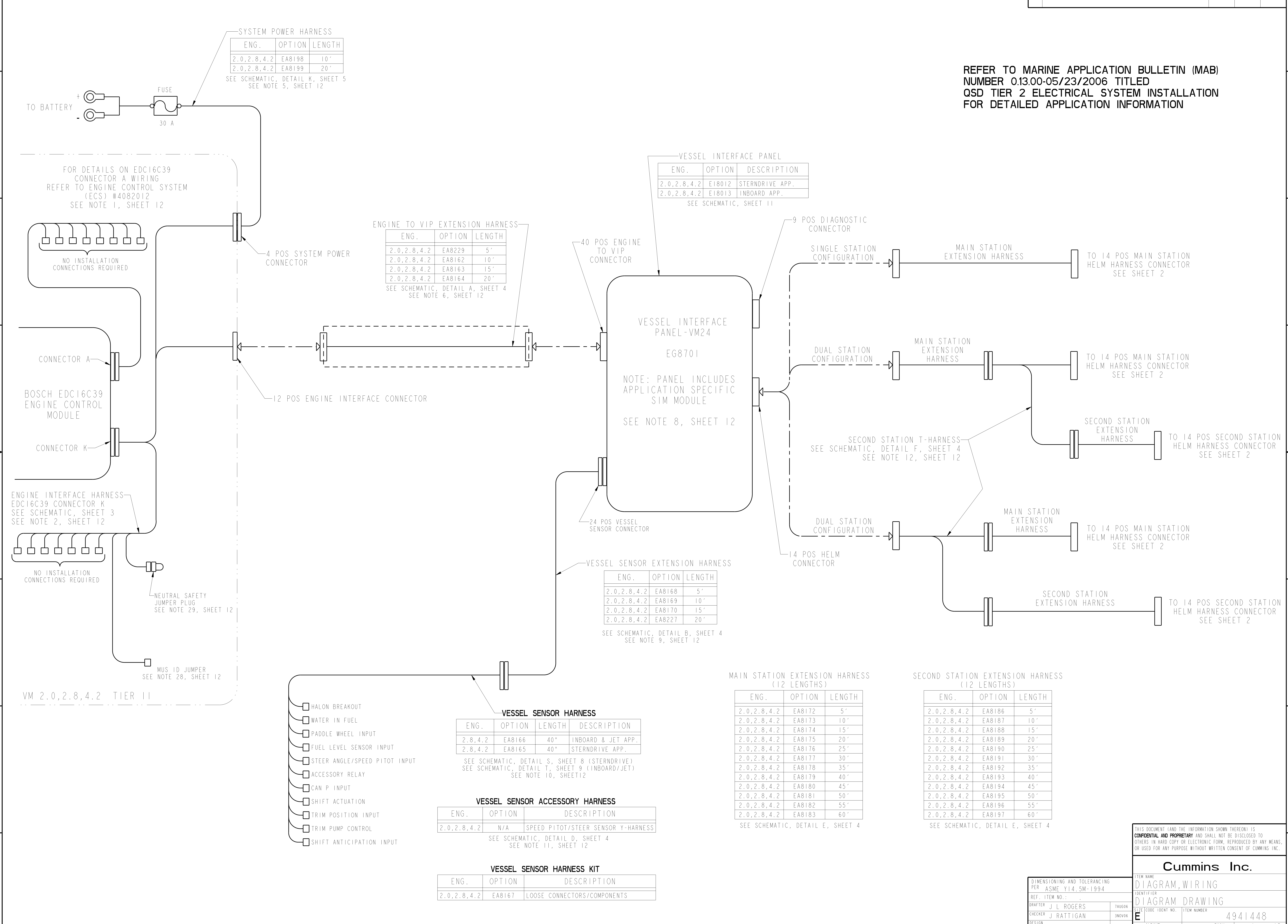


2.0,2.8,4.2 QSD (NON-DTS VM24)

REVISIONS				
REV	DESCRIPTION	DRAFTER	CHECKER	APPROVAL
02	070700-252 REVISED	LOR	R.L.W.	



REFER TO MARINE APPLICATION BULLETIN (MAB) NUMBER 0.13.00-05/23/2006 TITLED QSD TIER 2 ELECTRICAL SYSTEM INSTALLATION FOR DETAILED APPLICATION INFORMATION

SYSTEM POWER HARNESS

ENG.	OPTION	LENGTH
2.0,2.8,4.2	EA8198	10'
2.0,2.8,4.2	EA8199	20'

SEE SCHEMATIC, DETAIL K, SHEET 5  
SEE NOTE 3, SHEET 12

VESSEL INTERFACE PANEL

ENG.	OPTION	DESCRIPTION
2.0,2.8,4.2	E18012	STERNDRIVE APP.
2.0,2.8,4.2	E18013	INBOARD APP.

SEE SCHEMATIC, SHEET 11

ENGINE TO VIP EXTENSION HARNESS

ENG.	OPTION	LENGTH
2.0,2.8,4.2	EA8229	5'
2.0,2.8,4.2	EA8162	10'
2.0,2.8,4.2	EA8163	15'
2.0,2.8,4.2	EA8164	20'

SEE SCHEMATIC, DETAIL A, SHEET 4  
SEE NOTE 6, SHEET 12

VESSEL SENSOR EXTENSION HARNESS

ENG.	OPTION	LENGTH
2.0,2.8,4.2	EA8168	5'
2.0,2.8,4.2	EA8169	10'
2.0,2.8,4.2	EA8170	15'
2.0,2.8,4.2	EA8227	20'

SEE SCHEMATIC, DETAIL B, SHEET 4  
SEE NOTE 9, SHEET 12

VESSEL SENSOR HARNESS

ENG.	OPTION	LENGTH	DESCRIPTION
2.8,4.2	EA8166	40"	INBOARD & JET APP.
2.8,4.2	EA8165	40"	STERNDRIVE APP.

SEE SCHEMATIC, DETAIL S, SHEET 8 (STERNDRIVE)  
SEE SCHEMATIC, DETAIL T, SHEET 9 (INBOARD/JET)  
SEE NOTE 10, SHEET 12

VESSEL SENSOR ACCESSORY HARNESS

ENG.	OPTION	DESCRIPTION
2.0,2.8,4.2	N/A	SPEED PITOT/STEER SENSOR Y-HARNESS

SEE SCHEMATIC, DETAIL D, SHEET 4  
SEE NOTE 11, SHEET 12

VESSEL SENSOR HARNESS KIT

ENG.	OPTION	DESCRIPTION
2.0,2.8,4.2	EA8167	LOOSE CONNECTORS/COMPONENTS

MAIN STATION EXTENSION HARNESS (12 LENGTHS)

ENG.	OPTION	LENGTH
2.0,2.8,4.2	EA8172	5'
2.0,2.8,4.2	EA8173	10'
2.0,2.8,4.2	EA8174	15'
2.0,2.8,4.2	EA8175	20'
2.0,2.8,4.2	EA8176	25'
2.0,2.8,4.2	EA8177	30'
2.0,2.8,4.2	EA8178	35'
2.0,2.8,4.2	EA8179	40'
2.0,2.8,4.2	EA8180	45'
2.0,2.8,4.2	EA8181	50'
2.0,2.8,4.2	EA8182	55'
2.0,2.8,4.2	EA8183	60'

SEE SCHEMATIC, DETAIL E, SHEET 4

SECOND STATION EXTENSION HARNESS (12 LENGTHS)

ENG.	OPTION	LENGTH
2.0,2.8,4.2	EA8186	5'
2.0,2.8,4.2	EA8187	10'
2.0,2.8,4.2	EA8188	15'
2.0,2.8,4.2	EA8189	20'
2.0,2.8,4.2	EA8190	25'
2.0,2.8,4.2	EA8191	30'
2.0,2.8,4.2	EA8192	35'
2.0,2.8,4.2	EA8193	40'
2.0,2.8,4.2	EA8194	45'
2.0,2.8,4.2	EA8195	50'
2.0,2.8,4.2	EA8196	55'
2.0,2.8,4.2	EA8197	60'

SEE SCHEMATIC, DETAIL E, SHEET 4

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**Cummins Inc.**

ITEM NAME: DIAGRAM, WIRING  
IDENTIFIER: DIAGRAM DRAWING

DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994

REF. ITEM NO.:  
DRAFTER: J L ROGERS  
CHECKER: J RATTIGAN

TAJ006  
3NOV06

SCALE: NONE

ITEM NUMBER: 4941448  
ITEM CONTROL: CMU  
SHEET: 1 OF 12

2.0,2.8,4.2 QSD (NON-DTS VM24)

REVISIONS				
REV	DESCRIPTION	DRAFTER	CHECKER	APPROVAL
02	070700-252 REVISED			

NOTE: VESSEL VIEW OPTION SHOWN. FOR COMPLETE LIST OF AVAILABLE INSTRUMENTATION OPTIONS REFER TO TABLE 3 ON THIS SHEET.

SYSTEM TACHOMETER INTERFACE HARNESS SEE SCHEMATIC, DETAIL H, SHEET 5

SYSTEM SPEEDOMETER INTERFACE HARNESS SEE SCHEMATIC, DETAIL G, SHEET 5

ENG.	DESCRIPTION
2.0,2.8,4.2	PORT IGNITION JUMPER

REFER TO MARINE APPLICATION BULLETIN (MAB) NUMBER 0.13.00-05/23/2006 FOR DETAILED INFORMATION ON MAIN AND SECOND STATION HELM HARNESS CONFIGURATION

CAN P JUMPER HARNESS

ENG.	OPTION	DESCRIPTION
2.0,2.8,4.2	EA8171	CAN P INTERCONNECT

SEE SCHEMATIC, DETAIL L, SHEET 5  
SEE NOTE 13, SHEET 12

MAIN STATION HELM HARNESS

ENG.	OPTION	DESCRIPTION
2.0,2.8,4.2	EA8184	HARNESS & ASSOCIATED PARTS

SEE SCHEMATIC, DETAIL R, SHEET 7  
SEE NOTE 14, SHEET 12

SECOND STATION HELM HARNESS

ENG.	OPTION	DESCRIPTION
2.0,2.8,4.2	EA8185	HARNESS & ASSOCIATED PARTS

SEE SCHEMATIC, DETAIL R, SHEET 7  
SEE NOTE 15, SHEET 12

CAN P JUMPER HARNESS

ENG.	OPTION	DESCRIPTION
2.0,2.8,4.2	EA8171	CAN P INTERCONNECT

SEE SCHEMATIC, DETAIL L, SHEET 5  
SEE NOTE 13, SHEET 12

NOTE: VESSEL VIEW OPTION SHOWN. FOR COMPLETE LIST OF AVAILABLE INSTRUMENTATION OPTIONS REFER TO TABLE 3 ON THIS SHEET.

SYSTEM TACHOMETER INTERFACE HARNESS SEE SCHEMATIC, DETAIL H, SHEET 5

SYSTEM SPEEDOMETER INTERFACE HARNESS SEE SCHEMATIC, DETAIL G, SHEET 5

ENG.	DESCRIPTION
2.0,2.8,4.2	PORT IGNITION JUMPER

SEE SCHEMATIC, DETAIL C, SHEET 4  
SEE NOTE 27, SHEET 12

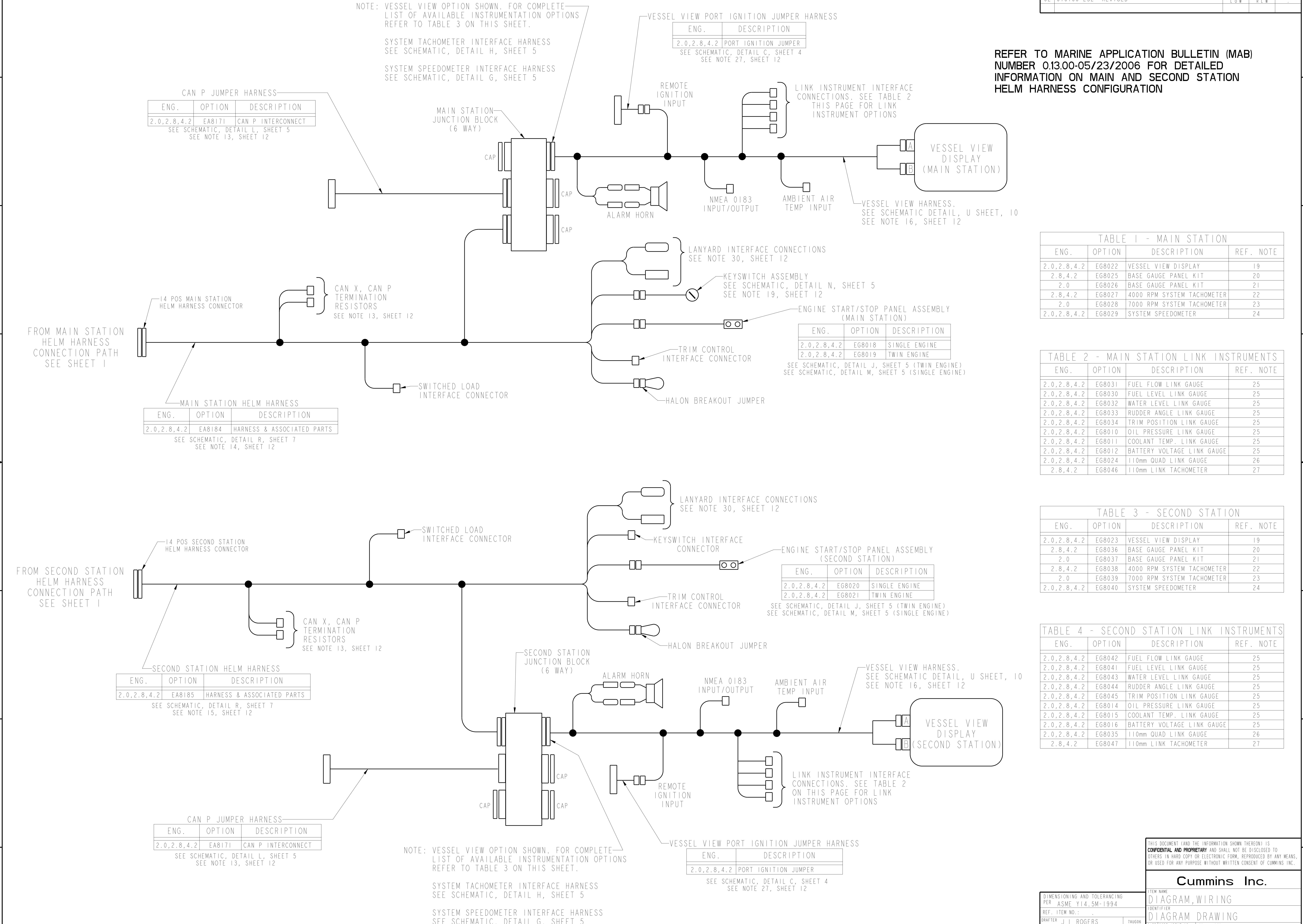


TABLE 1 - MAIN STATION

ENG.	OPTION	DESCRIPTION	REF. NOTE
2.0,2.8,4.2	EG8022	VESSEL VIEW DISPLAY	19
2.8,4.2	EG8025	BASE GAUGE PANEL KIT	20
2.0	EG8026	BASE GAUGE PANEL KIT	21
2.8,4.2	EG8027	4000 RPM SYSTEM TACHOMETER	22
2.0	EG8028	7000 RPM SYSTEM TACHOMETER	23
2.0,2.8,4.2	EG8029	SYSTEM SPEEDOMETER	24

TABLE 2 - MAIN STATION LINK INSTRUMENTS

ENG.	OPTION	DESCRIPTION	REF. NOTE
2.0,2.8,4.2	EG8031	FUEL FLOW LINK GAUGE	25
2.0,2.8,4.2	EG8030	FUEL LEVEL LINK GAUGE	25
2.0,2.8,4.2	EG8032	WATER LEVEL LINK GAUGE	25
2.0,2.8,4.2	EG8033	RUDDER ANGLE LINK GAUGE	25
2.0,2.8,4.2	EG8034	TRIM POSITION LINK GAUGE	25
2.0,2.8,4.2	EG8010	OIL PRESSURE LINK GAUGE	25
2.0,2.8,4.2	EG8011	COOLANT TEMP. LINK GAUGE	25
2.0,2.8,4.2	EG8012	BATTERY VOLTAGE LINK GAUGE	25
2.0,2.8,4.2	EG8024	110mm QUAD LINK GAUGE	26
2.8,4.2	EG8046	110mm LINK TACHOMETER	27

TABLE 3 - SECOND STATION

ENG.	OPTION	DESCRIPTION	REF. NOTE
2.0,2.8,4.2	EG8023	VESSEL VIEW DISPLAY	19
2.8,4.2	EG8036	BASE GAUGE PANEL KIT	20
2.0	EG8037	BASE GAUGE PANEL KIT	21
2.8,4.2	EG8038	4000 RPM SYSTEM TACHOMETER	22
2.0	EG8039	7000 RPM SYSTEM TACHOMETER	23
2.0,2.8,4.2	EG8040	SYSTEM SPEEDOMETER	24

TABLE 4 - SECOND STATION LINK INSTRUMENTS

ENG.	OPTION	DESCRIPTION	REF. NOTE
2.0,2.8,4.2	EG8042	FUEL FLOW LINK GAUGE	25
2.0,2.8,4.2	EG8041	FUEL LEVEL LINK GAUGE	25
2.0,2.8,4.2	EG8043	WATER LEVEL LINK GAUGE	25
2.0,2.8,4.2	EG8044	RUDDER ANGLE LINK GAUGE	25
2.0,2.8,4.2	EG8045	TRIM POSITION LINK GAUGE	25
2.0,2.8,4.2	EG8014	OIL PRESSURE LINK GAUGE	25
2.0,2.8,4.2	EG8015	COOLANT TEMP. LINK GAUGE	25
2.0,2.8,4.2	EG8016	BATTERY VOLTAGE LINK GAUGE	25
2.0,2.8,4.2	EG8035	110mm QUAD LINK GAUGE	26
2.8,4.2	EG8047	110mm LINK TACHOMETER	27

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**Cummins Inc.**

ITEM NAME: DIAGRAM, WIRING  
IDENTIFIER: DIAGRAM DRAWING

DIMENSIONING AND TOLERANCING PER: ASME Y14.5M-1994

REF. ITEM NO.:

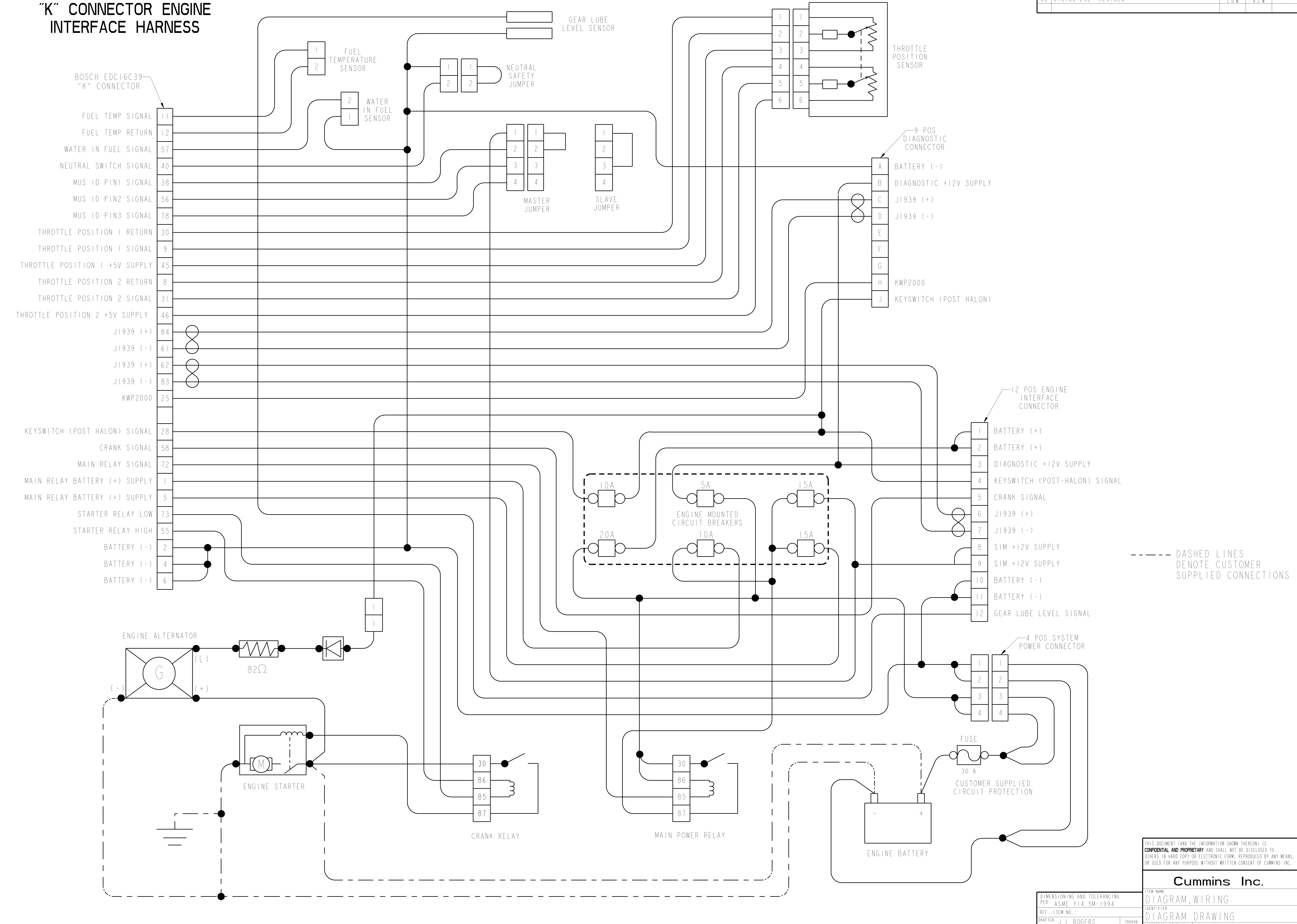
DRAFTER: J L ROGERS  
CHECKER: J RATTIGAN

DATE: 3/10/06  
SCALE: NONE

ITEM NUMBER: 4941448  
SHEET: 2 OF 12

2.0,2.8,4.2 QSD (NON-DTS VM24)  
 "K" CONNECTOR ENGINE  
 INTERFACE HARNESS

REVISIONS			
REV	DESCRIPTION	DRAFTER	CHECKER
02	070700-252 REVISED	TAJ006	J.RATTIGAN

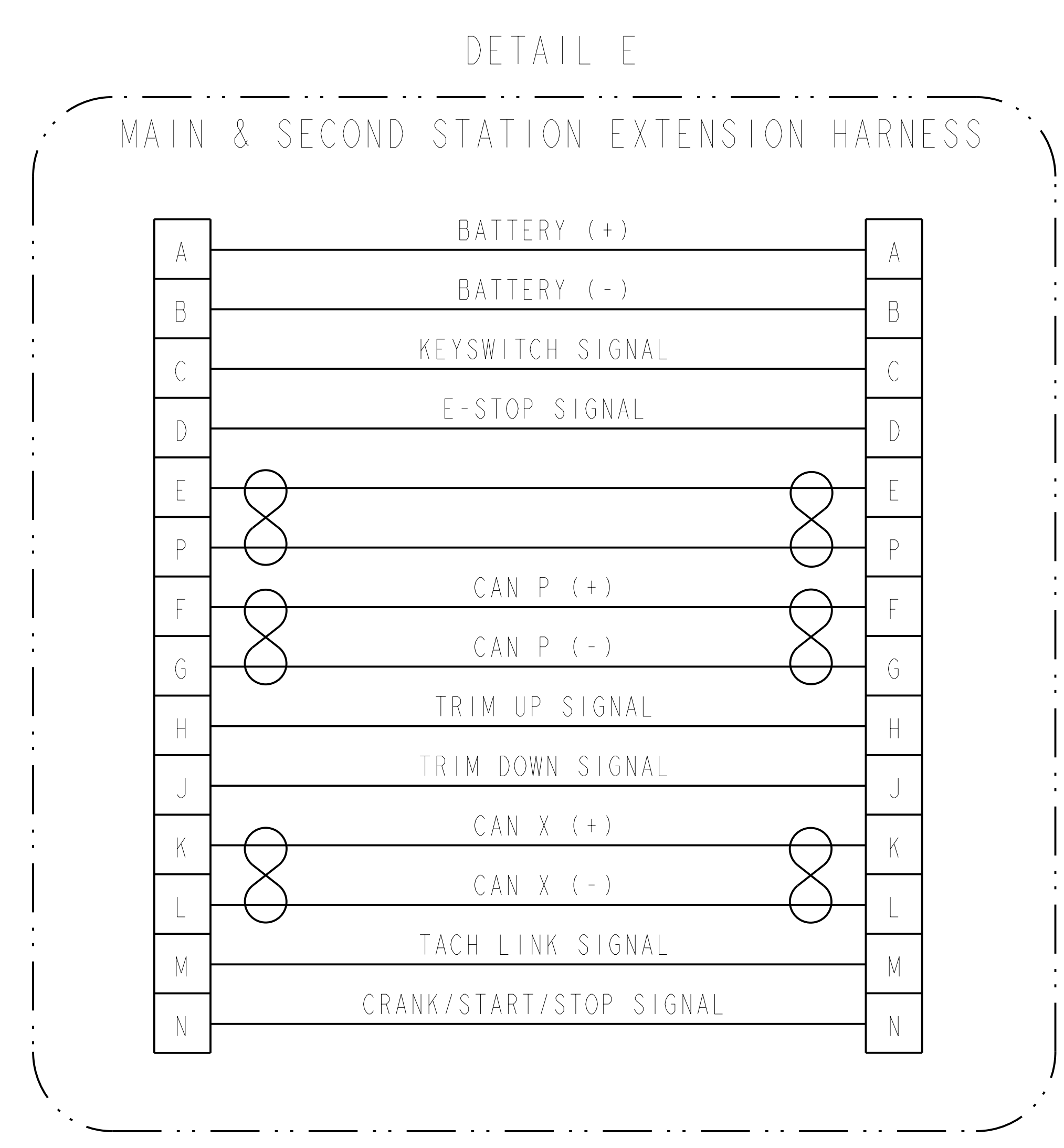
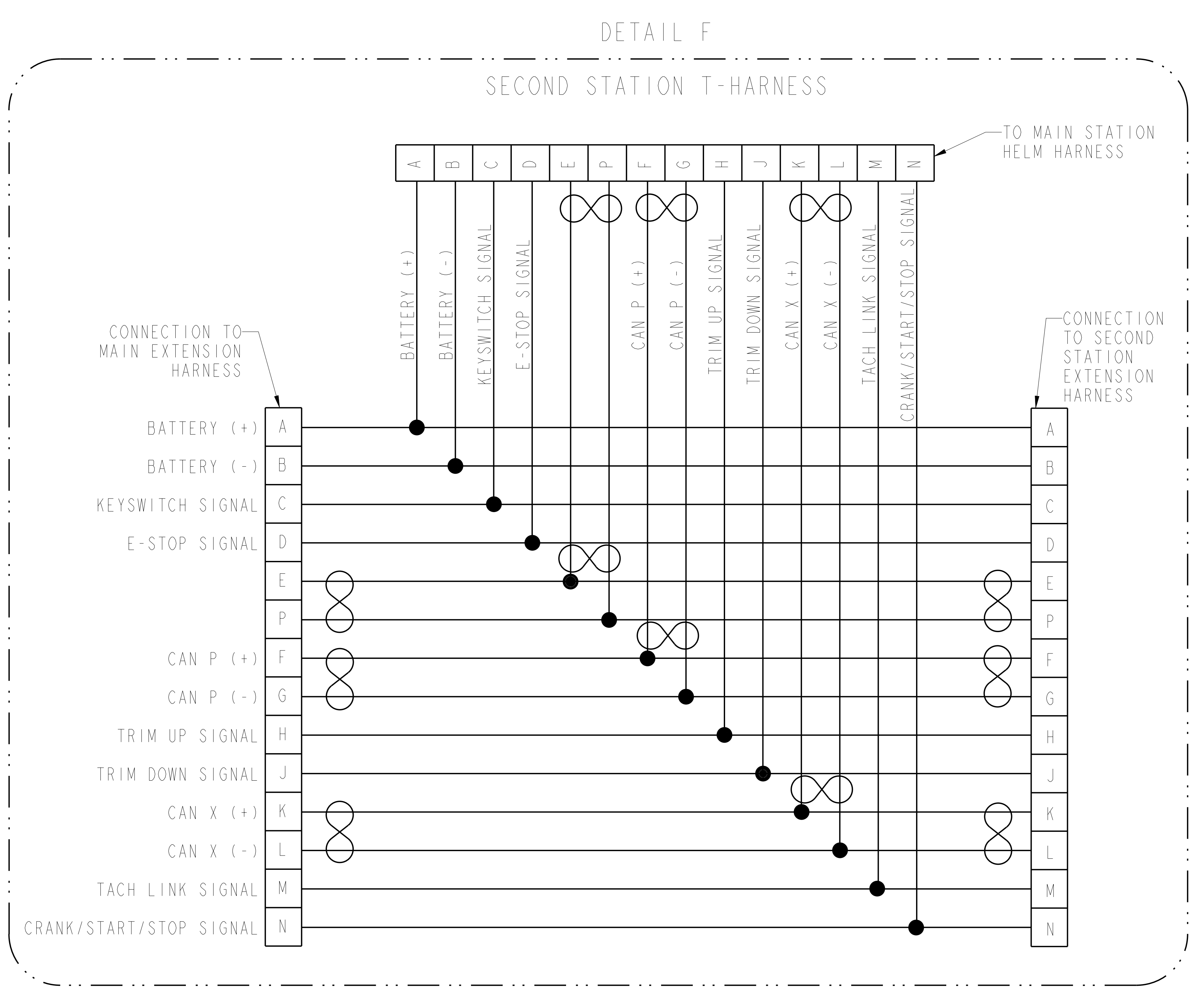
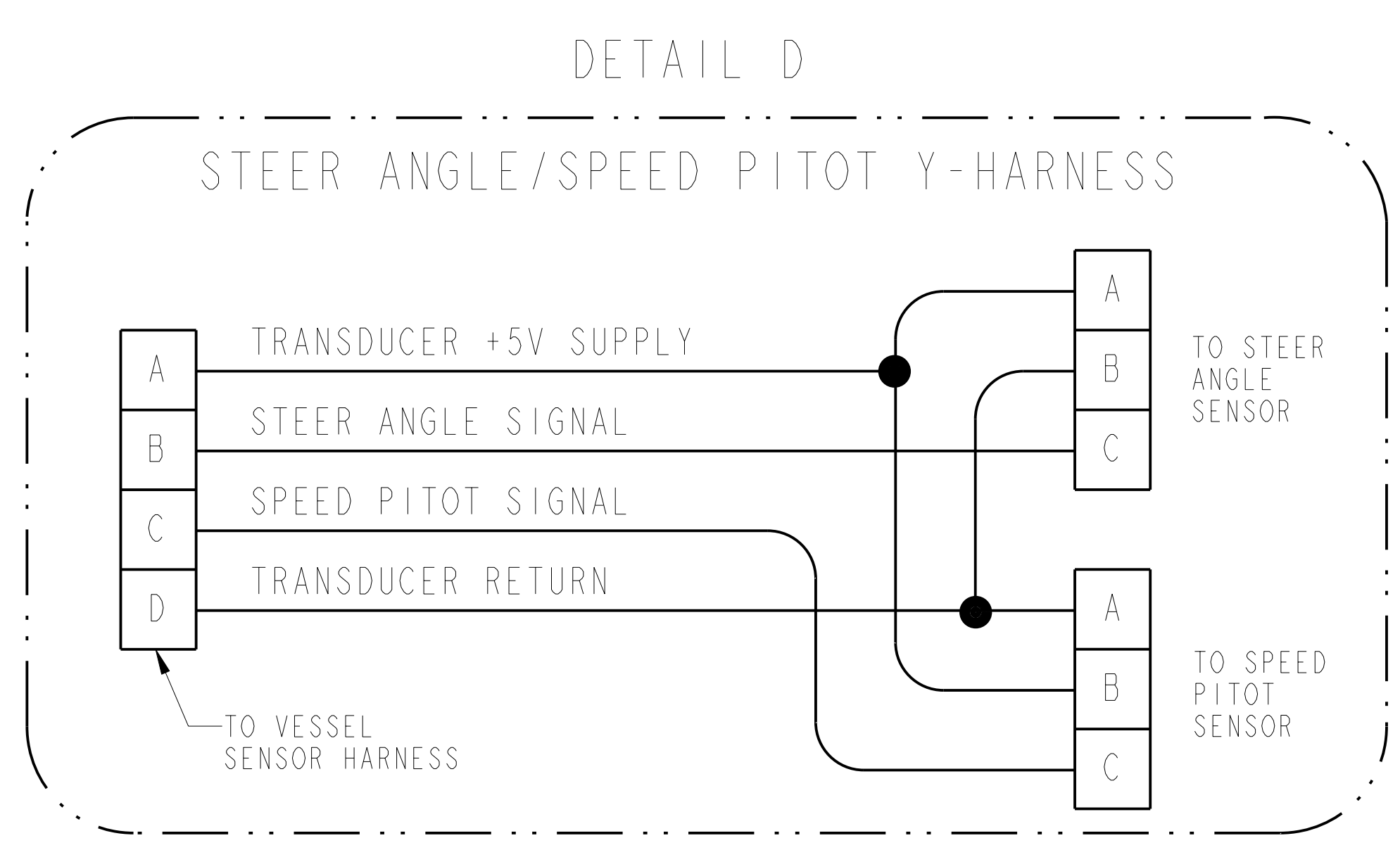
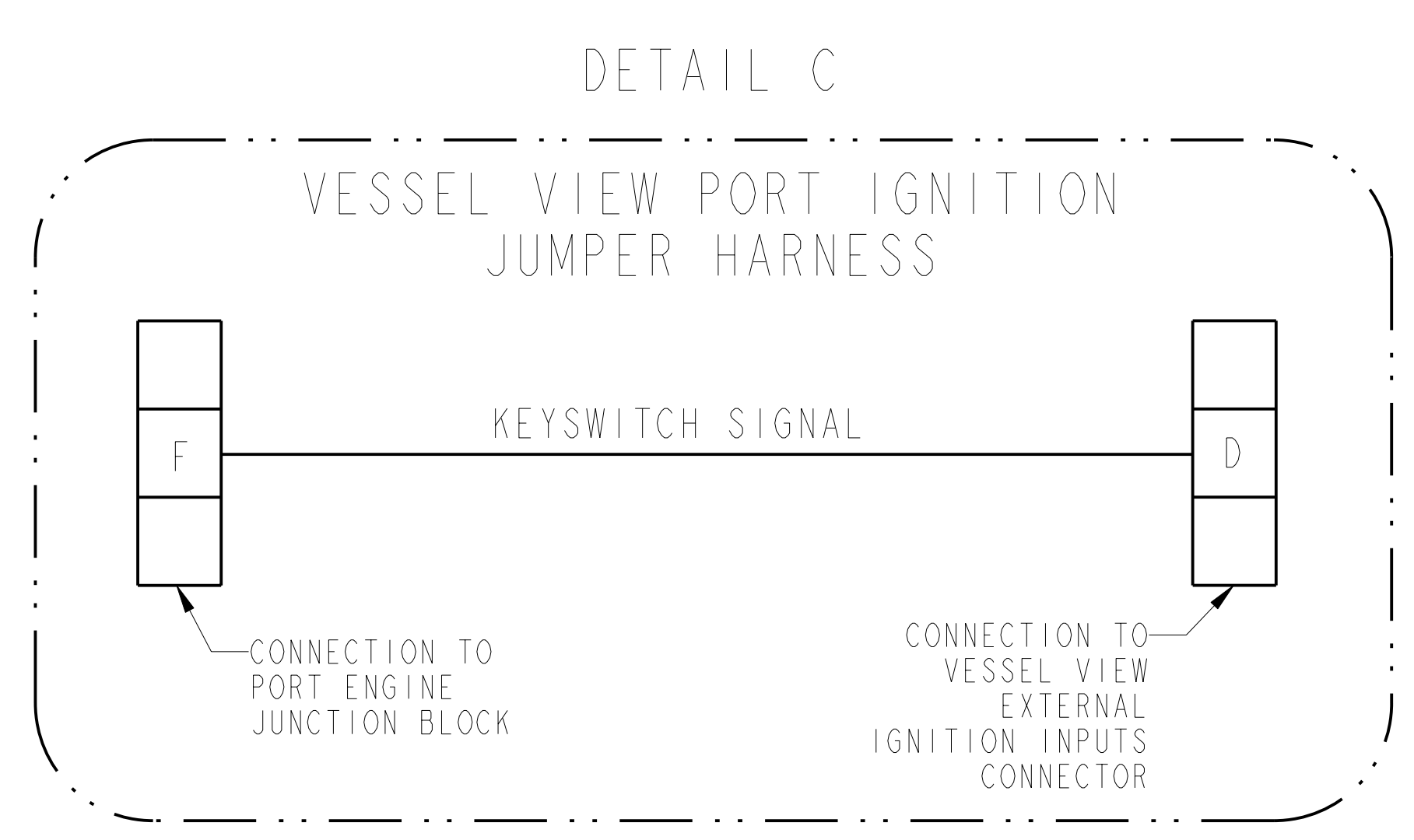
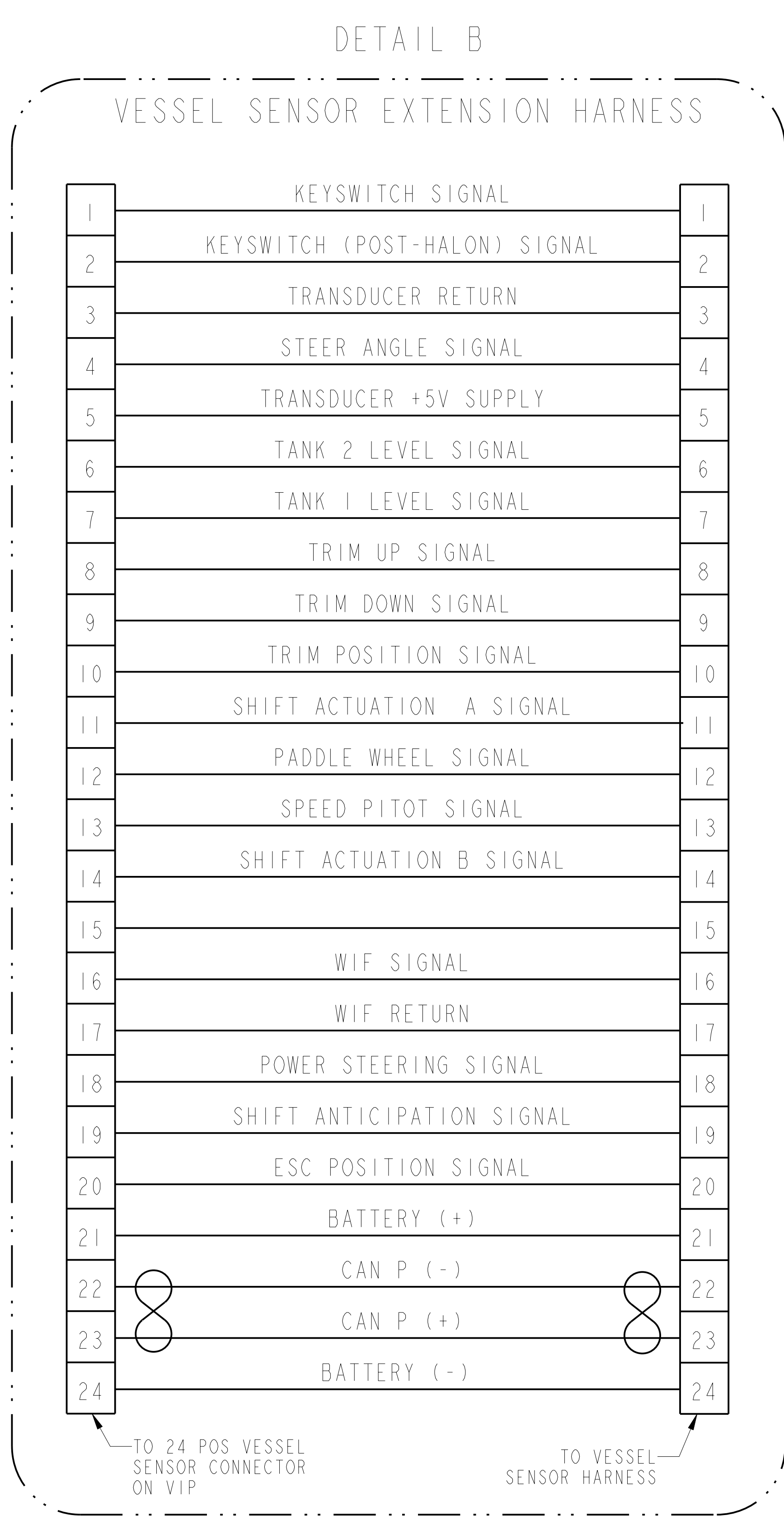
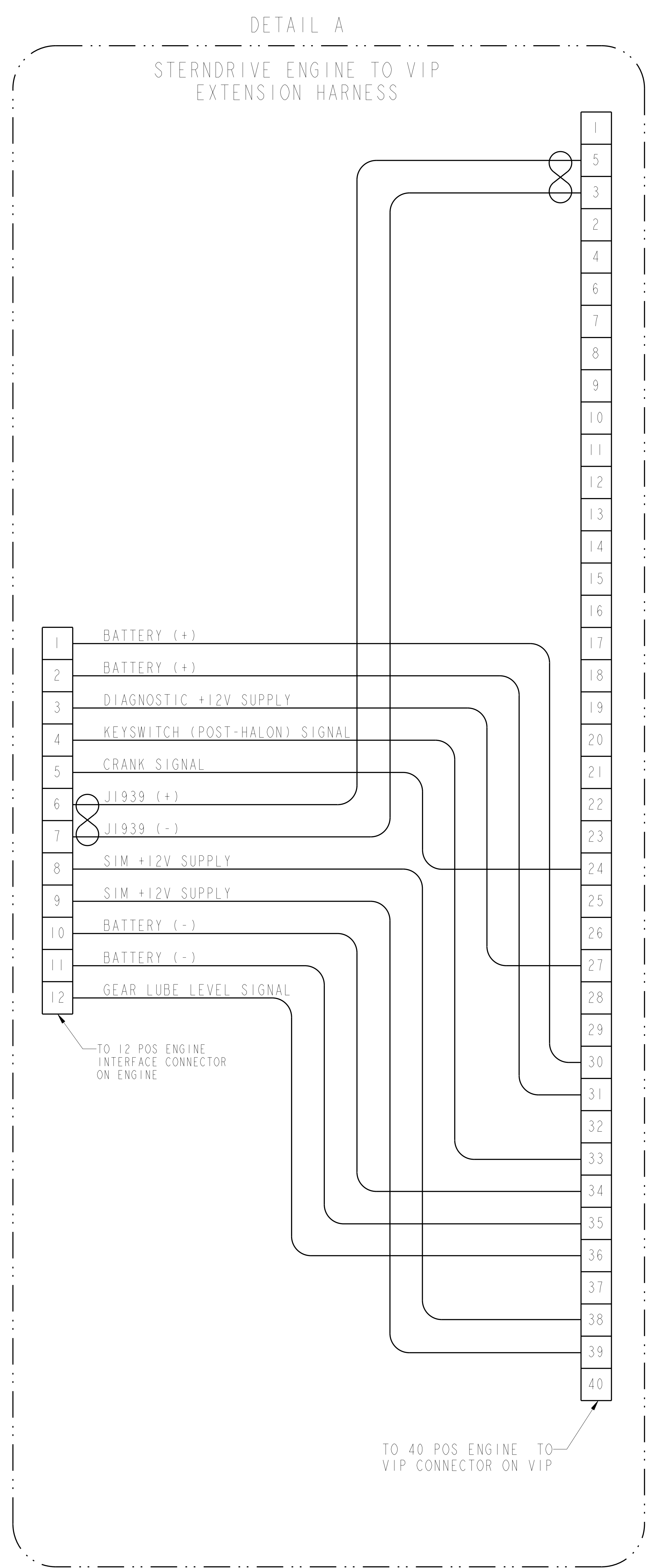


----- DASHED LINES  
 DENOTE CUSTOMER  
 SUPPLIED CONNECTIONS

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<b>Cummins Inc.</b>			
ITEM NAME DIAGRAM, WIRING		IDENTIFIER DIAGRAM DRAWING	
REF. ITEM NO.:	TAJ006	ITEM NUMBER	4941448
DRAFTER J L ROGERS	3NOV06	SCALE	NONE
CHECKER J RATTIGAN	DESIGN APPROVAL	ITEM CONTROL	CMU
		SHEET 3 OF 12	

DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994	
DRAFTER	J L ROGERS
CHECKER	J RATTIGAN
DESIGN APPROVAL	

REVISIONS				
REV	DESCRIPTION	DRAFTER	CHECKER	APPROVAL
02	070700-252 REVISED	L.O.R.	F.B.C.	



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**Cummins Inc.**

ITEM NAME: DIAGRAM, WIRING  
IDENTIFIER: DIAGRAM DRAWING

DIMENSIONING AND TOLERANCING PER: ASME Y14.5M-1994  
REF. ITEM NO.:  
DRAFTER: J L ROGERS  
CHECKER: J RATTIGAN  
SCALE: NONE

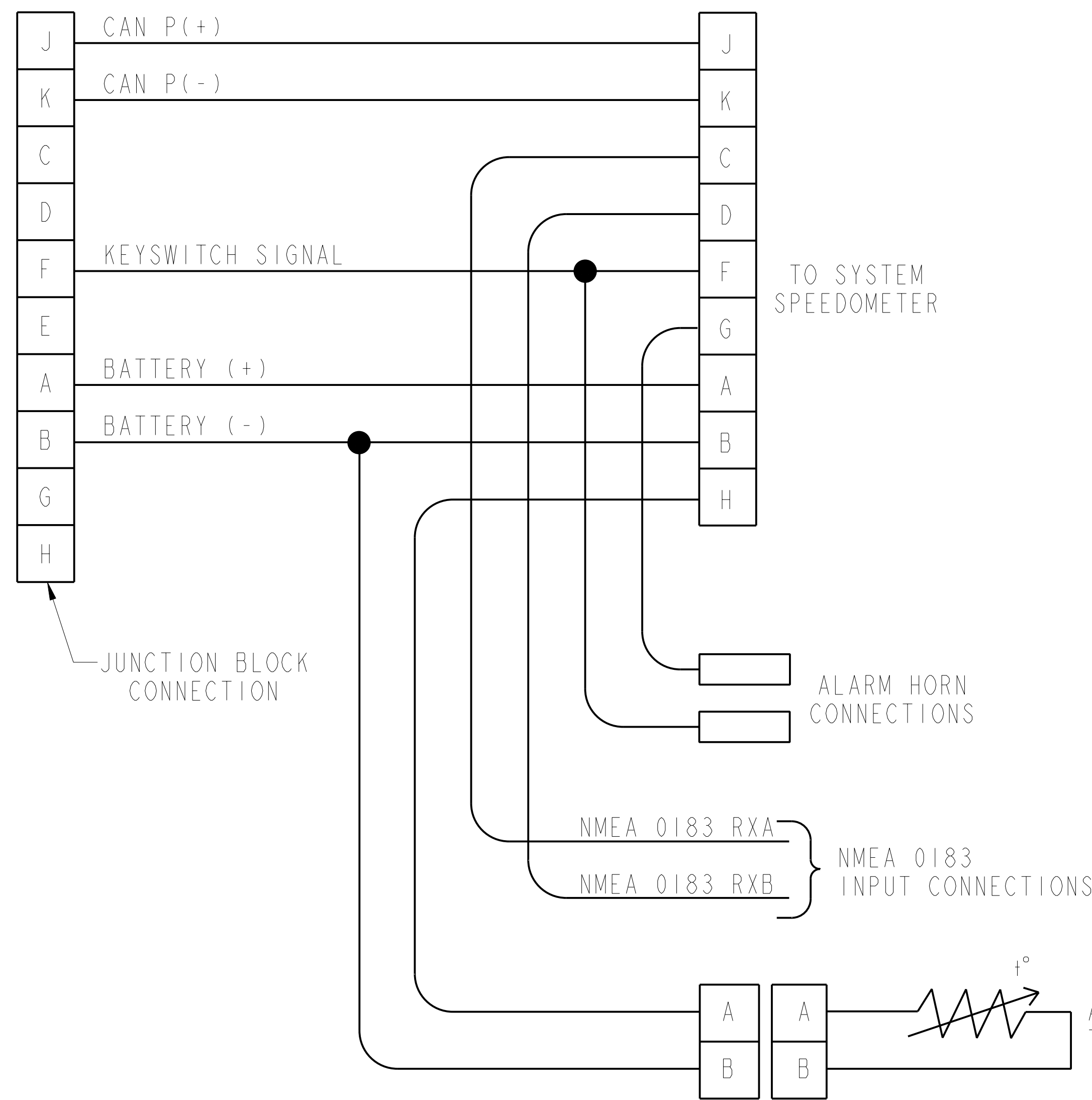
ITEM NUMBER: 4941448  
SHEET: 4 OF 12



REVISIONS			DRAFTER	CHECKER	APPROVAL
REV	DESCRIPTION		TAJ006	3NOV06	
02	070700-252 REVISED		L.O.R.	J.L.R.	

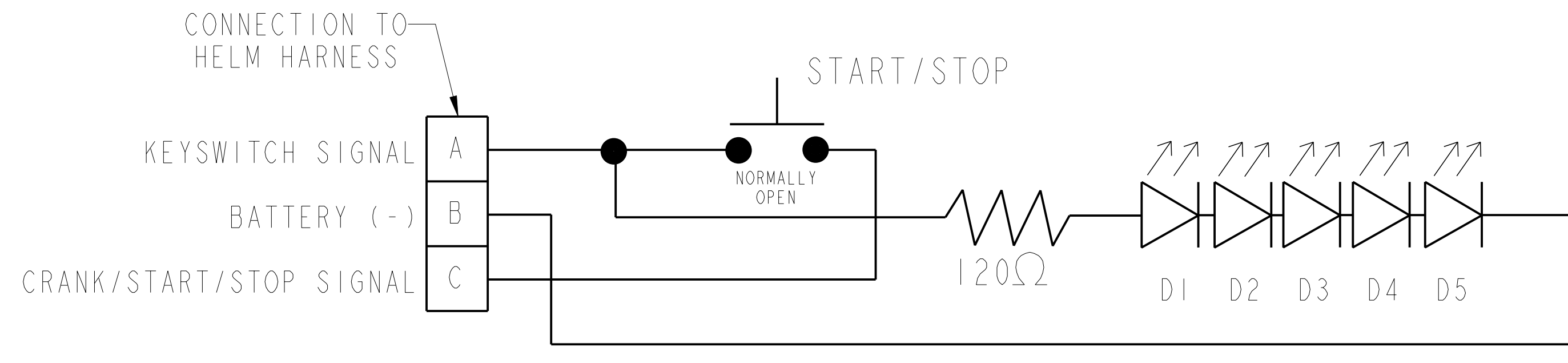
DETAIL G

SYSTEM SPEEDOMETER HARNESS



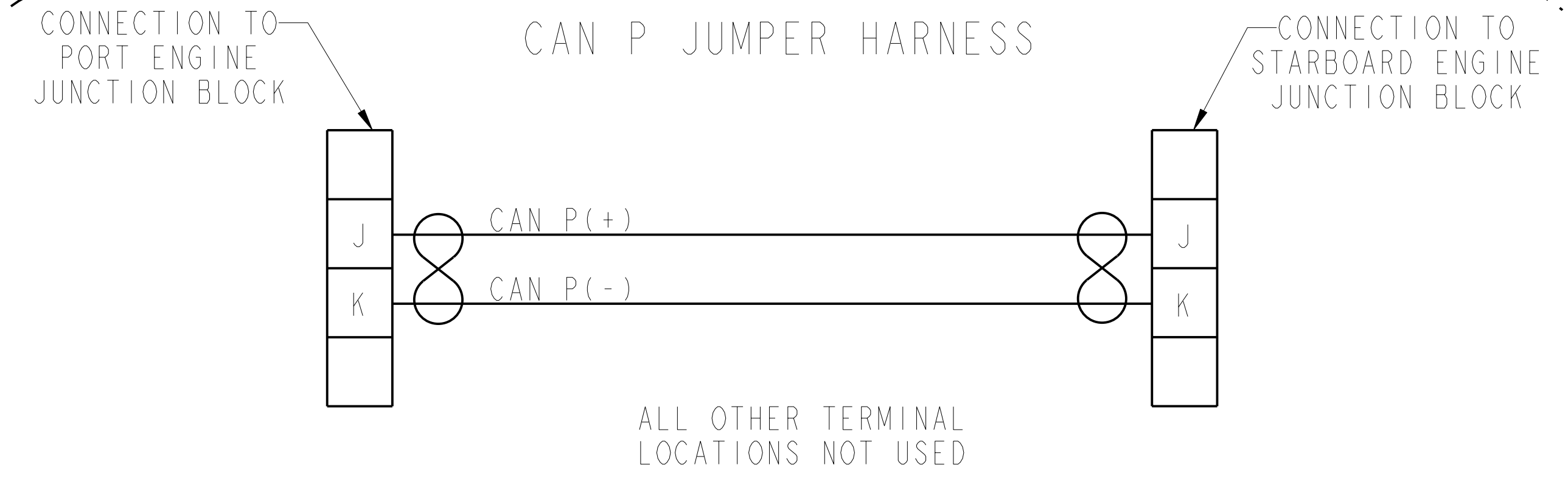
DETAIL M

SINGLE ENGINE START/STOP ASSY.



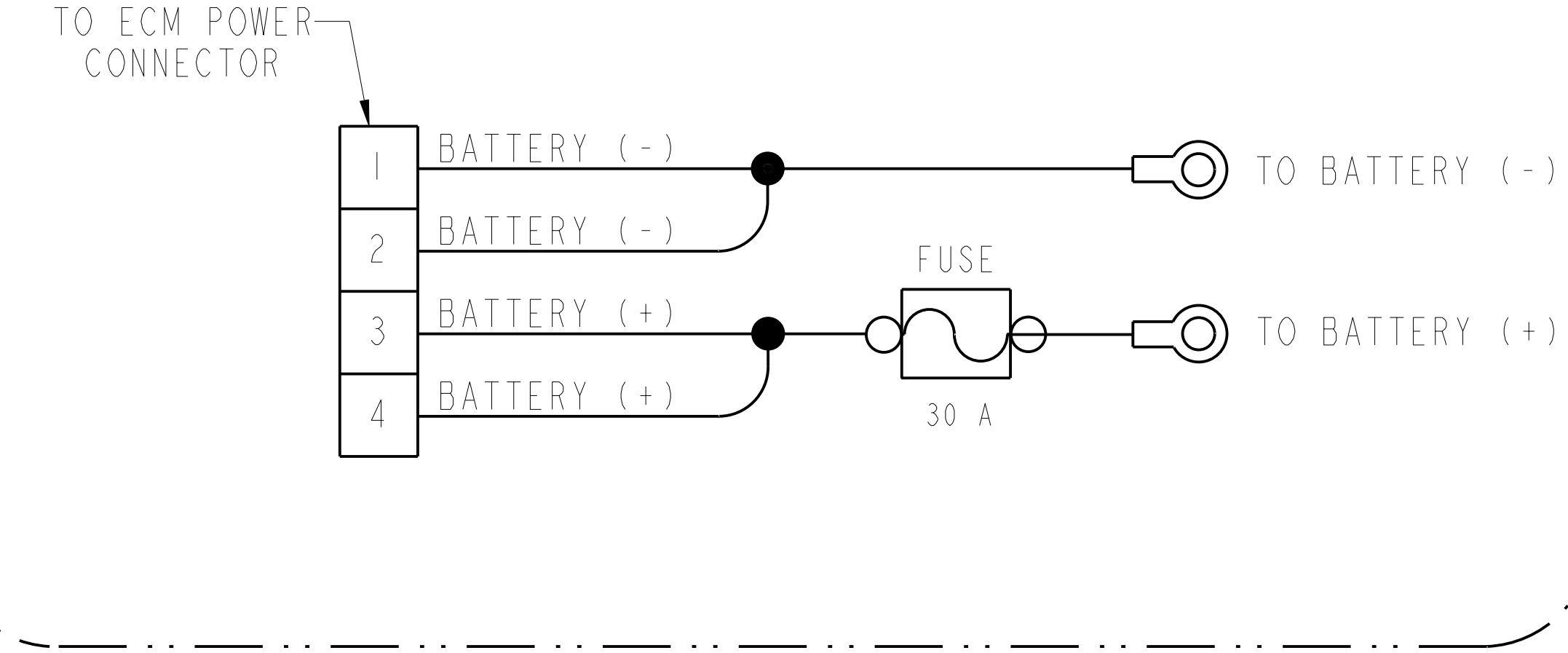
DETAIL L

CAN P JUMPER HARNESS



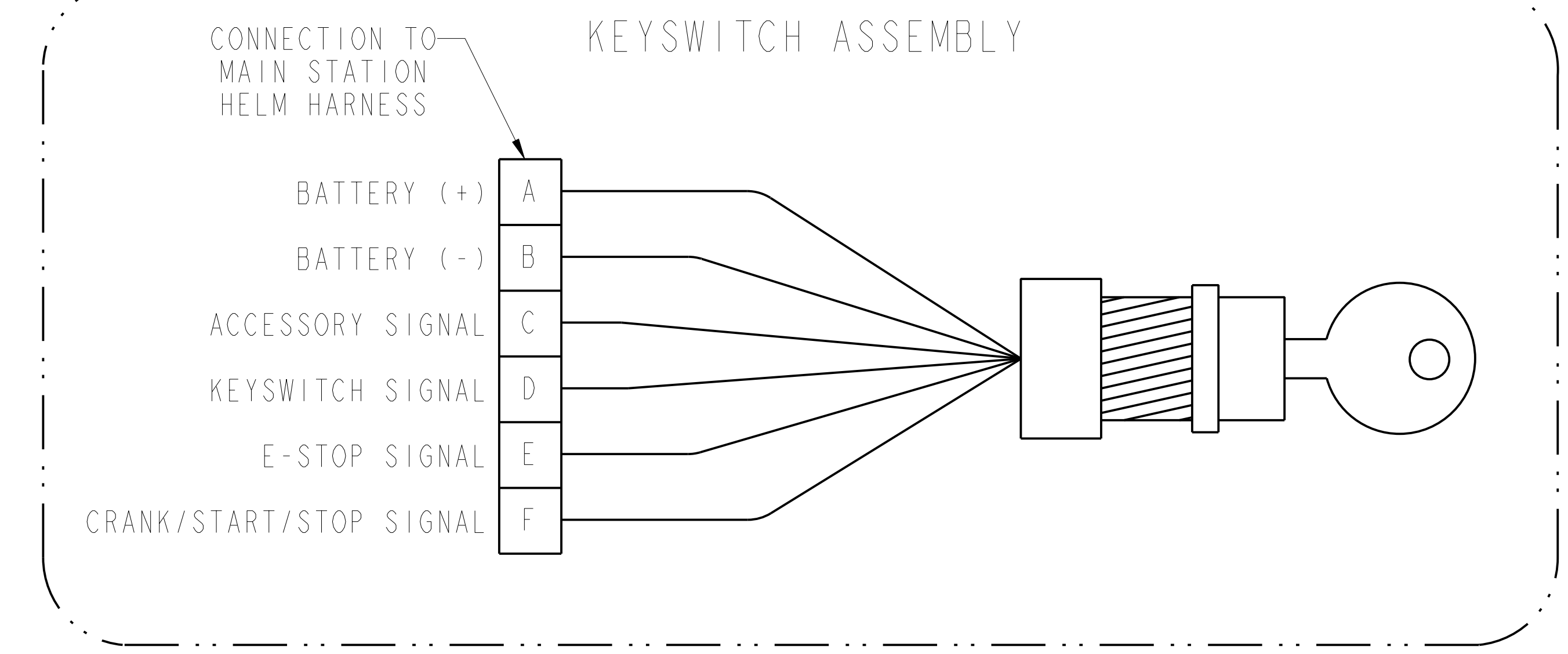
DETAIL K

SYSTEM POWER HARNESS



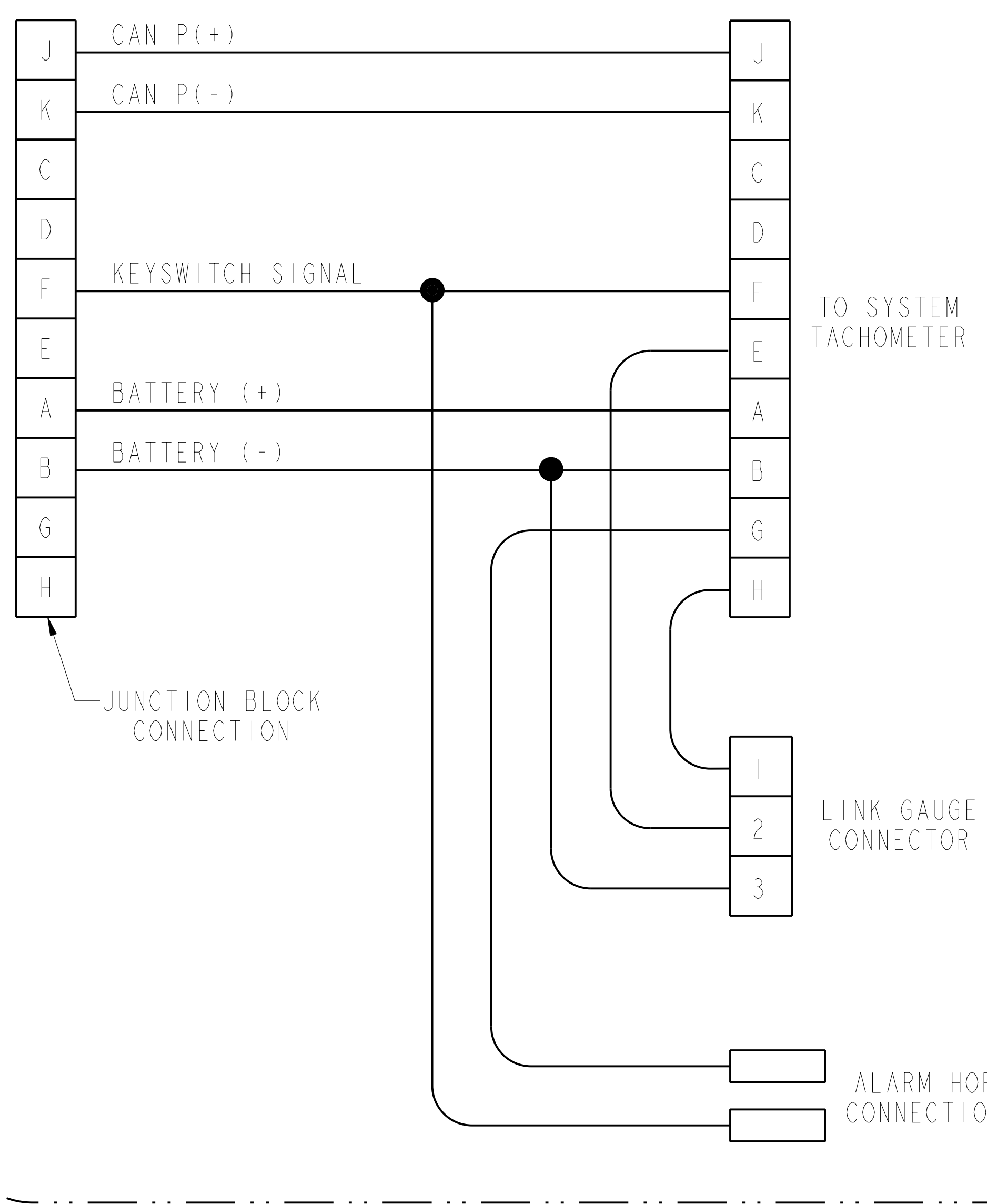
DETAIL N

KEYSWITCH ASSEMBLY



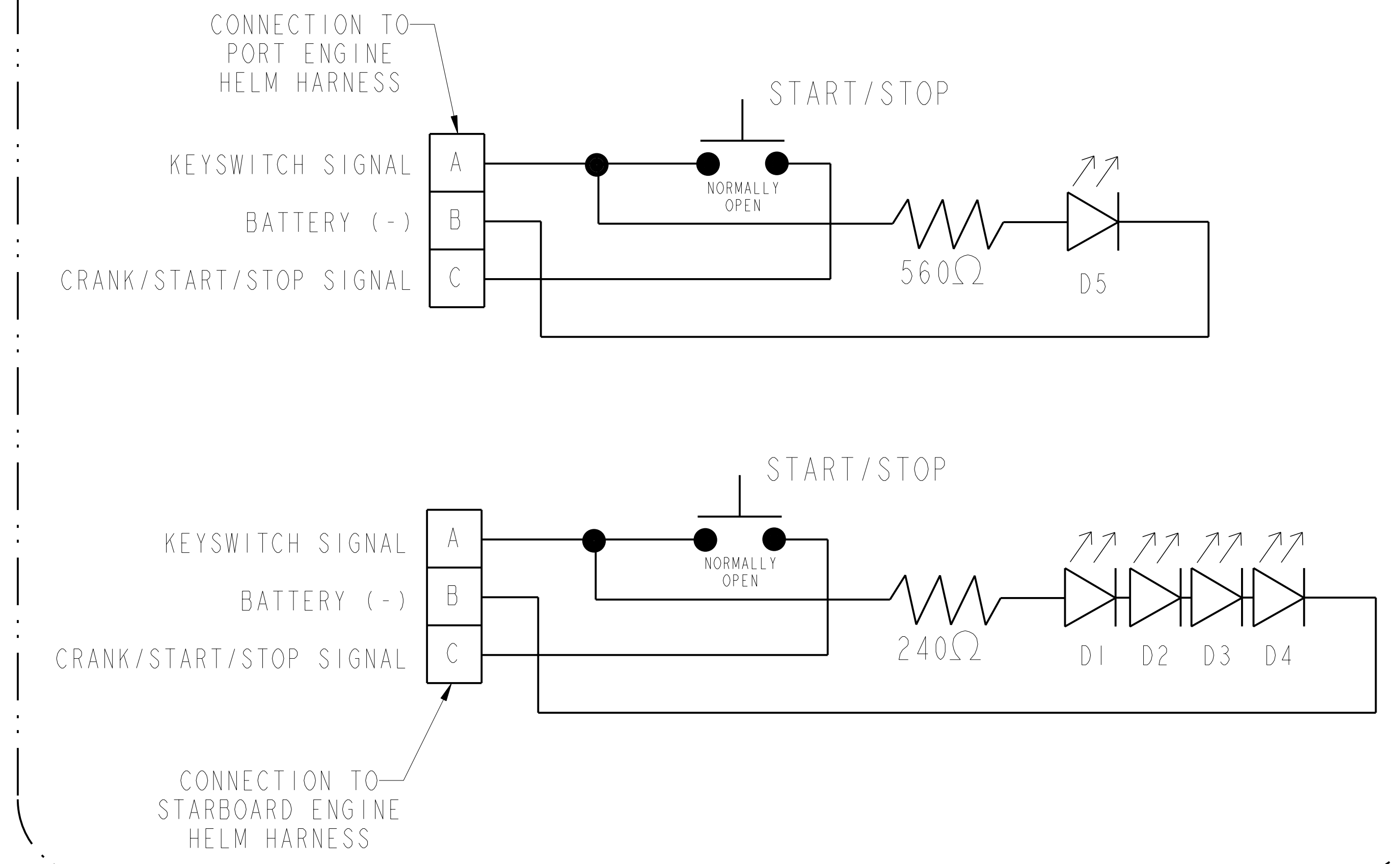
DETAIL H

SYSTEM TACHOMETER HARNESS



DETAIL J

TWIN ENGINE START/STOP ASSY.



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**Cummins Inc.**

DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994		ITEM NAME	
REF. ITEM NO.:		DIAGRAM, WIRING	
DRAFTER J L ROGERS		IDENTIFIER	
CHECKER J RATTIGAN		DIAGRAM DRAWING	
TAJ006	3NOV06	SIZE CODE	ITEM NUMBER
E			4941448
DESIGN APPROVAL	SCALE NONE	ITEM CONTROL	CUM SHEET 5 OF 12

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REVISIONS				
REV	DESCRIPTION	DRAFTER	CHECKER	APPROVAL
02	070700-252 REVISED	JLR	JR	

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**Cummins Inc.**

DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994		ITEM NAME DIAGRAM, WIRING	
REF. ITEM NO.:		IDENTIFIER DIAGRAM DRAWING	
DRAFTER J L ROGERS	TAJG06	SIZE CODE	ITEM NUMBER 4941448
CHECKER J RATTIGAN	3NOV06	<b>E</b>	ITEM CONTROL CMU SHEET 6 OF 12
DESIGN APPROVAL		SCALE NONE	

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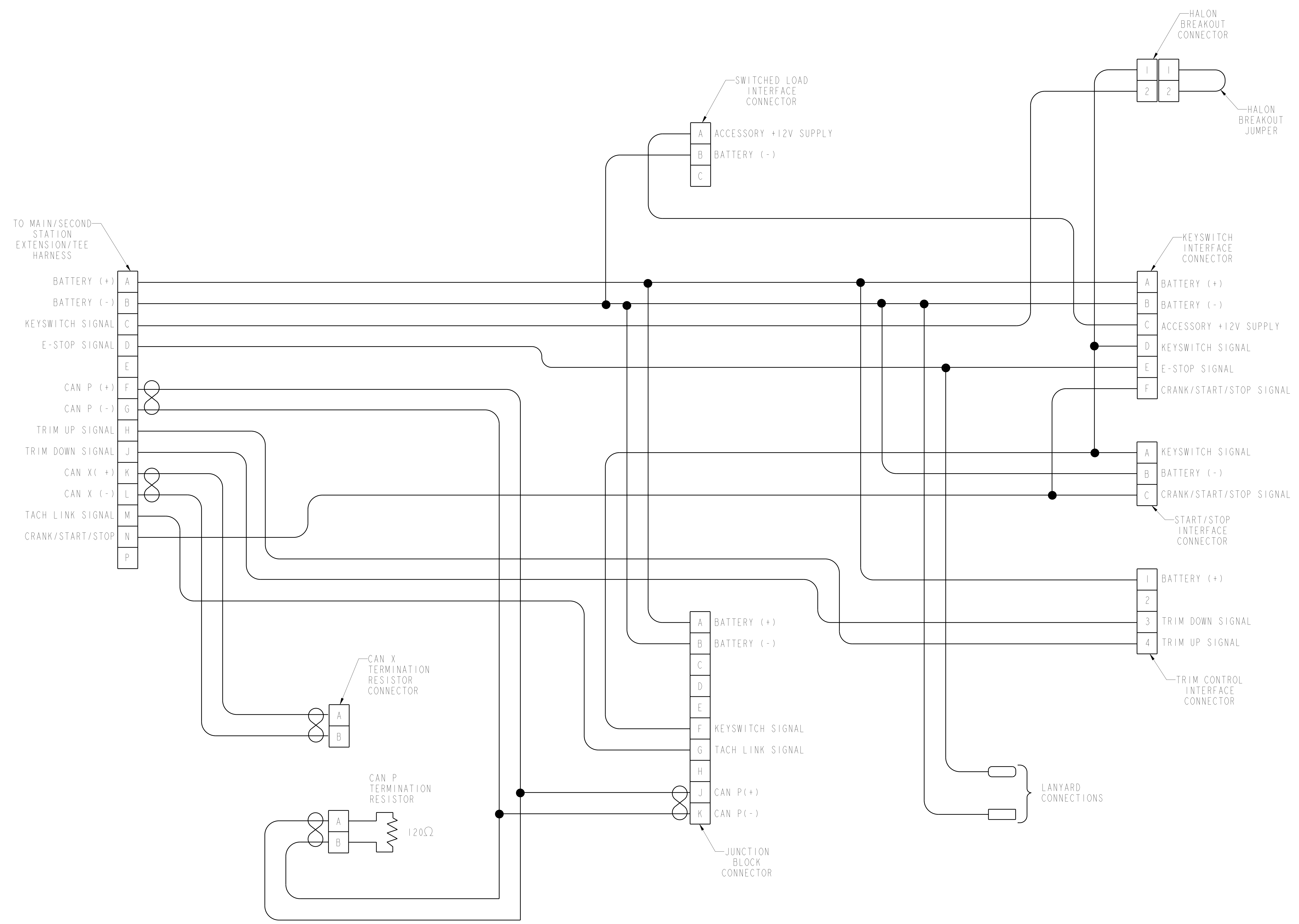
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2.0,2.8,4.2 QSD (NON-DTS VM24)  
HELM HARNESS  
DETAIL R

REVISIONS				
REV	DESCRIPTION	DRAFTER	CHECKER	APPROVAL
02	070700-252 REVISED	TAJ006	J.R.	



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DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994		ITEM NAME <b>DIAGRAM, WIRING</b>	
REF. ITEM NO.:		IDENTIFIER <b>DIAGRAM DRAWING</b>	
DRAFTER J L ROGERS	TAJ006	SIZE <b>E</b>	ITEM NUMBER 4941448
CHECKER J RATTIGAN	3NOV06	SCALE NONE	ITEM CONTROL CMU
DESIGN APPROVAL			SHEET 7 OF 12

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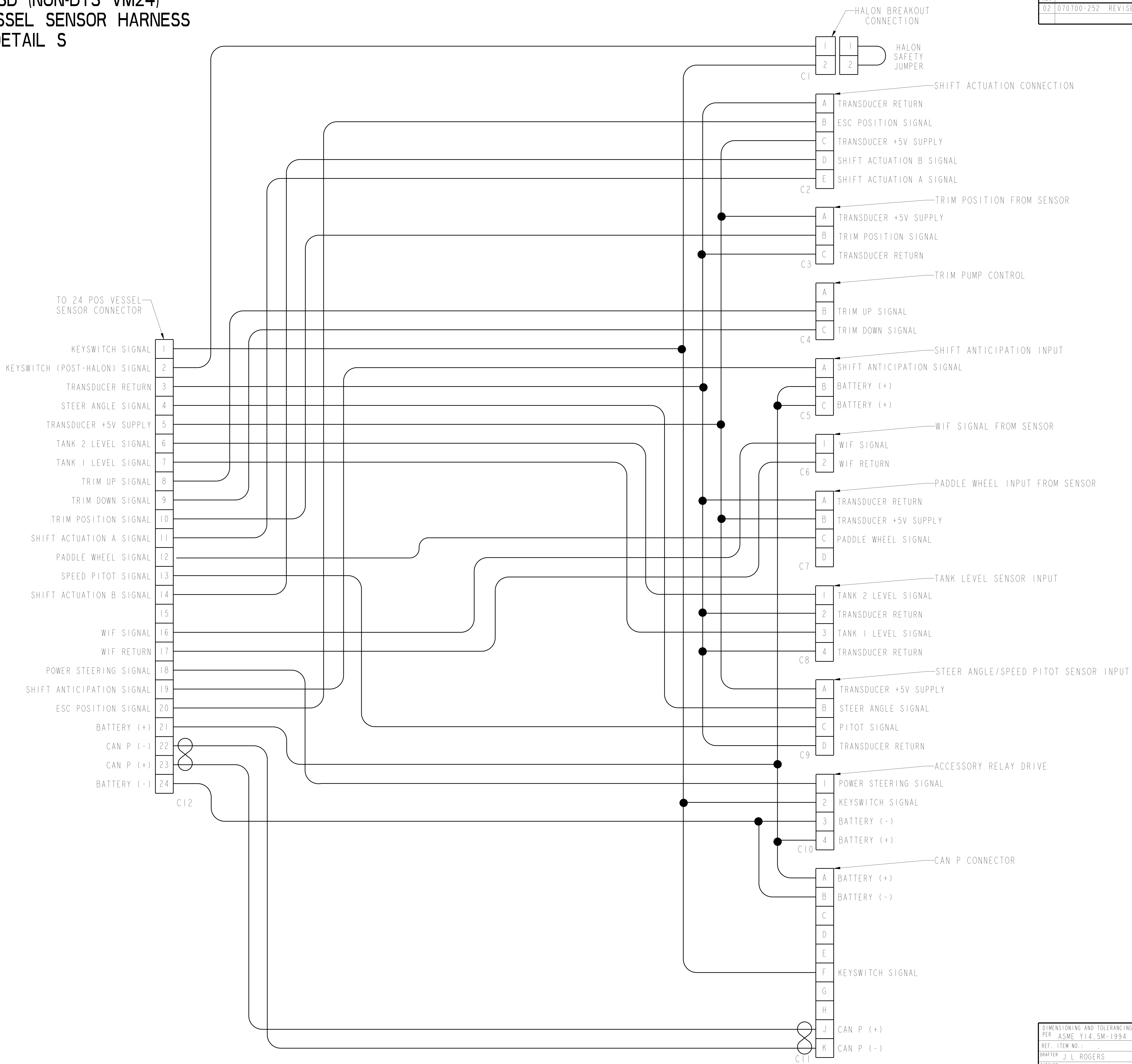
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2.0,2.8,4.2 QSD (NON-DTS VM24)  
 STERNDRIVE VESSEL SENSOR HARNESS  
 DETAIL S

REVISIONS				
REV	DESCRIPTION	DRAFTER	CHECKER	APPROVAL
02	070700-252 REVISED	TAJ006	J.R.	



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DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994		ITEM NAME <b>DIAGRAM, WIRING</b>	
REF. ITEM NO.:		IDENTIFIER <b>DIAGRAM DRAWING</b>	
DRAFTER J L ROGERS	TAJ006	SIZE <b>E</b>	ITEM NUMBER 4941448
CHECKER J RATTIGAN	3NOV06	SCALE NONE	ITEM CONTROL CMU
DESIGN APPROVAL			SHEET 8 OF 12

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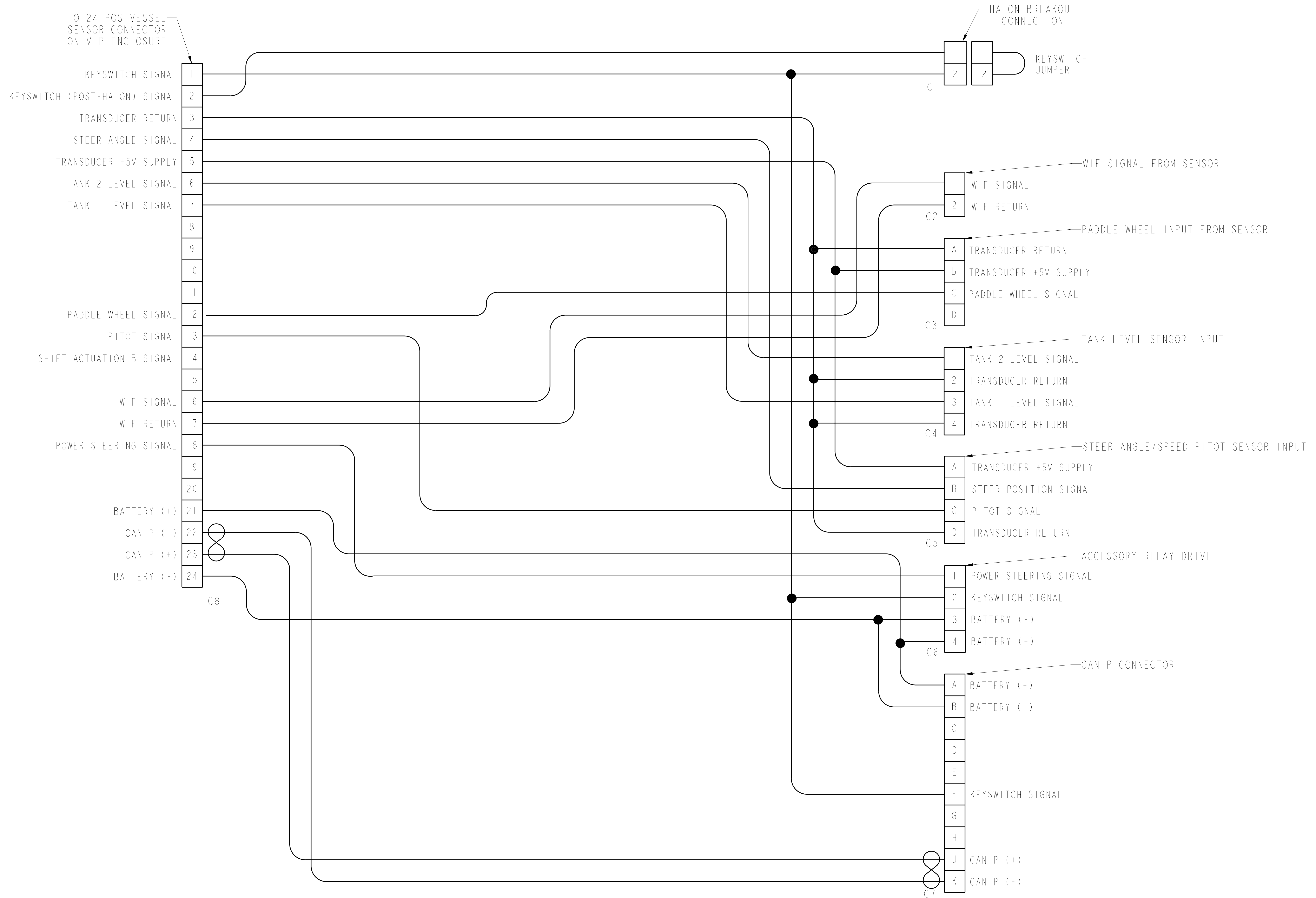
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2.0,2.8,4.2 QSD (NON-DTS VM24)  
 INBOARD/JET VESSEL SENSOR HARNESS  
 DETAIL T

REVISIONS				
REV	DESCRIPTION	DRAFTER	CHECKER	APPROVAL
02	1070700-252 REVISED	LOR	B.L.W.	



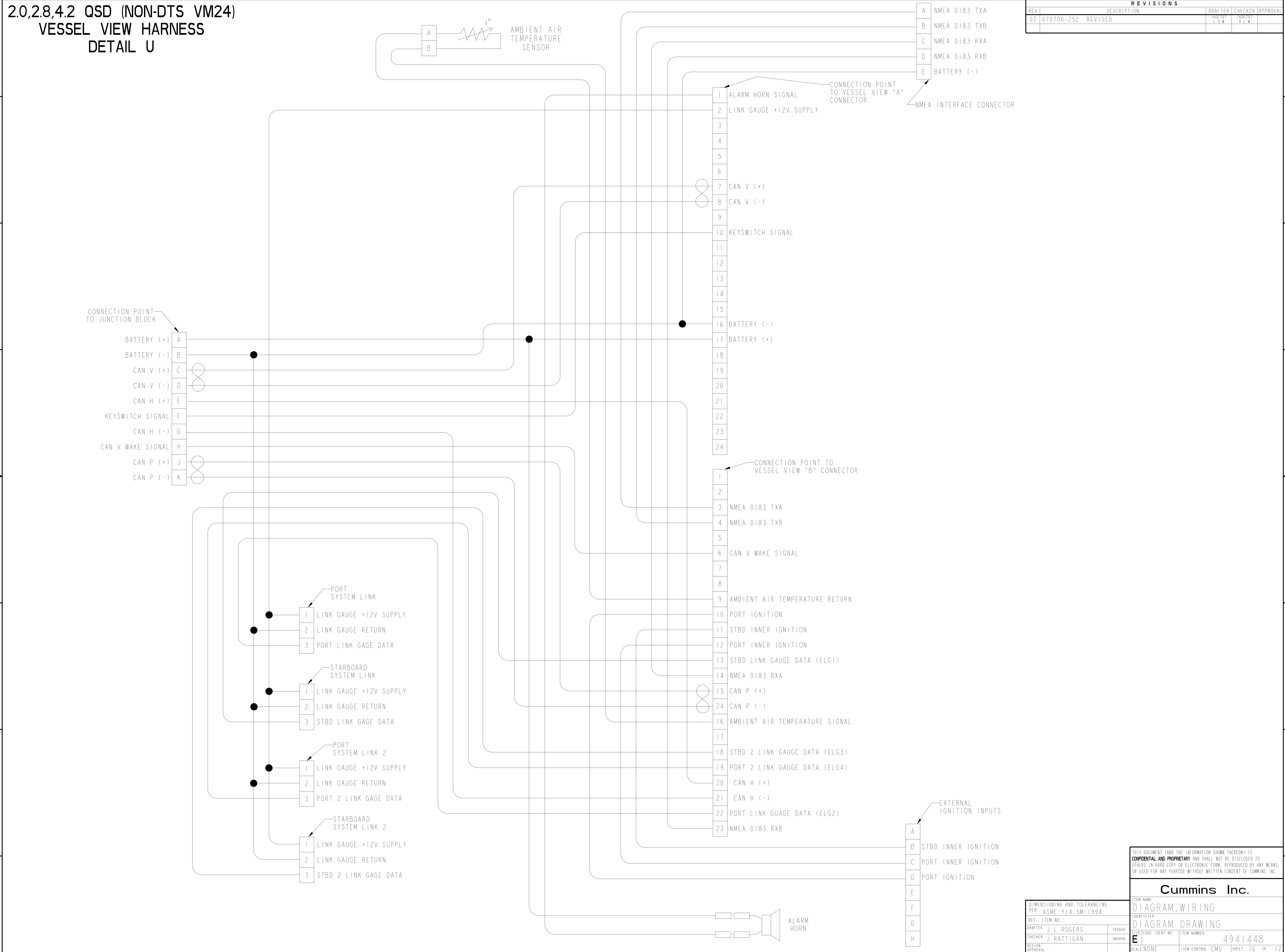
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DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994		ITEM NAME <b>DIAGRAM, WIRING</b>	
REF. ITEM NO.:		IDENTIFIER <b>DIAGRAM DRAWING</b>	
DRAFTER J L ROGERS	TAJG06	SIZE <b>E</b>	ITEM NUMBER 4941448
CHECKER J RATTIGAN	3NOV06	SCALE NONE	ITEM CONTROL CMU SHEET 9 OF 12

2.0,2.8,4.2 QSD (NON-DTS VM24)  
VESSEL VIEW HARNESS  
DETAIL U

REVISIONS				
REV	DESCRIPTION	DRAFTER	CHECKER	APPROVAL
02	070700-252 REVISED	TAJ006	J.R.	



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**Cummins Inc.**

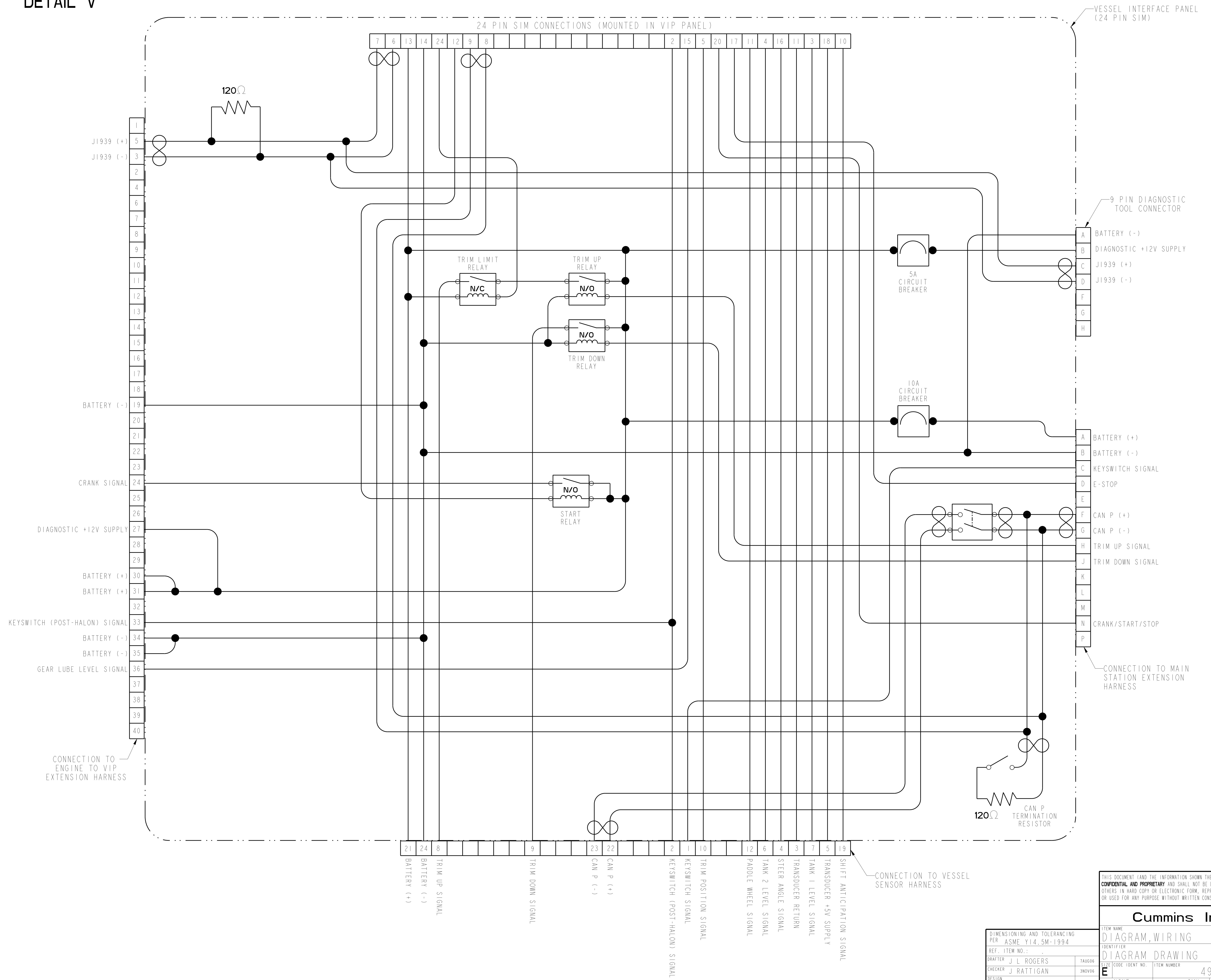
ITEM NAME: DIAGRAM, WIRING  
IDENTIFIER: DIAGRAM DRAWING  
ITEM NUMBER: 4941448

DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994  
REF. ITEM NO.:  
DRAFTER: J L ROGERS  
CHECKER: J RATTIGAN  
DESIGN APPROVAL:

TAJ006  
3NOV06  
SCALE: NONE  
ITEM CONTROL: CMU  
SHEET: 10 OF 12

2.0,2.8,4.2 QSD (NON-DTS VM24)  
VESSEL INTERFACE PANEL (VIP) - 24 PIN SIM  
DETAIL V

REVISIONS				
REV	DESCRIPTION	DRAFTER	CHECKER	APPROVAL
02	070700-252 REVISED			



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**Cummins Inc.**

DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994		ITEM NAME <b>DIAGRAM, WIRING</b>	
REF. ITEM NO.:		IDENTIFIER <b>DIAGRAM DRAWING</b>	
DRAFTER J L ROGERS	TAJ006	SIZE <b>E</b>	ITEM NUMBER 4941448
CHECKER J RATTIGAN	3NOV06	SCALE NONE	SHEET 11 OF 12

2.0,2.8,4.2 QSD (NON-DTS VM24)

REVISIONS				
REV	DESCRIPTION	DRAFTER	CHECKER	APPROVAL
02	070700-252 REVISED	JLR	JLR	

NOTES:

1. ALL CONNECTIONS TO THE BOSCH EDC16C39 "A" CONNECTOR ARE USED FOR SENSOR AND ACTUATOR CONTROL. NO MODIFICATIONS OR OEM CONNECTIONS ARE ALLOWED TO THIS HARNESS. FOR SPECIFIC WIRING DETAIL REFERENCE CUMMINS ECS WIRING DIAGRAM NUMBER 4082012.
2. THE "K" CONNECTOR ECM INTERFACE IS SIMILAR TO "OEM" CONNECTOR ON ENGINES WITH CUMMINS SUPPLIED ECMS. FOR SPECIFIC DETAILS ON REQUIRED INTERFACE POINTS REFER TO THE QSD MARINE APPLICATION BULLETIN NUMBER 0.13.00-05/23/2006.
3. INBOARD/JET ADAPTER HARNESS ONLY APPLICABLE ON INBOARD OR JET CONFIGURATIONS. HARNESS IS SENT ON ENGINE WHEN DELIVERED TO CMD. INTERFACE DETAILS PROVIDED IN THIS DRAWING PACKAGE.
4. DRIVE APPLICATION HARNESS ONLY REQUIRED FOR INBOARD/JET CONFIGURATIONS. REFER TO MAB REFERENCED IN NOTE 2 FOR DETAILED INTERFACE REQUIREMENTS.
5. SYSTEM POWER HARNESS SUPPLIED IS REQUIRED TO SUPPLY UNSWITCHED POWER TO THE 4-WAY CONNECTOR LOCATED ON THE REAR OF THE ENGINE. THIS HARNESS SHOULD NOT BE MODIFIED BY THE SYSTEM INSTALLER.
6. STERNDRIVE APPLICATIONS ONLY, 12-WAY TO 12-WAY EXTENSION HARNESS AVAILABLE IN 4 LENGTHS. NO MODIFICATION REQUIRED BY THE SYSTEM INSTALLER.
7. INBOARD/JET APPLICATIONS ONLY, 40-WAY TO 40-WAY EXTENSION HARNESS AVAILABLE IN 4 LENGTHS. NO MODIFICATION REQUIRED BY THE SYSTEM INSTALLER.
8. VESSEL INTEGRATION PANEL (VIP) REQUIRED IN ALL APPLICATIONS, OPTION DEPENDANT ON DRIVE CONFIGURATION. FOR SPECIFIC DETAILED INFORMATION ON CONFIGURATION AND MOUNTING CONSIDERATIONS REFER TO QSD MAB REFERENCED IN NOTE 2 ON THIS PAGE.
9. VESSEL SENSOR EXTENSION HARNESS ONLY REQUIRED WHEN VIP MOUNTED IN AREA AWAY FROM THE ENGINE COMPARTMENT. HARNESS AVAILABLE IN 4 LENGTHS.
10. VESSEL SENSOR HARNESS REQUIRED FOR ALL INSTALLATIONS. INTERFACE SCHEMATICS AND DETAILED APPLICATION INFORMATION CAN BE FOUND BY REFERENCING THE QSD MAB REFERRED TO IN NOTE 2 ON THIS SHEET.
11. VESSEL SENSOR ACCESSORY HARNESS USED TO INTERFACE VARIOUS INPUTS TO THE VESSEL SENSOR HARNESS. SPECIFIC INTERFACE DETAILS COVERED IN QSD MAB REFERENCED IN NOTE 2 ON THIS SHEET. NOT AVAILABLE AS CUMMINS OPTION, MERCURY SUPPLIED.
12. SECOND STATION T-HARNESS ONLY REQUIRED WHEN INSTALLATION REQUIRES INSTRUMENTATION AND START/STOP CONTROL TO BE PRESENT AT MORE THAN ONE CONTROL STATION. SECOND STATION T-HARNESS IS INCLUDED IN THE SECOND STATION HELM HARNESS OPTION ALONG WITH THE JUNCTION BLOCK REQUIRE AT THE SECOND STATION.
13. CAN P JUMPER HARNESS ONLY REQUIRED IN TWIN ENGINE INSTALLATIONS. OPTION SHOULD BE ORDERED WITH PORT ENGINE SPECIFICATION. DETAILS FOR PROPER INSTALLATION OF THIS HARNESS ARE CONTAINED IN THE QSD MAB REFERENCED IN NOTE 2 ON THIS SHEET. ONLY ONE HARNESS PER VESSEL REQUIRED. NOT REQUIRED AT BOTH STATIONS IN DUAL STATION INSTALLATIONS. THE CAN P TERMINATIONS MUST BE REMOVED FROM THE HELM HARNESS WHEN THE JUMPER IS USED.
14. MAIN STATION HELM HARNESS IS SUPPLIED WITH MAIN STATION KEYSWITCH AND MAIN STATION 6-WAY JUNCTION BLOCK. DETAILS FOR PROPER INSTALLATION OF THIS HARNESS ARE CONTAINED IN THE QSD MAB REFERENCED IN NOTE 2 ON THIS SHEET.
15. SECOND STATION HELM HARNESS IS SUPPLIED WITH 6-WAY JUNCTION BLOCK AND SECOND STATION T-HARNESS. DETAILS FOR PROPER INSTALLATION OF THIS HARNESS ARE CONTAINED IN THE QSD MAB REFERENCED IN NOTE 2 ON THIS SHEET.
16. VESSEL VIEW DISPLAY DISPLAY IS PACKAGED WITH VESSEL VIEW INTERFACE HARNESS AS WELL AS INSTALLATION AND OWNERS MANUAL. DETAILS ON PROPERLY INTERFACING WITH THE VESSEL VIEW HARNESS CONTAINED IN THE QSD MAB REFERENCED IN NOTE 2 OF THIS SHEET.
17. SINGLE ENGINE AND DUAL ENGINE START/STOP PANEL AVAILABLE AS OPTIONS FOR MAIN STATION ONLY. START/STOP BUTTON ASSEMBLY CAN BE USED WITH MAIN STATION KEYSWITCH IF REQUIRED BY VESSEL MANUFACTURER.
18. ENGINE START/STOP PANEL ASSEMBLY REQUIRED AT QSD SECOND STATIONS. THE INSTALLER CAN CHOOSE EITHER A SINGLE ENGINE START/STOP PANEL OR DUAL ENGINE START/STOP PANEL DEPENDING ON VESSEL REQUIREMENTS.
19. VESSEL VIEW DISPLAY AVAILABLE AS OPTIONS FOR MAIN AND SECOND STATIONS. DETAILED INSTALLATION AND CONFIGURATION INFORMATION PROVIDED IN VESSEL VIEW INSTALLATION MANUAL AND VESSEL VIEW OWNERS MANUAL SUPPLIED WITH THE DISPLAY.
20. BASE GAUGE PANEL KIT INCLUDES:
  - 4000 RPM SYSTEM TACHOMETER AND INTERFACE HARNESS
  - LINK OIL PRESSURE GAUGE
  - LINK COOLANT TEMPERATURE GAUGE
  - LINK BATTERY VOLTAGE GAUGE
  - SYSTEM TACHOMETER/SPEEDOMETER MANUAL
 OPTION ONLY FOR QSD2.8 AND QSD4.2 ENGINES
21. BASE GAUGE PANEL KIT INCLUDES:
  - 7000 RPM SYSTEM TACHOMETER AND INTERFACE HARNESS
  - LINK OIL PRESSURE GAUGE
  - LINK COOLANT TEMPERATURE GAUGE
  - LINK BATTERY VOLTAGE GAUGE
  - SYSTEM TACHOMETER/SPEEDOMETER MANUAL
 OPTION ONLY FOR QSD2.0 ENGINES
22. 4000 RPM SYSTEM TACHOMETER AND ASSOCIATED INTERFACE HARNESS, MANUAL INCLUDED.
23. 7000 RPM SYSTEM TACHOMETER AND ASSOCIATED INTERFACE HARNESS, MANUAL INCLUDED.
24. SYSTEM SPEEDOMETER SUPPLIED WITH INTERFACE HARNESS, MANUAL INCLUDED.
25. INDIVIDUAL 52mm LINK GAUGES SUPPLIED AS INSTALLATION REQUIRES. LINK GAUGES REQUIRE EITHER A SYSTEM TACHOMETER OR VESSEL VIEW TO PROVIDE DRIVE SIGNAL FOR PROPER OPERATION.
26. 110mm QUAD LINK GAUGE THAT CONTAINS COOLANT TEMPERATURE, OIL PRESSURE, BATTERY VOLTAGE, AND FUEL LEVEL ANALOG STYLE INDICATIONS. QUAD GAUGE REQUIRES SYSTEM TACHOMETER OR VESSEL VIEW DISPLAY TO PROVIDE DRIVE SIGNAL FOR PROPER OPERATION.
27. VESSEL VIEW PORT IGNITION JUMPER HARNESS ONLY REQUIRED IN TWIN ENGINE INSTALLATIONS USING A SINGLE VESSEL VIEW DISPLAY. HARNESS PROVIDED WITH THE VESSEL VIEW DISPLAY. DETAILS FOR PROPER INSTALLATION OF THIS HARNESS ARE CONTAINED IN THE QSD MAB REFERENCED IN NOTE 2 ON THIS SHEET.
28. MUS ID JUMPER CONFIGURATION REQUIRED FOR MULTIPLE ENGINE INSTALLATION. PROPER CONFIGURATION INFORMATION DETAILED IN THE QSD MAB REFERENCED IN NOTE 2 ON THIS SHEET.
29. ENGINE DELIVERED WITH NEUTRAL SAFETY JUMPER PLUG, IN PLACE.
30. LANYARD BULLET CONNECTION MUST BE CONNECTED IN INSTALLATIONS WHERE LANYARD SWITCH IS NOT USED.

**CAUTION - ENGINE CAN BE STARTED IN GEAR WITH JUMPER PLUG IN PLACE.**

SPECIFIC CONFIGURATION DETAILS CONTAINED IN THE QSD MAB REFERENCED IN NOTE 2 ON THIS SHEET.

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Cummins Inc.

DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994		ITEM NAME DIAGRAM, WIRING	
REF. ITEM NO.:		IDENTIFIER DIAGRAM DRAWING	
DRAFTER J L ROGERS	TAJG06	SIZE CODE	ITEM NUMBER 4941448
CHECKER J RATTIGAN	3NOV06	E	ITEM CONTROL CMU
DESIGN APPROVAL		SCALE NONE	SHEET 12 OF 12