



# LRV 1137 Roof Repair Change Order Request

October 4th, 2024

**SIEMENS**

# Repair Summary: February - June 2023

## Technical

- Damage identified on interior edge of A-module roof, crumpled and torn
- Damage identified at mounting location opposite side
- ~12-degree downward bend at crumple zone
- Interior bracing bent, but repairable
- Heat treatment possible to straighten; we can use it's own weight as leverage with support structure installed
- Roof must be removed to complete repair
- All wiring harnesses must be removed
- OEM manufacturing process for roof removal to be utilized

## Resources

- Elijah Jackson – Production Lead
- Kevin Hale Jr. – Production Support
- Byron Reyes – Pant / Body work Lead
- Ed Smith – Engineering repair lead
- Gabe Arrostuto – Quality Assurance
- Andrew Conley – Certified Weld Inspector
- Hudson Forrester – Commercial Project Manager
- Bruno Meza – Project Manager
- Ash Evans – Business Manager

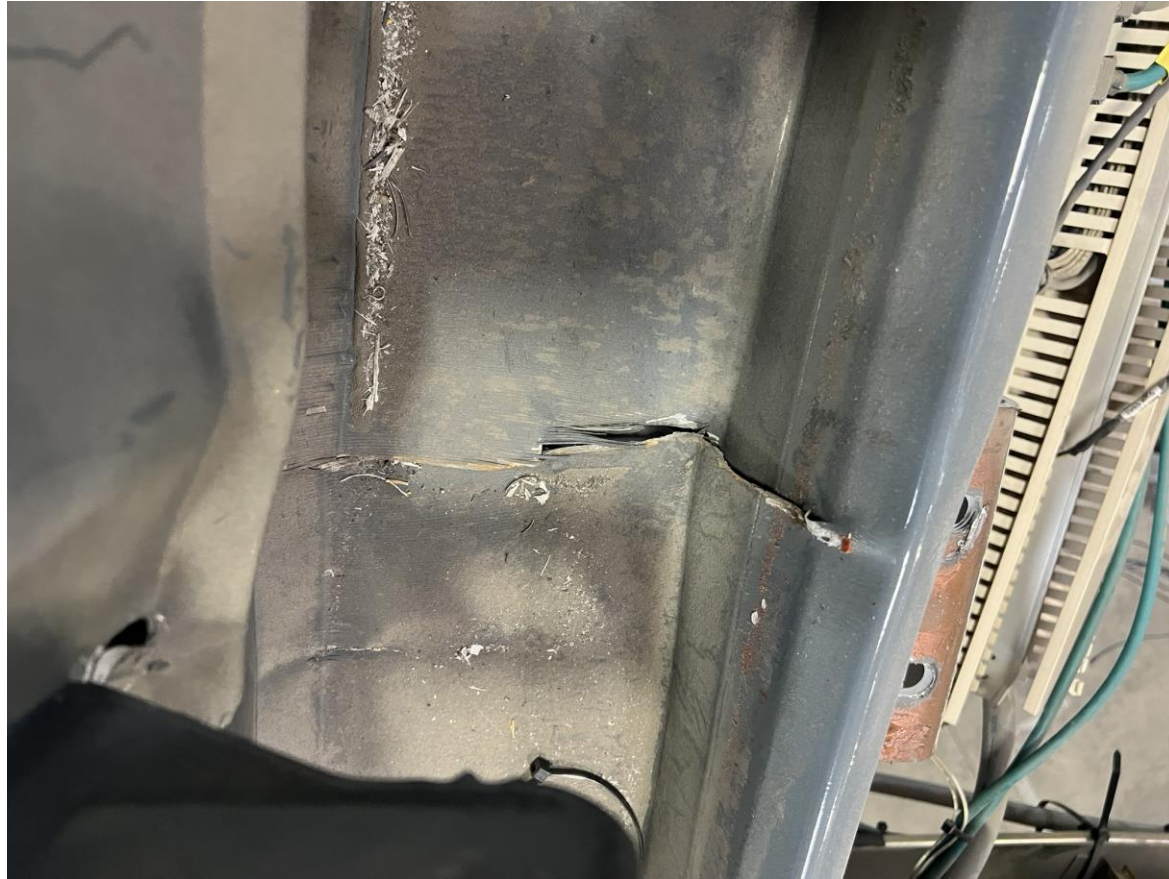
## Summary

- The following pictures articulate the damage found and results of the structural repair.
- Due to a change in the project team, we are unfortunately able to find a picture of the repair after it was blasted, primed and panted. The roof damage is not currently visible since it has been reinstalled.
- Damage was isolated in three main areas, the articulation portal (width), the sidewall (length) and the mounting provisions at the articulation portal (corner).

## Images of damage and roof removal



- Damage at articulation portal
- Roof damage behind this panel



- Damage observed after sidewall was cut away

## Images of damage and roof removal



- Roof removal using manufacturing fixture



- Roof removed from A-module

## Damage/Repair at articulation (width)



- Damage prior to repair (close up)



- Cut out of damaged section
- Relief cut to allow straightening

# Damage/Repair at articulation (width)



- Repaired section (wide angle)



- Repaired section



- Repaired section
- Straightened and realigned roof structure

## Damage/Repair at sidewall (length)



- Damage prior to repair



- Cut away damaged section
- Straightened and realigned roof structure



- Repaired section

## Damage/Repair at sidewall (length)



- Straightening corner at articulation portal, prior to welding in new section.



- Structurally repaired (prior to blasting, primer and paint)

## Damage/Repair at sidewall and corner mounting provisions



- Damage prior to repair



- Cut away damaged section
- Straightened and realigned roof panel



- Welded new OEM section and mounting provisions