

SVE BULLETIN

SPECIAL VEHICLE ENGINEERING – BODY BUILDERS ADVISORY SERVICE

Toll-free: (877) 840-4338

E-Mail: bbasqa@ford.com (preferred)

Fax: (313) 594-2633

Website: www.fleet.ford.com/truckbbas

QVM Bulletin: Q-92

Date: August 25, 2003

2004 Model Year E-Series Electrical System Changes

Models Affected 2004 E-Series Recreational Van, Cutaway, Chassis Cab and Stripped Chassis

Purpose

This bulletin addresses body builder's accessible circuits (Modified Vehicle Wiring) and other electrical system changes introduced in 2004 Model Year (MY) E-Series vehicles.

Description

Circuit Changes (refer to ATTACHMENT I & II)

The following circuit numbers and wire colors have changed or been deleted.

<u>2003MY</u>		<u>2004MY</u>		<u>Location</u>
<u>Circuit #</u>	<u>Wire Color</u>	<u>Circuit #</u>	<u>Wire Color</u>	
37	Yellow	1507	White/Red	B-Pillar, Under Dash, Under Hood
38	Black/Orange	Deleted	Deleted	B-Pillar
517	Black/White	1462	Red/White	B-Pillar
574	Lt Green/White	Deleted	Deleted	B-Pillar

B-Pillar Connectors Changes (refer to ATTACHMENT I)

Recreational Van

The 8-pin connector (F7UB-14A411-A) was replaced with a 6-pin connector (4C24-14A411-C) and circuit 38 (BK/O - battery feed) and circuit 54 (LG/Y - courtesy lamp jumper) were deleted. The 6-pin connector contains (2) battery feeds, (1) ignition control feed and a ground circuit.

Cutaway, Chassis Cab, Stripped Chassis

The old 6-pin connector (F4UB-14A411-C) was replaced with a new 6-pin connector (4C24-14A411-C). The new 6-pin connector is common with Recreational Van, **but the ground wire is non-functional**.

RV Van, Cutaway, Chassis Cab, Stripped Chassis -- Auxiliary Heater-A/C Wiring Changes (refer to ATTACHMENT I & IV)

Circuit 574 (LG/W – Aux. Switch Rear Controls) was deleted from the 12-pin connector (F4UB-14A411-F). The instrument panel rear fan control switch will no longer have the rear control position. Please contact your auxiliary heater-A/C system supplier for information on installing a rear mounted auxiliary heater-A/C fan control switch.

End-of-Frame Connectors Changes (refer to ATTACHMENT III)

Cutaway, Chassis Cab, Stripped Chassis

A new 8-pin connector (4C24-14A411-D) was added to the end-of-frame harness and is designated as "Rear Body/Chassis Lamps Only". **These circuits are to be used for second unit body (SUB) or chassis main tail lamps only and are limited to the maximum allowable continuous current as outline in the matrix at the bottom of ATTACHMENT III.**

The two original 4-pin connectors (F4UB-14A411-B & F4UB-14A411-D) are now designated as "Trailer Tow Lamps Only". **They are no longer to be used for the SUB or chassis main tail lamps.** If the two 4-pin connectors are used for the SUB or chassis main tail lamps, the turn signals will flash fast. Trailer lamps and additional SUB or chassis loads, such as marker lamps, clearance lamps, back-up alarms, etc., must utilize the two 4-pin connectors due the limiting current capability of the 8-pin connector circuits.

Refer to the matrix at the bottom of ATTACHMENT III for maximum allowable continuous current capability.

Modified Vehicle Wiring Kit (refer to Sketch-Kit-Camper Wiring SK-4C24-14A351-AA (Attachment V))

The following table provides the contents of the 2004MY Modified Vehicle Wiring Kit, including the part number, description, function and location.

<u>Part Number</u>	<u>Description</u>	<u>Function</u>	<u>Location</u>
F0AB-14B192-A	Relay	Ignition 12V	Power Dist. Panel
4C24-14A411-CA*	6-pin connector	(2) 12V, Ignition 12V, Ground@	B-Pillar
F4UZ-14A411-F	12-pin connector	Auxiliary Climate Control System	Deleted #
4C24-14A411-AA*	4-pin connector	(2) Pass-Thru, 12V, Ignition 12V	Under Hood
4C24-14A411-BA*	6-pin connector	L/R Turn/Stop, (2) Pass-Thru, 12V, Ignition 12V	Under Dash
F4UB-14A411-DB	4-pin connector	L/R Turn/Stop, Running Lamp, Ground	End-of-Frame
F4UB-14A411-BB	4-pin connector	Backup Lamp, Electric Brake, Ignition 12V	End-of-Frame
4C24-14A411-DA*	8-pin connector	L/R Turn/Stop, Running, Backup, Ground	End-of-Frame
SK-4C24-14A351-AA*	Sketch-Kit-Camper Wiring (MVW Sketch)		

NOTE: * New for 2004 Model Year

This 12-pin pigtail is available as a **service part only** (contact your local Ford dealer).

@ The ground wire (Black) is **only functional on Recreational Vans with gas engines.**

Dome Lamp Override Switch (refer to ATTACHMENT I)

With the deletion of circuit 54 from the B-Pillar connector, the dome lamp can be overridden by placing a switch in line circuit 53 (BK/LB) as follows:

Recreational Van

Cut and splice switch (rated 8 Amps minimum) into circuit 53 (BK/LB) of the illuminated visor harness (F6UB-14335-A).

Cutaway, Chassis Cab, Stripped Chassis

Cut and splice switch (rated 8 Amps minimum) into circuit 53 (BK/LB) of 3-pin connector (F6UB-14A411-A).

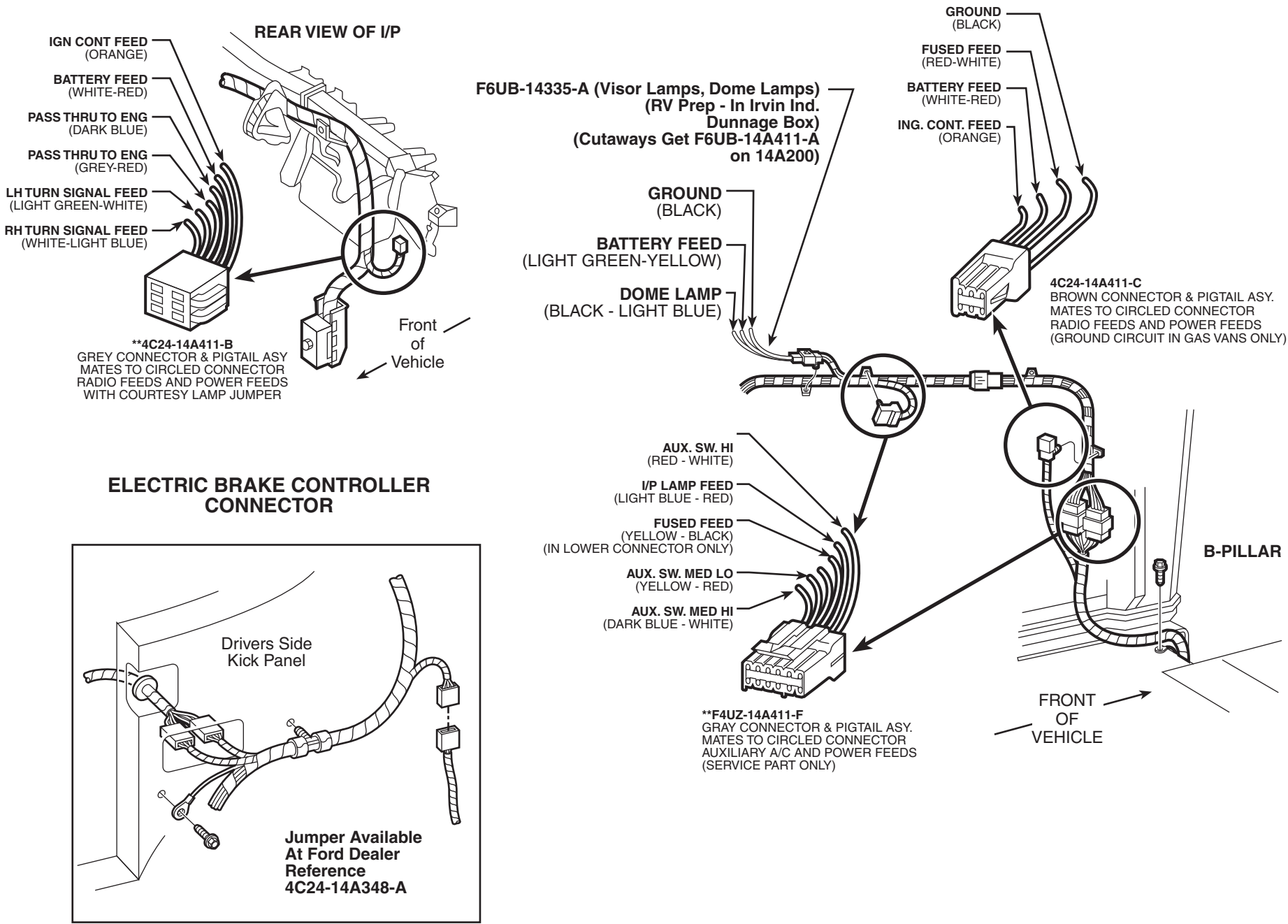
Use appropriate electrical guidelines outlined in Ford Body Builders Layout Book when making electrical modifications.

Please direct any questions regarding the above or other electrical system changes to the Ford Truck Body Builders Advisory Service on 1-877-840-4338 (phone), bbasqa@ford.com (e-mail), 1-313-594-2633 (fax), or www.fleet.ford.com/truckbbas (website) or refer to the 2004 Wiring Diagrams Book from Helm, Inc. (800-782-4356 or www.helminc.com).

Electrically yours,
(Signed)

Robert Bradley
Ford Truck Body Builders Advisory Service - Electrical

INSTRUMENT PANEL & B PILLAR

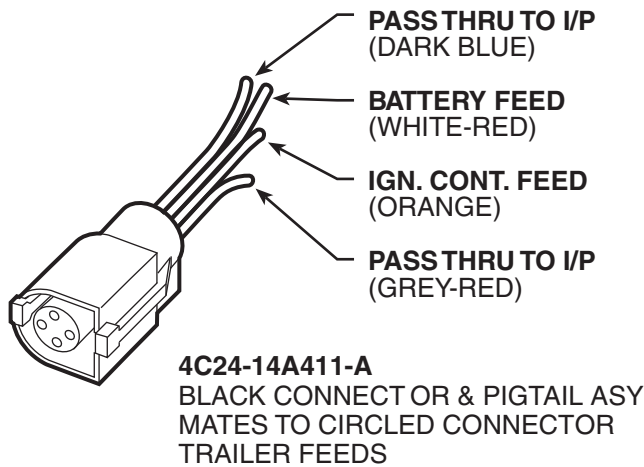
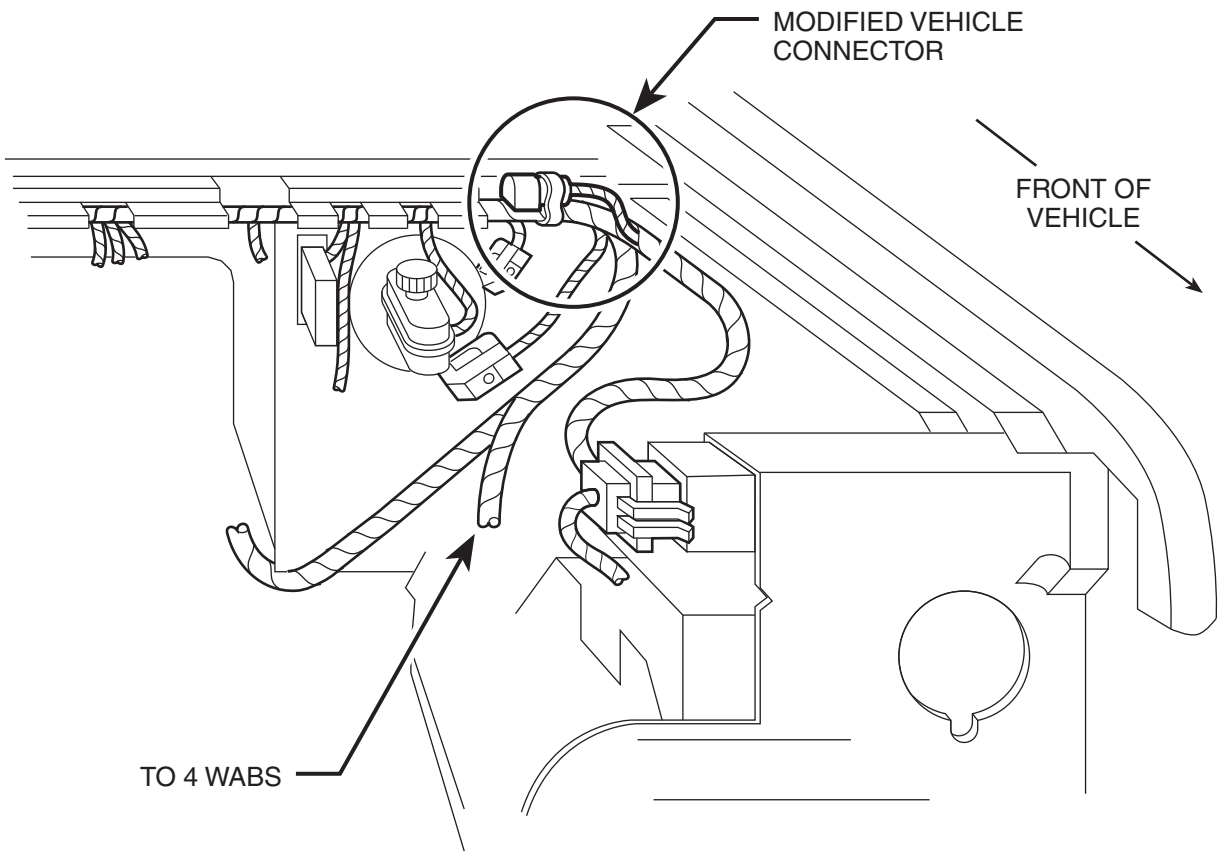


Note: Jumper included in optional trailer tow prep kit. (15A416)

	Load Name	Circuit Number	Wire Gauge	Circuit Color	Max. Cont. Current	Recommended Wire Length (In Feet) W/O Additional Fusing						
						Cont. Load 20 GA.	Cont. Load 18 GA.	Cont. Load 16 GA.	Cont. Load 14 GA.	Cont. Load 12 GA.	Cont. Load 10 GA.	Cont. Load 8 GA.
4C24-14A411-B	LH Turn Signal/Hazard	3	18	LG - W	2.2 A		80	121	196			
	Battery Feed	*1507	10	W-R	25A					26	42	66
	Ign. Control Feed	@49	12	O	25A					93	148	234
	Pass Thru (Eng)	#867	12	DB	25A	NOT FUSED						
	Pass Thru (Eng)	#868	12	GY-R	25A	NOT FUSED						
	RH Turn Signal/Hazard	2	18	W - LB	2.2 A		81	122	197.5			
4C24-14A411-C	Battery Feed	*1507	12	W-R	25A					20	32	51
	Ign. Control Feed	@49	12	O	25A					91	146	230
	Fused Feed	1462	12	R-W	25A					93	150	237
	Ground	57	10	BK	N/A	(GAS VANS ONLY)						
F4UB-14A411-F	I/P Lamp Feed	19	20	LB-R	8A	50	50	50				
	Fused Feed	884	10	Y-BK	10A	(HOT IN LOWER CONNECTOR ONLY)					30	45
	Aux. Sw. HI	757	18	R-W	8A	(CIRCUIT TO BE USED FOR RELAY GROUND RETURN ONLY)						
	Aux. Sw. Med Lo	752	14	Y-R								
	Aux. Sw. Med. HI	751	12	DB-W								
F6UB-14A411-A	Battery Feed	54	16	LG - Y	8A			82	133.5			
	Dome Lamp (Switched from 54)	53	16	BK - LB	8A			82	133.5			
	Ground	57	18	BK	N/A							

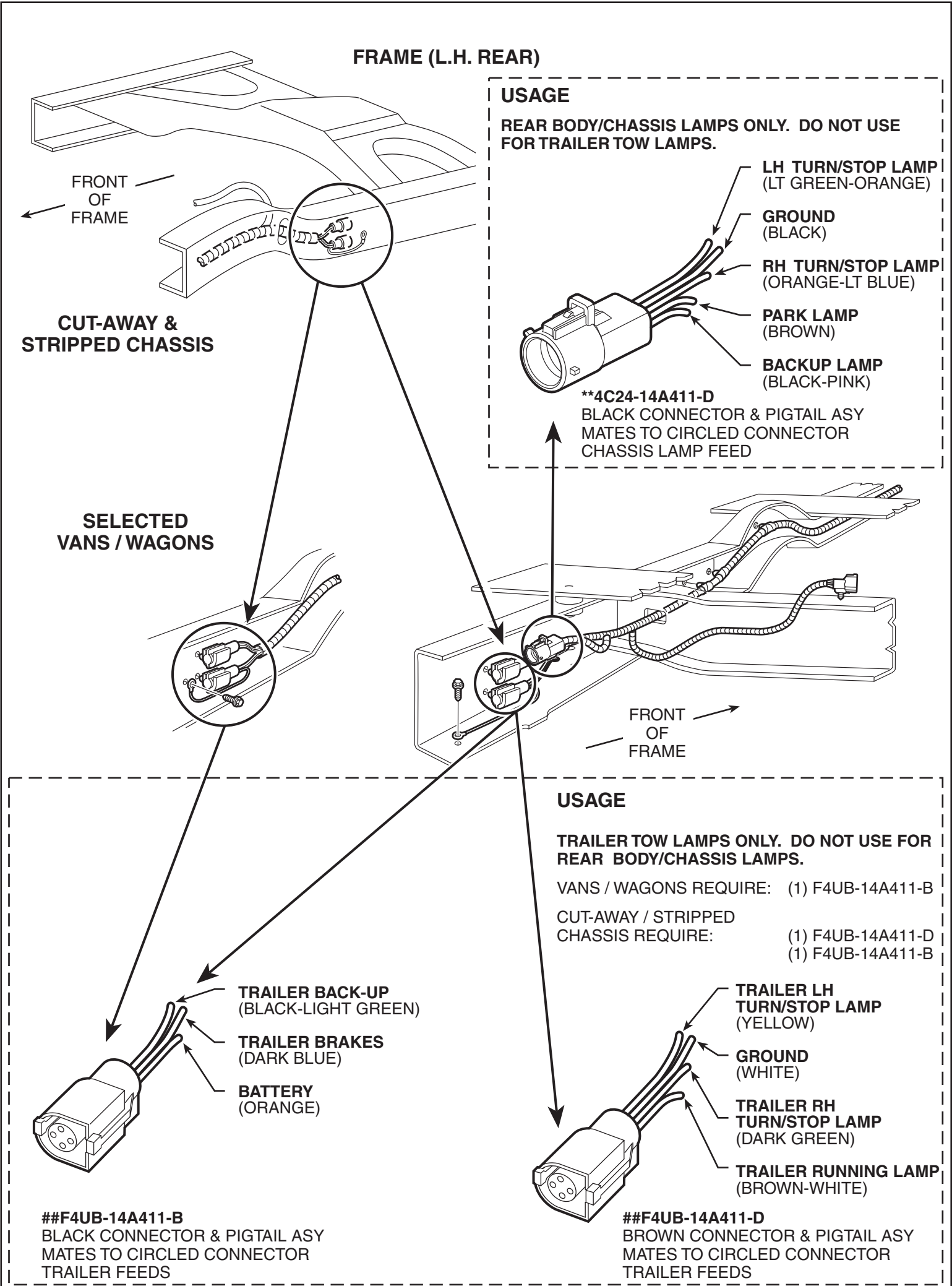
* Note: Total shared current for 1507 circuit not to exceed 25 amps.
@ Note: Total shared current for 49 circuit not to exceed 25 amps.
Note: Circuits 867 & 868 are not fused.
** Note: Available as service part only. (F4UZ-14A411-F)

VIEW OF ENGINE COMPARTMENT (L.H. SIDE)



Load Name	Circuit Number	Wire Gauge	Circuit Color	Max. Cont. Current	Recommended Wire Length (In Feet) W/O Additional Fusing					
					Cont. Load 18 GA.	Cont. Load 16 GA.	Cont. Load 14 GA.	Cont. Load 12 GA.	Cont. Load 10 GA.	Cont. Load 8 GA.
Battery Feed	@1507	10	W-R	25 AMP				28	45	71
Ign Control Feed	#49	12	O	25 AMP				95	152	240
Pass Thru (I/P)	*867	12	DB	25 AMP						
Pass Thru (I/P)	*868	12	GY-R	25 AMP						

* Note: Circuits 867 and 868 are not fused
Note: Total shared current for 49 circuit not to exceed 25 amps .
@ Note: Total shared current for 1507 circuit not to exceed 25 amps .



Load Name	Circuit Number	Wire Gauge	Circuit Color	Max. Cont. Current	Recommended Wire Length (In Feet) W/O Additional Fusing						
					Cont. Load 20 GA.	Cont. Load 18 GA.	Cont. Load 16 GA.	Cont. Load 14 GA.	Cont. Load 12 GA.	Cont. Load 10 GA.	Cont. Load 8 GA.
LH Turn ST LP	**9	14	LG-O	2 AMP	8	13	19	31	48	77	
RH Turn ST LP	**5	14	O-LB	2 AMP	8	13	19	31	48	77	
Park Lamp	**14	18	BR	5 AMP	NR	10	16	25	40	64	
Back - Up Lamp	**140	18	BK-PK	4 AMP	12	19	29	47	75	120	
Ground	**57	18	BK	@23 AMP							
Trailer Tow Battery Feed	* 49	12	O	2.5 AMP					14	23	36
Trailer Tow LH Turn ST LP	52	18	Y	8 AMP		86	129	210			
Trailer Tow RH Turn ST LP	64	18	DG	8 AMP		86	129	210			
Trailer Tow Running Lamp	# 962	14	BR-W	16 AMP				16	26	41	65
Trailer Tow Back - Up Lamp	# 963	12	BK-LG	16 AMP					34	55	86

NR (Not recommended) - Do not use, wire gauge is not intended for this application.
For ground circuit, length and gauge are dependent on desired load and voltage drop.

* Note: Total shared current for 49 circuit not to exceed 25 amps.

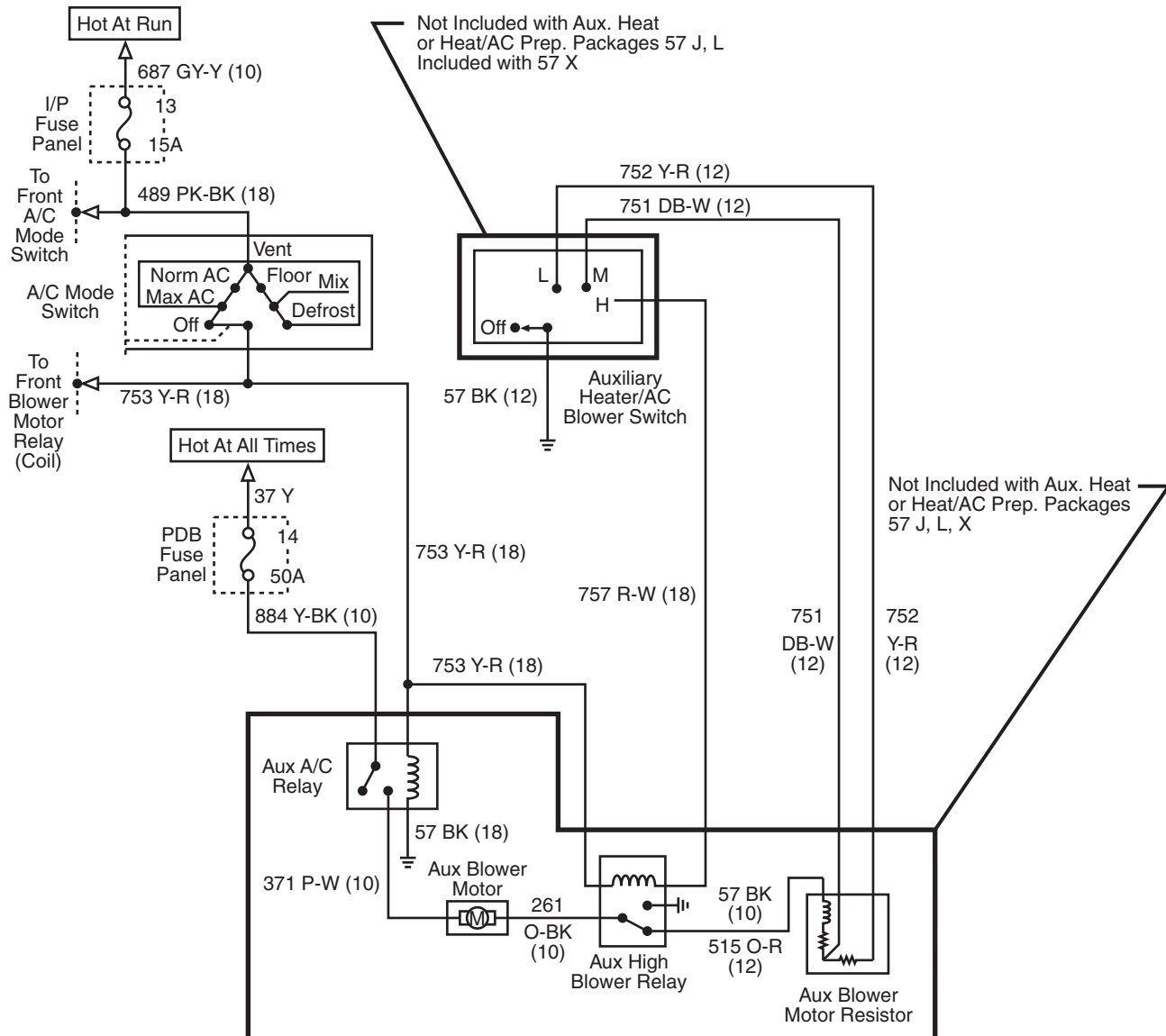
Note: Total shared current for 962 & 963 circuit not to exceed 18 amps.

@ Note: 23A is Max Cont. current at ambient temperature for 18 gauge wire.

** Note: Circuits used with rear body/chassis lamps only. Do not use for trailer tow lamps..

Note: Circuits used with trailer lamps only. Do not use for rear body/chassis lamps.

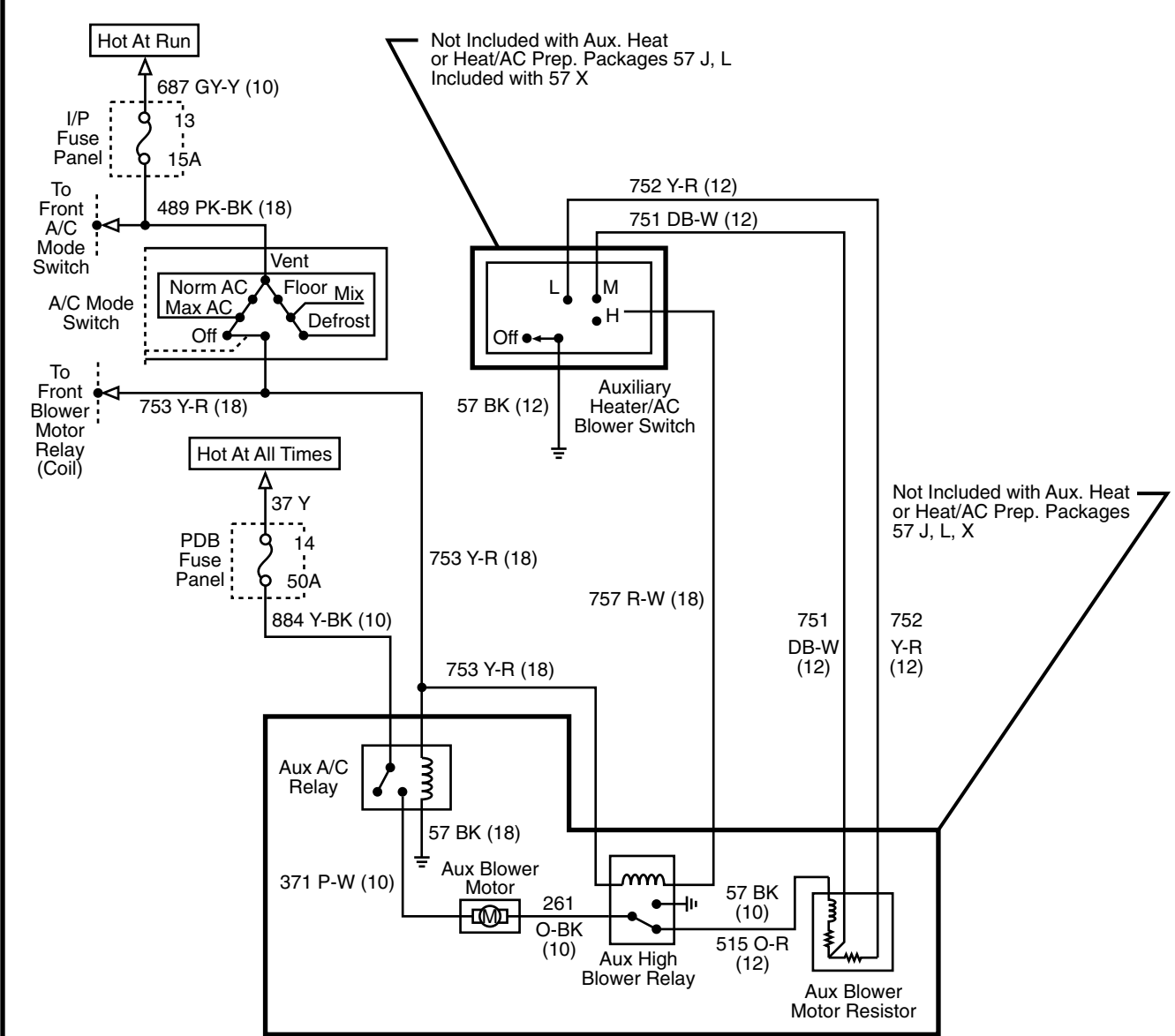
Auxiliary Heater A/C System Schematic



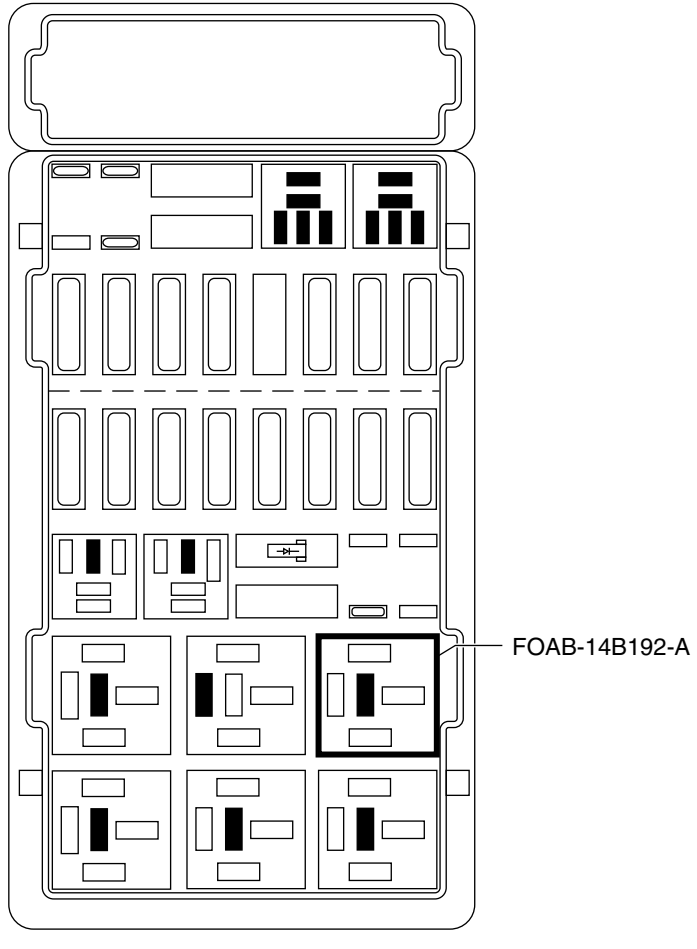
NO. SK-4C24-14A351-AA

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Auxiliary Heater A/C System Schematic

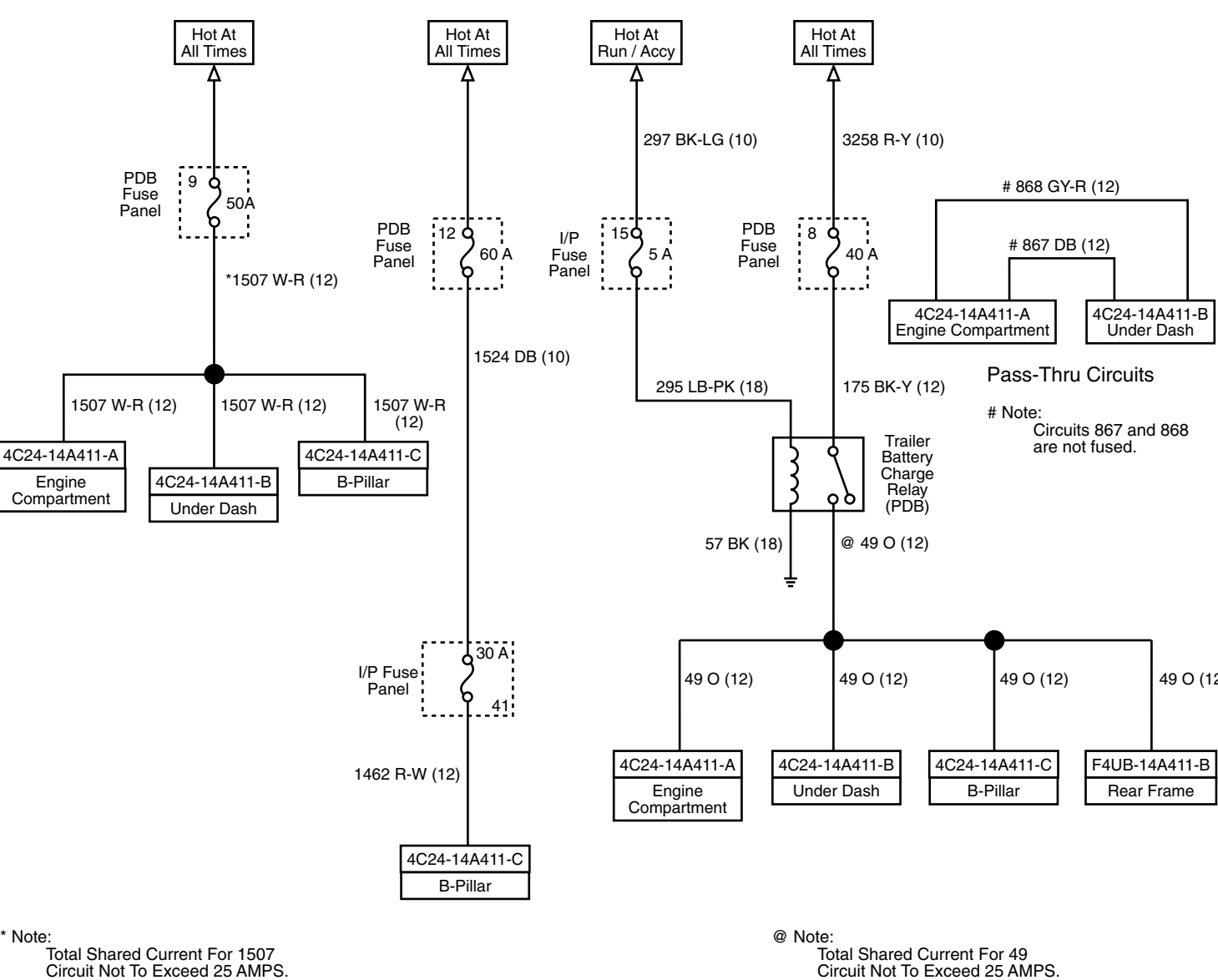


POWER DISTRIBUTION BOX (PDB)
(IN ENGINE COMPARTMENT)
TRAILER TOW RELAY LOCATION

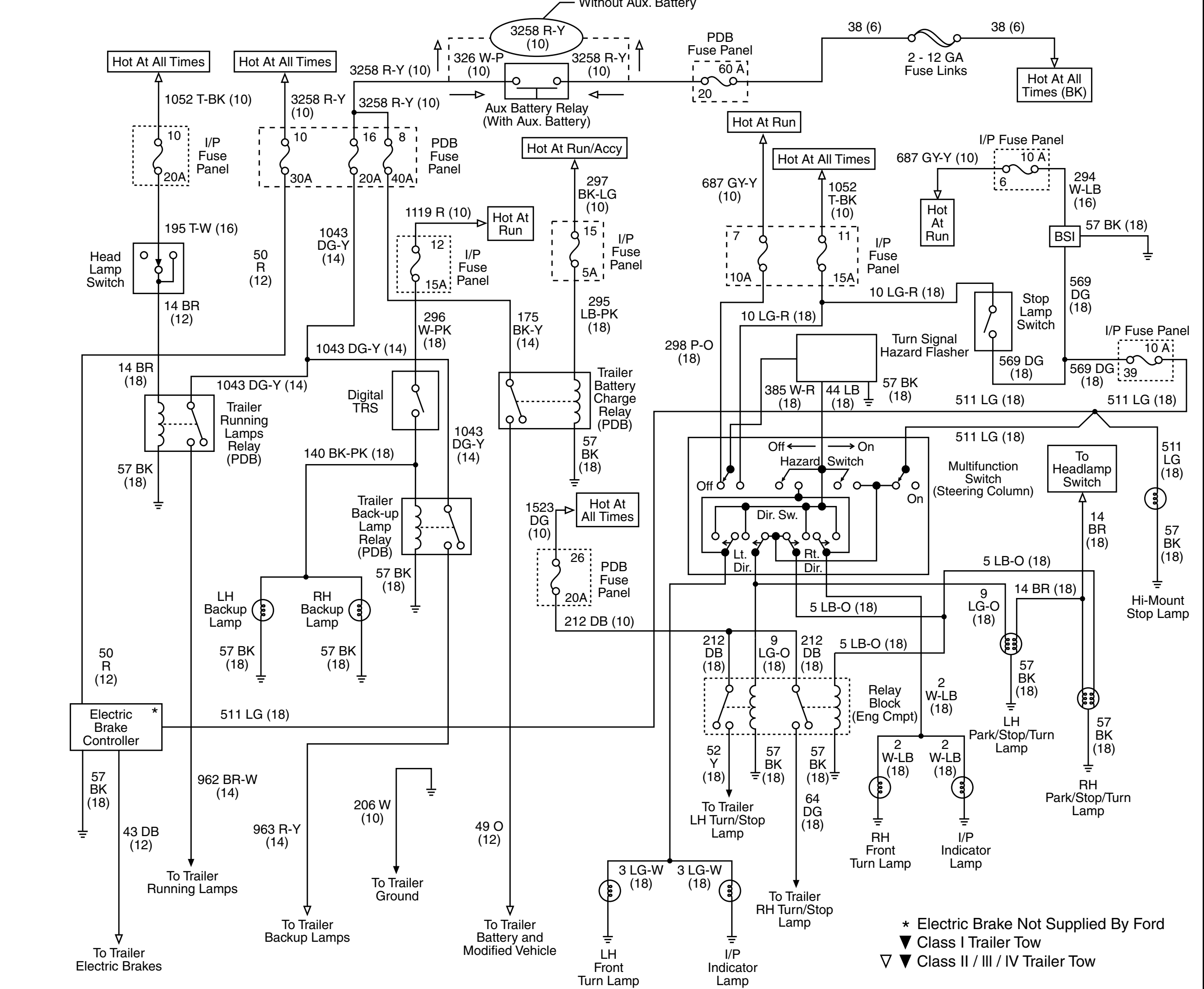


FOAB-14B192-A
Install trailer battery charge relay (in kit)
to highlighted area in junction box.

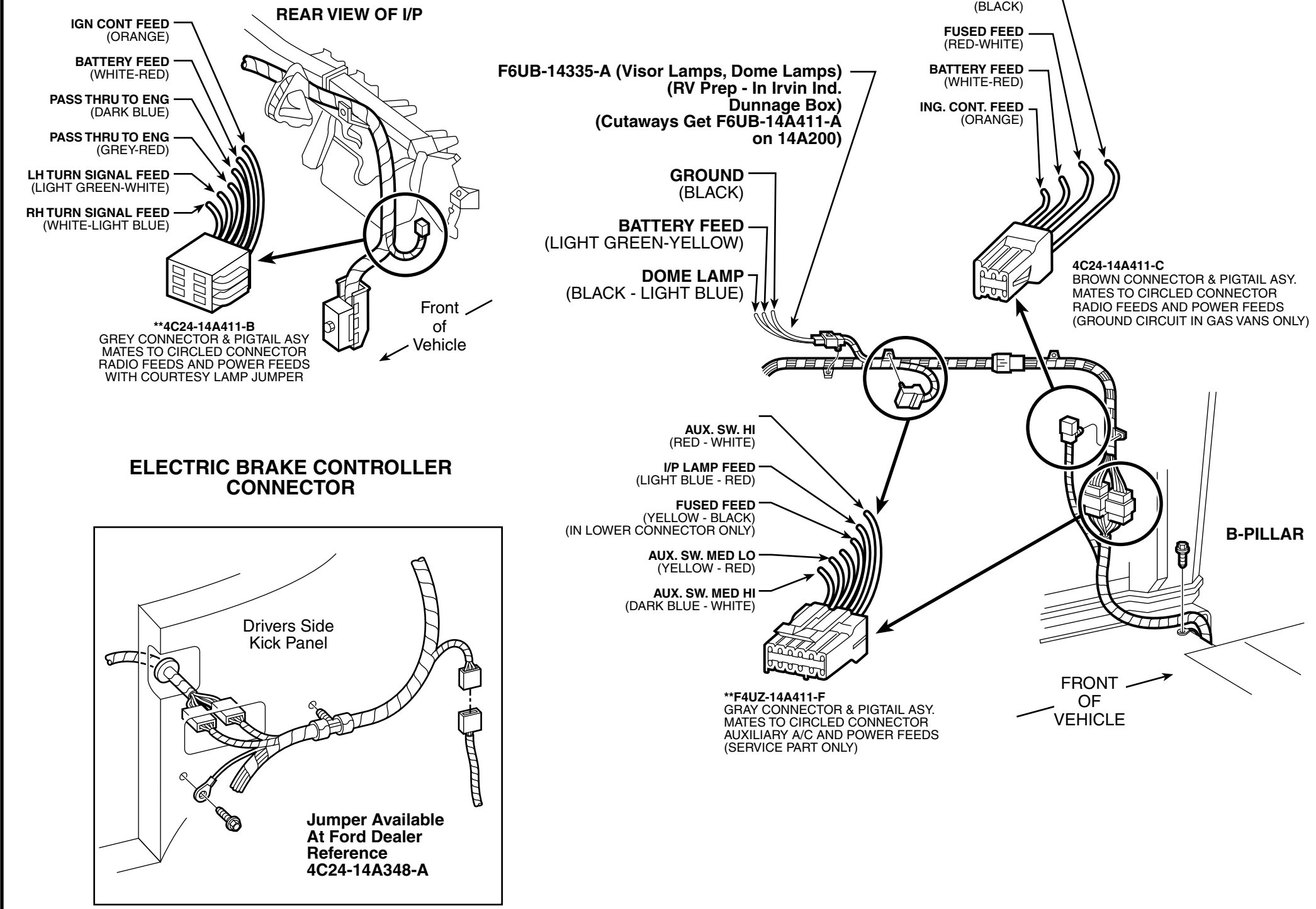
Modified Vehicle Schematic



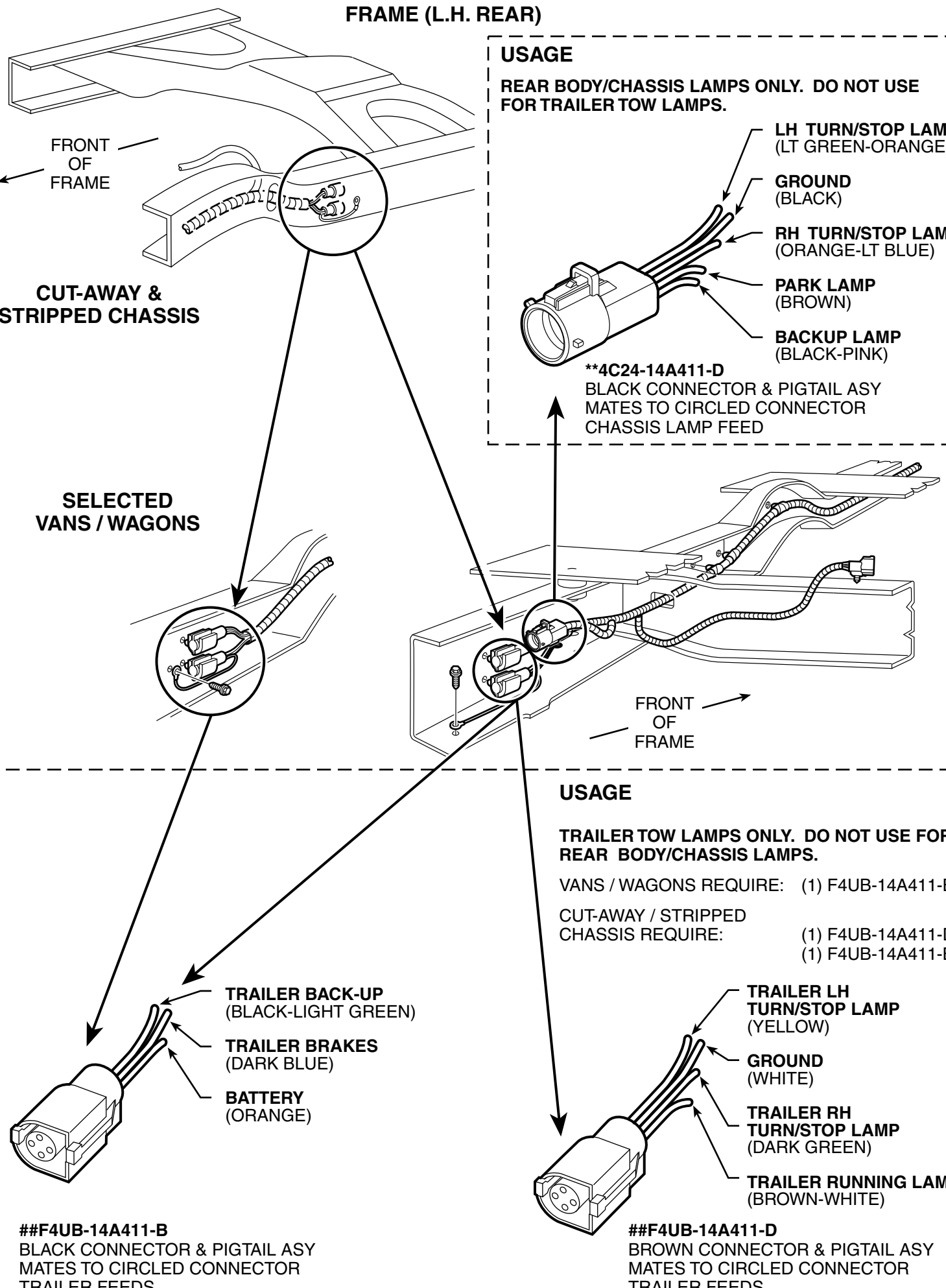
Rear Chassis Lamp and Trailer Tow Schematic



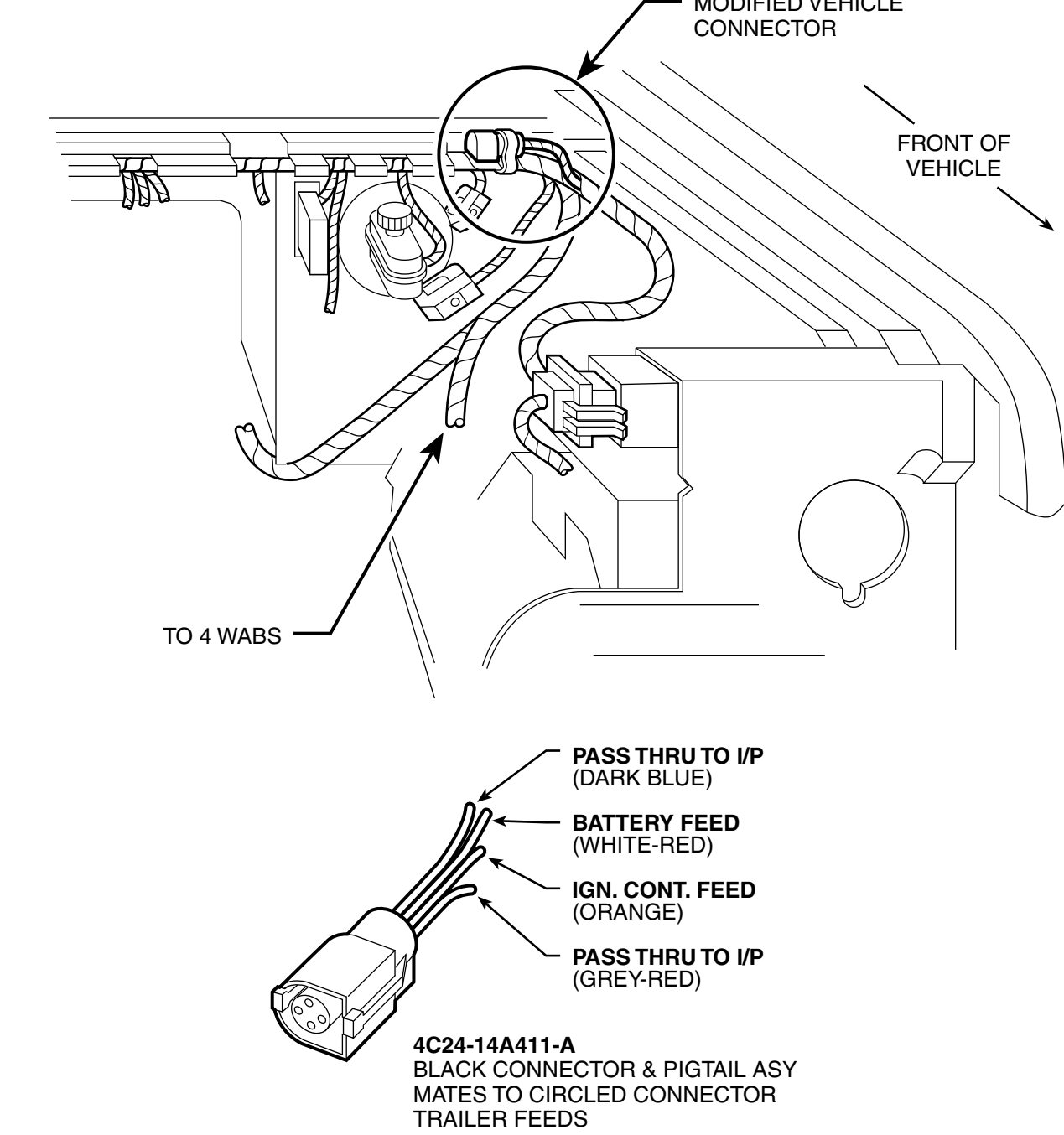
INSTRUMENT PANEL & B PILLAR



FRAME (L.H. REAR)



VIEW OF ENGINE COMPARTMENT (L.H. SIDE)



TABLES

Load Name	Circuit Number	Wire Gauge	Circuit Color	Max. Cont. Current	Recommended Wire Length (In Feet) W/O Additional Fusing									
					Cont. Load 20 GA.	Cont. Load 18 GA.	Cont. Load 16 GA.	Cont. Load 14 GA.	Cont. Load 12 GA.	Cont. Load 10 GA.	Cont. Load 8 GA.			
4C24-14A411-B	LH Turn Signal/Hazard	3	18	LG - W	2.2 A									
	Battery Feed	*1507	10	W-R	25A						26	42	66	
	Ign. Control Feed	@49	12	O	25A							93	148	234
	Pass Thru (Eng)	#867	12	DB	25A									
	Pass Thru (Eng)	#868	12	GY-R	25A									
4C24-14A411-C	RH Turn Signal/Hazard	2	18	W - LB	2.2 A									
	Battery Feed	*1507	12	W-R	25A						20	32	51	
	Ign. Control Feed	@49	12	O	25A							91	146	230
	Fused Feed	1462	12	R-W	25A							93	150	237
F4UB-14A411-F	Ground	57	10	BK	N/A									
	I/P Lamp Feed	19	20	LB-R	8A	50	50	50						
	Fused Feed	884	10	Y-BK	10A							30	45	
	Aux. Sw. Hi	757	18	R-W	8A									
F6UB-14A411-A	Aux. Sw. Med Lo	752	14	Y-R										
	Aux. Sw. Med. Hi	751	12	DB-W										
	Battery Feed	54	16	LG - Y	8A							82	133.5	
F6UB-14A411-A	Dome Lamp (Switched from 54)	53	16	BK - LB	8A							82	133.5	
	Ground	57	18	BK	N/A									

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Park Lamp	**14	18	BR	5 AMP	NR	10	16	25	40	64			
Back - Up Lamp	**140	18	BK-PK	4 AMP	12	19	29	47	75	120			
Trailer Tow Battery Feed	*57	18	BK	25 AMP									
Trailer Tow LH Turn ST LP	52	18	Y	8 AMP			86	129	210		14	23	36
Trailer Tow RH Turn ST LP	64	18	DG	8 AMP			86	129	210				
Trailer Tow Running Lamp	#962	14	BR-W	16 AMP				16	26	41	65		
Trailer Tow Back - Up Lamp	#963	12	BK-LG	16 AMP					24	34	55	86	

Load Name	Circuit Number	Wire Gauge	Circuit Color	Max. Cont. Current	Recommended Wire Length (In Feet) W/O Additional Fusing								
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** Note: Available as service part only. (F4UZ-14A411-F)

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DATE

LET

REVISIONS

CG

MAN

CK

APP

RELEASE SK-4C24-14A351-AB
NB00-E-11502217-000 (DR)

PART MUST COMPLY WITH SPECIFICATION WSS-M99P9999-A
TO HELP SAFEGUARD HEALTH, SAFETY AND THE ENVIRONMENT

PRODUCT

ORIGINAL WHEN RED

DO NOT SCALE

ABOVE SCALE FOR REFERENCE ONLY

REF

DRAWN BY

DATE

CHECKED

SCALE

APPROVED

Technical Illustration Corp.

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN
INCHES MILLIMETERS
MACHINED DIM±
ANGULAR DIM±

3RD ANGLE PROJECTION
STAMPED DIM±
DIM±

MATERIAL

APP

DATE

030823

NAME

Sketch - Kit - Camper Wiring

NO.

SK-4C24-14A351-AA