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PART 5: RUNUP2

for transect: CM-122-1

Station locations shifted by: -0.69 feet from their
original location to set the shoreline to
elevation 0 for RUNUP2 input

_____RUNUP2 INPUT CONVERSIONS_____
for transect: CM-122-1

Incident significant wave height: 2.12 feet

Peak wave period: 4.98 seconds

Mean wave height: 1.33 feet

Local Depth below SWEL: 18.91 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 = 18.91
Period, T = 4.24
Waveheight, H = 1.33
Deep water wavelength, L0 (ft)
L0 = g*T*T/twopi
L0 = 32.17*4.24*4.24/6.28 = 91.84
Deep water wave celerity, C0 (ft/s)
C0 = L0/T
C0 = 91.84/4.24 = 21.69
Angular frequency, sigma (rad/s)
sigma = twopi/T
sigma = 6.28/4.24 = 1.48
Hunts (1979) approximation for Celerity C1H (ft/s) at Depth D (ft)
y = sigma.*sigma.*D./g
y = 1.48*1.48*18.91/32.17 = 1.29
C1H = sqrt(g.*D./(y+1./(1 + 0.6522.*y + 0.4622.*y.^2 + 0.0864.*y.^4 +0.0675.*y.^5)))
C1H = 19.40
Shoaling Coefficient KsH
KsH = sqrt(C0/C1H)
KsH = sqrt(21.69/19.40) = 1.06
Deepwater Wave Height H0_H (ft)
H0_H = H/KsH
H0_H = 1.33/1.06 = 1.26

Deepwater mean wave height: 1.26 feet

_____END RUNUP2 CONVERSIONS_____

_____RUNUP2 RESULTS_____
for transect: CM-122-1

RUNUP2 SWEL:
9.10
9.10
9.10
9.10

9.10
9.10
9.10
9.10
9.10

RUNUP2 deepwater mean wave heights:
1.19
1.19
1.19
1.26
1.26
1.26
1.32
1.32
1.32

RUNUP2 mean wave periods:
4.02
4.24
4.45
4.02
4.24
4.45
4.02
4.24
4.45

RUNUP2 runup above SWEL:
1.46
1.49
1.52
1.28
1.29
1.31
1.12
1.14
1.14

RUNUP2 Mean runup height above SWEL: 1.31 feet

RUNUP2 2-percent runup height above SWEL: 2.87 feet

RUNUP2 2-percent runup elevation: 11.97 feet-NAVD88

RUNUP2 Messages:
No Messages

_____END RUNUP2 RESULTS_____

_____ACES BEACH RUNUP_____

Incident significant wave height: 2.12 feet

Significant wave height deshoaled using Hunt equation

Deepwater significant wave height: 1.76 feet

Peak wave period: 4.98 seconds

Average beach Slope: 1:36.03 (H:V)

ACES RUNUP CALCULATED USING 'Aces_Beach_Runup.m'

ACES Beach 2-percent runup height above SWEL: 1.17 feet

ACES Beach 2-percent runup elevation: 10.27 feet-NAVD88

ACES BEACH RUNUP is valid

_____________END ACES BEACH RESULTS____________________

PART 5 COMPLETE____