

PARTS & SERVICE NEWS

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(C)

- SUBJECT:** 730E HORSECOLLAR REWORK KIT
- PURPOSE:** Inform the field of repair procedure for frame cracks in horsecollar frame area.
- APPLICATION:** Komatsu Electric Drive Dump Trucks:
730E: 32190 - 32845, A30079 thru A30270
- FAILURE CODE:** 4711HA
- DESCRIPTION:** Location of frame cracks, welding repair procedure and kit installation.

Some trucks in the field may experience frame cracking in the lower horsecollar area. It is important to include a frame inspection of the front and rear, top and bottom of this area at regular intervals during normal frame inspections. Refer to Figure 1.

Follow the guidelines that are outlined in Parts and Service News, *Field Welding for Assembly or Repair* (AA00046C), Welding Manual I (SEBF14001), and Welding Manual II (SEBF15002). It is important that these instructions are read, fully understood, and followed.

Before any weld repairs are performed, ensure that the piston rods on the suspension are not exposed. Wrapping of the front suspension pistons and front tires is mandatory when grinding and welding in this area. Also, be sure to disconnect the battery prior to performing the repair process.

Refer to Figure 8 for the instructions for the new kit. The contents of the kit are listed in the table below:

LOWER HORSECOLLAR LOOP KIT (XK0285)		
Part Number	Quantity	Description
EK9820	1	Installation Drawing
EL2827	2	Backer
EL0497	1	Plate, R.H.
EL1259	1	Plate, L.H.
EL1269	2	Backer, Bottom
EL2828	2	Backer
EL2826	2	Backer, top

Welding Repair Process

The following instructions are for the welding repairs. Only qualified welders are permitted to do repairs as detailed. Welders are required to follow all instructions as detailed in the published Parts & Service News (AA00046C). During the repair and modification process it is the responsibility of the maintenance crew to contact your Komatsu Area Service Manager if any questions arise. Photographs are required for all welding procedures and inspection processes.

▲ IMPORTANT ▲

Before proceeding, consult your Komatsu Area Service Manager to ensure component drawings are current.

1. Manufacture kit components locally, refer to Figures 2 through 7.

Thermal Cutting Requirements

The following thermal cutting requirements are to be used when manufacturing parts. Material shall conform as follows:

- a. Cut edge roughness to be a maximum of 2000 RMS.
- b. Kerf angle deviation four degrees (4°) maximum.
- c. No micro cracks at cut edge.
- d. Remove slag produced by cutting.
- e. Cut edge imperfections greater than 0.06 inch (2 mm) in depth must be repaired by welding. Imperfections less than 0.06 inch (2 mm) in depth are to be removed by grinding. The depth of the conditioning depression prior to welding shall be measured from the edge inward and shall be limited to a maximum depth 0.500 inch (13 mm).

Thermal Cutting General Data

- a. After removal of any crack like imperfections and prior to welding, the cavity shall be examined by a magnetic particle method or a liquid penetrant method to ensure that the imperfection has been completely removed. When magnetic particle examination is used, the cavity shall be examined parallel and normal to the length of the cavity.
- b. All weld repairs and adjacent heat-affected zone shall be sound and free of cracks, the weld metal being thoroughly fused to all surfaces and edges without undercutting or overlap. Any visible cracks, porosity, lack of fusion, or undercut in any layer shall be removed prior to deposition of the succeeding layer. Weld metal shall project at least 0.06 inch (2 mm) above the mill-rolled surface after welding. The projecting metal shall be removed by chipping or grinding. Removing the projecting metal is done in order to make it flush with the rolled surface, and to produce a good finish (2000 RMS maximum).

Rework Procedure

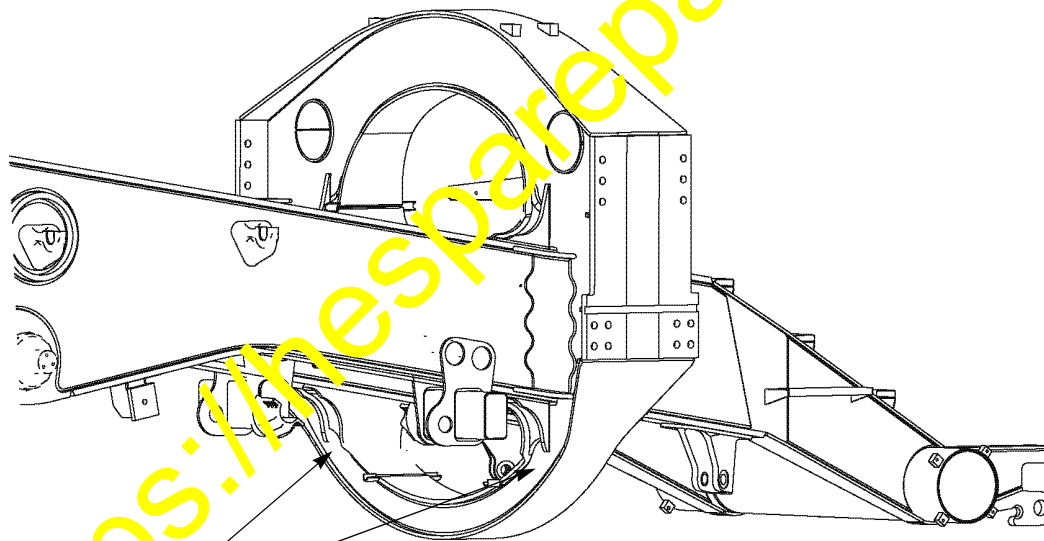
1. Using dye penetrant, inspect the entire work area for cracks. Document each step with photographs.
2. If any cracks are found, cut access hole as shown in Figure 8.
3. Remove internal gusset as shown in Figure 8. See view A-A. Grind all cut edges smooth.
4. Tack weld backer bars into location as shown in Figure 8.
5. Tack weld item 2 & 3 in the correct location.
6. Make WELD 1 first.

7. Back gouge welds as shown to make weld groove on the top and bottom extend past the ends of WELD 1.
8. Make groove WELD 2.
9. Make WELD 3 and blend into existing fillet weld.
10. Make WELD 4 as shown to taper the end of existing wrapper plate, Figure 8, section B-B.
11. Make WELD 5 and blend into existing fillet weld.
12. Grind all welds smooth.

⚠ IMPORTANT ⚠

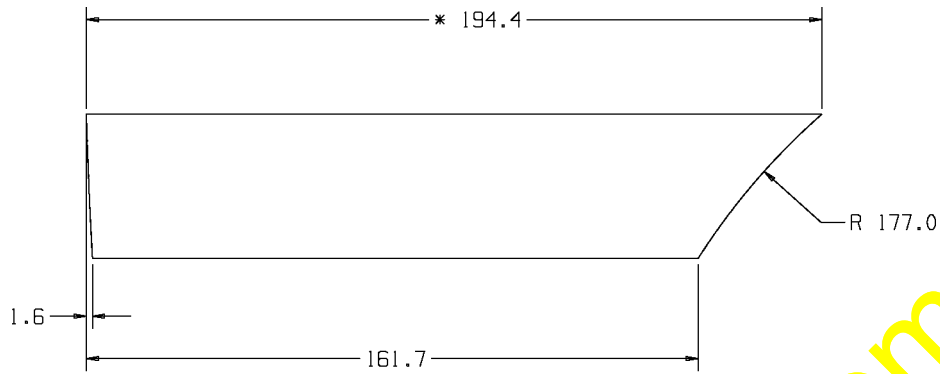
Plate position and fit up is critical for a good weld joint.

13. Inspect, clean, and paint the entire area.



INSPECTION AREA

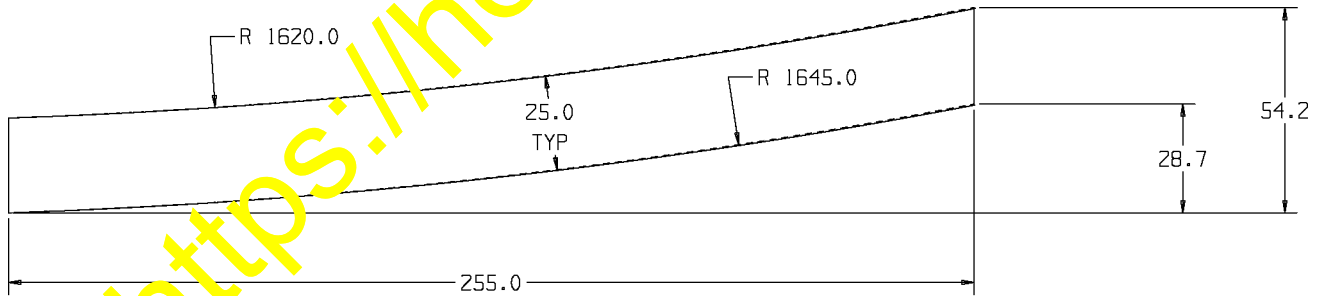
FIGURE 1. HORSECOLLAR FRAME INSPECTION AREA



9.525 X 38.1 mm FLAT PLATE
Material Specification: ASTM A36
Est. Wt. 0.49 Kg (1.08 lb)

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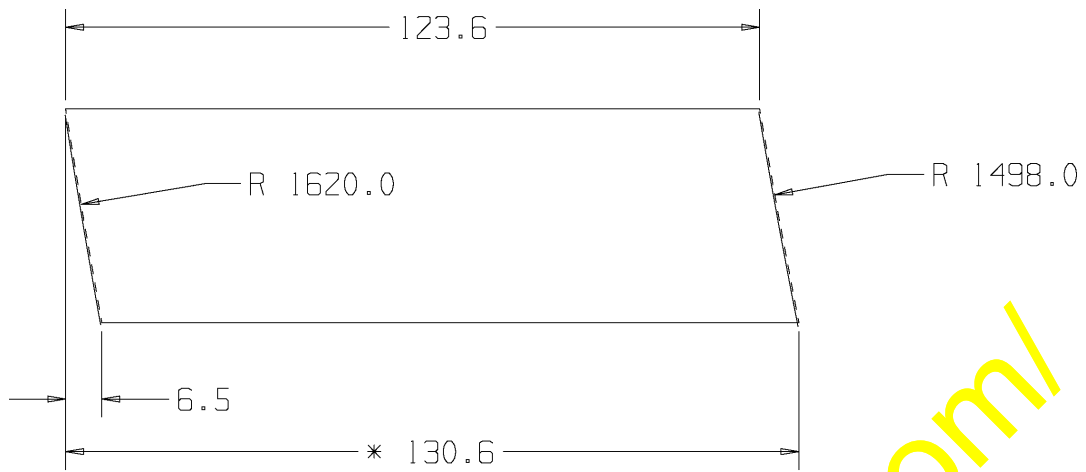
FIGURE 2. BACKER (EL2827)



9.0 mm FLAT PLATE
Material Specification: ASTM A36
Est. Wt. 0.45 kg (1 lb.)

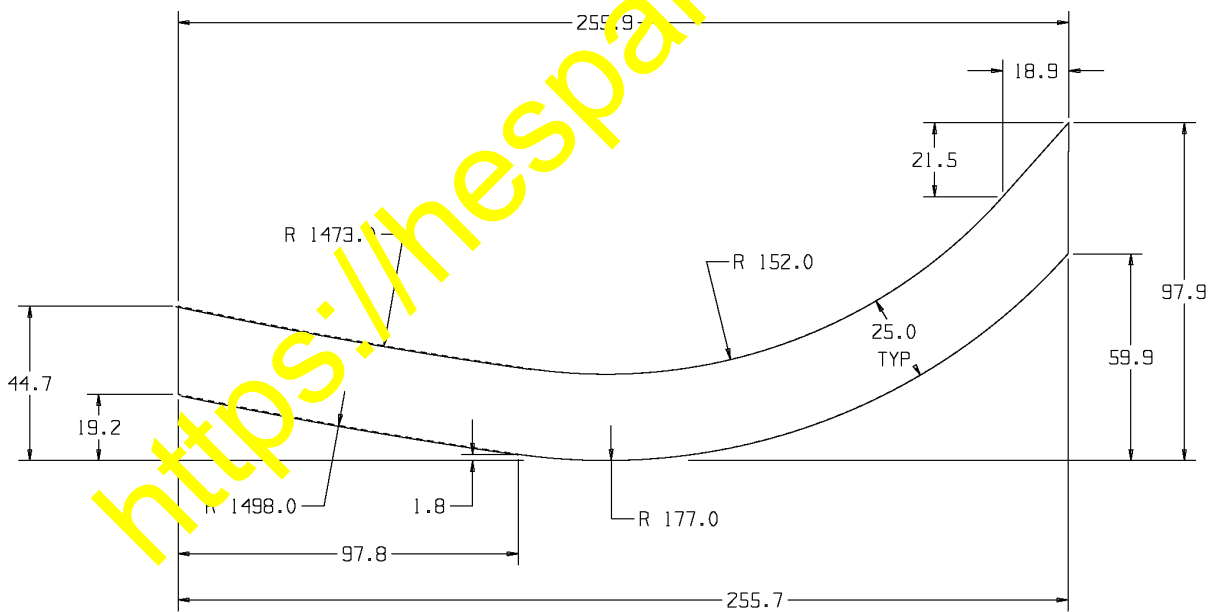
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FIGURE 3. BACKER, LOWER (EL1269)



9.525 X 38.1 mm FLAT PLATE
 Material Specification: ASTM A36
 Est. Wt. 0.35 Kg (0.77 lb) 71131

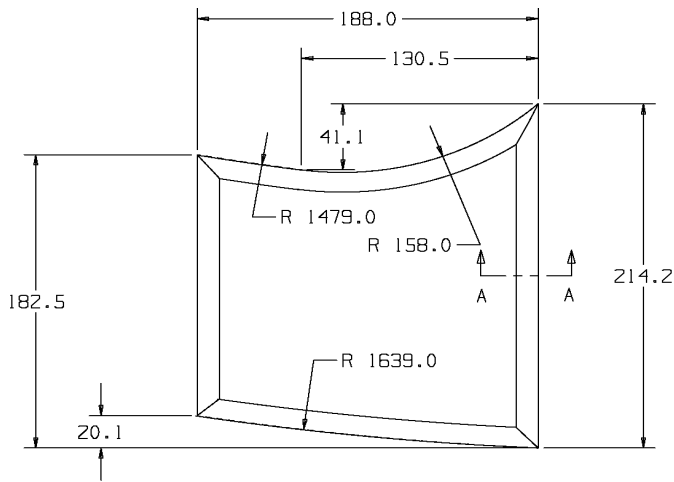
FIGURE 4. BACKER (EL2828)



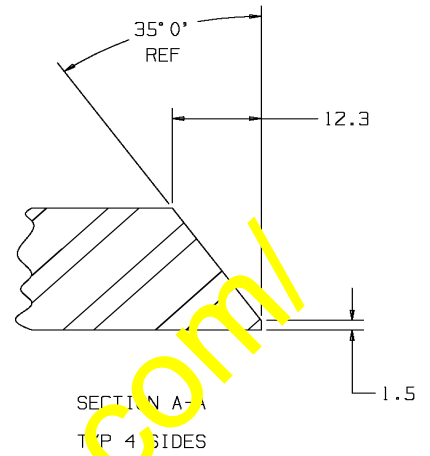
9.0 mm PLATE
 Material Specification: ASTM A36
 Est. Wt. 0.49 Kg (1.08 lb.)

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FIGURE 5. BACKER, TOP (EL2826)

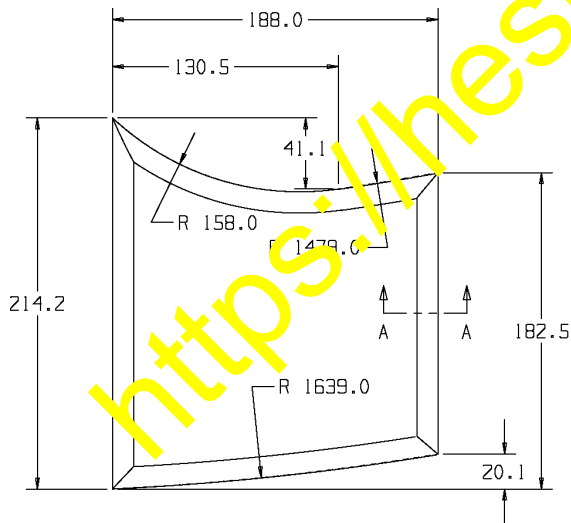


19.0 mm PLATE
 Material Specification: ASTM A572
 Grade 50
 Est. Wt. 4.2 Kg (9.2 lb)

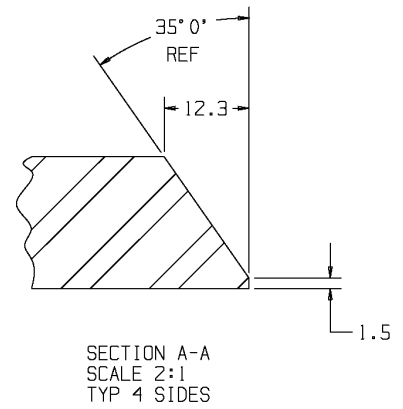


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FIGURE 6. PLATE, RIGHT HAND (EL0497)



19.0 mm PLATE
 Material Specification: ASTM A572
 Grade 50
 Est. Wt. 4.2 Kg (9.2 lb)



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FIGURE 7. PLATE, LEFT HAND (EL1259)

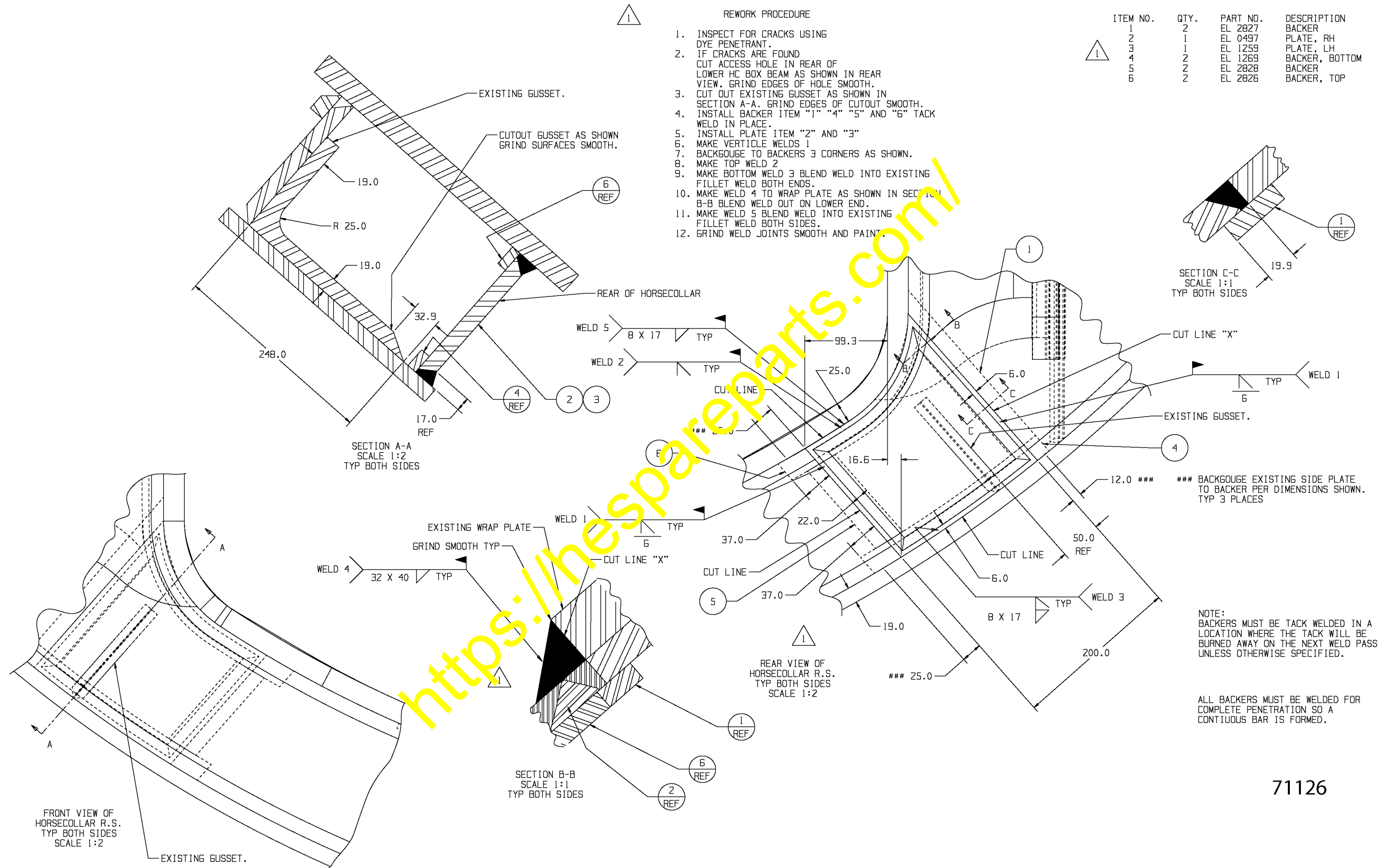


FIGURE 8. REWORK DRAWING (EK9820)