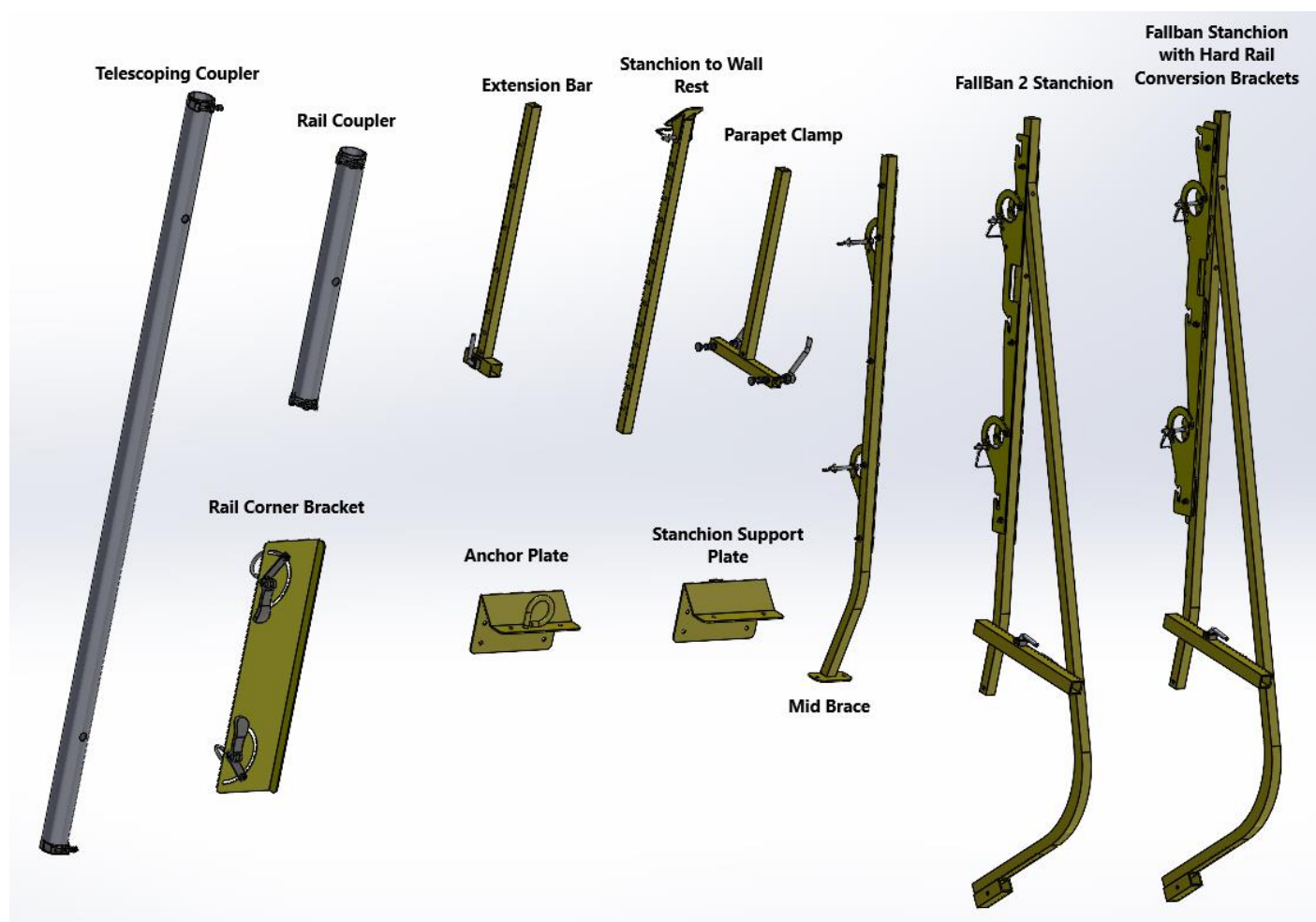


FALLBAN HARD RAIL INSTALLATION INSTRUCTIONS



These instructions are for use with FallBan 1 hard rail adaptors (post install on the FallBan 1 system) and FallBan 2. FallBan 1 adaptors contain new cable brackets, please see FallBan cable installation guide for instructions on cable barrier use. For the sole purpose of simplifying these instructions, the substrate for this installation example is wood perimeter edge. *Toe Board Adapter not pictured above*

FallBan Perimeter Safety System is for use on Low Slope Roofing (Flat up to 4/ 12 pitch). FallBan is not intended for Steep Roofing applications. **Please read all instructions before attempting to install.**

The installer should determine substrate acceptability for the installation and accepts any and all liability for failures or damage resulting from substrate integrity and/or incorrect installation. Never use the rail barrier as a step.

**Flat roof installation requires 1 ½ inch #12 screws, such as Olympic fasteners.
DO NOT REUSE FASTENERS.**

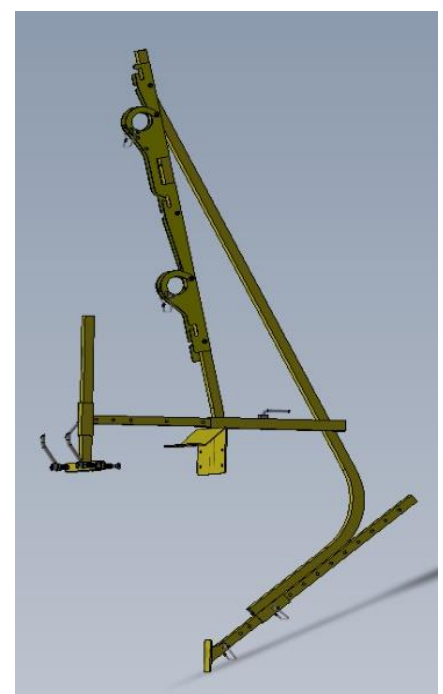
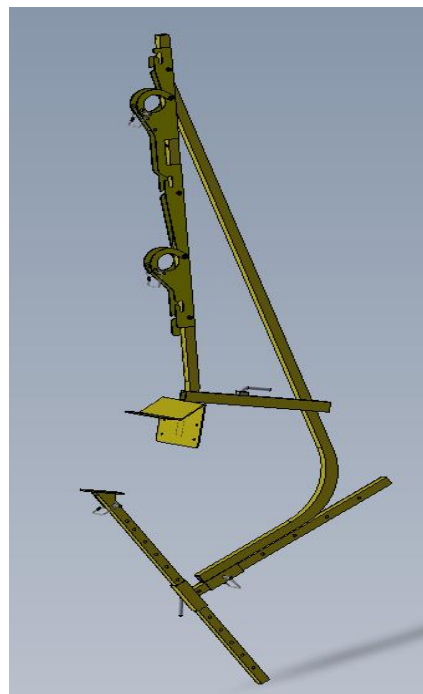
The use of fall protection Harnesses, ropes, lanyards, personal anchors, or other fall protection of your choosing is required during FallBan installation.

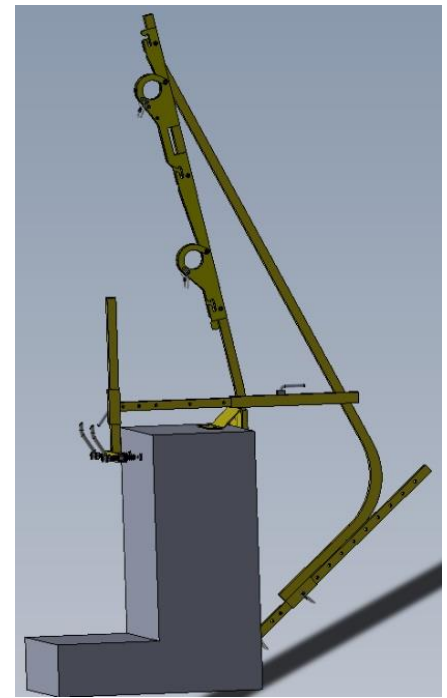
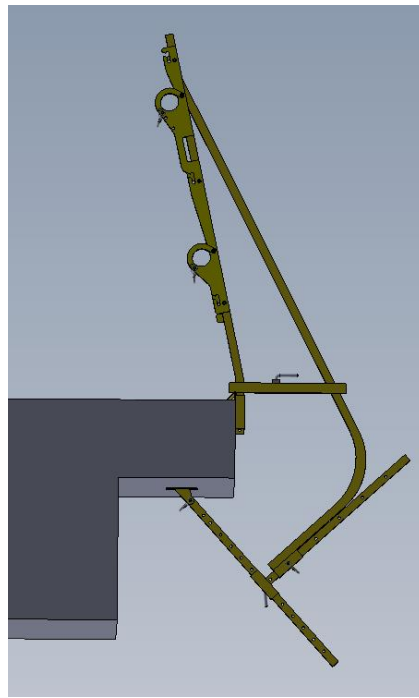
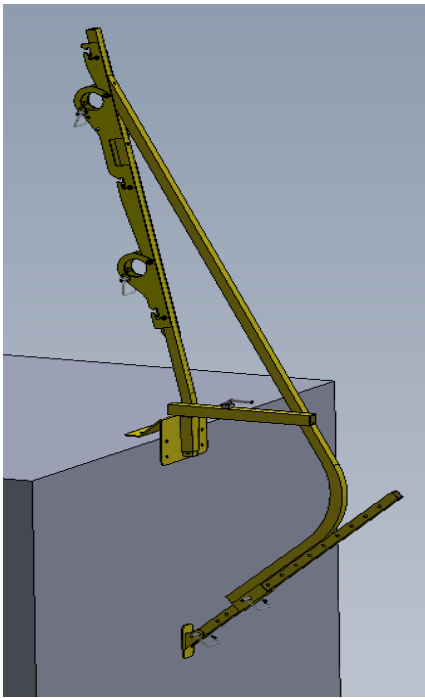
The FallBan hard rail system uses galvanized 2" EMT conduit, such as Wheatland Tube, as the "main rail". The conduit may be purchased at a local supplier. **NO MAIN RAIL SUBSTITUTIONS ARE PERMITTED.**

1. Survey the area to be protected: Place a chalk mark on the roof where you would like to begin your FallBan barrier. For roofs containing corners, one of the corners will typically be the best starting point. Make a mark between 32 and 48 inches from the corner point on each side of the corner. For straight runs, place a mark on either the leftmost or rightmost point in the protected area and use this as a starting point. From this starting line, measure and mark off 10-foot max intervals along the roof perimeter edge. At each corner, a mark should be made between 32 and 48 inches from the corner point on each side of the corner. Your starting line marks the placement of your first stanchion. For longer runs without parapet walls, stanchions should be placed every second mark from the first stanchion, with mid braces installed on the marks between stanchions. **Mid braces should not be used on parapet wall applications, stanchions should be placed every 10 feet.** In runs containing corners, a stanchion must be placed at the marks between 32 inches and 48 inches from the corner point on each side of the corner. **Stanchion on-center spacing cannot exceed 20 feet.** The purpose of the mid brace is to always maintain the correct rail height. For short runs, stanchions may be installed concurrently at a maximum span of 10 feet without a mid brace in between. Ensuring ample room for material handling and ladder entry/exit, place a mark on each side of desired ladder access and staging areas. Staging areas should not exceed 10 feet in length.



2. Assemble stanchions: Count the number of necessary stanchions, using the corresponding marks from the previous step. Attach support plates and stanchion to wall rests to stanchions (and hard rail adapters if using FallBan 1), in a manner that fits your roof edge detail. **For parapet wall applications:** Insert the parapet clamp into the extension bar receiver tube, as shown below. Ensure the bottom of the clamp brace is 4 – 6 inches from the bottom of the receiver tube and tighten the L bolt on the extension bar.





3. Make a template stanchion: Take a stanchion and set it on the roof edge. While the stanchion is in an upright position, adjust stanchion to wall rest so it slightly rest against the wall or roof overhang (extension bar may also require adjustment for overhang roofs). Once the first stanchion has been adjusted, use it as a template to set all remaining stanchions which will be used on similar roof edge detail. Do the same with all other roof edge details.
4. Next lay out individual parts to be used (complete stanchions, with support plates and stanchion to wall rests attached, extension bars, mid braces, parapet clamps, etc.), approximately 10 feet from the roof edge. See *Figure 2*



(Figure 2)

The following example uses 20-foot-long sections of rail

5. Pick a starting point: In cases where the barrier will run up to a wall, the wall is the best starting point, working your way away from the wall, down the perimeter. In wall-free applications with corners, a corner is typically the best starting point, working your way away from the corner, down the longest run of the roof. Another preferred starting point could be a chosen access area. In straight run applications, your starting point could be either the leftmost or the rightmost stanchion, working in the opposite direction.

For applications with parapet walls: Hardware anchoring of the stanchions is not necessary. Place stanchions with attached stanchion support plates in place. With the short end of the extension bar held vertically, insert the extension bar and mated parapet clamp into the stanchion center brace (receiver tube directly above the support plate) until the parapet clamp feet contact the inside of the parapet wall. Tighten the two L bolts on the stanchion center brace, to secure the extension bar to the stanchion. Secure the stanchion to the roof by tightening the two screw clamps on the inside of the parapet wall. Push and pull on the secured stanchion to identify and adjust any available slack from the system.

Mid braces should not be used in parapet wall applications.

For applications without parapet walls: Place stanchions with attached stanchion support plates and mid braces in place. The top of the stanchion support plates and mid braces must be anchored using the supplied fastening holes and two 1 ½ inch #12 screws. The support plate has optional lower wall fastening holes which may be used in addition to the two top fastening holes, if necessary.

Attach each stanchion and mid brace securely to the roof. Stanchion to wall rests should also be fastened into the lower wall, when possible. As a reminder: When installing contain corners, a stanchion must be placed between 32 inches and 48 inches from the corner point on each side of the corner. Additionally, a stanchion must be placed on each side of an access area, e.g. staging and ladder access areas.

6. After installing and fastening all of the stanchions and mid braces, select the sections of rail which best fit your first span. Insert the rail into the top vacant pipe supports, swing the arc clamp over the top of the rail, and place a 5/16 snap pin through the tightest available pin holes. Follow the same procedure for installing the rail into the mid vacant pipe supports.
7. Working in your chosen direction, slide a rail coupler over the end of the railing until the inserted rail obscures half of the coupler view port. Loosen the attached T-bolt clamp closest to the inserted rail and move it to the corresponding end of the coupler. Make sure the T-bolt clamp bolts are pointed away from the roof deck, to prevent punctures, lacerations, or snagging. Tighten the T-bolt clamp until the coupler cannot be pulled from the main rail. Install the rail coupler on the mid rail, in the same manner.
8. Insert the next chosen section of main rail into the next set of vacant top rail supports. Swing the arc clamps into place but do not insert the 5/16 snap pin. Slide the main rail into the vacant end of the top rail coupler until it butts against the previously inserted rail section. Move and tighten the second t-bolt clamp over the other end of the coupler, in the same manner as above. Install the 5/16 snap pins to secure rail to stanchions. Repeat these steps until you reach a corner or the end of your run.
9. When reaching the end of a run, choose rail lengths that will run all the way to the intersecting wall without overhanging the roof edge. A telescoping coupler may also be used to end a run. The coupler allows for variation in length from 0" to 5' off the end of the previous rail. The telescoping coupler and T-bolt clamps function in a similar way to the standard coupler referenced above. The main difference is the view port, which should be completely obscured by the inserted rail, allowing for a one-foot overlap.

Make sure the T-bolt clamp bolts are pointed away from the roof deck. Perform the same installation on both the top and mid rails.

10. When reaching a corner, follow the same instructions as above for ending the runs of rail. Loosen the U-bolts and slide the corner brackets over the end of the rails, ensuring that the bent lip is facing the inside of the roof perimeter. Lightly tighten the U-bolts until the bracket cannot slide off the rail but can still rotate. Place the intersecting rail into the vacant rail supports. Slide the rail through the second set of U-bolts until the gap between the intersecting rails is less than two inches. Tighten the U-bolts until the two intersecting rails are joined. **DO NOT OVERTIGHTEN**. Overtightening of the U-bolts will cause the corner bracket to deform and potentially fail. Perform the same installation on both the top and mid rails. Continue installing FallBan down the intersecting section of rail as mentioned above. *See Figure 3*

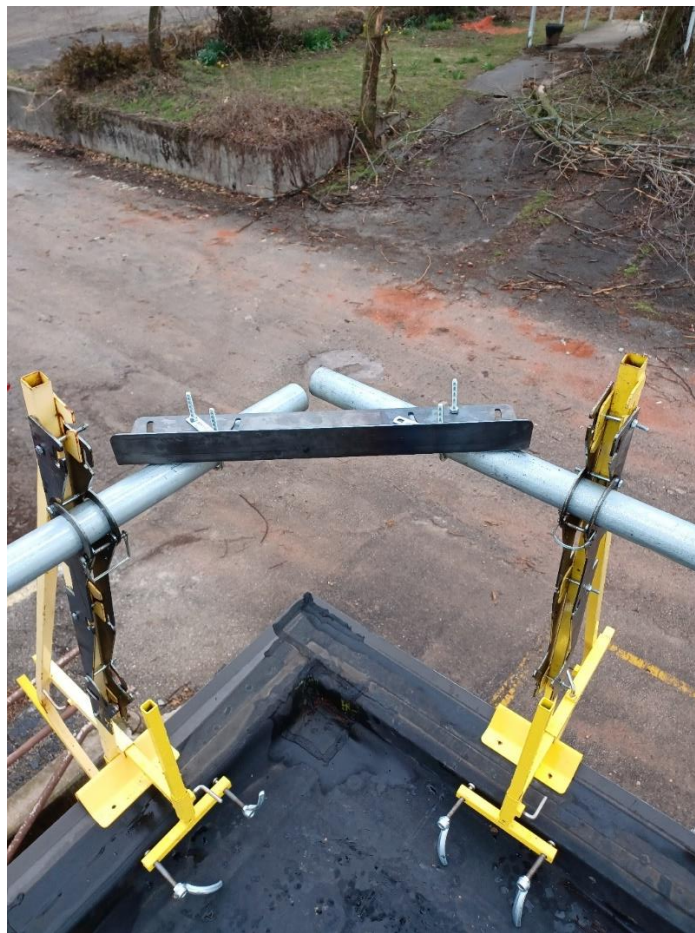


Figure 3

11. When using a ladder to access the roof, place two stanchions (one on each side of the ladder) to create an access area. Be sure to allow ample space to enter and exit the ladder. Do not allow sections of rail to substantially overhang into the access area. Terminate the sections of rail at staging area entries by installing and tightening T-bolt clamps on the end of each of the rails just inside of the staging area. This ensures the rails cannot slide out of the stanchion rail brackets. The same procedure should be used for any other access area e.g., material loading and debris removal areas. A warning line should be installed around these areas in compliance with OSHA, Corp of Engineers, Canadian SOR, etc.

12. Repeat these steps until the desired perimeter is protected.

13. Terminate the guardrail by installing and tightening T-Bolt clamps on both rails just beyond the protected area on both sides of your guardrail run. This ensures the rails cannot slide out of the stanchion rail brackets.

Reminder: Check FallBan system DAILY and re-adjust if necessary. Document actions in the daily log book. While making your daily inspection, visually inspect all components judiciously.

***"IF IT IS NECESSARY TO MEET O.S.H.A. 1910.29(b)(2)(ii), NETTING OR SCREENING CAN BE INSTALLED IN CONJUNCTION WITH A FALLBAN SYSTEM. A VINYL COATED NETTING WILL BE OFFERED FOR THIS PURPOSE AND WILL BE AVAILABLE**