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\* Royal Oak \* Southfield \* Southfield Township

**Southeastern Oakland County Water Authority**  
**Request for Proposals**  
**WATER SERVICE LINE REPLACEMENT PROGRAM**  
**Job #20191046**

Date: April 1, 2020

The Southeastern Oakland County Water Authority (SOCWA) is accepting proposals from experienced and qualified contractors to verify the piping material of existing water service lines and replace existing water service lines either the public side, from the water main to the curb box, and/or the private side, from the curb box to the water meter. Sealed proposals will be received by SOCWA at the Administration Office, 3910 W. Webster Road, Royal Oak, MI 48073 until EXACTLY 10:00 A.M. Local Time, May 5, 2020, at which time and place the names of submitting proposers will be publicly opened and read.

Proposers shall review and comply with the Instructions to Proposers, which are incorporated by reference and located in Attachment A – Project Manual, and carefully review all Procurement Documents, as defined in the Instructions to Proposers. Proposals submitted after the exact time specified for receipt, will not be considered.

The Contract will consist of the following principal items of work and appurtenances as specified herein and described in the Contract Documents.

**Description of Work:**

To provide unit prices for as-needed contracting to assist SOCWA member communities in the verification of existing water service line materials and the replacement of water service lines; public side, from the water main to the curb stop, and/or private side, from the curb stop to the water meter. Water service lines may need to be verified at the water supply main, at the curb stop or within the premises. Service lines shall be replaced with new water service lines, as programmed by each member community. Service line verification and replacement locations are unknown at this time and will be determined by individual member communities as time and budget permit. At this time, it is unknown how many service line verifications may be requested of this Contract by the member communities. However, an estimated total of between 400 and 600 service line replacements are anticipated to be contracted out per year amongst the member communities. SOCWA reserves the right to select more than one qualified contractor to serve the member communities under this Contract.

The project will be advertised on the Michigan Inter-governmental Trade Network (MITN) and copies of Procurement Documents shall be available on or after April 1, 2020 from the offices of Hubbell, Roth & Clark, Inc., Consulting Engineers, 555 Hulet Drive, Bloomfield Hills, Michigan 48302-0360.

SOCWA • 3910 W. Webster Road • Royal Oak • Michigan • 48073 • Phone 248.288.5150 • Fax 248.435.0310 • Email [socwa@socwa.org](mailto:socwa@socwa.org)

[www.socwa.org](http://www.socwa.org)

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**IN ACCORDANCE WITH STATE EXECUTIVE ORDER NO. 2020-21, THE OFFICES OF HUBBELL, ROTH & CLARK, INC. ARE CURRENTLY CLOSED TO OUTSIDE VISITORS.**

Please contact the offices of Hubbell Roth & Clark, Inc. at 248-454-6300 or e-mail at [frontdesk@hrcengr.com](mailto:frontdesk@hrcengr.com) to obtain a copy of the Procurement Documents. A non-refundable payment of SIXTY (\$60.00) Dollars is required to purchase the Procurement Documents. CHECK or CREDIT CARD is acceptable. CREDIT CARD information can be provided over the telephone or via e-mail or CHECKS, made payable to "Hubbell, Roth & Clark, Inc.", may be mailed to the office. Procurement Documents will be sent electronically and shipped by U.P.S. ground upon confirmation of payment.

**The Proposer is advised that to submit a proposal on this project, the Proposer must have purchased the Procurement Documents from Hubbell, Roth & Clark, Inc.**

A project information meeting will be held at 10:00am local time on Wednesday, April 15, 2020. This meeting will be held virtually on a platform to be determined. **Please provide an e-mail address when requesting Procurement Documents so that an invitation to the project information meeting can be sent.** Representatives of SOCWA, member communities and the Engineer will be present to discuss the project. Meeting attendance is **not mandatory**. The Engineer will transmit a summary of the meeting and answers to any questions presented at the meeting in the form of an addendum.

Proposals submitted by Proposers who have been debarred, suspended, or made ineligible by any Federal Agency will be rejected.

**Each proposer agrees to waive any claim it has or may have against SOCWA and its member communities, the Architect/Engineer, and their respective employees, arising out of or in connection with the administration, evaluation, or recommendation of any proposal.**

Each proposal shall be submitted on the proposal forms provided and shall be accompanied by a certified check, cashier's check or bid bond (proposal guarantee), executed by the proposer and Surety Company, payable to the Southeastern Oakland County Water Authority in the amount of not less than Five Percent (5%) of a projected yearly Contract of \$500,000. Proposal Guarantee shall provide assurance that the proposer will, upon acceptance of the proposal, execute the necessary Contract with the Southeastern Oakland County Water Authority. No proposal may be withdrawn after the scheduled closing time for receiving proposals for at least one hundred and twenty (120) days.

The selected proposer(s) will be required to furnish satisfactory Performance, Labor and Material, and Maintenance and Guarantee Bonds.



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**THE SOUTHEASTERN OAKLAND COUNTY WATER AUTHORITY RESERVES THE RIGHT TO REJECT ANY AND ALL PROPOSALS AND TO WAIVE ANY IRREGULARITIES IN THE PROPOSALS.**

No Proposal will be received unless made on blanks furnished and delivered to the Southeastern Oakland County Water Authority on or before 10:00 a.m., Local time, May 5, 2020

Please submit proposal on or before the date and time given above to:

Jeff McKeen, P.E.  
General Manager  
Southeastern Oakland County Water Authority  
3910 W. Webster Road,  
Royal Oak, Michigan 48073

All proposals (one (1) original, one (1) copy, and one (1) electronic copy) must be submitted in a Sealed Envelope marked "SOCWA WATER SERVICE LINE REPLACEMENT PROGRAM".

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## **SECTION I – INSTRUCTIONS**

### **Definitions**

1. Owner shall refer to the Southeastern Oakland County Water Authority, SOCWA or “Authority”.
2. For the purposes of this RFP, the SOCWA “member communities” consist of the following communities and the City of Ferndale; City of Berkley, Village of Beverly Hills, Village of Bingham Farms, City of Birmingham, City of Clawson, City of Huntington Woods, City of Lathrup Village, City of Pleasant Ridge, City of Royal Oak, City of Southfield and Southfield Township.
3. “Water Service Line” means the pipe from the discharge of the corporation fitting attached to the public water supply main to the customer premise plumbing or to the building plumbing at the first shut-off valve inside the building or 18 inches inside the building, whichever is shorter.
4. “Public Side Water Service Line” or “Public Water Service Line” means that portion of the Water Service Line from the discharge of the corporation fitting attached to the public water supply main to the discharge of the curb stop.
5. “Private Side Water Service Line” or “Private Water Service Line” means that portion of the Water Service Line from the discharge of the curb stop to the customer premise plumbing or to the building plumbing at the first shut-off valve inside the building or 18 inches inside the building, whichever is shorter.
6. For the purposes of this RFP, a service line will be considered a “lead service line” or “LSL” if any portion of the existing service line is made of lead or any portion of the service is made of galvanized steel that is or ever was downstream of a lead pipe.
7. Service Company, Vendor, Contractor, Firm or Proposer shall refer to the company providing a proposal for the work outlined in the specifications.

### **Securing Documents**

Copies of the Procurement Documents may be obtained from the offices of Hubbell, Roth & Clark, Inc., Consulting Engineers, 555 Hulet Drive, Bloomfield Hills, Michigan 48302-0360. The authorized version of the Procurement Documents shall be that document, which was purchased from the offices of Hubbell, Roth & Clark, Inc. only.

The Procurement Documents remain the property of the Southeastern Oakland County Water Authority.

### **Examination of Documents and Site Work**

Before submitting a proposal, each proposer shall examine the Project Manual carefully, and all other Procurement Documents. Proposers shall fully inform themselves prior to proposing as to items of Work covered under each unit price and the limitations under which the work may be performed and shall include in their unit prices the cost to cover the items necessary to perform the work as set forth in the Project Manual. No allowance will be made to a proposer because of lack of such examination or knowledge. The submission of a proposal will be considered as conclusive evidence that the proposer has made such examination.

**Addenda to Request for Procurement Documents**

No interpretation or clarification of the meaning of any part of this RFP will be made orally to any vendor. Vendors must request such interpretations or clarifications in writing from the Authority's Engineering Consultant, Hubbell, Roth & Clark, Inc. Request for information or clarification of this RFP must be made in writing and addressed to Bradley Shepler, P.E. at the address or email address listed below, with email being the preferred method of communication. Questions should reference the RFP or Project Manual page and section number.

Bradley Shepler, P.E., CCCA, LEED AP  
Associate  
Hubbell, Roth & Clark, Inc.  
555 Hulet Drive, Bloomfield Hills, MI 48302  
Email: bshepler@hrcengr.com

Questions relative to this solicitation must be submitted to Bradley Shepler, P.E., in writing, prior to TUESDAY, APRIL 22, 2020 at 10:00 a.m. No negotiations, decision or actions shall be initiated by any firm because of any verbal discussion with any individual employee of a member community, the Authority or their Engineering Consultant prior to the due date or during the evaluation process. All communications shall be conducted through the Authority's Engineering Consultant, unless specific written documentation is provided to the vendor.

The Authority reserves the right to change or amend the Procurement Documents, prior to the proposal due date by the issuance of Addendum. Addendum information will be provided to each vendor that has secured procurement documents in accordance with this Request for Proposals. All such changes or addenda shall become a part of the contract and all vendors shall be bound by such changes or addenda.

The Authority reserves the right to disqualify any proposer who contacts any Authority or SOCWA member community employee, representatives, or agent concerning this RFP other than in accordance with this section. Nothing in this section shall prohibit the Authority from conducting discussions with proposers after the proposal opening.

**Submittal Guidelines**

Note: these submittal guidelines may change due to Executive Order 2020-21, please pay close attention to any and all addendum provided.

- a. Submit one (1) original, one (1) copy, and one (1) electronic copy;
- b. It is the proposer's responsibility to clearly identify and describe the products, equipment and services being offered in response to this solicitation;
- c. The solicitation forms must be completed legibly and in their entirety;
- d. Proposers must provide pricing on all line items in Division I or Division II (or both) **and** all line items in the As-Needed Materials and Surface Restoration Items section of the Cost Worksheet;
- e. All required forms and information as requested must be furnished and presented in an organized, comprehensive and easy to follow manner;
- f. Faxed and/or emailed proposals WILL NOT be accepted.

**Professional Approach**

The firm will represent that all tasks will be performed in accordance with generally acceptable professional standards and further represent that the advice and consultation provided will be within its authority and capacity as a professional. The firm will comply with the regulations, laws, ordinances and requirements of all levels of government applicable to the project.

## **SECTION 2– PROJECT OVERVIEW**

### **Project Overview**

The Southeastern Oakland County Water Authority (SOCWA) is accepting proposals for professional construction services for the as-needed verification of existing water service line materials and replacement of lead water service lines within the SOCWA member communities as defined previously.

Member communities were required to submit preliminary distribution system materials inventory (PDSMI) to the Michigan Department of Environment, Great Lakes and Energy (EGLE) by January 1, 2020. A result of the PDSMI was the summation of the number of water service lines in each water supply system in which the piping material is unknown. By January 1, 2025, each water supply system is to complete a final distribution system materials inventory which would require verification of all the unknown water service line materials in their inventory. Numerous member communities have expressed an interest in utilizing this cooperative Contract to assist them with verifying their unknown service line materials, however, budgetary allocation towards service line verifications or number of service line verifications needed by each member community is not known at this time.

Member communities which have known lead service lines (LSLs), will begin their programs to replace a number of their respective LSLs, potentially beginning by July 1, 2020. The specific number of service lines to be replaced as a part of this contract is unknown but based on community surveys it is anticipated that roughly 400 to 600 LSLs per year are planned be replaced through this Contract. Please note that this approximations in no way constitute a guarantee of the amount of services to be replaced.

The intent of this proposal is to provide SOCWA member communities with common-to-all, competitively bid prices for which to complete water service line verifications and scheduled lead service line replacements. The member communities will provide SOCWA with a list of addresses in which service line verifications or service line replacements are needed. Included with the member community service line replacement work request would be; access agreements for each of the addresses, a desired schedule for completion of the Work and a preferred contractor prioritization based on the bid item costs, work experience and references provided in the proposal. SOCWA will work with the member community to determine the contractor that best fits the needs of the planned Work and assign that contractor the service line replacement program for that community. Service line replacement programs will not be spread through multiple communities unless agreed to by the contractor.

Upon assignment of the Work, the contractor will communicate and coordinate directly with staff from the member community(s) in which they are working and that staff will administer the field work, change management and requests for payment. Finalized payment recommendations will be submitted by the member community to SOCWA for issuance of payment to the contractor(s).

As noted in the proposal, the unit prices bid for the items of work contained herein will be valid through December 31, 2022. It is anticipated that SOCWA may accept multiple proposals, although SOCWA reserves the right to accept all, some, one or none of the submitted proposals and to negotiate with all, some, one or none of the proposers to develop a cooperative program that best meets the needs of the Authority's member communities.

The Cost Worksheet within the Project Manual has been prepared with multiple unit price bid items, described in detail within Section 01220. The intent is to provide options for all existing service line materials verification and service line replacement needs that exist in the member communities.

Because of the cooperative and as-needed nature of this proposal, the scope, schedule, location and jurisdictional requirements of the Work are unknown at this time. The result of this proposal selection process will provide SOCWA and its member communities a basis in which to select contractors that are qualified to perform existing service line materials verification and replacement work. If selected, contractors will hold a contract with SOCWA that defines the requirements of the Work, establishes unit prices for the Work and provides an assurance (bonds) to the member communities that the selected contractors will be ready and willing to complete existing service line materials verifications and/or service line replacements in their community in accordance with the contracting requirements. Once the selected contractors are established, it is the responsibility of the member community to provide a scope of the Work and desired schedule and for SOCWA to develop a sub-agreement with one of the selected contractors to complete the Work. This sub-agreement will establish the scope, schedule, potential for damages and any other minor contracting clarifications or requirements the member community may wish to include.

Please carefully review this document. This document is a Request for Proposal. It differs from a Request for Bid/Quotation in that the Authority is seeking contractors to provide, as described herein, proposals demonstrating work experience and successful completion of similar work, not a bid/quotation meeting firm specifications for the lowest price. As such, the lowest price proposed will not guarantee an award. Competitive sealed proposals will be evaluated based upon criteria formulated around the most important features of the Work, of which qualifications and experience may be overriding factors, and price may not be a determining issuance of a contract or award. The proposal evaluation criteria should be viewed as standards, which measure how well a contractor's qualifications, experience, references and approach meets the desired requirements and needs of the Authority and its member communities.

Those criteria that will be used and considered in evaluation for award are set forth in this document. The Authority and its member communities will thoroughly review all proposals received. The Authority will also utilize its best judgment when determining whether to schedule meetings with short-listed proposers after receipt of all proposals.

**The Southeastern Oakland County Water Authority and all member communities reserve the right to select, and subsequently recommend for award, any, all, some or none of the proposed services which best meet required needs, quality levels, and schedule.**

### **Background**

The Southeastern Oakland County Water Authority (SOCWA) is a regional water authority that purchases potable water from the Great Lakes Water Authority and stores, pumps, and redistributes potable water to thirteen customer municipalities through its network of 50.5 miles of 16-inch to 48-inch diameter transmissions mains. The SOCWA system supplies potable water to an area that covers over 56 square miles and a population of approximately 210,000. Customer communities include; Berkley, Beverly Hills, Bingham Farms, Birmingham, Bloomfield Hills, Bloomfield Township, Clawson, Huntington Woods, Lathrup Village, Pleasant Ridge, Royal Oak, Southfield, and Southfield Township. General information regarding SOCWA is available at [www.socwa.org](http://www.socwa.org).

## **SECTION 3– SCOPE OF SERVICES**

The Southeastern Oakland County Water Authority (Authority) is seeking contractors to verify existing water service line materials and replace existing lead water service lines or galvanized water service lines that were previously connected to lead (LSLs).

Water service line material verifications are proposed to be conducted at up to three (3) of the following locations along the service line, as directed;

- Curb stop (and up to 24 inches on either side of the valve)
- Internal penetration to a building or premises
- Connection to the public water supply main

The verification at the curb stop will entail exposing the curb stop as well as at least 24 inches of service line on either side of the curb stop (public side and private side). The intent of this verification is to identify the service line in its buried state on both the public side and private side with one excavation and reveal any material changes due to repair or curb stop replacement. The verifications at the internal penetration to a building or premises and at the connection to the public water supply main are to identify the service line material at locations with high potential for lead piping (i.e. “goosenecks”) or changes in material type. The location in which service line material verifications will be completed will be at the sole discretion of the member community in which the work will take place.

As part of this Contract it is anticipated that both private water service lines and public water services lines will be replaced. Selected contractors shall be prepared to replace both the private water service line and the public water service line at any given location, regardless of initial scope. At no time should any lead or galvanized piping knowingly remain as part of the water service line after the Work is completed. Work on private service lines will typically take place on private property and within a building/premises. Private property access agreements are required prior to any Work commencing on the private water service lines. Any work completed on private water service lines without a signed access agreement will not be covered under the terms and conditions of this Contract. It is noted that partial service line replacements – replacing public side service lines while leaving lead private side service lines or vice versa – are prohibited.

The proposers are requested to provide pricing for performing one (1) day of service line material verifications and one (1) water service line replacement. This item of work would be classified as an individual type work item. In addition, proposers are requested to provide pricing for performing a bulk quantity of service line material verifications (minimum of 30 addresses) and service line replacements (minimum of 10 addresses). This item of work would be classified as “program” work with the intent of obtaining improved unit pricing due to economies of scale. “Program” work will be limited to within an individual member community, unless otherwise agreed to by all parties.

The development of program work will involve a member community providing a list of addresses, signed access agreements (for LSL replacement work) and a desired completion schedule to SOCWA. SOCWA will subsequently negotiate with the selected contractor(s) in the best interest of the member community and assign the “program” to a selected contractor. From that point forward the contractor will work directly with the member community to complete the “program”.

Not all member communities have the available staff to complete the tasks designated to be fulfilled by the member communities. Therefore, the following items of work normally reserved to be completed by the member community are provided for separately within the Contract for the Contractor to complete, should the Authority or member community be unable to support the completion of said task:

- Distribution of Initial Notification and Public Education documents
- Collection of signed Access Agreements
- Initial Introductory Meeting Attendance and Work Plan
- Scheduling of Service Line Replacement work with property owner/tenant
- Conduct building/premise plumbing flush

Section 6 of this Request for Proposal document is the Vendor Questionnaire. Within this Section the Contractor is asked to provide information on his or her experience in handling public interaction and scheduling/management activities. This Section is important for the evaluation of contractors qualified to handle additional activities beyond the construction activities presented in this Proposal. In addition, Section 01220 of the Project Manual describes the scope of these activities in more detail to help develop anticipated costs.

As part of the Contract, each selected contractor is required to perform up to four (4) initial introduction meetings with each member community's program manager (PM) and the property owner/tenants. This task will familiarize the PM with the LSL replacement process and water service line piping, materials, connections, etc., and how to communicate the LSL replacement process to the property owner/tenant and to help them complete the LSL Replacement Work Plan (refer to Attachment C of this RFP document).

Proposers are required to provide a price for each line item and each unit (both individual and grouped) in the Cost Worksheet within Division I or Division II or both in order to be considered for award. Each line item and each unit within the "As Needed Materials and Surface Restoration" section must be filled out regardless of Division to be considered for award. Proposers will only be selected to perform work per Division not per line item. Prices within the "As Needed Materials and Surface Restoration" section will only be utilized for contracting purposes if the contractor is awarded work within one or more Divisions. **The Authority reserves the right to award a Contract for Division I or Division II or both Divisions as it sees fit to best meets the needs of the Authority and its member communities.** Proposers should anticipate independent work programs for existing service line materials verification or service line replacement; unit prices should be reasonable and well-balanced and items should not be over-weighted.

Maintaining traffic along typical residential streets and low volume commercial or industrial avenues should be considered included with the project. Maintaining traffic shall consist of signage, barrels, cones and all other means of traffic control and site safety measures in accordance with the latest edition of the MMUTCD to assure the safety of the traveling public while also maintaining access to all local residents. Should the authority having jurisdiction (AHJ) deem that more coordinated traffic control is needed, the AHJ will either perform the traffic control themselves or negotiate a cost proposal from the Contractor based on the scope, terms and traffic control plan needed.

All service line replacement work shall be guaranteed to the member community free from defects in material and workmanship for a period of one (1) year from its completion. The contractor will make repairs to the service line to rectify defects in material and/or workmanship for one (1) year after completion, with any repairs considered incidental to the service line replacement.

Selected contractor(s) shall exercise caution when performing the Work to prevent damage to existing foundations. The contractor shall be responsible for repairing any damage to the foundation caused by their installation operation.

Selected contractor(s) shall identify the location of any existing utility services to the home and conduct operations in such a manner as to ensure the water service verification and new water service installation does not damage any existing utilities. Work shall be accomplished in accordance with all local ordinances and right-of-way permitting, Consumers Energy requirements for Protecting Gas Facilities, and the technical specifications for the project as prepared by the Authority's engineering consultant, Hubbell, Roth & Clark, Inc. (HRC). The contractor shall be responsible for repairing any damages to the satisfaction of the homeowner and the utility company.

Selected contractor(s) are not responsible for moving any items on the interior of the home that infringe upon the work that is secured to the basement floor or wall or that cannot be easily moved by one (1) worker.

Selected contractor(s) are not responsible for modifications to interior plumbing work beyond that necessary to connect to the new water service to the existing premise plumbing within the defined limits of a service line replacement except that the installation of a new interior shut-off valve (angle meter ball valve with handle) upstream of the meter is required if it can be completed without modifying the existing interior plumbing work.

Work may be needed to be completed on Saturdays or off hours to accommodate residents. No additional compensation will be allowed for work completed on Saturdays or off hours.

#### Alternate Proposal(s)

The Authority will evaluate all proposal responses received and make a recommendation for award that is in the best interest of the Authority and its member communities and allows for successful completion of the project on time and within budget.

#### Contract Extension

SOCWA and member communities reserve the right to negotiate contract extensions with all accepted contracts for an additional two (2) years, until December 31, 2024, as mutually acceptable by both the member community and Contractor.



## **SECTION 4– GENERAL PROVISIONS**

In order to receive consideration, make proposals in strict accordance with the following:

- No proposal will be considered unless it is made in accordance with the Project Manual, addenda, instructions to proposers, general conditions and other Procurement Documents as provided.
- Proposal must be submitted on the forms provided, properly signed and with all items filled out as noted in the Instructions. Do not change the wording in the Proposal section, and do not add words to the Proposal section. Unauthorized conditions, limitations, or provisions attached to the proposal will be cause for rejection of the proposal. If alterations by erasure or interlineation are made for any reason, explain over such erasure or interlineation with a signed statement from the proposer.
- No late proposals will be accepted. Late proposals will be returned to submitter unopened. The Southeastern Oakland County Water Authority assumes no responsibility for errant delivery of proposals including those relegated to a courier agent who fails to deliver in accordance with the time and receiving point as specified.
- The Southeastern Oakland County Water Authority reserves the right to postpone a due date for its own convenience. Proposals are considered received when date stamped and in the possession of the General Manager.
- Only properly identified proposals received on time will be evaluated.
- Proposals that are not in total compliance with the Project Manual and other documents included in the Request for Proposals shall be marked “alternate” or the Authority will presume the proposal meets the specifications herein.
- No proposal will be accepted from, or contract awarded to any person, firm, or corporation that is in arrears or is in default to the Southeastern Oakland County Water Authority or its member communities upon any debt or contract, or that is in default as surety or otherwise, or failed to perform faithfully any previous contract with the Authority or its member communities.
- No proposal may be withdrawn after it has been deposited with the Southeastern Oakland County Water Authority, except as provided by law.
- All costs incurred in the preparation, submission, and presentation of this proposal, in any way whatsoever, will be wholly absorbed by the prospective firm. All supporting documentation will become the property of the Southeastern Oakland County Water Authority unless requested otherwise at the time of submission. Michigan FOIA requires the disclosure, upon request, of all public records that are not exempt from disclosure under section 13 of the Act, which are subject to disclosure under the Act. Therefore, confidentiality of information submitted in response to this Request for Proposals is not assured.
- The Authority reserves the right to reject any and all proposals, to waive any informality in the proposal received, and to accept any proposal (or part thereof) which it will deem to be most favorable to the interests of the Authority or to award to multiple proposers.
- The Authority and member communities reserve the right to modify the scope of services during the course of the Contract. Such modification may include adding or deleting any tasks this project will encompass and/or any other modifications deemed necessary. Any changes in pricing or payment terms proposed by the contractor resulting from the requested changes are subject to acceptance by the Authority. Changes may be increases or decreases.

- The Authority and member communities reserve the right to terminate the contract without penalty upon 30 days written notice due to poor performance or for reasons deemed to be in its best interest. A designated representative of the Authority will be solely responsible for determining acceptable performance levels. His/her decision will be deemed in the Authority's best interest and will be final. The Authority reserves the right to award the contract to the other of the qualified proposals, re-bid the contract or do whatever is deemed to be in its best interest.
- The successful proposer(s) must furnish documentation complying with State of Michigan and Federal laws relating to discrimination under Equal Employment Opportunity (EEO).
- The Southeastern Oakland County Water Authority and all member communities are exempt from all sales, excise, and transportation taxes.
- The selected contractor(s) must maintain for the life of the agreement insurance coverage meeting the minimum limits of liabilities as outlined in the Project Manual.
- Ownership of all data, materials and documentation originated and prepared for the Southeastern Oakland County Water Authority pursuant to the Request for Proposals and the subsequent contract shall belong exclusively to the Southeastern Oakland County Water Authority.
- The contractor(s) will provide competent, suitable and qualified personnel to perform the work as required by the specifications. The contractor(s) will designate a representative who will be present at site and will have the authority to act on behalf of the contractor. The contractors' representative will not be replaced without prior written notice to the Authority or contracted member community. All communications given the contractors' representatives will be as binding as if given to the contractor(s).
- The contractor(s) shall not subcontract any or all portions of the work unless the Authority or contracted member community grants prior written approval. Any subcontractor, so approved, shall be bound by the terms and conditions of this contract. The contractor(s) shall be fully liable for all acts and omissions of its subcontractor(s) and shall indemnify the Southeastern Oakland County Water Authority and all member communities for such acts or omissions. All work shall meet with the approval of the Authority's or member community's representative for the project(s), as conforming to the provisions and requirements of this contract.
- All work shall meet with the approval of the Southeastern Oakland County Water Authority General Manager, or his authorized representative, as conforming to the provisions and requirements of this contract.
- Advanced payments and partial payments for stored materials will not be authorized. Payments will be made as identified within the Request for Proposal.
- In the event sufficient budgeted funds are not available for a new fiscal period, the Authority shall notify the awarded company(s) of such occurrence and the contract shall terminate on the last day of the current fiscal period without penalty or expense to the Authority.
- The Southeastern Oakland County Water Authority reserves the rights to waive any informalities, or immaterial omissions or defects not involving price, time or changes in the work and to reject any or all proposals, if to do so is deemed in the best interest of the Authority. In no event will an award be made until all necessary investigations are made as to the responsibility and qualifications of the contractor(s) to whom it is proposed to make such award. Any contract awarded to a person or company who is discovered to have been in default or disqualified at the time of the awarding of the contract shall be voidable at the discretion of the Southeastern Oakland County Water Authority General Manager or comparable representative of a member community.

- Proposers are advised that the RFP is considered to be under evaluation until Contract award. Authority staff or its representatives are restricted from giving any information relative to the proposals and the “progress” of the evaluation during this time, except as described in this RFP and as required to administer the evaluation process. Proposal information will be available upon award of the contract.
- In the event bankruptcy proceedings are commenced by or against contractor or under any provisions of the United States Bankruptcy Act or for the appointment of a receiver or trustee or a general assignment for the benefit creditors of either party. The Authority shall be entitled to terminate without further cost or liability. The Authority may cancel the Agreement/Contract or affirm the Contract and hold the contractor responsible for damages.
- The proposer accepts full responsibility to ensure that no changes are made to the Request for Proposals documents. In the event of conflict between a version of the Request for Proposals submitted by proposer and the version maintained by the Southeastern Oakland County Water Authority, the version maintained by the Southeastern Oakland County Water Authority shall govern.
- Under 2012, PA517, an Iran linked business, as defined therein, is not eligible to contract with the Authority or any of its member communities and shall not submit a proposal.

## **SECTION 5– SELECTION CRITERIA**

The Southeastern Oakland County Water Authority intends to utilize a modified Qualification Based Selection (QBS) approach to award the Contract(s). All complete and responsive proposals from proposers that are considered responsible in accordance with the contracting requirements will be evaluated and ranked. The Authority reserves the right to reject any and all proposals, to make an award based directly on the proposals or to negotiate further with one or more contractors. The contractor selected will be chosen based on the apparent greatest benefit to the Authority and member communities, including but not limited to:

1. Experience and Qualifications (25%) - The proposing firm must have personnel who have experience with the administration, preparation, and installation of the requested work. Provide information on the specific work experience of ONLY the team personnel who will be assigned to this project. Include information regarding who the Authority and member communities will utilize on a local basis to support the communities after installation to maintain the one (1) year warranty. Provide a list of comparable projects (minimum of 3) that have been successfully completed by your firm within the past 5 years and a contact person (name, address, title, responsibility, and phone number) for each project. Please include municipal/government contracts only.
2. References (25%) – Please provide a list of municipal references (minimum 3). Include name, address, phone number, contact person and briefly describe scope of services performed. Include public sector clients only.
3. Cost Proposal (25%) – The unit prices in the Cost Worksheet will be evaluated based on the appropriateness of the proposal. The prices must be well-balanced and reasonable. No items should be over-weighted.
4. Proposed Method and Rate for Service Line Replacement (15%) – Provide a written procedure of the preferred method of approach or work plan to meet the Authority’s and member communities’ needs for the scope of work specified. In addition, proposers should clearly identify all available resources within the company and those that will be subcontracted to others. Proposers to provide an itemized list of specialized equipment, equipment available for use on the proposed contract and any equipment that would need to be rented for use on the project. Provide descriptions of various means and methods of service line replacement the Contractor can support. Acceptable service line replacement methods and the limitations and/or requirements of each have been detailed in the “Special Provision for Service Line Replacement”.
5. Project Schedule (10%) – Submit a description of proposed scheduling for service line replacements, including current and projected workload, number of crews with the qualifications and availability to meet the project’s needs, proposed methods for coordination, and projected number of service line replacements per week, month, or total that could be performed. Proposers to provide anticipated rate of service line replacement and how that rate would be accomplished.

The Authority has provided specifications and requirements, which will assist in the procurement of the highest quality services possible to meet the requirements and needs of the Authority and its member communities. The proposal evaluation criteria should be viewed as standards, which measure how well a vendor's approach meets the desired requirements and needs of the Authority.

An Authority appointed selection committee consisting of two (2) members of the Authority, two (2) staff from the member communities and the project engineer will evaluate each of the submissions. Each member of the selection committee has a clear understanding of the project and Contract documents and a vested interest in the success of this Contract. Each committee member will complete an individual evaluation. The individual evaluation scores will then be averaged to become the consensus score for each submission.

The Southeastern Oakland County Water Authority may conduct such investigations as deemed necessary to establish the responsibility, qualifications and financial ability of the Proposers, proposed Subcontractors, Suppliers, individuals, or entities to perform the Work in accordance with the Contract Documents.

The Southeastern Oakland County Water Authority reserves the right to reject any and all proposals or to make an award based directly on the proposals. The Southeastern Oakland County Water Authority reserves the right to negotiate separately with any proposer, when such action is considered in its best interest. The Authority may elect to award a Contract to one, two or more proposers, or none at all, whatever is in the best interest of the member communities taking into consideration the ability to meet contractual obligations.

Subsequent negotiations may be conducted, but such negotiations will not constitute acceptance, rejection or a counteroffer on the part of the Authority. The firm(s) selected for the award will be chosen based on the apparent greatest benefit to the Southeastern Oakland County Water Authority and its member communities.

The Southeastern Oakland County Water Authority reserves the right to interview any number of qualifying proposers as part of the evaluation process. The decision of which proposer to contact (if any) will be based on the selection criteria outlined in this document and as determined in the evaluation process. Meetings with shortlisted proposers will provide additional information and criteria upon which the Authority will base its selection decision.

The Southeastern Oakland County Water Authority reserves the right to select, and subsequently recommend for award, the proposed services which best meets its required needs, quality levels and budget constraints. The lowest price proposed may not have a direct bearing on the final selection.

The Authority is not required to accept the lowest cost proposal in all or in part. The proposal award will not be based solely upon cost but will be evaluated based upon criteria formulated around the most important features of the services, of which qualifications, experience, references, schedule or work plan may be overriding factors. The proposal evaluation criteria should be viewed as standards which measure how well a vendor's approach meets the desired requirements and needs of the Authority.

## SECTION 6– VENDOR QUESTIONNAIRE

Date:	
Firm Name:	
Address:	
City/State/Zip Code:	
Telephone Number:	
Fax Number:	
Contact Person:	
Contact Person Email:	

Firm Established:	
Years in Business:	

Type of Organization: (Circle One)
a. Individual
b. Partnership
c. Corporation
d. Joint Venture
e. Other

How many years has your company been utilizing the products and installation methods proposed for replacing water service lines? Please explain.

How many water service line replacements does your company complete in a typical year?

How many clients does your company currently serve with the type of services described?  
Explain the capacity of the services provided.

State what assistance is expected from the SOCWA staff (or its engineering consultant) and member community staff for the project.

Describe the number of sub-contractors that will be needed to assist in the completion of this project and their respective roles.

Describe a proposed work day dedicated to service line replacements.

Provide a summary of how communication will occur to keep key representatives updated on the progress and coordination for the project.



Provide a narrative of a scenario in which a member community has collected 30 addresses for LSL replacement and your pre-qualified LSL crew is dedicated to other projects for the foreseeable future at the time of the request.

Describe your company's policy regarding errors or omissions in plans and specifications.

What are your billing procedures?

For a situation when a community uses the optional bid items for administrative work, please describe your experience and any past projects in which you were required to engage the public.

If requested to provide customer engagement describe the process you would use to complete the following tasks:

- Contacting residents and distributing Initial Notification and Public Education documents
- Collecting signed Access Agreements
- Scheduling and completion of Initial Introductory Meeting Attendance and Work Plan
- Scheduling of Service Line Replacement work with tenant/property owner
- Conducting the building/premise plumbing flush in the presence of the tenant/property owner

Describe your methods of preparation and excavation for service line material verification at the curb stop that will provide efficiencies and minimize disruption.

Describe your practices and procedures to minimize claims as a result of your service line replacement work.

Have you been involved in any litigation during the past five years? If so, provide an explanation.

How many employees does your company employ?

Full-time employees:\_\_\_\_\_ Part-time employees:\_\_\_\_\_

## **SECTION 7 – REQUIRED FORMS**

- 1) Proposal Form (Section 00300 of Project Manual)
  - a. Must be filled out on forms provided
- 2) Iran-Linked Business Vendor Certification (Section 00704 of Project Manual)
- 3) Signed acknowledgement of any Addendum Forms provided and acknowledgement of addenda in Section 00300 of the Project Manual (Page 2)

In addition to the Required Forms listed above, the following is required to be submitted with the Proposal:

- Bid Bond
- Cost Worksheet in Section 00300 of Project Manual
- List of Comparable Projects as referenced in Section 5
- List of References as referenced in Section 5
- Vendor Questionnaire as referenced in Section 6

## **SECTION 8 – ATTACHMENTS**

### **ATTACHMENT A – PROJECT MANUAL**

## **SECTION 8 – ATTACHMENTS**

### **ATTACHMENT B – EXAMPLE ACCESS AGREEMENT**

## **WATER SERVICE REPLACEMENT AND ACCESS AGREEMENT**

This Agreement, made this \_\_\_\_ day of \_\_\_\_\_, 20\_\_ between \_\_\_\_\_ (the "City/Village") and the undersigned owners of property located at \_\_\_\_\_ (the "Owner"), and states the following:

**General Purpose.** The existing private water service line between the curb stop valve located at the property line and the water meter will be disconnected and replaced with a new private water service line within the same limits and in a similar location. The work under this Agreement includes all labor, all equipment and materials as necessary.

**Contractor.** This Agreement anticipates that a Contract will be awarded to a qualified contractor, experienced in performing water service line replacements to complete the services herein as defined in this Agreement. ("Contractor").

**Consideration.** The City/Village and the Owner each agrees that the mutual promises made by the other party and the benefits to be derived from their execution of this Agreement are full, sufficient and acknowledged consideration for entering into this Agreement.

### **The City/Village Will Do The Following:**

1. Conduct an introductory meeting with the Owner and perform a pre-inspection of the water service line where it enters the premises and connects to the meter (to confirm the service line material). At the same time an evaluation of the meter setting will be completed to determine if the meter should be replaced. If necessary, either or both of these items will be corrected/replaced at no cost to the Owner.
2. Have a new copper or plastic private water service line, constructed at City/Village expense, from the existing curb stop at the property line to the water meter within the premises. The existing private water service line, if not removed as part of the replacement, will be disconnected and plugged at the penetration into the premises.
3. Restore the Owner's property disturbed by construction, including sidewalk, grassed areas and any other landscape damaged by construction and any interior portions of the structure disturbed by the work. Restoration will not include interior finished work (i.e. woodwork, tiling, carpeting, painting, etc.) or premise plumbing work (including replacement of fixtures).
4. Require the Contractor doing the work to provide and maintain adequate insurance to protect the Owner against any loss that may result from damage caused by negligent construction operations on the Owner's property and to require the Contractor to provide the City/Village with proof of such coverage.
5. Guarantee to the Owner that any work done shall be free from defects in material and workmanship for a period of one (1) year from the completion of the work (Guarantee Period").

**The Owner Will Do The Following:**

1. Confirm that the Owner(s) is the only owner(s) of the above referenced property.
2. Permit temporary access and right of entry to and upon the above-referenced property to the City/Village, the City/Village's Project Representative (Engineer) and the Contractor to conduct an introductory meeting and pre-inspection as described above, to enable construction of and flushing of the new private water service line and to enable any needed adjustments, maintenance, or repairs during the guarantee period.
3. Provide clear and unobstructed access to the area where the water service line enters the premises. This may include the removal of drywall, paneling, fixtures, and carpeting that obstruct or hide the area where the service line enters the premises.
4. Assume full responsibility for the maintenance, repair, and the replacement of the private part of the water service line, located on the above-referenced property, after expiration of the guarantee period. After the end of the guarantee period the responsibility of each party (City/Village and the Owner) shall be limited to that as shown on the attached diagram.
5. Provide necessary watering and care to the turf grass restoration and landscaping installed, if necessary..
6. Hold the City/Village, Engineer, and the Contractor(s) harmless and free from any claim, suit, demand or liability for any damage incurred in performance of the water service line replacement work at the Owner's property as defined herein.

Signed by the Owner(s) this \_\_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
Owner(s) Signatures

\_\_\_\_\_  
Owner(s) Printed Names

Signed by the City/Village this \_\_\_\_ day of \_\_\_\_\_, 20\_\_.

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

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



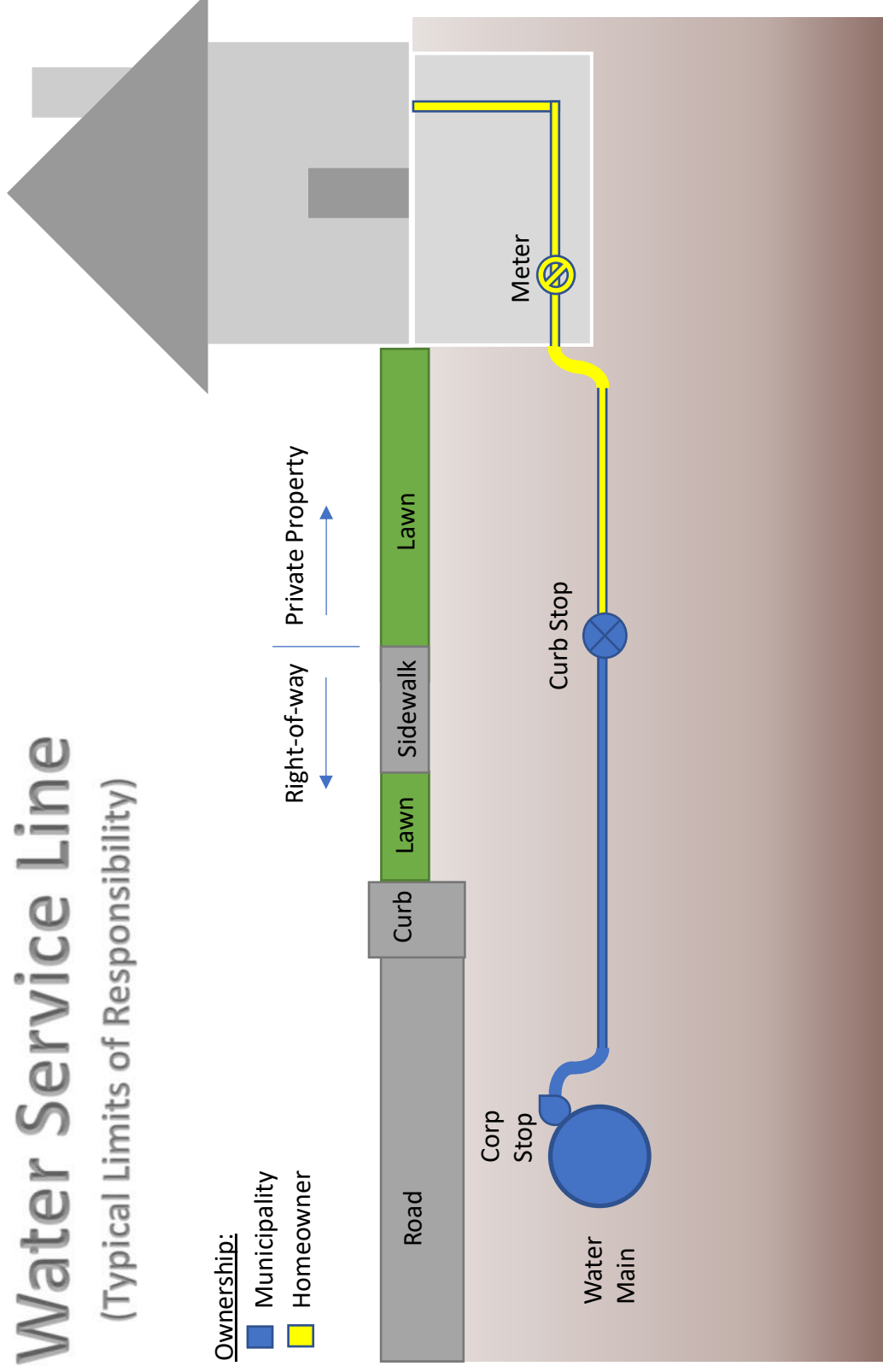
# Water Service Line

(Typical Limits of Responsibility)

Ownership:

- Municipality
- Homeowner

Right-of-way      Private Property



## **SECTION 8 – ATTACHMENTS**

### **ATTACHMENT C – EXAMPLE SERVICE LINE REPLACEMENT WORK PLAN**



# Service Line Replacement Work Plan

(insert logo here)

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

Address: \_\_\_\_\_  
(Street)  
\_\_\_\_\_  
(City) (Zip Code)

☐ Owner/Tenant Prefers to be Present During Replacement

☐ Very Available ☐ Somewhat Available ☐ Only Available by Appointment

☐ No Preference on Being Present During Replacement

\_\_\_\_\_  
(print name)

\_\_\_\_\_  
(sign name)

Contact Number : \_\_\_\_\_

## EXISTING CONDITIONS SURVEY

### EXISTING SERVICE LINE ENTRY POINT

- ☐ Wall:  
☐ Block ☐ Poured
- ☐ Floor:  
☐ Concrete ☐ Tile/ Carpet

### EXISTING PREMISE PLUMBING

- ☐ Copper ☐ Galvanized
- ☐ Plastic ☐ Other: \_\_\_\_\_

### EXISTING SERVICE LINE MATERIAL

- ☐ Lead
- ☐ Galvanized
- ☐ Copper
- ☐ Other: \_\_\_\_\_

### METER CONFIGURATION

- ☐ Vertical Type: \_\_\_\_\_
- ☐ Horizontal

- ☐ Review Plumbing and faucet operation with Tenant/Property Owner
- ☐ Take photos of proposed work area (Interior & Exterior)

Does the Contractor have clear access to the service line penetration? YES or NO

If NO, what needs to be moved/relocation: \_\_\_\_\_

Did you inform the homeowner of their responsibility to provide clear access? YES or NO

Did you observe any existing condition issues during walk-through? YES or NO

If YES, explain: \_\_\_\_\_

## WORK PLAN

### PROPOSED REPLACEMENT METHOD

- ☐ Drilling ☐ Open Cut
- ☐ Pulling ☐ Other: \_\_\_\_\_

### PROPOSED SCHEDULE

Anticipated Work Duration: \_\_\_\_\_

Anticipated # of Workers: \_\_\_\_\_

### PROPOSED SERVICE LINE ENTRY POINT

- ☐ Floor ☐ Wall

Proposed Demo Footprint: \_\_\_\_\_

### EXISTING SERVICE LINE POST-REPLACEMENT:

- ☐ Removed ☐ Abandoned

If Abandoned, How? \_\_\_\_\_

## **SECTION 8 – ATTACHMENTS**

### **ATTACHMENT D – MEMBER COMMUNITY WATER SERVICE LINE MATERIALS LIST**

WATER SERVICE LINE MATERIALS GUIDANCE DOCUMENT

	Item	Description	Manufacturer / Part Number
Berkley	Curb Stop	Compression fitting for copper or CTS O.D. tubing inlet & outlet, ball valve w/ Minneapolis thread	A.Y. McDonald 76104QA-NL
	Corporation Stop	AWWA/CC Taper Thread inlet by compression fitting for copper or CTS O.D. tubing, plug style	A.Y. McDonald 74701QA-NL
	Curb Box	Minneapolis Pattern	A.Y. McDonald 5615 TW or WB
	Service Line Pipe	HDPE SDR 9 4710 CTS Potable Pipe, Blue ≥1" where approved for use or Type K copper ≥1"	ADS (HDPE)
	Service Line Fittings	CTS Fittings (Lead-Mac Pak Fittings)	A.Y. McDonald QA Series
	Tracing Wire	Refer to MRWA Specification for requirements	Copperhead SoloShot or approved equal
	Repair Clamp	Full circumferential stainless steel	JCM 100 Series
	Service Saddle - Iron Pipe	Brass saddle w/ 2 silicon bronze straps req'd for 1-1/2" or larger taps	Ford Meter Box 202B
	Service Saddle - Asbestos Cement	Brass saddle w/ 2 silicon bronze straps req'd for any size tap	Ford Meter Box 202B
	Service Saddle - HDPE/PVC	Epoxy coated ductile body with 2 wide S.S. straps req'd for any size tap	JCM 406
Beverly Hills	Curb Stop	Quick/pack joint for copper or CTS O.D. tubing inlet & outlet	Ford Meter Box Z44-XXX-Q-NL ≤ 1", B44-XXX-Q-NL > 1"
	Corporation Stop	AWWA/CC Taper Thread inlet by flared copper outlet	Ford Meter Box FB600-X-Q-NL
	Curb Box	Stainless Rod, lid with 2-Hole Erie Pattern	Mueller H-10385; Ford Meter Box EA1
	Service Line Pipe	≥1" Type K Copper; HDPE SDR 9 only upon site specific approval	N/A
	Service Line Fittings	Quick joint, No Lead, CTS O.D. compression fittings	Ford Meter Box
	Tracing Wire	Only req'd for HDPE services, strength based on installation method	Copperhead SoloShot or approved equal
	Repair Clamp	Full circumferential stainless steel	Ford FS1
	Service Saddle - Iron Pipe	Brass saddle w/ 2 silicon bronze straps req'd for 1-1/2" or larger taps	Ford Meter Box 202B
	Service Saddle - Asbestos Cement	Brass saddle w/ 2 silicon bronze straps req'd for any size tap	Ford Meter Box 202B
	Service Saddle - HDPE/PVC	Epoxy coated ductile body with 2 wide S.S. straps req'd for any size tap	JCM 406
Bingham Farms	Curb Stop	Quick/pack joint for copper or CTS O.D. tubing inlet & outlet	Ford Meter Box Z44-XXX-Q-NL ≤ 1", B44-XXX-Q-NL > 1"
	Corporation Stop	AWWA/CC Taper Thread inlet by flared copper outlet	Ford Meter Box FB600-X-Q-NL
	Curb Box	Stainless Rod, lid with 2-Hole Erie Pattern	Mueller H-10385; Ford Meter Box EA1
	Service Line Pipe	≥1" Type K Copper; HDPE SDR 9 only upon site specific approval	N/A
	Service Line Fittings	Quick joint, No Lead, CTS O.D. compression fittings	Ford Meter Box
	Tracing Wire	Only req'd for HDPE services, strength based on installation method	Copperhead SoloShot or approved equal
	Repair Clamp	Full circumferential stainless steel	Ford FS1
	Service Saddle - Iron Pipe	Brass saddle w/ 2 silicon bronze straps req'd for 1-1/2" or larger taps	Ford Meter Box 202B
	Service Saddle - Asbestos Cement	Brass saddle w/ 2 silicon bronze straps req'd for any size tap	Ford Meter Box 202B
	Service Saddle - HDPE/PVC	Epoxy coated ductile body with 2 wide S.S. straps req'd for any size tap	JCM 406
Birmingham	Curb Stop	Ball valve style w/ flared copper inlet and outlet	AY McDonald #76100-NL
	Corporation Stop	Plug style w/ AWWA/CC Taper Thread inlet by flared copper outlet	AY McDonald 74701
	Curb Box	Two-piece adjustable, screw-type cast iron service box	Tyler/Union 6500 Series #95E
	Service Line Pipe	Type K Copper (min 1" service req'd)	N/A
	Service Line Fittings	Flared copper	AY McDonald
	Tracing Wire	N/A	N/A
	Repair Clamp	Full circumferential stainless steel	JCM #101 ≤ 12"; JCM #102 > 12"
	Service Saddle - Iron Pipe	Double bronze strap saddle	AY McDonald 3825
	Service Saddle - Asbestos Cement	N/A	N/A
	Service Saddle - HDPE/PVC	N/A	N/A
Clawson	Curb Stop	Ball valve style w/ flared copper inlet and outlet	AY McDonald 76100-NL
	Corporation Stop	Plug style w/ AWWA/CC Taper Thread inlet by flared copper outlet	AY McDonald 74701
	Curb Box	Two-piece arch pattern w/ stainless Rod, lid with 2-Hole Erie Pattern	AY McDonald 5601
	Service Line Pipe	Type K Copper	N/A
	Service Line Fittings	Flared copper	AY McDonald
	Tracing Wire	N/A	N/A
	Repair Clamp	Full circumferential stainless steel	Ford FS1
	Service Saddle - Iron Pipe	Double bronze strap saddle	AY McDonald 3825
	Service Saddle - Asbestos Cement	N/A	N/A
	Service Saddle - HDPE/PVC	N/A	N/A

WATER SERVICE LINE MATERIALS GUIDANCE DOCUMENT

	Item	Description	Manufacturer / Part Number
Ferndale	Curb Stop	Flared Copper inlet and outlet w/Minneapolis thread	Mueller H15154
	Corporation Stop	AWWA/CCTaper Thread inlet by flared copper outlet	Mueller H-15000
	Curb Box	Two-piece extension type cast iron w/ Minneapolis pattern	Mueller H-10300
	Service Line Pipe	Type K Copper	N/A
	Service Line Fittings	Flared copper	Mueller
	Tracing Wire	N/A	N/A
	Repair Clamp	Full circumferential stainless steel	Ford FS1
	Service Saddle - Iron Pipe	Brass body w/ double strap silicon bronze straps	Mueller BR2B
	Service Saddle - Asbestos Cement	N/A	N/A
	Service Saddle - HDPE/PVC	Epoxy coated ductile body with 2 wide S.S. straps req'd for any size tap	JCM 406
Lathrup Village	Curb Stop	Flared Copper inlet and outlet w/Minneapolis thread	Mueller H15154
	Corporation Stop	AWWA/CCTaper Thread inlet by flared copper outlet	Mueller H-15000
	Curb Box	Two-piece cast iron extension type w/ Minneapolis pattern, lid and plug w/ ended box length of 5'-6"	Mueller H-10300
	Service Line Pipe	≥1" Type K Copper	N/A
	Service Line Fittings	Flared Copper	Mueller
	Tracing Wire	N/A	N/A
	Repair Clamp	Full circumferential stainless steel	Ford FS1
	Service Saddle - Iron Pipe	Brass body w/ double strap silicon bronze straps	Mueller BR2B
	Service Saddle - Asbestos Cement	N/A	N/A
	Service Saddle - HDPE/PVC	Epoxy coated ductile body with 2 wide S.S. straps req'd for any size tap	JCM 406
Pleasant Ridge	Curb Stop	Flared copper or Pack Joint for CTS O.D. tubing inlet & outlet	Mueller H-15204 or H-25209
	Corporation Stop	AWWA/CCTaper Thread inlet by flared copper outlet	Mueller H-15000
	Curb Box	Two-piece cast iron w. arch base and telescoping upper w/ S.S. Rod	AY McDonald 5602 or 5603; Mueller H-10334 or H-10310
	Service Line Pipe	≥1" Type K Copper	N/A
	Service Line Fittings	refer to City of Royal Oak specifications	Mueller
	Repair Clamp	Full circumferential stainless steel	Ford FS1
	Tracing Wire	12 AWG copper clad steel core wire, solid w/ blue 45 mil HDPE insulation	N/A
	Repair Clamp	Full circumferential stainless steel	Ford FS1
	Service Saddle - Iron Pipe	Bronze saddles w/ double 304L S.S. straps (for C.I. ≥ 1" and D.I. ≥ 2")	Mueller BR2S or BR2W (upon City approval)
	Service Saddle - Asbestos Cement	Bronze saddles w/ double 304L S.S. straps (req's for all taps)	Mueller BR2S or BR2W (upon City approval)
Royal Oak	Service Saddle - HDPE/PVC	N/A	N/A
	Curb Stop	Flared copper or Pack Joint for CTS O.D. tubing inlet & outlet	Mueller H-15204 or H-25209
	Corporation Stop	AWWA/CCTaper Thread inlet by flared copper outlet	Mueller H-15000
	Curb Box	Two-piece cast iron w. arch base and telescoping upper w/ S.S. Rod	AY McDonald 5602 or 5603; Mueller H-10334 or H-10310
	Service Line Pipe	≥1" Type K Copper	N/A
	Service Line Fittings	refer to City specifications	Mueller
	Tracing Wire	12 AWG copper clad steel core wire, solid w/ blue 45 mil HDPE insulation	N/A
	Repair Clamp	Full circumferential stainless steel	Ford FS1
	Service Saddle - Iron Pipe	Bronze saddles w/ double 304L S.S. straps (for C.I. ≥ 1" and D.I. ≥ 2")	Mueller BR2S or BR2W (upon City approval)
	Service Saddle - Asbestos Cement	Bronze saddles w/ double 304L S.S. straps (req's for all taps)	Mueller BR2S or BR2W (upon City approval)
Southfield	Service Saddle - HDPE/PVC	N/A	N/A
	Curb Stop	Flared Copper inlet and outlet w/Minneapolis thread	
	Corporation Stop	AWWA/CCTaper Thread inlet by flared copper outlet	
	Curb Box	Minneapolis Pattern	A.Y. McDonald 5615 TW or WB
	Service Line Pipe	≥1" Type K Copper; HDPE SDR 9 only if site conditions dictate	N/A
	Service Line Fittings	Flared copper	
	Tracing Wire	Only req'd for HDPE services, strength based on installation method	Copperhead SoloShot or approved equal
	Repair Clamp	Full circumferential stainless steel	Ford FS1
	Service Saddle - Iron Pipe	Bronze saddles w/ double 304L S.S. straps (for C.I. ≥ 1" and D.I. ≥ 2")	Mueller BR2S or BR2W (upon City approval)
	Service Saddle - Asbestos Cement	Bronze saddles w/ double 304L S.S. straps (req's for all taps)	Mueller BR2S or BR2W (upon City approval)
	Service Saddle - HDPE/PVC	Epoxy coated ductile body with 2 wide S.S. straps req'd for any size tap	JCM 406

**SPECIFICATIONS**  
**FOR**  
**WATER SERVICE LINE REPLACEMENT**  
**PROGRAM**  
  
**SOUTHEASTERN OAKLAND COUNTY WATER AUTHORITY**  
**OAKLAND COUNTY, MIICHIGAN**

**APRIL 2020**

**HRC JOB NO. 20191046**



**555 Hulet Drive • P.O. Box 824**  
**Bloomfield Hills, Michigan 48303-0824**

**ADDENDUM NO. 1  
TO THE  
SOUTHEASTERN OAKLAND COUNTY WATER AUTHORITY  
WATER SERVICE LINE REPLACEMENT PROGRAM  
REQUEST FOR PROPOSAL**

ISSUED: April 20, 2020

HRC Job No. 20191046

This Addendum is issued prior to receipt of proposals to provide for certain changes and clarifications to the Specifications and/or the Drawings, as herein specified, and is hereby made a part of the Contract Documents and shall be taken into consideration in preparing the Proposal. All other conditions remain the same. **The Proposer shall acknowledge the receipt of this Addendum by signing below, including this addendum with their proposals, and completing the Addenda section on Page 2 of the Proposal Form (Section 00300).** Failure to sign the Addenda Section of the Proposal Form in the submission of the proposal may be justification for the proposal being rejected as non-responsive.

**THE DEADLINE FOR QUESTIONS HAS BEEN EXTENDED TILL TUESDAY, APRIL 28, 2020 BY 4:00PM.**

- The meeting summary for the Project Information Meeting held on Wednesday, April 15, 2020 is attached.

Received and Acknowledged By:

Company:

D'ANGELO BROTHERS INC.

Signature:

[Signature]

Printed Name:

VINCENT D'ANGELO

Title:

PRINCIPAL

Date:

5-5-2020

Delhi Township  
2101 Aurelius Rd.  
Suite 2A  
Holt, MI 48842  
517-694-7760

Detroit  
535 Griswold St.  
Buhl Building, Ste 1650  
Detroit, MI 48226  
313-965-3330

Grand Rapids  
1925 Breton Road SE  
Suite 100  
Grand Rapids, MI 49506  
616-454-4286

Howell  
105 W. Grand River  
Howell, MI 48843  
517-552-9199

Jackson  
401 S. Mechanic St.  
Suite B  
Jackson, MI 49201  
517-292-1295

Kalamazoo  
834 King Highway  
Suite 107  
Kalamazoo, MI 49001  
269-665-2005

Lansing  
215 S. Wash  
Suite D  
Lansing, MI  
517-292-14



**ADDENDUM NO. 2  
TO THE  
SOUTHEASTERN OAKLAND COUNTY WATER AUTHORITY  
WATER SERVICE LINE REPLACEMENT PROGRAM  
REQUEST FOR PROPOSAL**

ISSUED: April 30, 2020

HRC Job No. 20191046

This Addendum is issued prior to receipt of proposals to provide for certain changes and clarifications to the Specifications and/or the Drawings, as herein specified, and is hereby made a part of the Contract Documents and shall be taken into consideration in preparing the Proposal. All other conditions remain the same. **The Proposer shall acknowledge the receipt of this Addendum by signing below, including this addendum with their proposals, and completing the Addenda section on Page 2 of the Proposal Form (Section 00300).** Failure to sign the Addenda Section of the Proposal Form in the submission of the proposal may be justification for the proposal being rejected as non-responsive.

**PROPOSAL SUBMISSION UPDATES**

The deadline for the submission of the proposals remains as stated in the Procurement Documents. A physical proposal drop off area (Drop Box) will located at the front entrance to the SOCWA offices at the following address:

3910 W. Webster Road  
Royal Oak, MI 48073

Please ring the buzzer to acknowledge your presence and that a proposal is being dropped off. **You will not be allowed inside the facility.** If you wish to have a confirmation of receipt please leave your contact number on the exterior of the envelope and we will call you upon collection of your proposal. Should the weather be inclement on the day of the submission deadline, SOCWA will have staff posted at the entrance to accept the hand delivery of your proposal.

SOCWA offices are accepting daily mail and deliveries, however, these services have been inconsistent lately due to the ongoing pandemic. SOCWA will not accept proposals that miss the deadline and will not make exceptions for late submissions caused by delivery service delays.

The following lists the extent of this Addendum:

**Proposer Questions**

Q: When the water main is in the road as compared to when the water main is not in the road how does the excavation in the road and sand backfill get handled?

A: There are pay items for "Pavt, Rem, Concrete Roadway, Special", "HMA Surface, Rem, Special" and "Driveway and Sidewalk, Rem" that will separately compensate for removal of roadways, curb and gutter and/or driveway./sidewalk in order to perform the Work. Refer to Section 01220 for further description of what is included with these pay items. In accordance with the Special Provision for Water Service Line Replacement, "Areas within the Owner's right-of-way are to be backfilled and compacted with Class II sand", Page 6 of 9.

Delhi Township 2101 Aurelius Rd. Suite 2A Holt, MI 48842 517-694-7760	Detroit 535 Griswold St. Buhl Building, Ste 1650 Detroit, MI 48226 313-965-3330	Grand Rapids 1925 Breton Road SE Suite 100 Grand Rapids, MI 49506 616-454-4286	Howell 105 W. Grand River Howell, MI 48843 517-552-9199	Jackson 401 S. Mechanic St. Suite B Jackson, MI 49201 517-292-1295	Kalamazoo 834 King Highway Suite 107 Kalamazoo, MI 49001 269-665-2005	Lansing 215 S. Washington SQ Suite D Lansing, MI 48933 517-292-1488
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Q: Can you clarify backfilling requirements? The compaction methods of... "No heavy equipment or vibratory compaction methods allowed until 48" cover"; how do you compact in lifts of 6" or 12" if you can't use the standard compaction mean? Does the compaction/density testing have to be nuclear and/or certified by an approved testing facility?

A: Compaction to 95% of maximum unit weight of the backfill material is required over the pipelines and services installed or exposed. The intent of the Article that mentions "No heavy equipment or vibratory compaction methods allowed until 48" of cover is provided" is referring to heavy road building equipment and vibratory rollers not a plate compactor or hoepack. Compaction testing is at the discretion of and will be paid for by the Owner. Contractor is responsible for coordinating testing efforts.

Q: The RFP mentions "unauthorized excavations". Do we know what will be considered "unauthorized"...? The excavation will have to be made to the size needed for proper safety measures. A size limit would help.

A: Anything beyond what is needed to safely complete the work would be considered unauthorized. The Owner cannot suggest size limitations as they are not responsible for site safety.

Q: •Permits and requirements, it seems that most will be covered and allowance for them. However, most of these communities require Restoration Bonds/Deposits. Will a restoration bond/deposit be required? Based on work in these areas in the past there were required bonds/deposits of between \$500.00 - \$10,000.00 per site

A: Restoration bonds/deposits will be required on a per member community basis. Costs to obtain the bond or provide the deposit would be eligible to be reimbursed under the "Permit Allowance" pay item with the proper documentation.

Q: Do the member communities have any verifications completed at this time so replacements can begin immediately or does the verification piece of the RFP need to be started first in order to collect a list of needed service line replacements? Are there any SLRs ready to be replaced Day 1?

A: Yes, member communities have informational verifications completed, however, not many have access agreements already in hand. While the verification piece does not need to be started in order to collect a list of needed service line replacements, it may be instituted first because of the non-intrusive nature of some of the Work. I don't believe there are any SLRs that will be ready to be replaced Day 1 and that has to do with a combination of the access agreement collection as previously noted and the potential apprehensiveness of tenants/property owners letting contractors into their homes.

Q: In the pre bid conference meeting you referred to 400-600 addresses to be done:

- Is this estimate for all member communities together or for EACH member community?
- Are the 400-600 SLR's only or both SLR's and SLV's?
- Is it the intent of the member community to perform verifications at ALL homes in the community?

A: The estimate of 400-600 is a yearly estimate for all the member communities together and is just SLRs, it does not include service line material verifications. The number of verifications that will be scheduled will be dependent on the guidance the communities receive from EGLE on what constitutes a "verified" service line to fulfill their requirements of the Final Distribution System Materials Inventory that is due by January 1, 2025.



Q: Would the member communities provide water for hydrovac equipment as well as for the 6 weeks of watering for restorations (using a hydrant to fill these trucks is typically how we obtain water? Will there be a cost to obtain water from the member community?

A: Each member community may be different but I believe all have hydrant permitting in place for the use of hydrants with proper backflow prevention. Billing the contractor for water will be at the Owner's discretion, however, contractors will be able to utilize SOCWA owned hydrant connections at the Webster Pumping Station for filling trucks used for this project.

Q: Will the member community provide a lay down area to store material and equipment?

A: Member communities will work with the contractors to locate a lay down area to store material and equipment but the member communities are in no way obligated to provide a lay down area. The contractor will be required to maintain any laydown area during the length of the Contract and restore any lay down area to existing conditions when the contractor is finished at no additional cost to the Contract.

Q: Will the member community provide an area to dump slurry from the hydrovac excavations?

A: Member communities will work with the contractors to locate an area to dump slurry but the member community is in no way obligated to provide a location to dump slurry. The contractor will be required to maintain and contain any area in which slurry is stored during the length of the Contract, remove all collected slurry and materials from site and restore the area to existing conditions when the contractor is finished at no additional cost to the Contract.

Q: On the line item page that refers to concrete & asphalt, they show HMA minimum of 25 Ton and Concrete minimum at 10 CY. How will these units' restoration units be billed? Typically we measure a square footage and bill to that specific address where Asphalt, Concrete and Sod/Soil/hydroseed are placed.

A: The intent of the pavement restoration and turf restoration was to group them as best as possible. The RFP specifies that restoration must be completed within 14 days of disruption. The intent was that every two weeks the pavement restoration contractor would come through and pour any concrete roadway patches, driveways and sidewalks all at once. Same would go for the turf restoration, every two weeks the site restoration contractor would mobilize to the job and do all their work at once.

Q: How soon after the SLR/V work are restorations for that addresses required to be completed?

A: As stated above, within 14 days

Q: Is this all residential or are commercial/businesses included in this program

A: This program is not limited to residential properties.

Q: In our experience we have found using the methods to replace a service line, it is not only less disruption to the home, but also more efficient to core thru the foundation wall, in lieu of the floor, then using water stop foam insulation in the foundation then seal with the required cement to bring in a new service line. Is it acceptable to core thru the foundation wall to bring in a new service line?

A: In our experience, coring through a foundation wall increases the potential for leakage. In addition, according to local interpretations of the plumbing code, new penetrations through foundation walls should be waterproofed on the exterior. However, the ultimate decision is to be made by the member community as to what they will allow or not allow. There is no guarantee that any member community will allow anything other than what is specified at the end of the Special Provision for Water Service Line Replacement as an "Approved Service Line Installation Method"

Received and Acknowledged By:

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

Signature: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Title: \_\_\_\_\_

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

D'ANGELO BROTHERS

OTD

VINCENT D'ANGELO

PRINCIPAL

5-5-2020

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SECTION 00120

INSTRUCTIONS TO PROPOSERS

SCOPE OF WORK

The work under this Contract shall consist of the furnishing of all labor, material, equipment, services, and all incidental items necessary to complete the project in accordance with the Contract Documents.

OBSERVATION OF SITE

Before submitting a Proposal, each proposer shall investigate the potential sites of the proposed work and to arrive at a clear understanding of the conditions under which the work is to be done.

The Proposer shall be held to have compared the Procurement Documents with the proposed scope of work and to have satisfied themselves as to the potential conditions of the premises, existing constructions, and any other conditions that may affect the carrying out of the work, before delivery of his Proposal.

No allowance or extra consideration on behalf of the Proposer will subsequently be allowed by reason of error or oversight on the part of the Proposer or on account of interferences by the Owner's or by other Proposer's activities.

SOIL CONDITIONS

The Contractor, as such and as proposer, shall make their own determination as to soil and/or rock conditions and shall complete the work in whatever material and under whatever conditions may be encountered or created, without extra cost to the Owner. This shall apply whether or not borings are provided in the Procurement Documents.

All proposers conducting soil tests shall restore the area of their testing to original condition as closely as possible.

The Owner does not guarantee that the ground encountered during construction will conform with any boring information furnished herein.

The Owner and Hubbell, Roth & Clark, Inc. may have been involved in the design, observation, and/or construction of other underground projects in the area of the proposed construction. The observation reports, soil reports, and any soil information connected with these projects are available for construction observation and review by the prospective proposers.

REQUEST FOR PROPOSAL

The published Request for Proposal for the proposed work contains information necessary for proposers. A copy of the Request for Proposal shall be considered a part of the Instructions to Proposers as fully as if repeated herein.

## PROPOSALS

Proposals will be received in accordance with the Request for Proposal, and shall be submitted only on forms provided by the Engineer.

Proposals shall be enclosed in sealed envelopes marked with the name of the project and proposer and shall be delivered to the designated location on or before the submittal time as specified in the Request for Proposal.

Proposals shall be made in full conformity with all the conditions set forth in the Procurement Documents. Proposals are firm and cannot be withdrawn for a period of 120 days after opening of the proposals, unless otherwise specified in the Request for Proposal.

## NAME AND STATUS OF PROPOSER

The name and legal status of the proposer, either as a corporation, partnership, or individual, shall be stated in the Proposal.

Anyone signing a Proposal as an agent of another or others, must submit with the Proposal, legal evidence of his authority to do so.

The place of residence of each proposer, or the office address and telephone number in the case of a firm or company, with County and State, must be given after his signature.

## PROPOSER'S QUALIFICATIONS

It is the intention of the Owner to award this Contract to a Proposer fully capable, both financially and with regard to experience to perform and complete the work in a satisfactory manner. If required by the Owner, each proposer under consideration may be required to furnish the Owner, within 48 hours at the Owner's request, the following information sworn to under oath by him:

1. Performance record.
2. The address and description of the proposer's plant and place of business.
3. Itemized list of equipment available for use on the project.
4. A description of any similar project which the proposer has constructed in a satisfactory manner.
5. A certified or authenticated financial statement dated within sixty days prior to the opening of the proposals. The Owner may require that any items of such statements be further verified.
6. A list of contracts on which the proposer is currently engaged.
7. Such additional information as will satisfy the Owner that the proposer is adequately prepared, in technical experience and otherwise, to fulfill the Contract.



## PROPOSAL DEPOSIT

Each Proposal must be accompanied by a deposit in the form described in the Request for Proposal as a guarantee on the part of the proposer that they will, if called upon to do so, enter into contract in the attached form, to do the work covered by such proposal and at the price stated therein and to furnish acceptable surety for its faithful and entire fulfillment. Such certified check or bid bond shall be made out to the Owner and shall be subject to the conditions specified in the Proposal.

The deposits on all the proposals not awarded a Contract will be returned within 48 hours after the Contract is awarded to the successful proposal(s) and the signed agreement(s) have been delivered and the required bonds have been finally approved by the Owner, or after rejection of all proposals.

Surety companies providing and executing Bid Bonds shall appear on the United States Treasury Department's most current list (Circular 570) as holding certificates of authority as acceptable sureties on federal bonds. The penal sum of such bonds shall not exceed a company's underwriting limitation as stated therein. A surety company shall be licensed in the State in which it provides a bond and in the State where the Contract work is to be performed.

Failure to provide a bid bond from a qualified company shall be a basis for rejection of a proposal as non-responsive and non-responsible.

## EXPLANATION TO PROPOSERS BY ADDENDUMS

Neither the Owner nor the Engineer will give verbal answers to inquiries, regarding the meaning of the Procurement Documents, or give verbal instructions, previous to the award of the Contract. Any verbal statements regarding same by any persons, previous to the award, shall be unauthoritative.

Explanations desired by proposers shall be requested of the Engineer in writing and, if explanations are necessary, a reply will be made in the form of an addendum, a copy of which will be forwarded to each proposer whose work is affected.

Addendums issued to proposers prior to date of receipt of proposals shall become a part of the Procurement Documents, and all proposals shall include the work described in the addendums.

No inquiry received within 4 days of the date fixed for the opening of the proposals will be given consideration.

Failure of the Engineer to send, or of the proposer to receive, any such interpretations shall not relieve the proposer from obligation under the proposal as submitted.

## RIGHT TO ACCEPT, TO REJECT, AND TO WAIVE DEFECTS

The Owner reserves the right to accept any Proposal, to reject any or all Proposals, and to waive any defects or irregularity in the Proposal if it appears advantageous to the Owner to do so.

**Each proposer agrees to waive any claim it has or may have against the Owner, the Architect/Engineer, and their respective employees, arising out of or in connection with the administration, evaluation, or recommendation of any proposal.**



## TIME OF COMPLETION

The Owner, member communities and the individual citizens of the municipalities affected by this project are vitally concerned with the prompt completion of the construction together with the cleanup and restoration of roads and lawns within the time allowed in the Proposal.

The Proposer shall use sufficient labor and equipment to complete and place in service all of the work being constructed within this Contract within the time specified in the Proposal. The surface cleanup shall follow closely behind construction with earth spoil removed from lawns and roads and any trenches neatly finished by the end of each work day. Failure of the Proposer to comply with this type of workmanlike job will result in the suspension of construction operations until the cleanup is affected.

If the Proposer shall be unavoidably delayed in beginning or fulfilling this Contract by reason of excessive storms or floods, or by Acts of Providence, or by strikes, or by court injunction, or by stopping of the work by the Owner because of any emergency or public necessity, or by reason of alterations ordered by the Owner, the Proposer shall have no valid claim for damages on account of any cause or delay; but he shall in such case be entitled to such an extension of the above time limit herein, as the Engineer shall adjudge to be just and reasonable; provided, however, that formal claim for such extension shall be made in writing by the Proposer within a week after the date upon which such alleged cause or delay shall have occurred.

## FAIR EMPLOYMENT PRACTICES

Section 4 of the Fair Employment Practices Act PA 1955, No. 251, provides:

Section 4. Every Contract to which the State or any of its political or civil subdivisions is a party shall contain a provision requiring the Proposer and his subcontractors not to discriminate against any employee or applicant for employment, to be employed in the performance of said contract, with respect to his hire, tenure, terms, conditions, or privileges of employment, or any matter directly or indirectly related to employment, because of his race, color, religion, national origin or ancestry. Breach of this covenant may be regarded as a material breach of the Contract.

Section 4A of the Act provides:

Section 4A. Every contract which the State or any of its political or civil subdivisions is a party shall contain a provision requiring the Proposer and his subcontractors not to discriminate against any employee or applicant for employment to be employed in the performance of such contract with respect to his hire, tenure, terms, conditions or privileges of employment or any matter directly or indirectly related to employment because of his age or sex, except where based on a bona fide occupational qualification.

END OF SECTION

PROPOSAL  
FOR  
WATER SERVICE LINE REPLACEMENT PROGRAM  
SOUTHEASTERN OAKLAND COUNTY WATER AUTHORITY  
OAKLAND COUNTY, MICHIGAN

Southeastern Oakland County Water Authority (OWNER)  
3910 W. Webster Road  
Royal Oak, MI 48073

Proposals Due: Tuesday, May 5, 2020  
On or Before 10:00 am, Local Time  
HRC Job No. 20191046

To Prospective Proposers:

Name of Proposer: D'Angelo Brothers, Inc.

Address: P.O. Box 531330, Livonia, MI 48155

Date: 5/5/2020 Telephone: (248) 515-1942 Fax: \_\_\_\_\_

The above, as Proposer, hereby declares this bid is made in good faith without fraud or collusion with any persons bidding, and that the Specifications and all other information referenced in the Instructions to Proposers have been examined. Further, the Proposer is familiar with the location of the work described herein and is fully informed as to the nature of the work and the conditions relating to the performance of the Contract.

The Proposer acknowledges that no representations or warranties of any nature whatsoever have been received or are relied upon from the Southeastern Oakland County Water Authority (SOCWA) its agents or employees, as to any conditions to be encountered in accomplishing the work and that the proposal is based solely upon the Proposer's own independent judgment.

The above, as Proposer, hereby certifies that the Specifications and other data provided by the Owner for proposal purposes have been examined. Further, the undersigned certifies that the proposed construction methods have been reviewed and found acceptable for the conditions, which can be anticipated from the information provided for proposing.

The Proposer hereby affirms that the site of work has been inspected and further declares that no charges in addition to the Individual Unit Prices in the Cost Worksheet shall be made on account of any job circumstances or field conditions which were present and/or ascertainable prior to proposal submission. In addition, the Contractor, as such and as Proposer, shall make the determination as to existing soil conditions and shall also complete the work under whatever conditions created by the Contractor/Proposer's sequence of construction, construction methods, or other conditions the Contractor/Proposer may create, at no additional cost to the Owner.

The above, as Proposer, confirms knowledge of the location of the proposed Water Service Line Replacement Program and appurtenant construction for SOCWA in the member communities in the State of Michigan including; the City of Berkley, Village of Beverly Hills, Village of Bingham Farms, City of Birmingham, City of Clawson, City of Lathrup Village, City of Pleasant Ridge, City of Royal Oak, City of Southfield and Southfield Township with the addition of the City of Ferndale, and the conditions under which it must be

constructed. In addition, the Proposer agrees to perform Work in any and all of the abovementioned member communities without prejudice.

The Proposer also declares to have carefully examined the Specifications, Request for Proposal documents and other Contract Documents which the Proposer understands and accepts as sufficient for the purpose of said As-Needed Service Line Replacement Program, and appurtenant work, and agrees to contract with the Southeastern Oakland County Water Authority to furnish all labor, materials, tools, equipment, facilities and supervision necessary to do all the work specified and prescribed for the Southeastern Oakland County Water Authority, in strict accordance with the Owner's General Conditions, and with the full intent of the Specifications, prepared by Hubbell, Roth & Clark, Consulting Engineers, and will accept in full payment therefore the sum of:

## PROPOSAL

(REFER TO THE COST WORKSHEET AT THE END OF THIS SECTION FOR THE PROPOSAL FORM)

**Each proposer agrees to waive any claim it has or may have against the Owner, the Architect/Engineer, and their respective employees, arising out of or in connection with the administration, evaluation, or recommendation of any proposal.**

Each Proposal must be accompanied by a bid deposit in the form of a certified check, cashier's check or bid bond, executed by the proposer and Surety Company, payable to the Southeastern Oakland County Water Authority in the amount of Five Percent (5%) of the amount of the anticipated Contract amount of \$500,000. See Instructions to Proposers – Proposal Deposit for more information.

## TAXES

The Proposer affirms that all applicable Federal, State and Local taxes of whatever character and description are included in all prices stated in this Form of Proposal.

## ADDENDA

The Proposer acknowledges the following Addenda, covering revisions to the drawings or specifications and the cost, if any, of such revision has been included in the quoted proposal:

Addendum No. <u>1</u>	Dated <u>4/20/2020</u>
Addendum No. <u>2</u>	Dated <u>4/30/2020</u>
Addendum No. _____	Dated _____
Addendum No. _____	Dated _____

## FEES

The Bidder shall refer to the General Conditions for allowable Fees for additional work performed, upon Owner's written authorization, by Proposer's own forces and/or for additional work, upon Owner's written authorization, by Proposer's subcontractors.

### **TIME OF COMPLETION**

The Bidder hereby agrees to furnish the required Bonds, Insurance Certificates, and Policies within fifteen (15) days after acceptance of this Proposal.

If selected as a contractor for the SOCWA Water Service Line Replacement Program, we agree to have all work substantially completed within the negotiated schedules developed as projects are scoped. Substantial Completion is defined that the facilities are ready to use for their intended purpose with all utility systems fully functional.

Final Completion with all clean up and punch-list items shall be complete within 14 days of substantial completion.

### **LIQUIDATED DAMAGES**

Completion of the Work as scoped and provided to the selected contractors is critical for the Member Communities to meet State regulatory reporting requirements. As such, the Proposer guarantees that the work will be completed within the time limit developed and agreed to with the Member Community in which the contractor is working.

Inasmuch as the damage and loss to the Owner which will result from the failure of the Proposer to complete the work within the stipulated time, will be most difficult or impossible to accurately determine, it is mutually agreed that the damages to the Owner for such delay and failure on the part of the Proposer shall be liquidated in the amount of Five Hundred Dollars (\$500.00), for each and every calendar day by which the Proposer shall fail to complete the work or any part thereof within the provisions hereof, and such liquidated damages shall not be considered as a penalty.

The Owner will deduct and retain out of any money due or to become due hereunder the amount of the liquidated damages, and in case those amounts are less than the amount of actual liquidated damages, the Bidder shall pay the difference upon demand of the Owner.

**PROPOSALS TO REMAIN FIRM**

The price stated in this Proposal shall be guaranteed for a period of not less than one hundred and twenty (120) days from the bid due date and if authorized to proceed within that period, the bidder agrees to complete the work covered by the Proposal at said price.

If this Proposal is accepted by the Owner and the undersigned shall fail to contract as aforesaid and to furnish the required surety bonds within fifteen (15) days after being notified of the acceptance of their bid, then the undersigned shall be considered to have abandoned the contract, and the Certified Check, Cashier's Check or Bid Bond accompanying this Proposal shall be forfeited to the Southeastern Oakland County Water Authority.

If the undersigned enters into the contract in accordance with their proposal, or if their proposal is not accepted, then the accompanying bid guarantee shall be returned to the undersigned.

Company Name: D'Angelo Brothers, Inc.

Signature: \_\_\_\_\_ Title: Principal

Address: P.O. Box 531330, Livonia, MI 48155

County: Wayne State: Michigan

Telephone No.: (248) 515-1942 Fax No.: \_\_\_\_\_

Email Address: vince@dangelobrothers.com

### LEGAL STATUS OF BIDDER

This Bid is submittal in the name of:

(Print) D'Angelo Brothers Inc.

The undersigned hereby designates below the business address to which all notices, directions or other communications may be served or mailed:

Street P.O. Box 531330

City Livonia

State Michigan

Zip Code 48155

The undersigned hereby declares the legal status checked below:

☐ INDIVIDUAL

☐ INDIVIDUAL DOING BUSINESS UNDER AN ASSUMED NAME

☐ CO-PARTNERSHIP

The Assumed Name of the Co-Partnership is registered in the County of \_\_\_\_\_, Michigan

☐ CORPORATION INCORPORATED UNDER THE LAWS OF THE STATE OF \_\_\_\_\_

Michigan. The Corporation is

☐ LICENSED TO DO BUSINESS IN MICHIGAN

☐ NOT NOW LICENSED TO DO BUSINESS IN MICHIGAN

The name, titles, and home addresses of all persons who are officers or partners in the organization are as follows:

A corporation duly organized and doing business under the laws of the State of Michigan

NAME AND TITLE

HOME ADDRESS

Vincent D'Angelo

61151 Palomino Court

South Lyon, MI 48178

Signed and Sealed this \_\_\_\_\_

day of \_\_\_\_\_, 2020.

By (Signature)

Vincent D'Angelo

Printed Name of Signer

Principal

Title

**BID BOND**

We, the undersigned, \_\_\_\_\_

As Principal, hereinafter called the Principal, and \_\_\_\_\_

A corporation duly organized under the laws of the State of \_\_\_\_\_

As surety, hereinafter called the SURETY, are held and firmly bound unto:

The Owner: Southeastern Oakland County Water Authority

in the sum of Five hundred thousand dollars Dollars (\$500,000),

For the payment of which sum well and truly to be made, the said Principal and the said Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a bid for \_\_\_\_\_

NOW, THEREFORE, if the OWNER shall accept the bid of the Principal and the Principal shall enter into a contract with the OWNER in accordance with the terms of such bid, and give such bond or bonds as may be specified in the CONTRACT DOCUMENTS with good and sufficient surety for the faithful performance of such contract and for the prompt payment of labor and material furnished in the prosecution thereof, or in the event of the failure of the Principal to enter such contract and give such bond or bonds, if the Principal shall pay to the OWNER the difference not to exceed the penalty hereof between the amount specified in said bid and such larger amount for which the OWNER may in good faith contract with another party to perform the work covered by said bid, then the obligation of the Principal shall be null and void, otherwise to remain in full force and effect.

Signed and sealed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

(Witness)

(Principal)

(Seal)

(Title)

(Witness)

(Surety)

(Title)

**END OF SECTION**





# AIA Document A310™ – 2010

## Bid Bond

### CONTRACTOR:

(Name, legal status and address)

**D'Angelo Bros., Inc.**  
**21213 Equestrian Trail**  
**Northville, MI 48167**

### OWNER:

(Name, legal status and address)

**Southeastern Oakland County Water Authority**  
**3910 W. Webster Road**  
**Royal Oak, MI 48073**

**BOND AMOUNT: Five Percent (5%) of Amount Bid**

### SURETY:

(Name, legal status and principal place of business)

**Harco National Insurance Company**  
**702 Oberlin Rd**  
**Raleigh, NC 27605**

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

### PROJECT:

(Name, location or address, and Project number, if any)

**Water Service Line Replacement Program**

The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.

If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

Signed and sealed this **5th** day of **May, 2020**

(Witness)

(Witness)

**D'Angelo Bros., Inc.**

(Principal)

(Seal)

(Title)

**Harco National Insurance Company**

(Surety)

(Title)

**Susan L Small, Attorney-in-Fact**

Init.

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# POWER OF ATTORNEY

Bond # \_\_\_\_\_

## HARCO NATIONAL INSURANCE COMPANY INTERNATIONAL FIDELITY INSURANCE COMPANY

Member companies of IAT Insurance Group, Headquartered: 702 Oberlin Road, Raleigh, North Carolina 27605

**KNOW ALL MEN BY THESE PRESENTS:** That **HARCO NATIONAL INSURANCE COMPANY**, a corporation organized and existing under the laws of the State of Illinois, and **INTERNATIONAL FIDELITY INSURANCE COMPANY**, a corporation organized and existing under the laws of the State of New Jersey, and having their principal offices located respectively in the cities of Rolling Meadows, Illinois and Newark, New Jersey, do hereby constitute and appoint

T.L. YOUNG, KATHLEEN M. IRELAN, WENDY L. HINGSON, IAN J. DONALD, ROBERT TROBEC, ALAN P. CHANDLER, T.J. GRIFFIN, JEFFREY A. CHANDLER, TERENCE J. GRIFFIN, JOHN L. BUDDE, SUSAN L. SMALL, PATRICK E. WILLIAMS

Troy, MI

their true and lawful attorney(s)-in-fact to execute, seal and deliver for and on its behalf as surety, any and all bonds and undertakings, contracts of indemnity and other writings obligatory in the nature thereof, which are or may be allowed, required or permitted by law, statute, rule, regulation, contract or otherwise, and the execution of such instrument(s) in pursuance of these presents, shall be as binding upon the said **HARCO NATIONAL INSURANCE COMPANY** and **INTERNATIONAL FIDELITY INSURANCE COMPANY**, as fully and amply, to all intents and purposes, as if the same had been duly executed and acknowledged by their regularly elected officers at their principal offices.

This Power of Attorney is executed, and may be revoked, pursuant to and by authority of the By-Laws of **HARCO NATIONAL INSURANCE COMPANY** and **INTERNATIONAL FIDELITY INSURANCE COMPANY** and is granted under and by authority of the following resolution adopted by the Board of Directors of **INTERNATIONAL FIDELITY INSURANCE COMPANY** at a meeting duly held on the 13th day of December, 2018 and by the Board of Directors of **HARCO NATIONAL INSURANCE COMPANY** at a meeting held on the 13th day of December, 2018.

"RESOLVED, that (1) the Chief Executive Officer, President, Executive Vice President, Senior Vice President, Vice President, or Secretary of the Corporation shall have the power to appoint, and to revoke the appointments of, Attorneys-in-Fact or agents with power and authority as defined or limited in their respective powers of attorney, and to execute on behalf of the Corporation and affix the Corporation's seal thereto, bonds, undertakings, recognizances, contracts of indemnity and other written obligations in the nature thereof or related thereto; and (2) any such Officers of the Corporation may appoint and revoke the appointments of joint-control custodians, agents for acceptance of process, and Attorneys-in-fact with authority to execute waivers and consents on behalf of the Corporation; and (3) the signature of any such Officer of the Corporation and the Corporation's seal may be affixed by facsimile to any power of attorney or certification given for the execution of any bond, undertaking, recognizance, contract of indemnity or other written obligation in the nature thereof or related thereto, such signature and seals when so used whether heretofore or hereafter, being hereby adopted by the Corporation as the original signature of such officer and the original seal of the Corporation, to be valid and binding upon the Corporation with the same force and effect as though manually affixed."

IN WITNESS WHEREOF, **HARCO NATIONAL INSURANCE COMPANY** and **INTERNATIONAL FIDELITY INSURANCE COMPANY** have each executed and attested these presents on this 31st day of December, 2019



STATE OF NEW JERSEY  
County of Essex

Kenneth Chapman  
Executive Vice President, Harco National Insurance Company  
and International Fidelity Insurance Company

STATE OF ILLINOIS  
County of Cook



On this 31st day of December, 2019, before me came the individual who executed the preceding instrument, to me personally known, and, being by me duly sworn, said he is the therein described and authorized officer of **HARCO NATIONAL INSURANCE COMPANY** and **INTERNATIONAL FIDELITY INSURANCE COMPANY**; that the seals affixed to said instrument are the Corporate Seals of said Companies; that the said Corporate Seals and his signature were duly affixed by order of the Boards of Directors of said Companies.



IN TESTIMONY WHEREOF, I have hereunto set my hand affixed my Official Seal, at the City of Newark, New Jersey the day and year first above written.

Shirelle A. Outley a Notary Public of New Jersey  
My Commission Expires April 4, 2023

### CERTIFICATION

I, the undersigned officer of **HARCO NATIONAL INSURANCE COMPANY** and **INTERNATIONAL FIDELITY INSURANCE COMPANY** do hereby certify that I have compared the foregoing copy of the Power of Attorney and affidavit, and the copy of the Sections of the By-Laws of said Companies as set forth in said Power of Attorney, with the originals on file in the home office of said companies, and that the same are correct transcripts thereof, and of the whole of the said originals, and that the said Power of Attorney has not been revoked and is now in full force and effect.

IN TESTIMONY WHEREOF, I have hereunto set my hand on this day, 5/5/2020

A00502

  
Irene Martins, Assistant Secretary

**SOUTHEASTERN OAKLAND COUNTY WATER AUTHORITY  
WATER SERVICE LINE REPLACEMENT PROGRAM  
ITEMS OF WORK - COST WORKSHEET**

Line	Description	Unit of Measure	Base Price; Years 1-3 (Thru Dec 31, 2022)	
			Individual Unit	Grouped Unit
WATER SERVICE LINE REPLACEMENT PROGRAM - DIVISION I				
1	3/4 inch Type "K" Copper Private Water Service Line Replacement (Curb Stop to Meter), ≤ 40 feet	EA	\$2,580.00	\$2,580.00
2	3/4 inch Type "K" Copper Private Water Service Line Replacement (Curb Stop to Meter), > 40 feet	FT	\$25.00	\$25.00
3	1 inch Type "K" Copper Private Water Service Line Replacement (Curb Stop to Meter), ≤ 40 feet	EA	\$2,680.00	\$2,680.00
4	1 inch Type "K" Copper Private Water Service Line Replacement (Curb Stop to Meter), > 40 feet	FT	\$25.00	\$25.00
5	1 inch HDPE Private Water Service Line Replacement (Curb Stop to Meter), ≤ 40 feet	EA	\$2,380.00	\$2,380.00
6	1 inch HDPE Private Water Service Line Replacement (Curb Stop to Meter), > 40 feet	FT	\$23.00	\$23.00
7	1-1/2 inch Type "K" Copper Private Water Service Line Replacement (Curb Stop to Meter), ≤ 40 feet	EA	\$2,800.00	\$2,800.00
8	1-1/2 inch Type "K" Copper Private Water Service Line Replacement (Curb Stop to Meter), > 40 feet	FT	\$28.00	\$28.00
9	1-1/2 inch HDPE Private Water Service Line Replacement (Curb Stop to Meter), ≤ 40 feet	EA	\$2,700.00	\$2,700.00
10	1-1/2 inch HDPE Private Water Service Line Replacement (Curb Stop to Meter), > 40 feet	FT	\$26.00	\$26.00
11	2 inch Type "K" Copper Private Water Service Line Replacement (Curb Stop to Meter), ≤ 40 feet	EA	\$3,380.00	\$3,380.00
12	2 inch Type "K" Copper Private Water Service Line Replacement (Curb Stop to Meter), > 40 feet	FT	\$34.00	\$34.00
13	2 inch HDPE Private Water Service Line Replacement (Curb Stop to Meter), ≤ 40 feet	EA	\$3,200.00	\$3,200.00
14	2 inch HDPE Private Water Service Line Replacement (Curb Stop to Meter), > 40 feet	FT	\$31.00	\$31.00
15	Private Water Service Line Connection to Premise/Building Plumbing	EA	\$485.00	\$485.00
16	3/4 inch Type "K" Copper Public Water Service Line Replacement and Connection, Short Run ≤ 30 feet	EA	\$1,800.00	\$1,800.00
17	3/4 inch Type "K" Copper Public Water Service Line Replacement and Connection, Long Run > 30 feet to 60 feet	EA	\$2,680.00	\$2,680.00
18	3/4 inch Type "K" Copper Public Water Service Line Replacement > 60 feet	FT	\$25.00	\$25.00
19	1 inch Type "K" Copper Public Water Service Line Replacement and Connection, Short Run ≤ 30 feet	EA	\$1,900.00	\$1,900.00
20	1 inch Type "K" Copper Public Water Service Line Replacement and Connection, Long Run > 30 feet to 60 feet	EA	\$2,700.00	\$2,700.00
21	1 inch Type "K" Copper Public Water Service Line Replacement > 60 feet	FT	\$25.00	\$25.00
22	1 inch HDPE Public Water Service Line Replacement and Connection, Short Run ≤ 30 feet	EA	\$1,780.00	\$1,780.00
23	1 inch HDPE Public Water Service Line Replacement and Connection, Long Run > 30 feet to 60 feet	EA	\$2,650.00	\$2,650.00
24	1 inch HDPE Public Water Service Line Replacement > 60 feet	FT	\$23.00	\$23.00
25	1-1/2 inch Type "K" Copper Public Water Service Line Replacement and Connection, Short Run ≤ 30 feet	EA	\$2,000.00	\$2,000.00
26	1-1/2 inch Type "K" Copper Public Water Service Line Replacement and Connection, Long Run > 30 feet to 60 feet	EA	\$2,500.00	\$2,500.00
27	1-1/2 inch Type "K" Copper Public Water Service Line Replacement > 60 feet	FT	\$28.00	\$28.00
28	1-1/2 inch HDPE Public Water Service Line Replacement and Connection, Short Run ≤ 30 feet	EA	\$1,580.00	\$1,580.00
29	1-1/2 inch HDPE Public Water Service Line Replacement and Connection, Long Run > 30 feet to 60 feet	EA	\$2,400.00	\$2,400.00
30	1-1/2 inch HDPE Public Water Service Line Replacement > 60 feet	FT	\$26.00	\$26.00
31	2 inch Type "K" Copper Public Water Service Line Replacement and Connection, Short Run, ≤ 30 feet	EA	\$2,380.00	\$2,380.00
32	2 inch Type "K" Copper Public Water Service Line Replacement and Connection, Long Run > 30 feet to 60 feet	EA	\$2,780.00	\$2,780.00

SOUTHEASTERN OAKLAND COUNTY WATER AUTHORITY WATER SERVICE LINE REPLACEMENT PROGRAM ITEMS OF WORK - COST WORKSHEET					
Line	Description	Unit of Measure	Base Price; Years 1-3 (Thru Dec 31, 2022)		
			Individual Unit	Grouped Unit	
33	2 inch Type "K" Copper Public Water Service Line Replacement > 60 feet	FT	\$34.00		\$34.00
34	2 inch HDPE Public Water Service Line Replacement and Connection, Short Run, ≤ 30 feet	EA	\$2,200.00		\$2,200.00
35	2 inch HDPE Public Water Service Line Replacement and Connection, Long Run > 30 feet to 60 feet	EA	\$2,500.00		\$2,500.00
36	2 inch HDPE Public Water Service Line Replacement > 60 feet	FT	\$31.00		\$31.00
37	3/4 inch Brass Corp AWWA/CC Taper Thread inlet by CTS or Flare Copper outlet (Material Only)	EA	\$185.00		\$185.00
38	1 inch Brass Corp AWWA/CC Taper Thread inlet by CTS or Flare Copper outlet (Material Only)	EA	\$200.00		\$200.00
39	1-1/2 inch Brass Corp AWWA/CC Taper Thread inlet by CTS or Flare Copper outlet (Material Only)	EA	\$285.00		\$285.00
40	2 inch Brass Corp AWWA/CC Taper Thread inlet by CTS or Flare Copper outlet (Material Only)	EA	\$400.00		\$400.00
41	6 inch x 3/4 inch Brass Service Saddle (Material Only)	EA	\$175.00		\$175.00
42	6 inch x 1 inch Brass Service Saddle (Material Only)	EA	\$175.00		\$175.00
43	6 inch x 1-1/2 inch Brass Service Saddle (Material Only)	EA	\$175.00		\$175.00
44	6 inch x 2 inch Brass Service Saddle (Material Only)	EA	\$175.00		\$175.00
45	8 inch x 3/4 inch Brass Service Saddle (Material Only)	EA	\$175.00		\$175.00
46	8 inch x 1 inch Brass Service Saddle (Material Only)	EA	\$175.00		\$175.00
47	8 inch x 1-1/2 inch Brass Service Saddle (Material Only)	EA	\$175.00		\$175.00
48	8 inch x 2 inch Brass Service Saddle (Material Only)	EA	\$175.00		\$175.00
49	12 inch x 3/4 inch Brass Service Saddle (Material Only)	EA	\$250.00		\$250.00
50	12 inch x 1 inch Brass Service Saddle (Material Only)	EA	\$250.00		\$250.00
51	12 inch x 1-1/2 inch Brass Service Saddle (Material Only)	EA	\$250.00		\$250.00
52	12 inch x 2 inch Brass Service Saddle (Material Only)	EA	\$250.00		\$250.00
53	16 inch x 3/4 inch Brass Service Saddle (Material Only)	EA	\$500.00		\$500.00
54	16 inch x 1 inch Brass Service Saddle (Material Only)	EA	\$500.00		\$500.00
55	16 inch x 1-1/2 inch Brass Service Saddle (Material Only)	EA	\$550.00		\$550.00
56	16 inch x 2 inch Brass Service Saddle (Material Only)	EA	\$550.00		\$550.00
57	Abandon & Plug Existing Corp	EA	\$185.00		\$185.00
58	Remove Existing Corp and Install Repair Sleeve	EA	\$888.00		\$888.00
59	Water Main Taps Greater than 7 feet to the Top of Pipe	VFT	\$285.00		\$285.00
60	Dig Through Frost (per tap) When Additional Equipment is Necessary.	EA	\$250.00		\$250.00
61	Plumbing Permit (ALLOWANCE)	EA	\$100.00		\$100.00
62	Miscellaneous Permits (ALLOWANCE)	EA	\$500.00		\$100.00
63	Bonds & Insurances (ALLOWANCE)	LSUM	\$10,000.00		\$10,000.00
64	Distribute and Collect Access Agreements	EA	\$160.00		\$160.00
65	Initial Introduction Meeting Attendance & Work Plan	EA	\$160.00		\$160.00
66	Scheduling Service Line Replacement Work with Business/Residence	EA	\$160.00		\$160.00
67	Building/Premise Plumbing Flush	EA	\$225.00		\$225.00

SOUTHEASTERN OAKLAND COUNTY WATER AUTHORITY WATER SERVICE LINE REPLACEMENT PROGRAM ITEMS OF WORK - COST WORKSHEET				
Line	Description	Unit of Measure	Base Price; Years 1-3 (Thru Dec 31, 2022)	
			Individual Unit	Grouped Unit
SERVICE LINE VERIFICATION PROGRAM - DIVISION II				
68	Service Line Material Verification, Curb Stop	EA		
69	Service Line Material Verification, Interior Penetration	EA		
70	Service Line Material Verification, Water Main	EA		
AS NEEDED MATERIALS AND SURFACE RESTORATION ITEMS (APPLICABLE TO DIVISION I & DIVISION II)				
71	3/4 inch Brass Curb Stop CTS or Flare Copper/CTS or Flare Copper	EA	\$155.00	\$155.00
72	1 inch Brass Curb Stop CTS or Flare Copper/CTS or Flare Copper	EA	\$155.00	\$155.00
73	1-1/2 inch Brass Curb Stop CTS or Flare Copper/CTS or Flare Copper	EA	\$455.00	\$455.00
74	2 inch Brass Curb Stop CTS or Flare Copper/CTS or Flare Copper	EA	\$555.00	\$555.00
75	6' Curb Valve Box (including Stainless Steel Rod)	EA	\$160.00	\$160.00
76	Pavt Rem, Concrete Roadway, Special	SYD	\$15.00	\$15.00
77	HMA Surface, Rem, Special	SYD	\$12.00	\$12.00
78	Driveway and Sidewalk, Rem	SYD	\$12.00	\$12.00
79	Turf Grass Repair - Rough and Finish Grade, apply 3" Topsoil and Sod	SYD	\$11.00	\$11.00
80	Turf Grass Repair - Rough and Finish Grade, apply 3" Topsoil, Seed and Mulch Blanket	SYD	\$9.00	\$9.00
81	Turf Grass Repair - Rough and Finish Grade, apply 3" Topsoil and Hydroseed	SYD	\$10.00	\$10.00
82	Hardwood Mulch, 4 inch	SYD	\$10.00	\$10.00
83	Irrigation System Repair	EA	\$58.00	\$58.00
84	Maintenance Aggregate, 21AA	TON	\$28.00	\$28.00
85	Temporary Cold Patch	TON	\$200.00	\$200.00
86	HMA, 13A or approved equal (min 25 ton)	TON	\$305.00	\$305.00
87	Non Reinforced Concrete Roadway, MDOT P1 (min 10 cubic yards, aggregate)	CYD	\$305.00	\$305.00
88	Non Reinforced Concrete Driveways and Sidewalks, MDOT P1 (min 10 cubic yards, aggregate)	CYD	\$305.00	\$305.00
89	Concrete curb and gutter, MDOT P1 (min 10 cubic yards, aggregate)	LFT	\$49.00	\$49.00

Note:

- Contractor must provide a price for each line item and each unit (both individual and grouped) in the Cost Worksheet within Division I or Division II or both in order to be considered for award. Each line item and each unit within the "As Needed Materials and Surface Restoration" section must be filled out regardless of Division being pursued to be considered for award.
- Contractors will be selected to perform work per Division not per line item. Prices within the "As Needed Materials and Surface Restoration" section will only be utilized for contracting purposes if the contractor is awarded work within one or more Divisions.
- All brass products supplied under this Contract shall be no-lead brass products meeting the requirements of UNS Copper Alloy C89836 per ASTM B584-05 and Copper Alloy CDA No. C89833, alloy shall contain no more than 0.25% total lead content by weight.



PROPOSAL  
FOR  
WATER SERVICE LINE REPLACEMENT PROGRAM  
SOUTHEASTERN OAKLAND COUNTY WATER AUTHORITY  
OAKLAND COUNTY, MICHIGAN

Southeastern Oakland County Water Authority (OWNER)  
3910 W. Webster Road  
Royal Oak, MI 48073

Proposals Due: Tuesday, May 5, 2020  
On or Before 10:00 am, Local Time  
HRC Job No. 20191046

To Prospective Proposers:

Name of Proposer:

Danilo Brothers Inc.

Address:

P.O. Box 531330 Livonia MI 48155

Date:

5-5-2020

Telephone:

(248) 515-1942

Fax:

-

The above, as Proposer, hereby declares this bid is made in good faith without fraud or collusion with any persons bidding, and that the Specifications and all other information referenced in the Instructions to Proposers have been examined. Further, the Proposer is familiar with the location of the work described herein and is fully informed as to the nature of the work and the conditions relating to the performance of the Contract.

The Proposer acknowledges that no representations or warranties of any nature whatsoever have been received or are relied upon from the Southeastern Oakland County Water Authority (SOCWA) its agents or employees, as to any conditions to be encountered in accomplishing the work and that the proposal is based solely upon the Proposer's own independent judgment.

The above, as Proposer, hereby certifies that the Specifications and other data provided by the Owner for proposal purposes have been examined. Further, the undersigned certifies that the proposed construction methods have been reviewed and found acceptable for the conditions, which can be anticipated from the information provided for proposing.

The Proposer hereby affirms that the site of work has been inspected and further declares that no charges in addition to the Individual Unit Prices in the Cost Worksheet shall be made on account of any job circumstances or field conditions which were present and/or ascertainable prior to proposal submission. In addition, the Contractor, as such and as Proposer, shall make the determination as to existing soil conditions and shall also complete the work under whatever conditions created by the Contractor/Proposer's sequence of construction, construction methods, or other conditions the Contractor/Proposer may create, at no additional cost to the Owner.

The above, as Proposer, confirms knowledge of the location of the proposed Water Service Line Replacement Program and appurtenant construction for SOCWA in the member communities in the State of Michigan including; the City of Berkley, Village of Beverly Hills, Village of Bingham Farms, City of Birmingham, City of Clawson, City of Lathrup Village, City of Pleasant Ridge, City of Royal Oak, City of Southfield and Southfield Township with the addition of the City of Ferndale, and the conditions under which it must be



constructed. In addition, the Proposer agrees to perform Work in any and all of the abovementioned member communities without prejudice.

The Proposer also declares to have carefully examined the Specifications, Request for Proposal documents and other Contract Documents which the Proposer understands and accepts as sufficient for the purpose of said As-Needed Service Line Replacement Program, and appurtenant work, and agrees to contract with the Southeastern Oakland County Water Authority to furnish all labor, materials, tools, equipment, facilities and supervision necessary to do all the work specified and prescribed for the Southeastern Oakland County Water Authority, in strict accordance with the Owner's General Conditions, and with the full intent of the Specifications, prepared by Hubbell, Roth & Clark, Consulting Engineers, and will accept in full payment therefore the sum of:

### PROPOSAL

(REFER TO THE COST WORKSHEET AT THE END OF THIS SECTION FOR THE PROPOSAL FORM)

Each proposer agrees to waive any claim it has or may have against the Owner, the Architect/Engineer, and their respective employees, arising out of or in connection with the administration, evaluation, or recommendation of any proposal.

Each Proposal must be accompanied by a bid deposit in the form of a certified check, cashier's check or bid bond, executed by the proposer and Surety Company, payable to the Southeastern Oakland County Water Authority in the amount of Five Percent (5%) of the amount of the anticipated Contract amount of \$500,000. See Instructions to Proposers – Proposal Deposit for more information.

### TAXES

The Proposer affirms that all applicable Federal, State and Local taxes of whatever character and description are included in all prices stated in this Form of Proposal.

### ADDENDA

The Proposer acknowledges the following Addenda, covering revisions to the drawings or specifications and the cost, if any, of such revision has been included in the quoted proposal:

Addendum No. <u>#1</u>	<u>4-20-20</u>	Dated <u>4-20-20</u>	<u>[Signature]</u>
Addendum No. <u>#2</u>		Dated <u>4-30-20</u>	<u>[Signature]</u>
Addendum No. _____		Dated _____	
Addendum No. _____		Dated _____	

### FEES

The Bidder shall refer to the General Conditions for allowable Fees for additional work performed, upon Owner's written authorization, by Proposer's own forces and/or for additional work, upon Owner's written authorization, by Proposer's subcontractors.

### **TIME OF COMPLETION**

The Bidder hereby agrees to furnish the required Bonds, Insurance Certificates, and Policies within fifteen (15) days after acceptance of this Proposal.

If selected as a contractor for the SOCWA Water Service Line Replacement Program, we agree to have all work substantially completed within the negotiated schedules developed as projects are scoped. Substantial Completion is defined that the facilities are ready to use for their intended purpose with all utility systems fully functional.

Final Completion with all clean up and punch-list items shall be complete within 14 days of substantial completion.

### **LIQUIDATED DAMAGES**

Completion of the Work as scoped and provided to the selected contractors is critical for the Member Communities to meet State regulatory reporting requirements. As such, the Proposer guarantees that the work will be completed within the time limit developed and agreed to with the Member Community in which the contractor is working.

Inasmuch as the damage and loss to the Owner which will result from the failure of the Proposer to complete the work within the stipulated time, will be most difficult or impossible to accurately determine, it is mutually agreed that the damages to the Owner for such delay and failure on the part of the Proposer shall be liquidated in the amount of Five Hundred Dollars (\$500.00), for each and every calendar day by which the Proposer shall fail to complete the work or any part thereof within the provisions hereof, and such liquidated damages shall not be considered as a penalty.

The Owner will deduct and retain out of any money due or to become due hereunder the amount of the liquidated damages, and in case those amounts are less than the amount of actual liquidated damages, the Bidder shall pay the difference upon demand of the Owner.



**PROPOSALS TO REMAIN FIRM**

The price stated in this Proposal shall be guaranteed for a period of not less than one hundred and twenty (120) days from the bid due date and if authorized to proceed within that period, the bidder agrees to complete the work covered by the Proposal at said price.

If this Proposal is accepted by the Owner and the undersigned shall fail to contract as aforesaid and to furnish the required surety bonds within fifteen (15) days after being notified of the acceptance of their bid, then the undersigned shall be considered to have abandoned the contract, and the Certified Check, Cashier's Check or Bid Bond accompanying this Proposal shall be forfeited to the Southeastern Oakland County Water Authority.

If the undersigned enters into the contract in accordance with their proposal, or if their proposal is not accepted, then the accompanying bid guarantee shall be returned to the undersigned.

Company Name: D'ANGELO BROTHERS INC.

Signature: CELESTE VENIENI D'ANGELO Title: PRINCIPAL

Address: PO Box 531330 LITONIA MI

County: WAYNE

State: MI

Telephone No.: (248) 515-1942

Fax No.: -

Email Address: VENIENI@D'ANGELO-BROTHERS.COM



LEGAL STATUS OF BIDDER

This Bid is submittal in the name of:

(Print) D'ANGELO BROTHERS INC.

The undersigned hereby designates below the business address to which all notices, directions or other communications may be served or mailed:

Street PO Box 931330

City LIVONIA

State MI

Zip Code 48193

The undersigned hereby declares the legal status checked below:

☐ INDIVIDUAL

☐ INDIVIDUAL DOING BUSINESS UNDER AN ASSUMED NAME

☐ CO-PARTNERSHIP

The Assumed Name of the Co-Partnership is registered in the County of \_\_\_\_\_, Michigan

☒ CORPORATION INCORPORATED UNDER THE LAWS OF THE STATE OF \_\_\_\_\_  
MICHIGAN The Corporation is

☒ LICENSED TO DO BUSINESS IN MICHIGAN

☐ NOT NOW LICENSED TO DO BUSINESS IN MICHIGAN

The name, titles, and home addresses of all persons who are officers or partners in the organization are as follows:

A corporation duly organized and doing business under the laws of the State of MICHIGAN

NAME AND TITLE

VINCENT D'ANGELO

HOME ADDRESS

61151 PALOMERO CT

SOUTH LYON MI, 48178

Signed and Sealed this 5TH

day of MAY, 2020

By (Signature)

VINCENT D'ANGELO  
Printed Name of Signer

PRINCIPAL  
Title

BID BOND

See Attached

We, the undersigned, \_\_\_\_\_

As Principal, hereinafter called the Principal, and \_\_\_\_\_

A corporation duly organized under the laws of the State of \_\_\_\_\_

As surety, hereinafter called the SURETY, are held and firmly bound unto:

The Owner: Southeastern Oakland County Water Authority

in the sum of Five hundred thousand dollars Dollars (\$500,000),

For the payment of which sum well and truly to be made, the said Principal and the said Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a bid for \_\_\_\_\_

NOW, THEREFORE, if the OWNER shall accept the bid of the Principal and the Principal shall enter into a contract with the OWNER in accordance with the terms of such bid, and give such bond or bonds as may be specified in the CONTRACT DOCUMENTS with good and sufficient surety for the faithful performance of such contract and for the prompt payment of labor and material furnished in the prosecution thereof, or in the event of the failure of the Principal to enter such contract and give such bond or bonds, if the Principal shall pay to the OWNER the difference not to exceed the penalty hereof between the amount specified in said bid and such larger amount for which the OWNER may in good faith contract with another party to perform the work covered by said bid, then the obligation of the Principal shall be null and void, otherwise to remain in full force and effect.

Signed and sealed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

(Witness)

(Principal)

(Seal)

(Title)

(Witness)

(Surety)

(Title)

END OF SECTION



**SOUTHEASTERN OAKLAND COUNTY WATER AUTHORITY  
WATER SERVICE LINE REPLACEMENT PROGRAM  
ITEMS OF WORK - COST WORKSHEET**

Line	Description	Unit of Measure	Base Price; Years 1-3 (Thru Dec 31, 2022)	
			Individual Unit	Grouped Unit
WATER SERVICE LINE REPLACEMENT PROGRAM - DIVISION I				
1	3/4 inch Type "K" Copper Private Water Service Line Replacement (Curb Stop to Meter), ≤ 40 feet	EA	2,580	2,580
2	3/4 inch Type "K" Copper Private Water Service Line Replacement (Curb Stop to Meter), > 40 feet	FT	25	25
3	1 inch Type "K" Copper Private Water Service Line Replacement (Curb Stop to Meter), ≤ 40 feet	EA	2,480	2,480
4	1 inch Type "K" Copper Private Water Service Line Replacement (Curb Stop to Meter), > 40 feet	FT	25	25
5	1 inch HDPE Private Water Service Line Replacement (Curb Stop to Meter), ≤ 40 feet	EA	2,380	2,380
6	1 inch HDPE Private Water Service Line Replacement (Curb Stop to Meter), > 40 feet	FT	23	23
7	1-1/2 inch Type "K" Copper Private Water Service Line Replacement (Curb Stop to Meter), ≤ 40 feet	EA	2,800	2,800
8	1-1/2 inch Type "K" Copper Private Water Service Line Replacement (Curb Stop to Meter), > 40 feet	FT	28	28
9	1-1/2 inch HDPE Private Water Service Line Replacement (Curb Stop to Meter), ≤ 40 feet	EA	2,700	2,700
10	1-1/2 inch HDPE Private Water Service Line Replacement (Curb Stop to Meter), > 40 feet	FT	26	26
11	2 inch Type "K" Copper Private Water Service Line Replacement (Curb Stop to Meter), ≤ 40 feet	EA	3,380	3,380
12	2 inch Type "K" Copper Private Water Service Line Replacement (Curb Stop to Meter), > 40 feet	FT	34	34
13	2 inch HDPE Private Water Service Line Replacement (Curb Stop to Meter), ≤ 40 feet	EA	3,200	3,200
14	2 inch HDPE Private Water Service Line Replacement (Curb Stop to Meter), > 40 feet	FT	31	31
15	Private Water Service Line Connection to Premise/Building Plumbing	EA	485	485
16	3/4 inch Type "K" Copper Public Water Service Line Replacement and Connection, Short Run ≤ 30 feet	EA	1,800	1,800
17	3/4 inch Type "K" Copper Public Water Service Line Replacement and Connection, Long Run > 30 feet to 60 feet	EA	2,680	2,680
18	3/4 inch Type "K" Copper Public Water Service Line Replacement > 60 feet	FT	25	25
19	1 inch Type "K" Copper Public Water Service Line Replacement and Connection, Short Run ≤ 30 feet	EA	1,900	1,900
20	1 inch Type "K" Copper Public Water Service Line Replacement and Connection, Long Run > 30 feet to 60 feet	EA	2,700	2,700
21	1 inch Type "K" Copper Public Water Service Line Replacement > 60 feet	FT	25	25
22	1 inch HDPE Public Water Service Line Replacement and Connection, Short Run ≤ 30 feet	EA	1,780	1,780
23	1 inch HDPE Public Water Service Line Replacement and Connection, Long Run > 30 feet to 60 feet	EA	2,650	2,650
24	1 inch HDPE Public Water Service Line Replacement > 60 feet	FT	23	23
25	1-1/2 inch Type "K" Copper Public Water Service Line Replacement and Connection, Short Run ≤ 30 feet	EA	2,000	2,000
26	1-1/2 inch Type "K" Copper Public Water Service Line Replacement and Connection, Long Run > 30 feet to 60 feet	EA	2,500	2,500
27	1-1/2 inch Type "K" Copper Public Water Service Line Replacement > 60 feet	FT	28	28
28	1-1/2 inch HDPE Public Water Service Line Replacement and Connection, Short Run ≤ 30 feet	EA	1,580	1,580
29	1-1/2 inch HDPE Public Water Service Line Replacement and Connection, Long Run > 30 feet to 60 feet	EA	2,400	2,400
30	1-1/2 inch HDPE Public Water Service Line Replacement > 60 feet	FT	26	26
31	2 inch Type "K" Copper Public Water Service Line Replacement and Connection, Short Run, ≤ 30 feet	EA	2,380	2,380
32	2 inch Type "K" Copper Public Water Service Line Replacement and Connection, Long Run > 30 feet to 60 feet	EA	2,780	2,780



**SOUTHEASTERN OAKLAND COUNTY WATER AUTHORITY  
WATER SERVICE LINE REPLACEMENT PROGRAM  
ITEMS OF WORK - COST WORKSHEET**

Line	Description	Unit of Measure	Base Price, Years 1-3 (Thru Dec 31, 2022)	
			Individual Unit	Grouped Unit
33	2 Inch Type "K" Copper Public Water Service Line Replacement > 60 feet	FT	34	34
34	2 Inch HDPE Public Water Service Line Replacement and Connection, Short Run, ≤ 30 feet	EA	2,200	2,200
35	2 Inch HDPE Public Water Service Line Replacement and Connection, Long Run > 30 feet to 60 feet	EA	2,500	2,500
36	2 Inch HDPE Public Water Service Line Replacement > 60 feet	FT	31	31
37	3/4 inch Brass Corp AWWA/CC Taper Thread inlet by CTS or Flare Copper outlet (Material Only)	EA	185	185
38	1 inch Brass Corp AWWA/CC Taper Thread inlet by CTS or Flare Copper outlet (Material Only)	EA	200	200
39	1-1/2 inch Brass Corp AWWA/CC Taper Thread inlet by CTS or Flare Copper outlet (Material Only)	EA	235	235
40	2 inch Brass Corp AWWA/CC Taper Thread inlet by CTS or Flare Copper outlet (Material Only)	EA	400	400
41	6 inch x 3/4 inch Brass Service Saddle (Material Only)	EA	175	175
42	6 inch x 1 inch Brass Service Saddle (Material Only)	EA	175	175
43	6 inch x 1-1/2 inch Brass Service Saddle (Material Only)	EA	175	175
44	6 inch x 2 inch Brass Service Saddle (Material Only)	EA	175	175
45	8 inch x 3/4 inch Brass Service Saddle (Material Only)	EA	175	175
46	8 inch x 1 inch Brass Service Saddle (Material Only)	EA	175	175
47	8 inch x 1-1/2 inch Brass Service Saddle (Material Only)	EA	175	175
48	8 inch x 2 inch Brass Service Saddle (Material Only)	EA	175	175
49	12 inch x 3/4 inch Brass Service Saddle (Material Only)	EA	250	250
50	12 inch x 1 inch Brass Service Saddle (Material Only)	EA	250	250
51	12 inch x 1-1/2 inch Brass Service Saddle (Material Only)	EA	250	250
52	12 inch x 2 inch Brass Service Saddle (Material Only)	EA	250	250
53	16 inch x 3/4 inch Brass Service Saddle (Material Only)	EA	500	500
54	16 inch x 1 inch Brass Service Saddle (Material Only)	EA	500	500
55	16 inch x 1-1/2 inch Brass Service Saddle (Material Only)	EA	550	550
56	16 inch x 2 inch Brass Service Saddle (Material Only)	EA	550	550
57	Abandon & Plug Existing Corp	EA	185	185
58	Remove Existing Corp and Install Repair Sleeve	EA	888	888
59	Water Main Taps Greater than 7 feet to the Top of Pipe	VFT	285	285
60	Dig Through Frost (per tap) When Additional Equipment is Necessary.	EA	290	290
61	Plumbing Permit (ALLOWANCE)	EA	\$100.00	\$100.00
62	Miscellaneous Permits (ALLOWANCE)	EA	\$500.00	\$100.00
63	Bonds & Insurances (ALLOWANCE)	LSUM	\$10,000.00	\$10,000.00
64	Distribute and Collect Access Agreements	EA	100	100
65	Initial Introduction Meeting Attendance & Work Plan	EA	100	100
66	Scheduling Service Line Replacement Work with Business/Residence	EA	100	100
67	Building/Premise Plumbing Flush	EA	225	225



**SOUTHEASTERN OAKLAND COUNTY WATER AUTHORITY  
WATER SERVICE LINE REPLACEMENT PROGRAM  
ITEMS OF WORK - COST WORKSHEET**

Line	Description	Unit of Measure	Base Price; Years 1-3 (Thru Dec 31, 2022)	
			Individual Unit	Grouped Unit
SERVICE LINE VERIFICATION PROGRAM - DIVISION II				
68	Service Line Material Verification, Curb Stop	EA	850	800
69	Service Line Material Verification, Interior Penetration	EA	750	700
70	Service Line Material Verification, Water Main	EA	850	850
AS NEEDED MATERIALS AND SURFACE RESTORATION ITEMS (APPLICABLE TO DIVISION I & DIVISION II)				
71	3/4 inch Brass Curb Stop CTS or Flare Copper/CTS or Flare Copper	EA	155	155
72	1 inch Brass Curb Stop CTS or Flare Copper/CTS or Flare Copper	EA	155	155
73	1-1/2 inch Brass Curb Stop CTS or Flare Copper/CTS or Flare Copper	EA	455	455
74	2 inch Brass Curb Stop CTS or Flare Copper/CTS or Flare Copper	EA	555	555
75	6' Curb Valve Box (including Stainless Steel Rod)	EA	160	160
76	Pavt Rem, Concrete Roadway, Special	SYD	15	15
77	HMA Surface, Rem, Special	SYD	12	12
78	Driveway and Sidewalk, Rem	SYD	12	12
79	Turf Grass Repair - Rough and Finish Grade, apply 3" Topsoil and Sod	SYD	11	11
80	Turf Grass Repair - Rough and Finish Grade, apply 3" Topsoil, Seed and Mulch Blanket	SYD	9	9
81	Turf Grass Repair - Rough and Finish Grade, apply 3" Topsoil and Hydroseed	SYD	10	10
82	Hardwood Mulch, 4 inch	SYD	10	10
83	Irrigation System Repair	EA	50	50
84	Maintenance Aggregate, 21AA	TON	20	20
85	Temporary Cold Patch	TON	200	200
86	HMA, 13A or approved equal (min 25 ton)	TON	305	305
87	Non Reinforced Concrete Roadway, MDOT P1 (min 10 cubic yards, aggregate)	CYD	305	305
88	Non Reinforced Concrete Driveways and Sidewalks, MDOT P1 (min 10 cubic yards, aggregate)	CYD	305	305
89	Concrete curb and gutter, MDOT P1 (min 10 cubic yards, aggregate)	LFT	49	49

**Note:**

- Contractor must provide a price for each line item and each unit (both individual and grouped) in the Cost Worksheet within Division I or Division II or both in order to be considered for award. Each line item and each unit within the "As Needed Materials and Surface Restoration" section must be filled out regardless of Division being pursued to be considered for award.
- Contractors will be selected to perform work per Division not per line item. Prices within the "As Needed Materials and Surface Restoration" section will only be utilized for contracting purposes if the contractor is awarded work within one or more Divisions.
- All brass products supplied under this Contract shall be no-lead brass products meeting the requirements of UNS Copper Alloy C89836 per ASTM B584-05 and Copper Alloy CDA No. C89833, alloy shall contain no more than 0.25% total lead content by weight.



CONTRACT

ARTICLES OF AGREEMENT, Made and entered into this 31st  
day of DECEMBER, 2019, by and between

Southeastern Oakland County Water Authority ( A Michigan Municipal Corporation),  
3910 W. Webster Road, Royal Oak , MI 48073

Party of the first part, hereinafter called the Owner, and  
D'Angelo Brothers, Inc.  
P.O. Box 531330

in the City of Livonia, County of Wayne  
and State of Michigan, Party of the second part, hereinafter called the Contractor, to wit:

Item 1) That all proposals, specifications, plans, bonds, etc., hereto attached or herein referred to, shall be and are made a part of this agreement and contract.

Item 2) That the Contractor, under penalty of bond attached, shall furnish all labor, materials, and appliances necessary, and do all the work as set forth in the proposal.

Water Service Line Replacement Program  
HRC Job No. 20191046

according to the specifications, plans, etc., which have been made a part of this contract in a manner, time, and place, all and singular, as herein set forth.

IN CONSIDERATION WHEREOF, said Party of the First Part, for it and its successors, promises and agrees to pay to said Party of the Second Part, sums based on the agreed upon Work detailed in subsequent agreements with individual Member Communities of the Southeastern Oakland County Water Authority and in accordance with the unit prices as provided in the attached cost worksheet, all in the time and manner indicated in the specifications.

For the faithful performance of all and singular of the stipulations, terms and conditions of this Agreement, said parties respectfully bind themselves, their successors, heirs, executors, administrators and assigns.

IN WITNESS WHEREOF, Said Parties have signed this Contract, in duplicate, on the date first above written.

WITNESS:



**Southeastern Oakland County Water Authority**  
(A Michigan Municipal Corporation)

Party of the First Part

By: 




WITNESS:



**D'Angelo Brothers, Inc.**  
(A Michigan Corporation)

Party of the Second Part

By: 



PERFORMANCE BOND  
Bond No. 0774581

KNOW ALL MEN BY THESE PRESENTS, That we, the undersigned \_\_\_\_\_

D'Angelo Brothers, Inc.

P.O. Box 531330

Livonia, Michigan 48155 as Principal,

and Harco National Insurance Company

702 Oberlin Rd, Raleigh, NC 27605

of Raleigh, NC as Sureties,

are hereby held and firmly bound unto the "Owner"

Southeastern Oakland County Water Authority

3910 W. Webster Road

Royal Oak, MI 48073

in the full and just sum of Five Hundred Thousand Dollars

(\$500,000) for the payment of which well and truly to be made, we hereby jointly and severally

bind ourselves, our heirs, executors, administrators, successors and assigns.

Signed and sealed this 31st day of December 2019.

The condition of the above obligation is such that if said D'Angelo Bros., Inc.

shall well and faithfully do and perform the things agreed by Owner  
to be done and performed by the annexed contract, according to the terms thereof, then this obligation shall be  
void; otherwise, the same shall remain in full force and effect.



It is mutually understood and agreed that in cases where changes are required, either by order of the Engineer, or Owner, or by mutual agreement, such changes or changes shall not modify, discharge or release this bond.

D'Angelo Brothers, Inc.  
(A Michigan Corporation)


 (Seal)



(Seal)

Principal

Harco National Insurance Company



 (Seal)

Susan L. Small

Attorney-in-Fact (Seal)

Surety

Signed, Sealed and Delivered  
in the Presence of:

LABOR AND MATERIAL BOND  
Bond No. 0774581

KNOW ALL MEN BY THESE PRESENTS, That we \_\_\_\_\_

D'Angelo Brothers, Inc.

P.O. Box 531330

of Livonia, Michigan hereinafter called the Principal,

and Harco National Insurance Company

702 Oberlin Rd, Raleigh, NC 27605

hereinafter called the Surety, are held and firmly bound unto Southeastern Oakland County Water Authority, 3910 W. Webster Road, Royal Oak, MI 48073

in the sum of \_\_\_\_\_

Five Hundred Thousand and 00/100

Dollars (\$ 500,000.00)

to the payment whereof, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

Sealed with our seals and dated this 31st day of December, A.D., 2019.

WHEREAS, The above named Principal has entered into a contract with the Southeastern Oakland County Water Authority, 3910 W. Webster Road, Royal Oak, MI 48073

dated the 31st day of December, A.D., 2019, wherein said Principal has covenanted and agreed as follows, to-wit:

To furnish all the labor and material \_\_\_\_\_

Water Service Line Replacement Program

HRC Job No. 20191046

AND WHEREAS, This bond is given in compliance with and subject to the provisions of Act No. 213 of the Public Acts of Michigan, for the year 1963, and as may be amended by other Public Acts of Michigan.

NOW, THEREFORE, The condition of this obligation is such that if payment shall be made by the Principal to any Subcontractor or by him or any Subcontractor as the same may become due and payable of all indebtedness which may arise from him to a Subcontractor or party performing labor or furnishing materials or supplies or any Subcontractor to any person, firm or corporation on account of any labor performed or materials or supplies furnished in the performance of said contract, then this obligation shall be void; otherwise, the same shall be in full force and effect.


AND PROVIDED, That any alterations which may be made in the terms of said contract, or in the work to be done under it, or the giving by the party of the first part to said contract, of any extension of time for the performance of said contract, or any other forbearance on the part of either party to the other, shall not in any way release the Principal and the Surety, or either of them, their heirs, executors, administrators, successors or assigns from any liability hereunder, notice to the Surety of any alteration, extension, or forbearance being hereby waived.

**D'Angelo Brothers, Inc.**  
(A Michigan Corporation)

By: 

Principal

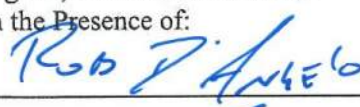

Harco National Insurance Company

  
Susan L. Small

Attorney-in-Fact

Surety

Signed, Sealed and Delivered  
in the Presence of:



MAINTENANCE AND GUARANTEE BOND  
Bond No. 0774581

KNOW ALL MEN BY THESE PRESENTS, That we

D'Angelo Brothers, Inc.

P.O. Box 531330

Livonia, Michigan 48155

as Principal, and Harco National Insurance Company

702 Oberlin Rd, Raleigh, NC 27605

are held and firmly bound unto Southeastern Oakland County Water Authority, 3910 W. Webster Road, Royal Oak, MI 48073 (The "Owner")

in the sum of Five hundred thousand and 00/100 Dollars (\$500,000.00)

good and lawful money of the United States of America, to be paid to the Owner  
its legal representatives and assigns, and we bind ourselves, our heirs, executors, administrators, successors and assigns, and each and every one of them jointly and severally, firmly by these presents.

SEALED WITH OUR SEALS AND DATED THIS 31<sup>st</sup> DAY OF December A.D., 2019.

WHEREAS, the above named principal has entered into a certain written contract with the  
Southeastern Oakland County Water Authority, 3910 W. Webster Road, Royal Oak, MI 48073  
dated this \_\_\_ day of \_\_\_\_\_ A.D., 20\_\_\_, where in the said principal covenanted and agreed as follows, to wit:

for the:

Water Service Line Replacement Program

HRC Job No. 20191046

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that by and under such contract, the above named principal has agreed with the Owner that for a period of one ( 1 ) year(s) from the date of acceptance of payment for the Work, to keep in good order and repair any defect in all the Work done under said contract, either by the principal, his subcontractors, or his material suppliers, that may develop during said period due to improper materials, defective equipment, workmanship or arrangements, and any other work affected in making good such imperfections, all to be made good without expense to the Owner, (excepting only such part or parts of said work as may have been disturbed without the consent or approval of the principal after the final acceptance of the work), and whenever directed so to do by the Owner, by notice served in writing, either personally or by mail, on the principal at 21213 Equestrian Trail, Northville, MI 48167

or \_\_\_\_\_, its legal representatives, or successors, or on the surety at 702 Oberlin Rd, Raleigh, NC 27605

Hubbell, Roth & Clark, Inc.  
Job 20191046

to proceed at once to make such repairs as directed by the Owner and in case of failure to do so within one (1) week from the date of service of such notice, or within reasonable time not less than one (1) week, as shall be fixed in said notice, then the Owner shall have the right to purchase such materials and employ such labor and equipment as may be necessary for the purpose, and to undertake, do and make such repairs, and charge the expense thereof to, and be fully reimbursed for same from said principal or surety. If any repair is necessary to be made at once to protect life and property, the Owner may take immediate steps to repair or barricade such defects without notice to the contractor. In such case the Owner shall not be held to obtain the lowest figures for the doing of the work, or any part thereof, but all sums actually paid therefor shall be charged to the principal or surety. In this connection the judgment of the Owner is final and conclusive.

If the principal for a period of one (1) year from the date of acceptance of payment for the Work, shall keep the work so constructed under the contract in good order and repair, excepting only such parts of said work which have been disturbed without the consent or approval of the principal after the final acceptance of same, and whenever notice is given as hereinbefore specified, at once proceed to make the repair as the notice directs, or reimburse the Owner for any expenses incurred by it in making such repairs should the principal or surety fail to do so, then the above obligation shall be void; otherwise, it will remain in full force and effect.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed by their respective authorized officers this 31st day of DECEMBER, 2019.

Signed, Sealed and Delivered  
in the Presence of:

[Signature] Rod D'Angelo

Witness

[Signature] Charlene Sell  
Witness Charlene Sell, Surety Administrator

[Signature]  
Witness Krista Pocket, Surety Administrator

D'Angelo Bros., Inc.

"Principal"

[Signature] (L.S.)  
Vincenzo D'Angelo

Harco National Insurance Company (L.S.)

"Surety"

[Signature] (L.S.)  
Susan L Small, Attorney-in-Fact

**POWER OF ATTORNEY**  
**HARCO NATIONAL INSURANCE COMPANY**  
**INTERNATIONAL FIDELITY INSURANCE COMPANY**

Bond # 0774581

Member companies of IAT Insurance Group, Headquartered: 702 Oberlin Road, Raleigh, North Carolina 27605

**KNOW ALL MEN BY THESE PRESENTS:** That **HARCO NATIONAL INSURANCE COMPANY**, a corporation organized and existing under the laws of the State of Illinois, and **INTERNATIONAL FIDELITY INSURANCE COMPANY**, a corporation organized and existing under the laws of the State of New Jersey, and having their principal offices located respectively in the cities of Rolling Meadows, Illinois and Newark, New Jersey, do hereby constitute and appoint

T.L. YOUNG, KATHLEEN M. IRELAN, WENDY L. HINGSON, IAN J. DONALD, ROBERT TROBEC, ALAN P. CHANDLER, T.J. GRIFFIN, JEFFREY A. CHANDLER, TERENCE J. GRIFFIN, JOHN L. BUDDE, SUSAN L. SMALL, PATRICK E. WILLIAMS

Troy, MI

their true and lawful attorney(s)-in-fact to execute, seal and deliver for and on its behalf as surety, any and all bonds and undertakings, contracts of indemnity and other writings obligatory in the nature thereof, which are or may be allowed, required or permitted by law, statute, rule, regulation, contract or otherwise, and the execution of such instrument(s) in pursuance of these presents, shall be as binding upon the said **HARCO NATIONAL INSURANCE COMPANY** and **INTERNATIONAL FIDELITY INSURANCE COMPANY**, as fully and amply, to all intents and purposes, as if the same had been duly executed and acknowledged by their regularly elected officers at their principal offices.

This Power of Attorney is executed, and may be revoked, pursuant to and by authority of the By-Laws of **HARCO NATIONAL INSURANCE COMPANY** and **INTERNATIONAL FIDELITY INSURANCE COMPANY** and is granted under and by authority of the following resolution adopted by the Board of Directors of **INTERNATIONAL FIDELITY INSURANCE COMPANY** at a meeting duly held on the 13th day of December, 2018 and by the Board of Directors of **HARCO NATIONAL INSURANCE COMPANY** at a meeting held on the 13th day of December, 2018.

"RESOLVED, that (1) the Chief Executive Officer, President, Executive Vice President, Senior Vice President, Vice President, or Secretary of the Corporation shall have the power to appoint, and to revoke the appointments of, Attorneys-in-Fact or agents with power and authority as defined or limited in their respective powers of attorney, and to execute on behalf of the Corporation and affix the Corporation's seal thereto, bonds, undertakings, recognizances, contracts of indemnity and other written obligations in the nature thereof or related thereto; and (2) any such Officers of the Corporation may appoint and revoke the appointments of joint-control custodians, agents for acceptance of process, and Attorneys-in-fact with authority to execute waivers and consents on behalf of the Corporation; and (3) the signature of any such Officer of the Corporation and the Corporation's seal may be affixed by facsimile to any power of attorney or certification given for the execution of any bond, undertaking, recognizance, contract of indemnity or other written obligation in the nature thereof or related thereto, such signature and seals when so used whether heretofore or hereafter, being hereby adopted by the Corporation as the original signature of such officer and the original seal of the Corporation, to be valid and binding upon the Corporation with the same force and effect as though manually affixed."

IN WITNESS WHEREOF, **HARCO NATIONAL INSURANCE COMPANY** and **INTERNATIONAL FIDELITY INSURANCE COMPANY** have each executed and attested these presents on this 31st day of December, 2019



STATE OF NEW JERSEY  
County of Essex

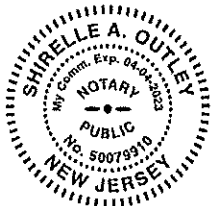
Kenneth Chapman

Executive Vice President, Harco National Insurance Company  
and International Fidelity Insurance Company

STATE OF ILLINOIS  
County of Cook



On this 31st day of December, 2019, before me came the individual who executed the preceding instrument, to me personally known, and, being by me duly sworn, said he is the therein described and authorized officer of **HARCO NATIONAL INSURANCE COMPANY** and **INTERNATIONAL FIDELITY INSURANCE COMPANY**; that the seals affixed to said instrument are the Corporate Seals of said Companies; that the said Corporate Seals and his signature were duly affixed by order of the Boards of Directors of said Companies.



IN TESTIMONY WHEREOF, I have hereunto set my hand affixed my Official Seal, at the City of Newark, New Jersey the day and year first above written.

Shirelle A. Outley a Notary Public of New Jersey  
My Commission Expires April 4, 2023

**CERTIFICATION**

I, the undersigned officer of **HARCO NATIONAL INSURANCE COMPANY** and **INTERNATIONAL FIDELITY INSURANCE COMPANY** do hereby certify that I have compared the foregoing copy of the Power of Attorney and affidavit, and the copy of the Sections of the By-Laws of said Companies as set forth in said Power of Attorney, with the originals on file in the home office of said companies, and that the same are correct transcripts thereof, and of the whole of the said originals, and that the said Power of Attorney has not been revoked and is now in full force and effect.

IN TESTIMONY WHEREOF, I have hereunto set my hand on this day,

Irene Martins, Assistant Secretary

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## GENERAL CONDITIONS

### 1. CONTRACT DOCUMENTS

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

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

### 2. CONTRACT DRAWINGS AND SPECIFICATIONS

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

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

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

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

### 3. ENGINEER'S STATUS

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



4. CONSTRUCTION OBSERVER STATUS

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

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

5. CONTRACTOR'S RESPONSIBILITY

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

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

6. PERMITS AND REGULATIONS

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

He shall at all times observe and comply with, and shall cause all his agents and employees to observe and comply with all existing and future laws, ordinances, regulations, orders, and decrees. Provided that if the drawings and specifications are at variance therewith, the Contractor shall promptly notify the Engineer in writing and any necessary changes shall be adjusted as provided in the Contract Documents.

## 7. SUBCONTRACTS

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

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

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

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

## 8. INFORMATION BY THE CONTRACTOR

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

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

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

## 9. GENERAL REQUIREMENTS FOR MATERIALS & WORKMANSHIP

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

Unless otherwise stipulated in the specifications, all equipment, materials, and articles incorporated in the work covered by this Contract are to be new and of the best grade of their respective kinds for the purpose. The Contractor shall, if required, furnish such evidence as to kinds and quality of materials as the Engineer may require.

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

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

10. TESTING AND SAMPLING

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

11. LINES AND GRADES

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

12. PROTECTION OF WORK AND PROPERTY

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

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

The Contractor shall assume full responsibility of loss or damage to the work during the entire construction period resulting from caving earth and from storms, floods, frosts, and other adverse weather conditions, and from all other causes whatsoever, not directly due to the acts or neglect of the

Owner, including fire, vandalism and malicious mischief, and shall turn the finished work over to the Owner in good condition and repair, at the time of the final estimate.

13. RESPONSIBILITY FOR ADJOINING STRUCTURES & TREES

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

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

14. MAINTENANCE OF SERVICE

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

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

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

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

In the event of the Contractor's failure to comply with these provisions, the Owner may with or without notice, cause the same to be done; and will deduct the cost of such work from any money due or to become due the Contractor under this Contract, but the performance of such work by the Owner or at his instance, shall serve in no way to release the Contractor from his general or particular liability for the safety of the public or the work.

15. STORAGE OF MATERIALS

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

16. RELATION TO OTHER CONTRACTORS

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

17. CONTRACTOR'S SUPERVISION AND ORIGINATION

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

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

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

## 18. FACILITIES FOR INSPECTION

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

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

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

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

## 19. SHOP DRAWINGS

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

## 20. ERRORS AND CORRECTIONS IN DRAWINGS AND SPECIFICATIONS

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



21. CHANGES IN THE WORK

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

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

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

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

22. BASIS FOR DETERMINING COST OF CHANGES IN THE WORK

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

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

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

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

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

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

23. PATENTS

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

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

24. "OR EQUAL" CLAUSE

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

25. CLEANING UP

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

26. USE OF COMPLETE PORTIONS OF THE WORK

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

27. PAYMENT WITHHELD

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

- A. Defective work not remedied.
- B. Claims filed or reasonable evidence indicating probable filing of claims.
- C. Failure of the contractor to make payments properly to subcontractors or for material or labor.

- D. A reasonable doubt that the Contract can be completed for the balance then unpaid.
- E. Damage to another contractor.

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

28. CONTRACTOR'S RIGHT TO STOP WORK

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

29. FAIR EMPLOYMENT PRACTICES ACT

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

30. AUTHORITY

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

31. STARTING WORK

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

32. SANITARY REGULATIONS

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

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33. SUNDAY AND NIGHT WORK

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

34. PROGRESS OF WORK

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

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

35. TIME OF COMPLETION

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

36. EXTENSION OF TIME

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

37. TIME IS ESSENCE OF CONTRACT

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

38. ESTIMATED QUANTITIES

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

39. FORFEITURE OF CONTRACT

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

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

40. NO WAIVER OF CONTRACT

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

41. PAYMENT NOT TO BE STOPPED

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

42. GUARANTEE

The Contractor, as a condition precedent to final payment, shall execute a guarantee to the Owner warranting for a period of one year from the date of final payment to keep in good order and repair any defect in all the work done under the contract, either by the Contractor or his subcontractors, or the material suppliers, that may develop during said period due to improper materials, defective equipment,, workmanship, or arrangements, and any other work affected in making good such imperfections shall also be made good, all without expense to the Owner, and the Contractor shall execute, in favor of the Owner, the attached Maintenance and Guarantee Bond.



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

43. ESTIMATES AND PAYMENTS

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

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

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

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

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

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

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

In the event a dispute arises over an avoidable or unacceptable delay in the performance of the work as described in Section 4(3) of Act 524 of Michigan Public Acts of 1980 [MCLA125.1564(3)], the dispute may, at the option of the Owner, be submitted for resolution in accordance with the provisions of Section 4 of Act 524 of the Michigan Public Acts of 1980 to an agent designated pursuant to Section 4(2) of the Act. The dispute resolution process described above shall be used only for the purpose of determining the rights of the parties to retained funds and interest earned on retained funds.

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

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

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

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

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CONTRACTOR'S DECLARATION

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

\_\_\_\_\_

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

\_\_\_\_\_

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

\_\_\_\_\_

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

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

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

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

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

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

CONTRACTOR'S AFFIDAVIT

STATE OF MICHIGAN )  
                                  )SS  
County of                )

The undersigned \_\_\_\_\_  
hereby represents that on \_\_\_\_\_ he (it) was awarded a contract by \_\_\_\_\_  
hereinafter called the Owner, to \_\_\_\_\_  
\_\_\_\_\_, in accordance with the terms and conditions of Contract No. \_\_\_\_; and the undersigned  
further represent that the subject work has now been accomplished and the said contract has now been  
completed.

The undersigned hereby warrants and certifies that all of his (its) indebtedness arising by reason of the said  
contract has been fully paid or satisfactorily secured; and that all claims from subcontractors and others for  
labor and material used in accomplishing the said contract, have been fully paid or satisfactorily settled. The  
undersigned further agrees that if any such claim should hereafter arise, he (it) shall assume responsibility for  
the same immediately upon request to do so by the Owner.

The undersigned, for a valuable consideration, the receipt of which is hereby acknowledged, does further  
hereby waive, release and relinquish any and all claims or right of lien which the undersigned now has or may  
hereafter acquire upon the subject premises for labor and material used in accomplishing said project owned  
by the Owner.

This affidavit is freely and voluntarily given with full knowledge of the facts, on this \_\_\_\_ day of \_\_\_\_\_,  
20\_\_\_\_.

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

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

Title: \_\_\_\_\_

Subscribed and sworn to before me, a Notary Public in and for \_\_\_\_\_ County, Michigan, on this \_\_\_\_ day  
of \_\_\_\_\_, 20\_\_\_\_.

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

My Commission Expires \_\_\_\_\_

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Act No. 524

Public Acts of 1980

Approved by Governor

January 29, 1981

**STATE OF MICHIGAN**  
**80<sup>th</sup> LEGISLATURE**  
**REGULAR SEASON OF 1980**

Introduced by Rep. Ryan

ENROLLED HOUSE BILL NO. 5541

AN ACT to provide for the terms of certain construction contracts with certain public agencies; to regulate the payment and retainage of payments on construction contracts with certain public agencies; and to provide for the resolution of certain disputes.

***The People of the State of Michigan enact:***

Sec. 1. As used in this act:

(a) "Agent" means the person or persons agreed to or selected by the contractor and the public agency pursuant to section 4(2).

(b) "Architect or professional engineer" means an architect or professional engineer licensed under Act No. 299 of the Public Acts of 1980, being sections 339.101 to 339.2601 of the Michigan Compiled Laws, and designated by a public agency in a construction contract to recommend progress payments.

(c) "Construction contract" or "contract" means a written agreement between a contractor and a public agency for the construction, alteration, demolition, or repair of a facility, other than a contract having a dollar value less than \$30,000.00 or a contract that provides for 3 or fewer payments.

(d) "Contract documents" means the construction contract; instructions to bidders; proposal; conditions of the contract; performance bond; labor and material bond; drawings; specifications; all addenda issued before execution of the construction contract and all modifications issued subsequently.

(e) "Contractor" means an individual, sole proprietorship, partnership, corporation, or joint venture, that is a party to a construction contract with a public agency.

(f) "Facility" means a building, utility, road, street, boulevard, parkway, bridge, ditch, drain, levee, dike, sewer, park, playground, or other structure or work that is paid for with public funds or a special assessment.

(g) "Progress payment" means a payment by a public agency to a contractor for work in place under the terms of a construction contract.

(h) "Public agency" means this state, or a county, city township, village, assessment district, or other political subdivision, corporation, commission, agency, or authority created by law. However, public agency does not include the state transportation department, a school district, junior or community college, the Michigan state housing development authority created in Act No. 346 of the Public Acts of 1966, as amended,

being sections 125.1401 to 125.1496 of the Michigan Compiled Laws, and a municipal electric utility or agency. "Assessment district" means the real property within a district area upon which special assessments are levied or imposed or the construction, reconstruction, betterment, replacement, or repair of a facility to be paid for by funds derived from those special assessments imposed or levied on the benefited real property.

(i) "Retainage" or "retained funds" means the amount withheld from a progress payment to a contractor pursuant to Section 3.

Sec. 2. (1) The construction contract shall designate a person representing the contractor who will submit written requests for progress payments, and a person representing the public agency to whom requests for progress payments are to be submitted. The written requests for progress payments shall be submitted to the designated person in a manner and at such time as provided in the construction contract.

(2) The processing of progress payments by the public agency may be deferred by the public agency until work having a prior sequence, as provided in the contract documents, is in place and is approved.

(3) Each progress payment requested, including reasonable interest if requested under subsection (4), shall be paid within 1 of the following time periods, whichever is later:

(a) Thirty days after the architect or professional engineer has certified to the public agency that work is in place in the portion of the facility covered by the applicable request for payment in accordance with the contract documents.

(b) Fifteen days after the public agency has received the funds with which to make the progress payment from a department or agency of the federal or state government, if any funds are to come from either of those sources.

(4) Upon failure of a public agency to make a timely progress payment pursuant to this section, the person designated to submit requests for progress payments may include reasonable interest on amounts past due in the next request for payment.

Sec. 3. (1) To assure proper performance of a construction contract by the contractor, a public agency may retain a portion of each progress payment otherwise due as provided in this section.

(2) The retainage shall be limited to the following:

(a) Not more than 10% of the dollar value of all work in place until work is 50% in place.

(b) After the work is 50% in place, additional retainage shall not be withheld unless the public agency determines that the contractor is not making satisfactory progress, or for other specific cause relating to the contractor's performance under the contract. If the public agency so determines, the public agency may retain not more than 10% of the dollar value of work more than 50% in place.

(3) The retained funds shall not exceed the pro rata share of the public agency's matching requirement under the construction contract and shall not be commingled with other funds of the public agency and shall be deposited in an interest bearing account in a regulated financial institution in this state wherein all such retained funds are kept by the public agency which shall account for both retainage and interest on each construction contract separately. A public agency is not required to deposit retained funds in an interest bearing account if the retained funds are to be provided under a state or federal grant and the retained funds have not been paid to the public agency.

(4) Except as provided in Section 4(7) and (8), retainage and interest earned on retainage shall be released to a contractor together with the final progress payment.

(5) At any time after 94% of work under the contract is in place and at the request of the original contractor, the public agency shall release the retainage plus interest to the original contractor only if the original contractor provides to the public agency an irrevocable letter of credit in the amount of the retainage plus interest, issued by a bank authorized to do business in this state, containing terms mutually acceptable to the contractor and the public agency.

Sec 4. (1) The construction contract shall contain an agreement to submit those matters described in subsection (3) to the decision of an agent at the option of the public agency.

(2) If a dispute regarding a matter described in subsection (3) arises, the contractor and the public agency shall designate an agent who has background, training, and experience in the construction of facilities similar to that which is the subject of the contract, as follows:

(a) In an agreement reached within 10 days after a dispute arises.

(b) If an agreement cannot be reached within 10 days after a dispute arises, the public agency shall designate an agent who has background, training, and experience in the construction of facilities similar to that which is the subject of the contract and who is not an employee of the agency.

(3) The public agency may request dispute resolution by the agent regarding the following:

(a) At any time during the term of the contract, to determine whether there has been a delay for reasons that were within the control of the contractor, and the period of time that delay has been caused, continued, or aggravated by actions of the contractor.

(b) At any time after 94% of work under the contract is in place, whether there has been an unacceptable delay by the contractor in performance of the remaining 6% of work under the contract. The agent shall consider the terms of the contract and the procedures normally followed in the industry and shall determine whether the delay was for failure to follow reasonable and prudent practices in the industry for completion of the project.

(4) This dispute resolution process shall be used only for the purpose of determining the rights of the parties to retained funds and interest earned on retained funds and is not intended to alter, abrogate, or limit any rights with respect to remedies that are available to enforce or compel performance of the terms of the contract by either party.

(5) The agent may request and shall receive all pertinent information from the parties and shall provide an opportunity for an informal meeting to receive comments, documents, and other relevant information in order to resolve the dispute. The agent shall determine the time, place, and procedure for the informal meeting. A written decision and reasons for the decision shall be given to the parties within 14 days after the meeting.

(6) The decision of the agent shall be final and binding upon all parties. Upon application of either party, the decision of the agent may be vacated by order of the circuit court only upon a finding by the court that the decision was procured by fraud, or other illegal means.

(7) If the dispute resolution results in a decision:

(a) That there has been a delay as described in subsection (3)(a), all interest earned on retained funds during the period of delay shall become the property of the public agency.

(b) That there has been unacceptable delay as described in subsection (3)(b), the public agency may contract with a subsequent contractor to complete the remaining 6% of work under the contract, and interest earned on retained funds shall become the property of the public agency. A subsequent contractor under this subdivision shall be paid by the public agency from the following sources until each source is depleted, in the order listed below:

(i) The dollar value of the original contract, less the dollar value of funds already paid to the original contractor and the dollar value of work in place for which the original contractor has not received payment.

(ii) Retainage from the original contractor, or funds made available under a letter of credit provided under section 3(5).

(iii) Interest earned on retainage from the original contractor, or funds made available under a letter of credit provided under section 3(5).

(8) If the public agency contracts with a subsequent contractor as provided in subsection (7)(b), the final progress payment shall be payable to the original contractor the time period specified in section 2(3). The amount of the final progress payment to the original contractor shall not include interest earned on retained funds. The public agency may deduct from the final progress payment all expenses of contracting with the subsequent contractor. This act shall not impair the right of the public agency to bring an action or to otherwise enforce a performance bond to complete work under a construction contract.



Sec. 5. (1) Except as provided in subsection (2), this act shall apply only to a construction contract entered into after the effective date of this act.

(2) For a construction contract entered into before the effective date of this date, the provisions of this act may be implemented by a public agency, through a contract amendment, upon the written request of the contractor, with such consideration as the public agency considers adequate.

Sec. 6. This act shall take effect January 1, 1983.

PUBLIC ACT 57  
STATE OF MICHIGAN  
89<sup>th</sup> LEGISLATURE  
REGULAR SESSION OF 1998

Introduced by Reps. Middaugh, Alley, Brackenridge, Olshove, Dobronski, Griffin, Gernaat, Walberg, Rhead, Richner, Kukuk, Callahan, Murphy, Thomas, Leland, Profit, Palamara, Wetters, McNutt, Varga, Gagliardi, Gustafson, Kilpatrick, Sikkema, Schermesser, Birkholz, Bodem, Dobb, Raczkowski and Perricone

ENROLLED HOUSE BILL NO. 5607

AN ACT to require contractors to provide certain notices to governmental entities concerning improvements on real property; to allow for the modification of contracts for improvement to real property; to provide for remedies; and to repeal acts and parts of acts.

***The People of the State of Michigan enact:***

Sec. 1. As used in this act:

(a) "Contractor" means a person who contracts with a governmental entity to improve real property or perform or manage construction services. Contractor does not include a person licensed under Article 20 of the Occupational Code, 1980 PA 299, MCL 339.2001 to 339.2014.

(b) "Governmental Entity" means the state, a county, city, township, village, public educational institution, or any political subdivision thereof.

(c) "Improve" means to build, alter, repair, or demolish an improvement upon, connected with, or beneath the surface of any real property, to excavate, clear, grade, fill, or landscape any real property, to construct driveways and roadways, or to perform labor upon improvements.

(d) "Improvement" includes, but is not limited to, all or any part of any building, structure, erection, alteration, demolition, excavation, clearing, grading, filling, landscaping, trees, shrubbery, driveways, and roadways on real property.

(e) "Person" means an individual, corporation, partnership, association, governmental entity, or any other legal entity.

(f) "Real Property" means the real estate that is improved, including, but not limited to, lands, leaseholds, tenements, hereditaments, and improvements placed on the real property.

Sec. 2. A contract between a contractor and a governmental entity for an improvement that exceeds \$75,000.00 shall contain all of the following provisions:

(a) That if a contractor discovers 1 or both of the following physical conditions of the surface or subsurface at the improvement site, before disturbing the physical condition, the contractor shall promptly notify the governmental entity of the physical condition in writing.

(i) A subsurface or latent physical condition at the site is differing materially from those indicated in the improvement contract.

(ii) An unknown physical condition at the site is of an unusual nature differing materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in the improvement contract.

(b) That if the governmental entity receives a notice under subdivision (a), the governmental entity shall promptly investigate the physical condition.

(c) That if the governmental entity determines that the physical conditions do materially differ and will cause an increase or decrease in costs or additional time needed to perform the contract, the governmental entity's determination shall be made in writing and an equitable adjustment shall be made and the contract modified in writing accordingly.

(d) That the contractor cannot make a claim for additional costs or time because of a physical condition unless the contractor has complied with the notice requirements of subdivision (a). The governmental entity may extend the time required for notice under subdivision (a).

(e) That the contractor cannot make a claim for an adjustment under the contract after the contractor has received the final payment under the contract.

Sec. 3. (1) If the contractor does not agree with the governmental entity's determination, with the governmental entity's consent the contractor may complete performance on the contract.

(2) At the option of the governmental entity, the contractor and the governmental entity shall arbitrate the contractor's entitlement to recover the actual increase in contract time and costs incurred because of the physical condition of the improvement site. The arbitration shall be conducted in accordance with the rules of the American Arbitration Association and judgment rendered may be entered in any court having jurisdiction.

Sec. 4 If an improvement contract does not contain the provisions required under Section 2, the provisions shall be incorporated into and considered part of the improvement contract.

Sec. 5 This Act does not limit the rights or remedies otherwise available to a contractor or the governmental entity under any other law or statute.

Sec. 6 This Act is repealed effective December 31, 2001.

Enacting Section 1. This Act takes effect 180 days after the date this Act is enacted.

This Act is ordered to take immediate effect.

*(Signed by John Engler, Governor of Michigan, at 3:00 p.m. on April 8, 1998)*

Act No. 517  
Public Acts of 2012  
Approved by the Governor  
December 28, 2012  
Filed with the Secretary of State  
December 28, 2012  
EFFECTIVE DATE: April 1, 2013

**STATE OF MICHIGAN  
96TH LEGISLATURE  
REGULAR SESSION OF 2012**

Introduced by Senators Kahn, Marleau, Brandenburg, Anderson, Green and Booher

**ENROLLED SENATE BILL No. 1024**

AN ACT to prohibit persons who have certain economic relationships with Iran from submitting bids on requests for proposals with this state, political subdivisions of this state, and other public entities; to require bidders for certain public contracts to submit certification of eligibility with the bid; to require reports; and to provide for sanctions for false certification.

*The People of the State of Michigan enact:*

Sec. 1. This act shall be known and may be cited as the "Iran economic sanctions act".

Sec. 2. As used in this act:

- (a) "Energy sector of Iran" means activities to develop petroleum or natural gas resources or nuclear power in Iran.
- (b) "Investment" means 1 or more of the following:
  - (i) A commitment or contribution of funds or property.
  - (ii) A loan or other extension of credit.
  - (iii) The entry into or renewal of a contract for goods or services.
- (c) "Investment activity" means 1 or more of the following:
  - (i) A person who has an investment of \$20,000,000.00 or more in the energy sector of Iran.
  - (ii) A financial institution that extends \$20,000,000.00 or more in credit to another person, for 45 days or more, if that person will use the credit for investment in the energy sector of Iran.
- (d) "Iran" means any agency or instrumentality of Iran.
- (e) "Iran linked business" means either of the following:
  - (i) A person engaging in investment activities in the energy sector of Iran, including a person that provides oil or liquefied natural gas tankers or products used to construct or maintain pipelines used to transport oil or liquefied natural gas for the energy sector of Iran.
  - (ii) A financial institution that extends credit to another person, if that person will use the credit to engage in investment activities in the energy sector of Iran.
- (f) "Person" means any of the following:
  - (i) An individual, corporation, company, limited liability company, business association, partnership, society, trust, or any other nongovernmental entity, organization, or group.
  - (ii) Any governmental entity or instrumentality of a government, including a multilateral development institution, as defined in section 1701(c)(3) of the international financial institutional act, 22 USC 262r(c)(3).

(275)

(iii) Any successor, subunit, parent company, or subsidiary of, or company under common ownership or control with, any entity described in subparagraph (i) or (ii).

(g) "Public entity" means this state or an agency or authority of this state, school district, community college district, intermediate school district, city, village, township, county, public authority, or public airport authority.

Sec. 3. (1) Beginning April 1, 2013, an Iran linked business is not eligible to submit a bid on a request for proposal with a public entity.

(2) Beginning April 1, 2013, a public entity shall require a person that submits a bid on a request for proposal with the public entity to certify that it is not an Iran linked business.

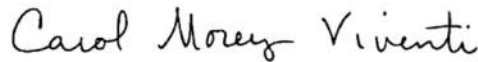
Sec. 4. If a public entity determines, using credible information available to the public, that a person has submitted a false certification under section 3(2), the public entity shall provide the person with written notice of its determination and of the intent not to enter into or renew a contract with the person. The notice shall include information on how to contest the determination and specify that the person may become eligible for a future contract with the public entity if the person ceases the activities that cause it to be an Iran linked business. The person shall have 90 days following receipt of the notice to respond in writing and to demonstrate that the determination of false certification was made in error. If a person does not make that demonstration within 90 days after receipt of the notice, the public entity may terminate any existing contract and shall report the name of the person to the attorney general together with information supporting the determination.

Sec. 5. The attorney general may bring a civil action against any person reported under section 4. If a civil action results in a finding that the person submitted a false certification, the person is responsible for a civil penalty of not more than \$250,000.00 or 2 times the amount of the contract or proposed contract for which the false certification was made, whichever is greater, the cost of the public entity's investigation, and reasonable attorney fees, in addition to the fine. A person who submitted a false certification shall be ineligible to bid on a request for proposal for 3 years from the date the public entity determines that the person has submitted the false certification.

Sec. 6. The provisions of this act are effective only if Iran is a state sponsor of terror as defined under section 2 of the divestment from terror act, 2008 PA 234, MCL 129.292.

Enacting section 1. This act takes effect April 1, 2013.

This act is ordered to take immediate effect.



Secretary of the Senate



Clerk of the House of Representatives

Approved .....

.....  
Governor



Statewide Prohibition Against Iran-Linked Businesses

The Michigan State legislature passed legislation to prohibit entities that have certain economic relationships with Iran from submitting a bid on a request for proposals (RFP) from state public entities, to require bidders for certain public contracts to submit certification of eligibility with a bid, and to respond to and report a false certification.

The "Iran Economic Sanctions Act" (P.A. 517 of 2012) makes an Iran-linked business ineligible to submit a bid on a RFP with a public entity. School districts, community college districts, and intermediate school districts must require each entity submitting a bid on an RFP to certify it is not an Iran-linked business. This requirement applies to all RFPs and not just to construction projects. Applicants for MDE grants will be required to assure compliance with this condition.

The Iran Economic Sanctions Act defines Iran-linked business as either of the following:

- A person engaging in investment activities in the energy sector of Iran, including a person who provides oil or liquefied natural gas tankers or products used to construct or maintain pipelines used to transport oil or liquefied natural gas for the energy sector of Iran.
- A financial institution that extends credit to another person, if that person will use the credit to engage in investment activities in the energy sector of Iran.

There are additional requirements to respond to and report an entity that has submitted a false certification. These requirements are described in the Iran Economic Sanction Act at: <http://www.legislature.mi.gov/documents/2011-2012/publicact/pdf/2012-PA-0517.pdf>

Provisions of the Iran Economic Sanction Act remain in effect as long as Iran is defined by the U.S. Secretary of State as a state sponsor of terror, a country determined to have repeatedly provided support for acts of international terrorism. Information about federal sanctions is available at: <http://www.state.gov/j/ct/list/c14151.htm>

Questions regarding the requirements of the Iran Economic Sanction Act may be directed to the Attorney General's office.

**VENDOR CERTIFICATION  
THAT IT IS NOT AN  
"IRAN LINKED BUSINESS"**

Pursuant to Michigan law, (the Iran Economic Sanctions Act, 2012 PA 517, MCL 129.311 et seq.), before accepting any bid or proposal, or entering into any contract for goods or services with any prospective Vendor, the Vendor must first certify that it is not an "IRAN LINKED BUSINESS, as defined by law.

Vendor	
Legal Name	D'ANGELO BROTHERS INC.
Street Address	PO Box 931330
City	LIVONIA
State, Zip	MI 48153
Corporate I.D. Number / State	
Taxpayer I.D. #	382156233

The undersigned, with: 1) full knowledge of all of Vendors business activities, 2) full knowledge of the requirements and possible penalties under the law MCL 129.311 et seq. and 3) the full and complete authority to make this certification on behalf of the Vendor, by his/her signature below, certifies that: the Vendor is NOT an "IRAN LINKED BUSINESS" as required by MCL 129.311 et seq., and as such that Vendor is legally eligible to submit a bid and be considered for a possible contract to supply goods and/ or services to the Owner.

Signature of Vendor's  
Authorized Agent:



Printed Name of Vendor's  
Authorized Agent:

VINCENT D'ANGELO

Witness Signature:



Printed Name of Witness:

BOB D'ANGELO

SECTION 00800

INSURANCE REQUIREMENTS

PART 1 INSURANCE

1.1 Insurance Required of the Contractor

- A. Prior to commencement of the work, the Contractor shall purchase and maintain during the term of the Contract such insurance as will protect the Contractor, the Owner, the Engineer and any additional insureds as listed from claims arising out of the work described in this Contract and performed by the Contractor, Subcontractor(s) or Sub-Subcontractor(s).
- B. All coverage shall be with insurance companies licensed and admitted to do business in the State of Michigan and acceptable to Southeastern Oakland County Water Authority.
- C. The requirements below should not be interpreted to limit the liability of the Contractor.
- D. All deductibles and SIRs are the responsibility of the Contractor.
- E. The Contractor shall procure and maintain insurance coverage consisting of the below listed policies.:

1.2 Worker's Compensation Insurance

- A. Worker's Compensation insurance including Employer's Liability to cover employee injuries or disease compensable under the Workers' Compensation Statutes of the states in which work is conducted under this contract; disability benefit laws, if any; or Federal compensation acts such as U. S. Longshoremen or harbor Workers', maritime Employment, or Railroad Compensation Act(s), if applicable.
- B. Self-insurance plans approved by the regulatory authorities in the state in which work on this project is performed are acceptable.

1.3 Comprehensive General Liability

- A. A Comprehensive General Liability policy to cover bodily injury to persons other than employees and for damage to tangible property, including loss of use thereof, including the following exposures:
  - 1. All premises and operations
  - 2. Explosion, collapse and underground damage
  - 3. Contractor's Protective coverage for independent contractors or subcontractors employed by him.
  - 4. Contractual Liability for the obligation assumed in the Indemnification or Hold Harmless agreement found hereinafter.
  - 5. The usual Personal Injury Liability endorsement with no exclusions pertaining to employment.

6. Products and Completed Operations coverage. This coverage shall extend through the contract guarantee period.

B. Additional Insured Requirements:

1. Coverage shall be Primary and Non-contributory and Waiver of Subrogation applies.
2. The policy shall include an endorsement which includes the following as additional insured's:
  - a. The "Owner"  
Southeastern Oakland County Water Authority, Royal Oak, Michigan  
Their council, members, Board members, public officials, consultants, agents, and employees
  - b. The "Engineer"  
Hubbell, Roth & Clark, Inc., Bloomfield Hills, Michigan  
Their owners, directors, officers, consultants, agents, and employees
  - c. The "Member Communities"  
City of Berkley, Village of Beverly Hills, Village of Bingham Farms, City of Birmingham, City of Clawson, City of Huntington Woods, City of Lathrup Village, City of Pleasant Ridge, City of Royal Oak, City of Southfield, Southfield Township and City of Ferndale, Michigan, all elected and appointed officials, all employees and volunteers, agents, all boards, commissions, and/or authorities and board members, including employees and volunteers thereof
  - d. Oakland County Water Resources Commissioner's Office, all elected and appointed officials, all employees and volunteers, agents, all boards, commissions, and/or authorities and board members, including employees and volunteers thereof

1.4 Comprehensive Automobile Liability

- A. A Comprehensive Automobile Liability policy to cover bodily injury and property damage arising out of the ownership, maintenance or use of any motor vehicle, including owned, non-owned and hired vehicles and including Michigan "No Fault" coverage.
- B. In light of standard policy provisions concerning (a) loading and unloading and (b) definitions pertaining to motor vehicles licensed for road use vs. unlicensed or self-propelled construction equipment, it is strongly recommended that the Comprehensive General Liability and the Comprehensive Auto Liability be written by the same insurance carrier, though not necessarily in one policy.
- C. Additional Insured Requirements:
  1. Coverage shall be Primary and Non-contributory
  2. The policy shall include an endorsement which includes the following as additional insured's:
    - a. The "Owner"  
Southeastern Oakland County Water Authority, Royal Oak, Michigan  
Their council, members, Board members, public officials, consultants, agents, and employees
    - b. The "Engineer"  
Hubbell, Roth & Clark, Inc., Bloomfield Hills, Michigan  
Their owners, directors, officers, consultants, agents, and employees
    - c. The "Member Communities"

- City of Berkley, Village of Beverly Hills, Village of Bingham Farms, City of Birmingham, City of Clawson, City of Huntington Woods, City of Lathrup Village, City of Pleasant Ridge, City of Royal Oak, City of Southfield, Southfield Township and City of Ferndale, Michigan, all elected and appointed officials, all employees and volunteers, agents, all boards, commissions, and/or authorities and board members, including employees and volunteers thereof
- d. Oakland County Water Resources Commissioner's Office, all elected and appointed officials, all employees and volunteers, agents, all boards, commissions, and/or authorities and board members, including employees and volunteers thereof

#### 1.5 Owner's & Contractor's Protective Liability Policy

- A. The Contractor shall purchase for the Owner, a separate Owner's Protective Liability policy to protect the Owner, the Engineer, their consultants, agents, employees and such public corporations in whose jurisdiction the work is located, for their contingent liability for work performed by the Contractor, the Subcontractor(s) or the Sub-Subcontractor(s) under this contract.
- B. Purchase the Owner's Protective Liability policy in the Owner's name.
- C. Additional Insured Requirements:
1. The policy shall include an endorsement which includes the following as additional insured's:
    - a. The "Engineer"  
Hubbell, Roth & Clark, Inc., Bloomfield Hills, Michigan  
Their owners, directors, officers, consultants, agents, and employees
    - b. The "Member Communities"  
City of Berkley, Village of Beverly Hills, Village of Bingham Farms, City of Birmingham, City of Clawson, City of Huntington Woods, City of Lathrup Village, City of Pleasant Ridge, City of Royal Oak, City of Southfield, Southfield Township and City of Ferndale, Michigan, all elected and appointed officials, all employees and volunteers, agents, all boards, commissions, and/or authorities and board members, including employees and volunteers thereof
    - c. Oakland County Water Resources Commissioner's Office, all elected and appointed officials, all employees and volunteers, agents, all boards, commissions, and/or authorities and board members, including employees and volunteers thereof

#### 1.6 Umbrella or Excess Liability

- A. The Contractor is granted the option of arranging coverage under a single policy for the full limit required or by a combination of underlying policies with the balance provided by an Excess or Umbrella Liability policy equal to the total limit(s) requested.
- B. Umbrella or Excess policy wording shall be at least as broad as the primary or underlying policy(ies) and shall apply both to the Contractor's general liability and to his automobile liability insurance.

C. Additional Insured Requirements:

1. Coverage shall be Primary and Non-contributory and Waiver of Subrogation applies.
2. Include an endorsement which includes the following as additional insured's:
  - a. The "Owner"  
Southeastern Oakland County Water Authority, Royal Oak, Michigan  
Their council, members, Board members, public officials, consultants, agents, and employees
  - b. The "Engineer"  
Hubbell, Roth & Clark, Inc., Bloomfield Hills, Michigan  
Their owners, directors, officers, consultants, agents, and employees
  - c. The "Member Communities"  
City of Berkley, Village of Beverly Hills, Village of Bingham Farms, City of Birmingham, City of Clawson, City of Huntington Woods, City of Lathrup Village, City of Pleasant Ridge, City of Royal Oak, City of Southfield, Southfield Township and City of Ferndale, Michigan, all elected and appointed officials, all employees and volunteers, agents, all boards, commissions, and/or authorities and board members, including employees and volunteers thereof
  - d. Oakland County Water Resources Commissioner's Office, all elected and appointed officials, all employees and volunteers, agents, all boards, commissions, and/or authorities and board members, including employees and volunteers thereof

1.7 Limits of Liability

A. The required limits of liability for insurance coverage shall be **not less than** the following:

1. Workers' Compensation  
Coverage A - Compensation ..... Statutory  
Coverage B - Employer's Liability ..... \$500,000
2. Comprehensive General Liability  
Bodily Injury and Property Damage ..... \$5,000,000      Each Occurrence  
Combined Single Limit ..... \$5,000,000      Per Job Aggregate  
..... \$1,000,000      Completed Operations Aggregate
3. Comprehensive Automobile Liability  
Bodily Injury and Property Damage ..... \$5,000,000      Each Accident  
Combined Single Limit
4. Owner's Protective  
Bodily Injury and Property Damage ..... \$3,000,000      Per Occurrence  
Combined Single Limit ..... \$1,000,000      Aggregate

B. Other Requirements

1. Notice of Cancellation
  - a. Policies will be endorsed to provide that at least 30 days, 10 days for non-payment of premium, written notice shall be given to the Owner and to the Engineer for; advanced notice of cancellation, non-renewal, reduction or material change (see sample endorsements which follow this Section).
2. Address for Written Notice
  - a. Southeastern Oakland County Water Authority  
3910 W. Webster Road  
Royal Oak, MI 48073  
Attn: Jeff McKeen, P.E.



## 1.8 Evidence of Coverage

- A. Prior to commencement of the work, the Contractor shall furnish to the Owner, Certificates of Insurance in force on the Owner's Form of Certificate provided as well as required endorsements.
- B. Other forms of Certificate are acceptable only if (1) they include all of the items prescribed in the Owner's Form of Certificate, including agreement to cancellation provisions outlined herein, (2) the Engineer's Project Identification Number, and (3) they have written approval of the Owner and the Engineer.
- C. The Owner reserves the right to request complete copies of policies if deemed necessary to ascertain details of coverage not provided by certificates.
- D. Such policy copies shall be "Originally Signed Copies," and so designated.
  - 1. Insurance Required for the Contractor
    - a. Workers' Compensation and Employers' Liability
    - b. Comprehensive General Liability-including:
      - 1) All premises and operations.
      - 2) Explosion, collapse and underground damage.
      - 3) Contractor's Protective.
      - 4) Contractual Liability for obligations assumed in the Indemnification-Hold Harmless Agreement of this Contract.
      - 5) Personal Injury Liability.
      - 6) Products and Completed Operations
    - c. Comprehensive Automobile Liability - including owned, non-owned and hired vehicles and Michigan "No Fault" coverage.
    - d. Umbrella or Excess Liability.
  - 2. Insurance Required for the Owner
    - a. Owners' and Contractor's Protective Liability Policy which names as additionally insured the Engineer, their consultants, agents, employees and such public corporations in whose jurisdiction the work is located.
    - b. Refer to sample endorsements which follow this Section.
- E. If any of the above coverages expire during the term of this contract, the Contractor shall deliver renewal certificates, endorsements, and/or policies to the Owner at least ten (10) days prior to the expiration date.

## 1.9 Qualification of Insurers

- A. In order to determine financial strength and reputation of insurance carriers, all companies providing the coverages required shall be licensed or approved by the Insurance Bureau of the State of Michigan and shall have a financial rating no lower than XI and a policyholder's service rating no lower than A as listed in A. M. Best's Key Rating Guide, current edition.
- B. Companies with ratings lower than A;XI will be acceptable only upon written consent of the Owner.

#### 1.10 Contract Security

- A. If the Owner is a public entity, the Contractor shall furnish a surety bond (form attached) in an amount at least equal to 100 percent of the contract price as security for the faithful performance of this contract. The Contractor shall furnish, also, a separate surety bond (form attached) in an amount at least equal to 100 percent of the contract price as security for the payment of all persons performing labor on the project under this contract, and furnishing materials in connection with this contract. The surety on each such bond shall be a duly authorized surety company satisfactory to the Owner.
- B. Regardless of whether the Owner is or is not a public entity, the Contractor shall furnish a Maintenance and Guarantee Bond (form attached) covering all work under this contract. The guarantee is to cover a period of one year subsequent to the date of the final estimate, unless otherwise specified.
- C. Surety Companies providing and executing Surety and Guarantee Bonds shall appear on the United States Treasury Departments most current list, Circular 570, as holding certificates of authority as acceptable sureties on federal bonds. The penal sum of such bonds shall not exceed the a company's limitation as stated therein. A surety company shall be licensed in the State in which it provides a bond and in the State where the contract work is to be performed.

#### 1.11 Indemnification

- A. The contractor agrees to indemnify, defend, and save harmless the Owner, the Engineer, the Member Communities, and their consultants, agents, and employees, from and against all loss or expense (including costs and attorney's fees) by reason of liability imposed by law upon the Owner, the Engineer, the Member Communities, and their consultants, agents, and employees for damages because of bodily injury, including death at any time resulting there from, sustained by any person or persons or on account of damage to property, including loss of use thereof, arising out of or in consequence of the performance of this work, whether such injuries to persons or damage to property is due, or claimed to be due, to the negligence of the contractor, his subcontractors, the Owner, the Engineer, the Member Communities, and their consultants, agents, and employees, **except** only such injury or damage as shall have been occasioned by the sole negligence of the Owner, the Engineer, the Member Communities, or their agents, employees or consultants.
- B. The Contractor also agrees to indemnify, defend and save harmless the Owner, the Engineer, the Member Communities, and their owners, directors, Board members, officers, directors, officials, and council members, consultants, agents and employees, from and against any and all loss or expense (including costs and attorney's fees) for any and all claims or allegations of supervision, inspection or observation activities or services which may arise out of, or in consequence of, the performance of this work.

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PART 2 PART 2 – NOT USED

PART 3 PART 3 – NOT USED

END OF SECTION

Client#: 7782		PAVCOR		DATE (MM/DD/YYYY) 04/02/2015	
<b>ACORD</b> <span style="font-size: small;">TM</span> <b>CERTIFICATE OF LIABILITY INSURANCE</b>					
<p>THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.</p> <p><b>IMPORTANT:</b> If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).</p>					
<b>PRODUCER</b> Insurance Agency 24724 Any Street (248) 666-6666 P.O. Box 2067 SomeCity, MI 48037-2067			<b>CONTACT NAME:</b> Insurance Agent name <b>PHONE (A/C, No, Ext):</b> 248 555-5555 <b>FAX (A/C, No):</b> 248 111-1111 <b>E-MAIL:</b> InsuranceAgent@InsuranceGroup.com <b>ADDRESS:</b> <b>PRODUCER CUSTOMER ID #:</b>		
<b>INSURED</b> Company ABC 2654 Street Name AnyCity, MI 48183			<b>INSURER(S) AFFORDING COVERAGE</b>		<b>NAIC #</b>
			<b>INSURER A:</b> Insurance Company 1		
			<b>INSURER B:</b> Insurance Company 2		
			<b>INSURER C:</b>		
			<b>INSURER D:</b>		
			<b>INSURER E:</b>		
			<b>INSURER F:</b>		

<b>COVERAGES</b>		<b>CERTIFICATE NUMBER:</b>		<b>REVISION NUMBER:</b>			
<p>THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.</p>							
INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<b>GENERAL LIABILITY</b> <input checked="" type="checkbox"/> CLAIMS GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> X,C,U <input checked="" type="checkbox"/> Contractual GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PROJECT <input type="checkbox"/> LOC	X	X	MPA00000042433S	11/17/2014	11/17/2015	EACH OCCURRENCE \$1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$100,000 MED EXP (Any one person) \$5,000 PERSONAL & ADV INJURY \$1,000,000 GENERAL AGGREGATE \$2,000,000 PRODUCTS - COMPIOP AGG \$2,000,000
A	<b>AUTOMOBILE LIABILITY</b> <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS <input checked="" type="checkbox"/> NON-OWNED AUTOS <input checked="" type="checkbox"/> Drive Other Car	X	X	BA00000042434S	11/17/2014	11/17/2015	COMBINED SINGLE LIMIT (Ea accident) \$1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$ \$
A	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> DEDUCTIBLE \$ <input type="checkbox"/> RETENTION \$	X	X	CMB00000042435S	11/17/2014	11/17/2015	EACH OCCURRENCE \$2,000,000 AGGREGATE \$2,000,000 \$ \$
B	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b> ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below		X	WC0001100555	05/01/2014	04/30/2015	<input checked="" type="checkbox"/> WC STATUTORY LIMITS <input type="checkbox"/> OTHER E.L. EACH ACCIDENT \$500,000 E.L. DISEASE - EA EMPLOYEE \$500,000 E.L. DISEASE - POLICY LIMIT \$500,000
A	<b>Installation Floater</b>	X		MPA00000042433S	11/17/2014	11/17/2015	\$150,000 \$1,000 deductible
DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)							
Municipality Name, their council, members, board members, public officials, consultants, agents, and (Please refer to attached Endorsements evidencing the change of policy.)							

<b>CERTIFICATE HOLDER</b>		<b>CANCELLATION</b>	
Municipality Name 18500 Street Name AnyCity, MI 48025		SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.	
		AUTHORIZED REPRESENTATIVE <div style="text-align: right;"><b>SIGNATURE</b></div>	

**DESCRIPTIONS (Continued from Page 1)**

employees, as well as the engineer; Hubbell Roth & Clark, their owners, directors, officers, consultants, agents, and employees are included as Additional Insured per written contract with respect to the general, auto and umbrella liability coverages for the work performed by the named insured for the certificate holder. Insurance is considered primary and non contributing and a waiver of subrogation applies. Should any of the above described policies be cancelled before the expiration date thereof, the issuing Company will mail 30 days prior written notice to the Certificate holder. Endorsements evidencing the change of Policy are attached.

Example only

AMS 25.3 (2009/09)

2 of 2

#S264726/M258177

POLICY NUMBER: TRA 4820287

**THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.**

**EARLIER NOTICE OF CANCELLATION  
PROVIDED BY US**

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE PART  
CRIME AND FIDELITY COVERAGE PART  
EQUIPMENT BREAKDOWN COVERAGE PART  
FARM COVERAGE PART  
COMMERCIAL PROPERTY COVERAGE PART  
COMMERCIAL INLAND MARINE COVERAGE PART  
COMMERCIAL LIABILITY UMBRELLA COVERAGE PART  
OWNERS AND CONTRACTORS PROTECTIVE LIABILITY COVERAGE PART  
COMMERCIAL GENERAL LIABILITY COVERAGE PART  
LIQUOR LIABILITY COVERAGE PART  
PROFESSIONAL LIABILITY COVERAGE

**SCHEDULE**

Number of Days' Notice 30

<u>Name Of Additional Insured Person(s) Or Organization(s)</u>	<u>Location(s) Of Covered Operations</u>

(If no entry appears above, information required to complete this Schedule will be shown in the Declarations as applicable to this endorsement.)

For any statutorily permitted reason other than nonpayment of premium, the number of days required for notice of cancellation, as provided in paragraph 2. of either the CANCELLATION Common Policy Condition or as amended by an applicable state cancellation endorsement, is increased to the number of days shown in the Schedule above.



POLICY NUMBER:

COMMERCIAL GENERAL LIABILITY  
CG 20 37 04 13

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

**ADDITIONAL INSURED – OWNERS, LESSEES OR  
CONTRACTORS – COMPLETED OPERATIONS**

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART  
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART

**SCHEDULE**

Name Of Additional Insured Person(s) Or Organization(s)	Location And Description Of Completed Operations
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.	

**A. Section II – Who Is An Insured** is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury" or "property damage" caused, in whole or in part, by "your work" at the location designated and described in the Schedule of this endorsement performed for that additional insured and included in the "products-completed operations hazard".

However:

1. The insurance afforded to such additional insured only applies to the extent permitted by law; and
2. If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

**B. With respect to the insurance afforded to these additional insureds, the following is added to Section III – Limits Of Insurance:**

If coverage provided to the additional insured is required by a contract or agreement, the most we will pay on behalf of the additional insured is the amount of insurance:

1. Required by the contract or agreement; or
  2. Available under the applicable Limits of Insurance shown in the Declarations;
- whichever is less.

This endorsement shall not increase the applicable Limits of Insurance shown in the Declarations.

COMMERCIAL GENERAL LIABILITY  
CG 20 33 04 13

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

**ADDITIONAL INSURED – OWNERS, LESSEES OR  
CONTRACTORS – AUTOMATIC STATUS WHEN  
REQUIRED IN CONSTRUCTION AGREEMENT WITH YOU**

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

**A. Section II – Who Is An Insured** is amended to include as an additional insured any person or organization for whom you are performing operations when you and such person or organization have agreed in writing in a contract or agreement that such person or organization be added as an additional insured on your policy. Such person or organization is an additional insured only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by:

1. Your acts or omissions; or
2. The acts or omissions of those acting on your behalf;

in the performance of your ongoing operations for the additional insured.

However, the insurance afforded to such additional insured:

1. Only applies to the extent permitted by law; and
2. Will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

A person's or organization's status as an additional insured under this endorsement ends when your operations for that additional insured are completed.

**B.** With respect to the insurance afforded to these additional insureds, the following additional exclusions apply:

This insurance does not apply to:

1. "Bodily injury", "property damage" or "personal and advertising injury" arising out of the rendering of, or the failure to render, any professional architectural, engineering or surveying services, including:

- a. The preparing, approving, or failing to prepare or approve, maps, shop drawings, opinions, reports, surveys, field orders, change orders or drawings and specifications; or
- b. Supervisory, inspection, architectural or engineering activities.

This exclusion applies even if the claims against any insured allege negligence or other wrongdoing in the supervision, hiring, employment, training or monitoring of others by that insured, if the "occurrence" which caused the "bodily injury" or "property damage", or the offense which caused the "personal and advertising injury", involved the rendering of or the failure to render any professional architectural, engineering or surveying services.

2. "Bodily injury" or "property damage" occurring after:

- a. All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the location of the covered operations has been completed; or
- b. That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.

C. With respect to the insurance afforded to these additional insureds, the following is added to **Section III – Limits Of Insurance:**

The most we will pay on behalf of the additional insured is the amount of insurance:

1. Required by the contract or agreement you have entered into with the additional insured; or
  2. Available under the applicable Limits of Insurance shown in the Declarations;
- whichever is less.

This endorsement shall not increase the applicable Limits of Insurance shown in the Declarations.

Example only



ACORD 75 (2001/01) 1 of 3 #5069 NOTE: IMPORTANT STATE INFORMATION ON REVERSE SIDE MSB © ACORD CORPORATION 1993

### CONDITIONS

This Company binds the kind(s) of insurance stipulated on the reverse side. The Insurance is subject to the terms, conditions and limitations of the policy(ies) in current use by the Company.

This binder may be cancelled by the Insured by surrender of this binder or by written notice to the Company stating when cancellation will be effective. This binder may be cancelled by the Company by notice to the Insured in accordance with the policy conditions. This binder is cancelled when replaced by a policy. If this binder is not replaced by a policy, the Company is entitled to charge a premium for the binder according to the Rules and Rates in use by the Company.

#### Applicable in California

When this form is used to provide insurance in the amount of one million dollars (\$1,000,000) or more, the title of the form is changed from "Insurance Binder" to "Cover Note".

#### Applicable in Delaware

The mortgagee or Obligee of any mortgage or other instrument given for the purpose of creating a lien on real property shall accept as evidence of insurance a written binder issued by an authorized insurer or its agent if the binder includes or is accompanied by: the name and address of the borrower; the name and address of the lender as loss payee; a description of the insured real property; a provision that the binder may not be canceled within the term of the binder unless the lender and the insured borrower receive written notice of the cancellation at least ten (10) days prior to the cancellation; except in the case of a renewal of a policy subsequent to the closing of the loan, a paid receipt of the full amount of the applicable premium, and the amount of insurance coverage.

Chapter 21 Title 25 Paragraph 2119

#### Applicable in Florida

Except for Auto Insurance coverage, no notice of cancellation or nonrenewal of a binder is required unless the duration of the binder exceeds 60 days. For auto insurance, the insurer must give 5 days prior notice, unless the binder is replaced by a policy or another binder in the same company.

#### Applicable in Nevada

Any person who refuses to accept a binder which provides coverage of less than \$1,000,000.00 when proof is required: (A) Shall be fined not more than \$500.00, and (B) is liable to the party presenting the binder as proof of insurance for actual damages sustained therefrom.

**SPECIAL CONDITIONS/OTHER COVERAGES (Cont. from page 1)**

consultants, agents, employees,  
& such public corporations in whose jurisdiction the work is located.

**\*\* Continued From Additional Interests Section \*\***

Hubbell, Roth & Clark, Inc.  
555 Hulet Drive; P.O. Box 824  
Bloomfield Hills, MI 48303-0824  
Type: Additional Insured

Example only



COMMERCIAL GENERAL LIABILITY  
CG 20 31 04 13

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

**ADDITIONAL INSURED – ENGINEERS,  
ARCHITECTS OR SURVEYORS**

This endorsement modifies insurance provided under the following:

OWNERS AND CONTRACTORS PROTECTIVE LIABILITY COVERAGE PART

**A. Section II – Who Is An Insured** is amended to include as an additional insured any architect, engineer or surveyor engaged by you, but only with respect to liability for "bodily injury" or "property damage" caused, in whole or in part, by your acts or omissions or the acts or omissions of those acting on your behalf:

1. In connection with your premises; or
  2. In the performance of your ongoing operations.
- However:

1. The insurance afforded to such additional insured only applies to the extent permitted by law; and
2. If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

**B.** With respect to the insurance afforded to these additional insureds, the following additional exclusion applies:

This insurance does not apply to "bodily injury" or "property damage" arising out of the rendering of or the failure to render any professional services by or for you, including:

1. The preparing, approving, or failing to prepare or approve, maps, shop drawings, opinions, reports, surveys, field orders, change orders or drawings and specifications; or

2. Supervisory, inspection, architectural or engineering activities.

This exclusion applies even if the claims against any insured allege negligence or other wrongdoing in the supervision, hiring, employment, training or monitoring of others by that insured, if the "occurrence" which caused the "bodily injury" or "property damage" involved the rendering of or the failure to render any professional services by or for you.

**C.** With respect to the insurance afforded to these additional insureds, the following is added to **Section III – Limits Of Insurance:**

If coverage provided to the additional insured is required by a contract or agreement, the most we will pay on behalf of the additional insured is the amount of insurance:

1. Required by the contract or agreement; or
  2. Available under the applicable Limits of Insurance shown in the Declarations;
- whichever is less.

This endorsement shall not increase the applicable Limits of Insurance shown in the Declarations.

SECTION 00805

SUPPLEMENTARY CONDITIONS

These Supplementary Conditions amend or supplement Section 00700 General Conditions of the Construction Contract. The General Conditions remain in full force and effect except as amended.

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

The address system used in these Supplementary Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added – for example, "Article SC-2."

SC-43. ESTIMATES AND PAYMENTS

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

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

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

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

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

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

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

In the event a dispute arises over an avoidable or unacceptable delay in the performance of the work as described in Section 4(3) of Act 524 of Michigan Public Acts of 1980 [MCLA125.1564(3)], the dispute may, at the option of the Owner, be submitted for resolution in accordance with the provisions of Section 4 of Act 524 of the Michigan Public Acts of 1980 to an agent designated pursuant to Section 4(2) of the Act. The dispute resolution process described above shall be used only for the purpose of determining the rights of the parties to retained funds and interest earned on retained funds.

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

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

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

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

SECTION 01220

BID ITEM DESCRIPTION

PART 1 GENERAL

1.1 SCOPE

- A. This Section describes the method of measurement and basis of payment for all items of Work included in the Contract and specified in the Proposal.
1. The Contractor shall provide all labor, material, tools, equipment and services required to complete the Work specified herein and indicated on the Drawings and all other items necessary to complete the job, whether specifically mentioned or implied.
  2. Payment will only be made for the items listed in the Cost Worksheet.
- B. The Owner will make no allowances for items not included in the Cost Worksheet.

1.2 ITEMS OF THE PROPOSAL

**WATER SERVICE LINE REPLACEMENT PROGRAM – DIVISION I**

**Item #1-14 (odd) – “(size) (material)” Private Water Service Line Replacement ≤ 40 feet**

This bid item shall be paid for at the Contract Unit Price per **each** private service line replaced. The Work required by this item includes all labor, equipment and materials necessary to install up to 40 linear feet of water service piping, fittings, adapters and bends, and the following associated items of work;

- Coordinating and communicating the contractor’s schedule with the authority having jurisdiction (AHJ) to allow for on-site representation and resident communication to be completed by the AHJ.
- Deliver a shutoff notice to the affected residence or business a minimum of 48 hours before any planned water service shutdown.
- Mobilization
- Traffic Control
- Excavations within the work area including hauling and disposal of unsuitable material.
- All work within the premises including removal of portions of the existing concrete floor slab or grout to accommodate the installation of the new water service line
- Installation of new water service line utilizing methods approved by the AHJ.
- Connection of new service line to the curb stop (including all adapters and fittings necessary to make the connection).
- Conducting “initial” flushing of the service line prior to connection to premise plumbing
- Sealing of the service line penetration
- Removal of all materials and debris from within the premises and clean up to match previously existing conditions.

- Backfill and compaction of all excavations to grade or bottom of proposed pavement section utilizing suitable excavated material or compacted sand backfill as applicable in accordance with Section 02315.
- Removal of all materials and debris from the project site upon completion of the service line installation and restoration of the disturbed area within the required timeframe.

New curb stops and curb boxes are not included with this line item and will be paid for under separate unit prices in the Contract, as needed. The Work included and required by this item are described and shall be completed in accordance with the Special Provision for Water Service Line Replacement and Section 02660.

**Item #1-14 (even) – “(size) (material)” Private Water Service Line Replacement > 40 feet**

This bid item shall be paid for at the Contract Unit Price per **foot** of additional private water service line installed beyond the initial 40 feet. This item of Work is intended to be used in combination with the “(size) (material)” **Private Water Service Line Replacement ≤ 40 feet** pay item and the associated items of work included with that pay item, not separate from the item. The Work required by this item includes all labor and materials necessary to install water service piping, fittings, adapters and bends utilizing methods approved by the AHJ and are described and shall be completed in accordance with the Special Provision for Water Service Line Replacement and with Section 02660.

**Item #15 – Private Water Service Line Connection to Premise/Building Plumbing**

This bid item shall be paid for at the Contract Unit Price per **each** connection of the private water service line to the premise/building plumbing after the initial flush of the service line. The Work required by this item includes all labor and materials necessary to install water service piping, fittings, adapters, bends and a new shut-off valve upstream of the meter to connect the service line to the premise/building plumbing and coordinating with the member community’s plumbing permitting authority for inspection. The Work shall be completed in accordance with the Special Provision for Water Service Line Replacement and Michigan Plumbing Code.

**Item #16, 19, 22, 25, 28, 31, 34- – “(size) (material)” Public Water Service Line Replacement and Connection, Short Run, ≤ 30 feet**

This bid item shall be paid for at the Contract Unit Price per **each** public water service line replaced. The Work required by this item includes all labor and materials necessary to install up to 30 linear feet of water service piping, fittings, adapters and bends and the following associated items of work;

- Coordinating and communicating the contractor’s schedule with the AHJ to allow for on-site representation and resident communication to be completed by the AHJ.
- Deliver a shutoff notice to the affected residence or business a minimum of 48 hours before any planned water service shutdown.
- Mobilization
- Traffic control
- Excavations within the work area including hauling and disposal of unsuitable material.
- Installation of new water service line utilizing methods approved by the AHJ.

- Connection of new service line to existing water main (including connecting to existing corporation stop or making a new tap to the existing main and any adapters and fittings necessary to make the connection)
- Flushing of new service line prior to connection to existing system (only applicable when the existing private water service is not a lead service line and is not being replaced)
- Backfill and compaction of all excavations to grade or bottom of proposed pavement section utilizing suitable excavated material or compacted sand backfill as applicable in accordance with Section 02315.
- Removal of all materials and debris from the project site upon completion of the service line installation and restoration of the disturbed area within the required timeframe.

Work associated with making a new tap to the existing main does not include the cost of the corporation stop or the brass saddle (if necessary) and any associated abandonment of the existing corporation stop, which will also be paid for separately. New curb stops and curb boxes are required but not included with this line item and will be paid for under separate unit prices in the Contract. Pavement removal and replacement is not included with this line item and will be paid for under separate unit prices in the Contract. Measurement and payment and the Work included and required by this item are described and shall be completed in accordance with the Special Provision for Water Service Line Replacement and Section 02660.

**Item #17, 20, 23, 26, 29, 32, 35 – “(size) (material)” Public Water Service Line Replacement and Connection, Long Run, > 30 feet to 60 feet**

This bid item shall be paid for at the Contract Unit Price per **each** public water service line replaced. The Work required by this item includes all labor and materials necessary to install between 30 linear feet and 60 linear feet of water service piping, fittings, adapters and bends and the following associated items of work;

- Coordinating and communicating the contractor’s schedule with the AHJ to allow for on-site representation and resident communication to be completed by the AHJ.
- Deliver a shutoff notice to the affected residence or business a minimum of 48 hours before any planned water service shutdown.
- Mobilization
- Traffic control
- Excavations within the work area including hauling and disposal of unsuitable material.
- Connection of new service line to existing water main (including connecting to existing corporation stop or making a new tap to the existing main)
- Flushing of new service line prior to connection to existing system (only applicable when the existing private water service is not a lead service line and is not being replaced)
- Backfill and compaction of all excavations to grade or bottom of proposed pavement section utilizing suitable excavated material or compacted sand backfill as applicable in accordance with Section 02315.
- Removal of all materials and debris from the project site upon completion of the service line installation and restoration of the disturbed area within the required timeframe.



Work associated with making a new tap to the existing main does not include the cost of the corporation stop or the brass saddle (if necessary) and any associated abandonment of the existing corporation stop, which will also be paid for separately. New curb stops and curb boxes are required but not included with this line item and will be paid for under separate unit prices in the Contract. Pavement removal and replacement is not included with this line item and will be paid for under separate unit prices in the Contract. Measurement and payment and the Work included and required by this item are described and shall be completed in accordance with the Special Provision for Water Service Line Replacement and Section 02660.

**Item #18, 21, 24, 27, 30, 33, 36 – “(size) (material)” Public Water Service Line Replacement > 60 feet**

This bid item shall be paid for at the Contract Unit Price per **foot** of additional public water service line replaced beyond the initial 60 feet of “long run” public water service installed. This item of Work is intended to be used in combination with the “(size) (material)” **Public Water Service Line Replacement and Connection, Long Run, ≤ 30 feet to 60 feet** pay item and the associated items of work included with that pay item, not separate from the item. The Work required by this item includes all labor and materials necessary to install water service piping, fittings, adapters and bends utilizing methods approved by the AHJ and are described and shall be completed in accordance with the Special Provision for Water Service Line Replacement and with Section 02660.

**Item #37-40 – “(size) “Brass Corp AWWA/CC Taper Thread inlet by CTS or Flare Copper outlet (Material Only)**

This bid item shall be paid for at the Contract Unit Price per **each** new corporation stop installed. This item shall be used when a new connection (tap) to an existing water main is completed. There is no Work required by this item. This item is to compensate the contractor for furnishing a new corporation stop of the type required by the AHJ, for a new service connection. All work to install the new corporation stop is included in the “(size) (material)” **Public Water Service Line Replacement and Connection, \_\_\_\_\_, \_\_\_\_\_** “pay item. Corporation stop materials for each SOCWA member community are specified in the Materials list included in the project specifications.

**Item #41-56 – “(size) x (size) “Brass Service Saddle (Material Only)**

This bid item shall be paid for at the Contract Unit Price per **each** new brass service saddle installed. This item shall be used when a new connection (tap) to an existing water main is completed and only on an as-needed basis in accordance with AHJ requirements for tapping of existing water mains. There is no Work required by this item. This item is to compensate the contractor for furnishing a new brass service saddle of the type required by the AHJ, for a new service connection. All work to install the new brass saddle is included in the “(size) (material)” **Public Water Service Line Replacement and Connection, \_\_\_\_\_, \_\_\_\_\_** “pay item. Brass service saddle materials for each SOCWA member community are specified in the Materials list included in the project specifications.

**Item #57 – Abandon & Plug Existing Corp**

This bid item shall be paid for at the Contract Unit Price per **each** corporation stop allowed to be plugged as the result of the installation of a new service line connection and the subsequent abandonment of the existing service line connection. This item includes closing the existing

corporation stop at the water main, cutting/disconnecting the existing water service at the discharge of the existing corporation stop and providing a restrained plug on the discharge side of the existing corporation stop. It is assumed that this work will take place in the same excavation as the new service connection and all backfilling and compaction requirements are included in the “**(size) (material)**” **Public Water Service Line Replacement and Connection, \_\_\_\_\_, \_\_\_\_\_**” pay item. The Work included and required by this item includes all labor, materials and equipment necessary to perform this work.

**Item #58 – Remove Existing Corp & Install Repair Sleeve**

This bid item shall be paid for at the Contract Unit Price per **each** existing corporation stop removed from an existing water main and repair sleeve installed. This item includes coordinating the water main shutdown with the AHJ, removal of the corporation stop from the main and furnishing and installing a repair sleeve overtop of the existing hole from the existing corporation stop. It is assumed that this work will take place in the same excavation as the new service connection and all backfilling and compaction requirements are included in the “**(size) (material)**” **Public Water Service Line Replacement and Connection, \_\_\_\_\_, \_\_\_\_\_**” pay item. The Work included and required by this item includes all labor, materials and equipment necessary to perform the work and shall be completed in accordance with the Special Provision for Water Service Line Replacement. Approved repair sleeve materials for each SOCWA member community are specified in the Materials list included in the project specifications.

**Item #59 – Water Main Taps Greater than 7 feet to the Top of Pipe**

This bid item shall be paid for at the Contract Unit Price per **vertical foot** of excavation beyond seven (7) feet (measured from the top of pipe) when completing a connection to an existing water main. This item of Work is intended to be used in combination with the “**(size) (material)**” **Public Water Service Line Replacement and Connection, \_\_\_\_\_, \_\_\_\_\_**” pay item and the associated items of work included with that pay item, not separate from the item. This item includes all additional labor, materials and equipment related to excavating, backfilling and compacting a water main at depth greater than seven (7) feet to the top of pipe.

**Item #60 – Dig Through Frost (Per Tap) When Additional Equipment is Necessary**

This bid item shall be paid for at the Contract Unit Price per **each** excavation made where specialized equipment is necessary to be mobilized to dig through frost. This item shall be used as needed, within the discretion of and only after approval by the Owner’s field representative. This item is intended to be used in coordination with the “**(size) (material)**” **Public Water Service Line Replacement and Connection, \_\_\_\_\_, \_\_\_\_\_**” pay item and the associated items of work included with that pay item, not separate from the item. This item includes all additional labor, materials and equipment related to mobilizing specialized equipment to site and excavating through the frost layer that could not be manipulated by standard on-site equipment.

**Item #61 – Plumbing Permit (ALLOWANCE)**

This bid item is to compensate the AHJ for their efforts to process and record the permit and inspect the plumbing work within the building or residence. Unless otherwise indicated, plumbing permits are required for all service line replacements where work is completed within

a business or residence. This bid item shall only be paid for at actual invoiced costs. All costs associated with this allowance item are approximate. The final payment will be adjusted to reflect the actual invoiced costs. If the invoiced costs are less than those set forth in the bid item, the Owner will receive a credit, based upon the remaining allowance amount. If the invoiced costs are greater for those bid items, the Contractor will receive additional payments based upon the amount in excess. The Contractor should make no assumptions regarding the above stated quantities or allowances. The Contractor shall not mark-up invoices associated with this allowance item.

**Item #62 – Miscellaneous Permits (ALLOWANCE)**

This bid item is to compensate the Contractor for the payment of services required to comply with permits associated with work outside the building/premises. Each member community has specific permitting requirements for work within private property or within the right-of-way. Contractor costs associated with complying with these requirements that are not included in the associated pay items within the Contract shall be paid for under this Allowance. This bid item shall only be paid for at actual invoiced costs. All costs associated with this allowance item are approximate. The final payment will be adjusted to reflect the actual invoiced costs. If the invoiced costs are less than those set forth in the bid item, the Owner will receive a credit, based upon the remaining allowance amount. If the invoiced costs are greater for those bid items, the Contractor will receive additional payments based upon the amount in excess. The Contractor should make no assumptions regarding the above stated quantities or allowances. The Contractor shall not mark-up invoices associated with this allowance item.

**Item #63 – Bonds & Insurances (ALLOWANCE)**

This bid item is to compensate the contractor for bonding and insurance costs to comply with the requirements as specified in the Contract documents. This bid item shall only be paid for at actual invoiced costs. All costs associated with this allowance item are approximate. The final payment will be adjusted to reflect the actual invoiced costs. If the invoiced costs are less than those set forth in the bid item, the Owner will receive a credit, based upon the remaining allowance amount. If the invoiced costs are greater for those bid items, the Contractor will receive additional payments based upon the amount in excess. The Contractor should make no assumptions regarding the specified bond amounts, anticipated quantity of Work or the allowance budgets provided. The Contractor shall not mark-up invoices associated with this allowance item.

**The following items of work are intended to be completed by the Member Communities. However, some Member Communities do not have staff available to administer the coordination and management aspects of a Service Line Replacement Program. SOCWA is requesting that all proposers provide a good faith estimate of the costs to complete the following administrative work items. The items will be heavily considered when evaluating the Cost Proposal section of the Selection Criteria.**

**Item #64 – Distribute and Collect Access Agreements**

This bid item shall be paid for at the Contract Unit Price per **each** signed access agreement collected. The item includes the time, postage and reproduction materials needed to distribute copies of member community specific customer notification packages (which would include at a minimum a cover letter to notify the property of the lead service line, an informational packet as described in the Special Provision for Water Service Line Replacement and a copy

of the access agreement) to businesses and residences and the time to collect, memorialize and organize each signed agreement. The member community will provide the contractor the mailing addresses in which to deliver the notification packages and copies of the informational packet.

**Item #65 – Initial Introduction Meeting Attendance & Work Plan**

The bid item shall be paid for at the Contract Unit Price per **each** initial introduction meeting attended and work plan submitted. This item of work includes the time to coordinate, schedule and attend an introductory meeting with each tenant/property owner that has submitted an access agreement in advance of service line replacement and complete a service line replacement Work Plan in accordance with the Special Provision for Water Service Line Replacement.

**Item #66 – Scheduling Service Line Replacement Work with Business/Residence**

This bid item shall be paid for at the Contract Unit Price per **each** successfully scheduled service line replacement. This item includes the time to schedule a service line replacement with the business/residence, providing scheduling updates to the municipality and coordinating any community assistance necessary for the service line replacement (i.e. water main shutdowns, compaction testing, etc.). This work item will be considered successful when the service line replacement work is substantially complete.

**Item #67 – Building/Premise Plumbing Flush**

This bid item shall be paid for at the Contract Unit Price per **each** building/premise plumbing flush completed once the new service line has been connected to the existing building/premise plumbing. The item includes the time needed to perform the building/premise plumbing flush in accordance with the Special Provision for Water Service Line Replacement for each individual service line replacement. Complete the building/premise plumbing flush in presence of the tenant/property owner. Include up to eight (8) fixtures in the building/premise plumbing flush.

**SERVICE LINE VERIFICATION PROGRAM – DIVISION II**

**Item #68 –Service Line Material Verification, Curb Stop**

This bid item shall be paid for at the Contract Unit Price per **each** water service line exposed and material verified at the curb stop location. The Work shall be completed in accordance with the Special Provision for Water Service Line Material Verification and include all labor, materials and equipment necessary to perform the verification work.

**Item #69 –Service Line Material Verification, Interior Penetration**

This bid item shall be paid for at the Contract Unit Price per **each** water service line material verified from within the building/premises. The Work shall be completed in accordance with the Special Provision for Water Service Line Material Verification and include all labor, materials and equipment necessary to perform the verification work.

**Item #70 –Service Line Material Verification, Water Main**

This bid item shall be paid for at the Contract Unit Price per **each** water service line exposed and material verified at the connection to the public water supply main. The Work shall be completed in accordance with the Special Provision for Water Service Line Material Verification and include all labor, materials and equipment necessary to perform the verification work.

**AS NEEDED MATERIALS AND SURFACE RESTORATION ITEMS  
(APPLICABLE TO DIVISION I & DIVISION II)**

**Item #71-74 – “ (size) “ Brass Curb Stop CTS or Flare Copper/CTS or Flare Copper**

This bid item shall be paid for at the Contract Unit Price per **each** new curb stop installed. The Work required by this item includes all labor and materials necessary to remove the existing curb stop and install the new curb stop valve, including all connections, adapters, fittings, bends and bedding materials. The Work included and required by this item are described and shall be completed in accordance with the Special Provision for Water Service Line Replacement and Section 02660. Curb stop materials for each SOCWA member community are specified in the Materials list included in the project specifications.

**Item #75 – 6’ Curb Valve Box (including Stainless Steel Rod)**

This bid item shall be paid for at the Contract Unit Price per **each** new 6’ curb valve box installed, including stainless steel rod. The Work required by this item includes all labor and materials necessary to remove and dispose of the existing curb box, install the new curb valve box and bed the base of the new curb box in crushed stone. The Work included and required by this item are described and shall be completed in accordance with the Special Provision for Water Service Line Replacement and Section 02660. Curb box materials for each SOCWA member community are specified in the Materials list included in the project specifications.

**Item #76 – Pavt Rem, Concrete Roadway, Special**

This bid item shall be paid for at the Contract Unit Price per **square yard** of concrete and composite pavement removal within the roadway, as measured in place. This item includes the sawcutting of concrete or composite pavement and curb and gutter to aid in the removal of portions of the pavement needed to perform the Work. This also includes all labor, equipment and materials necessary to remove existing roadway sections and comply with Section 603 of MDOT 2012 Standards Specifications for Construction.

**Item #77 – HMA Surface, Rem, Special**

This bid item shall be paid for at the Contract Unit Price per **square yard** of HMA surface removal, as measured in place. This item is for full depth HMA roadways only and does not get paid for separately within a composite pavement. This includes all labor and materials necessary to remove existing HMA and comply with Section 501 of MDOT 2012 Standards Specifications for Construction.

**Item #78 – Driveway and Sidewalk, Rem**

This bid item shall be paid for at the Contract Unit Price per **square yard** of concrete driveway and sidewalk removal, as measured in place. Regardless of material, this item

includes saw cutting. Removal of gravel driveways or temporary sidewalk will be considered included in the costs for the installation of the service line replacement. This includes all labor, equipment and materials necessary to remove existing driveway and comply with Section 801 of MDOT 2012 Standards Specifications for Construction. This pay item will account for the unit area of driveways and sidewalks that span the driveways.

**Item #79 – Turf Grass Repair – Rough and Finish Grade, apply 3” Topsoil and Sod**

This bid item shall be paid for at the Contract Unit Price per **square yard** of turf grass repair. This includes all labor, materials, and equipment necessary to match existing grade and apply 3” of topsoil and sod. The Work included and required by this item are described and shall be completed in accordance with the Special Provision for Site Restoration including, but not limited to, all excavation, subgrade preparation; filling, shaping, grading, and raking subgrade; disposing of suitable material and excess material; furnishing fill and topsoil; placing sod; also watering, protection of existing improvements; miscellaneous cleanup and restoration; and all items necessary to complete the job, whether specifically mentioned or implied.

**Item #80 – Turf Grass Repair – Rough and Finish Grade, apply 3” Topsoil, Seed, and Mulch Blanket**

This bid item shall be paid for at the Contract Unit Price per **square yard** of turf grass repair. This includes all labor, materials, and equipment necessary to match existing grade and apply 3” of topsoil, seed, and mulch blanket. The Work included and required by this item are described and shall be completed in accordance with the Special Provision for Site Restoration including, but not limited to, all excavation, subgrade preparation; filling, shaping, grading, and raking subgrade; disposing of suitable material and excess material; furnishing fill and topsoil; placing seed and mulch blanket; also watering, protection of existing improvements; miscellaneous cleanup and restoration; and all items necessary to complete the job, whether specifically mentioned or implied.

**Item #81 – Turf Grass Repair – Rough and Finish Grade, apply 3” Topsoil and Hydroseed**

This bid item shall be paid for at the Contract Unit Price per **square yard** of turf grass repair. This includes all labor, materials, and equipment necessary to match existing grade and apply 3” of topsoil and hydroseed. The Work included and required by this item are described and shall be completed in accordance with the Special Provision for Site Restoration including, but not limited to, all excavation, subgrade preparation; filling, shaping, grading, and raking subgrade; disposing of suitable material and excess material; furnishing fill and topsoil; installing hydroseed; also watering, protection of existing improvements; miscellaneous cleanup and restoration; and all items necessary to complete the job, whether specifically mentioned or implied.

**Item #82 – Hardwood Mulch, 4 inch**

This bid item shall be paid for at the Contract Unit Price per **square yard** of hardwood mulch installed at a minimum thickness of 4 inches. This includes all labor, materials, and equipment necessary to prepare a planting bed and install a layer of hardwood mulch to a specified thickness where directed. The Work included and required by this item are described and shall be completed in accordance with the Special Provision for Site Restoration including, but not limited to, all excavation, subgrade preparation; filling, shaping, grading, and raking subgrade;



disposing of excess material; furnishing and placing fill and mulch; also watering, protection of existing improvements; miscellaneous cleanup and restoration; and all items necessary to complete the job, whether specifically mentioned or implied.

**Item #83 – Irrigation System Repair**

This bid item shall be paid for at the Contract Unit Price per **each** irrigation system repair. Each irrigation system repair will include up to two (2) sprinkler heads and up to 20 feet to sprinkler line that matches the existing system. Contractor shall be responsible for the initial testing and adjustment of repaired heads, if seasonal limitations allow, and the replacement or repair to any leaks or non-functioning heads falls within the parameters of the project's warranty. Any additional testing and adjusting of the system is the responsibility of the municipality and property owner.

**Item #84 – Maintenance Aggregate, 21AA**

The bid item shall be paid for at the Contract Unit Price per **ton** of 21AA aggregate provided, placed and compacted. Measurement and payment and the Work included and required by this item are described and shall be completed in accordance with the Special Provision for “Maintenance Aggregate, 21AA”.

**Item #85 – Temporary Cold Patch**

The bid item shall be paid for at the Contract Unit Price per **ton** of temporary cold patch installed. This item includes all labor, equipment and materials necessary to install, grade and compact a patching material acceptable to the AHJ to create a temporary surface for vehicles and pedestrians until permanent pavement can be placed. “Temporary Cold Patch” shall be removed prior to permanent pavement installations and may not be used as a base material for permanent pavement installations. If the permanent pavement is being installed within the same Contract that the “Temporary Cold Patch” was placed, the removal and disposal of the cold patch shall be considered in the cost of the Work.

**Item #86 – HMA, 13A or approved equal (min 25 Ton)**

The bid item shall be paid for at the Contract Unit Price per **ton** of HMA. This item includes all labor and materials necessary to install, grade and compact to replace existing HMA surfaces. This item shall be used as needed to complete restoration of areas of HMA disturbed by construction that were determined unavoidable and not due to the Contractor's inability to protect the existing roadways. This includes all labor and materials necessary to install new HMA pavement in accordance with Section 02511. The minimum scope of work will include enough HMA installation to require at least 25 tons of material.

**Item #87 – Non Reinforced Concrete Roadway, MDOT P1 (min 10 Cubic Yards, aggregate)**

This bid item shall be paid for at the Contract Unit Price per **cubic yard** of non-reinforced concrete roadway of the specified detail to match existing, as measured in place. This item shall be used as needed to complete restoration of areas of non-reinforced concrete roadways disturbed by construction that were determined unavoidable and not due to the Contractor's inability to protect the existing roadways. This includes all labor, equipment and materials necessary to replace existing concrete roadway and comply with Section 603 of MDOT 2012

Standards Specifications for Construction. The minimum scope of work will include enough aggregate concrete work to require at least 10 cubic yards of material.

**Item #88 – Non Reinforced Concrete Driveways and Sidewalks, MDOT P1 (min 10 Cubic Yards, aggregate)**

This bid item shall be paid for at the Contract Unit Price per **cubic yard** of concrete driveway and sidewalk of the specified detail to match existing, as measured in place. This item shall be used as needed to complete restoration of areas of non-reinforced concrete driveways and sidewalks disturbed by construction that were determined unavoidable and not due to the Contractor's inability to protect the existing driveway and sidewalk. This includes all labor and materials necessary to replace existing concrete driveway and sidewalks and comply with Section 801 of MDOT 2012 Standards Specifications for Construction. The minimum scope of work will include enough aggregate concrete work to require at least 10 cubic yards of material.

**Item #89 – Concrete Curb and Gutter, MDOT P1 (min 10 Cubic Yards, aggregate)**

This bid item shall be paid for at the Contract Unit Price per **linear foot** of concrete curb and gutter of the specified detail to match existing, as measured in place. This item shall be used as needed to complete restoration of areas of concrete curb and gutter disturbed by construction that were determined unavoidable and not due to the Contractor's inability to protect the existing roadway. Measurement and payment and the Work required for this item are described and shall be completed in accordance with the MDOT 2012 Standards Specifications for Construction. The minimum scope of work will include enough aggregate concrete work to require at least 10 cubic yards of material.

**PART 2 PRODUCTS**

Not Used.

**PART 3 EXECUTION**

Not Used.

END OF SECTION

SECTION 01300

SUBMITTALS

PART 1 GENERAL

1.1 SCHEDULE FOR SUBMISSION

- A. Submittal procedures
- B. Submittal Review
- C. Proposed Products list
- D. Manufacture's installation instructions
- E. Manufacture's certificates

1.2 RELATED SECTIONS

- A. Section 01400 - Quality Control

1.3 SCHEDULE FOR SUBMISSION

- A. Prior to submitting any shop drawings, product data, portfolios, samples, etc. the Contractor shall prepare a summary, listing all items in the project which he will submit for review by the Engineer.
- B. The summary shall be submitted within twenty (20) calendar days after receipt of Notice to Proceed and shall be updated once per month thereafter.
- C. The summary and schedule for submittals shall not relieve the Contractor of his obligation to comply with specification requirements for items not listed on the schedule.
- D. Nothing herein shall be construed as allowing additional time for completion of the project in the event resubmittal is required for shop drawings or the other items to be submitted.

1.4 SUBMITTAL PROCEDURES

- A. Transmit each submittal with Engineer approved transmittal form.
- B. Sequentially number the transmittal form. Re-submittals shall have original number and a sequential alphabetic suffix.
- C. Identify Project, Contractor, Subcontractor and supplier and specification section number, as appropriate.

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

## 1.5 SUBMITTAL REVIEW

- A. All subcontractors and manufacturers' drawings shall first be sent directly to the Contractor, who shall keep a record of the drawing numbers and the dates of receipt. The Contractor shall check thoroughly all such drawings, as regards measurements, sizes of members, materials, and all other details to assure himself that they conform to the intent of the specification, and shall promptly return to the subcontractors and/or manufacturers for correction such submittals as are found inaccurate or otherwise in error.
- B. The Engineer will review the Contractor's, subcontractors' and manufacturers' submittals within a reasonable time after receipt thereof and will return one copy endeavoring to indicate, by notation thereon or written instructions, any correction which may be necessary to meet the Contract requirements. The Contractor shall then review such notations and/or instructions and if he concurs therein, shall make or have made such required corrections, and shall, when so noted in the specifications or requested by the Engineer, resubmit corrected products to the Engineer as soon as possible, for final review. Such further review by the Engineer will be

limited to the corrections only, and the Contractor, by such re-submission shall be held to have represented that such specifications contain no other alterations, additions or deletions, unless the Contractor (in writing) directs the Engineer's specific attention to same. Should the Contractor question, or dissent from, such notations and/or instructions, he shall so inform the Engineer and request further clarification before resubmitting.

- C. The review of Contractor's, subcontractors', and manufacturers' product information by the Engineer is for coordination and assistance, and the Engineer does not thereby assume responsibility for errors or omissions. Such errors or omissions must be made good by the Contractor, irrespective of the receipt, review of the submittal by the Engineer, and even though the work is done in accordance with such submittal.

#### 1.6 PROPOSED PRODUCTS LIST

- A. Within 15 days after date of Owner-Contractor Agreement submit list of all major products proposed for use, including those previously called for to be submitted in the Proposal, with name of manufacturer, trade name, and model number of each product.
- B. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.
- C. Substitutions: Whenever a particular brand or make or type of material, equipment, or other item is specified or is indicated in the Contract Documents, it is for the purpose of establishing a standard of quality, design, and type desired and to supplement the detailed specifications. Any other brand or make or type which in the opinion of the Engineer is equivalent to that specified or indicated may be offered as a substitute, subject to the following provisions:
1. Contractor shall submit for each proposed substitution sufficient details, complete descriptive literature and performance data together with samples of the materials where feasible to enable the Engineer to determine if the proposed substitution is equal to that specified.
  2. Contractor shall submit certified tests where applicable by an independent laboratory, acceptable to the Owner, attesting that the proposed substitution is equal.
  3. A list of installations where the proposed substitution is used.
  4. Requests for substitutions shall include full information concerning differences in cost, and any savings in cost resulting from such substitutions shall be passed on to the Owner.
  5. Where the review of a substitution requires revision or redesign of any part of the work, all such revision and redesign and all new drawings and details required, therefore, shall be provided by the Contractor at his own cost and expense and shall be subject to the review of the Engineer.
  6. In all cases, the Engineer shall be sole judge as to whether a proposed substitution is to be incorporated into the project. The Contractor shall abide by the Engineer's decision when proposed substitute items are judged to be unacceptable and shall in such instances furnish the item specified or indicated. No substitute items shall be used in the work without review of the Engineer.

1.7 MANUFACTURER INSTALLATION INSTRUCTIONS

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

1.8 MANUFACTURER CERTIFICATES

- A. When specified in individual sections, submit certification by manufacturer to Engineer, in quantities specified for Product Data.
- B. Indicate material or Product meets or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- C. Certificates may be recent or previous test results on material or Product, but must be acceptable to the Engineer.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

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SECTION 01400  
QUALITY CONTROL

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Quality assurance - control of installation.
- B. Tolerances
- C. References.
- D. Inspecting and testing laboratory services.

1.2 RELATED SECTIONS

- A. Section 01300 - Submittals: Submission of manufacturers' instructions and certificates.
- B. Section 01600 - Material and Equipment: Requirements for material and product quality.

1.3 QUALITY ASSURANCE - CONTROL OF INSTALLATION

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

1.4 TOLERANCES

- A. Monitor tolerance control of installed Products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.
- C. Adjust Products to appropriate dimensions; position before securing Products in place.

## 1.5 REFERENCES

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

## 1.6 INSPECTING AND TESTING LABORATORY SERVICES

- A. Owner will appoint, employ, and pay for specified services of an independent firm to perform inspecting and testing, as required.
- B. The independent firm will perform inspections, tests, and other services specified in individual specification sections and as required by the Engineer or the Owner.
- C. Inspecting, testing, and source quality control may occur on or off the project site. Perform off-site inspecting or testing as required by the Engineer or the Owner.
- D. Reports will be submitted by the independent firm to the Engineer, in duplicate, indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents.
- E. Cooperate with independent firm; furnish samples of materials, design mix, equipment, tools, storage, safe access, and assistance by incidental labor as requested.
  - 1. Notify Engineer and independent firm 48 hours prior to expected time for operations requiring services.
  - 2. Make arrangements with independent firm and pay for additional samples and tests required for Contractor's use.
- F. Testing or inspecting does not relieve Contractor of performing Work to contract requirements.
- G. Retesting required because of non-conformance to specified requirements shall be performed by the same independent firm on instructions by the Engineer. Payment for retesting will be charged to the Contractor by deducting inspecting or testing charges from the Contract Sum.

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PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01500  
CONSTRUCTION FACILITIES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Temporary Utilities: Sanitary facilities.
- B. Temporary Controls: Barriers, protection of the Work, and ground and surface water control.
- C. Construction Facilities: First Aid Facilities and parking.

1.2 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain adequate and required facilities and enclosures during the entire duration of the project.

1.3 BARRIERS

- A. The Contractor shall provide barricades, and adequate warning flags, signs, and lights in accordance with governing laws and ordinances to protect construction areas, existing facilities, and adjacent properties.
- B. Provide protection for plant life designated to remain. Replace damaged plant life.
- C. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

1.4 GROUND AND SURFACE WATER CONTROL

- A. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment. All water from whatever sources entering the work during any stage of construction shall be promptly removed and disposed. All pumping and drainage shall be done without damage to property or structures and without interference with the rights of the public, owners of private property, pedestrians or vehicular traffic, or the work of other contractors. Dewatering shall be done in such a manner that soil under or adjacent to existing structures shall not be disturbed, removed, or displaced.

1.5 PROTECTION OF INSTALLED WORK

- A. Protect installed Work and provide special protection where specified in individual specification sections.
- B. Provide temporary and removable protection for installed Products. Control activity in immediate work area to prevent damage.
- C. Prohibit traffic from landscaped areas.

1.6 FIRST AID FACILITIES

- A. A completely equipped, readily accessible first-aid kit shall be provided and maintained at the job site at all times.

1.7 PARKING

- A. Parking for construction personnel within private property is strictly prohibited.
- B. Coordinate construction personnel parking so as to not interfere with the public's normal use of the area(s) utilized for parking.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01600  
MATERIAL AND EQUIPMENT

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. General Provisions.
- B. Transportation and handling.
- C. Storage and protection.
- D. "Or Equal" Clause
- E. Product options.
- F. Substitutions.

1.2 RELATED SECTIONS

- A. Section 01300 - Submittals
- B. Section 01400 - Quality Control: Product quality monitoring.

1.3 GENERAL PROVISIONS

- A. Products (including all materials, machinery, equipment, and systems) shall be carefully designed and installed to insure that all required functions are adequately performed within specified degrees of precision and that each unit shall operate with every other part, furnished or existing, to provide a complete integrated system which shall operate to the satisfaction of the Engineer. Any changes or revisions of existing work made necessary by the type and dimensions of furnished products shall be made at the expense of the Contractor, and he shall furnish detail drawings showing such changes or revisions for the approval of the Engineer.
- B. Submit to the Engineer ample proof that each and every part of the products to be furnished is of a reliable make and of a type which has been in successful operation within the continental United States. Installation of any experimental or untried type of apparatus, material, or machinery will not be allowed.
- C. All materials, equipment, and accessories shall be new and unused and shall be essentially the products of a manufacturer regularly engaged in the production of such material or equipment and shall essentially duplicate material or equipment that has been in satisfactory operation at least 5 years.
- D. The owner reserves the right to reject any material or equipment manufacturer who, although meets the above requirements, does not provide satisfactory evidence indicating adequate and



prompt post-installation repair and maintenance service as required to suit the operational requirements of Owner. Items of any one type of materials or equipment shall be the product of a single manufacturer.

- E. All piping and equipment furnished under this contract shall be fabricated of such materials that under normal operating conditions harmful substances are not imparted to the water supply system.
- F. Certification shall be provided that all materials which may come into contact with potable water meets the National Sanitation Foundation Standard 61 and all Egle regulations in force at the time of submittals.

#### 1.4 TRANSPORTATION AND HANDLING

- A. Transport and handle Products in accordance with manufacturer's instructions.
- B. Transport and handle all materials in such a manner to avoid breakage, inclusion of foreign materials, and/or damage by water or other causes.
- C. Deliver packaged materials in original unopened containers. Packages or materials showing evidence of damage or contamination regardless of cause will be rejected.
- D. Promptly inspect shipments to ensure that Products comply with requirements, quantities are correct, and Products are undamaged.
- E. Repair or replace all items damaged or broken as a result of the Contractor's operation at no cost to the Owner.

#### 1.5 STORAGE AND PROTECTION

- A. Store and protect Products in accordance with manufacturers' instructions, with seals and labels intact and legible.
- B. Storage of materials and Products on private property without prior authorization is strictly prohibited.
- C. Storage of materials and Products within the public rights-of-way is allowed only upon written authorization of the Owner of the right-of-way.
- D. Store sensitive Products in weather tight, climate controlled enclosures.
- E. Provide bonded off-site storage and protection when site does not permit on-site storage or protection.
- F. Cover Products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation or potential degradation of Product.
- G. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.

- H. Provide equipment and personnel to store Products by methods to prevent soiling, disfigurement, or damage.
- I. Arrange storage of Products to permit access for inspection. Periodically inspect to verify Products are undamaged and are maintained in acceptable condition.

#### 1.6 PRODUCT OPTIONS

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

#### 1.7 "OR EQUAL" CLAUSE

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

#### 1.8 SUBSTITUTIONS

- A. Refer also to Section 01300.
- B. Engineer will consider requests for Substitutions after the date established in Notice to Proceed.
- C. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.

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

## PART 2 PRODUCTS

Not Used.

## PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 02315

UTILITY TRENCHING, BACKFILL AND COMPACTION

PART 1 GENERAL

1.1 SUMMARY

- A. The work covered by this specification consists of furnishing all plant, labor, equipment, appliances and materials, and performing all operations in connection with the excavation and preparation of utility trenches and bedding and backfill of utilities to the locations, lines, elevations, and grades as necessary to complete the Work.
- B. Excavation, backfill, and compaction for appurtenant structures such as, but not limited to, manholes, inlets, catch basins, handholes, transitions sections, junction chambers, structures, vaults, valve boxes, gate wells, and hydrants, shall be deemed to be in the category of trench excavation.
- C. Protection of existing utilities, sidewalks, pavements, trees, and other facilities in the vicinity of the trench excavation is included in the work covered by this specification.
- D. Related Requirements
  - 1. City/Village/Township Standard Details
  - 2. MDOT 2012 Standard Specifications for Construction

1.2 MEASUREMENT AND PAYMENT

- A. Excavation and compaction for the preparation of a utility trench, including all the work as covered by this specification and any sheeting, shoring or bracing to safely install an underground utility, shall be included in the costs per unit of measurement for the associated utility to be installed.
- B. Excavation and compaction in preparation for the installation of an appurtenant structure as defined herein, including all the work as covered by this specification and any sheeting, shoring or bracing to safely install the appurtenant structure, shall be included in the costs per unit of measurement for the associated appurtenant structure to be installed.
- C. Bedding, Initial Backfill, and Final Backfill to final grade for the installation of a utility, including all the work as covered by this specification and all labor, materials, equipment and compaction necessary to successfully install an underground utility, shall be included in the costs per unit of measurement for the associated utility to be installed.
- D. Bedding, Initial Backfill, and Final Backfill for the installation of an appurtenant structure as defined herein, including all the work as covered by this specification and all labor, materials, equipment and compaction necessary to successfully install the appurtenant structure, shall be

included in the costs per unit of measurement for the associated appurtenant structure to be installed.

- E. Protection of existing utilities, sidewalks, pavements, trees, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations shall be included in the costs for trench excavation.
- F. Dewatering necessary to provide for a clean, dry trench free from standing water and so that there is no unbalanced upward pressure on the bottom of the open excavation until utility installation is completed shall be included in the costs for trench excavation.

### 1.3 REFERENCES

#### A. Abbreviations and Acronyms

- 1. ASTM – American Society for Testing and Materials
- 2. MDOT – Michigan Department of Transportation
- 3. OSHA – Occupational Safety and Health Administration
- 4. USCS – Unified Soil Classification System

#### B. Definitions

- 1. Appurtenant Structure – Structures or appurtenances related to utility construction, such as but not limited to; manholes, inlets, catch basins, handholes, transitions sections, junction chambers, structures, vaults, valve boxes, gate wells, and hydrants.
- 2. Bedding – Select granular material on which the utility is supported within trench excavations. Installed at the trench subgrade elevation and up to a point within the pipe zone dependent on the pipe design, material and loading factors above and around the utility.
- 3. Final Backfill - Area of the trench excavation cross-section extending from the top of the pipe zone to the top of the trench and bottom of the surface restoration or pavement section.
- 4. Haunch Bedding – Area of the bedding cross-section between the bottom of the utility and the springline of the utility
- 5. Initial Backfill – Area of the trench excavation cross-section extending from the top of the bedding material, to a level 12 inches over the top of the installed utility.
- 6. Initial Bedding Layer - Area of the bedding cross-section between the subgrade and the bottom of the utility.
- 7. Inner Bedding – the bedding zone directly beneath the utility. Typically the middle 1/3 of the trench bottom width.
- 8. Pipe Zone – Area of the trench excavation cross-section extending from the subgrade to a level 12 inches over the top of the installed utility.
- 9. Rock - All boulder, solid ledges, bedded deposits, unstratified masses, and conglomerations of material so firmly cemented as to possess the characteristics of solid rock that cannot be practically excavated with a track-mounted power excavator equivalent to a Caterpillar Model No. 325 or equivalent equipped with new rock teeth.
- 10. Sand Backfill Trench – Utility trench or portion of utility trench in which the final backfill is within a 1:1 influence of existing or proposed graveled, slag or hard surfaced road, pavements, hard surfaced parking lots and driveways, sidewalks, curbs and when the trench edge is within 3 feet of the edge of pavement or as specified.

11. Standard Backfill Trench – Utility trench not within the Sand Backfill Trench zone.
12. Subgrade – Surface or elevation remaining after completing trench excavation or the top surface of an overexcavation or undercut backfill (stone or soil) immediately below the utility or utility bedding, as applicable. Commonly referred to as “Foundation”.
13. Suitable Material – Materials, either excavated or delivered, meeting MDOT Class II, IIA or IIIA or ASTM D 2487 soil classification group (USCS) SW, SM, SC, SP and or a combination of these group symbols; free of rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.
14. Unsuitable Material – Material which;
  - Contains rock, gravel or clay lumps larger than 3 inches in any dimension,
  - Contains more than 1% organic matter,
  - Has a Liquid Limit exceeding 40 and/or a Plastic Limit exceeding 10
  - Contains construction debris such as brick, broken concrete, wire, etc, or waste, vegetation, and other deleterious matter.
  - Is frozen or contains ice balls in excess of 3 inches in any dimension,
  - Maintains a moisture content, at the time of compaction, that exceeds the Optimum Moisture content, established by the method used to determine the Maximum Unit Weight, by three percentage points or more.
15. Utilities – Underground pipes, sewers, water mains, conduits, ducts, cables, as well as underground services to properties and buildings.

C. Reference Standards

1. ASTM D 2922 – Test Methods for Density of soil and Soil Aggregate in Place by Nuclear Methods (Shallow Depth)
2. OSHA Standard 29 CFR Part 1926 – “Safety and Health Regulations for Construction”
3. Reference Standards that are cited specifically by name shall be the current versions of said manuals existing at the time of the award of the Contract.

1.4 ADMINISTRATIVE REQUIREMENTS

- A. Conform to applicable state and local codes for disposal of excavated materials judged unsuitable for backfill.
- B. Unless otherwise specified, provide third-party materials testing services for the testing requirements specified herein.
- C. Coordination
  1. The Owner is the sole operator of all water system valves and hydrants. Coordinate all utility service interruptions with the Project Engineer.
  2. Contact the Project Engineer to schedule Owner field representation for construction observation.
  3. Coordinate with utilities for relocation, adjustment, or support of their facilities
- D. Safety
  1. Contractor is solely responsible for site safety.



2. Comply with applicable requirements of OSHA, specifically Standard 29 CFR Part 1926, Subpart P "Excavations", latest revision.
3. Keep surface over and along trenches and other excavations in a safe and satisfactory condition during the process of the Work.

#### 1.5 SUBMITTALS

- A. Pre-excavation photographs or other digitally recorded media to show existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by earthwork operations.
- B. Classifications and MDOT pit numbers of aggregates for Undercut Backfill, Bedding, Initial Backfill and Final Backfill and supporting material characteristic test results.
- C. Supplier endorsements that certify materials meet project requirements.
- D. Sheeting, Shoring or Trench Box Construction Plan
- E. Dewatering Plan for utility trench or appurtenant structure excavations, if necessary.

#### 1.6 QUALITY ASSURANCE

- A. Conduct a Pre-Excavation Meeting at the project site at the request of the Owner.
- B. Comply with all code, laws, ordinances, and regulations of governmental authorities having jurisdiction over this part of the work.
- C. Trench subgrade will be reviewed for elevation and stability.
  1. Elevation of trench bottom to be within a tolerance of one-half (1/2) inch from plan grade.
  2. Potential for trench undercutting will be reviewed by probing the trench bottom. Penetrations greater than six (6) inches below the specified subgrade elevation will prompt review by the Owner for potential undercuts.
- D. Compaction of Undercut Backfill, Bedding, and Initial Backfill will be visually observed to review installation in conformance with the project requirements.
- E. Compaction testing will be conducted on each lift of Final Backfill above the Pipe Zone, including the top of the Pipe Zone.
  1. Maximum lift thickness of final backfill is 12 inches unless otherwise detailed.
  2. Compact top of the Pipe Zone and Final Backfill materials to not less than 95% of the maximum unit weight as determined by the method described in the MDOT Density Testing and Inspection Manual appropriate for the backfill material.
  3. Provide testing summaries for each day and type of compaction testing, each summary shall include, at minimum, the following;
    - a. Station and depth of where the test was taken from centerline of utility.
    - b. The specified material and type of material (if different) being tested and the measured maximum dry density, moisture content, and percent compaction.
    - c. Method of compaction testing.

d. All tests taken.

## 1.7 EXISTING CONDITIONS

- A. The Contractor will be held to have compared the conditions of the site where work is to be performed with the specifications and to have satisfied themselves as to the conditions of the site, existing conditions, and any other conditions affecting the carrying out of the work.
  - 1. It is expressly understood that the Contractor will obtain first-hand information concerning the available facilities for receiving, transporting, handling and storing construction equipment and materials and concerning other local conditions that may affect the Work.
  - 2. The Contractor shall draw their own conclusion as to soil and/or rock conditions and groundwater to be encountered, and shall complete the Work under any job or field condition which was present and/or ascertainable prior to bidding.
- B. The Contractor shall complete the work under whatever conditions created by their own sequence of construction, construction methods, or other condition created at no additional cost to the Owner.
- C. Contact Miss Dig (811) a minimum of 72 hours in advance of any excavation for the location of utilities located in the vicinity of the work.
- D. Locate all utilities prior to beginning trench excavation activities.
- E. All utilities must be protected and supported during construction. Necessary measures to protect and support utilities must be employed as required by the specific utility and circumstances, and shall be completed at no additional cost to the Owner.
- F. If utility is damaged by Contractor, notify utility owner and Owner or Owner's Representative immediately. Repair or replacement of utilities damaged by Contractor shall be at the Contractor's expense.

## PART 2 PRODUCTS

### 2.1 UNDERCUT BACKFILL AGGREGATES

- A. Coarse graded aggregate to meet grading requirements as specified below.
- B. Slag and crushed concrete aggregates are prohibited.
- C. Aggregates to be supplied from approved manufacturers of prequalified aggregate sources, as identified in the MDOT Materials Source Guide, latest edition.

UNDERCUT BACKFILL GRADING REQUIREMENTS								
Material	Total Percent Passing (Sieve Size)							
	1 ½"	1"	¾"	½"	⅜"	No. 4	No. 8	Loss by Washing

MDOT 6A	100	95-100	-	30-60	-	0-8	-	≤ 1.0
MDOT 17A	-	100	90-100	50-75	-	0-8	-	≤ 1.0

## 2.2 UTILITY BEDDING

- A. Bed utility piping in Class II sand or 3/4 inch crushed stone (MDOT 34 G or approved equal).
- B. Bed Curb Stop Valve Box with 3/4 inch crushed stone (MDOT 34 G or approved equal) to an elevation of 12 inches above the bottom of the stem.

## 2.3 UTILITY INITIAL BACKFILL

- A. Match utility bedding.

## 2.4 UTILITY FINAL BACKFILL

- A. Final Backfill for utility trenches will be “Sand Backfill Trench” or “Standard Backfill Trench” as defined in Section 1.3.B
- B. Granular materials used for Final Backfill in the “Sand Backfill Trench” shall meet the minimum requirements for granular material as specified on the following page:

FINAL BACKFILL SAND BACKFILL TRENCH GRADING REQUIREMENTS								
Material	Total Percent Passing (Sieve Size)							
	3"	2"	1"	1/2"	3/8"	No. 4	No. 100	Loss by Washing
MDOT Class II	100	-	60-100	-	-	50-100	0-30	0-7
MDOT Class IIA	100	-	60-100	-	-	50-100	0-35	0-10
MDOT Class IIIA	-	-	-	-	100	50-100	0-30	0-15

- C. Final Backfill material used for the “Standard Backfill Trench” shall comply with;
  - 1. Grading requirements as specified below, or
  - 2. Definition of “Suitable Material” as described in Section 1.3.B.

FINAL BACKFILL STANDARD BACKFILL TRENCH GRADING REQUIREMENTS								
Material	Total Percent Passing (Sieve Size)							
	3"	2"	1"	1/2"	3/8"	No. 4	No. 100	Loss by Washing
MDOT Class II	100	-	60-100	-	-	50-100	0-30	0-7
MDOT Class IIA	100	-	60-100	-	-	50-100	0-35	0-10
MDOT Class III, Modified*	*100	-	-	-	-	50-100	-	0-15
MDOT Class IIIA	-	-	-	-	100	50-100	0-30	0-15

- D. Material not meeting the grading requirements for above may be used for Final Backfill provided the Contractor can supply test results showing conformance with the definition of “Suitable Material” as described in Section 1.3.B.
- E. Materials meeting any of the criteria for “Unsuitable Material” as described in Section 1.3.B are prohibited from use as Final Backfill.

## 2.5 APPURTENANT STRUCTURE BACKFILL

- A. Materials shall match condition and grading requirements detailed in “UTILITY FINAL BACKFILL”.

## PART 3 EXECUTION

### 3.1 PREPARATION

- A. Plan construction to minimize disturbance.
- B. Protect adjacent structures, utilities, sidewalks, pavements and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations
- C. Provide erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent sites and walkways.
- D. Maintain normal flow of drainage water on the jobsite and all present above ground and underground utilities.
- E. Provide and maintain barricades, warning lights, warning signs, and other protection required by applicable laws for safety of persons and property.

### 3.2 DEWATERING

- A. Do not allow water to accumulate in the trench.
  - 1. Remove water that accumulates in the trench which would affect the construction of utilities or their appurtenant structures by pumping, bailing, well-pointing, draining or other approved dewatering method.
  - 2. Perform all work necessary to keep the trenches entirely clear from water throughout construction of utilities and appurtenant structures.
  - 3. Construction of structures in water is prohibited.
- B. Convey all water removed from trench in a proper manner to a suitable point of discharge that complies with applicable soil erosion and sedimentation control regulations.
  - 1. Dispose of water from the trench in such a manner to cause no injury to public health, property, work completed or in progress, street surfaces, or where such effluent may cause an interference with the use of the streets.

2. If water is odorless and stable, discharge of the dewatering systems into an existing storm drain, channel, or street gutter in a manner approved by the Owner is permissible. Filtering of the discharge water is required.
  3. Discharge of water to a sanitary sewer main of sanitary sewer related structure is strictly prohibited.
- C. Maintain dewatering systems until dewatering is no longer required.
- D. Prevent surface water from ponding on prepared subgrades and from flooding the project site and surrounding areas. Reroute surface water runoff away from or around excavated areas.
- E. All shoring, sheeting, well-pointing, gravel bedding and other dewatering devices necessary to successfully complete the dewatering requirements of the project shall not be considered separate items of work but are inclusive to dewatering.

### 3.3 TRENCHING

- A. Excavate utility trench width to at least the minimum width in conformance with the material specification and standard details for the associated pipe or appurtenant structure type.
1. If material specification and standard details are not provided, refer to manufacturer's recommended trench widths.
  2. Provide Owner with planned trench dimensions at Pre-Excavation meeting if different than material specification and standard details.
- B. All excavation of trenches is to be by open cut method, to the depth and grade shown on the Drawings and as necessary to accommodate the Work, unless otherwise noted.
- C. Excavate to the line and grade shown on the Drawings or as necessary to install the utility.
- D. Begin trench excavation at the downstream end of the utility, when applicable.
- E. Excavate in accordance with OSHA Standard 29 CFR Part 1926 – "Safety and Health Regulations for Construction".
- F. Do not stockpile materials along one edge of the excavation so as to impose too great a load on the bank of the trench.
- G. Excavate only as much trench as can be entirely completed (install utility, backfill, compact, clean up) within that working day.
1. Do not open a greater length of trench than can be effectively utilized and maintained under existing conditions and with the forces at hand.
  2. Limit maximum allowable length of open trench to 1,000 lineal feet per work crew.
- H. Contractor is responsible for proper disposal of excavated materials.
1. Dispose of excess and unsuitable material in accordance with local, County, State and Federal Regulations.
  2. All excavated material removed offsite becomes the property of the Contractor.
- I. Preparation of Trenches for Utility Installation:

1. Excavate the bottom of the trench to a minimum over depth as indicated in the material specification and standard details for the associated pipe type and laying condition specified to provide for pipe bedding.
  2. Shape the bottom of the trench to support the utility uniformly.
  3. Check the elevation of the excavation depth.
  4. Review the subgrade for stability.
  5. Remove all water from the trench prior to utility placing operation to ensure a dry, firm bed on which to bed the utility.
  6. Where unsuitable soil conditions, or obstructions other than rock, require excavation of the trench below the subgrade elevation; undercut, backfill and compact the trench as specified in Section 3.4
- J. Excavation for Structures:
1. Excavate to provide a minimum of 12 inches of horizontal clearance between outer surface of structure and trench wall.
  2. Excavate the bottom of manhole bases and other precast structures and appurtenances to a minimum over depth of 6 inches below the bottom of the structure, or no less than indicated in the applicable standard details.
  3. Shape and grade the excavation so that the subgrade is level over the entire area.
  4. Check the excavation depth. Subgrade is required to be within 1/2-inch of elevation specified in the Drawings.
  5. Review the subgrade for stability.
    - a. Probe suitable soils that appear unstable.
    - b. Notify Owner if probe penetrations exceed six (6) inches.
  6. Remove all water from the excavation prior to placing the structure to ensure a dry, firm bed on which to install the base of the structure.
  7. Where unstable soil conditions, or obstructions other than rock, require excavation below the subgrade elevation; undercut, backfill and compact the excavation as specified in Section 3.4.
- K. Once trench is open, proceed immediately and with resolve to place specified materials in trench, or to otherwise utilize trench for its intended purpose.
1. Schedule work and order materials so that trenches are not left open for a longer period of time than is reasonably necessary.
  2. Any trench or portion of trench, which is opened and remains idle for 24 hours or longer, as determined by the Owner, may be directed to be immediately refilled, without completion of work, at no additional cost to the Owner.
  3. Said trench may not be reopened until the Owner is satisfied that work associated with trench will progress with resolve to finish.

### 3.4 TRENCH UNDERCUT AND BACKFILL

- A. Notify the owner when any unsuitable soil conditions or obstructions are discovered at the bottom of the trench or appurtenant structure excavation.
1. Undercut the subgrade only upon authorization of the Owner.
  2. Delineate and record limits of unsuitable materials.
- B. Excavate below the proposed subgrade elevation within the excavation limits until solid, suitable bearing material is uncovered.

- C. Fill the undercut excavation with approved aggregate material detailed in Section 2.1 to the proposed subgrade elevation.
  - 1. Maximum 12-inch lifts.
  - 2. Compact each lift to minimize voids.
- D. Suspend undercutting activities once a depth of 3 feet is reached to review the conditions with the Owner and, if necessary, consider alternative solutions.

### 3.5 UNAUTHORIZED EXCAVATIONS

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

### 3.6 SHORING, SHEETING AND TRENCH BOX CONSTRUCTION

- ~~A. Shoring and Sheeting~~
  - ~~1. Refer to specific sheeting and shoring specifications for minimum requirements braced excavation design and installation.~~
  - ~~2. Sheeting and shoring placed in the trench's pipe zone shall be left in place or cut off not lower than the top of pipe.~~
- B. Trench Boxes
  - 1. It is the Contractor's responsibility to determine the necessity of using a trench box for excavation.
  - 2. Ride trench box above the top of pipe to maintain the design trench width up to the top of pipe.
  - 3. Protect the integrity of the pipe bedding.
  - 4. Care must be taken to ensure that movement of the trench box does not pull the pipe joints apart.

### 3.7 UTILITY BEDDING

- A. Place the required depth of Bedding material on the trench subgrade that will rest below the utility bottom.
  - 1. Do not compact the Inner Bedding.
  - 2. Carefully excavate bell or coupling holes from this bedding layer so that the bells or couplings support no part of the load.
- B. Install utility
  - 1. To line and grade as specified in the construction drawings.
  - 2. Refer to specific pipe material specification for installation requirements.
- C. Place Haunch Bedding to the springline of the utility.
  - 1. Shovel slice material to occupy voids along the bottom circumference of the utility.



2. Hand tamp material to minimize voids in lifts not exceeding 6 inches.
- D. Place remainder of Bedding material, if specified, and hand tamp to minimize voids in lifts not exceeding 6 inches.

### 3.8 INITIAL BACKFILL

- A. Inspect pipe and fittings prior to backfill.
- B. Place Initial Backfill immediately after acceptance of utility Bedding compaction to protect the new utility installed.
- C. Observe specific pipe manufacturer's recommendations regarding methods of backfilling and compacting.
- D. Place Initial Backfill in lifts not exceeding 6 inches (loose thickness).
- E. Simultaneously fill the trench on both sides of the pipe in such a manner that injurious side pressures do not occur such that the pipe could be displaced or dislodged.
- F. Hand place, shovel slice, and hand tamp each lift of initial backfill solidly around and directly above the pipe.
  1. Utilize hand tamping to compact materials around the pipe.
  2. Do not use mechanical compaction equipment during Initial Backfill operations until material has been brought to 12 inches above the top of the pipe barrel.
- G. Exercise extreme care in backfilling operations to avoid displacing joints and appurtenances or causing any horizontal or vertical misalignment, separation, distortion or damage to newly made joints.
- H. Compact the top of the Initial Backfill to not less than 95% of the maximum unit weight of the selected material as specified in Section 1.6.
- I. Remove and replace utility if broken or damaged during backfill installation and compaction.
- J. Repair damages, distortions, or misalignments that occurred during backfill installation and compaction, to the full satisfaction of the Owner.
- K. Do not enclose or cover up any of the Work prior to required inspections and quality control testing.

### 3.9 FINAL BACKFILL

- A. Place Final Backfill using mechanical compaction method in layers not to exceed 12 inches.
- B. Compact each layer of Final Backfill to not less than 95% of the maximum unit weight of the selected material as specified in Section 1.6.

- C. It is the Contractor's responsibility to provide safe and secure access for testing personnel to complete the specified testing requirements.
- D. Backfill to the top of the excavated trench and compact all pipe installed during the same day, prior to completion of the day's work to provide a firm continuous support and covering for the pipe.
- E. Do not operate heavy equipment or use vibratory compaction methods over any pipe until it has been properly backfilled and compacted to minimum required maximum unit weight and has a minimum of 48 inches of cover.
- F. Compaction by flooding the excavation is prohibited.

3.10 NON-CONFORMING WORK

- A. Re-excavate trenches that have been improperly backfilled and replace and re-compact
- B. Should any of the Work be so enclosed or covered up prior to compliance with the quality assurance requirements of these specifications, such Work shall be uncovered and after quality control testing, refilled and compacted all at no additional cost to the Owner.
- C. Remove and replace pipe or structure sections that show excessive settlement or have been otherwise damaged by Contractor's operations at no cost to the Owner.

END OF SECTION

SECTION 02511

HOT MIXED ASPHALT PAVEMENT

PART 1 GENERAL

1.1 SUMMARY

- A. This Section shall include all work, materials, labor, and equipment necessary to furnish and install Hot Mix Asphalt (HMA) on a prepared base to the line, grade, thickness and cross-section in accordance with these specifications.

1.2 MEASUREMENT AND PAYMENT

- A. **HMA, (type)...Ton**  
The Owner will pay for the amount of HMA specified based on the weight placed, as supported by the weigh tickets supplied by the Contractor, and by the quality assurance yield calculations and mat thickness depth checks conducted by the Owner. **HMA, (type)** will be paid for at the contract unit price per ton bid as called for in the Contract Documents.
- B. Bond coat payment shall be included in the payment of HMA, Ton.
- C. Reductions to final pay amounts can be made for non-conforming work and HMA installation outside acceptable tolerances, as provided for in Section 3.6.

1.3 REFERENCES

- A. Abbreviations and Acronyms
1. ASTM - American Society for Testing Materials
  2. HMA – Hot Mix Asphalt
  3. MDOT - Michigan Department of Transportation.
  4. MIOSHA – Michigan Occupational Safety and Health Act
  5. MMUTCD – Michigan Manual of Uniform Traffic Control Devices
  6. JMF – Approved Job Mix Formula
- B. Definitions
1. Subgrade – Portion of the earth grade upon which the pavement structure is placed.
  2. Subbase – Layer of granular material placed on the subgrade as a part of the pavement structure.
  3. Open Graded Drainage Course – Layer of specified open-graded aggregate material placed on the subgrade as part of the pavement structure.
  4. Aggregate Base – Layer of dense graded aggregate material placed on a subgrade, subbase or open graded drainage course as part of the pavement structure.
  5. HMA base course – Layer below the leveling course for pavements in which there are three specified layers.
  6. HMA leveling course - Layer below the top course for pavements in which there are two or three specified layers.

7. HMA top course – Layer that forms the pavement surface.
  8. HMA patch – an HMA repair of a small localized defect in the pavement surface either as planned or as created by defective material that needs to be removed or replaced.
- C. Where referenced, “MDOT Specifications” is a general term that shall include the current version of the MDOT Standard Specifications for Construction and all Supplemental Specifications, Special Provisions, and Errata existing at the time of the award of the Contract.
- D. MDOT manuals that are referenced specifically by name shall be the current versions of said manuals existing at the time of the award of the Contract.

#### 1.4 PREPRODUCTION MEETING

- A. The Owner reserves the right to schedule a pre-production meeting. The pre-production meeting will be held a minimum of 7 calendar days prior to the start of HMA production and placement. The Owner will provide written notification to all parties a minimum of 14 calendar days prior to the meeting. Items of discussion shall include, but not be limited to:
1. Project safety.
  2. Project mixture and testing Special Provisions.
  3. Job Mix Formula.
  4. HMA sampling and testing requirements and procedures.
  5. Sequence of operations.
  6. HMA placement methods.
  7. The Contractor’s HMA-QC Plan.
  8. The roles and responsibilities of all parties involved in the work.
  9. HMA acceptance criteria.
  10. Project documentation.

#### 1.5 SUBMITTALS

- A. Submit Bond Coat supplier and manufacturer data that includes test results for the properties indicated in the Tables titled “Anionic (Cationic) Emulsified Asphalts” in the MDOT Specifications.
- B. Submit documentation of Plant Certification for the current year – per Table 1-1.
- C. Submit HMA Plant Scale Calibration Certificate for the current year.
- D. Submit JMF for all HMA mixtures for review by the Owner prior to construction.
1. Submit the JMF on an MDOT Form 1911 that has been signed by an MDOT Traveling Bituminous Inspector for the current year and has been modified for this project or submit JMF on suppliers form (s) with the information listed per Table 1-1.
  2. Submit performance graded binder test results from the current year if requested by the Owner.

## 1.6 QUALITY CONTROL

- A. Quality control of all materials used on the project and methods of installation shall be the responsibility of the Contractor. The Owner retains the right to perform random independent testing for the Owner's assurance the project is compliant at his tested locations however contract compliance remains the responsibility of the Contractor.
- B. It shall be the responsibility of the Contractor to correct or suspend operations, if necessary, when the work is not in compliance with these specifications.

## 1.7 QUALITY ASSURANCE

- A. The Owner will inspect, sample, test and evaluate the HMA for compliance to these specifications for the following:
  - 1. Delivery and Placement Temperature
    - a. The Owner will make periodic checks for temperature using a calibrated thermometer or temperature gun at locations within the truck, paver hopper or within the mat at the discretion of the Owner.
    - b. Refer to Section 3.5.A and Table 3-1 for allowable temperature ranges.
  - 2. Layer Thickness and Yield
    - a. The Owner will conduct periodic mat thickness depth checks and yield calculations during placement of the HMA material.
    - b. Lower layers of HMA base course are to be constructed to a tolerance of  $\pm \frac{3}{4}$  inch and final layers of base course constructed to a tolerance of  $\pm \frac{3}{8}$  inch.
    - c. HMA leveling course is to be constructed to a tolerance of  $\pm \frac{1}{4}$  inch.
    - d. HMA top course is to be constructed to a tolerance of  $\pm \frac{1}{8}$  inch.
    - e. The cumulative pavement thickness shall be at least the planned thickness and not be more than  $\frac{1}{4}$  inch greater than the planned thickness.
    - f. The pavement thickness of a single course pavement shall be at least the planned thickness and not be more than  $\frac{1}{4}$  inch greater than the planned thickness.
  - 3. Joint Quality: The Owner shall visually inspect the joint configuration and placement for tightness, smoothness and alignment to evaluate conformance to the requirements stated in Sections 3.5 C.5 and 3.5 D.
  - 4. Surface Texture (segregation)
    - a. The Owner shall visually inspect the surface texture to evaluate conformance to the requirements of Section 3.5 C.6.
    - b. Areas that visually appear to be segregated shall be evaluated by the Owner by taking a set of 6 to 15 tests with a nuclear density gauge in both the visually segregated area and in an adjacent non-segregated area with the mean value of density of the two areas compared using the MDOT BITSEG2 computer program.
    - c. HMA that generates an output from the MDOT BITSEG2 program of "Remove and Replace, take corrective action" or "take corrective action" shall be considered to be segregated.
  - 5. Surface Smoothness: The Owner shall visually inspect and make measurements to evaluate conformance to the requirements of Section 3.5 C.6.

6. Density
    - a. HMA base, leveling and top course placed for both main line and hand patching shall be compacted to a minimum of 92.0% and a maximum of 96.0% of the density calculated from the theoretical maximum specific gravity ( $G_{mm}$ ) indicated on the approved JMF for the mixture.
    - b. The compaction percentage shall be determined by a calibrated nuclear density gauge.
    - c. The compaction percentage may be determined by 6 inch diameter cores (using dried back weights) at the discretion of the Owner.
  7. Longitudinal Joint Density
    - a. Longitudinal Joints in HMA base, leveling and top course shall be constructed so that the density of the joint is a minimum of 84.0% of the density calculated from the theoretical maximum specific gravity ( $G_{mm}$ ) indicated on the approved JMF for the mixture.
    - b. The compaction percentage shall be determined by a calibrated nuclear density gauge centered on the line where the joint between the two adjacent lifts abut at the surface.
    - c. Cores will not be permitted to establish the density and compaction % of longitudinal joints in HMA base, leveling or top course.
  8. Mixture Properties
    - a. The Owner shall obtain samples of the hot mixture from the plant and test the mixture to evaluate compliance to the JMF.
      - 1) A single sample shall be obtained from each day's placement for each mixture type being placed that is under 100 tons.
      - 2) Two samples shall be obtained from each day's placement for each mixture type being placed that exceeds 100 tons.
    - b. The tested mixture properties shall be within the following tolerances during construction:
      - 1) Gradation of aggregate blend
        - a) Each sieve shall be within the Uniformity Tolerance indicated in Table 3-3.
      - 2) Binder content
        - a) Shall be within  $\pm 0.5\%$  of that indicated on the JMF
      - 3) Air Voids.
        - a) Shall be within  $\pm 1.0\%$  of the JMF value
      - 4) Voids in Mineral Aggregate (VMA)
        - a) Shall be within  $\pm 2.0\%$  of the JMF value
- B. Testing Agencies: The Owner may employ an independent testing agency to do testing for in place density and mixture properties as directed by the Owner.
- C. Destructive Testing: Destructive testing may be necessary during the term of the Contract to ensure that results as performed during the construction is deficient and warrants additional testing. The contractor shall be solely responsible for all costs incurred to perform destructive testing, including but not limited to the costs related to the testing of the areas suspected of failing to meet the contract requirements in a means approved by the Owner, to retain experts to direct the method of testing, oversee the testing, and assist in the resolution of the deficient areas solely at the contractors expense.

## PART 2 PRODUCTS

### 2.1 BOND COAT

- A. Shall meet the requirements of type SS-1h as specified in the table Titled “Anionic Emulsified Asphalts” or type CSS-1h as specified in the table Titled “Cationic Emulsified Asphalts” in the current version of the MDOT Specifications.

### 2.2 HMA MIXTURES

- A. Mixing Plants
  - 1. Submit documentation of plant certification by MDOT. If certification cannot be provided, the Owner may request samples of the materials to be used to be provided and tested to verify the properties of the submitted JMF prior to HMA being placed. See Table 1-1.
  - 2. Scales for weighing HMA mixtures must meet requirements of the section titled “Measuring Weight on Scales” of the MDOT Specifications.
- B. Composition of Mixture
  - 1. Provide the HMA mix type and the performance grade of asphalt binder as shown on the project plans and as described on the approved JMF.
  - 2. Aggregates
    - a. Shall be natural aggregates, iron blast furnace slag, reverbatory blast furnace slag or steel furnace slag.
    - b. Gradation shall be within the range for each sieve size as indicated Table 2-1.
    - c. Physical Requirements shall be as indicated in Table 2-2.
    - d. The minimum Aggregate Wear Index (AWI) for aggregates used in HMA Top Course mixtures shall be 220, unless otherwise specified.
    - e. The Owner reserves the right to request test results for and/or sample and test aggregates used in HMA Mixtures to establish compliance to these requirements prior to or during the production of HMA mixtures.
  - 3. Binder
    - a. Shall comply with the requirements indicated in Table 2-3.
    - b. Shall be from a supplier listed on the MDOT “Asphalt Binder Suppliers List” existing at the time of the contract award:
    - c. The Owner reserves the right to request test results for and/or sample and test binders used in HMA Mixtures to establish compliance to these requirements prior to or during production of HMA mixtures.
  - 4. Mineral Filler
    - a. Shall be 3MF mineral filler consisting of limestone dust, dolomite dust, fly ash collected by an electrostatic precipitation method, slag, or hydrated lime.
    - b. Shall have a gradation with 100 percent passing the No. 30 sieve and 75 to 100 percent passing the No. 200 sieve.
    - c. Free carbon content of the fly ash sample shall not exceed 12 percent by weight as measured by the loss on ignition tests in accordance with ASTM C311.



- C. Mix Design Criteria and Volumetric Properties shall meet the requirements indicated in Table 2-4.
- D. Reclaimed Asphalt Pavement (RAP) Substitution
  - 1. Is limited to a maximum of 15% of the total mixture in HMA top course.
  - 2. Is limited to a maximum of 30% of the total mixture in HMA leveling and base course.
  - 3. Is limited to a maximum of 17% RAP binder by weight of the total binder in HMA mixtures where polymer modified binders are specified (designated P).
  - 4. No adjustment shall be permitted for the binder grade selection.

### 2.3 PAVING EQUIPMENT

- A. Paving equipment shall be in good working order and capable of constructing HMA pavement in accordance with the specifications. Should the HMA paving indicate that an equipment problem is causing the construction to be out of specification, the Owner has the right to request the equipment be repaired or replaced.
- B. If maintaining traffic in the work area during construction, all self-propelled equipment within the construction influence area shall be with all safety devices as required by MIOSHA, MMUTCD, MDOT, or the local any governmental agencies within the construction influence area.

## PART 3 EXECUTION

### 3.1 EXAMINATIONS

- A. Each layer of HMA shall not be placed until the surface upon which it is to be placed has been inspected by the Contractor immediately prior to continuing construction.
- B. The Owner provides independent testing at random locations to assist in determining the conditions at the point the test is performed, but the Contractor shall remain solely responsible for compliance to the contract provisions throughout the entire project area.

### 3.2 PREPARATION OF SURFACES

- A. Subgrade
  - 1. Grade subgrade to within one-half inch in ten feet of the design grade.
  - 2. Compact the subgrade, to a depth of not less than nine inches, to not less than 95% of the maximum unit weight as determined by the method described in the MDOT Density Testing and Inspection Manual appropriate for the subgrade material. The Owner may require the maximum unit weight to be determined by ASTM D1557 or by other methods.
  - 3. Proof roll all subgrade using rubber-tired equipment of sufficient size and weight, as determined by the Engineer, to identify any soft or yielding soils that require undercutting.
  - 4. Undercut and replace soft or yielding soils in the subgrade using the specified materials and to the limits as directed by the Engineer.

B. Aggregate Base

1. Place the aggregate base to the line and grade as shown on the contact documents to within a tolerance of +/- 3/8 inch, unless otherwise specified.
2. Compact the aggregate base to not less than 98% of the maximum unit weight as determined by the method in the MDOT Density Testing and Inspection Manual appropriate for the aggregate base material. The Owner may require the maximum unit weight to be determined by ASTM D 1557 or by other methods.

3.3 BOND COAT

- A. Uniformly apply bond coat to the surfaces against which new HMA is to be placed with a pressure distributor.
- B. The surfaces against which new HMA is to be placed shall be clean and dry. Contact surfaces that have become coated with dust, sand, or other objectionable material shall be cleaned by brushing, blowing with compressed air, or cut back with an approved power saw or other mechanical means to achieve a smooth clean edge, as directed by the Owner.
- C. The bond coat shall be applied far enough in advance of placement of the fresh mixture to insure adequate curing. Reapplication of the bond coat may be required at the direction of the Engineer if it becomes contaminated prior to placement of the HMA mixture.
- D. At no time shall bond coat be applied to the vertical face of concrete curb and gutter or monolithically poured face curb.

3.4 TRANSPORTATION OF MIXTURES

- A. Each load of HMA mixture delivered to the project shall be weighed to the nearest 20 pounds on a certified scale having an automatic print out system.
- B. Trucks used for hauling HMA mixtures shall have tight, clean, smooth beds and shall be adequately covered to protect from the weather and foreign objects.
- C. Trucks used to haul HMA mixtures when the air temperature is below 50 degrees F. shall be insulated. The insulation shall be continuous along the bottom and four sidewalls.
- D. A release agent, as permitted by the Owner shall be applied to the hauling units with atomizing spray equipment. Excessive use of release agent will be cause for rejection of the load.

3.5 INSTALLATION

- A. HMA Delivery at Site
  1. The temperature of the HMA mixture discharged from the hauling unit shall be within the ranges indicated in Table 3-1 unless otherwise approved by the Owner or they may be rejected.
  2. Where there is no range specified in Table 3-1 for surface temperature and layer thickness, placement shall not be permitted unless approved by the Owner.
  3. Any load having a temperature below 250 degrees or above 350 degrees in the hauling unit will be rejected.

- B. Temperature of Surfaces Prior to Placement – See Table 3-1
- C. Placing HMA Mixtures
1. Pavers
    - a. HMA shall be placed by an approved self-propelled mechanical paver to such a depth that when compacted it will have the thickness specified or as directed by the Engineer. The mixture shall be dumped into the center of the hopper and care shall be exercised to avoid overloading the paver and spilling the mixture.
    - b. Pavers will be required to have an automatically controlled and activated screed and strike off assembly except when placing HMA mixtures for:
      - 1) Variable width sections.
      - 2) The first course of an HMA base course mixture on a subgrade, subbase or aggregate base.
      - 3) HMA base course mixtures for shoulders and widening less than 10.5 feet in width or as directed by the Owner.
  2. HMA Shoulders: Shoulder widths within the tolerance of the equipment shall be placed with the main line HMA Top Course mixture. Shoulder widths exceeding the capabilities of the equipment shall be placed with an acceptable paver as directed by the Owner.
  3. HMA Wedging
    - a. When necessary to take out irregularities in the existing road surface, wedging with HMA mixture shall be done by placing several layers with the paver.
    - b. The nominal maximum aggregate size for the material used shall not exceed  $\frac{3}{4}$  inch and the maximum lift thickness shall be 2 inches. HMA Mixtures 2C, 11A and 700B will not be permitted for wedging.
    - c. Any corrections made by wedging with HMA mixture shall be placed, compacted, and allowed to cool prior to placing leveling, or top course mixtures. If the surface temperature of the wedging material falls below 150° F then a bond coat shall be applied prior to placement of the next layer of pavement.
  4. HMA Lift Thickness
    - a. HMA base course shall not be placed in lifts exceeding 3 inches, compacted, unless otherwise approved by the Owner. Approval to place lifts in excess of 3 inches will be based on the ability of the Contractor to place and compact the HMA base course mixture to the required density, cross section, and within the specified tolerances
    - b. When the lift thickness exceeds 2 inches for HMA top course mixtures and 2  $\frac{1}{2}$  inches for HMA leveling course mixtures, the pavement shall be constructed in two or more courses, unless otherwise specified in the contract documents.
  5. HMA Joints
    - a. When placing the HMA top course, or the top 2 courses of multi-level pavement on the traveled portion of the roadway, the paving operation shall be conducted in a combination of widths which will cause the final course longitudinal joint lines to coincide with the proposed painted lane lines.
    - b. In placing HMA mixture adjacent to all joints, hand raking or brooming will be required to provide a dense smooth connection.

- c. All joints shall have the same texture and smoothness as other sections of the layer.
  - d. The interface between the HMA mixture and concrete surfaces shall be full depth saw cut to a minimum width of ¼ inch and sealed with a hot poured rubber sealant.
  - e. Transverse Joints
    - 1) The roller shall pass over the unprotected end of freshly placed mixture only when placing of the layer is discontinued or when delivery of the HMA mixture is interrupted.
    - 2) In all cases, the edge of the previously placed layer shall be cut back to expose a clean, even, vertical surface for its full thickness.
    - 3) In continuing placement of a strip, the mechanical hot mixture will be spread to obtain a joint after rolling which conforms to the required density and smoothness specified.
  - f. Longitudinal Joints
    - 1) Longitudinal joints shall be vertically aligned to be within 1 inch of the underlying course and aligned with the final pavement markings.
    - 2) Edges of previously placed strips that have cooled or are irregular, honeycombed, poorly compacted, damaged, or otherwise defective, and unsatisfactory sections of the joint shall be cut back to expose a clean, sound, vertical surface for the full thickness of the course as directed by the Owner.
    - 3) When placing HMA over a concrete pavement, the longitudinal joints shall align with the joints in the concrete pavement. It shall be the responsibility of the contractor to provide the precise location of the existing longitudinal joints prior to placement of the HMA. In no case shall the variance between the underlying longitudinal joints and the HMA longitudinal joints exceed 1 inch. The longitudinal joints in the HMA shall be saw cut and sealed with hot poured rubber sealant.
  - g. When the temperature of the previously placed HMA mixture mat falls below 170 degrees F. The edges of the previously placed HMA mixture mat shall be coated with bond coat material before the new HMA mixture is placed on the adjacent section.
6. HMA Surface.
- a. A sufficient number of experienced shovelers and rakers shall follow the machine, adding hot HMA mixture and raking the HMA mixture as required to produce a course that, when completed, will conform to all requirements specified herein. Broadcasting or fanning of HMA mixture over areas being compacted will be permitted for HMA base and leveling course but shall not be permitted for HMA top course.
  - b. In areas where the use of machine spreading is impractical, the HMA mixture shall be spread in a manner to prevent segregation.

D. Rolling and Compaction of HMA Mixtures

- 1. Rollers and Rolling – General
  - a. Use roller type indicated in Table 3-2 for the appropriate application.

- b. The Contractor shall provide an adequate number of rollers so as to achieve the minimum required density and finish, adjusting the speed of the paving operation as needed.
  - c. Pneumatic-tired rollers shall not mark or rut the surface or displace the pavement edges. The pneumatic tired roller shall be ballasted to obtain the required ground contact pressures as directed by the Owner. In order to obtain a uniformly textured mat and the desired in place density, the Owner may direct the Contractor to correct any deficiencies that arise at any time during the rolling operations. The roller operations shall be conducted in such a manner as to prevent scuffing or chatter marks in the pavement surface.
  - d. Steel rollers wheels shall be kept properly moistened with water but usage of an excess is prohibited. Pneumatic tired rollers shall be inspected and be verified to be clean.
  - e. Rolling of the HMA mixture shall begin as soon after placing as it will bear the roller without undue displacement, picking up the mat or cracking. Rolling can start longitudinally at the extreme sides of the lanes and proceed toward the center of the pavement, overlapping on successive trips by at least half the width of the drive wheel of the roller. Alternate passes of the roller shall be of slightly different lengths. The maximum roller speed shall not exceed the manufacturer's recommended speed for the type of mixture or thickness of layer being placed. At no time shall the roller finish perpendicular to the direction of travel.
2. Rolling and Compacting Unsupported Edges: When placing the HMA Mixture at an unsupported edge, the drum on the first pass at an unsupported edge shall be 3 inches to 6 inches inside the unsupported edge. On the second pass at an unsupported edge the drum shall extend over the unsupported edge by approximately 6 inches. The drum shall not run on the edge or directly inside the unsupported edge.
3. Rolling and Compacting Joints: When placing the HMA mixture in a lane adjoining a previously placed lane (longitudinal joint), the mixture shall be placed such that it uniformly overlaps the first lane by a maximum of two inches and is placed at a height above the cold mat equal to the breakdown roller depression on the hot mat. Compact the longitudinal joint by rolling from the hot side, keeping the edge of the roller approximately 6 inches to 8 inches inside the cold joint for the first pass. For the second pass of the roller, compact the joint from the hot side while overlapping the cold side by 6 inches to 8 inches.
4. Rolling and Compacting Areas of Limited Accessibility: In all places not accessible to the roller and less than 3 feet in width, the hot HMA mixture shall be compacted by vibratory plate compactors or by other means approved by the Engineer. Skin patching on an area that has been rolled will not be permitted.
5. HMA Surfaces
  - a. After final rolling, the surface may be tested by the Owner using a 10 foot straight edge supported on equal size blocks 1 inch or greater in thickness at each end at selected locations. The variation of the surface from the testing edge of the straight edge between any two contacts with the surface shall at no point exceed:
    - 1) Three-eighths inch for HMA base course.
    - 2) One-quarter inch for HMA leveling course.
    - 3) One-eighth inch for HMA top course.

- b. Finish rolling on the top course shall continue until all roller marks are eliminated.
- c. No traffic shall be allowed on the surface being placed until rolling has been completed and the surface has cooled sufficiently to prevent damage from traffic.

### 3.6 NON-CONFORMING WORK

- A. If it is determined by the Owner that the work is outside acceptable tolerances or to be non-conforming work per these specifications, the Contractor will be notified and allowed to make any necessary corrections to their operations. Should the Contractor fail to make the necessary corrections as requested, the Owner will determine the best course of action to correct which could include reducing final payment or hiring outside forces, at the Contractor's expense, to correct. The Contractor shall submit to the Owner for review the means and methods to make deficient areas compliant. Corrections shall be made based on these as directed by the Owner.
- B. Non-Conforming Work - Identified during construction.
  - 1. Temperature: HMA shall be rejected per Section 3.5A. If the HMA is placed it shall be either removed or replaced or if acceptable to be left in place by the Owner, a 25% reduction in payment will be assessed.
  - 2. Layer Thickness shall meet contract documents. Additional layers shall not be placed until resolved. Resolution may require removal and replacement, adjustments in placement of the next layer or grinding.
  - 3. Yield: Additional course shall not be placed until resolved.
  - 4. Joint Quality: If found to be deficient, the Contractor may be required to saw cut and seal the joint with hot poured rubber sealant or may be required to remove and replace the full width of pavement in the affected areas.
  - 5. Surface Texture (Segregation): Remove and replace to the full lane width in the affected area.
  - 6. Surface Smoothness: Remove and replace to the full lane width in the affected area.
  - 7. Density
    - a. Remove and replace to the full lane width in the affected area.
    - b. If in lower courses do not place additional courses until resolved
  - 8. Longitudinal Joint Density
    - a. Remove and replace to the full width of the pavement in the affected area.
  - 9. Mixture Properties: Test second sample, if obtained, for mixture. If second sample tests do not concur with first sample for the properties that are out of specification, no action is required. If second sample test results concur with first sample for the properties that are out of specification either remove and replace the affected HMA or if acceptable to be left in place by the Owner, a 25% reduction in payment will be assessed.
- C. Non-Conforming Work - Identified during the warranty period.
  - 1. Joint Quality: Saw cut and seal the joint with hot poured rubber sealant or remove and replace the full width of pavement in the affected areas.
  - 2. Surface Texture (Segregation): Remove and replace the full lane width in the affected area.

3. Rutting and/or Flushing: Remove and replace the full lane width in the affected area.
4. Cracks
  - a. For transverse cracks, either route and seal the crack with hot poured rubber sealant or remove and replace with a patch wide enough to accommodate the equipment needed to achieve the required density.
  - b. For random cracks remove and replace to the full lane width of the pavement in the affected area.
  - c. For edge cracks remove and replace to a width of at least three feet along the affected area

END OF SECTION



**Table 1-1. Requirements for HMA Mixture Submittals**

Job Name, HMA Supplier, and HMA Mixture Type

Plant No. and Plant Location

MDOT Form 1911 for plant with Traveling Mix Inspector signature and Plant Certification Date for current year.

Aggregate Pit No., Type and Blend %

Aggregate Gradation -Each and Combined

Aggregate Crushed %

Aggregate Soft Particle%

Aggregate Angularity Index

Aggregate L.A. Abrasion

Specific Gravity of Combined Aggregate,  $G_{sb}$

Aggregate Wear Index

Binder Supplier and MDOT Certifier Number

Binder Virgin Grade and Final Grade

Binder Specific Gravity

% Binder from RAP

% New Binder Added

**Mix Properties at Test Points 4 (minimum) and Optimum Binder Content**

Binder Content, %

Bulk Specific Gravity, compacted

Theoretical Maximum Specific Gravity

Air Voids, %

Voids in Mineral Aggregate, % (VMA)

Voids Filled with Asphalt, % (VFA)

Stability (LBS)

Flow (.01 In)

**Worksheets**

Regression Analysis for Marshall Mix Design

Bulk Specific Gravity Worksheet – Marshall Specimens

Theoretical Maximum Specific Gravity Worksheet

**Table 2-1. Master Gradation Ranges for Aggregate Blend for HMA Mixtures**

HMA Mixture	2C	11A	3C	4C MOD	13A MOD	36A MOD
% Passing 1 ½ inch	100	100				
% Passing 1 inch	91-100	90-100	100			
% Passing ¾ inch	90 max	70-95	91-100	100	100	
% Passing ½ inch	78 max	55-85	90 max	91-100	75-95	100
% Passing 3/8 inch	70 max	40-80	77 max	90 max	60-90	92-100
% Passing No. 4	52 max	25-65	57 max	67 max	45-80	65-90
% Passing No. 8	15-40	15-50	15-45	15-52	30-65	55-75
% Passing No. 16	30 max	10-40	33 max	37 max	20-50	
% Passing No. 30	22 max	7-32	25 max	27 max	15-40	25-45
% Passing No. 50	17 max	5-20	19 max	20 max	10-25	
% Passing No. 100	15 max	4-12	15 max	15 max	5-15	
% Passing No. 200	3-6	3-6	3-6	3-6	3-6	3-10

Note: RAP for HMA Mixture 4C MOD is limited to 15% of the total mixture

RAP for HMA Mixtures 13A MOD and 36A MOD is limited to 15% of the total mixture when used for HMA top course (Section 2.2.D).

**Table 2-1. Master Gradation Ranges for Aggregate Blend for HMA Mixtures**

HMA Mixture	700B MOD	1100L MOD	1100T MOD	1300L MOD 1300T MOD	1500L MOD 1500T MOD
% Passing 1 ½ inch	100				
% Passing 1 inch	80-100				
% Passing ¾ inch		100	100	100	
% Passing ½ inch		90-100	90-100	90-100	100
% Passing 3/8 inch	55-90	65-95	65-95	65-95	92-100
% Passing No. 4				55-75	65-90
% Passing No. 8	30-55	45-70	45-70	45-70	55-75
% Passing No. 16					
% Passing No. 30	15-40	20-45	20-45	20-45	25-50
% Passing No. 50					
% Passing No. 100					
% Passing No. 200	3-10	3-10	3-10	3-10	4-10

Note: RAP for HMA Mixtures 1100T MOD, 1300T MOD and 1500T MOD is limited to 15% of the total mixture (Section 2.2.D.).

**Table 2-2. Physical Requirements for Aggregates for HMA mixtures**

HMA Mixture	2C	11A	3C	4C MOD	13A MOD	36A MOD
Crushed, %, min, MTM 117	90	90	90	90	90	90
Soft Particle, %, max, MTM 110 (a)	12.0	12.0	12.0	8.0	12.0/8.0 (b)	8.0
Fine Aggregate Angularity, min, MTM 118 (c)	4.0	2.5	4.0	4.0	2.5	3.0
L.A. Abrasion, % loss, max, MTM 102, (d)	40	40	40	40	40	40
Sand Ratio, max (e)	-	-	-	-	50	50

- (a) Soft particles maximum is the sum of the shale, siltstone, friable sandstone, ochre, coal, clay-ironstone and any particles that are structurally weak or are non-durable in service.
- (b) When HMA mixture is used for HMA leveling or base course /HMA top course
- (c) The angularity index of the blended aggregate must meet the minimum requirement. In mixtures containing RAP, the required minimum angularity index must be met by the virgin material.
- (d) For the composite mixture. Each individual aggregate must be less than 50.
- (e) Percent of material passing the No. 4 sieve as a percent of the percent of material passing the No. 30 Sieve.

Note: RAP for HMA Mixture 4C MOD is limited to 15% of the total mixture

RAP for HMA Mixtures 13A MOD and 36A MOD is limited to 15% of the total mixture when used for HMA top course (Section 2.2.D).

**Table 2-2. Physical Requirements for Aggregates for HMA mixtures**

HMA Mixture	700B MOD	1100L MOD	1100T MOD	1300L MOD 1300T MOD	1500L MOD 1500T MOD
Crushed, %, min, MTM 117	25	40	90	90	90
Soft Particle, %, max, MTM 110 (a)	12.0	12.0/8.0 (b)	12.0/8.0 (b)	12.0/8.0 (b)	12.0/8.0 (b)
L.A. Abrasion, % loss, max, MTM 102 (c)	40	40	40	40	40

- (a) Soft particles maximum is the sum of the shale, siltstone, friable sandstone, ochre, coal, clay-ironstone and any particles that are structurally weak or are non-durable in service.
- (b) When HMA mixture is used for HMA base or leveling course /HMA top course
- (c) For the composite mixture. Each individual aggregate must be less than 50.

Note: RAP for HMA Mixtures 1100T MOD, 1300T MOD and 1500T MOD is limited to 15% of the total mixture (Section 2.2.D.)

**Table 2-3. Specifications for Performance Graded Binder**

Binder Designation	PG 52-22	PG 58-22	PG 64-22	PG 70-22	PG 52-28	PG 58-28	PG 64-28	PG 58-34
Average 7-day Max. Pavement Design Temp, °C	52	58	64	70	52	58	64	58
Minimum Pavement Design Temp, °C	-22	-22	-22	-22	-28	-28	-28	-34
<b>Original Binder</b>								
Flash Point Temp, T48/D92 Min, °C	230	230	230	230	230	230	230	230
Viscosity, T316/D4402: Max 3 Pa·s, Test Temp, °C	135	135	135	135	135	135	135	135
Dynamic Shear, T315/D7175: G*/sin θ, Min 1.00 kPa, Test Temp, °C at 10 rad/s	52	58	64	70	52	58	64	58
<b>Rolling Thin Film Oven (T240/D2872)</b>								
Mass Loss, Max, %	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Dynamic Shear, T315/D7175: G*/sin θ, Min 2.20 kPa, Test Temp, °C at 10 rad/s	52	58	64	70	52	58	64	58
<b>Pressure Aging Vessel Residue (R28/D6521)</b>								
PAV Aging Temp, °C	90	100	100	100	90	100	100	100
Dynamic Shear, T315/D7175: G*/sin θ, Max 5000 kPa, Test Temp, °C at 10 rad/s	19	22	25	28	16	19	22	16
Physical Hardening (a)	Report	Report	Report	Report	Report	Report	Report	Report
Creep Stiffness T315/D6648 S Max, 300 MPa M-value, Min 0.300 Test Temp, °C at 60 s (b)	-12	-12	-12	-12	-18	-18	-18	-24
Direct Tension T314/D6723 Fail, Strain Min 1.0% Test Temp, °C at 1.0 mm/min	-12	-12	-12	-12	-18	-18	-18	-24

- (a) Physical hardening is performed on a set of asphalt beams except the conditioning time is extended to 24h ± 10 min at 10% C above the minimum performance temperature. The 24 h stiffness and m-value are reported for information purposes only
- (b) If the creep stiffness is below 300 MPa, the direct tension tests are not required. If the creep stiffness is from 300 MPa to 600 MPa, the direct tension failure strain requirement can be used in lieu of the creep stiffness requirement. The m- value requirement must be satisfied in both cases

**Table 2-4. Mix Design Criteria and Volumetric Properties**

HMA Mixture	2C	11A	3C	4C MOD	13A MOD	36A MOD
Target Air Void, %	3.00	3.00	4.00	4.00	4.00/3.00 (a)	4.00/3.00 (a)
VMA, min, (based on $G_{sb}$ )	11.00	11.00	13.00	14.00	14.00	15.00
VFA	65-78	65-78	65-78	65-78	65-78	65-78
Fines to Binder Ratio, max (b)	1.2	1.2	1.2	1.2	1.2	1.2
Flow (.001 inch)	8-16	8-16	8-16	8-16	8-16	8-16
Stability, lbs, min	1200	1200	1200	1200	1200	1200

- (a) Target Air Void may be reduced to 3.00% for low volume roads for HMA mixture 13A and 36A if designated in the contract documents.
- (b) Ratio of aggregate passing the No. 200 sieve to total asphalt binder content by weight including fines and binder content contributed by RAP

Note: RAP for HMA Mixture 4C MOD is limited to 15% of the total mixture

RAP for HMA Mixtures 13A MOD and 36A MOD is limited to 15% of the total mixture when used for HMA top course (Section 2.2.D).

**Table 2-4. Mix Design Criteria and Volumetric Properties**

HMA Mixture	700B MOD	1100L MOD	1100T MOD	1300L MOD 1300T MOD	1500L MOD 1500T MOD
Target Air Void, %	4.00	3.00	3.00	3.00	3.00
VMA, min (based on $G_{sb}$ )	13.00	13.50	13.50	14.00	14.00
VFA	65-78	65-78	65-78	65-78	65-78
Fines to Binder Ratio, max (a)	1.2	1.2	1.2	1.2	1.2
Flow (.001 inch)	8-16	8-16	8-16	8-16	8-16
Stability, lbs, min	700	1100	1100	1300	1500

- (a) Ratio of aggregate passing the No. 200 sieve to total asphalt binder content by weight including fines and binder content contributed by RAP

Notes:

Measure and/or calculate volumetric properties from specimens made using a 50 blow Marshall Hammer per the Asphalt Institute Manual MS-2.

Measure the density of the Marshall specimens per ASTM D 2726.

Measure the Maximum Specific Gravity per ASTM D 6857.

Measure Flow and Stability of Marshall specimens per ASTM D 5581.

RAP is limited to 15% of the total mixture for HMA Mixtures 1100T MOD, 1300T MOD and 1500T MOD (Section 2.2.D).

**Table 3-1. HMA Mixture Placement Temperatures**

Temperature of Surface Being Overlaid, Deg F	Layer Thickness		
	1 inch and under	1 inch to 2 inches	Over 2 inches
	Target Placement Temperature Deg F		
35-39			310 - 350
40-49		310 - 350	295 - 335
50-59	310 - 350	295 - 335	280 - 320
60-69	295 - 335	280 - 320	265 - 305
70-79	280 - 320	265 - 305	250 - 290
80-89	265 - 305	250 - 290	250 - 290
90 and over	250 - 290	250 - 290	250 - 290

Air temperature must be 40 deg F and rising for the placement of HMA.

**Table 3-2. Roller Type Application Chart**

<b>Roller Type</b>	<b>HMA base course</b>	<b>HMA leveling course</b>	<b>HMA top course</b>	<b>Pinching Joints</b>
Pneumatic-tired	Initial Compaction only	Initial Compaction only	No	No
Tandem Steel Wheeled – Vibratory mode	Initial Compaction only	Initial Compaction only	Initial Compaction only	No
Tandem Steel Wheeled – Static mode	Initial and/or Final Compaction	Initial and/or Final Compaction	Initial and/or Final Compaction	Initial and/or Final Compaction

**Table 3-3. Uniformity Tolerance Limits for Aggregate Blends**

<b>Parameter</b>	<b>Top and Leveling Courses</b>	<b>Base Course</b>
% Passing # 8 and Larger Sieves	± 8.0	± 9.0
% Passing # 30 sieves	± 6.0	± 9.0
% Passing #200 Sieve	± 2.0	± 3.0



SECTION 02660

WATER SERVICES (GENERAL)

PART 1 GENERAL

1.1 SUMMARY

- A. This Section includes the general requirements and material standards for water service lines, connections and other appurtenances used in potable water supply systems. This Section also includes the requirements related to the installation of these items, as well as general items related to water service line construction.
- B. Related Requirements
  - 1. Section 01220 – Bid Item Description
  - 2. Section 02315 – Utility Trenching, Backfill and Compaction
  - 3. Special Provision for As-Needed Service Line Replacement

1.2 MEASUREMENT AND PAYMENT

- A. Measurement and payment information for materials and work items specified in this Section are detailed in Section 01220 – Bid Item Description.
- B. The costs for all required bacteriological sampling from water supply system shutdowns due to contractor error will be borne by the contractor, otherwise, the costs for testing will be borne by the Owner of the water supply system.

1.3 REFERENCES

- A. Abbreviations and Acronyms
  - 1. ANSI – American National Standards Institute ([www.ansi.org](http://www.ansi.org))
  - 2. AWWA - American Water Works Association ([www.awwa.org](http://www.awwa.org))
  - 3. NSF – National Sanitation Foundation
  - 4. ASTM – American Society for Testing and Materials
  - 5. DIPRA – Ductile Iron Pipe Research Association
- B. Definitions
  - 1. Working Pressure – the maximum anticipated, sustained operating pressure applied to the pipe exclusive of transient and surge pressures, also referred to as Maximum Allowable Operating Pressure.
  - 2. Surge Pressure – the transient internal hydrostatic pressure that the pipeline is subjected to because of pressure waves created by the conveying fluid's velocity change.
  - 3. Test Pressure – the internal hydrostatic pressure specified in the contract documents to which the pipeline will be subjected to during the hydrostatic pressure test and testing allowance test.
  - 4. Restrained Joint –a type of joint designed to resist forces that act to separate a joint, such as thrust caused by internal pressure, external pulling forces, etc. Standard

push-on and mechanical joints by themselves do not provide significant restraint against axial thrust forces.

C. Reference Standards

1. ANSI/AWWA ([www.awwa.org](http://www.awwa.org))
  - a. ANSI/AWWA C800 – Underground Service Line Valves and Fittings
2. Unless otherwise specified, references to documents shall mean the latest published edition of the referenced document in effect at the bid date of the project.

1.4 SUBMITTALS

- A. Manufacturer's specific technical data with the physical properties of service line piping, curb stops, corporation stops, curb boxes, tapping sleeves, fittings and other appurtenances to be used on the project.
- B. Hydraulic cement for interior concrete foundation or slab repair/sealing. Refer to Special Provision for As-Needed Water Service Line Replacement.
- C. Certificates of Compliance with Specifications shall be furnished for all materials to be supplied.

1.5 QUALITY ASSURANCE

- A. Provide a list of all suppliers of service line, fittings, valves and all other applicable water system materials
- B. Provide the Owner with a Certificate of Intent of Compliance prior to material delivery.
  1. Certificate shall certify that all materials supplied for the work will be manufactured, tested and inspected in accordance with the contract documents.
- C. Following the delivery of the materials the supplier shall provide the Owner with a Certificate of Compliance.
  1. The Certificate shall certify that all materials supplied have been manufactured, tested and inspected in accordance with the contract documents.
- D. Each of the above Certificates shall include the following:
  1. Suppliers name
  2. Mailing address;
  3. Project title,
  4. Description of each material supplied,
  5. Statement that all materials will be (or have been) manufactured, tested and inspected in accordance with the contract documents for the project and shall be signed and notarized.
- E. All of the above shall be provided at the Contractor's expense.
- F. Visually inspect all piping, valves, unions, corporations stops, curb boxes, fittings and other materials delivered to the project site for compliance with the specifications and physical condition. Any non-compliant or defective materials shall be immediately removed from the project site.

## PART 2 PRODUCTS

### 2.1 WATER SERVICE LINES

- A. Type 'K' Copper
  - 1. Unless otherwise indicated on the Drawings, Type 'K' copper services are to be used for new water service line installations.
  - 2. CTS type 'K' tubing in conformance with ASTM B88.
- B. High-density polyethylene (HDPE)
  - 1. Conforms with ASTM D3035 and AWWA C901 (3/4 inch through 3 inch) standards.
  - 2. Produced from resins that meet or exceed the requirement of ASTM D3350, designation PE4710, that meets or exceeds a cell classification of PE445574C/E per ASTM D3350.
  - 3. NSF/ANSI 61 listed by the manufacturer and bear the NSF logo or mark.
  - 4. CTS DR9 for the nominal diameter, at a minimum
- C. The use of plastic service lines, if authorized, must be accompanied by verification that the premises in which the service is connected has an electrical service that is not grounded to the existing premise plumbing.
- D. All water services shall be a minimum of one (1) inch in diameter or shall match existing diameter whichever is larger.
  - 1. Services lines less than one (1) inch in diameter shall only be used upon written authorization by the Owner.

### 2.2 CORPORATION STOPS

- A. Manufacturers
  - 1. Refer to Service Line Materials Guidance Document for specific material selections per member community.
- B. Bronze cast bodies, keys, stem washers and nuts and inlet threads conforming to AWWA C800
- C. Corporation stops to be AWWA/CC taper thread inlet by flare copper outlet unless otherwise indicated
- D. Provide the following size corporation stops where indicated on the Drawings and standard details sheets:
  - 1. Less than 16-inch diameter water main; 1-inch diameter corporation stop
  - 2. 16-inch diameter water main and larger; 2-inch diameter corporation stop
- E. Manufacturers
  - 1. Refer to Service Line Materials Guidance Document for specific material selections per member community.

## 2.3 SERVICE LINE TAPPING SADDLES

- A. Manufacturers
  - 1. Refer to Service Line Materials Guidance Document for specific material selections per member community.
- B. Corporation stops 2-inch diameter and larger on iron pipe requires installation with a heavy-duty ductile iron double strap service saddle.
- C. Corporation stops on plastic pipe requires the use of coated ductile iron service saddle with double stainless-steel straps.
  - 1. Service saddles shall have a ductile iron body, fusion plastic coated, and double, stainless steel straps meeting the requirements of AWWA C800.
    - a. Straps, bolts, nuts and washers shall stainless steel 18-8 Type 304.
    - b. Passivate all welds for resistance to corrosion
    - c. Minimum working pressure of 250 psi
    - d. Service saddles on pipe less than 14-inches in diameter
      - 1) Minimum combined strap width of 3-1/4-inches
    - e. Service saddles on pipe from 14-inch to 24-inch in diameter
      - 1) Two straps a minimum of 2-3/4 inches wide
- D. Tapping saddles on pipe diameters less than 16 inch in diameter and for corporation stops less than 2 inch in diameter are to be used only upon authorization of the Owner.

## 2.4 CURB STOP VALVES

- A. Manufacturers
  - 1. Refer to Service Line Materials Guidance Document for specific material selections per member community.
- B. Bronze cast bodies, ball, keys, stems, and outlet and inlet threads conform to AWWA C800
- C. Valves to be non-directional and watertight with flow in either direction
- D. Insulated valves are required when connecting dissimilar metal piping unless otherwise indicated.
- E. Match the curb stop valve size to the diameter of the service line, public or private, whichever is larger.

## 2.5 CURB STOP VALVE BOX (LESS THAN 3")

- A. Manufacturers
  - 1. Refer to Service Line Materials Guidance Document for specific material selections per member community.
- B. Two-piece cast iron valve box furnished with a two-hole pattern cast iron lid.
  - 1. Provide telescoping upper that is adjustable to allow for adjustment to final grade.

## 2.6 Tracer Wire

- A. Provide tracer wire with HDPE services as follows:
  - 1. Solid or multi-strand copper or copper-clad steel encased within an HDPE jacket designed for 600-volt applications with a 45 mil minimum thickness designed specifically for use in direct burial applications.
    - a. Jacket color shall be blue per APWA color coding convention.
    - b. Minimum tensile strength/break load of 2,500 pounds, and shall be specifically designed for trenchless applications.
  - 2. For other installation methods, use 10 AWG copper wire with a minimum 30 mil coating.
  - 3. The minimum thickness at any point along the tracer wire shall not be less than 90% of the specified average thickness in compliance with UL 83.
    - a. UL 83 specification shall be clearly marked on the wire insulation.
- B. Provide test stations that are compatible with Owner's locating equipment.
  - 1. For test stations not located within a valve box, provide a heavy-duty tracer box with cast iron cover.
  - 2. Tracer boxes in pavement shall be flush-mounted and rated for traffic.
- C. Attach tracer wire to the service line at 5-foot intervals along the full length between test stations.
  - 1. Utilize plastic cable ties or Owner approved alternative to attach the tracer wires to the piping.
  - 2. The use of tape is prohibited.
- D. Provide manufactured connectors that are rated for direct burial, have a dielectric gel and are sealed.
- E. Provide magnesium anodes for grounding of all dead ends of tracer wire not brought to a test station.
- F. Check tracer wires for continuity prior to placing the water service into service.

## PART 3 EXECUTION

### 3.1 DELIVERY, HANDLING, AND STORAGE

- A. Deliver and unload materials in a manner such that damage to those materials or coatings is prevented. Materials found to be damaged at the point of installation will be rejected and must be removed from the project site.
- B. Handle and store pipe in accordance with manufacturer's recommendations
- C. Materials shall only be stored in areas designated by the Owner. Security for stored materials is the responsibility of the Contractor.

### 3.2 EXCAVATION

- A. Complete trenching and excavation in accordance with Section 02315.

### 3.3 INSTALLATION OF SERVICE LINE

- A. Install service line piping in conformance with the approved methods described in the Special Provision for Service Line Replacement.
- B. Install service line at depths to provide a minimum cover of five and one half (5-1/2) feet over the top of piping unless otherwise approved by the Owner.

### 3.4 BACKFILLING

- A. Backfill excavations in accordance with Section 02315.
- B. Backfill all excavations within the public right-of-way and within the influence of any paved surfaces with Class II compacted sand in accordance with Section 02315.
- C. Backfill any excavations outside the public right-of-way and not within the influence

### 3.5 CORPORATION STOP

- A. Direct corporation stop taps to iron pipe will be allowed only upon approval of the Owner.
  - 1. Complete taps in accordance with the manufacturer's guidelines.
- B. Corporation stop taps to all other pipe materials will require a saddle.

### 3.6 SERVICE LINE CONNECTION SADDLE

- A. Clean pipe and lubricate gasket.
- B. Install saddle in accordance with manufacturer's recommended instructions.
- C. Corporation stop installation must not force the pipe away from the gasket seal.
- D. Pipe coupon must be removed from pipe.
- E. Recheck saddle torque after corporation stop installation and tighten as necessary.

### 3.7 CURB STOP VALVES & VALVE BOX

- A. Install curb stop valve plumb with the valve stem pointing towards the surface.
- B. Provide a base to support the bottom of the valve.
  - 1. Support valve base on a 6-inch thick crushed aggregate base, 6AA stone or approved equal.
- C. Install curb box base so that it does transmit loads or stress to the valve or water service
  - 1. Install the foot piece beneath the curb stop, if applicable, and the curb box base over the curb stop onto the foot piece
  - 2. Encase the curb box base in suitable open-graded crushed stone in accordance with Section 02315.
- D. Install valve box plumb and centered over the valve.

- E. Adjust valve box cover height to match finished grade.
  - 1. Review plumbness of valve box and accessibility of curb stop valve after backfilling and correct any deficiencies prior to final restoration.

### 3.8 TESTING

- A. Hydrostatic and bacteriological sampling is not required for the new service line after a service line replacement is completed and the service line is adequately flushed.
- B. Verification testing is required when the water supply main is depressurized during the performance of a service line replacement.
  - 1. Depressurized sections of water main are required to be bacteriologically tested prior to lifting a boil water advisory.
- C. Thoroughly flush the portion of the system that was depressurized unidirectionally so as not to flush stagnant water through the supply system.
- D. Disinfect water main in accordance with ANSI/AWWA C651 and conduct bacteriological testing of water samples taken from the pipeline.
  - 1. Provide chlorination and bacteriological testing plan to the Owner prior to initiating chlorination.
    - a. Indicate method of chlorination.
    - b. Indicate the number and location of sampling points
    - c. Indicate the schedule of sampling
  - 2. Following chlorination, all treated water shall be thoroughly flushed from the main.
    - a. The treated water will be considered flushed when the residual chlorine content is less than 0.7 p.p.m.
  - 3. Bacteriological testing to be performed by the Owner.
    - a. The first water sample shall be taken 24 hours after disinfection and flushing, and the second 24 hours after the first sample.
    - b. Owner will prepare a chain-of-custody for all samples taken, signed by all persons who handle the sample from the field, throughout transport to the laboratory, and at the laboratory.
    - c. Analysis of other contaminants may be required if the Engineer has reason to believe that these contaminants are present.
  - 4. Test results shall be directly reported to the Owner and contractor.
- E. Should the initial treatment of all or any section of the main, in the opinion of the Engineer, prove ineffective, the chlorination procedure shall be repeated until confirmed tests show that water sampled from the new main conforms to the foregoing requirements.
- F. If the system is not activated within 30 days after initial testing, bacteriological tests shall be repeated to assure a safe water supply system.

### 3.9 SHUTTING OFF WATER

- A. Familiarize locations of existing gate valves and have them made easily accessible for emergency shutoffs.
- B. Notify the local water authority to have valves opened and closed for purposes of shutting down the water supply.



- C. Keep on the job at all times, all of the necessary equipment to shut the water off and to make immediate emergency repairs without undue delay.
- D. In case of an emergency break in a water line due to the contractor's construction operations, the contractor shall supply water to those deprived of water service.
- E. Forty-eight hour advance notice shall be given to persons whose water is to be shut off.

### 3.10 WATER SERVICES

- A. The best available information for the location of stop boxes and service leads will be provided by the Owner at least 48 hours prior to the start of service line replacement.
- B. Install water services of the material approved for use at a minimum of 5.5 feet of cover.
- C. Long side water services (i.e. beneath roadways, water courses, etc.) shall be installed using horizontal directional drilling methods unless otherwise authorized by the Owner.
- D. Water service connections shall not be made until all applicable tap permits are obtained.

END OF SECTION

SECTION 02929

SEEDING

PART 1 GENERAL

1.1 SUMMARY OF WORK

- A. Types of work required include the following:
  - 1. Soil preparation
  - 2. Seeding lawns
  - 3. Hydroseeding

1.2 RELATED WORK

- A. Related work specified elsewhere:
  - 1. Section 02958 – Special Landscaping Materials for Site
  - 2. Section 02970: Landscape Maintenance and Guarantee Standards
  - 3. Special Provision for Site Restoration

1.3 QUALITY ASSURANCE

- A. Hydroseed subcontractor shall have a minimum 5 years' experience with hydroseeding and related work.

1.4 SUBMITTALS

- A. Submit seed vendor's certification for required grass seed mixture, indicating percentage by weight, and percentages of purity, germination, and weed seed for each grass species.
- B. Submit materials test report.
- C. Submit fertilizer(s) analysis certification.
- D. Upon seeded lawn acceptance, submit written maintenance instructions recommending procedures for maintenance of seeded lawns.
- E. Hyrdoseeder's certification of experience.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Deliver seed and fertilizer materials in original unopened containers, showing weight, analysis, and name of manufacturer.
- B. Store in a manner to prevent wetting and deterioration

## 1.6 PROJECT CONDITIONS

- A. Work notifications: Notify Engineer at least 7 working days prior to start of seeding operation.
- B. Protect existing utilities, paving and other facilities from damage caused by seeding operations.
- C. Locate, protect, and maintain the irrigation system during seeding operations.
- D. Perform seeding work only after planting and other work affecting ground surface has been completed.
- E. Restrict traffic from lawn areas until grass is established. Erect signs and barriers as required.
- F. Provide hose and lawn watering equipment as required.

## 1.7 WARRANTY

- A. Refer to Landscape Maintenance and Guarantee Standards specified in Section 02970.

## PART 2 PRODUCTS

### 2.1 TOPSOIL

- A. Refer to Section 02958

### 2.2 GRASS SEED

- A. Refer to Special Provision for Site Restoration

### 2.3 BONDED FIBER MATRIX

- A. Refer to Special Provision for Site Restoration

### 2.4 FERTILIZER:

- A. Granular, non-burning product composed of not less than 50% organic slow acting, guaranteed analysis professional fertilizer.
- B. Type A: Starter fertilizer containing 20% nitrogen, 12% phosphoric acid and 8% potash by weight or similar approved composition.

### 2.5 WATER

- A. Free of substance harmful to seed growth.
- B. Hoses or other methods of transportation furnished by Contractor.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Examine finish surfaces, grades, topsoil quality and depth. Do not start seeding work until unsatisfactory conditions are corrected.

### 3.2 PREPARATION

- A. Limit preparation to areas which will be immediately seeded. Spread topsoil, fine grade.
- B. Scarify surface of lawn areas to minimum depth of 3". Remove stones over 1" in any dimension and sticks, roots, rubbish and extraneous matter.
- C. Place loosened topsoil in areas designated as seeded lawn areas to minimum depth of 3". Remove stones over 1/2" in any dimension and sticks, roots, rubbish, and extraneous matter.
- D. Grade lawn areas to smooth, free draining and even surface with a loose, uniformly fine texture. Roll and rake; remove ridges and fill depressions as required to drain.
- E. Apply Type A fertilizer to indicated turf areas at a rate equal to 1.0 lb. per 200 sq. ft. or 220 lbs/acre.
  - 1. Apply fertilizer by mechanical rotary or drop type distributor, thoroughly and evenly incorporated with the soil to depth of 1" by disking or other approved methods.
  - 2. Fertilize areas inaccessible to power equipment with hand tools and incorporate it into soil.
- F. Dampen dry soil prior to seeding.
- G. Restore prepared area to specified condition if eroded, settled or otherwise disturbed after fine grading and prior to seeding.

### 3.3 SEEDING

- A. Seed immediately after preparation of bed in accordance with the seasonal limitations detailed in Section 816 for the 2012 MDOT Standard Specifications for Construction.
- B. Seed indicated areas within contract limits and areas adjoining contract limits disturbed as a result of construction operations at a rate of 440 lbs/acre.

### 3.4 HYDROSEEDING

- A. Hydroseeding: Mix specified seed, fertilizer, and fiber mulch in water, using equipment specifically designed for hydroseed application. Continue mixing until uniformly blended into homogenous slurry suitable for hydraulic application.
- B. Mix slurry with nonasphaltic tackifier.
- C. Apply slurry uniformly to all areas to be seeded in accordance with the Special Provision for Site Restoration.

3.5 MAINTENANCE

- A. Refer to Landscape Maintenance and Guarantee Standards as specified in Section 02970.
- B. Mow lawn areas as soon as lawn top growth reaches 3" height. Cut back to 2" in height. Repeat mowing as required to maintain specified height.
- C. Maintain seeded banks, ditches, medians, and fields to the extent of establishment only. Re-grade and re-seed washed out or eroded areas as required until a suitable cover is established.

3.6 ACCEPTANCE

- A. See Section 02970 Landscape Maintenance and Guarantee Standards.

3.7 CLEANING

- A. Perform cleaning during installation of the work and upon completion of the work.
- B. Remove from site all excess materials, debris and equipment.
- C. Repair damage resulting from seeding operations.

END OF SECTION

SECTION 02934

SODDING

PART 1 GENERAL

1.1 DESCRIPTION

- A. Provide sodded lawns as shown and specified. The work includes:
  - 1. Soil Preparation
  - 2. Sodding Lawns

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 02958 – Special Landscape Requirements for Site
- B. Section 02970 – Landscape Maintenance and Guarantee Standards

1.3 QUALITY ASSURANCE

- A. Sod: Comply with American Sod Producers Association (ASPA) classes of sod materials.

1.4 SUBMITTALS

- A. Submit sod growers certification of grass species. Identify source location.
- B. Submit materials test report.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Cut, deliver, and install sod within a 24-hour period.
  - 1. Do not harvest or transport sod when moisture content may adversely affect sod survival.
  - 2. Protect sod from sun, wind, and dehydration prior to installation.
  - 3. Do not tear, stretch, or drop sod during handling and installation.

1.6 PROJECT CONDITIONS

- A. Work notification: Notify Engineer at least 7 working days prior to start of sodding operations.
- B. Protect existing utilities, paving, and other facilities from damage caused by sodding operations. Contractor shall be responsible for any damage to utilities and existing facilities.
- C. Perform sodding work only after planting and other work affecting ground surface has been completed.
- D. Locate, protect, and maintain the irrigation system during sodding operations.

1.7 WARRANTY

- A. Refer to Landscape Maintenance and Guarantee Standards in Section 02970.

PART 2 PRODUCTS

2.1 TOPSOIL

- A. Refer to Section 02958

2.2 SOD

- A. Approved nursery grown blend of improved turf type tall fescus, densely rooted blue grass rye grass and other approved perennial grasses that matches the adjacent lawn to the extent possible.
- B. Sod shall be well-rooted, healthy sod, free of diseases, nematodes and soil borne insects, free from noxious weeds and reasonably free from other weeds.
1. Uniform in color, leaf texture, density, and free of weeds, undesirable grasses, stones, roots, thatch, and extraneous material; viable and capable of growth and development when planted.
- C. Furnish sod machine stripped and of Supplier's standard width, length, and thickness:
1. Mow sod before stripping.
2. Sod shall not be less than two (2") inches thick, cut in strips not than ten (10") inches wide by eighteen (18") inches long with clean cut edges
- D. Sod containing Common Bermudagrass, Quackgrass, Johnsongrass, Poison Ivy, Nutsedge, Nimblewill, Canada Thistle, Timothy, Bentgrass, Wild Garlic, Ground Ivy, Perennial Sorrel, or Brome grass weeds will not be acceptable.

2.3 FERTILIZER

- A. Granular, non-burning product composed of not less than 50% organic slow acting, guaranteed analysis professional fertilizer.
- B. Starter fertilizer containing 12% nitrogen, 26% phosphoric acid, and 12% potash by weight, or similar approved composition.

2.4 WATER:

- A. Free of substance harmful to sod growth.
- B. Hoses or other methods of transportation furnished by Contractor.

## PART 3 EXECUTION

### 3.1 INSPECTION

- A. Examine finish surfaces, grades, topsoil quality, and depth. Do not start sodding work until unsatisfactory conditions are corrected.

### 3.2 PREPARATION FOR PLANTING LAWNS

- A. Limit preparation to areas which will be immediately sodded.
- B. Loosen subgrade of lawn areas to minimum depth of 4".
  - 1. Remove stones over 1/2" in any dimension and sticks, roots, rubbish, and extraneous matter.
- C. Rough grade lawn areas to smooth, free draining and even surface with a loose, uniformly fine texture.
  - 1. Roll and rake; remove ridges and fill depressions as required to drain.
- D. Spread topsoil to a minimum depth required to meet lines, grades and elevations shown, after light rolling and natural settlement.
  - 1. Add specified soil amendments and mix thoroughly into upper 4" of topsoil at rate to adjust pH of topsoil to not less than 6.0 nor more than 6.8.
  - 2. Distribute evenly by machine and incorporate thoroughly into topsoil
- E. Apply fertilizer at the rate equal to 1.0 lb. per 200 sft or 220 lbs/acre.
  - 1. Apply fertilizer by mechanical rotary or drop type distributor, thoroughly and evenly incorporated with the soil to a depth of 3" by discing or other approved methods.
  - 2. Fertilize areas inaccessible to power equipment with hand tools and incorporate it into soil.
- F. Moisten prepared lawn areas before planting if soil is dry.
  - 1. Water thoroughly and allow surface moisture to dry before planting lawns.
  - 2. Do not create a muddy soil condition.
- G. Restore prepared areas to specified condition if eroded, settled, or otherwise disturbed after fine grading and prior to sodding.
- H. Place approximately 1/2 of total amount of topsoil required and work into top of loosened subgrade to create a transition layer and then place remainder of planting soil.
- I. Fine grade lawn areas to a smooth, even surface with loose, uniformly fine texture.
  - 1. Roll, rake and drag lawn areas, remove ridges and fill depressions, as required to meet finish grades.
  - 2. Limit fine grading to areas which can be planted immediately after grading.

### 3.3 SODDING

- A. Sod shall be moist and shall be laid in a moist earth bed.



- B. Lay sod to form a solid mass with tightly-fitted joints.
  - 1. Butt ends and sides of sod strips.
  - 2. Do not overlay edges.
  - 3. Stagger strips to offset joints in adjacent courses.
  - 4. Remove excess sod to avoid smothering of adjacent grass.
  - 5. Provide sod pad top flush with adjacent curbs, sidewalks, drains, and seeded areas.
- C. Do not lay dormant sod or install sod on saturated or frozen soil.
- D. Install initial row of sod in a straight line, beginning at bottom of slopes, perpendicular to direction of the sloped area. Place subsequent rows parallel to and lightly against previously installed row. Offset subsequent rows by 1/2 length of sod strip to break up sod strip joints.
- E. Water sod thoroughly with a fine spray immediately after laying.
- F. Roll with light lawn roller to ensure contact with sub-grade.
- G. Utilize pegs to stabilize the sod on slopes over 50%.

#### 3.4 MAINTENANCE

- A. Refer to Section 02970: Landscape Maintenance and Guarantee Standards.
  - 1. Apply Type A fertilizer to lawns approximately 30 days after sodding at a rate equal to 220 lbs/acre. Apply with a mechanical rotary or drop type distributor. Thoroughly water into soil.
  - 2. Apply herbicides as required to control weed growth or undesirable grass species.
  - 3. Apply fungicides and insecticides as required to control diseases and insects.
  - 4. Remove sod pegs.

#### 3.5 ACCEPTANCE

- A. Refer to Section 02970: Landscape Maintenance and Guarantee Standards.

#### 3.6 CLEANING

- A. Perform cleaning during installation of the work and upon completion of the work.
- B. Remove from site all excess materials, debris, and equipment.
- C. Repair damage resulting from sodding operations.

END OF SECTION

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SECTION 02958

SPECIAL LANDSCAPING REQUIREMENTS FOR SITE

PART 1 GENERAL

1.1 WORK INCLUDED

- A. Furnish all labor, materials, equipment and services necessary for the following work:
  - 1. Providing and applying topsoil for planting and turf areas.
  - 2. Providing and planting trees, plants, etc. shown on the Drawings, including specified maintenance.
  - 3. Providing and installing any landscape accessory as needed.

1.2 QUALITY ASSURANCE

- A. Landscape work shall be done by a single firm specializing in commercial landscape installations.
- B. Ship landscape materials with certificates of inspection required by governing authorities. Comply with regulations applicable to landscape materials.
- C. Do not make substitutions. If specified landscape material is not obtainable, submit proof of non-availability to Consultant, together with proposal for use of equivalent material.
- D. Analysis and Standards: Package standard products with manufacturer's certified analysis. For other materials, provide analysis by recognized laboratory made in accordance with methods established by the Association of Official Agriculture Chemists, wherever applicable.
- E. Provide and pay for materials testing. Testing agency shall be acceptable to the Owner. Provide the following data:
  - 1. Test representative materials samples proposed for use.
  - 2. Topsoil:
    - a. pH factor
    - b. Cation Exchange Capacity
    - c. Mechanical Analysis
    - d. Percentage of organic content
    - e. Recommendations on type and quantity of additives required to establish satisfactory pH factor and supply of nutrients to bring nutrients to satisfactory level for planting.
- F. Trees, Shrubs and Plants: Provide trees, shrubs and plants of quality, size, genus, species and variety shown and scheduled for landscape work and complying with recommendations and requirements of ANSI Z60. 1 "American Standards for Nursery Stock". Provide healthy, vigorous stock, grown in a recognized nursery in accordance with good horticultural practice and free from disease, insects, eggs, larvae and defects such as knots, sun-scald, injuries, abrasions or disfigurement.

- G. Label at least one tree and one shrub of each variety with a securely attached waterproof tag bearing legible designation of botanical and common name.
- H. Inspection: The Consultant or Owner's Representative may inspect trees and shrubs either at place of growth or at site before planting, for compliance with requirements for genus, species, variety, size and quality. Consultant retains right to further inspect trees and shrub for size and condition of balls and root systems, insects, injuries and latent defects, and to reject unsatisfactory or defective material at any time during progress of work. Remove rejected trees or shrubs immediately from project site.
- I. All plants shall be nursery grown under climatic conditions similar to those in the locality of the project for a minimum of 2 years. Stock furnished shall be at least the minimum size indicated. Larger stock is acceptable, at no additional cost, and providing that the larger plants will not be cut back to size indicated. Provide plants indicated by two measurements so that only a maximum of 25% are of the minimum indicated and 75% are of the maximum size indicated.

### 1.3 SUBMITTALS

- A. The Contractor is responsible for providing the following submittals to the Consultant in triplicate. These submittals must be reviewed by the Consultant prior to any authorized landscaping operations.
  - 1. Submit the following materials certification:
    - a. Topsoil source and pH value, including test results specified.
    - b. Peat moss, including test results specified.
    - c. Plant fertilizer.
  - 2. Certification: Submit certificates of inspection as required by governmental authorities. Submit manufacturer's or vendor's certified analysis for soil amendments and fertilizer materials. Submit other data substantiating that materials comply with specified requirements.
  - 3. Planting Schedule: Submit proposed planting schedule, indicating dates for each type of landscape work during normal seasons for such work in area of site. Correlate with specified maintenance periods to provide maintenance from date of substantial completion. Once accepted, revise dates only as approved in writing, after documentation of reasons for delays.
  - 4. Maintenance Instructions: Submit typewritten instructions recommending procedures to be established by Owner for maintenance of landscape work for two full years. Submit prior to expiration of required maintenance period(s).

### 1.4 DELIVERY, STORAGE AND HANDLING

- A. Packaged Materials: Deliver packaged materials in containers showing weight, analysis and name of manufacturer. Protect materials from deterioration during delivery, and while stored at site.
- B. Take all precautions customary in good trade practice in preparing plants for moving. Workmanship that fails to meet the highest standards will be rejected. Spray deciduous plants in foliage with an approved "anti-desiccant" immediately after digging to prevent dehydration. Dig, pack, transport, and handle plants with care to ensure protection against injury. Inspection certificates required by law shall accompany each shipment invoice or order in

stock and on arrival. The certificate shall be filed with the Consultant. Protect all plants from drying out. If plants cannot be planted immediately upon delivery, properly protect them with soil, wet peat moss, or in a manner acceptable to the Consultant. Water heeled-in plantings daily. No plant shall be bound with rope or wire in a manner that could damage or break the branches.

- C. Trees and Shrubs: Provide freshly dug trees and shrubs. Do not prune prior to delivery, unless otherwise approved by Consultant. Do not bend or bind-tie trees or shrubs in such a manner as to damage bark, break branches or destroy natural shape. Provide protective covering during delivery. Do not drop balled and burlapped stock during delivery.
- D. Deliver trees and shrubs after preparations for planting have been completed and plant immediately. If planting is delayed more than 6 hours after delivery, set trees and shrubs in shade, protect from weather and mechanical damage, and keep roots moist by covering with mulch, burlap or other acceptable means of retaining moisture.
- E. Do not remove container-grown stock from containers until planting time.

#### 1.5 JOB CONDITIONS

- A. Proceed with and complete landscape work as rapidly as portions of site become available, working within seasonal limitations for each kind of landscape work required.
- B. Utilities: Determine location of underground utilities and perform work in a manner which will avoid possible damage. Hand excavate, as required. Maintain grade stakes set by others until removal is mutually agreed upon by parties concerned.
- C. Excavation: When conditions detrimental to plant growth are encountered, such as rubble fill, adverse drainage conditions, or obstruction, notify Owner's Representative before planting.
- D. Planting Time: Plant or install materials during normal planting season for each type of landscape work required. Correlate planting with specified maintenance periods to provide maintenance from date of substantial completion.
- E. Coordination with Lawns: Plant trees and shrubs after final grades are established and prior to planting of lawns, unless otherwise acceptable to Owner's Representative. If planting of trees and shrubs occurs after lawn work, protect lawn areas and promptly repair damage to lawns resulting from planting operations.

#### 1.6 SPECIAL PROJECT WARRANTY

- A. Warrant turf through specified turf maintenance period, and until final acceptance.
- B. Warrant trees and shrubs, for a period of two years after date of substantial completion, against defects including death and unsatisfactory growth, except for defects resulting from neglect by Owner, abuse or damage by others, or unusual phenomena or incidents which are beyond the landscape contractor's control. Remove and replace trees, shrubs, or other plants found to be dead or in unhealthy condition during warranty period. Make replacements during growth season following end of warranty period. Replace trees and shrubs which are in doubtful condition.

- C. Inspection will be conducted at end of the warranty period, to determine acceptance or rejection. Only one replacement (per tree, shrub or plant) will be required at end of warranty period, except for losses or replacements due to failure to comply with specified requirements.

## PART 2 PRODUCTS

### 2.1 TOPSOIL AND PEAT MOSS

- A. Topsoil
  - 1. Topsoil shall be fertile, friable and representative of productive soil, capable of sustaining vigorous plant growth and shall be free of clay lumps, sub-soil, weeds, seeds and other foreign debris.
  - 2. Acidity range shall be between pH 5.0 and 7.5.
  - 3. Organic content shall be not less than 5% and not greater than 30%.
  - 4. Clay content shall range between 5% and 25%.
- B. Peat Moss: Brown to black in color, weed and seed free granulated raw peat or baled peat, containing not more than 9% mineral on a dry basis.

### 2.2 PLANTS

- A. Provide plants typical of their species or variety; with normal, densely-developed branches and vigorous, fibrous root systems.
  - 1. Provide only sound, healthy, vigorous plants free from defects, disfiguring knots, sun-scald injuries, frost cracks, abrasions of the bark, plant diseases, insect eggs, borers, and all forms of infestation.
  - 2. All plants shall have a fully developed form without voids and open spaces.
  - 3. Plants held in storage will be rejected if they show signs of growth during storage.
- B. Dig balled and burlapped plants with firm, natural balls of earth of sufficient diameter and depth to encompass the fibrous and feeding root system necessary for full recovery of the plant.
  - 1. Provide ball sizes complying with the latest edition of the American Standard for Nursery Stock.
  - 2. Cracked or mushroomed balls are not acceptable.
- C. Container-Grown Stock: Grown in a container for sufficient length of time for the root system to have developed to hold its soil together, firm and whole.
  - 1. No plants shall be loose in the container.
  - 2. Container stock shall not be pot bound.
- D. Provide tree species that mature at heights over 25' with a single main trunk. Trees that have the main trunk forming a "Y" shape are not acceptable.
- E. Plants planted in rows shall be matched in form.
- F. If the use of larger plants is acceptable, increase the spread of roots or root ball in proportion to the size of plant.

- G. No pruning wounds shall be present with a diameter of more than 1" and such wound must show vigorous bark on all edges.
- H. Evergreen trees shall be branched to the ground.

## 2.3 OTHER

- A. Water: Free of substances harmful to plant growth. Hoses or other methods of transportation furnished by Contractor.
- B. Stakes for staking: Hardwood, 2" x 2" x 8' long.
- C. Staking wires: No. 10 or 12 gauge galvanized wire.
- D. Staking hose: Two-ply, reinforced garden hose not less than ½" inside diameter.
- E. Tree wrap: Standard waterproofed tree wrapping paper, 2-1/2" wide, made of 2 layers of crepe craft paper weighing not less than 30 lbs. per ream, cemented together with asphalt.
- F. Twine: Two ply jute material.
- G. Anti-Desiccant: Protective film emulsion providing a protective film over plant surfaces; permeable to permit transpiration. Mixed and applied in accordance with manufacturer's instructions.

## PART 3 EXECUTION

### 3.1 GENERAL

- A. Examine proposed planting areas and conditions of installation. Do not start planting work until unsatisfactory conditions are corrected.
- B. Time of Planting:
  - 1. Evergreen Material: Plant evergreen material between September 1 and November 1 or in spring before new growth begins. If project requirements require planting at other times, plants shall be sprayed with anti-desiccant prior to planting operations.
  - 2. Deciduous Material: Plant deciduous materials in a dormant conditions. If deciduous trees are planted in-leaf, they shall be sprayed with an anti-desiccant prior to planting operation.
- C. Planting shall be performed only by experienced workmen familiar with planting procedures under the supervision of a qualified supervisor.
- D. Locate plants as indicated or as approved in the field after staking by the Contractor and or the Consultant. If obstructions are encountered that are not shown on the Drawings, do not proceed with planting operations until alternate plant locations have been selected by the Consultant.

- E. Plant largest sized materials first, proceeding to next smallest size, completing planting operations with minimal sizes.

### 3.2 PREPARATION

- A. Preparation of Planting Soil:
  - 1. Before mixing, clean topsoil of roots, plants, sod, stones, clay lumps and other extraneous materials harmful or toxic to plant growth.
  - 2. Mix specified soil amendments and fertilizers with topsoil at rates specified. Delay mixing of fertilizer if planting will not follow placing of planting soil within a few days.
  - 3. Provide pre-mixed planting mixture for use around the balls and roots of the plants consisting of five parts planting topsoil to one part peat moss and 12 lbs. plant fertilizer for each cu. yd. of mixture.
  - 4. Apply phosphoric acid fertilizer (other than that constituting a portion of complete fertilizers) directly to subgrade before applying planting soil and tilling.
- B. For pit and trench type backfill, mix planting soil prior to backfilling and stockpile at site.
- C. For planting beds, mix planting soil either prior to planting or apply on surface of topsoil and mix thoroughly before planting.

### 3.3 PLANTS/TREES

- A. Excavation for Trees and Shrubs:
  - 1. Excavate pits, beds and trenches with vertical sides and with bottom of excavation slightly raised at center to provide proper drainage. Loosen hard subsoil in bottom of excavation.
  - 2. For balled and burlapped (B&B) trees and shrubs, make excavations at least half again as wide as the ball diameter and equal to the ball depth, plus following allowance for setting of ball on a layer of compacted backfill.
  - 3. For container-grown stock, excavate as specified for balled and burlapped stock, adjusted to size of container width and depth.
- B. Dispose of subsoil removed from planting excavations. Do not mix with planting soil or use as backfill.
- C. Fill excavations for trees and shrubs with water and allow to percolate out before planting.
- D. Planting Trees:
  - 1. Set balled and burlapped (B&B) stock on layer of compacted planting soil mixture, plumb and in center of pit or trench with top of ball at same elevation as adjacent finished landscape grades. Remove burlap from sides of balls; retain on bottoms. When set, place additional backfill around base and sides of ball, and work each layer to settle backfill and eliminate voids and air pockets. When excavation is approximately 2/3 full, water thoroughly before placing remainder of backfill. Repeat watering until no more is absorbed. Water again after placing final layer of backfill.
  - 2. Set container grown stock as specified for balled and burlapped stock, except cut cans on 2 sides with an approved can cutter; remove bottoms of wooden boxes after partial backfilling so as not to damage root balls.

3. Dish top of backfill to allow for mulching.

- E. Mulch pits, trenches and planted areas. Provide not less than 2 inch thickness of mulch and work into top of backfill and finished level with adjacent finish grades. Provide finished 4" thickness of mulch.
- F. Prune, thin out and shape trees and shrubs in accordance with standard horticultural practice. Prune trees to retain required height and spread. Unless otherwise directed by the Consultant, do not cut tree leaders, and remove only injured or dead branches from flowering trees, if any. Prune shrubs to retain natural character.
- G. Remove and replace excessively pruned or mis-formed stock resulting from improper pruning.
- H. Wrap tree trunks of 2" caliper and larger. Start at ground and cover trunk to height of first branches and securely attach. Inspect tree trunks for injury, improper pruning and insect infestation and take corrective measures before wrapping. Secure tree wrap in place with twine wound spirally downward in opposite direction, tied around the tree in at least three places in addition to the top and bottom.
- I. Stake all trees immediately after lawn seeding or sodding operations and prior to acceptance. When high winds or other conditions which may affect tree survival or appearance occur, the Consultant may require immediate staking.

#### 3.4 MAINTENANCE

- A. Begin maintenance immediately after planting.
- B. Maintain trees, conifers and other plants until final acceptance but in no case less than 60 days after substantial completion of planting.
- C. Maintain trees, conifers and other plants by pruning, cultivating and weeding as required for healthy growth. Restore planting saucers. Tighten and repair stake and guy supports and reset trees and shrubs to proper grades or vertical position as required. Restore or replace damaged wrappings. Spray as required to keep trees and shrubs free of insects and disease.

#### 3.5 CLEAN UP AND PROTECTION

- A. During landscape work, keep pavements clean and work areas in an orderly condition.
- B. Protect landscape work and materials from damage due to landscape operations, operations by other contractors and trades and trespassers.
- C. Maintain protection during installation and maintenance periods.
- D. Treat, repair or replace damaged landscape work as directed.

END OF SECTION



SECTION 02970

LANDSCAPE MAINTENANCE AND GUARANTEE STANDARDS

PART 1 GENERAL

1.1 DESCRIPTION

- A. This Section describes the maintenance practices required for lawn areas and guarantee standards for lawn areas and plantings.

1.2 PROJECT WARRANTY

- A. Warranty seeded or sodded areas through specified six (6) week maintenance period.
- B. Warranty trees, transplanted trees and shrubs, for a period of one year after date of the accepted maintenance period, against defects including death and unsatisfactory growth, except for defect resulting from neglect by Owner, abuse or damage by others, or unusual phenomena or incidents which are beyond Landscape Installer's control.
- C. Remove and replace all plants found dead, unhealthy or in doubtful condition and extend warranty period for one (1) year after replacement.
1. The extended warranty period is one full-growing season.
  2. Make replacements during growth season following end of warranty or extended warranty season.
  3. At the end of the extended warranty period all plants found dead, unhealthy, or in doubtful condition shall be removed and replaced, based upon the opinion of the Architect/Engineer.
  4. Only one replacement will be required at the end of the warranty or extended warranty period, except for losses or replacements due to failure to comply with specified requirements.

1.3 MAINTENANCE

- A. Begin maintenance immediately after planting.
1. Maintain trees, transplanted trees, shrubs and other plants until final acceptance.
  2. Water all plantings through the maintenance period, keep guy wires taut, raise tree balls which settle, furnish and apply sprays as necessary to keep the plantings free of disease and furnish and apply sprays as necessary to keep the plantings free of disease and insects until the end of the warranty period.
  3. Water all evergreens thoroughly in the Fall to ensure they do not go into the Winter season dry.
  4. Arrange with Owner to walk the site monthly during maintenance period to review maintenance standards.
  5. Remove all stakes, guy wires, tree wrap paper, dead twigs and branches from tree and plant materials at the end of this maintenance warranty period.

B. Maintain Seeded Grass Areas

1. Establish a dense lawn of permanent grasses, free from lumps and depressions or any bare spots, none of which is larger than one foot of area up to a maximum of 3% of the total seeded lawn area.
  - a. Reseed any part of the seeded lawn that fails to show a uniform germination until a dense grass cover is established.
2. Water and provide a minimum of two cuttings of the lawn or more as necessary until the final inspection and acceptance of the seeded lawn area by the Owner.
3. Lawn cutting is required when the lawn reaches 3 inches in height.
  - a. Cut lawn to 2" inches in height.
4. Seeded lawns not given full six (6) weeks of maintenance prior to the first snowfall, or if not considered acceptable at that time, will require continued maintenance through the following Spring until acceptable lawn is established.
5. Maintain lawns by watering, fertilizing, weeding, mowing, trimming, and other operations such as rolling, regrading, replanting, and applying herbicides, fungicides, insecticides as required to establish a smooth, acceptable lawn, free of eroded or bare areas.
6. Water as required to maintain adequate surface soil moisture for proper seed germination. Continue watering as required for not less than six (6) weeks.
  - a. When irrigation is not present, seeding should take place in early Spring or Fall.
7. Repair, rework, and re-seed all areas that have washed out, are eroded, or do not catch.

C. Maintain Sodded Grass Areas

1. Maintain sodded lawn areas, including watering, spot weeding, mowing, application of herbicides, fungicides, insecticides, and resodding until a full, uniform stand of grass free of weed, undesirable grass species, disease, and insects is achieved and accepted by the Owner.
2. Water sod thoroughly every day throughout the six (6) week maintenance period to establish proper rooting.
3. Repair, rework and resod all areas that have washed out or are eroded.
4. Replace undesirable or dead areas with new sod.
5. Water and provide a minimum of two cuttings of the lawn or more as necessary until final inspection and acceptance of the lawn areas by the Owner.
6. Mow lawn areas as soon as lawn top growth areas a 3" height.
  - a. Cut back to 2" height.
  - b. Repeat mowing as required to maintain specified height.
  - c. Not more than 40% of grass shall be removed at any single mowing.
7. Provide a uniform stand of grass by watering, mowing, and maintaining lawn areas until final acceptance.
  - a. Resod areas, with specified materials, which fail to provide a uniform stand of grass until all affected areas are accepted by the Owner.
8. Sodded areas will be acceptable provided all requirements, including maintenance, have been complied with, and a healthy, even colored viable lawn is established, free of weeds, undesirable grass species, disease, and insects.

- D. Inspection and Final Acceptance
1. When landscape work is completed, including maintenance, Owner will, upon request, make a final inspection to determine acceptability.
  2. Landscape work may be inspected for acceptance in parts agreeable to Owner provided work offered for inspection is complete, including maintenance.
  3. Where inspected landscape work does not comply with requirements, replace rejected work and continue specified maintenance until reinspected by Owner and found acceptable.
    - a. Remove rejected plants and materials promptly from project site.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

END OF SECTION

SECTION 02990

PERMITS

PART 1 GENERAL

1.1 GENERAL

- A. The Permits needed to perform service line verification and replacement work within each member community are listed below.
- B. The Contractor is responsible for applying for all permits required. Costs incurred completing applications is considered included in the project and will not be considered for reimbursement through the "Miscellaneous Permits Allowance".
- C. Permit requirements and regulations required by this project shall be adhered to by the Contractor as if they were included in the Contract Documents.
- D. Should any contradictions or discrepancies between the requirements of the Permits Section and other Sections of these Specifications be found, this sections language shall have precedence.

1.2 PERMITS

- A. The following permits may be needed in order to perform work in the designated community
  - 1. City of Berkley
    - a. Plumbing permit; no fee
    - b. Right-of-way Permit; no fee
  - 2. Village of Beverly Hills
    - a. Plumbing permit; no fee
    - b. ROW permit; no fee
    - c. Connection permit; no fee;
  - 3. Village of Bingham Farms
    - a. Plumbing permit; no fee
    - b. ROW permit; no fee
    - c. Connection permit; no fee
  - 4. City of Birmingham
    - a. Plumbing permit; no fee
    - b. ROW permit; no fee
    - c. Sidewalk permit; no fee
    - d. Contractor to pay for testing of backfill and base course beneath and within the influence of paved surfaces
  - 5. City of Clawson
    - a. Plumbing Permit; \$100
    - b. ROW Permit; no fee
  - 6. City of Ferndale
    - a. Plumbing Permit; \$100
    - b. ROW Permit; no fee

7. City of Huntington Woods
  - a. Plumbing permit, no fee
  - b. ROW Permit; no fee
8. City of Lathrup Village
  - a. Plumbing Permit; \$100
  - b. ROW Permit; no fee
9. City of Pleasant Ridge
  - a. Building permit, one-time \$50 fee for Contractor to register with the Bldg Dept
  - b. Plumbing Permit; \$70
  - c. ROW Permit; no fee
10. City of Royal Oak
  - a. Building permit, one-time \$50 fee for Contractor to register with the Bldg Dept
  - b. Sewer permit, \$70 minimum for inspection per address  
(online permit application)
  - c. Plumbing permit, \$70 minimum for inspection per address  
(online permit application)
  - d. ROW permit, no fee
11. City of Southfield
  - a. Plumbing Permit; \$100
  - b. ROW permit, no fee

B. Contractor is required to obtain all permits prior to starting work.

END OF SECTION

**SPECIAL PROVISION  
FOR  
MAINTENANCE AGGREGATE, 21AA**

HRC

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3/31/20

**Description**

This work shall consist of furnishing, placing and compacting aggregate on a prepared subgrade for temporary and permanent applications to provide a surface to maintain vehicular and/or pedestrian traffic or to provide a base course for subsequent paving as described in the specifications and as directed by the Engineer.

The scope of the work will consist of providing aggregate for patches in roadways or sidewalks disturbed by service line verification or service line replacement work. Temporary applications included times when permanent pavement cannot be installed in a reasonable amount of time and the maintenance aggregate will be utilized to provide a traversable surface. Permanent applications include installing a base course layer for subsequent paving.

This work shall be done in accordance with Section 302 of the 2012 Michigan Department of Transportation Standard Specifications for Construction, except as herein specified.

**Materials**

Maintenance Aggregate, 21AA shall meet the gradation requirements specified in Table 1 and the physical requirements listed in Table 902-2 of the 2012 Michigan Department of Transportation Standard Specifications for Construction

TABLE 1 GRADATION LIMITS (Prior to Rolling and Compacting)								
Material	Total Percent Passing (Sieve Size)							
	1 1/2"	1"	3/4"	1/2"	3/8"	No. 8	No. 30	Loss by Washing
21AA	100	85 - 100	*	50 - 75	*	20 - 45	*	4 - 8

Material not meeting gradation or loss by wash limits in Table 1 will not be permitted to be placed on the grade.

Maintenance Aggregate, 21AA materials shall be obtained from natural aggregate, iron blast furnace slag or reverberatory furnace slag. Only fines produced by the crushing process shall be permissible, no plastic fines shall be added.

The use of crushed concrete is permissible upon written authorization by the Owner and compliance with the Measurement and Payment section of this Special Provision.

Maintenance Aggregate, 21AA produced by crushing Portland cement concrete must not contain building rubble as evidenced by the presence of more than 5.0 percent, by particle count, building brick, wood, plaster, hot mix asphalt, or similar materials. Sporadic pieces of steel reinforcement may be present provided they pass the maximum grading sieve size without hand manipulation.

SPECIAL PROVISION  
FOR  
**MAINTENANCE AGGREGATE, 21AA**

HRC

3/31/20

The Contractor is solely responsible for degradation and segregation during shipment, placement, and compaction of the material.

**Construction Methods**

Construction shall conform to Section 302 of the Michigan Department of Transportation 2012 Standards Specifications for Construction. This work shall consist of installing Maintenance Aggregate, 21A, to the depth and elevation as directed by the Owner or Owner's field representation and includes all material, labor and equipment used in the preparation of the base, furnishing all material, grading and compacting the material to proper finished elevations, and protecting the subgrade, sub base, and finished product.

Provide a finished and compacted surface, smooth and uniform in appearance that is free of loose aggregates, holes, depressions, ruts, and ridges.

Placing and Compacting with Sodium Chloride will not be required or allowed.

The Owner reserves the right to perform in-place density control testing on permanent applications to verify at least 95 percent of the maximum unit weight as determined by the method in the MDOT Density Testing and Inspection Manual appropriate for the material.

The Owner reserves the right to sample the aggregates at the jobsite at any time prior to installation for gradation and other specification compliance testing. The sampling location for materials prior to installation shall be from an individual dump truck or a composite sample made up of several truck dumps as the 21AA aggregate is being delivered to a job site stockpile.

The Owner may sample and test the compacted in-place material for final acceptance. If segregation, contamination, or excessive degradation is observed, the Owner will provide written notification to the Contractor of the need for in-place testing and determine the limits of the area subject to in-place acceptance. Material placed or paved over after receipt of notification of the need for in-place testing may be deemed to be unauthorized work as specified by subsection 104.05 of the Standard Specifications for Construction.

Compacted in-place samples shall be taken from the project grade after placement, compaction, and final trimming. Mechanical methods may be used to assist in obtaining samples from the grade when the layer thickness is greater than 4 inches.

SPECIAL PROVISION  
FOR  
**MAINTENANCE AGGREGATE, 21AA**

HRC

3/31/20

**Measurement and Payment**

Maintenance Aggregate will be paid for at the Contract unit price per Ton for the thickness required to provide a temporary or permanent compacted surface which includes all work indicated in this Special Provision and related Contract References.

**Pay Item**

**Pay Unit**

Maintenance Aggregate, 21AA .....Ton

Payment for **Maintenance Aggregate, 21AA** shall include all labor, equipment, and materials required to complete the work described including, but not limited to, furnishing the crushed aggregate, placing spreading, shaping, compacting, trimming, protecting pavement adjacent to the installation, and all costs associated with corrective action including corrections necessary to rectify degradation, contamination, and segregation are included in the associated item of work.

The one-time removal of maintenance aggregate used in a temporary application shall be included in the unit price for "**Maintenance Aggregate, 21AA...Ton**"

Crushed concrete may be used if a reasonable credit is provided to the Owner. This credit must be approved prior to written authorization from the Owner.

When the Owner calls for in-place testing, only those costs associated with a failing test result shall be borne by the Contractor.



SPECIAL PROVISION  
FOR  
**ROLLED EROSION CONTROL PRODUCTS**

HRC

1 of 8

3/31/2020

**Description**

This work shall consist of providing all necessary materials, labor, and equipment required for installing Rolled Erosion Control Products (RECPs). RECPs are installed to provide temporary erosion protection until vegetation become established on critical slopes, vegetative channels, detention basins, streambanks, or shorelines. This includes securing the RECPs by stapling in to a trench at upstream and downstream ends, its base or toe, and the crest or top. Work includes, but is not limited to, the following major items:

- A. Final grading of stream banks or shorelines as shown on the drawings.
- B. Work shall be staged and timed to limit sedimentation impacts to the waterway and to have excavated banks exposed for the shortest time possible.
- C. Install and maintain all temporary sedimentation controls as specified.
- D. Furnish all erosion control and planting materials.
- E. Install all necessary seed and planting materials.
- F. Protection of all work until Provisional Acceptance. Maintenance until end of guarantee period.

**Definitions**

- A. Rolled erosion control product (RECP): A general term for any temporary degradable or long-term non-degradable material manufactured or fabricated into rolls designed to reduce soil erosion and assist in the growth, establishment, and protection of vegetation.
- B. Mulch-control netting (MCN): A planar woven natural fiber or extruded geosynthetic mesh used as a temporary degradable rolled erosion control product to restrain loose fiber mulches.
- C. Open weave textile (OWT): A temporary degradable rolled erosion control product composed of processed natural or polymer yarns woven into a matrix, used to provide erosion control and facilitate vegetation establishment.
- D. Netless rolled erosion control blanket: Consists of natural and/or polymer fibers mechanically interlocked and/or chemically adhered together to form an RECP.
- E. Erosion control blanket (ECB): A temporary degradable rolled erosion control product composed of processed natural or polymer fibers mechanically, structurally or chemically bound together to form a continuous matrix to provide erosion control and facilitate vegetation establishment.

SPECIAL PROVISION  
FOR  
ROLLED EROSION CONTROL PRODUCTS

HRC

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3/31/2020

- F. Turf Reinforcement Mat (TRM): A rolled erosion control product composed of non-degradable synthetic fibers, filaments, nets, wire mesh and/or other elements, processed into a permanent, three-dimensional matrix of sufficient thickness. TRMs, which may be supplemented with degradable components, are designed to impart immediate erosion protection, enhance vegetation establishment and provide long-term functionality by permanently reinforcing vegetation during and after maturation. Note: TRMs are typically used in hydraulic applications, such as high flow ditches and channels, steep slopes, stream banks, and shorelines, where erosive forces may exceed the limits of natural, unreinforced vegetation or in areas where limited vegetation establishment is anticipated. Composite turf reinforcement mats (TRMs) combine permanent, three-dimensional matting with natural fiber matrix material (coir or coir/straw mix).

**Materials**

Different classes of Rolled Erosion Control Products (RECPs) are described in this Section, but are not equivalent. The Contractor must use the specific RECPs listed on the Plans and approved by the Engineer. Products of a different class or that do not meet the specifications will not be allowed. Use a wider roll width if site conditions allow to reduce seams.

Temporary Erosion Control Blanket (ECB) Material Descriptions

A. Netless Rolled Erosion Control Blanket Description

The netless rolled erosion control blanket is composed primarily of a uniform layer of virgin wood fiber with degradable man-made fibers that are intertwined into a dimensionally stable composite matrix without a netting on the surface. The following products meet the specifications for netless RECB lines:

1. Futerra F4 Netless,
2. or approved equal.

Material Properties –

Mass/Unit Area	ASTM D6475	5 oz/yd <sup>2</sup> (170 g/m <sup>2</sup> )
Thickness	ASTM D6525	0.2 in (5.1 mm)
Tensile Strength	ASTM D6818	4.3 lb/ft (0.8 kN/m)

B. Single-Net Straw Erosion Control Blanket Description

The single-net straw blanket is composed of certified weed-free, agricultural straw that is evenly distributed and sewn to a single natural jute fiber netting with degradable thread on 1.5-2 inch centers. The netting shall consist of machine directional strands formed from two intertwined yarns with cross directional strands interwoven through the twisted machine strands (Leno weave) to form a net opening size of approximate ½ x 1 inch mesh. Blankets with cross-lay weaves are not allowed. Photo-degradable polypropylene or other synthetic nettings are not allowed unless specifically indicated on

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the Project Plans or pre-approved by the Engineer. Products shall meet the specifications of ECTC and FHWA FP-03 Category Type 2.C. The following products meet the specifications for single-net straw ECB lines:

1. North American Green - S75BN (bionet),
2. Western Excelsior Corp. - Excel SR-1 All Natural,
3. East Coast Erosion Blankets – ECS-1B (biodegradable),
4. or approved equal.

Material Properties –

Mass/Unit Area	ASTM D6475	8 oz/yd2 (270 g/m2)
Min. Tensile Strength	ASTM D4595	50 lb/ft
Min. Permissible Shear Stress	ASTM D6460	1.50 lb/ft2

C. Double-Net Straw Erosion Control Blanket Description

The double-net straw blanket is composed of certified weed-free, agricultural straw that is evenly distributed and sewn to a natural jute fiber netting on the top and bottom sides with degradable thread on 1.5-2 inch centers. The top netting shall consist of machine directional strands formed from two intertwined yarns with cross directional strands interwoven through the twisted machine strands (Leno weave) to form a net opening size of approximate ½ x 1 inch mesh. Blankets with cross-lay weaves on top are not allowed. Photo-degradable polypropylene or other synthetic nettings are not allowed unless specifically indicated on the Project Plans or pre-approved by the Engineer. Products shall meet the specifications of ECTC and FHWA FP-03 Category Type 2.D. The following products meet the specifications for double-net straw ECB lines:

1. North American Green - S150BN (bionet),
2. Western Excelsior Corp. - Excel SS-2 All Natural,
3. East Coast Erosion Blankets – ECS-2B (biodegradable),
4. or approved equal.

Material Properties –

Mass/Unit Area	ASTM D6475	9.29 oz/yd2 (315 g/m2)
Min. Tensile Strength	ASTM D4595	75 lb/ft
Min. Permissible Shear Stress	ASTM D6460	1.75 lb/ft2

D. Straw/Coir Fiber Erosion Control Blanket Description

The straw/coir fiber blankets shall be a machine-produced mat with a 70% agricultural straw and 30% coconut fiber blend matrix. The biodegradable blanket shall be of consistent thickness with the straw and coconut fiber evenly distributed over the entire area of the mat and sewn to a natural jute fiber netting on the top and bottom sides with degradable thread on 1.5-2 inch centers. The top netting shall consist of machine directional strands formed from two intertwined yarns with cross directional strands

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interwoven through the twisted machine strands (Leno weave) to form a net opening size of approximate ½ x 1 inch mesh. Products shall meet the specifications of ECTC and FHWA FP-03 Category Type 3.B.

The following products meet the specifications for (double-net) straw/coir ECB lines:

1. North American Green - SC150BN (bionet),
2. Western Excelsior Corp. - Excel CS-3 All Natural,
3. East Coast Erosion Blankets – ECSC-2B (biodegradable),
4. or approved equal.

**Material Properties –**

Mass/Unit Area	ASTM D6475	9.66 oz/yd <sup>2</sup> (328 g/m <sup>2</sup> )
Min. Tensile Strength	ASTM D4595	100 lb/ft
Min. Permissible Shear Stress	ASTM D6460	2.0 lb/ft <sup>2</sup>

**Material Composition –**

<u>Material</u>	<u>Content</u>
Matrix	70% straw fiber (0.35 lb/yd <sup>2</sup> ) (0.19kg/m <sup>2</sup> +) 30% coconut fiber (0.15 lb/yd <sup>2</sup> ) (0.08 kg/m <sup>2</sup> )
Biodegradable Netting	Both - biodegradable jute fiber approx. 9.3 lb/1000 ft <sup>2</sup>

**E. Coir Fiber Erosion Control Blanket Description**

The coir fiber blanket shall be a 100% organic coir (coconut) fiber blanket woven between two natural fiber nettings into a continuous matrix for temporary erosion protection. The blankets shall be of consistent thickness with the coconut fiber evenly distributed over the entire area of the mat and a minimum mass per unit area of 0.50 lb/yd<sup>2</sup>. The blanket shall be sewn to a natural jute fiber netting on the top and bottom sides with degradable thread on 1.5-2 inch centers. The top netting shall consist of machine directional strands formed from two intertwined yarns with cross directional strands interwoven through the twisted machine strands (Leno weave) to form a net opening size of approximate ½ x 1 inch mesh. Blankets with cross-lay weaves on top are not allowed. Photo-degradable polypropylene or other synthetic nettings are not allowed unless specifically indicated on the Project Plans or pre-approved by the Engineer. Products shall meet the specifications of ECTC and FHWA FP-03 Category Type 4. The following products meet the specifications for coir fiber ECB lines:

1. North American Green - C125BN,
2. Western Excelsior Corp. - Excel CC-4 All Natural,
3. East Coast Erosion Blankets – ECC-2B (biodegradable),
4. or approved equal.

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**Material Properties –**

Mass/Unit Area	ASTM D6475	8.83 oz/yd2 (300 g/m2)
Min. Tensile Strength	ASTM D4595	125 lb/ft
Min. Permissible Shear Stress	ASTM D6460	2.25 lb/ft2

Where non-biodegradable coir fiber erosion control blankets are specified, they shall consist of the same coir matrix but the netting shall be heavyweight, UV stabilized, black polypropylene on both sides with an approximate weight of 3 lb/1,000 ft2 (14.6 kg/100 m2) such as NAG C125 or approved equal.

**F. Coir Fiber Netting Description**

The coir fiber netting shall be a 100% natural twisted bristle coir (coconut) fiber twine woven into an open weave textile for shear protection. The following products meet the specifications for coir fiber netting lines:

1. Belton Industries Inc. - DeKoWe 700,
2. RoLanka International Inc. - BioD-Mat 70,
3. BonTerra America - CF7,
4. or approved equal.

**Material Properties –**

Mass/Unit Area	ASTM D3776	20 oz/yd2 (700 g/m2)
Min. Tensile Strength	ASTM D4595	125 lb/ft
Min. Permissible Shear Stress		4 lb/ft2
Max. Open Area	50%	

**G. Composite Turf Reinforcement Mat (C-TRM) Description**

The composite turf reinforcement mat (C-TRM) shall be a machine produced mat of 100% coconut fiber matrix incorporated into a permanent three dimensional, polypropylene netting structure with prominent closely spaced ridges across the entire width of the mat. Soil-filled TRMs will not be allowed. The matrix shall be stitch bonded between two heavy duty, UV stabilized nettings with 0.50 x 0.50 inch openings. The three nettings shall be stitched together on 1.50 inch (3.81 cm) centers with UV stabilized polypropylene thread to form a permanent three dimensional structure. C-TRM Products shall meet the specifications of ECTC and FHWA FP-03 Category Type 5.C, in addition to having a minimum typical thickness of 0.6 inches (ASTM D6525) such as North American Green C350, or approved pre-approved equal.

**H. Fasteners**

Fasteners for rolled erosion control products are critical to maintaining protection for the life of the RECP. There are three types of acceptable fasteners depending on the soils, slopes, shear stress, and functional life of the RECP. Fasteners may be installed by

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hand or with a mechanical driver. The following are acceptable fastener materials unless otherwise specified on the Project Plans.

1. Use 6" Wire Pins – shall be 11 gauge wire, 6" long staples, Round Top Pins, or approved equal.
2. Use 8" Wire Pins – shall be 11 gauge wire, 8" long staples, Round Top Pins, or approved equal.
3. Biodegradable Stakes – Rigid biodegradable stakes may be specified for temporary protection with biodegradable blankets in areas that will be mowed. Approved fasteners include Round Top BioPin, BioSTAKes as manufactured by North American Green, or approved equal.
4. Additional fasteners such as rebar, metal pins with washers, or duckbill anchors may be required for specialized stabilization or soil bioengineering practices as specified on the Plans.

**Execution**

Erosion Control Blanket Installation Procedures

The critical points are overlaps and seams, the projected water line, and the bottom of the channel. Installation rates and staple densities shall be per the manufacturer's instructions or as follows unless otherwise indicated on the Project Plans.

- A. Achieve final grade and removal all stones, roots, and foreign material as described in the Section 2930 before installing RECPs indicated on the Project Plans.
- B. Begin at the top of the slope by anchoring the blanket in a 6" deep x 6" wide trench parallel to flow (along the contour). Backfill and compact the trench after installing fasteners (Figs. 1A & 1B).
- C. Blankets on side slopes must be placed end over end (shingle style) with a 6" overlap with the blanket on the upper part of the slope overlapping the lower blanket and/or the upstream blanket overlapping the downstream blanket.
- D. In channel applications, a staple check slot is recommended at midway or 30' to 40' intervals (Fig. 1D) and the center of the blankets shall be secured using a minimum of staple pattern 'D' (Fig. 3).
- E. The terminal end of the blankets at the base of the slope, shoreline, or streambank must be anchored in a 6" deep x 6" wide trench after installing staples 12" apart. Along streambanks, backfill and compact the lower edge of blankets in the trench per the Toe Protection Detail.

Composite Turf Reinforcement Mat Installation Procedures

A 6.5 ft. wide row of TRM shall be installed parallel to flow (see detail). Biodegradable Erosion Control Blanket may be required above the C-TRM on disturbed areas. The critical points are overlaps and seams, the average water line, and the bottom of the channel. Install similar to Section 3.01 except use 8" long, 11 gauge wire staples installed with staple pattern 'E' (Fig. 4). If using the NAG DOT system, secure C-TRM by placing staple through white dots.

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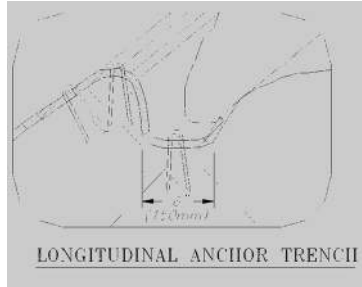


Fig. 1A

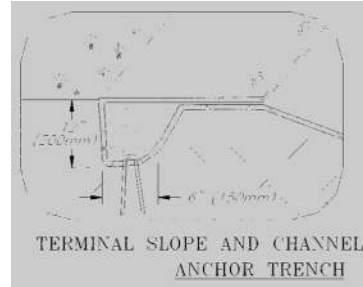


Fig. 1B

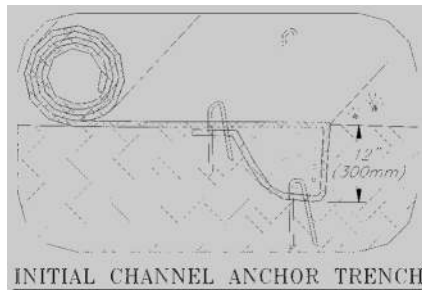


Fig. 1C

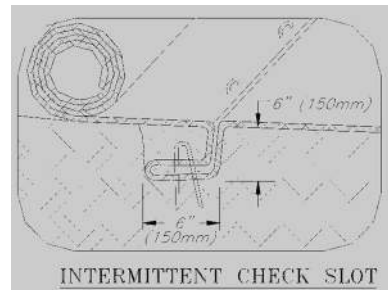


Fig. 1D

## STAPLE PATTERN "C"

1.75 staples/yd<sup>2</sup> (2.1 staples/m<sup>2</sup>) using 6 in (15.2 cm), 11 ga. wire "U" staples. 8 in (20.3 cm) staples and longer may be used for loose soils. 9 ga. staples or heavier may be necessary in hard or rocky soils.

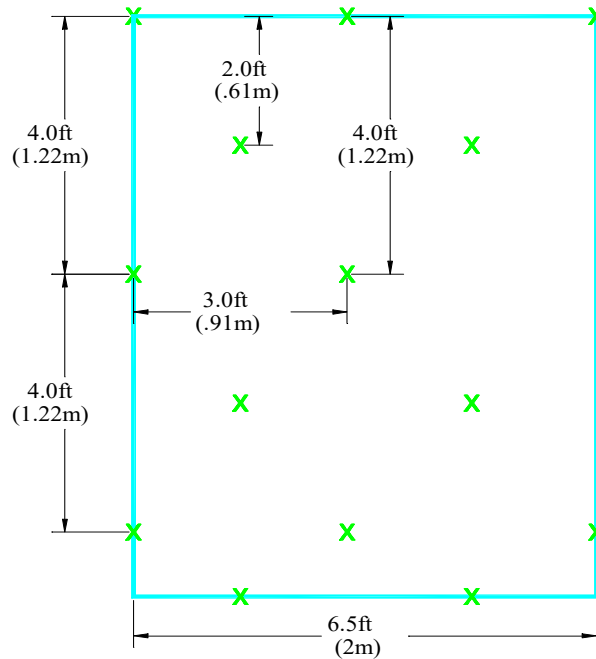


Fig. 2 Low/Moderate Kinetic Energy Erosion Control Blanket Installation

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STAPLE PATTERN "D"

3.5 staples/yd<sup>2</sup> (4.2 staples/m<sup>2</sup>) using 6 in (15.2 cm), 11 ga. wire "U" staples. 8 in (20.3 cm) staples and longer may be used for loose soils. 9 ga. staples or heavier may be necessary in hard or rocky soils.

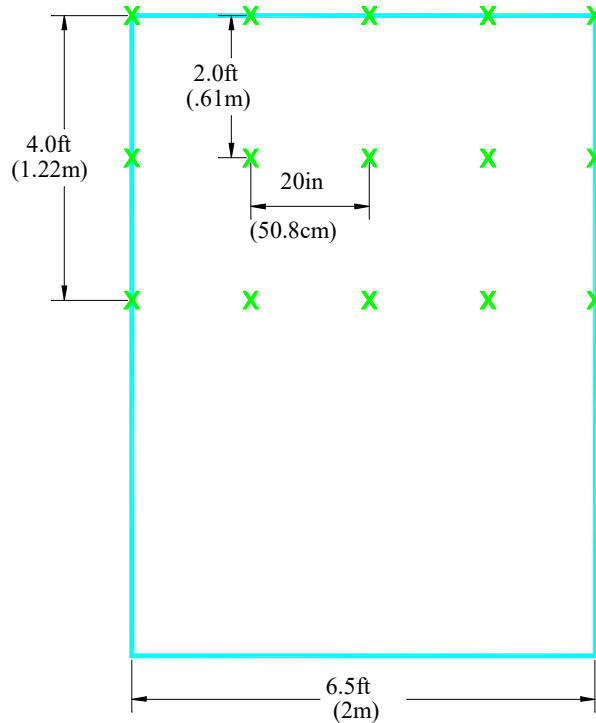


Fig. 3 High Kinetic Energy Erosion Control Blanket Installation

STAPLE PATTERN "E"

3.8 staples/yd<sup>2</sup> (4.5 staples/m<sup>2</sup>) using 6 in (15.2 cm), 11 ga. wire "U" staples. 8 in (20.3 cm) staples and longer may be used for loose soils. 9 ga. staples or heavier may be necessary in hard or rocky soils.

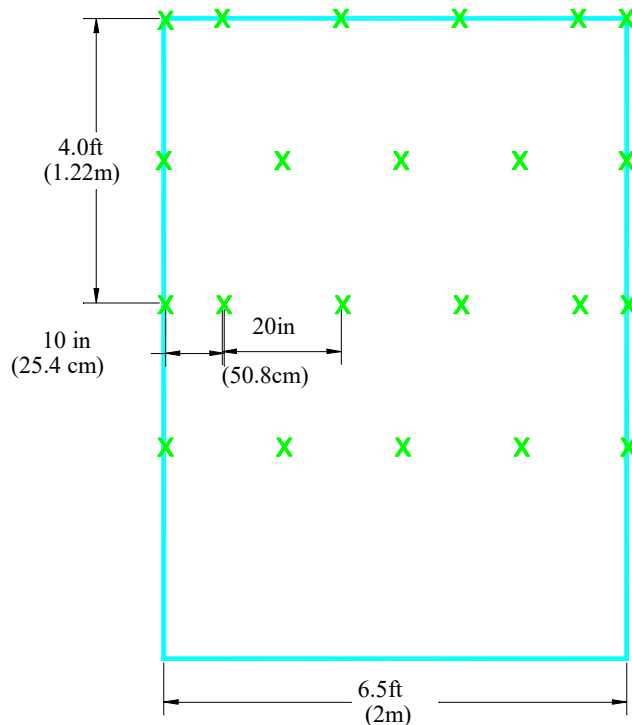


Fig. 4 Very High/Severe Kinetic Energy Erosion Control Blanket Installation



# SPECIAL PROVISION FOR SITE RESTORATION

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## **Description**

This work shall include final restoration of disturbed areas to match existing conditions, due to service line verification or service line replacement work and subsequent paving, backfill and restoration preparation. Materials and construction methods as specified in this Special Provision shall supersede any conflicting technical specifications provided in the contract documents.

## **Materials**

Materials specified in the standard specifications for the SOCWA member communities in which the Work resides shall supersede the following general materials.

Topsoil surface shall meet the requirements of Section 02958.

Seed shall meet the requirements of Seeding Mixture, THM as specified in General Roadside Seed Mix Selection Guide of the 2012 Michigan Department of Transportation Standard Specifications for Construction.

Mulch Blanket shall meet the requirements of Single-Net Straw Erosion Control Blanket as specified in the Special Provision for Rolled Erosion Control Products

Sod shall meet the requirements of Section 02934.

Fertilizers shall comply with the requirements of Section 02929 for seeded lawns and Section 02934 for sodded lawns.

Mulch anchoring shall be a bonded fiber matrix (BFM) consisting of long strand, virgin wood fibers (90 percent by weight) and bound together by a pre-blended, high strength poly-saccharine polymer adhesive (10 percent by weight).

- The virgin wood fibers must be thermo-mechanically defiladed from clean whole wood chips, containing a minimum of 25 percent of the fibers averaging 7/16 of an inch long, with a minimum of 50 percent or more retained on the No. 25 sieve size.
- The organic binders must be a high viscosity colloidal poly-saccharine tackifier (4000 centipoise) with activating agents to render the resulting matrix insoluble upon drying.
- BFM shall be 90 day degradable.

Mulch shall be free of growth or germination inhibiting ingredients and shall meet the following requirements; shredded hardwood mulch shall consist of the dark brown, triple-shredded bark from hardwood trees such as maples and oaks which has been mixed and screened to a maximum four (4) inch particle size and provide a uniform texture free from sawdust, foreign materials, and any artificially introduced chemical compounds that would be detrimental to plant or animal life.

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**Construction Methods**

Remove existing plantings and landscape materials within the zone of influence of construction or that which cannot be reasonably protected during construction and store in such a manner that the removed items can be successfully replanted or replaced without damage.

Items shall be stored in areas near the construction site so that they can be monitored by the Owner's field representation. Document condition and layout of existing plantings and landscape materials prior to removal.

It is the Contractor's responsibility to protect and maintain all plantings and landscaping materials removed, while they are being stored and throughout the duration of construction. All plantings and landscape materials that perish or are damaged during the duration of the construction, due to the Contractor's inability to protect and maintain the items, shall be replaced in kind and in accordance with Section 02958.

Final site restoration shall not commence until all underground construction activities have been completed but no longer than 14 days after rough grade has been established unless otherwise approved by the Project Engineer.

Contractor shall acknowledge that his operations may take place on and near newly paved surfaces and shall accommodate these conditions by use of proper equipment and machinery so as to not damage finished products. Contractor shall be responsible for any damages to finished products.

Review the scope and limits of the restoration work with the Owner's field representative.

Furnish and install topsoil in areas prepared for restoration to a minimum depth to meet required lines, grades, and elevations after light rolling and natural settlement.

- Place approximately ½ of total amount of topsoil required.
- Add specified soil amendments (if needed), mix thoroughly into upper 4" of subsoil, and then place remainder of topsoil.
- Refer to Section 02958 for further preparation activities

Limit topsoil installation and preparation to areas which will be planted promptly thereafter.

Complete seed and mulch blanket or BFM installation within two (2) days of topsoil placement.

Seed areas as discussed during the review of the scope and limits of the restoration, in accordance with Section 02929.

Install Mulch Blanket atop seeded areas in accordance with requirements specified in the Special Provision for Rolled Erosion Control Products, or

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Install BFM, applied hydraulically, at a minimum rate of 4000 pounds per acre unless dormant seeding which requires a rate of 6000 pounds per acre or greater if specified by the manufacturer or as directed by the Engineer for the specific site conditions.

- BFM slurry must be applied in successive layers, from two or more directions, to fully cover 100 percent of the soil surface.
- Do not apply on saturated soils or immediately before, during or after rainfall in accordance with the manufacturer's recommended timeframe for application for such conditions.

If an area washes out after mulch blanket or BFM installation and acceptance and is the result of a storm, the contractor will be required to make corrections to prevent future washouts and replace the topsoil, fertilizer, seed and mulch blanket or BFM. This replacement will not be paid for as extra work.

Sod areas as discussed during the review of the scope and limits of the restoration, in accordance with Section 02934.

Seasonal limitations in accordance with Section 816 of the 2012 MDOT Standard Specifications for Construction will apply.

Replace existing plantings and landscape materials removed prior to construction. Coordinate with property owner if possible prior to planting and replacement and receive sign-off that the items have been replaced and arranged appropriately.

Provide four (4) inches of mulch in areas as discussed during the review of the scope and limits of the restoration. Mulch shall be thoroughly soaked after installation.

**Maintenance, Inspection and Final Acceptance**

The contractor will be required to water in accordance with section 816.03 daily at a rate of 3.5 gallons/square yard by natural or manual means to keep the surface moist for six (6) weeks after the seed or sod is placed.

Six (6) weeks after the initial seeding, the contractor will fill any areas that may have settled with topsoil and reseed and mulch or BFM areas without dense growth as directed by the engineer.

- The Owner will assume the restoration after the initial six (6) weeks after placement schedule and will continue to water the areas and repair any issues related to no growth or thin growth after the contractor reseeds and mulches.
- The contractor will be released from any further efforts to restore the lawn areas.

If the contractor has not watered for six (6) weeks prior to November 1, the contractor will be required to continue to water beginning April 15 until a total of six (6) weeks has been completed as the areas restored will be considered dormant seeding after November 1.

The Contractor shall water and provide one (1) cutting of the lawn to 3" inches in height prior to reseeding after the initial six (6) week period of contractor's responsibility.

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Inspection and final acceptance in accordance with Section 02970 is required prior to application for final payment.

Maintain sodded areas in accordance with Section 02970.

Inspection and final acceptance is required prior to application for final payment.

**Measurement and Payment**

The completed work as detailed above shall be recognized as **“Site Restoration”** and will be paid for at the contract unit prices for the following contract items (pay items), which includes all work indicated in this Special Provision.

<b>Pay Item</b>	<b>Pay Unit</b>
Turf Grass Repair - Rough and finish grade, apply 3” topsoil and sod .....	Syd
Turf Grass Repair - Rough and finish grade, apply 3” topsoil, seed and mulch blanket .....	Syd
Turf Grass Repair - Rough and finish grade, apply 3” topsoil and hydroseed .....	Syd
Hardwood Mulch, 4 inch .....	Syd

The pay items recognized under **“Site Restoration”** will be measured by area in square yards, based on actual area of material installed. Sod, Mulch Blanket or Mulch Anchoring (Hydroseed) may be used.

Hardwood mulch will be installed only as directed by the Owner or Owner’s field representation and will be measured in place based on actual area of material installed to thickness required.

Seed will be measured by collection of vendor’s certification tickets for weight of seed used and confirmed by measuring actual area seeded to determine application rate. Quantity of seed installed beyond the specified application rate will not be paid.

Payment of **“Site Restoration”** shall be payment in full for all costs associated with the restoration elements specified including furnishing all materials, installing and preparing topsoil to the tolerances indicated, installing seed, mulch blanket or BFM, to the rate, workmanship, and limits indicated, and maintaining restoration items in accordance with Section 02970.

Payment for these items will be at the following rate:

- 1) Contractor to receive 50% payment of any of these items when they are placed
- 2) Contractor will receive remaining 50% when all the provisions detailed herein are completed

When **“Site Restoration”** work is completed, including the six (6) week maintenance period, Engineer will, upon request, make a final inspection prior to transferring the responsibility to the Owner for assuming those areas for completion and watering.

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Where inspected “**Site Restoration**” work during the initial six (6) weeks after placement does not comply with requirements, the contractor shall replace rejected work and continue specified six (6) week maintenance until reinspected by Engineer and found acceptable which shall not exceed the six (6) week time frame after placement.

The following items will not be measured and paid for separately, but shall be included in the respective bid items under “**Site Restoration**”.

Topsoil Surface, Furn, 3 inch, Special  
Seeding, Mixture THM  
Mulch Blanket, Special  
Mulch Anchoring, Hydroseed  
Soil Amendments

Fertilizer, Chemical Nutrient, CL A  
Water Sodding/Seeding  
Weed Control

Payment for **Site Restoration** shall be payment in full for all costs associated with these specific restoration elements including furnishing all materials, installing and preparing topsoil to the tolerances indicated, installing sod to the workmanship and limits agreed to, maintaining restoration items in accordance with Section 02970 and property owner sign off.

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**Description**

This work consists of providing all labor, equipment and materials necessary to replace an existing water service line from the public water supply main (water main) to the existing curb stop (i.e., public water service line) and/or from the discharge of the existing curb stop to the customer premise plumbing or to the building plumbing at the first shut-off valve inside the building or 18 inches inside the building (hereinafter referred to as “meter”), whichever is shorter (i.e., private water service line).

The intent of this work is to be performed on a non-emergency, individual service line replacement basis to replace either the private water service line, the public water service line, or both. If lead or galvanized public or private service lines are found to exist where previously thought to be non-lead, they should be replaced concurrently, consistent with the details and pay items provided herein. Work may include the removal and replacement of sidewalk, driveways or roadways which will be paid for under separate pay items as detailed. At no time shall a partial service line replacement – replacing public side service lines while leaving lead private side service lines or vice versa – be allowed.

Work on private service lines will typically take place on private property and within a building/premises. Therefore, private property access agreements are required prior to any Work commencing on the private water service lines. Any work completed on private water service lines without a signed access agreement will not be covered under the terms and conditions of this Contract. As part of their signed access agreement, tenant/property owners will be required to provide clear access to the location in which the service line enters the building/premises. However, proposals for private service line replacement work should allow for minor clearing of the workspace (i.e. moving some minor items small furniture, storage boxes, etc.) in order to gain the clear access needed to complete the project. Should the work require significant clearing of materials, removal of items adhered or connected to surfaces or other unforeseeable conditions that would not constitute clear access the property owner/tenant shall be informed that service line replacement cannot commence until clear access is provided.

Perform work in accordance with this Special Provision, the Owner's standard details, local ordinances and the latest edition of the Michigan Plumbing Code. Work will require accessing private property, including inside a building/premises in most cases. A field representative of the Owner must be on-site during all work within a building/premises.

It is the intent of the project that the following coordination and administrative work items will be completed by the Owner and/or Owner's field representative:

- Distribution of Initial Notification and Public Education documents
- Collection of signed Access Agreements
- Initial Introductory Meeting Attendance and Work Plan
- Scheduling of Service Line Replacement work with property owner/tenant
- Recording and documenting service line replacement work.
- Conduct premise plumbing flush

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However, some Member Communities do not have staff available to administer the coordination and management aspects of a Service Line Replacement Program. Therefore, separate work items have been provided in the Cost Worksheet for the contractor to perform the coordination and administrative work items listed above. These work items will only be used upon direct authorization of the member community and advanced notice to contractors will be provided when the intent to use these administrative work items is needed.

For the purposes of this Special Provision "Owner" refers to SOCWA and/or the SOCWA member community in which the Work resides, depending on the stage of construction.

**Materials**

Service line materials shall be type K seamless copper tubing compliant with lead-free regulations (NSF 372 and NSF-61G), unless the use of another material is authorized by the Owner.

- Refer to Section 02660 for further detail on material requirements

HDPE water services shall be minimum SDR 9 and 1-inch minimum diameter.

- Refer to Section 02660 for further detail on material requirements

Pipe fittings for service lines outside of the building/premises shall be consistent with the service line materials data sheet as provided in the Contract documents.

Pipe fittings for building/premise plumbing shall be in conformance with materials listed in the latest edition of the Michigan Plumbing Code.

Hydraulic Cement for the restoration of foundation walls or floors or sealing of annular spaces around the service line shall be rapid-setting, calcium aluminate cement product with fiberglass reinforcement. The product shall have a minimum compressive strength of 3,000 psi, minimum bond strength of 2,000 psi and maximum 0.1% drying shrinkage at 90% relative humidity.

Final backfill for excavations shall meet the requirements of Section 02315.

Concrete required for sidewalk, driveway and roadway replacement shall be MDOT P1 with a minimum compressive strength of 3,500 psi, unless otherwise specified in the Owner's permitting standards.

Site restoration materials shall meet the minimum requirements of the Special Provision for Site Restoration unless the conditions for private property access require more stringent materials.

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**Construction Methods**

Preconstruction Activities:

Temporary shutting off of water service to a building/residence for the replacement of a water service line shall be done only with approval from and coordination with the Owner.

- All construction work must be coordinated so that the duration a building/premises is without water service is minimized.
- Under no circumstances shall a residence be left without water service overnight.
- Contractor's operations must be continuous until water service to a residence is restored.

Private water service replacement work cannot begin until access agreements have been signed by all necessary parties.

The Owner will coordinate and schedule an introductory meeting with property owner/tenant, unless otherwise specified by the Owner for the contractor to perform this task. At the time of the introductory meeting the responsible party will initially verify the presence of a lead service line in the building/premises.

If the presumed lead service line within the building/premises is verified as not being lead or galvanized, the remainder of the introductory meeting may be concluded.

- Report findings to Owner, along with any signs of partial replacement of the private water service line,
- Address to be removed from the service line replacement program, unless the public water service line is presumed to be lead,
- Owner to review the source of the original information and determine if further investigation is needed.

If a lead service line within the building/premises is verified, the responsibility party will perform the following tasks;

- Take pictures/video of the interior and exterior workspace
- Visually inspect all exposed plumbing and plumbing fixtures
- Complete a Work Plan for the property where the water service is to be replaced, including;
  - Method of replacement
  - Sequence of operations and duration of impact
  - Materials, equipment and number of personnel to enter the premises
  - Anticipated extent of premises and exterior private property damage
- Review Work Plan with the property tenant/property owner



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The Owner will supply the impacted tenant/property owners with a packet of lead service line replacement (LSLR) information, unless otherwise specified by the Owner for the contractor to perform this task. This initial LSLR informational packet will include at minimum;

- Recommended Flushing Instructions
- Filter Care and Maintenance Guidelines
- Lead Service Line Replacement Program FAQ
- Healthy Water Tips Pamphlet

Obtain a plumbing permit from the Owner or municipality in which the work is taking place.

- Plumbing permits must be pulled by a licensed Master plumber or in accordance with the AHJ's permitting procedures,
- The installation of water service piping within a building/premises does not need to be performed by a licensed master or journeyman plumber if the following apply;
  - A permit is secured from the responsible enforcing agency and inspections are performed.
  - The installer certifies that the installation complies with the applicable parts of the state construction code.

Construction Activities:

Maintaining traffic shall consist of signage, barrels, cones and all other means of traffic control and site safety measures in accordance with the latest edition of the MMUTCD to assure the safety of the traveling public while also maintaining access to all local residents.

- Maintaining traffic along typical residential streets and low volume commercial or industrial avenues should be considered included with the project.
- Should the authority having jurisdiction (AHJ) deem that more coordinated traffic control is needed, the AHJ will either perform the traffic control themselves or negotiate a cost proposal from the Contractor based on the scope, terms and traffic control plan needed.

Prior to starting any work on the day of the water service line replacement (SLR);

- Ensure the accessibility conditions of the access agreement and work plan have been met (i.e. whether the tenant/property owner wished to be present),
- Review that MISS DIG staking has been completed and is current,
- Be prepared to complete a full service line replacement (FSLR),
  - An FLSR includes replacing the public water service line and the private water service line, including a new curb stop, curb box and water main connection as specified by the Owner.
- Disconnect the water service line upstream of the meter.

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Perform an exploratory excavation at the curb stop to verify the extent of the work.

- If the service line material between the curb stop and the water main is galvanized or lead, immediately contact the on-site Owner's field representative and prepare for an FSLR.
- Ensure at least 24-inches of service line is exposed when verifying the service line material.
  - Once lead or galvanized piping material is verified, the extent of the work has been verified and the exploratory excavation may be stopped.

Install a new private water service line or public water service or both.

- Refer to the "Approved Service Line Installation Methods" at the end of this Special Provision to review the requirements and expectations of the pre-approved SLR methods.
- Contractor shall be prepared to open-cut the new service line in case other methods fail.
- Partial service line replacements are prohibited; at no time shall existing lead or galvanized piping remain in contact with the potable water service line to a building/premises in which the service line replacement work is being completed.
- FSLRs require a minimum water service line diameter of one (1) inch.
- The size of the new private water service shall be 1-inch diameter minimum or match the existing service size from the public water service whichever is larger
  - Owner has the authority to authorize the use of service lines less than 1-inch in diameter if the existing public water service line serving the private water service line is less than 1-inch in diameter.
- A new curb stop and curb box is required when the public water service line is replaced.

If a public water service line replacement is performed, complete one of the following connection types as specified by the Owner;

- Connect to the discharge end of the existing corporation stop or
- Provide a new tap to the existing water main

If a new tap to the existing water main is required by the system Owner;

- Install a new service connection and corporation stop on the existing water main
  - Install a service saddle where required by the system Owner
  - New connection shall be a minimum of 12 inches away from any existing service tap
- Abandon or remove the existing corporation stop as required by the Owner;
  - To abandon
    - Cut/disconnect the existing service line
    - Close and plug the existing corporation stop.
  - To remove;
    - Coordinate water system shutdown with the AHJ
    - Remove existing corporation stop
    - Install a new service saddle and/or stainless steel repair clamp over the hole in the pipe as required by the Owner

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Prepare penetration for new water service line

- Sawcutting within a premises to remove concrete flooring is prohibited.
- Hazardous or Non-hazardous, contaminated material (such as Asbestos tile or insulation), if present, shall not be removed by the Contractor. Consult the Owner's representative for further direction when questionable materials are encountered
- Limit new penetrations or enlargement of existing penetrations to the smallest dimensions possible.
- Clean up edges of penetration so as to not damage new service line piping when being installed and to create a clean joint when restored.

Conduct initial water service line flush;

- Complete initial flush prior to connecting to building/premise plumbing or private service line,
- Connect new water service to water main or curb stop,
- Connect a hose to the end of the new water service either within the excavation at the curb stop (for a public side only replacement) or within the building/premises (for a FSLR or a private side replacement) and flush at full velocity for a minimum of 10 minutes or until water runs clear, whichever is less,
- Drain the flush water to the nearest drain, laundry tub or to the exterior as agreed to with the Owner's representative and/or tenant/property owner.

Connect the new water service to premise plumbing.

- Install a new interior water shut-off valve (angle meter ball valve with a handle) on the service side (upstream) of the meter unless otherwise directed.
- Premise plumbing work must be inspected in accordance with the jurisdictional permitting authority's requirements.

Backfill and compact all exterior excavations in accordance with Section 02315

- Non-paved areas outside the Owner's right-of-way and not within the influence of the road are to be backfilled and compacted to grade with suitable excavated material.
  - Mounding of the grade to anticipate settlement is prohibited.
- Areas within the Owner's right-of-way are to be backfilled and compacted with Class II sand.
  - Within paved areas the sand backfill shall stop at the bottom of the proposed pavement section
  - Within non-paved areas, the sand backfill shall stop one (1) below the surface and suitable excavated material and topsoil shall make up the remaining backfill.

Temporary roadways, sidewalks and driveways shall be prepared with maintenance aggregate or cold patch as directed by the Owner

**SPECIAL PROVISION  
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Owner's field representative to perform a full-system flush in accordance with AWWA C810 in the presence of the tenant/property owner in accordance with the post-replacement instructions for flushing of premise plumbing, unless otherwise specified by the Owner for the contractor to perform this task. Additional compensation may be requested for building/premises that include greater than eight (8) fixtures to flush. Full-system flush shall consist of, at a minimum;

1. Locate all faucets in the building/premises that will drain,
2. Remove aerators, screens, shower heads, etc. (wherever possible) for all faucets that are planned to be flushed,
3. Open faucets in the basement or lowest level in the building/premises and leave all faucets running at the highest rate possible using cold water,
4. Proceed to open faucets and flush in the same manner on the next highest floor until you reach the highest floor in the building/premises,
5. After all faucets are open, leave water running for at least 30 minutes,
6. After 30 minutes, turn off the first faucet opened and continue to turn off faucets in the order they were opened.

Advise the tenant/property owner to clean or replace aerators/screens at each faucet.

Owner's field representative to review with tenant/property owner post-replacement instructions for daily mini-flushing of premise plumbing, use of filters, testing and sampling and healthy water tips pamphlet and collect signature of review of these instructions.

Restore any disturbance within premises.

- Repair any penetrations in the floor or wall created to install new water service line with hydraulic cement.
- Clean, sweep and remove all construction debris from the interior work area

Remove any debris generated on the exterior of the building/premises and rough grade the site to its original grade and contour, compact to prevent settling and prepare the site for restoration.

Owner will collect tenant/property owner signature for substantial completion of access agreement including restoration of all disturbance within the premises and supply literature to affected tenants/property owners regarding post-replacement responsibilities.

At the time of substantial completion, the one (1) year warranty on the service line replacement will commence.

Complete all exterior restoration (turf restoration, pavement, etc.) within 14 days of substantial completion unless seasonal limitations prohibit the work.

Exterior restoration will be considered separate to this substantial completion as seasonal limitations may preside over its completion.

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**WATER SERVICE LINE REPLACEMENT**

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**Final Acceptance**

Exterior restoration to be completed in accordance with the Special Provision for Site Restoration and MDOT Standard Specifications for Construction (concrete) and Section 02511 (HMA) for sidewalk, driveway and roadway replacements.

Owner will collect tenant/property owner signature for final completion of access agreement.

**Measurement and Payment**

The completed work as detailed above shall be recognized by the contract items (pay items) #1 through #67 and #71 through #89 as detailed in the Cost Worksheet as provided in Section 00300 and as described in Section 01220 and will be paid for at the contract unit price bid as such.

The following items will not be paid for separately but should be considered to be included in the project;

- Mobilization/demobilization
- Brass unions, reducers, angle valves and other fittings necessary to complete the work.
- Master plumber registration fee
- ROW permit
- Maintain grounding of the home's electrical system during the installation of the new service line to the satisfaction of the Owner's representative
- Traffic Control, unless measures beyond the scoped described herein are necessary

The following items will be the responsibility of the Owner or Owner's field representative, unless otherwise required by the Owner through use of the associated pay items in the Cost Worksheet, all other items needed to complete the project are the responsibility of the Contractor;

- Collect Signatures for Access Agreement, Substantial Completion of Agreement and Final Completion of Agreement
- Initiating first contact with tenant/property owner and performing initial walkthrough of the premises
- Development of Service Line Replacement Work Plan and Review with Tenant/Property Owner
- Conducting a condition survey of the premises complete with photographic evidence of the interior and exterior work areas
- Distribution of lead service line informational materials
- Scheduling service line replacement work with property owner/tenant
- Site observation during in-home work
- Delivery of post-replacement instructions, collect signature of delivery and witness full-system flush

**SOUTHEASTERN OAKLAND COUNTY WATER AUTHORITY  
APPROVED SERVICE LINE INSTALLATION METHODS  
FOR  
WATER SERVICE LINE REPLACEMENT PROGRAM**

Open Cut

Locate the existing service line and excavate a trench along the same alignment as the existing service line. Remove the existing service line and install a new water service line in the same trench as the existing service line. An open cut service line installation will require a new penetration through the foundation wall that is twice the diameter (min.) of the service line being installed. This new penetration must be cored. The service line through the wall shall be wrapped in a protective sheathing at least 0.025 inches (0.64 mils) thick and the penetration be packed tight from the inside and out with a preapproved hydraulic cement material. Prior to backfill, the exterior of penetration shall be sealed with an Owner approved waterproofing membrane. Bed the service line in Class II sand and backfill with suitable excavated material or Class II sand as directed by the Owner and in accordance with Section 02315. The open cut replacement of service lines beneath the roadway, except in cases of emergency, is prohibited.

Horizontal Directional Drilling

Water service lines that are horizontal directionally drilled are required to be bored beneath the foundation wall and connected to the premise plumbing through the floor of the foundation. Horizontal directional drilling through a foundation wall is prohibited unless written authorization from the Owner is provided. Follow the requirements of Public Act 174 and locate all utilities prior to pilot bore. Excavate below the foundation floor to locate the pilot bore. Removal of the foundation floor necessary to locate the pilot bore shall be kept to a minimum. Pull in new service line. Use caution not to exceed the pull stresses of the service line material. Wrap the service line, that is to be in contact with the foundation floor, in a protective sheathing at least 0.025 inches (0.64 mils) thick prior to restoring the floor of the foundation. Concrete floors requiring repair shall utilize a high-strength hydraulic cement as specified.

Pipe Pulling

The pulling of a water service line through a foundation wall is allowed only upon authorization from the Owner. Remove the minimum amount of existing material around the existing service line to pull the new service line through location of the existing penetration and properly seal the annulus around the new service line. Feed a high strength cable through the existing service line and connect to the roll of service line tubing. Engage compression couplings on both ends of the existing service line and initiate the pull. Pull the existing service line at a consistent force to avoid breaking or tearing the existing service line during the pull and minimize potential for underground disturbances. Once pulled through, check the service line for marring and remove any portions that show significant signs of damage. Wrap the service line, that is to be in contact with the restoration mortar, in a protective sheathing at least 0.025 inches (0.64 mils) thick prior to restoring the floor of the foundation. Annuluses shall be repaired utilizing a high-strength hydraulic cement as specified.

**SPECIAL PROVISION  
FOR  
WATER SERVICE LINE MATERIAL VERIFICATION**

HRC

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**Description**

This work consists of providing all labor, equipment and materials necessary to verify the existing material of water service lines. The intent of this work is to identify the material of a water service line in three (3) separate locations along its existence from the public water supply main to the building/premise plumbing;

- 1) at the discharge of the corporation stop on the public water supply main
- 2) on each side of the curb stop
- 3) at the interior penetration of the private service line to the building/premise

Street addresses will be provided by the member communities for the locations of the material verifications. Member communities will indicate what type of verification they will require for which street address and also flag/mark the curb box locations.

**Materials**

Final backfill materials for excavations shall meet the requirements of Section 02315.

Concrete required for sidewalk, driveway and roadway replacement shall be MDOT P1 with a minimum compressive strength of 3,500 psi

Site restoration materials shall meet the minimum requirements of the Special Provision for Site Restoration unless the conditions for private property access require materials that are more stringent.

**Construction Methods**

**Curb Stop Verifications:**

Excavate to expose the existing water service line at the curb stop.

- Salvage turf grass and topsoil.
- Remove sidewalk only where necessary to accommodate the excavation.
- Utilize hydroexcavation, potholing or air-knifing technologies to limit the size of the disruption wherever possible.
- Support and protect the curb box during the excavation.
- Expose the existing water service line a minimum of 24 inches on each side of the curb stop.
  - If lead or galvanized service line piping is discovered, excavation may cease and exposing the full 24 inches of service line on each side is not necessary
- Haul away and dispose of unsuitable excavated materials

Document the existing water service line material on each side of the curb stop.

- Complete service line verification form.
- Log the service line information into GIS collector application, if available.
- Provide photo documentation of existing service line.

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Evaluate the condition of the curb stop and curb box and make recommendation for replacement.

- Owner or Owner's representative will have the authority to approve replacing deteriorated components.

Bed the curb stop and bottom of the curb box in 3/4 inch crushed stone.

Backfill and compact the excavation in accordance with Section 02315.

- Plumb the curb box as backfill progresses.

Restore the disturbed areas in accordance with the Special Provision for Site Restoration

Interior Penetration Verifications:

Coordinate and schedule a site visit with the tenant/property owner.

Document the existing water service line material entering the building/premises

- Complete service line verification form.
- Log the service line information into GIS collector application, if available.
- Provide photo documentation.

Review the existing penetration for evidence of service line splicing near the penetration.

Water Main Verifications

Excavate to expose the existing water service line at the water main.

- Sawcut and remove pavement only where necessary to accommodate excavation.
- Utilize hydroexcavation, potholing or air-knifing technologies to limit the size of the disruption wherever possible.
- Haul away and dispose of pavement and unsuitable excavated materials

Document the existing water service line material on each side of the curb stop.

- Complete service line verification form.
- Log the service line information into GIS collector application, if available.
- Provide photo documentation of existing service line.

Bed the water main in 6AA crushed stone to 12 inches above the top of the water main.

- Rod the stone into the haunches of the pipe during bedding
- Refer to Section 02315, Article 3.7 for more detailed bedding installation requirements.

Backfill and compact the excavation in accordance with Section 02315.

Restore the disturbed areas in accordance with the Special Provision for Site Restoration.



## SPECIAL PROVISION FOR WATER SERVICE LINE MATERIAL VERIFICATION

HRC

3/31/2020

General:

Maintaining traffic is incidental shall consist of signage, barrels, cones and all other means of traffic control and site safety measures in accordance with the latest edition of the MMUTCD to assure the safety of the traveling public while also maintaining access to all local residents. Maintaining traffic along typical residential streets and low volume commercial or industrial avenues should be considered included with the project. Should the authority having jurisdiction (AHJ) deem that more coordinated traffic control is needed, the AHJ will either perform the traffic control themselves or negotiate a cost proposal from the Contractor based on the scope, terms and traffic control plan needed.

Backfill and compact all exterior excavations in accordance with Section 02315

- Non-paved areas outside the Owner's right-of-way and not within the influence of the road are to be backfilled and compacted to grade with suitable excavated material.
  - Mounding of the grade to anticipate settlement is prohibited.
- Areas within the Owner's right-of-way are to be backfilled and compacted with Class II sand.
  - Within paved areas the sand backfill shall stop at the bottom of the proposed pavement section
  - Within non-paved areas, the sand backfill shall stop one (1) below the surface and suitable excavated material and topsoil shall make up the remaining backfill.

Temporary roadways, sidewalks and driveways shall be prepared with maintenance aggregate or cold patch as directed by the Owner

Install backfill immediately following verification of service line materials and any replacement of deteriorated service line components. In no circumstance shall an excavation remain open overnight.

**Measurement and Payment**

Pay Item	Pay Unit
Service Line Material Verification, Curb Stop.....	Ea
Service Line Material Verification, Interior Penetration .....	Ea
Service Line Material Verification, Water Main .....	Ea

**Service Line Material Verification, Curb Stop** includes all equipment, materials, and labor needed to expose the existing water service line at the curb stop, document the material of the water service line on each side of the curb stop and backfill and compact the excavation.

**Service Line Material Verification, Interior Penetration** includes all labor and materials needed to schedule an inspection of the service line entry point into the building/premises and document the material of the water service line.

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FOR  
**WATER SERVICE LINE MATERIAL VERIFICATION**

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**Service Line Material Verification, Water Main** includes all equipment, materials, and labor needed to expose the existing water service line at the public water supply main, document the material of the water service line on the discharge side of the corporation stop and backfill and compact the excavation.

The following items will not be measured and paid for separately, but shall be included in the unit price bid for each of the above items;

- Mobilization
- Maintaining Traffic
- Soil Erosion and Sedimentation Control
- Hauling and Disposal of Excavated Materials
- Stone Bedding
- Class II Backfill

Refer to the "As Needed Materials and Surface Restoration Items" section of the Cost Worksheet for additional items of work that will be paid for separately.