

# XYLEM, INC (H-20 GP)

## w/ BATTERY BACK-UP FOR AUDIO AND VISUAL ALARMS

**SCOPE:** Supply one complete H-20 LP Pre-Fab Lift Station, per design.

Pumps shall be capable of pumping domestic & commercial sewage.  
Complete system shall be supplied by:

XYLEM, INC 912-344-9925

NO SUBSTITUTIONS - NO ALTERNATES

The H-20 Load Rated Fiberglass Wetwell Must Be Manufactured By L.F. Manufacturing, Giddings, Texas, Which Includes A Written 20 Yr. Warranty  
Certification of the wetwell H-20 load rating must be supplied with submittals.  
H-20 certification must be signed and sealed by an engineer registered in the State of Florida.

After the H-20 load rated wetwell has been installed, the ASTM Certification Number and Serial Tracking Number must be visible.

**PUMPS:** The submersible pumps shall be manufactured by Flygt Corporation.

The pumps shall be installed in the H-20 LP FRP wetwell utilizing a dual slide rail system. The pumps shall be grinder, fibrous materials, heavy sludge, and other matter typically found in wastewater.

Major pump components shall be grey cast iron, ASTM A-48, Class 35B. The pump motor shall be NEMA B design and housed in an air-filled watertight chamber. The stator windings shall be insulated with moisture resistant Class H insulation by use of the trickle impregnation method. The motor shall be heat-shrink fit into the stator housing. The use of bolts, pins, or other fastening devices is not acceptable. The cable entry seal shall consist of a cylindrical elastomer grommet flanked by washers. Epoxies, silicones, or other sealing systems are not acceptable. Thermal switches set to open at 125 degrees C shall be embedded in the stator end coils to monitor the temperature of each phase winding. The motor horsepower shall be adequate so that the pump is non-overloading throughout the entire pump performance curve from shut-off through run-out.

The pump shall be provided with a dual mechanical seal. Both upper and lower seal assemblies shall consist of a stationary tungsten-carbide ring and a rotating tungsten-carbide ring. Other seal materials are not considered acceptable."

**DUPLEX CONTROL PANEL:**

Control panel shall be assembled and built by a TUV (UL508A CERTIFIED) manufacturing facility.

The Enclosure shall be minimum 30" high x 30" wide x 10" deep 4X aluminum with padlockable draw latches.

The enclosure shall have external mounting feet to allow for wall mounting. All hardware shall be stainless steel.

The following components shall be mounted through the enclosure:

- 1- ea. Red Alarm Beacon (Light)
- 1- ea. Alarm Horn
- 1- ea. Generator Receptacle w/ weatherproof cover
- 1- ea. Alarm Silence Pushbutton

The backpanel shall be fabricated from .125, 5052-H32 marine alloy aluminum. All components shall be mounted by machined stainless steel screws.

The following components shall be mounted to backpanel:

- 2- ea. Motor Contactors
- 1- ea. Volt Monitor (Single Phase) Phase Monitor (Three Phase)
- 1- ea. Control Transformer (480 Volt Only)
- 1- ea. Silence Relay
- 1- ea. Duplex Alternator
- 1- ea. Model BOAC5AH Battery Back-Up w/ Smart Charger (Per DEP)
- 20- ea. Terminals For Field Connections
- 6- ea. Terminals For Motor Connections (Single Phase Only)
- 3- ea. Grounding Lugs

The innerdoor shall be fabricated from .080, 5052-H32 marine alloy aluminum. The innerdoor shall have a continuous aluminum piano hinge.

The following components shall be mounted through the innerdoor:

- 1- ea. Main Circuit Breaker
- 1- ea. Emergency Circuit Breaker
- 1- ea. Mechanical Interlock For Emergency and Main Breakers
- 2- ea. Short Circuit Protectors
- 1- ea. Control Circuit Breaker
- 1- ea. Hand-Off-Auto Selector Switches
- 2- ea. Pump Run Pilot Lights
- 1- ea. Power On Pilot Light
- 2- ea. Elapse Time Meters (Non-Resettable)
- 1- ea. GFI Duplex Convenience Outlet

**COMPONENT SPECIFICATIONS:**

All circuit breakers shall be molded thermal magnetic. The mechanical interlock shall prevent the normal and emergency main breakers being energized at the same time.

An emergency generator receptacle shall be supplied in accordance with DEP standards. The generator receptacle shall be adequately sized to meet the equipment operating conditions.

NEUTRAL TO BE SUPPLIED FOR BOTH 230V 3PHASE OR 230V SINGLE PHASE POWER

All motor short circuit protection devices must provide for undervoltage release and class 10 overload protection on all three phases. Visible trip indication, test, and reset capability must be provided without opening inner door.

Open frame, across the line, contactors shall be rated per IEC standards and properly sized per the motor requirements. Contactors shall provide for safe touch power and control terminals.

Lightning Arrestor shall meet or exceed the requirements of ANSI/IEEE Std. C62.21-1984 section 8.6.1. and 8.7.3 shall be supplied by electrician and mounted on the bottom side of the switch disconnect ahead of the pump control panel.

A voltage monitor shall be supplied for single phase service. A phase monitor shall be supplied for (3) phase service.

A green pilot light shall be supplied for each motor. The pilot light shall illuminate each time the motor is called to run. Each pump shall have an Elapse Time Meter to record the accumulated run time. The ETM shall be 2" diameter, non-resettable, six digit, totally encapsulated unit.

A Red pilot light shall be supplied for control power. The pilot light shall illuminate when the control power is available inside the control panel.

Relays shall be ice-cube plug in type. Relay contacts shall be rated 10 amp minimum, DPDT.

Twenty (20) terminals shall be supplied for field connections. The terminals shall be rated 25 amps minimum.

Each motors over-temperature contact shall be connected to the terminal strip and shall open a contact to de-energize the appropriate motor upon a high temperature within the motor. A 15 Amp GFI duplex receptacle shall be supplied and mounted on the innerdoor.

Ground lugs shall be supplied and appropriately sized for each motor and for service entrance.

Nameplates for the innerdoor and back panel shall be of a graphic design, specifically depicting the intent for each device.

**MISCELLANEOUS:** All wiring on the backpanel shall be contained within the wiring duct. All wiring between the innerdoor and the backpanel shall be contained with in a plastic spiral wrap.

Each wire shall have a wire number of each end to correspond to the as built drawing for field troubleshooting.

The control panel shall be assembled by a TUV (UL508A Certified) manufacturing facility.

**FASTNERS & APPURTANCES:** All fasternes, lifting cables, float cable bracket, hinges, and appurtances shall be made of AISI 304SS.

A 304SS slide/latch assembly shall be provided tor holding the doors open on the wetwell and valve box. Slide rails shall be made of SCH.40 AISI 304SS pipe. Pump lifting cables shall be made of AISI 304 SS.

**H-20 LOAD RATED WETWELL WITH LIFTING LUGS:**

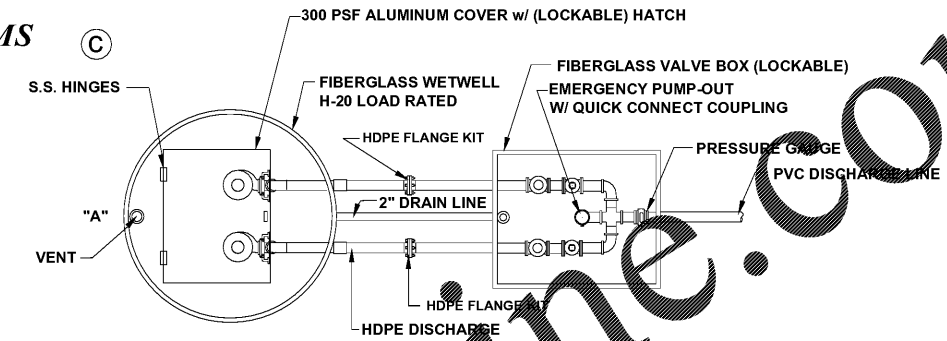
The fiberglass wetwell must be H-20 load rated with integral lifting lugs, fiberglass slope in bottom of wetwell and valve box. Certification of the H-20 load rating must be supplied at the time of submittals to Engineer. The wetwell shall be manufactured of fiberglass reinforced polyester (FRP) of depth and diameter as shown on the lift station elevation detail. The wall thickness shall be adequate for the depth of the wetwell to maintain the H-20 LOAD RATING.

**EXECUTION:**

Installation shall be in strict accordance with the manufacturer's recommendations in the locations shown on the drawing.

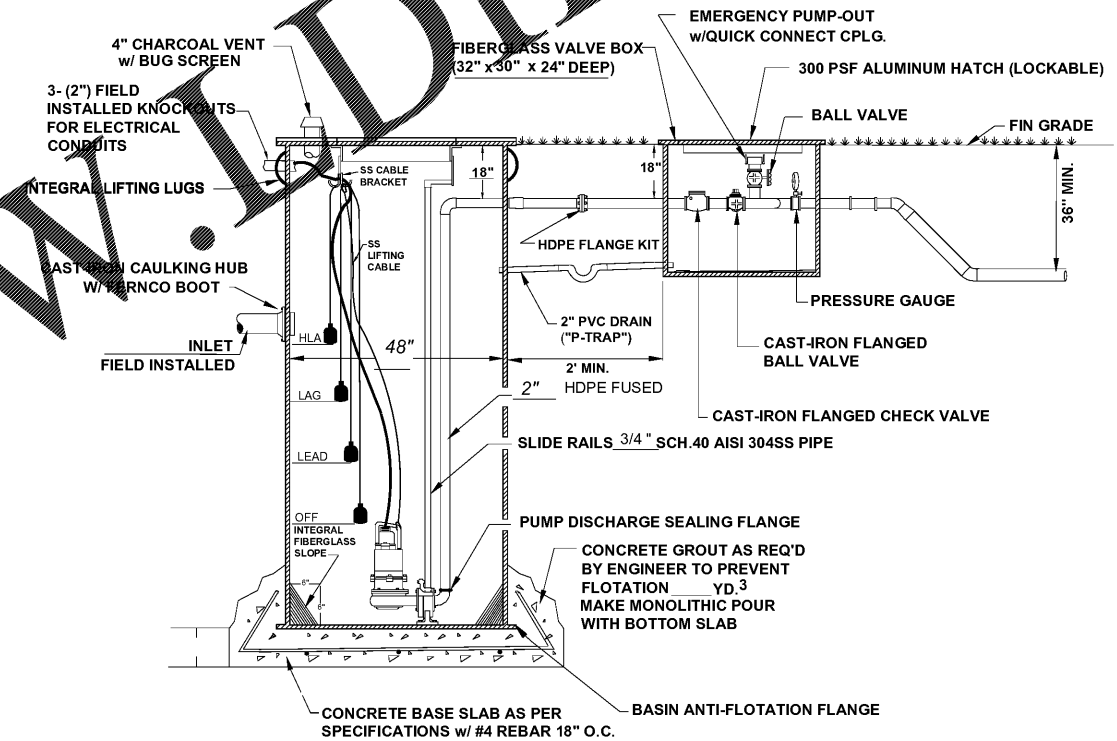
**INSPECTION & TESTING:** A factory representative shall be provide for a one (1) time start-up and shall have complete knowledge of the proper operation and maintenance of complete system.

Megger the motors. The pump motors shall be megged out prior to the start-up to ensure that the insulation of the pump motor/cable is intact. The pump controls and pumps shall be checked for mechanical reliability and proper operation.

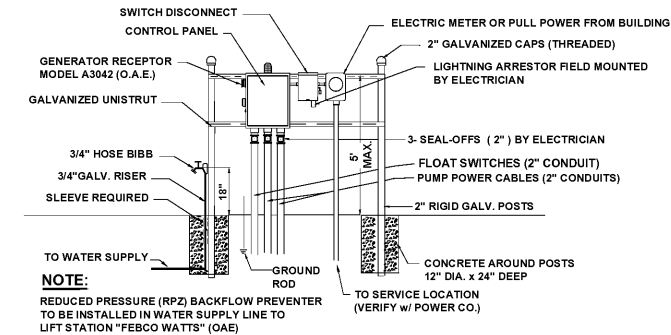


NOTE: PUMP CONTROL PANEL SHALL BE LOCATED FEET MINIMUM FROM WETWELL PERIMETER AT POINT "A"

### LIFT STATION PLAN



### LIFT STATION SECTION



### ELECTRICAL RISER

PUMP DATA		ELEVATIONS	
PRIMARY PUMP CAPACITY	N/A GPM	TOP OF WETWELL	N/A
PRIMARY TDH	N/A TDH	INLET INVERT	N/A
PUMP MANUFACTURER	FLYGT	HIGH LEVEL ALARM (HLA)	N/A
PUMP MODEL #	N/A	2nd PUMP ON (LAG)	N/A
R.P.S.	N/A	1st PUMP ON (LEAD)	N/A
HORSEPOWER	N/A	PUMPS OFF (OFF)	N/A
ELECTRICAL/ VOLTS / PHASE	N/A	BOTTOM OF WETWELL	N/A
PUMP DISCHARGE SIZE	N/A	WETWELL DIAMETER	48"
IMPELLER CODE	N/A		

**\* ELECTRICIAN NOTES:**

1. DRAWING NOT TO SCALE
- \* 2. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH LOCAL CODES
- \* 3. ELECTRICIAN SHALL SEAL OFF CONDUIT RUNS
- \* 4. ELECTRICIAN TO MOUNT LIGHTNING ARRESTOR AT SWITCH DISCONNECT
- \* 5. CONTRACTOR SHALL VERIFY POWER SOURCE PRIOR TO ORDERING EQUIPMENT
- \* 6. NEUTRAL TO BE SUPPLIED FOR 230V-3 PHASE OR 230V-SINGLE PHASE POWER.

H-20 LP 08-28-18

**COLEMAN COMPANY**  
ENGINEERS - SURVEYORS  
Savannah, Georgia (912) 200-3001 | CGI-SAV.COM

**NOT FOR CONSTRUCTION**

REVISIONS:


CIVIL CONSTRUCTION PLANS FOR  
**EXTENDED STAY HOTEL**  
LOCATED IN POOLER, GEORGIA  
ATTANGER OUTLET

JOB NUMBER: 18-426  
DATE: 8/23/18  
DRAWN BY: JWR  
CHECKED BY: TGB  
SCALE: AS NOTED

LIFT STATION DETAIL

SHEET:  
C11

