



DEPARTMENT OF PUBLIC WORKS LAND DEVELOPMENT DIVISION PAVING NOTES

These "Paving Notes" are intended to be used on all plans for private development and public right-of-way improvements subject to, but not limited to: precise grading/paving improvements (i.e., private/public parking lots, driveways, private/public streets, etc.), street improvements, storm drain improvements and trench repairs.

1. Standards. All work and materials (i.e., asphalt concrete (AC) pavement, Portland Concrete Cement (PCC), base course, etc.) shall conform to the Standard Specifications for Public Works Construction (i.e., GreenBook) latest edition, the Engineering and Construction Manual, City and engineering standards and requirements.
2. Permit Requirements. A grading or encroachment permit(s) shall be obtained prior to paving. Before obtaining an encroachment permit, a Certificate of Insurance and the required bonding (for public improvements) shall be provided to the City Engineer. A Caltrans encroachment permit may be required.
3. Soil Sterilizer. An approved soil sterilizer shall be used on all base grade surfaces prior to paving.
4. Prime Coat. Prime coat is required on subgrade or base when the base is subjected to substantial construction traffic (or when long time periods elapse before AC is placed), as determined by the soils engineer and approved by the City Engineer.
5. Type I Slurry. Prior to project final completion and acceptance of streets into the City's maintained system, Type I Slurry shall be placed over the asphalt concrete paved project street(s), as directed by the City Engineer. The entire roadway width shall be swept at least 3 times or as directed by the City Engineer.
6. Fog Seal. For private development, asphaltic emulsion (fog seal) shall be applied not less than 14 days following placement of the asphalt surfacing and shall be applied at a rate of 0.05 gallons per sq. yd. The asphalt emulsion shall conform to Sections 37, 39 and 94 of the State Standard Specifications.
7. Tack Coat. A tack coat shall be applied to existing pavement and vertical joints, concrete surfaces and asphalt concrete base course, if it has been exposed to vehicular loads. The tack coat shall be slow setting anionic emulsified asphalt Type "SS-1h" conforming to the GreenBook.
8. Certification/Testing. All subgrade and base grade shall be certified by a licensed land surveyor. Base and AC materials shall be tested in accordance with the City's Quality Assurance Program (QAP) and/or as directed by the City Engineer.

9. Paving Materials.

a. AC Materials.

1. AC materials shall conform to section 203-6 of the GreenBook and City Standards.
 - i. Type C2 PG70-10 for finish and overlay courses. This course shall be a minimum of 0.12 foot (1½ inches) thick including grind and overlay installations.
 - ii. Type B PG70-10 for base course. This course shall contain the balance of the required asphalt concrete thickness. The minimum AC lift for base course is 0.21 foot (2½ inches).
2. The minimum AC thickness is 0.33 foot (4 inches).
3. The maximum AC lift is four is 0.33 foot (4 inches).

Note: "Shoving" is a type of AC pavement failure that may be caused by asphalt mixes that are too rich in asphalt, that have course/fine aggregate that is too rounded, etc. Typically, shoving results at hills, curves or intersections, caused by braking or accelerating vehicular forces. To prevent or minimize shoving, the City reserves to right to require a modified AC mix design with properties that provide high stability (i.e., ability to resist shoving and rutting, angular aggregate particles with a rough surface texture, etc.) in compliance with the GreenBook and/or Caltrans specifications.

b. Base Materials.

1. Base materials shall conform to provisions of the GreenBook and current City standards.
2. For street sections, base course material shall be Crushed Aggregate Base (CAB) or Crushed Miscellaneous Base (CMB) per sections 200-2.2 and 202-2.4 of the GreenBook. Principal and Urban Arterial roads require CAB.

c. Portland Concrete Cement. All PCC used shall be in conformance to the GreenBook.

10. Mix Designs. Ten working days prior to paving, the proposed mix design(s) from the supplying asphalt or concrete plant shall be submitted to the City for review and approval. The mix design(s) shall clearly show that the design meets all City and GreenBook requirements.

11. Street Sections. Street structural sections shown on plans are tentative (i.e., they're used for bonding purposes). The final structural section requirements shall be determined by additional soil tests, after rough grading. The structural section design shall be reviewed and approved by the City Engineer. Said design shall adhere to the methodology set forth in Chapter 600 of Caltrans Highway Design Manual and shall utilize the "R" value method (i.e., "R" value tests shall be conducted in accordance with California Test No. 301 and shall be certified by a registered civil engineer). The number and locations of these tests shall be subject to approval by the City Engineer.

12. Compaction. Prior to placement of base material and AC, compaction reports by a soils engineer, certifying 95% compaction of sub-grade and base material, shall be submitted to the City Engineer. Compaction test observation of sub-grade and base grade materials shall be coordinated to include the soils engineer and the Public Works inspector.

13. Paving Inspections.

- a. Base Grade Inspection. One inspection at sub-grade completion (prior to placement of base) is required by the Department of Public Works.
- b. Paving Inspections. Two paving inspections are required by the Department of Public Works: (1) prior to paving, at base grade completion; and (2) during placement of AC.

- c. Driveways. All onsite private residential driveways shall comply with the approved plans and City standards, and shall be inspected and cleared by the City Engineer prior to paving.
14. Utilities. All underground facilities and laterals shall be in place prior to paving.
15. Trenching for Utilities. All street trenches shall conform to City and engineering standards. Refer to City Standard No. 407 "Trench/Pothole Repair" for trench maintenance and/or repairs. If trenches in close proximity and parallel to gutter lines result in leaving pavement strips in distress or less than two feet in width (between the trench and gutter line), said pavement strips shall be removed and repaved, at the discretion of the City Engineer. A tack coat shall be applied to existing asphalt concrete and vertical surfaces to be joined in compliance with the GreenBook.
16. Parking Lot Grade. The minimum AC or concrete pavement grade shall be one percent (1%).
17. Gutter Lip. A 3/8 inch lip shall be placed adjacent to concrete gutters in accordance with City and engineering standards. Refer to Standard No. 200.
18. Paving Detail around Manholes, Valve Covers, etc. All paving around manholes, utility valve covers, etc. shall be in accordance with the GreenBook requirements, utility agency requirements, City and engineering standards. Refer to City Standard No. 503 "Paving Detail Around Manhole."
19. AC Placement. The method of depositing, distributing (i.e., using a self-propelled spreading/finishing machine) and rolling AC shall be in accordance with the GreenBook.
20. Acceptance of Product. The contractor shall repair any defective surfacing due to grade settlement of fills, trench fills or base material, as required by the City Engineer. No pavement "birdbaths" or deviations greater than 1/8 inch in six feet shall be accepted.
21. Protection of Work. The contractor shall: (a) protect existing structures, curb and gutters, sidewalks, landscaping, catch basin depressions and other surface features against damage caused by paving operations and asphalt spray; (b) protect completed work; all vehicular traffic (i.e., moving or stationary loads) shall be kept off newly paved areas until pavement surfaces have cooled down adequately; (c) clean the site (i.e., remove loose pavement and aggregate, clean out all manhole pits, ensure free operation of valves after paving, remove all debris, rubbish and excess material from work area, etc.).
22. Other Construction Notes. Refer to separate notes for "general," "grading," and "erosion and sediment control" requirements.