



David J. Johnson  
Director  
Service Engineering Operations  
Ford Customer Service Division

Ford Motor Company  
P. O. Box 1904  
Dearborn, Michigan 48121

September 24, 2021

**TO:** All U.S. Ford and Lincoln Dealers

**SUBJECT: Customer Satisfaction Program 21B04**  
Certain 2017 through 2020 Model Year F550 Equipped with Payload Plus Upgrade Package  
Frame Rail Crack

**PROGRAM TERMS**

This program will be in effect through October 31, 2022. There is no mileage limit for this program.

**URGENCY / EXPIRATION DATE**

This Customer Satisfaction Program has an expiration date of October 31, 2022 to encourage dealers and customers to have this service performed as soon as possible.

We recommend dealers utilize their FSA VIN Lists name and address to contact customers with affected vehicles. This will help minimize the number of vehicles that may develop a frame rail crack, which requires a more extensive repair. FSA VIN Lists are expected to be available by week of October 25, 2021.

**AFFECTED VEHICLES**

Vehicle	Model Year	Assembly Plant	Build Dates
F550	2017-2020	Kentucky	January 12, 2016 through May 21, 2020
F550	2017-2020	Ohio	February 17, 2016 through May 21, 2020

Affected vehicles are identified in OASIS and FSA VIN Lists.

This program includes vehicles that are used in specific vocation only, which may be particularly affected by this condition due to duty cycle. These vocations include:

- Aerial Bucket
- Service Bodies with Hoists
- Roll-Off Wreckers
- Waste Hauler Roll-Offs

**REASON FOR THIS PROGRAM**

In some of the affected vehicles certain second unit body (SUB) upfits could cause stress points on the frame rail. Over time this stress could cause a crack in the frame rail behind the cab.

**SERVICE ACTION**

Dealers are to install frame rail service kits following Technical Information in Attachment III. This service must be performed on all affected vehicles per direction in Dealer Information Sheet, Attachment V at no charge to the vehicle owner.

## **OWNER NOTIFICATION MAILING SCHEDULE**

Owner letters are expected to be mailed the week of October 11, 2021. Dealers should repair any affected vehicles that arrive at their dealerships per Dealer Information Sheet, whether or not the customer has received a letter.

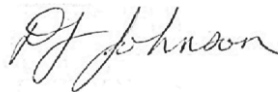
## **ATTACHMENTS**

Attachment I: Administrative Information  
Attachment II: Labor Allowances and Parts Ordering Information  
Attachment III: Technical Information  
Attachment IV: Templates  
Attachment V: Dealer Information Sheet  
Owner Notification Letters

## **QUESTIONS & ASSISTANCE**

For questions and assistance, contact the Special Service Support Center (SSSC) via the SSSC Web Contact Site. The SSSC Web Contact Site can be accessed through the Professional Technician System (PTS) website using the SSSC link listed at the bottom of the OASIS VIN report screen or listed under the SSSC tab.

Sincerely,



David J. Johnson

**Customer Satisfaction Program 21B04**  
Certain 2017 through 2020 Model Year F550 with Payload Plus Upgrade Package  
Frame Rail Crack

**OASIS ACTIVATION**

OASIS will be activated on September 24, 2021.

**FSA VIN LISTS ACTIVATION**

FSA VIN Lists will be available through <https://web.fsavinlists.dealerconnection.com> on September 23, 2021. Owner names and addresses will be available by September 24, 2021.

**NOTE:** Your FSA VIN Lists may contain owner names and addresses obtained from motor vehicle registration records. The use of such motor vehicle registration data for any purpose other than in connection with this program is a violation of law in several states, provinces, and countries. Accordingly, you must limit the use of this listing to the follow-up necessary to complete this service action.

**SOLD VEHICLES**

- Owners of affected vehicles will be directed to dealers for repairs.
- Immediately contact any of your affected customers whose vehicles are not on your VIN list but are identified in OASIS. Give the customer a copy of the Owner Notification Letter (when available) and schedule a service date.
- Correct other affected vehicles identified in OASIS which are brought to your dealership.
- Dealers are to prioritize repairs of customer vehicles over repairs of new and used vehicle inventory.

**STOCK VEHICLES**

- Correct all affected units in your new vehicle inventory before delivery.
- Use OASIS to identify any affected vehicles in your used vehicle inventory.

**TITLE BRANDED / SALVAGED VEHICLES**

Affected title branded and salvaged vehicles are eligible for this service action.

**OWNER REFUNDS**

- Ford Motor Company is offering a refund for owner-paid repairs covered by this program if the repair was performed before the date of the Owner Notification Letter. This refund offer expires March 31, 2022.
- Dealers are also pre-approved to refund owner-paid emergency repairs that were performed away from an authorized servicing dealer after the date of the Owner Notification Letter. Non-covered repairs, or those judged by Ford to be excessive, will not be reimbursed.
- Refunds will only be provided for the cost associated with frame rail cracks.

**RENTAL VEHICLES**

Rental vehicles are not approved for this program.

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**ADDITIONAL REPAIR (LABOR TIME AND/OR PARTS)**

Additional repairs identified as necessary to complete the FSA should be managed as follows:

- For related damage and access time requirements, refer to the Warranty and Policy Manual / Section 6 – Ford & Lincoln Program Policies / General Information & Special Circumstances for FSA's / Related Damage.
- For vehicles within new vehicle bumper-to-bumper warranty coverage, no SSSC approval is required, although related damage must be on a separate repair line with the "Related Damage" radio button checked.
  - Ford vehicles – 3 years or 36,000 miles
- For vehicles outside new vehicle bumper-to-bumper warranty coverage, submit an Approval Request to the SSSC Web Contact Site prior to completing the repair.

**CLAIMS PREPARATION AND SUBMISSION**

- **Claim Entry:** Enter claims using Dealer Management System (DMS) or One Warranty Solution (OWS) online.
  - When entering claims:
    - Claim type 31: Field Service Action. The FSA number 21B04 is the sub code.
    - Customer Concern Code (CCC): N59
    - Condition Code (CC): 01
    - Causal Part Number: 5005
    - Part Quantity: 0
  - For additional claims preparation and submission information, refer to the Recall and Customer Satisfaction Program (CSP) Repairs in the OWS User Guide.
- **Related Damage/Additional labor and/or parts:** Must be claimed as Related Damage on a separate repair line from the FSA with same claim type and sub code as described in Claim Entry above.

**IMPORTANT:** Click the Related Damage Indicator radio button.

- **Provision for Motorcraft High Temperature Anti Corrosion and Locally Obtained Supplies:** Motorcraft High Temperature Anti Corrosion, Anchor Lube and Rotabroach Cutter (or equivalent)

**NOTE:** Misc. supplies can be used on multiple vehicles.

- Program Code 21B04
- Misc. Expense: OTHER
- Amount: \$10.00
- **Refunds:** Submit refunds on a separate repair line.
  - Program Code: 21B04                      - Misc. Expense: ADMIN
  - Misc. Expense: REFUND                      - Misc. Expense: 0.2 Hrs.
- Multiple refunds should be submitted on one repair line and the invoice details for each repair should be detailed in the comments section of the claim.

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**LABOR ALLOWANCES**

Description	Labor Operation	Labor Time
Inspect Vehicle, Inspection Pass (Vehicle not equipped with Second Unit Body per Attachment V Dealer Information Sheet, Brackets not required)	21B04A	0.2 Hours
Installation of Upper and Lower Brackets (Cannot be claimed with 21B04C)	21B04B	3.1 Hours
Installation of Lower Brackets Only (Cannot be claimed with 21B04B)	21B04C	1.6 Hours
The following labor ops can be combined with 21B04B or 21B04C. (Reference Attachment III page 2 and 3 for combinations) NOTE: Labor operation lettering does not match Attachment III Repair Service Procedure lettering. Use service procedure description to match correct labor operation.		
DEF Pressure Line Re-route (Diesel Only)	21B04D	0.2 Hours
Wire Harness Crush Shield Installation	21B04E	0.1 Hours
Wire Harness to Flag Stud Interference Correction	21B04F	0.1 Hours
Wire Harness Shield Contacting Fuel Tank Strap Correction	21B04G	0.2 Hours
Exhaust Hanger Modification	21B04H	0.2 Hours
Removal and Installation of Second Unit Body (Only use if access needed for upper bracket)	MT21B04J	Up to 20 Hours

**PARTS REQUIREMENTS / ORDERING INFORMATION**

NOTE: 60" CA and Non 60" CA, this is referencing the measurement from cab to axle for the various frame lengths and cab configurations. 60" from cab to axle and over 60" from cab to axle. See page 2 of technical instruction or ordering guide for further details to find frame length and which frame length are 60CA or Non 60CA.

Part Number	Description	Order Quantity	Claim Quantity
LC3Z-5019-G	Upper and Lower Bracket Kit Non 60" CA	1	1
LC3Z-5019-H	Upper and Lower Bracket Kit 60" CA	1	1
LC3Z-5019-J	Lower Bracket Kit Non 60" CA	1	1
LC3Z-5019-K	Lower Bracket Kit 60" CA	1	1
PM-13-A	Motorcraft High Temperature Anti Corrosion	MISC. OTHER	
Obtain Locally	Anchor Cutting Lube (or equivalent)		
	15mm Rotabroach Cutter (or equivalent)		

Order your parts requirements through normal order processing channels. To guarantee the shortest delivery time, an emergency order for parts must be placed.

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**DEALER PRICE**

For latest prices, refer to DOES II.

**PARTS RETENTION, RETURN, & SCRAPPING**

Follow the provisions of the Warranty and Policy Manual, Section 1 - WARRANTY PARTS RETENTION AND RETURN POLICIES. If a replaced part receives a scrap disposition, the part must be scrapped in accordance with all applicable local, state and federal environmental protection and hazardous material regulations. Federal law prohibits selling motor vehicle parts or components that are under safety, compliance, or emissions recall.

**EXCESS STOCK RETURN**

Excess stock returned for credit must have been purchased from Ford Customer Service Division in accordance with Policy Procedure Bulletin 4000.

**REPLACED FSA PARTS INSPECTION AND SIGN OFF**

Effective March 1<sup>st</sup> 2021 all parts replaced as part of an FSA repair with a repair order open date of March 1<sup>st</sup> 2021 or later must be inspected and signed off on the repair order by a member of your dealers fixed operations management team or an employee the task has been delegated to. If the task is to be delegated to a non-management employee, the employee needs to be someone other than the technician who completed the repair and needs to understand the importance of completing this task consistently and accurately.

- All parts replaced as part of an FSA repair should be returned to the parts department following the Warranty Parts Retention and Return Policies.
- Inspect the replaced parts to verify the FSA repair was completed.
- If the FSA repair is found to be complete, the designated employee signs the repair order line or parts return stamp area (electronic or hand signed) for the FSA repair indicating the parts were inspected and validated to have been replaced.
- After the parts have been inspected, they should be handled based on the guidance in the parts status report in the Online Warranty System (Hold, Return, CORE, Scrap, etc.).
- This process is subject to review during warranty audits for FSA repairs with a repair order open date of March 1<sup>st</sup> 2021 or later. Any eligible FSA claims requiring parts replacement, found not to have been inspected and signed off during a warranty audit will be subject to chargeback and consideration for enrollment into the Dealer Incomplete Recall Repair Process.

**Note:** Other approvals (electronic or handwritten) for add-on repair lines, dealer owned vehicle repairs, and repeat repairs do not qualify as FSA parts inspection approvals. The post repair FSA parts inspection process (electronic or handwritten) is independent from other warranty approval requirements. The approval by the designated employee implies that the FSA parts were found to be replaced and must be able to be clearly identified on the Repair Order. If multiple FSA's require approval on a single Repair Order, each applicable occurrence will require individual post repair approval by the designated employee.

## Dealer Information Sheet

ATTACHMENT V  
Page 1 of 3

### Customer Satisfaction Program 21B04

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**Service Fix** – There is two type of service kits for the frame reinforcement. One with lower only brackets, and one with upper and lower brackets. Vehicles that require service kits for this program are aerial buckets, service bodies with a hoist, roll-off wreckers, and waste hauler roll-offs.

Other type of upfitted trucks not listed here will not require frame reinforcement. Such as flat beds, stake beds, box trucks. Do not install brackets on trucks not listed in this attachment.

Lower Bracket Kit Only - Aerial Buckets

Example



**Customer Satisfaction Program 21B04**

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- Upper and Lower Bracket Kit Only - Service Bodies with a Hoist, Roll-Off Wreckers and Waste Hauler Roll-Offs

NOTE: To gain access to top of the frame with a service body installed it may have to be removed.

Example





**Customer Satisfaction Program 21B04**  
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Frame Rail Crack



## CERTAIN 2017-2020 MODEL YEAR F550 SUPERDUTY VEHICLES EQUIPPED WITH PAYLOAD PLUS UPGRADE PACKAGE — FRAME RAIL CRACKS

### SERVICE PROCEDURE

**NOTE:** In the tech instructions and parts ordering will reference 60CA and Non 60CA for the two kits. This is referencing the measurement from cab to axle for the various frame lengths and cab configurations. 60" from cab to axle and over 60" from cab to axle. See page 2 for further details to find frame length and which frame length are 60CA or Non 60CA.

**NOTE:** Vehicles that require service kits for this program are aerial buckets, service bodies with a hoist, roll off wreckers, and waste hauler roll offs. See attachment V.

1. Identify and inspect the areas where the frame rail may exhibit signs of stress or a crack. Using compressed air, clear any debris that may be on the frame rails in the area of red dashed box. See Figure 1.

- Are there any signs of stress or cracks found on the frame rail?
  - Yes - Contact Special Service Support Center (SSSC).
  - No - Continue to procedure on Page 2.

**NOTE:** Non-60CA frame shown, 60CA frame similar. The first crossmember rearward of the cab will be set further rearward on the 60CA frame.

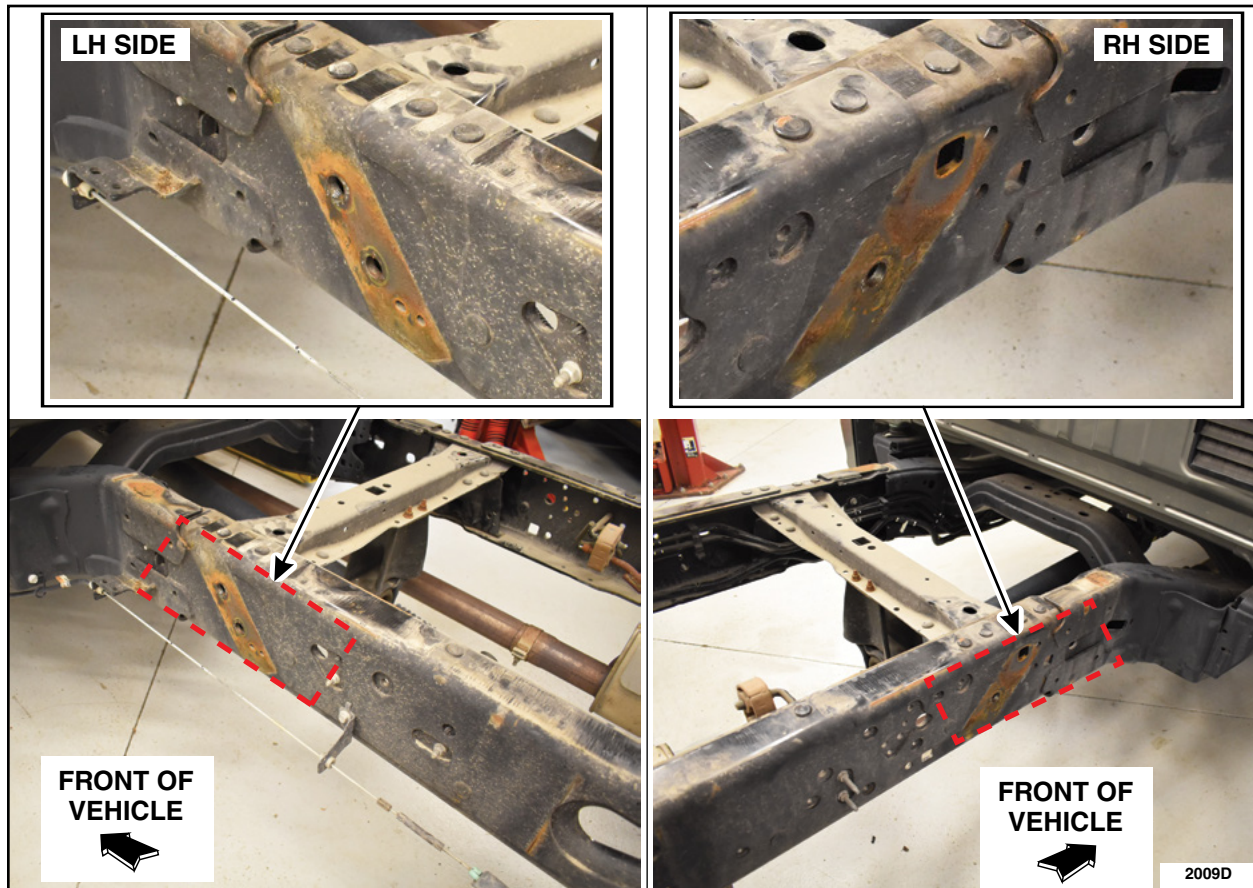


FIGURE 1



Match the vehicle's wheel base and fuel type to the list of wheelbase configurations below to determine the appropriate Repair Service Procedures.

**NOTE:** Refer to the Dealer Bulletin for the correct part numbers for the frame size on the vehicle.

**NOTE:** Vehicle wheelbase can be found:

- On the vehicle window sticker, which can be viewed from the OASIS pull down menu on PTS, or the window sticker link in HVBOM.
- On the Vehicle Certification Label.
- By clicking the Additional Information link on OASIS, and scrolling through the Build Information.

**NOTE:** The Repair Service Procedures C through G below need to be performed in conjunction with the replacement of the lower frame rail reinforcement brackets on certain fuel and DEF tank configurations. These procedures can be for either the RH or LH side lower reinforcement bracket replacement, please read through the procedures that pertain to your vehicles configuration.

## **60CA FRAMES**

### **145" WHEELBASE VEHICLES - Regular Cab**

- Gas Engine.....Repair Service Procedures D, A & B
- Diesel Engine with Aft of Axle Fuel Tank and LH Inboard Mounted Urea Tank.....Repair Service Procedures E, G, A & B
- Diesel Engine with a Mid Ship Fuel Tank.....Repair Service Procedures D, G, A & B
- All Other Vehicle Configurations.....Repair Service Procedures A & B

### **168" WHEELBASE VEHICLES - Super Cab**

- Gas Engine.....Repair Service Procedures D, A & B
- Diesel Engine with Aft of Axle Fuel Tank and LH Inboard Mounted Urea Tank.....Repair Service Procedures E, G, A & B
- Diesel Engine with a Mid Ship Fuel Tank.....Repair Service Procedures D, G, A & B
- All Other Vehicle Configurations.....Repair Service Procedures A & B

### **179" WHEELBASE VEHICLES - Crew Cab**

- Gas Engine.....Repair Service Procedures D, A & B
- Diesel Engine with Aft of Axle Fuel Tank and LH Inboard Mounted Urea Tank.....Repair Service Procedures E, G, A & B
- Diesel Engine with a Mid Ship Fuel Tank.....Repair Service Procedures D, G, A & B
- All Other Vehicle Configurations.....Repair Service Procedures A & B



## **NON-60CA FRAMES**

### **169" WHEELBASE VEHICLES - Regular Cab**

- Gas Engine with Aft of Axle Fuel Tank.....Repair Service Procedures A & B
- Gas Engine with a Mid Ship Fuel Tank.....Repair Service Procedures F, A & B
- Diesel Engine with Aft of Axle Fuel Tank.....Repair Service Procedures C, A & B
- Diesel Engine with a Mid Ship Fuel Tank.....Repair Service Procedures C, F, A & B

### **192" WHEELBASE VEHICLES - Super Cab**

- Gas Engine with Aft of Axle Fuel Tank.....Repair Service Procedures A & B
- Gas Engine with a Mid Ship Fuel Tank.....Repair Service Procedures F, A & B
- Diesel Engine with Aft of Axle Fuel Tank.....Repair Service Procedures C, A & B
- Diesel Engine with a Mid Ship Fuel Tank.....Repair Service Procedures C, F, A & B

### **193" WHEELBASE VEHICLES - Regular Cab**

- Gas Engine.....Repair Service Procedures A & B
- Diesel Engine with a Aft of Axle.....Repair Service Procedures C, A & B
- Diesel Engine with a Mid Ship Fuel Tank.....Repair Service Procedures C, F, A & B

### **203" WHEELBASE VEHICLES - Crew Cab**

- Gas Engine with a Aft of Axle.....Repair Service Procedures A & B
- Gas Engine with a Mid Ship Fuel Tank.....Repair Service Procedures F, A & B
- Diesel Engine with Aft of Axle Fuel Tank.....Repair Service Procedures C A & B
- Diesel Engine with a Mid Ship Fuel Tank.....Repair Service Procedures C, F, A & B

### **205" WHEELBASE VEHICLES - Regular Cab**

- Gas Engine.....Repair Service Procedures A & B
- Diesel Engine.....Repair Service Procedures C A & B

## **REPAIR SERVICE PROCEDURES**

A. Upper Frame Rail Reinforcement Bracket Installation.....Page 4

**NOTE:** Upper Frame Rail Reinforcement Bracket not required on Aerial Bucket Equipped Trucks.

B. Lower Frame Rail Reinforcement Bracket Installation.....Page 15

C. DEF Pressure Line Re-route Procedures (choose the cab type and reductant tank configuration)

- i. All Cabs Equipped with a LH Inboard Reductant Tank.....Page 21
- ii. Regular Cab Vehicles with RH Outboard Reductant Tank.....Page 23
- iii. Super Cab and Crew Cab Vehicles with RH Outboard Reductant Tank.....Page 26

D. Wire Harness Crush Shield Installation.....Page 28

E. Wire Harness to Flag Stud Interference Correction.....Page 29

F. Wire Harness Shield Contacting Fuel Tank Strap Correction.....Page 30

G. Exhaust Hanger Modification.....Page 34



### **A. Upper Frame Rail Reinforcement Bracket Installation Procedure**

**NOTE:** If equipped, the removal of the second unit body, bucket or any other component that covers the upper rear frame rail section, is required prior to performing this repair. Vehicles with wrecker or roll back should be able to move second unit body out of way enough to install upper brackets.

**NOTE:** Upper Frame Rail Reinforcement Bracket not required on Aerial Bucket Equipped Trucks.

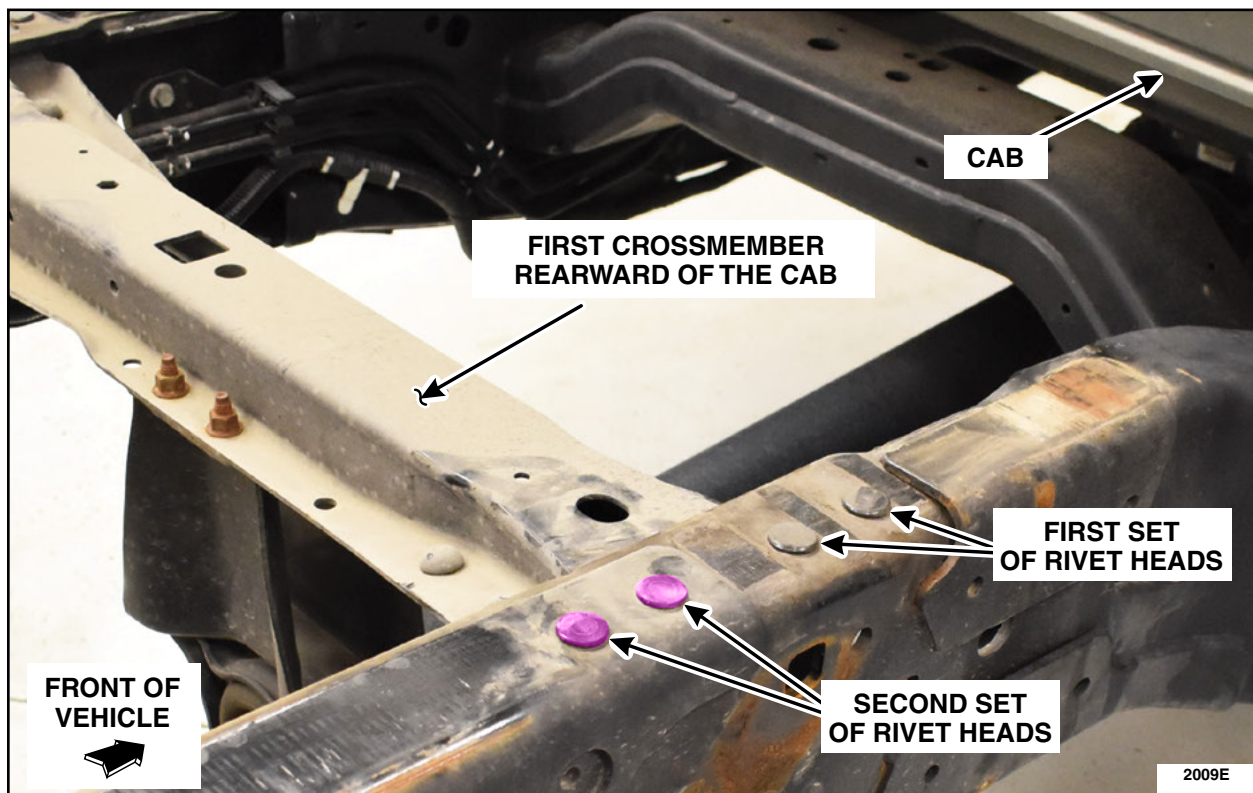
**NOTE:** This procedure is being performed on a Non-60CA frame. The 60CA frames are similar with the exception of the brackets physical shape and amount of holes needed to mount the bracket to the frame rail. The lower bracket on the 60CA frames will use a single fastener at the rear of the bracket and will use a single flag stud to attach the bracket to the frame. The 60CA upper and lower brackets are longer in design than the Non-60CA brackets.

**NOTE:** This installation procedure must be performed on both the Right Hand (RH) and Left hand (LH) sides of the vehicles upper frame rail. This procedure shows the installation of the RH side frame rail reinforcement bracket and is symmetrical to the LH side.

**NOTE:** Not all of the parts in the Part Kits will be used. All unused parts of the kit can be scrapped.

1. On the RH side frame rail, locate the second set of rivet heads, rearward of the cab. See Figure 2.

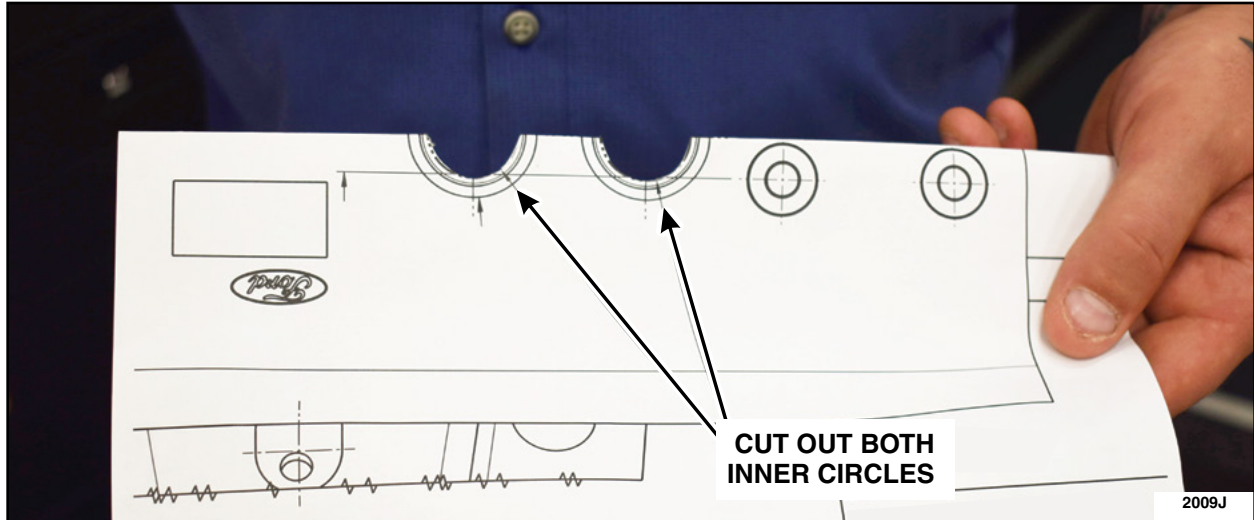
**NOTE:** Non-60CA frame shown, 60CA frame similar. The first crossmember rearward of the cab will be set further rearward on the 60CA frame.



**FIGURE 2**



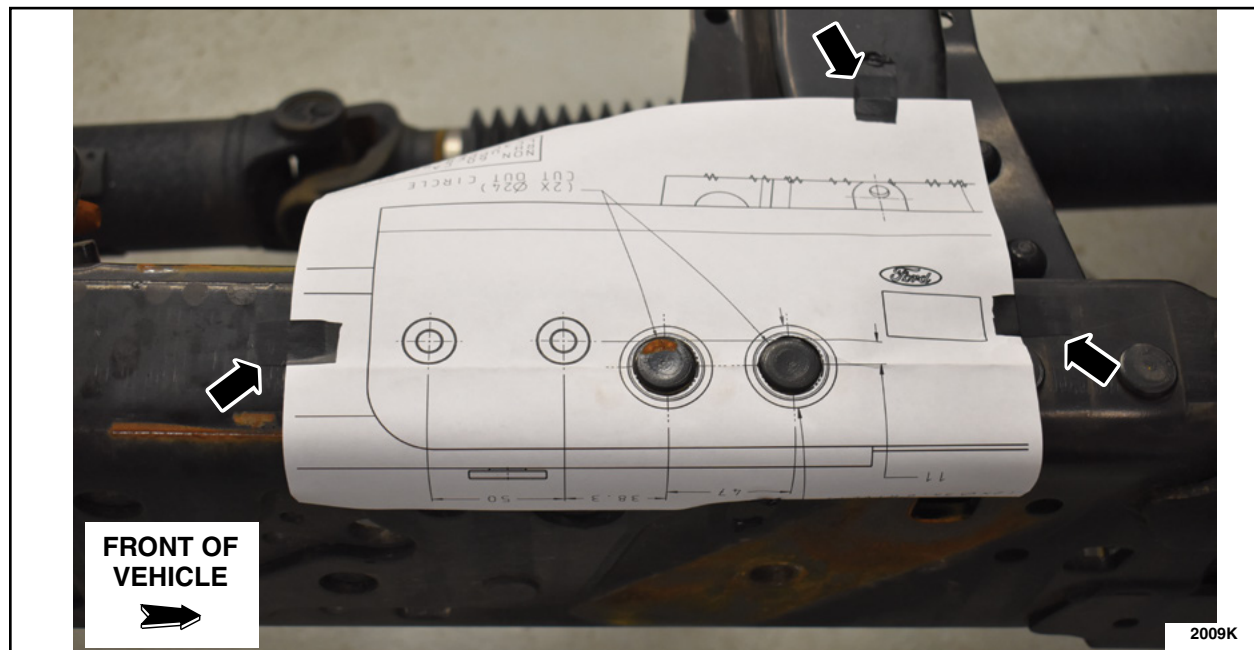
2. Print out the RH Upper Frame Rail Bracket Template (See Attachment IV) per the 60 CA and Non-60 CA. When printing the templates ensure that the printers Page Size is set to **'Actual size'** and Page Orientation set to **'Landscape'**.
3. Cut out the two (2) larger rivet heads on the template, cut out the inner most circle by slightly folding the template at the center line of the larger circles and cut out the half moon shape. See Figure 3.



**FIGURE 3**

4. Place the template over the rivet heads, identified in Step 1, and secure the template to the frame with tape. See Figure 4.

**NOTE: Non-60CA frame shown, 60CA frame similar. The first crossmember rearward of the cab will be set further rearward on the 60CA frame.**



**FIGURE 4**



5. Using a center punch, mark the center of the smaller diameter circles. See Figure 5.

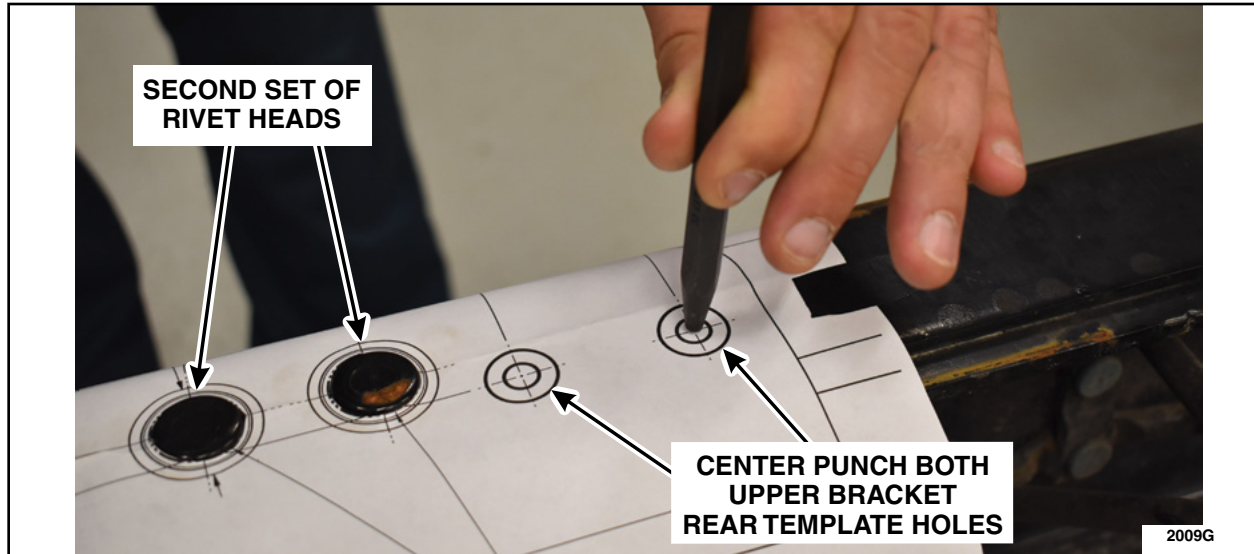


FIGURE 5

6. Remove the template from the frame and apply a bead of Anchorlube G771 or equivalent. See Figure 6.

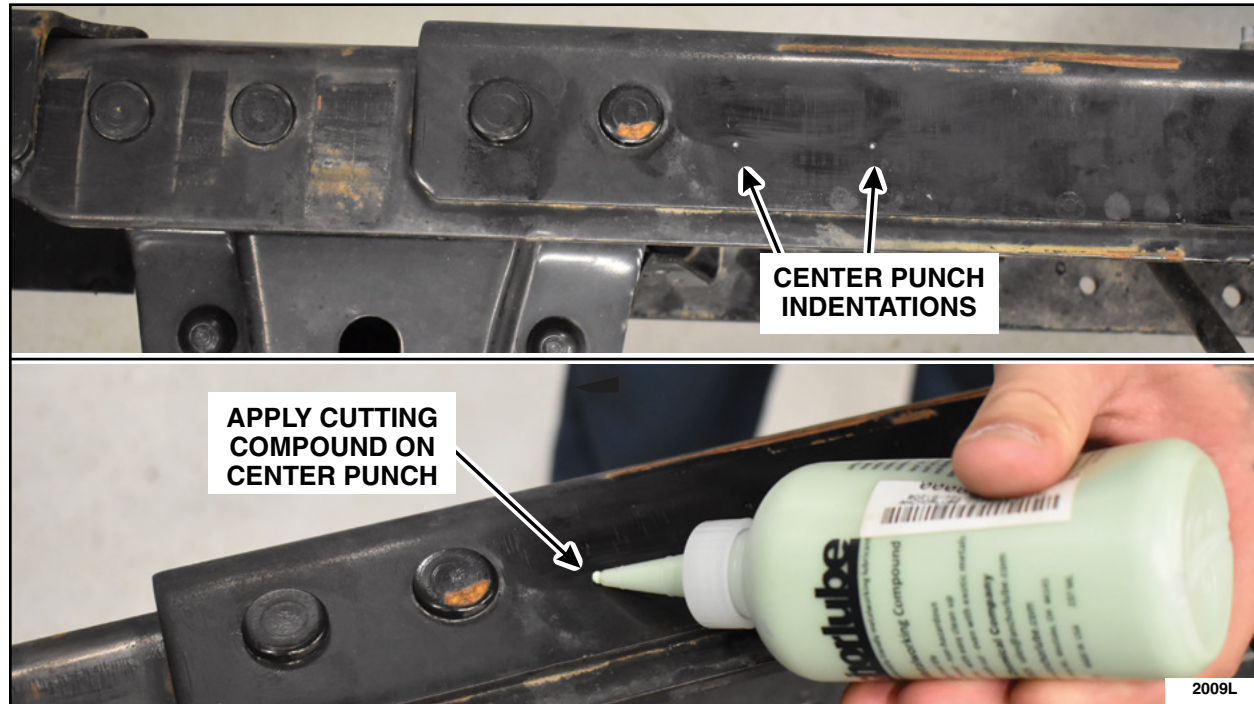


FIGURE 6



7. Using a drill (set to the bits recommended drill speed) and a 15mm Rotabroach bit, such as the Hougen or Blair 15mm x 25mm Deep High Speed Steel Annular Cutter and a Rotabroach Arbor, drill the two (2) holes that were just center punched in the previous Step. See Figure 7.

**NOTE:** Cutting fluid, such as Anchorlube G771 or equivalent, will need to be applied several times during the cutting out of these holes to prevent heat and aid in cutting. High heat will cause the bits to wear prematurely.

**NOTE:** On dual layer frame drilling, once the drill bit has cut through the upper layer you will need to stop and clear away any shavings and remove the loose piece of the upper frame in order to continue drilling through the lower layer. See Figures 7 and 8.

**NOTE:** One Hougen 15mm Rotabroach bit should be expected to drill four (4) single layer holes and two (2) double frame layer holes.

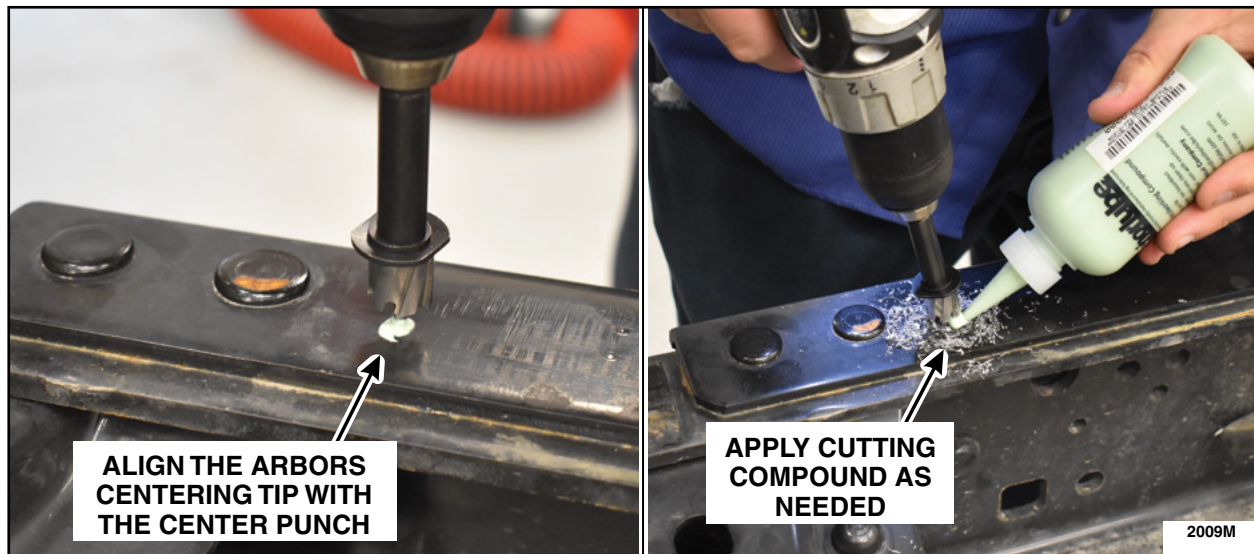


FIGURE 7



FIGURE 8



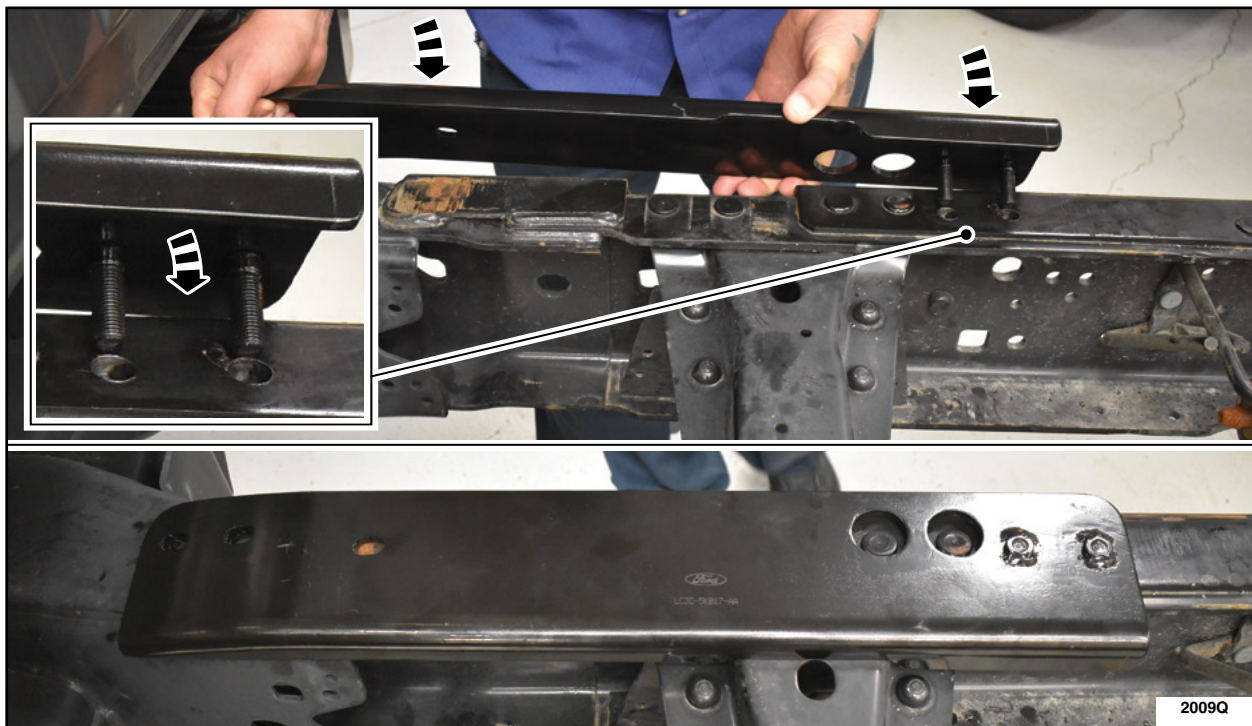


8. Clear away any shavings and clean the drilled holes and the frame around them, using rubbing alcohol and a clean shop towel.
9. Using a small brush and Motorcraft® High Temperature Anti-Corrosion Coating (PM-13-A), apply the coating in and around the holes that were just drilled, to cover any bare metal present from the drilling of the holes. See Figure 9.



**FIGURE 9**

10. Position the upper bracket on the frame and seat the two (2) rear studs into the drilled holes. See Figure 10.



**FIGURE 10**



11. Use the bracket as a template to mark the front drill hole locations by;

- a. Centering the two (2) rivet heads in the bracket rivet holes. See Figure 11.
- b. Ensuring that the outboard edge of the bracket is flush with the frame. See Figure 11.
- c. Clamp the bracket to the frame and center punch the front two (2) holes. See Figures 12 and 13.

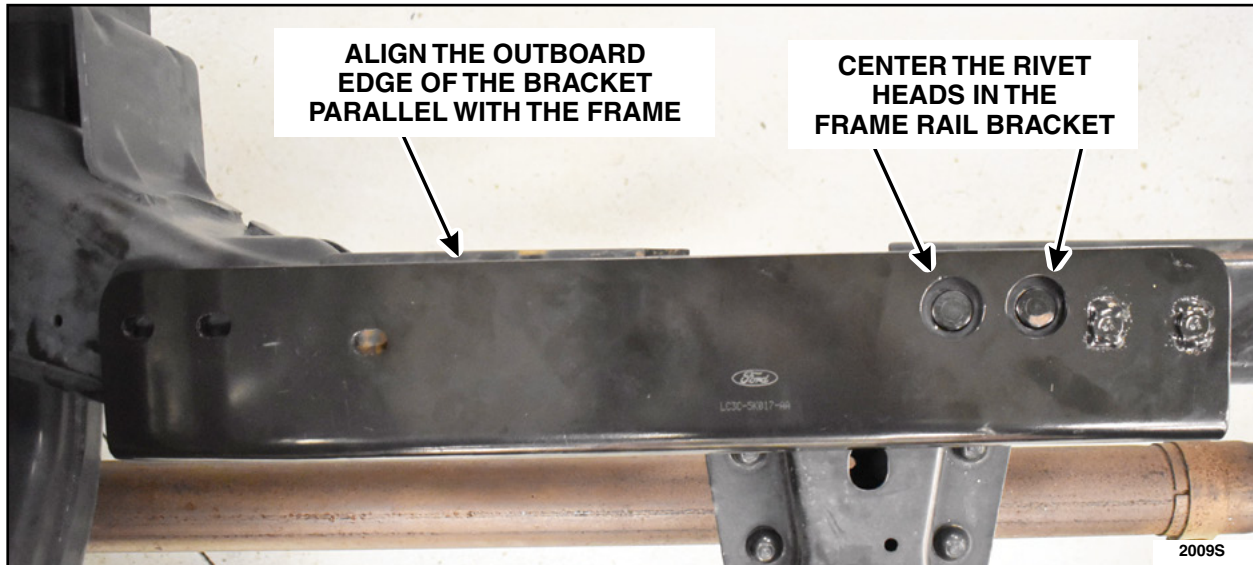


FIGURE 11

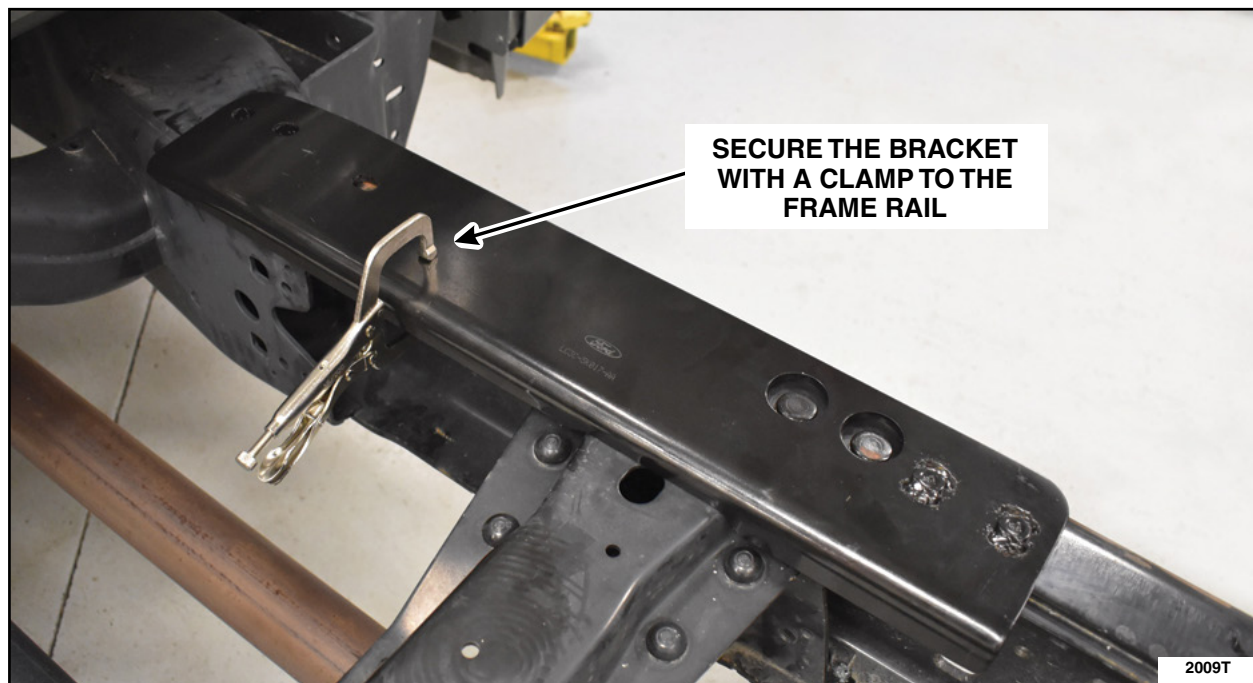


FIGURE 12





FIGURE 13



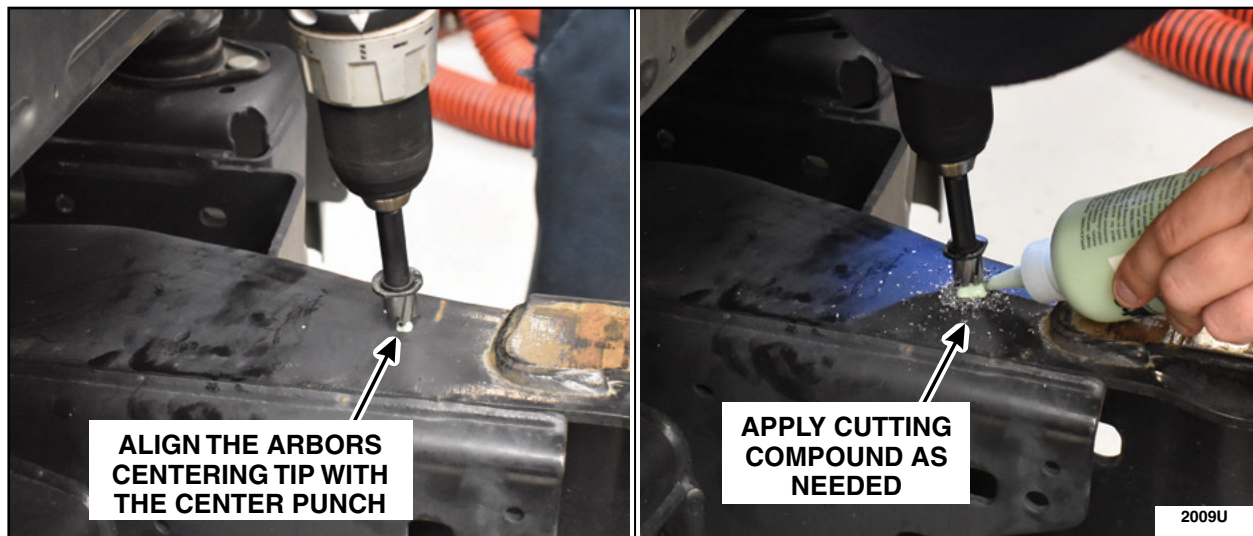
12. Remove the clamp and the bracket from the frame. See Figure 10.

13. Using a drill (set to the bits recommended drill speed) and a 15mm Rotabroach bit, such as the Hougén 15mm x 25mm Deep High Speed Steel Annular Cutter and a Rotabroach Arbor, drill the two (2) holes that were just center punched in the previous Steps. See Figure 14.

**NOTE:** If the tool being used to drill the front hole, nearest to the cab, does not achieve the correct angle to drill the hole, a right angle drill will need to be used to achieve the correct angle.

**NOTE:** Cutting fluid, such as Anchorlube G771, will need to be applied several times during the cutting out of these holes.

**NOTE:** One RotaBroach bit, with proper use of cutting fluid, will be able to drill holes on several trucks before needing replaced.



**FIGURE 14**

14. Clear away any shavings and clean the drilled holes and the frame around them, using rubbing alcohol and a clean shop towel.

15. Using a small brush and Motorcraft® High Temperature Anti-Corrosion Coating (PM-13-A), apply the coating in and around the holes that were just drilled, to cover any bare metal present from the drilling of the holes. See Figure 9.



16. Position the bracket in place on the upper frame rail.

17. Install a spacer, Part Number LC3C-5113-CA, between the upper bracket and the frame rail, one for each bolt, then install front bracket to frame bolts in the front two holes and position the front nut plate in the frame and start the bolts into the nut plate. See Figures 15 and 16.

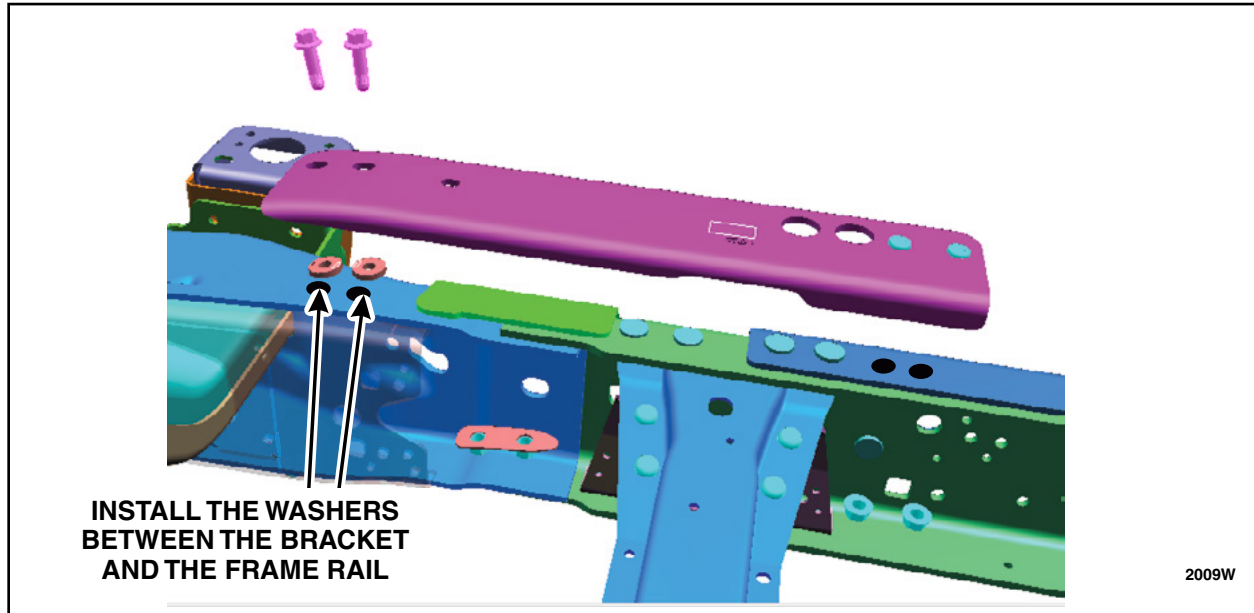


FIGURE 15

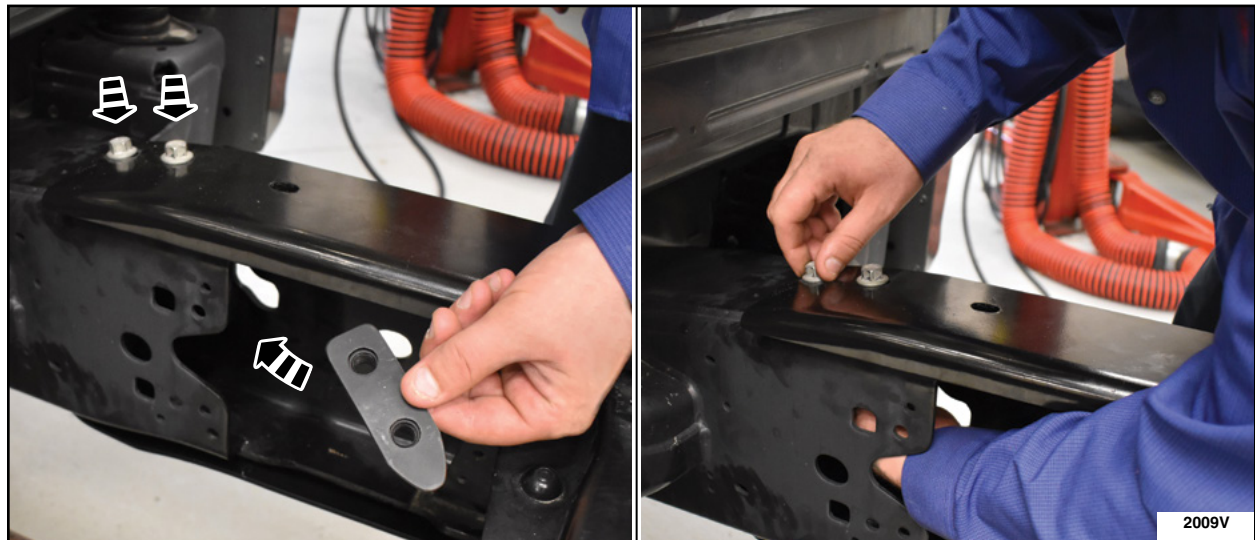


FIGURE 16



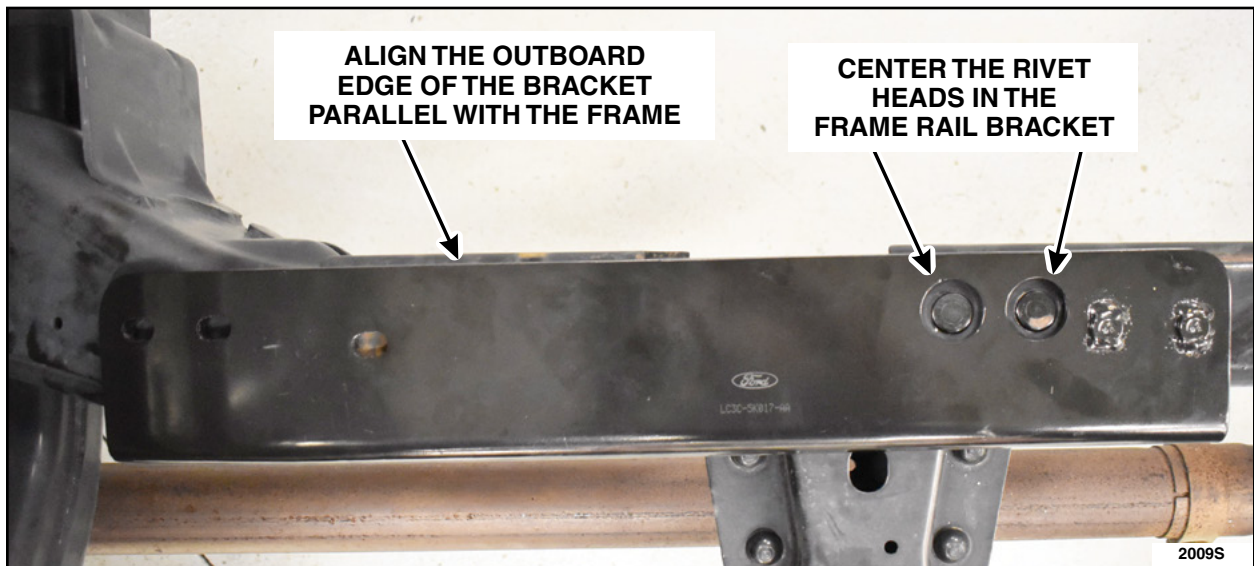
18. Install the rear nuts, onto the bracket rear studs, finger tight at this time. See Figure 17.



**FIGURE 17**

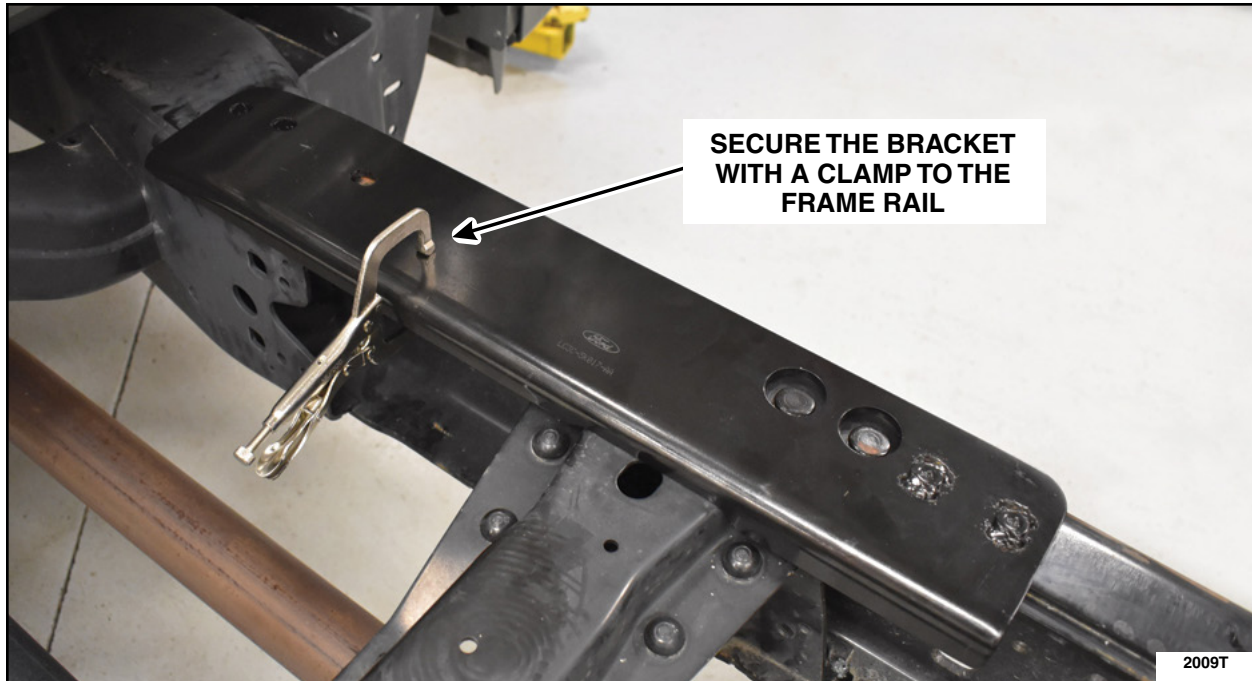
19. Tighten all of the front and rear fasteners until almost tight, so that the bracket can still be adjusted front to back and side to side.

20. With the bracket setting flush against the top of the frame, ensure that the outboard edge is flush with the frame and the rivet heads are centered in the bracket openings. Secure the bracket to the frame rail with a clamp. See Figures 18 and 19.



**FIGURE 18**

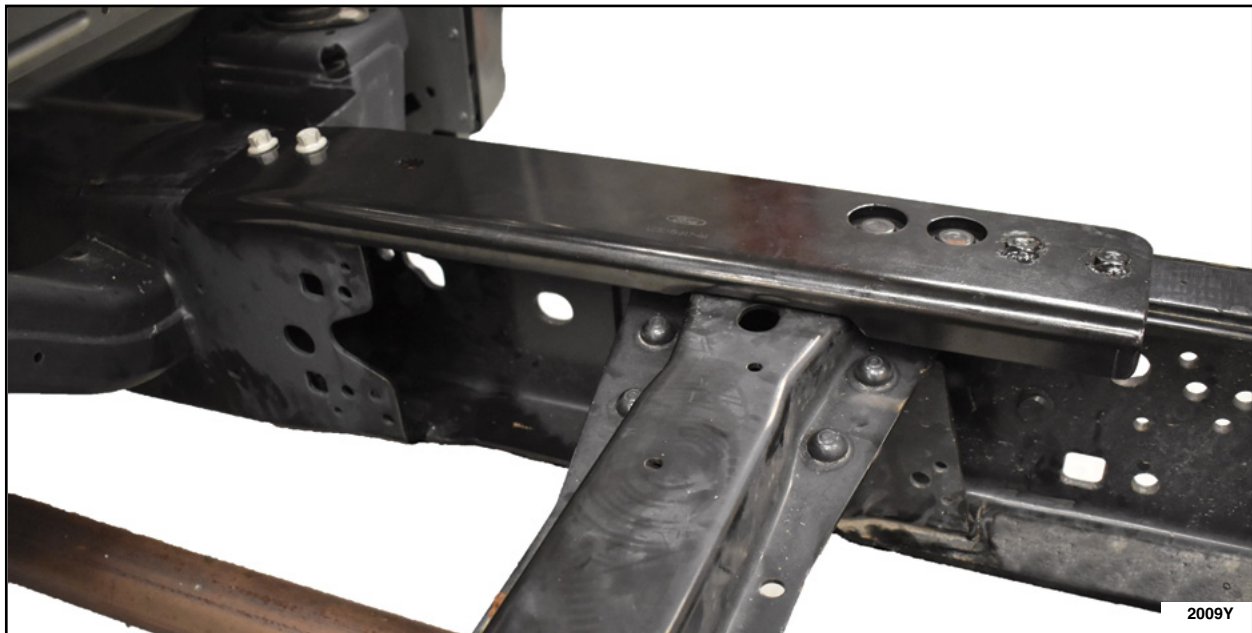




**FIGURE 19**

21. Tighten both front bolts and both rear nuts. Then remove the clamp. Figure 20 shows a fully installed upper RH bracket

- Tighten to: 59 lb. ft (80 Nm).



**FIGURE 20**

22. Repeat the 'Upper Frame Rail Bracket Installation Procedure' to the LH side upper frame rail. Then, proceed to the next required Repair Service Procedure.



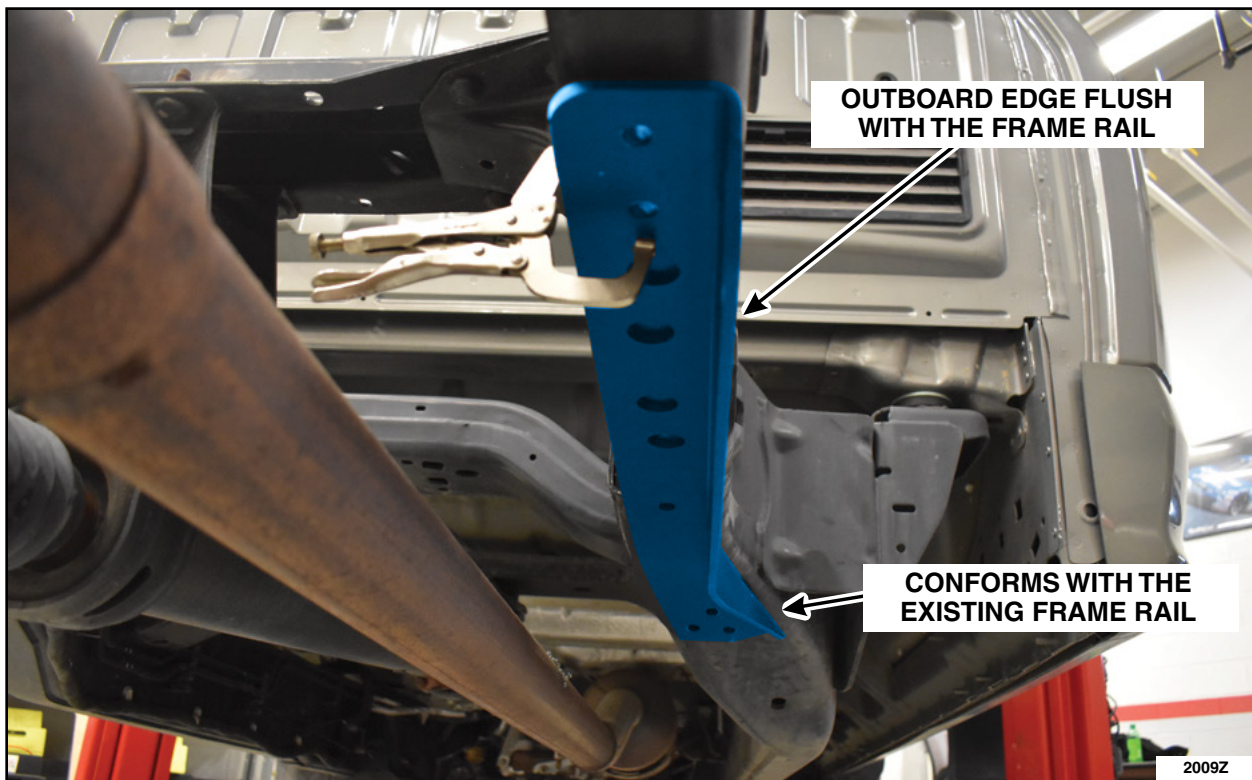
## **B. Lower Frame Rail Reinforcement Bracket Installation Procedure**

**NOTE:** This procedure is being performed on a Non-60CA frame. The 60CA frames are similar with the exception of the brackets physical shape and amount of holes needed to mount the bracket to the frame rail. The lower bracket on the 60CA frames will use a single fastener at the rear of the bracket and will use a single flag stud to attach the bracket to the frame. The 60CA upper and lower brackets are longer in design than the Non-60CA brackets. Non-60CA has double nut plate on bottom.

**NOTE:** This installation procedure must be performed on both the Right Hand (RH) and Left Hand (LH) sides of the vehicles lower frame rail. This procedure shows the installation of the RH side lower frame rail reinforcement bracket and is symmetrical to the LH side.

1. Using the help of an assistant, Position the lower bracket in place, up against the lower frame rail as shown in Figure 21. Align the bracket to the contour of the frame.
  - a. Ensure that the outboard edge is flush with the outboard side of the frame rail.
  - b. Clamp the bracket to the frame.

**NOTE:** Non-60CA frame shown, 60CA frame similar. The first crossmember rearward of the cab will be set further rearward on the 60CA frame.



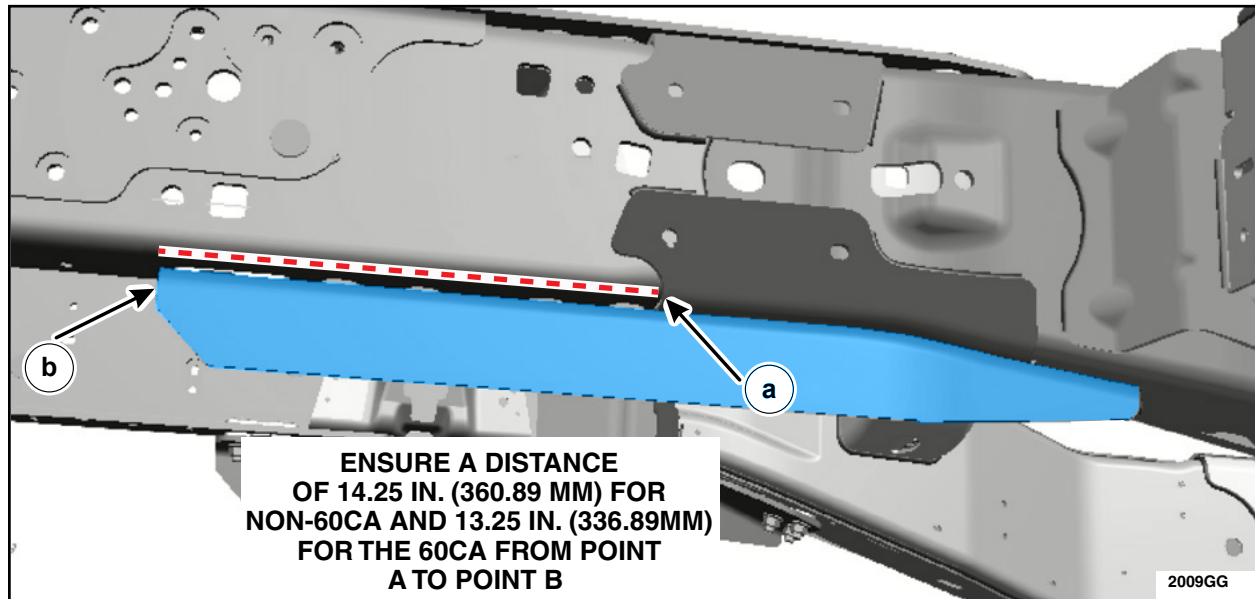
**FIGURE 21**





2. Measure from point 'a' to point 'b' and ensure that the measurement is equal to 14.25 in. (360.89 mm) for Non-60CA frames and 13.25 in. (336.89mm) for the 60CA frames. If not, adjust the bracket as needed and reclamp the bracket to the frame. See Figure 22.

**NOTE:** Non-60CA frame shown, 60CA frame similar.



**FIGURE 22**



3. Using the bracket as a template, mark the center, with a center punch, of the three (3) front bracket to frame holes and two (2) rear bracket to frame rail holes. Remove the clamp and position the bracket aside at this time. See Figure 23.

**NOTE:** The lower bracket on the 60CA frames will utilize only one (1) rear hole, not two (2) like the Non-60CA. These bracket will use a single fastener at the rear of the bracket and will use a single flag stud to attach the bracket to the frame.

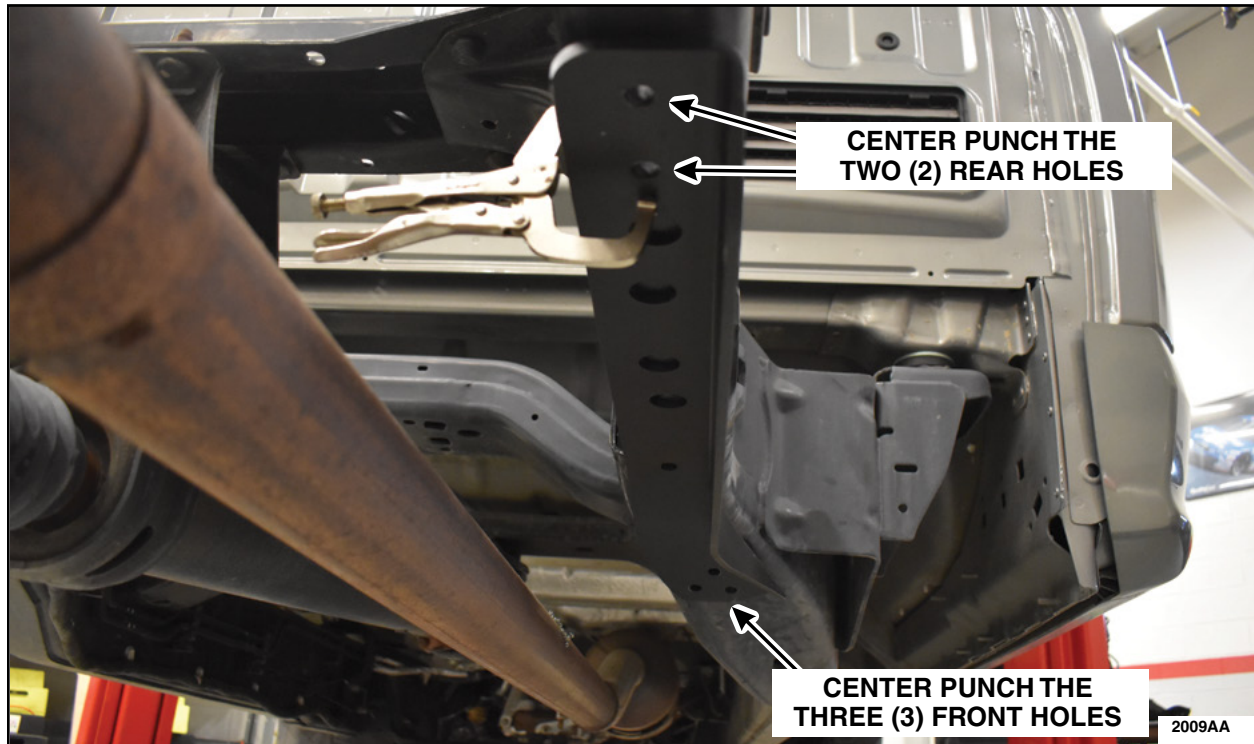


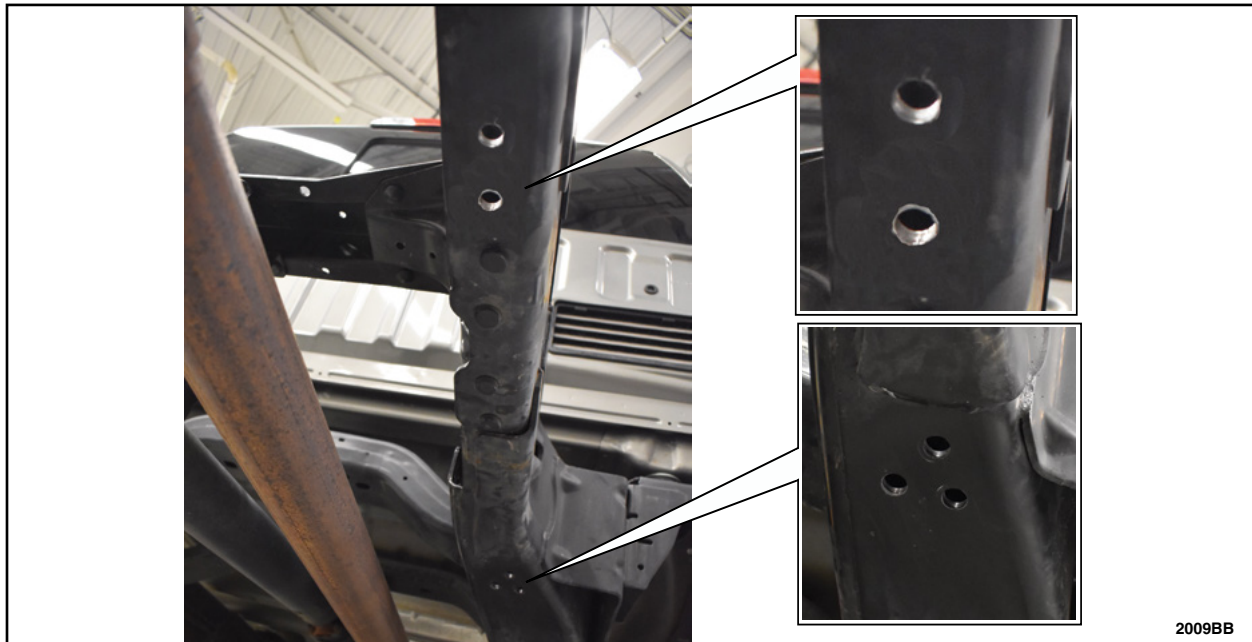
FIGURE 23



- Using a drill (set to the bits recommended drill speed) and a 15mm Rotabroach bit, such as the Hougén 15mm x 25mm Deep High Speed Steel Annular Cutter and a Rotabroach Arbor, drill the five (5) holes for Non-60CA and the four (4) holes for the 60CA that were just center punched in the previous Step. See Figure 24.

**NOTE:** Cutting fluid, such as Anchorlube G771, will need to be applied several times during the cutting out of these holes.

**NOTE:** The lower bracket on the 60CA frames will utilize only one (1) rear hole, not two (2) like the Non-60CA, to secure the rear of the bracket to the frame.



**FIGURE 24**

- Clear away any shavings and clean the drilled holes and the frame around them, using rubbing alcohol and a clean shop towel.
- Using a small brush and Motorcraft® High Temperature Anti-Corrosion Coating (PM-13-A), apply the coating in and around the holes that were just drilled, to cover any bare metal present from the drilling of the holes. See Figure 9.



7. Position the lower bracket back in place with the rear two (2) holes aligned for Non-60CA and the four (4) holes aligned for the 60CA, and clamp the bracket to the frame. Install the rear nut plate and the two (2) rear fasteners as shown in Figure 25. Do Not fully tighten the fasteners at this time.

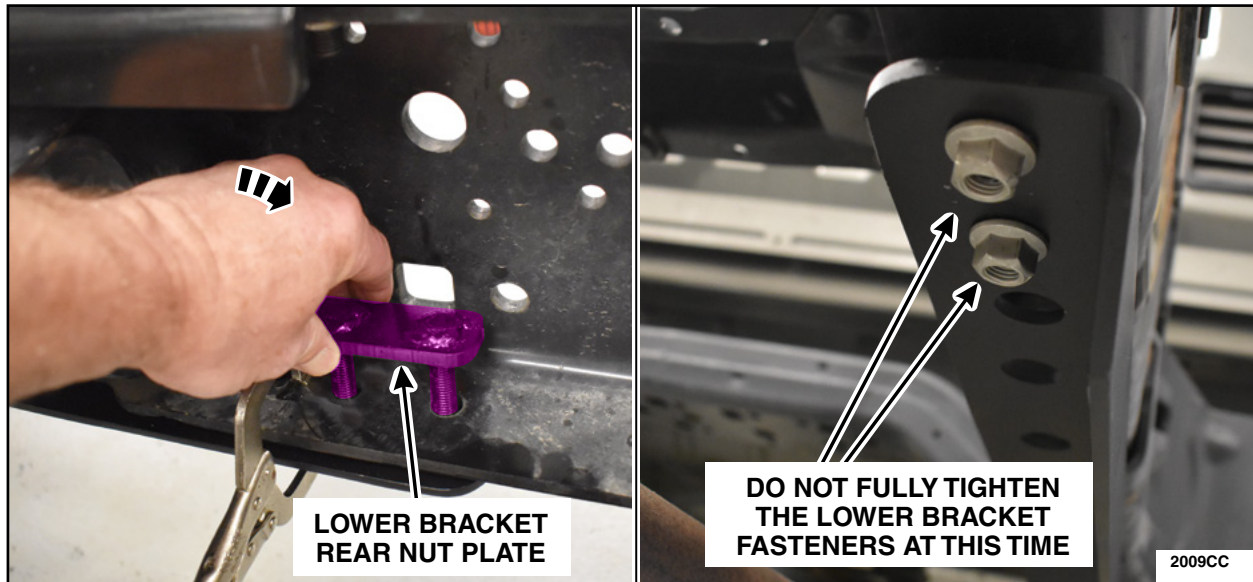


FIGURE 25

8. Install the lower bracket front three stud nut plate, with the three studs facing downward. (To aid in installing the lower bracket three stud nut plate in boxed portion of frame, a magnet pick up tool can be used to place into position.) Push the bracket upward and install all three (3) nuts. Even with the lower bracket rear stud nuts loose, the front nut plate will still need to be worked into the lower bracket holes, once through the frame. See Figure 26.

**NOTE:** The lower bracket front nut plate can be installed in any position. It is normal for the front portion of the lower bracket to sag until all fasteners have been fully tightened.

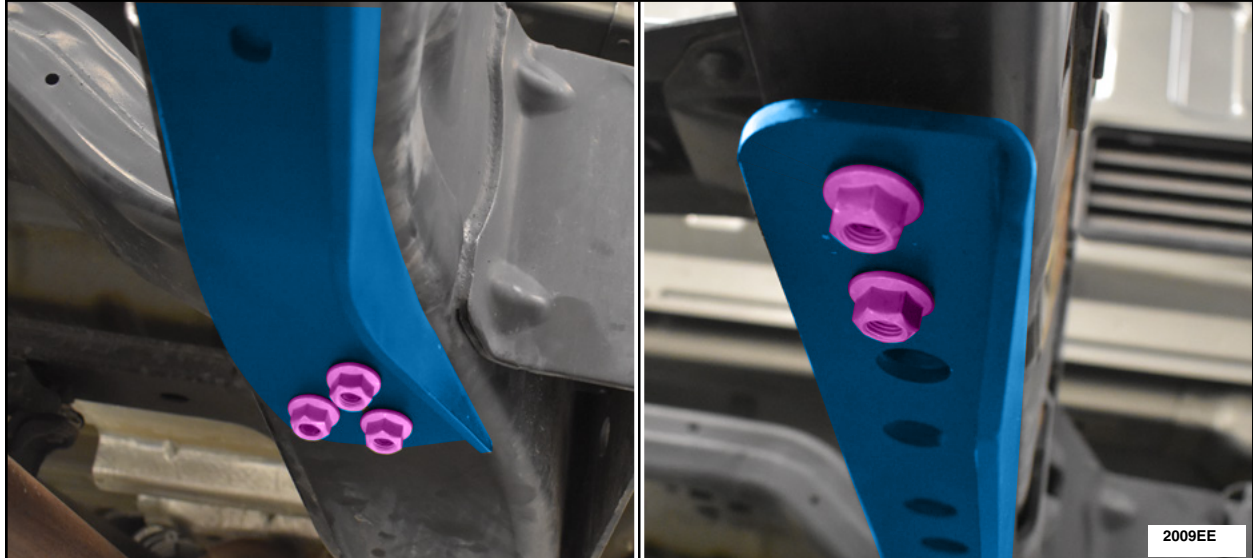


FIGURE 26



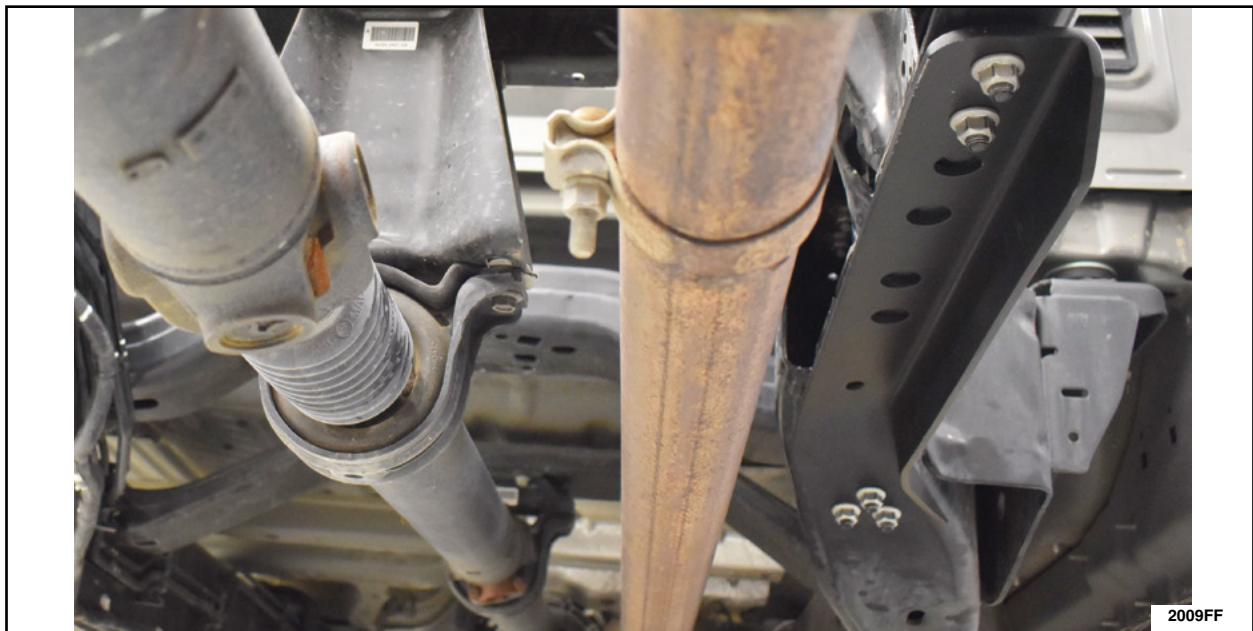
9. Tighten the lower brackets front three (3) nuts and the rear two (2) nuts for Non-60CA or the one (1) nut for 6CA. See Figure 27.

- Tighten to: 59 lb. ft (80 Nm).



**FIGURE 27**

10. Figure 28 shows the fully installed right lower Frame Rail Bracket.



**FIGURE 28**

11. Repeat the 'Lower Frame Rail Bracket Installation Procedure' to the LH side lower frame rail. Then, proceed to the next required Repair Service Procedure.

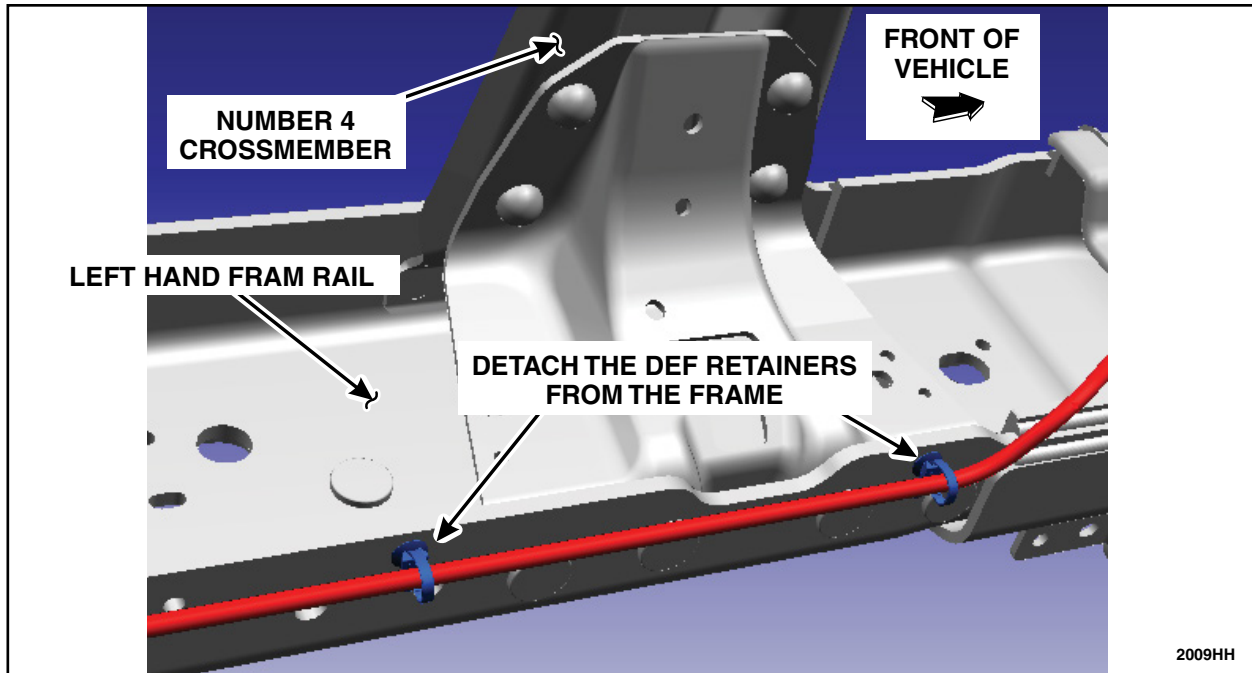


### C. Diesel Exhaust Fluid (DEF) Pressure Line Re-route

#### **For All Non-60CA Vehicles Equipped With Left Hand Side Inboard Mounted Reductant Tank**

1. Detach the two (2) DEF pressure line retainers that retain the line to the frame, under the number 4 crossmember as shown in Figure 29. Position the DEF pressure line aside.

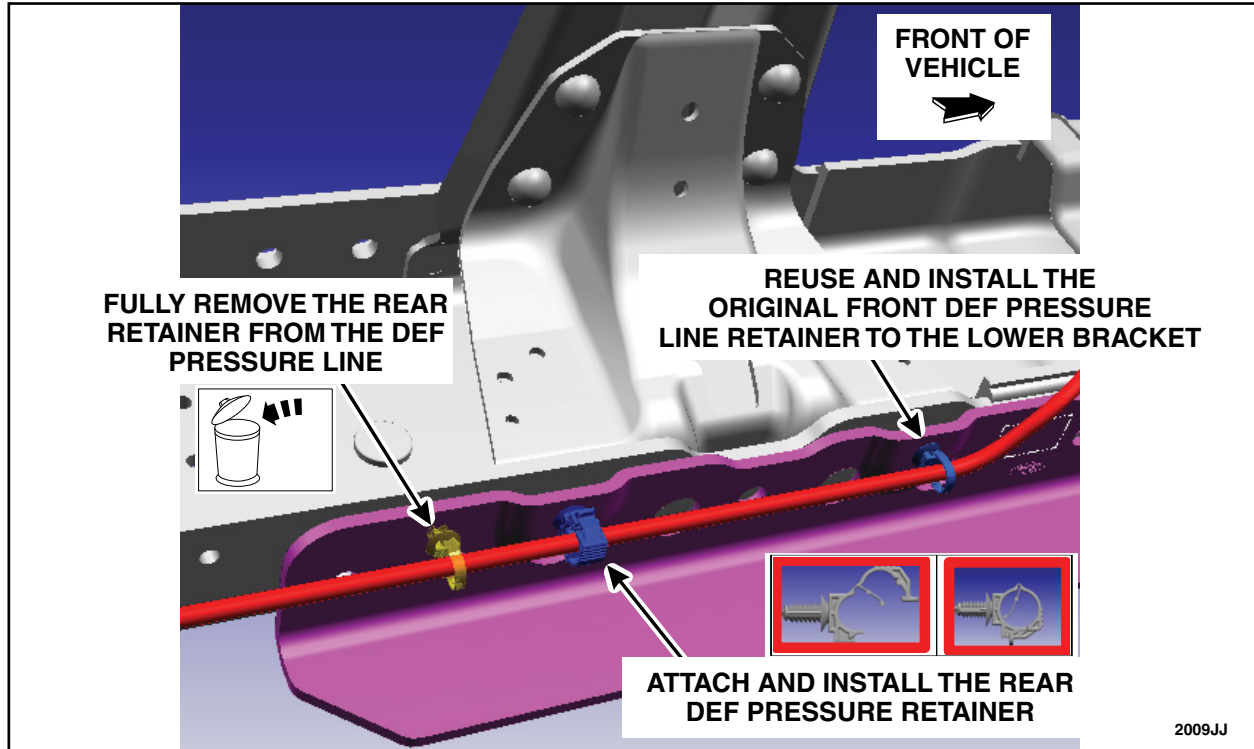
**NOTE:** The DEF pressure line is shown in the factory installed position.



**FIGURE 29**



2. Once the LH side lower bracket has been installed, position back the DEF pressure line and attach the existing front line to frame retainer to the lower bracket as shown in Figure 30. Then, remove and discard the original rear line to frame retainer from the DEF pressure line. Then, attach the supplied clasp retainer to the DEF pressure line and install into the rear lower bracket retainer hole as shown in Figure 30.



**FIGURE 30**

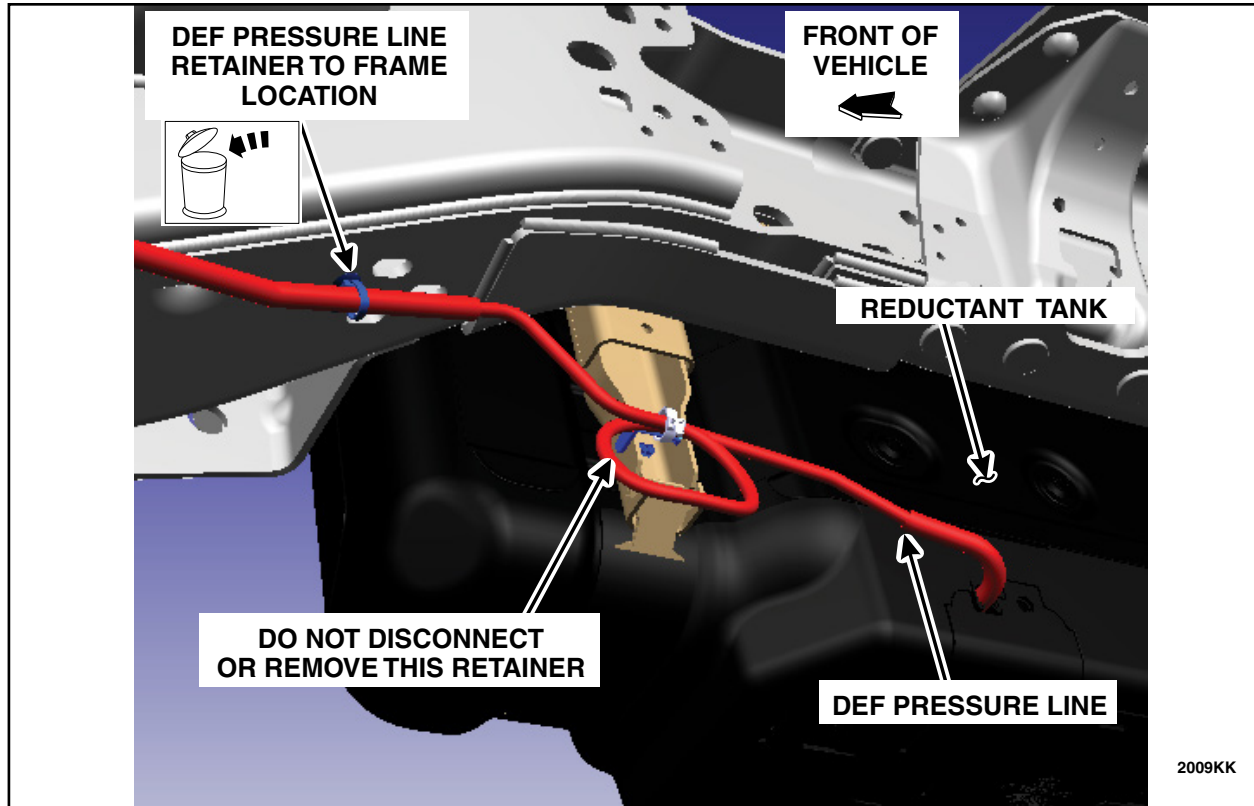
3. Proceed to the next required Repair Service Procedure.



**C. Diesel Exhaust Fluid (DEF) Pressure Line Re-route**

**For All Regular Cab Vehicles Equipped With Right Hand Side Outboard Mounted Reductant Tank**

1. Detach the single DEF pressure line retainer from the RH lower frame as shown in Figure 31. Then, completely remove and discard the retainer from the DEF pressure line.



**FIGURE 31**





2. Once the RH side lower bracket has been installed, install the supplied T clip to the lower bracket and route the DEF pressure line toward the T clip and attach the T clip to the DEF pressure line with two (2) of the supplied zip ties as shown in Figure 32.

**NOTE:** Figure 32 shows the different T clip locations for between the regular cab vehicles and Crew and Super Cab vehicles. Holes are pre drilled on bracket for T clip, will need to drill new hole for routing clip.

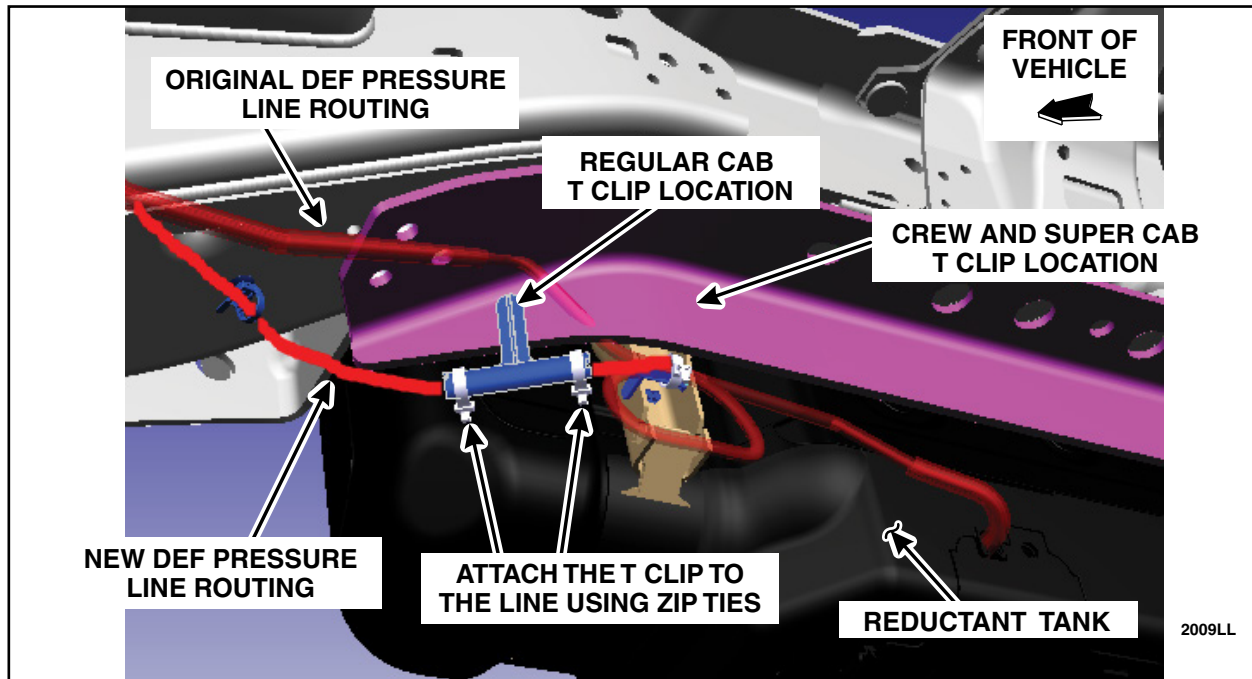
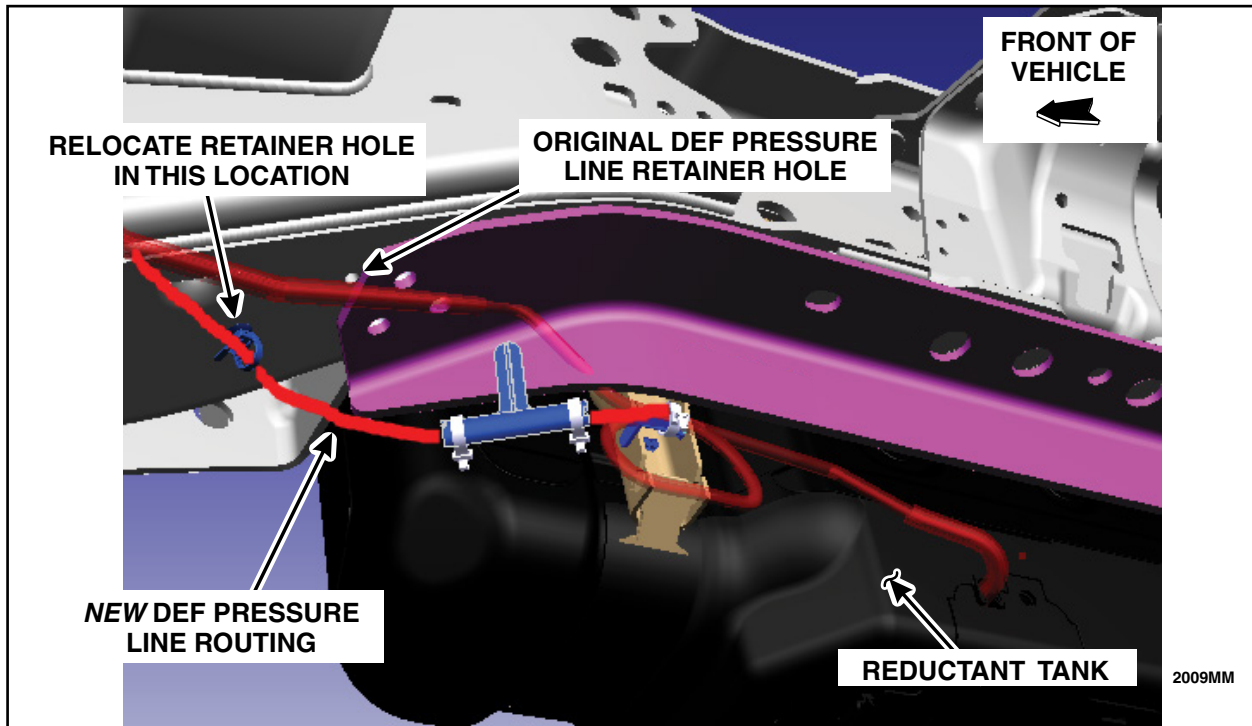


FIGURE 32



3. Using a drill and an 8mm (0.31 in) bit, drill a *new* hole location, for the *new* routing clip, forward of the lower frame rail bracket. Using a small brush and Motorcraft® High Temperature Anti-Corrosion Coating (PM-13-A), apply the coating in and around the hole that was just drilled, to cover any bare metal present from the drilling of the hole. Then, install the supplied push pin zip tie into the new hole location and position the DEF pressure line and secure in place with the zip tie as shown in Figure 33.

**NOTE:** The *new* drill hole location should be determined by positioning the DEF pressure line in its natural relaxed position toward the frame and marking a location for the *new* drill hole, forward of the *new* reinforcement bracket as shown in Figure 33.



**FIGURE 33**

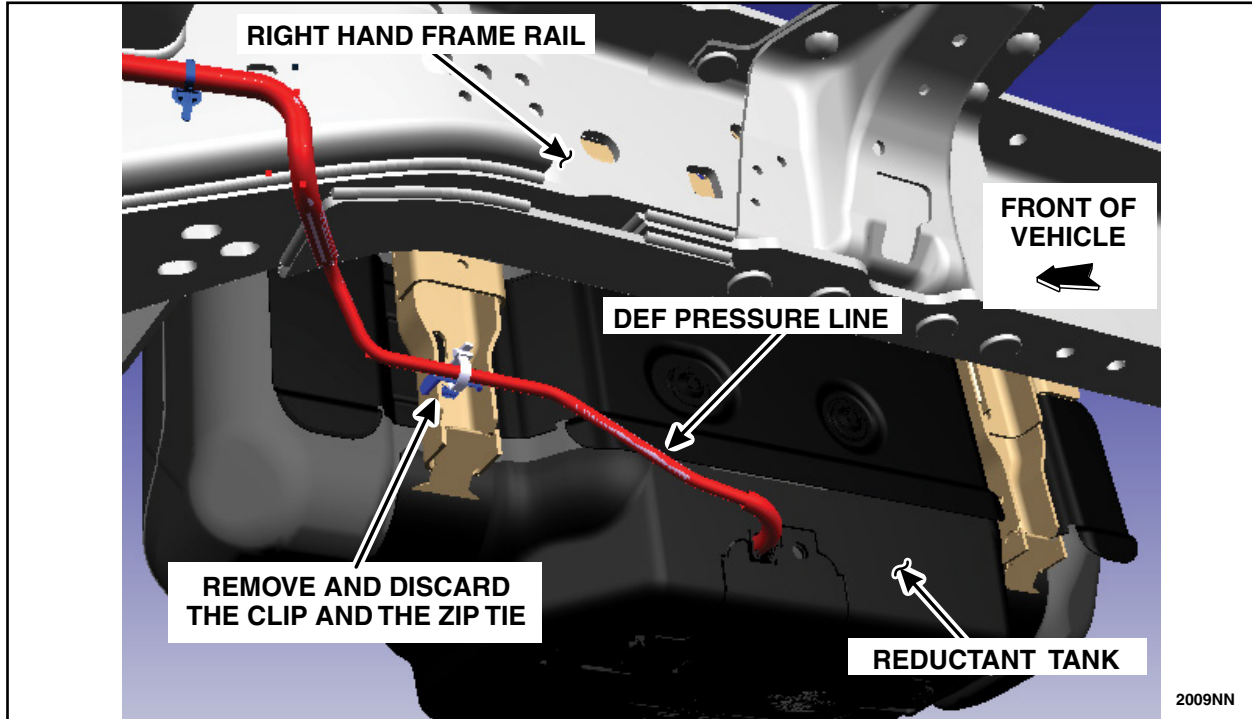
4. Proceed to the next required Repair Service Procedure.



**C. Diesel Exhaust Fluid (DEF) Pressure Line Re-route**

**For All Super Cab And Crew Cab Vehicles With RH Side Outboard Mounted Reductant Tanks**

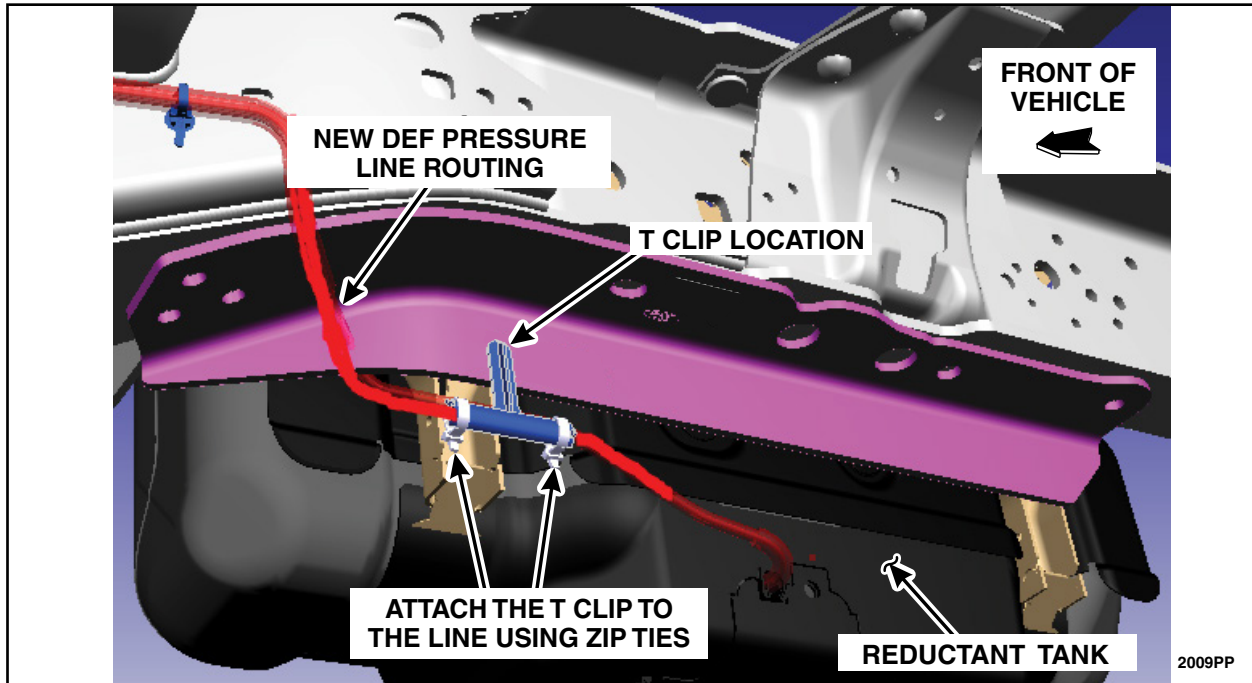
1. Remove and discard the clip and zip tie from the area shown in Figure 34.



**FIGURE 34**



2. Once the RH side lower bracket has been installed, install the supplied T clip to the existing hole in the lower reinforcement bracket and route the DEF pressure line toward the T clip and attach the T clip to the DEF pressure line with two (2) of the supplied zip ties as shown in Figure 35.



**FIGURE 35**

3. Proceed to the next required Repair Service Procedure.

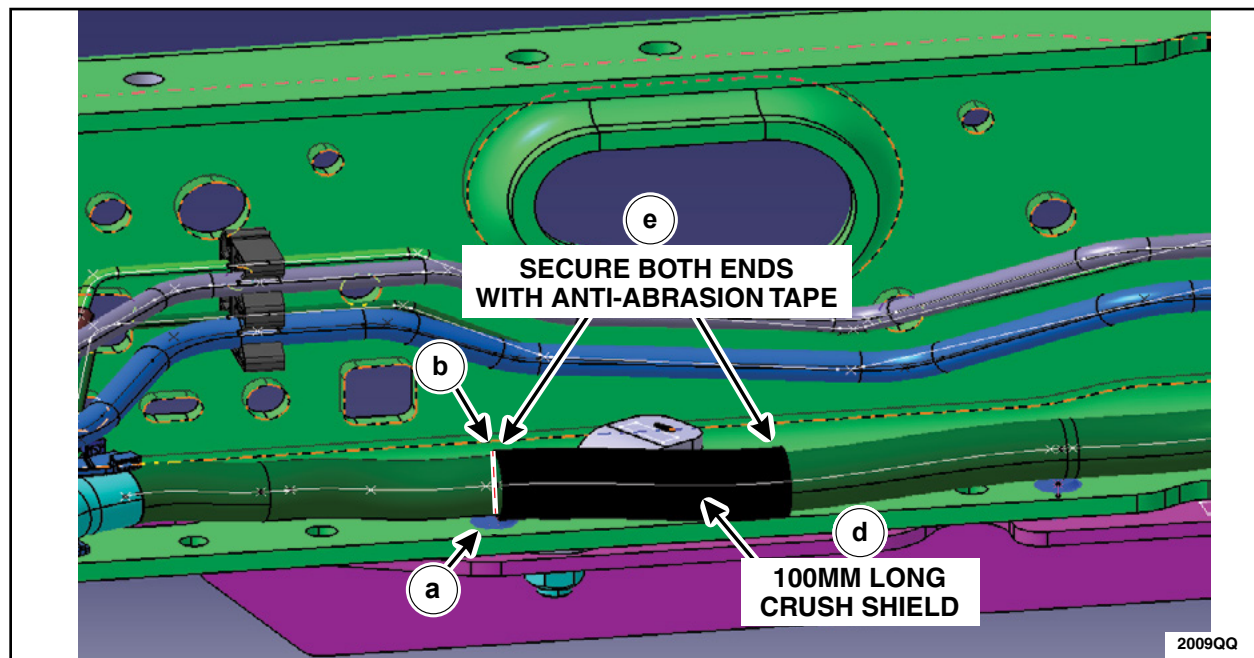


### **D. Wire Harness Crush Shield Installation - Lower Bracket**

**For All 60"CA Vehicles Equipped With Gas Fuel Tank and Diesel Mid Ship Fuel Tank and One Of The Following Wheel Bases;**

1. Install a crush shield on the left hand side frame rail harness as follows;

- Remove the tie strap push pin (a) from the hole indicated in Figure 36.
- Mark the location of the push pin on the harness (b).
- Cut off the existing push pin from the harness removed in sub-step a.
- Install the provided crush shield (d) on the harness with the rear edge of the shield aligning the mark made in second bullet point (above). See Figure 36.
- Secure both ends of the crush shield with the supplied Coroplast Tape (e).
- Install the supplied push pin zip tie in same location as the previously marked (original) location on the harness (b).



**FIGURE 36**

2. Proceed to the next required Repair Service Procedure.

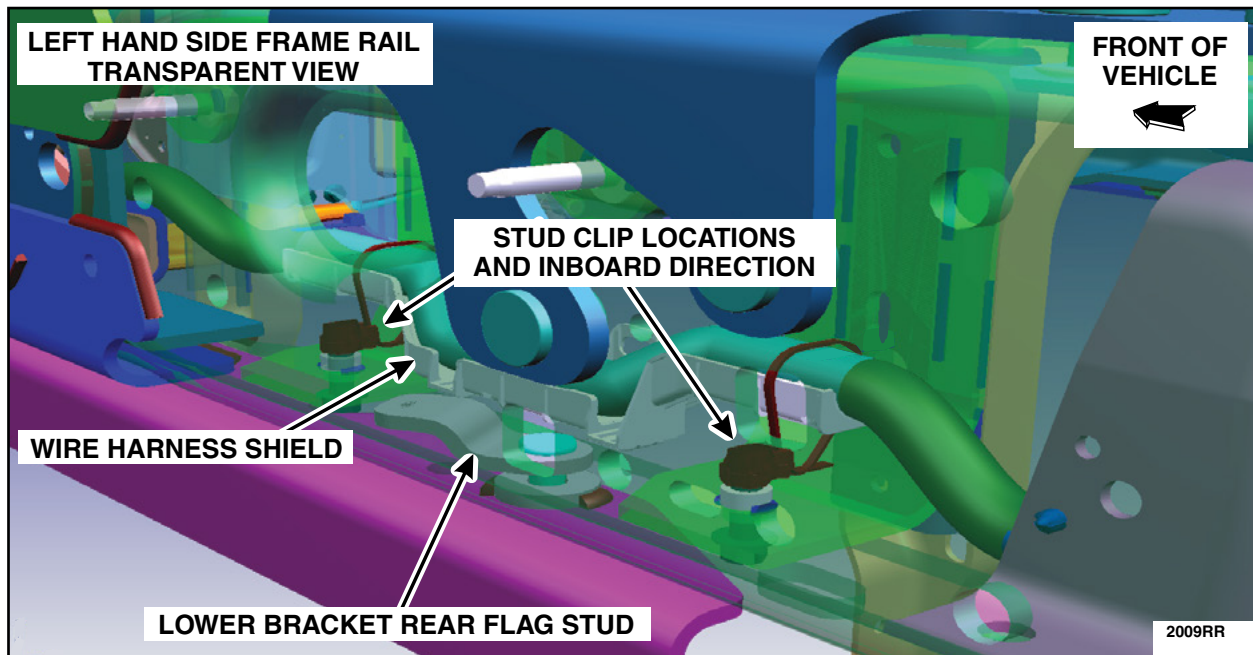


### **E. Wire Harness Shield To Flag Stud Interference Correction**

**For All 60"CA Vehicles Equipped With Left Hand Side Inboard Mounted Reductant Tank and One Of The Following Wheel Bases;**

1. For the left hand side lower frame rail bracket, the rear flag stud will contact the harness shield if not raised. Raise the harness by completing the follow steps;

- Position the supplied stud clips onto the studs with the zip ties side facing inboard as shown in Figure 37.
- Secure the harness to the stud clips with the zip ties.
- Ensure that the harness shield is positioned above the flag stud and the stud clips are fully seated on the studs.



**FIGURE 37**

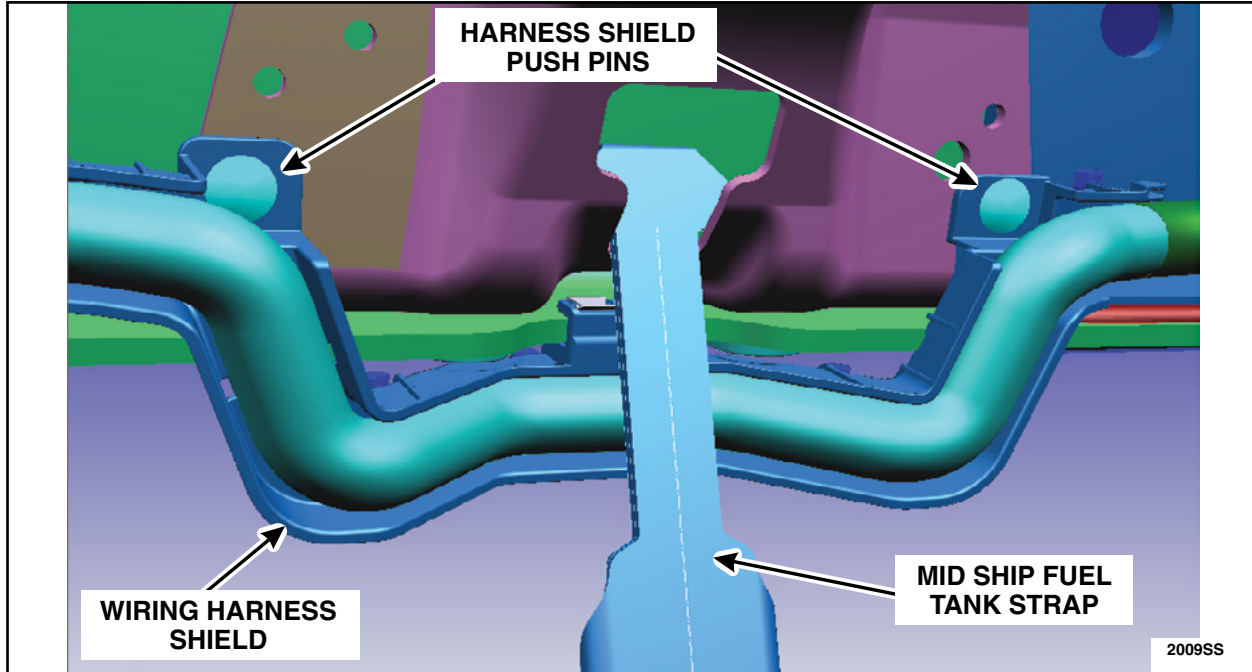
2. Proceed to the next required Repair Service Procedure.



**F. Wire Harness Shield Contacting Fuel Tank Strap Correction**

**For Non-60CA Vehicles Equipped With Mid-Ship Fuel Tank;**

1. From the left hand side lower frame rail, remove the harness shield push pins as shown in Figure 38.



**FIGURE 38**



2. Detach the edge biter clip from the frames lower flange as shown in Figure 39.

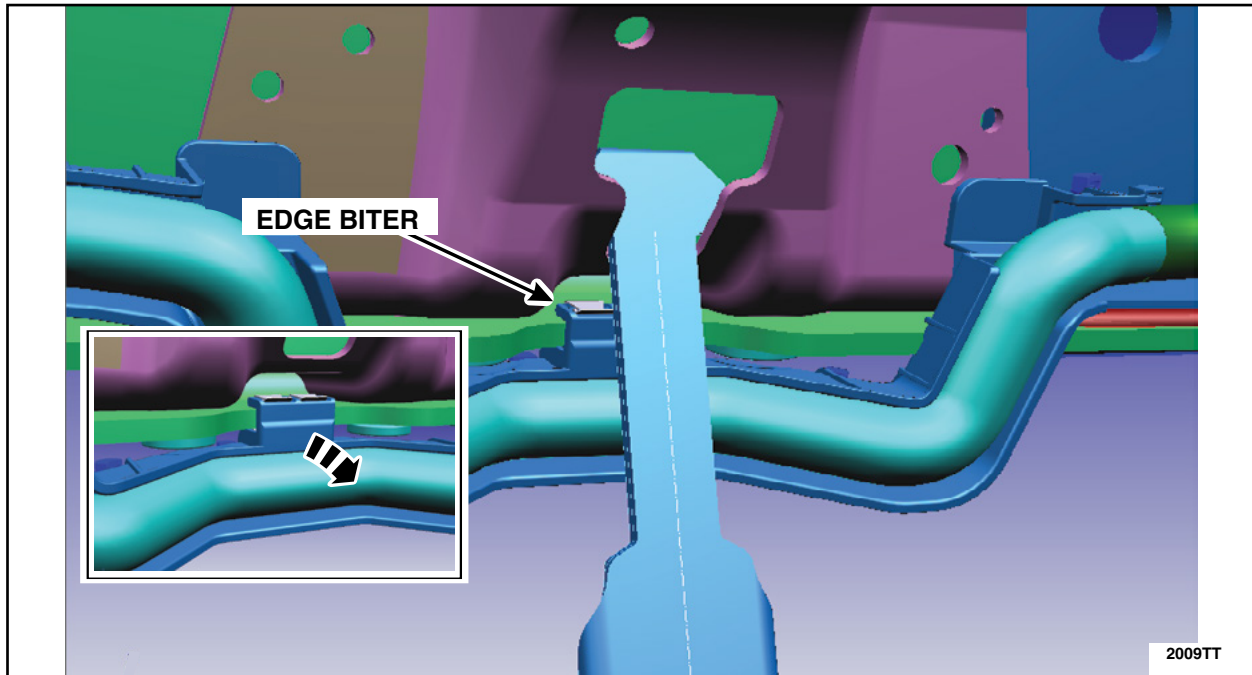


FIGURE 39

3. Remove the seven (7) tie straps holding the harness to the harness shield.

4. Using a suitable cutting tool, remove the edge biter clip flush with the surface of the harness shield as shown in Figure 40.

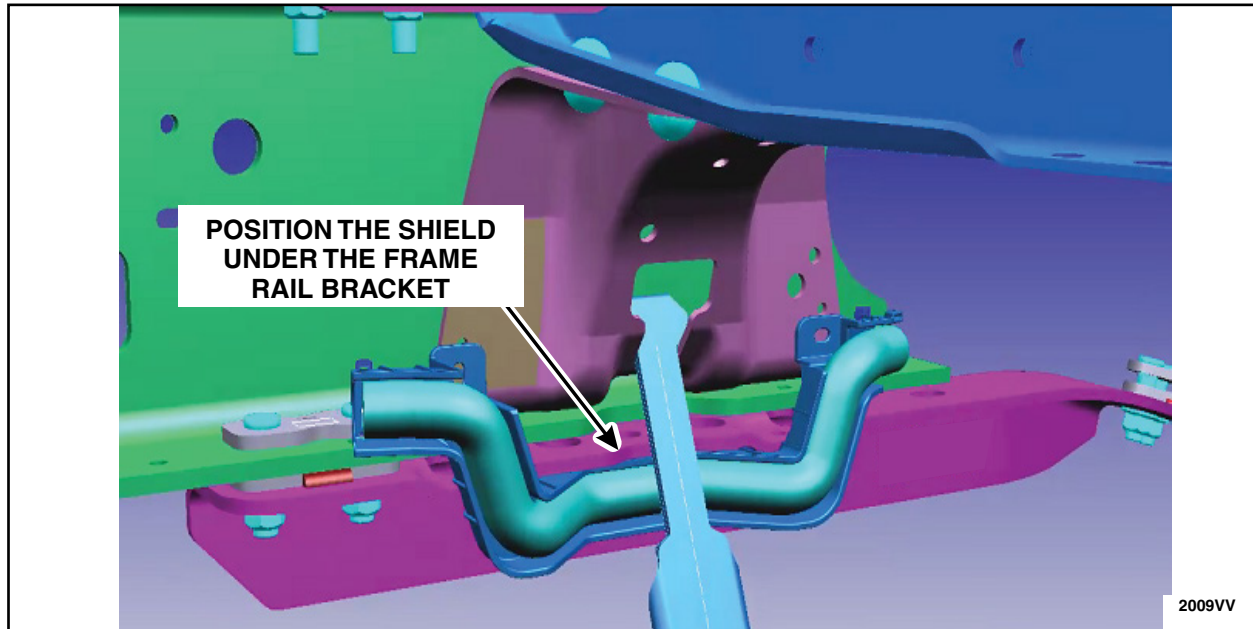


FIGURE 40





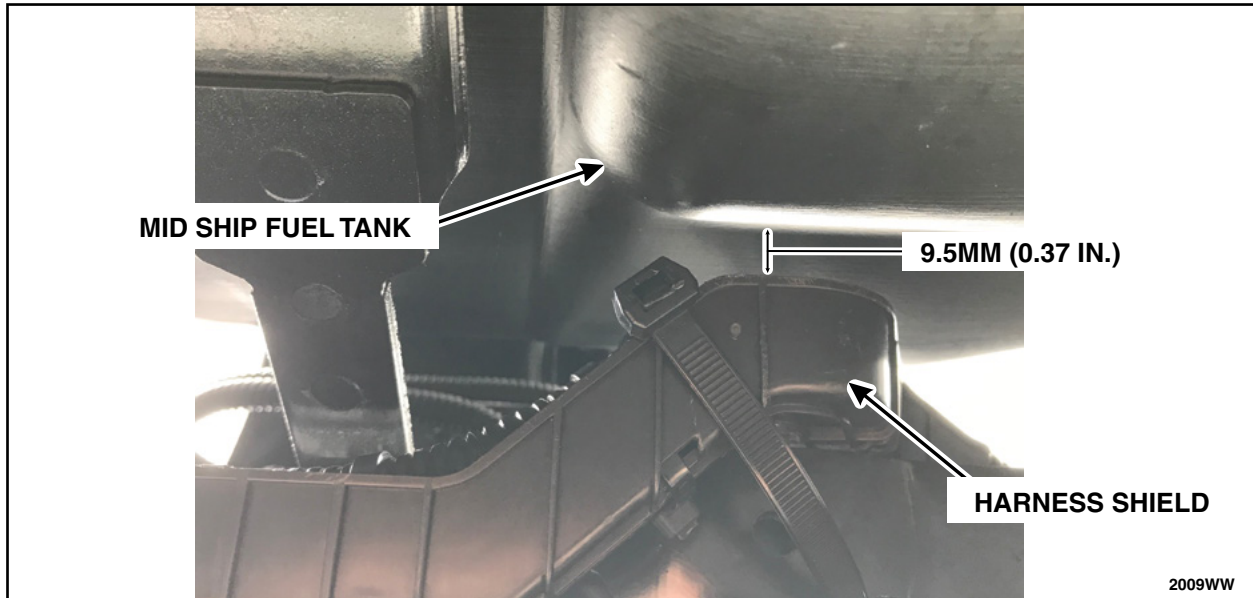
5. Reattach the shield to the harness, in the same locations as they were removed from in Step 3, using seven (7) of the similar supplied tie straps.
6. Once the frame rail bracket has been installed, position the middle of the harness shield under the frame rail bracket as shown in Figure 41. Then, using two (2) of the supplied tie straps, secure the harness shield in the same location as the push pins were removed from in Step 1.



**FIGURE 41**



7. Using two (2) of the larger supplied tie straps, secure the harness shield to the reinforcement bracket using the existing holes in the reinforcement bracket.
8. Ensure that the wiring harness shield has at least 9.5mm (0.37 in.) of clearance from any contact to the mid ship fuel tank. See Figure 42.



**FIGURE 42**

9. Proceed to the next required Repair Service Procedure.

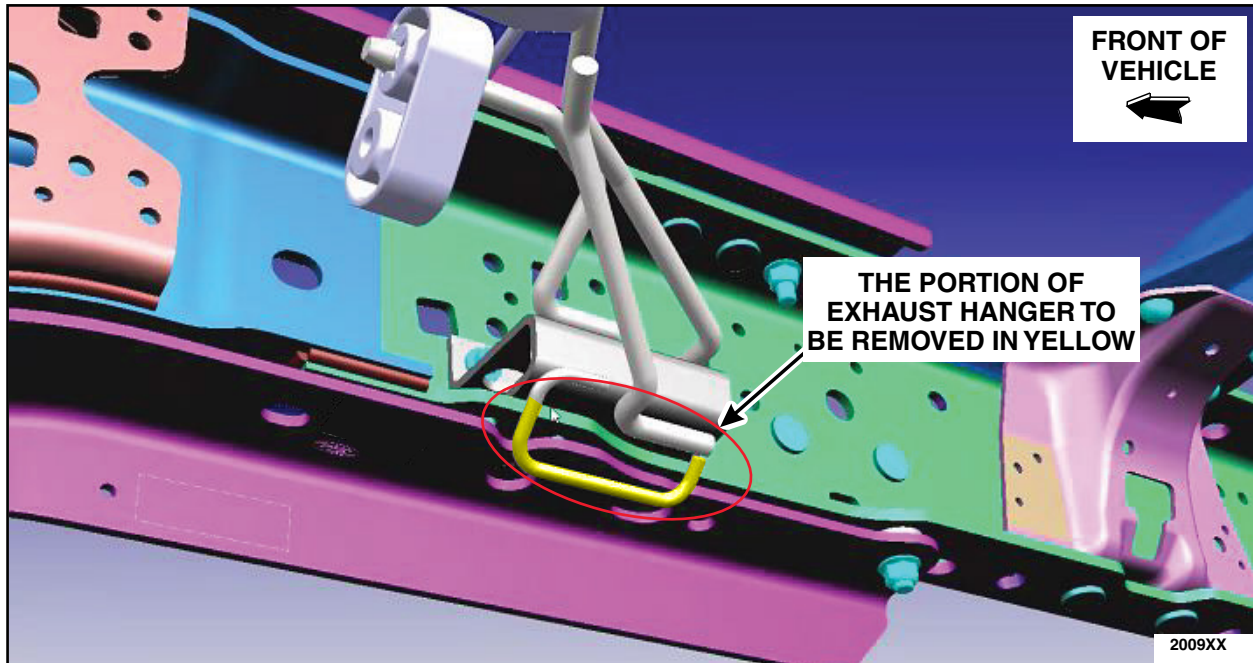


## **G. Exhaust Hanger Modification Procedure**

### **For Right Hand Side Lower Frame Rail Installation**

#### **All 60CA Diesel Vehicles Only:**

1. The right hand side exhaust hanger will interfere with right hand side lower reinforcement bracket.  
Figure 43 shows the portion of the exhaust hanger that will be removed in order to obtain the clearance needed.



**FIGURE 43**



2. Using a suitable cutting tool, cut the exhaust hanger in the location shown in Figure 44. Remove and discard the cut off portion of exhaust hanger. See Figure 44.

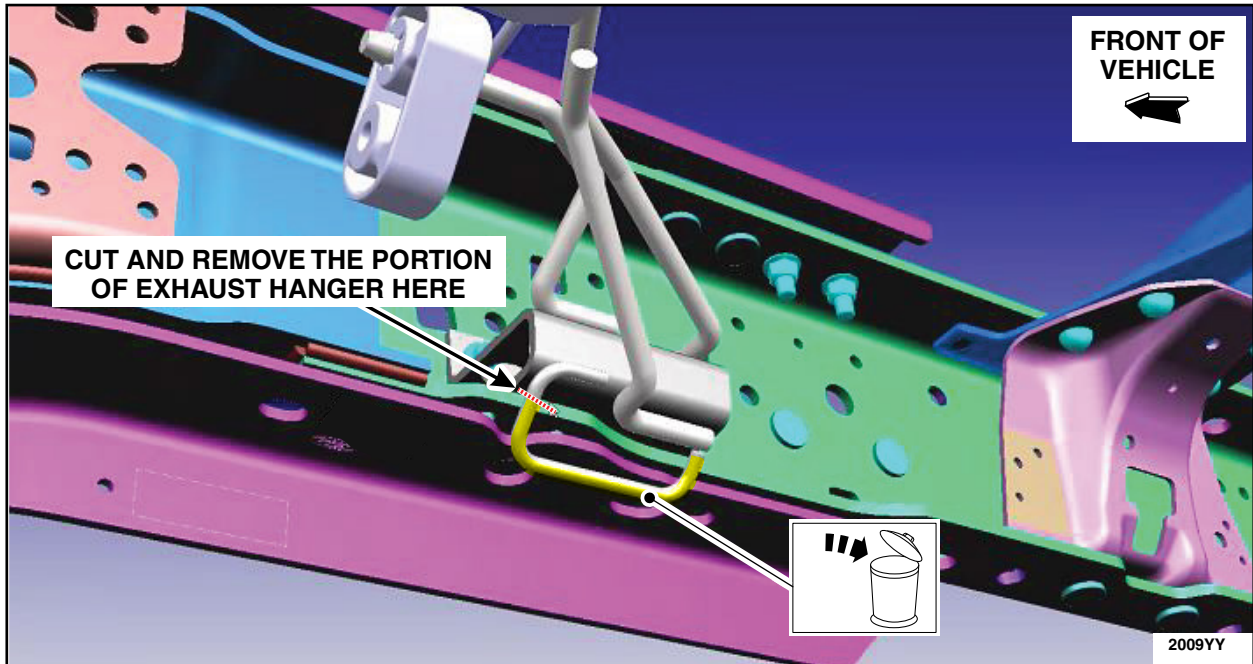


FIGURE 44

3. Figure 45 shows the final result once the exhaust hanger portion is removed.

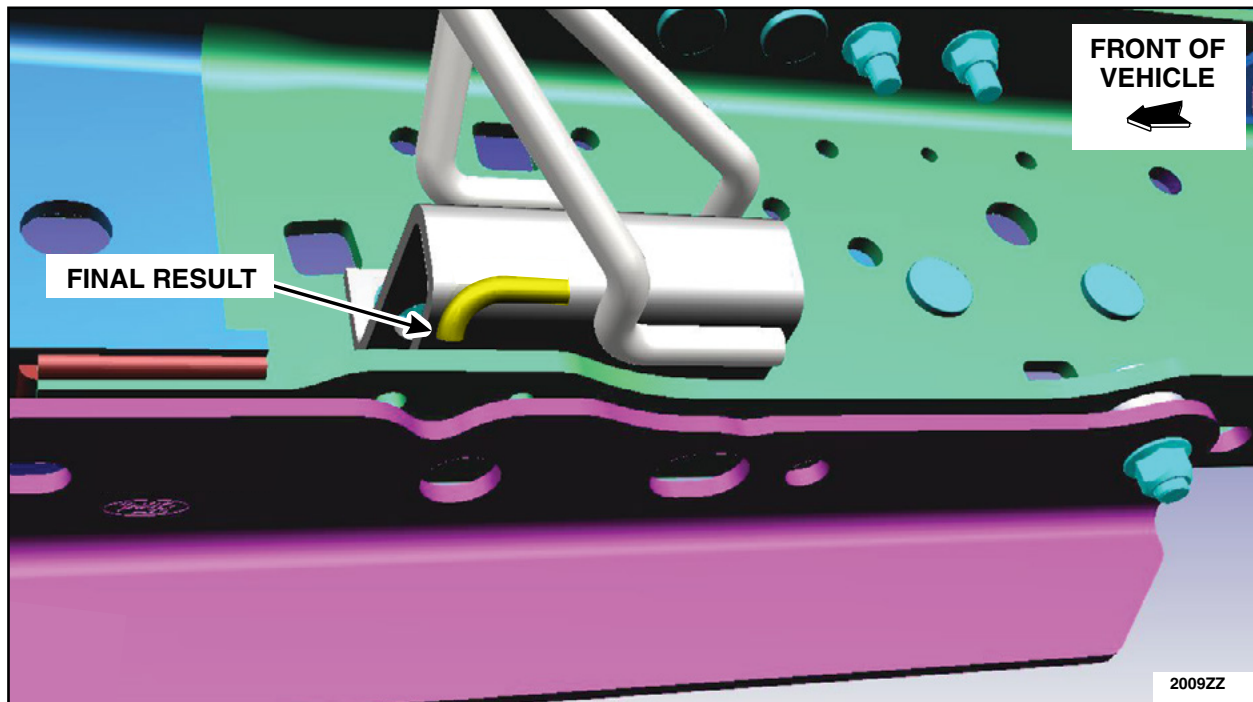


FIGURE 45



**IMPORTANT NOTE: Federal law prohibits selling motor vehicle parts or components that are under safety, compliance, or emissions recall. Unless a part is requested to be returned to Ford, all parts replaced under this FSA must be scrapped in accordance with all applicable local, state and federal environmental protection and hazardous material regulations. Refer to the Parts Retention, Return, & Scrapping section of the FSA dealer bulletin for further information.**

