



Town Wide Sanitary Sewer Repairs

GENERAL SPECIFICATIONS

TOWN OF TRUMBULL, CONNECTICUT
GENERAL SPECIFICATIONS
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TOWN OF TRUMBULL, CONNECTICUT

GENERAL SPECIFICATIONS

1. BIDS:

Bids, as stated in the "Bid Sheet", will be compared on the basis of the sum of the quantities multiplied by respective unit prices, added to lump-sum prices.

In the event that there is a discrepancy in the bid sheet between the lump-sum or unit prices written in words and figures, the prices written in words shall govern.

The Town agrees to examine and consider each bid submitted in consideration of the Bidder's Agreements, as hereinabove set forth in the Bid Sheet.

NOTE: Any/all reference to "he/him" shall be taken to mean "his/her/its".

2. OBLIGATION OF BIDDERS:

At the time of opening of bids, each bidder shall be presumed to have inspected the sites, and to have read and made himself thoroughly familiar with the Plans and Contract Documents including all addenda. The failure or omission of any bidder to receive or examine any form, instrument or document shall in no way relieve any bidder from any obligation in respect to his bid.

Each bidder must fully inform himself of the construction and labor conditions relating to the work which is now or will be performed. Failure to do so will not relieve the successful bidder of his obligation to furnish all labor and materials necessary to carry out the provisions of the contract documents and to complete the contemplated work. Inasmuch as possible, the contractor must, in carrying out his work, employ such methods or means as will not cause any interruptions or interference with the work of any other contractor.

The successful bidder must furnish a field and office organization chart and equipment list to be used on the job to demonstrate that he has the capability to perform the work prescribed for this project and shall furnish the Town all other information and data requested on the form provided for this purpose; such submission to be made prior to construction startup.

The Contractor shall supply a foreman full time on the job. Such foreman must be satisfactory to the Town of Trumbull. Failure to comply shall be cause for breach of contract.

The Contractor's normal sequence of operation in performing the work under the terms of this contract shall be varied at the direction of the Town of Trumbull, so that priorities can be given in critical areas such as schedule, right-of-way, clearance and other Town commitments, either present or future.

The Contractor shall file an appeal to the Public Works Director if the sequence of operation in performing the work is varied by the Town in a manner that is unacceptable to him.

The Contractor shall have no claim against the Town for damages or extra compensation on account of delays in execution of the work or delays in making the construction site available to the Contractor.

3. CONTRACT DOCUMENTS:

Whenever the term "Contract Documents" is used herein, it shall include the Agreement, Information to Bidders, General Specifications, Bid Documents, Technical Specifications, Special Notes, Addenda, and Project Plans, including all modifications thereof incorporated in the documents before their execution.

4. DIRECTOR OF PUBLIC WORKS:

The Director Public Works, of the Town of Trumbull, Connecticut, under whose authority all public works are performed. Hereinafter when the word "Engineer" is used, it is hereby interpreted to include the authority of the Director of Public Works, as well as the Town Engineer.

5. TOWN ENGINEER:

The Town Engineer will represent the Town of Trumbull, Connecticut, and shall have complete charge of all work involved. Hereinafter where the word "Engineer" appears it shall mean the Town Engineer or his duly authorized representatives performing their usual duties, i.e. clerk of the works, etc.

6. CONTRACTOR:

Party of the second part to the contract, acting directly or through his agent or employees.

7. SUB-CONTRACTOR:

Any individual, firm, partnership or corporation to whom the Contractor sub-lets or assigns any part or parts of this project covered by this contract.

8. NOTICE:

The term "notice" as used herein shall mean and include written notices.

Written notice shall be deemed to have been served, when deposited in a United States Mail Box to or at last known business address of the person, firm or corporation for whom intended, or to his or their or its duly authorized agent, representative or office,

or enclosed in a postage prepaid wrapper or envelope addressed to such person or firm or corporation at his or their or its last known business address.

9. TIME IS OF THE ESSENCE:

Time is of the essence for this contract and as execution of the work may inconvenience property owners, vehicular traffic, pedestrians and adversely affect business in the area, it is essential that the work be pressed vigorously to completion. Also the cost of Town administration and supervision of construction, will be increased as the time occupied in the work is lengthened, and the deprivation to the residents of the Town of the needed improvement on herein contract may cause damages to the Town.

In the event the Contractor fails to perform the work in a timely manner due to the Contractor's poor planning, financial status, errors in construction or any other reason directly attributed to the Contractor's circumstances, the Town may institute default proceedings against the Contractor to recover damages and losses. Any payments due the Contractor may be withheld pending final determinations, and the bonding company for the performance of the work on this contract may be notified of impending actions that may be warranted.

If any delay is imposed on the Contractor by specific orders of the Engineer, ie; to stop the work (for reasons other than failure on the part of the Contractor to comply with the requirements of the Contract Documents), material or labor strikes, acts of God, etc., such delay will entitle the Contractor to an equivalent extension of time.

When extra or additional work is ordered by the Engineer, the Contractor will be allowed an extension of time expressed in days as determined by the Town Engineer. The Contractor shall submit a written request for an extension of time, along with reasons for the request. A written response will be transmitted to the Contractor with a determination by the Town as to whether or not an extension of time will be granted.

10. COMMENCEMENT OF WORK:

The Contractor shall commence work on the day specified in the order by the Engineer, as the date of such commencement; and shall fully complete the work within the number of consecutive calendar days from said date as hereinafter specified as the period for completion of his contract, unless such period shall be extended as hereinafter provided by the Town.

11. BLANK FORM FOR BID:

All bids must be written or typed upon the blank form for "Bid Sheet," and must state the proposed price of each item of the work, both in words and in figures, and must be signed by the bidder with his business address.

BIDDERS SHALL NOT REMOVE AND SUBMIT THE BID PAGES SEPARATE FROM THE VOLUME OF CONTRACT DOCUMENTS, BUT SHALL SUBMIT THEIR BIDS BOUND WITH THE COMPLETE VOLUME OF ATTACHED DOCUMENTS, INCLUDING ALL PAGES CORRECTLY ASSEMBLED.

The undersigned understands that information relative to subsurface and other conditions, natural phenomena, existing pipes and other structures (surface and/or subsurface) has been furnished only for his information and convenience without any warranty of guarantee, express or implied, that the subsurface and/or other structures (surface and/or subsurface) actually encountered will be the same as these shown on the

drawings or in any of the other contract documents and he agrees that he shall not use or be entitled to use any such information made available to him through the contract documents or otherwise or obtained by him in his own examination of the site, as a basis of or ground for any claim against the Town, arising from or by reason of any variance which may exist between the aforesaid information made available to or acquired by him and the subsurface and/or other conditions, natural phenomena, existing pipes and other structures (surface and/or subsurface) actually encountered during the construction work, and he has made due allowance therefore in this bid.

12. WORKING HOURS AND HOLIDAYS:

The Contractor shall perform no work during the Town of Trumbull's employees' holidays nor before or after the Town's normal working hours, without specific approval of the Director.

The normal working hours of the Town are Monday through Friday, 7:00 a.m. to 4:00 p.m.

THE OFFICIAL TOWN OF TRUMBULL HOLIDAYS ARE:

New Year's Day
Martin Luther King Day
Presidents' Day
Good Friday
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day Following Thanksgiving Day
Christmas Day
Day After Christmas Day

13. PERFORMANCE & GUARANTEE MAINTENANCE BOND:

The Contractor shall secure a maintenance bond with a company which shall have been approved by the Attorney of the Town of Trumbull, guaranteeing his work in all phases of construction for a period of two (2) years from the date of acceptance by the Town which shall also cover all damages due to trench settlement.

The face value of the maintenance bond shall be as follows:20% of the base bid of contracts up to and including \$50,000.00 and in no way less than \$5,000.00.

Contracts in amount above \$50,000.00, the face value of the maintenance bond shall be on the basis of 10% of the base bid submitted. He shall leave the work in perfect order at completion, and neither the final certificate of payment nor any other provision of the contract shall relieve the Contractor of the responsibility for negligence, for faulty materials or workmanship within the extent and period as herein provided. Upon written

notice he shall remedy all defects due thereto and pay all expenses for any damage to other work resulting there from.

14. ADDITIONAL OR SUBSTITUTE BOND:

If at any time the Town becomes dissatisfied with the performance bond as issued by the present surety or sureties, or if for any other reason such bond shall cease to be adequate surety to the Town, the Contractor shall within five (5) days after notice from the Town to do so, substitute an acceptable bond in such form and sum and signed by such other sureties as may be satisfactory to the Town.

The premium on such bonds shall be paid by the Contractor. No further payment shall be deemed due nor shall be made until new sureties shall have qualified.

15. POWER OF ATTORNEY:

Attorneys-in-fact who sign contract bonds must file with each bond a certified copy of their power of attorney to sign said bond.

16. QUALIFICATIONS FOR EMPLOYMENT:

No person under the age of sixteen (16) years and no person currently serving sentences in a penal or Correctional institution shall be employed to perform any work on the project under this contract.

No person whose age or physical condition is such as to make his employment dangerous to his health or safety or to the health and safety of others shall be employed to perform any work on the project under this contract.

Provided that this sentence shall not operate against the employment of physically handicapped persons otherwise employed where such persons may be safely assigned to work, which they can ably perform.

There shall be no discrimination because of race, creed, color or political affiliation in employment of persons for work on the project under this contract.

17. PAYMENT OF EMPLOYEES:

The Contractor and each of his subcontractors shall pay each of his employees engaged in the work on the project under this contract in full (less deductions made mandatory by law) in a timely and routine manner.

18. DELETE

19. ACCIDENT PREVENTION:

Precaution shall be exercised at all times for the protection of all persons (including employees) and property.

The safety provisions of applicable laws, building and construction codes shall be observed.

Reference is hereby made to Occupational Safety and Health Administration standards as described in OSHA 2206, 1983 or latest edition or revision thereof

Machinery, equipment and all hazards shall be guarded or eliminated in accordance with the safety provisions of the manual of "Accident Prevention in Construction", published by the Associated General Contractors of America, to the extent that such provisions are not in contravention of applicable laws.

20. INSPECTION:

The Engineer or his authorized representative shall be permitted to inspect the work, materials, payrolls, and records of personnel, invoices of material and other relevant data and records of this contract.

21. PAYMENTS:

The Town's terms of payment are Net 30 Days after approval of invoice. No invoice will be paid until acceptance of goods ordered. By the fifth (5th) day of each month application for payment must be submitted by the Contractor to the Town's designated field representative, for verification and approval of quantities and costs incurred during said pay period. Only upon approval by designated representative will payment be forwarded for processing.

The Town shall retain five per centum (5%) of each estimate until final completion and acceptance of all work covered by this contract.

22. GENERAL SPECIFICATIONS "(OR EQUAL CLASSES)":

Whenever in this contract or specifications, a particular brand or make of material, device or equipment is shown or specified, such brand, make of material, device or equipment should be regarded merely as a standard unless otherwise specified.

If three or more brands, makes of material, devices or equipment are shown or specified, each should be regarded as the equal of the others.

When in the opinion of the Engineer, or his authorized agent, any other brand, make of material, device or equipment is recognized as equal to that specified, considering quality, workmanship and economy of operation, and suitable for the purpose intended, it will be accepted.

In the opinion of the Engineer and the Town's duly authorized agents, all material and workmanship shall in every respect be in accordance with what is in conformity with approved modern practice.

Whenever the plans, drawings, specifications, other contract documents, or the quality of the work, admit of doubt as to what is permissible, the interpretation will be made by the Engineer, as to which is in accordance with approved modern practice, in order to meet the particular requirements of the contract.

In all cases, new material shall be used unless this provision is waived with a special written notice by the Engineer.

23. INSPECTION AND TESTS:

All material and workmanship (if not otherwise designated) shall be subject to inspection, examination and tests, by the Engineer, or his duly authorized representatives, at any and at all times during the manufacture and/or construction, and at any and all places where such manufacture or construction is carried on.

Without additional charge, the Contractor shall furnish promptly all reasonable facilities, labor and material necessary to make tests so required, safe and convenient.

Special full size and performance tests shall be conducted as described in the specifications.

If at any time before final acceptance of the entire work, the Engineer considers necessary or advisable any examination of any portion of the work already completed, by removing or tearing out the same, the Contractor shall upon request, furnish promptly all necessary facilities, labor and materials.

If such work is found to be defective in any material respect, due to material or faulty construction by the Contractor, or any subcontractor, or if any work shall be covered over without approval of the engineer (whether or not the same shall be defective) the Contractor shall be liable for the expense of such examination and of satisfactory reconstruction.

If, however, such approval and consent shall have been given and if such work is found to meet the requirements of this contract, the Contractor shall be recompensed for the extent of such examination and reconstruction in the manner herein provided for the payment of the cost of "EXTRA WORK."

24. COSTS AND TESTS:

The selection of Bureau Laboratories, and/or agencies for the inspection and tests of supplies, materials or equipment shall be subject to the direction of the Engineer.

If inspection, tests, analysis of the materials or equipment, should disclose that said material or equipment requires rejection, then the cost of said inspection, test analysis shall be borne by the Contractor and said cost shall be deducted from the Contractor's current estimate by the Engineer. If supplies, material or equipment shall be found acceptable, the cost of said inspection, tests or analysis shall be borne by the Town.

25. PROTECTION OF WORK AND PROPERTY:

The Contractor shall at all times safely guard the Town's property from injury or loss, in connection with this contract. He shall at all times safely guard and protect his own work and that of adjacent property from damage. The Contractor shall replace and make good any such damage, loss or injury. All passageways, guard fences, lights and other facilities required for protection by local conditions must be provided and maintained.

26. POWER OF CONTRACTOR TO ACT IN AN EMERGENCY:

In case of an emergency, which threatens loss or injury of property and/or safety of life, the Contractor shall be allowed to act without previous instructions from the Engineer, as he sees fit. He shall notify the Engineer immediately thereafter of any compensation claimed by the Contractor due to such extra work, and shall submit same to the Engineer for approval. When the Contractor has not taken action, but has notified the Engineer of an emergency threatening injury to persons or damage to the work, or any adjoining property, the Contractor shall act as instructed or authorized by the Engineer to prevent such threatened injury or damage.

27. CERTIFICATE OF COMPLETION:

Upon completion of all work whatsoever required, the Engineer shall file a written certificate with the Director of Finance and the Contractor, for the entire amount of work performed and compensation earned by the Contractor, including extra work and compensation thereof.

28. FINAL PAYMENT:

Within thirty days of filing a certificate of completion, the Town shall pay to the Contractor the amount therein stated, less all prior payments and advances whatsoever to or for the account of the Contractor. All prior estimates and payments, including those relating to extra work, shall be subject to correction by this present payment, which throughout this contract is called the FINAL PAYMENT.

29. ACCEPTANCE OF FINAL PAYMENT CONSTITUTES RELEASE:

The acceptance by the Contractor of the final payment, shall be and shall operate as a release to the Town of all claims and of all liability to the contract or for all things done or furnished in connection with this work, and for every act and neglect of the Town and others relating to or arising out of this work, accepting the Contractor's claim for interest upon the final payment, if the payment is improperly delayed. No payment, however, final or otherwise, shall release the Contractor or his sureties from any obligation under this contract or of the performance bond.

30. SUB-SURFACE STRUCTURES:

All sub-surface structures and public utility lines have been located as far as possible, as indicated on the plans and information obtained from the respective utilities. The Town does not assume the responsibility for the accuracy of this information.

31. SUB-SURFACE CONDITIONS:

Bidders are notified that it is obligatory for them to obtain all the information they require as to the existing physical conditions relative to the work and in particular to sub-surface conditions---NOR SHALL THE TOWN BE HELD LIABLE FOR ANY ADDITIONAL COST TO THE CONSTRUCTION WHICH MAY RESULT DUE TO THESE CONDITIONS, and each bidder in bidding must rely exclusively upon his own investigation and that he makes this bid with the full knowledge of the kind, quality and quantity of work required.

The undersigned understands that information relative to subsurface and other conditions, natural phenomena, existing pipes and other structures (surface and/or subsurface) has been furnished only for his information and convenience without any warranty of guarantee, express or implied, that the subsurface and/or other structures (surface and/or subsurface) actually encountered will be the same as these shown on the drawings or in any of the other contract documents and he agrees that he shall not use or be entitled to use any such information made available to him through the contract documents or otherwise or obtained by him in his own examination of the site, as a basis of or ground for any claim against the Town, arising from or by reason of any variance which may exist between the aforesaid information made available to or acquired by him and the subsurface and/or other conditions, natural phenomena, existing pipes and other structures (surface and/or subsurface) actually encountered during the construction work, and he has made due allowance therefore in this bid.

32. CONTRACTOR'S TITLE TO MATERIALS:

No materials or supplies for the work shall be purchased by the Contractor or subcontractor, subject to any chattel mortgage or under any conditional sale or other agreement for which interest is retained by the seller.

33. SUPERINTENDENCE BY CONTRACTOR:

The Contractor shall employ a project Super-intendant who shall be present full time at the site of the work and who shall have full authority to act for the Contractor. The Contractor shall employ a project foreman who shall be in attendance at the work site during working hours.

It is understood that such representative shall be acceptable to the Town and shall be one whose experience and length of service in this particular kind of work warrants his ability to perform the duties entailed to the satisfaction of the Engineer, and who can continue in that capacity for the particular job involved unless he ceases to be on the Contractor's payroll.

The Engineer reserves the right of investigation to satisfy the Town that the appointed superintendent is properly qualified to carry out the obligations entailed to perform the work herein contemplated in the plans and specifications and directions.

34. REPRESENTATIONS OF CONTRACTORS:

The Contractor represents and warrants:

- a). That he is financially solvent and that he is experienced in and competent to perform the type of work, or to furnish plant and equipment materials and supplies.
- b). That he is familiar with all Federal, State and Municipal laws, ordinances and regulations, which in any way may affect the work of those employed therein.
- c). That he has carefully examined the plans and specifications and the site of the work, and that from his own investigation he has satisfied himself about the nature and location of the work, character, quality and quantity of the surface and sub-surface materials likely to be encountered, as well as the character of equipment and other facilities needed for the performance of the work, the general local conditions and all other conditions which may in any way affect the work.

35. PATENT RIGHT:

As part of his obligation hereunder and without any additional compensation, the Contractor will pay for all patent fees or royalties required in respect to the work or any part thereof, and will fully indemnify the Town for any loss on account of infringement of any patent rights.

36. PERMITS AND REGULATIONS:

The Contractor shall procure and pay for all permits and licenses necessary for the execution of his work. Town permit fees will be waived.

The Contractor shall comply with all laws, ordinances, rules and regulations relating to the performance of the work.

37. CORRECTION OF WORK:

All work, all material, whether incorporated in the work or not, all processes of manufacture and all methods of construction, shall be at all time and places subject to the inspection of the Engineer, who shall be the final judge of the quality and suitability of the work, materials, processes of manufacture and methods of construction for the purpose for which they are used.

Should they fail to meet the approval of the Engineer they shall be forthwith reconstructed, made good, replaced and corrected, as the case may be, by the Contractor, at his own expense.

Rejected material shall immediately be removed from the site.

Acceptance of material and workmanship by the Inspectors shall not relieve the Contractor from his obligation to supply other materials and workmanship when so ordered by the Engineer.

If, in the opinion of the Engineer, it is undesirable to replace any defective or damaged material, or to reconstruct or correct any portion of the work injured or not performed in

accordance with the contract, the compensation to be paid to the Contractor hereunder, shall be reduced by such amount which the Engineer deems equitable.

The Contractor expressly warrants that his work shall be free from any defects in material or workmanship, and agrees to correct any such defects which may appear within the maintenance period, following final completion of work.

Neither acceptance of the completed work, nor payment thereof, shall operate to release the Contractor or his sureties from any obligation under or upon this contract or the performance bond.

38. STATEMENT SHOWING AMOUNT DUE FOR WAGES, MATERIAL AND SUPPLIES:

With each application for payment under this contract, the Contractor and every subcontractor shall deliver to the Town a written verified statement in a form satisfactory to the Town, showing in detail the amounts then due and unpaid by such Contractor or subcontractor, to all laborers for daily or weekly wages, men employed by him under the contract for performance of work at the site thereof, or to other persons for material and equipment delivered at the site of the work.

The term "laborers" as used herein, shall include workmen and mechanics.

39. TOWN RIGHT TO WITHHOLD PAYMENTS:

The Town may withhold from the Contractor as much of any approved payment due him, as the Town deems necessary.

1st. To assure the payment of just claims due and unpaid of any person supplying labor or materials for the work.

2nd. To protect the Town from loss due to defective work not remedied.

or

3rd. To protect the Town from loss due to injury to persons or damage to work or property of other Contractors, subcontractors, or others caused by the act or neglect of the Contractor or any of his subcontractors.

The Town shall have the right, as agent for the Contractor, to apply any such amounts so withheld in such manner as the Town may deem proper, to satisfy such claims or to secure such protection.

Distribution of such money shall be considered as payments for the amount of the Contractor.

40. TOWN RIGHT TO STOP WORK OR TERMINATE CONTRACT:

If the Contractor shall be adjudged bankrupt, an assignment shall be made for the benefit of creditors. A receiver or liquidator shall be appointed for the Contractor and for any of his property. The Contractor shall be dismissed within twenty (20) days after such appointment. The proceedings in connection therewith shall not be stayed within the said twenty (20) days. If the Contractor shall refuse or fail after notice or warning from the

Engineer, to supply enough properly skilled workmen or proper materials, or if the Contractor shall fail to prosecute the work or any part thereof with such diligence as will insure its completion within the period herein specified (or duly authorized extension thereof) or shall fail to complete the work within said period, or if the Contractor shall fail to make prompt payment to persons supplying labor or materials for the work, or if the Contractor shall fail or refuse to regard laws, ordinances or the instructions of the Engineer or otherwise be guilty of a substantial violation of any provision of this contract, then in any such event, the Town without prejudice to any other right or remedy, may give seven (7) days notice to the Contractor, to terminate the employment of the Contractor. The Contractor shall lose the right to proceed either for the entire work or (at the option of the Town) for any portion thereof on which delays shall have occurred. The Town may as it deems expedient take possession of the work and complete it by contract or otherwise.

In such cases, the Contractor shall not be entitled to receive any further payment until the work is finished.

If the unpaid balance of the compensation to be paid the Contractor hereunder, shall exceed the expense of so completing the work (including compensation for additional managerial administrative and inspection services and any damages for delay), such excess shall be paid to the Contractor.

If such expense shall exceed such unpaid balance, the Contractor and his sureties shall be liable to the Town for such excess.

If the right of the Contractor to proceed with the work is so terminated, the Town may take possession of and utilize in completing the work, such materials, appliances, supplies, plant and equipment as may be on the site of the work, and necessary therefore.

If the work shall be stopped by order of the Court or any other public authority, for a period of three (3) months, without act or fault of the Contractor or any of his agents, servants, employees, or subcontractors, the Contractor may upon ten (10) days' notice to the Town of Trumbull, discontinue his performance of the work and/or terminate the contract.

TERMINATION:

- A. TERMINATION FOR CAUSE, If through any case, the Contractor shall fail to fulfill in a timely manner, its obligations under this Agreement, or if the contractor shall violate any of the covenants, agreements, or stipulations of this Agreement, the Town shall thereupon have the right to terminate this Agreement for cause by giving written notice to the Contractor of such termination and specifying the effective date thereof, at least five (5) days before the effective date of such termination. In the event, all finished or unfinished reports, documents, data, studies, surveys, drawings, maps, models, photographs, and reports or other material prepared by the contractor shall be entitled to receive just and equitable compensation for any satisfactory work completed on such documents and other materials to the effective date of termination.

The term "cause" includes, without limitation the following;

- 1) If the Contractor furnished any statement, representation, warranty or certification in connection with this Agreement, which is materially false, deceptive, incorrect, or incomplete.
- 2) If the Contractor fails to perform to the Town's satisfaction any material requirement of the Agreement, or is in violation of any specific provision thereof.
- 3) If the Town reasonably determines satisfactory performance of the Agreement is substantially endangered or can reasonably anticipate such an occurrence or default.

Notwithstanding the above, the Contractor shall not be relieved of liability to the Town for any damages sustained by the Town by virtue of any breach of the Agreement by the Contractor, and the Town may withhold any payment to the Contractor for the purpose of setoff until such time as the exact amount of damages due the Town from the Contractor is determined.

- B. TERMINATION FOR CONVENIENCE: The Town may terminate this Agreement at any time the Town determines that the purposes of the distribution of monies under the agreement would no longer be served by completion of the Work/Project. The Town shall effect such termination by giving written notice of termination to the Contractor and specifying the effective date thereof, at least twenty (20) days before the effective date of such termination. In the event, all finished or unfinished documents and other materials as described in Subsection A shall, at the option of the Town, become its property. If the Agreement is terminated by the Town as provided herein, the Contractor shall be paid an amount which bears the same ratio to the total compensation as the services actually and satisfactorily performed to the effective date of termination bear to the total services of the Contractor pursuant to the terms of this Agreement, less payments of compensation previously made, and subject to the Town's right of set off for any damages pursuant to the terms of the Agreement.

41. USES OF PREMISES AND REMOVAL OF DEBRIS:

The Contractor undertakes at his own expense:

- a). To take every precaution against injuries to persons or damage to property.
- b). To store his apparatus, materials, supplies and equipment in such orderly fashion at the site of the work as will not unduly interfere with the progress of his work.
- c). To place upon the work area or any part thereof, only such loads as are consistent with the safety of that portion of the work.
- d). To frequently clean up all refuse, rubbish, scrap material and debris caused by his operations, so that the site of the work shall at all times present a neat,

orderly and workmanlike appearance. Failure to comply with this article within 24 hours of notification

may result in the Owner having the work performed by outside sources at the Contractor's expense. These expenses will be deducted from the regular monthly periodic estimate.

e). To remove before final payment all surplus materials, false work, temporary structures, (including foundations thereof), plant of any description and debris of every nature resulting from his operation, and to put the site in a neat and orderly condition.

f). To effect all cutting, fitting or patching of his work required to make the same conform to the plans and specifications, and with the consent of the Engineer, to cut or otherwise alter the work of any other Contractor.

42. ALL WORK SUBJECT TO CONTROL OF THE ENGINEER:

In the performance of the work, the Contractor shall abide by all orders, directions and requirements of the Engineer and shall perform all duties to the satisfaction of the Engineer, and at such time and places, by such methods and in such manner and sequence as the Engineer may require.

The Engineer shall determine the amount, quantity, acceptability and fitness of all parts of the work, shall interpret the plans, specifications, contract and any extra work orders, and shall decide all other questions in connection with the work.

The Contractor shall employ no plant, equipment, materials, methods or men to which the Engineer objects, and shall remove no plant materials, equipment or other facilities from the site of the work, without the Engineer's permission. Upon request, the Engineer shall confirm in writing any oral order, direction requirement or determination.

43. TOWN ENGINEER, CONTROL NOT LIMITED:

The enumeration herein or elsewhere in the contract of particular instances in which the opinion, judgment, discretion or determination of the Engineer, shall control or in which work shall be performed to his or their satisfaction as subject to his or their approval or inspection, shall not imply that only matters similar to those enumerated shall be governed and performed, but without exception all the work shall be governed and so performed.

44. PROVISIONS REQUIRED BY LAW DEEMED INSERTED:

Each and every provision of law and clause required by law to be inserted in this contract, shall be deemed to be inserted herein, and the contract shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not correctly inserted, then upon the application of either party, the contract shall forthwith be physically amended to make such insertion.

45. SUBLETTING, SUCCESSOR AND ASSIGNS:

The Contractor shall not sublet any part of the work under this contract, nor assign any moneys due him hereunder without first obtaining the written consent of the Town.

46. DEFINITIONS:

Wherever the words defined in this section or pronouns used in their stead occur in the specifications, they shall have the meanings herein given.

AS DIRECTED, AS REQUIRED, ETC.

Wherever in the specifications, or on the drawings the words "As Directed", "As Ordered", "As Requested", "As Required", "As Permitted", or words of like import are used, it shall be understood that the Direction, Order, Request, Requirement, or Permission of the Engineer is intended. Similarly, the words "Approved", "Accepted", "Satisfactory", and words of like import shall mean Approved by, Acceptable to, or Satisfactory to the Engineer.

ELEVATION

The figures given on the drawings or in the other contract documents after the word "Elevation" or abbreviation of it shall mean the Distance in Feet Above the Datum Adopted by the Engineer.

NOTE: Unless otherwise stated elsewhere in the contract documents and/or on the contract drawings, vertical elevation datum for this project is based upon NEW City Datum, NGVD (ele. 0.00 = mean water).

ROCK

The word "Rock" wherever used as the name of any excavated material or material to be excavated, shall mean only boulders or solid ledge rock which, in the opinion of the Engineer, requires, for its removal, drilling and blasting, wedging, sledging, barring or breaking up with a power operated tool. No soft or disintegrated rock which can be removed with a hand pick or power-operated excavator or shovel, no loose, shaken or previously blasted rock or broken stone in rock fillings or elsewhere, and no rock exterior to the maximum limits of measurement allowed, which may fall into the excavation, will be measured or allowed as "Rocks".

EARTH

The word "Earth", wherever used as the name of an excavated material or material to be excavated, shall mean all kinds of material other than rock as above defined.

47. ABBREVIATIONS:

Where any of the following abbreviations are used in the Specifications, they shall have the meaning set forth opposite each.

AASHO	American Association of State Highway Officials
ACI	American Concrete Institute
AISC	American Institute of Steel Construction
ASA	American Standard Association
ASCE	American Society of Civil Engineers
ASTM	American Society For Testing and Materials
NEC	National Electrical Code, Latest Edition

48. HANDLING AND DISTRIBUTION:

The Contractor shall handle, haul and distribute all materials and all surplus materials on the different portions of the work, as necessary or required; shall provide suitable and adequate storage room for materials and equipment during the progress of the work, and shall be responsible for the protection, loss of, or damage to materials and equipment furnished by him, until the final completion and acceptance of the work.

Storage and Demurrage charges by Transportation Companies and Vendors shall be borne by the Contractor.

49. MATERIALS:

Samples - Inspection - Approval, unless otherwise expressly provided on the Drawings or in any of the other contract documents, only new material and equipment shall be incorporated in the work. All materials and equipment furnished by the Contractor to be incorporated in the work shall be subject to the inspection and approval of the Engineer. No material shall be processed or fabricated for the work or delivered to the work site without prior approval of the Engineer.

As soon as possible after execution of the Agreement, the Contractor shall submit to the Engineer the names and addresses of the manufacturers and suppliers of all materials and equipment he proposes to incorporate into the work. When shop and working drawings are required as specified below, the Contractor shall submit prior to the submission of such drawings, data in sufficient detail to enable the Engineer to determine whether the manufacturer and/or supplier have the ability to furnish a product meeting the specifications. As requested, the Contractor shall also submit data relating to the materials and equipment he proposes to incorporate into the work in sufficient detail to enable the Engineer to identify and evaluate the particular product and to determine whether it conforms to the Contract Requirements. Such data shall be submitted in a manner similar to that specified for submission of shop and working drawings.

Facilities and labor for the storage, handling and inspection of all materials and equipment shall be furnished by the Contractor. Defective materials and equipment shall be removed immediately from the site of the work.

If the Engineer so requires, either prior to or after commencement of the work, the Contractor shall submit additional samples of materials for such special tests as the Engineer deems necessary to demonstrate that they conform to the specifications. Such samples, including concrete test cylinders, shall be furnished, taken, stored, placed and shopped by the approved molds for making concrete test cylinders. Except as otherwise

expressly specified, with technical specifications, the Town shall make arrangements and pay for the tests.

All samples shall be packed so as to reach their destination in good condition, and shall be labeled to indicate the material represented. The name of the building or work and location for which the material is intended and the name of the contractor submitting the sample. To ensure consideration of samples, the Contractor shall notify the Engineer by letter that the samples have been shipped and shall properly describe the samples in the letter. The letter of notification shall be sent separate from and should not be enclosed with the samples.

The Contractor shall submit data and samples, or place his orders, sufficiently early to permit consideration, inspection, testing and approval before the materials and equipment are needed for incorporation in the work. The consequence of his failure to do so shall be the Contractor's sole responsibility.

When required, the Contractor shall furnish to the Engineer triplicate sworn copies of manufacturer's shop or mill tests (or reports from independent test laboratories) relative to materials, equipment, performance rating and concrete data.

50. WATCHMAN:

If it becomes necessary to supply watchmen during non-regular working hours, they shall be employed until (in the opinion of the Engineer) their services are no longer required. The Contractor shall employ and pay a satisfactory, sober, able-bodied watchman who shall be in attendance upon the work at all times, (regardless of the hour) whenever work by the regular employees stops.

51. MAINTENANCE OF TRAFFIC:

The Contractor shall conduct his operations in such a manner so that he does not impose unnecessary hardship upon the residents along the route of the work.

Streets may be closed to traffic only upon written order of the Traffic Engineer. Traffic shall be maintained within the project area except where it is found impracticable, or seriously interferes with the Contractor's operations. If permanent repairs are not completed immediately, the pavement surface along the line of work shall be maintained in a condition comparable to the adjacent road surface.

People living or having business within the barricaded zone shall be permitted to use the highway for auto traffic if possible.

The Contractor shall protect all phases of the work from damage due to traffic, etc., and provide necessary watchmen, signalmen and (if so ordered by the Engineer) police officers.

No direct payment for maintenance of traffic will be made, but shall be considered as included in the base bid submitted.

52. DRIVEWAYS AND PROPERTY ENTRANCES:

Excavated materials and equipment shall be placed in such position as not to unnecessarily impede travel on the streets, or access to driveways. A sufficiently clear space for pedestrian travel shall be maintained on the sidewalks, and all property entrances and driveways shall be kept clear, where possible.

Where necessary, bridges shall be constructed and maintained for residents. Before closing any driveway or entrance, the Contractor shall give the owner or resident of the property involved, due notice of such temporary closing. When this is not practicable and an emergency arises, the Contractor shall, on the order of the Engineer, provide a satisfactory place to house temporarily, any motor vehicle, which may be prevented from being housed at night.

No direct payment will be allowed for this work or condition, but shall be considered as included in the base bid submitted.

53. DUST:

The Contractor shall at all times during the execution of this contract, control the nuisance of flying dust, by water sprinkling or by application of oil, or a method satisfactory to the Engineer.

54. PRESERVATION OF TREES:

Trees and shrubs on the site of the work shall be protected during the entire period of the contract, and if injured by the Contractor or his employees, shall be replaced, unless it is covered by the bid items, at his expense before the completion of the contract.

55. INSPECTION OF WORK AWAY FROM THE SITE:

If work to be done away from the construction site is to be inspected on behalf of the Town during its fabrication, manufacture, or testing, or before shipment, the Contractor shall give notice to the Engineer of the place and time where such fabrication, manufacture, testing or shipping is to be done. Such notice shall be in writing and delivered to the Engineer in ample time so that the necessary arrangements for the inspection can be made.

56. CONTRACTOR'S SHOP AND WORKING DRAWINGS:

The Contractor shall submit for approval (in reproducible form unless otherwise specified) shop and working drawings of concrete reinforcement, structural details, piping layout,

wiring, materials fabricated for the contract and materials and equipment for which such drawings are specifically requested.

Such drawings shall show the principal dimensions, weight, structural and operating features, space required, clearances, type and/or brand of finish or shop coat, grease fittings, etc., depending on the subject of the drawing, when it is customary to do so.

When the dimensions are of particular importance, or when so specified, the drawings shall be certified by the manufacturer or fabricator as correct for the contract.

When so specified or if considered by the Engineer to be acceptable, manufacturer's specifications, catalog data, descriptive matter, illustrations, etc., may be submitted for approval in place of shop and working drawings. In such case, requirements shall be as specified for shop and working drawings, insofar as applicable, except that the submission shall be in quadruplicate.

The Contractor shall be responsible for the prompt and timely submittal of all shop and working drawings so that there shall be no delay to the work due to the absence of such drawings.

No material or equipment shall be purchased or fabricated for the contract until the required shop and working drawings have been submitted as herein above provided and approved as conforming to the contract requirements. All such materials and equipment and the work involved in their installation or incorporated into the work shall then be as shown in and represented by said drawings.

Until the necessary approval has been given, the Contractor shall not proceed with any portion of the work such as the construction of foundations, the design or details of which are dependent upon the design or details of work, materials, equipment or other features for which approval is required.

All shop and working drawings shall be submitted to the Engineer by and/or through the Contractor, who shall be responsible for obtaining shop and working drawings from his subcontractors and returning approved drawings to them. Unless otherwise approved, all shop and working drawings shall be prepared on standard size, 24 inch by 36 inch sheets, except those which are made by changing existing standard shop or working drawings. All drawings shall be clearly marked with the names of the Town, Contractor, and building, equipment or structure to which the drawing applies, and shall be accompanied by a letter of transmittal giving a list of the drawing number and the names mentioned above.

Only drawings which have been checked and corrected by the fabricator should be submitted to the Contractor by his subcontractors and vendors. Prior to submitting drawings to the Engineer, the Contractor shall check thoroughly all such drawings to satisfy himself that the subject matter thereof conforms to the drawings and specifications in all respects. All drawings which are correct shall be marked with the date, checker's name and indication of the Contractor's approval, and then shall be submitted to the Engineer. Other drawings shall be returned for correction.

The approval of shop and working drawings, etc., will be general only and shall not relieve or in any respect diminish the responsibility of the Contractor for details of design, dimensions, etc., necessary for proper fitting and construction of the work as required in the contract and for achieving the result and performance specified hereunder.

Should the Contractor submit for approval, equipment that requires modifications to the structures, piping, layout, etc., detailed on the drawings, he shall also submit for approval, details of the proposed modifications. If such equipment and modifications are approved, the Contractor, at no additional cost to the Town, shall do all work necessary to make such modifications.

The marked-up reproducible of the shop and working drawings or one mark-up copy of catalog cuts will be returned to the Contractor. The Contractor shall furnish additional copies of such drawings or catalog cuts when so requested.

57. OCCUPYING PRIVATE LAND:

The Contractor shall not (except after written consent from the proper parties) enter or occupy with men, tools, materials, or equipment, any land outside the right-of-way or property of the Town. A copy of the written consent shall be given to the Engineer.

58. INTERFERENCE WITH AND PROTECTION OF STREETS:

The Contractor shall not close or obstruct any portion of a street, road or private way without obtaining permits therefore from the proper authorities. If any street, road or private way shall be rendered unsafe by the Contractor's operations, he shall make such repairs or provide such temporary ways or guards as shall be acceptable to the Engineer and to the proper authorities.

Streets, roads, private ways and walks not closed shall be maintained passable and safe by the Contractor, who shall assume and have full responsibility for the adequacy and safety of provisions made therefore.

The Contractor shall, at least 24 hours in advance, notify the Police and Fire Departments in writing, with a copy to the Engineer, if the closure of a street or road is necessary. He shall cooperate with the Police Department in the establishment of alternate routes and shall provide adequate detour signs, plainly marked and well-lighted, in order to minimize confusion.

59. STORAGE OF MATERIALS AND EQUIPMENT:

All excavated materials, construction equipment and materials and equipment to be incorporated in the work shall be placed so as not to injure any part of the work or existing facilities and so that free access can be had at all times to all parts of the work and to all Public Utility installations in the vicinity of the work. Materials and equipment shall be kept neatly piled and compactly stored in such locations as will cause a minimum of inconvenience to public travel and adjoining owners, tenants and occupants.

60. INSUFFICIENCY OF SAFETY PRECAUTIONS:

If at any time, in the sole judgment of the Engineer, the work is not properly lighted, barricaded, or in any other respect safe in regard to public travel, persons on or about the work, or public or private property, the Engineer shall have the right to order such safeguards to be erected and such precautions to be taken as he deems advisable and the Contractor shall comply promptly with such orders. If, under such circumstances, the Contractor does not or cannot immediately put the work and the safeguards into proper

and approved condition, or if the Contractor or his representative is not upon the site so that he can be notified immediately of the insufficiency of safety precautions, the Engineer may put the work into such a condition that it shall be, in his opinion, in all respects safe. The Contractor shall pay all costs and expenses incurred by the Engineer or Town in so doing. Such action of the Engineer, or his failure to take such action, shall in no way relieve or diminish the responsibility of the Contractor for any and all costs, expenses, losses, liability, claims, suits, proceedings, judgments, awards or damages resulting from, by reason of or in connection with any failure to take safety precautions or the insufficiency of the safety precautions taken by him or by the Engineer acting under authority of this article or for failure to comply with the provisions of any State or Federal Occupational Safety and Health Laws, Rules or Regulations.

61. SANITARY REGULATIONS:

When deemed necessary by the Engineer, the suitable Contractor shall provide sanitary facilities for the use of those employed on the work. Such facilities shall be made available when the first employees arrive on the site of the work, shall be properly secluded from public observation and shall be constructed and maintained during the progress of the work in suitable numbers and at such points and in such manner as may be required or approved.

The Contractor shall maintain the sanitary facilities in a satisfactory and sanitary condition at all times and shall enforce their use. He shall rigorously prohibit the committing of nuisances on the site of the work, on the lands of the Town, or on adjacent property.

The Town and the Engineer shall have the right to inspect such facilities at all times to determine whether or not they are being properly and adequately maintained.

62. DELETE

63. DIMENSIONS OF EXISTING STRUCTURES:

Where the dimensions and locations of existing structures are of importance in the installation or connection of any part of the work, the Contractor shall verify such dimensions and locations in the field before the fabrication of any material or equipment which is dependent on the correctness of such information.

64. WORK TO CONFORM:

During its progress, and on its completion, the work shall conform truly to the lines, levels and grades indicated on the drawings or given by the Engineer and shall be built in a thoroughly substantial and workmanlike manner, in strict accordance with the drawings, specifications and other contract documents and the directions given from time to time by the Engineer.

65. COMPUTATION OF QUANTITIES:

For estimating quantities in which the computation of areas by Geometric methods would be comparatively laborious, it is agreed that the Planimeter shall be considered an instrument adapted to the measurement of such areas. It is further agreed that the computation of the Volume Prismoids shall be by the method of average end areas.

66. PLANNING AND PROGRESS SCHEDULES:

Before starting the work and from time to time during its progress, as the Engineer may request, the Contractor shall submit to the Engineer a written description of the methods he plans to use in doing the work and the various steps he intends to take.

Within two (2) days after the date of starting work, the Contractor shall prepare and submit to the Engineer a written schedule fixing the respective dates for the start and completion of various parts of the work. The Contractor shall update the schedule on a monthly basis and submit each schedule to the Engineer for review, approval and change where necessary during the progress of the work.

67. PRECAUTIONS DURING ADVERSE WEATHER:

During adverse weather and against the possibility thereof, the Contractor shall take all necessary precautions so that the work may be properly done and satisfactory in all respects. When required, protection shall be provided by the use of plastic sheets, tarpaulins, wood and building-paper shelters or other approved means.

The Engineer may suspend construction operations at any time when, in his sole judgment, the conditions are unsuitable or the proper precautions are not being taken, whatever the weather may be.

68. AS-BUILT DRAWINGS:

The Contractor shall be responsible for maintaining a set of as-built drawings during the course of the work for examination by the Engineer.

69. SCOPE OF WORK:

The intent of the contract is to complete the work or improvements in full compliance with the plans, specifications, technical specifications, special notes, etc.

A. Quantities

The unit bid prices shall be applied to the applicable quantities actually used and accepted in the performance of this project. Quantities have been established using the best information available for accuracy. In some instances, however, quantities may have been provided for some items in order to establish a unit price in the eventuality that the item of work may occur during the construction of the project.

Should the actual quantities constructed vary from those estimated, whether higher or lower, the Contractor is made aware that the applicable item will be paid for based upon

his unit bid price bid for that item. Exceptions to this article are noted below in section C, Change in Project Scope.

B. Cost Plus Items:

If the Town orders the performance of any work not covered by the drawings or specifications, and for which no unit price or lump sum basis can be agreed upon, then such extra work shall be done on a Cost-Plus percentage basis of payment as follows:

1.0 Direct Labor And Foreman Costs - For all labor including equipment operators, and foremen in direct charge of the specific operation, the Contractor shall receive the rate of wage actually paid as shown by his certified payroll, which shall be at least the current local minimum prevailing wage rate, per hour, per position, in accordance with the current State of Connecticut, Labor Department Minimum Rates & Classifications for Heavy Construction. Compensation shall be for each hour that said labor and foreman are actually engaged in such work, including such overtime as provided by existing laws and regulations. In addition the contractor shall receive for each hour worked, the actual costs paid to, or in behalf of workmen, by reason of allowances, health and welfare benefits, pension fund benefits or other benefits, when such amounts are required by collective bargaining agreement or other employment contract generally applicable to the classes of labor employed on the work. All personnel above the grade of foreman are excluded from receiving compensation under this section.

An amount equal to 20 percent of the total sums as specified above (1.0) will also be paid the contractor.

1.1 Other Labor Costs - The Contractor shall also be allowed to add to such direct labor and foremen costs, the following items:

Social Security Tax at the percentage legally required; Unemployment Ins., at the percentage legally required; Workmen's Compensation insurance at policy percentage rate; Property/liability damage insurance premiums;

An amount equal to 6 percent of the total sums as specified above (1.1) will also be paid the contractor.

1.2 Materials - For all materials used, the Contractor shall receive the actual cost of such materials, including freight and delivery charges, as shown by original receipted bills to which shall be added a sum equal to fifteen (15) percent.

1.3 Equipment Rental - For machinery, trucks, or equipment, exclusive of operator's hire, and except small tools and equipment for which no rental is allowed, which it may be deemed necessary to use, the Town will allow the Contractor the cost of renting such machinery, trucks, or equipment, which shall include fuel and lubricants, as are actually used in the performance of the work, but to which no percentage shall be added. Equipment rental costs will be based upon the "Rental Rate Blue Book" including Rate Adjustment Tables and amendments as published by Dataquest, Inc., San Jose, California or a lower rate if so submitted by the Contractor, and must be approved by the Town prior to any work being performed.

1.4 Sub-Contracts - Cost-Plus work may be performed by a subcontractor only when (a) the Contractor has obtained approval of the subcontractor by the Town and (b) the work has been performed by the subcontractor in strict compliance with the terms of the contract. In such event, the Contractor shall receive the cost of any such sub-contract to which shall be added a sum equal to ten (10) percent.

1.5 Superintendence - The foregoing payments shall be received by the Contractor as payment in full for all work done on a Cost Plus basis, and shall be accepted to cover all general superintendence, use of small tools and equipment for which no rental is allowed, job and general overhead, bonding, expenses, and anticipated profit.

2.0 The cost of the work done each day shall be submitted to the Engineer in a satisfactory form, on the succeeding day and shall be approved by him or adjusted accordingly.

3.0 Monthly payments of all charges for extra work, whether priced on the Cost Plus basis or an agreed-upon basis, shall upon completion, and approval, be requested with the subsequent monthly progress billing.

C. Change of Project Scope

In the event that the overall scope of the project is increased or decreased by 25% or more, either party to the contract may request a revised contract consideration to the stipulated bid unit prices that may be affected by the change. After agreement is reached by the Town and contractor on revised unit prices, a change order will be issued reflecting these changes. The re-negotiated unit prices will be based on the original contract unit prices with additions or subtractions indicated so as to justify the new unit price to the satisfaction of the Town. The revised unit prices will be applied only to that portion of the project in which the scope has been changed, in accordance with this article, and shall not be applied to any of the quantities of the original bid. An example of such a change may be the addition to or deletion of the originally stated project areas.

All of the above requirements shall be carried out in accordance with the provisions of the Trumbull Code, Article II, Purchasing, Section 23-18.4, Contracts.

70. FIELD OFFICE:

Not applicable for this project.

71. COORDINATION OF PLANS/SPECIFICATIONS:

Any requirement on the plans or in these Specifications, Special Notes/Provisions shall be equally binding on the Contractor.

In case of conflict, the plans shall take precedence over the Specifications. Special Notes/Provisions shall take precedence over plans and Specifications.

72. NO PAYMENT:

Unless otherwise provided for by a specific Contract Item, no separate payment shall be made for any of the requirements as described in the above General Specifications, but shall be deemed included in the total bid price for all the work in this Contract.

73. NOISE:

The Contractor will be required to limit noise operations pursuant to Town of Trumbull Charter Chapter 164 -1 to and including Chapter 164 -13



Town Wide Sanitary Sewer Repairs

SPECIAL NOTES and SPECIAL CONDITIONS

SPECIAL CONDITIONS

SC-1 QUANTITIES

1. The quantities listed on the bid form are for bid comparison purposes only and may not reflect the actual quantities constructed. The amount of work will depend on the available funding throughout the year.
2. THE QUANTITIES IN THE BID FORM ARE FOR PURPOSES OF ILLUSTRATION ONLY. THE FINAL QUANTITIES WILL BE DETERMINED BY THE ACTUAL WORK COMPLETED. THE LOW BIDDER WILL BE DETERMINED BASED UPON THE SUM TOTAL OF BID SUBMITTED, WHICH ARE WIEGHTED BASED UPON THE ESTIMATED QUANTITY OF EACH BID ITEM.

SC-2 WORK AREA

1. The specific locations for work to be completed under this contract has not been fully determined.
2. The Town is performing video inspection on the existing drainage system for the above mentioned roads. The scope of work will be defined as video inspections are completed.

SC-3 - Omitted

SC-4 CONSTRUCTION LAYOUT

1. All proposed improvement locations will be completed by the Contractor.
2. The Contractor is responsible for notifying "Call Before You Dig" (811 or 1800-922-4455) at least two full working days in advance of the excavation work to locate buried utility pipes and cables. No additional payment will be made for notifying call before you dig.

SC-5 COMMUNICATION

1. All communications, written and via telecommunications shall be made to:

Frank Smeriglio
Trumbull Town Engineer
Trumbull Town Hall
5866 Main St.
Trumbull, CT 06611
Tel.: 203-452-5050
Email: fsmeriglio@trumbull-ct.gov

or to the assigned field representative.

SC-6 AWARD OF WORK

1. The low bidder will be determined based upon the sum total of bids submitted, which are weighted based upon the estimated quantity of each item.

2. The Town of Trumbull may award the project based on either lowest of Base Bid or lowest of Based Bid and alternates Bids.

SC-7 Excavation for Drainage Structures and Pipe:

All trench excavated material including soil, asphalt, pipe, catch basin and manhole structures shall be removed from the trench, separated individually as follows:

- a) Soil materials.
- b) Concrete: sidewalks, catch basin and manhole components. The grates from the catch basins shall be separated from the tops.
- c) Asphalt pavement and curbing.
- d) Metal: Corrugated metal pipes, manhole frames and cover, and catch basin grates.

And then loaded into trucks and transported to Indian Ledge Park and deposited at the locations designated by the Trumbull DPW.

The contractor will provide trucks to haul the material from the project site to Indian Ledge Park. Bedding material shall be provided by the contractor and will be included in the price for structure and pipe.

Granular trench backfill material will be provided by the Town of Trumbull and will be loaded into the Contractors truck by the Contractor at Indian Ledge Park. The contractor will provide equipment to load trucks and trucks to haul the material to the project site.

Processed aggregate based material will be provided by the Town of Trumbull and will be loaded by Town staff at Indian Ledge Park. The contractor will provide trucks to haul the material to the project site.

The gates to Indian Ledge Park are open from 7:30 AM to 3:00 PM during normal Town business days. The contractor will need to make arrangements with Trumbull DPW for access to Indian Ledge Park outside of these normal hours.

SPECIAL CONDITIONS – CONNECTICUT DOT

NOTICE TO CONTRACTOR – CONTRACTOR TRAINING REQUIREMENT FOR 10HOUR OSHA CONSTRUCTION SAFETY AND HEALTH COURSE

In accordance with Connecticut General Statute 31-53b and Public Act No. 08-83, the Contractor is required to furnish proof that any person performing the work of a mechanic, laborer or worker pursuant to the classifications of labor under section 31-53, has completed a course of at least ten hours in duration in construction safety and health approved by the Federal Occupational Safety and Health Administration or, has completed a new miner training program approved by the Federal Mine Safety and Health Administration in accordance with 30 CFR 48 or, in the case of telecommunications employees, has completed at least ten hours of training in accordance with 29 CFR 1910.268.

Proof of compliance with the provisions of the statute shall consist of a student course completion card issued by the federal Occupational Safety and Health Administration, or other such proof as deemed appropriate by the Commissioner of the Connecticut Department of Labor, dated no earlier than five years prior to the commencement of the project. Each employer shall affix a copy of the construction safety course completion card for each applicable employee to the first certified payroll submitted to the Department of Transportation on which the employee's name first appears.

Any employee required to complete a construction safety and health course as required that has not completed the course, shall have a maximum of fourteen (14) days to complete the course. If the employee has not been brought into compliance, they shall be removed from the project until such time as they have completed the required training.

This section does not apply to employees of public service companies, as defined in section 16-1 of the 2008 supplement to the General Statutes, or drivers of commercial motor vehicles driving the vehicle on the public works project and delivering or picking up cargo from public works projects provided they perform no labor relating to the project other than the loading and unloading of their cargo.

The internet website for the federal Occupational Safety and Health Training Institute is <http://www.osha.gov/fso/ote/training/edcenters>.

Additional information regarding this statute can be found at the Connecticut Department of Labor website, <http://www.ctdol.state.ct.us/wgwkstnd/wgemenu.htm>.

Any costs associated with this notice shall be included in the general cost of the contract. In addition, there shall be no time granted to the contractor for compliance with this notice. The contractor's compliance with this notice and any associated regulations shall not be grounds for claims as outlined in Section 1.11 – "Claims".

NOTICE TO CONTRACTOR - REQUIREMENTS OF TITLE 49, CODE OF FEDERAL REGULATIONS PART 26

The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate.

NOTICE TO CONTRACTOR - BIDRIGGING AND/OR FRAUDS

The Connecticut Department of Transportation is cooperating with the U.S. Department of Transportation and the Justice Department in their investigation into highway construction contract bidrigging and/or frauds.

A toll-free "HOT LINE" telephone number 800-424-9071 has been established to receive information from contractors, subcontractors, manufacturers, suppliers or anyone with knowledge of bidrigging and/or frauds either past or current. The "HOT LINE" telephone number will be manned during normal working hours (8 A.M. - 5 P.M. EST.), and information will be treated confidentially and anonymity respected.

NOTICE TO CONTRACTOR - VEHICLE EMISSIONS

All motor vehicles and/or construction equipment (both on-highway and non-road) shall comply with all pertinent State and Federal regulations relative to exhaust emission controls and safety.

The contractor shall establish staging zones for vehicles that are waiting to load or unload at the contract area. Such zones shall be located where the emissions from the vehicles will have minimum impact on abutters and the general public.

Idling of delivery and/or dump trucks, or other equipment shall not be permitted during periods of non-active use, and it should be limited to three minutes in accordance with the Regulations of Connecticut State Agencies Section 22a-174-18(b)(3)(c):

No mobile source engine shall be allowed "to operate for more than three (3) consecutive minutes when the mobile source is not in motion, except as follows:

- (i) When a mobile source is forced to remain motionless because of traffic conditions or mechanical difficulties over which the operator has no control,
- (ii) When it is necessary to operate defrosting, heating or cooling equipment to ensure the safety or health of the driver or passengers,
- (iii) When it is necessary to operate auxiliary equipment that is located in or on the mobile source to accomplish the intended use of the mobile source,
- (iv) To bring the mobile source to the manufacturer's recommended operating temperature,
- (v) When the outdoor temperature is below twenty degrees Fahrenheit (20 degrees F),
- (vi) When the mobile source is undergoing maintenance that requires such mobile source be operated for more than three (3) consecutive minutes, or
- (vii) When a mobile source is in queue to be inspected by U.S. military personnel prior to gaining access to a U.S. military installation."

All work shall be conducted to ensure that no harmful effects are caused to adjacent sensitive receptors. Sensitive receptors include but are not limited to hospitals, schools, daycare facilities, elderly housing and convalescent facilities. Engine exhaust shall be located away from fresh air intakes, air conditioners, and windows.

A Vehicle Emissions Mitigation plan will be required for areas where extensive work will be performed in close proximity (less than 50 feet (15 meters)) to sensitive receptors. No work will proceed until a sequence of construction and a Vehicle Emissions Mitigation plan is submitted in writing to the Engineer for review and all comments are addressed prior to the commencement of any extensive construction work in close proximity (less than 50 feet (15 meters)) to sensitive receptors. The mitigation plan must address the control of vehicle emissions from all vehicles and construction equipment.

If any equipment is found to be in non-compliance with this specification, the contractor will be issued a Notice of Non-Compliance and given a 24 hour period in which to bring the equipment into compliance or remove it from the project. If the contractor then does not comply, the Engineer shall withhold all payments for the work performed on any item(s) on which the non-conforming equipment was utilized for the time period in which the equipment was out of compliance.

Any costs associated with this “Vehicle Emissions” notice shall be included in the general cost of the contract. In addition, there shall be no time granted to the contractor for compliance with this notice. The contractor’s compliance with this notice and any associated regulations shall not be grounds for claims as outlined in Section 1.11 – “Claims”.

NOTICE TO CONTRACTOR - PROCUREMENT OF MATERIALS

Upon award, the Contractor shall proceed with shop drawings, working drawings, procurement of materials, and all other submittals required to complete the work in accordance with the contract documents.

NOTICE TO CONTRACTOR - UTILITY SPECIFICATIONS

The contractor is hereby notified that all utility specifications contained elsewhere herein shall be made a part of this contract, and that the contractor shall be bound to comply with all requirements of such specifications. The requirements and conditions set forth in the subject specifications shall be binding on the contractor just as any other specification would be.

NOTICE TO CONTRACTOR - TRAFFIC DRUMS AND TRAFFIC CONES

Traffic Drums and 42-inch (1 m) Traffic Cones shall have four six-inch (150 mm) wide stripes (two - white and two - orange) of flexible bright fluorescent sheeting.

The material for the stripes shall be one of the following, or approved equal:

- 3M Scotchlite Diamond Grade Flexible Work Zone Sheeting, Model 3910 for the white stripes and Model 3914 for the orange stripes,
- Avery Dennison WR-7100 Series Reboundable Prismatic Sheeting, Model WR-7100 for the white stripes and Model WR-7114 for the orange stripes.

NOTICE TO CONTRACTOR - NCHRP 350 REQ. FOR WORK ZONE TRAFFIC CONTROL DEVICES

CATEGORY 1 DEVICES (traffic cones, traffic drums, tubular markers, flexible delineator posts)

Prior to using the Category 1 Devices on the project, the Contractor shall submit to the Engineer a copy of the manufacturer's self-certification that the devices conform to NCHRP Report 350.

CATEGORY 2 DEVICES (construction barricades, construction signs and portable sign supports)

Prior to using Category 2 Devices on the project, the Contractor shall submit to the Engineer a copy of the Letter of Acceptance issued by the FHWA to the manufacturer documenting that the devices (both sign and portable support tested together) conform to NCHRP Report 350 (TL-3).

Specific requirements for these devices are included in the Special Provisions.

Information regarding NCHRP Report 350 devices may be found at the following web sites:

FHWA: http://safety.fhwa.dot.gov/roadway_dept/road_hardware/index.htm

ATSSA: <http://www.atssa.com/resources/NCHRP350Crashtesting.asp>

NOTE: The portable wooden sign supports that have been traditionally used by most contractors in the State of Connecticut do NOT meet NCHRP Report 350 criteria and shall not be utilized on any project advertised after October 01, 2000.

NOTICE TO CONTRACTOR - TRAFFIC SIGNALS

The Contractor is hereby notified that certain conditions pertaining to the installation of new signals and maintenance of traffic signal operations are required when relevant, as part of this contract.

Qualified/Unqualified Workers

U.S. Department of Labor

Occupational Safety & Health Administration (OSHA) www.osha.gov

Part Number	1910
Part Title	Occupational Safety & Health Administration
Subpart	S
Subpart Title	Electrical
Standard Number	1910.333
Title	Selection and use of work practices

Under Maintenance and Protection of Traffic (M&PT) and Temporary Signalization the Contractor is required to keep in operation the following: all vehicle and pedestrian signals including necessary support structures; all vehicle and pedestrian detection; the pre-emption system; and coordination to the master, if in a system.

The contractor will be held liable for all damage to existing equipment resulting from his or his subcontractor's actions.

Vehicle detection material such as loop detector sawcut, conduit, and lead-in cables that is damaged during construction shall be repaired or replaced within 24 hours unless the Engineer determines otherwise. Loop detector sawcut, cable, and conduit replacements will be paid for under the applicable contract item, as listed below:

- Trenching and Backfilling
- Conduit
- Loop detector Sawcut
- 2 Conductor No. 14 Cable.

A credit will be deducted from monies due the Contractor for all maintenance calls responded to by Department of Transportation personnel.

See standard, “TR-1111_01, Loop Vehicle Detector and Sawcut”, sheet. The saw cut installation procedure has changed. When loops are installed in two or more adjacent lanes, the inside lane loops are set back 1 foot (0.3 m) to allow a straight cut from the corner of the curb.

Special provision for Item # 1111451A – LOOP DETECTOR SAW CUT has been revised to reflect the new requirements for loop sealant.

All existing traffic signal equipment, in particular the Loop Vehicle Detector Sawcut, shall be removed from the areas of proposed roadway changes or reconstruction prior to excavation.

The 30 Day Test on traffic control equipment, as specified in Section 10.00, Article 10.00.10 - TESTS, will not begin until the items listed below are delivered to the Department of Transportation, Traffic Signal Lab in Rocky Hill.

Four (4) sets of cabinet wiring diagrams. Leave one set in the controller cabinet.
All spare load switches and flash relays.

Standard CT DOT FORM 817 ITEMS

Cut Bituminous Concrete Pavement:

The contractor shall saw cut the bituminous concrete pavement at the locations as shown on the plans and details, or as directed in the field by the Town Engineer or assigned representative.

All work shall be in accordance with Article 4.06 of CT DOT FORM 817 with the exception of Articles 4.06.04 and 4.06.05 which are amended and modified as follows:

Delete Article 4.06.04 Method of Measurement

Delete Article 4.06.05 Basis of Payment

This work will not be measured for payment and will be included in the cost of "Chimney Replacements" or Sanitary Sewer Point Repair or Manhole Replacement

Temporary Pavement Repair:

The Contractor shall place bituminous concrete pavement at the locations as shown on the plans and details, or as directed in the field by the Town Engineer or assigned representative.

All work shall be in accordance with Article 4.06 of CT DOT FORM 817 with the exception of Articles 4.06.04 and 4.06.05 which are amended and modified as follows:

Delete Article 4.06.04 Method of Measurement Delete

Article 4.06.05 Basis of Payment

This work will not be measured for payment and will be included in the cost of "Chimney Replacements" or Sanitary Sewer Point Repair or Manhole Replacement

ITEM #0100100A – FORCE ACCOUNT WORK - LABORER

ITEM #0100200A – FORCE ACCOUNT WORK – LABOR FOREMAN

ITEM #0100300A – FORCE ACCOUNT WORK – TRUCK DRIVER

ITEM #0100400A – FORCE ACCOUNT WORK – OPERATOR

PART 1 GENERAL

Work under these items shall be incidental work required to facilitate work not included in the other bid items as ordered by the Town or Engineer.

- A. The hourly rate for labor items shall include all expenses to the Contractor including State prevailing wage rates, workman’s compensation, taxes, insurance, fringe benefits, etc., and all overhead expenses as well as profit.

PART 4 METHOD OF MEASUREMENT

Services of labor and equipment utilized in force account work will be measured for payment by the actual number of hours the labor and equipment is utilized in the performance of the force account work, of the type of labor and equipment noted.

PART 5 BASIS OF PAYMENT

Labor for force account work will be paid for at the contract unit price per hour for labor of the type noted, which price shall include all compensation, insurance, taxes, benefits, overhead, profit and any other cost or liability incidental to the furnishing of the labor ordered.

<u>PAY ITEM</u>	<u>PAY UNIT</u>
FORCE ACCOUNT WORK – LABORER	
HOUR FORCE ACCOUNT WORK – LABOR FOREMAN	
HOUR FORCE ACCOUNT WORK – TRUCK DRIVER	
HOUR	
FORCE ACCOUNT WORK – OPERATOR	HOUR

ITEM #0507782A – FURNISH MANHOLE FRAME AND COVER

PART 1 GENERAL

Work under this item shall consist of furnishing Town of Trumbull standard (26") sanitary and storm manhole frames and covers to the Town of Trumbull as directed by the Town or the Engineer. Unit cost shall include delivery to the Town of Trumbull.

Manhole covers shall be Pattern Number 1047, as manufactured by Campbell Foundry Company. Manhole covers for sanitary sewer manholes shall be marked "SEWER".

PART 4 METHOD OF MEASUREMENT

Furnishing of manhole frames and covers shall be measured as units, with one unit including both the frame and cover.

PART 5 BASIS OF PAYMENT

Furnishing of manhole frames and covers will be paid for at the contract unit price each for "Furnish Manhole Frame and Cover" furnished, including all incidental expense and delivery to the Town of Trumbull.

<u>PAY ITEM</u>	<u>PAY UNIT</u>
0507781A FURNISH MANHOLE FRAME AND COVER	EACH

ITEM #1401012A – SANITARY INSIDE DROP IN MANHOLE (0' – 9.9' DEEP)

ITEM #1401013A – SANITARY INSIDE DROP IN MANHOLE (10' – 14.9' DEEP)

ITEM #1401014A – SANITARY INSIDE DROP IN MANHOLE (15' – 19.9' DEEP)

ITEM #1401015A – SANITARY INSIDE DROP IN MANHOLE (20' – 24.9' DEEP)

ITEM #1401016A – SANITARY INSIDE DROP IN MANHOLE (25' – 30' DEEP)

ITEM #1403002A – 4' DIAMETER SANITARY MANHOLE REPLACEMENT (0' – 9.9' DEEP)

ITEM #1403003A – 4' DIAMETER SANITARY MANHOLE REPLACEMENT (10' – 14.9' DEEP)

ITEM #1403004A – 5' DIAMETER SANITARY MANHOLE REPLACEMENT (15' – 19.9' DEEP)

ITEM #1403005A – 6' DIAMETER SANITARY MANHOLE REPLACEMENT (20' – 30' DEEP)

ITEM #1403006A – 6' DIAMETER SANITARY MANHOLE REPLACEMENT (20' – 30' DEEP)

PART 1 GENERAL

1.1 SUMMARY A. Section

Includes

1. Precast concrete manholes
2. Cast iron manhole frames and covers
3. Inside drop in manholes

1.2 REFERENCES

- A. AASHTO – American Association of State Highway and Transportation Officials, Standard Specifications for Highways and Bridges, most recent edition.
- B. ASTM C32 - Standard Specification for Sewer and Manhole Brick (made from clay or shale).
- C. ASTM A48 – Standard Specification for Gray Iron Castings.
- D. ASTM C150 – Standard Specification for Portland Cement.
- E. ASTM C207 – Standard Specification for Hydrated Lime for Masonry Purposes.
- F. ASTM C478 – Standard Specification for Precast Reinforced Concrete Manhole Sections.
- G. ASTM C443 – Standard Specification for Joints for Circular Concrete Sewer and Culvert Piping Using Rubber Gaskets.
- H. ASTM C923 - Standard Specification for Resilient Connectors between Reinforced Concrete Manhole Structures, Pipes and Laterals.
- I. ASTM C990 – Standard Specification for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants.

1.3 SUBMITTALS

- A. Submit Shop Drawings, showing details of construction, reinforcing, joints, pipe connections to structures, manhole rungs, manhole frames and covers, dampproofing coating, and inside drops. B. Submit weights of manhole frames and covers.

1.4 QUALITY ASSURANCE

- A. The quality of materials, the process of manufacture, and the finished sections shall be subject to inspection and approval by the Engineer, or other representative of the Owner. Such inspection may be made at the place of manufacture, or at the Site after delivery, or at both places, and the materials shall be subject to rejection at any time on account of failure to meet any of the Specification requirements, even though samples may have been accepted as satisfactory at the place of manufacture. Material rejected after delivery to the job shall be marked for identification and shall be removed from the job at once. Materials which have been damaged after delivery will be rejected, and if already installed, shall be acceptably

repaired, if permitted, or removed and replaced, at no additional cost to the Owner.

- B. At the time of inspection, the materials will be carefully examined for compliance with the latest ASTM designation specified and these Specifications, and with the approved manufacturer's drawings. Manhole sections will be inspected for general appearance, dimension, "scratchstrength," blisters, cracks, roughness, and soundness. The surface shall be dense and close-textured.
- C. Imperfections in manhole sections may be repaired, subject to the approval of the Engineer, after demonstration by the manufacturer that strong and permanent repairs result. Repairs will be carefully inspected before final approval. Cement mortar used for repairs shall have a minimum compressive strength of 4,000 psi at 7 days and 5,000 psi at 28 days, when tested in 3 inch by 6 inch cylinders stored in the standard manner. Epoxy mortar may be utilized for repairs subject to the approval of the Engineer.
- D. Personnel shall have confined space entry training as appropriate for the work to be performed.
- E. Manholes shall be designed for lateral earth pressures and to resist flotation.

PART 2 PRODUCTS

2.1 PRECAST CONCRETE MANHOLE SECTIONS

- A. Precast concrete barrel sections and transition top sections, shall conform to ASTM C478 and the following requirements:
 - 1. The wall thickness shall not be less than 5 inches for 48 inch diameter reinforced barrel sections, 6 inches for 60 inch diameter reinforced barrel sections and 7 inches for 72 inch diameter reinforced barrel sections.
 - 2. Top sections shall be eccentric except that flat top sections shall be used where shallow cover requires a top section less than 4 feet as shown on the Drawings.
 - 3. Barrel sections shall have tongue and groove joints.
 - 4. All sections shall be cured by an approved method and shall not be shipped nor subjected to loading until the concrete compressive strength has attained 3,000 psi and not before 5 days after fabrication and/or repair, whichever is longer.
 - 5. Precast concrete barrel sections with precast top slabs and precast concrete transition sections shall be designed for a minimum of AASHTO HS20-44 loading plus the weight of the soil above at 120 pcf.
 - 6. The date of manufacture and the name and trademark of the manufacturer shall be clearly marked on each precast section.
 - 7. Precast concrete bases shall be monolithically constructed. The thickness of the bottom slab of the precast bases shall not be less than the barrel sections or top slab whichever is greater. Precast concrete bases shall be constructed with a 6 inch extended base, unless otherwise shown on the Drawings.

2.2 BRICK MASONRY

- A. Bricks shall be good, sound, hard and uniformly burned, regular and uniform in shape and size, of compact texture. Underburned or salmon brick will not be acceptable and only whole brick shall be used unless otherwise permitted. In case bricks are rejected by the Engineer, they shall be immediately removed from the site of the work and satisfactory bricks substituted, at no additional cost to the Owner.
 - 1. Bricks for the channels and shelves shall comply with the latest specifications of ASTM C32 for Sewer Brick, Grade SM.
 - 2. Bricks for building up and leveling manhole frames shall conform to ASTM C32 Grade MS.
 - 3. Poured concrete inverts will not be allowed.
- B. Mortar used in the brickwork shall be composed of one part Type II portland cement conforming to ASTM C150 to two parts sand to which a small amount of hydrated lime not to exceed 10 lbs. to each bag of cement shall be added.
- C. Sand used shall be washed, cleaned, screened, sharp and well graded as to different sizes and with no grain larger than will pass a No. 4 sieve. Sand shall be free from vegetable matter, loam, organic or other materials of such nature or of such quantity as to render it unsatisfactory. D. Hydrated lime shall conform to ASTM C207, Type S.

2.3 MANHOLE FRAMES AND COVERS

- A. Manhole frames and covers shall be of good quality, strong, tough, even grained cast iron, smooth, free from scale, lumps, blisters, sand holes and defects of any kind. Manhole covers and frame seats shall be machined to a true surface. Castings shall be thoroughly cleaned and subject to hammer inspection. Cast iron shall conform to ASTM A48, Class 30B.
- B. Manhole covers shall be Pattern Number 1047 as manufactured by Campbell Foundry Company, 26" diameter. Manhole covers for sanitary sewer manholes shall be marked "SEWER".
- C. Manhole frames and covers shall comply with the detail shown on the Drawings.

2.4 JOINTING PRECAST MANHOLE SECTIONS

- A. Tongue and groove joints of precast manhole sections shall be sealed with a preformed flexible joint sealant. The preformed flexible joint sealant shall conform to ASTM C990.

2.5 MANHOLE RUNGS

- A. Manhole rungs shall be drop front design, 14 inches wide with an abrasive step surface, steel reinforced, copolymer, polypropylene, plastic. Manhole rungs shall conform to OSHA requirements.

2.6 FLEXIBLE PIPE-TO-STRUCTURE CONNECTORS

- A. The flexible pipe-to-structure connectors shall be designed to provide a positive seal between the connector and the structure wall and between the connector and the pipe.
- B. The flexible boot shall be manufactured of EPDM synthetic rubber in accordance with ASTM C443 and C923 and shall be 3/8 inch thick or greater.
- C. The external bands shall be made entirely of 304 series non-magnetic stainless steel.
- D. The flexible connectors shall be provided with a wedge-type or toggle-type expander to secure the pipe in the structure opening.
- E. The flexible connectors shall meet the following criteria, in accordance with ASTM C923:
 - 1. Shall not leak when subjected to a head pressure of 10 psi for 10 minutes.
 - 2. Shall have the ability to deflect 7 degrees in any direction without leakage under the head pressure conditions described above.
 - 3. Shall not leak when subject to a load of 150 lbs./in. pipe diameter and the head pressure conditions described above.

2.7 MANHOLE DROPS

- A. Manhole drops shall be inside type, constructed in accordance with the "Inside Drop in Manhole" detail shown on the Drawings.
- B. Pipe and fittings for the chimneys shall be of the same type and class as the mainline.
- C. Pipe straps for inside manhole chimneys shall be constructed of aluminum alloy 6061-T6. Anchor bolts shall be 1/2" stainless steel.

2.8 DAMPPROOFING

- A. Provide two coats of bituminous dampproofing on outer surfaces of precast manholes at the rate of 20-25 square feet per gallon in accordance with manufacturer's instructions.
- B. Dampproofing coating shall be a factory-applied asphalt compound specially made to adhere to below grade concrete structures.
- C. The dampproofing shall be Sonoshield semi-mastic, as manufactured by BASF; Dehydratine 4 by Euclid Chemical; RIW Marine Liquid by Toch Brothers; or approved equal.

2.9 NON-SHRINK, WATER-PROOF GROUT

- A. Non-shrink, water-proof grout shall be Hallemite; Waterplug; Embeco; or equal.

PART 3 EXECUTION

3.1 INSTALLATION A.

Installation

1. Construct manholes to the dimensions shown on the Drawings and as specified. Protect all work against flooding and flotation.
2. Set precast concrete barrel sections so as to be plumb and with sections in true alignment with a ¼ inch maximum tolerance to be allowed.
3. Install the precast sections in a manner that will result in a watertight joint. Seal the joints of precast concrete barrel sections with the preformed flexible joint sealant used in sufficient quantity to fill 75% of the joint cavity. Fill the outside and inside precast section joints with non-shrink grout and finish flush with the adjoining surfaces. Plug holes in the concrete barrel sections required for handling or other purposes with a non-shrink, water-proof grout or concrete and rubber plugs, and finish flush on the inside.
4. Backfilling shall be done in a careful manner, bringing the fill up evenly on all sides. Backfilling shall be done in accordance with specification Section 0205001 – Trench Excavation. The Contractor shall use suitable granular fill removed from the excavation for backfilling. If the Contractor elects to utilize processed aggregate base in lieu of granular fill, there will be no additional payment to the Contractor.
5. After completion of backfilling, the Contractor shall install a temporary pavement patch as detailed in Sketch SK-5. This temporary pavement patch shall remain in place through one winter. After the patch has been in place for one winter, the temporary pavement patch shall be removed and a permanent pavement patch shall be installed in accordance with Sketch SK-6. All costs associate with pavement patching shall be included in the unit prices bid for the various sanitary repair items.

B. Pipe Connections

1. For pipes with smooth exterior surfaces (PVC, ductile iron, HDPE pressure pipe, steel, etc), use flexible pipe-to-structure connectors.
2. Where flexible pipe-to-structure connectors cannot be used, such as pipes with rough, irregular or corrugated exterior surfaces (concrete, corrugated metal, HDPE drainage pipe, etc):
 - a. After the new pipe has been set in place, completely fill the hole around the new pipe and structure with non-shrink, water-proof grout.
 - b. Place a 6 inch thick concrete encasement a total of 12 inches in length around the pipe stub adjacent to the exterior wall of the structure. Concrete shall have a 28 day compressive strength of 3,000 psi.

C. Manhole Rung Installation

1. Steel reinforced copolymer polypropylene plastic steps shall be press fitted by hand driven hammer into preformed holes in cured precast sections, on 12 inch centers, by the precast concrete manufacturer.

D. Brickwork

1. Mix mortar only in such quantity as may be required for immediate use and use before the initial set has taken place. Do not retain mortar for more than one and one-half hours and constantly work over with a hoe or shovel until used. Anti-freeze mixtures will not be allowed in the mortar. No masonry shall be laid when the outside temperature is below 40°F unless provisions are made to protect the mortar, bricks, and finished work from frost by heating and enclosing the work with tarpaulins or other suitable material. The Engineer's decision as to the adequacy of protection against freezing shall be final.
2. Construct channels and shelves of brick as shown on the Drawings. The brick channels shall correspond in shape with the lower half of the pipe. The top of the shelf shall be set at the elevation of the crown of the highest pipe and shall be sloped 1 inch per foot to drain toward the flow through channel. Construct brick surfaces exposed to sewage flow with the nominal 2 inch by 8 inch face exposed (i.e., bricks on edge).
3. Set manhole covers and frames in a full mortar bed and bricks, a maximum of 12 inches thick for conical tops and 6 inches thick for flat top sections, utilized to assure frame and cover are set to the existing grade. Reset the manhole frames and covers to final grade prior to placement of final paving.

3.2 CLEANING

- A. Clean new manholes of silt, debris and foreign matter of any kind, prior to final inspection.

PART 4 METHOD OF MEASUREMENT

Sanitary sewer manhole replacements will be measured as units. The depth category for the item "Sanitary Manhole Replacement" will be determined by measuring from the existing ground surface elevation down to the lowest invert in the existing manhole. There will be no separate measurement for removal of existing manholes where proposed manholes are to replace existing manholes. There will be no separate measurement for excavation, backfill, shoring, dewatering, temporary pavement, permanent pavement, pipe stubs (including repair collars) required to reconnect to existing sanitary main up to a maximum length of 10 linear feet on each side of the manhole, bypass pumping or Maintenance & Protection of Traffic required for sanitary manhole replacement. All such costs are to be included in the unit cost for the pay item "Sanitary Manhole Replacement" of the size and depth noted.

Sanitary inside drops in manholes will be measured as units. The depth category for the item "Sanitary Inside Drop in Manhole" will be determined by measuring from the invert of the incoming pipe down to the invert in the manhole where the drop ends. There will be no separate measurement for grouting, bypass pumping or Maintenance & Protection of Traffic required for construction of sanitary inside drops. All such costs are to be included in the unit cost for the pay item "Sanitary Inside Drop in Manhole" of the depth noted.

PART 5 BASIS OF PAYMENT

Sanitary sewer manhole replacements will be paid for at the contract unit price Each for "Sanitary Manhole Replacement" of the depth noted, complete in place, which price shall include all materials, equipment, tools and labor incidental thereto. There will be no separate measurement or payment for removal of existing manholes where proposed manholes are to replace existing manholes. There will be no separate measurement or payment for excavation, backfill, shoring, dewatering, temporary pavement, permanent pavement, pipe stubs (including repair collars) required to reconnect to existing sanitary main up to a maximum length of 10 linear feet on each side of the manhole, bypass pumping or Maintenance & Protection of Traffic required for sanitary manhole replacement. All such costs are to be included in the cost for the pay item "Sanitary Manhole Replacement" of the size and depth noted. Contractor shall assume mainline sanitary sewer, and pipes and repair collars required for manhole replacement, are to be 12" SDR-35 PVC.

Sanitary inside drops in manholes will be paid for at the contract unit price Each for "Sanitary Inside Drop in Manhole" of the depth noted, complete in place, which price shall include all materials, equipment, tools and labor incidental thereto. There will be no separate measurement or payment for grouting, bypass pumping or Maintenance & Protection of Traffic required for construction of sanitary inside drops. All such costs are to be included in the cost for the pay item "Sanitary Inside Drop in Manhole" of the depth noted.

<u>PAY ITEM</u>	<u>PAY UNIT</u>
1401012A SANITARY INSIDE DROP IN MANHOLE (0' – 9.9' DEEP)	EACH
1401013A SANITARY INSIDE DROP IN MANHOLE (10' – 14.9' DEEP)	EACH
1401014A SANITARY INSIDE DROP IN MANHOLE (15' – 19.9' DEEP)	EACH
1401015A SANITARY INSIDE DROP IN MANHOLE (20' – 24.9' DEEP)	EACH
1401016A SANITARY INSIDE DROP IN MANHOLE (25' – 30' DEEP)	EACH
1403002A 4' DIAM. SANITARY MANHOLE REPLACEMENT (0' – 9.9' DEEP)	EACH
1403003A 4' DIAM. SANITARY MANHOLE REPLACEMENT (10' – 14.9' DEEP)	EACH
1403004A 5' DIAM. SANITARY MANHOLE REPLACEMENT (15' – 19.9' DEEP)	EACH
1403005A 6' DIAM. SANITARY MANHOLE REPLACEMENT (20' – 24.9' DEEP)	EACH
1403006A 6' DIAM. SANITARY MANHOLE REPLACEMENT (25' – 30' DEEP)	EACH

- ITEM No. 1402142A – SANITARY CHIMNEY REPLACEMENT (10’ – 14.9’ Deep)**
- ITEM No. 1402143A – SANITARY CHIMNEY REPLACEMENT (15’ – 19.9’ Deep)**
- ITEM No. 1402144A – SANITARY CHIMNEY REPLACEMENT (20’ – 24.9’ Deep)**
- ITEM No. 1402145A – SANITARY CHIMNEY REPLACEMENT (25’ – 30’ Deep)**

- ITEM No. 1403496A – SANITARY SEWER POINT REPAIR (0’ – 9.9’ Deep)**
- ITEM No. 1403497A – SANITARY SEWER POINT REPAIR (10’ – 14.9’ Deep)**
- ITEM No. 1403498A – SANITARY SEWER POINT REPAIR (15’ – 19.9’ Deep)**
- ITEM No. 1403499A – SANITARY SEWER POINT REPAIR (20’ – 24.9’ Deep)**
- ITEM No. 1403500A – SANITARY SEWER POINT REPAIR (25’ – 30’ Deep)**

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes
 - 1. PVC Gravity Pipe and Fittings
 - 2. Precast Concrete Chimneys

1.2 REFERENCES

- A. ASTM D2412 - Standard Test Method for External Loading Properties of Plastic Pipe by Parallel-Plate Loading.
- B. ASTM D2444 - Standard Test Method for Impact Resistance of Thermoplastic Pipe and Fittings by Means of a Tup (Falling Weight).
- C. ASTM D3034 - Specification for Type PSM Polyvinyl Chloride (PVC) Sewer Pipe and Fittings.
- D. ASTM D3212 - Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals.
- E. ASTM F477 - Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe.
- F. ASTM F679 - Specification for Polyvinyl Chloride (PVC) Large-Diameter Plastic Gravity Sewer Pipe and Fittings.

1.3 SUBMITTALS

- A. Submit specifications and shop drawings for materials and equipment furnished under this Section.
- B. Prior to first shipment of pipe, submit certified test reports that the pipe for this Contract was manufactured and tested in accordance with the ASTM Standards specified herein.

1.4 QUALITY ASSURANCE

- A. Each type of PVC pipe and fittings shall be from a single manufacturer.
- B. Inspection of the pipe will also be made by the Owner after delivery. The pipe shall be subject to rejection at any time on account of failure to meet

any of the Specification requirements. Pipe rejected after delivery shall be marked for identification and shall immediately be removed from the job site.

PART 2 PRODUCTS

2.1 MATERIALS A.

Gravity Pipe

1. Polyvinyl chloride (PVC) pipe shall be of the size indicated on the Drawings or as specified and shall conform to the latest revision of ASTM D3034, Type SDR 35 for diameters less than or equal to 15 inch diameter and ASTM F679 for pipe greater than 15 inch diameter. Standard laying lengths shall not exceed 14.0 feet.
2. Joints shall be elastomeric gasket joints and shall provide a watertight seal. Assembly of joints shall be in accordance with ASTM D3212.
3. The minimum "pipe stiffness" (load divided by change in inside diameter in direction of load application) at 5% deflection shall be at least 46 psi for pipe tested in accordance with ASTM D2412.
4. No shattering or splitting shall be evident when 150 ft.-lbs. and 210 ft.-lbs. is impacted on 4 inch and 6 inch diameter pipe, respectively, in accordance with ASTM Method of Test D2444.
5. Pipe lengths and fittings to be used on the project shall be clearly marked on the outside in bold type with the name of the manufacturer, pipe size, pipe material, pipe class, and ASTM designation.
6. Lateral Service Chimneys
 - a. Pipe and fittings shall be 6 inch diameter and be of the same material as the main line PVC pipe.
 - b. Construct service chimneys with precast concrete sections. Cast-in-place chimneys will not be acceptable.

PART 3 EXECUTION

3.1 HANDLING PIPE AND FITTINGS

- A. Take care in loading, transporting, and unloading to prevent injury to the pipe. Do not drop pipe or fittings. Examine pipe and fittings before installing, and no piece shall be installed that is found to be defective.
- B. If any defective pipe is discovered after it has been installed, remove and replace it with a sound pipe in a satisfactory manner. Thoroughly clean pipe and fittings before installing, keep clean until they are used in the work, and conform to the lines, grades and dimensions required when installed.
- C. Pipe ends requiring cutting shall be cut square without damage to the remaining pipe. Bevel cut pipe ends 1/8 inch at approximately 30 degrees to provide proper assembly of the joint. Beveling can be done with a coarse file or portable grinder.
- D. Support stored pipe from below at not more than 3 foot intervals to prevent deformation. Do not stack pipe higher than 6 feet. Store pipe and fittings

in a manner which will keep them at ambient outdoor temperatures. Provide temporary shading as required to meet this requirement. Simply covering of the pipe and fittings which allows temperature buildup when exposed to direct sunlight will not be permitted.

3.2 INSTALLATION

- A. No single piece of pipe shall be laid unless it is generally straight. The centerline of the pipe shall not deviate from a straight line drawn between the centers of the openings at the ends of the pipe by more than 1/16 inch per foot of length. If a piece of pipe fails to meet this required check for straightness, it shall be rejected and removed from the site. Laying instructions of the manufacturer shall be explicitly followed.
- B. Install piping and fittings true to alignment and grade. If necessary, each length of pipe shall be cleaned out before installation.
- C. All PVC gravity pipe shall be installed on a bed of 3/4-inch crushed stone borrow and have a minimum depth of 6 inches. The 3/4-inch crushed stone borrow shall also completely encase the pipe and cover the pipe to a grade 6 inches over the top of the pipe for the entire width of the trench. Bell holes shall be made in the 3/4-inch crushed stone borrow bedding such that the pipe shall be uniformly supported throughout the entire length of the barrel section.
- D. Deflections in Pipe Alignment
 - 1. Wherever it is necessary to deflect pipe from a straight line, either in the vertical or horizontal plane, to avoid obstructions or where longradius curves are permitted, the amount of deflection allowed shall not exceed that required for satisfactory making of the joint, and shall be approved by the Engineer.
 - 2. Prior to deflecting the pipeline, the spigot of the pipeline should be marked flush with the bell end to assure that the spigot is not withdrawn excessively as the result of the deflection. After the pipe is deflected, an adequate depth of jointing material must remain on the side where the spigot is away from home and an adequate width of caulking space must remain on the opposite side of the pipe at the face of the bell.
 - 3. The maximum deflection recommended by the manufacturer when using any pipe system must be observed when deflecting a pipeline.
 - 4. In general, all radius curves called for on the Drawings or permitted at the time of construction are to be made using full lengths of pipe. The use of short lengths of pipe and extra joints in order to make a smaller radius turn will not be allowed without the written approval of Engineer.
- E. Unsuitable Laying Conditions
 - 1. No pipe shall be laid in water, in an unsuitable trench or during unsuitable weather conditions.
- F. Chimney Construction Methods

1. The Contractor shall carefully place the pipe, fittings and precast concrete sections forming the house service chimney in accordance with the standard detail for "Precast Concrete Chimney." The pipe fittings shall be braced and supported as necessary to ensure they stay in the proper position while the precast concrete sections are placed. Chimneys shall be constructed in such a manner that loads are not transferred to the mainline pipe or tee.

PART 4 METHOD OF MEASUREMENT

Sanitary chimney replacements will be measured as units. The depth category for the item "Sanitary Chimney Replacement" will be determined by measuring from the existing ground surface elevation down to the invert of the existing sanitary sewer main at the chimney location. There will be no separate measurement for removal of existing chimneys. There will be no separate measurement for excavation, backfill, temporary pavement, pipe stubs (including repair collars) required to reconnect to existing sanitary main, bypass pumping or Maintenance & Protection of Traffic required for sanitary chimney replacement. All such costs are to be included in the unit cost for the pay item "Sanitary Chimney Replacement" of the depth noted.

Sanitary point repairs will be measured as units. The depth category for the item "Sanitary Point Repair" will be determined by measuring from the existing ground surface elevation down to the invert of the existing sanitary sewer main at the point repair location. There will be no separate measurement for removal of existing pipe at repair locations. There will be no separate measurement for excavation, backfill, temporary pavement, pipe stubs (including repair collars) required to reconnect to existing sanitary main, bypass pumping or Maintenance & Protection of Traffic required for sanitary point repairs. All such costs are to be included in the unit cost for the pay item "Sanitary Point Repair" of the depth noted.

PART 5 BASIS OF PAYMENT

Sanitary sewer chimney replacements will be paid for at the contract unit price Each for "Sanitary Chimney Replacement" of the depth noted, complete in place, which price shall include all materials, equipment, tools and labor incidental thereto. There will be no separate payment for removal of existing chimneys at replacement locations. There will be no separate payment for excavation, backfill, temporary pavement, pipe stubs (including repair collars) required to reconnect to existing sanitary main, bypass pumping or Maintenance & Protection of Traffic required for sanitary chimney replacements. All such costs are to be included in the unit cost for the pay item "Sanitary Chimney Replacement" of the depth noted.

Sanitary Point Repairs will be paid for at the Contract unit price each for "Sanitary Point Repair" of the depth noted, complete in place, which price shall include all materials, equipment, tools and labor incidental thereto. There will be no separate payment for removal of existing pipe at repair locations. There will be no separate payment for excavation, backfill, temporary pavement, pipe stubs (including repair collars) required to reconnect to existing sanitary main, bypass pumping or Maintenance & Protection of Traffic required for sanitary point repairs. All such costs are to be included in the unit cost for the pay item "Sanitary Point Repair" of the depth noted.

Town of Trumbull
Sanitary Sewer Improvements

PAY ITEM DESCRIPTION	PAY UNIT
1402142A SANITARY CHIMNEY REPLACEMENT (10' - 14.9' DEEP)	EACH
1402143A SANITARY CHIMNEY REPLACEMENT (15' - 19.9' DEEP)	EACH
1402144A SANITARY CHIMNEY REPLACEMENT (20' - 24.9' DEEP)	EACH
1402145A SANITARY CHIMNEY REPLACEMENT (25' - 30' DEEP)	EACH

PAY ITEM DESCRIPTION	PAY UNIT
1403496A SANITARY SEWER POINT REPAIR (0' - 10' DEEP)	EACH
1403497A SANITARY SEWER POINT REPAIR (10' - 14.9' DEEP)	EACH
1403498A SANITARY SEWER POINT REPAIR (15' - 19.9' DEEP)	EACH
1403499A SANITARY SEWER POINT REPAIR (20' - 24.9' DEEP)	EACH
1403500A SANITARY SEWER POINT REPAIR (25' - 30' DEEP)	EACH

ITEM #1405000A – CREDIT FOR MULTIPLE SANITARY REPAIRS ON SAME OR ABUTTING ROAD, 0’ – 9.9’ DEEP

ITEM #1405001A – CREDIT FOR MULTIPLE SANITARY REPAIRS ON SAME OR ABUTTING ROAD, 10’ – 14.9’ DEEP

ITEM #1405002A – CREDIT FOR MULTIPLE SANITARY REPAIRS ON SAME OR ABUTTING ROAD, 15’ – 19.9’ DEEP

ITEM #1405003A – CREDIT FOR MULTIPLE SANITARY REPAIRS ON SAME OR ABUTTING ROAD, 20’ – 30’ DEEP

ITEM #1405004A – CREDIT FOR MULTIPLE SANITARY REPAIRS ON SAME OR ABUTTING ROAD, 20’ – 30’ DEEP

PART 1 GENERAL

Work under these items shall consist of furnishing Town of Trumbull with a Credit for additional sanitary sewer repairs performed on the same road. Should more than one repair be performed on the same road, regardless of the type of repair, a credit shall be applied to each subsequent repair after the first. The intent of this credit is to quantify the economy of scale associated with mobilization and demobilization, Maintenance & Protection of Traffic, etc. if multiple repairs are required on the same road.

PART 4 METHOD OF MEASUREMENT

Credits for Multiple Sanitary Repairs on Same Road shall be measured as units, of the depth noted, for each repair, regardless of type, after the first repair is performed on the road.

PART 5 BASIS OF PAYMENT

Credits for Multiple Sanitary Repairs on Same Road will be Credited to the Town of Trumbull at the contract unit price each for "Credit for Multiple Sanitary Repairs on Same Road", complete in place, of the depth noted.

PAY ITEM

PAY UNIT

CREDIT FOR MULTIPLE SANITARY REPAIRS ON SAME OR ABUTTING ROAD, 0’ – 9.9’ DEEP

EACH

CREDIT FOR MULTIPLE SANITARY REPAIRS ON SAME OR ABUTTING ROAD, 10’ – 14.9’ DEEP

EACH

CREDIT FOR MULTIPLE SANITARY REPAIRS ON SAME OR

ABUTTING ROAD, 15' – 19.9' DEEP

EACH

CREDIT FOR MULTIPLE SANITARY REPAIRS ON SAME OR
ABUTTING ROAD, 00' – 24.9' DEEP

EACH

CREDIT FOR MULTIPLE SANITARY REPAIRS ON SAME OR

ABUTTING ROAD, 25' – 30' DEEP

EACH