Roads

Hood River to Mosier

Chapter 4

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Hood River-to-Mosier

Photo of the restored timber lining which lines the insides of the Mosier Twin Tunnels.

During the summer of 1999, the Oregon Department of Transportation awarded the "Roads" section of the Hood River to Mosier projects to MOCON Construction of Portland Oregon. The purpose of this project was to restore the road work of the Historic Highway from the West Trailhead near Hood River, to the East Trailhead near Mosier. This work included excavating the extra width of pavement that had been added over the years, repaving the road, restoring the timber lining inside the Mosier Twin Tunnels, restoring the guardrail in its original position, and reclaiming the masonry walls.

Restoration of the Mosier Tunnels' Wood Canopy

MOCON started work on restoring the wood canopy in the fall of 1999. ODOT had salvaged the Port Orford Cedar lining that had been removed from the Elk Creek Tunnel on Hwy 38 and had stored them at Rooster Rock State Park. MOCON hauled the timbers to the Hanel Mill on Hwy 35 south of Hood River where they were milled down to the correct size. During the process of cutting ½" – 1" off of each side of every timber to create a clean usable surface, many nails were discovered. This added cost and time to the process, but Hanel provided a quality product that everyone was proud of. Once the timbers were cut to the proper dimension, they were hauled to the east end of the Mosier Twin Tunnels where MOCON cut them to the proper length and screwed them into place.

Left Top: MOCON cut the Timbers on site to ensure a proper fit.

Left Bottom: Once MOCON had the ribs (frame) in place, they attached the lagging (cross members) with screws from the back side. After the ribs and lagging were all in place, MOCON covered the entire backside of the wood canopy of a waterproof membrane and installed additional bracing to secure the canopy.

Above: ODOT inspector Kevin Bracy examines the waterproof membrane and braces behind the newly installed wood canopy.

View of the finished wood canopy, constructed from the recycled timbers from the Elk Creek Tunnel on Hwy 38.

Masonary Walls

Particularly challenging in the Roads contract was the restoration of the masonary walls. Alpha Omega of Hood River used a technique to build the wall different from other contractors on the Gorge projects. Alpha Omega grouted the rocks in place and instead of removing the excess grout before it hardened, they sandblasted it off at a later date. MOCON built the cap on the wall and also used a different technique. They built the formwork for the cap without fine tuning the forms to ensure a smooth curvature. Many hours were spent grinding and patching the cap. The lesson learned by ODOT was that even though we do not want to direct the contractor on how to perform their work, we can provide them ideas that will have a higher likelihood for success. For future walls, ODOT should have all contractors build a concrete core and cap first and then attach the rock veneer.

Gino of Alpha Omega Masonry supervises the stonework.

While the concrete cap was still curing, a rockfall occurred that severely damaged the work that Alpha Omega had done on on a section of the masonry wall which lies near the county line.

Looking east over the Alpha Omega crew starting on the Bingen Overlook wall. On the right side of the photo is the rock used to construct the wall. It was collected along side the Historic Highway from rockfalls near the work site.

After the stones were placed, Alpha Omega later came to the site and sandblasted the excess grout between the joints.

Alpha Omega, used a technique to build the wall different from other contractors on the Gorge projects, sandblasted off excess grout once it had dried, rather than remove it during initiol grout application.

After the wall was acceptable, MOCON acid washed and applied a staining product that provided a final appearance that more closely matched the existing masonry wall it connected to.

Looking east over the restored Bingen Overlook wall during the winter.

The newly reconstructed Bingen Overlook wall.

Additional Pavement Removal

Part of the Roads project was to remove the additional pavement width that had been added to the Historic Highway. Originally, the highway was 16 feet wide which was only wide enough to accommodate the smaller cars of the early 1900's. But as traffic volumes increased and the route was used by trucks hauling cargo from The Dalles to Portland, the highway was widened. The width of surface removed ranged from 1' to 6'. It appeared that most of the widening had occurred on the inside of each corner to also straighten the highway. Great care was taken to remove only the actual extra pavement. In some areas the joint between the newer and original pavement was obvious, but in other areas, professional judgement was used to identify the location of the original highway. Crestline Construction of The Dalles performed all of the pavement width removal work.

Where the joint was obvious, a disk could be used to separate the original highway from the added surfacing and then a saw was used to cut a clean line.

After the extra asphalt was separated from the original highway, it was excavated and hauled from the site.

Historic Guardrail Installation

As part of the efforts to restore the Historic Highway to its original condition, Historic guardrail was installed. Research discovered where the original locations of guardrail were, and the Roads project installed new, historic style guardrail in those same locations. Additionally, newer, more stringent design standards required installation of new guardrail where it Historically had not been. After the guardrail was installed in those locations, a special identification tag was attached to the backside of the railing to denote this difference. Columbia River Contractors installed this new guardrail.

The portion of the Roads project between the junction of Highway 35 and the West Trailhead currently carries local vehicle traffic. Several runs of guardrail were installed in this section. The historic version of the guardrail does not meet Federal Highway Administration (FHWA) safety guidelines and standards. Therefore, another version was designed to meet those standards while maintaining the general appearance of the historic version. The difference in the design is that the traffic-exposed guardrail has a steel plate backing on the rail members.

ODOT inspector Kevin Bracy documents the pieces of rail that were delivered to OPRD and ODOT for future maintenance needs.

Newly installed guardrail. The rail exposed to traffic has a metal backing that makes it safe for traffic.

Highway Regrading and Repaving

To finish the Roads contract, MOCON hired Munson Paving of The Dalles Oregon. First, Munson Paving had to level out many of the curves throughout the project. Originally, the curves were superelevated between four and ten percent. In order to meet the Americans with Disabilities Act (ADA), the superelevations had to be reduced to a maximum of five percent cross-slope. Also, several sections of the roadway were so badly deteriorated that a simple overlay could not fix them. In those areas, Crestline Construction excavated out the asphalt and base rock and then replaced them with new geotextile, base rock and asphalt.

Prior to the placement of the new asphalt surface, ODOT's Parkdale maintenance crew utilized the opportunity to clean out the ditches to minimize work that would have to be done after the new pavemnet was placed.

ODOT Paving Inspector Jesse J. Threlkel worked with Randy Munson to complete the paving on an accelerated schedule prior to the Opening Ceremony.

At this time, all of the work, except the overlay and shoulder rock, was substantially complete. A special Grand Opening Celebration and Dedication Ceremony was scheduled for Sunday, July 23, 2000 to coincide with an entire Gorge wide Historic Highway Event. However, the completion date for the Roads project was set for August 15. In order to complete the paving and shoulder rock portion of the Project prior to the Celebration, MOCON was paid an incentive of $15,000 to complete the work by July 21, the Friday before the ceremony.

MOCON was able to strike a deal with Wasco County to hire their crew to place the shoulder rock with a modified Flagherty machine. Without this machine, the shoulder rock would have been dumped on the new pavement and then bladed into place. Even with great care, the new pavement may have been damaged.

This modified Flagherty, owned by Wasco County, was used to install the shoulder aggregate along the whole length of the highway.

Looking east over the new asphalt and shoulder rock at the Bingen Overlook Wall.

The Grand Opening Celebration and Dedication Ceremony attracted many spectators and speakers including Sen. Mark O. Hatfield and ODOT Director, Grace Crunican.

The Dedication Ceremony

As a fitting conclusion to the substantial completion of all of the projects, a Dedication Ceremony and Grand Opening Celebration was held to help commemorate the success. Advertisements and information about the ceremony were distributed to business and individuals throughout the communities of the Gorge as well as the Portland Metro area. The activities of the ceremony included a 4.6 mile fun run/walk through the newly opened Twin Tunnels and an antique car parade through the entire project. In addition, several guest speakers attended providing their own words of wisdom. Two of the speakers included Sen. Mark O. Hatfield and ODOT Director Grace Crunican.

Construction Contacts

There were many people involved in the development and the construction of these projects. The key personnel for construction contacts for future reference are:

Jeanette Kloos

ODOT Project Development Leader

Mark Beeson

ODOT Project Manager, Troutdale

Craig Sipp

ODOT Senior Inspector, The Dalles

Bob Neill

ODOT Assistant Project Manager, Troutdale

Kevin Bracy

ODOT Senior Inspector, Troutdale