

Technical Memorandum

Subject: Surfacing Material Final Recommendations
AZ FTBR SALT 80(1) Horse Mesa Bridge

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INTRODUCTION

This memorandum provides the surfacing material recommendations for the bridge approaches and other material items for the Horse Mesa Bridge Project. The project is located on FR 80 in Maricopa County which is about 60 miles east of Phoenix, Arizona. The new bridge will be constructed just east of the existing bridge. The existing approaches and roadways have a gravel surface. The length of reconstruction for the roadways and approaches for the new bridge will be about 198 feet. The surfacing material for the approaches and roadway will be gravel.

This memorandum also documents the assumptions used to develop the preliminary recommendations. No pavement investigation was completed. The traffic volume on FR 80 is very low and is estimated to be around 20 vehicles a day (or less) based on feedback from Salt River Project (SRP) staff.

FIELD INVESTIGATIONS

As mentioned above, no pavement investigation was completed. A geotechnical report provided by the SRP included borings. From this data, the soil is assumed to consist of non-plastic silty sands with gravels. This type of soil is expected to provide a good foundation for a layer of surface gravel. Refer to the CFLHD Geotechnical Memo for more detailed information.

DESIGN RECOMMENDATIONS

Roadway and approaches: The SRP and BOR did not indicate concerns for sediment run-off into adjacent gulch, nor concerns for performance of unbound gravel material on the existing steep grades. This may be because of the very low traffic volume on FR 80, because typically unbound gravel will erode relatively quickly on steep grades.

The entire FR 80 route is gravel. Given the very low traffic on the route, the SRP and BOR are not particularly concerned about serviceability level. As a result, gravel surfacing for the bridge approaches and roadway will be provided. The surfacing structural section recommendations are as follows:

6 inches of aggregate surface course (30202-2100, roadway aggregate, method 2, surface course) for the approaches and roadway reconstruction sections.

The bridge deck surfacing will be a galvanized steel open grid deck. There will be no asphalt on this project and only a relatively small amount of cast-in-place concrete for the abutments and walls.

CONSTRUCTION CONSIDERATIONS & SPECIAL CONTRACT PROVISIONS

Haul distances for concrete are expected to be around two hours. The Phoenix area has multiple ready-mix concrete suppliers. Due to long haul time, hydration stabilizers may be required to meet discharge requirements in Section 552.