

SPECIFICATIONS AND CONTRACT DOCUMENTS

FOR

**VILLAGE OF LAKE ORION**

**DEPARTMENT OF PUBLIC WORKS**

**LEAD SERVICE LINE REPLACEMENT, YEARS 1-3**



**BIDS DUE:**

**Tuesday, November 25, 2025**

**Time: 2:00 p.m.**

Village Clerk's Office

21 E. Church St.

Lake Orion, MI 48362

**PRE-BID MEETING:**

**Tuesday, November 18, 2025**

**Time: 10:00 a.m.**

Online meeting

Login information to be provided

**ENGINEER**

NOWAK & FRAUS ENGINEERS

46777 WOODWARD AVENUE

PONTIAC, MI 48342

(248) 332-7931

NFE Job No.O823

**CONTRACT DOCUMENTS**  
**LEAD SERVICE LINE REPLACEMENT, YEARS 1-3**

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**VILLAGE OF LAKE ORION  
ADVERTISEMENT FOR BIDS**

The Village of Lake Orion is seeking bids for replacement of lead service lines to 24 premises served by the Village of Lake Orion water system, over a three-year period. Proposals will be received **virtually** by the office of the Village Clerk via [www.bidnetdirect.com](http://www.bidnetdirect.com) up to **2:00 p.m., local time, Tuesday, November 25, 2025**, after which time the bids will be publicly opened at **2:30 p.m. local time, Tuesday, November 25, 2025 in person** at 21 E. Church St., Lake Orion, Michigan 48362, and read by the Clerk and the amounts of the bids noted for the:

**LEAD SERVICE LINE REPLACEMENT PROJECT, YEARS 1-3**

The estimated quantities involved in this work consist principally of the following:

Water Service Line Replacement, Private Side	24 Ea
And all miscellaneous items of removal, construction, and restoration as set forth in the Contract Documents.	

An online pre-bid meeting (non-mandatory but strongly encouraged attendance) will be held at 10:00 a.m. **Tuesday, November 18, 2025**. Representatives of the OWNER and ENGINEER will be present to discuss the project and receive questions from prospective bidders, who are encouraged to attend and participate in the discussion. ENGINEER shall transmit to all Bidders of record such addenda as ENGINEER considers necessary to provide clarification, in response to questions arising therein. Oral statements shall not be relied upon and shall not be considered as legally effective or binding. **Bidder questions received after the date of the pre-bid meeting will not be considered.**

Starting **Tuesday, October 28, 2025**, Bidding Documents must be obtained online from the Michigan Inter-Governmental Trade Network (MITN) website via BidNet Direct [www.bidnetdirect.com](http://www.bidnetdirect.com). For questions about MITN, refer to [Purchasing & Bidding | Lake Orion, MI](#). **All information regarding the bidding for this project must be obtained on the BidNet Direct/MITN website only.**

A certified check or a satisfactory surety bid bond for a sum not less than five (5) percent of the amount of the proposal will be required with each proposal as a guarantee of good faith and same to be subject to the conditions stipulated in the Instructions to Bidders. **A pdf version of this Certified Check or Bid Bond must be included with your Electronic Bid Submission Response.** The successful bidder will be required to furnish the original certified bid check, satisfactory performance, labor and material, and maintenance and guarantee bonds in the amount of 100% of the project prior to award.

The bidder will be required to comply with Michigan statutory prohibitions against discrimination in employment and with employment opportunities for Village of Lake Orion residents.

No proposal once submitted may be withdrawn for at least 90 days after the actual opening of the bids.

The Village of Lake Orion reserves the right to accept any bid, to reject any or all bids, and to waive any informality in any bid should it consider same to be in the best interest of the Village.

**BY THE ORDER OF:**  
**DARWIN D.P. McCLARY, VILLAGE MANAGER**  
**VILLAGE OF LAKE ORION**

**WESLEY SANCHEZ, DPW DIRECTOR**  
**VILLAGE OF LAKE ORION**

# INSTRUCTIONS TO BIDDERS

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## INSTRUCTION TO BIDDERS

### 1. PROPOSALS TO BE RECEIVED

Bids or proposals for the:

#### LEAD SERVICE LINE REPLACEMENT PROJECT, YEARS 1-3

will be received **virtually** by the office of the Village Clerk via [www.bidnetdirect.com](http://www.bidnetdirect.com) up to **2:00 p.m., local time, Tuesday, November 25, 2025**, after which time the bids will be publicly opened at **2:30 p.m. local time, Tuesday, November 25, 2025 in person** at 21 E. Church St., Lake Orion, Michigan 48362, and read by the Clerk and the amounts of the bids noted.

Bidders must register as a vendor on the BidNet Direct / Michigan Intergovernmental Trade Network (MITN) bid system AT NO COST in order to view the Village of Lake Orion bid opportunities. For questions about MITN, refer to [Purchasing & Bidding | Lake Orion, MI](#). **All information regarding the bidding for this project must be obtained on the BidNet Direct/MITN website only.**

Each BID must be submitted electronically in pdf format on the forms obtained from BidNet Direct/MITN. All blank spaces for bid prices must be filled in, in ink or typewritten, and the bid form must be fully executed when submitted and not modified in any way.

No bidder may withdraw a bid within 90 days after the actual date of the opening thereof. Should there be reason why the contract cannot be awarded within the specified period, the time may be extended by mutual agreement between the Village of Lake Orion, herein after also referred to as the Village, and the BIDDER.

### 2. LOCATION OF THE WORK

Various locations throughout the Village of Lake Orion. See attached Lead Services Inventory and Map.

### 3. INSPECTION OF THE SITE

It is expected that each bidder will make a personal examination of the entire site of the proposed work and of its surroundings. **The locations of certain of the LSL replacements is comprised of challenging terrain and limited accessibility.** It will be assumed that each bidder, before offering his proposal, has obtained firsthand information concerning any probable interference and the available facilities for transporting, handling, and storing construction equipment and materials, and concerning other conditions which may affect his work.

#### **4. CONFORMITY TO PLANS, SPECIFICATIONS AND CONTRACT DOCUMENTS**

Proposals must be made in full conformity to all the conditions as set forth in the Plans, Specifications, and any Addendum for the work now on file in the office of the Village Manager. The CONTRACT DOCUMENTS contain the provisions required for the construction of the PROJECT. Information obtained from an officer, agent, or employee of the Village or any other person shall not affect the risks or obligations assumed by the CONTRACTOR or relieve him from fulfilling any of the conditions of the contract.

Each BIDDER is responsible for inspecting the site and for reading and being thoroughly familiar with the CONTRACT DOCUMENTS. The failure or omission of any BIDDER to do any of the foregoing shall in no way relieve any BIDDER from any obligation in respect to his BID.

#### **5. BASIS ON WHICH PROPOSALS ARE SOLICITED**

##### **A. PROPOSAL SOLICITATION**

Proposals may be solicited on the basis of unit prices, lump sum, or a combination of both. The proposal will clearly state which basis is used.

The lump sum price, when applied to the project, or the unit prices, when applied to the several demolition or salvage items, are to make up the total price for the entire work, exclusive of those things which are to be done or furnished by the Village, finished and complete in every particular, according to the Plans and Specifications appertaining to such work, which have been approved by the Village Council and are now on file in the office of the village Manager.

Where Proposals are solicited on the basis of unit prices for certain construction units, which are clearly set forth in the Form of Proposal, the Bidder shall state a unit price for each and every item listed in the Proposal and such prices shall be extended and totaled. If during the review of the Proposals, the Village finds any errors in any extension or total, the Village will make the necessary corrections and award the Contract on the basis of such corrections, since the unit prices shall govern. Any proposal which does not contain a unit price for each item listed will be deemed incomplete and will not be considered in the award of the Contract.

The unit price for each of the several items in the Proposal shall be such that the whole of the unit prices will represent a balanced bid. Any Proposal, in which the unit prices bid for any of the several items are deemed by the Village to be manifestly unbalanced, will be subject to instant rejection.

##### **B. STATEMENT OF QUANTITIES**

The quantities indicated in the proposal show the Engineer's estimate of the construction quantities involved in the job, and bids will be computed, tested, and compared by the quantities given in the proposal. Although estimated carefully and with as much accuracy as is practicable beforehand, these quantities are not to be taken as defining or limiting the

amount of work to be done under the Contract, but rather as information furnished to bidders concerning the approximate extent of the several items and as a basis for comparing bids.

The Village may increase or decrease the original contract price without renegotiation of the Unit Prices.

#### C. MATERIALS TO BE FURNISHED BY THE VILLAGE

The Village will furnish to the Contractor, delivered at the site: **replacement water meters as required**. The Contractor will receive and be responsible for all these materials from the time of their delivery to him until the time when they are received back by the Village as part of the completed and accepted work.

#### D. EXTRA WORK

All extra work that may be required of the Contractor will be estimated and paid for under provisions of the General Conditions, contained within this document, which govern such work.

#### E. ALTERNATES

When the Proposal so provides, a price shall be stated for each listed alternate. Unsolicited alternates are not to be submitted and, if so, will not be considered in the award of the Contract and may cause the entire bid to be rejected.

Selection of whether to award the Contract on the basis of the Base Bid or utilizing one or more of the Alternates will be made on the basis of value engineering and the Village's need to keep project costs within the project budget. The Village reserves full right to make this selection. After making such selection, the award shall be made on the basis of the lowest responsive bid utilizing the Alternates selected, and evaluated in accordance with the provisions of the Purchasing Ordinance of the Village, in accordance with Article 15 of the Instructions to Bidders.

#### F. LEGAL CONDITIONS

All applicable laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the Project shall apply to the contract throughout.

#### G. PERMITS AND LICENSES

Permits and licenses of a temporary nature necessary for the prosecution of the WORK shall be secured and paid for by the CONTRACTOR unless otherwise stated in the SUPPLEMENTAL GENERAL CONDITIONS.

## H. UTILITIES

Unless otherwise provided in these Specifications, the Contractor shall make his own arrangements for electricity, gas, water and sewer services for use during the construction of the work and shall pay for all connections, extensions, and services.

## 6. FORM OF PROPOSALS (Pages 11 through 14)

All proposals must be made in the form attached hereto.

All prices stated in the Proposal must be plainly expressed in figures only, and in the proper space or spaces provided. Prices shall be filled in, in ink or typewritten. Any corrections shall be initialed by the Bidder.

All information called for on the Proposal must be furnished to enable a fair comparison of the bids to be made.

The place of residence and phone number of each bidder, or the official address and phone number in the case of a firm or company, with County and State, must be given with the signature.

When bidder's drawings and/or specifications are required to be submitted, they shall be in sufficient detail to fully and distinctly show and describe the equipment which the bidder proposes to furnish, including the kind and quality of the material and workmanship that will be used in the various parts. If any general drawings, specifications, catalogs or any other literature are submitted which contain information or data not pertaining to the particular equipment proposed to be furnished, appropriate notations to that effect must be made.

Any stipulation or qualification contrary to the Contract requirements made by the bidder in or accompanying his proposal as a condition for the acceptance of the Contract will not be considered in the award of the Contract and may cause the rejection of the entire Proposal.

## 7. LEGAL STATUS OF BIDDER

The legal status of the bidder, that is, as a corporation, a partnership, or an individual, must be stated in the proposal. A corporation bidder must name the state in which its articles of incorporation are held, and must give the title of the official having authority under the by-laws to sign contracts. A partnership bidder must give the full names and addresses of all partners.

## 8. AGENCY

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

## 9. BID DEPOSIT

When the Advertisement states that security is required with the Proposal to ensure the acceptance and execution of the Contract and Bonds, no bid will be considered complete unless so guaranteed.

Each proposal must be accompanied by a certified check of guaranty or a bid bond in an amount not less than five percent (5%) of the total price, drawn upon a solvent bank to the order of the Village Treasurer of the Village of Lake Orion, or if a bond, executed by a surety company acceptable to the Village, as a guarantee of good faith on the part of the bidder and subject to the conditions stipulated in the proposal form.

A single certified check or guaranty (bidder's) bond may serve to cover two or more alternative proposals when such alternative proposals are submitted by the same bidder.

## 10. INTENTIONALLY LEFT BLANK

## 11. STATEMENT OF BIDDER'S QUALIFICATIONS

It is the intention of the Village to award the Contract for this job to a Contractor whose construction skill and financial resources are fully equal to the task of prosecuting the work in a satisfactory manner and of bringing it to completion within the time limit specified. With this end in view, the Form of Proposal calls for a statement of bidder's experience and ability in this particular class of work, and for references concerning his/her business standing and capacity. Contractor shall list the names, addresses and phone numbers of references. The mere ability to offer bonds will not be taken as sufficient evidence of responsibility on the part of the bidder. If Contract is awarded to a foreign company, a certificate of authority to do business in this State must accompany the executed Contract.

The low BIDDER shall supply the names, addresses and phone numbers of major material SUPPLIERS and SUBCONTRACTORS when requested to do so by the VILLAGE.

## 12. PAYMENTS

Partial payments will be made to the Contractor during the satisfactory progress of the work, calculated at the rate of ninety percent (90%) of the dollar amount of the work completed, until fifty percent (50%) of the established contract amount is in place. After fifty percent (50%) of the work is in place, additional retainage shall not be withheld unless the Contractor's progress is unsatisfactory, all in accordance with Article 13 of the General Conditions hereof and Act 524 of 1980.

## 13. TIME OF COMPLETION

This work to be done under the proposed Contract is to begin on or before the date stipulated in the Notice to Proceed and must be completed by **June 30, 2028**, unless the date for completion is extended by the Contract Documents. **The Contractor is expected to complete approximately one-third of the total service line replacements in each July 1 through June 30 fiscal year, but not less than 4 replacements in any such timeframe.** The

Owner and the individual residents of the Village of Lake Orion and Orion Township affected by this project are concerned with the prompt completion, restoration and cleanup at each construction area.

The Bidder 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 Bidder to comply with this type of workmanlike job will result in suspension of construction operations until the cleanup is effected. Time shall be considered to be of the essence of this Contract.

#### **14. RIGHT TO ACCEPT, TO REJECT, AND TO WAIVE DEFECTS**

The Village reserves the right to accept any proposal, to reject any or all proposals, and to waive any defect or irregularity in any proposal if it appears advantageous to the Village to do so. In particular, any alteration, erasure, or interlineation in the Form of Contract in the Specifications which are attached hereto and made a part, specifically, of these Instructions, or of the Form of Proposal, shall render the accompanying proposal irregular and subject to rejection by the Village of Lake Orion. In case any explanations, additions or alterations are to be offered, they shall be indicated on separate sheets attached to the proposal and referred to therein. Proposals which are clearly unbalanced will also be considered as irregular, and will be subject to instant rejection by the Village of Lake Orion.

#### **15. AWARD OF CONTRACT**

The Contract will be awarded to the qualified Bidder submitting the lowest responsive Bid complying with the conditions of the Invitation for Bids. The Bidder's qualification and responsiveness shall be determined by the Village of Lake Orion. The Bidder to whom the award is made will be notified at the earliest possible date. The Village reserves the right to reject all bids and not award the Contract, at its sole discretion.

#### **16. OBLIGATION TO EXECUTE CONTRACT**

The Bidder whose proposal is accepted will be required to execute the Contract, in the form attached hereto, and to furnish sureties as hereafter specified, within ten days (Sundays and legal holidays excepted), after receiving notice of acceptance of bid and preparation Contract forms is completed, and in case of the successful bidder's refusal or failure to do so, shall be considered to have abandoned all their rights and interests in the award, and their certified check or guaranty (bidder's) bond may be declared to be forfeited to the Village as liquidated damages and not a penalty, and the Contract may be awarded to another.

#### **17. BONDS**

The successful bidder will be required to execute surety bonds, with sureties acceptable to the Village. One such bond shall be a Performance Bond in the amount of 100 percent of the Contract Price on the form attached as pages 25 and 26 of the specifications. Another

such bond shall be a Labor and Material Bond in the amount of 100 percent of the Contract Price on the form attached as pages 27 and 28 of the specifications. The Contractor shall also provide a Maintenance Bond in the amount of 100 percent of the Contract Price on the form attached as pages 29 and 30 of the specifications.

## **18. INDEMNIFICATION AND INSURANCE**

To the fullest extent permitted by law, the successful bidder agrees to defend, pay on behalf of, indemnify, and hold harmless the VILLAGE OF LAKE ORION, its elected and appointed officials, employees, consultants, and volunteers and others working on behalf of the VILLAGE OF LAKE ORION, against any and all claims, demands, suits, or loss, including all costs connected therewith, and for any damages which may be asserted, claimed or recovered against or from the VILLAGE OF LAKE ORION, its elected and appointed officials, employees, consultants, volunteers or others working on behalf of the VILLAGE OF LAKE ORION, by reason of personal injury, including bodily injury and death, and/or property damage, including loss of use thereof, which arises out of or is in any way connected or associated with this contract.

The successful bidder shall purchase and maintain in a company or companies licensed to do business in the State of Michigan, such insurance as will protect him from claims set forth below which may arise out of or result from the contractor's operations under the contract, whether such operations be by himself or any subcontractor or by anyone directly or indirectly employed by any of them, or by anyone whose acts are associated with the project by any of them, may be liable.

**a. Workers Compensation Insurance:** The contractor shall procure and maintain during the life of the contract, Workers Compensation Insurance, including Employer's Liability Coverage, in accordance with all applicable statutes of the State of Michigan.

**b. Commercial General Liability Insurance:** The contractor shall procure and maintain during the life of this contract, Commercial General Liability Insurance on an "Occurrence Basis" with the limits of liability not less than **\$2,000,000**, per occurrence and/or aggregate combined single limit, Personal Injury, Bodily Injury and Property Damage. Coverage shall include the following extensions: (1) Contractual Liability; (2) Products and Completed Operations; (3) Independent Contractors Coverage; (4) Broad Form General Liability Extensions or equivalent; and (5) Deletion of all Explosion, Collapse and Underground (XCU) Exclusions. if applicable.

**c. Motor Vehicle Liability:** The contractor shall procure and maintain during the life of the contract, Motor Vehicles Liability Insurance, including Michigan No-Fault coverage, with limits of not less than **\$2,000,000**, per occurrence combined single limit Bodily Injury and Property Damage. Coverage shall include all owned vehicles, all non- owned vehicles and all hired vehicles.

**d. Additional Insured:** Commercial General Liability and Motor Vehicle Liability Insurance, as described above, shall include an endorsement stating the following shall be

**"Additional Insured"**. *"THE VILLAGE OF LAKE ORION, INCLUDING ALL ELECTED AND APPOINTED OFFICIALS, ALL EMPLOYEES AND VOLUNTEERS, ALL BOARDS, COMMISSIONS AND/OR AUTHORITIES, AND THEIR BOARD MEMBERS, EMPLOYEES AND VOLUNTEERS" AND NOWAK & FRAUS ENGINEERS, the project consultant.* (This coverage shall be primary to the Additional Insured, and not contributing with any other insurance or similar protection available to the Additional Insureds, whether said other available coverage be primary, contributing or excess.)

e. Cancellation Notice: Workers Compensation Insurance, Commercial General Liability Insurance, and Motor Vehicle Insurance, as described above, shall include an endorsement stating the following: ***"IT IS UNDERSTOOD AND AGREED THAT THIRTY (30) DAYS ADVANCE WRITTEN NOTICE OF CANCELLATION, NON-RENEWAL, REDUCTION AND/OR MATERIAL CHANGE SHALL BE SENT TO: VILLAGE OF LAKE ORION, VILLAGE CLERK, 21 EAST CHURCH STREET., LAKE ORION, MICHIGAN, 48362"***.

f. Owner's and Contractor's Protective Liability: The contractor shall procure and maintain during the life of this contract, a separate Owner's and Contractor's Protective Liability insurance coverage of not less than **\$2,000,000**, per occurrence and/or aggregate, combined single limit, Personal Liability, Bodily Injury, and Property Damage. The Village of Lake Orion shall be "Named Insured" on said coverage. Thirty (30) days Notice of Cancellation shall apply to this policy.

The successful bidder shall not commence work until he has obtained the insurance required under this section, nor shall the successful bidder permit any subcontractor to commence work on his subcontract until the insurance required of the subcontractor has been obtained.

Certificates of Insurance, along with copies of original policies where applicable, acceptable to the Village, shall be filed with the Village of Lake Orion, Village Clerk, ten (10) days prior to commencement of the contract.

## **19. PRE-BID MEETING**

An online pre-bid meeting will be held on **Tuesday, November 18, 2025 at 10:00 a.m. local time.** Bidders are strongly encouraged to attend this virtual meeting. Teams Login: [Pre-Bid Meeting - Lake Orion Lead Service Line Replacements | Meeting-Join | Microsoft Teams](#)

## **20. NON-DISCRIMINATION PROVISION**

Pursuant to the requirements of 1976, P.A. 453 (Michigan Civil Rights Act) and 1976, P.A. 220 (Michigan Handicapped Rights Act), the bidder and any subcontractors agree not to discriminate against any employee or applicant for employment with respect to hire, tenure, terms, conditions, or privileges of employment or a matter directly or indirectly related to employment, because of race, color, religion, national origin, age, sex, height, weight, marital status, or due to a handicap that is unrelated to the person's ability to perform the duties of a particular job or position. The Bidder agrees to comply with the Village of Lake Orion Human Rights Ordinance and Title VI Non-Discrimination Plan; information may be found at [DEI & Title VI Compliance | Lake Orion, MI](#). The Bidder must include this provision in any subcontracts associated with the project work.

**CONTRACTOR:** \_\_\_\_\_

**EMAIL:** \_\_\_\_\_

**FORM OF PROPOSAL**

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

To the Honorable Village Manager  
Village of Lake Orion, Michigan

Ladies and Gentlemen:

Having carefully examined the site of the proposed work, and being fully informed in regard to the conditions to be met in the prosecution and completion of the work, and having read and examined the Instructions to Bidders, Agreement, Bonds, General Conditions, Plans and Specifications pertaining to this work, and agreeing to be bound accordingly, the undersigned proposes to furnish all the materials, labor, tools, power, transportation and construction equipment necessary for the satisfactory and complete construction of the **LEAD SERVICE LINE REPLACEMENT PROJECT, YEARS 1-3** in full accordance with and conformity to the specifications for this work now on file in the office of the Village Department of Public Works at and for the following named prices, to wit:

<b>Item No.</b>	<b>Description</b>	<b>Quantity</b>	<b>Units</b>	<b>Unit Price</b>	<b>Amount</b>
1	Water Serv, Private Side	24	Ea	\$	\$
2	Water Serv, Public Side (As Needed)	0	Ea	\$	\$
3	HMA Surface, Rem (As Needed)	22	Syd	\$	\$
4	Sidewalk, Rem (As Needed)	192	Sft	\$	\$
5	Pavt, Rem (As Needed)	22	Syd	\$	\$
6	Maintenance Gravel (As Needed)	1	Ton	\$	\$
7	Temp HMA Surface, 2 inch (As Needed)	1	Ton	\$	\$
8	HMA, 5EML (As Needed)	4	Ton	\$	\$
9	Aggregate Base, 6 inch, Modified (As Needed)	44	Syd	\$	\$
10	Driveway, Nonreinf Conc, 6 inch (As Needed)	22	Syd	\$	\$
11	Sidewalk, Conc, 4 inch (As Needed)	192	Sft	\$	\$
<b>Total Base Bid Amount</b>					<b>\$</b>

The Village of Lake Orion reserves the right to increase or decrease any quantity or delete any item(s) of work as it deems in the best interest of the Village, there will be no adjustments to unit prices in the event of increase, decrease or deletions.

Contractor acknowledges receipt of the following Addendum(s):

Addendum No.: \_\_\_\_\_ Dated: \_\_\_\_\_

Addendum No.: \_\_\_\_\_ Dated: \_\_\_\_\_

The Contractor acknowledges that he has not received nor relied upon any representations or warranties of any nature whatsoever from the Village of Lake Orion its officers, employees or agents and that if he is awarded this contract, he shall enter into this Contract solely as the result of his own independent business judgment.

The undersigned acknowledges that he has made his own independent investigation and has satisfied himself as to the conditions of the work, including soil and subsurface conditions.

The undersigned agrees that, in case any additions, deductions or deletions in the amount of work contemplated are made, the above named unit prices for the various classes of work shall be used to allow for such additions, deductions or deletions.

The undersigned hereby agrees that if this Proposal shall be accepted by the said Village of Lake Orion, he will, within ten days after receiving notice of such acceptance and delivery of Contract forms thereof at the address given below (Sundays and legal holidays excepted), enter into contract, in the attached form, to construct the said work according to said plans and specifications and to furnish therefor all necessary equipment, tools and building appliances, materials, labor, power and transportation as aforesaid at and for the prices named in the foregoing paragraph; to furnish to the said Village and to the State of Michigan such sureties for the faithful performance of such Contract and for the payment of all materials used therein and for all labor expended thereon as shall be approved and accepted by the said Village; and to furnish to the said Village of Lake Orion a Maintenance Bond.

The undersigned attaches hereto a (certified check), (bidder's bond), in the sum of:

\_\_\_\_\_ Dollars (\$) \_\_\_\_\_) as required in the Instructions to Bidders. And the undersigned hereby agrees that, in case he shall fail to fulfill his obligations under the foregoing proposal and agreement, the said Village of Lake Orion may, at its option, determine that the undersigned has abandoned his rights and interests in such contract and that the certified check or bidder's bond accompanying this proposal has been forfeited to the said Village as liquidated damages and not as a penalty; but, otherwise the said certified check or bidder's bond shall be returned to the undersigned upon the execution of such contract and the acceptance of Bonds.

The undersigned states that he currently owns or intends to rent the following equipment that will be used in work covered by this proposal:

List of Equipment Owned

\_\_\_\_\_

List of Intended Rental Equipment

\_\_\_\_\_

The undersigned states that he has done work similar in character to that covered by this proposal at the following named times and places, to wit:

---

---

---

The undersigned refers the said Village to the following named parties for information concerning his experience, skill and business standing:

NAME, COMPANY AND PHONE NUMBER (List three references):

---

---

---

Dated and signed at \_\_\_\_\_, MI on \_\_\_\_\_  
(City) (Date)

Name of Bidder: \_\_\_\_\_

Address of Bidder: \_\_\_\_\_

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

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

Telephone#: \_\_\_\_\_ Fax#: \_\_\_\_\_

Federal Tax I.D. Number (\_\_\_\_\_)

**CERTIFICATIONS**

**IF A CORPORATION**

I, \_\_\_\_\_, certify that I am the \_\_\_\_\_ of the corporation named as Contractor herein; that \_\_\_\_\_, who signed this Agreement on behalf of the Contractor, was then \_\_\_\_\_ of said corporation; that said Agreement was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

\_\_\_\_\_  
Corporate Seal

\_\_\_\_\_  
Signature

**IF A PARTNERSHIP**

I, \_\_\_\_\_, certify that I am a partner in the partnership named as Contractor herein, and that I have authority to sign for and on behalf of this partnership consisting of the following partners:

NAME AND ADDRESS:

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

\_\_\_\_\_  
Signature

**IF A SOLE PROPRIETORSHIP**

I, \_\_\_\_\_, certify that I am the sole owner and proprietor.

\_\_\_\_\_  
Signature

**BID BOND**

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

\_\_\_\_\_ as Principal,

and \_\_\_\_\_ as Surety, are

hereby held and firmly bound unto the Village of Lake Orion, Michigan, as OWNER in the penal sum of:

\_\_\_\_\_ Dollars (\$ \_\_\_\_\_ )

for the payment of which, well and truly to be made, we hereby jointly and severally bind

ourselves, successors and assigns. Signed, this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_.

The Condition of the above obligation is such that whereas the Principal has submitted to the Village of Lake Orion, Michigan, a certain BID, attached hereto and hereby made a part hereof to enter into a contract in writing, for the

**LEAD SERVICE LINE REPLACEMENT PROJECT, YEARS 1-3**

NOW, THEREFORE,

(a) If said BID shall be rejected, or

(b) If said BID shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with said BID) and shall furnish a BOND for his faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all respects perform the agreement created by the acceptance of said BID, then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its BOND shall be in no way impaired or affected by any extension of the time within which the OWNER may accept such BID; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

\_\_\_\_\_ (L.S)  
Principal

\_\_\_\_\_ (L.S.)  
Surety

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

IMPORTANT - Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 540 as amended) and be authorized to transact business in the State of Michigan.

# AGREEMENT

THIS AGREEMENT, made this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, by and between the Village of Lake Orion, Oakland County, Michigan, party of the first part, hereafter called the Village, and \_\_\_\_\_, Michigan, party of the second part, hereinafter called the Contractor:

WITNESSETH: That for and in consideration of the payments and agreements hereinafter mentioned:

1. The CONTRACTOR shall commence and complete the construction of:

\_\_\_\_\_ in full conformance with the Contract Documents as enumerated in Article 6 of this Agreement.

2. The CONTRACTOR shall furnish all of the material, supplies, tools, equipment, labor and other services necessary for the construction and completion of the PROJECT described herein, excepting those things which are specifically stipulated in the contract documents to be furnished or done by the Village.

3. The CONTRACTOR shall commence the work required by the CONTRACT DOCUMENTS on or before the date stipulated in the NOTICE TO PROCEED and will complete the same within **the time specified in Article 13 of the Instructions to Bidders**, unless the date for completion is extended otherwise by the CONTRACT DOCUMENTS. Time shall be considered to be of the essence of this Contract.

4. The CONTRACTOR agrees to perform all of the WORK described in the CONTRACT DOCUMENTS and comply with the terms therein for the contract price of:

\_\_\_\_\_ (\$ \_\_\_\_\_ )

unless the contract price is duly changed by the contract documents.

5. The VILLAGE shall pay to the CONTRACTOR in the manner and at such times as set forth in the General Conditions such amounts as required by the CONTRACT DOCUMENTS.

6. The term "CONTRACT DOCUMENTS" means and includes the following:
  - A. AGREEMENT
  - B. BID BOND
  - C. PERFORMANCE BOND

D. LABOR AND MATERIAL BOND

E. MAINTENANCE BOND

F. CHANGE ORDER (Pursuant to General Conditions, Section 9)

G. ADDENDA:

No. \_\_\_\_\_, dated \_\_\_\_\_, 20\_\_\_\_.

No. \_\_\_\_\_, dated \_\_\_\_\_, 20\_\_\_\_.

No. \_\_\_\_\_, dated \_\_\_\_\_, 20\_\_\_\_.

H. ADVERTISEMENT

I. INSTRUCTIONS TO BIDDERS

J. BIDDER'S PROPOSAL (Incl. final Compliance Plan as accepted by OWNER)

K. GENERAL CONDITIONS (Incl. SUPPLEMENTAL GENERAL CONDITIONS and SPECIAL CONDITIONS (if any))

L. SPECIFICATIONS (Incl. SUPPLEMENTAL SPECIFICATIONS and SPECIAL PROVISIONS (if any))

M. PLANS

N. NOTICE OF AWARD

O. NOTICE TO PROCEED

This agreement, together with other documents enumerated in this ARTICLE 6, which said other documents are as fully a part of the Contract as if hereto attached or herein repeated, forms the Contract between the parties hereto. In the event that any provision in any component part of this Contract conflicts with any provision of any other component part, the provision of the component part first enumerated in this ARTICLE 6 shall govern, except as otherwise specifically stated.

7. This Agreement shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns.

IN WITNESS WHEREOF, the parties hereto have executed, or caused to be executed by their duly authorized officials, this Agreement in three (3) copies, each of which shall be deemed an original, on the date first above written.

**CONTRACT AGREEMENT BETWEEN THE VILLAGE OF LAKE ORION  
AND CONTRACTOR**

**LEAD SERVICE LINE REPLACEMENT PROJECT, YEARS 1-3**

**CONTRACTOR:** \_\_\_\_\_

In witness whereof, the parties have executed this Agreement the day and year last written below.

WITNESSES:

1) \_\_\_\_\_ By: \_\_\_\_\_  
2) \_\_\_\_\_ Its: \_\_\_\_\_

**VILLAGE OF LAKE ORION**

WITNESSES:

1) \_\_\_\_\_  
2) \_\_\_\_\_

VILLAGE MANAGER

By: \_\_\_\_\_  
Darwin D. P. McClary Date

WITNESSES:

1) \_\_\_\_\_  
2) \_\_\_\_\_

CLERK/TREASURER

By: \_\_\_\_\_  
Sonja Stout Date

Approved as to form:

By: \_\_\_\_\_  
Mary Kucharek, Village Attorney

**CERTIFICATIONS**

**IF A CORPORATION**

I, \_\_\_\_\_, certify that I am the \_\_\_\_\_ of the corporation named as Contractor herein; that \_\_\_\_\_, who signed this Agreement on behalf of the Contractor, was then \_\_\_\_\_ of said corporation; that said Agreement was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.\*

\_\_\_\_\_  
Corporate Seal

\_\_\_\_\_  
Signature

\* Attach copy of corporate resolution verifying authorization of individuals named above.

**IF A PARTNERSHIP**

I, \_\_\_\_\_, certify that I am a partner in the partnership named as Contractor herein, and that I have authority to sign for and on behalf of this partnership consisting of the following partners:

NAME AND ADDRESS:

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

\_\_\_\_\_  
Signature

**IF A SOLE PROPRIETORSHIP**

I, \_\_\_\_\_, certify that I am the sole owner and proprietor.

\_\_\_\_\_  
Signature

**BOND FOR FAITHFUL PERFORMANCE**

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

\_\_\_\_\_ as principal, and

\_\_\_\_\_, as surety, are held and

firmly bound unto the Village of Lake Orion, Michigan, a Municipal Corporation, in the sum of:

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

good and lawful money of the United States of America, to be paid to said Village of Lake Orion, its legal representatives and assigns, for which payment well and truly to be made, 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 \_\_\_\_\_ day of \_\_\_\_\_ A.D. 20 \_\_\_\_\_.

WHEREAS, the above named principal has entered into a certain written contract with the Village of Lake Orion, dated this \_\_\_\_\_ day of \_\_\_\_\_ A.D. 20 \_\_\_\_\_, wherein the said principal covenanted and agreed as follows, to-wit:

TO COMMENCE AND COMPLETE the:

**LEAD SERVICE LINE REPLACEMENT PROJECT, YEARS 1-3**

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS such that if the above named principal or their legal representatives or successors, shall in all things well and truly keep and perform the covenants, conditions, and agreements in the manner and form and at the time agreed upon to be kept and performed as provided by said contract, and plans, drawings, and specifications, referred to in said contract, and as may be required by the changes, alterations, and modifications thereof, as provided in said contract, then the above obligation shall be void; otherwise to remain in full force and effect.

This bond is given upon the express condition that any changes, alterations, or modifications that may be hereafter ordered or made in the construction and complete installation of the work herein referred to, or the placing of an inspector or superintendent thereon by the Village of Lake Orion shall not operate to discharge or release the surety or sureties thereon.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed by their respective authorized officers this \_\_\_\_\_ day of \_\_\_\_\_ A.D. 20 \_\_\_\_\_.

Signed, Sealed and Delivered in the Presence of:

_____	_____ (L.S.)
_____	_____ (L.S.)
_____	_____ (L.S.)

**LABOR AND MATERIAL BOND TO THE  
VILLAGE OF LAKE ORION, MICHIGAN**

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

\_\_\_\_\_ as principal, and \_\_\_\_\_

\_\_\_\_\_, as surety, are held

and firm bound unto the Village of Lake Orion, Michigan, a Municipal Corporation, in the sum of:

\_\_\_\_\_

good and lawful money of the United States of America, pursuant to Michigan State Public Act 213 of 1963, to be paid to the Village of Lake Orion, Michigan, for the use and benefit of all subcontractors, and persons, firms and corporations who shall furnish materials, supplies and perform labor entering into the work of:

**LEAD SERVICE LINE REPLACEMENT PROJECT, YEARS 1-3**

for which payment well and truly to be made, 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 \_\_\_\_\_ day of \_\_\_\_\_ A.D. 20\_\_\_\_.

WHEREAS, the above named principal has entered into a certain written contract with the Village of Lake Orion, dated this \_\_\_\_\_ day of \_\_\_\_\_ A.D. 20\_\_\_\_, wherein the said principal covenanted and agreed as follows, to wit:

TO COMMENCE AND COMPLETE the:

**LEAD SERVICE LINE REPLACEMENT PROJECT, YEARS 1-3**

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the above named principal, legal representatives, or successors shall pay or cause to be paid to all subcontractors, persons, firms, and corporation, as the same may become due and payable, all indebtedness which may arise from said principal to a subcontractor or party performing labor or furnishing materials and supplies, or any subcontractor to any person, firm or corporation on account of any labor performed or materials and supplies furnished in connection with the contract, construction and work herein referred to, then this obligation shall be void; otherwise to remain in full force and effect.

This bond is given upon the express condition that any changes, alterations, or modifications that may be hereafter ordered or made in the construction and complete installation of the work herein referred to, or the placing of an inspector or superintendent thereon by the Village of Lake Orion shall not operate to discharge or release the surety or sureties thereon.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed by their respective authorized officers this \_\_\_\_\_ day of \_\_\_\_\_ A.D. 20 \_\_\_\_.

Signed, Sealed and Delivered in the Presence of:

_____	_____ (L.S.)
_____	_____ (L.S.)
_____	_____ (L.S.)

**MAINTENANCE BOND**

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

\_\_\_\_\_ as principal, and \_\_\_\_\_

\_\_\_\_\_, as surety, are held

and firm bound unto the Village of Lake Orion, Michigan, a Municipal Corporation, in the sum of:

\_\_\_\_\_ good and lawful money of the United States of America, pursuant to Michigan State Public Act 213 of 1963, to be paid to the Village of Lake Orion, Michigan, for the use and benefit of all subcontractors, and persons, firms and corporations who shall furnish materials, supplies and perform labor entering into the work of:

**LEAD SERVICE LINE REPLACEMENT PROJECT, YEARS 1-3**

for which payment well and truly to be made, 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 \_\_\_\_\_ day of \_\_\_\_\_ A.D. 20 \_\_\_\_\_.

WHEREAS, the above named principal has entered into a certain written contract with the Village of Lake Orion, dated this \_\_\_\_\_ day of \_\_\_\_\_ A.D. 20 \_\_\_\_\_, wherein the said principal covenanted and agreed as follows, to wit:

TO COMMENCE AND COMPLETE construction of:

**LEAD SERVICE LINE REPLACEMENT PROJECT, YEARS 1-3**

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that by and under said contract, the above named principal has agreed with the Village of Lake Orion that for a period of **ONE** year(s) from the date of payment of Final Estimate, to keep in good order and repair all the work, done under said contract, 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 that whenever directed so to do by the Village Engineer of

the Village of Lake Orion by notice served in writing, either personally or by mail, on the principal at:

\_\_\_\_\_ or \_\_\_\_\_

legal representative, or successors, or on the surety at: \_\_\_\_\_

\_\_\_\_\_ WILL PROCEED at once to make such

repairs as directed by said Village Engineer; and in case of failure so to do within one week from the date of service of such notice, or within reasonable time not less than one week, as shall be fixed in said notice, then the Village of Lake Orion 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 receive same from said principal or surety. If any repair is necessary to be made at once to protect life and property, then and in that case, the Village may take immediate steps to repair or barricade such defects without notice to the contractor. In such accounting the Village shall not be held to obtain the lowest figures for the doing of the work or any part thereof, but all sums actually paid therefore shall be charged to the principal or surety. In this connection the judgment of the Village Engineer is final and conclusive. If the said principal for a period of **ONE** year(s) from the date of payment of Final Estimate, shall keep said work so constructed under said contract in good order and repair, excepting only such part or parts of said work which may have been disturbed without the consent or approval of said principal after the final acceptance of the same, and shall, whenever notice is given as hereinbefore specified, at once proceed to make repair as in said notice directed, or shall reimburse said Village of Lake Orion for any expense incurred by making such repairs, should the principal or their surety do so as hereinbefore specified, then the above obligation shall be void, otherwise to 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 \_\_\_\_\_ day of \_\_\_\_\_ A.D.

20 \_\_\_\_\_.

Signed, Sealed and Delivered in the Presence of:

\_\_\_\_\_ (L.S.)

\_\_\_\_\_ (L.S.)

\_\_\_\_\_ (L.S.)

# GENERAL CONDITIONS

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## **GENERAL CONDITIONS**

### **Article 1 - DEFINITIONS**

- 1.1 Wherever used in the CONTRACT DOCUMENTS, the following terms shall have the meanings indicated which shall be applicable to both the singular and plural thereof:
- 1.2 ADDENDA - Written or graphic instruments issued prior to the execution of the Agreement which modify or interpret the CONTRACT DOCUMENTS by additions, deletions, clarifications or corrections.
- 1.3 BID - The offer or proposal of the BIDDER submitted on the prescribed form setting forth the prices for the WORK to be performed. (See 1.8)
- 1.4 BIDDER - Any person, firm or corporation submitting a BID for the WORK.
- 1.5 BONDS - Bid, Performance, Labor and Material, and Maintenance Bonds and other instruments of security, furnished by the CONTRACTOR and their surety in accordance with the CONTRACT DOCUMENTS.
- 1.6 CHANGE ORDER - A written order to the CONTRACTOR authorizing an addition, deletion or revision in the WORK within the general scope of the CONTRACT DOCUMENTS, or authorizing an adjustment in the CONTRACT PRICE or CONTRACT TIME.
- 1.7 VILLAGE/OWNER - The Village of Lake Orion, Michigan, or its properly authorized representatives; and whenever the term "Village Council", "Village Clerk", "Director of Finance", "Village Engineer", or "Engineer", is used, it shall be understood to mean the Council, Village Manager, Clerk, Director of Finance, or Engineer of the said Village.
- 1.8 LEFT BLANK INTENTIONALLY
- 1.9 CONTRACT DOCUMENTS - The Contract, including ADVERTISEMENT, INSTRUCTIONS TO BIDDERS, FORM OF PROPOSAL, BID BOND, AGREEMENT, LABOR & MATERIAL BOND, PERFORMANCE BOND, MAINTENANCE BOND, GENERAL CONDITIONS, SUPPLEMENTAL GENERAL CONDITIONS, NOTICE OF AWARD, NOTICE TO PROCEED, CHANGE ORDER, PLANS, SPECIFICATIONS, ADDENDA, and any other documents specifically set forth in the Agreement.
- 1.10 CONTRACT PRICE - The total monies payable to the CONTRACTOR under the terms and conditions of the CONTRACT DOCUMENTS.

- 1.11 CONTRACT TIME - The number of calendar days or the completion date stated in the CONTRACT DOCUMENTS for the completion of the WORK in the CONTRACT DOCUMENTS; or the number of calendar days from the date established in the NOTICE TO PROCEED to the DATE stated in the CONTRACT DOCUMENTS for the completion of all of the WORK of the TOTAL CONTRACT; or both.
- 1.12 CONTRACTOR - The person, firm or corporation with whom the VILLAGE has executed the Agreement, or its legal representatives.
- 1.13 ENGINEER - The Village Engineer and/or the person, firm or corporation named as such in the CONTRACT DOCUMENTS.
- 1.14 FIELD ORDER - A written order effecting a change in the WORK not involving an adjustment in the CONTRACT PRICE or an extension of the CONTRACT TIME, issued by the ENGINEER to the CONTRACTOR during construction.
- 1.15 NOTICE OF AWARD - The written notice of the acceptance of the BID from the VILLAGE to the successful BIDDER.
- 1.16 NOTICE TO PROCEED - Written communication issued by the VILLAGE to the CONTRACTOR authorizing them to proceed with the WORK and establishing the date of commencement of the WORK in accordance with the CONTRACT DOCUMENTS.
- 1.17 OPEN TO TRAFFIC - That date as certified by the ENGINEER, when the WORK (PROJECT) or any section thereof is in a suitable condition for safe travel. The term "SUITABLE CONDITION FOR SAFE TRAVEL" shall be construed to mean that all work, INCLUDING the Leveling Course of Bituminous Material and all Concrete Work are complete. The PROJECT, or any portion thereof may be designated as "Accepted for Traffic" prior to completion of the whole project, and shall be opened to traffic as may be directed by the ENGINEER. In general, the term "OPEN TO TRAFFIC" shall be in accordance with Section 107.21 of the MDOT 2020 Standard Specifications for Construction.
- 1.18 **THIS SECTION IS LEFT INTENTIONALLY LEFT BLANK.**
- 1.19 PROJECT - The undertaking to be performed as provided in the CONTRACT DOCUMENTS.
- 1.20 RESIDENT PROJECT REPRESENTATIVE - The authorized representative of the VILLAGE who is assigned to the PROJECT site or any part thereof.
- 1.21 SHOP DRAWINGS - All drawings, diagrams, illustrations, brochures, schedules and other data which are prepared by the CONTRACTOR, a SUBCONTRACTOR, manufacturer, SUPPLIER or distributor, which illustrate how specific portions of the

WORK shall be fabricated or installed.

- 1.22 SPECIFICATIONS - A part of the CONTRACT DOCUMENTS consisting of written descriptions of a technical nature of materials, equipment, construction systems, standards and workmanship (may include SUPPLEMENTAL SPECIFICATIONS AND/OR SPECIAL PROVISIONS).
- 1.23 SUBCONTRACTOR - An individual, firm or corporation having a direct contract with the CONTRACTOR or with any other SUBCONTRACTOR for the performance of a part of the WORK at the site.
- 1.24 SUPPLIER - Any person or organization who supplies materials or equipment for the WORK, including that fabricated to a special design, but who does not perform labor at the site.
- 1.25 WORK - All labor necessary to produce the construction required by the CONTRACT DOCUMENTS, and all materials and equipment incorporated or to be incorporated in the PROJECT.
- 1.26 WORK ORDER - A written order to the CONTRACTOR causing a change in WORK involving the authorization to undertake additional work at existing contract unit prices or at new contract unit prices for new items of work.
- 1.27 WRITTEN NOTICE - Any notice to any party of the Agreement relative to any part of this Agreement in writing and considered delivered and the service thereof completed, when posted by certified or registered mail to the said party at their last given address, or delivered in person to said party or their authorized representative on the WORK.

## **Article 2 - PLANS AND SPECIFICATIONS**

The location of the structures, roads, systems, utilities, appurtenances and improvements which are to be built, reconstructed, rehabilitated or made under this Contract, and the character, form and dimensions of their various parts, are shown in the accompanying drawings, specifications and details in the Contract Document cited in the Instructions to Bidders.

These drawings constitute the Plans according to which the work of this Contract is to be done. Additional drawings may be prepared by the Village Engineer and supplied to the Contractor during the progress of the work, as the Village Engineer may deem to be necessary or expedient. All such additional drawings, made in elaboration or explanation of the original drawings, are to be considered as part and parcel of the Plans and shall be respected and followed as such by the Contractor.

The Plans are supplemented and explained by a set of technical specifications, which are appended hereto, and which describe and define the quality of materials and the character of workmanship which are to enter into the work of this Contract. These are the Specifications which are referred to in Article 1, and elsewhere in this Contract. Additional specifications in further elaboration or explanation of the work to be done may be prepared by the Village Engineer and supplied to the Contractor during the progress of the work, as the Village Engineer may deem to be necessary or expedient. Such additional specifications are to be considered as part and parcel of the specifications under this Contract, and shall be respected and followed as such by the Contractor.

Both Plans and Specifications are considered as essential parts of this Contract, and are intended to be cooperative. They shall be construed as supplementary each to the other, and any work called for in the Plans and not particularly mentioned in the Specifications, or described in the Specifications and not specially shown on the Plans, is to be regarded as included under this Contract the same as if fully set forth in the Specifications and exhibited on the Plans. Wherever figures or definite dimensions are given on the Plans or in the Specifications, these shall have precedence over dimensions taken by scaling.

In case any inconsistency, omission, or conflict shall be discovered in the Specifications or Plans, or if in any place the meaning of either or both shall be obscure or uncertain or in dispute, the Village Engineer shall decide as to the true intent and the Village Engineer's decision shall be final and binding. Any such inconsistencies, omissions, or conflict noted should be called to the attention of the Engineer, and a decision on the same obtained in advance.

### **Article 3 – PRE-CONSTRUCTION MEETING**

A pre-construction meeting will be held prior to the beginning of any work. The Engineer will schedule the meeting as soon as possible after acceptable executed contract documents are received from the Contractor.

Notice of the meeting will be made to the Owner, the Contractor, and to the following entities, contingent upon their interest in the project:

- a) Utility Companies
- b) County Road Commission
- c) Michigan Dept. of Transportation
- d) Michigan Dept. of Labor - Safety Division
- e) Other State, Local and County Agencies

The purpose of the pre-construction meeting is to discuss particular procedures and potential problem areas. The Contractor is given updates on the conditions of the proposed construction and what is expected as to proper notification in the event of damage to existing utilities.

The Contractor shall submit in writing at the pre-construction meeting the following information:

- a) Schedule of Construction
- b) Sources of Materials-Additions or Changes from Original Submission
- c) List of Sub-Contractors-Additions or Changes from Original Submission
- d) The Designated Safety Officer on the Job including all Phone Numbers
- e) Superintendent for the Project including all Phone Numbers
- f) Foreman in Charge on the Job Site including all Phone Numbers
- g) Emergency Phone Numbers for Contractor

As noted above, the Contractor is required to submit an outline of the proposed order of work and to indicate the schedule for completion of the major categories of the work consistent with the period of time specified under Time of Completion.

Approval by the Engineer and Owner of any construction schedule indicating completion of the work in less time than allotted by the Contract shall not be construed as an acknowledgment, either express or implied, that the work can be completed within the time shown on this schedule and shall not under any circumstances give rise to a cause of action for damages by the Contractor.

The Contractor's schedule of construction shall indicate a critical path for completing the work consistent with the period of time specified under Time of Completion. The schedule shall indicate the numbers and types of crews that will be employed at various times on the project.

#### **Article 4 – TESTING AND SAMPLING**

- a) Where called for in the specifications, samples of materials in the quantity named shall be submitted to 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, or with the specifications of well known or recognized technical and/or trade organizations, unless otherwise stipulated, required tests are to be made by the manufacturer, and their certificate therefore submitted to the Engineer.
- b) The Engineer and/or the Owner shall determine which materials are required by the specifications to be factory inspected or to have chemical or physical analysis or other inspection or test. The Contractor shall furnish to the Engineer and/or Owner two copies of orders for all materials requiring such inspection or test as soon as placed. Such orders shall contain complete information, including that as to quantity, quality, dimensions, sizes, capacities and types, and shall contain proper reference to the applicable specifications by title, number and paragraph,

and shall show the name and address of the producing factory but need not contain prices or contractual terms.

- c) All materials and workmanship (if not otherwise designated by the specifications) shall be subject to inspection, examination and test by the Engineer and/or Owner at any and all times during the manufacture or construction, and at any and all places where such manufacture or construction is carried on. The Engineer and/or Owner shall have the right to reject defective material and workmanship or require its correction. Rejected workmanship shall be satisfactorily corrected, and rejected material shall be satisfactorily replaced with proper material without charge therefore, and Contractor shall promptly segregate and remove the rejected material from the premises by the contractor who was responsible for the defects in the material. If Contractor fails to proceed at once with replacement of rejected material and correction of defective workmanship, the Owner may, by contract or otherwise, replace such material and correct such workmanship and charge the cost thereof to the Contractor, or may immediately terminate the contract.
- d) The Contractor shall furnish promptly, without additional charge, all reasonable facilities, labor and materials necessary for the safe and convenient conduct of all inspections and tests that may be required by the Engineer. All inspections and tests by the Engineer and/or Owner shall be performed in such a manner as not to delay the work unnecessarily. Special, full size, and performance tests shall be as described in the specifications. Contractor shall be charged with any additional cost of inspection when material or workmanship is not ready at the time inspection is requested by the Contractor.
- e) Should it be considered necessary or advisable by the Engineer and/or Owner any time before final acceptance of the entire work to make an examination of work already completed, by removing or tearing out same, the Contractor shall on request promptly furnish all necessary facilities, labor and material. If such work is found to be defective or nonconforming in any material respect, due to the fault of the Contractor or their subcontractor, Contractor shall defray all the expenses of such examination and of satisfactory reconstruction, and be responsible for any resulting delay. If, however, such work is found to meet requirements of the contract, the actual cost involved in the examination and replacement shall be allowed the Contractor, and they shall, in addition, if completion of the work has been delayed thereby, be granted a suitable extension of time on account of the additional work involved.
- f) Inspection of material and finished articles to be incorporated in the work at the site may be made at place of production, manufacture or shipment stated in the specifications; and such inspections and acceptance, unless otherwise stated in the specifications, shall be final, except as regards latent defects, departures from specific requirements of the contract and the specifications and drawings made a part thereof, damage or loss in transit, fraud or such gross mistakes as amount to

fraud. Subject to requirements contained in the preceding sentence, inspection of material and workmanship for final acceptance as a whole or in part shall be made at the site.

## **Article 5 - SHOP DRAWINGS**

- 5.1 The CONTRACTOR shall provide SHOP DRAWINGS as may be necessary for the prosecution of the WORK as required by the CONTRACT DOCUMENTS. The ENGINEER shall promptly review all SHOP DRAWINGS. The ENGINEER's approval of any SHOP DRAWINGS shall not release the CONTRACTOR from responsibility for deviations from the CONTRACT DOCUMENTS. The approval of any SHOP DRAWING which substantially deviates from the requirement of the CONTRACT DOCUMENTS shall be evidenced by a CHANGE ORDER.
- 5.2 When submitted for the ENGINEER'S review, SHOP DRAWINGS shall bear the CONTRACTOR'S certification that they have reviewed, checked and approved the SHOP DRAWINGS and that they are in conformance with the requirements of the CONTRACT DOCUMENTS.
- 5.3.1 Portions of the WORK requiring a SHOP DRAWING or sample submission shall not begin until the SHOP DRAWING or submission has been approved by the ENGINEER. A copy of each approved SHOP DRAWING and each approved sample shall be kept in good order by the CONTRACTOR at the site and shall be available to the ENGINEER.

## **Article 6 – ERRORS AND CORRECTIONS IN DRAWINGS AND SPECIFICATIONS**

Contractor shall examine and check all drawings and specifications furnished by Owner for dimensions, quantities, and coordination with other parts of the work on this or related contracts and shall notify the Engineer, in writing, of any and all errors, omissions or discrepancies they may discover by examining and checking of same. 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 Contractor shall carry out such instructions as if originally specified. In no case shall Contractor proceed with the work in uncertainty, and any work done by Contractor after 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 plans.

## **Article 7- MATERIALS AND WORKMANSHIP**

It is mutually understood that all materials and workmanship furnished under this Contract shall be of the highest quality, to the end that a good and substantial and workmanlike job may be produced. The Contractor shall bring only first class materials to the work, and they shall furnish suitable tools and equipment and shall employ competent labor to perform the work to

be done. Any materials or labor or tools or equipment that shall not, in the judgment of the Engineer, be suitable or competent to produce the desired result, may be ordered from the work by the Engineer, and such materials or labor or tools or equipment shall be promptly substituted therefor by the Contractor as will meet with the approval of the Engineer. Wherever a brand or name is given, it is for the purpose of defining or establishing a type or quality of material only.

#### 7.1 Defective Materials

Any materials or fabricated articles furnished by the Contractor to be used in this work which shall not, in the judgment of the Engineer, be equal to the requirements of the Plans and Specifications, may be rejected by the Engineer; and such rejected materials or articles shall not be used, but shall be immediately removed by the Contractor from the site of the work.

#### 7.2 Stored Materials

Materials and equipment distributed, stored or placed upon or near the site of the work shall be at all times so disposed as not to interfere with work being prosecuted directly by the Village or by other Contractors the Village employs or with street drainage, or with fire hydrants or with access thereto, and not to unreasonably inconvenience the public from access to or use of their property.

#### 7.3 Property Rights in Surplus Materials

All excess materials excavated during the progress of the work and not required for backfilling, all timber except tree stumps cut from the right-of-way, and all other materials which have been encountered and handled during construction operations, and which constitute a disposable surplus at the end of the construction period, shall be the property of the Contractor, unless otherwise directed by the Village or its Engineer. Such materials shall be hauled and neatly piled, or hauled and dumped at the places designated by the Engineer, at no extra compensation.

#### 7.4 Water Supply

Water for construction purposes may be taken from the Village water system from a hydrant approved by the Village and subject to the rules of the Oakland County Water Resources Commissioner's office.

### **Article 8 - SUPERINTENDENCE BY CONTRACTOR**

8.1 Except where the Contractor is an individual and gives their personal superintendence to the work, the Contractor shall provide a competent superintendent, satisfactory to the Village and the Engineer, on the work at all times during working hours with full authority to act for the Contractor. Any

orders by the Engineer given to and received by said superintendent shall be deemed to have been given to and received by the Contractor. The Contractor shall also provide an adequate staff for the proper coordination and expediting of their work. The Contractor shall maintain a complete set of plans and specifications at the site.

8.2 The Contractor may set up and establish an office on or near the site. On certain large projects, the Engineer may direct the Contractor to set up an office.

8.3 The Contractor shall lay out their own work and they shall be responsible for all work executed by them under the Contract. They shall verify all figures and elevations before proceeding with the work and will be held responsible for any error resulting from their failure to do so.

#### 8.4 Disorderly Employees

Disorderly, intemperate, or incompetent persons must not be employed, retained, or allowed upon the work site. Any foreman or workman who refuses or neglects to comply with the directions of the Engineer in the matter of personal conduct shall, at the request of the Engineer, be promptly discharged and shall not thereafter be re-employed without the consent of the Engineer.

#### 8.5 Relation to Other Contractors

The Contractor shall so conduct their operations as not to interfere with or injure the work of other Contractors or work personnel employed by the Village on adjoining or related work, and they shall promptly make good any injury or damage which may be done to such work by them or their employees or agents. Should a contract for adjoining work be awarded to another Contractor, and should the work on any one of these contracts interfere with that of the other, the Engineer shall decide which Contractor shall cease work for the time being and which shall continue or whether the work on both contracts shall continue at the same time and in what manner. In case the territory of one contract should be the necessary means of access to another contract, the Engineer shall have power to grant reasonable privileges with respect to the transportation or movement of men, animals, appliances or materials as they may adjudge to be necessary or expedient and in the best interests of the Village. Any decision which the Engineer may make as to the method and time of conducting work or the use of territory shall not be made the basis of any claim for damages, but an extension of time may be claimed, if justified by the circumstances, the same as in the case of other delays caused by the acts of the Village. Any difference of opinion or conflict of interest which may arise between this Contractor and other Contractors or work personnel of the Village in regard to adjoining work shall be determined and adjusted by the Engineer.

## 8.6 Time and Sequence of Work

In general, it is the intention and understanding that the Contractor shall have control over the sequence or order of execution of the several parts of the work to be done under this Contract, and over the methods of accomplishing the required results, except as some particular sequence or method may be distinctly demanded by the Plans and Specifications or by the express provisions of this Contract; the Engineer may, however, make such reasonable requirements as may, in their judgement, be necessary for the proper and effective protection of work partially or wholly completed, and to these requirements, the Contractor shall strictly conform.

## 8.7 Sunday, Holiday, Night Work and Hours of Operation

No Sunday or Holiday work shall be done except in case of emergency or to protect from damage or injury any work that has already been done, and then only with the written consent of the Engineer, and only to such an extent as he may judge to be necessary.

Ordinarily, no night work shall be carried on which will require the presence of the Engineer or an inspector, except with the written permission of the Engineer. Night work is permissible in an emergency to the extent required to meet the emergency, but the Contractor shall notify the Engineer, as far as possible in advance, of their intentions to carry on such emergency work and of the time and place of doing it.

Work hours of operation will be in accordance with Village ordinances.

## **Article 9 - ENGINEERING SUPERVISION**

The work covered by this Contract will be executed under the engineering supervision of the Village Engineer, who shall have authority to inspect all materials and workmanship entering into the work, to furnish all instructions and information regarding the Plans and Specifications that may be necessary, to supply supplementary or additional plans or specifications as they may deem expedient, and to point out to the Contractor any disregard of any of the provisions of the Contract; but the right of final acceptance or condemnation of the work will not be waived at any time during its progress.

The Engineer will set suitable stakes and marks showing the locations and elevations of various parts of the work and the Contractor shall provide such labor and assistance as the said Engineer may require in setting the same. 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. The Engineer may provide for the inspection of any or all materials or workmanship used or intended to be used under this Contract, by assistants under their direction or otherwise, as they may deem to be advisable or expedient; but no

inspection shall relieve the Contractor of their fundamental obligation to fully respect all the requirements of their Contract. Such inspection may cover any or all parts of the work, and may extend to and include the preparation or manufacture of any materials or fabricated articles intended to be incorporated in the work. The Contractor shall furnish, upon request therefor by the Engineer, such samples for examination or testing as the Engineer may prescribe. The Contractor shall furnish such labor and assistance as may be necessary for the proper handling of materials in all inspections and tests that may be required.

The Engineer and their duly authorized agents and employees may, at any time and for any purpose, enter upon the work and upon the premises occupied by the Contractor, and the Contractor shall provide proper and safe facilities by which the Engineer may have access to such parts of the work as may be required.

#### **Article 10 - VILLAGE'S RIGHT TO COMPLETE; SUSPENSION OR TERMINATION**

It is agreed that the Village has the right, when it shall become satisfied that the work provided for in this Contract will not be completed within the time limit, to furnish additional labor and material if necessary and render such other assistance as it may deem advisable, for the completion of said Contract, at the expense of the Contractor, and may retain the same out of the Contract price, or recover the same by legal proceedings.

It is agreed that the Village Manager has the right to determine finally all questions as to proper performance of this Contract, or any part or portion thereof, and in case of improper, dilatory or imperfect performance thereof, to suspend the work at any time and to order the partial or entire reconstruction of the same, and if at any time the said Contractor shall abandon the work of this Contract or become habitually negligent of their obligations under it, or shall fail to prosecute the work with reasonable diligence, so that the time of final completion of the work shall be unnecessarily and intolerably delayed, or if they shall violate any of the provisions of the Contract, then and in such case the Village Manager may declare this Contract forfeited and may, at address given in the proposal, notify them to discontinue all work under this Contract, or any part thereof, and thereupon they shall discontinue such work, or such part thereof, and shall cease to have any right to the possession of the ground; and the Village shall thereupon have the right to complete the work or any part thereof by Contract or otherwise, as it may elect, and for that purpose to take possession and make use of such materials, tools, building appliances, and equipment as may be found upon the work, and to charge the expense thereof to the Contractor. Power is hereby given the Village Manager to determine all such questions under this Contract, according to the true intent and meaning thereof.

All expenses charged under this provision shall be deducted and paid by the Village of Lake Orion out of any monies then due to the Contractor under this Contract, or any part thereof, and in such accounting the Village of Lake Orion shall not be held to obtain the lowest figures for the work of completing the contract, or any part thereof, or for insuring its proper completion, but all sums actually paid therefor shall be charged to the Contractor and in case

such expenses shall exceed the said sums, the Contractor shall pay the amount of the excess to the Village of Lake Orion.

#### **Article 11 - ASSIGNMENT OF CONTRACT**

It is agreed that the Contractor shall not assign or transfer this Contract, or subcontract any part of the work embraced in it, except with the written consent of the Village Manager to do so.

It is further agreed that all parts of the work which may be performed by a subcontractor shall conform to the Plans and Specifications and be subject to all provisions of this Contract exactly as if performed by the Contractor and their immediate employees and work personnel. No such letting of the work shall, in any way, diminish or weaken the responsibility of the Contractor for all parts of the work or lessen their obligation under this Contract.

It is likewise agreed that the Contractor shall not assign, either legally or equitably, any of the monies payable to him under this Contract, or his claim thereto, except with the written consent of the Village Manager.

#### **Article 12 - EXTRA WORK AND MODIFICATION**

It is agreed that the said Contractor shall do such incidental or extra work in connection with this Contract as the Village Manager may especially order in writing. If such extra work or any part thereof be of such character that it may be definitely covered by construction items for which unit prices are named in the proposal of this Contract, then and in that case the Village will pay, and the Contractor will accept as full compensation for such extra work, or such part thereof, the amount computed by applying the unit prices to the quantities of extra work falling under the several items. Also, such extra work may be paid for at prices mutually agreed upon at the time by the Village and the Contractor. But if such extra work, or any part thereof, be of a kind which may not be definitely covered by the regular pay items of this contract, and if no price therefor has been mutually agreed upon in advance, or if the work is of such a nature that it cannot be estimated with fair exactness in advance, then the Village will pay, and the Contractor will accept as full compensation for such, an amount equal to the actual and necessary net cost in money to the Contractor for labor and materials actually used therein or expended thereon, plus fifteen percent (15%) of such net cost for superintendence, power, the use of tools, and plant, liability insurance, and all overhead and incidental expenses.

During the progress of any extra work which is to be paid for on the basis of net cost plus fifteen percent (15%), the Contractor will furnish to the Village Engineer, at the end of each day, suitable time slips showing the name of and the number of hours worked by each work person employed thereon, the nature of work performed by them, and their rate of pay, together with suitable and adequate memoranda of the materials used therein, showing the character and amount of each such material, the source from which it was purchased, and the price paid or to be paid therefor.

The Village may, at its discretion, furnish to the Contractor any materials or supplies or transportation required for extra work, and the Contractor shall not be entitled to any allowance or percentage on account of materials or supplies or transportation so furnished.

It is agreed that all extra work that may be ordered and performed under the provisions of this article shall be done by the Contractor in an effective and workmanlike manner, and shall be subject to the same restrictions and liabilities as those which apply to the general work of this Contract; and the Contractor will be responsible for the maintenance and protection of such extra work until the time of the final acceptance of the entire job by the Village.

And it is further agreed that no claim against the Village on account of extra work shall be valid unless such extra work has been previously ordered in writing by the Village Manager, and unless such claim has been presented for payment as soon as practicable after the completion of such extra work and before the making up of the final estimate.

When it becomes necessary in the prosecution of any work or improvement under contract to make minor alterations or modifications of such contract or the plans and specifications thereof, such alterations, changes or modifications shall be made only on the written order of the Village Manager.

No such order shall be made until the price to be paid for the work or material or both and the credits, if any, to be allowed by the Village under the altered and modified Contract shall have been agreed upon in writing and signed by the Contractor and by the Village Manager.

### **Article 13 - DISPUTED CLAIMS FOR EXTRA COMPENSATION**

If any inconsistency, omission, or conflict is discovered in either the plans or the specifications, or if in any place the meaning of either the plans or the specifications, or both, is obscure, or uncertain, or in dispute, the Engineer will decide as to the true intent.

In case the Contractor deems extra compensation is due for work or materials not clearly covered in the contract, or not ordered by the Engineer as extra work, or due to changed or altered conditions, the Contractor shall notify the Engineer in writing of the Contractor's intention to make claim for such extra compensation before beginning work on which the Contractor intends to base a claim and shall afford the Engineer every facility for keeping actual cost of the work. The Contractor and the Engineer shall compare records and bring them into agreement at the end of each day. Failure on the part of the Contractor to give such notification or to afford the Engineer proper facilities for keeping strict account of actual cost will constitute a waiver of the claim for such extra compensation except that consideration will be given to claims to the extent that they are substantiated by Village records. The determination of extra compensation made by the Village, where the Contractor has failed to give proper notice of their claim for extra compensation as provided herein or has failed to afford the Engineer proper facilities for keeping strict account of actual costs, shall be final and binding on the Contractor. The filing of such notice by the Contractor and the monitoring of

cost by the Engineer for said notice of claim, shall not in any way be construed to establish the validity of the claim. When the extra work in question has been completed, the Contractor shall file the claim for extra compensation with the Engineer.

Such claims shall be filed with the Engineer in accordance with the MDOT 2020 Standard Specifications for Construction. A written decision will be given to the Contractor in a timely manner, regarding the approval, partial approval, or disapproval of the Contractor's claim for extra compensation. The Village will determine procedures for reviewing the Contractor's claim.

#### **Article 14 - EXTENSION OF TIME**

It is agreed that if the Contractor shall be unavoidably delayed in beginning or fulfilling this Contract by reason of excessive storms or floods, or by acts of Providence, or by general strikes, or by court injunction, or by stopping of the work by the Village because of any emergency or public necessity, or by reason of extra work ordered by the Village Engineer, or by any act, neglect, delay, or default on the part of the Village, the Contractor shall have no valid claim for damages on account of any such cause or delay, but he shall be, in such case, entitled to such extensions or advancement of the time period specified in the Agreement as the Village Engineer shall adjudge to be just and reasonable; provided, however, that formal claim for such extension shall be made in writing by the Contractor within a week after the date upon which such alleged cause of delay shall have occurred. The closing down of the work during the winter season on account of cold weather shall not be taken as entitling the Contractor to any extension of time within the meaning of this Article.

In case the Contractor shall be delayed in the fulfillment of his obligations under this Contract, from any cause whatsoever, and in case the Village shall acquiesce in the Contractor's prosecution and completion of the work, or any part of it, after the date at which it should have been finished, such acquiescence shall not operate as a waiver of any of the Village's rights under this Contract, nor shall it invalidate or in any way weaken the Contractor's bonds.

#### **Article 15 - LIQUIDATED DAMAGES**

It is expressly covenanted and agreed by and between the parties hereto that time is and shall be considered as of the essence of the Contract, and in the event that said Contractor shall fail in the due performance of the entire work to be performed under this Contract, by and at the time herein mentioned and referred to in the Agreement, or within some other certain date subsequent to this to which the time limit for completion of the work may have been advanced under provisions of Article 11, the said Contractor shall pay unto the Village as and for liquidated damages, and not as a penalty, the sum of **One Thousand Dollars (\$ 1,000.00)** for each and every calendar day that the said Contractor shall be in default.

Said sum of **One Thousand Dollars (\$ 1,000.00)** per day, in view of the difficulty of estimating such damages with exactness, is agreed upon as the damages which will be suffered

by the Village by reason of such default. It is also understood and agreed by the parties to this Contract that the liquidated damages hereinbefore mentioned are in lieu of the actual damages arising from such breach of this Contract; which said sum the Village shall have the right to deduct from any monies in its possession, otherwise due, or to become due to said Contractor, or to sue for and recover compensation for damages for non-performance of this Contract at the time stipulated herein and provided for. (See also any Special Provisions for Liquidated Damages.)

Said liquidated damages are in addition to any actual damages which the Village may recover under the provisions of the contract and are assessed in accordance with Section 108.10 of the MDOT 2020 Standard Specifications for Construction.

## **Article 16 - PAYMENTS TO THE CONTRACTOR**

### **16.1 Contractor's Obligation Prior to Payment**

It is agreed that before the Contractor shall demand partial or final estimates or payments, the Village may require them to furnish the Village satisfactory evidence that all persons that have supplied labor or materials for the work embraced under this Contract have been fully paid for the same; and that in case such evidence be not furnished as aforesaid, such sums as the Village may deem necessary to meet the lawful claims of the persons aforesaid be retained by the Village from any monies that may be due or become due to them under this Contract until such liabilities shall be fully discharged and evidence thereof be furnished to the Village. The Contractor agrees to make prompt settlement for all repair expenses made by the Village as a result of the Contractor's work. Consent of the Contractor's surety will be required prior to final payment.

### **16.2 Village's Obligation to Pay**

It is agreed that, in consideration of the faithful and entire performance by the Contractor of their obligations under this Contract, the Village shall pay to them, at the times and in the manner stipulated, the total sum as determined by calculations from the unit prices in the proposal, but diminished by such amount as the Village may lawfully retain as liquidated damages under the provisions of Article 12 herein; and the Contractor shall accept the payment of such sum as full compensation for their work under this Contract.

### **16.3 Progress Estimates and Payments**

Progress payments shall comply with Act No. 524 Public Acts of 1980. At about the first of each month, during which satisfactory progress has been made toward the final completion of the work, the Engineer will make up an estimate of the amount and value of the work which has been done under this Contract since the date of the

last preceding estimate, and will report such estimate in writing to the Village Director of Finance. Such estimates shall not be required to be made by strict measurements, or with exactness, but may be made either wholly or in part by appraisement or estimation or by a consideration of accounts for labor and materials, and it shall be sufficient if it is approximate only. Any error or inaccuracy which may occur in any progress estimate may be allowed for or corrected in any subsequent estimate.

Following the rendering of such estimate by the Engineer, and as soon as practicable thereafter, the Village will pay to the Contractor on account a sum equal to ninety percent (90%) of the Contract price of such work. The remaining ten percent (10%) will be retained until work is fifty percent (50%) in place. After the work is fifty percent (50%) in place, additional retainage shall not be withheld unless the Village 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 Village so determines, the Village may retain not more than ten percent (10%) of the dollar value of work more than fifty percent (50%) in place.

The Director of Finance may require the Contractor, before the payment of any estimate, to file an affidavit showing the unpaid bills for materials or supplies of any kind furnished for this work.

The progress estimates and payments thus provided for will include all extra work which may be done under the provisions of this Contract on the same basis as other work is included, all such extra work being regarded herein as essentially a part of this Contract, and not merely supplementary to it.

Disputes under this provision may be submitted to the decision of an agent, at the option of the Village, pursuant to Section 4 of Act 524 of 1980. (MCLA 125.1564).

#### 16.4 Measurement

Due and proper measurements will be taken by the Engineer during the progress of the work, and their estimates, based upon such measurements, shall be final and conclusive evidence of the amount of work performed under this Contract.

#### 16.5 Final Estimate and Payment

As soon as practicable after the satisfactory completion of all the work included under this Contract, the Engineer will make final inspection of all the work and will make up a final estimate of the amount due to the Contractor under the terms of this Contract. At this time the Contractor shall file with the Director of Finance an affidavit stating that all bills have been paid in full for all materials, supplies and labor of every kind that have been furnished for this work, or stating the balance

due for such materials, supplies and labor (See sample on Page 52). The Contractor shall file with the Village Engineer the Contractor's Declaration found on Page 51, stating that all claims for extra payments have been satisfactorily settled and there will be no further claims. Consent of the Contractor's surety shall also be filed. The Engineer will then certify this estimate to the Village Director of Finance and the Contractor will be paid the amount of said estimate, less the amounts previously paid; excepting that the Village may, at its option, reserve such amount as it may deem necessary to meet the undischarged obligations of the Contractor for materials or labor expended upon this work until such obligation shall have been paid.

#### **Article 17 - WARRANTY MAINTENANCE**

If, at any time during a two-year period from the date of payment of the final estimate, the need of any repair or replacement becomes apparent, the Village will at once notify the Contractor in writing, either personally or by mail at the address given in the proposal; and if within one week after such notification the Contractor has not made the necessary repairs, the Village may proceed to do the required work and to charge the cost thereof against the Contractor, excepting that in the case of a repair necessary to be made at once to protect life and property, then and in that case the Village may take immediate steps to repair or barricade such defects without notice to the Contractor.

Following the performance of any such repair work by the Village, and as soon as practicable thereafter, an itemized statement of the cost of such work will be sent to the Contractor by the Village. In such accounting the Village 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 Contractor.

#### **Article 18 - MICHIGAN NON-DISCRIMINATION STATUTE**

It is agreed that the Contractor and their subcontractors will not discriminate against an employee or applicant for employment with respect to hire, tenure, terms, conditions or privileges of employment, or a matter directly or indirectly related to employment, because of race, color, religion, national origin, age, sex, height, weight, or marital status; or because of a handicap that is unrelated to the individual's ability to perform the duties of a particular job or position. The Contractor further agrees to comply with the Village of Lake Orion Human Rights Ordinance and Title VI Non-Discrimination Plan; information may be found at [DEI & Title VI Compliance | Lake Orion, MI](#). Breach of this covenant may be regarded as a material breach of the Contract.

## **Article 19 - LABOR LAWS AND ORDINANCES**

The Contractor shall obey and abide by all laws of the State of Michigan relating to the employment of labor on public work, and all the charter provisions and ordinances of the Village of Lake Orion regulating or in respect to public improvements.

## **Article 20 - PATENTS, PATENT RIGHTS, AND TRADEMARKS**

The Contractor shall indemnify, protect, defend and save the Village of Lake Orion, including all elected and appointed officials, all employees and volunteers, all boards, commissions and/or authorities and their board members, employees, volunteers and others working on behalf of the Village, harmless against all claims or actions brought against the Village by reason of any actual or alleged infringement upon patent, trademark or service mark right in any article, material, process, machine or appliance used by him in this work.

## **Article 21 - WORK WITHIN RAILROAD, PRIVATE, STATE OR COUNTY RIGHTS-OF-WAY**

All construction work within railroad, private, State or County highway rights-of-way shall be performed by the Contractor in accordance with the requirements of the rights-of-way agreement and of the railroad or highway department having jurisdiction; including procedures of excavating, backfilling, removing and replacing pavement, maintaining and safeguarding traffic, inspection procedures of jacking pipes and encasing pipes under railroads and highways, etc. All required construction permits and surety bonds shall be furnished by the Contractor before commencing work. At the conclusion of the work, the Contractor shall furnish a written statement from the railroads and highway departments that work in rights-of-way under their jurisdiction has been completed to their satisfaction.

## **Article 22 - PROTECTION AND SAFETY**

### **22.1 Protection Against Accident**

The Contractor shall put up and shall maintain during the continuance of the work such barriers, lights and other protective devices and watchmen, when necessary, as will effectively prevent any accident in consequence of their work, and they shall be liable for all accidents and damages occasioned in any way by their acts or neglect, or by the acts or neglect of their agents, employees, or workmen.

### **22.2 Responsibility for Damage to Work**

The Contractor shall assume full responsibility for 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 Village, and shall turn the finished work over to the Village in good condition and repair at the time of the final estimate.

This responsibility of the Contractor shall cover all these elements included as extra work under this Contract in exactly the same manner as the regular work is covered.

### 22.3 Responsibility for Adjoining Structures

The Contractor shall have full responsibility for the protection of all property, driveways, buildings, fences, and other structures, and their foundations, along (or near) the line of the work, and shall indemnify, defend and save harmless the Village of Lake Orion, including all elected and appointed officials, all employees and volunteers, all boards, commissions and/or authorities and their board members, employees, volunteers and others working on behalf of the Village, against all damages or alleged damages to any such structure arising out of their work.

No driveway shall be entirely closed to travel, even temporarily, except with the written consent of the Engineer, previously obtained. Highways must be suitably posted during the period in which construction work is in progress in them, and the Contractor shall be responsible for this precaution. Suitable bridges must be built across trenches at highway crossings to facilitate travel, and this same requirement shall apply likewise to private roadways.

### 22.4 Responsibility for Water Courses

The Contractor shall maintain in continuous and effective service all drains and water courses touched during the progress of the work. If it should become necessary, temporarily, to divert or obstruct the flow of any such water course or drain, written consent must first be obtained from the Engineer, and the Contractor shall assume full responsibility for the consequences.

### 22.5 Responsibility for Utilities

Certain underground structures and utilities have been shown as an aid to the Contractor, but the Village does not guarantee their location or that other underground structures or utilities may not be encountered. It shall be the responsibility of the Contractor to make all arrangements with the owners of the respective utilities for the establishment of their location, prior to beginning the construction.

The Contractor shall assume full responsibility for the protection of all utilities, water, sewer, gas, telephone, or any other, either public or private, along or near the line of work, and will be held responsible for any damages to such utilities arising from their operations. If for the Contractor's convenience they desires that any portion of the utilities be moved to facilitate their operations, they shall make all necessary arrangements with the owner of the respective utilities, and pay all costs resulting from this work.

In cases where utilities, water, sewer, gas, telephone or any other, either public or private, are directly in the line of the structures being constructed, such as those being within the permissible limits of a sewer excavation or pavement excavation, and the Village deems it necessary that the said utility be moved, the said company or companies, agents or superintendents will be notified by the Village Engineer to remove the same within a specified time. The Contractor shall not interfere with said utility or any portion thereof until the expiration of the time specified in said notice. The Contractor will not be held responsible for any costs resulting from this work.

In all cases where there is a dispute between the Contractor and the owner of the respective utility as to necessity of moving or repairing same within Village-owned right of way, the Village Engineer shall make the final decision in the matter, which decision shall be binding on the respective parties, and order the respective parties to proceed accordingly.

#### 22.6 Protection of Trees and Shrubbery

The Contractor shall take ample precautions to protect all trees and ornamental shrubbery from injury by work personnel, teams, or other agencies connected with their work. Such trees or shrubbery shall be surrounded by protective posts or fencing before construction work begins if, in the judgment of the Engineer, such precautions are necessary.

#### 22.7 Protection of Reference Points

The Contractor shall carefully preserve monuments, bench marks, reference points and stakes and, in case of willful or careless destruction, they shall be charged with the resulting expense and shall be responsible for any mistakes that may be caused by their unnecessary loss or disturbance.

#### 22.8 Removal of Water

The Contractor shall provide all necessary pumps, pipes, drains, ditches, dikes, and other means for adequately protecting the work from damage by water, and he shall so protect it during the entire construction period. No direct payment will be made to the Contractor for removing or pumping water, or for any of the means employed in protecting the work against damage by water, but compensation therefor shall be considered as being included in the unit prices fixed in this Contract for the several structures.

Water pumped or delivered from trenches and excavations shall be disposed of in such manner as will not injure the public health, nor damage public or private property, nor injure any work complete or in progress.

## 22.9 Dust Control

The Contractor shall apply water or dust palliative, or both, for the alleviation or prevention of dust nuisance caused by their operations. Dust control operations shall be performed by the Contractor at the time ordered by the Engineer, but failure of the Engineer to issue such order will not relieve the Contractor of their responsibility.

Such dust control materials shall be applied as often as is necessary to control the dust. The use of road oils and waste oils to control dust is prohibited unless authorized by the Engineer.

No direct payment will be made for any such work performed or material used to control dust under this Contract.

## 22.10 Control of Noise

The Contractor shall eliminate noise to as great an extent as possible at all times. Air compressors shall be equipped with silencers, and the exhaust of all gasoline motors and other power equipment shall be provided with mufflers. In the vicinity of hospitals, libraries and schools, special precautions shall be taken to avoid noise and other nuisance, and the Contractor shall require strict observances of all pertinent ordinances and regulations. Any blasting permitted in such locations shall be done with reduced charges.

## 22.11 Erosion Control

The Contractor shall comply with the Soil Erosion and Sedimentation Control Act, Act 347 of 1972, as amended by Act 197, Public Acts of 1974 and local Village or County soil erosion control programs. Also, should the local agency determine that the construction operation is in violation of the act and cites the Village, the Contractor shall take immediate action, as directed by the Village, to insure compliance with the Act.

## 22.12 First Aid

The Contractor shall at all times provide a satisfactory first aid kit at the job site. Emergency phone numbers for police, doctors, and emergency vehicles shall also be kept in the first aid kit.

## 22.13 Ventilation and Safety in Gas

Positive and approved means shall be provided by the Contractor for the detection of gas in existing sewers. If gas is encountered and cannot be removed by natural

ventilation, then ventilating equipment of sufficient capacity and suitable type to adequately and quickly dilute the gas shall be promptly installed and operated. In all work where gas is present, no flame or other open light shall be used on the work. The Contractor shall be required to enforce a "no smoking" ban on all work personnel present.

#### 22.14 Sanitary Regulations

The Contractor shall provide for their employees an abundant and convenient supply of drinking water, taken from the Village water system or from some other safe and wholesome source, and shall give orders against the use for drinking purposes of any other water in the neighborhood known to be prejudicial to the health of the workers.

The Contractor shall provide at convenient points, properly secluded from observation, a sufficient number of sanitary conveniences, and shall maintain them strictly without nuisance and without offense to the public or to residents in the vicinity of the work. The number, location, character and conditions of maintenance of these utilities must at all times be such as will meet the approval of the Engineer.

#### **Article 23 - "OR EQUAL" CLAUSE**

Whenever, in any of the Contract Documents an article, 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 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 an Owner's approval of material and equipment before they are incorporated in the work.

#### **Article 24 - CLEANING UP**

Upon completion of the actual work of construction, the Contractor shall clean up and leave in neat condition all the premises which they have occupied during the construction period. Before the time of the final estimate, the Contractor shall remove from the premises all surplus excavation, debris, and rubbish, and all unused materials, together with all tools and equipment, or shall deposit them at such points and in such manner as the Engineer may require.

Before leaving the grounds, they shall replace or put in good repair all fences, telephone poles and lines, roadways, and other property that may have been damaged by them during the progress of the work. Damage to crops within the limits of the right-of-way or street will be

paid by the Village, but the Contractor must assume responsibility for all damages outside of this right-of-way.

#### **Article 25 – USE OF COMPLETED PORTIONS OF THE WORK**

The Owner may, at any time during the 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 portions may not have expired. In such event, the Contractor will be relieved of maintenance of said portion, except as covered by his guarantee of same. The use of any portion of the work by the Owner under the provisions of this section, shall not constitute final acceptance of the work and shall not be construed to be a final estimate for such work, the date of final estimate shall be the date of final estimate for the entire project covered under this Contract.

#### **Article 26 – 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 3 months, through no act or fault of the Contractor or of anyone employed by them, 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 the 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.

#### **Article 27 – NO WAIVER OF CONTRACT**

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

#### **Article 28 - PROGRESS SCHEDULE**

The CONTRACTOR shall submit a Progress Schedule to the Village for review and approval prior to the pre-construction meeting.

**CONTRACTOR'S DECLARATION**

I hereby declare that I have not, during the period of \_\_\_\_\_  
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,  
sue for, or claim compensation from the Village of Lake Orion or his agents, in addition to the  
regular items set forth in the contract named or numbered **LEAD SERVICE LINE REPLACEMENT**  
**PROJECT, YEARS 1-3** and dated \_\_\_\_\_ A.D., 20 \_\_\_\_\_, for \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

executed between myself and the Village of Lake Orion, and in the Change Orders for work  
issued by the Village 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: \_\_\_\_\_

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

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

**CONTRACTOR'S AFFIDAVIT**

STATE OF MICHIGAN )

)SS

COUNTY OF )

The undersigned \_\_\_\_\_, hereby represents that on \_\_\_\_\_, he (it) was awarded a contract by the Village of Lake Orion, hereinafter called the Owner, to provide construction services in accordance with the terms and conditions of Contract **LEAD SERVICE LINE REPLACEMENT PROJECT, YEARS 1-3** and the undersigned further represents 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 project, as well as all other claims arising from the performance of 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 \_\_\_\_\_ A.D. 20 \_\_\_\_\_.

Contractor: \_\_\_\_\_

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

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

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

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

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

VILLAGE OF LAKE ORION

SPECIAL PROVISION  
FOR  
**GENERAL REQUIREMENTS**

1 of 1

NFE: WES

2025-06-04

**SPECIFICATIONS AND CONTRACT PAY ITEMS**

All work shall be done in accordance with the Village of Lake Orion Standards, permit requirements of the Road Commission for Oakland County, and the Michigan Department of Transportation 2020 Standard Specifications for Construction and the latest revisions to the Standard Details as published by MDOT except as specifically modified in the Contract Documents.

The following bid/pay items in the proposal form are to be completed in accordance with MDOT Specifications:

<b><u>PAY ITEM</u></b>	<b><u>UNIT</u></b>
HMA Surface, Rem	SYD
Pavt, Rem	SYD
Sidewalk, Rem	SYD
HMA, 5EML	TON
Driveway, Nonreinf Conc, 6 inch	SYD

VILLAGE OF LAKE ORION

NOTICE TO BIDDERS

**JOB SITE SAFETY**

1 of 1

NFE:CLF

02/20/08

Neither the professional activities of the Engineer, nor the presence of the Engineer or its employees and consultants at, shall relieve the Contractor and any other entity of their obligations, duties and responsibilities including, but not limited to, construction means, methods, sequence, techniques or procedures necessary for performing, superintending or coordinating all portions of the work of construction in accordance with the Contract Documents and any health or safety precautions required by any regulatory agencies. The Engineer and its personnel have no authority to exercise any control over any construction Contractor or other entity or their employees in connection with their work or any health or safety precautions. The Contractor agrees that the Contractor is solely responsible for job site safety. The Contractor also agrees, to the extent permitted by law, that the Owner, Engineer and Engineer's consultants shall be indemnified by the Contractor for claims, demands, damages, judgments, losses, interest, attorney's fees, litigation costs and expenses of any kind, at any time, for bodily injury and or property damage, arising out of or in any way connected to the Contractor's work or acts related to the Project. The Contractor also agrees that the Owner, Engineer and Engineer's consultants shall be made additional insureds under the Contractor's general liability insurance policy.

**VILLAGE OF LAKE ORION**

**NOTICE TO BIDDERS**

**UTILITY COORDINATION**

1 of 1

NFE: WES

2025-04-30

**Description**

The Contractor shall cooperate and coordinate construction activities with the owners of utilities as stated in Section 104.07 of the 2020 MDOT Standard Specifications for Construction. In addition, for the protection of underground utilities, the Contractor shall follow the requirements in Section 107.12 of the 2020 MDOT Standard Specifications for Construction. Contractor delay claims, resulting from a utility, will be determined based upon Section 109.03 of the 2020 MDOT Standard Specifications for Construction.

For protection of underground utilities, and in conformance with Public Act 174, the Contractor shall contact the “MISS DIG” system at (800) 482-7171 or 811 a minimum of five (5) full working days, excluding Saturdays, Sundays, and federal holidays, prior to beginning each excavation in areas where public utilities have not been previously located. Members will thus be routinely notified. This does not relieve the Contractor of the responsibility to notify owners who may not be part of the “MISS DIG” system

The following public utilities have facilities located within the right-of-way:

**Electric - Distribution:**

DTE Energy  
1530 Trombly Street  
Detroit, MI 48211  
Contact: Laura Toporowski 630-336-2020

**Telephone:**

AT&T  
54 N. Mill Street  
Pontiac, MI 48342  
Contact: Matt Silwa 248-877-0762

**Gas:**

Consumers Energy  
4600 Coolidge Hwy  
Royal Oak, MI 48073  
Contact: Ernie Martyniuk 248-433-5868

**Cable Television:**

Comcast Cable  
25626 Telegraph Rd  
Southfield, MI 48033  
Contact: Michael Marlow 248-809-2765

**Water Main & Sanitary Sewer:**

Village of Lake Orion DPW  
21 E. Church St  
Lake Orion, MI 48362  
Contact: Wesley Sanchez 248-693-8391

**Electric – Community Lighting:**

DTE Energy  
15600 19 Mile Rd  
Clinton Twp, MI 48038  
Contact: Reggie Brown 586-412-3207

Owners of public utilities will not be required by the Village to move additional poles or structures in order to facilitate the operation of construction equipment unless it is determined by the Engineer that such poles or structures constitute a hazard to the public or are extraordinarily dangerous to the Contractor’s operations.

VILLAGE OF LAKE ORION

**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. Special Provision for 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 Special Provision for Water Service Replacement.

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 expected, sustained operating pressure applied to the pipe exclusive of transient and surge pressures, also referred to as Maximum Expected Operating Pressure.
2. Surge Pressure – the transient internal hydrostatic pressure to which the pipeline is subjected 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 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.
- 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. 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. 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.
- C. Transitions, fittings unions or couplings needed for service line installations shall be compatible and specifically made for the service line material being installed.

## 2.2 CORPORATION STOPS

- A. Heavy-duty brass cast bodies, keys, stem washers and nuts and inlet threads conforming to AWWA C800
- B. Corporation stops to be AWWA/CC taper thread inlet by flare copper outlet or quick/pack joint connection unless otherwise indicated
- C. 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
- D. Type of corporation stop as follows:
  - 1. 1-inch and less: Key/Plug valve
  - 2. Greater than 1-inch Ball valve
- E. Manufacturers
  - 1. Mueller Type H-15000
  - 2. Ford Meter Box F1000-4-Q-NL (1-inch)
  - 3. Ford Meter Box FB1000-X-Q-NL (Greater than 1-inch)
  - 4. Approved Equal
- F. Installation of corporation stops 1-1/2 inch diameter and larger on ductile iron pipe requires installation with a heavy-duty brass cast double strap service saddle.
- G. Installation of corporation stops on plastic pipe requires the use of coated ductile iron service saddle with double stainless steel straps.

## 2.3 CURB STOP VALVES

- A. Heavy duty brass cast bodies, ball, keys, stems, and outlet and inlet threads conform to AWWA C800
- B. Valves to be quick/pack joint connection for copper or CTS O.D. tubing inlet and outlet unless otherwise indicated.
  - 1. Valves to be non-directional and watertight with flow in either direction
  - 2. Insulated valves are required when connecting dissimilar metal piping unless otherwise indicated.
- C. Match the curb stop valve to the service line size from the municipal water supply
- D. Manufacturers
  - 1. Ford Meter Box B44-XXX-Q-NL
  - 2. Mueller Type P-25209
  - 3. Approved Equal

## 2.4 CURB STOP VALVE BOX (LESS THAN 3")

- A. Two-piece cast iron valve box with an arch pattern base furnished with a one-inch upper section and a two-hole pattern cast iron lid.
  - 1. Provide telescoping upper with a spring friction ring to allow for adjustment to final grade.
  - 2. Provide 42-inch stainless steel stationary rod
- B. Manufacturers
  - 1. Ford Meter Box EA1-XX-40-XXR-SS
  - 2. AY McDonald 5601ALR
  - 3. Approved Equal
- C. Provide curb box base for curb stop valves greater than 1 inch diameter

## 2.5 SERVICE LINE TAPPING SADDLES

- A. Heavy-duty brass double strap service saddles with AWWA tapered outlet thread.
- B. Manufacturers
  - 1. Ford Meter Box 202B
  - 2. Owner approved equal
- 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
  - 2. Manufacturers
    - a. JCM 406
    - b. Owner approved equal
- D. Tapping saddles on pipe diameters less than 16 inch in diameter and for corporation stops less than 1-1/2 inch in diameter are to be used only upon authorization of the Owner.

## 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 the related Section for the pipe material that is being installed.
- 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 Village of Lake Orion Water Main Standard Details.

### 3.3 INSTALLATION OF SERVICE LINE

- A. Install service line piping in conformance with the approved methods described in the Special Provision for Water Service 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.
- C. Connection to a water service line that contains lead or galvanized piping is strictly prohibited.
  - 1. Immediately report the discovery of a lead or galvanized water service to the Owner.
    - a. The Owner will provide direction on how to proceed.
- D. Saddles are required for service line connections to the following water main pipe materials;
  - 1. HDPE, PVC or PVCO
    - a. Refer to PART 2 in this Section for further detail

2. Asbestos Cement
    - a. Consult the OWNER prior to making connection for further detail.
  3. Prestressed Concrete Cylinder Pipe
    - a. Consult the Owner prior to making connection for further detail.
  4. Ductile Iron (16-inch and larger)
    - a. Refer to PART 2 in this Section for further detail
  5. Screw-in type corporation stop connections are permitted for all other material types and should follow manufacturers guidelines for installation.
- E. Long side water services (i.e. beneath roadways, water courses, etc.) shall be installed using trenchless methods (i.e. horizontal directional drilling or pipe pulling) unless otherwise authorized by the Owner.
- F. Conduct initial water service line flush (Public Side Only);
1. Complete initial flush prior to connecting to the private service line.
  2. Connect new water service to water main.
  3. Connect a hose to the end of the new water service within the excavation at the curb stop and flush at full velocity for a minimum of 10 minutes or until water runs clear, whichever is less,
  4. Drain the flush water to the nearest sanitary sewer structure as agreed to with the Owner's representative.

### 3.4 BACKFILLING

- A. 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 Trench "A" per the Village of Lake Orion Water Main Standard Details.
- B. Backfill any excavations outside the public right-of-way and not within the influence of any paved surfaces with Standard Backfill Trench "B" in accordance with Village of Lake Orion Water Main Standard Details.

### 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.
- C. Install corporation stop in accordance with the related Section for the pipe material that is being tapped.

### 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 poured concrete base or block.
- C. Install curb box base so that it does not transmit loads or stress to the valve or water service

1. Install the foot piece beneath the curb stop and the curb box base over the curb stop onto the foot piece.
2. Encase the curb box base in suitable open-graded material.
- 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 unless otherwise noted.
    - 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.
- 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. Repeat bacteriological testing if the system is not activated within 30 days after initial testing.

### 3.9 SHUTTING OFF WATER

- A. Familiarize locations of existing gate valves and have them made easily accessible for emergency shutoffs.
- B. Notify the Owner 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. A minimum twenty-four hour advance notice shall be given to persons whose water is to be shut off.

VILLAGE OF LAKE ORION  
SPECIAL PROVISION for  
**WATER SERVICE LINE REPLACEMENT**

NFE: WES

2025-07-15

**a. 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 premises plumbing or to the building plumbing at the first shut-off valve inside the building or 18 inches inside the building 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.** If public or private service lines are found to consist of lead or galvanized piping where non-lead materials are understood to exist, the Owner shall be notified immediately and the service line replaced concurrently, consistent with the details and pay items provided herein. At no time shall a partial lead service line replacement be allowed. Work may include the removal and replacement of sidewalk, driveways or roadways which will be paid for under separate pay items as detailed.

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.**

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.

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
- Scheduling of Service Line Replacement work with property owner/tenant
- Marking location of existing curb stop / water service line
- Recording and documenting service line replacement work
- Coordinate with Building Official to obtain plumbing permit / schedule inspection

For the purposes of this Special Provision "Owner" refers to the Village of Lake Orion.

**b. Materials**

Service line materials shall be type K seamless copper tubing compliant with lead-free regulations (NSF 372 and NSF-61G), 1-inch minimum diameter, unless the use of another material is authorized by the Owner.

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.

**c. Preconstruction Activities**

Owner will collect signed access agreement from property owner/tenant to permit the service line replacement to be completed. Private water service replacement work cannot begin until access agreements have been signed by all necessary parties.

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.

**d. 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 shall be considered included with the project.

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 and clear access to the service line within the premises has been provided),
- Review that MISS DIG staking has been completed and is current,
- Be prepared to complete a full service line replacement (FSLR), which includes replacing the public water service line and the private water service line, including a new curb stop, stop box and water main connection as specified by the Owner.
- If ground wire present, check for electrical current in the ground wire prior to disconnecting from the water service line upstream of the meter.
- Disconnect the water service line upstream of the meter, and if required by the Inspector, isolate and disconnect water service line and existing meter for replacement with new meter. New meter will be provided by Owner (Village of Lake Orion DPW).

Excavate 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.

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 to avoid damage to new service line piping when being installed and to create a clean joint when restored.

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.
- Costs for any transition fittings or adapters to make these connections shall be included in the cost of the service line replacement.

A new curb stop and stop 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 Owner.
    - 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

Conduct initial water service line flush;

- Connect new water service to water main or curb stop
- Complete initial flush prior to connecting to building/premise plumbing or private service line

- 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
- For a public side only replacement, drain the flush water to the nearest sanitary sewer. For FSLR or private side replacement, 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 the premises plumbing.

- Install a new interior water shut-off valve (new ball valve with handle) on the service side (upstream) of the meter unless otherwise directed by Owner's field representative.
- If water meter replacement is required by the Owner's field representative, install new meter in addition to new interior water shut-off valve (ball valve with handle) on the service side (upstream) of the new meter.
- Premises plumbing must be inspected in accordance with permitting authority's requirements.
- Reconnect grounding wire, if any.

Backfill and compact all exterior excavations in accordance with Village of Lake Orion Water Main Standard Details.

- Non-paved areas on private property and not within the influence of the road are to be backfilled and compacted to grade with suitable excavated material per Trench Detail "B".
  - Mounding of the grade to anticipate settlement is prohibited.
  - Rough grade the site to its original grade and contour, compact to prevent settling and prepare the site for restoration.
- Paved areas on private property are to be backfilled and compacted with Class II sand per Trench Detail "A" with sand backfill stopping at the bottom of the existing adjacent pavement section.
- Areas within the Owner's right-of-way are to be backfilled and compacted with Class II sand per Trench Detail "A".
  - 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) foot below the surface and suitable excavated material and topsoil shall make up the remaining backfill.
  - Temporary repairs to roadways, sidewalks and driveways shall be made with maintenance gravel or temporary HMA surface as directed by the Owner.

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. 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.

7. 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 and collect signature of review of these instructions.

Contractor shall 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 and remove any debris generated on the exterior of the building/premises.

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.

Contract shall 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.

**e. Final Acceptance**

Owner will collect tenant/property owner signature for final completion of access agreement.

**f. Approved Service Line Installation Methods**

**Horizontal Directional Drilling**

Horizontal Directional Drilling is a preferred method of service line replacement. Water service lines that are horizontal directionally drilled are required to be bored beneath the foundation wall and connected to the premises 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**

Pipe Pulling is a preferred method of service line replacement. 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.

**Open Cut**

Open-cutting of water service lines for replacement is not a preferred method of construction and should only be completed when all other options for trenchless replacement of the service line have been exhausted. 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 Village of Lake Orion Water Main Standard Details. The open cut replacement of service lines beneath the roadway, except in cases of emergency or to connect to existing water main in the roadway, is prohibited.

**g. Measurement and Payment**

The completed work, as described, herein will be measured and paid for at the contract unit price using the following pay items:

Pay Item	Pay Unit
“Water Serv, Private side”	Each
“Water Serv, Public Side”	Each

**Water Serv, Private Side** This bid item shall be paid for at the Contract Unit Price per each private water service line replaced. The Work required by this item includes all labor and materials necessary to install water service piping, fittings, valves, replacement meter (if required by Village), adapters and bends and the following associated items of work from the curb stop to the first shutoff valve inside the building, the valve downstream of the meter, or 18 inches inside the building (as directed by Village):

- Coordinating and communicating the contractor’s schedule with the Owner to allow for on-site representation and resident communication to be completed by the Owner.
- Delivery of a shutoff notice to the affected residence or business a minimum of 48 hours before any planned water service shutdown.
- Excavations within the work area including HDD insertion and receiving pits, hauling and disposal of unsuitable material.
- Temporary SESC control and clean-up
- All work within the premises including removal of portions of an existing concrete floor slab or wall or grout to accommodate the installation of the new water service line.

- Installation of new water service line utilizing methods approved by the Owner.
- 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 premises plumbing.
- Connection to premises plumbing, including replacing meter if required by Village.
- Sealing of the service line penetration.
- Removal of all materials and debris generated by service line replacement operation 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.
- Restoration of non-paved areas
- Mobilization/demobilization
- Brass unions, reducers, connectors and other fittings necessary to complete the work. Replacement meter will be supplied by the Village.
- 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 and traffic regulator control as necessary

**Water Serv, Public Side** 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 tap existing water main, install water service piping, service saddles, fittings, corporation stops, curb stop, curb stop box, adapters and bends and the following associated items of work from the public water main to the point of connection to the private water service line:

- Coordinating and communicating the contractor’s schedule with the Owner to allow for on-site representation and resident communication to be completed by the Owner.
- Delivery of a shutoff notice to the affected residence or business a minimum of 48 hours before any planned water service shutdown.
- Excavations within the work area including HDD insertion and receiving pits, hauling and disposal of unsuitable material.
- Temporary SESC control and clean-up
- Installation of new public water service line and water main tap utilizing methods approved by the Owner.
- Curb stop replacement, including stop box, as directed by the Owner.
- Conducting “initial” flushing of the service line prior to connection to private water service line.
- Connection of new service line to the curb stop (including all adapters and fittings necessary to make the connection).
- Backfill and compaction of all excavations to grade or bottom of proposed pavement section utilizing suitable excavated material or compacted sand backfill, as applicable.
- Restoration of non-paved areas
- Mobilization/demobilization
- Brass unions, corporation stops, curb stops and boxes, reducers, connectors and other fittings necessary to complete the work.
- Traffic control and traffic regulator control as necessary.

VILLAGE OF LAKE ORION  
SPECIAL PROVISION for  
**AGGREGATE BASE, \_\_\_ INCH, MODIFIED**

NFE: WES

2025-06

**Description**

This item of work consists of the furnishing, placing, and compacting of a certified aggregate base material on an approved subgrade to the bottom of the relevant HMA or concrete pavement replacement cross section, or on an approved subgrade as the surface treatment for gravel road repair and gravel driveway repair. Work shall be performed in accordance with Section 302 of the MDOT 2020 Standard Specifications for Construction except as modified herein.

**Materials**

Dense Graded Aggregate material for **“Aggregate Base, \_\_ inch, Modified”**, shall be 21AA Crushed Limestone meeting the requirements specified in Section 902 of the 2020 Standard Specifications for Construction for 21AA aggregate. The certification load tickets must be presented to the Field Observer at the time of delivery.

**Construction**

Compact all layers to a uniform depth of not more than 8 inches (+/- 1/4 inch). If the total plan base thickness exceeds 8 inches, construct the base in layers of equal thickness. The compaction specification has been revised as follows: The compaction specification shall be a minimum of 95 percent of the maximum dry density of the material based on the Modified Proctor (ASTM D1557). Secure the Engineer’s approval for the method of placement and compaction before continuing.

**Measurement and Payment**

The completed work, as described, will be measured and paid for at the contract unit price using the following pay item:

<b>Pay Item</b>	<b>Pay Unit</b>
<b>“Aggregate Base, ___ inch, Modified”</b>	Square Yard

The maximum allowable limits of roadbed excavation to construct the Aggregate Base for road pavement replacement shall be to a point not more than two feet (2.0 ft) beyond all back of curb or edge of asphalt. For gravel road repair, limit of measurement and payment shall be to the edge of existing shoulder.

Limits of measurement and payment for Aggregate Bases below HMA or concrete driveways, or for installation as gravel driveways, shall be the same square yard area of the driveway removal.

VILLAGE OF LAKE ORION  
SPECIAL PROVISION for  
**TEMP HMA SURFACE, 2 INCH**

NFE: WES

2025-06

**Description**

This item of work consists of the furnishing, placing, compacting and removing an approved HMA mixture where pavement surfaces over Sewer and Water Main trenches are to be immediately restored to maintain safe traffic prior to performing permanent pavement replacement.

**Materials**

The HMA mixture to be used can be a readily available hot mix material, including reclaimed asphalt pavement (RAP), from a local source, provided it meets the approval of the Engineer.

**Construction**

The temporary HMA material shall be raked smooth and thoroughly compacted in place on a minimum 6" thick base of "Maintenance Gravel". HMA Bond Coat will not be required. The Contractor shall temporarily restore all pavement where traffic is to be maintained not later than the end of the work day in which the pavement is removed.

**Measurement and Payment**

The completed work, as described, will be measured and paid for at the contract unit price using the following pay item:

<b>Pay Item</b>	<b>Pay Unit</b>
<b>"Temp HMA Surface, 2 inch"</b>	Ton

Load tickets for each batch of material hauled to the site shall be given to the Construction Observer daily. The temporary aggregate base will be measured and paid for as "Maintenance Gravel". The unit price bid for "Temp HMA Surface, 2 inch" shall include all costs for removing and disposing of the temporary HMA material.

VILLAGE OF LAKE ORION  
SPECIAL PROVISION for  
**DISPOSAL OF EXCAVATED SURPLUS MATERIAL**

NFE: JCK

1 OF 1

2018-03-07

This work shall be done in accordance with the Michigan Department of Transportation 2020 Standard Specifications for Construction, except as follows:

**DESCRIPTION**

Surplus materials such as trees, brush, stumps, culverts, and all excavated materials shall become property of the contractor. The contractor shall make their own arrangements for the disposal of all material.

Concrete, asphalt materials, and base generated from the pavement operations shall become the property of the contractor. The contractor shall make their own arrangements for the disposal of this material. This work shall be considered incidental to the pavement work.

All materials shall be disposed of according to all applicable local, state, and federal rules and regulations.

**MEASUREMENT AND PAYMENT**

This work shall not be paid for separately, but shall be considered incidental to the appropriate construction item as shown in the plans or as directed by the Engineer.

VILLAGE OF LAKE ORION

SPECIAL PROVISION for

**RESTORATION**

NFE: WES

1 OF 1

2025-05-15

This work shall be done in accordance with the Michigan Department of Transportation 2020 Standard Specifications for Construction, except as follows:

**DESCRIPTION**

Restoration shall consist of, but not be limited to, providing all labor, materials, and equipment necessary for the preparation of the foundation for seeding, fertilizing and mulching all areas to be restored and the placement of seed, fertilizer, mulch and watering as required.

**CONSTRUCTION METHODS**

Restoration work includes placement of screened topsoil (2" depth), seed, fertilizer, and mulch at designated rates. Thoroughly water entire area upon initial placement. A minimum of two additional waterings as directed by the Engineer shall be required.

In general, restoration will be required in all non-paved areas disturbed by the Contractor's operations.

**RATES OF APPLICATION**

In those areas where restoration is required, the following rates of application will apply.

Topsoil.....	Screened.....	2 In
Seed.....	Class A Seed Mixture.....	220 #/Ac
Fertilizer.....	Chemical Fertilizer Nutrient, Class A..	228 #/Ac
Mulch.....	Mulch.....	2 Ton/Ac

**MEASUREMENT AND PAYMENT**

The work of restoring disturbed areas shall not be paid for separately, but shall be considered incidental to the appropriate construction item as shown in the plans or as directed by the Engineer.

VILLAGE OF LAKE ORION  
SUPPLEMENTAL SPECIFICATIONS  
**LEAD SERVICE LINE REPLACEMENT PROJECT, YEARS 1-3**

**Purpose.** The purpose of these Supplemental Specifications is to cover special items of work not covered elsewhere on the Contract Drawings or in the Standard Specifications, to correct conflicts which may exist in the Specification, or to otherwise amend standard specifications and/or details. These Supplemental Specifications take precedence over all other parts of the Contract Documents, unless there is a Special Provision provided. The order of precedence is:

1. Special Provisions
2. Supplemental Specifications
3. Project Construction Plans
4. Authority Having Jurisdiction Standard Plans and Details
5. MDOT 2020 Standard Specifications

**1. CONCRETE REMOVAL**

The contractor will be responsible to remove and replace only the concrete that is essential for access to existing curb stop. Existing concrete walks are to be removed to the nearest adjacent formed joint. If no joint is in existence within five feet of the curb stop location, a joint for breaking may be sawcut through the existing sidewalk or driveway with the approval of the inspector. All sawcuts shall be made with a concrete saw. Any sawed joint which is not clean and straight will be rejected by the Village. Payment for sawcutting shall be considered incidental to the removal and included with the contract prices for "**Sidewalk, Rem**" and "**Pavt, Rem.**"

The Contractor shall exercise care when removing concrete adjacent to the adjoining areas of driveways and sidewalks that are not to be removed. Any walks, drives or similar structures not intended to be removed that are broken by the Contractor shall be removed to the nearest joint and replaced at no cost to the Village.

**2. SAWCUTTING**

Any and all sawcutting necessary or required for the removal of existing HMA surface for access to existing watermain or curb stop shall be included in the bid price and shall not be measured and paid for separately. All labor, material and equipment costs associated with sawcutting through HMA shall be included in the unit price bid for "**HMA Surface, Rem**". All pavements shall be sawcut full depth. Any sawed joint which is not clean and straight will be rejected by the Village. Any paths, drives or similar structures not intended to be removed that are broken by the Contractor shall be removed and replaced at the Contractor's expense.

**3. CONTRACTOR'S STAMP**

All concrete slabs being replaced shall have the Contractor's stamp imprinted in the surface at the beginning and ending flag of the replacement length. Failure to stamp the concrete shall be reason to remove said slabs and replace with new concrete with the stamp imprinted. The stamp shall be approximately four inches by six inches (4" x 6") outside measurements, containing the name of the Contractor and the current year in legible characters one quarter inch (1/4") deep and one inch (1") high. This stamp shall be approved by the Village prior to construction.

**4. SIDEWALK BASE**

All sidewalk replacement shall be placed only on 4" MDOT CL-II sand, smoothed, compacted and leveled to the grades established by the Inspector. All base shall be thoroughly compacted and leveled to grade. The cost for 4" MDOT CL-II sand shall be included with the unit price bid for "**Sidewalk, Conc, 4 inch**".

Prior to placing the concrete, all debris, stones, dirt, roots, etc., shall be removed from the sub base. The base shall be moistened with water in such a manner as to thoroughly wet the material without forming puddles or pockets of water. No concrete shall be placed on frozen sub base.

## **5. ASPHALT PATH REPLACEMENT**

This item of work consists of the furnishing, placing, and compacting an approved HMA mixture of not less than 3" thickness or to match the existing section. All asphalt path replacement shall be placed only on 4" MDOT CL-II sand, smoothed, compacted and leveled to the grades established by the Inspector. All base shall be thoroughly compacted and leveled to grade. The cost for 4" MDOT CL-II sand shall be included with the unit price bid for "**Asphalt Path Replacement**".

## **6. MAINTENANCE GRAVEL**

This bid item shall be paid for at the Contract Unit Price per ton. The price for installing maintenance gravel will be payment in full for all costs incurred for placing, spreading, compacting and surface preparation for areas of pavement removal, as directed by the Inspector, for maintaining safe traffic prior to performing permanent pavement replacement. All maintenance gravel shall be 21AA crushed limestone. The certification load tickets must be presented to the Inspector at the time of delivery. All costs shall be included in the contract unit price for "**Maintenance Gravel, Ton**".

## **7. DEWATERING**

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

## **8. DUST CONTROL**

The contractor shall provide adequate measures to control dust caused by this operation. The methods employed, and frequency of application shall be as approved by the Inspector. Payment for "DUST CONTROL" shall be included in the contract as an incidental item, and not paid separately.

## **9. PROPERTY IRONS**

All property irons and monuments disturbed or destroyed by the Contractor's operations shall be replaced by a Registered Land Surveyor provided by or caused to be provided by the Contractor at the Contractor's expense.

## **10. MAILBOXES, LANDSCAPING, LIGHTING, PAVERS, ETC.**

Contractor shall protect all mailboxes, decorative landscaping, yard lights, stone pavers or headwalls, and the like, located in the area of construction. Any such items located in the public right-of-way displaced by construction activities shall be carefully salvaged and placed on the property owner's property. Mailboxes shall be reinstalled in their original location by the Contractor at no additional cost to the Village. Payment for "MAILBOXES, LANDSCAPING, LIGHTING, PAVERS, ETC" shall be included in the contract as an incidental item, and not paid separately.

## **11. FENCING**

If any fencing is disturbed due to the Contractor's operations, he shall provide temporary snow fencing for the protection of the public and he shall replace the disturbed fence with a similar type at original location unless otherwise noted on the plans. Payment for "FENCING" shall be included in the contract as an incidental item, and not paid separately

## **12. TREE PROTECTION**

It is the Contractor's responsibility during construction to protect trees and perform tree trimming only at the direction of the inspector. Payment for any allowed tree trimming shall be included in the contract as an incidental item, and not paid separately. Tree removal will only be allowed at the direction of the inspector.

## **13. SOIL EROSION AND SEDIMENTATION CONTROL AND CLEAN-UP**

Soil Erosion and Sedimentation Control (SESC) and Clean-up shall include the installation of temporary SESC measures, the removal of said temporary SESC measures after the project has been completed, the regular maintenance, repair, cleaning and/or replacement of the temporary SESC measures during the course of the project, etc.

Temporary soil erosion measures shall be placed at the back of curb and/or along the property line, in any catch basins that may be affected by construction activity, and as directed by the inspector to prevent sediment from being deposited on private property or in the public right-of-way. Payment for "SOIL EROSION AND SEDIMENTATION CONTROL AND CLEAN-UP" shall be included in the contract as an incidental item, and not paid separately.

#### **14. PRIVATE LAWN IRRIGATION SYSTEMS**

The Contractor is advised that some properties may contain lawn irrigation systems between the property line and the edge of street pavement. Property owners will be notified at least two weeks in advance of any work on the Project and requested to relocate any irrigation system to areas outside of the line of construction.

If the property owner fails to relocate any irrigation system located in the public right-of-way, the Contractor will not be held responsible for any damage to such system. If the Contractor cuts the system during construction, Contractor shall cap the system pipe and witness the location of the cap with a wooden stake for the property owner's use and place any salvaged sprinkler heads on the property owner's property. Capping and marking shall be incidental to the work, and at no additional cost to the Village.

If the property owner flags the location of all sprinkler lines and heads located near the line of work and the Contractor cuts the system outside the limit of the public right-of-way during construction, Contractor shall be responsible for repairing the damage at no additional cost to the Village.

#### **15. WATER STOP BOXES in PAVEMENT**

A PVC sleeve shall be provided around all water stop boxes located in pavement replacement areas. Payment for such sleeves shall be included in the contract as an incidental item, and not paid separately.

#### **16. PERMITS**

Oakland County Water Resources Commissioner (OCWRC): The Contractor shall secure a "SOIL EROSION PERMIT" from the OCWRC prior to commencing construction, if so required. Any expenses for bond, permit and administrative fees, inspection and testing required by the OCWRC shall be paid for by a direct reimbursement.

#### **17. TRAFFIC CONTROL**

This work includes all labor, equipment, and materials necessary to construct the necessary traffic control measures. Traffic is to be maintained in accordance with the Michigan Manual of Uniform Traffic Control Devices (MMUTCD) current edition, and MDOT Standard Plans and Specifications. All proposed traffic control plans require approval from the engineer and the jurisdictional agency prior to implementation.

The contractor shall coordinate this work with other contractors performing work within the construction influence area or adjoining areas to avoid conflicts in the maintenance of traffic, construction signing, and to provide for the orderly progress of contractor work.

Local access to all business and private properties shall be maintained at all times. Payment for "TRAFFIC CONTROL" shall be included in the contract as an incidental item, and not paid separately.

#### **18. INCIDENTAL COSTS**

Unless otherwise indicated on the Drawings or in these Specifications, all site restoration, including, but not limited to, ditch restoration; minor line or grade adjustments; soil erosion and sedimentation control and clean-up; fence removal and replacement; mailbox removal and replacement; brush or tree (under 6" dia.) removal, tree trimming, traffic control; road, shoulder, driveway repair shall be completed by the Contractor in accordance with the Contract Documents and considered as incidental to the contract.

## Lead Service Line Inventory Years 1 -3

LSLR	Address	Street	Service Line Material	Service Line Material	Map #	LSLR Type
			(System-Owned)	(Customer-Owned)		(Public, Full, Private)
1	30 Beebe St	Beebe St	Unknown non-lead	Galvanized	3	Private
2	31 Beebe St	Beebe St	Unknown non-lead	Galvanized	3	Private
3	204 Lake St	Lake St	Plastic	Galvanized	3	Private
4	238 Lake St	Lake St	Unknown non-lead	Galvanized	3	Private
5	318 Lake St	Lake St	Unknown non-lead	Galvanized	3	Private
6	332 Lake St	Lake St	Unknown non-lead	Galvanized	3	Private
7	340 Lake St	Lake St	Unknown non-lead	Galvanized	3	Private
8	114 N Andrews St	N Andrews St	Unknown non-lead	Galvanized	3	Private
9	165 N Andrews St	N Andrews St	Unknown non-lead	Galvanized	3	Private
10	83 N Andrews St	N Andrews St	Unknown non-lead	Galvanized	3	Private
11	97 N Andrews St	N Andrews St	Unknown non-lead	Galvanized	3	Private
12	98 N Andrews St	N Andrews St	Unknown non-lead	Galvanized	3	Private
13	138 N North Shore Dr	N North Shore Dr	Unknown non-lead	Galvanized	3	Private
14	44 N North Shore Dr	N North Shore Dr	Unknown non-lead	Galvanized	3	Private
15	55 N North Shore Dr	N North Shore Dr	Unknown non-lead	Galvanized	3	Private
16	56 N North Shore Dr	N North Shore Dr	Unknown non-lead	Galvanized	3	Private
17	72 N North Shore Dr	N North Shore Dr	Unknown non-lead	Galvanized	3	Private
18	84 N North Shore Dr	N North Shore Dr	Unknown non-lead	Galvanized	3	Private
19	164 W Flint St	W Flint St	Unknown non-lead	Galvanized	3	Private
20	176 W Flint St	W Flint St	Unknown non-lead	Galvanized	3	Private
21	189 W Flint St	W Flint St	Unknown non-lead	Galvanized	3	Private
22	197 W Flint St	W Flint St	Unknown non-lead	Galvanized	3	Private
23	306 W Flint St	W Flint St	Unknown non-lead	Galvanized	3	Private
24	318 W Flint St	W Flint St	Unknown non-lead	Galvanized	3	Private

Table of Contents

LSLR LOCATIONS  
MAP 3



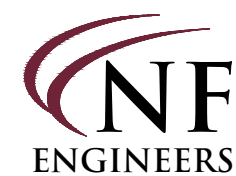
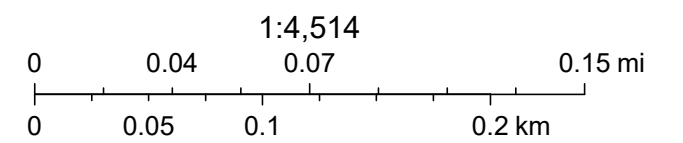
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- Watermain Valves
- ⓘ Watermain Hydrant
- Watermains
- Watermain Hydrant Lead
- Tax Parcel



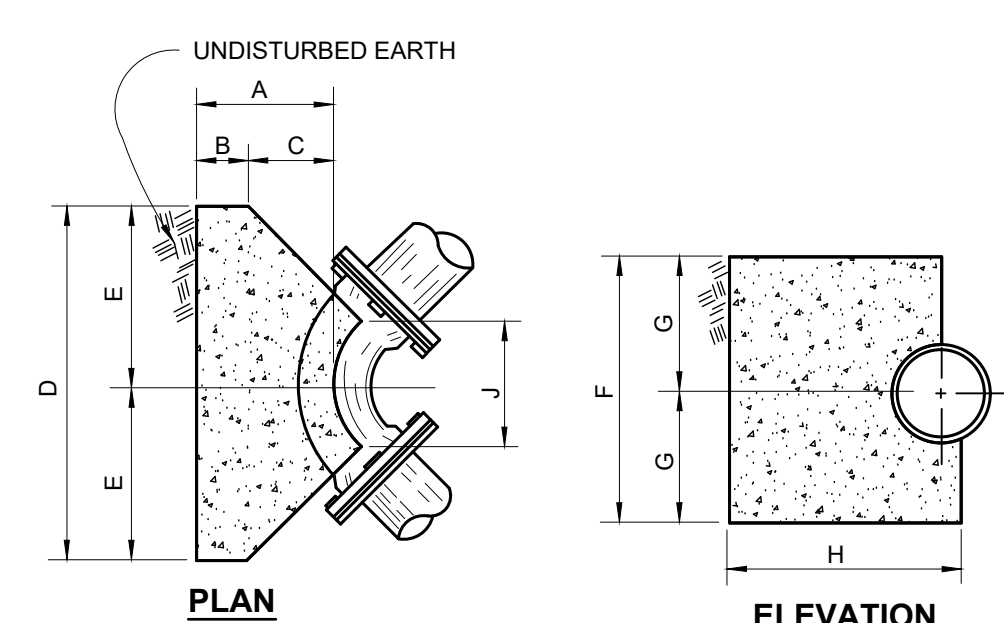
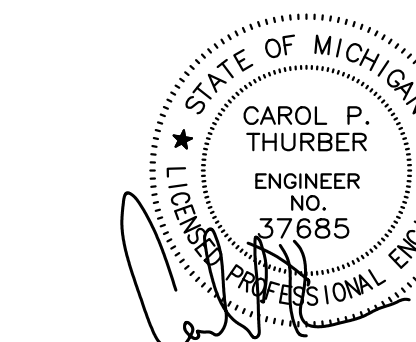
**VILLAGE OF LAKE ORION  
LEAD SERVICE LINE REPLACEMENT YEARS 1 - 3**

NFE Job No. O823  
JUNE 2025



**NOWAK & FRAUS ENGINEERS**  
48680 VAN DYKE, STE 200  
SHELBY TWP., MI 48317

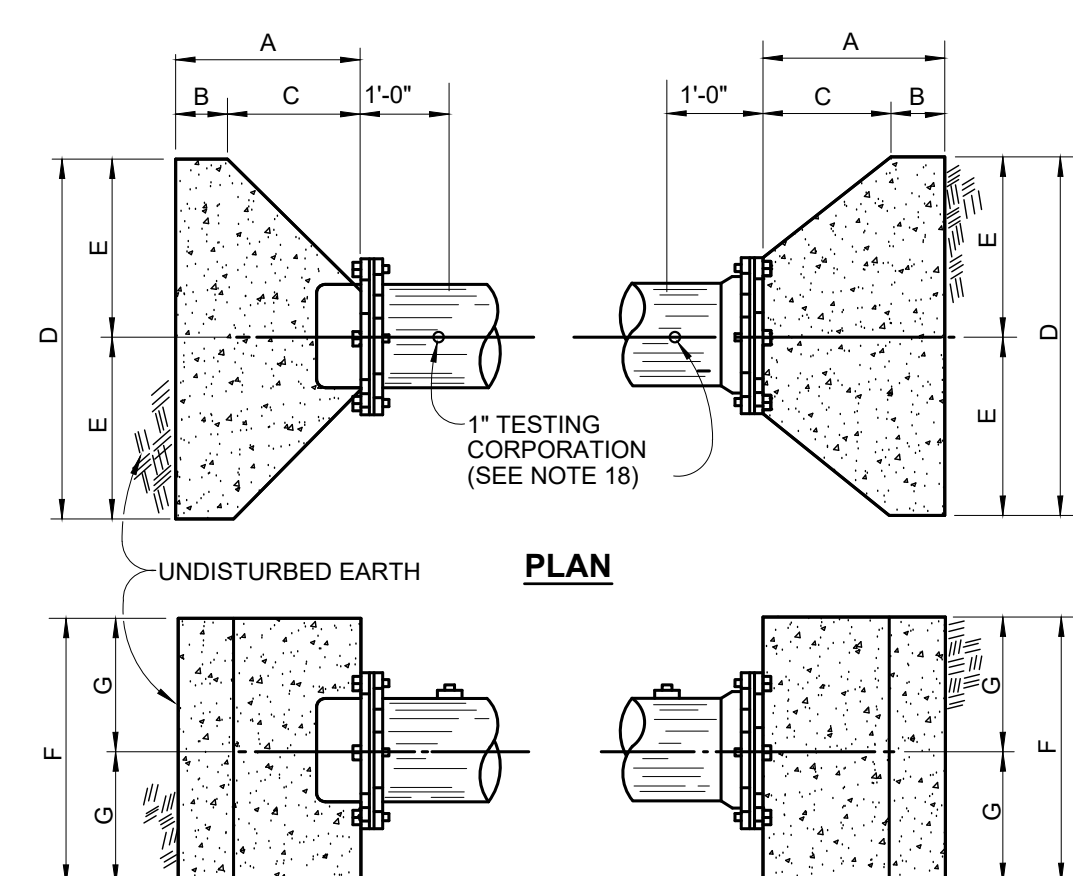




ANGLE	A (MIN.)	B (MIN.)	C	D	E	F	G	H (MIN.)	J	
6"	45°	1'-2"	0'-9"	0'-9"	1'-6"	0'-9"	1'-6"	0'-9"	1'-8"	0'-10"
6"	90°	1'-5"	0'-9"	0'-9"	2'-0"	1'-0"	2'-0"	1'-0"	1'-8"	0'-10"
6"	45°	1'-9"	0'-9"	1'-2"	2'-4"	1'-3"	2'-0"	1'-0"	1'-11"	1'-4"
6"	90°	1'-9"	0'-9"	1'-2"	3'-4"	1'-8"	2'-6"	1'-3"	1'-11"	1'-2"
12"	22-1/2°	1'-9"	0'-9"	1'-2"	2'-6"	1'-3"	2'-0"	1'-0"	2'-4"	1'-4"
12"	45°	2'-1"	0'-9"	1'-4"	3'-6"	1'-6"	2'-8"	1'-3"	2'-4"	1'-4"
12"	90°	2'-1"	0'-9"	1'-4"	5'-0"	2'-2"	3'-0"	1'-6"	2'-4"	1'-8"
18"	22-1/2°	1'-9"	1'-2"	1'-8"	3'-4"	1'-8"	2'-6"	1'-3"	3'-0"	1'-2"
18"	45°	2'-5"	1'-2"	1'-8"	5'-4"	2'-8"	3'-0"	1'-8"	3'-0"	2'-8"
18"	90°	2'-5"	1'-2"	1'-8"	6'-0"	3'-0"	3'-0"	2'-0"	3'-0"	2'-8"
24"	90°	4'-7"	1'-0"	3'-7"	10'-0"	5'-0"	7'-0"	3'-6"	5'-4"	2'-4"

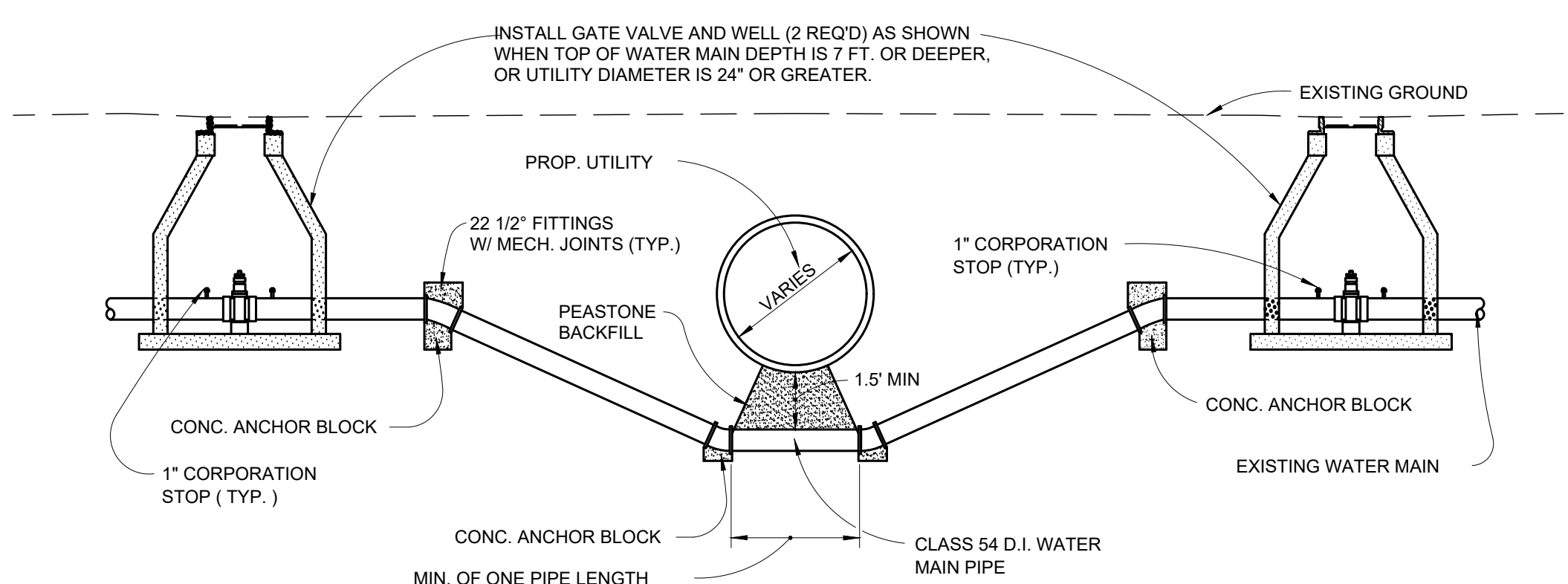
\* 90° BENDS TO BE INSTALLED ONLY WITH WRITTEN APPROVAL FROM THE VILLAGE

**CONCRETE THRUST BLOCKS FOR HORIZONTAL BENDS**



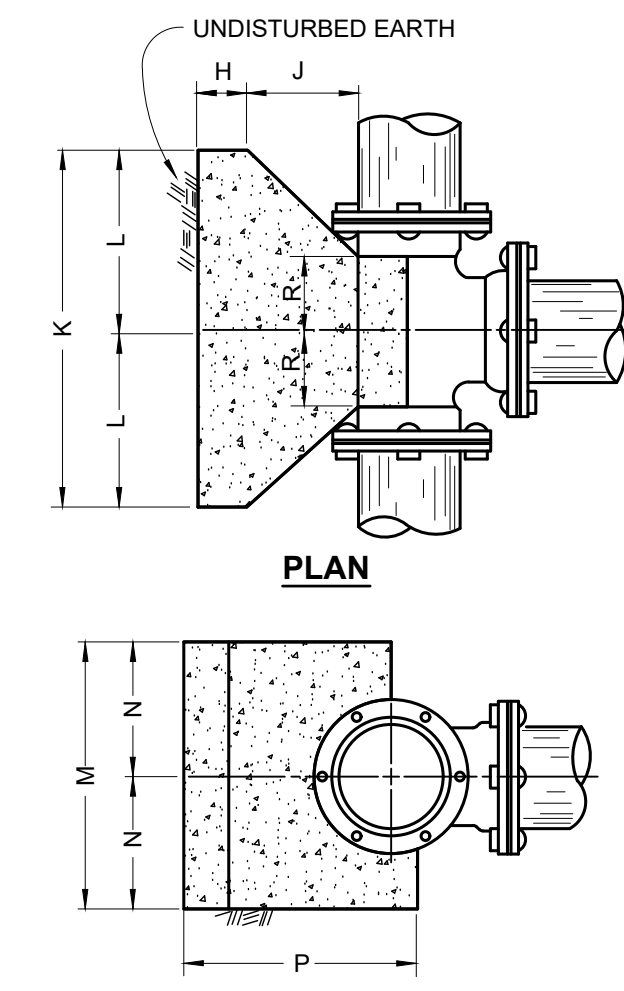
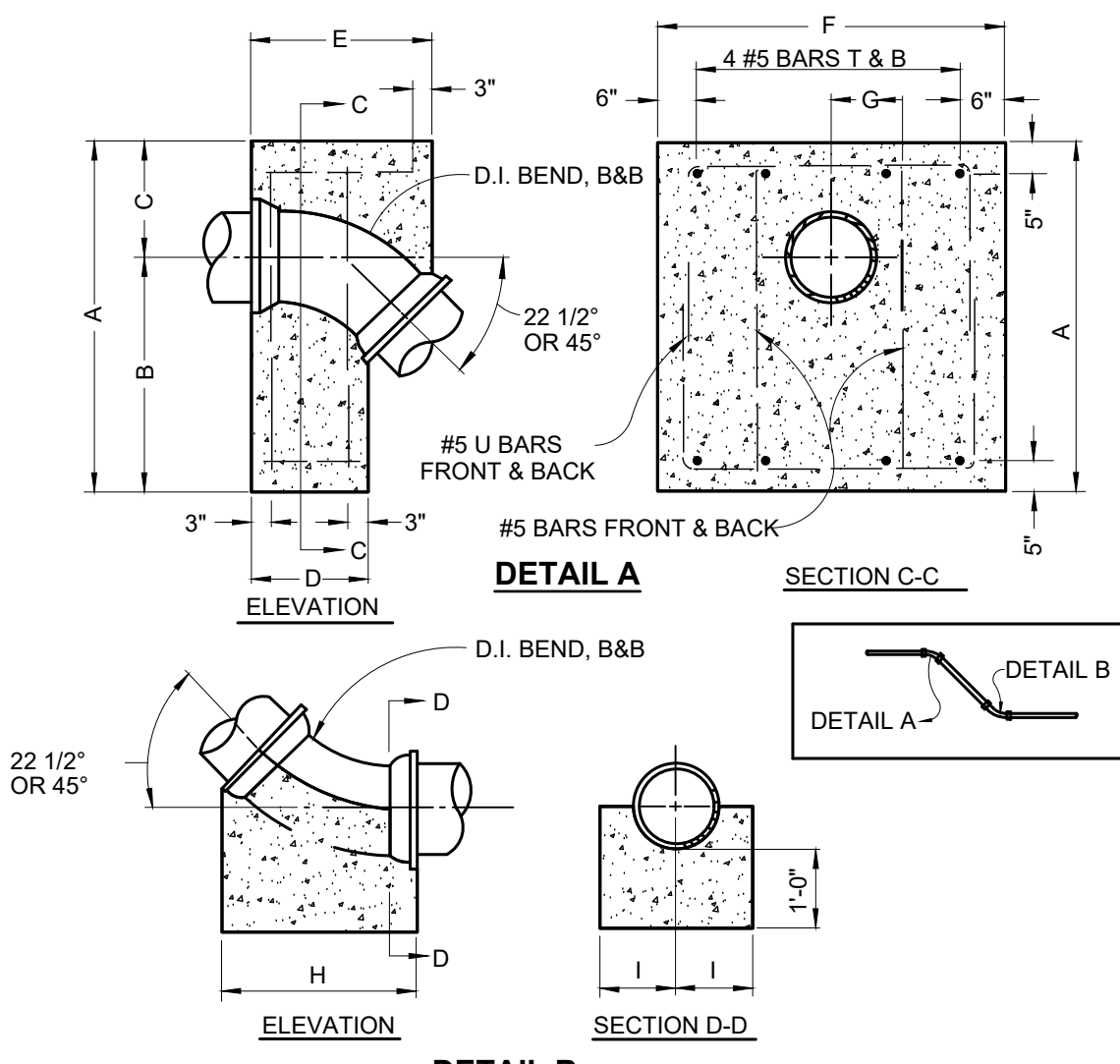
SIZE	A	B	C	D	E	F	G
6"	1'-11"	0'-9"	1'-2"	3'-0"	1'-6"	2'-0"	1'-0"
12"	2'-1"	0'-9"	1'-4"	4'-0"	2'-0"	3'-0"	1'-8"
18"	2'-8"	1'-0"	1'-8"	5'-0"	2'-4"	4'-0"	2'-0"
24"	4'-2"	1'-6"	2'-8"	8'-0"	3'-0"	4'-0"	2'-0"

**CONCRETE THRUST BLOCKS FOR CAPS**



**VERTICAL ADJUSTMENT FOR WATER MAIN**

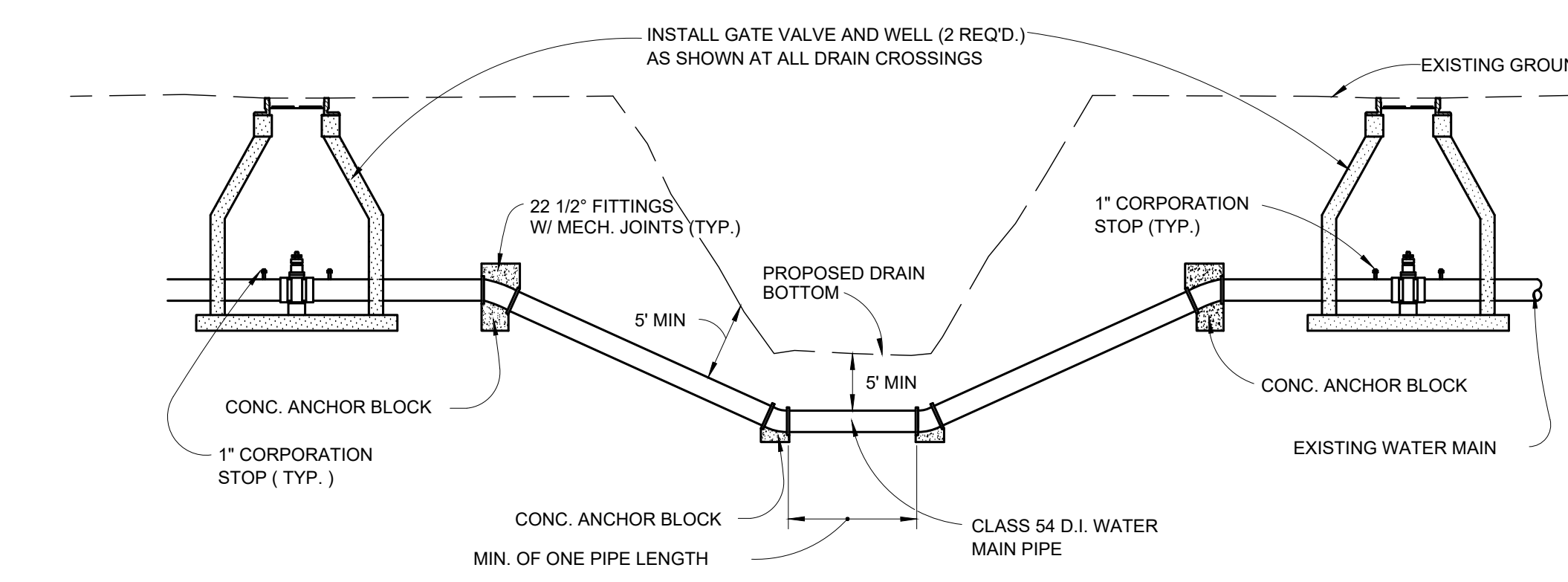
- NOTES:**
1. USE STANDARD BEDDING
  2. SUBGRADE ELEVATION GIVEN ON PLANS
  3. THE CONTRACTORS SHALL CHLORINATE AND PRESSURE TEST THE SECTION OF ADJUSTED WATER MAIN AT 150 P.S.I. PRIOR TO PLACING IN SERVICE.
  4. VERTICAL ADJUSTMENT OF EXISTING WATER MAIN INCLUDING GATE VALVES SHALL BE INCLUDED IN THE PROJECT.
  5. FIELD LOCK GASKETS SHALL BE REQUIRED WHERE MECHANICAL JOINTS ARE NOT USED. (USE OF FIELD LOCK GASKETS REQUIRES PRIOR APPROVAL OF THE VILLAGE).



CODE	TEE SIZE			
	8"x8" 12"x8" 18"x8"	12"x12" 18"x12"	18"x18"	
H	0'-9"	0'-9"	1'-0"	
J	0'-9"	1'-3"	1'-4"	
K	2'-8"	4'-0"	4'-8"	
L	1'-4"	2'-0"	2'-4"	
M	2'-0"	3'-0"	4'-8"	
N	1'-0"	1'-6"	2'-4"	
P	8"	2'-0"	2'-10"	
R	12"	2'-10"	3'-4"	3'-6"
R	8"	0'-7"		
R	12"	0'-8"	0'-10"	1'-0"
R	18"	0'-8"	0'-10"	1'-0"

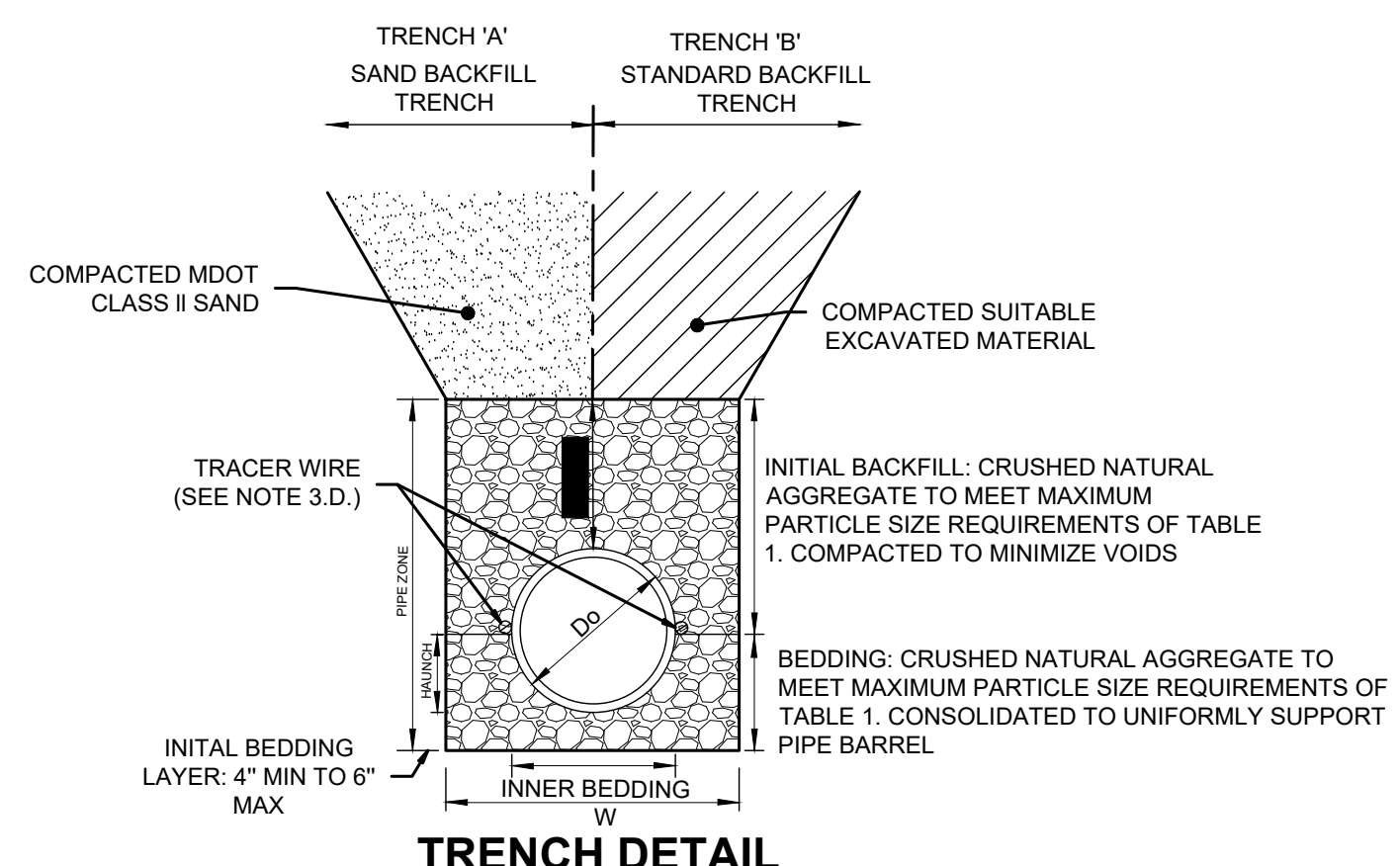
NOTE - THRUST BLOCKS FOR 6" TEES SHALL MATCH THE REQUIREMENTS FOR 8" TEES.

**CONCRETE THRUST BLOCKS FOR TEES**



**DRAIN CROSSING**

- NOTES:**
1. USE STANDARD BEDDING
  2. SUBGRADE ELEVATION GIVEN ON PLANS
  3. THE CONTRACTORS SHALL CHLORINATE AND PRESSURE TEST THE SECTION OF ADJUSTED WATER MAIN AT 150 P.S.I. PRIOR TO PLACING IN SERVICE.
  4. VERTICAL ADJUSTMENT OF EXISTING WATER MAIN INCLUDING GATE VALVES SHALL BE INCLUDED IN THE PROJECT.
  5. FIELD LOCK GASKETS SHALL BE REQUIRED WHERE MECHANICAL JOINTS ARE NOT USED. (USE OF FIELD LOCK GASKETS REQUIRES PRIOR APPROVAL OF THE VILLAGE).



**TRENCH DETAIL**

- NOTES:**
1. FLEXIBLE PIPES ARE CONSIDERED PIPES THAT WHEN INSTALLED UNDERGROUND ARE DESIGNED TO DEFLECT UNDER LOAD AND INCLUDE: DUCTILE IRON, POLYVINYL CHLORIDE (PVC), AND HIGH DENSITY POLYETHYLENE (HDPE) PIPES. DO NOT COMPACT INNER BEDDING OF INITIAL BEDDING LAYER.
  2. CAREFULLY EXCAVATE BELL OR COUPLING HOLES FROM THE INITIAL BEDDING LAYER.
  3. SHOVEL SLICE BEDDING MATERIAL IN THE HAUNCH AREA ALONG THE BOTTOM CIRCUMFERENCE OF THE PIPE TO CONSOLIDATE BEDDING AND UNIFORMLY SUPPORT THE PIPE BARREL.
  4. COMPACT INITIAL BACKFILL MATERIAL IN LIFTS NOT EXCEEDING 6 INCHES BY HAND TAMPING AROUND AND DIRECTLY ABOVE PIPE TO MINIMIZE VOIDS.
  5. DO NOT USE MECHANICAL COMPACTION EQUIPMENT DURING INITIAL BACKFILL OPERATIONS UNTIL MATERIAL HAS BEEN BROUGHT TO 12 INCHES ABOVE THE TOP OF PIPE BARREL.
  6. COMPACT SAND BACKFILL AND STANDARD BACKFILL TRENCHES OUTSIDE OF PIPE ZONES TO NOT LESS THAN 95% OF THE MAXIMUM UNIT WEIGHT IN LIFTS NOT EXCEEDING 12 INCHES.
  7. FOR MINIMUM TRENCH WIDTHS, REFER TO TABLE 2.
  8. MAXIMUM TRENCH WIDTHS:  
 DUCTILE IRON - Do + 2Do UNLESS MINIMUM TRENCH WIDTH IS GREATER THAN 18"  
 PVC OR HDPE - MAX TRENCH WIDTH SHALL NOT EXCEED MINIMUM MORE THAN 18"
  9. IF THE PIPE IS LOCATED BENEATH THE GROUND WATER TABLE, THE PIPE ZONE SHALL BE WRAPPED IN A GEOTEXTILE SEPARATOR TO MINIMIZE MIGRATION OF SOIL INTO THE PIPE ZONE.

**TABLE 1**  
 MAXIMUM PARTICLE SIZE VS. PIPE SIZE

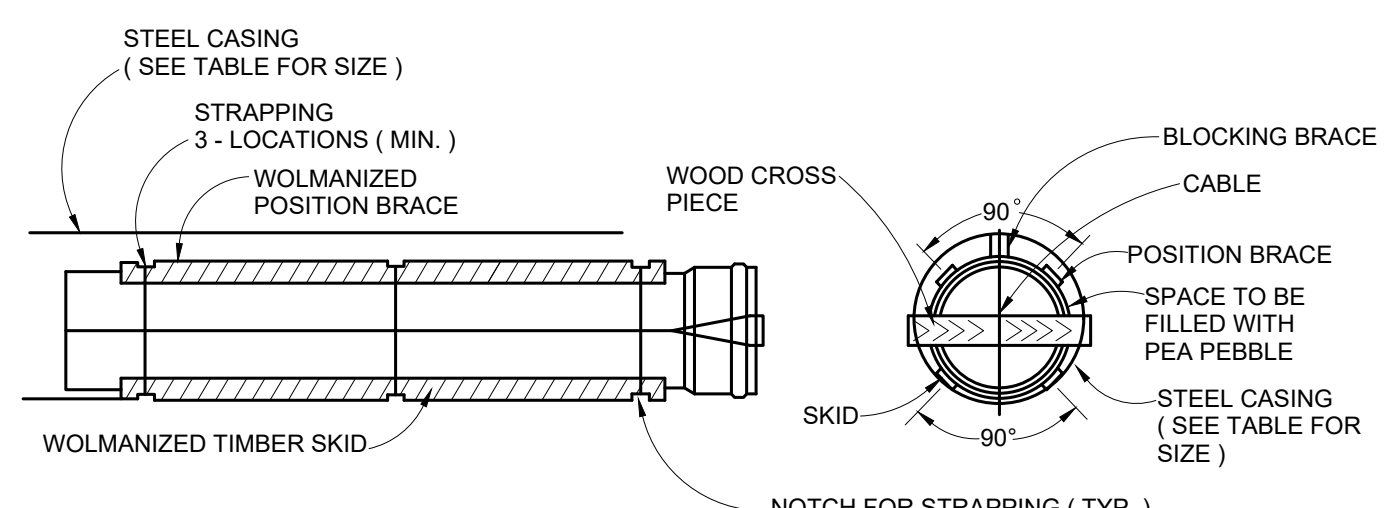
DUCTILE IRON	
NOMINAL PIPE SIZE (IN)	MAXIMUM PARTICLE (IN)
6+	1 1/2
PVC OR HDPE	
NOMINAL PIPE SIZE (IN)	MAXIMUM PARTICLE (IN)
6 TO 8	3/4
10 TO 15	1
16+	1 1/2

**TABLE 2**  
 MINIMUM TRENCH WIDTH TABLE (IN.)

DUCTILE IRON	
NOMINAL PIPE SIZE (IN)	TRENCH WIDTH, W
6+	Do + 24
PVC OR HDPE	
NOMINAL PIPE SIZE (IN)	TRENCH WIDTH, W
4-24	Do + 12
24+	Do + 24

**ANCHORAGE FOR VERTICAL BENDS**

DIAM	VERTICAL BEND ANGLE	DIMENSION-INCHES								
		A	B	C	D	E	F	G	H	
6"	22-1/2°	3'-0"	1'-8"	1'-4"	1'-4"	1'-7"	2'-8"	0'-8"	1'-9"	1'-0"
8"	45°	4'-0"	2'-0"	1'-8"	1'-8"	1'-8"	3'-2"	0'-10"	2'-0"	1'-0"
12"	22-1/2°	4'-0"	2'-0"	1'-8"	1'-7"	2'-0"	4'-0"	0'-10"	2'-6"	1'-0"
12"	45°	4'-8"	3'-0"	1'-6"	1'-4"	2'-4"	5'-0"	0'-11"	2'-6"	1'-0"
18"	22-1/2°	4'-8"	2'-10"	1'-8"	1'-7"	2'-2"	5'-0"	0'-11"	2'-4"	1'-8"



NOTE: THE ENDS OF THE CASING SHALL BE SEALED AFTER THE WATER MAIN IS INSTALLED THROUGH THE CASING

**STEEL CASING REQUIREMENTS**

PIPE SIZE	RECOMMENDED MINIMUM CASING DIAMETER (O.D.)	MINIMUM CASING WALL THICKNESS
4"	12.75"	.375"
6"	14"	.375"
8"	16"	.375"
12"	20"	.375"
16"	24"	.406"
24"	36"	.532"

**STEEL CASING REQUIREMENTS**  
 NOT TO SCALE