

**INS-88.500-0A**  
**KSCR INSTALLATION INSTRUCTIONS**  
**STANDARD PROCEDURE**

<b>1. Unpacking the KSCR .....</b>	<b>2</b>
<b>2. Splicing the KSCR (If Required).....</b>	<b>4</b>
<b>3. Assemble Curb and Rail Corners .....</b>	<b>5</b>
<b>4. Install Cross Bracing (If Required) .....</b>	<b>6</b>
<b>5. Install Flex Connector Supports (if supplied).....</b>	<b>7</b>
<b>6. Install Weather Seals .....</b>	<b>8</b>
<b>7. Install Optional Noise Control Package .....</b>	<b>10</b>
<b>8. Installation of Air Handling Unit.....</b>	<b>11</b>
<b>9. Trouble Shooting Section.....</b>	<b>12</b>

## 1. Unpacking the KSCR

NOTE: In assembling the KSCR it is IMPORTANT the lower roof curb is installed so the top of the curb is square and level to the earth within  $\pm 1/4$ " via shims, wedges, etc. It is also important that the curb sides be aligned. Diagonal measurements must be equal within  $1/4$ " and sides must be aligned within  $3/16$ ", see figure 1.1.

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**IMPORTANT!** Do not use the gaskets which may be furnished by the equipment manufacturer for the top of the curb, or which may be attached to the bottom of the equipment. Failure to remove or using manufacturer's gasket material may result in deformation of the upper isolation rail!

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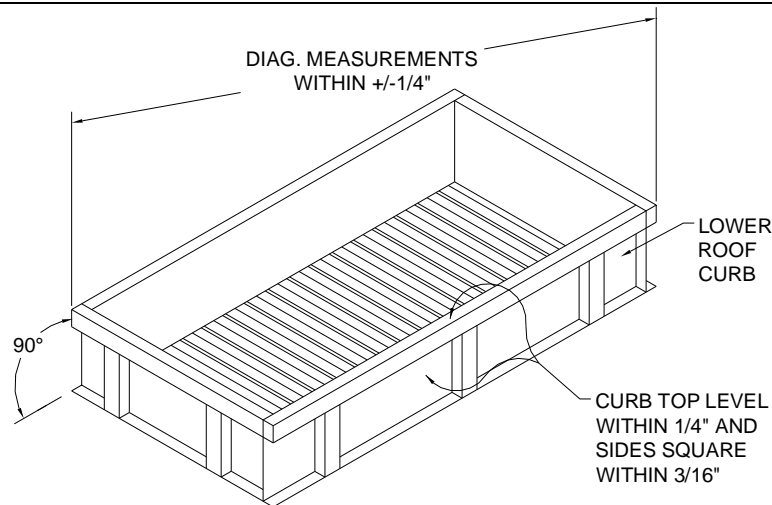
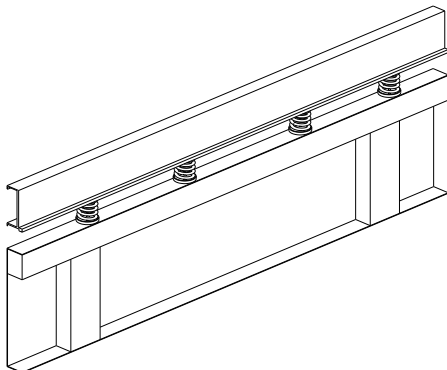


Figure 1.1

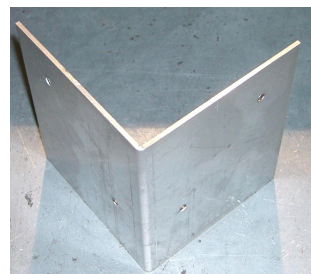
NOTE: Refer to the KSCR drawings shipped with the curbs for this project. If the sides are over 10 feet in length, they will be split into two parts for shipment. In this case, splice kits will also be provided to connect the together in the field.

- A. Carefully unpack the KSCR curb and lay out for identification. Use the typical packing list below to make sure all parts are present. Promptly report any shipping damage to the carrier and report and missing items to the vendor.

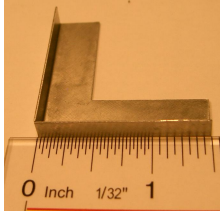
### TYPICAL PACKING LIST



Side & End Rail Assemblies marked A, B, C, D



Top Rail Corner Bracket (4 per unit)



Top Rail Corner Cover (4 per unit)



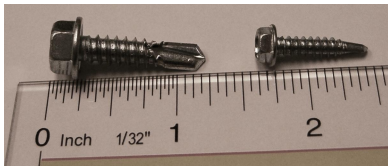
Neoprene weather seal (a large KSCR may have multiple rolls)



Bottom Corner Bracket (4 per unit)



Cover Straps



TEK screw 1/4" x 1" long & #8" x 3/4" long



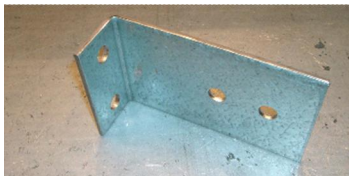
Adhesive double sided tape



Cross brace/flex connector support and bracket (used as needed)



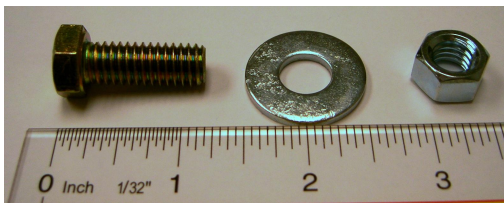
Foam weather seal



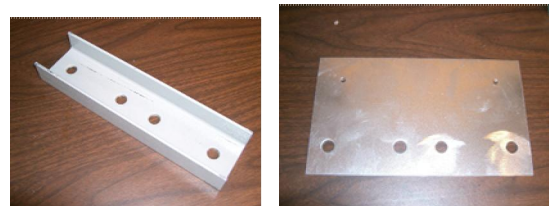
Cross brace bracket (2 per cross brace)



Trouble shooting kit (contains multiple springs)



Cross brace hardware [3/8" x 1", 3/8" nut and washers (8 per cross brace)]



Splice channel and backing plate (if required)

## 2. Splicing the KSCR (If Required)

NOTE: If none of the curb sides are longer than 10 feet, skip this step.

- A. Locate two sides with the same side rail identifier (Rail A, B, C, D). Remove from the shipping carton (2) bottom splice plates, and (2) top rail splice angles. Butt the two side members to be spliced together so that the squared off ends of both the top rail and bottom curb contact one another. Using #8 TEK screws provided, screw the lower curb members together as shown in figure 2.1. (IMPORTANT! Do not install any screws within 4 inches of one side of the splice joint and on the same area of the opposite side of the curb as a cross brace will be installed later at this location.)

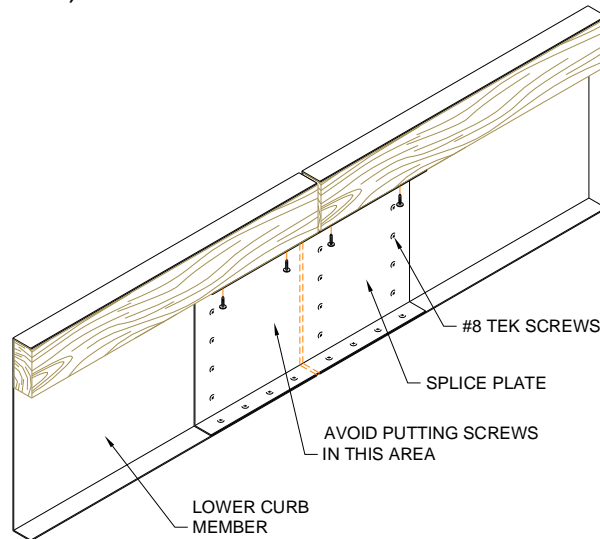


Figure 2.1

- B. Splice the upper rail sections together using the splice channels and backing plate provided as shown in figure 2.2 and 2.3. Place the aluminum backing plate on the outside of the top rail. Hold in place using two (2) #8 x 3/4" TEK screws. Drill four (4) 7/16" holes using the backing plate as a template. Place the splice channel on the inside of the rail, lining up with the four (4) lower bolt holes. Then use the 3/8" bolts, nuts and washers supplied to fasten the four (4) pieces together.



Figure 2.2

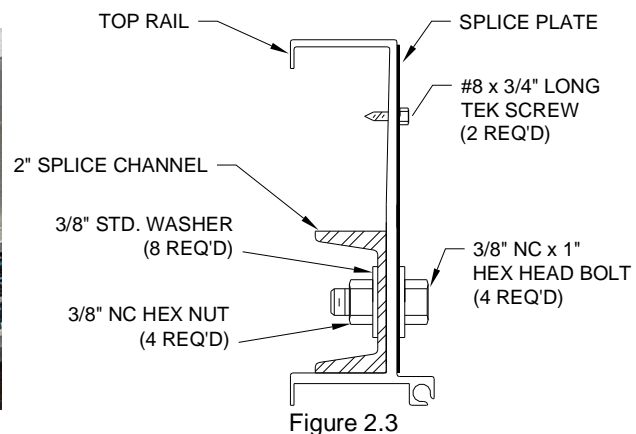


Figure 2.3

### 3. Assemble Curb and Rail Corners

NOTE: One end of the curb is marked on the submittal drawings (condenser end, return end, etc.) to aid in assembling the curb sides in the correct order to ensure proper loading and optimum performance of the springs. This end may be rail B. This also allows the curb to be installed on the roof in the proper orientation.

- A. Remove from the shipping carton four (4) bottom corner brackets. Refer to figure 3.1 and note the orientation of the curb sides at the corners. With the corners oriented in this way, stand two adjacent sides up at a time and slide a corner bracket onto the two curb sections as shown in figure 3.2. Do this at all four corners. Once the corner brackets are fully seated, secure side panels using six (6) 1/4" x 1" TEK screws at each corner.

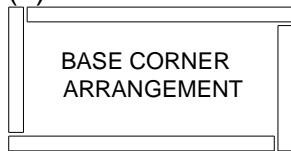


Figure 3.1

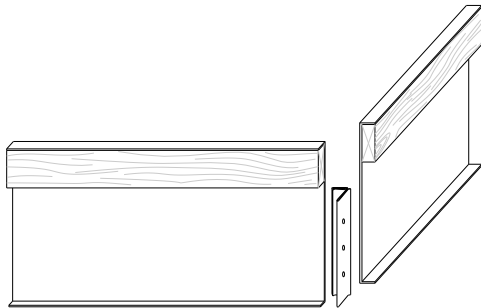


Figure 3.2



Figure 3.3

- B. Remove the four (4) top rail corner brackets and the sixteen (16) 1/4" dia. x 1" long self-drilling screws from the shipping carton.
- C. Attach a corner bracket to the top rails at each corner with four (4) 1/4" screws through the pre-located holes in the bracket (see figure 3.4).
- i. It may be necessary to hold the rails and bracket with clamps (see figure 3.5).
- D. Caulk the full seam of the corner bracket and top rail (see figure 3.4).

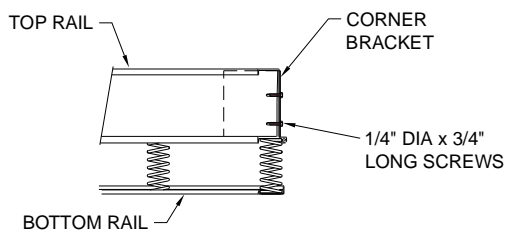
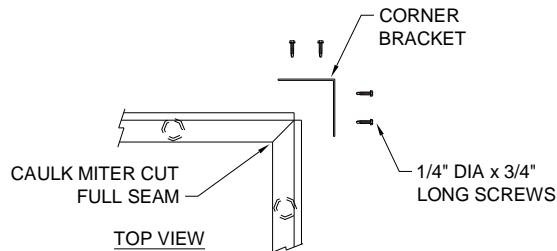


Figure 3.4

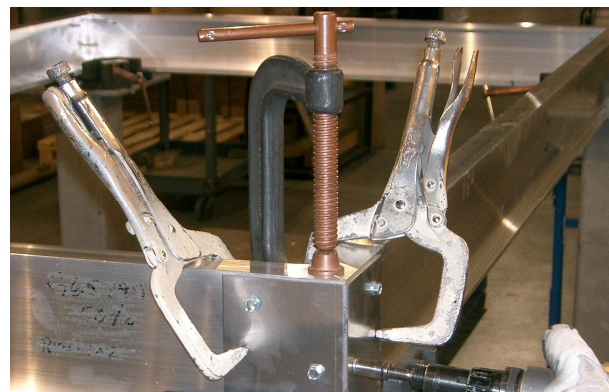


Figure 3.5

#### 4. Install Cross Bracing (If Required)

NOTE: If top or bottom cross bracing is required for this installation, parts will be provided with the curb. If no cross bracing is required, skip this step.

- A. Remove the upper and/or lower cross braces from the shipping skid. The lower cross brace is to be field located at the approximate center of the curb as shown in figure 4.1. Screw into place using the two (2) sheet metal angles and #8 TEK screws. Should this location cause interference with ductwork, relocate the cross brace as near as possible to the center of the curb, but avoiding the ductwork.

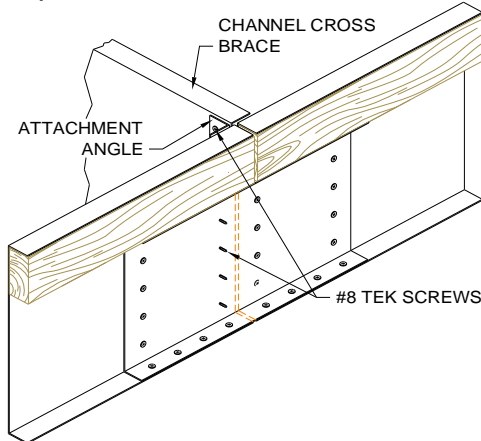


Figure 4.1

- B. If an upper cross brace is required, determine a location clear of ductwork but as close to the center of the curb as possible. If more than one cross brace is required, they should be spaced evenly in the rails. Also verify that the vertical dimension between the top of the cross brace and the top of the upper rail is greater than the distance the equipment may protrude down between the upper rails. Failure to do this may result in interference between the equipment and the isolation rail when the equipment is set in place. If it is apparent the interference will result between the cross brace and the bottom of the equipment, the cross brace should be modified, or a shim fitted to the top of the top rail to allow clearance of the equipment.
- C. Locate the bracket in the top rail as shown in figures 4.2 and 4.3 and drill into the top rail. Attach the cross brace (a galvanized, roll formed channel with two (2) holes at each end) and cross brace bracket in place with the 3/8" hardware provided. Use eight (8) bolts per cross brace.

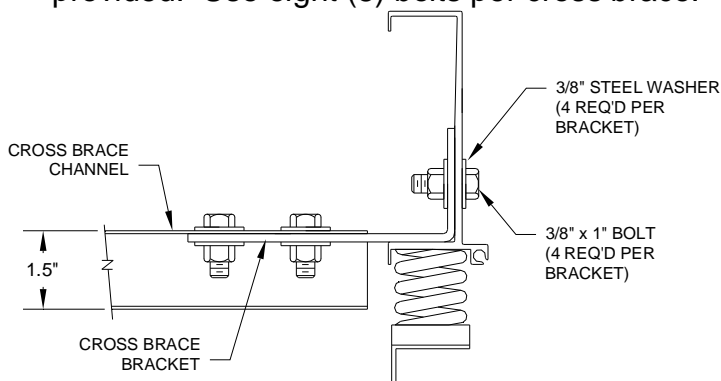


Figure 4.2



Figure 4.3

## 5. Install Flex Connector Supports (if supplied)

- A. The flex connector supports are to be installed as shown on the submittal drawings shipped with the curb. These are galvanized, roll formed channels without holes at the ends, which have been cut to length. Canvas flex connectors are by others.
- B. Attach end brackets to flex connector support channels with the provided #8 TEK screws. Hang flex connector supports either on the perimeter channel or to mating flex connector supports, see figures 5.1 and 5.2.
- C. Note the relative heights of the perimeter support area and the lips around the supply and return ducts. Adjust the height of the flex connector supports to match these and form a positive seal (note: the maximum standard adjustment is 2" below flush).

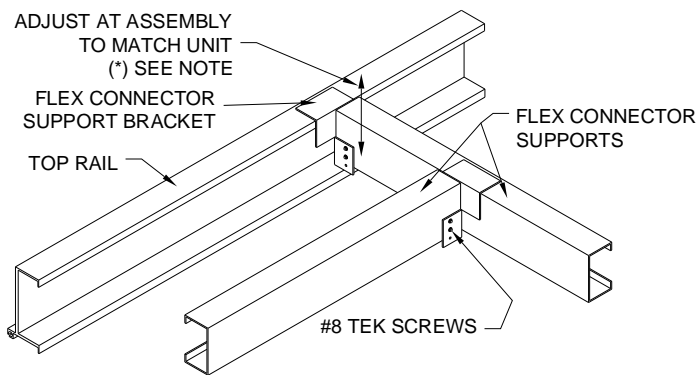


Figure 5.1



Figure 5.2

- D. Canvas flex connectors, provided by others, are to be attached between the installed flex connector supports and to the duct from the building, see figure 5.3.

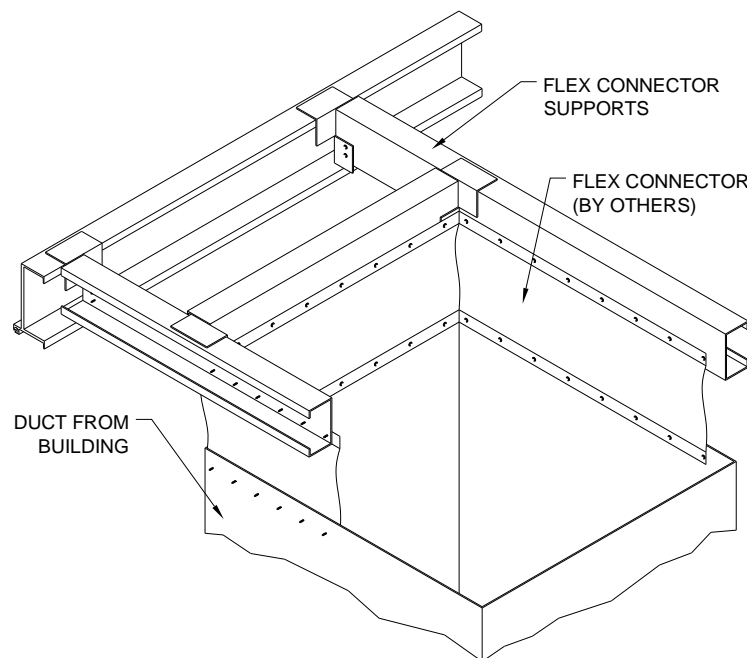


Figure 5.3

## 6. Install Weather Seals

- A. Remove the roll of neoprene weather seal material from shipping container.  
**DO NOT CUT WEATHER SEAL AT THIS TIME.**
- B. Start at one corner of the isolation rail system and slide the rounded edge of the weather seal into the 1/4" diameter groove in the upper rail (see figure 6.1 & 6.3).
- C. Pull the weather seal to the midpoint of this top rail as shown in figure 6.2.
- D. Insert the other end of the weather seal into the opposite groove of the same corner, and gently pull all the way through this rail until all the slack is taken up.
- E. Repeat this process at the other corners. Gently pull the weather seal around the perimeter until it meets the other end (see figure 6.2). Make sure the weather seal is tight around the corners.

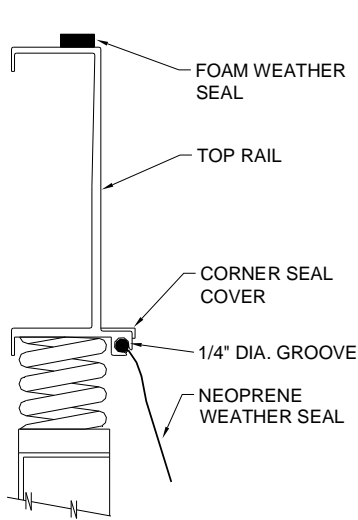


Figure 6.1

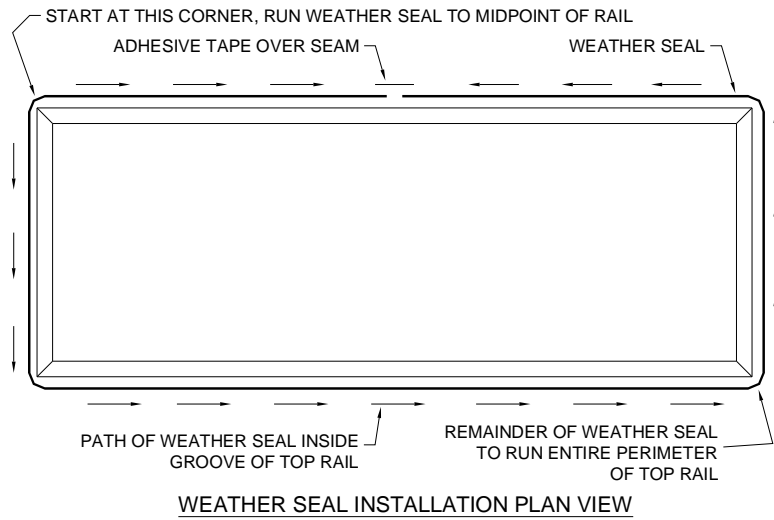


Figure 6.2

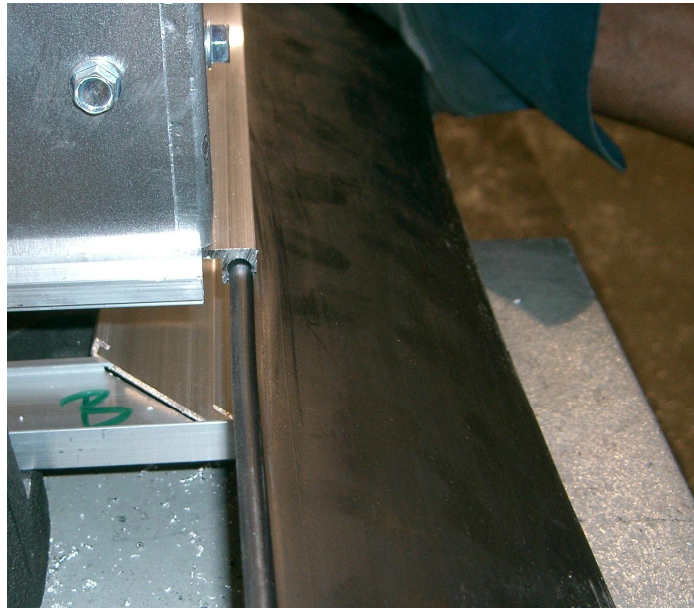


Figure 6.3

- F. Cut to length allowing for a 3" overlap (see figure 6.4).
- G. Bond weather seal with adhesive double sided tape (see figure 6.4).
- H. Attach foam weather seal to top outside edge of upper rails as shown in figure 6.1.

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**IMPORTANT:** *Weather seal material must be cleaned with a solvent, such as alcohol, which will not leave an oily film, or adhesive tape will not stick. Do not use paint thinners or turpentine.*

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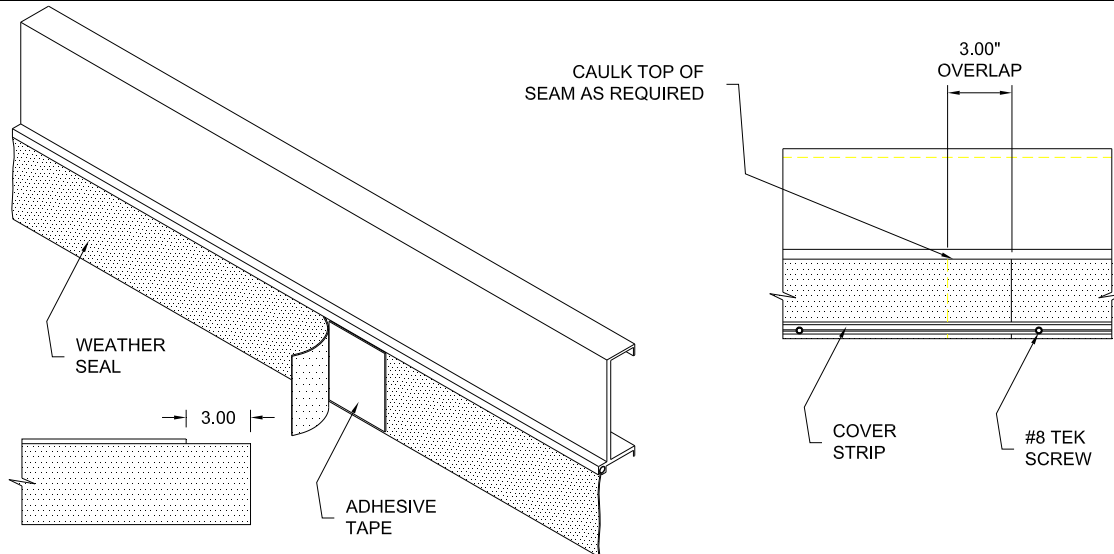


Figure 6.4

- I. Caulk corner at weather seal and corner bracket, see figure 6.5.
- J. Attach Cover strips using #8 TEK screws after equipment is set, see section 8.E.



Figure 6.5

## 7. Install Optional Noise Control Package

- A. Install any optional noise control package at this time. 2 x 4 studs, sheet rock and deck insulation by others (see figure 7.1).

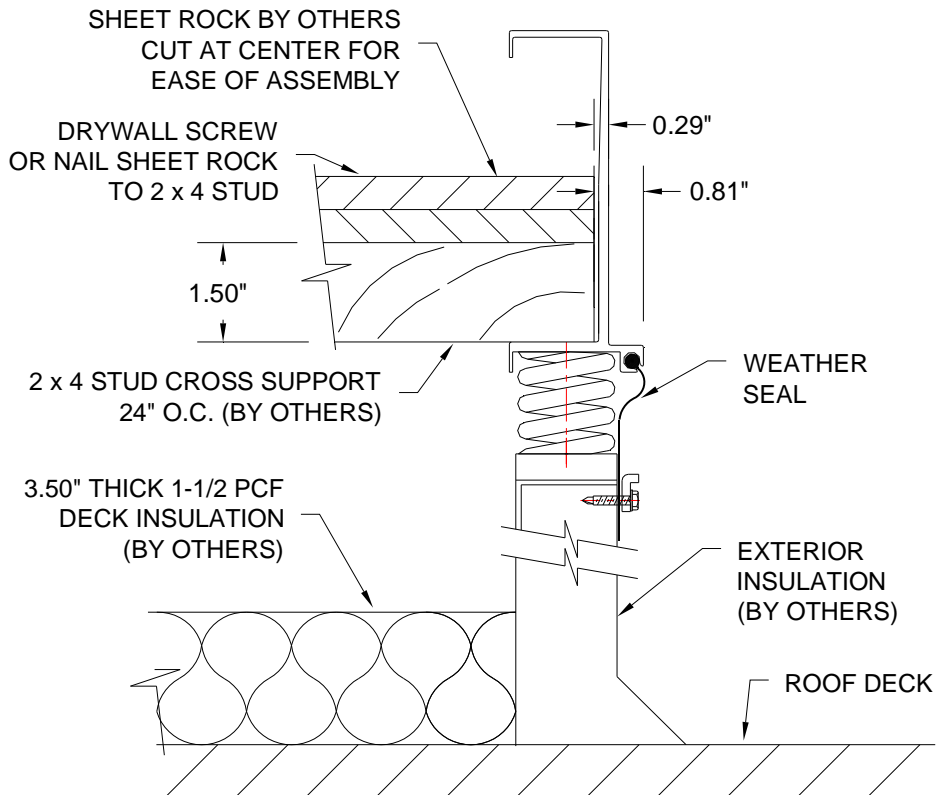


Figure 7.1

## **8. Installation of Air Handling Unit**

- A. Visually inspect the assembly for springs that may be tilted due to misalignments between the top rail and the bottom rail. Realign the spring as required so the springs remain in an upright position.
- B. Check to be certain there is no factory applied gasket material on the underside of the equipment where contact will be made with the top rail of the KSCR.  
**IMPORTANT: FAILURE TO REMOVE MANUFACTURER'S GASKET MATERIAL VOIDS KSCR WARRANTY.**
- C. Position the air-handling unit onto the top of the KSCR. **WARNING: THE AIR HANDLER MUST BE LOWERED SLOWLY AND LEVEL SO IT ENGAGES THE TOP RAILS EVENLY OR DAMAGE TO THE KSCR MAY RESULT. THE AIR HANDLER MUST BE INSTALLED AS ONE UNIT AND NOT IN SECTIONS. DO NOT ATTEMPT TO DRAG THE AIR HANDLER ACROSS THE KSCR DURING INSTALLATION, OR DAMAGE TO THE KSCR WILL RESULT.**
- D. Verify the KSCR is floating freely on the springs. This can be done by rocking the air handler. If the air handler does not rock, check to be sure there is no interference between the top rail and the bottom rail. If solid springs are present, or if the KSCR is not sitting level, remove the KSCR Trouble Shooting Kit from the shipping carton and follow the trouble shooting instructions on the last page of these instructions.
- E. Arrange the neoprene weather seal with some slack between the top rail and the bottom rail and secure in place with the 5 feet long aluminum cover strips and #8 TEK screws as shown in figure 6.5. The cover strips are not cut to length, but can be bent to fit around corners. To cut or bend the cover strip, first notch with a hammer and cold chisel, then bend strip to shape (or bend back and forth to break off).
- F. Ensure the weather seal is watertight.
- G. Lag the air handler to the KSCR per the manufacturer's instructions, or if a wind or seismic analysis has been performed, in accordance with that analysis.
- H. Disconnect the rigging cables and dismiss the crane.  
**WARNING: IF THE CRANE IS DISMISSED BEFORE THE ABOVE INSPECTIONS AND LEAK TESTING ARE COMPLETED, THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY COST TO REPAIR OR MODIFY THE KSCR, INCLUDING LABOR, MATERIALS, OR CRANE RENTAL.**

**NOTE: IN THE EVENT THE INSTALLATION OF THE KSCR IS NOT COMPLETED IN ACCORDANCE WITH THESE INSTRUCTIONS, THE MANUFACTURER WILL NOT ACCEPT ANY RESPONSIBILITY FOR MALFUNCTION OF THE KSCR OR DAMAGE TO THE KSCR OR ANY ASSOCIATED EQUIPMENT OR STRUCTURE RESULTING FROM THE INSTALLATION.**

## 9. Trouble Shooting Section

**Overloaded springs** are springs that have less than 1/16" average air gap between the coils after loading. **Underloaded springs** are springs that measure more than 2-1/4" top to bottom after loading.

**What to do if improperly loaded springs are found on the installation.**

1. Recheck the tagging (Rail A, B, C, and D) on the rails against the submittal drawing. Is the assembly sequence correct? Check the equipment orientation label (Condenser End, Return End, etc.).
2. If the unit has an overhanging condenser with a support rail, check the installation drawing to ensure proper alignment.
3. If multiple units are being installed, check to see that the tag numbers on all (4) rails agree and are consistent with the unit being supported (is RTU-1 on the isolation rail meant for RTU-1).
4. Make sure all ductwork and piping have flex connectors between the unit and the roof structure.
5. If unit leveling is required: Several loose springs are shipped with each KSCR for this purpose. The springs should be installed within 18" of a corner when they are required. Low and high corners should be identified while the KSCR springs support the unit weight (see figure 9.1). The unit should then be lifted slightly and additional springs should be located in the low corners and twisted into the grooves on the lower rail assembly (see figure 9.2). The unit can then be lowered into place again. Should further leveling be required, remove springs from the high corners and relocate them to the low corners (do not allow the gap between springs to exceed 24"). Repeat the process as necessary. Caution should be used not to install too many springs, as the entire system may become unstable if it sits too high.

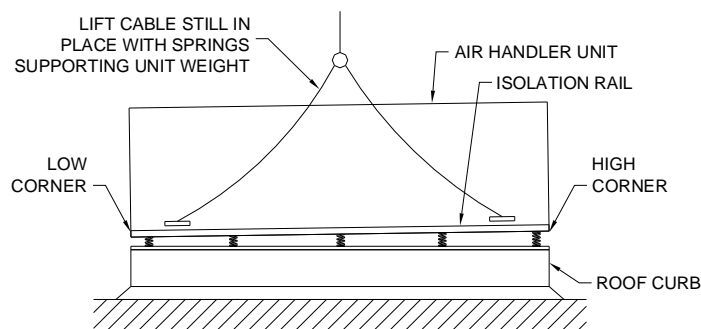


Figure 9.1

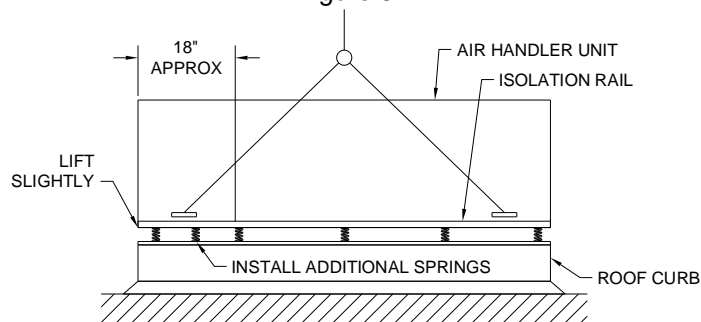


Figure 9.2