

City of Kalamazoo
Big Rock Drive Water Main Extension
Project Number 221189

SECTION 01 22 00 - UNIT PRICES - MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes descriptions of the method of measurement and the basis of payment for Unit Price Work under this Contract.
- B. Basis of Contract Payments:
 - 1. Final Contract Price shall be determined by actual quantities installed at unit prices stated in Contractor's Bid.
 - 2. Engineer shall determine actual as-built quantities.
 - 3. All work identified on the Drawings, but not included as a Bid item shall be considered incidental to construction and not paid for directly, except Work that would be considered additional Work due to unforeseen conditions.
 - 4. Unit price payments for individual items shall include everything necessary for such item to function as intended in the system.
 - 5. Owner reserves the right to increase, decrease or eliminate any quantities for items listed in Contractor's Bid or which become a part of the Contract Documents.
 - 6. All work shall be completed in accordance with the City of Kalamazoo Standard Specifications for Water Main and Service Installation 2021.
- C. Items included as incidental to Unit Prices for systems and appurtenances. Unless there is a specific pay item identified, the unit price payment shall include, but not be limited to:
 - 1. Clear, excavate, trench, bedding, trench backfill, compaction, disposal of items for clearing and unsuitable or excess excavated materials.
 - 2. Temporary sheeting, bracing and shoring of excavations.
 - 3. Support, protection, repair, connection or reconnection of existing pipelines and utilities. Cleanup and surface restoration.
 - 4. Water service repair.
 - 5. Sewer lead repair.
 - 6. Bulkhead of pipes to be abandoned.
 - 7. Removal of pipes, valves, structures and appurtenances located within the excavation limits of new utilities whether identified on the removal Drawings or not.
 - 8. Coordination of mail delivery and refuse removal with residents, post office, and refuse collectors.
 - 9. Coordination with public transportation and schools/buses.
 - 10. Support of utility poles and existing underground utilities during excavation and installation of sanitary sewer, water main and storm sewer.
 - 11. Remove, salvage, and replace street signs.
 - 12. Remove and disposal of trees/stumps less than or equal to 8-inches in diameter.
 - 13. Protection, repair, and/or replacement of leaching basins/storm inlets damaged by Contractor.
 - 14. Remove and replace guard rails.
 - 15. The Contractor shall provide a written statement of warranty (Warranty Bond) for a period of 2 years from the date of final acceptance (after all service connections are complete). Warranty work shall cover any necessary cost to repair water main or appurtenance leaks and water main or appurtenance leak damage at no cost to the City of Kalamazoo. Final acceptance will only be given once all water service connections are complete.
- D. City provided materials

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1. City shall provide all items listed in the table below at no cost to the Contractor.
2. Contractor shall be responsible for coordinating delivery of materials by contacting the City's specified supplier a minimum of 10 working days prior to desired delivery. In advance of material delivery, a centralized delivery yard shall be established by the Contractor and agreed upon with the City and City's material supplier on or adjacent to the project site. The Contractor shall supply any materials not explicitly listed below that are necessary to construct the project. These materials shall be incidental to construction. No second hand or salvaged materials shall be allowed or supplied. All supplied products shall be "Buy American" unless otherwise specified and shall comply with the conditions of this section.
3. Contractor shall review the plans and list of City supplied materials during bidding and throughout construction. If Contractor believes additional quantities will be required, Contractor shall immediately notify the City in writing, and the City will provide the additional quantities at no cost to the Contractor (THIS ONLY PERTAINS TO MATERIALS LISTED IN TABLE – CITY PROVIDED MATERIALS). City shall not be responsible for any downtime or construction delays associated with insufficient materials being available during construction. Contractor shall be responsible for all delays and downtime associated with Contractor supplied materials, and shall purchase, provide, and install materials not explicitly listed below that are necessary to construct the project as designed.
4. All City provided materials, not used during construction, shall be returned to the City within one week of water main and service installation completion, unless otherwise directed by the City's project manager. The Contractor shall be responsible for transporting and unloading any excess material from the project site to 415 E. Stockbridge Ave., Kalamazoo, MI. This includes, but is not limited to, partial and full sticks of pipe, partial and full rolls of copper (including tag ends of copper services), valves, fittings, gaskets, bolts, etc.
5. City provided materials shall be used efficiently and waste from cutting pipes, etc. shall be minimized. City provided materials shall be handled with care and protected from damage, vandalism and thievery. Contractor shall be responsible for providing additional materials due to theft, vandalism or damage caused by the contractor.
6. Contractor shall wash the inside of all pipe and fittings with chlorinated water (maximum 200 ppm chlorine solution) immediately prior to placement in the trench. Water pressure and velocity during washing shall not exceed manufacture's recommendations or damage the pipe or fittings.
7. Contractor shall provide 2 year warranty as described in the City of Kalamazoo Standard Specifications for Water Main and Service Installation. Warranty shall cover all City and Contractor provided parts and materials; and associated contractor labor costs.
8. Contractor and Engineer shall track City provided material delivery and usage on a daily basis.

Table - City Provided Materials

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ITEM	QUANTITY
DIP_6 INCH (includes pipe and standard gaskets)	60
DIP_12 INCH (includes pipe and standard gaskets)	5800
FLANGE X PLAIN END STAND PIPE, 6 INCH DIA, 10 FT LONG	2
6" SOLID SLEEVE	2
12" SOLID SLEEVE	3
6" 90 DEG BEND	5
6" 45 DEG BEND	4
12" 45 DEG BEND	12
6" 22.5 DEG BEND	2
12" 22.5 DEG BEND	8
6" 11.25 DEG BEND	2
12" 11.25 DEG BEND	4
6" CAP	1
12" CAP	1
4" PLUG X 2" FPT	1
12" PLUG	2
6" X 2" FPT BLIND FLANGE	2
12" X 4" TEE	1
12" X 6" TEE	14
12" X 12" TEE	2
4" MEGA LUGS W/ GASKET AND BOLT KIT	1
6" MEGA LUGS W/ GASKET AND BOLT KIT	70
12" MEGA LUGS W/ GASKET AND BOLT KIT	100
12" FIELD LOCKING GASKETS	60
6" GATE VALVE	14
12" BUTTERFLY VALVE	10
VALVE BOX	26
HYDRANT	12
6" X 13" SWIVEL X SOLID ADAPTER W/ SWIVEL GLAND	26
12" X 1" SADDLE	30
1.25" COPPER PIPE	3250
1.25" SERVICE BRASS - STREET	30
1.25" SERVICE BRASS - YARD	30
FORD BOX COMPLETE, 1.25 INCH	26
CURB BOX	30
AIR RELEASE VALVE, 2 INCH (CLA-VAL SERIES 36)	1

Item 1.25" SERVICE BRASS – STREET: Shall include one each of the following parts per the Standard Specifications.

Part	Ford #	AY McDonald #
1" CC x 1.25" FC Corporation Stop	FB600-45-NL	74701B, 5142-013
1.25" FCxFC Curb Stop	B22-555-NL	76100, 5142-340

Item FORD BOX COMPLETE, _INCH: Shall include the meter setter (Ford V81-22-33-NL for 0.75" service with 5/8" meter or Ford V84-22-55-NL for 1.25" service for 1" meter), box, and complete meter pit cover.

Item 1.25" SERVICE BRASS – YARD: Shall include one each of the following parts per the Standard Specifications.

Part	Ford #	AY McDonald #	Apollo
1.25" FCx1"MC Angle Valve	KV23-454W-NL	-	-
Meter Connector, 1" MCx1" MIP	C38-44-2-625-NL	74620, 5124-111	-
1" Ball Valve	-	-	77FLF-105-01

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1.3 GENERAL CONDITIONS

- A. Item No. 1 – Mobilization, (Maximum of 5% of Total Bid):
1. Includes:
 - a. Preparatory work and expenses incurred prior to beginning work onsite.
 - b. Transport materials, personnel, and equipment to the job site.
 - c. Establish temporary onsite construction facilities, including but not limited to, port-a-johns.
 - d. Provide insurance, bonds, and other costs associated with the project in general and not included in other pay items.
 - e. All required submittals.
 2. Unit of Measure:
 - a. Lump sum.
 - b. 50% payment will be made after 5% of the original contract amount is earned.
 - c. Final 50% payment will be made after 25% of the contract amount is earned.
- B. Item No. 2 - Cash Allowances - Testing:
1. Includes cash allowance for:
 - a. Material certification.
 - b. Material density/compaction testing.
 - c. Material density/compaction testing requirements shall be per City of Kalamazoo Standard Specifications for Water Main and Services Installation 2021 and RCKC requirements.
 2. Cost for pressure testing and chlorination of the water main shall be included in the water main items. Owner shall perform and pay for bacterial sampling of water main.
 3. Unit of measure:
 - a. Actual dollars paid to independent laboratory.
 - b. General Contractor allowable mark-up is 10%.
 - c. Documented by invoices.
- C. Item No. 3 – Traffic Control:
1. Includes the following in accordance with the most recent Michigan Manual of Uniform Traffic Control Devices:
 2. Furnish, install, and maintain:
 - a. Traffic control devices including barricades and barrels; provide flaggers as necessary.
 - b. Maintain access to residential driveways.
 - c. Detours in accordance with the Project Drawings.
 - d. Traffic Control as required due to Contractor's operations, MDOT or RCKC requirements.
 - e. Provide minimum 5-days notice to MDOT and RCKC before beginning work within ROW.
 3. Unit of measure:
 - a. Lump sum.
 - b. 50% payment shall be made for installation of traffic control devices.
 - c. 50% payment shall be made after removal of traffic control devices and construction within the ROW is complete.

1.4 SOIL EROSION CONTROL

- A. Item No. 4 - Soil Erosion Control:
1. Includes the following:
 - a. Develop and implement the soil erosion control plan including providing and maintaining the minimum required soil erosion and sedimentation control measures and any other measures necessary to adequately control soil erosion and sedimentation.
 - b. Apply for and obtain applicable permits.
 - c. Provide and maintain soil erosion and sedimentation control measures.
 - d. Provide inspections by a certified Storm Water Operator and provide inspection documentation to the City of Kalamazoo weekly and following precipitation events.
 - e. Sweep and clean roadways and sidewalks as necessary to prevent tracking of soil and sediment transport.

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- f. Protect and clean catch basins and storm sewers as required.
 - g. Bypass pump storm water during and after rain events while existing storm sewer is removed.
 - h. Implementing the soil erosion and sedimentation control plan, including providing and maintaining the minimum required soil erosion and sedimentation control measures indicated on the Drawings and any other measures necessary to adequately control soil erosion and sedimentation.
 - i. Provide and maintain tree protection fencing.
 - j. Remove temporary soil erosion and sedimentation control measures after site is stabilized and turf is established.
2. Unit of Measure:
- a. Lump sum.
 - b. 50% payment shall be made for installation of soil erosion and sedimentation control measures.
 - c. 50% payment shall be made upon project completion for operation and removal of soil erosion and sedimentation control measures.

1.5 DEMOLITION AND REMOVALS

- A. Item No. 5 – Remove & Replace, HMA Roadway:
- 1. Includes the following:
 - a. Sawcut, remove (full depth) and dispose of existing bituminous, concrete, composite pavement materials, and aggregate base.
 - b. Milling at ends of pavement removal per requirements of the Road Commission of Kalamazoo County.
 - c. Preparation and compaction of subgrade.
 - d. Furnish, place and compact sand subbase and aggregate base.
 - e. Furnish and place HMA base, leveling and top course mixture to match existing roadway.
 - f. Furnish and place aggregate shoulder and shoulder base.
 - 2. Unit of measure: Lump Sum.
- B. Item No. 6 – Remove & Replace, Driveway:
- 1. Includes the following:
 - a. Includes sawcut, remove, and dispose of existing HMA, concrete, or aggregate drive surfaces.
 - b. Contractor to determine required removal width based on proposed Means and Methods.
 - c. Costs for removal/replacement of surfaces damaged due to Contractor’s activities shall be incidental to construction.
 - d. Preparation and compaction of subgrade.
 - e. Furnish, place and compact aggregate or sand base for appropriate surface type.
 - f. Furnish and place 8-inch thick MDOT 21AA aggregate surface for aggregate drives.
 - g. Furnish and place HMA to match existing asphalt surface for asphalt drives.
 - h. Utilize 6-inch thick “High Early Strength” concrete for concrete drives and protect until concrete is set.
 - 2. Unit of measure: Each
- C. Item No. 7 - Remove and Replace Drive Culvert:
- 1. Includes the Following:
 - a. Removal and disposal of existing culvert.
 - b. Installation of new 12-inch reinforced concrete culvert:
 - 1) Match existing inverts at elevations shown on the plans.
 - 2) Excavate, backfill, and compact trench.
 - 3) Provide pipe bedding and trench backfill material.
 - 2. Unit of measure: Each

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- D. Item No. 8 – Granular Material, Class III:
1. Includes the following:
 - a. Remove and dispose of excavated soil, which in the opinion of the Engineer, is unsuitable for use as either bedding or backfill material.
 - b. Importation and placement of MDOT Class III material.
 2. Unit of Measure:
 - a. Cubic Yard compacted in-place.
- E. Item Nos. 9 and 10 – Removal, Tree:
1. Includes the following:
 - a. Remove trees, including stumps and roots, to 2 feet below finished grade, dispose of stumps and roots.
 - b. Dispose of all tree material not specifically retained by property owner.
 2. The size of trees shall be determined by the average diameter of the tree trunk, measured to the nearest full inch, at a point 4-1/2 feet above the base of the tree from the ground line. Trees having major limbs lower than 4-1/2 feet from the ground shall be measured at the smallest diameter below such limbs.
 3. Unit of Measure
 - a. Several trees originating from the same ground level trunk shall be measured separately.
 - b. Each.

1.6 WATER DISTRIBUTION SYSTEM

- A. Item No. 11 - Water Main, 12" DI
1. Includes the following:
 - a. Install, restrain, flush, pressure test and disinfect water main.
 - b. Excavate, backfill, and compact trench.
 - c. Provide pipe bedding and trench backfill material.
 - d. Dewatering required for pipe installation.
 - e. Additional pressure testing and disinfection shall be completed at the Contractor's expense until results are acceptable by the Owner.
 2. Unit of Measure:
 - a. Lineal foot.
 - b. Measure from center of fitting to center of fitting along centerline of pipe.
- B. Item No. 12 – Water Main, 12" Valve and Box
1. Install valve, restraints, and valve box adjusted to finished grade.
 2. Unit of Measure: Each.
- C. Item No. 13 – Water Main, 12" Fitting
1. Install fitting and joint restraint that are not specifically included with other pay items.
 2. Includes: 12"x12" tees, 12" bends and 12" plugs.
 3. Unit of Measure: Each.
- D. Item No. 14 – Water Main, Hydrant Assembly:
1. Includes the following:
 - a. Install fire hydrant assembly, including main line tee, fire hydrant, valve and box, connecting spool (swivel x solid adapters w/ swivel gland), all 6-inch pipes, fittings and joint restraints.
 - b. Adjust hydrant to final grade according to City of Kalamazoo specifications.
 - c. Adjust valve box to final grade.
 - d. Hydrant extension (if necessary).
 - e. Hydrant Storz connection.
 - f. Hydrant marker.
 2. Unit of Measure: Each.
- E. Item No. 15 – Water Main, Air Release Chamber:

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1. Includes the following:
 - a. Furnish and install air release chamber including all excavation, bedding, backfill, concrete vault and access port.
 - b. Furnish and install all fittings, piping, and appurtenances that are not provided by the City.
 - c. Install City provided 12x4 Tee, 4" plug x 2" FPT and Cla-Val Series 36 air release valve.
 - d. Voids between the water main and concrete vault shall be filled/sealed with link seal and non-shrink grout.
 - e. Drain hole in the chamber bottom shall be filled with pea gravel and 1-foot of pea gravel shall be placed beneath chamber to facilitate drainage.
 2. Unit of Measure: Each.
- F. Item No. 16 – Water Main, PRV Station:
1. Includes the following:
 - a. Furnish and install pressure reducing valve chamber including all excavation, bedding, backfill, concrete vault and access port. HS-20 loading capacity.
 - b. Install City provided main line tees, 6-inch piping, 6-inch valves, 6-inch bends and 6" x 2" FPT blind flanges.
 - c. Furnish and install all chamber internal fittings, piping, and appurtenances, including gaskets for 6" blind flanges.
 - d. Furnish and install two pipe bollards.
 - e. Furnish and install pressure reducing valve.
 - f. Voids between the water main and concrete vault shall be filled/sealed with link seal and non-shrink grout.
 - g. Drain hole in the chamber bottom shall be filled with 6A stone and 1-foot of 6A stone shall be placed beneath chamber to facilitate drainage.
 2. Unit of Measure: Each.
- G. Item No. 17 – Water Main, 1-1/4" Water Service
1. Includes the following:
 - a. Install water main tapping saddle and valve, tap the water main, install type K copper water service pipe, and curb stop and box, including all excavation, bedding and backfill.
 - b. Furnish and install copper disk in yard side of curb stop if yard side service is not installed at the time of curb stop installation.
 - c. Adjust Curb Box to final grade.
 - d. Restore disturbed area.
 2. Unit of Measure:
 - a. Lineal foot from the water main tap location to the center of the curb stop
- H. Item No. 18 – Water Main, 1-1/4" Water Service, Outside of ROW:
1. Includes the following:
 - a. Install connection to curb stop, fittings and appurtenances, and type K copper water service pipe to interior of structure to be served (or connection point to existing well line), including all excavation, bedding and backfill.
 - b. Restore disturbed area.
 2. Unit of Measure: Lineal foot from center of the curb stop to exterior wall face of the structure (or connection point to existing well line).
- I. Item No. 19 – Water Main, 1-1/4" Water Service, Private:
1. Includes the following:
 - a. Only to be used downstream of meter pits.
 - b. Furnish and install connection to K copper water service pipe 5 feet downstream of meter pit, including all fittings and appurtenances.
 - c. Furnish and install 1.25" diameter SDR-9 HDPE pipe with 12 AWG tracer wire to interior of structure to be served (or connection point to existing well line), including all excavation, bedding and backfill.

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- d. 12AWG high strength HDPE insulated tracer wire shall have terminal loop 5' long inside of meter pit and 2' long inside house.
 - e. All new pipe and fittings shall be NSF certified for potable water, rated to minimum 250 psi and joined to new piping using butt fusion or electrofusion. Compression fittings are not allowed.
 - f. Pressure test from the meter pit to the end connection point for one hour at 150 psi, prior to connecting to the structure or existing well line. Leave final connection point exposed for minimum one hour after final connections are completed and water is turned on. Do not backfill until City or City's representative has inspected the work.
 - g. Restore disturbed area.
2. Unit of Measure: Lineal foot from point of connection approximately 5 feet downstream of meter pit to exterior wall face of the structure (or connection point to existing well line).
- J. Item No. 20 – Water Main, 2" Water Service, Private:
1. Includes the following:
 - a. Only to be used downstream of meter pits.
 - b. Furnish and install connection to 1-1/4" K copper water service pipe 5 feet downstream of meter pit, including all fittings and appurtenances.
 - c. Furnish and install 2" diameter SDR-9 HDPE pipe with 12 AWG tracer wire to interior of structure to be served (or connection point to existing well line), including all excavation, bedding and backfill.
 - d. 12AWG high strength HDPE insulated tracer wire shall have terminal loop 5' long inside of meter pit and 2' long inside house.
 - e. All new pipe and fittings shall be NSF certified for potable water, rated to minimum 250 psi and joined to new piping using butt fusion or electrofusion. Compression fittings are not allowed.
 - f. Pressure test from the meter pit to the end connection point for one hour at 150 psi, prior to connecting to the structure or existing well line. Leave final connection point exposed for minimum one hour after final connections are completed and water is turned on. Do not backfill until City or City's representative has inspected the work.
 - g. Restore disturbed area.
 2. Unit of Measure: Lineal foot from point of connection approximately 5 feet downstream of meter pit to exterior wall face of the structure (or connection point to existing well line).
- K. Item No. 21 – Water Main, 1-1/4" Meter Pit:
1. Includes the following:
 - a. Install meter pit per City of Kalamazoo Specifications, including all excavation, bedding and backfill.
 - b. Install specified pipe and fittings in meter pit and prepare all plumbing for meter placement.
 - c. City of Kalamazoo will provide meter and remote/radio. Contractor to install both.
 - d. Restore disturbed area.
 2. Unit of Measure: Each
- L. Item No. 22 – Water Main, House Service Connection:
1. Includes the following:
 - a. Furnish and install connection to new water service from exterior of house, through the foundation (or connecting to existing well line), to the existing house plumbing, including all excavation, bedding and backfill.
 - b. Furnish and install all piping, fittings, and appurtenances to connect new water service to existing house plumbing or existing well piping (if connecting outside of the structure) using a plumber licensed by the State of Michigan.
 - c. Utilizing existing water service penetration through foundation or coring new penetration.
 - d. Capping of existing water supply line at well head and at exterior of house foundation.
 - e. Connect water meter yolk and meter provided by the City using a plumber licensed by the State of Michigan.
 - f. Remove existing water pressure tank if not specifically retained by property owner.

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- g. Restore disturbed area.
 - h. Includes, up to 10 feet laterally of interior plumbing work to relocate a service entrance to the side of the structure with water main frontage, and to allow for meter placement inside the structure in accordance with City of Kalamazoo Standard Specifications for Water Main and Service Installation 2021.
 - i. All pipe and fittings shall be NSF 61 and NSF 372 certified for drinking water.
 - 2. Unit of Measure: Each
- M. Item 23 – Water Main, Service Relocating:
- 1. Includes the following:
 - a. Applies to situations where, more than 10 feet laterally of plumbing is necessary to allow meter placement inside a structure in accordance with City of Kalamazoo Specifications.
 - b. Furnish and install all interior pipe, fittings and supports necessary to facilitate meter placement at the side of the home with water main frontage (preferably front of home), when the existing water/well line enters the back or side of the home and the basement is unfinished.
 - c. Additional interior pipe and fittings shall be routed from the meter location at the front of the home to a location near the pressure tank at the back or side of the home using Type M or Type L Copper Pipe and fittings that are NSF 61 and NSF 372 certified for drinking water.
 - d. Abandon existing service connection by removing pipe from foundation and sealing the existing penetration inside and outside the structure with non-shrink grout.
 - e. All interior plumbing shall be performed by a plumber that is licensed in the State of Michigan.
 - f. The physical connection to the homes plumbing, pressure tank removal and other associated items shall be paid for under other existing pay items.
 - g. All associated methods and materials shall be in compliance with City of Kalamazoo Specifications, Michigan Plumbing Code, MI Act 399, and all other local, state and federal rules and regulations.
 - h. Restoration of unfinished interior surfaces shall be incidental.
 - 2. Pay item may be used where directed by the City or Engineer.
 - 3. Unit of Measure – Lump Sum
- N. Item No. 24 – Water Main, Polyethylene Encasement:
- 1. Includes the following:
 - a. Provide and install polyethylene encasement of water main where groundwater is encountered or as directed by the Owner.
 - b. Polyethylene encasement shall be performed in accordance with City of Kalamazoo Standard Specifications for Water Main and Service Installation 2021.
 - 2. Unit of measure: Linear Feet as measured along the centerline of the water main.
- O. Item No. 25 – Water Main, Well Abandonment:
- 1. Includes the following:
 - a. Abandon existing water supply well using a State of Michigan Licensed Potable Well Driller including:
 - 1) Removal and disposal of existing well pump and well piping from inside well casing.
 - 2) Capping wires and waterproofing termination of electrical connection to well head.
 - 3) Filling of well casing with non-shrink grout or bentonite per requirements of Kalamazoo County Health Department.
 - 4) Cutting and capping of well below grade per requirements of Kalamazoo County Health Department and Michigan Department of Environment, Great Lakes, and Energy (EGLE).
 - 5) Provide well abandonment forms and required documentation to Owner and Kalamazoo County Health Department.
 - b. Restore disturbed area.
 - 2. Unit of Measure: Each
- P. Item No. 26 – Water Main, Service Pressure Reducing Valve:
- 1. Includes the following:

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- a. Furnish and install service pressure reducing valve downstream of water meter if service line pressure exceeds 85 psi, or as required by Michigan Plumbing Code, Etc.:
 - 1) Furnish and install WATTS Lead-Free Pressure Reducing Valve 25 AUB Series, 1" with FNPT Union by FNPT Connections, Cla-Val CRD-L 1", or approved equal.
 - 2) Furnish and install all required fittings between water meter and house plumbing.
 - 3) Set pressure reducing valve to appropriate pressure and test.
2. Unit of Measure: Each

1.7 RESTORATION

- A. Item No. 27 – Restoration, Turf Over Water Main and Services:
 1. Includes the following:
 - a. Regrade surface over areas disturbed by construction and restore to match preconstruction conditions.
 - b. Contractor shall utilize a professional landscaping company whose primary business is landscaping work,
 - 1) Furnish, place, and grade 4-inches of screened topsoil. Includes removal and disposal of any existing soil required to place new topsoil even with existing grade.
 - 2) Place hydroseed or match existing landscaping/surface materials.
 - 3) Place mulch and mulch anchoring where indicated on the drawings or as needed to prevent erosion until turf is established.
 - 4) maintain until vegetation is established, including, watering, fertilizing, reseeding, additional topsoil placement, etc.
 2. Payment shall not be authorized until appropriate vegetation is established.
 3. Unit of measure: Lineal foot as measured along the centerline of the water main outside of pavement areas.