

Funding Agreement #2

Private Property Infiltration and Inflow Reduction Agreement

This Agreement is made between the Milwaukee Metropolitan Sewerage District (District) with its principal place of business at 260 West Seeboth Street, Milwaukee, Wisconsin 53204-1446 and the City of Milwaukee (Municipality), with its municipal offices at 841 N. Broadway, Room 701, Milwaukee, Wisconsin 53202.

WHEREAS, Wisconsin law, through Section 66.30 Stats., authorizes any municipality to enter into an intergovernmental cooperation agreement with another municipality for the furnishing of services; and

WHEREAS, the District is responsible for collecting and treating wastewater from the Municipality's locally owned collection system; and

WHEREAS, the Municipality's sewers collect wastewater from lateral sewers located on private property and owned by private property owners; and

WHEREAS, during wet weather events stormwater enters lateral sewers through defective pipes and leaky joints and connections ("infiltration") and stormwater also enters lateral sewers from foundation drains, improper connections and other sources ("inflow"); infiltration and inflow increases the amount of wastewater that the District must collect and treat; and

WHEREAS, during wet weather events infiltration and inflow ("I/I") into privately owned sewers contributes to the risk of sewer overflows; and

WHEREAS, the District wishes to fund measures to reduce I/I from private property.

Now, therefore, for the consideration of the mutual promises made by the parties to this Agreement, the parties agree as follows:

1. Date of Agreement

This Agreement becomes effective immediately upon signature by both parties and shall end when the Municipality receives final payment from the District; or when this Agreement is otherwise terminated as set forth herein.

2. District Funding

The District shall reimburse the Municipality for up to \$3,400,000, or up to the limit of funds allocated by the District to the Municipality in a properly adopted budget (if that amount is greater), in costs for the private property I/I control work described in Attachment A ("the Work"). The District funding shall be provided as a reimbursement upon completion of the Work. Costs associated with work to correct identified connected downspouts (illegal connections) shall not be reimbursable by the District. Beyond the financial support for the Work, the District shall have no involvement in ownership, construction, maintenance or operation of the Work. The Municipality shall identify the District as a funder in informational literature and signage.

This funding level may not be adequate to cover 100% of the costs of the Work. The City agrees to provide any additional funding necessary for the completion of the Work.

3. Procedure for Payment

No more often than monthly, the Municipality shall submit an invoice to the District for the amount to be reimbursed. The invoice should include a documentation of all costs to be reimbursed. Invoices from consultants shall provide the hourly billing rates, if applicable, the hours worked by individuals, and a summary of the tasks accomplished.

Reports and invoices shall be submitted to:

Jerome Flogel, P.E.
Senior Project Manager
Milwaukee Metropolitan Sewerage District
260 West Seeboth Street
Milwaukee, WI 53204 – 1446

At the conclusion of the Work, final reimbursement shall not be made until all of the Work has been performed, the Public Involvement plan has been fully implemented, and the Deliverables listed in Attachment A have been provided to the District.

4. Changes in Work and Modifications to the Agreement

Any changes to the Work must be approved by the District, in writing, in advance. The District may not reimburse for work that is not included in Attachment A unless prior written approval from the District is obtained.

This Agreement may be modified only by a writing signed by both parties.

5. Ongoing Reporting Obligation

For a period of five years following the completion of the Work, the Municipality agrees to report to the District by December 31 of each year the performance of and any problems with the completed Work. Such problems include, without limitation, homeowner complaints, warranty issues, and unexpected surface flooding. This information may be used by the District in planning future I/I reduction efforts.

6. Permits, Certificates and Licenses

The Municipality is solely responsible for ensuring compliance with all federal, state and local laws requiring permits, certificates and licenses required to implement the Work. Acceptance of this agreement by the District and/or issuance of reimbursement funds to the municipality by the District does not constitute acknowledgement by the District that any or all requirements of these laws have been met.

7. Public Bidding

In addition to the statutory requirements applicable to the Municipality, any work done and any purchases of materials and supplies involving an expenditure of greater than \$25,000

shall be subject to public bidding, with a contract awarded to the lowest responsible bidder complying with the invitation to bid.

The District shall review draft bid documents and will provide feedback to the Municipality.

8. Responsibility for Work, Insurance and Indemnification

The Municipality is solely responsible for planning, design, construction and maintenance of the Work, including the selection and payment of consultants, contractors, and materials. The Municipality is solely responsible for ensuring compliance with Wisconsin prevailing wage law.

All connections to the lateral identified in the project shall be investigated as outlined in the Bid Documents in Attachment B and those connections found to be connected downspouts shall be disconnected and the lateral lined through.

The District shall not provide any insurance coverage of any kind for the Work or the Municipality.

The Municipality shall defend, indemnify and hold harmless the District and its Commissioners, employees, and agents against any and all damages, costs, liability and expense whatsoever (including attorneys fees and related disbursements) arising from or connected with the planning, design, construction, operation or maintenance of the Work.

9. Terminating the Agreement

The District may terminate this Agreement at any time prior to commencement of the Work. After the Work has commenced, the District may terminate the Agreement only for good cause, such as, but not limited to, breach of agreement by the Municipality. The Municipality may terminate the Agreement at any time, but will not receive any payment from the District if the Work is not completed.

10. Exclusive Agreement

This is the entire Agreement between the Municipality and the District regarding reimbursement for Work.

11. Severability

If any part of this Agreement is held unenforceable, the rest of the Agreement will continue in effect.

12. Applicable Law

This Agreement is governed by the laws of the State of Wisconsin.

13. Resolving Disputes

If a dispute arises under this Agreement, the parties agree to first try to resolve the dispute with the help of a mutually agreed-upon mediator in Milwaukee County. Any costs and fees other than attorney fees associated with the mediation shall be shared equally by the parties. If

the dispute is not resolved within 30 days after it is referred to the mediator, either party may take the matter to court.

14. Notices

All notices and other communications in connection with this Agreement shall be in writing and shall be considered given as follows:

- when delivered personally to the recipient's address as stated on this Agreement; or
- three days after being deposited in the United States mail, with postage prepaid to the recipient's address as stated on this Agreement.

15. No Partnership

This Agreement does not create a partnership relationship nor give the Municipality the apparent authority to make promises binding upon the District. The Municipality does not have authority to enter into contracts on the District's behalf.

16. Assignment

The Municipality may not assign any rights or obligations under this Agreement without the District's prior written approval.

17. Public Records

The Municipality agrees to cooperate and assist the District in the production of any records in the possession of the Municipality that are subject to disclosure by the District pursuant to the State of Wisconsin's Open Records Law, §§19.31-19.39, Wis. Stats. The Municipality agrees to indemnify the District against any and all claims, demands, and causes of action resulting from the Municipality's failure to comply with this requirement.

MILWAUKEE METROPOLITAN SEWERAGE DISTRICT

CITY OF MILWAUKEE

By: _____
Kevin L. Shafer, P.E.
Executive Director

By: _____
Jeffrey Polenske, P.E.
City Engineer

Date: _____
_____ Approved as to form:

Date: _____

DRAFT

Attachment A

The City of Milwaukee has embarked on a project to rehabilitate existing sanitary sewer laterals of selected homes in the area bounded by: West Center Street to West Burleigh Street from North 82nd Street to North 92nd Street.

Notices were sent to 563 properties to televise the existing sanitary lateral. To date, 451 properties have consented to participate for the inspection and as of September 22, 2011 inspection of approximately 415 properties has been completed. Currently, the city has sent out additional right of entry (R.O.E.) forms and information to all residents that have participated in the lateral inspection for lateral rehabilitation. As of September 22, 2011 the City has received 343 consents for lateral rehabilitation. Participation in this next phase of the program is completely voluntary and the City will be bidding out the project using its own contract on Friday September 23, 2011.

1. *Map*

A map of all participating homeowners for lateral rehabilitation have been created and submitted to the District.

2. *Map of project area*

A map of the project area is not necessary.

3. *Background for choosing target area*

Over the past 3 years, this area has received numerous backwater complaints by residents. Also, this area has been identified by the City of Milwaukee, DNR, and MMSD as having excessive amounts of I/I. In homes built prior to 1954 the foundation drains are directly connected to the sanitary sewer. This area has approximately 95% of properties that were built prior to 1954.

4. *Description of work to performed including strategies and methods.*

In 2010 all public main sanitary sewers in the system were rehabilitated with a cured-in-place lining method or relay. Also, this area has had flow monitors installed at the intersection of West Center Street and North 92nd Street for the last several years. Current data is available and it will be compared to post rehabilitation data to study the effects that this work has on I/I. The current flow monitoring data has been provided to MMSD and analyzed by Brown and Caldwell. It was agreed upon that more post rehabilitation rain events and corresponding data need to occur before a determination can be made. Flow monitoring data of post lateral rehabilitation work will also be provided to MMSD for their review.

Presently, National Power Rodding has inspected approximately 415 sanitary laterals to assess the condition for possible lateral rehabilitation. Based on the review of the examinations, lateral rehabilitation, using lateral lining is proposed, for 451 homes.

5. *Please submit a print copy and efile pdf of final plans sealed by the designer and endorsed by Municipal official.*

Does not apply

6. *Identify the Public information and education plan describing the roles of various personnel and / or agencies and identifying the types of media to be used.*

Currently, the Department of Public Works is working with Alderman James A. Bohl Jr. to educate residents in the proposed demonstration area about the causes of basement backups. A resident meeting explaining why this work is necessary, why this area was chosen, potential costs to the residents, schedule of construction and advantages to participation was held on June 8, 2011.

If necessary, the City, Alderman, and MMSD may have additional pre and post rehabilitation meetings with all residents explaining the goals, schedule, and work associated with the demonstration project.

Alderman Bohl's website offers all public information regarding the proposed demonstration project and contact numbers. Mr. Yousuf of the Environmental Engineering Section is available to answer any questions, concerns, and complaints regarding the schedule, results, and construction of the entire project.

Four weeks after the initial letter is sent out to the residents City of Milwaukee Engineers, working with the Alderman's Office, will go door to door in an attempt to increase participation.

Depending on the response results after 1 month from sending out the initial notices and follow up contact, the City of Milwaukee will assess the number of responses and evaluate the need to use the Public Relations Firm under contract from MMSD to gain additional consent.

Once the project is complete, feedback forms requesting input from residents in the Demonstration Project will be sent out to all participants.

7. *Provide a cost estimate of work proposed including as much detail as available if work is being completed internally, a cost estimate of internal labor by category, e.g. engineering, planning, utility personnel, etc.; should be included in the cost estimate.*

The current request is for the use of MMSD funds for lateral rehabilitation.

Lateral Lining:

451 laterals @ \$8,000 per lateral = \$3,608,000

*\$8,000 constitutes all costs associated with the lateral lining including seals, surface restoration, and cleanouts

Lateral Televising:

21 laterals @ \$200 per lateral = \$4,200

Total Construction Cost = \$3,548,200

Inspection 120 days @ \$325/day = \$39,000

Engineering and initial public outreach = \$200,000

*Engineering will be paid for by City funds and inspection will be paid by MMSD funds

Total Engineering / Inspection / Public Outreach = \$239,000

Total Project Cost = \$3,851,200

Any additional funds that are not covered by MMSD will be paid for by City of Milwaukee funds. All additional cost, including initial public outreach and engineering, will be paid by the City's contract.

The City of Milwaukee will send right of entry (R.O.E.) forms to all 451 residents that have previously consented for the lateral inspection, manage the responses, and produce plans based on the results. Once the project is complete, feedback forms requesting input from residents in the Demonstration Project will be sent out to all participants.

The contractor is required to hold a training session for the City's Public Works Inspectors to ensure the inspectors understand the process and materials used in the lateral lining process.

8. *Schedule of work*

A tentative schedule of work is the following:

Letters were mailed out for lateral rehabilitation consent on August 29, 2011

Finalize plans and bid out lateral rehabilitation contract on September, 23, 2011

Pre-bid meeting with MMSD, Contractors, and the City on October 4, 2011

Send additional notices to non-responsive homeowners for lateral rehabilitation consent on September 28, 2011

Open bids for the lateral rehabilitation on October 14, 2011

Pre-construction meeting with MMSD, contractor, and City on October 28, 2011

Lateral rehabilitation construction begins by November 17, 2011

Lateral rehabilitation construction completed May 26, 2012

*Assume approximately 4 laterals will be rehabilitated per day

Progress meetings will be held with MMSD on a monthly basis to discuss the progress of the project. All properties in the lateral rehabilitation project will be bid out in 1 contract.

Once the project is complete, feedback forms requesting input from residents in the Demonstration Project will be sent out to all participants.

9. Estimated timeline for expenses incurred by the Municipality for the project.

The lateral rehabilitation work is anticipated to begin on November 17, 2011. Since the City of Milwaukee will be going out to contract on its own, we will request the funds from MMSD shortly after receiving bids. Daily inspection / progress reports will be available and submitted with all requests for funding from MMSD. The City will hold progress meetings with MMSD and the Contractor to discuss the project on a monthly basis.

10. What is the summary of the procurement process.

The City of Milwaukee will be generating its own contract / plans / specifications for the lateral rehabilitation. All copies of plans / specifications will be provided to MMSD prior to bidding for their review / comments. Once the results bid results are received they will be delivered to MMSD.

11. If applicable, data attributes that will be collected, media type in which it will be collected, and format of the data storage.

The final post rehabilitation examination of the sanitary lateral will be collected through a closed circuit television examination (CCTV). All media will be submitted on two copies of DVD's or external hard drives. The post construction DVD / report shall include address, tax ID, and work performed on each lateral.

12. Goals and anticipated outcomes of the work.

The main objective for this phase of the project is to eliminate sources of I/I by rehabilitating the sanitary sewer lateral and repairing structural defects. Pre construction flow monitoring data has been sent to MMSD consultants and will be analyzed prior to the start of construction. That data will be compared to post construction flow monitoring data. The City anticipates that the peak flowrate during rain events will decrease. This anticipated decrease in flow will ultimately lower the amount of I/I in the sanitary sewer, therefore reducing the chance of basement backups.

The City of Milwaukee has previously conducted a pilot project rehabilitating private plumbing on 5 city owned properties and cured-in-place lined 6-feet of laterals for approximately 1,200 properties. Throughout these projects specifications have been developed for work on private property. Specifications and lessons learned from these projects will be applied to the current demonstration project. Some lessons learned from the project include unit price costs, construction methods, and difficulties that will arise during construction.

Finally, attorneys for the City of Milwaukee have reviewed the specifications and ROE form for work on private property. Their comments / concerns have been applied to this demonstration project.

13. Outline the proposed project completion report including strategy for logging and documenting lessons learned throughout the project.

Sanitary sewer laterals of each consenting property owner will be rehabilitated, using a contractor hired by the City, from the public sewer main in the street to as close to the building foundation as possible.

Existing flow monitoring data has been provided to MMSD and will be compared with post rehabilitation data. The goal of this project is to lower the amount of I/I in the sanitary sewer, ultimately reducing the chances of basement backups.

Final daily inspector reports will be provided to MMSD in order to verify the final quantities that were installed.

All above information will be provided to MMSD. We do not believe it is necessary to provide an in depth report and analysis at this time.

14. Photo and or video documentation plan including file management, types of media to be used and storage format.

Photos and reports will be kept for all phases of construction. All sewer exams will be stored on a DVD or a hard drive for future review. All photos will be stored as a JPEG file on the City of Milwaukee computers.

15. For CIR work, as summary of tests and methods planned for verification of results and successful completion of work including plans for documenting, e.g., field inspectors, recording, tracking, and reporting.

Lateral inspections of 415 of the 451 consenting properties have been completed. Based on future lateral rehabilitation consents, a plan will be compiled of all addresses that will participate in the lateral rehabilitation program. Records will be kept on each address on the total footage that was rehabilitated and any other work that is proposed.

City of Milwaukee inspectors will be on site during construction documenting the progress and work completed. Daily construction reports will be available for viewing of the work performed by the contractor. City of Milwaukee Staff Engineers will periodically inspect the site. Also, an internal City of Milwaukee account is already set up for engineering and inspection.

The City of Milwaukee has flow monitoring data available since 2005. This data will be compared with post rehabilitation flow monitoring data to gauge the effectiveness of the work.

16. For CIR work, monitoring plan for tracking work quality, integrity, and performance, e.g. flow metering, run time meters, warranty inspections, surveys, etc.

A summary of existing flow monitoring data exists for the demonstration area and has been provided to MMSD. This information will be compared to the post rehabilitation flow data. During construction, advanced records will be kept on the footage of each sanitary lateral rehabilitation, sorted by property address and tax identification number. Daily inspections and reports will be completed by City of Milwaukee Construction Inspectors. No survey work will be completed prior to the start of construction and any warranty language and expectations will be outlined in the bid documents.

Deliverables

1. Map of participating homes with electronic data base format of associated information including without limitation: property tax i.d., address, and column categories of work performed by property including lateral lined, cleanout installed, section repair, etc.
2. Final version of Public Involvement/Public Education program reviewed and approved by the District and the District consultants.
3. Final version of project contract documents including but not limited to plans, specifications, bidding documents, and meeting schedule reviewed and approved by the District and the District consultants.
4. Pre-work flow monitoring data and analysis.
5. Notification of public and project meetings with inclusion of the District in participation thereof.
6. Progress reports on project activities and public involvement (PI) activities on a monthly basis or with pay reimbursement request, whichever occurs more frequently.

7. Inspection reports from the field engineer for work completed on a monthly basis or with expense reimbursement request, whichever occurs more frequently.
8. Photo documentation of project work in jpeg format on disc, jump drive or other format agreeable to both parties.
9. Quality control and quality assurance reports by the contractor submitted on a regular basis as work progresses.
10. Summary report upon completion of the project summarizing quantifiable results of the completed work based on pre-work estimates, measurements, or data collected. The report shall include a specific section reporting on the results of the PI effort including follow up contact with residents in the project area as included in the PI plan. The report shall include specific details on the results of the efforts in planning that were intended to maximize efficiency and results as well as lessons learned throughout the project that may be applied in subsequent projects.
11. The City will be responsible for reporting post work flow monitoring data for at least 2 years post work or as long as data is available, whichever period is longer, and reporting on any problems with the work for 5 years.

**Special Provisions for
Sanitary Building Sewer (Lateral) Rehabilitation Contract
Plan File No. 198-5-57
(Sewer Plan File Number 224-92, 224-93, and 227-83)**

PURPOSE AND SCOPE OF WORK

This work consists of furnishing all labor, materials, tools, equipment and incidentals necessary to completely rehabilitate the existing sanitary building sewers (laterals) by using a cured-in-place lining method.

In order to complete the sanitary sewer lateral rehabilitation, the contractor is required to install a cleanout, clean the lateral, and then rehabilitate the sanitary sewer lateral from the public sewer main to the farthest point possible towards the home. The installation of the cleanout and the cleaning of the lateral shall be completed prior to their cured-in-place lining.

Inspection of the sanitary sewer laterals and public sewer mains have been performed by the City and are available for review. The list of sanitary sewer laterals that were not completely inspected due to obstructions are shown in attachment A. The contractor shall clean these laterals and examine the entire length necessary to perform the cured-in-place lining of these laterals. All costs associated with the additional cleaning and inspection shall be included in the unit bid price for sanitary building sewer (lateral) inspection and cleaning.

All costs associated with the cured-in-place lining, and post construction examination of the laterals shall be included in the unit bid price for the respective diameter sanitary building sewer (lateral) cured-in-place lining. All pay length shall be measured from the public sewer main.

This work will be conducted on both public and private property, therefore, the contractor is required to have the necessary insurance to

cover public and private property construction.

This area has been chosen by the City of Milwaukee as a demonstration project. Participation by the residents is 100% voluntary and owners can opt out at any time. Copies of all right of entry consent forms are available for viewing upon request.

The quantity listed in this contract is an estimate. The City reserves the right, at the direction of the Commissioner of Public Works, to increase or decrease the scope of the work as outlined in this specification. Any increase or decrease in work shall not raise a claim for an extra, and all work shall be paid at the unit bid price. Also, the awarding of this contract is subject to and contingent upon availability of funding.

The information presented on the aforementioned plans, files, and tables is the best available from the City of Milwaukee sewer construction plans. No survey work was performed by the City in preparation of this contract. Prior to bidding, the contractor shall inspect the project sites to become familiar with the existing site conditions such as accessibility, traffic, manhole locations, etc.

All cured-in-place lining work shall be completed and all reports, and sewer examinations, including all media, shall be submitted to the Environmental Engineering Section (EES) by May 25, 2012. The contractor shall not deviate from the above listed scope and schedule without prior permission of Mr. Zafar Yousuf of the EES. Mr. Yousuf's contact number is 414-286-2467.

Attendance at a pre-bid and a pre-construction meeting will be required. The contractor shall contact Mr. Zafar Yousuf of the Environmental Engineering Section at least ten (10) working days prior to the start of construction to arrange the meeting. The Pre-bid meeting will be held in room 820 841 North Broadway Milwaukee WI on Tuesday October 4, 2011 at 10:00 AM. The contractor shall be prepared to discuss the schedule of construction activities, materials and procedures to be used, and exchange any information deemed necessary to ensure successful completion of the project. Also, the contractor is required to attend bi-monthly progress meetings with MMSD and the City once the project begins.

SPECIFICATION DOCUMENTS

The contractor shall perform all work as stated in the latest edition of the following documents, where applicable:

1. Standard Specifications for Sewer and Water Construction in Wisconsin Sections 7.1.1 and 7.1.2, Sixth Edition dated, December 22, 2003 and addenda thereto.
2. City of Milwaukee Standard Special Provisions Dated August 22, 2011
3. ASTM F-2561 (Sanitary Building Sewer (lateral) Method)
4. ASTM F-1216 (Cured-In-Place Lining Installation)

Any other methods and specifications not covered above must be submitted to the EES section for approval.

PRODUCT AND MANUFACTURERS/INSTALLER QUALIFICATION REQUIREMENTS

1. The contractor must submit all required pre-qualification product, manufacturer, and installer documents to the City of Milwaukee Environmental Engineering Section room 820 841 North Broadway Milwaukee, WI 53202 no later than October 6, 2011.
2. Only proven cured-in-place lining products with a substantially successful long-term track record will be approved.
3. For a product to be accepted, the manufacturer must have successfully produced a minimum of the following:
 - A. Three successful cured-in-place lateral lining installation contracts of similar size and scope in the United States.
 - B. 2,000 lateral liner installations.
 - C. Must be capable of installation and testing from the mainline or manhole.

All of the above must be documented to satisfy the City of Milwaukee to assure viability.

4. For an installer to be accepted, the installer must satisfy all of the following:
 - A. Insurance, financial and bonding requirements of the City of Milwaukee.
 - B. A minimum of (3) years of active experience in the commercial installation of the product proposed.
 - C. Successfully installed at least 500 cured-in-place service laterals of the proposed product in sewer systems within the United States.
 - D. Must have a minimum of (3) years of experience in the installation of lateral cured-in-place lining.
 - E. The contractor shall employ a minimum of 1 foreman and 2 crew members with experience of at least 50 liner installations.

Acceptable documentation of these minimum requirements must be submitted to the City of Milwaukee, and any intentional misrepresentation of references will be grounds for disqualification.

5. Sewer rehabilitation products submitted for approval must provide third-party test results supporting the short-term and long-term performance as well as the structural strength of the product. No product will be approved without independent third-party testing verification.
6. The tube and resin manufacturers shall be third-party certified by United States recognized organization standards. Proof of certification shall be required for approval, if requested by the City of Milwaukee.
7. The use of proven materials that serve to enhance the pipe performance specified herein will be allowed. Proven materials must have passed independent third-party laboratory testing, not excluding long-term structural behavior testing, and must

have been successfully installed to repair failing host pipes in the U.S. for at least (2) years.

SUBMITTALS

The contractor shall send all submittals to Mr. Zafar Yousuf of the EES section at 841 North Broadway, Room 821, Milwaukee, Wisconsin, 53202.

TESTING

1. The contractor is required to air test one (1) out of every fifty (50) laterals installed. All costs associated with air testing shall be included in the unit bid price for sanitary building sewer (lateral) cured-in-place lining.
2. The Air test shall consist of the following:
 - A. The contractor shall install a plug at the sanitary sewer cleanout and at the sewer main connection.
 - B. Air should be added to the plugged section of the lateral until air pressure reaches 4.0 psi.
 - C. Allow at least two (2) minutes for the air temperature to stabilize, adding air to maintain the initial pressure.
 - D. Shut off the air supply after stabilizing the temperature
 - E. Air test failures shall be defined as failure to maintain at least 3.5 psi for three (3) minutes.
3. If a lateral does not pass the air test the contractor is required to repair the liner until it can pass the test.
 - A. The Construction Engineer reserves the right to impose any penalty or additional testing for a failed air test, at no cost to the City.

INSPECTION

1. City of Milwaukee Department of Public Works Inspectors will be on site during construction.
2. The amount charged for inspection shall be \$325 per day after the given workdays or the completion date has passed, unless otherwise negotiated by the City with the Contractor.
3. Prior to the start of construction the contractor is required to hold a training session for the City's Public Works Inspectors to ensure the inspectors understand the process and materials used in the lateral lining process.

PRODUCTS

1. The proposed materials shall be suitable for use in the environment and conditions of this project. The material shall be manufactured in such a manner as to result in a tight-fitting, continuous liner after installation. There shall be no measurable annular space. The liner shall have a tight fit at service connections and manhole terminations, as evidenced by indentations and flares, respectively.
2. The liner thickness for the main connection and its lateral shall be in accordance with ASTM 1216 standards and be submitted for approval by the EES.

CLEANING AND TELEVISIONING

1. Prior to installation of the liner, the lateral shall be cleaned from the public sewer main or cleanout to the farthest point possible into the home. The equipment and methods shall be capable of removing dirt, grease, mineral deposits, heavy roots, and other material and obstructions from the laterals as well as televising from the mains. All costs associated with cleaning shall be included in the unit bid price for sanitary building sewer (lateral) inspection and cleaning.
2. During sewer cleaning and televising operations, satisfactory precautions shall be taken in the use of cleaning equipment to prevent damage to the existing pipes.

3. No coding or reports are necessary on pre-examinations.
4. The contractor shall keep debris from entering the laterals and sewer mains as a direct result of the work and work practices under this contract. The contractor shall remove any materials and equipment that enter the sewer as a result of the examinations. At the end of each workday the contractor shall be responsible for cleanup of all work areas.

- Examination documentation:

A legibly written/typed examination report and clear DVD footage shall be submitted for each completed lateral run. A DVD shall not include laterals from more than one street. At the end of the contract, the contractor shall submit the examinations performed to the EES for review. The submittal shall consist of two copies of the examination reports and 2 sets of DVD's or hard drives in a 3 three-ring binder, sorted by address, with an index system indicating block and street, property address, sewer type, lateral size, and sewer size.

Each completed sewer lateral run shall be stationed starting with zero at the beginning of the run. The stationing shall be continuously displayed on the DVD. Examinations shall be conducted at a rate of no greater than 30 feet per minute.

Each sewer examination and report pair shall include an identical visual, audio, and written identification of the following:

1. Date of the examination.
2. Type of sewer (i.e., sanitary).
3. Size of the sewer.
4. Lateral Size and location.
5. Type of material of which the lateral is constructed.
6. Name of the street and address of the property in which the lateral is located.
7. Beginning and ending tape counter numbers for each lateral run examined.
8. Direction of camera movement (i.e., heading east) and direction of sewer flow.
9. Start and end stations of all pipe defects and features, including:

- A. Pipe collapsed.
 - B. Pipe gull-winged or losing shape and extent thereof (amount of deformation)
 - C. Missing pieces of pipe (size and location by clocking).
 - D. Longitudinal cracks (width of crack and location by clocking).
 - E. Circular cracks (width of crack and location by clocking).
 - F. Pipe wall deterioration and defects.
 - G. Open joints (width of joint opening).
 - H. Offset joints (offset in inches and location).
 - I. Mineral deposits (size and location by clocking)
 - J. Roots at joints (classified as heavy, medium or light and location by clocking).
 - K. Roots in connections (classified as heavy, medium or light).
 - L. Joint leaks (estimated infiltration by gallons per minute [gpm], location by clocking, and classified as clear or containing sediment particles).
 - M. Crack leaks (estimated infiltration by gpm and classified as clear or containing sediment particles).
 - N. Deviations in horizontal or vertical alignment (i.e., bends and sags).
 - O. Changes in pipe cross-section.
 - P. Any other defect or features that should be noted.
10. The total length from the upstream manhole to the beginning of the lateral shall be noted on each examination report. Also, the length of the lateral, starting at the sewer main, to the end of the lateral, or termination point, shall be noted on the examination reports.

The exams shall be in color and shall be labeled with the examination number, examination date, location, address, size, and type of sewer examined. The quality of DVD shall be such that the service connections and all defects are clearly visible on the City's DVD viewing equipment. Prior to starting work on this contract, the contractor shall submit to the EES an example of a written examination report and a DVD or hard drive for approval as a format and quality standard. The review process by the EES will take no longer than five (5) days. The City reserves the right to perform periodic viewing of DVD during the course of the work under this contract. Poor quality DVD, identified by the City during or after taping, will be returned to the contractor. The contractor shall then re-examine the sewers

on the returned DVD at the contractor's expense and shall resubmit them to the City, at no cost to the City.

- Examination Equipment and Materials:

The sewer examinations shall utilize color closed circuit television systems with a minimum of 650 lines of resolution. The TV picture shall be linked, by audio and visual communication, to a television screen and recording system inside an at-grade truck/trailer. The television cameras shall be specifically designed for this type of work. Cameras shall be capable of performing a radial view inspection of the top, bottom, and sides of the pipe.

Lighting for the camera shall be suitable to allow a clear picture of the entire periphery of the sewer pipe. The lighting equipment shall be capable of being dimmed or brightened to provide a clearer picture.

The system shall include a metering device so that the exact location of any point within the lateral can be recorded. The meter shall be capable of reducing readings for reverse movement of the camera and be able to be manually re-zeroed for each lateral run. The output of this metering device shall be constantly displayed on the examination video footage.

PUBLIC NOTIFICATION

The contractor shall make every effort to maintain sewer lateral service usage throughout the duration of the project. In the event that a lateral will be taken out of service, the maximum amount of time without service shall be eight (8) hours for any property served by the sewer. A public notification program shall be implemented and shall, as a minimum, require the contractor to be responsible for contacting each home or business connected to the sanitary sewer and inform them of the work to be conducted, and when the sewer will be off-line. The contractor shall also provide the following:

1. Written notice will be delivered to each home or business at least seven (7) days and twenty four (24) hours prior to the beginning of work being conducted in the section affecting said property.

2. A local telephone number of the contractor's primary contact for the public to call to discuss the project or any problems / complaints from residents that may arise.
3. The contractor must be on site and capable of discussing the overall project and the goals of MMSD and the City of Milwaukee with the residents.
4. Personal contact with any home or business that cannot be reconnected within the time stated in the written notice.

**GENERAL SANITARY BUILDING SEWER (LATERAL)
LINING/CLEANOUT INFORMATION**

1. If any equipment becomes lodged in the laterals it shall be removed by the contractor at the contractor's expense. This shall include all costs for any dig up and/or repairs of the laterals, backfilling, and surface restoration. The contractor shall inform Mr. Zafar Yousuf of the EES at 414-286-2467 immediately if a camera becomes lodged in a lateral and any dig up and/or repairs is necessary for removal.
2. All work shall be in accordance with the current State of Wisconsin Plumbing Code.
3. The contractor is required to obtain a Department of Public Works Plumbing Permit for each property prior to the beginning of any lateral work. All the costs associated with obtaining the required permits shall be included in the unit bid price for the respective diameter sanitary building sewer (lateral) cured-in-place lining.
4. Prior to any work being done on the laterals an inspector from the City of Milwaukee Department of Neighborhood Services is required to be on-site. The contractor shall contact the Department of Neighborhood Services at 414-286-3361 at least 10-days prior to the start of any work on the laterals to inform them of the work schedule.
5. Any material, including mineral deposits, displaced from the laterals by Jet-cleaning, air / water blasting, or chains shall be

removed. The contractor shall be responsible for disposing of the removed materials at a Department of Natural Resources (DNR) approved site. The cost of this work shall be included in the unit bid price for the respective diameter sanitary building sewer cured-in-place lining.

6. If a tap on the existing sanitary sewer lateral is discovered, the contractor shall inform the Construction and Plumbing Inspector of the tap connection and is required to dye test to determine its origin. If it is revealed that a connection exists between the downspouts and the sanitary sewer lateral, the contractor shall inform the residents of the problem and request consent to disconnect the downspouts and install discharge piping. All downspout discharge shall comply with City of Milwaukee code of ordinance volume #2 section 225-4. Once the downspouts are disconnected and there is nothing connected to the tap the liner shall then be installed through the existing tap. All costs associated with this work shall be included in the unit bid price for downspout dye test and downspout installation.
7. The contractor shall not cured-in-place line through an existing lateral tap unless proper dye testing has been completed. In general, lining lengths specified on the plans are up to an existing lateral tap.
8. It was not possible to pre-examine the entire length of laterals at certain locations, as specified on the plans, due to obstructions (see attachment A). The contractor is required to remove all obstructions from the entire lateral, including light to heavy calcium, roots, and grease, and televise the entire lateral necessary to complete the lining. The contractor will be paid for the actual lining footage installed. All the costs necessary for the removal of the obstructions in the lateral and inspection shall be included in the unit bid price for the sanitary building sewer (lateral) inspection and cleaning.
9. When installing the cured-in-place liner the contractor shall line past the nearest joint or at least 6-inches downstream of the cleanout.

10. If a lateral "wye" connection at the main is discovered the contractor shall cured-in-place line the laterals and "wye" connection to the maximum length specified. The contractor shall only be paid for the actual length lined. No extra length and payment shall be granted for the shared portion of the "wye" connection.
11. If necessary, all costs associated with installing the 6-inch to 4-inch transitions in the lateral liner shall be included in the unit bid price for 6" to 4" transition.
12. The lateral liner shall be capable of providing a water tight seal at the connection.
13. At the termination point a hydrophilic "O-ring" must be installed.
14. The contractor will be required to handle all flow during the installation of the cured-in-place liner. The cost of bypassing and pumping the flow around the project shall be included in the unit bid price for sanitary building sewer (lateral) cured-in-place lining.
15. The contractor shall provide the City with (2) copies of a post installation DVD examination and report of the sewer. These video exams will become the property of the City of Milwaukee. The cost of this work shall be included in the unit bid price for the lateral lining.
16. The sanitary sewer cleanout installed shall be a Vac-a-Tee or approved equal. If the contractor wishes to use a different type of cleanout they shall submit the design at least five (5) days prior to the bid opening for product approval.
17. Prior to the installation of the cleanout the contractor shall locate and mark the existing sanitary lateral on the surface. The lateral location shall be established from the sewer main to as close to the house as possible. All costs associated with locating the sanitary laterals shall be included the unit bid price for trace existing sanitary building sewer (lateral).

18. Prior to the installation of the cleanout the contractor shall hotline all utilities in the cleanout area. All the costs associated with this work shall be included in the unit bid price for furnish and install sanitary sewer cleanout.
19. Payment for all work necessary to furnish and install the sanitary cleanout shall be included in the unit bid price for furnish and install sanitary cleanout. There will be no payment for excavation or surface restoration work associated with the cleanout as these items are considered incidental to the contract.
20. The contractor shall make all efforts to install the sanitary sewer cleanout in a location that minimizes surface disturbance to the residents. If it is not possible, the contractor shall inform the EES section of the location of the cleanout prior to installation. No permanent structures such as stairs, sidewalks, landscaping or trees shall be removed without the consent of the homeowner.
21. Minimal landscape and other surface disturbance is anticipated during the cured-in-place lining and cleanout installation. Any surface disturbed by construction, including, but not limited to pavement, pavement markings, lawn, or other landscaping shall be replaced by the contractor, in kind, as soon as practicable, but no later than 10 days after the disturbance. If the surface is disturbed after November 15, 2011 the contractor shall temporarily restore the site until the weather is acceptable for full restoration. No other surface vegetation, including but not limited to, trees or bushes, shall be disturbed as a result of this project without the owners consent. Any other surface vegetation disturbed by contractor shall also be replaced, in kind, as soon as practicable. Unless otherwise specified on the plans, all restoration shall be performed at the contractor's expense and there shall be no extra payment by the City for restoration.

GENERAL SANITARY LATERAL REPAIR INFORMATION

1. If a repair is noted on the plans the contractor shall coordinate all repair work, including restoration, with the homeowner.

2. Prior to the start of construction the contractor shall hotline all utilities in the repair area. All the costs associated with this work shall be included in the unit bid price for 6-inch diameter sanitary building sewer (lateral) repair class "C" bedding.
3. The existing pipe must be repaired with the same size and at the same slope to allow for the installation of the liner. If PVC pipe is used as the repair pipe, a fernco must be installed at the transition point to the existing pipe on each end.
4. No permanent structures such as stairs, sidewalks, landscaping or trees shall be removed without the consent and approval of the homeowner and the approval of the EES.
5. Any surface disturbed by construction, including, but not limited to pavement, pavement markings, lawn, or other landscaping shall be replaced by the contractor, in kind, as soon as practicable, but no later than 10 days after the disturbance. If the surface is disturbed after November 15, 2011 the contractor shall temporarily restore the site until the weather is acceptable for full restoration. No other surface vegetation, including but not limited to, trees or bushes, shall be disturbed as a result of this project without the owners consent. Any other surface vegetation disturbed by contractor shall also be replaced, in kind, as soon as practicable.
6. The contractor shall complete all lateral repairs prior to the installation of the cured-in-place liner.
7. If any public tree modification is necessary the contractor must contact the EES section immediately. No public trees shall be removed as a result of the lateral repair work.
8. If pre-inspection of the existing lateral by CCTV reveals an obstruction, defect, or segment of lateral that cannot be rehabilitated with a cured-in-place liner and a repair is not specified on the plans the contractor shall dig-up and repair the necessary segment of the sewer lateral by open cut excavation methods. All repairs shall be approved by the Environmental Engineering Section prior to the beginning of any excavation by the contractor. The cost for repairing the lateral shall be

included in the unit bid price for the respective diameter sanitary building sewer (lateral) repair, class "c" bedding.

9. Surface disruption and restoration due to repairs will be paid by the following unit bid prices:

Bid item	Description	Unit	
50025	Type "A" Lawn Replacement		Sq. Yds.
50300	Pavement Dowels	Each	
50301	Pavement Sawing	Lin. Ft.	
50307	3" Asphaltic Concrete		Sq. Yds.
50309	Concrete Base		Sq. Yds.
50310	Concrete Pavement		Sq. Yds.
50316	Concrete Curb and Gutter		Lin. Ft.
50328	Concrete Walk		Sq. Ft.

Any additional restoration must be approved by the EES section prior to the start of excavation.

LATERAL GROUTING

1. If necessary due to heavy infiltration that will not allow for the installation of the cured-in-place liner, the contractor shall grout the existing joint to allow for the installation of the cured-in-place liner. If the contractor discovers that grouting is necessary they shall submit a video examination immediately to the EES Section of the defect. All grouting installations must be approved by the EES Section.
2. All costs, including installation, materials, submittals, and testing, associated with the lateral grouting shall be included in the unit bid price for lateral grouting.
3. Packer injection grouting shall be accomplished by pressure injection of chemical grout into the soils encompassing the pipe joint. Chemical grouts are designed to be injected into the soil surrounding the pipe, which stabilizes the soil and forms a permanent impermeable seal called a soil ring, and into the annular space between liners and host pipes. Adequate volumes of grout must be injected to form an effective seal.
4. The contractor shall provide all labor, materials, tools, equipment, and incidentals as shown, specified, and required to grout lateral tap connections and joints in laterals connected to sewer mains using a

packer injection method and stop active infiltration prior to rehabilitating the pipe with cured-in-place methods.

5. If lateral grouting is necessary the contractor is required to submit the following information:
 - A. Chemical grout, grout mixture ratio (including additives), and MSDS sheets.
 - B. Equipment operating procedures and systems to be used, including manufacturer's literature on grout pumps, packers, and lateral blockage clearing equipment.
 - C. Upon completion of grouting each reach, submit to the EES Section a report showing the following data for each joint tested and/or grouted or attempted to be grouted.
 - Stationing
 - Time and date
 - Grout mixture formation, including additives and catalyst mixture formulation and proportion of each
 - Pumping pressure
 - Quantity of grout (if applicable) used to seal the joint
 - Post-grout pressure test results
5. All grout materials must have the following characteristics:
 - A. While being injected, the grout must be able to react /perform in the presence of water (groundwater).
 - B. The cured grout must withstand submergence in water without degradation.
 - C. The resultant grout formation must prevent the passage of water (infiltration) through the pipe joint.
 - D. The grout, after curing, must be flexible, under both dry and wet conditions.
 - E. The grout must not be biodegradable.
 - F. The cured grout should be chemically stable and resistant to acids, alkalis, and organics found in sewage.
 - G. Materials shall be capable of being pumped through a minimum of 450 feet of 1/2-inch to 3/4-inch diameter hose.
 - H. Residual grout shall be easily removable from the sewer line to prevent blockage of the sewage flow.
6. The contractor is required to handle, formulate, and store grout in conformance with the manufacturer's recommendations. The uncured grout shall be delivered to the Site in unopened containers with the date

of manufacture clearly indicated. Immediately remove from the Site any uncured grout compound determined to be more than six months old. Once a container of uncured grout has been opened it shall be used within 72 hours.

7. All grout materials used shall meet the following minimum application requirements:
 - A. Mixing of the components shall be compatible with field applications and not require precise measurements.
 - B. Catalyzation shall take place at the point of injection/repair.
 - C. Cleanup shall be done without inordinate use of flammable or hazardous chemicals.
8. Grouting equipment shall consist of two separate pumping systems capable of supplying an uninterrupted flow of sealing materials to completely fill the voids. The gel side of the system shall be a closed system to minimize exposure to moisture. Pumps, fittings, and hoses shall be designed to transport a high viscosity material and shall not be affected by acetone or ketone solvents. The sizing of the system shall be such that the water side can transport materials at 1 to 1 or 8 to 10 times the ratio of the gel side. Pumps shall be sized to deliver a minimum of 3 gpm.
9. Grout shall pass from the pumping system through instant reading, controlled flow meters and then through a dual hose system into the sealing device. The device (referred to hereafter as a push packer) shall be a flexible tube with expandable end bulbs and a minimum of 3-feet of grout chamber between end bulbs. Packers shall be sized for 4-inch and 6-inch pipe diameters. No sealing device which is expanded mechanically nor where the expansion sleeve is not continuous will be allowed in order to prevent damage to the pipe from excessive amounts of sealing pressures or air leakage in the center area of such sealing device. Only low void packers with annular space less than $\frac{1}{4}$ gallon shall be used.
10. Equipment for cleaning and removing excess grout in laterals shall be present on-site any grouting work is being conducted.
11. The Acrylamide base grout shall have the following characteristics:
 - A. A minimum of 10% acrylamide base material by weight in the total grout mix. A higher concentration of acrylamide base

material may be used to increase strength or offset dilution during injection.

- B. The ability to tolerate some dilution and react in moving water during injection.
- C. A viscosity of approximately 2 centipoise, which can be increased with additives.
- D. A constant viscosity during the reaction period.
- E. A controllable reaction time from 10 seconds to 1 hour.
- F. A reaction (curing) that produces a homogenous, chemically stable, non-biodegradable, firm, flexible gel.
- G. The ability to increase mix viscosity, density and gel strength by the use of additives.
- H. Product Manufacturer:
 - Avanti AV-100; or equal

12. Acrylic base grout shall have the following characteristics:

- A. A minimum of 10% acrylamide base material by weight in the total grout mix. A higher concentration of acrylamide base material may be used to increase strength or offset dilution during injection.
- B. The ability to tolerate some dilution and react in moving water during injection.
- C. A viscosity of approximately 2 centipoise, which can be increased with additives.
- D. A constant viscosity during the reaction period.
- E. A controllable reaction time from 5 seconds to 6 hours.
- F. A reaction (curing) that produces a homogenous, chemically stable, non-biodegradable, , flexible gel.
- G. The ability to increase mix viscosity, density and gel strength by the use of additives.
- H. Product Manufacturer:
 - Avanti AV-118; or equal

13. The additives shall consist of the following:

- A. Add a root deterrent chemical such as dichlobenil to the grout in proportions as recommended by the manufacturer.
- B. Add a fluorescent green dye to all grouts so that a visual residual layer of grout remains to provide confirmation that the void was filled during sealing.
- C. Add gel time extending agent in accordance with the manufacturer's recommendations to extend gel time as

necessary. The use of water to increase gel time is specifically prohibited.

- Product Manufacturer: Avanti Potassium ferricyanide (KFe); or equal.

14. The installation of the grouting shall consist of the following:

- A. Remove all roots affecting the viability of the grout seal.
- B. Grouting shall be by the injection method or equal. Generally, this shall be accomplished by forcing grout through a system of pumps and hoses into and through the joints of the sewer from the packer within the sewer pipe. Jetting or driving pipes from the surface that could damage or cause undermining of the pipelines is not allowed.
- C. Remove excess grout from pipe and laterals. Excess grout shall be defined as a thickness of grout greater than 1/4" at any point or an amount of grout that could cause a blockage or impede the installation of the cured-in-place lateral liner. Flush or push forward to the next downstream manhole, remove from the sewer system, and properly dispose of excess grout. In no case shall excess grout material be allowed to accumulate or flushed down the sewer. For lateral taps, a special lateral jetter launched from mainline is required to remove excess grout after lateral tap sealing.
- D. Laterals that are actively leaking need to be grouted prior to rehabilitation using cured-in-place pipe. The EES shall approve the use of grout prior to any grouting operations
- E. Any lateral that is grouted and still found to be leaking prior to installation of the cured-in-place lateral liner shall be regouted and leakage shall be stopped at no additional cost to the City of Milwaukee.

15. The contractor shall prepare grout in accordance with the manufacturer's recommendations.

16. At the beginning of each day, prior to application of grout, the contractor shall perform a pump test to determine if proper ratios are being pumped from the grout component tanks at the proper rates. They shall use separate containers to capture the discharges from the grout component tanks and take corrective action if unequal quantities are being pumped. The pump test shall be repeated until equal quantities are pumped from the grout tanks. Pump one gallon of grout and count

the pump strokes to confirm the number of pump strokes required to achieve a delivery rate of 3 to 5 gallons per minute. The pump test shall be repeated until proper ratios and delivery rates are pumped from the grout tanks.

17. At the beginning of each day, when new batches of grout are mixed, when grout additives are modified to change gel times, at the beginning of any new pipe segment or manhole, and whenever the temperature in the tanks and hoses have changed by more than 10°F from the previous gel test, the contractor shall perform a grout gel test with quantities of grout to determine the grout mixture gel time.
18. The contractor shall add gel time extending agent as necessary to compensate for changes in temperature in grout component tanks or hoses. The addition of dilution water to extend gel times is not acceptable.
19. During the grouting process, the contractor shall monitor the grout component tanks to make sure that proper ratios are being pumped. If unequal levels are noted in the tanks, repeat the pump test as described above.
20. The contractor shall Submit calculations of the expected annular space between the packer and the lateral pipe for approval by the EES. Gel times shall not be less than 25 seconds. For lateral tap connection sealing for laterals directly connected to the mainline sewer and for lateral pipe joints sealing for laterals by push packer.
21. If necessary and approved by the EES section the contractor shall seal inject gout at a lateral joint.
22. For laterals that are grouted using a flexible push packer, the contractor shall insert packer through the cleanout and position the lateral packer over the downstream-most leaking joint or defect to be sealed.
23. Pneumatically expand the packer ends such that they seal against the inside periphery of the pipe to form a void area now completely isolated from the remainder of the pipe line.

24. Pump grout materials into this isolated area through the hose system at controlled pressures that are in excess of groundwater pressures. Run the pump continuously until refusal with the goal of applying ¼ gallon to ½ gallon of grout per inch-diameter of pipe joint. Refusal shall mean the mixed grout has flowed through any joint failure, through any annular space, and into the surrounding soil; gelled or filled the available void space; and formed a cohesive seal stopping further grout flow. Record the amount of grout pumped.
25. Upon completion of the injection the contractor shall deflate the packer to break away the ring of gel formed by the packer void. If inspection and/or testing shows the seal was not completely effective, repeat the process.
26. The process must be repeated as needed to stop the active infiltration, by bringing the push packer back up the lateral toward the cleanout.
27. For laterals that were grouted the contractor shall confirm the flow after the sealing of each lateral. Remove excess grout that extends into the pipe, reduces the pipe diameter, or restricts the flow. Blockages in the lateral that are the result of grouting operations shall be the responsibility of the contractor.

WATER USAGE

1. Milwaukee Water Works hydrant fees and deposits for sewer flushing and lining dated May 1, 2011 are a part of this contract. Please contact Mr. Early Smith of the Milwaukee Water Works at (414) 286-5177 for any questions related to hydrant fees and deposits. All permit fees and deposits shall be included in the unit bid price for the respective diameter cured-in-place lining.
2. In any instance where water is used from a hydrant or other public water supply source, the contractor shall protect the public water supply by means of an appropriate backflow preventer. Where the hose or outlet will be above the elevation of the water source the contractor shall use a reduced pressure zone (RPZ) backflow preventer such as Watts series 909 or equal. If a ¾" or smaller hose supply is required Watts series 8 vacuum breaker-backflow preventer or equal may be used. Where the hose and outlet will always be below the elevation of the water source an atmospheric vacuum breaker such as Febco model 710/715 or

equal may be used. The backflow preventer shall be connected to the hydrant in compliance with Section 2.8.12 of the Department of Public Works General Specifications and shall be self-supporting imposing no load on the hydrant.

EROSION CONTROL

The erosion control item on this contract shall include an Erosion Control Implementation Plan (ECIP). The ECIP shall be submitted to the City Engineer, at least ten (10) working days prior to the scheduled start of work on the contract. The City Engineer shall review the ECIP for meeting technical standards and notify the contractor if the plan meets the standards within seven (7) working days. Work shall not start until the ECIP meets technical standards. The contractor shall be required to have a copy of the ECIP on the job site for the entire duration of the contract. The ECIP shall include, but not be limited to:

- A. A plan showing all locations of erosion control devices and other best management practices (bmp's).
- B. A written description of all erosion control devices and bmp's to be used.
- C. A written schedule of installing erosion control devices.
- D. A written schedule of construction operations related to implementing erosion control devices and bmp's.
- E. Written maintenance schedule for all erosion control devices and bmp's.

All costs associated with implementing the erosion control plan, such as furnishing, installing, maintaining, and removal of erosion control devices shall be included in the unit price bid for erosion control. There shall be no additional compensation for revising the ECIP or utilizing additional bmp's in order to comply with Chapter 290 of the City of Milwaukee Code of Ordinances. If the contractor is found not in compliance with the ECIP, the contractor will be subject to the penalties included in Chapter 290. A blank "Erosion Control Implementation Plan" application is in the bid document package.

For projects in paved, non-rural areas, the Soil Erosion Control Plan for non-rural areas (Plan File No. 51-5-62), revised and dated May 10, 1995, is part of the contract.

TRAFFIC CONTROL

The contractor shall comply with the City of Milwaukee, Department of Public Works booklet *TRAFFIC CONTROL FOR CONSTRUCTION AND MAINTENANCE WORK* and Part IV of the State of Wisconsin *MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES*. The bid item barricading shall include all barricades, signing, etc, to comply with the above named manuals and any traffic management plans specified on the plan.

ENVIRONMENTAL CONTAMINATION

The contractor shall comply with all federal, state, and local laws and regulations controlling pollution of the environment, including obtaining and executing all permits required. When contaminated soil is encountered, Mr. Walter Ebersohl of the Wisconsin Department of Natural Resources shall be contacted at (414) 961-2713. The handling, storage and disposal of such soil shall conform to their requirements. Costs associated with meeting these requirements shall be paid for in accordance with "cost plus basis" for extra work.

PAYMENT

The contractor shall give a "good faith" effort to complete all the work as shown on the plans in the conditions present. However, if it is possible to cured-in-place line, or clean only a portion of the lateral, the contractor shall repair the necessary portion of the lateral by the above mentioned specifications to allow for a cured-in-place liner to be installed.

If a lateral cannot be rehabilitated by cured-in-place lining or repair methods, the contractor shall generate a video examination of the defect and immediately notify the EES Section. The cost for cleaning the laterals where the pre-examination is available shall be included in the unit bid price for 6-inch diameter sanitary building sewer (lateral), cured-in-place lining. All cleaning and televising of laterals where the pre-examination was not completed shall be included in the unit bid price for sanitary building sewer (lateral) inspection and cleaning. The contractor will be paid for the actual

length cured-in-place lined or repaired for each lateral. The total footage will be measured at the surface from the public main sanitary sewer to the termination point of the liner.

Attachment A

Properties not entirely examined		
2727	N	85TH ST
2728	N	85TH ST
2736	N	85TH ST
2737	N	85TH ST
2756	N	85TH ST
2759	N	85TH ST
2773	N	85TH ST
2801	N	85TH ST
2806	N	85TH ST
2840	N	85TH ST
2843	N	85TH ST
2846	N	85TH ST
2872	N	85TH ST
2721	N	86TH ST
2722	N	86TH ST
2727	N	86TH ST
2730	N	86TH ST
2731	N	86TH ST
2736	N	86TH ST
2739	N	86TH ST
2800	N	86TH ST
2820	N	86TH ST
2826	N	86TH ST
2836	N	86TH ST
2840	N	86TH ST
2843	N	86TH ST
2966	N	86TH ST
2972	N	86TH ST
2705	N	87TH ST
2726	N	87TH ST
2739	N	87TH ST

2744	N	87TH ST
2779	N	87TH ST
2780	N	87TH ST
2801	N	87TH ST
2806	N	87TH ST
2807	N	87TH ST
2819	N	87TH ST
2826	N	87TH ST
2827	N	87TH ST
2830	N	87TH ST
2833	N	87TH ST
2836	N	87TH ST
2837	N	87TH ST
2840	N	87TH ST
2846	N	87TH ST
2852	N	87TH ST
2859	N	87TH ST
2862	N	87TH ST
2868	N	87TH ST
3001	N	87TH ST
3007	N	87TH ST
3008	N	87TH ST
3012	N	87TH ST
3034	N	87TH ST
3041	N	87TH ST
3056	N	87TH ST
2725	N	88TH ST
2731	N	88TH ST
2732	N	88TH ST
2751	N	88TH ST
2762	N	88TH ST
2800	N	88TH ST
2820	N	88TH ST
2827	N	88TH ST
2832	N	88TH ST
2835	N	88TH ST
2847	N	88TH ST
2852	N	88TH ST
2855	N	88TH ST
2909	N	88TH ST

2935	N	88TH ST
2961	N	88TH ST
2720	N	89TH ST
2750	N	89TH ST
2771	N	89TH ST
2808	N	89TH ST
2828	N	89TH ST
2849	N	89TH ST
2852	N	89TH ST
2857	N	89TH ST
2868	N	89TH ST
2875	N	89TH ST
2922	N	89TH ST
2925	N	89TH ST
2934	N	89TH ST
2935	N	89TH ST
2940	N	89TH ST
2941	N	89TH ST
2956	N	89TH ST
2957	N	89TH ST
2722	N	90TH ST
2729	N	90TH ST
2737	N	90TH ST
2748	N	90TH ST
2828	N	90TH ST
2842	N	90TH ST
2919	N	90TH ST
2950	N	90TH ST
2963	N	90TH ST
3014	N	90TH ST
3019	N	90TH ST
3022	N	90TH ST
3025	N	90TH ST
3046	N	90TH ST
3050	N	90TH ST
3057	N	90TH ST
2722	N	91ST ST
2739	N	91ST ST
2742	N	91ST ST
2758	N	91ST ST

2772	N	91ST ST
2773	N	91ST ST
2815	N	91ST ST
2820	N	91ST ST
2821	N	91ST ST
2908	N	91ST ST
2918	N	91ST ST
2925	N	91ST ST
2951	N	91ST ST
2971	N	91ST ST
2972	N	91ST ST
3000	N	91ST ST
3011	N	91ST ST
3030	N	91ST ST
3012-3014	N	91ST ST
2734	N	92ND ST
2814	N	92ND ST
2834	N	92ND ST
2720-2724	N	92ND ST
8514	W	CENTER ST
8608	W	CENTER ST
8708	W	CENTER ST
8714	W	CENTER ST
8720	W	CENTER ST
8724	W	CENTER ST
8730	W	CENTER ST
8808	W	CENTER ST
9026	W	CENTER ST
9130	W	CENTER ST
8620-8622	W	CENTER ST
8626	W	CHAMBERS ST
8928	W	CHAMBERS ST
9105	W	CHAMBERS ST
8433	W	HADLEY ST
9001	W	LOCUST ST
9125	W	LOCUST ST
8215	W	LORRAINE PL
8221	W	LORRAINE PL
8237	W	LORRAINE PL
8321	W	LORRAINE PL

DRAFT