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PART 5: RUNUP2

for transect: CM-140

Station locations shifted by: -0.64 feet from their
original location to set the shoreline to
elevation 0 for RUNUP2 input

_____RUNUP2 INPUT CONVERSIONS_____
for transect: CM-140

Incident significant wave height: 22.82 feet

Peak wave period: 14.54 seconds

Mean wave height: 14.29 feet

Local Depth below SWEL: 36.64 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 = 36.64
Period, T = 12.36
Waveheight, H = 14.29
Deep water wavelength, L0 (ft)
L0 = g*T*T/twopi
L0 = 32.17*12.36*12.36/6.28 = 782.38
Deep water wave celerity, C0 (ft/s)
C0 = L0/T
C0 = 782.38/12.36 = 63.30
Angular frequency, sigma (rad/s)
sigma = twopi/T
sigma = 6.28/12.36 = 0.51
Hunts (1979) approximation for Celerity C1H (ft/s) at Depth D (ft)
y = sigma.*sigma.*D./g
y = 0.51*0.51*36.64/32.17 = 0.29
C1H = sqrt(g.*D./(y+1./(1 + 0.6522.*y + 0.4622.*y.^2 + 0.0864.*y.^4 +0.0675.*y.^5)))
C1H = 32.66
Shoaling Coefficient KsH
KsH = sqrt(C0/C1H)
KsH = sqrt(63.30/32.66) = 1.39
Deepwater Wave Height H0_H (ft)
H0_H = H/KsH
H0_H = 14.29/1.39 = 10.26

Deepwater mean wave height: 10.26 feet

_____END RUNUP2 CONVERSIONS_____

_____RUNUP2 RESULTS_____
for transect: CM-140

RUNUP2 SWEL:
8.80
8.80
8.80
8.80

8.80
8.80
8.80
8.80
8.80

RUNUP2 deepwater mean wave heights:
9.75
9.75
9.75
10.26
10.26
10.26
10.78
10.78
10.78

RUNUP2 mean wave periods:
11.74
12.36
12.98
11.74
12.36
12.98
11.74
12.36
12.98

RUNUP2 runup above SWEL:
16.89
18.56
20.20
16.83
18.39
20.23
16.90
18.46
20.27

RUNUP2 Mean runup height above SWEL: 18.53 feet

RUNUP2 2-percent runup height above SWEL: 40.76 feet

RUNUP2 2-percent runup elevation: 49.56 feet-NAVD88

RUNUP2 Messages:
No Messages

_____END RUNUP2 RESULTS_____

_____ACES BEACH RUNUP_____

Incident significant wave height: 22.82 feet

Significant wave height deshoaled using Hunt equation

Deepwater significant wave height: 14.37 feet

Peak wave period: 14.54 seconds

Average beach Slope: 1:6.79 (H:V)

ACES RUNUP CALCULATED USING 'Aces_Beach_Runup.m'

ACES Beach 2-percent runup height above SWEL: 31.82 feet

ACES Beach 2-percent runup elevation: 40.62 feet-NAVD88

ACES BEACH RUNUP is valid

_______________END ACES BEACH RESULTS_______________________

PART 5 COMPLETE____