Sodom Ditch Bridges

WBES 2009 – Session 3B

Keith Kaufman

Knife River-Western Oregon Division

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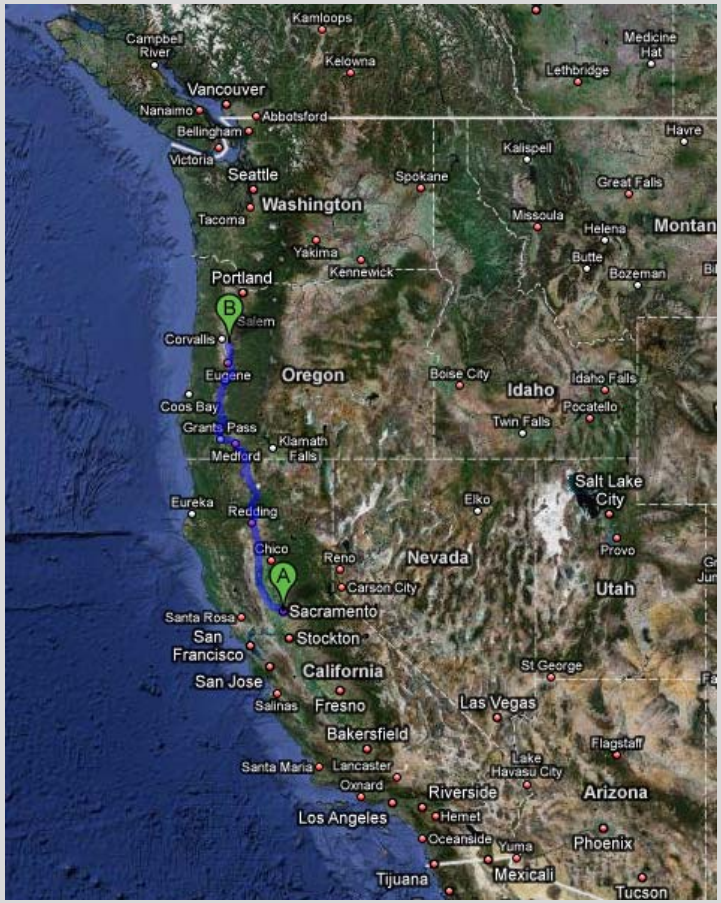
Project Location



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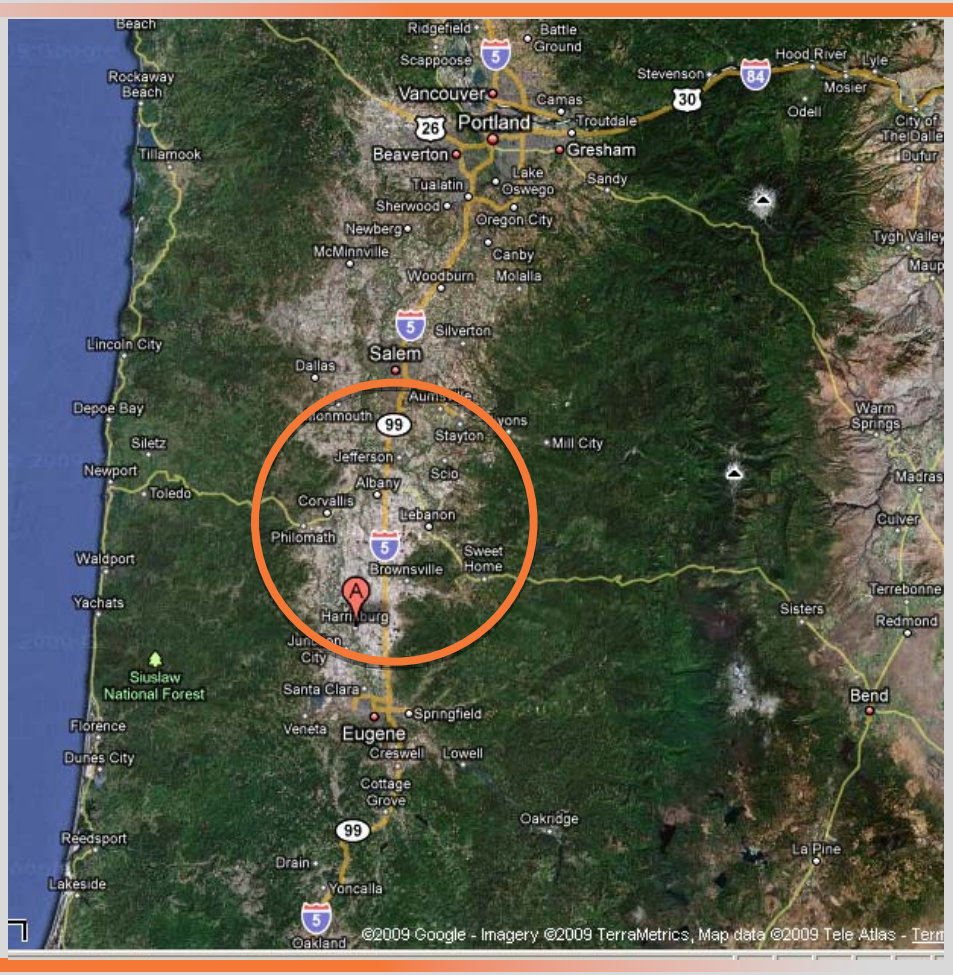
Project Location



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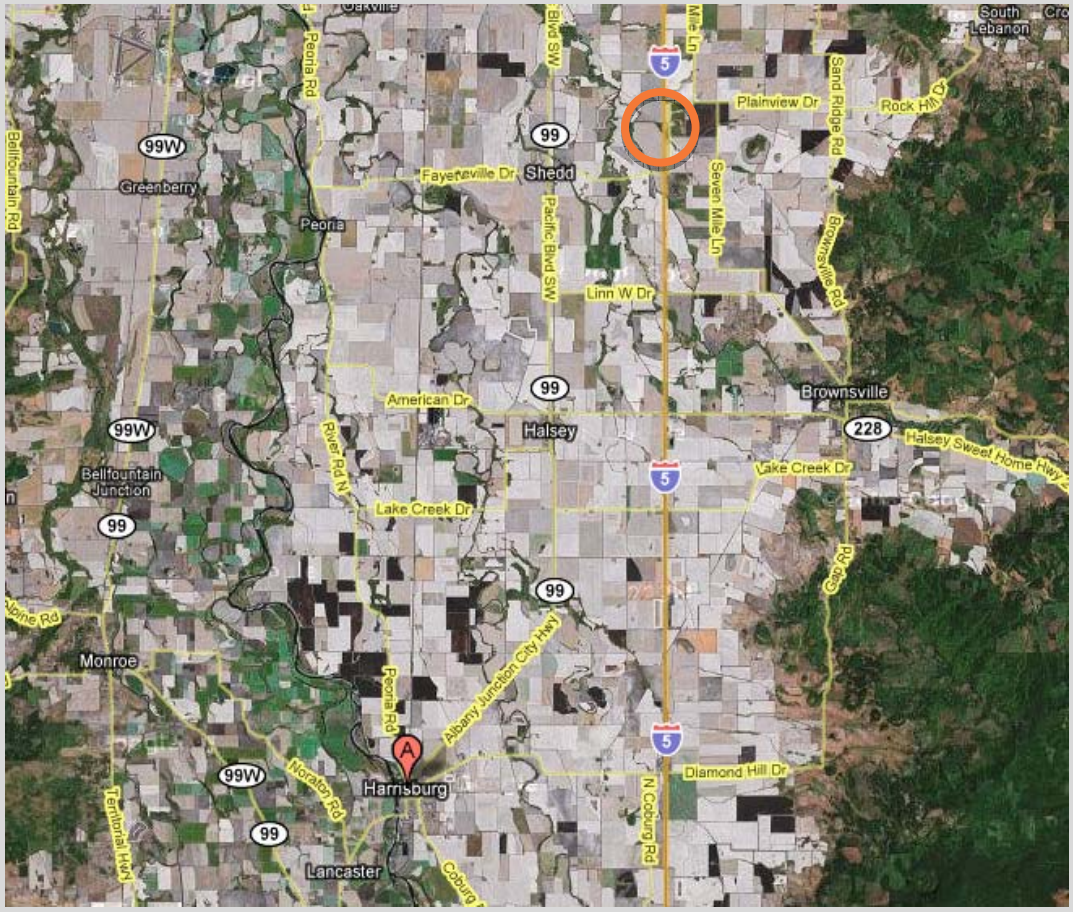
Project Location (15 miles)



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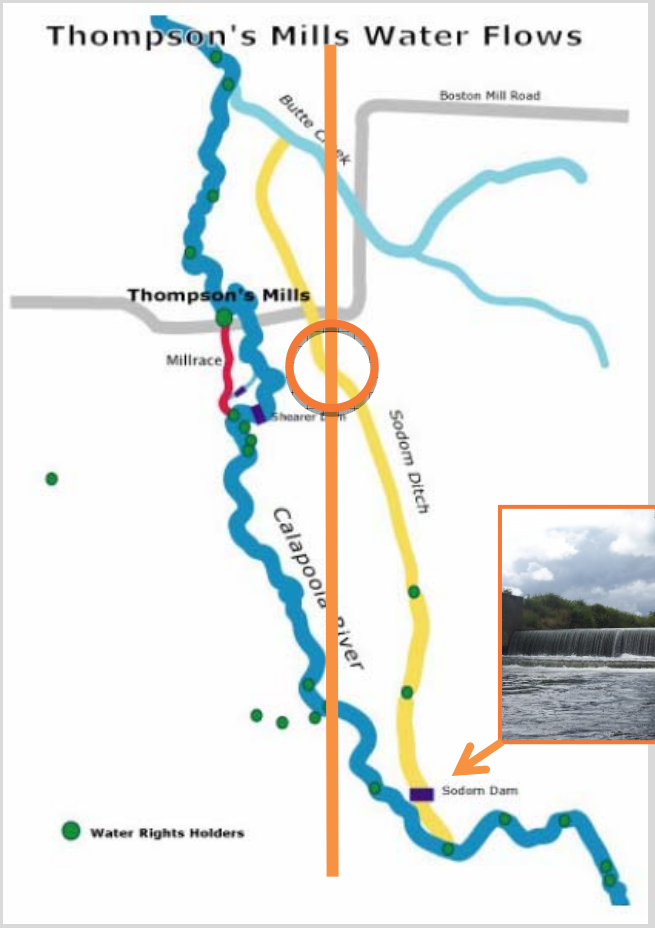
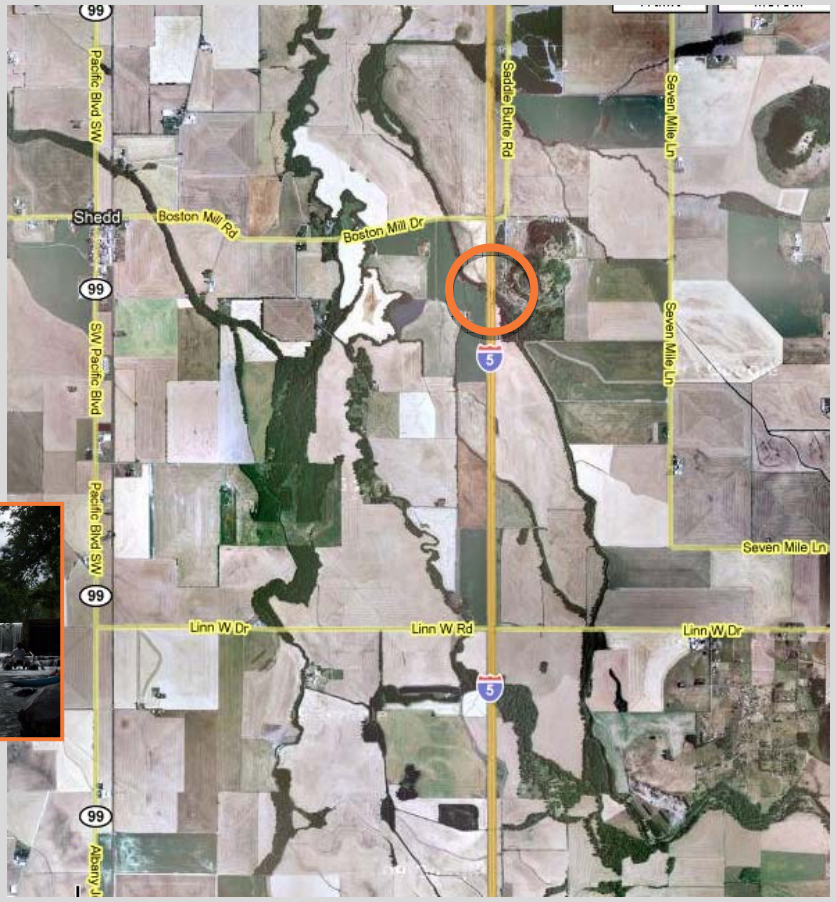
Project Location





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Existing Bridge Debris

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Existing Bridge Debris

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Project Information

- Oregon DOT / OBDP
  - OTIA III State Bridge Delivery Program
  - OBDP - Joint Venture HDR & Fluor
- I-5: Sodom Ditch–Calapooia Oflow – Bundle 216
  - (2) Bridge Replacements
  - (2) Bridge Repairs
  - $12 Million Total
  - $3.35 Million Per Bridge

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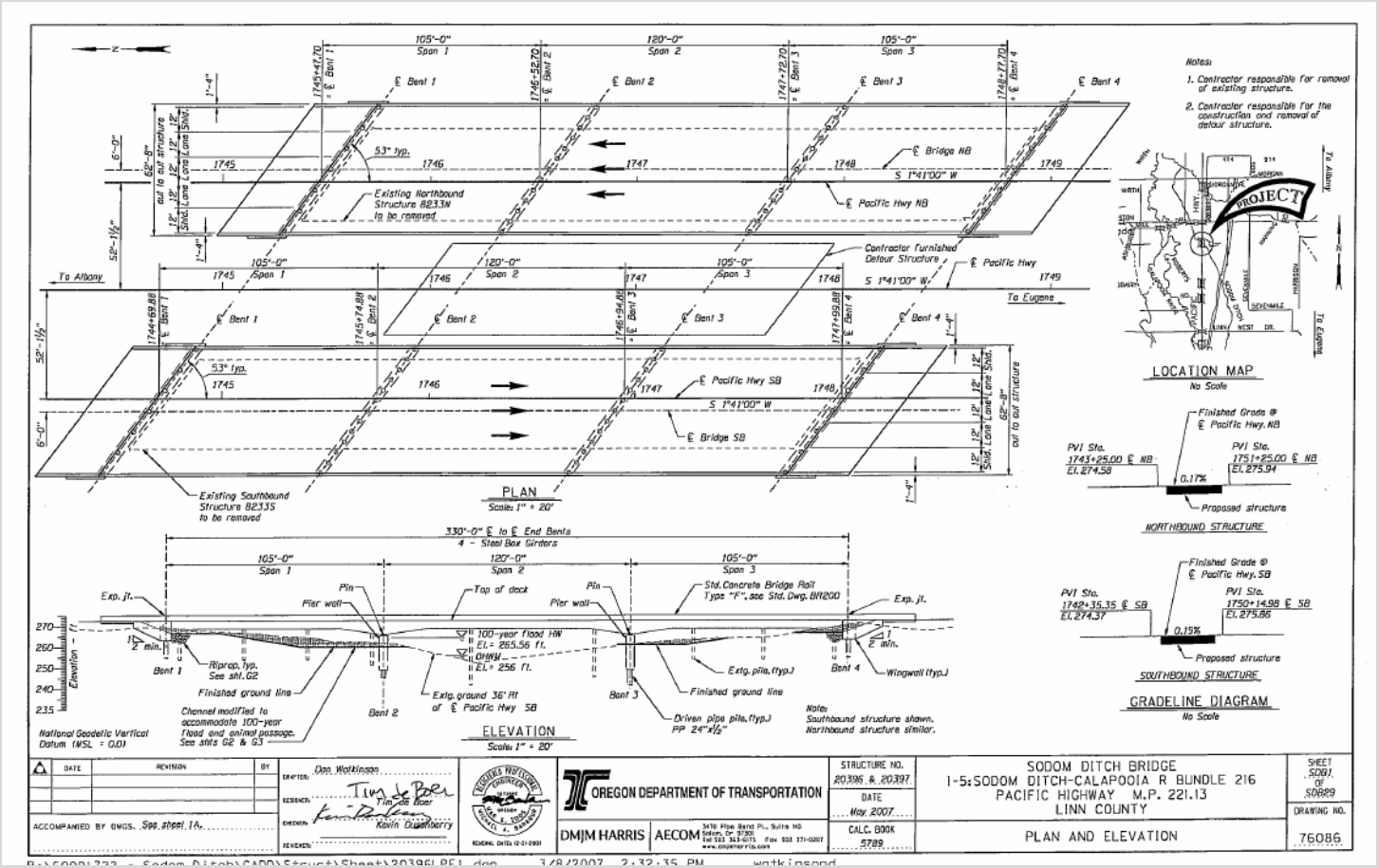
Contract Bridge Design



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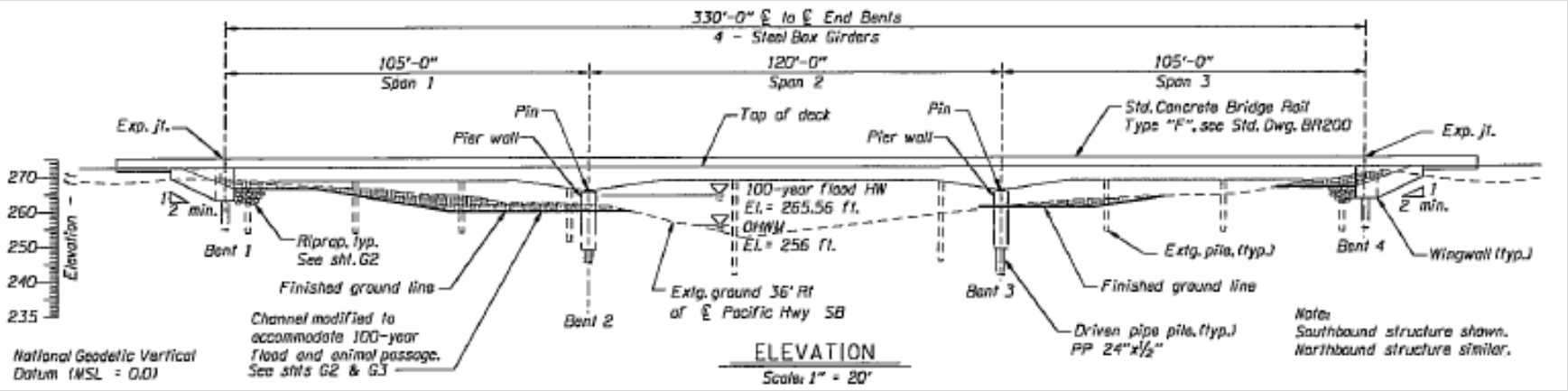
Contract Bridge Design



- (3) Spans 105’-120’-105’ = 330’
- Structure Steel Depth 3’-0” To 4’-6”
- (4) Girder Lines

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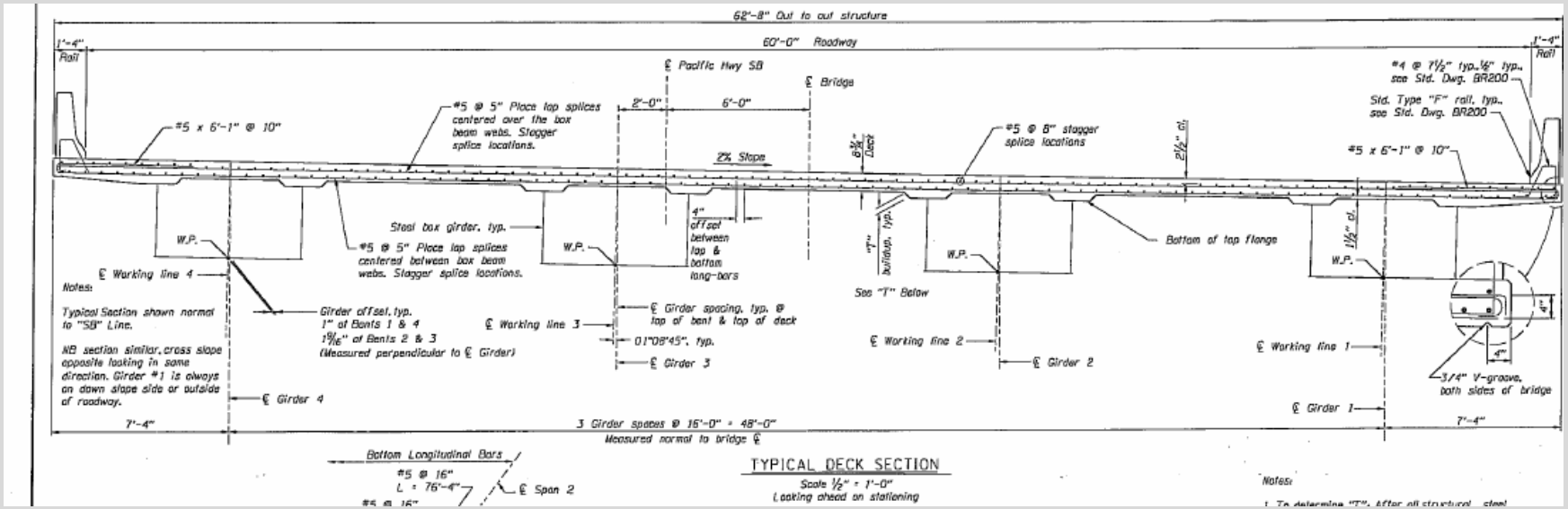
Contract Bridge Design



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Bid and VE Proposal

- Bid Date – May 24, 2007
- KRC Contacted GC – June 2007
  - Precast Option Presented
  - Hydraulic Issues
  - GC/OBEC/KRC Develop Precast Option
- VE Proposal Submitted – July 2007

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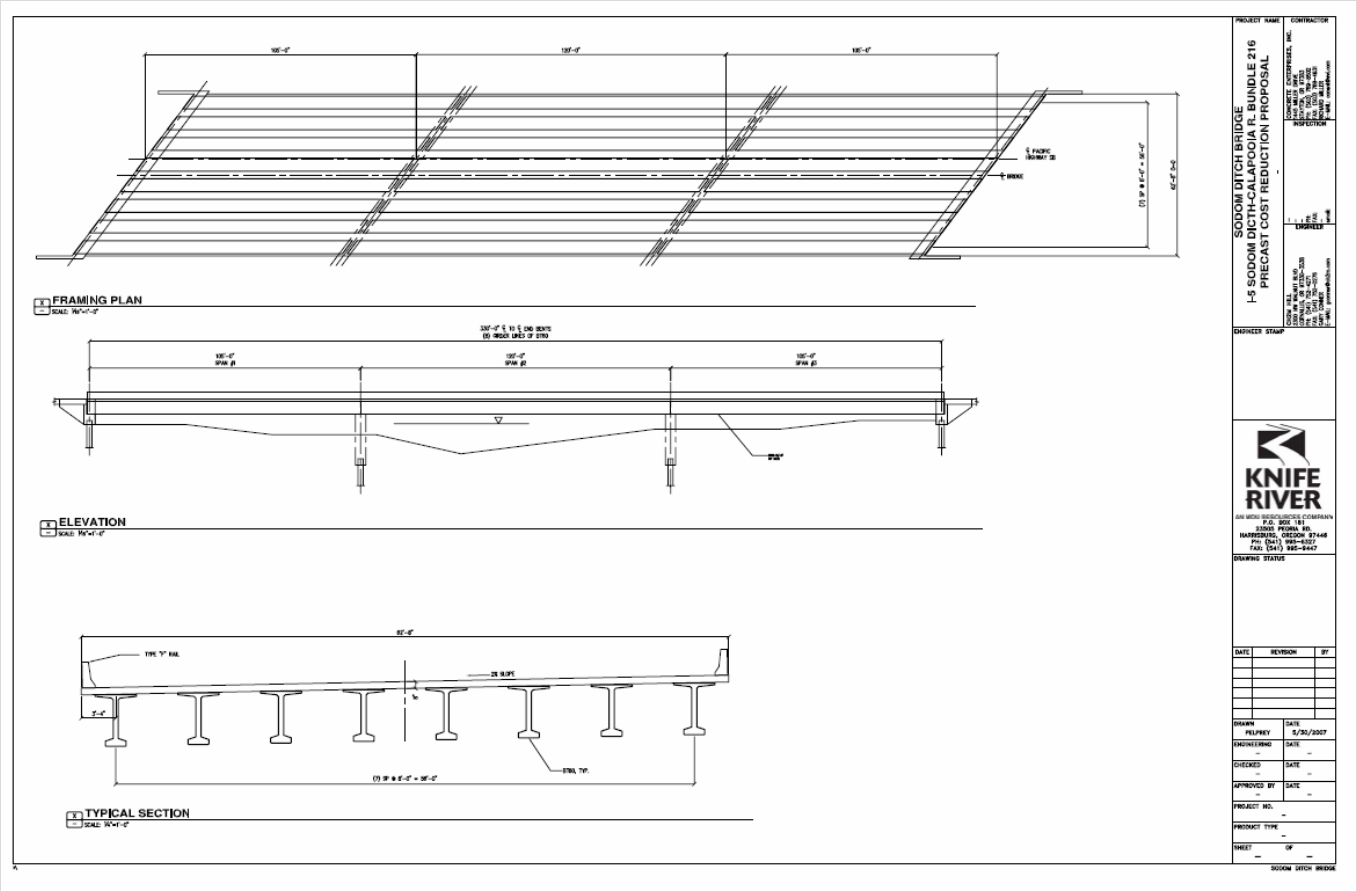
VE – Bulb Tee Option May 2007



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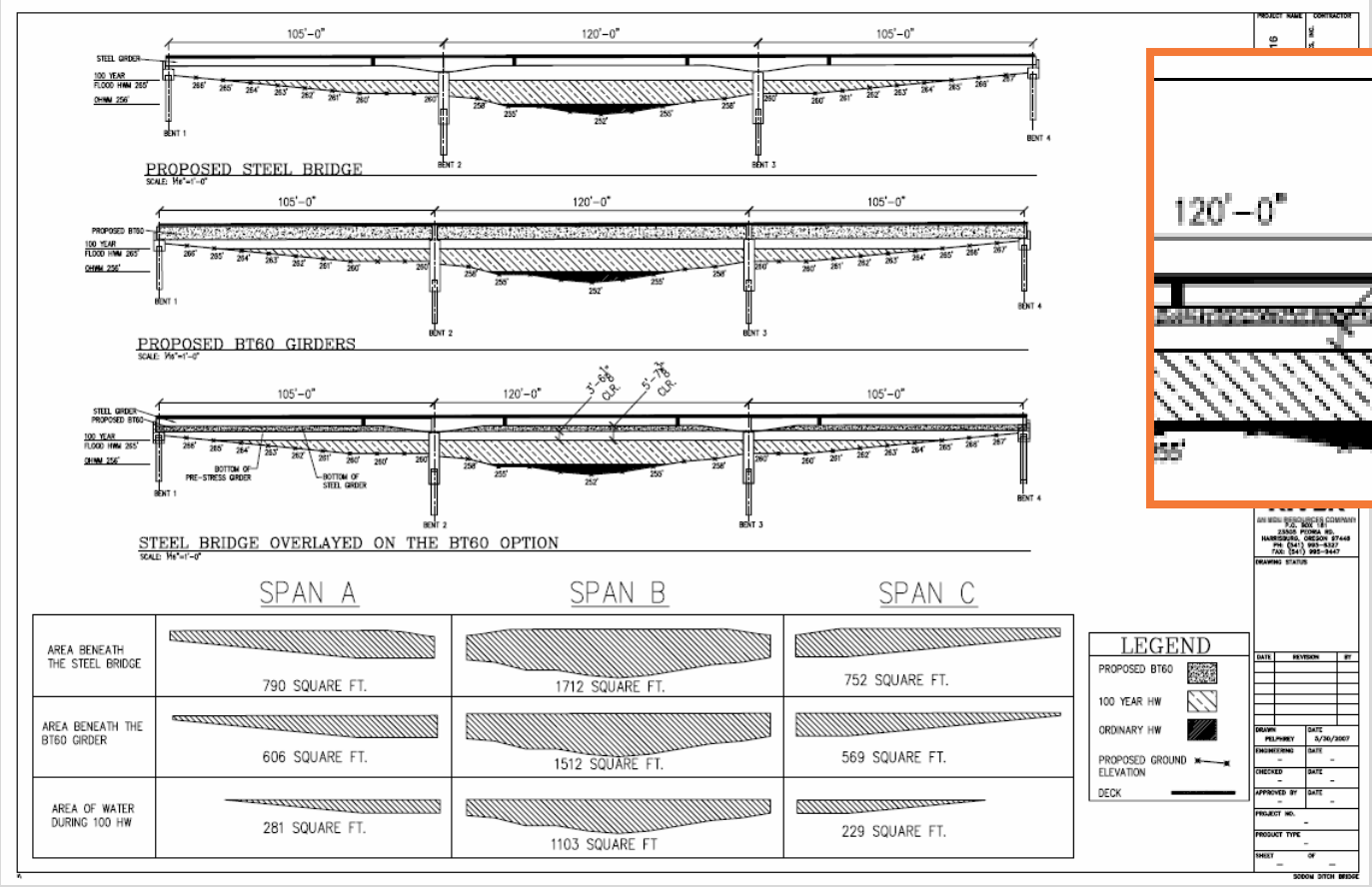
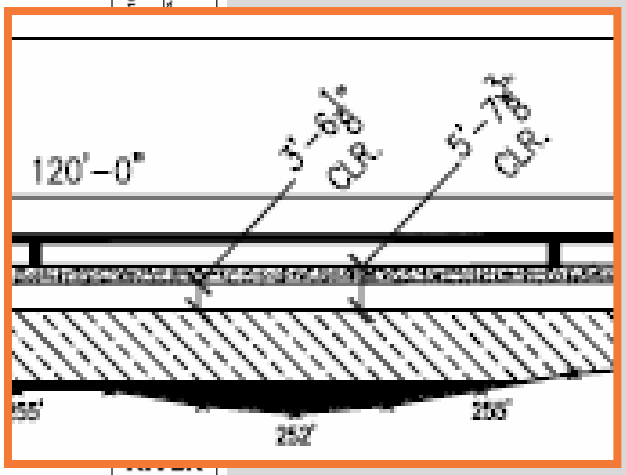
VE – Hydraulic Opening





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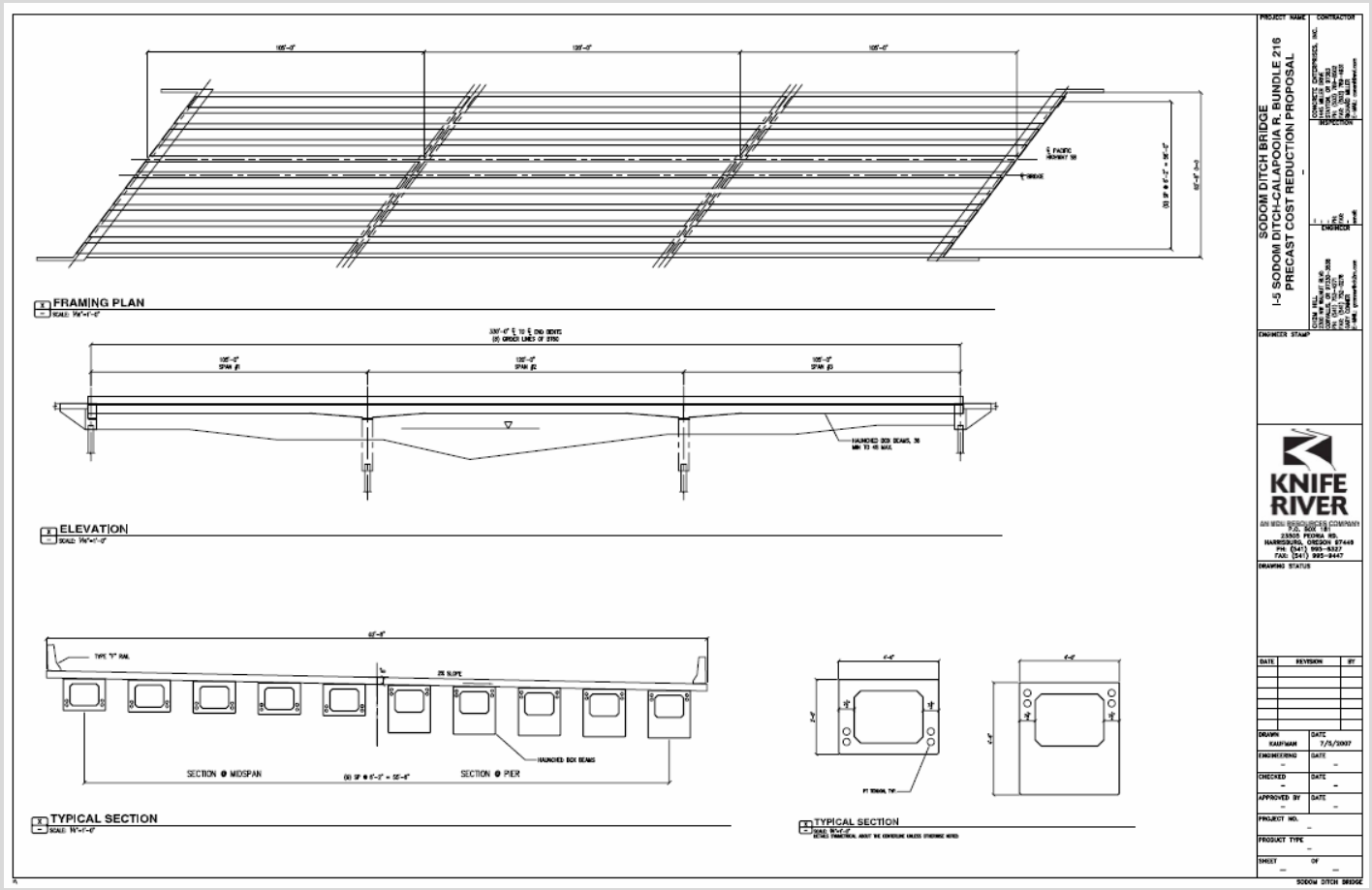
VE – Precast Option July 2007



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VE Proposal

- VE Proposal Rejected – August 2007

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Alive and Kicking

- GC Contacts KRC - February 2008
  - Steel Delivery & Production Issues
  - Project Schedule
- Plans Issued – April 2008
- Form Modifications – June 2008
- Post-Tensioning – June 2008

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Construction Schedule

- I-5 South Bound
  - Production (30 Beams) June/July 2008
  - Erection – August 2008
- I-5 North Bound
  - Production (30 Beams) Feb/March 2009
  - Erection – April 2009
- Project Complete – August 2009

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Design and Production Challenges

- Modified Box Beam Form
- Bottom Soffit Profile
- Top Face Profile
- Strand Pattern
- Void Geometry
- Post-Tensioning Profile
- Product Storage

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Form Modifications & P-T

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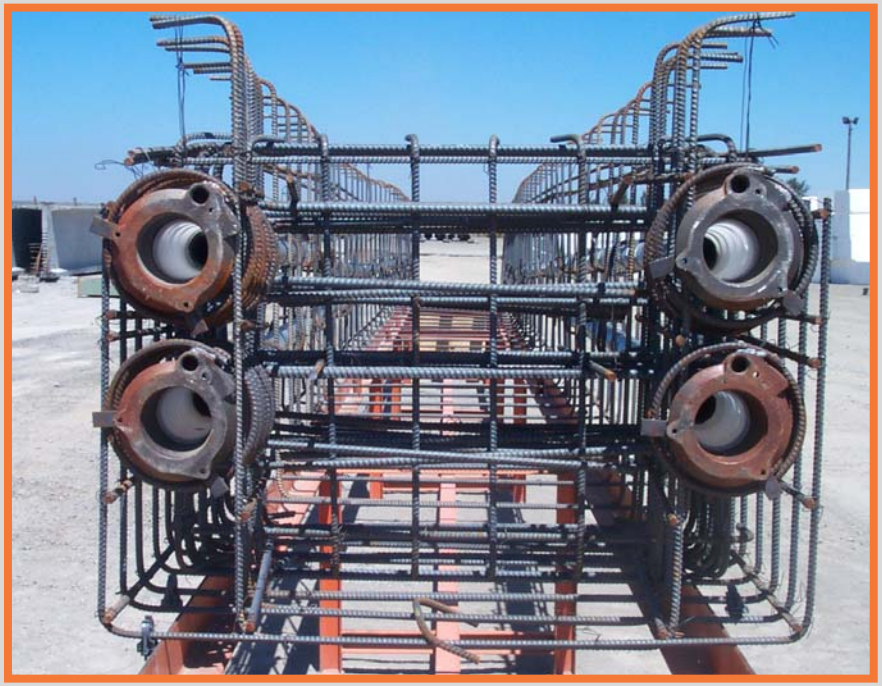
Post-Tensioning & Cage



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Fabrication

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Fabrication

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Storage and Shoring

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Post-Tensioning Duct Splicing

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SODOM DITCH DUCT SPLICE

Erected Geometry with 3" gap.

Extend duct with longer interior coupler to close gap.

Extend coupler and center over joint and seal all joints including duct to concrete.

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Span 2 Erection

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End Span Erection

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End Span Erection

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Closure and Decking

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Pushing Strand and Post-Tensioning

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Sodom Ditch, I-5 SB

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Sodom Ditch, I-5 SB

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Sodom Ditch

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Summary

- Talk with your Friendly Precast Manufacture for Bridge Solutions.
- Standard Precast Sections can be Modified to meet your Project Needs.
- Precast Concrete will Accelerate your Construction Schedule.
- Precast Concrete – It is the Solution!

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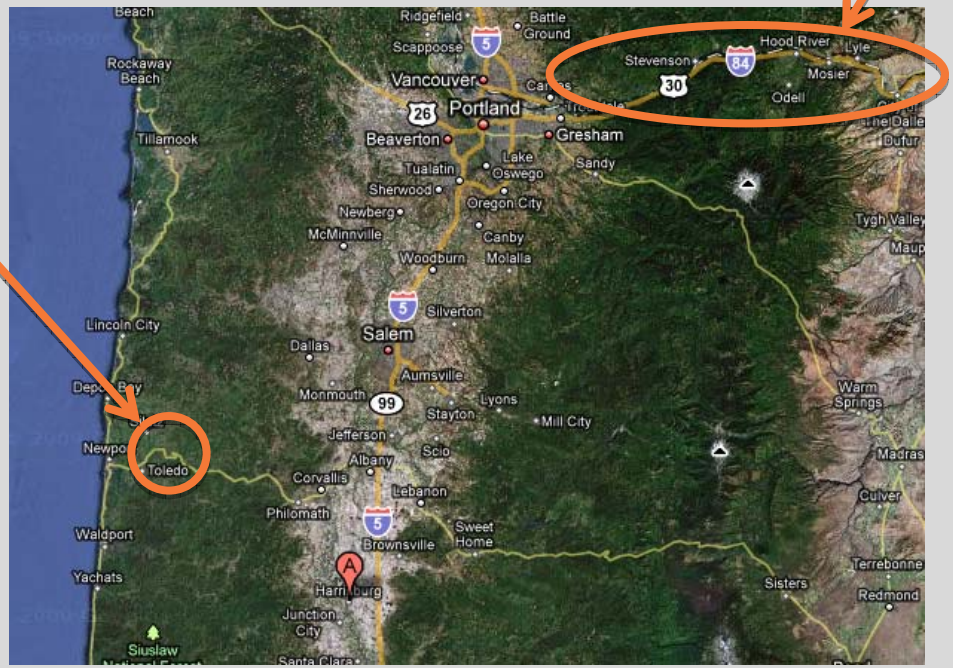
Thank You & Coming Attractions

Oregon US20 -
Session 4C
Jordan Pelphrey

Bridge Facades -
Session 7B
Keith Kaufman

Girder Stability -
Session 6B
Steven Walker



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