



September 12, 2016

Don Leonard, CEO  
Great Salt Lake Brine Shrimp Cooperative  
1750 West 2450 South  
Ogden UTAH 84401

RE: Promontory Road Dedication and Design

Dear Mr. Leonard:

At your request, we have reviewed the proposed alignment for the Promontory Road Dedication, and write to express our opinion on potential issues and solutions regarding that alignment.

The current road bed is relatively straight and flat. In addition, it has been in continuous use for many years. Changing the alignment to a new one—with a new road bed—that is less straight and moves up- and down-slope should pose little difficulty to existing users of the road *provided that the new road is constructed properly*. If not, however, it could pose serious problems for individuals and business that already use this county road.

We see two primary risks: first, based on the design provided the Easterly portion of the road has slopes up to 6.33 percent and slopes up to 5.19 percent on the Westerly end. The current road slopes are significantly less than the proposed design. Design slopes might not accommodate the heavy vehicles that businesses in the area routinely move up and down these roads, particularly in harsh, winter conditions. Second, a new and untested road bed may fail in ways that the current one would not.

At a minimum we are recommending an all-weather surface for the roadway, designed to minimize erosion and support a minimum 80,000-pound legal semi-truck load. Based on this we recommend the following road section as minimum requirements. We also recommend a geotechnical investigation of the soils to verify that no additional requirements are in order.

- Compacted subgrade under the road surface;
- 12" of Gravel Surface minimum 26' wide (with 2 applications of Magnesium Chloride after fine grading applied in the first year of service);
- 4' shoulders on both sides of the road surface;
- Crowned Roadway non-parabolic;<sup>1</sup> super-elevated through curves and

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<sup>1</sup> A parabolic curve on the crowned road surface will create flat areas allowing water to pool and degrade the road surface.

- Ditches along cut areas and on the uphill sides in fill areas of the road to direct water away from the road surface with cross roadway drainage (culverts) spaced appropriately, and aligning with existing natural drainage channels. Ditches need to have a minimum running slope of 1.0% to ensure adequate parallel drainage to prevent subgrade from becoming saturated.

Assuming soil surveys reveal no additional challenges, constructing a road to those specifications should resolve potential problems associated with changing the road alignment. Please note, however, that we believe there is a need for a more thorough technical analysis, which has been limited to date by late notice and delays in receiving relevant background documents regarding the proposed project.

Respectfully,

A handwritten signature in black ink that reads "Christian Michaelson". The signature is written in a cursive style with a long, sweeping underline.

Christian Michaelson P.E.