EXHIBIT 7

SPECIFICATIONS FOR FINE ASPHALT CONCRETE (FINE AC)

DEFINITIONS

RECLAIMED ASPHALT PAVEMENT (RAP):	Asphalt pavement removed from roadway surfaces either by milling machine or by excavation that has the potential to be recycled.
BASE COURSE	Asphalt treated base course placed on a prepared sub-grade that is properly shaped and compacted.
FINAL (TOP) COURSE	The wearing surface is typically placed over a base course or used as an overlaying course over old pavement that is properly shaped and compacted.

GENERAL REQUIREMENTS

Asphalt Concrete mixtures supplied to the CITY under this contract must contain no RAP and shall, except as otherwise provided for, comply with the current Standard Specifications for Public Works Construction, as modified by the current City of Los Angeles Brown Book edition at time of work performance. Base and final courses have the same specifications.

The Contractor shall submit a mix-design to be approved by the Department of General Services - Standards Division. The mix design shall be Marshall Method using procedures contained in Chapter 5 of the current edition of Asphalt Institute's Manual Series No. 2 (MS-2), or Superpave Method using procedures contained in the current edition of Asphalt Institute's Superpave Series No. 2 (SP-2).

Composition and Grading

The job mix formula submitted by the Contractor shall be a class D, E, or F mix within the "Master Grading Band" established in **Table 2.01** and either the Marshall properties established in **Table 2.02** or Superpave properties in **Table 2.03**. Marshall mixes shall be designed with 75 blows on each side with an air void target of 3.5%. Superpave mixes shall be designed at 65 gyrations with an air void target of 3%. In addition, the formula shall show the AC binder composition, the mineral aggregate sources, and mixing and compacting temperatures. The Contractor shall include the same minimum data requirements and Marshall or Superpave Mix Design Criteria as shown in "Brown Book", 8th Edition, section 203-6.3.

Table 2.01: Master Grading Band

Sieve Size	Percentage Passing Sieves					
	Class D		Class E		Class F	
	Min	Min	Min	Max	Min	Max
1-1/2” (37.5mm)						
1” (25.0mm)						
3/4” (19.0mm)						
1/2" (12.5mm)	100					
3/8” (9.5mm)	95	100	100		100	
No. 4 (4.75mm)	58	72	65	85	95	100
No. 8 (2.36mm)	34	48	45	65	70	84
No. 30 (600µm)	18	32	22	38	36	50
No. 50 (300µm)	13	23	16	28	23	35
No. 200 (75µm)	2	9	6	12	6	12
Binder Content (%)	4.8	6.5	5.8	7.8	8.0	10.0

Table 2.02: Marshall Mix Design Criteria
ASTM D6926/D6927

Test Item	Test Result	
	Min	Max
Stability (lbs)	1800	5000
Flow, 0.01”	8	16
Number of Blows, each side of specimen	75	
Percent Air Voids (per ASTM D3203)	2	5
Dust to Asphalt Ratio	0.6	1.2

Table 2.03: Superpave Mix Design Criteria
ASTM D6925

Test Item	Test Result	
	Min	Max
Modified Marshall Stability (lbs) (Precondition in water 2 hrs at 60 °C)	10,000	18,000
Indirect Tensile Strength (psi) (Precondition in water 2 hrs at 60 °C)	20	70
Percent Air Voids (per ASTM D3203)	2	4
Dust to Asphalt Ratio	0.6	1.2

Note: Superpave mixes shall have N_{design} of 65 gyrations.

Virgin Aggregate Requirements

Coarse aggregate (larger than 4.75mm) shall meet the following minimum requirements when tested according to ASTM D5821: 85% of the coarse aggregate shall have one fractured face, and 80% of the coarse aggregate shall have two fractured faces.

Coarse aggregate shall have a maximum of 10% flat and/or elongated particles when tested according to ASTM D4791

Fine aggregate (smaller than 2.36mm) shall have a minimum uncompacted void content of 45% when tested according to AASHTO T 304 and a minimum sand equivalent of 45% when tested according to ASTM D2419.

Asphalt Paving Binder Requirements

Asphalt paving binder shall meet the requirements for a PG64-10 binder as listed in Table 203-1.2(A) of the City of Los Angeles Brown Book 8th Edition.

AIR VOIDS

Laboratory compacted specimens tested per ASTM D3203 must reveal air voids of 2% to 5% for Marshall mixes, and 2% to 4% for Superpave mixes. Air voids of 5% to 6% are acceptable at CITY's discretion. Material with air voids of less than 2% or in excess of 6% will be rejected and the material cost, material removal cost, and the cost of material replacement and/or street repair will be paid for by Contractor in the form of a deduction against monies owed Contractor by CITY, or cash if no money is owed.

Air voids will be tested from material taken from the plant and/or job site. A minimum of four samples per day shall be taken regardless of tonnage per class and source. Air voids determined from these samples shall be considered as representative of the daily production. However, in situ air voids within the mat can vary considerably as a consequence of compaction methods. This set of air voids can be determined from core samples and/or thin Layer Nuclear

Density Gauge Testing. Therefore, CITY will not hold Contractor responsible for compaction methods.

TESTING

CITY shall have the right to test any and all Recycled Asphalt Concrete (RAC) processed by the Contractor for the CITY. Testing will be done by the CITY's Standards Division of the Department of General Services, using established industry methods, to ensure compliance with specifications accepted by the CITY. If any sample fails to meet specification limits, CITY shall notify Contractor thereof in writing as soon as practical.

A minimum of four samples per day, per class and per source regardless of the total tonnage shall be considered a statistically acceptable measure for acceptance and payment. Samples will be tested for compliance with specifications. If the samples do not comply with requirements established herein, no payment relative to the failed tonnage shall be made.

The following standard testing methods are used:

- AASHTO T 304 Uncompacted Void Content of Fine Aggregate
- ASTM C117 Materials Finer than 75-um (No. 200) Sieve in Mineral Aggregate by Washing
- ASTM C136 Sieve Analysis of Fine and Coarse Aggregates
- ASTM D140 Sampling of Asphalt Materials
- ASTM D2419 Sand Equivalent Value of Soils and Fine Aggregate
- ASTM D4791 Flat and Elongated Particles in Coarse Aggregate
- ASTM D7906 Recovery of Asphalt Binder from Solution Using Toluene and the Rotary Evaporator
- ASTM D2041Theoretical Maximum Specific Gravity and Density of Asphalt Mixtures
- ASTM D2172 Quantitative Extraction of Asphalt Binder from Asphalt Mixture
- ASTM D2726 Bulk Specific Gravity and Density of Non-Absorptive Compacted Asphalt Mixtures
- ASTM D3203 Percent Air Voids in Compacted Asphalt Specimens
- ASTM D3549 Thickness or Height of Compacted Asphalt Mixture Samples
- ASTM D5821 Determining the Percentage of Fractured Particles in Coarse Aggregate
- ASTM D6307 or CT 382 Asphalt Content of Asphalt Mixture by Ignition Method
- ASTM D6926 Preparation of Bituminous Specimens Using Marshall Apparatus
- ASTM D6927 Marshall Stability and Flow of Asphalt Mixes
- ASTM D5444 Mechanical Size Analysis of Extracted Aggregate
- ASTM D6925 Relative Density of Asphalt Mix Specimen by Means of Superpave Gyratory Compactor.
- ASTM D8259 Rotary Wheel Testing (RWT) of Compacted Asphalt Mixtures
- City of LA Protocol – Modified Marshall Stability (for gyratory compacted specimens)
- City of LA Protocol – Indirect Tensile Strength (for gyratory compacted specimens)

If Contractor disagrees with laboratory test results administered by the Standards Division then Contractor may, at his/her own expense, submit an untested portion of the failed sample to a private laboratory with the results also submitted to the Standards Division. The Standards Division must approve, in advance, of the private laboratory to which the sample will be sent for testing. The CITY'S laboratory will provide a recommendation to the Bureau of Street Services regarding any contested test results. The Bureau of Street Services Director will make the final determination as to whether or not payment is made for the sample.

QUANTITIES

The quantities stated herein are estimates only of the CITY'S requirements. Contractor agrees to furnish more or less than the estimates in accordance with actual needs as they occur throughout the contract period at the Unit Price(s) quoted. Rainy days may require less tons per day than the average.

DISPOSAL OF RESIDUAL WASTE

Contractor shall be responsible for the disposal of all the unusable waste generated from the process and any applicable fines. Under this contract, non-usable waste may be disposed of in a landfill. All usable RAP must be utilized in the process of producing RAC.

HAZARDOUS SUBSTANCES

This specification includes products which may contain hazardous substances shown on the list prepared by the Director of Industrial Relations of the State of California pursuant to California Labor Code Sections 6380-6386. Safety Data Sheet(s) (SDS) prepared in compliance with Title 8, California Code of Regulations, Section 5194, shall accompany this proposal.

If any of the ingredients of the product bid is a carcinogen as shown on the most current list prepared by the International Agency for Research on Cancer (IARC), Contractor shall separately identify such ingredients as a carcinogen. Contractor is advised that the products will not be accepted unless (1) the product may be used safely and (2) no acceptable non-carcinogenic substitute is available.