PART 5: RUNUP2

for transect: CM-127

Station locations shifted by: -0.05 feet from their
original location to set the shoreline to
elevation 0 for RUNUP2 input

RUNUP2 INPUT CONVERSIONS
for transect: CM-127

Incident significant wave height: 5.87 feet

Peak wave period: 9.74 seconds

Mean wave height: 3.68 feet

Local Depth below SWEL: 39.35 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 = 39.35
Period, T = 8.28
Waveheight, H = 3.68
Deep water wavelength, L0 (ft)
L0 = g*T*T/twopi
L0 = 32.17*8.28*8.28/6.28 = 350.74
Deep water wave celerity, C0 (ft/s)
C0 = L0/T
C0 = 350.74/8.28 = 42.38
Angular frequency, sigma (rad/s)
sigma = twopi/T
sigma = 6.28/8.28 = 0.76
Hunts (1979) approximation for Celerity C1H (ft/s) at Depth D (ft)
y = sigma.*sigma.*D./g
y = 0.76*0.76*39.35/32.17 = 0.70
C1H = sqrt(g.*D./(y+1./(1 + 0.6522.*y + 0.4622.*y.^2 + 0.0864.*y.^4 +0.0675.*y.^5)))
C1H = 31.38
Shoaling Coefficient KsH
KsH = sqrt(C0/C1H)
KsH = sqrt(42.38/31.38) = 1.16
Deepwater Wave Height H0_H (ft)
H0_H = H/KsH
H0_H = 3.68/1.16 = 3.16

Deepwater mean wave height: 3.16 feet

END RUNUP2 CONVERSIONS

RUNUP2 RESULTS
for transect: CM-127

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:
3.00
3.00
3.00
3.16
3.16
3.16
3.32
3.32
3.32

RUNUP2 mean wave periods:
7.86
8.28
8.69
7.86
8.28
8.69
7.86
8.28
8.69

RUNUP2 runup above SWEL:
6.46
6.79
7.15
6.60
6.98
7.36
6.69
7.14
7.54

RUNUP2 Mean runup height above SWEL: 6.97 feet

RUNUP2 2-percent runup height above SWEL: 15.33 feet

RUNUP2 2-percent runup elevation: 24.23 feet-NAVD88

RUNUP2 Messages:
Nonfatal Error, Check Output

_____END RUNUP2 RESULTS_____

_____ACES BEACH RUNUP_____

Incident significant wave height: 5.87 feet

Significant wave height deshoaled using Hunt equation

Deepwater significant wave height: 4.43 feet

Peak wave period: 9.74 seconds

Average beach Slope: 1:16.96 (H:V)

ACES RUNUP CALCULATED USING 'Aces_Beach_Runup.m'

ACES Beach 2-percent runup height above SWEL: 5.85 feet

ACES Beach 2-percent runup elevation: 14.75 feet-NAVD88

ACES BEACH RUNUP is valid

_____________END ACES BEACH RESULTS____________________

PART 5 COMPLETE____