YORK® PRODUCT DRAWING YORK INTERNATIONAL CORPORATION P.O. Box 1592, York, PA 17405	Supersedes: 160.48-PA16 (696) FORM 160.00-PW2 (398) **WIRING DIAGRAM, MILLENNIUM VARIABLE SPEED DRIVE CP-CT, 5CJ-5CM WITH OPTIONAL HARMONIC FILTER**
CONTRACTOR _____ ORDER NO. _____ YORK CONTRACT NO. _____ YORK ORDER NO. _____	PURCHASER _____ JOB NAME _____ LOCATION _____ ENGINEER _____
☐ REFERENCE DATE _____	☐ APPROVAL DATE _____ ☐ 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)

C1 - C36	CAPACITORS, FILTER, 5000 μf, 450 VDC
C37 - C42	CAPACITORS, FILM, 1.0 μf, 1200 VDC
C43 - C51	CAPACITORS, FILM, 0.2 μf, 1200 VDC
C61 - C66	CAPACITORS, DV/DT, 0.047 μf, 1600 VDC
1FU - 3FU	SEMI-CONDUCTOR FUSES, 700A, 700V: GOULD SHAWMUT *A3-66C 700TS OR FERRAZ -6.6URD33TTF0700
4FU - 6FU	SCRTRIGGER / OIL PUMP MOTOR FUSES - SEE TABLE 1
7FU - 8FU	CONTROL SUPPLY TRANSFORMER PRIMARY FUSES - 15A, 500V, BUSS FNQ-15
9FU	EXTERNAL CONTROL SUPPLY TRANSFORMER SECONDARY FUSE - 20A, 500V, BUSS FNQ-20
10FU	INTERNAL CONTROL SUPPLY TRANSFORMER SECONDARY FUSE - 10A, 500V, BUSS FNQ-10
1L, 2L	INDUCTOR, DCLINK, 715 A, 125 μH
1M, 2M	CONTACTORS, PRECHARGE, 600 VAC, 25 A
Q1 - Q12	DUAL IGBT MODULES, 1200 V, 200 A
1RES - 2 RES	RESISTOR, PRECHARGE, 35 Ω, 500 W
3RES - 4RES	RESISTORS, BLEEDER, 750 Ω, 225 W
5RES - 10RES	DV/DT RESISTORS, 10 Ω, 50 W
11RES - 13RES	RESISTORS, PRECHARGE (HARMONIC FILTER) 10 Ω, 375 W
RT1 - RT4	HEATSINK THERMISTOR TEMPERATURE SENSORS
1SCR - 3SCR	SCR / DIODE MODULES, 1200 V, 250 A
1R	RELAY, COOLING FANS AND PUMP
1SW	CIRCUIT BREAKER, 600 V, 800 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
1TB	TERMINAL BLOCK, FACTORY WIRING
2TB - 3TB	TERMINAL BLOCKS, FIELD WIRING
⟩——	JACK J1 - 1 ETC...
——⟩	PLUG, P1 - 1 ETC...

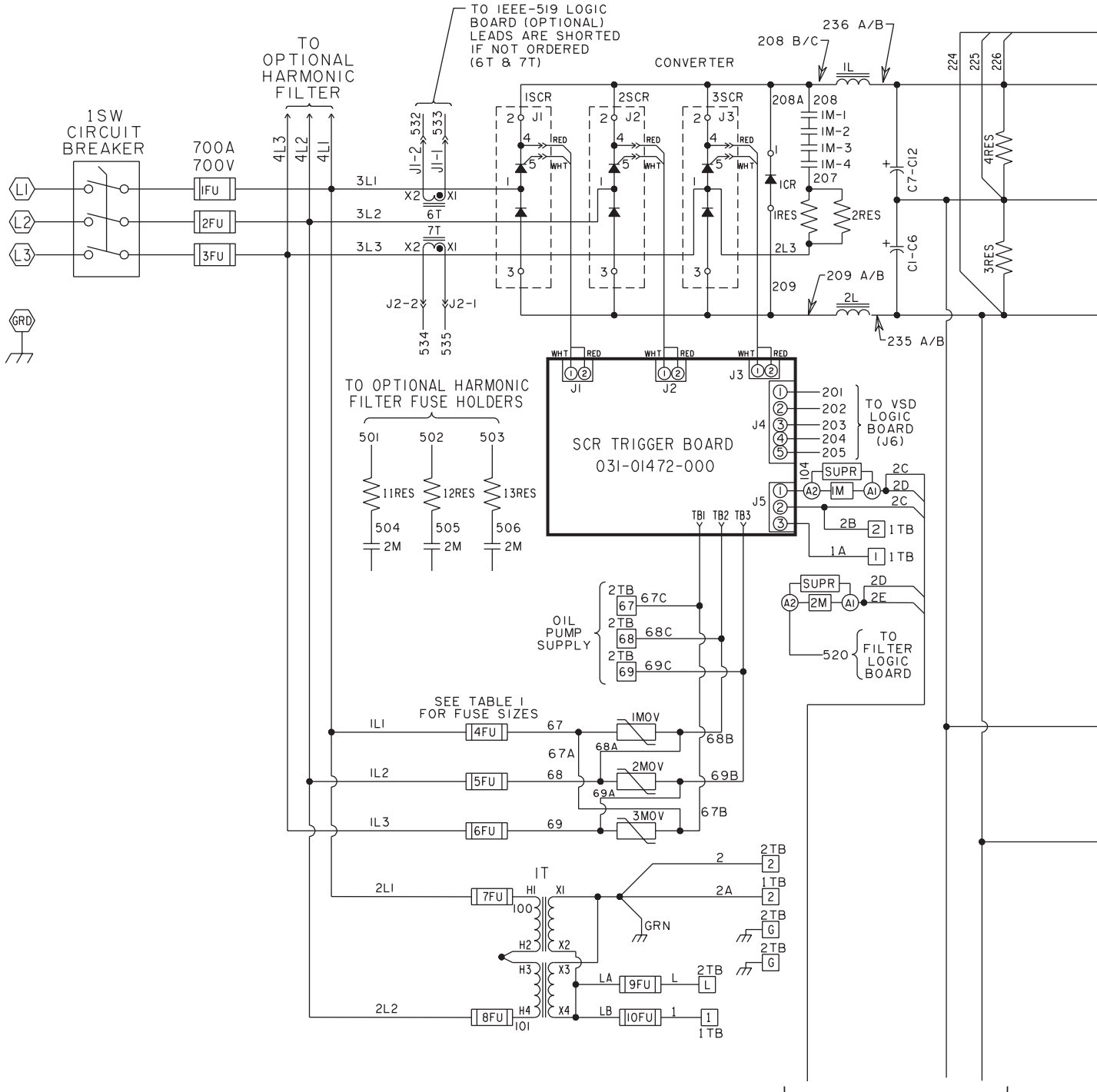

FIG. 1 – ELEMENTARY DIAGRAM (TOP)
035-15153 (REV. E)

CONTINUED ON PAGE 3B

FORM 160.00-PW2

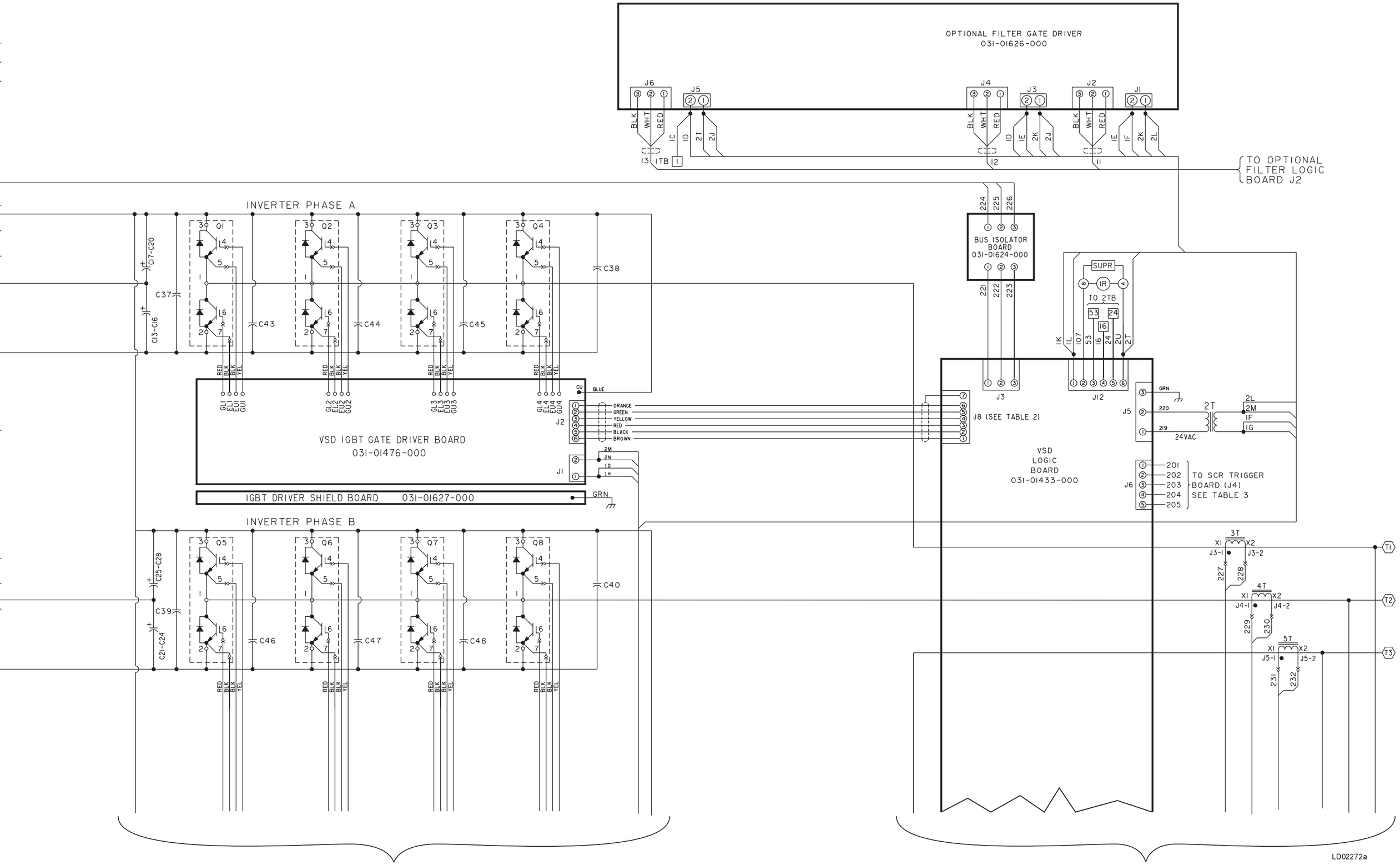

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TABLE 1	
UNIT STYLE	FUSING - 4FU, 5FU, 6FU
YT	5A, 500V, BUSS FNQ-5
YK	7A, 500V, BUSS FNQ-7

TABLE 2
VSD LOGIC BOARD - J8, J9, J10 PINOUT

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

TABLE 3
VSD LOGIC BOARD - J6 PINOUT

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

TABLE 4
OPTONAL FILTER LOGIC BOARD - J3 PINOUT

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

TABLE 5
OPTONAL FILTER LOGIC BOARD - J5 PINOUT

CONNECTOR PIN	IDENTIFIER	FUNCTION
1	*522	TO J2-1, OPTIONAL 1625 BOARD
2	*523	TO J2-2, OPTIONAL 1625 BOARD
3	*524	TO J2-3, OPTIONAL 1625 BOARD
4	*528	TO J2-3, OPTIONAL 1624 BOARD
5	*527	TO J2-2, OPTIONAL 1624 BOARD
6	*526	TO J2-1, OPTIONAL 1624 BOARD

* SAME PIN NUMBERS ARE USED AT BOTH ENDS OF CABLE

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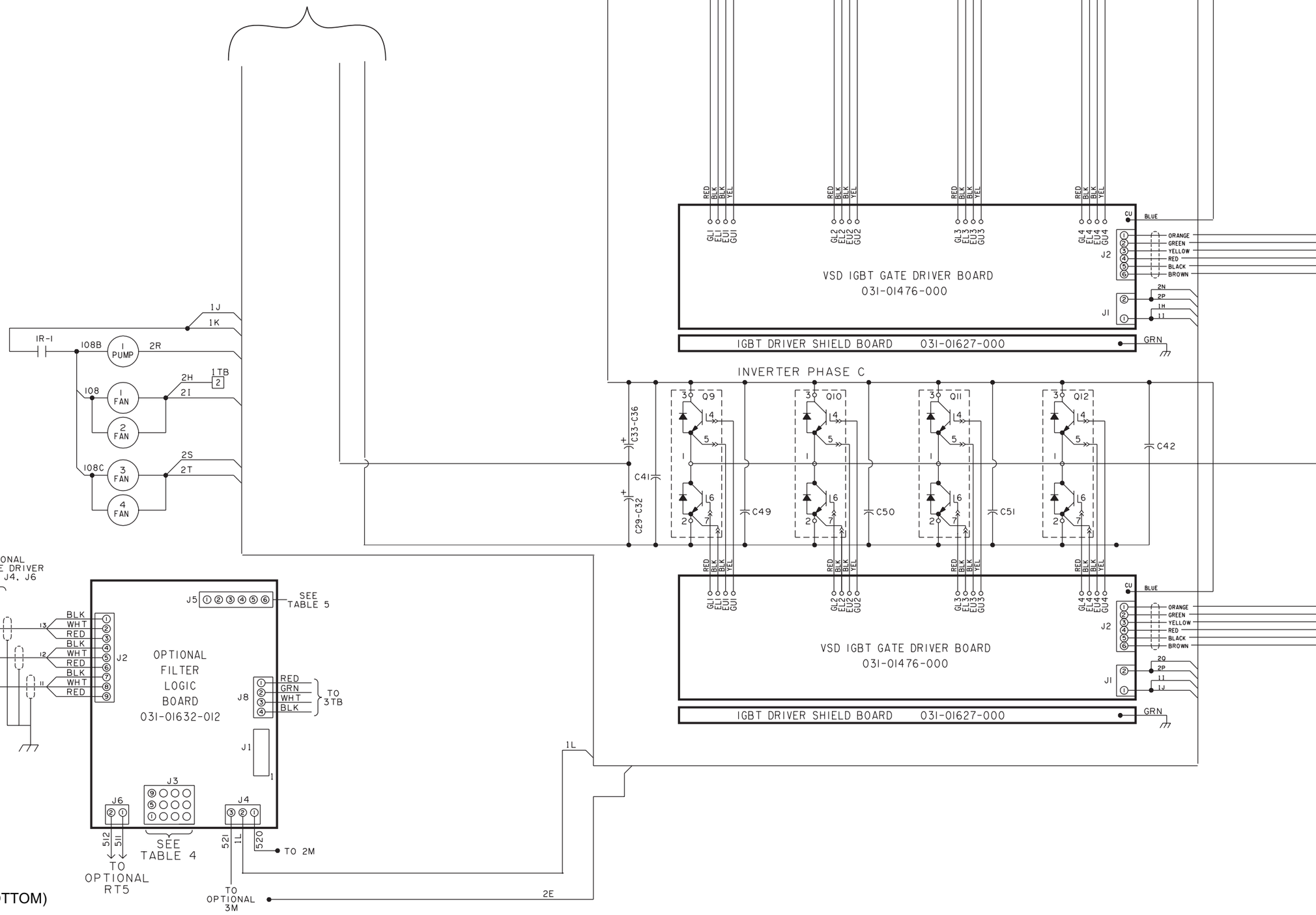

FIG. 1 (Cont'd) – ELEMENTARY DIAGRAM (BOTTOM)
035-15153 (REV. E)

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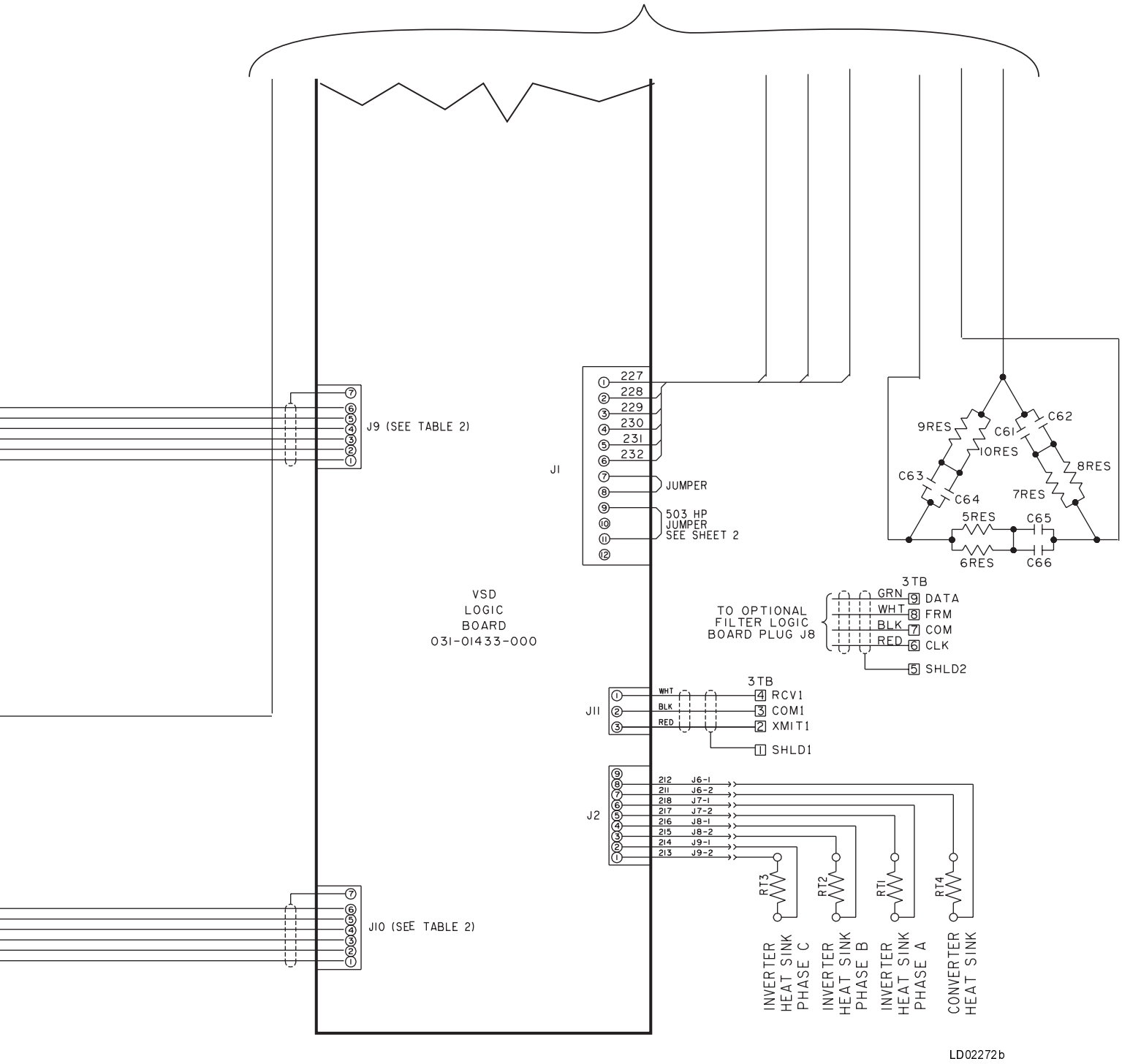

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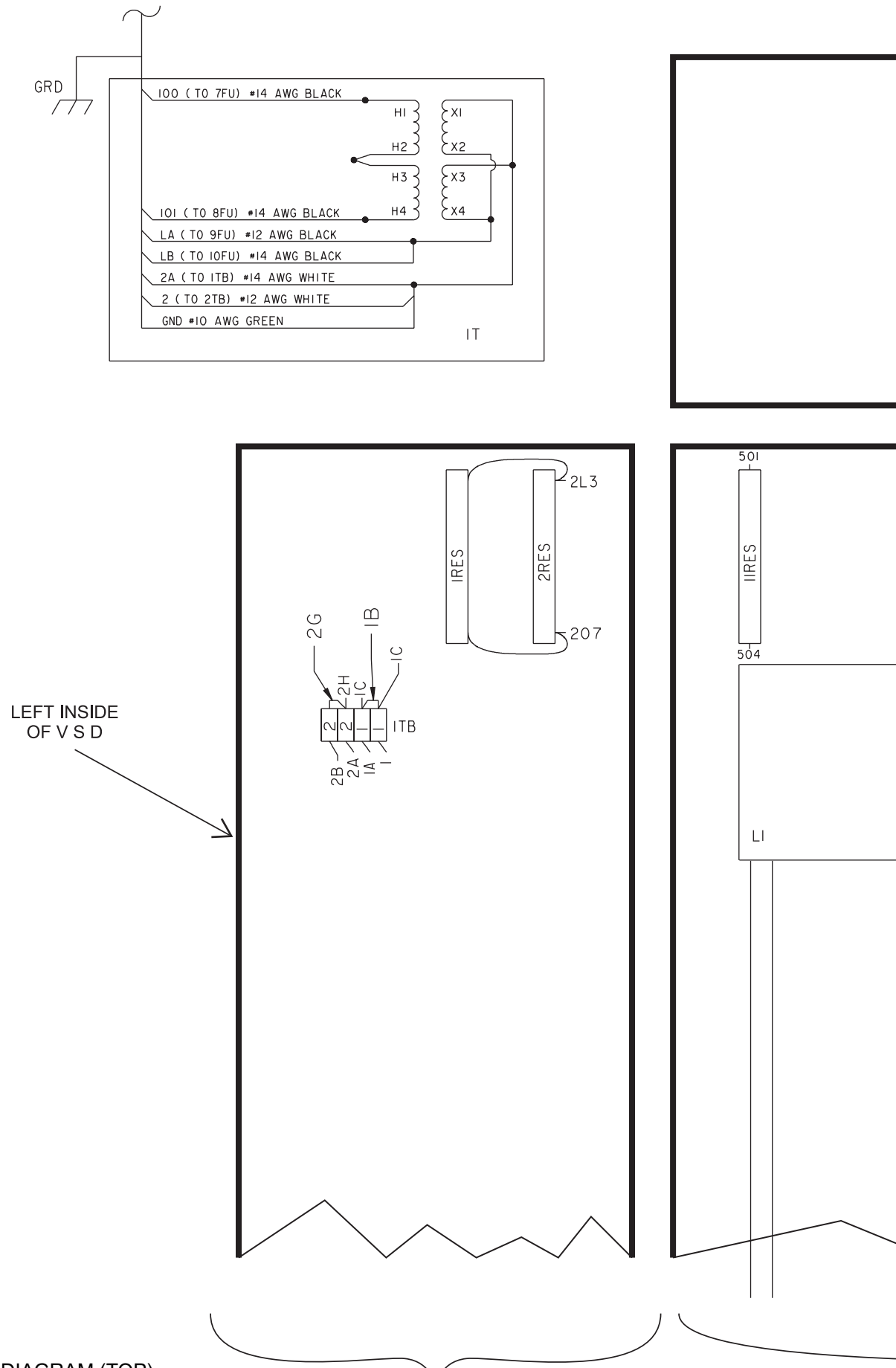

FIG. 2 – CONNECTION DIAGRAM (TOP)
035-15153 (REV. E)

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TOP
OF V S D

PUMP 1

108C 108B 2R
108A 2S
2Q

FILTER GATE DRIVER - TOP VIEW
031-01626-000
PH3 PH2 PH1
BLK WHT RED
J6 J4 J2
J5 J3 J1
1C 1D 2I 2J
1D 1E 2K 2J
1E 1F 2K 2L

PHASE A
VSD IGBT GATE DRIVER
TOP VIEW
031-01476-000
1. ORANGE GREEN YELLOW RED BLACK BROWN
J2
J1
2M 2N 1G 1H

PHASE B
VSD IGBT GATE DRIVER
TOP VIEW
031-01476-000
1. ORANGE GREEN YELLOW RED BLACK BROWN
J2
J1
2N 2P 1H 1I

PHASE C
VSD IGBT GATE DRIVER
TOP VIEW
031-01476-000
1. ORANGE GREEN YELLOW RED BLACK BROWN
J2
J1
2Q 2P 1I 1J

FORM 160.00-PW2

502 503
12RES 13RES
505 506
1 & 2 FAN COIL
2H 2I 108
ISW
IT
L2 L3
501A 502A 503A
J1
J2
524 523 522
031-01625-000
517 518 519
1DCCT 2DCCT
1 2 3 4
RED WHT BLK
507 507A 507B
508 508A 508B
509 509A 509B
3M
SUPR
A1 A2
2E 52I
16RES 17RES 18RES
IEEE 519
HI FREQ.
TRAP
531A 529A
FILTER
RT5
511 512
529 531
14RES
15RES
530
225A
TI
3T
X2 X1
228 227
217 218
1 2
RTI
PHASE A

RIGHT INSIDE
OF V S D

IF IG 2L 2M
PRI 2T SEC
LINE LOAD
219 220
529 530 531
J1
031-01624-000
J2
526 527 528

FILTER LOGIC
BOARD (J5)
PIN WIRE
1. 522
2. 523
3. 524
4. 528
5. 527
6. 526

FILTER LOGIC
BOARD (J8)
PIN WIRE
1. RED
2. GREEN
3. WHITE
4. BLACK

503 H.P.

HEAT SINK
PHASE A
HEAT SINK
PHASE B
HEAT SINK
PHASE C
4T 3T 5T

VSD LOGIC BOARD (J1)
1. SIG. PH. 3T (227)
2. COMMON (228)
3. SIG. PH. 4T (229)
4. COMMON (230)
5. SIG. PH. 5T (231)
6. COMMON (232)
7. IIS RLY.
8. +5V
9. DGND
10. I-SCO*
11. I-SCI*
12. I-SC2*

INSIDE
OF V S D

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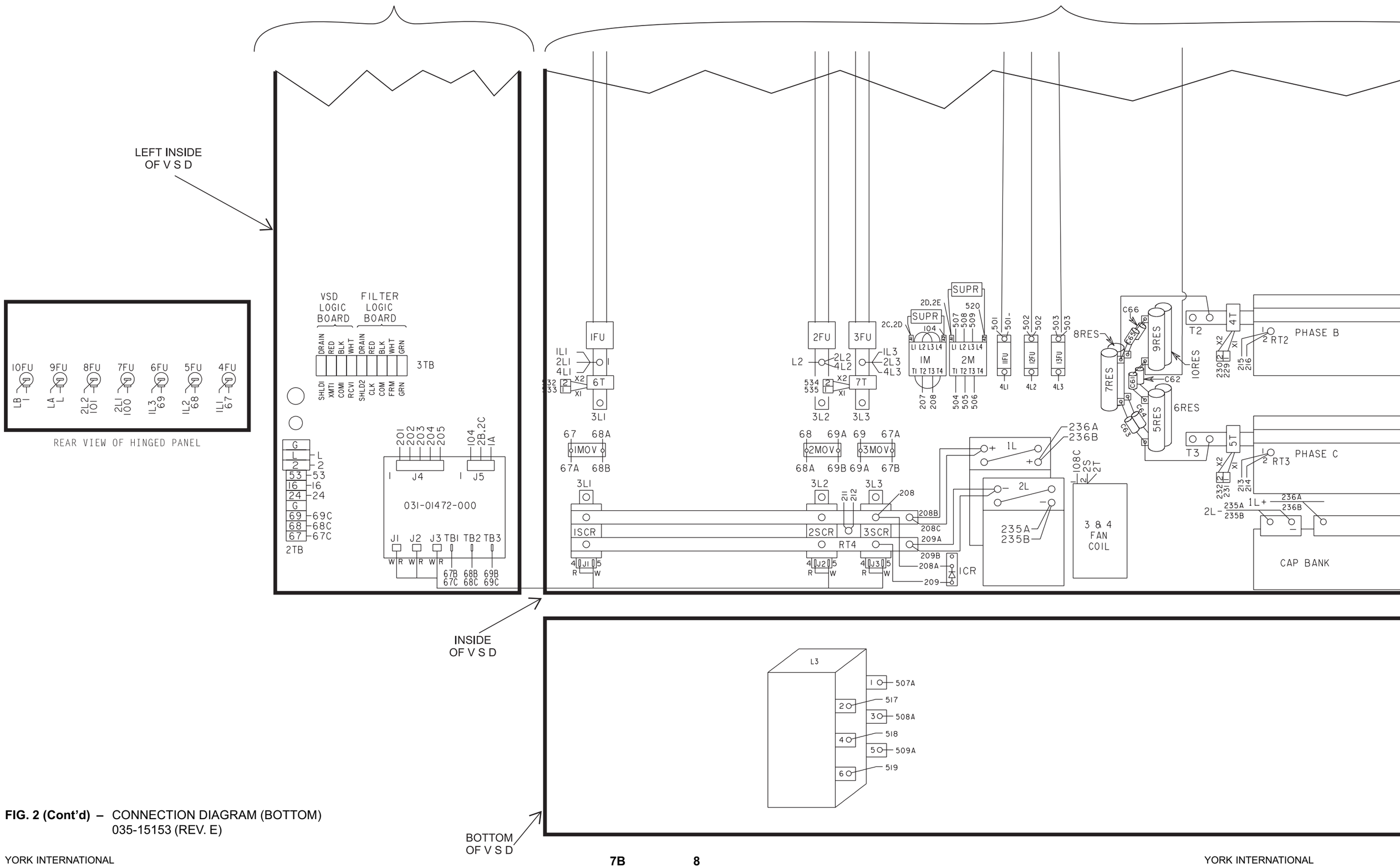

FIG. 2 (Cont'd) – CONNECTION DIAGRAM (BOTTOM)
035-15153 (REV. E)

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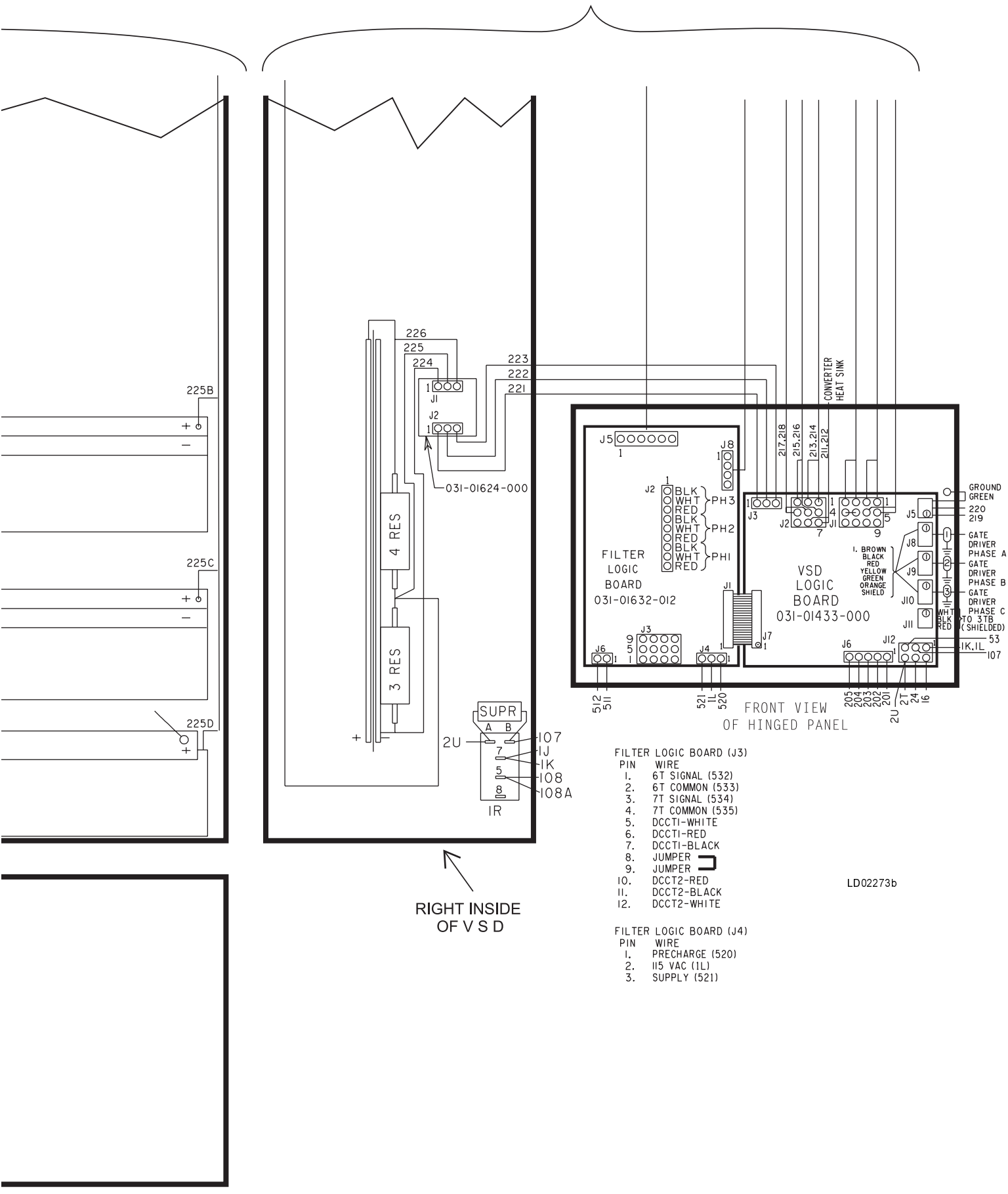

FILTER LOGIC BOARD (J3)

PIN	WIRE
1.	6T SIGNAL (532)
2.	6T COMMON (533)
3.	7T SIGNAL (534)
4.	7T COMMON (535)
5.	DCCTI-WHITE
6.	DCCTI-RED
7.	DCCTI-BLACK
8.	JUMPER
9.	JUMPER
10.	DCCT2-RED
11.	DCCT2-BLACK
12.	DCCT2-WHITE

FILTER LOGIC BOARD (J4)

PIN	WIRE
1.	PRECHARGE (520)
2.	115 VAC (1L)
3.	SUPPLY (521)

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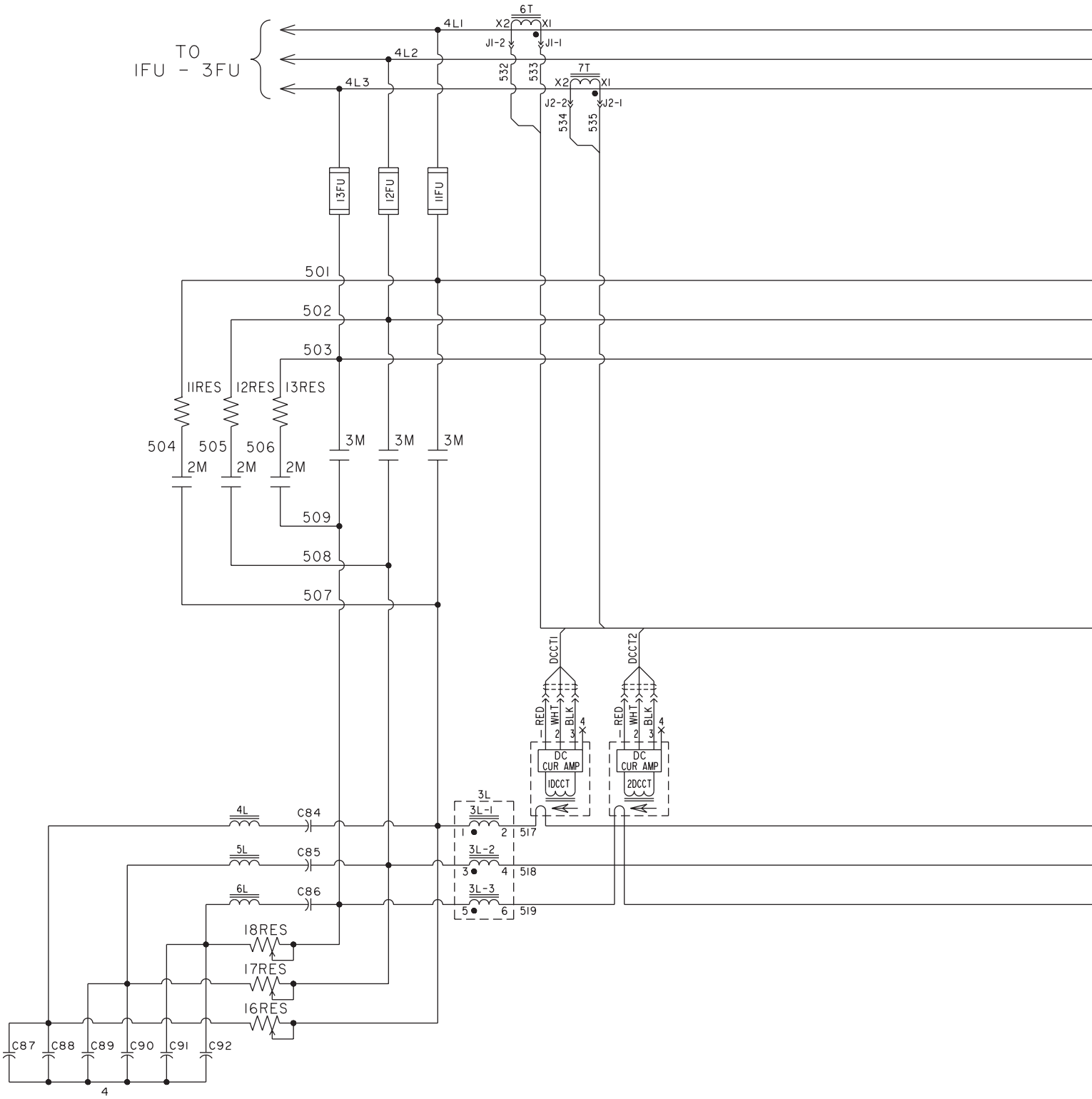
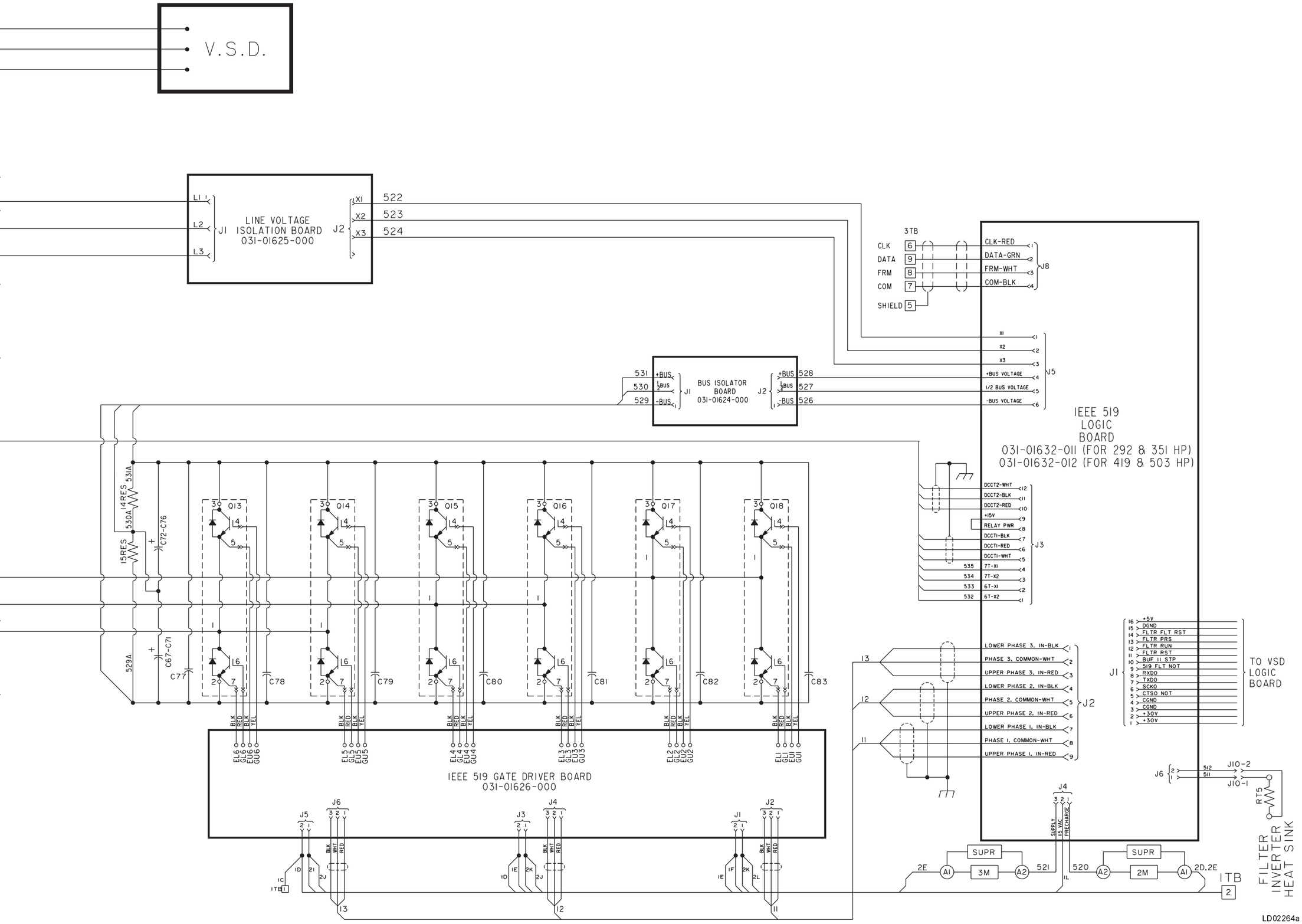


FIG. 3 – OPTIONAL HARMONIC FILTER ELEMENTARY DIAGRAM
035-12669 (REV. D)

FORM 160.00-PW2



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

C67 - C76	CAPACITORS, FILTER, 500 µf, 450 VDC
C77 - C83	CAPACITORS, FILM, 0.1 µf, 1200 VDC
C84 - C86	CAPACITORS, FILM, 3.0<F14 µf, 1000 VDC
C87 - C92	CAPACITORS, FILM, 25.0 µf, 450 VAC
1DCCT, 2DCCT	FILTER CURRENT TRANSDUCERS
11FU - 13FU	SEMICONDUCTOR FUSES, 200 A, 500 V: BUSSMANN FWH200B FERRAZ A050F200
3L	THREE PHASE INDUCTOR, 75 - 80 µh, 400 A
4L - 6L	INDUCTORS, 24 µh, 15 A
2M	CONTACTOR, PRECHARGE, 600 VAC, 25 A
3M	CONTACTOR, SUPPLY, 600 VAC, 150 A
Q13 - Q18	DUAL 1GBT MODULES, 1200 V, 200 A
11RES - 13RES	RESISTORS, PRECHARGE (HARMONIC FILTER), 10 Ω, 375 W
14RES - 15RES	RESISTORS, BLEEDER, 3000 Ω, 225 W
16RES - 18 RES	RESISTORS, TRAP, ADJUSTABLE, 2.0 Ω, 225 W (1.7 Ω)
6T, 7T	INPUT CURRENT TRANSFORMER
1TB	TERMINAL BLOCK, FACTORY WIRING
3TB	TERMINAL BLOCK, FIELD WIRING
⟩——	JACK J1 - 1 ETC...
——⟩	PLUG, P1 - 1 ETC...

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Form 160.00-PW2 (398)
Supersedes: Nothing