PART 5: RUNUP2

for transect: CM-158-1

Station locations shifted by: -2.83 feet from their
original location to set the shoreline to
elevation 0 for RUNUP2 input

RUNUP2 INPUT CONVERSIONS
for transect: CM-158-1

Incident significant wave height: 1.78 feet

Peak wave period: 2.71 seconds

Mean wave height: 1.12 feet

Local Depth below SWEL: 24.27 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 = 24.27
Period, T = 2.31
Waveheight, H = 1.12
Deep water wavelength, L0 (ft)
L0 = g*T*T/twopi
L0 = 32.17*2.31*2.31/6.28 = 27.23
Deep water wave celerity, C0 (ft/s)
C0 = L0/T
C0 = 27.23/2.31 = 11.81
Angular frequency, sigma (rad/s)
sigma = twopi/T
sigma = 6.28/2.31 = 2.72
Hunts (1979) approximation for Celerity C1H (ft/s) at Depth D (ft)
y = sigma.*sigma.*D./g
y = 2.72*2.72*24.27/32.17 = 5.60
C1H = sqrt(g.*D./(y+1./(1 + 0.6522.*y + 0.4622.*y.^2 + 0.0864.*y.^4 +0.0675.*y.^5)))
C1H = 11.81
Shoaling Coefficient KsH
KsH = sqrt(C0/C1H)
KsH = sqrt(11.81/11.81) = 1.00
Deepwater Wave Height H0_H (ft)
H0_H = H/KsH
H0_H = 1.12/1.00 = 1.12

Deepwater mean wave height: 1.12 feet

END RUNUP2 CONVERSIONS

RUNUP2 RESULTS
for transect: CM-158-1

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:
1.06
1.06
1.06
1.12
1.12
1.12
1.17
1.17
1.17

RUNUP2 mean wave periods:
2.19
2.31
2.42
2.19
2.31
2.42
2.19
2.31
2.42

RUNUP2 runup above SWEL:
1.21
1.23
1.25
1.26
1.29
1.31
1.31
1.33
1.35

RUNUP2 Mean runup height above SWEL: 1.28 feet

RUNUP2 2-percent runup height above SWEL: 2.82 feet

RUNUP2 2-percent runup elevation: 11.62 feet-NAVD88

RUNUP2 Messages:
No Messages

_____END RUNUP2 RESULTS_____

_____ACES BEACH RUNUP_____

Incident significant wave height: 1.78 feet

Significant wave height deshoaled using Hunt equation

Deepwater significant wave height: 1.56 feet

Peak wave period: 2.71 seconds

Average beach Slope: 1:5.39 (H:V)

ACES RUNUP CALCULATED USING 'Aces_Beach_Runup.m'

ACES Beach 2-percent runup height above SWEL: 2.72 feet

ACES Beach 2-percent runup elevation: 11.52 feet-NAVD88

ACES BEACH RUNUP is valid

_______________END ACES BEACH RESULTS_______________________

PART 5 COMPLETE____