DATE ISSUED_____ SET #_____

ISSUED FOR:
REVIEW/ APPROVAL____
BIDDING_____
CONSTRUCTION_____

PROPOSAL, CONTRACT DOCUMENTS AND SPECIFICATIONS FOR STORM SEWER CLEANING

VILLAGE OF LAKE LINDEN

HOUGHTON COUNTY, MICHIGAN

MAY 2022

TRAVERSE ENGINEERING SERVICES
701 HANCOCK STREET
HANCOCK, MICHIGAN 49930

File No. 424-03

REQUEST FOR BIDS

The Village of Lake Linden is accepting bids to clean storm sewers in the Village located in Houghton County, Michigan.

Sealed bids for the cleaning will be received by the Village of Lake Linden at the Village office located at 401 Calumet Avenue, Lake Linden Michigan 49945 of until 11:00 A.M. local time Thursday JUNE 2, 2022 and then at said office publicly opened and read aloud. Bidders may also submit their bid by email by the time and date stipulated for receiving bids. Bids submitted by email must be submitted to the Village of Lake Linden at vll@lakelinden.net and traverseengineering@gmail.com.

The work shall consist, in part, of cleaning approximately 9,000 LFT of storm sewer in the Village of Lake Linden in Houghton County, Michigan.
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The Information for Bidders, Form of Bid, Form of Contract, Plans, Specifications and other contract documents may be examined at the following:

1. Village of Lake Linden
   401 Calumet Avenue
   Lake Linden, MI 49945

2. Traverse Engineering Services, P.C.
   701 Hancock Street
   Hancock, MI 49930

Copies may be obtained at the office of Traverse Engineering Services, P.C. 701 Hancock Street, Hancock, Michigan 49930 upon payment of a $60.00 non-refundable handling charge. Digital copies of the plans and contract documents may be obtained at the office of Traverse Engineering Services, P.C. 701 Hancock Street, Hancock, Michigan 49930 upon payment of a $45.00 non-refundable handling charge. The Owner reserves the right to waive any informality or to reject any and all bids.

It is the responsibility of each Bidder before submitting a Bid, to visit the site to become familiar with local conditions that may affect cost, progress, performance or furnishing of the Work, and notify Owner of all conflicts, errors or discrepancies in the information provided with the bid documents. Contact Andrew Goldsworthy at 906-296-9911 to schedule a site visit.

No Bidder may withdraw his bid within 45 days after the actual date of opening thereof.

DATE: May 6, 2022 Robert Poirier, Clerk

SCOPE OF WORK

The work under this contract consists of cleaning of approximately 9,000 LFT of storm sewers in the Village of Lake Linden in Houghton County Michigan. Pipe sizes range from 8" diameter to 60" diameter including equivalent 48" and 60" elliptical pipe. Pipe materials include PVC, VCP, RCP, CMP, brick and HDPE. There may be other pipe materials involved. Completion of the cleaning is to be documented by CCTV.

INFORMATION FOR BIDDERS

1. Each Bidder shall submit, with his bid, a list of three projects similar in nature to the work proposed herein. The list shall contain the name of the Owner, contact information, amount of the contract and project location. Failure to submit a list of similar projects may be cause for rejection of the bid.

2. The Bidder shall submit, with his bid, the names of contractors or persons he proposes to use as subcontractors on the work. Failure to submit a list of subcontractors may be cause for rejection of the bid.

3. The Contractor shall include, and be deemed to have included in his bid and contract price, all Michigan Sales and Use Taxes currently imposed by Legislative enactment and as administered by the Michigan Department of Revenue on the bid date.

   If the Contractor is not required to pay the burden, or obtains a refund or drawback in whole or in part of any Michigan Sales or Use Tax, interest or penalty thereon which was required to be and was deemed to have been included in the bid and contract price, the contract price shall be reduced by the amount thereof and the amount of such reduction, whether as a refund or otherwise, shall enure.

4. The Bidder's attention is directed to the fact that all applicable state laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the contract throughout, and they will be deemed to be included in the contract the same as though written out in full.

5. The successful bidder will be required to furnish the types and amounts of insurance coverage as listed in the General Conditions and Instruction to Bidders.

6. All materials and equipment incorporated in the work of this contract shall be new. No second hand or salvaged materials or equipment will be permitted unless specified.

7. A bid that is qualified is subject to rejection by the Owner.

8. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract and for safety precautions and programs in connection with the Work.

9. Each Bidder shall submit the following information with their Bid;

   a. A list of a minimum of three previous projects with names and telephone numbers of contact persons familiar with the installation.

   b. The bidders proposed schedule for completion of the sewer cleaning.

10. It is the responsibility of each Bidder before submitting a Bid, to visit the site to become familiar with local conditions that may affect cost, progress, performance or furnishing of the Work, and notify Owner of all conflicts, errors or discrepancies in the information provided with the bid documents. Contact Andrew Goldsworthy at 906-296-9911 to schedule a site visit.

11. The submission of a Bid will constitute an incontrovertible representation by Bidder that the Bid is premised upon performing and furnishing the Work required by the Bid Documents and such means, methods, techniques, sequences or procedures of construction as may be indicated in or required by the Bid Documents, and that the Bid Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance and furnishing of the work.

12. The Owner has made application for the Michigan Department of Transportation (MDOT) permit. A copy of the permit is attached to these specifications or will be provided to bidders by addendum. The Contractor shall include all costs in complying with MDOT permit conditions in the price bid for Mobilization, Insurance and Permits.

GENERAL CONDITIONS AND INSTRUCTIONS TO BIDDERS
VILLAGE OF LAKE LINDEN STORM SEWER CLEANING

1. INSURANCE

The Contractor shall provide, upon acceptance of his Bid, Certificates of Insurance for affording the following coverage:

Workers' Compensation, and related coverages:

a. State:	Statutory
b. Applicable Federal (e.g., Longshoremen's):	Statutory
c. Employer's Liability	**$ 500,000**

Contractor's General Liability shall include completed operations and product liability coverages and eliminate the exclusion with respect to property under the care, custody, and control of the Contractor:

a. General Aggregate	**$ 2,000,000**
b. Products - Completed Operations Aggregate	**$ 1,000,000**
c. Personal and Advertising Injury	**$ 1,000,000**
d. Each Occurrence (Bodily Injury and Property Damage)	**$ 1,000,000**
e. Property Damage liability insurance will provide Explosion, Collapse, and Underground coverages where applicable.	
f. Excess or Umbrella Liability	
1) General Aggregate	**$ 2,000,000**
2) Each Occurrence	**$ 2,000,000**

Automobile Liability

a. Bodily Injury:	
Each Person	**$ 1,000,000**
Each Accident	**$ 1,000,000**
b. Property Damage:	
Each Accident	**$ 1,000,000**
c. Combined Single Limit of	**$ 1,000,000**

The Contractual Liability coverage shall provide coverage for not less than the following amounts:

a. Bodily Injury:	
Each Person	**$ 2,000,000**
Each Accident	**$ 2,000,000**
b. Property Damage:	
Each Accident	**$ 2,000,000**
Annual Aggregate	**$ 2,000,000**

The Village of Lake Linden and Traverse Engineering Services, P.C., shall be named as additional insureds on all policies.

After completion of this contract and final acceptance by the owner, the Contractor shall continue to

furnish Certificates of Insurance for Comprehensive General Liability verifying the continuance of coverage for products and/or completed operations for a period of not less than 12 months beyond the termination of the contract.

2. BID SECURITY

2.1 Each Bid must be accompanied by Bid security made payable to Owner in an amount of five percent of the Bidder's maximum Bid price and in the form of a certified or bank check or a Bid Bond issued by a surety acceptable to the Owner.

2.2 The Bid security of the Successful Bidder will be retained until such Bidder has executed the Agreement and furnished the required contract security, whereupon the Bid security will be returned. If the Successful Bidder fails to execute and deliver the Agreement and furnish the required contract security within fifteen days after the Notice of Award, Owner may annul the Notice of Award and the Bid security of that Bidder will be forfeited.

The Bid security of other Bidders whom Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of the seventh day after the Effective Date of the Agreement or the forty-sixth day after the Bid opening, whereupon Bid security furnished by such Bidders will be returned. Bid security with Bids which are not competitive will be returned within seven days after the Bid opening.

2.3 Attorneys-in-fact who sign bid bonds or contract bonds must file with each bond a certified and effectively dated copy of their power of attorney.

3. BID FORM.

3.1. The Bid Form is included with the Bidding Documents; additional copies may be obtained from Engineer.

3.2. All blanks on the Bid Form must be completed in ink or by typewriter.

3.3. Bids by corporations must be executed in the corporate name by the president or a vice-president (or other corporate officer accompanied by evidence of authority to sign) and the corporate seal must be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation must be shown below the signature.

3.4. Bids by partnerships must be executed in the partnership name and signed by a partner, whose title must appear under the signature and the official address of the partnership must be shown below the signature.

3.5. All names must be typed or printed below the signature.

3.6. The address and telephone number of communications regarding the Bid must be shown.

4. SUBMISSION OF BIDS.

Bids shall be submitted at the time and place indicated in the Advertisement or Invitation to Bid and shall be enclosed in an opaque sealed envelope, marked with the Project title (and, if applicable, the designated

portion of the Project for which the Bid is submitted) and name and address of the Bidder and accompanied by the Bid security and other required documents. If the Bid is sent through the mail or other delivery system the sealed envelope shall be enclosed in a separate envelope with the notation "BID ENCLOSED" on the face of it.

5. OPENING OF BIDS.

Bids will be opened and (unless obviously non-responsive) read aloud publicly. An abstract of the amounts of the base Bids and major alternates (if any) will be made available to Bidders after the opening of Bids.

6. BIDS TO REMAIN SUBJECT TO ACCEPTANCE.

All bids will remain subject to acceptance for forty-five (45) days after the day of the Bid opening, but Owner may, in its sole discretion, release any Bid and return the Bid security prior to that date.

7. AWARD OF CONTRACT.

Owner reserves the right to reject any and all Bids, to waive any and all informalities not involving price, time or changes in the Work and to negotiate contract terms with the Successful Bidder, and the right to disregard all nonconforming, nonresponsive, unbalanced or conditional Bids. Also, Owner reserves the right to reject the Bid of any Bidder if Owner believes that it would not be in the best interest of the Project to make an award to that Bidder, whether because the Bid is not responsive or the Bidder is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by Owner. Discrepancies in the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

8. BOND REQUIREMENTS

The successful bidder shall furnish surety bonds with sureties acceptable to the Owner. One bond equal to one hundred percent (100%) of the contract price as security for the faithful performance of the contract and one equal to one hundred percent (100%) of the contract price as security for the payment of all labor, materials, and supplies used in the work and protection of the Owner from all liens and damages arising from the work.

9. LAWS AND REGULATIONS

The Bidder's attention is directed to the fact that all applicable state laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the contract throughout, and they will be deemed to be included in the contract the same as though written out in full.

10. BIDDERS QUALIFICATION

No proposal will be considered from any bidder unless known to be skilled and regularly engaged in work of a character similar to that covered by the plans and specifications. In order to aid the Owner in determining the responsibility of any bidder, the bidder shall, within 48 hours after being requested in writing by the Owner to do so, furnish evidence satisfactory to the Owner of the bidder's experience and familiarity with work of the character specified herein.

11. MATERIALS

All materials and equipment incorporated in the work of this contract shall be new. No second hand or salvaged materials or equipment will be permitted unless specified.

12. COMPLETION

It is the intent of the Owner to start the work after spring runoff has abated and flows in the pipes are low enough to permit cleaning. Several small diameter pipes experience limited flow from spring runoff. The Contractor shall state in his proposal dates for the starting and completion of the work. The work is to be 100% complete on or before October 15, 2022.

Substantial completion is defined as the completion of all work specified herein including furnishing of the CCTV documentation confirming the completion of the completion of each section of pipe to be cleaned and satisfactory completion of all punch list items.

It is the intent of the Owner to issue the Notice of Award within 30 days of the receipt of bids.

PROPOSAL

PROJECT IDENTIFICATION: LAKE LINDEN STORM SEWER CLEANING

CONTRACT IDENTIFICATION AND NUMBER: TES File No. 424-03

THIS BID IS SUBMITTED TO:

VILLAGE OF LAKE LINDEN
401 CALUMET STREET
LAKE LINDEN, MICHIGAN 49945

1. The undersigned BIDDER proposes and agrees, if this Bid is accepted, to enter into an agreement with OWNER in the form included in the Contract Documents to perform and furnish all Work as specified or indicated in the Contract Documents for the Contract Price and within the Contract Time indicated in this Bid and in accordance with the other terms and conditions of the Contract Documents.

2. BIDDER accepts all of the terms and conditions of the Advertisement or Invitation to Bid and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for forty-five days after the day of Bid opening. BIDDER will sign and submit the Agreement with the Bonds and other documents required by the Bidding Requirements within fifteen days after the date of OWNER's Notice of Award.

3. In submitting this Bid, BIDDER represents, as more fully set forth in the Agreement, that:

(a) BIDDER has examined copies of all the Bidding Documents and of the following Addenda (receipt of all which is hereby acknowledged):

Date _____ Number _____

(b) BIDDER has familiarized itself with the nature and extent of the Contract Documents, Work, site, locality, and all local conditions and Laws and Regulations that in any manner may affect cost, progress, performance or furnishing of the Work.

(c) BIDDER has obtained and carefully studied (or assumes responsibility for obtaining and carefully studying) all examinations, investigations, explorations, tests and studies which pertain to the subsurface or physical conditions at the site or otherwise may affect the cost, progress, performance of furnishing of the Work as BIDDER considers necessary for the performance or furnishing of the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents and no additional examinations, investigations, explorations, tests, reports or similar information or data are or will be required by BIDDER for such purposes.

(d) BIDDER has reviewed and checked all information and data shown or indicated on the Contract Documents with respect to existing Underground Facilities at or contiguous to the site and assumes responsibility for the accurate location of said Underground Facilities. No additional examinations, investigations, explorations, tests, reports or similar information or data in respect of said Underground Facilities are or will be required by BIDDER in order to perform and furnish the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents.

(e) BIDDER has correlated the results of all such observations, examinations, investigations, explorations, tests, reports and studies with the terms and conditions of the Contract Documents.

(f) BIDDER has given ENGINEER written notice of all conflicts, errors or discrepancies that it has discovered in the Contract Documents and the written resolution thereof by ENGINEER is acceptable to BIDDER.

(g) This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; BIDDER has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; BIDDER has not solicited or induced any person, firm or corporation to refrain from bidding; and BIDDER has not sought by collusion to obtain for itself any advantage over any other Bidder or over OWNER.

TIME OF COMPLETION

Bidder thereby agrees to commence work under this contract on or before a date to be specified in the written "Notice to Proceed" of the Owner and to substantially complete the project on or before October 1, 2022 and to fully complete the project on or before October 15, 2022.

Bidder further agrees to pay as liquidated damages, the sum of $500 for each consecutive calendar day thereafter as hereinafter provided.

BID SCHEDULE

Note: Bids shall include sales tax and all other applicable taxes and fees.

ITEM	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1. Mobilization, Insurance & Permits	LUMP SUM	1		
2. Performance and Payment Bonds	LUMP SUM	1		
3. Clean 8” or 9” Diameter Sewer	LFT	350		
4. Clean 10” Diameter Sewer	LFT	230		
5. Clean 12” Diameter Sewer	LFT	1454		
6. Clean 15” Diameter Sewer	LFT	1115		
7. Clean 18” Diameter Sewer	LFT	2321		
8. Clean 20” Diameter Sewer	LFT	140		
9. Clean 24” Diameter Sewer	LFT	897		
10. Clean 30” Diameter Sewer	LFT	1238		
11. Clean 48” Diameter Sewer	LFT	345		
12. Clean 42”x53” Sewer	LFT	390		
13. Clean 60” Diameter Sewer	LFT	260		
14. Clean 48”x 76” Sewer	LFT	230		
15. Clean 8” to 12” Dia. Catch basin Leads	LFT	300		
16. Clean Catch Basins	EACH	90		
17. CCTV Sewer Inspection, 12” to 24”	LFT	300		
18. CCTV Sewer Inspection, 27” to 48”	LFT	300		

The sum of the foregoing Items 1 to 18 inclusive (TOTAL BASE BID) is $ _____.

The Bidder agrees that this bid shall be good and may not be withdrawn for a period of forty-five (45) calendar days after the scheduled time for receiving bids.

Bidder's Name _____ Date _____

Address _____ Phone_____

_____

Authorized Signature_____

AGREEMENT

ARTICLES OF AGREEMENT, made and entered into this the _____day of _____, 2022, by and between the VILLAGE OF LAKE LINDEN

party of the first part, hereinafter called "OWNER" and

_____.

of the City of _____, County of _____

_____, and State of _____, party of the

second part, hereinafter called the "CONTRACTOR", to wit:

1. That the Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

VILLAGE OF LAKE LINDEN STORM SEWER CLEANING

2. That the Proposal, Advertisement, Instruction to Bidders, Construction Specifications, Plans and Drawings, and Addenda hereto attached or herein to, shall be and are hereby made a part of this agreement and contract.

3. That the party of the second part shall furnish all labor, materials and appurtenances necessary, and do all the work as set forth in the Proposal and Addenda No. ___ according to the specifications, plans, etc. which have hereinbefore been made a part of this contract in a manner, time and place, all and singular, as herein set forth.

4. OWNER shall make progress payments on account of the Contract Price on the basis of CONTRACTOR'S Applications for Payment as recommended by ENGINEER, on or about the 25th day of each month during construction. All progress payments will be on the basis of the progress of the Work measured by the schedule of values established prior to the start of construction. 10% retainage will be withheld until the Work is 100% complete and accepted by the Owner.

5. The Work must be substantially completed on or before October 1, 2022. The Work must be completed and ready for final payment on or before October 15, 2022

6. OWNER and CONTRACTOR recognize that time is of the essence of this Agreement and that OWNER will suffer financial loss if the Work is not completed within the times specified in paragraph 5 above, plus any extension thereof allowed. They also recognize the delays, expense and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by OWNER if the Work is not completed on time.

   Accordingly, instead of requiring any such proof, OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty) CONTRACTOR shall pay OWNER Five Hundred Dollars and Zero Cents ($500.00) for each day that expires after the time specified in

paragraph 5. for Substantial Completion until the Work is substantially complete. After Substantial Completion if CONTRACTOR shall neglect, refuse to fail to complete the remaining Work within the Contract Time or any proper extension thereof granted by OWNER, CONTRACTOR shall pay OWNER Five Hundred Dollars and Zero Cents ($500.00) for each day that expires after the time specified for completion and readiness for final payments.

IN CONSIDERATION WHEREOF, said party of the first part, for it and its successors, promises and agrees to pay to said party of the second part, the sum provided in the attached proposal, dated, _____ including additions and deductions as provided therein

_____,

($_____) all in the time and manner provided herein.
(amount in figures and writing)

For the faithful performance of all and singular of the stipulations, terms and conditions of this agreement, said parties respectfully bind themselves, their successors, their heirs, executors, administrators assigns.

IN WITNESS WHEREOF, the parties have hereunto set their hands and seals, in duplicate, the day and year first above written.

WITNESS:

_____

PARTY OF THE FIRST PART:

VILLAGE OF LAKE LINDEN

By _____

Title_____

WITNESS:

_____

PARTY OF THE SECOND PART:

_____.

By _____

Title _____

During the course of the Contract, the Contractor's responsible representative may be reached at the following telephone numbers:

Day-time office number _____

Night-time emergency number _____

GENERAL CONSTRUCTION SPECIFICATIONS

1. WORK INCLUDED

   All items of work on the plans or in the specifications that are not specifically noted in the Bid Schedule as a pay item shall be considered as included in the cost to clean the storm sewers and shall be constructed at no extra cost to the Owner.

2. SPECIFICATION BY REFERENCE

   Whenever reference is made to specifications other than those contained herein, said specifications, in effect at the time of bidding shall apply and be as binding as if fully repeated herein.

3. MATERIALS AND EQUIPMENT

   All materials and equipment incorporated in the work shall be new. No secondhand or salvaged materials or equipment will be permitted unless specifically authorized by the Owner.

4. MAJOR SUPPLIERS AND SOURCES OF MATERIALS

   The names and business addresses of manufacturers and suppliers of materials to be used by the Contractor shall be submitted for review by the Engineer. Prior use without approval of any item is at the risk of the Contractor. The Engineer's approval of information furnished does not release the Contractor from proper installation and performance of any material, equipment, or arrangement, or from his liability to replace same should it prove defective.

5. LAYOUT AND CONSTRUCTION STAKING

   The Contractor shall carefully compare all elevations given on the drawings with the information shown on the construction survey stakes and shall call the Engineer's attention to any discrepancies before proceeding with the work.

6. SOIL CONDITIONS

   Borings **have not** been made by the Owner.

7. PROJECT CONDITIONS PRIOR TO FINAL INSPECTION

   Before work shall be considered ready for final inspection, the Contractor shall have completed all items of work under his Contract and shall have removed all debris and waste materials from the work areas. In addition, all appropriate safety precautions shall be taken immediately prior to the start of any final inspection.

8. MAINTENANCE OF TRAFFIC

   All work shall be carried on in a neat and satisfactory manner, and interference with the normal flow of traffic shall be kept to a minimum. No street may be closed or partially barricaded without prior permission from the authority having jurisdiction. Such permission shall be in writing, and a copy thereof shall be delivered to the Owner prior to the closing or barricading of any street. If such permission is granted, the Contractor shall notify the local police and fire departments, the local Board of Education and any local private schools; and then erect "Street Closed" signs and designate a

suitable detour. Safety precautions shall be observed at all times. The Contractor shall, at all times, maintain traffic control devices and provide and maintain proper lights and barricades. In addition, if required by the authority having jurisdiction, the Contractor shall provide flagmen for the directing of traffic.

9. SAFETY

The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract and for safety precautions and programs in connection with the Work.

TECHNICAL SPECIFICATIONS

LAKE LINDEN STORM SEWER CLEANING

SUPPLEMENTAL SPECIFICATIONS
LAKE LINDEN STORM SEWER CLEANING

1.0 SAFETY

The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract and for safety precautions and programs in connection with the Work.

2.0 SPECIAL NOTE

It is the purpose of these Supplemental Specifications to cover special items not covered in the specifications. These Supplemental Specifications take precedence over other parts of the Contract Documents.

3.0 WORK INCLUDED

All items of work on the plans or in the specifications that do not fall into one of the categories specifically noted in the Bid Schedule as a pay item shall be considered as included in the cost of sewer cleaning and shall be constructed at no extra cost to the Owner.

4.0 REVIEW OF MATERIAL AND WORK TO BE PERFORMED

The Owner shall provide construction review services for the Work and Materials of the Project.

5.0 AGENCIES, PERMITS AND INSPECTIONS

Before construction starts, the Contractor shall: Contact the Engineer for inspection of work on the Project seven days prior to start of construction. Call Miss Dig at 800-482-7171, 3 days before construction commences, for underground utility locations. The location of all existing utilities shall be staked before construction starts.

The cost to apply for and secure all required permits is the responsibility of the Contractor. Include all permit costs in the amount bid for Mobilization, Insurance & Permits.

6.0 CLEANLINESS OF THE PROJECT

At the completion of the project remove all materials and construction litter from parking areas, drives, sidewalks and lawn areas. Sweep clean all paved areas impacted by the construction.

7.0 MAINTENANCE OF TRAFFIC AND SITE PROTECTION

Provide, erect and maintain barricades, lighting and guard rails as required by applicable regulatory agencies to protect users of adjacent roadways and to restrict unauthorized traffic, including recreational vehicles from entering the site during construction. All costs associated with maintenance of traffic shall be included in the cost of Mobilization.

8.0 CCTV INSPECTION

The Bid Schedule contains a bid item for CCTV inspection of storm sewers. No specific sewers have been identified at this time. The item is being bid to establish a unit price in the event the Owner requires CCTV of a specific sewer.

The Contractor is required to provide a copy of the CCTV documentation confirming that the cleaning has been completed on each of the sections identified in the contract documents to be cleaned. The cost to furnish this information must be included in the price bid for sewer cleaning.

9.0. SPECIFICATIONS BY REFERENCE

Whenever reference is made to specifications other than those contained herein, said specifications, in effect at the time of bidding shall apply and be as binding as if fully repeated herein.

All construction signage, barricades and all other items of work not specifically described in the supplemental specification or elsewhere in the contract documents shall be in accordance with the 2020 Edition of the MDOT Standard Specifications for Construction and the current edition of the MMUTCD.

10.0 DISPOSAL OF MATERIAL

It shall be the responsibility of the contractor to remove all rock, earth, and other debris removed from the storm sewers from the site. Materials removed from the storm sewers shall be transported to the Village surplus material disposal site located off M-26 approximately 1,350 feet west of Hecla Street at the direction of Andrew Goldsworthy, DPW Superintendent.

END OF SECTION

SEWER CLEANING AND TELEVISION INSPECTION

SCOPE OF WORK

1.1 This work shall consist of all labor, equipment and materials necessary to clean the designated storm sewer lines and catch basins in accordance with these specifications. The work shall consist of, but not necessarily be limited to, performing the following work tasks where specified.

1.2 The area of work and type of repair to be performed shall be at those locations shown on the tables or drawings and made part of these specifications, and shall be confined into pipe sizes ranging in size from eight inches through sixty inches in diameter, including equivalent elliptical pipe sizes.

GENERAL

2.1 Sewer Line Cleaning shall be performed by hydraulically propelled or mechanically operated cleaning equipment. Selection of equipment shall be based on such field conditions as access availability to manholes, type of debris to be removed, depth of sewer flow, etc.

2.2 Sewer Flow Control shall be accomplished as required and at the direction of the Owner's Representative.

SEWER LINE CLEANING

3.1 Sewer Cleaning: The designated storm sewer manhole sections shall be cleaned using mechanically powered, hydraulically propelled or high velocity sewer cleaning equipment, as specified. Selection of the equipment used shall be based on the conditions of the lines at the time the work commences. The equipment and methods selected shall be satisfactory to the Owner's Representative. The equipment selected for cleaning shall be capable of removing dirt, rocks, sand, and other deleterious materials and obstructions from the sewer lines and manholes. If cleaning of an entire section cannot be successfully performed from one manhole, the equipment shall be re-setup on the other manhole and cleaning again attempted. If, again, successful cleaning cannot be performed or the equipment fails to traverse the entire manhole section, it will be assumed that a major blockage exists and the cleaning effort shall be abandoned.

Water needed for cleaning may be obtained from the Village of Lake Linden at no cost.

3.2 Material Removal: All sludge, dirt, sand, rocks and other solid or semi-solid material resulting from the cleaning operation shall be removed at the downstream manhole of the section being cleaned. Passing material from manhole section to manhole section which could cause line stoppages, accumulations of sand in wet wells, or damage pumping equipment shall not be permitted.

3.3 Disposal of Materials: All Solids or semi-solids resulting from the cleaning operations shall be removed from the site and disposed of in a manner and at a site designated by the Owner. All materials shall be removed from the site no less often than at the end of each workday. Under no circumstances will the Contractor be allowed to accumulate debris, etc., on the site of work beyond the stated time, except in totally enclosed containers and as approved by the Owner.

3.4 Cleaning Precautions: During all sewer cleaning operations, satisfactory precautions shall be taken to protect the sewer lines from damage that might be inflicted by the improper use of cleaning equipment. Whenever hydraulically propelled cleaning tools, which depend upon water pressure to provide their cleaning force or any tools which retard the flow of water in the sewer line are used, precautions shall be taken to ensure that the water pressure created does not cause any damage or flooding to public or private property being served by the manhole section involved. The flow of water in the storm sewer shall be utilized to provide necessary pressures for hydraulic cleaning devices whenever possible. When additional quantities of water from fire hydrants are necessary to avoid delay in normal working procedures, the water shall be conserved and not used unnecessarily. No fire hydrant shall be obstructed in case of a fire in the area served by the hydrant nor shall a hydrant be used for the purpose described unless a vacuum break is provided.

3.5 Final Acceptance: Acceptance of this portion of the work shall be made upon the successful completion of the television inspection and shall be to the satisfaction of the Owner's Representative. In areas where television inspection is not performed, or where cleaning was not found satisfactory during the television inspection, a double squeegee with each squeegee the same size as the sewer, shall be pulled through each manhole section as evidence of being adequately cleaned.

3.6 Cleaning Equipment:

a. High Velocity Hydro-Cleaning Equipment: All high velocity sewer cleaning equipment shall be constructed for ease and safety of operation. The equipment shall have a selection of two or more high velocity nozzles. The nozzles shall be capable of producing a scouring action from 15 degrees to 45 degrees in all size lines designated to be cleaned. Equipment shall also include a high velocity gun for washing and scouring manhole walls and floor. The gun shall be capable of producing flows from a fine spray to a long distance solid stream. The equipment shall carry its own water tank, auxiliary engines, pumps, and hydraulically driven hose reel. All controls shall be located so that the equipment can be operated above ground.

SEWER FLOW CONTROL

4.1 When sewer line flows at the upstream manhole of the manhole section being worked are above the maximum allowable requirements for television inspection, joint treating or joint sealing, the flows shall be reduced to the levels shown in 4.2 by manual operation of pump stations, plugging/blocking of the flows or by pumping/bypassing of the flows, as specified.

4.2 Sewer flows shall not exceed those shown below for the respective line sizes as measured in the manhole when performing television inspection, joint testing or joint sealing tasks.

a. Maximum Line Flows.....Television Inspection

6" - 10" Pipe.....20% of Pipe Diameter
12" - 24" Pipe.....25% of Pipe Diameter

b. Maximum Line Flows.....Joint Testing/Sealing
6" - 12" Pipe.....25% of Pipe Diameter
12" - 24" Pipe.....20% of Pipe Diameter

4.3 Plugging or Blocking: A sewer line plug shall be inserted into the line at a manhole upstream from the section being inspected and/or sealed. The plug shall be so designed that all or any portion of the sewage flows can be released. During the inspection, testing or sealing portion of the operation, flows shall be shut off or reduced to within the maximum flow limits specified in 4.2. After the work tasks have been completed, flows shall be restored to normal.

4.4 Pumping and Bypassing: When pumping/bypassing is required, the Contractor shall supply the necessary pumps, conduits and other equipment to divert the flow of sewage around the manhole section in which work is to be performed. The bypass system shall be of sufficient capacity to handle existing flows plus additional flow that may occur during periods of a rain storm. The Contractor will be responsible for furnishing the necessary labor and supervision to set up and operate the pumping and bypassing system. If pumping is required on a 24-hour basis, all engines shall be equipped in a manner to keep the pump noise at a minimum.

4.5 Flow Control Precautions: Whenever flows in a sewer line are blocked, plugged or bypassed, sufficient precautions must be taken to protect the sewer lines from damage that might be inflicted by excessive sewer discharging. Further, precautions must be taken to ensure that sewer flow control operations do not cause flooding or damage to public or private property being served by the sewers involved.

CLOSED CIRCUIT TELEVISION INSPECTION

5.1 Each manhole section shall be visually inspected by means of the specified post cleaning closed-circuit television upon completion of cleaning. The inspection will be done one manhole section at a time and the flow in the section being inspected will be suitably controlled, as specified in Section IV. Other closed-circuit television inspection that may be requested by the Owner will be paid for at the unit priced bid for Closed-Circuit Television Inspection.

5.2 The television camera used for the inspection shall be one specifically designed and constructed for such inspection. Lighting for the camera shall be suitable to allow a clear picture for the entire periphery of the pipe. The camera shall be operative in 100% humidity conditions. The camera, television monitor and other components of the video system shall be capable of producing a minimum 500 line resolution video picture. Picture quality and definition shall be to the satisfaction of the Owner's Representative and if unsatisfactory, equipment shall be removed and no payment made for unsatisfactory inspection.

5.3 The camera shall be moved through the line in either direction at a uniform rate, stopping when necessary to ensure proper documentation of the sewer's condition but in no case will the television camera be pulled greater than 30 feet per minute. Manual winches, power winches, TV cable and powered rewinds or other devices that do not obstruct the camera view or interfere with proper documentation of the sewer conditions shall be used to move the camera through the sewer line. If, during the inspection operation the television camera will not pass through the entire manhole section, the Contractor shall re-set his equipment in a manner so that the inspection can be performed from the opposite manhole. If, again, the camera fails to pass through the entire manhole section, the inspection shall be considered complete and no additional inspection work will be required.

5.4 Whenever non-remote powered and controlled winches are used to pull the television camera through the line, telephones or other suitable means of communication shall be set up between the two manholes of the section being inspected to ensure good communications between members of the crew.

5.5 The accuracy of measurements cannot be stressed too strongly. Measurement for location of defects shall be above ground by means of a meter device. Marking on cable, or the like, which would require interpolation for depth of manhole, will not be allowed. Measurement meters will be accurate to two-tenths (0.2) of a foot over the length of the section being inspected. Accuracy of the measurement meters shall be checked daily by use of a walking meter, roll-a-tape or other suitable device.

5.6 Documentation of the television results shall be as follows:

a. Television Inspection Logs: Printed location records shall be kept by the Contractor and will clearly show the location in relation to adjacent manholes, of each infiltration point discovered by the television camera. In addition, other points of significance such as locations of building sewer connections, joints, unusual conditions, roots, storm sewer connections, collapsed sections, presence of scale and erosion and other discernible features will be recorded and a copy of such records will be supplied to the Owner.

b. Photographs: Instant developing, 35mm or other standard size photographs of the television monitor or problem areas shall be taken by the Contractor upon request of the Owner's Representative, so long as such photographing does not interfere with the Contractor's operations.

c. Video Recordings: The purpose of tape or CD recording shall be to supply a visual and audio record of problem areas of the lines that may be replayed both daily and at future presentations. Video recording playback shall be at the same speed that it was recorded. Slow motion or stop motion play back features shall be supplied at the option of the Contractor. Title to the recordings shall remain with the Contractor; however, the Contractor shall furnish the Owner with three CD copies of all CCTV inspections completed under this contract. The Contractor shall be required to have all tapes or CDs and necessary playback equipment readily accessible for review by the Owner during the project and for 90 days after the completion of the project.

6.0 GENERAL

A. The Contractor shall furnish and maintain, in good condition, all cleaning and televising equipment necessary for proper execution of the work.

B. Maintaining Flow: It will be the responsibility of the Contractor, throughout the tenure of this contract, to provide and maintain sufficient flow at all times to pass any flash of storm flow of drainage ditches and prevent any backwater flooding due to obstruction caused by cleaning or CCTV equipment.

C. Retrieval of Materials and Equipment: It shall be the Contractor's responsibility to remove materials and equipment that has been lodged in the sewer from cleaning, television inspection, or point repair excavations.

D. Work Schedule. This schedule shall outline the sequence in which the Contractor proposes to conduct his operations and shall be approved by the Owner before work is started. The Contractor shall use a time-scaled logic diagram format. The level of detail of activities shall provide clear, concise communication of the plan of work. At a minimum, activities showing

initial mobilization, start-up, cleaning and televising, and any resultant point repairs shall be included.

E. Original and updated schedules must be provided to the Owner in writing. The software used for producing the schedules must have the capability to tailor the form and format of schedules, and accompanying reports, to the Owner's requirements.

F. The Owner may require additional updates to the schedule as changes occur. These additional updates will be submitted to the Owner within 24 hours of the request. Changes to the schedule are subject to approval of the Owner.

6.1 TELEVISION INSPECTION AND COMPUTERIZED EQUIPMENT

A. The Contractor shall use a color pan and tilt camera or a side wall scanning (panoramic) camera specifically designed and constructed for sewer inspection. Each sewer to be televised shall be suitably isolated to control flow during the inspection. The Contractor shall provide a recording of the televised sewer inspection, locating each sewer service connection entering the sewer.

B. Lighting for the pan and tilt camera or side wall scanning camera shall provide a clear picture of the entire periphery of the existing sewer.

C. The pan and tilt camera shall pause, pan, and visually inspect all service connections, pipe ends, and maintenance or structural defects. If utilizing a camera with side wall scanning capabilities, pausing and panning of each lateral is not necessary during the inspection if the image clearly depicts the inside of the lateral for post processing. If a blockage cannot be removed and hampers the televising of the sewer in one direction then the Contractor shall attempt to complete the section by televising from the other manhole to complete the section, this reversal should immediately follow the initial direction. The Contractor must immediately report the obstruction to the Owner.

D. Side wall scanning inspection systems are imaging cameras that are capable of a continuous 360 degree image capture of the wall of the pipeline being inspected. These systems may have one or multiple cameras to capture the complete interior view of the pipeline. Due to the high resolution of the image quality, the inspections may be conducted at a higher speed than color pan and tilt CCTV method. Once the pipeline inspections are completed, the captured images can be linked with a companion software package that allows for identifying and coding defects and features in the pipeline. Typically these systems provide a fold flat view and a perspective view (typical of CCTV) of the pipeline.

E. If the image quality is not adequate for post-inspection coding, the Contractor shall be required to repeat the survey at the Contractor's expense.

F. The Contractor shall perform all CCTV inspections in accordance with NASSCO's Pipeline Assessment Certification Program (PACP). CCTV inspections will be delivered entirely in electronic format. The entire survey shall be recorded in an approved electronic format submitted with electronic links between the data and the video. All television inspection reports shall be with-in +/- two (2) feet of the measured linear footage between manholes

along the existing sewer centerline from the start of pipe to end of pipe. All Owner and PACP required header information must be fully and accurately entered on all CCTV reports. Work not following these specifications may be rejected for payment and the Contractor may be required to re do the work.

G. The Contractor shall provide a PACP certified operator on site at all times during the entire survey. If video is to be coded separately from the actual recording, both the onsite Operator and the individual performing the PACP coding shall be PACP certified. The Contractor shall provide proof of certification prior to commencement of work, prior to a change in personnel involved in data collection, and as requested by the Owner

H. CCTV Reports, logs, electronic reports, and worksheets must include the following information and conform to the applicable guidelines:

1 CCTV Reports, NASSCO PACP Certified Database, and electronic worksheets must accompany all inspection work.
2 All Owner and NASSCO PACP required header information must be fully and accurately entered on all CCTV reports.

END OF SECTION

LAKE LINDEN SEWER CLEANING TOTALS

	STREET	PIPE SIZES	TOTAL LENGTH	VOLUME
		INCHES	FEET	CYD
1	FRONT STREET NORH OF 8TH STREET	8, 24, 30	965	47.8
2	FRONT STREET SOUTH OF 8TH STREET	15	470	12
3	12TH STREET WEST OF CARLOS	15	350	3.4
4	8TH STREET FROM OUTLET WEST	60	490	116.4
5	MAPLE AND G STREETS	12	423	3.1
6	D STREET	18	41	1.3
7	F STREET	10	230	0.9
8	CALUMET STREET NORTH OF 4TH STREET	12,30	825	53.3
9	2ND STREET FROM OUTLET WEST	48	735	122.4
10	KIT STREET	12	431	12.5
11	HECLA STREET S OF 2ND STREET	24	400	27.7
12	PINE STREET	9, 12	530	10.2
13	FIRST STREET	18, 24	2645	25.7
14	FIFTH STREET	20	140	8.1
15	PEAR STREET	15	295	4.3
	TOTALS		8970	449.1

LAKE LINDEN CATCH BASIN CLEANOUTS

CATCH BASINS NEEDING CLEANOUT 90
(See attached sheet)

LAKE LINDEN PIPE CLEANING QUANTITIES

SEPETMBER 28, 2018 424-04

	STREET	8" or 9"	10"	12"	15"	18"	20"	24"	30"	36"	42"	48"	42X53	60"	48X76
1	FRONT N. OF 8TH	100						132	733						
2	FRONT S. OF 8TH				470										
3	12TH W. OF CARLOS				350										
4	8TH													260	230
5	MAPLE AND G STREET			423											
6	D Street					41									
7	F STREET		230												
8	CALUMET N OF 4TH			320					505						
9	2ND STREET											345	390		
10	KIT STREET AREA			431											
11	HECLA ST S. TO FIRST							400							
12	PINE STREET	250		280											
13	FIRSTSTREET					1480		365							
						800									
14	FIFTH STREET						140								
15	PEAR STREET				295										
	TOTALS	350	230	1454	1115	2321	140	897	1238			345	390	260	230

LAKE LINDEN CATCH BASIN CLEANOUTS

STREET	CB'S
Fifth Street	3
Pine Street	3
Hecla Street S of 4th	3
Kit Street	5
Calumet Street N of 4th	8
E Street	3
12th Street	6
Front Street S of 8th	5
Front Street N of 8th	15
8th Street	7
2nd Street	8
Maple Street	11
Gregory Street	7
1st street	2
Pear Street	4
TOTAL	90

LAKE LINDEN PIPE CLEANING SUMMARY

LOCATION FRONT STREET NORTH OF 8TH STREET #1

FROM	TO	DIA INCHES	LENGTH FEET	% FULL	VOL/FT CU. FT	TOT VOL CU FT	VOL CYD	POB LAT	POB LONG	POE LAT	POE LONG
OUTLET 8TH MH #1	MH #3	30	300	1/2+	2.45	735.0	27.2	47.195826	-88.406457		
MH#3	MH#6	30	433	1/4+	1.04	450.3	16.7				
MH#10	MH#11	24	132	1/4+	0.66	87.1	3.2				
MH#17	POE	8	100	1/2+	0.17	17.0	0.6			47.202702	-88.406430
			965								
		TOTAL VOLUME FRONT STREET NORTH					47.8				

LOCATION FRONT STREET SOUTH OF 8TH STREET #2

FROM	TO	DIA INCHES	LENGTH FEET	% FULL	VOL/FT CU. FT	TOT VOL CU FT	VOL CYD	POB LAT	POB LONG	POE LAT	POE LONG
OUTLET 8TH MH #1	MH #1	15	27	3/4+	1.052	28.4	1.1	47.195826	-88.406457		
MH#1	MH#4	15	443	1/2+	0.67	296.8	11.0			47.195546	-88.406557
			470								
		TOTAL VOLUME FRONT STREET SOUTH					12.0				

LOCATION 12TH STREET WEST OF CARLOS #3

FROM	TO	DIA INCHES	LENGTH FEET	% FULL	VOL/FT CU. FT	TOT VOL CU FT	VOL CYD	POB LAT	POB LONG	POE LAT	POE LONG
INLET	MH #1	15	350	1/4+	0.26	91.0	3.4	47.199607	-88.409961	47.199721	-88.408546
		TOTAL VOLUME 12TH STREET					3.4				

LAKE LINDEN PIPE CLEANING SUMMARY

LOCATION 8TH STREET FROM OUTLET WEST #4

FROM	TO	DIA INCHES	LENGTH FEET	% FULL	VOL/FT CU. FT	TOT VOL CU FT	VOL CYD	POB LAT	POB LONG	POE LAT	POE LONG
OUTLET TORCH LAKE	MH #1	48X76	230	1/2+	9.32	2143.6	79.4	47.195833	-88.405481		
MH#1	MH#2	60	260	1/4+	3.84	998.4	37.0			47.195518	-88.406457
			490								
		TOTAL VOLUME 8TH STREET WEST					116.4				

LOCATION MAPLE AND G STREET #5

FROM	TO	DIA INCHES	LENGTH FEET	% FULL	VOL/FT CU. FT	TOT VOL CU FT	VOL CYD	POB LAT	POB LONG	POE LAT	POE LONG
OUTLET 8TH MH #3	MH #4	12	423	1/4+	0.2	84.6	3.1	47.195820	-88.408849	47.195438	-88.409827
		TOTAL VOLUME MAPLE AND G STREETS					3.1				

LOCATION D STREET WEST OF MAPLE STREET #6

FROM	TO	DIA INCHES	LENGTH FEET	% FULL	VOL/FT CU. FT	TOT VOL CU FT	VOL CYD	POB LAT	POB LONG	POE LAT	POE LONG
INLET	MH #3	18	41	1/2+	0.88	36.1	1.3	47.199607	-88.409961	47.199721	-88.408546
		TOTAL VOLUME D STREET					1.3				
ESTIMATED 100 CYD EXCAVATION REQUIRED AT THE INLET											

LAKE LINDEN PIPE CLEANING SUMMARY

LOCATION F STREET WEST OF MAPLE #7

FROM	TO	DIA INCHES	LENGTH FEET	% FULL	VOL/FT CU. FT	TOT VOL CU FT	VOL CYD	POB LAT	POB LONG	POE LAT	POE LONG
MAPLE ST MH #4	MH #2	10	230	1/4+	0.11	25.3	0.9	47.196191	-88.408565	47.196173	-88.409825
		TOTAL VOLUME F STREET					0.9				

LOCATION CALUMET STREET NORTH OF 4TH STREET #8

FROM	TO	DIA INCHES	LENGTH FEET	% FULL	VOL/FT CU. FT	TOT VOL CU FT	VOL CYD	POB LAT	POB LONG	POE LAT	POE LONG
4TH STREET MH #3	MH #4	30	505	1/2+	2.45	1237.3	45.8	47.191983	-88.409211		
MH #4	MH #5	12	320	1/2+	0.63	201.6	7.5			47.193787	-88.408131
			825								
		TOTAL VOLUME CALUMET NORTH OF 4TH					53.3				

LOCATION 2ND STREET FROM OUTLET WEST #9

FROM	TO	DIA INCHES	LENGTH FEET	% FULL	VOL/FT CU. FT	TOT VOL CU FT	VOL CYD	POB LAT	POB LONG	POE LAT	POE LONG
OUTLET	MH #3	42X53	390	1/2+	6.3	2457.0	91.0	47.189882	-88.407551		
MH #3	MH #6	48	345	1/4+	2.46	848.7	31.4			47.190098	-88.409636
			735								
		TOTAL VOLUME 2ND STREET					122.4				

LAKE LINDEN PIPE CLEANING SUMMARY

LOCATION KIT STREET NORTH OF 2ND STREET #10

FROM	TO	DIA INCHES	LENGTH FEET	% FULL	VOL/FT CU. FT	TOT VOL CU FT	VOL CYD	POB LAT	POB LONG	POE LAT	POE LONG
2ND STREET MH #10	MH #3	12	420	FULL	0.78	327.6	12.1	47.190581	-88.412934	47.191682	-88.412612
MH #2	MH #2B	12	11	FULL	0.78	8.6	0.3	47.191122	-88.412696	47.191255	-88.413137
			431								
		TOTAL VOLUME KIT STREET					12.5				

LOCATION HECLA STREET 2ND STREET SOUTH TO FIRST STREET #11

FROM	TO	DIA INCHES	LENGTH FEET	% FULL	VOL/FT CU. FT	TOT VOL CU FT	VOL CYD	POB LAT	POB LONG	POE LAT	POE LONG
2ND STREET MH #8	MH #3	24	290	1/2+	1.57	455.3	16.9	47.190274	-88.410854		
MH #3	MH #4	24	110	3/4+	2.66	292.6	10.8			47.189164	-88.411243
			400								
		TOTAL VOLUME HECLA SOUTH OF 2ND					27.7				

LOCATION PINE STREET WEST OF HECLA STREET #12

FROM	TO	DIA INCHES	LENGTH FEET	% FULL	VOL/FT CU. FT	TOT VOL CU FT	VOL CYD	POB LAT	POB LONG	POE LAT	POE LONG
MH #3 AT OSCEOLA	MH #5	12	280	1/2+	0.39	109.2	4.0	47.189882		47.189689	-88.417752
MH #3	MH #7	9	250	1/4+	0.2	50.0	1.9			47.190128	-88.414960
			530								
		TOTAL VOLUME PINE STREET					5.9				

LAKE LINDEN PIPE CLEANING SUMMARY

LOCATION FIRST STREET FRONT STREET TO OSCEOLA STREET #13

FROM	TO	DIA INCHES	LENGTH FEET	% FULL	VOL/FT CU. FT	TOT VOL CU FT	VOL CYD	POB LAT	POB LONG	POE LAT	POE LONG
2ND STREET MH #3	MH #1	24	55	1/4+	0.662	36.4	1.3	47.189657	-88.408802		
MH #1	MH #2	18 (2)	760	1/4+	0.67	509.2	18.9				
MH #2	MH #3	18 (2)	560	1/4+	0.67	375.2	13.9				
MH #3	MH #4	24	110	1/4-	0.66	72.6	2.7				
MH #4	MH #5	18 (2)	160	1/4+	0.67	107.2	4.0				
MH #5	MH #6	24	200	1/4+	0.66	132.0	4.9			47.189071	-88.412938
			2645								
		TOTAL VOLUME FIRST STREET					44.3				

LOCATION FIFTH STREET CALUMET STREET WEST #14

FROM	TO	DIA INCHES	LENGTH FEET	% FULL	VOL/FT CU. FT	TOT VOL CU FT	VOL CYD	POB LAT	POB LONG	POE LAT	POE LONG
CALUMET MH #3	1	20	140	1.09	1.57	219.8	8.1	47.193041	-88.408592	47.193194	-88.409102
		TOTAL VOLUME HECLA SOUTH OF 2ND					8.1				

LOCATION PEAR STREET SOUTH OF FIFTH STREET #15

FROM	TO	DIA INCHES	LENGTH FEET	% FULL	VOL/FT CU. FT	TOT VOL CU FT	VOL CYD	POB LAT	POB LONG	POE LAT	POE LONG
MH #1	MH#3	15"	295	1/2+	0.39	115.1	4.3	47.193194	-88.408592	47.192378	-88.409633
		TOTAL VOLUME					4.3				

LAKE LINDEN STORM SEWER INVENTORY DATE 19-Sep-18 FILE NO. 424-04

LOCATION/STREET FRONT STREET STORM SEWER #1

DESCRITION FROM 8TH STREET STORM NORTH TO POE

MH #	MANHOLE LOCATION	MANHOLE CONDITION	PIPE LENGTH	PIPE SIZE (OUT)	PIPE TYPE	PIPE SIZE (IN)	PIPE TYPE	PIPE COND.	SEDIMENT	CB'S THIS MH	COOR LAT	COOR LONG
Outlet	8th ST MH #1	GOOD		60	RCP	30"N	RCP	GOOD	1/2+	2	47.195826	-88.406457
1	27'N of 8th	GOOD	27	30"S	RCP	30"N	RCP/BR	POOR	1/2+			
2	N of 8TH	POOR	138	30"S	BRICK	30"N	BRICK	POOR	1/2+			
3	N of 8	POOR	135	30"S	BRICK	30"N	BRICK	POOR	1/2+			
4	N of 8th	POOR	193	30"S	BRICK	30"N	BRICK	POOR	1/4+			
5	9th STREET	POOR	128	30"S	BRICK	30"N	BRICK	POOR	1/4+	2		
6	Bet. 9th & 10th	POOR	112	30"S	BRICK	30"N	BRICK	POOR	1/4+			
7	10th STREET	POOR	138	30"S	BRICK	24"N	BRICK	POOR	1/4+	1		
7	10th STREET					?"E						
8	Bet. 10th & 11th	POOR	145	24"S	BRICK	24"N	BRICK	POOR	None			
9	11th STREET	POOR	117	24"S	BRICK	24"N	BRICK	POOR				
10	Bet. 11th & 12th	POOR	132	24"S	BRICK	24"N	BRICK	POOR	Some			
11	12th STREET	POOR	132	24"S	BRICK	24"N	VCT	POOR		3		
11	12th STREET					15"W	VCT	POOR	Some			
11	12th STREET					12"E	Many	POOR	Some			
12	Bet. 12th & 13th	Buried	185	24"S	VCT	24"N	VCT	POOR				
12	Bet. 12th & 13th					24" W	?					
13	13th STREET	POOR	185	24"S	VCT	15"N	VCT	POOR	None	2		
14	14th STREET	POOR	348	15"S	VCT	8"N	VCT	POOR	None	3		
15	Bet. 14th & 15th	POOR	176	8"S	VCT	8"N	VCT	POOR	None			
16	15th STREET	POOR	176	8"S	VCT	8"N	VCT	POOR	None	1		
17	N of 15th	POOR	100	8"S	VCT			POOR	1/2+	1	47.202702	-88.406430

LAKE LINDEN STORM SEWER INVENTORY DATE 19-Sep-18 FILE NO. 424-04

LOCATION/STREET FRONT STREET STORM SEWER #2

DESCRITION FROM 8TH STREET STORM SOUTH TO POE

MH #	MANHOLE LOCATION	MANHOLE CONDITION	PIPE LENGTH	PIPE SIZE (OUT)	PIPE TYPE	PIPE SIZE (IN)	PIPE TYPE	PIPE COND.	SEDIMENT	CB'S THIS MH	COOR LAT	COOR LONG
Outlet	8th Street MH #1										47.195826	-88.406457
1	S. of 8th Street	Good	27	18"N	RCP	15"S	VCT	POOR	Flooded			
2	S. of 8th Street	POOR	139	15"N	VCT	15"S	VCT	Poor	Mortar	2		
3	< Pt S. of 8th	POOR	164	15"N	VCT	15"S	VCT	POOR	1/2+			
4	N. of 7th STREET	POOR	140	15"N	VCT	10"N	VCT	POOR	Some		47.195546	-88.406557
5	POE at School	Good	148	10"	PVC					3	47.194184	-88.406777

LAKE LINDEN STORM SEWER INVENTORY DATE 18-Sep-18 FILE NO. 424-04

LOCATION/STREET 12 STREET STORM SEWER #3

DESCRITION FROM THE INLET WEST OF CARLOS STREET TO FRONT STREET TO NEUMAN STREET

MH #	MANHOLE LOCATION	MANHOLE CONDITION	PIPE LENGTH	PIPE SIZE (OUT)	PIPE TYPE	PIPE SIZE (IN)	PIPE TYPE	PIPE COND.	SEDIMENT	CB'S THIS MH	COOR LAT	COOR LONG
Inlet	West of Carlos	GOOD				36"	RCP		Some		47.199607	-88.409961
1	Carlos Street	POOR	350	15"E	VCT	15"W	VCT	POOR	Light	2	47.199721	-88.408546
2	Calumet Street	Damage	244	15"E	VCT	15"W	VCT	POOR	Clean	2		
	Front St. MH 11	W. Outlet	275			15"W	VCT	POOR			47.199692	-88.406418
	Front St. MH 11	E. Outlet				12"W	VCT	POOR				
3	Neuman Street	Fair	241	12"W	VCT					2	47.199695	-88.40554

LAKE LINDEN STORM SEWER INVENTORY DATE 19-Sep-18 FILE NO. 424-04

LOCATION/STREET 8TH STREET STORM SEWER #4

DESCRITION OUTLET TO MAPLE STREET INSTALLED 2004

MH #	MANHOLE LOCATION	MANHOLE CONDITION	PIPE LENGTH	PIPE SIZE (OUT)	PIPE TYPE	PIPE SIZE (IN)	PIPE TYPE	PIPE COND.	SEDIMENT	CB'S THIS MH	COOR LAT	COOR LONG
Outlet	TORCH LAKE										47.195833	-88.405481
1	Front Street	GOOD	230	48"X76"	RCP	60"w	RCP	GOOD	1/2+	2	47.195826	-88.406457
1	Front Street					30"N	RCP	GOOD	1/2+			
1	Front Street					"S	RCP	GOOD	1/2+			
1	Front Street					30"N	RCP	GOOD	1/2+			
2	Calumet (M-26)	GOOD	260	60"	RCP	60"W	RCP	GOOD	Light	5?	47.195518	-88.407487
2	Calumet (M-26)					36"S	Brick	POOR	Clean			
2	Calumet (M-26)					30"N	Brick	POOR	Light			
3	Maple Street	GOOD	250	60"	RCP	42"N	Brick	POOR	Light		47.195820	-88.408489
3						12"S	VCT	POOR	Light			

LAKE LINDEN STORM SEWER INVENTORY DATE 20-Sep-18 FILE NO. 424-04

LOCATION/STREET Maple Street and G street #5

DESCRITION From 8th Street South to G Street then West on G Street to the POE.

MH #	MANHOLE LOCATION	MANHOLE CONDITION	PIPE LENGTH	PIPE SIZE (OUT)	PIPE TYPE	PIPE SIZE (IN)	PIPE TYPE	PIPE COND.	SEDIMENT	CB'S THIS MH	COOR LAT	COOR LONG
Outlet	8th St. (MH#3)										47.195820	-88.408489
1	S. of 8th Street	POOR	25	12"NE	VCT?	12"	VCT?	POOR	1/4-			
2	At G Street	POOR	118	12"N	VCT?	12"W	VCT?	POOR	Light			
3	West of Maple	POOR	140	12"E	VCT?	12"E	VCT?		1/4+			
4	East of Hecla	POOR	140	12"E	VCT?				1/4+		47.195438	-88.409827
			423									

LAKE LINDEN STORM SEWER INVENTORY DATE 20-Sep-18 FILE NO. 424-04

LOCATION/STREET D STREET #6

DESCRITION FROM MAPLE STREET WEST TO AUDETTE'S DRIVEWAY TO WEST OF HECLA STREET

MH #	MANHOLE LOCATION	MANHOLE CONDITION	PIPE LENGTH	PIPE SIZE (OUT)	PIPE TYPE	PIPE SIZE (IN)	PIPE TYPE	PIPE COND.	SEDIMENT	CB'S THIS MH	COOR LAT	COOR LONG
Outlet	Maple St. MH # 6										47.197522	-88.408593
1	W. of Maple	UNK	114	15"	UNK	15"NW	UNK	POOR	UNK	Not. Fd.		
2	Yard CB	UNK/POOR	139	15"SE	UNK	15"W	UNK	POOR	UNK			
3	East side of Hecla	FAIR	102	18"W	HDPE	18"E	HDPE	Fair	Blocked E.			
4	Inlet W. of Hecla	POOR/Bur.	41	18"E	HDPE				1/2+		47.197932	-88.410370

LAKE LINDEN STORM SEWER INVENTORY DATE 20-Sep-18 FILE NO. 424-04

LOCATION/STREET F STREET #7

DESCRITION FROM MAPLE STREET WEST TO NEAR HECLA STREET

MH #	MANHOLE LOCATION	MANHOLE CONDITION	PIPE LENGTH	PIPE SIZE (OUT)	PIPE TYPE	PIPE SIZE (IN)	PIPE TYPE	PIPE COND.	SEDIMENT	CB'S THIS MH	COOR LAT	COOR LONG
Outlet	Maple St. MH # 4										47.196191	-88.408565
1	W. of Maple	POOR	148	10"	VCT	10"	VCT	POOR	Debris			
2	At Hecla		156	10"	VCT	10"	VCT	POOR	Debris W.		47.196173	-88.409825
			304									
	Unable to locate the end of the 10" inlet.											

LAKE LINDEN STORM SEWER INVENTORY DATE 23-Sep-18 FILE NO. 424-04

LOCATION/STREET CALUMET STREET (M-26) #8

DESCRITION FROM 4TH STREET NORTH TO SIXTH STREET

MH #	MANHOLE LOCATION	MANHOLE CONDITION	PIPE LENGTH	PIPE SIZE (OUT)	PIPE TYPE	PIPE SIZE (IN)	PIPE TYPE	PIPE COND.	SEDIMENT	CB'S THIS MH	COOR LAT	COOR LONG
Outlet	4TH St. MH # 3										47.191983	-88.409211
1	N. of 4th Street	POOR	150	30"S	Brick	30"N	Brick	POOR	1/2+			
2	N. of 4th Street	POOR	170	30"S	Brick	30"N	Brick	POOR	1/2+			
3	At 5th Street	POOR	185	30"S	Brick	12"N	?	POOR	1/2+	3	47.193041	-88.408592
3						20"W	Brick	POOR				
4	N. of 5th Street	POOR	160	12"S	?	12"N	?	POOR				
5	At 6th Street	POOR	160	12"S	?					5	47.193787	-88.408131
	Manhole #3 was flooded on September 20, 2018											
	Post Office yard drain is connected to MH #5											

LAKE LINDEN STORM SEWER INVENTORY DATE 20-Sep-18 FILE NO. 424-04

LOCATION/STREET 2ND STREET #9

DESCRITION FROM THE OUTLET AT TORCH LAKE WEST TO THE INLET WEST OF THE RR GRADE

MH #	MANHOLE LOCATION	MANHOLE CONDITION	PIPE LENGTH	PIPE SIZE (OUT)	PIPE TYPE	PIPE SIZE (IN)	PIPE TYPE	PIPE COND.	SEDIMENT	CB'S THIS MH	COOR LAT	COOR LONG
Outlet	TORCH LAKE	2003				34"X53"	RCP	GOOD	1/2+		47.189882	-88.407551
1	N. of the Park	GOOD	190	34"X53"	RCP	34"X53"	RCP	GOOD	1/2+			
2	N. of the Park	GOOD	125	34"X53"	RCP	34"X53"	RCP	GOOD	1/2+			
3	E. of Front St	GOOD	75	34"X53"	RCP	48"	RCP	GOOD	1/2+		47.189659	-88.408802
3							RCP	GOOD	Sediment			
3A	S.End Front St.	GOOD		24"NE?	RCP	2-18"	VCT	POOR	1/4+			
4	Front Street	GOOD	60	48"SE	RCP	48"N	RCP	GOOD	1/4+	2		
5	2nd & Front	GOOD	70	48"S	RCP	48"W	RCP	GOOD	Clean	2		
6	E. Side M-26	GOOD	215	48"E	Lined	48"W	RCP	GOOD	Clean		47.190098	-88.409636
7	M-26	POOR	40	48"E	Lined	48"W	Lined	GOOD	?		47.190127	-88.409839
7						12"S	Brick	POOR	?			
8	Hecla Street	POOR	260	48"E	Lined	48"W	Lined	Good	Clean	3	47.190274	-88.410854
8						24" S	Brick	POOR	Plugged			
8						12"N	?	POOR	?			
9	Schoolcraft	POOR	262	48"E	Lined	48"W	Brick	GOOD	Clean		47.190447	-88.411878
9						12"N	?	?				
10	Kit Street	POOR	243	48"E	Brick	48" W	Brick	POOR	Clean	1	47.109058	-88.412934
						12"N	?	POOR	Plugged			
11	Gagnon Yard	POOR (1')	415	48"E	Brick	48"W	Brick	POOR	?			
12	Base of RR Grade	POOR	55	48"E	Brick	48"W	Brick	POOR	Clean			
13	In RR Grage	POOR	35	48"E	Brick	48"W	Brick	POOR	?			
13.1	POB Tunnel	None	20	48"E	Brick	60"X80"	Mason	POOR	?			
13.2	POE Tunnel	None	158	60"x80"	Mason	48"W	RCP	GOOD	?			
14	MH above RR Gr.	GOOD	16	48"E	RCP	48"W	RCP	GOOD	?			
15	Inlet	GOOD	45			48"E	RCP	GOOD			47.191155	-88.415569

LAKE LINDEN STORM SEWER INVENTORY DATE 20-Sep-18 FILE NO. 424-04

LOCATION/STREET KIT STREET #10

DESCRITION FROM 2ND STREET WEST TO FOURTH STREET

MH #	MANHOLE LOCATION	MANHOLE CONDITION	PIPE LENGTH	PIPE SIZE (OUT)	PIPE TYPE	PIPE SIZE (IN)	PIPE TYPE	PIPE COND.	SEDIMENT	CB'S THIS MH	COOR LAT	COOR LONG
Outlet	2nd Street MH #10										47.190581	-88.412934
1	N of 2nd	Flooded	120	12"S	VCT?	12"N	VCT?	Plugged				
2	At Harris	Flooded	110	12"S	VCT?	12"N	VCT?	Plugged		1	47.191122	-88.412696
2						12"W?	VCT?					
2						12"E?	VCT?	Plugged				
2A	E. Side Kit Street	Flooded	20	12"W?	VCT?			Plugged		1		
2B	Harris W. of Kit	Flooded	115	12"E?	VCT?			Plugged			47.191255	-88.413137
3	CB @ 4th	Plugged	190	12"S?	VCT?			Plugged			47.191682	-88.412612

LAKE LINDEN STORM SEWER INVENTORY DATE 21-Sep-18 FILE NO. 424-04

LOCATION/STREET HECLA STREET SOUTH #11

DESCRITION HECLA STREET FROM 2ND STREET SOUTH TO FIRST STREET

MH #	MANHOLE LOCATION	MANHOLE CONDITION	PIPE LENGTH	PIPE SIZE (OUT)	PIPE TYPE	PIPE SIZE (IN)	PIPE TYPE	PIPE COND.	SEDIMENT	CB'S THIS MH	COOR LAT	COOR LONG
Outlet	2nd MH # 8										47.190274	-88.410854
1	S of 2nd	POOR	115	24"N	Brick	24"S	Brick	POOR	1/2+			
2	N of Pine	POOR	145	24"N	Brick	24"S	Brick	POOR	1/2+			
3	At Pine	POOR	30	24"N	Brick	24"S	Brick	POOR	3/4+		47.189429	-88.411176
3						24"W	Brick	Poor	3/4+			
4	At First Street	POOR	110			24"N?	Brick	POOR	3/4+	3	47.189164	-88.411243
			400									
	Outlet Manhole has wood debris to cover											
	MH#1 has wood debris to cover											
	MH#2 has wood debris to cover											
	MH#3 has wood debris to cover											
	CB and leads at First street are plugged											

LAKE LINDEN STORM SEWER INVENTORY DATE 21-Sep-18 FILE NO. 424-04

LOCATION/STREET PINE STREET #12

DESCRITION FROM HECLA STREET WEST TO THE POE

MH #	MANHOLE LOCATION	MANHOLE CONDITION	PIPE LENGTH	PIPE SIZE (OUT)	PIPE TYPE	PIPE SIZE (IN)	PIPE TYPE	PIPE COND.	SEDIMENT	CB'S THIS MH	COOR LAT	COOR LONG
Outlet	Hecla MH #3										47.189429	-88.411176
1	West of Hecla	POOR	130	18"E	Brick	18"W	Brick	POOR	Clean			
2	At Schoolcraft	POOR	120	18"E	Brick	18"W?	Brick	POOR	Clean	1		
2						12"SW	VCT?	POOR	Flow			
2						12"NW	VCT?	POOR				
3	At Osceola Street	POOR	170	12"E	Brick	12"W	Brick	POOR	Clean	1	47.189689	-88.417752
3						12"NW	VCT?		Sediment			
4	At Atlantic	POOR	140	12"E	Brick	12"W	Brick	POOR	Sediment	1		
4						8"NW	VCT?	POOR				
4						12"NW	VCT?	POOR				
5	West of Atlantic	POOR	140	12"E	Brick	9"W	?	POOR	Full			
6	West of Atlantic	POOR	100	9"E	?	9"W	?		Flooded			
7	POE	POOR	150	9"E	?				Flooded		47.190128	-88.414960
			950									
	MH #1 has a debris ring 2' below the lid											
	CB at MH #2 is plugged											
	CB at MH #3 is plugged											
	CB at MH #4 is plugged											
	MH #4, #5 and #6 have standing water											

LAKE LINDEN STORM SEWER INVENTORY DATE 21-Sep-18 FILE NO. 424-04

LOCATION/STREET FIRST STREET #13

DESCRITION FROM MH #3 ON THE 2N STREET STORM AT FRONT STREET

MH #	MANHOLE LOCATION	MANHOLE CONDITION	PIPE LENGTH	PIPE SIZE (OUT)	PIPE TYPE	PIPE SIZE (IN)	PIPE TYPE	PIPE COND.	SEDIMENT	CB'S THIS MH	COOR LAT	COOR LONG
Outlet	2ND Street MH #3	GOOD									47.189657	-88.408802
1	Front St. at the Park	GOOD	55	24"	RCP	18"SW	VCT	POOR	Light			
1						18"SW	VCT	POOR	Light			
2	Chamber at M-26	Ugly	760	18" NE (2)	VCT	18"W(2)	VCT	POOR	Some	2		
3	E. side N Street	Ugly	560	18" E (2)	VCT	24"	RCP	Fair	1/4-			
4	W. Side N Street	Ugly	110	24" E	RCP	18"W(2)	VCT	POOR	1/4-			
5	N. of N Street	Ugly x 2	160	18" E (2)	VCT	24"	CMP	POOR	Some			
6	Opposite Osceola	POOR	200	24"	CMP	24"SW	HDPE	POOR	Some		47.189071	-88.412938
7	Inlet in Torch Lk. Twp											
	above Bridge Street											
	The chamber at MH#2 has a poorly fitting steel plate for a cover.											
	The chamber at MH#5 has a poorly fitting steel plate for a cover.											
	The inlet pipe changes to 24" VCT about 20 feet outside (SW) MH #6. A previous FEMA repair job.											
	The two 18" pipes from MH #1 to MH#2 are parallel. Old maps show a deflection in the lines with no manhole.											

LAKE LINDEN STORM SEWER INVENTORY DATE 21-Sep-18 FILE NO. 424-04

LOCATION/STREET FIFTH STREET #14

DESCRITION FROM CALUMET STREET WEST TO HECLA STREET

MH #	MANHOLE LOCATION	MANHOLE CONDITION	PIPE LENGTH	PIPE SIZE (OUT)	PIPE TYPE	PIPE SIZE (IN)	PIPE TYPE	PIPE COND.	SEDIMENT	CB'S THIS MH	COOR LAT	COOR LONG
Outlet	Calumet MH #3								Flooded	3	47.193041	-88.408592
1	At Pear Street	POOR	140	20"E	Brick	20"W	Brick	POOR	Clean		47.193194	-88.409102
1						15"S	?	POOR	?			
2	At Torch Street	GOOD	130	20"E	Brick	20"W	Brick	POOR	Sediment		47.193322	-88.409547
2						12"N	VCT	POOR				
2						8"NW	VCT	POOR				
2						8"S	VCT?	POOR				
3	AT Hecla (No MH)			20"E	Brick	20"SW	Brick	POOR	?			
3						20"NW	Brick	POOR	?			
4	CB(?) on Saw (SW)	POOR		20"E	Brick	20"W	Brick	POOR	?		47.193520	-88.411593
5	SW Inlet (W of Saw)	?		20"E	Brick							
6	CB(?) on Saw (NW)	POOR		20"SE	Brick			POOR	?		47.194141	-88.411351
7	NW Inlet W of Saw	?										
	MH #4 is some sort of chamber on the West side of Saw between Poplar and Kilman Streets											
	MH 6 is some sort of chamber on the Wets side of Saw between Kilman and 6th Streets											
	Inlets #5 and 6 have not been inspected as of September 21, 108											

LAKE LINDEN STORM SEWER INVENTORY

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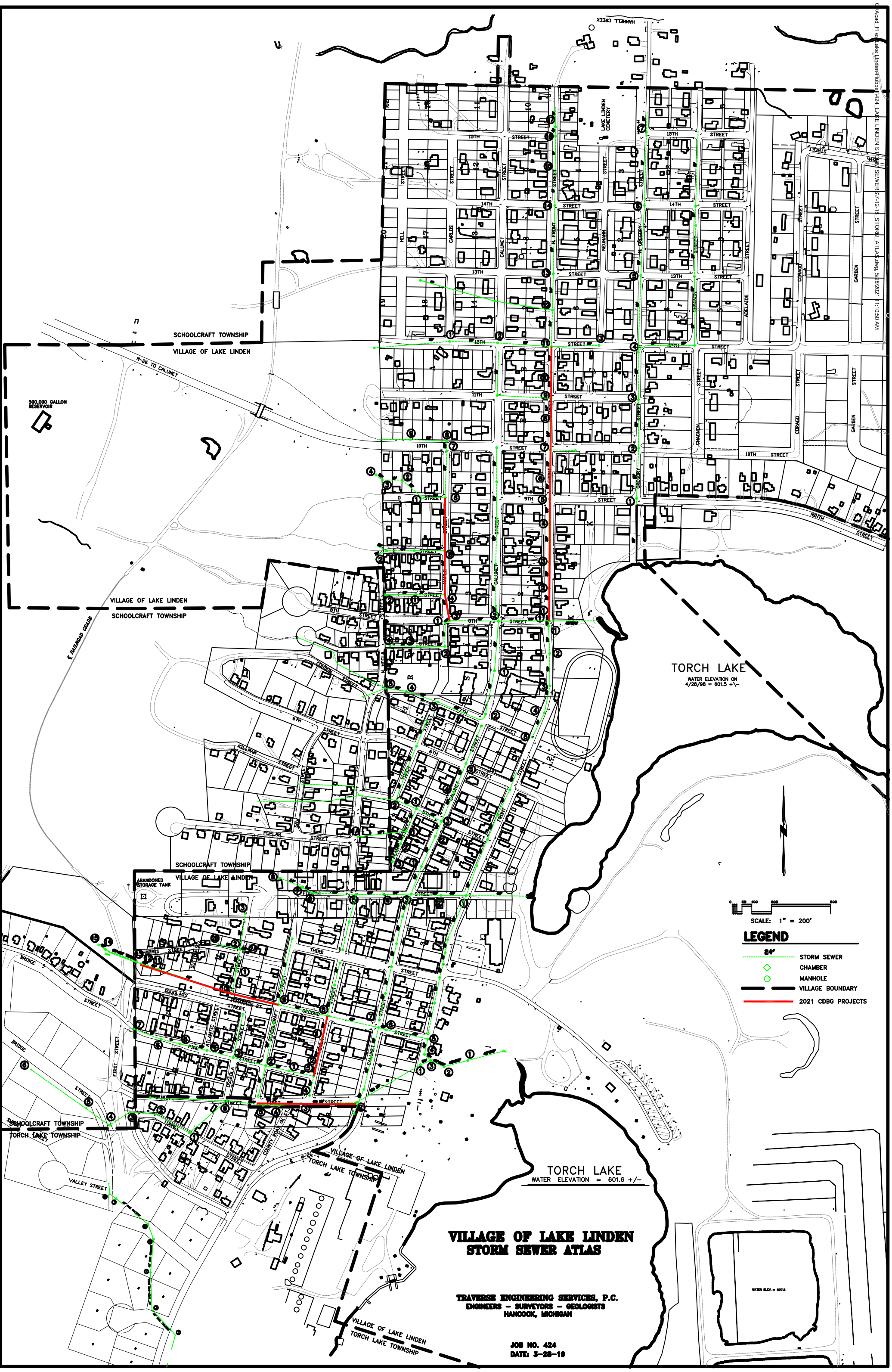
LOCATION/STREET PEAR STREET

#15

DESCRITION FROM FIFTH STREET SOUTH TO POE PLUS LEAD TO HECLA NEAR POPLAR

MH #	MANHOLE LOCATION	MANHOLE CONDITION	PIPE LENGTH	PIPE SIZE (OUT)	PIPE TYPE	PIPE SIZE (IN)	PIPE TYPE	PIPE COND.	SEDIMENT	CB'S THIS MH	COOR LAT	COOR LONG
Outlet	Fifth MH #1										47.193194	-88.408592
1	S of Fifth Street	POOR	125	15"N	VCT	15"S	VCT	POOR	1/4+			
1						12"SW?	VCT					
2	S of Fifth Street	POOR	70	15"N	VCT	15"	VCT		3/4+	1	47.192702	-88.409414
3	S of Fifth Street	?	100	15"N?	VCT?						47.192378	-88.409633
	THE FOLLOWING LINE RUNS FROM PEAR STREET WEST TO POPLAR											
Outlet	Pear MN #1										47.193194	-88.408592
1A	CB at Poplar	?	240	15" E	?	?SW	?	?	?	3	47.192734	-88.410502



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