Rehabilitation of St. Marys Wycliffe Bridge in British Columbia, Canada

2nd International Conference on Timber Bridges

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Murray M. Johnson, P.Eng., PE

Buckland & Taylor Ltd.

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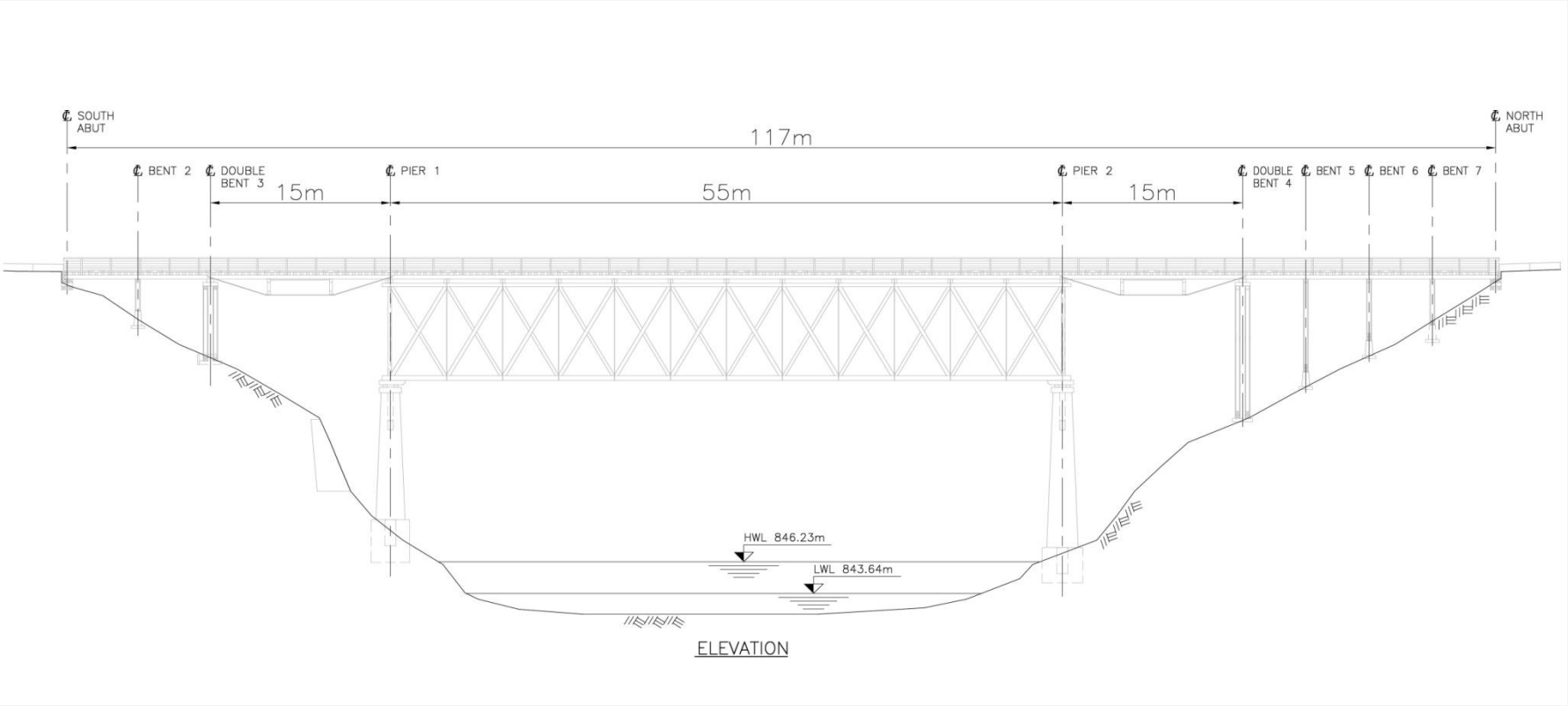
Existing Bridge



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Existing Bridge

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Existing Bridge

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Howe Truss Detail

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Existing Bridge

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Inspection: Deck Level Deterioration

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Inspection: Deck Level Deterioration

BUCKLAND & TAYLOR | COWI

Inspection: Queenpost Truss Deterioration

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Inspection: Queenpost Truss Deterioration

BUCKLAND & TAYLOR | COWI

Inspection: Queenpost Truss Deterioration

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Inspection: Substructure Deterioration

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Inspection: Substructure Deterioration

BUCKLAND & TAYLOR | COWI

Inspection: Substructure Deterioration

BUCKLAND & TAYLOR | COWI

Inspection: South Slope Movement

BUCKLAND & TAYLOR | COWI

Inspection: South Slope Movement

BUCKLAND & TAYLOR | COWI

Inspection: South Slope Movement

BUCKLAND & TAYLOR | COWI

Inspection: Howe Truss

Inspection: Howe Truss

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Inspection: Main Piers

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Inspection: Main Piers

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Bridge Rehabilitation Design

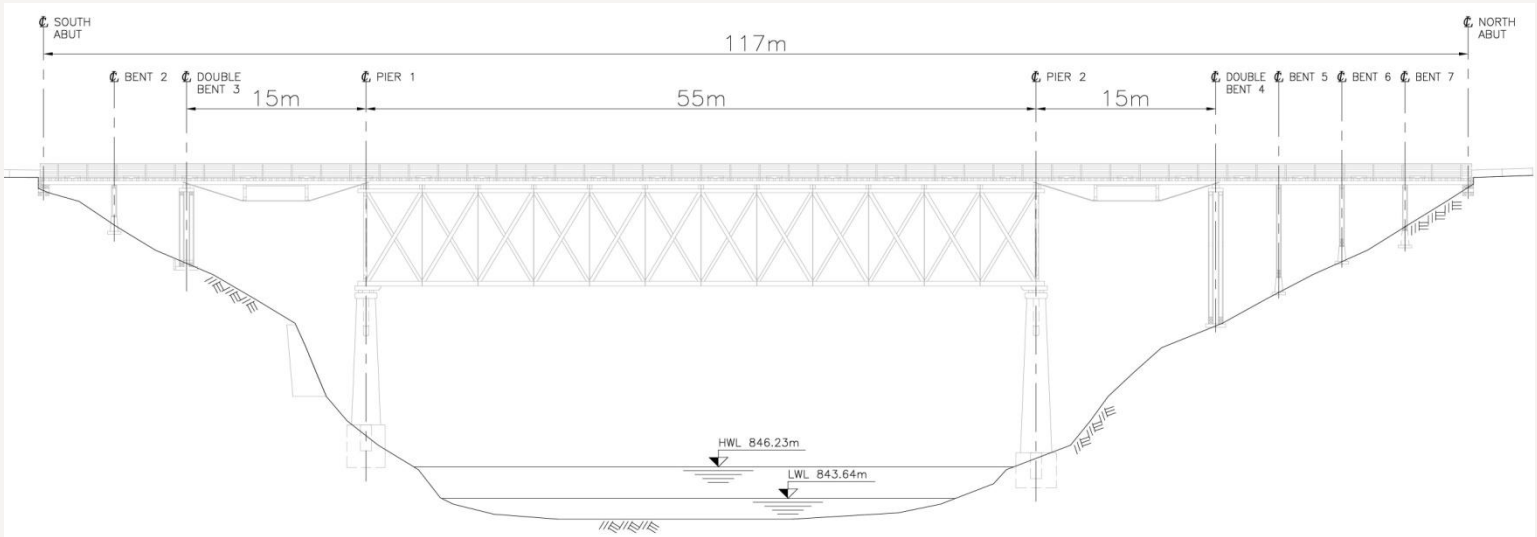
Required:

- **Double load limit to 36 tonnes**
- **Pedestrians and cyclists to share roadway**
- **Drastically reduce maintenance requirements**
- **Mitigate south slope movement problem**

Solution:

- **Remove entire deck and barrier system**
- **Keep main Howe truss span (55m), from floorbeams down**
- **Keep existing concrete piers**
- **Remove both queenpost spans and all trestle spans**
- **Build new concrete abutments and new north bent**
- **New 28 m and 18m/18m glulam girder spans**
- **Select truss strengthening**
- **Complete new deck system and crash-rated barriers, cyclist height**

Bridge Rehabilitation Design



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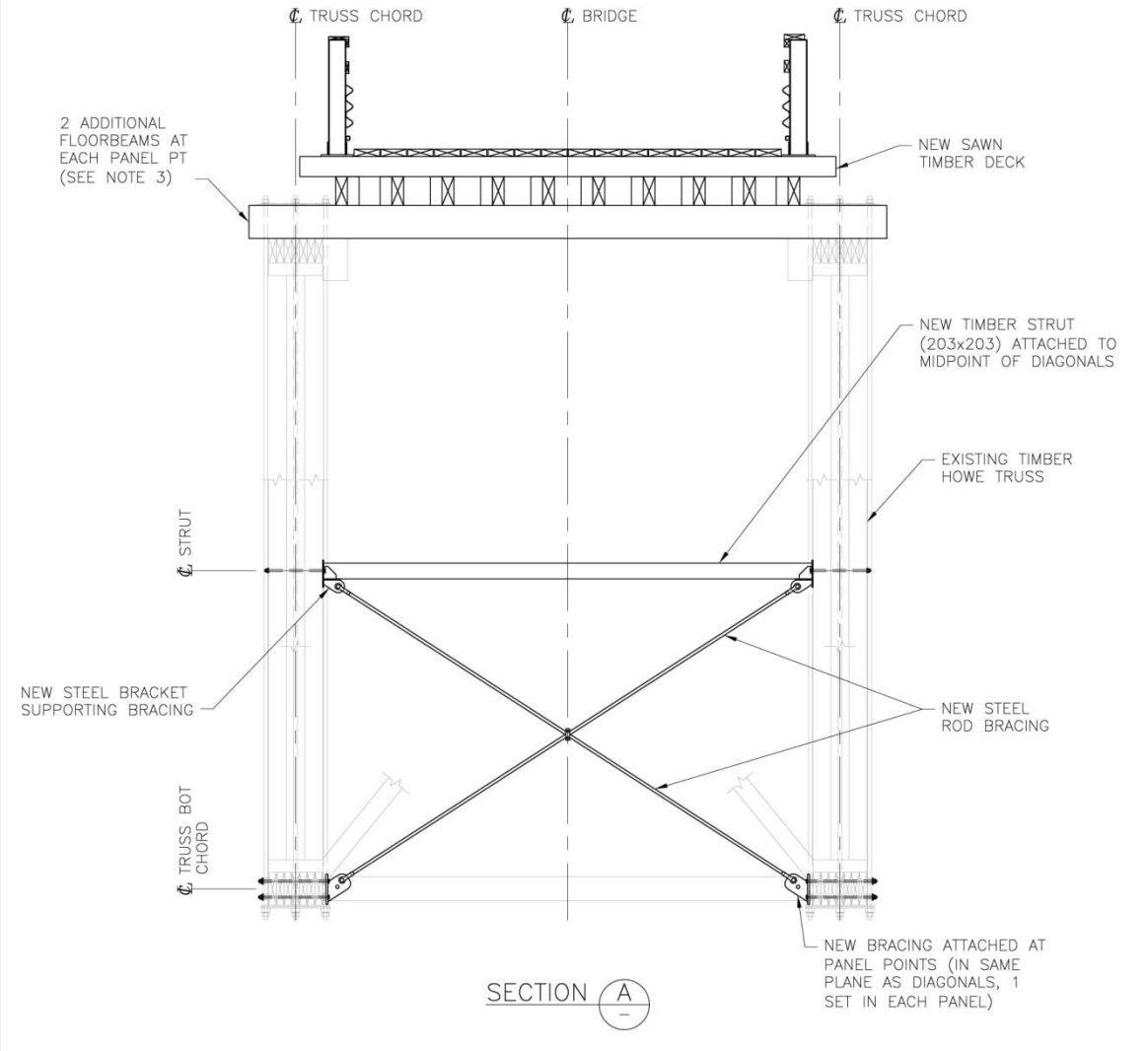
New Cross-section: Howe Truss Span



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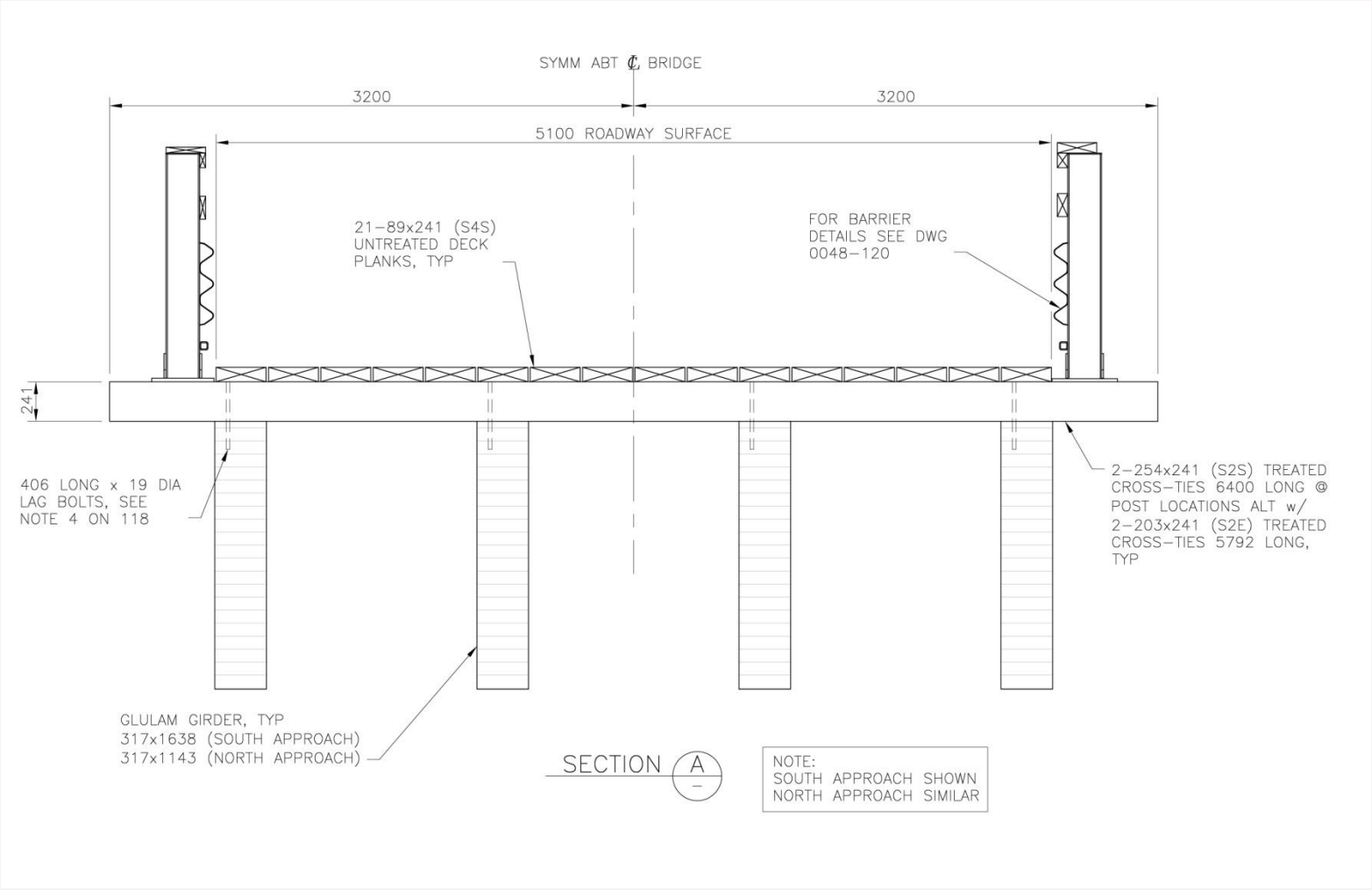
New Cross-section: Glulam Girder Approach Spans



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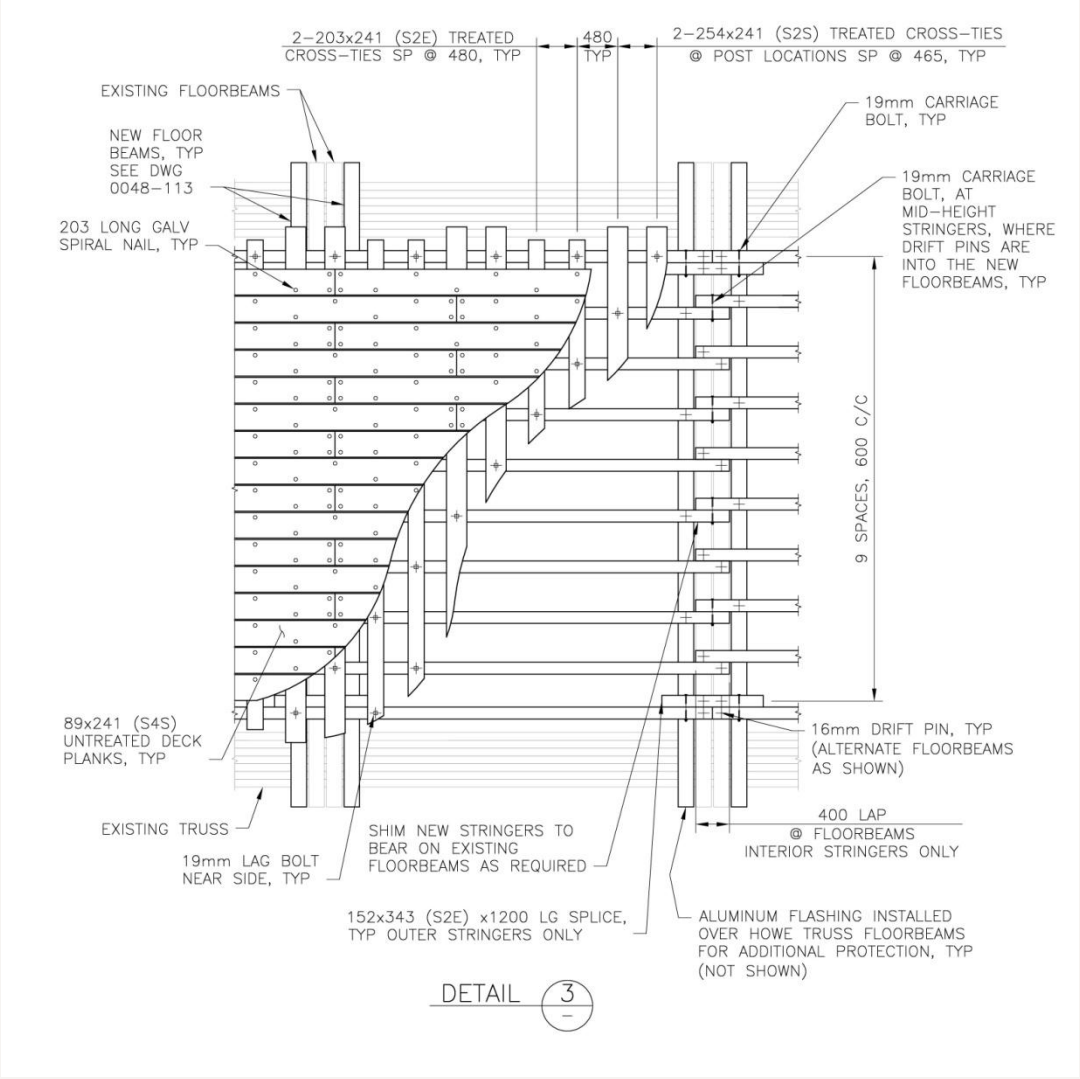
New Deck System



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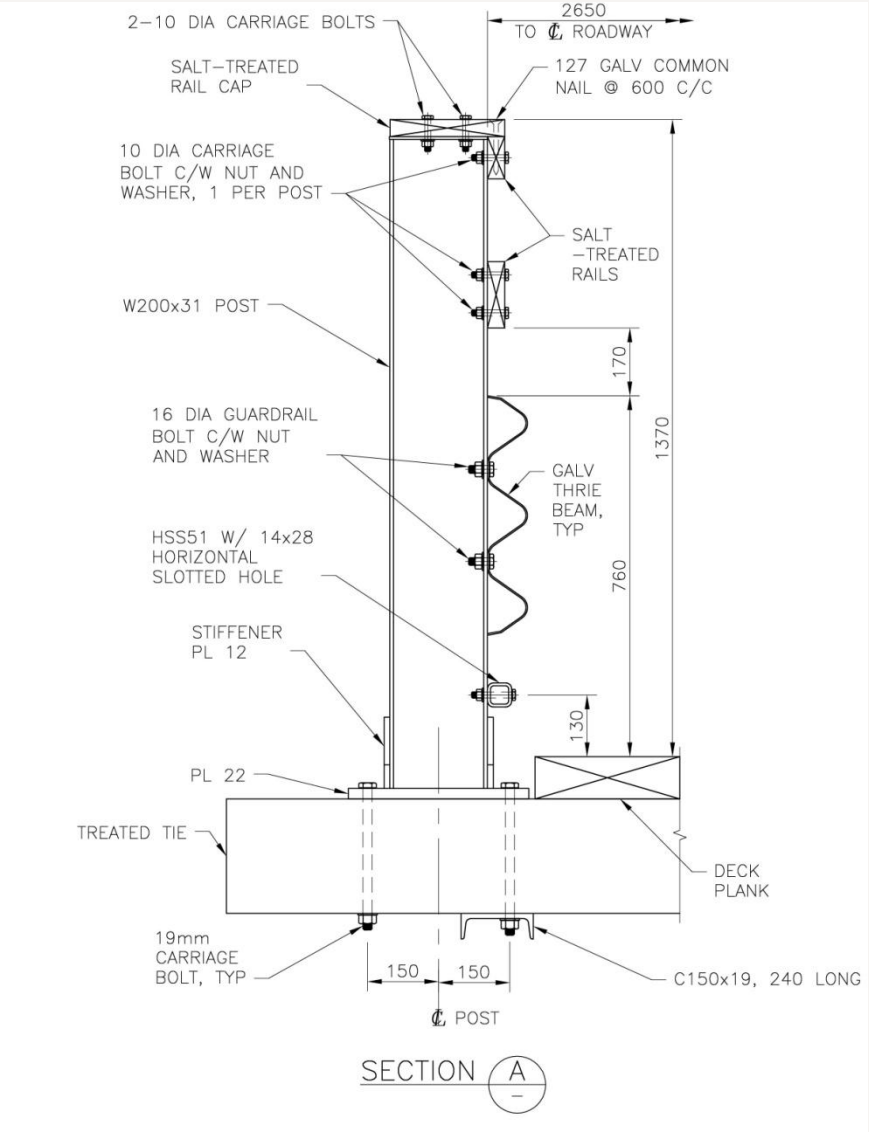
New Crash-rated Barrier (cyclist height)



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Construction

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Construction

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Supplemental Floorbeams

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Ready for Deck

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North Glulam Spans

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Construction

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Stringer Installation

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Decking

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Glulam Girders

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Glulam Spans

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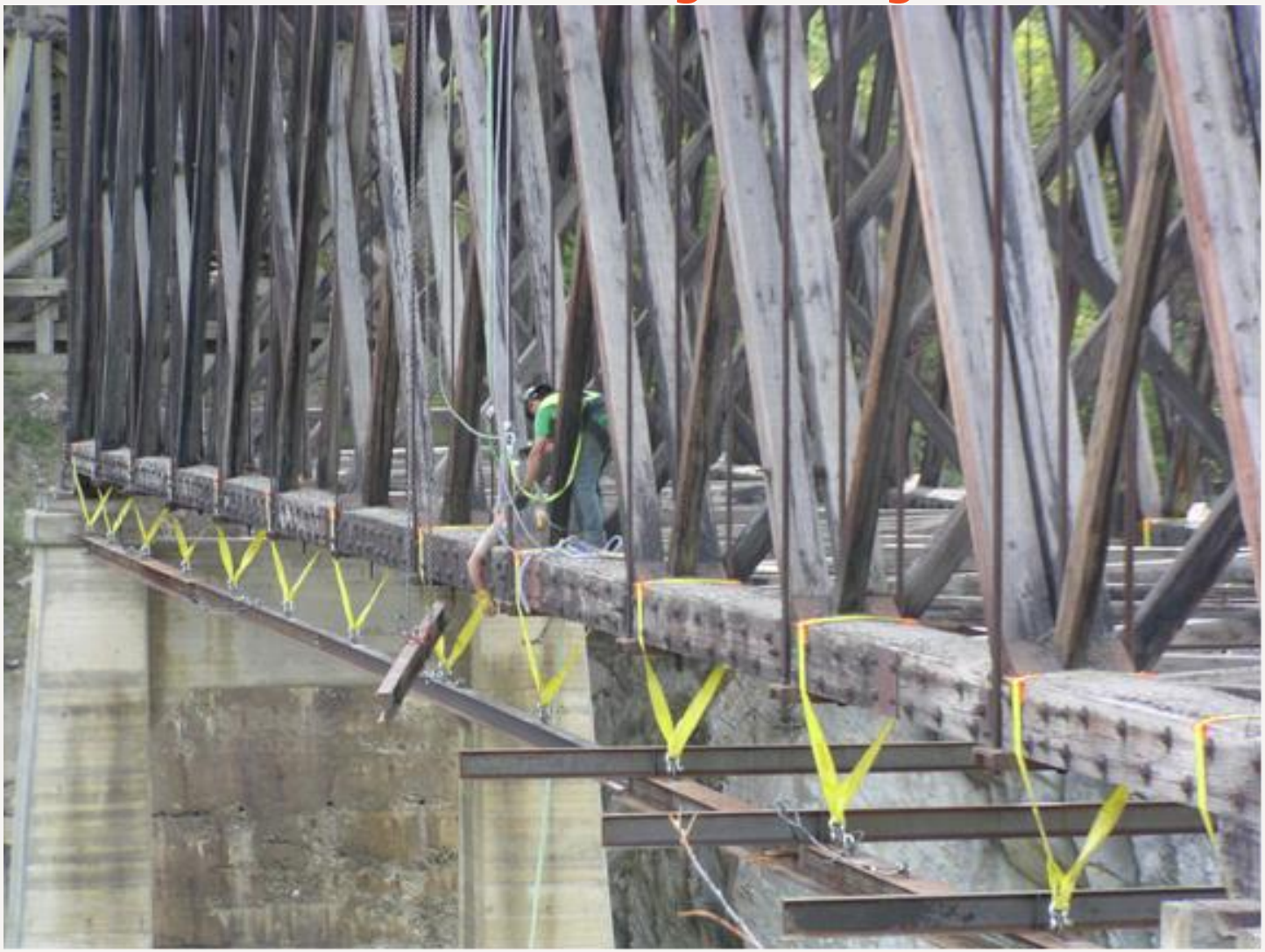
Truss Rehabilitation & Strengthening



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Truss Rehabilitation & Strengthening

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Truss Rehabilitation & Strengthening

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Completed Bridge

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Completed Bridge

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Completed Bridge: Barriers

Completed Bridge

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Completed Bridge

Thank You For Your Attention
Questions?

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