

BID OF \_\_\_\_\_

**2018**

**PROPOSAL, CONTRACT, BOND AND SPECIFICATIONS**

**FOR**

**SANITARY SEWER ACCESS STRUCTURE LINING - 2018**

**CONTRACT NO. 8255**

**PROJECT NO. 11827**

**MUNIS NO. 11827**

**IN**

**MADISON, DANE COUNTY, WISCONSIN**

AWARDED BY THE COMMON COUNCIL  
MADISON, WISCONSIN ON \_\_\_\_\_

CITY ENGINEERING DIVISION  
1600 EMIL STREET  
MADISON, WISCONSIN 53713

<https://bidexpress.com/login>

**SANITARY SEWER ACCESS STRUCTURE LINING - 2018  
CONTRACT NO. 8255**

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This Proposal, and Agreement have  
been prepared by:

**CITY ENGINEERING DIVISION  
CITY OF MADISON  
MADISON, DANE COUNTY, WISCONSIN**



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Robert F. Phillips, P.E., City Engineer

RFP: cnb

# SECTION A: ADVERTISEMENT FOR BIDS AND INSTRUCTIONS TO BIDDERS

## REQUEST FOR BID FOR PUBLIC WORKS CONSTRUCTION CITY OF MADISON, WISCONSIN

### A BEST VALUE CONTRACTING MUNICIPALITY

PROJECT NAME:	SANITARY SEWER ACCESS STRUCTURE LINING - 2018
CONTRACT NO.:	8255
SBE GOAL	5%
BID BOND	5%
SBE PRE BID MEETING (1:00 P.M.)	AUGUST 17, 2018
PREQUALIFICATION APPLICATION DUE (2:00 P.M.)	AUGUST 16, 2018
BID SUBMISSION (2:00 P.M.)	AUGUST 23, 2018
BID OPEN (2:30 P.M.)	AUGUST 23, 2018
PUBLISHED IN WSJ	AUGUST 9, 2018 & AUGUST 16, 2018

SBE PRE BID MEETING: Representatives of the Affirmative Action Department will be present to discuss the Small Business Enterprise requirements at 1600 Emil Street, Madison Wisconsin.

PREQUALIFICATION APPLICATION: Forms are available on our website, [www.cityofmadison.com/business/pw/forms.cfm](http://www.cityofmadison.com/business/pw/forms.cfm). If not currently prequalified in the categories listed in Section A, an amendment to your Prequalification will need to be submitted prior to the same due date. Postmark is not applicable.

BIDS TO BE SUBMITTED by hand to 1600 EMIL ST., MADISON, WI 53713 or online at [www.bidexpress.com](http://www.bidexpress.com).

THE BID OPENING is at 1600 EMIL ST., MADISON, WI 53713.

#### STANDARD SPECIFICATIONS

The City of Madison's Standard Specifications for Public Works Construction - 2018 Edition, as supplemented and amended from time to time, forms a part of these contract documents as if attached hereto.

These standard specifications are available on the City of Madison Public Works website, [www.cityofmadison.com/Business/PW/specs.cfm](http://www.cityofmadison.com/Business/PW/specs.cfm).

The Contractor shall review these Specifications prior to preparation of proposals for the work to be done under this contract, with specific attention to Article 102, "BIDDING REQUIREMENTS AND CONDITIONS" and Article 103, "AWARD AND EXECUTION OF THE CONTRACT." For the convenience of the bidder, below are highlights of three subsections of the specifications.

#### SECTION 102.1: PRE-QUALIFICATION OF BIDDERS

In accordance with Wisconsin State Statutes 66.0901 (2) and (3), all bidders must submit to the Board of Public Works proof of responsibility on forms furnished by the City. The City requires that all bidders be qualified on a biennial basis.

Bidders must present satisfactory evidence that they have been regularly engaged in the type of work specified herein and they are fully prepared with necessary capital, materials, machinery and supervisory personnel to conduct the work to be contracted for to the satisfaction of the City. All bidders must be pre-qualified by the Board of Public Works for the type of construction on which they are bidding prior to the opening of the bid.

In accordance with Section 39.02(9)(a)l. of the General Ordinances, all bidders shall submit in writing to the Affirmative Action Division Manager of the City of Madison, a Certificate of Compliance or an Affirmative Action Plan at the same time or prior to the submission of the proof of responsibility forms.

The bidder shall be disqualified if the bidder fails to or refuses to, prior to opening of the bid, submit a Certificate of compliance, Affirmative Action Plan or Affirmative Action Data Update, as applicable, as defined by Section 39.02 of the General Ordinances (entitled Affirmative Action) and as required by Section 102.11 of the Standard Specifications.

#### SECTION 102.4 PROPOSAL

No bid will be accepted that does not contain an adequate or reasonable price for each and every item named in the Schedule of Unit Prices.

A lump sum bid for the work in accordance with the plans and specifications is required. The lump sum bid must be the same as the total amounts bid for the various items and it shall be inserted in the space provided.

All papers bound with or attached to the proposal form are considered a part thereof and must not be detached or altered when the proposal is submitted. The plans, specifications and other documents designated in the proposal form will be considered a part of the proposal whether attached or not.

A proposal submitted by an individual shall be signed by the bidder or by a duly authorized agent. A proposal submitted by a partnership shall be signed by a member/partner or by a duly authorized agent thereof. A proposal submitted by a corporation shall be signed by an authorized officer or duly authorized registered agent of such corporation, and the proposal shall show the name of the State under the laws of which such corporation was chartered. The required signatures shall in all cases appear in the space provided thereof on the proposal.

Each proposal shall be placed, together with the proposal guaranty, in a sealed envelope, so marked as to indicate name of project, the contract number or option to which it applies, and the name and address of the Contractor or submitted electronically through Bid Express ([www.bidexpress.com](http://www.bidexpress.com)). Proposals will be accepted at the location, the time and the date designated in the advertisement. Proposals received after the time and date designated will be returned to the bidder unopened.

#### SECTION 102.5: BID DEPOSIT (PROPOSAL GUARANTY)

All bids, sealed or electronic, must be accompanied with a Bid Bond equal to at least 5% of the bid or a Certificate of Annual/Biennial Bid Bond or certified check, payable to the City Treasurer. Bid deposit of the successful bidders shall be returned within forty-eight (48) hours following execution of the contract and bond as required.

#### MINOR DISCREPENCIES

Bidder is responsible for submitting all forms necessary for the City to determine compliance with State and City bidding requirements. Notwithstanding any language to the contrary contained herein, the City may exercise its discretion to allow bidders to correct or supplement submissions after bid opening, if the minor discrepancy, bid irregularity or omission is insignificant and not one related to price, quality, quantity, time of completion or performance of the contract.

**Bidders for this Contract(s) must be Pre-Qualified for at least one of the following type(s) of construction denoted by an**

Building Demolition

- 101  Asbestos Removal
- 120  House Mover

- 110  Building Demolition

Street, Utility and Site Construction

- 201  Asphalt Paving
- 205  Blasting
- 210  Boring/Pipe Jacking
- 215  Concrete Paving
- 220  Con. Sidewalk/Curb & Gutter/Misc. Flat Work
- 221  Concrete Bases and Other Concrete Work
- 222  Concrete Removal
- 225  Dredging
- 230  Fencing
- 235  Fiber Optic Cable/Conduit Installation
- 240  Grading and Earthwork
- 241  Horizontal Saw Cutting of Sidewalk
- 242  Infrared Seamless Patching
- 245  Landscaping, Maintenance
- 246  Ecological Restoration
- 250  Landscaping, Site and Street
- 251  Parking Ramp Maintenance
- 252  Pavement Marking
- 255  Pavement Sealcoating and Crack Sealing
- 260  Petroleum Above/Below Ground Storage Tank Removal/Installation
- 262  Playground Installer

- 265  Retaining Walls, Precast Modular Units
- 270  Retaining Walls, Reinforced Concrete
- 275  Sanitary, Storm Sewer and Water Main Construction
- 276  Sawcutting
- 280  Sewer Lateral Drain Cleaning/Internal TV Insp.
- 285  Sewer Lining
- 290  Sewer Pipe Bursting
- 295  Soil Borings
- 300  Soil Nailing
- 305  Storm & Sanitary Sewer Laterals & Water Svc.
- 310  Street Construction
- 315  Street Lighting
- 318  Tennis Court Resurfacing
- 320  Traffic Signals
- 325  Traffic Signing & Marking
- 332  Tree pruning/removal
- 333  Tree, pesticide treatment of
- 335  Trucking
- 340  Utility Transmission Lines including Natural Gas, Electrical & Communications
- 399  Other Manhole Lining

Bridge Construction

- 501  Bridge Construction and/or Repair

Building Construction

- 401  Floor Covering (including carpet, ceramic tile installation, rubber, VCT)
- 402  Building Automation Systems
- 403  Concrete
- 404  Doors and Windows
- 405  Electrical - Power, Lighting & Communications
- 410  Elevator - Lifts
- 412  Fire Suppression
- 413  Furnishings - Furniture and Window Treatments
- 415  General Building Construction, Equal or Less than \$250,000
- 420  General Building Construction, \$250,000 to \$1,500,000
- 425  General Building Construction, Over \$1,500,000
- 428  Glass and/or Glazing
- 429  Hazardous Material Removal
- 430  Heating, Ventilating and Air Conditioning (HVAC)
- 433  Insulation - Thermal
- 435  Masonry/Tuck pointing

- 437  Metals
- 440  Painting and Wallcovering
- 445  Plumbing
- 450  Pump Repair
- 455  Pump Systems
- 460  Roofing and Moisture Protection
- 464  Tower Crane Operator
- 461  Solar Photovoltaic/Hot Water Systems
- 465  Soil/Groundwater Remediation
- 466  Warning Sirens
- 470  Water Supply Elevated Tanks
- 475  Water Supply Wells
- 480  Wood, Plastics & Composites - Structural & Architectural
- 499  Other \_\_\_\_\_

State of Wisconsin Certifications

- 1  Class 5 Blaster - Blasting Operations and Activities 2500 feet and closer to inhabited buildings for quarries, open pits and road cuts.
- 2  Class 6 Blaster - Blasting Operations and Activities 2500 feet and closer to inhabited buildings for trenches, site excavations, basements, underwater demolition, underground excavations, or structures 15 feet or less in height.
- 3  Class 7 Blaster - Blasting Operations and Activities for structures greater than 15' in height, bridges, towers, and any of the objects or purposes listed as "Class 5 Blaster or Class 6 Blaster".
- 4  Petroleum Above/Below Ground Storage Tank Removal and Installation (Attach copies of State Certifications.)
- 5  Hazardous Material Removal (Contractor to be certified for asbestos and lead abatement per the Wisconsin Department of Health Services, Asbestos and Lead Section (A&LS).) See the following link for application: [www.dhs.wisconsin.gov/Asbestos/Cert](http://www.dhs.wisconsin.gov/Asbestos/Cert). State of Wisconsin Performance of Asbestos Abatement Certificate must be attached.
- 6  Certification number as a Certified Arborist or Certified Tree Worker as administered by the International Society of Arboriculture
- 7  Pesticide application (Certification for Commercial Applicator For Hire with the certification in the category of turf and landscape (3.0) and possess a current license issued by the DATCP)
- 8  State of Wisconsin Master Plumbers License.

## SECTION B: PROPOSAL

Please refer to the  
Bid Express Website  
at <https://bidexpress.com>  
look up contract number  
and go to  
Section B: Proposal Page

You can access all City of Madison bid solicitations for FREE at [www.bidexpress.com](http://www.bidexpress.com)

Click on the “Register for Free” button and follow the instructions to register your company and yourself. You will be asked for a payment subscription preference, since you may wish to bid online someday. Simply choose the method to pay on a ‘per bid’ basis. This requires no payment until / unless you actually bid online. You can also choose the monthly subscription plan at this time. You will, however, be asked to provide payment information. Remember, you can change your preference at anytime. You will then be able to complete your free registration and have full access to the site. Your free access does not require completion of the ‘Digital ID’ process, so you will have instant access for viewing and downloading. To be prepared in case you ever do wish to bid online, you may wish to establish your digital ID also, since you cannot bid without a Digital ID.

If you have any problems with the free registration process, you can call the bidexpress help team, toll free at 1-888-352-2439 (option 1, option1).

## **SECTION C: SMALL BUSINESS ENTERPRISE**

### **Instructions to Bidders City of Madison SBE Program Information**

#### **2 Small Business Enterprise (SBE) Program Information**

##### **2.1 Policy and Goal**

The City of Madison reaffirms its policy of nondiscrimination in the conduct of City business by maintaining a procurement process which remains open to all who have the potential and ability to sell goods and services to the City. It is the policy of the City of Madison to allow Small Business Enterprises (SBE) maximum feasible opportunity to participate in City of Madison contracting. The bidder acknowledges that its bid has been submitted in accordance with the SBE program and is for the public's protection and welfare.

Please refer to the "ADVERTISEMENT FOR BIDS" for the goal for the utilization of SBEs on this project. SBEs may participate as subcontractors, vendors and/or suppliers, which provide a commercially useful function. The dollar value for SBE suppliers or 'materials only' vendors shall be discounted to 60% for purposes of meeting SBE goals.

A bidder which achieves or exceeds the SBE goal will be in compliance with the SBE requirements of this project. In the event that the bidder is unable to achieve the SBE goal, the bidder must demonstrate that a good faith effort to do so was made. Failure to either achieve the goal or demonstrate a good faith effort to do so will be grounds for the bidder being deemed a non-responsible contractor ineligible for award of this contract.

A bidder may count towards its attainment of the SBE goal only those expenditures to SBEs that perform a commercially useful function. For purposes of evaluating a bidder's responsiveness to the attainment of the SBE goal, the contract participation by an SBE is based on the percentage of the total base bid proposed by the Contractor. The total base bid price is inclusive of all addenda.

Work performed by an SBE firm in a particular transaction can be counted toward the goal only if it involves a commercially useful function. That is, in light of industry practices and other relevant considerations, does the SBE firm have a necessary and useful role in the transaction, of a kind for which there is a market outside the context of the SBE Program, or is the firm's role a superfluous step added in an attempt to obtain credit towards goals? If, in the judgment of the Affirmative Action Division, the SBE firm will not perform a commercially useful function in the transaction, no credit towards goals will be awarded.

The question of whether a firm is performing a commercially useful function is completely separate from the question of whether the firm is an eligible SBE. A firm is eligible if it meets the definitional criteria and ownership and control requirements, as set forth in the City of Madison's SBE Program.

If the City of Madison determines that the SBE firm is performing a commercially useful function, then the City of Madison must then decide what that function is. If the commercially useful function is that of an SBE vendor / supplier that regularly transacts business with the respective product, then the City of Madison will count 60% of the value of the product supplied toward SBE goals.

To be counted, the SBE vendor / supplier must be engaged in selling the product in question to the public. This is important in distinguishing an SBE vendor / supplier, which has a regular trade with a variety of customers, from a firm which performs supplier-like functions on an ad hoc basis or for only one or two contractors with whom it has a special relationship.

A supplier of bulk goods may qualify as an eligible SBE vendor / supplier if it either maintains an inventory or owns or operates distribution equipment. With respect to the distribution equipment; e.g., a fleet of trucks, the term "operates" is intended to cover a situation in which the supplier leases the equipment on a regular basis for its entire business. It is not intended to cover a situation in which the firm simply provides drivers for trucks owned or leased by another party; e.g., a prime contractor, or leases such a party's trucks on an ad hoc basis for a specific job.

If the commercially useful function being performed is not that of a qualified SBE vendor / supplier, but rather that of delivery of products, obtaining bonding or insurance, procurement of personnel, acting as a broker or manufacturer's representative in the procurement of supplies, facilities, or materials, etc., only the fees or commissions will apply towards the goal.

For example, a business that simply transfers title of a product from manufacturer to ultimate purchaser; e. g., a sales representative who re-invoices a steel product from the steel company to the Contractor, or a firm that puts a product into a container for delivery would not be considered a qualified SBE vendor / supplier. The Contractor would not receive credit based on a percentage of the cost of the product for working with such firms.

Concerning the use of services that help the Contractor obtain needed supplies, personnel, materials or equipment to perform a contract: only the fee received by the service provider will be counted toward the goal. For example, use of a SBE sales representative or distributor for a steel company, if performing a commercially useful function at all, would entitle the Contractor receiving the steel to count only the fee paid to the representative or distributor toward the goal. This provision would also govern fees for professional and other services obtained expressly and solely to perform work relating to a specific contract.

Concerning transportation or delivery services: if an SBE trucking company picks up a product from a manufacturer or a qualified vendor / supplier and delivers the product to the Contractor, the commercially useful function it is performing is not that of a supplier, but simply that of a transporter of goods. Unless the trucking company is itself the manufacturer or a qualified vendor / supplier in the product, credit cannot be given based on a percentage of the cost of the product. Rather, credit would be allowed for the cost of the transportation service.

The City is aware that the rule's language does not explicitly mention every kind of business that may contribute work on this project. In administering these programs, the City would, on a case-by-case basis, determine the appropriate counting formula to apply in a particular situation.

## **2.2 Contract Compliance**

Questions concerning the SBE Program shall be directed to the Contract Compliance Officer of the City of Madison Department of Civil Rights, Affirmative Action Division, 210 Martin Luther King, Jr. Blvd., Room 523, Madison, WI 53703; telephone (608) 266-4910.



## 2.3 Certification of SBE by City of Madison

The Affirmative Action Division maintains a directory of SBEs which are currently certified as such by the City of Madison. Contact the Contract Compliance Officer as indicated in Section 2.2 to receive a copy of the SBE Directory or you may access the SBE Directory online at [www.cityofmadison.com/dcr/aaTBDir.cfm](http://www.cityofmadison.com/dcr/aaTBDir.cfm).

All contractors, subcontractors, vendors and suppliers seeking SBE status must complete and submit the **Targeted Business Certification Application** to the City of Madison Affirmative Action Division by the time and date established for receipt of bids. A copy of the Targeted Business Certification Application is available by contacting the Contract Compliance Officer at the address and telephone indicated in Section 2.2 or you may access the Targeted Business Certification Application online at [www.cityofmadison.com/dcr/aaTBDir.cfm](http://www.cityofmadison.com/dcr/aaTBDir.cfm). Submittal of the Targeted Business Certification Application by the time specified does not guarantee that the applicant will be certified as a SBE eligible to be utilized towards meeting the SBE goal for this project.

## 2.4 Small Business Enterprise Compliance Report

### 2.4.1 Good Faith Efforts

Bidders shall take all necessary affirmative steps to assure that SBEs are utilized when possible and that the established SBE goal for this project is achieved. A contractor who self performs a portion of the work, and is pre-qualified to perform that category of work, may subcontract that portion of the work, but shall not be required to do so. When a bidder is unable to achieve the established SBE goal, the bidder must demonstrate that a good faith effort to do so was made. Such a good faith effort should include the following:

- 2.4.1.1 Attendance at the pre-bid meeting.
- 2.4.1.2 Using the City of Madison's directory of certified SBEs to identify SBEs from which to solicit bids.
- 2.4.1.3 Assuring that SBEs are solicited whenever they are potential sources.
- 2.4.1.4 Referring prospective SBEs to the City of Madison Affirmative Action Division for certification.
- 2.4.1.5 Dividing total project requirements into smaller tasks and/or quantities, where economically feasible, to permit maximum feasible SBE participation.
- 2.4.1.6 Establishing delivery schedules, where requirements permit, which will encourage participation by SBEs.
- 2.4.1.7 Providing SBEs with specific information regarding the work to be performed.
- 2.4.1.8 Contacting SBEs in advance of the deadline to allow such businesses sufficient time to prepare a bid.
- 2.4.1.9 Utilizing the bid of a qualified and competent SBE when the bid of such a business is deemed reasonable (i.e. 5% above the lowest bidder), although not necessarily low.
- 2.4.1.10 Contacting SBEs which submit a bid, to inquire about the details of the bid and confirm that the scope of the work was interpreted as intended.
- 2.4.1.11 Completion of Cover Page (page C-6), Summary Sheet (page C-7) and SBE Contact Reports (pages C-8 and C9) if applicable.

## 2.4.2 Reporting SBE Utilization and Good Faith Efforts

The Small Business Enterprise Compliance Report is to be submitted by the bidder with the bid: This report is due by the specified bid closing time and date. Bids submitted without a completed SBE Compliance Report as outlined below may be deemed non-responsible and the bidder ineligible for award of this contract. Notwithstanding any language to the contrary contained herein, the City may exercise its discretion to allow bidders to correct or supplement submissions after bid opening, if the minor discrepancy, bid irregularity or omission is insignificant and not one related to price, quality, quantity, time of completion, performance of the contract, or percentage of SBE utilization.

2.4.2.1 If the Bidder meets or exceeds the goal established for SBE utilization, the Small Business Enterprise Compliance Report shall consist of the following:

- 2.4.2.1.1 **Cover Page**, Page C-6; and
- 2.4.2.1.2 **Summary Sheet**, C-7.

2.4.2.2 If the bidder does not meet the goal established for SBE utilization, the Small Business Enterprise Compliance Report shall consist of the following:

- 2.4.2.2.1 **Cover Page**, Page C-6;
- 2.4.2.2.2 **Summary Sheet**, C-7; and
- 2.4.2.2.3 **SBE Contact Report**, C-8 and C-9. (A separate Contact Report must be completed for each applicable SBE which is not utilized.)

## 2.5 Appeal Procedure

A bidder which does not achieve the established goal and is found non-responsible for failure to demonstrate a good faith effort to achieve such goal and subsequently denied eligibility for award of contract may appeal that decision to the Small Business Enterprises Appeals Committee. All appeals shall be made in writing, and shall be delivered to and received by the City Engineer no later than 4:30 PM on the third business day following the bidder's receipt of the written notification of ineligibility by the Affirmative Action Division Manager. Postmark not acceptable. The notice of appeal shall state the basis for the appeal of the decision of the Affirmative Action Division Manager. The Appeal shall take place in accordance with Madison General Ordinance 33.54.

## 2.6 SBE Requirements After Award of the Contract

The successful bidder shall identify SBE subcontractors, suppliers and vendors on the subcontractor list in accordance with the specifications. The Contractor shall submit a detailed explanation of any variances between the listing of SBE subcontractors, vendors and/or suppliers on the subcontractor list and the Contractor's SBE Compliance Report for SBE participation.

No change in SBE subcontractors, vendors and/or suppliers from those SBEs indicated in the SBE Compliance Report will be allowed without prior approval from the Engineer and the Affirmative Action Division. The contractor shall submit in writing to the City of Madison Affirmative Action Division a request to change any SBE citing specific reasons which necessitate such a change. The Affirmative Action Division will use a general test of reasonableness in approving or rejecting the contractor's request for change. If the request is approved, the Contractor will make every effort to utilize another SBE if available.

The City will monitor the project to ensure that the actual percentage commitment to SBE firms is carried out.

## **2.7 SBE Definition and Eligibility Guidelines**

A Small Business Enterprise is a business concern awarded certification by the City of Madison. For the purposes of this program a Small Business Enterprise is defined as:

- A. An independent business operated under a single management. The business may not be a subsidiary of any other business and the stock or ownership may not be held by any individual or any business operating in the same or a similar field. In determining whether an entity qualifies as a SBE, the City shall consider all factors relevant to being an independent business including, but not limited to, the date the business was established, adequacy of its resources for the work in which it proposes to involve itself, the degree to which financial, equipment leasing and other relationships exist with other ineligible firms in the same or similar lines of work. SBE owner(s) shall enjoy the customary incidents of ownership and shall share in the risks and profits commensurate with their enjoyment interests, as demonstrated by an examination of the substance rather than form or arrangements that may be reflected in its ownership documents.
- B. A business that has averaged no more than \$4.0 million in annual gross receipts over the prior three year period and the principal owner(s) do not have a personal net worth in excess of \$1.32 million.

Firm and/or individuals that submit fraudulent documents/testimony may be barred from doing business with the City and/or forfeit existing contracts.

SBE certification is valid for one (1) year unless revoked.

**SANITARY SEWER ACCESS STRUCTURE LINING - 2018  
CONTRACT NO. 8255**

**Small Business Enterprise Compliance Report**

**This information may be submitted electronically through  
Bid Express or submitted with bid in sealed envelope.**

**Cover Sheet**

Prime Bidder Information

Company: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone Number: \_\_\_\_\_ Fax Number: \_\_\_\_\_

Contact Person/Title: \_\_\_\_\_

Prime Bidder Certification

I, \_\_\_\_\_, \_\_\_\_\_ of  
Name Title  
\_\_\_\_\_ certify that the information  
Company

contained in this SBE Compliance Report is true and correct to the best of my knowledge and belief.

\_\_\_\_\_  
Witness' Signature

\_\_\_\_\_  
Bidder's Signature

\_\_\_\_\_  
Date



**SANITARY SEWER ACCESS STRUCTURE LINING - 2018  
CONTRACT NO. 8255**

**Small Business Enterprise Compliance Report**

**SBE Contact Report**

Submit separate copy of this form for each SBE which you are not able to utilize towards meeting the SBE goal for this project. Attach separate sheets if necessary.

SBE Information

Company: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

Contact Person/Title: \_\_\_\_\_

1. Outline below all efforts to solicit a bid from the above SBE. Include date, means of contact, who from your company made this contact and the result.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. Describe the information provided to the aforementioned SBE regarding the scope of work for which he/she was to provide a bid.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Is this the same scope of work on which the subcontractor you intend to utilize based his/her bid?

Yes     No

3. Did this SBE submit a bid?     Yes     No

4. Is the General Contractor pre-qualified to self-perform this category of work?

Yes     No

5. If you responded "Yes" to Question 3, please check the items below which apply and provide the requested detail. If you responded "No" to Question 3, please skip ahead to item 6 below.

The SBE listed above is unavailable for work on this project for the following reasons. Provide specific detail for this conclusion.

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The SBE listed above is unqualified for work on this project. Provide specific details for this conclusion.

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The SBE listed above provided a price that was unreasonable (i.e. more than 5% above the lowest bidder). Provide specific detail for this conclusion including the SBE's price and the price of the subcontractor you intend to utilize.

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A contract with the SBE listed above may constitute a breach of the bidder's collective bargaining agreements. Provide specific detail for this conclusion including, but not limited to, correspondence from the SBE indicating it will not sign a project labor agreement and/or correspondence from the applicable trade union indicating a project labor agreement will not be allowed at the time of project bidding.

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Other; please specify reason(s) other than listed above which made it impossible for you to utilize this SBE on this project.

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6. Describe any other good faith efforts:

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## **SECTION D: SPECIAL PROVISIONS**

### **SANITARY SEWER ACCESS STRUCTURE LINING - 2018 CONTRACT NO. 8255**

It is the intent of these Special Provisions to set forth the final contractual intent as to the matter involved and shall prevail over the Standard Specifications and plans whenever in conflict therewith. In order that comparisons between the Special Provisions can be readily made, the numbering system for the Special Provisions is equivalent to that of the Specifications.

Whenever in these Specifications the term "Standard Specifications" appears, it shall be taken to refer to the City of Madison Standard Specifications for Public Works Construction and Supplements thereto.

#### **SECTION 102.11: BEST VALUE CONTRACTING**

This Contract shall be considered a Best Value Contract if the Contractor's bid is equal to or greater than \$61,000 for a single trade contract; or equal to or greater than \$297,500 for a multi-trade contract pursuant to MGO 33.07(7).

#### **SECTION 102.12: EQUAL BENEFITS REQUIREMENT (SEC. 39.07, MGO)**

Equal Benefits are not required. Delete this entire provision.

#### **ARTICLE 104 SCOPE OF WORK**

This project involves lining 54 manholes on the east side of Madison that have been determined to be in disrepair where clear water (surface water drainage/ groundwater) is migrating into the sanitary sewer system. The method of installation called for in this specification is cementitious liner with an epoxy coating for sealing. If a bidder would like to submit an alternate method of rehab including but not limited to polyurea, polyurethane, bidders are encouraged to submit a unit price per vertical foot and specifications of the product proposed to be used including the proposed lining thickness. Bidders wishing to submit an alternate product shall include with their bid the technical data sheets of the product to be used as well as their Material Safety Data Sheets (MSDS).

The Contractor shall view the site conditions and the manholes prior to bidding to become familiar with the existing conditions.

#### **SECTION 104.4, 104.5, 104.6: INCREASED, DECREASED, OR DELETED ITEMS**

The quantities for this contract have been estimated for the purpose of bidding. No revisions in the unit price bid shall be made in the event these items are increased, decreased, or deleted.

The Construction Engineer may switch the rehabilitation method to include the epoxy coating depending on site conditions. If there are sewer access structures within the project limits that have already been lined and are determined to be in good condition by the Construction Engineer, the manhole may be removed from the lining list. If a sewer access structure is determined to be in a deteriorated condition even though it had previously been lined, the method of lining rehabilitation for the sewer access structures and the in the vicinity of manhole to a cementitious lining including an epoxy coating [BID ITEM 90070 SEWER ACCESS STRUCTURE LINING WITH EPOXY (ALTERNATIVE METHODS ACCEPTED)].



**SECTION 105.12: COOPERATION BY THE CONTRACTOR**

The Contractor shall use care around existing trees, plantings, fences, walls, steps, and driveways that may be encountered during the installation of the CIPP liner. Damage to these items during construction shall be repaired or replaced at the Contractors expense

The Contractor shall maintain access for property owners during the installation of sewer access structure liner.

The Contractor shall examine all of the work sites in particular the sanitary easements across private property, including the Wisconsin Army National Guard property (2400 Wright St). The sanitary easements in the rear yards along Waunona Way should also be reviewed. Work on these properties may require the cooperation of the owners and tenants to make the project run smoothly.

The Contractor may obtain access to the Wisconsin Army National Guard properties via the following contacts:

Wis. Army National Guard                      Chris Nelson, Office Manager, Dept. of Military Affairs Facilities  
242-3360    [Chris.Nelson@wi.gov](mailto:Chris.Nelson@wi.gov)

Structure SAS 5859-006, on plan sheet #5, will require the City of Madison Engineering Department to raise the sewer access structure casting prior to the Contractor lining the structure. This work will be performed by City of Madison crews. The contacts for the City of Madison for this work:

Jay Schlimgen                                      608-266-4087, [jschlimgen@cityofmadison.com](mailto:jschlimgen@cityofmadison.com)  
Jim Streich    608-243-5897, [jstreich@cityofmadison.com](mailto:jstreich@cityofmadison.com)

Please contact Jay or Jim five (5) days prior to lining (additional time preferred) to allow the City to schedule crews to complete sewer access structure casting adjustment.

**SECTION 107.1: PUBLIC CONVENIENCE AND SAFETY**

Access to businesses and commercial driveways shall be maintained at all times. The Contractor shall coordinate with parking lot property owners to maintain access and notify residents of access routes. The Contractor shall properly barricade and light all work areas. All equipment and items incidental to the work shall not be left or stored on the sidewalk or in the sidewalk area.

**SECTION 107.2: PROTECTION AND RESTORATION OF PROPERTY**

It is advised that the contractor access manholes in backyard sanitary sewer easements during dry weather to prevent damage or disturbance of grassed areas. Appropriate erosion control shall be used if soil is disturbed or anticipated to be disturbed adjacent Lake Monona. The Contractor shall coordinate restoration of the sanitary sewer easement and any private property that the property owner allows the Contractor to use with the property owner. Standard city seed mix can be used to restore all grassed areas. Any fencing, pavers, or storage sheds moved by the Contractor shall be restored as directed by the property owner. All surfaces and residential fences removed, damaged or disturbed by the Contractor in the work area shall be restored to the condition in which they existed prior to commencement of the work at no additional cost to the City.

If the contractor needs a large work area to complete the project, the Contractor may enter into agreement with individual property owners for the use of private property. These agreements shall be between the Contractor and the private property owner and shall not include the City. Any damage or restoration done by the Contractor during the use of private property through such an agreement, shall be at the sole cost and responsibility of the Contractor.

**SECTION 107.7:            MAINTENANCE OF TRAFFIC**

The Contractor shall maintain one lane in each direction on Fordem Ave, Kinsman Blvd, and Wright Street at all times. The Contractor shall coordinate any lane shifts at signalized intersections and give at least 3 working days notice prior to this occurring.

No work shall encroach into or impact traffic lanes on Fordem Ave or Wright St during peak traffic hours (7:00 AM – 9:00 AM and 3:00 PM – 6:00 PM, weekdays).

Vehicular access to affected parking lots shall be maintained at all times.

Access to residential properties shall be maintained whenever possible. Any closure of driveways shall require notice by the Contractor at least 72 hours prior to this occurring

No work shall begin without an approved Traffic Control Plan.

The Contractor shall not obstruct traffic in the affected parking lots, trails or bike paths. All work on the Wis. Army National Guard facility property shall be coordinated and approved by their Building and Grounds Supervisor.

The Contractor shall provide ADA/Handicap Accessible pedestrian access at all intersections within the construction area at all times. Sidewalks shall be maintained on at least one side of the street at all times.

The Contractor may remove parking within the project limits as necessary to facilitate construction. The Contractor shall be responsible for posting and maintaining NO PARKING signs in accordance with City of Madison Police Department's "Guidelines for Temporary No Parking Restrictions for Construction or Special Events".

The work areas shall be backfilled, plated, or protected by traffic control devices during non-working hours. If steel plates are used, the Contractor shall notify the City of Madison Streets Division, 266-4681, 24 hours prior to placement of the plates.

This bid item is intended for traffic control required to facilitate manhole relining operations and/or sewage bypassing.

The Contractor shall provide bridging for wastewater hosing when the hosing is to lay on the pavement under traffic. Contractor shall provide signing in advance of bumps where there is hosing crossing the lane of traffic.

No construction equipment or materials shall be stored in the roadway or street right-of-way that is open to traffic during non-working hours. Construction equipment and materials are not to be stored within the street right-of-way that is outside the project limits as shown on the approved plan.

Contact Tom Mohr, Traffic Engineering Division, 267-8725, with any questions concerning these traffic control specifications.

**SECTION 109.2:            PROSECUTION OF WORK**

The Contractor may begin work on **OCTOBER 29, 2018**. All work under this contract shall be completed within **ONE (1) CALENDER YEAR** after issuance of the start work letter.

After execution of the contract the Contractor shall schedule a preconstruction meeting with the Engineer. Work shall begin only after a start work letter is received. If it is desirable to begin work before the above-mentioned date, the Contractor shall establish a mutually acceptable date with the City Engineer, and the agreed upon date must be determined prior to the preconstruction meeting.

Work on this project may start no earlier than 7:00 AM Monday through Saturday and must be completed each day no later than 7:00 PM. Any bypass pumping using onsite generators shall also not extend beyond these hours unless approved in advance by the City Engineer.

## **PART V                      SEWERS AND SEWER STRUCTURES**

### **SANITARY SEWER GENERAL**

**BASE METHOD:**                      **PERMACAST® BY AP/M PERMAFORM® PLUS EPOXY, CALCIUM ALUMINATE PLUS EPOXY**  
**APPROVED EQUALS:**              **SPECTRASHIELD, QUADEX REPAIR MATERIALS, SPECTRUM SPRAYROQ SPRAYWALL**

1            Intent: It is the intent of this specification to provide for the waterproofing, sealing, corrosion protection of existing sewer access structure, from the cover to the channel. This specification offers flexibility in design by offering current technologies available for repairing the various defects found in sanitary sewer access structures.

The method of installation called for in this specification is cementitious liner with epoxy coating for sealing. If a bidder would like to submit an alternate method of rehab including but not limited to polyurea, polyurethane, epoxy, calcium aluminate with epoxy, bidders are encouraged to submit a unit price per vertical foot and specifications of the product proposed to be use including the thickness. Flexible lining systems utilizing polymers such a polyurethane or polyurea shall have a minimum thickness of 500 mils or ½ inch.

2            General: This specification establishes the minimum standard for materials and method of application for the waterproofing, sealing, structural enhancement and corrosion protection of existing manholes. The repair methods may be engineered for the groundwater pressures, dimensions and condition of each manhole.

### 3            Referenced Standards

- |      |            |  |
|------|------------|--|
| 3.1  | ASTM C-39  | Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens  |
| 3.2  | ASTM C-94  | Standard Test Method for Ready-Mix Concrete  |
| 3.3  | ASTM C-109 | Standard Test Method for Compressive Strength of Hydraulic Cement Mortars  |
| 3.4  | ASTM C-143 | Standard Test Method for Slump of Hydraulic Cement Concrete  |
| 3.5  | ASTM D-149 | Standard Test Method for Dielectric Breakdown Voltage and Dielectric Strength of Solid Electrical Insulating Materials at Commercial Power Frequencies |
| 3.6  | ASTM C-157 | Modified Standard Test Method for Length Change of Hardened Hydraulic Cement Mortar and Concrete   |
| 3.7  | ASTM C-293 | Standard Test Method for Flexural Strength of Concrete (Using Simple Beam with Center-Point Loading)   |
| 3.8  | ASTM C-309 | Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete   |
| 3.9  | ASTM C-403 | Standard Test Method for Time of Setting of Concrete Mixtures by Penetration Resistance  |
| 3.10 | ASTM C-469 | Standard Test Method for Static Modulus of Elasticity and Poisson's Ratio of Concrete in Compression   |

- 3.11 ASTM C-496 Standard Test Method for Splitting Tensile Strength of Cylindrical Concrete Specimens
- 3.12 ASTM D-570 Standard Test Method for Water Absorption of Plastics
- 3.13 ASTM C-882 Standard Test Method for Bond Strength of Epoxy Systems Used with Concrete by Slant Shear
- 3.14 ASTM C-1090 Standard Test Method for Measuring Changes in Height of Cylindrical Specimens from Hydraulic-Cement Grout
- 3.15 ASTM C-1202 (AASHTO T 277 Equivalent) Electrical Indication of Concrete's Ability to Resist Chloride Ion Penetration
- 3.16 ASTM D-1653 Standard Test Methods for Water Vapor Transmission of Organic Coating Films (Method B)
- 3.17 ASTM D-4541 Pull-off Strength of Coatings Using a Portable Adhesion Tester
- 3.18 ASTM D-4414 Standard Practice for Measurement of Wet Film Thickness of Organic Coatings by Notched Gages
- 3.19 NACE RP0274 High Voltage Electrical Inspection of Pipeline Coating Prior to Installation
- 3.20 NACE 6/  
SSPC-SP 13 Surface Preparation of Concrete

#### 4 Leak Plugging and Offset Patching

##### Plugging and Patching and Material

###### 4.1.1 Permacast-Plug™

4.1.1A A quick setting hydraulic cement compound used to quickly stop running water or seepage leaks in masonry and concrete. The Permacast-Plug™ formulation is nonshrinking, nonmetallic, and noncorrosive. Permacast-Plug™ requires only potable water for mixing and achieves initial set in 1 to 3 minutes, even when applied under water.

4.1.1B Permacast-Plug™ is used above or below grade, interior or exterior, to stop seepage and flowing water leaks in most concrete and masonry walls and floors. The fast initial set, high strength, and controlled expansion, make Permacast-Plug™ the ideal patching material for use in manholes, wet wells, lift stations, and other structures subject to leakage. Permacast-Plug™ will not permanently seal running water leaks that are caused by thermal or structural movement.

OR

###### 4.1.2 Permacast-Patch™

4.1.2A A fast setting, ready-to-use, cement based concrete and masonry patching compound formulated specifically for underwater use. It requires only potable water for mixing. Permacast-Patch™ achieves initial set in 3 to 5 minutes and final set within 20 minutes even under water. After initial set, Permacast-Patch™ may be shaved to conform to the contours of the surrounding surface. Properly mixed and applied, Permacast-Patch™ quickly develops a very high strength and a tenacious bond.

4.1.2.B Permacast-Patch™ is used underwater or below grade on vertical, overhead, and horizontal surfaces. It is used for the patching of manholes in preparation for the PERMACAST® liner application and is particularly well suited to fill offset bricks in the corbel area.

OR

4.1.3 MS-10,000 UL™

4.1.3A PERMACAST® MS-10,000 UL is designed to provide a thick underlayment that fills mortar joints, cracks and voids in brick and masonry manholes. The underlayment provides a sound substrate onto which the structural liner is spun cast at the specified thickness of ½"-2" to reinforce and seal the existing structure.

5 Inflow and Infiltration prevention at the Frame Chimney Joint

5.2.3 Cor+Flex Chimney Sealant Description

5.2.3.A COR+FLEX is a two-component, high performance urethane elastomeric coating specifically designed for high build applications. When fully cured, COR+FLEX forms an extremely tough, abrasive resistant rubber like coating, especially suited for applications requiring protection from impact, abrasion or corrosion on metal or concrete surfaces. The system has added UV stabilizers and provides corrosion, weather, and abrasion resistance to various surfaces.

5.2.3.B Cor+Flex Physical Properties

Property	B Component	A Component
Appearance at 25°C	Blue Liquid	White Liquid
Specific Gravity at 25°C	1.09	1.04
Viscosity at 25°C, mPas	2,500	1,500
Flash Point, PMCC, °c	216	179
VOC,%	0	0
	Unit	Value
Specific Gravity	D792	1.083
Density	D792	lb/ft3 67
Hardness	D2240	Shore A 85
Taber Abrasion	D4060	
H-18 Wheel, 1000-g Load, 1,000 Cycles		mg/loss 190
Tensile Strength:	D412	lb/in2 1,330
Ultimate Elongation	D412	% 580
Tear Strength		
• Die C	D624	lbf/in 330
• Split	D1938	lbf/in 140
Water Absorption: 30 Days	D570	% 1.0
Crack Bridging 1000 Cycles	C 957	- passes

5.2.4 Cor+Flex Installation

5.2.4.A Surfaces to be coated must be clean and dry. Sandblast the casting to remove any loose debris and rust. Powerwash to remove any debris left from sandblasting and ensure the masonry interface is free of debris, release oil, or other contaminants. Apply primer to areas to receive Cor+Flex. Once the primer becomes tacky begin applying Cor+Flex. Applying COR+FLEX is very much like spraying paint. You must keep the spray pattern perpendicular to the surface

being sprayed. Maintain a nice straight smooth motion. To achieve the best coverage, each pass of the spray pattern should overlap the preceding pass by approximately 1/3. COR+FLEX can be applied in thicknesses from about 30 mils to 1/2 inch or more. On horizontal surfaces, thicknesses of about 1/8 inch can be achieved in a single pass. On vertical surfaces be careful not to apply too quickly or thickly in one spot. If running occurs, control by: 1) Traversing across the surface faster, 2) Moving the spray gun back from the surface, or Reducing the output of the spray gun. Multiple layers to achieve desired film thickness is possible with multiple coats, however the time between layers should not exceed 40 minutes.

### 5.3 Cured –In-Place Chimney Liner

#### 5.3.1 Cor+Gard Top Seal

5.3.1.A Cor+Gard Top Seal is a cured in place method to line manhole chimneys. Cor+Gard Top Seal is made of a stretchable coated polyester liner and vacuum impregnated with a “100% solids” silicate resin. It is cured at ambient temperature under pressure in about an hour. Cor+Gard Top Seal bonds extremely well, provides a high level of chemical resistance, eliminates inflow and infiltration, and structurally enhances the manhole chimney.

#### 5.3.1.B Cor+Gard Top Seal Physical Properties

Compressive Strength, ASTM D 695	1,542 psi
Tensile Strength, ASTM D 638	1,999 psi
Tensile Elongation, ASTM D 638	7.6%
Flexural Strength, ASTM D 790	3,110 psi
Flexural Modulus, ASTM D 790	117,788 psi
Hardness, ASTM D 2240	74.8 Shore D
Freeze/Thaw Cycles	No cracking or bond failure
Bond Strength	Concrete Failure
Mixing Ration	2:1
Pot Life	22 min. @ 71°F
Cure Time	65 to 75 min.
Chemical Resistance	High

#### 5.3.2 Cor+Gard Top Seal Installation

5.3.2.A Prepare the chimney section by pressure washing with a minimum 4,000 psi. Top steps must be removed flush with the wall, castings need to be ground to remove rust, active leaks must be stopped, and large voids must be filled. The silicate based resin is thoroughly mixed at a 2:1 ratio at temperatures between 50°F to 80°F. The liner is impregnated with the silicate resin and held in place with a pressure vessel while curing. The finished product meets ASTM F1216-98.

## 6 Structural Liner

### 6.1 MS-10,000 Mortar

6.1.1 The material is an ultra high strength, high build, corrosion resistant mortar, based on micro-silica enhanced Portland cement. When mixed with the appropriate amount of water, a paste-like material will develop which may be

sprayed, cast, pumped or gravity-flowed into any area 1/2 inch and larger. This mortar will harden quickly without any need for special curing.

- 6.1.2 The hardened binder is dense and highly impermeable. The above performance is achieved by a complex formulation of mineral, organic and densifying agents and sophisticated chemical admixtures. Graded quartz sands are used to enhance particle packing and further improve the fluidity and hardened density. The composition also possesses excellent thin-section toughness, high modulus of elasticity and is self-bonding. Fibers are added as an aid to casting, for increased cohesion and to enhance flexural strength.
- 6.1.3 The water content may be adjusted to achieve consistencies ranging from thin motor oil to modeling clay. Despite its high fluidity, the mortar has good wet adhesion and does not sag or run after placement. The mortar may be cast against soil, metals (including aluminum and lead), wood, plastic, cardboard and other normal construction material.
- 6.1.4 Physical properties

Unit Weight	125 pcf
Set Time at 70° F ASTM C-403	
Initial Set	Min. 120 minutes
Final Set	Min. 240 minutes
Modulus of Elasticity ASTM C-469	
28 days	Min. 1,500,000 psi
Flexural Strength ASTM C-293	
24 hours	Min. 400 psi
28 days	> 1250 psi
Compressive Strength ASTM C-109	
24 hours	Min. 3,000 psi
28 days	Min. 10,000 psi
Split Tensile Strength ASTM C-496	> 700 psi
Shear Bond ASTM C-882	> 1,500 psi
Shrinkage ASTM C-157, RH 90%	None
Shrinkage ASTM C-1090, RH 90%	None
Chloride Permeability ASTM C-1202	<550 Coulombs

OR

## 6.2 CR-9,000 Mortar Pure Calcium Aluminate Cement

- 6.2.1 The material is a high strength, high build, corrosion resistant; mortar based on 100% calcium aluminate cement. When mixed with the appropriate amount of water, a paste-like material will develop which may be sprayed, cast, pumped or gravity-flowed into any area 1/2 inch and larger. This mortar will harden quickly and can be considered mature after 24 hours. The hardened mortar has been purposely developed to be resistant to very aggressive soil conditions, such as low pH and high sulfates, seawater and dilute sulfuric acid resulting from bacteriological oxidation of hydrogen sulfide common to sanitary sewers. The raw materials are carefully selected and contain no calcium sulfates, tri-calcium aluminates or agents aggressive to reinforcing steel. The mortar is designed to resist biogenic corrosion in atmospheres in which Portland cements may reach levels as low as pH 2.

- 6.2.2 The hardened binder is dense and highly impermeable and does not contain any free lime hydrates. It has excellent thin-section toughness and bonding strength. Nonmetallic alkali resistant fibers control cracking and enhance its flexural resistance.
- 6.2.3 The mortar can be used as the sole protection against aggressive elements common to many sanitary sewer systems. The water content may be reduced to achieve any consistency ranging from thin motor oil to that of modeling clay. Despite its high fluidity, the mortar has good wet adhesion and does not sag or run after placement. The mortar may be cast against soil, metals, including aluminum and lead, wood, plastic, cardboard and other normal construction material.
- 6.2.4 Physical properties

Unit Weight	135 pcf
Working Time	40-60 minutes @ 70° F
Final Set Time	90-120 minutes @ 70° F
Compressive Strength ASTM C-109	
24 hours	5,000 psi
28 days	9,000 psi
Flexural Strength ASTM C-293	750 psi
Tensile Strength ASTM C-496	600 psi
Thin Section Toughness	Excellent
Abrasion Resistance	2% @ 1000 cycles
Freeze/Thaw Resistance	No visual damage 300 cycles
Sulfate Resistance	No attack 90 days
Biogenic Sulfate Resistance	Excellent at pH 2 and higher
Shear Bond ASTM C-882	2,000 psi
Shrinkage ASTM C-596	None

### 6.3 Cementitious Structural Liner Installation

- 6.3.1 Design Strength/Thickness Ratio: Many factors impact optimum design thickness, i.e. the condition of the existing manhole, its material composition, depth, degree of ovality, groundwater pressure, and traffic loads. The design engineer should determine the most appropriate combined value in each case. Check the manufacturer's design guide for detail. At the strength levels of PERMACAST® materials, a thickness of 1/2" is appropriate for most manholes up to depths of 12 feet.
- 6.3.2 Preparation: Cover the manhole base to prevent washed debris from entering the sewer line. Wash the interior surface with a high-pressure water blast, usually 3,500 psi, sufficient to remove all laitance and loose material and flush debris downward to the covered base. Pressures sufficient to etch the existing surface will improve adhesion. Plug any active leaks with plugging material according to the instructions on data the sheets, and fill voids and overhangs with patching or underlayment grout.
- 6.3.3 Anti-bacterial Rinse: Rinse newly prepared surface with a solution of Con<sup>MIC</sup>Shield® to kill any residual acid producing bacteria.
- 6.3.4 Equipment: Mortar mixers, compressors and pumps are standard commercial models. The high-speed, rotating applicator device is used to provide a densely compacted liner of uniform thickness and thorough coverage.



### 6.3.5 Mixing

6.3.5.A Combine 50 pounds of the packaged dry mix with the specified amount of potable water while mixing with a high-speed shear mixer for four (4) minutes. Continue to agitate the mortar to prevent thickening beyond the desired fluidity. If it thickens, it may be retempered. The working time is approximately 40 minutes.

6.3.5.B Con<sup>MIC</sup>Shield<sup>®</sup> admixture: The liner material is mixed with just the addition of clean water and Con<sup>MIC</sup>Shield<sup>®</sup>, in the prescribed amounts for MIC protection. No other additives shall be used at the site without prior approval.

### 6.3.6 Application

6.3.6.A Position the bi-directional SpinCaster applicator within the center of the manhole at the lowest point desired for the new wall and commence pumping the mixed mortar. As the mortar begins to be centrifugally cast evenly around the interior, retrieve the applicator head at the prescribed speed for applying the thickness that has been selected. Controlled multiple passes are then made until the desired finished thickness is attained. If the procedure is interrupted for any reason, simply arrest the retrieval of the applicator head until flows are recommenced.

6.3.6.B The retrieval speed can be easily varied to create different thickness to provide the best strengths as the condition or depth of the manhole may dictate in any portion of the manhole. Because of the even application throughout the circumference, thickness may be verified at any point with a wet gage.

6.3.6.C Consult Table 1 and Table 2 from the Iowa State University Design Guide for the appropriate thickness of the cementitious liner.

6.3.6.D If additional thickness is desired at any level, simply place the rotating applicator at that level and recommence pumping and retrieval until that area is thickened. Additional layers may be applied at any time.

6.3.6.E Clean Up: Upon completion, the base covering shall be removed and any debris disposed of properly. Additional material shall be hand applied to bench surfaces at a thickness of 3 inches tapering from the wall to the edge of the channel. Flows at bottom channels may remain active during the procedure.

### 6.3.7 Hot Weather Application (Above 80° F)

6.3.7.A Do not apply Permacast mortars when ambient and surface temperatures are 100° F and above. Shade the material and prepared surface to keep them cool.

6.3.7.B To extend working time, mix the material with cool water or ice-cooled water. Be certain the substrate is saturated surface-dry (SSD) before application begins.

6.3.7.C When finishing is required, work the material quickly once it has stiffened- when a finger pressed against the material will mark it lightly but not sink beneath the surface.

6.3.7.D Proper curing is always required and is particularly important in hot weather. Refer to Section 7.3.9 on curing below.

6.3.8 Cold Weather Application (Above 45° F):

6.3.8.A Do not apply Permacast mortars when ambient temperatures are expected to fall below 40° F within 72 hours of placement. Both ambient and substrate temperatures must be at least 45° F at the time of placement.

6.3.8.B Low substrate and ambient temperatures slow down rate of set and strength development. At temperatures below 50° F, warm the material, water, and substrate. Properly ventilate the area when heating. Protect the new liner from freezing.

6.3.9 Curing/Finishing: Avoid overly windy and arid curing conditions; use curing membranes per ASTM C-309 to create the most optimal curing conditions possible. The use of Cor+Gard ER evaporative reducer will help keep mortar hydrated during the curing phase. Apply Cor+Gard ER immediately after mortar placement and then finish mortar with a brush. Alternatively, Cor+Gard Cure & Seal curing compound will aid in proper mortar curing and produce a tough wearing surface. If epoxy topcoats are to follow neither Cor+Gard ER nor Cure & Seal should be used. Use only products that will be compatible and enhance the epoxy bond. CON<sup>MIC</sup>SHIELD® ID is recommended for liners subject to any possibility of bacterial corrosion.

6.4 Epoxy Mortar Lining

6.4.1 COR+ROC Description

6.4.1.A COR+ROC is a ceramic filled, 100% solids epoxy especially formulated for use in sewer systems. It's no sag formulation allows it to be used on vertical and overhead surfaces. COR+ROC quickly forms a tenacious bond to freshly applied PERMACAST® mortars or properly prepared concrete surfaces. COR+ROC is self-priming and may be applied over damp concrete surfaces. COR+ROC application produces a homogenous protective layer that is impervious to water, oils and most chemicals.

6.4.2 COR+ROC Installation

6.4.2.A Surfaces should be free of oil, grease, laitance, surface water, form release agents and other contaminants that may affect bond. Concrete surfaces shall be pressure washed, abrasive blast or chemically cleaned to remove deteriorated concrete and other contaminants. All debris shall be kept from entering sewer flows and removed for disposal. Any active leaks shall be plugged with Permacast Plug or by an approved chemical injection grout. Permacast UL shall be used to fill voids and bring the cleaned concrete surface back to a uniform and sound substrate. If more than 24 hours has elapsed before the COR+ROC application can commence or chemical cleaning was utilized, the prepared substrate shall be neutralized with clean water.

- 6.4.2.B The pre-measured Part A and Part B shall be remixed and then emptied into a clean, dry mixing pail. Mix with a jiffy-mixer until the components have reached a uniform color and texture. All parts shall be maintained at temperatures between 75 and 100 degrees F. Do not attempt to retemper or thin with solvents. A plural component pump may also be utilized to mix and dispense the epoxy.
- 6.4.2.C Apply COR+ROC by SpinCasting or trowel to achieve a minimum thickness of 0.125 inches. The surface may be smoothed by trowel, gloved hand or a short nap paint roller. Dip implements into soapy water to break the surface tension. Remove excess water prior to smoothing.
- 6.4.2.D Applied wet film thickness shall be verified per ASTM D-4414, Standard Practice for Measurement of Wet Film Thickness of Organic Coatings by Notched Gages.

7 Chemical Protective Coating – COR+GARD® Composite

7.1 COR+GARD® is a two-component 100% solids epoxy design formulated for use in sewer systems. It is light green in color for enhanced visibility and may be applied robotically from the PERMACAST® patented robotic applicator for uniform distribution over the entire interior surface without requiring entry and its corresponding safety requirements. Centrifugal casting avoids air bubble entrapment. COR+GARD® will cure quickly, even when immersed in fresh or salt water and rapidly forms a tenacious bond to freshly applied PERMACAST® mortars which are formulated to prevent delaminating calcium powders from forming during hydration. COR+GARD® composite produces a smooth, glossy and homogenous protective layer that is impervious to biological corrosion, water, oils and most chemicals.

7.2 Once the cementitious underlayment has been applied to seal, reinforce and smooth the existing interior surface, the COR+GARD® epoxy is applied at a minimum thickness of .065 inches (1.65 mm) to provide a complete and uniform vapor barrier against attack by sewer gases and corrosion causing bacteria. The surface shall be free of entrapped air bubbles or holidays.

7.3 Physical properties

Dry Time	4-6 hours @ 75° F
Compressive Strength ASTM D-695	10,500 psi
Flexural Strength ASTM D-790	9,000 psi
Tensile Strength ASTM D-638	7,500 psi
Hardness ASTM D-2240	75-80 Shore D
Heat Distortion ASTM D-648	220° F
Ultimate Elongation ASTM D-638	3.5% - 4%
Adhesive Shear ASTM C-882	1,000 psi

The cured epoxy shall have the following HMIS Rating. Health 0 Fire 1 Reactivity 0

7.4 Chemical Protective Coating Installation

7.4.1 COR+GARD® 100% solids epoxy shall be applied over the fresh PERMACAST® liner to create a vapor barrier impervious to the chemical corrosion. The COR+GARD® shall be applied at the engineer's specified thickness.

7.4.2 Moisture Content and Mortar Age Considerations

7.4.2.A COR+GARD® may be applied when the MS-10,000 mortar has taken a final set (8-12 hrs) or when moisture from free water escape during hydration is no longer observed.

7.4.2.B When time constraints do not allow for waiting for the final set, the surface may be conditioned to accept the COR+GARD® by applying Primer.

7.4.2.C Apply epoxy primer directly to the new MS-10,000 surface as soon as the surface water has disappeared. The surface may be damp but not wet. The moisture in the concrete & repair mortar is not harmful to the penetration or adhesion of the coating. The depth of penetration may be as much as 1/16" to 1/4". The epoxy primer acts in two ways: (1) It penetrates the mortar and acts as a primer, and (2) it forms a thin film on the mortar which is water resistant and relatively impervious, holding the water in and acting as a concrete curing compound.

7.4.2.D Primer is top coated with COR+GARD® after primer has achieved its initial set, but while in a tacky condition. If Primer has dried hard to touch before top coating, an additional coat of primer must be applied.

**Application Condition (Primer)**

Condition	Material	Surface	Ambient	Humidity
Optimum	60°-90°F	75°F	75°F	0-95%
Minimum	50°F	40°F	50°F	0%
Maximum	95°F	120°F	100°F	95%

**Curing Schedule (Primer)**

Surface Temp. & 50% Relative Humidity	Dry to Topcoat	Maximum Recoat Time
50°F	1.5 hours	8 hours
75°F	1 hours	5 hours
90°F	.7 Hours	3 hours

7.4.3 Temperature/Weather Considerations

7.4.3.A Rising mortar temperatures during COR+GARD® application may cause blistering and pinhole problems caused by out-gassing from the mortar.

7.4.3.B Monitoring the dew point during periods of changing weather is recommended to ensure that COR+GARD® is not applied over excess moisture that has condensed on the mortar surface.

7.4.3.C Avoid applying COR+GARD® during rain events that can saturate the new prepared substrate with excess water.

874.3.D See charts below for optimum temperatures and conditions for

COR+GARD® application.

7.4.3.E If rapid cure is required, cure times can be reduced and product performance enhanced by artificially applying heat during the curing process.

**COR+GARD® Application Condition**

Condition	MATERIAL	SURFACE	AMBIENT	HUMIDITY
<b>Optimum</b>	60°-90°F	75°F	75°F	0-95%
<b>Minimum</b>	60°F	55°F	60°F	0%
<b>Maximum</b>	95°F	115°F	100°F	95%

**COR+GARD® Curing Schedule**

Surface Temperature & 50% Relative Humidity	Dry to Topcoat	Maximum Recoat Time	Cure for Immersion Service
50°F	4 hours	24 hours	8 hours
75°F	3 Hours	18 hours	6 hours
90°F	2 Hours	12 hours	4 hours

7.4.4 Mixing

7.4.4.A Combine equal parts A & B Component in a clean dry pail. Do not mix by hand. Mix each pail of COR+GARD® using a power mixer (e.g. ½” drill motor and Jiffy mixer paddle). Do not incorporate air into the mix. Mix thoroughly for a full 3 minutes. After mixing allow mixed components to induce (sweat-in) for 20-30 minutes at temperatures below 75°F before beginning application. Care should be taken to decrease induction time as temperatures rise above 75°F to avoid flash setting.

7.4.5 Applying the Epoxy

7.4.5.A If application is delayed beyond 24 hours, or if the prepared mortar liner is exposed to foreign matter, it shall be rinsed to neutralize its surface and the epoxy shall then be applied.

7.4.5.B The epoxy shall be uniformly applied onto the prepared mortar lining before re-exposure to chemicals can contaminate the underlying mortar. It is recommended that two coats of epoxy be applied to reduce pinholes. The second coat will act to repair the pinholes that develop in the first coat due to epoxy filling imperfections in the

substrate. The epoxy shall be applied at a minimum thickness of .125 inches (125 mils) to provide a complete and uniform vapor barrier.

- 7.4.5.C Applied wet film thickness shall be verified per ASTM D-4414, Standard Practice for Measurement of Wet Film Thickness of Organic Coatings by Notched Gages.
- 7.4.5.D The protective coating shall be spark tested per NACE RP0274 at 100 volts per mil of dry film thickness.
- 7.4.5.E Cleanup: Upon completion, the Contractor shall clean up the work site and properly dispose of any excess material or debris
- 7.4.4.F Caution: The reintroduction of flows may allow harmful chemicals and gasses to affect the chemical reaction. Allow 24 hours for epoxy cure.

## 8 MIC Corrosion Protection Admixture – Con<sup>MIC</sup>Shield<sup>®</sup>

- 8.1 Con<sup>MIC</sup>Shield<sup>®</sup> is a liquid admixture for concrete and mortars for the prevention of bacterial corrosion (MIC) common to concrete pipe, manholes and similar structures in municipal sewer environments. As an additive, it permeates the PERMACAST<sup>®</sup> mortar during the mixing phase and molecularly bonds to the cement and aggregate to create an environment incompatible to the growth of harmful bacteria.
- 8.2 Con<sup>MIC</sup>Shield<sup>®</sup> becomes an integrated component of the hardened binder. It cannot wash off, delaminate or lose its effectiveness from wear. Scraping or erosion of the concrete surface only serves to expose additional material to the environment that would otherwise foster bacterial growth. As bacterial growth is neutralized, hydrogen sulfide gases released from the raw sewerage cannot be metabolized and converted into sulfuric acid in concentrations sufficient to damage the impregnated concrete and mortar.
- 8.3 This material is ideally suited for concrete used to manufacture precast pipe and manholes for use in municipal sewer environments or wherever Thiobacillus bacteria may cause microbiologically induced corrosion (MIC). Repair mortars with Con<sup>MIC</sup>Shield<sup>®</sup> subjected to concentrations of Thiobacillus bacteria in the laboratory have shown complete neutralization in just 24 hours.
- 8.4 CON<sup>MIC</sup>SHIELD<sup>®</sup> ID shall be applied for identifying concrete and mortar structures containing CON<sup>MIC</sup>SHIELD<sup>®</sup>. CON<sup>MIC</sup>SHIELD<sup>®</sup> ID acts as an indicator to warn when corrosion activity other than biogenic corrosion is present. The product also aids in curing and sealing cement based structures.

## 9 Submittals

- 9.1 All submittals shall conform completely to the requirements of the Contract document.
- 9.2 The following items may be required of the *installer* to be submitted to the *engineer*. This Contract shall not be considered complete until receipt and acceptance of the following:
  - 9.2.1 Reference submittals
    - 10.2.1.A Contractor certification
    - 10.2.1.B Material certification
  - 9.2.2 Product data
    - 9.2.2.A Patching and plugging material
    - 9.2.2.B I & I Barrier, Manufactured Barrier
    - 9.2.2.C Flexible Chimney Sealant
    - 9.2.2.D CIP Manhole Seal
    - 9.2.2.E Cementitious lining material

9.2.2.F Cementitious lining with admixture  
9.2.2.G Epoxy coating composite

10 Product Handling

- 10.1 Special handling is not required for PERMACAST® mortar. Normal precautions for “nuisance dust” should be observed. Consult Material Safety Data Sheet for details.
- 10.2 Special handling is not required for the PERMAFORM® No-Dig Replacement method.
- 10.3 Proper protective clothing and breathing apparatus shall be used to avoid direct contact with the liquid components of COR+GARD® composite if hand spraying or brushing COR+GARD® by man entry. When spraying COR+GARD® with spinner head, breathing apparatus is not usually required. Manufacturer’s material safety data sheets shall be kept on site and the applicator shall ensure familiarization with this information and emergency procedures.
- 10.4 Con<sup>MIC</sup>Shield® is essentially non-toxic and contains no phenols, heavy metals or formaldehyde. It is an E.P.A. registered antibacterial ingredient (E.P.A. Registration Number 75174-2-47000). It is stable in ultraviolet light and it is leach-resistant. Consult Material Safety Data Sheet for full details.
- 10.5 Personnel entry is not required to rebuild the interior wall of most manholes when using the PERMACAST® spinner head. If personnel entry becomes necessary for any reason, OSHA standards for confined space entry shall be strictly observed.

11 Quality Assurance and Acceptance

- 11.1 Two test cubes of the PERMACAST® material may be taken randomly as directed by the inspector at owner’s expense to verify strengths. Thickness can be verified with a wet gage at any random point of the new interior surface. Any areas found to be thinner than minimum tolerances shall immediately receive additional material. Visual inspection should verify a leak-free, uniform appearance.
- 11.2 Applied wet film thickness of COR+GARD® shall be verified per ASTM D-4414, Standard Practice for Measurement of Wet Film Thickness of Organic Coatings by Notched Gages.
- 11.3 A portable adhesion tester may be used to verify bond strength of the COR+GARD® protective coating per ASTM D-4541, Pull-off Strength of Coatings Using a Portable Adhesion Tester.
- 11.4 Spark testing is an excellent test of the thickness; continuity and thoroughness of protective coatings like COR+GARD® and embedded plastic linings. NACE RP0274 testing standard will detect bubble or blister type voids, cracks, thin spots, and foreign inclusions or contaminants in the coating. Any area found to be a defect shall immediately receive additional material.
  - 11.4.1 All work shall be performed by factory certified applicators in accordance with T&R testing voltage. The dielectric strength of COR+ GARD® requires testing at 100 volts per each mil of thickness.

12 Bypassing Pumping

- 12.1 The Contractor shall provide for the continuous flow of sewage around the sewer access structures designated for re-lining as needed. A bypass shall be installed by plugging the line at an existing upstream sewer access structure and pumping or directing the flow to a downstream sewer access structure. The pump(s) and

bypass lines shall be of adequate capacity and size to handle the flow. Raw sewage shall be routed back to the sanitary sewerage system or hauled and disposed of as approved by the City

- 12.2 Bypass pumping (if necessary) shall be limited to the regular hours of work as provided for in Section 109.2 of these Special Provisions unless necessitated by an emergency beyond the Contractor's control. A representative of the Contractor must be on-site at all times that bypass pumping is in operation.
- 12.3 If the Contractor elects to use bypass pumping as a means of sewerage control, the methods, equipment, type of hose, etc., shall be subject to approval by the City Engineer. Hoses crossing streets, driveways, parking areas, etc., are to be ramped over to prevent damage to the hoses.
- 12.4 No spillage of wastewater to adjacent streets, lawns, etc., shall be tolerated. If any such spillage should occur, all construction operations shall cease and cleanup shall commence immediately and be completed to the satisfaction of the Engineer prior to the resumption of any construction operations.
- 12.5 Prior to submitting a bid for this project the Contractor shall familiarize himself with the City's sanitary sewerage facilities in this area and develop an adequate bypassing plan. A written plan shall be submitted to the City Engineer for approval prior to the start of work.

### 13 Public Notification

- 13.1 It is not anticipated that there will be any interruption of sewer service for the residents and business owners within the project limits. Contractor shall make every effort to maintain service usage throughout the duration of the project. In the event that a service needs to be taken out of service, the maximum amount of time allowed for the service interruption shall be 8 hours for any property served by the sewer. The Contractor shall implement a public notification program that shall, at a minimum, require the Contractor to be responsible for contacting all tenants and owner of each home or business connected to the sanitary sewer and informing them of the work to be conducted and the date, time and length of service interruption.
- 13.2 The Contractor shall prepare and submit written notice describing the work to be performed for the Engineer to review. Upon acceptance of the Engineer, the notice shall be delivered to each home or business a minimum of seven (7) days prior to the beginning of work being conducted. Door hangers shall also be placed at effected properties between no later than 24 hours and no earlier than 72 hours prior to the work being completed. All notices shall also contain a local (or toll free) telephone number of the Contractor that property owners can use to discuss the project or any problems that may arise during installation of the manhole liner. Any related costs such as hotel expenses or residential bypass pumping are the responsibility of the Contractor. The City shall provide the Contractor with names and addresses of affected property owners within the project limits
- 13.3 If products to be used in the lining process emit harmful gas vapors such as but not limited to Volatile Organic Compounds (VOC)s that could potentially put homeowners or business owners in harms way, the contractor shall include in the notice to homeowners what product is being used, what measures are being done by the contractor to keep the work area safe, what needs to be done by the homeowner to prevent the harmful gas vapors from entering their homes such as pouring water in the floor drain to prevent the migration of fumes, and finally what



people need to do if they come into contact with the gas vapors. Contractor shall provide emergency contact information in the Public Notification the Madison Fire Department, Public Health Department Madison, and Madison Police Department. Material Safety Data Sheets shall also be included with this notice. The intent of this specification is chemical exposure for people inside their homes or workplace.. Emissions from generators or construction equipment are not a concern.

- 14 Safety: The Contractor agrees to perform all work under this contract in accordance with local, state, and federal safety regulation with regard to workers completing the work and general public in the area of the work. This includes, but is not limited to, evaluation of the atmosphere to determine the presence of toxic or flammable vapors or lack of oxygen prior to entering sewer access structures, performing inspection, installation of the liner or cleaning operations. Plugs on all pipes connected to the manholes will need to have temporary plugs installed and the sewer access structure will need to have proper venting if any harmful gases are emitted during lining process.
- 15 Clean-up: Upon acceptance of the installation work and testing, the Contractor shall restore the project area affected by the operations to a condition at least equal to that existing prior to the work. This includes, but is not limited to removing rubbish, debris, dirt, equipment and excess material from the site. This also includes minor grading, topsoil, and seeding for any ruts or damage caused while in the process of access the manhole. The Contractor shall clean adjacent surfaces soiled by and during the course of work.
- 16 Minimum Design Thickness: The tables below shall be the minimum thickness of liner. Contractor responsible for determining actual design thickness needed for each sewer access structure for the material type and method of installation. Contractor that submit thickness design calculations prior to lining sewer access structure.

**Thickness Design Tables of PERMACAST® Liner**

Diameter (in.)	Depth (ft.)	Light Traffic			Heavy Traffic		
		12 hours	24 hours	7 days	12 hours	24 hours	7 days
		Thickness (in.)	Thickness (in.)	Thickness (in.)	Thickness (in.)	Thickness (in.)	Thickness (in.)
24	1	1	1	0.75	1.75	1.25	1.25
"	> 2	0.5	0.5	0.5	0.5	0.5	0.5
36	1	1.25	1	1	2	1.75	1.5
"	> 2	0.5	0.5	0.5	0.5	0.5	0.5
48	1	1.5	1.25	1	2.25	1.75	1.75
"	> 2	0.5	0.5	0.5	0.5	0.5	0.5

Table 1. Traffic Load

Depth (ft.)	Diameter 24 in.			Diameter 36 in.			Diameter 48 in.		
	12 hours	24 hours	7 days	12 hours	24 hours	7 days	12 hours	24 hours	7 days
	Thickness (in.)	Thickness (in.)	Thickness (in.)	Thickness (in.)	Thickness (in.)	Thickness (in.)	Thickness (in.)	Thickness (in.)	Thickness (in.)
4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
8	0.5	0.5	0.5	0.75	0.5	0.5	0.75	0.75	0.5
12	0.5	0.5	0.5	0.75	0.75	0.5	0.75	0.75	0.5
16	0.75	0.5	0.5	0.75	0.75	0.75	1	1	0.75
20	0.75	0.75	0.5	1	0.75	0.75	1	1	0.75
30	0.75	0.75	0.75	1	1	0.75	1.25	1	1
40	1	0.75	0.75	1	1	1	1.25	1.25	1

Table 2. Hydrostatic Load

NOTE: Material which develop strengths less than 3,000 psi in 24 hours need to be applied at 1½ times the thickness as shown above.

#### 17 Warranty

Contractor shall provide a minimum of a 5 yr warranty installation warranty and a 1 year manufacturer's warranty upon the completion of the installation of the manhole liner system.. Failure will be deemed to have occurred if the protective lining fails to (a) prevent the internal deterioration or corrosion of the structure (b) protect the substrate and environment from contamination by effluent or (c) prevent groundwater infiltration.

If any such failure occurs within 5 years of initial completion of work on a structure, the damage will be repaired to restore the lining at no cost to the Owner within 60 days after written notification of the failure. Failure does not include damage resulting from mechanical or chemical abuse. Mechanical or chemical abuse means exposing the lined surfaces of the structure to any mechanical force or chemical substance not customarily present or used in connection with structures of the type involved. Liability is limited to and shall not exceed the purchase price paid to line the manhole.

### **BID ITEM 90070 –SEWER ACCESS STRUCTURE LINING WITH EPOXY (ALTERNATIVE METHODS ACCEPTED)**

#### **DESCRIPTION**

Work under this item shall include furnishing and install a sprayed on cementitious sewer access structure liner using the Permacast method, or an approved alternative, as directed by the special provisions above and the City of Madison Standard Specification ("Standard Specifications"), 2018 Edition. In addition to the MS 10,000 cementitious material, work under this bid item shall include an epoxy coating installed in conformance with the manufacturer's specifications. Unit price shall include all materials, equipment, labor, manhole cleaning, repair work for stoppage of leaks, and disposal of removed material. The Contractor shall comply with the Permacast method as indicated in the Technical Specifications. Contractor shall install a minimum thickness of 1/2 -inch of cementitious liner onto interior of manhole. In addition to the cementitious liner, a minimum of a 1/4 -inch thickness epoxy coating shall be placed on the interior walls of sewer access structure (COR+GARD or COR+ROC). **All work shall be performed by factory certified applicators.**

**Alternative products and methods are encouraged for this bid item. The intent of this contract is to apply a lining system to existing sanitary sewer access structures that will provide a waterproof and corrosion resistant protection to the sewer access structures called for lining on the plan set.**

#### **METHOD OF MEASUREMENT**

This item shall be measured by the vertical foot for each sanitary sewer access structure successfully relined. No additional compensation will be granted for additional liner wall thickness beyond what is called for in these specification

#### **BASIS OF PAYMENT**

The contract unit price shall include furnishing all equipment, tools, labor, and materials referenced in these Special Provisions and Part V of the Standard Specifications; site preparation; cleaning of the existing sewer access structure prior to lining; placement of the lining material; normal bypassing of sanitary sewage around the sewer access structure undergoing lining; testing of liner material; cleanup operations including site restoration; and all other general requirements and incidental work pertaining to work specified the these Special Provisions.

**SECTION E: BIDDERS ACKNOWLEDGEMENT**

**SANITARY SEWER ACCESS STRUCTURE LINING - 2018  
CONTRACT NO. 8255**

Bidder must state a Unit Price and Total Bid for each item. The Total Bid for each item must be the product of quantity, by Unit Price. The Grand Total must be the sum of the Total Bids for the various items. In case of multiplication errors or addition errors, the Grand Total with corrected multiplication and/or addition shall determine the Grand Total bid for each contract. The Unit Price and Total Bid must be entered numerically in the spaces provided. All words and numbers shall be written in ink.

1. The undersigned having familiarized himself/herself with the Contract documents, including Advertisement for Bids, Instructions to Bidders, Form of Proposal, City of Madison Standard Specifications for Public Works Construction - 2018 Edition thereto, Form of Agreement, Form of Bond, and Addenda issued and attached to the plans and specifications on file in the office of the City Engineer, hereby proposes to provide and furnish all the labor, materials, tools, and expendable equipment necessary to perform and complete in a workmanlike manner the specified construction on this project for the City of Madison; all in accordance with the plans and specifications as prepared by the City Engineer, including Addenda Nos. \_\_\_\_\_ through \_\_\_\_\_ to the Contract, at the prices for said work as contained in this proposal. (Electronic bids submittals shall acknowledge addendum under Section E and shall not acknowledge here)
2. If awarded the Contract, we will initiate action within seven (7) days after notification or in accordance with the date specified in the contract to begin work and will proceed with diligence to bring the project to full completion within the number of work days allowed in the Contract or by the calendar date stated in the Contract.
3. The undersigned Bidder or Contractor certifies that he/she is not a party to any contract, combination in form of trust or otherwise, or conspiracy in restraint of trade or commerce or any other violation of the anti-trust laws of the State of Wisconsin or of the United States, with respect to this bid or contract or otherwise.
4. I hereby certify that I have met the Bid Bond Requirements as specified in Section 102.5.  
*(IF BID BOND IS USED, IT SHALL BE SUBMITTED ON THE FORMS PROVIDED BY THE CITY. FAILURE TO DO SO MAY RESULT IN REJECTION OF THE BID).*
5. I hereby certify that all statements herein are made on behalf of \_\_\_\_\_ (name of corporation, partnership, or person submitting bid) a corporation organized and existing under the laws of the State of \_\_\_\_\_ a partnership consisting of \_\_\_\_\_; an individual trading as \_\_\_\_\_; of the City of \_\_\_\_\_ State of \_\_\_\_\_; that I have examined and carefully prepared this Proposal, from the plans and specifications and have checked the same in detail before submitting this Proposal; that I have fully authority to make such statements and submit this Proposal in (its, their) behalf; and that the said statements are true and correct.

\_\_\_\_\_  
SIGNATURE

\_\_\_\_\_  
TITLE, IF ANY

Sworn and subscribed to before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

\_\_\_\_\_  
(Notary Public or other officer authorized to administer oaths)

My Commission Expires \_\_\_\_\_

Bidders shall not add any conditions or qualifying statements to this Proposal.

**SECTION F: BEST VALUE CONTRACTING**  
**SANITARY SEWER ACCESS STRUCTURE LINING - 2018**  
**CONTRACT NO. 8255**

**Best Value Contracting**

1. The Contractor shall indicate the non-apprenticeable trades used on this contract.

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2. Madison General Ordinance (M.G.O.), 33.07(7), does provide for some exemptions from the active apprentice requirement. Apprenticeable trades are those trades considered apprenticeable by the State of Wisconsin. Please check applicable box if you are seeking an exemption.

- Contractor has a total skilled workforce of four or less individuals in all apprenticeable trades combined.
- No available trade training program; The Contractor has been rejected by the only available trade training program, or there is no trade training program within 90 miles.
- Contractor is not using an apprentice due to having a journey worker on layoff status, provided the journey worker was employed by the contractor in the past six months.
- First-time Contractor on City of Madison Public Works contract requests a onetime exemption but intends to comply on all future contracts and is taking steps typical of a "good faith" effort.
- Contractor has been in business less than one year.
- Contractor doesn't have enough journeyman trade workers to qualify for a trade training program in that respective trade.
- An exemption is granted in accordance with a time period of a "Documented Depression" as defined by the State of Wisconsin.

3. The Contractor shall indicate on the following section which apprenticeable trades are to be used on this contract. Compliance with active apprenticeship, to the extent required by M.G.O. 33.07(7), shall be satisfied by documentation from an applicable trade training body; an apprenticeship contract with the Wisconsin Department of Workforce Development or a similar agency in another state; or the U.S Department of Labor. This documentation is required prior to the Contractor beginning work on the project site.

- The Contractor has reviewed the list and shall not use any apprenticeable trades on this project.

**LIST APPRENTICABLE TRADES** (check all that apply to your work to be performed on this contract)

- BRICKLAYER
- CARPENTER
- CEMENT MASON / CONCRETE FINISHER
- CEMENT MASON (HEAVY HIGHWAY)
- CONSTRUCTION CRAFT LABORER
- DATA COMMUNICATION INSTALLER
- ELECTRICIAN
- ENVIRONMENTAL SYSTEMS TECHNICIAN / HVAC SERVICE TECH/HVAC INSTALL / SERVICE
- GLAZIER
- HEAVY EQUIPMENT OPERATOR / OPERATING ENGINEER
- INSULATION WORKER (HEAT & FROST)
- IRON WORKER
- IRON WORKER (ASSEMBLER, METAL BLDGS)
- PAINTER & DECORATOR
- PLASTERER
- PLUMBER
- RESIDENTIAL ELECTRICIAN
- ROOFER & WATER PROOFER
- SHEET METAL WORKER
- SPRINKLER FITTER
- STEAMFITTER
- STEAMFITTER (REFRIGERATION)
- STEAMFITTER (SERVICE)
- TAPER & FINISHER
- TELECOMMUNICATIONS (VOICE, DATA & VIDEO) INSTALLER-TECHNICIAN
- TILE SETTER

## **SECTION G: BID BOND**

KNOW ALL MEN BY THESE PRESENT, THAT Principal and Surety, as identified below, are held and firmly bound unto the City of Madison, (hereinafter referred to as the "Obligee"), in the sum of five per cent (5%) of the amount of the total bid or bids of the Principal herein accepted by the Obligee, for the payment of which the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

The conditions of this obligation are such that, whereas the Principal has submitted, to the City of Madison a certain bid, including the related alternate, and substitute bids attached hereto and hereby made a part hereof, to enter into a contract in writing for the construction of:

### **SANITARY SEWER ACCESS STRUCTURE LINING - 2018 CONTRACT NO. 8255**

1. If said bid is rejected by the Obligee, then this obligation shall be void.
2. If said bid is accepted by the Obligee and the Principal shall execute and deliver a contract in the form specified by the Obligee (properly completed in accordance with said bid) and shall furnish a bond for his/her faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said bid, then this obligation shall be void.

If said bid is accepted by the Obligee and the Principal shall fail to execute and deliver the contract and the performance and payment bond noted in 2. above executed by this Surety, or other Surety approved by the City of Madison, all within the time specified or any extension thereof, the Principal and Surety agree jointly and severally to forfeit to the Obligee as liquidated damages the sum mentioned above, it being understood that the liability of the Surety for any and all claims hereunder shall in no event exceed the sum of this obligation as stated, and it is further understood that the Principal and Surety reserve the right to recover from the Obligee that portion of the forfeited sum which exceed the actual liquidated damages incurred by the Obligee.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by an extension of the time within which the Obligee may accept such bid, and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, on the day and year set forth below.

Seal      PRINCIPAL

\_\_\_\_\_  
Name of Principal

\_\_\_\_\_  
By

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name and Title

Seal      SURETY

\_\_\_\_\_  
Name of Surety

\_\_\_\_\_  
By

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name and Title

This certifies that I have been duly licensed as an agent for the above company in Wisconsin under National Provider No. \_\_\_\_\_ for the year \_\_\_\_\_, and appointed as attorney in fact with authority to execute this bid bond and the payment and performance bond referred to above, which power of attorney has not been revoked.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Agent Signature

\_\_\_\_\_  
Address

\_\_\_\_\_  
City, State and Zip Code

\_\_\_\_\_  
Telephone Number

#### NOTE TO SURETY & PRINCIPAL

The bid submitted which this bond guarantees shall be rejected if the following instrument is not attached to this bond:

Power of Attorney showing that the agent of Surety is currently authorized to execute bonds on behalf of the Surety, and in the amounts referenced above.



## Certificate of Biennial Bid Bond

TIME PERIOD - VALID (FROM/TO)
NAME OF SURETY
NAME OF CONTRACTOR
CERTIFICATE HOLDER <p style="text-align: center;">City of Madison, Wisconsin</p>

This is to certify that a biennial bid bond issued by the above-named Surety is currently on file with the City of Madison.

This certificate is issued as a matter of information and conveys no rights upon the certificate holder and does not amend, extend or alter the coverage of the biennial bid bond.

Cancellation: Should the above policy be cancelled before the expiration date, the issuing Surety will give thirty (30) days written notice to the certificate holder indicated above.

\_\_\_\_\_  
Signature of Authorized Contractor Representative

\_\_\_\_\_  
Date

## SECTION H: AGREEMENT

THIS AGREEMENT made this \_\_\_\_\_ day of \_\_\_\_\_ in the year Two Thousand and Eighteen between \_\_\_\_\_ hereinafter called the Contractor, and the City of Madison, Wisconsin, hereinafter called the City.

WHEREAS, the Common Council of the said City of Madison under the provisions of a resolution adopted \_\_\_\_\_, and by virtue of authority vested in the said Council, has awarded to the Contractor the work of performing certain construction.

NOW, THEREFORE, the Contractor and the City, for the consideration hereinafter named, agree as follows:

1. **Scope of Work.** The Contractor shall, perform the construction, execution and completion of the following listed complete work or improvement in full compliance with the Plans, Specifications, Standard Specifications, Supplemental Specifications, Special Provisions and contract; perform all items of work covered or stipulated in the proposal; perform all altered or extra work; and shall furnish, unless otherwise provided in the contract, all materials, implements, machinery, equipment, tools, supplies, transportation, and labor necessary to the prosecution and completion of the work or improvements:

### SANITARY SEWER ACCESS STRUCTURE LINING - 2018 CONTRACT NO. 8255

2. **Completion Date/Contract Time.** Construction work must begin within seven (7) calendar days after the date appearing on mailed written notice to do so shall have been sent to the Contractor and shall be carried on at a rate so as to secure full completion SEE SPECIAL PROVISIONS, the rate of progress and the time of completion being essential conditions of this Agreement.
3. **Contract Price.** The City shall pay to the Contractor at the times, in the manner and on the conditions set forth in said specifications, the sum of \_\_\_\_\_ (\$ \_\_\_\_\_) Dollars being the amount bid by such Contractor and which was awarded to him/her as provided by law.
4. **Affirmative Action.** In the performance of the services under this Agreement the Contractor agrees not to discriminate against any employee or applicant because of race, religion, marital status, age, color, sex, disability, national origin or ancestry, income level or source of income, arrest record or conviction record, less than honorable discharge, physical appearance, sexual orientation, gender identity, political beliefs, or student status. The Contractor further agrees not to discriminate against any subcontractor or person who offers to subcontract on this contract because of race, religion, color, age, disability, sex, sexual orientation, gender identity or national origin.

The Contractor agrees that within thirty (30) days after the effective date of this agreement, the Contractor will provide to the City Affirmative Action Division certain workforce utilization statistics, using a form to be furnished by the City.

If the contract is still in effect, or if the City enters into a new agreement with the Contractor, within one year after the date on which the form was required to be provided, the Contractor will provide updated workforce information using a second form, also to be furnished by the City. The second form will be submitted to the City Affirmative Action Division no later than one year after the date on which the first form was required to be provided.

The Contractor further agrees that, for at least twelve (12) months after the effective date of this contract, it will notify the City Affirmative Action Division of each of its job openings at facilities in Dane County for which applicants not already employees of the Contractor are to be considered. The notice will include a job description, classification, qualifications and application procedures

and deadlines. The Contractor agrees to interview and consider candidates referred by the Affirmative Action Division if the candidate meets the minimum qualification standards established by the Contractor, and if the referral is timely. A referral is timely if it is received by the Contractor on or before the date started in the notice.

Articles of Agreement  
Article I

The Contractor shall take affirmative action in accordance with the provisions of this contract to insure that applicants are employed, and that employees are treated during employment without regard to race, religion, color, age, marital status, disability, sex, sexual orientation, gender identity or national origin and that the employer shall provide harassment free work environment for the realization of the potential of each employee. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation and selection for training including apprenticeship insofar as it is within the control of the Contractor. The Contractor agrees to post in conspicuous places available to employees and applicants notices to be provided by the City setting out the provisions of the nondiscrimination clauses in this contract.

Article II

The Contractor shall in all solicitations or advertisements for employees placed by or on behalf of the Contractors state that all qualified or qualifiable applicants will be employed without regard to race, religion, color, age, marital status, disability, sex, sexual orientation, gender identity or national origin.

Article III

The Contractor shall send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding a notice to be provided by the City advising the labor union or worker's representative of the Contractor's equal employment opportunity and affirmative action commitments. Such notices shall be posted in conspicuous places available to employees and applicants for employment.

Article V

The Contractor agrees that it will comply with all provisions of the Affirmative Action Ordinance of the City of Madison, including the contract compliance requirements. The Contractor agrees to submit the model affirmative action plan for public works contractors in a form approved by the Affirmative Action Division Manager.

Article VI

The Contractor will maintain records as required by Section 39.02(9)(f) of the Madison General Ordinances and will provide the City Affirmative Action Division with access to such records and to persons who have relevant and necessary information, as provided in Section 39.02(9)(f). The City agrees to keep all such records confidential, except to the extent that public inspection is required by law.

Article VII

In the event of the Contractor's or subcontractor's failure to comply with the Equal Employment Opportunity and Affirmative Action Provisions of this contract or Section 39.03 and 39.02 of the Madison General Ordinances, it is agreed that the City at its option may do any or all of the following:

1. Cancel, terminate or suspend this Contract in whole or in part.

2. Declare the Contractor ineligible for further City contracts until the Affirmative Action requirements are met.
3. Recover on behalf of the City from the prime Contractor 0.5 percent of the contract award price for each week that such party fails or refuses to comply, in the nature of liquidated damages, but not to exceed a total of five percent (5%) of the contract price, or five thousand dollars (\$5,000), whichever is less. Under public works contracts, if a subcontractor is in noncompliance, the City may recover liquidated damages from the prime Contractor in the manner described above. The preceding sentence shall not be construed to prohibit a prime Contractor from recovering the amount of such damage from the non-complying subcontractor.

#### Article VIII

The Contractor shall include the above provisions of this contract in every subcontract so that such provisions will be binding upon each subcontractor. The Contractor shall take such action with respect to any subcontractor as necessary to enforce such provisions, including sanctions provided for noncompliance.

#### Article IX

The Contractor shall allow the maximum feasible opportunity to small business enterprises to compete for any subcontracts entered into pursuant to this contract. (In federally funded contracts the terms "DBE, MBE and WBE" shall be substituted for the term "small business" in this Article.)

5. Substance Abuse Prevention Program Required. Prior to commencing work on the Contract, the Contractor, and any Subcontractor, shall have in place a written program for the prevention of substance abuse among its employees as required under Wis. Stat. Sec. 103.503.
6. **Contractor Hiring Practices.**

#### **Ban the Box - Arrest and Criminal Background Checks. (Sec. 39.08, MGO)**

This provision applies to all prime contractors on contracts entered into on or after January 1, 2016, and all subcontractors who are required to meet prequalification requirements under MGO 33.07(7)(l), MGO as of the first time they seek or renew pre-qualification status on or after January 1, 2016. The City will monitor compliance of subcontractors through the pre-qualification process.

- a. **Definitions.** For purposes of this section, "Arrest and Conviction Record" includes, but is not limited to, information indicating that a person has been questioned, apprehended, taken into custody or detention, held for investigation, arrested, charged with, indicted or tried for any felony, misdemeanor or other offense pursuant to any law enforcement or military authority.

"Conviction record" includes, but is not limited to, information indicating that a person has been convicted of a felony, misdemeanor or other offense, placed on probation, fined, imprisoned or paroled pursuant to any law enforcement or military authority.

"Background Check" means the process of checking an applicant's arrest and conviction record, through any means.

- b. **Requirements.** For the duration of this Contract, the Contractor shall:

1. Remove from all job application forms any questions, check boxes, or other inquiries regarding an applicant's arrest and conviction record, as defined herein.

2. Refrain from asking an applicant in any manner about their arrest or conviction record until after conditional offer of employment is made to the applicant in question.
3. Refrain from conducting a formal or informal background check or making any other inquiry using any privately or publicly available means of obtaining the arrest or conviction record of an applicant until after a conditional offer of employment is made to the applicant in question.
4. Make information about this ordinance available to applicants and existing employees, and post notices in prominent locations at the workplace with information about the ordinance and complaint procedure using language provided by the City.
5. Comply with all other provisions of Sec. 39.08, MGO.

**c. Exemptions:** This section shall not apply when:

1. Hiring for a position where certain convictions or violations are a bar to employment in that position under applicable law, or
2. Hiring a position for which information about criminal or arrest record, or a background check is required by law to be performed at a time or in a manner that would otherwise be prohibited by this ordinance, including a licensed trade or profession where the licensing authority explicitly authorizes or requires the inquiry in question.

To be exempt, Contractor has the burden of demonstrating that there is an applicable law or regulation that requires the hiring practice in question, if so, the contractor is exempt from all of the requirements of this ordinance for the position(s) in question.

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IN WITNESS WHEREOF, the Contractor has hereunto set his/her hand and seal and the City has caused these presents to be sealed with its corporate seal and to be subscribed by its Mayor and City Clerk the day and year first above written.

Countersigned:

	Company Name
Witness	Date
Witness	Date
Witness	Date

CITY OF MADISON, WISCONSIN

Provisions have been made to pay the liability that will accrue under this contract.

Approved as to form:

Finance Director	City Attorney
Signed this _____ day of _____, 20_____	
Witness	Mayor
Witness	City Clerk

**SECTION I: PAYMENT AND PERFORMANCE BOND**

KNOW ALL MEN BY THESE PRESENTS, that we \_\_\_\_\_  
as principal, and \_\_\_\_\_  
Company of \_\_\_\_\_ as surety, are held and firmly bound unto the City of  
Madison, Wisconsin, in the sum of \_\_\_\_\_ (\$\_\_\_\_\_) Dollars, lawful money of the United  
States, for the payment of which sum to the City of Madison, we hereby bind ourselves and our  
respective executors and administrators firmly by these presents.

The condition of this Bond is such that if the above bounden shall on his/her part fully and faithfully  
perform all of the terms of the Contract entered into between him/herself and the City of Madison for the  
construction of:

**SANITARY SEWER ACCESS STRUCTURE LINING - 2018  
CONTRACT NO. 8255**

in Madison, Wisconsin, and shall pay all claims for labor performed and material furnished in the  
prosecution of said work, and save the City harmless from all claims for damages because of negligence  
in the prosecution of said work, and shall save harmless the said City from all claims for compensation  
(under Chapter 102, Wisconsin Statutes) of employees and employees of subcontractor, then this Bond is  
to be void, otherwise of full force, virtue and effect.

Signed and sealed this \_\_\_\_\_ day of \_\_\_\_\_

Countersigned:

\_\_\_\_\_  
Company Name (Principal)

\_\_\_\_\_  
Witness

\_\_\_\_\_  
President Seal

\_\_\_\_\_  
Secretary

Approved as to form:

\_\_\_\_\_  
Surety Seal  
 Salary Employee       Commission

\_\_\_\_\_  
City Attorney

By \_\_\_\_\_  
Attorney-in-Fact

This certifies that I have been duly licensed as an agent for the above company in Wisconsin under  
National Producer Number \_\_\_\_\_ for the year \_\_\_\_\_, and appointed as attorney-in-fact  
with authority to execute this payment and performance bond which power of attorney has not been  
revoked.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Agent Signature