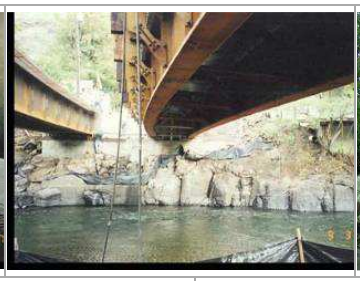
ABC Innovative Projects

Imnaha Bridge over Little Sheep Creek									
Location	Oregon Route 350 over Little Sheep Creek at Milepost 29.34, near the community of Imnaha in Wallowa County								
State	Oregon								
Owner	State								
Year ABC Built	1997								
State ID #	18074								
NBI #	18074								
Coordinates	***Latitude:***	45.559353		***Longitude:***	-116.834103				
Contact Person	Bruce V. Johnson, P.E. State Bridge Engineer Oregon Department of Transportation Phone: 503-986-3344 Email: bruce.v.johnson@odot.state.or.us								
Mobility Impact Time	***ABC:***	Estimated 9 months		***Conventional:***	Estimated 12 months				
Impact Category	*Tier 1*	*Tier 2*	*Tier 3*	*Tier 4*	***Tier 5***				
					X				
Primary Driver(s)	• improved work-zone safety • improved site constructability • improved material quality and product durability • minimized environmental impacts • reduced life-cycle cost								
Description	• 110-ft-long and 30-ft-wide single-span steel curved girder bridge • Rural location; also remote • Average Daily Traffic count: 190 (2010) • Traffic management alternative, if constructed conventionally: Conventional construction would have required a temporary detour bridge for local traffic to reach a dead end forest highway, at some distance, serving a small rural community on the other side of the creek ***Existing Bridge:*** The existing four-span wood decking on timber and steel stringer bridge was 20-ft wide with two 10-ft-wide traffic lanes and no shoulders. The existing bridge was deteriorated and required replacement. ***Replacement Bridge:*** The replacement bridge has two 12-ft-wide traffic lanes and one 5-ft-wide shoulder on the north side. The cross-section consists of four 4.75-ft-deep Grade 50W steel curved girders spaced at 8 ft with a 4.25-inch-thick concrete-filled steel-grid deck. The two halves were connected with a 3-ft-wide, 8-inch-thick cast-in-place reinforced concrete deck closure joint. The cast-in-place abutments are keyed into and founded on rock. ***Construction Methods:*** The contract required the bridge to remain open to traffic during construction. It also restricted construction activities in the creek due to salmon spawning beds.								

	The new right half of the bridge was constructed slightly offset from the existing bridge while the existing bridge remained open to one lane of traffic. The contractor cast the abutments on rock foundations on the banks of the creek. Cranes were utilized to erect the steel curved girders onto elastomeric bearing pads on the abutments. The steel-grid deck was erected on the girders, and concrete was cast to complete the deck. The sidewalk's 3.5-ft-high pedestrian rail consists of a 1.5-ft-high tube rail mounted on top of a 2-ft-high concrete parapet wall; the other side has regular side-mounted 2.67-ft-high steel tube rails on steel W6x25 posts. The one lane of traffic was diverted to the new half of the bridge. The existing bridge was demolished and the left half of the new bridge was built on the original alignment. Traffic was diverted to the left half of the bridge and the right half was skid laterally to connect with the new left half of the bridge using hydraulic jacks. Reinforcement was placed in the 3-ft-wide longitudinal closure joint, and the joint was filled with concrete. No overlay was applied. Other finish work was completed and all lanes were opened to traffic. There was no incentive/disincentive clause in the contract.
High Performance Materials	•
Photos Additional photos	  

Project Planning	***Decision-Making Tools***	*Site Procurement*	***Procurement***	*Contracting*
	• State process	•	• Design-bid-build	•
Geotechnical Solutions	*Foundations & Walls*		*Rapid Embankment*	
	•		•	

Structural Solutions	***Prefabricated Bridge Elements & Systems***			***Construction***
	Elements	***Systems***	***Miscellaneous***	• Transverse skids
	• Steel grid (concrete filled) deck	• Other: Half-width curved steel girder span with concrete-filled steel-grid deck	• CIP reinforced concrete closure joints	

Costs	Not available.			
Funding	*Federal only*	*State only*	***Federal and State***	*Other*
			X	
Incentive Program ($)	*Highways for LIFE*	*IBRD*	*SHRP2*	*Other*

Contract Plans	**Complete Set:**		**ABC *:**	Bridge Plans (link to pdf)
Specifications	**Complete Set:**	Not available.	**ABC *:**	

Bid Tabs	Not available.			
Schedule	**Engineer's:**	Not available.	**Actual:**	
Other Related Information	ODOT Bridge Engineering Website [http://www.oregon.gov/ODOT/HWY/BRIDGE/]			
Photo Credits	Oregon Department of Transportation			

* Specific to the ABC used in the project.