

USAGE FACTORS FOR MAJOR HIGHWAY CONSTRUCTION MATERIALS AND LABOR 1/

U.S. WEIGHTED AVERAGES FOR ALL FEDERAL-AID HIGHWAY CONSTRUCTION
CONTRACTS OVER \$1,000,000 ON THE NATIONAL HIGHWAY SYSTEM
REPORTED AS COMPLETED DURING CALENDAR YEARS 1994, 1995, 1996

OCTOBER 1997

TABLE PT-4

TYPE OF MATERIALS AND LABOR	UNIT	NUMBER OF UNITS PER MILLION DOLLARS OF CONSTRUCTION COST 2/
Cement (excludes cement in concrete pipe)	Ton	852
Bituminous material	Ton	454
Aggregates 3/ Purchased (by contractors)	Ton	15,380
Produced (by contractors)	Ton	4,019
Steel		
Structural (shapes, plates, H and sheet piling)	Ton	25
Reinforcing (pavement and structural reinforcement)	Ton	46
Culvert pipe (corrugated metal and structural plate, pipe arches and arches)	Ton	2
Miscellaneous (joint devices, tubular piling, etc.)	Ton	4
Concrete pipe (plain and reinforced)	Ton	77
Clay pipe and tile (includes some pvc pipe)	Ton	1
Lumber (all lumber products except timber piling)	Board foot	7,677
Petroleum products 4/	Gallon	25,169
Guardrail (all types)	Linear foot	740
Bridge railing (all types)	Linear foot	162
Corrugated aluminum culvert	Pound	105
Signs (complete in place)	Dollar	10,197
Lighting (complete in place)	Dollar	11,129
Labor	Employee-hour	12,180

1/ For comparable standards of design, the usage of materials and labor on Federal-aid work is not appreciably different from their usage on non-Federal-aid work. The data in this table are obtained from Form FHWA-47, prepared by the Federal-Aid and Design Division in the Office of Engineering.

2/ Right-of-way, preliminary engineering, and construction engineering costs excluded.

3/ Includes sand, gravel, clay gravel, slag, crushed stone, etc.; used for all highway construction including bases, subbases, concrete surfaces, bituminous surfaces, structural concrete, and drainage work.

4/ Fuel and lubricants for equipment and trucks. Grease converted to gallons on basis of 8 pounds per gallon.