

SECTION 01010 – SUMMARY OF WORK

PART 1 – GENERAL

1.1 DESCRIPTION

- A. Work consists of cleaning and inspecting drainage conduits consisting of the South River Conduit, the Canal Street Conduit, the Canal Street Drainage Siphon, and the Salem State College Conduit as indicated in Appendix A through D.
- B. Work components included in this contract are listed below with the exceptions noted in paragraph C:
1. Cleaning drainage conduits and catch basins to include sediment and debris removal, dewatering, and disposal.
 2. Transportation of sediment and debris to off-site dewatering location and off-site disposal site.
 3. Sediment testing and permitting as required for disposal.
 4. CCTV inspection of drainage conduits.
 5. Structural inspection of the South River Conduit.
 6. Coordination for traffic control.
 7. Sedimentation and erosion control.
 8. Flow control.
 9. Reporting.
- C. Work excluded from this contract is as follows:
1. Root removal.
 2. Payment for traffic control. Uniformed police officers for traffic control to be paid directly by the City.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

****END OF SECTION****

SECTION 01025 - MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Scope: This Section describes the measurement and payment for the Work to be completed under each Bid item in the Bid Form. The descriptions may not reference all of the associated Work. Work specified but not specifically designated as a Proposal item is considered incidental to all Bid Form items.
- B. Payment Procedures are described in the agreement, General Conditions and related documents. All other activities required in connection with performance of the Work, whether described in the Contract Documents or mandated by applicable codes, permits and laws, will not be separately paid for unless specifically provided for in the form of General Bid, but will be considered incidental to performance of the overall Project.

1.2 SUBMITTALS

- A. Schedule of Values: Measurement and payment for the work performed will be per item identified in the Schedule of Values. The value of each item listed in the Schedule of Values shall constitute full compensation for complete compliance with the requirements of that item, including all labor, equipment, materials, tools, incidental work, and construction methods.

1.3 METHOD OF MEASUREMENT

- A. All measurements shall be made in English units.
- B. When the method of measurement is in stations, miles, feet or acres, the measurements shall be horizontal measurements unless specified otherwise.

1.4 BASIS OF PAYMENT

- A. Payment shall be based on the most recent Schedule of Values in accordance with the procedures and schedule set forth in the Agreement and Section 01300, Submittals.
- B. Payment shall be made on approved submittal items. No payment shall be made for items without approved submittals.
- C. Progress payments for lump sum items shall be based on the percentage completion of each portion of the work as of the end of the period covered by the Application for Payment.
- D. Progress payments for unit price items shall be based on the quantity measured as described in paragraph 1.5.

1.5 DESCRIPTION OF PAY ITEMS

- A. Item 1 – Storm Drain Cleaning up to 1,000 tons of debris removed and disposed.
 - 1. Basis of Payment: Percentage Complete of Lump Sum assuming 1,000 tons equals 100

percent. If the ENGINEER has approved the cleaning results of all conduit within the scope of work based on the television inspection and less than 1,000 tons of debris total has been removed from the conduits, this line item shall be considered 100 percent complete and full payment then due to the CONTRACTOR.

2. Method of Measurement: Measurement of completed work shall be based on weight slips from disposal facility.
 3. Includes:
 - a. Furnishing all equipment, materials, tools and labor necessary to clean as specified in Section 02720 – Storm Drain Cleaning.
 - b. Bypass pumping, plugging or blocking of flow; reporting; additional expenses related to alternative hours worked to perform Work during low tide; the storage, testing and disposal of material retrieved from the cleaning process; mobilization and demobilization; and traffic control used to perform the Work shall be considered incidental to the Work.
- B. Item 2 – Storm Drain Cleaning greater than 1,000 tons of debris.
1. Basis of Payment: Unit price per ton of debris disposed after the first 1,000 tons covered under Item 1.
 2. Method of Measurement: Measurement of completed work shall be based on weight slips from disposal facility.
 3. Includes:
 - a. Furnishing all equipment, materials, tools and labor necessary to clean as specified in Section 02720 – Storm Drain Cleaning.
 - b. Bypass pumping, plugging or blocking of flow; reporting; additional expenses related to alternative hours worked to perform Work during low tide; the storage, testing and disposal of material retrieved from the cleaning process; mobilization and demobilization; and traffic control used to perform the Work shall be considered incidental to the Work.
- C. Item 3 – Storm Drain Inspection.
1. Basis of Payment: Percentage completion of each line item in the Schedule of Values.
 2. Method of Measurement: Measurement of completed work shall be based on the DVDs, printed log sheets, and structural report submitted to the ENGINEER.
 3. Includes:
 - a. Furnishing all equipment, material, and labor associated with CCTV and structural inspection of the drainage conduits as specified in Section 02725 – Storm Drain Inspection.

- b. Bypass pumping, plugging or blocking of flow; data recording; reporting; additional expenses related to alternative hours worked to perform Work during low tide; mobilization and demobilization; and traffic control used to perform the Work shall be considered incidental to the Work.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

****END OF SECTION****

SECTION 01200 - PROJECT MEETINGS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. General: During the Project the CONTRACTOR shall be required to attend meetings to discuss the status of the Work and other matters as necessary for the proper execution of the Project. The CONTRACTOR shall attend the following meetings:
1. Preconstruction meeting.
 2. Progress meetings.
- B. Meetings will be held at the City of Salem Engineering offices located at 120 Washington Street, Salem, MA. The CONTRACTOR will compile minutes of meetings and provide copies to attendees.

1.2 PERSONNEL

- A. Authority: Persons designated by the CONTRACTOR to attend meetings shall have authority to commit the CONTRACTOR and Subcontractors to actions agreed upon in the meetings.
- B. Attendance: Assign the same personnel to represent CONTRACTOR at meetings through the entire Project duration. Require attendance of Subcontractors when necessary or when requested by the ENGINEER.

1.3 PRECONSTRUCTION MEETING

- A. General: Meeting will be scheduled within ten (10) days of issuance of Notice To Proceed. Provide attendance by CONTRACTOR's personnel and all major Subcontractors. The ENGINEER will request attendance of other parties involved.
- B. Base Agenda: The following items will be the basis of what will be discussed:
1. Organizational arrangement of CONTRACTOR's forces and personnel, and those of Subcontractors, suppliers, and the ENGINEER;
 2. Channels and procedures for communications;
 3. Construction schedule and submittal schedule including sequence of critical work.
 4. Contract Documents, including distribution of required copies of original documents and revisions;
 5. Processing of Shop Drawings and other data submitted to the ENGINEER for review;
 6. Processing of field decisions and Change Orders;
 7. Schedule for Progress Meetings;

8. Rules and regulations governing performance of the Work; and
9. Procedures for safety and first aid, security, quality control, housekeeping, and other related matters.

1.5 PROGRESS MEETINGS

- A. General: Meetings will be held on a schedule acceptable to CONTRACTOR, ENGINEER, OWNER, and regulatory agencies.
- B. Base Agenda:
 1. Review, revise as necessary, and approve minutes of previous meeting;
 2. Review progress of the Work since last meeting, including status of submittals for approval and requests for payment;
 3. Identify problems which impede planned progress;
 4. Develop corrective measures and procedures to regain planned schedule; and
 5. Complete other current business.

PART 2 - PRODUCTS (not applicable)

PART 3 - EXECUTION (not applicable)

****END OF SECTION****

SECTION 01300 - SUBMITTALS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This Section describes the types of submittals required during construction; procedures for making submittals, the preparation of submittals and the times submittals are required.
- B. Submittals include, but are not limited to:
1. Qualifications of CONTRACTOR and/or subcontractors
 2. Construction Schedule
 3. Schedule of Values
 4. Insurance Certificates
 5. Certifications
 6. Traffic Control Plan
 7. List of contacts, key personnel and emergency contacts
 8. List of manufacturers, subcontractors and applicators to be used on the project
 9. Storm Water Flow Control Plan
 10. Shop Drawings
 11. Test Results
 12. Weekly Progress Reports
 13. Inspection logs, both printed log sheets and DVDs
 14. Structural Engineer's report for the South River Conduit
 15. Payment Requests
- C. Additional submissions are required by the General Conditions. Such submittals generally include such things as Bids and bidding documents, insurance policies, certifications of bond and insurance coverage, Applications for Payment, requests for Change Orders, guarantees, permits, certifications and documents required by federal state and local authorities, submissions required by utility companies and other persons, firms or organizations and other such submittals.
- D. The Requirements of this Section are general in nature and basically apply to all Sections of the specifications. Additional submissions and more specific requirements on submissions are contained in the various specification sections. In each individual Section, no attempt was made to cover or repeat the submissions contained in this Section and, therefore, the total of all submissions required are the combination of those described in this Section plus those specified in the various other Sections.

1.2 IDENTIFICATION OF SUBMITTALS

- A. Completely identify each submittal and re-submittal by showing at least the following information:
1. Name of Project.
 2. Name, address and telephone number of CONTRACTOR and CONTRACTOR's stamp of approval, indicating that the submission has been thoroughly checked by CONTRACTOR for conformance and fit.

3. Name, address and telephone number of individual, firm or organization who will be doing the fabrication, supplying or manufacturing of equipment and materials and the name of the individual who may be contacted for further information.
4. Drawing number and specification section number to which submittal applies.
5. The location, service, equipment designation and other information to specifically indicate the item for which acceptance is requested.

Submissions not containing the above will be returned to CONTRACTOR, un-reviewed by ENGINEER.

1.3 COORDINATION OF SUBMITTALS

- A. Prior to submitting to ENGINEER, fully coordinate all interrelated Work. As a minimum, do the following:
 1. Determine and verify all field dimensions and conditions, materials, catalog numbers and similar data.
 2. Coordinate with all trades, subcontractors, other CONTRACTORS, public agencies, and utility companies and secure all necessary approvals, in writing.
 3. Clearly indicate any deviations from the Contract Documents.
- B. Make submittals in groups containing all associated items which in some way depend upon each other. ENGINEER may elect not to review partial, incomplete submissions, whereupon he will return the incomplete submission to the CONTRACTOR for a resubmission of a complete submittal. Identify appropriate specification Section and Drawing on submittal.
- C. Number submittals sequentially. Re-submittals shall utilize the assigned submittal number and be designated "A". Subsequent re-submittals shall be designated "B", "C", etc. as necessary.

1.4 TIMING OF SUBMITTALS

- A. Except where otherwise specifically noted, allow fifteen (15) business days, after receipt by ENGINEER to review and process submittals. Make submittals far enough in advance of scheduled dates of installation to provide time for reviews, for securing necessary acceptance, for possible revisions and re-submittals, and for placing orders and securing delivery.
- B. Submissions may be returned un-reviewed, rejected for several reasons, accepted conditioned upon submission of related items or for other reasons set further in the Contract Documents.
- C. Make submissions well in advance as the returning or rejecting of submissions or other similar circumstances are possible and are deemed "Avoidable Delays" as defined in the General Conditions. Costs for these delays or those attributed to CONTRACTOR's tardiness in making submittals shall be borne by the CONTRACTOR.

1.5 DESTINATION OF SUBMITTALS: Unless otherwise specified, copies of every submission shall be sent to ENGINEER's office.

1.6 CLARITY OF SUBMITTALS: All printed materials shall be neat, clean, clear and legible, and of such quality that they can be easily reproduced by normal photocopying or blueprinting machines. Copies not conforming to this requirement may be returned to CONTRACTOR, un-reviewed.

1.7 CONTRACTOR'S APPROVAL STAMP: Each copy of every submittal shall be stamped with the CONTRACTOR's approval stamp. CONTRACTOR shall discuss deviations from the specifications with the ENGINEER prior to submittal.

1.8 ENGINEER'S REVIEW

A. ENGINEER will review and comment on each submission conforming to the requirements of this Section. ENGINEER's review will be only for conformance with the design concept of the Project and will be confined to general arrangement and compliance with the Contract Documents only, and will not be for the purpose of checking quantities, dimensions, weights, clearances, fitting, tolerances, interferences, or coordination of trades or CONTRACTORS. The acceptance of a separate item does not represent acceptance of an assembly in which the item functions. ENGINEER's review and comments will in no way relieve CONTRACTOR of any of its responsibilities under the Contract. ENGINEER will indicate one or more of the following:

1. No Exceptions Taken: When so marked, the work covered by the submittal may proceed provided it complies with the requirements of the Contract Documents. Acceptance of the work will be based on that compliance.
2. Make Corrections Noted: When so marked, the work covered by the submittal may proceed provided it complies with the requirements of the Contract Documents and the Engineer's notes and comments. Acceptance of the work will be based on that compliance.
3. Additional Information Requested: When so marked, submit supplemental information to the Engineer for review. Submittals with this action may be used at the project site or elsewhere where work is in progress if the additional submitted information is marked as a. or b. above.
4. Revise and Resubmit: When so marked, make corrections or changes to the original submittal or prepare a new submittal and resubmit to Engineer for review. Submittals with this action may not be used at the project site or elsewhere where work is in progress.
5. Rejected: When so marked, the submittal is not acceptable. Do not permit submittals with the action marking to be used at the project site or elsewhere where work is in progress.

B. No payment will be made on any pay item, or for any stored material, for which a submission is required if submission:

1. Has not been made,
2. Has been made but was rejected by ENGINEER,
3. Has been made, but CONTRACTOR has not complied with ENGINEER's notes marked on the submittal,
4. Has been made and no exception was taken, but item provided does not conform to the Shop Drawing nor to the Contract Documents.

1.9 RESUBMISSIONS: Prepare new and additional submissions, make required corrections, and resubmit corrected copies until accepted. On or with re-submittals, clearly describe revisions and changes made, other than the corrections requested by ENGINEER, which did not appear on the previous submissions. Resubmit numbered as previously specified. No submittal may be made more than three times. If a submittal is not fully acceptable after its second submission, the Contractor shall take effective action to manage the submittal process and to

resolve the problem so the third submission will be acceptable. The contractor shall be solely responsible for all increased costs including, without limitation, project delays, professional fees, Engineer's review time, and other costs related to submittals made more than three times.

1.10 CONTRACTOR'S RESPONSIBILITIES

- A. ENGINEER's acceptance of submittals shall not relieve CONTRACTOR of responsibilities for any deviation from the requirements of the Contract Documents unless CONTRACTOR has informed ENGINEER, in writing, of such deviation at the time of submission and ENGINEER has given written acceptance to the specific deviation, nor shall ENGINEER's acceptance relieve CONTRACTOR from responsibility for errors or omissions in the submittals.
- B. No portion of the Work requiring a submission shall be commenced until the submission has been accepted by ENGINEER.

PART 2 - PRODUCTS

2.1. QUALIFICATIONS OF CONTRACTOR

- A. Refer to Section 01400, Quality Control for requirements regarding qualifications and certification of Workers.
- B. Submit with bid, documentation sufficient to demonstrate that the CONTRACTOR, subcontractors, and applicators are qualified, trained and experienced with the methods, techniques and materials specified herein.
- C. Submit with bid, information on equipment to be used by the CONTRACTOR for sediment removal and transport.

2.2. CONSTRUCTION SCHEDULE

- A. Submit for ENGINEER's and OWNER's information, a construction schedule showing the proposed sequence of the Work and the estimated date of starting and completing each stage of the Work in order to complete the Project within the Contract Time. Prepare the schedule in a manner so that the actual progress of the Work can be recorded and compared with the expected progress.
- B. Coordinate the Work and make every effort to maintain the Construction Schedule. In the event actual progress begins to lag the schedule, promptly employ additional means or methods of construction to make up the lost time.
- C. Keep the construction schedule current and revise or confirm the schedule in accordance with General Conditions, to accurately reflect the conditions of the Work, past progress, and anticipated future progress. Revised schedule(s) shall show the original schedule also to allow the OWNER to track deviation(s).

- 2.3. SCHEDULE OF VALUES: Refer to the Agreement for the Schedule of Values requirements. The Schedule of Values shall be submitted within two weeks after award of the Contract and before the first application for payment. The CONTRACTOR shall promptly update the Schedule of Values to reflect approved Change Orders.

- 2.4. INSURANCE CERTIFICATES: Refer to the General Conditions for submittal requirements. Submit updated certificates as necessary to verify current coverage.
- 2.5. CERTIFICATIONS: Submit in triplicate certifications of compliance whenever required by the specifications or ENGINEER. Certifications shall be complete and exact, they shall be properly authenticated by the written signature, in ink, of an OWNER, officer or duly authorized representative of the person, firm or organization issuing such certification, and they shall guarantee that the materials or equipment are in complete conformance with requirements of these specifications.
- 2.6. TRAFFIC CONTROL PLAN: Refer to Section 01500, Traffic Control. The Traffic Control Plan shall be submitted at least two weeks prior to the start of Work.
- 2.7. STORM WATER FLOW CONTROL PLAN: The CONTRACTOR shall submit a plan in accordance with the provisions of Section 01550 and receive approval from the ENGINEER prior to beginning Work.
- 2.8. SHOP DRAWINGS
- A. Submit Shop Drawings for all fabricated Work, for all manufactured items and for all other items specifically required by the specifications.
 - B. Submit three copies plus the quantity to be returned to the CONTRACTOR of each standard drawing, catalog cut, or other material. If a resubmission is not required, ENGINEER will retain three copies and return the remaining copies to CONTRACTOR to be distributed.
 - C. Subcontractors must submit Shop Drawings directly to CONTRACTOR for checking. Thoroughly check subcontractors' Shop Drawings for measurements, sizes of members, details, materials, and conformance with the Contract Documents. Return submittals which are found to be inaccurate or in error. Do not submit to ENGINEER until corrections have been made.
 - D. Clearly show the relation of the various parts, and, where the Work depends upon field measurements and include them on the Shop Drawings before submitting to ENGINEER.
 - E. If the Shop Drawings contain any departures from the Contract requirements, specifically describe them in CONTRACTOR's letter of transmittal. Where such departures require revisions to layouts or structural changes to the Work as shown, CONTRACTOR shall, at his own expense, prepare and submit revised layout and structural drawings. Make the revised drawings the same size as the Contract Drawings.
- 2.9. SAMPLES
- A. Where required, submit sample or test specimens of materials to be used or offered for use. Samples shall be representative, in all respects, of the material offered or intended, shall be supplied in such quantities and sizes as may be required for proper examination and tests, and shall be delivered to ENGINEER, prepaid, along with identification as to their sources and types or grades. Submit samples well in advance of anticipated use to permit the making of tests or examinations.

- B. Samples will be checked with reasonable promptness only for conformance with the design and for compliance with the information given in the Contract Documents.
 - C. The use of materials or equipment for which samples are required to be submitted for acceptance is not permitted until such acceptance has been given by ENGINEER.
- 2.10. TEST RESULTS: Whenever tests are required on materials and equipment, such tests shall be performed and two (2) copies of the test results submitted to ENGINEER. Do not deliver to the Project or incorporate into the Work any materials or equipment for which ENGINEER has not issued a written acceptance of the required tests and test results.
- 2.11. REPORTS
- A. Weekly Progress Reports: The CONTRACTOR shall deliver a weekly report to the ENGINEER due the following Monday. The report shall record the following information:
 - 1. Location and linear footage of conduit cleaned and/or inspected the previous week.
 - 2. Location and description of any condition, restriction, hindrance, blockage, or accessibility problem that prevented timely completion of CONTRACTOR's work.
 - 3. Water usage.
 - 4. Daily records of safety measures employed and incidents.
 - 5. Police details utilized.
 - B. Inspection Logs: The CONTRACTOR shall prepare and submit to ENGINEER, three printed copies of individual log sheets and three DVDs of each line section inspected in accordance with Section 02725– Storm Drain Inspection.
 - C. Structural Inspection Report: The CONTRACTOR shall prepare and submit to the ENGINEER, a report prepared by a structural engineer summarizing the structural condition of the South River Conduit, including recommendations for repair.
- 2.12. PAYMENT REQUESTS:
- A. General: See General Conditions for payment procedures, format, schedule and requirements. Submit one signed and notarized original to the Engineer accompanied by documentation as described below and in the General Conditions. It is recognized that certain applications involve extra requirements, including initial application, application at times of Substantial Completion, and final payment application.
 - B. Documentation of Work: The CONTRACTOR shall be required to provide detailed documentation of the Work performed in support of the values presented on the periodic pay requests. The pay request shall include a tabulation showing the quantity of sediment disposed of with the weight tickets attached. Submission the inspection DVDs shall document the inspection work.
 - C. Payment Application Times: The "date" for each progress payment is as indicated in CONTRACT.

- D. Application Preparation: Except as otherwise indicated, complete every entry provided for on the form, including notarization and execution by authorized persons. Incomplete applications will be returned by ENGINEER without action.

PART 3 - EXECUTION:

Not Used.

****END OF SECTION****

SECTION 01400 – QUALITY CONTROL

PART 1 – GENERAL

1.1 DESCRIPTION OF WORK

- A. Minimum requirements for quality control, procedures, and performance Work of a general nature, including but are not necessarily limited to the following:
1. Supervisory personnel,
 2. Tradespersons and workmanship standards,
 3. Inspections, tests and reports,
 4. Environmental controls: Water Pollution Control

1.2 CONTRACTOR QUALIFICATIONS

- A. **CONTRACTOR Experience:** Work shall be performed by CONTRACTORS and sub-contractors with a minimum of five (5) years of experience in performing the services described herein. Supervisory personnel shall have no less than three (3) years of experience in performing the services described herein and shall be present at the jobsite during all phases of the Work.
- B. **Personnel qualifications:** All personnel must be qualified to perform their designated tasks. Supervisors must be certified by the manufacturer of the product or system which they are using. Where no formal certification program exists, the CONTRACTOR shall furnish information relative to previous experience sufficient to demonstrate the ability of the person relative to the product, system, or equipment to which they will be assigned.
- C. Unless otherwise indicated herein, all Work shall be performed in accordance with the procedures outlines by the National Association of Sewer Service Companies (NASSCO) in the latest edition of their recommended specifications.

1.3 INSPECTIONS, TESTS AND REPORTS

- A. **General:** Provide testing and inspection services where required by Contract Documents.
- B. **Reports:** Submit test/inspection reports, including the testing agency's analysis of results and recommendations per Section 01300, Submittals.
- C. **Payment for Testing:** The cost of all testing shall be considered incidental to the Work; no separate payment will be made.
- D. **Qualifications of Testing Laboratory:** Acceptable to ENGINEER and OWNER, meeting ASTM requirements for type of testing to be performed. Analytical Laboratories must be permitted or licensed by the state for the each parameter (and method) used on the Project.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

3.1 ENVIRONMENTAL CONTROLS:

- A. Water Pollution Control: Take all precautions necessary to prevent contaminating, polluting, or silting of water courses or water storage areas.

****END OF SECTION****

SECTION 01500 - TRAFFIC CONTROL

PART 1 - GENERAL

1.1 DESCRIPTION OF REQUIREMENTS

- A. Prepare traffic control plan for approval by the City of Salem Police Department and the ENGINEER.
- B. Regulate traffic in the area of Work being performed in all roadways in accordance with the Traffic Management Plan; regulate traffic in all areas in accordance with the requirements of these specifications, the Salem Police department, and the ENGINEER.
- C. Perform Work in a manner to provide maximum safe passage for the public at all times with a minimum of obstruction to traffic.
- D. The Salem police department and the ENGINEER will determine if safe passage is being maintained. Perform additional Work required by them to maintain passage.
- E. Provide all signs, barricades, traffic guards, and warning devices required.
- F. Provide access for residents and abutting landowners along the Project to driveways and other normal outlets from their property.
- G. Coordinate with Police. CONTRACTOR shall be responsible for arranging traffic details with the Salem Police Department or other agencies as required.
- H. Minimize disruption to local business by coordinating road and service disruptions with the businesses. Maintain access to businesses to the maximum extent possible at all times.

1.2 SUBMITTALS

- A. Submit a traffic control plan in accordance with Section 01300, Submittals. The CONTRACTOR shall not proceed with Work prior to receiving approval of the Plan from the City of Salem Police Department.

PART 2 - PRODUCTS

- 2.1 SIGNS, BARRICADES, AND WARNING DEVICES: Comply with requirements in "Manual on Uniform Traffic Control Devices" published by Dept. of Transportation, Federal Highway Administration and requirements of Mass Highway.

PART 3 - EXECUTION

- 3.1 MAINTENANCE OF TRAFFIC: Maintain at least one-way traffic through the Work area during working hours and two-way traffic during nights, weekends and holidays. All road closures must be coordinated and approved by the Salem Police Department.

3.2 DETOURS

- A. General: Provide, identify and maintain suitable detours when the Project, or any part thereof, is closed to public travel. When the closed part of the Project is reopened, restore the detour area, and any other disturbed areas, to the original condition as approved by the ENGINEER.
- B. Approval: All detours must be prior approved by OWNER, police and fire departments, Salem DPW, and ENGINEER.
- C. Notification: Notify OWNER, police department, fire department and ENGINEER when detours are put into use and when they are reopened.
- D. Request Approval of Detours: Make written request for detours 48 hours in advance of their proposed use.

3.3 SCHEDULING OF WORK

- A. Schedule all Work so that two adjacent parallel streets are not closed to passage by the public at any one time.
- B. Revise plan if, in the opinion of the Police or the ENGINEER, it will create traffic hazard or an unreasonably long detour.
- C. Do not start in any new location without the permission of the ENGINEER.

3.4 SIGNS, BARRICADES, AND WARNING DEVICES

- A. Provide all signs, barricades, signal lights, or other traffic control devices shown on the approved Traffic Management Plan or as necessary to ensure the safety of the public.
- B. Provide and illuminate suitable warning signs to show where construction, barricades, or detours exist.
- C. Provide signal lights and illuminate at all barricades and obstructions from sunset to sunrise.
- D. Maintain necessary signs required by the Police, barricades, lights, and other safety precautions during authorized suspension of the Work, weekends, holidays, or other times when construction Work is not in progress. Cover detour signs every night and on weekends or other periods of non-work.

3.5 UNIFORMED TRAFFIC GUARDS

- A. Schedule uniformed traffic guards when required by police or the ENGINEER. In accordance with the policies of the Salem Police Department, traffic details shall be filled by Salem Police officers whenever possible. Delays due to the lack of traffic control personnel shall be considered delays within the CONTRACTOR's control. Police must be notified at least 48 hours prior to commencing any Work.
- B. Uniformed traffic guards shall be arranged and scheduled by the CONTRACTOR. CONTRACTOR shall pay for traffic guards without OWNER reimbursement whenever the CONTRACTOR schedules traffic guards but the CONTRACTOR fails to arrive for or conduct

the work.

3.6 EXISTING SIGNS

- A. Temporarily reset and maintain street directory and regulatory signs which must be moved during construction. Relocate signs so that no traffic hazards are created.
- B. Permanently reset signs at designated locations prior to completion of the Work.

****END OF SECTION****

SECTION 01550 – FLOW CONTROL

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Provide all labor, tools, materials and equipment necessary to temporarily restrict and/or bypass flow around the affected section of the Work.
- B. Prevent overflows into the streets at all times.
- C. Restore normal system flows at the end of normal working hours every day or post an attendant on site. No unattended bypass pumping will be allowed.

1.2 FLOW DATA

- A. The entire project area is influenced by tides and groundwater. The South River Conduit conveys perennial flow from Mill Pond. Therefore, flows are variable depending on tide cycles and weather conditions. The CONTRACTOR is responsible for controlling flows in accordance with this specification and therefore, the CONTRACTOR is encouraged to visit the project locations prior to Work to visually inspect flow conditions.

1.3 SUBMITTALS

- A. Storm Water Flow Control Plan must contain at a minimum:
 - 1. Standard Operating Procedure: Describe the normal sequence of events to be followed to control the flow during cleaning and inspection efforts. If bypass pumping is to be employed, include a description of procedures for setting up and breaking down pumping equipment and a bypass routing diagram for each Work zone. The plan must address strategies and safeguards to ensure that public safety and environmental health is maintained at all times, the possibility of property damage, erosion/sediment control and wetlands impacts, and overall level of inconvenience is minimized.
 - 2. Emergency Response Plan: Describe the intended means of handling the following situations, include both response and clean-up measures. List equipment to be used and where it will be stored in case of:
 - a. Break or failure of bypass line
 - b. Failure of bypass pump
 - c. Overflow
 - d. Failure of bypass pumping system to accommodate flow.
- B. Shop Drawings: Provide submittals in accordance with Section 01300, Submittals for all equipment and materials to be used including, but not limited to:
 - 1. Plugs and/or bladders
 - 2. Pumps
 - 3. Pipes or hoses
 - 4. Joints/couplings

PART 2 – PRODUCTS

2.1 PLUGS

- A. Plugs shall be so designed to allow all or a portion of the flow to be released. Plugs shall be provided with a tag line.

2.2 PUMPS, PIPES & FITTINGS

- A. Pumps shall be capable of conveying the volume of flow anticipated with a sufficient margin of safety.
- B. Lay flat hose: Hose shall be extra heavy duty, highly abrasion resistant and fitted with gasketed couplings. Hose shall be rated for 150% of working pressure.

PART 3 – EXECUTION

3.1 GENERAL

- A. The CONTRACTOR shall provide a completely functional system capable of controlling flow without leakage or spillage of liquids upon the ground or streets.
- B. The CONTRACTOR shall adequately handle all flow without damage or overflow.
- C. The CONTRACTOR must allow for passage of traffic.

3.2 TEMPORARY POWER

- A. The CONTRACTOR shall be entirely responsible for providing fuel and/or power to run all pumps associated with the bypass at no additional cost to the OWNER.

3.3 PIPING

- A. The piping system must provide adequate water tightness. The ENGINEER may require the CONTRACTOR to perform a leakage test with clean water if in the ENGINEER's sole opinion the piping system appears as though it may leak. Any such testing shall be to the ENGINEER's satisfaction and shall be at the CONTRACTOR's expense.
- B. The temporary piping shall be laid along the general lines of the street in a manner that causes the minimum amount of disruption and is least likely to be damaged. At driveways, provisions shall be made to permit property owners to drive over the temporary pipe by use of temporary bituminous pavement, cold patch, or other approved material to form a ramp on each side of the pipe to the satisfaction of the ENGINEER or by depressing the pipe as directed by the ENGINEER.

3.4 OPERATION AND MAINTENANCE

- A. The bypass must be attended by the CONTRACTOR at all times. Unattended bypass will not be allowed. If bypass pumping must continue past working hours an attendant must be present at all times.

****END OF SECTION****

SECTION 01700 - PROJECT CLOSEOUT

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Definitions: Closeout is defined to include general requirements near end of Contract Time, in preparation for final acceptance, final payment, normal termination of Contract, occupancy by OWNER and similar actions evidencing completion of the Work. Time of closeout is directly related to "Substantial Completion", and therefore may be either a single time period for entire Work or a series of time periods for individual parts of the Work which have been certified as substantially complete at different dates. That time variation (if any) shall be applicable to other provisions of this section.

1.2 PREREQUISITES TO SUBSTANTIAL COMPLETION

- A. General: Prior to requesting ENGINEER's inspection for certification of Substantial Completion (for either entire Work or portions thereof), complete the following and list known exceptions in the request:
1. Reporting: Submit all weekly reports, inspection DVDs and logs, and structural inspection report as indicated in the individual sections of these specifications.
 2. Punch List: Provide a Punch List of incomplete items stating the reason for incompleteness and value of the incompleteness.
- B. Inspection Procedures: Upon receipt of CONTRACTOR's request, ENGINEER will either proceed with inspection or advise CONTRACTOR of prerequisites not fulfilled. Following initial inspection, ENGINEER will either prepare certificate of Substantial Completion, or advise CONTRACTOR of Work which must be performed prior to issuance of certificate, and repeat inspection when requested and assured that Work has been substantially completed. Results of completed inspection will form initial "punch-list" for final acceptance.

1.3 PREREQUISITES TO FINAL ACCEPTANCE:

- A. General: Prior to requesting ENGINEER's final inspection for certification of final acceptance and final payment, as required by General Conditions, complete the following and list known exceptions (if any) in request:
1. Submit final payment request with final releases and supporting documentation not previously submitted and accepted.
 2. Submit updated final statement, accounting for final changes to Contract Amount.
 3. Submit copy of ENGINEER's final punch-list of itemized Work to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, endorsed and dated by ENGINEER.
 4. Submit final project reports.

5. Submit final liquidated damages settlement statement, acceptable to OWNER.
 6. Submit final waivers of lien from all subcontractors and suppliers.
 7. Perform final cleaning as specified herein.
- B. Reinspection Procedure: Upon receipt of CONTRACTOR's notice that Work has been completed, including punch-list items resulting from earlier inspections, and excepting incomplete items delayed because of acceptable circumstances, ENGINEER will reinspect Work. Upon completion of reinspection, ENGINEER will either prepare certificate of final acceptance or advise CONTRACTOR of Work not completed or obligations not fulfilled as required for final acceptance. If necessary, procedure will be repeated.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

3.1 FINAL CLEANING

- A. General: Final clean-up requirements are as follows:
1. Clean project site, including disturbed landscape development areas, of litter and foreign substances. Sweep paved areas to a broom-clean condition; remove stains, petrochemical spills and other foreign deposits. Rake disturbed grounds which are neither planted nor paved, to a smooth, even-textured surface.
 2. Clean and restore dewatering area to original condition.
 3. Remove and legally dispose of all erosion and sediment controls devices and accumulated sediment from project site and dewatering site.
- B. Removal of Protection: Except as otherwise requested by ENGINEER, remove temporary protection devices and facilities which were installed during the course of the Work.
- C. Disposal of Wastes: Remove waste materials from site and dispose of in a lawful manner.

****END OF SECTION****