

Appendix 7B-3

CHANNEL STABILITY WORK SHEET

CHANNEL DATA

$Q =$ _____ (cfs) $P =$ _____ (ft.) Native Material
 $S_o =$ _____ (ft/ft) $R =$ _____ (ft.) $D_{50} =$ _____
 $d_n =$ _____ (ft.) $V_n =$ _____ (fps) $D_{75} =$ _____
 $A =$ _____ (ft²) Side Slope = _____ :1 $n =$ _____

STABILITY OF NATIVE MATERIAL

$\tau_o = 62.4 \cdot R \cdot S_o = 62.4 \cdot$ _____ \cdot _____ $=$ _____

τ_p Bed = _____ (Appendix 7E-2 or 3)

For $D_{50} =$ _____ $\phi =$ _____^o (Appendix 7E-1)

For $D_{75} =$ _____ $\phi =$ _____^o (Appendix 7E-9)

Side Slope = _____ :1 $\theta =$ _____^o

$K_1 = [1 - (\sin^2 \theta / \sin^2 \phi)]^{0.5}$

$K_1 = [1 - (\sin^2$ _____^o / \sin^2 _____^o)]^{0.5} = _____

τ_s Side Slope (SS) = τ_p Bed $\cdot K =$ _____ \cdot _____ $=$ _____

τ_p Bed (_____) (<) (=) (>) τ_o (_____)

\therefore Native Material on Bed is (stable) (unstable)

τ_s SS (_____) (<) (=) (>) τ_o (_____)

\therefore Native Material on Side Slope is (stable) (unstable)

Source: VDOT