PART 5: RUNUP2

for transect: CM-141

Station locations shifted by: 0.17 feet from their
original location to set the shoreline to
elevation 0 for RUNUP2 input

RUNUP2 INPUT CONVERSIONS
for transect: CM-141

Incident significant wave height: 17.46 feet

Peak wave period: 15.09 seconds

Mean wave height: 10.93 feet

Local Depth below SWEL: 31.08 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 = 31.08
Period, T = 12.82
Waveheight, H = 10.93
Deep water wavelength, L0 (ft)
L0 = g*T*T/twopi
L0 = 32.17*12.82*12.82/6.28 = 841.99
Deep water wave celerity, C0 (ft/s)
C0 = L0/T
C0 = 841.99/12.82 = 65.66
Angular frequency, sigma (rad/s)
sigma = twopi/T
sigma = 6.28/12.82 = 0.49
Hunts (1979) approximation for Celerity C1H (ft/s) at Depth D (ft)
y = sigma.*sigma.*D./g
y = 0.49*0.49*31.08/32.17 = 0.23
C1H = sqrt(g.*D./(y+1./(1 + 0.6522.*y + 0.4622.*y.^2 + 0.0864.*y.^4 +0.0675.*y.^5)))
C1H = 30.40
Shoaling Coefficient KsH
KsH = sqrt(C0/C1H)
KsH = sqrt(65.66/30.40) = 1.47
Deepwater Wave Height H0_H (ft)
H0_H = H/KsH
H0_H = 10.93/1.47 = 7.43

Deepwater mean wave height: 7.43 feet

END RUNUP2 CONVERSIONS

RUNUP2 RESULTS
for transect: CM-141

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:
7.06
7.06
7.06
7.43
7.43
7.43
7.81
7.81
7.81

RUNUP2 mean wave periods:
12.18
12.82
13.46
12.18
12.82
13.46
12.18
12.82
13.46

RUNUP2 runup above SWEL:
0.68
0.73
0.79
0.71
0.77
0.86
0.69
0.75
0.81

RUNUP2 Mean runup height above SWEL: 0.75 feet

RUNUP2 2-percent runup height above SWEL: 1.66 feet

RUNUP2 2-percent runup elevation: 10.46 feet-NAVD88

RUNUP2 Messages:
No Messages

_____END RUNUP2 RESULTS_____

_____ACES BEACH RUNUP_____

Incident significant wave height: 17.46 feet

Significant wave height deshoaled using Hunt equation

Deepwater significant wave height: 10.41 feet

Peak wave period: 15.09 seconds

Average beach Slope: 1:16.66 (H:V)

ACES RUNUP CALCULATED USING 'Aces_Beach_Runup.m'

ACES Beach 2-percent runup height above SWEL: 14.02 feet

ACES Beach 2-percent runup elevation: 22.82 feet-NAVD88

ACES BEACH RUNUP is valid

_______________END ACES BEACH RESULTS_______________________

PART 5 COMPLETE____