ITEM NO. 864
BYPASS PUMPING

864.1 **DESCRIPTION:** The work covered by this item consists of; furnishing all labor, supervision, tools, equipment, appliances, and materials to perform all operations in connection with pumping sewage and wet weather flows around pipe segment(s). The purpose of bypass pumping is to prevent sewage overflows and provide reliable sewer at all times. The Contractor shall maintain sewage flow in the construction area in order to prevent backup and/or overflow into upstream pipe segments and laterals, adjacent ditches, storm sewers, and waterways.

864.2 **MATERIALS:** The Contractor shall provide and maintain adequate pumping equipment, force mains and other necessary appurtenances in order to maintain reliable sanitary sewer service in all sanitary sewer lines as required for construction. The Contractor shall have backup pump(s), force main(s) and appurtenances ready to deploy immediately. Appurtenances and discharge point shall be approved by the Inspector.

Any spillage, backups and/or overflows, etc. as the result of inadequate equipment are the sole responsibility of the Contractor.

The Contractor shall demonstrate that the pumping system is in good working order and is sufficiently sized to successfully handle flows by performing a test run for a period of 24 hours prior to beginning the work.

The Contractor shall be required to have all materials, equipment and labor necessary to complete the repair or replacement on the job site prior to isolating the sewer manhole or line segment and beginning bypass pumping operations.

864.3 **CONSTRUCTION:** The Contractor shall provide bypass pumping of sewage and wet weather flows around each segment(s) of pipe that is to be replaced. The Contractor will be required to provide in writing a sequence of bypass pumping for review and approval by the Inspector. Refer to the construction plans for the construction phasing and diversion requirements. The Contractor shall also provide the Inspector a sketch showing the location of bypass pumping equipment for each line segment(s) around which flows are being bypassed. The Contractor shall be responsible for all required bulkheads, pumping, equipment, piping, etc., to accomplish the sequence of pumping. The Contractor shall cease bypass pumping operations and return flows to the new and/or existing sewer when directed by the Inspector.

All piping(s), joints and accessories shall be designed to withstand at least twice

the maximum system pressure, or a minimum of 50 psi whichever is greater. During bypass pumping, no sewage shall be leaked, dumped, or spilled in or unto, any area outside of the existing sanitary sewer system. When bypass pumping operations are complete, all pumping shall be drained into the sanitary sewer prior to disassembly.

864.4 PUMP OPERATION:

1. The Contractor shall plug off and pump down the sewer manhole or line segment in the immediate work area and shall maintain the sanitary sewer system so that surcharging does not occur. Where work requires the line to be blocked beyond working hours, Contractor shall operate bypass pumping and man the system 24 hours a day.

2. The Contractor shall ensure that no damage will be caused to private property as a result of bypass pumping operations. Ingress and egress to adjacent properties shall be maintained at all times. Ramps, steel plates or other methods shall be deployed by the Contractor to facilitate traffic over surface piping. High traffic commercial properties may require alternate methods.

3. The Contractor shall complete the work as quickly as possible and satisfactorily pass all tests, inspections and repair all deficiencies prior to discontinuing bypass pumping operations and returning flow to the sewer manhole or line segment.

4. The Contractor shall immediately notify the Inspector should a surcharge occur that results in an overflow of sewage. If the Contractor is unable to remedy the situation, then he should suspend or terminate the work until such time as the overflows have been controlled. Should such surcharge damage the materials and/or equipment that are used on the job and/or adjacent property, it shall be corrected at no additional cost to SAWS.

   In the event that sewage accidentally drains into the drainage system or street, the Contractor shall immediately stop the overflow, notify the Inspector, and take the necessary action to clean up and disinfect the spillage to the satisfaction of the Engineer. If sewage is spilled onto public or private property, the Contractor shall wash down, clean up and disinfect the spillage to the satisfaction of the Engineer.

   The Contractor shall locate bypass pumping suction and discharge lines so as to not cause undue interference with the use of streets, private

driveways and alleys. In cases where the suction and or discharge lines are required to be buried for vehicle/pedestrian traffic, cost for this work is incidental and includes complete restoration of any surface features disturbed. Force main piping may be laid inside of storm drainage pipes to avoid surface interference with vehicular or pedestrian traffic. Flows shall not be allowed to spill from said force mains into said drainage pipes. The use of existing storm drain systems shall be approved by the SAWS Drainage Engineer. Force mains laid in storm sewers shall be pressure pipe and fittings.

The Contractor shall not intentionally damage or remove portions of existing storm sewer system structures or sanitary sewer structures for the purpose of installing bypass pumping system without specific approval from the Inspector. If a structure is damaged, it shall be reconstructed or replaced to the satisfaction of the Engineer at no additional cost to the SAWS.

The City of San Antonio and SAWS shall not be responsible for any damage to the bypass pumping system sustained by the Contractor directly or indirectly as a result of storm water runoff within streets, ditches and/or storm sewer systems. The Contractor shall be responsible for any and all damage that results directly or indirectly from the interference of storm water runoff to bypass pumping equipment, piping and/or appurtenances. It is the intent of these specifications to require the Contractor to establish adequate bypass pumping as required regardless of the flow conditions.

864.5 **MEASUREMENT AND PAYMENT:** Measurement for the work specified herein will be by lump sum, as the work progresses, and as required by the plans and specifications. Partial payment of the "Lump sum" bid for Bypass Pumping shall be in accordance with the following: (Multiple set-ups and operations shall be included in the “Lump-Sum” price)

1. When initial set-up and operation of the bypass system begins, 40% of the line item will be paid.

2. The remaining portion of the line item will be paid when the bypass pumping operations for the entire job are completed.

Bypass pumping not specifically required on plans, but directed by the Engineer and/or the Inspector, will not be measured separately for payment and will be considered incidental. Repair or replacement of manhole sections disturbed as part of the bypass operations is considered incidental to the line item and will not be measured separately for payment.