



NEVADA COUNTY TRANSPORTATION COMMISSION

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Press Release

TO: YubaNet-Pascale Fusshoeller
The Union
Nevada City Advocates
KMVR
KNCO –Rita Stevens

FROM: Daniel Landon, Executive Director

SUBJECT: American Society of Civil Engineers Selects Dorsey Drive Interchange as the 2014 Outstanding Construction Project of the Year

DATE: February 27, 2015

On February 25, 2015 Grass Valley Councilmember Jan Arbuckle, City Engineer Tim Kiser, Senior Civil Engineer Trisha Tillotson, and Nevada County Transportation Commission Executive Director Dan Landon attended an awards banquet in Sacramento where the American Society of Civil Engineers, Sacramento Section, named the Dorsey Drive Interchange the 2014 Outstanding Construction Project of the Year.

The City of Grass Valley served as the lead agency, working in partnership with the Nevada County Transportation Commission and Caltrans. Design was prepared by Caltrans and construction was performed by McGuire and Hester. Construction management and engineering were performed by HDR with geotechnical and storm water protection plan support provided by Holdrege and Kull.

Significant elements of this \$15 million construction project include:

A two-phase bridge widening project that improved approximately 0.46 miles of roadway and 1.4 miles of highway, including the widening of both Dorsey Drive and the two-lane bridge over the highway, new on- and off-ramps for the diamond interchange, and modifying Joerschke Drive into a one-way street. Completion of the project has dramatically reduced access time from State Route 20/49 to the Sierra Nevada Memorial Hospital and has improved access to adjacent businesses.

Improved pedestrian facilities were installed, including bus stop turnouts with benches, new ADA compliant sidewalks, bicycle paths, crosswalks, and audible pedestrian signals.

Architectural treatments were added to the concrete bridge walls, retaining walls, street lighting and retention walls. The project also featured improvements to storm water pollution treatment with oil/water separators and sand trap inlets.

Innovations in Construction: The project initially included a \$500,000, 275 linear foot wall along the westbound on-ramp. During construction the contractor found stable rock in this area and investigated the possibility of creating a steeper slope instead of constructing the costly wall. The contractor submitted a cost reduction incentive proposal along with his proposed design. HDR, Holdrege and Kull, and Caltrans reviewed this design and found it acceptable. The cost savings from this improvement was split between the contractor and the City of Grass Valley.

Pioneering in Use of Materials and Methods: To construct the foundation for an overhead sign, the contractor was required to drill a 60 inch diameter hole twenty-seven linear feet into solid granite rock. During preliminary drilling, it was found that the strength of the granite in this location reached over 15,000 pounds per square inch, which was effectively stronger than the concrete that was to be poured to support the sign. Holdrege and Kull designed a “rock socket” that won Caltrans approval and was used for the first time in the region. The rock socket consisted of eight steel bars that were grouted 10 feet into the bedrock. This innovation significantly reduced the cost of installing the overhead sign.

Resourcefulness and Planning and Solving Design Challenges: Due to right-of-way constraints, the westbound off-ramp was modified to join the Joerschke Drive before intersecting with Dorsey Drive. To accommodate this, a portion of Joerschke Drive was modified to be a one-way street with westbound-only traffic. This innovation reduced the number of properties that needed to be acquired to establish a dedicated off-ramp, and saved the project approximately \$1.7 million.

The project featured a unique bridge widening as a Caltrans designer was able to create a cantilevered bridge out of an existing bridge column. The cantilever supports two 76 foot long precast girders. This configuration resulted in additional functionality from the existing structure and reduced construction costs.

Impact on Physical Environment: In response to the major drought that California is currently experiencing, Caltrans redesigned the landscaped areas by eliminating the irrigation system and replacing plants in the original design with native drought tolerant plants. Caltrans also specified the use of “DRI-Water”, a time-released, temporary irrigation canister that is used during the first year of plant establishment.

Water quality improvements were provided by constructing drop inlets with sand traps in order to mitigate the potential of sediment reaching Wolf Creek. Additional measures included the placement of an oil/water separator at the strategic location of Dorsey Drive and E. Main St.

A reduction in energy use was accomplished by installing LED streetlights throughout the project

Also included in the project were approximately 1,272 linear feet of sound walls that match the projects color scheme in addition to reducing highway noise and increasing privacy for residences and businesses. Other aesthetic features include decorative street lighting, landscaping, and decorative railings. These features are consistent with walls and streetlights in other locations of the City, thereby minimizing the look of “new construction”.