

# **FLEAT 350 Installation Checklist**

State: \_\_\_\_\_

Date: \_\_\_\_\_

Project #: \_\_\_\_\_

Location: \_\_\_\_\_

- The rail height is in accordance with the plans (generally 27-3/4" above the edge of the shoulder).
- The rail at post #1 is placed at a straight flare (offset between 2'-6" & 4'-0") over the 37'-6" terminal length.
- The rail is not attached to the post at post location #3 or post location #1.
- The foundation tubes do not protrude more than 4" above the ground line (measured by the AASHTO 5' cord method). Site grading may be necessary to meet this requirement.
- The bolts at the top of the foundation tubes are not over-tightened, deforming the walls of the tubes.
- The guide chute of the impact head is parallel to the top of the rail and the exit slot of the impact head is facing traffic.
- The two lag screws holding the impact head to post 1 are snug.
- The 8" x 8" bearing plate at post 1 is correctly positioned with the 5" dimension up & the 3" dimension down. The anchor cable is taut and correctly installed. A nail has been placed over the bearing plate to prevent rotation.
- The cable anchor bracket shoulder bolts are properly attached to the W-beam guardrail and the cable anchor bracket is fully seated on the shoulder portion of the bolts.
- Posts #1 and #2 are installed in foundation tubes and have the 2-1/2" breakaway hole located parallel to the roadway with the bottom of the hole at the top of the tube.
- CRT posts at locations 3 through 7 have two 3-1/2" breakaway holes (checked prior to installation) located parallel to the roadway with the center of the top hole located at the ground line.
- If the posts were augered, be sure the backfill material around the posts is compacted.
- No washers are used on the face of the rail except at the cable anchor bracket bolts.

Additional notes: \_\_\_\_\_

Inspection performed by: \_\_\_\_\_

# Repairing the *FLEAT 350*

## Equipment Needed for Repair Operation

- Acetylene torch to cut off the damaged rail,
- S.A.E. wrench or socket sizes 9/16", 7/8", 15/16", 1-1/4", and 1-1/2",
- Vice grip or channel lock pliers,
- Sledge hammer,
- Post remover tool (see **Figures 10 and 11**),
- Other normal guardrail tools.

## General Repair Procedures

After an end-on impact occurs with the *FLEAT 350*, it will normally require replacement of the 12'-6" end section of rail and any other damaged rail section(s), any broken post(s) and potentially the impact head. For a traffic face impact, the damage will be to the downstream rail section(s) and associated posts.

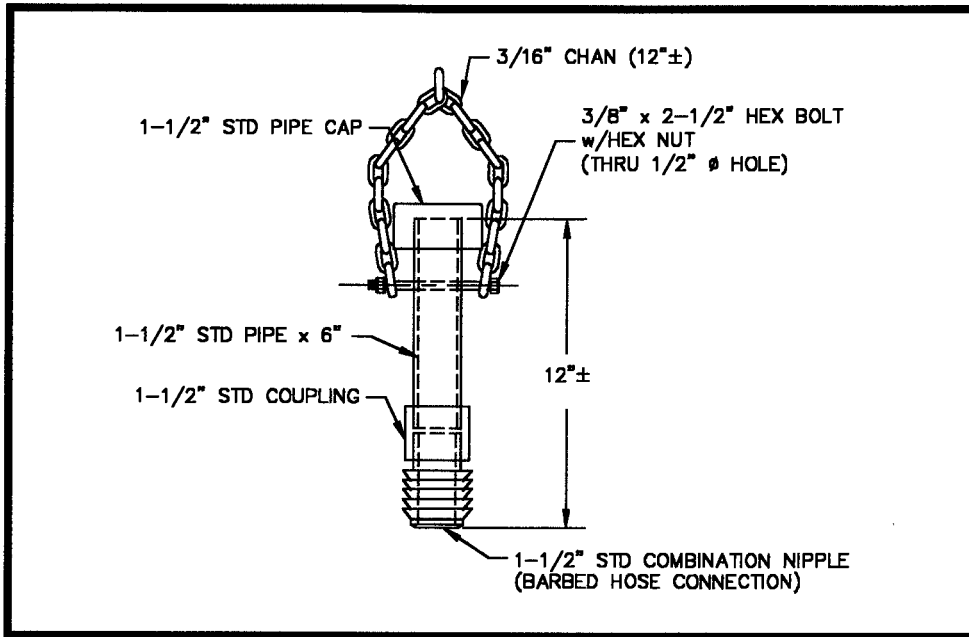
The general step-by-step procedure for repairing a damaged *FLEAT 350* terminal is as follows:

- (1) Check the impact head for damage.
- (2) Check the cable anchor bracket and cable assembly for damage. The bearing plate, nuts, washers, cable anchor bracket, and the special cable anchor bracket shoulder bolts are rarely damaged.
- (3) Check the number of broken posts and wood blockouts that need to be replaced, along with any damaged bolts. Inventory and pick up the reusable parts.
- (4) Torch off the kinked rail near the outlet of the impact head. The impact head should be able to be removed by hand at this point. If not, the impact head is probably not reusable.
- (5) Disconnect and remove the damaged rail from the posts.
- (6) Remove the broken posts from the foundation tubes using one of the two post removal tools (see **Figures 10 and 11**) assembled from "off the shelf hardware" items. Pound the steel pipe or screw the lag screw into the top of the broken post stub and remove the remains of the broken post by pulling on the chain. Use a pry bar as a lever if necessary.
- (7) Reinstall the system following the procedures listed in this manual.

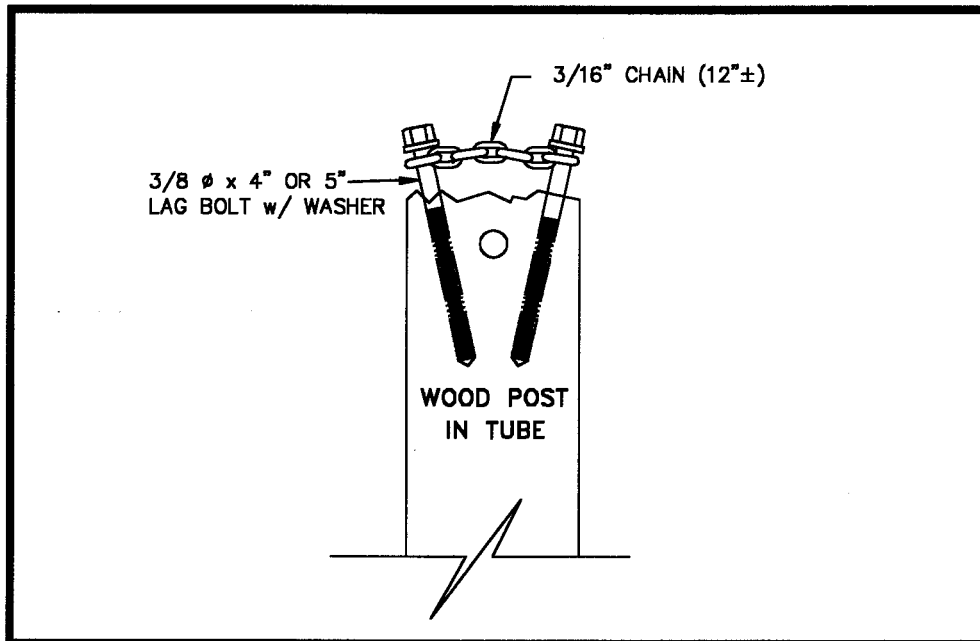
## **Procedures Immediately Following an Accident (Temporary)**

If no repair parts are readily available immediately following an accident, the following procedure should be used to provide temporary protection of the guardrail end. It should be noted that this repair is only for temporary purposes, and the anchor cable cannot be installed to provide tension in the rail for redirection impacts.

- (1) Remove damaged rail and impact head from the roadway or shoulder area.
- (2) Using an acetylene torch, cut the kinked rail off at the outlet of the impact head and inspect the head for any damage.
- (3) Remove the impact head by hand.
- (4) Locate the first post downstream of any damaged rail and cut this rail off about 9" in front of the post. If the post is at a splice, simply unbolt the damaged rail.
- (5) Install the impact head on the rail and attach it to the post with lag bolts.
- (6) Warning signs should be used where appropriate.



**Figure 10. Wood Post Pulling Tool  
(Pipe Option)**



**Figure 11. Wood Post Pulling Tool  
(Lag Screw Option)**