

City of Kalamazoo FY 25 DWSRF LSLR Project Specifications

GENERAL

The intent of this project is to replace all water services that are not copper to copper.

Owner = City of Kalamazoo

Engineer = Anna Crandall, PE

All plumbing materials for water service replacements will be provided by contractor. Contractor to provide gravel, HMA, sidewalk, topsoil, seed, etc.

1. SPECIFICATIONS

The work under this contract shall be performed in accordance with these Project Specifications and the City of Kalamazoo Standard Specifications for Water Main and Service Installation dated 6/14/2021.

In the event of a conflict between the Standard Specifications and these Project Specifications, the Project Specifications shall prevail.

The Michigan Department of Transportation Standard Specifications for Highway Construction 2020 Edition are included by specific paragraph reference.

2. PROJECT AREA

The Contractor shall confine his work to the project area needed for the work. Project area address list and overview map are provided in these specifications. Additional information of service line material by address will be provided to the Contractor upon contract award. Any other area required for equipment, material storage or for construction operation shall be the Contractor's responsibility. The Contractor shall receive written permission from the Owners of adjacent properties before using any portion of the property outside the project area.

The Contractor shall take all necessary precautions to minimize disturbances to the area during the construction period. All damage caused by the Contractor or sub-contractors to the property outside the project area shall be repaired at no expense either to the property owner or to this project.

3. SUMMARY OF WORK

Work to be constructed in this project generally includes furnishing and installing the following:

Existing Water Service Investigation: "Potholing"
Approximately 1300 Water Service Lead Replacements
Approximately 250 Abandon Blinds

All labor, materials, equipment, transportation, and activity or costs necessary for completion of this work shall be included in this contract unless specifically stated otherwise. There may be a few addresses included in these plans and specifications where the non-copper service line has already been replaced by the City of Kalamazoo as an emergency replacement due to high sample results. Under the Michigan Lead Copper Rule, partial lead service line replacements are not allowed. Once the service line is taken out of service for replacement, all non-copper or non-plastic portions of that service line shall be replaced prior to service being reconnected and the water turned back on to reduce particulate lead release.

4. PERMITS

Contractor shall obtain Right-of Way permits and coordinate with City of Kalamazoo Right-of-Way Coordinators throughout the project as moving from street to street.

5. SCHEDULING

The Contractor shall file a construction schedule with the Engineer and Owner and receive approval in writing prior to commencing construction.

The Contractor and the Construction Observer shall coordinate/communicate schedule of shut down and reconnection of service with Resident/Bill Payer for each property.

The Construction Observer shall distribute water filters and instructions once new connection is completed.

Certain areas within the project may require street closing. The Contractor shall coordinate his work with the Owner and shall take the necessary precautions required by the Owner to minimize traffic interference.

Deadline for Lead Service Replacement Services:

June 30, 2028;

All costs associated with scheduling shall be considered incidental to the project.

6. MAINTENANCE OF TRAFFIC

Local traffic shall be maintained at all times during construction. All traffic control devices and placement shall be in accordance with the current MDOT Standards and Specifications for Construction or as directed by engineer.

During the progress of work, the Contractor shall accommodate vehicular traffic in road rights-of-way as provided in these specifications. Access to fire hydrants, water and gas valves shall be maintained at all times during construction.

Where streets and driveways are obstructed, the contractor shall place and maintain temporary driveways, ramps, etc., which, in the opinion of the Engineer, are necessary to accommodate the public. The Contractor shall provide access at night and on weekends for all properties in the immediate construction area. Emergency vehicle access shall be maintained at all times.

The Contractor shall be required to keep the surface of the roadway in a smooth, dust free and accessible condition for adjoining properties at all times. Dust control shall also apply to paved roads in the project area and are to be kept clean by the use of a mechanical sweeping device. Maintenance shall consist of grading the disturbed or graveled surface and maintaining the surface free of “wash- boards” and “chuck-holes”, suitable for traffic.

The Contractor shall inform the schools, local police, ambulance services and fire department in advance of his program of street obstruction and detours. Detouring and construction signing shall be in accordance with Michigan Manual of Uniform Traffic Control at the direction of the Owner.

Prior to construction the Contractor shall submit and obtain Owner approval for his traffic control plans, including detour plans and schedules. Full closure requires 2 weeks’ notice to Public Works for media release.

The Owner must approve all detours. The Contractor shall pay for all costs of detours. All costs shall be included under proposal item “Traffic Control”.

Cost of maintaining traffic including detouring, construction signing, and traffic control shall be paid as specified in the proposal form.

7. LIMITATION ON OPERATIONS

The Contractor shall at all times conduct his work so that there is a minimum of inconvenience to the residents, businesses and industries within the project area. Work on City of Kalamazoo Major Streets shall be limited to April through November. Work on City of Kalamazoo Local Streets for this project can occur any time of year, weather dependent. Patches shall be restored with concrete per Exhibit B and milled and paved with HMA when seasonal restrictions are lifted – this is only

acceptable on Local Streets. All Major Streets shall be paved back with HMA. Sections will need to be milled and paved based on patch density and existing pavement condition per the attached Standard Streets Details.

8. PROTECTION OF WORK

The Contractor shall protect the work until it is accepted by the Engineer. Any part of the completed work that is damaged prior to acceptance by Engineer shall be replaced at the Contractor's expense.

9. DUST CONTROL

All haul roads, detour roads and other public and private roads (including backfilled trenches), driveways and parking lots used by the Contractor must be maintained in a dust free condition during the life of this Contract. The control of dust shall be accomplished by sweeping and by the application of dust control materials. The materials and methods of application shall be approved by the Engineer and shall be applied as often as is necessary to control the dust, or if directed to do so by the Owner's representative. If directed to do so, the Contractor shall complete the dust control measures within 24 hours. All spillage on public roadways used as haul routes shall be cleaned daily.

Costs of providing dust control shall be included in the major items of construction. Therefore, no additional payment shall be made.

10. MATERIAL HAUL ROADS

Any spillage on public roadways used as haul routes shall be cleaned daily.

Use of gravel roads is prohibited. Permission to use gravel roads shall be given to Contractor only if Contractor assumes responsibility of maintenance, dust control and restoration of the gravel roads to the satisfaction of the Owner.

11. DIGITAL PHOTOGRAPHS

The Contractor shall digitally photograph entire project area prior to construction. These photographs shall be made available to the Contractor, Engineer and Owner during construction of the project. Payment shall be included in the major items of work.

12. TOPSOIL STRIPPING

The Contractor shall perform clearing, grubbing, and stripping of topsoil. Stripped topsoil shall be stockpiled on the site. The Contractor shall be allowed to use this stockpiled material when placing topsoil on the site and shall provide additional topsoil

as necessary to meet the thickness specified. No fill shall be placed over topsoil or organic material. At completion of construction, topsoil shall be spread uniformly over the disturbed areas. Any excess topsoil shall become the property of the Contractor and properly disposed of offsite.

13. PROTECTION OF NATURAL RESOURCES

The Contractor shall take all necessary steps to prevent damage to fish and game habitats and to preserve the natural resources of the State. Excavation and backfill shall be carried out so as to minimize discharge of damaging material into any stream, lake, or reservoir.

The Contractor shall exercise caution in the discharge of waters from pumps, deep wells, or well point systems in order that such discharges do not cause erosion, siltation, soil depositions, etc., in sewers, streams or other water courses or drainage structures.

The Contractor shall not permit any sand or debris of any kind to enter the existing ditches, streams, storm sewers or culverts.

The rules and regulations of all work shall comply with Part 301 (Inland Lakes and Streams Act), Part 91 (Soil Erosion and Sedimentation Control Act), and Part 303 (Wetlands Protection Act) of Michigan Public Act 451, 1994.

14. SOIL EROSION AND SEDIMENTATION CONTROL (Part 91, P.A. No. 451)

All work shall comply with the rules and regulations of the Michigan Soil Erosion and Sedimentation Control Act (Part 91, Michigan Public Act No. 451, 1994).

These measures have been developed from the Michigan Unified Keying System, described in "Michigan Soil Erosion and Sedimentation Control Guide Book" published by the Land and Water Management Division of MDEQ.

All of these measures shall be in place prior to excavating where required and shall be maintained until construction is complete except 6, "seeding with mulch matting" or aggregate cover, which shall be done immediately after the pipe installation.

Net erosion blankets containing plastic or synthetic net or netting shall no longer be authorized, purchased, nor approved for use. Only Erosion Control Blankets such as North American Green Bionet S150BN, and Western Wood fibers EXCEL SS-2 All Natural (biodegradable jute/scrim netting with leno weave type mesh), or equivalent, are considered acceptable products.

The cost of the above requirements shall be included in the price of the major items of work.

15. DEWATERING

When dewatering of groundwater is required, the Contractor shall limit the dewatering operation to the minimum time and depth required for construction. The Contractor shall submit to the Owner a dewatering plan indicating how dewatering will be accomplished, along with how and where dewatering discharge will be directed and controlled. Dewatering flows shall not be directed immediately to any watercourse. All flow shall be directed to an “ecolobag” or Engineer approved equal sediment trap. The sediment trap shall be located to allow a minimum overland flow 100 feet prior to entering any water course.

Dewatering shall be included in the price of the major items of work.

16. EXCESS DIRT

The Contractor shall remove all excess material resulting from construction and arrange for disposal at a suitable site. Excess material shall be the property of the Contractor and shall be disposed of properly by the Contractor.

17. USE OF SLAG

No slag shall be permitted.

18. EXISTING UTILITIES

As an aid to the Contractor, various utilities and underground structures are shown on the plans. All information concerning shown utilities were taken from field topo and from available records, but the Owner and the Engineer do not guarantee that the location shown on the plans is accurate, nor that additional underground utilities or structures may not be encountered.

The Contractor shall notify Miss Dig and Utility Companies for utility locations before starting any open cut or tunnel construction or before drilling holes for construction purposes. He shall cooperate with the utility companies in any repair, relocation, or other work to be performed on the utility caused by the construction of the contract.

The Contractor shall be fully responsible for the location, protection, relocation, replacement, etc. for all existing underground utilities which may reasonably be expected in any area, regardless of whether or not such utilities are shown on the plans. Items in this category shall include, but not necessarily be limited to; water mains and services, gas mains and services, storm sewer and catch basin leads, telephone, electric, and cable TV wire, etc. Such work shall be considered incidental to the major items of construction unless otherwise noted on the construction drawings.

A. Contractor shall coordinate with the Owner to locate all private utilities.

- B. Sewers (Storm, Culverts, and Under drains)
City of Kalamazoo provides storm sewer service in the project area.
- C. Sanitary Sewer
City of Kalamazoo provides sanitary sewer service in the project area.
- D. Water Main
City of Kalamazoo provides water service in the project area.
- E. Cable
Charter Communications provides cable service in the project area.
- F. Electric Services
Consumers Energy operates the electrical system in the project area.
- G. Gas
Consumers Energy provides natural gas service in the project area.
- H. Telephone
AT&T Michigan provides telephone service in the project area.
- I. Miss Dig
The Contractor shall contact "MISS DIG" not less than 72 hours before starting construction for assistance in locating utilities or for any work to be done on utilities. The toll free phone number is (800) 482-7171.

19. PROTECTION OF UTILITIES

The Contractor shall furnish, install, use, and maintain adequate sheeting, shoring, bracing, and stabilization methods required to ensure the integrity of existing underground utilities both during and after completion of construction. When necessary, the Contractor shall shore and brace existing utility poles which interfere with construction.

The Contractor shall be responsible for repairing all cracks, leaks, breaks, and defects in the utilities during the standard contract guarantee period of two year after acceptance of construction, at no additional cost either to the project owner or the owner of the utility.

Should service provided by public utilities be interrupted by the Contractor, the Contractor shall be responsible for returning all public utilities to normal working order.

Locations of existing utilities are shown using available records. The Owner and the Engineer do not guarantee that the locations shown on the plans are accurate. Additional underground utilities or structures may be encountered. No additional

payment will be made due to unknown or inaccurately located utilities. The Contractor shall notify Miss Dig and Utility Companies for utility locations before starting any earth moving operations.

The Contractor shall coordinate daily construction activities with that of utility companies which may be relocating some of their facilities as required by the project. No claim for additional compensation will be allowed based on delays caused by utility relocations.

Cost for complying with this specification shall be included in major items of work in the proposal. Therefore, no additional payment for these items shall be made.

20. UTILITY POLES

When necessary, the Contractor shall shore and brace utility poles that interfere with construction. Shoring and bracing shall be such that sinking or excessive tilting does not take place. All relocation or removing and replacing of power poles, light poles and telephone poles shall be done in accordance with Utility Owners Standards and all expenses shall be paid for by the Contractor. All arrangements for relocations with the Utility Company Owners shall be done by the Contractor at least 72 hours prior to need for relocations.

21. TELEPHONE

An emergency telephone system (listing of number) shall be set up and given to the Engineer and Owner so that the Contractor may be immediately notified of any unsafe conditions or emergencies encountered during times that the Contractor is not working on the project.

The Contractor shall provide a local number and a local employee so that he may be contacted at any time (including weekends and holidays) 24 hours a day.

22. EXISTING PRIVATE FACILITIES

Existing wells, septic tank, tile field, lawn sprinklers or other facilities disturbed or damaged by the Contractor shall be repaired and restored to working condition before the end of that working day. Under no circumstances will such interruptions be extended overnight. The Contractor shall take necessary precautions not to allow any discharge from the above to enter any lake, stream, or canal along the line of work. Costs for repairs or temporary service caused by the Contractor shall be at his own expense and no claims for extra work will be allowed.

All precautions necessary shall be taken to ensure no damage occurs to homes, including basements.

23. MAIL BOXES

The Contractor shall temporarily relocate mailboxes interfering with construction so that mail service is not interrupted. Mailboxes shall be replaced in a condition, elevation, and location equal to that existing prior to construction in accordance with U.S. Post Office requirements. Costs are incidental.

24. MATERIAL TESTING

The Owner reserves the right to sample and test any of the materials required for the proposed construction, either before or after delivery to the project and to reject any material represented by any sample which fails to comply with the minimum requirements specified.

The Contractor shall furnish all materials reasonably required for sample testing and analysis necessary for the testing of materials as required by these specifications.

The cost of the above testing shall be paid for by the Owner. If any pipe fails to meet the specified requirements, all pipe represented by the sample shall be rejected unless the Contractor can demonstrate through additional tests, at his own expense, that the remainder of the pipe is satisfactory.

As a minimum requirement, the following shall be submitted to the Engineer by the Contractor (at no extra cost to the Owner).

A. Gravels: A gradation analysis.

25. COORDINATION

The Contractor shall coordinate construction with the Owner and Engineer. Contractor shall attend periodic coordination meetings scheduled by the Engineer as necessary.

26. RECORD PLANS

The Contractor shall maintain a set of record drawings throughout the project. The Contractor shall make the drawings available to the Owner and Engineer in a timely manner upon request. A set of record drawings shall be submitted to the Engineer at the completion of the project.

27. WATER SERVICE POTHOLING

Owner records indicate that some service lines are of known materials. These known service lines will not require potholing investigation. Contractor shall expose unknown water service at the water main connection and approximately 3' from the curb box on each side for viewing by the Authorized Representative and for a ford box, if present, starting approximately 3' from the ford box along the private line toward the house, until the private line coupling is observed. It is up to the Contractor whether this is done by vactor truck or open excavation. Some service materials are

known for yard and unknown from main to curb box. However, potholing will be paid for one each per house whether yard or street or private line is known or unknown or any combination. This item shall include restoration of the pothole. Hard surface restoration will be paid separately as **Road or Driveway Remove & Replace COK (Exhibit B)**. Backfilling of the pothole shall take place immediately after viewing and data collection by the Authorized Representative.

28. WATER SERVICE SHORT & LONG

This item includes replacement of the water service from the water main (including new tap) to the curb box including the curb box. Removal and replacement of road or driveway cross-section shall be paid for under item road removal and replacement (See attached Exhibits A, B, and C). Sidewalk removal and replacement is to be paid separately. Contractor may bore service if desired. This item shall include lawn restoration as well. Distinction of long and short is simply if the water main is on the house side of the road it's a short service. If the water main is on the far side of the road it's a long service.

29. WATER SERVICE YARD

This item includes replacement of the water service from the curb box to the meter not including the curb box or the meter. This item does not anticipate asphalt or concrete removal. Pavement removal and replacement is to be paid for separately. Sidewalk removal and replacement is to be paid separately. Contractor may bore service if desired. This item shall include lawn restoration.

30. WATER SERVICE PRIVATE

This item includes the replacement of the water service from a curb box into the house. This item does not anticipate asphalt or concrete removal. Pavement removal and replacement is to be paid for separately. Contractor should bore service if able. This item shall include lawn restoration. A plumber may be required to finalize the connection in the house. Type k copper shall be used for the pipe underground. A flare copper to male iron pipe fitting and ball valve shall be used just inside the exterior wall of the house. For 0.75" use Ford C28-33-NL. For 1.25" use Ford C28-55-NL.

31. 2" SERVICE

This item refers to the service between the water main and the meter setting no greater than 58 feet in length, including the tap. Pavement removal and replacement is to be paid for separately. Contractor may bore service if desired. This item shall include lawn restoration. Copper Tubing, Additional Length, 2" refers to the additional copper tubing and work needed when services exceed 58 feet in length. See standard details WA-07-A, WS-9-A.

32. 2" METER VAULT

This item refers to all labor and materials to install a meter vault for a 2" Service as shown in detail WS-1-A. Pavement removal and replacement is to be paid for separately. This item shall include lawn restoration.

33. ABANDON BLIND

This item includes all labor and materials required to excavate to and turn off the blind service line at the water main, cut, and sever the service connection from the water main. This item also includes backfill. Pavement removal and replacement is to be paid for separately. All blinds located by City Utility Locators shall be cut. The quantity in the bid proposal is an estimate, payment will be made on actual quantities.

34. PLUMBER

This item includes all labor and materials required to connect either the meter to the existing private plumbing in the house or to connect the Water Service Private to the existing private plumbing in the house. This work shall be completed by a plumber who is licensed in the State of Michigan. This item shall also include meter setting. Meters and remotes will be supplied by the City. The new meter shall be sized to match the existing. This item includes removing the old meter and providing to the Inspector, installing the new meter, ground clamps, ground wire, and remote to the outside of the building or ford box lid. Provide the meter and remote stickers to the Inspector. See details WS-5-A for inside meter setting and WSS-7-A for ford box meter setting.

Interior meter setter: for 5/8": Ford C38-13-2-188-NL; for 1": Ford C38-4-2-625-NL

Ball valve: Apollo 94ALF-105-01A

Ground wire: #6 AWG, stranded, bare copper grounding wire

Ground wire clamps: Cast bronze ground clamp for use with stranded ground wire and sized to match the service size.

Remote wire: Agave Wire TIN22-3SOLRGB Solid Strand Meter Cable, 22 to 3 AWG, PVC, Red/Black/Green, or approved equal.

The complete work as described will be measured and paid for as Plumber, HR.

35. WATER FILTER

Contractor shall supply one faucet mount water filter to each house where water service work takes place. Water filter shall be tested and certified to NSF/ANSI 53 to ensure they reduce contaminants, including lead, per the requirements of the standards. Water filter shall be PUR faucet unit Model No. FM2000B or FM3333B, or approved equal.

36. CURB VALVE

This item is utilized when the existing street service is copper, but the curb valve is leaking or not operational. This item includes all labor and materials to replace the curb valve according to the Standard Specifications. The complete work as described will be measured and paid for as Curb Valve, EA.

37. CURB BOX

This item is utilized when the existing service is found to be copper and the curb box is damaged and in need of replacement. This item includes all labor and materials to replace the curb box according to the Standard Specifications. The complete work as described will be measured and paid for as Curb Box, EA.

38. MISCELLANEOUS REPAIR ALLOWANCE

This allowance is for minor repairs for unique installations that may require demolition and repair in the house more than the typical installation. The contractor must notify the inspector prior to any work being performed under the allowance. The contractor shall provide a cost estimate that is approved by the Engineer and Owner prior to work being performed. Actual costs for the work will be paid with an allowable 5% markup for specialty sub-contractors.

39. LAWN RESTORATION

This item includes all work necessary to return the area of construction operations to its original or better condition, other than the items listed in the Proposal, shall be considered incidental to the construction, and no specific payment will be made therefor.

Initial restoration (rough grading, temporary aggregate if necessary, removal of excess excavated material and debris) shall be done each day to the extent necessary to allow the movement of local traffic and permit access to all properties for emergency vehicles. Maintenance of streets, drives, sidewalks, etc. shall be the responsibility of the Contractor (including dust control, grading, stabilization, etc.) until the restoration is complete and has been accepted by the Engineer.

Restoration of each street or section of utility line shall follow the construction in a timely fashion so as to minimize inconvenience to the adjacent property owners and the general public. The manner in which this restoration is done by the Contractor will be a determining factor in the approval by the Engineer of staking requests and partial payment requests

A. Underground Sprinkling Equipment

Underground sprinkling lines, valves & heads, and water system curb stops and boxes are specifically excluded from the pay items. The Contractor shall take the necessary precautions to preserve this equipment during construction. Any underground sprinkling equipment disturbed by the Contractor shall be replaced at the Contractor's expense.

All underground sprinkling equipment shall be replaced in a timely fashion so as to minimize damage to the lawn areas. The Contractor will be responsible for any lawn damage caused by delayed replacement of the sprinkling equipment.

B. Fences

Fences, which are removed for construction, shall be replaced with equal or better type and size. The cost of removing and replacing the fences shall be considered part of the major items of work found in the Proposal unless otherwise specified

C. Ornamental Shrubbery and Bushes

Ornamental shrubbery and bushes that are removed during construction shall be replaced in kind and size in a vigorous growing condition. Replacement costs shall be considered part of the major items of work found in the Proposal unless otherwise specified. All shrubs and bushes replaced shall be insured by a one-(1) year warranty commencing from the date of installation.

D. Turf Restoration

All areas of established turf shall be replaced as nearly as possible to their original or better condition. Lawns shall be protected and maintained by watering, mowing, and reseeding as necessary, until the period of time when the final acceptance and payment is made by the Engineer for the project, to establish a uniform, weed-free, stand of the specified grasses. The cost shall be considered part of the major items of work found in the Proposal.

- Topsoil

Topsoil shall be placed at a minimum depth of four (4) inches over all areas disturbed by the Contractor's operations. The subgrade shall be graded to conform to the adjacent contours and shall be approved by the Engineer before placing topsoil. The topsoil shall then be placed in accordance with Section 816 of the MDOT 2012 Standard Specifications for Construction.

The soil shall be dark, organic natural surface soil, exclusive of muck or peat, suitable for the establishment of grass or other vegetable growth.

- Fertilizer

After the topsoil has been placed, it shall be fertilized with a starter fertilizer at the rate of two (2) pounds per 1,000 square feet, in proportions of 16% nitrogen, 32% phosphoric acid, and 3% potash, or as directed by the Engineer. Fertilizer shall be applied just before the placing of the seed to retain its full benefit before unfavorable weather can cause deterioration.

- Seeding

All previously seeded lawn areas shall be reseeded with MDOT THM seed (Table 917-1). Other areas disturbed by the Contractor's operations shall be seeded with MDOT TUF seed. Temporary seed shall be placed for erosion

control or temporary soil stabilization of stockpile areas. Seed mixtures, application rates, and methods shall be in accordance with Section 816 of the MDOT 2012 Standard Specifications for Construction.

Seasonal limitations on seeding in Section 816 of the MDOT 2012 Standard Specifications for Construction are waived. The Contractor shall repeat the seeding procedure as often as necessary to produce a close stand of weed-free grass

- Mulching
All seeded areas shall be mulched immediately following the seeding. Mulching shall be applied to all newly seeded areas at a rate of two (2) tons per acre in accordance with the requirements of Section 816 of the MDOT 2012 Standard Specifications for Construction, or as directed by the Engineer.
- Hydro Application
All fertilizing, seeding and mulching shall be applied by an approved Hydro seeding and mulching process unless separate applications as heretofore described are approved by the Engineer.
- Erosion Control
All erosion control measures shall be installed and maintained in accordance with the Soil Erosion and Sedimentation Control plan and permit. Unless otherwise specified, mulch blanket and high velocity blanket shall be placed in accordance with Section 816 of the MDOT 2012 Standard Specifications for Construction.

Net erosion blankets containing plastic or synthetic net or netting shall no longer be authorized, purchased, nor approved for use. Only Erosion Control Blankets such as North American Green Bionet S150BN, and Western Wood fibers EXCEL SS-2 All Natural (biodegradable jute/scrim netting with leno weave type mesh), or equivalent, are considered acceptable products. Loose straw is acceptable, where applicable.

- Sod
Sod shall be placed only where directed by the Engineer or as noted on the drawings or specifications.

All sod shall be nursery grown, conforming to MDOT requirements for Class A. Sod shall be approved by the Engineer before placing and shall be placed in accordance with the requirements of Section 816 of the MDOT 2012 Standard Specifications for Construction. The base on which the sod is to be laid shall consist of a minimum of four (4) inches of topsoil placed, watered and fertilized in the same manner required for seeding

40. PAVEMENT REMOVAL AND REPLACEMENT

This work consists of removing and replacing HMA, concrete, masonry, and other common pavement material, except sand and gravel, regardless of thickness, reinforcement, and overlays.

The materials shall be HMA 13A, HMA, MDOT 4E, HMA, MDOT 5E, Concrete, Grade P1; and Concrete S2. The pavement shall be removed to an existing joint or sawed joint. Saw cut pavement full depth in a straight neat line as directed by the Engineer. Do not use a crane and ball pavement breaker. Do not disturb remaining pavement. Assume ownership of removed materials and dispose of according to MDOT 2012 Standard Specifications for Construction subsection 205.03P.

After completion of the utility work, replace subgrade, subbase, and aggregate base in accordance with Michigan Department of Transportation Standard Plan for utility trenches R-83-Series. Replace sidewalk, driveway, and pavement matching existing materials. Replacement of brick roadway shall be completed with integrally colored concrete and stamped with the "Pennsylvania Avenue Brick Running Bond" pattern. The completed work, as described, will be measured and paid for at the contract unit price using the following pay items:

- Sidewalk Remove & Replace
- Curb Remove & Replace
- Road or Driveway Remove & Replace COK (Exhibit A)
- Road or Driveway Remove & Replace COK (Exhibit B)
- Road or Driveway Remove & Replace RCKC (Exhibit C)
- HMA Driveway Remove & Replace
- Stamp Concrete
- HMA 13A
- HMA, MDOT 4E
- HMA, MDOT 5E
- Milling, 2"
- Milling, 1.5"

The limits of the construction will be established at the discretion of the Engineer. Payment shall be based on the saw cut limits. The unit price includes all labor, equipment, and materials to saw cut, remove, haul, dispose of the pavement. All other material removal and replacement shall be included with other contract items. There will be sections of City of Kalamazoo streets where a lane width will be required to be milled and repaved to a depth of 1.5" for entire blocks. These sections will be determined during construction and communicated to the Contractor. Estimated quantities are in the bid proposal.

41. PAYMENT

Payment shall be made for the proposal items only. All of the work specified above and indicated on the drawings shall be considered included in the unit prices shown on the proposal. Work for a single address shall not be included in the monthly pay application until all work is completed at that address. The City has developed a shared one-drive spreadsheet and will provide this to the Contractor awarded the contract. The Contractor is responsible to coordinate with the Consultant for **DAILY** updates to the spreadsheet. The Contractor is responsible to provide all information necessary to the Project Inspector for the completion of the service card as-builts.

Definitions of abbreviations for measurement/payment:

LF	=	Lineal Foot
EA	=	Each
VF	=	Vertical Foot
LS	=	Lump Sum
CY	=	Cubic Yard
SY	=	Square Yard
SF	=	Square Foot
TON	=	Tonnage