

SECTION 02960 – TEMPORARY SEWER BYPASS PUMPING

PART 1 – GENERAL

1.1 DESCRIPTION

- A. The CONTRACTOR shall provide a complete sewer bypassing system including, but not limited to, the following:
 - 1. Developing a sewer bypassing plan
 - 2. Developing a spill prevention and emergency response plan
 - 3. Submitting and obtaining approval from the AGENCY for the sewer bypassing plan and the spill prevention and emergency response plan.
 - 4. Implementing the bypassing and spill prevention and emergency response plan.
 - 5. Providing bypassing in accordance with the approved plans throughout the duration of the Work.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. The Work of the following Sections applies to the Work of this Section. Work of other Sections of the Specification, not referenced below, shall also apply to the extent required for proper performance of this Work.
 - 1. Section 01048 Special Construction Conditions and Procedures
 - 2. Section 01300, Record Drawings and Submittals
 - 3. Section 01570, Traffic Regulations
 - 4. Section 02750, Traffic Striping and Pavement Markings
 - 5. Section 15000, General Piping Systems and Appurtenances

1.3 SUBMITTALS

- A. All submittals required by this Specification shall be provided to the AGENCY for approval within 10 days of receiving the Notice to Proceed. No construction activities related to bypassing shall begin prior to the approval of the required submittals by the AGENCY. Approval of the CONTRACTOR'S Bypassing and Spill Prevention and Emergency Response Plan in no way relieves the CONTRACTOR of his responsibility to maintain sewage service or provide sewer bypassing at all times during construction and to prevent any spills.
- B. Bypassing Plan
 - 1. The CONTRACTOR shall design the bypass system to handle the flows of the system. Contractor shall assume the sewer lines are flowing half full at the slopes indicated on the Contract Drawings for the purposes of estimating the flow rate.
 - 2. The CONTRACTOR shall develop and submit to the AGENCY, for review and approval, a written Bypassing plan including sequence of work outlining how sewage flows will be maintained and bypassed during construction. The bypassing plan shall include, but not be limited to:
 - a. A primary and 100% redundant backup pumping system, each capable of handling the peak flow of the system, which shall be on

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- site and available 24 hours a day.
 - b. A flow monitoring plan describing the method of monitoring and showing the location of upstream and downstream monitoring units for all of the construction locations.
 - c. Bypassing of service laterals as necessary to ensure the maximum amount of time a connection is out of service is 8 hours in accordance with the standard specifications.
 - 3. The bypassing plan shall be developed in conjunction with the traffic control plans in order to minimize the impact to the community. See the standard specifications.
- C. Spill Prevention and Emergency Response Plan
 - 1. The CONTRACTOR shall develop and submit to the AGENCY, for review and approval, a written Spill Prevention and Emergency Response Plan. The Spill Prevention and Emergency Response Plan shall be developed to prevent and respond to any construction related sewage spills. The plan shall include, but not be limited to:
 - a. Identification of all nearby waterways, channels, catch basins and entrances to underground storm drains
 - b. Furnishing of all the necessary materials, supplies, tools equipment, labor and other services to prevent sewage from coming into contact with these areas.
 - c. Arrangements for an emergency response unit comprised of emergency response equipment and trained personnel to be immediately dispatched to the Site in the event of sewage spill(s).
 - d. An emergency notification procedure, which includes an emergency response roster with telephone numbers and arrangements for backup personnel and equipment and an emergency notification roster of designated AGENCY representatives.
 - e. Direct phone numbers (no voicemail) for 3 CONTRACTOR representatives who shall be accessible and available at all times to respond immediately to any construction related emergency.

1.4 RESPONSIBILITIES OF CONTRACTOR

- A. The CONTRACTOR shall observe and comply with all Federal, State, and local laws, ordinances, codes, orders, and regulations which in any manner affect the conduct of the work, specifically as it relates to sewage and prevention of sewage spills. The CONTRACTOR shall be fully responsible for preventing sewage spills, containing any sewage spills, recovery and legal disposal of any spilled sewage, paying any and all fines, incurring and handling any penalties, claims, or liability arising from negligently causing or allowing a sewage spill, failure to prevent a sewage spill, or any violation of any law, ordinance, code, order, or regulation as a result of the spillage.

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PART 2 – MATERIALS

2.1 GENERAL

- A. All equipment and tools used for sewer bypassing shall be designed to prevent any and all sewage leaks or spills.
- B. All equipment used as part of the bypassing system shall not cause a significant noise impact to the community in accordance with local noise ordinances. If noise complaints from residents occur due to the CONTRACTORS activities, the CONTRACTOR shall immediately replace the noise generating equipment or reduce the noise generated with mitigating devices to the satisfaction of the AGENCY.
- C. Sewage shall be conveyed/pumped in closed conduits and disposed of in a sanitary sewer system. Sewage shall not be permitted to flow in trenches or be covered by backfill.
- D. Suction and discharge manholes shall be sealed to prevent odors.
- E. Access to driveways may not be blocked by the bypass pipe. Lay flat pipe, a raised platform above bypass pipe or a shallow trench may be used to provide access to residents.
- F. If bypass piping must cross any major arterial streets/roads, piping must be installed in a shallow trench. Lay flat piping or raised traffic platforms across these streets will not be allowed. Trench shall be backfilled or covered with recessed, secured trench plating.
- G. All shallow trenching shall be backfilled and paved in accordance with the standard specifications following demobilization of sewer bypass. All costs to install, maintain, backfill, and pave temporary shallow trenching shall be included in Contractor's bid item for sewer bypassing and no additional compensation shall be made therefor.
- H. If deemed necessary due to lack of preparedness on the Contractor's part, the AGENCY has the option to clean up the sewage spill caused by the Contractor. Clean up costs incurred by the AGENCY shall be recoverable in addition to the penalties from the Contractor's progress payments.

2.2 PUMPING EQUIPMENT

- A. All pumps used for sewer bypassing shall be the submersible type and shall only be operated below ground in the sewer manhole or other sewer facility. The use of above ground pumps or pumps not specifically designed for submersible service are not allowed.
- B. The pumps shall be sized to fit in manholes or other confined areas necessary to successfully complete the sewer bypassing. The CONTRACTOR shall ensure all

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equipment used for bypassing will operate under the conditions required and the CONTRACTOR will be responsible for all costs associated with changes to the bypassing system due to inappropriate equipment or non-conformance with the Contract Documents.

- C. Electric or fuel/generator driven pumps shall be used. The CONTRACTOR shall provide an emergency standby power generator, sized to operate the bypass system at a minimum, to be used to operate the submersible pumps IF electrical power is lost during the progress of the Work and a sewage spill will occur. The generator shall meet all requirements per the standard specifications.
- D. The pumps shall be specifically intended for use with raw sewage and shall be capable of passing a 3-inch diameter solid.
- E. Regardless of power used the total noise of any equipment used by the CONTRACTOR as part of the bypassing system shall be under 68 dba as measured standing thirty (30) feet from the equipment.

PART 3 – EXECUTION

3.1 GENERAL

- A. The CONTRACTOR shall observe and comply with the AGENCY policy of “ZERO SPILLS”.
- A. The CONTRACTOR shall exercise care not to damage existing public and private improvements, interrupt existing services and/or facility operations which may cause a sewage spill. Any reasonably anticipated utility and/or improvement which is damaged by the CONTRACTOR shall be immediately repaired at the CONTRACTOR'S expense. In the event that the CONTRACTOR damages an existing utility or interrupts an existing service which causes a sewage spill, the CONTRACTOR shall immediately notify the AGENCY representatives. The CONTRACTOR shall request and obtain from the AGENCY an emergency roster of the designated AGENCY representatives with their respective telephone numbers, pager numbers, and cellular phone numbers. The CONTRACTOR shall take all measures necessary to prevent further damage or service interruption, and to control, contain and clean up the resultant impacts of the damage, service interruption and any resulting sewage spill(s).
- B. The CONTRACTOR shall continuously monitor the flow levels downstream and upstream of the construction location to detect any possible failure that may cause a sewage backup and spill. The CONTRACTOR shall include the means and methods of monitoring the flow in their Sewer Bypassing Plan.

3.2 SEWAGE SPILLS

- A. In case of sewage spill, the CONTRACTOR shall act immediately, within fifteen minutes – without instructions from the AGENCY – to control the spill and take all appropriate steps to contain it in accordance with their Spill Response Plan.

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- B. The CONTRACTOR shall immediately notify the AGENCY representatives of the sewage spill(s) and all remedial actions taken.
- C. The CONTRACTOR shall, within 24 hours from the occurrence of the spill, submit to the AGENCY a draft written report describing the following information related to the spill: the location on a current Thomas Bros. guide map; the nature and volume; the date and time; the duration; the cause; the type of remedial and/or preventive actions taken; and the water body impacted and results of any necessary monitoring. The AGENCY will review the draft report, and if revisions are required, the CONTRACTOR shall make those revisions and submit the final report to the AGENCY within 24 hours of the receipt of comments. Requests for additional compensation for the handling of the spill shall be submitted to the Engineer as a construction claim. The CONTRACTOR shall assure the validity, accuracy, and correctness of the claim under penalty of perjury. The Engineer may institute further corrective actions, as deemed necessary, to fully comply with existing law, ordinance, code, order or regulation. The CONTRACTOR shall be responsible for all costs incurred for the corrective actions.
- D. It shall be the CONTRACTOR's responsibility to assure that all field forces, including Subcontractors, know and obey all safety and emergency procedures, including the Spill Response Plan, to be maintained and followed at the Site.

3.3 SEWER BYPASSING

- A. The CONTRACTOR shall provide temporary means to maintain and handle the sewage flow in the existing system as required to complete the necessary construction.
- B. The CONTRACTOR shall size the bypass system to handle the peak flow of the system. The CONTRACTOR shall provide a redundant, identically sized, one-hundred percent (100%) backup bypass system. The CONTRACTOR shall utilize the backup system to mitigate any additional wet weather flows, perform the necessary maintenance and repairs on the primary bypass system, and exercise and ensure the operability of the backup system. Each pump, including the backup pumps, shall be a complete unit with its own suction and discharge piping. The CONTRACTOR shall operate the backup bypass system for a minimum of twenty-five percent (25%) of the time on a weekly basis. The backup bypass system shall be fully installed and operationally ready at all times.
- C. Prior to the full operation of the bypass system, the CONTRACTOR shall demonstrate, to the satisfaction of the AGENCY, that both the primary and backup bypass systems are fully functional and adequate, and shall certify the same, in writing, in a manner acceptable to the AGENCY.
- D. The CONTRACTOR shall provide all equipment necessary to minimize the noise generated by the bypassing operations. Noise levels from the complete bypassing system shall not exceed the levels allowable under the local jurisdictional codes and requirements.

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- E. The CONTRACTOR shall continuously (while in use) monitor the operation of the bypass system and all impacted facilities. The CONTRACTOR shall submit, as part of their bypass plan, their system monitoring procedure and frequency. The CONTRACTOR shall maintain a log of the monitoring in a manner acceptable to the Engineer.
- F. The CONTRACTOR shall continuously monitor the flow levels downstream and upstream of the bypass to detect any possible failure that may cause a sewage backup and/or spill. The CONTRACTOR shall include the means and methods of monitoring the flow in their Bypassing Plan. The CONTRACTOR shall provide flow monitoring data to the AGENCY on a weekly basis in a format acceptable to the AGENCY.
- G. The CONTRACTOR shall routinely inspect and maintain the bypass system, including the backup system. The CONTRACTOR shall submit as part of their Bypassing Plan their maintenance procedures and frequency. The CONTRACTOR shall maintain a log of all pertinent inspection, maintenance and repair records in a manner acceptable to the Engineer.
- H. At the end of each day's work, the CONTRACTOR shall re-establish sewer flows in the gravity sewer system. Work undertaken each day shall only include work that can be completed during that working day.
- I. See the standard specifications for requirements of property owner notification due to bypassing operations.

****END OF SECTION****