

CITY OF ANN ARBOR

INVITATION TO BID



WATER TREATMENT PLANT CLARIFIER #4 DRIVE  
REPLACEMENT

ITB # 4334

Due Date: June 4, 2014 On or Before 2:00 P.M.

Public Services Area/Water Treatment Unit

Issued By:

City of Ann Arbor  
Procurement Unit  
301 E. Huron Street  
Ann Arbor, MI 48107

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ADVERTISEMENT  
FOR THE  
WATER TREATMENT PLANT  
CLARIFIER #4 DRIVE REPLACEMENT  
CITY OF ANN ARBOR

ITB NO. 4334

Sealed Bids will be received by the City of Ann Arbor Procurement Unit, 301 East Huron Street, Fifth Floor, Larcom City Hall, on or before Wednesday, June 4, 2014 by 2:00 PM (Local Time) for the construction of Water Treatment Plant Clarifier #4 Drive Replacement. Bids will be publically opened and read aloud at this time.

A pre-bid conference will be held Tuesday, May 20, 2014 at 10:00 AM at the Ann Arbor Water Treatment Plant Conference Room located at 919 Sunset Road, Ann Arbor, Michigan 48103, followed by a site visit. Attendance is highly recommended.

Work to be done includes: replacement of the existing drive on Clarifier #4 including all necessary demolition, modifications, site restoration, all mechanical, start-up, testing, training and all related work necessary for a complete and full operational system.

Bid documents, plans, specifications, and addenda shall be downloaded by Bidders at either of the following websites: Michigan Inter-governmental Trade Network (MITN) [www.mitn.info](http://www.mitn.info) or City of Ann Arbor Purchasing website: [www.A2gov.org](http://www.A2gov.org). It is the Bidder's responsibility to verify they have obtained all information before submitting a bid.

Each Bid shall be accompanied by a certified check, or Bid Bond by a recognized surety, in the amount of 5% of the total of the bid price. A Bid, once submitted, becomes the property of the City. In the sole discretion of the City, the City reserves the right to allow a bidder to reclaim submitted documents provided the documents are requested and retrieved no later than 48 hours prior to the scheduled bid opening.

The successful Bidder will be required to furnish satisfactory performance and labor and material bonds in the amount of 100% of the bid price and satisfactory insurance coverage.

Precondition for entering into a Contract with the City of Ann Arbor is compliance with Chapter 112 of Title IX of the Code of the City of Ann Arbor. The successful Bidder may also be required to comply with Chapter 23 of Title I of the Code of the City of Ann Arbor. Further information is outlined in the Contract Documents. All bidders are required to complete and submit the City of Ann Arbor Conflict of Interest Disclosure Form with the bid.

After the time of opening, no Bid may be withdrawn for a period of 90 days. The City reserves the right 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.

Technical questions regarding this project may be submitted in writing to the Consulting Engineer, Tetra Tech, Attn: Brian Rubel, PE via email at [brian.rubel@tetrattech.com](mailto:brian.rubel@tetrattech.com). Questions by telephone call are prohibited. Technical questions directed to the Owner are prohibited. The deadline for questions shall be seven (7) calendar days before bids; questions are due on or before Wednesday, May 28, 2014 at 5:00 PM. Questions will not be received after this date.

Any further information on bid documents may be obtained from the Procurement Office, (734) 794-6500.

CITY OF ANN ARBOR PROCUREMENT UNIT

## **NOTICE OF PRE-BID CONFERENCE**

A pre-bid conference for this project will be held on Tuesday, May 20, 2014 at 10:00 AM at the Ann Arbor Water Treatment Plant Conference Room located at 919 Sunset Road, Ann Arbor, Michigan 48103. A site visit will follow the pre-bid conference to allow potential bidders the opportunity to view the project site. This will be the only opportunity for bidders to view the project site.

Attendance at this conference is highly recommended. Administrative and technical questions regarding this project will be answered at this time. The pre-bid conference is for information only. Any answers furnished will not be official until verified in writing by the Financial Service Area, Procurement Unit. Answers that change or substantially clarify the bid will be affirmed in an addendum.

## **INSTRUCTIONS TO BIDDERS**

### **General**

Work to be done under this Contract is generally described through the detailed specifications and must be completed fully in accordance with the contract documents. All work to be done under this Contract is located in or near the City of Ann Arbor.

The City shall make available to all prospective Bidders, prior to receipt of the Bids, access to the area in which the work is to be performed. Advance notice should be given to the Administering Service Area/Unit in cases where access to the site must be arranged by the City.

Any Bid which does not conform fully to these instructions may be rejected.

### **Preparation of Bids**

Bids should be prepared providing a straight-forward, concise description of the Bidder's ability to meet the requirements of the ITB. Bids shall be written in ink or typewritten. No erasures are permitted. Mistakes may be crossed out and corrected and must be initialed and dated in ink by the person signing the Bid.

Bids must be submitted on Page Numbers ITB 1-3 and on the "Bid Forms" provided with each blank properly filled in. If forms are not fully completed it may disqualify the bid.

Each person signing the Bid certifies that he/she is the person in the Bidder's firm/organization responsible for the decision as to the fees being offered in the Bid and has not and will not participated in any action contrary to the terms of this provision.

### **Questions or Clarification on ITB Specifications**

All questions regarding this ITB shall be submitted via email. Emailed questions and inquires will be accepted from any and all prospective Bidders in accordance with the terms and conditions of the ITB.

All questions shall be submitted by Wednesday, May 28, 2014 at 5:00 PM and should be addressed as follows:

Specification/Scope of Work questions emailed to [brian.rubel@tetrattech.com](mailto:brian.rubel@tetrattech.com)

Bid Process and HR Compliance questions emailed to [MBerryman@a2gov.org](mailto:MBerryman@a2gov.org).

### **Addenda**

If it becomes necessary to revise any part of the ITB, notice of the Addendum will be posted to Michigan Inter-governmental Trade Network (MITN) [www.mitn.info](http://www.mitn.info) and/or City of Ann Arbor web site [www.A2gov.org](http://www.A2gov.org) for all parties to download.

Each Bidder must in its Bid, to avoid any miscommunications, acknowledge all addenda which it has received, but the failure of a Bidder to receive, or acknowledge receipt of; any addenda shall not relieve the Bidder of the responsibility for complying with the terms thereof.

The City will not be bound by oral responses to inquiries or written responses other than written addenda.

## **Bid Submission**

All Bids are due and must be delivered to the City of Ann Arbor Procurement Unit on or before Wednesday, June 4, 2014 by 2:00 PM. Bids submitted late or via oral, telephonic, telegraphic, electronic mail or facsimile **will not** be considered or accepted.

Each Bidder must submit one (1) original Bid and two (2) additional Bid copies in a sealed envelope clearly marked: **ITB No. 4334 – Water Treatment Plant Clarifier #4 Drive Replacement**.

### **Bids must be addressed and delivered to:**

City of Ann Arbor  
C/O Customer Service 1<sup>st</sup> Floor  
P.O. Box 8647  
301 East Huron Street  
Ann Arbor, MI 48107

All Bids received on or before the Due Date will be publicly opened and recorded immediately. No immediate decisions are rendered.

Hand delivered Bids will be date/time stamped/signed by the Procurement Unit at the address above in order to be considered. Normal business hours are 9:00 a.m. to 3:00 p.m. Monday through Friday, excluding Holidays. The City will not be liable to any Bidder for any unforeseen circumstances, delivery or postal delays. Postmarking to the Due Date will not substitute for receipt of the Bid. Each Bidder is responsible for submission of their Bid.

Additional time for submission of bids past the stated due date and time will not be granted to a single Bidder; however, additional time may be granted to all Bidders when the City determines in its sole discretion that circumstances warrant it.

## **Award**

The City intends to award a Contract(s) to the lowest responsible Bidder(s). On multi-divisional contracts, separate divisions may be awarded to separate Bidders. The City may also utilize alternatives offered in the Bid Forms, if any, to determine the lowest responsible Bidder on each division, and award multiple divisions to a single Bidder, so that the lowest total cost is achieved for the City. For unit price bids, the contract will be awarded based upon the unit prices and the lump sum prices stated by the bidder for the work items specified in the bid documents, with consideration given to any alternates selected by the City. If the City determines that the unit price for any item is materially different for the work item bid than either other bidders or the general market, the City, in its sole discretion, in addition to any other right it may have, may reject the bid as not responsible or non-conforming.



The acceptability of major subcontractors will be considered in determining if a Bidder is responsible. In comparing Bids, the City will give consideration to alternate Bids for items listed in the bid forms.

## **Qualifications**

**The City will evaluate Proposals based on cost as well as experience. Contractors that have not included the required list of similar work experience and associated references in Section 5 of the Bid Form may have their bid rejected.**

As part of the proposal, Bidders shall provide documentation that the Bidder's company has at least 7 years of experience performing construction on similar projects. Bidders shall also submit the attached form, "Section 5 – References," which identifies a minimum of three projects completed in the past five years on similar projects, including construction cost, contractor and subcontractor information, that demonstrate similar work experience and complexity to that included within these contract documents.

All key staff and subcontractors are subject to the approval by the City.

## **Official Documents**

The City of Ann Arbor shall accept no alternates to the bid documents made by the Bidder unless those alternatives are set forth in the "Alternate" section of Bid form.

The City of Ann Arbor officially distributes bid documents from the Procurement Unit or through the Michigan Intergovernmental Trade Network (MITN). Copies of the bid documents obtained from any other source are not Official copies. Addenda and other bid information will only be posted to these official distribution sites. If you obtained City of Ann Arbor Bid documents from other sources, it is recommended that you register on [www.MITN.info](http://www.MITN.info) and obtain an official Bid.

## **Bid Security**

Each bid must be accompanied by a certified check, or Bid Bond by a surety licensed and authorized to do business within the State of Michigan, in the amount of 5% of the total of the bid price.

## **Withdrawal of Bids**

After the time of opening, no Bid may be withdrawn for the period of 90 days specified in the Advertisement.

## **Contract Time**

Time is of the essence in the performance of the work under this Contract. The available time for work under this Contract is indicated on page C-1, Article III of the Contract. If these time requirements can not be met, the Bidder must stipulate on Bid Form Section 3 - Time Alternate its schedule for performance of the work. Consideration will be given to time in evaluating bids.

## **Liquidated Damages**

A liquidated damages clause, as given on page C-2, Article III of the Contract, provides that the Contractor shall pay the City as liquidated damages, and not as a penalty, a sum certain per day for each and every day that the Contractor may be in default of completion of the specified work, within the time(s) stated in the Contract, or written extensions.

Liquidated damages clauses, as given in the General Conditions, provide further that the City shall be entitled to impose and recover liquidated damages for breach of the obligations under Chapter 112 of the City Code.

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.

## **Human Rights Information**

Section 5, beginning at page GC-3, outlines the requirements for fair employment practices under City of Ann Arbor Contracts. To establish compliance with this Ordinance, the Bidder should complete and return with its bid completed copies of the Human Rights Division Contract Compliance Forms or an acceptable equivalent. In the event Human Rights forms are not submitted with bid, the Bidder will have 24 hours to provide once requested by the City.

## **Wage Requirements**

Section 4, beginning at page GC-2, outlines the requirements for payment of prevailing wages or of a “living wage” to employees providing service to the City under this contract. The successful bidder must comply with all applicable requirements and provide documentary proof of compliance when requested.

## **Conflict of Interest Disclosure**

The City of Ann Arbor Purchasing Policy requires that prospective Vendors complete a Conflict of Interest Disclosure form (a copy of which is attached to this ITB). A contract may not be awarded to the selected Vendor unless and until the Procurement Unit and the City Administrator have reviewed the Disclosure form and determined that no conflict exists under applicable federal, state, or local law or administrative regulation. Not every relationship or situation disclosed on the Disclosure Form may be a disqualifying conflict. Depending on applicable law and regulations, some contracts may be awarded on the recommendation of the City Administrator after full disclosure, where such action is allowed by law, if demonstrated competitive pricing exists and/or it is determined the award is in the best interest of the City.

## **Major Subcontractors**

The Bidder shall identify each major subcontractor it expects to engage for this Contract if the work to be subcontracted is 15% or more of the bid sum or over \$50,000, whichever is less. The Bidder also shall identify the work to be subcontracted to each major subcontractor.

## **Debarment**

Submission of a Bid in response to this ITB is certification that the Bidder is not currently debarred, suspended, proposed for debarment, and declared ineligible or voluntarily excluded from participation in this transaction by any State or Federal departments or agency. Submission is also agreement that the City will be notified of any changes in this status.

## **Disclosures**

After bids are opened, all information in a submitter's bid is subjected to disclosure under the provisions of Michigan Public Act No. 442 of 1976, as amended (MCL 15.231 et seq.) known as the "Freedom of Information Act". The Freedom of Information Act also provides for the complete disclosure of contracts and attachments thereto except where specifically exempted.

## **Bid Protest**

All Bid protests must be in writing and filed with the Purchasing Agent within five (5) business days of the award action. The Bidder must clearly state the reasons for the protest. If a Bidder contacts a City Service Area/Unit and indicates a desire to protest an award, the Service Area/Unit shall refer the Bidder to the Purchasing Agent. The Purchasing Agent will provide the Bidder with the appropriate instructions for filing the protest. The protest shall be reviewed by the City Administrator or designee whose decision shall be final.

## **Reservation of Rights**

The City of Ann Arbor reserves the right to accept any bid or alternative bid proposed in whole or in part, to reject any or all bids or alternatives bids in whole or in part and to waive irregularity and/or informalities in any bid and to make the award in any manner deemed in the best interest of the City.

**City of Ann Arbor Procurement Office**

**INSTRUCTIONS FOR CONTRACTORS**

**For Completing CONTRACT COMPLIANCE FORM**

City Policy

The “non discrimination in contracts” provision of the City Code, (Chapter 112, Section 9:161) requires contractors/vendors/grantees doing business with the City not to discriminate on the basis of actual or perceived race, color, religion, national origin, sex, age, condition of pregnancy, marital status, physical or mental limitations, source of income, family responsibilities, educational association, sexual orientation, gender identity or HIV status against any of their employees, any City employee working with them, or any applicant for employment. It also requires that the contractors/vendors/grantees include a similar provision in all subcontracts that they execute for City work or programs.

This Ordinance further requires that each prospective contractor/vendor submit employment data to the City showing current total employee breakdown by occupation, race and gender. This allows the Procurement Office to determine whether or not the contractor/vendor has a workforce that is reflective of the availability of women and under-represented minorities within the contractor’s labor recruitment area (the area where they can reasonably be expected to recruit employees). ***This data is provided to the City on the Human Rights Contract Compliance Forms (attached).***

**To complete the form:**

**1) If a company has more than one location, then that company must complete 2 versions of the form.**

- **Form #1** should contain the employment data for the **entire corporation.**
- **Form #2** should contain the employment data for those employees:
  - who will be working on-site;
  - in the office responsible for completing the contract; or,
  - in the case of non-profit grantees, those employees working on the project funded by the City grant(s).

2) If the company has only one location, fill out Form #1 only.

3) Complete all data in the upper section of the form including the name of the person who completes the form and the name of the company/organization’s president.

4) Complete the Employment Data in the remainder of the form. Please be sure to complete all columns including the Total Columns on the far right side of the form, and the Total row and Previous Year Total row at the bottom of the form.

5) Return the completed form(s) to your contact in the City Department for whom you will be conducting the work.

**For assistance in completing the form, contact:**

Procurement Office of the City of Ann Arbor  
734/794-6576

If a contractor is determined to be out of compliance, the Procurement Office will work with them to assist them in coming into compliance.

**CITY OF ANN ARBOR HUMAN RIGHTS OFFICE  
CONTRACT COMPLIANCE FORM**

**Form #1**

*Entire Organization (Totals for All Locations where applicable)*

Name of Company/Organization \_\_\_\_\_ Date Form Completed \_\_\_\_\_

Name and Title of Person Completing this Form \_\_\_\_\_ Name of President \_\_\_\_\_

Address \_\_\_\_\_ County \_\_\_\_\_ Phone # \_\_\_\_\_  
 (Street address) (City) (State) (Zip) (Area Code)

Fax# \_\_\_\_\_ Email Address \_\_\_\_\_  
 (Area Code)

**EMPLOYMENT DATA**

Job Categories	Number of Employees (Report employees in only one category)												TOTAL COLUMNS A-L
	Male						Female						
	White	Black or African American	Asian	Hispanic or Latino	Native Hawaiian or Other Pacific Islander	American Indian or Alaska Native	White	Black or African American	Asian	Hispanic Latino	or Native Hawaiian or Other Pacific Islander	American Indian or Alaskan Native	
	A	B	C	D	E	F	G	H	I	J	K	L	
Exec/Sr. Level Officials													
Supervisors													
Professionals													
Technicians													
Sales													
Admin. Support													
Craftspeople													
Operatives													
Service Workers													
Laborers/Helper													
Apprentices													
Other													
<b>TOTAL</b>													
<b>PREVIOUS YEAR TOTAL</b>													

**CITY OF ANN ARBOR HUMAN RIGHTS OFFICE  
CONTRACT COMPLIANCE FORM**

Form #2

*Local Office (Only those employees that will do local or on-site work, if applicable)*

Name of Company/Organization \_\_\_\_\_ Date Form Completed \_\_\_\_\_

Name and Title of Person Completing this Form \_\_\_\_\_ Name of President \_\_\_\_\_

Address \_\_\_\_\_ County \_\_\_\_\_ Phone # \_\_\_\_\_  
 (Street address) (City) (State) (Zip) (Area Code)

Fax# \_\_\_\_\_ Email Address \_\_\_\_\_  
 (Area Code)

**EMPLOYMENT DATA**

Job Categories	Number of Employees (Report employees in only one category)												TOTAL COLUMNS A-L	
	Male						Female							
	White	Black or African American	Asian	Hispanic or Latino	Native Hawaiian or Other Pacific Islander	American Indian or Alaska Native	White	Black or African American	Asian	Hispanic or Latino	Native Hawaiian or Other Pacific Islander	American Indian or Alaskan Native		
	A	B	C	D	E	F	G	H	I	J	K	L		
Exec/Sr. Level Officials														
Supervisors														
Professionals														
Technicians														
Sales														
Admin. Support														
Craftspeople														
Operatives														
Service Workers														
Laborers/Helper														
Apprentices														
Other														
<b>TOTAL</b>														
<b>PREVIOUS YEAR TOTAL</b>														

**ATTACHMENT C  
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 employers providing services to the City or recipients of grants for financial assistance (in amounts greater than \$10,000 in a twelve-month period of time) pay their employees who are working on the City project or grant, a minimum level of compensation known as the **Living Wage**. This wage must be paid to the employees for the length of the contract/project.

*Companies employing fewer than 5 persons and non-profits employing fewer than 10 persons are exempt from the Ordinance. If this exemption applies to your firm, please check below:*

\_\_\_\_\_ This **company** is exempt due to the fact that we employ or contract with fewer than 5 individuals.

\_\_\_\_\_ This **non-profit agency** is exempt due to the fact that we employ or contract with fewer than 10 employees.

The Ordinance requires that all contractors/vendors and/or grantees agree to the following terms:

- a) To pay each of its employees performing work on any covered contract or grant with the City, no less than the living wage, which is defined as \$12.70/hour when health care is provided, or no less than \$14.18/hour for those employers that do *not* provide health care. It is understood that the Living Wage will be adjusted each year on April 30, and covered employers will be required to pay the adjusted amount thereafter. The rates stated above include any adjustment for 2014.
  - b) Please check the boxes below which apply to your workforce:
    - Employees who are assigned to *any covered* City project or grant will be paid at or above the applicable living wage without health benefits Yes \_\_\_\_\_ No \_\_\_\_\_
- OR**
- Employees who are assigned to *any covered* City project or grant will be paid at or above the applicable living wage with health benefits Yes \_\_\_\_\_ No \_\_\_\_\_
- c) To post a notice approved by the City regarding the Living Wage Ordinance in every work place or other location in which employees or other persons contracting for employment are working.
  - d) To provide the City payroll records or other documentation as requested; and,
  - e) To permit access to work sites to City representatives for the purposes of monitoring compliance, investigating complaints or non-compliance.

The undersigned authorized representative hereby obligates the contractor/vendor or grantee to the above stated conditions under penalty of perjury and violation of the Ordinance.

Company Name	Address, City, State, Zip
Signature of Authorized Representative	Phone (area code)
Type or Print Name and Title	Email address
Date signed	

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

Revised 3/2014 rev.0 LW-2

# CITY OF ANN ARBOR LIVING WAGE ORDINANCE

**RATE EFFECTIVE APRIL 30, 2014 - ENDING APRIL 29, 2015**

**\$12.70** per hour

If the employer provides health care benefits\*

**\$14.18** 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  
Mark Berryman at 734/794-6500 or [mberryman@a2gov.org](mailto:mberryman@a2gov.org)**

Revised 3/2014 Rev.0 LW-1



## 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 Advertisement, Human Rights Division Contract Compliance Forms, Conflict of Interest Disclosure 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 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 \_\_\_\_\_, 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 1:319 (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 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 \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
Bidder's Name

\_\_\_\_\_  
Authorized Signature of Bidder

\_\_\_\_\_  
Official Address

\_\_\_\_\_  
(Print Name of Signer Above)

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

\_\_\_\_\_  
Email Address for Award Notice

**LEGAL STATUS OF BIDDER**

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

By signing below the authorized representative of the Bidder hereby certifies that:

The Bidder 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 proposal, is authorized to execute contracts on behalf of respondent.\*

\*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 \_\_\_\_\_, whom \_\_\_\_\_ bearing the title of \_\_\_\_\_ 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 with the county of \_\_\_\_\_, whose members are (attach list including street and mailing address for each.)

- An individual, whose signature with address, is affixed to this Bid.

\_\_\_\_\_  
Signature Date: \_\_\_\_\_,

(Print) Name \_\_\_\_\_ Title \_\_\_\_\_

Firm: \_\_\_\_\_

Address: \_\_\_\_\_

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

Email \_\_\_\_\_

BID FORM

Section 1 – Schedule of Prices

Project: Water Treatment Plant Clarifier #4 Drive Replacement  
ITB No.: 4334

Bidder's Name: \_\_\_\_\_

Notes:

1. All bidders shall provide a Unit Price and Total Price for all bid items specified.
2. Quantities included in the bid table represent estimated quantities for different work. The CONTRACTOR shall be compensated for the actual number of items completed using the unit prices provided.
3. The City, at its sole discretion, may elect to delete any portion of the work delineated below, with no change to the unit prices provided. Work shall be determined based upon the availability of funds.
4. Any item not provided in the following list shall be considered incidental.
5. Contract shall be awarded based on the base bid or any combination of the base bid and alternate bid areas in any manner the City believes to be in its best interest.

**Bid Items**

The Bidder agrees to complete the Project and all related work, as specified and shown on the drawings, for the following unit prices.

<b>WATER TREATMENT PLANT CLARIFIER #4 DRIVE REPLACEMENT – BASE BID</b>					
<b>Item No.</b>	<b>Item Description</b>	<b>Qty</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Total Price</b>
1.	Clarifier #4 Drive Replacement with WesTech Model No. DV8050, including all mobilization, demolition, site preparation and restoration, mechanical, controls, painting, coating application and all related work.	1	LS	\$	\$
2.	Permit Allowance	1	LS	\$ 2,500.00	\$ 2,500.00
<b>TOTAL BASE BID (ITEMS 1 THROUGH 2)</b>					<b>\$</b>

Total Base Bid: \_\_\_\_\_ Dollars (\$ \_\_\_\_\_ )  
(Amount shall be shown in both words and figures. In case of a discrepancy, the amount shown in words shall govern.)

**Alternates**

The following items are alternates for the manufacturer to be used to replace the drive

on Clarifier #4. The Owner may elect to substitute the alternates below for Item No. 1 in the Base Bid.

Alternate 1 to Item No. 1

Instead of WesTech Model No. DV8050 replace Clarifier #4 Drive with Walker Drive Model No. S80M-T16

Deduct: \_\_\_\_\_ Dollars (\$ \_\_\_\_\_)  
(Amount shall be shown in both words and figures. In case of a discrepancy, the amount shown in words shall govern.)

Alternate 2 to Item No. 1

Instead of WesTech Model No. DV8050 replace Clarifier #4 Drive with Ovivo Eimco Drive Model No. C-80.

Deduct: \_\_\_\_\_ Dollars (\$ \_\_\_\_\_)  
(Amount shall be shown in both words and figures. In case of a discrepancy, the amount shown in words shall govern.)

## BID FORM

### Section 2 - Material and Equipment 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.

<u>Item Number</u>	<u>Description</u>	<u>Add/Deduct Amount</u>
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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 \_\_\_\_\_

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-1, 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 \_\_\_\_\_

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.

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>
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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 \_\_\_\_\_





## CONTRACT

THIS AGREEMENT is made on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_, between the CITY OF ANN ARBOR, a Michigan Municipal Corporation, 301 East Huron Street, Ann Arbor, Michigan 48104 (“City”) and \_\_\_\_\_ (“Contractor”)

(An individual/partnership/corporation, include state of incorporation)

(Address)

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 “Water Treatment Plant Clarifier #4 Drive Replacement” in accordance with the requirements and provisions of the following documents, including all written modifications incorporated into any of the documents, which are incorporated as part of this Contract:

Human Rights Division Contract	General Conditions
Living Wage Declaration of	Standard Specifications
Compliance Forms	Detailed Specifications
(if applicable)	Plans
Bid Forms	Addenda
Contract and Exhibits	
Bonds	

### ARTICLE II - Definitions

Administering Service Area/Unit means Public Services Area.

Supervising Professional or Owner means Senior Utilities Engineer or other persons acting under the authorization of the Administrator/Manager of the Administering Service Area/Unit.

Engineer or Owner’s Representative means Consulting Professional acting under the authorization of the Supervising Professional/Owner.

Project means, Water Treatment Plant Clarifier #4 Drive Replacement, Bid No. ITB-4334

### 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, including equipment procurement, construction and project close out, shall be completed within seven (7) consecutive months. The construction portion of this contract shall be completed within three (3) consecutive weeks. Shorter completion times for certain portions of the work may be specified in the Detailed Specifications. Liquidated damages shall also apply to these intermediate milestones based on the amounts listed in the Detailed Specifications.
- (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 \$1000.00 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.

As an independent requirement, where the Detailed Specifications or Plans identify certain portions of the work to be completed within a shorter period of time and the Contractor fails to complete each portion within the shorter period specified for each portion, including any extension granted in writing by the Project Supervisor, the City is entitled to deduct from the monies due the Contractor, as liquidated damages and not as a penalty, the amount equal to that identified in Specifications or Plans for each portion or Phase of the work not timely completed for each calendar day of delay in completion of each portion of the work.

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.

Liquidated damages under this section are in addition to any liquidated damages due under Section 5 of the General Conditions.

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 Forms for the estimated bid total of:  

\_\_\_\_\_ Dollars (\$\_\_\_\_\_)
- (B) The amount paid shall be equitably adjusted to cover changes in the work ordered by the Supervising Professional but not required by the Contract Documents. Increases or decreases shall be determined only by written agreement between the City and Contractor.

ARTICLE V - Assignment

This Contract may not be assigned or subcontracted without the written consent of 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 agreement, 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 agreement.

## 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.

## ARTICLE IX - Indemnification

To the fullest extent permitted by law, Contractor shall indemnify, defend and hold harmless 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.

ARTICLE X - Entire Agreement

This Contract represents the entire understanding between the City and the Contractor and it supersedes all prior representations or agreements whether written or oral. Neither party has relied on any prior representations in entering into this Contract. This Contract may be altered, amended or modified only by written amendment signed by the City and the Contractor.

**FOR CONTRACTOR**

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

**FOR THE CITY OF ANN ARBOR**

By \_\_\_\_\_  
John Hieftje, Mayor

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

**Approved as to substance**

By \_\_\_\_\_  
Steven D. Powers, City Administrator

By \_\_\_\_\_  
Craig Hupy, Public Services  
Area Administrator

**Approved as to form and content**

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

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 dated \_\_\_\_\_, 20\_\_, for: \_\_\_\_\_ 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.

**SIGNED AND SEALED** this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

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

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

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

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

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

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

Approved as to form:

Name and address of agent:

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

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

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, dated \_\_\_\_\_, 20\_\_, for \_\_\_\_\_  
\_\_\_\_\_; 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.

**SIGNED AND SEALED** this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
(Name of Surety Company)  
By \_\_\_\_\_  
(Signature)  
Its \_\_\_\_\_  
(Title of Office)

\_\_\_\_\_  
(Name of Principal)  
By \_\_\_\_\_  
(Signature)  
Its \_\_\_\_\_  
(Title of Office)

Approved as to form:

Name and address of agent:

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

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

## **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."

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.

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 1:319 of Chapter 14 of Title I of the Code of the City of Ann Arbor, the Contractor agrees to conform to Chapter 23 of Title I of the Code of the City of Ann Arbor, as amended, which in part states:

### **1:814. Applicability.**

- (1) This Chapter shall apply to any person that is a contractor/Bidder or grantee as defined in Section 1:813 that employs or contracts with five (5) or more individuals; provided, however, that this Chapter shall not apply to a non-profit contractor/Bidder or non-profit grantee unless it employs or contracts with ten (10) or more individuals.
- (2) This Chapter shall apply to any grant, contract, or subcontract or other form of financial assistance awarded to or entered into with a contractor/Bidder or grantee after the effective date of this Chapter and to the extension or renewal after the effective date of this Chapter of any grant, contract, or subcontract or other form of financial assistance with a contractor/Bidder or grantee.

### **1:815. Living Wages Required.**

- (1) Every contractor/Bidder or grantee, as defined in Section 1:813, shall pay its covered employees a living wage as established in this Section.
  - (a) For a covered employer that provides employee health care to its employees, the living wage shall be \$12.52 an hour, or the adjusted amount hereafter established under Section 1:815(3).
  - (b) For a covered employer that does not provide health care to its employees, the living wage shall be \$13.96 a hour, or the adjusted amount hereafter established under Section 1:815(3).

- (2) In order to qualify to pay the living wage rate for covered employers providing employee health care under subsection 1:815(1)(a), a covered employer shall furnish proof of said health care coverage and payment therefor to the City Administrator or his/her designee.
- (3) The amount of the living wage established in this Section shall be adjusted upward no later than April 30, 2002, and every year thereafter by a percentage equal to the percentage increase, if any, in the federal poverty guidelines as published by the United States Department of Health and Human Services for the years 2001 and 2002. Subsequent annual adjustments shall be based upon the percentage increase, if any, in the United States Department of Health and Human Services poverty guidelines when comparing the prior calendar year's poverty guidelines to the present calendar year's guidelines. The applicable percentage amount will be converted to an amount in cents by multiplying the existing wage under Section 1.815(1)(b) by said percentage, rounding upward to the next cent, and adding this amount of cents to the existing living wage levels established under Sections 1:815(1)(a) and 1:815(1)(b). Prior to April 1 of each calendar year, the City will notify any covered employer of this adjustment by posting a written notice in a prominent place in City Hall, and, in the case of a covered employer that has provided an address of record to the City, by a written letter to each such covered employer.

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 Section 209 of the Elliot-Larsen Civil Rights Act (MCL 37.2209). The Contractor further agrees to comply with the nondiscrimination provisions of Chapter 112 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. The Contractor further agrees to comply with the provisions of Section 9:161 of Chapter 112 of the Ann Arbor City Code and in particular the following excerpts:

#### 9:161 NONDISCRIMINATION BY CITY CONTRACTORS

- (1) All Contractors proposing to do business with the City of Ann Arbor shall satisfy the nondiscrimination administrative policy adopted by the City Administrator in accordance with the guidelines of this section. All Contractors shall receive approval from the Director prior to entering into a contract with the City, unless specifically exempted by administrative policy. All City Contractors shall take affirmative action to insure 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 race, national origin or sex.
- (2) Each prospective contractor shall submit to the City data showing current total employment by occupational category, sex and minority group. If, after verifying this data, the Director concludes that it indicates total minority and female employment commensurate with their availability within the contractor's labor recruitment area, i.e., the area from which the contractor can reasonably be expected to recruit, said contractor shall be accepted by the Director as having fulfilled affirmative action requirements for a period of one year at which

time the Director shall conduct another review. Other Contractors shall develop an affirmative action program in conjunction with the Director. Said program shall include specific goals and timetables for the hiring and promotion of minorities and females. Said goals shall reflect the availability of minorities and females within the Contractor's labor recruitment area. In the case of construction Contractors, the Director shall use for employment verification the labor recruitment area of the Ann Arbor-Ypsilanti standard metropolitan statistical area. Construction Contractors determined to be in compliance shall be accepted by the Director as having fulfilled affirmative action requirements for a period of six (6) months at which time the Director shall conduct another review.

- (3) In hiring for construction projects, contractors shall make good faith efforts to employ local persons, so as to enhance the local economy.
- (4) All Contracts shall include provisions through which the Contractor agrees, in addition to any other applicable Federal or State labor laws:
  - (a) To set goals, in conference with the Human Resources Director, for each job category or division of the work force used in the completion of the City work;
  - (b) To provide periodic reports concerning the progress the Contractor has made in meeting the affirmative action goals it has agreed to;
  - (c) To permit the Director access to all books, records and accounts pertaining to its employment practices for the purpose of determining compliance with the affirmative action requirements.
- (5) The Director shall monitor the compliance of each contractor with the nondiscrimination provisions of each contract. The Director shall develop procedures and regulations consistent with the administrative policy adopted by the City Administrator for notice and enforcement of non-compliance. Such procedures and regulations shall include a provision for the posting of Contractors not in compliance.
- (6) All City Contracts shall provide further that breach of the obligation not to discriminate shall be a material breach of the Contract for which the City shall be entitled, at its option, to do any or all of the following:
  - (a) To cancel, terminate, or suspend the Contract in whole or part and/or refuse to make any required periodic payments under the Contract;
  - (b) Declare the Contractor ineligible for the award of any future contracts with the City for a specified length of time;
  - (c) To recover liquidated damages of a specified sum, said sum to be that percentage of the labor expenditure for the time period involved which would have accrued to minority group members had the affirmative action not been breached;

(d) Impose for each day of non-compliance, liquidated damages of a specified sum, based upon the following schedule:

<u>Contract Amount</u>	<u>Assessed Damages Per Day of Non-Compliance</u>
\$ 10,000 - 24,999	\$ 25.00
25,000 - 99,999	50.00
100,000 - 199,999	100.00
200,000 - 499,999	150.00
500,000 - 1,499,999	200.00
1,500,000 - 2,999,999	250.00
3,000,000 - 4,999,999	300.00
5,000,000 - and above	500.00

(e) In addition the Contractor shall be liable for any costs or expenses incurred by the City of Ann Arbor in obtaining from other sources the work and services to be rendered or performed or the goods or properties to be furnished or delivered to the City under this contract.

#### 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 13. 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.

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

- A. 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 which may arise under this Contract; whether the acts were made by the Contractor or by any subcontractor or anyone employed by them directly or indirectly. The following insurance policies are required:
  1. 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
  2. Commercial General Liability Insurance equivalent to, as a minimum, Insurance Services Office form CG 00 01 07 98. The City of Ann Arbor shall be named as an additional

insured. There shall be no added exclusions or limiting endorsements including, but not limited to: Products and Completed Operations, Explosion, Collapse and Underground coverage or Pollution. Further, 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 Job General Aggregate

\$1,000,000 Personal and Advertising Injury

\$2,000,000 Products and Completed Operations Aggregate

3. Motor Vehicle Liability Insurance, including Michigan No-Fault Coverages, equivalent to, as a minimum, Insurance Services Office form CA 00 01 07 97. The City of Ann Arbor shall be named as an additional insured. There shall be no added exclusions or limiting endorsements. Coverage shall include all owned vehicles, all non-owned vehicles and all hired vehicles. 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.
  4. 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.
- B. Insurance required under Section A.2 and A.3 of this Contract 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.
- C. In the case of all Contracts involving on-site work, the Contractor shall provide to the City before the commencement of any work under this Contract documentation demonstrating it has obtained the above mentioned policies. Documentation must provide and demonstrate an unconditional 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; name of insurance company; name and address of the agent or authorized representative; name and address of insured; project name; policy expiration date; and specific coverage amounts; (b) any deductibles or self-insured retentions which shall be approved by the City, in its sole discretion; (c) that the policy conforms to the requirements specified. An original certificate of insurance may be provided as an initial indication of the required insurance, provided that no later than 21 calendar days after commencement of any work the Contractor supplies a copy of the endorsements required on the policies. Upon request, the Contractor shall provide within 30 days a copy of the policy(ies) 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 to the Administering Service Area/Unit at least ten days prior to the expiration date.

- D. Any Insurance provider of Contractor shall be admitted and 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-admitted insurance companies are not acceptable unless approved in writing by the City.

#### 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 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.

**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 Water Treatment Plant Clarifier #4 Drive Replacement, 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 Advertisement. 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.

A copy of the Public Services Department Standard Specifications may be purchased from the Engineering Division, (Fourth Floor, City Hall, Ann Arbor, Michigan), for \$35.00 per copy. In addition, a copy of these Standard Specifications is available for public viewing at the Engineering Division office, for review Monday through Friday between the hours of 8:30 a.m. and 4:00 p.m. Copies of the Standard Specifications can also be downloaded from the web link:

[http://www.a2gov.org/government/publicservices/project\\_management/privatedev/pages/standardspecificationsbook.aspx](http://www.a2gov.org/government/publicservices/project_management/privatedev/pages/standardspecificationsbook.aspx).

## DETAILED SPECIFICATIONS

SECTION 00620 - APPLICATION FOR PAYMENT CERTIFICATE

CONTRACTOR'S APPLICATION FOR PAYMENT NO. \_\_\_\_\_

CONTRACTOR: \_\_\_\_\_ TITLE: \_\_\_\_\_

OWNER: \_\_\_\_\_ CONTRACT NO.: \_\_\_\_\_

Substantial Completion Date: \_\_\_\_\_ Final Completion Date: \_\_\_\_\_

Milestone Completion Date: \_\_\_\_\_

Application is made for payment for the Work shown below, accomplished through the date of \_\_\_\_\_

- 1. Original Contract Sum \$ \_\_\_\_\_
- 2. Net Change by Change Order \$ \_\_\_\_\_
- 3. Current Contract Amount (line 1 + line 2) \$ \_\_\_\_\_
- 4. Work Complete (from summary sheet) \_\_\_\_\_ % \$ \_\_\_\_\_
- 5. Stored Materials (from summary sheet, if applicable) \$ \_\_\_\_\_
- 6. Less \_\_\_\_\_ % Retainage \$ \_\_\_\_\_
- 7. Less 10% Retainage - Stored Materials \$ \_\_\_\_\_
- 8. Total Retainage (line 6 + 7) \$ \_\_\_\_\_
- 9. Amount Due to Date (line 4 + 5 - 8) \$ \_\_\_\_\_
- 10. Less Previous Payments (from summary sheet) \$ \_\_\_\_\_
- 11. Amount Due This Application (line 9-10) \$ \_\_\_\_\_

CONTRACTOR'S Certification:

The undersigned CONTRACTOR certifies that: (1) all previous progress payments received from OWNER on account of Work done under the Contract referred to above have been applied to discharge in full all obligations of CONTRACTOR incurred in connection with Work covered by prior Applications for Payment; (2) title to all Work, materials and equipment incorporated in said Work or otherwise listed in or covered by this Application for Payment will pass to OWNER at time of payment free and clear of all liens, claims, security interest and encumbrances (except such as are covered by Bond acceptable to OWNER indemnifying OWNER against any such lien, claim, security interest or encumbrance); and (3) all Work covered by this Application for Payment is in accordance with the Contract Documents and not defective as that term is defined in the Contract Documents.

ATTACHMENTS TO THIS CERTIFICATION:

\_\_\_\_ Summary Sheet      \_\_\_\_ Change Order Summary      \_\_\_\_ Stored Material Summary  
\_\_\_\_ Other \_\_\_\_\_

CONTRACTOR:

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

Payment to CONTRACTOR of the amount shown in line 11 above is recommended by ENGINEER, Tetra Tech, Inc.

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

APPROVED: OWNER

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



**Stored Material Summary**

Invoice No.	Stored Material	Material Location	Insurance Certificates on File	Stored Previous		Stored This Month		Incorporated This Month		Materials remaining in storage (\$)
				Date (MO/YR)	Amount (\$)	Date (MO/YR)	Amount (\$)	Date (MO/YR)	Amount (\$)	
		On-Site Off-Site	Yes / No							
		On-Site Off-Site	Yes / No							
		On-Site Off-Site	Yes / No							

**SAMPLE**



## SECTION 01110 - SUMMARY OF WORK

### PART 1 - GENERAL

#### 1.01 SUMMARY

- A. The Project is located at the Ann Arbor Water Treatment Plant (AA WTP) at 919 Sunset Road, Ann Arbor, MI 48103.
- B. The Work consists of removal and replacement of the existing drive unit on Clarifier #4, including any modifications to the existing mechanism as related to the drive replacement. This may include repairs to existing steel structures, preparation and painting of metal surfaces and any other ancillary and incidental work necessary to accomplish the above.
  - 1. Removal of existing clarifier drive includes shoring and supporting all clarifier components (troughs, rakes, etc.) and substructure, unbolting existing drive from drive cage and supporting pier and removing existing bridge and walkway. Disposal of the removed drive shall be the responsibility of the CONTRACTOR.
  - 2. Installation of new clarifier drive includes field verifying dimensions prior to fabricating drive and all adaptation and drive conversion components, if required, as described in Section 11336. CONTRACTOR shall reconnect new drive to existing drive cage, make adaptor connections to center pier and bridge, if any, and balance mechanism once installation is complete. CONTRACTOR shall be responsible for ensuring all existing clarifier components are reconnected correctly and will operate successfully with the new drive in accordance with the replacement drive manufacturer's instructions.
  - 3. See Walker Process Equipment original shop drawings and data sheet for existing Clarifier #4 in the plans section. Responsibility for ensuring proper installation, commissioning, testing and overload device setting (torque testing) shall be responsibility of the replacement drive manufacturer and recommendations regarding proper shoring shall be provided by the replacement drive manufacturer for CONTRACTOR's use during construction.

#### 1.02 WORK SEQUENCE

- A. CONTRACTOR shall arrange its Work so that at no time shall it cause unnecessary interruption to the operation of existing facilities. CONTRACTOR shall prepare and submit to ENGINEER for approval, a complete detailed working schedule in compliance with the OWNER's schedule, setting forth the sequence of operations CONTRACTOR proposes to follow. No work shall commence until the ENGINEER has approved this plan.
- B. The CONTRACTOR's work schedule shall be dictated by the availability of Clarifier #4. Work shall begin at the clarifier only after the OWNER has isolated, dewatered and made Clarifier #4 available. CONTRACTOR shall be responsible for maintaining the structure, including dewatering, once it has been made available to extent necessary to complete the work.
- C. The CONTRACTOR's schedule may be altered by the ENGINEER at any point to coordinate construction activities with the need, or lack thereof, for Clarifier #4.
- D. As a guide in preparing a construction sequence for the project, the CONTRACTOR shall use the following:

1. General Sequence
  - a. Submit Project Schedule and CONTRACTOR's Proposed Protection of Process Water plan for review and approval.
  - b. Perform walk-through and review existing drive with ENGINEER.
  - c. Provide 30-days notice prior to beginning work to allow plant staff to isolate Clarifier #4. Contractor shall coordinate arrival of the new drive on site prior to having the tank drained.
  - d. Provide protection of process water by ensuring tanks is drained and valves are closed.
  - e. Begin work.
  - f. Perform drive replacement including touch-up painting, testing and commissioning.
  - g. Clean up, restoration.
2. Schedule
  - a. The schedule set below and in article III of the contract is fixed and non-negotiable.
  - b. Contractor shall be responsible for providing additional crews as required at no additional cost to the OWNER to meet the schedule.
  - c. The completion dates set below describe the dates that the improvements, including clean up and restoration, must be completed. The OWNER will be putting Clarifier #4 back into service at the dates set below.
  - d. Available Construction Window for Clarifier #4 Drive Replacement: 21 calendar days.

### 1.03 LIQUIDATED DAMAGES

- A. Liquidated damages will be applied independently for each area of improvements that are not completed by the dates set by this Contract.
- B. Where the schedule requirements identified in the this Section are not met; including repairs not fully complete, final cleaning, equipment reinstallation and all other work to make the structure suitable for Owner operation, non-quantifiable liquidated damages in the following amounts will be applied.
  1. Clarifier #4 Drive Replacement Substantial Completion: Liquidated damages in the amount of \$1,000.00 per day will be imposed for each calendar day beyond 21 calendar days that the clarifier is not operational.
  2. Access Road Closure: CONTRACTOR will be allowed to close WTP Access Road off of Pomona Road for two periods of not more than (5) days each with 14 days advanced notice: five (5) days for existing drive removal and five (5) days for proposed drive installation. The Access Road must be kept open for at least (5) work days between these closure periods. The Access Road shall be kept clear outside work hours. Liquidated damages in the amount of \$2,000.00 per day will be imposed for each calendar day the Access Road is closed in addition to these two periods.
  3. Final Cleanup and Site Restoration: Liquidated damages in the amount of \$300.00 per day will be imposed for each calendar day beyond the Contract period that this work is not complete.

### 1.04 CONTRACTOR USE OF PREMISES

- A. OWNER will occupy the Site during the entire construction period. Cooperate with OWNER during construction operations to minimize conflicts and facilitate OWNER usage. Perform the Work so as not to interfere with OWNER's operations.

- B. Limit use of the premises to construction activities in areas indicated; allow for OWNER occupancy and use by the public. Confine operations to areas within Contract limits indicated. Portions of the Site beyond areas in which construction operations are indicated are not to be disturbed.
- C. Keep driveways and entrances serving the premises clear and available to OWNER, OWNER's employees, and private property owners at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on Site. Areas for CONTRACTOR's trailers, equipment, and material storage, and CONTRACTOR's employee parking shall be as indicated on Drawings or agreed by OWNER prior to the start of construction.
- D. The CONTRACTOR shall maintain the site and surrounding public properties free from accumulations of waste, debris and rubbish, caused by the construction operations.
- E. CONTRACTOR use of OWNER's utilities (power and water) is covered in Section 01500. CONTRACTOR shall coordinate all connections and usage of OWNER utilities to ensure no disruption with normal plant operation.
- F. CONTRACTOR shall provide his own restroom facilities, see Section 01500.

#### 1.05 PROTECTION OF WORK AND MATERIAL

- A. During the progress of the work and up to the date of final payment, the CONTRACTOR shall be solely responsible for the care and protection of all work and materials covered by the Contract, except where a certificate of partial substantial completion has been issued by the OWNER.
- B. All work and materials shall be protected against damage, injury or loss from any cause whatsoever, and the CONTRACTOR shall make good any such damage or loss at his own expense. Protection measures shall be subject to the approval of the OWNER.

#### 1.06 SHORING, UNDERPINNING AND BRACING

- A. When necessary and required, the CONTRACTOR shall provide underpinning and temporary shoring and bracings, all in accordance with code requirements,
- B. Shoring and bracing shall be of such form and so installed as to safely support the work and interfere as little as possible with the progress of the work.

#### 1.07 CONFINED SPACE

- A. Clarifier #4 is considered a Non-Permitted Confined Space. The CONTRACTOR must meet all requirements of MIOSHA for working in confined spaces. The CONTRACTOR must submit a confined space entry program to the City for record, before any work is started in the area.

#### 1.08 SECURITY AND ACCESS

- A. The Water Treatment Plant is a limited access facility. The CONTRACTOR must comply with the plant's operational provisions for security including, but not limited to:
  - 1. Provide proper identification of employees
  - 2. Provide and use photos IDs for all CONTRACTOR personnel.

3. Maintain daily sign-in log of personnel and visitors.
4. Provide a list of personnel and vehicles on site
5. Maintain a daily log of vehicle license plate numbers on site.
6. Allow OWNER to conduct background checks on CONTRACTOR's personnel upon request.
7. Notify the plant in advance of material deliveries to the site, including delivery contents.
8. Follow the proper procedure for entry to/departure from plant.

These procedures may be revised by the City at any time, as needed.

- B. Use of OWNER's security measures does not relieve Contractor of its responsibility to secure its own working spaces and materials.
- C. Access to Plant Site, Roadways, and Parking Areas
  1. An unobstructed traffic route through all water plant gates shall be maintained at all times for the OWNER's operations personnel and maintenance equipment, with the exception of the temporary closures described herein. The CONTRACTOR shall be responsible for providing access to the construction area and for preparing and maintaining temporary access road, fence, and/or gate, as needed. CONTRACTOR's personnel shall park on approved City streets adjacent to the water treatment plant and shall not park on the water treatment plant site.
  2. An unobstructed traffic route around the plant site shall be maintained at all times for the OWNER's operations personnel, maintenance equipment, and delivery vehicles. Vehicular access to the treatment units, buildings, and bulk chemical storage facilities for Owner personnel and for chemical delivery vehicles shall be maintained at all times by the CONTRACTOR.
  3. It shall be the responsibility of the CONTRACTOR to obtain any permits required from the City of Ann Arbor and pay all associated fees.
  4. The CONTRACTOR shall be responsible for removal of snow in areas of the CONTRACTOR's work.

#### 1.09 GUARANTEE

- A. The CONTRACTOR shall be present for a site inspection before the warranty expires. At this time, the OWNER will develop a punch list of deficiencies to be addressed by the CONTRACTOR. The CONTRACTOR shall address these items within 14 days of the inspection.

#### 1.010 PERMITS

- A. The CONTRACTOR will be required to follow the requirements established by all permits necessary for the construction of this project. The following is a list of all permits that must be obtained prior to the beginning of construction.
  1. City of Ann Arbor Building Permit
- B. The City of Ann Arbor Building permit shall be applied for by the CONTRACTOR. The plan review fee shall be paid for by the CONTRACTOR. The CONTRACTOR shall be required to obtain the permit, pay all associated fees and adhere to all requirements of the permit. The CONTRACTOR must submit a copy of the permit to the OWNER and ENGINEER prior to construction.

- C. CONTRACTOR may be required to obtain a permit from the City of Ann Arbor should any part of project mobilization or project activities interfere with traffic on a City street.

#### 1.011 RESTORATION OF DISTURBED LAWN AREAS

- A. Recondition existing lawn areas damaged by CONTRACTOR's operations including storage of materials and equipment and movement of vehicles.
- B. All lawn areas shall be restored to a condition that is equal to or better than prior to construction.
- C. Construction methods for seeding and mulching shall be in accordance with the City of Ann Arbor Public Services Department Standard Specifications, Division VIII – Landscaping and Restoration.
- D. Seeding dates, kinds of seed and rates shall be as follows:
  - April 15 – October 10
  - Perennial Ryegrass (44 lb/acre)
  - Kentucky Bluegrass (66 lb/acre) and
  - Creeping Red Fescue (110 lb/acre)
- E. Contractor's obligation for lawn restoration shall not be relieved until the grass seed has germinated and covered the disturbed area to a density similar to surrounding, undisturbed areas.

#### PART 2 - PRODUCTS

NOT USED

#### PART 3 - EXECUTION

##### 3.01 CONTROL OF WATER POLLUTION

- A. General Requirements
  - 1. The CONTRACTOR shall conduct his work in such manner as to prevent the entry of fuels, oils, bituminous materials, chemical, sewage or other harmful materials into the plant flow or treatment processes.
  - 2. The CONTRACTOR shall take all necessary precautions to prevent the entry of these harmful materials including the use of tarps, planks, protective trusses or scaffolding systems, or other OWNER and ENGINEER approved methods.
  - 3. Any vehicles or equipment with oil, fuel, or other fluid leaks shall not be allowed on the site and shall be immediately removed upon detection.

END OF SECTION

## SECTION 01210 - ALLOWANCES

### PART 1 - GENERAL

#### 1.01 SUMMARY

- A. This Section specifies administrative and procedural requirements for processing Allowances. Selected materials and equipment, and in some cases their installation, are shown and specified in the Contract Documents by Allowances. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when additional information is available for evaluation. Additional requirements, if necessary, will be issued by Change Order.

#### 1.02 DEFINITIONS

- A. Lump Sum Allowance: A monetary sum that includes, as part of the Contract Price, the associated costs and requirements to complete the specified Allowance.

#### 1.03 SUBMITTALS

- A. Submit invoices or delivery slips to indicate actual quantities of materials delivered to the Site for use in fulfillment of each Allowance.

#### 1.04 OWNER'S INSTRUCTIONS

- A. At the earliest feasible date after Contract Award, advise ENGINEER of the date when the final selection and purchase of each product or system described by an Allowance must be completed in order to avoid delay in performance of the Work.
- B. When requested by ENGINEER, obtain Bids for each Allowance for use in making final selections; include recommendations that are relevant to performance of the Work.
- C. Purchase products and systems as selected by ENGINEER from the designated supplier.
- D. Use Allowances only as directed for OWNER's purposes, and only by Change Orders which designate amounts to be charged to the Allowance.
- E. If the actual price for the specified Allowance is more or less than the stated Allowance, the Contract Price shall be adjusted accordingly by Change Order. The adjustment in Contract Price shall be made in accordance with Paragraph 11.02 of the General Conditions.
- F. Change Orders authorizing use of funds from the Contingency or Provisionary Allowances will include CONTRACTOR's related costs and reasonable overhead and profit margins.
- G. At Project closeout, any amounts remaining in Allowances will be credited to OWNER by Change Order.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

3.01 INSPECTION

- A. Inspect products covered by an Allowance promptly upon delivery for damage or defects.

3.02 PREPARATION

- A. Coordinate materials and their installation for each Allowance with related materials and installations to ensure that each Allowance item is completely integrated and interfaced with related construction activities.

## SCHEDULE OF ALLOWANCES

1. Lump Sum Allowance for Building Permit. An Allowance of \$2,500 shall be included in the Contract Price for this Work. CONTRACTOR shall make all arrangements for and shall pay for this Work under this Contract. For further information, contact:

Company	City of Ann Arbor Building Department
Address	301 E. Huron Street, Ann Arbor, MI 48104
Phone	734-794-6267

END OF SECTION



## SECTION 01290 - APPLICATIONS FOR PAYMENT

### PART 1 - GENERAL

#### 1.01 SUMMARY

- A. This Section specifies administrative and procedural requirements governing CONTRACTOR's Applications for Payment.
- B. Related Sections:
  - 1. CONTRACTOR's Application for Payment form is included in Section 00620.
  - 2. CONTRACTOR's Construction Schedule and Submittal Schedule are included in Section 01330.

#### 1.02 OWNER'S INSTRUCTIONS

- A. Payment for clarifier drive shall be made at the following milestones:
  - 1. Delivery of Clarifier Drive – 60% of material cost
  - 2. Installation of Clarifier Drive - 30% of material cost
  - 3. Start-up of Clarifer Drive and Final Close-out activities - 10% of material cost
- B. CONTRACTOR may propose an alternate payment schedule based on the schedule of values approach below.
- C. Schedule of Values:
  - 1. Coordinate preparation of Schedule of Values with preparation of CONTRACTOR's Construction Schedule.
  - 2. Correlate line items on Schedule of Values with other required administrative schedules and forms, including:
    - a. CONTRACTOR's Construction Schedule.
    - b. Application for Payment form.
    - c. List of subcontractors.
    - d. Schedule of Allowances.
    - e. Schedule of Alternates.
    - f. List of products.
    - g. List of principal suppliers and fabricators.
    - h. Schedule of Submittals.
  - 3. Submit Schedule of Values to ENGINEER at the earliest feasible date, but in no case later than 7 days before the date scheduled for submittal of the initial Application for Payment.
  - 4. Format and Content: Use the Project Manual Table of Contents as a guide to establish the format for Schedule of Values.
  - 5. Identification: Include the following Project identification on Schedule of Values:
    - a. Project name and location.
    - b. Name of ENGINEER.
    - c. Project number.
    - d. CONTRACTOR's name and address.
    - e. Date of submittal.
  - 6. Arrange Schedule of Values in a tabular form with separate rows for each Specification Section and separate columns for each major structure or area of Work.

7. Provide a breakdown of the Contract Price in sufficient detail to facilitate continued evaluation of Applications for Payment and progress reports. Break principal subcontract amounts down into several line items.
  8. Round off amounts to the nearest whole dollar; the total shall equal the Contract Price.
  9. For each part of the Work where an Application for Payment may include materials or equipment, purchased or fabricated and stored, but not yet installed, provide separate line items on Schedule of Values for initial cost of the materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
  10. Show line items for indirect costs, and margins on actual costs, only to the extent that such items will be listed individually on Applications for Payment. Each item on Schedule of Values and Applications for Payment shall be complete including its total cost and proportionate share of general overhead and profit margin.
  11. At CONTRACTOR's option, temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown as separate line items on Schedule of Values or distributed as general overhead expense.
  12. Update and resubmit Schedule of Values when Change Orders or Work Change Directives result in a change in the Contract Price.
- D. Initial Application for Payment: Administrative actions and submittals that must precede submittal of the first Application for Payment include the following:
1. List of subcontractors.
  2. List of principal suppliers and fabricators.
  3. Schedule of Values.
  4. CONTRACTOR's Construction Schedule (preliminary if not final).
  5. Schedule of principal products.
  6. Submittal Schedule (preliminary if not final).
- E. Applications For Payment:
1. Each Application for Payment shall be consistent with previous applications and payments as certified by ENGINEER and paid for by OWNER.
  2. The initial Application for Payment, the Application for Payment at time of Substantial Completion, and the final Application for Payment involve additional requirements.
  3. The date for each progress payment will be determined at the Pre-Construction Conference. The period of construction Work covered by each Application for Payment is 1 month. Actual start/end dates will be determined at the Pre-Construction Conference.
  4. Use the pay application form included in Section 00620 for Applications for Payment.
  5. Complete every entry on the form, including execution by person authorized to sign legal documents on behalf of CONTRACTOR. Incomplete applications will be returned without action.
  6. Entries shall match data on Schedule of Values and CONTRACTOR's Construction Schedule. Use updated Schedules if revisions have been made.
  7. Include amounts of Change Orders and Work Change Directives issued prior to the last day of the construction period covered by the application.
  8. Submit 3 executed copies of each Application for Payment to ENGINEER; Each copy shall be complete, including waivers of lien and similar attachments, when required.
  9. Transmit each copy with a transmittal form listing attachments, and recording appropriate information related to the application in a manner acceptable to ENGINEER.

- F. Application for Payment at Substantial Completion:
1. Following issuance of the Certificate of Substantial Completion, submit an Application for Payment; this application shall reflect any Certificates of Partial Substantial Completion issued previously for OWNER occupancy of designated portions of the Work.
  2. Administrative actions and submittals that shall proceed or coincide with this application include:
    - a. Warranties (guarantees) and maintenance agreements.
    - b. Test/adjust/balance records.
    - c. Maintenance instructions.
    - d. Start-up performance reports.
    - e. Final cleaning.
    - f. Application for reduction of retainage and consent of surety.
    - g. Final progress photographs.
    - h. List of incomplete Work, recognized as exceptions to ENGINEER'S Certificate of Substantial Completion.
- G. Final Payment Application: Administrative actions and submittals which must precede or coincide with submittal of the final payment Application for Payment include the following:
1. Completion of Project closeout requirements.
  2. Completion of items specified for completion after Substantial Completion.
  3. Transmittal of required Project construction records to OWNER.
  4. Proof that taxes, fees, and similar obligations have been paid.
  5. Removal of temporary facilities and services.
  6. Removal of surplus materials, rubbish, and similar elements.
  7. CONTRACTOR's waivers of mechanics liens for Project.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

END OF SECTION

## SECTION 01310 - PROJECT COORDINATION

### PART 1 - GENERAL

#### 1.01 SUMMARY

- A. This Section specifies administrative and supervisory requirements necessary for Project coordination including, but not necessarily limited to:
  - 1. Coordination of Work under this Contract.
  - 2. Administrative and supervisory personnel.
  - 3. Pre-Construction Conference.
  - 4. Pre-Installation Conference.
  - 5. Progress meetings.
  - 6. Inspections
  - 7. General installation provisions.
  - 8. Cleaning and protection.
  
- B. Related Sections Specified Elsewhere:
  - 1. Equipment installation check, and operation, maintenance, and training of OWNER's personnel are included in Section 01600 and Sections for specific equipment items.
  - 2. Requirements for CONTRACTOR's Construction Schedule are included in Section 01330.
  - 3. Closeout procedures are included in Section 01770.

#### 1.02 SUBMITTALS

- A. Within 15 days of Notice to Proceed, submit a list of CONTRACTOR's principal staff assignments, including the Superintendent and other personnel in attendance at Site; identify individuals, their duties and responsibilities; list their addresses and telephone numbers.

#### 1.03 SCHEDULING

- A. Coordinate construction operations included under different Sections of the Specifications that are dependent upon each other for proper installation, connection, and operation. Where installation of one part of the Work is dependent on installation of other components, either before or after its own installation, schedule construction activities in the sequence required to obtain the best results. Where availability of space is limited, coordinate installation of different components to assure maximum accessibility for required maintenance, service and repair. Make adequate provisions to accommodate items scheduled for later installation.
  
- B. CONTRACTOR shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at Site in accordance with Laws or Regulations. CONTRACTOR shall train CONTRACTOR's employees on use of these sheets and shall keep a master copy on hand at Site.
  
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
  - 1. Preparation of schedules.
  - 2. Installation and removal of temporary facilities.

3. Delivery and processing of submittals.
4. Progress meetings.
5. Project closeout activities.

#### 1.04 PRE-CONSTRUCTION CONFERENCE

- A. ENGINEER will schedule a Pre-Construction Conference and organizational meeting at the Site or other convenient location prior to commencement of construction activities to review responsibilities and personnel assignments.
- B. Attendees: OWNER, ENGINEER, CONTRACTOR and its superintendent, manufacturers, suppliers and other concerned parties shall each be represented at the conference by persons familiar with and authorized to conclude matters relating to the Work. The drive manufacturer shall have a representative at this conference.
- C. Agenda: Discuss items of significance that could affect progress including such topics as:
  1. Tentative Construction Schedule.
  2. Critical Work sequencing.
  3. Designation of responsible personnel.
  4. Procedures for processing field decisions and Change Orders.
  5. Procedures for processing Applications for Payment.
  6. Distribution of Contract Documents.
  7. Submittal of Shop Drawings, product data, and samples.
  8. Preparation of Record Documents.
  9. Use of the premises.
  10. Office, Work, and storage areas.
  11. Equipment deliveries and priorities.
  12. Safety procedures.
  13. First aid.
  14. Security.
  15. Housekeeping.
  16. Working hours.

#### 1.05 PRE-INSTALLATION CONFERENCE

- A. Where specified, CONTRACTOR, supplier, and ENGINEER shall meet on Site and discuss tools, techniques, and procedures for installation of products and equipment prior to performing the Work.

#### 1.06 COORDINATION MEETINGS

- A. CONTRACTOR shall schedule meetings for planning and coordinating plant or process shutdowns and tie-ins as needed. Meetings shall be attended by CONTRACTOR, ENGINEER and staff as directed by OWNER.

#### 1.07 PROGRESS MEETINGS

- A. Attendees: In addition to representatives of OWNER and ENGINEER, each subcontractor, supplier, or other entity concerned with current progress or involved in planning, coordination, or

performance of future activities shall be represented at these meetings by persons familiar with the Project and authorized to conclude matters relating to progress.

- B. Agenda: Review and correct or approve minutes of the previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to the current status of the Project.
- C. CONTRACTOR's Construction Schedule: Review progress since the last meeting. Determine where each activity is in relation to CONTRACTOR's Construction Schedule, whether on time or ahead or behind schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
- D. Reporting: ENGINEER will prepare and distribute copies of minutes of the meeting to each party present and to other parties who should have been present. The minutes will include a brief summary, in narrative form, of progress since the previous meeting and report.
- E. Schedule Updating: CONTRACTOR shall revise Construction Schedule after each progress meeting where revisions to Schedule have been made or recognized. Issue revised Schedule no later than 3 days after the progress meeting date to ENGINEER for distribution concurrently with the progress meeting minutes.

#### 1.08 INSPECTIONS

- A. CONTRACTOR shall participate in inspections with OWNER and/or ENGINEER as needed throughout the project.

#### PART 2 - PRODUCTS

NOT USED

#### PART 3 - EXECUTION

##### 3.01 CLEANING AND PROTECTION

- A. During handling and installation, clean and protect construction in progress and adjoining materials in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- B. Clean and maintain completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- C. Protect clarifier sump from accumulating debris during construction. Plywood or another method of protecting debris from entering the sump shall be used.

END OF SECTION

## SECTION 01330 - SUBMITTALS

### PART 1 - GENERAL

#### 1.01 SUMMARY

- A. This Section specifies administrative and procedural requirements for submittals, including, but not necessarily limited to, the following:
  - 1. CONTRACTOR's Construction Schedule.
  - 2. Schedule of Values
  - 3. Submittal Schedule.
  - 4. Shop Drawings.
  - 5. Shoring and support plan for Clarifier ancillary components
  - 6. Product data.
  - 7. Progress photographs.
  - 8. Record photographs.
  
- B. Topics covered elsewhere include, but are not limited to:
  - 1. Permits.
  - 2. Applications for payment.
  - 3. Performance and payment bonds.
  - 4. Insurance certificates.
  - 5. List of subcontractors.

#### 1.02 SCHEDULE OF VALUES

- A. Within fourteen (14) days after issuance of Notice to Proceed, CONTRACTOR shall submit two (2) copies of the proposed schedule of values for the ENGINEER's review and approval.
- B. Schedule of values shall be revised as needed based on ENGINEER's comments.
- C. Schedule of values shall be organized according to specification divisions.
- D. Schedule of values shall include sections for tracking all costs associated with each stage of the project.
  
- E. A Lump Sum payment equal to 1-1/2% of the total Bid Price (to include all bonds, instanace, etc.) will be allowed for "mobilization" as a progress payment line item. The actual cost of bonds and insurance (up to maximum payment of 1-1/2%) will be considered in the initial payment request provided that cost documentation suitable to the OWNER is furnished by the CONTRACTOR. Any outstanding balance of the mobilization line litem will be payable when the Project work is 10% complete as indicated by the approved progress parments (less costs of mobilization and stored equipment).

#### 1.03 SUBMITTALS

- A. Bonds and Insurance Certificates shall be submitted to and approved by OWNER prior to executing the contract and prior to the initiation of any construction on Site.
- B. Permits, Licenses, and Certificates: For OWNER's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, and similar documents; correspondence and records established in conjunction with compliance with standards; and regulations bearing upon performance of the Work.

#### 1.04 SUBMITTAL PROCEDURES

- A. Coordination:
  - 1. Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.
  - 2. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
  - 3. Coordinate transmittal of different types of submittals for related elements of the Work so processing will not be delayed by the need to review submittals concurrently for coordination.
  - 4. ENGINEER reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- B. Processing:
  - 1. Allow sufficient review time so that installation shall not be delayed as a result of the time required to process submittals, including time for resubmittals.
  - 2. ENGINEER will review and return submittals with reasonable promptness, or advise CONTRACTOR when a submittal being processed must be delayed for coordination or receipt of additional information by putting the submittal "On Hold" and returning a transmittal identifying the reasons for the delay.
  - 3. No extension of Contract Time will be authorized because of failure to transmit submittals to ENGINEER sufficiently in advance of the Work to permit processing.
- C. Submittal Preparation:
  - 1. Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.
  - 2. Provide a space approximately 4 inches by 5 inches on the label or beside the title block on submittals not originating from CONTRACTOR to record CONTRACTOR's review and approval markings and the action taken.
  - 3. Include the following information on the label for processing and recording action taken.
    - a. Project name.
    - b. Date.
    - c. Name and address of ENGINEER.
    - d. Name and address of CONTRACTOR.
    - e. Name and address of subcontractor.
    - f. Name and address of supplier.
    - g. Name of manufacturer.
    - h. Number and title of appropriate Specification Section.
    - i. Drawing number and detail references, as appropriate.
  - 4. Any markings done by CONTRACTOR shall be done in a color other than red. Red is reserved for ENGINEER's marking.



5. The number of copies to be submitted will be determined at the pre-construction conference. Reproducibles may be submitted and will be marked and returned to CONTRACTOR. Blue or black line prints shall be submitted in sufficient quantity for distribution to ENGINEER and OWNER recipients.

D. Submittal Transmittal:

1. Package each submittal appropriately for shipping and handling. This shall include an index either on the transmittal or within the submittal itself. Transmit each submittal from CONTRACTOR to ENGINEER using a transmittal form. Submittals received from sources other than CONTRACTOR will be returned without action. Use separate transmittals for items from different specification sections. Number each submittal consecutively beginning with the specification section. Resubmittals should have the same number as the original, plus a letter designation for each resubmittal (i.e., 11336-1-A, 11336-1-B, etc.).
2. Indicate on the transmittal relevant information and requests for data. On the form, or separate sheet, record deviations from Contract Document requirements, including minor variations and limitations. Include CONTRACTOR's certification that information complies with Contract Document requirements. On resubmittal, all changes shall be clearly identified for ease of review. Resubmittals shall be reviewed for the clearly identified changes only. Any changes not clearly identified will not be reviewed and original submittal shall govern.

#### 1.05 CONSTRUCTION SCHEDULE

- A. Within fourteen (14) days after issuance of the Notice to Proceed, the CONTRACTOR shall prepare three (3) copies of the proposed schedule and submit two (2) copies to the ENGINEER for review and approval. Hard copies of project schedule shall be in color with critical path shown. CONTRACTOR shall also submit electronic copy of schedule.
  1. Secure time commitments for performing critical elements of the Work from parties involved. Coordinate each element on Schedule with other construction activities; include minor elements involved in the sequence of the Work. Show each activity in proper sequence. Indicate graphically sequences necessary for completion of related portions of the Work.
  2. Coordinate Construction Schedule with Schedule of Values, list of subcontracts, Submittal Schedule, progress reports, payment requests, and other schedules.
  3. Indicate completion in advance of the date established for Substantial Completion. Indicate Substantial Completion on Schedule to allow time for ENGINEER's procedures necessary for certification of Substantial Completion.
- B. Schedule Updating: Revise Schedule after each meeting or activity where revisions have been recognized or made within 48 hours following the meeting or activity. Updated schedule shall show all changes since previous submittal.

#### 1.06 SUBMITTAL SCHEDULE

- A. After development and acceptance of Construction Schedule, prepare a complete Schedule of Submittals. Submit Schedule within 10 days of the date required for establishment of Construction Schedule.
- B. Coordinate Submittal Schedule with the list of subcontracts, Schedule of Values, and the list of products, as well as Construction Schedule.

- C. Prepare Schedule in chronological order; include submittals required during the construction period. Provide the following information:
  - 1. Scheduled date for the first submittal.
  - 2. Related Section number.
  - 3. Submittal category.
  - 4. Name of subcontractor.
  - 5. Description of the part of the Work covered.
  - 6. Scheduled date for resubmittal.
  - 7. Scheduled date ENGINEER's final release or approval.
- D. Following response to initial submittal, print and distribute copies to ENGINEER, OWNER, subcontractors, and other parties required to comply with submittal dates indicated. Post copies in the Project meeting room and field office.
- E. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in construction activities.
- F. Schedule Updating: Revise Schedule after each meeting or activity where revisions have been recognized or made within 48 hours following the meeting or activity.

#### 1.07 SHOP DRAWINGS

- A. Submit newly prepared information, drawn to accurate scale. Highlight, encircle, or otherwise indicate deviations from the Contract Documents. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings. Standard information prepared without specific reference to the Project is not considered Shop Drawings.
- B. Shop Drawings include fabrication and installation drawings, setting diagrams, schedules, patterns, templates, and similar drawings. Include the following information:
  - 1. Dimensions.
  - 2. Identification of products and materials included.
  - 3. Compliance with specified standards.
  - 4. Notation of coordination requirements.
  - 5. Notation of dimensions established by field measurement.
- C. Nameplate data for equipment including electric motors shall be included on Shop Drawings. Electric motor data shall state the manufacturer, horsepower, service factor, voltage, enclosure type, oversize wiring box, etc.
- D. Shop Drawings shall indicate shop painting requirements to include type of paint and manufacturer.
- E. Standard manufactured items in the form of catalog work sheets showing illustrated cuts of the items to be furnished, scale details, sizes, dimensions, quantity, and all other pertinent information should be submitted and approved in a similar manner.
- F. Measurements given on Shop Drawings or standard catalog sheets, as established from Contract Drawings and as approved by ENGINEER, shall be followed. When it is necessary to verify field measurements, they shall be checked and established by CONTRACTOR. The field measurements so established shall be followed by CONTRACTOR and by all affected trades.

- G. Sheet Size: Except for templates, patterns, and similar full-size Drawings, submit Shop Drawings on sheets at least 8-1/2 inches by 11 inches but no larger than 36 inches by 48 inches.
- H. Do not use Shop Drawings without an appropriate final stamp indicating action taken in connection with construction.

#### 1.08 PRODUCT DATA

- A. Collect Product Data into a single submittal for each element of construction or system. Product Data includes printed information such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams, and performance curves. Where Product Data must be specially prepared because standard printed data is not suitable for use, submit as Shop Drawings.
- B. Mark each copy to show applicable choices and options. Where printed Product Data includes information on several products, some of which are not required, mark copies to indicate the applicable information. Include the following information:
  - 1. Manufacturer's printed recommendations.
  - 2. Compliance with recognized trade association standards.
  - 3. Compliance with recognized testing agency standards.
  - 4. Application of testing agency labels and seals.
  - 5. Notation of dimensions verified by field measurement.
  - 6. Notation of coordination requirements.
- C. Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.

#### 1.09 ENGINEER'S ACTION

- A. Except for submittals for record, information or similar purposes, where action and return is required or requested, ENGINEER will review each submittal, mark to indicate action taken, and return promptly.
  - 1. Compliance with specified characteristics is CONTRACTOR's responsibility.
- B. Action Stamp: ENGINEER will stamp each submittal with a uniform, self-explanatory action stamp. The stamp will be appropriately marked, as follows, to indicate the action taken:
  - 1. Final Unrestricted Release: Where submittals are marked "No Exceptions Taken," that part of the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents; final acceptance will depend upon that compliance.
  - 2. Final-But-Restricted Release: When submittals are marked "Furnish as Corrected," that part of the Work covered by the submittal may proceed, provided it complies with notation or corrections on the submittal and requirements of the Contract Documents; final acceptance will depend on that compliance.
  - 3. Returned for Resubmittal: When submittal is marked "Rejected" or "Revise and Resubmit," do not proceed with that part of the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal in accordance with the notations; resubmit without delay. Repeat if necessary to obtain a different action mark.
    - a. Do not permit submittals marked "Rejected" or "Revise and Resubmit" to be used at Site, or elsewhere where Work is in progress.

4. Other Action: Where a submittal is primarily for information or record purposes, special processing or other activity, the submittal will be returned, marked "Acknowledge Receipt."
5. The approval of ENGINEER shall not relieve CONTRACTOR of responsibility for errors on Drawings or submittals as ENGINEER's checking is intended to cover compliance with Drawings and Specifications and not enter into every detail of the shop work.

#### 1.10 RECORD PHOTOGRAPHS

- A. CONTRACTOR shall take a minimum of 36 pre-construction photographs to document the condition of the site prior to beginning work.
- B. After final acceptance of the Work, 36 photographs shall be taken of each structure and major feature of the Project as directed by ENGINEER. These photographs shall be taken from points and at times directed by ENGINEER.
- C. Photographs shall include condition of Access Road both before and after project.
- D. CONTRACTOR shall provide digital photos submitted on CD. File names should represent the subject matter of the photo. At the completion of the project, the CONTRACTOR shall print the photos on photographic paper (4"x6") and bind in a 3-ring binder, two photos per 8 ½ x 11 sheet.

#### PART 2 - PRODUCTS

NOT USED

#### PART 3 - EXECUTION

NOT USED

END OF SECTION

## SECTION 01500 - TEMPORARY FACILITIES

### PART 1 - GENERAL

#### 1.01 SUMMARY

- A. Section Includes: This Section specifies procedural and administrative requirements for temporary services and facilities.
- B. Temporary Utilities include, but are not limited to:
  - 1. Temporary electric power.
  - 2. Temporary lighting.
- C. Temporary Construction and Support Facilities include, but are not limited to:
  - 1. CONTRACTOR's storage sheds.
  - 2. Sanitary facilities (temporary toilets)
- D. Construction Buildings and Facilities include, but are not limited to.
  - 1. Temporary Project bulletin boards.
  - 2. Stairs.
  - 3. Hoists.
  - 4. Ongoing construction cleanup.
  - 5. Storage of equipment and material.
- E. Security and Protection Facilities required include, but are not limited to:
  - 1. Temporary fire protection.
  - 2. Barricades, warning signs, lights.
  - 3. Security enclosure and lockup.
  - 4. Environmental protection.
  - 5. Control of noise.
  - 6. Dust control.
- F. Traffic Control Facilities required include, but are not limited to:
  - 1. Maintenance of traffic.

#### 1.02 REFERENCES

- A. Natural Resources and Environmental Protection Act, P.A. 451 (Act 451) of 1994.
- B. Guidebook of Best Management Practices for Michigan Watersheds.
- C. Local Soil Erosion Control Ordinance or requirements.
- D. Michigan Manual of Uniform Traffic Control Devices (MMUTCD).
- E. Codes and Standards:

1. Comply with NFPA Code 241, "Building Construction and Demolition Operations," ANSI A10 Series standards for "Safety Requirements for Construction and Demolition," and NECA Electrical Design Library, "Temporary Electrical Facilities."
2. Refer to "Guidelines for Bid Conditions for Temporary Job Utilities and Services," prepared jointly by AGC and ASC, for industry recommendations.
3. Comply with NEMA, NECA, and UL standards and regulations for temporary electric service. Install service in compliance with National Electric Code (NFPA 70).

### 1.03 SUBMITTALS

- A. Shop Drawings: Submit in accordance with Section 01330, Shop Drawings covering the items included under this Section. Shop Drawing submittals shall include:
  1. Temporary Utilities: Submit a schedule indicating dates for implementation and termination of each temporary utility. At the earliest feasible time, when acceptable to OWNER, change over from use of temporary service to use of the permanent service.

### 1.04 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction including, but not limited to:
  1. Building Code requirements.
  2. Health and Safety regulations.
  3. Utility Company regulations.
  4. Police, Fire Department, and Rescue Squad rules.
  5. Environmental Protection regulations.
  6. State and Local Soil Erosion and Sedimentation Control regulations.
- B. Inspection: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

### 1.05 PROJECT CONDITIONS

- A. Unless otherwise provided in these Specifications, CONTRACTOR shall make CONTRACTOR's own arrangements for electricity, gas, water, and temporary toilets for use during the construction of the Work and shall pay for all temporary facilities, connections, extensions, and services.
  1. Cost or use charges for temporary facilities are not chargeable to OWNER or ENGINEER, and will not be accepted as a basis of claims for a Change Order.
- B. Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Take necessary fire prevention measures. Do no overload facilities or permit them to interfere with progress. Do not allow hazardous, dangerous or unsanitary conditions, or public nuisances to develop or persist on Site.
- C. At the completion of the work, or when the temporary services are no longer required, the facilities shall be restored to their original conditions.

## 1.06 SEQUENCING AND SCHEDULING

- A. CONTRACTOR shall inform the local Fire Department in advance of CONTRACTOR's program of street obstruction and detours, so that the Fire Department can set up plans for servicing the area in case of an emergency.
  - 1. CONTRACTOR shall also notify the public agency having jurisdiction over the roads at least 1 week prior to obstructing any street.

## PART 2 - PRODUCTS

### 2.01 MATERIALS

- A. Provide new materials; if acceptable to ENGINEER, undamaged previously used materials in serviceable condition may be used. Provide materials suitable for the use intended.
- B. Water: Potable water service will be available through OWNER. CONTRACTOR shall be responsible for coordinating connections for temporary potable water service.

### 2.02 EQUIPMENT

- A. Provide new equipment; if acceptable to ENGINEER, undamaged, previously used equipment in serviceable condition may be used. Provide equipment suitable for use intended.
- B. Electrical Outlets: Provide properly configured NEMA polarized outlets to prevent insertion of 110 to 120 volt plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button, and pilot light for connection of power tools and equipment.
- C. Electrical Power Cords: Provide grounded extension cords; use "hard-service" cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords, if single lengths will not reach areas where construction activities are in progress.
- D. Temporary Toilet Units: Provide self-contained single-occupant toilet units, properly vented and fully enclosed with a glass fiber-reinforced polyester shell or similar nonabsorbent material. CONTRACTOR shall coordinate location of temporary toilet units with ENGINEER.
- E. First Aid Supplies: Comply with governing regulations.
- F. Fire Extinguishers: Provide hand-carried, portable, UL rated, Class "A" fire extinguishers for temporary offices and similar spaces.
  - 1. In other locations, provide hand-carried, portable, UL rated, Class "ABC" dry chemical extinguishers, or a combination of extinguishers of NFPA recommended classes for the exposures.
  - 2. Comply with NFPA 10 and 241 for classification, extinguishing agent and size required by location and class of fire exposure.
- G. Bulletin Board: Provide a weather-protected enclosed bulletin board at Site. The bulletin board shall be mounted in a conspicuous and public outside location.

## PART 3 - EXECUTION

### 3.01 INSTALLATION

- A. Use qualified personnel for installation of temporary facilities. Locate facilities where they shall serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.
- B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed, or are replaced by authorized use of completed permanent facilities.

### 3.02 TEMPORARY UTILITY INSTALLATION

- A. Water Service and Distribution: CONTRACTOR shall at all times provide for CONTRACTOR's employees an abundant and convenient supply of cool drinking water taken from a potable source.
- B. Temporary Electric Power Service: Provide weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics during construction period. Include meters, transformers, overload protected disconnects, automatic ground fault interrupters, and main distribution switchgear.
- C. Temporary Lighting: Wherever overhead floor or roof deck has been installed, provide temporary lighting with local switching.
  - 1. Install and operate temporary lighting that shall fulfill security and protection requirements, without operating the entire system, and shall provide adequate illumination for construction operations and traffic conditions.
- D. Public and Private Utilities: Where any utilities, water, sewer, gas, telephone, or any other either public or private, are encountered, CONTRACTOR must provide adequate protection for them, and CONTRACTOR shall be held responsible for any damages to such utilities arising from CONTRACTOR's operations.

### 3.03 TEMPORARY CONSTRUCTION AND SUPPORT FACILITIES INSTALLATION

- A. Locate sanitary facilities, and other temporary construction and support facilities for easy access.
  - 1. Maintain temporary construction and support facilities until near Substantial Completion. Remove prior to Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to OWNER.
- B. Sanitary Facilities: Sanitary facilities include temporary toilets, wash facilities, and drinking water fixtures. Comply with regulations and health Codes for the type, number, location, operation, and maintenance of fixtures and facilities. Install where facilities will best service the Project's needs.
  - 1. Provide toilet tissue, paper towels, paper cups, and similar disposable materials for each facility. Provide covered waste containers for used material.
  - 2. Install self-contained toilet units. Shield toilets to ensure privacy. Use of pit-type privies will not be permitted.



3. Install wash facilities supplied with potable water at convenient locations for personnel involved in handling materials that require wash-up for a healthy and sanitary condition. Dispose of drainage properly. Supply cleaning compounds appropriate for each condition.

#### 3.04 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Except for use of permanent fire protection as soon as available, do not change over from use of temporary security and protection facilities to permanent facilities until Substantial Completion, or longer as requested by ENGINEER.
- B. Temporary Fire Protection: Install and maintain temporary fire protection facilities of the types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 10, "Standard for Portable Fire Extinguishers," and NFPA 241, "Standard for Safeguarding Construction, Alterations and Demolition Operations."
  1. Provide supervision of welding operations and similar sources of fire ignition.
- C. Private Owner Fences: No fences shall be removed or destroyed by CONTRACTOR without the written permission of ENGINEER. CONTRACTOR shall be held fully responsible for any damages caused by CONTRACTOR's work to adjoining fences. Fences that have to be removed shall be preserved and replaced in a manner acceptable to ENGINEER. Damaged material shall be replaced by new material.
- D. Environmental Protection: Provide protection, operate temporary facilities and conduct construction in ways and by methods that comply with environmental regulations and minimize the possibility that air, waterways and subsoil might be contaminated or polluted, or that other undesirable effects might result. Avoid use of tools and equipment which produce harmful noise. Restrict use of noise-making tools and equipment to hours that will minimize complaints from persons or firms near the Site.
- E. Control of Noise: CONTRACTOR shall eliminate noise to as great an extent as possible at all times. Air compressors shall be equipped with silencers, and the exhaust of all gasoline motors and other power equipment shall be provided with mufflers.
- F. Dust Control: CONTRACTOR shall take all steps necessary for the alleviation or prevention of dust nuisance caused by or resulting from CONTRACTOR's operations and shall apply water or dust palliative, or both, as required. No direct payment will be made for any such Work performed or materials used to control dust from this Contract.

#### 3.05 TRAFFIC CONTROL FACILITIES INSTALLATION

- A. Maintenance of Traffic: During the progress of Work, CONTRACTOR shall accommodate both vehicular and pedestrian traffic as provided in these Specifications.
  1. In the absence of specific requirements, CONTRACTOR shall maintain such traffic. Access to fire hydrants, water, and gas valves shall always be maintained.
  2. CONTRACTOR's truck and equipment operations on public streets shall be governed by all local traffic ordinances and regulations of the Fire and Police Departments and the Department of Public Works.
  3. Where streets are partially obstructed, CONTRACTOR shall place and maintain temporary driveways, ramps, bridges and crossings which, in the opinion of ENGINEER, are necessary to accommodate the public. In the event of CONTRACTOR's failure to comply with the foregoing

provisions, 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 CONTRACTOR under this Contract; but the performance of such Work by OWNER, or at OWNER's insistence, shall serve in no way to release CONTRACTOR from CONTRACTOR's liability for the safety of the traveling public.

4. CONTRACTOR shall inform the local Fire Department in advance of CONTRACTOR's program of street obstruction and detours, so that the Fire Department can set up plans for servicing the area in case of an emergency. CONTRACTOR shall also notify the public agency having jurisdiction over the roads at least 1 week prior to obstructing a road.

### 3.06 FIELD QUALITY CONTROL

- A. Any unforeseen situations that may be encountered during the course of construction that may cause accelerated erosion and deposition of sediment into waterways shall be controlled by methods that may include sediment traps, sediment basins, or other measures. Any slope failures or development of gullies after construction has been completed shall be corrected immediately.
- B. Should the local Regulatory Agency determine at any time during construction that the construction operation is in violation of the Natural Resources and Environmental Protection Act, P.A. 451 (Act 451) of 1994 and cite OWNER, CONTRACTOR or Subcontractor shall take immediate action, as directed by OWNER, to ensure compliance with the Act.

### 3.07 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse.
- B. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage by freezing temperatures and similar elements.
- C. Termination and Removal: Unless ENGINEER requires that it be maintained longer, remove each temporary facility when the need has ended, or when replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with the temporary facility. Repair damaged Work, clean exposed surfaces and replace construction that cannot be satisfactorily repaired.
  1. Materials and facilities that constitute temporary facilities are property of CONTRACTOR. OWNER reserves the right to take possession of Project identification signs.
  2. At Substantial Completion, clean and renovate permanent facilities that have been used during the construction period.

END OF SECTION

## SECTION 01600 - GENERAL EQUIPMENT STIPULATIONS

### PART 1 - GENERAL

#### 1.01 SUMMARY

- A. These General Equipment Stipulations apply, in general, to all equipment provided under other Specification Sections. They shall supplement the detailed equipment specifications, but in cases of conflict the equipment specifications shall govern.
- B. Related Sections: Circular Sludge Collection Mechanisms are specified in Section 11336.

#### 1.02 OPERATION AND MAINTENANCE

- A. All equipment suppliers shall submit to ENGINEER, through CONTRACTOR, 2 bound copies of a draft manual for review and comment and 5 bound copies and 1 electronic/digital format copy of a final manual containing specifications, Drawings, and descriptions of equipment; installation instructions; operation, maintenance, and lubrication manuals; parts lists; emergency instructions; and where applicable, test data with curves, wiring diagrams, PLC programs on CD and schematics. This information shall be submitted for each item of equipment furnished under this Contract and shall be specific to the exact equipment models complete with all appurtenances provided. It shall also include detailed, comprehensive directions for all required maintenance activities and for the repair or replacement of all wearing parts. Special attention shall be paid to necessary safety precautions that OWNER's staff should take when operating, maintaining, or repairing the equipment.
  - 1. Bound copies of O&M Manuals shall be in addition to any instructions shipped with the equipment and shall be submitted only after ENGINEER has given final approval of Shop Drawings. All manuals shall be submitted to ENGINEER following final Shop Drawing approval and prior to the date of shipment of the equipment to the Site. Organize operation and maintenance manuals into suitable sets of manageable size, organized by section or process, as directed by ENGINEER. Bind properly indexed data in heavy-duty 2-inch, 3-ring vinyl-covered binders, with pocket folders for folded sheet information. Appropriate identification shall be noted on the front and spine of each binder.
  - 2. Electronic Copy of O&M Manuals: Each equipment O&M manual shall be provided with an electronic disk, matching the content of the final approved printed O&M Manual. The information shall be saved in a single ".pdf" file, with bookmarks for each chapter, section, appendices, etc., as well as each piece of equipment. Where numerous pieces of equipment may be addressed within a section, a second tier of bookmarks shall be provided to allow quick access to each piece of equipment or key piece of information. All material not applicable to this project shall be deleted or stricken.
  - 3. "Sample" Table of Contents:

##### Bookmarks

###### Table of Contents

Section 1 - Approved Shop Drawings

Section 2 - Installation Instructions and Parts Identification

Section 3 - Operations and Maintenance Information

Section 4 - Troubleshooting (If not included in Section 3.)

Section 5 - Parts List (If not included in Section 3.)

Section 6 - Lubrication Instructions (If not included in Section 3.)

4. These manuals shall be in addition to any instructions shipped with the equipment and shall be submitted only after ENGINEER has given final approval of Shop Drawings. All manuals shall be submitted to ENGINEER following final Shop Drawing approval and prior to the date of shipment of the equipment to the Site. Organize operation and maintenance manuals into suitable sets of manageable size, organized by section or process, as directed by ENGINEER. Bind properly indexed data in heavy-duty 2-inch, 3-ring vinyl-covered binders, with pocket folders for folded sheet information. Appropriate identification shall be noted on the front and spine of each binder.

Two additional copies of the preventative maintenance section of this manual shall be provided under separate cover.

### 1.03 QUALITY ASSURANCE

- A. Compliance with OSHA: All equipment provided under this Contract shall meet all the requirements of the Federal and/or State Occupational Safety and Health Acts. Each equipment supplier shall submit to ENGINEER certification that the equipment furnished is in compliance with OSHA.
- B. Electrical Codes, Ordinances, and Industrial Standards: The design, testing, assembly, and methods of installation of the wiring materials, electrical equipment and accessories proposed under this Contract shall conform to the National Electrical Code and to applicable State and local requirements. UL listing and labeling shall be adhered to under this Contract. Any equipment that does not have a UL, FM, CSA, or other listed testing laboratory label shall be furnished with a notarized letter signed by the supplier stating that the equipment furnished has been manufactured in accordance with the National Electrical Code and OSHA requirements. Any additional cost resulting from any deviation from codes or local requirements shall be borne by CONTRACTOR.

### 1.04 SHIPPING AND HANDLING EQUIPMENT

- A. All equipment shall be boxed, crated, or otherwise completely enclosed and protected during shipment and handling.

## PART 2 - PRODUCTS

### 2.01 MATERIALS

- A. Shop Painting:
  1. Non-submerged Applications: Tnemec Series 37H, Chem-Prime.
  2. Submerged, Non-potable Applications: Tnemec Series 66, Hi-Build Epoxoline.
  3. Submerged, Potable Applications: Tnemec Series 139, Pota-Pox II.
  4. Colors shall match existing painted equipment
  5. Rust preventive compound shall be:
    - a. Dearborn Chemical, No-Ox-ID2W.
    - b. Houghton, Rust Veto 344.
    - c. Rust-Oleum R-9.

## 2.02 COMPONENTS

- A. Lubrication: Equipment shall be adequately lubricated by systems which require attention no more often than weekly during continuous operation. Lubrication system shall not require attention during start-up or shutdown and shall not waste lubricants.
  - 1. Lubrication point shall be easily accessible with all points of application provided with standard fittings for greasing or placing oil.
  - 2. Lubricants of the type recommended by the equipment manufacturer shall be provided in sufficient quantity for all consumption prior to completion of required testing and acceptance of equipment by OWNER.
  - 3. A one-year supply of lubrication (food grade oil) shall be provided to OWNER at time of installation.
  
- B. Safety Guards: All belt or chain drives, fan blades, couplings, vertical or horizontal drive shafts, and other moving or rotating parts shall be covered on all sides by a safety guard. Safety guards shall be fabricated from 16 gauge or heavier galvanized or aluminum-clad sheet steel or 1/2-inch mesh galvanized expanded metal. Each guard shall be designed for easy installation and removal and painted safety yellow.
  - 1. All necessary supports and accessories shall be provided for each guard. Supports and accessories, including bolts, shall be hot-dipped galvanized.
  - 2. All safety guards in outdoor locations shall be designed to prevent the entrance of rain and dripping water.

## 2.03 FABRICATION

- A. Shop Painting: All iron and steel surfaces shall be protected by suitable paint or coatings applied in the shop or at point of fabrication. Surfaces which will be inaccessible after assembly shall be protected for the life of the equipment.
  - 1. All iron and steel surfaces which will be totally or partially submerged or located in a continuously or intermittently moist atmosphere during normal operation shall be shop blast cleaned to a near-white finish, removing all dirt, rust-scale, and foreign matter by any of the recommended methods outlined in the Steel Structures Painting Council Specification SP-10.
  - 2. The cleaned surfaces shall be shop primed before any rust bloom forms. All other exposed surface shall be properly filed, scraped, sanded, etched, brushed, sandblasted, and/or cleaned to provide surfaces free from dirt, loose crystals, rust, scale, oil, and grease and shop primed.
  - 3. Shop primed surfaces shall be painted with one or more coats of a primer which meets the requirements of this Section and is compatible with the finish painting system specified in Section 09900. Minimum shop coat thickness shall be 1.5 dry mills.
  
- B. Electric motors, speed reducers, starters, pumps, motor control centers, control panels, and other self-contained or enclosed components shall be shop finished with 2 coats of an enamel paint as per manufacturer's recommendations.
  
- C. Where specified, steel and iron surfaces shall be hot-dipped galvanized in conformity with ASTM A 153 and A 385.

- D. Machined, polished, and nonferrous surfaces which are not to be painted or galvanized shall be coated with rust preventive compound.

## PART 3 - EXECUTION

### 3.01 EQUIPMENT INSTALLATION CHECK

- A. An experienced, competent, and authorized representative of the manufacturer or supplier of each item of equipment shall visit Site of Work a minimum of 2 times, once prior to installation to review installation procedures with CONTRACTOR and once after installation to inspect, check, adjust if necessary, and approve the equipment's installation. The equipment supplier's representative shall revisit Site as often as necessary until all trouble is corrected and the equipment installation and operation is satisfactory to ENGINEER.
- B. Manufacturer's representative shall provide all necessary tools and testing equipment required including noise level and vibration sensing equipment.
- C. Each equipment supplier's representative shall furnish to OWNER, through ENGINEER, a written report certifying that the equipment:
  - 1. Has been properly installed and lubricated;
  - 2. Is balanced and in accurate alignment;
  - 3. Is free from any undue stress imposed by connecting piping or anchor bolts;
  - 4. Has been operated under full load condition and that it operated satisfactorily to ENGINEER;
  - 5. That OWNER's operators have been instructed in the proper maintenance and operation of the equipment; and
  - 6. Furnish OWNER, through ENGINEER, a copy of all test data recorded during the installation check including noise level and vibration readings.

### 3.02 OPERATION AND MAINTENANCE TRAINING

- A. Provide services of manufacturer's service representative to instruct OWNER's personnel in operation and maintenance of equipment. Training shall include start-up and shutdown, servicing and preventative maintenance schedule and procedures, and troubleshooting procedures plus procedures for obtaining repair parts and technical assistance.
  - 1. Manufacturer's representative shall provide on-site training on two non-consecutive days..
  - 2. Review operating and maintenance data contained in the operating and maintenance manuals.
  - 3. Schedule training with OWNER, provide at least 14-day prior written notice to ENGINEER.

END OF SECTION

## SECTION 01770 - CONTRACT CLOSEOUT

### PART 1 - GENERAL

#### 1.01 SUMMARY

- A. This Section specifies administrative and procedural requirements for Contract closeout including, but not limited to:
  - 1. Warranties and Bonds.
  - 2. Requirements for Substantial Completion.
  - 3. Project record document submittal.
  - 4. Equipment acceptance.
  - 5. Operating and maintenance manual submittal.
  - 6. Final cleaning.
- B. Certifications and other commitments and agreements for continuing services to OWNER are specified elsewhere in the Contract Documents.

#### 1.02 WARRANTY REQUIREMENTS

- A. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve CONTRACTOR of the warranty on the Work that incorporates the products, nor does it relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with CONTRACTOR.
- B. Related Damages and Losses: When correcting warranted Work that has failed, remove and replace other Work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted Work.
- C. Reinstatement of Warranty: When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.
- D. Replacement Cost: Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of Contract Documents. CONTRACTOR is responsible for the cost of replacing or rebuilding defective Work regardless of whether OWNER has benefited from use of the Work through a portion of its anticipated useful service life.
- E. OWNER's Recourse: Written warranties made to OWNER are in addition to implied warranties, and shall not limit the duties, obligations, rights, and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which OWNER can enforce such other duties, obligations, rights, or remedies.
- F. Rejection of Warranties: OWNER reserves the right to reject warranties and to limit selections to products with warranties not in conflict with requirements of the Contract Documents.

- G. OWNER reserves the right to refuse to accept Work for the Project where a special warranty, certification, or similar commitment is required on such Work or part of the Work, until evidence is presented that entities required to countersign such commitments are willing to do so.

### 1.03 SUBSTANTIAL COMPLETION

- A. Before requesting inspection for certification of Substantial Completion, complete the following. List exceptions in the request.
1. In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show 100 percent completion for the portion of the Work claimed as substantially complete. Include supporting documents for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the Contract Price.
  2. If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the Work is not complete.
  3. Advise OWNER of pending insurance changeover requirements.
  4. Submit specific warranties, workmanship bonds, maintenance agreements, O&M Manuals, final certifications, and similar documents.
  5. Obtain and submit releases enabling OWNER unrestricted use of the Work and access to services and utilities; include occupancy permits, operating certificates, and similar releases.
  6. Complete final clean up requirements, including touch-up painting. Touch-up and otherwise repair and restore marred exposed finishes.
- B. Inspection Procedures: On receipt of a request for inspection, ENGINEER will either proceed with inspection or advise CONTRACTOR of unfilled requirements.
1. ENGINEER will prepare the Certificate of Substantial Completion following inspection, or advise CONTRACTOR of construction that must be completed or corrected before the certificate will be issued.
  2. ENGINEER will repeat inspection when requested and assured that the Work has been substantially completed.
  3. Results of the completed inspection will form the basis of requirements for final acceptance.
- C. The warranty period for specific portions of the Work will begin on the date established on Component Acceptance Form or at such other date as agreed by OWNER, ENGINEER, and CONTRACTOR.

### 1.04 FINAL ACCEPTANCE

- A. Before requesting final inspection for certification of final acceptance and final payment, complete the following. List exceptions in the request.
1. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.
  2. Submit an updated final statement, accounting for final additional changes to the Contract Price.
  3. Submit a copy of ENGINEER's final inspection list of items to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, and the list has been endorsed and dated by ENGINEER.
  4. Submit consent of surety to final payment.
  5. Submit a final liquidated damages settlement statement.
  6. Submit evidence of final, continuing insurance coverage complying with insurance requirements.



7. Submit record drawings, maintenance manuals, final Project photographs, damage or settlement survey, property survey, and similar final record information.
  8. Complete start-up testing of systems, and instruction of OWNER's operating and maintenance personnel. Discontinue or change over and remove temporary facilities from the site, along with construction tools, mock-ups, and similar elements.
  9. Meet all other conditions of the contract.
- B. Reinspection Procedure: ENGINEER will reinspect the Work upon receipt of notice that the Work, including inspection list items from earlier inspections, has been completed, except items whose completion has been delayed because of circumstances acceptable to ENGINEER.
1. Upon completion of reinspection, ENGINEER will prepare a certificate of final acceptance as shown in the end of this Section, or advise CONTRACTOR of Work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.
  2. If necessary, reinspection will be repeated.

#### 1.05 SUBMITTALS

- A. Submit written warranties to ENGINEER prior to the date certified for Substantial Completion. If ENGINEER's Certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion for the Work, or a designated portion of the Work, submit written warranties upon request of ENGINEER.
- B. Refer to individual Sections of Divisions 2 through 16 for specific content requirements, and particular requirements for submittal of special warranties.

#### 1.06 RECORD DOCUMENT SUBMITTALS

- A. Record Drawings:
1. Mark Shop Drawings to show conditions fully and accurately and to record a cross-reference at the corresponding location. Give particular attention to concealed elements that would be difficult to measure and record at a later date.
  2. Mark shop drawings with red erasable pencil; use other colors to distinguish between variations in separate categories of the Work.
  3. Mark new information that is important to OWNER, but was not shown on Shop Drawings.
  4. Note related Change Order numbers where applicable.
  5. Organize Record Drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates, and other identification on the cover of each set.
- B. Miscellaneous Record Submittals: Refer to other Specification Sections for requirements of miscellaneous record keeping and submittals in connection with actual performance of the Work.
1. Immediately prior to the date or dates of Substantial Completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for continued use and reference. Submit to ENGINEER for OWNER's records.
- C. Operation and Maintenance Manuals: Submit in accordance with requirements of Section 01600, operation and maintenance manuals for items included under this Section.

## PART 2 - PRODUCTS

NOT USED

## PART 3 - EXECUTION

### 3.01 COMPONENT ACCEPTANCE

- A. Component Acceptance Certificate: For each item of equipment incorporated into the Project, ENGINEER will issue a Component Acceptance Certificate as shown at the end of this Section.
- B. The certificate will certify that the equipment installation is complete, that manufacturer-provided inspection and start-up services and training have taken place, and that OWNER has beneficial use of the equipment.
- C. The data on the Component Acceptance Certificate may be used to establish the time of beginning for the warranty period for that piece of equipment, if OWNER begins to use it at that time.

### 3.02 FINAL CLEANING

- A. General cleaning during construction is required by the General Conditions. and included in Section 01310 and 01500.
- B.
- C. Clean each surface or unit to the condition expected in typical municipal water treatment facility.
- D. Complete the following cleaning operations before requesting inspection for Certification of Substantial Completion as shown at the end of this Section.
  - 1. Remove labels that are not permanent labels.
  - 2. Clean exposed exterior and interior hard-surfaced finishes to a dust-free condition, free of stains, films, and similar foreign substances.
  - 3. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition.
  - 4. Clean Site, including landscape development areas, of rubbish, litter, accumulated debris, surplus materials of any kind which result from its operation, including construction equipment, tools, sheds, sanitary enclosures, etc., and foreign substances.
  - 5. Sweep paved areas broom clean; remove stains, spills, and other foreign deposits. Rake grounds that are neither paved nor planted to a smooth even-textured surface.
  - 6. The site of the work shall be rehabilitated or developed in accordance with other sections of the Specifications. In the absence of any portion of these requirements, the CONTRACTOR shall completely rehabilitate the site to a condition and appearance equal or superior to that which existed just prior to construction, except for those items whose permanent removal or relocation was required in the Contract Documents or ordered by the OWNER.
- E. Removal of Protection: Remove temporary protection and facilities installed for protection of the Work during construction.
- F. Comply with regulations of authorities having jurisdiction and safety standards for cleaning.
  - 1. Do not burn waste materials. Do not bury debris or excess materials on OWNER's property.
  - 2. Do not discharge volatile, harmful, or dangerous materials into drainage systems.

3. Remove waste materials from Site and dispose of in a lawful manner.
- G. Where extra materials of value remaining after completion of associated Work have become OWNER's property, arrange for disposition of these materials as directed.

END OF SECTION

CERTIFICATE OF COMPONENT ACCEPTANCE

Contract \_\_\_\_\_

Contract No. \_\_\_\_\_

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

Specification Section No. \_\_\_\_\_

Equipment Item: \_\_\_\_\_

Manufacturer: \_\_\_\_\_

Manufacturer's Representative: \_\_\_\_\_ Phone: \_\_\_\_\_

Address: \_\_\_\_\_

The representative named above hereby approves the equipment installation, and certifies that:

1. The equipment has been properly installed and lubricated.
2. The equipment is in accurate alignment.
3. The equipment is free from any undue stress imposed by connecting piping or anchor bolts.
4. The equipment has been operated under *full load conditions* and that it operated satisfactorily to ENGINEER.
5. OWNER's Representative has been instructed in the proper lubrication and operation of the equipment.
6. OWNER's Representative has been given a copy of all test data recorded during the installation check including speed, noise level, vibration, etc. (If no data was taken, so state below.)

The manufacturer's representative takes no exceptions to the above unless such exceptions are written below:  
(Continue on another sheet if required.)

\_\_\_\_\_

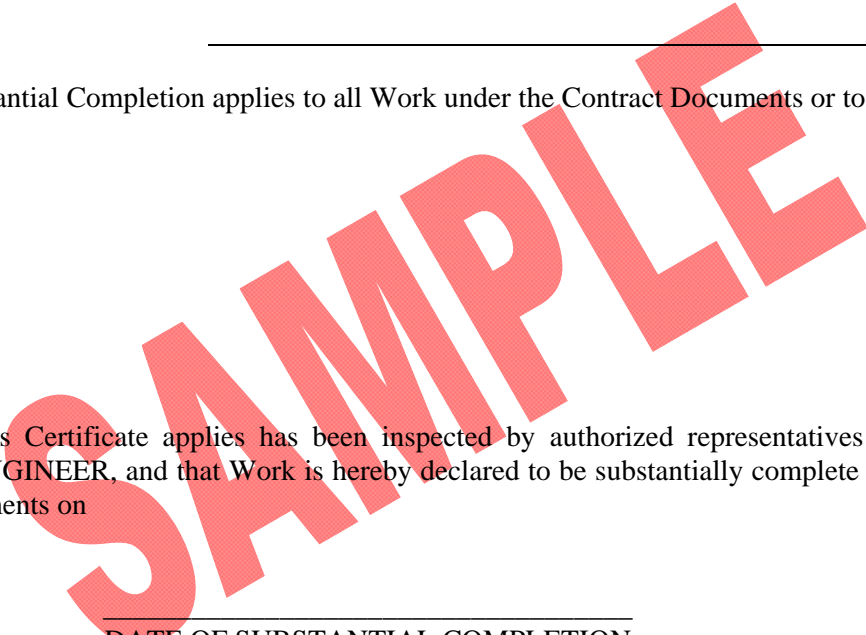
\_\_\_\_\_

Manufacturer's Representative	Date	Signature
Witnesses:		
Contractor's Representative	Date	Signature
Owner's Representative (Engineer)	Date	Signature
Owner	Date	Signature

CERTIFICATE OF SUBSTANTIAL COMPLETION

Contract \_\_\_\_\_  
Contract No. \_\_\_\_\_  
Date Issued: \_\_\_\_\_  
OWNER \_\_\_\_\_  
CONTRACTOR \_\_\_\_\_

This Certificate of Substantial Completion applies to all Work under the Contract Documents or to the following specified parts thereof:



The Work to which this Certificate applies has been inspected by authorized representatives of OWNER, CONTRACTOR and ENGINEER, and that Work is hereby declared to be substantially complete in accordance with the Contract Documents on

\_\_\_\_\_  
DATE OF SUBSTANTIAL COMPLETION

A tentative list of items to be completed or corrected is attached hereto as Attachment No. A. This list may not be all-inclusive, and the failure to include an item in it does not alter the responsibility of CONTRACTOR to complete all the Work in accordance with the Contract Documents. The items in the tentative list shall be completed or corrected by CONTRACTOR within \_\_\_\_\_ days of the above date of Substantial Completion.

The responsibilities between OWNER and CONTRACTOR for security, operation, safety, maintenance, heat, utilities, insurance and warranties and guarantees pending final payment shall be as follows:

OWNER: Shall perform and/or maintain insurances, if any, in accordance with Article 5 of the General Conditions, and allow CONTRACTOR reasonable access to complete or correct items on the tentative list. Additional responsibilities are:

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

CONTRACTOR: Shall perform and/or maintain Site security, temporary facilities, Bonds and insurances in accordance with Article 5 of the General Conditions, and protect the Work. Additional responsibilities are:

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

The following documents are attached to and made a part of this Certificate:

Attachment A: Tentative List of Items to be completed prior to Final Payment (Pages 1 to \_\_, inclusive).

This certificate does not constitute an acceptance of Work not in accordance with the Contract Documents nor is it a release of CONTRACTOR's obligation to complete the Work in accordance with the Contract Documents.

Executed by ENGINEER on \_\_\_\_\_  
Date

\_\_\_\_\_  
ENGINEER

By: \_\_\_\_\_  
(Authorized Signature)

CONTRACTOR accepts this Certificate of Substantial Completion on \_\_\_\_\_  
Date

\_\_\_\_\_  
CONTRACTOR

By: \_\_\_\_\_  
(Authorized Signature)



CERTIFICATE OF FINAL COMPLETION

Contract \_\_\_\_\_  
Contract No. \_\_\_\_\_  
Date Issued: \_\_\_\_\_  
OWNER \_\_\_\_\_  
CONTRACTOR \_\_\_\_\_

This Certificate of Final Completion applies to all Work under the Contract Documents or to the following specified parts thereof:

The Work to which this Certificate applies has been inspected by authorized representatives of OWNER, CONTRACTOR and ENGINEER, in accordance with Paragraph 14.06 of the General Conditions, and that Work is hereby declared to be finally complete in accordance with the Contract Documents on

\_\_\_\_\_  
DATE OF FINAL COMPLETION

CONTRACTOR's general warranty and guarantee period commences on \_\_\_\_\_ and terminates on \_\_\_\_\_.

CONTRACTOR's special warranty and guarantee are:

\_\_\_\_\_ warranty and guarantee period commences on \_\_\_\_\_ and terminates on \_\_\_\_\_.

\_\_\_\_\_ warranty and guarantee period commences on \_\_\_\_\_ and terminates on \_\_\_\_\_.

This certificate does not constitute an acceptance of Work not in accordance with the Contract Documents nor is it a release of CONTRACTOR's obligation to correct defective Work in accordance with the General Conditions of the Contract Documents.

Executed by ENGINEER on \_\_\_\_\_  
Date

\_\_\_\_\_  
ENGINEER

By: \_\_\_\_\_  
(Authorized Signature)

CONTRACTOR accepts this Certificate of Final Completion on \_\_\_\_\_  
Date

\_\_\_\_\_  
CONTRACTOR

By: \_\_\_\_\_  
(Authorized Signature)

END OF SECTION



## SECTION 11336 - CIRCULAR SLUDGE COLLECTION MECHANISMS

### PART 1 - GENERAL

#### 1.01 SUMMARY

- A. Section Includes: Labor, materials, and equipment necessary for fabrication, production, installation, and erection of the clarifier drive, with minimum requirements as listed on Schedule.
- B. Related Documents: General provisions of the Contract, including General Conditions and Division 1 Specification Sections, including Section 01600, apply to the Work of this Section. Specification 16220, Motors, also applies to the Work of this section.
- C. Products Furnished But Not Installed Under This Section: Anchor bolts shall be installed in accordance with certified prints furnished by equipment manufacturer.

#### 1.02 REFERENCES

- A. Reference Standards:
  - 1. AGMA 46005 Practice for Gear Motors using Spur, Helical, Herringbone and Spiral Bevel Gears.
  - 2. AISC Specification for the Design, Fabrication and Erection of Structural Steel.
  - 3. ANSI/AGMA 2001-D04 Fundamental Rating Factors and Calculation Methods for Involute Spur and Helical Gear Teeth.
  - 4. ANSI/AGMA 6001-C88 Design and Selection of Components for Enclosed Gear Drives.
  - 5. ANSI/AGMA 6034-B92 Practice for Enclosed Cylindrical Worm Gear Speed Reducers and Gear Motors.
  - 6. ASTM A 53 Pipe, Steel, Black, and Hot-dipped, Zinc-coated Welded and Seamless.

#### 1.03 DEFINITIONS

- A. Circular, Flocculating Sludge Collector Mechanism: Process flow entering the tank shall pass through an oversized influent well equipped with flocculating devices to enhance flocculating and settling. Settled sludge shall be removed by scraper blades attached to a rotating arm that will plow the sludge to a well near the center of the tank.
  - 1. This device shall comprise the following components: Drive mechanism\*, motor\*, overload device\*, bridge (flocculating influent well, radial and circular collection troughs, mechanical mixers), and anchor bolts.
    - \*To be replaced on this project. Other items to remain.

#### 1.04 SUBMITTALS

- A. Shop Drawings: Submit in accordance with Section 01330, Shop Drawings covering the items included under this Section. Shop Drawing submittals shall include:
  - 1. Drive control Drawings/wiring diagram.
  - 2. Drive arrangement Drawings including materials of construction.

3. Gear motor specifications/cuts.
  4. Drive specifications with materials of construction.
  5. Drive catalog cuts.
  6. AGMA calculations.
  7. Shoring, underpinning and bracing plan for existing bridge, troughs and all ancillary equipment and structural components supported by center drive mechanism and cage.
  8. Reference List of successful installations.
- B. Test and Inspection Report: A written report shall be submitted to ENGINEER documenting all testing and/or inspection results. These reports shall be prepared as noted under Section 01600.
- C. Operation and Maintenance Manuals: Submit in accordance with requirements of Section 01600, operation and maintenance manuals for items included under this Section.
- D. Warranty: Submit in accordance with requirements of Section 01770, warranties covering the items included under this Section.
1. The clarifier drive manufacturer's warranty shall be in the City's name.
  2. Warranty shall run one year from date of substantial completion for all work performed including the clarifier drive and related work such as painting.

#### 1.05 DELIVERY, STORAGE, AND HANDLING

- A. Packing and Shipping: Structural assemblies shall be shipped in sections as large as feasible to minimize field erection.

### PART 2 - PRODUCTS

#### 2.01 MANUFACTURERS

- A. Subject to compliance with specified requirements, manufacturers (with model number) offering products which may be incorporated in Work include:
1. Circular Sludge Collector Mechanism Drive Equipment:
    - a. Ovivo (EIMCO)
      - 1) Model Number C-80 (ALTERNATE BID)
    - b. Walker Process Equipment Division of McNish Corporation
      - 1) Model No. S80M-T16 (ALTERNATE BID)
    - c. WesTech Engineering, Inc.
      - 1) Model No. DV8050 (BASE BID)

## 2.02 MANUFACTURER OPTIONS

### A. Lubrication system

1. Drive gear reduction unit gears and bearings shall operate in a constant oil bath.
  - a. Oil shall be of a food grade
  - b. Access for performing oil changes shall be from above the drive unit from the bridge

### B. Overload Protection

1. Torque Indicator/Switch
  - a. The alarm unit shall consist of a disc spring assembly, a gear rack and pinion plunger, indicator dial, two micro switches, one N.O. and one N.C., and terminal block.
  - b. A visual torque dial indication shall be provided and oriented so that it may be read from the walkway.
  - c. The switches are adjusted to 1) sound an alarm when the load on the mechanism reaches continuous torque capacity of the drive, and 2) to stop the motor when the load reaches 125 percent of the continuous torque capacity. Switches shall be factory adjusted to accurately calibrate the alarm torque valve and the overload position. The overload system shall be capable of field adjustment.
2. Shear Pin
  - a. Additional protection shall be provided by shear pins actuated by lugs on the shear coupling.
3. Zero Speed Switch
  - a. The drive shall be equipped with an overload limit switch to detect stoppage of the rotating drive.
  - b. The switch shall be capable of field adjustable settings to determine the speed at which the zero-speed switches trip.
  - c. The switch shall have a form C (S.P.D.T.) dry relay contacts, rated 5 A at 250 V ac, for fail-safe operation. Switch shall include a time delay startup of 3 seconds and be capable of handling the rack's slow movement.
  - d. The switch shall allow for 120VAC power at a maximum of 20 VA.
  - e. Any required targets shall be installed by contractor

## 2.03 MANUFACTURED UNITS

- A. Each sludge collector mechanism shall comprise a complete assembly including the components and accessories described in this Section and listed on Existing Equipment Schedule.
- B. The existing unit is of the center-column type, with a central driving mechanism which supports the bridge, flocculating well, influent well, mixers and collector troughs, and rotates a center cage with collector arms attached thereto. The proposed drive unit shall be compatible with existing clarifier and shall be fabricated to be dimensionally equivalent to the existing drive. Manufacturer shall determine the motor size needed based on the efficiency of its drive and the torque requirements of the clarifier mechanism. See plans section for existing shop drawings and data sheet of existing clarifier and drive unit.
- C. The drive manufacturer shall be responsible for any and all adaptation and drive conversion components required to mate the new drive with the existing clarifier center column, drive cage and platform/walkway. All new work shall be of suitable material and workmanship to reliably operate the clarifier including supporting the bridge.

- D. A detailed description of startup testing including overload trip setting and torque testing shall be provided by the drive manufacturer.
- E. Materials of construction used for the clarifier drive adapter plates, as required to complete a dimensionally equivalent installation of a different manufacturer's drive, shall be compatible with materials of the existing clarifier equipment components.
- F. All antifriction bearings shall have a B-10 life rating of not less than 175,000 hours.
- G. Motors: Electric motors shall be furnished meeting the requirements of Section 16220.
  - 1. Electric motors shall be sized to meet the torque requirements of the existing drive as defined in the Existing Equipment Schedule.
- H. Anchors: All anchors shall be stainless steel as specified herein and furnished under this Section. The anchors shall be installed in accordance with certified prints furnished by equipment manufacturer.

## PART 3 - EXECUTION

### 3.01 ERECTION

- A. Work by the CONTRACTOR shall include removal and disposal of existing clarifier drive including disposal of drive lubrication.
- B. Equipment furnished and installed under this Section shall be fabricated, assembled, erected, and placed in proper operating condition in full conformity with detail drawings, specifications, engineering data, instructions, and recommendations of drive manufacturer as approved by ENGINEER. Work shall include adjusting the mechanism to be level and plumb after the new drive installation is complete. This may include adjusting the clarifier rakes and other components, along with other work required to restore the clarifier to working order.
- C. CONTRACTOR is responsible for supporting existing bridge, troughs and all ancillary equipment and structural components during construction as described in Specification section 01110.
- D. CONTRACTOR shall provide modifications to existing clarifier bridge and platform as required to provide continuous platform surface along the clarifier bridge and surrounding the replaced drive.
  - 1. Materials of construction shall be of equal grade, thickness and design of existing, surrounding bridge platform.
  - 2. Eliminate any gaps or tripping hazards.
  - 3. Provide non-slip grating. New grating shall be fiber-reinforced plastic.

### 3.02 PAINTING AND SURFACE REPAIR RESTORATION

- A. Repair damaged or altered surfaces and touch-up or repair damaged coatings in accordance with manufacturer's instructions.
- B. Repair surfaces in accordance with the following requirements:
  - 1. MANUFACTURER: Subject to compliance with specified requirements, manufacturers offering products which may be incorporated in Work include:
    - a. Tnemec Company Incorporated, 121 S. Barnard Street, Suite 8, Howell, MI 48843.

2. NON-IMMERSION SYSTEM FOR STEEL (existing handrails, walkway structural steel)
  - a. Surface Preparation: SSPC-SP10 Near White Blast Cleaning
  - b. Primer: Series 91K-97 Tneme-Sinc. DFT 2.5 to 3.5 mils.
  - c. Intermediate Coat: Series 69 Hi-Build Epoxoline II. DFT 3.0 to 4.0 mils.
  - d. Finish Coat: Series 1075 Endura-Shield II. DFT 2.0 to 3.0 mils.
  - e. Total DFT: 7.5 to 10.5 mils.
  - f. Finish Color: As selected by OWNER from manufacturer's colors.
  
3. IMMERSION SYSTEM FOR STEEL (all rake components, influent channels, weird, effluent channels and miscellaneous metals positioned at or below tank operating level).
  - a. System Type: Zinc/Epoxy/Epoxy
  - b. Surface Preparation: SSPC-SP10 Near White Blast Cleaning
  - c. Primer: Series 94-H2O Hydro-Zinc. DFT 2.5 to 3.5 mils
  - d. Intermediate Coat: Series N140 Pota-Pox Plus. DFT 4.0 to 6.0 mils
  - e. Finish Coat: Series N140 Pota-Pox Plus. DFT 4.0 to 6.0 mils.
  - f. Total DFT: 10.5 to 15.5 mils.
  - g. Finish color: 1255 Beige
  
4. ACCESSORIES
  - a. Accessories required for application of specified coating in accordance with manufacturer's instructions, including thinners.
  - b. Products of coating manufacturer, or compatible with coatings.
  
5. STEEL PREPARATION
  - a. Prepare steel surfaces in accordance with coating system manufacturer's instructions, and to preparation standard indicated for the system being applied.
  - b. Fabrication Defects:
    - 1) Correct steel and fabrication defects revealed by surface preparation.
    - 2) Remove old spatter and slag.
    - 3) Round sharp corners or welds to a smooth contour.
    - 4) Smooth weld undercuts and recesses.
    - 5) Grind down porous welds to pinhole-free metal.
    - 6) Remove weld flux from surface.
  - c. Ensure surfaces are dry.
  - d. Exterior Exposed or Interior Exposed Surfaces: Remove visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter in accordance with SSPC-SP 6/NACE 3.
  - e. Abrasive Blast-Cleaned Surfaces: Coat abrasive blast-cleaned surfaces with primer before visible rust forms on surface. Do not leave blast-cleaned surfaces uncoated for more than 8 hours.
  
6. GALVANIZED STEEL AND NONFERROUS METAL PREPARATION
  - a. Prepare galvanized steel and nonferrous metal surfaces in accordance with coating system manufacturer's instructions.
  - b. Surface preparation recommendations will vary depending on substrate and exposure conditions.
  - c. Ensure surfaces are dry.
  - d. Remove rust from galvanized steel:
    - 1) Remove white rust from galvanized steel by hand or power brushing.

- 2) Remove rust from old galvanized steel in accordance with SSPC-SP 2 or SP 3.
- 3) Do not damage or remove galvanizing.
- e. Increase mechanical adhesion under moderate to severe conditions, such as exterior or chemical environment, by abrasive blast and/or chemical cleaning.

7. DUCTILE OR CAST IRON SURFACE PREPARATION

- f. Prepare ductile or cast iron surfaces in accordance with coating system manufacturer's instructions.
- g. Ensure surfaces are clean, dry and free of oil, grease, dirt, dust and other contaminants.

3.03 FIELD QUALITY CONTROL

A. Installation Check:

1. Manufacturer's representative shall perform an installation check which shall include inspection of the drive, as well as inspecting that the entire clarifier is properly balanced, plumbed, and operating smoothly and that the overload devices have been installed, tested and adjusted properly.

CIRCULAR SLUDGE COLLECTION MECHANISM  
EXISTING EQUIPMENT SCHEDULE

Number of Units:	One
Type:	Circular Sludge Collection
Location:	Primary Clarifier #4
Center Column Diameter (inches):	4'-6" (existing ID) 3/8" wall
Tank Dimensions	
Diameter (feet):	130'-0" (clarifier)
SWD (feet):	18'-1 5/16"
Rated Continuous Torque, (ft.-lbs):	85,000
Momentary Peak Torque, (ft.-lbs):	170,000
Minimum Ball Race Diameter (inch):	1 ½
Minimum Main Gear Pitch Diameter (inches):	
Remarks:	This specification is for a replacement drive for the existing Walker Model S80M-T16 drive on the existing primary clarifier #4 mechanisms. Existing motor is 1.5hp 3/60/480.

END OF SECTION

## SECTION 16220 - MOTORS

### PART 1 - GENERAL

#### 1.01 SUMMARY

- A. Section applies, in general, to all electric or DC motor-driven equipment provided under Divisions 2 through 16 Sections. This Section shall supplement the detailed Equipment Specifications, but in cases of conflict, the Specifications indicated in this Section shall govern.

#### 1.02 SUBMITTALS

- A. Shop Drawings: Submit in accordance with Section 01330, Shop Drawings covering the items included under this Section. Shop Drawing submittals shall include:
  - 1. Submittals for motors shall accompany the specific equipment the motor is to be supplied with.
  - 2. Submit product literature for each motor.
- B. Operation and Maintenance Manuals: Submit in accordance with requirements of Section 01600, operation and maintenance manuals for items included under this Section.

#### 1.03 QUALITY ASSURANCE

- A. Electrical Codes, Ordinances, and Industrial Standards: The design, testing, assembly, and methods of installation of the wiring materials, electrical equipment, and accessories proposed under this Contract shall conform to the National Electrical Code and to applicable State and local requirements. UL listing and labeling shall be adhered to under this Contract. Any equipment that does not have a UL, FM, CSA, or other listed testing laboratory label, shall be furnished with a notarized letter signed by the supplier stating that the equipment furnished has been manufactured in accordance with the National Electrical Code and OSHA requirements. Any additional cost resulting from any deviation from codes or local requirements shall be borne by CONTRACTOR.

### PART 2 - PRODUCTS

#### 2.01 MANUFACTURERS

- A. Subject to compliance with specified requirements, motors shall be standard design and construction. Manufacturers offering products which may be incorporated in Work include:
  - 1. Motors:
    - a. Marathon Blue Chip Series.
    - b. Siemens, Inc.
    - c. General Electric Co.
    - d. Reliance Electric Co.
    - e. U.S. Electric Motors.
- B. For motors that are integrally constructed as a piece of equipment, such as appliances, hand tools, etc., and where manufacturer would be required to redesign equipment to meet these general specifications, it is the intent to allow such standard motors to be used, provided they do not exceed 1-1/2 horsepower and are suitable for use on standard power systems.



## 2.02 MATERIALS

- A. Shop primers shall be Tnemec "77 Chem-Prime," or equal.
- B. Rust preventive compound shall be equal to Dearborn Chemical "No-Ox-ID2W," Houghton "Rust Veto 344," or Rust-Oleum "R-9".

## 2.03 MANUFACTURED UNITS

- A. Electrical Motors: Motor design and application shall comply with current ANSI, IEEE, NEMA, and AFBMA standards and with the NEC where applicable. They shall be squirrel cage induction motors rated 60 hertz, continuous duty for use in 40 degrees C ambient temperature. Motors shall comply with NEMA MG1-1993, Rev. 1, Part 31, Definite Purpose Inverter-Fed Motors whether used with variable frequency drives or not.
  - 1. The motors shall be sized within their rated loads under the specified conditions without utilizing the top 15 percent of the 1.0 or 1.15 service factor. Motor sizing measured at the motor output shaft shall include all loadings on the motor. Motor loadings shall include the maximum or specified load condition of the driven equipment plus all drive losses of components, located between the motor and the driven equipment.
  - 2. The motor winding temperature rise shall be NEMA Standard for the class of insulation used at the rated service factor load.
  - 3. The motors shall be capable of handling unfiltered voltage peaks of up to 1600 volts, and rise times of 0.1 micro-seconds.
- B. All integral horsepower motors shall have oversize conduit boxes with clamp-type grounding terminals inside which are effectively connected to all noncurrent-carrying motor parts.
- C. All explosion-proof motors shall meet NEC Class 1, Division I, Group D, requirements with T2A temperature rating.
- D. Unless these general specifications are supplanted by the detailed equipment specifications, motors shall be rated and constructed as follows:
  - 1. Below 1/2 Horsepower: Motors shall be rated 115/230 volts, single phase, but shall be suitable for use on 208 volt power system. They shall have permanently lubricated sealed bearings (antifriction type where high radial or axial thrusts are produced by the driven equipment). Standard motors shall be totally enclosed fan cooled, totally enclosed air-over, or totally enclosed nonventilated capacitor start type as shown on Equipment Schedule(s) or specified in the equipment specifications. Totally enclosed explosion-proof motors shall be provided where required per equipment specifications section.
  - 2. From 1/2 to 1-1/2 Horsepower: Motors shall be rated 115/230 volts single phase or shall be rated 230/460 volts 3-phase as indicated by Equipment Schedule(s). In either case they shall be suitable for use on 208 volt power systems under their given load conditions. They shall have bearings as in 2.03 F.1. The standard enclosures shall be totally enclosed fan cooled, totally enclosed nonventilated, totally enclosed explosion-proof, or open drip-proof as shown on Equipment Schedule(s) or specified in the equipment specifications.
  - 3. From 2 to 200 Horsepower: Motors shall be rated 230/460 or 460 volt, 3-phase. They shall be grease lubricated, ball bearing, Class B insulated, minimum or as specified. Horizontal motors

shall be open drip-proof, totally enclosed fan-cooled or totally enclosed explosion-proof (NEC, Class I, Group D) as shown on Equipment Schedule(s) or specified in the equipment specifications. Vertical motors shall meet NEMA standard open drip-proof specifications as a vertical motor when called for or totally enclosed fan cooled or totally enclosed explosion-proof as shown on Equipment Schedule(s).

- E. Horizontal and vertical motors may also be weather protected, Type I, and shall have encapsulated or sealed windings.
- F. Special duty and severe environment application shall have motors which are designed specifically to meet the special conditions as specified.
- G. The following symbols will be employed on Equipment Schedule(s) to indicate the required motor enclosure and construction features:
  - 1. TE Totally Enclosed, may be nonventilated, fan-cooled or air-over type.
  - 2. TENV Totally Enclosed Nonventilated.
  - 3. TEFC Totally Enclosed Fan-cooled.
  - 4. TEEP Totally Enclosed Explosion-proof, Class I, Div. I, Group D.
  - 5. ODP Open Drip-proof.
  - 6. WPI Weather Protected Type I.
  - 7. E/S Encapsulated or Sealed Windings.
    - a. All motors with encapsulation or sealed windings shall have a water-tight conduit box.
- H. See NEMA Standard MG1 for definition of above terms.
- I. Motor Efficiency: Where Equipment Schedule(s) indicate that motors shall be designed for high efficiency, they shall meet or exceed the Motor Operating Characteristics shown on High Efficiency Motor Schedule No. 16220.2, appended to this Section. Guaranteed minimum efficiency at full load shall be based on IEEE Standard 112, Test Method B. Nominal motor efficiencies are average expected values. Manufacturer's motor Shop Drawings shall indicate full compliance with the High Efficiency Motor Schedule No. 16220.2.

## 2.04 FABRICATION

- A. Electric motors shall be shop-finished with 2 coats of enamel paint per manufacturer's recommendations.

## PART 3 - EXECUTION

### 3.01 INSTALLATION

- A. Comply with manufacturer's written installation and alignment instructions.
- B. Lubricate oil-lubricated bearings.
- C. Provide electrical wiring and connections as specified in Division 16 Sections.

### 3.02 FIELD QUALITY CONTROL

- A. Inspect all terminations for proper connection.
- B. Check motor for proper rotation.

HIGH EFFICIENCY MOTOR SCHEDULE NO. 16220.2  
MOTOR OPERATING CHARACTERISTICS

HP	RPM Syn.	Efficiency (percent)						
		Guar. Min.			Nominal		Power Factor (percent)	
		Full	1/2	3/4	Full	1/2	3/4	Full
1	1800	81.5	78.1	81.0	81.5	54.2	67.3	75.8
	1200	75.5	69.5	75.6	78.5	38.4	49.4	58.3
1.5	3600	78.5	78.4	80.2	81.5	75.3	84.4	88.8
	1800	81.5	79.2	82.9	84.0	52.1	65.1	74.0
	1200	81.5	80.5	83.4	84.0	44.0	56.6	85.6
2	3600	81.5	78.8	82.9	84.0	66.3	78.4	85.0
	1800	81.5	78.8	82.6	84.0	48.9	61.7	70.0
	1200	84.0	83.0	83.6	86.5	46.6	59.6	68.0
3	3600	84.0	75.4	84.3	86.5	69.7	80.0	85.6
	1800	86.5	86.9	88.5	88.5	62.3	73.9	79.9
	1200	86.5	84.5	87.5	88.5	45.9	58.3	68.0
5	3600	86.5	86.2	88.2	88.5	71.7	81.7	86.4
	1800	88.5	84.0	88.2	88.5	68.5	79.2	84.6
	1200	86.5	85.8	88.2	88.5	50.8	63.8	71.9
7.5	3600	86.5	82.9	86.7	88.5	75.9	84.3	88.1
	1800	88.5	89.2	90.3	90.2	66.5	77.2	82.4
	1200	86.5	87.5	88.8	88.5	58.6	68.8	73.7
10	3600	86.5	87.7	89.0	88.5	77.1	84.5	87.6
	1800	88.5	89.3	90.4	90.2	67.6	77.4	81.9
	1200	88.5	89.0	90.3	90.2	60.1	70.2	74.9
15	3600	88.5	82.3	87.4	90.2	81.1	87.2	90.4
	1800	90.2	91.0	91.9	91.7	68.5	78.1	82.3
	1200	88.5	89.9	90.6	90.2	67.4	77.1	81.4
20	3600	90.2	89.1	91.1	91.7	83.7	88.5	90.5
	1800	90.2	90.9	91.9	91.7	68.9	78.1	81.8
	1200	90.2	91.0	91.0	91.7	69.8	78.5	81.9
25	3600	90.2	91.6	92.0	91.7	81.9	88.6	90.6
	1800	91.7	92.8	93.2	92.4	72.7	81.4	84.5
	1200	90.2	90.0	91.4	91.7	79.8	84.5	85.5
30	3600	90.2	90.6	91.7	91.7	81.1	87.8	90.3
	1800	91.7	92.8	93.3	93.0	71.5	80.6	84.2
	1200	90.2	91.7	92.0	91.7	78.9	85.4	86.8
40	3600	90.2	89.1	91.2	91.7	83.8	88.6	89.9
	1800	91.7	91.0	92.6	93.0	71.6	80.6	84.2
	1200	91.7	93.0	93.3	93.0	80.9	86.4	88.0
50	3600	90.2	88.7	90.8	91.7	82.5	90.8	92.0
	1800	93.0	92.4	93.7	94.1	76.4	83.7	86.3
	1200	91.7	93.0	93.3	93.0	80.9	87.3	88.9
60	3600	91.7	89.9	92.0	93.0	84.9	89.9	91.6
	1800	93.0	93.2	94.0	94.1	76.3	84.0	86.8
	1200	91.7	92.5	93.1	93.0	75.8	82.9	85.5
75	3600	93.0	91.0	93.1	94.1	82.6	88.7	90.9
	1800	93.0	92.6	93.8	94.1	76.4	83.8	86.6
	1200	93.0	93.5	94.2	94.1	75.1	82.4	84.7
100	3600	93.0	91.3	93.3	94.1	86.1	89.7	91.0
	1800	94.1	93.8	94.8	95.0	83.8	87.6	89.0
	1200	93.0	93.1	93.9	94.1	72.5	80.0	83.2
125	3600	93.0	91.2	93.1	94.1	83.0	88.3	89.0
	1800	93.7	93.5	94.6	95.0	79.2	84.6	86.0
	1200	93.0	93.5	94.2	94.1	75.2	82.3	85.2
150	3600	93.0	91.8	93.4	94.1	85.3	89.3	89.1
	1800	94.1	93.7	94.7	95.0	81.6	86.4	86.6
	1200	94.1	94.1	94.9	95.0	77.2	84.4	85.7
200	3600	94.1	92.7	94.3	95.0	83.3	87.5	88.5
	1800	94.5	94.2	94.9	95.0	80.0	85.6	86.7
	1200	94.3	94.2	94.9	95.0	78.0	84.5	86.0
250	3600	94.3	94.8	95.5	95.3	83.0	87.5	88.5
	1800	94.3	96.0	96.0	95.8	79.5	85.6	83.0

END OF SECTION