Project Summary:

August18, 2009
Day 611 of 1278

Recent Construction Highlights

Flatiron Constructors Intermountain began construction at Cantilever 4 WB, continued at Span 1 EB CIP Superstructure with stressing and grouting, falsework removal at Pier Table 3 EB, and placing the bottom slab and web/diaphragm portions of Pier Table 4 EB. The following is a summary of the construction progress for the last month.

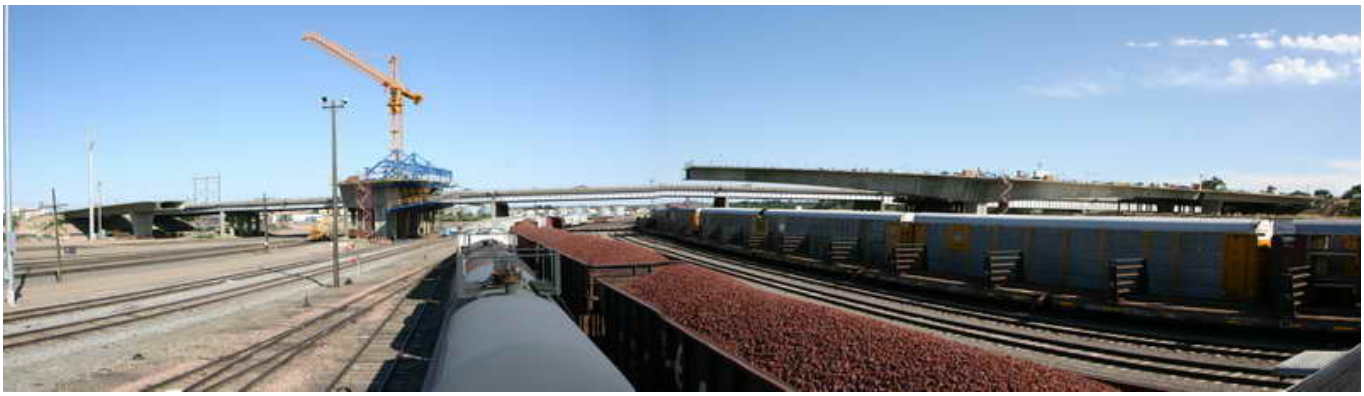

Figure 1 – Overview of the Bridge Construction – July 16, 2009:
This photo shows an overview of the project, as seen from the Rail yard looking southeast. The main-span traveler can be seen at Cantilever 4 WB forming Segment W4-1W over the UPRR mainline tracks and the tower crane is now operational at Pier 4. The highlight on the girder on the right side of the photo is the reflection from the Arkansas River.

Figure 2 – Cantilever 4 WB Segmental Construction – July 20, 2009:
With the bulkhead installed, the ironworkers begin tying the bottom slab and web reinforcing for Segment W4-1W. The traveler allows bridge construction to continue without impacting the UPRR mainline tracks directly below.

Figure 3 – Pier Table 3 EB Construction – July 20, 2009:
The winches are installed on the deck of Pier Table 3 EB to facilitate falsework removal.

Figure 4 – Pier Table 4 EB – July 23, 2009:
The concrete for the bottom slab portion at Pier Table 4 EB is placed using a concrete pump over the BNSF mainline. Flatiron places as much reinforcing as possible to minimize conflicts and speed production for the web/diaphragm portion. The precast bottom slab of W4-1E (below Pier Table 4 WB) was cast immediately after this element.

Figure 5 – Cantilever 4 WB Segmental Construction – July 27, 2009:
The first main-span segment concrete placement occurs at Cantilever 4 WB. The concrete pump is set up on the access road between the BNSF and UPRR Railroads, which allows for uninterrupted train movement.

Figure 6 – Pier Table 3 EB Segmental Construction – July 27, 2009:
After the posts are removed, the falsework platform is lowered down using the winches on the deck. The block-out in the wing is to avoid the tower crane, which will be moved back to Pier 3 upon completion of Cantilever 4 WB. This blockout will be poured back after the cantilever is complete and the tower crane is removed.

Figure 7 – Span 2 WB CIP Superstructure Construction – July 31, 2009:
Workers stress the PT bars to engage the strongbacks for the closure segment, which align and lock the tips of Span 1 WB and the Cantilever 3 WB together.

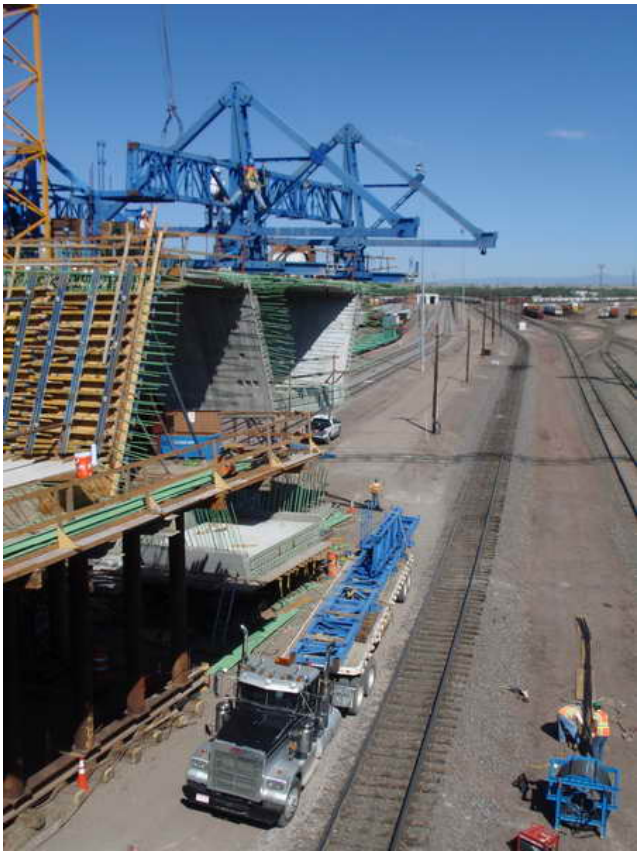

Figure 8 – Cantilever 4 WB Segmental Construction – August 5, 2009:
The rear transverse truss for the side-span traveler is installed, as the front transverse truss waits below. Work is closely coordinated with the BNSF flagger and performed in between trains passing through the jobsite.

Figure 9 – Span 2 WB Segmental Construction – August 5, 2009:
The 50-ton crane lifts the bottom slab formwork platform. Once the platform was hoisted, PT bars support the formwork off the strongbacks.

Figure 10 – Pier Table 4 EB Construction – August 7, 2009:
The concrete for the webs and diaphragm at Pier Table 4 EB is placed. With daily high temperatures reaching in the upper 90's, concrete placement began at 3 am to keep concrete batching temperatures within allowable limits. The cooling system (white tubes) ran until the diaphragm temperatures peaked and began dropping.

Figure 11 – Span 2 WB Closure Segment Construction – August 12, 2009:
The closure segment formwork on the exterior is supported off the traveler holes in the deck and the bottom slab formwork platform. The top of the stability prop is visible below the platform.

Figure 12 – Span 2 WB Closure Segment Construction – August 13, 2009:
The closure segment formwork on the interior is supported off the bottom slab.

Figure 13 – Span 2 WB Closure Segment Construction – August 13, 2009:
The eight-foot long closure segment is ready for concrete placement. Concrete is scheduled for 12 am.

Figure 14 – Span 2 WB Closure Segment Construction– August 14, 2009:
The pump truck places the concrete for Span 2 WB closure segment. Concrete placement occurs during the time when thermal gradients in the bridge are at a minimum.

Figure 15 – Span 2 WB Closure Segment Construction – August 14, 2009:
Workers place and finish the top slab concrete for Span 2 WB closure segment.

Figure 16 – Cantilever 4 WB Segmental Construction – August 15, 2009:
The lifting frame is assembled and ready to pick the precast bottom slab of Segment W4-1E. Eight 100-ton jacks are connected to a common manifold for equal lifting of the slab. Flatiron originally planned to have a 240-ton crane lift the slab, but due to inherent variables between Railroad operations and the Contractor's schedule, the lifting frame saves the Contractor from having to pay for idle equipment.

Figure 17 – Cantilever 4 WB Segmental Construction – August 15, 2009:
After five trains pass through on the BNSF mainline by 11:45 am, the flagger gives Flatiron the green light for a temporary track closure. The bottom slab of Segment W4-1E is rolled into position and picked using eight, one-inch diameter PT bars. The operation took just over four hours to roll out slab and lift into position, despite having jacks with only three inches of stroke.

Figure 18 – Cantilever 4 WB Segmental Construction – August 18, 2009:
A BNSF train passes under Cantilever 4 WB while forming continues above. Since the lower deck drive of the form traveler did not meet Railroad temporary clearance envelopes, Flatiron opted to precast the bottom slab and use it to support the web and top slab concrete. The lower deck drive will be installed for the casting of Segment W4-3E.

Figure 19 – Cantilever 4 WB Segmental Construction – August 18, 2009:
An "excess height" car passes on the BNSF mainline under Segment W4-1E showing adequate clearance from the precast bottom slab.

Figure 20 – Abutment 1 Backwall Construction – August 18, 2009:
Ironworkers tie the backwall reinforcing, as carpenters form the wing walls. Flatiron plans to cast the backwall, backfill, cast the approach slabs, and lay asphalt approaches by mid-November.

Substructure Construction	To Date		Total	Unit	% Complete
48” Diameter Drilled Shafts (Monuments)	3	of	4	Each	75%
48” Diameter Drilled Shafts (Abutments)	11	of	14	Each	79%
60” Diameter Drilled Shafts (Pier 2 & 5)	6	of	8	Each	75%
96” Diameter Drilled Shafts (Pier 3 & 4)	8	of	8	Each	100%
Type I Footings (Pier 2 & 5)	3	of	4	Each	75%
Type II Footings (Pier 3 & 4)	4	of	4	Each	100%
3’-6” Piers (Pier 2 & 5)	3	of	4	Each	75%
7’-1” Piers (Pier 3 & 4)	4	of	4	Each	100%
Abutments	3/4	of	2	Each	38%

Superstructure Construction	To Date		Total	Unit	% Complete
Westbound					
End Span CIP Westbound	2	of	2	Each	100%
Abutment Diaphragm Westbound	2	of	2	Each	100%
Pier Diaphragm Westbound	2	of	2	Each	100%
Pier Table Westbound	2	of	2	Each	100%
Cantilever 3 Segments Westbound	22	of	22	Each	100%
Cantilever 4 Segments Westbound	1	of	20	Each	5%
Closure Segments Westbound	1	of	3	Each	33%
Eastbound					
End Span CIP Eastbound	1	of	2	Each	50%
Abutment Diaphragm Eastbound	1	of	2	Each	50%
Pier Diaphragm Eastbound	1	of	2	Each	50%
Pier Table Eastbound	1	of	2	Each	50%
Cantilever 3 Segments Eastbound	0	of	22	Each	0%
Cantilever 4 Segments Eastbound	0	of	20	Each	0%
Closure Segments Eastbound	0	of	3	Each	0%

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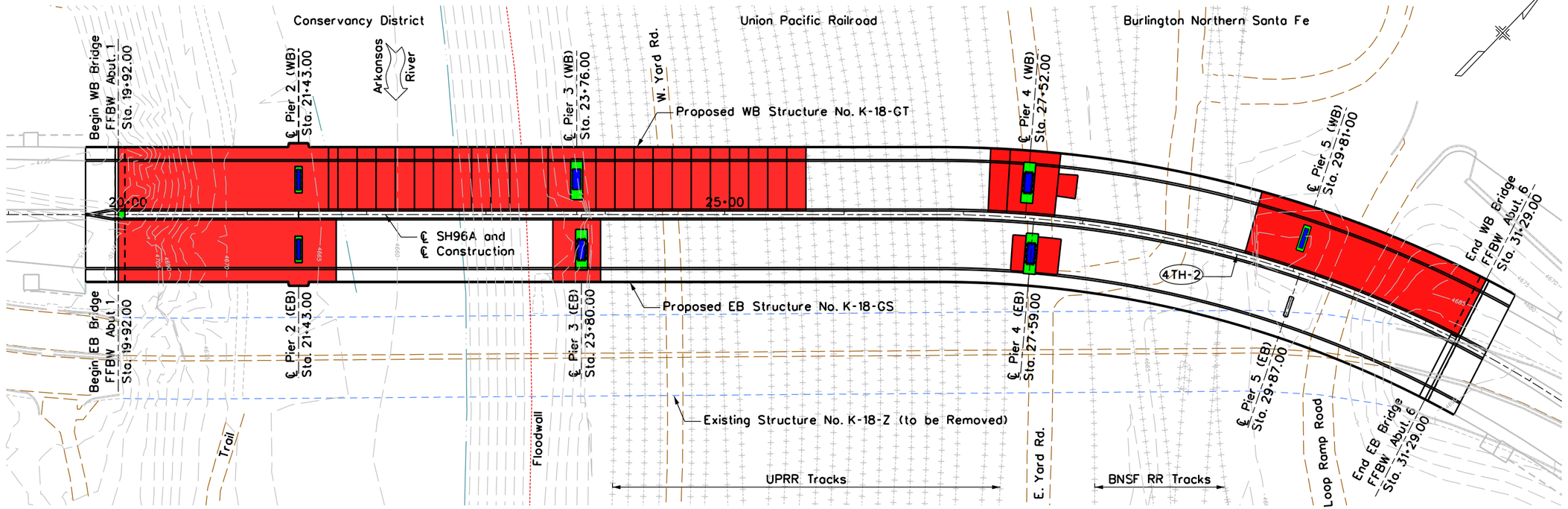
Project Milestone Dates

Milestone Event	April 2008 Baseline Finish Date	Actual
Project Award	October 18, 2007	October 18, 2007
Notice to Proceed	November 8, 2007	November 8, 2007
Abutment 1 Drill Caissons	February 15, 2008	February 15,2008
Abutment 1 Cap Form/Rebar/Pour	March 6, 2008	March 6, 2008
Pier 2 EB Drill Caissons	March 3, 2008	March 3, 2008
Pier 2 WB Form/Rebar/Pour Footing	March 24, 2008	March 24, 2008
Pier 2 WB Column Form/Rebar/Pour	April 29, 2008	April 29, 2008
Pier 3 EB Drill Caissons	April 17, 2008	May 1, 2008
Pier 3 WB Form/Rebar/Pour Footing	May 15, 2008	June 4, 2008
Pier 3 WB Column Form/Rebar/Pour	July 1, 2008	August 5, 2008
Pier 4 EB Drill Caissons	May 8, 2008	July 1, 2008
Pier 4 WB Form/Rebar/Pour Footing	May 13, 2008	August 8, 2008
Pier 4 WB Column Form/Rebar/Pour	August 20, 2008	September 18, 2008
Pier 5 WB Drill Caissons	April 17, 2008	May 30, 2008
Pier 5 WB Form/Rebar/Pour Footing	April 21, 2008	June 12, 2008
Pier 5 WB Column Form/Rebar/Pour	October 21, 2008	July 11, 2008
Abutment 6 WB Drill Caissons	April 18, 2008	April 22,2008
Abutment 6 WB Cap Form/Rebar/Pour	May 8, 2008	May 8, 2008
Span 1 WB Form/Rebar/Pour Bottom Slab/Webs/Diaphragms	June 17, 2008	August 29, 2008
Span 1 WB Form/Rebar/Pour Deck	July 8, 2008	October 10, 2008
Pier Table 3 WB Form/Rebar/Pour Bottom Slab	August 18, 2008	November 21, 2008
Pier Table 3 WB Form/Rebar/Pour Diaphragm & Webs	September 4, 2008	December 5, 2008
Pier Table 3 WB Form/Rebar/Pour Deck	October 7, 2008	December 31, 2008
Span 5 WB Form/Rebar/Pour Bottom Slab/Webs/Diaphragms	February 12, 2009	January 29, 2009
Span 5 WB Form/Rebar/Pour Deck	March 12, 2009	March 6, 2009
Form and Pour First Segment – W3-1E	November 19, 2008	February 16, 2009
Pier Table 4 WB Form/Rebar/Pour Bottom Slab	March 5, 2009	February 26, 2009
Pier Table 4 WB Form/Rebar/Pour Diaphragm & Webs	March 23, 2009	March 20, 2009
Pier Table 4 WB Form/Rebar/Pour Deck	April 23, 2009	April 15, 2009
Form and Pour First Closure – Span 2 WB	May 19, 2009	August 14, 2009
Span 1 EB Form/Rebar/Pour Bottom Slab/Webs/Diaphragms	October 7, 2008	June 10, 2009
Span 1 EB Form/Rebar/Pour Deck	October 27, 2008	July 10, 2009
Pier Table 3 EB Form/Rebar/Pour Bottom Slab	November 13, 2008	April 30, 2009
Pier Table 3 EB Form/Rebar/Pour Diaphragm & Webs	December 2, 2008	May 13, 2009
Pier Table 3 EB Form/Rebar/Pour Deck	January 9, 2009	June 18, 2009
Pier Table 4 EB Form/Rebar/Pour Bottom Slab	May 15, 2009	July 23, 2009
Pier Table 4 EB Form/Rebar/Pour Diaphragm & Webs	June 2, 2009	August 7, 2009
Shift Traffic to New WB Structure	February 17, 2010	
Install Last Drilled Caissons – Abutment 6 (EB Only)	April 26, 2010	
Form and Pour Last Segment – E4-10E	October 12, 2010	
Form and Pour Last Closure – Span 3 EB	November 16, 2010	
Complete Structure and Final Traffic Configuration	March 4, 2011	

All items are based on the April 2008 Baseline Schedule. All dates represent the "Finish" of the activity, unless otherwise noted.

Cantilever construction should resume at approximately one pair of segments a week after assembly of the travelers is complete and the precast bottom slab segments are cast. Pier Table construction is keeping ahead of segmental construction, with Flatiron planning to move the form travelers immediately to the next pier table when a cantilever is complete. Although several milestones dates were completed beyond the original date, Flatiron has stated that project completion will occur within contractual requirements.



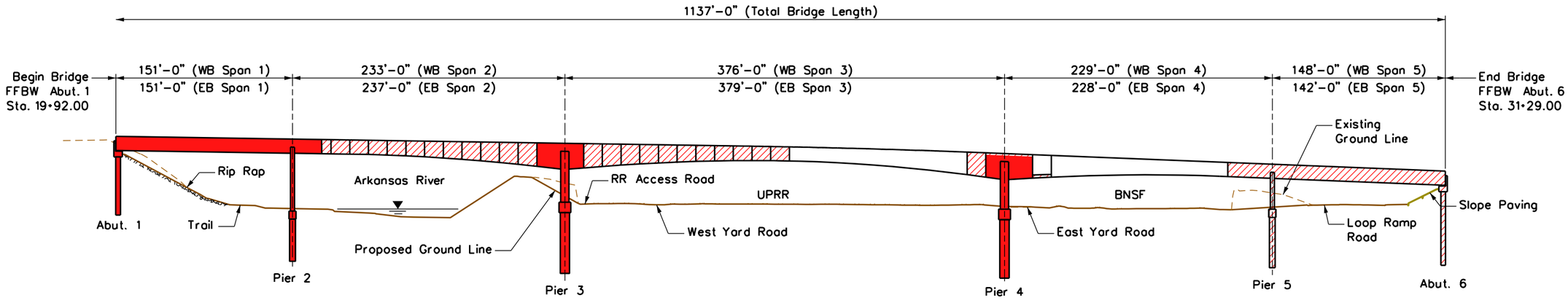
PLAN

LEGEND – PLAN

- Pier Completed
- Footing Completed
- Superstructure Completed
- Superstructure Completed (Webs, Bottom Slab, & Diaphragms)

LEGEND – ELEVATION

- Completed Elements (WB Only)
- Completed Elements (WB And EB)



ELEVATION

4th Street Bridge Project - Project Completion Status - August 18, 2009

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