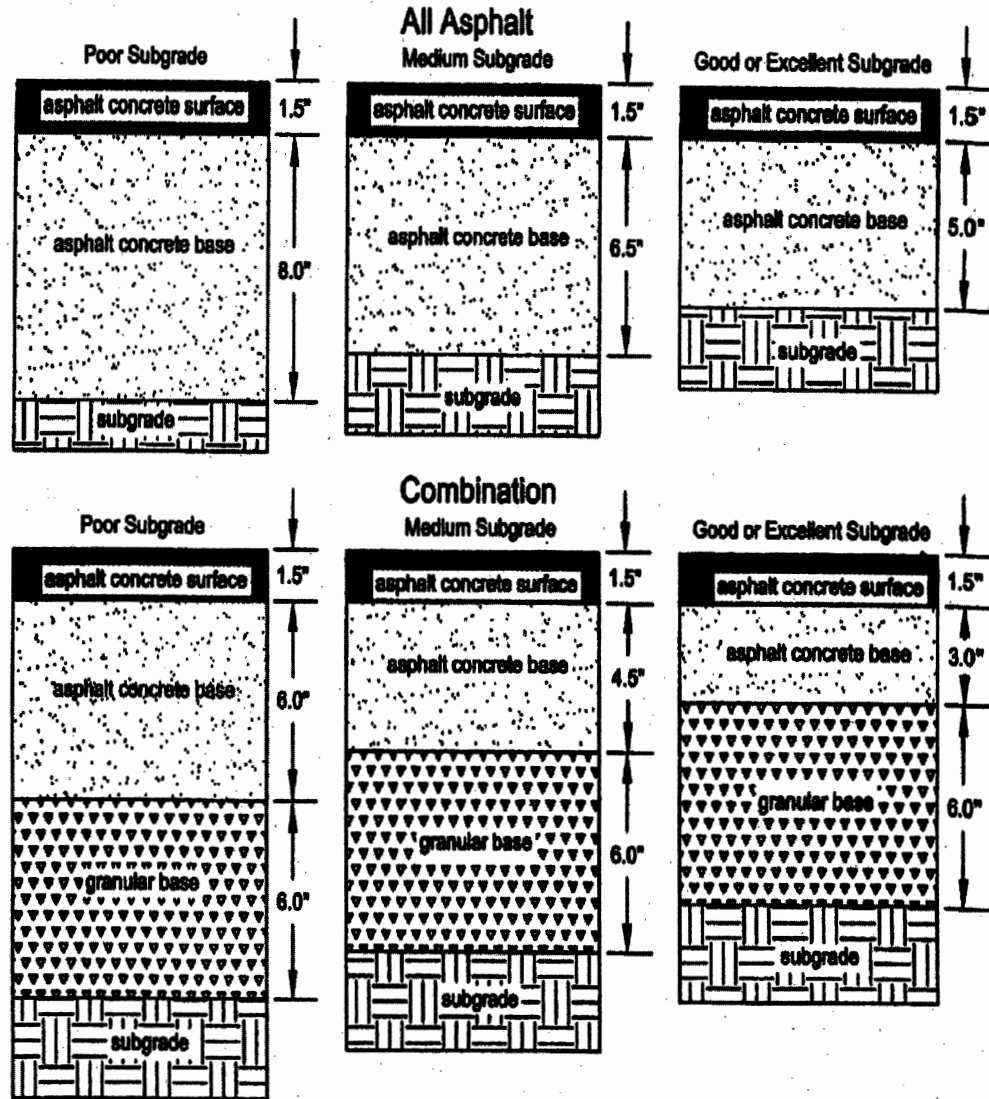


Figure 4.5  
 Pavement Sections for Major Collectors (ADT ≤ 7,500) (EAL ≤ 400,000)



Source: N.J.S.M.E., *Asphalt Handbook for County and Municipal Engineers*, 3rd Edition, March 2000. The figures were derived by applying the Asphalt Institute's Thickness Design - Full Depth Asphalt Pavement Structures for Highways and Streets.

**NOTES:**

1. Materials for the asphalt concrete surface shall conform to Section 404.02 of the New Jersey Department of Transportation's *Standard Specifications for Road and Bridge Construction (1989)*.
2. Materials for the asphalt concrete base shall conform to Sections 301.02 and 304.02 of the N.J. Department of Transportation's *Standard Specification for Road and Bridge Construction (1989)*.
3. Thicknesses may have to be constructed in multiple lifts, based on equipment capabilities.
4. The granular base shall be dense graded aggregate conforming to Section 901.08 or soil aggregate designated I-5 conforming to Section 901.09 and shown in Table 901-2 of the N.J. Department of Transportation's *Standard Specifications for Road and Bridge Construction (1989)*.
5. All subgrades shall be considered "poor," unless the applicant proves otherwise through CBR testing or field evaluation of soil classification. Test results shall be reviewed by the municipal engineer.
6. Subgrade compaction shall be approved by the municipal engineer.
7. Drawings are based on the following design assumptions: A 20-year design period with staged construction is used. Base courses are designed to withstand the construction traffic anticipated during a 3-year construction period and have a residual life of 17 years at the end of the 3-year period. The entire pavement section, base course plus finish course, is designed to withstand the traffic loading for the remaining 17 years of the 20-year design period.

TABLE 4.7  
SUBGRADE CATEGORIES  
A. BASED ON STRENGTH TEST

A. BASED ON STRENGTH TEST	California Bearing Ratio (Cbr)	Resilient Modules Mr Value
Subgrade category		
Good to excellent	+10	Above 15,000
Medium	+5 to 9	7,500 to 13,500
Poor	2 to 4	3,000 to 6,000

B. BASED ON SOIL CLASSIFICATION

Subgrade category	Material	Unified System <sup>a</sup>	AASHTO System <sup>a</sup>
Good to excellent	Gravels and sands	GW, GP, GM, GC, SW, SP, SM, SC	A-1, A-2-4, A-2-5, A-2-6, A-2-7, A-3
Good or poor	Silts and clays	ML, CL, OL, MH, CH, OH	A-4, A-5, A-6, A-7-5, A-7-6

Notes: <sup>a</sup>Refers to categories of soil types and properties

Sources: Per the Rutgers Model Subdivision and Site Plan Ordinance by David Listokin and Carole W. Baker, January 1987—Original strength test and soil classification information derived from the Asphalt Institute, "Thickness Design—Full-Depth Asphalt Pavement Structures for Highways and Streets," MS-1, 8th Edition, August 1970 in Robert F. Baker et al. (editor), Handbook of Highway Engineering. Inclusion of SW, SP, SC soil classifications based on information from the Portland Cement Association's Thickness Design for Concrete Highway and Street Pavements.

Revised CBR strength test and M[r] value information are from the Asphalt Handbook for County and Municipal Engineers, November 1991 (Second Edition), published by the New Jersey Society of Municipal Engineers.

Administrative correction.

See: 29 N.J.R. 1296(a).

Administrative correction.

See: 29 N.J.R. 2816(a).

Amended by R.1999 d.374, effective November 1, 1999 (operative May 1, 2000).

See: 31 N.J.R. 477(a), 31 N.J.R. 3259(a).

Rewrote (b)2; and in Table 4.6, deleted Intersection Standard heading, and substituted a reference to Maximum Grade of Secondary Street for a reference to Maximum Grade.

Amended by R.2000 d.480, effective December 4, 2000 (operative June 3, 2001).

See: 32 N.J.R. 2670(b), 32 N.J.R. 4277(a).

Rewrote (c); amended Figures 4.2 and 4.3; and inserted Figures 4.4 and 4.5.

Amended by R.2002 d.399, effective December 16, 2002.

See: 34 N.J.R. 2615(a), 34 N.J.R. 4412(a).

Added new (c), including Tables 4.8 and 4.9; deleted former (c); recodified former (d) as new (c)3; added new Figures 4.2 through 4.5 and deleted former Figures 4.2 through 4.5.

Public Notice: Notice regarding the Publication of two Notices of Adoption in the December 16, 2002 New Jersey Register.

See: 34 N.J.R. 4343(a), 4412(a), 35 N.J.R. 219(b).

Administrative correction.

See: 35 N.J.R. 2494(a).

Amended by R.2005 d.56, effective February 7, 2005.

See: 36 N.J.R. 4025(a), 37 N.J.R. 481(c).

Amended by R.2006 d.47, effective February 6, 2006.

See: 37 N.J.R. 3878(a), 38 N.J.R. 925(a).

In (b)2, added "for intersections along the same or opposite sides"; in (b), added "CURVE" to the heading of Table 4.6.

## 5:21-4.20 Curves

(a) Vertical curves shall be designed in accordance with AASHTO's "A Policy on Geometric Design of Highways and Streets" standards, incorporated herein by reference.

(b) Sight easements on vertical and horizontal curves shall be required and determined based on the sight distance requirements contained in AASHTO's "A Policy on Geometric Design of Highways and Streets" standards, taking into consideration the speed limits established by the government agency having jurisdiction. Residential access, residential neighborhood, and rural street design shall be based on a speed limit of 25 miles an hour. Minor collector street design shall be based on a speed limit of 30 miles per hour. Major collector design shall be based on a speed limit of 30 miles per hour or five miles over the anticipated posted speed limit, whichever is higher.

Amended by R.2000 d.480, effective December 4, 2000 (operative June 3, 2001).

See: 32 N.J.R. 2670(b), 32 N.J.R. 4277(a).

In (b), substituted "shall" for "should" in the second and third sentences, deleted "and major" following "Minor" in the third sentence, and the last sentence was added.

Administrative correction.

See: 35 N.J.R. 2494(a).

Amended by R.2006 d.47, effective February 6, 2006.

See: 37 N.J.R. 3878(a), 38 N.J.R. 925(a).

In (a), deleted "and horizontal" following "Vertical."

## SUBCHAPTER 5. WATER SUPPLY

### 5:21-5.1 Water supply system

Water supply systems, where installed, shall conform to the standards contained in this subchapter.