Crossing Requirements

- Maintain Roadway/Crossing Surface Level to Track:
  - Hump Crossings
  - Severe Downgrades
  - Skewed Angles
  - Multiple Track Crossings

- Rail Track Structure Designed to Flex
- Highway Surface Must Be Rigid
- Rail Ballast Allows Water to Filter and Drain
- Highway Surface Designed for Water Runoff
RR Operational Issues

- Track surfacing through the crossing requires crossing to be easily removed.
- Under heavy rail traffic, removal of the crossing surface occurs more frequently.
- Cost to remove crossing surface can be significant.
Crossing Surface Types

- Wood / Timber
- Asphalt
- Composite Plastic
- Rubber
- Concrete
- Polymer Concrete
Poor crossing surfaces may contribute to an unsafe condition at a railroad crossing.
A rough surface may contribute to a collision by diverting the road users' attention from the prime tasks of observing crossing signals and looking for a train.

Potholes and Uneven Road Surface May Cause Vehicular Accidents
Multi-axle vehicles like trucks need more traction at grade crossings.
“Another aspect of the acceleration performance of vehicles at crossings is the design of the crossing approaches coupled with the condition of the crossing surface. Crossings and approaches on a steep grade are difficult and time-consuming to cross. Also, vehicles will move more slowly over crossings that have rough surfaces.”

Most Crossing Surfaces Do Not Provide Adequate Skid Resistance
Traction is compromised under wet conditions.

Crossing Safety
High Rates of Traffic Cause Some Surfaces To Deteriorate and Show Wear in Traffic Lanes.
Many types of crossing surfaces show wear even under moderate loads of traffic.

Very few crossing surfaces provide adequate skid resistance.
This crossing surface shows excessive wear due to heavy traffic volume.

Traction is compromised under wet conditions.
Road salt and heavy traffic loads have destroyed this crossing surface.
BODAN is the only crossing surface that offers a lifetime skid-resistant surface.
Unique Design
Safety Features

- Galvanized Steel Reinforcing Gage Molded into the Precast
- Consistent Level Riding Surface
- Skid-Resistant Surface
- “High-Impact” Yellow Pedestrian Panel
- Flashing Red LED Warning Lights
Zero Physical Change!
• Polymer Concrete Material
• Rubber Bearing Strip
• ½” Leveling Course
• Portland Cement Concrete Foundation
• Serves as a Paving Stop
• Nominal 4’ Sections
Boise, ID

Top of unit

Existing wire channel

Top of base

Enlarge existing hole to 1/4" by 1" slot

Add Weep Hole 1/4"

Scale 1 to 1
1" = 1"

Current Design

Added to Design

1.0"
0.5" 1.0"
0.0"

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<tr>
<td>Title</td>
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<td>Owner</td>
<td>Bodan RR X-ing</td>
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<tr>
<td>Author</td>
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BODAN®
Highway/Rail Grade Crossing System
**Flashing Warning Lights**

Applications: RR Crossings, Pedestrian Crosswalks, Traffic Delineation, Tunnel and Platform Edges

Luminaire: Flush (zero elevation above ground level)

Source: Two LUXEON Star LEDs

Pattern: Bidirectional, Wide

Photometrics: From 5 to 80 degrees in vertical plane + - 65 degrees in horizontal plane in each direction. Peak intensity 15 candelas.
Electrical: LED Power consumption 2.5 watts. Power Inputs: 120/240 volts AC; or low voltage operation AC/DC from 9 to 24 volts, polarity independent.

Colors: Red, Amber, Green, Cyan, Blue, White

Mechanical: Drive-over, snowplow-proof, weather-proof, completely sealed against road salts & chemicals, shock and vibration-resistant.

Size: 2.5” diameter, 1.46” deep, 6 oz. weight.
**Optional Warning Lights**

- **Luminaire:** Flush (zero elevation above ground level)
- **Source:** Two LUXEON Star LEDs
- **Pattern:** Bidirectional, Wide
- **Peak Intensity:** 15 Candelas
Detectable warning tiles like Transpo’s Step-Safe® have been used at rail stations for many years.
"We're hoping to change driver behavior at that crossing," said Joe Peagler, Idaho Transportation Department rail-highway safety coordinator. "It's a very busy intersection and the trains slow down to five miles per hour because people stop on the tracks."

Peagler also stated that an average of two trains and 30,000 cars use the crossing each day. While trains are normally allowed to travel at twenty-five miles per hour, they have to reduce speed because of the many cars that sometimes block the crossing.

Since 1991, there have been four collisions at the crossing when motorists failed to stop. Two of those collisions involved injuries. Peagler reported that there are hundreds of near misses annually. Overhead signal lights will remain on the site, because crossing gates on a 110 ft. wide street were deemed too impractical for use.
Reliability

• 15 Years Experience in Pre-Cast Polymer Concrete
• Company in Business 35 Years
• Lifetime Granular Surface
• Maintenance Free
• Meets Strict Standards
• ISO Certification 9001/9002
Contact

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