

MIT-Dowel-Scan:

Non-Destructive Examination of Dowel Bars and Lane Ties in Concrete Pavements

What:

- Determines location and alignment of load transfer devices and lane ties through non-destructive means

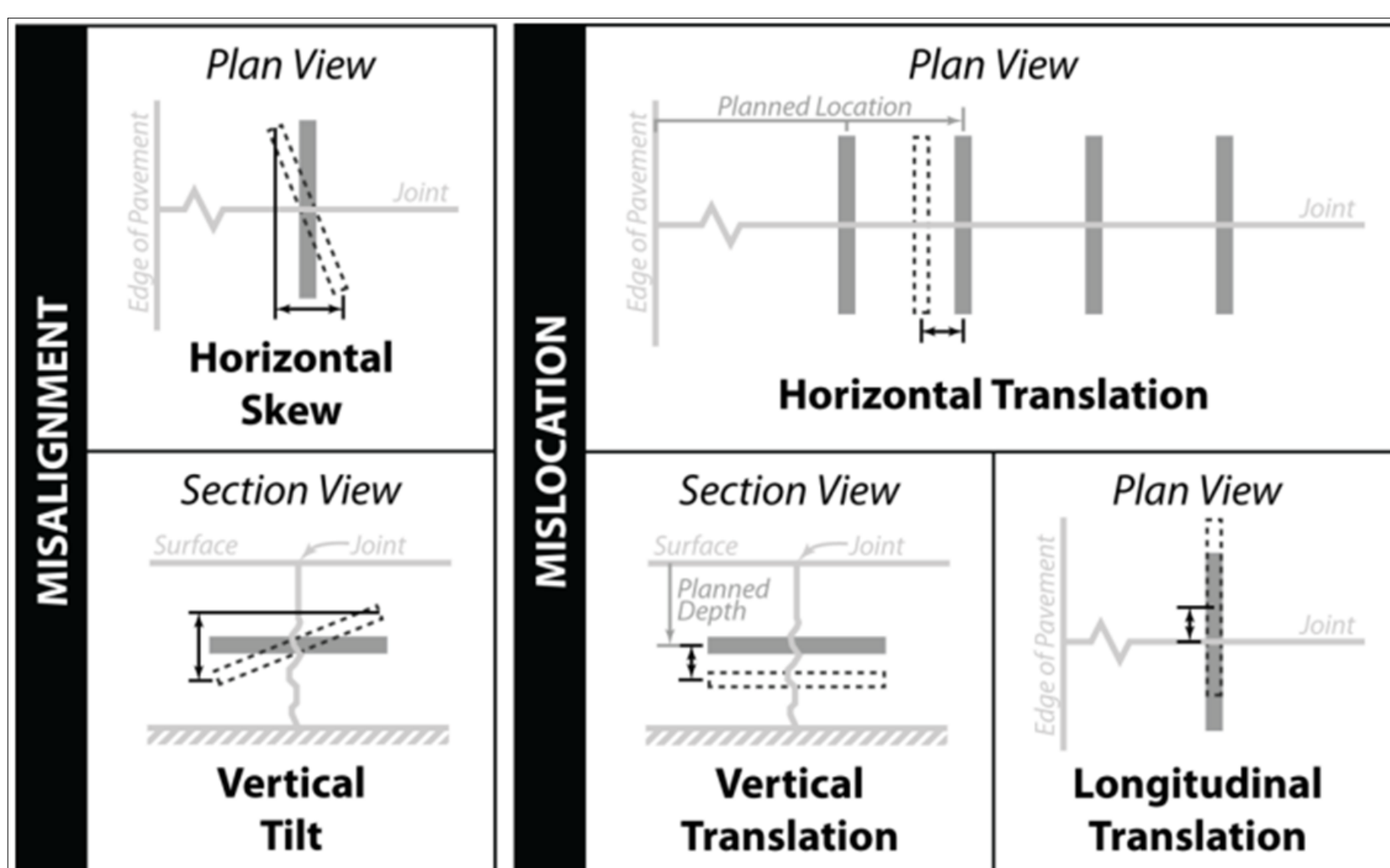
Why:

- Provides assessment of joint performance:
 - Risk of joint locking
 - Adequate load transfer
 - Fast and accurate results

Results:

Precise Measurements:

- Horizontal Translation (X-Position)
- Horizontal Skew (Misalignment)
- Longitudinal Translation (Sideshift)
- Vertical Skew (Misalignment)
- Vertical Translation (Depth)



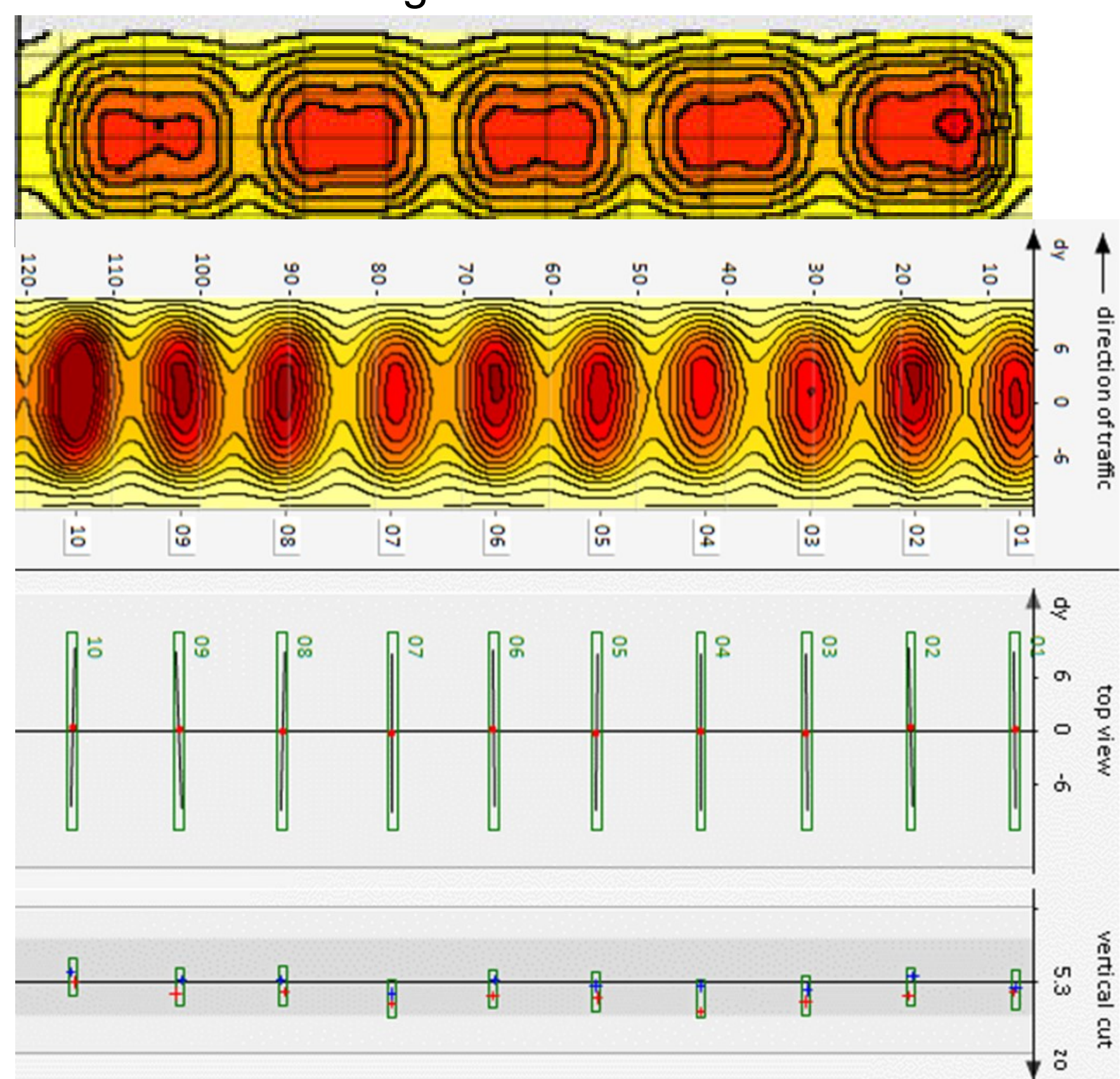
Project Verification:

- Tie bar severely misaligned
- Tie bar overlapped the dowels, potentially locking the transverse joint
- Saw blade cut through the high steel, skewing the longitudinal joint line
- Severe risk of concrete pavement spalling



MIT-DOWEL-SCAN Output:

- Creates a "Heat" Map:
 - Visual representation of the magnetic field
- Provides Overhead View:
 - Sideshift
 - Horizontal Misalignment
- Provides Vertical Face View:
 - Depth
 - Vertical Misalignment



New Technology (Dowel Baskets):

- A-shape and U-shape
- Cut and uncut tie wires
- Any size basket (number of bars)

