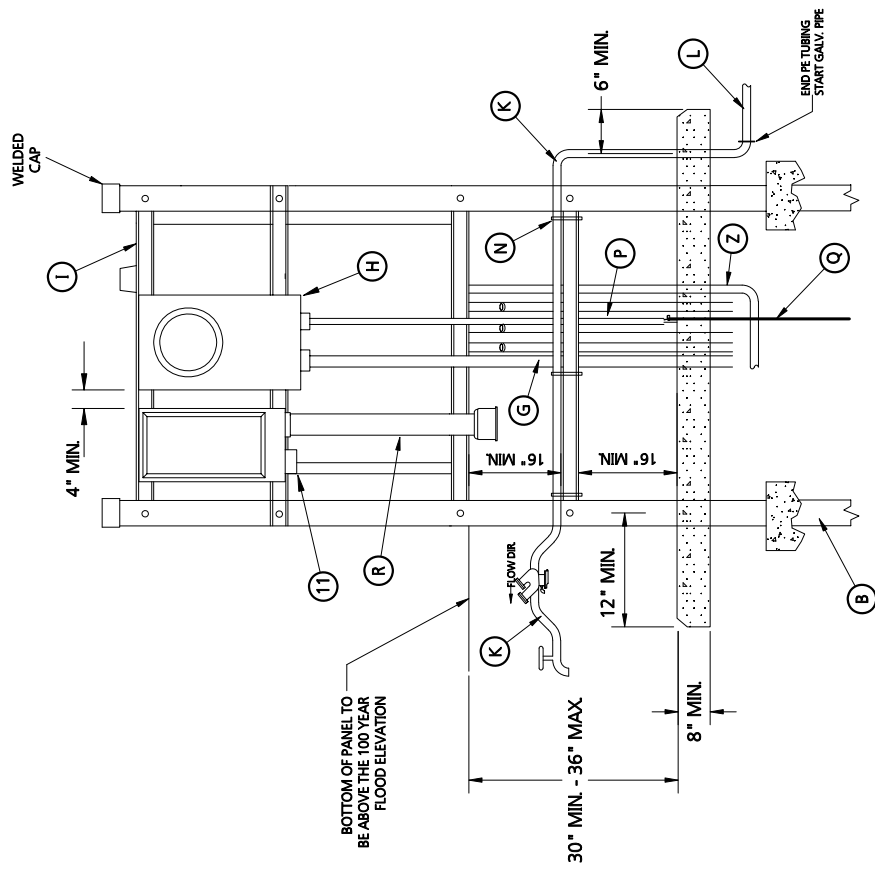


ISSUE DATE JANUARY 1st, 2008

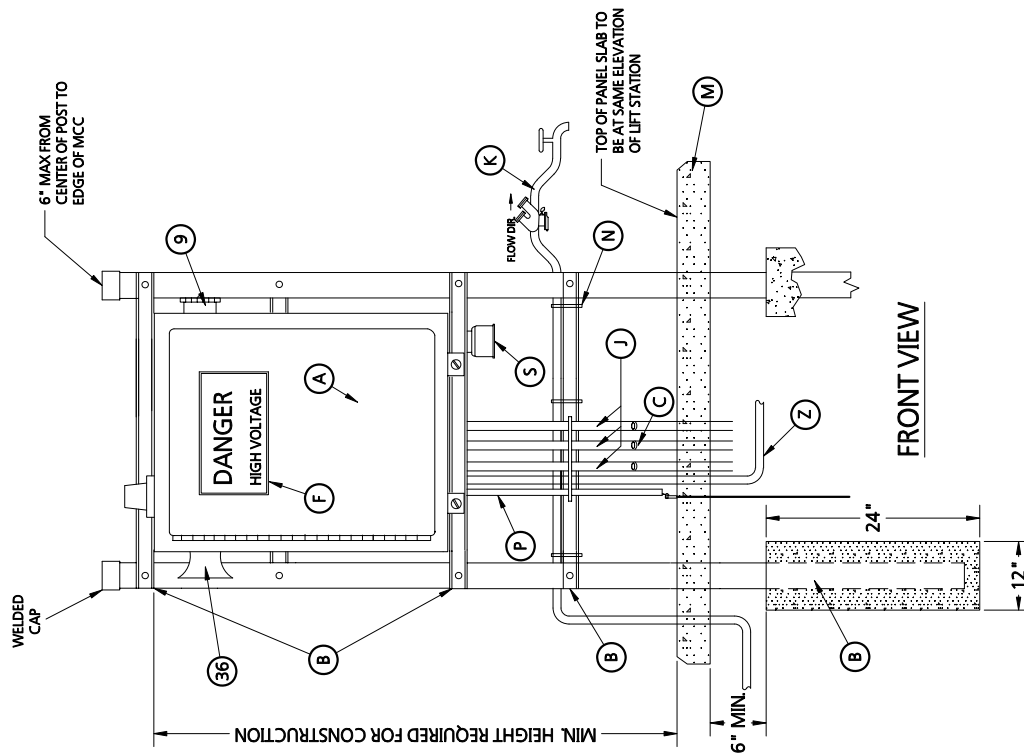
SECTION 5C

240V 1PHASE W/TCU AND VFD





BACK VIEW



FRONT VIEW

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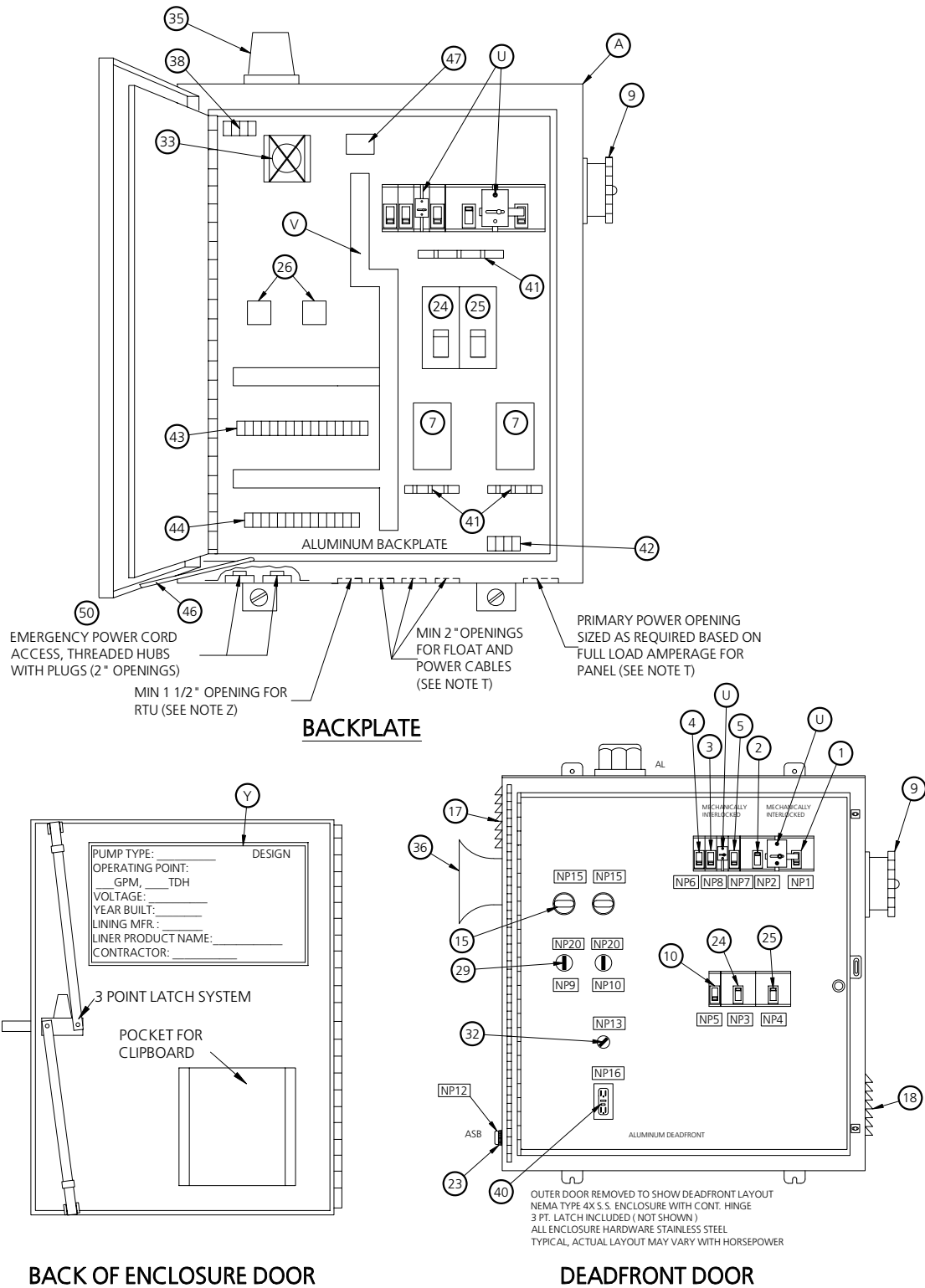
CONTROL PANEL MOUNTING

CHARLOTTE COUNTY UTILITIES

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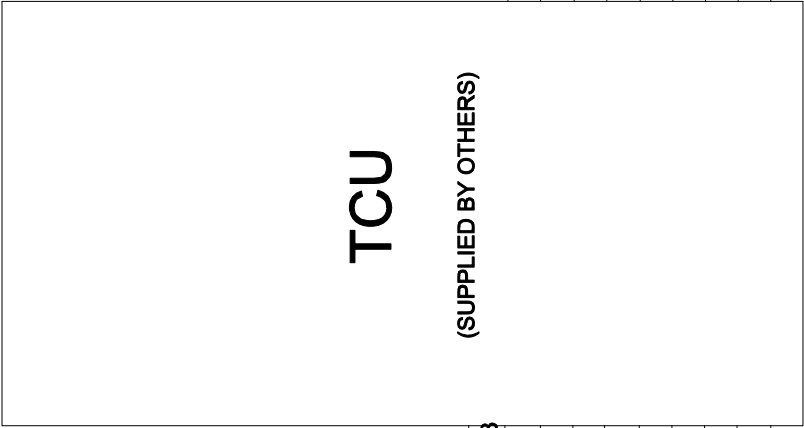
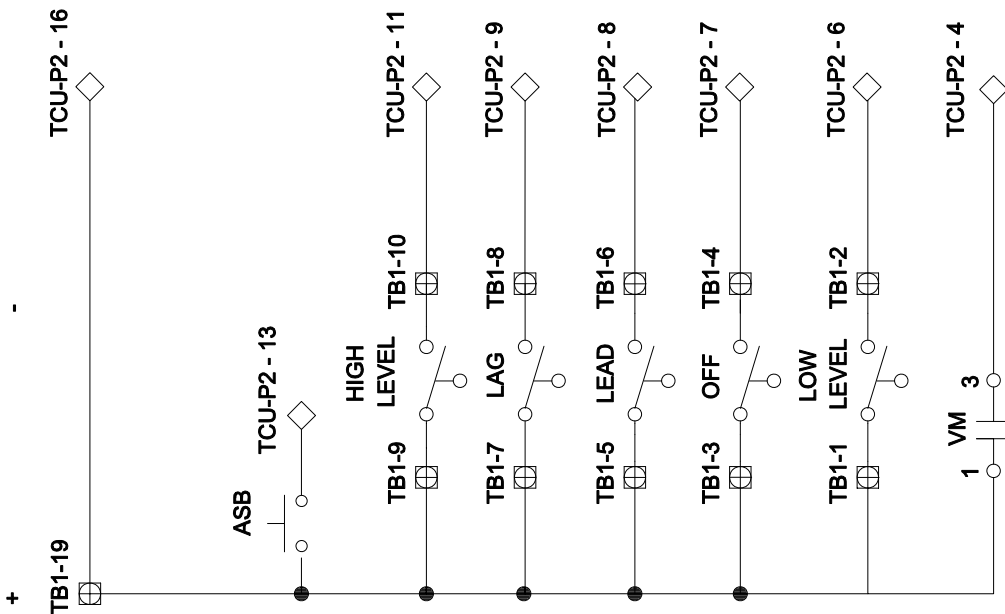
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CONTROL PANEL LAYOUT

CHARLOTTE COUNTY UTILITIES

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(24VDC BY OTHERS)



- ◇ MS POWER P2 - 24
- ◇ ALARM SILENCE P2 - 13
- ◇ HI-LEVEL P2 - 11
- ◇ LAG PUMP ON P2 - 9
- ◇ LEAD PUMP ON P2 - 8
- ◇ PUMPS OFF P2 - 7
- ◇ LOW LEVEL P2 - 6
- ◇ PM BYPASS P2 - 4
- ◇ M2 INPUT LEAD P2 - 2
- ◇ M1 INPUT LEAD P2 - 1

- ◇ M1 START P1 - 23
- ◇ M2 START P1 - 22
- ◇ ALARM LIGHT P1 - 17
- ◇ ALARM POWER P1 - 18
- ◇ ALARM BELL P1 - 16
- ◇ FLOAT COM P1 - 16
- ◇ PHASE A* P1 - 3
- ◇ PHASE B* P1 - 2
- ◇ PHASE C* P1 - 1

TERMINAL LEGEND

- ◇ - TERMINAL BLOCK
- ◇ - TERMINAL PCM (MATCHES PCM PIN #'S)

DATE: 1/1/2008

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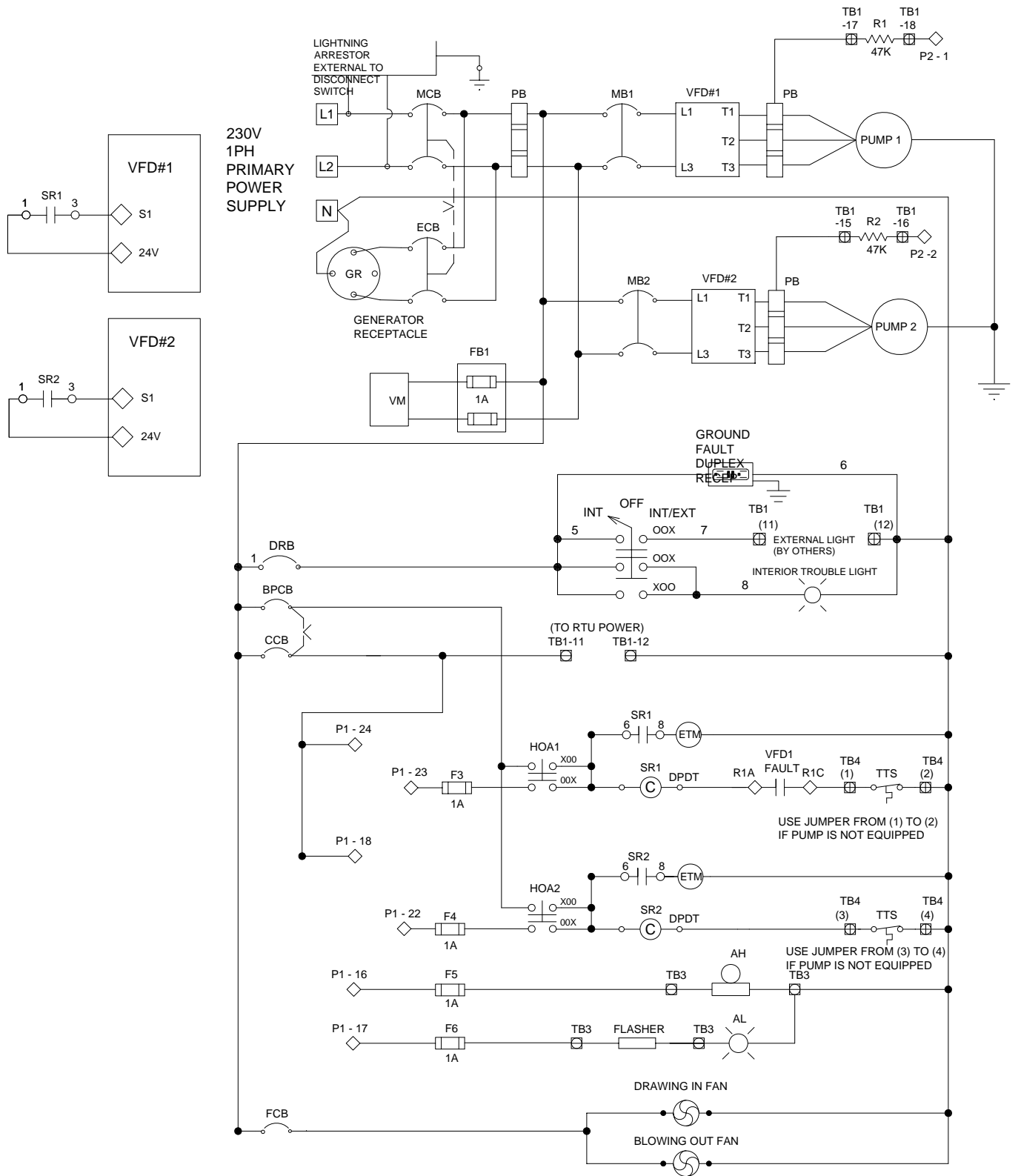
TCU LAYOUT

CHARLOTTE COUNTY UTILITIES

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NUMBER: LS-230V1PHRTU-4



DATE: 1/1/2008

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CONTROL PANEL SCHEMATIC

CHARLOTTE COUNTY UTILITIES

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NUMBER: LS-230V1PHRTU-5

EQUIPMENT PANEL LEGEND

AB -ALARM BELL		GR -GENERATOR RECEPTACLE
AC -AIR COMPRESSOR		HOA -HAND-OFF-AUTO SELECTOR SWITCH
AH -ALARM HORN		MB -MOTOR BREAKER
AL -ALARM LIGHT		MCB -MAIN CIRCUIT BREAKER
ASB -ALARM SILENCE BUTTON		MS -MOTOR STARTER
BPCB -BYPASS CIRCUIT BREAKER		OL -OVERLOAD
CCB -CONTROL CIRCUIT BREAKER		PCM -PUMP CONTROL MODULE
DPDT -DOUBLE POLE DOUBLE THROW		PB -POWER BLOCK
DRB -DUPLEX RECEPTACLE BREAKER		PL PILOT LIGHT
ECB -EMERGENCY CIRCUIT BREAKER		PM -PHASE MONITOR
ETM -ELAPSED TIME METER		PSB -PUSH BUTTON
F -FUSE		R -RELAY
FB -FUSE BLOCK		RL -RUNNING LIGHT
FCB -FAN CIRCUIT BREAKER		SR -STARTER RELAY
FL -FLASHER		TB -TERMINAL BLOCK
FR -FLOAT REGULATOR		TTS -TYPICAL THERMAL SWITCH
FTS -FLOAT TEST SWITCH		VFD -VARIABLE FREQUENCY DRIVE
GFDR -GROUND FAULT DUPLEX RECEPTACLE		VM -VOLTAGE MONITOR
GND -GROUND		XDUCER -TRANSDUCER
		XFMR -TRANSFORMER

DATE: 1/1/2008

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EQUIPMENT LEGEND

CHARLOTTE COUNTY UTILITIES

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NUMBER: LS-230V1PHRTU-3

EQUIPMENT SPECIFICATION 240 1PH-TCU W / VFD

ITEM NO.	ABBREV.	PART	QUANTITY	DESCRIPTION
1	ECB	EMERGENCY CIRCUIT BREAKER	1	SQ-D FAL ____ 3-POLE ____ A
2	MCB	MAIN CIRCUIT BREAKER	1	SQ-D FAL ____ 3-POLE ____ A
3	BPCB	BYPASS CONTROL CIRCUIT BREAKER	1	SQ-D FAL ____ 1-POLE 15 AMP
4	DRB	DUPLEX RECEPTICAL BREAKER W/GFI	1	SQ-D FAL ____ 1-POLE 15 AMP
5	CCB	CONTROL CIRCUIT BREAKER	1	SQ-D FAL ____ 1-POLE 15 AMP
6				
7	VFD	VARIABLE FREQUENCY DRIVE	2	MOTOR TRONICS #VCH (SIZE ____)
8	FL	FLASHER	1	SSAC FS-126
9	GR	GENERATOR RECEPTACLE	1	RUSSELSTOLL DS2414MP000 480V 304 S.S. LOCKING HASP
10	FCB	FAN CIRCUIT BREAKER	1	SQ-D FAL ____ 1-POLE 15 AMP
11	LA	LIGHTNING ARRESTER	1	SQ-D #SP3650 650 V, 3PH
12				
13		PUMP MOTOR		
14	FB	FUSE BLOCK		
15	ETM	ELAPSED TIME METER	2	ETMAC 200-10NG7 ROUND MOUNT
16				
17		INTAKE FAN	1	
18		EXHAUST FAN	1	
19	OL	OVERLOAD HEATER (IN PANEL)		SQ-D ____ , ____ , ____
20				
21				
22				
23	ASB	ALARM SILENCE BUTTON	1	SIEMENS-ALLIS 3SB02-PFB10 OR SQ-D SKRIRH13
24	MB	MOTOR BREAKER PUMP #1	1	SQ-D FAL ____ 3-POLE ____ A
25	MB	MOTOR BREAKER PUMP #2	1	SQ-D FAL ____ 3-POLE ____ A
26	SR	STARTER RELAY	2	DAYTON 8 - PIN, 120 VAC 50/60 HZ
27				
28				
29	HOA	HAND-OFF-AUTO SWITCH	2	SQUARE"D" SWITCH CSS0001SKS43B CONTACT BLOCK-CT9001KA-1 LEDGEN 9001KN2G0SP
30				
31	FR	FLOAT REGULATOR		ROTO-FLOAT TYPE S, LIQUID LEVEL SENSOR
32	TLS	TROUBLE LIGHT SWITCH INT. & EXT.	1	SQ-D SKSF43BH2 & KA1
33	TL	TROUBLE LIGHT	1	LEVITON 9880 (40 WATT BULB)
34				
35	AL	ALARM LIGHT	1	INGRAM LRX-40 or OHIO ELECTRIC RL-3K
36	AH	ALARM HORN	1	ALA-876-N5. EDWARDS
37				
38	TB	TERMINAL BLOCK #3	1	
39				
40	GFDR	GROUND FAULT DUPLEX RECEPTACLE	1	
41	PB	POWER BLOCK	1	
42	TB	TERMINAL BLOCK #4	1	
43	TB	TERMINAL BLOCK #2 (RTU)	1	
44	TB	TERMINAL BLOCK #1	1	
45		LATCH, DEADFRONT DOOR	1	SOUTHCO 62-10-201-10
46		DOOR BAR WIND RESTRAINT	1	
47	NB	NEUTRAL BLOCK	1	GB-1 WEIDMULLER
48				
49				
50	TH	THREADED HUBS WITH PLUGS		

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EQUIPMENT SPECIFICATION

CHARLOTTE COUNTY UTILITIES

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NUMBER: LS-230V1PHRTU-7

LABEL SPECIFICATION

ITEM NO.	LABEL INSCRIPTION	QUANTITY	BACKGROUND COLOR
NP1	ECB	1	RED
NP2	MCB	1	BLACK
NP3	MB#1	1	BLACK
NP4	MB#2	1	BLACK
NP5	EFCB	1	BLACK
NP6	DRB	1	BLACK
NP7	CCB	1	BLACK
NP8	BPCB	1	BLACK
NP9	PUMP#1	1	BLACK
NP10	PUMP#2	1	BLACK
NP12	ASB	1	RED
NP13	TLS	1	BLUE
NP14			
NP15	ETN #1	1	BLUE
NP15	ETM #2		BLUE
NP16	GFDR	1	BLUE
NP17	No. 1 RUN	1	GREEN
NP18	No. 2 RUN	1	GREEN
NP20	HOR	1	BLUE
NP21		1	BLUE
NP22		1	BLUE
NP23		1	BLUE
NP24		1	BLUE
NP25		1	BLUE
NP26		1	BLUE

- LABELS SHALL BE LAMINATED PLASTIC WITH WHITE 1/4" HIGH ENGRAVED LETTERS.
- BACKGROUND COLOR OF LABELS SHALL BE AS INDICATED ABOVE.
- LABELS SHALL BE ATTACHED WITH PERMANENT ADHESIVE.
- ALL WIRES WITHIN THE CONTROL PANEL SHALL BE STRANDED WIRE AND BE PERMANETLY NUMBERED

DATE: 1/1/2008	<h1>LABEL SPECIFICATION</h1> <h2>CHARLOTTE COUNTY UTILITIES</h2>	PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN CCU APPROVAL.
DRAWN BY: DEC		PAGE No. 80
APPROVED BY: TGD		NUMBER: LS-LBL-SPEC

CONTROL PANEL MOUNTING NOTES

A	CONTROL PANEL ENCLOSURE SHALL BE TYPE 304 STAINLESS, WITH ALUMINUM DEADFRONT DOOR AND BACKPLATE. ENCLOSURE SHALL BE, NEMA 4X GASKETED TYPE WITH PADLOCKABLE HASP. THREE POINT LATCH SYSTEM AND WIND RESTRAINER ARM THAT INCLUDES HARDWARE TO RESTRAIN DEAD FRONT DOOR WHEN OPEN. ALL METAL COMPONENTS OF LATCH SYSTEM AND RESTRAINER TO BE MANUFACTURED OF TYPE 304 STAINLESS STEEL.
B	TWO (2) 4" DIAMETER ALUMINUM PIPE SCH 80 WITH 4" WELDED ALUMINUM CAP. PIPESHALL BE A MINIMUM OF 10 FEET LONG WITH A MIN. OF 4' BURIED PIPE SHALL BE ANCHORED IN CONCRETE FROM 3" BELOW BOTTOM OF PIPE TO ONE FOOT BELOW FINISHED GRADE. PIPE SHALL BE FURNISHED WITH TYPE 304 STAINLESS STEEL H-1 7/8" CHANNEL STRUT C/W TYPE 304 S.S. NUTS AND BOLTS TO SUIT. AS SUPPLIED BY B-LINE SYSTEMS OR EQUAL. ISOLATE DISSIMILAR METALS WITH RUBBER GASKETS.
C	"EY6" EXPLOSION PROOF CLASS 1 SEAL-OFF 2" DIA. SEAL WITH NON-HARDENING CONDUIT SEALANT AS APPROVED BY MANUFACTURER FOR TEMPORARY SEAL. (3 REQUIRED)
D	ALL FASTENERS FOR CONSTRUCTION OF THE PANEL ENCLOSURE SHALL BE TYPE 304 S.S. SCREWS, NUTS, BOLTS AND WASHERS.
E	ALL STRUCTURAL OR ELECTRICAL COMPONENTS OF CONTROL PANEL SHALL BE AS SPECIFIED HEREIN AND IN TABLES OR APPROVED EQUAL. ALL ELECTRICAL COMPONENTS AND WIRING SHALL BE IN ACCORDANCE WITH N.E.C. - LATEST REVISION. ANY LOCAL ELECTRIC CODES IN CONFLICT WITH THE DETAIL SHOWN, SHALL BE RESOLVED BY THE ELECTRICAL CONTRACTOR WITH THE APPROVAL OF CCU ENGINEER PRIOR TO CONSTRUCTION.
F	PLASTIC WARNING LABELS STATING "DANGER HIGH VOLTAGE" MUST BE INSTALLED ON THE OUTSIDE OF THE ENCLOSURE DOOR (TO O.S.H.A. SPECIFICATIONS). SECURE LABEL TO DOOR WITH ADHESIVE OR CEMENT.
G	VOLTS, 60 CYCLE, 1 PHASE, NUMBER GAUGE WIRES IN 2" MIN. SCH 80 PVC CONDUIT, TO BE EXTENDED FROM METER TO DISCONNECT. CONTRACTOR TO INSTALL CONDUIT FROM METER CAN TO F.P.L. SERVICE POLE. POWER COMPANY TO CONNECT PRIMARY POWER SERVICE THROUGH UNDERGROUND SERVICE.
H	SERVICE METER'S CAN TO BE INSTALLED BY CONTRACTOR. POWER SUPPLY TO RUN THRU SCH 80 CONDUIT UNDERGROUND FROM METER CAN TO F.P.L. SOURCE BY F.P.L. CONTRACTOR SHALL COORDINATE AND PAY ALL INSTALLATION FEES FOR THE WORK BY F.P.L..
I	AMP, FUSED SAFETY DISCONNECT SWITCH IN NEMA 4X STAINLESS STEEL ENCLOSURE WITH LOCKING PLATE. ELECTRICAL LIGHTNING ARRESTOR SHALL BE SQUARE D. CONTRACTOR TO INSTALL THE EXTERNAL LIGHTING ARRESTOR. POWER SUPPLY TO CONTROL PANEL SHALL EXIT THRU UNDERSIDE.
J	2" CONDUIT FOR CABLES (3 REQUIRED). FROM TOP OF SWEEP TO CONTROL PANEL TO BE 316 STAINLESS STEEL & FROM TOP OF SWEEP TO INSIDE OF WETWELL TO BE PVC SCH. 80. CLAMP TO BOTTOM STRUT OF CONTROL PANEL WITH STAINLESS STEEL CONDUIT CLAMPS.
K	3/4" STAINLESS STEEL PIPE WITH (2) 90° BENDS. BACKFLOW PREVENTER AND HOSE BIB TO BE CLAMPED TO PANEL SUPPORT SYSTEM (3 S.S. CLAMPS MIN.).
L	3/4" POLYETHYLENE TUBING FROM WATER METER.
M	CONSTRUCT 3000 PSI CONCRETE SLAB - 7' X 6' X 6" THICK WITH WIRE MESH REINFORCED.
N	WORM DRIVE CLAMPS (ALL STAINLESS STEEL) (TYPICAL) (3 MINIMUM)
O	NOT USED
P	ONE (1) NUMBER 6 WIRE GROUND IN 1/2" SCH 80 PVC CONDUIT.
Q	3/4" DIAMETER BY 10 FEET LONG COPPER ENCASED STEEL GROUND ROD.
R	THREADED RIGID STAINLESS STEEL CONDUIT. SIZED AS REQUIRED BY FULL LOAD AMPERAGE.
S	CAST ALUMINUM TYPE LB FITTING WITH ALUMINUM CAP.
T	ELECTRICAL CONTRACTOR SHALL INSTALL PROPER HOLES, FITTINGS AND SEALANT TO SUIT REQUIRED CONDUITS.
U	HEAVY DUTY MECHANICAL INTERLOCK FOR EMERGENCY POWER TRANSFER.
V	PANDUIT TO BE FILLED TO ONLY 50% CAPACITY.
W	ELECTRICAL SUPPLY TO LIFT STATION SHALL BE PROVIDED BY UNDERGROUND LINES FROM POLE TO LIFT STATION.
X	SCHEMATIC SHOWN IS BASED ON 230V, 1PH, 3 WIRE PRIMARY POWER SERVICE. PANEL SCHEMATIC AND COMPONENTS MAY VARY WITH USE OF ANOTHER PRIMARY POWER SERVICE. SHOP DRAWINGS, INCLUDING PANEL LAYOUT, SCHEMATIC AND COMPLETE PARTS LIST SHALL BE SUBMITTED TO CHARLOTTE COUNTY UTILITIES FOR APPROVAL PRIOR TO PANAL CONSTRUCTION. ELLIS K. PHILPS & COMPANY, FORT MYERS, FLORIDA IS AN APPROVED COMPONENT VENDOR.
Y	PLASTIC LIFT STATION LABEL WILL BE INSTALLED ON THE INSIDE OF THE ENCLOSURE DOOR. SIGN WILL BE PROVIDED BY CONTRACTOR. SECURE LABEL TO DOOR WITH ADHESIVE OR CEMENT.
Z	1 1/2" PVC SCH 80 CONDUIT FROM CONTROL PANEL TO ANTENNA FOR RTU CONNECTIONS.

DATE: 1/1/2008

DRAWN BY: DEC

APPROVED BY: TGD

CONTROL PANEL MOUNTING NOTES

CHARLOTTE COUNTY UTILITIES

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