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# COX

Research and Technology, Inc.

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## TRIPLEX VFD / SOFT START WITH EXTERNAL VFD CONTROL PANEL

Cox Research and Technology, Inc.  
14697 S. Harrells Ferry Road  
Baton Rouge, LA. 70816  
(225) 756-3271 Fax (225) 755-1030

|                                  |               |  |
|----------------------------------|---------------|--|
| VOLTAGE                          | 277/480V      | (480V, 277/480V, 240V, 120/240V, 208V, 120/208V) |
| PHASE/HZ                         | 3/60          |  |
| NO. MOTORS                       | 3             |  |
| HP                               | 75            |  |
| FLA                              | 91            |  |
| TYPE OF PUMP                     | Submersible   | (Self-Priming, Submersible)                      |
| MANUFACTURER                     | Gorman Rupp   |  |
| CATALOG NUMBER                   |               |  |
|                                  |               |  |
| CONTROL VOLTAGE                  | 120V          | (120V, Other)                                    |
| ENCLOSURE                        | NEMA 3R       | (NEMA 1, NEMA 3R, NEMA 4, NEMA 4X)               |
| ENCLOSURE MATERIAL               | Painted Steel | (Painted Steel, Stainless Steel, Fiberglass)     |
| CONTROL SENSOR                   | Transducer    | (Floats, Bubbler, Other)                         |
| CAPACITORS                       | No            | (Yes, No)  |
| CAPACITOR WIRING FIGURE          | N/A           |  |
| THERM. & SEAL FAIL WIRING FIGURE |               |  |

OPTIONS:

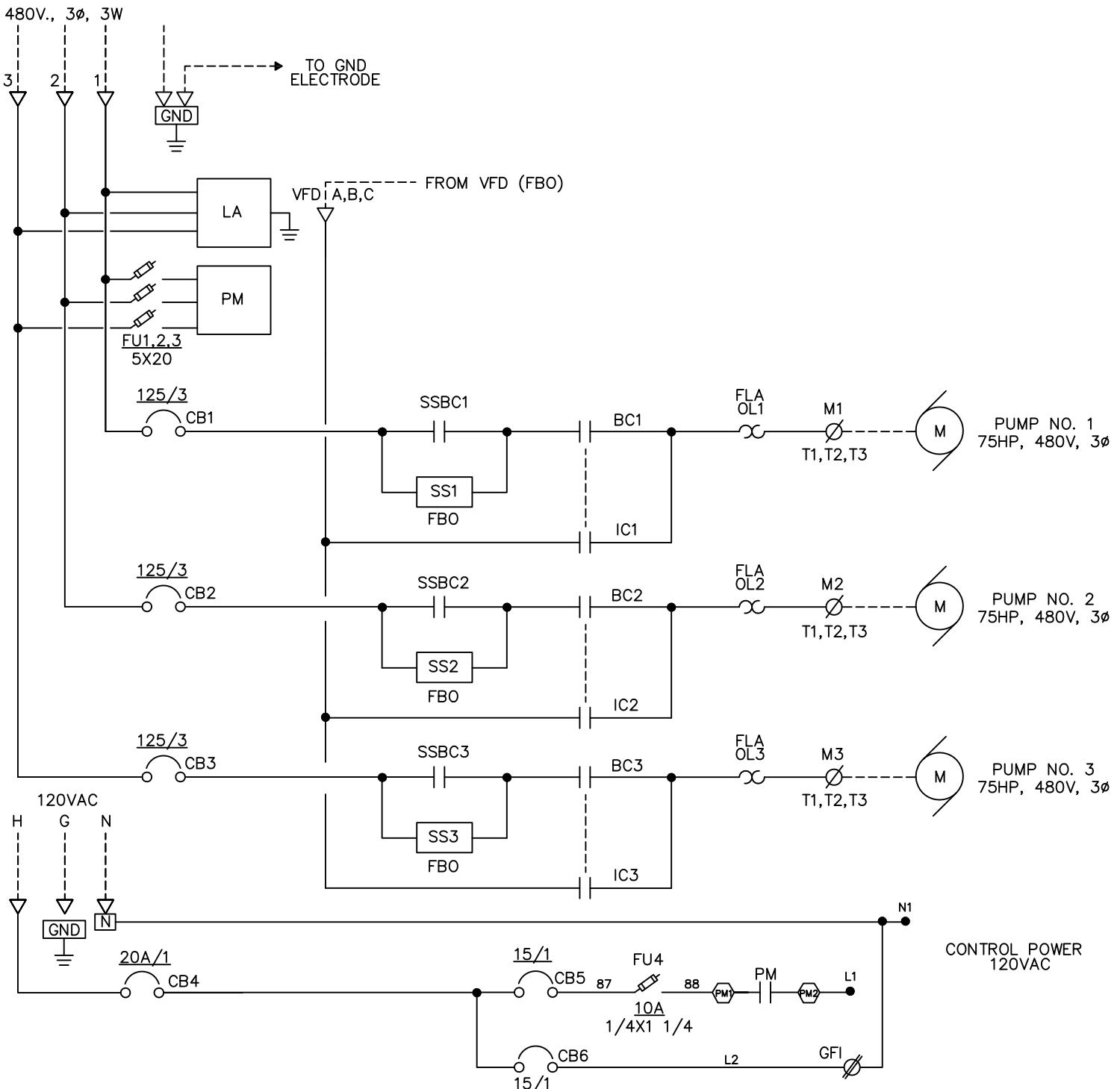
|                                  |   |                            |
|----------------------------------|---|----------------------------|
| SEAL FAIL LIGHTS                 | X | (Submersible Only)         |
| SEAL FAIL RELAYS                 |   | (Submersible Only)         |
| SEAL FAIL PUMP SHUTDOWN          |   | (Submersible Only)         |
| HT PUMP SHUTDOWN                 | X | (Self-Primer, Submersible) |
| ALARM HORN                       |   |                            |
| ALARM LIGHT                      | X |                            |
| LIGHT PANEL MTD                  |   |                            |
| LIGHT REMOTE MTD                 | X |                            |
| LIGHT FLASHER                    | X |                            |
| LIGHTNING ARRESTER               | X |                            |
| ELAPSED TIME METER               | X |                            |
| PHASE MONITOR                    | X |                            |
| NEMA RATED STARTERS              | X |                            |
| GROUND FAULT RECPT.              | X |                            |
| GREEN RUN LIGHTS VS. RED         | X |                            |
| POLE, BOX, SEAL                  |   |                            |
| INTRINSICALLY SAFE RELAYS        |   |                            |
| HIGH TEMP. LOCKOUT, MANUAL RESET | X |                            |
| ECONOMY VERSION                  |   |                            |

SOLD TO: Delta Process, Ruston, LA  
TAG : City of Ruston

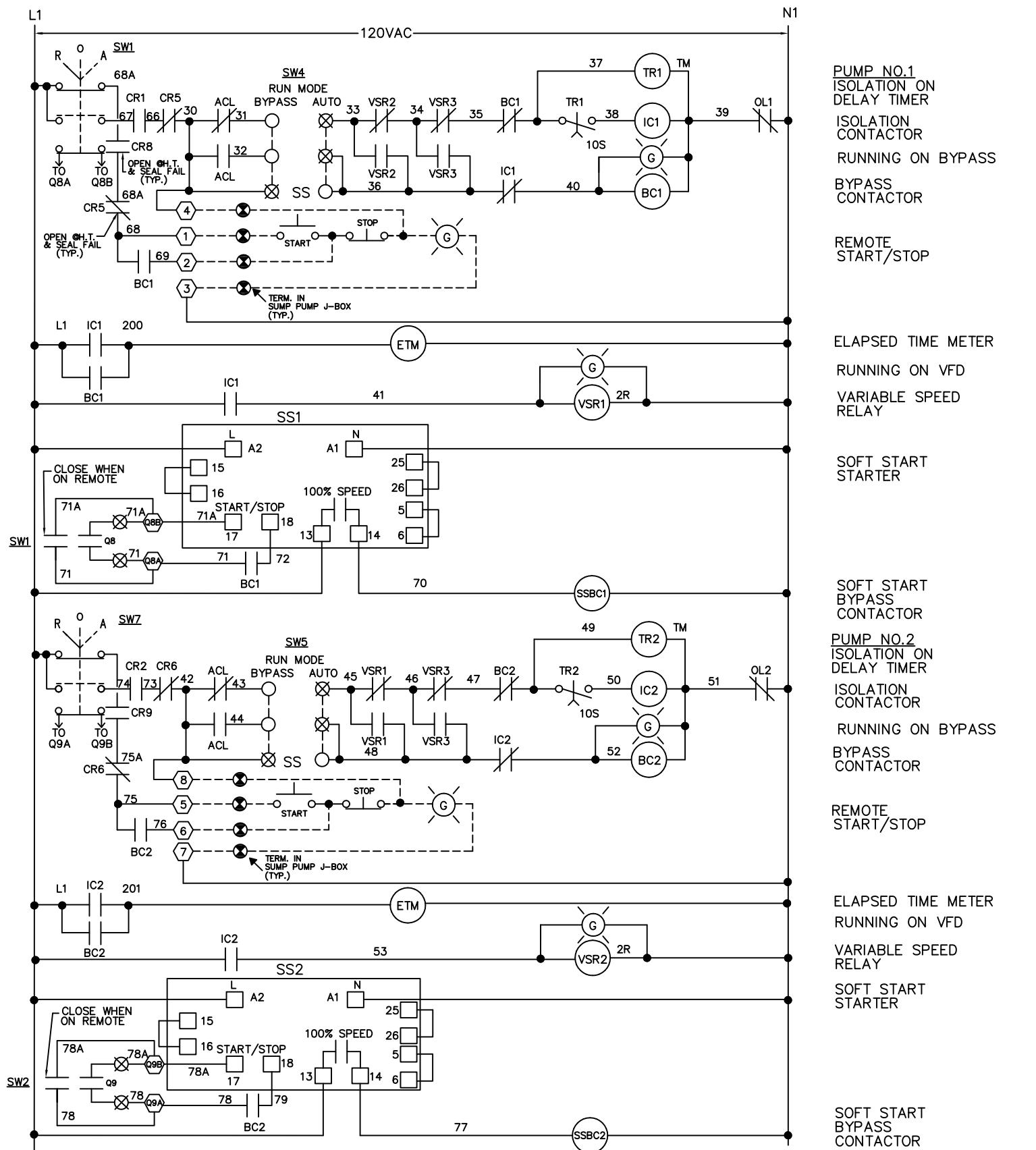
SHIP TO: Delta Process, Ruston, LA

| Drawing Title    | PANEL DESCRIPTION                                 |  | REFERENCE DRAWING<br>S/N | NO.<br>C.C. | REVISION-LOCATION<br>DRAWN<br>BY CTR | ECN  | DATE                      | BY                     |
|------------------|---|--|--------------------------|-------------|--------------------------------------|--|---------------------------|------------------------|
|                  |   |  |                          |             |                                      | DATE<br>APPROVED<br>BY                     | DATE<br>APPROVED<br>BY    | DATE<br>APPROVED<br>BY |
| DATE<br>12/03/02 | Project Title<br><br>DUPLEX PUMP<br>CONTROL PANEL |  |                          |             |                                      | P.O. Box 77808<br>Baton Rouge, LA<br>70809 | PURCHASE ORDER NUMBER     |                        |
|                  |   |  |                          |             |                                      | Ph. (225)756-3271<br>Fax (225)756-1030     | DRAWING NUMBER<br>CP-1490 | SHEET NUMBER<br>1      |

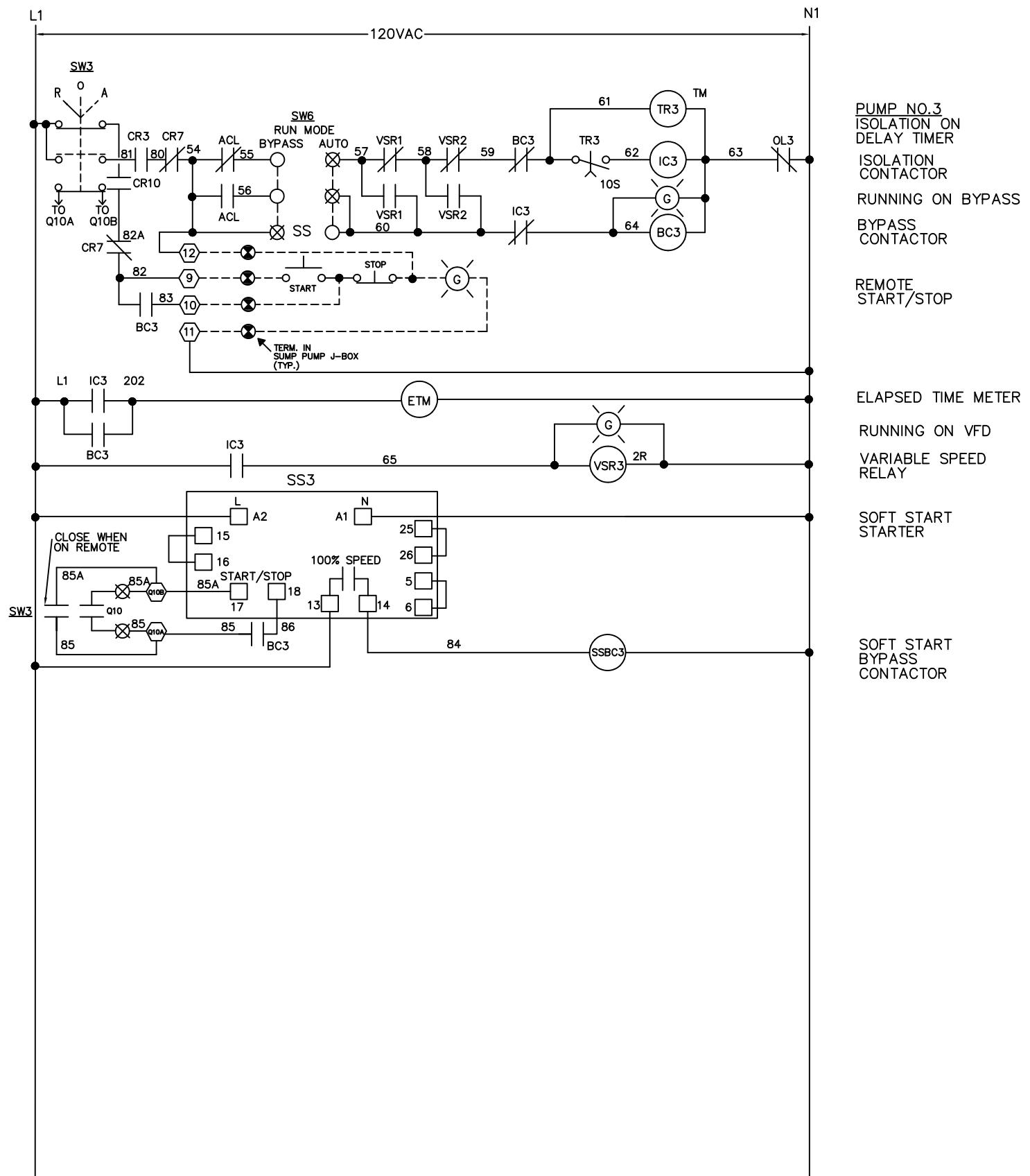
3 CIRCUITS  
FROM 400A C.B.



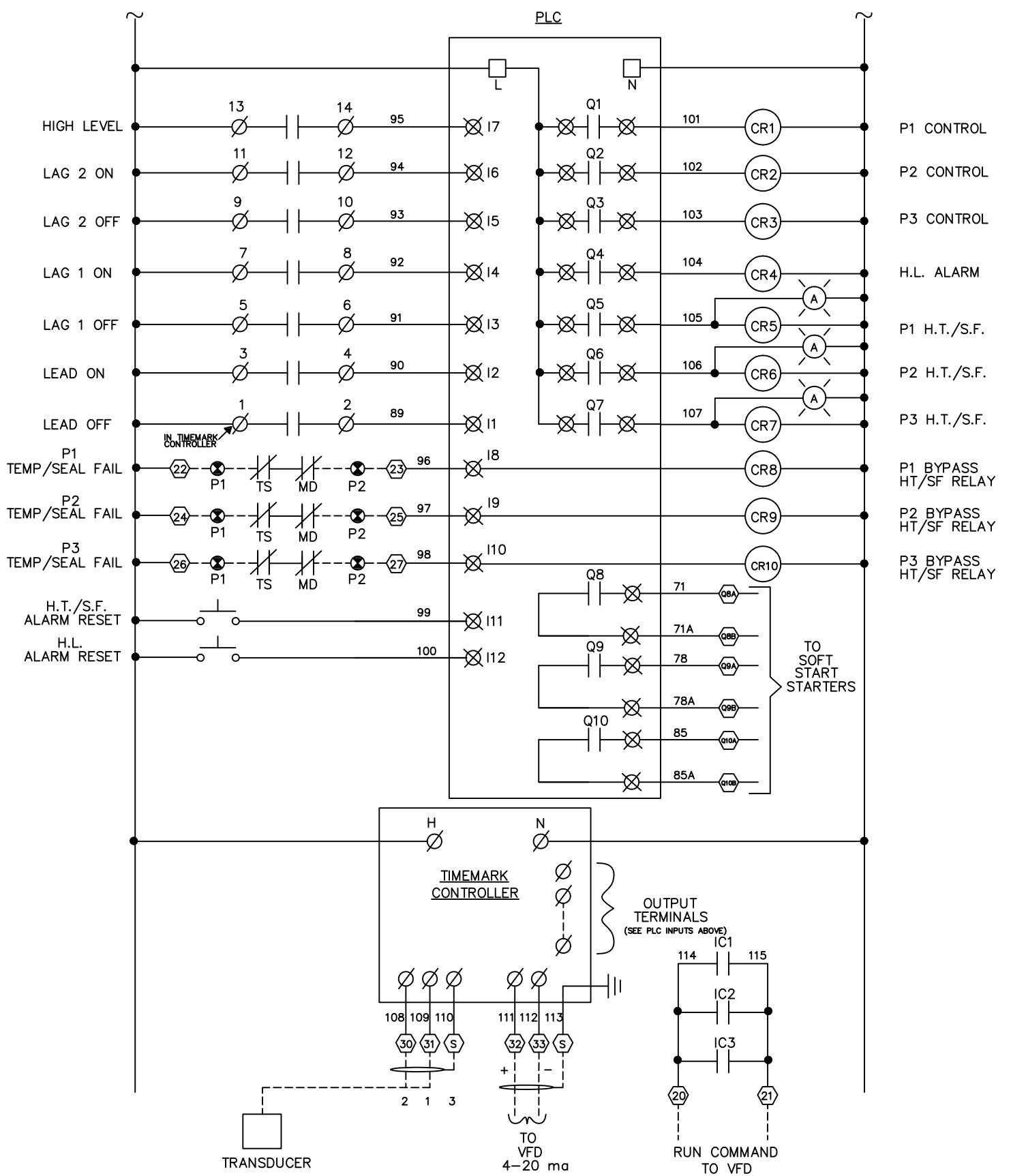
|                  |  |   |  |   |                            |
|------------------|--|---|--|---|----------------------------|
|                  | Drawing Title<br><br><b>POWER DIAGRAM</b>                  |   |  |   |                            |
|                  |  | REFERENCE DRAWING<br>S/N                    | NO.<br>Sales Engineer<br>C.C.  | REVISION-LOCATION<br>DRAWN<br>BY CTR  | ECN<br>APPROVED<br>BY DATE |
| DATE<br>11/13/02 |  | Application Engineer<br>R.C.                |  |   |                            |
|                  | Project Title<br><br><b>TRIPLEX PUMP<br/>CONTROL PANEL</b> | <b>COX</b><br>Research and Technology, Inc. | P.O. Box 77808<br>Baton Rouge, LA<br>70809<br>Ph. (225)756-3271<br>Fax (225)756-1030 | PURCHASE ORDER NUMBER<br><br>DRAWING NUMBER<br>CP-1490<br>SHEET NUMBER<br>2 |                            |



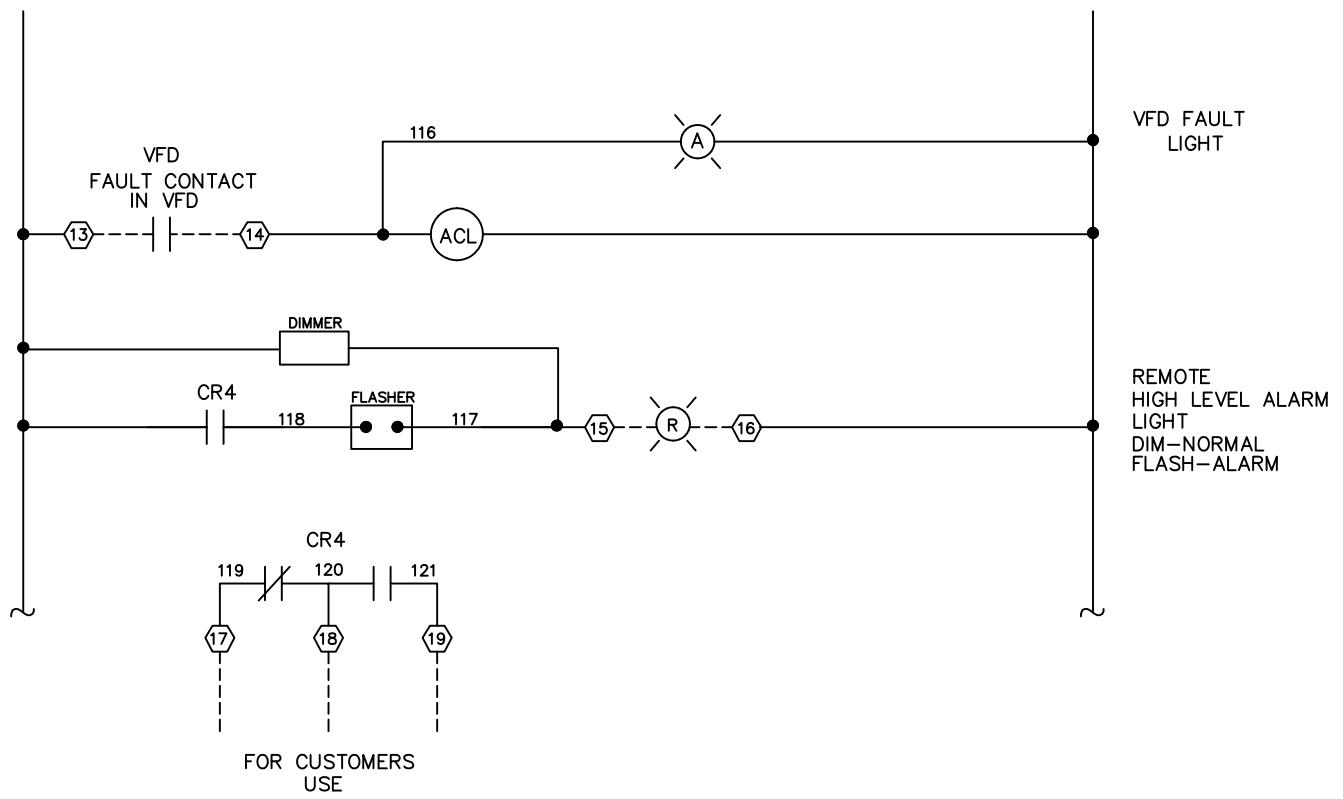
|                                       | Drawing Title                               |                |                      |      |  |  |        |     |          |                       |
|---------------------------------------|---|----------------|----------------------|------|--|--|--------|-----|----------|-----------------------|
|                                       | CONTROL DIAGRAM                             |                |                      |      |  |  |        |     |          |                       |
| DATE<br>11/13/02                      |   |                | REFERENCE DRAWING    |      | NO.                                    | REVISION-LOCATION                          |        | ECN | DATE     | BY                    |
|                                       | S/N   | Sales Engineer | Application Engineer | C.C. | R.C.                                   | DRAWN                                      | BY CTR | BY  | APPROVED | DATE                  |
| Project Title                         | <b>COX</b><br>Research and Technology, Inc. |                |                      |      |  | P.O. Box 77808<br>Baton Rouge, LA<br>70809 |        |     |          |                       |
| <b>TRIPLEX PUMP<br/>CONTROL PANEL</b> |   |                |                      |      | Ph. (225)756-3271<br>Fax (225)756-1030 |  |        |     |          | PURCHASE ORDER NUMBER |
|                                       |   |                |                      |      |  | DRAWING NUMBER<br>CP-1490                  |        |     |          |                       |
|                                       |   |                |                      |      |  | SHEET NUMBER<br>3                          |        |     |          |                       |



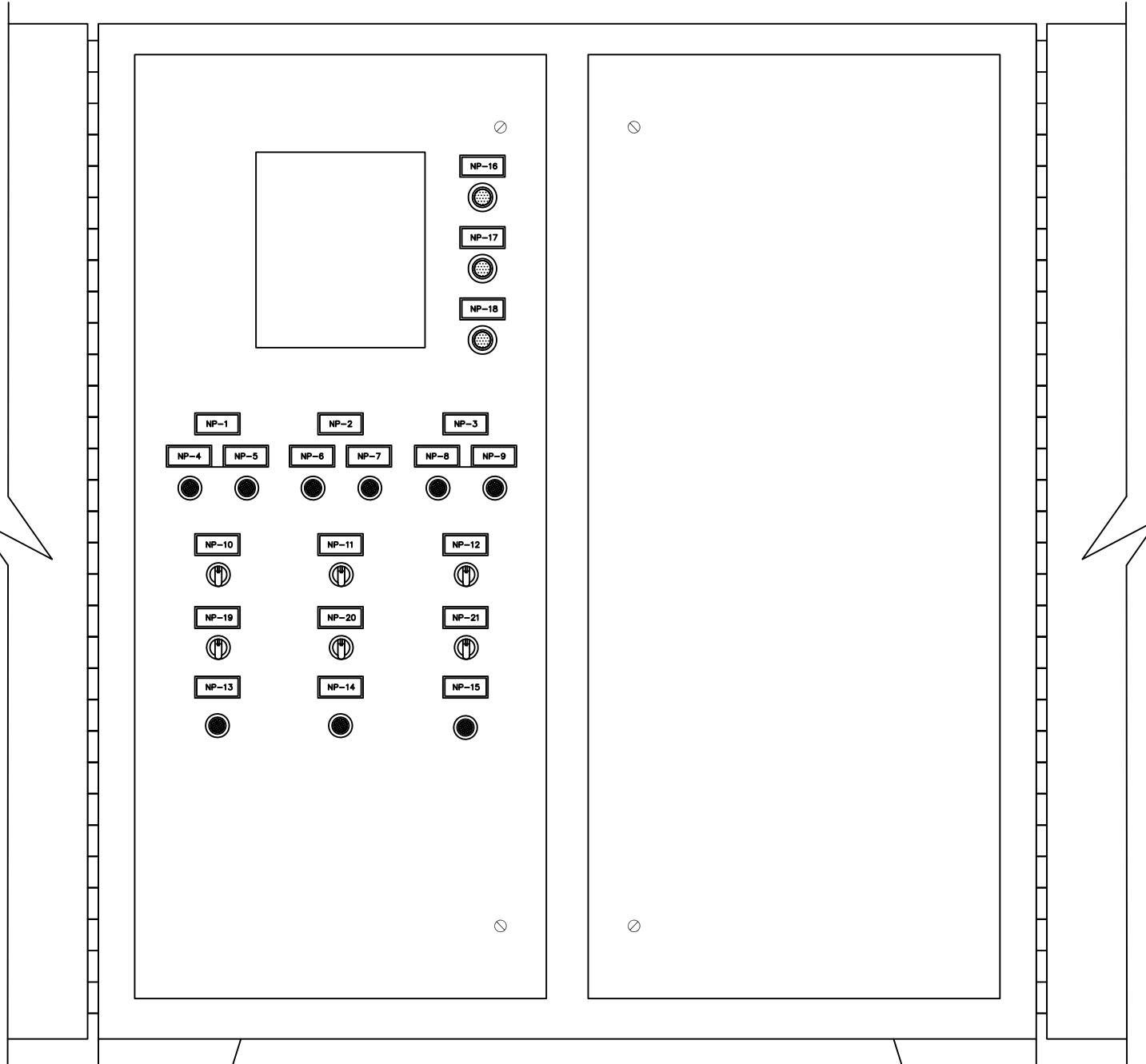
|                  |  |                              |                                      |  |   |
|------------------|--|------------------------------|--------------------------------------|--|---|
|                  | Drawing Title<br><br>CONTROL DIAGRAM               |                              |                                      |  |   |
|                  |  | REFERENCE DRAWING<br>S/N     | NO.<br>Sales Engineer<br>C.C.        | REVISION-LOCATION<br>DRAWN<br>BY CTR   | ECN<br>APPROVED<br>BY DATE  |
| DATE<br>11/13/02 |  | Application Engineer<br>R.C. |                                      |  |   |
|                  | Project Title<br><br>TRIPLEX PUMP<br>CONTROL PANEL |                              | COX<br>Research and Technology, Inc. | P.O. Box 77808<br>Baton Rouge, LA<br>70809<br>Ph. (225)756-3271<br>Fax (225)756-1030 | PURCHASE ORDER NUMBER<br><br>DRAWING NUMBER<br>CP-1490<br>SHEET NUMBER<br>4 |



|   | Drawing Title<br><b>CONTROL DIAGRAM</b>                |   |                               |   |                        |                             |
|---|--|---|-------------------------------|---|------------------------|-----------------------------|
| DATE<br>11/13/02  | Project Title<br><b>TRIPLEX PUMP<br/>CONTROL PANEL</b> | REFERENCE DRAWING<br>S/N                    | NO.<br>Sales Engineer<br>C.C. | REVISION-LOCATION<br>Application Engineer<br>R.C. | ECN<br>DRAWN<br>BY CTR | DATE<br>APPROVED<br>BY DATE |
|   |  | <b>COX</b><br>Research and Technology, Inc. |                               |   |                        |                             |
| PURCHASE ORDER NUMBER<br>P.O. Box 77808<br>Baton Rouge, LA<br>70809<br>Ph. (225)756-3271<br>Fax (225)756-1030 |  | DRAWING NUMBER<br>CP-1490                   |                               | SHEET NUMBER<br>5                                 |                        |                             |



|  |   |                               |   |  |   |
|--|---|-------------------------------|---|--|---|
|  | Drawing Title<br><br>CONTROL DIAGRAM        |                               |   |  |   |
|  |   |                               |   |  |   |
|  |   |                               |   |  |   |
| DATE<br>/11/13/02                                  | REFERENCE DRAWING<br>S/N                    | NO.<br>Sales Engineer<br>C.C. | REVISION-LOCATION<br>Application Engineer<br>R.C. | ECN<br>DRAWN<br>BY CTR   | DATE<br>APPROVED<br>BY DATE   |
| Project Title<br><br>TRIPLEX PUMP<br>CONTROL PANEL | <b>COX</b><br>Research and Technology, Inc. |                               |   | P.O. Box 77808<br>Baton Rouge, LA<br>70809<br><br>Ph. (225)756-3271<br>Fax (225)756-1030 | PURCHASE ORDER NUMBER<br><br>DRAWING NUMBER<br>CP-1490<br><br>SHEET NUMBER<br>6 |



VIEW OF SWING PANEL

NAMEPLATE SCHEDULE

|       |                 |       |                 |
|-------|-----------------|-------|-----------------|
| NP-1  | PUMP 1          | NP-12 | REMOTE-OFF-AUTO |
| NP-2  | PUMP 2          | NP-13 | HT/SF           |
| NP-3  | PUMP 3          | NP-14 | HT/SF           |
| NP-4  | DRIVE RUN       | NP-15 | HT/SF           |
| NP-5  | BYPASS RUN      | NP-16 | VFD FAULT       |
| NP-6  | DRIVE RUN       | NP-17 | HT/SF RESET     |
| NP-7  | BYPASS RUN      | NP-18 | HL RESET        |
| NP-8  | DRIVE RUN       | NP-19 | BYPASS-AUTO     |
| NP-9  | BYPASS RUN      | NP-20 | BYPASS-AUTO     |
| NP-10 | REMOTE-OFF-AUTO | NP-21 | BYPASS-AUTO     |
| NP-11 | REMOTE-OFF-AUTO |       |                 |

**NOTE:**  
SEWER GASES WILL DESTROY COMPONENTS IN PANEL.  
PROPER SEALS MUST BE INSTALLED EXTERNAL TO THE  
PANEL TO PREVENT ENTRY OF GASES.

|  |                                      |             |  |   |                             |  |
|--|--------------------------------------|-------------|--|---|-----------------------------|--|
|  | Drawing Title                        |             |  |   |                             |  |
|  | ENCLOSURE                            |             |  |   |                             |  |
| DATE<br>11/13/02                                   | REFERENCE DRAWING<br>S/N             | NO.<br>C.C. | REVISION-LOCATION<br>DRAWN<br>BY CTR   | ECN   | DATE<br>APPROVED<br>BY DATE |  |
| Project Title<br><br>TRIPLEX PUMP<br>CONTROL PANEL | COX<br>Research and Technology, Inc. |             | P.O. Box 77808<br>Baton Rouge, LA<br>70809<br><br>Ph. (225)756-3271<br>Fax (225)756-1030 | PURCHASE ORDER NUMBER<br><br>DRAWING NUMBER<br>CP-1490<br><br>SHEET NUMBER<br>7 |                             |  |

# BILL OF MATERIALS

| ITEM | QTY | MANUFACTURER | PART NO.      | DESCRIPTION               |
|------|-----|--------------|---------------|---------------------------|
| 1    | 1   | EBE          | D747216REPL   | ENCLOSURE                 |
| 1a   | 1   | EBE          | AD7472P       | BACKPLATE                 |
| 1b   | 1   | EBE          | AD7472SP      | DEAD FRONT                |
| 2    | 3   | ABB          | S3N125TW/LUGS | CB 1,2,3                  |
| 3    | 1   | SQUARE D     | QOU120        | CB 4                      |
| 4    | 2   | SQUARE D     | QOU115        | CB 5,6                    |
| 5    | 1   | DANFOSS      | VLT80000-AQUA | VFD                       |
| 6    | 3   | DANFOSS      | MCD3045       | SS1,2,3                   |
| 7    | 3   | SQUARE D     | 8502SF02V02   | SSBC1,2,3                 |
| 8    | 3   | SQUARE D     | 8736SF03V02   | IC/BC1,2,3                |
| 9    | 9   | SQUARE D     | CC132         | THERMAL UNITS FOR 91.1A   |
| 10   | 3   | SQUARE D     | 6A854         | TR1,2,3                   |
| 11   | 12  | SQUARE D     | 9999SX8       | AUX. RELAY                |
| 12   | 12  | SQUARE D     | 9999SBT1      | ADAPTOR                   |
| 13   | 7   | OMRON        | MY2INAC120    | CR1-7                     |
| 14   | 7   | OMRON        | PYF08A-E      | BASES                     |
| 15   | 1   | SSAC         | FS126         | FLASHER                   |
| 16   | 3   | A-B          | 800H-HR28     | BYPASS-AUTO SW1,2,3       |
| 17   | 3   | A-B          | 800H-JR2A     | REMOTE-OFF-AUTO SW1,2,3   |
| 18   | 2   | A-B          | 800H-AR2A     | P.B.SW                    |
| 19   | 6   | A-B          | 800H-QRH10G   | GREEN PILOT LIGHT         |
| 20   | 4   | A-B          | 800H-QRH10A   | AMBER PILOT LIGHT         |
| 21   | 1   | SSAC         | PLMU11        | PHASE MONITOR             |
| 22   | 1   | DELTA L.A.   | LA603         | LIGHTNING ARRESTOR        |
| 23   | 1   | SIEMENS      | 230RC         | PLC 12IO                  |
| 24   | 2   | SIEMENS      | DM8230R       | EXPANSION MODULE 8IO      |
| 25   | 1   | TIMEMARK     | 4082          | 8PT TRANSDUCER CONTROLLER |
| 26   | 4   | OMRON        | MK3PN5SAC120  | RELAYS                    |
| 27   | 3   | OMRON        | SSAC          | RELAYS                    |
| 28   |     |              |               |                           |

|                  |                               |  |                               |                |  |                           |                     |         |
|------------------|-------------------------------|--|-------------------------------|----------------|--|---------------------------|---------------------|---------|
|                  | Drawing Title                 |  |                               |                |  |                           |                     |         |
|                  | BILL OF MATERIALS             |  |                               |                |  |                           |                     |         |
|                  |                               |  | REFERENCE DRAWING             |                | NO.  | REVISION-LOCATION         | ECN                 | DATE BY |
| DATE<br>11/13/02 |                               |  | S/N                           | Sales Engineer | Application Engineer                       | DRAWN<br>BY CTR           | APPROVED<br>BY DATE |         |
|                  |                               |  | C.C.                          | R.C.           |  |                           |                     |         |
|                  | Project Title                 |  | COX                           |                | P.O. Box 77808<br>Baton Rouge, LA<br>70809 | PURCHASE ORDER NUMBER     |                     |         |
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|                  |                               |  |                               |                |  | SHEET NUMBER<br>8         |                     |         |