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. Demonstration "proof" testing in the field.

3. Developing a spill prevention and emergency response plan.

4. Submitting and obtaining approval from the District for the sewer bypassing plan and the spill prevention and emergency response plan.

5. Implementing the bypassing and spill prevention and emergency response plan.

6. Providing bypassing in accordance with the Approved Plans throughout the duration of the Work.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. All related work specified elsewhere, or in other codes or standards, will be as last revised, unless a specific date of issuance is called out in opposition to later revision date(s).

B. Other sections of the Standard Specifications, not referenced below, shall also apply to the extent required for proper performance of this Work.

1. Section 01300 – Submittals

1.3 SUBMITTALS

A. Connection and Bypass Pumping Plan (CBPP)

1. Prepare a comprehensive CBPP 60-days prior to the connection or disruption of service to any District sewer system. The CBPP shall detail how each connection to existing sewer will be accomplished.

2. 30-day temporary bypass meter to determine actual flows prior to construction.

3. The design, installation, and operation of any temporary pumping systems shall be the Contractor's responsibility. The Contractor shall employ the services of a vendor who can demonstrate to the District that they specialize in the design and operation of temporary bypass pumping systems. The vendor shall provide at least five references of projects of a similar size and complexity as this project performed within the last three years. The bypass pumping system shall meet the requirements of all codes and regulatory agencies having jurisdiction.

4. Provide a detailed plan for showing how each bypass pumping system will be performed. Provide the following items:

    a. Staging areas for pumps.

    b. Sewer plugging method and the type of plug. How the plug will be secured and emergency removal of the plug.

    c. Number, size, material, location, and method of installation of the suction and discharge piping.

    d. Bypass pump sizes, capacity, number of each size to be on site.

    e. A primary and 100% redundant backup pumping system, each capable of handling the peak flow of the system, which shall be on site and available 24 hours a day.

    f. Number and size of portable power generators and the details of the noise suppression equipment. At least one standby generator for each size shall be provided in the event of an emergency.

    g. Hydraulic calculations and a system head curve plotted on the pump curve.

    h. 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.

    i. Bypassing of service laterals as necessary to ensure the maximum amount of time a connection is out of service is 8 hours.

    j. Method of protecting downstream manholes from damage if applicable.

    k. Method of protecting downstream storm drain inlets from damage if applicable.

    l. Downstream discharge plan. Plan showing the location of bypass pumping discharge piping. Show any paving drive over required and details.

    m. The bypassing plan shall be developed in conjunction with the traffic control plans in order to minimize the impact to the community.

    n. Schedule for installation and maintenance of bypass pumping system. Coordinate with the CBPP.

B. Spill Prevention and Emergency Response Plan

1. The Contractor shall develop and submit to the District, 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 District 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.

C. Confined Space Entry Plan (CSEP)

1. Develop a CSEP to comply with all laws and regulations. Submit for project records. This plan will not be reviewed and approved. It is the Contractor's plan. Be informed that sewers may have methane gas, H2S gas, and low oxygen gas levels. Include appropriate portable gas safety monitors for worker use in verifying the quality of air inside manholes.

1.4 SYSTEM DESCRIPTION

A. Design Requirements

1. Bypass pumping systems shall have sufficient capacity to pump peak flow. The Contractor shall determine the upstream slope for each pipe to be bypassed by having the Contractor's surveyor dip the upstream and downstream manholes. The Contractor shall determine the full flow pipe capacity of each pipe and add them together to determine the peak pumping capacity to be installed at each bypass pumping site.

1.5 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.

PART 2 – PRODUCTS

2.1 EQUIPMENT

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 Contractor's activities, the Contractor shall immediately replace the noise generating equipment or reduce the noise generated with mitigating devices to the satisfaction of the District.

C. Pumps

1. Pumps shall be specifically intended for use with raw sewage and shall be capable of passing a 3-inch diameter solid. All pumps shall be fully automatic self-priming units that do not require the use of foot valves or vacuum pumps for priming. The pumps may be electric or diesel powered that comply with noise requirements. Noise levels shall not exceed 85 dBA at 50 feet. All pumps shall be constructed to allow dry running for long periods of time to accommodate the cyclical nature of sewage flows. Provide floats and stop controls for each system. If diesel power is utilized, provide sufficient fuel to run bypass for the entirety of the bypass period.

2. Provide not less than one standby pump of each size. The stand-by pumps shall be on-line but isolated from the discharge pipeline by valves.

D. Discharge Piping

1. Temporary discharge piping shall be HDPE. Other piping material may be used with approval by the District Engineer or their designee.

PART 3 – EXECUTION

3.1 INSTALLATION

A. The Contractor shall observe and comply with the District policy of "ZERO SPILLS".

B. Install the bypass pumping system in accordance with the Approved Plan.

C. Perform hydrostatic pressure test of the system 24-hours prior to actual operation in the presence of the District Engineer of their designee. The Contractor shall demonstrate, to the satisfaction of the District, that both the primary and backup bypass systems are fully functional and adequate before any construction activity is allowed to commence.

D. Plugging and blocking of sewage flows shall incorporate a primary and secondary plugging device. Remove the blockage when the connection to the new sewer is accomplished.

Coordinate the removal so that the blockage is removed immediately after the pumps have lowered the water level to minimum in the manhole or sump.

E. Exercise caution when working inside a manhole, sump, or pipeline. Implement the CSEP on all entries.

F. 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.

G. Pipelines shall be located out of streets and shall include digging shallow trenches, burying the pipe, and paving with cold patch. Once completed with bypass pumping the piping shall be removed and the site repaired to the satisfaction of the District and the jurisdictional agency.

H. Restore the area to the condition prior to installation of the bypass pumping piping and equipment.

I. Report any spills to the District Engineer or their designee immediately. Contractor is responsible to pay any clean-up costs incurred by the District and any fines levied by any agency associated with a spill from the bypass pumping.

J. The bypass pumping system shall be manned at all times.

K. The Contractor shall routinely inspect and maintain the bypass system, including the backup system.

****END OF SECTION****