```
_____
PART 5: RUNUP2

        for transect: CM-137

Station locations shifted by: 0.37 feet from their
original location to set the shoreline to
elevation 0 for RUNUP2 input


_____RUNUP2 INPUT CONVERSIONS_____
        for transect: CM-137

Incident significant wave height: 4.63 feet

Peak wave period: 9.58 seconds

Mean wave height: 2.90 feet

Local Depth below SWEL: 47.21 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 = 47.21
    Period, T = 8.14
    Waveheight, H = 2.90
Deep water wavelength, L0 (ft)
    L0 = g*T*T/twopi
    L0 = 32.17*8.14*8.14/6.28 = 339.61
Deep water wave celerity, C0 (ft/s)
    C0 = L0/T
    C0 = 339.61/8.14 = 41.70
Angular frequency, sigma (rad/s)
    sigma = twopi/T
    sigma = 6.28/8.14 = 0.77
Hunts (1979) approximation for Celerity C1H (ft/s) at Depth D (ft)
    y = sigma.*sigma.*D./g
    y = 0.77*0.77*47.21/32.17 = 0.87
    C1H = sqrt( g.*D./(y+1./(1 + 0.6522.*y + 0.4622.*y.^2 + 0.0864.*y.^4 +0.0675.*y.^5)) )
    C1H = 33.28
Shoaling Coefficient KsH
    KsH = sqrt(C0/C1H)
    KsH = sqrt(41.70/33.28) = 1.12
Deepwater Wave Height H0_H (ft)
    H0_H = H/KsH
    H0_H = 2.90/1.12 = 2.59

Deepwater mean wave height: 2.59 feet

_____END RUNUP2 CONVERSIONS_____

_____RUNUP2 RESULTS_____
        for transect: CM-137

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:
2.46
2.46
2.46
2.59
2.59
2.59
2.72
2.72
2.72

RUNUP2 mean wave periods:
7.74
8.14
8.55
7.74
8.14
8.55
7.74
8.14
8.55

RUNUP2 runup above SWEL:
1.05
1.16
1.25
1.13
1.24
1.35
1.22
1.33
1.47

RUNUP2 Mean runup height above SWEL: 1.24 feet

RUNUP2 2-percent runup height above SWEL: 2.74 feet

RUNUP2 2-percent runup elevation: 11.54 feet-NAVD88

RUNUP2 Messages:
No Messages

_____END RUNUP2 RESULTS_____


_____ACES BEACH RUNUP_____

Incident significant wave height: 4.63 feet

Significant wave height deshoaled using Hunt equation

Deepwater significant wave height: 3.62 feet

Peak wave period: 9.58 seconds

Average beach Slope: 1:7.60 (H:V)

ACES RUNUP CALCULATED USING 'Aces_Beach_Runup.m'

ACES Beach 2-percent runup height above SWEL: 8.98 feet

ACES Beach 2-percent runup elevation: 17.78 feet-NAVD88

ACES BEACH RUNUP is valid
```

_____END ACES BEACH RESULTS_____

PART 5 COMPLETE_____