

Stretching the Limits II

Modern Timber Bridge Case Studies

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Stretching Bridge Spans

- ❑ 1980s - WWS supplied 13 bridges with clear spans longer than 30m (Longest span = 51m)
 - ❑ 1990s – WWS supplied 19 bridges with clear spans longer than 30m (Longest span = 53m)
 - ❑ 2000s – WWS supplied 39 bridges with clear spans longer than 30m (Longest span = 61m)
 - ❑ 2010s – WWS has supplied 16 bridges with clear span longer than 30m (Longest span=85m)
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Increasing Bridge Loading

- Old Loading Criteria
 - HS20-44 Truck = 340kN (72,000 lbs.)
 - Pedestrian loading = 85 psf., reducible
 - New Loading Criteria
 - HL93 Truck with MPF = 384 kN (86,400 lbs.)
 - Lane Load = 9.33 kN/m applied to 3.048m wide lane (640 plf applied to 10'-0" wide lane)
 - Pedestrian Loading = 90 psf. nonreducible
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Lower Burnett Road Bridge – Buckley, Washington

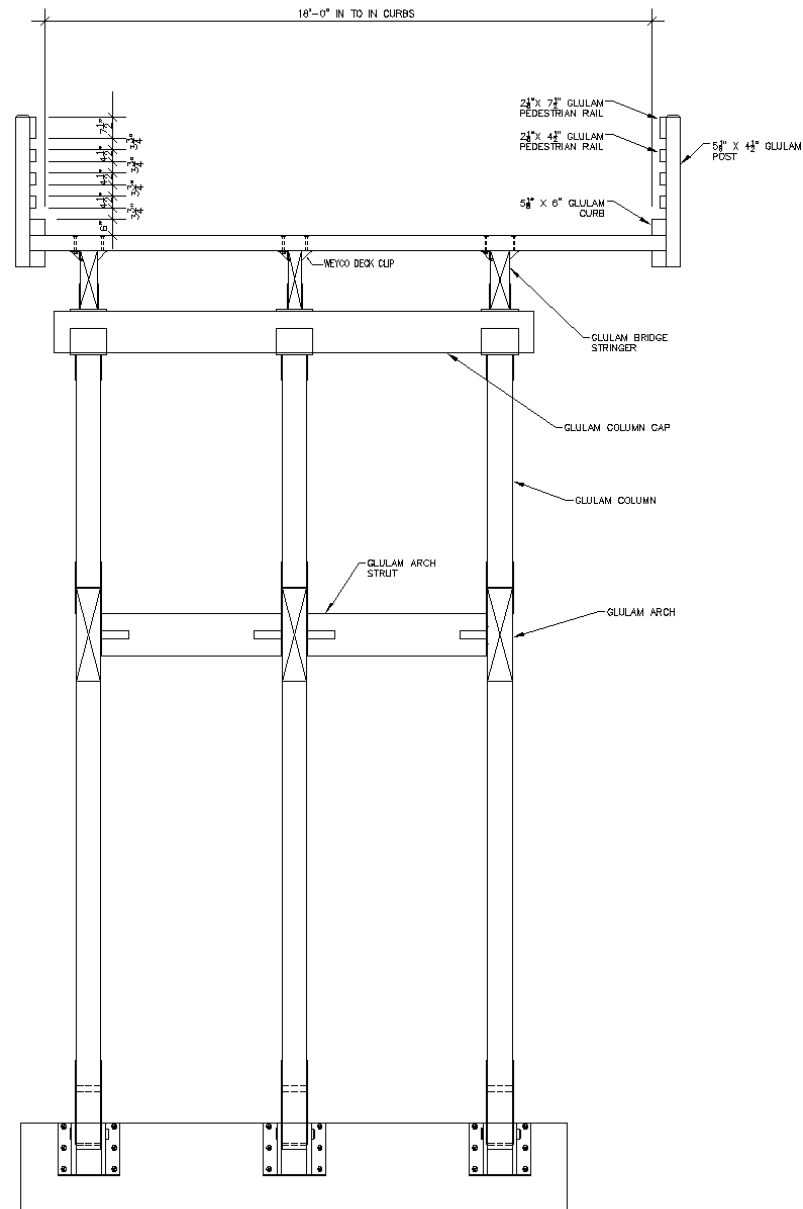
□ Bridge Statistics

- 5.48m (18'-0") wide three span Arch Bridge
 - 119.21m (391'-1½") overall length
 - 198.12m (650'-0") Horizontal Curvature
 - 1.22m (4'-0") Elevation Difference
 - 4.07kPa (85psf) pedestrian live load
 - 134.44kN (30,000 lbs) maintenance vehicle load.
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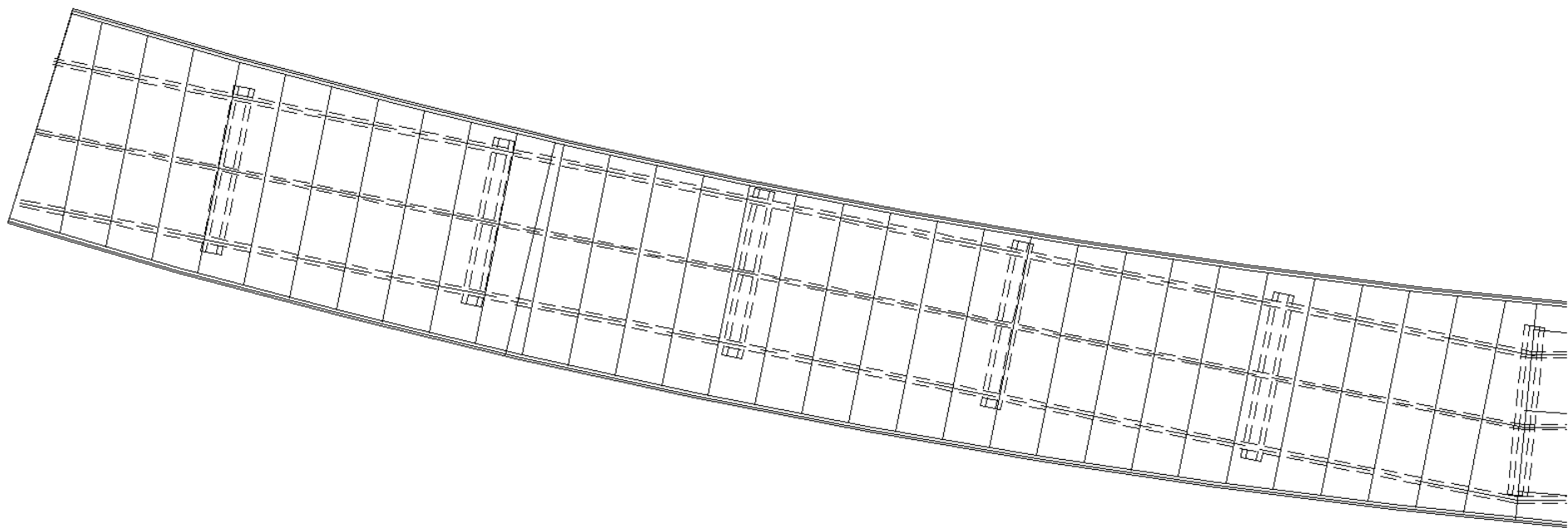
Drawing K: BRIDGE PROJECTS, 6104-SP TO BUCA\CN\LB-S2.DWG Layout Tab SHEET 56
 Date: 01/16/2007 Time: 01:26:18 PM Plotted by: SCARSTE
 Xrefs



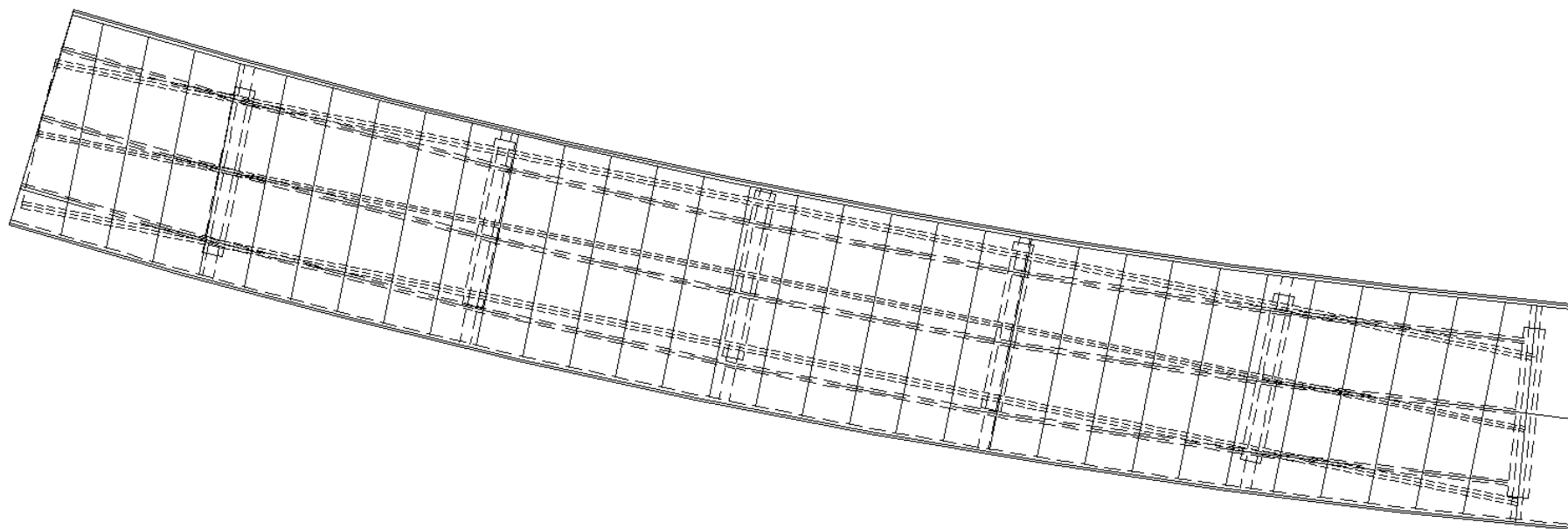
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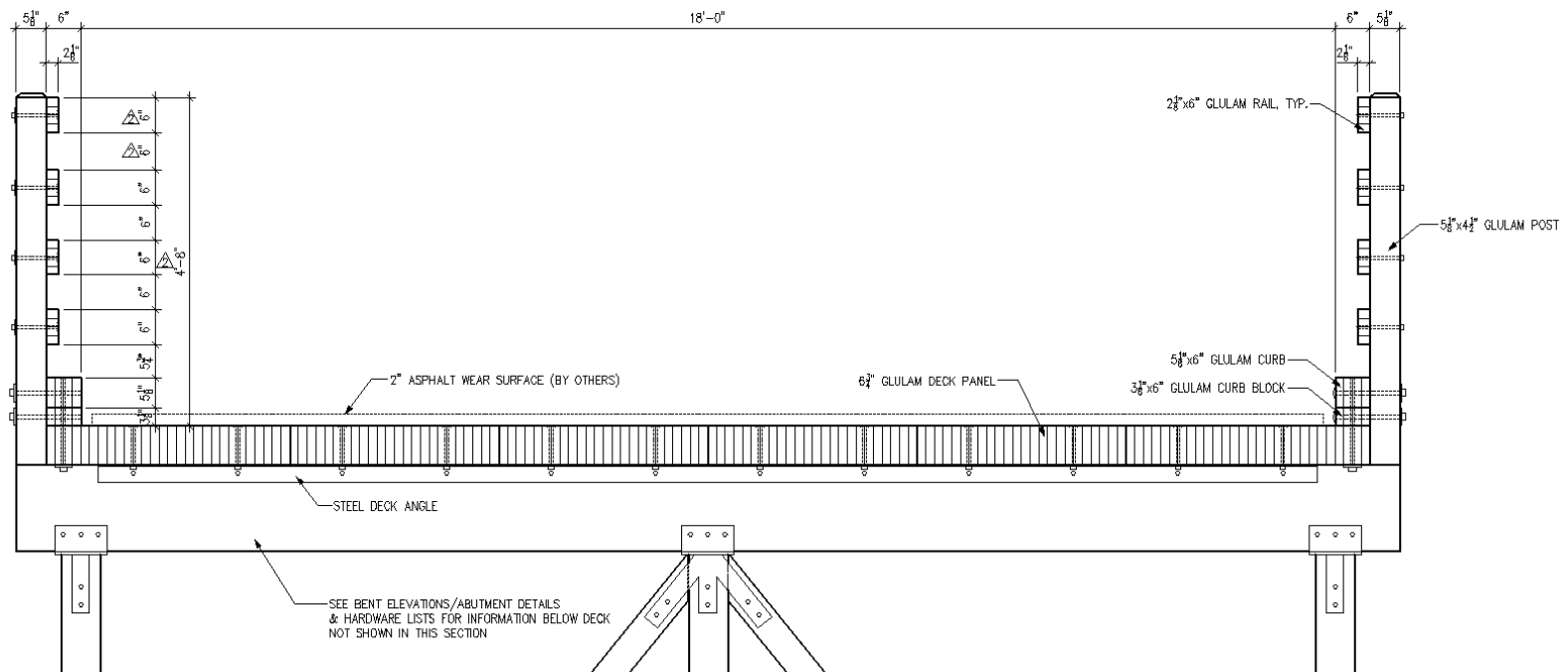
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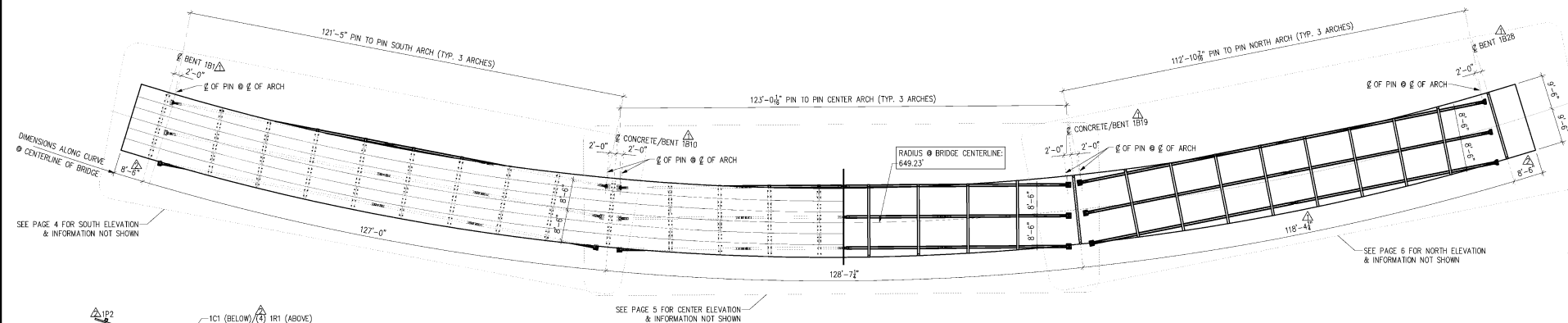


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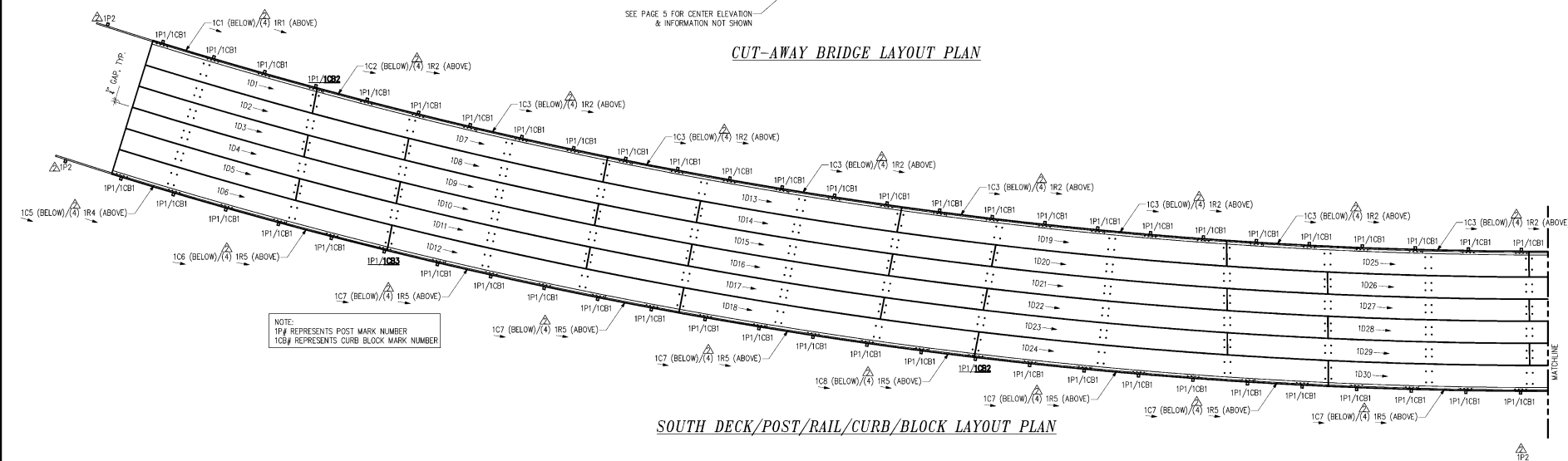


TYPICAL BRIDGE SECTION

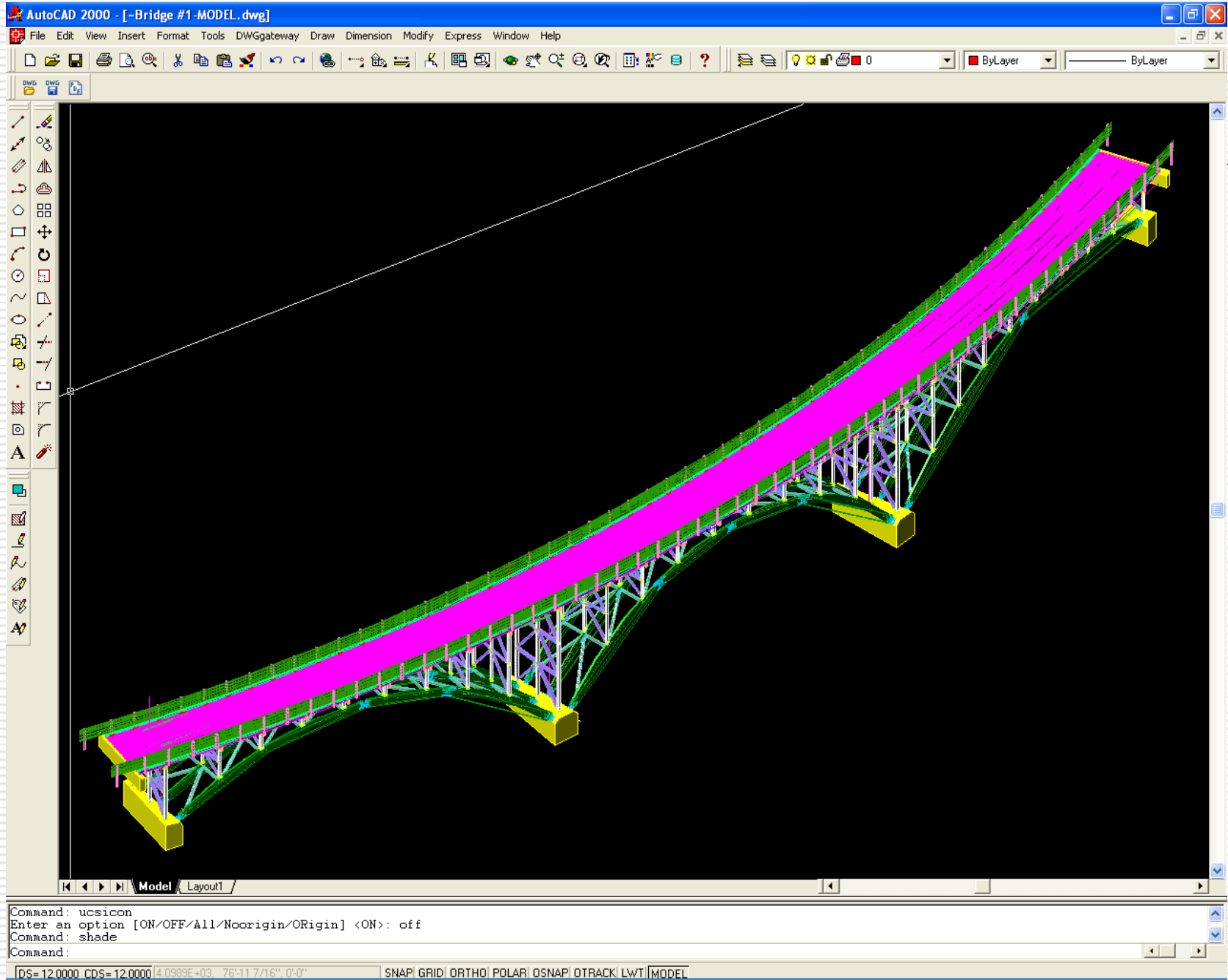
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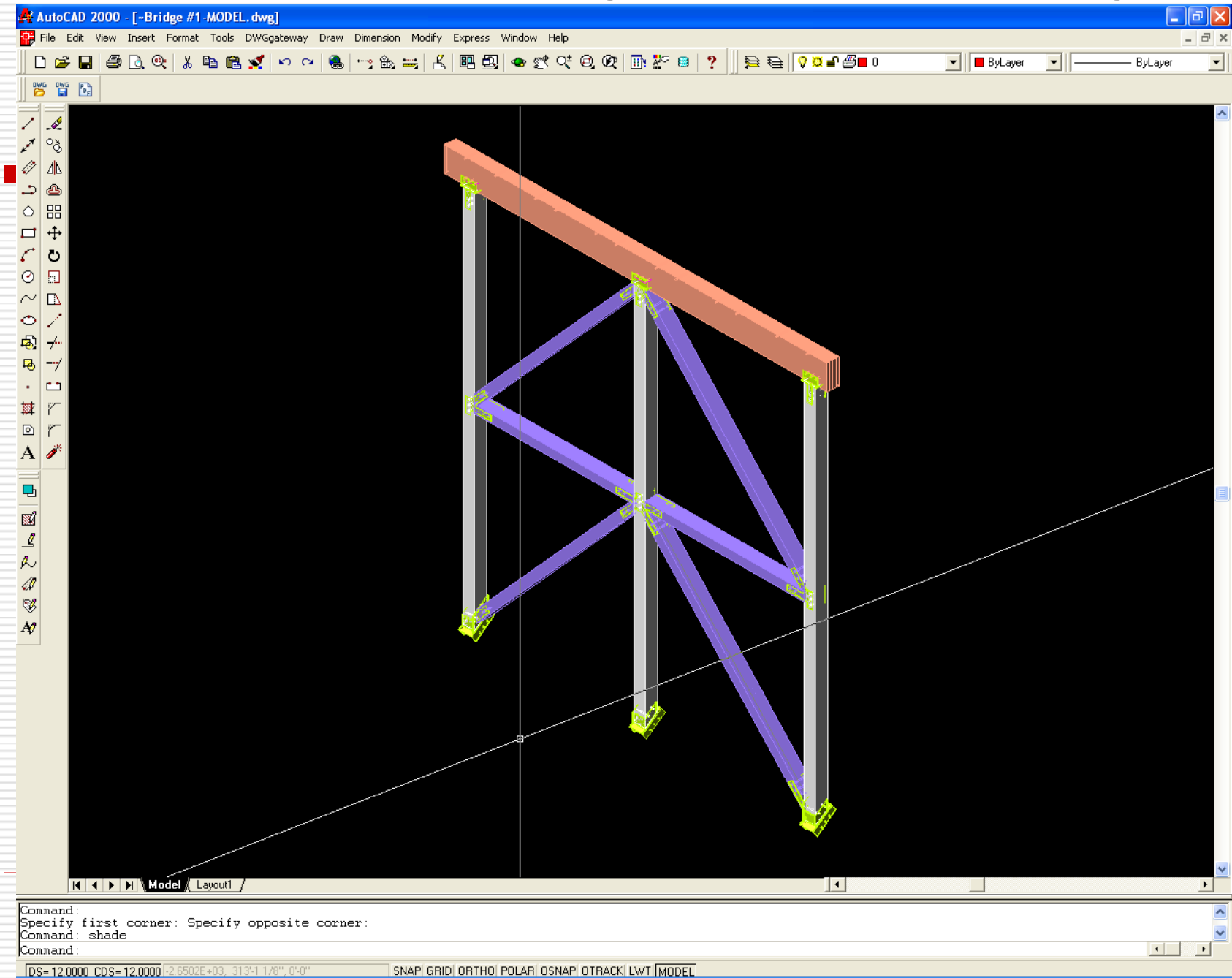
CUT-AWAY BRIDGE LAYOUT PLAN



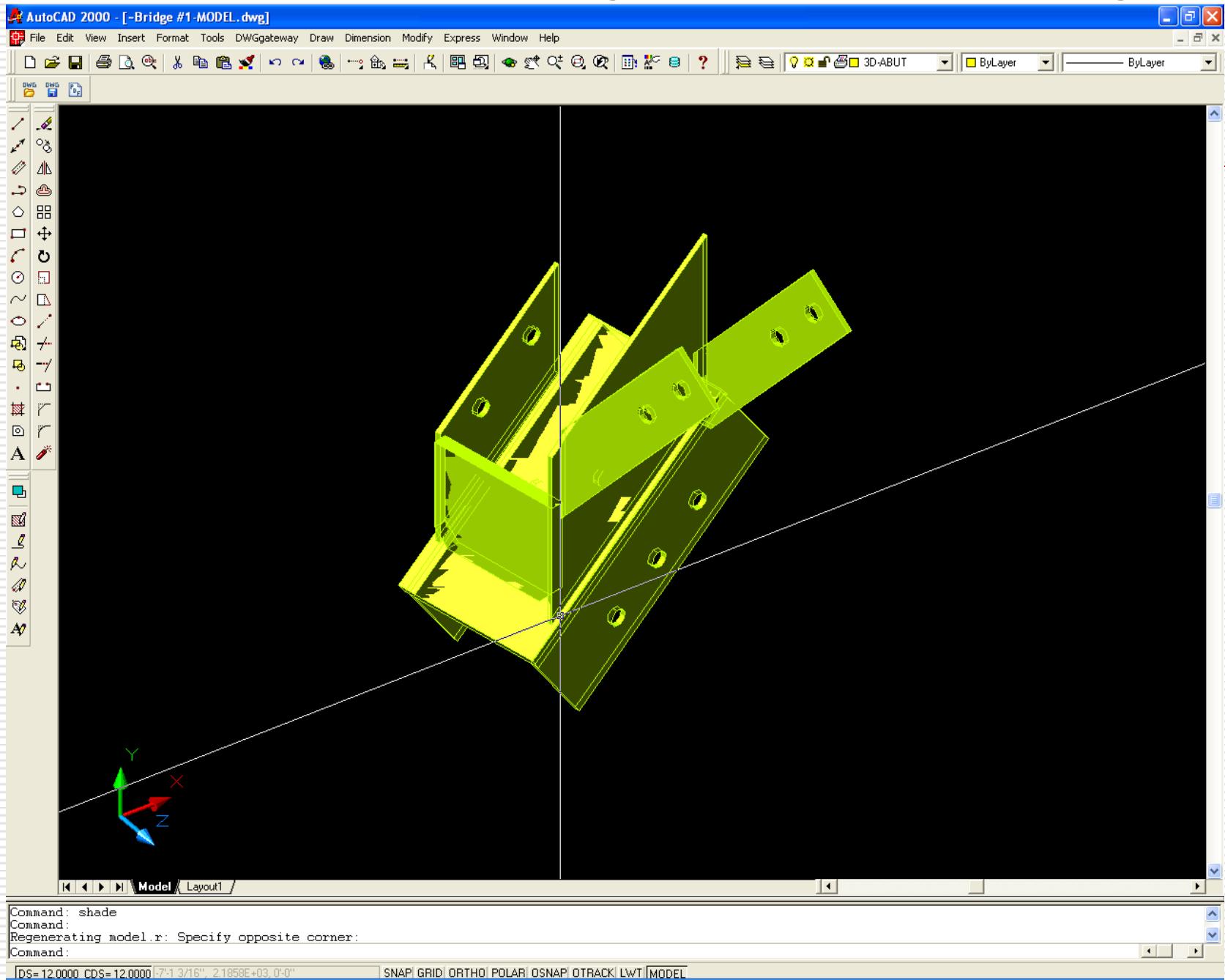
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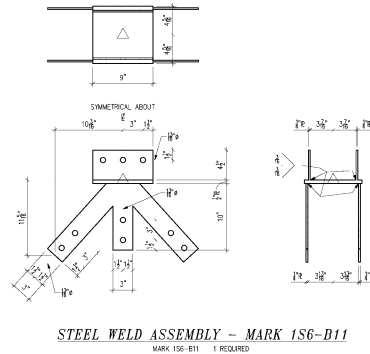
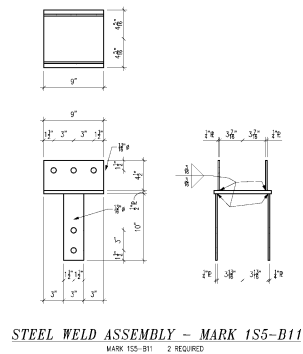
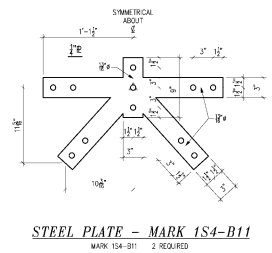
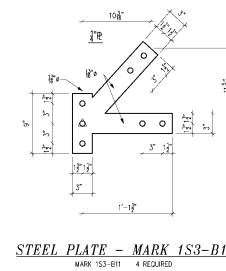
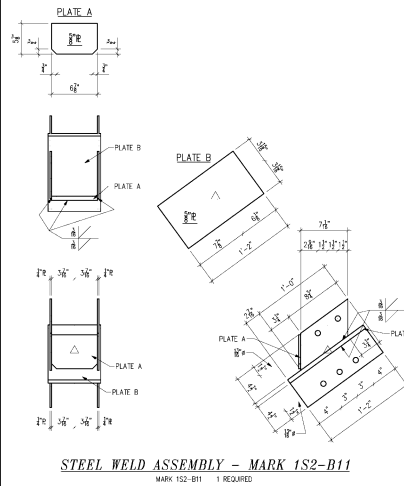
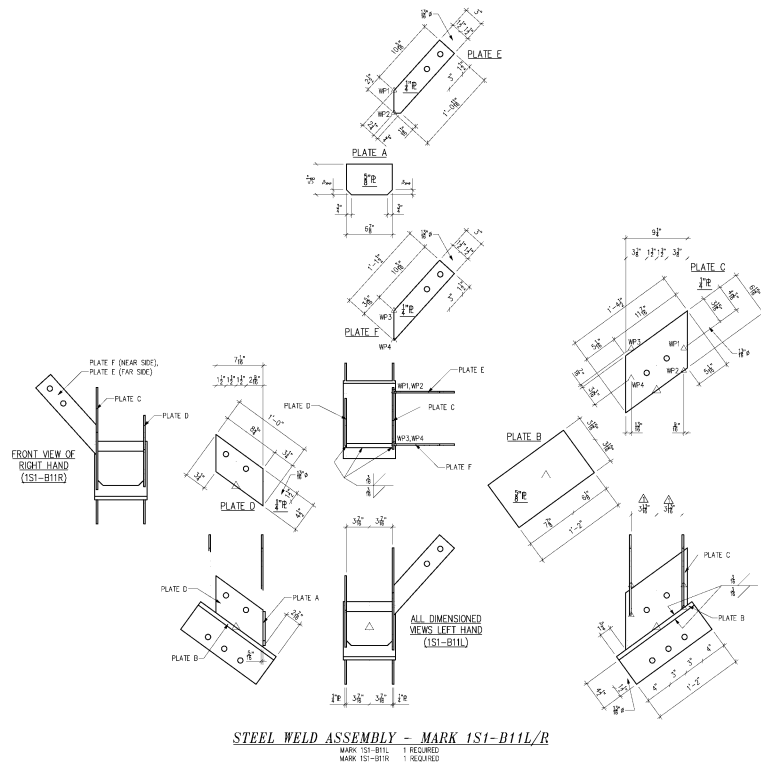
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PROJECT: LOWER BURNETT ROAD BRIDGE LOCATION: BUCKLEY, WASHINGTON DISTRICT: PIERCE COUNTY		WESTERN WOOD STRUCTURES, INC. P.O. BOX 130 TUALATIN, OREGON 97062 503/692-6900 FAX 503/692-6434 800/547-5411	ARCHITECT: PIERCE COUNTY DEPARTMENT OF PUBLIC WORKS AND UTILITIES ENGINEER: PIERCE COUNTY DEPARTMENT OF PUBLIC WORKS AND UTILITIES CONTRACTOR:
DRAWN BY: ERG DATE: 05/01/07 CHECKED BY: GHT DATE: 07/15/07 DATE PRINTED:	JOB NO: 074012 PLT DATE: 07/01/07 SHEET: 41 OF 84		

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Whistlestop Bridge – Portage, Alaska

Bridge Statistics:

Design Concept: Early 20th century railroad work camp.

Walkway Width: 1.83m (6'-0")

Span: 85.34m (280'-0")

Live Load: 4.31kPa (90psf)

Snow Load: 9.57kPa (200 psf) ground snow load

Wind Load: 52m/s (120mph), Exposure C

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