

# Appendix E

## SAMPLE STREET SURFACE STANDARDS

### Bicycle Technical Guidelines



*A Guide for Local Agencies in Santa Clara County*

- 1.  $R^h$  = Radius of horizontal curve per site conditions, no bike/ped conflicts with motor vehicles
- 2.  $R^c$  = Curb radius at ramp terminal intersections to be 20-25 feet maximum for optimal ped bike accommodation.
- 3. Posted speed limit on Arterial 35 mph maximum.

# 4 MAINTENANCE AND CONSTRUCTION ZONES

## 4.1 ROADWAY RESURFACING

### 4.1.1 Gutter Seams

During resurfacing, ensure smooth longitudinal gutter seams by grinding and/or wedge cutting prior to applying the overlay. This will maintain a smooth transition between the asphalt surface of the roadway and gutter pan thereby providing a safe riding surface for bicyclists. (Note: This is standard practice in Palo Alto, Sunnyvale and Los Altos.) See Figure 4-1.

### 4.1.2 Check Lane Widths

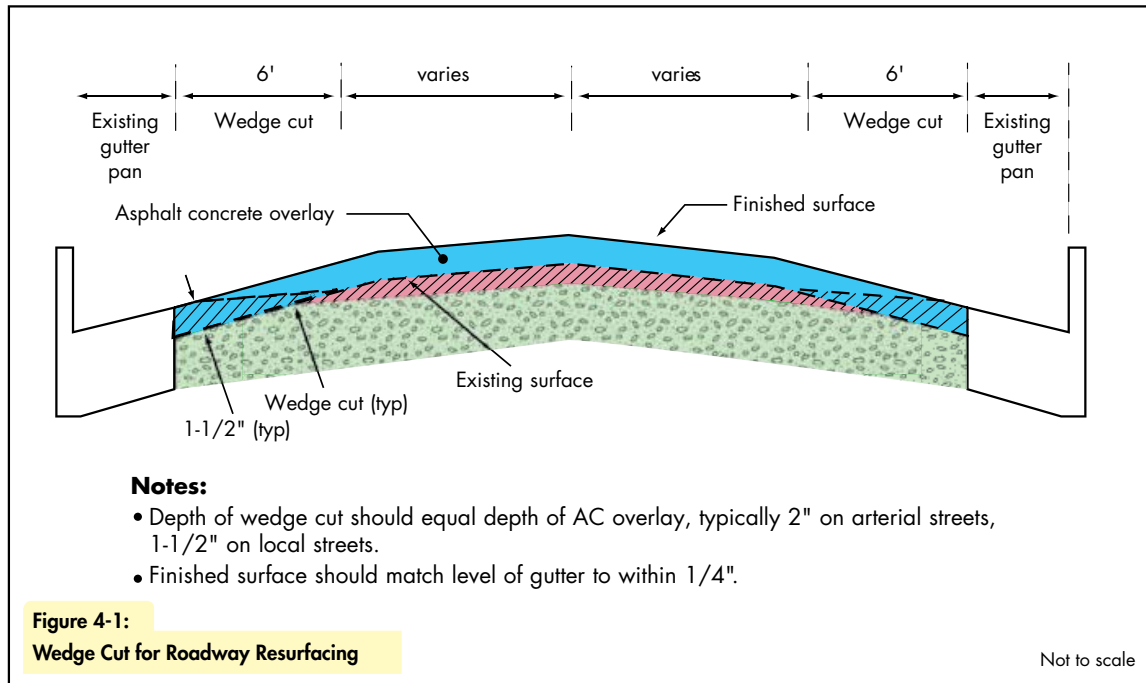
Lane width allocation should be reevaluated during every resurfacing project to determine if bike lanes or wide curb lanes can be provided when the roadway markings are reapplied. See guidelines set forth in Chapter 7.1 Bike Lanes, Chapter 7.2 Wide Curb Lanes or Chapter 7.4 Shoulders.

### 4.1.3 Pavement Surface

The project should include the following construction practices:

The maximum tolerances for variations in the vertical surface for grooves (indentations) and steps (ridges) are set forth in the HDM Table 1003.6 (see also Chapter 3.4.1). These tolerances should be maintained

<b>IN THIS CHAPTER:</b>
4.1 Roadway Resurfacing
4.2 Roadway Patching and Utility Trenching
4.3 Ponding
4.4 Sweeping
4.5 Landscape Maintenance
4.6 Construction Zones and Detours



CHAPTER 4-MAINTENANCE AND CONSTRUCTION ZONES

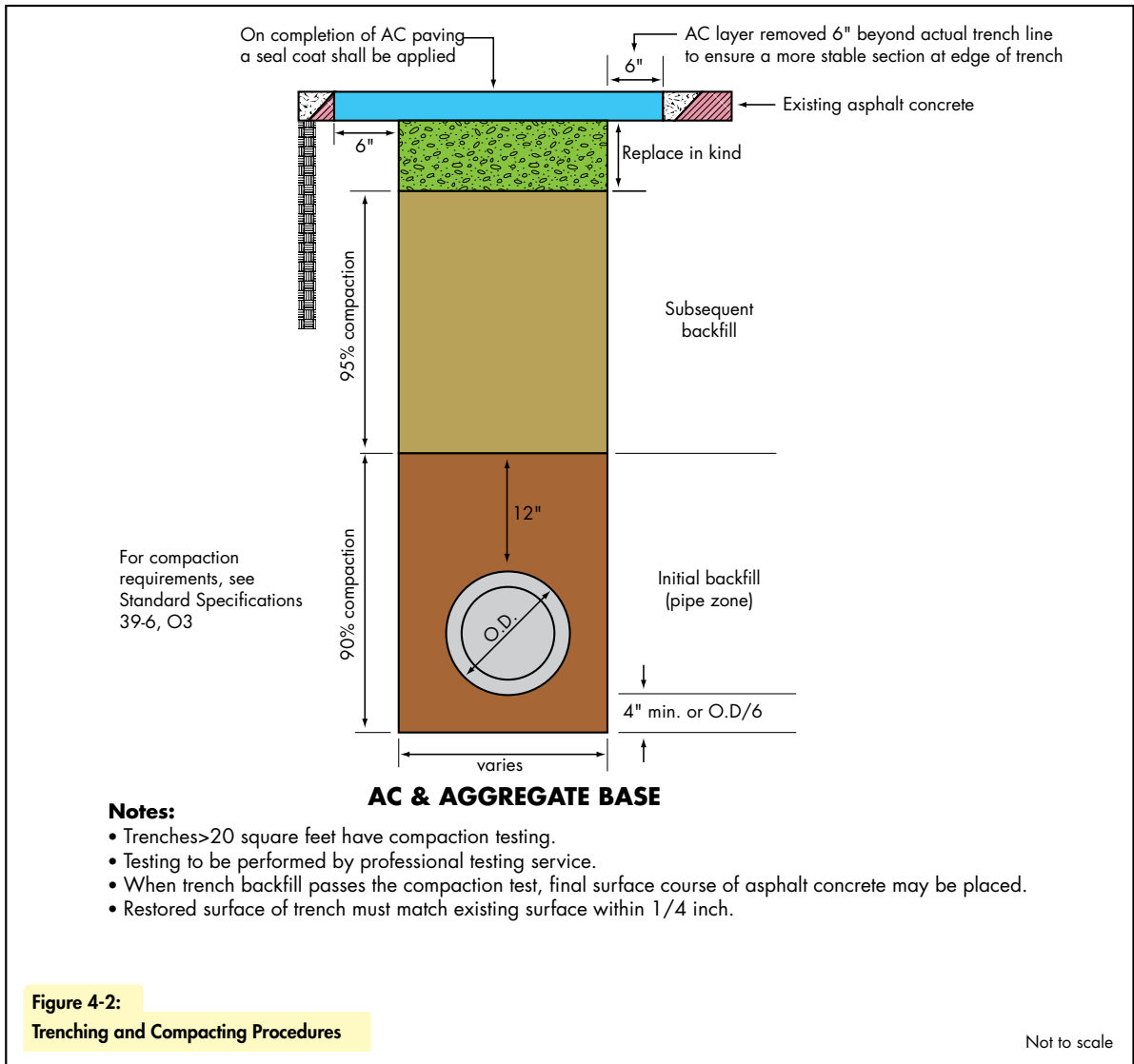
**LOCAL PRACTICE**

The City of Palo Alto also requires that contractors guarantee adherence to these standards for one year after project completion.

on all roadways at locations such as driveway lips, where two pavements intersect, and other such seams in the areas where bicyclists can be expected to ride.

**4.2 ROADWAY PATCHING AND UTILITY TRENCHING REPAIR**

The repair of potholes and trenches should adhere to compaction standards of Caltrans Standard Specification 39-6.03 to ensure that the pavement surface remains intact and smooth. (See Figure 4-2).



4-2 VTA Bicycle Technical Guidelines December 13, 2007

CHAPTER 4-MAINTENANCE AND CONSTRUCTION ZONES

**4.3 PONDING**

Ponding at the edge of the road and in bike lanes occurs when there are dips and bumps in the roadway surface and when drains become clogged. This is potentially a problem for bicyclists because riding through the pond may cause the bicyclist to fall or the pool of water may cover an obstacle, for example a drainage grate with parallel bars. A regular inspection of curb and gutter should be undertaken to identify areas that are raised, sunken or have some vertical differential that would cause ponding; these should be repaired.

**4.4 SWEEPING**

All roadways should be swept regularly to remove debris such as gravel, glass and leaves which may cause a bicyclist to slip and fall. Roadway sweeping schedules will vary depending on the season, the number and types of street trees and other characteristics of the roadway. Responsible agencies should also remove broken glass from the roadway, including the gutter and shoulder after all accidents. During construction or maintenance activities sweeping is generally required on a daily basis to remove excess gravel and debris.

**4.5 LANDSCAPING MAINTENANCE**

Shrubs and other landscaping adjacent to the roadway or shoulders, including expressway shoulders, should be regularly inspected to ensure that they do not encroach upon the roadway or shoulder area where bicyclists ride. This includes low encroaching shrubs that occupy the physical space where the bicyclists ride as well as eye level shrubs or tree branches that could hit bicyclists in the face. Table 4-1 lists typical maintenance activities and their recommended frequencies.

<b>Table 4-1 Optimal Maintenance Frequencies For Roads and Trails</b>	
<b>Maintenance Activity</b>	<b>Recommended Frequency</b>
Respond to hazardous pavement failure reports	Respond to 100% of reports within 8 hours of report
Maintain clean walkways/roadside areas	80% of areas maintained to a "satisfactory" level as defined by a photographic standard
Sweep roadways or trails	100% of roadways every two weeks, with 90% maintained to a "satisfactory" level as defined by a photographic standard
Maintain arterial street traffic markings	100% of markings annually
Maintain non-arterial street and trail traffic markings	75% of markings every two years
Repair deteriorated non-traffic control signs	100% within 30 days of report/complaint
Maintain landscaping encroachment onto roadway or trail that obscures sight distance	100% within 24 hours of report.
Sweep during construction	Daily