PART 5: RUNUP2

for transect: CM-150

Station locations shifted by: 0.26 feet from their
original location to set the shoreline to
elevation 0 for RUNUP2 input

RUNUP2 INPUT CONVERSIONS
for transect: CM-150

Incident significant wave height: 7.30 feet

Peak wave period: 13.55 seconds

Mean wave height: 4.57 feet

Local Depth below SWEL: 18.02 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 = 18.02
Period, T = 11.52
Waveheight, H = 4.57
Deep water wavelength, L0 (ft)
L0 = g*T*T/twopi
L0 = 32.17*11.52*11.52/6.28 = 679.03
Deep water wave celerity, C0 (ft/s)
C0 = L0/T
C0 = 679.03/11.52 = 58.97
Angular frequency, sigma (rad/s)
sigma = twopi/T
sigma = 6.28/11.52 = 0.55
Hunts (1979) approximation for Celerity C1H (ft/s) at Depth D (ft)
y = sigma.*sigma.*D./g
y = 0.55*0.55*18.02/32.17 = 0.17
C1H = sqrt(g.*D./(y+1./(1 + 0.6522.*y + 0.4622.*y.^2 + 0.0864.*y.^4 +0.0675.*y.^5)))
C1H = 23.41
Shoaling Coefficient KsH
KsH = sqrt(C0/C1H)
KsH = sqrt(58.97/23.41) = 1.59
Deepwater Wave Height H0_H (ft)
H0_H = H/KsH
H0_H = 4.57/1.59 = 2.88

Deepwater mean wave height: 2.88 feet

END RUNUP2 CONVERSIONS

RUNUP2 RESULTS
for transect: CM-150

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:
2.74
2.74
2.74
2.88
2.88
2.88
3.02
3.02
3.02

RUNUP2 mean wave periods:
10.94
11.52
12.09
10.94
11.52
12.09
10.94
11.52
12.09

RUNUP2 runup above SWEL:
12.10
12.22
12.40
12.54
12.68
12.78
13.00
13.13
13.25

RUNUP2 Mean runup height above SWEL: 12.68 feet

RUNUP2 2-percent runup height above SWEL: 27.89 feet

RUNUP2 2-percent runup elevation: 36.79 feet-NAVD88

RUNUP2 Messages:
Nonfatal Error, Check Output

_____END RUNUP2 RESULTS_____

_____ACES BEACH RUNUP_____

Incident significant wave height: 7.30 feet

Significant wave height deshoaled using Hunt equation

Deepwater significant wave height: 4.03 feet

Peak wave period: 13.55 seconds

Average beach Slope: 1:34.22 (H:V)

ACES RUNUP CALCULATED USING 'Aces_Beach_Runup.m'

ACES Beach 2-percent runup height above SWEL: 4.23 feet

ACES Beach 2-percent runup elevation: 13.13 feet-NAVD88

ACES BEACH RUNUP is valid

_____________END ACES BEACH RESULTS____________________

PART 5 COMPLETE____