

**CONTROL PANEL / DEAD FRONT**  
SCALE: N.T.S.

**SOUTH FLORIDA LIFT STATION, INC.**  
PACKAGED FIBERGLASS LIFTSTATIONS  
D.E.P. OR STANDARD CONTROL PANELS

COMPLETE WORKING SYSTEM SHALL BE SUPPLIED:  
**SOUTH FLORIDA LIFT STATION, INC.**  
FORT MYERS, FL 33901  
(239) 332-0041  
(239) 332-0045 FAX

**SPECIFICATION**  
DESIGN CONDITIONS  
MODEL: TP28M H.P.: 1  
VOLT: 480/277 PHASE: 3  
DISCHARGE: 1 1/2" IMPELLER: SINGLE VANE  
GPM: 36 TDH: 29

FOR TECHNICAL ASSISTANCE, CONTACT  
**SOUTH FLORIDA LIFT STATION, INC.**  
FORT MYERS, FL 33901  
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**SUBMERSIBLE NON CLOG PUMPS**

SUBMERSIBLE NON CLOG PUMPS SHALL BE HOMA MODEL TP28M. THE PUMPS SHALL BE INSTALLED IN THE H-20 GP FRP WET WELL UTILISING A DUAL SLIDE RAIL SYSTEM. THE UNIT SHALL BE CAPABLE OF ALL MATERIAL IN DOMESTIC AND COMMERCIAL SEWAGE, INCLUDING FOREIGN OBJECTS SUCH AS PLASTICS, SANITARY NAPKINS AND DISPOSABLE DIAPERS, WHICH WILL PASS THROUGH THE PUMP AND THE SCH 80 PVC DISCHARGE PIPING.

PUMP SHALL BE CAPABLE OF HANDLING 1" MIN. SOLIDS AT 1-1/2" DISCHARGE AT 3450 RPM. SINGLE PHASE MOTORS SHALL BE OF THE CAPACITOR START, CAPACITOR RUN TYPE FOR HIGH STARTING TORQUE. STATOR WINDING SHALL BE OPEN WITH CLASS F INSULATION AND SHALL BE HEAT-SHRINK FITTED INTO THE STATOR HOUSING. THE USE OF PINS BOLTS OR OTHER FASTENING DEVICES IS NOT ACCEPTABLE. A HEAT SENSOR THERMOSTAT SHALL BE ATTACHED TO THE TOP OF THE MOTOR WINDING AND SHALL BE CONNECTED IN SERIES WITH THE MAGNETIC CONTACTOR COIL IN THE CONTROL PANEL TO STOP THE MOTOR IF WINDING TEMPERATURE EXCEEDS 140 DEGREES CELCIUS, BUT SHALL AUTOMATICALLY RESET WHEN THE WINDING TEMPERATURE RETURNS TO NORMAL. TWO HEAT SENSOR THERMOSTAT SHALL BE USED ON THREE PHASE MOTORS. UPPER AND LOWER SEALS SHALL BE SILICON vs. SILICON CARBIDE.

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

THE FIBERGLASS WETWELL MUST BE H-20 LOAD RATED W/INTEGRAL LIFTING LUGS, AND CERTIFICATION OF THIS RATING MUST BE SUPPLIED AT TIME OF SUBMITTAL. THE WETWELL SHALL BE MANUFACTURED OF FIBERGLASS REINFORCED POLYESTER (FRP) OF DIAMETER AND DEPTH 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. REINFORCING MATERIALS: THE REINFORCING MATERIAL SHALL BE COMMERCIAL GRADE TYPE "E" GLASS IN THE FORM OF MAT, CHOPPED OR ROVING FABRIC, HAVING A COUPLING AGENT THAT WILL PROVIDE A SUITABLE BOND BETWEEN THE GLASS REINFORCEMENT AND THE RESIN. ADDITIVES SUCH AS THIXOTROPIC AGENTS, CATALYST, PROMOTERS, ETC. MAY BE ADDED AS REQUIRED BY THE SPECIFIC MANUFACTURING PROCESS TO BE USED TO MEET THE REQUIREMENTS OF THIS SPECIFICATION. THE RESIN SYSTEM SHALL BE SUITABLE FOR ATMOSPHERES CONTAINING HYDROGEN SULPHIDE AND DILUTE SULPHURIC ACID AS WELL AS OTHER GASSES ASSOCIATED WITH WASTE WATER COLLECTION SYSTEMS. WET WELL SHALL BE A ONE PIECE UNIT MANUFACTURED BY L.F. MANUFACTURING, INC. OR ENGINEERS APPROVED EQUIVALENT. EACH WET WELL IS FACTORY SERIAL NUMBERED FOR QUALITY AND LOW GRADE TESTING AND TRACKING PURPOSES.

**H-20 LOAD RATING**

THE COMPLETE WET WELL SHALL HAVE A MINIMUM DYNAMIC-LOAD RATING OR 16,000 FT-LB WHEN TESTED. THE COMPLETE WET WELL SHALL NOT HAVE LEAKS, CRACKS, OR SUFFER FROM DELAMINATION, BUSTERS, WRINKLES, DRY AREAS, OR OTHER DAMAGES WHEN LOAD TESTED TO 40,000 FT-LBS. WET WELL SHALL NOT DEFLECT VERTICALLY DOWNWARD MORE THAN 1/4" AT THE POINT OF LOAD APPLICATION WHEN LOADED TO 24,000 LBS.

**WATER TIGHT INTEGRITY**

ALL WET WELLS ARE 100% WATER TIGHT. PUMP MOUNTING BOLTS ARE INSTALLED FOR EASIER INSTALLATION AND TO ENSURE BASIN WATER TIGHT INTEGRITY. AN INTEGRAL FIBERGLASS SLOPED BOTTOM CAN BE INSTALLED UPON REQUEST FROM CONTRACTOR OR ENGINEER. LENGTH AND HEIGHT OF SLOPE CAN CHANGE DUE TO DIAMETER OF WET WELL AND SIZE OF PUMPS.

**ALUMINIUM HATCH COVER**

SHALL BE MANUFACTURED FROM 1/4" ALUMINIUM DIAMOND PLATE AND BUILT TO WITHSTAND A LOAD OF 150 LB PER S.F. AND SHALL BE MANUFACTURED BY HALLIDAY PRODUCTS OR EQUAL. STAINLESS STEEL BOLTS, NUTS AND HINGES -W/LOCKING STAPLE.

**FLOATS**

SHALL BE ANCHOR SCIENTIFIC POLYPROPYLENE NON-MERCURE FLOAT SWITCHES RATED AT 5 AMPS AT 120V OR EQUAL.

**SPECIFICATIONS FOR DUPLEX D.E.P. TYPE CONTROL PANEL**

EACH PANEL SHALL CONTROL TWO 1 HP, 480/277 VOLT, 3 PHASE, 60 HZ PUMPS. A NEUTRAL SHALL BE SUPPLIED TO THE PANEL FOR 120 VOLT CONTROL POWER.

PANEL ENCLOSURE SHALL BE NEMA 4X FABRICATED FROM 304L STAINLESS STEEL. OUTER DOOR SHALL HAVE HINGES AND MEANS FOR PADLOCKING. INNER DEAD FRONT DOOR SHALL BE 5052-H32 ALLOY ALUMINIUM. ALL MOUNTING HOLES SHALL BE DRILLED AND TAPPED, SELF TAPPING SCREW NOT ACCEPTABLE. ALL BOLTS, NUTS LOCK WASHERS AND MACHINE SCREWS SHALL BE STAINLESS STEEL.

**THE FOLLOWING MAJOR COMPONENTS ARE REQUIRED:**

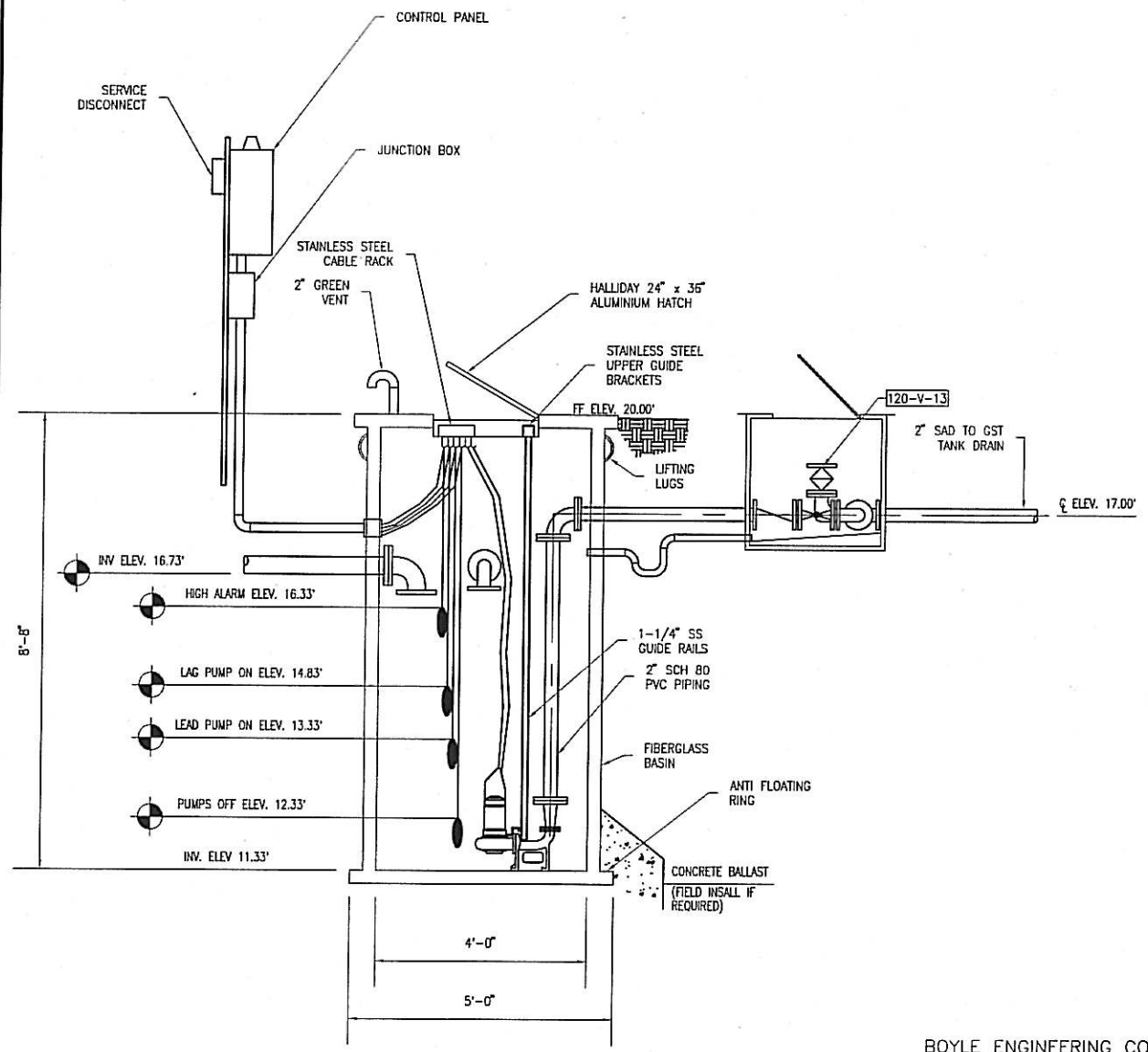
- 1) MAIN BREAKER
- 2) EMERGENCY BREAKER AND GENERATOR RECEPTACLE-RUSSEL STOLL
- 3) PUMP BREAKERS
- 4) CONTROL CIRCUIT BREAKERS
- 5) ALTERNATOR
- 6) HIGH LEVEL FLASHING ALARM LIGHT
- 7) HIGH LEVEL ALARM WITH SILENCE - WHEN SILENCE LIGHT STAYS ON
- 8) LIGHTING ARRESTOR
- 9) SURGE SUPPRESSOR
- 10) PHASE/UNDER VOLTAGE MONITORING RELAY IF 3 PHASE, UNDER VOLTAGE MONITORING RELAY IF SINGLE PHASE
- 11) NEMA RATED MOTOR STARTERS WITH OVERLOAD PROTECTION FOR ALL POWER LEGS
- 12) ELAPSE TIME METERS
- 13) RUN LIGHTS
- 14) CAPACITORS AND START-RELAYS ANS APPROVED FOR HOMA PUMPS ON SINGLE PHASE SYSTEMS

**TYPICAL SEQUENCE OR OPERATION:**

**ON RISE LEVEL:**  
LOWEST FLOAT WILL CLOSE CIRCUIT RELAY. LEAD PUMP ON FLOAT CLOSES TO BRING LEAD PUMP ON. IF LEAD DOES NOT RECEDE AND WATER CONTINUES TO RISE, THE LAG FLOAT WILL CLOSE AND BRING THE ON THE LAG PUMP. FURTHER RISING OF LEVEL IN WET WELL WILL CONTINUE CLOSE 4TH FLOAT (HIGH LEVEL) AND ACTIVATE HIGH LEVEL ALARM LIGHT AND HORN.

**ON FALLING LEVEL:**  
ALL PUMPS WILL DE-ENERGIZE AT THE OPENING OF THE LOWEST (OFF) FLOAT CONTROL CIRCUITRY WILL BE SUCH THAT NO FLOAT WILL DEPEND ON ANOTHER FLOAT FOR ITS CONTROL POWER. CONTROL PANEL SCHEMATIC, IN PLASTIC LAMINATE, IS TO BE AFFIXED TO THE INSIDE OF THE OUTER DOOR. ALL WIRING SHALL BE NUMBERED. IN THE EVENT THE PUMPS BEING FURNISHED REQUIRE SEAL FAILURE COMPONENTS AND INDICATION TO VALIDATE THE WARRANTY, THESE COMPONENTS SHALL BE FURNISHED AS REQUIRED. ALL COMPONENT LABELS SHALL BE OF THE LASER PRINTED MYLAR PLASTIC LABELS. A 24-HOUR EMERGENCY TELEPHONE CONTACT SHALL BE DISPLAYED BY THE OWNER.

BASIN DIAMETER (INCHES)	CUBIC FEET OF CONCRETE REQUIRED PER FOOT OF BASIN DEPTH
24	2
30	3.5
36	5
48	8.5
60	12



**LIFT STATION PLAN AND SECTION**  
SCALE: 1" = 20'

**BOYLE ENGINEERING CORPORATION**  
**FDEP PERMIT**  
FOR REVIEW USE ONLY  
DATE: 03/19/07

USER: ezech  
 DATE: May 07, 2007 2:23pm  
 X:\Projects\WWS\Station Smith\Construction\Drawings\FDEP\_Permit\DW-120-105.dwg  
 PLOTS: 03-1-02-00 12x18  
 DATE: May 07, 2007 2:23pm

REV	DATE	DESCRIPTION	APPR
1			
2			
3			
4			
5			
6			
7			
8			

VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING	DESIGNED BY GNEW	PROJECT ENGINEER VICTOR J. GODLEWSKI JR., PE
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	DRAWN BY GNEW	REG NUMBER 33139
	CHECKED BY VJG	EXP DATE 02/28/07
	DATE JAN 2006	PROJECT NUMBER FE-W61-102-00
		CADD STANDARDS BOYLE

**BOYLE ENGINEERING CORPORATION**  
4415 METRO PARKWAY, SUITE 404  
FORT MYERS, FLORIDA 33916  
FL. ENGINEERING BUS. NO. 2005  
(239) 278-7996

Wharton-Smith, Inc. CONSTRUCTION GROUP

**THREE OAKS WASTEWATER TREATMENT PLANT**  
**EXPANSION**  
**LIFT STATION**  
**PLAN AND SECTIONS**

DRAWING: **D-120-105**  
SHEET: **89**  
OF 000 SHEETS