```
diary on        % begin recording

% FEMA appeal for The Town of Harpswell, Cumberland county, Maine
% TRANSECT ID: CM-159-1
% calculation by SJH, Ransom Consulting, Inc. 20-Feb-2020
% 100-year wave runup using TAW methodology
% including berm and weighted average with foreshore if necessary
%
% chk nld 20200220
%
% This script assumes that the incident wave conditions provided
% as input in the configuration section below are the
% appropriate values located at the end of the foreshore
% or toe of the slope on which the run-up is being calculated
% the script does not attempt to apply a depth limit or any other
% transformation to the incident wave conditions other than
% conversion of the peak wave period to the spectral mean wave
% as recommended in the references below
%
% references:
%
% Van der Meer, J.W., 2002. Technical Report Wave Run-up and
% Wave Overtopping at Dikes. TAW Technical Advisory Committee on
% Flood Defence, The Netherlands.
%
% FEMA. 2007,  Atlantic Ocean and Gulf of Mexico Coastal Guidelines Update
%
%
%


%-------------------------------------------------------------------------
% CONFIG
%-------------------------------------------------------------------------
fname='inpfiles/CM-159-1sta_ele_include.csv';   % file with station, elevation, include
                                 % third colunm is 0 for excluded points
imgname='logfiles/CM-159-1-runup';
SWEL=8.811;  % 100-yr still water level including wave setup.
H0=5.2342;    % significant wave height at toe of structure
Tp=13.5919;    % peak period, 1/fma,
T0=Tp/1.1;

gamma_berm=0.6;   % this may get changed automatically below
gamma_rough=0.8;
gamma_beta=1;
gamma_perm=1;

setupAtToe=-0.01229;
maxSetup=0.75187;   % only used in case of berm/shallow foreshore weighted average

plotTitle='Iterative TAW for CM-159-1'

plotTitle =

Iterative TAW for CM-159-1


% END CONFIG
%------------------------------

SWEL=SWEL+setupAtToe

SWEL =

               8.79871

SWEL_fore=SWEL+maxSetup

SWEL_fore =

               9.55058


% FIND WAVELENGTH USING DEEPWATER DISPERSION RELATION
% using English units
L0=32.15/(2*pi)*T0^2

L0 =

         781.224904904769


% Find Hb (Munk, 1949)
%Hb=H0/(3.3*(H0/L0)^(1/3))
%Db=-Hb/.78+SWEL;  % depth at breaking

% The toe elevation here is only used to determine the average
% structure slope, it is not used to depth limit the wave height.
% Any depth limiting or other modification of the wave height
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% to make it consitent with TAW guidance should be performed
% prior to the input of the significant wave height given above.
Ztoe=SWEL-1.5*H0

Ztoe =

                    0.94741


% read the transect
[sta,dep,inc] = textread(fname,'%n%n%n%*[^\n]','delimiter',',','headerlines',0);

% remove unselected points
k=find(inc==0);
sta(k)=[];
dep(k)=[];

sta_org=sta;   % used for plotting purposes
dep_org=dep;


% initial guess at maximum run-up elevation to estimate slope
Z2=SWEL+1.5*H0

Z2 =

                    16.65001


% determine station at the max runup and -1.5*H0 (i.e. the toe)
top_sta=-999;
toe_sta=-999;
for kk=1:length(sta)-1
    if ((Z2 > dep(kk)) & (Z2 <= dep(kk+1)))     % here is the intersection of z2 with profile
        top_sta=interp1(dep(kk:kk+1),sta(kk:kk+1),Z2)
    end
    if  ((Ztoe > dep(kk)) & (Ztoe <= dep(kk+1)))    % here is the intersection of Ztoe with profile
        toe_sta=interp1(dep(kk:kk+1),sta(kk:kk+1),Ztoe)
    end
end

toe_sta =

          12.5371395555078


top_sta =

          320.612962556562

% check to make sure we got them, if not extend the end slopes outward
S=diff(dep)./diff(sta);
if toe_sta==-999
   dy=dep(1)-Ztoe;
   toe_sta=sta(1)-dy/S(1)
end
if top_sta==-999
   dy=Z2-dep(end);
   top_sta=sta(end)+dy/S(end)
end

% just so the reader can tell the values aren't -999 anymore
top_sta

top_sta =

          320.612962556562

toe_sta

toe_sta =

          12.5371395555078



% check for case where the toe of slope is below SWL-1.5*H0
% in this case interpolate setup from the setupAtToe(really setup as first station), and the max setup
% also un-include points seaward of SWL-1.5*H0
if Ztoe > dep(1)
   dd=SWEL_fore-dep;
   k=find(dd<0,1); % k is index of first land point
   staAtSWL=interp1(dep(k-1:k),sta(k-1:k),SWEL_fore);
   dsta=staAtSWL-sta(1);
   dsetup=maxSetup-setupAtToe;
   dsetdsta=dsetup/dsta;
   setup=setupAtToe+dsetdsta*(toe_sta-sta(1));
   sprintf('-!!- Location of SWEL-1.5*H0 is %4.1f ft landward of toe of slope',dsta)
   sprintf('-!!- Setup is interpolated between setup at toe of slope and max setup')
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    sprintf('-!!-         setup is adjusted to %4.2f feet',setup)
    SWEL=SWEL-setupAtToe+setup;
    sprintf('-!!-        SWEL is adjusted to %4.2f feet',SWEL)
    k=find(dep < SWEL-1.5*H0)
    sta(k)=[];
    dep(k)=[];
else
    sprintf('-!!- The User has selected a starting point that is %4.2f feet above the elevation of SWEL-1.5H0\n',dep(1
    sprintf('-!!- This may be reasonable for some cases.  However the user may want to consider:\n')
    sprintf('-!!-   1) Selecting a starting point that is at or below %4.2f feet elevation, or\n', Ztoe)
    sprintf('-!!-   2) Reducing the incident wave height to a depth limited condition.\n')
end

ans =

-!!- Location of SWEL-1.5*H0 is 302.4 ft landward of toe of slope


ans =

-!!- Setup is interpolated between setup at toe of slope and max setup


ans =

-!!-         setup is adjusted to 0.26 feet


ans =

-!!-        SWEL is adjusted to 9.07 feet


k =

     1
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     3
     4
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% now iterate converge on a runup elevation
tol=0.01;  % convergence criteria
R2del=999;
R2_new=3*H0; %initial guess
R2=R2_new;
iter=0;
R2_all=[];
topStaAll=[];
Berm_Segs=[];
TAW_ALWAYS_VALID=1;
while(abs(R2del) > tol && iter <= 25)
    iter=iter+1;
    sprintf ('!----------------- STARTING ITERATION %d -----------------!',iter)
    % elevation of toe of slope
    Ztoe
    % station of toe slope (relative to 0-NAVD88 shoreline
    toe_sta
    % station of top of slope/extent of 2% run-up
    top_sta
    % elevation of top of slope/extent of 2% run-up
    Z2
    % incident significant wave height
    H0
    % incident spectral peak wave period
    Tp
    % incident spectral mean wave period
    T0

    R2=R2_new
```

```
Z2=R2+SWEL
% determine slope for this iteration
top_sta=-999;
for kk=1:length(sta)-1
    if ((Z2 > dep(kk)) & (Z2 <= dep(kk+1)))     % here is the intersection of z2 with profile
        top_sta=interp1(dep(kk:kk+1),sta(kk:kk+1),Z2)
        break;
    end
end
if top_sta==-999
    dy=Z2-dep(end);
    top_sta=sta(end)+dy/S(end)
end

% get the length of the slope (not accounting for berm)
Lslope=top_sta-toe_sta

% loop over profile segments to determine berm factor
% re-calculate influence of depth of berm based on this run-up elevation
% check for berm, berm width, berm height
berm_width=0;
rdh_sum=0;
Berm_Segs=[];
Berm_Heights=[];
for kk=1:length(sta)-1
    ddep=dep(kk+1)-dep(kk);
    dsta=sta(kk+1)-sta(kk);
    s=ddep/dsta;
    if  (s < 1/15)     % count it as a berm if slope is flatter than 1:15 (see TAW manual)
        sprintf ('Berm Factor Calculation: Iteration %d, Profile Segment: %d',iter,kk)
        berm_width=berm_width+dsta;    % tally the width of all berm segments
        % compute the rdh for this segment and weight it by the segment length
        dh=SWEL-(dep(kk)+dep(kk+1))/2
        if  dh < 0
            chi=R2;
        else
            chi=2* H0;
        end
        if (dh <= R2 & dh >=-2*H0)
            rdh=(0.5-0.5*cos(3.14159*dh/chi)) ;
        else
            rdh=1;
        end
        rdh_sum=rdh_sum + rdh * dsta
        Berm_Segs=[Berm_Segs, kk];
        Berm_Heights=[Berm_Heights, (dep(kk)+dep(kk+1))/2];
    end
    if dep(kk) >= Z2  % jump out of loop if we reached limit of run-up for this iteration
        break
    end
end
sprintf ('!------- End Berm Factor Calculation, Iter: %d ---------!',iter)
berm_width
rB=berm_width/Lslope
if (berm_width > 0)
    rdh_mean=rdh_sum/berm_width
else
    rdh_mean=1
end
gamma_berm=1- rB * (1-rdh_mean)
if gamma_berm > 1
    gamma_berm=1
end
if gamma_berm < 0.6
    gamma_berm =0.6
end
% Iribarren number
slope=(Z2-Ztoe)/(Lslope-berm_width)
Irb=(slope/(sqrt(H0/L0)))
% runup height
gamma_berm
gamma_perm
gamma_beta
gamma_rough
gamma=gamma_berm*gamma_perm*gamma_beta*gamma_rough
% check validity
TAW_VALID=1;
if (Irb*gamma_berm < 0.5 | Irb*gamma_berm > 10 )
    sprintf('!!! - - Iribaren number: %6.2f is outside the valid range (0.5-10), TAW NOT VALID - - !!!\n', Irb*gam
    TAW_VALID=0;
else
    sprintf('!!! - - Iribaren number: %6.2f is in the valid range (0.5-10), TAW RECOMMENDED - - !!!\n', Irb*gamma_
end
islope=1/slope;
if (slope < 1/8 | slope > 1)
    sprintf('!!! - - slope: 1:%3.1f V:H is outside the valid range (1:8 - 1:1), TAW NOT VALID - - !!!\n', islope)
    TAW_VALID=0;
else
    sprintf('!!! - - slope: 1:%3.1f V:H is in the valid range (1:8 - 1:1), TAW RECOMMENDED - - !!!\n', islope)
end
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    if TAW_VALID == 0
       TAW_ALWAYS_VALID=0;
    end

    if (Irb*gamma_berm < 1.8)
       R2_new=gamma*H0*1.77*Irb
    else
       R2_new=gamma*H0*(4.3-(1.6/sqrt(Irb)))
    end
    % check to see if we need to evaluate a shallow foreshore
    if berm_width > 0.25 * L0;
       disp ('!   Berm_width is greater than 1/4 wave length')
       disp ('!   Runup will be weighted average with foreshore calculation assuming depth limited wave height on ber
       % do the foreshore calculation
       fore_H0=0.78*(SWEL_fore-min(Berm_Heights))
       % get upper slope
       fore_toe_sta=-999;
       fore_toe_dep=-999;
       for kk=length(dep)-1:-1:1
          ddep=dep(kk+1)-dep(kk);
          dsta=sta(kk+1)-sta(kk);
          s=ddep/dsta;
          if s < 1/15
             break
          end
          fore_toe_sta=sta(kk);
          fore_toe_dep=dep(kk);
          upper_slope=(Z2-fore_toe_dep)/(top_sta-fore_toe_sta)
       end
       fore_Irb=upper_slope/(sqrt(fore_H0/L0));
       fore_gamma=gamma_perm*gamma_beta*gamma_rough;
       if (fore_Irb < 1.8)
          fore_R2=fore_gamma*fore_H0*1.77*fore_Irb;
       else
          fore_R2=fore_gamma*fore_H0*(4.3-(1.6/sqrt(fore_Irb)));
       end
       if berm_width >= L0
          R2_new=fore_R2
          disp ('berm is wider than one wavelength, use full shallow foreshore solution');
       else
          w2=(berm_width-0.25*L0)/(0.75*L0)
          w1=1-w2
          R2_new=w2*fore_R2 + w1*R2_new
       end
    end % end berm width check
    % convergence criterion
    R2del=abs(R2-R2_new)
    R2_all(iter)=R2_new;
    % get the new top station (for plot purposes)
    Z2=R2_new+SWEL
    top_sta=-999;
    for kk=1:length(sta)-1
       if ((Z2 > dep(kk)) & (Z2 <= dep(kk+1)))    % here is the intersection of z2 with profile
          top_sta=interp1(dep(kk:kk+1),sta(kk:kk+1),Z2)
          break;
       end
    end
    if top_sta==-999
       dy=Z2-dep(end);
       top_sta=sta(end)+dy/S(end);
    end
    topStaAll(iter)=top_sta;
end
ans =
!---------------- STARTING ITERATION 1 ----------------!
Ztoe =
                   0.94741
toe_sta =
        12.5371395555078
top_sta =
        320.612962556562
Z2 =
                   16.65001
H0 =
                    5.2342
Tp =
                   13.5919
T0 =
        12.3562727272727
R2 =
                   15.7026
Z2 =
        24.7730988293135
top_sta =
        409.091260868219
Lslope =
        396.554121312712
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 32
dh =
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              4.19996582931351
rdh_sum =
          0.34729103989654
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 33
dh =
              4.16210982931351
rdh_sum =
           0.689183131478468
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 34
dh =
              4.12425382931351
rdh_sum =
           1.02569668069317
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 35
dh =
              4.08639782931351
rdh_sum =
            1.3568527876611
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 36
dh =
              4.04854232931351
rdh_sum =
           1.68267331427858
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 37
dh =
              4.01068682931351
rdh_sum =
           2.00318074015032
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 38
dh =
              3.97283082931351
rdh_sum =
           2.31839816087574
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 39
dh =
              3.93497482931351
rdh_sum =
           2.62834942512647
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 40
dh =
              3.89711882931351
rdh_sum =
           2.93305906124232
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 41
dh =
              3.85926282931351
rdh_sum =
           3.23255227406553
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 42
dh =
              3.82140682931351
rdh_sum =
            3.5268549416878
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 43
dh =
              3.78355132931351
rdh_sum =
           3.81599368013784
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 44
dh =
              3.74660082931351
rdh_sum =
           4.10011818245487
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 45
dh =
              3.71146032931351
rdh_sum =
            4.3794986850822
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 46
dh =
              3.67722582931351
rdh_sum =
            4.6542810892491
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 47
dh =
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                3.64299132931351
rdh_sum =
                4.924489166909
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 48
dh =
                3.60875632931351
rdh_sum =
                5.19014710656527
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 49
dh =
                3.57452132931351
rdh_sum =
                5.45127964399068
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 50
dh =
                3.54028632931351
rdh_sum =
                5.70791199263286
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 51
dh =
                3.50605132931351
rdh_sum =
                5.960069840953
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 52
dh =
                3.47181632931351
rdh_sum =
                6.20777934971427
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 53
dh =
                3.43758182931351
rdh_sum =
                6.4510672136025
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 54
dh =
                3.40334732931351
rdh_sum =
                6.68996052885288
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 55
dh =
                3.36911232931351
rdh_sum =
                6.92448679197281
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 56
dh =
                3.34018382931351
rdh_sum =
                7.15534473042837
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 57
dh =
                3.31656182931351
rdh_sum =
                7.38322227554551
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 58
dh =
                3.29293982931351
rdh_sum =
                7.60813310254311
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 59
dh =
                3.26931782931351
rdh_sum =
                7.83009103572924
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 60
dh =
                3.24569582931351
rdh_sum =
                8.04911004780645
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 61
dh =
                3.22207382931351
rdh_sum =
                8.26520425916959
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 62
dh =
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             3.19845182931351
rdh_sum =
             8.47838793719619
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 63
dh =
             3.17482932931351
rdh_sum =
             8.68867543438173
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 64
dh =
             3.15120682931351
rdh_sum =
              8.8960813105302
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 65
dh =
             3.12758482931351
rdh_sum =
             9.10062033078974
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 66
dh =
             3.10396282931351
rdh_sum =
             9.30230734323149
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 67
dh =
             3.08034082931351
rdh_sum =
             9.50115733925113
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 68
dh =
             3.03570482931351
rdh_sum =
             9.69468795656988
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 88
dh =
             0.98227582931351
rdh_sum =
             9.71625537312226
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 89
dh =
             1.03286432931351
rdh_sum =
             9.74008323016519
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 90
dh =
             1.08345282931351
rdh_sum =
              9.7662812759583
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 91
dh =
             1.13404082931351
rdh_sum =
             9.79495868743633
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 92
dh =
             1.18462932931351
rdh_sum =
             9.82622411909927
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 93
dh =
             1.23521782931351
rdh_sum =
             9.86018560499294
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 94
dh =
             1.28580632931351
rdh_sum =
             9.89695055777596
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 95
dh =
             1.33639482931351
rdh_sum =
              9.9366257439633
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 96
dh =
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                   1.38698332931351
rdh_sum =
                   9.97931725931872
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 97
dh =
                   1.43757182931351
rdh_sum =
                   10.0251305044017
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 98
dh =
                   1.48815982931351
rdh_sum =
                   10.0741701278713
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 99
dh =
                   1.53874832931351
rdh_sum =
                   10.1265400985462
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 100
dh =
                   1.58933682931351
rdh_sum =
                   10.1823435862936
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 101
dh =
                   1.63992532931351
rdh_sum =
                   10.2416829696226
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 102
dh =
                   1.69051382931351
rdh_sum =
                   10.3046598120887
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 103
dh =
                   1.71211932931351
rdh_sum =
                   10.3692208971279
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 104
dh =
                   1.67575882931351
rdh_sum =
                   10.4311263700036
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 105
dh =
                   1.61041532931351
rdh_sum =
                   10.4883907490733
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 106
dh =
                   1.54507232931351
rdh_sum =
                   10.5411843126416
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 107
dh =
                   1.47972882931351
rdh_sum =
                   10.5896789897535
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 108
dh =
                   1.41438532931351
rdh_sum =
                    10.634048397365
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 109
dh =
                   1.34904182931351
rdh_sum =
                   10.6744677387184
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 110
dh =
                   1.28369832931351
rdh_sum =
                   10.7111137359718
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 111
dh =
```

```
              1.21835552931351
rdh_sum =
              10.7441645890685
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 112
dh =
              1.15301182931351
rdh_sum =
              10.7737998253717
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 113
dh =
              1.08766832931351
rdh_sum =
               10.800200313842
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 114
dh =
              1.02232482931351
rdh_sum =
              10.8235481672951
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 115
dh =
              0.967712329313509
rdh_sum =
              10.8444852638338
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 116
dh =
              0.934562329313509
rdh_sum =
              10.8640217417262
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 117
dh =
              0.91214332931351
rdh_sum =
              10.8826379409497
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 118
dh =
              0.889724329313509
rdh_sum =
              10.9003556516786
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 119
dh =
              0.867305329313508
rdh_sum =
              10.9171967047576
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 120
dh =
              0.844886329313509
rdh_sum =
              10.9331829707141
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 121
dh =
              0.822467329313509
rdh_sum =
              10.9483363587682
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 122
dh =
              0.80004832931351
rdh_sum =
              10.9626788158405
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 123
dh =
              0.777629329313509
rdh_sum =
              10.9762323255591
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 124
dh =
              0.755209829313509
rdh_sum =
              10.9890188904057
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 125
dh =
              0.732790329313509
rdh_sum =
              11.0010605654208
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 126
dh =
```

```
          0.710371329313508
rdh_sum =
          11.0123794552374
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 127
dh =
          0.691291829313508
rdh_sum =
          11.0231006469349
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 128
dh =
          0.67889132931351
rdh_sum =
          11.0334419712337
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 129
dh =
          0.669829829313509
rdh_sum =
          11.0435100003683
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 130
dh =
          0.660768329313509
rdh_sum =
          11.0533083573869
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 131
dh =
          0.651707329313508
rdh_sum =
          11.0628406819117
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 132
dh =
          0.642645829313508
rdh_sum =
          11.0721105861723
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 133
dh =
          0.633584329313509
rdh_sum =
          11.0811216991189
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 134
dh =
          0.62452332931351
rdh_sum =
          11.0898776655947
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 135
dh =
          0.615461829313508
rdh_sum =
          11.0983821041707
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 136
dh =
          0.606400329313509
rdh_sum =
           11.106638649458
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 137
dh =
          0.597338829313509
rdh_sum =
           11.1146509379004
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 138
dh =
          0.604589329313509
rdh_sum =
           11.1228583760436
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 139
dh =
          0.628151829313508
rdh_sum =
           11.1317160806177
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 140
dh =
          0.651714329313508
rdh_sum =
           11.1412486092642
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 141
dh =
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        0.675276829313509
rdh_sum =
        11.1514804858827
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 142
dh =
        0.698838829313511
rdh_sum =
        11.1624361837851
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 143
dh =
        0.722401329313509
rdh_sum =
        11.1741401708112
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 144
dh =
        0.745963829313508
rdh_sum =
        11.1866168622854
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 145
dh =
        0.769526329313509
rdh_sum =
         11.199890634896
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 146
dh =
        0.793088829313509
rdh_sum =
        11.2139858254762
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 147
dh =
        0.816650829313508
rdh_sum =
        11.2289267115841
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 148
dh =
        0.840213329313508
rdh_sum =
        11.2447375643841
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 149
dh =
        0.83501132931351
rdh_sum =
        11.2603542666909
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 150
dh =
        0.80104482931351
rdh_sum =
        11.2747323021676
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 151
dh =
        0.76707882931351
rdh_sum =
        11.2879221464582
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 152
dh =
        0.733112329313508
rdh_sum =
        11.2999743636841
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 153
dh =
        0.69914582931351
rdh_sum =
        11.3109396540344
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 154
dh =
        0.665179829313509
rdh_sum =
        11.3208688455127
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 155
dh =
        0.631213329313509
rdh_sum =
        11.3298128432749
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 156
dh =
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         0.597246829313509
rdh_sum =
         11.3378226704693
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 157
dh =
         0.567179329313509
rdh_sum =
         11.3450482120678
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 158
dh =
         0.544908329313509
rdh_sum =
          11.351718694948
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 159
dh =
         0.526535329313509
rdh_sum =
         11.3579478566655
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 160
dh =
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rdh_sum =
         11.3637507086783
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 161
dh =
          0.48978982931351
rdh_sum =
         11.3691422863933
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 162
dh =
         0.471417329313509
rdh_sum =
         11.3741376259143
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 163
dh =
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rdh_sum =
         11.3787517652215
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 164
dh =
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rdh_sum =
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ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 165
dh =
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rdh_sum =
         11.3868967250129
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 166
dh =
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rdh_sum =
         11.3904576889675
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 167
dh =
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rdh_sum =
         11.3936977590714
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 168
dh =
         0.361180829313509
rdh_sum =
         11.3966320457723
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 169
dh =
          0.34280832931351
rdh_sum =
         11.3992756598757
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 170
dh =
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rdh_sum =
         11.4015320217426
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 171
dh =
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          0.282813329313509
rdh_sum =
          11.4033317935143
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 172
dh =
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rdh_sum =
          11.4047264545435
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 173
dh =
          0.215068329313509
rdh_sum =
          11.4057675260437
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 174
dh =
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rdh_sum =
          11.4065065657648
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 175
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rdh_sum =
          11.4069951626658
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 176
dh =
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rdh_sum =
          11.4072849315842
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 177
dh =
          0.0795783293135095
rdh_sum =
          11.4074275079026
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 178
dh =
          0.0457058293135102
rdh_sum =
           11.407474542213
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 179
dh =
          0.0118338293135078
rdh_sum =
          11.4074776952462
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 180
dh =
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rdh_sum =
          11.4074825555786
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 181
dh =
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rdh_sum =
          11.4075138371476
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 182
dh =
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rdh_sum =
          11.4075945009929
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 183
dh =
          -0.123656170686489
rdh_sum =
          11.4077475058862
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 184
dh =
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rdh_sum =
          11.4079958072773
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Berm Factor Calculation: Iteration 1, Profile Segment: 185
dh =
          -0.191401170686492
rdh_sum =
          11.4083623562391
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 186
dh =
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        -0.225273670686491
rdh_sum =
        11.4088700984141
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 187
dh =
        -0.25914617068649
rdh_sum =
        11.4095419729608
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 188
dh =
        -0.300954670686492
rdh_sum =
        11.4104480535946
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 189
dh =
        -0.358635670686491
rdh_sum =
        11.4117345735307
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 190
dh =
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rdh_sum =
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ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 191
dh =
        -0.489868670686491
rdh_sum =
        11.4159340452541
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 192
dh =
        -0.55548567068649
rdh_sum =
        11.419018614771
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 193
dh =
        -0.621102670686492
rdh_sum =
        11.4228739643954
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 194
dh =
        -0.686719670686491
rdh_sum =
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ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 195
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rdh_sum =
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Berm Factor Calculation: Iteration 1, Profile Segment: 196
dh =
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rdh_sum =
        11.4399189659417
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Berm Factor Calculation: Iteration 1, Profile Segment: 197
dh =
        -0.883569670686491
rdh_sum =
        11.4477109175616
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 198
dh =
        -0.94918667068649
rdh_sum =
        11.4566995495225
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 199
dh =
        -1.01480367068649
rdh_sum =
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ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 200
dh =
        -1.08042017068649
rdh_sum =
        11.4786051036284
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 201
dh =
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            -1.13097467068649
rdh_sum =
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ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 202
dh =
            -1.16646767068649
rdh_sum =
            11.5049043975112
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 203
dh =
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rdh_sum =
            11.5192918046467
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 204
dh =
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rdh_sum =
            11.5345370358644
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 205
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rdh_sum =
            11.5506645338725
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 206
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rdh_sum =
            11.5676987098371
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 207
dh =
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rdh_sum =
            11.5856639036619
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 208
dh =
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rdh_sum =
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ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 209
dh =
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rdh_sum =
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ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 210
dh =
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rdh_sum =
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Berm Factor Calculation: Iteration 1, Profile Segment: 211
dh =
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rdh_sum =
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ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 228
dh =
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rdh_sum =
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ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 229
dh =
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rdh_sum =
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ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 230
dh =
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rdh_sum =
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ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 231
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            -2.85412417068649
rdh_sum =
            11.9668123133042
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 232
dh =
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          -2.90948817068649
rdh_sum =
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ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 233
dh =
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rdh_sum =
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ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 234
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rdh_sum =
          12.2231060653157
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 235
dh =
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rdh_sum =
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ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 236
dh =
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rdh_sum =
          12.4097424563985
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 237
dh =
          -3.18630917068649
rdh_sum =
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ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 238
dh =
          -3.24167317068649
rdh_sum =
          12.6094645025983
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 239
dh =
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rdh_sum =
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ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 240
dh =
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rdh_sum =
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ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 241
dh =
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rdh_sum =
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ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 242
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rdh_sum =
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ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 243
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rdh_sum =
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ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 244
dh =
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rdh_sum =
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ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 245
dh =
          -3.56046167068649
rdh_sum =
          13.4114948781261
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 246
dh =
          -3.54706467068649
rdh_sum =
          13.5322014030267
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 247
dh =
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          -3.53366817068649
rdh_sum =
          13.6520361157193
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 248
dh =
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rdh_sum =
          13.7710017471354
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 249
dh =
          -3.50687467068649
rdh_sum =
          13.8891010021656
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 250
dh =
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rdh_sum =
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ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 251
dh =
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rdh_sum =
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ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 252
dh =
          -3.46668467068649
rdh_sum =
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ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 253
dh =
          -3.45328767068649
rdh_sum =
           14.352889383205
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 254
dh =
          -3.43989067068649
rdh_sum =
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ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 255
dh =
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rdh_sum =
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ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 260
dh =
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rdh_sum =
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ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 261
dh =
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rdh_sum =
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ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 262
dh =
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rdh_sum =
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ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 263
dh =
          -4.29145117068649
rdh_sum =
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ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 264
dh =
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rdh_sum =
          15.4253404156378
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 265
dh =
          -4.40154167068649
rdh_sum =
           15.606999308101
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 266
dh =
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          -4.45658667068649
rdh_sum =
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ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 267
dh =
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rdh_sum =
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Berm Factor Calculation: Iteration 1, Profile Segment: 268
dh =
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rdh_sum =
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ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 269
dh =
          -4.61806067068649
rdh_sum =
          16.3763741855412
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 270
dh =
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rdh_sum =
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ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 271
dh =
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rdh_sum =
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ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 272
dh =
          -4.76122467068649
rdh_sum =
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ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 273
dh =
          -4.80894567068649
rdh_sum =
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ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 274
dh =
          -4.85666667068649
rdh_sum =
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ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 275
dh =
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Berm Factor Calculation: Iteration 1, Profile Segment: 276
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dh =
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Berm Factor Calculation: Iteration 1, Profile Segment: 278
dh =
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rdh_sum =
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ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 279
dh =
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rdh_sum =
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ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 280
dh =
          -5.13723517068649
rdh_sum =
          18.8191879783637
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 281
dh =
```

```
              -5.17343767068649
rdh_sum =
              19.0639422354364
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 282
dh =
              -5.20964017068649
rdh_sum =
              19.3118172117758
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 283
dh =
              -5.24584217068649
rdh_sum =
              19.5628260905723
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 284
dh =
              -5.28204467068649
rdh_sum =
              19.8169819771773
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 285
dh =
              -5.31824717068649
rdh_sum =
              20.0742977686568
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 286
dh =
              -5.35444967068649
rdh_sum =
              20.3347861963068
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 287
dh =
              -5.39065217068649
rdh_sum =
              20.5984598249859
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 288
dh =
              -5.42685417068649
rdh_sum =
              20.8653310082083
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 289
dh =
              -5.46305667068649
rdh_sum =
              21.1354120200685
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 290
dh =
              -5.49925917068649
rdh_sum =
              21.4087149221949
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 291
dh =
              -5.53546117068649
rdh_sum =
              21.6852515624504
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 292
dh =
              -5.57166367068649
rdh_sum =
              21.9650337083798
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 293
dh =
              -5.60786617068649
rdh_sum =
              22.2480729126864
ans =
!------- End Berm Factor Calculation, Iter: 1 ---------!
berm_width =
     223
rB =
              0.562344426687091
rdh_mean =
          0.0997671431062171
gamma_berm =
          0.493759070205184
gamma_berm =
                          0.6
slope =
          0.137281031698372
Irb =
```

```
                1.67715583583191
gamma_berm =
                       0.6
gamma_perm =
       1
gamma_beta =
       1
gamma_rough =
                       0.8
gamma =
                       0.48
ans =
!!! - - Iribaren number:    1.01 is in the valid range (0.5-10), TAW RECOMMENDED - - !!!
ans =
!!! - - slope: 1:7.3 V:H is in the valid range (1:8 - 1:1), TAW RECOMMENDED - - !!!
R2_new =
          7.45827228689431
!   Berm_width is greater than 1/4 wave length
!   Runup will be weighted average with foreshore calculation assuming depth limited wave height on berm
fore_H0 =
                3.65043666
upper_slope =
         0.0902230000000017
upper_slope =
          0.09137134319549
upper_slope =
         0.0924939073598073
upper_slope =
         0.0935915620233916
upper_slope =
         0.0946651055998504
upper_slope =
         0.0957153343999376
upper_slope =
         0.0967430105180589
upper_slope =
         0.0977488317665857
upper_slope =
         0.0987334981531549
upper_slope =
         0.0996976805461189
upper_slope =
          0.100641991276395
upper_slope =
          0.101567048288818
upper_slope =
          0.101690429014869
w2 =
         0.0472655588251012
w1 =
          0.952734441174899
R2_new =
          7.46920614758068
R2del =
          8.23339385241932
Z2 =
          16.5397049768942
top_sta =
          320.036602067562
ans =
!---------------- STARTING ITERATION 2 -----------------!
Ztoe =
                   0.94741
toe_sta =
          12.5371395555078
top_sta =
          320.036602067562
Z2 =
          16.5397049768942
H0 =
                    5.2342
Tp =
                   13.5919
T0 =
          12.3562727272727
R2 =
          7.46920614758068
Z2 =
          16.5397049768942
top_sta =
          320.036602067562
Lslope =
          307.499462512054
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 32
dh =
          4.19996582931351
rdh_sum =
          0.34729103989654
ans =
```

```
Berm Factor Calculation: Iteration 2, Profile Segment: 33
dh =
           4.16210982931351
rdh_sum =
          0.689183131478468
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 34
dh =
           4.12425382931351
rdh_sum =
           1.02569668069317
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 35
dh =
           4.08639782931351
rdh_sum =
            1.3568527876611
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 36
dh =
           4.04854232931351
rdh_sum =
           1.68267331427858
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 37
dh =
           4.01068682931351
rdh_sum =
           2.00318074015032
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 38
dh =
           3.97283082931351
rdh_sum =
           2.31839816087574
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 39
dh =
           3.93497482931351
rdh_sum =
           2.62834942512647
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 40
dh =
           3.89711882931351
rdh_sum =
           2.93305906124232
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 41
dh =
           3.85926282931351
rdh_sum =
           3.23255227406553
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 42
dh =
           3.82140682931351
rdh_sum =
            3.5268549416878
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 43
dh =
           3.78355132931351
rdh_sum =
           3.81599368013784
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 44
dh =
           3.74660082931351
rdh_sum =
           4.10011818245487
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 45
dh =
           3.71146032931351
rdh_sum =
            4.3794986850822
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 46
dh =
           3.67722582931351
rdh_sum =
            4.6542810892491
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 47
dh =
           3.64299132931351
rdh_sum =
            4.924489166909
ans =
```

```
Berm Factor Calculation: Iteration 2, Profile Segment: 48
dh =
          3.60875632931351
rdh_sum =
          5.19014710656527
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 49
dh =
          3.57452132931351
rdh_sum =
          5.45127964399068
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 50
dh =
          3.54028632931351
rdh_sum =
          5.70791199263286
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 51
dh =
          3.50605132931351
rdh_sum =
            5.960069840953
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 52
dh =
          3.47181632931351
rdh_sum =
          6.20777934971427
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 53
dh =
          3.43758182931351
rdh_sum =
           6.4510672136025
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 54
dh =
          3.40334732931351
rdh_sum =
          6.68996052885288
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 55
dh =
          3.36911232931351
rdh_sum =
          6.92448679197281
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 56
dh =
          3.34018382931351
rdh_sum =
          7.15534473042837
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 57
dh =
          3.31656182931351
rdh_sum =
          7.38322227554551
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 58
dh =
          3.29293982931351
rdh_sum =
          7.60813310254311
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 59
dh =
          3.26931782931351
rdh_sum =
          7.83009103572924
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 60
dh =
          3.24569582931351
rdh_sum =
          8.04911004780645
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 61
dh =
          3.22207382931351
rdh_sum =
          8.26520425916959
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 62
dh =
          3.19845182931351
rdh_sum =
          8.47838793719619
ans =
```

```
Berm Factor Calculation: Iteration 2, Profile Segment: 63
dh =
          3.17482932931351
rdh_sum =
          8.68867543438173
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 64
dh =
          3.15120682931351
rdh_sum =
           8.8960813105302
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 65
dh =
          3.12758482931351
rdh_sum =
          9.10062033078974
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 66
dh =
          3.10396282931351
rdh_sum =
          9.30230734323149
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 67
dh =
          3.08034082931351
rdh_sum =
          9.50115733925113
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 68
dh =
          3.03570482931351
rdh_sum =
          9.69468795656988
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 88
dh =
          0.98227582931351
rdh_sum =
          9.71625537312226
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 89
dh =
          1.03286432931351
rdh_sum =
          9.74008323016519
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 90
dh =
          1.08345282931351
rdh_sum =
           9.7662812759583
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 91
dh =
          1.13404082931351
rdh_sum =
          9.79495868743633
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 92
dh =
          1.18462932931351
rdh_sum =
          9.82622411909927
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 93
dh =
          1.23521782931351
rdh_sum =
          9.86018560499294
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 94
dh =
          1.28580632931351
rdh_sum =
          9.89695055777596
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 95
dh =
          1.33639482931351
rdh_sum =
           9.9366257439633
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 96
dh =
          1.38698332931351
rdh_sum =
          9.97931725931872
ans =
```

```
Berm Factor Calculation: Iteration 2, Profile Segment: 97
dh =
          1.43757182931351
rdh_sum =
          10.0251305044017
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 98
dh =
          1.48815982931351
rdh_sum =
          10.0741701278713
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 99
dh =
          1.53874832931351
rdh_sum =
          10.1265400985462
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 100
dh =
          1.58933682931351
rdh_sum =
          10.1823435862936
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 101
dh =
          1.63992532931351
rdh_sum =
          10.2416829696226
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 102
dh =
          1.69051382931351
rdh_sum =
          10.3046598120887
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 103
dh =
          1.71211932931351
rdh_sum =
          10.3692208971279
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 104
dh =
          1.67575882931351
rdh_sum =
          10.4311263700036
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 105
dh =
          1.61041532931351
rdh_sum =
          10.4883907490733
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 106
dh =
          1.54507232931351
rdh_sum =
          10.5411843126416
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 107
dh =
          1.47972882931351
rdh_sum =
          10.5896789897535
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 108
dh =
          1.41438532931351
rdh_sum =
           10.634048397365
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 109
dh =
          1.34904182931351
rdh_sum =
          10.6744677387184
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 110
dh =
          1.28369832931351
rdh_sum =
          10.7111137359718
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 111
dh =
          1.21835532931351
rdh_sum =
          10.7441645890685
ans =
```

```
Berm Factor Calculation: Iteration 2, Profile Segment: 112
dh =
            1.15301182931351
rdh_sum =
            10.7737998253717
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 113
dh =
            1.08766832931351
rdh_sum =
             10.800200313842
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 114
dh =
            1.02232482931351
rdh_sum =
            10.8235481672951
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 115
dh =
           0.967712329313509
rdh_sum =
            10.8444852638338
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 116
dh =
           0.934562329313509
rdh_sum =
            10.8640217417262
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 117
dh =
           0.91214332931351
rdh_sum =
            10.8826379409497
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 118
dh =
           0.889724329313509
rdh_sum =
            10.9003556516786
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 119
dh =
           0.867305329313508
rdh_sum =
            10.9171967047576
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 120
dh =
           0.844886329313509
rdh_sum =
            10.9331829707141
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 121
dh =
           0.822467329313509
rdh_sum =
            10.9483363587682
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 122
dh =
           0.80004832931351
rdh_sum =
            10.9626788158405
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 123
dh =
           0.777629329313509
rdh_sum =
            10.9762323255591
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 124
dh =
           0.755209829313509
rdh_sum =
            10.9890188904057
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 125
dh =
           0.732790329313509
rdh_sum =
            11.0010605654208
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 126
dh =
           0.710371329313508
rdh_sum =
            11.0123794552374
ans =
```

```
Berm Factor Calculation: Iteration 2, Profile Segment: 127
dh =
         0.691291829313508
rdh_sum =
         11.0231006469349
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 128
dh =
         0.67889132931351
rdh_sum =
         11.0334419712337
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 129
dh =
         0.669829829313509
rdh_sum =
         11.0435100003683
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 130
dh =
         0.660768329313509
rdh_sum =
         11.0533083573869
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 131
dh =
         0.651707329313508
rdh_sum =
         11.0628406819117
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 132
dh =
         0.642645829313508
rdh_sum =
         11.0721105861723
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 133
dh =
         0.633584329313509
rdh_sum =
         11.0811216991189
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 134
dh =
         0.62452332931351
rdh_sum =
         11.0898776655947
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 135
dh =
         0.615461829313508
rdh_sum =
         11.0983821041707
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 136
dh =
         0.606400329313509
rdh_sum =
          11.106638649458
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 137
dh =
         0.597338829313509
rdh_sum =
         11.1146509379004
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 138
dh =
         0.604589329313509
rdh_sum =
         11.1228583760436
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 139
dh =
         0.628151829313508
rdh_sum =
         11.1317160806177
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 140
dh =
         0.651714329313508
rdh_sum =
         11.1412486092642
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 141
dh =
         0.675276829313509
rdh_sum =
         11.1514804858827
ans =
```

```
Berm Factor Calculation: Iteration 2, Profile Segment: 142
dh =
        0.698838829313511
rdh_sum =
        11.1624361837851
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 143
dh =
        0.722401329313509
rdh_sum =
        11.1741401708112
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 144
dh =
        0.745963829313508
rdh_sum =
        11.1866168622854
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 145
dh =
        0.769526329313509
rdh_sum =
         11.199890634896
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 146
dh =
        0.793088829313509
rdh_sum =
        11.2139858254762
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 147
dh =
        0.816650829313508
rdh_sum =
        11.2289267115841
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 148
dh =
        0.840213329313508
rdh_sum =
        11.2447375643841
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 149
dh =
        0.83501132931351
rdh_sum =
        11.2603542666909
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 150
dh =
        0.80104482931351
rdh_sum =
        11.2747323021676
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 151
dh =
        0.76707882931351
rdh_sum =
        11.2879221464582
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 152
dh =
        0.733112329313508
rdh_sum =
        11.2999743636841
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 153
dh =
        0.69914582931351
rdh_sum =
        11.3109396540344
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 154
dh =
        0.665179829313509
rdh_sum =
        11.3208688455127
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 155
dh =
        0.631213329313509
rdh_sum =
        11.3298128432749
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 156
dh =
        0.597246829313509
rdh_sum =
        11.3378226704693
ans =
```

```
Berm Factor Calculation: Iteration 2, Profile Segment: 157
dh =
        0.567179329313509
rdh_sum =
        11.3450482120678
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 158
dh =
        0.544908329313509
rdh_sum =
         11.351718694948
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 159
dh =
        0.526535329313509
rdh_sum =
        11.3579478566655
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 160
dh =
        0.508162329313508
rdh_sum =
        11.3637507086783
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 161
dh =
         0.48978982931351
rdh_sum =
        11.3691422863933
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 162
dh =
        0.471417329313509
rdh_sum =
        11.3741376259143
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 163
dh =
        0.453044329313508
rdh_sum =
        11.3787517652215
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 164
dh =
         0.43467182931351
rdh_sum =
        11.3829997746316
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 165
dh =
        0.416299329313508
rdh_sum =
        11.3868967250129
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 166
dh =
         0.39792632931351
rdh_sum =
        11.3904576889675
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 167
dh =
        0.379553329313509
rdh_sum =
        11.3936977590714
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 168
dh =
        0.361180829313509
rdh_sum =
        11.3966320457723
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 169
dh =
         0.34280832931351
rdh_sum =
        11.3992756598757
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 170
dh =
        0.316685829313508
rdh_sum =
        11.4015320217426
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 171
dh =
        0.282813329313509
rdh_sum =
        11.4033317935143
ans =
```

```
Berm Factor Calculation: Iteration 2, Profile Segment: 172
dh =
          0.24894082931351
rdh_sum =
          11.4047264545435
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 173
dh =
          0.215068329313509
rdh_sum =
          11.4057675260437
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 174
dh =
          0.181195829313509
rdh_sum =
          11.4065065657648
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 175
dh =
          0.14732332931351
rdh_sum =
          11.4069951626658
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 176
dh =
          0.113450829313509
rdh_sum =
          11.4072849315842
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 177
dh =
          0.0795783293135095
rdh_sum =
          11.4074275079026
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 178
dh =
          0.0457058293135102
rdh_sum =
           11.407474542213
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 179
dh =
          0.0118338293135078
rdh_sum =
          11.4074776952462
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 180
dh =
         -0.0220386706864915
rdh_sum =
          11.4074991764102
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 181
dh =
         -0.0559111706864908
rdh_sum =
           11.407637427093
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 182
dh =
         -0.0897836706864901
rdh_sum =
          11.4079939055014
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 183
dh =
         -0.123656170686489
rdh_sum =
          11.4086700255477
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 184
dh =
         -0.15752867068649
rdh_sum =
          11.4097671362658
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 185
dh =
         -0.191401170686492
rdh_sum =
            11.41138650124
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 186
dh =
         -0.225273670686491
rdh_sum =
          11.4136292780515
ans =
```

```
Berm Factor Calculation: Iteration 2, Profile Segment: 187
dh =
        -0.25914617068649
rdh_sum =
        11.4165964977459
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 188
dh =
        -0.300954670686492
rdh_sum =
        11.4205969797722
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 189
dh =
        -0.358635670686491
rdh_sum =
        11.4262746928959
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 190
dh =
        -0.424252170686492
rdh_sum =
        11.4342140543362
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 191
dh =
        -0.489868670686491
rdh_sum =
        11.4447898362357
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 192
dh =
        -0.55548567068649
rdh_sum =
        11.4583748270835
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 193
dh =
        -0.621102670686492
rdh_sum =
        11.4753395047411
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 194
dh =
        -0.686719670686491
rdh_sum =
        11.4960517729329
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 195
dh =
        -0.752336170686492
rdh_sum =
        11.5208766483105
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 196
dh =
        -0.817952670686491
rdh_sum =
        11.5501760423652
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 197
dh =
        -0.883569670686491
rdh_sum =
        11.5843084968091
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 198
dh =
        -0.94918667068649
rdh_sum =
        11.6236288395337
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 199
dh =
        -1.01480367068649
rdh_sum =
        11.6684879470769
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 200
dh =
        -1.08042017068649
rdh_sum =
        11.7192324312214
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 201
dh =
        -1.13097467068649
rdh_sum =
        11.7747449403343
ans =
```

```
Berm Factor Calculation: Iteration 2, Profile Segment: 202
dh =
         -1.16646767068649
rdh_sum =
          11.8337251600679
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 203
dh =
         -1.20196067068649
rdh_sum =
          11.8962713750372
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 204
dh =
         -1.23745317068649
rdh_sum =
          11.9624810228565
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 205
dh =
         -1.27294567068649
rdh_sum =
          12.0324507742842
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 206
dh =
         -1.30843867068649
rdh_sum =
          12.1062765171259
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 207
dh =
         -1.34393117068649
rdh_sum =
          12.1840531712354
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 208
dh =
         -1.37942367068649
rdh_sum =
          12.2658748296482
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 209
dh =
         -1.41491667068649
rdh_sum =
          12.3518347429142
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 210
dh =
         -1.45040967068649
rdh_sum =
          12.4420251830182
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 211
dh =
         -1.48590217068649
rdh_sum =
          12.5365374176182
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 228
dh =
         -2.68392767068649
rdh_sum =
          12.8226989314909
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 229
dh =
         -2.74339617068649
rdh_sum =
          13.1202310797134
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 230
dh =
         -2.79876017068649
rdh_sum =
          13.4284630658131
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 231
dh =
         -2.85412417068649
rdh_sum =
          13.7474988726084
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 232
dh =
         -2.90948817068649
rdh_sum =
           14.077436624737
ans =
```

```
Berm Factor Calculation: Iteration 2, Profile Segment: 233
dh =
        -2.96485267068649
rdh_sum =
        14.4183686351374
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 234
dh =
        -3.02021717068649
rdh_sum =
        14.7703811571753
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 235
dh =
        -3.07558117068649
rdh_sum =
        15.1335543347585
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 236
dh =
        -3.13094517068649
rdh_sum =
         15.507962359815
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 237
dh =
        -3.18630917068649
rdh_sum =
        15.8936733323748
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 238
dh =
        -3.24167317068649
rdh_sum =
        16.2907492236445
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 239
dh =
        -3.29703767068649
rdh_sum =
        16.6992459457799
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 240
dh =
        -3.35240217068649
rdh_sum =
        17.1192131157133
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 241
dh =
        -3.40776617068649
rdh_sum =
        17.5506940264577
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 242
dh =
        -3.46313017068649
rdh_sum =
        17.9937258312791
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 243
dh =
        -3.51849417068649
rdh_sum =
        18.4483394201751
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 244
dh =
        -3.55666817068649
rdh_sum =
        18.9109534720326
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 245
dh =
        -3.56046167068649
rdh_sum =
        19.3743631215656
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 246
dh =
        -3.54706467068649
rdh_sum =
        19.8349634945681
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 247
dh =
        -3.53366817068649
rdh_sum =
        20.2927559468129
ans =
```

```
Berm Factor Calculation: Iteration 2, Profile Segment: 248
dh =
        -3.52027167068649
rdh_sum =
         20.7477418183524
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 249
dh =
        -3.50687467068649
rdh_sum =
         21.1999224336763
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 250
dh =
        -3.49347767068649
rdh_sum =
         21.6492993111209
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 251
dh =
        -3.48008117068649
rdh_sum =
         22.0958741625954
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 252
dh =
        -3.46668467068649
rdh_sum =
          22.539648684301
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 253
dh =
        -3.45328767068649
rdh_sum =
         22.9806245569309
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 254
dh =
        -3.43989067068649
rdh_sum =
          23.418803654589
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 255
dh =
        -3.42649417068649
rdh_sum =
         23.8541880444507
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 260
dh =
        -4.12631567068649
rdh_sum =
         24.4361934642331
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 261
dh =
        -4.18136067068649
rdh_sum =
         25.0295952466222
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 262
dh =
        -4.23640567068649
rdh_sum =
         25.6343433280687
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 263
dh =
        -4.29145117068649
rdh_sum =
         26.2503816656638
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 264
dh =
        -4.34649667068649
rdh_sum =
         26.8776480614877
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 265
dh =
        -4.40154167068649
rdh_sum =
         27.5160741982075
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 266
dh =
        -4.45658667068649
rdh_sum =
         28.1655858791264
ans =
```

```
Berm Factor Calculation: Iteration 2, Profile Segment: 267
dh =
        -4.51163167068649
rdh_sum =
         28.8261029656729
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 268
dh =
        -4.56667717068649
rdh_sum =
         29.4975395191327
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 269
dh =
        -4.61806067068649
rdh_sum =
         30.1790862934755
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 270
dh =
        -4.66578167068649
rdh_sum =
         30.8699468106226
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 271
dh =
        -4.71350317068649
rdh_sum =
          31.570044276788
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 272
dh =
        -4.76122467068649
rdh_sum =
         32.2792980789316
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 273
dh =
        -4.80894567068649
rdh_sum =
         32.9976238206129
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 274
dh =
        -4.85666667068649
rdh_sum =
           33.72493354703
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 275
dh =
        -4.90438817068649
rdh_sum =
         34.4611357767676
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 276
dh =
        -4.95210967068649
rdh_sum =
         35.2061353513001
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 277
dh =
        -4.99983067068649
rdh_sum =
         35.9598334773153
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 278
dh =
        -5.04755217068649
rdh_sum =
         36.7221280393986
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 279
dh =
        -5.09527367068649
rdh_sum =
          37.492913367236
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 280
dh =
        -5.13723517068649
rdh_sum =
         38.2710746007514
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 281
dh =
        -5.17343767068649
rdh_sum =
         39.0555298959006
ans =
```

```
Berm Factor Calculation: Iteration 2, Profile Segment: 282
dh =
        -5.20964017068649
rdh_sum =
        39.8462132999386
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 283
dh =
        -5.24584217068649
rdh_sum =
        40.6430573314796
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 284
dh =
        -5.28204467068649
rdh_sum =
        41.4459932509279
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 285
dh =
        -5.31824717068649
rdh_sum =
         42.25495082069
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 286
dh =
        -5.35444967068649
rdh_sum =
        43.0698584070147
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 287
dh =
        -5.39065217068649
rdh_sum =
        43.8906429966024
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 288
dh =
        -5.42685417068649
rdh_sum =
        44.7172301339118
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 289
dh =
        -5.46305667068649
rdh_sum =
        45.5495441783241
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 290
dh =
        -5.49925917068649
rdh_sum =
        46.3875080807431
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 291
dh =
        -5.53546117068649
rdh_sum =
        47.2310434057154
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 292
dh =
        -5.57166367068649
rdh_sum =
        48.0800705799138
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 293
dh =
        -5.60786617068649
rdh_sum =
         48.934508679198
ans =
!------- End Berm Factor Calculation, Iter: 2 ---------!
berm_width =
   223
rB =
        0.725204519638008
rdh_mean =
        0.219437258651112
gamma_berm =
        0.433932372112753
gamma_berm =
                        0.6
slope =
        0.184525374639748
Irb =
        2.25433772683246
gamma_berm =
                        0.6
gamma_perm =
```

```
       1
gamma_beta =
     1
gamma_rough =
                      0.8
gamma =
                      0.48
ans =
!!! - - Iribaren number:   1.35 is in the valid range (0.5-10), TAW RECOMMENDED - - !!!
ans =
!!! - - slope: 1:5.4 V:H is in the valid range (1:8 - 1:1), TAW RECOMMENDED - - !!!
R2_new =
         10.0249864885066
!   Berm_width is greater than 1/4 wave length
!   Runup will be weighted average with foreshore calculation assuming depth limited wave height on berm
fore_H0 =
              3.65043666
upper_slope =
         0.191381999999999
upper_slope =
         0.191381999999997
upper_slope =
         0.1913820000001
upper_slope =
         0.191382964690341
upper_slope =
         0.191382491013939
upper_slope =
         0.191382329315458
upper_slope =
         0.191382495466228
upper_slope =
         0.191382397093115
upper_slope =
         0.191382331312215
upper_slope =
         0.191382426342143
upper_slope =
         0.191382373292093
upper_slope =
         0.191382331983192
upper_slope =
         0.183651694516359
w2 =
        0.0472655588251012
w1 =
         0.952734441174899
R2_new =
         10.0099479510347
R2del =
         2.54074180345404
Z2 =
         19.0804467803482
ans =
!---------------- STARTING ITERATION 3 ----------------!
Ztoe =
                   0.94741
toe_sta =
         12.5371395555078
top_sta =
         345.995907699236
Z2 =
         19.0804467803482
H0 =
                    5.2342
Tp =
                   13.5919
T0 =
         12.3562727272727
R2 =
         10.0099479510347
Z2 =
         19.0804467803482
top_sta =
         345.995907699236
Lslope =
         333.458768143728
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 32
dh =
         4.19996582931351
rdh_sum =
         0.34729103989654
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 33
dh =
         4.16210982931351
rdh_sum =
        0.689183131478468
ans =
```

```
Berm Factor Calculation: Iteration 3, Profile Segment: 34
dh =
          4.12425382931351
rdh_sum =
          1.02569668069317
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 35
dh =
          4.08639782931351
rdh_sum =
           1.3568527876611
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 36
dh =
          4.04854232931351
rdh_sum =
          1.68267331427858
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 37
dh =
          4.01068682931351
rdh_sum =
          2.00318074015032
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 38
dh =
          3.97283082931351
rdh_sum =
          2.31839816087574
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 39
dh =
          3.93497482931351
rdh_sum =
          2.62834942512647
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 40
dh =
          3.89711882931351
rdh_sum =
          2.93305906124232
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 41
dh =
          3.85926282931351
rdh_sum =
          3.23255227406553
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 42
dh =
          3.82140682931351
rdh_sum =
           3.5268549416878
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 43
dh =
          3.78355132931351
rdh_sum =
          3.81599368013784
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 44
dh =
          3.74660082931351
rdh_sum =
          4.10011818245487
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 45
dh =
          3.71146032931351
rdh_sum =
           4.3794986850822
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 46
dh =
          3.67722582931351
rdh_sum =
           4.6542810892491
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 47
dh =
          3.64299132931351
rdh_sum =
            4.924489166909
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 48
dh =
          3.60875632931351
rdh_sum =
          5.19014710656527
ans =
```

```
Berm Factor Calculation: Iteration 3, Profile Segment: 49
dh =
         3.57452132931351
rdh_sum =
         5.45127964399068
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 50
dh =
         3.54028632931351
rdh_sum =
         5.70791199263286
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 51
dh =
         3.50605132931351
rdh_sum =
          5.960069840953
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 52
dh =
         3.47181632931351
rdh_sum =
         6.20777934971427
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 53
dh =
         3.43758182931351
rdh_sum =
          6.4510672136025
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 54
dh =
         3.40334732931351
rdh_sum =
         6.68996052885288
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 55
dh =
         3.36911232931351
rdh_sum =
         6.92448679197281
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 56
dh =
         3.34018382931351
rdh_sum =
         7.15534473042837
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 57
dh =
         3.31656182931351
rdh_sum =
         7.38322227554551
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 58
dh =
         3.29293982931351
rdh_sum =
         7.60813310254311
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 59
dh =
         3.26931782931351
rdh_sum =
         7.83009103572924
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 60
dh =
         3.24569582931351
rdh_sum =
         8.04911004780645
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 61
dh =
         3.22207382931351
rdh_sum =
         8.26520425916959
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 62
dh =
         3.19845182931351
rdh_sum =
         8.47838793719619
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 63
dh =
         3.17482932931351
rdh_sum =
         8.68867543438173
ans =
```

```
Berm Factor Calculation: Iteration 3, Profile Segment: 64
dh =
          3.15120682931351
rdh_sum =
           8.8960813105302
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 65
dh =
          3.12758482931351
rdh_sum =
          9.10062033078974
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 66
dh =
          3.10396282931351
rdh_sum =
          9.30230734323149
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 67
dh =
          3.08034082931351
rdh_sum =
          9.50115733925113
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 68
dh =
          3.03570482931351
rdh_sum =
          9.69468795656988
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 88
dh =
          0.98227582931351
rdh_sum =
          9.71625537312226
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 89
dh =
          1.03286432931351
rdh_sum =
          9.74008323016519
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 90
dh =
          1.08345282931351
rdh_sum =
           9.7662812759583
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 91
dh =
          1.13404082931351
rdh_sum =
          9.79495868743633
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 92
dh =
          1.18462932931351
rdh_sum =
          9.82622411909927
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 93
dh =
          1.23521782931351
rdh_sum =
          9.86018560499294
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 94
dh =
          1.28580632931351
rdh_sum =
          9.89695055777596
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 95
dh =
          1.33639482931351
rdh_sum =
           9.9366257439633
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 96
dh =
          1.38698332931351
rdh_sum =
          9.97931725931872
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 97
dh =
          1.43757182931351
rdh_sum =
          10.0251305044017
ans =
```

```
Berm Factor Calculation: Iteration 3, Profile Segment: 98
dh =
        1.48815982931351
rdh_sum =
        10.0741701278713
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 99
dh =
        1.53874832931351
rdh_sum =
        10.1265400985462
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 100
dh =
        1.58933682931351
rdh_sum =
        10.1823435862936
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 101
dh =
        1.63992532931351
rdh_sum =
        10.2416829696226
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 102
dh =
        1.69051382931351
rdh_sum =
        10.3046598120887
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 103
dh =
        1.71211932931351
rdh_sum =
        10.3692208971279
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 104
dh =
        1.67575882931351
rdh_sum =
        10.4311263700036
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 105
dh =
        1.61041532931351
rdh_sum =
        10.4883907490733
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 106
dh =
        1.54507232931351
rdh_sum =
        10.5411843126416
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 107
dh =
        1.47972882931351
rdh_sum =
        10.5896789897535
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 108
dh =
        1.41438532931351
rdh_sum =
         10.634048397365
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 109
dh =
        1.34904182931351
rdh_sum =
        10.6744677387184
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 110
dh =
        1.28369832931351
rdh_sum =
        10.7111137359718
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 111
dh =
        1.21835532931351
rdh_sum =
        10.7441645890685
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 112
dh =
        1.15301182931351
rdh_sum =
        10.7737998253717
ans =
```

```
Berm Factor Calculation: Iteration 3, Profile Segment: 113
dh =
        1.08766832931351
rdh_sum =
          10.800200313842
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 114
dh =
        1.02232482931351
rdh_sum =
        10.8235481672951
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 115
dh =
        0.967712329313509
rdh_sum =
        10.8444852638338
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 116
dh =
        0.934562329313509
rdh_sum =
        10.8640217417262
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 117
dh =
        0.91214332931351
rdh_sum =
        10.8826379409497
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 118
dh =
        0.889724329313509
rdh_sum =
        10.9003556516786
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 119
dh =
        0.867305329313508
rdh_sum =
        10.9171967047576
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 120
dh =
        0.844886329313509
rdh_sum =
        10.9331829707141
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 121
dh =
        0.822467329313509
rdh_sum =
        10.9483363587682
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 122
dh =
        0.80004832931351
rdh_sum =
        10.9626788158405
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 123
dh =
        0.777629329313509
rdh_sum =
        10.9762323255591
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 124
dh =
        0.755209829313509
rdh_sum =
        10.9890188904057
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 125
dh =
        0.732790329313509
rdh_sum =
        11.0010605654208
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 126
dh =
        0.710371329313508
rdh_sum =
        11.0123794552374
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 127
dh =
        0.691291829313508
rdh_sum =
        11.0231006469349
ans =
```

```
Berm Factor Calculation: Iteration 3, Profile Segment: 128
dh =
          0.67889132931351
rdh_sum =
          11.0334419712337
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 129
dh =
          0.669829829313509
rdh_sum =
          11.0435100003683
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 130
dh =
          0.660768329313509
rdh_sum =
          11.0533083573869
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 131
dh =
          0.651707329313508
rdh_sum =
          11.0628406819117
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 132
dh =
          0.642645829313508
rdh_sum =
          11.0721105861723
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 133
dh =
          0.633584329313509
rdh_sum =
          11.0811216991189
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 134
dh =
          0.62452332931351
rdh_sum =
          11.0898776655947
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 135
dh =
          0.615461829313508
rdh_sum =
          11.0983821041707
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 136
dh =
          0.606400329313509
rdh_sum =
           11.106638649458
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 137
dh =
          0.597338829313509
rdh_sum =
           11.1146509379004
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 138
dh =
          0.604589329313509
rdh_sum =
           11.1228583760436
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 139
dh =
          0.628151829313508
rdh_sum =
           11.1317160806177
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 140
dh =
          0.651714329313508
rdh_sum =
           11.1412486092642
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 141
dh =
          0.675276829313509
rdh_sum =
           11.1514804858827
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 142
dh =
          0.698838829313511
rdh_sum =
           11.1624361837851
ans =
```

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Berm Factor Calculation: Iteration 3, Profile Segment: 143
dh =
          0.722401329313509
rdh_sum =
          11.1741401708112
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 144
dh =
          0.745963829313508
rdh_sum =
          11.1866168622854
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 145
dh =
          0.769526329313509
rdh_sum =
           11.199890634896
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 146
dh =
          0.793088829313509
rdh_sum =
          11.2139858254762
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 147
dh =
          0.816650829313508
rdh_sum =
          11.2289267115841
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 148
dh =
          0.840213329313508
rdh_sum =
          11.2447375643841
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 149
dh =
          0.83501132931351
rdh_sum =
          11.2603542666909
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 150
dh =
          0.80104482931351
rdh_sum =
          11.2747323021676
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 151
dh =
          0.76707882931351
rdh_sum =
          11.2879221464582
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 152
dh =
          0.733112329313508
rdh_sum =
          11.2999743636841
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 153
dh =
          0.69914582931351
rdh_sum =
          11.3109396540344
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 154
dh =
          0.665179829313509
rdh_sum =
          11.3208688455127
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 155
dh =
          0.631213329313509
rdh_sum =
          11.3298128432749
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 156
dh =
          0.597246829313509
rdh_sum =
          11.3378226704693
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 157
dh =
          0.567179329313509
rdh_sum =
          11.3450482120678
ans =
```

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Berm Factor Calculation: Iteration 3, Profile Segment: 158
dh =
         0.544908329313509
rdh_sum =
          11.351718694948
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 159
dh =
         0.526535329313509
rdh_sum =
          11.3579478566655
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 160
dh =
         0.508162329313508
rdh_sum =
          11.3637507086783
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 161
dh =
         0.48978982931351
rdh_sum =
          11.3691422863933
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 162
dh =
         0.471417329313509
rdh_sum =
          11.3741376259143
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 163
dh =
         0.453044329313508
rdh_sum =
          11.3787517652215
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 164
dh =
         0.43467182931351
rdh_sum =
          11.3829997746316
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 165
dh =
         0.416299329313508
rdh_sum =
          11.3868967250129
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 166
dh =
         0.39792632931351
rdh_sum =
          11.3904576889675
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 167
dh =
         0.379553329313509
rdh_sum =
          11.3936977590714
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 168
dh =
         0.361180829313509
rdh_sum =
          11.3966320457723
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 169
dh =
         0.34280832931351
rdh_sum =
          11.3992756598757
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 170
dh =
         0.316685829313508
rdh_sum =
          11.4015320217426
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 171
dh =
         0.282813329313509
rdh_sum =
          11.4033317935143
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 172
dh =
         0.24894082931351
rdh_sum =
          11.4047264545435
ans =
```

```
Berm Factor Calculation: Iteration 3, Profile Segment: 173
dh =
        0.215068329313509
rdh_sum =
        11.4057675260437
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 174
dh =
        0.181195829313509
rdh_sum =
        11.4065065657648
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 175
dh =
        0.14732332931351
rdh_sum =
        11.4069951626658
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 176
dh =
        0.113450829313509
rdh_sum =
        11.4072849315842
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 177
dh =
        0.0795783293135095
rdh_sum =
        11.4074275079026
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 178
dh =
        0.0457058293135102
rdh_sum =
         11.407474542213
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 179
dh =
        0.0118338293135078
rdh_sum =
        11.4074776952462
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 180
dh =
       -0.0220386706864915
rdh_sum =
        11.4074896556115
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 181
dh =
       -0.0559111706864908
rdh_sum =
        11.4075666326873
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 182
dh =
       -0.0897836706864901
rdh_sum =
        11.4077651239339
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 183
dh =
       -0.123656170686489
rdh_sum =
        11.4081416130786
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 184
dh =
        -0.15752867068649
rdh_sum =
        11.4087525637329
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 185
dh =
       -0.191401170686492
rdh_sum =
        11.4096544130113
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 186
dh =
       -0.225273670686491
rdh_sum =
        11.4109035651532
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 187
dh =
        -0.25914617068649
rdh_sum =
        11.4125563851483
ans =
```

```
Berm Factor Calculation: Iteration 3, Profile Segment: 188
dh =
        -0.300954670686492
rdh_sum =
         11.4147851007526
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 189
dh =
        -0.358635670686491
rdh_sum =
         11.4179490083659
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 190
dh =
        -0.424252170686492
rdh_sum =
         11.4223747066208
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 191
dh =
        -0.489868670686491
rdh_sum =
         11.4282723578718
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 192
dh =
         -0.55548567068649
rdh_sum =
         11.4358515138592
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 193
dh =
        -0.621102670686492
rdh_sum =
         11.4453210028066
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 194
dh =
        -0.686719670686491
rdh_sum =
         11.4568888512757
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 195
dh =
        -0.752336170686492
rdh_sum =
         11.4707621775915
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 196
dh =
        -0.817952670686491
rdh_sum =
         11.4871471375733
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 197
dh =
        -0.883569670686491
rdh_sum =
          11.506248843391
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 198
dh =
         -0.94918667068649
rdh_sum =
         11.5282712367292
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 199
dh =
         -1.01480367068649
rdh_sum =
          11.553417020653
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 200
dh =
         -1.08042017068649
rdh_sum =
         11.5818875475467
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 201
dh =
         -1.13097467068649
rdh_sum =
         11.6130560946695
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 202
dh =
         -1.16646767068649
rdh_sum =
         11.6461894101615
ans =
```

```
Berm Factor Calculation: Iteration 3, Profile Segment: 203
dh =
        -1.20196067068649
rdh_sum =
        11.6813454247771
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 204
dh =
        -1.23745317068649
rdh_sum =
        11.718581788574
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 205
dh =
        -1.27294567068649
rdh_sum =
        11.7579559215655
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 206
dh =
        -1.30843867068649
rdh_sum =
        11.7995250098315
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 207
dh =
        -1.34393117068649
rdh_sum =
        11.8433459052591
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 208
dh =
        -1.37942367068649
rdh_sum =
        11.8894752108486
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 209
dh =
        -1.41491667068649
rdh_sum =
         11.93796927688
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 210
dh =
        -1.45040967068649
rdh_sum =
        11.9888841280819
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 211
dh =
        -1.48590217068649
rdh_sum =
        12.0422754535237
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 228
dh =
        -2.68392767068649
rdh_sum =
        12.2094169602546
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 229
dh =
        -2.74339617068649
rdh_sum =
        12.3835796136605
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 230
dh =
        -2.79876017068649
rdh_sum =
        12.5643808873884
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 231
dh =
        -2.85412417068649
rdh_sum =
        12.7519171511403
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 232
dh =
        -2.90948817068649
rdh_sum =
        12.9462827412486
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 233
dh =
        -2.96485267068649
rdh_sum =
        13.1475699951153
ans =
```

```
Berm Factor Calculation: Iteration 3, Profile Segment: 234
dh =
         -3.02021717068649
rdh_sum =
          13.3558690991223
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 235
dh =
         -3.07558117068649
rdh_sum =
          13.5712680581458
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 236
dh =
         -3.13094517068649
rdh_sum =
          13.7938527964555
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 237
dh =
         -3.18630917068649
rdh_sum =
          14.0237070688534
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 238
dh =
         -3.24167317068649
rdh_sum =
          14.2609124353869
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 239
dh =
         -3.29703767068649
rdh_sum =
           14.505548304182
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 240
dh =
         -3.35240217068649
rdh_sum =
          14.7576917739476
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 241
dh =
         -3.40776617068649
rdh_sum =
          15.0174176079139
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 242
dh =
         -3.46313017068649
rdh_sum =
          15.2847983475663
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 243
dh =
         -3.51849417068649
rdh_sum =
          15.5599042232879
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 244
dh =
         -3.55666817068649
rdh_sum =
           15.840376342948
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 245
dh =
         -3.56046167068649
rdh_sum =
          16.1213834612178
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 246
dh =
         -3.54706467068649
rdh_sum =
          16.4005025887153
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 247
dh =
         -3.53366817068649
rdh_sum =
           16.677737700567
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 248
dh =
         -3.52027167068649
rdh_sum =
          16.9530927346683
ans =
```

```
Berm Factor Calculation: Iteration 3, Profile Segment: 249
dh =
        -3.50687467068649
rdh_sum =
        17.2265715922016
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 250
dh =
        -3.49347767068649
rdh_sum =
        17.4981782777618
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 251
dh =
        -3.48008117068649
rdh_sum =
        17.7679168986877
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 252
dh =
        -3.46668467068649
rdh_sum =
        18.0357915253928
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 253
dh =
        -3.45328767068649
rdh_sum =
         18.301806191901
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 254
dh =
        -3.43989067068649
rdh_sum =
        18.5659650347644
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 255
dh =
        -3.42649417068649
rdh_sum =
        18.8282722923723
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 260
dh =
        -4.12631567068649
rdh_sum =
        19.1921305376022
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 261
dh =
        -4.18136067068649
rdh_sum =
         19.564320169616
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 262
dh =
        -4.23640567068649
rdh_sum =
        19.9448793324293
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 263
dh =
        -4.29145117068649
rdh_sum =
        20.3338437487381
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 264
dh =
        -4.34649667068649
rdh_sum =
        20.7312465568555
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 265
dh =
        -4.40154167068649
rdh_sum =
        21.1371182996169
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 266
dh =
        -4.45658667068649
rdh_sum =
        21.5514870688723
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 267
dh =
        -4.51163167068649
rdh_sum =
        21.9743784206001
ans =
```

```
Berm Factor Calculation: Iteration 3, Profile Segment: 268
dh =
        -4.56667717068649
rdh_sum =
        22.4058154450003
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 269
dh =
        -4.61806067068649
rdh_sum =
        22.8452481428875
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 270
dh =
        -4.66578167068649
rdh_sum =
        23.2921207520795
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 271
dh =
        -4.71350317068649
rdh_sum =
        23.7464452676518
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 272
dh =
        -4.76122467068649
rdh_sum =
        24.2082319352323
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 273
dh =
        -4.80894567068649
rdh_sum =
        24.6774892482746
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 274
dh =
        -4.85666667068649
rdh_sum =
        25.1542241026341
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 275
dh =
        -4.90438817068649
rdh_sum =
        25.6384417953103
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 276
dh =
        -4.95210967068649
rdh_sum =
        26.1301458664882
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 277
dh =
        -4.99983067068649
rdh_sum =
        26.6293380985949
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 278
dh =
        -5.04755217068649
rdh_sum =
        27.1360187512746
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 279
dh =
        -5.09527367068649
rdh_sum =
        27.6501863259666
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 280
dh =
        -5.13723517068649
rdh_sum =
        28.1709345788981
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 281
dh =
        -5.17343767068649
rdh_sum =
        28.6973574962573
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 282
dh =
        -5.20964017068649
rdh_sum =
        29.2294516669904
ans =
```

```
Berm Factor Calculation: Iteration 3, Profile Segment: 283
dh =
        -5.24584217068649
rdh_sum =
         29.767212869678
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 284
dh =
        -5.28204467068649
rdh_sum =
         30.3106363078554
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 285
dh =
        -5.31824717068649
rdh_sum =
         30.8597163757945
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 286
dh =
        -5.35444967068649
rdh_sum =
         31.4144467375272
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 287
dh =
        -5.39065217068649
rdh_sum =
         31.9748203276634
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 288
dh =
        -5.42685417068649
rdh_sum =
         32.5408292745283
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 289
dh =
        -5.46305667068649
rdh_sum =
         33.1124651346157
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 290
dh =
        -5.49925917068649
rdh_sum =
         33.6897186601283
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 291
dh =
        -5.53546117068649
rdh_sum =
         34.2725798006822
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 292
dh =
        -5.57166367068649
rdh_sum =
         34.8610379368771
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 293
dh =
        -5.60786617068649
rdh_sum =
         35.4550816492521
ans =
!------- End Berm Factor Calculation, Iter: 3 ---------!
berm_width =
   223
rB =
        0.668748347033663
rdh_mean =
        0.158991397530278
gamma_berm =
        0.437576887257282
gamma_berm =
                        0.6
slope =
        0.164161135282204
Irb =
        2.00554878302685
gamma_berm =
                        0.6
gamma_perm =
    1
gamma_beta =
    1
gamma_rough =
                        0.8
gamma =
```

```
                         0.48
ans =
!!! - - Iribaren number:   1.20 is in the valid range (0.5-10), TAW RECOMMENDED - - !!!
ans =
!!! - - slope: 1:6.1 V:H is in the valid range (1:8 - 1:1), TAW RECOMMENDED - - !!!
R2_new =
          8.91862794672521
!   Berm_width is greater than 1/4 wave length
!   Runup will be weighted average with foreshore calculation assuming depth limited wave height on berm
fore_H0 =
                3.65043666
upper_slope =
        0.0902230000000017
upper_slope =
        0.0942700224653267
upper_slope =
         0.098005686503614
upper_slope =
          0.1014646297826
upper_slope =
         0.104676433849944
upper_slope =
         0.107666702926857
upper_slope =
         0.110457626872635
upper_slope =
         0.113068435173931
upper_slope =
         0.115516047086123
upper_slope =
         0.117815330791406
upper_slope =
         0.119979316817591
upper_slope =
         0.122019632039475
upper_slope =
         0.121791088503132
w2 =
        0.0472655588251012
w1 =
         0.952734441174899
R2_new =
          8.93237934579823
R2del =
          1.07756860523648
Z2 =
          18.0028781751117
ans =
!---------------- STARTING ITERATION 4 -----------------!
Ztoe =
                   0.94741
toe_sta =
          12.5371395555078
top_sta =
          334.052516266492
Z2 =
          18.0028781751117
H0 =
                    5.2342
Tp =
                   13.5919
T0 =
          12.3562727272727
R2 =
          8.93237934579823
Z2 =
          18.0028781751117
top_sta =
          334.052516266492
Lslope =
          321.515376710984
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 32
dh =
          4.19996582931351
rdh_sum =
          0.34729103989654
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 33
dh =
          4.16210982931351
rdh_sum =
         0.689183131478468
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 34
dh =
          4.12425382931351
rdh_sum =
          1.02569668069317
ans =
```

```
Berm Factor Calculation: Iteration 4, Profile Segment: 35
dh =
          4.08639782931351
rdh_sum =
           1.3568527876611
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 36
dh =
          4.04854232931351
rdh_sum =
          1.68267331427858
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 37
dh =
          4.01068682931351
rdh_sum =
          2.00318074015032
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 38
dh =
          3.97283082931351
rdh_sum =
          2.31839816087574
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 39
dh =
          3.93497482931351
rdh_sum =
          2.62834942512647
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 40
dh =
          3.89711882931351
rdh_sum =
          2.93305906124232
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 41
dh =
          3.85926282931351
rdh_sum =
          3.23255227406553
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 42
dh =
          3.82140682931351
rdh_sum =
           3.5268549416878
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 43
dh =
          3.78355132931351
rdh_sum =
          3.81599368013784
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 44
dh =
          3.74660082931351
rdh_sum =
          4.10011818245487
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 45
dh =
          3.71146032931351
rdh_sum =
           4.3794986850822
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 46
dh =
          3.67722582931351
rdh_sum =
           4.6542810892491
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 47
dh =
          3.64299132931351
rdh_sum =
            4.924489166909
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 48
dh =
          3.60875632931351
rdh_sum =
          5.19014710656527
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 49
dh =
          3.57452132931351
rdh_sum =
          5.45127964399068
ans =
```

```
Berm Factor Calculation: Iteration 4, Profile Segment: 50
dh =
          3.54028632931351
rdh_sum =
          5.70791199263286
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 51
dh =
          3.50605132931351
rdh_sum =
           5.960069840953
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 52
dh =
          3.47181632931351
rdh_sum =
          6.20777934971427
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 53
dh =
          3.43758182931351
rdh_sum =
           6.4510672136025
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 54
dh =
          3.40334732931351
rdh_sum =
          6.68996052885288
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 55
dh =
          3.36911232931351
rdh_sum =
          6.92448679197281
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 56
dh =
          3.34018382931351
rdh_sum =
          7.15534473042837
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 57
dh =
          3.31656182931351
rdh_sum =
          7.38322227554551
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 58
dh =
          3.29293982931351
rdh_sum =
          7.60813310254311
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 59
dh =
          3.26931782931351
rdh_sum =
          7.83009103572924
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 60
dh =
          3.24569582931351
rdh_sum =
          8.04911004780645
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 61
dh =
          3.22207382931351
rdh_sum =
          8.26520425916959
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 62
dh =
          3.19845182931351
rdh_sum =
          8.47838793719619
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 63
dh =
          3.17482932931351
rdh_sum =
          8.68867543438173
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 64
dh =
          3.15120682931351
rdh_sum =
           8.8960813105302
ans =
```

```
Berm Factor Calculation: Iteration 4, Profile Segment: 65
dh =
        3.12758482931351
rdh_sum =
        9.10062033078974
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 66
dh =
        3.10396282931351
rdh_sum =
        9.30230734323149
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 67
dh =
        3.08034082931351
rdh_sum =
        9.50115733925113
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 68
dh =
        3.03570482931351
rdh_sum =
        9.69468795656988
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 88
dh =
        0.98227582931351
rdh_sum =
        9.71625537312226
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 89
dh =
        1.03286432931351
rdh_sum =
        9.74008323016519
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 90
dh =
        1.08345282931351
rdh_sum =
         9.7662812759583
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 91
dh =
        1.13404082931351
rdh_sum =
        9.79495868743633
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 92
dh =
        1.18462932931351
rdh_sum =
        9.82622411909927
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 93
dh =
        1.23521782931351
rdh_sum =
        9.86018560499294
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 94
dh =
        1.28580632931351
rdh_sum =
        9.89695055777596
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 95
dh =
        1.33639482931351
rdh_sum =
         9.9366257439633
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 96
dh =
        1.38698332931351
rdh_sum =
        9.97931725931872
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 97
dh =
        1.43757182931351
rdh_sum =
        10.0251305044017
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 98
dh =
        1.48815982931351
rdh_sum =
        10.0741701278713
ans =
```

```
Berm Factor Calculation: Iteration 4, Profile Segment: 99
dh =
          1.53874832931351
rdh_sum =
          10.1265400985462
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 100
dh =
          1.58933682931351
rdh_sum =
          10.1823435862936
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 101
dh =
          1.63992532931351
rdh_sum =
          10.2416829696226
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 102
dh =
          1.69051382931351
rdh_sum =
          10.3046598120887
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 103
dh =
          1.71211932931351
rdh_sum =
          10.3692208971279
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 104
dh =
          1.67575882931351
rdh_sum =
          10.4311263700036
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 105
dh =
          1.61041532931351
rdh_sum =
          10.4883907490733
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 106
dh =
          1.54507232931351
rdh_sum =
          10.5411843126416
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 107
dh =
          1.47972882931351
rdh_sum =
          10.5896789897535
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 108
dh =
          1.41438532931351
rdh_sum =
           10.634048397365
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 109
dh =
          1.34904182931351
rdh_sum =
          10.6744677387184
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 110
dh =
          1.28369832931351
rdh_sum =
          10.7111137359718
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 111
dh =
          1.21835532931351
rdh_sum =
          10.7441645890685
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 112
dh =
          1.15301182931351
rdh_sum =
          10.7737998253717
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 113
dh =
          1.08766832931351
rdh_sum =
           10.800200313842
ans =
```

```
Berm Factor Calculation: Iteration 4, Profile Segment: 114
dh =
          1.02232482931351
rdh_sum =
          10.8235481672951
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 115
dh =
          0.967712329313509
rdh_sum =
          10.8444852638338
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 116
dh =
          0.934562329313509
rdh_sum =
          10.8640217417262
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 117
dh =
          0.91214332931351
rdh_sum =
          10.8826379409497
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 118
dh =
          0.889724329313509
rdh_sum =
          10.9003556516786
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 119
dh =
          0.867305329313508
rdh_sum =
          10.9171967047576
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 120
dh =
          0.844886329313509
rdh_sum =
          10.9331829707141
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 121
dh =
          0.822467329313509
rdh_sum =
          10.9483363587682
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 122
dh =
          0.80004832931351
rdh_sum =
          10.9626788158405
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 123
dh =
          0.777629329313509
rdh_sum =
          10.9762323255591
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 124
dh =
          0.755209829313509
rdh_sum =
          10.9890188904057
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 125
dh =
          0.732790329313509
rdh_sum =
          11.0010605654208
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 126
dh =
          0.710371329313508
rdh_sum =
          11.0123794552374
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 127
dh =
          0.691291829313508
rdh_sum =
          11.0231006469349
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 128
dh =
          0.67889132931351
rdh_sum =
          11.0334419712337
ans =
```

```
Berm Factor Calculation: Iteration 4, Profile Segment: 129
dh =
        0.669829829313509
rdh_sum =
        11.0435100003683
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 130
dh =
        0.660768329313509
rdh_sum =
        11.0533083573869
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 131
dh =
        0.651707329313508
rdh_sum =
        11.0628406819117
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 132
dh =
        0.642645829313508
rdh_sum =
        11.0721105861723
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 133
dh =
        0.633584329313509
rdh_sum =
        11.0811216991189
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 134
dh =
        0.62452332931351
rdh_sum =
        11.0898776655947
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 135
dh =
        0.615461829313508
rdh_sum =
        11.0983821041707
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 136
dh =
        0.606400329313509
rdh_sum =
         11.106638649458
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 137
dh =
        0.597338829313509
rdh_sum =
        11.1146509379004
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 138
dh =
        0.604589329313509
rdh_sum =
        11.1228583760436
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 139
dh =
        0.628151829313508
rdh_sum =
        11.1317160806177
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 140
dh =
        0.651714329313508
rdh_sum =
        11.1412486092642
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 141
dh =
        0.675276829313509
rdh_sum =
        11.1514804858827
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 142
dh =
        0.698838829313511
rdh_sum =
        11.1624361837851
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 143
dh =
        0.722401329313509
rdh_sum =
        11.1741401708112
ans =
```

```
Berm Factor Calculation: Iteration 4, Profile Segment: 144
dh =
        0.745963829313508
rdh_sum =
         11.1866168622854
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 145
dh =
        0.769526329313509
rdh_sum =
         11.199890634896
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 146
dh =
        0.793088829313509
rdh_sum =
         11.2139858254762
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 147
dh =
        0.816650829313508
rdh_sum =
         11.2289267115841
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 148
dh =
        0.840213329313508
rdh_sum =
         11.2447375643841
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 149
dh =
        0.83501132931351
rdh_sum =
         11.2603542666909
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 150
dh =
        0.80104482931351
rdh_sum =
         11.2747323021676
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 151
dh =
        0.76707882931351
rdh_sum =
         11.2879221464582
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 152
dh =
        0.733112329313508
rdh_sum =
         11.2999743636841
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 153
dh =
        0.69914582931351
rdh_sum =
         11.3109396540344
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 154
dh =
        0.665179829313509
rdh_sum =
         11.3208688455127
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 155
dh =
        0.631213329313509
rdh_sum =
         11.3298128432749
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 156
dh =
        0.597246829313509
rdh_sum =
         11.3378226704693
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 157
dh =
        0.567179329313509
rdh_sum =
         11.3450482120678
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 158
dh =
        0.544908329313509
rdh_sum =
         11.351718694948
ans =
```

```
Berm Factor Calculation: Iteration 4, Profile Segment: 159
dh =
        0.526535329313509
rdh_sum =
        11.3579478566655
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 160
dh =
        0.508162329313508
rdh_sum =
        11.3637507086783
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 161
dh =
        0.48978982931351
rdh_sum =
        11.3691422863933
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 162
dh =
        0.471417329313509
rdh_sum =
        11.3741376259143
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 163
dh =
        0.453044329313508
rdh_sum =
        11.3787517652215
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 164
dh =
        0.43467182931351
rdh_sum =
        11.3829997746316
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 165
dh =
        0.416299329313508
rdh_sum =
        11.3868967250129
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 166
dh =
        0.39792632931351
rdh_sum =
        11.3904576889675
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 167
dh =
        0.379553329313509
rdh_sum =
        11.3936977590714
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 168
dh =
        0.361180829313509
rdh_sum =
        11.3966320457723
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 169
dh =
        0.34280832931351
rdh_sum =
        11.3992756598757
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 170
dh =
        0.316685829313508
rdh_sum =
        11.4015320217426
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 171
dh =
        0.282813329313509
rdh_sum =
        11.4033317935143
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 172
dh =
        0.24894082931351
rdh_sum =
        11.4047264545435
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 173
dh =
        0.215068329313509
rdh_sum =
        11.4057675260437
ans =
```

```
Berm Factor Calculation: Iteration 4, Profile Segment: 174
dh =
        0.181195829313509
rdh_sum =
        11.4065065657648
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 175
dh =
        0.14732332931351
rdh_sum =
        11.4069951626658
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 176
dh =
        0.113450829313509
rdh_sum =
        11.4072849315842
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 177
dh =
        0.0795783293135095
rdh_sum =
        11.4074275079026
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 178
dh =
        0.0457058293135102
rdh_sum =
        11.407474542213
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 179
dh =
        0.0118338293135078
rdh_sum =
        11.4074776952462
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 180
dh =
        -0.0220386706864915
rdh_sum =
        11.4074927153634
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 181
dh =
        -0.0559111706864908
rdh_sum =
        11.4075893845089
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 182
dh =
        -0.0897836706864901
rdh_sum =
        11.407838650672
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 183
dh =
        -0.123656170686489
rdh_sum =
        11.4083114401848
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 184
dh =
        -0.15752867068649
rdh_sum =
        11.4090786476562
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 185
dh =
        -0.191401170686492
rdh_sum =
        11.4102111259103
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 186
dh =
        -0.225273670686491
rdh_sum =
        11.4117796759309
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 187
dh =
        -0.25914617068649
rdh_sum =
        11.4138550368126
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 188
dh =
        -0.300954670686492
rdh_sum =
        11.4166533824819
ans =
```

```
Berm Factor Calculation: Iteration 4, Profile Segment: 189
dh =
        -0.358635670686491
rdh_sum =
         11.4206256253057
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 190
dh =
        -0.424252170686492
rdh_sum =
         11.4261814293641
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 191
dh =
        -0.489868670686491
rdh_sum =
         11.4335841176761
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 192
dh =
         -0.55548567068649
rdh_sum =
         11.4430960467459
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 193
dh =
        -0.621102670686492
rdh_sum =
         11.4549784366844
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 194
dh =
        -0.686719670686491
rdh_sum =
         11.4694912451623
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 195
dh =
        -0.752336170686492
rdh_sum =
          11.486893005968
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 196
dh =
        -0.817952670686491
rdh_sum =
         11.5074407333938
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 197
dh =
        -0.883569670686491
rdh_sum =
         11.5313897931912
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 198
dh =
         -0.94918667068649
rdh_sum =
         11.5589937166626
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 199
dh =
        -1.01480367068649
rdh_sum =
          11.590504088633
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 200
dh =
        -1.08042017068649
rdh_sum =
         11.6261703808501
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 201
dh =
        -1.13097467068649
rdh_sum =
         11.6652073955797
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 202
dh =
        -1.16646767068649
rdh_sum =
         11.7066980423705
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 203
dh =
        -1.20196067068649
rdh_sum =
         11.7507137696497
ans =
```

```
Berm Factor Calculation: Iteration 4, Profile Segment: 204
dh =
        -1.23745317068649
rdh_sum =
         11.7973255952957
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 205
dh =
        -1.27294567068649
rdh_sum =
          11.846604167724
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 206
dh =
        -1.30843867068649
rdh_sum =
         11.8986197588588
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 207
dh =
        -1.34393117068649
rdh_sum =
         11.9534421370196
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 208
dh =
        -1.37942367068649
rdh_sum =
          12.011140671227
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 209
dh =
        -1.41491667068649
rdh_sum =
         12.0717843243015
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 210
dh =
        -1.45040967068649
rdh_sum =
         12.1354415601026
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 211
dh =
        -1.48590217068649
rdh_sum =
         12.2021803290023
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 228
dh =
        -2.68392767068649
rdh_sum =
         12.4088872052807
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 229
dh =
        -2.74339617068649
rdh_sum =
         12.6241272281632
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 230
dh =
        -2.79876017068649
rdh_sum =
         12.8474234871855
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 231
dh =
        -2.85412417068649
rdh_sum =
         13.0788808933223
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 232
dh =
        -2.90948817068649
rdh_sum =
         13.3186012632866
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 233
dh =
        -2.96485267068649
rdh_sum =
         13.5666833568769
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 234
dh =
        -3.02021717068649
rdh_sum =
         13.8232226893559
ans =
```

```
Berm Factor Calculation: Iteration 4, Profile Segment: 235
dh =
        -3.07558117068649
rdh_sum =
        14.0883114917861
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 236
dh =
        -3.13094517068649
rdh_sum =
         14.362038829688
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 237
dh =
        -3.18630917068649
rdh_sum =
        14.6444904933205
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 238
dh =
        -3.24167317068649
rdh_sum =
        14.9357489651538
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 239
dh =
        -3.29703767068649
rdh_sum =
        15.2358934691939
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 240
dh =
        -3.35240217068649
rdh_sum =
        15.5449997811192
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 241
dh =
        -3.40776617068649
rdh_sum =
        15.8631401968125
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 242
dh =
        -3.46313017068649
rdh_sum =
        16.1903836675147
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 243
dh =
        -3.51849417068649
rdh_sum =
        16.5267956930845
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 244
dh =
        -3.55666817068649
rdh_sum =
        16.8695658608907
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 245
dh =
        -3.56046167068649
rdh_sum =
        17.2129694292121
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 246
dh =
        -3.54706467068649
rdh_sum =
        17.5541373547924
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 247
dh =
        -3.53366817068649
rdh_sum =
         17.893073247155
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 248
dh =
        -3.52027167068649
rdh_sum =
        18.2297806818706
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 249
dh =
        -3.50687467068649
rdh_sum =
        18.5642632010112
ans =
```

```
Berm Factor Calculation: Iteration 4, Profile Segment: 250
dh =
          -3.49347767068649
rdh_sum =
           18.8965244792851
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 251
dh =
          -3.48008117068649
rdh_sum =
           19.2265683234069
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 252
dh =
          -3.46668467068649
rdh_sum =
           19.5543985063475
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 253
dh =
          -3.45328767068649
rdh_sum =
           19.8800187678146
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 254
dh =
          -3.43989067068649
rdh_sum =
           20.2034329792704
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 255
dh =
          -3.42649417068649
rdh_sum =
           20.5246451432679
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 260
dh =
          -4.12631567068649
rdh_sum =
           20.9650185039651
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 261
dh =
          -4.18136067068649
rdh_sum =
           21.4150132467213
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 262
dh =
          -4.23640567068649
rdh_sum =
           21.8746481129587
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 263
dh =
          -4.29145117068649
rdh_sum =
           22.3439383188481
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 264
dh =
          -4.34649667068649
rdh_sum =
           22.8228953742929
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 265
dh =
          -4.40154167068649
rdh_sum =
           23.3115270781969
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 266
dh =
          -4.45658667068649
rdh_sum =
            23.809837691273
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 267
dh =
          -4.51163167068649
rdh_sum =
           24.3178278466849
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 268
dh =
          -4.56667717068649
rdh_sum =
            24.835494637682
ans =
```

```
Berm Factor Calculation: Iteration 4, Profile Segment: 269
dh =
        -4.61806067068649
rdh_sum =
        25.3621884060423
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 270
dh =
        -4.66578167068649
rdh_sum =
        25.8972579839437
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 271
dh =
        -4.71350317068649
rdh_sum =
        26.4406935801828
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 272
dh =
        -4.76122467068649
rdh_sum =
        26.9924829590698
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 273
dh =
        -4.80894567068649
rdh_sum =
        27.5526114443879
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 274
dh =
        -4.85666667068649
rdh_sum =
        28.1210620984606
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 275
dh =
        -4.90438817068649
rdh_sum =
         28.697815726213
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 276
dh =
        -4.95210967068649
rdh_sum =
        29.2828507063561
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 277
dh =
        -4.99983067068649
rdh_sum =
        29.8761429983833
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 278
dh =
        -5.04755217068649
rdh_sum =
        30.4776664087547
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 279
dh =
        -5.09527367068649
rdh_sum =
        31.0873923386006
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 280
dh =
        -5.13723517068649
rdh_sum =
        31.7043052793845
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 281
dh =
        -5.17343767068649
rdh_sum =
        32.3273984468576
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 282
dh =
        -5.20964017068649
rdh_sum =
        32.9566518851851
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 283
dh =
        -5.24584217068649
rdh_sum =
        33.5920445551886
ans =
```

```
Berm Factor Calculation: Iteration 4, Profile Segment: 284
dh =
        -5.28204467068649
rdh_sum =
        34.2335545919792
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 285
dh =
        -5.31824717068649
rdh_sum =
        34.8811590539839
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 286
dh =
        -5.35444967068649
rdh_sum =
        35.5348340116027
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 287
dh =
        -5.39065217068649
rdh_sum =
        36.1945545510885
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 288
dh =
        -5.42685417068649
rdh_sum =
        36.8602946956298
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 289
dh =
        -5.46305667068649
rdh_sum =
        37.5320276587945
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 290
dh =
        -5.49925917068649
rdh_sum =
         38.209725599276
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 291
dh =
        -5.53546117068649
rdh_sum =
         38.8933596269444
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 292
dh =
        -5.57166367068649
rdh_sum =
        39.5829000532821
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 293
dh =
        -5.60786617068649
rdh_sum =
        40.2783161500409
ans =
!------- End Berm Factor Calculation, Iter: 4 ---------!
berm_width =
    223
rB =
        0.693590466127094
rdh_mean =
        0.180620251793905
gamma_berm =
        0.431686018506634
gamma_berm =
                      0.6
slope =
        0.173124934853039
Irb =
        2.11505909610844
gamma_berm =
                      0.6
gamma_perm =
     1
gamma_beta =
     1
gamma_rough =
                      0.8
gamma =
                     0.48
ans =
!!! - - Iribaren number:   1.27 is in the valid range (0.5-10), TAW RECOMMENDED - - !!!
ans =
!!! - - slope: 1:5.8 V:H is in the valid range (1:8 - 1:1), TAW RECOMMENDED - - !!!
R2_new =
```

```
              9.40561771579483
!   Berm_width is greater than 1/4 wave length
!   Runup will be weighted average with foreshore calculation assuming depth limited wave height on berm
fore_H0 =
              3.65043666
upper_slope =
        0.0902230000000015
upper_slope =
        0.097973153145544
upper_slope =
        0.10462027918924
upper_slope =
        0.110384280321987
upper_slope =
        0.11543007615445
upper_slope =
        0.119884077115868
upper_slope =
        0.123844684148631
upper_slope =
        0.127389481849192
upper_slope =
        0.130580728139701
upper_slope =
        0.133468851872305
upper_slope =
        0.136094998812992
upper_slope =
        0.138493305381693
upper_slope =
        0.137466373101177
w2 =
        0.0472655588251012
w1 =
        0.952734441174899
R2_new =
        9.39885567394788
R2del =
        0.466476328149648
Z2 =
        18.4693545032614
ans =
!---------------- STARTING ITERATION 5 ----------------!
Ztoe =
                0.94741
toe_sta =
        12.5371395555078
top_sta =
        339.222775825026
Z2 =
        18.4693545032614
H0 =
                5.2342
Tp =
                13.5919
T0 =
        12.3562727272727
R2 =
        9.39885567394788
Z2 =
        18.4693545032614
top_sta =
        339.222775825026
Lslope =
        326.685636269519
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 32
dh =
        4.19996582931351
rdh_sum =
        0.34729103989654
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 33
dh =
        4.16210982931351
rdh_sum =
        0.689183131478468
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 34
dh =
        4.12425382931351
rdh_sum =
        1.02569668069317
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 35
dh =
        4.08639782931351
rdh_sum =
        1.3568527876611
ans =
```

```
Berm Factor Calculation: Iteration 5, Profile Segment: 36
dh =
        4.04854232931351
rdh_sum =
        1.68267331427858
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 37
dh =
        4.01068682931351
rdh_sum =
        2.00318074015032
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 38
dh =
        3.97283082931351
rdh_sum =
        2.31839816087574
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 39
dh =
        3.93497482931351
rdh_sum =
        2.62834942512647
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 40
dh =
        3.89711882931351
rdh_sum =
        2.93305906124232
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 41
dh =
        3.85926282931351
rdh_sum =
        3.23255227406553
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 42
dh =
        3.82140682931351
rdh_sum =
         3.5268549416878
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 43
dh =
        3.78355132931351
rdh_sum =
        3.81599368013784
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 44
dh =
        3.74660082931351
rdh_sum =
        4.10011818245487
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 45
dh =
        3.71146032931351
rdh_sum =
         4.3794986850822
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 46
dh =
        3.67722582931351
rdh_sum =
         4.6542810892491
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 47
dh =
        3.64299132931351
rdh_sum =
          4.924489166909
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 48
dh =
        3.60875632931351
rdh_sum =
        5.19014710656527
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 49
dh =
        3.57452132931351
rdh_sum =
        5.45127964399068
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 50
dh =
        3.54028632931351
rdh_sum =
        5.70791199263286
ans =
```

```
Berm Factor Calculation: Iteration 5, Profile Segment: 51
dh =
          3.50605132931351
rdh_sum =
            5.960069840953
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 52
dh =
          3.47181632931351
rdh_sum =
          6.20777934971427
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 53
dh =
          3.43758182931351
rdh_sum =
           6.4510672136025
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 54
dh =
          3.40334732931351
rdh_sum =
          6.68996052885288
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 55
dh =
          3.36911232931351
rdh_sum =
          6.92448679197281
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 56
dh =
          3.34018382931351
rdh_sum =
          7.15534473042837
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 57
dh =
          3.31656182931351
rdh_sum =
          7.38322227554551
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 58
dh =
          3.29293982931351
rdh_sum =
          7.60813310254311
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 59
dh =
          3.26931782931351
rdh_sum =
          7.83009103572924
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 60
dh =
          3.24569582931351
rdh_sum =
          8.04911004780645
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 61
dh =
          3.22207382931351
rdh_sum =
          8.26520425916959
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 62
dh =
          3.19845182931351
rdh_sum =
          8.47838793719619
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 63
dh =
          3.17482932931351
rdh_sum =
          8.68867543438173
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 64
dh =
          3.15120682931351
rdh_sum =
           8.8960813105302
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 65
dh =
          3.12758482931351
rdh_sum =
          9.10062033078974
ans =
```

```
Berm Factor Calculation: Iteration 5, Profile Segment: 66
dh =
          3.10396282931351
rdh_sum =
          9.30230734323149
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 67
dh =
          3.08034082931351
rdh_sum =
          9.50115733925113
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 68
dh =
          3.03570482931351
rdh_sum =
          9.69468795656988
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 88
dh =
          0.98227582931351
rdh_sum =
          9.71625537312226
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 89
dh =
          1.03286432931351
rdh_sum =
          9.74008323016519
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 90
dh =
          1.08345282931351
rdh_sum =
           9.7662812759583
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 91
dh =
          1.13404082931351
rdh_sum =
          9.79495868743633
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 92
dh =
          1.18462932931351
rdh_sum =
          9.82622411909927
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 93
dh =
          1.23521782931351
rdh_sum =
          9.86018560499294
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 94
dh =
          1.28580632931351
rdh_sum =
          9.89695055777596
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 95
dh =
          1.33639482931351
rdh_sum =
           9.9366257439633
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 96
dh =
          1.38698332931351
rdh_sum =
          9.97931725931872
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 97
dh =
          1.43757182931351
rdh_sum =
          10.0251305044017
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 98
dh =
          1.48815982931351
rdh_sum =
          10.0741701278713
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 99
dh =
          1.53874832931351
rdh_sum =
          10.1265400985462
ans =
```

```
Berm Factor Calculation: Iteration 5, Profile Segment: 100
dh =
        1.58933682931351
rdh_sum =
        10.1823435862936
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 101
dh =
        1.63992532931351
rdh_sum =
        10.2416829696226
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 102
dh =
        1.69051382931351
rdh_sum =
        10.3046598120887
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 103
dh =
        1.71211932931351
rdh_sum =
        10.3692208971279
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 104
dh =
        1.67575882931351
rdh_sum =
        10.4311263700036
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 105
dh =
        1.61041532931351
rdh_sum =
        10.4883907490733
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 106
dh =
        1.54507232931351
rdh_sum =
        10.5411843126416
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 107
dh =
        1.47972882931351
rdh_sum =
        10.5896789897535
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 108
dh =
        1.41438532931351
rdh_sum =
         10.634048397365
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 109
dh =
        1.34904182931351
rdh_sum =
        10.6744677387184
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 110
dh =
        1.28369832931351
rdh_sum =
        10.7111137359718
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 111
dh =
        1.21835532931351
rdh_sum =
        10.7441645890685
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 112
dh =
        1.15301182931351
rdh_sum =
        10.7737998253717
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 113
dh =
        1.08766832931351
rdh_sum =
         10.800200313842
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 114
dh =
        1.02232482931351
rdh_sum =
        10.8235481672951
ans =
```

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Berm Factor Calculation: Iteration 5, Profile Segment: 115
dh =
        0.967712329313509
rdh_sum =
        10.8444852638338
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 116
dh =
        0.934562329313509
rdh_sum =
        10.8640217417262
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 117
dh =
        0.91214332931351
rdh_sum =
        10.8826379409497
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 118
dh =
        0.889724329313509
rdh_sum =
        10.9003556516786
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 119
dh =
        0.867305329313508
rdh_sum =
        10.9171967047576
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 120
dh =
        0.844886329313509
rdh_sum =
        10.9331829707141
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 121
dh =
        0.822467329313509
rdh_sum =
        10.9483363587682
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 122
dh =
        0.80004832931351
rdh_sum =
        10.9626788158405
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 123
dh =
        0.777629329313509
rdh_sum =
        10.9762323255591
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 124
dh =
        0.755209829313509
rdh_sum =
        10.9890188904057
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 125
dh =
        0.732790329313509
rdh_sum =
        11.0010605654208
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 126
dh =
        0.710371329313508
rdh_sum =
        11.0123794552374
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 127
dh =
        0.691291829313508
rdh_sum =
        11.0231006469349
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 128
dh =
        0.67889132931351
rdh_sum =
        11.0334419712337
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 129
dh =
        0.669829829313509
rdh_sum =
        11.0435100003683
ans =
```

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Berm Factor Calculation: Iteration 5, Profile Segment: 130
dh =
        0.660768329313509
rdh_sum =
        11.0533083573869
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 131
dh =
        0.651707329313508
rdh_sum =
        11.0628406819117
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 132
dh =
        0.642645829313508
rdh_sum =
        11.0721105861723
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 133
dh =
        0.633584329313509
rdh_sum =
        11.0811216991189
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 134
dh =
        0.62452332931351
rdh_sum =
        11.0898776655947
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 135
dh =
        0.615461829313508
rdh_sum =
        11.0983821041707
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 136
dh =
        0.606400329313509
rdh_sum =
         11.106638649458
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 137
dh =
        0.597338829313509
rdh_sum =
        11.1146509379004
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 138
dh =
        0.604589329313509
rdh_sum =
        11.1228583760436
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 139
dh =
        0.628151829313508
rdh_sum =
        11.1317160806177
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 140
dh =
        0.651714329313508
rdh_sum =
        11.1412486092642
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 141
dh =
        0.675276829313509
rdh_sum =
        11.1514804858827
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 142
dh =
        0.698838829313511
rdh_sum =
        11.1624361837851
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 143
dh =
        0.722401329313509
rdh_sum =
        11.1741401708112
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 144
dh =
        0.745963829313508
rdh_sum =
        11.1866168622854
ans =
```

```
Berm Factor Calculation: Iteration 5, Profile Segment: 145
dh =
        0.769526329313509
rdh_sum =
         11.199890634896
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 146
dh =
        0.793088829313509
rdh_sum =
         11.2139858254762
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 147
dh =
        0.816650829313508
rdh_sum =
         11.2289267115841
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 148
dh =
        0.840213329313508
rdh_sum =
         11.2447375643841
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 149
dh =
        0.83501132931351
rdh_sum =
         11.2603542666909
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 150
dh =
        0.80104482931351
rdh_sum =
         11.2747323021676
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 151
dh =
        0.76707882931351
rdh_sum =
         11.2879221464582
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 152
dh =
        0.733112329313508
rdh_sum =
         11.2999743636841
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 153
dh =
        0.69914582931351
rdh_sum =
         11.3109396540344
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 154
dh =
        0.665179829313509
rdh_sum =
         11.3208688455127
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 155
dh =
        0.631213329313509
rdh_sum =
         11.3298128432749
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 156
dh =
        0.597246829313509
rdh_sum =
         11.3378226704693
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 157
dh =
        0.567179329313509
rdh_sum =
         11.3450482120678
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 158
dh =
        0.544908329313509
rdh_sum =
         11.351718694948
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 159
dh =
        0.526535329313509
rdh_sum =
         11.3579478566655
ans =
```

```
Berm Factor Calculation: Iteration 5, Profile Segment: 160
dh =
        0.508162329313508
rdh_sum =
        11.3637507086783
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 161
dh =
        0.48978982931351
rdh_sum =
        11.3691422863933
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 162
dh =
        0.471417329313509
rdh_sum =
        11.3741376259143
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 163
dh =
        0.453044329313508
rdh_sum =
        11.3787517652215
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 164
dh =
        0.43467182931351
rdh_sum =
        11.3829997746316
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 165
dh =
        0.416299329313508
rdh_sum =
        11.3868967250129
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 166
dh =
        0.39792632931351
rdh_sum =
        11.3904576889675
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 167
dh =
        0.379553329313509
rdh_sum =
        11.3936977590714
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 168
dh =
        0.361180829313509
rdh_sum =
        11.3966320457723
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 169
dh =
        0.34280832931351
rdh_sum =
        11.3992756598757
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 170
dh =
        0.316685829313508
rdh_sum =
        11.4015320217426
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 171
dh =
        0.282813329313509
rdh_sum =
        11.4033317935143
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 172
dh =
        0.24894082931351
rdh_sum =
        11.4047264545435
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 173
dh =
        0.215068329313509
rdh_sum =
        11.4057675260437
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 174
dh =
        0.181195829313509
rdh_sum =
        11.4065065657648
ans =
```

```
Berm Factor Calculation: Iteration 5, Profile Segment: 175
dh =
         0.14732332931351
rdh_sum =
         11.4069951626658
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 176
dh =
         0.113450829313509
rdh_sum =
         11.4072849315842
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 177
dh =
         0.0795783293135095
rdh_sum =
         11.4074275079026
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 178
dh =
         0.0457058293135102
rdh_sum =
          11.407474542213
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 179
dh =
         0.0118338293135078
rdh_sum =
         11.4074776952462
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 180
dh =
        -0.0220386706864915
rdh_sum =
          11.407491261436
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 181
dh =
        -0.0559111706864908
rdh_sum =
         11.4075785733664
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 182
dh =
        -0.0897836706864901
rdh_sum =
         11.4078037125971
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 183
dh =
        -0.123656170686489
rdh_sum =
         11.4082307430205
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 184
dh =
         -0.15752867068649
rdh_sum =
         11.4089237026491
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 185
dh =
        -0.191401170686492
rdh_sum =
         11.4099465954073
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 186
dh =
        -0.225273670686491
rdh_sum =
          11.411363382927
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 187
dh =
         -0.25914617068649
rdh_sum =
         11.4132379763483
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 188
dh =
        -0.300954670686492
rdh_sum =
         11.4157656731169
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 189
dh =
        -0.358635670686491
rdh_sum =
         11.4193538669574
ans =
```

```
Berm Factor Calculation: Iteration 5, Profile Segment: 190
dh =
        -0.424252170686492
rdh_sum =
         11.4243727757424
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 191
dh =
        -0.489868670686491
rdh_sum =
         11.4310604923322
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 192
dh =
        -0.55548567068649
rdh_sum =
         11.4396543222933
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 193
dh =
        -0.621102670686492
rdh_sum =
          11.450390642501
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 194
dh =
        -0.686719670686491
rdh_sum =
         11.4635047992467
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 195
dh =
        -0.752336170686492
rdh_sum =
         11.4792309742389
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 196
dh =
        -0.817952670686491
rdh_sum =
         11.4978021099924
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 197
dh =
        -0.883569670686491
rdh_sum =
         11.5194498048777
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 198
dh =
        -0.94918667068649
rdh_sum =
         11.5444041565819
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 199
dh =
        -1.01480367068649
rdh_sum =
         11.5728936722192
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 200
dh =
        -1.08042017068649
rdh_sum =
          11.605145128889
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 201
dh =
        -1.13097467068649
rdh_sum =
         11.6404485383956
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 202
dh =
        -1.16646767068649
rdh_sum =
         11.6779739770494
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 203
dh =
        -1.20196067068649
rdh_sum =
         11.7177865352928
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 204
dh =
        -1.23745317068649
rdh_sum =
         11.7599509480839
ans =
```

```
Berm Factor Calculation: Iteration 5, Profile Segment: 205
dh =
        -1.27294567068649
rdh_sum =
        11.8045316511427
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 206
dh =
        -1.30843867068649
rdh_sum =
        11.8515927755131
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 207
dh =
        -1.34393117068649
rdh_sum =
        11.9011980332608
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 208
dh =
        -1.37942367068649
rdh_sum =
        11.9534108128823
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 209
dh =
        -1.41491667068649
rdh_sum =
        12.0082941739551
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 210
dh =
        -1.45040967068649
rdh_sum =
        12.0659107639011
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 211
dh =
        -1.48590217068649
rdh_sum =
        12.1263228056397
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 228
dh =
        -2.68392767068649
rdh_sum =
        12.3143869191639
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 229
dh =
        -2.74339617068649
rdh_sum =
        12.5102795385177
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 230
dh =
        -2.79876017068649
rdh_sum =
        12.7135684070638
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 231
dh =
        -2.85412417068649
rdh_sum =
        12.9243551322203
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 232
dh =
        -2.90948817068649
rdh_sum =
        13.1427387537974
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 233
dh =
        -2.96485267068649
rdh_sum =
        13.3688157799887
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 234
dh =
        -3.02021717068649
rdh_sum =
        13.6026800162026
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 235
dh =
        -3.07558117068649
rdh_sum =
        13.8444225295503
ans =
```

```
Berm Factor Calculation: Iteration 5, Profile Segment: 236
dh =
        -3.13094517068649
rdh_sum =
        14.0941317591689
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 237
dh =
        -3.18630917068649
rdh_sum =
        14.3518934160285
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 238
dh =
        -3.24167317068649
rdh_sum =
        14.6177904535812
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 239
dh =
        -3.29703767068649
rdh_sum =
        14.8919031139032
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 240
dh =
        -3.35240217068649
rdh_sum =
        15.1743087525147
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 241
dh =
        -3.40776617068649
rdh_sum =
        15.4650818090956
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 242
dh =
        -3.46313017068649
rdh_sum =
        15.7642939324896
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 243
dh =
        -3.51849417068649
rdh_sum =
        16.0720138816195
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 244
dh =
        -3.55666817068649
rdh_sum =
        16.3856385861301
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 245
dh =
        -3.56046167068649
rdh_sum =
        16.6998517426384
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 246
dh =
        -3.54706467068649
rdh_sum =
        17.0119880830628
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 247
dh =
        -3.53366817068649
rdh_sum =
        17.3220514517941
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 248
dh =
        -3.52027167068649
rdh_sum =
        17.6300456572078
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 249
dh =
        -3.50687467068649
rdh_sum =
        17.9359744721559
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 250
dh =
        -3.49347767068649
rdh_sum =
        18.2398417882053
ans =
```

```
Berm Factor Calculation: Iteration 5, Profile Segment: 251
dh =
          -3.48008117068649
rdh_sum =
          18.5416516149786
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 252
dh =
          -3.46668467068649
rdh_sum =
          18.8414079263413
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 253
dh =
          -3.45328767068649
rdh_sum =
          19.1391146609146
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 254
dh =
          -3.43989067068649
rdh_sum =
          19.4347758751368
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 255
dh =
          -3.42649417068649
rdh_sum =
           19.728395742576
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 260
dh =
          -4.12631567068649
rdh_sum =
          20.1331977768471
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 261
dh =
          -4.18136067068649
rdh_sum =
          20.5470465936333
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 262
dh =
          -4.23640567068649
rdh_sum =
          20.9699713560419
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 263
dh =
          -4.29145117068649
rdh_sum =
           21.401998237662
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 264
dh =
          -4.34649667068649
rdh_sum =
          21.8431502485473
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 265
dh =
          -4.40154167068649
rdh_sum =
          22.2934472265914
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 266
dh =
          -4.45658667068649
rdh_sum =
          22.7529059968049
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 267
dh =
          -4.51163167068649
rdh_sum =
          23.2215402828325
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 268
dh =
          -4.56667717068649
rdh_sum =
          23.6993607857886
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 269
dh =
          -4.61806067068649
rdh_sum =
          24.1857632140023
ans =
```

```
Berm Factor Calculation: Iteration 5, Profile Segment: 270
dh =
        -4.66578167068649
rdh_sum =
        24.6801395133842
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 271
dh =
        -4.71350317068649
rdh_sum =
        25.1824911983036
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 272
dh =
        -4.76122467068649
rdh_sum =
        25.6928176704218
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 273
dh =
        -4.80894567068649
rdh_sum =
        26.2111162188691
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 274
dh =
        -4.85666667068649
rdh_sum =
        26.7373821880468
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 275
dh =
        -4.90438817068649
rdh_sum =
        27.2716089786161
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 276
dh =
        -4.95210967068649
rdh_sum =
        27.8137878822607
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 277
dh =
        -4.99983067068649
rdh_sum =
        28.3639080842675
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 278
dh =
        -5.04755217068649
rdh_sum =
        28.9219569158277
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 279
dh =
        -5.09527367068649
rdh_sum =
        29.4879196075873
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 280
dh =
        -5.13723517068649
rdh_sum =
        30.0608271543961
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 281
dh =
        -5.17343767068649
rdh_sum =
        30.6397149360731
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 282
dh =
        -5.20964017068649
rdh_sum =
        31.2245714013247
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 283
dh =
        -5.24584217068649
rdh_sum =
        31.8153840427085
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 284
dh =
        -5.28204467068649
rdh_sum =
        32.4121396451614
ans =
```

```
Berm Factor Calculation: Iteration 5, Profile Segment: 285
dh =
        -5.31824717068649
rdh_sum =
        33.0148240410604
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 286
dh =
        -5.35444967068649
rdh_sum =
        33.6234221946473
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 287
dh =
        -5.39065217068649
rdh_sum =
        34.2379182042311
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 288
dh =
        -5.42685417068649
rdh_sum =
        34.8582952234105
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 289
dh =
        -5.46305667068649
rdh_sum =
         35.484535707094
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 290
dh =
        -5.49925917068649
rdh_sum =
        36.1166211702788
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 291
dh =
        -5.53546117068649
rdh_sum =
        36.7545321917781
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 292
dh =
        -5.57166367068649
rdh_sum =
        37.3982486583026
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 293
dh =
        -5.60786617068649
rdh_sum =
        38.0477495258955
ans =
!------- End Berm Factor Calculation, Iter: 5 ---------!
berm_width =
   223
rB =
        0.682613421717822
rdh_mean =
        0.170617710878455
gamma_berm =
        0.433852517710582
gamma_berm =
                     0.6
slope =
        0.168991049615736
Irb =
        2.06455561675206
gamma_berm =
                     0.6
gamma_perm =
    1
gamma_beta =
    1
gamma_rough =
                     0.8
gamma =
                    0.48
ans =
!!! - - Iribaren number:   1.24 is in the valid range (0.5-10), TAW RECOMMENDED - - !!!
ans =
!!! - - slope: 1:5.9 V:H is in the valid range (1:8 - 1:1), TAW RECOMMENDED - - !!!
R2_new =
        9.18102993901939
!   Berm_width is greater than 1/4 wave length
!   Runup will be weighted average with foreshore calculation assuming depth limited wave height on berm
fore_H0 =
              3.65043666
upper_slope =
```

```
         0.0902230000000018
upper_slope =
         0.0957742398863572
upper_slope =
         0.100747910753869
upper_slope =
         0.105229743022116
upper_slope =
         0.109289167561497
upper_slope =
         0.112983252993707
upper_slope =
         0.116359238172955
upper_slope =
         0.119456437369652
upper_slope =
         0.122308049068908
upper_slope =
         0.124942207687049
upper_slope =
         0.127382803485949
upper_slope =
         0.129650447069657
upper_slope =
         0.129107807069795
w2 =
        0.0472655588251012
w1 =
         0.952734441174899
R2_new =
          9.17992091657826
R2del =
         0.218934757369619
Z2 =
          18.2504197458918
ans =
!---------------- STARTING ITERATION 6 -----------------!
Ztoe =
                   0.94741
toe_sta =
          12.5371395555078
top_sta =
          336.796179975081
Z2 =
          18.2504197458918
H0 =
                    5.2342
Tp =
                   13.5919
T0 =
          12.3562727272727
R2 =
          9.17992091657826
Z2 =
          18.2504197458918
top_sta =
          336.796179975081
Lslope =
          324.259040419573
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 32
dh =
          4.19996582931351
rdh_sum =
          0.34729103989654
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 33
dh =
          4.16210982931351
rdh_sum =
          0.689183131478468
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 34
dh =
          4.12425382931351
rdh_sum =
          1.02569668069317
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 35
dh =
          4.08639782931351
rdh_sum =
           1.3568527876611
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 36
dh =
          4.04854232931351
rdh_sum =
          1.68267331427858
ans =
```

```
Berm Factor Calculation: Iteration 6, Profile Segment: 37
dh =
          4.01068682931351
rdh_sum =
          2.00318074015032
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 38
dh =
          3.97283082931351
rdh_sum =
          2.31839816087574
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 39
dh =
          3.93497482931351
rdh_sum =
          2.62834942512647
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 40
dh =
          3.89711882931351
rdh_sum =
          2.93305906124232
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 41
dh =
          3.85926282931351
rdh_sum =
          3.23255227406553
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 42
dh =
          3.82140682931351
rdh_sum =
           3.5268549416878
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 43
dh =
          3.78355132931351
rdh_sum =
          3.81599368013784
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 44
dh =
          3.74660082931351
rdh_sum =
          4.10011818245487
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 45
dh =
          3.71146032931351
rdh_sum =
           4.3794986850822
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 46
dh =
          3.67722582931351
rdh_sum =
           4.6542810892491
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 47
dh =
          3.64299132931351
rdh_sum =
            4.924489166909
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 48
dh =
          3.60875632931351
rdh_sum =
          5.19014710656527
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 49
dh =
          3.57452132931351
rdh_sum =
          5.45127964399068
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 50
dh =
          3.54028632931351
rdh_sum =
          5.70791199263286
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 51
dh =
          3.50605132931351
rdh_sum =
           5.960069840953
ans =
```

```
Berm Factor Calculation: Iteration 6, Profile Segment: 52
dh =
        3.47181632931351
rdh_sum =
        6.20777934971427
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 53
dh =
        3.43758182931351
rdh_sum =
         6.4510672136025
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 54
dh =
        3.40334732931351
rdh_sum =
        6.68996052885288
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 55
dh =
        3.36911232931351
rdh_sum =
        6.92448679197281
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 56
dh =
        3.34018382931351
rdh_sum =
        7.15534473042837
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 57
dh =
        3.31656182931351
rdh_sum =
        7.38322227554551
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 58
dh =
        3.29293982931351
rdh_sum =
        7.60813310254311
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 59
dh =
        3.26931782931351
rdh_sum =
        7.83009103572924
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 60
dh =
        3.24569582931351
rdh_sum =
        8.04911004780645
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 61
dh =
        3.22207382931351
rdh_sum =
        8.26520425916959
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 62
dh =
        3.19845182931351
rdh_sum =
        8.47838793719619
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 63
dh =
        3.17482932931351
rdh_sum =
        8.68867543438173
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 64
dh =
        3.15120682931351
rdh_sum =
         8.8960813105302
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 65
dh =
        3.12758482931351
rdh_sum =
        9.10062033078974
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 66
dh =
        3.10396282931351
rdh_sum =
        9.30230734323149
ans =
```

```
Berm Factor Calculation: Iteration 6, Profile Segment: 67
dh =
          3.08034082931351
rdh_sum =
          9.50115733925113
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 68
dh =
          3.03570482931351
rdh_sum =
          9.69468795656988
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 88
dh =
          0.98227582931351
rdh_sum =
          9.71625537312226
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 89
dh =
          1.03286432931351
rdh_sum =
          9.74008323016519
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 90
dh =
          1.08345282931351
rdh_sum =
           9.7662812759583
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 91
dh =
          1.13404082931351
rdh_sum =
          9.79495868743633
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 92
dh =
          1.18462932931351
rdh_sum =
          9.82622411909927
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 93
dh =
          1.23521782931351
rdh_sum =
          9.86018560499294
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 94
dh =
          1.28580632931351
rdh_sum =
          9.89695055777596
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 95
dh =
          1.33639482931351
rdh_sum =
            9.9366257439633
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 96
dh =
          1.38698332931351
rdh_sum =
          9.97931725931872
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 97
dh =
          1.43757182931351
rdh_sum =
          10.0251305044017
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 98
dh =
          1.48815982931351
rdh_sum =
          10.0741701278713
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 99
dh =
          1.53874832931351
rdh_sum =
          10.1265400985462
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 100
dh =
          1.58933682931351
rdh_sum =
          10.1823435862936
ans =
```

```
Berm Factor Calculation: Iteration 6, Profile Segment: 101
dh =
        1.63992532931351
rdh_sum =
        10.2416829696226
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 102
dh =
        1.69051382931351
rdh_sum =
        10.3046598120887
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 103
dh =
        1.71211932931351
rdh_sum =
        10.3692208971279
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 104
dh =
        1.67575882931351
rdh_sum =
        10.4311263700036
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 105
dh =
        1.61041532931351
rdh_sum =
        10.4883907490733
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 106
dh =
        1.54507232931351
rdh_sum =
        10.5411843126416
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 107
dh =
        1.47972882931351
rdh_sum =
        10.5896789897535
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 108
dh =
        1.41438532931351
rdh_sum =
         10.634048397365
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 109
dh =
        1.34904182931351
rdh_sum =
        10.6744677387184
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 110
dh =
        1.28369832931351
rdh_sum =
        10.7111137359718
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 111
dh =
        1.21835532931351
rdh_sum =
        10.7441645890685
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 112
dh =
        1.15301182931351
rdh_sum =
        10.7737998253717
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 113
dh =
        1.08766832931351
rdh_sum =
         10.800200313842
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 114
dh =
        1.02232482931351
rdh_sum =
        10.8235481672951
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 115
dh =
      0.96771232931351 09313509
rdh_sum =
        10.8444852638338
ans =
```

```
Berm Factor Calculation: Iteration 6, Profile Segment: 116
dh =
        0.934562329313509
rdh_sum =
        10.8640217417262
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 117
dh =
        0.91214332931351
rdh_sum =
        10.8826379409497
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 118
dh =
        0.889724329313509
rdh_sum =
        10.9003556516786
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 119
dh =
        0.867305329313508
rdh_sum =
        10.9171967047576
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 120
dh =
        0.844886329313509
rdh_sum =
        10.9331829707141
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 121
dh =
        0.822467329313509
rdh_sum =
        10.9483363587682
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 122
dh =
        0.80004832931351
rdh_sum =
        10.9626788158405
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 123
dh =
        0.777629329313509
rdh_sum =
        10.9762323255591
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 124
dh =
        0.755209829313509
rdh_sum =
        10.9890188904057
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 125
dh =
        0.732790329313509
rdh_sum =
        11.0010605654208
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 126
dh =
        0.710371329313508
rdh_sum =
        11.0123794552374
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 127
dh =
        0.691291829313508
rdh_sum =
        11.0231006469349
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 128
dh =
        0.67889132931351
rdh_sum =
        11.0334419712337
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 129
dh =
        0.669829829313509
rdh_sum =
        11.0435100003683
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 130
dh =
        0.660768329313509
rdh_sum =
        11.0533083573869
ans =
```

```
Berm Factor Calculation: Iteration 6, Profile Segment: 131
dh =
        0.651707329313508
rdh_sum =
        11.0628406819117
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 132
dh =
        0.642645829313508
rdh_sum =
        11.0721105861723
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 133
dh =
        0.633584329313509
rdh_sum =
        11.0811216991189
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 134
dh =
        0.62452332931351
rdh_sum =
        11.0898776655947
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 135
dh =
        0.615461829313508
rdh_sum =
        11.0983821041707
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 136
dh =
        0.606400329313509
rdh_sum =
        11.106638649458
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 137
dh =
        0.597338829313509
rdh_sum =
        11.1146509379004
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 138
dh =
        0.604589329313509
rdh_sum =
        11.1228583760436
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 139
dh =
        0.628151829313508
rdh_sum =
        11.1317160806177
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 140
dh =
        0.651714329313508
rdh_sum =
        11.1412486092642
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 141
dh =
        0.675276829313509
rdh_sum =
        11.1514804858827
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 142
dh =
        0.698838829313511
rdh_sum =
        11.1624361837851
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 143
dh =
        0.722401329313509
rdh_sum =
        11.1741401708112
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 144
dh =
        0.745963829313508
rdh_sum =
        11.1866168622854
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 145
dh =
        0.769526329313509
rdh_sum =
        11.199890634896
ans =
```

```
Berm Factor Calculation: Iteration 6, Profile Segment: 146
dh =
          0.793088829313509
rdh_sum =
          11.2139858254762
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 147
dh =
          0.816650829313508
rdh_sum =
          11.2289267115841
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 148
dh =
          0.840213329313508
rdh_sum =
          11.2447375643841
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 149
dh =
          0.83501132931351
rdh_sum =
          11.2603542666909
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 150
dh =
          0.80104482931351
rdh_sum =
          11.2747323021676
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 151
dh =
          0.76707882931351
rdh_sum =
          11.2879221464582
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 152
dh =
          0.733112329313508
rdh_sum =
          11.2999743636841
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 153
dh =
          0.69914582931351
rdh_sum =
          11.3109396540344
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 154
dh =
          0.665179829313509
rdh_sum =
          11.3208688455127
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 155
dh =
          0.631213329313509
rdh_sum =
          11.3298128432749
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 156
dh =
          0.597246829313509
rdh_sum =
          11.3378226704693
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 157
dh =
          0.567179329313509
rdh_sum =
          11.3450482120678
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 158
dh =
          0.544908329313509
rdh_sum =
           11.351718694948
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 159
dh =
          0.526535329313509
rdh_sum =
          11.3579478566655
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 160
dh =
          0.508162329313508
rdh_sum =
          11.3637507086783
ans =
```

```
Berm Factor Calculation: Iteration 6, Profile Segment: 161
dh =
          0.48978982931351
rdh_sum =
          11.3691422863933
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 162
dh =
          0.471417329313509
rdh_sum =
          11.3741376259143
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 163
dh =
          0.453044329313508
rdh_sum =
          11.3787517652215
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 164
dh =
          0.43467182931351
rdh_sum =
          11.3829997746316
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 165
dh =
          0.416299329313508
rdh_sum =
          11.3868967250129
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 166
dh =
          0.39792632931351
rdh_sum =
          11.3904576889675
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 167
dh =
          0.379553329313509
rdh_sum =
          11.3936977590714
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 168
dh =
          0.361180829313509
rdh_sum =
          11.3966320457723
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 169
dh =
          0.34280832931351
rdh_sum =
          11.3992756598757
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 170
dh =
          0.316685829313508
rdh_sum =
          11.4015320217426
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 171
dh =
          0.282813329313509
rdh_sum =
          11.4033317935143
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 172
dh =
          0.24894082931351
rdh_sum =
          11.4047264545435
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 173
dh =
          0.215068329313509
rdh_sum =
          11.4057675260437
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 174
dh =
          0.181195829313509
rdh_sum =
          11.4065065657648
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 175
dh =
          0.14732332931351
rdh_sum =
          11.4069951626658
ans =
```

```
Berm Factor Calculation: Iteration 6, Profile Segment: 176
dh =
        0.113450829313509
rdh_sum =
        11.4072849315842
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 177
dh =
        0.0795783293135095
rdh_sum =
        11.4074275079026
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 178
dh =
        0.0457058293135102
rdh_sum =
         11.407474542213
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 179
dh =
        0.0118338293135078
rdh_sum =
        11.4074776952462
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 180
dh =
       -0.0220386706864915
rdh_sum =
        11.4074919162376
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 181
dh =
       -0.0559111706864908
rdh_sum =
        11.4075834423597
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 182
dh =
       -0.0897836706864901
rdh_sum =
        11.4078194476219
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 183
dh =
       -0.123656170686489
rdh_sum =
        11.4082670866194
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 184
dh =
        -0.15752867068649
rdh_sum =
        11.4089934855097
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 185
dh =
       -0.191401170686492
rdh_sum =
        11.4100657329928
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 186
dh =
       -0.225273670686491
rdh_sum =
        11.4115508712957
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 187
dh =
        -0.25914617068649
rdh_sum =
        11.4135158871645
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 188
dh =
       -0.300954670686492
rdh_sum =
         11.416165481429
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 189
dh =
       -0.358635670686491
rdh_sum =
        11.4199266506178
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 190
dh =
       -0.424252170686492
rdh_sum =
        11.4251873834242
ans =
```

```
Berm Factor Calculation: Iteration 6, Profile Segment: 191
dh =
        -0.489868670686491
rdh_sum =
          11.432197142415
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 192
dh =
        -0.55548567068649
rdh_sum =
          11.4412045244113
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 193
dh =
        -0.621102670686492
rdh_sum =
          11.4524571065784
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 194
dh =
        -0.686719670686491
rdh_sum =
          11.4662013339662
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 195
dh =
        -0.752336170686492
rdh_sum =
          11.4826823734569
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 196
dh =
        -0.817952670686491
rdh_sum =
          11.5021440299978
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 197
dh =
        -0.883569670686491
rdh_sum =
          11.5248286310964
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 198
dh =
        -0.94918667068649
rdh_sum =
          11.5509768573437
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 199
dh =
        -1.01480367068649
rdh_sum =
          11.5808276428388
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 200
dh =
        -1.08042017068649
rdh_sum =
          11.6146180237916
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 201
dh =
        -1.13097467068649
rdh_sum =
          11.6516041189331
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 202
dh =
        -1.16646767068649
rdh_sum =
          11.6909167050981
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 203
dh =
        -1.20196067068649
rdh_sum =
          11.7326237507667
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 204
dh =
        -1.23745317068649
rdh_sum =
          11.7767928359888
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 205
dh =
        -1.27294567068649
rdh_sum =
          11.8234912108359
ans =
```

```
Berm Factor Calculation: Iteration 6, Profile Segment: 206
dh =
        -1.30843867068649
rdh_sum =
        11.8727857892688
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 207
dh =
        -1.34393117068649
rdh_sum =
        11.9247430290768
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 208
dh =
        -1.37942367068649
rdh_sum =
        11.9794290313219
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 209
dh =
        -1.41491667068649
rdh_sum =
        12.036909534312
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 210
dh =
        -1.45040967068649
rdh_sum =
        12.0972498260854
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 211
dh =
        -1.48590217068649
rdh_sum =
        12.1605147311005
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 228
dh =
        -2.68392767068649
rdh_sum =
        12.3570101524488
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 229
dh =
        -2.74339617068649
rdh_sum =
        12.5616545039865
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 230
dh =
        -2.79876017068649
rdh_sum =
        12.7739953739704
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 231
dh =
        -2.85412417068649
rdh_sum =
        12.9941360245647
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 232
dh =
        -2.90948817068649
rdh_sum =
        13.2221769180144
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 233
dh =
        -2.96485267068649
rdh_sum =
        13.4582157532449
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 234
dh =
        -3.02021717068649
rdh_sum =
        13.7023472871769
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 235
dh =
        -3.07558117068649
rdh_sum =
        13.9546632972889
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 236
dh =
        -3.13094517068649
rdh_sum =
        14.215252695707
ans =
```

```
Berm Factor Calculation: Iteration 6, Profile Segment: 237
dh =
        -3.18630917068649
rdh_sum =
        14.4842014246254
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 238
dh =
        -3.24167317068649
rdh_sum =
        14.7615924254556
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 239
dh =
        -3.29703767068649
rdh_sum =
        15.0475056863692
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 240
dh =
        -3.35240217068649
rdh_sum =
         15.342018060339
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 241
dh =
        -3.40776617068649
rdh_sum =
        15.6452032347743
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 242
dh =
        -3.46313017068649
rdh_sum =
        15.9571318610912
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 243
dh =
        -3.51849417068649
rdh_sum =
         16.277871452033
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 244
dh =
        -3.55666817068649
rdh_sum =
        16.6047239593907
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 245
dh =
        -3.56046167068649
rdh_sum =
        16.9321855625531
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 246
dh =
        -3.54706467068649
rdh_sum =
        17.2574974098203
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 247
dh =
        -3.53366817068649
rdh_sum =
        17.5806632531875
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 248
dh =
        -3.52027167068649
rdh_sum =
        17.9016868094547
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 249
dh =
        -3.50687467068649
rdh_sum =
        18.2205717607044
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 250
dh =
        -3.49347767068649
rdh_sum =
        18.5373219139992
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 251
dh =
        -3.48008117068649
rdh_sum =
        18.8519412007337
ans =
```

```
Berm Factor Calculation: Iteration 6, Profile Segment: 252
dh =
        -3.46668467068649
rdh_sum =
        19.1644335173445
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 253
dh =
        -3.45328767068649
rdh_sum =
        19.4748027258102
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 254
dh =
        -3.43989067068649
rdh_sum =
        19.7830528121952
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 255
dh =
        -3.42649417068649
rdh_sum =
        20.0891878859719
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 260
dh =
        -4.12631567068649
rdh_sum =
        20.5101845008982
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 261
dh =
        -4.18136067068649
rdh_sum =
        20.9404951257143
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 262
dh =
        -4.23640567068649
rdh_sum =
        21.3801444896513
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 263
dh =
        -4.29145117068649
rdh_sum =
        21.8291540932043
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 264
dh =
        -4.34649667068649
rdh_sum =
        22.2875420306123
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 265
dh =
        -4.40154167068649
rdh_sum =
        22.7553229827796
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 266
dh =
        -4.45658667068649
rdh_sum =
        23.2325083826151
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 267
dh =
        -4.51163167068649
rdh_sum =
        23.7191063258653
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 268
dh =
        -4.56667717068649
rdh_sum =
         24.215121653795
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 269
dh =
        -4.61806067068649
rdh_sum =
         24.719929201001
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 270
dh =
        -4.66578167068649
rdh_sum =
         25.232901004375
ans =
```

```
Berm Factor Calculation: Iteration 6, Profile Segment: 271
dh =
        -4.71350317068649
rdh_sum =
         25.7540336897567
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 272
dh =
        -4.76122467068649
rdh_sum =
          26.283321620843
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 273
dh =
        -4.80894567068649
rdh_sum =
         26.8207569009275
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 274
dh =
        -4.85666667068649
rdh_sum =
         27.3663295458478
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 275
dh =
        -4.90438817068649
rdh_sum =
         27.9200274862298
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 276
dh =
        -4.95210967068649
rdh_sum =
         28.4818364002843
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 277
dh =
        -4.99983067068649
rdh_sum =
         29.0517397182266
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 278
dh =
        -5.04755217068649
rdh_sum =
         29.6297188810275
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 279
dh =
        -5.09527367068649
rdh_sum =
         30.2157530908477
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 280
dh =
        -5.13723517068649
rdh_sum =
         30.8088512133328
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 281
dh =
        -5.17343767068649
rdh_sum =
         31.4080283896672
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 282
dh =
        -5.20964017068649
rdh_sum =
          32.0132693967037
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 283
dh =
        -5.24584217068649
rdh_sum =
         32.6245579971213
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 284
dh =
        -5.28204467068649
rdh_sum =
         33.2418771923757
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 285
dh =
        -5.31824717068649
rdh_sum =
         33.8652089746206
ans =
```

```
Berm Factor Calculation: Iteration 6, Profile Segment: 286
dh =
        -5.35444967068649
rdh_sum =
         34.494534413111
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 287
dh =
        -5.39065217068649
rdh_sum =
         35.1298336571085
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 288
dh =
        -5.42685417068649
rdh_sum =
         35.7710858568581
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 289
dh =
        -5.46305667068649
rdh_sum =
         36.418269413294
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 290
dh =
        -5.49925917068649
rdh_sum =
         37.0713617345558
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 291
dh =
        -5.53546117068649
rdh_sum =
         37.7303392407045
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 292
dh =
        -5.57166367068649
rdh_sum =
         38.3951776110207
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 293
dh =
        -5.60786617068649
rdh_sum =
         39.065851543728
ans =
!------- End Berm Factor Calculation, Iter: 6 ---------!
berm_width =
   223
rB =
        0.687721766250373
rdh_mean =
        0.175183190779049
gamma_berm =
        0.432755527129571
gamma_berm =
                        0.6
slope =
        0.17087866598573
Irb =
         2.08761653617829
gamma_berm =
                        0.6
gamma_perm =
     1
gamma_beta =
     1
gamma_rough =
                        0.8
gamma =
                        0.48
ans =
!!! - - Iribaren number:   1.25 is in the valid range (0.5-10), TAW RECOMMENDED - - !!!
ans =
!!! - - slope: 1:5.9 V:H is in the valid range (1:8 - 1:1), TAW RECOMMENDED - - !!!
R2_new =
         9.28358130162529
!   Berm_width is greater than 1/4 wave length
!   Runup will be weighted average with foreshore calculation assuming depth limited wave height on berm
fore_H0 =
             3.65043666
upper_slope =
        0.0902230000000019
upper_slope =
        0.0966270166774252
upper_slope =
        0.102268477025144
upper_slope =
```

```
             0.107275985552235
upper_slope =
             0.111750618938341
upper_slope =
             0.115773181935945
upper_slope =
             0.11940893706764
upper_slope =
             0.122711032343722
upper_slope =
             0.125723421600666
upper_slope =
             0.128482670289661
upper_slope =
             0.131019324313528
upper_slope =
             0.133359309371191
upper_slope =
             0.132629119120589
w2 =
         0.0472655588251012
w1 =
          0.952734441174899
R2_new =
             9.27977277880384
R2del =
          0.0998518622255808
Z2 =
             18.3502716081174
ans =
!---------------- STARTING ITERATION 7 ----------------!
Ztoe =
                   0.94741
toe_sta =
             12.5371395555078
top_sta =
          337.902902897458
Z2 =
             18.3502716081174
H0 =
                    5.2342
Tp =
                   13.5919
T0 =
             12.3562727272727
R2 =
             9.27977277880384
Z2 =
             18.3502716081174
top_sta =
          337.902902897458
Lslope =
           325.36576334195
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 32
dh =
             4.19996582931351
rdh_sum =
           0.34729103989654
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 33
dh =
             4.16210982931351
rdh_sum =
           0.689183131478468
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 34
dh =
             4.12425382931351
rdh_sum =
           1.02569668069317
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 35
dh =
             4.08639782931351
rdh_sum =
            1.3568527876611
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 36
dh =
             4.04854232931351
rdh_sum =
           1.68267331427858
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 37
dh =
             4.01068682931351
rdh_sum =
           2.00318074015032
ans =
```

```
Berm Factor Calculation: Iteration 7, Profile Segment: 38
dh =
        3.97283082931351
rdh_sum =
        2.31839816087574
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 39
dh =
        3.93497482931351
rdh_sum =
        2.62834942512647
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 40
dh =
        3.89711882931351
rdh_sum =
        2.93305906124232
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 41
dh =
        3.85926282931351
rdh_sum =
        3.23255227406553
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 42
dh =
        3.82140682931351
rdh_sum =
         3.5268549416878
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 43
dh =
        3.78355132931351
rdh_sum =
        3.81599368013784
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 44
dh =
        3.74660082931351
rdh_sum =
        4.10011818245487
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 45
dh =
        3.71146032931351
rdh_sum =
         4.3794986850822
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 46
dh =
        3.67722582931351
rdh_sum =
         4.6542810892491
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 47
dh =
        3.64299132931351
rdh_sum =
          4.924489166909
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 48
dh =
        3.60875632931351
rdh_sum =
        5.19014710656527
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 49
dh =
        3.57452132931351
rdh_sum =
        5.45127964399068
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 50
dh =
        3.54028632931351
rdh_sum =
        5.70791199263286
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 51
dh =
        3.50605132931351
rdh_sum =
         5.960069840953
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 52
dh =
        3.47181632931351
rdh_sum =
        6.20777934971427
ans =
```

```
Berm Factor Calculation: Iteration 7, Profile Segment: 53
dh =
         3.43758182931351
rdh_sum =
          6.4510672136025
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 54
dh =
         3.40334732931351
rdh_sum =
         6.68996052885288
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 55
dh =
         3.36911232931351
rdh_sum =
         6.92448679197281
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 56
dh =
         3.34018382931351
rdh_sum =
         7.15534473042837
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 57
dh =
         3.31656182931351
rdh_sum =
         7.38322227554551
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 58
dh =
         3.29293982931351
rdh_sum =
         7.60813310254311
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 59
dh =
         3.26931782931351
rdh_sum =
         7.83009103572924
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 60
dh =
         3.24569582931351
rdh_sum =
         8.04911004780645
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 61
dh =
         3.22207382931351
rdh_sum =
         8.26520425916959
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 62
dh =
         3.19845182931351
rdh_sum =
         8.47838793719619
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 63
dh =
         3.17482932931351
rdh_sum =
         8.68867543438173
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 64
dh =
         3.15120682931351
rdh_sum =
          8.8960813105302
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 65
dh =
         3.12758482931351
rdh_sum =
         9.10062033078974
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 66
dh =
         3.10396282931351
rdh_sum =
         9.30230734323149
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 67
dh =
         3.08034082931351
rdh_sum =
         9.50115733925113
ans =
```

```
Berm Factor Calculation: Iteration 7, Profile Segment: 68
dh =
        3.03570482931351
rdh_sum =
        9.69468795656988
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 88
dh =
        0.98227582931351
rdh_sum =
        9.71625537312226
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 89
dh =
        1.03286432931351
rdh_sum =
        9.74008323016519
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 90
dh =
        1.08345282931351
rdh_sum =
         9.7662812759583
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 91
dh =
        1.13404082931351
rdh_sum =
        9.79495868743633
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 92
dh =
        1.18462932931351
rdh_sum =
        9.82622411909927
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 93
dh =
        1.23521782931351
rdh_sum =
        9.86018560499294
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 94
dh =
        1.28580632931351
rdh_sum =
        9.89695055777596
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 95
dh =
        1.33639482931351
rdh_sum =
         9.9366257439633
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 96
dh =
        1.38698332931351
rdh_sum =
        9.97931725931872
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 97
dh =
        1.43757182931351
rdh_sum =
        10.0251305044017
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 98
dh =
        1.48815982931351
rdh_sum =
        10.0741701278713
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 99
dh =
        1.53874832931351
rdh_sum =
        10.1265400985462
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 100
dh =
        1.58933682931351
rdh_sum =
        10.1823435862936
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 101
dh =
        1.63992532931351
rdh_sum =
        10.2416829696226
ans =
```

```
Berm Factor Calculation: Iteration 7, Profile Segment: 102
dh =
        1.69051382931351
rdh_sum =
        10.3046598120887
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 103
dh =
        1.71211932931351
rdh_sum =
        10.3692208971279
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 104
dh =
        1.67575882931351
rdh_sum =
        10.4311263700036
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 105
dh =
        1.61041532931351
rdh_sum =
        10.4883907490733
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 106
dh =
        1.54507232931351
rdh_sum =
        10.5411843126416
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 107
dh =
        1.47972882931351
rdh_sum =
        10.5896789897535
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 108
dh =
        1.41438532931351
rdh_sum =
         10.634048397365
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 109
dh =
        1.34904182931351
rdh_sum =
        10.6744677387184
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 110
dh =
        1.28369832931351
rdh_sum =
        10.7111137359718
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 111
dh =
        1.21835532931351
rdh_sum =
        10.7441645890685
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 112
dh =
        1.15301182931351
rdh_sum =
        10.7737998253717
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 113
dh =
        1.08766832931351
rdh_sum =
         10.800200313842
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 114
dh =
        1.02232482931351
rdh_sum =
        10.8235481672951
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 115
dh =
        0.967712329313509
rdh_sum =
        10.8444852638338
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 116
dh =
        0.934562329313509
rdh_sum =
        10.8640217417262
ans =
```

```
Berm Factor Calculation: Iteration 7, Profile Segment: 117
dh =
          0.91214332931351
rdh_sum =
          10.8826379409497
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 118
dh =
          0.889724329313509
rdh_sum =
          10.9003556516786
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 119
dh =
          0.867305329313508
rdh_sum =
          10.9171967047576
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 120
dh =
          0.844886329313509
rdh_sum =
          10.9331829707141
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 121
dh =
          0.822467329313509
rdh_sum =
          10.9483363587682
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 122
dh =
          0.80004832931351
rdh_sum =
          10.9626788158405
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 123
dh =
          0.777629329313509
rdh_sum =
          10.9762323255591
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 124
dh =
          0.755209829313509
rdh_sum =
          10.9890188904057
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 125
dh =
          0.732790329313509
rdh_sum =
          11.0010605654208
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 126
dh =
          0.710371329313508
rdh_sum =
          11.0123794552374
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 127
dh =
          0.691291829313508
rdh_sum =
          11.0231006469349
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 128
dh =
          0.67889132931351
rdh_sum =
          11.0334419712337
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 129
dh =
          0.669829829313509
rdh_sum =
          11.0435100003683
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 130
dh =
          0.660768329313509
rdh_sum =
          11.0533083573869
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 131
dh =
          0.651707329313508
rdh_sum =
          11.0628406819117
ans =
```

```
Berm Factor Calculation: Iteration 7, Profile Segment: 132
dh =
        0.642645829313508
rdh_sum =
        11.0721105861723
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 133
dh =
        0.633584329313509
rdh_sum =
        11.0811216991189
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 134
dh =
        0.62452332931351
rdh_sum =
        11.0898776655947
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 135
dh =
        0.615461829313508
rdh_sum =
        11.0983821041707
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 136
dh =
        0.606400329313509
rdh_sum =
         11.106638649458
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 137
dh =
        0.597338829313509
rdh_sum =
        11.1146509379004
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 138
dh =
        0.604589329313509
rdh_sum =
        11.1228583760436
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 139
dh =
        0.628151829313508
rdh_sum =
        11.1317160806177
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 140
dh =
        0.651714329313508
rdh_sum =
        11.1412486092642
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 141
dh =
        0.675276829313509
rdh_sum =
        11.1514804858827
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 142
dh =
        0.698838829313511
rdh_sum =
        11.1624361837851
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 143
dh =
        0.722401329313509
rdh_sum =
        11.1741401708112
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 144
dh =
        0.745963829313508
rdh_sum =
        11.1866168622854
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 145
dh =
        0.769526329313509
rdh_sum =
         11.199890634896
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 146
dh =
        0.793088829313509
rdh_sum =
        11.2139858254762
ans =
```

```
Berm Factor Calculation: Iteration 7, Profile Segment: 147
dh =
        0.816650829313508
rdh_sum =
        11.2289267115841
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 148
dh =
        0.840213329313508
rdh_sum =
        11.2447375643841
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 149
dh =
        0.83501132931351
rdh_sum =
        11.2603542666909
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 150
dh =
        0.80104482931351
rdh_sum =
        11.2747323021676
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 151
dh =
        0.76707882931351
rdh_sum =
        11.2879221464582
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 152
dh =
        0.733112329313508
rdh_sum =
        11.2999743636841
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 153
dh =
        0.69914582931351
rdh_sum =
        11.3109396540344
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 154
dh =
        0.665179829313509
rdh_sum =
        11.3208688455127
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 155
dh =
        0.631213329313509
rdh_sum =
        11.3298128432749
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 156
dh =
        0.597246829313509
rdh_sum =
        11.3378226704693
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 157
dh =
        0.567179329313509
rdh_sum =
        11.3450482120678
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 158
dh =
        0.544908329313509
rdh_sum =
         11.351718694948
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 159
dh =
        0.526535329313509
rdh_sum =
        11.3579478566655
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 160
dh =
        0.508162329313508
rdh_sum =
        11.3637507086783
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 161
dh =
        0.48978982931351
rdh_sum =
        11.3691422863933
ans =
```

```
Berm Factor Calculation: Iteration 7, Profile Segment: 162
dh =
        0.471417329313509
rdh_sum =
        11.3741376259143
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 163
dh =
        0.453044329313508
rdh_sum =
        11.3787517652215
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 164
dh =
        0.43467182931351
rdh_sum =
        11.3829997746316
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 165
dh =
        0.416299329313508
rdh_sum =
        11.3868967250129
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 166
dh =
        0.39792632931351
rdh_sum =
        11.3904576889675
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 167
dh =
        0.379553329313509
rdh_sum =
        11.3936977590714
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 168
dh =
        0.361180829313509
rdh_sum =
        11.3966320457723
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 169
dh =
        0.34280832931351
rdh_sum =
        11.3992756598757
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 170
dh =
        0.316685829313508
rdh_sum =
        11.4015320217426
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 171
dh =
        0.282813329313509
rdh_sum =
        11.4033317935143
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 172
dh =
        0.24894082931351
rdh_sum =
        11.4047264545435
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 173
dh =
        0.215068329313509
rdh_sum =
        11.4057675260437
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 174
dh =
        0.181195829313509
rdh_sum =
        11.4065065657648
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 175
dh =
        0.14732332931351
rdh_sum =
        11.4069951626658
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 176
dh =
        0.113450829313509
rdh_sum =
        11.4072849315842
ans =
```

```
Berm Factor Calculation: Iteration 7, Profile Segment: 177
dh =
        0.0795783293135095
rdh_sum =
        11.4074275079026
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 178
dh =
        0.0457058293135102
rdh_sum =
        11.407474542213
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 179
dh =
        0.0118338293135078
rdh_sum =
        11.4074776952462
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 180
dh =
       -0.0220386706864915
rdh_sum =
        11.4074916118452
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 181
dh =
       -0.0559111706864908
rdh_sum =
        11.4075811789509
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 182
dh =
       -0.0897836706864901
rdh_sum =
        11.407812133017
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 183
dh =
       -0.123656170686489
rdh_sum =
        11.4082501919054
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 184
dh =
       -0.15752867068649
rdh_sum =
        11.4089610462442
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 185
dh =
       -0.191401170686492
rdh_sum =
        11.41001035079
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 186
dh =
       -0.225273670686491
rdh_sum =
        11.4114637157944
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 187
dh =
       -0.25914617068649
rdh_sum =
        11.4133866983765
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 188
dh =
       -0.300954670686492
rdh_sum =
        11.4159796283542
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 189
dh =
       -0.358635670686491
rdh_sum =
        11.4196603903545
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 190
dh =
       -0.424252170686492
rdh_sum =
        11.4248087132189
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 191
dh =
       -0.489868670686491
rdh_sum =
        11.4316687755686
ans =
```

```
Berm Factor Calculation: Iteration 7, Profile Segment: 192
dh =
         -0.55548567068649
rdh_sum =
           11.44048392721
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 193
dh =
         -0.621102670686492
rdh_sum =
           11.4514965411053
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 194
dh =
         -0.686719670686491
rdh_sum =
           11.4649479058887
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 195
dh =
         -0.752336170686492
rdh_sum =
           11.4810780854797
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 196
dh =
         -0.817952670686491
rdh_sum =
           11.5001258396341
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 197
dh =
         -0.883569670686491
rdh_sum =
           11.5223285134064
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 198
dh =
         -0.94918667068649
rdh_sum =
           11.547921873746
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 199
dh =
         -1.01480367068649
rdh_sum =
           11.577140014483
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 200
dh =
         -1.08042017068649
rdh_sum =
           11.6102152105449
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 201
dh =
         -1.13097467068649
rdh_sum =
           11.6464193319559
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 202
dh =
         -1.16646767068649
rdh_sum =
           11.684901415738
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 203
dh =
         -1.20196067068649
rdh_sum =
           11.7257280954618
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 204
dh =
         -1.23745317068649
rdh_sum =
           11.7689656317588
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 205
dh =
         -1.27294567068649
rdh_sum =
           11.8146799697531
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 206
dh =
         -1.30843867068649
rdh_sum =
           11.8629367332565
ans =
```

```
Berm Factor Calculation: Iteration 7, Profile Segment: 207
dh =
        -1.34393117068649
rdh_sum =
        11.9138011073873
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 208
dh =
        -1.37942367068649
rdh_sum =
        11.9673379361441
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 209
dh =
        -1.41491667068649
rdh_sum =
        12.0236117166982
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 210
dh =
        -1.45040967068649
rdh_sum =
        12.0826865138698
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 211
dh =
        -1.48590217068649
rdh_sum =
        12.1446259472686
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 228
dh =
        -2.68392767068649
rdh_sum =
        12.3372091677514
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 229
dh =
        -2.74339617068649
rdh_sum =
        12.5377929947375
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 230
dh =
        -2.79876017068649
rdh_sum =
        12.7459343768273
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 231
dh =
        -2.85412417068649
rdh_sum =
         12.961735841211
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 232
dh =
        -2.90948817068649
rdh_sum =
        13.1852972241635
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 233
dh =
        -2.96485267068649
rdh_sum =
        13.4167157073615
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 234
dh =
        -3.02021717068649
rdh_sum =
        13.6560856426721
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 235
dh =
        -3.07558117068649
rdh_sum =
          13.9034985156
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 236
dh =
        -3.13094517068649
rdh_sum =
        14.1590430576292
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 237
dh =
        -3.18630917068649
rdh_sum =
        14.4228051436652
ans =
```

```
Berm Factor Calculation: Iteration 7, Profile Segment: 238
dh =
        -3.24167317068649
rdh_sum =
        14.6948677618672
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 239
dh =
        -3.29703767068649
rdh_sum =
        14.9753110605347
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 240
dh =
        -3.35240217068649
rdh_sum =
        15.2642121692668
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 241
dh =
        -3.40776617068649
rdh_sum =
        15.5616451690813
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 242
dh =
        -3.46313017068649
rdh_sum =
        15.8676812198619
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 243
dh =
        -3.51849417068649
rdh_sum =
        16.1823884593212
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 244
dh =
        -3.55666817068649
rdh_sum =
        16.5031126633682
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 245
dh =
        -3.56046167068649
rdh_sum =
        16.8244364488398
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 246
dh =
        -3.54706467068649
rdh_sum =
         17.143644096263
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 247
dh =
        -3.53366817068649
rdh_sum =
        17.4607394033436
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 248
dh =
        -3.52027167068649
rdh_sum =
        17.7757261321885
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 249
dh =
        -3.50687467068649
rdh_sum =
        18.0886080097899
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 250
dh =
        -3.49347767068649
rdh_sum =
        18.3993888852066
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 251
dh =
        -3.48008117068649
rdh_sum =
        18.7080727289102
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 252
dh =
        -3.46668467068649
rdh_sum =
        19.0146634760203
ans =
```

```
Berm Factor Calculation: Iteration 7, Profile Segment: 253
dh =
        -3.45328767068649
rdh_sum =
         19.3191650268108
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 254
dh =
        -3.43989067068649
rdh_sum =
         19.6215814027255
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 255
dh =
        -3.42649417068649
rdh_sum =
         19.9219167456954
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 260
dh =
        -4.12631567068649
rdh_sum =
          20.335420861881
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 261
dh =
        -4.18136067068649
rdh_sum =
         20.7581165011092
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 262
dh =
        -4.23640567068649
rdh_sum =
         21.1900305076443
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 263
dh =
        -4.29145117068649
rdh_sum =
         21.6311866086809
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 264
dh =
        -4.34649667068649
rdh_sum =
         22.0816052383814
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 265
dh =
        -4.40154167068649
rdh_sum =
         22.5413035300379
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 266
dh =
        -4.45658667068649
rdh_sum =
         23.0102954785879
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 267
dh =
        -4.51163167068649
rdh_sum =
         23.4885918517077
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 268
dh =
        -4.56667717068649
rdh_sum =
         23.9762002706823
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 269
dh =
        -4.61806067068649
rdh_sum =
         24.4725051830225
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 270
dh =
        -4.66578167068649
rdh_sum =
         24.9768877797063
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 271
dh =
        -4.71350317068649
rdh_sum =
         25.4893470015022
ans =
```

```
Berm Factor Calculation: Iteration 7, Profile Segment: 272
dh =
        -4.76122467068649
rdh_sum =
        26.0098795965343
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 273
dh =
        -4.80894567068649
rdh_sum =
        26.5384801212672
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 274
dh =
        -4.85666667068649
rdh_sum =
        27.0751411110764
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 275
dh =
        -4.90438817068649
rdh_sum =
        27.6198530818844
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 276
dh =
        -4.95210967068649
rdh_sum =
        28.1726043637984
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 277
dh =
        -4.99983067068649
rdh_sum =
        28.7333811046453
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 278
dh =
        -5.04755217068649
rdh_sum =
        29.3021675257658
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 279
dh =
        -5.09527367068649
rdh_sum =
        29.8789456737987
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 280
dh =
        -5.13723517068649
rdh_sum =
        30.4627344569421
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 281
dh =
        -5.17343767068649
rdh_sum =
        31.0525581666798
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 282
dh =
        -5.20964017068649
rdh_sum =
        31.6484033106802
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 283
dh =
        -5.24584217068649
rdh_sum =
        32.2502554092774
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 284
dh =
        -5.28204467068649
rdh_sum =
        32.8580992464333
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 285
dh =
        -5.31824717068649
rdh_sum =
        33.4719186230306
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 286
dh =
        -5.35444967068649
rdh_sum =
        34.0916964423722
ans =
```

```
Berm Factor Calculation: Iteration 7, Profile Segment: 287
dh =
         -5.39065217068649
rdh_sum =
          34.7174147127492
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 288
dh =
         -5.42685417068649
rdh_sum =
          35.3490544684939
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 289
dh =
         -5.46305667068649
rdh_sum =
          35.9865960180438
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 290
dh =
         -5.49925917068649
rdh_sum =
          36.6300187014174
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 291
dh =
         -5.53546117068649
rdh_sum =
          37.2793008944589
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 292
dh =
         -5.57166367068649
rdh_sum =
          37.9344202547148
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 293
dh =
         -5.60786617068649
rdh_sum =
           38.595353481858
ans =
!------- End Berm Factor Calculation, Iter: 7 ---------!
berm_width =
   223
rB =
          0.685382499097281
rdh_mean =
          0.173073333999363
gamma_berm =
          0.433238935086301
gamma_berm =
                        0.6
slope =
          0.170006660820607
Irb =
           2.07696329054436
gamma_berm =
                        0.6
gamma_perm =
     1
gamma_beta =
     1
gamma_rough =
                        0.8
gamma =
                       0.48
ans =
!!! - - Iribaren number:   1.25 is in the valid range (0.5-10), TAW RECOMMENDED - - !!!
ans =
!!! - - slope: 1:5.9 V:H is in the valid range (1:8 - 1:1), TAW RECOMMENDED - - !!!
R2_new =
           9.23620657056007
!   Berm_width is greater than 1/4 wave length
!   Runup will be weighted average with foreshore calculation assuming depth limited wave height on berm
fore_H0 =
               3.65043666
upper_slope =
          0.0902230000000017
upper_slope =
          0.0962077116565548
upper_slope =
          0.101523848871205
upper_slope =
          0.106277571175988
upper_slope =
          0.110553551884053
upper_slope =
          0.114420404661031
upper_slope =
```

```
          0.117934212657135
upper_slope =
          0.121141133093016
upper_slope =
          0.124079724577419
upper_slope =
          0.126782352287117
upper_slope =
          0.12927626765902
upper_slope =
          0.131584781821143
upper_slope =
          0.130947149891356
w2 =
       0.0472655588251012
w1 =
        0.952734441174899
R2_new =
         9.23362221665361
R2del =
        0.0461505621502329
Z2 =
          18.3041210459671
ans =
!---------------- STARTING ITERATION 8 ----------------!
Ztoe =
                   0.94741
toe_sta =
          12.5371395555078
top_sta =
          337.391386298029
Z2 =
          18.3041210459671
H0 =
                    5.2342
Tp =
                   13.5919
T0 =
          12.3562727272727
R2 =
          9.23362221665361
Z2 =
          18.3041210459671
top_sta =
          337.391386298029
Lslope =
          324.854246742521
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 32
dh =
          4.19996582931351
rdh_sum =
          0.34729103989654
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 33
dh =
          4.16210982931351
rdh_sum =
          0.689183131478468
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 34
dh =
          4.12425382931351
rdh_sum =
          1.02569668069317
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 35
dh =
          4.08639782931351
rdh_sum =
           1.3568527876611
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 36
dh =
          4.04854232931351
rdh_sum =
          1.68267331427858
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 37
dh =
          4.01068682931351
rdh_sum =
          2.00318074015032
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 38
dh =
          3.97283082931351
rdh_sum =
          2.31839816087574
ans =
```

```
Berm Factor Calculation: Iteration 8, Profile Segment: 39
dh =
          3.93497482931351
rdh_sum =
          2.62834942512647
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 40
dh =
          3.89711882931351
rdh_sum =
          2.93305906124232
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 41
dh =
          3.85926282931351
rdh_sum =
          3.23255227406553
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 42
dh =
          3.82140682931351
rdh_sum =
           3.5268549416878
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 43
dh =
          3.78355132931351
rdh_sum =
          3.81599368013784
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 44
dh =
          3.74660082931351
rdh_sum =
          4.10011818245487
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 45
dh =
          3.71146032931351
rdh_sum =
           4.3794986850822
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 46
dh =
          3.67722582931351
rdh_sum =
           4.6542810892491
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 47
dh =
          3.64299132931351
rdh_sum =
            4.924489166909
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 48
dh =
          3.60875632931351
rdh_sum =
          5.19014710656527
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 49
dh =
          3.57452132931351
rdh_sum =
          5.45127964399068
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 50
dh =
          3.54028632931351
rdh_sum =
          5.70791199263286
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 51
dh =
          3.50605132931351
rdh_sum =
           5.960069840953
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 52
dh =
          3.47181632931351
rdh_sum =
          6.20777934971427
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 53
dh =
          3.43758182931351
rdh_sum =
           6.4510672136025
ans =
```

```
Berm Factor Calculation: Iteration 8, Profile Segment: 54
dh =
        3.40334732931351
rdh_sum =
        6.68996052885288
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 55
dh =
        3.36911232931351
rdh_sum =
        6.92448679197281
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 56
dh =
        3.34018382931351
rdh_sum =
        7.15534473042837
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 57
dh =
        3.31656182931351
rdh_sum =
        7.38322227554551
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 58
dh =
        3.29293982931351
rdh_sum =
        7.60813310254311
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 59
dh =
        3.26931782931351
rdh_sum =
        7.83009103572924
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 60
dh =
        3.24569582931351
rdh_sum =
        8.04911004780645
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 61
dh =
        3.22207382931351
rdh_sum =
        8.26520425916959
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 62
dh =
        3.19845182931351
rdh_sum =
        8.47838793719619
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 63
dh =
        3.17482932931351
rdh_sum =
        8.68867543438173
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 64
dh =
        3.15120682931351
rdh_sum =
         8.8960813105302
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 65
dh =
        3.12758482931351
rdh_sum =
        9.10062033078974
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 66
dh =
        3.10396282931351
rdh_sum =
        9.30230734323149
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 67
dh =
        3.08034082931351
rdh_sum =
        9.50115733925113
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 68
dh =
        3.03570482931351
rdh_sum =
        9.69468795656988
ans =
```

```
Berm Factor Calculation: Iteration 8, Profile Segment: 88
dh =
        0.98227582931351
rdh_sum =
        9.71625537312226
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 89
dh =
        1.03286432931351
rdh_sum =
        9.74008323016519
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 90
dh =
        1.08345282931351
rdh_sum =
         9.7662812759583
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 91
dh =
        1.13404082931351
rdh_sum =
        9.79495868743633
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 92
dh =
        1.18462932931351
rdh_sum =
        9.82622411909927
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 93
dh =
        1.23521782931351
rdh_sum =
        9.86018560499294
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 94
dh =
        1.28580632931351
rdh_sum =
        9.89695055777596
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 95
dh =
        1.33639482931351
rdh_sum =
         9.9366257439633
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 96
dh =
        1.38698332931351
rdh_sum =
        9.97931725931872
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 97
dh =
        1.43757182931351
rdh_sum =
        10.0251305044017
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 98
dh =
        1.48815982931351
rdh_sum =
        10.0741701278713
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 99
dh =
        1.53874832931351
rdh_sum =
        10.1265400985462
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 100
dh =
        1.58933682931351
rdh_sum =
        10.1823435862936
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 101
dh =
        1.63992532931351
rdh_sum =
        10.2416829696226
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 102
dh =
        1.69051382931351
rdh_sum =
        10.3046598120887
ans =
```

```
Berm Factor Calculation: Iteration 8, Profile Segment: 103
dh =
          1.71211932931351
rdh_sum =
          10.3692208971279
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 104
dh =
          1.67575882931351
rdh_sum =
          10.4311263700036
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 105
dh =
          1.61041532931351
rdh_sum =
          10.4883907490733
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 106
dh =
          1.54507232931351
rdh_sum =
          10.5411843126416
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 107
dh =
          1.47972882931351
rdh_sum =
          10.5896789897535
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 108
dh =
          1.41438532931351
rdh_sum =
           10.634048397365
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 109
dh =
          1.34904182931351
rdh_sum =
          10.6744677387184
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 110
dh =
          1.28369832931351
rdh_sum =
          10.7111137359718
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 111
dh =
          1.21835532931351
rdh_sum =
          10.7441645890685
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 112
dh =
          1.15301182931351
rdh_sum =
          10.7737998253717
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 113
dh =
          1.08766832931351
rdh_sum =
           10.800200313842
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 114
dh =
          1.02232482931351
rdh_sum =
          10.8235481672951
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 115
dh =
         0.967712329313509
rdh_sum =
          10.8444852638338
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 116
dh =
         0.934562329313509
rdh_sum =
          10.8640217417262
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 117
dh =
         0.91214332931351
rdh_sum =
          10.8826379409497
ans =
```

```
Berm Factor Calculation: Iteration 8, Profile Segment: 118
dh =
        0.889724329313509
rdh_sum =
        10.9003556516786
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 119
dh =
        0.867305329313508
rdh_sum =
        10.9171967047576
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 120
dh =
        0.844886329313509
rdh_sum =
        10.9331829707141
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 121
dh =
        0.822467329313509
rdh_sum =
        10.9483363587682
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 122
dh =
        0.80004832931351
rdh_sum =
        10.9626788158405
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 123
dh =
        0.777629329313509
rdh_sum =
        10.9762323255591
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 124
dh =
        0.755209829313509
rdh_sum =
        10.9890188904057
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 125
dh =
        0.732790329313509
rdh_sum =
        11.0010605654208
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 126
dh =
        0.710371329313508
rdh_sum =
        11.0123794552374
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 127
dh =
        0.691291829313508
rdh_sum =
        11.0231006469349
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 128
dh =
        0.67889132931351
rdh_sum =
        11.0334419712337
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 129
dh =
        0.669829829313509
rdh_sum =
        11.0435100003683
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 130
dh =
        0.660768329313509
rdh_sum =
        11.0533083573869
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 131
dh =
        0.651707329313508
rdh_sum =
        11.0628406819117
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 132
dh =
        0.642645829313508
rdh_sum =
        11.0721105861723
ans =
```

```
Berm Factor Calculation: Iteration 8, Profile Segment: 133
dh =
        0.633584329313509
rdh_sum =
        11.0811216991189
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 134
dh =
        0.62452332931351
rdh_sum =
        11.0898776655947
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 135
dh =
        0.615461829313508
rdh_sum =
        11.0983821041707
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 136
dh =
        0.606400329313509
rdh_sum =
        11.106638649458
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 137
dh =
        0.597338829313509
rdh_sum =
        11.1146509379004
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 138
dh =
        0.604589329313509
rdh_sum =
        11.1228583760436
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 139
dh =
        0.628151829313508
rdh_sum =
        11.1317160806177
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 140
dh =
        0.651714329313508
rdh_sum =
        11.1412486092642
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 141
dh =
        0.675276829313509
rdh_sum =
        11.1514804858827
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 142
dh =
        0.698838829313511
rdh_sum =
        11.1624361837851
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 143
dh =
        0.722401329313509
rdh_sum =
        11.1741401708112
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 144
dh =
        0.745963829313508
rdh_sum =
        11.1866168622854
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 145
dh =
        0.769526329313509
rdh_sum =
        11.199890634896
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 146
dh =
        0.793088829313509
rdh_sum =
        11.2139858254762
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 147
dh =
        0.816650829313508
rdh_sum =
        11.2289267115841
ans =
```

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Berm Factor Calculation: Iteration 8, Profile Segment: 148
dh =
        0.840213329313508
rdh_sum =
        11.2447375643841
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 149
dh =
        0.83501132931351
rdh_sum =
        11.2603542666909
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 150
dh =
        0.80104482931351
rdh_sum =
        11.2747323021676
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 151
dh =
        0.76707882931351
rdh_sum =
        11.2879221464582
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 152
dh =
        0.733112329313508
rdh_sum =
        11.2999743636841
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 153
dh =
        0.69914582931351
rdh_sum =
        11.3109396540344
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 154
dh =
        0.665179829313509
rdh_sum =
        11.3208688455127
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 155
dh =
        0.631213329313509
rdh_sum =
        11.3298128432749
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 156
dh =
        0.597246829313509
rdh_sum =
        11.3378226704693
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 157
dh =
        0.567179329313509
rdh_sum =
        11.3450482120678
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 158
dh =
        0.544908329313509
rdh_sum =
         11.351718694948
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 159
dh =
        0.526535329313509
rdh_sum =
        11.3579478566655
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 160
dh =
        0.508162329313508
rdh_sum =
        11.3637507086783
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 161
dh =
        0.48978982931351
rdh_sum =
        11.3691422863933
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 162
dh =
        0.471417329313509
rdh_sum =
        11.3741376259143
ans =
```

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Berm Factor Calculation: Iteration 8, Profile Segment: 163
dh =
          0.453044329313508
rdh_sum =
          11.3787517652215
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 164
dh =
          0.43467182931351
rdh_sum =
          11.3829997746316
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 165
dh =
          0.416299329313508
rdh_sum =
          11.3868967250129
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 166
dh =
          0.39792632931351
rdh_sum =
          11.3904576889675
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 167
dh =
          0.379553329313509
rdh_sum =
          11.3936977590714
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 168
dh =
          0.361180829313509
rdh_sum =
          11.3966320457723
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 169
dh =
          0.34280832931351
rdh_sum =
          11.3992756598757
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 170
dh =
          0.316685829313508
rdh_sum =
          11.4015320217426
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 171
dh =
          0.282813329313509
rdh_sum =
          11.4033317935143
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 172
dh =
          0.24894082931351
rdh_sum =
          11.4047264545435
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 173
dh =
          0.215068329313509
rdh_sum =
          11.4057675260437
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 174
dh =
          0.181195829313509
rdh_sum =
          11.4065065657648
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 175
dh =
          0.14732332931351
rdh_sum =
          11.4069951626658
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 176
dh =
          0.113450829313509
rdh_sum =
          11.4072849315842
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 177
dh =
       0.0795783293135095
rdh_sum =
          11.4074275079026
ans =
```

```
Berm Factor Calculation: Iteration 8, Profile Segment: 178
dh =
        0.045705 8293135102
rdh_sum =
           11.407474542213
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 179
dh =
        0.0118338293135078
rdh_sum =
           11.4074776952462
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 180
dh =
       -0.0220386706864915
rdh_sum =
           11.4074917513053
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 181
dh =
       -0.0559111706864908
rdh_sum =
           11.407582215952
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 182
dh =
       -0.0897836706864901
rdh_sum =
           11.4078154842704
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 183
dh =
       -0.123656170686489
rdh_sum =
           11.4082579323781
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 184
dh =
        -0.15752867068649
rdh_sum =
           11.4089759086108
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 185
dh =
       -0.191401170686492
rdh_sum =
           11.4100357247099
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 186
dh =
       -0.225273670686491
rdh_sum =
           11.4115036470159
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 187
dh =
        -0.25914617068649
rdh_sum =
           11.4134458876667
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 188
dh =
       -0.300954670686492
rdh_sum =
           11.4160647791552
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 189
dh =
       -0.358635670686491
rdh_sum =
           11.4197823809573
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 190
dh =
       -0.424252170686492
rdh_sum =
           11.4249822064821
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 191
dh =
       -0.489868670686491
rdh_sum =
           11.4319108555391
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 192
dh =
        -0.55548567068649
rdh_sum =
           11.4408140823021
ans =
```

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Berm Factor Calculation: Iteration 8, Profile Segment: 193
dh =
        -0.621102670686492
rdh_sum =
         11.4519366445998
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 194
dh =
        -0.686719670686491
rdh_sum =
         11.4655221941656
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 195
dh =
        -0.752336170686492
rdh_sum =
         11.4818131336688
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 196
dh =
        -0.817952670686491
rdh_sum =
         11.5010505353002
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 197
dh =
        -0.883569670686491
rdh_sum =
         11.5234740279723
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 198
dh =
        -0.94918667068649
rdh_sum =
         11.5493216311453
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 199
dh =
        -1.01480367068649
rdh_sum =
         11.5788296577363
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 200
dh =
        -1.08042017068649
rdh_sum =
         11.6122325657754
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 201
dh =
        -1.13097467068649
rdh_sum =
         11.6487950077628
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 202
dh =
        -1.16646767068649
rdh_sum =
         11.6876576527895
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 203
dh =
        -1.20196067068649
rdh_sum =
         11.7288877466694
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 204
dh =
        -1.23745317068649
rdh_sum =
         11.7725521552174
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 205
dh =
        -1.27294567068649
rdh_sum =
         11.8187174221504
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 206
dh =
        -1.30843867068649
rdh_sum =
         11.8674497631328
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 207
dh =
        -1.34393117068649
rdh_sum =
         11.9188149471682
ans =
```

```
Berm Factor Calculation: Iteration 8, Profile Segment: 208
dh =
        -1.37942367068649
rdh_sum =
        11.9728783950317
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 209
dh =
        -1.41491667068649
rdh_sum =
        12.0297051734167
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 210
dh =
        -1.45040967068649
rdh_sum =
        12.089359908499
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 211
dh =
        -1.48590217068649
rdh_sum =
        12.1519067728721
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 228
dh =
        -2.68392767068649
rdh_sum =
        12.3462839527065
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 229
dh =
        -2.74339617068649
rdh_sum =
        12.5487298303806
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 230
dh =
        -2.79876017068649
rdh_sum =
        12.7587970640234
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 231
dh =
        -2.85412417068649
rdh_sum =
        12.9765885249247
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 232
dh =
        -2.90948817068649
rdh_sum =
        13.2022043437351
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 233
dh =
        -2.96485267068649
rdh_sum =
        13.435741946911
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 234
dh =
        -3.02021717068649
rdh_sum =
        13.6772958799084
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 235
dh =
        -3.07558117068649
rdh_sum =
        13.9269577702215
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 236
dh =
        -3.13094517068649
rdh_sum =
        14.1848164405268
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 237
dh =
        -3.18630917068649
rdh_sum =
        14.4509578051941
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 238
dh =
        -3.24167317068649
rdh_sum =
        14.7254648398036
ans =
```

```
Berm Factor Calculation: Iteration 8, Profile Segment: 239
dh =
        -3.29703767068649
rdh_sum =
        15.0084176283313
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 240
dh =
        -3.35240217068649
rdh_sum =
        15.2998931828728
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 241
dh =
        -3.40776617068649
rdh_sum =
        15.5999654135365
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 242
dh =
        -3.46313017068649
rdh_sum =
        15.9087052568633
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 243
dh =
        -3.51849417068649
rdh_sum =
        16.2261805740311
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 244
dh =
        -3.55666817068649
rdh_sum =
        16.5497169920948
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 245
dh =
        -3.56046167068649
rdh_sum =
        16.873857368345
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 246
dh =
        -3.54706467068649
rdh_sum =
        17.1958661420609
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 247
dh =
        -3.53366817068649
rdh_sum =
        17.5157470905975
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 248
dh =
        -3.52027167068649
rdh_sum =
        17.833503955891
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 249
dh =
        -3.50687467068649
rdh_sum =
        18.1491404449404
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 250
dh =
        -3.49347767068649
rdh_sum =
        18.4626603881458
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 251
dh =
        -3.48008117068649
rdh_sum =
        18.7740677386571
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 252
dh =
        -3.46668467068649
rdh_sum =
        19.083366414448
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 253
dh =
        -3.45328767068649
rdh_sum =
        19.3905602988195
ans =
```

```
Berm Factor Calculation: Iteration 8, Profile Segment: 254
dh =
        -3.43989067068649
rdh_sum =
         19.695653397578
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 255
dh =
        -3.42649417068649
rdh_sum =
         19.9986498383547
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 260
dh =
        -4.12631567068649
rdh_sum =
         20.4155943993163
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 261
dh =
        -4.18136067068649
rdh_sum =
         20.841786974869
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 262
dh =
        -4.23640567068649
rdh_sum =
         21.2772534517857
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 263
dh =
        -4.29145117068649
rdh_sum =
         21.722016548705
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 264
dh =
        -4.34649667068649
rdh_sum =
         22.1760956394386
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 265
dh =
        -4.40154167068649
rdh_sum =
         22.6395067454728
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 266
dh =
        -4.45658667068649
rdh_sum =
         23.1122626997766
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 267
dh =
        -4.51163167068649
rdh_sum =
         23.5943730577633
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 268
dh =
        -4.56667717068649
rdh_sum =
         24.0858441789845
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 269
dh =
        -4.61806067068649
rdh_sum =
         24.5860560872303
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 270
dh =
        -4.66578167068649
rdh_sum =
         25.0943857577575
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 271
dh =
        -4.71350317068649
rdh_sum =
         25.6108310797815
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 272
dh =
        -4.76122467068649
rdh_sum =
         26.1353877180357
ans =
```

```
Berm Factor Calculation: Iteration 8, Profile Segment: 273
dh =
        -4.80894567068649
rdh_sum =
        26.6680491140955
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 274
dh =
        -4.85666667068649
rdh_sum =
        27.2088066580417
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 275
dh =
        -4.90438817068649
rdh_sum =
        27.7576496903689
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 276
dh =
        -4.95210967068649
rdh_sum =
        28.3145653352226
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 277
dh =
        -4.99983067068649
rdh_sum =
        28.8795385043333
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 278
dh =
        -5.04755217068649
rdh_sum =
        29.4525521541735
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 279
dh =
        -5.09527367068649
rdh_sum =
        30.0335870371028
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 280
dh =
        -5.13723517068649
rdh_sum =
         30.621657407784
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 281
dh =
        -5.17343767068649
rdh_sum =
        31.2157833101094
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 282
dh =
        -5.20964017068649
rdh_sum =
        31.8159504638362
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 283
dh =
        -5.24584217068649
rdh_sum =
        32.4221435890595
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 284
dh =
        -5.28204467068649
rdh_sum =
        33.0343466581006
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 285
dh =
        -5.31824717068649
rdh_sum =
        33.6525426481524
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 286
dh =
        -5.35444967068649
rdh_sum =
        34.2767136271961
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 287
dh =
        -5.39065217068649
rdh_sum =
        34.9068407567219
ans =
```

```
Berm Factor Calculation: Iteration 8, Profile Segment: 288
dh =
        -5.42685417068649
rdh_sum =
        35.5429042127385
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 289
dh =
        -5.46305667068649
rdh_sum =
        36.1848834346047
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 290
dh =
        -5.49925917068649
rdh_sum =
        36.8327568820461
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 291
dh =
        -5.53546117068649
rdh_sum =
        37.4865020396126
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 292
dh =
        -5.57166367068649
rdh_sum =
        38.1460956632228
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 293
dh =
        -5.60786617068649
rdh_sum =
        38.8115135402461
ans =
!------- End Berm Factor Calculation, Iter: 8 ---------!
berm_width =
   223
rB =
        0.686461704706447
rdh_mean =
        0.174042661615453
gamma_berm =
        0.433011917477744
gamma_berm =
                         0.6
slope =
        0.170407337946776
Irb =
         2.08185834394049
gamma_berm =
                         0.6
gamma_perm =
     1
gamma_beta =
     1
gamma_rough =
                         0.8
gamma =
                        0.48
ans =
!!! - - Iribaren number:   1.25 is in the valid range (0.5-10), TAW RECOMMENDED - - !!!
ans =
!!! - - slope: 1:5.9 V:H is in the valid range (1:8 - 1:1), TAW RECOMMENDED - - !!!
R2_new =
        9.25797475709777
!   Berm_width is greater than 1/4 wave length
!   Runup will be weighted average with foreshore calculation assuming depth limited wave height on berm
fore_H0 =
               3.65043666
upper_slope =
        0.0902230000000016
upper_slope =
        0.0963944731237948
upper_slope =
        0.101856230182631
upper_slope =
        0.106724094321125
upper_slope =
        0.111089842307254
upper_slope =
        0.115027394983626
upper_slope =
        0.118596850649219
upper_slope =
        0.121847437655401
upper_slope =
        0.124820094404285
upper_slope =
```

```
             0.12754904571449
upper_slope =
        0.130063006690715
upper_slope =
        0.132386453917656
upper_slope =
        0.131707647313443
w2 =
      0.0472655588251012
w1 =
        0.952734441174899
R2_new =
        9.25482286583838
R2del =
        0.0212006491847685
Z2 =
        18.3253216951519
ans =
!---------------- STARTING ITERATION 9 ----------------!
Ztoe =
               0.94741
toe_sta =
        12.5371395555078
top_sta =
        337.626366837191
Z2 =
        18.3253216951519
H0 =
                5.2342
Tp =
               13.5919
T0 =
        12.3562727272727
R2 =
        9.25482286583838
Z2 =
        18.3253216951519
top_sta =
        337.626366837191
Lslope =
        325.089227281683
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 32
dh =
        4.19996582931351
rdh_sum =
        0.34729103989654
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 33
dh =
        4.16210982931351
rdh_sum =
        0.689183131478468
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 34
dh =
        4.12425382931351
rdh_sum =
        1.02569668069317
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 35
dh =
        4.08639782931351
rdh_sum =
         1.3568527876611
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 36
dh =
        4.04854232931351
rdh_sum =
        1.68267331427858
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 37
dh =
        4.01068682931351
rdh_sum =
        2.00318074015032
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 38
dh =
        3.97283082931351
rdh_sum =
        2.31839816087574
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 39
dh =
        3.93497482931351
rdh_sum =
        2.62834942512647
ans =
```

```
Berm Factor Calculation: Iteration 9, Profile Segment: 40
dh =
          3.89711882931351
rdh_sum =
          2.93305906124232
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 41
dh =
          3.85926282931351
rdh_sum =
          3.23255227406553
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 42
dh =
          3.82140682931351
rdh_sum =
           3.5268549416878
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 43
dh =
          3.78355132931351
rdh_sum =
          3.81599368013784
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 44
dh =
          3.74660082931351
rdh_sum =
          4.10011818245487
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 45
dh =
          3.71146032931351
rdh_sum =
           4.3794986850822
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 46
dh =
          3.67722582931351
rdh_sum =
           4.6542810892491
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 47
dh =
          3.64299132931351
rdh_sum =
            4.924489166909
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 48
dh =
          3.60875632931351
rdh_sum =
          5.19014710656527
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 49
dh =
          3.57452132931351
rdh_sum =
          5.45127964399068
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 50
dh =
          3.54028632931351
rdh_sum =
          5.70791199263286
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 51
dh =
          3.50605132931351
rdh_sum =
           5.960069840953
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 52
dh =
          3.47181632931351
rdh_sum =
          6.20777934971427
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 53
dh =
          3.43758182931351
rdh_sum =
           6.4510672136025
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 54
dh =
          3.40334732931351
rdh_sum =
          6.68996052885288
ans =
```

```
Berm Factor Calculation: Iteration 9, Profile Segment: 55
dh =
          3.36911232931351
rdh_sum =
          6.92448679197281
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 56
dh =
          3.34018382931351
rdh_sum =
          7.15534473042837
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 57
dh =
          3.31656182931351
rdh_sum =
          7.38322227554551
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 58
dh =
          3.29293982931351
rdh_sum =
          7.60813310254311
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 59
dh =
          3.26931782931351
rdh_sum =
          7.83009103572924
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 60
dh =
          3.24569582931351
rdh_sum =
          8.04911004780645
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 61
dh =
          3.22207382931351
rdh_sum =
          8.26520425916959
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 62
dh =
          3.19845182931351
rdh_sum =
          8.47838793719619
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 63
dh =
          3.17482932931351
rdh_sum =
          8.68867543438173
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 64
dh =
          3.15120682931351
rdh_sum =
           8.8960813105302
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 65
dh =
          3.12758482931351
rdh_sum =
          9.10062033078974
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 66
dh =
          3.10396282931351
rdh_sum =
          9.30230734323149
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 67
dh =
          3.08034082931351
rdh_sum =
          9.50115733925113
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 68
dh =
          3.03570482931351
rdh_sum =
          9.69468795656988
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 88
dh =
          0.98227582931351
rdh_sum =
          9.71625537312226
ans =
```

```
Berm Factor Calculation: Iteration 9, Profile Segment: 89
dh =
          1.03286432931351
rdh_sum =
          9.74008323016519
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 90
dh =
          1.08345282931351
rdh_sum =
           9.7662812759583
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 91
dh =
          1.13404082931351
rdh_sum =
          9.79495868743633
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 92
dh =
          1.18462932931351
rdh_sum =
          9.82622411909927
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 93
dh =
          1.23521782931351
rdh_sum =
          9.86018560499294
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 94
dh =
          1.28580632931351
rdh_sum =
          9.89695055777596
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 95
dh =
          1.33639482931351
rdh_sum =
           9.9366257439633
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 96
dh =
          1.38698332931351
rdh_sum =
          9.97931725931872
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 97
dh =
          1.43757182931351
rdh_sum =
          10.0251305044017
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 98
dh =
          1.48815982931351
rdh_sum =
          10.0741701278713
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 99
dh =
          1.53874832931351
rdh_sum =
          10.1265400985462
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 100
dh =
          1.58933682931351
rdh_sum =
          10.1823435862936
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 101
dh =
          1.63992532931351
rdh_sum =
          10.2416829696226
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 102
dh =
          1.69051382931351
rdh_sum =
          10.3046598120887
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 103
dh =
          1.71211932931351
rdh_sum =
          10.3692208971279
ans =
```

```
Berm Factor Calculation: Iteration 9, Profile Segment: 104
dh =
         1.67575882931351
rdh_sum =
         10.4311263700036
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 105
dh =
         1.61041532931351
rdh_sum =
         10.4883907490733
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 106
dh =
         1.54507232931351
rdh_sum =
         10.5411843126416
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 107
dh =
         1.47972882931351
rdh_sum =
         10.5896789897535
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 108
dh =
         1.41438532931351
rdh_sum =
          10.634048397365
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 109
dh =
         1.34904182931351
rdh_sum =
         10.6744677387184
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 110
dh =
         1.28369832931351
rdh_sum =
         10.7111137359718
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 111
dh =
         1.21835532931351
rdh_sum =
         10.7441645890685
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 112
dh =
         1.15301182931351
rdh_sum =
         10.7737998253717
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 113
dh =
         1.08766832931351
rdh_sum =
          10.800200313842
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 114
dh =
         1.02232482931351
rdh_sum =
         10.8235481672951
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 115
dh =
        0.967712329313509
rdh_sum =
         10.8444852638338
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 116
dh =
        0.934562329313509
rdh_sum =
         10.8640217417262
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 117
dh =
        0.91214332931351
rdh_sum =
         10.8826379409497
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 118
dh =
        0.889724329313509
rdh_sum =
         10.9003556516786
ans =
```

```
Berm Factor Calculation: Iteration 9, Profile Segment: 119
dh =
        0.867305329313508
rdh_sum =
        10.9171967047576
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 120
dh =
        0.844886329313509
rdh_sum =
        10.9331829707141
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 121
dh =
        0.822467329313509
rdh_sum =
        10.9483363587682
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 122
dh =
        0.80004832931351
rdh_sum =
        10.9626788158405
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 123
dh =
        0.777629329313509
rdh_sum =
        10.9762323255591
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 124
dh =
        0.755209829313509
rdh_sum =
        10.9890188904057
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 125
dh =
        0.732790329313509
rdh_sum =
        11.0010605654208
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 126
dh =
        0.710371329313508
rdh_sum =
        11.0123794552374
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 127
dh =
        0.691291829313508
rdh_sum =
        11.0231006469349
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 128
dh =
        0.67889132931351
rdh_sum =
        11.0334419712337
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 129
dh =
        0.669829829313509
rdh_sum =
        11.0435100003683
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 130
dh =
        0.660768329313509
rdh_sum =
        11.0533083573869
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 131
dh =
        0.651707329313508
rdh_sum =
        11.0628406819117
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 132
dh =
        0.642645829313508
rdh_sum =
        11.0721105861723
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 133
dh =
        0.633584329313509
rdh_sum =
        11.0811216991189
ans =
```

```
Berm Factor Calculation: Iteration 9, Profile Segment: 134
dh =
          0.62452332931351
rdh_sum =
          11.0898776655947
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 135
dh =
          0.615461829313508
rdh_sum =
          11.0983821041707
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 136
dh =
          0.606400329313509
rdh_sum =
           11.106638649458
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 137
dh =
          0.597338829313509
rdh_sum =
           11.1146509379004
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 138
dh =
          0.604589329313509
rdh_sum =
           11.1228583760436
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 139
dh =
          0.628151829313508
rdh_sum =
           11.1317160806177
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 140
dh =
          0.651714329313508
rdh_sum =
           11.1412486092642
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 141
dh =
          0.675276829313509
rdh_sum =
           11.1514804858827
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 142
dh =
          0.698838829313511
rdh_sum =
           11.1624361837851
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 143
dh =
          0.722401329313509
rdh_sum =
           11.1741401708112
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 144
dh =
          0.745963829313508
rdh_sum =
           11.1866168622854
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 145
dh =
          0.769526329313509
rdh_sum =
            11.199890634896
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 146
dh =
          0.793088829313509
rdh_sum =
           11.2139858254762
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 147
dh =
          0.816650829313508
rdh_sum =
           11.2289267115841
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 148
dh =
          0.840213329313508
rdh_sum =
           11.2447375643841
ans =
```

```
Berm Factor Calculation: Iteration 9, Profile Segment: 149
dh =
          0.83501132931351
rdh_sum =
          11.2603542666909
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 150
dh =
          0.80104482931351
rdh_sum =
          11.2747323021676
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 151
dh =
          0.76707882931351
rdh_sum =
          11.2879221464582
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 152
dh =
          0.733112329313508
rdh_sum =
          11.2999743636841
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 153
dh =
          0.69914582931351
rdh_sum =
          11.3109396540344
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 154
dh =
          0.665179829313509
rdh_sum =
          11.3208688455127
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 155
dh =
          0.631213329313509
rdh_sum =
          11.3298128432749
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 156
dh =
          0.597246829313509
rdh_sum =
          11.3378226704693
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 157
dh =
          0.567179329313509
rdh_sum =
          11.3450482120678
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 158
dh =
          0.544908329313509
rdh_sum =
           11.351718694948
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 159
dh =
          0.526535329313509
rdh_sum =
          11.3579478566655
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 160
dh =
          0.508162329313508
rdh_sum =
          11.3637507086783
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 161
dh =
          0.48978982931351
rdh_sum =
          11.3691422863933
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 162
dh =
          0.471417329313509
rdh_sum =
          11.3741376259143
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 163
dh =
          0.453044329313508
rdh_sum =
          11.3787517652215
ans =
```

```
Berm Factor Calculation: Iteration 9, Profile Segment: 164
dh =
          0.43467182931351
rdh_sum =
          11.3829997746316
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 165
dh =
          0.416299329313508
rdh_sum =
          11.3868967250129
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 166
dh =
          0.39792632931351
rdh_sum =
          11.3904576889675
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 167
dh =
          0.379553329313509
rdh_sum =
          11.3936977590714
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 168
dh =
          0.361180829313509
rdh_sum =
          11.3966320457723
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 169
dh =
          0.34280832931351
rdh_sum =
          11.3992756598757
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 170
dh =
          0.316685829313508
rdh_sum =
          11.4015320217426
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 171
dh =
          0.282813329313509
rdh_sum =
          11.4033317935143
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 172
dh =
          0.24894082931351
rdh_sum =
          11.4047264545435
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 173
dh =
          0.215068329313509
rdh_sum =
          11.4057675260437
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 174
dh =
          0.181195829313509
rdh_sum =
          11.4065065657648
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 175
dh =
          0.14732332931351
rdh_sum =
          11.4069951626658
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 176
dh =
          0.113450829313509
rdh_sum =
          11.4072849315842
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 177
dh =
          0.0795783293135095
rdh_sum =
          11.4074275079026
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 178
dh =
          0.0457058293135102
rdh_sum =
          11.407474542213
ans =
```

```
Berm Factor Calculation: Iteration 9, Profile Segment: 179
dh =
        0.0118338293135078
rdh_sum =
        11.4074776952462
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 180
dh =
       -0.0220386706864915
rdh_sum =
        11.407491686981
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 181
dh =
       -0.0559111706864908
rdh_sum =
        11.4075817376479
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 182
dh =
       -0.0897836706864901
rdh_sum =
        11.407813938546
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 183
dh =
       -0.123656170686489
rdh_sum =
        11.4082543621812
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 184
dh =
       -0.15752867068649
rdh_sum =
        11.4089690535309
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 185
dh =
       -0.191401170686492
rdh_sum =
        11.4100240213129
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 186
dh =
       -0.225273670686491
rdh_sum =
        11.4114852292578
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 187
dh =
       -0.25914617068649
rdh_sum =
        11.4134185873891
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 188
dh =
       -0.300954670686492
rdh_sum =
        11.4160255045018
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 189
dh =
       -0.358635670686491
rdh_sum =
        11.4197261145055
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 190
dh =
       -0.424252170686492
rdh_sum =
        11.4249021852742
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 191
dh =
       -0.489868670686491
rdh_sum =
        11.4317991999374
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 192
dh =
       -0.55548567068649
rdh_sum =
        11.4406618037678
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 193
dh =
       -0.621102670686492
rdh_sum =
        11.4517336547115
ans =
```

```
Berm Factor Calculation: Iteration 9, Profile Segment: 194
dh =
        -0.686719670686491
rdh_sum =
         11.4652573146861
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 195
dh =
        -0.752336170686492
rdh_sum =
         11.4814741078051
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 196
dh =
        -0.817952670686491
rdh_sum =
         11.5006240398737
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 197
dh =
        -0.883569670686491
rdh_sum =
         11.5229456866342
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 198
dh =
         -0.94918667068649
rdh_sum =
         11.5486760288731
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 199
dh =
        -1.01480367068649
rdh_sum =
         11.5780503562905
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 200
dh =
        -1.08042017068649
rdh_sum =
         11.6113021203398
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 201
dh =
        -1.13097467068649
rdh_sum =
         11.6476993023211
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 202
dh =
        -1.16646767068649
rdh_sum =
         11.6863864305404
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 203
dh =
        -1.20196067068649
rdh_sum =
         11.7274304685565
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 204
dh =
        -1.23745317068649
rdh_sum =
          11.770898003194
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 205
dh =
        -1.27294567068649
rdh_sum =
         11.8168553022274
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 206
dh =
        -1.30843867068649
rdh_sum =
         11.8653683084958
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 207
dh =
        -1.34393117068649
rdh_sum =
         11.9165025218608
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 208
dh =
        -1.37942367068649
rdh_sum =
         11.9703230972435
ans =
```

```
Berm Factor Calculation: Iteration 9, Profile Segment: 209
dh =
        -1.41491667068649
rdh_sum =
        12.0268948388379
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 210
dh =
        -1.45040967068649
rdh_sum =
        12.0862821140963
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 211
dh =
        -1.48590217068649
rdh_sum =
        12.1485488407593
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 228
dh =
        -2.68392767068649
rdh_sum =
        12.3420989044397
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 229
dh =
        -2.74339617068649
rdh_sum =
        12.5436862881552
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 230
dh =
        -2.79876017068649
rdh_sum =
        12.7528656285542
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 231
dh =
        -2.85412417068649
rdh_sum =
        12.9697396397643
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 232
dh =
        -2.90948817068649
rdh_sum =
        13.1944083182543
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 233
dh =
        -2.96485267068649
rdh_sum =
         13.42696897922
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 234
dh =
        -3.02021717068649
rdh_sum =
        13.6675160805125
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 235
dh =
        -3.07558117068649
rdh_sum =
        13.9161411858648
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 236
dh =
        -3.13094517068649
rdh_sum =
        14.1729330776664
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 237
dh =
        -3.18630917068649
rdh_sum =
        14.4379776539023
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 238
dh =
        -3.24167317068649
rdh_sum =
        14.7113578978154
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 239
dh =
        -3.29703767068649
rdh_sum =
        14.9931539249533
ans =
```

```
Berm Factor Calculation: Iteration 9, Profile Segment: 240
dh =
        -3.35240217068649
rdh_sum =
        15.2834428035532
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 241
dh =
        -3.40776617068649
rdh_sum =
         15.582298524538
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 242
dh =
        -3.46313017068649
rdh_sum =
        15.8897921294878
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 243
dh =
        -3.51849417068649
rdh_sum =
        16.2059916091927
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 244
dh =
        -3.55666817068649
rdh_sum =
        16.5282318693026
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 245
dh =
        -3.56046167068649
rdh_sum =
        16.8510740725873
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 246
dh =
        -3.54706467068649
rdh_sum =
        17.1717917930635
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 247
dh =
        -3.53366817068649
rdh_sum =
        17.4903888175974
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 248
dh =
        -3.52027167068649
rdh_sum =
        17.8068688975525
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 249
dh =
        -3.50687467068649
rdh_sum =
        18.1212357492721
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 250
dh =
        -3.49347767068649
rdh_sum =
        18.4334932118848
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 251
dh =
        -3.48008117068649
rdh_sum =
        18.7436452466528
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 252
dh =
        -3.46668467068649
rdh_sum =
        19.0516957795794
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 253
dh =
        -3.45328767068649
rdh_sum =
        19.3576487019148
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 254
dh =
        -3.43989067068649
rdh_sum =
        19.6615080267985
ans =
```

```
Berm Factor Calculation: Iteration 9, Profile Segment: 255
dh =
        -3.42649417068649
rdh_sum =
        19.9632778885774
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 260
dh =
        -4.12631567068649
rdh_sum =
        20.3786372038503
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 261
dh =
        -4.18136067068649
rdh_sum =
        20.8032185562166
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 262
dh =
        -4.23640567068649
rdh_sum =
        21.2370482765122
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 263
dh =
        -4.29145117068649
rdh_sum =
        21.6801495510121
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 264
dh =
        -4.34649667068649
rdh_sum =
        22.1325422450713
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 265
dh =
        -4.40154167068649
rdh_sum =
        22.5942428954682
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 266
dh =
        -4.45658667068649
rdh_sum =
        23.0652648736156
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 267
dh =
        -4.51163167068649
rdh_sum =
         23.545618296581
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 268
dh =
        -4.56667717068649
rdh_sum =
        24.0353101083994
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 269
dh =
        -4.61806067068649
rdh_sum =
         24.533722369152
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 270
dh =
        -4.66578167068649
rdh_sum =
        25.0402339939816
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 271
dh =
        -4.71350317068649
rdh_sum =
        25.5548433590316
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 272
dh =
        -4.76122467068649
rdh_sum =
         26.077546630649
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 273
dh =
        -4.80894567068649
rdh_sum =
        26.6083377665508
ans =
```

```
Berm Factor Calculation: Iteration 9, Profile Segment: 274
dh =
        -4.85666667068649
rdh_sum =
        27.1472086869843
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 275
dh =
        -4.90438817068649
rdh_sum =
        27.6941492765083
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 276
dh =
        -4.95210967068649
rdh_sum =
         28.249147217412
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 277
dh =
        -4.99983067068649
rdh_sum =
        28.8121879934633
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 278
dh =
        -5.04755217068649
rdh_sum =
        29.3832551464394
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 279
dh =
        -5.09527367068649
rdh_sum =
        29.9623300275624
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 280
dh =
        -5.13723517068649
rdh_sum =
        30.5484290268341
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 281
dh =
        -5.17343767068649
rdh_sum =
        31.1405741356468
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 282
dh =
        -5.20964017068649
rdh_sum =
        31.7387514382468
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 283
dh =
        -5.24584217068649
rdh_sum =
        32.3429460248977
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 284
dh =
        -5.28204467068649
rdh_sum =
        32.9531422433455
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 285
dh =
        -5.31824717068649
rdh_sum =
        33.5693234517578
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 286
dh =
        -5.35444967068649
rdh_sum =
        34.1914721044492
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 287
dh =
        -5.39065217068649
rdh_sum =
         34.819569754531
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 288
dh =
        -5.42685417068649
rdh_sum =
        35.4535969749388
ans =
```

```
Berm Factor Calculation: Iteration 9, Profile Segment: 289
dh =
         -5.46305667068649
rdh_sum =
          36.093533606914
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 290
dh =
         -5.49925917068649
rdh_sum =
          36.7393585172272
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 291
dh =
         -5.53546117068649
rdh_sum =
          37.3910496025375
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 292
dh =
         -5.57166367068649
rdh_sum =
          38.0485840356322
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 293
dh =
         -5.60786617068649
rdh_sum =
          38.7119380256622
ans =
!------- End Berm Factor Calculation, Iter: 9 ---------!
berm_width =
   223
rB =
          0.685965517420161
rdh_mean =
          0.173596134644225
gamma_berm =
          0.433115444903205
gamma_berm =
                      0.6
slope =
          0.170222776270047
Irb =
          2.07960356271276
gamma_berm =
                      0.6
gamma_perm =
     1
gamma_beta =
     1
gamma_rough =
                      0.8
gamma =
                     0.48
ans =
!!! - - Iribaren number:   1.25 is in the valid range (0.5-10), TAW RECOMMENDED - - !!!
ans =
!!! - - slope: 1:5.9 V:H is in the valid range (1:8 - 1:1), TAW RECOMMENDED - - !!!
R2_new =
          9.24794779837129
!   Berm_width is greater than 1/4 wave length
!   Runup will be weighted average with foreshore calculation assuming depth limited wave height on berm
fore_H0 =
               3.65043666
upper_slope =
          0.0902230000000016
upper_slope =
          0.0963072516582605
upper_slope =
          0.101701145318816
upper_slope =
           0.1065159251127
upper_slope =
          0.110840009931419
upper_slope =
          0.114744817341484
upper_slope =
          0.118288555558608
upper_slope =
          0.121519009876234
upper_slope =
           0.12447600240095
upper_slope =
          0.127192887032832
upper_slope =
          0.129697694420277
upper_slope =
          0.132014356920906
upper_slope =
```

```
          0.13135479292437
w2 =
        0.0472655588251012
w1 =
        0.952734441174899
R2_new =
          9.24505627957507
R2del =
        0.00976658626330895
Z2 =
          18.3155551088886
% final 2% runup elevation
Z2=R2_new+SWEL
Z2 =
          18.3155551088886
diary off
-1.000000e+00
-1.000000e+00
```