARATION

1. Tube installation shall be in accordance with the following specifications.
2. The foundation for the placement of the geotextile tube shall be smooth and free of protrusions which could damage the geotextile. Remnant timber piles, piers, footings, underground utilities, etc., at or below grade, shall be removed if located within 6.0 m (20 ft) of the project site.
3. Weak or unsuitable foundation material shall be removed or stabilized.
4. The dewatering area shall be graded to a maximum slope of 1%. The dewatering area shall have a non-erodible surface (gravel, grass, asphalt or concrete) or shall be lined with plastic sheeting.

B. DEPLOYMENT

1. Tubes shall be aligned as straight as possible. Means of assuring that the tubes are properly aligned within the specified tolerances, shall be incorporated into the placement methodology presented in the Plan of Construction.
2. The geotextile tube shall be deployed along the alignment and secured in place as necessary to assure proper alignment after filling. No portion of the tube shall be filled until the entire tube segment has been fully anchored to the foundation along the correct alignment and pulled taut. Larger tubes may require concrete barriers to prevent the tubes from rolling during filling.
3. All unused fill ports shall be tied closed.

C. FILLING

1. After completing the deployment and anchorage of the geotextile tube, filling with dredged material shall be accomplished in accordance with the approved Plan of Construction. The discharge line of the dredge shall be fitted with a "Y-valve" to allow control of the rate of filling. The Y-valve system shall be fitted with an internal mechanism such as a gate, butterfly valve, ball valve, or pinch valve to allow the contractor to regulate discharge into the geotextile tube. Any excess discharge shall be directed away from the tubes toward the borrow area.

2. The dredge discharge pipe shall be free of protrusions that could tear the fill port. It is generally accepted practice to support the dredge discharge pipe above the fill port in a manner which reduces stress on the fill port seams.
3. The height to width ratio of the fully deployed tube shall not exceed a value of 0.5. Other height and width specification may be required by the Engineer to assure sliding, overturning, bearing capacity, and global stability of the tube system.
4. If the tube is not to be externally backfilled, the area should be left in a neat and properly graded manner. If the tube is to be externally backfilled, the lines and grade on the Plan of Construction must be followed.
5. The tubes shall not be filled higher than the manufacturer's recommended height.

D. PROTECTION

1. At no time shall construction equipment be operated directly on the geotextile tube or its ancillary materials. Filled geotextile tubes and scour aprons can be traversed if a 300 mm (12 in) minimum of soil is covering the geotextile. No hooks, tongs or other sharp instruments shall be used for handling. The geotextile tube or scour apron shall not be dragged along the ground.
2. Any damaged geotextile tube resulting from the Contractor's failure to control filling rates and pressures or general lack of care shall be repaired or replaced to the manufacturer's original specifications at no additional cost to the Owner.

E. REMOVAL OF DEWATERED MATERIAL

1. A sample of the dewatered material shall be taken from the center of the tube and tested prior to cutting the tube open. Small cuts can be made in the geotextile for purposes of sampling.
2. After the dredged material within the geotextile tube has dewatered (passes the "paint filter test" or achieves a specified % solids), the tube can be cut open and the contents excavated. The material must be placed into trucks within 24 hours after cutting the tube to prevent re-suspension of the material by rain. Prior to removing dredged material, soil erosion measures must be inspected and restored.
3. Excavation of material and loading shall be in accordance with the Plan of Construction.

END OF SECTION

SECTION 02550

MAINTAINING TRAFFIC

PART 1 GENERAL

1.1 DESCRIPTION

The work covered by this Specification shall consist of measures necessary to protect and maintain traffic and protect the work while the Contract is in force.

The Michigan Manual of Uniform Traffic Control Devices, current edition, including all subsequent revisions thereto, is hereby established as part of these Specifications.

1.2 DEFINITIONS

Where the following terms are used in these specifications or on the plans, they are defined as follows:

CIA (Construction Influence Area) - The project and the area surrounding the project, as shown on the plans which has been determined by the Municipality to define the limits of responsibility for traffic control as specified herein.

Traffic Control Devices - Signs, signals, lighting devices, barricades, delineators, pavement markings, traffic regulators and all other equipment shown on the plans or determined by the Engineers as necessary for protecting and regulating traffic.

Local Traffic - That traffic which has origin or destination within the CIA.

Project Limits - The boundaries of the area in which the items under contract are being placed.

Traffic Lane - The portion of the traveled way for the movement of a single line of vehicles.

Traffic Regulator - A person properly dressed and equipped with the necessary signs as specified in the current Michigan Manual of Uniform Traffic Control Devices.

1.3 RESPONSIBILITIES

The Engineer will show each major stage of construction on the plans, including the basic traffic control devices required for each stage. Portable traffic control devices normally will not be shown.

The Contractor will furnish and maintain all necessary traffic control devices outside the CIA.

The Contractor will furnish, install and maintain electrical devices requiring connections to public utilities when they are specifically called for on the plans.

The Contractor will place and maintain all pavement markings, unless otherwise specified.

The Contractor will normally fabricate, furnish, install and maintain all special signs that may be required for an individual project, unless otherwise specified. Where lighting devices are called for on special signs provided by the Contractor, they will be furnished, installed and maintained by the Contractor.

The Contractor shall furnish, install and maintain all traffic control devices inside the CIA, unless otherwise specified; and shall remove such traffic control devices from the project when no longer required, as determined by the Engineer.

The Contractor shall be responsible for the actions of his Subcontractors in relation to placement, maintenance and removal of traffic control devices.

The Contractor shall designate, in writing, to the Engineer, a Safety Supervisor and an alternate. The identity of these persons, including their addresses and telephone numbers, shall also be made known to the municipal Police and Fire Departments, as well as the municipality's Sheriff's Department and the State Police, where applicable, in order that immediate communication may be possible in emergencies, at night, over weekends, during the holiday periods and at such other times when construction operations are not in progress. Changes in the designation of the Safety Supervisor or the alternate shall immediately be made known, in writing, to the Engineer.

The Contractor's designated Safety Supervisor, or his alternate, shall be available at all times to the Engineer. He shall meet with the Engineer before work on the project is started to review plans for the protection of traffic in the CIA and shall meet with him periodically as the work progresses to discuss such modifications of these plans and may be required.

The Contractor's Safety Supervisor shall review the safety activities of each subcontractor and shall see that they are properly coordinated with those of the Contractor.

## PART 2 PRODUCTS

Not Used

## PART 3 EXECUTION

### 3.1 GENERAL PROVISIONS

In all cases, the Contractor shall provide reasonable access and reasonable facilities for local traffic to property along the project by means of temporary roadways, culverts, bridges or other means approved by the Engineer.

Where traffic is to be maintained over pavement to be removed during a succeeding stage of construction, breaking operations shall not begin until immediately before pavement removal.

When equipment and materials to be used in the work are located within the right-of-way of any street or road, the traveling public shall be safeguarded by suitable and sufficient signs, lights, barricades, or other means furnished and maintained by the Contractor. Such protection will be

considered as incidental to construction. No materials or equipment shall be stored within 15 feet of a traveled roadway, unless otherwise provided or specifically authorized.

The Contractor shall notify the Engineer and the Municipality before starting any work that might inconvenience or endanger traffic in sufficient time so that arrangements may be made for publicizing the impending construction, closing the road and providing detours, signs and barricades for the maintenance of traffic. No road or section thereof shall be closed to traffic unless provided on the plans, in the specifications, or as permitted by the Municipality.

Should the Contractor wish to make minor stage construction deviations from the plans, he shall submit his request and proposed plan revision to the Engineer and Municipality not less than five (5) working days prior to changing traffic patterns for review and approval. Additional traffic control devices with in the CIA required because of approved deviations from stage construction shall be furnished, installed and maintained by the Contractor at no additional cost to the Municipality, and must be properly placed before any such deviating stage construction can commence.

Unless otherwise provided, the Contractor shall conduct his operations and the use of his equipment in such a manner that two-way traffic will be provided throughout the entire length of the project. Temporary structures, bridges over pavement, pavement gaps or other means approved by the Engineer and the Municipality shall be employed where required. Bridges over pavement shall be of a design approved by the Engineer. The length of pavement gaps shall be as directed by the Engineer and gaps shall remain open until the adjacent concrete pavement has attained a modulus of rupture of at least 550 p.s.i.

At specific locations shown on the plans where special problems in handling of through traffic are involved, the construction shall be by the part-width method, one lane at a time or half of an intersection at a time while through traffic is being maintained on the remaining lanes and shoulders. Temporary widening and surfacing of the shoulders may be required.

Where shoulders, detours and/or temporary roads are used to maintain traffic, they shall be graded, surfaced and treated for dust at such times and locations and in such amounts as directed by the Engineer.

The roadway shall be graded and maintained in a condition satisfactory for traffic during the construction of the project. Should the construction work be suspended due to weather conditions or for any other reason, sufficient labor, materials and equipment shall be ready for immediate use at all times for proper maintenance.

When temporary road and drives are no longer needed, they shall be obliterated as part of this work. Restoration shall be considered incidental to the Contract unless a provision is provided elsewhere in this Contract. No additional compensation will be allowed.

When conditions are such as to warrant the Engineers' authorization of one-way traffic through a construction area, the Contractor shall maintain a traffic regulator at each end of the one-way section. Traffic regulators shall be equipped with two-way radios when required by the Engineer.

At intersections of minor roads and streets, where traffic can be taken care of reasonably by temporary re-routing, the crossing may be closed upon approval of the Engineer and the Municipality.

All moving equipment operating in traffic areas shall operate with headlights turned on provided such headlights are included as original vehicle standard equipment.

### 3.2 TRAFFIC CONTROL DEVICES

All traffic control devices placed by the Contractor shall conform to the design, condition, placement and lighting requirements specified in the Michigan Manual of Uniform Traffic Control Devices and the plans.

Only traffic control devices appropriate to conditions at the time shall be displayed.

All traffic control devices shall be cleaned, repainted, re-reflectorized or replaced, as determined by the Engineer to continually provide adequate visibility and legibility, and shall be maintained in place in proper condition until the work is completed or until no longer required.

In addition to the traffic control devices shown on the plans, the Contractor shall furnish temporary traffic control devices which conform to the Michigan Manual of Uniform Traffic Control Devices to provide protection to traffic from open trenches, excavations, obstructions and any other hazardous conditions or situations as may exist. When the shoulders at the edges of pavement are low, high, soft or rough, while maintaining traffic on pavement, the Contractor shall place and maintain a sufficient number of approved lighted devices to warn traffic adequately during the hours of darkness. The lights shall be placed along the edge of the pavement with a maximum distance of 50 feet between lights or as specified by the Engineer. Lights shall be spaced more closely on curves, at intersections and/or where required for safety.

Road closure barricades shall be provided with warning lights which shall be lighted from one hour before sunset to one hour after sunrise. Such warning lights shall consist of either three (3) flashing, yellow, battery-operated lights with seven (7) inch diameter lenses or three (3) 60-watt, yellow, incandescent lamps and shall be mounted on the top of the barricade.

All other barricades, warning signs and points of special hazard in place under traffic during the hours of darkness shall be adequately lighted with at least one (1) yellow, battery-operated flashing light unless otherwise directed. All warning signs in use during hours of daylight may be supplemented with high-level warning devices, consisting of fluorescent orange flags positioned above the signs.

Existing warning and regulatory signs shall not be taken down but shall be maintained during the progress of the work in their approximate normal position.

Temporary or permanent traffic signs, in addition to those placed within the CIA by the contractor may be placed within the CIA by the municipality or another contractor working in the same area or on an adjacent project, or other authorized agency, when approved by the Engineer. Such temporary or permanent signs shall only be those required for the safety and direction of traffic because of operations other than the Contractor's operations. Such signs shall be the responsibility of the agency placing them and shall be protected from damage and shall not be removed unless authorized by the Engineer.

When, in the opinion of the Engineer, Traffic Control Devices are deficient, inadequate or improper, or conditions within the CIA are such that safety is adversely affected, the Contractor or his Safety Supervisor will be immediately notified. Such notice will be accomplished by a statement of the corrective action to be taken. If the Contractor fails to

comply promptly with such instructions, the Engineer may stop any or all work on the project until satisfactory corrective action is taken. In the event that the Contractor neglects to take any corrective action, the Engineer may order such work as is deemed necessary to ensure public safety done by the Municipality or outside forces at the Contractor's expense.

When, in the opinion of the Engineer, an emergency condition exists that requires immediate action to protect life or property, the Engineer, without notice to the Contractor, may order such work as deemed necessary to be done by Municipality or outside forces at the Contractor's expense.

### 3.3 METHOD OF PAYMENT

The work covered by this Specification, consisting of measures necessary to protect and maintain traffic and protect the work while the Contract is in force, shall be considered incidental to the Contract unless a provision is provided elsewhere in this Contract. No additional compensation will be allowed.

The cost of any emergency work and/or other work ordered to be performed by the Engineer at the Contractor's expense, as previously described within this Specification, will be deducted from payments due on the Contract.

END OF SECTION

SECTION 02751

CLEANING OF SEWER LINES

PART 38 GENERAL

38.1 SUMMARY

- A. It is the intent of these specifications to provide a basis by which a storm sewer line can be cleaned of all excess debris so that internal sewer inspections or other work can be carried out. This basis shall include methods, equipment, and payment of work. Cleaning of sewer lines shall be accomplished by trapping and collecting all sand, debris, and grease at the next manhole, upstream or downstream of the line being cleaned, and removal and proper disposal of said materials in accordance with applicable State and Local laws governing the disposal of such materials. Cleanup operations shall consist of cleaning all debris out of the manholes and off the ground around the manhole and should include removal and proper disposal of said materials.
- B. The Contractor shall provide and furnish all required skilled and unskilled labor, materials, fuel, machinery, tools, so that the contract and all work required to be done under the contract can and will be carried on continuously and expeditiously to completion, in all respects to the satisfaction of the Owner.
- C. The sewer lines for which cleaning are required are shown or identified in these Contract Documents or as directed by the Owner.

38.2 MEASUREMENT AND PAYMENT

- A. Payment for cleaning of a storm sewer line shall include all supervision, labor, equipment, water, electrical bills, disposal of debris, cleanup and any other applicable item and shall be included in the unit prices as described in the Specifications herein.

**B. Light Cleaning, 12-24 -inch Diameter Sewer.....Linear Foot**

The Owner shall pay for a “three-pass” cleaning of sewer pipelines utilizing high pressure jetting equipment, brushes and swabs to allow for passage of the CCTV; removing small amounts of loose debris such as gravel, sand, small rocks, grease and other deleterious materials within the sewer line; and removal of loose mineral deposits up to 25% of sewer diameter (height). **Normal Cleaning, 12-24 -inch Diameter Sewer** will be paid for at the contact unit price per foot measured from inside of manhole to inside of manhole. Attached, or encrusted and hard compacted deposits are not included in the unit price for **Normal Cleaning, 12-24 -inch Diameter Sewer**.

**C. Light Cleaning, 30-60 -inch Diameter Sewer.....Linear Foot**

The Owner shall pay for a “three-pass” cleaning of sewer pipelines utilizing high pressure jetting equipment, brushes and swabs to allow for passage of the CCTV; removing small

amounts of loose debris such as gravel, sand, small rocks, grease and other deleterious materials within the sewer line; and removal of loose mineral deposits up to 25% of sewer diameter (height). **Normal Cleaning, 30-60 -inch Diameter Sewer** will be paid for at the contact unit price per foot measured from inside of manhole to inside of manhole. Attached, or encrusted and hard compacted deposits are not included in the unit price for **Normal Cleaning, 30-60 -inch Diameter Sewer**.

**D. Heavy Cleaning, 12-24 -inch Diameter Sewer.....Linear Foot**

Should the sewer line have too much debris or blockage to allow a camera to pass through after the original three passes are made additional cleaning may be required. This work shall commence only upon the approval and direction of the Owner and/or the Owner's Representative/Engineer and will be defined as "**Heavy Cleaning**"

The Owner shall pay for an additional "three-pass" cleaning of sewer pipelines utilizing high pressure jetting equipment, and mechanical cleaners such as bucket machines, scrapers, cutters and augers to allow for passage of the CCTV; removing obstructions and medium to large amounts of debris such as gravel, sand, rocks, grease and other deleterious materials within the sewer line; removal of mineral deposits in accordance with the cleaning standards detailed in Article 1.2.D and removal of all attached, or encrusted and hard compacted deposits; and removal of roots, root balls. **Heavy Cleaning, 12-24 -inch Diameter Sewer** will be paid for at the contact unit price per foot measured from inside of manhole to inside of manhole.

**E. Heavy Cleaning, 30-60 -inch Diameter Sewer.....Linear Foot**

Should the sewer line have too much debris or blockage to allow a camera to pass through after the original three passes are made additional cleaning may be required. This work shall commence only upon the approval and direction of the Owner and/or the Owner's Representative/Engineer and will be defined as "**Heavy Cleaning**"

The Owner shall pay for an additional "three-pass" cleaning of sewer pipelines utilizing high pressure jetting equipment, and mechanical cleaners such as bucket machines, scrapers, cutters and augers to allow for passage of the CCTV; removing obstructions and medium to large amounts of debris such as gravel, sand, rocks, grease and other deleterious materials within the sewer line; removal of mineral deposits in accordance with the cleaning standards detailed in Article 1.2.D and removal of all attached, or encrusted and hard compacted deposits; and removal of roots, root balls. **Heavy Cleaning, 30-60 -inch Diameter Sewer** will be paid for at the contact unit price per foot measured from inside of manhole to inside of manhole.

**F. Cleaning Types (deposits and debris)**

1. Incidental Cleaning of "Loose" Deposits and Debris (prior to cleaning)
  - a. Up to 12" diameter sewer - 25% of sewer height
  - b. 13" to 24" diameter sewer - 15% of sewer height
  - c. Over 24" diameter sewer - 10% of sewer height
2. Heavy Cleaning of "Attached/Compacted" Deposits and Debris (prior to cleaning)
  - a. Up to 12" diameter sewer – over 25% of sewer height
  - b. 13" to 24" diameter sewer - over 15% of sewer height
  - c. Over 24" diameter sewer - over 10% of sewer height

3. Heavy Cleaning of “Attached/Compacted” Deposits and Debris (following three (3) passes with jetting equipment)
  - a. Up to 15” diameter sewer – over 20% of sewer height
  - b. 16” to 36” diameter sewer - over 15% of sewer height
  - c. Over 36” diameter sewer - over 10% of sewer height

### 38.3 REFERENCES

- A. Abbreviations and Acronyms
  1. NASSCO – National Association of Sewer Service Companies
  2. PACP - Pipeline Assessment and Certification Program
  3. CCTV – Closed Circuit Televising
- B. Definitions
  1. Three-Pass Cleaning –Flushing of a sewer with a maximum of (3) passes utilizing high pressure jetting system
- C. NAASCO Reference Standards
  1. In accordance with NASSCO standards, heavy cleaning may require a step cleaning approach usually by accessing the downstream manhole and cleaning from downstream to upstream. Step cleaning is a systematic and efficient method of cleaning pipe with medium to large amounts of debris. Small sections or lengths of the sewer segment (steps or passes) are cleaned in each pull of the cleaning nozzle. This prevents build-up of debris downstream in the pipe and at the manhole. This also prevents the nozzle from becoming stuck in a large build-up of debris.
  2. It is common practice to follow the cleaning nozzle with visual inspection from upstream to downstream to verify that the cleaning process is effective and that the pipe is cleaned per NASSCO standards for accurate PACP coding. However, at times it may be necessary to clean a pipe from the upstream manhole to the downstream manhole (reverse set-up). The reasoning for a reverse set-up is based on the conditions, the access/location and the amount and type of debris in the pipe. Heavy cleaning may require specialized nozzles depending on the amount of debris, the type of deposit, the type of debris or obstruction and the debris location.

### 38.4 QUALIFICATIONS

- A. The Contractor performing the work shall be a company specializing in performing cleaning storm sewers, and shall have a minimum experience of at least three other projects of similar size and scope within the last five years that include cleaning operations as outlined herein.

### 38.5 SUBMITTALS

- A. Prior to initiation of work, the Contractor shall submit for Owner review and approval the following:
  1. Listing of and data sheets for equipment to be used for proposed cleaning work.
  2. Proposed water source for cleaning and proposed disposal site for solids cleaned from sewer.

### 38.6 REQUIRED DELIVERABLES

- A. All data pertinent to the line cleaned shall be duly recorded on an adequate cleaning log form as supplied by the Contractor. This form shall be turned over to and remain in the possession of the Engineer after a section of the line has been completed.
- B. Landfill disposal logs for all debris.

### 38.7 ACCEPTANCE

- A. A daily log of work accomplished shall be duly recorded and acknowledged by the Owner or Owner's representative and the Contractor's superintendent.
- B. All inspection recordings and reports will be reviewed by the Owner. The Owner shall have the authority to reject all or any portion of recordings not conforming to Specifications. These areas shall be re-cleaned at no additional charge.

## PART 39 PRODUCTS

### 39.1 EQUIPMENT

- A. All equipment used for cleaning operations, any method, shall be equipment specifically designed for the type of work specified. Self-contained cleaning units shall be used for the work unless otherwise approved by the Owner.

## PART 40 EXECUTION

### 40.1 GENERAL

- A. The Contractor shall be responsible for securing the site and protection of the Owner's personnel and public. Any necessary traffic control shall be in accordance with the current Michigan Manual of Uniform Traffic Control Devices.
- B. The contractor shall notify the residents/businesses one day prior to starting cleaning with a "Resident Notification Letter" informing the residents/businesses of the Contractor's cleaning activities and to provide contact information for the Contractor and Owner. The Contractor shall submit the letter for Owner review and approval prior to notification. This letter should include contact information for residents to call should clean pressures cause toilet overflows or drain backups.
- C. The Contractor shall clean in the direction of flow unless approval is received prior to reverse flow cleaning by the Owner. The liquid filtrate may be drained back into the downstream manhole and shall be disposed of in accordance with all regulations. The Contractor is responsible for providing all required water.

- D. Protection During Cleaning Operations - Satisfactory precautions shall be taken to protect the sewer lines from damage that might be inflicted by the improper use of cleaning equipment. Whenever hydraulically propelled cleaning tools, which depend upon water pressure to provide their cleaning force, or any tools which retard the flow of water in the sewer line are used, precautions shall be taken to insure that the water does not cause damage or flooding to public or private property being served by the manhole section involved. The Contractor shall reduce the pressures at the direction of the Owner, or if notified by a resident that such problems are occurring. By reducing pressure, additional cleaning time or passes through needed and shall be done at no additional cost to the Owner.

#### 40.2 METHODS

- A. The methods of cleaning a storm or combined sewer line which are acceptable for use are outlined below. Approval from the Owner for the method chosen shall be obtained prior to any cleaning work.
- B. Bucket Machine Method - This method shall consist of:
1. Rodding the sewer line with a power-driven continuous steel rod of sufficient length and gauge and with the proper cleaning heads or augers, so as to loosen all solid materials. It shall also provide a means to thread a cable for the power winch.
  2. Removal of all solids, materials and other debris by means of a clam-shell type bucket and/or other appliances dragged through the sewer line with power winches of suitable size and horsepower.
  3. Brushing of the sewer line with a brush large enough to assure that the line has been cleaned sufficiently. This brush shall be mechanically driven, with the power mechanism properly sized.
  4. All electrical drops required by the Contractor shall be arranged for by the Contractor.
- C. Hydraulic Cleaning Method - This method shall consist of cleaning and flushing of the sewer line by means of water pumped into the line at a high velocity. This shall be accomplished using between 800 pounds per square inch (P.S.I.) and 1000 P.S.I. of pressure at the pump connected by a high pressure hose to deliver water to a self-propelled nozzle to do the necessary cleaning and flushing. As many passes as necessary shall be made to sufficiently clean the sewer line.

#### 40.3 DISPOSAL OF DEBRIS AND CLEANUP

- A. After removal of debris out of a manhole, the Contractor shall dispose of debris at a Type II landfill. The Owner will sign the manifest for the debris as the Generator, and shall be provided with copies of the landfill invoices after delivery. Any testing required for proper disposal shall be at the Contractor's expense and included in the unit prices bid for sewer cleaning. If the testing indicates the debris is not acceptable for disposal at a Type II landfill, and disposal at a Type III landfill, or other specialized disposal facility is required, the Owner will negotiate a change order for the additional costs for the required disposal. Clean up operations shall consist of cleaning all debris out of the manhole and off the ground around the manhole. At no time shall the Contractor push the debris downstream in the sewer system.

40.4 CLEANUP

- A. The Contractor shall be responsible to clean up any debris or spills during each day of work and restore conditions to existing as soon as possible.

END OF SECTION

SECTION 02836

PROPERTY PROTECTION FENCE

“Property Protection Fence” shall be six (6) foot high chain link fence installed at the boundary of the construction limits, except through drive approaches and as otherwise indicated on the Plans or directed by the Owner to surround landscaping and trees to be preserved and protected. The purpose of the fence is to define the limits of all construction activities. Construction is to be confined within the limits of the fencing. Only at the direction of the project engineer will the property protection fence be relocated.

The fence shall meet the following specifications:

Height:..... 6'-0" (minimum)  
Fence Material:..... Chain Link  
Post Spacing:..... 10 ft (maximum)  
Post Material: ..... Steel  
Shade Tarp: ..... 6' high mesh

Itemized within the Proposal is “Property Protection Fence.” The unit price bid shall include all costs for providing and installing the protective fence, maintaining fence during construction, and removal of the protective fencing upon completion of the project as directed by the Owner. No construction fence may be removed without Owner authorization. Construction fence that is installed on pavement areas shall be supported by posts that are not driven into the pavement or otherwise supported without damaging the pavement.

A 6 ft high green or black, 80% shade fence tarp with grommets spaced every 12 inches along the perimeter shall be used with the temporary construction fencing.

The Owner may increase or decrease the quantity within the Proposal. No adjustment in Contract unit price will be made for increases or decreases in Property Protection Fence quantities, regardless of the percentage of increase or decrease.

END OF SECTION

SECTION 02910

SEEDING

PART 41 GENERAL

41.1 SUMMARY OF WORK

- A. Provide a dense stand of vegetation free from weeds. Extent of seeded areas is shown or described on drawings and by provisions of this section.
- B. Types of work required include the following:
  - 1. Soil preparation
  - 2. Top Soil installation and fine grading
  - 3. Seeding (Slit seeding, Drill seeding, Broadcast seeding)

41.2 RELATED WORK

- A. Related work specified elsewhere:
  - 1. Section 02110: Site Clearing
  - 2. Section 02200: Earthwork
  - 3. Section 02950: Trees, Plants and Ground Covers

41.3 QUALITY ASSURANCE

- A. Seeding Subcontractor shall have a minimum 5 years experience with successfully installing vegetation and related work.

41.4 SUBMITTALS

- A. Submit certification of seed mix composition from seed vendor/supplier for each seed mixture specified.
- B. Manufacturer's certification of fertilizer indicating composition of nutrients (N,P,K)
- C. Statement of certification of experience providing references for three past projects with similar outcomes.

41.5 DELIVERY, STORAGE AND HANDLING

- A. Deliver seed in original sealed, labeled and undamaged containers.

41.6 PROJECT CONDITIONS

- A. Work notifications: Notify Engineer at least 7 working days prior to start of seeding operation.
- B. Protect existing utilities, paving and other facilities from damage caused by seeding operations.

- C. Perform seeding work only after planting and other work affecting ground surface has been completed.
- D. Restrict traffic from seeded areas until desired vegetation is well established. Erect signs and barriers as required.
- E. Provide all equipment, labor, materials needed or as required (water, fertilizer, and other provisions) to promote and establish seeded areas.

#### 41.7 WARRANTY

- A. All seeding shall be warranted for a period of 1 year following acceptance

### PART 42 PRODUCTS

#### 42.1 MATERIALS

- A. Seed:
  - 1. Fresh, clean, dry, new-crop seed complying with the Association of Official Seed Analysts' - Rules for Testing Seeds - for purity and germination tolerances.
  - 2. Seed Mixture: Provide seed of grass, herb and forb species and varieties, proportions by weight, and minimum percentages of purity, germination, and maximum percentage of weed seed as indicated on the plans.
- B. Fertilizer:
  - 1. Granular, non-burning product composed of not less than 50% organic slow acting, guaranteed analysis professional fertilizer.
  - 2. The City of Ann Arbor has a Zero Phosphorus Ordinance. Please use Phosphorus-free organic fertilizer.
- C. Water: Free of substance harmful to seed and growth. Hoses or other methods of transportation furnished by Contractor.
- D. Topsoil
  - 1. Topsoil shall be fertile, friable and representative of productive soil, capable of sustaining vigorous plant growth and shall be free of clay lumps, sub-soil, weeds, seeds and other foreign debris.
  - 2. Acidity range shall be between pH 5.0 and 7.5.
  - 3. Organic content shall be not less than 5% and not greater than 30%.
  - 4. Clay content shall range between 5% and 15%.

### PART 3 EXECUTION

#### 3.1 EXAMINATION

- E. Examine finish surfaces, grades, topsoil quality and depth. Do not start seeding work until unsatisfactory conditions are corrected.

### 3.2 PREPARATION

- F. Limit preparation to areas which will be immediately seeded. Spread topsoil, fine grade.
- G. Scarify surface of seeded areas to minimum depth of 3". Remove stones over 1" in any dimension and large sticks, roots, rubbish and extraneous matter.
- H. Apply 3" minimum topsoil to entire area to be seeded and grade areas to be seeded to the finish grades as indicated on the drawings.
- I. Grade seeded areas to smooth, free draining and even surface with a loose, uniformly fine texture. Roll and rake; remove ridges and fill depressions as required to drain.
- J. Apply limestone, if required by soil test results, at rate determined by the soil test, to adjust pH of topsoil to not less than 6.0 nor more than 6.8. Distribute evenly by machine and incorporate thoroughly into topsoil.
- K. Apply starter fertilizer at the rate equal to 1.0 lb. of actual nitrogen per 1,000 sq. ft. (43 lbs./acre). Apply fertilizer by mechanical rotary or drop type distributor, thoroughly and evenly incorporated with the soil to depth of 1" by disking or other approved methods. Fertilize areas inaccessible to power equipment with hand tools and incorporate it into soil.
- L. Dampen dry soil prior to seeding.
- M. Restore prepared area to specified condition if eroded, settled or otherwise disturbed after fine grading and prior to seeding.

### 3.3 SEEDING

- N. Seeding: Mix specified seed and cover crop, until uniformly blended into homogenous mix suitable for application.
- O. Sow the seed by hand on smaller sites or by mechanical means on larger sites. Divide the seed into two parts. Sow the seed in two directions perpendicular to each other.
- P. Incorporate seeds into the soil by lightly raking the seeded area into the soil within the top one quarter inch of the soil surface. Roll the seeded area to ensure seed has good contact with the soil.
- Q. Cover the seeded soil with weed seed-free straw, hydro-mulch or on sloped areas, erosion control blanket and/or as indicated on the plans.

### 3.4 MAINTENANCE

- R. Proper maintenance shall be performed to adequately establish viable well growing plant species of each mixture specified. The contractor is free to make whatever changes are necessary to ensure the specified seed mixture germinated and established.

3.5 CLEANING

- S. Perform cleaning during installation of the work and upon completion of the work. Remove from site all excess materials, debris and equipment. Repair damage resulting from seeding operations.

END OF SECTION

SECTION 02950

TREES, PLANTS, AND GROUND COVER

PART 43 GENERAL

43.1 SECTION INCLUDES

- A. Preparation of subsoil and topsoil.
- B. Topsoil bedding.
- C. New installation and/or Relocation of trees, plants, plant plugs and/or ground cover.
- D. Mulch and fertilizer.
- E. Maintenance.

43.2 RELATED SECTIONS

- A. Section 02200 – Earthwork.

43.3 MAINTENANCE DATA

- A. Submit under provisions of Section 01300.

43.4 QUALITY ASSURANCE

- A. Certification: - The contractor shall be responsible for all certificates of inspection of plant materials required by Federal, State or other authorities. Copies of these certificates shall be filed with the Owner.
- B. Selection: - All trees, shrubs and/or plant plugs required by contract shall be tagged at the source prior to digging and shipment.
- C. It shall be the contractor's responsibility to see that this is done, and to notify the Owner of the location(s) of such material prior to digging.
- D. The Owner will have the option to inspect all material at the source, regardless of location, and to reject any plants that do not meet with his approval.

43.5 QUALIFICATIONS

- A. Nursery: Company specializing in growing and cultivating the plants with five years documented experience.
- B. Installer: Company specializing in installing and planting the plants with five years documented experience and approved by nursery.

- C. Maintenance Services: Performed by installer under the provisions of these specifications.

#### 43.6 REGULATORY REQUIREMENTS

- A. Comply with regulatory agencies for fertilizer composition.
- B. Provide certificate of compliance from all authorities having jurisdiction indicating approval of plants and fertilizer mixture.
- C. Plant Materials: Certified by federal and state department of agriculture to be free of disease or hazardous insects.

#### 43.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect and handle products to site under provisions of Section 01600.
- B. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.
- C. Protect plants until planted.
- D. Deliver plant life materials immediately prior to placement. Keep plants moist until planting.
- E. All shrubs shall be bound and secured by twine to protect against broken branches. Twine shall be removed after planting.

#### 43.8 ENVIRONMENTAL REQUIREMENTS

- A. Do not install plant life when ambient temperatures may drop below 35 degrees F or above 90 degrees F.
- B. Do not install plants when wind velocity exceeds 30 mph.

#### 43.9 COORDINATION

- A. Coordinate work under provisions of Section 01039.

#### 43.10 WARRANTY

- A. The contractor shall guarantee that all plants are true to botanical name and that the quality and size meet specifications, as are required herein.
- B. The contractor shall fully guarantee that all plants are in a vigorous growing condition during and at the end of the guarantee period. The guarantee period shall expire one (1) year from the date of acceptance by the Owner.
- C. The contractor shall replace plants that do not meet these specifications or ones that have lost their natural shape due to dead branches excessive pruning, or inadequate or improper contractor maintenance. All plants rejected shall be removed from the site and legally disposed of by the contractor at no additional cost to the Owner.

- D. Replacement plants and planting operations shall be in accordance with the original specifications. All costs for such replacements shall be considered to be included in the bid price. Replacement planting shall be completed no later than the next succeeding planting season. All replacement plants shall be guaranteed for an additional period of one (1) year. All areas damaged by replacement operations shall be fully restored by the contractor to their original and/or specified condition.
- E. The contractor shall not assume responsibility during the guarantee period for damages resulting from natural causes such as floods, lightning storms, freezing rains or winds over 60 miles per hour. The Contractor will also not be held responsible for damages resulting from acts of negligence on the part of the Owner or others occupying the site, fire or vandalism.

#### 43.11 MAINTENANCE SERVICE

- A. Maintenance of trees, shrubs and evergreens by the contractor consists of pruning, keeping guys taut and trees erect, raising tree balls which settle below grade and weekly irrigation for a period of twelve (12) weeks.
- B. General maintenance, including weekly irrigation throughout the remainder of the growing season, shall be accomplished by the Owner's personnel following the initial maintenance requirements as noted above.
- C. At the end of this period of initial maintenance, the Owner will accept the various portions of the work, provided the requirements of the specifications have been fulfilled.
- D. It shall be the contractor's responsibility to conduct monthly inspections and advise the Owner of watering excesses or deficiencies during the guarantee period.
- E. Additional maintenance to include:
  - 1. Cultivation and weeding plant beds and tree pits.
  - 2. Applying herbicides for weed control, as required in accordance with manufacturer's instructions. Remedy damage resulting from use of herbicides.
  - 3. Remedy damage from use of insecticides.
  - 4. Disease control.

#### PART 44 PRODUCTS

##### 44.1 ACCEPTABLE NURSERIES

- A. Refer to the Owner for any special requirements.

##### 44.2 TREES, PLANTS, PLANT PLUGS AND GROUND COVER

- A. Refer to the Plant List on the drawings for plant materials that are required, or the list of suitable trees contained herein.
  - 1. Quality and Size: Plant materials shall have a habit of growth that is normal for the species, shall conform to the sizes given in the Plant List, shall be sound, vigorous and free from plant diseases, insects and their eggs.

2. All plants shall have a normal and healthy root system, as designated by horticultural standards. All standards, i.e., quality designations and measurements (ball sizes, heights and caliper of plants) shall be in accordance with the latest edition of "USA Standards for Nursery Stock (ANSI Z60.1)." This booklet is available from the American Associate of Nurserymen, Inc., 835 Southern Bldg., Washington D.C. 20005 or Americanhort, 2130 Stella Court, Columbus, OH. 43215
3. Root Protection: Plants designated "B & B" in the Plant List shall be balled and burlapped. They shall be dug with firm, natural balls of earth of sufficient diameter and depth to encompass the fibrous and feeding root systems necessary for full recovery of the plant. Balls shall be securely wrapped with burlap and bound with cord. No balled and burlapped plant shall be planted if the ball is cracked or broken.
4. Plants designated and Plant Plugs shall be container grown with full rooting systems and viable leaves and branches. Minimum plug container size shall be 2" by 2" by 8" deep.

#### 44.3 PLANTING MIXTURE

- A. Planting mixture is the material which is used for tamping around the earth balls in the process of planting.
- B. It shall be prepared on the site by mixing two parts topsoil, two parts soil excavated from the pit, and one part peat. Five (5) pounds of Superphosphate shall be added to each cubic yard of planting mixture.
  1. PEAT
    - a. Peat shall be granulated raw peat or baled peat and shall be essentially brown to black in color.
  2. SUPERPHOSPHATE
    - a. Superphosphate, as is commonly used for agricultural purposes, shall be used and will contain approximately 20% available phosphoric acid.
  3. MULCH MATERIALS
    - a. Mulching Material: Wood chips, ground bark, free of growth or germination inhibiting ingredients.
    - b. Mulching Material: Oat or wheat straw, free from weeds, foreign matter detrimental to plant life, and dry.

#### PART 45 EXECUTION

##### 45.1 EXAMINATION

- A. Verify that site is ready to receive work.

##### 45.2 EXCAVATION

- A. Circular pits with vertical sides shall be excavated for all plants.
- B. Diameter of all plant pits shall be at least one (1) foot greater than the diameter of the ball.
- C. Depth of pits shall be enough to accommodate the ball of B & B material in the manner shown on the planting detail drawing.

- D. The earth in the bottom of the pits shall be loosened by spading or other approved means, to a depth of four (4) inches.

#### 45.3 PLANTING

- A. All planting, unless otherwise directed, shall be performed as herein stated.
  - 1. Plants shall be set in the planting pit to the proper grade and position. Set plants upright and face to give the best appearance or relationship to each other or adjacent structures. Planting mixture, as specified, shall then be carefully worked around the ball or roots until approximately 2/3 of the planting pit has been backfilled. At this time, trees and shrubs with balled roots shall have burlap and straps cut away and folded back from the top of the balls. The remaining portion of the planting pit can then be filled with planting mixture and tamped to grade. Note: Planting mixture in a frozen or muddy condition shall not be used for backfill.
  - 2. Water is to be worked around the balls during or immediately after the plants have been backfilled. The entire ball area of each plant shall be soaked and the backfill solidly worked in and settled around the plants.

#### 45.4 PLANT RELOCATION AND RE-PLANTING

- A. Re-locate plants as indicated on the contract Drawing.
- B. Re-plant plants in pits or beds, partly filled with prepared topsoil mixture, at a minimum depth of 6 inches, under each plant. Loosen burlap, ropes, and wires, from the root ball.
- C. Place bare root plant materials so roots lie in a natural position. Backfill soil mixture in 6 inch layers. Maintain plant materials in vertical position.
- D. Saturate soil with water when the pit or bed is half full of top soil and again when full.

#### 45.5 GUYING AND STAKING

- A. All trees shall be guyed and staked immediately after planting.
- B. Work shall be done as illustrated in the planting detail drawing.
- C. Trees shall be guyed securely with pliable, zinc coated iron or steel wire No. 10 gauge and covered at contact with the tree with dark fabric rubber hose.
- D. No eye bolts or nails are to be driven into the tree.
- E. Trees shall be secured by two double twisted wire guys secured to two 3" diameter cedar posts set four (4) feet into the ground and standing a minimum of 4'-5' above grade.

#### 45.6 MULCHING AND WATERING

- A. All plants shall be mulched with cover 4" in depth.
- B. This cover shall extend in all directions to the edge of the excavated hole.

- C. After mulching, all plants shall be thoroughly soaked.

#### 45.7 PRUNING AND REPAIR

- A. Upon completion of work, all plants shall have been pruned and injuries repaired.
- B. The amount of pruning shall be limited to the minimum necessary to remove dead or injured twigs or branches, remove badly formed and interfering limbs and to compensate for the loss of roots from transplanting.
- C. Pruning shall be done so as not to change the natural habit or shape of the plant.
- D. All cuts shall be made flush, leaving no stubs, and shall be dressed with an approved pruning paint.
- E. All pruning shall be done by workmen experienced in this type of work.

#### 45.8 WRAPPING

- A. The trunks of all trees shall be wrapped.
- B. As a minimum, the standard tree wrapping paper shall begin at ground level and end just above the first branch.

#### 45.9 FINAL APPROVAL

- A. All planted material shall be subject to final approval by the Owner's representative after completion of all phases of the contractor's work.
- B. Materials that do not meet specifications as listed herein or material that has been damaged due to shipment or installation may be rejected.
- C. Acceptable replacements for rejected plants will be made, at no cost to the Owner.

#### 45.10 CLEAN-UP

- A. Upon completion of the work, or any portion thereof, the ground shall be cleared of all debris and of all other superfluous materials resulting from landscape development.

#### 45.11 SCHEDULE - PLANT LIST

- A. Refer to Contract Drawings for Plant Lists for Plant Materials that are required or the list of trees required to be provided or relocated.

END OF SECTION

SECTION 02990

PERMITS

PART 1 – GENERAL

1.1 GENERAL

- A. The Permits included in this Section have been applied for by the Owner with the cost to the Contractor noted. They are provided as information for the Contractor because the requirements and regulations contained in these documents shall be adhered to by the Contractor as they pertain to the work done under this Contract.
- B. Should any contradictions or discrepancies between the requirements of the Permits Section and other Sections of these Specifications be found, this sections language shall have precedence.

1.2 RELATED SECTIONS

- A. Section 02200 – Earthwork
- B. Section 02221 - Soil Erosion and Sedimentation Control

1.3 PERMIT

- A. The following permits are contained hereinafter with costs to the Contractor noted.
  - 1. EGLE Part 31/Part 301 Permit (pending)
  - 2. Soil Erosion and Sediment Control Permit – must be applied for by the Contractor through the City of Ann Arbor
  - 3. Soil Erosion and Sediment Control Permit – must be applied for by the Contractor through Pittsfield Township
  - 4. Wetland Permit – must be applied for by the Contractor through the City of Ann Arbor
  - 5. Wetland Permit – must be applied for by the Contractor through Pittsfield Township
  - 6. There are no costs to the Contractor for these items.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION

# APPENDIX



**CITY OF ANN ARBOR**  
**LIVING WAGE ORDINANCE DECLARATION OF COMPLIANCE**

The Ann Arbor Living Wage Ordinance (Section 1:811-1:821 of Chapter 23 of Title I of the Code) requires that an employer who is (a) a contractor providing services to or for the City for a value greater than \$10,000 for any twelve-month contract term, or (b) a recipient of federal, state, or local grant funding administered by the City for a value greater than \$10,000, or (c) a recipient of financial assistance awarded by the City for a value greater than \$10,000, shall pay its employees a prescribed minimum level of compensation (i.e., Living Wage) for the time those employees perform work on the contract or in connection with the grant or financial assistance. The Living Wage must be paid to these employees for the length of the contract/program.

*Companies employing fewer than 5 persons and non-profits employing fewer than 10 persons are exempt from compliance with the Living Wage Ordinance. If this exemption applies to your company/non-profit agency please check here  No. of employees*

The Contractor or Grantee agrees:

- (a) To pay each of its employees whose wage level is not required to comply with federal, state or local prevailing wage law, for work covered or funded by a contract with or grant from the City, no less than the Living Wage. The current Living Wage is defined as \$13.91/hour for those employers that provide employee health care (as defined in the Ordinance at Section 1:815 Sec. 1 (a)), or no less than \$15.51/hour for those employers that do not provide health care. The Contractor or Grantor understands that the Living Wage is adjusted and established annually on April 30 in accordance with the Ordinance and covered employers shall be required to pay the adjusted amount thereafter to be in compliance with Section 1:815(3).

**Check the applicable box below which applies to your workforce**

- Employees who are assigned to any covered City contract/grant will be paid at or above the applicable living wage without health benefits
- Employees who are assigned to any covered City contract/grant will be paid at or above the applicable living wage with health benefits
- (b) To post a notice approved by the City regarding the applicability of the Living Wage Ordinance in every work place or other location in which employees or other persons contracting for employment are working.
- (c) To provide to the City payroll records or other documentation within ten (10) business days from the receipt of a request by the City.
- (d) To permit access to work sites to City representatives for the purposes of monitoring compliance, and investigating complaints or non-compliance.
- (e) To take no action that would reduce the compensation, wages, fringe benefits, or leave available to any employee covered by the Living Wage Ordinance or any person contracted for employment and covered by the Living Wage Ordinance in order to pay the living wage required by the Living Wage Ordinance.

The undersigned states that he/she has the requisite authority to act on behalf of his/her employer in these matters and has offered to provide the services or agrees to accept financial assistance in accordance with the terms of the Living Wage Ordinance. The undersigned certifies that he/she has read and is familiar with the terms of the Living Wage Ordinance, obligates the Employer/Grantee to those terms and acknowledges that if his/her employer is found to be in violation of Ordinance it may be subject to civil penalties and termination of the awarded contract or grant of financial assistance.

\_\_\_\_\_  
Company Name

\_\_\_\_\_  
Street Address

\_\_\_\_\_  
Signature of Authorized Representative

\_\_\_\_\_  
Date

\_\_\_\_\_  
City, State, Zip

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

\_\_\_\_\_  
Phone/Email address

**CITY OF ANN ARBOR  
LIVING WAGE ORDINANCE**

**RATE EFFECTIVE APRIL 30, 2020 - ENDING APRIL 29, 2021**

**\$13.91 per hour**

If the employer provides health  
care benefits\*

**\$15.51 per hour**

If the employer does **NOT**  
provide health care benefits\*

Employers providing services to or for the City of Ann Arbor or recipients of grants or financial assistance from the City of Ann Arbor for a value of more than \$10,000 in a twelve-month period of time must pay those employees performing work on a City of Ann Arbor contract or grant, the above living wage.

## **ENFORCEMENT**

The City of Ann Arbor may recover back wages either administratively or through court action for the employees that have been underpaid in violation of the law. Persons denied payment of the living wage have the right to bring a civil action for damages in addition to any action taken by the City.

Violation of this Ordinance is punishable by fines of not more than \$500/violation plus costs, with each day being considered a separate violation. Additionally, the City of Ann Arbor has the right to modify, terminate, cancel or suspend a contract in the event of a violation of the Ordinance.

\* Health Care benefits include those paid for by the employer or making an employer contribution toward the purchase of health care. The employee contribution must not exceed \$.50 an hour for an average work week; and the employer cost or contribution must equal no less than \$1/hr for the average work week.

**The Law Requires Employers to Display This Poster Where Employees Can Readily See It.**

**For Additional Information or to File a Complaint contact  
Colin Spencer at 734/794-6500 or [cspencer@a2gov.org](mailto:cspencer@a2gov.org)**



# Vendor Conflict of Interest Disclosure Form

All vendors interested in conducting business with the City of Ann Arbor must complete and return the Vendor Conflict of Interest Disclosure Form in order to be eligible to be awarded a contract. Please note that all vendors are subject to comply with the City of Ann Arbor's conflict of interest policies as stated within the certification section below.

If a vendor has a relationship with a City of Ann Arbor official or employee, an immediate family member of a City of Ann Arbor official or employee, the vendor shall disclose the information required below.

1. No City official or employee or City employee's immediate family member has an ownership interest in vendor's company or is deriving personal financial gain from this contract.
2. No retired or separated City official or employee who has been retired or separated from the City for less than one (1) year has an ownership interest in vendor's Company.
3. No City employee is contemporaneously employed or prospectively to be employed with the vendor.
4. Vendor hereby declares it has not and will not provide gifts or hospitality of any dollar value or any other gratuities to any City employee or elected official to obtain or maintain a contract.
5. Please note any exceptions below:

Conflict of Interest Disclosure*	
Name of City of Ann Arbor employees, elected officials or immediate family members with whom there may be a potential conflict of interest.	<input type="checkbox"/> Relationship to employee <hr style="border: 0; border-top: 1px solid black; margin: 5px 0;"/> <input type="checkbox"/> Interest in vendor's company <input type="checkbox"/> Other (please describe in box below)

\*Disclosing a potential conflict of interest does not disqualify vendors. In the event vendors do not disclose potential conflicts of interest and they are detected by the City, vendor will be exempt from doing business with the City.

I certify that this Conflict of Interest Disclosure has been examined by me and that its contents are true and correct to my knowledge and belief and I have the authority to so certify on behalf of the Vendor by my signature below:		
Vendor Name	Vendor Phone Number	
Signature of Vendor Authorized Representative	Date	Printed Name of Vendor Authorized Representative

Questions about this form? Contact Procurement Office City of Ann Arbor Phone: 734/794-6500, [procurement@a2gov.org](mailto:procurement@a2gov.org)



# CITY OF ANN ARBOR NON-DISCRIMINATION ORDINANCE

Relevant provisions of Chapter 112, Nondiscrimination, of the Ann Arbor City Code are included below.  
You can review the entire ordinance at [www.a2gov.org/humanrights](http://www.a2gov.org/humanrights).

**Intent:** It is the intent of the city that no individual be denied equal protection of the laws; nor shall any individual be denied the enjoyment of his or her civil or political rights or be discriminated against because of actual or perceived age, arrest record, color, disability, educational association, familial status, family responsibilities, gender expression, gender identity, genetic information, height, HIV status, marital status, national origin, political beliefs, race, religion, sex, sexual orientation, source of income, veteran status, victim of domestic violence or stalking, or weight.

**Discriminatory Employment Practices:** No person shall discriminate in the hire, employment, compensation, work classifications, conditions or terms, promotion or demotion, or termination of employment of any individual. No person shall discriminate in limiting membership, conditions of membership or termination of membership in any labor union or apprenticeship program.

**Discriminatory Effects:** No person shall adopt, enforce or employ any policy or requirement which has the effect of creating unequal opportunities according to actual or perceived age, arrest record, color, disability, educational association, familial status, family responsibilities, gender expression, gender identity, genetic information, height, HIV status, marital status, national origin, political beliefs, race, religion, sex, sexual orientation, source of income, veteran status, victim of domestic violence or stalking, or weight for an individual to obtain housing, employment or public accommodation, except for a bona fide business necessity. Such a necessity does not arise due to a mere inconvenience or because of suspected objection to such a person by neighbors, customers or other persons.

**Nondiscrimination by City Contractors:** All contractors proposing to do business with the City of Ann Arbor shall satisfy the contract compliance administrative policy adopted by the City Administrator in accordance with the guidelines of this section. All city contractors shall ensure that applicants are employed and that employees are treated during employment in a manner which provides equal employment opportunity and tends to eliminate inequality based upon any classification protected by this chapter. All contractors shall agree not to discriminate against an employee or applicant for employment with respect to hire, tenure, terms, conditions, or privileges of employment, or a matter directly or indirectly related to employment, because of any applicable protected classification. All contractors shall be required to post a copy of Ann Arbor's Non-Discrimination Ordinance at all work locations where its employees provide services under a contract with the city.

**Complaint Procedure:** If any individual believes there has been a violation of this chapter, he/she may file a complaint with the City's Human Rights Commission. The complaint must be filed within 180 calendar days from the date of the individual's knowledge of the allegedly discriminatory action or 180 calendar days from the date when the individual should have known of the allegedly discriminatory action. A complaint that is not filed within this timeframe cannot be considered by the Human Rights Commission. To file a complaint, first complete the complaint form, which is available at [www.a2gov.org/humanrights](http://www.a2gov.org/humanrights). Then submit it to the Human Rights Commission by e-mail ([hrc@a2gov.org](mailto:hrc@a2gov.org)), by mail (Ann Arbor Human Rights Commission, PO Box 8647, Ann Arbor, MI 48107), or in person (City Clerk's Office). For further information, please call the commission at 734-794-6141 or e-mail the commission at [hrc@a2gov.org](mailto:hrc@a2gov.org).

**Private Actions For Damages or Injunctive Relief:** To the extent allowed by law, an individual who is the victim of discriminatory action in violation of this chapter may bring a civil action for appropriate injunctive relief or damages or both against the person(s) who acted in violation of this chapter.

THIS IS AN OFFICIAL GOVERNMENT NOTICE AND  
MUST BE DISPLAYED WHERE EMPLOYEES CAN READILY SEE IT.

## MICHIGAN DEPARTMENT OF TRANSPORTATION CERTIFIED PAYROLL

COMPLETION OF CERTIFIED PAYROLL FORM FULFILLS THE MINIMUM MDOT PREVAILING WAGE REQUIREMENTS

(1) NAME OF CONTRACTOR / SUBCONTRACTOR (CIRCLE ONE) (2) ADDRESS

(3) PAYROLL NO. (4) FOR WEEK ENDING (5) PROJECT AND LOCATION (6) CONTRACT ID

(a)	(b)	(c)	(d) DAY AND DATE							(e)	(f)	(g)	(h)	(i)	(j) DEDUCTIONS					(k)			
			HOURS WORKED ON PROJECT												TOTAL HOURS ON PROJECT	PROJECT RATE OF PAY	PROJECT RATE OF FRINGE PAY	GROSS PROJECT EARNED	GROSS WEEKLY EARNED		TOTAL WEEKLY HOURS WORKED ALL JOBS	FICA	FEDERAL
EMPLOYEE INFORMATION NAME:	WORK CLASSIFICATION	Hour Type								0			\$0.00									\$0.00	\$0.00
ETH/GEN: ID #:	GROUP/CLASS #:	S								0			\$0.00									\$0.00	\$0.00
NAME:										0			\$0.00									\$0.00	\$0.00
ETH/GEN: ID #:	GROUP/CLASS #:	S								0			\$0.00									\$0.00	\$0.00
NAME:										0			\$0.00									\$0.00	\$0.00
ETH/GEN: ID #:	GROUP/CLASS #:	S								0			\$0.00									\$0.00	\$0.00
NAME:										0			\$0.00									\$0.00	\$0.00
ETH/GEN: ID #:	GROUP/CLASS #:	S								0			\$0.00									\$0.00	\$0.00
NAME:										0			\$0.00									\$0.00	\$0.00
ETH/GEN: ID #:	GROUP/CLASS #:	S								0			\$0.00									\$0.00	\$0.00
NAME:										0			\$0.00									\$0.00	\$0.00
ETH/GEN: ID #:	GROUP/CLASS #:	S								0			\$0.00									\$0.00	\$0.00
NAME:										0			\$0.00									\$0.00	\$0.00

Date \_\_\_\_\_

I, \_\_\_\_\_ (Name of Signatory Party) \_\_\_\_\_ (Title)

do hereby state:

(1) That I pay or supervise the payment of the persons employed by

\_\_\_\_\_ on the \_\_\_\_\_ (Contractor or Subcontractor)

\_\_\_\_\_ ; that during the payroll period commencing on the \_\_\_\_\_ (Building or Work)

\_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, and ending the \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_,

all persons employed on said project have been paid the full weekly wages earned, that no rebates have been or will be made either directly or indirectly to or on behalf of said

\_\_\_\_\_ from the full \_\_\_\_\_ (Contractor or Subcontractor)

weekly wages earned by any person and that no deductions have been made either directly or indirectly from the full wages earned by any person, other than permissible deductions as defined in Regulations, Part 3 (29 C.F.R. Subtitle A), issued by the Secretary of Labor under the Copeland Act, as amended (48 Stat. 948, 63 Stat. 108, 72 Stat. 967; 76 Stat. 357; 40 U.S.C. § 3145), and described below:

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

(2) That any payrolls otherwise under this contract required to be submitted for the above period are correct and complete; that the wage rates for laborers or mechanics contained therein are not less than the applicable wage rates contained in any wage determination incorporated into the contract; that the classifications set forth therein for each laborer or mechanic conform with the work he performed.

(3) That any apprentices employed in the above period are duly registered in a bona fide apprenticeship program registered with a State apprenticeship agency recognized by the Bureau of Apprenticeship and Training, United States Department of Labor, or if no such recognized agency exists in a State, are registered with the Bureau of Apprenticeship and Training, United States Department of Labor.

(4) That:

(a) WHERE FRINGE BENEFITS ARE PAID TO APPROVED PLANS, FUNDS, OR PROGRAMS

- in addition to the basic hourly wage rates paid to each laborer or mechanic listed in the above referenced payroll, payments of fringe benefits as listed in the contract have been or will be made to appropriate programs for the benefit of such employees, except as noted in section 4(c) below.

(b) WHERE FRINGE BENEFITS ARE PAID IN CASH

- Each laborer or mechanic listed in the above referenced payroll has been paid, as indicated on the payroll, an amount not less than the sum of the applicable basic hourly wage rate plus the amount of the required fringe benefits as listed in the contract, except as noted in section 4(c) below.

(c) EXCEPTIONS

EXCEPTION (CRAFT)	EXPLANATION

REMARKS:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

NAME AND TITLE	SIGNATURE

THE WILLFUL FALSIFICATION OF ANY OF THE ABOVE STATEMENTS MAY SUBJECT THE CONTRACTOR OR SUBCONTRACTOR TO CIVIL OR CRIMINAL PROSECUTION. SEE SECTION 1001 OF TITLE 18 AND SECTION 231 OF TITLE 31 OF THE UNITED STATES CODE.