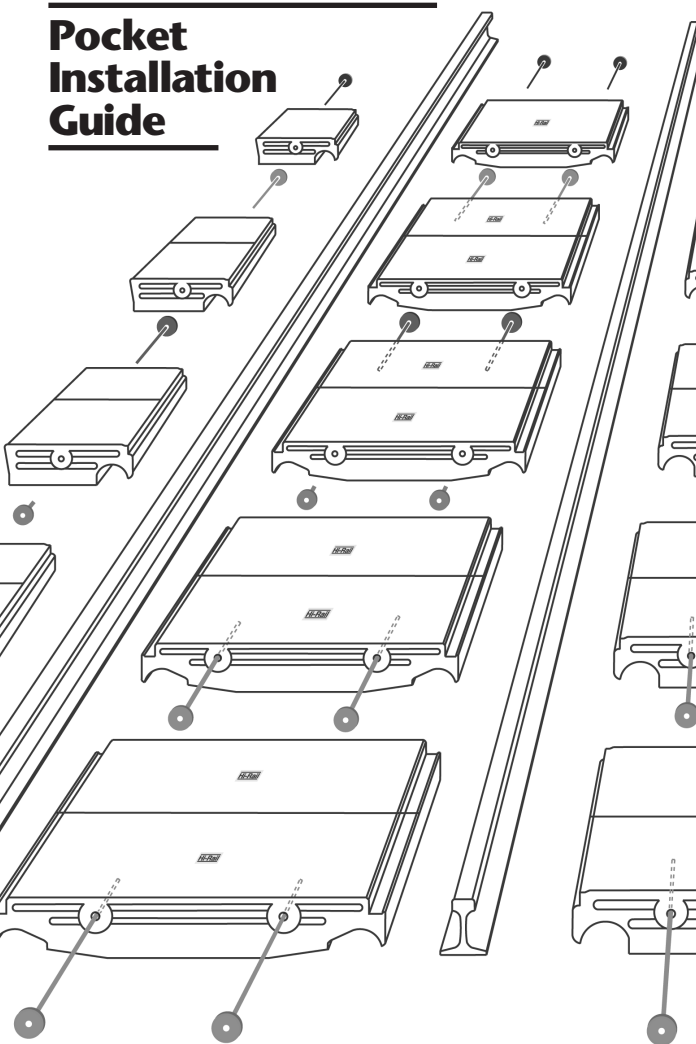


# HiRAIL®

# Rubber Grade Crossing System For Concrete Ties

## Pocket Installation Guide



# Crossing Preparation

- ① Road Should Be Completely Closed**
  - to assure safety and speed of installation
- ② 6 Feet Of Approach Cleared On Each Side Of Track**
  - less than 6 feet is acceptable if the road approach is sufficiently compacted prior to re-opening
- ③ New Ties On 18" Centers**
  - ties should extend an even distance to each side of the rail
- ④ Continuous Welded Rail**
  - minimizes future maintenance in crossing area
  - if field welds are used, it may be necessary to notch the HiRAIL material to assure a proper fit around the weld
  - all welds should be ground as flush as is permissible
- ⑤ Gauging, Leveling, Tamping**
  - must be completed prior to installation of crossing materials
- ⑥ Clearing Of Excess Ballast**
  - ballast in crib area should be lower than the top of each tie

*It is recommended that all standard safety practices be followed when installing grade crossing surfaces.*

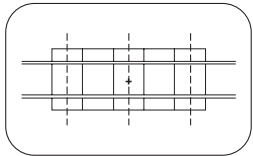
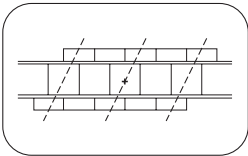
# Center the Crossing

## ① Locate The Exact Center Of The Crossing

- with respect to the highway centerline
- determine whether the total number of gauge pads to be installed is odd or even

## ② Determine The Crossing Skew

- if the crossing is skewed, field pads should be staggered depending on the degree of the skew
- the expected pattern of vehicular traffic will determine how much the field pads need to be staggered

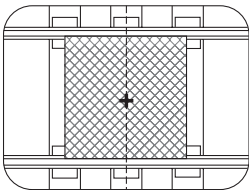


*Stagger field pads in relation to traffic flow*

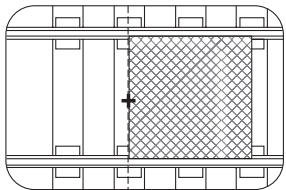
# Gauge Pads

## ① Position Of The First Gauge Pad

- start in the center of the crossing and work toward one end at a time
- location of the first gauge pad will depend on whether the total number of gauge pads to be placed is odd or even
- if the total number of gauge pads is odd, the first pad should straddle the center tie of the crossing
- if the total number of gauge pads is even, the edge of the first pad should be placed on the center of the center tie



*If the total number of gauge pads is odd, the first pad should straddle the center tie of the crossing.*

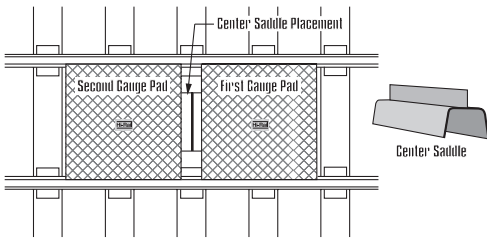


*If the total number of gauge pads is even, the edge of the first pad should be placed on the center of the center tie.*

# Gauge Pads (continued)

## ② Position Of The Center Saddle

- prior to setting the first gauge pad, the center saddle must be placed on a tie
- the center saddle should be placed on the tie where the first two gauge pads will interlock



## ③ Lubricate Gauge Pad And Rail Contact Area

- use waterless hand cleaner or a mixture of dish soap and water
- lubricate the ball of the rail and the rail contact area of the first gauge pad

## ④ Install The First Gauge Pad

- top of the ties must be free of all ballast to ensure a proper fit
- pads must remain lubricated throughout all phases of this process
- seat one flangeway under the ball of the rail, then seat the opposite side of the pad by applying pressure towards the center of the track with a backhoe and forcing the pad between the rails or use the installation tool available from HiRAIL

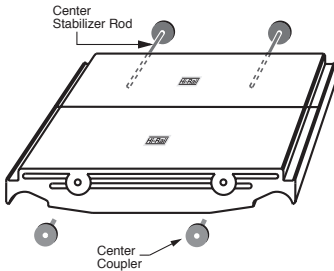
## ⑤ Install The Second Gauge Pad

- lubricate the ball of the rail, the rail contact area and the tongue and groove of the second gauge pad
- seat the pad between rails in the same manner as the first pad
- the center saddle should be between the two gauge pads

# Gauge Pads (continued)

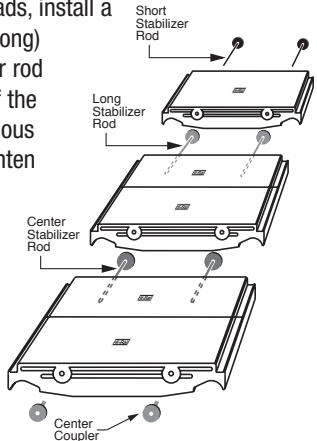
## ⑥ Installing The Stabilizer Rods

- applying even pressure with track jacks or a machine (such as a backhoe), compress the pads as tightly as possible toward the center saddle, making sure the tongue and groove fit snugly to form a smooth and level seam over the center saddle
- insert the *center stabilizer rods* (69" long) through the holes in the gauge pads
- thread the *center couplers* onto the opposite ends of the center stabilizer rods and tighten by turning in a counter-clockwise direction



## ⑦ Continue Gauge Pad Installation To End Of Crossing

- with every two gauge pads, install a long stabilizer rod (75" long)
- thread the long stabilizer rod into the receiving end of the rod connecting the previous two gauge pads and tighten in a counter-clockwise direction
- if the total number of gauge pads is odd, one end of the crossing will require a short stabilizer rod (39" long)



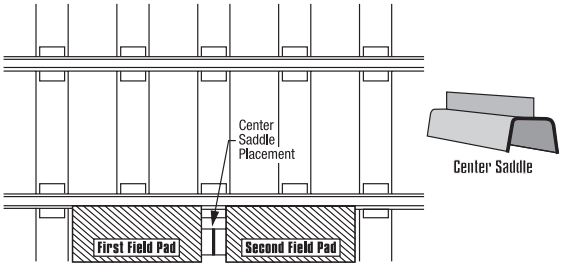
# Field Pads

## ① Position Of First Field Pad

- will depend upon skew of the crossing
- for skewed crossings, field pads should be staggered
- for non-skewed crossings, seams of the field pads should line up with seams of the gauge pads
- start near the center of the crossing and work toward one end

## ② Position Of The Center Saddle

- prior to setting the first field pad, the center saddle must be placed on a tie
- the center saddle should be placed on the tie where the first two field pads will interlock



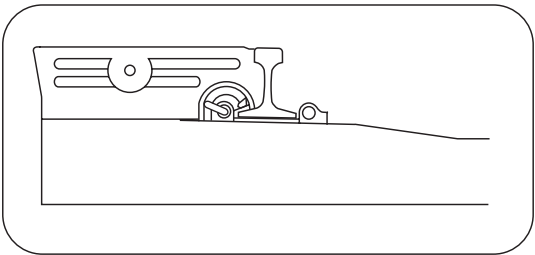
## ③ Lubricate Field Pad And Rail Contact Area

- use waterless hand cleaner or a mixture of dish soap and water
- lubricate the ball of the rail and the rail contact area of the first field pad

# Field Pads (continued)

## ④ Install The First Field Pad

- top of the ties must be free of all ballast to ensure a proper fit
- pads must remain lubricated throughout all phases of this process
- position pad firmly in contact with web of the rail

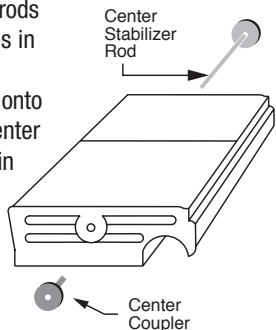


## ⑤ Install The Second Field Pad

- lubricate the ball of the rail, the rail contact area and the tongue and groove of the second field pad
- position pad firmly in contact with web of the rail in the same manner as the first field pad
- the center saddle should be between the two field pads

## ⑥ Installing The Stabilizer Rods

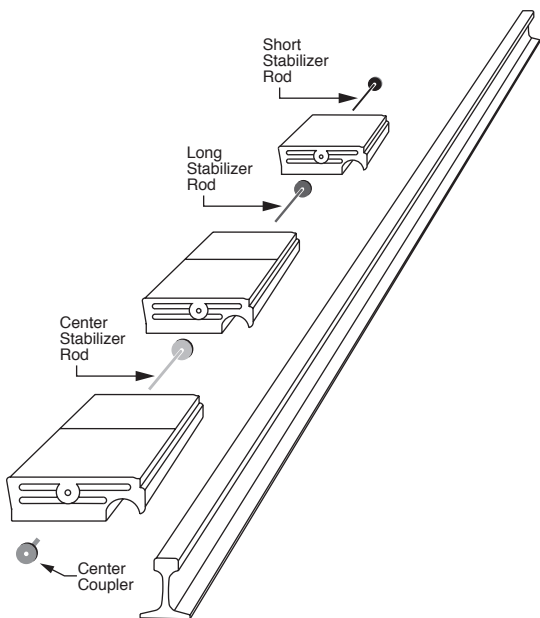
- applying even pressure with track jacks or a machine (such as a backhoe), compress the pads as tightly as possible toward the center saddle, making sure the tongue and groove fit snugly to form a smooth, level seam
- insert the center stabilizer rods (69" long) through the holes in the gauge pads
- thread the center couplers onto the opposite ends of the center stabilizer rods and tighten in a counter-clockwise direction



# Field Pads (continued)

## 7 Continue Field Pad Installation To End Of Crossing

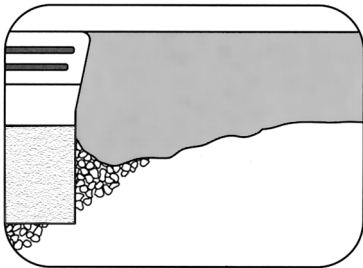
- with every two field pads, install a *long stabilizer rod* (75" long)
- thread the long *stabilizer rod* into the receiving end of the rod connecting the previous two field pads and tighten in a counter-clockwise direction
- if the total number of field pads is odd, one end of the crossing will require a *short stabilizer rod* (39" long)





# Repaving Approaches

- ① **Complete Approaches With Concrete Or Asphalt**
  - to full depth at the edge of all field pads
- ② **Allow Sufficient Time For Pavement To Cure Before Opening Crossing**
  - if approaches are not paved immediately, it may be necessary to reset all field pads tightly against the web of the rail before final paving



*Repave approaches to full depth of field pads*

- ③ **Open Crossing To Traffic**

Hi-Rail



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