

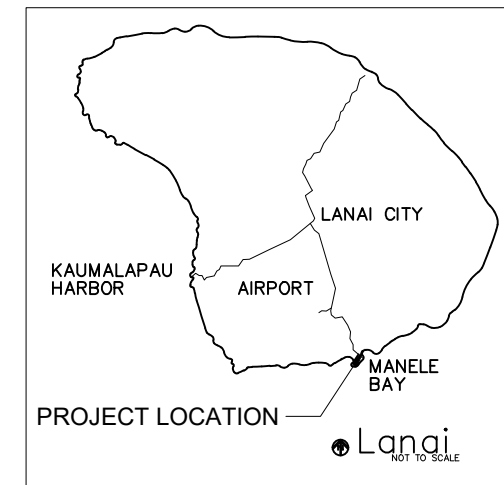
STATE OF HAWAII
 DEPARTMENT OF LAND AND NATURAL RESOURCES
 DIVISION OF BOATING AND OCEAN RECREATION
 JOB NO. LA22-02
**MANELE SMALL BOAT HARBOR
 SEWAGE LIFT STATION REPAIR**

MANELE, LANAI, HAWAII
 TMK: (2) 4-9-017:006



LOCATION MAP
 (NOT TO SCALE)

DRAWING INDEX		
DRAWING NO.	SHEET NO.	DESCRIPTION
T-1	1	TITLE SHEET
C-1	2	LIFT STATION DEMOLITION PLAN
C-2	3	LIFT STATION REPAIR PLAN
C-3	4	DETAILS

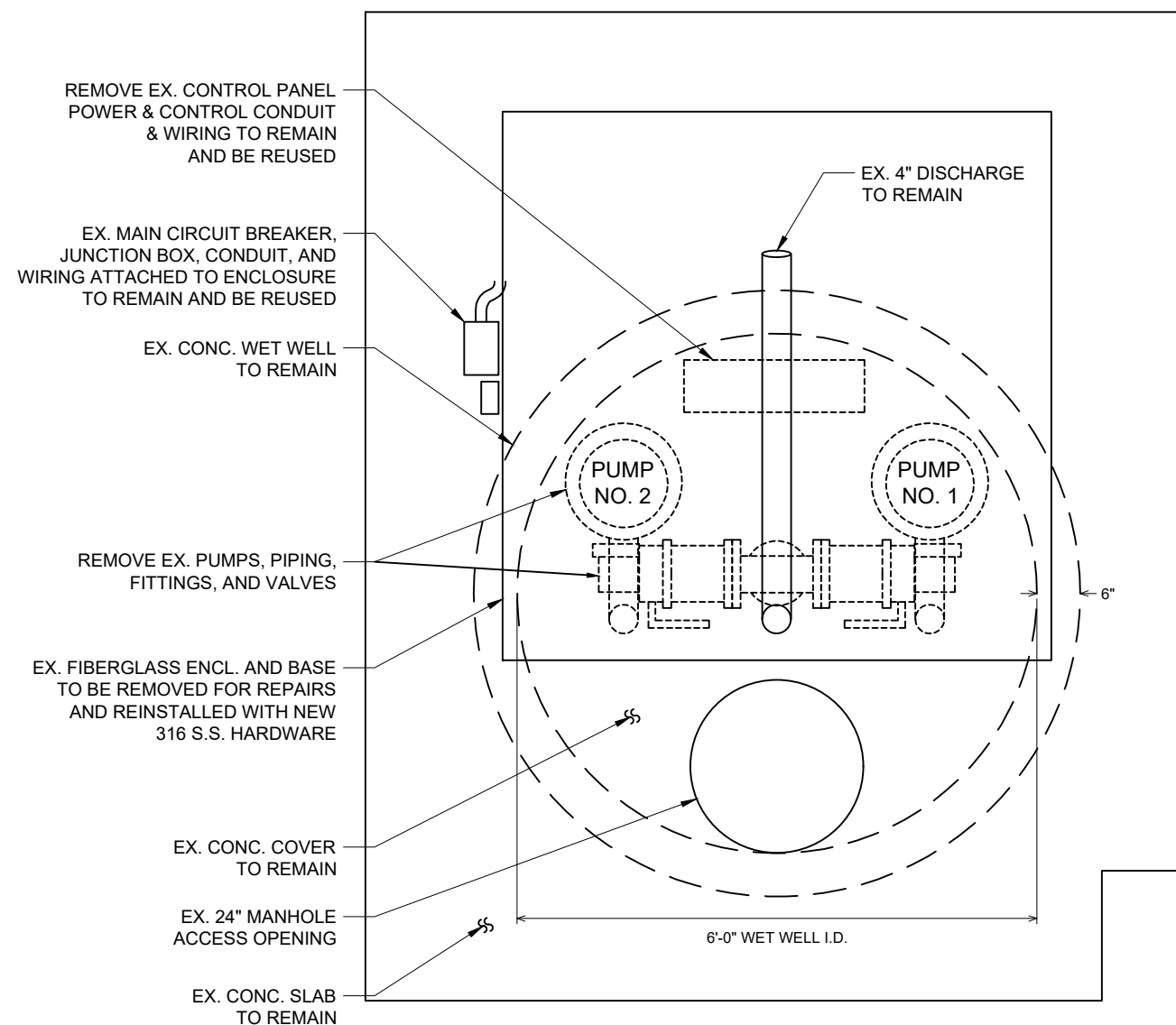


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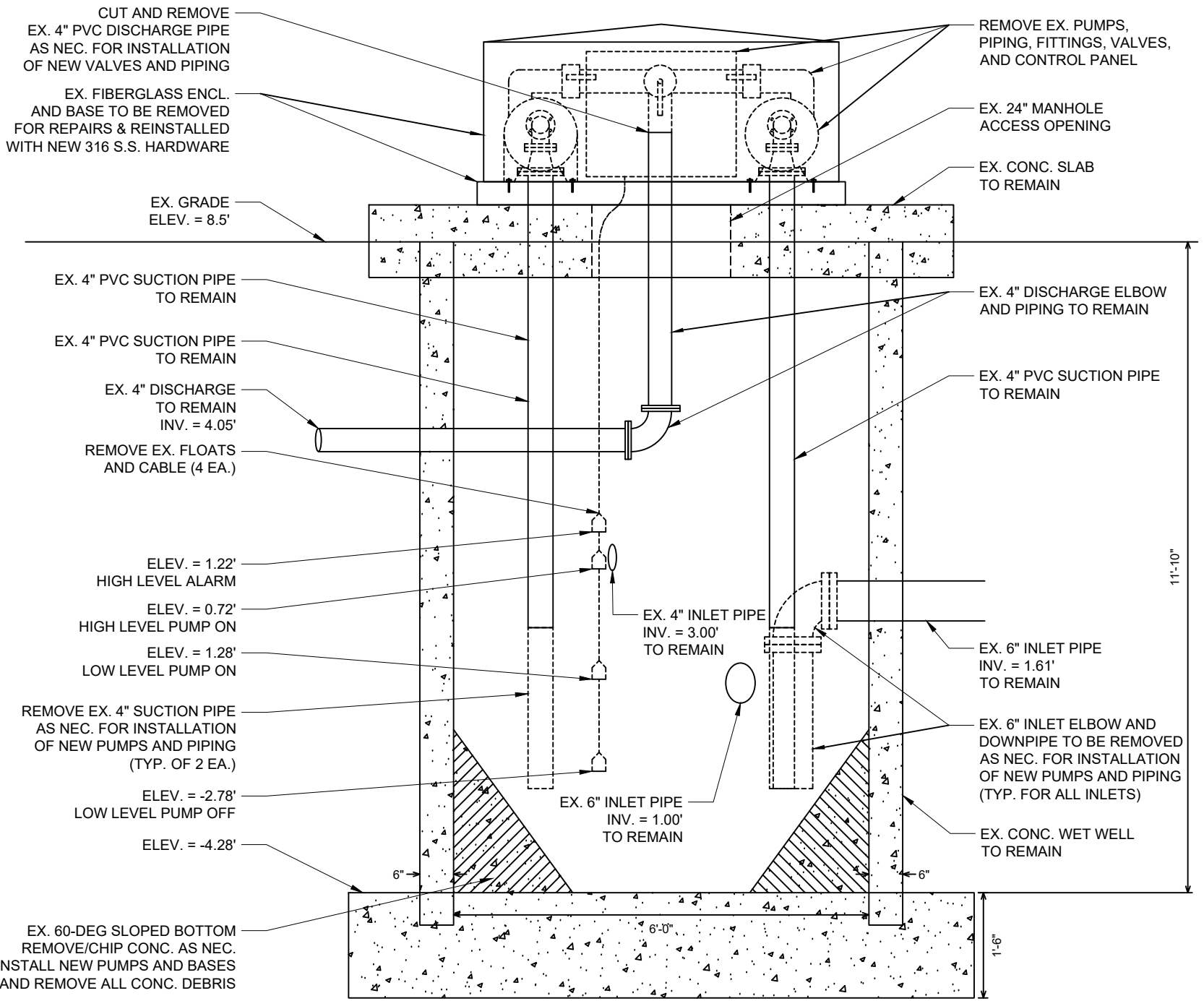
DATE: Nov 18, 2022

EDWARD R. UNDERWOOD
 ADMINISTRATOR
 DIVISION OF BOATING AND OCEAN RECREATION
 DEPARTMENT OF LAND AND NATURAL RESOURCES

DRAWING NO.
T-1



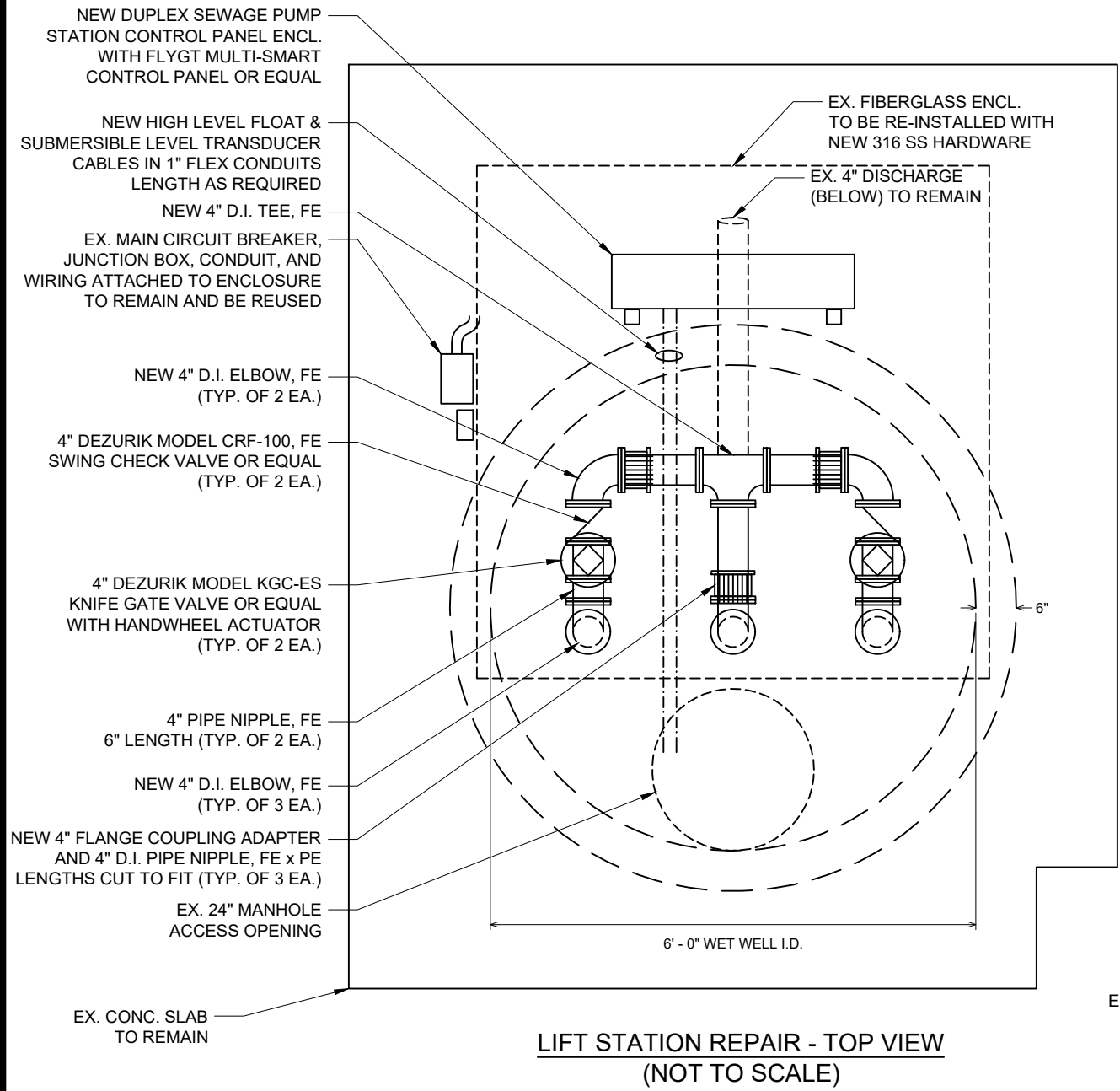
LIFT STATION DEMO PLAN
(NOT TO SCALE)



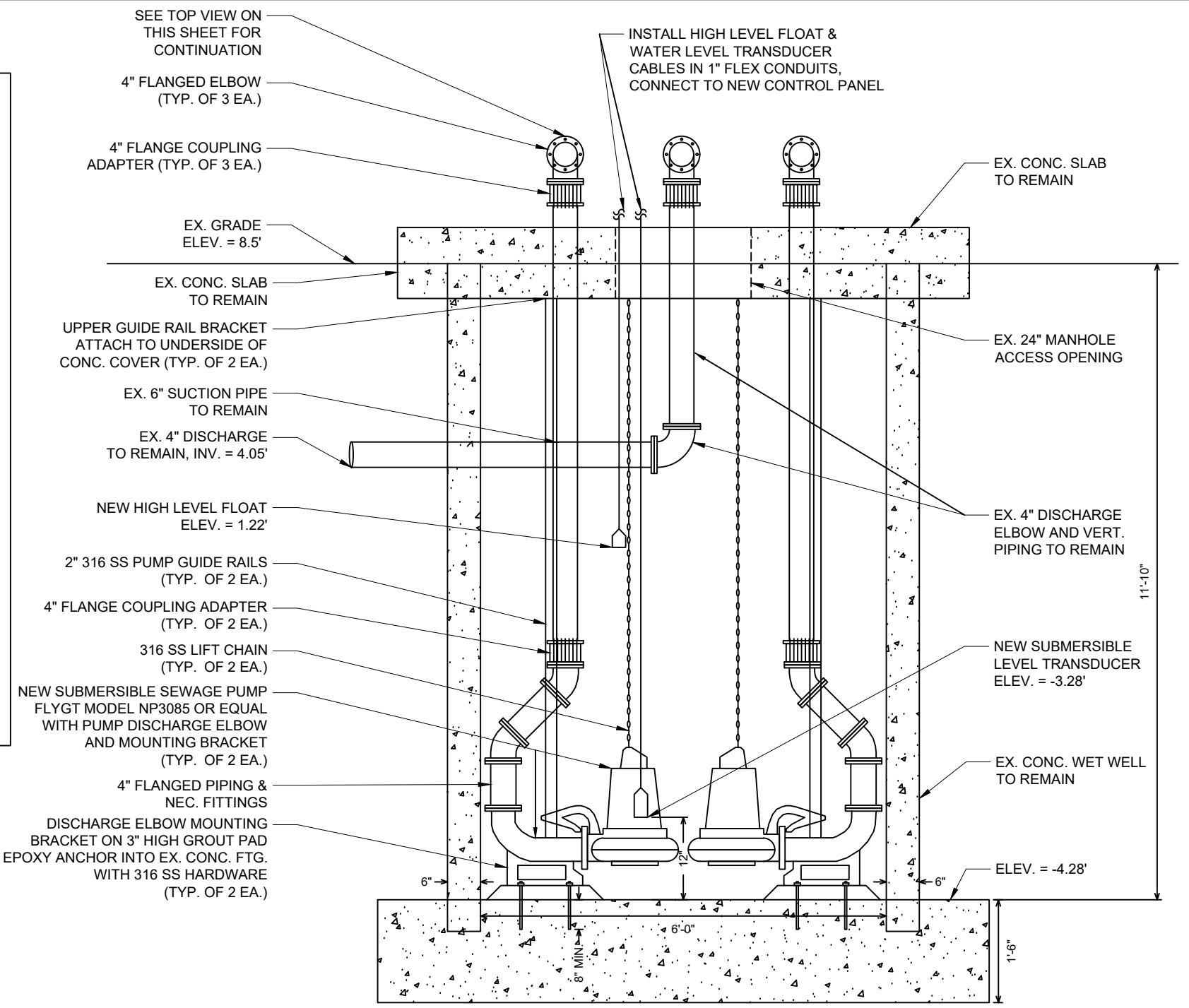
LIFT STATION DEMO SECTION
(NOT TO SCALE)

- NOTES:**
1. CONTRACTOR REQUIRED TO PROVIDE ALL NECESSARY DEMOLITION WORK, WHETHER SHOWN ON THESE PLANS OR NOT, FOR PROPER INSTALLATION OF NEW PUMPS, PUMP BASES, PUMP GUIDE RAILS, PIPING, FITTINGS, VALVES, CONTROL PANEL, FLOATS, WATER LEVEL TRANSDUCERS, AND APPURTENANT ELECTRICAL WORK IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION GUIDES AND RECOMMENDATIONS.
 2. CONTRACTOR SHALL BE RESPONSIBLE TO CONDUCT A THOROUGH SITE INVESTIGATION PRIOR TO SUBMITTING BIDS TO ENSURE ALL REQUIRED SITE WORK IS ACCOUNTED FOR IN THEIR BID.
 3. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE OSHA REGULATIONS WITH REGARD TO WORKING IN CONFINED SPACES INCLUDING, BUT NOT LIMITED TO, USE OF AIR HANDLERS, AIR QUALITY MONITORING DEVICES, AND NECESSARY SAFETY PERSONNEL AND EQUIPMENT.

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STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES DIVISION OF BOATING & OCEAN RECREATION					
MANELE SMALL BOAT HARBOR SEWAGE LIFT STATION REPAIR					
LIFT STATION DEMOLITION PLAN					
DESIGNED:			SUBMITTED:		
DRAWN:			DATE: 11/17/22		
CHECKED:			SCALE:		
APPROVED:			DRAWING NO.		
CHIEF ENGINEER			DATE		
					C-1



LIFT STATION REPAIR - TOP VIEW
(NOT TO SCALE)



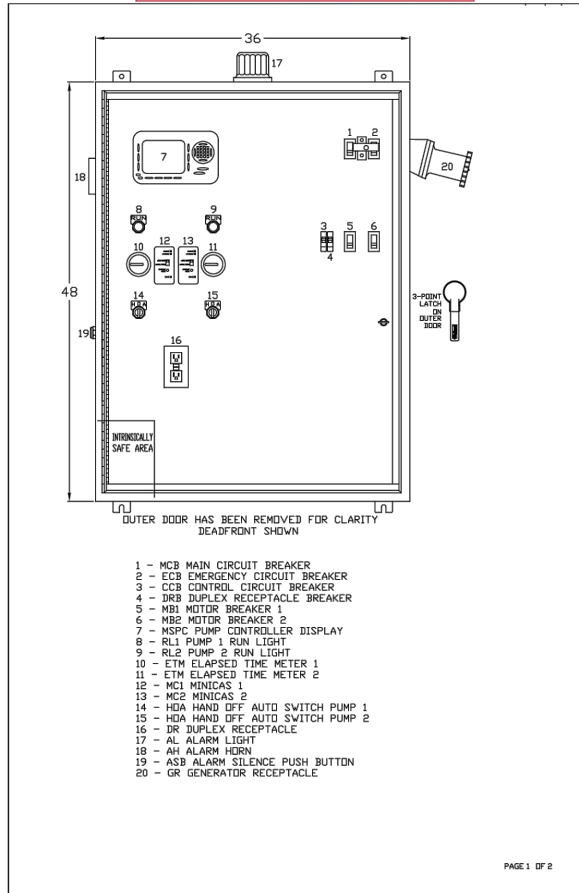
LIFT STATION REPAIR - SECTION VIEW
(NOT TO SCALE)

NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE TO CONDUCT A THOROUGH SITE INVESTIGATION PRIOR TO SUBMITTING BIDS TO ENSURE ALL REQUIRED SITE WORK IS ACCOUNTED FOR IN THEIR BID.
2. SUBMERSIBLE SEWAGE PUMPS SHALL BE FLYGT MODEL NP3085.760 WITH 3 HP, 460V, 3 PH., 1705 RPM MOTOR, 50 FT. STANDARD CABLE, FLUID LEAKAGE SENSOR, 4" DISCHARGE ELBOW, AND MOUNTING BRACKET OR APPROVED EQUAL.
3. ELECTRICAL WORK: ELECTRICAL WORK FOR THIS PROJECT SHALL BE DESIGN-BUILD. THE CONTRACTOR SHALL BE REQUIRED TO DESIGN AND DETERMINE ELECTRICAL WORK REQUIRED FOR COMPLETE INSTALLATION INCLUDING, BUT NOT LIMITED TO, INSTALLATION OF CONTROL PANEL, HIGH LEVEL FLOAT, SUBMERSIBLE LEVEL TRANSDUCER, POWER AND CONTROL WIRING, CONDUITS, AND CONNECTION TO EX. 480-VOLT, 3-PHASE POWER SUPPLY. CONTRACTOR SHALL COORDINATE START-UP, TESTING, AND OPERATION OF THE NEW PUMP SYSTEM WITH THE PUMP SYSTEM SUPPLIER REPRESENTATIVE. ALL ELECTRICAL WORK SHALL BE PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR.
4. CONTROL PANEL SHALL BE PROVIDED IN 316 SS NEMA 4X ENCLOSURE AND MOUNTED TO EX. CONC. SLAB WITH 316 SS UNISTRUTS OR APPROVED EQUAL. TOP OF CONTROL PANEL ENCLOSURE SHALL NOT EXCEED 60" ABOVE TOP OF CONC. SLAB.
5. SEE SHEET C-3 FOR CONTROL PANEL EXAMPLE. CONTRACTOR SHALL BE RESPONSIBLE TO DESIGN AND FABRICATE CONTROL PANEL SIMILAR TO CONTROL PANEL EXAMPLE ON SHEET C-3 IN ACCORDANCE WITH PUMP MANUFACTURER'S RECOMMENDATIONS AND REQUIREMENTS.
6. ALL ABOVE-GROUND PIPING (EXCLUDING VALVES) SHALL BE PAINTED WITH TWO COATS OF WEATHER RESISTANT PAINT.
7. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE OSHA REGULATIONS WITH REGARD TO WORKING IN CONFINED SPACES INCLUDING, BUT NOT LIMITED TO, USE OF AIR HANDLERS, AIR QUALITY MONITORING DEVICES, AND NECESSARY SAFETY PERSONNEL AND EQUIPMENT.
8. START-UP, TESTING, AND TRAINING SHALL BE PROVIDED BY CERTIFIED MANUFACTURER'S REPRESENTATIVES.

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MANELE SMALL BOAT HARBOR SEWAGE LIFT STATION REPAIR					
LIFT STATION REPAIR PLAN					
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CHIEF ENGINEER			DATE		
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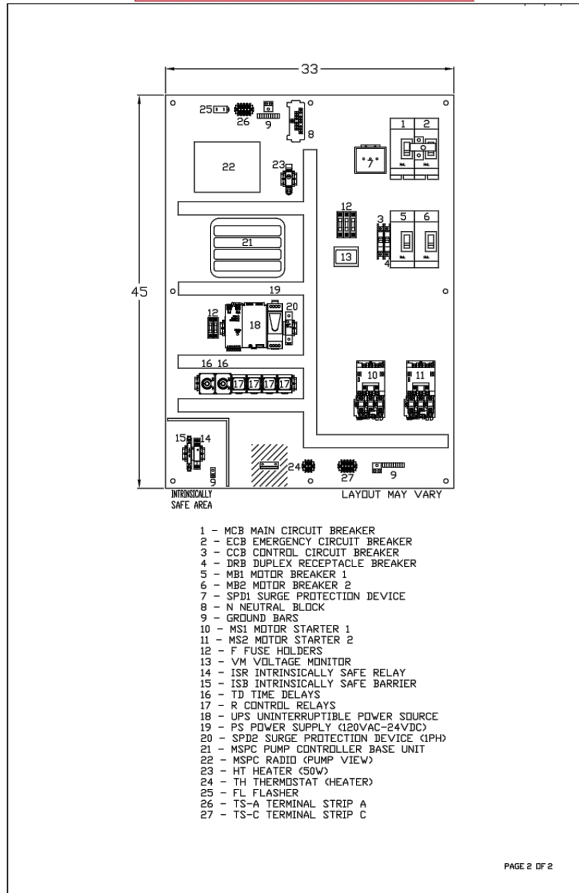
EXAMPLE ONLY. NOT FOR CONSTRUCTION.



- 1 - MCB MAIN CIRCUIT BREAKER
- 2 - ECB EMERGENCY CIRCUIT BREAKER
- 3 - CCB CONTROL CIRCUIT BREAKER
- 4 - DRB DUPLEX RECEPTACLE BREAKER
- 5 - MBI MOTOR BREAKER 1
- 6 - MBE MOTOR BREAKER 2
- 7 - MSPC PUMP CONTROLLER DISPLAY
- 8 - RL1 PUMP 1 RUN LIGHT
- 9 - RL2 PUMP 2 RUN LIGHT
- 10 - ETM ELAPSED TIME METER 1
- 11 - ETM ELAPSED TIME METER 2
- 12 - MCI MINICAS 1
- 13 - MCI MINICAS 2
- 14 - HDA HAND OFF AUTO SWITCH PUMP 1
- 15 - HDA HAND OFF AUTO SWITCH PUMP 2
- 16 - DR DUPLEX RECEPTACLE
- 17 - AL ALARM LIGHT
- 18 - AH ALARM HORN
- 19 - ASB ALARM SILENCE PUSH BUTTON
- 20 - GR GENERATOR RECEPTACLE

PAGE 1 OF 2

EXAMPLE ONLY. NOT FOR CONSTRUCTION.



- 1 - MCB MAIN CIRCUIT BREAKER
- 2 - ECB EMERGENCY CIRCUIT BREAKER
- 3 - CCB CONTROL CIRCUIT BREAKER
- 4 - DRB DUPLEX RECEPTACLE BREAKER
- 5 - MBI MOTOR BREAKER 1
- 6 - MBE MOTOR BREAKER 2
- 7 - SPD SURGE PROTECTION DEVICE
- 8 - N NEUTRAL BLOCK
- 9 - GROUND BARS
- 10 - MSI MOTOR STARTER 1
- 11 - MS2 MOTOR STARTER 2
- 12 - F FUSE HOLDERS
- 13 - VM VOLTAGE MONITOR
- 14 - ISR INTRINSICALLY SAFE RELAY
- 15 - ISB INTRINSICALLY SAFE BARRIER
- 16 - TD TIME DELAYS
- 17 - R CONTROL RELAYS
- 18 - UPS UNINTERRUPTIBLE POWER SOURCE
- 19 - PS PDCV POWER SUPPLY (120VAC-24VDC)
- 20 - SPD SURGE PROTECTION DEVICE (SPD)
- 21 - MSPC PUMP CONTROLLER BASE UNIT
- 22 - MSPC RADII (PUMP VIEW)
- 23 - HT HEATER (50V)
- 24 - TH THERMOSTAT (HEATER)
- 25 - FL FLASHER
- 26 - TS-A TERMINAL STRIP A
- 27 - TS-C TERMINAL STRIP C

PAGE 2 OF 2

CONTROL PANEL DETAIL
(NOT TO SCALE)

Dimensions

Basic Valve with Lever Actuator

Valve Size	Dimensions					
	F	H	J	L	M	N
2"	3.0	1.88	5.78	15.06	14.78	8.00
3"	3.75	2.00	7.75	21.78	17.75	11.88
4"	4.50	2.00	9.75	29.80	23.80	15.88
6"	5.50	2.25	12.00	39.00	31.00	20.00
8"	6.50	2.50	14.50	49.00	41.00	24.00
10"	7.50	2.75	17.00	59.00	51.00	28.00
12"	8.50	3.00	19.50	69.00	61.00	32.00
15"	10.00	3.25	23.00	83.00	73.00	36.00
20"	12.00	3.50	27.00	101.00	89.00	42.00
24"	14.00	3.75	31.00	119.00	105.00	48.00
30"	16.00	4.00	35.00	137.00	121.00	54.00
36"	18.00	4.25	39.00	155.00	137.00	60.00
42"	20.00	4.50	43.00	173.00	153.00	66.00
48"	22.00	4.75	47.00	191.00	169.00	72.00
60"	26.00	5.25	55.00	227.00	203.00	84.00

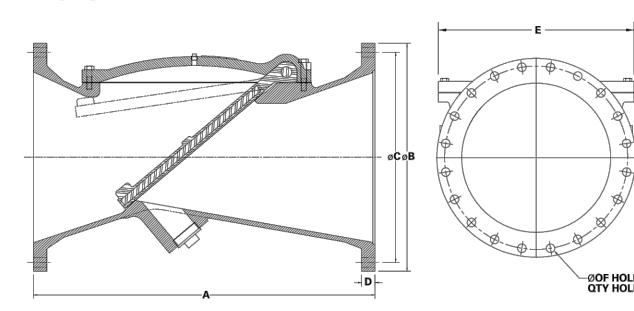
Basic Valve with Handwheel Actuator

Valve Size	Dimensions					
	F	H	J	L	M	N
2"	3.0	1.88	4.00	14.00	12.00	8.00
3"	3.75	2.00	5.75	19.00	16.00	10.00
4"	4.50	2.00	7.50	24.00	21.00	12.00
6"	5.50	2.25	9.50	31.00	27.00	15.00
8"	6.50	2.50	11.50	38.00	33.00	18.00
10"	7.50	2.75	13.50	45.00	39.00	21.00
12"	8.50	3.00	15.50	52.00	45.00	24.00
15"	10.00	3.25	18.00	61.00	53.00	28.00
20"	12.00	3.50	21.00	73.00	63.00	32.00
24"	14.00	3.75	24.00	85.00	73.00	36.00
30"	16.00	4.00	27.00	97.00	83.00	40.00
36"	18.00	4.25	30.00	109.00	93.00	44.00
42"	20.00	4.50	33.00	121.00	103.00	48.00
48"	22.00	4.75	36.00	133.00	113.00	52.00
60"	26.00	5.25	42.00	157.00	133.00	60.00

www.dezurik.com

Dimensions

Body Style 100



Valve Size	A	B	C	D	No. of Flange Bolts	Bolt Hole Size	E
2"	8.00	6.00	6.75	6.00	4	0.75	5.25
3"	10.00	7.00	7.75	7.00	4	0.75	6.00
4"	12.00	8.00	8.75	8.00	4	0.75	6.75
6"	15.00	10.00	11.00	10.00	6	0.75	8.75
8"	18.00	12.00	13.00	12.00	8	0.75	10.75
10"	21.00	14.00	15.00	14.00	8	0.75	12.75
12"	24.00	16.00	17.00	16.00	8	0.75	14.75
15"	27.00	18.00	19.00	18.00	12	1.00	16.75
20"	33.00	22.00	23.00	22.00	12	1.00	20.75
24"	39.00	26.00	27.00	26.00	16	1.25	24.75
30"	45.00	30.00	31.00	30.00	20	1.50	30.75
36"	51.00	34.00	35.00	34.00	24	1.75	36.75
42"	57.00	38.00	39.00	38.00	28	2.00	42.75
48"	63.00	42.00	43.00	42.00	32	2.25	48.75
60"	75.00	50.00	51.00	50.00	40	2.50	58.75

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KNIFE GATE VALVE DETAIL
(NOT TO SCALE)

SWING CHECK VALVE DETAIL
(NOT TO SCALE)

NOTES:

- 4" KNIFE GATE VALVE SHALL BE DEZURIK MODEL KGC-ES OR APPROVED EQUAL WITH 316 SS BODY, 316 SS GATE, EPDM SEAT MATERIAL, F1 END CONNECTION, ASP SELF-ADJUSTING PACKING, AND HANDWHEEL ACTUATOR WITH 304 SS YOKE.
- 4" SWING CHECK VALVE SHALL BE DEZURIK MODEL CRF-100 RUBBER FLAPPER SWING CHECK VALVE OR APPROVED EQUAL WITH DISC POSITION INDICATOR, NBR FLAPPER MATERIAL, F1 END CONNECTION, AND DUCTILE IRON BODY.
- CONTROL PANEL SHALL INCLUDE, BUT NOT BE LIMITED TO, FLYGT MULTI-SMART CONTROL PANEL (OR APPROVED EQUAL) MOUNTED TO CONTROL PANEL ENCLOSURE DOOR, FLASHING ALARM BEACON MOUNTED TO TOP OF ENCLOSURE, AUDIBLE ALARM HORN MOUNTED TO SIDE OF ENCLOSURE, ALARM SILENCE PUSH BUTTON MOUNTED TO SIDE OF ENCLOSURE, HAND-OFF-AUTO SWITCHES, DUPLEX RECEPTACLE, PUMP RUN-TIME METERS, CIRCUIT BREAKERS, 3-POINT LATCH ON ENCLOSURE DOOR, RELAYS, MOTOR STARTERS, VOLTAGE MONITOR, 120VAC-24VDC POWER SUPPLY, UNINTERRUPTED POWER SUPPLY, AND AUXILIARY GENERATOR RECEPTACLE.
- ELECTRICAL WORK: ELECTRICAL WORK FOR THIS PROJECT SHALL BE DESIGN-BUILD. THE CONTRACTOR SHALL BE REQUIRED TO DESIGN AND DETERMINE ELECTRICAL WORK REQUIRED FOR COMPLETE INSTALLATION INCLUDING, BUT NOT LIMITED TO, INSTALLATION OF CONTROL PANEL, HIGH LEVEL FLOAT, SUBMERSIBLE LEVEL TRANSDUCER, POWER AND CONTROL WIRING, CONDUITS, AND CONNECTION TO EX. 480-VOLT, 3-PHASE POWER SUPPLY. CONTRACTOR SHALL COORDINATE START-UP, TESTING, AND OPERATION OF THE NEW PUMP SYSTEM WITH THE PUMP SYSTEM SUPPLIER REPRESENTATIVE. ALL ELECTRICAL WORK SHALL BE PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR IN ACCORDANCE WITH ALL APPLICABLE ELECTRICAL BUILDING CODES.
- CONTROL PANEL SHALL BE PROVIDED IN 316 SS NEMA 4X ENCLOSURE AND MOUNTED TO EX. CONC. SLAB WITH 3136 SS UNISTRUTS OR APPROVED EQUAL. TOP OF CONTROL PANEL ENCLOSURE SHALL NOT EXCEED 60" ABOVE TOP OF CONC. SLAB.

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					C-3