Steepening the Curve
Roundabouts on Grade
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June 29, 2020
Current Guidance

- **NCHRP Section 6.8.7.5**: Not desirable for greater than 4%.

- **California Department of Transportation Highway Design Manual**: Potential for overturning trucks on greater than 4% grade.

- **AASHTO**: Grades should not exceed about 6%.

- **FHWA**: Roundabouts may be on grades steeper than 4%, but circulatory roadway grades must be constructed on a constant plane.
Project Locations

City of Colfax
- S Auburn Street RB

Town of Truckee
- Stockrest Springs RB

Roundabout Location

- S Auburn Street RB
- Stockrest Springs RB
Existing Condition – S Auburn St RB – Colfax, CA
Project Constraints
Considerations in Design

In locating the roundabout on grade, the following considerations were utilized:

• Minimize potential for overturning trucks/high profile vehicles

• Flatten the profile grade at the roundabout approach

• Profile grades for local rural roads in mountainous terrain should be less than 16.5% for a design speed of 25 mph (utilized 11.5% maximum)

• All fastpath profiles met the criteria described above and had no vehicle clearance issues.
Grading - Profile
Grading – Overall Fastpath

Fastpath - Northbound and Southbound

S Auburn St and Interstate 80 Roundabout Project
Colfax, California
Grading – Fastpath Profiles
Grading – Fastpath Profiles
Grading – Fastpath Profiles
Grading - Overall
Grading - Circulating
During Construction
During Construction
Final Product
Final Conditions

City of Colfax
S Auburn Street RB

Town of Truckee
Stockrest Springs RB
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