Q-356R9

SVE BULLETIN

SPECIAL VEHICLE ENGINEERING – BODY BUILDERS ADVISORY SERVICE

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2023 - 2025MY SUPER DUTY PICKUP BOX REMOVAL

REVISION	UPDATE	REVISION DATE
Q-365R9	ADDED 2025MY, FDRS APP UPDATED TO MAINTAIN FUNCTION OF DIGITAL REAR VIEW CAMERA AND OTHER IMPROVEMENTS, UPDATED FLOW CHART, REVISED PROCESS TO RUN FDRS APP ON LOW SERIES, REVISED LIGHTING CIRCUIT RECOMMENDATIONS TO INCLUDE "FLEXIBLE 5" & "FLEXIBLE 6" (NOW CONFIGURABLE SEPARATELY IN FDRS), ADDED CAUTION TO PERFORM PHYSICAL MODIFICATIONS AND CIRCUIT REONFIGURATION IN THE SAME LOCATION, UPDATED TAILLAMP HARNESS SERVICE PART LIST, NOTE ON OPERATION OF TRAILER BLIS FEATURE, UPDATED CONNECTORS AND PINOUTS FOR 2024MY+ LIGHTING PACK, UPDATED AVAILABILITY OF "TAILGATE DELETE CAP KIT" FOR 2025MY, ADDED PASSWORD FOR FDRS EXTERIOR LIGHTING CONFIGURATION APP, UPDATED APPENDIX A & B	30SEP2024
Q-365R8	REVISED GUIDANCE REGARDING DIGITAL REAR VIEW CAMERA FOR MID AND HIGH SERIES VEHICLES, PROVIDED FDRS PASSWORD FOR REVERSAL OF PICKUP BOX REMOVAL, REVISED LIGHTING CONFIGURATION GUIDANCE, UPDATED FLOW CHART	28FEB2024
Q-365R7	EXPANDED TO 2024 MODEL YEAR, UPDATED SUPPORTED TRIM LEVELS FOR BOX REMOVAL, UPDATED ELECTRICAL SYSTEM DETAILS TO INCLUDE MID AND HIGH SERIES VEHICLES, ADDED FIGURES, UPDATED FLOW CHART, UPDATED SERVICE PART NUMBERS, UPDATED TAILLAMP HARNESS CIRCUITS, PINOUTS AND CONNECTOR VIEWS, UPDATED APPENDIXES.	15FEB2024
Q-356R6	ADDED BOX DELETE TAILLAMP HARNESS AVAILABILITY, UPDATED FLOW CHART, UPDATED ELECTRICAL SYSTEM DETAILS, ADDED BOX DELETE CONTENT TO TAILLAMP HARNESS CIRCUIT TABLE AND CONNECTOR VIEWS, ADDED TABLE OF AVAILABLE SERVICE HARNESS PART NUMBERS, UPDATED FDRS INSTRUCTIONS IN APPENDIX A, ADDED RECOMMENDATION TO USE PART IN "TAILGATE REMOVAL CAP KIT" AS DELETE CAPS, ADDED 12-WAY DELETE CAP RECOMMENDATIONS.	20JUN2023
Q-356R5	ADDED PICKUP TAILLAMP HARNESS SERVICE PART NUMBERS, UPDATED BULB OUTAGE RESOLUTION OPTIONS, UPDATED PRO POWER ONBOARD CONFIGURATION NOTES, ADDED FLOW CHART, ADDED FDRS INSTRUCTIONS.	12JUN2023
Q-356R4	UPDATED WITH MINIMUM CURRENT DRAW REQUIRED FOR BULB-OUTAGE	26APR2023
Q-356R3	UPDATED ELECTRICAL HARNESS, CONNECTOR & LIGHTING GUIDANCE	05APR2023
Q-356R2	UPDATED CONTENT	01MAR2023
Q-356R1	ADDED CONTENT	15NOV2022
Q-356	INITIAL RELEASE	09NOV2022

MODEL(S) AFFECTED:
2023 - 2025MY SUPER DUTY PICKUPS

ISSUE / DESCRIPTION:
Pickup Box Removal is supported for 2023 through 2025 Model Year Super Duty Pickups on the following models:

- F250 and F350
- All Body Styles, Wheelbases, GVWR, Engine and Drive combinations
- All Trim Levels

Please reference the Pickup Box Removal BBLB for the applicable model year as it contains important regulatory and technical information regarding box removal on Super Duty Pickups. It is available on the Ford BBAS website at: fordpro.com/upfit/publications, under "Body Builder Layout Book".

Electrical System Modifications for Box Removal
Modifications are necessary to restore electrical function and avoid error states when the pickup box and rear bumper are removed. The available options depend on the vehicle content level, the taillamp harness used, and the configuration of the aftermarket taillamps. A flow chart is provided to help visualize the options available, see Figure 1. Almost all options require a Ford Diagnosis and Repair System (FDRS) tool to make configuration changes. Vehicle Alterers that do not have an FDRS tool can purchase the software license and check for compatible scan tool hardware here, or contact their local Ford Dealership for assistance.

For vehicle content level, guidance is based on the following definitions:

- Low Series – Vehicles without rear facing Advanced Driver Assist Systems (ADAS), with Halogen Taillamps and Analog Rear View Camera.
    - Includes XL and XLT Trim WITHOUT these options:
        - 17S - STX Appearance Package
        - 17P - XLT Premium Package
        - 874 - 360 Degree Camera Package
        - 87J – 360 Degree Camera Package w/out CHMSL Camera
        - 52T - Tow Technology Package
- Mid Series – Vehicles with rear facing ADAS, Halogen Taillamps (LED Reverse) and Digital Rear View Camera.
    - Includes XL and XLT WITH the options listed above for Low Series
    - Includes all Lariat and King Ranch Trim
- High Series – Vehicles with rear facing ADAS, LED Taillamps and Digital Rear View Camera.
    - Includes all Platinum and Limited Trim

There are several wiring harnesses at the rear of the vehicle that need to be disconnected to remove the pickup box:

- Taillamp Harness - this harness has lighting and optional Pro Power Onboard circuits and is connected to the vehicle with 32-way (C408) and 12-way (C405) connectors at the end of the RH frame rail, see Figures 2, 3 and 4.
- Tailgate Harness - this harness has rear view camera and other circuits for tailgate function and is connected to the vehicle at the end of the LH frame rail with two 16-way connectors (C4003 and C4825) plus the Rear View Camera connector (C4002 for Analog, C465 for Digital). See Figure 5. Some Mid and High Series vehicles may also have one or two more 2-way connectors.
- If the vehicle is equipped with the 5th Wheel/Gooseneck Hitch Prep Pack, an additional harness is connected to the vehicle with 16-way (C438) and 2-way (C432) connectors below the RH frame rail. See Figure 6.

If removing the Rear Bumper, the bumper wiring harness needs to be disconnected from the vehicle at the 8-way connector (C421), and the two trailer tow connectors removed from the back of the bumper. See Figure 7.

Reconfiguration with FDRS tool

After removing the pickup box and bumper, an FDRS tool is needed to run the Pickup Bed Configuration “Remove Full Box, Bumper and Tailgate” Script (see Appendix A). This will revise the rear lighting configuration to that of the factory Box Delete and deactivate all features that require sensors installed on the Pickup Box and Bumper to operate. After running this script, it may be necessary to make additional lighting configuration changes as described in the “Lighting Circuits” section and Appendix B.

The FDRS “Pickup Bed Configuration” Application has been updated so the Digital Rear View Camera system will remain active after running the “Remove Full Box, Bumper and Tailgate” script. It will also resolve the tailgate ajar telltale (Mid series vehicles with Power Tailgate Release only) and remove the “Taillamp” button from the Onboard Scales HMI screen (High series vehicles only).

The app is now recommended to run on ALL vehicles, not just Mid and High series.

Note: The updated version of the FDRS app can be run on a vehicle previously configured, to update the vehicle as described above. Any additional lighting configuration changes made after running the app previously will need to be repeated after running the updated app.

There is also a narrow pathway for Box Removal that does not require the use of an FDRS tool, see the “Non-FDRS Pathway” section for more information.

Lighting Circuits

A taillamp harness is needed to connect the taillamps on the Second Unit Body (SUB) to the vehicle wiring. For reference, the Taillamp Harness Circuits and Pinouts are provided in Figure 8 and the Taillamp Harness Connector Views are provided in Figure 9.

CAUTION! The physical installation of wiring / taillamps and reconfiguration of circuits with FDRS tool should be done in the same location to avoid driving the vehicle in a partially modified state, as the taillamps may not function properly. If the alterer does not have an FDRS tool to perform the circuit reconfiguration, a local Ford dealer may have a Mobile Service unit that could perform the FDRS updates at the alterer location.

Since the FDRS Pickup Bed Configuration “Remove Full Box, Bumper and Tailgate” script reconfigures lighting circuits like a Box Delete vehicle, it is highly recommended to use a “Box Delete” Taillamp harness to complete the wiring for the rear lighting, but other options are available.

- “Box Delete” Taillamp Harness – Purchase one of the available Box Delete service parts (See Figure 10, Taillamp Level = “BD” for Pickup Box Delete). It is best to select a harness that has only the circuits you are planning to

use on the altered vehicle. These taillamp harnesses offer the best compatibility with aftermarket combined stop/turn lamps and the Ford analog rear view camera kit (Low series only). If LED lamps are used, use the FDRS tool to also disable bulb outage detection, see Appendix B for details. Figure 11 shows the layout of the Box Delete Taillamp harness with connector numbers and locations. The wiring and taillamp connectors (C422 & C423) of this harness are designed for combined stop/turn taillamp function using circuits CLS23 and CLS27.

- "Pickup" Taillamp Harness – A new Pickup Taillamp service part can be purchased (see below) or the Taillamp harness from the pickup box may be removed and reused (Low and Mid Series vehicle only! High Series taillamp harnesses do not have reverse lamp circuits). Using a pickup taillamp harness allows reuse of parts and supports use of DRW Park lamp circuits (if desired, DRW pickups only). Reference Figures 2 and 3 for pickup taillamp harness connector numbers and locations.
    - If buying a service harness, choose one of the Low Series pickup harnesses based on the planned circuit utilization, see Figure 10 for a list of available service parts (Taillamp Level = "L" for Pickup Low Series, which should also be used for Mid and High Series vehicles). It is best to select a harness that has only the circuits you are planning to use on the altered vehicle.
    - Whether reusing or buying a new harness, unused connectors will need delete caps, or the connectors removed, and all unused wires sealed with heat shrink caps.
    - The existing taillamp connectors need to be replaced or adapted to be compatible with the taillamps planned for the altered vehicle.
    - Combined Stop/Turn Lamps - Use circuits CLS78 and CLS79 for LH and RH Stop/Turn for the replacement taillamps. An FDRS tool is needed to reconfigure the lighting circuits and deactivate bulb outage detection (if using LED lamps). See Appendix B for details.
    - Separate Stop and Turn Lamps – Use circuits CLS51 and CLS53 for LH and RH Stop Lamps and CLS78 and CLS79 for LH and RH Turn Lamps. An FDRS tool is needed to reconfigure the lighting circuits and deactivate bulb outage detection (if using LED lamps). See Appendix B for details.
- "Custom" Taillamp Harness - A custom harness can be fabricated with the preferred taillamp connectors and other desired circuits using a 32-way connector (C408) that is purchased through an electronic component distributor (Sumitomo 6181-7505).
    - Combined Stop/Turn Lamps – Use the same lighting circuits as the Box Delete Taillamp harness (CLS23 and CLS 27 for LH and RH Stop/Turn), the FDRS Pickup Bed Configuration Application will configure the vehicle for this arrangement. If LED lamps are used, use the FDRS tool to also disable bulb outage detection, see Appendix B for details.
    - Separate Stop and Turn Lamps - Use Circuits CLS23 and CLS27 for LH and RH Turn Lamps and the CLS78 and CLS79 for LH and RH Stop Lamps. An FDRS tool will be needed to reconfigure the lighting circuits and deactivate bulb outage detection (if using LED lamps). See Appendix B for details.
    - For Low Series vehicles, analog camera circuits can also be built into the harness like the Ford Box Delete harness.

Note: The Pickup Bed Configuration App will deactivate the LED Box Lighting feature if the vehicle is equipped.

Rear View Camera

NOTE: It is not recommended to reuse the rear view camera from the tailgate as it has guidance lines that are calibrated to the pickup camera location/orientation. The guidance lines cannot be turned off and may not be accurate when the camera is placed in a different position.

CAUTION! For vehicles with GVWR 10,000 lbs. or less, the vehicle alterer must verify the new or modified rear view camera system meets FMVSS 111 Section 6.2.

The treatment of the Rear View Camera depends on the vehicle content level.

- Low Series (Analog Camera) - An analog rear view camera should be installed in the SUB, Ford camera kit JC3Z-19G490-H (camera and 20 ft harness) can be purchased for this purpose. See the Super Duty BBLB "Rear-View Camera Prep Kit" for the proposed camera mounting zone.
    - If using the Box Delete taillamp harness, the kit will connect directly to the 1x6 connector on the harness (C4005), see Figure 11.
    - If using a Low Series pickup taillamp harness, the 1x6 connector that comes with the kit will not plug directly into the 2x3 connector on the vehicle (C4002), see Figure 5. There are several options available to make the connection:
        - Remove the Tailgate harness from the pickup box and reuse it to make the camera connection.
        - Purchase jumper harness PC3Z-14B242-FA which will mate to the vehicle 2x3 and kit 1x6 connectors.
        - Purchase Pigtail Kit 3U2Z-14S411-FEAB for the 2x3 connector and remove the 1x6 connector from the kit harness. Splice the 2x3 connector onto the camera kit wiring harness using the methods described in the "Electrical Wiring – Splice/Repair" section of the General BBLB.

        - Remove the 2x3 connector from the existing tailgate harness and the 1x6 connector from the kit harness. Splice the 2x3 connector onto the camera kit wiring harness using the methods described in the "Electrical Wiring – Splice/Repair" section of the General BBLB.
        - Purchase a 2x3 shell (Molex 33472-0734) (alternate 33742-0701, a blunt cut circuit will be needed to seal the open cavity) or obtain a 2x3 connector from various methods above and de-pin it. Remove the pins from the 1x6 kit harness connector and insert into 2x3 connector shell in the same pin number location.

    See Figure 12 for Analog Rear View Camera Circuits and Pinouts.

- Mid and High Series (Digital camera) – The FDRS "Pickup Bed Configuration" Application has been updated so the Digital Rear View Camera system will remain active after running the "Remove Full Box, Bumper and Tailgate" Script, please make sure you are using the latest version (see Appendix A). A rear view camera should be installed in the SUB, however Ford does not offer a compatible kit without guidance lines for vehicles with digital camera. Options include:
    - An aftermarket digital camera may be available to connect to the vehicle.
        - Use Aptiv 35026651 Female Coax connector on the camera wiring and plug directly into connector C465 at the back of the LH frame rail, see RH inset in Figure 5. See Figure 13 for the Digital Rear View Camera Circuit and Pinout information.
        - Mid and High Series vehicles use the video feed from the digital rear view camera to produce the 360 degree view in addition to the standard backup camera view. The quality of "stitching" between the rear and side camera images in the 360 degree view will vary depending on the chosen location and orientation of the rear camera. The closer to the OE location and orientation, the more harmonious the stitched image will be.
    - An aftermarket stand-alone rear view camera/monitor system may be used.

    NOTE: Some 2023MY Mid and High Series vehicles may experience loss of the 360 degree view if a digital rear view camera is not connected to the vehicle (C465). If this is the case, there are two ways to regain the 360 degree view:
    - Use an FDRS tool ("SW Updates" tab) to update the IPMA module software if an update is available.
    - PERMANENTLY COVER the lens of the pickup tailgate camera, reconnect it to the vehicle (C465) and physically mount it somewhere out of the way. It is important that the lens of the camera is completely covered so that no visible image is transmitted by the camera.

Advanced Driver Assist System (ADAS) Features

Mid and High Series vehicles have sensors in the taillamps and bumper that are needed to operate many Advanced Driver Assist System (ADAS) features. The FDRS Pickup Bed Configuration Application will deactivate the applicable ADAS features to avoid warning/error messages and minimize Diagnostic Trouble Codes (DTCs) when the box and bumper are removed. These features include (if equipped):

- Blind Spot Information System
- Cross Traffic Alert
- Exit Warning
- Blind Spot Assist
- Rear Park Aid
- Reverse Brake Assist
- Front Park Aid
- Front Brake Assist
- Pro Trailer Hitch Assist
- Pro Trailer Backup Assist

The FDRS "Remove Full Box, Bumper and Tailgate" script is designed to deactivate ALL the features listed above (if equipped), it is not feasible to preserve some features and deactivate others (e.g. the Rear Park Aid feature is not supported for box removal even if the rear bumper and ultrasonic sensors remain connected to the vehicle).

CAUTION! Once deactivated, these features will not be available to the vehicle user and there will be no warning that the features are not operational. It is recommended that the vehicle alterer communicate this note of caution to their customer.

CAUTION! If a digital rear view camera is reconnected to the vehicle electrical system, the "Remove Full Box, Bumper and Tailgate" script MUST be run to deactivate the Driver Assist features listed above. Otherwise, the listed features may not work as expected, potentially causing injury or property damage.

NOTE: The Trailer BLIS feature will not be operational after the taillamps are removed from the vehicle, even if the BLIS feature has not been deactivated by the Pickup Bed Configuration App.

Power Tailgate Feature

Some Mid Series (King Ranch) and all High Series vehicles have the Power Tailgate feature that includes an added rear view camera and set of rear park aid sensors for tailgate-down operation. The FDRS Pickup Bed Configuration Application will deactivate all associated features to avoid warning/error messages and Diagnostic Trouble Codes (DTCs).

Non-FDRS Pathway

There is a narrow pathway for Pickup Box Removal that does not require an FDRS tool. This path requires:

- Low Series Vehicle Only
- Use of Low Series Pickup Taillamp wiring harness
- Use of taillamps with combined Stop/Turn function
- If the vehicle has Pro Power Onboard, an auxiliary outlet must be installed in the Second Unit Body.

Note that the vehicle has two sets of rear stop/turn circuits. Circuits CLS78 & CLS79 (in C408) should be used for the replacement taillamps, circuits CLS51 & CLS53 (in C405) will be unused. For this execution, circuits CLS51 & CLS53 need to have resistors installed between them and a chassis ground, and if using LED lamps, circuits CLS78 & CLS79 will also need to have a parallel resistor added to prevent "fast flash". The resistor values should be chosen so that each circuit will output a ***minimum*** of 120mA (approximate total resistance between 6-130 Ω). *(Reference for Chassis Cab: minimum current draw of 920mA, approximate total resistance between 6-15Ω).*

Pro Power Onboard

If the vehicle is equipped with the Pro Power Onboard (PPO) feature and an auxiliary outlet is planned to be installed in the SUB:

- The auxiliary outlet can be removed from the pickup bed and relocated in the SUB, reconnecting directly to the Box Delete or Pickup taillamp harness. If necessary, an 18 ft extension harness PC3Z-14A411-C is available through service to assist placing the outlet where desired.
- A PPO auxiliary outlet kit PC3Z-15A416-C (includes the duplex outlet and 18 ft harness) can also be purchased through service and connected to the taillamp harness.
- Please see the Super Duty BBLB for more information on Pro Power Onboard outlet location and other important information.

If the vehicle is equipped with the PPO feature and an auxiliary outlet is NOT installed in the SUB:

- For 2023MY vehicles with build dates before 4/10/23 for KTP or 5/22/23 for OHAP, the inverter module will need to be reconfigured with the Ford FDRS tool to deactivate the aux outlet to avoid warning and error messages. See Bulletin Q-362 for more details.
- For vehicles other than above, no reconfiguration action is necessary. A message will pop up in the cluster for three key cycles indicating that the auxiliary outlet is not detected. On the 4th key cycle, there will be no popup message and the PPO system will resume normal function using only the front (cab) outlet.
- Delete caps may be required depending on the taillamp harness used:
  - If using a box delete harness with PPO circuits, the PPO Connectors (C4629A & B) will be unused but are supplied with delete caps already installed.
  - If using a Pickup taillamp harness with PPO circuits, the PPO Connectors (C4629A & B) will need to be sealed with delete caps (Yazaki 7288-3029-10 Connector and 7158-3080-60 4 position plug for C4629A, Molex 33472-4031 for C4629B). Alternatively, the PPO connectors may be removed from the taillamp harness, and the wires sealed with heat shrink caps.
  - If using a Box Delete or Pickup taillamp harness without PPO circuits, no delete caps are needed.

Finishing Unused Connectors

IMPORTANT! The two unused 16-way vehicle connectors (C4825 and C4003) for the Tailgate Harness need to be coupled together with the jumper harness from the "Tailgate Delete Cap Kit", see Figure 14 for part identification. For 2023 and 2024MY vehicles, the kit is provided in the glove box of all Super Duty Pickups. For 2025MY, the kit is no longer provided with the vehicle, but can be obtained from your local Ford Dealer at no charge. If misplaced, a new kit can be purchased through service (PC3Z-13A576-A). Delete caps for the analog and digital camera connectors (C4002 and C465) are also provided in the kit in case they are needed. See Figure 5 for connector locations.

If using a Box Delete or Custom taillamp harness, the unused 12-way vehicle connector (C405) will need a delete cap. Delete caps can be purchased separately (Aptiv 35096259 – all cavities blocked, or Aptiv 15532138 – all cavities open, must have seals installed) or use service pigtail WPT-1815 (Part # PU2Z-14S411-BJA) with the leads sealed with heat shrink caps. See Figure 2 for connector locations.

If the bumper is removed, the bumper harness connector (C421) can be used to access license plate lamp circuits or otherwise must be capped. Use pigtail WPT-1823 (Part # PU2Z-14S411-BGA) with the unused leads sealed with heat shrink caps. See Figure 7 for connector locations.

If the vehicle is equipped with the 5th Wheel/Gooseneck Hitch Prep Pack, a suitable harness and outlet must be installed, or the 18-way (C438) and 2-way connectors (C432) need to have delete caps installed. For the 16-way, a Molex 34985 Pol B with all cavities sealed can be installed or use service pigtail WPT-1092 (Part # AU2Z-14S411-AKA) with the leads sealed with heat shrink caps. For the 2-way a Yazaki 7286-9860-10 plus 2 cavity plugs 7158-3080-60 can be installed or use service pigtail WPT-1698 (Part # 8U2Z-14S411-PB) with the leads sealed with heat shrink caps. See Figure 6 for connector locations.

Final Evaluation

Once installation of the SUB is complete (including lighting, rear view camera and reconfiguration of features) check the vehicle for proper function and Diagnostic Trouble Codes (DTCs). If not functioning as expected, or unexpected DTCs are present (see note below), review the FDRS reconfiguration instructions and if necessary, follow the applicable service procedures to resolve. Service Info is available by subscription via the Motorcraft website: www.motorcraftservice.com

NOTE: On Mid and High Series vehicles, some DTCs may be present despite the deactivation of all applicable ADAS features, some examples are provided below:

- Lost Communication with Rear Gate Module
- Tailgate Park Assist Sensor Module - No Signal
- Enhanced Exterior Lighting System - Bus Signal / Message Failure
- Lost Communication With ECM/PCM
- Invalid Data Received from Image Processing Module

There may also be a popup warning and/or telltale illuminated in the instrument cluster (regarding Lane Departure Warning or Pre-Collision Assist, as examples) that should turn off after the vehicle is driven and the system re-calibrates.

Reversibility of Box Removal

A Pickup Box Removal vehicle can be reverted to a Pickup with the reinstallation of a compatible Pickup Box (including Wiring, Tailgate and Taillamps) and Bumper. Ideally, the replacement Box and Bumper would be the original equipment from the pickup, or of identical content and model year. An FDRS tool is needed to make configuration changes and enable available ADAS features, unless the box removal followed the “Non-FDRS Pathway”. See Appendix A for details on running the FDRS Pickup Bed Configuration App, but instead select the “Reinstall Full Box, Bumper and Tailgate” option. The password for is “257DSPWR” (all caps).

Refer to the Pickup Box Removal and/or Super Duty Body Builder Layout Books for additional guidelines and recommendations. If you have any questions, please contact the Ford Body Builders Advisory Service as shown in the header of this bulletin.

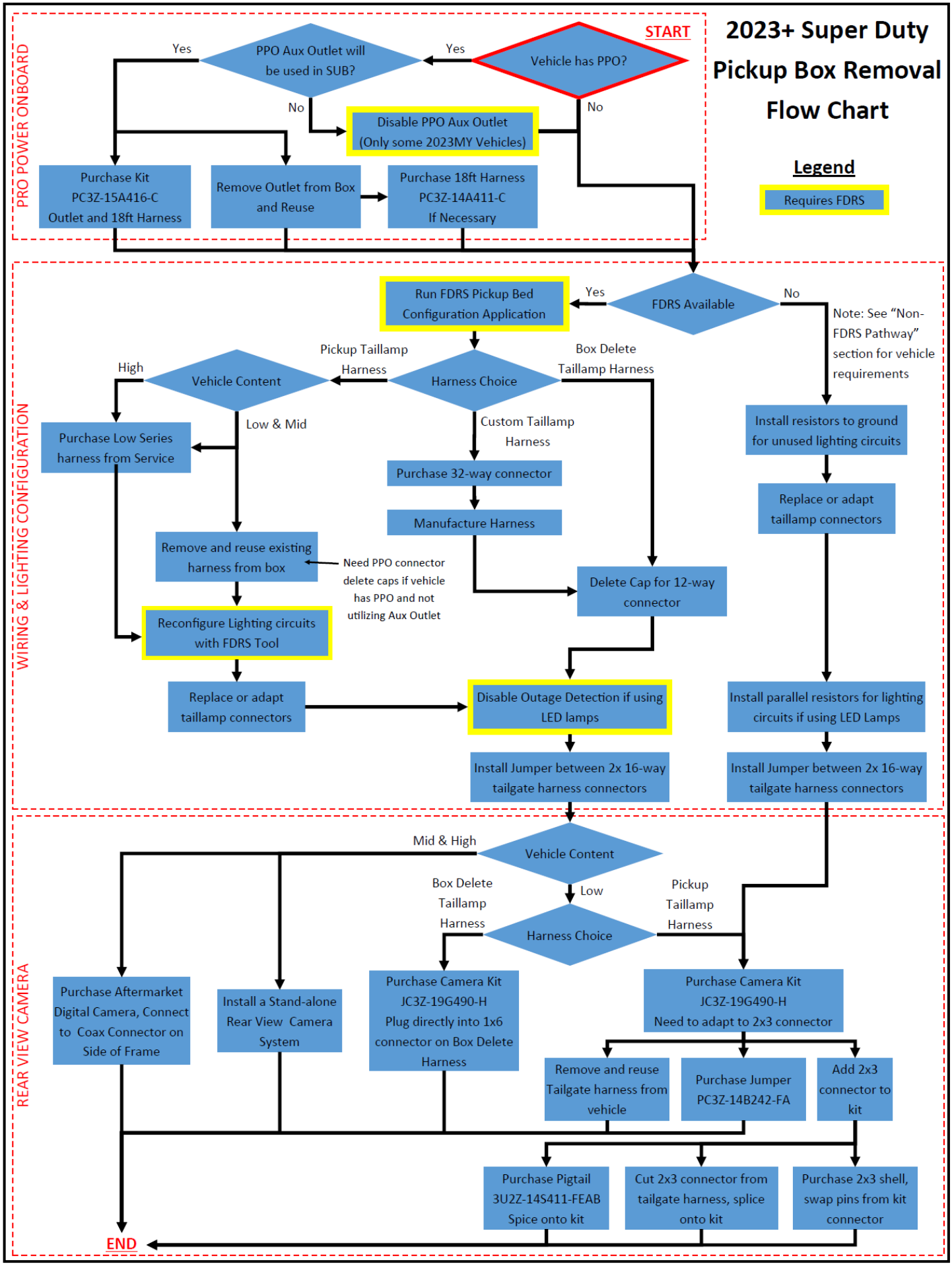


Figure 1 – Pickup Box Removal Flow Chart

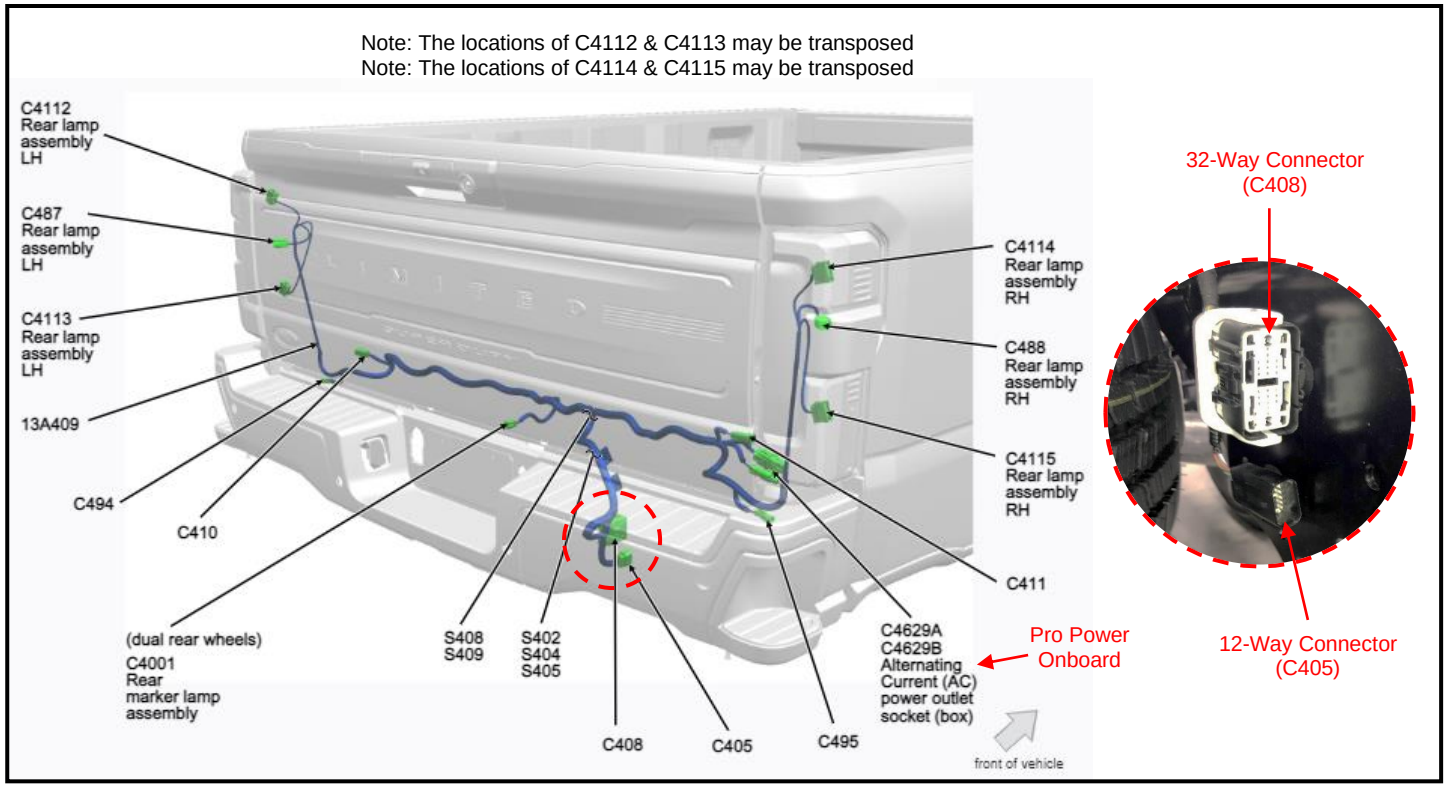


Figure 2 – Taillamp Harness – Pickup Low Series

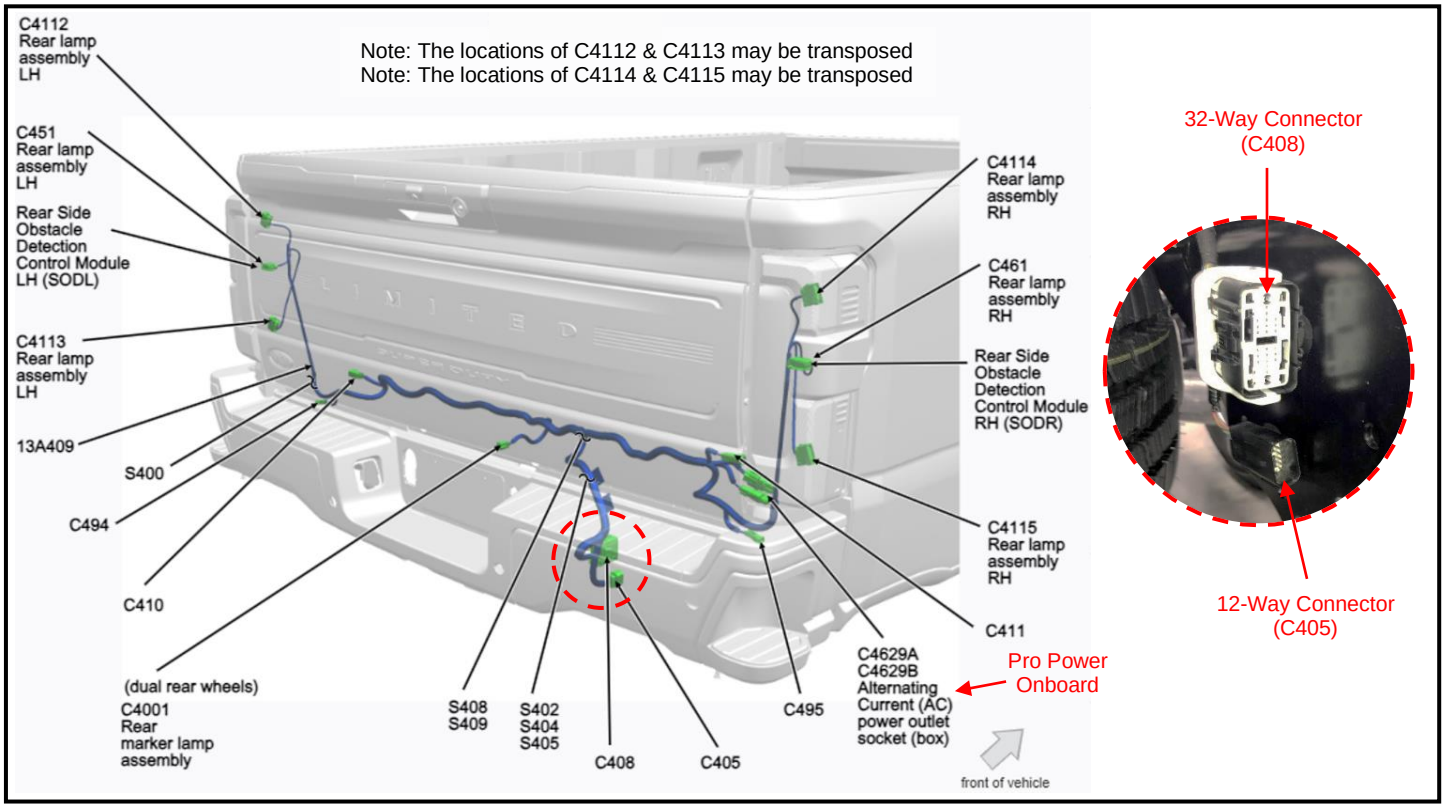


Figure 3 – Taillamp Harness – Pickup Mid Series

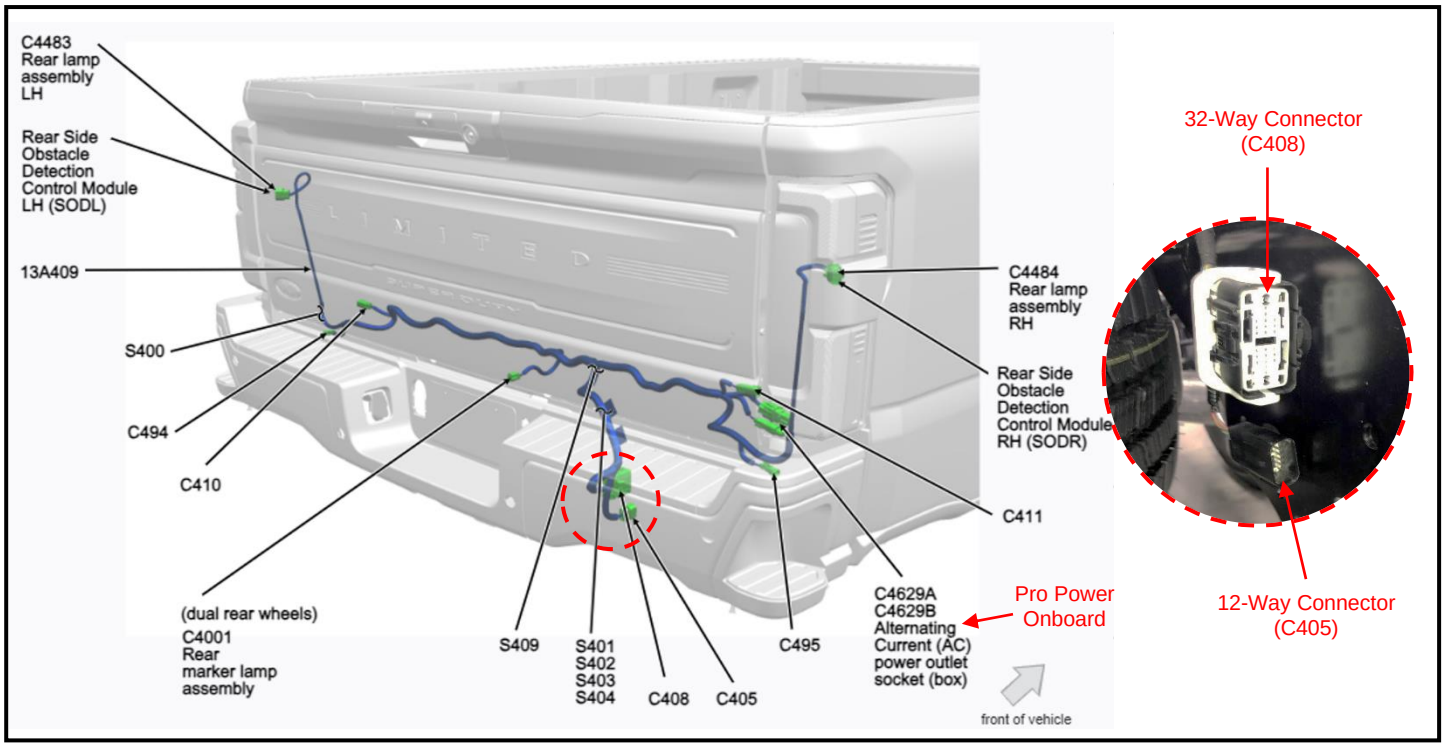


Figure 4 – Taillamp Harness – Pickup High Series

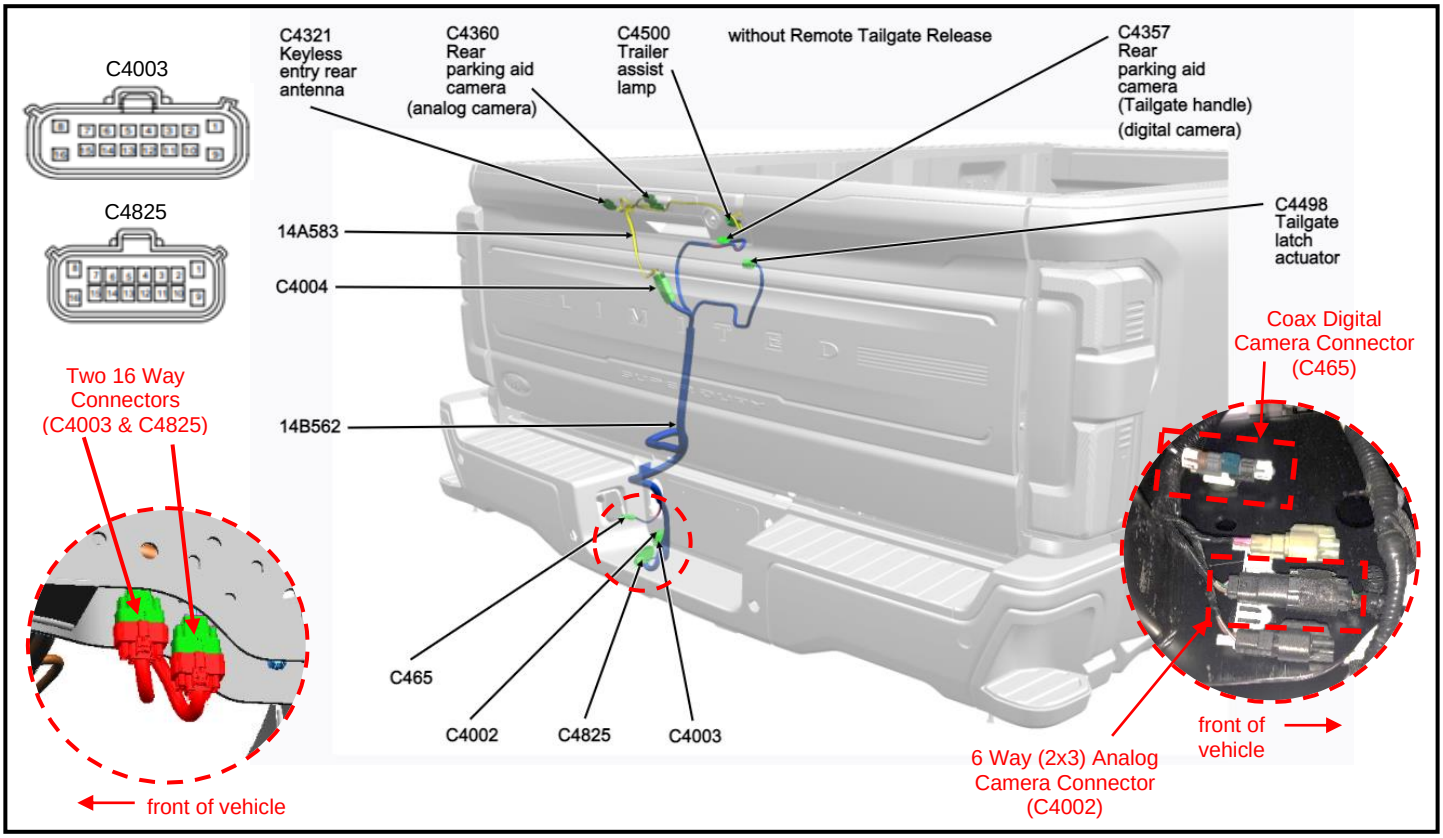


Figure 5 – Tailgate Harness (Low Series Shown)

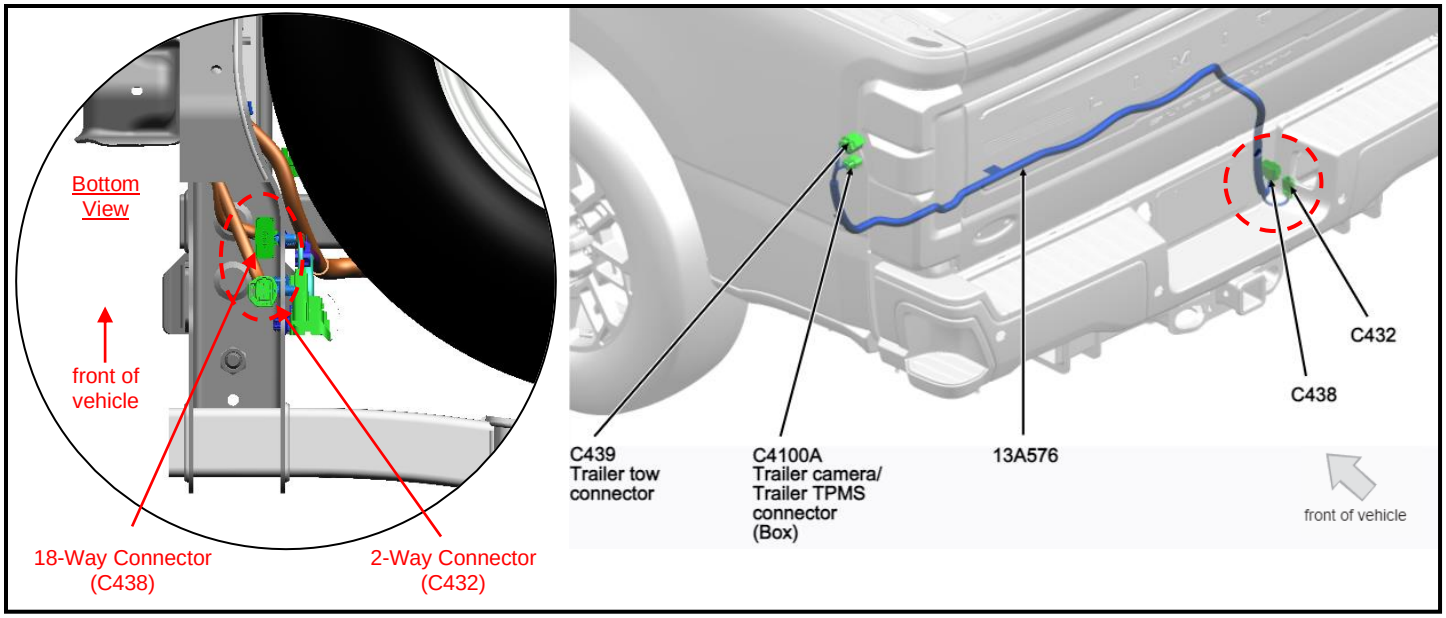


Figure 6 – 5th Wheel/Gooseneck Trailer Tow Harness (only with 5th Wheel/Gooseneck Hitch Prep Pack)

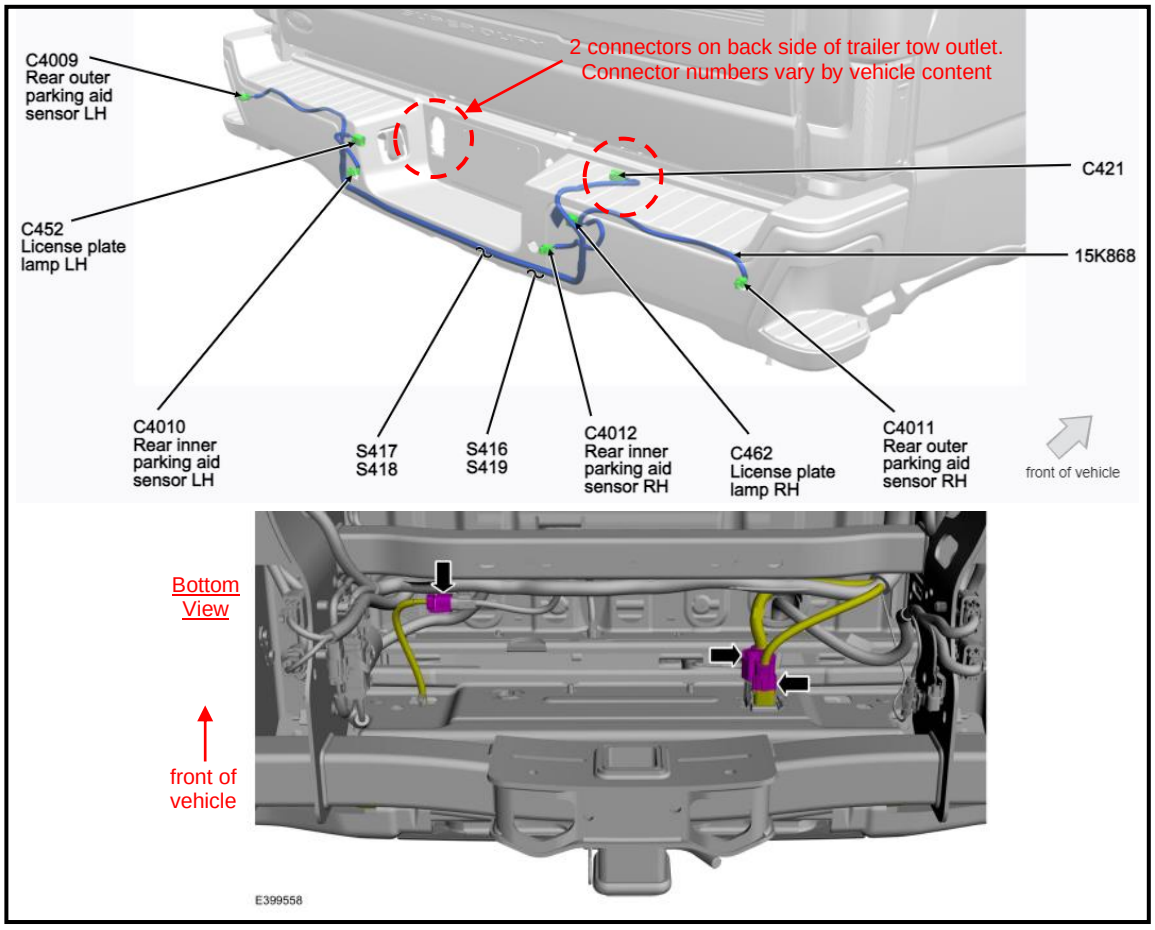


Figure 7 – Bumper Harness (Mid / High Series Shown)

					Box Delete			Pickup Low Series			Pickup Mid Series			Pickup High Series		
Connector (to vehicle)	Pin #	Wire Color	Circuit Name	Description / Comments	Connector (to comp.)	Pin #	Wire Color	Connector (to comp.)	Pin #	Wire Color	Connector (to comp.)	Pin #	Wire Color	Connector (to comp.)	Pin #	Wire Color
	1	OG/GN	HYA12	PPO Outlet Neutral	C4629A	3	OG/GN	C4629A	3	OG/GN	C4629A	3	OG/GN	C4629A	3	OG/GN
	2	OG	HYA10	PPO Outlet Power	C4629A	1	OG	C4629A	1	OG	C4629A	1	OG	C4629A	1	OG
	3	BU/GN BU/BN	RMF17	RH BLIS Radar Ground	-	-	-	-	-	-	C461	2	BU/GN	C4483 C4484	5 5	BU/BN
	4	GY/BU	VYA21	PPO Outlet LIN Bus	C4629B	3	GY/BU	C4629B	3	GY/BU	C4629B	3	GY/BU	C4629B	3	GY/BU
	5	VT/GN	TBB05	PPO Inverter Enable	C4629B	1	VT/GN	C4629B	1	VT/GN	C4629B	1	VT/GN	C4629B	1	VT/GN
	6	GY GY/YE	CLS23	Left Rear Turn. Configured as: - Turn for PU High - Stop/Turn for PU Box Delete	C423	4	GY/YE	-	-	-	-	-	-	C4483	1	GY
	7	WH	CLS81	Pickup Box Work Lamp (Lighting Pack)	-	-	-	C410 C411	1 1	WH WH	C410 C411	1 1	WH WH	C410 C411	1 1	WH WH
	8	BU/GY	CLS05	Park Lamps (DRW)	-	-	-	C494 C495 C4001	1 1 1	BU/WH BU/WH BU/WH	C494 C495 C4001	1 1 1	BU/WH BU/WH BU/WH	C494 C495 C4001	1 1 1	BU/WH BU/WH BU/WH
	9	GN	CLS10	Reverse (Common LH & RH)	C422 C423	1 1	GN/WH GN/WH	C487 C488	3 3	GN/WH GN/WH	C451 C461	6 6	GN/WH GN/WH	-	-	-
	10	-	-	not used	-	-	-	-	-	-	-	-	-	-	-	-
	11	-	-	not used	-	-	-	-	-	-	-	-	-	-	-	-
	12	-	-	not used	-	-	-	-	-	-	-	-	-	-	-	-
	13	-	-	not used	-	-	-	-	-	-	-	-	-	-	-	-
	14	BN	RYA21	PPO Outlet LIN Bus Return	C4629B	2	BN	C4629B	2	BN	C4629B	2	BN	C4629B	2	BN
	15	YE/GN	VMF13	BLIS Radar CAN Bus Low	-	-	-	-	-	-	C461	4	YE/GN	C4484	12	YE/GN
	16	GN	VMF12	BLIS Radar CAN Bus High	-	-	-	-	-	-	C461	3	GN	C4484	6	GN
	17	YE	VDN14	Autolamp LIN Bus	-	-	-	-	-	-	-	-	-	C4483 C4484	8 8	YE/GN YE/GN
	18	YE/VT	CLS79	Flexible 6. Configured as: - RR Stop/Turn for PU Low & Mid	-	-	-	C4115	3	YE/VT	C4115	3	YE/VT	-	-	-
	19	GN/BN	CPL22	Liftgate Lock (Lighting Pack)	-	-	-	C410	4 (23) 2 (24+)	GN/BN	C410	4 (23) 2 (24+)	GN/BN	C410	4 (23) 2 (24+)	GN/BN
C408	20	GN/WH GN	CLS78	Flexible 5. Configured as: - LR Stop/Turn for PU Low & Mid - Power for LIN Reverse on PU High	-	-	-	C4113	3	GN/WH	C4113	3	GN/WH	C4483 C4484	4 4	GN GN
	21	GN GN/OG	CLS27	Right Rear Turn. Configured as: - RR Turn for PU High - RR Stop/Turn for PU Box Delete	C422	4	GN/OG	-	-	-	-	-	-	C4484	1	GN
	22	-	-	not used	-	-	-	-	-	-	-	-	-	-	-	-
	23	BK/BU	GD476	Ground C494/C495/C4001 - DRW C410/C411 - Lighting Pack	C422 C423	2 2	BK/WH BK/WH	C487 C488 C4112 C4113 C4114 C4115 C494 C495 C410 C411 C411 C4001	1 1 1 1 1 1 2 2 3 6 (23) 2 (24+) 2	BK/WH BK/WH BK/WH BK/WH BK/WH BK/WH BK/WH BK/WH BK/WH BK/WH BK/WH BK/WH	C451 C461 C4112 C4113 C4114 C4115 C494 C495 C410 C411 C411 C4001	7 7 1 1 1 1 2 2 3 6 (23) 2 (24+) 2	BK/WH BK/WH BK/WH BK/WH BK/WH BK/WH BK/WH BK/WH BK/WH BK/WH BK/WH BK/WH	C494 C495 C410 C411 C411 C4001 C4483 C4484	2 2 3 6 (23) 2 (24+) 2 3 3	BK/WH BK/WH BK/WH BK/WH BK/WH BK/WH BK/GN BK/GN
	24	GY/YE	RYA09	PPO Outlet Ground	C4629A	2	GY/YE	C4629A	2	GY/YE	C4629A	2	GY/YE	C4629A	2	GY/YE
	25	BK	GD476	Ground				C410	6 (23) 4 (24+)	BK	C410	6 (23) 4 (24+)	BK	C410	6 (23) 4 (24+)	BK
	26	-	-	not used	-	-	-	-	-	-	-	-	-	-	-	-
	27	-	-	not used	-	-	-	-	-	-	-	-	-	-	-	-
	28	BU/GN	CLS77	Park Lamps										C4484	10	BU/GN
	29	BU/WH BU/BN	CLS77	Park Lamps	C422 C423	3 3	BU/WH BU/WH	C4112 C4113 C4114 C4115	2 2 2 2	BU/WH BU/WH BU/WH BU/WH	C4112 C4113 C4114 C4115	2 2 2 2	BU/WH BU/WH BU/WH BU/WH	C4483	10	BU/BN
	30	VT/BN	CYA18	PPO Outlet Mode Control	C4629B	4	VT/BN	C4629B	4	VT/BN	C4629B	4	VT/BN	C4629B	4	VT/BN
	31	-	-	not used	-	-	-	-	-	-	-	-	-	-	-	-
	32	-	-	not used	-	-	-	-	-	-	-	-	-	-	-	-
	1	-	-	not used	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	not used	-	-	-	-	-	-	-	-	-	-	-	-
	3	WH WT/GN	CLS51	Left Rear Stop. Configured as: - LR Stop/Turn for PU Low & Mid - LR Stop for PU High	-	-	-	C4112	3	WH	C4112	3	WH	C4483	2	WH/GN
	4	BU/WH	CLS54	Right Rear Turn Outage	-	-	-	-	-	-	-	-	-	C4484	11	BU/WH
	5	GN/WH	CLS55	Left Rear Turn Outage	-	-	-	-	-	-	-	-	-	C4483	11	GN/WH
	6	YE/GN YE	CMF16	LH BLIS Radar Power	-	-	-	-	-	-	C451	1	YE/GN	C4483	7	YE
C405	7	VT-GY	RMF16	LH BLIS Radar Ground	-	-	-	-	-	-	C451 C451	2 5	VT/GY VT/GY	C4483 C4483	5 9	VT/GY VT/GY
	8	YE YE/GN	VMF13	BLIS Radar CAN Bus Low	-	-	-	-	-	-	C451	4	YE	C4483	12	YE/GN
	9	GN	VMF12	BLIS Radar CAN Bus High	-	-	-	-	-	-	C451	3	GN	C4483	6	GN
	10	VT/GN VT/GY	CMF17	RH BLIS Radar Power	-	-	-	-	-	-	C461	1	VT/GN	C4484	7	VT/GY
	11	GY/YE GY/VT	CLS53	Right Rear Stop. Configured as: - RR Stop/Turn for PU Low & Mid - RR Stop for PU High	-	-	-	C4114	3	GY/YE	C4114	3	GY/YE	C4484	2	GY/VT
	12	-	-	not used	-	-	-	-	-	-	-	-	-	-	-	-
	1	BN/WH	CBB51	Camera Power	C4005	1	BN/WH	-	-	-	-	-	-	-	-	-
	2	GN	VMP43	Camera Video Out +	C4005	2	GN	-	-	-	-	-	-	-	-	-
C4002 (2x3)	3	VT/GN	VMP44	Camera Video Out -	C4005	3	VT/GN	-	-	-	-	-	-	-	-	-
	4	BK/YE	DMP43	Camera Video Out D	C4005	4	BK/YE	-	-	-	-	-	-	-	-	-
	5	-	-	not used	C4005	5	-	-	-	-	-	-	-	-	-	-
	6	VT/GY	VDN04	Camera LIN Bus	C4005	6	VT/GY	-	-	-	-	-	-	-	-	-

Figure 8 – Taillamp Harness Circuits and Pinouts

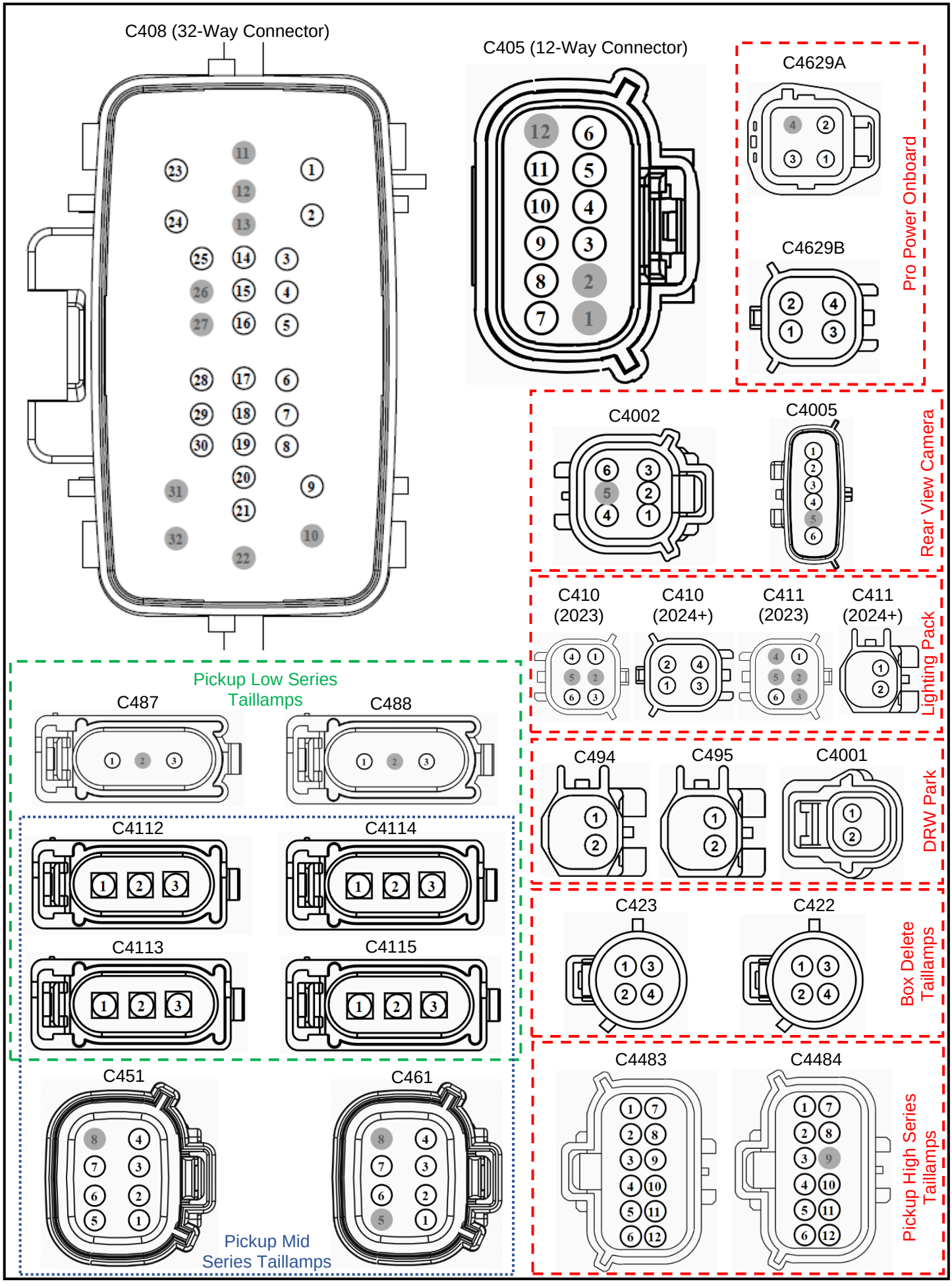


Figure 9 – Taillamp Harness Connector Views

Service Part Number	Pro Power Onboard	DRW Park Lamps	Taillamp Level L = Pickup Low Series BD = Box Delete
PC3Z-13A409-A			BD
RC3Z-13A409-B	X		BD
PC3Z-13A409-BNA	X	X	L
PC3Z-13A409-BKA	X		L
PC3Z-13A409-NA		X	L
PC3Z-13A409-KA			L

Figure 10 – Service Parts for Taillamp Harness

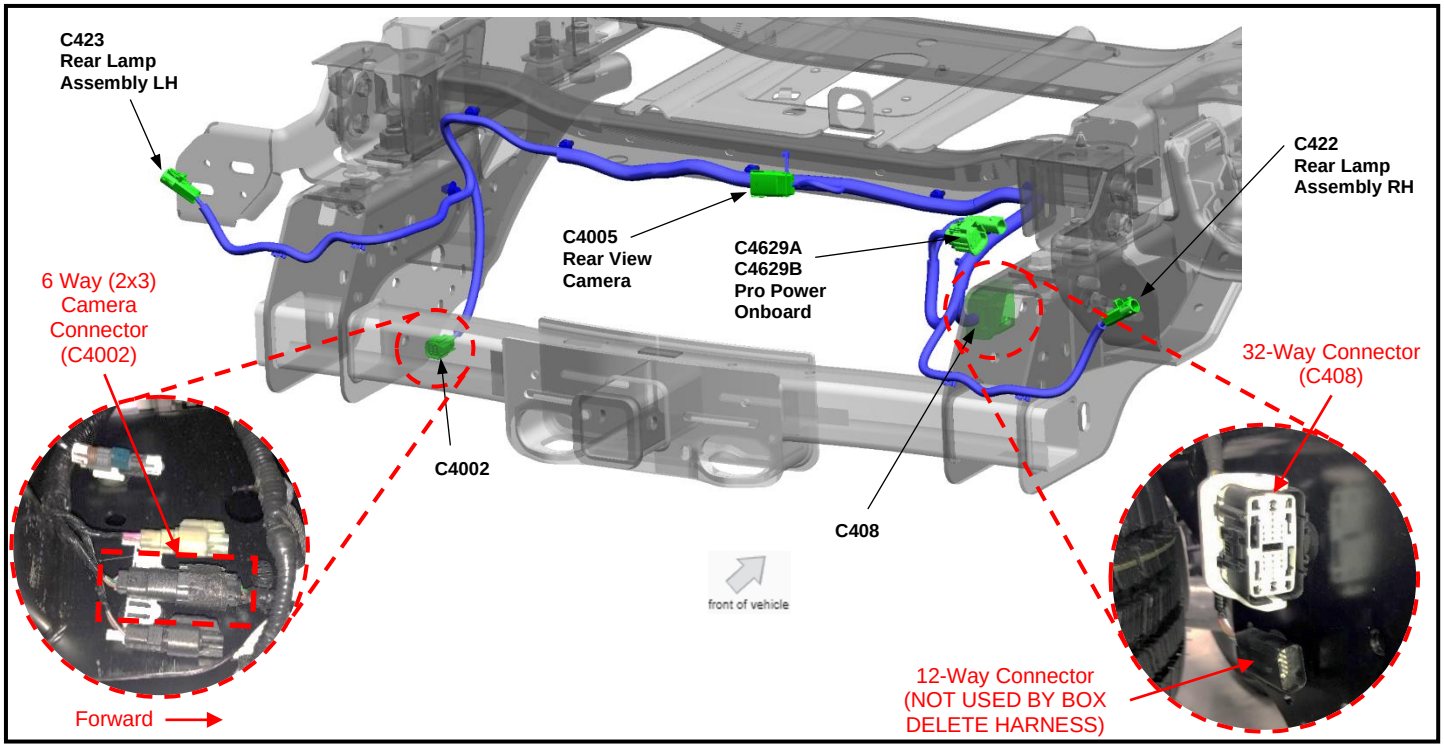


Figure 11 – Taillamp Harness – Box Delete

Analog Camera for Box Removal (using 19G490 kit)							
Connector (to vehicle)	Pin #	Wire Color	Connector (to camera)	Pin #	Wire Color	Circuit Name	Description
C4002 (2x3)	1	BN/WH	C4005 (1x6) On Kit Harness	1	BN	CBB51	Power
	2	GN		2	GN/BU	VMP43	Video Out +
	3	VT/GN		3	VT/GY	VMP44	Video Out -
	4	BK/YE		4	BK	DMP43	Video Out D
	5	*		5	*	*	not used
	6	VT/GY		6	VT/WH	VDN04	LIN Bus

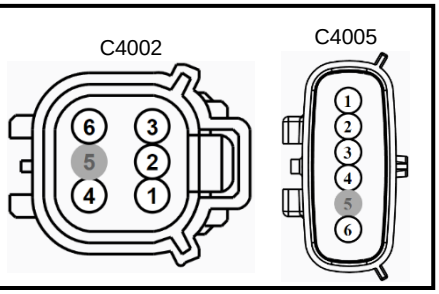
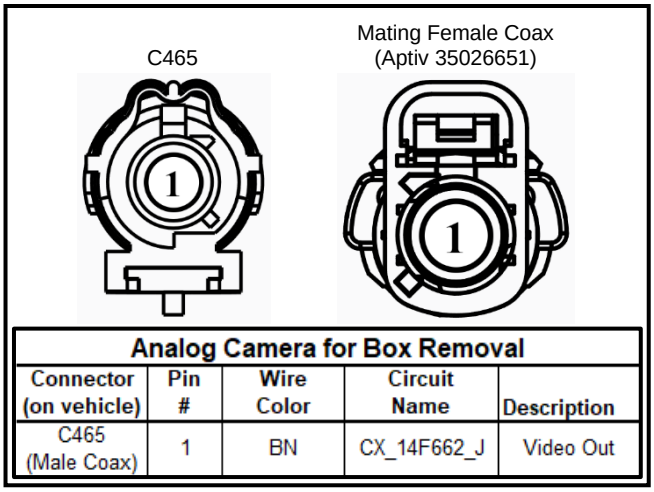


Figure 12 – Analog Rear View Camera Circuits and Pinouts



Analog Camera for Box Removal				
Connector (on vehicle)	Pin #	Wire Color	Circuit Name	Description
C465 (Male Coax)	1	BN	CX_14F662_J	Video Out

Figure 13 – Digital Rear View Camera Circuit and Pinout

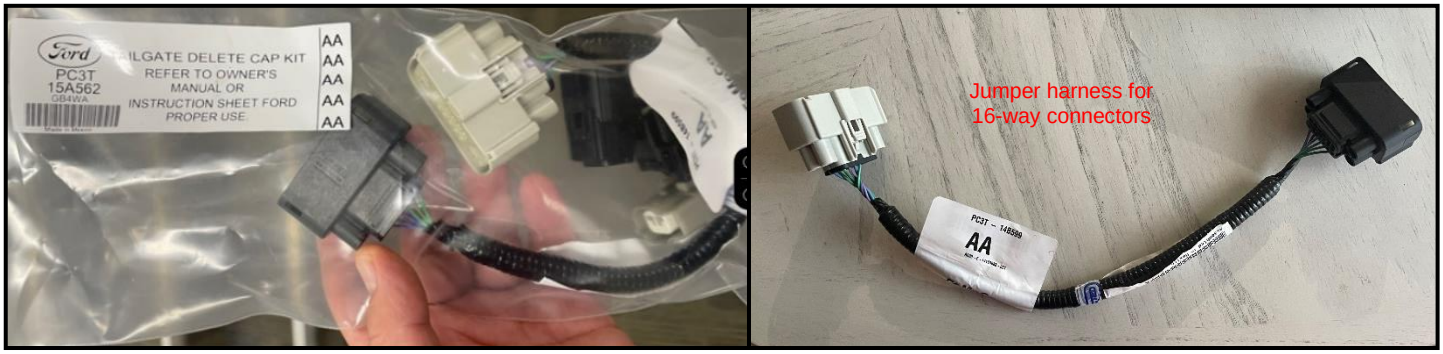


Figure 14 – Tailgate Delete Cap Kit

Appendix A – FDRS Pickup Bed Configuration Application

This application will be used to reconfigure rear lighting circuits to the factory Pickup Box Delete settings and deactivate applicable ADAS and Power Tailgate features, if equipped.

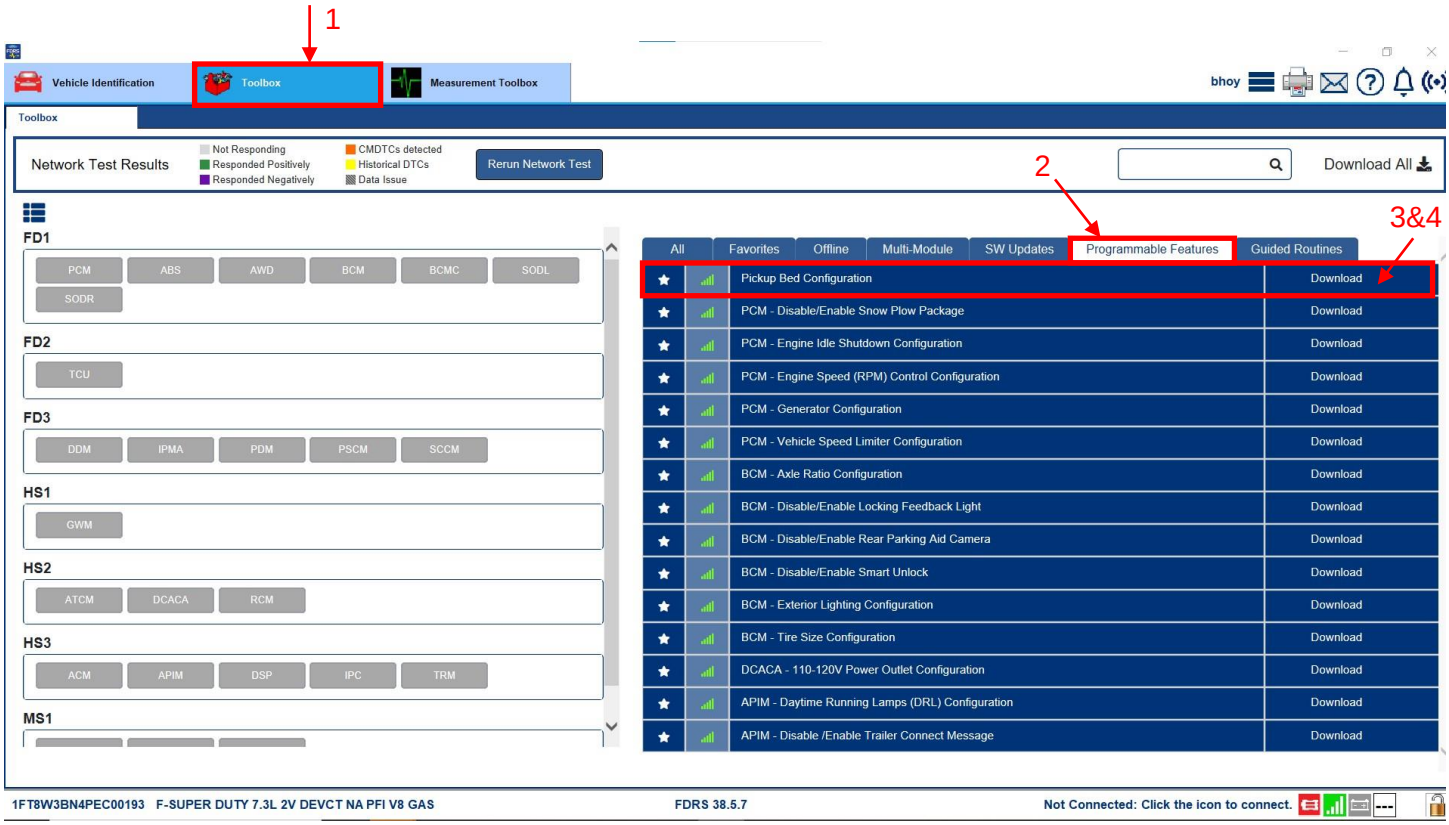
Open the Ford FDRS tool and connect to the vehicle being altered, then:

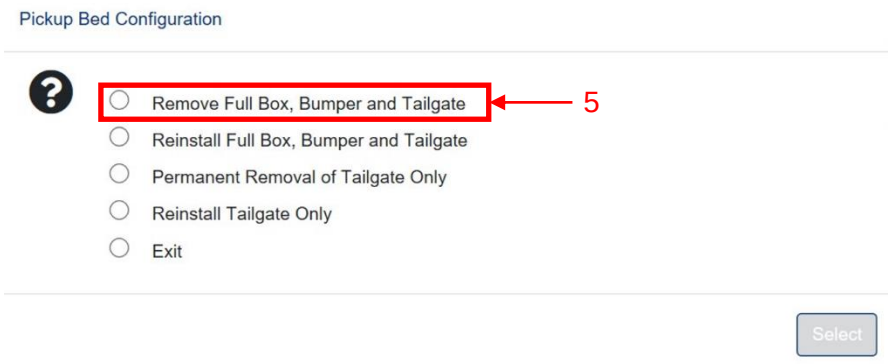
1. Select “Toolbox”
2. Select “Programmable Features”
3. Download the latest version of “Pickup Bed Configuration”
4. Run “Pickup Bed Configuration”
5. Select “Remove Full Box, Bumper and Tailgate” from the list of options
6. Password: “DSPWR257” (all caps)

The script will decide which features the vehicle has and revise the configuration as appropriate. When done, select “Exit” (at the bottom of the list of options) to exit the app and perform a reset of the applicable modules.

In case the “Remove Full Box, Bumper and Tailgate” script was run in error or does not produce the desired effect, the process can be reversed by running the “Reinstall Full Box, Bumper and Tailgate” option. The password is “257DSPWR” (all caps)

Screen Captures from the FDRS tool are provided below to help visualize the selections.





Appendix B – FDRS Tool Guidance for Additional Lighting Configuration

After running the FDRS Pickup Bed Configuration Application, it may be necessary to make additional lighting configuration changes with FDRS as described in the "Lighting Configuration" section.

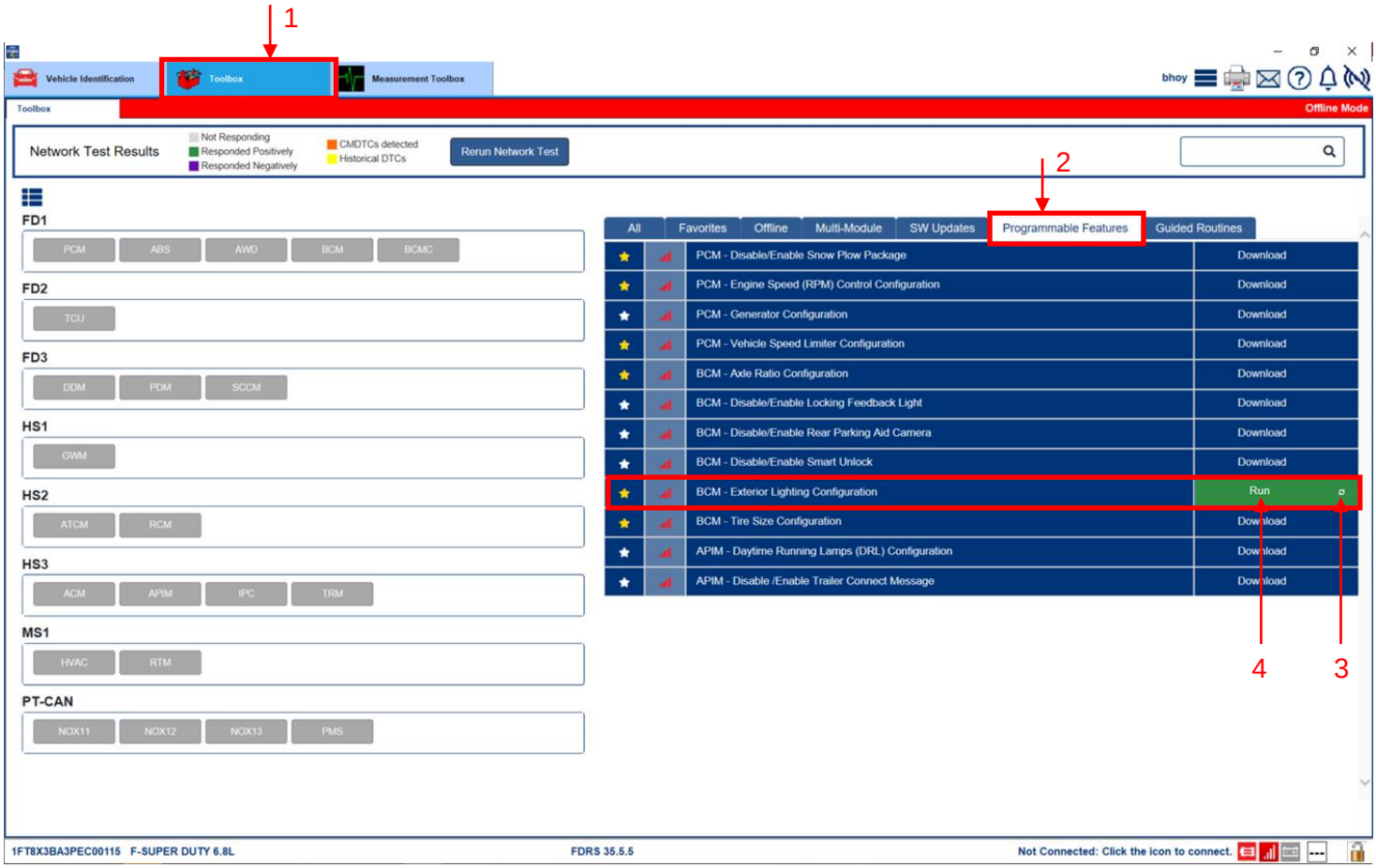
Open the Ford FDRS tool and connect to the vehicle being altered, then:

1. Select "Toolbox"
2. Select "Programmable Features"
3. Download the latest version of "BCM – Exterior Lighting Configuration" if necessary
4. Run "BCM – Exterior Lighting Configuration"
5. Password is "FMVSS108" (all caps)

The list of available lighting configuration options will appear. Instructions on selecting the options and settings for the vehicle content level, harness type and lighting configuration are provided below. Only one option can be selected at a time, the order of selecting is not significant. When done, select "Exit" (at the bottom of the list of options) to exit the app and perform a BCM reset.

- When using a Box Delete Taillamp Harness
  - If using LED lamps, deactivate bulb outage on the rear stop and turn circuits
    - Select "Rear_Bulb_Turn_Outage_Cfg" – revise value to "NO_OUTAGE"
- When using a Pickup Taillamp Harness (Low or Mid Series)
  - For Combined Stop/Turn Lamps:
    - Activate the planned stop/turn circuits (CLS78 & CLS79)
      - Select "Flexible_5_Ckt_Usage_Cfg" – revise value to "STOP_TURN"
      - Select "Flexible_6_Ckt_Usage_Cfg" – revise value to "STOP_TURN"
    - Deactivate the unused rear stop/turn circuits (CLS23 & CLS27)
      - Select "LR_Turn_Lamp_Ckt_Usage_Cfg" – revise value to "NOT_USED"
      - Select "RR_Turn_Lamp_Ckt_Usage_Cfg" – revise value to "NOT_USED"
    - If using LED lamps, deactivate bulb outage on the rear stop/turn circuits
      - Select "Rear_Bulb_Turn_Outage_Cfg" – revise value to "NO_OUTAGE"
  - For Separate Stop and Turn Lamps:
    - Reconfigure the rear lighting circuits (CLS51 & CLS53 for stop, CLS78 & CLS79 for turn)
      - Select "LR_Stop_Pos_Lamp_Ckt_Usage_Cfg" – revise value to "STOP_ONLY"
      - Select "RR_Stop_Pos_Lamp_Ckt_Usage_Cfg" – revise value to "STOP_ONLY"
      - Select "Flexible_5_Ckt_Usage_Cfg" – revise value to "TURN_ONLY"
      - Select "Flexible_6_Ckt_Usage_Cfg" – revise value to "TURN_ONLY"
    - Deactivate the unused rear stop/turn circuits (CLS23 & CLS27)
      - Select "LR_Turn_Lamp_Ckt_Usage_Cfg" – revise value to "NOT_USED"
      - Select "RR_Turn_Lamp_Ckt_Usage_Cfg" – revise value to "NOT_USED"
    - If using LED lamps, deactivate bulb outage on rear stop and turn circuits
      - Select "Rear_Bulb_StopPos_Outage_Cfg" – revise value to "NO_OUTAGE"
      - Select "Rear_Bulb_Turn_Outage_Cfg" – revise value to "NO_OUTAGE"
- When using a Custom Harness
  - For Combined Stop/Turn Lamps (CLS23 & CLS27):
    - If using LED lamps, deactivate bulb outage on the rear stop/turn circuits
      - Select "Rear_Bulb_Turn_Outage_Cfg" – revise value to "NO_OUTAGE"
  - For Separate Stop and Turn Lamps:
    - Reconfigure the rear lighting circuits (CLS23 & CLS27 for turn, CLS78 & CLS79 for stop)
      - Select "LR_Turn_Lamp_Ckt_Usage_Cfg" – revise value to "TURN_ONLY"
      - Select "RR_Turn_Lamp_Ckt_Usage_Cfg" – revise value to "TURN_ONLY"
      - Select "Fexible_5_Ckt_Usage_Cfg" – revise value to "STOP_ONLY"
      - Select "Flexible_6_Ckt_Usage_Cfg" – revise value to "STOP_ONLY"
    - If using LED lamps, deactivate bulb outage on rear stop and turn circuits
      - Select "Rear_Bulb_Turn_Outage_Cfg" – revise value to "NO_OUTAGE"

Screen Captures from the FDRS tool are provided on the next page to help visualize the selections.



Available Exterior Lighting Configuration Options in FDRS tool

- OutageTrailer_Cfg
- Front_Bulb_Turn_Outage_Cfg
- Front_LED_Turn_Outage_Cfg
- Rear_LED_Turn_Outage_Cfg CLS54 & 55 — Use to deactivate bulb outage on rear stop/turn circuits (High Series)
- Rear_LED_Turn_Outage_CircuitUsed_Cfg
- HeadlampStyle_Cfg
- LowBeam_Cfg
- LF_High_Beam_Ckt_Usage_Cfg
- RF_High_Beam_Ckt_Usage_Cfg
- LF_Low_Beam_Ckt_Usage_Cfg
- RF_Low_Beam_Ckt_Usage_Cfg
- LF_Turn_Lamp_Ckt_Usage_Cfg CLS23
- RF_Turn_Lamp_Ckt_Usage_Cfg CLS27 — Use to reconfigure rear stop/turn (Box Delete) and rear turn (High Series) circuits
- LR_Stop_Pos_Lamp_Ckt_Usage_Cfg CLS51
- RR_Stop_Pos_Lamp_Ckt_Usage_Cfg CLS53 — Use to reconfigure rear stop/turn (Low & Mid Series) and rear stop (High Series) circuits
- LR_Turn_Lamp_Ckt_Usage_Cfg
- RR Turn Lamp Ckt Usage Cfg
- OutageHeadlamps_Cfg
- DRL_OnWithParkLampsOn_Cfg
- LF_RF_PositionLampCkt_Usage_Cfg
- Rear_Bulb_StopPos_Outage_Cfg CLS51 & 53
- Rear_Bulb_Turn_Outage_Cfg CLS23, 27, 78 & 79 — Use to deactivate bulb outage on rear stop/turn circuits (Low & Mid Series)
- Flexible_5_Ckt_Usage_Cfg CLS78
- Flexible_6_Ckt_Usage_Cfg CLS79 — Use to reconfigure rear stop/turn (Low & Mid Series) and power supply (High Series) circuits
- Exit

For reference, the factory pickup configuration values for Rear Exterior Lighting are listed below:

	Default Values by Pickup Level	
Rear Exterior Lighting Configuration Options	**Low/Mid**	**High**
Rear_LED_Turn_Outage_Cfg	NO_OUTAGE	OUTAGE
LR_Stop_Pos_Lamp_Ckt_Usage_Cfg	STOP_TURN	STOP ONLY
RR_Stop_Pos_Lamp_Ckt_Usage_Cfg	STOP_TURN	STOP_ONLY
LR_Turn_Lamp_Ckt_Usage_Cfg	NOT_USED	TURN_ONLY
RR_Turn_Lamp_Ckt_Usage_Cfg	NOT_USED	TURN_ONLY
Rear_Bulb_StopPos_Outage_Cfg	OUTAGE	NO_OUTAGE
Rear_Bulb_Turn_Outage_Cfg	OUTAGE	NO_OUTAGE
Fexible_5_Ckt_Usage_Cfg	STOP_TURN	POWER_SUPPLY
Flexible_6_Ckt_Usage_Cfg	STOP_TURN	NOT_USED