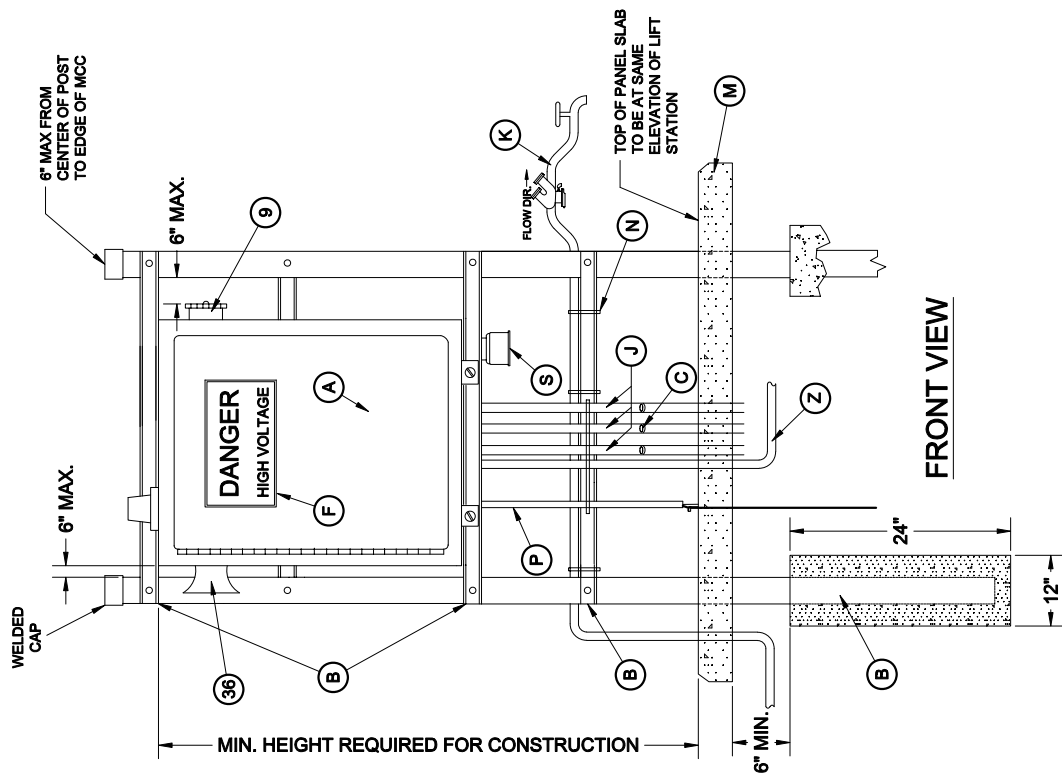
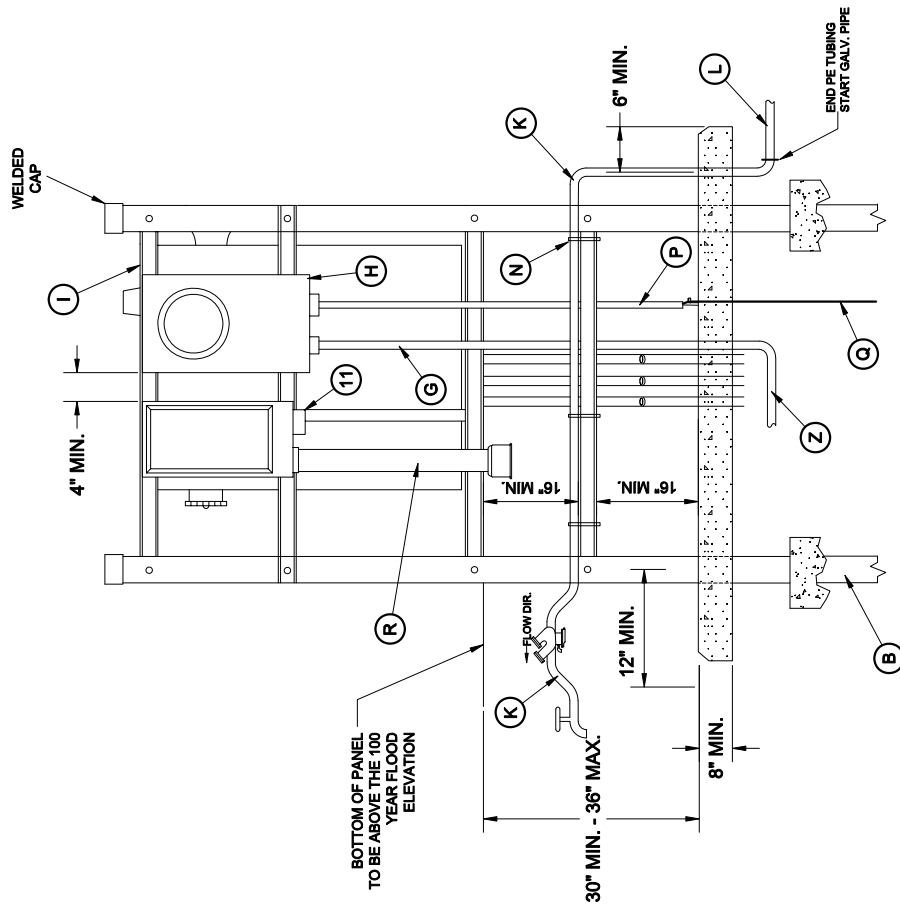


ISSUE DATE JANUARY 1st, 2008

# SECTION 5B

## 240V 3PH W/ TCU





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# CONTROL PANEL MOUNTING

CHARLOTTE COUNTY UTILITIES

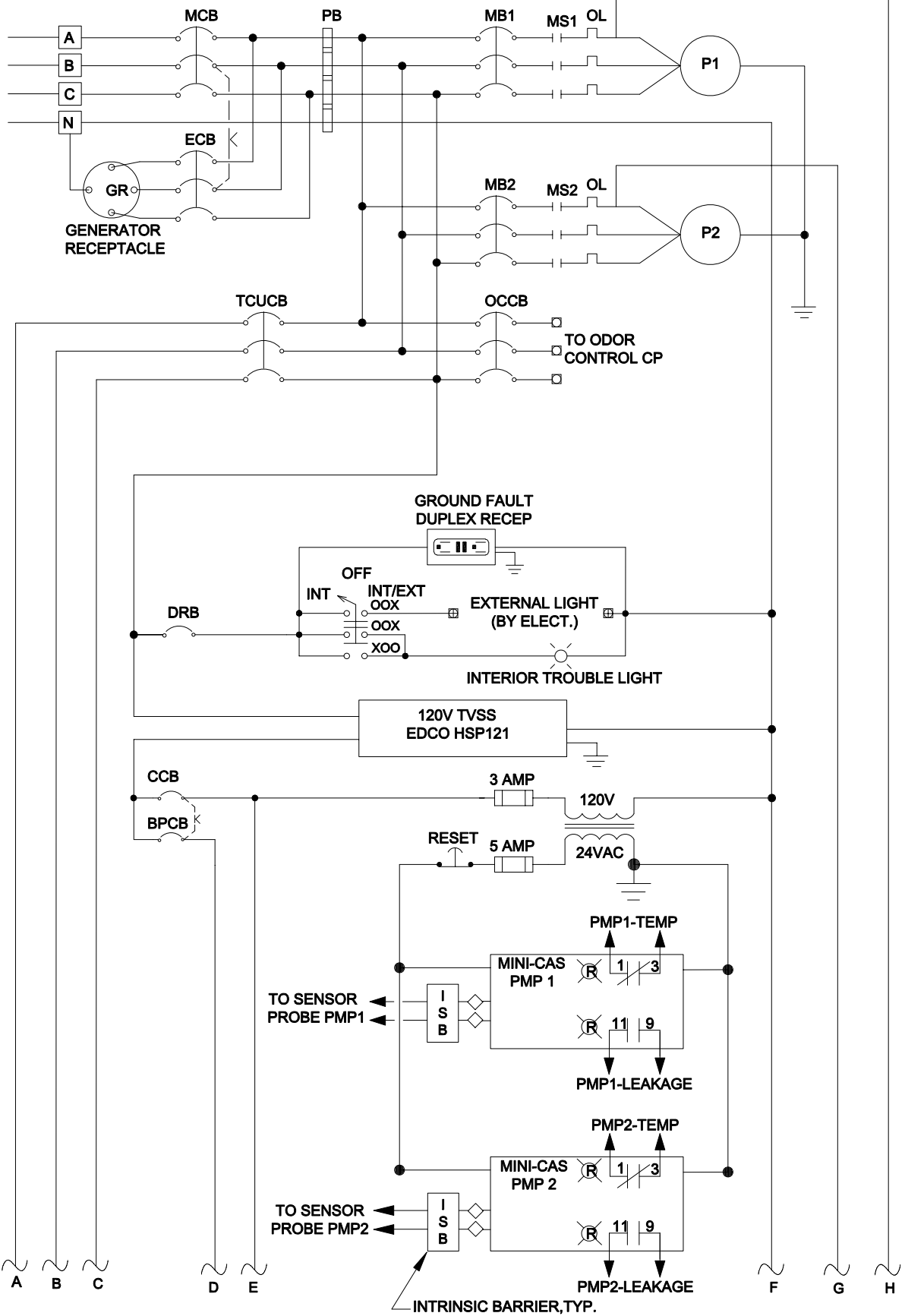
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NUMBER: LS--CP-MOUNTING



240V 3PH  
PRIMARY  
POWER  
SUPPLY



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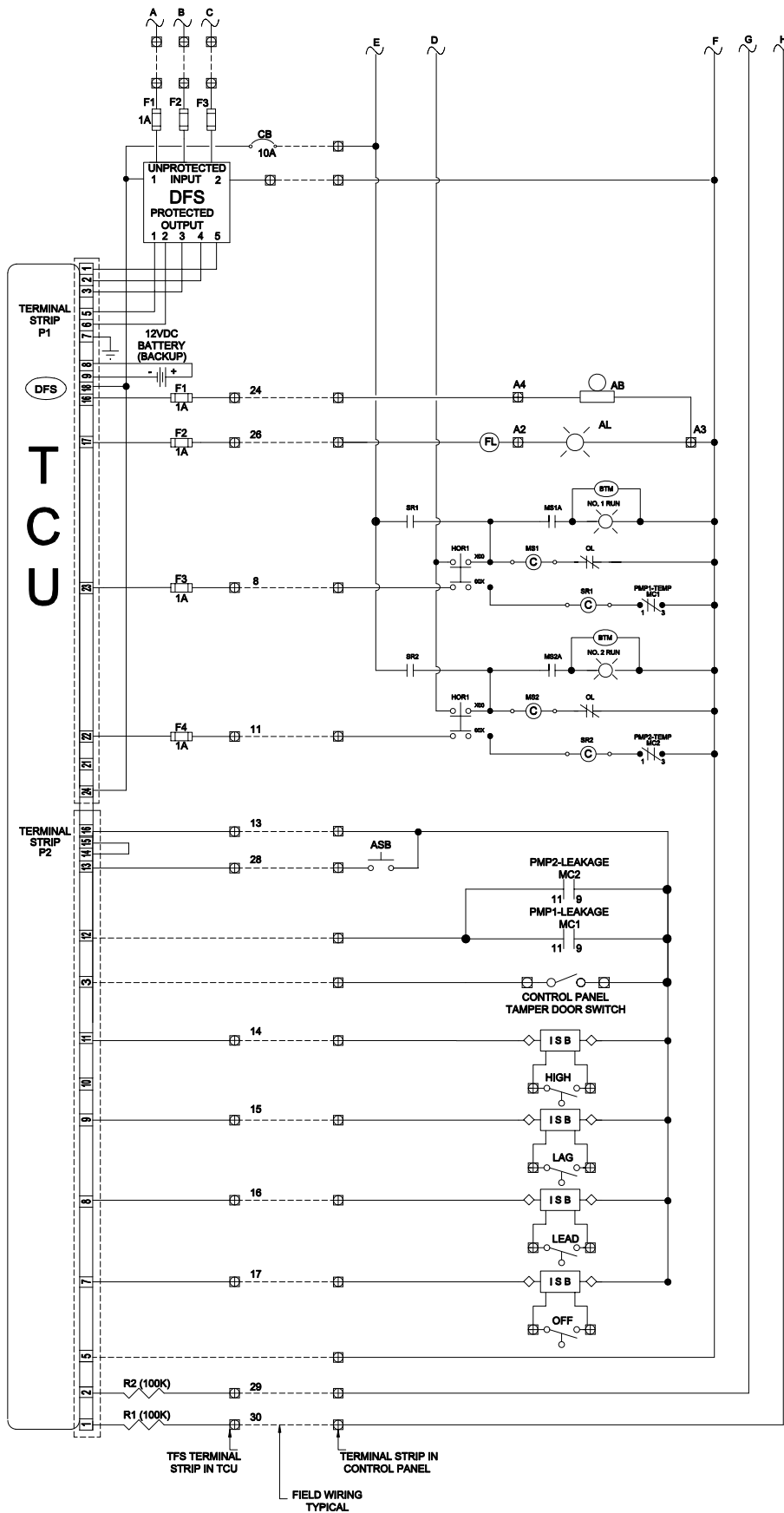
# 240V 3-PHASE CONTROL PANEL SCHEMATIC - 1

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NUMBER: LS-240V-3PH-LS-SCH-1



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# 240V 3-PHASE CONTROL PANEL SCHEMATIC - 2

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NUMBER: LS-240V-3PH-LS-SCH-2

**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                  |

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**LIFT STATION -  
EQUIPMENT PANEL LEGEND  
CHARLOTTE COUNTY UTILITIES**

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NUMBER: LS-EQ-PNL-LGD

**EQUIPMENT SPECIFICATION 240 3PH-TCU**

| 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        | MS      | MOTOR STARTER                    | 2        | SQ-D 8536 _____ (SIZE _____)   |
| 7        | OCCB    | ODOR CONTROL                     | 1        | SQ-D FAL SERIES 3-POLE (VERIFY AMP)  |
| 8        | FL      | FLASHER                          | 1        | SSAC FS-126  |
| 9        | GR      | GENERATOR RECEPTACLE             | 1        | RUSSELSTOLL DS2414MP000 480V 304 S.S. LOCKING HASP                         |
| 10       | ES      | ENTRY SWITCH                     |          |  |
| 11       | LA      | LIGHTNING ARRESTER               | 1        | SQ-D #SP3650 650 V, 3PH  |
| 12       | TCU     | TELEMETRY CONTROL UNIT           | 1        | DATAFLOW TCU   |
| 13       |         | PUMP MOTOR                       |          |  |
| 14       | FB      | FUSE BLOCK                       |          |  |
| 15       | ETM     | ELAPSED TIME METER               | 2        | ETMAC 200-10NG7 ROUND MOUNT  |
| 16       |         |                                  |          |  |
| 17       | CPT     | CONTROL POWER TRANSFORMER        |          |  |
| 18       |         |                                  |          |  |
| 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 #5Z45 W/SOCKET 3 5X852                    |
| 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        | SQ-D 5B364 4PT   |
| 39       |         |                                  |          |  |
| 40       | GFDR    | GROUND FAULT DUPLEX RECEPTACLE   | 1        | 15A-ARROW HART OR LEVITON  |
| 41       | PB      | POWER BLOCK                      | 1        | BUSSMAN # 16021-3  |
| 42       | TB      | TERMINAL BLOCK #4                | 1        | SQ-D 5B364 6PT   |
| 43       | TB      | TERMINAL BLOCK #2 (RTU)          | 1        | SQ-D 5B364 30PT  |
| 44       | TB      | TERMINAL BLOCK #1                | 1        | SQ-D 5B364 12PT  |
| 45       |         |                                  |          |  |
| 46       |         |                                  |          |  |
| 47       | NB      | NEUTRAL BLOCK                    | 1        | GB-1 WEIDMULLER  |
| 48       |         |                                  |          |  |
| 49       | MC      | MOUNTING CHANNEL                 | 4        | SQ-D 9080GH112   |
| 50       | TH      | THREADED HUBS WITH PLUGS         |          | MYERS - 2" ST-5  |

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# EQUIPMENT SPECIFICATION

## CHARLOTTE COUNTY UTILITIES

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PAGE No. 71

NUMBER: LS-EQ-SPEC

**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     | RESET             | 1        | BLUE             |
| NP16     | GFDR              | 1        | BLUE             |
| NP17     | No. 1 RUN         | 1        | GREEN            |
| NP18     | No. 2 RUN         | 1        | GREEN            |
|          |                   |          |                  |
| NP20     | HOR               | 1        | BLUE             |
| NP21     | OCCB              | 1        | BLACK            |

- 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

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**LABEL SPECIFICATION**

**CHARLOTTE COUNTY UTILITIES**

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NUMBER: LS-LBL-SPEC

# CONTROL PANEL MOUNTING NOTES

|          |   |
|----------|---|
| <b>A</b> | 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>B</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. |
| <b>C</b> | "EY6" EXPLOSION PROOF CLASS 1 SEAL-OFF 2" DIA. SEAL WITH NON-HARDENING CONDUIT SEALANT AS APPROVED BY MANUFACTURER FOR TEMPORARY SEAL. (3 REQUIRED)   |
| <b>D</b> | ALL FASTENERS FOR CONSTRUCTION OF THE PANEL ENCLOSURE SHALL BE TYPE 304 S.S. SCREWS, NUTS, BOLTS AND WASHERS.   |
| <b>E</b> | 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.   |
| <b>F</b> | 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.   |
| <b>G</b> | 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.   |
| <b>H</b> | 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..  |
| <b>I</b> | 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.  |
| <b>J</b> | 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.  |
| <b>K</b> | 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.).   |
| <b>L</b> | 3/4" POLYETHYLENE TUBING FROM WATER METER.  |
| <b>M</b> | CONSTRUCT 3000 PSI CONCRETE SLAB - 7' X 6' X 6" THICK WITH WIRE MESH REINFORCED.  |
| <b>N</b> | WORM DRIVE CLAMPS (ALL STAINLESS STEEL) (TYPICAL) (3 MINIMUM)   |
| <b>O</b> | 1" PVC SCH 80 CONDUIT FROM CONTROL PANEL TO ANTENNA FOR EXTERIOR LIGHT.   |
| <b>P</b> | ONE (1) NUMBER 6 WIRE GROUND IN 1/2" SCH 80 PVC CONDUIT.  |
| <b>Q</b> | 3/4" DIAMETER BY 10 FEET LONG COPPER ENCASED STEEL GROUND ROD.  |
| <b>R</b> | THREADED RIGID STAINLESS STEEL CONDUIT. SIZED AS REQUIRED BY FULL LOAD AMPERAGE.  |
| <b>S</b> | CAST ALUMINUM TYPE LB FITTING WITH ALUMINUM CAP.  |
| <b>T</b> | ELECTRICAL CONTRACTOR SHALL INSTALL PROPER HOLES, FITTINGS AND SEALANT TO SUIT REQUIRED CONDUITS.   |
| <b>U</b> | HEAVY DUTY MECHANICAL INTERLOCK FOR EMERGENCY POWER TRANSFER.   |
| <b>V</b> | PANDUIT TO BE FILLED TO ONLY 50% CAPACITY.  |
| <b>W</b> | ELECTRICAL SUPPLY TO LIFT STATION SHALL BE PROVIDED BY UNDERGROUND LINES FROM POLE TO LIFT STATION.   |
| <b>X</b> | 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.   |
| <b>Y</b> | 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.  |
| <b>Z</b> | 1 1/2" PVC SCH 80 CONDUIT FROM CONTROL PANEL TO ANTENNA FOR RTU CONNECTIONS.  |

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## MOUNTING NOTES

### CHARLOTTE COUNTY UTILITIES

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NUMBER: LS-LGD-NOTES