



**CITY OF NOVI CITY COUNCIL
OCTOBER 12, 2020**

SUBJECT: Consideration of a unit price contract for as-needed catch basin, storm water pipe, and concrete slab stabilization services to Havener Tech, LLC, using the Farmington Hills contract (extended to MITN members), for a one-year term at an estimated amount of \$100,000.

SUBMITTING DEPARTMENT: Department of Public Works, Field Operations Division

EXPENDITURE REQUIRED	\$ 100,000 (Estimated)
AMOUNT BUDGETED	\$ 100,000
APPROPRIATION REQUIRED	\$ 0
LINE ITEM NUMBER	210-211.00-872.031

BACKGROUND INFORMATION: The Department of Public Works is responsible for inspecting, cleaning, and rehabilitating the stormwater collection structures along city roadways. These structures collect rainwater, snowmelt, and excess irrigation water draining from paved surfaces.

Because the majority of these stormwater collection structures are made of brick and mortar and are regularly exposed to continuous freeze thaw cycles, they can crack and deteriorate prematurely. Structural degradation of the catch basin can cause the collection system to transport stormwater improperly, which undermines the roadway and surrounding property.

In-house rehabilitation of a structure (removing and replacing bricks and mortar) can take one to three days, depending on the severity of the failure. When using polymer foam, it takes approximately 15 minutes to repair basins that have not already compromised the roadway. This rehabilitation process, and the material used, will also last longer than traditional repairs since polymer foam repels moisture rather than absorbing water through cracks and small voids associated with brick and mortar repairs.

Unit pricing for catch basin, stormwater pipe, and concrete slab stabilization services was obtained using the Michigan Intergovernmental Trade Network (MITN) as part of a bidding process initiated by the City of Farmington Hills.

RECOMMENDED ACTION: Approval to award a unit price contract for as-needed catch basin, storm water pipe, and concrete slab stabilization services to Havener Tech, LLC, using the Farmington Hills contract (extended to MITN members), for a one-year term at an estimated amount of \$100,000.

Spray Foam Catch Basin Repair



Before



After



May 18, 2020

CONTRACT ADDENDA NOTICE NO. 1

OF

EXTENSION OF CONTRACT NO. FH- 18-19-2071

2020 CATCH BASIN, STORM WATER PIPE AND CONCRETE SLAB
STABILIZATION PROGRAM

NAME & ADDRESS OF VENDOR: Havener Properties DBA Havener Tech 433 Elmwood Troy, MI 48083 Contact – Michael Guerin (248) 890-1812 Fax (248) 291-5742 mguerin@havenertech.com	CONTRACT TERM: ORIGINAL: June 11, 2018 – June 10, 2020 RENEWAL/EXTENSION OPTION – June 11, 2020 – June 10, 2021 accepted with a 3% increase in prices.
TERMS: Net 30	BUYER: Michelle Aranowski (248) 871-2426
F.O.B.: Delivered	COOPERATIVE: N/A

NATURE OF CHANGE(S):

All terms, conditions, specifications and pricing provisions remain unchanged.

AUTHORITY/REASON:

CMR Approval CMR 6-18-51

TOTAL ESTIMATED CONTRACT VALUE:

ORIGINAL: \$65,450.00

CURRENT: \$67,413.50

ACCEPTANCE/APPROVAL OF CONTRACT ADDENDA

Signed: Michael Guerin

Printed: MICHAEL GUERIN

Date: 5-27-2020

**CITY OF FARMINGTON HILLS – DPW
2018 AS NEEDED CATCH BASIN, STORM WATER PIPE AND
CONCRETE SLAB STABILIZATION PROGRAM**

2020 Contract Sum

All Prices to include parts & labor. Quantities listed are estimates for evaluation purposes only. The City will schedule work as needed.

ITEM #	DESCRIPTION	UNIT	QTY	UNIT PRICE	AMOUNT
General Items					
1.	Injection stabilization of Storm Water Catch Basin	EA	30	\$ 530.45	\$ 15,913.50
2.	Injection stabilization of Storm Water Pipe or Concrete Slab	LB	5,000	\$ 10.30	\$ 51,500
3.	Mobilization	LS	5	\$ 0	\$ 0
TOTAL 2020 ITEMIZED BID					\$ 67,413.50

CONTRACT EXTENSION

The City of Farmington Hills reserves the right to extend the contract (beyond the first 2 years) for two (2) additional years, through mutual consent with the successful bidder, under the same terms and conditions. Please indicate below your percentage of increase per year over the 2019 prices listed herein for the two year extension of this contract.

Prices listed herein will increase 3% each year beginning at the third year of award.



2018 & 2019

**AS NEEDED CATCH
BASIN, STORM WATER
PIPE AND CONCRETE
SLAB STABILIZATION
PROGRAM**

**Awarded by City Council 6-11-18
Bid #itb-fh-18-19-2071**

Havener Properties DBA Havener Tech
433 Elmwood Road
Troy, MI 48083
248-890-1812

GENERAL SPECIFICATIONS

1.) RIGHTS-OF-WAY:

The necessary right-of-way for construction of drains, water mains and other structures across or under private properties have been or will be obtained by the Owner. A County permit is required by the contractor for right-of-way work and must abide by all county requirements. In carrying out the work on private right-of-way, the Contractor shall take due and proper precautions against any injury to adjacent structures and shall hold himself strictly within the rights obtained by the Owner. Should the Contractor desire additional space on private property, he may obtain such space on privately owned property at his own expense by agreement with the Owner thereof.

The Contractor shall comply with all requirements of the permit, including backfill, pavement repair, replacement and construction specifications.

2.) MONUMENTS:

Monuments or other recognized property boundary markers at street intersection corners, acreage or lot corners, and right-of-way lines shall be preserved. Where such monuments or markers must be removed during construction, the Engineer shall be notified and the Contractor shall make all necessary arrangements for resetting of the monument or marker and bear the cost thereof.

3.) UTILITY FOR PROSECUTING THE WORK:

Unless otherwise provided in these specifications, the Contractor shall make his own arrangements for items such as electricity, gas water and sewer services for his use in field offices and for construction of the work, including temporary power installation for use in completing his contract, and shall pay all costs therefore.

4.) SPECIFICATIONS BY REFERENCE:

Where reference is made in specifications or standards of any technical society, association, governmental agency, etc., if it is understood and agreed that such specifications or standards are a part of the Specifications as though fully repeated therein.

The following listed letters or abbreviations shall be interpreted as indicated:

"A.S.T.M." shall mean the American Society for Testing Materials.

"A.W.W.A." shall mean the American Water Works Association

"A.S.A." shall mean the American Standards Association

"A.I.S.I." shall mean the American Iron and Steel Institute

"M.D.O.T." shall mean the Michigan Department of Transportation

5.) WORKING SPACE:

In his operations, the Contractor shall interfere as little as possible with traffic, and in all cases shall confine his operations to the minimum space possible.

Stockpiling of construction material and equipment will be permitted as necessary, but in no case shall traveled ways, driveways or entrances be unduly obstructed.

Should the Contractor desire additional space on private property, he may obtain such space on privately owned property at his own expense, by agreement with the Owner thereof.

6.) CLEANLINESS OF THE WORK:

The contractor shall keep the work and all property occupied by him in a neat and orderly condition at all times. Waste materials, rubbish and debris shall not be allowed to accumulate. Contractor's equipment, temporary

buildings and excess materials shall be promptly removed, as they become no longer needed for the progress of the work. At the completion of the work, the premises shall be left raked clean. The newly constructed drains, concrete chambers, flumes, manholes and other structures shall be cleared of all scaffolding, centering and debris of all sorts.

The intent of these specifications is to provide qualitative guidelines for the orderly execution of the contract requirements. Insofar as the Contractor makes satisfactory progress and maintains an effective cleanup crew following the construction operations, the direction of the work force shall be solely his responsibility. If, however, in the judgment of the Owner, adequate cleanup and site restoration efforts are not being expended, including but not limited to; roadway, driveway and drainage maintenance, removal of surplus materials, restoration of signs, mailboxes and like items, further construction shall be halted and work forces directed to the restoration activity until proper order is restored. This shall not be construed as cause for additional compensation.

7.) STREET CLEANLINESS:

The contractor shall clean and keep clean the streets, the work and public or private property occupied by him, from waste materials or refuse resulting from his operations. Trucks hauling excavated materials, cement, sand, stone or other loose materials from or to the site shall be tight so that no spillage will occur on adjacent streets. Before trucks start away from the site, their loads shall be trimmed. Should the Contractor be negligent of his duties in maintaining the proper street cleanliness, the Owner will take necessary steps to perform such cleaning and shall charge the Contractor for all the costs.

8.) MAINTENANCE OF TRAFFIC:

During the progress of the work, the Contractor shall accommodate both vehicular and pedestrian traffic as provided in these specifications and as indicated on the drawings. In the absence of specific requirements, the Contractor shall maintain access and movement of all such traffic. However, the Contractor shall provide for the following:

- a) **General Traffic Control:** All construction signing and traffic control shall be in accordance with the guidelines and provisions of the Michigan Manual of Uniform Traffic Control Device (MMUTCD). The Contractor shall provide barricades and advance warning signs as specified on the Signing Diagrams, or as directed by the Engineer, and provide any signs and barricades within the project area necessary to protect traffic. The Contractor shall not begin any operation on the project until all of the specified/necessary signs have been installed and approved by the Engineer.
- b) **Existing Warning and Regulatory Signs:** Existing traffic control signs and street name signs shall be removed, temporarily reset and maintained by the Contractor if necessary. Upon completion of the project, traffic control signs and street name signs will be reset in their proper position in accordance with the City's sign inventory or at the direction of the Engineer. All existing permanent signs on this project are to be preserved and maintained as incidental to the project. All signs which are damaged during the course of construction will be charged to the contractor. The City will inventory all signs at the beginning of a project, and upon project completion, before final acceptance is made.
- c) **Provision for Local Traffic:** The Engineer may direct the Contractor to use Aggregates for maintaining traffic in various locations for maintaining local or through traffic. Aggregates for maintaining traffic shall consist of 21AA limestone. Aggregate placed to maintain traffic shall be removed and incorporated into the project, where specified by the Engineer, as incidental to the project. Surplus Aggregate, which cannot be incorporated into the project, shall be disposed of by the Contractor as incidental to the project.
- d) **Maintaining Traffic Over or Along the Project:** Barricades or other approved channelizing device, when required or necessary, shall be staggered along the edge of the pavement abutting the work area with a

maximum spacing between barricades of 100 feet on straight portions of the roadway and 50 feet on curved roadway sections or in tapers. When provided for on the plans, temporary widening of the exiting pavement shall be constructed with base aggregate for temporary roadway and bituminous surfacing. The base aggregate for temporary roadway shall consist of 21AA limestone.

The Contractor shall provide adequate temporary lane delineation/pavement markings on roadways that have existing pavement markings or where pavement markings are proposed. Bituminous surfaces shall be marked during or at the end of each day's paving. Concrete surfaces shall be marked prior to opening the pavement to traffic. Temporary pavement markings shall be placed as shown on the plans or as directed by the Engineer. The lane delineation shall include the placement of 4" wide markings, a minimum 3 foot length of tape (type NR or type R) per 50 feet of roadway. Markings shall either be white or yellow in accordance with the Michigan Manual of Uniform Traffic Control Devices. Placement of temporary markings shall be incidental to the project.

- e) **Utility Access and Governing Traffic Ordinance:** Access to fire hydrants, water and gas valves shall always be maintained. The Contractor's truck and equipment operations on public streets shall be governed by all local traffic ordinances and regulations of the Fire, Police Department and Department of Public Works.
- f) **Construction Openings:** Working sites at manholes, alignment holes, and other minor openings in streets need not be fenced, but they shall not be larger than necessary and shall be well protected by lighted barricades and shall not be occupied longer than necessary. Small openings in street shall be covered with strong steel plates anchored in place when they are not required to be open for construction purposes.

Shaft locations shall be selected at points where they will interfere with traffic as little as possible and their working site arrangements shall meet the approval of the Engineer. Detouring of traffic shall be done in accordance with the requirements of the local department having jurisdiction and the guidelines of the Michigan Manual of Uniform Traffic Control Devices and the MDOT Standard Construction Specifications.
- g) **Partial Street and Access Obstructions:** Where streets are partially obstructed, the Contractor shall place and maintain temporary driveways, ramps, bridges and crossings that are necessary to accommodate the public. In the event of the Contractor's failure to comply with the foregoing provisions, the Owner may, with or without notice, cause the same to be done and deduct the cost of such work from any monies due or to become due the Contractor under this contract, but the performance of such work by the Owner, or at his insistence, shall serve in no way to release the Contractor from his liability for the safety of the traveling public.
- h) **Advance Notice:** The Contractor shall inform the local fire and police departments in advance of his program of street obstruction and detours, so that these departments can set up plans for servicing the area in case of an emergency. He shall also notify the Department of Public Services at least one week prior to obstructing any street.
- i) **Flag Control:** The Contractor shall direct traffic using flag control in accordance with the specifications of the Michigan Manual of Uniform Traffic Control Devices and MDOT's current Standard Specifications for Construction. The Contractor shall use flag control for all construction operations that interfere with normal traffic flow and where specified by the Engineer. All advanced signing and equipment shall be incidental to the project or included in the specified flag control pay item.

- j) **Miscellaneous:** Along with the above, the Contractor shall provide flagmen, warning lights, signs and barricades necessary to direct and protect vehicular and pedestrian traffic, as determined necessary by the Owner.

9.) **CARE OF WORK:**

The Contractor shall be responsible for all damages to persons or property that occur as a result of its fault or negligence in connection with the prosecution of the work and shall be responsible for the proper care and protection of all work performed until completion and final acceptance, by the City of Farmington Hills.

Outside the scope of this project the Contractor shall not damage sidewalks, streets, curbs, pavements, utilities, structures, or any other property, either on or adjacent to the site. He shall repair it at his own expense, and in a manner satisfactory to the City of Farmington Hills any damage thereto caused by its operations.

10.) **DISPOSAL OF EXCAVATED MATERIAL:**

Excavated material permitted to be used for backfill may be deposited along line of work where working room permits. All materials in excess of the quantity permitted for backfilling and all materials unsuitable for backfilling shall be hauled away by the Contractor. Where the surplus excavated material is wanted by the Owner, it shall be disposed of within the incorporated limits of the Governmental Agency at locations which are designated by the Owner or his representative, all at the Contractor's expense. Material not wanted by the Owner shall be disposed of by the Contractor at sites obtained by him, at his expense. He shall provide all labor and equipment for spreading such materials at the place of dumping and shall leave such areas in a neat and generally level condition.

11.) **FINAL CLEANUP AND GRADING:**

Upon completion of construction and before final payment is due, the Contractor shall restore his working area to as clean a condition as existed before his operations were started. He shall go over the entire line of work and refill any places that may have settled. He shall then regrade and put in shape all backfilled trenches, all fills he may have made from excess excavated materials, and all other areas that may have been disturbed through his operations.

12.) **PUBLIC AND PRIVATE UTILITIES:**

It is understood that the Contractor shall contact all utility companies' public or private prior to starting construction to verify all locations and elevations.

Where any utilities, public or private, such as water, sewer (storm or sanitary) gas, telephone, electric, or any other are encountered, the Contractor must provide adequate protection for them and he will be held responsible for any damages to such utilities arising from his operations. When it is apparent that construction operations may endanger the foundation of any such utility conduit, cable, or the support of any utility structure or appurtenance, the Contractor shall notify the utility owner of this possibility and he shall take such steps as may be required to provide temporary bracing or support. When it is necessary, in order to carry out the work that a pole, electric or telephone structure or any other conduit or cable be moved to a new location, or moved and replaced after construction, the Contractor shall arrange with the Owner of the utility, public or private, for the removing of such pole or poles, or other conduit or cable, and shall pay all costs therefore.

Where it is the policy of any utility owner to make his own repairs to damaged conduit or other structures, the Contractor shall cooperate to the fullest extent with the utility and he shall see that his operations interfere as little as possible with those operations and shall bear all costs therefore.

13.) **ACCIDENT PREVENTION:**

The Contractor shall exercise proper precaution at all times for the protection of persons, property and shall be responsible for all damages to property, either on or off the site which occur as a result of its fault or negligence in

connection with the prosecution of the work. The safety provisions of applicable laws and building and construction codes shall be safety and health measures as the City of Farmington Hills may determine to be reasonably necessary. Machinery, equipment and all other hazards shall be guarded in accordance with the safety provisions of the "Manual of Accident Prevention in Construction" published by the Associated General Contractors of America, Inc., to the extent that such provisions are not in conflict with applicable local laws.

14.) HOURS OF WORK:

City ordinances require that construction activity be allowed only between the hours of 7:00 a.m. and 7:00 p.m., Monday through Saturday on local roadwork. Major roads other than industrial roads, work hours are restricted to Monday through Friday, 9:00 a.m. to 3:00 p.m. Construction on industrial roads may also be restricted to Monday through Friday, 9:00 a.m. to 3:00 p.m. if it is determined to be in the interest of the health, safety and welfare of the City. When it is determined that special circumstances exist, or it is in the best interest of the City, or where there is a threat to public health, safety, or welfare allowances may be made to allow construction (only in non-residential areas) on Sundays and Holidays. Permission must be given in writing and authorized by the City Manager or the Director of Public Services. A copy of the written authorization shall be forwarded to the Police Department. The contractor/builder receiving the authorization shall keep a copy of the authorization at the construction site. **For specific time limit and scheduling, see the supplemental specifications section.**

15.) GAS

If the Contractor or his forces must work in existing sewers, open excavations or new sewer not yet approved and accepted by the Owner in which gas may be present, the sewer or open excavations shall be checked for the presence of gas before entering. If gas detected cannot be removed by natural ventilation, or by the removal of manhole covers on existing sewer appurtenances, the Contractor or his forces shall maintain forced draft or other gas control or removal process as may be necessary to render the sewers or open excavation safe, determined by gas detection instruments and shall pay all costs therefore. Neither the Owner nor Engineer shall be responsible or liable for any damages arising out of or resulting from gas, either directly or indirectly.

16.) SAMPLES FOR TEST

The Contractor shall furnish all samples of materials necessary for tests as determined by the Engineer. All samples taken for analysis and tests shall be taken in such manner as to be truly representative of the entire lot under test. The Contractor shall furnish such assistance and facilities as the Engineer may require for collecting, storing and curing samples. He shall also pay the cost of delivering the testing.

17.) SOURCE OF MATERIALS AND EQUIPMENT:

The Contractor shall be free to secure the approved materials and equipment from sources of his own selection. However, if the Engineer finds that the work will be delayed or adversely affected in any way because a selected source of supply cannot furnish a uniform product in sufficient quantity, or the product is not suitable for the work, the Engineer shall have the right to require the original source of supply be changed by the Contractor. The Contractor shall have no claim for damage for additional compensation because of this agreement.

18.) MATERIALS, DELIVERY, STORAGE AND HANDLING:

All materials shall be so delivered, stored and handled as to prevent the inclusion of foreign materials and the damage of materials by water or breakage. Packaged materials shall be delivered in original, unopened packages and stored until ready for use. Packages of materials showing evidence of damage shall be rejected.

All materials that have been stored shall be subject to re-test and must meet the requirements of their respective specifications at the time they are used in the work.

19.) WATER:

All water used in connection with the work shall be from the local water department. The Contractor shall secure the required permit from the Oakland County Drain Commissioner's Office (248-858-1122 or 248-858-0958) and

shall bear all expenses of such permit and for the water used. Contractor shall comply with all procedures (hours, permit, payment, access, etc.) which govern the use of municipal water.

Where water is not available from the Drain Commissioner's Office, the Contractor shall obtain his own source of supply, the quality of which shall be subject to the approval of the Engineer.

20.) EXISTING STRUCTURES:

The Contractor shall assume full responsibility for the protection of all buildings or other structures and their foundations as well as other improvements such as pavement, roadways, sidewalks or railroad tracks that might be affected by his operations. Should settlement or lateral movement of adjacent structures or surface features occur, such conditions shall be rectified by the Contractor at his expense.

21.) BACKFILL:

For purposes of these specifications, backfill shall be considered as that material placed in open cut excavations above an elevation 12 inches over the outside top of the utility or installation.

- a.) Backfill for all trenches in public rights-of-way when whole or any portions thereof lie under, cross or run within 5.0 feet of a parallel to proposed or existing concrete, asphalt or aggregate surfaced roadways, or combinations thereof, driveways, parking areas or walkways, shall be porous material as defined hereafter and mechanically compacted in place in one (1) foot layers or less to a minimum compaction of 95%.
- b.) Unless specified elsewhere, all trenches under road shoulders defined as the area from the edge of pavement, whether concrete or asphalt to the adjacent road ditch or the area within eight (8) feet of said pavement edge, whichever is lesser, shall be backfilled as described under (a) above. Aggregate surfaced roadways with parallel ditches shall not be considered to have a shoulder area so that backfill of all trenches between top of banks of parallel road ditches adjacent to the traveled aggregate roadway shall be as described in (a) above.
- c.) Backfill for all trenches not included in limitations described under (a) and (b) above or in permanent easements adjacent thereto or permanent easement across graded and improved sites, all unless specified elsewhere may be selected excavated material (excluding blue clay) mechanically compacted in place to produce a minimum 90% compaction.
- d.) When select excavated material is permitted to be used for backfill, this material shall be free of rocks, rubble, roots, stumps, refuse, organic materials, blue clay, and other materials which would not, in the opinion of the Engineer, facilitate compaction or assume proper settlement or which would damage or displace the utility or installation.
- e.) Specified compaction means not less than the percentage required based on the maximum unit weight at optimum moisture content when tested in accordance with AASHTO Specification T-180 or ASTM D-1557-64T. If the excavated material is not suitable to obtain the minimum compaction required, the Contractor shall, at his expense, remove unsuitable material or add porous materials or both to obtain the compaction specified. Compaction tests will be made by a representative of the Owner and paid for by the Owner, unless otherwise specified.
- f.) Whatever type of backfilling is required, its costs shall be included in the price bid per lineal foot of installing the edge drain or base material for driveway repairs.
- g.) Porous backfill material shall meet the following gradation specifications where specified on the plans or elsewhere in the contract.

1. Gravel, stone or slag meeting gradation requirements of M.D.O.T. Specification designation 21A or 22A limestone.
 2. Gradation requirements of M.D.O.T. Specification for Porous Material Grade "A", approved by the Engineer.
 3. Gradation requirements M.D.O.T. Specification for Porous Material Grade "B", approved by the Engineer.
 4. Approved bank-run sand or sand-gravel uniformly graded that will contain less than 10% clay or loam and pass a 3/4 inch mesh screen respectively, approved by the Engineer.
 5. Class II sand or gravel backfill shall conform to the most recent M.D.O.T. Standard Specifications for construction.
- h.) No backfilling shall be done prior to inspection of the pipe and after this inspection, the sand required to a point one foot above the pipe shall be placed. The entire backfilling operation shall proceed along with the laying of the pipe and at no time shall more than 50 feet of trench be open between the point of pipe laying and the backfill.

If the required trench compaction is not being met within 300 feet of the pipe laying operation, the Contractor shall cease further construction until the compaction requirements are met and can be maintained.

22.) MORTAR FOR BRICK WORK AND PIPE JOINTS:

Mortar for brick work or block work in sewers or appurtenances and for pipe joints shall be mixed by volume in the proportions of one part Portland cement to two parts sand. A bag of cement shall be considered one cubic foot. The cement and sand shall be first mixed dry to a uniform color in a batch mixer or a tight mortar box, and then mixed thoroughly with water which shall be added gradually to the required consistency. Mortar shall be mixed in batches of such sizes as will be used within one hour. Any mortar which has set sufficiently to require retempering shall not be used.

The amount of material in the sand removable by decantation shall not exceed 2% by weight. Not less than 90% of the material shall pass a No. 8 sieve and at least 95% shall be retained on a 100 sieve.

23.) FINAL TRIM AND CLEANUP:

The following items shall constitute Final Trim and Cleanup, damage, repair, or replacement of which shall be the responsibility of the Contractor. The cost of the work described below shall be incidental to the cost of the project unless otherwise specified elsewhere in this proposal.

- a) All concrete pavement, gravel roadways, with or without asphalt surfacing driveways or service drives and approaches to same, either concrete, gravel or asphalt surfaced and all sidewalks or housewalks disturbed by the Contractor shall be replaced. All necessary removal and replacement shall meet the current specifications of the governmental unit or agency having jurisdiction.

When the utility, as proposed for construction will be located under an existing concrete pavement and when the residual pavement is five feet or more in width, it may be left in place. However, if the residual pavement is less than five feet from a pavement joint or from the face of the curb, it shall be removed and replaced. If the residual pavement to be removed is adjacent to the curb, the curb shall be removed and a new curb poured integral with the pavement. All concrete pavement which is not removed to a joint shall

be saw cut to a depth equal to 2/3 thickness prior to removal. All concrete pavement replaced shall be to a thickness with or without reinforcing mesh and with or without hook bolts as required by the Governmental Agency having jurisdiction thereof. All damages or undermined pavement shall be removed and replaced.

All concrete pavement and/or driveway approaches under the jurisdiction of the City of Farmington Hills shall meet the specifications for Grade AA, 3500 lb. concrete, with air-entrained cement, course aggregate gradation equal to City pavement standards and properly cured with white membrane curing compound.

If the pavement removed has an asphaltic concrete surface, the surface shall be removed to a distance one foot beyond the limits of the removed concrete pavement. The butt joint in asphaltic concrete removal shall be prepared by sawing through the total depth of asphaltic concrete. The surface shall be replaced with a nominal thickness of asphaltic concrete meeting the requirements of the Agency having jurisdiction, both as to materials and method of replacement.

All asphalt replacement under the jurisdiction of the City of Farmington Hills shall be MDOT Div. 4, No. 11 bituminous mixture modified with 20AA aggregate, minimum 50% crushed, with asphalt penetration 85-100.

When the utility as proposed for construction will be located under an existing gravel pavement, an equivalency of 8" of 22A roadside gravel shall be placed over approved compacted sand backfill, as stated in Item 28 of these General Specifications. It shall be maintained at this thickness and blended in to provide a smooth, continuous, uniform grade.

- b) All necessary grading shall be done to fit adjoining ground elevations.

Where existing drainage ditches are disturbed or destroyed, they shall be restored to the original cross-section by the Contractor. Where there are no existing drainage ditches within the limits of the contract, drainage ditches shall be installed to the standard cross-section for ditches or as directed by the Engineer.

- c) Established lawn areas disturbed by the Contractor shall be restored in the following manner:
- 1) All lawn areas damaged during the work shall be graded and restored with sod. The Contractor shall restore the existing lawn areas with Class A sod as specified in Section 6.53 "Turf Establishment" of the most recent M.D.O.T. Standard Specifications for construction, except that Class A seed shall be sown at a rate of 200 lbs/acre and will not be paid for until satisfactory germination has been accepted. All sod shall be placed on a two-inch bed of topsoil. This topsoil shall be rich black earth, free from sod, stoned, weed stalks and debris.
 - 2) When seeding is required, the Contractor shall rebuild the existing lawn areas with Class A seed as specified in Section 6.53 "Turf Establishment" of the most recent M.D.O.T. Standard Specification for construction. The top four inches (4") of trench backfill shall be made with selected topsoil preserved or secured elsewhere for this purpose.

This topsoil shall be rich black earth, free from sod, stones, weed stalks or debris. The trench surface shall be carefully raked to an even level with all stones, sticks and other debris removed. The lawn seed mixture shall be distributed in an amount not less than twenty pounds of 10-6-4 commercial fertilizer per one thousand square feet into the area. Seed shall not be sown between June 15 and August 15, nor between October 15 and April 15, nor any time when the soil has insufficient moisture to insure proper germination. After seeding, the surface shall be lightly raked with a steel garden rake or equivalent, and rolled with a light lawn roller. Seeded areas

shall receive a proper mulch of clean wheat or oat straw, chopped to a maximum length of three inches. All lawn repairs, whether seeding or sodding shall be incidental to laying the pipe unless listed as a separate bid item on the proposal. Contractor shall be responsible for the watering of the lawn areas for a period of 14 calendar days after seeding and sodding.

- 3) Shrubs, small trees and other planting which may be damaged during any phase of the work shall, with the permission of the Owner, be replanted as directed or removed to an area provided by the contractor and "heeled in" until such time as they can be replanted in their original location. The work shall be done in an acceptable manner and the Contractor shall be required to replace any shrubs or trees that fail to survive.
- d) Private ornamental gas or electric lights, fences, shrubs, rip-rap material, small out buildings and similar items placed or installed in street right-of-way or public or private utility easements by the property owner shall be carefully removed and placed on the adjacent property at the location designated by the property owner.
- e) Items under "d" above where damaged or disturbed in construction easements, or private property adjacent thereto shall be repaired and/or restored to original condition.

24.) EROSION AND SEDIMENT CONTROL:

In compliance with Soil Erosion and Sedimentation Control Act (P.A. 347 of 1973), the City of Farmington Hills has adopted by reference the latest rules promulgated by the Michigan Department of Natural Resources relative to said Act.

In general, the Contractor shall take necessary precautions to positively prevent erosion and resultant sediment run-off into existing open or enclosed drains, because all such run-off eventually reaches natural streams. To accomplish such control it may be necessary to build various types of gravel filters, sandbag traps, straw bale traps, barriers or other approved means to filter sediment or combinations of same. For these S.A.D. projects, we suggest the consideration of utilizing the following types of sediment control, either singly or in combination, or other means which may prove equally effective (see detail sheet).

1. Stone Outlet Filter Within a Straw Bale Berm
2. Stone Outlet Filter within an Earth Berm
3. Straw Bale Diversion Berm
4. Ditch Sediment Trap

In each case, the purpose is to settle out and/or filter out the sediment being carried away in storm flow as a result of removing natural vegetation (or hard surface areas) and exposing subsoil's during construction operations. It will be necessary to construct such erosion control systems during construction, so they will be functional at any and all times. It is absolutely necessary to inspect operational erosion control installation after each storm and perform any needed repairs, cleaning of filter media or other adjustments as may be required. The erosion and sediment control systems must remain in operable condition until final site restoration has been accomplished, to wit:

- a) All areas to receive sod are properly sodded.
- b) All areas to receive seed and mulch are so treated and the new grass reaches acceptable growth and density.
- c) All areas to be resurfaced (drives, walks, roadways) are paved; and
- d) In general, all surplus earth has been removed and no areas disturbed during construction remain vulnerable to further erosion as a direct result of the construction activity.

ALL COSTS FOR THIS WORK, INSTALLATION, MATERIALS, LABOR AND MAINTENANCE SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.

CITY OF FARMINGTON HILLS - DPW

**SUPPLEMENTAL SPECIFICATIONS
2018 & 2019 AS NEEDED CATCH BASIN, STORM WATER PIPE AND CONCRETE SLAB
STABILIZATION PROGRAM**

The City of Farmington Hills Division of Public Works (DPW) is requesting itemized proposals for as needed catch basin, storm water pipe and concrete slab stabilization throughout the City of Farmington Hills. Staff of the firms which submit proposals for this work must have a minimum of five (5) years of demonstrated experience with the repair of municipal underground utility structures using expanding polymer foam. All of the firm's staff must have appropriate license(s) and Spray Polyurethane Foam Alliance Professional Certification Program (SPFA PCP) installer certifications.

TERM OF CONTRACT

The term of the contract is from the date of the Proceed to Work order through the following 24 months, subject to the City's right to rebid.

FISCAL YEAR FUNDING

Fiscal year funding is from FY 17/18, 18/19 & 19/20.

DESCRIPTION OF WORK

The City maintains jurisdiction of both local, low volume, subdivision type streets and major arterial type streets, both hosting many masonry and pre-cast storm water catch basins, concrete and CMP storm water pipes and concrete pavement/sidewalks.

The contractor shall be required to furnish all necessary labor, machines, tools, equipment and other means to fill voids around storm water structures and under concrete pavement, slabs and sidewalks using expanding polymer foam on the City's street system and City properties.

GENERAL

Unit prices shall remain firm for the term of the contract. The owner will contact the contractor when service is needed. The schedule for any work performed under this agreement must be approved by the DPW Superintendent or Supervisor.

SCOPE OF WORK

The City is requesting pricing for the items listed in the itemized proposal. Unit pricing shall include all labor, tools, equipment, materials, parts and incidentals needed to fill voids and/or stabilize storm water structures and concrete slabs. Restoration and clean up shall also be included in the bidder's unit prices. All work will be at the request and authorization of a DPW Road Supervisor, or the Public Works Superintendent.

SUBCONTRACTS

The Contractor shall not sublet, assign, or transfer, this contract, or any portion thereof or any payment due him there under, without the written consent of the Owner.

HOURS OF WORK

All work on **Major Roads** must be done Monday thru Friday between the hours of 9:00 a.m. to 3:00 p.m. or, if approved by DPW Supervisor, on Saturday between the hours of 7:00 a.m. to 7:00 p.m. All work on **Local Roads** must be done Monday thru Saturday 7:00 a.m. to 7:00 p.m. Only emergency work is allowed on Sundays and holidays. The schedule for any work performed must first be approved by a DPW Supervisor.

RESTORATION

The Contractor shall assume full responsibility for the protection of all pavements, walls, utilities, water mains, sewers, telephone lines, gas mains, cable TV wiring, computer cables, irrigation systems, mailboxes and any other services, structures, or landscaping along or near the work site which may be affected by the contractor's operations and equipment. The Contractor shall indemnify, defend, and save harmless the City against all damages or alleged damages to any such structure arising out of his work and bear the cost of repair or replacement of any such structure or landscaping damaged as a result of his/her operations.

Any disturbed landscaping shall be restored by the contractor. All debris shall be removed from the site. Landscape restoration shall include sod repair, as opposed to seed and topsoil, where an irrigation/sprinkler systems exist.

SAFETY

All construction procedures shall comply with the Safety Code of the State of Michigan and appropriate portions of the Occupational Safety and Health Act.

MAINTAINING TRAFFIC

Traffic is to be maintained in accordance with the current edition Michigan Manual of Uniform Traffic Control Devices, and M.D.O.T. Standard Plans and Specifications. The Contractor and employees shall be responsible for all traffic control within the Construction Influence Area (CIA) and shall comply with all MDOT Work Zone Safety Specifications.

The degree of the magnitude of the temporary traffic controls will vary depending on the classification of the roadway (major vs. local) where the work is being performed.

APPLICATOR QUALIFICATIONS

The Contractor shall provide staff for the work under this project that have documented minimum of 4 years of experience in the application of expanding polymer foam for municipal underground utility structures, pipes and slab lifting. Documentation must also be provided that the Contractor, staff and methods are approved by the product manufacture.

REFERENCES

Each bidder shall provide the City of Farmington Hills with a list of projects (minimum five) in the metro Detroit area where the contractor has completed similar work in the past. Include name of contact, firm, address and phone number.

MISS DIG—UTILITY LOCATION

The Contractor is responsible to notify Miss Dig for all sites where below-grade work is necessary. Three (3) days advance notice must be given. No below-grade work shall be performed unless sites are properly staked.

CALL MISS DIG AT 1-800-482-7171

Although all available information will be provided to the contractor, it remains the responsibility of the contractor to locate all underground utilities. Some utilities may exist but not appear on plans provided by the City. Accordingly, all precautions must be taken to ensure that utilities, including irrigation systems, are not damaged. The contractor must utilize utility location devices, hand-digging, and all other precautionary practices necessary to ensure that utilities are not damaged or disrupted.

MISCELLANEOUS

No deviation from any of specifications will be permitted unless approved in writing by DPW or Engineering staff. All work shall be complete. Incidentals not indicated above shall be the responsibility of the contractor. No payment shall be made until the entire work is completed, per location.

No work shall be performed unless a DPW Inspector is present.

Should there be any contradictions between the supplementary specifications and the general specifications, the supplementary specifications shall take precedence.

CONTRACTOR'S SUPERVISION AND ORGANIZATION

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

The Contractor shall employ only competent, efficient and properly licensed workers and shall not use any unfit person not properly skilled in the work assigned to him/her, and shall at all times enforce strict discipline and good order among employees.

MATERIALS

The material to be used for the stabilization of the City's storm water structures and concrete slab lifting/stabilization shall be a hydrophobic, two-part polyurethane foam meeting or exceeding the following:

- Average density (AST M D1622) = 4 lbs/ft³
- Compressive Strength (ASTM D1621)
 - Peak Stress = 90 ps;
 - Peak Strain = 7%
 - Yield Stress = 100 psi
 - Yield Strain = 8%
- Tensile strength (ASTM D1623)
 - Avg = 85 psi
 - Elongation = <5%
- Thermal & Humid Aging (ASTM D2126) = <1%

The contractor shall submit documentation certifying that the materials supplied are consistent with this specification.

CONSTRUCTION PROCEDURE

Within 48 hours of notification by the City's Div. of Public Works, the contractor shall schedule a field meeting with the DPW Supervisor or Superintendent to review the necessary work, and become familiarized with each of the locations. Upon completion of the field meeting, a cost estimate will be prepared by the contractor and submitted to the DPW Supervisor for authorization along with a schedule for the completion of the work.

MAINTAINING TRAFFIC

The City's Division of Public Works will provide the necessary temporary traffic control for each project location in accordance with the most current version of the MMUTCD.

PROGRESS PAYMENTS

The contractor may request monthly progress payments for work completed during any calendar month. Requests for payments shall be based on the inspector's signed Daily Reports, measurement of work completed, and the unit prices established in the contract, all in conformance with the agreement, or other governing conditions.

BASIS OF PAYMENT:

- BID ITEM 1: **Injection Stabilization of Storm Water Catch Basin** – Shall be paid for the injection of hydrophobic, two-part polyurethane foam to void-fill around the outside perimeter of a storm water catch basin. The unit cost of this item shall include all materials, equipment, labor and tools necessary to completely fill the voids around the structure as outlined in the contract specifications.
- BID ITEM 2: **Injection Stabilization of Storm Water Pipe or Concrete Slab** – Shall be paid for by the pound of hydrophobic, two-part polyurethane foam to void-fill around the outside perimeter of concrete or CMP storm water pipe and the void-filling and slab lifting of concrete road surfaces, concrete sidewalk and concrete slabs. The unit cost of this item shall include all materials, equipment, labor and tools necessary to completely fill the voids around the pipe, under the concrete slab or lift the slab into the required position.
- BID ITEM 3: **Mobilization** – Shall be paid the lump sum value of one mobilization for each group of locations assigned to the contractor by DPW staff. Should the as-needed request be for one location, then the contractor will be paid one mobilization unit for that call in. Should the DPW have multiple locations in need of repair resulting in one as-needed call in, the contractor will be paid for one mobilization only.