

INVITATION FOR BIDS



MANHOLE REHABILITATION SERVICES 2010

IFB #2010-6470-2012

MAY 12, 2010

City of Newport News

Office of the Purchasing Director

2400 Washington Avenue

Newport News, VA 23607

Phone: (757) 926-8031/ Fax: (757) 926-8038

nngov.com/purchasing

SCOPE OF WORK – To provide Manhole Rehabilitation Services throughout the City of Newport News using the Permaform/Permacast™ system.

All contractors shall be made aware that a portion of this project is funded from the Virginia Clean Water Revolving Loan Fund (VCWRLF). Bidders must comply with the President's Executive Order #11246 prohibiting discrimination in employment regarding race, color, creed, sex or national origin and Executive Orders #12138 and #11625 regarding utilization of MBE/WBE firms. Bidders must certify that they do not or will not maintain or provide for their employees any facilities that are segregated on the basis of race, color, creed or national origin. Bidders must also comply with the Civil Rights Act of 1964.

Bid Due: June 8, 2010 at 3:00 p.m.

Contract Officer: _____

Shari D. Colvin, CPPB, VCO, Deputy Director, (757) 926-8031

****AN ORIGINAL SECTION "A" AND ONE DUPLICATE COPY IS REQUESTED****

In compliance with this invitation for bids, and subject to all the conditions thereof, the undersigned offers, if this bid is accepted within (60) calendar days from the date of the opening, to furnish any or all of the items and/or services upon which prices are quoted, at the price set opposite each item, to be delivered at the time and place specified herein. The undersigned certifies he has read, understands, and agrees to all terms, conditions, and requirements of this bid, and is authorized to contract on behalf of firm named below.

Company Name: _____

Address: _____

City/State/Zip: _____

Telephone: _____ FAX No.: _____

email: _____

Print Name: _____ Title: _____

Signature: _____ Date: _____

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Section A

CONDITIONS AND INSTRUCTIONS

Rev: 04/29/2010

1. All bids shall be submitted on and in accordance with this form. If more space is required to furnish a description of the commodities and/or services bid, or delivery terms, the bidder may attach a letter hereto that will be made a part of the bid. In case of conflict, the City's published specifications shall supersede any additional writings submitted with the bid. Such writings should be clearly marked and noted on the exception page.
2. All bids shall be submitted sealed, plainly marked showing the bid number, date and time. The entire solicitation document is to be returned when submitting a bid, unless otherwise directed by the bid document. Failure to return all pages may result in a determination that the submittal is non-responsive.
3. Bids and amendments thereto, if received by the Purchasing Department after the date and time specified for bid opening, will not be considered. It will be the responsibility of the bidder to see that their bid is received by the Purchasing Department as specified. There will be no exceptions. Date of postmark will not be considered. Telephone, facsimile, electronic and verbal bids will not be accepted. Prices or changes shown on the outside of an envelope will not be considered in determination of low bid.
4. If City Hall is closed for business at the time scheduled for bid opening, for whatever reasons, sealed bids will be accepted and opened on the next business day of the City, at the originally scheduled hour.
5. Each bid is received with the understanding that the acceptance in writing by the City of the bidder to furnish any or all of the commodities and/or services described therein, shall constitute a contract between the bidder and the City, which shall bind the bidder on his part to furnish and deliver the articles quoted on at the prices stated and in accordance with the conditions of said accepted bid; and the City on its part to order from such bidder, except for causes beyond reasonable control; and pay for, at the agreed prices, all articles specified and delivered.
6. Bidders have the right to request withdrawal of their bids from consideration due to error by giving notice not later than two days after bids are publicly opened. Work papers showing evidence of error(s) may be required. Upon request Administrative withdrawal procedures will be provided that shall be used for that purpose.
7. If issued, addenda to this solicitation will be posted on the Purchasing Department's website (www.nngov.com/purchasing). It is the bidder's responsibility to check the website or contact the Purchasing Department prior to the submittal deadline to ensure that the bidder has a complete, up-to-date package.
8. The solicitation document maintained by the Purchasing Department, in the bid file folder, shall be considered the official copy. In the case of any inconsistency between bid documents submitted to the City, but not clearly listed on the exception page of the

document as an exception by the bidder, the language of the official copy shall prevail. Furthermore, any exception or changes to the specifications made by the bidder may be cause to disqualify your bid.

9. Award will be made to the lowest responsive and responsible bidder. The quality of the articles to be supplied, their conformity with the specifications, their suitability to the requirements, the delivery terms, qualifications and references will be taken into consideration in making an award. Length of time for delivery as well as price may be considered in awarding the bid.

Unless canceled or rejected, a responsive bid from the lowest responsible bidder shall be accepted as submitted; except that if the bid from the lowest responsible bidder exceeds available funds, the purchasing director may negotiate with the apparent low bidder to obtain a contract price within available funds.

Upon making an award, or giving notice of intent to award, the City will place appropriate notice on the public bulletin board located outside of the Purchasing Department at City Hall. Notice of award may also appear on the Purchasing Website: www.nngov.com/purchasing or www.demandstar.com.

10. The City reserves the right to reject any and all bids, and to waive any informality if it is determined to be in the best interest of the City.
11. Prices shall be stated in units of quantity specified. No additional charges shall be passed to the City, including any applicable taxes, delivery or surcharges. Prices quoted shall be the final cost to the City.
12. All prices and notations should be in ink or typewritten. Mistakes may be crossed out and corrections made in ink and must be initialed and dated in ink by the person signing the bid.
13. In case of error in the extension of prices, the unit price shall govern.
14. The time of proposed delivery must be stated in definite terms. If time of delivery for different commodities varies, the bidder shall so state.
15. Samples, when requested, must be furnished free of expense, and upon request, if not destroyed, will be returned at the bidder's risk and expense.
16. Unless qualified by the provision "NO SUBSTITUTE", the use of the name of the manufacturer, brand make or catalog designation in specifying an item does not restrict bidders to the manufacturer, brand, make or catalog designation identification. This is used simply to indicate the character, quality and/or performance equivalence of the commodity desired. The commodity on which bids are submitted must be of such character, quality and/or performance equivalence that it will serve as that specified. In

submitting bids on a commodity other than as specified, bidder shall furnish complete data and identification with respect to the alternate commodity they propose to furnish.

Consideration will be given to bids submitted on alternate commodities to the extent that such action is deemed to serve the best interests of the City. If the bidder does not indicate that the commodity he proposes to furnish is other than specified, it will be construed to mean that the bidder proposes to furnish the exact commodity described.

17. The apparent silence of these specifications and any supplemental specifications as to any detail or the omission from the specifications of a detailed description concerning any point shall be regarded as meaning that only the best commercial practices are to prevail and correct type, size and design are to be used. All interpretations of these specifications shall be made on the basis of this statement.
18. All bids must be signed by an authorized, responsible officer or employee having the capacity to enter contracts. Obligations assumed by such signature must be fulfilled.
19. By signing this bid, the bidder assigns to the City any and all rights that he may have under the antitrust laws of the United States and the Commonwealth of Virginia in any way arising from or pertaining to this bid. This provision is remedial in nature and is to be liberally construed by any court in favor of the City.
20. The bidder certifies by signing this Invitation for Bid that this bid is made without prior understanding, agreement, or accord with any other person submitting a bid for the same product or service and that this bid is in all respects bona fide, fair and not the result of any act of fraud or collusion with another person engaged in the same line of business or commerce. Any false statement hereunder constitutes a felony and can result in a fine and imprisonment, as well as civil damages.
21. The contractor guarantees to defend and save the City, its agents and employees, harmless from liability of any nature or kind, for use of any copyright, composition, secret process, patented or unpatented invention, articles or appliances furnished or used in the performance of the contract, or which the contractor is not the patentee, assignee, or licensee.
22. The contractor shall keep himself fully informed of all federal, state and local laws, ordinances and regulations that in any manner affect the conduct of the work. The contractor shall at all times observe and comply with all such laws, ordinances and regulations and he shall protect and indemnify the City, and its representatives against any claim or liability arising from or based on any violation of the same, whether by the contractor, his subcontractors, suppliers of materials or services, or others engaged by the contractor or the employees of any of them. **The contractor certifies that he does not and shall not during the performance of the contract for goods and services in the Commonwealth, knowingly employ an unauthorized alien as defined in the federal Immigration Reform and Control Act of 1986, as amended.**

23. All bidders or offeror's organized or authorized to transact business in the Commonwealth pursuant to Title 13.1 or Title 50, as amended, shall include the identification number issued to it by the State Corporation Commission. Any bidder or offeror that is not required to be authorized to transact business in the Commonwealth as a foreign business entity under Title 13.1 or Title 50, as amended, or as otherwise required by law shall include in its bid or proposal a statement describing why the bidder or offeror is not required to be so authorized.

Number or Statement: _____

Any business entity that enters into a contract with a public body pursuant to this chapter shall not allow its existence to lapse or its certificate of authority or registration to transact business in the Commonwealth, if so required under Title 13.1 or Title 50, as amended, to be revoked or cancelled at any time during the term of the contract. The City may void any contract with a business entity if the business entity fails to remain in compliance with the provisions of this section.

24. **Contractor's License** If any of the services promulgated under this solicitation consist of construction work, it is required under Title 54.1, Chapter 11, Code of Virginia for a contractor who performs or manages construction, removal, repair, or improvements when the total value referred to in a single contract or project is:

Seventy thousand dollars (\$70,000) or more, or the total value of all such construction, removal, repair or improvements undertaken by such person within any twelve-month period is five hundred thousand dollars (\$500,000) or more shall show evidence of being licensed as a **Class A Contractor**.

Seventy-five hundred dollars (\$7,500.00) or more, but less than seventy thousand dollars (\$70,000) or the total value of all such construction, removal, repair or improvements undertaken by such person within any twelve-month period is one hundred and fifty thousand dollars (\$150,000) or more, but less than five hundred thousand dollars (\$500,000) shall show evidence of being licensed as a **Class B Contractor**.

Over one thousand dollars (\$1,000) but no more than seventy-five hundred dollars (\$7,500) or the total value of all such construction, removal, repair, or improvements undertaken by such person within any twelve-month period is no more than one hundred and fifty thousand dollars shall show evidence of being licensed as a **Class C Contractor**.

The City shall require master certification as a condition of licensure or certification of electrical, plumbing and heating, ventilation and air conditioning contractors.

A valid business license from the City may be required. The bidder shall complete whichever of the following notations as appropriate:

"Licensed Class A Virginia Contractor No. _____."

"Licensed Class B Virginia Contractor No. _____."

"Licensed Class C Virginia Contractor No. _____."

25. Availability of Funds: A contract shall be deemed in force only to the extent of appropriations available to each department for the purchase of such articles or services. The City's extended obligations on those contracts that envision extended funding through successive fiscal periods shall be contingent upon actual appropriations for the following years.
26. In event of default by the contractor, the City reserves the right to procure the commodities and/or services from other sources, and hold the contractor liable for any excess cost occasioned thereby.
27. Appeals Procedure: Upon your request, administrative appeals information will be provided that shall be used for hearing protests of a decision to award or an award, appeals from refusal to allow withdrawal of bids, appeals from disqualification, appeals for debarment or suspension, or determinations of non-responsibility and appeals from decision or disputes arising during the performance of a contract. To be timely, all appeals, except contract disputes, shall be made within ten days of either public notice of award, or the actual award, whichever is first.
28. **It is the policy of the City of Newport News to facilitate the establishment, preservation, and strengthening of small businesses and businesses owned by women and minorities and to encourage their participation in the City's procurement activities. Toward that end, the City of Newport News encourages these firms to compete and encourages non-minority firms to provide for the participation of small businesses and businesses owned by women and minorities through partnerships, joint ventures, subcontracts, and other contractual opportunities. Bidder is requested to complete the SMB, MBE and WBE Business Objectives form within this document.**
29. The City has a directory of Newport News Minority and Women-owned businesses. The directory is distributed, at request, at no additional cost.
30. This public body does not discriminate against faith based organizations.
31. Non-Discrimination: During the performance of this contract, the contractor agrees as follows:
 - (a) He will not discriminate against any employees or applicants for employment because of race, religion, color, sex, national origin, age, disability, or any other basis prohibited by state law relating to discrimination in employment, except where one or more of these are a bona fide occupational qualification reasonably necessary to the normal operations of

the contractor. The contractor agrees to post in conspicuous places available to employees and applicants for employment, notices setting forth the provisions of this non-discrimination clause.

- (b) The contractor will be and state that he is an equal opportunity employer in all solicitations or advertisements for employees.
- (c) Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting the requirements of this section.

The contractor will include the provisions of the foregoing paragraphs (a), (b) and (c) in every subcontract or purchase order of over ten thousand dollars so that the provisions will be binding upon each subcontractor or vendor.

- 32. During the performance of this contract, the contractor agrees to (i) provide a drug-free workplace for the contractor's employees; (ii) post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana is prohibited in the contractor's workplace and specifying the actions that will be taken against employees for violations of prohibition; (iii) state in all solicitations or advertisements for employees placed by or on behalf of the contractor that the contractor maintains a drug-free workplace; and (iv) include the provisions of the foregoing clauses in every subcontract or purchase order of over \$10,000, so that the provisions will be binding upon each subcontractor or vendor.

For the purposes of this subsection, "A drug-free workplace" means a site for the performance of work done in connection with a specific contract awarded to a contractor in accordance with this subsection, the employees of whom are prohibited from engaging in the unlawful manufacture, sale, distribution, dispensation, possession or use of any controlled substance or marijuana during the performance of the contract.

- 33. Assignment of Contract: A contract shall not be assignable by the contractor in whole or in part without the written consent of the City.
- 34. Applicable Law and Courts: Any purchase order/contract resulting from this solicitation shall be governed in all respects by the laws of the Commonwealth of Virginia and any litigation with respect thereto shall be brought in the courts of the Commonwealth. The contractor shall comply with applicable federal, state and local laws and regulations.
- 35. Severability: If any provision of this Agreement or the application thereof to any person or circumstances shall to any extent be invalid or unenforceable, the remainder of this Agreement, or the application of such provision to persons or circumstances other than those which it is invalid or unenforceable, shall not be affected hereby, and each provision of this Agreement shall be valid and enforced to the full extent permitted by law.

36. Scheduling and Delays – The parties to any contract resultant of this solicitation acknowledge that all or part of the work to be performed hereunder may be delayed and extended at the option of the City. Such delays may be caused by delays, denials, and modifications of the various state or federal permits, or for other reasons. The City shall not be required to pay any of the Contractor's direct or indirect costs, or claims for compensation, extended overhead, or other damage or consequential damages arising out of or related to any delays or interruptions required or ordered by the City. If the City delays the project for any reason for a continuous period of 6 months or more, the City and Contractor will negotiate a mutually agreeable adjustment to the Contractor's award amount.
37. Cancellation: The City may cancel the contract immediately for violations of safety or rules of ethics. The City may cancel a contract thirty (30) days after the City has given a written request for a cure for vendor non-performance if such cure has not occurred. Cancellation shall not release the vendor from legal remedies available to the City.
38. **Bid Bond:** A bidder's bond or certified check in the amount of five percent (5%) of the amount bid shall accompany any bid in excess of \$100,000.00 for the bid to be acceptable.
39. **Performance and Labor and Material Payment Bond:** The Contractor shall have ten (10) days from the date of the City's request to provide a performance bond and a labor and material payment bond, (Use only the forms provided by the City, unless otherwise approved by the City Attorney) in the amount of the contract price, as security for faithful performance of the work in strict conformity with the Contract Documents and for payment of all persons who perform labor and furnish materials in prosecution of the work. The surety on such bonds shall be duly authorized to do business in the Commonwealth of Virginia and be satisfactory to the City.
40. **Direct contact with City departments other than Purchasing, on the subject of this bid is expressly forbidden except with the foreknowledge and permission of the Director of Purchasing or their representative. Violation may result in a determination that your firm is ineligible for award.**
41. Questions or comments related to this solicitation should be directed to the Contract Officer, whose name and contact information appears on the front of this document. All questions must be submitted in writing (facsimile or email); telephonic inquiries will not be considered.
42. Successful bidder shall furnish all required bonds, certificates of insurance and required endorsements on City approved forms included in this bid package. Any other forms are not acceptable and shall not be approved by the City Attorney's office. Time is critical on this work and non-compliance will delay the work and may be cause to make award to the next qualified bidder.

43. **Engineering Standard Specifications:** This contract consists of plans, technical specifications and the Department of Engineering Standard Specifications. The Standard Specification are available for \$15.75, including tax, per copy non-refundable, from the Department of Engineering, City Hall Building, 8th floor, Newport News, Virginia 23607, telephone (757) 926-8611. In the Standard Specification any/all references to the Director of Engineering, which involves the initial Invitation For Bid and prior to an actual contract being awarded shall be defined and interpreted as the City's Purchasing Director or their designee.
44. **Liquidated Damages:** TIME IS OF THE ESSENCE ON THIS CONTRACT. Failure of the Contractor to complete the work within the time allowed will result in damages being sustained by the City. Such damages are, and will continue to be, impracticable and extremely difficult to determine. For each consecutive calendar day in excess of the time specified for completion of the work, the Contractor shall pay to the City, or have withheld from monies due it, the sum of **\$300.00 per day**.

Execution of the contract under these specifications shall constitute agreement by the City and Contractor that this amount per day is the minimum value of the costs and actual damage caused by failure of the Contractor to complete the work within the allotted time, that such sum is liquidated damages and shall not be construed as a penalty, and that such sum may be deducted from payments due the Contractor if such delay occurs.

Permitting the Contractor to continue and finish the work or any part thereof after the contract time or adjusted contract time, as pertinent, has expired shall in no way operate as a waiver on the part of the City or any of its rights under the contract.

Payment of liquidated damages shall not release the Contractor from obligations in respect to the fulfillment of the entire contract, nor shall the payment of such liquidated damages constitute a waiver of the City's right to collect any additional damages which may be sustained by failure of the Contractor to carry out the terms of the contract, it being the intent of the parties that said liquidated damages be full and complete payment only for failure of the Contractor to complete the work on time.

45. **Permits:** Contractor shall be responsible for obtaining all permits, as required by the City of Newport News, prior to start of construction. **The contractor shall obtain all permits of the Department of Engineering, i.e. Right-of-Way, and Land Disturbing, etc. The fees for Right-of-Way, and Land Disturbing permits are waived on this project. However, a separate Public Right-of-Way permit and performance bond of no less than \$5,000.00 is required for working in the City's Right-of-Way. Also, a minimum of \$2,000.00 bond for Soil Removal and Land Disturbing Activities is required. In addition, fees for Code Compliance required permits are still waived and shall not be required.** Prove of approved final inspection shall be required before final payment is made.
46. **Insurance:** The contractor shall maintain adequate liability insurance, which shall protect and save harmless the City of Newport News, Virginia, and its officials from all

suits and actions of every kind and description arising from injury or damage to persons and property in the prosecution of said work or in failure to properly safeguard same, and from all claims arising under the workmen's compensation laws. The contractor shall furnish proof of said insurance prior to commencement of services. Separate forms, which name the City as additional insured and as alternate employer, must be included with the Certificate of Insurance. **Please make sure prior to submitting a bid that all insurance endorsements forms have been reviewed by your insurance carrier.**

The Commonwealth of Virginia requires construction contractors and subcontractors to obtain and maintain worker's compensation insurance while performing work on behalf for the City. Evidence of coverage needs to be provided prior to commencement of work.

Sample forms CG 20-10 (naming the City as additional insured for liability claims) and WC 00-03-01 (naming the City as an alternate employer for Worker's Compensation claims); and the Commonwealth's form for Worker's Compensation Certificate of Coverage are attached (**See Section B**).

Contractor shall have ten (10) days from the date of the city's request, to provide insurance documentation. Failure to provide the Certificate and forms within this period may be cause for the City to award a contract to the next responsive bidder, and hold the original contractor liable for excess costs.

47. The Conditions and Instructions in this solicitation are intended to apply to the resulting contract and shall supersede any conflicting terms offered. Any additional conditions a bidder intends to be considered must be submitted with the bid as an exception. Such exceptions may result in a finding that the submittal is 'non-responsive' to the bid, negating possibility of an award to that bidder. Contractual documents submitted by the successful firm after an award will not be accepted. Failure of the contractor to perform the contract by reason of this non-acceptance of additional conditions shall result in termination of the contract by the City for cause, and may result in debarment of the Contractor for a period of up to three years. Such actions taken by the City shall not release the Contractor from additional remedies that may be allowed by law.

SPECIAL NOTE:

When the contractor chooses to work on Sunday or any City Holiday, the contractor shall be required to pay the City for project inspection services for those days. The payment rate is established at \$75.00 per inspector, per hour, for each hour the inspector(s) provides the inspection service, which shall include travel time to and from the site. The contractor shall submit with each monthly invoice for the specific billing period a check payable to the City of Newport News in an amount equivalent to the hours of inspection service times the above rate. There shall be a minimum service time requirement of two (2) hours per inspector.

The Contractor shall request approval from the City of any scheduled work on Sundays or Holidays a minimum of 72 hours prior to the scheduled work date. Approval by the Director of the Department of Engineering or his representative is required. There is no obligation or requirement that the City provide this service, and the City cannot guarantee the availability of an inspector.

Note: This requirement may not apply to contracts where work hour restrictions established by the City will require Sunday or Holiday work)

Since it is the intent of the City to promote small businesses (SBE), minority businesses (MBE) and women-owned businesses (WBE), you are requested to report the total dollars which will be sub-contracted to each of the business classifications pertaining to this contract. If you should sub-contract with SBE's, MBE's and WBE's, list the dollar figures separately for each general classification.

This will enable the City to track the amount of business the City does with small, minority and women-owned businesses. Without your cooperation it would be very difficult to fully understand the City's performance in this important segment of the market. Indicate your figures below and return this form to the Purchasing Department with your initial bid package.

If you are not sub-contracting, even if you are a S/M/WBE, put zeros in the spaces below.

IFB #2010-6470-2012

Total SBE Dollars to be Sub-contracted \$ _____

Total MBE Dollars to be Sub-contracted \$ _____

Total WBE Dollars to be Sub-contracted \$ _____

EXCEPTION PAGE

EXCEPTIONS:

Bidder must sign the appropriate statement below, as applicable:

() Bidder understands and agrees to all terms, conditions, requirements, and specifications stated herein.

Firm: _____

Signature: _____

() Bidder takes exception to terms, conditions, requirements, or specifications stated herein (Bidder must itemize all exceptions below, and return with this IFB):

Firm: _____

Signature: _____

Vendors should note that any exceptions taken from the stated terms and/or specifications may be cause for their submittal to be deemed "non-responsive", risking the rejection of their submittal.

Payment terms shall be considered in determining the low bidder.

BID RESULTS

Bid results of the apparent three lowest qualified responsive and responsible bidders will be made available on recorded message the following two business days after the bid opening, by calling (757) 926-7261 or by visiting our web site:

www.nngov.com/purchase or www.demandstar.com

ANTI-COLLUSION CERTIFICATION

The bidder certifies that this bid is made without prior understanding, agreement, or connection with any corporation, firm, or person submitting a bid for the same product and that this bid is in all respects bona fide, fair and not the result of any act of fraud or collusion with another person or firm engaged in the same line of business or commerce. The bidder understands collusive bidding is a violation of Federal law and that any false statement hereunder constitutes a felony and can result in fines, imprisonment, as well as civil damages. The bidder also understands that failure to sign this statement will make the bid non-responsive and unqualified for award.

Signed: _____ Date: _____

Name of Company: _____

INSTRUCTIONS OF BIDDERS/OFFERORS

BIDDER/OFFEROR'S RESPONSIBILITIES:

- A. Affirmative Steps:** Bidders/Offerors shall take affirmative steps in compliance with the regulations, prior to submission of bids or closing data for receipt of initial offers, to encourage participation in projects by MBEs and WBEs. Such efforts include:
1. Establish and maintain a current solicitation list of minority and female recruitment sources, and assure MBEs and WBEs are solicited once they are identified.
 2. When feasible, segmenting total work requirements to permit maximum MBE/WBE participation, and establish delivery schedules to encourage MBE/WBE participation.
 3. Assuring that MBEs, and WBEs are solicited whenever they are potential sources of Goods or services. This step may include:
 - a. Sending letters or making other personal contact with MBEs, WBEs, private Agencies and state associations (e.g., those who appear on lists prepared by EPA or the recipient and other MBE/WBE known to the Bidder/Offeror). MBEs/WBEs should be contacted when other potential subcontractors are contacted, within reasonable time prior to bid submission or closing date for receipt of initial offers. Those letters or other contacts should communicate the following:
 - (i) Specific description of the work to be contracted;
 - (ii) How and where to obtain a copy of plans and specifications or other detailed information needed to prepare a detailed price quotation;
 - (iii) Date the quotation is due to the bidder/offeror;
 - (iv) Name, address, and phone number of the person in the Bidders/Offeror's firm whom the prospective MBE/WBE subcontractor should contact for additional information.
 - b. Using the services and assistance of the Small Business Administration and the Office of Minority Business Enterprises of the Commonwealth of Virginia.

Affirm.A: Rev. 2/7/97

Manhole Rehabilitation Services 2010

B. Bidders/Offerors are requested to demonstrate compliance with MBE/WBE requirements. Demonstration of compliance may include the following information; however, the recipient may specify other methods of demonstrating compliance:

1. Names, addresses, phone number, scope of work, aggregate dollar amount of work for MBE/WBE firms expected to perform on this contract. If none, respond accordingly. _____

2. Description of contacts to MBE/WBE firms, including number of contacts, work offered, dates of contact and result of contact. If none, so state. _____

3. Description of contacts of organizations, agencies and associations, which assist MBE/WBE firms, showing the names, person contacted, and date of contact. If none, so State. _____

4. Copies of advertisements for employment showing your firm as advertised to be an Equal Opportunity Employer. (This is a requirement for firms who have received prior governmental contracts valued at \$10,000 or more and have advertised subsequently to that date) _____

C. Successful Bidder/Offeror should take reasonable affirmative steps to subcontract with MBEs and WBEs whenever additional subcontracting opportunities arise during the performance of the contract.

Affirm.A: Rev. 2/7/97

NOTICE TO CONTRACTORS

Sealed proposal will be received by the Department of Purchasing of the City of Newport News, Virginia on the 4th Floor, City Hall Building, 2400 Washington Avenue, no later than **June 8, 2010 at 3:00 p.m. for Manhole Rehabilitation Services 2010.**

Please be advised that all questions in reference to this project should be directed to the Department of Purchasing, Shari D. Colvin, CPPB, VCO, telephone (757) 926-8031, fax (757) 926-8038, scolvin@nngov.com. **All bid questions must be received five working days prior to the bid due date.**

SCOPE OF WORK: To provide Manhole Rehabilitation Services throughout the City of Newport News using the Permaform/Permacast™ system for a contracted period of 2010.

Each proposal greater than \$100,000 shall be accompanied by a bidder's bond or a certified check of five percent (5%) of the amount of the bid. Performance and Labor & Material Payment Bond amounting to one hundred percent (100%) of the contract price will be required of the successful bidder.

This contract consists of plans and technical specifications as amended by Special Conditions and Department of Engineering Standard Specifications. Plans and technical specifications for said contract may be obtained by bona fide contractors and suppliers at the Office of the Department of Engineering, 8th Floor, City Hall Building, Newport News, Virginia, telephone (757) 926-8611 for a non-refundable fee of **\$15.75** including tax per copy. If the contractor submitting a bid does not have a set of the current Department of Engineering Standard Specifications, a set shall be purchased prior to submitting a bid at a cost of **\$15.75, including tax per copy, non-refundable and shall be maintained on the job site at all times until the completion of the project.**

The attention of the bidder is invited to the provisions of Chapter 11 of Title 54.1 of the Code of Virginia regulating the practice of general contracting under which it will be necessary for the bidder to show evidence of certificate of registration as provided by said code.

The City of Newport News reserves the right to reject any or all bids.

Everett P. Skipper, PE, BCEE
Director of Engineering
2400 Washington Avenue
Newport News, VA 23607

Manhole Rehabilitation Services 2010

To The City Manager
City of Newport News
Newport News, Virginia

Dear Sir:

In submitting this bid, the undersigned declares that he is, or they are, the only person, or persons, interested in said bid, that it is made without any connection with any person making another bid for the same contract; that the bid is in all respects fair and without collusion, fraud or mental reservation; and that no official of the City, or any person in the employ of the City, is directly or indirectly, interested in said bid, or in the supplies or work in which it relates, or on any portion of the profits thereof.

The undersigned also declares that he had, or they have, examined all the specifications, specifically including the Standard Specifications, August 1, 1983, form of contract, and that he has, or they have, personally inspected the actual location of the work together with the local sources of supply and understands that in signing this proposal, he, or they, waive all right to plead a misunderstanding regarding the same.

The undersigned further understands and agrees that he is, or they are, to furnish and provide for the respective item price bid, all necessary materials, machinery, implements, tools, labor, service, et cetera, and to do, and perform all the work necessary under the aforesaid conditions to complete the improvements aforementioned in accordance with the specifications for said improvements which specifications, it is agreed, are a part of this proposal, and to accept in full compensation therefore, the amount of the summation of the products of the actual quantities, as finally determined, multiplied by the unit price bid. For the purpose of award, however, the summation of the products of the approximate quantities herein stated, multiplied by the unit price, shall be considered the total bid.

The undersigned further agrees to accept the aforesaid unit prices in compensation for any additions or deductions caused by variations in quantities due to more accurate measurements.

BID

ITEM #	MH #	LOCATION	DESCRIPTION	QTY	UNIT	REHAB. METHOD	UNIT PRICE	TOTAL PRICE
1	007194	56 HUXLEY PL	Road	7.167	VF	PERMAFORM		
2	007802	116 HUXLEY PL	Road	10.167	VF	PERMACAST		
3	008030	35 BURNHAM PL	Road	5.9167	VF	PERMACAST		
4	008379	84 SWEETBRIAR RD	Road	5.5	VF	PERMACAST		
5	001490	12709 WOODSIDE LN	Road	12.5	VF	PERMACAST		
6	150001	60th WARWICK BLVD	Located in Old Waterworks Complex	9	VF	PERMAFORM		
7	014513	609 IVY AVE	Road	11.167	VF	PERMAFORM		
8	001795	530 APT 530 BULKELEY PL	Road	7.083	VF	PERMAFORM		
9	NOTE	4302 HUNTINGTON AVE	Road	10.833	VF	PERMAFORM		
10	007904	26 MIDDLESEX RD	Road	5.5	VF	PERMAFORM		
11	007891	12 MIDDLESEX RD	Road	4.833	VF	PERMAFORM		
12	011506	1013 74TH ST	Road	9.333	VF	PERMAFORM		
13	011526	1005 74TH ST	Road	10	VF	PERMAFORM		
14	001180	100 REXFORD RD	Road	10.5	VF	PERMAFORM		
15	014084	2400 JEFFERSON AVE	Road	7.75	VF	PERMAFORM		
16	014131	2309 JEFFERSON AVE	Road	7	VF	PERMAFORM		
17	000029	51 CARELTON RD	Driveway PS 5	12.333	VF	PERMAFORM		
18	000033	51 CARELTON RD	Driveway PS 5	11.333	VF	PERMAFORM		
19	000037	51 CARELTON RD	Driveway PS 5	11.333	VF	PERMAFORM		
20	000039	51 CARELTON RD	Driveway PS 5	8.416	VF	PERMAFORM		
21	001788	26 GARFEILD DR	Road	5.5	VF	PERMAFORM		
22	001768	34 GARFEILD DR	Road	3.833	VF	PERMAFORM		
23	012453	1237 36TH ST	Road	4.667	VF	PERMAFORM		
24	011321	1210 77th ST	Road	3.083	VF	PERMAFORM		
25	044269	13225 AQUADUCT DR	Road	11	VF	PERMAFORM		
26	003313	4010 CAMPBELL RD	Road	2.083	VF	PERMAFORM		
27	007153	766 CHATSWORTH DR	Road	6.5	VF	PERMAFORM		

Manhole Rehabilitation Services 2010

28	007993	657 HARPERSVILLE RD	Road	9.25	VF	PERMAFORM		
29	011754	1109 JAMES DR	Road	3.75	VF	PERMAFORM		
30	001852	802 LOCKWOOD DR	Road	7.5	VF	PERMAFORM		
31	004429	387 NICEWOD DR	Road	3.25	VF	PERMAFORM		
32	003130	123 PHILLIPS DR	Road	3.667	VF	PERMAFORM		
33	003166	115PHILLIPS DR	Road	4.167	VF	PERMAFORM		
34	010894	602 RANDOLPH RD	Road	7.416	VF	PERMAFORM		
35	014708	17346 WARWICK BLVD	Road	12.083	VF	PERMAFORM		
36	013943	3000 WARWICK BLVD	Road	9.416	VF	PERMAFORM		
37	002054	926 COLAMA DR	Road	6.5	VF	PERMAFORM		

PROJECT TOTAL \$

NOTE:

- 1. Contractor is responsible for obtaining all necessary permits.**
- 2. The City reserves the right to add or delete manhole quantities to/from existing contract. There shall be no compensation for any adjustments to the contract.**

MEASUREMENT AND PAYMENT

Local Traffic Control: The Contractor shall be responsible for furnishing all labor, materials, equipment, road signs, flagging operations and traffic control devices required to complete the project and in accordance with VMAPM or MUTCD. Work hour restriction designation “A” will be used. The Contractor shall have their traffic control plan approved by the Transportation Division prior to beginning work in the City right-of-way. Payment shall be made per week as bid.

Collector Traffic Control: The Contractor shall be responsible for furnishing all labor, materials, equipment, roadway signs, barricades, flagging operations, and other traffic control devices required to complete the project in accordance with VMAPM or MUTCD. Collector streets may require a single or double lane closure. Work hour restriction designations “A” or “B” will be used. Contractor shall have their traffic control plan approved by the Transportation Division prior to beginning work in the City right-of-way. Payment shall be made per week as bid.

Arterial Traffic Control: The Contractor shall be responsible for furnishing all labor, materials, equipment, road signs, barricades, crash mounted truck (speeds of 45 mph or higher), flagging operations and traffic control devices required to complete the project and in accordance with VWAPM or MUTCD. Arterial streets may require a single lane or multi-lane closure. Work hour restriction designations “B” or “C” will be used. The Contractor shall have their traffic control plan approved by the Transportation Division prior to beginning work in the City right-of-way. Payment shall be made per week as bid.

Permaform Manhole Rehabilitation: Measurement and payment shall be made at the unit price per vertical foot for manhole to be rehabilitated using the Permaform method as directed by the Technical Specifications. Unit price shall include all mobilization, demobilization, materials, equipment, labor, manhole cleaning, manhole invert shaping (see TS-15), stoppage of leaks, and disposal of removed material. The Contractor shall comply with the Permaform method as indicated in the Technical Specifications (TS-10 to TS-14). **All work shall be performed by factory certified applicators.**

Permacast Manhole Rehabilitation: Measurement and payment shall be made at the unit price per vertical foot for manhole to be rehabilitated using the Permacast method as directed by the Technical Specifications. Unit price shall include all mobilization, demobilization, materials, equipment, labor, manhole cleaning, invert shaping (see TS-15), stoppage of leaks, and disposal of removed material. The Contractor shall comply with the Permacast method as indicated in the Technical Specifications (TS-1 to TS-9). Contractor shall install a minimum thickness of ½-inch of cementitious liner with ConShield additive onto interior of manhole. **All work shall be performed by factory certified applicators.**

Grind Protruding Laterals: Measurement and payment for grinding protruding laterals shall be at the unit price per each lateral ground and field verified. The unit price shall include all labor, equipment, materials, and any other associated items needed to perform this item.

Bypass Pumping: Payment for bypass pumping shall be per day as bid. The unit price shall include furnishing and maintaining all labor, materials, equipment, and pumps required to allow constant sewage flow during the construction phase. Refer to Bypass Pumping System on Pages SCC-4 to SCC-6. The bypass pumping should not exceed an estimated rate of 150 gpm. **If the bypass pumping exceeds the rate of 150 gpm, the additional cost shall be negotiated.**

Manhole Rehabilitation Services 2010

Construct Manhole Invert: Payment for constructing manhole invert shall be at the unit price per each installed and field verified. The unit price shall include all labor, material, and equipment to install an invert into the bottom of the manhole and shall be in accordance with the “Manhole Invert Shaping Detail” on Page TS-10.

Manhole Rehabilitation Services 2010

On acceptance of this proposal for said work, the undersigned does, or do hereby bind himself, or themselves, to enter into a written contract within ten (10) days of award, with the said Authority, and to perform said work for the consideration above named.

Bidder agrees to complete the entire work within 90 Calendar days from date of Notice to Proceed.

State Contractor Registration Number: _____

Business Name: _____

Address: _____

(Street; P.O. Box not acceptable)

(City, State and Zip Code)

By: _____ Date: _____

By: _____ Date: _____

ADDENDA
No.

ACKNOWLEDGED
Initial

IF CONTRACTOR DESIRES TO MAKE ANY ALTERNATIVE PROPOSAL ON DIFFERENT TYPE OF CONSTRUCTION THAN ONE CALLED FOR, IT SHALL BE ENCLOSED ON A SEPARATE SHEET.

Bid Bond # _____
BID BOND

KNOW ALL MEN BY THOSE PRESENT: That we, the undersigned:

_____ as Principal, and _____

as Surety, acknowledge ourselves held and firmly bound unto the City of Newport News, Virginia, in the just and full sum of five percent (5%) of the maximum amount of accompanying bid for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors, and assigns.

WHEREAS, the Principal has submitted a bid, dated _____,
20____, **Manhole Rehabilitation Services 2010, IFB#2010-6470-2012.**

NOW, THEREFORE, if the Obligee shall accept the bid of the Principal and the Principal shall enter into a contract with the Obligee in accordance with such bid and give bond with good and sufficient surety for the faithful performance of such contract, or in the event of the failure of the Principal to enter into such contract and give such bond, if the Principal shall pay to the Obligee the difference, not to exceed the penalty hereof, between the amount specified in said bid and the amount for which the Obligee may legally contract with another party to perform the work covered by said bid, if the latter amount be in excess of the former, then this obligation shall be null and void, otherwise to remain in full force and effect.

Manhole Rehabilitation Services 2010

IN WITNESS WHEREOF, the parties hereto have caused their corporation names and seals, respectively, to be hereunto subscribed and affixed by their officers in that behalf duly authorized this _____ day of _____.

CONTRACTOR

BY _____
SEAL

ATTEST:

SURETY

BY _____
SEAL

ATTEST:

Resident Virginia Agent of Surety

Submit with Power of Attorney

Section B

INSURANCE ENDORSEMENTS

Insurance - The contractor shall maintain adequate liability insurance, which shall protect and save harmless the City of Newport News, Virginia, and its officials from all suits and actions of every kind and description arising from injury or damage to persons and property in the prosecution of said work or in failure to properly safeguard same, and from all claims arising under the workmen's compensation laws. The contractor shall furnish proof of said insurance prior to commencement of services. Separate forms, which name the City as additional insured and as alternate employer must be included with the Certificate of Insurance.

The Commonwealth of Virginia requires construction contractors and subcontractors to obtain and maintain worker's compensation insurance while performing work on behalf for the City. Evidence of coverage needs to be provided prior to commencement of work.

Sample forms CG 20-10 (naming the City as additional insured for liability claims) and WC 00-03-01 (naming the City as an alternate employer for Worker's Compensation claims); and the Commonwealth's form for Worker's Compensation Certificate of Coverage are attached.

Contractor shall have ten (10) days from the date of the city's request to provide insurance documentation. Failure to provide the Certificate and forms within this period may be cause for the City to award a contract to the next responsive bidder, and hold the original contractor liable for excess costs.

<u>TYPE INSURANCE COVERAGE</u>	<u>LIMITS</u>
1. Workman's Compensation Employer's Liability	Statutory \$100,000.00
2. Comprehensive General Liability with XCU & Contractual included	\$500,000.00each \$500,000.00 each Occurrence \$500,000.00 in Aggregate
3. Property Damage Liability	\$100,000.00 each Occurrence

POLICY NUMBER:

COMMERCIAL GENERAL LIABILITY

CG 20 10 10 93

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS (FORM B)

This endorsement modifies insurance provided under the following:

**COMMERCIAL GENERAL LIABILITY COVERAGE
PART**

SCHEDULE

Name of person or organization:

**City of Newport News
C/o Purchasing Department
2400 Washington Avenue
Newport News, VA 23607**

(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

WHO IS AN INSURED (Section II) is amended to include as an insured the person or organization shown in the Schedule, but only with respect to liability arising out of your ongoing operations performed for that insured.

CG 20 10 10 93

**WORKER'S COMPENSATION
CERTIFICATE OF COVERAGE**

Section 11-46.3, Code of Virginia, requires construction contractors and subcontractors to obtain and maintain workers' compensation insurance while performing work on behalf of the Commonwealth of Virginia departments, institutions or agencies. This same requirement applies for work being performed on behalf of local governments.

Evidence of coverage needs to be provided prior to commencement of work.

This form is to be returned to the organization contracting the work.

The undersigned organization stipulates that it either:

- A. Has worker's compensation insurance _____ Yes

Insurance Company: _____

Policy Expiration Date: _____

- B. Is self-insured for workers' compensation _____ Yes

Title of Construction Contract: *Manhole Rehabilitation Services 2010, IFB#2010-6470-2012*

Contract Number: _____

Signed By: _____

Title: _____

Firm Name: _____

Address: _____

Commercial Coverage

Standard Workers' Compensation and Employer's Liability Policy

Alternate Employer Endorsement

Policy Amendment

WC 00 03 01

If the following information is not complete, refer to the appropriate information page attached to the policy.

INSURED	POLICY NO.	SEQ. NO.
----------------	-------------------	-----------------

PRODUCER	EFFECTIVE DATE
-----------------	-----------------------

SCHEDULE

Alternate Employer	Address	State of Special or Temporary Employment
City of Newport News	2400 Washington Avenue, Newport News, Virginia	

This endorsement applies only with respect to bodily injury to your employees while in the course of special or temporary employment by the alternate employer in the state named in the Schedule. Part One (Workers Compensation Insurance) and Part Two (Employers Liability Insurance) will apply as though the alternate employer is insured.

We will not ask any other insurer of the alternate employer to share with us a loss covered by this endorsement.

Premiums will be charged for your employees while in the course of special or temporary employment by the alternate employer.

Under Part One (Workers Compensation Insurance), we will reimburse the alternate employer for the benefits required by the workers compensation law if we are not permitted to pay the benefits directly to the person entitled to them.

Part Four (Your Duties If Injury Occurs) applies to you and the alternate employer. The alternate **TC-1** employer will recognize our right to defend under Parts One and Two and our right to inspect under Part Six.

The insurance afforded by this endorsement is not intended to satisfy the alternate employers duty to secure its obligations under the workers compensation law. We will not file evidence of this insurance on behalf of the alternate employer with any government agency.

CONTRACT

THIS AGREEMENT, made this _____ day of _____, 20____, between the City of Newport News, Virginia, hereinafter referred to and designated as "City" and/or _____, his, its or their successors, executors, administrators and assigns, hereinafter referred to and designated as "Contractor."

WHEREAS, the City of Newport News, Virginia, has accepted the sealed proposal of the said contractor to furnish all the labor and equipment and to do and perform all the work necessary to complete the **Manhole Rehabilitation Services 2010, IFB#2010-6470-2012** in the City of Newport News, Virginia, as shown on the plans and specifications hereto attached for the unit prices set forth in the said proposal.

NOW THEREFORE, THIS AGREEMENT WITNESSETH: That in consideration of the payments to be made by the City of Newport News, Virginia, as hereinafter set out, the Contractor covenants and agrees with said City of Newport News, Virginia to furnish all labor, tools and equipment and to do and perform in a good and workmanlike manner all and singular all the work in and about the **Manhole Rehabilitation Services 2010, IFB#2010-6470-2012** in the City of Newport News, Virginia, in strict accordance with all documents identified below which are incorporated and made a part hereof as fully and completely as if the same were herein, in words and figures, at length set forth:

Manhole Rehabilitation Services 2010

Invitation for Bid 1 Page
Table of Contents 1 Page
Conditions and Instructions 12 Pages
Instructions to Bidders/Offerors 2 Pages
Notice to Contractors 1 Page
Bid 7 Pages
Bid Bond 2 Pages
Insurance Endorsements 4 Pages
Contract 5 Pages
Performance Bond 3 Pages
Labor and Material Payment Bond 4 Pages
General Conditions 1 Page
Special Construction Conditions 6 Pages
Special Traffic Conditions 2 Pages
Technical Specifications 15 Pages
Standard Specifications, August 1, 1983 252 Pages

The Contractor will have a minimum 90 calendar days from Notice to Proceed to complete the manhole rehabilitation work.

CONTRACT

ITEM #	MH #	LOCATION	DESCRIPTION	QTY	UNIT	REHAB. METHOD	UNIT PRICE	TOTAL PRICE
1	007194	56 HUXLEY PL	Road	7.167	VF	PERMAFORM		
2	007802	116 HUXLEY PL	Road	10.167	VF	PERMACAST		
3	008030	35 BURNHAM PL	Road	5.9167	VF	PERMACAST		
4	008379	84 SWEETBRIAR RD	Road	5.5	VF	PERMACAST		
5	001490	12709 WOODSIDE LN	Road	12.5	VF	PERMACAST		
6	150001	60th WARWICK BLVD	Located in Old Waterworks Complex	9	VF	PERMAFORM		
7	014513	609 IVY AVE	Road	11.167	VF	PERMAFORM		
8	001795	530 APT 530 BULKELEY PL	Road	7.083	VF	PERMAFORM		
9	NOTE	4302 HUNTINGTON AVE	Road	10.833	VF	PERMAFORM		
10	007904	26 MIDDLESEX RD	Road	5.5	VF	PERMAFORM		
11	007891	12 MIDDLESEX RD	Road	4.833	VF	PERMAFORM		
12	011506	1013 74TH ST	Road	9.333	VF	PERMAFORM		
13	011526	1005 74TH ST	Road	10	VF	PERMAFORM		
14	001180	100 REXFORD RD	Road	10.5	VF	PERMAFORM		
15	014084	2400 JEFFERSON AVE	Road	7.75	VF	PERMAFORM		
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22	001768	34 GARFEILD DR	Road	3.833	VF	PERMAFORM		
23	012453	1237 36TH ST	Road	4.667	VF	PERMAFORM		
24	011321	1210 77th ST	Road	3.083	VF	PERMAFORM		
25	044269	13225 AQUADUCT DR	Road	11	VF	PERMAFORM		
26	003313	4010 CAMPBELL RD	Road	2.083	VF	PERMAFORM		
27	007153	766 CHATSWORTH DR	Road	6.5	VF	PERMAFORM		
28	007993	657 HARPERSVILLE RD	Road	9.25	VF	PERMAFORM		

Manhole Rehabilitation Services 2010

29	011754	1109 JAMES DR	Road	3.75	VF	PERMAFORM		
30	001852	802 LOCKWOOD DR	Road	7.5	VF	PERMAFORM		
31	004429	387 NICEWOD DR	Road	3.25	VF	PERMAFORM		
32	003130	123 PHILLIPS DR	Road	3.667	VF	PERMAFORM		
33	003166	115PHILLIPS DR	Road	4.167	VF	PERMAFORM		
34	010894	602 RANDOLPH RD	Road	7.416	VF	PERMAFORM		
35	014708	17346 WARWICK BLVD	Road	12.083	VF	PERMAFORM		
36	013943	3000 WARWICK BLVD	Road	9.416	VF	PERMAFORM		
37	002054	926 COLAMA DR	Road	6.5	VF	PERMAFORM		

PROJECT TOTAL \$

NOTE:

- 1. Contractor is responsible for obtaining all necessary permits.**
- 2. The City reserves the right to add or delete manhole quantities to/from existing contract. There shall be no compensation for any adjustments to the contract.**

BY

TITLE _____

Seal Here:

ATTEST: _____

TITLE: _____

(Officer or Corporation)

CITY OF NEWPORT NEWS, VIRGINIA

BY _____

Seal Here:

ATTEST: _____

Performance Bond # _____

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: That we, the undersigned _____
_____, as Principal,
and _____, as
Surety, acknowledge ourselves held and firmly bound unto the City of Newport News, Virginia
as Obligee, in the amount of _____
_____ dollars, (_____) for the payment of which,
well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors,
administrators, successors and assigns.

WHEREAS, the said _____
did, on the _____ day of _____, 20____, enter into a contract with the
City of Newport News, Virginia for the **Manhole Rehabilitation Services 2010, IFB#2010-
6470-2012** which said contract is by reference made a part hereof, is hereinafter referred to as
the Contract.

NOW, THEREFORE, the condition of this obligation is such that if the Principal shall in all
respects promptly and faithfully comply with and fulfill all the terms and conditions of said
contract, then this obligation shall be void; otherwise it shall remain in full force and effect.

The Surety hereby waives notice of any change, alteration or addition to the terms of the Contract
or extension of time made by the Owner.

Whenever principal shall be, and declared by Obligee to be in default under the Contract, the
Surety may promptly remedy the default, or shall promptly

1. Complete the Contract in accordance with its terms and conditions, or
2. Obtain a bid or bids for completing the Contract in accordance with its terms and

Manhole Rehabilitation Services 2010

conditions, and upon determination by Surety of the lowest responsible bidder, or, if the Obligee elects, upon determination by the Obligee and Surety jointly of the lowest responsible bidder, arrange for a contract between such bidder and Obligee, and make available as work progresses (even though there should be a default or a succession of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the contract price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term "balance of the contract price", as used in this paragraph, shall mean the total amount payable by the Obligee to principal under the Contract and any amendments thereto, less the amount properly paid by Obligee to principal.

It is hereby expressly further understood and agreed that this Bond is also given and made against defective material and workmanship in the said work covered by the said Contract, provided, however, that no suit, action or proceeding, by reason of any defect whatever, shall be brought upon this Bond after one (1) year following the date of final acceptance of the completed project by the Owner.

Manhole Rehabilitation Services 2010

No right of action shall accrue on this bond to or for the use of any person or corporation other than the Obligee named herein or the heirs, executors, administrators or successors of Obligee.

SIGNED AND SEALED this _____ day of _____, 20____.

PRINCIPAL

BY _____

ATTEST:

SURETY

BY _____

ATTORNEY-IN-FACT

COUNTERSIGNED:

Resident Virginia Agent of Surety
(if original Agent is non-resident)

Submit with Power of Attorney

APPROVED AS
TO FORM

City Attorney

Labor & Material Bond # _____

LABOR AND MATERIAL PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: That we, the undersigned, _____
_____, as Principal, and
_____, as
Surety, acknowledge ourselves held and firmly bound unto the City of Newport News, Virginia
as Obligee in the amount of _____ Dollars (_____)
for the payment of which, well and truly to be made, we hereby jointly and severally bind
ourselves, our heirs, executors, administrators, successors and assigns.

WHEREAS, the said _____ did, on the ____ day of
_____, 20____, enter into a contract with the City of Newport News, Virginia, for
the **Manhole Rehabilitation Services 2010, IFB#2010-6470-2012** which said contract is by
reference made a part hereof, as fully and is hereinafter referred to as the Contract.

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

1. A claimant is defined as one having a direct contract with the Principal or with a subcontractor of the Principal for labor, material, or both, used or reasonably required for use in the performance of the Contract, labor and material being construed to also include that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental of equipment directly applicable to the Contract.
2. The above-named Principal and Surety hereby jointly and severally agree with the

City that every claimant as herein defined, who has not been paid in full before the expiration of a period ninety (90) days after the date on which the last of such claimant's work or labor was done or performed, or materials were furnished by such claimant, may sue on this bond for such sum or sums as may be justly due claimant, and have execution thereon. The City shall not be liable for the payment of any costs or expenses of any such suit.

3. No suit or action shall be commenced hereunder by any claimant:
 - A. Unless claimant, other than one having a direct contract with the Principal, shall have given written notice of the following: The Principal, the City, and the Surety above named, within ninety (90) days after such claimant did or performed the last of the work or labor, or furnished the last of the materials for which said claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished or for whom the work or labor was done or performed.

Such notice shall be served by mailing the same by registered or certified mail, postage prepaid, in an envelope addressed to the Principal, City and Surety, at any place where an office is regularly maintained for the transaction of business, or served in any manner in which legal process may be served in the state in which the aforesaid project is located, save that such service need not be made by a public officer.

Manhole Rehabilitation Services 2010

- B. After the expiration of one (1) year following the date on which Principal ceased work on said Contract, it being understood, however, that if any limitation embodied in this Bond is prohibited by any law controlling the construction hereof such limitation shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law.
 - C. Other than in a state court of competent jurisdiction in and for the county or other political subdivision of the state in which the Project, or any part thereof, is situated, or in the United States District Court for the district in which the Project, or any part thereof, is situated, and not elsewhere.
4. The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment by Surety of mechanics' liens, which may be filed of record against said improvement, whether or not claim for the amount of such lien be presented under and against this bond.

Manhole Rehabilitation Services 2010

SIGNED AND SEALED this _____ day of _____, 20_____.

Contractor

BY _____

ATTEST:

Surety

BY _____

ATTORNEY-IN-FACT

Resident Virginia Agent of Surety
(if original agent is non-resident)

Submit with Power of Attorney

APPROVED AS
TO FORM

City Attorney

Section C

GENERAL CONDITIONS

DAMAGE TO EXISTING UTILITIES:

- A. Existing utilities shown on the drawings: It shall be the Contractor's responsibility to conduct the work in such a manner as to avoid damage to or interference with any utilities services shown on the drawings. If such damage, interference, or interruption of service shall occur as a result of his work, then it shall be the Contractor's responsibility to promptly notify the Engineer of the occurrence and to repair or correct it to the satisfaction of the Engineer and the Owner of the utility.

- B. Existing utilities not shown on the drawings: It shall be the Contractor's responsibility to exercise all reasonable precaution in the performance of the work to avoid damage to or interference with any utilities services, even though not shown on the drawings. If such damage, interference, or interruption of service shall occur as the result of this work, then the Contractor's responsibility will be the same as stipulated in Paragraph A. Shown above.

SITE RESTORATION:

All surfaces 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, except as otherwise specified herein.

PROTECTION OF PROPERTY:

The Contractor shall protect all private property adjacent to the project limits and shall restore any property damaged during construction. The Contractor shall also maintain access to all property and provide temporary drives and/or walks as directed by the Engineer. No specific payment shall be made for this work, as it shall be included in other pay items as incidental work.

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.

AUTHORITY OF THE ENGINEER:

The Contractor shall perform all of the work specified herein under the general direction and to entire satisfaction, approval, and acceptance of the Engineer. The Engineer shall decide all questions relating to measurements of quantities, the character of the work performed and as to whether the rate of progress will insure completion within the contract time. All questions as to the meaning of the specifications will be decided by the Engineer and he shall have the authority to stop the work if necessary to insure its proper execution.

SPECIAL CONSTRUCTION CONDITIONS

A. Traffic Control

The Contractor shall comply with the “Special Traffic Conditions” noted on the plans or in the specifications.

B. Construction in Vicinity of Existing Water Lines and Other Utilities

Contractor to field verify actual location of existing water lines and/or any other utilities prior to commencing construction in its vicinity. Contractor is to exercise caution during construction around such mains, ensuring not to disturb the bedding of any existing water lines. The Contractor shall be responsible for repairing or replacing any damaged utilities as directed by the Engineer and without any additional cost to the City.

C. Staging Area

The Contractor shall be responsible for obtaining staging area for the project. The City is under no obligation to provide such an area.

D. Work on Sunday and City Holiday

1. When the contractor chooses to work on Sunday or any City Holiday, the contractor shall be required to pay the City for project inspection services for those days. The payment rate is established at \$75.00 per inspector, per hour, for each hour the inspector(s) provides the inspection service, which shall include travel time to and from the site. The contractor shall submit with each monthly invoice for the specific billing period a check payable to the City of Newport News in an amount equivalent to the hours of inspection service times the above rate. There shall be a minimum service time requirement of two (2) hours per inspector.
2. The Contractor shall request approval from the City of any scheduled work on Sundays or Holidays a minimum of 72 hours prior to the scheduled work date. Approval by the Director of the Department of Engineering or his representative is required. There is no obligation or requirement that the City provide this service, and the City cannot guarantee the availability of an inspector.

Note: This requirement may not apply to contracts where work hour restrictions established by the City will require Sunday or Holiday work)

Authority of the Engineer:

The Contractor shall perform all of the work specified herein under the general direction and to entire satisfaction, approval, and acceptance of the Engineer. The Engineer shall decide all questions relating to measurements of quantities, the character of the work performed and as to whether the rate of progress will insure completion within the contract time. All questions as to the meaning of the specifications will be decided by the Engineer, and he shall have the authority to stop the work if necessary to insure its proper execution.

E. Disposal of Material from Manhole Cleaning Operations:

The Contractor shall be responsible for the storage and disposal of all material cleaned from the project sanitary sewer manholes. Storage and disposal of such material shall be incidental to manhole rehabilitation and shall be in accordance with applicable State and Federal Regulations. No attempt has been made to quantify the extent or nature of material to be cleaned from manholes. The City is under no obligation to provide a disposal site.

F. Care of Existing Utilities:

A thorough attempt has been made to show the type, size, locations, and number of all utility mains and services on the plans, however, no guarantee is made to the true type, size, locations, and number of such mains and services and shall be investigated and verified in the field by the Contractor before starting work in the area. The Contractor shall notify all owners of utilities, based on his work schedule, to facilitate the relocation of all necessary utilities. Coordination of construction work schedule with utility companies i.e. Virginia Power, Virginia Natural Gas and Newport News Water Works shall be worked out in advance in order to minimize delays. The Contractor shall be held responsible for any damages to, and for maintenance and protection of, existing utilities and structure.

G. Damage to Existing Utilities:

1. Existing utilities shown on the drawings: It shall be the Contractor's responsibility to conduct the work in such a manner as to avoid damage to or interference with any utilities services shown on the drawings. If such damage, interference, or interruption of service shall occur as a result of his work, then it shall be the Contractor's responsibility to promptly notify the Engineer of the occurrence and to repair or correct it to the satisfaction of the Engineer and the Owner of the utility.
2. Existing utilities not shown on the drawings: It shall be the Contractor's responsibility to exercise all reasonable precaution in the performance of the work to avoid damage to or interference with any utilities services, even though not shown on the drawings. If such damage, interference, or interruption of service shall occur as the result of this work, then the Contractor's responsibility will be the same as stipulated in Paragraph 1 shown above.

H. Site Restoration:

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. The excavated areas shown on the plans shall be fertilized, and seeded to match existing adjoining areas.

I. Maintaining Drainage Facilities:

The Contractor shall be responsible for maintaining adequate drainage to the satisfaction of the Engineer during construction at no additional cost to the City.

J. Protection of Property:

The Contractor shall protect all private property adjacent to the project limits and shall restore any property damaged during construction. The Contractor shall also maintain access to all property and provide temporary drives and/or walks as directed by the Engineer. No specific payment shall be made for this work, as it shall be included in other pay items as incidental work.

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.

K. Private and Public Utilities:

At points where the Contractor's operations are adjacent to any public or private utility, damage to which might result in considerable expense, loss or inconvenience, work shall not commence until all arrangements necessary for the protection thereof have been completed.

The Contractor shall cooperate with the Owners of any underground or overhead utility lines in their removal and adjustment operations in order that these operations may progress in a reasonable manner and that duplication of adjustment work may be reduced to a minimum, and that services rendered by those parties will not be unnecessarily interrupted.

In the event of interruption to any utility service as a result of accidental breakage, or as a result of being exposed or unsupported, the Contractor shall promptly notify the proper authority and shall cooperate with said authority in the restoration of service. No work shall be undertaken around fire hydrants until provisions for continued service have been approved by the local fire authority. The Contractor shall be responsible for any damage to utilities due to neglect or due to his methods of performing the work and shall be responsible for the cost of restoring the utility to satisfactory service.

L. Grading and Seeding Disturbed-Turf Areas:

All disturbed areas within the limits of construction and adjacent areas disturbed by the Contractor or his operations shall be restored in accordance with *Section 2300* of the Department of Engineering Standard Specifications. Hydroseeding will be permitted subject to approval of the Engineer.

SECTION 02465 – BYPASS PUMPING SYSTEM

PART 1 – GENERAL

1.1 DESCRIPTION

A. The Contractor is required to furnish all materials, labor, equipment, power, maintenance, etc. to implement a temporary bypass pumping system for the purpose of diverting the existing sewage flow around the work area for the time that is required to perform the work.

1.2 QUALITY ASSURANCES

- A. The design, installation and operation of the temporary bypass pumping system shall be the Contractor's responsibility. The bypass system shall meet the requirements of all codes and regulatory agencies having jurisdiction.
- B. The temporary bypass pumping system will be required to convey estimated peak flows of the sewers being bypassed. The primary pump(s) shall be sized to convey 100% of the peak flows. The standby pump(s) shall be sized to convey 100% of the peak flows.
- C. Spillage or blockage occurring as a result of the Contractor's operations shall be his sole responsibility, and shall be remedied immediately. Should a spill occur, the Contractor shall promptly notify the City of Newport News, and other proper authorities.

1.3 JOB CONDITIONS

- A. The Contractor will provide all necessary means to safely convey the normal flows past the work area. The Contractor will not be permitted to stop or impede the main or any sideline flows under any circumstances, except for an individual service lateral being replaced.
- B. The Contractor must give notice by bypassing operations 48 hours prior to start, to the City of Newport News, Department of Engineering (Mr. Stephen Williams (757) 926-8611) and the Department of Public Works' Wastewater Division (Mr. Steve Land (757) 269-2752).

1.04 SUBMITTALS

- A. The Contractor shall prepare a specific detailed description of the proposed bypass

pumping system for each bypass location; the submittal shall include a written description of the plan and shall address the quantity, capacity, and location of all pumping equipment. All pumping equipment submitted shall include the pump's performance curves, the size, type and routing of all suction and discharge pipes and the means of connecting the system shall also be included.

PART 2 – PRODUCTS

2.01 PUMPS

- A. The pumps and drives shall be rated for continuous duty and shall be capable of pumping the specified flow range without surging, cavitation, or vibration. The pump shall not overload the power system at any point on the pump-operating curve. The pump shall be suitable for use with raw unscreened sewage. The pump shall be self-contained unit, designed for temporary use.
- B. All pumps used shall be fully automatic self priming units that do not require the use of foot-valves or vacuum pumps in the priming system or they can be submersible pumps. All pumps used must be constructed to allow dry running for long periods of time to accommodate the cyclical nature of effluent flows.
- C. All engines shall include noise control devices in good condition, and critical (hospital noise rated) mufflers.

2.02 PIPING

- A. In order to prevent the accidental spillage of flows, all discharge systems must be constructed of rigid pipe with positive, leak-proof connections.
- B. Direct flow from the discharge piping directly into the sewer main in the downstream direction.
- C. Provide thrust restrained as necessary.

2.03 TEMPORARY PLUGS

- A. Plugs shall be inflatable plugs constructed of specially treated industrial fabric and reinforced neoprene. Plug shall be equipped with steel pull rings and aluminum and clamps.
- B. All plugs shall be firmly attached to a stationary object at ground level to a steel cable in order to prevent loss of plug in the pipeline.

PART 3 – EXECUTION

3.01 TEMPORARY INSTALLATION

- A. Installation shall include furnishing oil, fuel, grease, lubricants, tools and spare parts that

may be required to maintain the operation of the pump throughout the construction period, as recommended by the manufacturer. The Contractor shall be solely responsible for maintaining the temporary bypass pumps and appurtenances. At the end of the construction period, the Contractor shall remove the pump and appurtenances.

- B. The pumps shall be installed for temporary use only and shall be removed by the Contractor prior to completion of the contract. The Contractor shall be responsible for proper operation of the complete pumping system, which includes pump, driver, controls and appropriate pipe connections, during the construction period.
- C. Adequate hoisting equipment for each pump and accessories shall be maintained on the site.
- D. The Contractor shall insure that the temporary bypass pumping system is properly maintained and a responsible operator shall be on hand at all times when pumps are operating.
- E. Provide a complete standby pump and pump power system located on the construction site.
- F. Where the discharge piping crosses roads or driveways, the Contractor shall install the piping in a shallow trench so the top of pipe is at least 1 inch below grade. Protect the pipe from vehicular damage through the use of steel plates suitable for highway loadings. The Contractor may not close roads or driveways solely for the purpose of protecting discharge piping. Where above ground piping presents a tripping hazard; the Contractor shall provide adequate warning devices and construct pedestrian crossing ramps or detour routes.
- G. The bypass pumping systems may not exceed the rated capacity of the receiving sewers, unless the sewers are currently overloaded. If the receiving sewers are currently overloaded, the bypass pumping systems may not exceed the current hydraulic loading of the receiving sewers.

SPECIAL TRAFFIC CONDITIONS

The following traffic control requirements shall apply:

1. Section 1004.13 "Traffic Control" of our current Standard Specifications (as amended May 2, 1991) shall be applicable on this project. In addition, fluorescent prismatic lens sheeting signs (diamond grade) shall be used in work zones and other work zone improvements. The use of orange encapsulated lens sheeting for construction warning signs is no longer allowed.
2. The Virginia Work Area Protection Manual (current edition) as well as the Manual on Uniform Traffic Control Devices (current edition) shall be used on this project. All cones (Group 1) used on this project shall be 36" in height and Group 2 channelization devices (drums) shall consist of 6" retro-reflective sheeting.
3. If assistance from Traffic Operations for such items as "No Parking" signs or regulatory control sign relocation becomes necessary, the Contractor shall give at least forty-eight hours (weekdays) notice in advance. Contact Jerry Pickett at 269-2463, weekdays 7:00 A.M. to 4:00 P.M. for these services.
4. The Contractor shall control the stockpiling of materials and/or spoils so as not to prohibit access to residences or businesses. Lighted, reflectorized plastic drums shall also be provided around any and all materials and/or hazardous locations within the project limits and within the City's right-of-way.
5. Haul routes for spoil removal and/or needed materials (fill, asphalt, rip rap, etc.) shall be requested in writing (including map) and shall be approved by the Engineer.
6. Residents shall be notified in person and/or in writing when access to their homes will be temporarily interrupted. Access to businesses and multi-family residential developments shall be maintained at all times; where only one driveway access is available, the utility crossing shall be made one-half the driveway width at a time.
7. The Contractor shall submit a traffic control plan to the Transportation Services Division for approval at the preconstruction meeting. The following traffic control typical set-ups from the Virginia Work Area Protection Manual are approved for use on this project:
 - A) Figure TTC-3.0 – Stationary on a Shoulder
 - B) Figure TTC-14.1 – Outside Lane Closure on 4-Lane Roadway
 - C) Figure TTC-15.1 – Inside Lane Closure on 4-Lane Roadway
 - D) Figure TTC-20.1 – Flagging Operation on Two-Lane Roadway
8. The City reserves the right to require modifications to the traffic control sign plan and/or traffic control material placements in the field as the field needs or conditions change.
9. Flagging operations are required for closure of a lane on a two-way roadway unless otherwise approved. Exceptions are typically granted on low volume "local" streets with less than 500 vehicles per day. Certified flaggers shall be properly attired as per Virginia Work Area Protection Manual, and shall use stop/slow paddles instead of flags.
10. All project personnel such as rakers, inspectors, foremen, etc. who are in the roadway shall

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wear safety vests and white hard hats when paving work is in progress.

11. Work Hour Restrictions: Listed below are the work hour restriction designations:

“A” – No Work Hour Restrictions

“B” – 8:00 A.M. to 3:00 P.M.; 7:00 P.M. to 6:00 A.M.

“C” – 9:00 P.M. to 6:00 A.M.; Sunday Work May Be Required

No street closures are to be considered for this project.

12. Open manholes/valve boxes shall not be left unattended or remain open when work zone traffic control plan set-up is not in-place. Work zones shall be clearly delineated and specific hazard areas are to be encircled with reflectorized plastic drums in lieu of Type I or Type II barricades which are not approved for use in the street.

STRUCTURAL CEMENTITIOUS LINER
PERMACAST® BY AP/M PERMAFORM®

- 1 Intent:** It is the intent of this specification to provide minimum standards for materials and methods for waterproofing, sealing, structural reinforcement and corrosion protection of existing manholes, wet wells and similar underground structures. This specification provides flexibility in design by offering technologies available for repairing the various defects found in sanitary sewer structures from minor leaks to complete structural failure.
- 2 Applicability:** These repair systems may be engineered for the depth, diameter, shape, traffic loading, groundwater pressures and condition of each manhole as a system of products, methods and certified applicators.

3 Referenced Standards

- 3.1 ASTM C-109 Standard Test Method for Compressive Strength of Hydraulic Cement Mortars
- 3.2 ASTM C-157 Modified Standard Test Method for Length Change of Hardened Hydraulic Cement Mortar and Concrete
- 3.3 ASTM C-293 Standard Test Method for Flexural Strength of Concrete (Using Simple Beam with Center-Point Loading)
- 3.4 ASTM C-309 Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete
- 3.5 ASTM C-403 Standard Test Method for Time of Setting of Concrete Mixtures by Penetration Resistance
- 3.6 ASTM C-469 Standard Test Method for Static Modulus of Elasticity and Poisson's Ratio of Concrete in Compression
- 3.7 ASTM C-496 Standard Test Method for Splitting Tensile Strength of Cylindrical Concrete Specimens
- 3.8 ASTM C-882 Standard Test Method for Bond Strength of Epoxy Systems Used with Concrete by Slant Shear
- 3.9 ASTM C-1090 Standard Test Method for Measuring Changes in Height of Cylindrical Specimens from Hydraulic-Cement Grout
- 3.10 ASTM C-1202 (AASHTO T 277 Equivalent) Electrical Indication of Concrete's Ability to Resist Chloride Ion Penetration
- 3.11 ASTM F-2551 Standard Practices for Installing a Protective Cement Liner System in Sanitary Sewer Manholes

4 Infiltration Elimination

- 4.1 Leak Plugging and Patching Material

4.1.1 Permacast-Plug™

4.1.1.1 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.

4.1.1.2 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™ an effective patching material for use in manholes, wet wells, lift stations and other structures with leakage. Permacast-Plug™ will not permanently seal running water leaks that are caused by either thermal or structural movement.

4.1.2 Permacast-Patch™

4.1.2.1 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 high strength and a tenacious bond.

4.1.2.2 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.

4.1.3 MS-10,000 UL™

4.1.3.1 PERMACAST® MS-10,000 UL is designed to provide a thick base layer that fills mortar joints, cracks and voids in brick and masonry manholes. The base layer 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.

- 4.2 Chemical Grout: All chemical sealing materials needed for severe leaks in the performance of work specified shall conform to ASTM F 2304 latest edition Standard Practice for Rehabilitation of Sewers Using Chemical Grouting.

5 Inflow Control

5.1 Frame & Cover: See other section for watertight covers and inflow inserts.

- 5.2 Frame-Chimney Seal: See other sections for Manufactured and Applied Chimney Seals and Frame-Chimney Plastic Insert.

6 Structural Cementitious Liner

6.1 MS-10,000 Structural Liner

6.1.1 The material is an ultra high strength, high build, corrosion resistant mortar, based on silica modified 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 gap 1/2 " and wider. This mortar will harden quickly without any 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	3,000 psi
28 days	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

6.2 MS-10,000 with Con^{mic}Shield[®]

6.2.1 The material is unchanged in physical properties by adding Con^{mic}Shield[®].

6.2.2 Con^{mic}Shield[®] is a liquid admixture for concrete and mortars for the prevention of MIC common to concrete pipe, manholes and similar structures in municipal sewer environments. As an additive, it permeates the PERMACAST[®] mortar during the mixing phase and molecularly bonds to the cement particles to create an environment incompatible to the growth of harmful bacteria.

6.2.2.1 Con^{mic}Shield[®] 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.

6.2.2.2 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 MIC. Repair mortars with Con^{mic}Shield[®] subjected to concentrations of Thiobacillus bacteria in the laboratory have shown complete neutralization in just 24 hours.

6.3 Design Criteria

- 6.3.1 Consult Tables 1 and 2 for the appropriate thickness of the cementitious liner.
- 6.3.2 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.

Refer to ISU Design Guide

Table 1: Thickness Design of PERMACAST® Liner for Traffic Loads

Diameter (in.)	Depth (ft.)	Light Traffic			Heavy Traffic		
		12 hours	24 hours	7 days	12 hours	24 hours	7 days
		Thickne ss (in.)	Thickne ss (in.)	Thickne ss (in.)	Thickne ss (in.)	Thickne ss (in.)	Thickne ss (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 2: Thickness Design of PERMACAST® Liner for Hydrostatic Loads

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
	Thickne ss (in.)	Thickne ss (in.)	Thickne ss (in.)	Thickne ss (in.)	Thickne ss (in.)	Thickne ss (in.)	Thickne ss (in.)	Thickne ss (in.)	Thickne ss (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

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

6.4 Cementitious Structural Liner Installation

6.4.1 Design Strength/Thickness Ratio: Many factors impact optimum design thickness and these include: the condition of the existing manhole, its material composition, depth, degree of ovality, groundwater pressure, and traffic loads. The design engineer shall determine the most appropriate engineering parameters 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.

6.4.2 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 sheets, and fill voids and overhangs with patching material. Apply a Con^{mic}Shield® rinse to kill any remaining bacteria.

6.4.3 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.

6.4.4 Mixing

6.4.4.1 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.

6.4.4.2 Con^{mic}Shield® admixture: The liner material is mixed with just the addition of clean water and Con^{mic}Shield®, in the prescribed amounts for Microbiologically induced corrosion (MIC) protection. No other additives shall be used at the site without prior approval.

6.4.5 Application

6.4.5.1 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 resumed.

6.4.5.2 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.

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

6.4.6 Hot Weather Application (Above 80° F)

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

6.4.6.2 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.

6.4.6.3 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.

6.4.6.4 Proper curing is always required and is particularly important in hot weather. Refer to Section 8.5.7 on curing.

6.4.7 Cold Weather Application (Above 45° F):

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

6.4.7.2 Low substrate and ambient temperatures slow down rate of set and strength development. At temperatures below 45° F, warm the material, water, and substrate. Properly ventilate the area when heating. Protect the new liner from freezing.

6.4.8 Curing/Finishing: Avoid overly windy and arid curing conditions; use curing membranes per ASTM C-309: C-1315 to create the most optimal curing conditions possible. CS IDENTIFIER™ is used for identifying concrete and mortar structures containing Con^{mic}Shield® and also 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. If epoxy topcoats are to follow, CS IDENTIFIER™ should not be used. Only use products that will be compatible to enhance the epoxy bond.

7Submittals

7.1 All submittals shall conform to the requirements of the Contract document.

7.2 In addition, the following items may be required of the installer to be submitted to the engineer at the sole discretion of the engineer. This Contract shall not be considered complete until receipt and acceptance of the following:

7.2.1 Reference submittals

7.2.1.1 Contractor certification

7.2.1.2 Material certification

7.2.2 Product data

7.2.2.1 Patching and plugging material

7.2.2.2 Cementitious lining material

7.2.2.3 Cementitious lining with admixture

8Product Handling

8.1 Special handling is not required for PERMACAST® mortar. Normal precautions for “nuisance dust” shall be observed. Consult Material Safety Data Sheet for details.

- 8.2 Con^{mic}Shield® is non-toxic and contains no phenols, heavy metals or formaldehyde. It contains 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.
- 8.3 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.

9Quality Assurance and Acceptance

- 9.1 Two test cubes of the PERMACAST® material shall 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 the minimum specified thickness shall immediately receive additional material. Visual inspection should verify a leak-free, uniform appearance.

10Measurement for Payment:

- 10.1 Payment shall be made at the unit price per vertical or square foot of finished wall for each prescribed thickness.

SEWER MANHOLE INSITU REPLACEMENT, PERMAFORM® FORMED-IN-PLACE CONCRETE WITH EMBEDDED PLASTIC LINER

BY AP/M PERMAFORM®

- 1 Intent:** It is the intent of this specification to provide for the non-disruptive structural replacement of sewer manholes by the installation of a formed-in-

place, thick-wall, seamless concrete manhole within the existing manhole extending from the bench to the frame.

2 General: This method, PERMAFORM® utilizes an internal forming system for forming a new and structurally independent wall within the existing manhole conforming generally to the existing inside dimensions and shape. The new interior wall shall have a cross-sectional dimension of sufficient thickness to be structurally independent and allow for the maximum new inside diameter. It shall be constructed of high strength ready mixed concrete designed to impart certain desirable properties for municipal and industrial sewer collection systems. This procedure does not require interruption of sewer flows at the base or at elevated points of entry.

3 Reference specifications:

- 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-143 Standard Test Method for Slump of Hydraulic Cement Concrete
- 3.4 ASTM D-149 Standard Test Method for Dielectric Breakdown Voltage and Dielectric Strength of Solid Electrical Insulating Materials at Commercial Power Frequencies
- 3.5 NACE RP0274 High Voltage Electrical Inspection of Pipeline Coating Prior to Installation

4 Materials:

- 4.1 **Concrete:** The concrete shall be Type I/II Portland cement concrete with 5/8 inch minus coarse aggregate with fiber reinforcement and plasticizers producing an average compressive strength of 4,000 psi at full cure. (Other formulations and filler materials may be selected to meet specific needs.)
- 4.2 **Plastic liner:** When corrosive elements are present, a ribbed or studded plastic liner shall be anchored into the new interior wall during the procedure to create an impermeable barrier. The plastic liner shall be PVC, PE or other as best suited for the corrosion condition and compatibility with the pipe liner.

5 Manhole Acceptance: The new interior shall be inspected by the Contractor in the presence of the Owner's Representative to ensure its integrity. NACE RP0274 spark testing standard shall be used as prescribed for the material and thickness to detect cracks and thin spots in the entire interior. Any defects shall be promptly repaired and reinspected.

6 Submittals:

6.1 All submittals shall conform completely to the requirements of the Contract document.

6.2 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:

- A Reference submittals
 - a Contractor certification
 - b Material certification

- B Product data
 - a Design mix
 - b Plastic liner

7 Product handling: Special handling is not required.

8 Product installation:

8.1 **Preparation:** The Contractor shall employ adequate cleaning to remove loose material and debris from the manhole. Existing steps which might interfere with the erection of the forms shall be removed. Precautions shall be taken to prevent foreign material from entering the active lines. Infiltration which may adversely affect placement of the concrete shall be eliminated or reduced to an acceptable level.

8.2 **Equipment:** Segmented, stackable steel forms shall be bolted together in cylindrical and conical sections with either eccentric or concentric cones or flat top ceilings and conform generally to the interior shape of the existing manhole.

8.3 Installation procedure:

A Pipe extensions shall be placed through the new concrete wall at the base and at higher points of entry, such as drop inlets, to maintain flows during the procedure.

B The form shall be sized and erected to conform to the existing interior dimensions and shape. The space between the forms and the existing wall shall be of a sufficient thickness, usually 3 inches and no less than 1½ inches. The finished opening shall have a minimum diameter of 20 inches.

C The form shall be positioned, sealed and finished at the manhole base to ensure concrete does not enter the sewer.

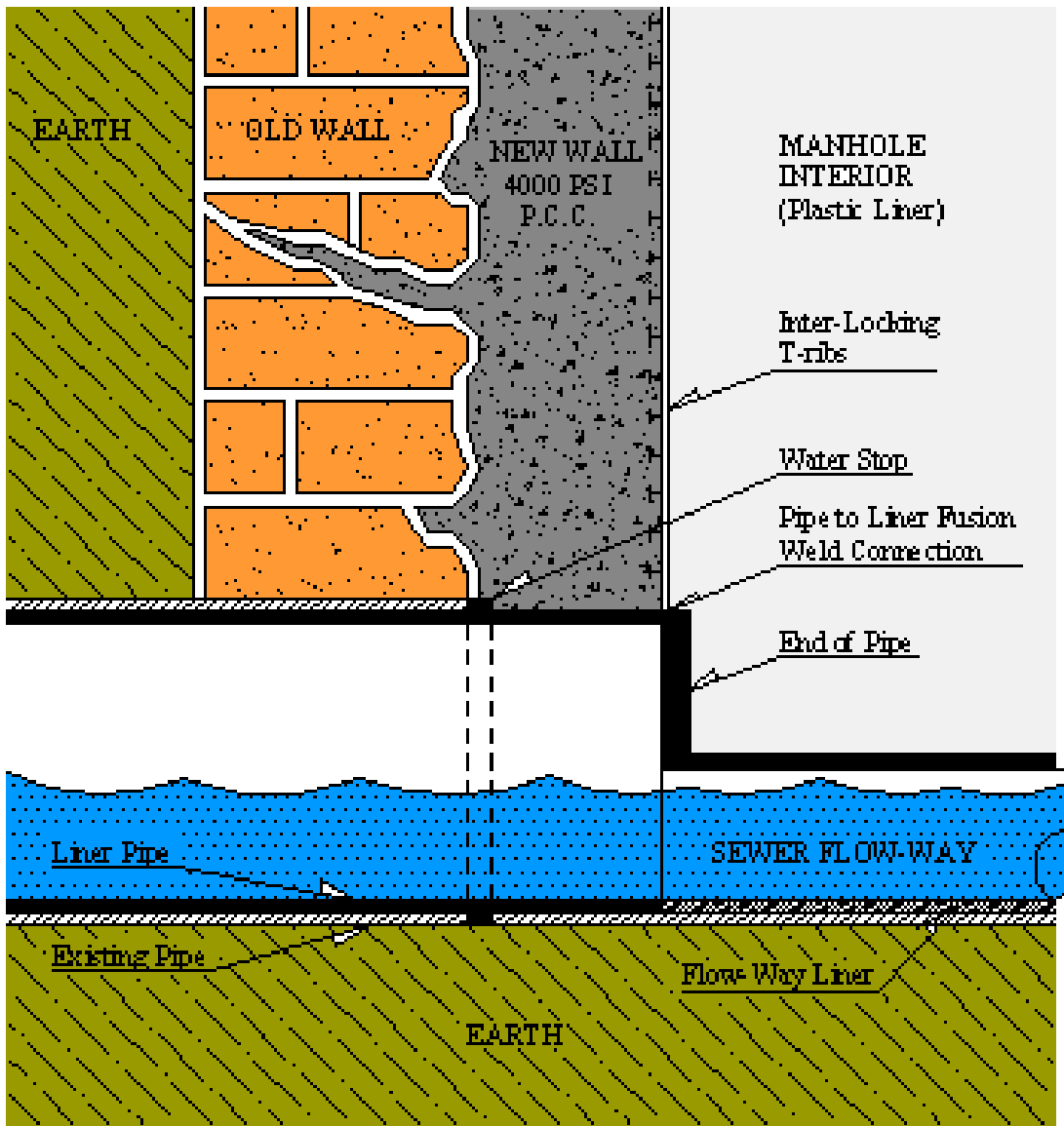
- D The concrete shall be carefully placed from the bottom up in such a manner as to prevent segregation of the cement and aggregate. The concrete shall be consolidated to fill all pockets, seams and cracks within the existing wall.
- E When the concrete has sufficiently cured to preclude slump or damage, the form shall be disassembled and removed.
- F If the plastic liner is employed, it shall be fitted securely to the exterior of the steel forms during their erection within the manhole. When the forms are removed, any joints in the liner shall be welded and tested.
- G The bench shall receive an overlay of concrete or MS-10,000 as directed by the engineer at a thickness of three inches at the wall tapering to 1/2" at the edge of the invert channel. When corrosion resistance is needed, the bench shall receive a coating of COR+GARD[®] 100% solids epoxy.

Prior to the overlay, a hydrophylic sealing strip shall be placed around the circumference of the bench where it meets the vertical wall and around all pipe penetrations to form a water stop.

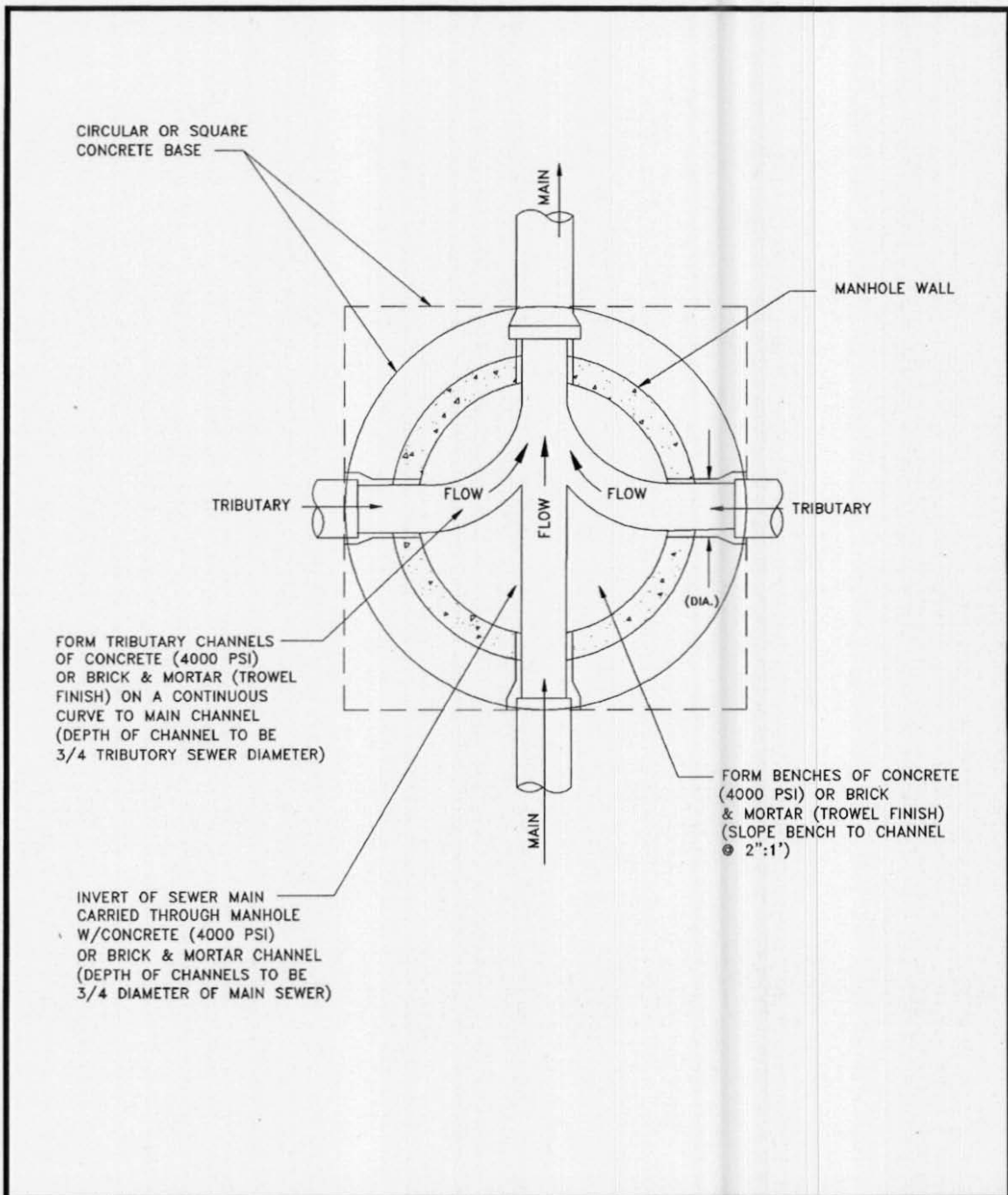
- H At the frame and cover, the plastic lining may be folded under the frame and reset with butyl mastic.
 - OR -
 - The plastic liner may extend 1/4" above the finished concrete at which time COR+GARD[®] epoxy is poured into such space against the plastic liner to seal any exposed concrete.
 - OR -
 - A flexible chimney seal may be attached or applied to the upper 3" portion of the plastic liner and the lower 3" portion of the prepared frame.
- I Sealing at all pipe penetration shall be accomplished using one of the following procedures:
 - a If the penetrating pipe is PVC and the liner is PVC or if the penetrating pipe is PE and the liner is PE, a fusion or extrude weld shall be made at their jointure with the new plastic lined wall.
 - b If the penetrating pipe is clay (VCP), cast iron, ductile iron or other material, a flat square section of the plastic liner approximately 1.5 times the pipe diameter shall be fitted over the penetrating pipe and fastened with a stainless steel hose clamp. Then it shall be folded back over the hose clamp and

flush with the plastic liner embedded into the wall. A weld strip or an extrude bead shall be welded along each edge of this flashing.

- 8.4 **Finish:** The resultant concrete interior wall shall be smooth and free of honeycomb and areas of segregated aggregate.
 - 8.5 **Cleanup:** Upon completion, the Contractor shall clean up the work site and properly dispose of any excess material or debris.
 - 8.6 **Safety:** The assembled internal manhole forms shall be bolted together to prevent shifting and shall have sufficient stiffness and strength to prevent collapse. All work shall be performed in strict accordance with the city and OSHA safety standards for confined space entry procedures.
- 9 Measurement for Payment:** Payment shall be made at the unit price per vertical foot of depth measuring from the invert to the frame or at lump sum per manhole.



Typical cross section of PERMAFORM[®] manhole with plastic liner and pipe seal



Approved August 1997

Mostafa A. Sabbah

MOSTAFA A. SABBABH, Ph.D., P.E.
 Director, Department of Engineering

MANHOLE
 INVERT SHAPING

Plate 4217