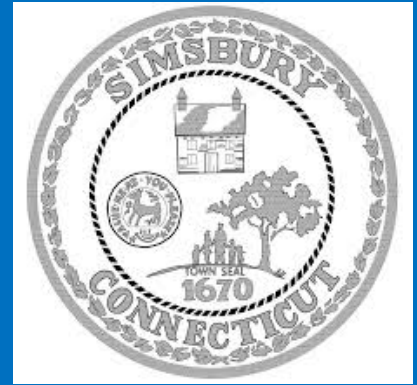


PROJECT MANUAL

ON-CALL SEWER REHABILITATION

INVITATION TO BID



**Town of
Simsbury,
Connecticut**



DPC Engineering, LLC
22 Northfield Road,
Longmeadow, MA 01106
P: 413-567-6310 F: 413-451-1030
www.DPCEngineering.com

...progressive solutions for municipal infrastructure

January 2020

**INVITATION TO BID
TOWN OF SIMSBURY
(EQUAL OPPORTUNITY EMPLOYER)**

Project: **ON-CALL SEWER REHABILITATION**

Project No. WPCA/DPW 2020-01

Sealed bids, endorsed "**On-Call Sewer Rehabilitation**" will be received at the office of the Finance Director, 933 Hopmeadow St., (Route 10/202), Simsbury, Connecticut, until **Thursday, February 06, 2020 at 11:00 a.m. (EST)** at which time they will be opened in public by the Director of Finance. Bids received after the time set for the opening may be rejected.

"NONDISCRIMINATION IN EMPLOYMENT"

Bidders on this work will be required to comply with the President's EXECUTIVE ORDER NO. 11246. The requirements for Bidders and Contractors under this Order are explained in the Specifications.

Included in this work is the installation of CIPP lining (8-inch through 36-inch) and manhole rehabilitation (exterior sealing, cementitious lining, epoxy lining). It is anticipated that this contract will be for a three-year period. The base Bid shall include unit pricing for year 1 (2020), and the Bid Form will include percent escalations to these unit prices for years 2 (2021) and 3 (2022).

Copies of the contract documents and specifications may be obtained from the Town Website at: <https://www.simsbury-ct.gov/finance/pages/public-bids-and-rfp>.

The right is reserved to reject any or all bids or to waive defects in same if it be deemed in the best interest of the Town of Simsbury. The Town of Simsbury is an Equal Opportunity Employer.

Thomas J Roy, P.E.
Director of Public Works

**SPECIFICATION FOR
ON-CALL SEWER REHABILITATION**

SIMSBURY, CONNECTICUT

January 10, 2020



PREPARED FOR: Town of Simsbury Water Pollution Control Authority
and Department of Public Works

PREPARED BY: Simsbury Water Pollution Control Authority

PROJECT NO: WPCA/DPW 2020-01

INDEX

ON-CALL SEWER REHABILITATION

1. Information for Bidders
2. Bidder's Proposal
 - a. Bidder's Legal Status Discloser
 - b. Non-collusion affidavit
 - c. Bidder's Qualifications Statement
3. Contract
4. Standard General Conditions
5. Special Provisions
6. Technical Specifications

INFORMATION FOR BIDDERS

1. Sealed BIDS will be received by the Director of Finance, for the Town of Simsbury (Herein called the "OWNER"), at the Town Office, 933 Hopmeadow St., Simsbury, CT 06070 until **11:00 a.m.** prevailing time on **Thursday, February 06, 2020**, and then publicly opened and read aloud.
2. Each BID must be submitted in a sealed envelope, addressed to the Director of Finance, designated on the outside as BID for: "**Town of Simsbury, On-Call Sewer Rehabilitation**".

Each envelope should also bear, on the outside, the name of the BIDDER and his address. If forwarded by mail, the sealed envelope containing the BID must be enclosed in another envelope addressed to the OWNER, at the above address.

3. Each BID must be made on attached Bid Forms and returned intact. BIDDERS will state, both in writing and in figures, the proposed price for each separate item of the work called for in the annexed blank, by which prices will be compared. If any price is omitted, the blank may be filled with the highest price named by any BIDDER for that item or the BID may be rejected. Only one copy of the BID form is required.
4. Any BID may be withdrawn prior to the above scheduled time for the opening of BIDS or authorized postponement thereof. Any BID received after the time and date specified shall not be considered. No BIDDER may withdraw a BID within 30 days after the actual date of the opening thereof. Should there be reasons why the contract cannot be awarded within the specified period, the time may be extended by mutual agreement between the OWNER and the BIDDER.
5. Each BID must be accompanied by a certified check or bank draft, payable to the Town of Simsbury, or a satisfactory BID Bond executed by the bidder and an acceptable surety, in an amount equal to five (5%) percent of the total Base Bid (Year 1 total). The certified check, bank draft, or Bid Bond shall be retained as a guarantee that if the proposal is accepted, the Bidder will post with the OWNER, a Performance, Labor and Material Bond in the full amount of the contract (Year 1 total), submit the required insurance certificates, and to sign a contract. Attorneys-in-fact who sign Bonds must file with each Bond a certified and effective dated copy of their Power of Attorney.
 - a. As soon as the Bid prices have been compared, the OWNER will return the BONDS of all except the three lowest responsible BIDDERS. When the agreement is executed, the bonds of the two remaining unsuccessful BIDDERS will be returned. The BID BOND of the successful BIDDER will be retained until the Performance, Labor, and Material Bond have been submitted and the required insurance certificates have been filed, after which it will be returned. If a BIDDER refuses to sign a contract or cannot obtain satisfactory Bonds, the Owner will retain his Bid security as liquidated damages, but not as a penalty.
 - b. The OWNER reserves the right to waive any informality in, or to reject any or all proposals or to accept any proposal which, in their opinion, is in the best interest of the Town of Simsbury whether or not such proposal is the lowest bid. The contractor must be responsible and qualified and have previously done work of a similar nature.

- c. The OWNER may make such investigations as he deems necessary to determine the ability of the BIDDER to perform the WORK, and the BIDDER shall furnish to the OWNER all such information and data for this purpose as the OWNER may request. The OWNER reserves the right to reject any BID if the evidence submitted by, or investigation of, such BIDDER fails to satisfy the OWNER that such BIDDER is properly qualified to carry out the obligations of the Agreement and to complete the WORK contemplated therein.
 - d. A conditional qualified Bid will not be accepted.
6. The Contractor to whom the contract shall be awarded must file the requisite Bonds, and certificate of INSURANCE as specified in the General Conditions, and execute said contract in triplicate within ten (10) calendar days from the date when NOTICE OF AWARD is delivered to the BIDDER, and in case of failure to do so, the person or firm will be considered to have abandoned the contract, and the CERTIFIED CHECK or BID BOND shall be forfeited to the Town of Simsbury.
 7. BIDDERS must satisfy themselves of the accuracy of the estimated quantities in the BID schedule by examination of the site and a review of the drawings and specifications including ADDENDA. After BIDS have been submitted, the BIDDER shall not assert that there was a misunderstanding concerning the quantities of WORK or of the nature of the WORK to be done. The failure of omission of any BIDDER to do any of the foregoing shall in no way relieve any BIDDER from obligation in respect to his BID.
 8. Should a BIDDER find any discrepancy or omission in the Plans or Specifications or is in doubt as to the meaning of any portion of them, he shall notify the ENGINEER, who will then instruct all BIDDERS in writing regarding the points in question.
 9. The OWNER, within ten (10) days of receipt of the requisite Bonds, acceptable Insurance Certificates and Agreement signed by the party to whom the Agreement was awarded, shall sign the Agreement and return to such party an executed duplicate of the Agreement. Should the OWNER not execute the Agreement within such period, the BIDDER may by WRITTEN NOTICE, withdraw his signed Agreement. Such notice of withdrawal shall be effective upon receipt of the notices by the OWNER.
 10. The NOTICE TO PROCEED shall be issued within ten (10) days of the execution of the Agreement by the OWNER. Should there be reasons why the NOTICE TO PROCEED cannot be issued within such period, the time may be extended by mutual agreement between the OWNER AND CONTRACTOR. If the NOTICE TO PROCEED has not been issued within the ten (10) day period or within the period mutually agreed upon, the CONTRACTOR may terminate the Agreement without further liability on the part of either party.
 11. The Contractor to whom this contract shall be awarded will be required to commence the work covered by this on-call contract as requested by the Owner, and complete the work in a timely manner.

12. The OWNER will be responsible for payment in accordance with the terms of the Contract. After completion of the project and acceptance by the Town, the Contractor shall submit an itemized final estimate. No later than 31 days after acceptance of the final estimate by the Town, the Town shall pay ninety-five (95%) percent of the Contract price. No later than six months after acceptance of the final estimate the Town will pay the five (5%) retained, unless in that time the materials or workmanship in the project shall have been found to be defective.
13. The CONTRACT DOCUMENTS contain the provisions required for the construction of the PROJECT. Information obtained from an officer, agent, or employee of the OWNER or any other person shall not affect the risks or obligations assumed by the CONTRACTOR or relieve him from fulfilling any of the conditions of the Contract.
14. Further, the BIDDER agrees to abide by the requirements under Executive Order No. 11246, as amended, including specifically the provisions of the equal opportunity clause set forth in the SUPPLEMENTAL GENERAL CONDITIONS.
15. The LOW BIDDER shall supply the names and addresses of major material SUPPLIERS and SUBCONTRACTORS when requested to do so by the OWNER.
16. The BIDDER'S attention is directed to the fact that all applicable Federal and State law, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the contract throughout, and they will be deemed to be included in the contract the same as though herein written out in full.
17. No amount shall be included in the BID for Connecticut State Sales Tax or for Federal Excise Tax.

BIDDER'S PROPOSAL

Place _____

Date _____

TO: Director of Finance
933 Hopmeadow Street
Simsbury, Connecticut 06070

Sir:

1. Proposal of _____

(hereinafter called BIDDER), organized and existing under the laws of the State of _____

doing business as _____

In compliance with your Invitation to Bid, dated **January 10, 2020**, Bidder hereby proposes to perform all work for the construction of **On-Call Sewer Rehabilitation** in strict accordance with the CONTRACT DOCUMENTS, within the time set forth therein, and at the prices shown for each bid item on the Bid Schedule. Any total cost found inconsistent with the unit cost when the bids are examined will be deemed in error and corrected to agree with the unit cost which shall be considered correct.

2. The undersigned BIDDER does hereby declare and stipulate that this proposal is made in good faith, without collusion or connection with any other person or persons bidding for the same work; that no person or persons other than those named herein are interested in this proposal or in the contract proposed to be taken; that no person acting for or employed by the Town of Simsbury is directly interested therein, or in the supplies or works to which it relates, or in any portion of the profits thereof contrary to the ordinances of said Town and laws of the State of Connecticut; that it is made in pursuance of and subject to all the terms and conditions of the Notice and Instructions to Bidders, the Construction Contract, the Detailed Specifications, and the Plans pertaining to the work to be done, all of which have been examined by the undersigned; that the site of the work has been examined; that it is understood that the town, its agents and employees are not to be in any manner held responsible for the accuracy of, or bound by, any estimates, subsurface information or plan of borings relative to the work and appearing on plans or in the foregoing notice; and that all such estimates, etc., are to be considered solely for the purpose of filling out and comparing the several proposals.

* Insert "a corporation", "a partnership", or "an individual" as applicable

3. The undersigned further agrees, in case of a corporation or fictitious trade name, that an acceptable certificate will be filed showing the proper officer or person authorized to sign said contract.

4. And the undersigned agrees to furnish satisfactory bonds and insurance, and to execute within ten (10) days after notice of the award, a formal contract with the Town of Simsbury, for the fulfillment of this proposal, and it is agreed that in case of failure on the part of the undersigned to do so, the certified check or bid bond deposited herewith shall be forfeited to the Town of Simsbury as liquidated damages for such failure.

Enclosed herewith find Certified Check, or Bid Bond in amount of _____

_____ Dollars (\$ _____) made payable to the Town of Simsbury as a proposal guarantee which it is understood will be forfeited in the event the Form of Contract is not executed, if awarded to the undersigned.

5. The undersigned BIDDER agrees to abide by the requirements of EXECUTIVE ORDER NO. 11246, as amended.
6. All the various phases of work enumerated in the Detailed Specifications with their individual jobs and overhead, whether specifically mentioned, included by implication or appurtenant thereto, are to be performed by the BIDDER under one of the items listed in the Bid Schedule, irrespective of whether it is named in said list.
7. Payment for work performed will be in accordance with the Bid Schedule, subject to changes as provided for in the Construction Contract. The total of the Bid is for comparison of proposals only. The Unit Prices, as applied to the quantities of work actually completed, will govern for actual payment. The Bidder acknowledges that the unit price will be applied and the final quantities may increase or decrease.
8. The Contractor shall commence the work covered by this on-call contract as requested by the Owner, and complete the work in a timely manner.

BIDDER _____

Seal, (if a corporation) BY _____

TITLE _____

BUSINESS ADDRESS _____

TELE. (_____) _____

If a Partnership, the partners are:

Full Name

Residence

| | |
|-------|-------|
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

If a Corporation, the officers are:

Full Name

Residence

| | | |
|-------|-----------|-------|
| _____ | President | _____ |
| _____ | Treasurer | _____ |
| _____ | Directors | _____ |
| _____ | | _____ |
| _____ | | _____ |

(I/We have)

*(I/We have not) previously performed work subject to the President's Executive Order Number 11246 or any preceding Executive Order.

Signed _____

*Cross out words not applicable

NOTE:

Bidder is reminded that in addition to completing and signing the above proposal and bid form, he/she shall also complete and return with the bid:

- Bid Schedule
- Bid Security
- Non-Collusion Affidavit
- Legal Status Form
- Statement of Bidder's Qualifications

BID SCHEDULE

(Estimated quantities are included for the purpose of comparison of bids only)

| Item Number | Item Name and Unit Bid Prices Written in Words and Figures | Estimated Quantity | Total Amount of Item (in figures) |
|---|--|--------------------|-----------------------------------|
| Cured-in-Place Pipe Lining, Gravity Main | | | |
| 1 | Cured-in-Place Pipe Lining (8-inch), per linear foot, the price of: _____ (\$ _____) | x 10,000 l.f. = | \$ _____ |
| 2 | Cured-in-Place Pipe Lining (10-inch), per linear foot, the price of: _____ (\$ _____) | x 500 l.f. = | \$ _____ |
| 3 | Cured-in-Place Pipe Lining (12-inch), per linear foot, the price of: _____ (\$ _____) | x 1,000 l.f. = | \$ _____ |
| 4 | Cured-in-Place Pipe Lining (greater than 12-inch, less than 18-inch), per linear foot, the price of: _____ (\$ _____) | x 1,000 l.f. = | \$ _____ |
| 5 | Cured-in-Place Pipe Lining (18-inch), per linear foot, the price of: _____ (\$ _____) | x 1,000 l.f. = | \$ _____ |
| 6 | Cured-in-Place Pipe Lining (24-inch), per linear foot, the price of: _____ (\$ _____) | x 500 l.f. = | \$ _____ |
| 7 | Cured-in-Place Pipe Lining (27-inch), per linear foot, the price of: _____ (\$ _____) | x 200 l.f. = | \$ _____ |

| Item Number | Item Name and Unit Bid Prices Written in Words and Figures | Estimated Quantity | Total Amount of Item (in figures) |
|-------------------------------|--|--------------------|-----------------------------------|
| 8 | Cured-in-Place Pipe Lining (30-inch), per linear foot, the price of: _____ (\$ _____) | x 200 l.f. = | \$ _____ |
| 9 | Cured-in-Place Pipe Lining (36-inch), per linear foot, the price of: _____ (\$ _____) | x 200 l.f. = | \$ _____ |
| Manhole Rehabilitation | | | |
| 10 | Exterior Chemical Sealing, per each, the price of: _____ (\$ _____) | x 400 each = | \$ _____ |
| 11 | Cementitious Lining (48-inch diameter), per each, the price of: _____ (\$ _____) | x 150 each = | \$ _____ |
| 12 | Cementitious Lining (48-inch diameter) Greater Than 5 V.F., per vertical foot, the price of: _____ (\$ _____) | x 500 v.f. = | \$ _____ |
| 13 | Cementitious Lining (60-inch diameter), per each, the price of: _____ (\$ _____) | x 150 each = | \$ _____ |
| 14 | Cementitious Lining (60-inch diameter) Greater Than 5 V.F., per vertical foot, the price of: _____ (\$ _____) | x 500 v.f. = | \$ _____ |

| Item Number | Item Name and Unit Bid Prices Written in Words and Figures | Estimated Quantity | Total Amount of Item (in figures) |
|-------------|---|--------------------|-----------------------------------|
| 15 | Epoxy Lining (48-inch diameter), per each, the price of: _____ (\$ _____) | x 75 each = | \$ _____ |
| 16 | Epoxy Lining (48-inch diameter) Greater Than 5 V.F., per vertical foot, the price of: _____ (\$ _____) | x 300 v.f. = | \$ _____ |
| 17 | Epoxy Lining (60-inch diameter), per each, the price of: _____ (\$ _____) | x 75 each = | \$ _____ |
| 18 | Epoxy Lining (60-inch diameter) Greater Than 5 V.F., per vertical foot, the price of: _____ (\$ _____) | x 300 v.f. = | \$ _____ |

TOTAL AMOUNT OF BID (base bid) – Year 1, Items 1 through 18

_____ dollars
(words)

(\$ _____)
(figures)

This Bid includes Addenda numbered _____.

Unit Price % Escalation for all Bid Items for Year 2 (2021) work: _____%.

Unit Price % Escalation for all Bid Items for Year 3 (2022) work: _____%.

Contract Award will be based on the base bid total for Year 1 from the lowest eligible bidder.

TOWN OF SIMSBURY, CONNECTICUT

BIDDER'S LEGAL STATUS DISCLOSURE

Please fully complete the applicable section below, attaching a separate sheet if you need additional space.

For purposes of this disclosure, "permanent place of business" means an office continuously maintained, occupied and used by the bidder's regular employees regularly in attendance to carry on the bidder's business in the bidder's own name. An office maintained, occupied and used by a bidder only for the duration of a contract will not be considered a permanent place of business. An office maintained, occupied and used by a person affiliated with a bidder will not be considered a bidder's permanent place of business.

IF A SOLELY OWNED BUSINESS:

Bidder's Full Legal Name _____

Mailing Address _____

Owner's Full Legal Name _____

Does the bidder have a "permanent place of business" in Connecticut, as defined above?

_____ Yes _____ No

If yes, please state the full street address (not a post office box) of that "permanent place of business."

IF A CORPORATION:

Bidder's Full Legal Name _____

Mailing Address _____

State in which Legally Organized _____

State Business ID # _____

Current Officers

President

Secretary

Chief Financial Officer

TOWN OF SIMSBURY

BIDDER'S NON-COLLUSION AFFIDAVIT

The undersigned bidder, having fully informed himself/itself regarding the accuracy of the statements made herein, certifies that:

- (1) the bid is genuine; it is not a collusive or sham bid;
- (2) the bidder developed the bid independently and submitted it without collusion with, and without any agreement, understanding, communication or planned common course of action with, any other person or entity designed to limit independent bidding or competition;
- (3) the bidder, its employees and agents have not communicated the contents of the bid to any person not an employee or agent of the bidder and will not communicate the bid to any such person prior to the official opening of the bid; and
- (4) no elected or appointed official or other officer or employee of the Town of Simsbury is directly or indirectly interested in the bidder's bid, or in the supplies, materials, equipment, work or labor to which it relates, or in any of the profits thereof.

The undersigned bidder further certifies that this statement is executed for the purpose of inducing the Town of Simsbury to consider its bid and make an award in accordance therewith.

Legal Name of Bidder

(signature)

Bidder's Representative, Duly Authorized

Name of Bidder's Authorized Representative

Title of Bidder's Authorized Representative

Date

Subscribed and sworn to before me this ____ day of _____, 20__.

Notary Public

STATEMENT OF BIDDER'S QUALIFICATIONS

All questions shall be answered and information given shall be clear and comprehensive. This statement shall be notarized. If additional room is required to answer questions, please attach additional sheet(s) with the supplemental information. The bidder's name shall appear on the top of the supplemental sheets to avoid confusion. The bidder may submit additional information as it deems necessary to enable the Town to judge the bidder's ability to perform the proposed Contract.

A complete statement of Bidders Qualifications shall be submitted for any Subcontractor that will be utilized to satisfy Item 13 of this Statement of Bidders Qualifications.

1. Bidder's full legal name:
2. Permanent main office address:
3. Contact person for this Invitation:
4. Phone and fax numbers and e-mail address of the contact person during normal business hours:
5. Date of organization:
6. Date of incorporation, if applicable:
7. Number of years bidder has been engaged in business under present firm or trade name:
8. Contracts on hand (dollar value, anticipated completion date):
9. General character or type of work performed by the bidder:
10. Has the bidder ever failed to complete any work awarded to it? If so, please explain in detail the circumstances:
11. Has the bidder ever defaulted on a contract? If so, please explain in detail the circumstances:

TOWN OF SIMSBURY
CONTRACT

THIS AGREEMENT, made this ___ day of _____ by and between THE TOWN OF SIMSBURY, 933 Hopmeadow Street, Simsbury, Connecticut hereinafter referred to as the OWNER and _____ with an address at _____ hereinafter referred to as the CONTRACTOR

WITNESSETH:

That for and in consideration of the mutual covenants and promises between the parties hereto, it is hereby agreed that:

1. The CONTRACTOR will furnish all of the materials and supplies, equipment, and labor and other services necessary in conformance with these contract documents for the construction and completion of the project described in general as follows: **On-Call Sewer Rehabilitation**, as defined in the Standard Instruction for Bidders.
2. COMPLETION OF WORK. The Contractor shall commence the work covered by this on-call contract as requested by the Owner, and complete the work in a timely manner.
3. CONTRACT SUM. The Owner shall pay the Contractor for the performance of said work the sum of \$_____, subject to additions or deductions provided herein in conformity with the bid schedule of prices.
4. The Contract Documents include the following:
 - (a) Notice and Instructions to Bidders dated _____
 - (b) Bidder's Proposal dated _____
 - (c) Notice of Award dated _____
 - (d) Contract
 - (e) General Conditions
 - (f) Supplemental General Conditions
 - (g) Plans prepared by:
 - (h) Technical Specifications prepared by DPC Engineering, LLC and issued by the

Town of Simsbury Department of Water Pollution

5. The OWNER will pay to the CONTRACTOR in the manner and at such times as set forth in the General Conditions and in such amounts as required by the Contract Documents.
6. This Contract shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns.

IN WITNESS WHEREOF, the parties hereto have executed, or caused to be executed by their duly authorized officials, this Contract in duplicate, on the date first above written.

OWNER:

Signed, Sealed and Delivered
in the presence of:

Town of Simsbury
BY: Maria E. Capriola
Town Manager

CONTRACTOR:

BY: _____

Printed Name: _____

Title: _____

PROJECT:

**Information Needed for
Communications on the Project**

Name of Company: _

Location of Company Office:

Street _

City/State _

Zip Code _

Mailing Address of Company Office (if different than

location): Street _

City/State _

Zip Code _

Phone No. of Company's Office (include area code)

Phone No. of Company's Project Office (if applicable) _ Company Official Responsible for this Project:

Name _

Title _

Phone No. _()_

Project Supervisor or Foreman:

Name _

Phone No. _ ()_

Person to be Contacted in Emergencies after Work Hours:

Name _ Phone

No. ()_

Person to be Contacted in Emergencies on Weekends and

Holidays: Name _____

Phone No. _()_

If any changes to the above information occur during the progress of the work, the Public Works Director shall be immediately notified.

Town of Simsbury

SUPPLEMENTAL CONTRACT SECTION

CODE OF ETHICS

Chapter 13 of the Code of Ordinances, the Simsbury Code of Ethics, is hereby incorporated by reference as if fully set forth, and is made a part of the Contract Documents. All Contractors shall sign the Acknowledgement Form.

TOWN OF SIMSBURY

**Acknowledgement Form
and**

Charter Section 1103 Code of the Town of Simsbury

ACKNOWLEDGEMENT FORM

I have read Section 1103 of the Charter of the Town of Simsbury, the Code of Ethics Ordinance, and the Guidelines issued thereunder. I understand my responsibilities as a Contractor retained by the Town of Simsbury, and I am in compliance with the Charter and the Code of Ethics. I have indicated in the space below any areas of conflict should they arise in matters before our board, commission, agency or department, and I agree to report any future conflicts under the provisions of Section 1103 of the Charter.

Areas of Exception

**CONFLICTS OF INTEREST
SECTION 1103**

CONFLICTS OF INTEREST. It is hereby declared to be the policy of the Town that any elected or appointed officer, any member of any board or commission or any employee of the Town who has a financial interest, direct or indirect, in any contract, transaction or decision of any officer or agent of the Town or any board or commission, shall disclose that interest to the Board of Selectmen, which shall record such disclosure upon the official record of its meetings. Such disclosure of a financial interest, direct or indirect, in any contract, transaction or decision of any officer or agent of the town or of any board or commission shall disqualify such elected or appointed official or such member of a board of commission or such town employee from participation in the awarding, assignment or discussion of said contract, transaction or decision. Violation by any such official, board or commission member or employee of the provisions of this section shall be grounds for his/her removal.

Signature

Name (Please Print)

Date

CONTRACTOR'S EXEMPT PURCHASE CERTIFICATE

I hereby certify, under penalties of perjury, that I am engaged in the performance of a construction contract on a project for the following named exempt agency or organization:

Town of Simsbury

Full Name of Agency of Organization

**933 Hopmeadow Street
Simsbury, CT. 06070**

Address of Same

That such agency is, to the best of my knowledge and belief, exempt from the Sales and Use Tax because it is a

Town

(Town, School, Fire or Police Department, Library etc.,
or other branch of State or Federal Government)

in accordance with Regulation No. 16 of Sales and Use Tax.

That this certificate is issued to cover all purchases of materials and supplies, designated by me, for use of the project referred to above.

Permit No. _ (if any) (signed) _ Contractor

Date: _

Place: _

 Firm Name

Address: _

GENERAL CONDITIONS

1. DEFINITIONS

- 1.1 Wherever used in the CONTRACT DOCUMENTS, The following terms shall have the meanings indicated which shall be applicable to both the singular and plural thereof.
- 1.2 ADDENDA - Written or Graphic Instruments issued prior to the execution of the Agreement which modify or interpret the Contract Documents, Drawings and Specifications, by additions, deletions, clarifications or corrections.
- 1.3 BID - The offer or proposal of the BIDDER submitted on the prescribed form setting forth the prices for the WORK to be performed.
- 1.4 BIDDER -Any person, firm, or corporation submitting a BID for the WORK.
- 1.5 BONDS - Bid, Performance, and Payment Bonds and other instruments of security, furnished by the CONTRACTOR in accordance with the CONTRACT DOCUMENTS.
- 1.6 CHANGE ORDER - A written order to the CONTRACTOR authorizing an addition, deletion, or revision in the WORK within the general scope of the CONTRACT TIME.
- 1.7 CONTRACT DOCUMENTS - The contract including Advertisement for Bids, information for Bidders, BID, Bid Bond, Agreement, Payment Bond, Performance Bond, NOTICE OF AWARD, NOTICE TO PROCEED, CHANGE ORDER, DRAWINGS, SPECIFICATIONS, AND ADDENDA.
- 1.8 CONTRACT PRICE - The total monies payable to the CONTRACTOR under the terms and conditions of the CONTRACT DOCUMENTS.
- 1.9 CONTRACT TIME - The number of calendar days stated in the CONTRACT DOCUMENTS for the completion of the WORK.
- 1.10 CONTRACTOR - The person, firm, or corporation with whom the OWNER has executed the Agreement.
- 1.11 DRAWINGS - The part of the CONTRACT DOCUMENTS which show the characteristics and scope of the WORK to be performed and which have been prepared or approved by the ENGINEER.
- 1.12 ENGINEER - The Director of Public Works for the Town of Simsbury, Connecticut.

- 1.13 FIELD ORDER - A written order affecting a change in the WORK not involving an adjustment in the CONTRACT PRICE or an extension of the CONTRACT TIME, issued by the ENGINEER to the CONTRACTOR during construction.
- 1.14 INSPECTOR - The person appointed by the Town of Simsbury, Conn. to supervise the WORK and shall extend to and include any assistant whom he/she may designate to act in the premises.
- 1.15 NOTICE OF AWARD - The written notice of the acceptance of the Bid from the OWNER to the successful BIDDER.
- 1.16 NOTICE TO PROCEED - Written communication issued by the OWNER to the CONTRACTOR authorizing him/her to proceed with the WORK and establishing the date of commencement of the work.
- 1.17 OWNER - The Town of Simsbury, Connecticut (A Public Body) for whom the WORK is to be performed.
- 1.18 PROJECT - The undertaking to be performed as provided in the CONTRACT DOCUMENTS.
- 1.19 SHOP DRAWINGS - All Drawings, Diagrams, Illustrations, Brochures, Schedules, and other data which are prepared by the CONTRACTOR, A SUBCONTRACTOR, manufacturer SUPPLIER or Distributor which illustrate how specific portions of the WORK shall be fabricated or installed.
- 1.20 SPECIFICATIONS - A part of the CONTRACT DOCUMENTS consisting of written descriptions of a technical nature of materials, equipment, construction systems, standards and workmanship.
- 1.21 SUBCONTRACTOR - An individual firm or corporation having a direct contract with the CONTRACTOR or with any other SUBCONTRACTOR for the performance of a part of the work at the site.
- 1.22 SUBSTANTIAL COMPLETION- That date as certified by the ENGINEER when the construction of the PROJECT or a specified part thereof is sufficiently completed, in accordance with the CONTRACT DOCUMENTS, so that the PROJECT or specified part can be utilized for the purposes for which it is intended.
- 1.23 SUPPLEMENTAL GENERAL CONDITIONS - Special provisions required by the funding program or Agency (Federal, State, or

Local) for participation in the PROJECT and included in the CONTRACT DOCUMENTS. Also such requirements that may be imposed by Applicable State Laws and special characteristics of the PROJECT.

- 1.24 SUPPLIER - Any person or organization who supplies materials or equipment for the WORK, including that fabricated to a special design, but who does not perform labor at the site.
- 1.25 WORK - All labor necessary to produce the construction required by the CONTRACT DOCUMENTS, all construction tools, machinery, and equipment, and all materials and equipment incorporated or to be incorporated in the PROJECT.
- 1.26 WRITTEN NOTICE - Any notice to any party of the Agreement relative to any part of this Agreement in writing and considered delivered and the service thereof completed, when posted by Mail to the said party at his/her last given address or delivered in person to said party or his/her authorized representative on the WORK.

2. PAYMENT

- 2.1 On the first of each month, the Contractor may submit an itemized estimate of work completed up to that time, including an estimate of the portion of lump sum items completed.
He/she must, if requested by the Director of Public Works, submit satisfactory evidence that he/she has paid in full for all labor, materials and equipment included in the monthly estimate. The estimates shall be made on forms furnished by the Town and the Contractor shall certify that the estimate is correct and the work performed is in conformity with the plans and specifications. No later than 31 days after submission by the Contractor, and acceptance by the Town, of the estimate, the Town will pay the estimated cost, less five percent (5%) retained by the Town.

After completion of the project and acceptance by the Town, the Contractor shall submit an itemized final estimate. No later than 31 days after acceptance of the final estimate by the Town, the Town shall pay ninety-five (95%) percent of the Contract price. No later than six months after acceptance of the final estimate the Town will pay the five (5%) retained, unless in that time the materials or workmanship in the project shall have been found to be defective.

3. PERMITS DURATION

- 3.1 The Contractor must obtain all necessary permits and pay the fee

for them. (Town portion of permit fees are waived. The State of Connecticut portion of building permits will not be waived.)

- 3.2 Should the Town be prevented or enjoined from proceeding with work either before or after the start of construction by reason of any litigation or other reason beyond the control of the Town, the Contractor shall not be entitled to or assert claim for damage by reason of said delay; but time for completion of the work will be extended to such reasonable time as the Owner may determine will compensate for time lost by such delay with such determination to be set forth in writing.

4. SUPERVISION

- 4.1 The Town will be represented at all times by the TOWN DIRECTOR OF PUBLIC WORKS or an employee authorized by the TOWN DIRECTOR OF PUBLIC WORKS to represent him/her; and the DIRECTOR OF PUBLIC WORKS or his/her authorized representative shall have sole authority in the interpretation and execution of the contract.
- 4.2 The Contractor must have a competent Field Supervisor on the job during all working hours and notify the Town of his/her name and address in writing, and where he/she may be reached normally after working hours. In the event of the absence of the Field Supervisor, the Contractor must appoint a second in command to take responsible charge of the job. The actual performance of work and superintendence shall be performed by the Contractor but the owner shall, at all times, have access to the premises for the purpose of observing or inspecting the work performed by the Contractor.

5. LAYOUT

- 5.1 Not Applicable

6. SITE WORK

- 6.1 The Contractor will be responsible for maintenance of adequate barricades, signs, and warning systems to protect the job and the public.
- 6.2 The Contractor shall properly protect all underground and above ground utilities from damage. No interruption shall be caused to any utility without the knowledge of the TOWN DIRECTOR OF PUBLIC WORKS.

7. STANDARDS

7.1 Whenever a material, article, or piece of equipment is identified on the plans or in the specifications by reference to manufacturers' or vendors' names, trade names, catalogue numbers, etc., it is intended merely to establish a standard and, any material, article, or equipment of other manufacturers and vendors which will perform adequately the duties imposed by the general design will be considered equally acceptable provided the material, article, or equipment so proposed, is, in the opinion of the Town, of equal substance and function. It shall not be purchased or installed by the Contractor without written approval.

8. CHANGES IN WORK

8.1 The Owner, without invalidating the Contract, may order extra work or make changes by altering, adding to or deducting from the work, the Contract Sum being adjusted accordingly.

9. CORRECTION OF WORK AFTER FINAL PAYMENT

9.1 Neither the final Certificate nor payment nor any provision in the Contract Documents shall relieve the contractor of responsibility for faulty materials or workmanship and, unless otherwise specified, he shall remedy any defects due thereto and pay for any damage to other work resulting therefrom, which shall appear within a period of one year from the date of substantial completion.

9.2 The Owner shall give notice of observed defects with reasonable promptness. All questions arising under this article shall be decided by the DIRECTOR OF PUBLIC WORKS subject to mediation.

10. INSURANCE REQUIREMENTS

The Contractor must carry insurance under which the Town is named as an assured, as follows:

Such insurance must be by insurance companies licensed to write such insurance in Connecticut against the following risks with the following minimum amounts and minimum durations.

- A. Workman's Compensation, as required by State Statute.
- B. Public Liability, Bodily Injury Liability and Property Damage Liability as follows:

| | |
|--------------------------------|-------------|
| Injury or death of one person: | \$2,000,000 |
|--------------------------------|-------------|

| | |
|--|-------------|
| Injury to more than one person in a single accident: | \$1,000,000 |
| Property damage in one accident: | \$1,000,000 |
| Property damage in all accidents: | \$1,000,000 |

C. Automobile and Truck (Vehicular) Public Liability, Bodily Injury Liability, and Property Damage Liability as follows:

| | |
|--------------------------------|-------------|
| Injury or death of one person: | \$1,000,000 |
|--------------------------------|-------------|

| | |
|--|-------------|
| Injury to more than one person in a single accident: | \$1,000,000 |
| Property damage in one accident: | \$1,000,000 |
| Property damage in all accidents: | \$1,000,000 |

D. Builders Risk including Fire and Extended coverage:

In an amount equal to the value of construction completed plus materials delivered to the site.

Insurance under B, C, and D above must provide for a 30 day notice to the Town of cancellation/or restrictive amendment.

Insurance under B and C above must be for the whole duration of the contract and for twelve (12) months after acceptance of the project by the Town.

Insurance under D above must be carried for the whole duration of the project and until acceptance by the Town.

Subcontractors must carry A, B and C in the same amounts as above for the duration of the project and until acceptance by the Town.

Certificates of insurance must be submitted to the Director of Public Works prior to the signing of the contract and within ten days of notification of award of contract. Should any insurance expire or be terminated during the period in which the same is required by this contract, the Director of Public Works shall be notified and such expired or terminated insurance must be replaced with new insurance and a new certificate furnished to the Director of Public Works.

Failure to provide the required insurance and certificates may, at the option of the Town, be held to be a willful and substantial breach of this contract.

NOTE: Coverage under "B" shall include XCU coverage as necessary, Collapse and Underground shall be provided for ALL Contracts. Explosion will be provided if specified, or prior to any blasting being performed under the Contract.

11. OWNER'S RIGHT TO DO WORK

If the Contractor fails to prosecute the work properly or fails to perform any provisions of this contract, the Owner, after three days written notice to the Contractor may, without prejudice to any other remedy it may have, make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor. Provided, however, that the Public Works Director shall approve both such action and the amount charged to the Contractor.

12. ACCEPTANCE OF FINAL PAYMENT AS RELEASE

The acceptance by the Contractor of final payment shall be and shall operate as a release to the OWNER of all claims and all liability to the CONTRACTOR other than claims in stated amounts as may be specifically excepted by the CONTRACTOR for all things done or furnished in connection with this WORK and for every act and neglect of the OWNER and others relating to or arising out of this WORK. Any payment however, final or otherwise, shall not release the CONTRACTOR or his sureties from any obligations under the CONTRACT DOCUMENTS or the Performance BOND and Payment BONDS.

13. CONTRACT SECURITY

The Contractor shall within ten (10) days after the receipt of the NOTICE OF AWARD furnish the OWNER with a performance BOND and a payment BOND in penal sums equal to the amount of the CONTRACT PRICE, conditioned upon the performance by the CONTRACTOR of all undertakings, covenants, terms, conditions, and agreements of the CONTRACT DOCUMENTS, and upon the prompt payment by the CONTRACTOR to all persons supplying labor and materials in the prosecution of the WORK provided by the CONTRACT DOCUMENTS. Such BONDS shall be executed by the CONTRACTOR and shall be in a Form acceptable to the Town Director of Finance. When Surety Company Bonds are used, the corporate bonding company shall be licensed to transact such business in the State of Connecticut and named on the current list of "Surety Companies Acceptable on Federal Bonds" as published in the Treasury Department Circular Number 570. The expense of these BONDS shall be borne by the CONTRACTOR. If at any time a surety on any such bond is declared as bankrupt or loses its right to do business in the State in which the WORK is to be performed or is removed from the list of surety companies accepted on FEDERAL BONDS, CONTRACTOR shall within ten (10) days after notice from the OWNER to do so, substitute an acceptable BOND (or BONDS) in such form and sum as may be satisfactory to the OWNER. The premiums on such BOND shall be paid by

the CONTRACTOR. No further payments shall be deemed due nor shall be made until the CONTRACTOR shall have furnished an acceptable BOND to the OWNER.

14. ASSIGNMENT

Neither the CONTRACTOR nor the OWNER shall sell, transfer, assign, or otherwise dispose of the CONTRACT or any portion thereof, or of his/her right title or interest therein, or his obligations there under, without written consent of the other party.

15. DRAWINGS AND SPECIFICATIONS

- 15.1 The intent of the DRAWINGS and SPECIFICATIONS is that the CONTRACTOR shall furnish all labor, materials, tools, equipment, and transportation necessary for the proper execution of the WORK in accordance with the CONTRACT DOCUMENTS and all incidental work necessary to complete the PROJECT in an acceptable manner ready for use, occupancy, or operation by the OWNER.
- 15.2 In case of conflict between the DRAWINGS AND SPECIFICATIONS, the SPECIFICATIONS shall govern. Figure dimensions on DRAWINGS shall govern over scale dimensions, and detailed DRAWINGS shall govern over general DRAWINGS.
- 15.3 Any discrepancies found between the DRAWINGS AND SPECIFICATIONS and site conditions or any inconsistencies or ambiguities in the DRAWINGS or SPECIFICATIONS shall be immediately reported to the Director of Public Works, in writing, who shall promptly correct such inconsistencies or ambiguities in writing. WORK done by the CONTRACTOR after his/her discovery of such discrepancies, inconsistencies or ambiguities shall be done at the CONTRACTOR'S risk.
- 15.4 The OWNER will furnish free of charge to the contractor up to three (3) copies of the DRAWINGS and SPECIFICATIONS as necessary for the proper execution of the WORK.

16. MATERIALS, WORKMANSHIP, SERVICES, AND FACILITIES

- 16.1 It is understood that except as otherwise specifically stated in the CONTRACT DOCUMENTS, the CONTRACTOR shall provide and

pay for all materials, tools, equipment, sanitary conveniences, light, power, transportation, supervision, temporary construction of any nature, and all other services and facilities of any nature whatsoever necessary to execute, complete, and deliver the WORK within the specified time.

- 16.2 All materials furnished shall be new and of the best quality customarily used in or furnished for work of the character of that herein proposed. Many features of the proposed work are described in detail herein, but the failure to so describe any part of the proposed work or any details or appurtenance thereof shall not be an exception to the above rule. The absence of requirements in drawings or specifications covering details usually included in first class installations of this kind shall not excuse the contractor for their omission in this work.
- 16.3 All workmanship shall be of the best quality for WORK of the character of that herein proposed. The CONTRACTOR shall employ only competent employees to do the WORK required.
- 16.4 Materials and equipment shall be so stored as to insure the preservation of their quality and fitness for the WORK. Stored materials and equipment to be incorporated in the WORK shall be located so as to facilitate prompt inspection.
- 16.5 Materials, supplies, or equipment to be incorporated into the WORK shall not be purchased by the CONTRACTOR or the SUBCONTRACTOR subject to a chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller.
- 16.6 Drinking water furnished for the employees on the job shall comply with O.S.H.A. regulations.

17. PROTECTION OF WORK AND PROPERTY

- 17.1 The CONTRACTOR will be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the WORK--he/she will take all necessary precautions for the safety of, and will provide the necessary protection to prevent damage, injury or loss to all employees on the site and other persons who may be affected thereby, all the work and all materials or equipment to be incorporated therein, whether in storage on or off the site, and other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities

not designated for removal, relocation, or replacement in the course of construction.

- 17.2 The CONTRACTOR will comply with all applicable laws, ordinances, rules, regulations, and orders of any public body having jurisdiction. He/she will erect and maintain, as required by the conditions and progress of the WORK, all necessary safeguards for safety and protection. He/she will notify owners of adjacent utilities when prosecution of the work may affect them. The CONTRACTOR will remedy all damage, injury, or loss to any property caused, directly or indirectly, in whole or in part, by the CONTRACTOR, and SUBCONTRACTOR or anyone directly or indirectly employed by any of them or anyone for whose acts any of them be liable, except damage or loss attributable to the fault of the CONTRACT DOCUMENTS or the acts or omissions, of the OWNER or anyone employed by either of them or anyone for whose acts either of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of the CONTRACTOR.
- 17.3 The CONTRACTOR will notify the OWNER at least one week prior to the start of construction.
- 17.4 The CONTRACTOR shall be responsible for verifying the location of any existing utilities. The CONTRACTOR shall notify "Call Before You Dig" at 1-800-922-4455 such that any utility lines can be marked.
- 17.5 In emergencies affecting the safety of persons or the work or property at the site or adjacent thereto, the CONTRACTOR, without special instruction or authorization from the OWNER, shall act to prevent threatened damage, injury or loss. He/she will give the DIRECTOR OF PUBLIC WORKS prompt WRITTEN NOTICE of any significant changes in the WORK or deviations from the CONTRACT DOCUMENTS caused thereby, and a CHANGE ORDER shall thereupon be issued covering the changes and deviations involved.

18. CHANGES IN CONTRACT PRICE

The CONTRACT PRICE may be changed only by a CHANGE ORDER. The value of any WORK covered by a CHANGE ORDER or of any claim for increase or decrease in the CONTRACT PRICE shall be determined by one or more of the following methods in the order of precedence listed below:

- (a) Unit prices previously approved
- (b) An agreed lump sum
- (c) The actual cost for labor, direct overhead, materials, supplies,

equipment, and other services necessary to complete the work. In addition there shall be added an amount to be agreed upon but not to exceed fifteen (15) percent of the actual cost of the WORK to cover the cost of general overhead and profit.

19. TIME FOR COMPLETION

- 19.1 The date of beginning and the time for completion of the WORK are essential conditions of the CONTRACT DOCUMENTS and the WORK embraced shall be commenced on a date specified in the NOTICE TO PROCEED.
- 19.2 The CONTRACTOR will proceed with the work at such rate of progress to insure full completion within the CONTRACT TIME. It is expressly understood and agreed, by and between the CONTRACTOR and the OWNER, that the CONTRACT TIME for the completion of the WORK described herein is a reasonable time, taking into consideration the average climatic and economic conditions and other factors prevailing in the locality of the WORK.
- 19.3 If the CONTRACTOR is delayed at any time in the progress of the WORK by changes ordered in the WORK, by labor disputes, fire, unusual delay in transportation, unavoidable casualties, causes beyond the CONTRACTOR'S control, or by any cause which the Director of Public Works may determine justifies the delay, then the CONTRACT TIME shall be extended by CHANGE ORDER for such reasonable time as the Director of Public Works may determine.

20. SUSPENSION OF WORK, TERMINATION AND DELAY

- 20.1 The OWNER may suspend the WORK or any portion thereof for a period of not more than ninety days, or such further time as agreed upon by the CONTRACTOR, by WRITTEN NOTICE to the CONTRACTOR and the Director of Public Works which notice shall fix the date on which work shall be resumed. The CONTRACTOR will resume that WORK on the date so fixed. The CONTRACTOR will be allowed an increase in the CONTRACT PRICE or an extension of the CONTRACT TIME, or both, directly attributable to any suspension.
- 20.2 If the CONTRACTOR is adjudged as bankrupt or insolvent, or if he/she makes a general assignment for the benefit of his creditors, or if a trustee or receiver is appointed for the CONTRACTOR or for any of his property, or if he/she files a petition to take advantage of

any debtor's act, or to reorganize under the bankruptcy or applicable laws, or if he/she repeatedly fails to supply sufficient skilled workmen or suitable materials or equipment, or if he/she repeatedly fails to make prompt payments to SUBCONTRACTORS or for labor, materials, or equipment or if he/she disregards laws, ordinances, rules, regulations or orders of any public body having jurisdiction of the WORK or if he/she disregards the authority of the Director of Public Works, or if he/she otherwise violates any provision of the CONTRACT DOCUMENTS, then the OWNER may, without prejudice to any other right or remedy and after giving the CONTRACTOR and his/her surety a minimum of ten (10) days from delivery of a WRITTEN NOTICE, terminate the services of the CONTRACTOR and take possession of the PROJECT and of all materials, equipment, tools, construction equipment, and machinery thereon owned by the CONTRACTOR and finish the WORK by whatever method he/she may deem expedient. In such case the CONTRACTOR shall not be entitled to receive any further payment until the WORK is finished. If the unpaid balance of the CONTRACT PRICE exceeds the direct and indirect costs of completing the PROJECT, including compensation for additional professional services, such excess SHALL BE PAID TO THE CONTRACTOR. If such costs exceed such unpaid balance, the CONTRACTOR will pay the difference to the OWNER. Such costs incurred by the OWNER will be determined by the Director of Public Works and incorporated in a CHANGE ORDER.

- 20.3 OWNER may terminate this Agreement in whole or in part solely for OWNER's convenience upon written notice to the CONTRACTOR, without regard to any fault or failure to perform by CONTRACTOR or any other party. In the event of a Termination for Convenience, Contractor shall be paid for all Work performed in accordance with the Contract Documents up to the date of such notice, plus an additional amount for reasonable, unavoidable and direct costs of demobilization for a maximum of ten (10) days following receipt of the notice.
- 20.4 Where the CONTRACTOR'S services have been so terminated by the OWNER, said termination shall not affect any right of the OWNER against the CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of monies by the OWNER due the CONTRACTOR will not release the CONTRACTOR from compliance with the CONTRACT DOCUMENTS.
- 20.5 After ten (10) days from delivery of a WRITTEN NOTICE to the CONTRACTOR, the OWNER may, without cause and without prejudice to any other right or remedy, elect to abandon the

PROJECT and terminate the contract. In such case, the CONTRACTOR shall be paid for all WORK executed and any expense sustained to date.

- 20.6 If, through no act or fault of the CONTRACTOR, the WORK is suspended for a period of more than ninety (90) days by the OWNER or under an order of court or other public authority, fails to act on any request for payment within thirty (30) days after it is submitted, or the OWNER fails to pay the CONTRACTOR substantially the sum approved by the ENGINEER or awarded by arbitrators within (30) days of its approval and presentation, then the Contractor may, after ten (10) days from delivery of a WRITTEN NOTICE to the OWNER and the ENGINEER, terminate the CONTRACT and recover from the OWNER payment for all WORK executed and all expenses sustained. In addition and in lieu of terminating the CONTRACT, if the ENGINEER has failed to act on a request for payment or if the OWNER has failed to make any payment as aforesaid, the CONTRACTOR may upon Ten (10) Days written notice to the OWNER and the ENGINEER stop the WORK until he has been paid all amounts then due, in which event and upon resumption of the WORK until he has been paid all amounts then due, in which event and upon resumption of the WORK, CHANGE ORDERS shall be issued for adjusting the CONTRACT PRICE or extending the CONTRACT TIME or both to compensate for the costs and delays attributable to the stoppage of the WORK.
- 20.7 OWNER shall have no liability to CONTRACTOR for compensation, expenses, additional fees or anticipated profits for unperformed Work, lost business opportunities, impaired bonding capacity, or and overhead or general conditions costs attributable to a termination by OWNER. All amounts payable by OWNER shall be subject to OWNER's right of audit and offset. Notwithstanding anything to the contrary in this Agreement (i) OWNER's liability hereunder shall be limited to OWNER's interest in the Project (i.e., Contractor shall not have recourse to any other assets of OWNER); and (ii) OWNER shall under no circumstances be liable for and consequential, indirect, punitive or special damages in connection with OWNER's obligation under this Agreement; and (iii) neither OWNER, its property manager, its project manager, not their respective parents, affiliates, members, officers, directors, shareholders, agents and employees shall have any personal liability hereunder.

21. INDEMNIFICATION

- 21.1 The CONTRACTOR will indemnify and hold harmless the OWNER and their agents and employees from and against all Claims, Damage, Loss, or Expense including Attorney's fees arising out of or resulting

from the performance of the WORK, provided that any such Claims, Damage, Loss or Expense is attributed to Bodily Injury, Sickness, Disease or Death, or to injury to or destruction of tangible property including the loss of use resulting therefrom; and is caused in whole or in part by any negligent or willful act or omission of the CONTRACTOR, and SUBCONTRACTOR, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable.

- 21.2 In any and all claims against the OWNER or any of their agents or employees, by any employee of the CONTRACTOR or SUBCONTRACTOR, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the INDEMNIFICATION OBLIGATION shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the CONTRACTOR or any SUBCONTRACTOR under Workmen's Compensation Acts, Disability Benefit Acts or other Employee Benefits Acts.

22. SEPARATE CONTRACTS

- 22.1 The OWNER reserves the right to let other contracts in connection with this PROJECT. The CONTRACTOR shall afford other CONTRACTORS reasonable opportunity for the introduction and storage of their materials and the execution of their WORK, and shall properly connect and coordinate his WORK with theirs. If the proper execution or results of any part of the CONTRACTOR's WORK depends upon the WORK of any other CONTRACTOR, the CONTRACTOR shall inspect and promptly report to the Director of Public Works any defects in such WORK that render it unsuitable for such proper execution and results.
- 22.2 The OWNER may perform additional WORK related to the PROJECT by himself, or he may let other Contracts containing provisions similar to these. The CONTRACTOR will afford the other CONTRACTORS who are Parties to such CONTRACTS (or the OWNER, if he is performing the additional WORK himself), reasonable opportunity for the introduction and storage of materials and equipment and the execution of WORK, and shall properly connect and coordinate his WORK with theirs.
- 22.3 If the performance of Additional WORK by other CONTRACTORS or the OWNER is not noted in the CONTRACT DOCUMENTS prior to the execution of the CONTRACT, written notice thereof shall be given to the CONTRACTOR prior to starting any such additional WORK. If the CONTRACTOR believes that the

performance of such additional WORK by the OWNER or others involves him in additional expense or entitles him to an extension of the CONTRACT TIME, he may make a Claim therefore as provided in Sections 22 and 23.

23. SUBCONTRACTING

- 23.1 CONTRACTOR may engage subcontractors and vendors to perform all or any portion of the Work, provided that CONTRACTOR shall be responsible for payment to any and all such subcontractors and vendors. CONTRACTOR shall be responsible for the performance of its subcontractors and vendors of every tier to the same extent as if such subcontracted work was performed by CONTRACTOR r directly. Prior to entering into subcontracts, CONTRACTOR shall provide OWNER with a written list of the names of CONTRACTOR 's proposed subcontractors and vendors for each portion of the Work for review and consent by OWNER, which consent shall not be unreasonably withheld, conditioned or delayed. CONTRACTOR acknowledges that all duties and responsibilities set forth in this Agreement flow-down and shall be an integral part of each and every subcontract entered into by Contractor
- 23.2 The CONTRACTOR shall not award WORK to SUBCONTRACTOR(s) in excess of Fifty (50) Percent of the CONTRACT PRICE, without prior written approval of the OWNER.
- 23.3 The CONTRACTOR shall be fully responsible to the OWNER for the Acts and omissions of his SUBCONTRACTORS, and of persons either directly or indirectly employed by him.
- 23.4 The CONTRACTOR shall cause appropriate provisions to be inserted in all subcontracts relative to the WORK to bind SUBCONTRACTORS, as applicable to the WORK OF SUBCONTRACTORS and to give the CONTRACTOR the same power as regards terminating any subcontract that the OWNER may exercise of the CONTRACTOR under any provision of the CONTRACT DOCUMENTS.
- 23.5 Nothing contained in this CONTRACT shall create any contractual relation between any SUBCONTRACTOR and the OWNER.

24. GUARANTY

The CONTRACTOR shall guarantee all materials and equipment furnished and WORK performed for a period of one (1) year from the date of SUBSTANTIAL COMPLETION. The CONTRACTOR warrants and guarantees for a period of one (1) year from the date of SUBSTANTIAL COMPLETION of the PROJECT that the completed PROJECT is free from all defects due to faulty materials or WORKMANSHIP and the CONTRACTOR shall promptly make such corrections as may be necessary by reason of such defects including the repairs of any damage to other parts of the PROJECT resulting from such defects. The

OWNER will give notice of observed defects with reasonable promptness. In the event that the CONTRACTOR should fail to make such repairs, adjustments, or other WORK that may be made necessary by such defects, the OWNER may do so and charge the CONTRACTOR the cost thereby incurred. The PERFORMANCE BOND or a MAINTENANCE BOND shall remain in force at a value of 25% of the completed WORK through the GUARANTEE PERIOD.

25. DISPUTE RESOLUTION

25.1 All claims, disputes and other matters in questions arising out of, or relating to, the CONTRACT DOCUMENTS or the breach thereof, except for claims which have been waived by the making and acceptance of Final Payment as provided by Section 16, shall be decided by litigation in the Superior Court of the State of Connecticut.

26. TAXES

The CONTRACTOR will pay all consumer, use, and other similar taxes required by the Law of the Place where the WORK is performed. This WORK is being performed for a Municipal Government and is exempt from Sales Tax.

SUPPLEMENTAL GENERAL CONDITIONS

1. PA 86-87, AAC Workers' Compensation Insurance Requirements for Contractors on Public Works projects and State licenses, prohibits municipalities from entering into a public works contract with an employer without receiving sufficient evidence from the employer that he has workers' compensation insurance and a statement from the state treasurer that the employer does not owe the Second Injury and Compensation Assurance Fund any money.
2. The Town of Simsbury Public Works Department shall be notified at least five (5) days prior to beginning work.
3. Prior to beginning work, the "Call Before You Dig" service shall be notified by the Contractor by calling 811 or 1-800-922-4455, or, if the contractor is registered, by e-ticket entry, such that any underground utilities in the immediate vicinity of the work can be marked.
4. All staking and surveying will be the responsibility of the Contractor.
5. All road monuments and lot pins shall be PRESERVED. Cost of resetting will be back charged to the Contractor.
6. Sales and Use Tax Exempt Purchase Certificate/ The Contractor's attention is called to Regulation 18 as amended promulgated by the Sales and Use Tax Division of the State Tax Department, which provided for the Exemption of the sales and use tax on the purchase of such materials and supplies as are to be physically incorporated in and become a permanent part of the project being performed under this contract. The Contractor or Subcontractor shall furnish his suppliers with a completed certificate, in the prescribed form; a copy of which is attached to these specifications
7. Upon completion or termination of the work, the Contractor shall remove from the vicinity of the work all equipment and all temporary structures, waste materials and rubbish resulting from its operations, leaving the premises in a neat and acceptable condition. In the event of failure to do so, the same may be done by the Owner at the expense of the Contractor.
13. The Contractor shall pay for any broken utility lines, except where the utility company may be liable under the "Call Before You Dig" law. The Owner will only pay for relocations necessary to complete the work of this project.
14. In accordance with Executive Order 11246, the Contractor is obliged not to discriminate against any employee or applicant for employment because of race, color, creed, or national origin. This obligation not to discriminate in employment includes, but is not limited to, the following: hiring, placement, upgrading, transfer, demotion, recruitment, advertising, solicitation for employment training during employment, rates of pay or other forms of compensation, selection for training including apprenticeship, layoff, or

termination.

15. For all new underground facilities installed after January 1, 1989 which is practicable and for all repairs, replacements or modifications involving an exposure of existing underground facilities at least 100 feet longitudinally after January 1, 1989, of which the utility has knowledge of such exposure, the utility shall install a warning tape located above the facility, and keep appropriate records thereof. The minimum separation between the facility and the warning tape shall be 12 inches unless the depth, other underground facilities or other engineering considerations make the minimum separation infeasible. The warning tape shall be durable, designed to withstand extended underground exposure, be of color assigned to the type of facility for surface markings in Section 16-345-5 (h) and durable imprinted with an appropriate warning or message.

SPECIAL PROVISIONS

1. **Cleaning Up:** The Contractor shall at all times keep the site and work free from accumulations of waste material or rubbish caused by his employees or work, or the employees or work of any of his subcontractors.

On completion of the work, the Contractor except as otherwise expressly directed or permitted in writing, shall tear down and remove all temporary structures built by him; shall remove all rubbish and abandoned materials of all kinds from all Contract structures and from any grounds, and shall leave all the grounds which may have been affected by his/her operations in a neat and satisfactory condition. Except as noted, all materials salvaged shall be the property of the Contractor.

7. **Act, Or Failure To Act, On Part Of Engineer Does Not Reduce Liability Of Contractor:** Giving notice or failure to give notice; or acting as authorized in the preceding sections, or failure to so act, on the part of the Engineer; or any question as to the adequacy of the notice by the Engineer, or of his/her acts, as provided in those sections, shall not in any way relieve the Contractor from any part of his responsibility or liability for performing any and all of the acts and assuming any and all of the risks, duties and liabilities which the Contractor is obligated to perform or assume.

8. **Disposal of Surplus Materials:** The Contractor shall be responsible for the removal and satisfactory disposal of all surplus materials unless otherwise specified in the Detail Specifications. Town properties shall not be used for such disposal unless specifically authorized by the Engineer in writing. Property owners adjacent to the work may have indicated to the Town that their land might be available for disposal of surplus fill and this fact may be noted on the Contract Drawings. The Contractor shall, however, make his own arrangements for the use of such private lands and shall, if requested by the Engineer, evidence that such arrangements have been made before such use. Any required local permits shall be the responsibility of the Contractor.

11. **Utility Notification Prior to Excavation:** In accord with Public Act 77-350, the Contractor is required to notify any utility with facilities in the vicinity of the excavation at least two full days prior to excavation. Notification may be given by using the "Call Before You Dig" state wide, toll free telephone number, 811 or 1-800-922-4455., or if the contractor is registered, by e-ticket entry. Responsibility for proper notification of all utilities shall rest with the Contractor.

The Contractor shall contact the appropriate Town authorities concerning any public or semi- public events that may occur during the construction period and that may have an effect on his construction. The contractor alone shall be responsible for arranging his construction sequence to conform to any restrictions these events may impose on his schedule.

No claims for extras will be allowed because of any delays, caused by the imposed restrictions; however, additional time may be granted for completion of the work to compensate for any delays caused by said restrictions.

12. **The State of Connecticut, Department of Environmental Protection and other involved State agencies** shall have access and inspection rights to all parts of the work on this project.
13. **Quantities of work** may be increased or decreased with payment to be based on actual quantities of work completed and the bid unit prices.

ON-CALL SEWER REHABILITATION

INDEX TO SPECIFICATIONS

Technical Specifications

Division I

01270 – Measurement and Payment

01520 – Construction Facilities

01550 – Traffic Regulation

01580 – Temporary Bypass Pumping System

Division II

02950 – Manhole Sealing

02952 – Manhole Lining

02953 – Cured-in-Place Pipe Lining

Attachment A – State of Connecticut Prevailing Wage Rates

Attachment B – Town of Simsbury Sanitary Sewer Collection System

SECTION 01270

MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.1 DIVISION 0 AND DIVISION 1 WORK INCIDENTAL TO THE CONTRACT PRICE

- A. No separate measurement or payment will be made for Work called for in Division 0 or Division 1 of the Specifications, unless specifically covered under the Bid items listed below. All costs associated with this Work will be considered incidental to the Contract Bid price.
- B. Division 2 Work will be measured and paid for at the Contractor's unit Bid price or lump sum item cost as indicated on the Bid form. Those payable Work items, and related prices as Bid, will be the basis for all compensation to the Contractor for Work performed under this Contract. Work not specifically included as a Bid item, but which is required to properly and satisfactorily complete the Work is considered ancillary and incidental to the Bid item Work, and payment for such Work is considered to be included in the values as Bid for payable items. Compensation for all unit Bid price Work will be made based on the measured quantity of Work under the appropriate Bid items.

1.2 CURED-IN-PLACE PIPE LINING (ITEMS 1 THROUGH 9)

- A. Measurement
 - 1. Measurement for cured-in-place pipe lining of existing pipelines will be on a linear foot basis and will be made along the ground surface above and parallel to the pipeline from and to the inside surface of structures.
- B. Payment
 - 1. Payment of the Bid price for pipe that has been CIPP-lined will be full compensation for any required preparatory cleaning, providing and testing of the liner, bypass pumping, video recording of the pipelines before and after pipe lining, traffic control, and all labor, equipment and materials required for or incidental to the Work. The Contractor shall use Certified Flaggers as necessary to provide traffic control. Unless the use of uniformed officers is ordered by the Chief of Police, all costs associated with the use of uniformed officers will be borne by the Contractor.
 - 2. Schedule of Payment: Completion of work- 90%; Final warranty inspection- 10%.

1.3 EXTERIOR CHEMICAL SEALING (ITEM 10)

A. Measurement

1. Measurement for exterior chemical sealing of manholes will be a count of the number of manholes sealed.

B. Payment

1. Payment of the Bid price for each manhole chemically-sealed will be full compensation for sealing the exterior of each manhole, including furnishing and mixing materials, injecting sealant through the manhole wall to the manhole exterior, testing, traffic control, and all labor, equipment and materials required for or incidental to the Work. The Contractor shall use Certified Flaggers as necessary to provide traffic control. Unless the use of uniformed officers is ordered by the Chief of Police, all costs associated with the use of uniformed officers will be borne by the Contractor.
2. Schedule of Payment: Completion of work- 90%; Final warranty inspection- 10%.

1.4 CEMENTITIOUS LINING (ITEMS 11 THROUGH 14)

A. Measurement

1. Measurement for cementitious lining of existing manholes will be a count of the number of manholes cementitious-lined. (Items 11 and 13)
2. Measurement for vertical feet of manhole cementitious-lined in excess of 5 vertical feet will be the total depth of the manhole from the top of the frame and cover to the lowest pipe invert less 5 feet. (Items 12 and 14)

B. Payment

1. Payment of the Bid price for each manhole cementitious-lined will be full compensation for initial exterior sealing, surface preparation, furnishing and mixing materials, plugging or blocking of flow, cement patching and plugging, testing, traffic control, and all labor, equipment and materials required for or incidental to the Work. (Items 11 and 13).
2. Payment of the Bid price for each vertical foot of a manhole cementitious-lined in excess of 5 feet will be full compensation for all labor, equipment and materials required for or incidental to the Work. (Items 12 and 14).
3. The Contractor shall use Certified Flaggers as necessary to provide traffic control. Unless the use of uniformed officers is ordered by the Chief of Police, all costs associated with the use of uniformed officers will be borne by the Contractor.
4. Schedule of Payment: Completion of work- 90%; Final warranty inspection- 10%.

1.5 EPOXY LINING (ITEMS 15 THROUGH 18)

A. Measurement

1. Measurement for epoxy lining of existing manholes will be a count of the number of manholes epoxy-lined. (Items 15 and 17)
2. Measurement for vertical feet of manhole epoxy-lined in excess of 5 vertical feet will be the total depth of the manhole from the top of the frame and cover to the lowest pipe invert less 5 feet. (Items 16 and 18)

B. Payment

1. Payment of the Bid price for each manhole epoxy-lined will be full compensation for initial interior and exterior sealing, surface preparation, furnishing and mixing materials, testing, traffic control, and all labor, equipment and materials required for or incidental to the Work. (Items 15 and 17)
2. Payment of the Bid price for each vertical foot of a manhole epoxy-lined in excess of 5 feet will be full compensation for all labor, equipment and materials required for or incidental to the Work. (Items 16 and 18).
3. The Contractor shall use Certified Flaggers as necessary to provide traffic control. Unless the use of uniformed officers is ordered by the Chief of Police, all costs associated with the use of uniformed officers will be borne by the Contractor.
4. Schedule of Payment: Completion of work- 90%; Final warranty inspection- 10%.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01520

CONSTRUCTION FACILITIES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes
 - 1. Temporary sanitary and first-aid facilities
 - 2. Trash containers and disposal

1.2 QUALITY ASSURANCE

- A. Maintain temporary construction facilities in proper and safe condition throughout the progress of the Work.

1.3 TEMPORARY SANITARY AND FIRST AID FACILITIES

- A. Provide suitably enclosed chemical or self-contained toilets for the use of the labor force employed on the Work. Toilets shall be located near the Work sites and secluded from observation insofar as possible. Toilets shall be serviced weekly, kept clean and supplied throughout the course of the Work.
- B. Contractor shall enforce proper use of sanitary facilities.
- C. Use of the Owner's sanitary facilities by the Contractor is prohibited.
- D. Provide a first aid station at the site.

1.4 TRASH CONTAINERS AND DISPOSAL

- A. All work sites shall be provided with a trash container of appropriate size and type for the location and work activity. All trash containers shall be emptied on a regular basis with all trash to be disposed of in a legal manner.
- B. No trash of any kind, even small quantities, including food wrappers, drinking cups, materials packaging and other miscellaneous products that constitute trash shall be disposed of in any site excavations or backfill.
- C. Contractor shall instruct all workers and enforce the requirement that all trash resulting from the contractor's operations and personnel be picked up and properly placed in a trash container each day.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

SECTION 01550

TRAFFIC REGULATION

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes
 - 1. Traffic requirements
 - 2. Traffic officers

1.2 PAYMENT PROCEDURES

- 1. The Contractor shall use Certified Flaggers as necessary to provide traffic control. Unless the use of uniformed officers is ordered by the Chief of Police, all costs associated with the use of uniformed officers will be borne by the Contractor.

1.3 REFERENCES

- A. Manual of Uniform Traffic Control Devices, U.S. Department of Transportation
- B. State of Connecticut DOT Office of the State, Traffic Administration Regulations, latest revision

1.4 TRAFFIC REQUIREMENTS

- A. Adhere to all applicable Town of Simsbury ordinances that relate to traffic control.
- B. Arrange construction activity so that all streets shall remain open to at least one-way traffic during periods of actual work, and to unimpeded, two-way traffic during all other periods.
- C. Provide a traffic control plan to Engineer for approval showing traffic control signs, barrels, cones, traffic officers, including detour signs, meeting the approval of Engineer, Owner and local Police Departments in accordance with the Manual of Uniform Traffic Control Devices.
- D. Determine the location of each day's work and implement the approved traffic control plan. If the plan requires the use of traffic officers, notify the Police Department.
- E. Contractor shall have no claim of delay if he does not notify the Police Department of his scheduled location in time to arrange for traffic officers.
- F. Hand deliver written notice to individual houses affected by driveway and side road closings or detours a minimum 24 hours in advance. A recommended parking area outside the work limits shall be included in the notice.

1.5 TRAFFIC OFFICERS

- A. Uniformed traffic officers shall be required at locations deemed necessary by Owner, working in conjunction with local Police and Fire Departments, for the protection of the public.
- B. The Police Chief or his representative, in consultation with Owner's representative, will determine the number of officers required for the work.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

SECTION 01580

TEMPORARY BYPASS PUMPING SYSTEM

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes
 - 1. Temporary bypass pumping
- B. Related Sections
 - 1. Section 02953 – Cured-In-Place Pipe Lining

1.2 SUBMITTALS

- A. Informational Submittals
 - 1. Submit a specific, detailed description of the proposed pumping system.
 - 2. Submit references for prior projects.
 - 3. Submit qualifications of bypass pumping company.
 - 4. Submit detailed plans and descriptions outlining all provisions and precautions to be taken by the Contractor regarding the handling of existing wastewater flows. This plan must be specific and complete, including such items as schedules, locations, elevations, capacities of equipment, materials and all other incidental items necessary and/or required to ensure proper protection of the facilities, including protection of the access and bypass pumping locations from damage due to the discharge flows, and compliance with the requirements and permit conditions specified in the Contract Documents. No construction shall begin until all provisions and requirements have been approved.
 - 5. Submit hydraulic calculations and drawings stamped by a Connecticut Registered Professional Engineer.
 - 6. The drawings shall include but not be limited to details of the following:
 - a. Staging areas for pumps
 - b. Sewer plugging method and types of plugs
 - c. Number, size, material, location and method of installation of suction piping
 - d. Number, size, material, method of installation and location of installation of discharge piping
 - e. Bypass pump sizes, capacity, number of each, and size to be on site and fuel/power requirements
 - f. Calculations of static lift, friction losses, and flow velocity (pump curves showing pump operating range shall be submitted)
 - g. System curve with suction lift performance

- h. Standby power generator size, location
- i. Downstream discharge plan
- j. Method of protecting discharge manholes or structures from erosion and damage
- k. Sections showing suction and discharge pipe depth, embedment, select fill and special backfill
- l. Method of noise control for each pump and/or generator
- m. Any temporary pipe supports and anchoring required
- n. Design plans and computation for access to bypass pumping locations indicated on the drawings
- o. Calculations for selection of bypass pumping pipe size
- p. Schedule for installation of and maintenance of bypass pumping lines
- q. A plan showing the location of bypass pumping equipment, and suction and discharge piping

1.3 QUALITY ASSURANCE

- A. Employ the services of a company that specializes in the design and operation of temporary bypass pumping systems. Demonstrate that the bypass pumping equipment is automated and is capable of functioning without the assistance of an operator.
- B. Provide at least 5 references of projects of similar size and complexity in wastewater applications performed within the past three years within New England.
- C. The bypass pumping company shall have a minimum experience of 15 years designing and supplying wastewater bypass systems.
- D. Demonstrate sufficient inventory to perform normal rentals, including this project, and maintain at least 100% reserve equipment for this project for immediate delivery.
- E. Demonstrate sufficient service and repair parts in stock to fulfill any service or repair of all rental equipment within 3 hours of any service call.
- F. Demonstrate sufficient service staff and trucks to mobilize to repair or service equipment within 1 hour of a service call, 24 hours per day, 7 days per week.
- G. Provide a list of cell phone and pager numbers to call for twenty-four hour service.
- H. The bypass system shall meet the requirements of all codes and regulatory agencies having jurisdiction.
- I. Obtain required approvals for placement of the temporary pumping equipment and piping system adjacent to the existing sewer main.

- J. No construction shall begin until the related project submittals are approved and all provisions of the work have been coordinated with the Owner, Engineer, and property owner.

1.4 SYSTEM REQUIREMENTS

- A. Design, install, operate, and subsequently remove a temporary bypass pumping system to divert the existing sewage flow around the work area for the duration of the work.
- B. Bypass pumping equipment shall be automated and capable of functioning without the assistance of an operator.
- C. Controls shall be provided to operate pump(s) as required based on liquid level in the suction manholes. A high-level alarm shall be provided. A backup pump activation alarm shall also be provided. Alarm shall notify personnel of a high level in the suction manhole or backup pump activation, and shall require immediate response by the Contractor to determine cause and implement measures to ensure pumping is at the maximum specified rate. The high level and backup pump alarms shall be capable of notifying the Contractor and the Owner's Representative via telephone.
- D. Pumping equipment shall be capable of operating for an extended period of time running dry. After this period of time, the pump shall have the capability of pulling a 25 inch Hg vacuum without adjustment or repair.
- E. The entire bypass system including all pumps, pipe, hose, valves, and fittings shall be provided by one bypass pumping company who is responsible for the operation of the entire system.

PART 2 PRODUCTS

2.1 EQUIPMENT

- A. Pumps shall be centrifugal, end suction, fully automatic self-priming low noise pumps that do not require the use of foot-valves, vacuum pumps, diaphragm pumps, or isolation valves in the priming system. Pumps must be constructed to allow dry running for long periods of time to accommodate the cyclical nature of effluent flow pumps and shall immediately develop 25 inch Hg vacuum without adjustment or repair or employ level control devices to regulate on/off or variable speed of the pump. Hydraulic, submersible, electric, or wellpoint type pumps are prohibited. Pumps shall be low noise sound attenuated, critically silenced units.
- B. Seals shall be high pressure, mechanical self-adjusting type with silicon carbide faces capable of withstanding suction pressures to 100 psi running. The mechanical seal shall be cooled and lubricated in an oil bath reservoir, requiring no maintenance or adjustment. Pump shall be capable of running dry, with no damage, for extended periods of time. All metal parts shall be of stainless steel. Elastomers shall be Viton. Pump end shall be manufactured to meet ISO 9002 certifications.
- C. The primary pumps shall be electric/diesel powered via a temporary electrical service. Temporary electrical service to be provided by the Contractor at his expense.

- D. Back-up pumps and/or standby electric generator system may be fossil fuel engine driven.
- E. Provide the necessary start/stop controls for each pump.
- F. Include one stand-by pump of each size to be maintained on site and a standby power source.
- G. Back-up pumps shall be on-line, isolated from the primary system by a valve.
- H. Pump shall not be connected by a common suction manifold. The use of PVC or Steel Pipe with Dresser Couplings will not be accepted. All pipe or hose will be rated for 25 inch Hg Vacuum.
- I. In order to prevent the accidental spillage of flows, all discharge systems must be constructed of high density polyethylene pipe with fused joints or quick disconnect pipe with positive restrained joints, and leak proof connections. Discharge hose will only be allowed by specific permission of the engineer. PVC pipe with glued joints, aluminum "irrigation pipe", steel pipe or PVC pipe with Dresser couplings will not be accepted. All joints must be 100% restrained. All discharge pipe must have a minimum working pressure of 50 psi. All force main connections shall be made by using flanged composite hose with a working pressure of 150 psi.
- J. Allowable piping materials will be fused, high density polyethylene pipe, acceptable disconnect pipe, or flanged composite pressure class hose. SDR of discharge piping shall be suitable for the calculated discharge pressures. The vendor fusing the pipe must have a minimum of 5 years experience fusing HDPE pipe of the same diameter required for the project.

2.2 SYSTEM DESCRIPTION

A. Design Requirements:

- 1. Bypass pumping systems shall have sufficient capacity to pump a peak flow equal to the capacity of the existing gravity sewer main.
- 2. Provide all pipeline plugs, pumps of adequate size to handle peak flow, and temporary discharge piping to ensure that the total flow of the main can be safely diverted around the work area. Bypass pumping systems will be required to be operated 24 hours per day.
- 3. Have adequate standby equipment available and ready for immediate operation and use in the event of an emergency or breakdown. One standby pump for each size pump utilized shall be installed at the mainline flow bypassing locations, ready for use in the event of primary pump failure. Also, a back-up power supply source shall be provided.
- 4. Bypass pumping system shall be capable of bypassing the flow around the work area as necessary for satisfactory performance of work.

B. Performance Requirements:

- 1. There must be no interruption in the flow of sewage throughout the duration of the Project. Provide, maintain and operate all temporary facilities such as dams, plugs, pumping equipment (both primary and back-up units as required), conduits, all necessary power, and all other

labor and equipment necessary to intercept the sewage flow before it reaches the point where it would interfere with the Work, carry it past the Work and return it to the existing sewer downstream of this work.

2. Provide all necessary means to safely convey the sewage past the work area. The Contractor will not be permitted to stop or impede the main flows under any circumstances.
3. Maintain sewer flow around the work area in a manner that will not cause surcharging of sewers, damage to sewers and that will protect public and private property from damage and flooding.
4. The bypass system shall not require excavation to reduce the suction lift without the specific approval of the engineer prior to the bid.
5. Protect water resources, wetlands, and other natural resources in accordance with the appropriate project permits.
6. Meet noise limits of 69dbA @ 30 feet. All diesel driven standby pumps and/or back-up power supplies shall be sound attenuated. The use of Critical Silenced Canopy pumps or acoustical enclosures for sound attenuation is required.
7. The pumps shall not be benched down to make the suction lift unless approved by the Engineer prior to Bid.

PART 3 EXECUTION

3.1 PREPARATION

A. Precautions

1. Locate existing utilities in the area where the Contractor selects to locate the bypass pipelines. Locate bypass pipelines to minimize any disturbances to existing utilities and obtain approval of the pipeline locations from the Owner, Engineer, and property owner. Pay all costs associated with relocating utilities and obtaining all approvals.
2. During all bypass pumping operation, protect the existing sewer lines from damage inflicted by any equipment. Be responsible for all physical damage to the existing facilities caused by human or mechanical failure.

3.2 FIELD QUALITY CONTROL AND MAINTENANCE

A. Test:

1. Perform leakage and pressure tests of the bypass pumping discharge piping using clean water prior to actual operation. Give the Engineer 24 hour notice prior to testing.

B. Inspection:

1. Inspect the bypass pumping system regularly (every 2 hours) to ensure that the system is working correctly.

C. Maintenance Service:

1. Ensure that the temporary pumping system is properly maintained and a responsible operator is on hand at all times when pumps are operating.

D. Extra Materials:

1. Keep spare parts for pumps and piping on site as required.
2. Maintain adequate hoisting equipment for each pump and accessories on the site.

E. Installation and Removal

1. Make connections to the existing sewer and construct temporary bypass pumping structures only at locations approved by the submittals.
2. Plugging or blocking of sewage flows shall incorporate primary and secondary plugging device. When plugging or blocking is no longer needed for performance and acceptance or work, it is to be removed in a manner that permits the sewage flow to slowly return to normal without surge, to prevent surcharging or causing other major disturbances downstream.
3. When working inside manholes, exercise caution and comply with OSHA requirements when working in the presence of sewer gases, combustible oxygen-deficient atmospheres, and confined spaces.
4. The pipeline must be located off streets and sidewalks and on shoulders of the roads. When the bypass pipeline crosses local streets and private driveways, the contractor must place the bypass pipelines in trenches and cover with temporary pavement. Adhere to any and all applicable project permits.
5. Upon completion of the bypass pumping operations, and after the receipt of written permission from the Engineer, remove all the piping, restore all structures, pipelines and property to pre-construction condition, and restore all pavement surfaces. Adhere to any and all applicable project permits.

END OF SECTION

SECTION 02950

MANHOLE SEALING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes
 - 1. Chemically sealing and waterproofing existing manholes

1.2 DESCRIPTION OF WORK

- A. Chemical sealing shall be by the Injection Method or equal. Generally, this shall be accomplished by forcing chemical sealing gel materials through a system of pumps and hoses from the interior of the structure to the exterior of the structure. Jetting or driving pipes from the surface that could damage or cause undermining of the manholes shall not be allowed. Uncovering the manholes by excavation of pavements and soil shall not be allowed.
- B. Where required by Owner, a waterproof cementitious coating shall also be applied to the interior surfaces of the manholes to provide an additional barrier against infiltration.
- C. A flexible joint sealant shall be applied from the manhole frame to 3-feet below the frame.
- D. Plugging and patching of manhole may be necessary in advance of such chemical sealing and waterproofing.

1.3 SAFETY

- A. The Contractor's personnel shall have confined space entry and other training as appropriate for the work to be performed. The confined space entry shall be in accordance with the requirements and protocol as specified in 29 CFR 1910.146, Permit Required Confined Spaces, and ASTM D 4276-84.

1.4 SUBMITTALS

- A. Manufacturer's product data for chemical gels, patching materials, cementitious coatings, and flexible sealants, including physical properties, surface preparation, application instructions and curing information.
- B. Qualifications of applicator
 - 1. Certification stating applicator is licensed and experienced in the application of the specified products.
 - 2. List of recently completed manhole sealing projects, including project name and location, names of owner and engineer, contact phone numbers, description of products used, substrates and application procedures.

1.5 QUALITY ASSURANCE

- A. Applicator Qualifications
 - 1. Licensed and experienced in the application of the specified products.
 - 2. Employs persons trained for the application of the specified products.
- B. The manufacturer shall have at least 5 years experience in the manufacture of the manhole sealing system being provided for this project. Similarly, the installer shall have at least 5 years experience installing the manhole sealing system being provided for the project.
- C. The manufacturer shall have supplied at least 10 projects of similar size, type of sealing system, and project conditions.
- D. The installer shall have performed manhole sealing similar to that required for this project for at least 10 projects of similar size and project conditions. The job locations and persons to contact for references shall be provided upon request by the Engineer.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
- B. Storage:
 - 1. Store materials in accordance with manufacturer's instructions.
 - 2. Keep containers sealed until ready for use.
 - 3. Store materials in cool, dry environment.
- C. Protect materials during handling and application to prevent damage.

1.7 WARRANTY

- A. Prior to the expiration of the 1-year warranty period, during a period of high groundwater, in the presence of the Owner, visually inspect all manholes rehabilitated as part of the Work. Notify the Owner and Engineer as to the proposed time period for the inspections.
- B. Make all necessary repairs and replacements to remedy defects, breaks, or failures of the Work occurring within one year following the date of acceptance of the Work due to faulty or inadequate materials or workmanship.

PART 2 PRODUCTS

2.1 CHEMICAL SEALING MATERIALS

- A. General
 - 1. Mixing, handling, and application of chemical sealing materials shall be in strict accordance with the manufacturer's recommendations.
 - 2. While being injected, the chemical sealant must be able to react/perform in the presence of water.

3. The cured sealing material must prevent the passage of water through the manhole cracks/joints. The sealing material must withstand submergence in water without degradation, remain flexible after curing, and must be able to withstand freeze/thaw and wet/dry cycles without adversely affecting the seal.
 4. The cured sealant must be homogeneous, chemically stable and resistant to acids, alkalis and organics normally found in sewage, and must not be biodegradable.
 5. Handling, formulation and storage of the sealing gel compound shall be in strict conformance with the manufacturer's recommendations. The uncured gel shall be delivered to the site in unopened containers, with the date of manufacture clearly indicated; no uncured gel manufactured more than six months prior to the date of application shall be utilized. Any uncured gel compound determined to be more than six months old shall be immediately removed from the site. Once a container of uncured gel has been opened, it shall be used as soon as practically possible. If the container of gel is not used within 24 hours of being opened, ensure that the gel has not been contaminated. Any contaminated gel shall be removed from the site and disposed of.
- B. Acrylamide base gel chemical sealing materials shall have the following characteristics:
1. A minimum of 10% acrylamide base material by weight in the total sealant mix. A higher concentration (%) of acrylamide base material may be used to increase strength or offset dilution during injection.
 2. The ability to tolerate some dilution and react in moving water during injection.
 3. A viscosity of approximately 2 centipoise, which can be increased with additives.
 4. A constant viscosity during the reaction period.
 5. A controllable reaction time from 10 seconds to 1 hour.
 6. The ability to increase mix viscosity, density, gel strength and resistance to shrinkage by the use of additives to the water.
- C. Acrylic base gel chemical sealing material shall have the following characteristics:
1. A minimum of 10% acrylic base material by weight in the total sealant mix. A higher concentration (%) of acrylic base material may be used to increase strength or offset dilution during injection.
 2. The ability to tolerate some dilution and react in moving water during injection.
 3. A viscosity of approximately 2 centipoise, which can be increased with additives.
 4. A constant viscosity during the reaction period.

5. A controllable reaction time from 5 seconds to 6 hours.
 6. The ability to increase mix viscosity, density, and gel strength by the use of additives.
- D. Urethane base gel chemical sealing material shall have the following characteristics:
1. One part urethane prepolymer thoroughly mixed with between 5 and 10 parts of water weight. The recommended mix ratio is one part urethane prepolymer to 8 parts of water (11% prepolymer).
 2. A liquid prepolymer having a solids content of 77% to 83%, specific gravity of 1.04 (8.65 lbs./gal.) and a flash point of 20°F.
 3. A liquid prepolymer having a viscosity of 600 to 1200 centipoise at 70°F that can be pumped through 500 feet of 1/2-in. hose with a 1000 psi head at a flow rate of 1 ounce per second.
 4. Water used to react the prepolymer shall have a pH between 5 and 9.
 5. A cure time of 80 seconds at 40°F, 55 seconds at 60°F, and 30 seconds at 80°F, when 1 part prepolymer is reacted with 8 parts of water only. Cure time shall be adjustable by the use of additives.
 6. A relatively rapid viscosity increase of the prepolymer/water mix. Viscosity shall increase from about 10 to 60 centipoise in the first minute for a 1 to 8 prepolymer/water ratio at 50°F.
 7. The ability to increase mix viscosity, density, gel strength and resistance to shrinkage by the use of additives to the water.

E. Chemical additives:

1. Grouts injected into near-surface and chimney-corbels areas may require the addition of shrink control agents, gel reinforcing agents and accelerators as listed below:

| Sealing Material | Suggested Additive |
|-------------------------|---------------------------|
| Acrylamide Gel | Ethylene Glycol |
| Acrylic Gel | Ethylene Glycol |
| Urethane Gel | Gel Reinforcing Agent |

2. Additives shall be included in the chemical mixes in accordance with the manufacturer's recommendations.

2.2 CEMENT PLUGGING, PATCHING AND COATING MATERIALS

- A. The materials used shall be designed, manufactured, and intended for sewer manhole rehabilitation and the specific application in which they are to be used. The materials shall have a proven history of performance in sewer manhole rehabilitation. The materials shall be delivered to the job site in original unopened packages and clearly labeled with the manufacturer's identification and printed instructions. All material shall be stored and handled in accordance with recommendations of the manufacturer and the American Concrete Institute.
- B. Cement plugging materials (for stopping active leaks in concrete and masonry manholes):
 - 1. The plugging material shall be premixed fast-setting, volume-stable waterproof cement consisting of hydraulic cement, graded silica aggregates, and special plasticizing and accelerating agents. It shall not contain chlorides, gypsums, plasters, iron particles, aluminum powder or gas-forming agents, or promote the corrosion of steel it may come in contact with. Set time shall be approximately 1 minute. Ten-minute compressive strength shall be approximately 500 psi and the ultimate compressive strength shall be a minimum of 5,000 psi.
- C. Cement patching, repointing, filling, and repairing materials (for nonleaking holes, cracks, and spalls in concrete and masonry manholes):
 - 1. The patching material shall be premixed, nonshrink cement-based material consisting of hydraulic cement, graded silica aggregates, and special plasticizing and accelerating agents, which has been formulated for vertical or overhead use. It shall not contain chlorides, gypsums, plasters, iron particles, aluminum powder, or gas-forming agents or promote the corrosion of steel it may come into contact with. Set time (ASTM C-191) shall be less than 30 minutes. One-hour compressive strength (ASTM C-109) shall be a minimum of 200 psi and the ultimate compressive strengths (ASTM C-109) shall be a minimum of 5,000 psi. Bond strengths (ASTM C-882 Modified) shall be a minimum of 1,700 psi.
- D. Coating materials (for waterproofing of concrete, block and brick manhole walls, cones and benches):
 - 1. The coating material shall be a high strength, fiber reinforced Portland cement microsilica mortar.
 - 2. The coating shall have the following physical properties:

| Property | Test Method | Value |
|-----------------------|-------------|---|
| Compressive Strength | ASTM C-109 | >4,000 psi at 1 day >10,000 psi at 28 days |
| Flexural Strength | ASTM C-293 | >1,600 psi at 28 days |
| Tensile Strength | ASTM C-496 | >800 psi at 28 days |
| Modulus of Elasticity | ASTM C-469 | >4,500,000 psi at 28 days |

| Property | Test Method | Value |
|--------------------|-------------|---|
| Sulfide Resistance | ASTM C-267 | No weight loss after 90 days in 20,000 ppm aqueous sulfuric acid solution |
| Bond | ASTM C-882 | >2,000 psi |
| Shrinkage | ASTM C-596 | 0.0% at 28 days (at 90% RH) |
| Freeze/Thaw | ASTM C-666 | No damage after 300 cycles |
| Permeability | ASTM C-1202 | <300 coulombs |

3. Coating shall be PARSON MH LINER, as manufactured by Parson Environmental Products, or equal.

2.3 FLEXIBLE SEALANT

- A. Flexible sealant shall be designed to absorb stresses created when cracks and joints move, ensuring a watertight seal.
- B. Flexible sealant shall be a two component, flexible, high strength, corrosion resistant, 100% solids polyamine epoxy/urethane hybrid suitable for installation within a sewer manhole.
- C. Flexible joint sealant shall be PARSONPOXY FP, as manufactured by Parson Environmental Products, or equal.
- D. The flexible sealant shall have the following physical properties:

| Property | Test Method | Value |
|----------------------|-------------|-----------------------------|
| Elongation | ASTM D-412 | 600% |
| Tensile Strength | ASTM D-412 | 1,600 psi |
| Impact Flexibility | ASTM D-256 | 120 inch pounds |
| Hardness, Shore A | ASTM D-2240 | 80 |
| Adhesion | ASTM D-4541 | 350 psi (substrate failure) |
| Slant Shear Strength | ASTM D-638 | 2,000 psi |

2.4 ROOT INHIBITOR

- A. When roots are present, for joint and lateral connection joint grouting, a root deterrent chemical shall be added to control root re-growth. The quantity of inhibitor shall be as recommended by the Manufacturer and approved by Engineer.
- B. Product shall be Avanti AC-50W, or equal.

PART 3 EXECUTION

3.1 SEALING INSTALLATION

A. General

1. Sealing shall be performed during high groundwater conditions, unless directed otherwise by the Owner.

B. Chemical Sealing Equipment

1. The basic equipment shall consist of chemical pumps, chemical containers, injection packers, hoses, valves, and all necessary equipment and tools required to seal manholes.
2. The chemical injection pumps shall be equipped with pressure meters that will provide for monitoring pressure during the injection of the chemical sealants.
3. When necessary, liquid bypass lines equipped with pressure-regulating bypass valves will be incorporated into the pumping system.

C. Chemical Sealing Procedures

1. At each point of leakage within the manhole structure a hole shall be carefully drilled from within the manhole and shall extend through the entire manhole wall. In cases where there are multiple leaks around the circumference of the manhole, fewer holes may be drilled, providing all leakage is stopped from these holes.
2. Grout ports or sealant injection devices shall be placed in these previously drilled holes in such a way as to provide a watertight seal between the holes and the injection device. A hose, or hoses, shall be attached to the injection device from an injection pump.
3. Chemical sealing materials as specified shall then be pumped through the hose until material refusal is recorded on the pressure gage mounted on the pumping unit or a predetermined quantity of sealant has been injected. Care shall be taken during the pumping operation to insure that excessive pressures do not develop and cause damage to the manhole structure.
4. Upon completion of the injection, the ports shall be removed and the remaining holes filled with mortar and troweled flush with the surface of the manhole walls or other surfaces. The mortar used shall be a nonshrink patching mortar.

3.2 MANHOLE INTERIOR COATING INSTALLATION

A. Cleaning

1. All concrete and masonry surfaces must be clean. Grease, laitance, loose bricks, mortar, unsound concrete, and other materials must be completely removed.

2. Water blasting utilizing proper nozzles shall be the primary method of cleaning; however, other methods such as wet or dry sandblasting, acid wash, concrete cleaners, degreasers or mechanical means may be required to properly clean the surface. Surfaces on which these other methods are used shall be thoroughly rinsed, scrubbed, and neutralized to remove cleaning agents and their reactant products.
 3. Surface preparation procedures shall be performed in accordance with the coating manufacturer's recommendations.
- B. Stopping infiltration
1. After surface preparation and prior to the application of coatings, infiltration shall either be stopped by chemical grout sealing, plugging, or by installing "bleed" pipes at the base of the manhole.
- C. Patching
1. All loose or disintegrated material shall be removed from the area to be patched or repointed exposing a sound subbase. Holes or voids around steps, joints or pipes, spalled areas, and cavities caused by missing or broken brick shall be patched and missing mortar repointed using a nonshrink patching mortar.
 2. Cracks not subject to movement and greater than 1/16 inch in width shall be routed out to a minimum width and depth of ½ inch and patched with nonshrink patching mortar.
- D. Coating (waterproofing)
1. For brick and block manholes, a waterproof, cementitious coating shall be applied to all surfaces, from and including the manhole bench and invert, up to the bottom of the frame. For precast concrete manholes, a waterproof, cementitious coating shall be applied to the manhole joints and any cracks in the structure.
 2. Prior to installation of coating, apply a test patch to confirm the suitability of the surface for adhesion of the coating and that the final appearance and function will be as the owner expects.
 3. The material shall be applied in accordance with the manufacturer's recommendations to a minimum thickness of ½ inch. When completed, the coating shall be free of any cracks or holes.
 4. The flexible joint sealant allows movement to occur at cracks and joints.
 5. A flexible joint sealant shall be applied in accordance with the manufacturer's recommendations from the manhole frame to 3 ft. below the frame. Minimum thickness shall be 100 mils.
- E. After proper curing of the applied materials, any "bleed" pipes that were used shall be removed, and the holes plugged and coated with the specified materials.
- F. All materials shall be mixed and applied in accordance with the manufacturer's written instructions.

3.3 FINAL ACCEPTANCE

A. After the specified sealing work has been completed, the manholes shall be visually inspected and tested by the Contractor in the presence of the Owner's Project Representative.

B. Structure Sealing Test

1. Manhole structure seal shall be visually inspected for watertightness against leakage of water into the manhole. All visible leaks and defects observed during inspection shall be repaired to the satisfaction of the Owner's Project Representative.

2. If the groundwater level is not, in the opinion of the Owner's Project Representative, high enough to give a realistic visual inspection, the Contractor shall test the manholes using one of the following methods:

a. Exfiltration Testing

1) Incoming and outgoing sewer and service lines shall be plugged, the plugs restrained and the manhole filled with water to the top of the manhole frame. A soaking period of up to 1 hour will be allowed if bypassing of the sewage is not required or has been provided for. At the end of this optional soaking period, the manhole shall be refilled with water and the test begun.

2) If the water loss exceeds that shown in the following table, the manhole will have failed the test.

| Depth of Manhole | Maximum Allowable Loss |
|-------------------------|---|
| under 8 feet deep | 1 inch in 5 minutes |
| over 8 feet deep | 1/8-inch per foot of depth in 5 minutes |

b. Vacuum Testing

1) All incoming and outgoing sewer and service lines shall be plugged, the plugs restrained and the vacuum tester head placed on the manhole frame and sealed. A vacuum of 10 inches Hg shall then be drawn on the manhole and the time measured for the vacuum to drop to 9 inches Hg. This time shall not be less than 40, 50, or 60 seconds for manhole diameters of 48, 60, and 72 inches, respectively. For manholes deeper than 20 feet, the test times shall be increased by 2 seconds per foot of additional manhole depth.

2) Manholes that fail shall be reworked and retested by the Contractor at no additional compensation.

- c. If exfiltration or vacuum testing is required, a minimum of 10 percent of the sealed manholes shall be tested. Manholes that fail shall be reworked and retested by the Contractor at no additional compensation. If more than 5 percent of the manholes tested fail the initial test, an additional 10 percent of the sealed manholes shall be tested. This process will continue until the testing is satisfactory, or until all manholes have been tested.

END OF SECTION

SECTION 02952

MANHOLE LINING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes
 - 1. Restoration and corrosion barrier composite liner for sewer manholes applied to the manhole benches, walls and corbels. Liner shall not be required for the manhole inverts.

1.2 REFERENCES

- A. ACI 305R – Hot Weather Concreting.
- B. ACI 503R – Use of Epoxy Compounds for Coating Concrete.
- C. ASTM C 78 – Flexural Strength of Concrete (Using Simple Beam With Third-Point Loading).
- D. ASTM C 109 – Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or 50-mm Cube Specimens).
- E. ASTM C 157 – Length Change of Hardened Hydraulic-Cement Mortar and Concrete.
- F. ASTM C 190 – Tensile Strength of Hydraulic Cement Mortars (discontinued)
- G. ASTM C 876 – Half-Cell Potentials of Uncoated Reinforcing Steel in Concrete.
- H. ASTM D 4138 – Measurement of Dry Film Thickness of Protective Coating Systems by Destructive Means.
- I. International Concrete Repair Institute (ICRI) Technical Guideline No. 03730 – Surface Preparation Guidelines for the Repair of Deteriorated Concrete Resulting From Reinforcing Steel Corrosion.
- J. National Association of Corrosion Engineers International, NACE RP 0188 – Discontinuity (Holiday) Testing of Protective Coatings.

1.3 SUBMITTALS

- A. Manufacturer's product data, including physical properties, surface preparation, application instructions, and curing.
- B. Manufacturer's test reports of in-place testing performed by an independent testing agency.
- C. Qualifications of applicator, including:
 - 1. Certification stating applicator is licensed and experienced in the application of the specified products.
 - 2. List of a minimum of 5 recently completed Restoration and Corrosion Barrier Composite Liner projects, including project name and location, names of owner and engineer, and description of products used, substrates, and application procedures.

- D. Certification that liner material is suitable for extended contact with municipal sewage and is chemically resistant to sewer gases.
- E. Additional references, upon request of the Engineer.

1.4 QUALITY ASSURANCE

- A. Applicator Qualifications:
 - 1. Licensed and experienced in the application of the specified products.
 - 2. Applicators shall be trained for the application of the specified products.
- B. The manufacturer shall have at least 5 years experience in the manufacture of the lining system being provided for this project. Similarly, the installer shall have at least 5 years experience installing the lining system being provided for this project.
- C. The manufacturer shall have supplied and provided the installation for at least 10 lining projects of similar size and project conditions. The job locations and persons to contact for references shall be provided upon request by the Engineer.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
- B. Storage:
 - 1. Store materials in accordance with manufacturer's instructions.
 - 2. Keep containers sealed until ready for use.
 - 3. Store materials in a cool dry environment.
- C. Protect materials during handling and application to prevent damage.

1.6 ENVIRONMENTAL CONDITIONS

- A. Do not apply materials under the following conditions:
 - 1. Temperatures exceeding the manufacturer's recommended maximum or minimum allowable.
 - 2. Dusty or smoke-laden atmosphere.
 - 3. Overflowing water.

1.7 SAFETY

- A. The liner installer's personnel shall have Confined Space Entry training.

1.8 WARRANTY

- A. Prior to the expiration of the 1-year warranty period, during a period of high groundwater, in the presence of the Owner, visually inspect all manholes rehabilitated as part of the Work. Notify the Owner and Engineer as to the proposed time period for the inspections.

- B. Make all necessary repairs and replacements to remedy defects, breaks, or failures of the Work occurring within one year following the date of acceptance of the Work due to faulty or inadequate materials or workmanship.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Madewell Products Corporation, PO Box 902, Roswell, Georgia 30077
- B. AP/M Permaform, P.O. Box 555, Johnston, IA 50131
- C. FOSROC, Inc., 150 Carley Court, Georgetown, KY 40324
- D. Or Equal

2.2 COMPOSITE LINER

- A. General
 - 1. Materials shall be from a single manufacturer.
 - 2. Materials shall be compatible with substrate and with each other.
- B. Hydraulic Cement Mortar
 - 1. Hydraulic cement mortar shall be Mainstay ML-10, as manufactured by Madewell Products Corporation, or equal, fast-setting mortar used to stop leaks through cracks and holes.
 - 2. Composition: Blend of hydraulic cements and fillers.
 - 3. Compressive Strength (ASTM C 109)
 - a. 1 Day: 3,500 psi
 - b. 7 Days: 4,900 psi
 - c. 28 Days: 5,500 psi
 - 4. Tensile Strength (ASTM C 190)
 - a. 7 Days: 290 psi
 - b. 28 Days: 575 psi
 - 5. Working Time: 45 to 90 seconds at 77 degrees F.
- C. Restoration Mortar
 - 1. Restoration mortar shall be Mainstay ML-72 Sprayable Microsilica Cement Mortar, as manufactured by Madewell Products Corporation, or equal, low shrinkage, high strength polymer modified, sprayable microsilica mortar.
 - 2. Composition: Blend of cements, microsilica, thermoplastic fibers, densifiers, polymer admixtures, and modifiers.
 - 3. Compressive Strength (ASTM C 109)
 - a. 2 Days: 3,875 psi

- b. 7 Days: 4,550 psi
 - c. 14 Days: 5,640 psi
 - d. 28 Days: 6,190 psi
 - 4. Flexural Strength (ASTM C 78)
 - a. 7 Days: 825 psi.
 - b. 28 Days: 985 psi.
 - 5. Tensile Strength (ASTM C 190)
 - a. 7 Days: 290 psi.
 - b. 28 Days: 575 psi.
 - 6. Shrinkage (ASTM C 157) Modified
 - a. 28 Days: 0.04 percent.
 - 7. Uniaxial Tensile Bond Strength, ACI 503R, Appendix A
 - a. 28 Days: Greater than 500 psi. Bond strength governed by substrate strength.
 - 8. Color: Dark gray.
- D. Epoxy Corrosion Barrier
- 1. Epoxy corrosion barrier shall be Mainstay DS-5 Epoxy, as manufactured by Madewell Products Corporation, or equal.
 - 2. Composition: 100 percent solids, modified epoxy sprayable Mortar.
 - 3. Thickness: Minimum of 100 mils in 1 or 2 coats.
 - 4. Number of Components: 2.
 - 5. Finish: Gloss.
 - 6. Color: White.
- E. Flexible Joint Sealant
- 1. Flexible joint sealant shall be ParsonPoxy FP, as manufactured by Parson Environmental Products, or equal.
 - 2. Composition: 100 percent solids, trowel applied.
 - 3. Thickness: minimum of 100 mils in 1 or 2 coats
 - 4. Number of components: 2
 - 5. Finish: Gloss.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine surfaces to receive restoration mortar. Notify the Engineer in writing if surfaces are not acceptable. Do not begin surface preparation or application until unacceptable conditions have been corrected.
- B. Provide the Engineer with a minimum of 3 days advance notice of completion of surface preparation and start of application.
- C. Before application of each material, surfaces to be lined will be inspected by the Engineer. Correct defects or deficiencies before application of subsequent material.
- D. Inspection by the Engineer or the waiver of inspection of any portion of the work shall not relieve the Contractor of responsibility to perform the work as specified.

3.2 SURFACE PREPARATION

- A. Prepare surfaces in accordance with manufacturer's instructions.
- B. Cleaning: Clean surfaces by water or abrasive blasting, or hand or power tools as required to remove all unsound concrete, contaminants, dirt, debris, and deteriorated reinforcing steel.
- C. Inspection:
 - 1. Inspect cleaned surfaces to identify and mark corroded reinforcing steel, and to locate cracks, leaks, and joints.
 - 2. If indicated, perform electrical potential testing in accordance with ASTM C 876.
- D. Replace or treat corroded reinforcing steel, repair cracks and leaks, and treat joints in accordance with manufacturer's instructions and as approved by the Engineer.
- E. Refer to ICRI Technical Guideline No. 03730 – Surface Preparation Guidelines for the Repair of Deteriorated Concrete Resulting From Reinforcing Steel Corrosion.
- F. Apply Madewell 1312P epoxy putty, or equal, after cleaning reinforcing steel to protect the steel from contamination and re-rusting.
- G. Prepare surfaces to have a minimum profile of 1/16 inch, with aggregate exposed.
- H. Inspect surfaces for soundness.
- I. Saturate all surfaces thoroughly with clean water.
- J. Apply restoration mortar as soon as water sheen is no longer visible (saturated surface dry).
- K. Hydrostatic Leak Correction:
 - 1. Stop visible hydrostatic leaks by application of hydraulic cement mortar after completion of surface preparation.
 - a. Mix only 1 to 2 pounds of mortar at a time.

- b. Add water to form a viscous mass with consistency of modeling clay.
 - c. Apply by hand or trowel.
 - d. Press mixed material firmly into place, starting at top of leak and working downward.
2. Inject flowing leaks or cracks using a suitable polymer gel or foam approved by the Engineer. Remove excess or spilled material from concrete surface before application of restoration mortar.
- L. Prior to application of restoration mortar, place covering over invert to prevent restoration material and epoxy corrosion barrier from entering the wastewater flow stream. Remove covering after work is complete.
- M. Maintain uninterrupted wastewater flow at all times during the work.

3.3 APPLICATION OF RESTORATION MORTAR

- A. Apply restoration mortar in accordance with manufacturer's instructions.
- B. Apply by 1 of the following methods:
- 1. Low pressure, low volume spray equipment.
 - 2. Wet mix shotcrete equipment.
 - 3. Hand trowel into place.
- C. Apply uniformly to substrate to the specified thickness.
- D. Do not trap air in corners, behind exposed reinforcing steel, or between lifts.
- E. Mortar Thickness: Apply a minimum thickness of 1 inch above peaks of existing profile after surface preparation.
- F. Finishing: Finish surface with wood float, sponge float, broom, or brush to produce a textured surface to apply Corrosion Barrier Mortar.
- G. Hot Weather Application:
- 1. Follow manufacturer's instructions to reduce evaporation rate of surface moisture until Corrosion Barrier Mortar can be applied.
 - 2. If applying mortar under conditions such as high temperatures of mortar, substrate, or air, high winds; and low humidity; alone or in combination; rapid evaporation of surface moisture can occur and cause plastic shrinkage cracking. Apply Epoxy Corrosion Barrier or primer/sealer a maximum of 1 hour after placing Restoration Mortar.
 - 3. If conditions prevent application of Epoxy Corrosion Barrier or primer, refer to ACI 305R-91, Figure 2.1.5 to estimate the evaporation rate of surface moisture from the mortar, based on temperatures, relative humidity, and wind velocity. Cover with plastic film or wet burlap to limit evaporation rate to a maximum of 0.1 pounds per square foot per hour.
- H. Cold Weather Application:

1. Follow manufacturer's instructions for minimum application temperature and minimum number of days to protect from freezing.
2. During cold weather (a period when for more than 3 successive days the average daily outdoor temperature drops below 40 degrees F) place restoration mortar at a minimum temperature of 55 degrees F and protect mortar from freezing for a minimum period of 3 days at a temperature between 55 and 75 degrees F. Gradually reduce mortar temperature during the protection period so that the final 24 hours is held as close to 55 degree F as practical.
3. During periods not defined as cold weather, but when freezing temperatures may occur, protect the mortar against freezing as specified for cold weather for the first 24 hours after application.

3.4 APPLICATION OF EPOXY CORROSION BARRIER AND FLEXIBLE JOINT SEALANT

- A. Apply Epoxy Corrosion Barrier and flexible joint sealant in accordance with manufacturer's instructions.
- B. Apply Epoxy Corrosion Barrier and flexible joint sealant as soon as possible after finishing of restoration mortar.
- C. Do not allow surface contamination to the finished restoration mortar before application of Epoxy Corrosion Barrier and flexible joint sealant.
- D. Corrosion Barrier Mortar and flexible joint sealant thickness: apply a minimum thickness of 100 mils.
- E. The flexible joint sealant shall be applied from the manhole frame to 3 feet below the frame.

3.5 CURING OF EPOXY CORROSION BARRIER AND FLEXIBLE JOINT SEALANT

- A. Foot Traffic: Allow a cure time of 24 hours at 70 degrees F.
- B. Curing Conditions:
 1. Continue to protect Composite Liner from freezing throughout protection periods specified for cold weather application.
 2. Shelter Composite Liner from direct impingement of water until 1 to 3 hours after application of Epoxy Corrosion Barrier, depending on substrate temperatures, after which cure sufficiently to be undamaged by water impingement or immersion at ordinary velocities.
- C. Immersion Service: Reach a tack-free condition before being immersed.

3.6 FIELD QUALITY CONTROL

- A. Field Quality Control Testing: Performed by the Contractor.
- B. Check application for required minimum dry film thickness (MDFT).
- C. Coated surfaces that fail to meet MDFT requirements will be rejected by the Engineer.
- D. Destructive Dry Film Thickness Tests, ASTM D 4138:

1. Perform minimum of 1 set of tests for every 500 square feet of surface lined, and consist of 5 spot measurements taken within 2 feet of each other.
 2. Average of the 5 measurements to equal minimum specified thickness, although individual measurements may underrun this amount by a maximum of 40 percent.
 3. Recoat test areas with corrosion barrier mortar.
- E. Spot Adhesion Testing of Restoration and Corrosion Barrier Composite Liner to Substrate:
1. Perform minimum of 1 uniaxial pull-off adhesion test for every 500 square feet of surface lined.
 2. Remove and replace areas not meeting required 145 psi at 28 days minimum adhesion requirement.
- F. Visual and Electrical Inspection for Holidays in Epoxy Corrosion Barrier:
1. Visual Inspection: Perform visual inspection for holidays in epoxy Corrosion Barrier. Mark areas identified for repair and reapplication of Epoxy Corrosion Barrier.
 2. Electrical Inspection: Perform spark testing in accordance with NACE RP 0188 or as recommended by the manufacturer. Mark areas identified for repair and reapplication of Epoxy Corrosion Barrier.
 3. Areas Marked for Repair or reapplication of Epoxy Corrosion Barrier. Sand or grind down to substrate, clean, spray with primer/sealer, and recoat with specified Epoxy Corrosion Barrier.

END OF SECTION

SECTION 02953

CURED-IN-PLACE PIPE LINING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes
 - 1. Structural rehabilitative cured-in-place pipe (CIPP) liner
 - 2. The following tasks:
 - a. Hydraulically clean sections of the sewer piping to be rehabilitated.
 - b. Perform a television inspection of the cleaned sewer pipes to be rehabilitated before and after the rehabilitation process.
 - c. Provide bypass pumping as required.
 - d. Perform modifications to existing manhole structures as required to accommodate the work and restoration required to restore the structures and sites to pre-construction conditions.
 - e. Provide structural rehabilitation liners in all sewer pipes to be rehabilitated.
 - f. Perform all other miscellaneous work required to rehabilitate the sewers as specified and/or directed by the Owner.
 - g. Provide 1-year warranty CCTV inspection of lined pipes.
- B. Related Sections
 - 1. Section 01550 – Traffic Regulation
 - 2. Section 01580 – Temporary Bypass Pumping System

1.2 REFERENCES

- A. ASTM D790 – Standard Test Method for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
- B. ASTM F1216 – Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Inversion and Curing of a Resin-Impregnated Tube
- C. ASTM D2990 - Standard Test Methods for Tensile, Compressive, and Flexural Creep and Creep-Rupture of Plastics
- D. ASTM D5813 - Standard Specification for Cured-In-Place Thermosetting Resin Sewer Piping Systems
- E. 29 CFR 1910.146 – Permit Required Confined Spaces

1.3 SUBMITTALS

- A. Submit material specifications, certified material testing results in accordance with ASTM F1216, D2990, and D5813, Material Safety Data Sheets, and shop drawings for all materials and equipment furnished under this Section.
- B. Submit samples of public notifications.
- C. Submit certification that liner material is suitable for extended contact with municipal sewage and is chemically resistant to sewer gases.
- D. Submit a detailed description of the installation procedures that will be used. The description shall include, but not be limited to, bypass pumping plans, liner shot sequence plans, segment-specific liner inversion/cure methods, information on whether the liner will be wetted out on-site or offsite, wet-out quality control program (if onsite), and cool-down procedures. Verify that these procedures are recommended by the manufacturer.
- E. Submit a contingency plan that includes methods and equipment to be used in the event that liner defects are encountered, and a description of backup equipment available to the installation crew, such as air compressors, lateral reinstatement cutters, etc.
- F. Submit on measurements of the host pipes taken prior to lining.
- G. Submit calculations for the liner thickness determination stamped by a Professional Engineer.
- H. Submit typed pre-construction and post-construction television logs, 2 color copies of the pre-construction video and 2 color copies of the post-construction video saved onto CD-R/WR or DVD-R media.
- I. Submit references upon request.
- J. Submit results of liner testing as described in Section 3.8.
- K. Upon request, submit pressure and temperature logs or “thermocouple logs” after completion of each cured-in-place liner installation.
- L. Upon request, submit copies of cured-in-place liner order sheets after delivery to the site to the Resident Project Representative.
- M. Submit liner samples cut out of the actual liner installations to an independent testing laboratory as described in paragraph 3.8 of this Section.

1.4 QUALITY ASSURANCE

- A. The manufacturer shall have at least 10 years of experience in the manufacture of the lining system being provided for this Project. Similarly, the installer shall have at least 10 years of experience installing the lining system being provided for this Project.
- B. Supervisory personnel shall have at least 5 years of experience in providing the required services and shall be present at the Site during all CIPP Work.
- C. The installer shall have completed at least 10 lining projects of similar size and project conditions. Provide the Engineer with a list of these projects, including the location and a contact person for each.

- D. If the installer elects to wet-out the liner on-site, the Contractor shall employ a Quality Control Program to ensure proper distribution of the resin. Both the Owner and the Engineer shall be notified a week in advance before commencing this work.
- E. The liner installer's personnel shall have a 10-hour construction and safety training, confined space entry and other training as appropriate for the Work to be performed. The confined space entry shall be in accordance with the requirements and protocol as specified in 29 CFR 1910.146, Permit Required Confined Spaces, and ASTM D 4276-84.

1.5 WARRANTY

- A. Prior to the expiration of the 1-year warranty period, during a period of high groundwater and low sewage flow, clean and CCTV inspect all cured-in-place pipes installed as part of the Work. Notify the Owner and Engineer as to the proposed time period for the CCTV inspection.
- B. Make all necessary repairs and replacements to remedy defects, breaks, or failures of the Work occurring within one year following the date of acceptance of the Work.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Liner material shall be compatible with municipal sewage. The liner shall be chemically resistant to withstand exposure to sewer gases. The liner shall be fabricated to a size that, when installed, will neatly fit the internal circumference of the existing (host) pipeline. Allow for circumference stretching during installation. The minimum length shall be that necessary to effectively span the required distance. The installer shall verify the pipe lengths and diameters in the field before installation.
- B. Liner shall be a polyester or vinylester felt tube impregnated with a polyester or vinylester resin and catalyst (CIPP liner).
- C. The liner shall be constructed of material which, when installed, shall provide a structurally sound lining able to withstand all imposed static, dynamic and hydrostatic loads, independent of the load-bearing capacity of the host pipe.
- D. Determine the liner thickness required for the existing site conditions and base the determination on providing a 50-year design life. Calculations for the determination of liner thickness shall be signed and stamped by a professional engineer registered in the state in which the Work is to be performed. The finished cured initial physical characteristics of the liner shall meet or exceed those specified below (assume long-term CIPP physical properties will be reduced by a minimum of 50% from the initial values).

Initial Structural Properties

| Property | Standard | Minimum Value |
|-------------------|------------|---------------|
| Flexural Strength | ASTM D-790 | 4,500 psi |
| Flexural Modulus | ASTM D-790 | 250,000 psi |

- E. Use the available information described below to design the sewer liner, and collect any additional information needed to complete the liner design:
 - 1. Sewer depths
- F. The flow capacity of the lined sewer shall have a final capacity equal to or greater than the original sanitary sewer (host pipe).
- G. Curing equipment shall be capable of monitoring and controlling adequate flow, pressure, and temperature to properly cure the liner according to the manufacturer's recommended curing procedures.
- H. CIPP liners shall comply with ASTM F1216 and be based on the following design criteria:
 - 1. No bonding to the host pipe
 - 2. Fully deteriorated host pipe
 - 3. Factor of safety of 2
 - 4. Long-term flexural strength – 50% of initial (minimum)
 - 5. Long-term flexural modulus - 50% of initial (minimum)
 - 6. Ovality of 2% of the pipe circumference (minimum)
 - 7. Constrained Soil Modulus in accordance with AASHTO LRFD Section 12
 - 8. Groundwater is at the existing surface grade at each liner location
 - 9. AASHTO HS-20 live loads
 - 10. Soil Load of 120 pounds per cubic foot
 - 11. Minimum service life of 50 years
- I. The liner shall have a uniform thickness that when compressed at installation pressures will meet or exceed the design thickness.
- J. The wall color of the interior pipe surface shall not be dark or non-reflective, which could inhibit proper television inspection.
- K. Sewing of liner pieces together to form the desired length for a particular run will not be allowed without the prior written approval of the Owner.

- L. Holes made in the liner during the wet-out process or for other reasons shall be identified, marked and repaired prior to delivery to the job site. Puncture marks or tears must be brought to the Owner's attention for approval before insertion into the pipeline.
- M. If a preliner tube is determined to be necessary, provide preliner tube. Preliner tube shall be a reinforced plastic sheet formed into a tube fit into the host pipe being lined, continuous from manhole to manhole. Alternatively, grout pipe to halt infiltration.

PART 3 EXECUTION

3.1 PUBLIC NOTIFICATION

- A. Implement a public notification program that includes, at a minimum, contacting each home and business connected to the sewer to be lined and informing them of the work to be performed and when the sewer will be off-line. The program shall include the preparation and distribution of written notices that describe the work, the schedule, and how the work will affect the home/business owner. The notices shall include a local telephone number for the Contractor that home/business owners may call if they have questions on the work or need to relay problems that arise related to the work. The notices shall also indicate that odors traveling through the sewer pipe and into homes/buildings may be generated during the lining work. Notices shall be approved by the Owner prior to distribution.
- B. Prepare and distribute two notices to each home/business owner that will be affected by the lining work, as described below:
 - 1. One week in advance of the lining work.
 - 2. 24 hours in advance of the lining work.
- C. If the lining work, including service reinstatement, is not performed within the schedule indicated in the written notice, contact the home/business owners to notify them of the schedule change.

3.2 WATER FOR CONSTRUCTION PURPOSES

- A. Water will be made available to the Contractor from the Town's WPCF for pipeline cleaning and installation of the liner.
- B. No separate payment will be required for the use of Town water.

3.3 CLEANING AND PRE-LINING TELEVISION INSPECTION

- A. Cleaning of the existing sewer line shall, at a minimum, restore 95% of the sewer's original carrying capacity.
- B. Clean sewer sections using a hydraulically propelled, high-velocity jet, or mechanically powered equipment where root intrusion and/or service pipe intrusions are to be removed. The nozzles shall be capable of producing a scouring action from 15 to 45 degrees in all lines. The equipment shall carry its own water tank, auxiliary engines, pumps and hydraulically driven hose reel.

- C. Take special precautions so as to prevent flooding of the upstream manholes and prevent damage to public or private property.
- D. No material is permitted to be disposed of, or stored, at the Site. All material shall be properly disposed of off-site, in compliance with local, state and federal regulations.
- E. After cleaning, television inspect the sewer pipe. During inspection, service connection locations shall be carefully noted and logged as well as conditions that may prevent the proper installation of the liner. The Engineer shall be immediately notified in writing of unsuitable conditions.
- F. Furnish two copies of the inspection reports and videos, for review and approval.

3.4 CUTTING OF PROTRUDING LATERALS

- A. Cut protruding laterals where the protrusion prohibits the passage of equipment necessary to perform the specified work.
- B. Use equipment specifically designed for this application.
- C. Protruding laterals shall be cut to the contour of the pipe.
- D. All pieces of pipe cut from the lateral shall be removed from the sewer mains. Debris will not be allowed to remain in the pipe.
- E. For each lateral cut, record the pipe reach and station as measured during the performance of the work.

3.5 LINING

- A. Provide traffic control in accordance with Section 01550.
- B. Field verify all proposed liner lengths prior to construction.
- C. Ensure that the correct liner is installed in each sewer main being rehabilitated.
- D. During the lining procedure, isolate the sewer section at the upstream manhole by using a sewer plug. Take special precautions so as to prevent flooding of the upstream sewer system and damage to public or private property. If pumping or bypassing is required, supply the pumps, conduits, and other equipment necessary to divert the entire flow, in accordance with Section 01580.
- E. The liner insertion shall be done according to the manufacturer's recommended installation procedures. Make field measurements as needed to ensure correct fit of liner.
- F. After liner insertion is completed, cure the liner according to the manufacturer's recommended curing procedures using heat and pressure. The liner shall be expanded until pressed tightly against the existing (host) pipe wall with a concave dimple appearing at each service connection. Curing pressures shall not exceed 15 psi.
- G. The lining shall have the ability to expand at least 2 inches larger than the host pipe diameter without splitting or rupturing.

- H. CIPP liner installation shall comply with ASTM F1216. Installation, reformation and processing shall cause no degradation of the liner physical properties.
- I. For water inversion/cure installations, cool the cured-in-place liner to a temperature below 100 degrees Fahrenheit before releasing the static head. The cool down procedure may include the introduction of cool water into the inversion standpipe to replace water being drained from a small hole in the liner made at the downstream end.
- J. For air inversion/steam cure installations, cool the cured-in-place liner to a temperature 113 degrees Fahrenheit before relieving the internal pressure. The cool down procedure may also include the introduction of cool water into the inversion standpipe to replace the mixture of air and steam being drained from a small hole in the liner made at the downstream end.
- K. Temperature or "thermocouple" logs shall be collected at the upstream and downstream manholes during the curing process to document that proper temperature, and cure times have been achieved.
- L. The finished pipe shall be continuous (jointless) over the entire length of a lining run and be as free as commercially practicable from visual defects such as foreign inclusion, dry spots, pinholes, delamination, and wrinkles.
- M. If the liner fails to form correctly (e.g., a section of liner does not cure fully, a liner lift, etc.) remove the failed liner and replace it with a new liner.
- N. After the liner has formed, the ends of the liner shall be cut away neatly at both manholes. Provide a smooth transition between liner and existing manhole invert.
- O. If, due to broken or misaligned pipe at the manhole wall, the new pipe fails to make a tight seal, apply a seal at the joint. The seal shall be of a resin mixture compatible with the pipe and shall be as recommended by the manufacturer. Other types of seals may be considered, and shall be submitted to the Owner for consideration. Seals shall be approved by the Owner prior to installation.
- P. Reconnect the existing active sewer service connections only after the manufacturer's minimum recommended curing time has elapsed and the pipe leakage testing has been performed. This shall be done without excavation, and by means of a television camera and cutting device that reestablishes the service to at least 90% of the previous capacity. If service connections cannot be fully reopened within a lined sewer segment due to work-day time constraints, the Contractor may be allowed to open each active service connection to a minimum of 75% of the full pipe diameter before the end of the work day, upon approval of the Owner. These service connections must be opened to 90% of the full pipe diameter by no later than the end of the next working day. Brush the opened lateral to a smooth finish, free from any burrs.
- Q. Do not reopen capped or inactive lateral connections. Confirm the locations of all capped or inactive laterals during the pre-lining television inspections and confirm with the Owner which laterals are to be abandoned.
- R. Prevent any escape of vapors from exceeding regulatory or guidance concentrations for contaminants within an occupied building or structure.

3.6 BYPASS OF FLOW

- A. Provide pumping equipment to bypass the flow around sections of sewer to be lined, where necessary, in accordance with Section 01580.

3.7 INSPECTION/TESTING

A. General

- 1. Test CIPP liner samples in accordance with ASTM F1216.
- 2. An independent testing laboratory shall test the cured-in-place pipe samples and the results shall be sent directly to the Engineer and Owner.

B. CIPP Liner

- 1. Collect, prepare and test liner samples for each sewer main segment being rehabilitated for flexural properties in accordance with ASTM F1216, Section 8.1.
 - a. For liner samples less than 18 inches in diameter or equivalent, collect a restrained pipe sample by placing a section of PVC pipe at the end of the lined segment and inverting the liner through the section of PVC pipe. Select PVC pipe to match the inside diameter of the sewer main being lined as closely as possible.
 - b. For liner samples greater than 18 inches in diameter or equivalent, prepare plate samples from the same tube and resin as the liner being installed at the time of wet-out. Cure the plate samples for the same duration and under the same conditions as the liner being installed.
- 2. Measure wall thickness of liner samples.
- 3. Provide information on chemical resistance of liner per ASTM F1216.

3.8 CLEAN-UP

- A. Upon acceptance of the installation work and testing, restore the project area affected by the operations to a condition at least equal to that existing prior to the work.

3.9 POST-LINING TELEVISION INSPECTION

- A. Perform post-lining television inspection, with inspection report and videos, on the completed pipe segments. Furnish two copies of the inspection reports and videos to the Engineer for review and approval.
- B. Use a pan-and-tilt video camera for the post-construction television inspection.
- C. Verify that the services have been reestablished to at least 90% of their capacity after completion of pipe lining.

END OF SECTION



Attachment A
Prevailing Wage Rates

Project: Bid No. WPCA/DPW 2020-01

**Minimum Rates and Classifications
for Heavy/Highway Construction**

**Connecticut Department of Labor
Wage and Workplace Standards Division**

ID#: H 26850

By virtue of the authority vested in the Labor Commissioner under provisions of Section 31-53 of the General Statutes of Connecticut, as amended, the following are declared to be the prevailing rates and welfare payments and will apply only where the contract is advertised for bid within 20 days of the date on which the rates are established. Any contractor or subcontractor not obligated by agreement to pay to the welfare and pension fund shall pay this amount to each employee as part of his/her hourly wages.

Project Number: 19-02R ; 120-151 And 05637

Project Town: Simsbury

FAP Number:

State Number:

Project: Bid No. WPCA/DPW 2020-01

| CLASSIFICATION | Hourly Rate | Benefits |
|---|--------------------|-----------------|
| 1) Boilermaker | 33.79 | 34% + 8.96 |
| 1a) Bricklayer, Cement Masons, Cement Finishers, Plasterers, Stone Masons | 34.72 | 32.15 |
| 2) Carpenters, Piledrivermen | 33.53 | 25.66 |
| 2a) Diver Tenders | 33.53 | 25.66 |

As of: Thursday, January 09, 2020

Project: Bid No. WPCA/DPW 2020-01

| | | |
|---|-------|-------|
| 3) Divers | 41.99 | 25.66 |
| 03a) Millwrights | 34.04 | 26.09 |
| 4) Painters: (Bridge Construction) Brush, Roller, Blasting (Sand, Water, etc.), Spray | 51.00 | 21.80 |
| 4a) Painters: Brush and Roller | 34.62 | 21.80 |
| 4b) Painters: Spray Only | 36.62 | 21.80 |
| 4c) Painters: Steel Only | 35.62 | 21.80 |
| 4d) Painters: Blast and Spray | 37.62 | 21.80 |

As of: Thursday, January 09, 2020

Project: Bid No. WPCA/DPW 2020-01

| | | |
|--|-------|------------------------|
| 4e) Painters: Tanks, Tower and Swing | 36.62 | 21.80 |
| 5) Electrician (Trade License required: E-1,2 L-5,6 C-5,6 T-1,2 L-1,2 V-1,2,7,8,9) | 40.00 | 27.67+3% of gross wage |
| 6) Ironworkers: Ornamental, Reinforcing, Structural, and Precast Concrete Erection | 36.67 | 35.77 + a |
| 7) Plumbers (Trade License required: (P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2) and Pipefitters (Including HVAC Work) (Trade License required: S-1,2,3,4,5,6,7,8 B-1,2,3,4 D-1,2,3,4 G-1, G-2, G-8, G-9) | 43.62 | 32.06 |
| ----LABORERS----- | | |
| 8) Group 1: Laborer (Unskilled), Common or General, acetylene burner, concrete specialist | 30.75 | 20.84 |
| 9) Group 2: Chain saw operators, fence and guard rail erectors, pneumatic tool operators, powdermen | 31.00 | 20.84 |

As of: Thursday, January 09, 2020

Project: WPCA/DPW 2020-01

| | | |
|--|-------|-------|
| 10) Group 3: Pipelayers | 31.25 | 20.84 |
| 11) Group 4: Jackhammer/Pavement breaker (handheld); mason tenders (cement/concrete), catch basin builders, asphalt rakers, air track operators, block paver, curb setter and forklift operators | 31.25 | 20.84 |
| 12) Group 5: Toxic waste removal (non-mechanical systems) | 32.75 | 20.84 |
| 13) Group 6: Blasters | 32.50 | 20.84 |
| Group 7: Asbestos/lead removal, non-mechanical systems (does not include leaded joint pipe) | 31.75 | 20.84 |
| Group 8: Traffic control signalmen | 18.00 | 20.84 |
| Group 9: Hydraulic Drills | 29.30 | 18.90 |

As of: Thursday, January 09, 2020

Project: Bid No. WPCA/DPW 2020-01

----LABORERS (TUNNEL CONSTRUCTION, FREE AIR). Shield Drive and
Liner Plate Tunnels in Free Air.----

| | | |
|---|-------|-----------|
| 13a) Miners, Motormen, Mucking Machine Operators, Nozzle Men, Grout Men, Shaft & Tunnel Steel & Rodmen, Shield & Erector, Arm Operator, Cable Tenders | 32.98 | 20.84 + a |
|---|-------|-----------|

| | | |
|-------------------------|-------|-----------|
| 13b) Brakemen, Trackmen | 32.01 | 20.84 + a |
|-------------------------|-------|-----------|

----CLEANING, CONCRETE AND CAULKING TUNNEL----

| | | |
|--|-------|-----------|
| 14) Concrete Workers, Form Movers, and Strippers | 32.01 | 20.84 + a |
|--|-------|-----------|

| | | |
|-------------------|-------|-----------|
| 15) Form Erectors | 32.34 | 20.84 + a |
|-------------------|-------|-----------|

----ROCK SHAFT LINING, CONCRETE, LINING OF SAME AND TUNNEL
IN FREE AIR:----

As of: Thursday, January 09, 2020

Project: WPCA/DPW 2020-01

| | | |
|--|-------|-----------|
| 16) Brakemen, Trackmen, Tunnel Laborers, Shaft Laborers | 32.01 | 20.84 + a |
| 17) Laborers Topside, Cage Tenders, Bellman | 31.90 | 20.84 + a |
| 18) Miners | 32.98 | 20.84 + a |
| ----TUNNELS, CAISSON AND CYLINDER WORK IN COMPRESSED AIR: ---- | | |
| 18a) Blaster | 39.47 | 20.84 + a |
| 19) Brakemen, Trackmen, Groutman, Laborers, Outside Lock Tender, Gauge Tenders | 39.27 | 20.84 + a |
| 20) Change House Attendants, Powder Watchmen, Top on Iron Bolts | 37.29 | 20.84 + a |

As of: Thursday, January 09, 2020

Project: WPCA/DPW 2020-01

| | | |
|------------------------------|-------|-----------|
| 21) Mucking Machine Operator | 40.06 | 20.84 + a |
|------------------------------|-------|-----------|

----TRUCK DRIVERS----(*see note below)

| | | |
|-----------------|-------|-----------|
| Two axle trucks | 29.51 | 24.52 + a |
|-----------------|-------|-----------|

| | | |
|---------------------------------------|-------|-----------|
| Three axle trucks; two axle ready mix | 29.62 | 24.52 + a |
|---------------------------------------|-------|-----------|

| | | |
|----------------------|-------|-----------|
| Three axle ready mix | 29.67 | 24.52 + a |
|----------------------|-------|-----------|

| | | |
|--|-------|-----------|
| Four axle trucks, heavy duty trailer (up to 40 tons) | 29.72 | 24.52 + a |
|--|-------|-----------|

| | | |
|---------------------|-------|-----------|
| Four axle ready-mix | 29.77 | 24.52 + a |
|---------------------|-------|-----------|

As of: Thursday, January 09, 2020

Project: WPCA/DPW 2020-01

| | | |
|---|-------|-----------|
| Heavy duty trailer (40 tons and over) | 29.98 | 24.52 + a |
| Specialized earth moving equipment other than conventional type on-the road trucks and semi-trailer (including Euclids) | 29.77 | 24.52 + a |

----POWER EQUIPMENT OPERATORS----

| | | |
|---|-------|-----------|
| Group 1: Crane handling or erecting structural steel or stone, hoisting engineer (2 drums or over), front end loader (7 cubic yards or over), Work Boat 26 ft. & Over, Tunnel Boring Machines. (Trade License Required) | 40.97 | 24.80 + a |
| Group 2: Cranes (100 ton rate capacity and over); Excavator over 2 cubic yards; Piledriver (\$3.00 premium when operator controls hammer); Bauer Drill/Caisson. (Trade License Required) | 40.64 | 24.80 + a |
| Group 3: Excavator/Backhoe under 2 cubic yards; Cranes (under 100 ton rated capacity), Gradall; Master Mechanic; Hoisting Engineer (all types of equipment where a drum and cable are used to hoist or drag material regardless of motive power of operation), Rubber Tire Excavator (Drott-1085 or similar); Grader Operator; Bulldozer Fine Grade (slopes, shaping, laser or GPS, etc.). (Trade License Required) | 39.88 | 24.80 + a |
| Group 4: Trenching Machines; Lighter Derrick; Concrete Finishing Machine; CMI Machine or Similar; Koehring Loader (Skooper) | 39.48 | 24.80 + a |

Project: Bid No. WPCA/DPW 2020-01

| | | |
|--|-------|-----------|
| Group 5: Specialty Railroad Equipment; Asphalt Paver; Asphalt Spreader; Asphalt Reclaiming Machine; Line Grinder; Concrete Pumps; Drills with Self Contained Power Units; Boring Machine; Post Hole Digger; Auger; Pounder; Well Digger; Milling Machine (over 24" Mandrell) | 38.87 | 24.80 + a |
| Group 5 continued: Side Boom; Combination Hoe and Loader; Directional Driller. | 38.87 | 24.80 + a |
| Group 6: Front End Loader (3 up to 7 cubic yards); Bulldozer (rough grade dozer). | 38.55 | 24.80 + a |
| Group 7: Asphalt Roller; Concrete Saws and Cutters (ride on types); Vermeer Concrete Cutter; Stump Grinder; Scraper; Snooper; Skidder; Milling Machine (24" and Under Mandrel). | 38.20 | 24.80 + a |
| Group 8: Mechanic, Grease Truck Operator, Hydroblaster, Barrier Mover, Power Stone Spreader; Welder; Work Boat under 26 ft.; Transfer Machine. | 37.79 | 24.80 + a |
| Group 9: Front End Loader (under 3 cubic yards), Skid Steer Loader regardless of attachments (Bobcat or Similar); Fork Lift, Power Chipper; Landscape Equipment (including hydroseeder). | 37.34 | 24.80 + a |
| Group 10: Vibratory Hammer, Ice Machine, Diesel and Air Hammer, etc. | 35.24 | 24.80 + a |

As of: Thursday, January 09, 2020

Project: Bid No. WPCA/DPW 2020-01

| | | |
|---|-------|-----------|
| Group 11: Conveyor, Earth Roller; Power Pavement Breaker (whiphammer), Robot Demolition Equipment. | 35.24 | 24.80 + a |
| Group 12: Wellpoint Operator. | 35.18 | 24.80 + a |
| Group 13: Compressor Battery Operator. | 34.58 | 24.80 + a |
| Group 14: Elevator Operator; Tow Motor Operator (Solid Tire No Rough Terrain). | 33.41 | 24.80 + a |
| Group 15: Generator Operator; Compressor Operator; Pump Operator; Welding Machine Operator; Heater Operator. | 32.99 | 24.80 + a |
| Group 16: Maintenance Engineer/Oiler | 32.32 | 24.80 + a |
| Group 17: Portable asphalt plant operator; portable crusher plant operator; portable concrete plant operator. | 36.76 | 24.80 + a |

As of: Thursday, January 09, 2020

Project: Bid No. WPCA/DPW 2020-01

Group 18: Power Safety Boat; Vacuum Truck; Zim Mixer; Sweeper; 34.26 24.80 + a
(minimum for any job requiring CDL license).

**NOTE: SEE BELOW

---LINE CONSTRUCTION---(Railroad Construction and Maintenance)---

| | | |
|--|-------|--------------|
| 20) Lineman, Cable Splicer, Technician | 48.19 | 6.5% + 22.00 |
|--|-------|--------------|

| | | |
|------------------------------|-------|--------------|
| 21) Heavy Equipment Operator | 42.26 | 6.5% + 19.88 |
|------------------------------|-------|--------------|

| | | |
|--|-------|--------------|
| 22) Equipment Operator, Tractor Trailer Driver, Material Men | 40.96 | 6.5% + 19.21 |
|--|-------|--------------|

| | | |
|----------------------|-------|-------------|
| 23) Driver Groundmen | 26.50 | 6.5% + 9.00 |
|----------------------|-------|-------------|

As of: Thursday, January 09, 2020

Project: WPCA/DPW 2020-01

| | | |
|-------------------|-------|--------------|
| 23a) Truck Driver | 40.96 | 6.5% + 17.76 |
|-------------------|-------|--------------|

---LINE CONSTRUCTION---

| | | |
|----------------------|-------|-------------|
| 24) Driver Groundmen | 30.92 | 6.5% + 9.70 |
|----------------------|-------|-------------|

| | | |
|---------------|-------|-------------|
| 25) Groundmen | 22.67 | 6.5% + 6.20 |
|---------------|-------|-------------|

| | | |
|-------------------------------|-------|--------------|
| 26) Heavy Equipment Operators | 37.10 | 6.5% + 10.70 |
|-------------------------------|-------|--------------|

| | | |
|---|-------|--------------|
| 27) Linemen, Cable Splicers, Dynamite Men | 41.22 | 6.5% + 12.20 |
|---|-------|--------------|

| | | |
|--|-------|--------------|
| 28) Material Men, Tractor Trailer Drivers, Equipment Operators | 35.04 | 6.5% + 10.45 |
|--|-------|--------------|

As of: Thursday, January 09, 2020

Project: Bid No. WPCA/DPW 2020-01

01) Asbestos/Toxic Waste Removal Laborers: Asbestos removal and encapsulation (except its removal from mechanical systems which are not to be scrapped), toxic waste removers, blasters. ****See Laborers Group 5 and 7****

As of:

Thursday, January 09, 2020

Project: Bid No. WPCA/DPW 2020-01

Welders: Rate for craft to which welding is incidental.

**Note: Hazardous waste removal work receives additional \$1.25 per hour for truck drivers.*

***Note: Hazardous waste premium \$3.00 per hour over classified rate*

ALL Cranes: When crane operator is operating equipment that requires a fully licensed crane operator to operate he receives an extra \$4.00 premium in addition to the hourly wage rate and benefit contributions:

1) Crane handling or erecting structural steel or stone; hoisting engineer (2 drums or over)

2) Cranes (100 ton rate capacity and over) Bauer Drill/Caisson

3) Cranes (under 100 ton rated capacity)

Crane with 150 ft. boom (including jib) - \$1.50 extra

Crane with 200 ft. boom (including jib) - \$2.50 extra

Crane with 250 ft. boom (including jib) - \$5.00 extra

Crane with 300 ft. boom (including jib) - \$7.00 extra

Crane with 400 ft. boom (including jib) - \$10.00 extra

All classifications that indicate a percentage of the fringe benefits must be calculated at the percentage rate times the "base hourly rate".

Apprentices duly registered under the Commissioner of Labor's regulations on "Work Training Standards for Apprenticeship and Training Programs" Section 31-51-d-1 to 12, are allowed to be paid the appropriate percentage of the prevailing journeymen hourly base and the full fringe benefit rate, providing the work site ratio shall not be less than one full-time journeyman instructing and supervising the work of each apprentice in a specific trade.

~~Connecticut General Statute Section 31-55a: Annual Adjustments to wage rates by contractors doing state work ~~

The Prevailing wage rates applicable to this project are subject to annual adjustments each July 1st for the duration of the project.

Each contractor shall pay the annual adjusted prevailing wage rate that is in effect each July 1st, as posted by the Department of Labor.

It is the contractor's responsibility to obtain the annual adjusted prevailing wage rate increases directly from the Department of Labor's website.

The annual adjustments will be posted on the Department of Labor's Web page: www.ct.gov/dol.

The Department of Labor will continue to issue the initial prevailing wage rate schedule to the Contracting Agency for the project.

All subsequent annual adjustments will be posted on our Web Site for contractor access.

Contracting Agencies are under no obligation pursuant to State labor law to pay any increase due to the annual adjustment provision.

As of: Thursday, January 09, 2020

Project: Bid No. WPCA/DPW 2020-01

Effective October 1, 2005 - Public Act 05-50: any person performing the work of any mechanic, laborer, or worker shall be paid prevailing wage

All Person who perform work ON SITE must be paid prevailing wage for the appropriate mechanic, laborer, or worker classification.

All certified payrolls must list the hours worked and wages paid to All Persons who perform work ON SITE regardless of their ownership i.e.: (Owners, Corporate Officers, LLC Members, Independent Contractors, et. al)

Reporting and payment of wages is required regardless of any contractual relationship alleged to exist between the contractor and such person.

~~Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clause (29 CFR 5.5 (a) (1) (ii)).

Please direct any questions which you may have pertaining to classification of work and payment of prevailing wages to the Wage and Workplace Standards Division, telephone (860)263-6790.

As of: Thursday, January 09, 2020

Project: Sewer Rehab

**Minimum Rates and Classifications
for Heavy/Highway Construction**

**Connecticut Department of Labor
Wage and Workplace Standards Division**

ID#: H 26858

By virtue of the authority vested in the Labor Commissioner under provisions of Section 31-53 of the General Statutes of Connecticut, as amended, the following are declared to be the prevailing rates and welfare payments and will apply only where the contract is advertised for bid within 20 days of the date on which the rates are established. Any contractor or subcontractor not obligated by agreement to pay to the welfare and pension fund shall pay this amount to each employee as part of his/her hourly wages.

Project Number:

Project Town: Simsbury

FAP Number:

State Number:

Project: Sewer Rehab

| CLASSIFICATION | Hourly Rate | Benefits |
|---|--------------------|-----------------|
| 1) Boilermaker | 33.79 | 34% + 8.96 |
| 1a) Bricklayer, Cement Masons, Cement Finishers, Plasterers, Stone Masons | 34.72 | 32.15 |
| 2) Carpenters, Piledrivermen | 33.53 | 25.66 |
| 2a) Diver Tenders | 33.53 | 25.66 |

As of: Thursday, January 09, 2020

Project: Sewer Rehab

| | | |
|---|-------|-------|
| 3) Divers | 41.99 | 25.66 |
| 03a) Millwrights | 34.04 | 26.09 |
| 4) Painters: (Bridge Construction) Brush, Roller, Blasting (Sand, Water, etc.), Spray | 51.00 | 21.80 |
| 4a) Painters: Brush and Roller | 34.62 | 21.80 |
| 4b) Painters: Spray Only | 36.62 | 21.80 |
| 4c) Painters: Steel Only | 35.62 | 21.80 |
| 4d) Painters: Blast and Spray | 37.62 | 21.80 |

As of: Thursday, January 09, 2020

Project: Sewer Rehab

| | | |
|--|-------|------------------------|
| 4e) Painters: Tanks, Tower and Swing | 36.62 | 21.80 |
| 5) Electrician (Trade License required: E-1,2 L-5,6 C-5,6 T-1,2 L-1,2 V-1,2,7,8,9) | 40.00 | 27.67+3% of gross wage |
| 6) Ironworkers: Ornamental, Reinforcing, Structural, and Precast Concrete Erection | 36.67 | 35.77 + a |
| 7) Plumbers (Trade License required: (P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2) and Pipefitters (Including HVAC Work) (Trade License required: S-1,2,3,4,5,6,7,8 B-1,2,3,4 D-1,2,3,4 G-1, G-2, G-8, G-9) | 43.62 | 32.06 |
| ----LABORERS----- | | |
| 8) Group 1: Laborer (Unskilled), Common or General, acetylene burner, concrete specialist | 30.75 | 20.84 |
| 9) Group 2: Chain saw operators, fence and guard rail erectors, pneumatic tool operators, powdermen | 31.00 | 20.84 |

As of:

Thursday, January 09, 2020

Project: Sewer Rehab

| | | |
|--|-------|-------|
| 10) Group 3: Pipelayers | 31.25 | 20.84 |
| 11) Group 4: Jackhammer/Pavement breaker (handheld); mason tenders (cement/concrete), catch basin builders, asphalt rakers, air track operators, block paver, curb setter and forklift operators | 31.25 | 20.84 |
| 12) Group 5: Toxic waste removal (non-mechanical systems) | 32.75 | 20.84 |
| 13) Group 6: Blasters | 32.50 | 20.84 |
| Group 7: Asbestos/lead removal, non-mechanical systems (does not include leaded joint pipe) | 31.75 | 20.84 |
| Group 8: Traffic control signalmen | 18.00 | 20.84 |
| Group 9: Hydraulic Drills | 29.30 | 18.90 |

Project: Sewer Rehab

----LABORERS (TUNNEL CONSTRUCTION, FREE AIR). Shield Drive and
Liner Plate Tunnels in Free Air.----

| | | |
|---|-------|-----------|
| 13a) Miners, Motormen, Mucking Machine Operators, Nozzle Men, Grout Men, Shaft & Tunnel Steel & Rodmen, Shield & Erector, Arm Operator, Cable Tenders | 32.98 | 20.84 + a |
|---|-------|-----------|

| | | |
|-------------------------|-------|-----------|
| 13b) Brakemen, Trackmen | 32.01 | 20.84 + a |
|-------------------------|-------|-----------|

----CLEANING, CONCRETE AND CAULKING TUNNEL----

| | | |
|--|-------|-----------|
| 14) Concrete Workers, Form Movers, and Strippers | 32.01 | 20.84 + a |
|--|-------|-----------|

| | | |
|-------------------|-------|-----------|
| 15) Form Erectors | 32.34 | 20.84 + a |
|-------------------|-------|-----------|

----ROCK SHAFT LINING, CONCRETE, LINING OF SAME AND TUNNEL
IN FREE AIR:----

As of: Thursday, January 09, 2020

Project: Sewer Rehab

| | | |
|--|-------|-----------|
| 16) Brakemen, Trackmen, Tunnel Laborers, Shaft Laborers | 32.01 | 20.84 + a |
| 17) Laborers Topside, Cage Tenders, Bellman | 31.90 | 20.84 + a |
| 18) Miners | 32.98 | 20.84 + a |
| ----TUNNELS, CAISSON AND CYLINDER WORK IN COMPRESSED AIR: ---- | | |
| 18a) Blaster | 39.47 | 20.84 + a |
| 19) Brakemen, Trackmen, Groutman, Laborers, Outside Lock Tender, Gauge Tenders | 39.27 | 20.84 + a |
| 20) Change House Attendants, Powder Watchmen, Top on Iron Bolts | 37.29 | 20.84 + a |

As of: Thursday, January 09, 2020

Project: Sewer Rehab

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| 21) Mucking Machine Operator | 40.06 | 20.84 + a |
|------------------------------|-------|-----------|

----TRUCK DRIVERS----(*see note below)

| | | |
|-----------------|-------|-----------|
| Two axle trucks | 29.51 | 24.52 + a |
|-----------------|-------|-----------|

| | | |
|---------------------------------------|-------|-----------|
| Three axle trucks; two axle ready mix | 29.62 | 24.52 + a |
|---------------------------------------|-------|-----------|

| | | |
|----------------------|-------|-----------|
| Three axle ready mix | 29.67 | 24.52 + a |
|----------------------|-------|-----------|

| | | |
|--|-------|-----------|
| Four axle trucks, heavy duty trailer (up to 40 tons) | 29.72 | 24.52 + a |
|--|-------|-----------|

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|---------------------|-------|-----------|
| Four axle ready-mix | 29.77 | 24.52 + a |
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As of: Thursday, January 09, 2020

Project: Sewer Rehab

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|---|-------|-----------|
| Heavy duty trailer (40 tons and over) | 29.98 | 24.52 + a |
| Specialized earth moving equipment other than conventional type on-the road trucks and semi-trailer (including Euclids) | 29.77 | 24.52 + a |

---POWER EQUIPMENT OPERATORS---

| | | |
|---|-------|-----------|
| Group 1: Crane handling or erecting structural steel or stone, hoisting engineer (2 drums or over), front end loader (7 cubic yards or over), Work Boat 26 ft. & Over, Tunnel Boring Machines. (Trade License Required) | 40.97 | 24.80 + a |
| Group 2: Cranes (100 ton rate capacity and over); Excavator over 2 cubic yards; Piledriver (\$3.00 premium when operator controls hammer); Bauer Drill/Caisson. (Trade License Required) | 40.64 | 24.80 + a |
| Group 3: Excavator/Backhoe under 2 cubic yards; Cranes (under 100 ton rated capacity), Gradall; Master Mechanic; Hoisting Engineer (all types of equipment where a drum and cable are used to hoist or drag material regardless of motive power of operation), Rubber Tire Excavator (Drott-1085 or similar); Grader Operator; Bulldozer Fine Grade (slopes, shaping, laser or GPS, etc.). (Trade License Required) | 39.88 | 24.80 + a |
| Group 4: Trenching Machines; Lighter Derrick; Concrete Finishing Machine; CMI Machine or Similar; Koehring Loader (Skooper) | 39.48 | 24.80 + a |

Project: Sewer Rehab

| | | |
|--|-------|-----------|
| Group 5: Specialty Railroad Equipment; Asphalt Paver; Asphalt Spreader; Asphalt Reclaiming Machine; Line Grinder; Concrete Pumps; Drills with Self Contained Power Units; Boring Machine; Post Hole Digger; Auger; Pounder; Well Digger; Milling Machine (over 24" Mandrell) | 38.87 | 24.80 + a |
| Group 5 continued: Side Boom; Combination Hoe and Loader; Directional Driller. | 38.87 | 24.80 + a |
| Group 6: Front End Loader (3 up to 7 cubic yards); Bulldozer (rough grade dozer). | 38.55 | 24.80 + a |
| Group 7: Asphalt Roller; Concrete Saws and Cutters (ride on types); Vermeer Concrete Cutter; Stump Grinder; Scraper; Snooper; Skidder; Milling Machine (24" and Under Mandrel). | 38.20 | 24.80 + a |
| Group 8: Mechanic, Grease Truck Operator, Hydroblaster, Barrier Mover, Power Stone Spreader; Welder; Work Boat under 26 ft.; Transfer Machine. | 37.79 | 24.80 + a |
| Group 9: Front End Loader (under 3 cubic yards), Skid Steer Loader regardless of attachments (Bobcat or Similar); Fork Lift, Power Chipper; Landscape Equipment (including hydroseeder). | 37.34 | 24.80 + a |
| Group 10: Vibratory Hammer, Ice Machine, Diesel and Air Hammer, etc. | 35.24 | 24.80 + a |

Project: Sewer Rehab

| | | |
|---|-------|-----------|
| Group 11: Conveyor, Earth Roller; Power Pavement Breaker (whiphammer), Robot Demolition Equipment. | 35.24 | 24.80 + a |
| Group 12: Wellpoint Operator. | 35.18 | 24.80 + a |
| Group 13: Compressor Battery Operator. | 34.58 | 24.80 + a |
| Group 14: Elevator Operator; Tow Motor Operator (Solid Tire No Rough Terrain). | 33.41 | 24.80 + a |
| Group 15: Generator Operator; Compressor Operator; Pump Operator; Welding Machine Operator; Heater Operator. | 32.99 | 24.80 + a |
| Group 16: Maintenance Engineer/Oiler | 32.32 | 24.80 + a |
| Group 17: Portable asphalt plant operator; portable crusher plant operator; portable concrete plant operator. | 36.76 | 24.80 + a |

Project: Sewer Rehab

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|--|-------|-----------|
| Group 18: Power Safety Boat; Vacuum Truck; Zim Mixer; Sweeper; (minimum for any job requiring CDL license). | 34.26 | 24.80 + a |
|--|-------|-----------|

**NOTE: SEE BELOW

---LINE CONSTRUCTION---(Railroad Construction and Maintenance)---

| | | |
|--|-------|--------------|
| 20) Lineman, Cable Splicer, Technician | 48.19 | 6.5% + 22.00 |
|--|-------|--------------|

| | | |
|------------------------------|-------|--------------|
| 21) Heavy Equipment Operator | 42.26 | 6.5% + 19.88 |
|------------------------------|-------|--------------|

| | | |
|--|-------|--------------|
| 22) Equipment Operator, Tractor Trailer Driver, Material Men | 40.96 | 6.5% + 19.21 |
|--|-------|--------------|

| | | |
|----------------------|-------|-------------|
| 23) Driver Groundmen | 26.50 | 6.5% + 9.00 |
|----------------------|-------|-------------|

As of: Thursday, January 09, 2020

Project: Sewer Rehab

| | | |
|-------------------|-------|--------------|
| 23a) Truck Driver | 40.96 | 6.5% + 17.76 |
|-------------------|-------|--------------|

---LINE CONSTRUCTION---

| | | |
|----------------------|-------|-------------|
| 24) Driver Groundmen | 30.92 | 6.5% + 9.70 |
|----------------------|-------|-------------|

| | | |
|---------------|-------|-------------|
| 25) Groundmen | 22.67 | 6.5% + 6.20 |
|---------------|-------|-------------|

| | | |
|-------------------------------|-------|--------------|
| 26) Heavy Equipment Operators | 37.10 | 6.5% + 10.70 |
|-------------------------------|-------|--------------|

| | | |
|---|-------|--------------|
| 27) Linemen, Cable Splicers, Dynamite Men | 41.22 | 6.5% + 12.20 |
|---|-------|--------------|

| | | |
|--|-------|--------------|
| 28) Material Men, Tractor Trailer Drivers, Equipment Operators | 35.04 | 6.5% + 10.45 |
|--|-------|--------------|

As of: Thursday, January 09, 2020

Project: Sewer Rehab

01) Asbestos/Toxic Waste Removal Laborers: Asbestos removal and encapsulation (except its removal from mechanical systems which are not to be scrapped), toxic waste removers, blasters. ****See Laborers Group 5 and 7****

Project: Sewer Rehab

Welders: Rate for craft to which welding is incidental.

**Note: Hazardous waste removal work receives additional \$1.25 per hour for truck drivers.*

***Note: Hazardous waste premium \$3.00 per hour over classified rate*

ALL Cranes: When crane operator is operating equipment that requires a fully licensed crane operator to operate he receives an extra \$4.00 premium in addition to the hourly wage rate and benefit contributions:

1) Crane handling or erecting structural steel or stone; hoisting engineer (2 drums or over)

2) Cranes (100 ton rate capacity and over) Bauer Drill/Caisson

3) Cranes (under 100 ton rated capacity)

Crane with 150 ft. boom (including jib) - \$1.50 extra

Crane with 200 ft. boom (including jib) - \$2.50 extra

Crane with 250 ft. boom (including jib) - \$5.00 extra

Crane with 300 ft. boom (including jib) - \$7.00 extra

Crane with 400 ft. boom (including jib) - \$10.00 extra

All classifications that indicate a percentage of the fringe benefits must be calculated at the percentage rate times the "base hourly rate".

Apprentices duly registered under the Commissioner of Labor's regulations on "Work Training Standards for Apprenticeship and Training Programs" Section 31-51-d-1 to 12, are allowed to be paid the appropriate percentage of the prevailing journeymen hourly base and the full fringe benefit rate, providing the work site ratio shall not be less than one full-time journeyman instructing and supervising the work of each apprentice in a specific trade.

~~Connecticut General Statute Section 31-55a: Annual Adjustments to wage rates by contractors doing state work ~~

The Prevailing wage rates applicable to this project are subject to annual adjustments each July 1st for the duration of the project.

Each contractor shall pay the annual adjusted prevailing wage rate that is in effect each July 1st, as posted by the Department of Labor.

It is the contractor's responsibility to obtain the annual adjusted prevailing wage rate increases directly from the Department of Labor's website.

The annual adjustments will be posted on the Department of Labor's Web page: www.ct.gov/dol.

The Department of Labor will continue to issue the initial prevailing wage rate schedule to the Contracting Agency for the project.

All subsequent annual adjustments will be posted on our Web Site for contractor access.

Contracting Agencies are under no obligation pursuant to State labor law to pay any increase due to the annual adjustment provision.

As of: Thursday, January 09, 2020

Project: Sewer Rehab

Effective October 1, 2005 - Public Act 05-50: any person performing the work of any mechanic, laborer, or worker shall be paid prevailing wage

All Person who perform work ON SITE must be paid prevailing wage for the appropriate mechanic, laborer, or worker classification.

All certified payrolls must list the hours worked and wages paid to All Persons who perform work ON SITE regardless of their ownership i.e.: (Owners, Corporate Officers, LLC Members, Independent Contractors, et. al)

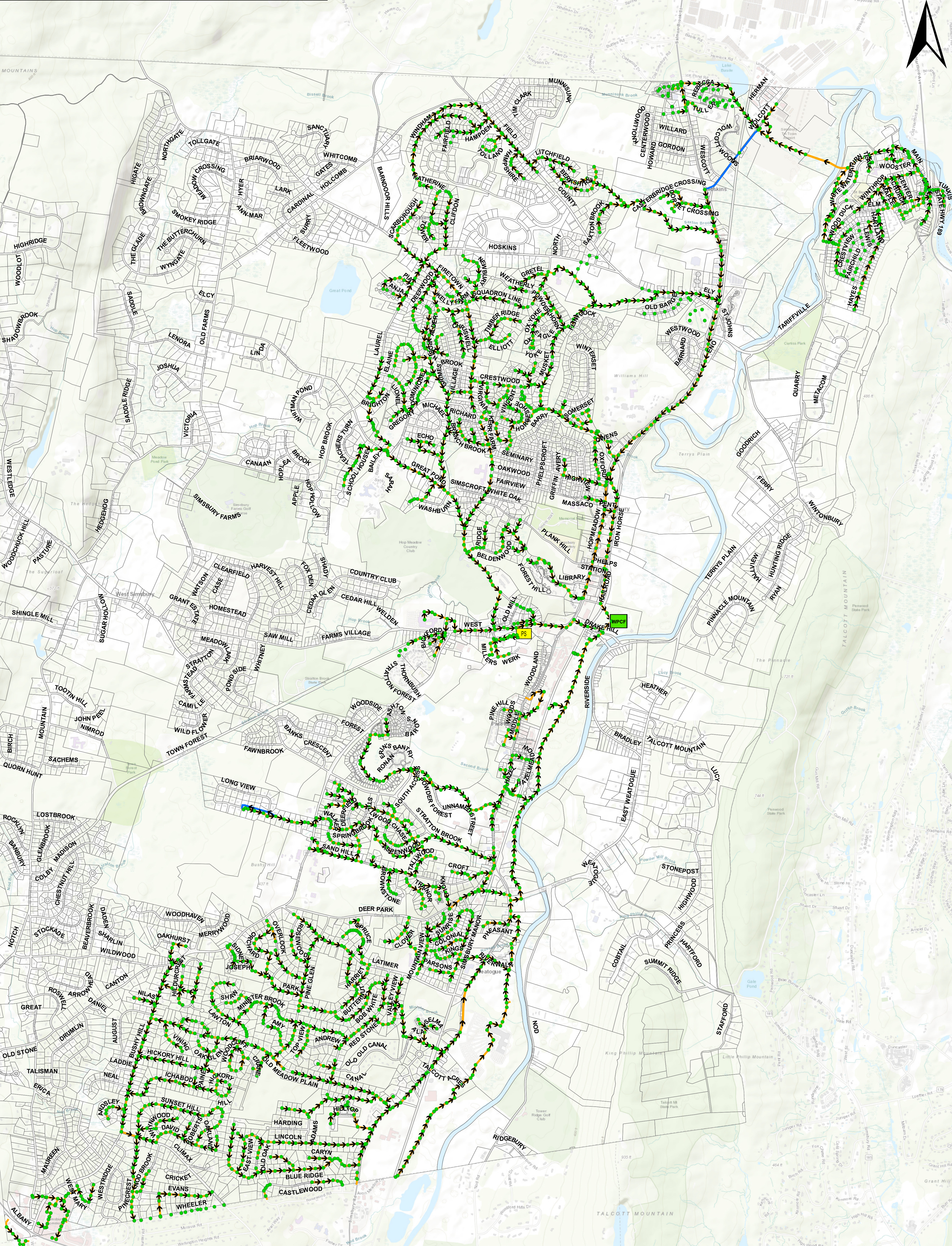
Reporting and payment of wages is required regardless of any contractual relationship alleged to exist between the contractor and such person.

~~Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clause (29 CFR 5.5 (a) (1) (ii)).

Please direct any questions which you may have pertaining to classification of work and payment of prevailing wages to the Wage and Workplace Standards Division, telephone (860)263-6790.

As of:

Thursday, January 09, 2020



Legend

- Manhole
- PS Pump Station
- WPCF Water Pollution Control Facility
- Gravity Sewer
- Pressurized Main

Town of Simsbury, CT

Figure 1
Existing Collection System

DPC Engineering, LLC

JOB NO: SIMSBURY **DRAWN BY: GF**

DATE: November 2019