

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 NOT USED.

1.2 REFERENCE STANDARDS

- .1 NOT USED.

1.3 SCHEDULING

- .1 Schedule work to minimize interruptions to existing services.
- .2 Maintain existing sewage flows during construction.

1.4 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Provide manufacturer's instructions, printed product literature and data sheets for packaged sewage lift and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Shop Drawings:
 - .1 Submit drawings stamped and signed to Departmental Representative for review and approval

1.5 CLOSEOUT SUBMITTALS

- .1 Provide in accordance with Section 01 78 00 - Closeout Submittals
- .2 Operation and Maintenance Data: Provide operation and maintenance data for sewage lift station for incorporation into manual.
- .3 Include information as follows:
 - .1 Record drawings, wiring diagrams, electrical schematics of equipment as installed.
 - .2 Interconnections with numbers and wire sizes.
 - .3 Certified pump characteristic curves.
 - .4 Detailed operation and maintenance instructions.
 - .5 Parts list comprising complete schedule clearly identified to facilitate re-ordering.

1.6 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with manufacturer's written instructions
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.

- .3 Storage and Handling Requirements:
 - .1 Store materials off ground indoors in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect packaged sewer lift from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.

Part 2 Products

2.1 Pit, pumps, accessories, and controls for each of the two sub-projects shall be supplied by the mechanical contractor and shall come as a duplex pump/pit package from a single supplier. The electrical contractor shall install the control panels. Component specifications shall be as follows:

2.2 PITS

- .1 Sewage Pit (PIT-1)
 - .1 Structure: leak free, one piece, heavy duty reinforced fibreglass material with heavy bituminous coating inside and out
 - .2 Dimensions: 610 diameter, 1219 depth
 - .3 Solid heavy duty fibreglass cover with stainless steel hardware, approved for walking traffic
- .2 Drainage Pit (PIT-2)
 - .1 Structure: leak free, one piece, heavy duty reinforced fibreglass material with heavy bituminous coating inside and out
 - .2 Dimensions: 914 diameter, 1219 depth
 - .3 32 x 4.8 galvanized steel welded close mesh bar grate cover, match size to pit

2.3 PUMPS

- .1 SEWAGE PUMPS (P-1A and P-1B)
 - .1 Submersible sewage pump, rated for continuous duty
 - .2 Motor: 4/10 hp, 120 V, 60 Hz, 1 ph
 - .3 Flow: 1.89 lps (30 gpm)
 - .4 Head: 45 kPa (15 feet)
 - .5 Discharge Connection Size: 50 mm
 - .6 Passes solids up to 50 mm
- .2 DRAINAGE/EFFLUENT PUMPS (P-2A and P-2B)
 - .1 Submersible effluent pump, continuous duty
 - .2 Motor: 1/2 hp, 120 V, 60 Hz, 1 ph
 - .3 Flow: 1.89 lps (30 gpm)
 - .4 Head: 90 kPa (30 feet)

- .5 Discharge Connection Size: 50 mm
- .6 Passes solids up to 19 mm

2.4 PIPING AND VALVES

- .1 Pipe, fittings, valves, and joints in accordance with Section 22 13 18

2.5 ACCESSORIES

- .1 Galvanized (hot-dipped) steel pump chains, fastened to wall of pits.
- .2 Three control float switches:
 - .1 Lead Pump on Float
 - .2 Lag Pump on Float
 - .3 High Level Alarm
- .3 Float switch assembly mounting bracket (corrosion resistant)

2.6 CONTROL PANELS (CP-1 and CP-2)

- .1 Line voltage duplex pump control
- .2 Control panel alternates lead pump.
- .3 Integrated local visual and audible alarm
- .4 Auxiliary alarm contact
- .5 Hand-off-auto selector switches
- .6 Pump run indicator lights
- .7 Float status indicator lights
- .8 Enclosure shall be suitable for a sprinklered location.
- .9 Internal magnetic motor contactors:
 - .1 1 Ph 120 V for CP-1
 - .2 1 Ph 120 V for CP-2
- .10 Internal circuit breakers (disconnects) for each pump:
 - .1 20A/1P for CP-1
 - .2 20A/1P for CP-2
- .11 Use only CSA approved components

Part 3 Execution

3.1 EXAMINATION

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for sewage lift installation in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate in presence of Departmental Representative
 - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative

3.2 EXCAVATION BACKFILLING AND COMPACTION

- .1 Excavate, backfill and compact as per plans.
- .2 Backfill: Sand compacted to 95% proctor density

3.3 CONCRETE

- .1 Do concrete work in accordance with Section 03 30 00 - Cast-in-Place Concrete

3.4 EQUIPMENT INSTALLATION

- .1 Install equipment, piping and controls in accordance with manufacturers' recommendations and as indicated on plans.

3.5 FIELD QUALITY CONTROL

- .1 After completion of installation, demonstrate functional operation of systems, including sequence of operation, to approval of Departmental Representative
- .2 Provide labour and ancillary equipment necessary to fulfil tests.
- .3 Test to demonstrate that:
 - .1 Pumps and equipment run free from heating, or vibration.
 - .2 Operation meets requirements of these specifications.
 - .3 Pumps and pumping are free and clear of debris and obstructions.
- .4 Replace equipment found defective.
 - .1 Repeat test until equipment is accepted by Departmental Representative

3.6 DEMONSTRATION

- .1 Operating Personnel Training
 - .1 Provide on site training by qualified personnel for designated operating personnel prior to final commissioning.

- .1 Schedule and deliver training in accordance with training plan approved in writing by Departmental Representative
- .2 Include training for 3 designated personnel on routine maintenance procedures, minor repairs, replacement of parts, including disassembly of major components.
- .3 Include safety precaution procedures for systems.

3.7 CLEANING

- .1 Clean in accordance with Section 01 74 11 - Cleaning
- .2 Waste Management in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

END OF SECTION