

# Package Style Wastewater Lift Station Systems

Lift Station  
For

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Reference Number:  
May 22, 1999

**Tipton Environmental International, Inc.**

2002-G Ford Circle  
Milford, Ohio 45150

# TEII Lift Station Systems Specifications Sheet

Reference: \_\_\_\_\_

Design Flow = \_\_\_\_ 0 gpm @ \_0 feet TDH \_\_\_\_ hp Grinder Pumps

Engineer: \_\_\_\_\_

## TIPTON ENVIRONMENTAL INTERNATIONAL, INC. PACKAGED LIFT STATION FOR WASTEWATER SPECIFICATIONS

Wastewater Treatment System  
Prefabricated Steel Construction

### 1.0 GENERAL

1.1 The contractor shall furnish and install one package sewage pump station, complete and ready for operation in accordance with the plans and specifications stated herein. The treatment system shall be a Tipton Model TEII-LS-100\_\_\_\_- F package lift station of the prefabricated fiberglass construction as manufactured by Tipton Environmental International, Inc, Milford, Ohio. The system shall be complete with all necessary tank vessels, component equipment necessary for efficient and proper pumping operation.

1.2 The package system shall be factory prefabricated and assembled, so far as possible, taking into consideration shipping and erection limitations. In addition all internal tank piping and wiring shall be supplied and ended at the appropriate joint. All vessel surfaces shall be factory fabricated of fiberglass as described below.

### 1.3 OTHER SERVICES AND EQUIPMENT

1.31 The field contractor shall perform the actual installation of the TEII pumping station. The following is a brief description of the field contractors responsibilities:

- A. An adequate access road to the plant site shall be provided to enable the lowboy truck into the project site and off loaded.
- B. Provide facilities and equipment for off loading and setting of the pumping station onto its foundation pad, which has been provided by the field contractor. Anchoring facilities to be positioned in the foundation pad as defined by the contract drawings.
- C. Once the pump station has been set into position, it shall be reconnect including when required re-assembly of the piping and wiring which may have been disconnected at the factory for shipping purposes.
- D. The pumping system shall be delivered to the project site with a majority of the component equipment installed in position. Do to shipping restrictions some of the ancillary equipment such as the blower motor units and the electrical control console, anodes. The field contractor to be responsible for assembling these items into their position.
- E. All site utilities to the system shall be tied-in to the system. The electrical power requirements at the main power block or main circuit breaker shall be \_\_\_\_\_ volts, 1 or 3 phase, 60 Hz., amps. The sub-panel to be also connected to the main power by the field contractor.

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- F. The foundation pad for setting the system on to be furnished by the field contractor.
- G. Backfill, finish grade and placement of gravel around the outside perimeter of the system for a walkway.

## 2.0 SYSTEM DESIGN PARAMETERS

2.1 Influent Characteristics The following are the influent characteristics of the specified system:

- A. Maximum daily flow \_\_\_\_\_ gallon per minute with a TDH \_\_\_\_ Feet
- B. Peak hourly flow rate 3.0 times the daily flow rate

2.2 The TEII system shall be designed to pump \_\_\_\_\_ gallons per day of crude raw domestic wastewater.

## 3.0 VESSEL TANK CONSTRUCTION

3.1 All tank vessels shall be fabricated of reinforced structural grade fiber-glass joined with fillets of adequate section for the joint involved. All walls shall be continuous and watertight and shall be supported by structural reinforcing members where required. fabrication and erection shall conform to the appropriate requirements of "AIFC Specifications of Buildings All other areas such as the floor, end walls and internal bulkheads to be adequately reinforced.

3.2 All piping and valving shall be provided constructed of a minimum of schedule 40 steel pipe. The painting of this pipe and valving to be as defined in section below:

3.3 The TEII package lift station system shall be transported to the job site on Lowboy truck in one major section, wet well and valve pit attached.

3.4 The lift station shall be \_\_\_\_\_ feet in diameter and \_\_\_\_\_ feet high. The valve box shall be attached to the lift station wet well.

## 4.0 PAINTING AND CORROSION CONTROL

4.1 All wet well and valve pit shall not be painted, because of the fiberglass construction. All other metal surfaces to be painted shall be properly prepared in a workmanlike manner to obtain a smooth, clean, and dry surface. All rust, metal fragments, dust, weld slag, and mill scale as well as extraneous matter, shall be removed by means of cleaning by wire brushing or whatever means necessary.

4.2 All interior lift station metal vessel surfaces and all steel piping & valving shall be painted with a Sherwin Williams enamel finish.

## 5.0 FOUNDATION

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- 5.1 A poured foundation pad shall be constructed conforming to the project specifications for level and flatness as specified by the manufacturer on the foundation pad drawing. Anchoring tabs shall be provided attached to the tank so the field contractor can attach the anchors mounted in the pad to these tabs. Once lift station has been set on to the foundation pad additional concrete shall be poured into the base so as to create a weight which will not allow the lift station to float , even under a fluid soil condition.

## EQUIPMENT SECTION

### 6.0 PUMPING SYSTEM

#### 6.1 ELECTRICAL CONTROL CONSOLE CP-2

- 6.11 An electrical control center Model CP-2 Series LS-100 shall be installed within a NEMA 4 steel Electrical weatherproof enclosure complete with wall mounting facilities .

- 6.12 The electrical control center shall control the operation of the following equipment:

- A) Pump No. 1 P-1
- B) Pump No. 2 P-2
- C) Liquid level sensors (4)
- D) High Water Alarm
- E) Seal Leak Sensors alarm

- 6.14 Lift Station Pumps Control - The pumps shall operate on a duplex pump alternator operation I mode where as pump one will operate alternately with pump no 1 and 2 on cycles. The pump operation shall be controlled by four (4) encapsulated mercury float switches each individually adjustable for the following:

- Level A) All Pumps off
- Level B) Lead Pump on
- Level C) Lag Pump on
- Level D) High Level Alarm

- 6.15 The sewage pumps shall operate on a lead-lag with the two pumps alternating. If the liquid level reaches lag pump on level, both pumps shall operate. If the liquid level reaches the high water level, the alarm will be activated.

- 6.16 All wiring, terminal blocks, supports and accessories required for the operations of the control panel shall be provided in compliance with the National Electric Code.

- 6.17 Sewage Pumps Tagged P-1, P-2

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- 6.171 The sewage pumps shall be of the Goulds type. The pump shall have a capacity of \_\_\_\_ GPM @ \_\_\_\_ feet of TDH. The pump shall have a 3 horsepower motor which will operate on \_\_\_\_ volt, \_\_\_\_\_ phase, 60 hz.
- 6.172 Each sewage pump shall be supplied shall be of the grinder type and with a 2 inch discharge connection . In addition to the pump each pump shall be furnished with a slide rail assembly.

## 7.0 INLET CONNECTION

- 7.1 An influent connection to the TEII lift Station system shall be provided. It shall consist of one 6" diameter flanged pipe. The inlet shall be located at the side wall of the wetwell chamber.

## 8.0 Effluent Connection

The effluent connection of the lift station system shall be located as shown on the plans and shall consist of one \_\_\_\_" diameter standard flanged pipe at the location shown.

## Division 8 Field Service

### 9.0 FIELD ASSEMBLY

The shipment of the "TEII" sewage pumping system is done by special lowboy trucks directly to the job site. The equipment necessary to unload the plant and set it on the foundation pad must be furnished by the field contractor. The access road into the project site to handle these lowboy trucks will be the responsibility of the field contractor. The approximate weight of the system is 10,000 pounds ,empty.

The TEII package systems shall be completely assembled units and are shipped as a unit where shipping height limitations permit. Portion of the equipment must be removed to meet the shipping height limitations. This equipment will be packaged separately at the factory for re-assembly at the field. The equipment should be field assembled and installed by the field contractor.

### 10.0 Field Assembly

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## 11.0 Filed Service

- 11.1 At the time the sewage pumping system is filled with water or sewage, all power connections have been completed, and all equipment is approved for service, the contractor shall provide the services of a representative of the manufacturer who shall instruct the owner's representative in the proper operation and maintenance of the wastewater treatment system including instructions in conducting all required operational tests. The manufacturer's representative shall furnish at this time, a service manual on the equipment installed within the sewage pumping system. The manufacturer's representative shall for a period of one (1) year after delivery is made, make periodic inspections of the system, advising the owner's representative of any operational difficulties.

## 12.0 Guarantee

- 12.1 The manufacturer of the sewage pumping system shall guarantee for one (1) year from the date of shipment that the vessel and all component equipment shall be free from defective materials and workmanship. the manufacturer shall furnish replacement parts for any component considered in the opinion of the manufacturer to be defective, whether of his other manufacturer during this guarantee period.