

## CHAPTER 5

### OPEN CHANNEL HYDROLOGY

#### 5.1 Symbols And Definitions

To provide consistency within this chapter as well as throughout this manual the following symbols presented in Table 5.1-1 will be used. These symbols were selected because of their wide use in open channel publications.

**Table 5.1-1  
Symbols and Definitions**

<u>Symbol</u>	<u>Definition</u>	<u>Units</u>
$\alpha$	Energy coefficient	-
A	Cross-sectional area	ft <sup>2</sup>
b	Bottom width	ft
$C_g$	Specific weight correction factor	-
D or d	Depth of flow	ft
d	Stone diameter	ft
delta d	Superelevation of the water surface profile	ft
$d_x$	Diameter of stone for which x percent, by weight, of the gradation is finer	ft
E	Specific energy	ft
Fr	Froude number	-
g	Acceleration of gravity	32.2 ft/s <sup>2</sup>
$h_{loss}$	Head loss	ft
K	Channel conveyance	-
$k_e$	Eddy head loss coefficient	ft
$K_T$	Trapezoidal open channel conveyance factor	-
L	Length of channel	ft
$L_p$	Length of downstream protection	ft
n	Manning's roughness coefficient	-
P	Wetted perimeter	ft
Q	Discharge rate	cfs
R	Hydraulic radius of flow	ft
$R_c$	Mean radius of the bend	ft
S	Slope	ft/ft
$SW_s$	Specific weight of stone	lbs/ft <sup>3</sup>
T	Top width of water surface	ft
V or v	Velocity of flow	ft/s
w	Stone weight	lbs
$y_c$	Critical depth	ft
$y_n$	Normal depth	ft
z	Critical flow section factor	-

END OF SECTION 5.1