Hamilton Construction North Jefferson – Santiam Interchange Project

Northwest Construction's BEST of 2006 Award

Project Name: North Jefferson - Santiam Interchange, North Albany, OR
Tenure: February 2004 – June 2006

Project Description:

The North Jefferson Project was a $20.5 million eight mile long reconstruction of Interstate 5 just north of Albany, Oregon. Included was eight miles of paving, roadway rubbilization, installation of new guardrail, new permanent signage, new drainage, five new overflow structures that were cast in place, a new double box culvert, temporary concrete barrier, permanent barrier, and removal of seven detour bridges.

This project had many challenges ranging from working within in-water work window to staging traffic in various parts of the project. One of the biggest challenges to overcome on the project was the construction of the UPRR Structure that spanned over the UPRR Mainline Railroad, Jefferson Hwy, and a sensitive wetland area for a total length of 463 feet. The type of structure that was called out to be constructed was a combination of a CIP Box Girder and Pre-cast Beams that are post-tensioned together for the final product. The end result were three clear spans, one to clear Jefferson Highway, one to clear the UPRR Mainline, and the other span to balance the previous span.

The original construction sequence called out to construct the CIP Box girder sections prior to the placement of the concrete girders. This seemed to be a logical way to construct it, but one problem arose: if the box girders were constructed prior to the beam setting, the falsework for the CIP Box Girder would be in the way and the crane would not be able to set the beams. So we looked at it a different way. We knew that the beams would have to be delivered at night and also we would have to get track time from UPRR. Those were two knowns in the equation. Thinking outside of the box for the last variable, we had the thought of setting the girders first and then constructing the box girder around the girders. Through many AutoCAD drawings, field measuring, and looking at various sizes of cranes and crane charts, we were able to find the right size of crane that would fit in between the already constructed center piers. The beam erection for all three spans had to be a two crane pick. The first span over Jefferson Highway had an 80T Linkbelt Crawler crane and on the other end we utilized a 350T Grove Hydraulic crane. The next two spans were set using a combination of a 350T and a 120T Grove Hydraulic crane. Between the center columns being in place and the falsework, there was barely enough room to have these cranes fit into the confined spaces and still have enough room for counterweight. After months of planning for the beam erection, in three nights, all of the beams for this structure were set.

An additional innovation was using the old existing concrete pavement as the new road base. Rather than excavate miles and miles of concrete, the existing asphalt was ground off, up to 12" in some areas. Then a concrete rubbilizer was brought on site to break up the concrete into the required fractured pieces and a massive roller was used to "seat" the concrete into the existing ground prior to paving. From there, five lifts of asphalt, including the top lift of F-mix were placed. In return, the public saved money on not having to replace miles and miles of new

subgrade and aggregate base. As the public drives through the job today, it is one of the smoothest riding roadway in the Willamette Valley.

Project Owner: ODOT (Oregon Department of Transportation)
General Contractor: Hamilton Construction Co (Oregon)
Subcontractors: Morse Brothers, Staton, Willamette Valley Steel, Dirt & Aggregate