Complete Geotechnical, Geological and Geo-Civil Services

July 14, 2011
File: 258.23altr.doc

Solano County Division of Architectural Services
675 Texas Street, Suite 2500
Fairfield, California 94533

Attn: Orlie Coronel-Mangune

Re: Pavement Structural Section Alternatives
Claybank Adult Detention Center Expansion
Fairfield, California

Following your recent request, this letter presents alternate asphalt pavement structural sections for use in value engineering and design of the planned Claybank Adult Detention Center Expansion project. We have performed Geotechnical Investigations for the project, most recently summarized in an update geotechnical investigation report dated December 17, 2010. That report included preliminary pavement structural sections based on anticipated subgrade conditions and Traffic Indices of 4.0 and 6.0.

For this letter, we reviewed the most current site grading plan, provided by Solano County, and our previous work to develop alternate pavement sections. The purpose of these alternates is for them to be used by the Design Team in evaluating construction cost impacts. Based on our previous recommendations and understanding of the project, we anticipate that new asphalt paved access driveways and parking will be constructed on one of two types of prepared subgrade (as discussed in our earlier report): 1) lime-treated on-site clay soil, or 2) import select fill. Based on our experience, we judge that an assumed R-value of 50 for lime-treated clay soil is appropriate. R-values for import select fill can vary widely, depending on the source. For purposes of this design effort, we have used an assumed R-value of 30 for import select fill (which is the same assumption used in determining the preliminary values listed in our December 2010 report). For this letter, we have determined alternate pavement sections for both lime-treated clay subgrade and import select fill subgrade.

In addition to R-value, the second primary input parameter needed for Caltrans flexible pavement design is a Traffic Index (TI). For light-use parking and access driveways, TIs ranging from 4.0 to 6.0 are common. For this letter, we have determined structural sections alternatives for TI values of 4.0, 5.0, and 6.0. Intermediate TIs can be interpolated. We recommend the project Civil engineer determine where the various TIs are most appropriate for this project and whether additional TI values should be considered.

Finally, Caltrans pavement design typically incorporates a "Factor of Safety" for highways and streets. This Factor of Safety does not necessarily yield a thicker total Equivalent section, but rather shifts more of the total section into the Asphalt (AC) portion, generally reducing the Aggregate Baserock (AB) section. For this project, we judge that the Caltrans Factor of Safety could be neglected, since the pavements are for parking and driveway areas rather than major

roadways. Also, as noted, neglecting the Factor of Safety does not yield a lesser total pavement section, only one that tends to have less AC and more AB. For this letter we provide alternate sections with and without the Caltrans Factor of Safety.

The table below provides the alternate pavement sections, developed with the various factors discussed above. For a lime-treated subgrade condition, we also provide a "Full Depth AC" section, which could be placed directly on the lime-treated subgrade with no Aggregate Baserock (AB). We do not recommend a Full Depth AC section where Import Select Fill is used as subgrade.

PAVEMENT SECTION ALTERNATIVES
CLAYBANK ADULT DETENTION PROJECT
FAIRFIELD, CALIFORNIA

Lime-Treated On-Site Subgrade Assumed R-Value = 50

	w/ Caltrans FS		W/o Caltrans FS		Full Depth
	AC	AB	AC	AB	AC
T.I.	(inches)	(inches)	(inches)	(inches)	(inches)
4.0	2.5	6.0	2.0	6.0	3.5
5.0	3.0	6.0	2.0	6.0	4.0
6.0	3.5	6.0	2.5	6.0	5.0

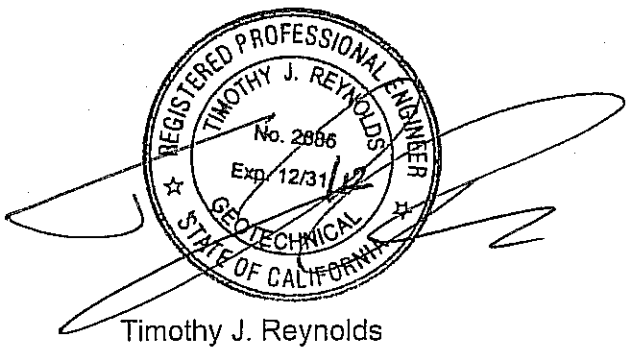
Import Select Structural Fill Subgrade Assumed R-Value = 30

	w/ Caltrans FS		W/o Caltrans FS	
	AC	AB	AC	AB
T.I.	(inches)	(inches)	(inches)	(inches)
4.0	2.5	6.0	2.0	6.0
5.0	3.0	7.0	2.0	8.0
6.0	3.5	8.0	2.5	10.0

1) Class 2 Aggregate Base shall confirm to Caltrans Standard Specifications
2) We do not recommend AC thicknesses of less than 2-inches nor AB thicknesses less than 6-inches. Thus, where pavement analysis yields lesser values, a min of 2-inch AC and 6-inch AB were used.

We trust that this provides the information required at this time. If you or others have further questions or comments, please call us.

Yours very truly,
MILLER PACIFIC ENGINEERING GROUP



Timothy J. Reynolds
Geotechnical Engineer No. 2686
(Expires 12/31/12)

3 copies submitted