








Arriva
by Coach House®

Section 3

Electrical Systems

Electrical Systems

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Special Electrical Statement

Coach House *ARRIVA* Motorhomes are wired with a Master Disconnect Switch. The location and operation of this switch is detailed on page 3-33 of this manual.

Coach House, Inc. recommends
that the Master Disconnect Switch
be turned to the “ON” position
any time your motorhome is in use.
Vital systems including LPG and
Carbon Monoxide detectors will not
function unless the
Master Disconnect Switch
is turned “ON”

Power Converter

Your Coach House **ARRIVA** is equipped with a power converter that supplies the motorhome with 110 volts AC (Alternating Current) and 12 volts DC (Direct Current). The source of power can be from the:

- 1) Auxiliary “House” 12 volt batteries
- 2) 110 volt external power cord (Shore Power)
- 3) Generator

Power Converter Location:

MODEL

ARRIVA

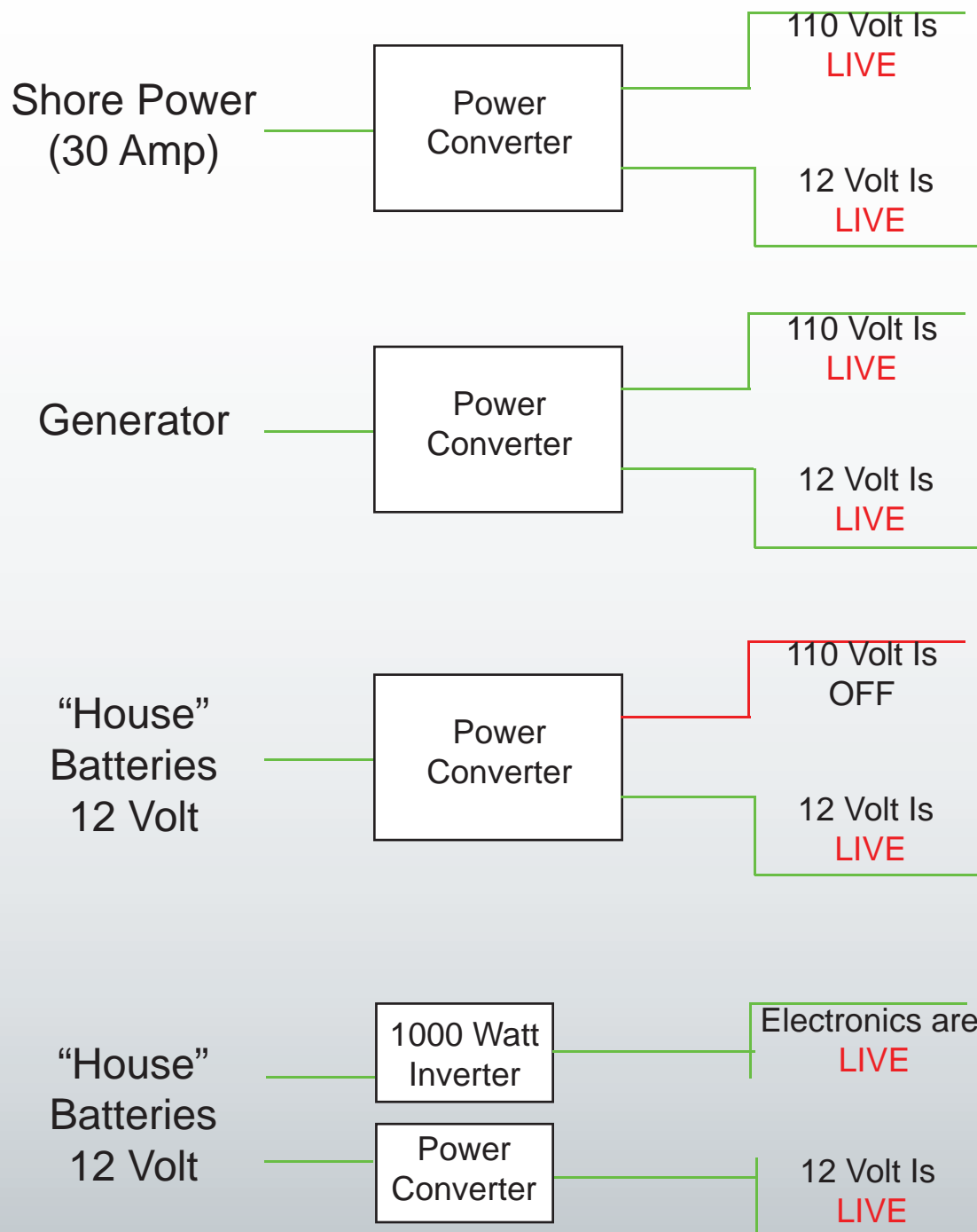
Location

Electical Panel on Driver's Side Upper Cabinet



The converter is equipped with an automatic switchover relay to prevent both the generator and the external power cord from being connected to the converter at the same time. When either the external power cord or the generator is being used, both the 110 volt AC system and the 12 volt DC system will be activated inside the motorhome. When neither of these is connected, the 12 volt auxiliary batteries will activate only the 12 volt DC system.

The separate 1000 Watt Inverter will power the electronics using only the “House” Batteries.





Arriva
by Coach House®

Progressive Dynamics
Power Converter

Instruction Manual

Insert Progressive Dynamics Manual Here

Circuit Breaker & Fuses

The location of the power converter can be found by looking for a black plastic box approximately 6" high x 12" wide. Location of the converter for your model is listed on page 3-3.

The door can be opened with a "push" touch and the circuit breakers and fuses can be located. The 110 volt AC breakers are located on the right with the first breaker on the left being the MAIN POWER, and the remaining breakers for the circuits as labeled on the door. The 12 volt DC fuses are the automotive push in type links and are located on the left side. The top two breakers are for system use, and do not feed the motorhome. The 12 volt DC circuits are labeled on the door.

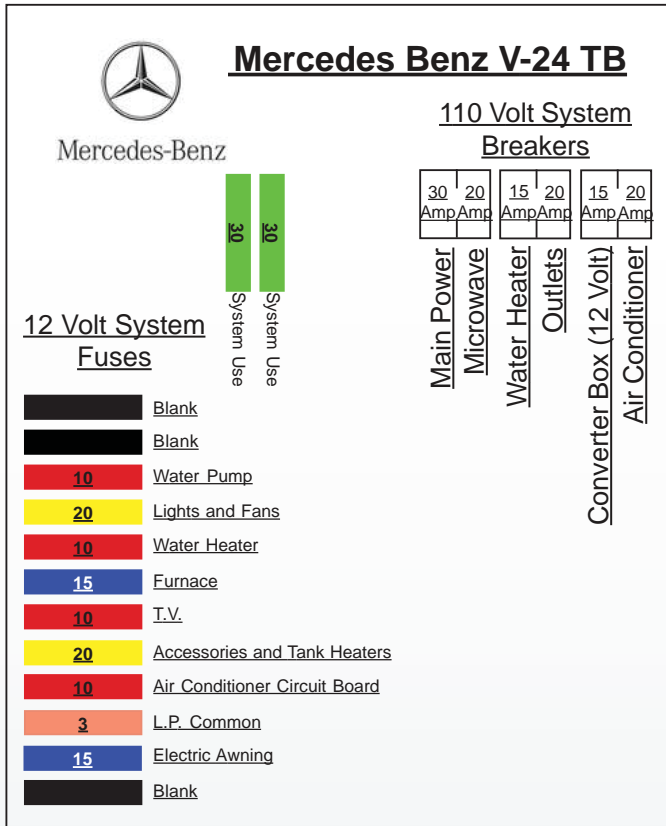
There is an auxiliary 12 volt fuse panel located above the driver's side seat in a compartment behind a smoked plexiglass door.

Diagrams of the Fuse Panels for your model are located on the next page.

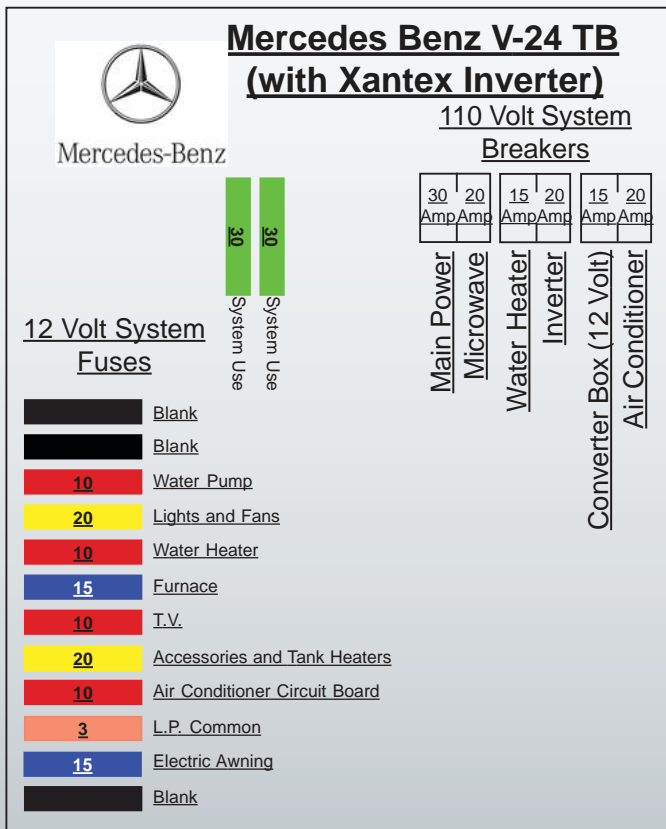
CAUTION

Whenever working on the electrical system, the system or circuit being worked on should be deactivated by disconnecting the power and/or throwing the main circuit breaker and safe procedures should be followed to prevent electrical shock. Any modifications made to the system should only be done by a professional to assure compliance with the codes and to assure safe installation practices.

Main Fuse Panel



Main Fuse Panel
without Inverter



Main Fuse Panel
with Xantrex
1800 Watt Inverter

Auxiliary Fuse Panel

(On Electrical Panel Driver's Side Upper Cabinet)

| <u>Circuit</u> | <u>Amp</u> | <u>Device</u> |
|----------------|------------|---------------------|
| 1 | | Empty |
| 2 | 5A | 12v Power Supply |
| 3 | 1A | T.V. Antenna Rotor |
| 4 | 5A | Satellite |
| 5 | | Empty |
| 6 | 10A | CO and LP Detectors |



Mercedes Benz Battery Seperator



Mercedes-Benz

Mercedes Benz Sprinter Models have a factory installed battery seperator. Please refer to the Mercedes Benz Manual for information about the charging systems on the Sprinter Chassis.

Generator



Mercedes-Benz

Mercedes Benz Chassis models are equipped with a:



3.6 kW ONAN LPG (Propane) Microquiet Generator

Your LP Gas Tank should only be filled by a qualified Propane Salesperson. Injury or death could occur if safety precautions are not followed.

The instruction manual supplied with the generator should be carefully reviewed. Care should be taken not to exceed the capacity of the generator to prevent any possible damage to the generator unit.

Insert Cummins Generator Manual Here

Auxiliary "House" Batteries



Mercedes-Benz

Auxiliary batteries are located under the hood on the driver's side of the engine compartment.



Standard - 1 Battery
(100 Amp Hours)



Optional - 2 Batteries
(242 Amp Hours)

Factory Installed Battery (Standard)

Rated 100 Amp Hours

Interstate Group CG2 6 Volt (Optional)

Two - 6 Volt Batteries Wired in Series

Rated 242 Amp Hours

The auxiliary batteries are charged either by:

- 1) The *Alternator* of the motor home while driving
- 2) The *Power Converter* when external 120 Volt AC power is connected
- 3) The *Generator*

Care should be taken to prevent the auxiliary batteries from being totally discharged by making sure that all of the lights, fans, and appliances are turned off when the motor home is not in use. Whenever the motor home is not used for a period of time, the 120 Volt power cord should be plugged in once a month for 8 to 12 hours to bring up the charge on the auxiliary batteries. The master 12 Volt electrical switch (found to the right immediately upon entering the main motor home door) must be ON for the converter charger to charge the auxiliary batteries. Refer to the power center instruction sheet for further information. A totally discharged battery will not normally recharge as quickly, or in the same manner as a low battery. Professional help should be used when attempting to charge a totally discharged battery.

The engine battery of the motor home is not charged from the power converter. The engine battery should be periodically checked and maintained. Refer to the Chassis Owners Manual for recommended engine battery maintenance.

Maintenance of Batteries

Batteries have a “life” which is determined by the number of charging/discharging “cycles”. When your system is not in use, proper care should be taken to extend the battery life by following simple procedures:

Short Term Storage:

- 1) Turn off the Interior Battery Switch (located inside the Motorhome on the Galley Wall to the left).
- 2) Ensure that all current drains have been eliminated. (Turn off all appliances)

Long Term Storage:

- 1) Turn off the Interior Battery Switch (located inside the Motorhome on the Galley Wall to the left).
- 2) Disconnect the “House” Batteries by removing the Main “Positive” cable.



Note: The house battery (ies) are located under the engine hood on the driver’s side.

- 3) Connect a Battery Maintenance Device (Charging System) to your “House” Battery Bank. Chargers and Maintenance Devices are readily available at Auto Parts Stores, RV Dealers, or your local Hardware Store.

Engine Battery Maintenance:

Please refer to your Chassis Owner’s Manual to correctly maintain your engine battery.

**Insert Battery Maintenance Manual in
See Through Pocket Here**

80 Amp Breaker

Your Coach House *ARRIVA* has an electrical system circuit breaker to prevent damage to the 12 volt electrical system. The 80 Amp breaker will 'trip' if an overload situation occurs. Push in the red button to reset the breaker.

80 Amp Breaker Locations

| <u>Model #</u> | <u>Location</u> |
|----------------|-------------------------|
| <i>ARRIVA</i> | Under the Driver's Seat |



150 Amp Breaker

Your Coach House *ARRIVA* has an electrical system circuit breaker to prevent damage to the engine when using the Emergency Start Switch. The 150 Amp breaker will 'trip' if an overload situation occurs. Push in the red button to reset the breaker.

150 Amp Breaker Locations

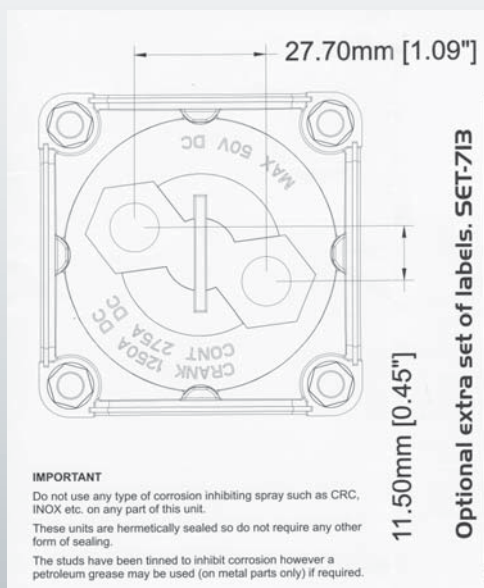
| <u>Model #</u> | <u>Location</u> |
|----------------|----------------------------|
| <i>ARRIVA</i> | Under the Passenger's Seat |



Master Disconnect Switch

The battery switch is located on the entrance wall just under the sink. Auxiliary batteries are being used when the switch is in the on position. Always turn the battery switch to the off position when the motor home is not being used to prevent the auxiliary batteries from being drained.

NOTE: Auxiliary batteries will NOT charge from engine alternator or converter with battery switch in the "OFF" position.



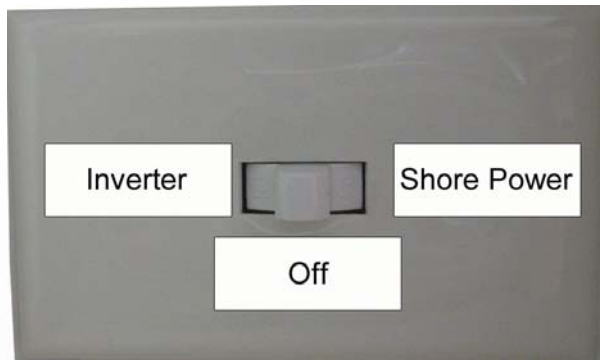
1000 Watt Inverter

A Xantrex 1000 Watt Inverter has been installed in your *ARRIVA* motorhome as standard equipment. The remote on/off switch for the inverter is just behind the driver's seat on the wall.

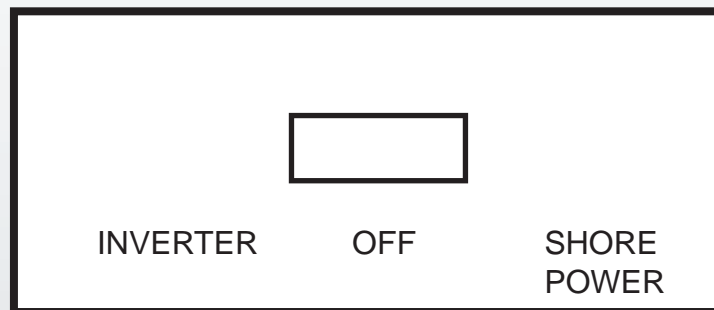
This inverter will supply 110 volt power to the electronic components (Television, DVD player, optional Satellite Receivers, and the outlet behind the driver's seat) when you are not hooked up to shore power or running the generator. These devices will drain your house batteries if in use for an extended period of time.



Power Input Selection Switch

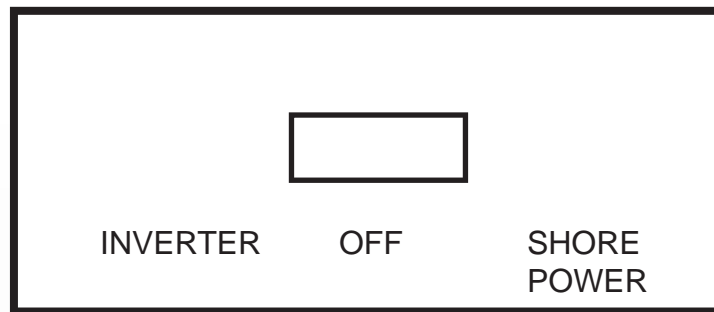


A selector switch has been installed in your **ARRIVA** motorhome to protect the inverter from being shorted out when hooking up to shore power. This switch is located next to the smoke detector on the driver's side just behind the driver's seat.. The switch is a three position switch. The following diagram shows the positions.



**THIS SWITCH IS NOT INSTALLED IF A
XANTREX PURE SINE WAVE INVERTER
WAS INSTALLED IN YOUR COACH HOUSE
MOTORHOME.**

Power for the front outlets, the television and electronics, and the automatic legless awning are all fed through the Power Input Selection Switch. Each position feeds power to the outlets and appliances differently.



When the Selector Switch is in the “Inverter” position, 110 Volt Power to the front outlets is supplied from the “House Batteries” it is possible to drain your house batteries if the switch is in this position too long without recharging your house batteries. Plugging in to Shore Power will charge your batteries while the Inverter is selected.

When the Selector Switch is in the “OFF” position, no power is supplied to the front outlets. **The powered awning will NOT work when the switch is in this position.** Severe damage could be done to the awning in inclement weather if power is not supplied.

When the Selector Switch is in the “Shore Power” position, 110 Volt Power to the front outlets is supplied from the 110 Volt source you are plugged into. The house batteries will not drain their charge in this position. Remember to plug in your shore cord in this position.

Make sure your Battery Cutoff Switch is in the ON position and the Inverter is turned ON any time the Electric Awning is deployed. Damage to your Awning or Motorhome may occur if power is not available in the event of inclement weather.

Auxilliary Start Over-Ride Switch

In the event that your engine battery does not have the power to start your motorhome, your **ARRIVA** is equipped with an Auxilliary Start Over-Ride Switch which will “tie” the house batteries to the engine battery to give an extra “boost” of power to start your motorhome engine.

Push the white switch and HOLD IT DOWN while starting your vehicle with the key.

The Over-Ride Switch is located under the Driver's Seat next to the 80-Amp Breaker.



GFCI Receptacles

A GFCI receptacle is different from conventional receptacles. In the event of a ground fault, a GFCI will trip and quickly stop the flow of electricity to prevent serious injury. All Coach House *ARRIVA* models have GFCI receptacles in the galley and the bathroom. See the GFCI manual for more information.



How to test your GFCI Outlet:

Step 1: Plug a lamp into the GFCI.

Step 2: Turn on the lamp.

Step 3: Push the TEST button on the GFCI. The GFCI should trip, stopping the flow of electricity to the lamp. Note that the RESET button will pop-out.



If the lamp DOESN'T turn off when the TEST button is pushed, the GFCI is not working properly and should be replaced immediately.

If the lamp DOES turn off when the TEST button is pushed, the GFCI is working properly and should be tested monthly. To restore power, press the RESET button.



If the power is not restored when the RESET button is pushed, the GFCI is not working properly and should be replaced immediately.

For more information on GFCIs and how to test monthly, go to www.tools.passandseymour.com/gfci or to participate in an interactive GFCI demo online, go to www.electrical-safety.org

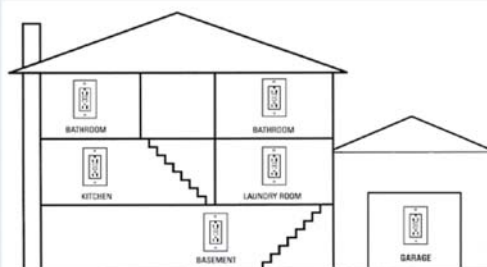
What is a GFCI Outlet?

A Ground Fault Circuit Interrupter (GFCI) Outlet protects you from serious injury due to electrical shock from:

- Hazardous leakage levels from appliances and tools
- Exposure to moisture while operating electrical equipment
- Frayed or damaged electrical wiring

Where are your GFCIs located?

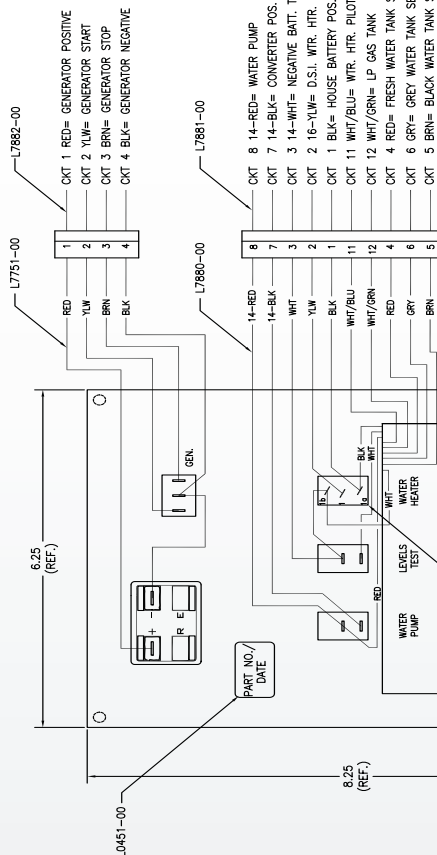
GFCI protection is required per the *National Electrical Code®* (NEC) for outlets servicing bathrooms, kitchen countertops, unfinished basements, garages, utility sinks, and outdoor locations.



Legrand/Pass & Seymour is a proud sponsor of:



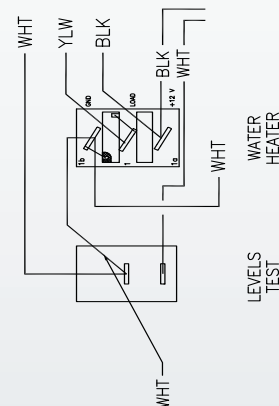
Main Control Panel Wiring Diagrams



DETAIL -A

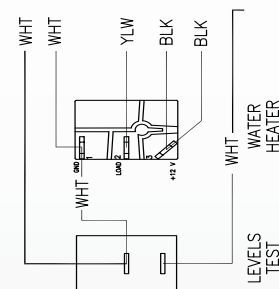
DETAIL -B

FOR L0109-00 "MARQUARDT"
SHOWN APPROX. 2X SCALE



DETAIL -C

FOR L0109-00 "CARLINGSWITCH"
SHOWN APPROX. 2X SCALE

[illegible]

| | | | | | | |
|-------------------|--------|----------|----------|------|--|---|
| DATE | DRAWN | DATE | MATERIAL | IN |  VERTICAL LINE DRAWING 808TOL, INDIANA 46507 DEXTER | SCALES: NONE DWG. NO. PAGE 2 OF 2 1A1068-00 |
| | | | | | | |
| FUNCTION DRAWING, | | | | | | |
| MONITOR DANIEL | | | | | | |
| CHECKED | DATE | CHECKED | DATE | DATE | | |
| IMPR | 3/4/03 | IMPR | 3/4/03 | DATE | | |
| APPROV'D | | APPROV'D | | DATE | | |

FUSE PANEL



| | | | |
|------|----|---------|--|
| 1486 | 18 | 6-24-13 | REPLACE BATTERY ISOLATOR WITH BATTERY SEPARATOR. |
| 1433 | 17 | 3-13-12 | CHANGE CIRCUIT BREAKERS 15/20 WAS 20/15. |
| 1415 | 16 | 11-7-11 | UPDATE PANELBOARD FOR NEW CONVERTER. |

DESCRIPTION



Coach House
Van Motor Homes

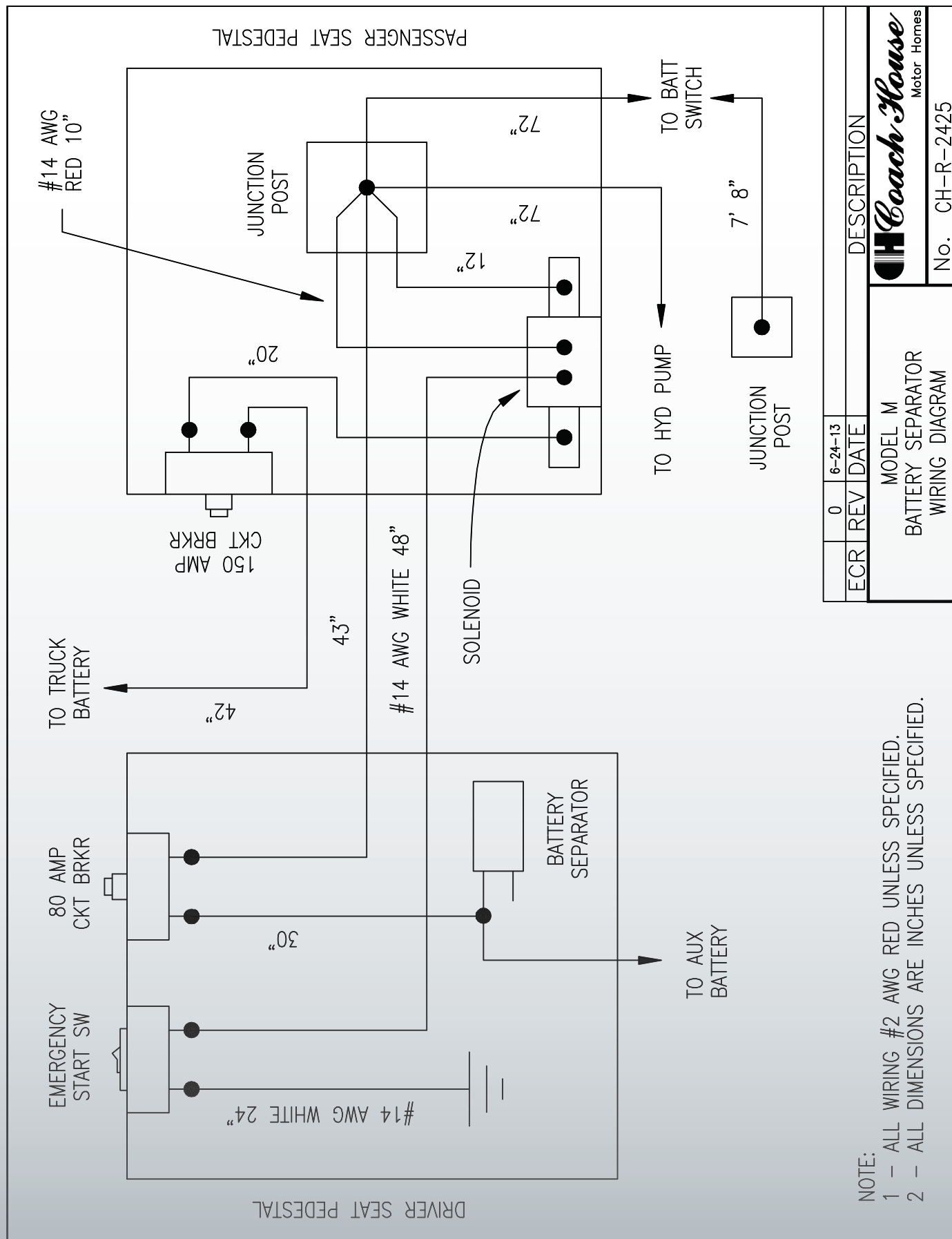
No. EL108

PLATINUM 110VAC & 12VDC WIRING DIAGRAM

SHEET 2 OF 2

NOTE:

1. SOME ITEMS SHOWN ARE OPTIONAL.
2. WIRING 14 GA UNLESS SPECIFIED.



NOTE:

- 1 - ALL WIRING #2 AWG RED UNLESS SPECIFIED.
- 2 - ALL DIMENSIONS ARE INCHES UNLESS SPECIFIED.

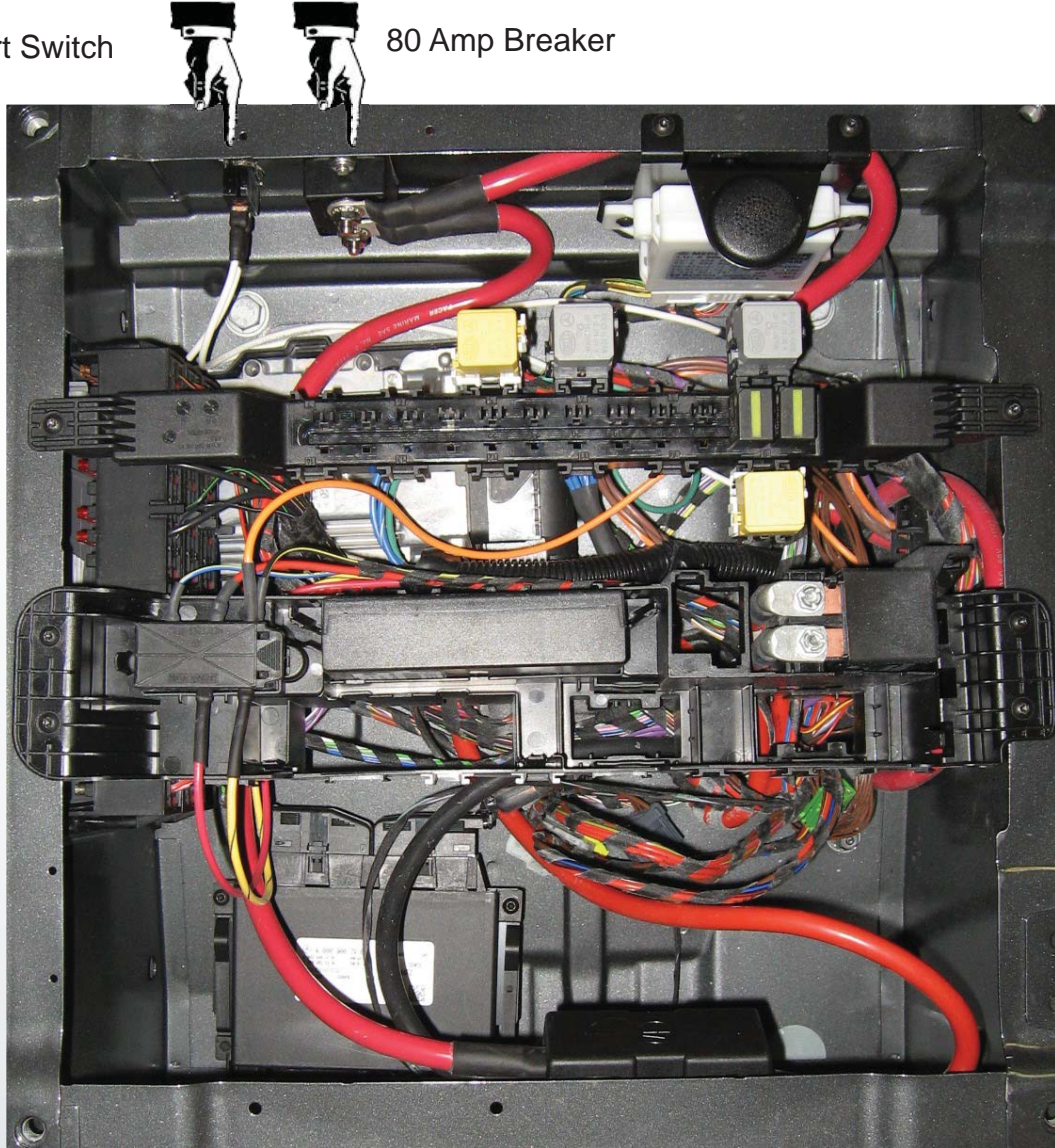
| ECR | REV | DATE | DESCRIPTION |
|--|---------|------|-------------|
| 0 | 6-24-13 | | |
| MODEL M BATTERY SEPARATOR WIRING DIAGRAM | | | |
| | | | |
| No. CH-R-2425 | | | |

Driver's Seat Pedestal Wiring

Auxilliary Start Switch

80 Amp Breaker

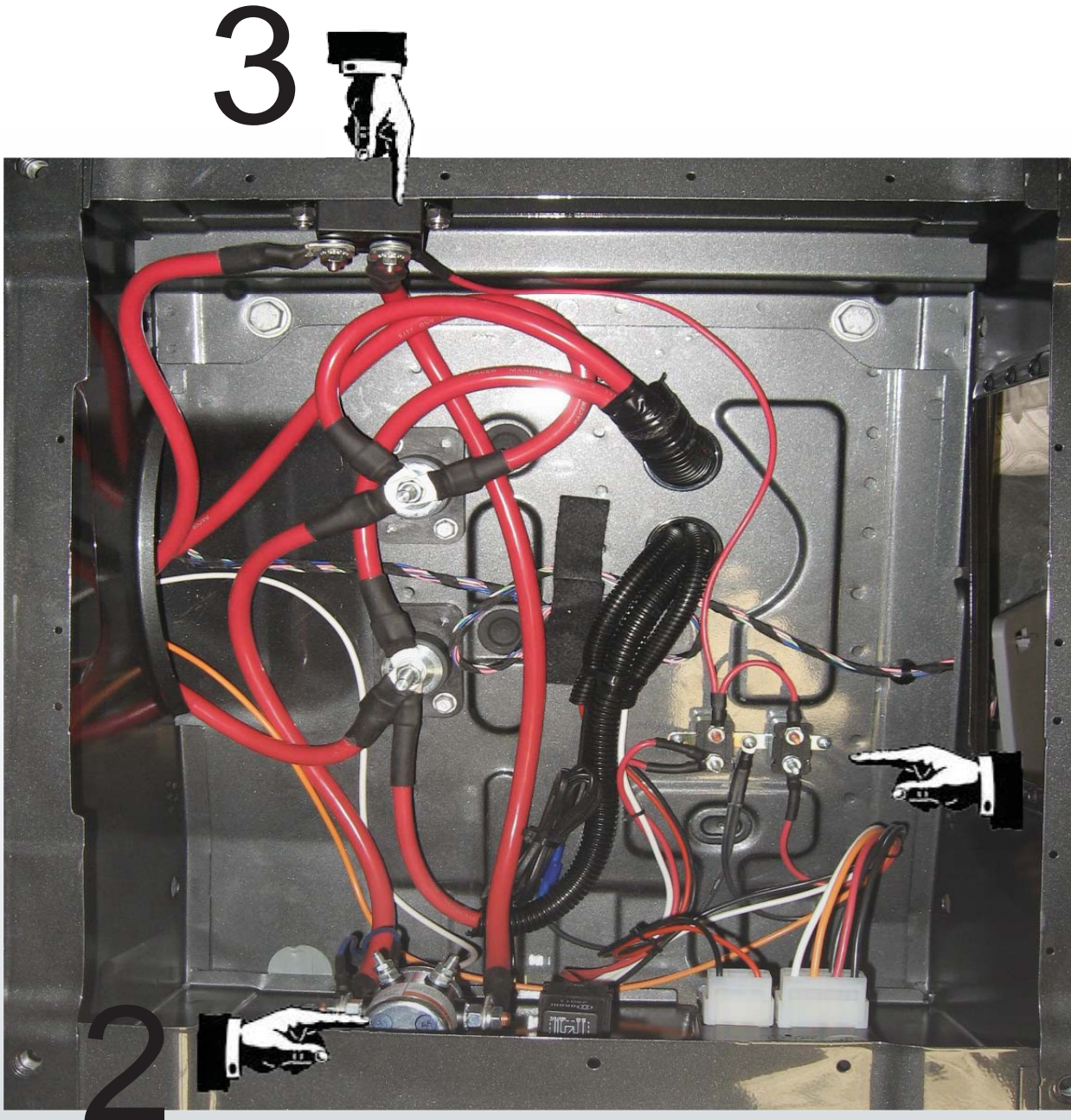
Drivers Door



Coach House has added electrical switches / breakers under the Driver's Seat (In the Pedestal). The 80 Amp Breaker and the Auxilliary Start Over-ride switch are located according to the picture above.

Passenger Seat Pedestal Wiring

Passenger's Door 1



The following electrical items are installed under the Passenger's Seat (In the Pedestal)
They are:

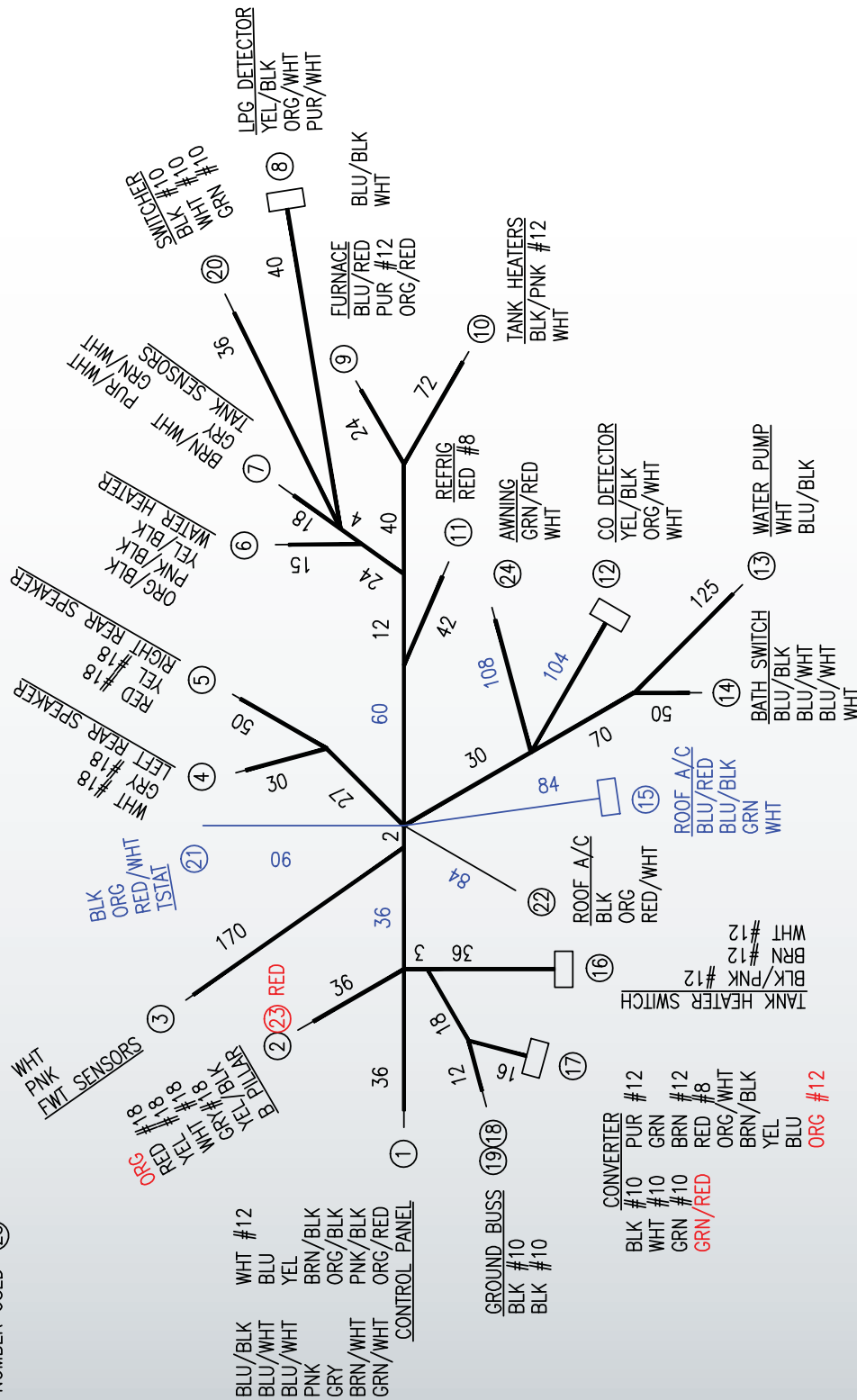
- 1) Resettable Breakers for the Powered Entry Step (15 Amp / 6 Amp)
- 2) Emergency Start Solenoid
- 3) 150 Amp Breaker (Emergency Start Circuit)

12 Volt Wiring Diagrams

| SHEET NO. | 1 | 2 | 3 | 4 |
|-----------|---|---|---|---|
| REVISION | 1 | 1 | 1 | 1 |

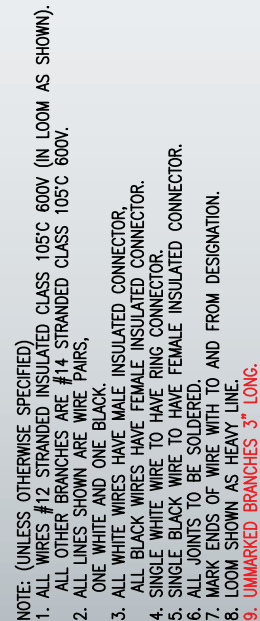
REF: LAST BRANCH NUMBER USED (25)

ALL DIMENSIONS ARE IN INCHES



NOTE:
 1. SINGLE LINE SHOWN FOR COMMON LENGTHS OF MULTIPLE WIRES AT SAME LOCATION.
 2. SPLIT LOOM SHOWN AS HEAVY LINE, AND WITHIN 3 INCHES OF END UNLESS SPECIFIED.
 3. VENDOR TO SUPPLY MATING PLUGS FOR 8, 12, 15, 16, & 17. (SEE PIGTAIL DETAIL)

| | | | |
|--|--|---------|------|
| CHANGE BRANCH LENGTH AS SHOWN IN BLUE. RELOCATE BRANCH & CHANGE LENGTH 15 & 21. | | 2-25-14 | |
| BREAKOUT BRANCH 23 WITH BRANCH 2, ADD BRANCH 19 SPLICE TO 24 WHT, ADD BRANCH 17 TO 24 GRN/RED. | | 1521 | 1 |
| DESCRIPTION | | REV | DATE |
| MERCEDES CLASS B V24 (TB) MAIN HARNESS | | | |
| Coach House Motor Homes | | | |
| No. CH-E-V2401 | | | |



| | | | |
|------|---|---------|---|
| | | | ADD BRANCH DIMMER SWITCH (FOR ①), CLARIFIED DIMMER SWITCH (FOR ②), ADD MISSING BRANCH LENGTHS, RELOCATE BRANCH RANGE IGNITOR, RELOCATE BRANCH SWITCH POWER. |
| 1521 | 2 | 2-24-14 | |
| 1516 | 1 | 2-4-14 | ADD BRANCH RANGE IGNITOR . |



Coach House