

Appendix 7-A
Symbols and Acronyms

Chapter 7 Symbols

<u>Symbol</u>	<u>Definitions</u>	<u>Units</u>
A	Area of cross section	sf
A	Watershed area (Section 7.3.3)	acres
a	Depth of depression	in.
C	Runoff coefficient or coefficient	-
d	Depth of gutter flow at the curb line	ft.
D	Diameter of pipe	ft.
E	Efficiency of a grate inlet	-
E_o	Ratio of frontal flow to total gutter flow Q_w/Q	-
g	Acceleration due to gravity (32.2 ft./s^2)	ft./s^2
h	Height of curb opening inlet	ft.
H	Head loss	ft.
i	Rainfall intensity	in./hr.
K	Coefficient for multiple inlets k conveyance factor	-
L_T	Length of curb opening inlet	ft.
L	Pipe length	ft.
L	Length of runoff travel	ft.
L	Length of deck (Section 7.4)	ft.
n	Roughness coefficient in Manning formula	-
P	Perimeter of grate opening, neglecting bars and side against curb	ft.
Q	Rate of discharge in gutter (Section 7.4)	cfs
Q_i	Intercepted flow	cfs
Q_r	Runby flow	cfs
Q_s	Gutter capacity above the depressed section (See Figure 7-1)	cfs
Q_T	Total flow	cfs
Q^t	Maximum allowable flow	cfs
Q_w	Gutter capacity in the depressed section (See Figure 7-1)	cfs
R_h	Hydraulic radius	ft.

R_f	Ratio of frontal flow intercepted to total frontal flow	-
S or S_x	Pavement cross slope (Section 7.4)	ft./ft.
S	Crown slope of pavement	ft./ft.
S or S_L	Longitudinal slope of pavement	ft./ft.
S_w	Depressed section slope (See Figure 7-1)	ft./ft.
T	Top width of water surface (spread on pavement) (Section 7.4)	ft.
T	Allowable spread (Section 7.4)	ft.
t_c	Time of concentration	min.
T_D	Tire tread depth	in.
T_s	Spread above depressed section	ft.
TXD	Pavement texture depth	in.
V	Velocity of flow	fps
V_o	Gutter velocity where splash over first occurs	fps
W	Width of drained deck	ft.
W	Width of depression for curb opening inlets (Section 7.4)	ft.
W_d	Rotational velocity on dry surface	rpm
WD	Water depth	in.
WP	Wetted perimeter	ft.
W_w	Rotational velocity on flooded surface	rpm
y	Depth of flow in approach gutter	ft.
Z	T/d , reciprocal of the cross slope	-

Acronyms

AASHTO	American Association of State Highway Transportation Officials
FHWA	Federal Highway Administration
MDOT	Michigan Department of Transportation
USACE	United States Army Corps of Engineers
USDOT	United States Department of Transportation