




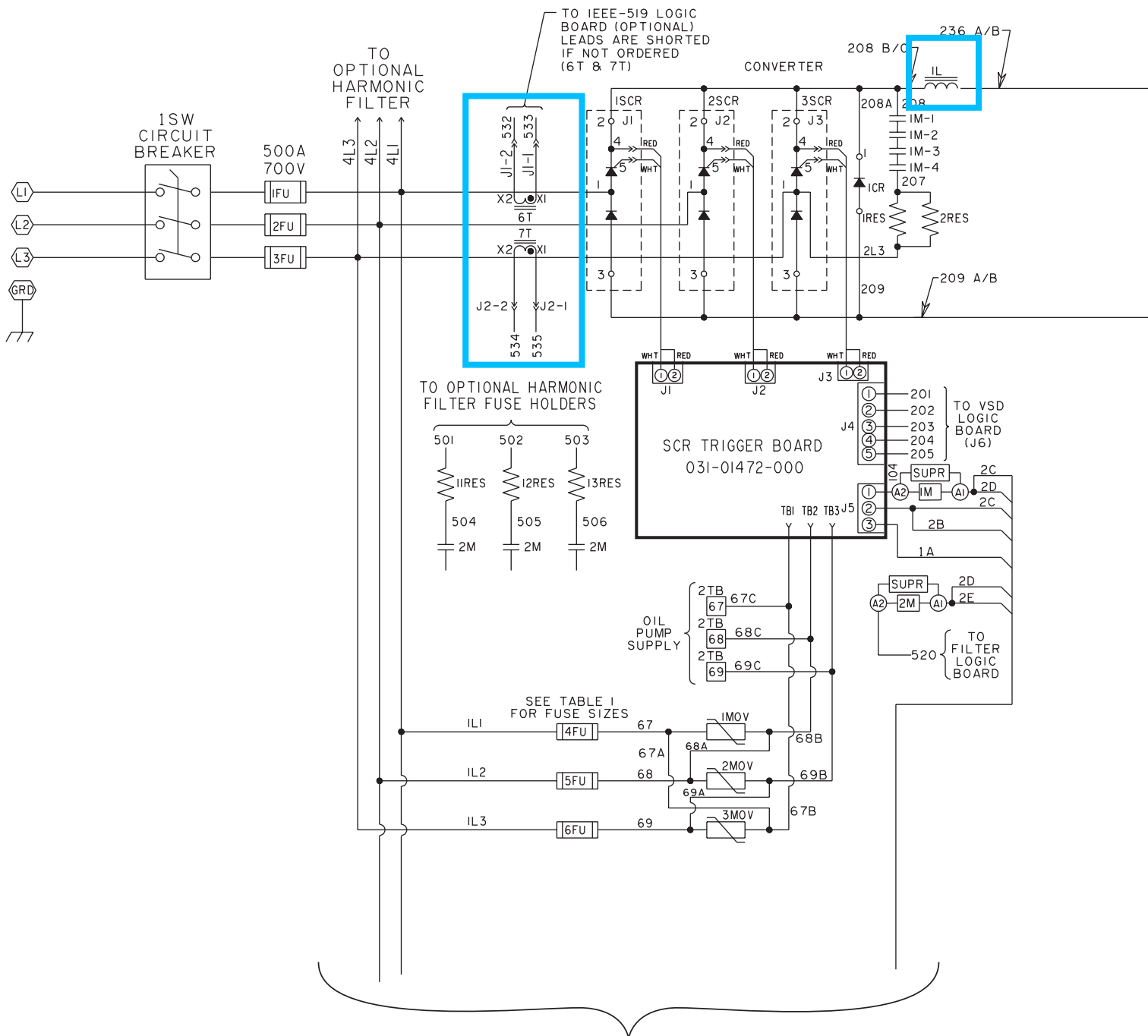
|  |   |
|--|---|
| <br><b>PRODUCT DRAWING</b> | Supersedes: Nothing <span style="float: right;">FORM 160.00-PW1 (398)</span><br><br><b style="text-align: center;">WIRING DIAGRAM,<br/>MILLENNIUM VARIABLE SPEED DRIVE<br/>CF-CN, 5CC-5CI<br/>WITH OPTIONAL HARMONIC FILTER</b> |
| YORK INTERNATIONAL CORPORATION<br>P.O. Box 1592, York, PA 17405  |   |
| CONTRACTOR _____<br>ORDER NO. _____<br>YORK CONTRACT NO. _____<br>YORK ORDER NO. _____                     | PURCHASER _____<br>JOB NAME _____<br>LOCATION _____<br>ENGINEER _____   |
| <input type="checkbox"/> REFERENCE      DATE _____   | <input type="checkbox"/> APPROVAL      DATE _____   |
| <input type="checkbox"/> CONSTRUCTION      DATE _____  |   |

### NOTES

1. Field wiring to be in accordance with the National Electrical Code as well as all other applicable codes and specifications.
2. Terminal board connection points are indicated by numbers within a square i.e. 1. 1TB main power connection points are indicated by numbers within a hexagon i.e. L1. Component terminal markings are indicated by numbers within a circle i.e. 2. Numbers adjacent to circuit lines are the circuit identification numbers.
3. Terminals L1, L2, L3 and GRD are the main power input terminals and are field connected (see note 6). Terminals T1, T2 and T3 are the compressor motor load power terminals and are factory connected on factory packaged units.
4. The three-phase solid state motor overload protection system provides motor overcurrent protection at 105% full load amps.
5. See the applicable YORK Control Center wiring diagram Product Drawing Forms:  
     YT Style H - 160.48-PA21  
     YK Style C - 160.49-PW9  
     YK Style D - 160.52-PW3
6. Field wiring connections per Product Drawing Forms:  
     YT Style H - 160.48-PA15  
     YK Style C - 160.49-PW12  
     YK Style D - 160.49-PW12
7. Elementary Diagram does not show all components relating to the optional harmonic filter components. The Connection Diagram does show all the components relating to the optional harmonic filter. Refer to pages 10, 11 & 11A for wiring related specifically to the optional filter.

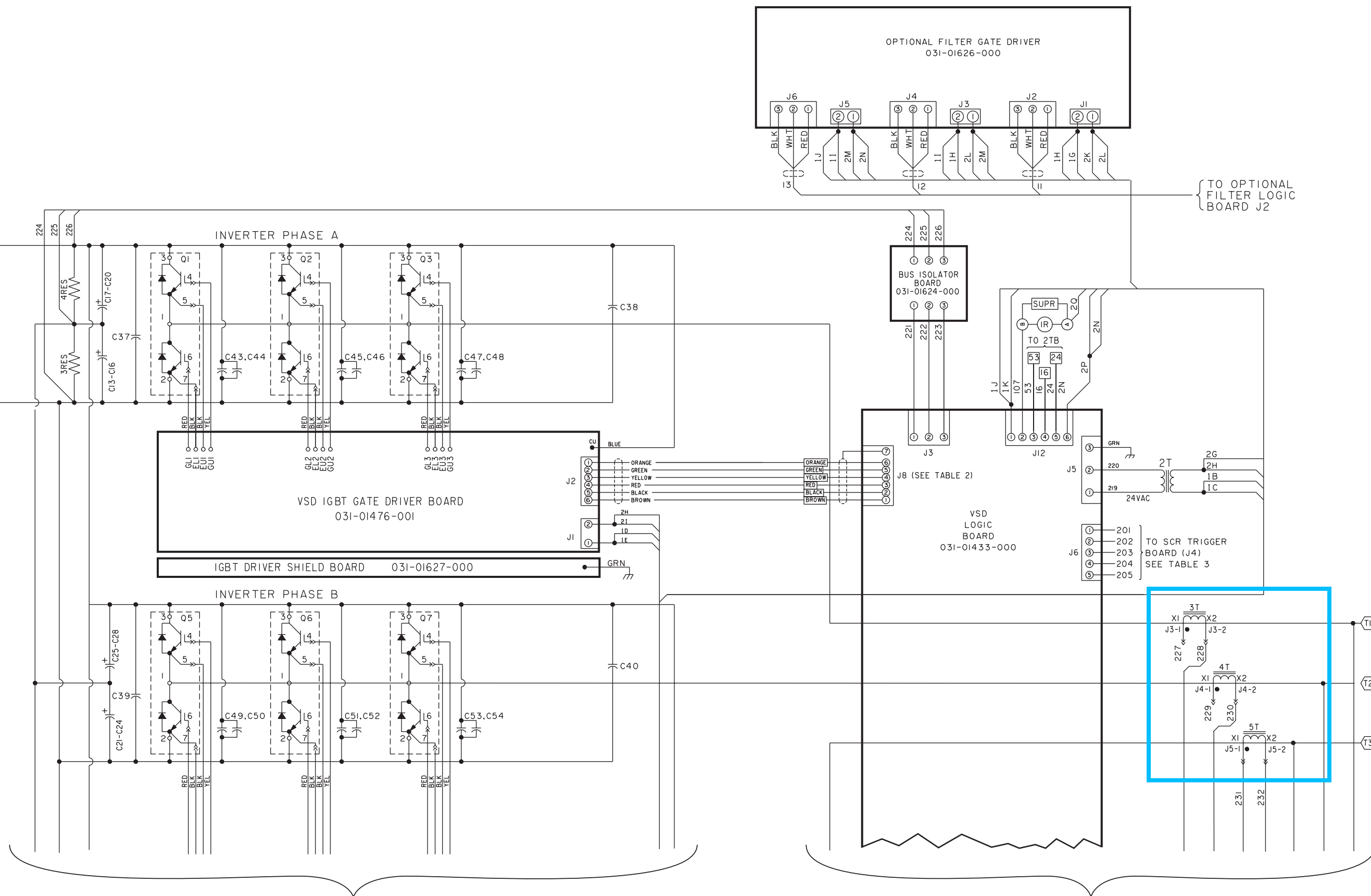
### LEGEND FOR VARIABLE SPEED DRIVE (See pages 1 - 9)

|   |   |
|---|---|
| C13 - C36   | CAPACITORS, FILTER, 5000 $\mu$ f, 450 VDC   |
| C37 - C42   | CAPACITORS, FILM, 1.0 $\mu$ f, 1200 VDC   |
| C43 - C60   | CAPACITORS, FILM, 0.1 $\mu$ f, 1000 VDC   |
| C61 - C66   | CAPACITORS, DV/DT, 0.047 $\mu$ f, 1600 VDC  |
| 1FU - 3FU   | SEMI-CONDUCTOR FUSES, 500A, 700V: GOULD SHAWMUT *A3-66C 500TS<br>OR FERRAZ -6.6URD33TTF0500 |
| 4FU - 6FU   | SCRTRIGGER / OIL PUMP MOTOR FUSES   |
| 7FU - 8FU   | CONTROL SUPPLY TRANSFORMER PRIMARY FUSES  |
| 9FU   | EXTERNAL CONTROL SUPPLY TRANSFORMER SECONDARY FUSE  |
| 10FU  | INTERNAL CONTROL SUPPLY TRANSFORMER SECONDARY FUSE  |
| 1L  | INDUCTOR, DCLINK, 532 A, 470 $\mu$ H  |
| 1M, 2M  | CONTACTORS, PRECHARGE, 600 VAC, 25 A  |
| Q1 - Q3, Q5 - Q7  | DUAL 1GBT MODULES, 1200 V, 200 A  |
| Q8 - Q11  |   |
| 1RES - 2 RES  | RESISTOR, PRECHARGE, 35 $\Omega$ , 500 W  |
| 3RES - 4RES   | RESISTORS, BLEEDER, 750 $\Omega$ , 225 W  |
| 5RES - 10RES  | DV/DT RESISTORS, 10 $\Omega$ , 50 W   |
| 11RES - 13RES   | RESISTORS, PRECHARGE (HARMONIC FILTER) 10 $\Omega$ , 375 W                                  |
| RT1 - RT4   | HEATSINK THERMISTOR TEMPERATURE SENSORS   |
| 1SCR - 3SCR   | SCR / DIODE MODULES, 1200 V, 250 A  |
| 1R  | RELAY, COOLING FANS AND PUMP  |
| 1SW   | ELECTRONIC CIRCUIT BREAKER W/ GRD FAULT, 600 V, 600 A                                       |
| 1T  | 120 VAC, 3 KVA CONTROL POWER TRANSFORMER  |
| 2T  | 24 VAC, 75VA CONTROL TRANSFORMER  |
| 3T - 5T   | OUTPUT CURRENT TRANSFORMERS   |
| 6T - 7T   | INPUT CURRENT TRANSFORMERS  |
| 2TB - 3TB   | TERMINAL BLOCKS, FIELD WIRING   |
|  | JACK J1 - 1 ETC...  |
|  | PLUG, P1 - 1 ETC...   |



CONTINUED ON PAGE 3B

FIG. 1 – ELEMENTARY DIAGRAM (TOP)  
035-12688 (REV. C)



CONTINUED ON PAGE 4

CONTINUED ON PAGE 5

LD02265a

CONTINUED FROM PAGE 2

| UNIT STYLE | FUSING - 4FU, 5FU, 6FU |
|------------|------------------------|
| YT         | 5A, 500V, BUSS FNO-5   |
| YK         | 7A, 500V, BUSS FNO-7   |

| CONNECTOR PIN | SHIELDED CABLE WIRE COLOR | FUNCTION        |
|---------------|---------------------------|-----------------|
| 1             | BRN                       | FAULT           |
| 2             | BLK                       | GROUND          |
| 3             | RED                       | +5V             |
| 4             | YEL                       | UPPER PHASE, IN |
| 5             | GRN                       | LOWER PHASE, IN |
| 6             | ORG                       | SW. +7.5V       |
| 7             | DRAIN WIRE **             | SHIELD          |

\*\* NOT CONNECTED AT GATE DRIVER BOARD END

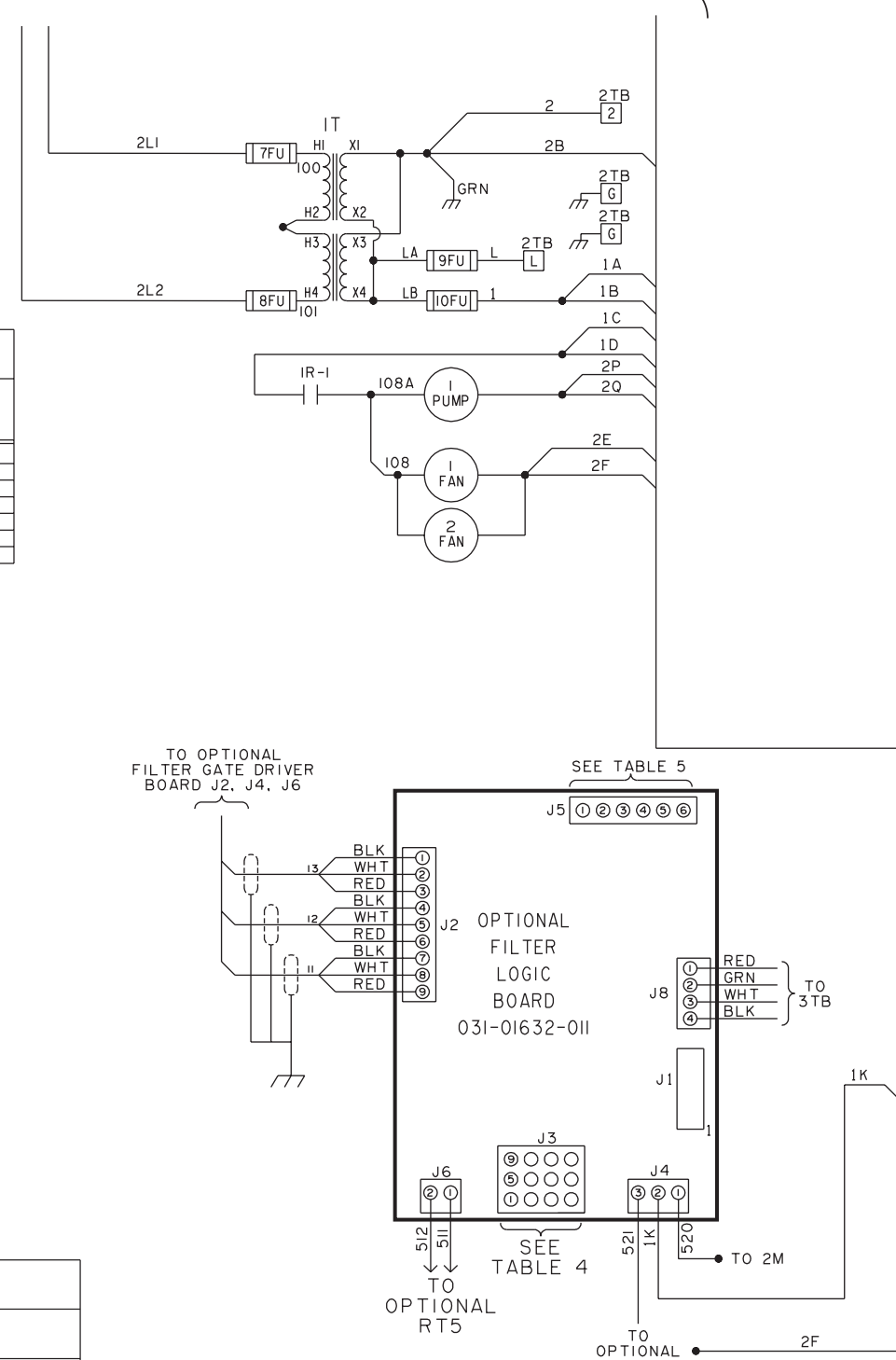
| CONNECTOR PIN | FUNCTION    |
|---------------|-------------|
| 1             | +5V FEED    |
| 2             | PH LOSS OUT |
| 3             | PRECHG IN   |
| 4             | SCRTRIG IN  |
| 5             | 7.5V FEED   |

| CONNECTOR PIN | IDENTIFIER | FUNCTION          |
|---------------|------------|-------------------|
| 1             | *532       | TO 6T-X2          |
| 2             | *533       | TO 6T-X1          |
| 3             | *534       | TO 7T-X2          |
| 4             | *535       | TO 7T-X1          |
| 5             | WHITE      | TO 1DCCT - OPTION |
| 6             | RED        | TO 1DCCT - OPTION |
| 7             | BLK        | TO 1DCCT - OPTION |
| 8             | -          | TO J3 PIN 9       |
| 9             | -          | TO J3 PIN 8       |
| 10            | RED        | TO 2DCCT - OPTION |
| 11            | BLK        | TO 2DCCT - OPTION |
| 12            | WHITE      | TO 2DCCT - OPTION |

| CONNECTOR PIN | IDENTIFIER | FUNCTION                     |
|---------------|------------|------------------------------|
| 1             | *522       | TO J2-1, OPTIONAL I625 BOARD |
| 2             | *523       | TO J2-2, OPTIONAL I625 BOARD |
| 3             | *524       | TO J2-3, OPTIONAL I625 BOARD |
| 4             | *528       | TO J2-3, OPTIONAL I624 BOARD |
| 5             | *527       | TO J2-2, OPTIONAL I624 BOARD |
| 6             | *526       | TO J2-1, OPTIONAL I624 BOARD |

\* SAME PIN NUMBERS ARE USED AT BOTH ENDS OF CABLE

LD02265c



CONTINUED FROM PAGE 3

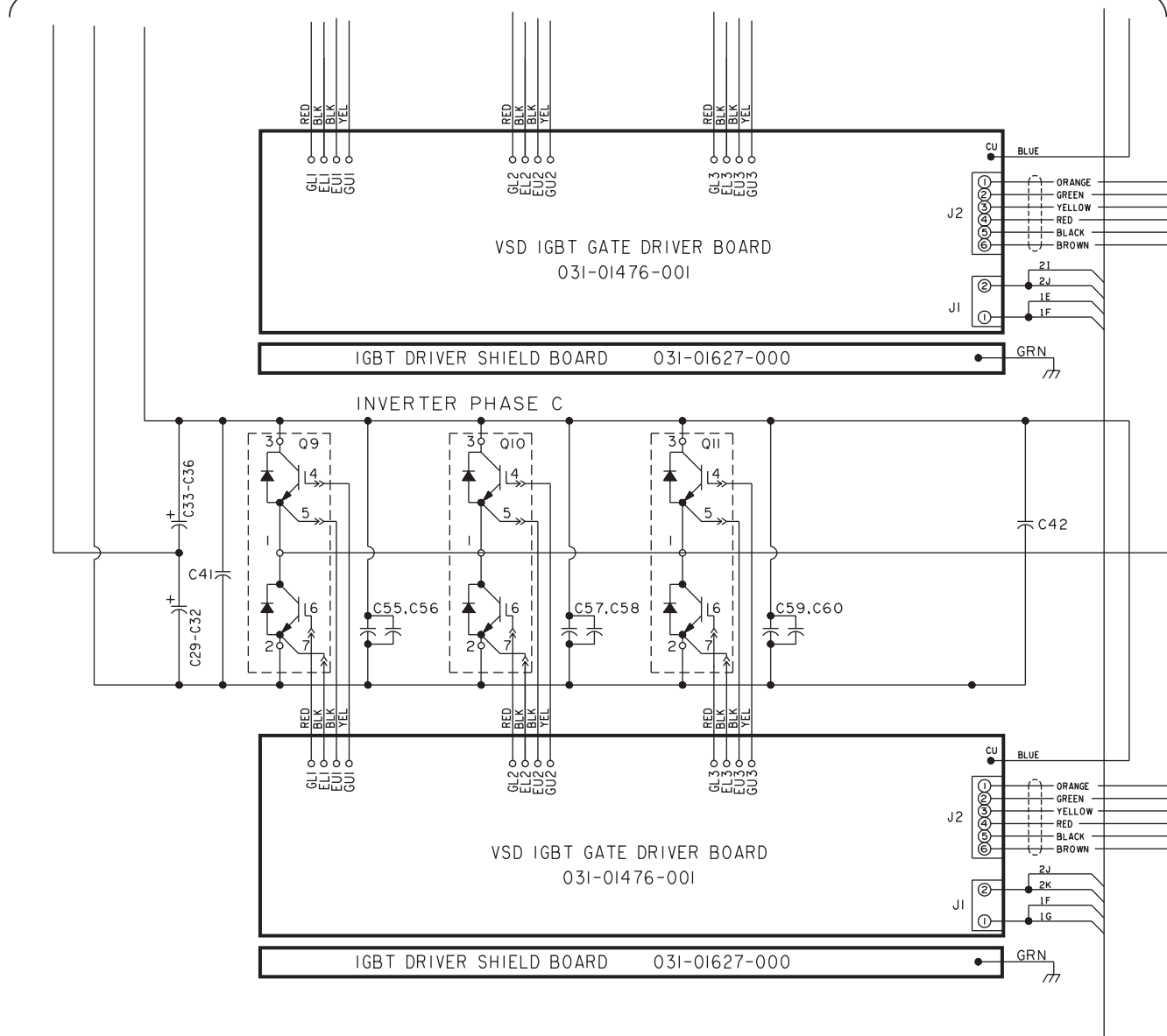
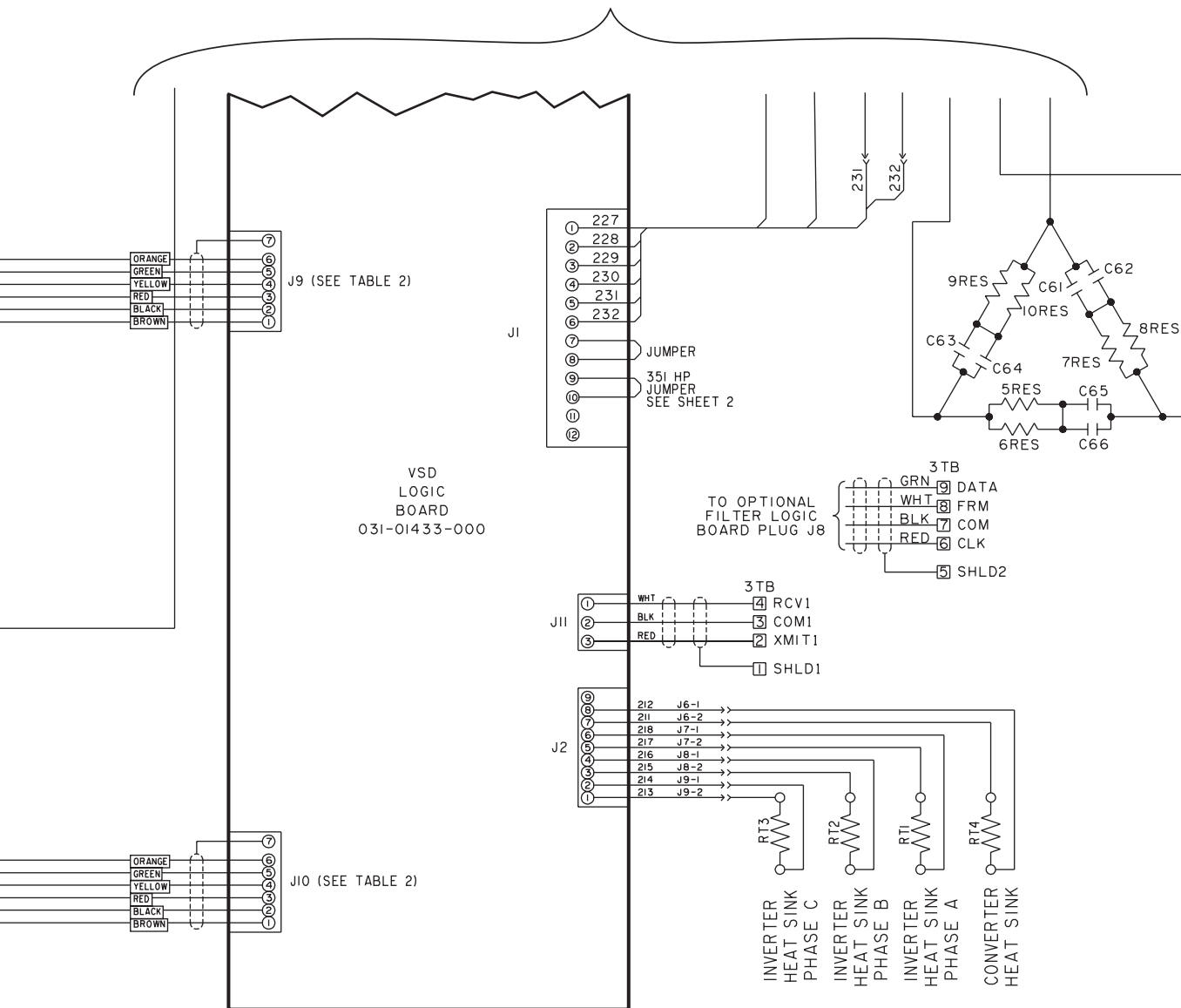
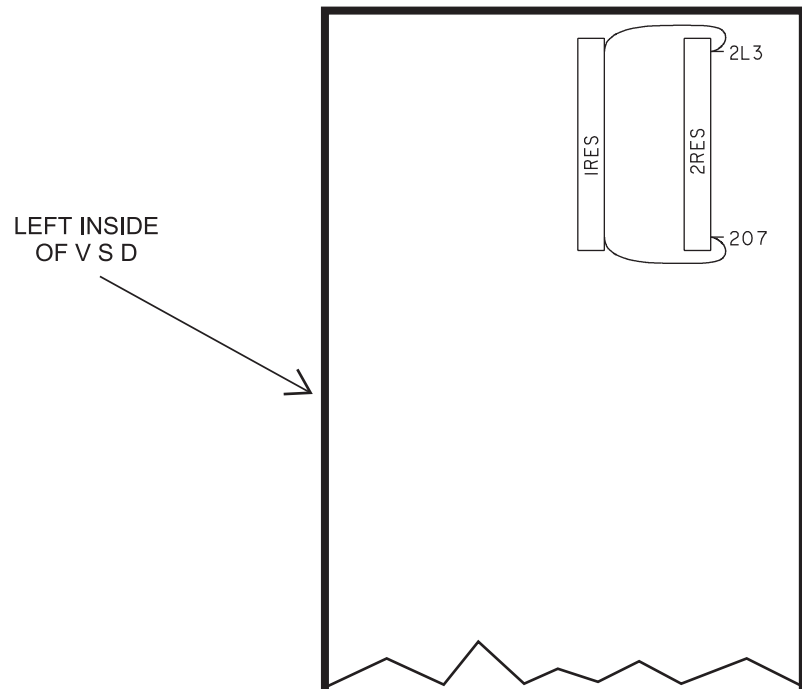
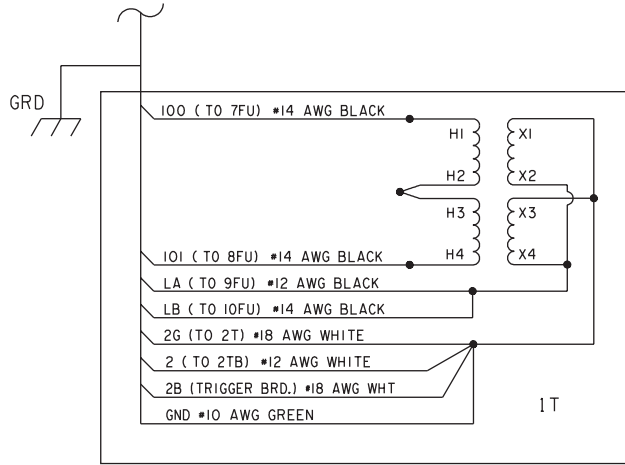


FIG. 1 (Cont'd) – ELEMENTARY DIAGRAM (BOTTOM)  
035-12688 (REV. C)

CONTINUED FROM PAGE 3A



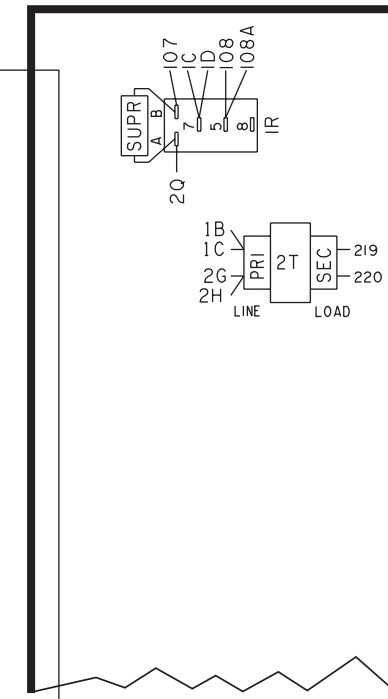
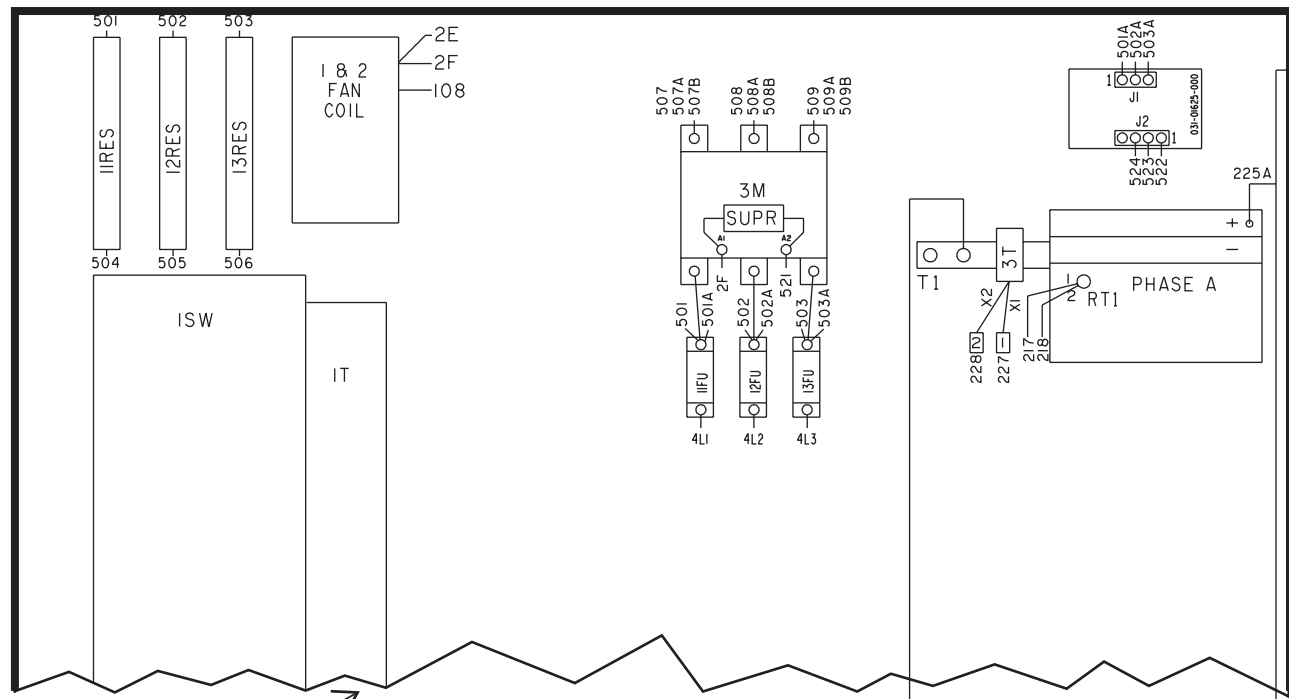
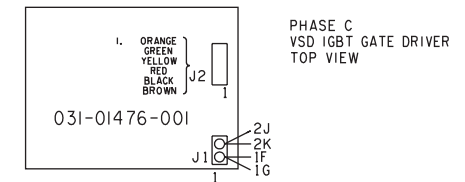
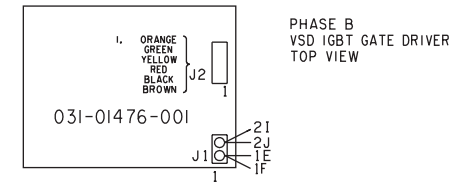
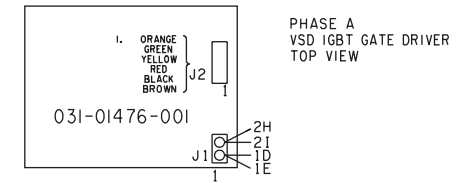
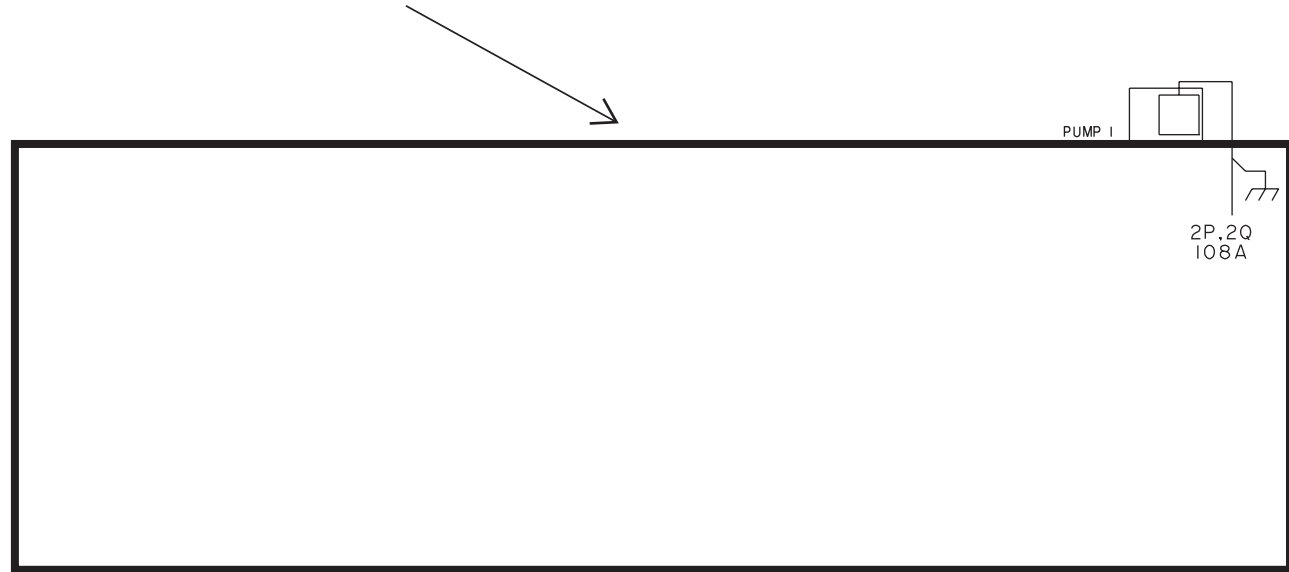
LD02265b



CONTINUED ON PAGE 7B

FIG. 2 – CONNECTION DIAGRAM (TOP)  
035-12688 (REV. C)

TOP OF V S D



RIGHT INSIDE OF V S D

INSIDE OF V S D

CONTINUED ON PAGE 8

CONTINUED ON PAGE 9

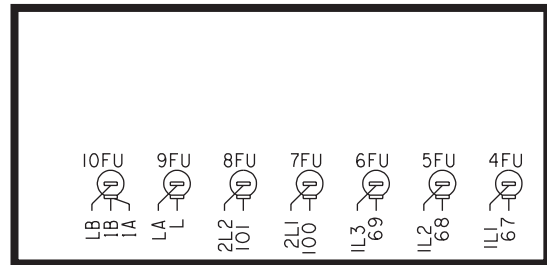
LD02266a

CONTINUED FROM PAGE 6

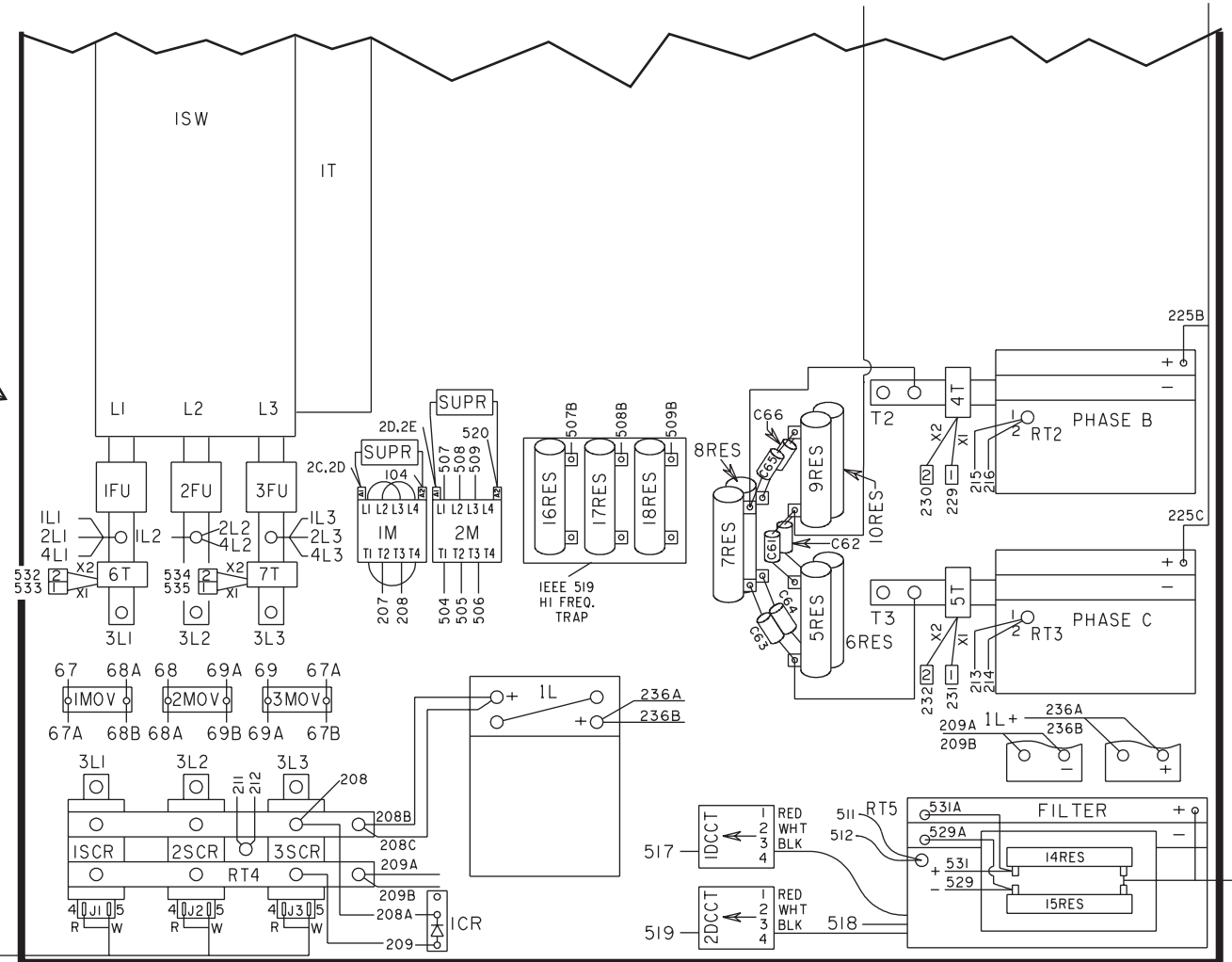
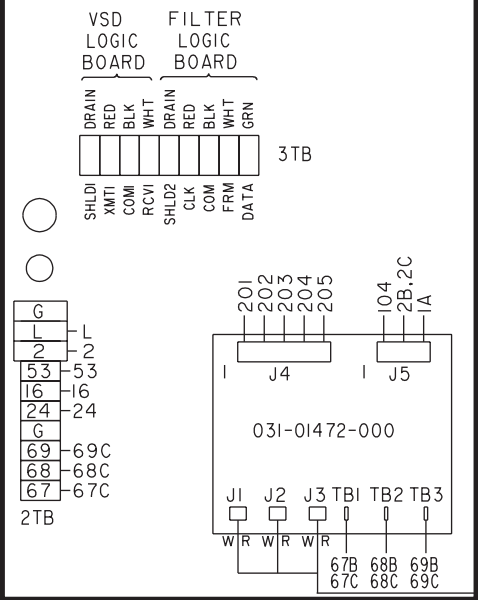
CONTINUED FROM PAGE 7

LEFT INSIDE OF VSD

INSIDE OF VSD



REAR VIEW OF HINGED PANEL

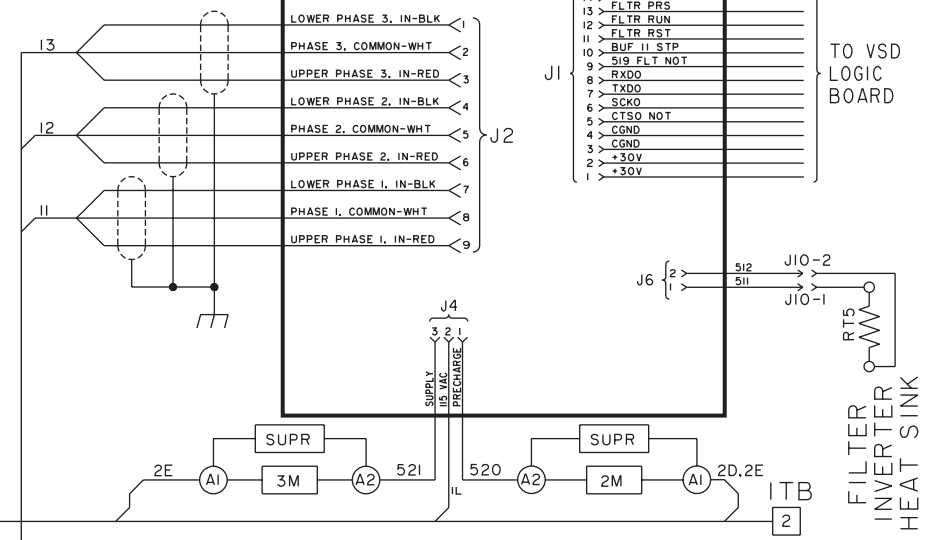
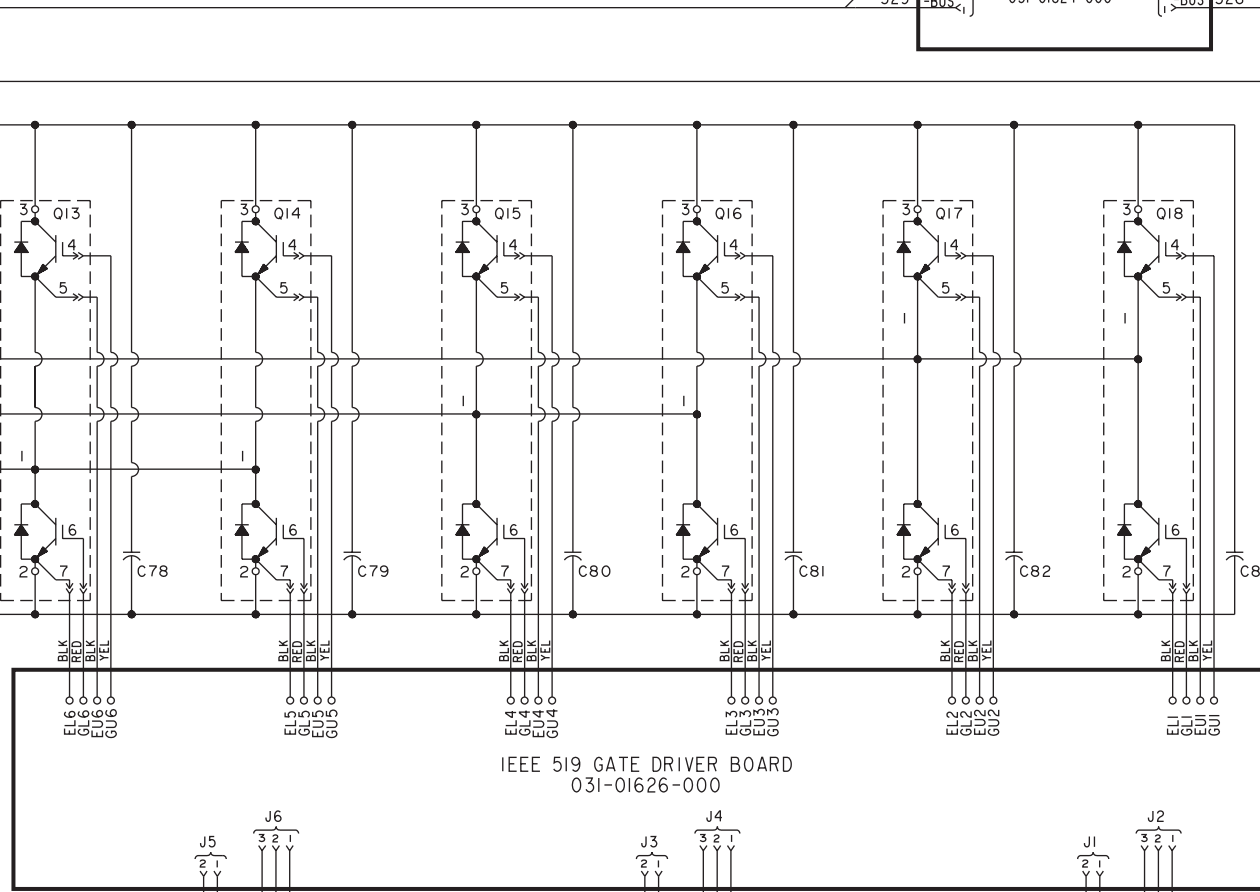
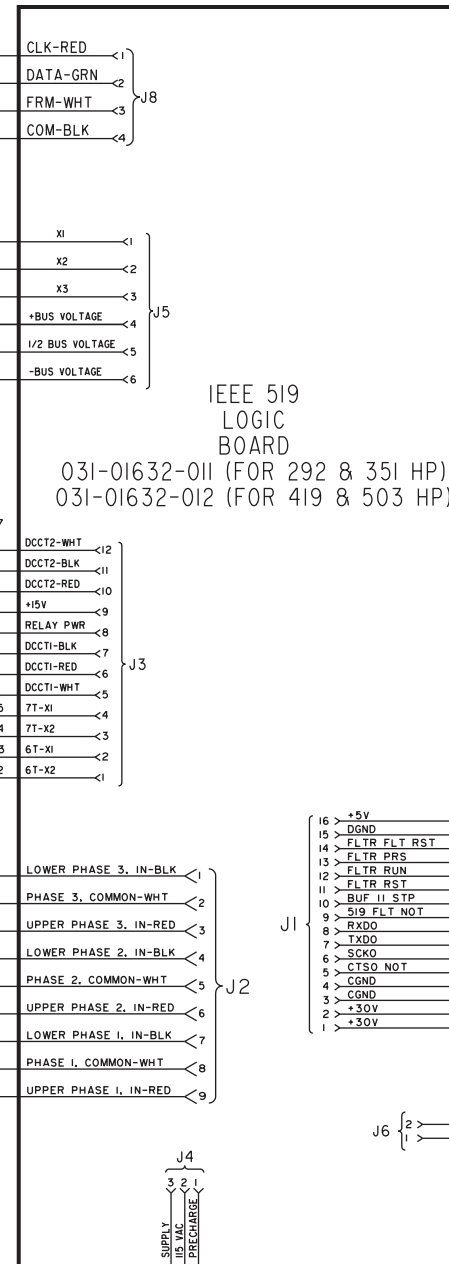
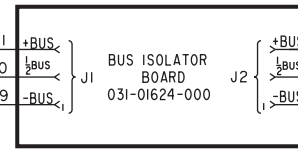
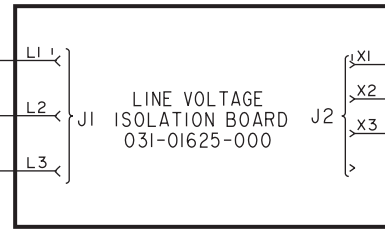
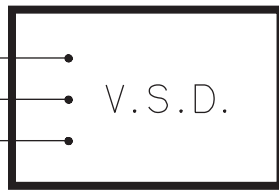


BOTTOM OF VSD



FIG. 2 (Cont'd) - CONNECTION DIAGRAM (BOTTOM)  
 035-12688 (REV. C)







**LEGEND FOR OPTIONAL HARMONIC FILTER (See pages 10 - 11A)**

|   |   |
|---|---|
| C67 - C76   | CAPACITORS, FILTER, 500 $\mu$ f, 450 VDC                                  |
| C77 - C83   | CAPACITORS, FILM, 0.1 $\mu$ f, 1200 VDC                                   |
| C84 - C86   | CAPACITORS, FILM, 3.0<F14 $\mu$ f, 1000 VDC                               |
| C87 - C92   | CAPACITORS, FILM, 25.0 $\mu$ f, 450 VAC                                   |
| 1DCCT, 2DCCT  | FILTER CURRENT TRANSDUCERS  |
| 11FU - 13FU   | SEMICONDUCTOR FUSES, 150 A, 500 V:<br>BUSSMANN FWH150B<br>FERRAZ A050F150 |
| 3L  | THREE PHASE INDUCTOR, 100 - 110 $\mu$ h, 280 A                            |
| 4L - 6L   | INDUCTORS, 24 $\mu$ h, 15 A   |
| 2M  | CONTACTOR, PRECHARGE, 600 VAC, 25 A                                       |
| 3M  | CONTACTOR, SUPPLY, 600 VAC, 85 A  |
| Q13 - Q18   | DUAL IGBT MODULES, 1200 V, 200 A  |
| 11RES - 13RES   | RESISTORS, PRECHARGE (HARMONIC FILTER), 10 $\Omega$ , 375 W               |
| 14RES - 15RES   | RESISTORS, BLEEDER, 3000 $\Omega$ , 225 W                                 |
| 16RES - 18 RES  | RESISTORS, TRAP, ADJUSTABLE, 2.0 $\Omega$ , 225 W (1.7 $\Omega$ )         |
| 6T, 7T  | INPUT CURRENT TRANSFORMER   |
| 1TB   | TERMINAL BLOCK, FACTORY WIRING  |
| 3TB   | TERMINAL BLOCK, FIELD WIRING  |
|  | JACK J1 - 1 ETC...  |
|  | PLUG, P1 - 1 ETC...   |

