

CITY OF DE PERE

PROJECT 18-08

MANHOLE REPAIR AND REHABILITATION

**BID DATE:
APRIL 26, 2018
@ 1:00 PM**

Bid documents, including plans and specifications, are available for download at www.QuestCDN.com. The QuestCDN website can also be accessed through the City website at www.de-pere.org. On the homepage, click on the City Departments tab at the top, then click on Public Works, then Engineering, then Construction Projects, then 2018 Construction Projects. Download cost is \$10 for each contract. Bidding documents may be viewed on the QuestCDN website or at the Municipal Service Center.

Bid Tabs must be verified by staff prior to posting and will be available for viewing on the website within 7 days following the bid opening. Award information will be pending until approved by the Common Council.

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**Project 18-08
MANHOLE REPAIR AND REHABILITATION**

City of De Pere

SECTION 00 11 13

APRIL 5, 2018 – APRIL 12, 2018

CITY OF DE PERE

ADVERTISEMENT TO BID

PROJECT 18-08

MANHOLE REPAIR AND REHABILITATION

Sealed proposals will be received by the Board of Public Works of the City of De Pere at the Municipal Service Center, 925 South Sixth Street, De Pere, Wisconsin 54115, until 1:00 PM. Thursday April 26, 2018, at which time they will be publicly opened and read aloud.

Project 18-08 for which proposals are being sought includes the following approximate quantities:

- 94 VF of Spray-On Liner
- 9 EA of Poured In Place Bench
- 2 EA of Chemical Grouting

Complete digital project bidding documents are available for viewing and or downloading at www.QuestCDN.com or may be examined at the office of the Director of Public Works. Digital plan documents may be downloaded for \$10 by inputting Quest Project # 5662672 on Quest's Project Search page. The QuestCDN website can also be accessed through the City website at www.de-pere.org. On the homepage, click on the City Departments tab at the top, then click on Public Works, then Engineering, then Construction Projects, then 2018 Construction Projects.

Each proposal shall be accompanied by a certified check or bid bond in an amount equal to five percent (5%) of the bid, payable to the City of De Pere, as a guarantee that if the bid is accepted, the bidder will execute a contract and furnish a contract bond as set forth in the General Conditions of the City of De Pere. In case the bidder fails to file such contract and bond, the amount of the check or bid bond shall be forfeited to the City of De Pere as liquidated damages.

The letting of the contract is subject to the provisions of the following Wisconsin Statutes:

Section 62.15 regarding Public Works.

Section 66.0901(3) regarding Prequalification of Contractor.

Each bidder shall pre-qualify by submitting proof of responsibility on forms furnished by the Director of Public Works. Such forms shall be filed with the Director of Public Works no later than 4:00 P.M., Monday, April 23, 2018. Prospective bidders who have previously submitted such forms subsequent to January 1, 2018 will not be required to separately submit such form for this project.

Project 18-08
MANHOLE REPAIR AND REHABILITATION

City of De Pere

The City of De Pere reserves the right to reject any or all bids, to waive any informalities in bidding and to accept any proposal which the Common Council deems most favorable to the interest of the City of De Pere.

Dated this 5th day of April 2018.

Board of Public Works
City of De Pere
Eric Rakers, P.E.
City Engineer

Project 18-08

SECTION 00 21 13
INSTRUCTIONS TO BIDDERS

ARTICLE 1 – DEFINED TERMS

- 1.1 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:

None

ARTICLE 2 – COPIES OF BIDDING DOCUMENTS

- 2.1 Complete sets of the Bidding documents in the number and for the deposit sum, if any, stated in the Advertisement or Invitation to Bid may be obtained as stated in the Advertisement for bids.
- 2.2 Complete sets of Bidding Documents shall be used in preparing Bids; Owner does not assume any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- 2.3 Owner, in providing the Bidding Documents on the terms stated in the Advertisement for Bids, does so only for the purpose of obtaining Bids for the Work and does not confer a license or grant for any other use.

ARTICLE 3 – QUALIFICATIONS OF BIDDERS

- 3.1 In accordance with Section 66.0901(3), each bidder shall pre-qualify by submitting proof of responsibility on forms furnished by the Director of Public Works. Such forms shall be filed with the Director of Public Works as stated in the advertisement for Bids. Prospective bidders who have previously submitted such forms after January 1st of this year will not be required to separately submit such form for this project.

ARTICLE 4 – EXAMINATION OF BIDDING DOCUMENTS, OTHER RELATED DATA AND SITE

- 4.1 Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated conditions appear in the General Conditions.
- 4.2 Underground Facilities
- A. Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or contiguous to the Site is based upon information and data furnished to Owner and Engineer by owners of such Underground Facilities, including Owner, or others.

4.3 Subsurface and Physical Conditions

A. The technical data includes:

1. Those reports known to Owner of explorations and tests of subsurface conditions at or contiguous to the Site; and
2. Those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except underground Facilities).
3. No reports of explorations or tests of subsurface conditions at or contiguous to the Site, or drawings of physical conditions relating to existing surface or subsurface structures at the Site, are known to Owner.

B. Limited Reliance by Contractor on Technical Data Authorized: Contractor may rely upon the accuracy of the “technical data” contained in such reports and drawings, but such reports and drawings are not Contract Documents. Contractor may not rely upon or make any claim against Owner, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:

1. the completeness of such reports and drawings for Contractor’s purposes, including but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
2. Other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
3. Any Contractor interpretation of or conclusion drawn from any “technical data” or any such other data, interpretations, opinions, or information.

4.4 On request, Owner will provide Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies as Bidder deems necessary for submission of a Bid. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies. Bidder shall comply with all applicable Laws and Regulations relative to excavation and utility locates.

4.5 Reference is made to Section 01 10 00: Summary of Work, for work that will be completed and for the identification of the general nature of other work that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) that relates to the Work contemplated by these Bidding Documents. On request, Owner will provide to each Bidder for examination access to or copies of Contract Documents (other portions thereof related to price) for such other work.

4.6 It is the responsibility of each Bidder before submitted a Bid to:

A. Examine and carefully study the Bidding Documents, the other related data identified in the Bidding Documents, and any Addenda;

B. Visit the Site and become familiar with and satisfy Bidder as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;

- C. Become familiar with and satisfy Bidder as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work;
 - D. Obtain and carefully study (or accept consequences of not doing so) all examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents, and safety precautions and programs incident thereto;
 - E. Agree at the time of submitting its Bid that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding Documents;
 - F. Become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;
 - G. Correlate the information known to Bidder, information and observations obtained from visits to the Site, reports and drawing identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents;
 - H. Promptly give Engineer written notice of all conflicts, errors, ambiguities, or discrepancies, that bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder; and
 - I. Determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work.
- 4.7 The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 4, that without exception the Bid is premised upon performing and furnishing the Work required by the Bidding Documents and applying any specific means, methods, techniques, sequences, and, procedures of construction that may be shown or indicated or expressly required by the Bidding Documents, that Bidder has given Engineer written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in the Bidding Documents and the written resolutions thereof by Engineer are acceptable to Bidder, and that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.

ARTICLE 5 – SITE AND OTHER AREAS

- 5.1 The Site is identified in the Bidding Documents. Easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by Owner unless otherwise provided in the Bidding Documents. All additional lands and access thereto required for temporary construction facilities, construction equipment, or storage of materials and equipment to be incorporated in the Work are to be obtained and paid for by Contractor.

ARTICLE 6 – INTERPRETATIONS AND ADDENDA

- 6.1 All questions about the meaning or intent of the Bidding Documents are to be submitted to Engineer in writing. Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by Engineer as having received the Bidding Documents. Questions received less than ten days prior to the date for opening of Bids may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.
- 6.2 Addenda may be issued to clarify, correct, or change the Bidding Documents as deemed advisable by Owner and Engineer.

ARTICLE 7 – BID SECURITY

- 7.1 A Bid shall be accompanied by Bid security made payable to Owner in an amount of 5 percent of Bidder's maximum Bid price and in the form of a certified check or bank money order or Bid bond (on the form attached) issued by a surety meeting the requirements of the General Conditions. Submittal of a Bid Bond on a form other than the Bid Bond form included in the Bidding Documents may be cause for rejection of Bid.
- 7.2 The Bid security of the Successful Bidder will be retained until such Bidder has executed the Contract documents, furnished the required contract security and met the other conditions of the Notice of Award, whereupon the Bid security will be returned. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within 15 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 per the General Conditions.
- 7.3 Bid security of other Bidders whom Owner believes do not have a reasonable chance of receiving the award will be returned within seven days after the Bid opening.

ARTICLE 8 – CONTRACT TIMES

- 8.1 The number of days within which, or the dates by which, Milestones are to be achieved and the Work is to be substantially completed and ready for final payment are set forth in the Bid Form and Summary of Work.

ARTICLE 9 – LIQUIDATED DAMAGES

- 9.1 Provisions for liquidated damages are set forth in the General Conditions.

ARTICLE 10 – SUBSTITUTE AND “OR-EQUAL” ITEMS

- 10.1 The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration of possible substitute or “or-equal” items. Whenever it is specified or described in the Bidding Documents that a substitute or “or-equal” item of material or equipment may be furnished or used by Contractor if acceptable to Engineer, application for such acceptance will not be considered by Engineer until after the Effective Date of the Bid Form and Summary of Work.

ARTICLE 11 – SUBCONTRACTORS, SUPPLIERS, AND OTHERS

- 11.1 The Bidder shall submit with the Bid to Owner a list of all such Subcontractors, Suppliers, individuals, or entities proposed for those portions of the Work for which such identification is required. Such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, individual, or entity, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit a substitute, in which case apparent Successful Bidder shall submit an acceptable substitute, Bidder’s Bid price will be increased (or decreased) by the difference in cost occasioned by such substitution, and Owner may consider such price adjustment in evaluating Bids and making the Contract award.
- 11.2 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposed to use acceptable Subcontractors, Suppliers, individuals, or entities. Declining to make requested substitutions will not constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner subject to revocation of such acceptance after the Effective Date of the Agreement.
- 11.3 Contractor shall not be required to employ any Subcontractor, Supplier, individual, or entity against whom Contractor has reasonable objection.

ARTICLE 12 – PREPARATION OF BID

- 12.1 The Bid form is included with the Bidding documents.
- 12.2 All blanks on the Bid Form shall be completed by printing in ink or by typewrite and the Bid signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each alternative, and unit price item listed therein, or the words “No Bid,” “ No Change,” or “Not Applicable” entered.
- 12.3 A Bid by a corporation shall be executed in the corporate name by the president or a vice-president or other corporate officer accompanied by evidence of authority to sign. The corporate seal shall be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown below the seal.
- 12.4 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership shall be shown below the signature.
- 12.5 A Bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm shall be shown below the signature.
- 12.6 A Bid by an individual shall show the Bidder’s name and official address.
- 12.7 A Bid by a joint venture shall be executed by each joint venture in the manner indicated on the Bid Form. The official address of the joint venture shall be shown below the signature.
- 12.8 All names shall be typed or printed in ink below the signatures.
- 12.9 The Bid shall contain an acknowledgement of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.
- 12.10 The address and telephone number for communications regarding the Bid shall be shown.
- 12.11 The Bid shall contain evidence of Bidder’s authority and qualification to do business in the state where the Project is located or covenant to obtain such qualification prior to award of the Contract. Bidder’s state contractor license number, if any, shall also be shown on the Bid Form.

ARTICLE 13 – BASIS OF BID; COMPARISON OF BIDS

13.1 Unit Price

A. Bidders shall submit a Bid on a unit price basis for each item of Work listed in the Bid

schedule.

- B. The total of all estimated prices will be the sum of the products of the estimated quantity of each item and the corresponding unit price. The final quantities and Contract Price will be determined in accord with the General Conditions.
- C. Discrepancies between 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. Discrepancies between words and figures will be resolved in favor of the words.

ARTICLE 14 – SUBMITTAL OF BID

- 14.1 A Bid shall be submitted no later than date and time prescribed and at place indicated in Advertisement for Bids and shall be enclosed in a plainly marked package with the Project title (and, if applicable, designated portion of the Project for which the Bid is submitted), name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, sealed envelope containing the Bid shall be enclosed in a separate package plainly marked on outside with the notation “BID ENCLOSED.” A mailed Bid shall be addressed to City of De Pere, Municipal Service Center, 925 S. Sixth Street, De Pere, WI 54115. Electronically transmitted Bids will not be accepted.
- 14.2 See Bid Form for a list of documents typically required to be submitted with the Bid.

ARTICLE 15 – MODIFICATION AND WITHDRAWAL OF BID

- 15.1 A Bid may be modified or withdrawn by an appropriate document duly executed in the manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids.
- 15.2 If within 24 hours after Bids are opened, any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid, that Bidder will be disqualified from further bidding on the Work.

ARTICLE 16 – OPENING BIDS

- 16.1 Bids will be opened at the time and place indicated in the Advertisement or Invitation to Bid 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.

ARTICLE 17 – BIDS REMAIN SUBJECT TO ACCEPTANCE

- 17.1 All bids will remain subject to acceptance for the period of time stated in the General Conditions, but Owner may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

ARTICLE 18 – EVALUATION OF BIDS AND AWARD OF CONTRACT

- 18.1 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner further reserves the right to reject the Bid of any Bidder whom it finds, after reasonable inquiry and evaluation, to not be responsible. Owner may also 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. Owner also reserves the right to waive all informalities not involving price, time, or changes in the Work and to negotiate contract terms with the Successful Bidder.
- 18.2 More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any Bidder has an interest in more than one Bid for the Work may be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest.
- 18.3 In evaluating Bids, Owner will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices and other data, as may be requested in the Bid Form or prior to the Notice of Award.
- 18.4 In evaluating Bidders, Owner will consider the qualifications of Bidders and may consider the qualifications and experience of Subcontractors, Supplier, and other individuals or entities proposed for those portions of the Work for which the identify of Subcontractors, Suppliers, and other individuals or entities must be submitted as provided in the Supplementary Conditions.
- 18.5 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders, proposed Subcontractors, Suppliers, individuals, or entities to perform the Work in accordance with the Contract Documents.
- 18.6 Bidder agrees to waive any claim it has or may have against the Owner and the respective employees arising out of or in connection with the administration, evaluation or recommendation of any Bid.
- 18.7 If the Contract is to be awarded, Owner will award the Contract to the lowest responsible responsive Bidder whose Bid is in the best interests of the Project.

ARTICLE 19 – CONTRACT SECURITY AND INSURANCE

- 19.1 The General Conditions set forth Owner's requirements as to performance and payment bonds and insurance. When the Successful Bidder delivers the executed Agreement to Owner, it shall be accompanied by such bonds and a certificate of insurance.

ARTICLE 20 – SIGNING OF AGREEMENT

- 20.1 When Owner gives a Notice of Award to the Successful Bidder, it shall be accompanied by the required number of unsigned counterparts of the Agreement with the other Contract Documents which are identified in the Agreement as attached thereto. Within 10 days thereafter, Successful Bidder shall sign and deliver the required number of counterparts of the Agreement and attached documents to Owner. Within ten days thereafter, Owner shall deliver one fully signed counterpart to Successful Bidder with a complete set of Drawings with appropriate identification.

END OF SECTION

SECTION 00 41 13

CITY OF DE PERE

BID FORM

PROJECT 18-08

This bid, submitted by the undersigned Bidder to the City of De Pere, in accordance with the Advertisement or Invitation to Bid, which will be received until 1:00 PM. Thursday May 3, 2018 is to furnish and deliver all materials, and to perform and do all work on the project designated by October 31, 2018.

Bidder has examined and carefully prepared the bid from the plans and specifications and has checked the same in detail before submitting said proposal or bid; and that said bidder or bidder's agents, officer or employees have not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with this proposal or bid.

Bidder has examined and carefully studied the Bidding Documents, other related data identified in the Bidding Documents, and the following Addenda, receipt of which is hereby acknowledged:

<u>Addendum No.</u>	<u>Addendum Date</u>
_____	_____
_____	_____

BASIS OF BID:

Bidder will complete the Work in accordance with the Contract documents for the following prices (s):

As stated in the attached Unit Price Bid Schedule.

Unit Prices have been computed in accordance with the General Conditions.

Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Bid items will be based on actual quantities, determined as provided in the Contract Documents.

TOTAL BID PRICE: \$ _____

Project 18-08
MANHOLE REPAIR AND REHABILITATION

City of De Pere

ATTACHMENTS TO THIS BID

The following documents are submitted with and made a condition of this Bid:

- A. Required Bid Security
- B. Unit Price Bid Schedule (Section 00 41 43)
- C. Proposed Products Form (Section 00 43 33)
- B. Tabulation of Subcontractors (Section 00 43 36)

BID SUBMITTAL

This Bid is submitted by _____ of _____,

The Bidder, being duly sworn, does dispose that they are an authorized representative of

Bidder, if Bidder is:

An Individual

Name (typed or printed): _____

By: _____
(Individual's signature)

Doing business as: _____

A Partnership

Partnership Name: _____

By: _____
(Signature of general partner – attach evidence of authority to sign)

Name (typed or printed): _____

A Corporation

Corporation Name: _____

State of Incorporation: _____

Type (General Business, Professional, Service, Limited Liability): _____

By: _____
(Signature – attach evidence of authority to sign)

Project 18-08
MANHOLE REPAIR AND REHABILITATION

City of De Pere

Name (typed or printed): _____

Title: _____
(CORPORATE SEAL)

Attest _____

Date of Qualification to do business in Wisconsin is ____/____/____.

Joint Venture

Name of Joint Venture: _____

First Joint Venturer Name: _____ (SEAL)

By: _____
(Signature of first joint venture partner – attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Second Joint Venturer Name: _____ (SEAL)

By: _____
(Signature of second joint venture partner – attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

(Each joint venture must sign. Manner of signing for each individual, partnership, and corporation that is a party to joint venture should be in manner indicated above.)

Bidder's Business Address _____

Phone No. _____ Fax No. _____

E-mail _____

SUBMITTED on _____, 20__.

State Contractor License No. _____ (if applicable).

Project 18-08
MANHOLE REPAIR AND REHABILITATION

City of De Pere

SECTION 00 41 43

CITY OF DE PERE
PROJECT 18-08
BID SCHEDULE – UNIT PRICE

ITEM	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT BID
SP-01	Spray-On Liner	VF	94	\$_____	\$_____
SP-02	Poured In Place Bench	EA	9	\$_____	\$_____
SP-03	Chemical Grout Manhole	EA	2	\$_____	\$_____
TOTAL AMOUNT BID:					\$_____

SECTION 00 43 13

CITY OF DE PERE

BID BOND

KNOW ALL MEN BY THESE PRESENTS: That _____,

as Principal, hereinafter called Principal, and _____,

as Surety, hereinafter called Surety, are held and firmly bound unto the City of De Pere, a municipal corporation of the State of Wisconsin, as Oblige, hereinafter called City, in the amount of

_____ dollars (\$_____) for the payment whereof Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presence.

WHEREAS, Principal has made a proposal to the City for furnishing all materials, labor, tools, equipment and incidentals necessary to complete the work of Project 18-08 in accordance with drawings and specifications prepared by the Director of Public Works of said City, which proposal is by reference made a part hereof, and is hereinafter referred to as the BID.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if Principal shall be awarded the contract for said project and Principal shall enter into a contract in accordance with the BID, then this obligation shall be null and void; otherwise it shall remain in full force and effect, provided that:

1. The liability of Surety shall in no event exceed the penalty of this bond.
2. Any suits at law or proceedings, in equity brought or to be brought against Surety to recover any claim hereunder shall be executed within six (6) months from the date of this instrument.

Signed and sealed this _____ day of _____, 20____.

In the presence of:

WITNESS

PRINCIPAL (SEAL)

WITNESS

SURETY (SEAL)

SECTION 00 43 33

PROPOSED PRODUCTS FORM

The following is a list of material, type or model numbers and manufactures used in the preparation of this proposal and to be used on this project:

<u>ITEM</u>	<u>MATERIAL</u>	<u>SUPPLIER</u>
Spray-On Liner	<hr/>	<hr/>
Poured in Place Bench	<hr/>	<hr/>
Chemical Grout	<hr/>	<hr/>

SECTION 00 43 36

TABULATION OF SUBCONTRACTORS

The following information is submitted which gives the name, business address, and portion of work for each subcontractor that will be used in the work if the bidder is awarded the contract, and no subcontractor doing work in excess of one-half of one percent of the total amount of the bid and who is not listed will be used without the written approval of the Engineer. Additional numbered pages outlining this portion of the proposal may be attached to this page.

NAME

BUSINESS ADDRESS

PORTION OF WORK

**Project 18-08
MANHOLE REPAIR AND REHABILITATION**

City of De Pere

**SECTION 00 51 00
NOTICE OF AWARD**

(Contractor)
(Contractor Name)
(Address)
(Address)

Project Description: 18-08 MANHOLE REPAIR AND REHABILITATION

The City has considered the proposal submitted by you dated (BID DATE) for the above-described project in response to its Advertisement for Bids dated April 5, 2018 and April 12, 2018.

You are hereby notified that the Common Council of the City of De Pere has accepted your bid of (Contract Amount \$_____.00).

You are required to execute the Contract and furnish the required Performance Bond, Payment Bond and Certificates of Insurance within ten (10) calendar days from the date of this notice to you.

If you fail to execute said Agreement and to furnish said bonds within ten (10) days from the date of this notice, said City will be entitled to consider all your rights arising out of the City's acceptance of your bid as abandoned and as a forfeiture of your Bid Bond. The City will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this NOTICE OF AWARD to the City.

Dated this ____th day of _____ 2018.

DEPARTMENT OF PUBLIC WORKS

BY: Eric P. Rakers, P.E.
City Engineer

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged by:

_____, this the _____ day of _____, 20____

By:_____

Title:_____

Project 18-08
MANHOLE REPAIR AND REHABILITATION

City of De Pere

SECTION 00 52 13
CONTRACT

This Contract, made and entered into this day _____ (date to be affixed by City), by and between (Contractor Name), hereinafter called Contractor, and the City of De Pere, a municipal corporation of the State of Wisconsin, hereinafter called City.

WITNESSETH: That, in consideration of the covenants and agreements herein contained, to be performed by the parties hereto, and of the payments hereinafter agreed to be made, it is mutually agreed as follows:

ARTICLE I - SCOPE OF WORK

The Contractor shall furnish all materials and all equipment and labor necessary, and perform all work shown on the drawings and described in the specifications for the project entitled 18-08 Manhole Repair and Rehabilitation, all in accordance with the requirements and provisions of the following documents, which are hereby made a part of this Contract:

- (a) Advertisement for Bids, dated April 5 and April 12, 2018.
- (b) Drawings designated for 18-08 Manhole Repair and Rehabilitation dated April 5, 2018.
- (c) City of De Pere 2018 Construction Specifications.
- (d) Special Provisions dated April 5, 2018.
- (e) Proposal submitted by (Contractor Name) dated Bid Date.
- (f) Addenda No. dated

ARTICLE II - TIME OF COMPLETION

- (a) The work to be performed under the Contract shall be commenced within (number spelled out) () calendar days after receipt of written notice to proceed. The work shall be completed within thirty (30) calendar days after receipt of Notice to Proceed.
- (b) Time is of the essence with respect to the date of completion herein above stated. Failure to complete the work within the number of calendar days stated in this Article, or interim dates included in the work sequence in Section 01 10 00, Summary of Work, including any extensions granted thereto, shall entitle the City to deduct from the monies due the Contractor an amount equal to Update based on 00 70 00 - General Conditions (Page 22)(\$) per day for each calendar day of delay in the completion of the work. Such amount shall be considered and treated not as a penalty but as liquidated damages, which the City will sustain, by failure of the Contractor to complete the work within the time stated.

ARTICLE III - PAYMENT

- (a) The Contract Sum. The City shall pay to the Contractor for the performance of the Contract the amounts determined for the total number of each of the following units of work completed at the unit price stated thereafter. The number of units contained in this schedule is approximate only,

and the final payment shall be made for the actual number of units that are incorporated in or made necessary by the work covered by the Contract.

- b) Progress Payments. The City shall make payments on account of the Contract as follows:
1. On not later than the third Friday day of every month the Contractor shall present to the City an invoice covering an estimate of the amount and proportionate value of the work done as verified by the City under each item of work that has been completed from the start of the job up to and including the third Friday of the preceding month, and the value of the work so completed determined in accordance with the schedule of unit prices for such items, together with such supporting evidence as may be required. This invoice shall also include an allowance for the cost of such materials and equipment required in the permanent work as have been delivered to the site but not as yet incorporated in the work.
 2. On not later than the second week of the following month, the City shall, after deducting previous payments made, pay to the Contractor 95% of the amount of the approved invoice, retaining 5% of the estimate of work done until 50% of the work has been completed. At 50% completion of the work, the previous retainage shall not yet be paid, but further partial payments shall be made in full to the contractor without additional retainage being taken unless the engineer certifies that the work is not proceeding satisfactorily. If the work is not proceeding satisfactorily, additional amounts may be retained. After substantial completion, an amount retained may be paid to the contractor, keeping retained only such amount as is needed for the remaining work.
 3. The Contractor shall notify the City in writing when all work under this Contract has been completed. Upon receipt of such notice the City shall, within a reasonable time, make the final inspection and issue a final certificate stating that the work provided for in this Contract has been completed and is accepted under the terms and conditions thereof, and that the entire balance due the Contractor as noted in said final certificate is due and payable. Before issuance of the final certificate the Contractor shall submit evidence satisfactory to the City that payrolls, material bills, and other indebtedness connected with the work under this Contract have been paid.

The City shall make final payment as soon after issuance of the final certificate as practicable.

ARTICLE IV – CONTRACT DOCUMENTS

- (a) Contents
1. The Contract documents consist of the following:
 - a. This Contract (pages 00 52 13-1 to 0052-13-2, inclusive).
 - b. Payment bond (pages 00 61 13-1 to 00 61 13-2, inclusive).
 - c. Performance bond (page 00 61 16-1).
 - d. General Conditions (pages 00 70 00-1 to 00 70 00-27, inclusive).
 - e. Specifications as listed in the table of contents of the Project Manual.
 - f. Drawings consisting of ___ sheets with each sheet bearing the following general title: ___[or] the Drawings listed on attached sheet index.
 - g. Addenda (numbers ___ to ___ inclusive), dated ____.
 - h. Exhibits to this Agreement (enumerated as follows):
 - 1) Contractor's Bid (pages 00 41 13-1 to 00 41 13-3, inclusive).
 - 2) Bid Schedule – Unit Prices (Pages 00 41 43-1).
 - 3) Proposed Products Form (Page 00 43 33-1)

City of De Pere

- IN WITNESS WHEREOF, the parties hereto have executed this Contract, the day and year first written above.

Approved as to Form By: _____ (City Attorney)

Sufficient funds are available to provide for the payment of this obligation.

BY: _____
(CLERK-TREASURER)

**Project 18-08
MANHOLE REPAIR AND REHABILITATION**

City of De Pere

**SECTION 00 55 00
NOTICE TO PROCEED**

Date: _____

(CONTRACTOR NAME)
(ADDRESS)
(ADDRESS)

PROJECT: 18-08 Manhole Repair and Rehabilitation

You are hereby notified to commence work in accordance with the CONTRACT dated _____, within ten (10) days of this Notice. All work under this contract shall be completed within _____ (NUMBER IN WORDS) (___#) consecutive days from the start of construction or _____ (DATE) whichever comes first.

Department of Public Works

By: Eric P. Rakers, P.E.
Title: City Engineer

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED is hereby acknowledged by

_____, this _____ day of _____, 20____.
Company Name

Signature

BY: _____
Printed Name

TITLE: _____

SECTION 00 61 13

CITY OF DE PERE

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: That **(CONTRACTOR NAME)**, as Principal,
hereinafter called Contractor, and _____

_____, as Surety, hereinafter called Surety, are held and firmly bound
unto the City of De Pere, a municipal corporation of the State of Wisconsin, as Obligee, hereinafter called
the owner, for the use and benefit of claimants as herein below defined in the **amount _____**
(CONTRACT AMT. SPELLED OUT) (\$_____) for the payment whereof
Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns,
jointly and severally, firmly by these presents.

WHEREAS, Contractor has by written agreement dated _____ (date to be affixed by
City) entered into a contract with City for Project 18-08, in accordance with drawings and specifications
prepared by the Director of Public Works of said City, which contract is by reference made a part hereof,
and is hereinafter referred to as the CONTRACT.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if Contractor shall
promptly make payments to all claimants as hereinafter defined, for all labor and material used or
reasonably required for use in the performance of the CONTRACT, then this obligation shall be null and
void; otherwise it shall remain in full force and effect, subject, however, to the following conditions.

1. A claimant is defined as one having a direct contract with Contractor or with a sub-
contractor of Contractor for labor, material, or both, used or reasonably required for use in
the performance of the contract, labor and material being construed to include that part of
water, gas, power, lights, heat, oil, gasoline, telephone service, or rental of equipment
directly applicable to the contract.
2. The above named Contractor and Surety hereby jointly and severally agree with the City
that every claimant as herein defined, who has not been paid in full before the expiration
of a period of ninety (90) days after the date on which the last of such claimant's work or
labor was done or performed, or materials were furnished by such claimant may sue on
this bond for the use of such claimant in the name of the City, prosecute the suit to final
judgment for such sum or sums as may be justly due claimant, and have execution thereon,
provided, however, that the City shall not be liable for the payment of any costs or
expenses of any such suit.
3. No suit or action shall be commenced hereunder by any claimant:
 - a. Unless claimant shall have given written notice to any two of the following: The
Contractor, the City, or the Surety above named, within ninety (90) days after
such claimant did or performed the last of the work or labor, or furnished the last
of the materials for which said claim is made, stating with substantial accuracy the
amount claimed and the name of the party to whom the materials were furnished,

Project 18-08
MANHOLE REPAIR AND REHABILITATION

City of De Pere

or for whom the work or labor was done or performed. Such notice shall be served by mailing the same by registered mail, postage prepaid, in an envelope addressed to the Contractor, City, or Surety, at any place where an office is regularly maintained for the transaction of business, or served in any manner in which legal process may be served in the State of Wisconsin, save that such service need not be made by a public officer.

- b. After the expiration of one (1) year following the date on which Contractor ceased work on said CONTRACT.
 - c. Other than in a state court of competent jurisdiction in and for the County or other political subdivision of the state in which the project, or any part thereof, is situated, or in the United States District Court for the district in which the project, or any part thereof, is situated, and not elsewhere.
4. The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment by Surety of mechanics' liens, which may be filed or recorded against said improvement, whether or not claim for the amount of such lien be presented under and against this bond.

SIGNED AND SEALED THIS _____ DAY OF _____, 20__.

In Presence of:

_____ (WITNESS)	_____ (CONTRACTOR)
_____ (WITNESS)	_____ (SURETY)

SECTION 00 61 16

CITY OF DE PERE

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: That **(CONTRACTOR'S NAME)**, as Principal, hereinafter called Contractor, and _____, as Surety, hereinafter called Surety, are held and firmly bound unto the City of De Pere, a municipal corporation of the State of Wisconsin, as Obligee, hereinafter called City, in the amount of **(AMOUNT WRITTEN OUT)** (\$_____) for the payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Contractor has by written agreement dated _____ (date to be affixed by City), entered into a contract with the City for Project 18-08, in accordance with drawings and specifications prepared by the Director of Public Works of said City, which contract is by reference made a part hereof, and is hereinafter referred to as the CONTRACT.

NOW THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if the Contractor shall promptly and faithfully perform said CONTRACT, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

Whenever Contractor shall be, and declared by the City to be in default under the CONTRACT, the City having performed City's obligations there under, the Surety may promptly remedy the default, or shall promptly

1. Complete the CONTRACT in accordance with its terms and conditions or
2. Obtain a bid or bids for submission to City for completing the CONTRACT in accordance with its terms and conditions, and upon determination by the City and Surety of the lowest responsible bidder, arrange for a contract between such bidder and City make available as work progresses (even though there should be a default or succession of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the contract price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term "balance of the contract price" as used in this paragraph shall mean the total amount payable by City to Contractor under the CONTRACT and any amendments thereto, less the amount properly paid by City to Contractor.

Any suit under this bond must be instituted before the expiration of two (2) years from the date on which final payment under the CONTRACT falls due. No right of action shall accrue on this bond to or for the use of any person or corporation other than the owner named herein or the heirs, executors, administrators or successors of City.

SIGNED AND SEALED THIS _____ DAY OF _____, 20__.

In the Presence of:

(WITNESS)

(CONTRACTOR)

(SEAL)

(WITNESS)

(SURETY)

(SEAL)

Project 18-08
MANHOLE REPAIR AND REHABILITATION

City of De Pere

Project #
Project Name:

City of De Pere

Contractor's Application for Payment No.

Application Period:	Application Date:
Owner: City of De Pere	Contractor:
	Contractor's Project No.:

APPLICATION FOR PAYMENT

Change Order Summary

Approved Change Orders		
Number	Additions	Deductions
Total	\$0.00	\$0.00
NET CHANGE BY CHANGE ORDERS:		\$0.00

1. ORIGINAL CONTRACT PRICE:.....	
2. Net change by Change Orders and Written Amendments (+ or -):.....	\$0.00
3. CURRENT CONTRACT PRICE (Line 1 plus Line 2):.....	\$0.00
4. Total completed and stored to date Column H on Progress Estimate:...	\$0.00
5. Retainage (per Agreement):	
a. Work Completed - Column H (95% up to 50% of Contract or 2.5% of 100% of Contract)	\$0.00
6. AMOUNT ELIGIBLE TO DATE (Line 4 minus 5):.....	\$0.00
7. LESS PREVIOUS PAYMENTS (Line 6 from prior Application):.....	\$0.00
8. AMOUNT DUE THIS APPLICATION (Line 6 minus Line 7):.....	\$0.00

CONTRACTOR'S CERTIFICATION

The undersigned Contractor certifies that:(1) all previous progress payments received from Owner on account of Work done under Contract have been applied on account to discharge Contractor's legitimate obligations incurred in connection with Work covered by prior Applications for Payment; (2) title of all Work, materials and equipment incorporated in said Work or otherwise listed in or covered by this Application for Payment will pass to Owner at time of payment free and clear of all Liens, security interests and encumbrances (except such as are covered by a Bond acceptable to Owner indemnifying Owner against any such Liens, security interest or encumbrances); and (3) all Work covered by the Application for Payment is in accordance with the Contract Documents and is not defective.

By:	Date:

Payment of:

\$

(Line 8 or other - attach explanation of other amount)

is recommended by:

(Contractor)

(Date)

Payment of:

\$

(Line 8 or other - attach explanation of other amount)

is recommended by:

(Owner)

(Date)

Date

00 62 76-1

Application for Payment

SECTION 00 65 16

CERTIFICATE OF SUBSTANTIAL COMPLETION

Project:	
Owner:	Owner's Contract No.:
Contractor:	

This [tentative] [definitive] Certificate of Substantial Completion applies to:

☐ All Work under the Contract Documents: ☐ The following specified portions of the Work:

Date of Substantial Completion

The Work to which this Certificate applies has been inspected by authorized representatives of Contractor and Engineer, and found to be substantially complete. The Date of Substantial completion of the Project or portion thereof designated above is hereby declared and is also the date of commencement of applicable warranties required by the Contract Documents, except as stated below.

A [tentative] [definitive] list of items to be completed or corrected is attached hereto. This list may not be all-inclusive, and the failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

The responsibilities between Owner and Contractor for security, operation, safety, maintenance, heat, utilities, insurance and warranties shall be as provided in the Contract Documents except as amended as follows:

☐ Amended Responsibilities ☐ Not Amended

Owner's Amended Responsibilities:

Contractor's Amended Responsibilities:

Project 18-08
MANHOLE REPAIR AND REHABILITATION

City of De Pere

The following documents are attached to and made part of this Certificate:

This Certificate does not constitute an acceptance of Work not in accordance with the Contract Documents nor is it a release of Contractor's obligation to complete the Work in accordance with the Contract Documents.

Executed by Engineer

Date

Accepted by Contractor

Date

SECTION 01 10 00
SUMMARY OF WORK

PART 1 – GENERAL

1.1 SUMMARY

- A. Section Includes
 - 1. References
 - 2. Work Covered by the Contract Documents
 - 3. Work Sequence
 - 4. Use of Premises
 - 5. Warranty
 - 6. Work By Others
 - 7. Project Utility Sources
 - 8. Miscellaneous Provisions

1.2 REFERENCES

- A. General Specifications The work under this contract shall be in accordance with the City of De Pere, 2018 Construction Specifications and these Special Provisions and plans, and the latest edition of the Wisconsin Department of Transportation Standards Specifications for Highway and Structure Construction, where referenced in the City Specifications.
- B. Definitions. Any reference to the “state” or the “department” in said standard Specifications shall mean the “City of De Pere” for the purposes of this contract.
- C. Industry Standards
 - 1. Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
 - 2. Comply with standards in effect as of date of the Contract Documents, unless otherwise indicated.
 - 3. If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement.
 - 4. The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements.
 - 5. Each section of the specifications generally includes a list of reference standards normally referred to in that respective section. The purpose of this list is to furnish the Contractor with a list of standards normally used for outlining the quality control

desired on the project. The lists are not intended to be complete or all inclusive, but only a general reference of standards that are regularly referred to.

6. Each entity engaged in construction on the Project shall be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents. Where copies of standards are needed to perform a required construction activity, obtain copies directly from the publication source and make them available on request.

1.3 WORK COVERED BY THE CONTRACT DOCUMENTS

A. Project Identification

1. Project Location
 - a. Various locations of manhole rehabilitation
2. Work will be performed under the following prime contract:
 - a. Project 18-08 Manhole Repair and Rehabilitation

B. The Work includes:

1. Spray on liner of manholes.
2. Poured in place benches.
3. Chemical grout manholes.

1.4 WORK SEQUENCE

- A. Conduct construction activities to maintain access to businesses and residences throughout construction.
- B. Sequence construction to maintain wastewater flow throughout construction.

1.5 USE OF PREMISES

- A. Contractor shall have full use of the premises for construction operations, including use of the Project Site, as allowed by law, ordinances, permits, easement agreements and the Contract documents.
- B. Contractor's use of premises is limited only by Owner's right to perform work or to retain other contractors on portions of the Project.
- C. The Project Site is limited to property boundaries, rights-of-way, easements, and other areas designated in the Contract Documents.
- D. Provide protection and safekeeping of material and products stored on or off the premises.
- E. Move any stored material or products which interfere with operations of Owner or other Contractors.

1.6 WARRANTY

- A. The Contractor warrants and guarantees to the City that all work shall be in accordance with the Contract Documents and will not be defective. Prompt notice of all defects will be given to the Contractor. All defective work, whether or not in place, may be rejected, corrected or accepted as provided in this proposal.
- B. If within one (1) year after the date of contract work completion or such longer period of time as may be prescribed by law or by the terms of any applicable special guarantee required by the Contract Documents or by a special provision of the Contract Documents, any work is found to be defective, the Contractor shall comply in accordance with the City's written instructions. These written instructions will include either correcting such defective work or, if it has been rejected by the City, removing it from the site and replacing it with non-defective work. If the Contractor does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk or loss or damage, the City may have the defective work corrected or the rejected work removed and replaced. All direct and indirect costs of correction or removal and replacement of defective work, including compensation for additional professional services, shall be paid by the Contractor.

1.7 WORK BY OTHERS

- A. The City of De Pere Park Department will trim all trees or remove trees and grind stumps for trees to be removed. Questions regarding trees or landscaping that is bid as part of this contract can be directed to the Engineer.
- B. Cooperate fully with separate contractors and/or Owner so work by others may be carried out smoothly, without interfering with or delaying work under this Contract.

1.8 PROJECT UTILITY SOURCES

- A. Green Bay Metropolitan Sewer District (NEW Water), Lisa Sarau, (lsarau@newwater.us) (920-438-1039)
- B. AT&T, Joe Kassab, (jk572k@att.com) (920-735-3206)
- C. Wisconsin Public Service, Bob Laskowski, (rtlaskowski@wisconsinpublicservice.com) (920-617-2775)
- D. Time Warner Cable, Vince Albin, (vince.albin@twcable.com) (920-378-0444)
- E. Nsight, Rick Vincent, (rick.vincent@nsight.com) (920-617-7316)

1.9 MISCELLANEOUS PROVISIONS

- A. Notification to Residents – The Contractor shall individually notify all residents and businesses 2-weeks prior to the start of operations, giving an estimated time that vehicle movement will be limited or prohibited. Property owners shall be notified 24-hours prior to closing a drive.

PART 2 – PRODUCTS

PART 3 – EXECUTION

END OF SECTION

SECTION 01 22 07

MEASUREMENT AND PAYMENT MANHOLE REHABILITATION

PART 1 – GENERAL

1.1 SUMMARY

- | | |
|--------------------------|------------------|
| A. Section includes: | <u>Bid Items</u> |
| 1. Spray-on Liner | SP-01 |
| 2. Poured in Place Bench | SP-02 |
| 3. Chemical Grouting | SP-03 |
- B. Unit Prices include:
1. Defined work for each Unit Price Item which will provide a functionally complete Project when combined with all unit price items. If there are specific work items which the Contractor believes are not identified in any Unit Price Item, but is required to provide a functionally complete Project, then the identified specific work items shall be included in the appropriate Unit Price Item.
 2. The method of measurement for payment.
 3. The price per unit for payment.

1.2 GENERAL WORK ITEMS

- A. Include with the appropriate Unit Price Item the following work items which are common to the Unit Price Items for sanitary sewer systems.
- B. If there is a specific Unit Price Item for any of the following items, then the work item shall be included with that specific unit price item.
1. Traffic Control.
 2. Mobilization.
 3. All labor, material and equipment to perform specified work.
 4. All safety requirements.

1.3 SPRAY-ON LINER

- A. The unit price for Spray-On Liner work includes:
1. General Work Items of Article 1.2.
 2. Bypass pumping.
 3. High pressure cleaning of interior.
 4. Patching voids and cracks in manhole, bench, inverts, etc.
 5. Stopping infiltration by patching or grouting.

6. Applying liner and other material.
7. Disposal of removed material.
8. Cleaning of any debris left from lining in the work area.

B. Measurement of payment will be the distance from the invert of the lowest sewer to the bottom of the frame.

C. The unit of measurement for payment is vertical feet.

1.4 POURED IN PLACE BENCH

A. The unit price for Poured in Place Bench work includes:

1. General Work Items of Article 1.2.
2. Bypass pumping.
3. High pressure cleaning of interior.
4. Patching voids and cracks.
5. Stopping infiltration by patching or grouting.
6. Removing existing bench (if required).
7. Disposal of existing bench (if required).
8. Forming bench and applying material to form bench.
9. Cleaning of any debris left from pouring in the bench in the work area.

B. Measurement of payment will be the actual number of poured in place bench installed.

C. The unit of measurement for payment is each.

1.5 CHEMICAL GROUTING

A. The unit price for Chemical Grouting work includes:

1. General Work Items of Article 1.2.
2. Bypass pumping (if required).
3. Applying grout and other material.
4. Cleaning the manhole of grout material.
5. Dispose of material.

B. Measurement of payment will be the actual number of manholes chemical grouted.

C. The unit of measurement for payment is each.

END OF SECTION

SECTION 01 29 00
PAYMENT PROCEDURES

PART 1 – GENERAL

1.1 SUMMARY

- A. This section includes:
 - 1. Administrative and procedural requirements necessary to prepare and process Applications for Payment

1.2 SCHEDULE OF VALUES

- A. Unit Price work will be the Schedule of Values used as the basis for reviewing Applications for Payment.

1.3 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as recommended by the Engineer and approved by Owner.
- B. The date for each progress payment should be the 3rd Tuesday of each month. The period covered by each Application for Payment starts on the day following the end of the preceding period and ends the 4th Friday of the Month.
- C. Use forms provided by Engineer for Applications for Payment. Sample copy of the Application for Payment and Continuation Sheet is included in Section 00 62 76.
- D. Application Preparation Procedures
 - 1. When requested by the Contractor, the Engineer will determine the actual quantities and classifications of Unit Price Work performed.
 - a. Preliminary determinations will be reviewed with the Contractor before completing Application for Payment.
 - b. Engineer will complete the Application for Payment based on Engineer's decision on actual quantities and classifications.
 - c. Engineer will submit three original copies of Application for Payment to Contractor for certification of all three original copies.
 - d. Contractor shall submit signed Application for payment to Owner for approval within time frame agreed to at the Preconstruction Conference.
 - 2. If payment is requested for materials and equipment not incorporated in the Work, then the following shall be submitted with the Application for Payment:
 - a. Evidence that materials and equipment are suitably stored at the site or at another location agreed to in writing.
 - b. A bill of sale, invoice, or other documentation warranting that the materials and equipment are free and clear of all liens.

- c. Evidence that the materials and equipment are covered by property insurance.
3. Complete every entry on form. Execute by a person authorized to sign legal documents on behalf of Contractor.
- E. With each Application for Payment, submit waivers of liens from subcontractors and suppliers for the construction period covered by the previous application.
 1. Submit partial waivers on each item for amount requested before deduction for retainage on each item.
 2. When an application shows completion for an item, submit final or full waivers.
 3. Owner reserves the right to designate which entities involved in the Work shall submit waivers.
 4. Submit final Application for Payment with or preceded by final waivers from every entity involved with performance of the Work covered by the application.
 5. Submit waivers of lien on forms executed in a manner acceptable to Owner.
- F. The following administrative actions and submittals shall precede or coincide with submittal of first Application for Payment:
 1. List of subcontractors.
 2. Schedule of Values (For Lump Sum Work).
 3. Contractor's construction schedule.
- G. Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted including, but not limited, to the following:
 1. Evidence of completion of Project closeout requirements.
 2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
 3. Updated final statement, accounting for final changes to the Contract Sum.
 4. Consent of Surety to Final Payment.
 5. Final lien waivers as evidence that claims have been settled.
 6. Final liquidated damages settlement statement.

PART 2 – PRODUCTS

PART 3 – EXECUTION

END OF SECTION

**SECTION 01 32 33
CONSTRUCTION PHOTOGRAPHS**

PART 1 – GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Photographs for utility construction sites.

1.2 SUBMITTALS

- A. Submit electronic files of each photographic view within seven (7) days of taking photographs.

1.3 QUALITY ASSURANCE

- A. Photographs are to be submitted to the Engineer for approval prior to the start of construction.

PART 2 – PRODUCTS

PART 3 – EXECUTION

3.1 UTILITY AND STREET CONSTRUCTION SITES

- A. After construction provide photographs to show finished product.

END OF SECTION

SECTION 01 33 00
SUBMITTALS

PART 1 – GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for submittals:
 - 1. Progress Schedule
 - 2. Schedule of Shop Drawings and Sample Submittals
 - 3. Shop Drawings
- B. Failure to meet Submittal requirements to the satisfaction of the Engineer will constitute unsatisfactory performance of the work in accordance with the Contract Documents, therefore, the Engineer may recommend to the Owner that all or a portion of payments requested during the corresponding pay period be withheld until these requirements are met.

1.2 SUBMITTAL PROCEDURES

- A. Coordination

Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.

 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 - 2. Coordinate transmittal of different types of submittals for related elements of the work so processing will not be delayed by the need to review submittals concurrently for coordination.
 - a. The Engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until all related submittals are received.
 - 3. To avoid the need to delay installation as a result of the time required to process submittals, allow sufficient time for submittal review, including time for re-submittals.
 - a. Allow two weeks for initial submittal.
 - b. Allow two weeks for reprocessing each submittal.
 - c. No extension of Contract Time will be authorized because of failure to transmit submittals to the Engineer sufficiently in advance of the work to permit processing.
- B. Submittal Preparation

Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.

 - 1. Assign a reference number to each submittal and re-submittal.
 - 2. Provide a space approximately 4 by 5 inches (100 by 125 mm) on the label or beside the title block on Shop Drawings to record the Contractor's review and approval markings and the action taken.
 - 3. Include the following information on the label for processing and recording action taken.

- a. Project name.
 - b. Date.
 - c. Name and address of the Engineer.
 - d. Name and address of the Contractor.
 - e. Name and address of the subcontractor.
 - f. Name and address of the supplier.
 - g. Name of the manufacturer.
 - h. Number and title of appropriate Specification Section.
 - i. Drawing number and detail references, as appropriate.
4. Each submittal shall be stamped by the Contractor indicating that submittal was reviewed for conformance with the Contract Documents. The Engineer will not accept unstamped submittals.

C. Submittal Transmittal

Package each submittal appropriately for transmittal and handling. Transmit each submittal to the Engineer. The Engineer will not accept submittals received from sources other than the Contractor.

1. On the transmittal, record relevant information and requests for Engineer action. On a form, or separate sheet, record deviations from Contract Document requirements, including variations, limitations, and justifications. Include Contractor's certification that information complies with Contract Document requirements.

1.3 CONTRACTOR'S PROGRESS SCHEDULE

- A. Prepare and submit to the Engineer within 10 days after the Effective Date of the Agreement, four copies of a preliminary progress schedule of the work activities form Notice to Proceed until Substantial Completion.
1. Provide sufficient detail of the work activities comprising the schedule to assure adequate planning and execution of the work, such that in the judgment of the Engineer, it provides an appropriate basis for monitoring and evaluation of the progress of the work. A work activity is defined as an activity which requires substantial time and resources (manpower, equipment, and/or material) to complete and must be performed before the contract is considered complete.
 2. The schedule shall indicate the sequence of work activities. Identify each activity with a description, start date, completion date and duration. Include, but do not limit to the following items, as appropriate to this contract:
 - a. Shop drawing review by the Engineer.
 - b. Excavation and grading.
 - c. Asphalt and concrete placement sequence.
 - d. Restoration.
 - e. Construction of various segments of utilities.
 - f. Subcontractor's items of work.
 - g. Allowance for inclement weather.
 - h. Contract interfaces, date of Substantial Completion.

- i. Interfacing and sequencing with existing facilities and utilities.
- j. Sequencing of major construction activities.
- k. Milestones and completion dates.

B. Distribution

Following response to the initial submittal, print and distribute copies of the revised construction schedule to the Engineer, Subcontractors, and other parties required to comply with scheduled dates. When revisions are made, distribute to the same parties. Delete parties from distribution when they have completed their assigned portion of the work and are no longer involved in construction activities.

C. Schedule Updating

Revise the schedule after each meeting, event, or activity where revisions have been recognized or made. Issue the updated schedule concurrently with the report of each meeting.

D. Punch List

Prepare and submit to the Engineer within 10 days after substantial completion a detailed progress schedule for outstanding work and punch list items.

1.4 SCHEDULE OF SHOP DRAWINGS AND SAMPLE SUBMITTALS

A. Submit four (4) hard copies or electronic copies of preliminary submittal schedule in accordance with the General Conditions of the Contract and as follows:

- 1. Coordinate submittal schedule with the subcontractors, Schedule of Values, and of products as well as the Contractor's Progress Schedule.
- 2. Prepare the schedule in chronological order. Provide the following information:
 - a. Scheduled date for the first submittal.
 - b. Related Section number.
 - c. Submittal category (Shop Drawings, Product Data, or Samples).
 - d. Name of the subcontractor.
 - e. Description of the part of the work covered.
 - f. Scheduled date for the Engineer's final release or approval.

B. Distribution

Following response to the preliminary submittal schedule, print and distribute copies of the revised submittal schedule to the Engineer, Owner, subcontractors, and other parties required to comply with submittal dates indicated. Post copies in the field office.

- 1. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the work and are no longer involved in construction activities.

C. Schedule Updating

Revise the schedule after each meeting or activity where revisions have been recognized or made. Issue the updated schedule concurrently with the report of each meeting.

1.5 SHOP DRAWINGS

- A. Submit newly prepared information drawn accurately to scale. Highlight, encircle, or otherwise indicate deviations from the Contract Documents. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings. Standard information prepared without specific reference to the Project is not a Shop Drawing.
- B. Collect product data into a single submittal for each element of construction of system. Product data includes printed information, such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams, and performance curves.
 - 1. Mark each copy to show actual product to be provided. Where printed Product Data includes information on several products that are not required, mark copies to indicate the applicable information. Include the following information:
 - a. Manufacturer's printed recommendations.
 - b. Compliance with trade association standards.
 - c. Compliance with recognized testing agency standards.
 - d. Application of testing agency labels and seals.
 - e. Notation of dimensions verified by field measurement.
 - f. Notation of coordination requirements.
- C. Do not use shop drawings without an appropriate final stamp indicating action taken.
- D. Submittals
Submit four (4) copies of each required submittal. The Engineer will retain two copies, and return the others to the Contractor marked with action taken and corrections or modifications required.
- E. Distribution
Furnish copies of reviewed submittal to installers, subcontractors, suppliers, manufacturers, fabricators, and others required for performance of construction activities. Show distribution on transmittal forms. Maintain one copy at the project site for reference.
 - 1. Do not proceed with installation until a copy of the Shop drawing is in the Installer's possession.
 - 2. Do not permit use of unmarked copies of the Shop Drawing in connection with construction.

1.6 ENGINEER'S ACTION

- A. Except for submittals for the record or information, where action and return is required, the Engineer will review each submittal, mark to indicate action taken, and return promptly. The Engineer will stamp each submittal with a uniform action stamp. The Engineer will mark the stamp appropriately to indicate the action taken, as follows:

1. “No Exceptions Taken”: The work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents.
2. “Make Corrections Noted”: The work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents.
3. “Amend and Resubmit”: Do not proceed with work covered by the submittal. Resubmit without delay. Do not use, or allow others to use, submittals marked “Amend and Resubmit” at the Project Site or elsewhere where work is in progress.
4. “Rejected – See Remarks”: Do not proceed with work covered by the submittal. Resubmit without delay. Do not use, or allow others to use, submittals marked “Rejected and Resubmit” at the Project Site or elsewhere where work is in progress.

B. Unsolicited Submittals

The Engineer/Architect will return unsolicited submittals to the sender without action.

PART 2 – PRODUCTS

PART 3 – EXECUTION

END OF SECTION

SECTION 01 41 00

REGULATORY REQUIREMENTS

PART 1 – GENERAL

1.1 SUMMARY

- A. Section Includes
 - 1. Underground Utilities
 - 2. Property Monuments
 - 3. Traffic Control
 - 4. Permits for Project

1.2 UNDERGROUND UTILITIES

- A. Under the provisions of Wisconsin Statutes, Section 182.0175, all contractors, subcontractors, and any firm or individual intending to do work on this contract shall contact all utility firms in the affected area of construction a minimum of three (3) working days prior to beginning construction so that affected utilities will be located and marked.

1.3 PROPERTY MONUMENTS

- A. Protect iron pipe monuments from movement.
- B. The cost of replacement of any monuments moved or destroyed during construction shall be the Contractor's responsibility.
- C. Perpetuation of destroyed or moved monuments shall be performed in accordance with state statutes by a registered land surveyor.

1.4 TRAFFIC CONTROL

- A. Provide traffic control facilities including barricades, signs, lights, warning devices, pavement markings, flaggers, etc.
- B. Construct and use traffic control facilities in accordance with the U.S. D. O. T. Federal Highway Administration's Manual on Uniform Traffic Control Devices for Streets and Highways.
- C. Maintain traffic control devices as required to properly safeguard the public travel through final completion, including during periods of suspension of work.

1.5 PERMITS FOR PROJECT (Not used)

PART 2 – PRODUCTS (Not used)

PART 3 – EXECUTION (Not used)

END OF SECTION

SECTION 33 39 13.01

MANHOLE REHABILITATION - SPRAY-ON LINER

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes

1. Work under this section includes manhole rehabilitation to eliminate infiltration, provide corrosion protection, repair voids, and restore structural integrity.

B. Work under this section generally shall include:

1. Removal of any loose and unsound materials and cast iron steps.
2. Cleaning manhole surface using high-pressure water.
3. Repair and filling of voids.
4. Repair and sealing of invert and benches.
5. Elimination of active infiltration prior to application of the grout.
6. Apply coating to form a monolithic liner on interior of manhole.

1.2 SUBMITTALS

A. Product Data.

1. Product literature and catalog cut sheets of all materials to be supplied that relate to these specifications.
2. One copy of all test reports.

1.3 QUALITY ASSURANCE

- A. The Contractor shall guarantee all work performed under the contract for a period of one (1) year from date of final acceptance against defective material and workmanship of any nature.
- B. The Contractor shall warrant and save harmless the Owner against any claims for potential infringement and any loss thereof.

PART 2 – PRODUCTS

2.1 PRODUCTS

- A. Patching, infiltration control, grouting, and/or liner mix shall be a cementitious material mixed and applied in accordance with the specification of the appropriate manufacturer. Provide the Engineer with the mixture specifications prior to patching, grouting, or lining.
- B. No applications shall be made to frozen surfaces or if freezing is expected to occur inside the manhole within 24 hours after application.
- C. Method of application is determined by type of product used and will be at the Contractor's discretion.
- D. Water used for mixing the grouts shall be clean and potable.
- E. Mortar used for repair of the joints between blocks or bricks in the manhole structure shall consist of a pre-mixed Portland cement based hydraulic cement consisting of Portland cement, graded silica aggregates, special plasticizing and accelerating agents. The mortar shall not contain chlorides, gypsum, plasters, iron particles, or gas forming agents or promote the corrosion of steel it may come into contact with. Set time should vary between 3 minutes and 15 minutes, depending on site conditions.
- F. Equipment used for mixing and application of the mixtures and the lining material shall be specifically constructed for the purpose intended and be recommended by the manufacturer of the materials to be applied.

2.2 PATCHING MIX

- A. A quick setting cementitious material shall be used as a patching mix and is to be mixed and applied according to the manufacturer's recommendations and shall have the following minimum requirements:
 - 1. Compressive strength at 6 hr (ASTM C 109) 1,400 psi
 - 2. Shrinkage at 90% relative humidity (ASTM C-596) 0%
 - 3. Bending strength at 28 days (ASTM C 321) 150 psi
 - 4. Cement Sulfate resistant
 - 5. Density at application 105 ± 5 pcf

2.3 MIXTURE FOR INFILTRATION CONTROL

- A. The grout used for the control of infiltration shall be a rapid setting cementitious grout specifically formulated for leak control. The grout shall be mixed and applied in accordance with the manufacturer's recommendations and have the following minimum requirements:

1. Compressive strength at 1 hr (ASTM C 109)	600 psi
2. Compressive strength at 24 hr (ASTM C-109)	1,800 psi
3. Bonding strength at 1 hr (ASTM C-321)	30 psi
4. Bonding strength at 24 hr (ASTM C-321)	80 psi

2.4 MIXTURE FOR LINING MANHOLES

- A. Manufacturers:

1. The Strong Company, Inc. – Strong Seal MS-2C
2. PermaForm – Permacast MS – 10,000
3. Sauereisen – Sewerseal No. F-170

- B. A fiber-reinforced cementitious liner shall be used to form a structural/structurally enhanced monolithic liner covering all interior manhole surfaces and shall have the following minimum requirements at 28 days:

1. Compressive strength	8,000 psi
2. Tensile strength	800 psi
3. Flexural strength	1,500 psi
4. Shrinkage at 90% relative humidity	0%
5. Bonding strength	2,000 psi
6. Density, at application	134 ± 5 lbs/ft ³

- C. Lining thickness shall be a minimum 3/4 inch for a 48-inch diameter manhole up to 14 feet deep.

- D. Provide the Engineer with the mixture specification prior to patching, grouting, or lining.

PART 3 – INSTALLATION

3.1 PREPARATION

- A. All pipe connections to the manhole shall be covered or plugged to prevent extraneous materials from entering the sewer lines.

- B. All foreign material shall be removed from the manhole wall and bench using a high-pressure water spray applied at a minimum pressure of 2,000 psi. Loose and protruding brick, blocks, and mortar shall be removed using a mason's hammer and chisel, and/or scraper meeting the approval of the Engineer. All large voids shall be filled using the specified quick setting patching mix as approved by the Engineer.
- C. Active leaks shall be stopped using a quick setting hydraulic cement mix meeting the specified conditions and approved by the Engineer. The mix shall be applied in accordance with the manufacturer's recommendations. Some of the leaks may require holes to localize the infiltration during the application of the hydraulic cement. After the application of the hydraulic cement, the weep holes shall be plugged.
- D. Step Removal:
 - 1. All existing steps shall be removed to within one (1) inch of the existing wall.

3.2 APPLICATION OF LINER

- A. At the completion of the repairs to the walls of the manhole, the loose material shall be removed from the bottom and the invert and bench shall be repaired using the specified quick setting patching mix approved by the Engineer.
- B. Invert repairs shall be made on all inverts with visible damage and/or infiltration. The flow in the sewer shall be blocked. The invert shall be cleaned and the quick setting mix shall be applied to the invert and the bench. The surface of the mixture shall be trowel finished and spread over the bench sufficiently to tie into the structurally enhanced liner that will be applied to the walls of the manhole. The flow in the manhole shall be reestablished within 30 minutes after placing the mix.

3.3 INVERT AND BENCH REPAIRS

- A. 1st Application: The surface of the manhole shall be clean and free of foreign material prior to the application. The surface shall be free of excess water droplets but totally saturated. The material shall be applied by spraying starting at the bottom of the manhole wall and proceeding to the top to a minimum thickness necessary to fill all cracks, crevices, and voids and a relatively smooth surface. Troweling may be used to achieve the desired surface smoothness. The troweling shall also be used to compact the material into voids and to set the bond.

- B. 2nd Application: The second application shall be applied after the initial application has begun the initial set (15 minutes to 1 hour depending on the ambient conditions). This application shall be applied until a sum of $\frac{3}{4}$ -inch of thickness is achieved. The material shall be applied by spraying starting at the bottom of the manhole wall and proceeding to the top until the minimum required thickness is attained. The surface of this application shall be troweled to a smooth finish. Care should be taken not to overwork the finished surface and bring additional water to the surface and weaken the material.
- C. Bench Application: Covers placed in the bottom of the manhole to prevent foreign material from entering the sewer pipe shall be removed and any foreign material shall be removed from the bottom of the manhole. The bench shall be sprayed, with sufficient material to provide a smooth slopping surface from the manhole walls to the invert of the pipe. The minimum thickness of the material at the bottom shall be $\frac{3}{4}$ inch. The wall to bench intersection shall be rounded to a uniform radius for the full circumference of the manhole.
- D. No material shall be applied to frozen surfaces or if freezing is expected to occur within 24 hours of the application of the material. If the ambient temperatures are in excess of 95°F, precautions shall be taken to keep the mix temperatures below 90°F. Mixing water shall be a maximum of 85°F.

3.4 CURING

- A. The contractor shall take the necessary precautions to insure that the lining material is not exposed to sunlight or air movement. The manhole lining material shall be allowed to cure for minimum of four hours before the flow in the manhole is reestablished. The manhole shall be allowed to cure for a minimum of 24 hours before traffic is allowed over the manhole.

3.5 MANHOLE STEP REPLACEMENT

- A. Step replacement is not required.

3.6 MANHOLE WALL REHABILITATION

- A. This work shall consist of the repair of the joints between the blocks or bricks in the manhole wall and corbel and the resurfacing of the manhole walls at locations indicated on the plans or indicated by the Engineer with an appropriate grout material in accordance with the details in the plans, these special provisions and as directed by the Engineer.

3.7 TESTING

- A. Prior to acceptance of manhole rehabilitation, the manhole will be visually inspected for the absence of leaks.

END OF SECTION

SECTION 33 39 13.02

MANHOLE REHABILITATION - POURED IN PLACE BENCH

PART 1 – GENERAL

1.1 SUMMARY

- A. Work under this section includes manhole rehabilitation to eliminate infiltration, provide corrosion protection, repair voids, and restore structural integrity of the bench of the manhole.
- B. Work under this section generally shall include:
 - 1. Removal of any loose and unsound materials
 - 2. Cleaning surface using high-pressure water.
 - 3. Repair and filling voids.
 - 4. Repair and sealing invert and benches.
 - 5. Elimination of active infiltration prior to installation of the liner.
 - 6. Installation of bench.

1.2 SUBMITTALS

- A. Submit shop drawings in accordance with Section 01300, Submittals, including:
 - 3. Product literature and catalog cut sheets of all materials to be supplied that relate to these specifications.
 - 4. One copy of all test reports.
 - 5. Procedure for establishing the bench and flowline.

1.3 QUALITY ASSURANCE

- A. The Contractor shall guarantee all work performed under the contract for a period of one (1) year from date of final acceptance against defective material and workmanship of any nature.
- B. The Contractor shall warrant and save harmless the Owner against any claims for potential infringement and any loss thereof.

PART 2 – PRODUCTS

2.1 PRODUCTS

- A. Patching, infiltration control, grouting, and/or liner mix shall be a cementitious material mixed and applied in accordance with the specification of the appropriate manufacturer.

- B. No applications shall be made to frozen surfaces or if freezing is expected to occur inside the manhole within 24 hours after application.
- C. Method of application is determined by type of product used and will be at the Contractor's discretion.
- D. Water used for mixing the grouts shall be clean and potable.
- E. Equipment used shall be specifically constructed for the purpose intended and be recommended by the manufacturer of the materials to be applied.

2.2 BENCH THICKNESS

- A. The restoration shall be accomplished by pouring a new concrete bench in the existing manhole. The new liner shall have a minimum thickness of three (3) inches.

2.3 PATCHING MIX

- A. A quick setting cementitious material shall be used as a patching mix and is to be mixed and applied according to the manufacturer's recommendations and shall have the following minimum requirements:

- | | |
|--|-------------------|
| 1. Compressive strength at 6 hr (ASTM C 109) | 1,400 psi |
| 2. Shrinkage at 90% relative humidity (ASTM C-596) | 0% |
| 3. Bending strength at 28 days (ASTM C 321) | 150 psi |
| 4. Cement | Sulfate resistant |
| 5. Density at application | 105 ± 5 pcf |

2.4 MIXTURE FOR INFILTRATION CONTROL

- A. The grout used for the control of infiltration shall be a rapid setting cementitious grout specifically formulated for leak control. The grout shall be mixed and applied in accordance with the manufacturer's recommendations and have the following minimum requirements:

- | | |
|---|-----------|
| 1. Compressive strength at 1 hr (ASTM C 109) | 600 psi |
| 2. Compressive strength at 24 hr (ASTM C-109) | 1,800 psi |
| 3. Bonding strength at 1 hr (ASTM C-321) | 30 psi |
| 4. Bonding strength at 24 hr (ASTM C-321) | 80 psi |

- B. The concrete material shall be selected and proportioned to produce a concrete, which will be strong, dense, and resistant to weathering and abrasion. Concrete shall have a 28-day cure strength at 4,000 psi.
- C. Provide the mixture specification to the Engineer prior to lining.
- D. Provide the 28-day strength test results to the Engineer.

2.5 MIXTURE FOR INVERT AND BENCH REPAIRS

- A. The grout used for invert and bench repairs shall conform to ASTM C-33, C-94, C-150, C-260 and C-494 and have the following minimum requirements at 28 days:
 - 1. Compressive strength 4,000 psi

PART 3 – INSTALLATION

3.1 PREPARATION

- A. All pipe connections to the manhole shall be covered or plugged to prevent extraneous materials from entering the sewer lines.
- B. All foreign material shall be removed from the manhole wall and bench using a high-pressure water spray applied at a minimum pressure of 2,000 psi. Loose and protruding brick, blocks, and mortar shall be removed using a mason's hammer and chisel, and/or scraper meeting the approval of the Engineer. All large voids shall be filled using the specified quick setting patching mix as approved by the Engineer.
- C. Active leaks shall be stopped using a quick setting hydraulic cement mix meeting the specified conditions and approved by the Engineer. The mix shall be applied in accordance with the manufacturer's recommendations. Some of the leaks may require holes to localize the infiltration during the application of the hydraulic cement. After the application of the hydraulic cement, the weep holes shall be plugged.
- D. The structure must be prepared to allow:
 - 2. Material will be removed by mechanical means. Assistance of specially designed, air operated, chippers and pneumatic chisels are highly recommended.
 - 3. Removed material will not be allowed to enter the pipeline. Remove all dislodged material from the structure.

3.2 INVERT AND BENCH REPAIRS

- A. Loose material shall be removed from the bottom and the invert and bench shall be repaired using a quick setting patching mix approved by the Engineer.
- B. Invert repairs shall be made on all inverts.
 - 1. Bench and invert repair
 - a. Preparation
 - b. Whenever possible, bypass plugs will be installed in all the inlets and plumbed into the outlet, allowing flow to pass through the structure without interference with bench and invert repairs. If plugs cannot be installed, bypass pumping or other approved alternative shall be used to allow the repairs to be made.
 - c. All loose or deteriorated material must be removed.
 - d. Material will be removed to allow a minimum of two (2) inches of new concrete to be placed around the circumference of the invert and over the existing bench at a point half the depth of the outlet invert and tapered up to the wall.
- C. The invert shall be cleaned and the quick setting mix shall be applied to the invert and the bench.
- D. The surface of the mixture shall be trowel finished and spread over the bench sufficiently to tie into the structurally enhanced liner that will be applied to the walls of the manhole.
- E. The flow in the manhole shall be reestablished within 30 minutes after placing the patching mix.
- F. A forming system shall be used to provide a perfect flow line from the invert of the inlet pipe to invert of the outlet pipe. Where laterals are involved, the system shall provide for a sanitary sweep into the main invert, again in a perfect flow line from the invert of the inlet lateral to the invert of the outlet piping. This invert forming system will be that of Infratech, 6248 Lakeland Avenue North, Brooklyn Park, Minnesota 55428, (612) 533-4525 or approved equal including modular composite plastic invert replacement systems.
- G. Material shall be as follows:
 - 1. Composition: Concrete mixture shall conform to the following ASTM standards: C-33, C-94, C-150; C-260; and C-494.
 - 2. Strength requirement;

3. Concrete ingredients shall be selected and proportioned in such a manner as to produce concrete, which will be extremely strong, dense, and resistant to weathering and abrasion. Concrete shall have a minimum 28-day cure strength of 4,000 psi.

H. Installation shall be as follows:

1. New concrete shall be placed, to a minimum two (2) inch thickness, over solid concrete properly prepared as specified for manhole walls. Where solid concrete does not remain after preparation, new concrete shall be poured to a minimum four (4) inch thickness. Concrete shall be placed forming an invert depth half the diameter of the outlet pipe. The new bench shall be tapered up to the manhole wall.
2. Once installed, the new concrete shall be allowed to cure a minimum of 24 hours before flow can pass directly over the new concrete.

3.3 CURING

- A. The contractor shall take the necessary precautions to insure that the lining material is not exposed to sunlight or air movement. The lining material shall be allowed to cure for a minimum of four hours before the flow in the manhole is reestablished.

3.4 TESTING

- A. Prior to acceptance of manhole rehabilitation, the manhole will be visually inspected for the absence of leaks.

END OF SECTION

SECTION 33 39 13.03

MANHOLE REHABILITATION – CHEMICAL GROUTING

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes

1. Work under this section includes manhole rehabilitation to eliminate leaks and infiltration.
2. Chemical grouting of manhole leaks and cracks.
3. Repair and filling of holes and voids resulting from the installation of the chemical grout.

1.2 QUALITY ASSURANCE

- A. The Contractor shall guarantee all work performed under the contract for a period of one (1) year from date of final acceptance against defective material and workmanship of any nature.
- B. The Contractor shall warrant and save harmless the Owner against any claims for potential infringement and any loss thereof.

PART 2 – PRODUCTS

2.1 PRODUCTS

- A. Patching, infiltration control, grouting, and/or liner mix shall be a cementitious material mixed and applied in accordance with the specification of the appropriate manufacturer.
 1. The mixture shall contain a minimum of 10% acrylamide base material by weight in the total sealant mix.
 2. A higher concentration of acrylamide base material may be necessary to increase strength or offset dilution during injection.
 3. The reaction time shall be controllable from 10 seconds to 1 hour through the use of additives as recommended by the manufacturer.
- B. Alternative chemical grouts may be used based on field conditions if accepted by the Engineer and Owner.

- C. No applications shall be made to frozen surfaces or if freezing is expected to occur inside the manhole within 24 hours after application.
- D. Method of application is determined by type of product used and will be at the Contractor's discretion.
- E. Water used for mixing the grouts shall be clean and potable and provided by the Contractor.
- F. Equipment used for mixing and application of the mixtures and the lining material shall be specifically constructed for the purpose intended and be recommended by the manufacturer of the materials to be applied.
- G. Provide the Engineer with the mixture specification prior to patching, grouting or lining.

PART 3 – INSTALLATION

3.1 PREPARATION

- A. All handling and mixing of chemical sealing materials shall be in accordance with the manufacturer's recommendations. All personnel shall have received appropriate safety training, including a refresher course within the last two years.
- B. Inverts shall be covered to prevent extraneous materials from entering the sewer lines.
- C. At each active leak or point of previous leakage identified by the Owner, one or more holes shall be drilled through the manhole wall for injection of the chemical grout. The injection pressure shall be monitored and controlled to prevent any damage to the manhole structure.
- D. Upon completion of the injection process, the openings shall be filled with mortar and troweled flush with the surface. The mortar used shall be a non-shrink patching mortar.

END OF SECTION

TABLES AND EXHIBITS

TABLE 1	SPRAY ON LINER
TABLE 2	POURED IN PLACE BENCH
TABLE 3	CHEMICAL GROUTING
EXHIBITS/MAP	9 PAGES

PROJECT 18-08**TABLE 1****SPRAY-ON LINER**

Facility ID	Location	Surface Mat.	MH Depth	Note
H8-EKQ2DL	Suburban & Aldrin Intersection	Asphalt	24.9	CMU block MH, steps deteriorated, leaking. LINE
J8-COK4LD	Chicago & Legion Intersection	Asphalt	9.2	Brick MH, debris and water in flowline. LINE & BENCH
J7-OW5YDP	1523 Chicago	Asphalt	8.1	Brick MH, debris and water in flowline. LINE & BENCH
G6-OR8IFH	4th Manhole West of Lawrence on Employers	Grass	17	Leaking from barrel sections. LINE
E4-XKZU7C	1st Manhole South of 2481 Lawrence	Grass	18.8	Leaking from barrel sections. LINE
H7-M4E8ZM	1010 Meadowview	Asphalt	15.8	Leaking from barrel sections. LINE

PROJECT 18-08**TABLE 2****POURED IN PLACE BENCH**

Facility ID	Location	Surface Mat.	MH Depth	Note
J8-COK4LD	Chicago & Legion Intersection	Asphalt	9.2	Brick MH, debris and water in flowline. LINE & BENCH
J7-OW5YDP	1523 Chicago	Asphalt	8.1	Brick MH, debris and water in flowline. LINE & BENCH
H6-MYOWRY	Patrick Henry & 76th Place Intersection	Asphalt	9	Debris and standing water in invert, reshape bench. BENCH
H7-O0O8DA	Meadowview & S. Seventh Intersection	Asphalt	20.4	Debris and standing water in bottom, pour a bottom and create a flowline. BENCH
I7-3ZBF3E	Lost Dauphin & Nicolet Intersection	Concrete	6	Debris and standing water in bottom, reshape bench and create flowline for West pipe. BENCH
H7-Z8I668	Lost Dauphin & Fox Ridge Intersection	Concrete	6.5	Debris and standing water in bottom, reshape bench. BENCH
J7-NFAATC	Ledgeview and Lone Oak Intersection	Asphalt	16.7	Debris and standing water in bottom, pour a bottom and create a flowline. BENCH
J8-9IH5JM	1st Manhole East of Ontario on Chicago	Asphalt	8	Debris and standing water in bottom, pour a bottom and create a flowline. BENCH
H6-LUWV85	1719 76th Place	Asphalt	10.8	Debris and standing water in bottom, reshape bench. BENCH

PROJECT 18-08**TABLE 3****CHEMICAL GROUTING**

Facility ID	Location	Surface Mat.	MH Depth	Note
H6-LCSLET	Lost Dauphin & Colleen Intersection	Concrete	17.2	Leaking on top of bench at barrel section. GROUT
G5-NHSBJU	Lost Dauphin & Lantern Intersection	Asphalt	15.6	Leaking near south and west inverts. GROUT

LINE MANHOLE AT ALDRIN & SUBURBAN INTERSECTION



LINE & BENCH AT CHICAGO AND LEGION INTERSECTION



LINE & BENCH AT 1523 CHICAGO



LINE 4TH MANHOLE WEST OF LAWRENCE ON EMPLOYERS



LINE 1ST MANHOLE SOUTH OF 2481 LAWRENCE



LINE AT 1010 MEADOWVIEW



BENCH AT PATRICK HENRY & 76TH PLACE INTERSECTION



BENCH AT MEADOWVIEW & S. SEVENTH INTERSECTION



BENCH AT LOST DAUPHIN AND NICOLET



BENCH AT LOST DAUPHIN AND FOX RIDGE



BENCH AT LEDGEVIEW AND LONE OAK INTERSECTION



BENCH AT 1ST MANHOLE EAST OF ONTARIO ON CHICAGO



BENCH AT 1719 76TH PLACE



GROUT AT COLLEEN AND LOST DAUPHIN INTERSECTION

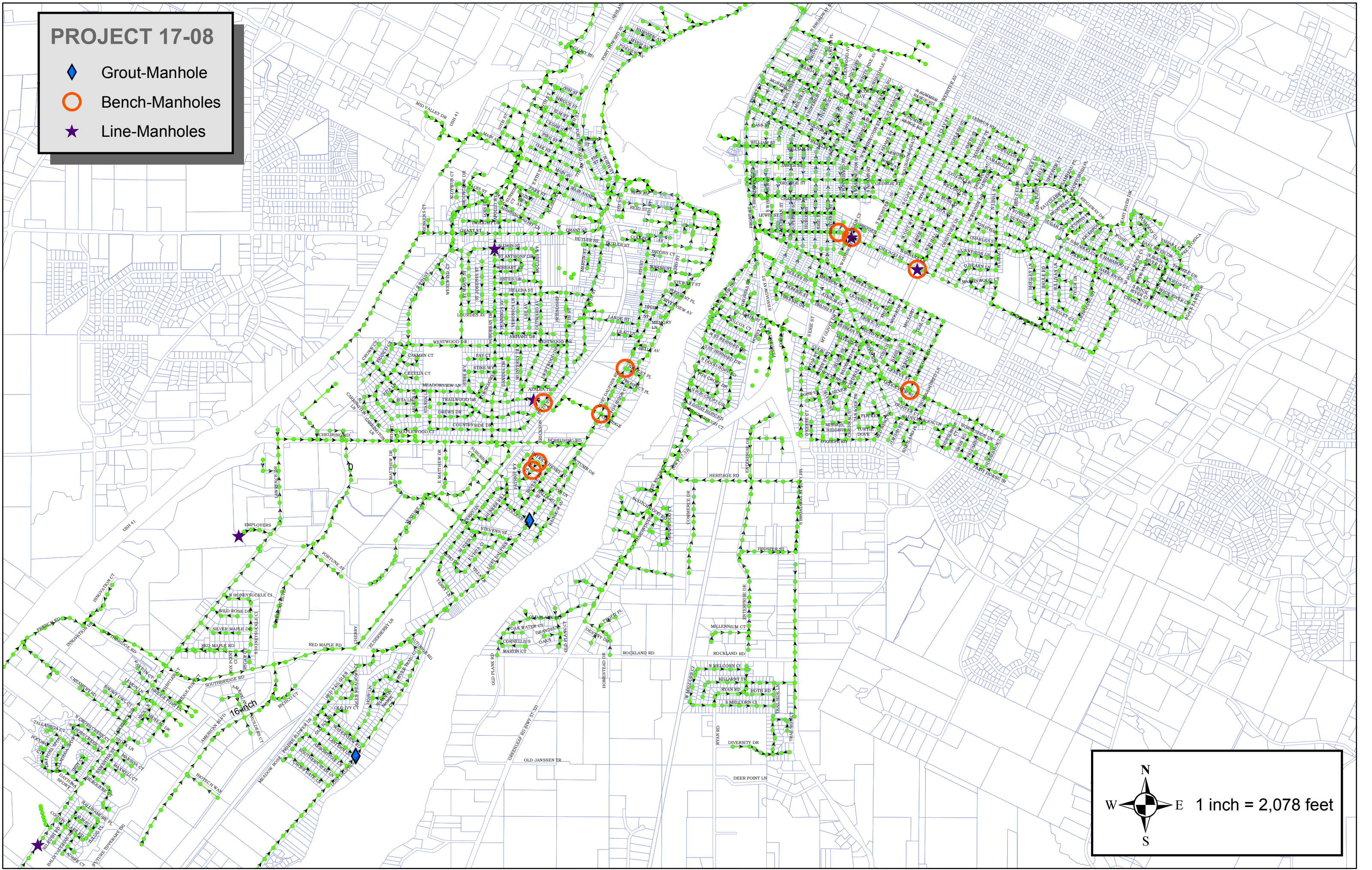


GROUT AT LANTERN AND LOST DAUPHIN INTERSECTION



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- ◆ Grout-Manhole
- Bench-Manholes
- ★ Line-Manholes



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W E 1 inch = 2,078 feet
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