

CITY OF ANN ARBOR
INVITATION TO BID



Outdoor Pool Ultraviolet Disinfection Improvements

ITB No. 4652

Due Date: Tuesday, January 12, 2021 at 2:00 PM (Local Time)

Parks and Recreation Services Unit
Community Services Area

Issued By:

City of Ann Arbor
Procurement Unit
301 E. Huron Street
Ann Arbor, MI 48104

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ATTACHMENTS

- City of Ann Arbor Prevailing Wage Declaration Form*
- City of Ann Arbor Living Wage Forms*
- City of Ann Arbor Vendor Conflict of Interest Disclosure Form*
- City of Ann Arbor Non-Discrimination Ordinance Declaration Form and Notice*

NOTICE OF PRE-BID CONFERENCE

A virtual pre-bid conference for this project will be held on **Tuesday, December 22, 2020 at 10:00 AM**. To attend the conference, contact Chris Elenbaas at christopher.elenbaas@stantec.com no later than 24 hours prior to the scheduled time to receive a meeting link.

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.

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 the "Bid Forms" provided with each blank properly filled in. If forms are not fully completed it may disqualify the bid. No alternative bid will be considered unless alternative bids are specifically requested. If alternatives are requested, any deviation from the specification must be fully described, in detail on the "Alternate" section of Bid form.

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 Clarifications / Designated City Contacts

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 due on or before **Wednesday, December 30 at 5:00 PM** and should be addressed as follows:

Specification/Scope of Work questions emailed to christopher.elenbaas@stantec.com
Bid Process and Compliance questions emailed to cspencer@a2gov.org

Any error, omissions or discrepancies in the specification discovered by a prospective contractor and/or service provider shall be brought to the attention of **Chris Elenbaas** at christopher.elenbaas@stantec.com after discovery as possible. Further, the contractor and/or service provide shall not be allowed to take advantage of errors, omissions or discrepancies in the specifications.

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 and/or City of Ann Arbor web site 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 **Tuesday, January 12, 2021 at 2:00 PM (local time)**. 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)** Bid copies in a sealed envelope clearly marked: **ITB No. 4652 – Outdoor Pool Ultraviolet Disinfection Improvements**.

Bids must be addressed and delivered to:

City of Ann Arbor
Procurement Unit,
c/o Customer Services, 1st Floor
301 East Huron Street
Ann Arbor, MI 48104

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

The following forms provided within this ITB Document must be included in submitted bids.

- **City of Ann Arbor Prevailing Wage Declaration of Compliance**
- **City of Ann Arbor Living Wage Ordinance Declaration of Compliance**
- **Vendor Conflict of Interest Disclosure Form**
- **City of Ann Arbor Non-Discrimination Ordinance Declaration of Compliance**

Bids that fail to provide these forms listed above upon bid opening will be rejected as non-responsive and will not be considered for award.

Hand delivered bids may be dropped off in the Purchasing drop box located in the Ann Street (north) vestibule/entrance of City Hall which is accessible to the public at all hours. 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. All key staff and subcontractors are subject to the approval by the City.

Official Documents

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 and obtain an official Bid. Bidders do not need to be shown on the plan holders list provided by MITN to be considered an official plan holder.

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 ninety (90) days

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-2, 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

All contractors proposing to do business with the City shall satisfy the contract compliance administrative policy adopted by the City Administrator in accordance with the Section 9:158 of the Ann Arbor City Code. Breach of the obligation not to discriminate as outlined in Section 5, beginning at page GC-2 shall be a material breach of the contract. Contractors are required to post a copy of Ann Arbor's Non-Discrimination Ordinance attached at all work locations where its employees provide services under a contract with the City.

Wage Requirements

Section 4, beginning at page GC-1, outlines the requirements for payment of prevailing wages and for payment of a "living wage" to employees providing service to the City under this contract. The successful bidder and its subcontractors must comply with all applicable requirements and provide proof of compliance.

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

For laborers whose wage level are subject to federal, state and/or local prevailing wage law the appropriate Davis-Bacon wage rate classification is identified based upon the work including within this contract. **The wage determination(s) current on the date 10 days before bids are due shall apply to this contract.** The U.S. Department of Labor (DOL) has provided explanations to assist with classification in the following resource link: beta.SAM.gov.

For the purposes of this ITB the Construction Type of Building will apply.

Conflict Of Interest Disclosure

The City of Ann Arbor Purchasing Policy requires that prospective Vendors complete a Conflict of Interest Disclosure form. 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 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. A copy of the Vendor Conflict of Interest Disclosure Form is attached.

Major Subcontractors

The Bidder shall identify on Bid Form Section 4 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. The Bidder shall not change or replace a subcontractor without approval by the City.

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.

Any inquiries or requests regarding this procurement should be only submitted in writing to the Designated City Contacts provided herein. Attempts by any prospective bidder to initiate contact with anyone other than the Designated City Contacts provided herein that the bidder believes can influence the procurement decision, e.g., Elected Officials, City Administrator, Selection Committee Members, Appointed Committee Members, etc., may lead to immediate elimination from further consideration.

Cost Liability

The City of Ann Arbor assumes no responsibility or liability for costs incurred by the Bidder prior to the execution of a contract with the City. By submitting a bid, a bidder agrees to bear all costs incurred or related to the preparation, submission and selection process for the bid.

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.

Idlefree Ordinance

The City of Ann Arbor adopted an idling reduction Ordinance that goes into effect July 1, 2017. The full text of the ordinance (including exemptions) can be found at: www.a2gov.org/idlefree.

Under the ordinance, No Operator of a Commercial Vehicle shall cause or permit the Commercial Vehicle to Idle:

- (a) For any period of time while the Commercial Vehicle is unoccupied; or
- (b) For more than 5 minutes in any 60-minute period while the Commercial Vehicle is occupied.

In addition, generators and other internal combustion engines are covered

(1) Excluding Motor Vehicle engines, no internal combustion engine shall be operated except when it is providing power or electrical energy to equipment or a tool that is actively in use.

Environmental Commitment

The City of Ann Arbor recognizes its responsibility to minimize negative impacts on human health and the environment while supporting a vibrant community and economy. The City further recognizes that the products and services the City buys have inherent environmental and economic impacts and that the City should make procurement decisions that embody, promote, and encourage the City's commitment to the environment.

The City encourages potential vendors to bring forward emerging and progressive products and services that are best suited to the City's environmental principles.

INVITATION TO BID

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

Ladies and Gentlemen:

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

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

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

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

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

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

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

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

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

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

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

SIGNED THIS 7TH DAY OF JANUARY, 2021.

AQUATIC SOURCE, LLC
Bidder's Name


Authorized Signature of Bidder

190 SUMMIT STREET
Official Address

NICK SHELTON
(Print Name of Signer Above)

248-366-0606
Telephone Number

N.SHELTON@AQUATICSOURCE.COM
Email Address for Award Notice

LEGAL STATUS OF BIDDER

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

Bidder declares that it is:

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


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

• A limited liability company doing business under the laws of the State of MI, whom NICK SHELTON bearing the title of GENERAL MANAGER whose signature is affixed to this proposal, is authorized to execute contract on behalf of the LLC.

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

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

Authorized Official



Date 1/11, 2021

(Print) Name NICK SHELTON Title SIGNOR / GENERAL MANAGER

Company: AQUATIC SOURCE, LLC

Address: 190 SUMMIT STREET, BRIGHTON MI 48116

Contact Phone (248) 366-0606 Fax (248) 366-0605

Email NSHELTON@AQUATICSOURCE.COM

BID FORM

Section 1 – Schedule of Prices

Company: AQUATIC SOURCE, LLC

Project: ITB No. 4652 – Outdoor Pool Ultraviolet Disinfection Improvements

Base Bid

For the entire work outlined in these documents for ITB No. 4652 – Outdoor Pool Ultraviolet Disinfection Improvements, complete as specified, using equipment and materials only of the type and manufacturers where specifically named. Lump sum prices shall be provided for each pool facility. The Owner may elect to perform the work at any combination of pool facilities for the pricing provided.

Fuller Park Pool FIFTY-SIX THOUSAND FOUR HUNDRED NINETY (\$ 56,490)

Veterans Park Pool FOURTY-FIVE THOUSAND FIVE HUNDRED EIGHTEEN (\$ 45,518)

Buhr Park Pool EIGHTY-SIX THOUSAND FOUR HUNDRED NINETY FIVE (\$ 86,495)

TOTAL BASE BID ONE HUNDRED EIGHTY EIGHT THOUSAND FIVE (\$ 188,503)
HUNDRED THREE

BID FORM

Section 2 – Material, Equipment and Environmental Alternates

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

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

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

<u>Item Number</u>	<u>Description</u>	<u>Add/Deduct Amount</u>
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" FOR THE WORK OUTLINED IN THIS REQUEST FOR BID, THE BIDDER DOES NOT PROPOSE ANY MATERIAL OR EQUIPMENT ALTERNATE UNDER THE CONTRACT."

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

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

Signature of Authorized Representative of Bidder  Date 1-11-21

BID FORM

Section 3 - Time Alternate

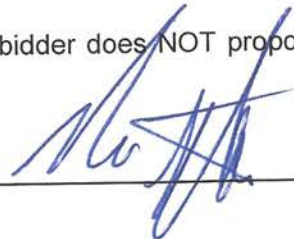
If the Bidder takes exception to the time stipulated in Article III of the Contract, Time of Completion, page C-2, it is requested to stipulate below its proposed time for performance of the work. Consideration will be given to time in evaluating bids.

"FOR THE WORK OUTLINED IN THIS REQUEST FOR BID, THE BIDDER DOES NOT PROPOSE ANY TIME ALTERNATE UNDER THE CONTRACT."

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

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

Signature of Authorized Representative of Bidder



Date 1-11-21

BID FORM

Section 4 - Major Subcontractors

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

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

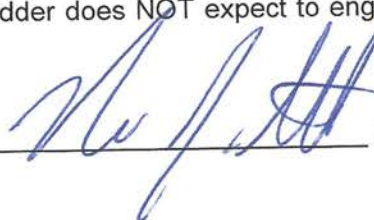
For the work outlined in these documents the Bidder expects to engage the following major subcontractors to perform the work identified:

<u>Subcontractor (Name and Address)</u>	<u>Work</u>	<u>Amount</u>
ELECTRICAL CONTRACTOR T.B.D.	SERVICE FEEDS TO U.V.	T.B.D.

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

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

Signature of Authorized Representative of Bidder



Date 1-11-21

BID FORM

Section 5 – References

Include a minimum of three (3) reference from similar projects completed within the past five (5) years.

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

1) WEST OTTAWA H.S. - 2018
Project Name Cost Date Constructed

TOM SWIFNEY - SWIFNEYT@WEST.OTTAWA.NET -
Contact Name Phone Number

2) BIRMINGHAM SCHOOLS - 2018
Project Name Cost Date Constructed

NEW FACILITIES GUY - DON'T KNOW -
Contact Name Phone Number

3) WEST BLOOMFIELD H.S. - 2019
Project Name Cost Date Constructed

BRIAN LOWE BRIAN.LOWE@WBSD.ORG -
Contact Name Phone Number

BID FORM

Section 6 – Contractor Information and Responsible Contractor Criteria

Backup documentation may be requested at the sole discretion of the City to validate all of the responses provided herein by bidders. False statements by bidders to any of the criteria provided herein will result in the bid being considered non-responsive and will not be considered for award.

Failure to provide responses to all questions may result in being deemed non-responsive.

Attach additional pages as needed if space below is insufficient.

Pursuant to Sec 1:312(20) of the City Code which sets forth requirements of a responsible bidder, Bidder is required to submit the following:

1. Organization Name: AQUATIC SOURCE, LLC

Social Security or Federal Employer I.D. #: 26-3009151

Address: 190 SUMMIT STREET

City: BRIGHTON State: MI Zip: 48116

Type of Organization (circle one below):

Individual Partnership Corporation Joint Venture Other

If "Other" please provide details on the organization:

Year organization established: 2008

2. Current owners/principals/members/managing members/partners of the organization:

OWNER - ①

3. Assumed Names, "doing business as" d/b/a, and/or former organization names(s), if applicable: _____

Explanation of any business name changes:

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

NONE

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

OVER 500 YEARS COMMERCIAL POOL EXPERIENCE w/ OUR STAFF

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

N/A

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

Yes

No

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

Yes

No

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

0%, 0%, 100% BOTH ANNUAL SOURCE + SUBS

10. Submit documentation as to employee pay rates.

POST BID. DON'T YOU
DICTATE THEM??

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

PTO PROGRAM, 401K, LONG TERM DISABILITY, LIFE INSURANCE

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

WE HAVE PD SPECIFIC PROGRAMS. WE ARE AN EO EMPLOYER

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

Yes

No

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

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

Yes

No

15. By attachment, please provide the following:

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

N/A

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

Yes

No

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

Yes

No

EMR = _____

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

Yes

No

If, yes, Ratio = .70

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

Yes

No

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

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

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

Yes

No

CONTRACT

THIS CONTRACT is between the CITY OF ANN ARBOR, a Michigan Municipal Corporation, 301 East Huron Street, Ann Arbor, Michigan 48104 ("City") and Aquatic Source, LLC ("Contractor") a limited liability company doing business under the laws of the State of Michigan located at 190 Summit Street, Brighton, Michigan 48116.

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 ITB No. 4652 – Outdoor Pool Ultraviolet Disinfection Improvements in accordance with the requirements and provisions of the following documents, including all written modifications incorporated into any of the documents, all of which are incorporated as part of this Contract:

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

ARTICLE II - Definitions

Administering Service Area/Unit means Parks and Recreation Services Unit, Community Services Area.

Project means ITB No. 4652 – Outdoor Pool Ultraviolet Disinfection Improvements.

Supervising Professional means the person acting under the authorization of the manager of the Administering Service Area/Unit. At the time this Contract is executed, the Supervising Professional is: Scott Spooner whose job title is Parks and Recreation Services Deputy Manager - Maintenance. If there is any question concerning who the Supervising Professional is, Contractor shall confirm with the manager of the Administering Service Area/Unit.

Contractor's Representative means Nick Shelton whose job title is General Manager.

ARTICLE III - Time of Completion

- (A) The work to be completed under this Contract shall begin immediately on the date specified in the Notice to Proceed issued by the City.

- (B) The entire work for this Contract shall be completed within the schedule identified in Detailed Specification Section 01 00 00.
- (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 \$500 for each calendar day of delay in the completion of all the work. If any liquidated damages are unpaid by the Contractor, the City shall be entitled to deduct these unpaid liquidated damages from the monies due the Contractor.

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

ARTICLE IV - The Contract Sum

- (A) The City shall pay to the Contractor for the performance of the Contract, the lump sum price as given in the Bid Form in the amount of:

One Hundred Eighty-Eight Thousand Five Hundred Three Dollars (\$188,503.00)

ARTICLE V - Assignment

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

ARTICLE VI - Choice of Law

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

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

ARTICLE VII - Relationship of the Parties

The parties of the Contract agree that it is not a Contract of employment but is a Contract to accomplish a specific result. Contractor is an independent Contractor performing services for the City. Nothing contained in this Contract shall be deemed to constitute any other relationship between the City and the Contractor.

Contractor certifies that it has no personal or financial interest in the project other than the compensation it is to receive under the Contract. Contractor certifies that it is not, and shall not

become, overdue or in default to the City for any Contract, debt, or any other obligation to the City including real or personal property taxes. City shall have the right to set off any such debt against compensation awarded for services under this Contract.

ARTICLE VIII - Notice

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

ARTICLE IX - Indemnification

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

ARTICLE X - Entire Agreement

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

ARTICLE XI – Electronic Transactions

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

FOR CONTRACTOR

By _____

Its: _____

FOR THE CITY OF ANN ARBOR

By _____
Christopher Taylor, Mayor

By _____
Jacqueline Beaudry, City Clerk

Approved as to substance

By _____
Tom Crawford
City Administrator

By _____
Derek Delacourt
Community Services Area Administrator

Approved as to form and content

Stephen K. Postema, City Attorney

PERFORMANCE BOND

- (1) _____ (referred to as "Principal"),
and _____, a corporation duly authorized
to do business in the State of Michigan (referred to as "Surety"), are bound to the City of Ann Arbor,
Michigan (referred to as "City"), for \$ _____, the payment of which Principal and Surety bind
themselves, their heirs, executors, administrators, successors and assigns, jointly and severally,
by this bond.
- (2) The Principal has entered a written Contract with the City entitled _____,
_____ for ITB No. 4652 and
this bond is given for that Contract in compliance with Act No. 213 of the Michigan Public Acts of
1963, as amended, being MCL 129.201 *et seq.*
- (3) Whenever the Principal is declared by the City to be in default under the Contract, the Surety may
promptly remedy the default or shall promptly:
- (a) complete the Contract in accordance with its terms and conditions; or
- (b) obtain a bid or bids for submission to the City for completing the Contract in accordance with
its terms and conditions, and upon determination by Surety of the lowest responsible bidder,
arrange for a Contract between such bidder and the City, and make available, as work progresses,
sufficient funds to pay the cost of completion less the balance of the Contract price; but not
exceeding, including other costs and damages for which Surety may be liable hereunder, the
amount set forth in paragraph 1.
- (4) Surety shall have no obligation to the City if the Principal fully and promptly performs under the
Contract.
- (5) Surety agrees that no change, extension of time, alteration or addition to the terms of the Contract
or to the work to be performed thereunder, or the specifications accompanying it shall in any way
affect its obligations on this bond, and waives notice of any such change, extension of time,
alteration or addition to the terms of the Contract or to the work, or to the specifications.
- (6) Principal, Surety, and the City agree that signatures on this bond may be delivered electronically
in lieu of an original signature and agree to treat electronic signatures as original signatures that
bind them to this bond. This bond may be executed and delivered by facsimile and upon such
delivery, the facsimile signature will be deemed to have the same effect as if the original signature
had been delivered to the other party.

SIGNED AND SEALED this _____ day of _____, 202_.

(Name of Surety Company)

By _____
(Signature)

Its _____
(Title of Office)

Approved as to form:

Stephen K. Postema, City Attorney

(Name of Principal)

By _____
(Signature)

Its _____
(Title of Office)

Name and address of agent:

LABOR AND MATERIAL BOND

- (1) _____
of _____ (referred to as "Principal"), and _____, a corporation duly authorized to do business in the State of Michigan, (referred to as "Surety"), are bound to the City of Ann Arbor, Michigan (referred to as "City"), for the use and benefit of claimants as defined in Act 213 of Michigan Public Acts of 1963, as amended, being MCL 129.201 et seq., in the amount of \$ _____, for the payment of which Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, by this bond.
- (2) The Principal has entered a written Contract with the City entitled _____

_____, for ITB No. _____; and this bond is given for that Contract in compliance with Act No. 213 of the Michigan Public Acts of 1963 as amended;
- (3) If the Principal fails to promptly and fully repay claimants for labor and material reasonably required under the Contract, the Surety shall pay those claimants.
- (4) Surety's obligations shall not exceed the amount stated in paragraph 1, and Surety shall have no obligation if the Principal promptly and fully pays the claimants.
- (5) Principal, Surety, and the City agree that signatures on this bond may be delivered electronically in lieu of an original signature and agree to treat electronic signatures as original signatures that bind them to this bond. This bond may be executed and delivered by facsimile and upon such delivery, the facsimile signature will be deemed to have the same effect as if the original signature had been delivered to the other party.

SIGNED AND SEALED this _____ day of _____, 202_

(Name of Surety Company)
By _____
(Signature)
Its _____
(Title of Office)

Approved as to form:

Stephen K. Postema, City Attorney

(Name of Principal)
By _____
(Signature)
Its _____
(Title of Office)

Name and address of agent:

GENERAL CONDITIONS

Section 1 - Execution, Correlation and Intent of Documents

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

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

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

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

Section 2 - Order of Completion

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

Section 3 - Familiarity with Work

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

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

Section 4 - Wage Requirements

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

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

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

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

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

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

Section 5 - Non-Discrimination

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

Section 6 - Materials, Appliances, Employees

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

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

assigned.

Adequate sanitary facilities shall be provided by the Contractor.

Section 7 - Qualifications for Employment

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

Section 8 - Royalties and Patents

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

Section 9 - Permits and Regulations

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

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

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

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

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

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

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

Section 11 - Inspection of Work

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

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

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

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

Section 12 - Superintendence

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

Section 13 - Changes in the Work

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

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

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

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

Section 14 - Extension of Time

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

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

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

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

Section 15 - Claims for Extra Cost

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

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

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

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

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

Section 16 - Progress Payments

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

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

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

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

Section 17 - Deductions for Uncorrected Work

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

Section 18 - Correction of Work Before Final Payment

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

If the Contractor does not remove the condemned work and materials within 10 days after written notice, the City may remove them and, if the removed material has value, may store the material

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

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

Section 19 - Acceptance and Final Payment

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

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

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

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

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

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

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

Section 20 - Suspension of Work

The City may at any time suspend the work, or any part by giving 5 days notice to the Contractor in writing. The work shall be resumed by the Contractor within 10 days after the date fixed in the

written notice from the City to the Contractor to do so. The City shall reimburse the Contractor for expense incurred by the Contractor in connection with the work under this Contract as a result of the suspension.

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

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

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

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

Section 22 - Contractor's Right to Terminate Contract

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

Section 23 - City's Right To Do Work

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

Section 24 - Removal of Equipment and Supplies

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

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

Section 25 - Responsibility for Work and Warranties

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

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

Section 26 - Partial Completion and Acceptance

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

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

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

Section 27 - Payments Withheld Prior to Final Acceptance of Work

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

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

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

Section 28 - Contractor's Insurance

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

policy language shall document that the Contractor satisfies the following minimum requirements. Contractor shall add registration@mycoitracking.com to its safe sender's list so that it will receive necessary communication from myCOI. When requested, Contractor shall provide the same documentation for its subcontractor(s) (if any).

Required insurance policies include:

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

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

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

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

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

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

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

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

Section 29 - Surety Bonds

Bonds will be required from the successful bidder as follows:

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

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

Section 30 - Damage Claims

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

Section 31 - Refusal to Obey Instructions

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

Section 32 - Assignment

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

Section 33 - Rights of Various Interests

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

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

Section 34 - Subcontracts

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

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

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

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

Section 35 - Supervising Professional's Status

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

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

Section 36 - Supervising Professional's Decisions

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

Section 37 - Storing Materials and Supplies

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

Section 38 - Lands for Work

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

Section 39 - Cleaning Up

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

Section 40 - Salvage

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

Section 41 - Night, Saturday or Sunday Work

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

Section 42 - Sales Taxes

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

Section 43

CONTRACTOR'S DECLARATION

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

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

Contractor

Date

By _____
(Signature)

Its _____
(Title of Office)

Past due invoices, if any, are listed below.

STANDARD SPECIFICATIONS

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

Standard Specifications are available online:

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

DETAILED SPECIFICATIONS

GENERAL REQUIREMENTS
01 00 00

PART 1 -- GENERAL

1.1 SUMMARY

A. Description of Work

1. Work under this Contract consists of the installation of ultraviolet disinfection equipment at three outdoor pool facilities including Fuller Park Pool, Veterans Memorial Park Pool and Buhr Park Pool. The work includes all necessary demolition, piping, electrical, start-up, testing, training, and all related work necessary for complete and fully operational systems.
2. Contract drawings are included which give specific locations for all work under this Contract.
3. It is the intent of these Contract Documents that the Contractor provide complete and finished system. Items shown on the Drawings and Specifications not specifically connected to a heading in the Bid Form are to be considered as incidental to the work.

B. Products Furnished

1. Pertinent data regarding Owner furnished equipment is appended to these specifications. The Contractor shall contact the manufacturer and obtain additional data in assisting him in the preparation of the bid for the installation and start-up of the equipment.
2. Any alternate equipment shall be submitted for review and approval during bidding.

1.2 ADMINISTRATIVE REQUIREMENTS

A. Scheduling

1. The Contractor shall provide a work schedule. The schedule shall be complete and shall show in detail the manner in which he proposes to complete the work under this contract and approximately monthly billing of the Contract. The purpose of the schedule is to assist the Owner in notifying the public of inconveniences and to anticipate cash-flow on the job, and to determine if the Contractor is reasonably proceeding with the work to assure completion within the specified time.
2. Work hours shall be restricted to Monday through Friday, 7AM to 7PM. Work shall not be conducted on City holidays. Exceptions to work hour limits shall be only by written permission of the Owner.

B. Sequencing

1. The Contractor shall coordinate and schedule his work with the Owner when his operation may affect the operation of the existing pool facilities. This includes coordination of pool startup for testing of the UV disinfection equipment. At no time shall the Contractor's work interfere with the Owner's normal pool startup operations.
2. City Council approval is anticipated by March 1, 2021. Notice to proceed is anticipated by March 26, 2021.
3. The Owner will begin filling the pool facilities with water between April 19 and May 14, 2021.
4. The Owner will place the pools in service on May 28, 2021.

5. All UV disinfection equipment shall be substantially complete and in service by the time of the inspection by the Washtenaw County Pool Inspector prior to the Owner placing the pools in service.
6. If the Contractor must drain pool lines, the work shall be done so as not to impact water quality in pools adversely. Once the Owner has turned on the pool recirculation systems the Contractor shall be responsible to maintain water quality in the pools.

C. Project Progress Meeting

1. It shall be the responsibility of the Contractor to have a representative present at each meeting. The meetings shall be held at least once a month as directed by the Engineer.

1.3 SUBMITTALS

A. Digital Photographic Record

1. The Contractor shall furnish to the Owner a digital video or photographic record for all areas proposed for improvement and all access ways to the work area.
2. The video or photographs shall be stored on a USB drive and be of such quality to accurately show the existing conditions. The record shall be produced one week prior to the placement of materials or equipment in the construction area.
3. The video or photographs must be recorded while the visibility is clear.
4. The photographic record shall include date, time, and location at appropriate intervals. The location shall be easily referenced to the Contract Drawings.
5. The audio-video taping shall be VHS and of such quality to accurately describe the existing.

1.4 QUALITY ASSURANCE

A. Permitting

1. Construction 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 Permits (All Trades). The Contractor will be required to apply for, pay all fees, obtain, and adhere to all requirements of the permit.

1.5 SITE CONDITIONS

A. Existing Conditions

1. Existing Facility Access

- a. The Contractor shall be responsible for maintaining access to existing facilities for personnel and supplies during the construction period. Access to existing facilities shall not be temporarily disrupted without coordination with and prior approval of the Owner.

2. Construction Water

- a. Water for construction is available from the Owner and may be obtained from the existing facilities. The Contractor shall be responsible for providing an approved backflow prevention device to protect the water source and all necessary piping.

3. CONSTRUCTION POWER

- a. Electrical power to be used during construction is available from the Owner and may be obtained from the existing facilities. The Contractor shall be responsible for providing all necessary meters, disconnections, and transformers.

END OF SECTION

SUBMITTAL PROCEDURES
01 33 00

PART 1 -- GENERAL

1.1 SECTION INCLUDES

- A. Submittal Procedures
- B. Certifications
- C. Shop Drawings
- D. Product Data
- E. Samples
- F. Manufacturers' Instructions
- G. Manufacturers' Field Reports
- H. Construction Schedule
- I. Submittal Schedule

1.2 SUBMITTAL PROCEDURES

- A. 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. Resubmittals should have the same number as the original, plus a letter designation for each Resubmittal (i.e. 7-A, 7-B, etc.)
- B. 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.
- C. Include the following information on the label for processing and recording action taken.
 - 1. Project name.
 - 2. Date.
 - 3. Name and address of Engineer.
 - 4. Name and address of Contractor.
 - 5. Name and address of subcontractor.
 - 6. Name and address of supplier.
 - 7. Name of manufacturer.

8. Number and title of appropriate specification sections.
9. Drawing number and detail references, as appropriate.
- D. Schedule submittals to expedite the Project and deliver to Engineer at business address. Coordinate submission of related items. Coordinate related activities that require sequential activity.
- E. Submit a schedule of shop drawing submittals.
- F. Review and approve shop Drawings, project data, and samples before submitting them.
- G. Verify field measurements, field construction criteria, catalog numbers, and similar data. Indicate on the submission exactly what was verified.
- H. Any markings done by Contractor shall be done in a color other than red. Red is reserved for Engineer's marking.
- I. The number of copies to be submitted will be determined at the pre-construction conference. Reproducible 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.
- J. Coordinate each submittal with the requirements of the Contract Documents.
- K. Provide space for Contractor and Engineer review stamps.
- L. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction Work, and coordination of information, is in accordance with the requirements of the Work and Contract Documents.
- M. Submit the number of copies that the Contractor requires, plus four copies that will be retained by the Owner and Engineer.
- N. Identify variations from Contract Documents and Product or system limitations that may be detrimental to successful performance of the completed Work.
- O. No claim will be allowed for damages or extension of time because of delays in the work resulting from rejection of material or from revision and resubmittal of shop Drawings, project data, or samples.
- P. 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.
- Q. Engineer reserves the right to withhold action on a submittal required coordination with other submittals until related submittals are received.
- R. Do not install materials or equipment which requires submittals until the submittals are returned with Engineer's/Owner's stamp and initials or signature indicating approval. The Owner shall have final approval authority.
- S. Contractor's responsibility of errors, omissions, and deviations from requirements of Contract Documents in submittals is not relieved by the Engineer's review.
- T. Distribute copies of reviewed submittals to concerned parties. Instruct parties to promptly report any inability to comply with requirements.
- U. Do not use Shop Drawings without an appropriate final stamp indicating action taken in connection with construction.

- V. Submittals not requested in conformance with this Specification will not be recognized or processed.
- W. Revise and resubmit as required, identify all changes made since the previous submittal.
- X. In the event that more than two re-submittals of any submittal is necessary to achieve conformance to the Contract requirements, Contractor shall be charged for excess engineering. The Owner shall deduct these charges from the Contractor's final payment. Charges will be \$115.00/hr. minimum four hours, for each additional submittal of an item. A tabulated record of such charges will be provided for the Contractor's review prior to the processing of the final payment.
- Y. Submit new project data and samples when the initial submittal is returned disapproved.

1.3 CERTIFICATIONS

- A. When specified in individual specification sections, submit certification by the manufacturer, installation/application subcontractor, or the Contractor to Engineer, in quantities specified for Product Data.
- B. Indicate that the material or Product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- C. Certifications may be recent or previous test results of the material or product but must be acceptable to Engineer.

1.4 SHOP DRAWINGS

- A. Shop Drawings: Submit to Engineer for review for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. Produce copies and distribute in accordance with Paragraph 1.2 - Submittal Procedures.
- B. 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.
- C. Shop Drawings include fabrication and installation Drawings, setting diagrams, schedules, patterns, templates, and similar Drawings. Include the following information:
 - 1. Dimension.
 - 2. Identification of products and materials included.
 - 3. Compliance with specified standards.
 - 4. Notation of coordination requirements.
 - 5. Notation of dimensions established by field measurements.
- D. 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.
- E. 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.

- F. Indicate special utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

1.5 PRODUCT DATA

- A. Product Data: Submit to Engineer for review for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. Produce copies and distribute in accordance with Paragraph 1.2 - Submittal Procedures.
- B. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- C. Indicate product utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

1.6 MANUFACTURER'S INSTRUCTIONS

- A. When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, to Engineer for delivery to Owner in quantities specified for Product Data.
- B. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

1.7 MANUFACTURER'S FIELD REPORTS

- A. Submit reports for the Owner.
- B. Submit report in duplicate, within seven days of observation, to Engineer and Owner for Information.
- C. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the Contract Documents.

1.8 CONSTRUCTION SCHEDULE

- A. Bar Chart Schedule:
 - 1. Prepare a fully developed, horizontal bar chart type construction schedule. Schedule shall be prepared electronically in Microsoft Project with critical path and links shown. Submit color copies of the schedule within 30 days of the date established for commencement of the work.
 - 2. Provide a separate item bar for each significant construction activity. Provide a continuous vertical line to identify the first working day of each week. Use the same breakdown of units of the work as indicated on schedule of values.
 - 3. Prepare schedule of sheet, or series of sheets, of stable transparency, or other reproducible media, of sufficient width to show data for entire construction period.
 - 4. 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.
 - 5. Coordinate construction schedule with schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests, and other schedules.

6. Indicate completion in advance of the date established for substantial completion. Indicate substantial completion of schedule to allow time for Engineer's procedures necessary for certification of substantial completion

B. Schedule Updating: Provide an updated construction schedule at each progress meeting. Color copies of the updated schedule shall be prepared for all attendees.

1.9 SUBMITTAL SCHEDULE

A. After development and acceptance of the construction schedule, prepare a complete schedule of submittals. Submit schedule within ten 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 first 90 days. 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. The submittal schedule shall reflect critical path shop Drawings that must be expedited.

E. 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.

F. 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.

G. Schedule Updating: Provide an updated submittal schedule at each progress meeting.

PART 2 -- PRODUCTS

NOT USED

PART 3 -- EXECUTION

3.1 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 the requirements of the Contract Documents; final acceptance will depend upon the compliance.
 2. Final-But-Restricted Release: When submittals are marked "Make Corrections Noted" that part of the work covered by the submittal may proceed, provided it complies with notation or correction 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 the 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. Additional Information Needed: When submittal is marked "Submit Specified Item" Contractor shall submit requested information.
 5. 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".
 6. 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.

END OF SECTION

EXECUTION AND CLOSEOUT REQUIREMENTS
01 70 00

PART 1 -- GENERAL

1.1 SECTION INCLUDES

- A. Substantial Completion
- B. Final Inspection
- C. Request for Final Payment
- D. Safety and Security
- E. Construction Access
- F. Work Area and Storage of Materials
- G. Notification to Utilities
- H. Existing Public Utilities
- I. Sanitary Requirements

1.2 SAFETY AND SECURITY

- A. Contractor shall provide written documentation of his safety plan for the work.
- B. All work shall be performed in accordance with MIOSHA.
- C. The site is accessible to the public; therefore, additional precautions shall be taken for securing work areas, stores, and equipment.
- D. The Owner's security requirements shall be met at both locations.
- E. Existing access gates and chains shall remain locked at all times. The Contractor shall daisy chain all closures so that the Owner can access as required.
- F. All security precautions and measures shall be the responsibility of the Contractor.
- G. Provide safety fencing around material or equipment storage.

1.3 CONSTRUCTION ACCESS

- A. There is limited access for construction equipment and materials at the site.
- B. The Contractor shall coordinate ongoing pedestrian access to the pedestrian footpaths throughout construction. In general, the footpaths within the work zone may be closed to pedestrian traffic during work hours.
- C. Upon completion of work, the Contractor shall restore the site to its original condition.

1.4 WORK AREA AND STORAGE OF MATERIALS

- A. The staging area shall be restored to existing conditions upon completion of the Contractor's work.
- B. The working area shall be organized in an orderly manner with storage and tool sheds, sanitary facilities, parking areas for employees, and all other necessary facilities developed and maintained by the Contractor. The Contractor shall keep the work site and all access routes clean and dust free.
- C. Contractor shall not allow any trash, concrete or other construction debris to enter the river. Any materials that fall into the river shall be retrieved and removed by the Contractor.
- D. All materials, supplies and equipment, whether furnished by the Contractor or by the Owner, shall be delivered, stored, and handled as to prevent the inclusion of foreign materials and/or damage by water, freezing, breakage or other causes. Packaged materials shall be delivered in the original unopened containers and shall be stored until ready for use. All materials which have been stored shall meet the requirements of the Specifications at the time they are used in the project.

1.5 NOTIFICATION TO UTILITIES

- A. Prior to the start of any operations in the vicinity of any utilities, the Contractor shall notify the utility companies and request that they stake out the locations of the utilities in question.

1.6 EXISTING PUBLIC UTILITIES

- A. The Contractor shall conduct his operations so as not to damage any existing utility. The Contractor shall correct, at his own expense, any injury caused during the operations of his subcontractors or suppliers.

1.7 SANITARY REQUIREMENTS

- A. The Contractor shall provide adequate sanitary facilities for all persons employed on the project. The sanitary facilities shall conform in every way to the requirements of the "General Safety Rules and Regulations for the Construction Industry".
- B. The sanitary facility shall be securely fixed to the ground to prevent vandalism.
- C. The sanitary facility shall be locked by the Contractor during non-working hours.

1.8 WINTER CONSTRUCTION

- A. The Engineer shall have permissive authority over the work which is proposed to be done during the winter months. The Contractor shall provide adequate weather protection, temporary heating and take any other measures which are necessary to insure that the work performed during the winter months is properly installed and protected against damage from freezing.

1.9 SUBSTANTIAL COMPLETION

- A. Substantial completion shall be the date as certified by the Engineer when the construction of the Project, or a specified part thereof, is sufficiently completed, in accordance with the Contract Documents, so that the Project, or specified part, can be fully utilized for the purposes for which it was intended.
- B. 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, 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 certificate, and similar releases.
 6. Complete final cleanup requirements, including touch-up painting. Touch-up and otherwise repair and restore marred exposed finishes.
 7. Provide all required demonstration and training sessions.
- C. 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 completed inspection will be for the basis of requirements for final acceptance.
 4. Date of Substantial Completion will begin the warranty period unless noted otherwise.

1.10 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. The list shall be endorsed and dated by the Engineer.
 4. Submit final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion, or when Owner took possession of and responsibility for corresponding elements of the work.
 5. Submit consent of surety to final payment.
 6. Submit a final liquidated damages settlement statement.

7. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
8. Submit record drawings, maintenance manuals, damage or settlement survey, property survey, and similar final record information.
9. Deliver tools, spare parts, extra stock, and similar items.
10. Make final changeover of permanent locks and transmit keys to Owner. Advise Owner's personnel of changeover in security provisions.
11. Complete commissioning and training of Owner's personnel.
12. Discontinue or change over and remove temporary facilities from the site, along with construction tools, mock-ups, and similar elements.

1.11 REQUEST FOR FINAL PAYMENT

- A. Submit request for final payment in accordance with the Agreement and General Conditions.
- B. Request for final payment shall include:
 1. Documents required in the General Conditions, as may be modified by the Supplementary Conditions.
 2. Releases or Waivers of Lien Rights:
 - a. When submitting releases or waivers of Lien rights, provide release or waiver by Contractor and each Subcontractor and Supplier that provided Contractor with labor, material, or equipment.
 - b. Provide list of Subcontractors and Suppliers for which release, or waiver of Lien is required.
 - c. Each release or waiver of Lien shall be signed by an authorized representative of entity submitting release or waiver to Contractor and shall include Subcontractor's or Supplier's corporate seal if applicable.
 - d. Release or waiver of Lien may be conditional upon receipt of final payment.
 3. Consent of Surety.
 4. Documentation that all punch list items are complete.
 5. Warranties.
 6. Operation and Maintenance Manuals.
 7. Record Drawings being maintained by the Contractor.

PART 2 -- PRODUCTS

NOT USED

PART 3 -- EXECUTION

NOT USED

END OF SECTION

POOL GENERAL
13 11 00

PART 1 -- GENERAL

1.1 SUMMARY

A. Section Includes

1. Work shall include, but is not necessarily limited to:

- a. General conditions for pool systems related work. This includes applicable Division 01 Sections.
- b. Construction and start up supervision.
- c. Operation and Maintenance Manuals.

B. Related Requirements

1. Drawings and general provision of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 QUALITY ASSURANCE

A. Experience: The Pool Contractor (hereafter indicated as Contractor) shall have been engaged in the construction of municipal/commercial swimming pools for a period of at least 5-years and shall provide a record of at least five successful installations of a similar type and size of construction acceptable to the Engineer.

B. Field Superintendent: Contractor shall provide at least one person who shall be thoroughly trained and experienced in the construction of swimming pools, who shall be present at all times during the execution of this portion of the Work and who shall personally direct the Work of this Section.

C. Project Manager: Contractor shall have one project manager in addition to the field superintendent who is thoroughly trained and experienced in the construction of pools with a minimum of 5-years of experience. This person will be responsible for all submissions, material procurement and project administration.

D. Codes and Regulations: Contractor shall have a working knowledge of and shall comply with all State, City, and County Codes and Regulations applicable to the work under this Section, including but not limited to:

1. Michigan Department of Environmental Quality Water Bureau, Public Swimming Pools, Public Act and Rules Governing Public Swimming Pools, current editions.

a. As project involves addition of supplemental disinfection, which is not required by code, a State Pool permit is not required. See Division 1 for description of other project permits, fees, etc.

2. American National Standard for Public Swimming Pools, ANSI/NSPI.

3. NSF International/ANSI Standard 50 – Circulation System Components and Related Materials for Swimming Pools, Spas/Hot Tubs.

4. Article 680 of the National Electrical Code.

- E. Patented Materials: Contractor shall pay all royalties and license fees. He shall defend all suits or claims for infringement of any patent right and save the Owner and Engineer harmless from loss on account thereof.
- F. Quality of Materials: The materials, products, and equipment specified herein establish the standard of required function, dimension, appearance, and quality. Complete submittal data must be provided to the Engineer for review and approval or rejection. No substitutes may be made without prior approval. If a substitute is approved, Bidders will be notified by Addendum.
- G. Quality of Labor: The Contractor shall use only personnel thoroughly trained and experienced in the trade involved in each type of Work required for the swimming pool related construction. In acceptance or rejection of installed work, no allowance will be made for lack of skill on the part of the workers.

1.3 SUBMITTALS

- A. Shop Drawings: Submit drawings showing the layout, dimensions, operating characteristics of each piece of equipment, valves, controls, piping, and all miscellaneous materials and items specified to be furnished.
 - 1. Provide per Division 01.
 - 2. Shop drawings shall be submitted and approved prior to fabrication or purchase.
- B. Project Record Documents: Provide per Division 01.
- C. Operation and Maintenance Data: See Division 01 and Part 3 of this specification.
- D. Warranties: Provide written warranties addressed to the Owner as specified in Divisions 01 and 13. Warranties shall be submitted prior to Final Payment for the Project. Extended warranties shall be provided where noted.
- E. Test Reports: Reports of all tests shall be distributed by the testing laboratory after each test with copies sent to the Engineer, Owner, and Contractor.
- F. Contractor shall provide layout drawings of all piping with elevations before Work on piping commence.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Equipment: All practical precautions shall be taken to prevent damage to equipment and materials on the Site. All items of operating equipment shall be kept covered or stored out of the weather.

1.5 JOB CONDITIONS

- A. Existing Conditions: Contractor use of the Site is limited to the areas identified elsewhere in the project documents and/or as designated by the Owner/Engineer. Contractor shall provide and maintain access during construction. Any damage to any facilities/site elements shall be the responsibility of the Contractor. All damage shall be repaired by the Contractor at no cost to the Owner.

1.6 GENERAL REQUIREMENTS

- A. Comply with all requirements identified in Division 1 and supplemented with requirements identified in other specification sections.
- B. Contractor shall protect adjacent areas during construction and repair/replace damaged items to the satisfaction of the Owner and Engineer.

1.7 WARRANTIES

- A. Warranty with 2-year correction period from the actual Substantial Completion Date shall apply to all pool work in Division 13, unless otherwise stated for a longer period for specific items.

1.8 EQUIPMENT LAYOUT

- A. Piping, equipment locations, conduit, or other modifications required because of use of different equipment from that shown on the Drawings shall be the responsibility of the Contractor at no cost to the Owner and shall also include any Design Team review and redesign costs. All changes must be approved by the Engineer.

PART 2 -- PRODUCTS

NOT USED

PART 3 -- EXECUTION

3.1 GENERAL

- A. All the Contractor's work shall be performed by skilled workers experienced in pool construction. All cutting and patching of existing materials shall be neatly done. Piping and equipment shall be carefully arranged in an orderly manner for ease of maintenance, operation, and repair. All piping must drain to low points.

3.2 GROUNDING AND BONDING

- A. Coordinate with Electrical Sections to ground and bond all pool equipment, etc. in accordance with the most current version of Article 680 of the National Electrical Code and State and local code requirements.

3.3 FIELD QUALITY CONTROL

- A. Testing: Shall comply with requirements specified throughout the Project Manual.

3.4 MANUFACTURER SERVICES AND STARTUP

- A. Contractor shall return to the site in spring of 2021 at the direction of the Owner as Owner is preparing for the 2021 pool season and is responsible for the initial startup and adjusting of UV System. After completion of installation of all equipment and all that is related, the equipment and installation shall be inspected and approved by a manufacturer trained and approved technician as being in compliance with the manufacturer's recommendations and requirements. After such inspection, the equipment shall be given any required adjustment, and when complete the equipment shall be ready to be placed into operation under the supervision of the manufacturer's representative. Manufacturer's representative shall certify to the Engineer that the equipment is installed and operates correctly.
- B. The Contractor shall schedule a manufacturer trained and approved technician at a time agreeable to the Owner, to train Owner's personnel in the proper operation and preventive maintenance of equipment, after all equipment has been installed and certified by the respective manufacturers. The following minimum times shall be provided (time does not include travel time to and from Site) for start-up training to instruct the Owner in operation and maintenance procedures, and to certify to the Engineer that the equipment is operating correctly.

- 1. UV Equipment (Veterans Park Pool) 2-hours
- 2. UV Equipment (Fuller Park Pool) 2-hours
- 3. UV Equipment (Buhr Park Pools) 2-hours

- C. The Contractor shall videotape training sessions for Owner's future reference. The Contractor shall coordinate all training to allow for this option.

3.5 OPERATION AND MAINTENANCE MANUAL

- A. Contractor shall provide one copy (and three electronic PDF copies) of closeout items for each piece of equipment, valve, materials, etc. and shall provide instructions on the proper draining of each piece of equipment and piping. Manufacturer's data in each manual shall be the printed literature of the manufacturer. Photocopies of such literature are not acceptable. Standard information in the manufacturer's literature that does not apply to the specific model provided shall be crossed out. This material shall be bound in 3-ring binders or spiral binder type and transmitted to the Owner/Engineer prior to final acceptance of the Project. In addition, provide the following information in each 3-ring binder:

1. Copies of all approved shop drawings.
2. Manufacturer's wiring diagrams for electrically powered equipment.
3. Records of tests performed to certify compliance with system requirements.
4. Certificates of inspection by regulatory agencies.
5. Parts lists for manufactured equipment.
6. Exploded drawing for each piece of equipment with field replaceable parts.
7. Valve schedules.
8. Warranties.
9. Manufacturer's instructions for maintenance and operations for each piece of new equipment.
10. Spare parts list.
11. Narrative on controls.
12. Start-up and shutdown procedures that address specifics to this Project and specific equipment and options provided for this Project. Procedures shall reference valve tags and valve positioning for various modes of operation.
13. Trouble shooting information.
14. Additional information as indicated in the other Sections of the Construction Standards.
15. PDF copies of the final Operation and Maintenance Manual shall be as follows:
 - a. Provide three digital copies in a PDF format saved to a flash drive. The saved files shall be clearly identified and organized in a similar manner to the hard copies.
 - 1) Data saved on the flash drives shall be accessible and neatly organized.
 - 2) Provide a table of contents which utilizes bookmarks. The bookmark shall take the reader to a specific page when the reader clicks on the desired title in the table of contents. A bookmark shall be provided for materials associated with each piece of equipment included in the O&M manual.

END OF SECTION

POOL GENERAL 13

11 00 - 4

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POOL PIPING, VALVES, FITTINGS AND SPECIALTIES
13 11 46

PART 1 -- GENERAL

1.1 SUMMARY

A. Section Includes

1. Work shall include, but is not necessarily limited to:

- a. Piping, fittings, valves, supports, accessories, etc. All items shall be constructed of materials compatible for long term use with chlorinated water and other chemicals being used.

B. Related Requirements

1. All requirements of Section 13 11 00 – Pool General shall apply to this Section.

1.2 WARRANTY

- A. Warranty with 2-year correction period from the actual Substantial Completion Date shall apply to all work in this Section, unless otherwise stated for a longer period for specific time.

PART 2 -- PRODUCTS

2.1 PIPING, VALVES, AND FITTINGS

- A. Pool Piping and Fittings: All pool piping shall be Schedule 80 PVC and shall conform to state requirements for pool recirculation piping. All pipes shall be graded to drain and shall be provided with drain valves at low points for convenient draining for maintenance. All PVC piping fittings for nominal pipe diameter shall be Schedule 80 injection molded. Piping and fittings shall be listed for potable water service by the National Sanitation Foundation (NSF) and manufactured in compliance with ASTM D2467 and ANSI/NSF Standard 61.

1. Piping immediately adjacent to the UV disinfection unit as noted on the drawings and per manufacturer recommendations shall either be 316L low carbon stainless-steel or Schedule 80 unplasticized PVC. Pipe pressure ratings shall be equal to or greater than standard schedule 80 PVC piping. Fittings within distances identified on the drawings shall be 316L stainless-steel.
2. Fitting bolts, nuts, hardware, etc. shall be manufactured from corrosion restraint materials.
3. Provide full size reducers (i.e. no bushing reducers) at all locations, except if noted otherwise in the drawings.
4. Provide watertight pressure transition fittings to connect new and existing piping to accommodate different pipe materials, etc. as required.

B. Valves: Valves and fittings shall be NSF approved.

1. Basis of Design Butterfly Valves: Spears, Asahi, Hayward and Thermoplastic Valves, Inc. (TVI). Thermoplastic Butterfly Valves shall be wafer style with ANSI B16.5 Class 150 flanges. Disc shall be smooth and contoured for lowest possible pressure drop (highest Cv). Shaft shall be 410 S.S. and of 1 piece, through shaft design, with square drive through entire length of blade. Valves shall have epoxy coated gear actuators with hand wheel. Chains shall be installed for valves located in buildings greater than 6-feet above grade. Seat liners shall be full faced with integral, ribbed flanges. No auxiliary gaskets shall be required for installation. Seat liners shall effectively isolate the body and

shaft from the flow media. Seat liners shall also thermally insulate the body from the internal operating temperature. Valve liner and seals are replaceable. Materials of construction shall be: Body - PVC, ASTM D1784, (Standard 2- to 14-inch), Disc - PP, ASTM D4101 (Standard), Shaft - ASTM A240, Type 410 S.S. (Standard), Seals/Seat - EPDM, Ethylene Propylene Diene Monomer, Hardware – 4-inches through 24-inches 304 S.S. 8-inch size positioner plate 410 S.S. Chrome Plated, Lever - ABS, ASTM D1788, Gear Box, cast iron housing ASTM A53, Epoxy coated. Provide gear operators on all butterfly valves 8-inches and larger and lever operators on butterfly valves 6-inches and smaller, unless specifically designated otherwise. Lever operated valves where provided shall be complete with a spring loaded 15 position latch lever. Provide additional bracing, supports, etc. for valve extensions in storage tanks. Valves and accessories located in tanks, sumps, manholes, or similar structures shall be suitable for submersible service.

2. Valves as noted on UV drawings shall be equipped with stainless steel discs and materials acceptable to the UV equipment manufacturer.
3. Basis of Design ball valves: Hayward PVC true-union valves. Provide with extension stems and hand wheel actuators where shown on the drawings.

C. Gauges:

1. Provide gauges and assemblies on either side of the UV strainer basket. Verify locations with the UV manufacturer and the Engineer. Gauges and assemblies shall be suitable for service with chlorinated water. Gauges shall be interchangeable. Basis of Design: Subject to compliance with requirements provide gauges manufactured by United Instrument, Inc., McDaniel, Crosby, Ashcroft, US Gauge or Wika and shall conform as follows:
 - a. 2-1/2 inch diameter dial size, 304 stainless-steel turret style case, internal threaded bezel, 1/4 inch minimum connection size, 316 stainless-steel connection material, standard bottom connection mounting, plexiglass window, aluminum with white background dial, black aluminum - micro adjustable pointer, phosphor bronze bourdon tube, 316 stainless-steel movement, 1.0 percent of full scale accuracy, black mat finish, glycerin filled, solid front/blow-out back, restrictive type 316 stainless-steel snubber using tiny needle valve orifice or metallic porous sponge type, gauge assembly shall be glycerin-filled.
 - b. Diaphragm seal shall be constructed of neoprene or any other equally flexible, fatigue resistant material with stainless-steel housing and equipped with bleed screw on pumped water side of diaphragm seal.
 - c. Valves on gauge assemblies shall be quarter turn ball valves constructed with bronze body, stainless-steel ball, and teflon seat. Basis of Design Manufacturer: Subject to compliance with requirements, provide "Apollo" ball valves by Conbraco Industries.
 - d. Pipe Connection: Connected to pipe with male portion of quick coupler.

2. Provide gauges as follows:

<u>Calibration</u>	<u>Pressure Range</u>
Feet H ₂ O	0 to 100

3. If gauges other than Feet H₂O are proposed (i.e., PSI), they shall be of similar equivalent pressure range. In addition, Contractor shall provide typed, laminated conversion chart between proposed units and feet H₂O and place conversion chart in pool equipment room at location selected by the Owner.

D. Pipe Identification

1. All exposed piping shall receive pipe markers as specified below.
 - a. Shall identify conveyed fluid; identify where flow is going and direction of flow.
 - b. Shall be rolled, plastic-coated type markers.
 - c. Markers shall snap around entire circumference of pipe.
 - d. Markers shall be removable.
 - e. Markers requiring bonding, taping, adhesives, or other fastening devices shall not be allowed.
 - f. Markers shall conform to State, ANSI and OSHA requirements.

E. Pipe Hangers, Supports, Brackets, Etc.

1. Basis of Design Products: Grinnell and Crane.
2. Piping supports shall be located to minimize impact to access of equipment and suitable for the structural systems they are supported from.
3. Hangers, supports, brackets, etc. shall be manufactured from corrosion resistant materials and or painted/galvanized or low carbons stainless steel to provide corrosion resistance. In addition to piping supports, provide additional supports as required for valves, valve extension stems, gauges, equipment, etc.
4. Additional cross bracing shall be provided to securely support piping, prevent sway, vibration transmission, etc.

- F. Valve Tags: All valves shall be tagged with brass, non-ferrous metal or plastic laminated tags wired to the valve stem or otherwise attached to the valve being tagged. Fasteners shall be non-ferrous or otherwise corrosion-proof. Numbering shall match the schedule in the Contractor provided pool O&M Manual. Coordinate numbering system with Owner.

PART 3 -- EXECUTION

3.1 GENERAL

- A. All piping shall be neatly arranged in an orderly manner for ease of operation and maintenance. Arrangement shall be as shown on the drawings. Minor deviations may be allowed based on actual field conditions but must be pre-approved by the Engineer. All equipment shall be set level on concrete pads.
- B. Care shall be taken to place all piping true to line and grade. All piping shall be graded to drain for maintenance.
- C. Workmanship: All work shall be performed by skilled workers experienced in swimming pool construction. All piping shall be neatly laid out and installed in accordance with the best construction practices. All piping must drain to low points and be provided with convenient drain valves. Piping shall be watertight with no leakage.
- D. Piping Support: Piping shall be installed with or supports per the pipe size and spacing chart below. Provide additional supports near equipment to support piping. All piping shall be supported in such a way to eliminate swaying and vibration transmission. Provide cross-bracing supports as required.

Pipe Size (inches)	Maximum Spacing
1/4	3.5
3/8	4
1/2	4.5
3/4	4.5
1	5
1-1/4	5.5
1-1/2	5.5
2	5.5
2-1/2	6.5
3	7
3-1/2	7
4	7
5	7.5
6	8
8	8.5
10	9
12	10.5
14	11
16	11.5

- E. Pipe Identification: Place flow direction arrows at each pipe identification point. Pipe identification shall be placed as follows:
 - 1. Pipe identification shall be provided on all branch lines of all header pipes and at each change of direction.
 - 2. Pipe identification shall be provided on all header lines between branches.
 - 3. Where the same pipe goes through a wall, ceiling, roof, or piece of equipment, provide pipe identification on each side.
 - 4. In no case, on all other piping, shall pipe identification exceed 20-foot spacing.
- F. Identify valves with tags bearing system identification and a valve sequence number. Provide a computer written valve schedule indicating the valve number and the equipment or areas supplied by each valve. Include the schedule in mechanical room and in Operation and Maintenance Manual. Schedules in mechanical rooms shall be in clear plastic and be conspicuously posted.
- G. The Contractor shall install all necessary piping in general accordance with the drawings.
- H. All piping shall be pitched to provide positive gravity drainage for winterization.
- I. All piping must be properly supported.

END OF SECTION

POOL ULTRAVIOLET DISINFECTION EQUIPMENT
13 11 47

PART 1 -- GENERAL

1.1 SECTION INCLUDES

- A. Pool ultraviolet disinfection equipment.

1.2 RELATED DOCUMENTS

- A. Drawings and Contracting Requirements, including General and Supplementary Conditions and Division 01 - General Requirements, apply to this Section.
- B. All requirements of Section 13 11 13 – Exterior Fountain General shall apply to this Section.

1.3 REFERENCES

- A. The following latest edition reference specifications, guides, and standards shall become part of this Specification as if herein written. If provisions conflict, the more stringent provisions shall apply.

- 1. NSF – National Sanitary Foundation
- 2. MET – Met Laboratories, Inc.
- 3. CSA – Canadian Standards Association
- 4. UL – Underwriters Laboratory
- 5. NEMA – National Electrical Manufacturers' Association
- 6. ANSI – American National Standards Institute
- 7. USEPA UVDGM- U.S. Environmental Protection Agency Ultraviolet Guidance Manual
- 8. Din – German Institute of Standardization
- 9. IP – International Electrotechnical Commission

1.4 SUBMITTALS

- A. Shop Drawings in accordance with Division 01 and Section 13 11 00:
 - 1. Submit for review shop drawings showing the following:
 - a. Complete description in sufficient detail to permit an item comparison with the Specification.
 - b. Dimensions, installation, and detail requirements.
 - c. Descriptive information including catalog cuts and manufacturers specifications for all components.
 - 2. Electrical schematics, wiring diagrams, and layouts.
- B. Operation and Maintenance Manuals in accordance with Division 01 and Section 13 11 00.

- C. Material Safety Data Sheets: The Contractor shall furnish to the Owner current copies of material safety data sheets for all chemicals and products brought onto the Site by the Contractor.

1.5 QUALITY ASSURANCE

- A. Equipment supplier shall have at least 20-year experience providing medium pressure UV systems to the Aquatics market.
- B. Equipment supplier shall design, develop, manufacture, and test the system in a facility that is assessed and registered as conforming to the requirements of ISO 9001:2008 quality management system.

1.6 WARRANTY

- A. Warranty with 2-year correction period from the actual Substantial Completion Date shall apply to all Work in this Section, unless otherwise stated for a longer period for specific items.
- B. A factory trained representative of the manufacturer shall perform all warranty work. Manufacturer to warranty Ultraviolet chamber and Control panel for a period of 5-years excluding lamps, quartz, and seals. Medium pressure Ultraviolet bulbs shall be warranted for a period of 8,000 hours. Intermittently operated lamps (≥ 1 on/off cycle per day) will be replaced free of charge should failure occur prior to 4,000 hours and replacement will be prorated between 4,000 and 8,000 hours.
- C. Manufacturer must maintain spare or replacement parts in North America for same day or no longer than next day delivery in North America.
- D. A Service Agreement (twice per year maintenance) from a qualified factory certified distributor shall be provided to initiate the service in order and to maintain the 5-year warranty.

PART 2 -- PRODUCTS

2.1 GENERAL

- A. Ultraviolet Disinfection Equipment: Shall operate within the UVC electromagnetic spectrum emitting wavelengths in the range of 200nm to 400nm. These required wavelengths will provide constant disinfection/inactivation of bacteria, algae, molds, viruses, and destruction of Monochloramines, Dichloramines and Trichloramines.
- B. Ultraviolet Lamp/Chamber and Control Panel Manufacturer shall be Evoqua Water Technologies/Neptune Benson (www.evoqua.com) WAFER Series or approved equal. Any deviation/exception must be provided in writing to and approved by the designer prior to the Bid Date.
- C. The UV System shall have a MET or equivalent (ETL, CSA, or UL) listing, be NSF-50 2016 certified including Section 14.18 (crypto inactivation) and 3rd party validated to the USEPA UVDGM 2006 Guidelines.

1. Equipment General Description

- a. The Ultraviolet System shall be provided in a complete package to include 316L stainless-steel Construction, Control System located in a NEMA 12 (IP52) rated panel, Medium Pressure Bulbs designed to emit wavelengths within the UVC electromagnetic spectrum, automatic wiper system, and project commissioning by a certified manufacturer technician.

2.2 MODELS

- A. State of art design and direct flow through characteristics. Direct flow will be required to reduce total head loss through the system. Chamber and Control Cabinet shall be as indicated on the drawings. All required electrical work to be performed by licensed electrician.

1. Veteran's Park Pool – WF-215-8-N

- a. Pool Description: Outdoor, multi-use pool with zero-edge entry, shallow water with water features, lap lanes, flume water slide and deep water. Pool Volume = 232,000 gallons. Recirculation Rate = 645 GPM. Turnover Rate = 6 Hours.
- b. Dual Lamp medium pressure system with two (2) 1.5 kW bulbs.
- c. ANSI flange size of 8 inches and maximum flow of 1100 GPM @ 94 percent UVT.
- d. Electrical requirements: 208 Volt, single phase with a 30-amp external breaker.

2. Fuller Park Pool – WF-225-8-N

- a. Pool Description: Outdoor, Z-shape pool with shallow water area, lap lanes and deep water. Pool Volume = 400,000 gallons. Recirculation Rate = 1,220 GPM. Turnover Rate = 5.46 Hours.
- b. Dual Lamp medium pressure system with two (2) 2.5 kW bulbs.
- c. ANSI flange size of 8 inches and maximum flow of 1,540 GPM @ 94 percent UVT.
- d. Electrical requirements: 208 Volt, single phase with a 40-amp external breaker.

3. Buhr Park Pool (Main Pool) – WF-125-6-N

- a. Pool Description: Outdoor, L-shape pool with lap lanes and deep water. Pool Volume = 196,000 gallons. Recirculation Rate = 612 GPM. Turnover Rate = 5.34 Hours.
- b. Single Lamp medium pressure system with 2.5 kW bulb.
- c. ANSI flange size of 6 inches and maximum flow of 660 GPM @ 94 percent UVT.
- d. Electrical requirements: 208 Volt, single phase with a 30-amp external breaker.

4. Buhr Park Pool (Shallow Pool) – WF-115-4-N

- a. Pool Description: Outdoor, zero-edge entry, water features and maximum depth of 2'. Pool Volume = 17,000 gallons. Recirculation Rate = 300 GPM. Turnover Rate = 0.94 Hours.
- b. Single Lamp medium pressure system with 1.5 kW bulb.
- c. ANSI flange size of 4-inches and maximum flow of 396 GPM @ 94 percent UVT.
- d. Electrical requirements: 208 Volt, single phase with a 20-amp external breaker.

2.3 ULTRAVIOLET REACTOR

- A. Pressure rated for 150 psi and pressure drop across the unit will be minimal. The unit shall be constructed of 316L stainless-steel electropolished and passivated to prevent corrosion within the harsh pool environment. The Ultraviolet chamber shall come complete with the following equipment:

POOL ULTRAVIOLET DISINFECTION EQUIPMENT

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1. Ultraviolet intensity monitor factory calibrated to provide intensity in mw/cm², monitors providing percentage of lamp output not acceptable. It must include a built-in alarm system to notify operator when output level drops below required level of 60 mj/cm² for indoor pools or 40mj/cm² for outdoor pools (or operator set dosing levels).
2. UV Reactor shall be a validated system with third party testing to a recognized international standard such as the USEPA DGM.
3. Ultraviolet temperature control system shall be provided to maintain system integrity in the event of flow interruptions to the chamber.
4. Ultraviolet chamber shall come complete with annealed quartz sleeve with "O" ring seals for water tightness. System shall be complete with advanced seal arrangement to reduce risk of quartz over-compression on the seal face.
5. Chambers shall be complete with ANSI flanges and all ports or vents shall be threaded NPT. The Ultraviolet chamber must be capable of installation in the system so that it remains full under all conditions.
6. The ultraviolet unit must be complete with appropriate brackets or feet for ease of installation in either vertical or horizontal mounting.
7. The Chamber shall have a sacrificial anode attached to the chamber, extending inside the chamber, and be bonded to the installation bond loop.

2.4 ULTRAVIOLET LAMP

- A. Ultraviolet lamp shall be medium pressure high intensity. Lamp shall be designed to emit continuous Ultraviolet wavelengths in the range of 200nm to 400nm. This will provide optimal disinfection benefits and destruction of the Monochloramine, Dichloramine, and Trichloramine compounds. Lamp must remain unaffected by temperature variance of -17 degrees C (0 degrees F) to 93 degrees Celsius (200 degrees Fahrenheit).
- B. The lamp system must provide a constant dose of not less than 60 mj/cm² until the end of the lamp life for indoor applications and not less than 40 mj/cm² for outdoor disinfection and this must be based on constantly monitoring the full recirculating flow rate, not on a side stream treatment. The system must be equipped with infinitely variable power control to control the intensity & dose. Power stepping systems are not acceptable. The lamps shall be capable of turndown to 30% of the nominal rated power.
- C. The lamps shall be connected via means of a plug collector and shall have a mechanical interlock to prevent lamp removal when lit for safety reasons.

2.5 AUTOMATIC WIPER SYSTEM

- A. An automatic cleaning system shall be provided for cleaning of quartz sleeve and Ultraviolet monitor probe. The system shall travel the entire length of the quartz sleeve twice per desired cleaning cycle. Precision molded wiper rings shall be provided to ensure thorough quartz tube cleaning and quartz tube protection. Wiper cycle shall be user selectable and adjustable within a range of 5 minutes to 24 hours depending on anticipated application and deposit build-up. At a minimum, the Automatic Wiper system shall have the following characteristics:
 1. System shall utilize direct drive with square faced coupling and acme threaded shaft to prevent slippage and pin shearing. Systems utilizing shear pins or complicated gear boxes will be unacceptable.
 2. Wiper power supply shall be 24-volt DC for improved safety. Higher voltage not acceptable.

3. System shall incorporate Direct Shaft Encoding for positional location. Systems relying on external limit switches or internally located magnets will be unacceptable.
4. Wiper interval shall be operator selectable with optional override switch.
5. Wiper faults are to be indicated on the control system display.
6. Wiper System to utilize "Intelligent Operation" for automatic start-up commissioning.
7. Record wiper position at chamber ends. Position must be fixed and not dependent on a timed interval or component striking end of chamber.
8. Establish a travel run without setting limit switches to ensure system integrity and longevity.

2.6 UV STRAINER

- A. The UV system shall be provided with a downstream strainer to protect against the possibility of lamp/quartz breakage traveling downstream.
- B. The strainer must be cleanable without removal from the piping system.
- C. The strainer must be operable either manually, electrically, or pneumatically to clean it.
- D. The electrical or pneumatic operation must be integrated with the filtration control system and/or the UV control system.

2.7 ULTRAVIOLET CONTROL SYSTEM

- A. Control cabinet shall be Evoqua Water Technologies/Neptune Benson SPECTRA Touch control unit or approved equal. System shall be IP54 rated cabinet.
- B. The power must be controllable to provide full power, half power and infinite variable power based on real time interface with changes in UVT, Flow Rate or Combined Chloramines. The power panel must house the electronic ballasts required to ignite and power the lamps.
- C. Three levels of operation shall be provided to meet the needs of the operator and pool environment: Simple Control (start, stop, and reset), Full Parameter Display, and Customized Operator Configuration.
- D. Modes of operation shall be password protected to secure system critical setup functions. Touch Control system shall have clearly identifiable start, stop, and reset icons (suitable for gloved operation) with Running and Fault LCD indicators.
 1. The display shall include the following:
 2. Ultraviolet calculated dose (derived from flow and intensity inputs).
 3. Ultraviolet intensity (as a percent and mw/cm²).
 4. Lamp Current.
 5. Chamber Temperature (displayed as degrees F or degrees C).
 6. Operation hour meter.
 7. Fault indicators to include Lamp fault, low Ultraviolet and temperature alarm, Ground fault trip, Wiper Fault.

- E. All alarm functions shall have simple text message display to assist in fault finding.
- F. The Control System shall have a minimum of the following interface control.
 - 1. Remote operation.
 - 2. Process interrupt features (from valves, flow meters).
 - 3. Low UV dose (configurable to shut down or alarm only).
 - 4. Flow meter input
 - 5. Auto restrike
 - 6. Half to full power ultraviolet setting with 24 hour/7-day settable timer.
 - 7. Variable power/dose pacing interface.
- G. Control system shall have built in data logging capabilities to record the following information:
 - 1. Ultraviolet intensity required.
 - 2. Ultraviolet intensity measured.
 - 3. Lamp current.
 - 4. Chamber temperature.
 - 5. Flow rate (if flow meter is connected).
 - 6. Time and date stamp, all alarms generated.
- H. Control system shall have capability to be interfaced with a chemical controller that can measure total or combined chloramines to maintain the proper dosage required during the life of the lamp:
 - 1. Control system shall be capable of operating through Ethernet or Wi-Fi.
- I. Furnish with audible alarm kit.
- J. Furnish when extended length cable if required for specific installation.

PART 3 -- EXECUTION

3.1 GENERAL

- A. Provide manufacturer services and start- up per Section 13 11 13.
- B. All equipment and piping shall be neatly arranged in an orderly manner for ease of operation and maintenance. Arrangement shall be as shown on the Drawings with minor deviations allowed where required for the size and configuration of the specific items of equipment to be used.
- C. Workmanship: All work shall be performed by skilled workers experienced in pool construction. All piping shall be neatly laid out and installed in accordance with the best construction practices. All piping must drain to low points and be provided with convenient drain valves. Each valve and system component shall be clearly labeled using permanent tags and/or permanent tape labels properly secured in place. Unit

shall be installed with adequate clearances as recommended by manufacturer for maintenance, component replacement, etc.

- D. Contractor shall furnish and install miscellaneous accessory materials as required to provide complete functioning system.
- E. Ground and bond equipment in accordance with the most current version of the National Electrical Code and local code requirements.

3.2 SYSTEM STARTUP

- A. Install in accordance with contract documents and manufacturer's instructions.
- B. Commissioning
 - 1. Ultraviolet Chamber and Control Panel shall be commissioned by a qualified factory trained technician to institute the 5-year warranty.
 - 2. Final electrical and control cabling will be connected from the control cabinet to the Ultraviolet disinfection chamber during the commissioning process.
 - 3. Daily operation and simple maintenance instructions shall be provided during the commissioning process.

END OF SECTION

**COMMON WORK RESULTS FOR ELECTRICAL
26 05 00**

PART 1 -- GENERAL

1.1 SECTION INCLUDES

- A. Related Sections
- B. Work Included
- C. Codes and Standards
- D. Drawings
- E. Submittals
- F. Permits, Fees and Inspections
- G. Record Drawings
- H. Operation and Maintenance Manuals
- I. Site Examination
- J. Utilities
- K. Temporary Power
- L. Storage at Site
- M. Equipment and Materials
- N. Grounding and Bonding
- O. Workmanship and Completion of Installation
- P. Cutting and Patching
- Q. Coordination
- R. Miscellaneous

1.2 RELATED SECTIONS

- A. The requirements set out in the Contract Documents, Contract forms, General Conditions, Supplementary General Conditions, and General Requirements apply to all work specified herein.

1.3 WORK INCLUDED

- A. Refer to the entire set of Contract Documents to become familiar with the project. Contractor is responsible for all equipment mounting, conduit routing and incidental work which may be necessary because of construction requirements, whether or not they are shown on the electrical drawings.
- B. The Contractor shall furnish all materials, labor, transportation, tools, permits, fees, and incidentals necessary for the installation of a complete electrical system.

- C. It is the intent of the Contract Documents to provide an installation complete in every respect. In the event that additional details or special construction are required for work indicated or specified, it shall be the responsibility of the Contractor to provide all materials and equipment which are usually furnished with such systems in order to complete the installation, whether mentioned or not.

1.4 CODES AND STANDARDS

- A. Codes and Standards: this Division of Specifications contains references to the following documents. They are a part of this section as specified and modified. In case of conflict between the requirements of this Division and those of the listed documents, the requirements of this section shall prevail.

1. All work shall be in compliance with all applicable portions of the edition recognized by the Authority Having Jurisdiction (AHJ) of the National Electrical Code (NEC), the National Electrical Safety Code (NESC) and all city and county codes and ordinances, which may or may not be specifically referenced in these contract documents. None of the terms or provisions of these contract documents shall be construed as waiving any of the rules, regulations, or requirements of these authorities.
2. NEMA, National Electrical Manufacturers Association
3. UL, Underwriters' Laboratories
4. ANSI, American National Standards Institute (ANSI).
5. NEC, ANSI/NFPA 70 National Electrical Code
6. IEEE, Institute of Electrical and Electronics Engineers
7. ICEA S-68-516/NEMA WC-8 Ethylene-Propylene Rubber Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy.
8. AEIC CS-6 Specifications for Ethylene Propylene Rubber Insulated Shielded Power Cables Rated 5 through 69KV.
9. UL 1072 Medium-Voltage Power Cables.
10. IEEE 48 Standard Test Procedures and Requirements for High-Voltage Alternating-Current Cable Termination.
11. IEEE C2 National Electrical Safety Code

- B. In any instance where these Contract Documents call for construction materials of a better quality or larger size than required by the codes, the provisions of the Contract Documents shall take precedence. The codes shall govern where violations are indicated in the construction documents. In any instance where there is a conflict between the Drawings and Specifications, the larger size, higher quantity, or better quality shall be provided, unless the Owner's Representative directs otherwise.

1.5 DRAWINGS

- A. The accompanying Drawings are intended to show the general arrangement and extent of the work. The exact location and arrangement of all parts shall be determined as the work progresses to conform in the best possible manner with the surroundings and as directed by the Owner and/or Engineer.
- B. If any departures from the Drawings are deemed necessary by the Contractor, details of such departures and the reasons therefore shall be submitted to the Owner's Representative for review. No departures shall be made without prior written acceptance of the Owner and/or Engineer.

- C. Figured dimensions shall be followed without reference to scale. Where dimensions are not shown, measurements shall be scaled.
- D. The Electrical Drawings and Specifications are complementary to each other and each form part of this contract. In the event of discrepancies between the drawings and specifications, the Project Engineer shall be contacted for a written clarification prior to tender closing. Misinterpretation of any requirements of either the Drawings or Specifications will not relieve the Contractor of responsibility to complete the work.

1.6 SUBMITTALS

- A. Shop drawings for all electrical equipment shall be provided as specified in Division 1.

1.7 PERMITS, FEES, AND INSPECTIONS

- A. Obtain and pay for all permits and fees required for the execution and inspection of the electrical work and pay all charges incidental to such permits.
- B. Bid price shall include all fees related to the approval and inspection of electrical work.
- C. Notify the Engineer of all changes required by the Electrical Inspection Department prior to making changes.
- D. Arrange and pay for any special inspection of equipment specified, if and when required.
- E. Provide Certificates of Acceptance from all authorities having jurisdiction including the Electrical Inspection Department on completion of work and include them in the operating manuals.
- F. The Electrical Contractor shall notify the Consultant when the final inspections can be performed. Defects of deficiencies found during this inspection shall be corrected to the satisfaction of the Consultant before final payment is made.

1.8 RECORD DRAWINGS

- A. The Contractor shall maintain a set of electrical record Drawings at the job site neatly marked with all changes from the original Contract Drawings.

1.9 OPERATION AND MAINTENANCE MANUALS

- A. The Contractor shall furnish of operation and maintenance manuals to the Owner and and/or Engineer.

1.10 SITE EXAMINATION

- A. The Contractor shall be responsible for the coordination and proper relation of his work to the building structure and to the work of all trades. The Contractor shall visit the premises and thoroughly familiarize himself with all details of the work and working conditions and verify all dimensions in the field. The Contractor shall advise the Owner's Representative of any discrepancy at least seven days prior to bidding. The submission of bids shall be deemed evidence of the Contractor's site visit, the coordination of all existing conditions and the inclusion of all considerations for existing conditions.

1.11 UTILITIES

- A. The Contract Documents reflect the general location, voltage, capacity, size, and manner of routing for all utilities known to be required on this project. It shall be the responsibility of the Contractor to visit the site and to meet with the local utility companies in order to coordinate and confirm the exact requirements for all electrical utilities, including, but not limited to, all facilities required to provide complete and operative

electrical power and telephone services. The bid submitted by the Contractor shall include costs for all such coordinative work as well as any and all utility company charges and/or fees.

1.12 TEMPORARY POWER

- A. The Contractor shall coordinate with the Owner, and other trades involved, the requirements for temporary power on this project. No additional charges shall be made to the Owner for wiring, connections, poles, fixtures, or devices required to facilitate construction.
- B. The Contractor shall provide the necessary wiring, connections, service switches, poles, wiring protective devices, lighting fixtures, lamps, outlet devices, disconnect switches, etc., as required for temporary lighting. In addition, a similar system shall be provided for the distribution of single- and three-phase power of voltage levels and adequate ampacity as required to facilitate the construction of the project. These services shall be installed in accordance with requirements of the NEC and OSHA.

1.13 STORAGE AT SITE

- A. The Contractor shall not receive material or equipment at the job site until ready for installation or until there is suitable space provided to properly protect equipment from rust, weather, humidity, dust, and physical damage.
- B. Store major electrical equipment (switchboards, panelboards, lighting fixtures, dry type transformers, VFDs, etc.) sealed in original factory wrapping in a clean, dry, and conditioned environment protected from the weather. Storage outdoors is not acceptable.
- C. Ship equipment in accordance with manufacturer's instructions or in upright position.
- D. Ship channel bases and anchor stencils ahead of equipment.
- E. Block moving parts where necessary to prevent damage during shipping and handling of equipment. Clearly and conspicuously display instructions to remove blocking before putting equipment into service.

PART 2 -- PRODUCTS

2.1 EQUIPMENT AND MATERIALS

- A. All materials shall be new and of high quality. All materials of a type for which the Underwriters' Laboratories, Inc. (UL) has established a standard shall be listed by UL and shall bear the UL label.
- B. Motors, electric heating, control and distribution devices and equipment to operate satisfactorily at 60Hz within normal operating limits established by above standard. Equipment to operate in extreme operating conditions established in above standard without damage to equipment.
- C. Verify, before energizing, that equipment supplied under this contract or by the Owner is compatible with the related electrical power supply system.
- D. No variations from the Drawings or Specifications will be permitted without a written authorization from the Engineer.
- E. Products and materials called for on the drawings or in the specifications by trade names, manufacturer's name and catalogue reference are those that are to be used as the basis for the Tender.
- F. The Engineer will only consider alternate products and materials to those specified if they are shown in the Bid as a material variation and if they are submitted with an appropriate price adjustment. The Engineer will reserve the right to accept or reject any alternative without explanation.

- G. The alternate submission shall provide sufficient information to enable the Engineer to determine whether the alternate is acceptable or unacceptable. Provide complete information on required revisions to other work and products to accommodate each alternate product.
- H. The Contractor assumes full responsibility when providing alternative products or materials that all space, weight, connections, power and wiring requirements etc. are considered and compensated for. Any costs incurred for additional components, changes to other services, structural or space requirements, layouts, and plans, etc. that may arise from the use of the alternate shall be borne by the Contractor.
- I. Unless otherwise indicated, supply equipment enclosures, boxes, electrical materials, and products suitable for ambient environment of the following areas. Provide NEMA 4X (stainless steel) material.
- J. Equipment identification shall be provided on all electrical equipment. Contractor to provide sample labels for approval prior to printing and affixing on the equipment. Supplier nameplates and labels shall be clearly visible and legible after equipment installation and field painting.

2.2 GROUNDING AND BONDING

- A. Provide all equipment bonding as required regardless whether it has been shown on the Drawings or called for in this Specification.
- B. Arrange grounds so that under normal operating conditions no injurious amount of current will flow in any bonding conductor.
- C. Include a separate bonding wire to all devices that are rewired and to all new devices. The conduit raceway system is not to be used as the sole bonding path.

PART 3 -- EXECUTION

3.1 WORKMANSHIP AND COMPLETION OF INSTALLATION

- A. All electrical work described within this Specification and on the project Drawings shall be carried out by qualified, licensed electricians or apprentices, skilled in their trade, as per the conditions of the Local Act respecting manpower vocational training and qualification. Registered apprentices shall be permitted, under the direct supervision of a qualified licensed electrician, to perform specific tasks. The activities permitted shall be determined based on the level of training attained and the demonstration of ability to perform specific duties. All works shall be executed in a thorough and substantial manner.
- B. The Contractor shall be held responsible for transportation of his materials to and on the job, and for their storage and protection until the final acceptance of the job.
- C. The Contractor shall be held responsible for timely placing of all conduit and outlet boxes, cabinets and other wiring devices in the walls, ceilings, slabs, beams, etc., as construction progresses.
- D. Contractor shall furnish all necessary scaffolding, tackle, tools and appurtenances of all kinds, and all labor required for the safe and expeditious execution of his contract.
- E. All equipment shall be installed in a manner to permit access to parts requiring service. All electrical equipment shall be installed in such a manner as to allow removal for service without disassembly of other equipment and shall have working clearances as required by NEC. Any large piece of apparatus which is to be installed in any space in the building, and which is too large to fit through finished openings, shall be placed before enclosing structure is completed. Following placement, such apparatus shall be completely protected from damage.
- F. The Contractor shall, at all times, keep the premises free from accumulations of waste material and packaging debris. This debris shall be removed daily from the construction site.

- G. This Contractor shall include for disconnecting and removing all existing electrical equipment, conduit and wiring back to the point of supply that is not being re-used or is redundant. Patch all holes in existing interior and exterior walls, bases, structures, ceilings, etc. resulting from conduit/raceway removal.
- H. All removed electrical equipment shall remain the property of the Owner unless otherwise stated and delivered to the Owner's designated storage location on the site. Conduit and wire removed shall be considered as scrap and properly disposed from the site by this Contractor.
- I. Include relocating, making temporary connections, reinstalling, and reconnecting any equipment, as required, for systems being modified as part of this project.
- J. Prior to saw cutting or core drilling holes in existing walls or floor slabs, test to ascertain that the concrete section does not contain buried conduit raceways.

3.2 CUTTING AND PATCHING

- A. Where it becomes necessary to drill or cut through any floors, walls or ceilings to permit the installation of any work under this contract, or to repair any defects that may appear prior to the expiration of the warranty, such cutting shall be done under the supervision of the Owner's Representative by the Contractor. After the necessary work has been completed, the damage shall be repaired by the Contractor, who shall pay all costs of such cutting and repairing.
- B. No joists, beams, girders, or columns shall be cut by the Contractor without first obtaining written permission from the Owner's Representative.
- C. All drilling for expansion bolts, hangers and other supports shall be done by the Contractor, subject to the approval of the Owner's Representative. Labor and materials required to replace or rebuild parts cut or injured shall be furnished at the Contractor's expense, subject to the satisfaction of the Owner's Representative.
- D. All openings made in fire-rated walls, floors and ceilings shall be patched by the electrical Contractor in a manner maintaining the original fire rating.

3.3 COORDINATION

- A. The Contractor shall coordinate the work of the different trades so that interferences between piping, equipment, structural and architectural work shall be avoided. Before commencing work, obtain a ruling from the Engineer on any conflicting issues between divisions. No compensation will be made for any costs arising from conflict not identified before work has commenced.
- B. Cooperate with all other trades on the job, so that all equipment can be satisfactorily installed and so that no delay is caused to any other trade.
- C. The Contractor is responsible for ensuring that all conduit sleeves are timely installed and are sealed, flashed, or caulked to the satisfaction of the Owner's Representative.
- D. Make all temporary connections as required to maintain operation of the plant during the construction and equipment replacement or modifications. Schedule work for shutdown or non-productions periods as required.

3.4 MISCELLANEOUS

- A. Each piece of floor-mounted equipment, such as switchboards, transformers, etc., shall be set on a concrete base. Bases shall not be less than 4-inches high and shall be pinned to the floor.

- B. The Contractor shall furnish and install vibration isolation means for all equipment and materials furnished under this contract which may transmit perceptible noise or vibration, structure borne, or air borne, to occupied areas.
- C. All transformers and other equipment indicated shall be mounted on 1-inch-thick cork rib or rubber pads or steel spring isolator units properly sized, spaced and loaded, as specified herein, which in turn shall rest on a 4-inch minimum concrete base.
- D. Electrical conduit shall be isolated from all dry type transformers and rotating or reciprocating machinery with flexible metal conduit. Use lengths approximately 10 diameters in length.
- E. Schedule the electrical work so that disruption to the rest of the circuitry will be kept to a minimum. Coordinate with the Owner to schedule shutdowns required for system connection or equipment replacement.
- F. Contractor is responsible for any damage resulting from operations to existing facilities such as underground cables, hard surface areas, piping, and other utilities. Contractor is to restore, replace or repair any such damage to the satisfaction of the Engineer. Obtain locates prior to commencing work wherever possible.

END OF SECTION

LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES
26 05 19

PART 1 -- GENERAL

1.1 RELATED SECTIONS

- A. Division 1 – General Requirements
- B. Section 26 05 00 – Common Work Results for Electrical

1.2 REFERENCES

- A. All applicable UL, NEC and ANSI standards.

1.3 DESIGN REQUIREMENTS

- A. Number and sizes of wires (and associated raceways) indicated are a guide only and are not necessarily the exact number and sizes required. Wire or cable sizes smaller than indicated are not acceptable.
- B. Connect all wiring to terminal strips. One side of terminal strip shall be left empty for remote connections. Not more than two conductors shall be terminated on each terminal. Use shorting bars or shorting combs as applicable where looping is required between terminals.

PART 2 -- PRODUCTS

2.1 MANUFACTURED PRODUCTS

- 1. Comply with standards listed in 1.2, References.
- A. Low Voltage Unarmored Wire and Cable (1000V and Below)
 - 1. Acceptable manufacturers: Phillips Cables Limited, Alcatel Wire Inc., Pirelli Cables Inc. and United Wire.
 - 2. Construction: Stranded, annealed copper conductors, 600V minimum rating for #14AWG, #12AWG, #10AWG and #8AWG and 1000V rating for conductors larger than #8 AWG, THHN or XHHW insulation, suitable for handling at minus 40°C ambient, 90°C maximum conductor temperature, limited flame spread FT4, jacketed.
 - 3. Minimum conductor sizes: Unless otherwise indicated, #12AWG for power and current transformer circuits; #14AWG for control circuits. Increase conductor size as required compensating for voltage drop.
 - 4. Multi conductor cables: PVC flame retardant black jacket overall, suitable for handling at -40°C, flame test rated FT4.
 - 5. Lighting wiring: GTF wire, 600V, 125°C, flexible copper conductor for connections between luminaire and outlet boxes.
 - 6. Color coding: For insulated conductors, conform to the following:
 - a. Power wiring – Black, Red, Blue, White (Neutral)
 - b. AC Control Wiring – Red

- c. DC Wiring – Blue
- d. Interlock Control Circuit – Yellow
- e. Equipment Grounding - Green
- f. Isolated Ground - Green/Yellow Stripe
- g. Insulated ground conductors forming part of a multi-conductor cable assembly: Inspection Authority color coding.

B. Wiring Accessories

1. Wire markers: Plastic slip-on, black letters on white background, Thomas & Betts Ltd. Shur-Code or Wieland Electric Inc. Z Type.
2. Cable markers: For cables or conductors greater than 13mm diameter, strap on type, semi rigid PVC carrier strip, Wieland Electric Inc. type K.
3. Terminal blocks: 600V, 25A minimum rating, modular, 35mm DIN rail mounted, provision for circuit number labelling, individually removable, sized to accommodate conductor size and circuit current, Weidmüller Sak Series, Phoenix Terminal Blocks Ltd. UK Series, Wieland Electric Inc. WK Series or Entrelec.
4. Field wiring terminations: Where screw-type terminal blocks are provided, supply insulated fork tongue terminals, Thomas & Betts Ltd. Sta Kon, 3M Inc. Scotchlok.
5. Splice connectors for equipment pig-tail, lighting and receptacle circuits: For wire sizes #12AWG and #10AWG inclusive, twist-on compression spring type, Ideal type Wing Nut or Marr Electric Ltd. Marrette Type II.
6. Equipment pigtail power circuit connections: For wire sizes #8AWG minimum, split-bolt type, sized to suit number and size of conductors, Burndy Inc. Servit Type KS.
7. 5kV motor terminations: Heat shrinkable connection kits, including compression lug connectors, sealant, cover caps and tubes, Raychem Ltd. type MCK 5.
8. Low voltage (1000V and lower) motor terminations: Heat shrinkable connection kit, including sleeves, caps and sealant, Raychem Ltd. type MCK.
9. Cable ties: Nylon, one-piece, self-locking type, Thomas & Betts Ltd., Burndy Inc., or Wieland Electric Inc.
10. Electrical insulating tape: 3M Inc. Scotch 33.
11. Cable grips: To accommodate type and geometry of cable supported, single weave, variable mesh design, Thomas and Betts Ltd., Crouse Hinds, Woodhead Ltd.
12. Cable pulling lubricant: Compatible with cable covering and not to cause damage or corrosion to conduits or ducts, Ideal type Yellow 77.

C. Wire and Cable Connections

1. Power wire connections at motors shall be with Burndy, or approved equal, pressure type lugs using a ratchet type crimping tool and "Everdur" hardware.

2. Service and feeder wiring connections shall be made with solderless or pressure type lugs.
3. Conductor splices and taps shall be made with mechanical compression connectors.
4. Identification Markers: All control devices within panels shall be identified with lamicoid nameplates, black letters on white background. Nameplates shall be applied to the panel backplate adjacent to the device.

D. Pulling Compound

1. Non-toxic, non-corrosive, non-combustible, non-flammable, wax-based lubricant;
2. Suitable for rubber, neoprene, PVC, polyethylene. Hypalon and CPE wire and cable.
3. Suitable for zinc-coated steel, aluminum, PVC, bituminized fibre, and fibreglass raceways.
4. Manufacturers and Products: Ideal Co.; Yellow 77; Polywater, Inc.; Cable Grip Co.

PART 3 -- EXECUTION

3.1 COORDINATION

- A. Prior to installation of wiring, compare Contract Drawings with latest issue of Vendor shop drawings.
- B. Report discrepancies promptly to Engineer.

3.2 INSTALLATION

- A. Provide wires of number and size (including corresponding raceways) required, with spare conductors as indicated. Provide adequate wiring for actual equipment installed.
- B. Provide wire and cable according to the drawings and electrical system requirements.
- C. Pull cable into ducts and conduits in accordance with cable manufacturer's recommendations. Use patented cable grips suitable for cable type, or pulling eyes fastened directly onto cable conductors.
- D. Limiting pulling tension and minimum bending radii to those recommended by manufacturer.
- E. Prevent damage to cable jackets by utilizing adequate lubricant when pulling cables through ducts and conduits.
- F. Connect cables to electrical boxes and equipment enclosures located in sprinkled areas with watertight cable connectors.
- G. Provide cable grips for vertical and catenary cable suspension installations to reduce cable tension at connectors and at cable bends.
- H. Install through wiring in junction and pull boxes having no connection within the box. Leave 6 inches minimum of slack inside box.
- I. Facilitate making of joints and connections by leaving sufficient slack in each conductor at panel boards, outlet boxes and other devices.
- J. Do not connect more than three lighting circuits for three phase panels and two lighting circuits for single-phase panels to a common neutral.

- K. Use #10AWG minimum for home runs to lighting panels exceeding 1-inch.
- L. Identify each cable by attaching a cable marker at each end, in all intermediate manholes, junction boxes and pull boxes.

3.3 WIRING TERMINATIONS

- A. Insulate equipment pigtail power circuit connections with wire sizes #8AWG and larger, with heat shrink sleeving termination kits.
- B. Terminate armored cables with accepted connectors suitable for application, size, and type of cable.
- C. Except where pulling tensions exceed allowable cable limits or where tap connections are required, only install splices in power, control and instrumentation cable runs with written permission of Engineer. Where unavoidable, install splices in junction boxes complete with terminals.
- D. Make power (1000V and below), control and signal wiring taps, splices and terminations in junction boxes with labelled terminal blocks, securely fastened to avoid loosening under vibration or normal strain. Terminate lighting circuits and 120V convenience receptacle circuits with twist on or split bolt type connectors and insulating tape.
- E. Terminate control, signal and instrumentation circuit conductors, including spares, on terminal blocks. Use ferrules for all wiring. Label terminal blocks with assigned circuit code associated with connected wires.
- F. Identify each conductor, including spares, by wire markers at each termination. Indicate circuit designation or unique wire number. Identify spare conductors as 'SP1', 'SP2', etc.

3.4 TESTING

- A. Cable and Wire – 1000V and below
 - 1. Conduct insulation resistance measurements using a properly rated megohmmeter (500V instrument for circuit up to 350V systems, 1000V instrument for 351 - 600V systems).
 - 2. Record test results in a logbook and submit to Engineer for reference. Replace or repair circuits that do not meet Inspection Authority requirements. With equipment disconnected, measure insulation resistance of the following circuits:
 - a. Power and motor feeders: Phase-to-phase, phase-to-ground.
 - b. Control circuits: To ground only.
 - c. Do not perform insulation tests on equipment containing solid-state components.

B. WIRING INDICATION

- 1. Identify wiring with wire markers.
- 2. Color code power, feeder and branch conductors at both ends with colored plastic tapes. Tapes are not required where conductors are identified by jacket color. Maintain phase and color sequence throughout.
- 3. Identify each conductor, including spares, with assigned circuit code to facilitate troubleshooting and maintenance.

END OF SECTION

LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

26 05 19 - 4
DS-41

RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS
26 05 33

PART 1 -- GENERAL

1.1 RELATED SECTIONS

- A. Division 1 – General Requirements
- B. Section 26 05 00 – Common Work Results for Electrical

1.2 REFERENCES

- A. All applicable UL, NEC and ANSI standards.

PART 2 -- PRODUCTS

2.1 CONDUIT MATERIALS

- A. All conduit, unless otherwise indicated, shall be rigid galvanized steel or aluminum.
- B. Buried conduit shall be Schedule 80 PVC.
- C. Conduit passing through concrete pads and walls shall be RGS.
- D. Minimum size of conduit shall be 3/4-inch unless otherwise indicated.

2.2 RIGID GALVANIZED STEEL CONDUIT

- A. Rigid galvanized steel conduit shall be mild steel pipe with threaded connections, hot-dipped galvanized on both interior and exterior surfaces, conforming to ANSI Standard C80.1, "Specifications for Rigid Steel Conduit (zinc-coated)". Manufacturers shall be Allied, Triangle, Youngstown, Steelduct, or equal.

2.3 METAL CONDUIT FITTINGS

- A. Metal conduit fittings shall conform to ANSI C80.4, "Fittings for Rigid Metal Conduit and Electrical Metal Tubing". Manufacturers shall be Appleton, Crouse-Hinds, O.Z. Gedney, Pyle-National, Russel & Stoll, Thomas & Betts, or equal. Conduit fittings for EMT shall be compression type.

2.4 LIQUIDTIGHT FLEXIBLE STEEL CONDUIT

- A. Liquidtight flexible steel conduit shall be constructed of a flexible galvanized steel core made from a continuous metal strip and an extruded PVC cover. Manufacturers shall be Anaconda, ElectriFlex, or equal.

2.5 PLASTIC CONDUIT AND FITTINGS

- A. Plastic conduit and fittings shall be rigid polyvinyl chloride (PVC), UL 651 labeled for 90°C and NEMA-80-PVC and meeting ASTM D 1784-81 standards for PVC compounds. Material shall permit chemical solvent sealing of joints in the field, providing continuity of mechanical strength and water tightness. Manufacturers shall be Amoco, Carlon, Olin, or equal.

2.6 OUTLET BOXES

A. Concealed Boxes

1. Outlet boxes for concealed indoor work and for ceiling lighting fixture outlets shall be galvanized pressed steel of the knockout type, having galvanized steel cover or extension ring, as required.

B. Exposed Boxes

1. Outlet boxes for exposed work shall be cast aluminum or cadmium plated cast iron with threaded hubs, Type FS or FD.

C. Manufacturers of outlet boxes shall be Appleton, Steel City, Crouse-Hinds, Killark, Pyle-National, Russell & Stol, or equal.

PART 3 -- EXECUTION

3.1 INSTALLATION

A. All electrical wiring shall be installed in conduit.

B. All conduit shall be surface mounted unless otherwise noted or shown on the plans.

C. Conduit and raceway systems in offices or administration areas shall be concealed in floors, walls, or ceilings.

3.2 RACEWAYS

A. All exposed conduit shall be run in neat symmetrical lines parallel and perpendicular to building walls, beams, columns, and other building elements.

B. Install conduits to conserve headroom in exposed locations and cause minimum interference in spaces through which they pass.

C. All conduit shall be dry, clean, and free of obstructions before conductors are pulled. If there is evidence of moisture, obstructions, or foreign matter in the conduit when the conductors are installed, the wiring shall be removed, and the conduit cleaned to the satisfaction of the ENGINEER. All wiring showing evidence of damaged insulation shall be replaced.

D. Connect conduits to electrical boxes and electrical equipment enclosures in wet areas with watertight conduit connectors. Provide watertight, steel capped bushings on ends.

E. Assemble metallic conduit in such a manner that it will be electrically continuous.

F. Conduits shall be separated by at least one conduit diameter.

G. Maximum distance between pullboxes and/or outlets in any conduit run shall not exceed 80-ft.

H. Keep conduit at least 12-inches clear of all hot water pipes, steam lines, and flues.

I. Concealed conduit shall be placed in the floors before concrete is poured and in concrete or masonry walls as the walls are laid up. The conduit shall be blocked and fastened in place to prevent any displacement during construction.

J. One nylon fish cord shall be furnished and left remaining inside each run of conduit in which no conductors are installed. Splicing of fish cord will not be permitted.

- K. Use flexible steel conduit for short connections to motors on adjustable rails, to vibrating equipment, between outlet boxes in hung or furred ceilings and flush-type lighting fixtures, between outlet boxes and chain mounted fixtures, and in metal partitions.
- L. Where plastic conduit is used, a ground conductor shall be installed.
- M. Expansion joints for conduit shall be furnished to compensate for thermal expansion and contraction.

3.3 CONDUIT SUPPORTS

- A. Groups of conduits shall be supported on trapeze hangers, "Unistrut," "Powerstrut," or equal. Hanger supports shall be rod or pipe with threaded connections.
- B. Conduit pipe straps shall be one-hole malleable iron. Individual conduits not supported on pipe straps shall be provided with clevis hangers.
- C. Conduit shall be supported at intervals not exceeding the maximum distances as specified by the N.E.C. for a given type/size conduit. Multiple runs of conduit shall be mounted with steel supports so arranged that each individual conduit is clamped in place.
- D. Conduit installed on walls shall be mounted on spacers to provide not less than 1/4-inch space between the conduit and the wall.
- E. Conduit and other equipment may be attached to structural steel only after review by the ENGINEER.
- F. All conduit shall be secured to the supports by means of approved galvanized clamps which are designed for use with the support system.

3.4 PENETRATIONS/TERMINATIONS

- A. Provide conduit running through expansion joints of the building with approved expansion fittings.
- B. Conduit passing through walls and ceilings shall be installed in conduit entrance seals by Nelson Electric Co., Type MCT, O.Z. Gedney, Electrical Mfg. Co., Type WSK, or equal.
- C. Wherever a conduit enters an electrical equipment enclosure from an underground location, the opening shall be sealed with duct seal after the wires and/or cables are pulled.
- D. The threads of all steel conduit connections concealed in concrete shall be coated at the time of installation with zinc-clad primary coating as manufactured by the Sherwin Williams Corp., General Electric Co., or equal.
- E. All conduits, fittings, and enclosures shall be terminated with bonding and bushing fittings as required by NEC.

3.5 OUTLET BOXES

- A. Outlet boxes on structural columns shall be mounted on the web of the column and shall not project beyond the column flanges.
- B. Outlet boxes on concrete walls shall be attached to lead anchors with machine screws, or to permanent inserts similar to Unistrut channels.

END OF SECTION

LOW VOLTAGE DISTRIBUTION
26 20 00

PART 1 -- GENERAL

1.1 RELATED SECTIONS

- A. Division 1 – General Requirements
- B. Section 26 05 00 – Common Work Results for Electrical

1.2 REFERENCES

- A. All applicable UL, NEC, and ANSI standards.

1.3 DESCRIPTION

- A. Provide, install and connect a complete system of feeders, panels, safety switches, starters, contactors, push buttons, conduits, wire fittings, boxes, supports and all necessary materials for equipment requiring electrical power as indicated on the Plans or hereinafter specified, ready for satisfactory operation.

PART 2 -- PRODUCTS

2.1 CIRCUIT BREAKER PANELBOARDS

- A. Panelboards shall be dead front and have ratings and features as shown on the Plans.
- B. Enclosures for panelboards shall be minimum 20-inches wide by 5-3/4-inches deep with an overall door. Boxes shall be made of code gauge galvanized steel and shall be designed for surface or flush mounting as shown on the Plans.
- C. Glazed directory frames and cards designating the branch circuits shall be mounted on the inside of the cabinet door. All directories shall be typed or printed.
- D. Circuit breakers shall have molded plastic cases, AC rated, quick-make, quick-break, with trip-free operating handle, position indicator, and thermal magnetic trip device.
- E. Two- and three-pole breakers shall have a common operating handle and a common trip mechanism.
- F. Ground fault circuit interrupters shall be installed in panels where noted on the Plans.
- G. When replacing panelboards and circuit breakers or adding circuit breakers to an existing panelboard, the interruption rating of the new equipment shall match that of the old equipment.
- H. Panelboards shall be Square D, Type NQO or I-Line or equal.

PART 3 -- EXECUTION

3.1 INSTALLATION

- A. Panel boards shall be mounted at uniform heights throughout the building.
- B. Flush-mounted panel boards shall be provided with two spare 1-inch conduits extending to the ceiling cavity or nearest area of exposed conduit.

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

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

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

The Contractor agrees:

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

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

AQUATIC SOURCE, LLC
Company Name

[Signature] 1-11-21
Signature of Authorized Representative Date

NICK SHELTON - GENERAL MANAGER
Print Name and Title

190 SUMMIT STREET, BRIGHTON, MI 48116
Address, City, State, Zip

248-366-0206 N.SHELTON@AQUATICSOURCE.COM
Phone/Email address

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

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

The Ann Arbor Living Wage Ordinance (Section 1:811-1:821 of Chapter 23 of Title I of the Code) requires that an employer who is (a) a contractor providing services to or for the City for a value greater than \$10,000 for any twelve-month contract term, or (b) a recipient of federal, state, or local grant funding administered by the City for a value greater than \$10,000, or (c) a recipient of financial assistance awarded by the City for a value greater than \$10,000, shall pay its employees a prescribed minimum level of compensation (i.e., Living Wage) for the time those employees perform work on the contract or in connection with the grant or financial assistance. The Living Wage must be paid to these employees for the length of the contract/program.

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

The Contractor or Grantee agrees:

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

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

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

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

AQUATIC SOURCES, LLC
Company Name

[Signature] 1-11-21
Signature of Authorized Representative Date

190 SUMMIT STREET
Street Address

BRIGHTON, MI 48116
City, State, Zip

NICK SHULTON - GENERAL MANAGER
Print Name and Title

NSHULTON@AQUATICSOURCES.COM
Phone/Email address

**CITY OF ANN ARBOR
LIVING WAGE ORDINANCE**

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

\$13.91 per hour

If the employer provides health
care benefits*

\$15.51 per hour

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

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

ENFORCEMENT

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

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

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

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

**For Additional Information or to File a Complaint contact
Colin Spencer at 734/794-6500 or cspencer@a2gov.org**



Vendor Conflict of Interest Disclosure Form

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

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

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

Conflict of Interest Disclosure*	
Name of City of Ann Arbor employees, elected officials or immediate family members with whom there may be a potential conflict of interest.	<input type="checkbox"/> Relationship to employee <hr/> <input type="checkbox"/> Interest in vendor's company <input type="checkbox"/> Other (please describe in box below)
NONE	

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

I certify that this Conflict of Interest Disclosure has been examined by me and that its contents are true and correct to my knowledge and belief and I have the authority to so certify on behalf of the Vendor by my signature below:		
AQUATIC SOURCE, LLC	248-366-0606	
Vendor Name	Vendor Phone Number	
	1-11-21	NICK SHELTON - G.M.
Signature of Vendor Authorized Representative	Date	Printed Name of Vendor Authorized Representative

**CITY OF ANN ARBOR
DECLARATION OF COMPLIANCE**

Non-Discrimination Ordinance

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

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

The Contractor agrees:

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

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

AQUATIC SOURCE, LLC
Company Name

[Signature] 1-11-21
Signature of Authorized Representative Date

NICK SIFERTON - GENERAL MANAGER
Print Name and Title

190 SUMMIT STREET, BRIGHTON, MI 48116
Address, City, State, Zip

NSHIFTON@AQUATICSOURCE.COM
Phone/Email Address

Questions about the Notice or the City Administrative Policy, Please contact:
Procurement Office of the City of Ann Arbor
(734) 794-6500

CITY OF ANN ARBOR NON-DISCRIMINATION ORDINANCE

Relevant provisions of Chapter 112, Nondiscrimination, of the Ann Arbor City Code are included below.
You can review the entire ordinance at www.a2gov.org/humanrights.

Intent: It is the intent of the city that no individual be denied equal protection of the laws; nor shall any individual be denied the enjoyment of his or her civil or political rights or be discriminated against because of actual or perceived age, arrest record, color, disability, educational association, familial status, family responsibilities, gender expression, gender identity, genetic information, height, HIV status, marital status, national origin, political beliefs, race, religion, sex, sexual orientation, source of income, veteran status, victim of domestic violence or stalking, or weight.

Discriminatory Employment Practices: No person shall discriminate in the hire, employment, compensation, work classifications, conditions or terms, promotion or demotion, or termination of employment of any individual. No person shall discriminate in limiting membership, conditions of membership or termination of membership in any labor union or apprenticeship program.

Discriminatory Effects: No person shall adopt, enforce or employ any policy or requirement which has the effect of creating unequal opportunities according to actual or perceived age, arrest record, color, disability, educational association, familial status, family responsibilities, gender expression, gender identity, genetic information, height, HIV status, marital status, national origin, political beliefs, race, religion, sex, sexual orientation, source of income, veteran status, victim of domestic violence or stalking, or weight for an individual to obtain housing, employment or public accommodation, except for a bona fide business necessity. Such a necessity does not arise due to a mere inconvenience or because of suspected objection to such a person by neighbors, customers or other persons.

Nondiscrimination by City Contractors: All contractors proposing to do business with the City of Ann Arbor shall satisfy the contract compliance administrative policy adopted by the City Administrator in accordance with the guidelines of this section. All city contractors shall ensure that applicants are employed and that employees are treated during employment in a manner which provides equal employment opportunity and tends to eliminate inequality based upon any classification protected by this chapter. All contractors shall agree not to discriminate against an employee or applicant for employment with respect to hire, tenure, terms, conditions, or privileges of employment, or a matter directly or indirectly related to employment, because of any applicable protected classification. All contractors shall be required to post a copy of Ann Arbor's Non-Discrimination Ordinance at all work locations where its employees provide services under a contract with the city.

Complaint Procedure: If any individual believes there has been a violation of this chapter, he/she may file a complaint with the City's Human Rights Commission. The complaint must be filed within 180 calendar days from the date of the individual's knowledge of the allegedly discriminatory action or 180 calendar days from the date when the individual should have known of the allegedly discriminatory action. A complaint that is not filed within this timeframe cannot be considered by the Human Rights Commission. To file a complaint, first complete the complaint form, which is available at www.a2gov.org/humanrights. Then submit it to the Human Rights Commission by e-mail (hrc@a2gov.org), by mail (Ann Arbor Human Rights Commission, PO Box 8647, Ann Arbor, MI 48107), or in person (City Clerk's Office). For further information, please call the commission at 734-794-6141 or e-mail the commission at hrc@a2gov.org.

Private Actions For Damages or Injunctive Relief: To the extent allowed by law, an individual who is the victim of discriminatory action in violation of this chapter may bring a civil action for appropriate injunctive relief or damages or both against the person(s) who acted in violation of this chapter.

THIS IS AN OFFICIAL GOVERNMENT NOTICE AND
MUST BE DISPLAYED WHERE EMPLOYEES CAN READILY SEE IT.

MICHIGAN DEPARTMENT OF TRANSPORTATION CERTIFIED PAYROLL

COMPLETION OF CERTIFIED PAYROLL FORM FULFILLS THE MINIMUM MDOT PREVAILING WAGE REQUIREMENTS

(1) NAME OF CONTRACTOR / SUBCONTRACTOR (CIRCLE ONE) (2) ADDRESS

(3) PAYROLL NO. (4) FOR WEEK ENDING (5) PROJECT AND LOCATION (6) CONTRACT ID

(a)	(b)	(c)	(d) DAY AND DATE							(e)	(f)	(g)	(h)		(i)	(j) DEDUCTIONS					(k)			
			Hour Type											TOTAL HOURS ON PROJECT		PROJECT RATE OF PAY	PROJECT RATE OF FRINGE PAY	GROSS PROJECT EARNED	GROSS WEEKLY EARNED	TOTAL WEEKLY HOURS WORKED ALL JOBS		FICA	FEDERAL	STATE
EMPLOYEE INFORMATION NAME:	WORK CLASSIFICATION									0					\$0.00								\$0.00	\$0.00
ETH/GEN: ID #: GROUP/CLASS #:		S								0					\$0.00								\$0.00	\$0.00
NAME:										0					\$0.00								\$0.00	\$0.00
ETH/GEN: ID #: GROUP/CLASS #:		S								0					\$0.00								\$0.00	\$0.00
NAME:										0					\$0.00								\$0.00	\$0.00
ETH/GEN: ID #: GROUP/CLASS #:		S								0					\$0.00								\$0.00	\$0.00
NAME:										0					\$0.00								\$0.00	\$0.00
ETH/GEN: ID #: GROUP/CLASS #:		S								0					\$0.00								\$0.00	\$0.00
NAME:										0					\$0.00								\$0.00	\$0.00
ETH/GEN: ID #: GROUP/CLASS #:		S								0					\$0.00								\$0.00	\$0.00
NAME:										0					\$0.00								\$0.00	\$0.00
ETH/GEN: ID #: GROUP/CLASS #:		S								0					\$0.00								\$0.00	\$0.00
NAME:										0					\$0.00								\$0.00	\$0.00

Date _____

I, _____ (Name of Signatory Party) _____ (Title)

do hereby state:

(1) That I pay or supervise the payment of the persons employed by

_____ on the
 _____ (Contractor or Subcontractor)
 _____; that during the payroll period commencing on the
 _____ (Building or Work)
 _____ day of _____, _____, and ending the _____ day of _____, _____,
 all persons employed on said project have been paid the full weekly wages earned, that no rebates have
 been or will be made either directly or indirectly to or on behalf of said

_____ from the full
 _____ (Contractor or Subcontractor)
 weekly wages earned by any person and that no deductions have been made either directly or indirectly
 from the full wages earned by any person, other than permissible deductions as defined in Regulations, Part
 3 (29 C.F.R. Subtitle A), issued by the Secretary of Labor under the Copeland Act, as amended (48 Stat. 948,
 63 Stat. 108, 72 Stat. 967; 76 Stat. 357; 40 U.S.C. § 3145), and described below:

(2) That any payrolls otherwise under this contract required to be submitted for the above period are
 correct and complete; that the wage rates for laborers or mechanics contained therein are not less than the
 applicable wage rates contained in any wage determination incorporated into the contract; that the
 classifications set forth therein for each laborer or mechanic conform with the work he performed.

(3) That any apprentices employed in the above period are duly registered in a bona fide
 apprenticeship program registered with a State apprenticeship agency recognized by the Bureau of
 Apprenticeship and Training, United States Department of Labor, or if no such recognized agency exists in a
 State, are registered with the Bureau of Apprenticeship and Training, United States Department of Labor.

(4) That:

(a) WHERE FRINGE BENEFITS ARE PAID TO APPROVED PLANS, FUNDS, OR PROGRAMS

- in addition to the basic hourly wage rates paid to each laborer or mechanic listed in
 the above referenced payroll, payments of fringe benefits as listed in the contract
 have been or will be made to appropriate programs for the benefit of such
 employees, except as noted in section 4(c) below.

(b) WHERE FRINGE BENEFITS ARE PAID IN CASH

- Each laborer or mechanic listed in the above referenced payroll has been paid,
 as indicated on the payroll, an amount not less than the sum of the applicable
 basic hourly wage rate plus the amount of the required fringe benefits as listed
 in the contract, except as noted in section 4(c) below.

(c) EXCEPTIONS

EXCEPTION (CRAFT)	EXPLANATION

REMARKS:

NAME AND TITLE	SIGNATURE

THE WILLFUL FALSIFICATION OF ANY OF THE ABOVE STATEMENTS MAY SUBJECT THE CONTRACTOR OR
 SUBCONTRACTOR TO CIVIL OR CRIMINAL PROSECUTION. SEE SECTION 1001 OF TITLE 18 AND SECTION 231 OF TITLE
 31 OF THE UNITED STATES CODE.