

LABORATORY INVESTIGATION OF BRIDGE STRIP SEAL JOINT TERMINATION DETAILS

A series of horizontal lines in white and red, with varying lengths and thicknesses, extending across the width of the slide.

Mid-Continent Transportation Research
Symposium
Ames, IA 2015



Project Coordinators

Iowa State University

Dr. Brent Phares
Travis Hosteng
Sam Redd

Technical Advisor Committee:

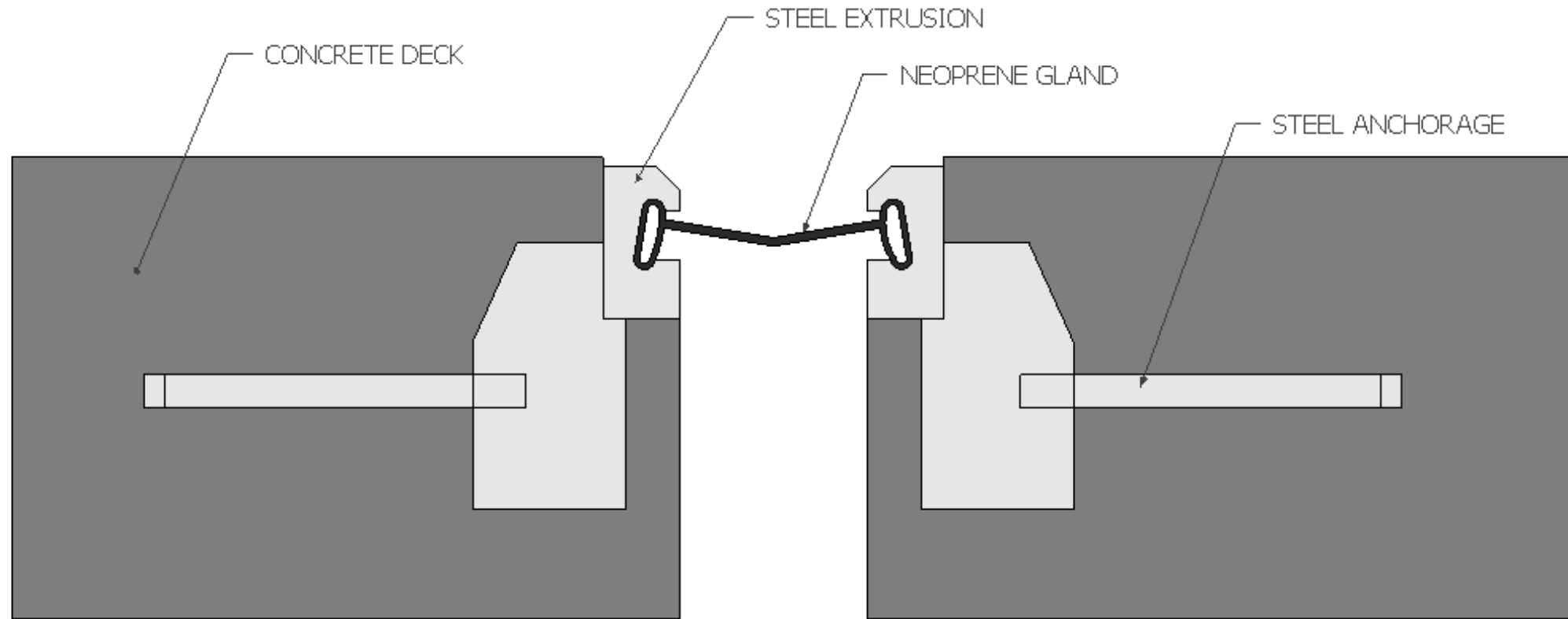
Norman McDonald
Ahmad Abu-Hawash
Jim Nelson
Dean Bierwagen
Gordon Port



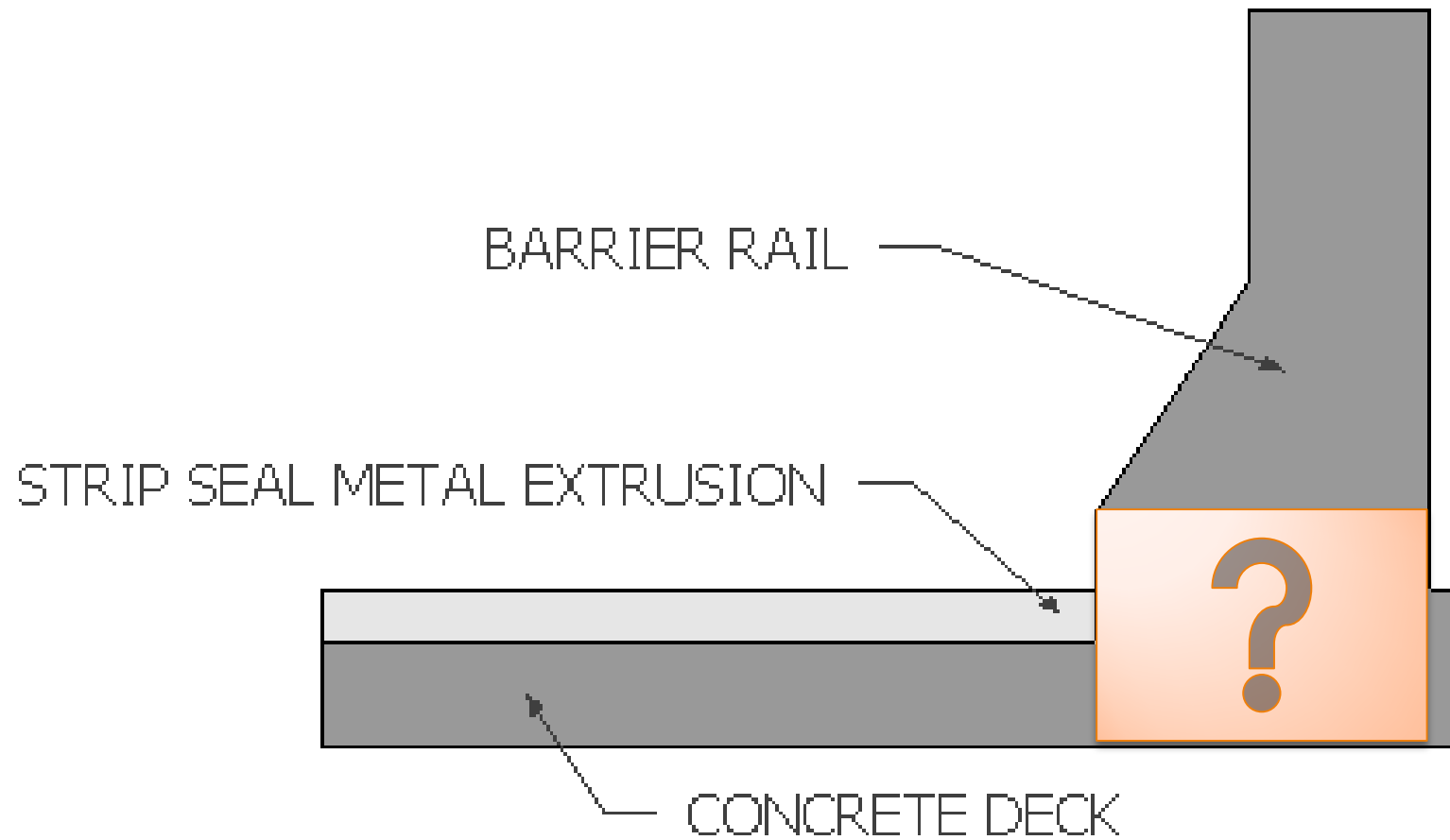
Problem Statement

- Current Iowa DOT details for the termination of strip seals at the deck-to-curb interface are complicated and quality construction is difficult to achieve. Subsequently, there is a need to re-evaluate and redesign the strip seal termination detail.

Anatomy of Strip Seal Expansion Joint



Strip Seal Termination Detail



Research Approach

- Develop new details and investigate details used by other states to re-evaluate Iowa's current termination detail.

Laboratory investigation will evaluate:

- Constructability
- Installation of neoprene gland
- Watertight integrity of design

Laboratory Specimens



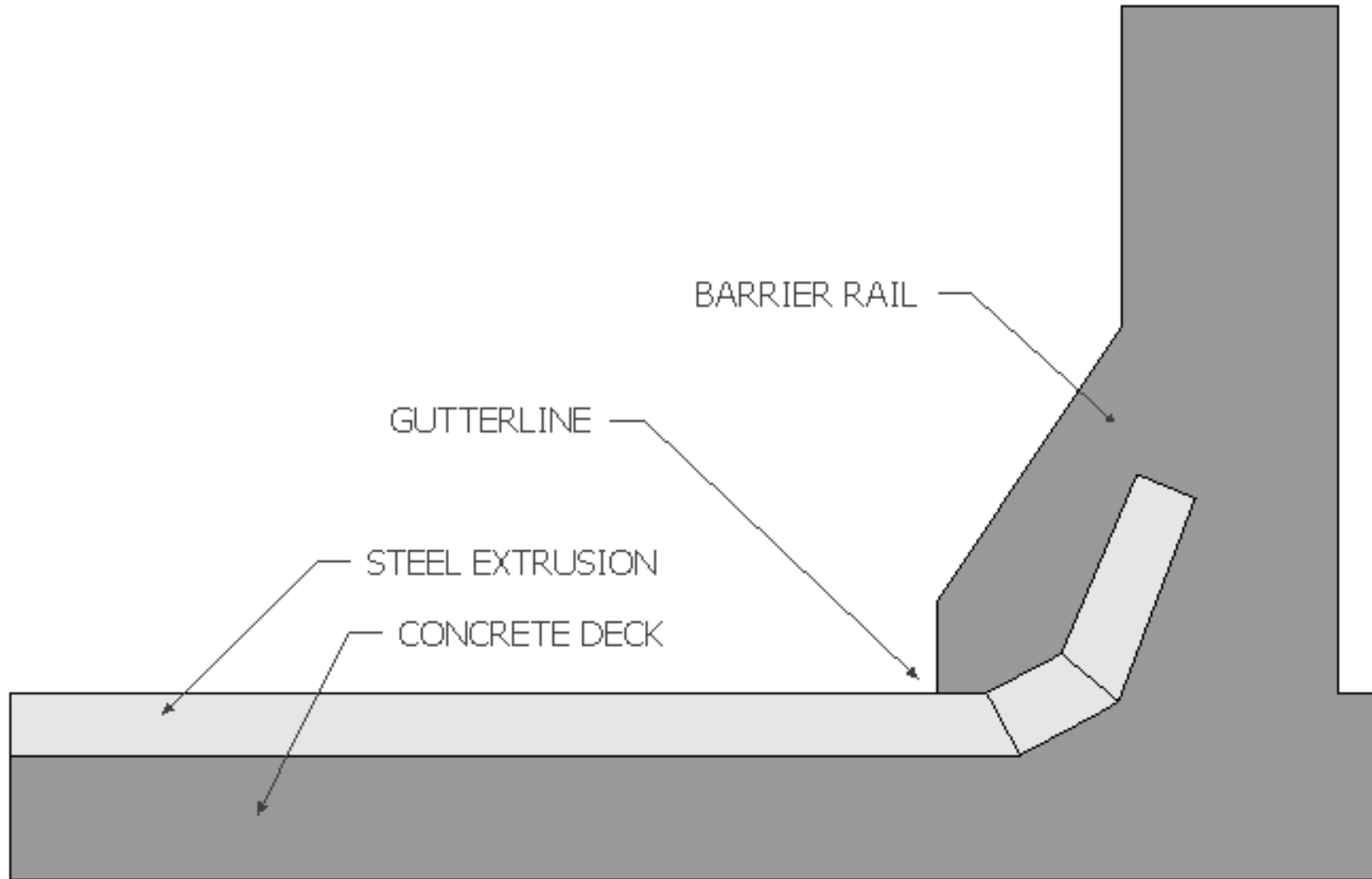
Two Manufacturers - Watson Bowman



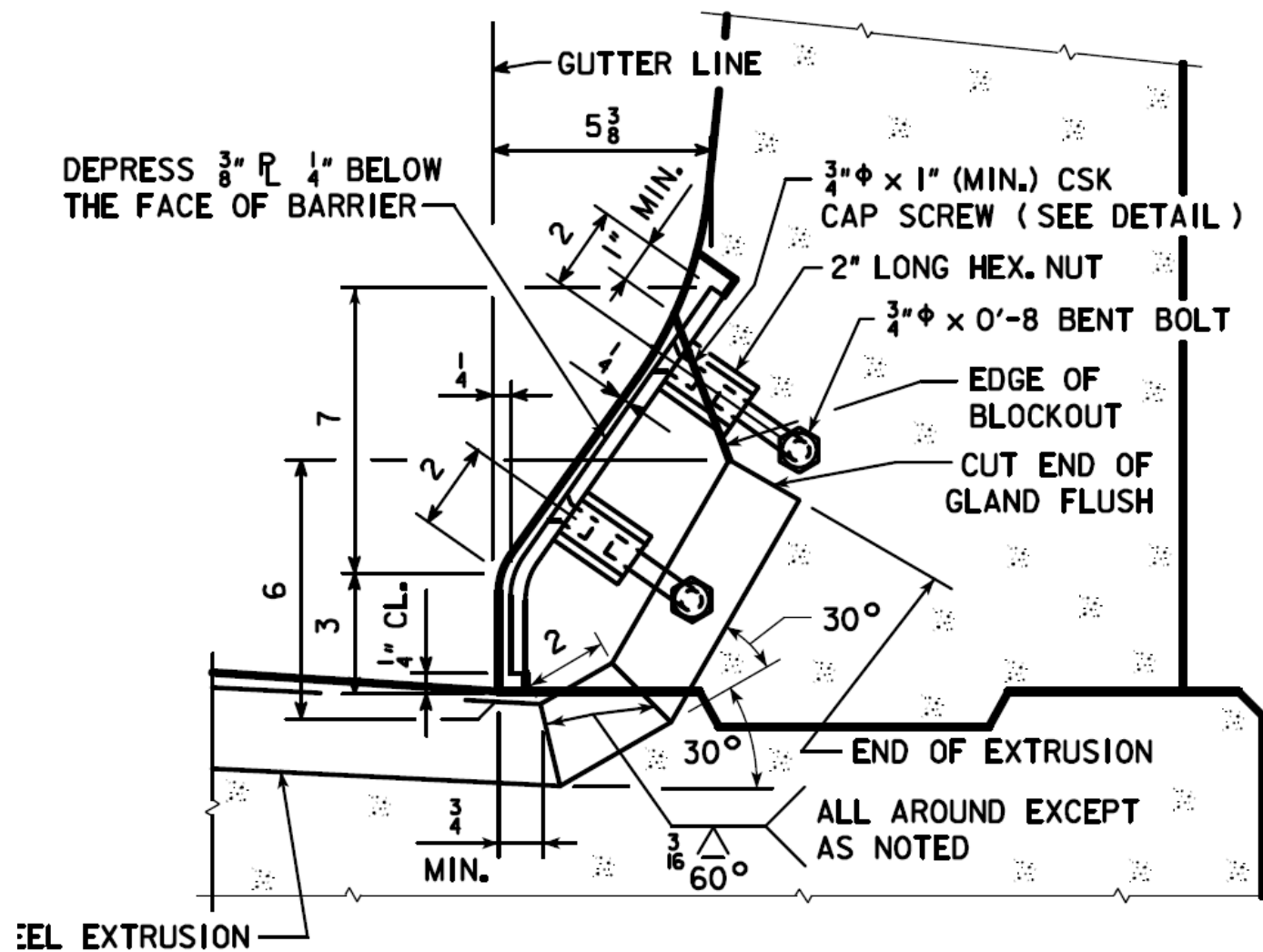
Two Manufacturers - D.S. Brown



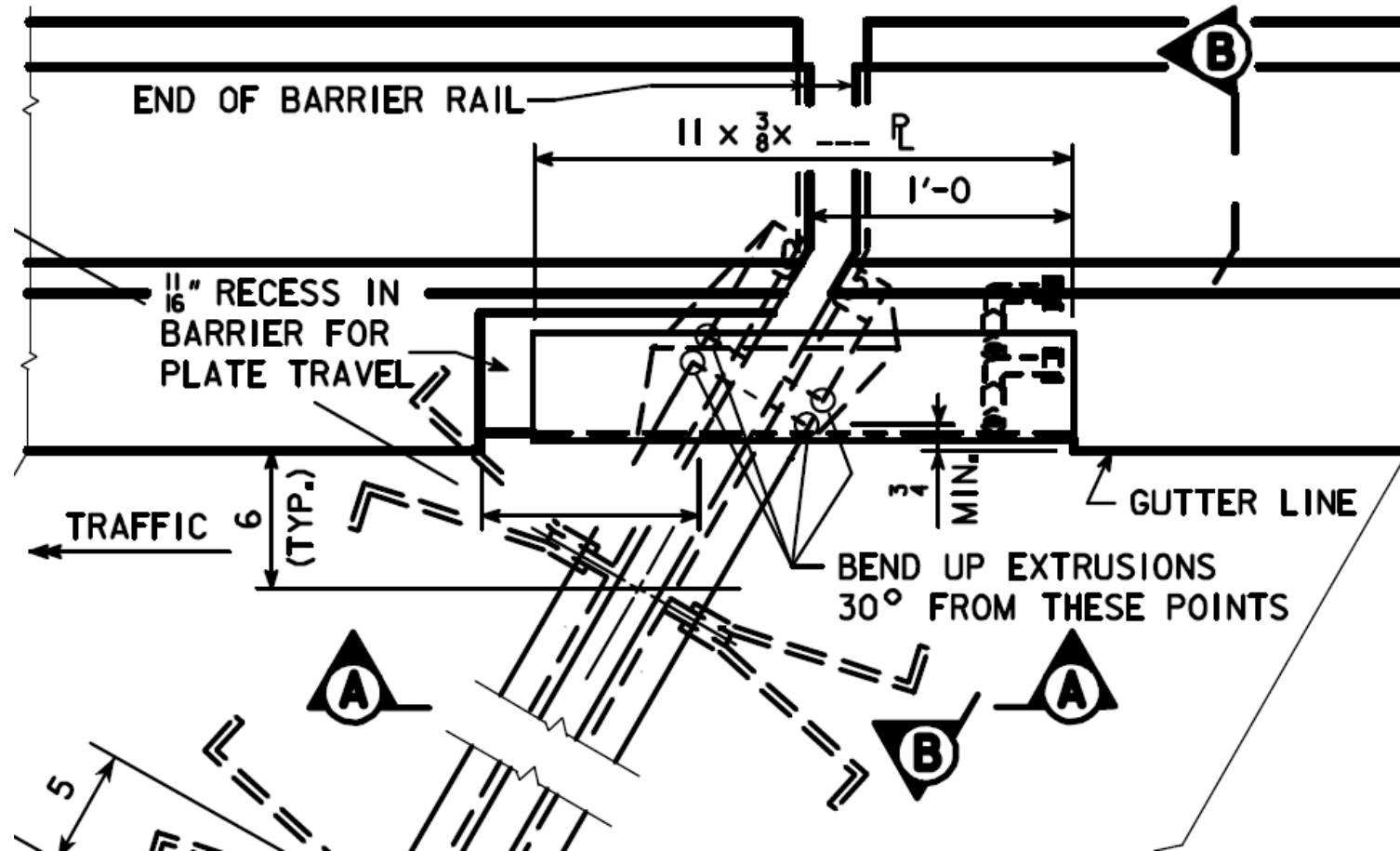
Termination Detail - Turn Up



Iowa - Termination Detail



Iowa - Plan View with Skew



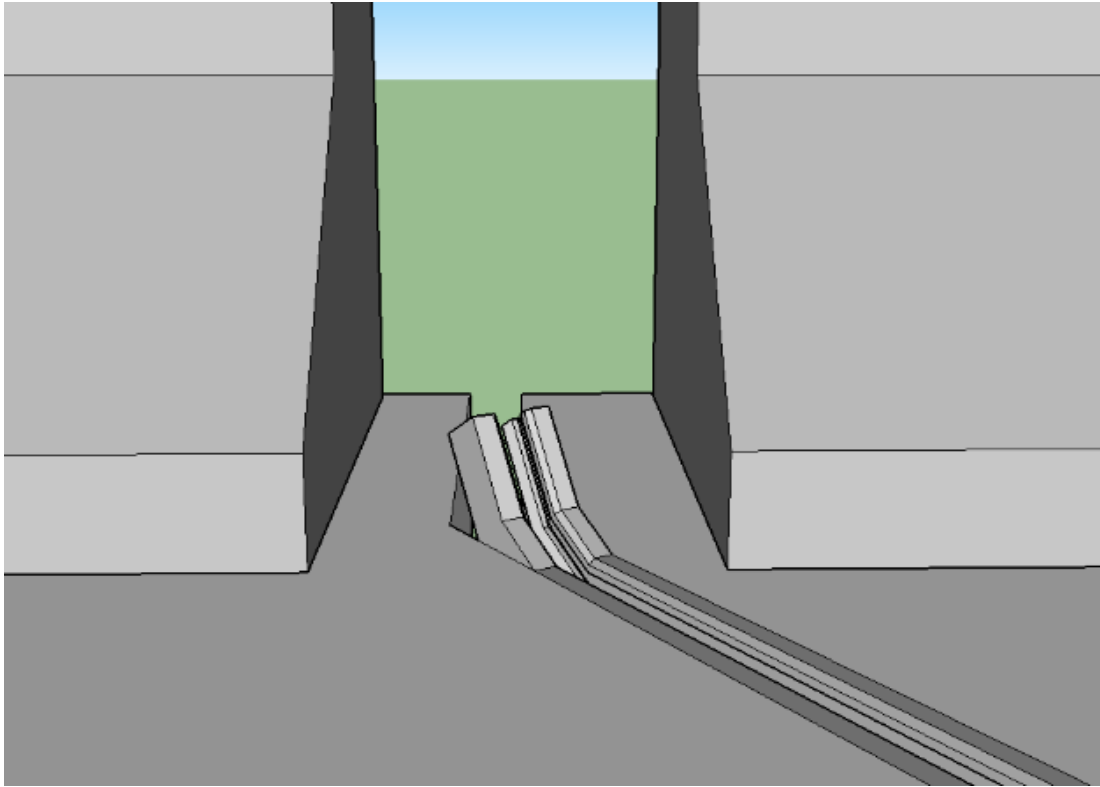
Current Detail - D.S. Brown



Current Detail - Watson Bowman



Modify Construction Sequence: Deck Pour Blockout



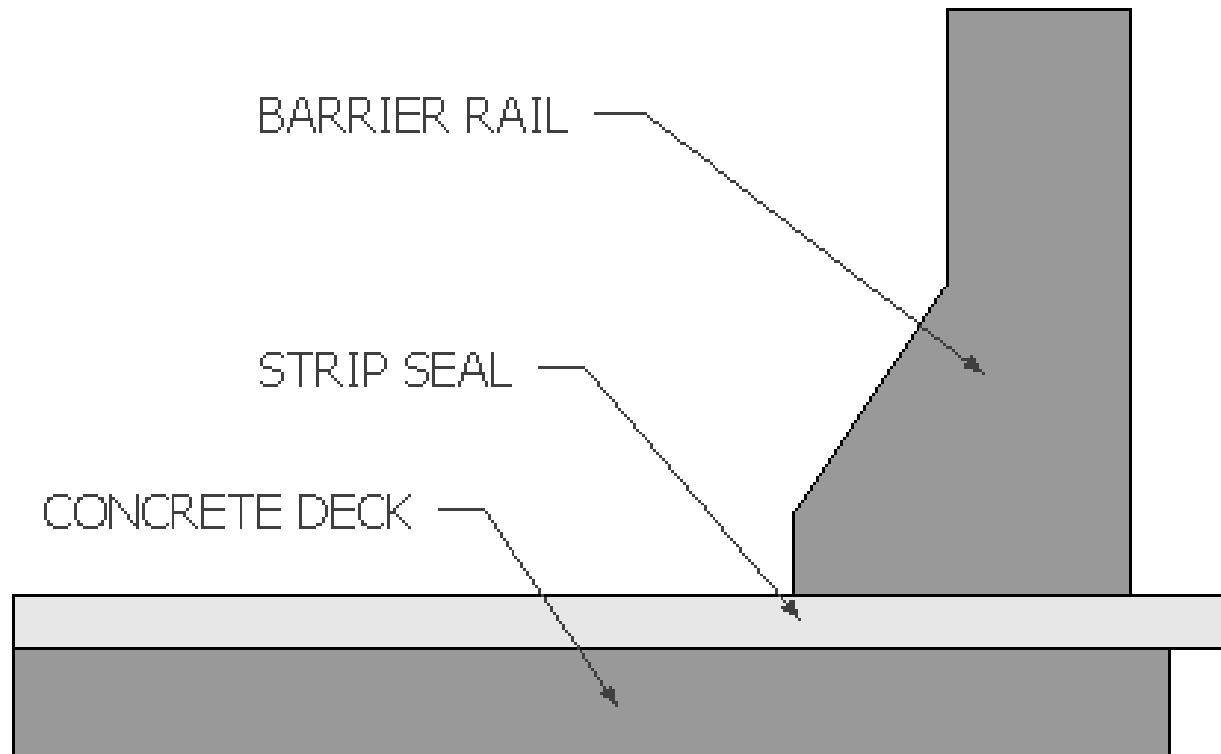
Modified Detail- Iowa DOT



Modified Detail - Iowa DOT

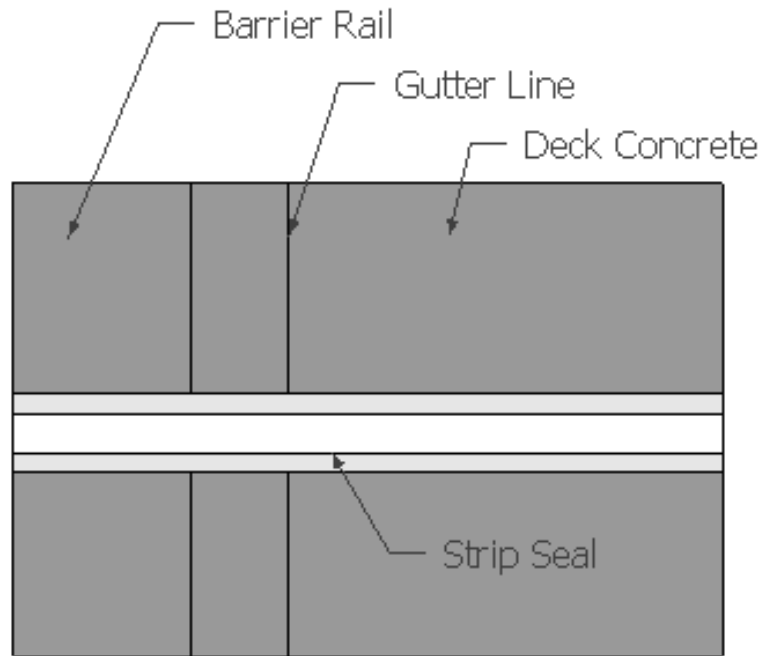


Design 1: Straight Through Curb

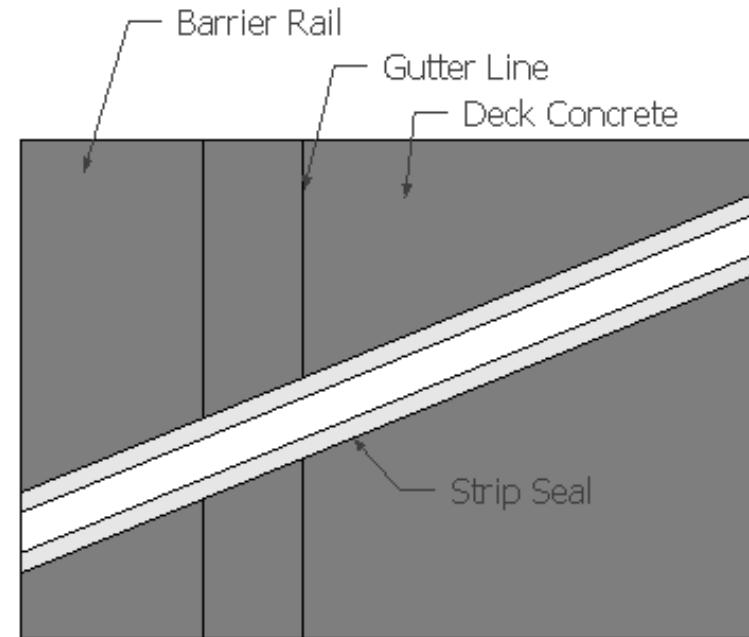


Section View

Design 1: Straight Through Curb

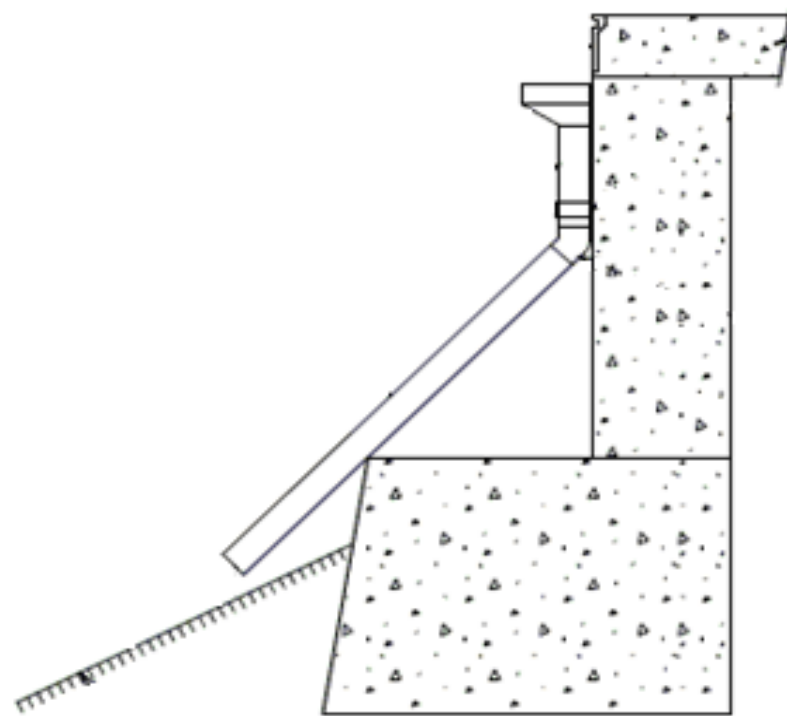
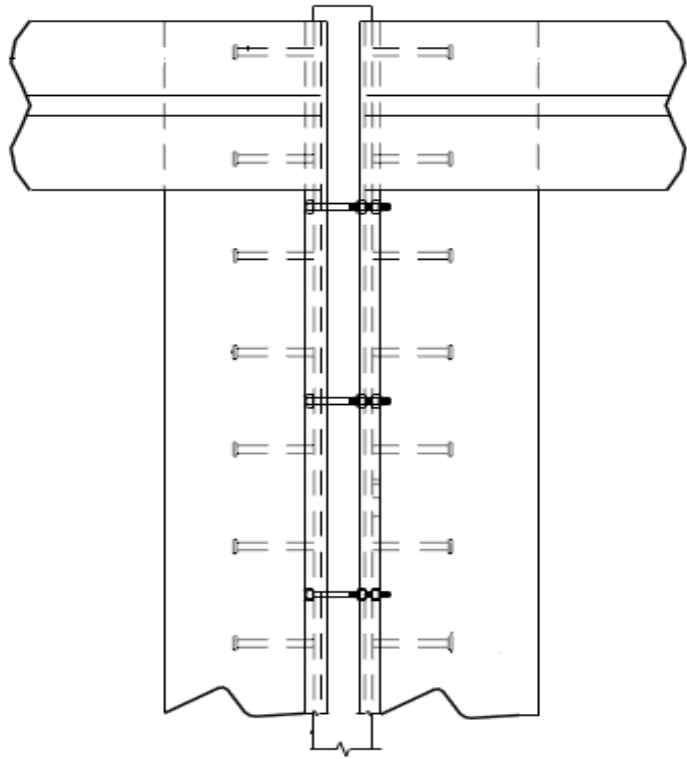


Plan View

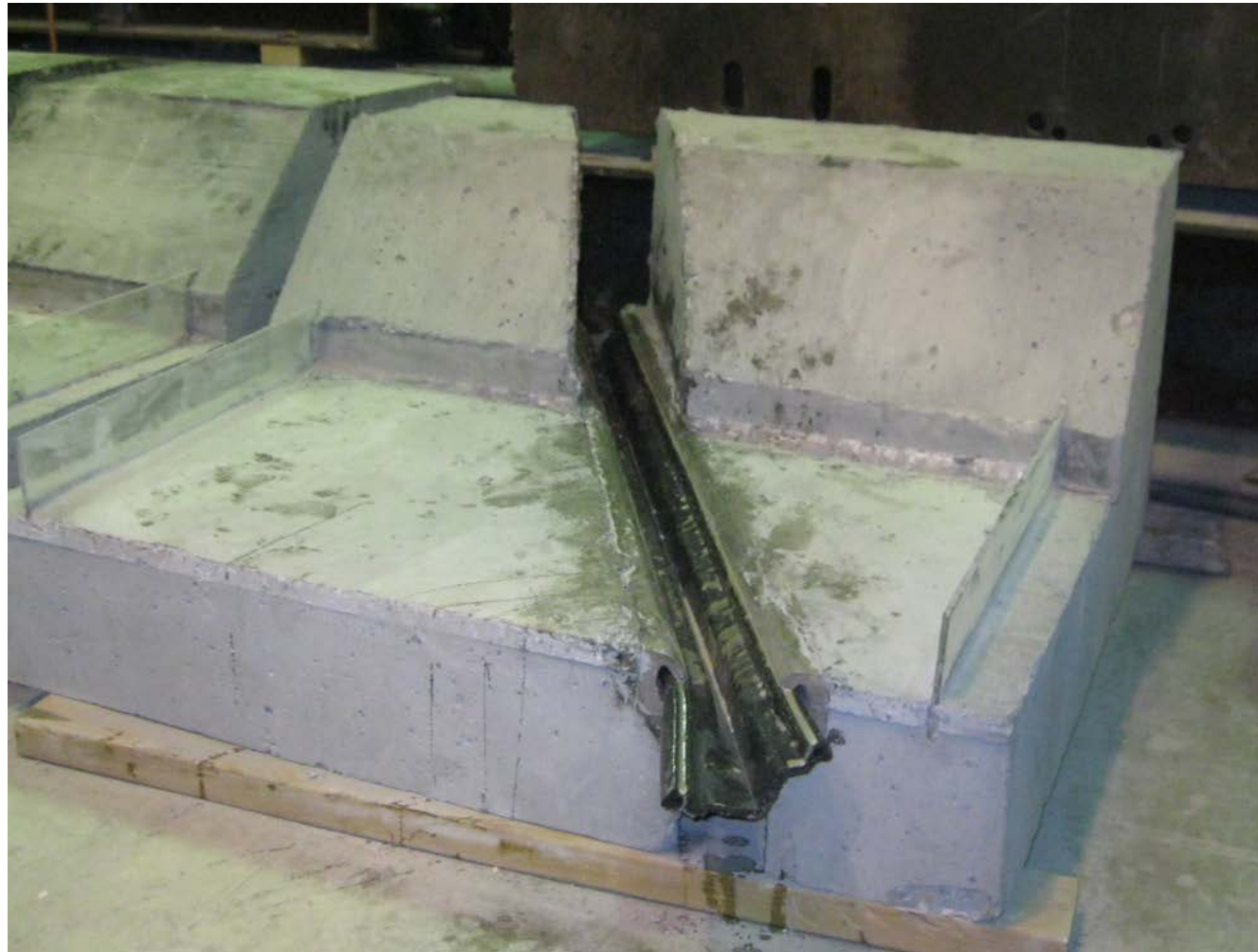


Plan View – Skew 30°

Straight Through Curb - Missouri, Kansas



Design 1: Straight Through Curb - D.S. Brown



Design 1: Straight Through Curb - D.S. Brown



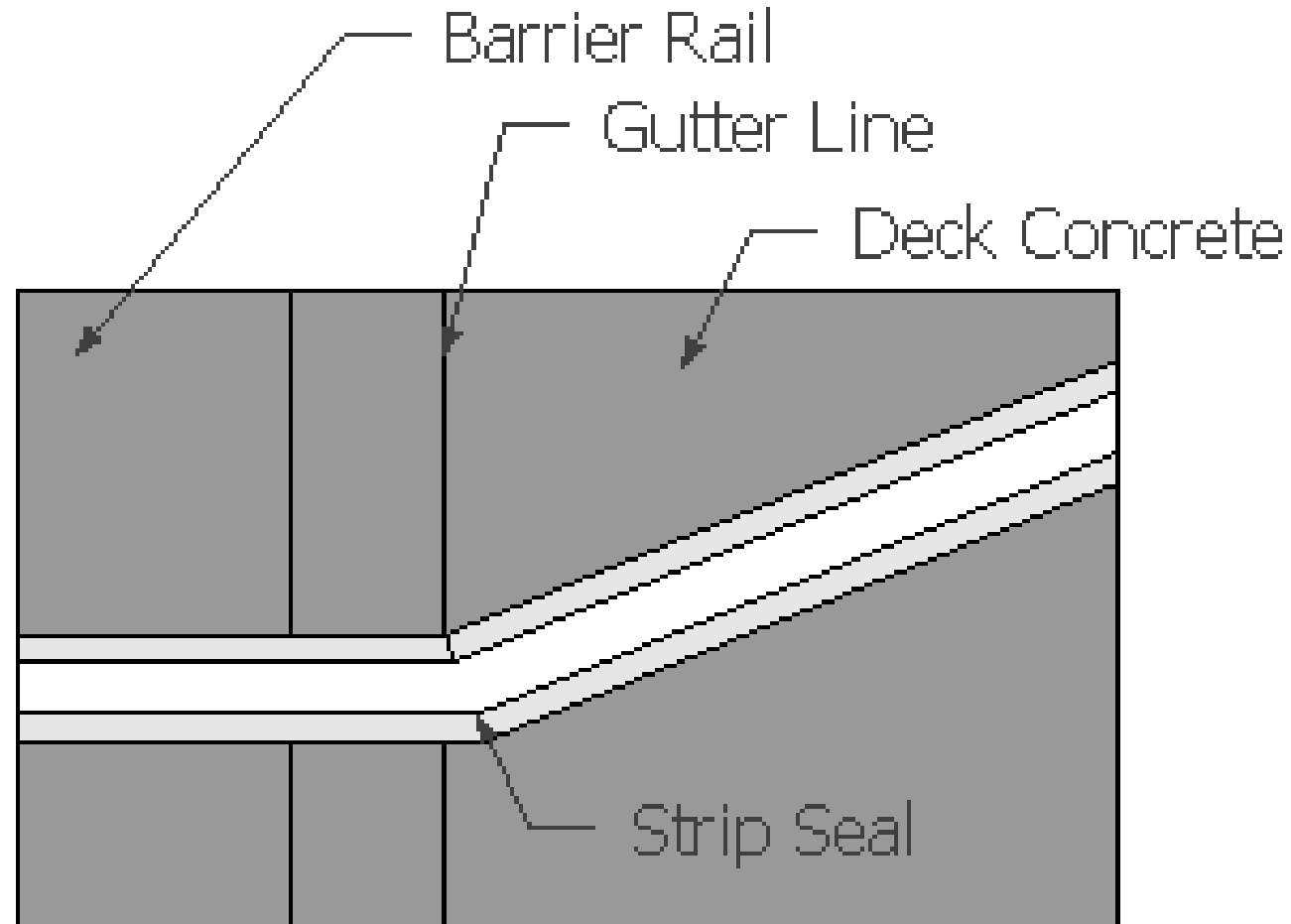
Design 1: Straight Through Curb - Watson



Design 1: Straight Through Curb - Watson



Design 2: Dogleg



Plan View – Skew 30°

Design 2: Dogleg - D.S. Brown

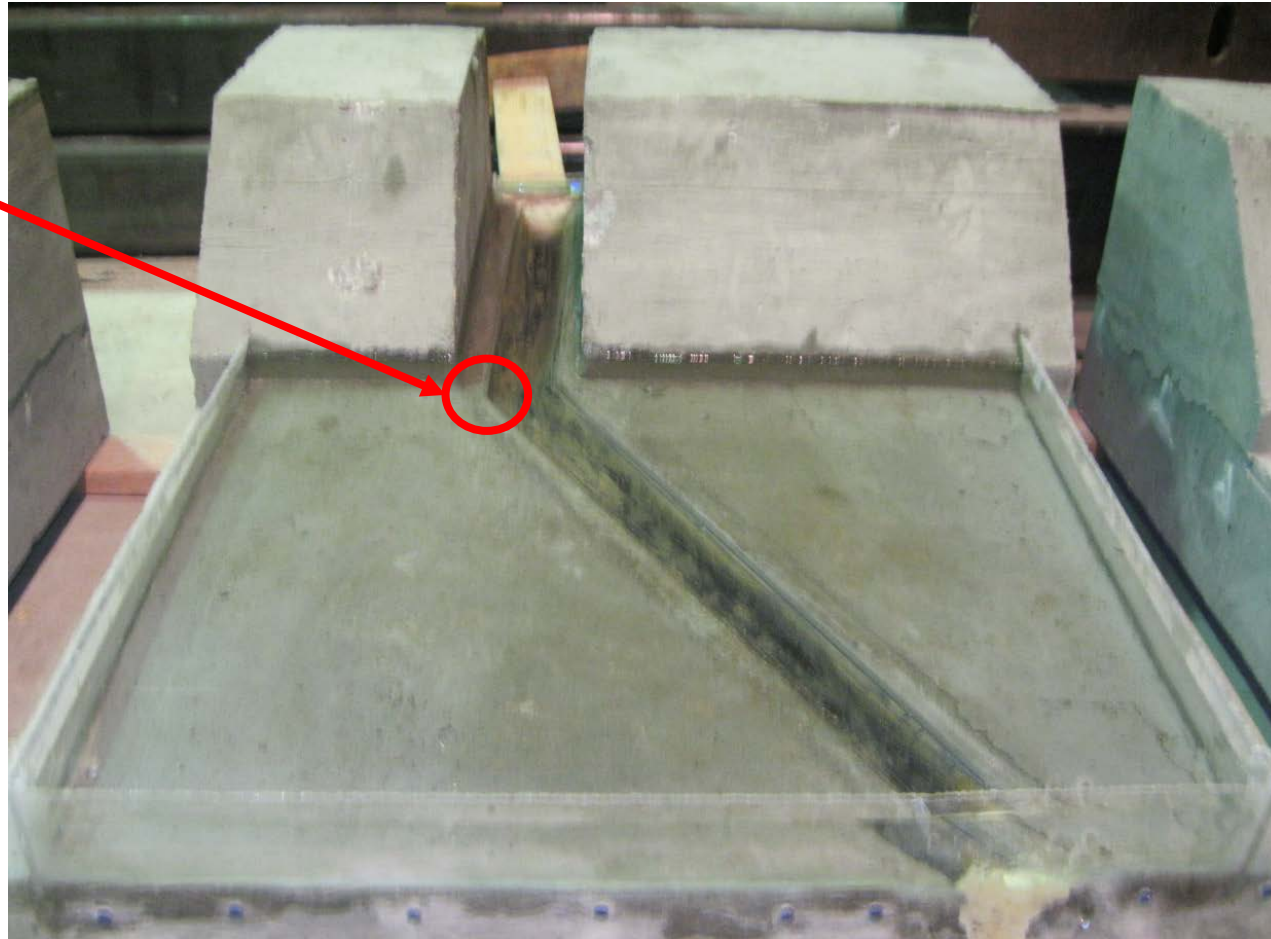


Design 2: Dogleg - Watson Bowman



Design 2: Dogleg - Watson Bowman

Leaked through
bend



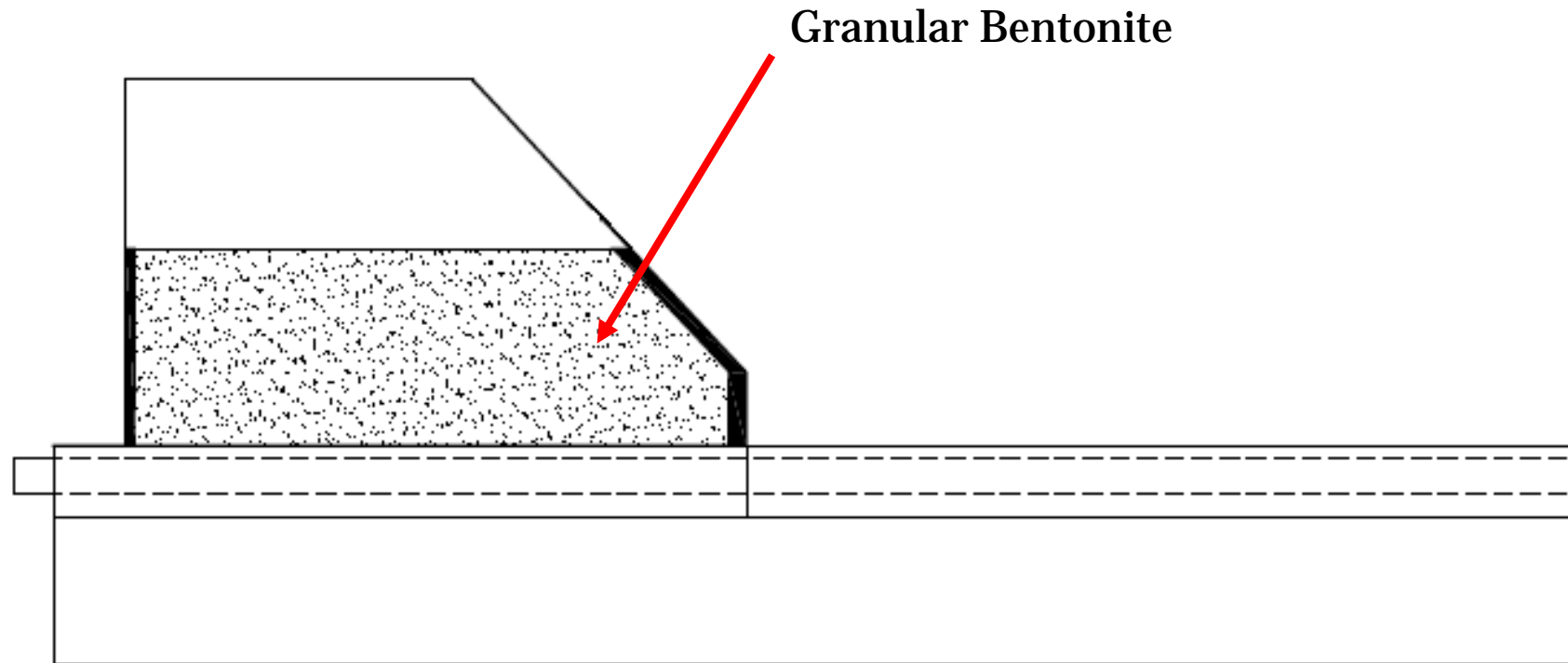
Design 2: Dogleg - Watson Bowman



Design 2: Dogleg - Watson Bowman



Design 3: Bentonite at Termination



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Design 3: Bentonite at Termination

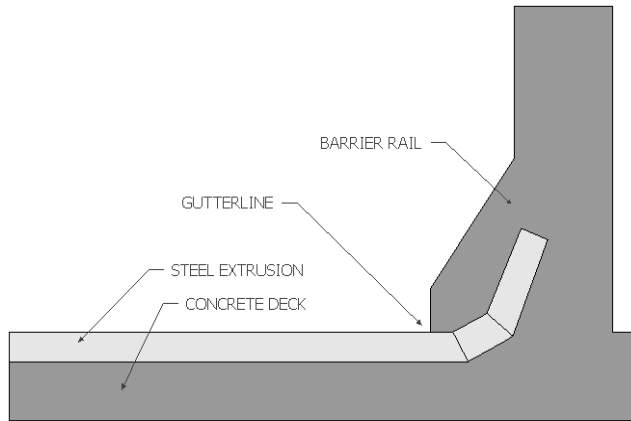


Design 3: Bentonite at Termination

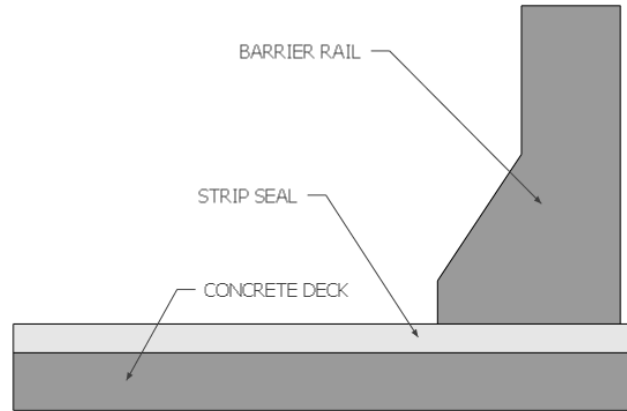


Summary

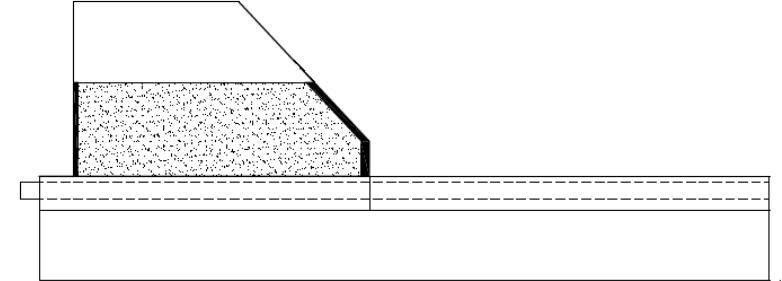
- Turn Up



- Straight Through



- Bentonite





Thank You!

Questions?