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August 5, 2014

Marlo Tinney  
Chief, Office of Transportation Planning –East  
California Department of Transportation, District 3  
2379 Gateway Oaks Drive, Ste 150 – MS 19  
Sacramento, CA 95833

Subject: Newcastle Fire Station, 032014-PLA-0055, PLN14-00044 (RDG project #13-262)  
Caltrans Comments on Environmental Application

Dear Ms. Tinney,

We have received the staff review comments from Caltrans District 3 dated July 28, 2014 and propose the following responses:

***Encroachment Permit***

The parcel where the proposed project is located is directly adjacent to Caltrans Right of Way (ROW) at the I-80 westbound off ramp to Newcastle Road. However, some of the landscape removal and earthwork associated with the project is proposed and performed within the State’s highway ROW prior to commencing construction. To apply for an Encroachment Permit, a completed Encroachment Permit application, environmental documentation, and five sets of plans clearly indicating State ROW must be submitted to the following address:

Bruce Capaul, District Office Chief  
Office of Permits, North Area Branch  
Caltrans District 3  
703 B Street, Marysville, CA 95901

Traffic-related mitigation measures should be incorporated into the construction plans prior to the Encroachment Permit process. See the website at the following URL for more information:  
<http://www.dot.ca.gov/hq/traffops/developerserv/permits/>

**Response: Noted.**

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**“Values from the Past, Experience for the Present, Preparing for the Future”**

### ***Newcastle Road/Old State Highway/I-80 westbound ramps Roundabout***

As an informational comment, we would like to suggest that Placer County consider a future roundabout at the Newcastle Road/Old State highway/I-80 westbound ramps intersection to improve traffic operations, preserve safety, and increase capacity. Caltrans District 3 Traffic Operations staff has considered the possibility of a roundabout at this intersection. A conventional roundabout would be difficult to construct and would have significant ROW issues. However, a mini-roundabout may be feasible and may not require widening the Newcastle Road Overcrossing structure. The entire central island of a mini-roundabout is mountable, so large vehicles can negotiate the turning movements. This intersection type should accommodate the fire station's needs very well. See attachment A for a conceptual schematic of the roundabout.

**Response: Noted. This issue to be addressed between Caltrans and Placer County.**

### ***Hydraulics***

- There appears to be an issue with the Time of Concentration (Tc) used for the existing and proposed flow calculations. There is no display in the Drainage Report that shows the flow path used for the Tc and it appears that the selected path is through the swale on the east side of the property roughly parallel to the Interstate off ramp. The hydraulically most remote path would start near the north-west corner of the property and pass over the relatively flat area at the proposed location of the building. This will likely change the existing flow to a lower fluid flow rate. Additionally, the path for the Tc in the proposed design will likely result in a shorter Tc and consequently a higher fluid flow rate. Without treatment best management practices (BMPs) we would expect the flow for the proposed design to be slightly higher than the existing. Please show the path of the Tc in the watershed maps.

**Response: Arrows have been added to the shed maps to clarify the drainage paths. We compared a drainage path originating near the north-west corner of the property (Drainage Path 2) with the drainage path originating from the north-east (Drainage Path 1), and determined that Drainage Path 1 has a longer Tc. See updated report. The post-development flows are still slightly less than the pre-development flows for both the 10-year and 100-year storm events.**

- No net increase to the 100-year storm event peak discharge may be realized within the State's ROW and/or Caltrans drainage facilities as a result of the project. Any impacts to Caltrans drainage facilities arising from effects of the project should be minimized through drainage mitigation measures.

**Response: Noted. As noted above, the post-development flows are still slightly less than the pre-development flows for both the 10-year and 100-year storm events, so no mitigation is necessary.**

- Page 1 of the Drainage Report refers to a discussion with a Caltrans employee. Please include his name: Gurdeep Ghattal P.E., District 3 Hydraulics.

**Response: Noted. Gurdeep Bhattal's name has been added to page 1 of the report.**

- Please revisit the Manning's "n" values selected for the Tc flow path. Values that are in Table 5-5 are for sheet/overland flow only and cannot be used for shallow concentrated or channel flows. For example, we would expect the "n" value for asphalt pavement to be 0.016 and not the 0.11 used in the calculations.

**Response: Table 8-1 on page VIII-4 of the Placer County Stormwater Management Manual was used for shallow concentrated or channel flows. For both the pre- and post-development flows, the controlling drainage paths do not pass through paved areas. Referring to Table 8-1, the Manning's "n" value for medium to dense brush (summer) ranges from 0.07 to 0.16, so a value of 0.11 was selected for various swales in regions of the property where brush was encountered.**

- There is an inconsistency with the percent of impervious cover select for the existing conditions. In the Drainage Report approximately 22% was used and in the Initial Project Application it states there is no existing impervious area (0%). Please reconcile and show the existing impervious area in an attachment.

**Response: The Initial Project Application did not consider surface areas beyond the property boundary. Since there are no on-site impervious surfaces, 0% is appropriate. However, the Drainage Report calculations do consider surface areas beyond the project site (e.g. the freeway off-ramp) that drain to the site, so the total impervious area would obviously be different.**

- The watersheds should include the highway runoff. The off ramp does not appear to be crowned. The superelevation of the curve should be directing the runoff toward the project location and the existing 24-inch culvert. Please include all runoff that is going to the existing culvert including any that might be flowing from other properties. Please indicate where the runoff from the railroads industrial parcel to the north goes.

**Response: Noted. The entire off-ramp is now included.**

- This entire site appears as though it could be a detentions basin for several properties including the highway. With the proposed construction most of the basin will be filled in. Please calculate the hydraulic grade line for the existing and proposed design for the existing 24-inch culvert for both the 10 and 100-year storm events. For the 10-year event the headwater should not rise above the soffit of the culvert. For the 100-year storm event the headwater should not cause objectionable backwater, including encroaching on the travelled way. If this location was acting as a detention basin then the displaced storage will need to be mitigated.

**Response: Noted. We have added a section to the Stormwater Report on pages 6-7 titled "Stormwater Detention". We have calculated the water head (i.e. depth of open channel flow) in the culvert, and determined that the post-development grading will not displace or adversely affect detention storage.**

- In summary, there should be no increase in the runoff to the State's existing 24 inch culvert for the 100-year storm event.

**Response: Noted. As noted above, the post-development flows are still slightly less than the pre-development flows for both the 10-year and 100-year storm events, so no mitigation is necessary.**

Please let us know if you have any additional questions or comments.

Sincerely,  
**Roseville Design Group, Inc.**



Philip J. Herzer, P.E.  
Vice President

cc: File Copy