PART 5: RUNUP2

for transect: CM-134

Station locations shifted by: 0.00 feet from their
original location to set the shoreline to
elevation 0 for RUNUP2 input

RUNUP2 INPUT CONVERSIONS
for transect: CM-134

Incident significant wave height: 2.74 feet

Peak wave period: 4.95 seconds

Mean wave height: 1.72 feet

Local Depth below SWEL: 29.23 feet

Mean wave height deshoaled using Hunt approximation for
celerity assuming constant wave energy flux.
References: R.G. Dean and R.A. Dalrymple. 2000. Water

Wave Mechanics for Engineers and Scientists. World
Scientific Publishing Company, River Edge New Jersy

USACE (1985), Direct Methods for Calculating Wavelength, CETN-1-17
US Army Engineer Waterways Experiment Station Coastel Engineering
Research Center, Vicksburg, MS

also see Coastal Engineering Manual Part II-3
for discussion of shoaling coefficient

Depth, D = 29.23
Period, T = 4.21
Waveheight, H = 1.72
Deep water wavelength, L0 (ft)
L0 = g*T*T/twopi
L0 = 32.17*4.21*4.21/6.28 = 90.74
Deep water wave celerity, C0 (ft/s)
C0 = L0/T
C0 = 90.74/4.21 = 21.56
Angular frequency, sigma (rad/s)
sigma = twopi/T
sigma = 6.28/4.21 = 1.49
Hunts (1979) approximation for Celerity C1H (ft/s) at Depth D (ft)
y = sigma.*sigma.*D./g
y = 1.49*1.49*29.23/32.17 = 2.02
C1H = sqrt(g.*D./(y+1./(1 + 0.6522.*y + 0.4622.*y.^2 + 0.0864.*y.^4 +0.0675.*y.^5)))
C1H = 20.92
Shoaling Coefficient KsH
KsH = sqrt(C0/C1H)
KsH = sqrt(21.56/20.92) = 1.02
Deepwater Wave Height H0_H (ft)
H0_H = H/KsH
H0_H = 1.72/1.02 = 1.69

Deepwater mean wave height: 1.69 feet

END RUNUP2 CONVERSIONS

RUNUP2 RESULTS
for transect: CM-134

RUNUP2 SWEL:
8.90
8.90
8.90
8.90

8.90
8.90
8.90
8.90
8.90

RUNUP2 deepwater mean wave heights:
1.61
1.61
1.61
1.69
1.69
1.69
1.78
1.78
1.78

RUNUP2 mean wave periods:
4.00
4.21
4.42
4.00
4.21
4.42
4.00
4.21
4.42

RUNUP2 runup above SWEL:
0.01
0.01
0.01
0.01
0.01
0.01
0.01
0.01
0.01

RUNUP2 Mean runup height above SWEL: 0.01 feet

RUNUP2 2-percent runup height above SWEL: 0.02 feet

RUNUP2 2-percent runup elevation: 8.92 feet-NAVD88

RUNUP2 Messages:
No Messages

_____END RUNUP2 RESULTS_____

_____ACES BEACH RUNUP_____

Incident significant wave height: 2.74 feet

Significant wave height deshoaled using Hunt equation

Deepwater significant wave height: 2.37 feet

Peak wave period: 4.95 seconds

Average beach Slope: 1:45.43 (H:V)

ACES RUNUP CALCULATED USING 'Aces_Beach_Runup.m'

ACES Beach 2-percent runup height above SWEL: 1.20 feet

ACES Beach 2-percent runup elevation: 10.10 feet-NAVD88

ACES BEACH RUNUP is valid

_____________END ACES BEACH RESULTS____________________

PART 5 COMPLETE____