

February 12, 2019

Sent via email – scott@sbcivilengineering.com

Scott Benedict, P.E
SB Engineering
586 Citadel Way
Reno, NV 89503

Ralston Street – University Terrace to 11th Street. Surface and Subsurface

Dear Scott,

This correspondence includes excerpts from our Geotechnical Investigation and Pavement Design Report prepared for the RTC Reno Consolidated 19-03 Project. The excerpts below relate to the subsurface conditions encountered on Ralston Street. We understand SB Engineering is preparing design plans for the waterline replacement in Ralston Street from University Terrace to 9th Street, and would like to include this information in the Bidding Documents. The entire Report will be available with the contract documents for the Reno Consolidated 19-03 Project expected to bid late May 2019. The following is provided for information only and bidders are responsible for any interpretation or conclusions.

3.0 SURFACE AND SUBSURFACE CONDITIONS

3.1 Ralston Street

During ESE's investigation of Ralston Street, Portland Cement Concrete (PCC) was encountered in TP-2 extending 6.5-feet to 8.0 feet from front face of the curb on west side of roadway and in C-6, 5.5 feet from front face of curb on the east side of the roadway. It appears that there is an 8-foot wide concrete gutter running on both sides of the roadway. Its thickness was measured at 4-inches in TP-2; the asphalt concrete (AC) structural section on Ralston Street beyond the gutters generally ranged from 5.0 inches to 11.0-inches. No aggregate base/fill material was encountered underlying the AC or PCC.

Underlying the AC and PCC was generally silty, clayey sand with gravel and clayey sand with gravel. Cobbles (3" to 12" diameter) were observed in the test pits.

4.0 PAVEMENT EVALUATION AND DESIGN

4.1 Visual Observation and Pavement History

4.1.1 Ralston Street

Ralston Street is a two lane AC paved roadway with residential parking on both sides of the roadway. The roadway width varies from 38-40 feet wide with a parkway between the sidewalk

and roadway on both sides for the roadway. Ralston Street is classified as a Collector roadway by the City of Reno.

Ralston Street exhibits extensive alligator cracking, maintenance patching and transverse and longitudinal thermal cracking. Alligator or fatigue cracking is typically caused by fatigue failure of the AC surface under repeated traffic loading. Localized failure of the subgrade has required maintenance patching. Thermal cracking is typically caused by shrinkage of the AC surface due to the hardening of the asphalt and daily temperature cycling. The thermal cracking appears to extend through the entire thickness of existing AC. Ralston Street was originally constructed with PCC gutters that extend 8 feet from front face of curb on both sides of the roadway. The thickness of the 8 foot gutter was measured to be 4 inches thick. The thickness of the AC overlying the gutter varied from 1.75" to 3.5" depending on the distance from the front face of curb. The curb and gutter exhibits severe cracking and surface raveling.

Records provided by the City of Reno indicate the roadway was originally constructed in 1970, a thin overlay was placed in 2001 and a double microsurface treatment was placed in 2008.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 General

Both test pits on Ralston Street had clayey sand with gravel and cobbles directly below the existing AC.

5.2 Construction Concerns

Cobbles and clayey sand with gravels were encountered in the test pits on Ralston Street. The contractor should expect cobbles and soft, unstable subgrade during the construction of Ralston Street. In addition, the contractor should be aware of the 8 foot PCC gutter on both sides of the roadway from University Terrace to 11th Street.

We trust this provides the information you require at this time. Please do not hesitate to contact me at (775) 828-7220 extension 201 if you have any questions or require additional information.

Sincerely,
Eastern Sierra Engineering, P.C.



Shawn W. Jenkins, P.E.
NV PE#10194

cc – Warren Call - RTC – wcall@rtcwashoe.com
Steve Volk- TMWA – svolk@tmwa.com