



RFP

Charter Township of Union 2019 Sanitary Sewer Manhole Rehabilitation Request for Proposal (RFP)

Sealed Bids for the rehabilitation of eighteen (18) sanitary sewer manholes will be received by the **Charter Township of Union**, at the Water Treatment facility located at **5228 South Isabella Road, Mt. Pleasant, MI 48858**, until **10:30 AM** local time on **September 18, 2019**, at which time the Bids received will be publicly opened and read.

Mail or Deliver Sealed Proposals to:

2019 – Rehabilitation of Sanitary Manhole Structures
Department of Public Services
Attention: Kim Smith, Public Service Director
Charter Township of Union
5228 South Isabella Road
Mt. Pleasant, MI 48858

General Scope:

The Charter Township of Union is soliciting requests from qualified contractors to complete the following work:

The project will include all work, materials and equipment required for the cured in place (CIP) structural rehabilitation of eighteen (18) sanitary sewer manhole structures located in The Charter Township of Union Township. The eighteen (18) manholes are located on Deerfield Road and the intersection of River Road and Industrial Drive. The purpose is to clean, vacuum, and inspect sanitary sewer manholes as well as eliminate infiltration, repair voids, restore structural integrity and provide corrosion protection by the application of a specified resin cure in place liner to the wall and bench surfaces of brick/concrete structures or structures produced with any other masonry construction material. These structures include, but are not limited to manholes.

The information contained below are the specific qualifications each contractor must meet in order to provide an accurate proposal. Attachments include Sanitary Sewer Structure Rehabilitation 2019 Manhole Map, Bid Sheet, and Technical Specifications.

Requirements - General:

- Work must comply with all applicable federal, state and local laws and regulations
- All equipment and materials shall be compliant with manufacturers recommendations and the Township Standard Specifications and Details
- Contractor shall be responsible for obtaining all local regulatory permits (including fees) which may include MDOT, and Isabella County Road Commission.
- Date of completion to be within 45 consecutive calendar days of receipt of Notice to Proceed or as coordinated with Township Staff.
- Provide in addition to all other manufacturer warranties, a (1) year full labor and material warranty on all workmanship, material and equipment furnished for this project.

- Prospective bidders are recommended to conduct a site visit prior to bidding although not required. All site inspections must be scheduled with the Township at least seven (7) days prior to the bid due date.

Terms of Agreement:

General:

- To hold bid open for 60 consecutive calendar days from the bid due date
- To enter into and execute a contract with Charter Township of Union
- References:
 - Provide minimum of three (3) references of similar municipality projects located within Michigan and have been completed within the last five (5) years.

Insurance:

- Contractor will have Worker's Compensation Insurance in limits required by state law and Comprehensive General Liability Insurance coverage in force for all of its operations under this contract. Township and DPW shall be listed as additional insureds on policy. A copy will be provided to the Township prior to commencing work.

Bonds:

- The Contractor shall include in the proposal price the cost to provide the following:
 - Letter of Surety and licensed to do business in the State of Michigan.

Shop Drawing Submittals:

- Provide one hard and one pdf copy of material specification sheets, and warranty information to Township. Do not proceed until written approval is received

Services / materials to be provided:

Contractor shall provide all equipment, and materials necessary to complete the work described herein. The scope of work shall include but shall not be limited to the following.

- Manhole Rehabilitation of 18 sanitary sewer structures
 - Refer to the attached Drawing and Technical Specifications for additional information.
- General
 - Mobilization, site restoration and cleanup
 - Coordination of delivery and unloading of equipment and materials
 - Contractor shall conduct all work so as to not interfere with the existing system operations.
 - Field investigation to confirm material type prior to performing work.
 - Coordination with Township Staff and DPW

Additional Services / Materials to Be Included:

- Contractor shall be responsible to coordinate and provide construction schedule and minimum 48-hour notice before commencing work.
- Coordination with property owners



Contractors Proposal Form

Bidders are instructed to submit bids for this project on a per item basis.

All bid items are tax inclusive. All work shall be in compliance with DPW Specifications, details, drawings, and terms identified in the RFP and applicable laws.

The following bid tabulation sheet is per item and the Township reserves the right to accept and/or reject any or all portions of the proposal.

**2019 SANITARY SEWER MANHOLE REHABILITATION –
BID SHEET**

Proposal of _____

(Hereinafter called “Bidder”), organized and existing under the Laws of the State of _____, doing business as _____,*
to Charter Township of Union, Isabella County MI.

In compliance with your Request for Bids, Bidder hereby proposes to perform Work for the rehabilitation of Eighteen (18) Sanitary Sewer Manholes in strict accordance with the Contract Documents within the time set forth therein and at the prices stated below.

By submission of this Bid, each Bidder certifies, and in the case of a joint Bid, each party thereto certifies as to his own organization that this Bid has been arrived at independently, without consultation, communication, or agreement as to any matter relating to this Bid with any other Bidder or with any competitor.

Bidder hereby agrees to commence Work under this Contract on or before a date to be specified in the Notice to Proceed and to substantially complete the Project within 45 consecutive calendar days thereafter, and fully complete Project (including restoration, punch list items, and close-out documents) within 30 days of Substantial Completion. Bidder further agrees to pay as liquidated damages, the sum of \$500.00 for each consecutive calendar day thereafter.

Bidder hereby agrees to also pay for the actual costs to the Owner for Resident Project Representative and Project management services and all additional inspection costs beyond the Contract completion date established by the “Notice to Proceed”.

Bidder agrees to perform all Work in the Contract Documents for the following prices:

Manhole Number	Rehabilitation Description	Unit	Item Cost
MH#04-DEER	Leak Stop Only	1	
MH#06-DEER	Leak Stop Only	1	
MH#08-DEER	Leak Stop Only	1	
MH#13-DEER	Leak Stop and Cured in Place Liner (CIP)	1	
MH#151-DEER	Leak Stop and Cured in Place Liner (CIP)	1	
MH#151A-DEER	Leak Stop and Cured in Place Liner (CIP)	1	
MH#151B-DEER	Leak Stop Only	1	
MH#151C-DEER	Leak Stop Only	1	
MH#151D-DEER	Leak Stop Only	1	
MH#151E-DEER	Leak Stop Only	1	
MH#152-DEER	Leak Stop and Cured in Place Liner (CIP)	1	
MH#153-DEER	Leak Stop and Cured in Place Liner (CIP)	1	
MH#156-DEER	Leak Stop and Cured in Place Liner (CIP)	1	
MH#158-DEER	Leak Stop Only	1	
MH#159-DEER	Leak Stop Only	1	

Manhole Number	Rehabilitation Description	Unit	Item Cost
MH#159A-DEER	Leak Stop Only	1	
MH#160-DEER	Leak Stop Only	1	
MH#- 13A River	Leak Stop and Cured in Place Liner (CIP)	1	
	Total	18	

Amount of Bid in Words

Respectfully submitted,

Seal if Bid is by a Corporation

ATTEST:

Title

Signature

Name of Contractor

Address



Department of Public Services

5228 South Isabella Road
Mt. Pleasant, MI 48858

Phone (989) 772 4600 ext. 224

Fax (989) 773 1988

E Mail ksmith@uniontownshipmi.com

2019 - REHABILITATION OF SANITARY SEWER MANHOLE STRUCTURES SPECIFICATION

SECTION 1: GENERAL

1.01 DESCRIPTION

This specification includes all work, materials and equipment required for the structural rehabilitation of eighteen (18) sanitary sewer manhole structures located in The Charter Township of Union Township. The eighteen (18) manholes are located on Deerfield Road and the intersection of River Road and Industrial Drive. The purpose is to clean, vacuum, and inspect sanitary sewer manholes as well as eliminate infiltration, repair voids, restore structural integrity and provide corrosion protection by the application of a specified cure in place liner to the wall and bench surfaces of brick/concrete structures or structures produced with any other masonry construction material. These structures include, but are not limited to manholes.

1.02 QUALITY ASSURANCE

- A. Furnish materials of quality required by the American Society for Testing and Materials (ASTM) standards or other approved standards and specifications.
- B. Provide guarantee against defective materials and workmanship in accordance with the requirements of these specifications.
- C. The contractor installing the finished protective liner will be a certified trained applicator of the specified processes. Contractor must include with bid documents at least three verifiable references of projects completed within the last five years using the specified materials.
- D. Provide verifiable independent third-party creep test results documenting no less than 70% retention of flexural modulus of elasticity after 50 years of service. The third-party testing firm may not be affiliated with the manufacturer in any way.

1.03 REFERENCES

American Society for Testing and Materials (ASTM) Annual Book of Standards:

- A. ASTM D638-91: Test Method for Tensile Properties of Plastics.
- B. ASTM D790-91: Test Methods for Flexural Properties of Unreinforced and reinforced Plastics and Electrical Insulating Materials.
- C. ASTM D638 - Tensile Properties of Plastics.
- D. ASTM D790 - Flexural Properties of Unreinforced and Reinforced Plastics.
- E. ASTM D695 - Compressive Properties of Rigid Plastics.
- F. ASTM D4541 - Pull-off Strength of Coatings Using a Portable Adhesion Tester.
- G. ASTM D2584 - Volatile Matter Content.
- H. ASTM D543 - Resistance of Plastics to Chemical Reagents.



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- I. ASTM C109 - Compressive Strength Hydraulic Cement Mortars.
- J. ACI 506.2-77 - Specifications for Materials, Proportioning, and Application of Shotcrete.
- K. ASTM C579 - Compressive Strength of Chemically Setting Silicate and Silica Chemical Resistant Mortars.
- L. SSPC SP-13/NACE No. 6 – Surface Preparation of Concrete
- M. ASTM - The published standards of the American Society for Testing and Materials, West Conshohocken, PA.
- N. NACE - The published standards of National Association of Corrosion Engineers (NACE International), Houston, TX.
- O. SSPC - The published standards of the Society of Protective Coatings, Pittsburgh, PA.

1.04 PROJECT/SITE CONDITIONS

Coordinate with the Utility Foreman, MDOT, and the Isabella County Road Commission for traffic control and all required permitting during rehabilitation work at each designated location. All permitting is the responsibility of the contractor and a copy of all required permits must be provided to the Charter Township of Union prior to work commencing.

1.05 SEQUENCING

No interruptions of flow through manholes, wet wells, pump stations or any other portion of the plant or sanitary sewer system shall be allowed, if interruption of flow is required bypass pumping shall be utilized. All bypass pumping and method of bypass pumping shall be coordinated with and approval received from the Utility Foreman prior to the interruption.

SECTION 2: PRODUCTS

2.01 MATERIALS

- A. Infiltration Control mix:
 - 1. Minor Infiltration.
 - a. Cementitious Grout (De Neef Industrial Products)

A rapid-setting cementitious grout or chemical grout specifically formulated for leak control should be used to stop minor water infiltration. It should be mixed and applied according to the manufacturers recommendations and should meet the following minimum requirements.

Compressive strength	ASTM C 109	1,800 psi @ ½ hr 4,000 psi @ 24 hrs 5,000 psi @ 7 days
Tensile strength	ASTM C 190	300 psi @ 7 days 350 psi @ 28 days



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2. Very Active Infiltration

a. Chemical Grout (DC Neef Industrial Chemicals)

- 1). A chemical grout must be used for stopping very active infiltration, filling voids and should be mixed and applied according to manufacturer's recommendations. The cementitious grout should be volume stable having a minimum 1-day compressive strength of 50 psi and a 28-day compressive strength of 250 psi.
- 2). Chemical grouts can be used for stopping very active infiltration and should be mixed and applied per manufacturer's recommendations.

B. Patching and profiling mix:

1. Cementitious Compound (Strong Seal or equivalent product)

A quick setting cementitious material can be used to bring the substrate to profile by filling voids, cracks, missing mortar and other substrate defects. It should be mixed and applied according to the manufacturers recommendations and should meet the following minimum requirements.

Compressive strength	ASTM C 109	1000 psi @ 1 hr 3500 psi @ 48 hrs 5000 psi @ 28 days
Tensile strength	ASTM C 307	200 psi @ 24 hrs 300 psi @ 7 days

C. Resin Based Liner:

1. The resin-based material shall be used to form the cured in place on structural enhanced monolithic liner covering all interior surfaces of the structure including benches and inverts of manholes. The finished liner shall be approved and conform to the minimum physical requirements listed below.

Cured in Place Liner

Compressive strength	ASTM D 695	21,000 psi min
Tensile strength	ASTM D 638	35,000 psi min
Flexural strength	ASTM D 790	35,000 psi min
Bond		Shall exceed tensile strength of substrate
Flexural modulus (initial)	ASTM D 790	1.500 MPsi min
Density		62.4 # / pcf

- a. The finished structure shall be corrosion resistant to: Hydrogen Sulfide; 200% sulfuric Acid; 170% Nitric Acid; 5% Sodium Hydroxide; road salts for winter conditions as well as other common ingredients of the sanitary sewage environment.
- b. The wall of the liner will be structurally designed to withstand the hydraulic load generated by the groundwater table & restore structural integrity. The long term (50 yr.) value of the flexural modulus of elasticity will be a minimum of 500,000 psi and is an integral part of the engineering equation used to design the wall thickness of the structural liner.



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For this reason, the value of the long-term flexural modulus of the proposed product will be certified by an independent, third party testing lab and submitted with the design calculations for each individual structure.

Definition- Long term value will be identified as initial flexural modulus less the reduction in value caused by Creep over a fifty (50) year minimum period and verified by DMA testing.

2. Other Materials: Because of the advantages associated with rapid cure and infinite thickness capabilities, no resin-based materials shall be used to achieve the structural enhancement without prior approval of the Utility Foreman or Public Service Director.

SECTION 3: EXECUTION

3.01 INSPECTION

- A. Evaluation of Atmosphere: Prior to entering structures, an evaluation of the atmosphere will be conducted to determine the presence of toxic, flammable vapors or possible lack of oxygen. The evaluation shall be in accordance with local, state or federal safety regulations.

3.02 PREPARATION

- A. Place covers over all pipe openings to prevent extraneous material from entering the sewer system. All foreign material shall be removed from the structures wall and bench floor using a pressure water spray (minimum 2500 psi). The use of acid for cleaning purposes, no matter how dilute, will not be allowed. Loose or protruding brick, mortar and concrete shall be removed by using a mason hammer and chisel. Fill any large voids with quick setting patch mix as described in Paragraph (2.01 IIA). The surface to be repaired must be clean and free of any loose materials.
- B. Minor leaks shall be stopped using the quick-setting specially formulated infiltration control mix (paragraph 2.01 IA) and shall be mixed and applied per manufacturer's recommendations. When severe infiltration is present, drilling may be required in order to pressure grout outside the structure using either a cementitious or chemical grout (paragraph 2.01 IB). Manufacturer's recommendations shall be followed when pressure grouting is required.

3.03 INSTALLATION/APPLICATION

- A. Application Temperatures: Application of liner shall not be made unless the ambient temperature inside the structure is 50 degrees or higher. All material specifications for temperature must be met.
- B. Bench, Invert Repair:
 1. The manhole bench must be sprayed/cured in place but depending on availability and future plans, some judgment consideration will have to be made regarding the invert. Important issue here is the necessity to ensure a monolithic system is achieved.
 2. After bypass pumping of the flow and thorough cleaning preparatory work has been achieved. The cured in place resin-based liner shall be applied to the invert, bench and wall areas in the same manner as specified for the liner application below. The cured in place liner shall be applied such that the entire structure receives a structurally enhanced monolithic liner.



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3. The finished invert surfaces shall be smooth, free of ridges and will be sloped in the direction of flow. Special care shall be used to ensure a smooth transition between the new manhole invert and intersecting pipeline inverts such that flow will not be impaired.
- C. Liner Application: The resin-based liner shall be cured in place to all surfaces by a trained technician who is experienced in the application of a sprayed or cured in place applied liner and has been certified by the manufacturer. Liner will be applied in accordance to all manufacturer and material specifications. Appropriate personal protection equipment shall be utilized but, in every case, when applying the liner in place, the sprayer and all other personnel in direct contact with the spray atmosphere, will always be protected by supplied air.

The minimum thickness of the material applied is to be no less than 250 mils (1/4") in order to support structural integrity. No other products such as cement or grouts may be used as part of the structural reinstatement, however, said products may be used as part of the repair process prior to sprayed application of the structure as specified in Section 2.

Application of the cured in place liner applied material must be completed in one (1) mobilization in order to minimize the disruption and cost of excessive bypassing, pipeline plugging, traffic control and all other support services.

The finished manhole must be returned to full service immediately after the cured in place liner application is complete.

- D. Curing: The structure should be allowed to cure for 24 hours and return to ambient temperature prior to any physical testing, including vacuum testing.

3.04 FIELD QUALITY CONTROL

- A. The following test/inspection will be performed by the Utility Foreman.
 1. Visually verify the absence of leaks from infiltration.
- B. The following tests shall be performed by the Contractor.
 1. Vacuum Test: A vacuum test conforming to the requirements of ASTM C1244 shall be performed for every lined manhole or circular structure where practical.



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Bids Due:

September 18, 2019 10:30 a.m.

Address Sealed Bids to:

Charter Township of Union
Attn: Kim Smith – Public Service Director
5228 South Isabella Road
Mt. Pleasant MI 48858

Inquiry:

Kim Smith – Public Works Coordinator
ksmith@uniontownshipmi.com (989)772-4600 ext. 224
John Bebow – Utility Foreman
jbebow@uniontownshipmi.com

The Charter Township of Union reserves the right to accept or reject all bids that are received.

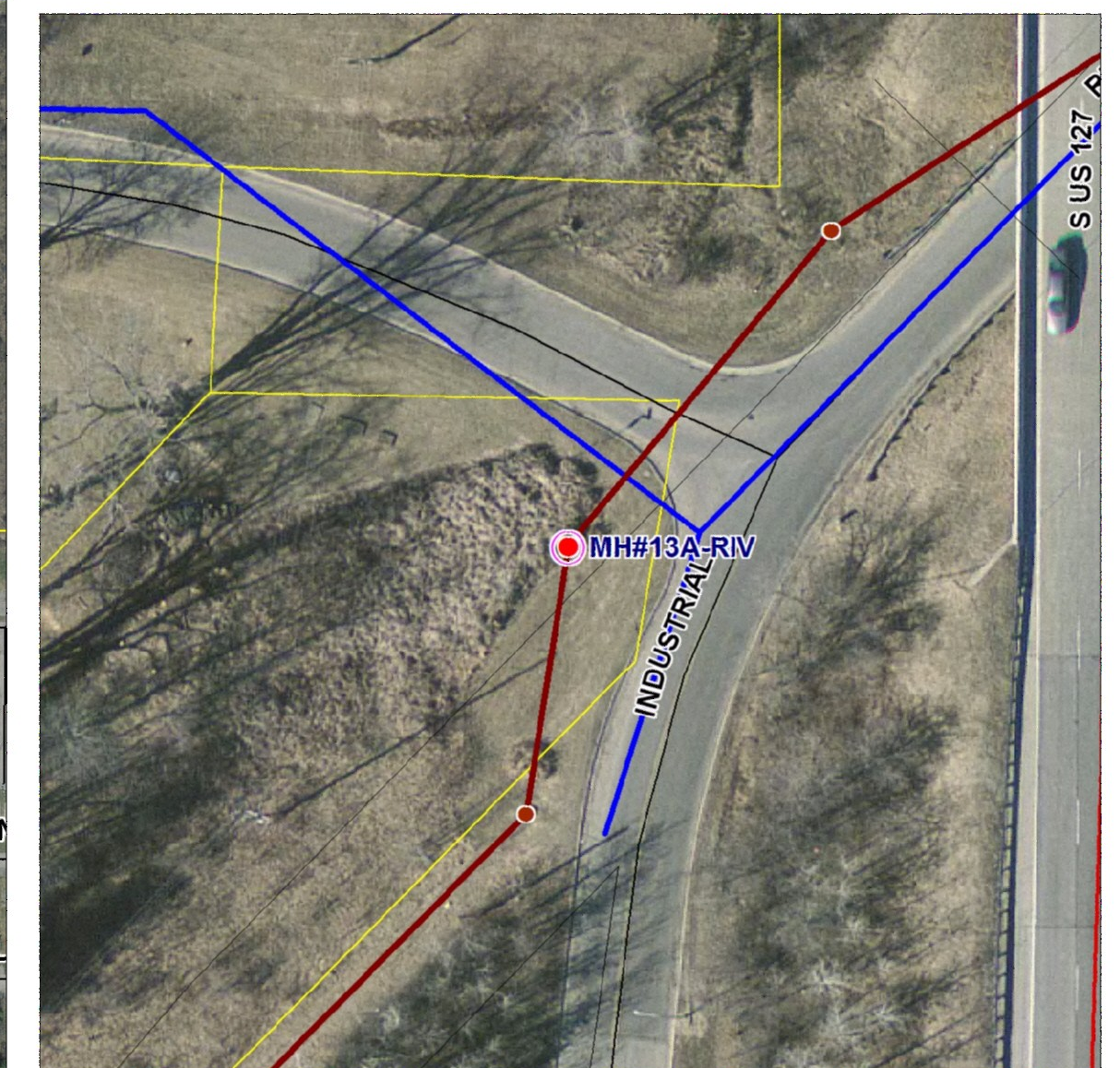
No Bidder may withdraw their Bid within sixty (60) days after the actual date of Bid opening.

Sanitary Sewer Structure Rehabilitation 2019 Manhole Map

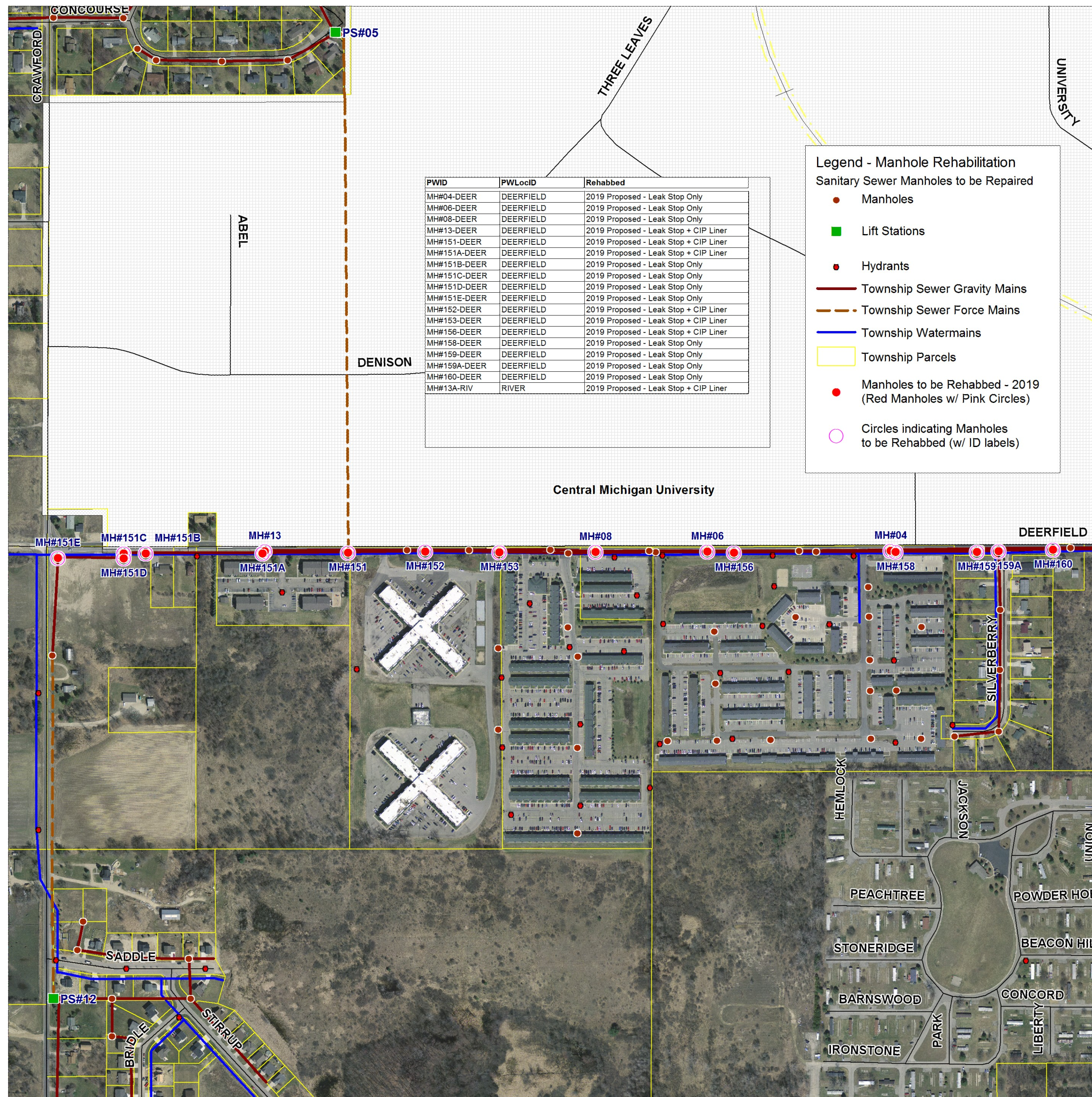
Charter Township of Union
T14N R04W
Isabella County, Michigan

Manholes to be Repaired:

- Area #1 - Seventeen (17) Manholes:
Deerfield Road Area
(South side of Deerfield Road)
- Area #2 - One (1) Manhole:
River Road & Industrial Drive Intersection
(In grass belt 130' west of US-127 overpass).



Map Production Date: July 24, 2019
Union Township Mapping & GIS



Legend - Manhole Rehabilitation

Sanitary Sewer Manholes to be Repaired

- Manholes
- Lift Stations
- Hydrants
- Township Sewer Gravity Mains
- - - Township Sewer Force Mains
- Township Watermains
- Township Parcels

• Manholes to be Rehabbed - 2019 (Red Manholes w/ Pink Circles)

○ Circles indicating Manholes to be Rehabbed (w/ ID labels)