PART 5: RUNUP2

for transect: CM-123-1

Station locations shifted by: -0.59 feet from their
original location to set the shoreline to
elevation 0 for RUNUP2 input

RUNUP2 INPUT CONVERSIONS
for transect: CM-123-1

Incident significant wave height: 3.52 feet

Peak wave period: 5.02 seconds

Mean wave height: 2.20 feet

Local Depth below SWEL: 27.63 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 = 27.63
Period, T = 4.27
Waveheight, H = 2.20
Deep water wavelength, L0 (ft)
L0 = g*T*T/twopi
L0 = 32.17*4.27*4.27/6.28 = 93.26
Deep water wave celerity, C0 (ft/s)
C0 = L0/T
C0 = 93.26/4.27 = 21.85
Angular frequency, sigma (rad/s)
sigma = twopi/T
sigma = 6.28/4.27 = 1.47
Hunts (1979) approximation for Celerity C1H (ft/s) at Depth D (ft)
y = sigma.*sigma.*D./g
y = 1.47*1.47*27.63/32.17 = 1.86
C1H = sqrt(g.*D./(y+1./(1 + 0.6522.*y + 0.4622.*y.^2 + 0.0864.*y.^4 +0.0675.*y.^5)))
C1H = 20.98
Shoaling Coefficient KsH
KsH = sqrt(C0/C1H)
KsH = sqrt(21.85/20.98) = 1.02
Deepwater Wave Height H0_H (ft)
H0_H = H/KsH
H0_H = 2.20/1.02 = 2.16

Deepwater mean wave height: 2.16 feet

END RUNUP2 CONVERSIONS

RUNUP2 RESULTS
for transect: CM-123-1

RUNUP2 SWEL:
9.00
9.00
9.00
9.00

9.00
9.00
9.00
9.00
9.00

RUNUP2 deepwater mean wave heights:
2.05
2.05
2.05
2.16
2.16
2.16
2.27
2.27
2.27

RUNUP2 mean wave periods:
4.05
4.27
4.48
4.05
4.27
4.48
4.05
4.27
4.48

RUNUP2 runup above SWEL:
0.19
0.22
0.22
0.19
0.23
0.25
0.20
0.24
0.25

RUNUP2 Mean runup height above SWEL: 0.22 feet

RUNUP2 2-percent runup height above SWEL: 0.49 feet

RUNUP2 2-percent runup elevation: 9.49 feet-NAVD88

RUNUP2 Messages:
No Messages

_____END RUNUP2 RESULTS_____

_____ACES BEACH RUNUP_____

Incident significant wave height: 3.52 feet

Significant wave height deshoaled using Hunt equation

Deepwater significant wave height: 3.02 feet

Peak wave period: 5.02 seconds

Average beach Slope: 1:18.39 (H:V)

ACES RUNUP CALCULATED USING 'Aces_Beach_Runup.m'

ACES Beach 2-percent runup height above SWEL: 2.70 feet

ACES Beach 2-percent runup elevation: 11.70 feet-NAVD88

ACES BEACH RUNUP is valid

_______________END ACES BEACH RESULTS_______________________

PART 5 COMPLETE____