

Recent Construction Highlights

Flatiron Constructors Intermountain continued construction at Cantilever 4 WB, finished Abutment 1 backwall, began Abutment 6 WB backwall, and finished the top slab portion of Pier Table 4 EB. The following is a summary of the construction progress for the last month.



Figure 1 – Cantilever 4 WB Segmental Construction – August 19, 2009:
Flatiron installs the core form panel after erecting the precast bottom slab of Segment W4-1E. The formwork panel rests on the inner core form beams that are supported by the front transverse truss and the top slab of the pier table.

Figure 2 – Abutment 1 Construction – August 24, 2009:
The carpenters form up the remaining portion of the backwall and wingwalls at Abutment 1.





Figure 3 – Abutment 1 Construction – August 27, 2009:

The backwall is stripped, followed by pointing and patching of the form ties. The gray conduit penetrating the backwall is for utilities running within the box girders.

Figure 4 – Cantilever 4 WB Segmental Construction – September 1, 2009:

The precast bottom slab for Segment W4-2E is hoisted using the lifting frame, as described in last month's update. Once Segment W4-2E is cast, the lower deck drive will be installed on the side-span traveler and casting will resume with typical segment operations. By eliminating the need to precast the bottom slab, Flatiron should be able to cast two segments per week. The precast slab was used to meet the BNSF mainline track clearance envelope.





Figure 5 – Pier Table 4 EB Construction – September 2, 2009:

The forming for the top slab portion for Pier Table 4 EB is nearly complete. This is the last of four pier tables.

Figure 6 – Cantilever 3 WB Segmental Construction – September 4, 2009:
A Flatiron employee removes the shims from the stability prop under Cantilever 3 WB now that Span 2 WB is complete. The prop will be relocated to support the out-of-balance construction loads at Cantilever 4 WB after the first four pair of segments are cast.



Figure 7 – Abutment 1 Construction – September 8, 2009:

The dirt work subcontractor begins installing the mechanically reinforced soil backfill. The geotextile fabric is installed and soil is placed in one-foot lifts and compacted. The front of the geotextile is pulled back and stapled, and the process is repeated. The plywood between the soil and backwall maintains a gap between the backfill and the abutment backwall and is lifted after each layer is placed.

Figure 8 – Cantilever 4 WB Segmental Construction – September 8, 2009:
The segment crew finishes tying the web reinforcing for Segment W4-2E just prior to launching the core form. The web reinforcing uses a Class “C” splice to engage the web with the precast bottom slab.



Figure 9 – Cantilever 4 WB Segmental Construction – September 9, 2009:

The precast bottom slab of Segment W4-2E contains a one-foot closure joint between the precast slab and the previously cast segment. The web forms are locked tight against the precast slab, which is supported from the frame via twelve 1 ¼” diameter PT bars. Formwork for this closure joint will be placed next.

Figure 10 – Roadway Approach Construction – September 9, 2009:
The approach work has begun with milling of the existing roadway on the east end of the project. Flatiron currently has both the east and west roadway approach work occurring with traffic configured for one lane in each direction on the existing bridge.



Figure 11 – Pier Table 4 E B Construction – September 10, 2009:
The top slab concrete is placed and finished, while work continues at Cantilever 4 WB in the background.

Figure 12 – Cantilever 4 WB Segmental Construction – September 15, 2009:
Launching of the side-span traveler reveals Segments W4-1E and W4-2E, which both used a precast bottom slab as formwork over the BNSF mainline track.





Figure 13 – Cantilever 4 WB Segmental Construction – September 16, 2009:
A 240-ton crane erects the lower deck drive for the side-span traveler to begin forming Segment W4-3E.



Project Summary:

September 16, 2009
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Substructure Construction	<u>To</u> <u>Date</u>		<u>Total</u>	<u>Unit</u>	<u>% Complete</u>
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	1 1/4	of	2	Each	63%

Superstructure Construction	<u>To</u> <u>Date</u>		<u>Total</u>	<u>Unit</u>	<u>% Complete</u>
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	4	of	20	Each	20%
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	2	of	2	Each	100%
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%



Project Summary:

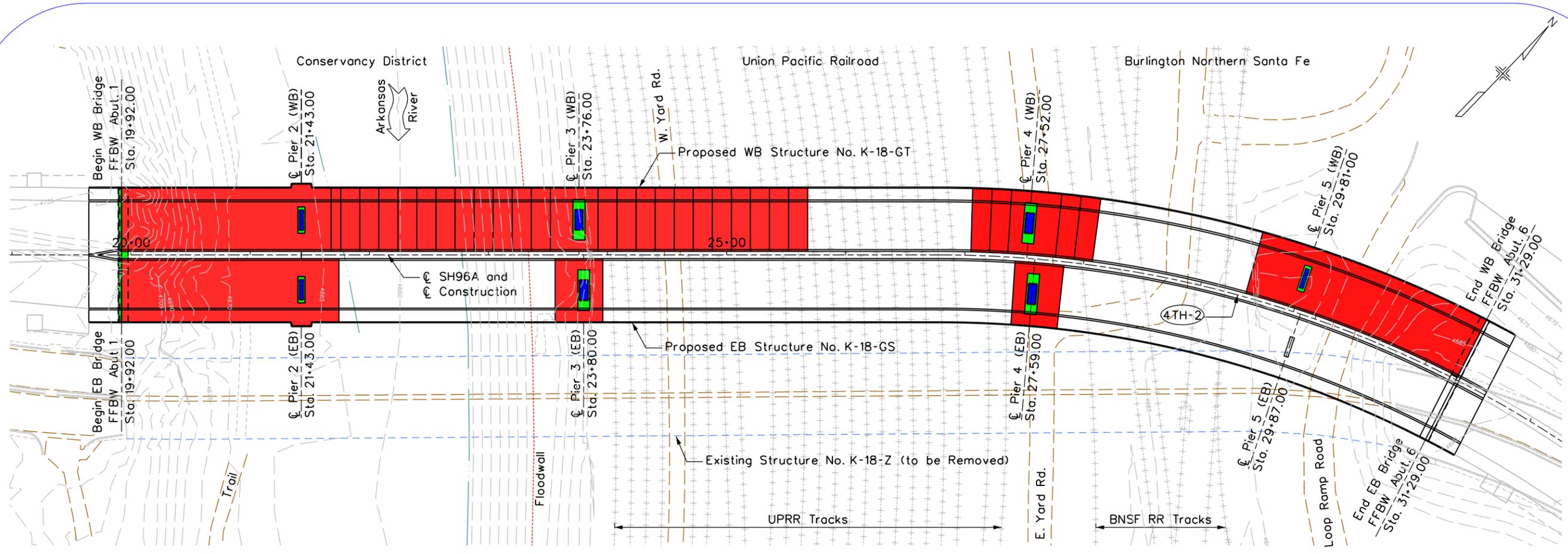
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Project Milestone Dates

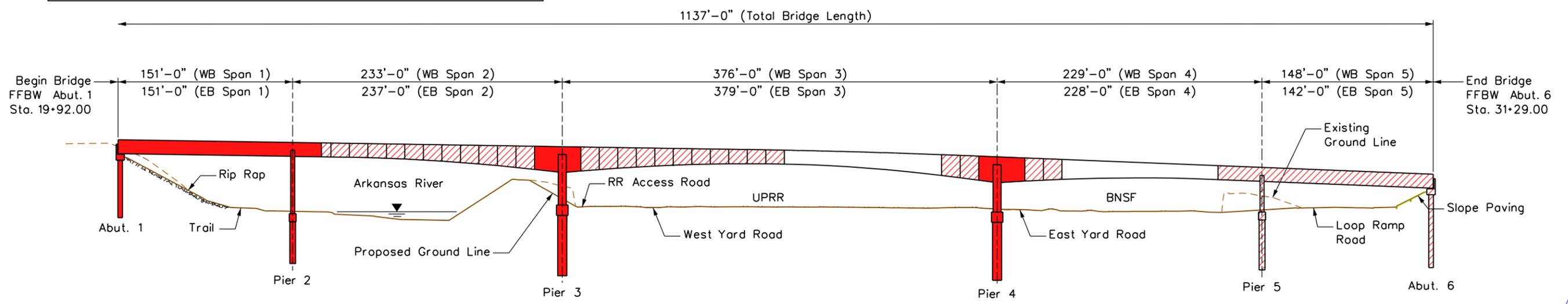
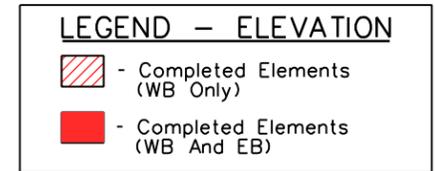
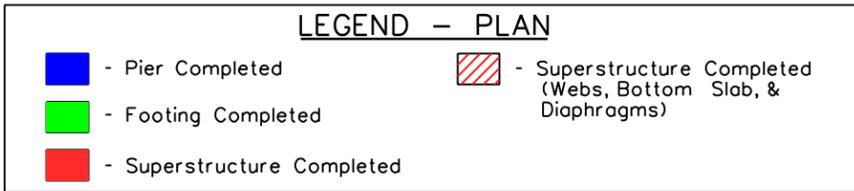
Milestone Event	April 2008 Baseline Finish Date	Actual
Project Award	October 18, 2007	October 18, 2007
Notice to Proceed	November 8, 2007	November 8, 2007
Abutment 1 Drill Caissons	February 15, 2008	February 15, 2008
Abutment 1 Cap Form/Rebar/Pour	March 6, 2008	March 6, 2008
Pier 2 EB Drill Caissons	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
Pier Table 4 EB Form/Rebar/Pour Top Slab	June 30, 2009	September 10, 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 now that the precast bottom slab segments are complete. Although several milestones dates were completed beyond the original date, Flatiron has stated that project completion will occur within contractual requirements.



PLAN



ELEVATION

