



# TraCast™

## Installation Instructions

### Track Preparation

- Prior to track disassembly; stake out the alignment of the crossing with offsets located every six track feet.
- Remove the existing crossing surface to a minimum width of 10', allowing for clearance on each side of the 7'11" wide modules.
- Remove the rails, ties and ballast to a distance of 5' beyond each end of the crossing.
- Remove all fouled materials and replace with select compacted backfill.
- Install subsurface drainage at each edge of crossing to maintain full bearing value of the foundation.
- For stable ground conditions, excavate 15" below the top of rail and compact the surface to 95% of maximum density. Place and compact 1-1/2" of 1"-minus crushed base rock. Spread a loose layer of 1/4"-minus crushed rock and screed to a surface elevation 13-1/4" below top of rail
- In case of unstable ground conditions, excavate 25" below the top of rail and compact the surface to 95% of maximum density. Place and compact 6" of 1"-minus crushed base rock. Place three lifts of asphaltic concrete, compacted to 90% of relative density, to a surface elevation 14" below top of rail. Spread a loose layer of 1/4"-minus crushed rock and screed to a surface elevation 13-1/4" below top of rail.
- The design loads of our modules are based on achieving a minimum sub-base modulus of 250 KCF. It is recommended that customers consult a local geotechnical engineer to verify the local site conditions and to insure the correct foundation design for the crossing.

### Installation Steps

#### STEP #1

Mark the centerline of the track. For a curved crossing, use offsets from centerline at six foot increments. Begin placing modules from the end of the crossing. When placing the subsequent modules, use 1/4" wood lathe or another suitable means to obtain an expansion gap between modules.

#### STEP #2

Be careful to match the vertical and horizontal alignment of rail troughs. If the vertical alignment of adjoining rail trough surfaces mismatch by more than 1/8", lift the module and adjust the fins to correct the module heights.

#### STEP #3

When all modules have been placed, use compressed air and brooms to clean all debris out of the rail troughs. Use a 1-1/8" socket and impact driver to remove the 3/4" rail clip bolts and set them aside for the moment.

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### STEP #4

Be sure all rail welds in the crossing limits are ground smooth to allow for proper fitment of the rail into the molded field recess.

### STEP #5

Place the 4x4 timbers used for shipment and storage over the rail trough and place the new rail on top of the timbers in preparation for the rail booting process. Unroll the boot on top of the modules alongside the rail. Lubricate the base of the rail trough with a mixture of dish soap and water. Always use adequate lubrication.

### STEP #6

Beginning at one end of the crossing, pick and raise the rail to install the boot around the rail. Be sure the boot is fully seated so that the base is completely flat. As the rail boot installation proceeds, begin removing the 4x4 timbers and slowly lowering the booted rail into the trough.

### STEP #7

Use lining bars to insure that as the rail is lowered into the trough it does not contact the black GripTite knobs.

### STEP #8

Begin the rail jacking process at the end of the crossing. Using lining bars, track jacks or other devices, jack against the base of the rail to slide it tightly into the molded field recess to obtain gauge. Be sure to protect the inner concrete edge of the rail trough with a 2x4 or other means to prevent damage.

### STEP #9

Install the steel rail clips and plastic insulators using the 3/4" bolts removed in step #3 to fasten the rail in the trough while maintaining gauge of 56-1/2". Do not fully tighten the bolts at this time.

### STEP #10

When the rail is fastened on the first module proceed to the next adjacent module. Do not fasten more than one module at a time. When the rail is fastened along the entire crossing go back and fully tighten all of the 3/4" bolts to a minimum torque of 140 ft-lbs. Be sure to check that gauge has been maintained at 56-1/2".

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### STEP #11

Lubricate the GripTite knobs, inside sloped edge of the concrete trough and backside of the rubber RailGuard panels with a mixture of dish soap and water. Place the RailGuard panels by hand into the trough rotating the leading edge under the head of the rail while lining up the GripTite cavities in the RailGuard panel with the GripTite knobs in the concrete module.

### STEP #12

While being careful not to hit the concrete surface of the modules, use a sledge hammer to force the RailGuard panels down over GripTite knobs. If the rubber panels are difficult to install due to high ambient air temperatures, place a 4x4 along the top rubber surface and force them down using the bucket of heavy equipment. Always use adequate lubrication with a mixture of dish soap and water to aid the process.

### STEP #13

After the rail in the modules is connected to the existing track, space the first tie 4" away from the module to allow bar tamping and room to apply double rail anchors.

### STEP #14

Sub-base materials for road approaches must be compacted to 95% of maximum density before paving to ensure a high performance interface with the crossing modules.