

SECTION 02738

FLOW CONTROL OF SEWER LINES

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. The work of this item consist of the installation and maintenance of a by-pass with adequate capacity to maintain continuous sewage flow in existing sewer lines and shall consist of furnishing all labor equipment and materials required to control the flow through the section of pump station to be by-passed. The use of a by-pass shall only be required if the Contractor's methods of performing the work require a by-pass or if on-site issues require or warrant a bypass.
- B. The Contractor shall provide, install and test bypass systems including all labor, equipment and material for by-pass operation and all other measures necessary for the by-pass system without interruptions, backups or overflows.
- C. The following by-pass options may be approved by the Owner:
  - 1. Provide by-pass pumps and provide piping to pump sewage from an upstream manhole into the wet well. Discharge piping shall be routed directly into the wet well.
  - 2. Installation of a flow-through plug in the influent pipe. Plug shall discharge into the wet well.
  - 3. Other method submitted in the form of a shop drawing by the Contractor and approved by the Owner.
- D. The Contractor shall assume full responsibility for adequate sizing, construction and operation of the by-pass system. No additional payment shall be made for the Contractor's method(s) of by-passing.

1.02 RELATED WORK

- A. Section 01010 - Summary of Work

1.03 SYSTEM DESCRIPTION

A. GENERAL

1. The Contractor shall provide a bypass system for the purpose of providing sufficient bypass capacity throughout the duration of the project.
2. Bypass system, when in operation, shall convey raw wastewater between the intake and discharge points as shown on the plans or otherwise approved by the Owner.
3. The design, installation, operation, and maintenance of the system shall be the Contractor's responsibility.
4. The Contractor shall employ the services of a qualified vendor experienced in the design and operation of reliable temporary standby pumping systems or use its own by-pass pumping equipment to meet the intent of this specification where applicable.
5. During the operation of the system, the Contractor shall not be permitted to stop or impede the flow of wastewater unless specifically authorized by the Owner.

B. SPECIAL PROCEDURES

1. The Contractor shall be responsible for all spills of raw wastewater which occur during the operation of the temporary standby pumping system, including any and all fines imposed on the Owner by the NJDEP or any other regulatory agencies. All wastewater spills shall be immediately reported to the NJDEP by calling (609)292-7172.

1.02 DESIGN CRITERIA

- A. The work covered by this specification shall be in accordance with the best practice of the industry. The specifications call attention to certain features but do not purport to cover all details entering into the required work.
- B. The bypass system to be provided shall meet the intent of the contract and allow for construction of the improvements indicated on plans at no additional cost to the Owner.

### 1.03 SUBMITTALS

- A. Contractor's calculations and description of all equipment and his methodology to control wastewater flows in form of shop drawings. Information provided to the Engineer shall be complete and sufficient for Engineer's review and approval.

## PART 2 - PRODUCTS

### 2.01 ACCEPTABLE SUB-CONTRACTORS FOR BY-PASS PUMPING SYSTEM

- A. Temporary by-pass pumping system:
  - 1. Godwin Pumps of America Inc., Bridgeport, NJ
  - 2. Pumping Services, Inc., Middlesex, NJ
  - 3. Or equal

### 2.02 TEMPORARY PLUGS AND BULKHEAD

- A. Plugs shall be inflatable plugs constructed of specifically treated industrial fabric and reinforced neoprene. Plugs shall be equipped with steel pull rings and aluminum end clamps.
- B. All plugs shall be firmly attached to a satisfactory object at ground level by a steel cable to prevent loss of plug in the pipeline.
- C. The Contractor shall provide details pertaining to the proposed bulkheading for the Engineer review and approval.

## PART 3 - EXECUTION

### 3.01 GENERAL

- A. N/A

### 3.02 PLUGGING OR BLOCKING

- A. A sewer line plug or flow through plug shall assure watertight condition downstream from the plugged connection. The Plugs shall be designed to allow all or any portion of the sewage flow be easily released.
- B. Bypass plug shall be inserted into the sewer line(s) at a manhole located at the upstream end of the section in

which the work is to be performed.

C. Plugs shall be removed upon completion of work.

### 3.03 BY-PASS PUMPING

A. If by-pass pumping is required, Highlands Pump Station shall be by-passed as follows:

a. As required to complete work under this contract, the Contractor shall maintain the sewage flow by pumping the sewage from the upstream manhole, directly to one equalization basin. The Contractor shall bulkhead the exiting upstream manhole and pump all sewage entering that manhole to an equalization basin. The Contractor shall furnish and operate pumps whenever sewage flow cannot be maintained through a continuous pipeline.

b. Pumps shall have the capacity, under all conditions encountered on this project, to pump sewage flow at a rate of 800 gpm each. The influent pipe diameter is 20".

B. If by-pass pumping is required, Atlantic Highlands Pump Station shall be by-passed as follows:

a. As required to complete work under this contract, the Contractor shall maintain the sewage flow by pumping the sewage from the upstream manhole, directly into the wet well. The Contractor shall bulkhead the exiting upstream manhole and pump all sewage entering that manhole. The Contractor shall furnish and operate pumps whenever sewage flow cannot be maintained through the pump station.

b. Pumps shall have the capacity, under all conditions encountered on this project, to pump sewage flow at a rate of 800 gpm each. The influent pipe diameter is 18".

C. The Contractor shall submit pump performance curves, system curves and an estimate of pumping capacity under field conditions. A written plan of every by-pass pumping operation shall be submitted at least two weeks prior to construction to the Engineer for review and approval.

D. The Contractor shall have on hand a minimum of one (1) backup pump for every two operating by-pass pumps. If only one by-pass pump is being utilized, the Contractor

shall have one backup pump. Backup pumps shall be of equal or greater capacity as the operating pumps.

- E. Under no circumstances shall sewage be allowed to flow into the trench or drainage system and mix with the ground or storm water to be diverted to drainage systems. Pipes for the pumping operation shall be of sufficient quality and strength to withstand vehicular traffic passing over them or steel sleeves or ramps shall be provided. Couplings shall be tight and free from leaks. Any pipe or joint that leaks shall be immediately repaired removed and/or replaced. Utilization of adequately rated High Density Polyethylene Pipe (HDPE) is required at all easement locations. Quick connector (Bauer type) pipe shall not be allowed.
- F. By-pass pumping will be permitted only during construction, unless otherwise approved by the Engineer.
- G. At the completion of construction of each section, the Contractor shall remove bypass system. Temporary bypass piping shall provide capacity to the existing pipe. All temporary connections shall be watertight.
- H. The Contractor shall conduct his work so as to not cause excessive surcharging of the sewerage system and shall not cause damage to the sewerage system, its connections and/or apparatus. Any damage caused by the Contractor's operations shall be repaired to the complete satisfaction of the Engineer at no additional cost to the Owner.
- I. Bypass pumps shall be supplied with adequate noise inhibitors to comply with local noise ordinances or the requirements of the contract documents, whichever is most stringent.
- M. Ramps and/or steel sleeves to be installed at any road crossing of the above ground temporary pipe shall be submitted in form of shop drawings for Engineer's review and approval prior to construction.

### 3.04 CLEAN-UP

- A. The Contractor shall be responsible for the disposal of excess material and general clean-up of the work area which will be subject to the approval of the Engineer.

END OF SECTION 02738