



# HOFFMAN ESTATES

GROWING TO GREATNESS

February 6, 2024

**SUBJECT: VILLAGE OF HOFFMAN ESTATES  
BATAVIA LANE INFRASTRUCTURE IMPROVEMENTS  
ADDENDUM NO. 1**

To Whom It May Concern:

Please refer to the following changes and clarifications to the above bidding documents:

1. The Village is receiving \$250,000 of DCEO grant funding for this project with the balance of funds from local sources. The Business Enterprise Program utilization plan applies only to the grant funding amount (\$250,000). The total goal would be 28% (18% MBE, 10% WBE) of \$250,000 or minimum of \$70,000 of total work in the contract.
2. The Business Enterprise Program utilization plan is set as a goal. However, the plan is required to be approved by DCEO prior to the Village receiving grant funding. It is not expected that DCEO will approve a good faith plan short of the goal and bidders should provide evidence their bid meets the full goal amount.
3. Please see revised Water Main special provision. Water main fittings meeting requirements of AWWA specification C-153 has now been included. Additionally, the special provision has been edited to remove reference of cathodic protection and include the use of polyethylene wrapping.
4. Please see revised Water Service Connection special provision. The special provision has been revised to remove reference to 1" water service and include reference to 1 1/2" water service, consistent with plan references.
5. Approval of a live sewer bypass is required prior to commencing sanitary sewer replacement. It shall be assumed that max flows within the existing sewer reach 1,000 gpm.
6. Water main casing pipe is not required to be steel and shall meet requirements of water main quality pipe per the Standard Specifications for Water and Sewer Construction in Illinois.

**THESE CHANGES TO THE ABOVE DOCUMENTS MUST BE REFLECTED IN THE BIDS SUBMITTED TO THE VILLAGE. THE ABOVE CLARIFICATION HAS BEEN MADE TO ASSIST YOU IN PREPARING YOUR PROPOSAL.**

**PLEASE SIGN BELOW TO VERIFY RECEIPT OF THE ADDENDUM AND RETURN WITH YOUR BID.**

Company/Bidder: \_\_\_\_\_

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

Name & Title: \_\_\_\_\_

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

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### WATER MAIN

Description. The Contractor shall furnish and install the proposed water main of the diameter specified at the locations shown on the plans or as directed by the Engineer. The water main shall include excavation, granular bedding, installation of the water main and fittings, testing and chlorination of the water main, backfill and compaction of the trench and all incidental items required for a complete and operational water main.

Before construction can begin, an approved IEPA permit must be received by the Village of Hoffman Estates.

Water main pipe shall be ductile iron pipe conforming to ANSI A21.51 or AWWA C151 within a minimum thickness of Class 52. All pipe shall have a minimum laying length of 18 feet. Pipe joints shall be push-on joints or mechanical joints conforming to AWWA C-111 (ANSI 21.11). All ductile iron pipe shall be cement-mortar lined in accordance with AWWA C-104 (ANSI A21.4). The exterior of ductile iron pipe shall be coated with a layer of arc-sprayed zinc per ISO 8179. The mass of the zinc applied shall be 200 g/m<sup>2</sup> of pipe surface area. A finishing layer topcoat shall be applied to the zinc. The coating system shall conform in every respect to ISO 8179-1 “Ductile iron pipes – External zinc-based coating – Part 1: Metallic zinc with finishing layer (ISO 2004).”

Water mains and appurtenances shall be installed in conformance with AWWA C-600, the material manufacturer's recommendations, the Standard Specifications for Water and Sewer Main Construction in Illinois and these requirements. In case of conflicts between the specifications, the more stringent specification shall apply.

Excavation and backfill for water mains shall conform to the Standard Specifications for Water and Sewer Main Construction in Illinois, latest edition.

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Unless otherwise shown on the plans or indicated in the special provisions, all pipe shall be laid to a minimum depth of six (6) feet and a maximum of eight (8) feet as measured from the proposed ground surface or established grade to the top of the barrel of the pipe.

Sheeting and bracing shall be placed in the ditch, as may be necessary, for the safety of the work and public, for protection of the workers, adjacent properties, or structures and for the proper installation of the work. Sheeting and/or bracing shall be progressively removed as the backfill is placed in such a manner as to prevent the caving in of the sides of the trench or excavation, and to prevent damage to the work.

The trench, unless otherwise specified, shall have a flat bottom conforming to the proposed grade to which the pipe is laid. The pipe shall be laid on four inches of CA-7 washed gravel placed on sound soil cut true and even so that the barrel of the pipe will have a bearing for its full length. Bell holes shall be excavated for joints. Any part of the trench excavated below grade shall be replaced with material approved by the Engineer and thoroughly compacted. Where a firm foundation is not found to exist for the bottom of the trench at the required depth, due to soft, spongy or other unsuitable soil, such unsuitable soil shall be removed for the full width of the trench and replaced with well compacted unwashed gravel or an equal substitute thereof, or crushed stone if such compacted material proved unsatisfactory. The cost of this work shall not be paid for separately, but shall be included in the pay item WATER MAIN.

The pipe shall then be covered with 4" of CA-7 washed gravel. All bedding and granular backfill to 4" over the main shall be included in the cost of WATER MAIN.

Trench backfill shall be required in all locations where the water main trench is under or within two feet (2') of existing or proposed pavements including, but not limited to curb and gutter streets, sidewalks, and driveways. The trench backfill shall be CA-7 washed gravel and shall be mechanically compacted to not less than 95% of the standard laboratory density. This work shall be paid for separately as TRENCH BACKFILL.

Where water is encountered in the trench, it shall be removed during pipe laying and jointing operations. Trench water shall not be allowed to enter the pipe at any time.

~~Where corrosive soils are encountered which may be damaging to the pipe, A polyethylene wrapping, bonding or cathodic protection will be required.~~

Long radius curves, either horizontal or vertical, may be laid with standard pipe by deflections at the joints. Maximum deflections at the pipe joints and laying radius for various pipe lengths are as found in the following standards:

- Ductile Cast Iron Pipe Mechanical Joints AWWA C600.
- Ductile Iron Pipe Push-On Joints AWWA C600.

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When rubber gasketed pipe is laid on a curve, the pipe shall be jointed in a straight alignment and then moved into position. Trenches shall be made wider on curves for this purpose.

Separation from sewers shall conform to Sections 41-2.01B through 41-2.01D of the "Standard Specifications for Water and Sewer Main Construction in Illinois," latest edition.

All valves shall be attached to the water main with a flange connector to facilitate removal of the valve.

Tracer wire (12 gauge copper) with blue insulation shall be installed on the water main continuous run length from valve to valve with accessible termination points at all valves and fire hydrants.

### Fittings

Water main work includes furnishing and installing all tees, wyes, crosses, bends, plugs and reducers necessary to complete the water main installation as shown on the plans. It shall be done in accordance with the applicable portions of Section 40 and 41 of the Water and Sewer Specifications, the Village's Standard Details, and the following.

Fittings shall be ductile iron meeting requirements of AWWA specification ~~C-110 (ANSI 21.10)~~ C-153 (ANSI 21.53). Fittings shall be cement-lined in accordance with AWWA C-104 (ANSI A21.4). All mechanical joint type fitting shall include bolts made of stainless steel.

### Material Testing

Pressure Test. The contractor shall pressure test the water main pipeline at all valved sections. The Engineer shall be notified of the time of the test a minimum of twenty-four (24) hours prior to the test. Pressure testing the pipeline using compressed air will not be allowed. The test shall be made by closing valves or by tied end caps and/or plugs and filling the pipe slowly with water.

The test shall consist of holding a minimum hydrostatic pressure on the pipe of 150 pounds per square inch for a period of two hours based at the lowest elevation of the test section. A two-pound test gauge with a minimum capacity of 160 pounds will be required. It is recommended that the initial pressure be 3 to 5 psi above the minimum required pressure due to possible air in the line. The test shall begin and end at the same pressure. The water necessary to bring to initial pressure shall be measured by a means satisfactory to the Engineer. The leakage shall be considered the amount of water entering the pipeline during the test period. The total allowable leakage shall meet the requirements of AWWA C600-82.

Any defective pipe, fittings, valves, or hydrants shall be replaced with new sections. All fire hydrant auxiliary valves shall be open throughout the test in the test section. At the conclusion of

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the test, a fire hydrant shall be opened to verify that both the pressure drops on the pressure gauge, and that the fire hydrant auxiliary valves are open. The contractor shall provide all of the equipment necessary for the testing.

All testing shall be done prior to the installation of service lines. Suitable means shall be provided for determining the quantity of water lost by leakage under the specified test pressure.

ALLOWABLE LEAKAGE PER 1000 FT OF PIPELINE TABLE\* - gph

Avg. Test Pressure psi	Nominal Pipe Diameter – in.												
	6	8	10	12	14	16	18	20	24	30	36	42	48
250	0.71	0.95	1.19	1.42	1.66	1.90	2.14	2.37	2.85	3.56	4.27	4.99	5.70
225	0.68	0.90	1.13	1.35	1.58	1.80	2.03	2.25	2.70	3.38	4.05	4.73	5.41
200	0.64	0.85	1.06	1.28	1.48	1.70	1.91	2.12	2.55	3.19	3.82	4.46	5.09
175	0.59	0.80	0.99	1.19	1.39	1.59	1.79	1.98	2.38	2.98	3.58	4.17	4.77
150	0.55	0.74	0.92	1.10	1.29	1.47	1.66	1.84	2.21	2.76	3.31	3.86	4.41
125	0.50	0.67	0.84	1.01	1.18	1.34	1.51	1.68	2.01	2.52	3.02	3.53	4.03
100	0.45	0.60	0.75	0.90	1.05	1.20	1.35	1.50	1.80	2.25	2.70	3.15	3.60

\* For pipe with 18-ft nominal lengths. To obtain the recommended allowable leakage for pipe with 20-ft nominal lengths, multiply the leakage calculated from the table by 0.9. If the pipeline under test contains sections of various lengths, the allowable leakage will be the sum of the computed leakage for each size.

Allowable leakage shall not be greater than that computed as follows:

$$\frac{\text{Footage} \times \text{Allowable Leakage} \times 2 \text{ hours}}{\text{in oz 1000 ft}} = \text{Gallon} \times 128 \text{ oz/gal} = \text{Total Allowable Leakage}$$

Leakage is defined as the quantity of water required to be supplied to the newly laid pipe necessary to maintain the 150 pound test pressure.

All pressure tests shall be done in the presence of the Engineer.

When deemed impractical by the Engineer to test the new water main installations between existing valves, a static pressure test using system pressure shall be applied from existing valve to existing valve for 24 hours. Excavations will be kept open and barricaded to observe any leakage.

### Preliminary Flushing

Prior to chlorination, the water main shall be flushed as thoroughly as possible with the water pressure and outlets available. Flushing shall be done after the pressure test is made. It must be understood that such flushing removes only the lighter solids and cannot be relied upon to remove heavy material allowed to get into the main during pipe installation. If no hydrant is installed at the end of the main, a tap should be provided large enough to effect a velocity in the main of at least 2.5 feet per second.

### Disinfection

The point of application of the chlorinating agent shall be at the beginning of the pipeline extension or any valved section of it and through a corporation stop in the top of the newly laid pipe. The injector for delivering the chlorine-gas into the pipe should be supplied from a tap on the pressure side of the gate valve controlling the flow into the pipeline extension.

Water from the existing distribution system or other source of supply shall be controlled so as to flow slowly into the newly laid pipeline during the application of chlorine-gas. The rate of chlorine mixture flow shall be in such proportion to the rate of water entering the pipe that the chlorine applied to the water entering the newly laid pipe shall be at least 50 ppm, or enough to meet the requirements during the retention period. This may require as much as 100 ppm of chlorine in the water left in the line after chlorination.

Valves shall be manipulated so that the strong chlorine solution in the line being treated will not flow back into the existing line supplying water.

Treated water shall be retained in the pipe long enough to destroy all spore-forming bacteria. This retention period shall be at least twenty-four (24) hours. After the chlorine-treated water has been retained for the required time, and after proper flushing, the chlorine residual at the pipe extremities and at other representative points should be at least 1.0 ppm.

In the process of chlorinating newly laid pipe, all valves or other appurtenances shall be operated while the pipeline is filled with a chlorinating agent. Dechlorination may be required before discharging highly chlorinated water into the storm sewer.

All water mains shall be disinfected and tested according to the requirements of the "Standards for Disinfecting Water Mains," AWWA C651-86, and shall be performed by an independent firm exhibiting experience in the methods and techniques of this operation, and shall be done in the presence of the Engineer. The Engineer shall be notified of the time of disinfection a minimum of twenty-four (24) hours prior to the disinfection.

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### Final Flushing and Testing

Chlorinated water will be flushed from all terminations prior to sampling. Bacteriological samples shall be taken at each connection to the existing water main. In accordance with Section 7.1 of the AWWA Standard "at least one sample shall be collected from the new main and one from each branch. In case of extremely long mains it is desirable that samples be collected along the length of the line as well as at its end." The maximum distance allowed between samples in any situation shall be 1000 feet. All branch connections 3" in diameter or larger, greater than or equal to 20 feet in length including building services, are to be considered branches for application of this rule. Samples should never be taken from an unsterilized hose or from a fire hydrant, because such samples seldom meet current bacteriological standards.

Samples shall be taken by the firm performing the disinfection of the main and in the presence of the Engineer. Samples shall be transported iced from the construction site to the IEPA approved laboratory. The laboratory shall be instructed to notify the Engineer of all unsatisfactory results. Two successive satisfactory samples are required. Successive samples shall be taken at least 24 hours apart.

Method of Measurement. Water main (of the diameters specified) will be measured per foot in place. Water mains shall be measured along the center line of the water main from the center of the valve to the center of the valve, fittings, or end of the pipe.

Basis of Payment. Payment for water main shall be made at the contract unit price per foot for WATER MAIN of the appropriate diameter. Payment shall be full compensation for excavation, removal of existing water main in conflict with the proposed water main, polyethylene wrapping, cathodic protection, capping existing tees, bedding, installation of water main, backfill, thrust blocking, jetting, pressure testing, chlorination, and all labor, materials, equipment and incidentals as shown on the plans and as specified herein to construct a complete and operational water main except as noted below. Fittings shall not be paid for separately but shall be included in the cost of WATER MAIN.

Payment for Trench Backfill shall be made at the contract unit price bid per cubic yard for TRENCH BACKFILL.

Restoration of sidewalk, driveways and landscaping shall be measured for payment under their respective bid items. Granular bedding as specified shall be included in the cost of the water main.

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### WATER SERVICE CONNECTION

This work shall conform to detail "Service Connection Detail" and shall consist of existing water service replacement with a new 4" 1 1/2" water service by locating and disconnecting the existing water service from the water main and connection of new 4" 1 1/2" water service to the newly installed water main. This work shall also include the removal and replacement of sidewalks, curbs, and pavement as needed to make the connection where not shown for restoration on the plans. The Village's Public Water Department will field locate existing B-boxes upon request. The Contractor's Work shall include installation of water service lines of copper pipe, Type "K" conforming to ASTM B88, B251 and providing saddle tapping in water main using a drilling machine for water main pipe.

Service connection to the water main shall be with a Mueller double strap bronze service clamp and a corporation stop Mueller H-15020 or approved equal. Direct taps to the water main must be approved by the Director of Engineering. Each service shall have a curb stop Mueller H-15151 and a curb box Mueller H-10302 or approved equal. B-boxes shall not be allowed in paved areas including streets, sidewalks, driveways, etc.

Water service lines shall have a minimum cover of five feet (5'). Copper service lines shall be one continuous length of pipe from the water main to the B-box. Curb stops and curb boxes shall be located in public rights-of-way. Such curb stops and boxes shall not be located in any paved areas unless approved by the Engineering Director.

The horizontal and vertical separation between water service lines and all storm sewers, sanitary sewers, combined sewer or any drain or sewer service connection shall be the same as water main separation previously described. Water pipe previously described shall be used for sewer service lines when minimum horizontal and vertical separation cannot be maintained.

All services disrupted by the construction process shall have a maximum 4 hour outage and must be returned to service by the end of the day of disruption. Any temporary items or labor necessary to comply shall be included in the cost of the associated construction.



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Compacted fine aggregate trench backfilling (FA 6) of all trenches in parkways shall extend up to six (6) inches below the finished grade to allow for topsoil and sodding.

In some cases, where obstructions (trees, driveway, retaining wall, etc.) exist, the new water service pipe routing may be different than the existing (to be abandoned) water service. The Engineer together with the Contractor will field establish the water service routing to the existing B-box to minimize parkway damage. All items addressed, including any water service removal or an additional water service length (due to a different new water service routing) shall be considered included in the contract unit price. Compacted coarse aggregate trench backfill (CA 7, crushed) of all trenches under pavement shall extend up to pavement subgrade. The cost of adjusting buffalo boxes to the finished grade shall be considered included in the cost of this pay item.

**“Long” water services, as described under the Basis of Payment, shall be installed by Horizontal Directional Drilling. Directional drilling costs shall also be considered included in the cost of the pay item.**

Restoration in non-paved areas shall match the restoration requirements specified elsewhere on the project and shall be included in the cost of the service, if restoration areas fall outside of the limits identified on the plans with hatching.

Restoration in paved areas shall include Class D Patching and Portland Cement Concrete Sidewalk, as needed and per applicable special provisions, and shall be included in the cost of the service if restoration areas fall outside of the limits identified on the plans with hatching.

Whenever the existing water service and B-box are located at the same side of the parkway as the proposed water main, then the water service replacement work will be defined and paid for at the contract unit price per each for WATER SERVICE CONNECTION (SHORT).

Whenever the existing water service and B-box are located on the opposite side of the parkway as the proposed water main, then the water service replacement work will be defined and paid for at the contract unit price per each for WATER SERVICE CONNECTION (LONG).

This item price shall include excavation, directional drilling, shoring, dewatering, disposal of materials, tapping, saddle, corporation stop, curb valve, buffalo box, couplings and connections to curb valve, necessary length of copper pipe, joint materials, any required final curb box adjustment to finished elevations, testing, disinfection, removal and replacement of water service lateral from the corporation stop to the splice or curb valve as appropriate, backfilling including aggregate trench backfill material for a complete water service operational installation, restoration with topsoil and sod or pavements for restoration areas outside the limits of those identified on the plans or specified herein, resident notifications, and all work necessary to complete the work.