PART 5: RUNUP2

for transect: CM-149-1

Station locations shifted by: -0.15 feet from their
original location to set the shoreline to
elevation 0 for RUNUP2 input

RUNUP2 INPUT CONVERSIONS
for transect: CM-149-1

Incident significant wave height: 4.27 feet

Peak wave period: 10.75 seconds

Mean wave height: 2.67 feet

Local Depth below SWEL: 59.13 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 = 59.13
Period, T = 9.14
Waveheight, H = 2.67
Deep water wavelength, L0 (ft)
L0 = g*T*T/twopi
L0 = 32.17*9.14*9.14/6.28 = 427.57
Deep water wave celerity, C0 (ft/s)
C0 = L0/T
C0 = 427.57/9.14 = 46.79
Angular frequency, sigma (rad/s)
sigma = twopi/T
sigma = 6.28/9.14 = 0.69
Hunts (1979) approximation for Celerity C1H (ft/s) at Depth D (ft)
y = sigma.*sigma.*D./g
y = 0.69*0.69*59.13/32.17 = 0.87
C1H = sqrt(g.*D./(y+1./(1 + 0.6522.*y + 0.4622.*y.^2 + 0.0864.*y.^4 +0.0675.*y.^5)))
C1H = 37.27
Shoaling Coefficient KsH
KsH = sqrt(C0/C1H)
KsH = sqrt(46.79/37.27) = 1.12
Deepwater Wave Height H0_H (ft)
H0_H = H/KsH
H0_H = 2.67/1.12 = 2.38

Deepwater mean wave height: 2.38 feet

END RUNUP2 CONVERSIONS

RUNUP2 RESULTS
for transect: CM-149-1

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:
2.26
2.26
2.26
2.38
2.38
2.38
2.50
2.50
2.50

RUNUP2 mean wave periods:
8.68
9.14
9.59
8.68
9.14
9.59
8.68
9.14
9.59

RUNUP2 runup above SWEL:
5.84
5.89
5.97
6.30
6.36
6.42
6.76
6.82
6.88

RUNUP2 Mean runup height above SWEL: 6.36 feet

RUNUP2 2-percent runup height above SWEL: 13.99 feet

RUNUP2 2-percent runup elevation: 22.89 feet-NAVD88

RUNUP2 Messages:
No Messages

_____END RUNUP2 RESULTS_____

_____ACES BEACH RUNUP_____

Incident significant wave height: 4.27 feet

Significant wave height deshoaled using Hunt equation

Deepwater significant wave height: 3.34 feet

Peak wave period: 10.75 seconds

Average beach Slope: 1:7.14 (H:V)

ACES RUNUP CALCULATED USING 'Aces_Beach_Runup.m'

ACES Beach 2-percent runup height above SWEL: 9.66 feet

ACES Beach 2-percent runup elevation: 18.56 feet-NAVD88

ACES BEACH RUNUP is valid

_______________END ACES BEACH RESULTS_______________________

PART 5 COMPLETE____