```
diary on          % begin recording

% FEMA appeal for The Town of Kennebunkport, York county, Maine
% TRANSECT ID: YK-108
% calculation by SJH, Ransom Consulting, Inc. 02-Apr-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/YK-108sta_ele_include.csv';   % file with station, elevation, include
                                   % third colunm is 0 for excluded points
imgname='logfiles/YK-108-runup';
SWEL=9.0347;  % 100-yr still water level including wave setup.
H0=2.4638;    % significant wave height at toe of structure
Tp=12.522;    % peak period, 1/fma,
T0=Tp/1.1;

gamma_berm=0.99585;   % this may get changed automatically below
gamma_rough=0.6;
gamma_beta=1;
gamma_perm=1;

setupAtToe=0.41366;
maxSetup=0.68007;   % only used in case of berm/shallow foreshore weighted average

plotTitle='Iterative TAW for YK-108'

plotTitle =

Iterative TAW for YK-108


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

```
SWEL=SWEL+setupAtToe

SWEL =

               9.44836

SWEL_fore=SWEL+maxSetup

SWEL_fore =

               10.12843



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

L0 =

        663.075738236217


% 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
```

```
% 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 =

                  5.75266


% 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 =

                  13.14406


% 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 =

          212.427117384844


top_sta =

          332.64095522817

% 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 =

          332.64095522817

toe_sta

toe_sta =

          212.427117384844



% 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')
```

```
        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 =

-!!- The User has selected a starting point that is 0.01 feet above the elevation of SWEL-1.5H0


ans =

-!!- This may be reasonable for some cases.  However the user may want to consider:


ans =

-!!-   1) Selecting a starting point that is at or below 5.75 feet elevation, or


ans =

-!!-   2) Reducing the incident wave height to a depth limited condition.



% 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
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 =
                  5.75266
toe_sta =
        212.427117384844
top_sta =
         332.64095522817
Z2 =
                 13.14406
H0 =
                   2.4638
Tp =
                   12.522
T0 =
        11.3836363636364
R2 =
                   7.3914
Z2 =
                 16.83976
top_sta =
         853.24102935843
Lslope =
        640.813911973586
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 1
dh =
                 3.700486
rdh_sum =
       0.854629843592181
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 2
dh =
                 3.692757
rdh_sum =
        1.70751853192025
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 3
dh =
                3.6523775
rdh_sum =
        2.55117235854404
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 4
```

```
dh =
                      3.611998
rdh_sum =
          3.38536357933416
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 5
dh =
                      3.5716185
rdh_sum =
          4.20987072116057
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 6
dh =
                      3.531239
rdh_sum =
          5.02447872866588
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 7
dh =
                      3.4908595
rdh_sum =
          5.82897910678553
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 8
dh =
                      3.467545
rdh_sum =
          6.62755116654938
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 9
dh =
                      3.4612955
rdh_sum =
          7.42452286255871
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 10
dh =
                      3.4550465
rdh_sum =
           8.219889608945
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 11
dh =
                      3.4487975
rdh_sum =
           9.0136467174644
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 12
dh =
                      3.442548
rdh_sum =
          9.80578939607165
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 13
dh =
                      3.4362985
rdh_sum =
          10.5963130069552
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 14
dh =
                      3.4300495
rdh_sum =
          11.3852130680951
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 15
dh =
                      3.4238005
rdh_sum =
          12.1724849938907
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 16
dh =
                      3.4175515
rdh_sum =
          12.9581242245842
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 17
dh =
                      3.411302
rdh_sum =
          13.7421260951528
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 18
dh =
                      3.4003055
rdh_sum =
          14.5232359682026
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 19
```

```
dh =
                  3.3798155
rdh_sum =
        15.2989203750387
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 20
dh =
                  3.3545785
rdh_sum =
        16.0678578183687
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 21
dh =
                  3.329341
rdh_sum =
        16.8299785406263
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 22
dh =
                  3.3041035
rdh_sum =
        17.5852146819812
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 23
dh =
                  3.2788665
rdh_sum =
        18.3335003032842
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 24
dh =
                  3.2536295
rdh_sum =
        19.0747711289892
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 28
dh =
                  2.7927855
rdh_sum =
        19.6788755386565
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 29
dh =
                  2.7838805
rdh_sum =
        20.2802018069415
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 30
dh =
                  2.818876
rdh_sum =
        20.8924261630196
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 31
dh =
                  2.8538715
rdh_sum =
        21.5154927442284
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 32
dh =
                  2.888867
rdh_sum =
        22.1493402908991
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 33
dh =
                  2.923863
rdh_sum =
        22.7939023294304
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 34
dh =
                  2.9588585
rdh_sum =
        23.4491067466467
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 35
dh =
                  2.993854
rdh_sum =
        24.1148762854152
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 36
dh =
                  2.9785435
rdh_sum =
        24.7760334371378
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 37
```

```
dh =
                 2.9129265
rdh_sum =
        25.4172546007938
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 38
dh =
                 2.84731
rdh_sum =
        26.0382928170551
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 39
dh =
                 2.7816935
rdh_sum =
        26.6389362920358
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 40
dh =
                 2.7160765
rdh_sum =
        27.2190087614432
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 41
dh =
                 2.6504595
rdh_sum =
        27.7783701115315
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 42
dh =
                 2.5848425
rdh_sum =
        28.3169164696317
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 43
dh =
                 2.519226
rdh_sum =
        28.8345805451998
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 44
dh =
                 2.4536095
rdh_sum =
         29.331331429459
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 53
dh =
                 1.726356
rdh_sum =
        29.6048176138964
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 54
dh =
                  1.71542
rdh_sum =
        29.8752014637987
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 55
dh =
                 1.704484
rdh_sum =
        30.1424941412628
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 56
dh =
                 1.693548
rdh_sum =
        30.4067069586539
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 57
dh =
                 1.682612
rdh_sum =
        30.6678513780551
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 58
dh =
                 1.671676
rdh_sum =
        30.9259390107105
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 77
dh =
        -0.850196999999998
rdh_sum =
        30.9582309149951
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 78
```

```
dh =
               -0.8961285
rdh_sum =
      30.9940627842217
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 79
dh =
      -0.942059999999998
rdh_sum =
      31.0336115186145
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 80
dh =
      -0.987991999999998
rdh_sum =
      31.0770526451754
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 81
dh =
               -1.033924
rdh_sum =
      31.1245601679345
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 82
dh =
               -1.0798555
rdh_sum =
      31.1763064940586
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 83
dh =
               -1.125787
rdh_sum =
      31.2324624585753
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 84
dh =
               -1.171719
rdh_sum =
      31.2931972667024
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 85
dh =
               -1.217651
rdh_sum =
      31.3586783314902
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 86
dh =
               -1.2635825
rdh_sum =
       31.429071202729
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 87
dh =
               -1.2947505
rdh_sum =
      31.5028904700443
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 88
dh =
               -1.311155
rdh_sum =
      31.5785432157297
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 89
dh =
               -1.327559
rdh_sum =
      31.6560500125799
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 90
dh =
               -1.343963
rdh_sum =
      31.7354313988286
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 91
dh =
               -1.360367
rdh_sum =
      31.8167078215817
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 92
dh =
               -1.3767715
rdh_sum =
      31.8998996945149
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 93
```

```
dh =
                  -1.393176
rdh_sum =
        31.9850272807344
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 94
dh =
                  -1.40958
rdh_sum =
        32.0721106893207
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 95
dh =
                  -1.425984
rdh_sum =
        32.1611699929693
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 96
dh =
                  -1.442388
rdh_sum =
        32.2522251683237
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 97
dh =
                  -1.4576205
rdh_sum =
        32.3451514820193
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 98
dh =
                  -1.4716815
rdh_sum =
         32.439820175667
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 99
dh =
                  -1.4857425
rdh_sum =
        32.5362457265432
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 100
dh =
                  -1.499803
rdh_sum =
        32.6344424859339
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 101
dh =
                  -1.5138635
rdh_sum =
        32.7344248040827
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 102
dh =
                  -1.5279245
rdh_sum =
        32.8362070317194
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 103
dh =
                  -1.5419855
rdh_sum =
        32.9398033920457
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 104
dh =
                  -1.553117
rdh_sum =
         33.044845968831
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 105
dh =
                  -1.561319
rdh_sum =
        33.1509598172267
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 106
dh =
                  -1.569521
rdh_sum =
        33.2581497241443
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 107
dh =
                  -1.577723
rdh_sum =
         33.366420463418
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 108
```

```
dh =
                 -1.585925
rdh_sum =
         33.4757767957466
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 109
dh =
                 -1.594127
rdh_sum =
         33.5862234686356
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 110
dh =
                 -1.602329
rdh_sum =
         33.6977652163396
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 111
dh =
                 -1.610531
rdh_sum =
         33.8104067598047
ans =
Berm Factor Calculation: Iteration 1, Profile Segment: 126
dh =
                 -4.540023
rdh_sum =
         34.4860121429232
ans =
!------- End Berm Factor Calculation, Iter: 1 ---------!
berm_width =
     83
rB =
         0.129522781027609
rdh_mean =
         0.415494122203894
gamma_berm =
         0.924293173180865
slope =
        0.0198759833019815
Irb =
          0.32606746457757
gamma_berm =
         0.924293173180865
gamma_perm =
     1
gamma_beta =
     1
gamma_rough =
                       0.6
gamma =
         0.554575903908519
ans =
!!! - - Iribaren number:   0.30 is outside the valid range (0.5-10), TAW NOT VALID - - !!!
ans =
!!! - - slope: 1:50.3 V:H is outside the valid range (1:8 - 1:1), TAW NOT VALID - - !!!
R2_new =
         0.788582580619379
R2del =
          6.60281741938062
Z2 =
          10.2369425806194
top_sta =
          286.813999820101
ans =
!---------------- STARTING ITERATION 2 ----------------!
Ztoe =
                   5.75266
toe_sta =
          212.427117384844
top_sta =
          286.813999820101
Z2 =
          10.2369425806194
H0 =
                    2.4638
Tp =
                    12.522
T0 =
          11.3836363636364
R2 =
         0.788582580619379
Z2 =
          10.2369425806194
top_sta =
          286.813999820101
Lslope =
          74.3868824352572
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 1
```

```
dh =
                  3.700486
rdh_sum =
     1
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 2
dh =
                  3.692757
rdh_sum =
     2
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 3
dh =
                  3.6523775
rdh_sum =
     3
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 4
dh =
                  3.611998
rdh_sum =
     4
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 5
dh =
                  3.5716185
rdh_sum =
     5
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 6
dh =
                  3.531239
rdh_sum =
     6
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 7
dh =
                  3.4908595
rdh_sum =
     7
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 8
dh =
                  3.467545
rdh_sum =
     8
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 9
dh =
                  3.4612955
rdh_sum =
     9
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 10
dh =
                  3.4550465
rdh_sum =
    10
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 11
dh =
                  3.4487975
rdh_sum =
    11
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 12
dh =
                  3.442548
rdh_sum =
    12
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 13
dh =
                  3.4362985
rdh_sum =
    13
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 14
dh =
                  3.4300495
rdh_sum =
    14
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 15
dh =
                  3.4238005
rdh_sum =
    15
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 16
```

```
dh =
                3.4175515
rdh_sum =
    16
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 17
dh =
                3.411302
rdh_sum =
    17
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 18
dh =
                3.4003055
rdh_sum =
    18
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 19
dh =
                3.3798155
rdh_sum =
    19
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 20
dh =
                3.3545785
rdh_sum =
    20
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 21
dh =
                3.329341
rdh_sum =
    21
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 22
dh =
                3.3041035
rdh_sum =
    22
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 23
dh =
                3.2788665
rdh_sum =
    23
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 24
dh =
                3.2536295
rdh_sum =
    24
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 28
dh =
                2.7927855
rdh_sum =
    25
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 29
dh =
                2.7838805
rdh_sum =
    26
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 30
dh =
                2.818876
rdh_sum =
    27
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 31
dh =
                2.8538715
rdh_sum =
    28
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 32
dh =
                2.888867
rdh_sum =
    29
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 33
dh =
                2.923863
rdh_sum =
    30
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 34
```

```
dh =
                   2.9588585
rdh_sum =
    31
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 35
dh =
                   2.993854
rdh_sum =
    32
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 36
dh =
                   2.9785435
rdh_sum =
    33
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 37
dh =
                   2.9129265
rdh_sum =
    34
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 38
dh =
                   2.84731
rdh_sum =
    35
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 39
dh =
                   2.7816935
rdh_sum =
    36
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 40
dh =
                   2.7160765
rdh_sum =
    37
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 41
dh =
                   2.6504595
rdh_sum =
    38
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 42
dh =
                   2.5848425
rdh_sum =
    39
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 43
dh =
                   2.519226
rdh_sum =
    40
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 44
dh =
                   2.4536095
rdh_sum =
    41
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 53
dh =
                   1.726356
rdh_sum =
    42
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 54
dh =
                   1.71542
rdh_sum =
    43
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 55
dh =
                   1.704484
rdh_sum =
    44
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 56
dh =
                   1.693548
rdh_sum =
    45
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 57
```

```
dh =
                1.682612
rdh_sum =
    46
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 58
dh =
                1.671676
rdh_sum =
    47
ans =
Berm Factor Calculation: Iteration 2, Profile Segment: 77
dh =
        -0.850196999999998
rdh_sum =
          47.985012873909
ans =
!------- End Berm Factor Calculation, Iter: 2 ---------!
berm_width =
    48
rB =
        0.645275059642093
rdh_mean =
        0.999687768206437
gamma_berm =
        0.999798524610787
slope =
        0.169943629817657
Irb =
         2.78794199279831
gamma_berm =
        0.999798524610787
gamma_perm =
    1
gamma_beta =
    1
gamma_rough =
                        0.6
gamma =
        0.599879114766472
ans =
!!! - - Iribaren number:   2.79 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 =
         4.93904921486272
R2del =
         4.15046663424334
Z2 =
         14.3874092148627
ans =
!---------------- STARTING ITERATION 3 -----------------!
Ztoe =
                   5.75266
toe_sta =
         212.427117384844
top_sta =
         408.813558329594
Z2 =
         14.3874092148627
H0 =
                   2.4638
Tp =
                   12.522
T0 =
         11.3836363636364
R2 =
         4.93904921486272
Z2 =
         14.3874092148627
top_sta =
         408.813558329594
Lslope =
          196.38644094475
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 1
dh =
                 3.700486
rdh_sum =
        0.854629843592181
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 2
dh =
                 3.692757
rdh_sum =
         1.70751853192025
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 3
dh =
                3.6523775
```

```
rdh_sum =
          2.55117235854404
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 4
dh =
                  3.611998
rdh_sum =
          3.38536357933416
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 5
dh =
                  3.5716185
rdh_sum =
          4.20987072116057
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 6
dh =
                  3.531239
rdh_sum =
          5.02447872866588
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 7
dh =
                  3.4908595
rdh_sum =
          5.82897910678553
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 8
dh =
                  3.467545
rdh_sum =
          6.62755116654938
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 9
dh =
                  3.4612955
rdh_sum =
          7.42452286255871
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 10
dh =
                  3.4550465
rdh_sum =
          8.219889608945
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 11
dh =
                  3.4487975
rdh_sum =
          9.0136467174644
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 12
dh =
                  3.442548
rdh_sum =
          9.80578939607165
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 13
dh =
                  3.4362985
rdh_sum =
          10.5963130069552
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 14
dh =
                  3.4300495
rdh_sum =
          11.3852130680951
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 15
dh =
                  3.4238005
rdh_sum =
          12.1724849938907
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 16
dh =
                  3.4175515
rdh_sum =
          12.9581242245842
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 17
dh =
                  3.411302
rdh_sum =
          13.7421260951528
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 18
dh =
                  3.4003055
```

```
rdh_sum =
          14.5232359682026
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 19
dh =
                  3.3798155
rdh_sum =
          15.2989203750387
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 20
dh =
                  3.3545785
rdh_sum =
          16.0678578183687
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 21
dh =
                  3.329341
rdh_sum =
          16.8299785406263
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 22
dh =
                  3.3041035
rdh_sum =
          17.5852146819812
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 23
dh =
                  3.2788665
rdh_sum =
          18.3335003032842
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 24
dh =
                  3.2536295
rdh_sum =
          19.0747711289892
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 28
dh =
                  2.7927855
rdh_sum =
          19.6788755386565
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 29
dh =
                  2.7838805
rdh_sum =
          20.2802018069415
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 30
dh =
                  2.818876
rdh_sum =
          20.8924261630196
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 31
dh =
                  2.8538715
rdh_sum =
          21.5154927442284
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 32
dh =
                  2.888867
rdh_sum =
          22.1493402908991
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 33
dh =
                  2.923863
rdh_sum =
          22.7939023294304
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 34
dh =
                  2.9588585
rdh_sum =
          23.4491067466467
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 35
dh =
                  2.993854
rdh_sum =
          24.1148762854152
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 36
dh =
                  2.9785435
```

```
rdh_sum =
          24.7760334371378
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 37
dh =
                2.9129265
rdh_sum =
          25.4172546007938
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 38
dh =
                  2.84731
rdh_sum =
          26.0382928170551
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 39
dh =
                2.7816935
rdh_sum =
          26.6389362920358
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 40
dh =
                2.7160765
rdh_sum =
          27.2190087614432
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 41
dh =
                2.6504595
rdh_sum =
          27.7783701115315
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 42
dh =
                2.5848425
rdh_sum =
          28.3169164696317
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 43
dh =
                 2.519226
rdh_sum =
          28.8345805451998
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 44
dh =
                2.4536095
rdh_sum =
           29.331331429459
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 53
dh =
                 1.726356
rdh_sum =
          29.6048176138964
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 54
dh =
                  1.71542
rdh_sum =
          29.8752014637987
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 55
dh =
                 1.704484
rdh_sum =
          30.1424941412628
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 56
dh =
                 1.693548
rdh_sum =
          30.4067069586539
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 57
dh =
                 1.682612
rdh_sum =
          30.6678513780551
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 58
dh =
                 1.671676
rdh_sum =
          30.9259390107105
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 77
dh =
         -0.850196999999998
```

```
rdh_sum =
        30.9972869478005
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 78
dh =
            -0.8961285
rdh_sum =
        31.0763370219085
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 79
dh =
       -0.942059999999998
rdh_sum =
        31.1634485130887
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 80
dh =
       -0.987991999999998
rdh_sum =
        31.2589739144722
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 81
dh =
              -1.033924
rdh_sum =
        31.3632584519643
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 82
dh =
             -1.0798555
rdh_sum =
        31.4766397745638
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 83
dh =
              -1.125787
rdh_sum =
        31.5994478606616
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 84
dh =
              -1.171719
rdh_sum =
        31.7320047507665
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 85
dh =
              -1.217651
rdh_sum =
        31.8746240637825
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 86
dh =
             -1.2635825
rdh_sum =
        32.0276107156804
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 87
dh =
             -1.2947505
rdh_sum =
        32.1878016200761
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 88
dh =
              -1.311155
rdh_sum =
        32.3518381290203
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 89
dh =
              -1.327559
rdh_sum =
        32.5197567021796
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 90
dh =
              -1.343963
rdh_sum =
        32.6915934932308
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 91
dh =
              -1.360367
rdh_sum =
        32.8673842292747
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 92
dh =
             -1.3767715
```

```
rdh_sum =
          33.0471643290736
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 93
dh =
                   -1.393176
rdh_sum =
          33.2309686570662
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 94
dh =
                    -1.40958
rdh_sum =
          33.4188315153213
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 95
dh =
                   -1.425984
rdh_sum =
          33.6107868861832
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 96
dh =
                   -1.442388
rdh_sum =
          33.8068683064446
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 97
dh =
                  -1.4576205
rdh_sum =
          34.0068107493371
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 98
dh =
                  -1.4716815
rdh_sum =
          34.2103422816865
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 99
dh =
                  -1.4857425
rdh_sum =
           34.41748661834
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 100
dh =
                   -1.499803
rdh_sum =
          34.6282670554379
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 101
dh =
                  -1.5138635
rdh_sum =
          34.8427067263342
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 102
dh =
                  -1.5279245
rdh_sum =
          35.0608286030369
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 103
dh =
                  -1.5419855
rdh_sum =
          35.2826552332953
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 104
dh =
                   -1.553117
rdh_sum =
          35.5074305556439
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 105
dh =
                   -1.561319
rdh_sum =
          35.7343873937061
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 106
dh =
                   -1.569521
rdh_sum =
           35.963533179079
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 107
dh =
                   -1.577723
```

```
rdh_sum =
          36.1948752837817
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 108
dh =
                  -1.585925
rdh_sum =
          36.4284210200543
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 109
dh =
                  -1.594127
rdh_sum =
          36.6641776401597
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 110
dh =
                  -1.602329
rdh_sum =
          36.9021523361853
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 111
dh =
                  -1.610531
rdh_sum =
          37.1423522398478
ans =
Berm Factor Calculation: Iteration 3, Profile Segment: 126
dh =
                  -4.540023
rdh_sum =
          38.1263333822086
ans =
!------- End Berm Factor Calculation, Iter: 3 ---------!
berm_width =
     83
rB =
          0.422636102577727
rdh_mean =
          0.459353414243477
gamma_berm =
          0.771503234123908
slope =
          0.0761532784953555
Irb =
          1.24930203758898
gamma_berm =
          0.771503234123908
gamma_perm =
     1
gamma_beta =
     1
gamma_rough =
                    0.6
gamma =
          0.462901940474345
ans =
!!! - - Iribaren number:   0.96 is in the valid range (0.5-10), TAW RECOMMENDED - - !!!
ans =
!!! - - slope: 1:13.1 V:H is outside the valid range (1:8 - 1:1), TAW NOT VALID - - !!!
R2_new =
          2.5219424210483
R2del =
          2.41710679381442
Z2 =
          11.9703024210483
top_sta =
          326.889848671777
ans =
!---------------- STARTING ITERATION 4 -----------------!
Ztoe =
                    5.75266
toe_sta =
          212.427117384844
top_sta =
          326.889848671777
Z2 =
          11.9703024210483
H0 =
                    2.4638
Tp =
                    12.522
T0 =
          11.3836363636364
R2 =
           2.5219424210483
Z2 =
          11.9703024210483
top_sta =
          326.889848671777
```

```
Lslope =
        114.462731286933
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 1
dh =
                  3.700486
rdh_sum =
     1
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 2
dh =
                  3.692757
rdh_sum =
     2
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 3
dh =
                  3.6523775
rdh_sum =
     3
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 4
dh =
                  3.611998
rdh_sum =
     4
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 5
dh =
                  3.5716185
rdh_sum =
     5
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 6
dh =
                  3.531239
rdh_sum =
     6
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 7
dh =
                  3.4908595
rdh_sum =
     7
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 8
dh =
                  3.467545
rdh_sum =
     8
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 9
dh =
                  3.4612955
rdh_sum =
     9
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 10
dh =
                  3.4550465
rdh_sum =
    10
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 11
dh =
                  3.4487975
rdh_sum =
    11
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 12
dh =
                  3.442548
rdh_sum =
    12
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 13
dh =
                  3.4362985
rdh_sum =
    13
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 14
dh =
                  3.4300495
rdh_sum =
    14
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 15
dh =
                  3.4238005
```

```
rdh_sum =
    15
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 16
dh =
                3.4175515
rdh_sum =
    16
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 17
dh =
                3.411302
rdh_sum =
    17
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 18
dh =
                3.4003055
rdh_sum =
    18
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 19
dh =
                3.3798155
rdh_sum =
    19
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 20
dh =
                3.3545785
rdh_sum =
    20
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 21
dh =
                3.329341
rdh_sum =
    21
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 22
dh =
                3.3041035
rdh_sum =
    22
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 23
dh =
                3.2788665
rdh_sum =
    23
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 24
dh =
                3.2536295
rdh_sum =
    24
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 28
dh =
                2.7927855
rdh_sum =
    25
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 29
dh =
                2.7838805
rdh_sum =
    26
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 30
dh =
                2.818876
rdh_sum =
    27
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 31
dh =
                2.8538715
rdh_sum =
    28
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 32
dh =
                2.888867
rdh_sum =
    29
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 33
dh =
                2.923863
```

```
rdh_sum =
    30
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 34
dh =
                2.9588585
rdh_sum =
    31
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 35
dh =
                2.993854
rdh_sum =
    32
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 36
dh =
                2.9785435
rdh_sum =
    33
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 37
dh =
                2.9129265
rdh_sum =
    34
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 38
dh =
                2.84731
rdh_sum =
    35
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 39
dh =
                2.7816935
rdh_sum =
    36
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 40
dh =
                2.7160765
rdh_sum =
    37
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 41
dh =
                2.6504595
rdh_sum =
    38
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 42
dh =
                2.5848425
rdh_sum =
    39
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 43
dh =
                2.519226
rdh_sum =
        39.5176640755681
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 44
dh =
                2.4536095
rdh_sum =
        40.0144149598273
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 53
dh =
                1.726356
rdh_sum =
        40.2879011442647
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 54
dh =
                1.71542
rdh_sum =
        40.558284994167
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 55
dh =
                1.704484
rdh_sum =
        40.8255776716311
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 56
dh =
                1.693548
```

```
rdh_sum =
        41.0897904890222
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 57
dh =
                1.682612
rdh_sum =
        41.3509349084234
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 58
dh =
                1.671676
rdh_sum =
        41.6090225410788
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 77
dh =
        -0.850196999999998
rdh_sum =
        41.8641907850563
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 78
dh =
                -0.8961285
rdh_sum =
         42.14469014795
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 79
dh =
        -0.942059999999998
rdh_sum =
        42.4512390312671
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 80
dh =
        -0.987991999999998
rdh_sum =
        42.7844708728844
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 81
dh =
                -1.033924
rdh_sum =
        43.1449314985707
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 82
dh =
                -1.0798555
rdh_sum =
        43.5330773117988
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 83
dh =
                -1.125787
rdh_sum =
        43.9492743990521
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 84
dh =
                -1.171719
rdh_sum =
         44.393797347574
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 85
dh =
                -1.217651
rdh_sum =
        44.8668277316205
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 86
dh =
                -1.2635825
rdh_sum =
        45.3684535102834
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 87
dh =
                -1.2947505
rdh_sum =
        45.8894861119588
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 88
dh =
                -1.311155
rdh_sum =
        46.4207221312532
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 89
dh =
                -1.327559
```

```
rdh_sum =
           46.9621482142789
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 90
dh =
                    -1.343963
rdh_sum =
           47.5137470633917
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 91
dh =
                    -1.360367
rdh_sum =
           48.0754971332639
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 92
dh =
                    -1.3767715
rdh_sum =
           48.6473729480721
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 93
dh =
                    -1.393176
rdh_sum =
           49.2293444939223
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 94
dh =
                    -1.40958
rdh_sum =
           49.8213772350422
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 95
dh =
                    -1.425984
rdh_sum =
           50.4234327427536
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 96
dh =
                    -1.442388
rdh_sum =
           51.0354684033283
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 97
dh =
                    -1.4576205
rdh_sum =
           51.6567296786553
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 98
dh =
                    -1.4716815
rdh_sum =
           52.2864683690515
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 99
dh =
                    -1.4857425
rdh_sum =
            52.924644671178
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 100
dh =
                    -1.499803
rdh_sum =
            53.571215895325
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 101
dh =
                    -1.5138635
rdh_sum =
            54.226137077194
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 102
dh =
                    -1.5279245
rdh_sum =
           54.8893609852979
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 103
dh =
                    -1.5419855
rdh_sum =
           55.5608375431604
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 104
dh =
                    -1.553117
```

```
rdh_sum =
          56.2388101902174
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 105
dh =
                  -1.561319
rdh_sum =
          56.9215475105037
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 106
dh =
                  -1.569521
rdh_sum =
          57.6090304278274
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 107
dh =
                  -1.577723
rdh_sum =
          58.3012393705975
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 108
dh =
                  -1.585925
rdh_sum =
          58.9981542738669
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 109
dh =
                  -1.594127
rdh_sum =
          59.6997545814269
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 110
dh =
                  -1.602329
rdh_sum =
          60.4060192479533
ans =
Berm Factor Calculation: Iteration 4, Profile Segment: 111
dh =
                  -1.610531
rdh_sum =
          61.1169267412034
ans =
!------- End Berm Factor Calculation, Iter: 4 ---------!
berm_width =
    82
rB =
          0.716390383822343
rdh_mean =
          0.745328374892725
gamma_berm =
          0.817555696740739
slope =
          0.191531709580794
Irb =
          3.14209656852503
gamma_berm =
          0.817555696740739
gamma_perm =
    1
gamma_beta =
    1
gamma_rough =
                      0.6
gamma =
          0.490533418044443
ans =
!!! - - Iribaren number:   2.57 is in the valid range (0.5-10), TAW RECOMMENDED - - !!!
ans =
!!! - - slope: 1:5.2 V:H is in the valid range (1:8 - 1:1), TAW RECOMMENDED - - !!!
R2_new =
          4.10597950258665
R2del =
          1.58403708153835
Z2 =
          13.5543395025867
top_sta =
          334.278555672762
ans =
!---------------- STARTING ITERATION 5 -----------------!
Ztoe =
                   5.75266
toe_sta =
          212.427117384844
top_sta =
          334.278555672762
Z2 =
          13.5543395025867
```

```
H0 =
                  2.4638
Tp =
                  12.522
T0 =
          11.3836363636364
R2 =
          4.10597950258665
Z2 =
          13.5543395025867
top_sta =
          334.278555672762
Lslope =
          121.851438287918
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 1
dh =
                  3.700486
rdh_sum =
          0.854629843592181
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 2
dh =
                  3.692757
rdh_sum =
          1.70751853192025
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 3
dh =
                  3.6523775
rdh_sum =
          2.55117235854404
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 4
dh =
                  3.611998
rdh_sum =
          3.38536357933416
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 5
dh =
                  3.5716185
rdh_sum =
          4.20987072116057
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 6
dh =
                  3.531239
rdh_sum =
          5.02447872866588
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 7
dh =
                  3.4908595
rdh_sum =
          5.82897910678553
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 8
dh =
                  3.467545
rdh_sum =
          6.62755116654938
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 9
dh =
                  3.4612955
rdh_sum =
          7.42452286255871
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 10
dh =
                  3.4550465
rdh_sum =
           8.219889608945
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 11
dh =
                  3.4487975
rdh_sum =
          9.0136467174644
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 12
dh =
                  3.442548
rdh_sum =
          9.80578939607165
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 13
dh =
                  3.4362985
```

```
rdh_sum =
          10.5963130069552
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 14
dh =
                  3.4300495
rdh_sum =
          11.3852130680951
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 15
dh =
                  3.4238005
rdh_sum =
          12.1724849938907
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 16
dh =
                  3.4175515
rdh_sum =
          12.9581242245842
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 17
dh =
                   3.411302
rdh_sum =
          13.7421260951528
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 18
dh =
                  3.4003055
rdh_sum =
          14.5232359682026
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 19
dh =
                  3.3798155
rdh_sum =
          15.2989203750387
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 20
dh =
                  3.3545785
rdh_sum =
          16.0678578183687
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 21
dh =
                   3.329341
rdh_sum =
          16.8299785406263
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 22
dh =
                  3.3041035
rdh_sum =
          17.5852146819812
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 23
dh =
                  3.2788665
rdh_sum =
          18.3335003032842
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 24
dh =
                  3.2536295
rdh_sum =
          19.0747711289892
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 28
dh =
                  2.7927855
rdh_sum =
          19.6788755386565
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 29
dh =
                  2.7838805
rdh_sum =
          20.2802018069415
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 30
dh =
                   2.818876
rdh_sum =
          20.8924261630196
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 31
dh =
                  2.8538715
```

```
rdh_sum =
          21.5154927442284
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 32
dh =
                    2.888867
rdh_sum =
          22.1493402908991
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 33
dh =
                    2.923863
rdh_sum =
          22.7939023294304
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 34
dh =
                    2.9588585
rdh_sum =
          23.4491067466467
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 35
dh =
                    2.993854
rdh_sum =
          24.1148762854152
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 36
dh =
                    2.9785435
rdh_sum =
          24.7760334371378
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 37
dh =
                    2.9129265
rdh_sum =
          25.4172546007938
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 38
dh =
                     2.84731
rdh_sum =
          26.0382928170551
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 39
dh =
                    2.7816935
rdh_sum =
          26.6389362920358
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 40
dh =
                    2.7160765
rdh_sum =
          27.2190087614432
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 41
dh =
                    2.6504595
rdh_sum =
          27.7783701115315
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 42
dh =
                    2.5848425
rdh_sum =
          28.3169164696317
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 43
dh =
                    2.519226
rdh_sum =
          28.8345805451998
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 44
dh =
                    2.4536095
rdh_sum =
           29.331331429459
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 53
dh =
                    1.726356
rdh_sum =
          29.6048176138964
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 54
dh =
                     1.71542
```

```
rdh_sum =
          29.8752014637987
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 55
dh =
                    1.704484
rdh_sum =
          30.1424941412628
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 56
dh =
                    1.693548
rdh_sum =
          30.4067069586539
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 57
dh =
                    1.682612
rdh_sum =
          30.6678513780551
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 58
dh =
                    1.671676
rdh_sum =
          30.9259390107105
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 77
dh =
          -0.850196999999998
rdh_sum =
          31.0280507237207
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 78
dh =
                   -0.8961285
rdh_sum =
          31.1410471696547
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 79
dh =
          -0.942059999999998
rdh_sum =
          31.2654062704542
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 80
dh =
          -0.987991999999998
rdh_sum =
          31.4015920472012
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 81
dh =
                    -1.033924
rdh_sum =
          31.5500537944393
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 82
dh =
                   -1.0798555
rdh_sum =
          31.7112255057645
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 83
dh =
                    -1.125787
rdh_sum =
          31.8855256100824
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 84
dh =
                    -1.171719
rdh_sum =
          32.0733564730845
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 85
dh =
                    -1.217651
rdh_sum =
          32.2751036099072
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 86
dh =
                   -1.2635825
rdh_sum =
          32.4911351922629
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 87
dh =
                   -1.2947505
```

```
rdh_sum =
          32.7170606665314
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 88
dh =
                    -1.311155
rdh_sum =
          32.9482565087037
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 89
dh =
                    -1.327559
rdh_sum =
          33.1847649031252
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 90
dh =
                    -1.343963
rdh_sum =
          33.4266273572466
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 91
dh =
                    -1.360367
rdh_sum =
          33.6738845351014
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 92
dh =
                    -1.3767715
rdh_sum =
           33.926576417145
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 93
dh =
                    -1.393176
rdh_sum =
          34.1847419638417
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 94
dh =
                    -1.40958
rdh_sum =
          34.4484191047776
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 95
dh =
                    -1.425984
rdh_sum =
          34.7176450675503
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 96
dh =
                    -1.442388
rdh_sum =
          34.9924562056593
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 97
dh =
                    -1.4576205
rdh_sum =
          35.2724854338905
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 98
dh =
                    -1.4716815
rdh_sum =
          35.5573579765236
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 99
dh =
                    -1.4857425
rdh_sum =
          35.8470987329957
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 100
dh =
                    -1.499803
rdh_sum =
          36.1417318648817
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 101
dh =
                    -1.5138635
rdh_sum =
          36.4412811402113
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 102
dh =
                    -1.5279245
```

```
rdh_sum =
          36.7457699340984
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 103
dh =
               -1.5419855
rdh_sum =
          37.0552208755417
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 104
dh =
               -1.553117
rdh_sum =
          37.3686158090096
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 105
dh =
               -1.561319
rdh_sum =
          37.6849254633857
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 106
dh =
               -1.569521
rdh_sum =
          38.0041570728599
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 107
dh =
               -1.577723
rdh_sum =
          38.3263177565478
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 108
dh =
               -1.585925
rdh_sum =
          38.6514145182109
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 109
dh =
               -1.594127
rdh_sum =
          38.9794542459803
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 110
dh =
               -1.602329
rdh_sum =
          39.3104437120859
ans =
Berm Factor Calculation: Iteration 5, Profile Segment: 111
dh =
               -1.610531
rdh_sum =
          39.6443895725894
ans =
!------- End Berm Factor Calculation, Iter: 5 ---------!
berm_width =
     82
rB =
          0.672950612254947
rdh_mean =
          0.483468165519383
gamma_berm =
          0.652399585737098
slope =
          0.195769082315707
Irb =
          3.21161108577688
gamma_berm =
          0.652399585737098
gamma_perm =
     1
gamma_beta =
     1
gamma_rough =
                    0.6
gamma =
          0.39439751442259
ans =
!!! - - Iribaren number:   2.10 is in the valid range (0.5-10), TAW RECOMMENDED - - !!!
ans =
!!! - - slope: 1:5.1 V:H is in the valid range (1:8 - 1:1), TAW RECOMMENDED - - !!!
R2_new =
          3.28599479467491
R2del =
          0.819984707911739
Z2 =
          12.7343547946749
```

```
top_sta =
          331.005647048839
ans =
!---------------- STARTING ITERATION 6 ----------------!
Ztoe =
                       5.75266
toe_sta =
          212.427117384844
top_sta =
          331.005647048839
Z2 =
          12.7343547946749
H0 =
                        2.4638
Tp =
                        12.522
T0 =
          11.3836363636364
R2 =
          3.28599479467491
Z2 =
          12.7343547946749
top_sta =
          331.005647048839
Lslope =
          118.578529663995
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 1
dh =
                       3.700486
rdh_sum =
     1
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 2
dh =
                       3.692757
rdh_sum =
     2
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 3
dh =
                       3.6523775
rdh_sum =
     3
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 4
dh =
                       3.611998
rdh_sum =
     4
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 5
dh =
                       3.5716185
rdh_sum =
     5
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 6
dh =
                       3.531239
rdh_sum =
     6
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 7
dh =
                       3.4908595
rdh_sum =
     7
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 8
dh =
                       3.467545
rdh_sum =
     8
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 9
dh =
                       3.4612955
rdh_sum =
     9
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 10
dh =
                       3.4550465
rdh_sum =
    10
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 11
dh =
                       3.4487975
```

```
rdh_sum =
    11
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 12
dh =
                3.442548
rdh_sum =
    12
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 13
dh =
                3.4362985
rdh_sum =
    13
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 14
dh =
                3.4300495
rdh_sum =
    14
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 15
dh =
                3.4238005
rdh_sum =
    15
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 16
dh =
                3.4175515
rdh_sum =
    16
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 17
dh =
                3.411302
rdh_sum =
    17
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 18
dh =
                3.4003055
rdh_sum =
    18
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 19
dh =
                3.3798155
rdh_sum =
    19
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 20
dh =
                3.3545785
rdh_sum =
    20
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 21
dh =
                3.329341
rdh_sum =
    21
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 22
dh =
                3.3041035
rdh_sum =
    22
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 23
dh =
                3.2788665
rdh_sum =
        22.748285621303
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 24
dh =
                3.2536295
rdh_sum =
        23.4895564470081
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 28
dh =
                2.7927855
rdh_sum =
        24.0936608566754
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 29
dh =
                2.7838805
```

```
rdh_sum =
         24.6949871249603
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 30
dh =
                2.818876
rdh_sum =
         25.3072114810385
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 31
dh =
               2.8538715
rdh_sum =
         25.9302780622472
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 32
dh =
                2.888867
rdh_sum =
         26.5641256089179
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 33
dh =
                2.923863
rdh_sum =
         27.2086876474492
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 34
dh =
               2.9588585
rdh_sum =
         27.8638920646655
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 35
dh =
                2.993854
rdh_sum =
          28.529661603434
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 36
dh =
               2.9785435
rdh_sum =
         29.1908187551566
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 37
dh =
               2.9129265
rdh_sum =
         29.8320399188126
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 38
dh =
                 2.84731
rdh_sum =
         30.4530781350739
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 39
dh =
               2.7816935
rdh_sum =
         31.0537216100547
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 40
dh =
               2.7160765
rdh_sum =
          31.633794079462
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 41
dh =
               2.6504595
rdh_sum =
         32.1931554295503
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 42
dh =
               2.5848425
rdh_sum =
         32.7317017876506
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 43
dh =
                2.519226
rdh_sum =
         33.2493658632186
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 44
dh =
               2.4536095
```

```
rdh_sum =
        33.7461167474778
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 53
dh =
            1.726356
rdh_sum =
        34.0196029319152
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 54
dh =
            1.71542
rdh_sum =
        34.2899867818175
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 55
dh =
            1.704484
rdh_sum =
        34.5572794592817
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 56
dh =
            1.693548
rdh_sum =
        34.8214922766728
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 57
dh =
            1.682612
rdh_sum =
         35.082636696074
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 58
dh =
            1.671676
rdh_sum =
        35.3407243287294
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 77
dh =
       -0.850196999999998
rdh_sum =
        35.4970030423345
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 78
dh =
            -0.8961285
rdh_sum =
        35.6695536529763
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 79
dh =
       -0.942059999999998
rdh_sum =
        35.8590074971876
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 80
dh =
       -0.987991999999998
rdh_sum =
        36.0659635149986
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 81
dh =
            -1.033924
rdh_sum =
        36.2909867201335
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 82
dh =
            -1.0798555
rdh_sum =
        36.5346070860419
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 83
dh =
            -1.125787
rdh_sum =
        36.7973189237057
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 84
dh =
            -1.171719
rdh_sum =
         37.079579950087
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 85
dh =
            -1.217651
```

```
rdh_sum =
            37.381809984448
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 86
dh =
                -1.2635825
rdh_sum =
        37.7043901206445
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 87
dh =
                -1.2947505
rdh_sum =
        38.0409765810757
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 88
dh =
                -1.311155
rdh_sum =
        38.3849939939069
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 89
dh =
                -1.327559
rdh_sum =
        38.736480497968
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 90
dh =
                -1.343963
rdh_sum =
        39.0954726209154
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 91
dh =
                -1.360367
rdh_sum =
        39.4620050443602
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 92
dh =
                -1.3767715
rdh_sum =
        39.836110826651
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 93
dh =
                -1.393176
rdh_sum =
        40.2178209340043
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 94
dh =
                -1.40958
rdh_sum =
        40.6071642291132
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 95
dh =
                -1.425984
rdh_sum =
        41.004167928562
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 96
dh =
                -1.442388
rdh_sum =
        41.4088573648196
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 97
dh =
                -1.4576205
rdh_sum =
        41.8207046881751
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 98
dh =
                -1.4716815
rdh_sum =
        42.2391760289589
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 99
dh =
                -1.4857425
rdh_sum =
        42.664286120519
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 100
dh =
                -1.499803
```

```
rdh_sum =
          43.0960482597126
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 101
dh =
                   -1.5138635
rdh_sum =
          43.5344747771811
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 102
dh =
                   -1.5279245
rdh_sum =
          43.9795770368751
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 103
dh =
                   -1.5419855
rdh_sum =
          44.4313649595702
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 104
dh =
                   -1.553117
rdh_sum =
          44.8884518778111
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 105
dh =
                   -1.561319
rdh_sum =
          45.3494463875654
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 106
dh =
                   -1.569521
rdh_sum =
          45.8143508872703
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 107
dh =
                   -1.577723
rdh_sum =
          46.2831675349385
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 108
dh =
                   -1.585925
rdh_sum =
          46.7558982480258
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 109
dh =
                   -1.594127
rdh_sum =
          47.2325447033132
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 110
dh =
                   -1.602329
rdh_sum =
           47.713108336804
ans =
Berm Factor Calculation: Iteration 6, Profile Segment: 111
dh =
                   -1.610531
rdh_sum =
           48.197590343635
ans =
!------- End Berm Factor Calculation, Iter: 6 ---------!
berm_width =
    82
rB =
          0.691524850513461
rdh_mean =
          0.587775491995549
gamma_berm =
          0.714936508724237
slope =
          0.190868655979553
Irb =
          3.13121910886174
gamma_berm =
          0.714936508724237
gamma_perm =
     1
gamma_beta =
     1
gamma_rough =
                        0.6
```

```
gamma =
        0.428961905234542
ans =
!!! - - Iribaren number:   2.24 is in the valid range (0.5-10), TAW RECOMMENDED - - !!!
ans =
!!! - - slope: 1:5.2 V:H is in the valid range (1:8 - 1:1), TAW RECOMMENDED - - !!!
R2_new =
        3.58894343172231
R2del =
        0.302948637047396
Z2 =
        13.0373034317223
top_sta =
        332.214844241459
ans =
!---------------- STARTING ITERATION 7 ----------------!
Ztoe =
                  5.75266
toe_sta =
        212.427117384844
top_sta =
        332.214844241459
Z2 =
        13.0373034317223
H0 =
                  2.4638
Tp =
                  12.522
T0 =
        11.3836363636364
R2 =
        3.58894343172231
Z2 =
        13.0373034317223
top_sta =
        332.214844241459
Lslope =
        119.787726856615
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 1
dh =
                  3.700486
rdh_sum =
     1
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 2
dh =
                  3.692757
rdh_sum =
     2
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 3
dh =
                  3.6523775
rdh_sum =
     3
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 4
dh =
                  3.611998
rdh_sum =
     4
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 5
dh =
                  3.5716185
rdh_sum =
        4.8245071418264
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 6
dh =
                  3.531239
rdh_sum =
        5.63911514933172
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 7
dh =
                  3.4908595
rdh_sum =
        6.44361552745137
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 8
dh =
                  3.467545
rdh_sum =
        7.24218758721522
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 9
dh =
                  3.4612955
```

```
rdh_sum =
            8.03915928322455
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 10
dh =
            3.4550465
rdh_sum =
            8.83452602961084
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 11
dh =
            3.4487975
rdh_sum =
            9.62828313813024
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 12
dh =
            3.442548
rdh_sum =
            10.4204258167375
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 13
dh =
            3.4362985
rdh_sum =
            11.2109494276211
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 14
dh =
            3.4300495
rdh_sum =
            11.999849488761
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 15
dh =
            3.4238005
rdh_sum =
            12.7871214145566
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 16
dh =
            3.4175515
rdh_sum =
            13.57276064525
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 17
dh =
            3.411302
rdh_sum =
            14.3567625158187
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 18
dh =
            3.4003055
rdh_sum =
            15.1378723888684
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 19
dh =
            3.3798155
rdh_sum =
            15.9135567957046
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 20
dh =
            3.3545785
rdh_sum =
            16.6824942390346
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 21
dh =
            3.329341
rdh_sum =
            17.4446149612921
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 22
dh =
            3.3041035
rdh_sum =
            18.199851102647
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 23
dh =
            3.2788665
rdh_sum =
            18.94813672395
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 24
dh =
            3.2536295
```

```
rdh_sum =
          19.6894075496551
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 28
dh =
                 2.7927855
rdh_sum =
          20.2935119593224
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 29
dh =
                 2.7838805
rdh_sum =
          20.8948382276074
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 30
dh =
                  2.818876
rdh_sum =
          21.5070625836855
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 31
dh =
                 2.8538715
rdh_sum =
          22.1301291648943
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 32
dh =
                  2.888867
rdh_sum =
          22.7639767115649
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 33
dh =
                  2.923863
rdh_sum =
          23.4085387500962
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 34
dh =
                 2.9588585
rdh_sum =
          24.0637431673125
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 35
dh =
                  2.993854
rdh_sum =
          24.7295127060811
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 36
dh =
                 2.9785435
rdh_sum =
          25.3906698578036
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 37
dh =
                 2.9129265
rdh_sum =
          26.0318910214597
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 38
dh =
                   2.84731
rdh_sum =
          26.6529292377209
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 39
dh =
                 2.7816935
rdh_sum =
          27.2535727127017
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 40
dh =
                 2.7160765
rdh_sum =
           27.833645182109
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 41
dh =
                 2.6504595
rdh_sum =
          28.3930065321973
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 42
dh =
                 2.5848425
```

```
rdh_sum =
        28.9315528902976
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 43
dh =
            2.519226
rdh_sum =
        29.4492169658656
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 44
dh =
            2.4536095
rdh_sum =
        29.9459678501248
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 53
dh =
            1.726356
rdh_sum =
        30.2194540345623
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 54
dh =
            1.71542
rdh_sum =
        30.4898378844645
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 55
dh =
            1.704484
rdh_sum =
        30.7571305619287
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 56
dh =
            1.693548
rdh_sum =
        31.0213433793198
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 57
dh =
            1.682612
rdh_sum =
        31.282487798721
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 58
dh =
            1.671676
rdh_sum =
        31.5405754313764
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 77
dh =
        -0.850196999999998
rdh_sum =
        31.6727678353644
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 78
dh =
            -0.8961285
rdh_sum =
        31.8188716672814
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 79
dh =
        -0.942059999999998
rdh_sum =
        31.9794589381497
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 80
dh =
        -0.987991999999998
rdh_sum =
        32.1550784155893
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 81
dh =
            -1.033924
rdh_sum =
        32.3462544151769
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 82
dh =
            -1.0798555
rdh_sum =
        32.5534859301548
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 83
dh =
            -1.125787
```

```
rdh_sum =
        32.7772461693779
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 84
dh =
               -1.171719
rdh_sum =
        33.0179818130397
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 85
dh =
               -1.217651
rdh_sum =
        33.2761119255755
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 86
dh =
               -1.2635825
rdh_sum =
        33.5520272600737
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 87
dh =
               -1.2947505
rdh_sum =
        33.8402192692142
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 88
dh =
               -1.311155
rdh_sum =
        34.1349367086472
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 89
dh =
               -1.327559
rdh_sum =
        34.4362217064004
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 90
dh =
               -1.343963
rdh_sum =
         34.7441152346
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 91
dh =
               -1.360367
rdh_sum =
        35.0586569027897
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 92
dh =
               -1.3767715
rdh_sum =
        35.3798851541363
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 93
dh =
               -1.393176
rdh_sum =
        35.7078368510057
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 94
dh =
               -1.40958
rdh_sum =
        36.0425472628687
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 95
dh =
               -1.425984
rdh_sum =
         36.38405047002
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 96
dh =
               -1.442388
rdh_sum =
        36.7323791521793
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 97
dh =
               -1.4576205
rdh_sum =
        37.0870738968301
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 98
dh =
               -1.4716815
```

```
rdh_sum =
          37.4476680588213
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 99
dh =
                 -1.4857425
rdh_sum =
          37.8141827571687
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 100
dh =
                 -1.499803
rdh_sum =
          38.1866380023701
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 101
dh =
                 -1.5138635
rdh_sum =
          38.5650531151956
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 102
dh =
                 -1.5279245
rdh_sum =
          38.9494467265095
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 103
dh =
                 -1.5419855
rdh_sum =
          39.3398363498764
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 104
dh =
                 -1.553117
rdh_sum =
          39.7349845838882
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 105
dh =
                 -1.561319
rdh_sum =
          40.1336454904689
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 106
dh =
                 -1.569521
rdh_sum =
          40.5358242933452
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 107
dh =
                 -1.577723
rdh_sum =
          40.9415260349071
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 108
dh =
                 -1.585925
rdh_sum =
          41.3507555759476
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 109
dh =
                 -1.594127
rdh_sum =
          41.7635175954121
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 110
dh =
                 -1.602329
rdh_sum =
          42.1798165901572
ans =
Berm Factor Calculation: Iteration 7, Profile Segment: 111
dh =
                 -1.610531
rdh_sum =
          42.5996568747194
ans =
!------- End Berm Factor Calculation, Iter: 7 ---------!
berm_width =
    82
rB =
          0.684544253003095
rdh_mean =
          0.51950801066731
gamma_berm =
          0.671081970088282
```

```
slope =
        0.192778027092338
Irb =
        3.16254253010959
gamma_berm =
        0.671081970088282
gamma_perm =
     1
gamma_beta =
     1
gamma_rough =
                     0.6
gamma =
        0.402649182052969
ans =
!!! - - Iribaren number:   2.12 is in the valid range (0.5-10), TAW RECOMMENDED - - !!!
ans =
!!! - - slope: 1:5.2 V:H is in the valid range (1:8 - 1:1), TAW RECOMMENDED - - !!!
R2_new =
        3.3732492257251
R2del =
        0.215694205997213
Z2 =
        12.8216092257251
top_sta =
        331.353916689851
ans =
!---------------- STARTING ITERATION 8 ----------------!
Ztoe =
                 5.75266
toe_sta =
        212.427117384844
top_sta =
        331.353916689851
Z2 =
        12.8216092257251
H0 =
                  2.4638
Tp =
                  12.522
T0 =
        11.3836363636364
R2 =
         3.3732492257251
Z2 =
        12.8216092257251
top_sta =
        331.353916689851
Lslope =
        118.926799305007
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 1
dh =
                3.700486
rdh_sum =
     1
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 2
dh =
                3.692757
rdh_sum =
     2
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 3
dh =
                3.6523775
rdh_sum =
     3
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 4
dh =
                3.611998
rdh_sum =
     4
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 5
dh =
                3.5716185
rdh_sum =
     5
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 6
dh =
                3.531239
rdh_sum =
     6
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 7
dh =
                3.4908595
```

```
rdh_sum =
     7
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 8
dh =
                    3.467545
rdh_sum =
     8
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 9
dh =
                    3.4612955
rdh_sum =
     9
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 10
dh =
                    3.4550465
rdh_sum =
    10
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 11
dh =
                    3.4487975
rdh_sum =
    11
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 12
dh =
                    3.442548
rdh_sum =
    12
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 13
dh =
                    3.4362985
rdh_sum =
    13
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 14
dh =
                    3.4300495
rdh_sum =
    14
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 15
dh =
                    3.4238005
rdh_sum =
    15
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 16
dh =
                    3.4175515
rdh_sum =
    16
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 17
dh =
                    3.411302
rdh_sum =
    17
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 18
dh =
                    3.4003055
rdh_sum =
    18
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 19
dh =
                    3.3798155
rdh_sum =
    19
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 20
dh =
                    3.3545785
rdh_sum =
           19.76893744333
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 21
dh =
                    3.329341
rdh_sum =
          20.5310581655875
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 22
dh =
                    3.3041035
```

```
rdh_sum =
          21.2862943069424
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 23
dh =
               3.2788665
rdh_sum =
          22.0345799282454
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 24
dh =
               3.2536295
rdh_sum =
          22.7758507539505
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 28
dh =
               2.7927855
rdh_sum =
          23.3799551636178
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 29
dh =
               2.7838805
rdh_sum =
          23.9812814319028
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 30
dh =
               2.818876
rdh_sum =
          24.5935057879809
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 31
dh =
               2.8538715
rdh_sum =
          25.2165723691897
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 32
dh =
               2.888867
rdh_sum =
          25.8504199158604
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 33
dh =
               2.923863
rdh_sum =
          26.4949819543916
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 34
dh =
               2.9588585
rdh_sum =
          27.1501863716079
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 35
dh =
               2.993854
rdh_sum =
          27.8159559103765
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 36
dh =
               2.9785435
rdh_sum =
          28.4771130620991
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 37
dh =
               2.9129265
rdh_sum =
          29.1183342257551
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 38
dh =
               2.84731
rdh_sum =
          29.7393724420163
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 39
dh =
               2.7816935
rdh_sum =
          30.3400159169971
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 40
dh =
               2.7160765
```

```
rdh_sum =
          30.9200883864044
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 41
dh =
                  2.6504595
rdh_sum =
          31.4794497364927
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 42
dh =
                  2.5848425
rdh_sum =
           32.017996094593
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 43
dh =
                   2.519226
rdh_sum =
          32.5356601701611
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 44
dh =
                  2.4536095
rdh_sum =
          33.0324110544202
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 53
dh =
                   1.726356
rdh_sum =
          33.3058972388577
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 54
dh =
                    1.71542
rdh_sum =
          33.5762810887599
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 55
dh =
                   1.704484
rdh_sum =
          33.8435737662241
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 56
dh =
                   1.693548
rdh_sum =
          34.1077865836152
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 57
dh =
                   1.682612
rdh_sum =
          34.3689310030164
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 58
dh =
                   1.671676
rdh_sum =
          34.6270186356718
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 77
dh =
         -0.850196999999998
rdh_sum =
          34.7757392046747
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 78
dh =
                 -0.8961285
rdh_sum =
          34.9399971366068
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 79
dh =
         -0.942059999999998
rdh_sum =
          35.1204067066152
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 80
dh =
         -0.987991999999998
rdh_sum =
          35.3175528240006
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 81
dh =
                  -1.033924
```

```
rdh_sum =
            35.5319896036051
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 82
dh =
                -1.0798555
rdh_sum =
            35.7642393278771
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 83
dh =
                -1.125787
rdh_sum =
            36.0147918738851
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 84
dh =
                -1.171719
rdh_sum =
            36.284103838344
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 85
dh =
                -1.217651
rdh_sum =
            36.5725972982741
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 86
dh =
                -1.2635825
rdh_sum =
            36.8806590203917
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 87
dh =
                -1.2947505
rdh_sum =
            37.202201500502
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 88
dh =
                -1.311155
rdh_sum =
            37.5309003613587
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 89
dh =
                -1.327559
rdh_sum =
            37.8667953664496
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 90
dh =
                -1.343963
rdh_sum =
            38.2099248172081
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 91
dh =
                -1.360367
rdh_sum =
            38.5603253265775
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 92
dh =
                -1.3767715
rdh_sum =
            38.9180320336697
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 93
dh =
                -1.393176
rdh_sum =
            39.2830781511806
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 94
dh =
                -1.40958
rdh_sum =
            39.6554949535899
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 95
dh =
                -1.425984
rdh_sum =
            40.035312218293
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 96
dh =
                -1.442388
```

```
rdh_sum =
          40.4225579954478
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 97
dh =
                -1.4576205
rdh_sum =
          40.8167253755021
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 98
dh =
                -1.4716815
rdh_sum =
          41.2173009688845
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 99
dh =
                -1.4857425
rdh_sum =
          41.6243018254767
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 100
dh =
                 -1.499803
rdh_sum =
          42.0377436640029
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 101
dh =
                -1.5138635
rdh_sum =
          42.4576413269098
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 102
dh =
                -1.5279245
rdh_sum =
          42.8840087799328
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 103
dh =
                -1.5419855
rdh_sum =
           43.316858650014
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 104
dh =
                 -1.553117
rdh_sum =
          43.7548485973251
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 105
dh =
                 -1.561319
rdh_sum =
          44.1966301925175
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 106
dh =
                 -1.569521
rdh_sum =
          44.6422068326251
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 107
dh =
                 -1.577723
rdh_sum =
          45.0915816932413
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 108
dh =
                 -1.585925
rdh_sum =
          45.5447577283345
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 109
dh =
                 -1.594127
rdh_sum =
          46.0017376700747
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 110
dh =
                 -1.602329
rdh_sum =
           46.462524028675
ans =
Berm Factor Calculation: Iteration 8, Profile Segment: 111
dh =
                 -1.610531
```

```
rdh_sum =
          46.9271190922445
ans =
!------- End Berm Factor Calculation, Iter: 8 ---------!
berm_width =
    82
rB =
          0.689499763545288
rdh_mean =
          0.572281940149324
gamma_berm =
          0.705088498868909
slope =
          0.191431409132897
Irb =
          3.14045112979403
gamma_berm =
          0.705088498868909
gamma_perm =
    1
gamma_beta =
    1
gamma_rough =
                    0.6
gamma =
          0.423053099321346
ans =
!!! - - Iribaren number:   2.21 is in the valid range (0.5-10), TAW RECOMMENDED - - !!!
ans =
!!! - - slope: 1:5.2 V:H is in the valid range (1:8 - 1:1), TAW RECOMMENDED - - !!!
R2_new =
          3.5408932455372
R2del =
          0.167644019812107
Z2 =
          12.9892532455372
top_sta =
          332.023055459023
ans =
!--------------- STARTING ITERATION 9 -----------------!
Ztoe =
                    5.75266
toe_sta =
          212.427117384844
top_sta =
          332.023055459023
Z2 =
          12.9892532455372
H0 =
                    2.4638
Tp =
                    12.522
T0 =
          11.3836363636364
R2 =
          3.5408932455372
Z2 =
          12.9892532455372
top_sta =
          332.023055459023
Lslope =
          119.595938074179
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 1
dh =
                    3.700486
rdh_sum =
    1
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 2
dh =
                    3.692757
rdh_sum =
    2
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 3
dh =
                    3.6523775
rdh_sum =
    3
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 4
dh =
                    3.611998
rdh_sum =
    4
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 5
dh =
                    3.5716185
```

```
rdh_sum =
     5
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 6
dh =
                  3.531239
rdh_sum =
         5.81460800750531
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 7
dh =
                  3.4908595
rdh_sum =
         6.61910838562496
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 8
dh =
                  3.467545
rdh_sum =
         7.41768044538882
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 9
dh =
                  3.4612955
rdh_sum =
         8.21465214139815
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 10
dh =
                  3.4550465
rdh_sum =
         9.01001888778443
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 11
dh =
                  3.4487975
rdh_sum =
         9.80377599630383
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 12
dh =
                  3.442548
rdh_sum =
        10.5959186749111
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 13
dh =
                  3.4362985
rdh_sum =
        11.3864422857947
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 14
dh =
                  3.4300495
rdh_sum =
        12.1753423469345
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 15
dh =
                  3.4238005
rdh_sum =
        12.9626142727301
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 16
dh =
                  3.4175515
rdh_sum =
        13.7482535034236
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 17
dh =
                  3.411302
rdh_sum =
        14.5322553739923
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 18
dh =
                  3.4003055
rdh_sum =
         15.313365247042
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 19
dh =
                  3.3798155
rdh_sum =
        16.0890496538782
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 20
dh =
                  3.3545785
```

```
rdh_sum =
        16.8579870972082
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 21
dh =
                3.329341
rdh_sum =
        17.6201078194657
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 22
dh =
                3.3041035
rdh_sum =
        18.3753439608206
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 23
dh =
                3.2788665
rdh_sum =
        19.1236295821236
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 24
dh =
                3.2536295
rdh_sum =
        19.8649004078287
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 28
dh =
                2.7927855
rdh_sum =
         20.469004817496
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 29
dh =
                2.7838805
rdh_sum =
        21.0703310857809
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 30
dh =
                2.818876
rdh_sum =
        21.6825554418591
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 31
dh =
                2.8538715
rdh_sum =
        22.3056220230679
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 32
dh =
                2.888867
rdh_sum =
        22.9394695697385
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 33
dh =
                2.923863
rdh_sum =
        23.5840316082698
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 34
dh =
                2.9588585
rdh_sum =
        24.2392360254861
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 35
dh =
                2.993854
rdh_sum =
        24.9050055642546
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 36
dh =
                2.9785435
rdh_sum =
        25.5661627159772
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 37
dh =
                2.9129265
rdh_sum =
        26.2073838796333
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 38
dh =
                2.84731
```

```
rdh_sum =
          26.8284220958945
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 39
dh =
                2.7816935
rdh_sum =
          27.4290655708753
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 40
dh =
                2.7160765
rdh_sum =
          28.0091380402826
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 41
dh =
                2.6504595
rdh_sum =
          28.5684993903709
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 42
dh =
                2.5848425
rdh_sum =
          29.1070457484712
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 43
dh =
                2.519226
rdh_sum =
          29.6247098240392
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 44
dh =
                2.4536095
rdh_sum =
          30.1214607082984
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 53
dh =
                1.726356
rdh_sum =
          30.3949468927358
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 54
dh =
                 1.71542
rdh_sum =
          30.6653307426381
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 55
dh =
                1.704484
rdh_sum =
          30.9326234201023
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 56
dh =
                1.693548
rdh_sum =
          31.1968362374934
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 57
dh =
                1.682612
rdh_sum =
          31.4579806568946
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 58
dh =
                1.671676
rdh_sum =
           31.71606828955
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 77
dh =
         -0.850196999999998
rdh_sum =
          31.8516999714941
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 78
dh =
                -0.8961285
rdh_sum =
           32.001583617091
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 79
dh =
         -0.942059999999998
```

```
rdh_sum =
          32.1663005886813
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 80
dh =
       -0.987991999999998
rdh_sum =
          32.3464077885873
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 81
dh =
                 -1.033924
rdh_sum =
          32.542436405007
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 82
dh =
                 -1.0798555
rdh_sum =
          32.7548910068591
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 83
dh =
                 -1.125787
rdh_sum =
          32.9842490584595
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 84
dh =
                 -1.171719
rdh_sum =
          33.2309601474705
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 85
dh =
                 -1.217651
rdh_sum =
          33.4954448650408
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 86
dh =
                 -1.2635825
rdh_sum =
          33.7780940891095
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 87
dh =
                 -1.2947505
rdh_sum =
          34.0732767155348
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 88
dh =
                 -1.311155
rdh_sum =
          34.3751195059644
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 89
dh =
                 -1.327559
rdh_sum =
          34.683664231544
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 90
dh =
                 -1.343963
rdh_sum =
          34.9989514461651
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 91
dh =
                 -1.360367
rdh_sum =
          35.321020275531
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 92
dh =
                 -1.3767715
rdh_sum =
          35.6499086172839
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 93
dh =
                 -1.393176
rdh_sum =
          35.9856527183575
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 94
dh =
                 -1.40958
```

```
rdh_sum =
           36.3282871628803
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 95
dh =
                -1.425984
rdh_sum =
           36.677845283889
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 96
dh =
                -1.442388
rdh_sum =
           37.0343589478529
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 97
dh =
                -1.4576205
rdh_sum =
           37.3973586674859
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 98
dh =
                -1.4716815
rdh_sum =
           37.7663678505761
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 99
dh =
                -1.4857425
rdh_sum =
           38.141406883544
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 100
dh =
                -1.499803
rdh_sum =
           38.5224949989264
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 101
dh =
                -1.5138635
rdh_sum =
           38.9096507019538
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 102
dh =
                -1.5279245
rdh_sum =
           39.3028917703034
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 103
dh =
                -1.5419855
rdh_sum =
           39.7022348191283
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 104
dh =
                -1.553117
rdh_sum =
           40.1064197049131
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 105
dh =
                -1.561319
rdh_sum =
           40.5141781979427
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 106
dh =
                -1.569521
rdh_sum =
           40.9255151829108
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 107
dh =
                -1.577723
rdh_sum =
           41.3404353550105
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 108
dh =
                -1.585925
rdh_sum =
           41.7589432196854
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 109
dh =
                -1.594127
```

```
rdh_sum =
         42.1810430923912
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 110
dh =
              -1.602329
rdh_sum =
         42.6067390983669
ans =
Berm Factor Calculation: Iteration 9, Profile Segment: 111
dh =
              -1.610531
rdh_sum =
         43.0360351724167
ans =
!------- End Berm Factor Calculation, Iter: 9 ---------!
berm_width =
     82
rB =
         0.685642015275969
rdh_mean =
         0.524829697224594
gamma_berm =
         0.674203276005779
slope =
         0.192483380285897
Irb =
          3.15770882021649
gamma_berm =
         0.674203276005779
gamma_perm =
     1
gamma_beta =
     1
gamma_rough =
                   0.6
gamma =
         0.404521965603467
ans =
!!! - - Iribaren number:   2.13 is in the valid range (0.5-10), TAW RECOMMENDED - - !!!
ans =
!!! - - slope: 1:5.2 V:H is in the valid range (1:8 - 1:1), TAW RECOMMENDED - - !!!
R2_new =
          3.3882526695457
R2del =
         0.152640575991503
Z2 =
         12.8366126695457
top_sta =
         331.413801831848
ans =
!---------------- STARTING ITERATION 10 -----------------!
Ztoe =
                   5.75266
toe_sta =
         212.427117384844
top_sta =
         331.413801831848
Z2 =
         12.8366126695457
H0 =
                   2.4638
Tp =
                   12.522
T0 =
         11.3836363636364
R2 =
          3.3882526695457
Z2 =
         12.8366126695457
top_sta =
         331.413801831848
Lslope =
         118.986684447004
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 1
dh =
               3.700486
rdh_sum =
     1
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 2
dh =
               3.692757
rdh_sum =
     2
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 3
dh =
              3.6523775
```

```
rdh_sum =
     3
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 4
dh =
                  3.611998
rdh_sum =
     4
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 5
dh =
                  3.5716185
rdh_sum =
     5
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 6
dh =
                  3.531239
rdh_sum =
     6
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 7
dh =
                  3.4908595
rdh_sum =
     7
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 8
dh =
                  3.467545
rdh_sum =
     8
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 9
dh =
                  3.4612955
rdh_sum =
     9
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 10
dh =
                  3.4550465
rdh_sum =
    10
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 11
dh =
                  3.4487975
rdh_sum =
    11
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 12
dh =
                  3.442548
rdh_sum =
    12
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 13
dh =
                  3.4362985
rdh_sum =
    13
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 14
dh =
                  3.4300495
rdh_sum =
    14
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 15
dh =
                  3.4238005
rdh_sum =
    15
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 16
dh =
                  3.4175515
rdh_sum =
    16
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 17
dh =
                  3.411302
rdh_sum =
    17
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 18
dh =
                  3.4003055
```

```
rdh_sum =
    18
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 19
dh =
                3.3798155
rdh_sum =
        18.7756844068362
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 20
dh =
                3.3545785
rdh_sum =
        19.5446218501661
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 21
dh =
                3.329341
rdh_sum =
        20.3067425724237
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 22
dh =
                3.3041035
rdh_sum =
        21.0619787137786
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 23
dh =
                3.2788665
rdh_sum =
        21.8102643350816
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 24
dh =
                3.2536295
rdh_sum =
        22.5515351607866
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 28
dh =
                2.7927855
rdh_sum =
        23.1556395704539
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 29
dh =
                2.7838805
rdh_sum =
        23.7569658387389
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 30
dh =
                2.818876
rdh_sum =
         24.369190194817
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 31
dh =
                2.8538715
rdh_sum =
        24.9922567760258
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 32
dh =
                2.888867
rdh_sum =
        25.6261043226965
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 33
dh =
                2.923863
rdh_sum =
        26.2706663612278
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 34
dh =
                2.9588585
rdh_sum =
        26.9258707784441
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 35
dh =
                2.993854
rdh_sum =
        27.5916403172126
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 36
dh =
                2.9785435
```

```
rdh_sum =
         28.2527974689352
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 37
dh =
                 2.9129265
rdh_sum =
         28.8940186325912
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 38
dh =
                   2.84731
rdh_sum =
         29.5150568488525
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 39
dh =
                 2.7816935
rdh_sum =
         30.1157003238332
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 40
dh =
                 2.7160765
rdh_sum =
         30.6957727932406
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 41
dh =
                 2.6504595
rdh_sum =
         31.2551341433289
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 42
dh =
                 2.5848425
rdh_sum =
         31.7936805014291
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 43
dh =
                  2.519226
rdh_sum =
         32.3113445769972
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 44
dh =
                 2.4536095
rdh_sum =
         32.8080954612564
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 53
dh =
                  1.726356
rdh_sum =
         33.0815816456938
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 54
dh =
                   1.71542
rdh_sum =
         33.3519654955961
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 55
dh =
                  1.704484
rdh_sum =
         33.6192581730603
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 56
dh =
                  1.693548
rdh_sum =
         33.8834709904514
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 57
dh =
                  1.682612
rdh_sum =
         34.1446154098525
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 58
dh =
                  1.671676
rdh_sum =
         34.4027030425079
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 77
dh =
         -0.850196999999998
```

```
rdh_sum =
        34.5501782248791
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 78
dh =
              -0.8961285
rdh_sum =
        34.7130691928891
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 79
dh =
      -0.942059999999998
rdh_sum =
        34.8919872733409
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 80
dh =
      -0.987991999999998
rdh_sum =
        35.0875149127072
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 81
dh =
                -1.033924
rdh_sum =
        35.3002042651844
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 82
dh =
               -1.0798555
rdh_sum =
        35.5305761673561
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 83
dh =
                -1.125787
rdh_sum =
        35.7791195734401
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 84
dh =
                -1.171719
rdh_sum =
        36.0462906898679
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 85
dh =
                -1.217651
rdh_sum =
        36.3325117469033
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 86
dh =
               -1.2635825
rdh_sum =
        36.6381702145709
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 87
dh =
               -1.2947505
rdh_sum =
        36.9572213286324
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 88
dh =
                -1.311155
rdh_sum =
        37.2833827390903
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 89
dh =
                -1.327559
rdh_sum =
        37.6166944445506
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 90
dh =
                -1.343963
rdh_sum =
        37.9571950056047
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 91
dh =
                -1.360367
rdh_sum =
        38.3049213198206
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 92
dh =
               -1.3767715
```

```
rdh_sum =
          38.6599088350445
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 93
dh =
                    -1.393176
rdh_sum =
          39.0221910995712
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 94
dh =
                    -1.40958
rdh_sum =
          39.3917997502932
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 95
dh =
                    -1.425984
rdh_sum =
          39.7687649511014
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 96
dh =
                    -1.442388
rdh_sum =
          40.15311516407
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 97
dh =
                    -1.4576205
rdh_sum =
          40.5443469772715
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 98
dh =
                    -1.4716815
rdh_sum =
          40.9419504298898
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 99
dh =
                    -1.4857425
rdh_sum =
          41.3459429263232
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 100
dh =
                    -1.499803
rdh_sum =
          41.7563405569727
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 101
dh =
                    -1.5138635
rdh_sum =
           42.17315855052
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 102
dh =
                    -1.5279245
rdh_sum =
          42.5964112735048
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 103
dh =
                    -1.5419855
rdh_sum =
          43.0261117707044
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 104
dh =
                    -1.553117
rdh_sum =
          43.4609252265528
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 105
dh =
                    -1.561319
rdh_sum =
          43.8995105269536
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 106
dh =
                    -1.569521
rdh_sum =
          44.3418712237781
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 107
dh =
                    -1.577723
```

```
rdh_sum =
         44.7880106505501
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 108
dh =
                -1.585925
rdh_sum =
         45.2379319222541
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 109
dh =
                -1.594127
rdh_sum =
         45.6916379351539
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 110
dh =
                -1.602329
rdh_sum =
         46.1491313666262
ans =
Berm Factor Calculation: Iteration 10, Profile Segment: 111
dh =
                -1.610531
rdh_sum =
         46.6104146750051
ans =
!------- End Berm Factor Calculation, Iter: 10 ---------!
berm_width =
    82
rB =
         0.689152743276264
rdh_mean =
         0.568419691158599
gamma_berm =
         0.702575246217931
slope =
         0.191527106997003
Irb =
          3.14202106268441
gamma_berm =
         0.702575246217931
gamma_perm =
     1
gamma_beta =
     1
gamma_rough =
                        0.6
gamma =
         0.421545147730759
ans =
!!! - - Iribaren number:   2.21 is in the valid range (0.5-10), TAW RECOMMENDED - - !!!
ans =
!!! - - slope: 1:5.2 V:H is in the valid range (1:8 - 1:1), TAW RECOMMENDED - - !!!
R2_new =
          3.52850620749376
R2del =
          0.14025353794806
Z2 =
         12.9768662074938
top_sta =
          331.97361350816
ans =
!---------------- STARTING ITERATION 11 -----------------!
Ztoe =
                  5.75266
toe_sta =
         212.427117384844
top_sta =
          331.97361350816
Z2 =
         12.9768662074938
H0 =
                   2.4638
Tp =
                   12.522
T0 =
         11.3836363636364
R2 =
          3.52850620749376
Z2 =
         12.9768662074938
top_sta =
          331.97361350816
Lslope =
         119.546496123316
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 1
dh =
                 3.700486
```

```
rdh_sum =
     1
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 2
dh =
                3.692757
rdh_sum =
     2
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 3
dh =
                3.6523775
rdh_sum =
     3
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 4
dh =
                3.611998
rdh_sum =
     4
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 5
dh =
                3.5716185
rdh_sum =
     5
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 6
dh =
                3.531239
rdh_sum =
     6
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 7
dh =
                3.4908595
rdh_sum =
        6.80450037811965
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 8
dh =
                3.467545
rdh_sum =
        7.6030724378835
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 9
dh =
                3.4612955
rdh_sum =
        8.40004413389283
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 10
dh =
                3.4550465
rdh_sum =
        9.19541088027912
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 11
dh =
                3.4487975
rdh_sum =
        9.98916798879852
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 12
dh =
                3.442548
rdh_sum =
       10.7813106674058
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 13
dh =
                3.4362985
rdh_sum =
       11.5718342782893
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 14
dh =
                3.4300495
rdh_sum =
       12.3607343394292
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 15
dh =
                3.4238005
rdh_sum =
       13.1480062652248
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 16
dh =
                3.4175515
```

```
rdh_sum =
        13.9336454959183
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 17
dh =
                3.411302
rdh_sum =
        14.7176473664869
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 18
dh =
                3.4003055
rdh_sum =
        15.4987572395367
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 19
dh =
                3.3798155
rdh_sum =
        16.2744416463729
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 20
dh =
                3.3545785
rdh_sum =
        17.0433790897028
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 21
dh =
                3.329341
rdh_sum =
        17.8054998119604
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 22
dh =
                3.3041035
rdh_sum =
        18.5607359533153
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 23
dh =
                3.2788665
rdh_sum =
        19.3090215746183
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 24
dh =
                3.2536295
rdh_sum =
        20.0502924003234
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 28
dh =
                2.7927855
rdh_sum =
        20.6543968099907
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 29
dh =
                2.7838805
rdh_sum =
        21.2557230782756
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 30
dh =
                2.818876
rdh_sum =
        21.8679474343538
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 31
dh =
                2.8538715
rdh_sum =
        22.4910140155625
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 32
dh =
                2.888867
rdh_sum =
        23.1248615622332
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 33
dh =
                2.923863
rdh_sum =
        23.7694236007645
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 34
dh =
                2.9588585
```

```
rdh_sum =
        24.4246280179808
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 35
dh =
                2.993854
rdh_sum =
        25.0903975567493
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 36
dh =
                2.9785435
rdh_sum =
        25.7515547084719
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 37
dh =
                2.9129265
rdh_sum =
        26.3927758721279
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 38
dh =
                2.84731
rdh_sum =
        27.0138140883892
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 39
dh =
                2.7816935
rdh_sum =
        27.61445756337
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 40
dh =
                2.7160765
rdh_sum =
        28.1945300327773
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 41
dh =
                2.6504595
rdh_sum =
        28.7538913828656
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 42
dh =
                2.5848425
rdh_sum =
        29.2924377409659
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 43
dh =
                2.519226
rdh_sum =
        29.8101018165339
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 44
dh =
                2.4536095
rdh_sum =
        30.3068527007931
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 53
dh =
                1.726356
rdh_sum =
        30.5803388852305
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 54
dh =
                1.71542
rdh_sum =
        30.8507227351328
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 55
dh =
                1.704484
rdh_sum =
        31.118015412597
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 56
dh =
                1.693548
rdh_sum =
        31.3822282299881
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 57
dh =
                1.682612
```

```
rdh_sum =
          31.6433726493892
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 58
dh =
                    1.671676
rdh_sum =
          31.9014602820446
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 77
dh =
        -0.850196999999998
rdh_sum =
          32.0379999388124
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 78
dh =
                   -0.8961285
rdh_sum =
          32.1888812692253
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 79
dh =
        -0.942059999999998
rdh_sum =
          32.3546880557463
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 80
dh =
        -0.987991999999998
rdh_sum =
          32.5359792945862
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 81
dh =
                    -1.033924
rdh_sum =
          32.7332879295603
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 82
dh =
                    -1.0798555
rdh_sum =
          32.9471199377176
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 83
dh =
                    -1.125787
rdh_sum =
          33.1779538378816
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 84
dh =
                    -1.171719
rdh_sum =
           33.426239911306
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 85
dh =
                    -1.217651
rdh_sum =
          33.6923990732485
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 86
dh =
                    -1.2635825
rdh_sum =
          33.9768221508079
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 87
dh =
                    -1.2947505
rdh_sum =
          34.2738458667652
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 88
dh =
                    -1.311155
rdh_sum =
          34.5775650153055
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 89
dh =
                    -1.327559
rdh_sum =
          34.8880212614671
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 90
dh =
                    -1.343963
```

```
rdh_sum =
           35.2052550366259
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 91
dh =
                  -1.360367
rdh_sum =
           35.5293053264501
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 92
dh =
                  -1.3767715
rdh_sum =
           35.8602098720553
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 93
dh =
                  -1.393176
rdh_sum =
           36.1980047452114
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 94
dh =
                  -1.40958
rdh_sum =
           36.5427243362494
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 95
dh =
                  -1.425984
rdh_sum =
           36.8944017678677
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 96
dh =
                  -1.442388
rdh_sum =
           37.2530686785949
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 97
dh =
                  -1.4576205
rdh_sum =
           37.6182529380874
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 98
dh =
                  -1.4716815
rdh_sum =
           37.9894753473376
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 99
dh =
                  -1.4857425
rdh_sum =
           38.3667560892788
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 100
dh =
                  -1.499803
rdh_sum =
           38.7501141808942
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 101
dh =
                  -1.5138635
rdh_sum =
           39.1395679018271
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 102
dh =
                  -1.5279245
rdh_sum =
           39.5351347941157
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 103
dh =
                  -1.5419855
rdh_sum =
           39.9368312252537
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 104
dh =
                  -1.553117
rdh_sum =
           40.3433911272565
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 105
dh =
                  -1.561319
```

```
rdh_sum =
          40.7535404700615
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 106
dh =
                -1.569521
rdh_sum =
          41.1672840452197
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 107
dh =
                -1.577723
rdh_sum =
          41.5846264526087
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 108
dh =
                -1.585925
rdh_sum =
           42.005572100188
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 109
dh =
                -1.594127
rdh_sum =
          42.4301252037638
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 110
dh =
                -1.602329
rdh_sum =
          42.8582897867639
ans =
Berm Factor Calculation: Iteration 11, Profile Segment: 111
dh =
                -1.610531
rdh_sum =
          43.2900696800233
ans =
!------- End Berm Factor Calculation, Iter: 11 ---------!
berm_width =
    82
rB =
          0.685925582590181
rdh_mean =
          0.527927679024675
gamma_berm =
          0.676193518210301
slope =
          0.192406934158836
Irb =
           3.15645471396932
gamma_berm =
          0.676193518210301
gamma_perm =
     1
gamma_beta =
     1
gamma_rough =
                       0.6
gamma =
          0.405716110926181
ans =
!!! - - Iribaren number:   2.13 is in the valid range (0.5-10), TAW RECOMMENDED - - !!!
ans =
!!! - - slope: 1:5.2 V:H is in the valid range (1:8 - 1:1), TAW RECOMMENDED - - !!!
R2_new =
           3.39807598015199
R2del =
          0.130430227341773
Z2 =
           12.846435980152
top_sta =
          331.453010853295
ans =
!---------------- STARTING ITERATION 12 -----------------!
Ztoe =
                   5.75266
toe_sta =
          212.427117384844
top_sta =
          331.453010853295
Z2 =
           12.846435980152
H0 =
                    2.4638
Tp =
                    12.522
T0 =
           11.3836363636364
```

```
R2 =
          3.39807598015199
Z2 =
           12.846435980152
top_sta =
          331.453010853295
Lslope =
          119.025893468451
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 1
dh =
                  3.700486
rdh_sum =
     1
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 2
dh =
                  3.692757
rdh_sum =
     2
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 3
dh =
                  3.6523775
rdh_sum =
     3
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 4
dh =
                  3.611998
rdh_sum =
     4
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 5
dh =
                  3.5716185
rdh_sum =
     5
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 6
dh =
                  3.531239
rdh_sum =
     6
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 7
dh =
                  3.4908595
rdh_sum =
     7
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 8
dh =
                  3.467545
rdh_sum =
     8
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 9
dh =
                  3.4612955
rdh_sum =
     9
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 10
dh =
                  3.4550465
rdh_sum =
    10
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 11
dh =
                  3.4487975
rdh_sum =
    11
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 12
dh =
                  3.442548
rdh_sum =
    12
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 13
dh =
                  3.4362985
rdh_sum =
    13
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 14
dh =
                  3.4300495
```

```
rdh_sum =
    14
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 15
dh =
                3.4238005
rdh_sum =
    15
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 16
dh =
                3.4175515
rdh_sum =
    16
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 17
dh =
                 3.411302
rdh_sum =
    17
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 18
dh =
                3.4003055
rdh_sum =
    18
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 19
dh =
                3.3798155
rdh_sum =
      18.7756844068362
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 20
dh =
                3.3545785
rdh_sum =
      19.5446218501661
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 21
dh =
                 3.329341
rdh_sum =
      20.3067425724237
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 22
dh =
                3.3041035
rdh_sum =
      21.0619787137786
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 23
dh =
                3.2788665
rdh_sum =
      21.8102643350816
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 24
dh =
                3.2536295
rdh_sum =
      22.5515351607866
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 28
dh =
                2.7927855
rdh_sum =
      23.1556395704539
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 29
dh =
                2.7838805
rdh_sum =
      23.7569658387389
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 30
dh =
                 2.818876
rdh_sum =
       24.369190194817
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 31
dh =
                2.8538715
rdh_sum =
      24.9922567760258
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 32
dh =
                 2.888867
```

```
rdh_sum =
          25.6261043226965
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 33
dh =
                   2.923863
rdh_sum =
          26.2706663612278
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 34
dh =
                   2.9588585
rdh_sum =
          26.9258707784441
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 35
dh =
                   2.993854
rdh_sum =
          27.5916403172126
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 36
dh =
                   2.9785435
rdh_sum =
          28.2527974689352
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 37
dh =
                   2.9129265
rdh_sum =
          28.8940186325912
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 38
dh =
                    2.84731
rdh_sum =
          29.5150568488525
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 39
dh =
                   2.7816935
rdh_sum =
          30.1157003238332
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 40
dh =
                   2.7160765
rdh_sum =
          30.6957727932406
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 41
dh =
                   2.6504595
rdh_sum =
          31.2551341433289
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 42
dh =
                   2.5848425
rdh_sum =
          31.7936805014291
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 43
dh =
                    2.519226
rdh_sum =
          32.3113445769972
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 44
dh =
                   2.4536095
rdh_sum =
          32.8080954612564
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 53
dh =
                   1.726356
rdh_sum =
          33.0815816456938
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 54
dh =
                    1.71542
rdh_sum =
          33.3519654955961
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 55
dh =
                   1.704484
```

```
rdh_sum =
          33.6192581730603
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 56
dh =
                   1.693548
rdh_sum =
          33.8834709904514
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 57
dh =
                   1.682612
rdh_sum =
          34.1446154098525
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 58
dh =
                   1.671676
rdh_sum =
          34.4027030425079
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 77
dh =
          -0.850196999999998
rdh_sum =
          34.5493711042915
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 78
dh =
                  -0.8961285
rdh_sum =
          34.7113760768893
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 79
dh =
          -0.942059999999998
rdh_sum =
          34.8893273556661
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 80
dh =
          -0.987991999999998
rdh_sum =
          35.0838057682147
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 81
dh =
                   -1.033924
rdh_sum =
          35.2953621732077
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 82
dh =
                  -1.0798555
rdh_sum =
          35.5245164432332
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 83
dh =
                   -1.125787
rdh_sum =
          35.7717569053935
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 84
dh =
                   -1.171719
rdh_sum =
          36.0375394821074
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 85
dh =
                   -1.217651
rdh_sum =
          36.3222864698807
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 86
dh =
                  -1.2635825
rdh_sum =
          36.6263857595336
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 87
dh =
                  -1.2947505
rdh_sum =
          36.9438203633587
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 88
dh =
                   -1.311155
```

```
rdh_sum =
         37.2683352697709
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 89
dh =
                 -1.327559
rdh_sum =
         37.5999706248167
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 90
dh =
                 -1.343963
rdh_sum =
         37.9387651520257
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 91
dh =
                 -1.360367
rdh_sum =
         38.2847559283326
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 92
dh =
                 -1.3767715
rdh_sum =
         38.6379785964959
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 93
dh =
                 -1.393176
rdh_sum =
         38.9984669170647
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 94
dh =
                 -1.40958
rdh_sum =
         39.3662527564977
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 95
dh =
                 -1.425984
rdh_sum =
         39.7413665237858
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 96
dh =
                 -1.442388
rdh_sum =
         40.1238369425115
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 97
dh =
                 -1.4576205
rdh_sum =
         40.5131628746275
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 98
dh =
                 -1.4716815
rdh_sum =
         40.9088365896165
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 99
dh =
                 -1.4857425
rdh_sum =
         41.3108757175017
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 100
dh =
                 -1.499803
rdh_sum =
         41.7192965853998
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 101
dh =
                 -1.5138635
rdh_sum =
         42.1341146681012
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 102
dh =
                 -1.5279245
rdh_sum =
         42.5553445876564
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 103
dh =
                 -1.5419855
```

```
rdh_sum =
          42.9829996553642
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 104
dh =
                  -1.553117
rdh_sum =
          43.4157499653368
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 105
dh =
                  -1.561319
rdh_sum =
          43.8522591798187
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 106
dh =
                  -1.569521
rdh_sum =
          44.2925309495508
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 107
dh =
                  -1.577723
rdh_sum =
          44.7365687089255
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 108
dh =
                  -1.585925
rdh_sum =
          45.1843756757898
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 109
dh =
                  -1.594127
rdh_sum =
          45.6359548512601
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 110
dh =
                  -1.602329
rdh_sum =
          46.0913090195493
ans =
Berm Factor Calculation: Iteration 12, Profile Segment: 111
dh =
                  -1.610531
rdh_sum =
          46.5504407478074
ans =
!------- End Berm Factor Calculation, Iter: 12 ---------!
berm_width =
    82
rB =
          0.688925725407261
rdh_mean =
          0.567688301802529
gamma_berm =
          0.702169349717263
slope =
          0.191589596242868
Irb =
          3.1430462049203
gamma_berm =
          0.702169349717263
gamma_perm =
     1
gamma_beta =
     1
gamma_rough =
                      0.6
gamma =
          0.421301609830358
ans =
!!! - - Iribaren number:   2.21 is in the valid range (0.5-10), TAW RECOMMENDED - - !!!
ans =
!!! - - slope: 1:5.2 V:H is in the valid range (1:8 - 1:1), TAW RECOMMENDED - - !!!
R2_new =
          3.52662050549167
R2del =
          0.128544525339685
Z2 =
          12.9749805054917
top_sta =
          331.966086867376
ans =
!---------------- STARTING ITERATION 13 -----------------!
Ztoe =
                      5.75266
```

```
toe_sta =
          212.427117384844
top_sta =
          331.966086867376
Z2 =
          12.9749805054917
H0 =
                    2.4638
Tp =
                    12.522
T0 =
          11.3836363636364
R2 =
          3.52662050549167
Z2 =
          12.9749805054917
top_sta =
          331.966086867376
Lslope =
          119.538969482532
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 1
dh =
                    3.700486
rdh_sum =
      1
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 2
dh =
                    3.692757
rdh_sum =
      2
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 3
dh =
                    3.6523775
rdh_sum =
      3
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 4
dh =
                    3.611998
rdh_sum =
      4
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 5
dh =
                    3.5716185
rdh_sum =
      5
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 6
dh =
                    3.531239
rdh_sum =
      6
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 7
dh =
                    3.4908595
rdh_sum =
          6.80450037811965
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 8
dh =
                    3.467545
rdh_sum =
          7.6030724378835
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 9
dh =
                    3.4612955
rdh_sum =
          8.40004413389283
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 10
dh =
                    3.4550465
rdh_sum =
          9.19541088027912
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 11
dh =
                    3.4487975
rdh_sum =
          9.98916798879852
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 12
dh =
                    3.442548
```

```
rdh_sum =
          10.7813106674058
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 13
dh =
                  3.4362985
rdh_sum =
          11.5718342782893
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 14
dh =
                  3.4300495
rdh_sum =
          12.3607343394292
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 15
dh =
                  3.4238005
rdh_sum =
          13.1480062652248
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 16
dh =
                  3.4175515
rdh_sum =
          13.9336454959183
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 17
dh =
                   3.411302
rdh_sum =
          14.7176473664869
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 18
dh =
                  3.4003055
rdh_sum =
          15.4987572395367
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 19
dh =
                  3.3798155
rdh_sum =
          16.2744416463729
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 20
dh =
                  3.3545785
rdh_sum =
          17.0433790897028
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 21
dh =
                   3.329341
rdh_sum =
          17.8054998119604
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 22
dh =
                  3.3041035
rdh_sum =
          18.5607359533153
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 23
dh =
                  3.2788665
rdh_sum =
          19.3090215746183
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 24
dh =
                  3.2536295
rdh_sum =
          20.0502924003234
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 28
dh =
                  2.7927855
rdh_sum =
          20.6543968099907
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 29
dh =
                  2.7838805
rdh_sum =
          21.2557230782756
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 30
dh =
                   2.818876
```

```
rdh_sum =
          21.8679474343538
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 31
dh =
               2.8538715
rdh_sum =
          22.4910140155625
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 32
dh =
                2.888867
rdh_sum =
          23.1248615622332
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 33
dh =
                2.923863
rdh_sum =
          23.7694236007645
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 34
dh =
               2.9588585
rdh_sum =
          24.4246280179808
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 35
dh =
                2.993854
rdh_sum =
          25.0903975567493
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 36
dh =
               2.9785435
rdh_sum =
          25.7515547084719
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 37
dh =
               2.9129265
rdh_sum =
          26.3927758721279
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 38
dh =
                 2.84731
rdh_sum =
          27.0138140883892
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 39
dh =
               2.7816935
rdh_sum =
           27.61445756337
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 40
dh =
               2.7160765
rdh_sum =
          28.1945300327773
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 41
dh =
               2.6504595
rdh_sum =
          28.7538913828656
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 42
dh =
               2.5848425
rdh_sum =
          29.2924377409659
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 43
dh =
                2.519226
rdh_sum =
          29.8101018165339
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 44
dh =
               2.4536095
rdh_sum =
          30.3068527007931
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 53
dh =
                1.726356
```

```
rdh_sum =
          30.5803388852305
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 54
dh =
                    1.71542
rdh_sum =
          30.8507227351328
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 55
dh =
                   1.704484
rdh_sum =
           31.118015412597
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 56
dh =
                   1.693548
rdh_sum =
          31.3822282299881
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 57
dh =
                   1.682612
rdh_sum =
          31.6433726493892
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 58
dh =
                   1.671676
rdh_sum =
          31.9014602820446
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 77
dh =
         -0.850196999999998
rdh_sum =
          32.0381389456419
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 78
dh =
                 -0.8961285
rdh_sum =
          32.1891730099848
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 79
dh =
         -0.942059999999998
rdh_sum =
          32.3551466262501
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 80
dh =
         -0.987991999999998
rdh_sum =
          32.5366191092318
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 81
dh =
                  -1.033924
rdh_sum =
          32.7341236693535
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 82
dh =
                 -1.0798555
rdh_sum =
          32.9481664968867
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 83
dh =
                  -1.125787
rdh_sum =
          33.1792262695524
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 84
dh =
                  -1.171719
rdh_sum =
          33.4277533720617
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 85
dh =
                  -1.217651
rdh_sum =
          33.6941687663817
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 86
dh =
                 -1.2635825
```

```
rdh_sum =
             33.9788632687397
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 87
dh =
                    -1.2947505
rdh_sum =
             34.2761686830875
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 88
dh =
                    -1.311155
rdh_sum =
             34.5801749183611
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 89
dh =
                    -1.327559
rdh_sum =
             34.8909236229165
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 90
dh =
                    -1.343963
rdh_sum =
             35.2084552089273
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 91
dh =
                    -1.360367
rdh_sum =
             35.5328086401699
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 92
dh =
                    -1.3767715
rdh_sum =
             35.8640216333365
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 93
dh =
                    -1.393176
rdh_sum =
             36.2021302329127
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 94
dh =
                    -1.40958
rdh_sum =
             36.5471687990868
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 95
dh =
                    -1.425984
rdh_sum =
             36.8991704218747
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 96
dh =
                    -1.442388
rdh_sum =
             37.2581667044212
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 97
dh =
                    -1.4576205
rdh_sum =
             37.6236851123592
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 98
dh =
                    -1.4716815
rdh_sum =
              37.995246048303
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 99
dh =
                    -1.4857425
rdh_sum =
             38.3728696636621
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 100
dh =
                    -1.499803
rdh_sum =
             38.7565749420456
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 101
dh =
                    -1.5138635
```

```
rdh_sum =
          39.1463801281824
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 102
dh =
                 -1.5279245
rdh_sum =
          39.5423027276532
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 103
dh =
                 -1.5419855
rdh_sum =
          39.9443590696512
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 104
dh =
                  -1.553117
rdh_sum =
          40.3512821821123
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 105
dh =
                  -1.561319
rdh_sum =
          40.7617971500881
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 106
dh =
                  -1.569521
rdh_sum =
          41.1759087507359
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 107
dh =
                  -1.577723
rdh_sum =
          41.5936215692071
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 108
dh =
                  -1.585925
rdh_sum =
          42.0149399984019
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 109
dh =
                  -1.594127
rdh_sum =
          42.4398682387349
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 110
dh =
                  -1.602329
rdh_sum =
          42.8684102979113
ans =
Berm Factor Calculation: Iteration 13, Profile Segment: 111
dh =
                  -1.610531
rdh_sum =
          43.3005699907123
ans =
!------- End Berm Factor Calculation, Iter: 13 ---------!
berm_width =
     82
rB =
         0.685968771146072
rdh_mean =
         0.528055731594052
gamma_berm =
          0.67626097015214
slope =
         0.192395278960775
Irb =
          3.15626350929666
gamma_berm =
          0.67626097015214
gamma_perm =
     1
gamma_beta =
     1
gamma_rough =
                      0.6
gamma =
         0.405756582091284
ans =
!!! - - Iribaren number:   2.13 is in the valid range (0.5-10), TAW RECOMMENDED - - !!!
ans =
!!! - - slope: 1:5.2 V:H is in the valid range (1:8 - 1:1), TAW RECOMMENDED - - !!!
```

```
R2_new =
          3.39838767679335
R2del =
        0.128232828698324
Z2 =
          12.8467476767934
top_sta =
          331.454254967503
ans =
!--------------- STARTING ITERATION 14 ----------------!
Ztoe =
                  5.75266
toe_sta =
          212.427117384844
top_sta =
          331.454254967503
Z2 =
          12.8467476767934
H0 =
                   2.4638
Tp =
                   12.522
T0 =
          11.3836363636364
R2 =
          3.39838767679335
Z2 =
          12.8467476767934
top_sta =
          331.454254967503
Lslope =
          119.027137582659
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 1
dh =
                 3.700486
rdh_sum =
     1
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 2
dh =
                 3.692757
rdh_sum =
     2
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 3
dh =
                3.6523775
rdh_sum =
     3
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 4
dh =
                 3.611998
rdh_sum =
     4
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 5
dh =
                3.5716185
rdh_sum =
     5
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 6
dh =
                 3.531239
rdh_sum =
     6
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 7
dh =
                3.4908595
rdh_sum =
     7
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 8
dh =
                 3.467545
rdh_sum =
     8
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 9
dh =
                3.4612955
rdh_sum =
     9
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 10
dh =
                3.4550465
```

```
rdh_sum =
    10
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 11
dh =
                3.4487975
rdh_sum =
    11
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 12
dh =
                3.442548
rdh_sum =
    12
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 13
dh =
                3.4362985
rdh_sum =
    13
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 14
dh =
                3.4300495
rdh_sum =
    14
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 15
dh =
                3.4238005
rdh_sum =
    15
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 16
dh =
                3.4175515
rdh_sum =
    16
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 17
dh =
                3.411302
rdh_sum =
    17
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 18
dh =
                3.4003055
rdh_sum =
    18
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 19
dh =
                3.3798155
rdh_sum =
        18.7756844068362
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 20
dh =
                3.3545785
rdh_sum =
        19.5446218501661
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 21
dh =
                3.329341
rdh_sum =
        20.3067425724237
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 22
dh =
                3.3041035
rdh_sum =
        21.0619787137786
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 23
dh =
                3.2788665
rdh_sum =
        21.8102643350816
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 24
dh =
                3.2536295
rdh_sum =
        22.5515351607866
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 28
dh =
                2.7927855
```

```
rdh_sum =
           23.1556395704539
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 29
dh =
               2.7838805
rdh_sum =
           23.7569658387389
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 30
dh =
               2.818876
rdh_sum =
            24.369190194817
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 31
dh =
               2.8538715
rdh_sum =
           24.9922567760258
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 32
dh =
               2.888867
rdh_sum =
           25.6261043226965
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 33
dh =
               2.923863
rdh_sum =
           26.2706663612278
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 34
dh =
               2.9588585
rdh_sum =
           26.9258707784441
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 35
dh =
               2.993854
rdh_sum =
           27.5916403172126
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 36
dh =
               2.9785435
rdh_sum =
           28.2527974689352
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 37
dh =
               2.9129265
rdh_sum =
           28.8940186325912
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 38
dh =
                2.84731
rdh_sum =
           29.5150568488525
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 39
dh =
               2.7816935
rdh_sum =
           30.1157003238332
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 40
dh =
               2.7160765
rdh_sum =
           30.6957727932406
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 41
dh =
               2.6504595
rdh_sum =
           31.2551341433289
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 42
dh =
               2.5848425
rdh_sum =
           31.7936805014291
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 43
dh =
               2.519226
```

```
rdh_sum =
         32.3113445769972
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 44
dh =
                2.4536095
rdh_sum =
         32.8080954612564
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 53
dh =
                 1.726356
rdh_sum =
         33.0815816456938
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 54
dh =
                  1.71542
rdh_sum =
         33.3519654955961
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 55
dh =
                 1.704484
rdh_sum =
         33.6192581730603
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 56
dh =
                 1.693548
rdh_sum =
         33.8834709904514
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 57
dh =
                 1.682612
rdh_sum =
         34.1446154098525
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 58
dh =
                 1.671676
rdh_sum =
         34.4027030425079
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 77
dh =
         -0.850196999999998
rdh_sum =
         34.5493456004071
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 78
dh =
                -0.8961285
rdh_sum =
          34.711322575736
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 79
dh =
         -0.942059999999998
rdh_sum =
         34.889243302564
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 80
dh =
         -0.987991999999998
rdh_sum =
         35.0836885570384
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 81
dh =
                -1.033924
rdh_sum =
         35.2952091565765
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 82
dh =
                -1.0798555
rdh_sum =
         35.5243249429599
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 83
dh =
                -1.125787
rdh_sum =
         35.7715242231033
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 84
dh =
                -1.171719
```

```
rdh_sum =
        36.0372629100525
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 85
dh =
               -1.217651
rdh_sum =
        36.3219633019827
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 86
dh =
               -1.2635825
rdh_sum =
        36.6260133025615
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 87
dh =
               -1.2947505
rdh_sum =
        36.9433968027713
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 88
dh =
               -1.311155
rdh_sum =
         37.267859656177
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 89
dh =
               -1.327559
rdh_sum =
        37.5994420134208
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 90
dh =
               -1.343963
rdh_sum =
        37.9381826031168
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 91
dh =
               -1.360367
rdh_sum =
        38.2841185078017
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 92
dh =
               -1.3767715
rdh_sum =
        38.6372853763268
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 93
dh =
               -1.393176
rdh_sum =
        38.9977169758809
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 94
dh =
               -1.40958
rdh_sum =
        39.3654451801084
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 95
dh =
               -1.425984
rdh_sum =
        39.7405004056761
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 96
dh =
               -1.442388
rdh_sum =
        40.1229113843596
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 97
dh =
               -1.4576205
rdh_sum =
        40.5121770500544
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 98
dh =
               -1.4716815
rdh_sum =
         40.907789742822
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 99
dh =
               -1.4857425
```

```
rdh_sum =
          41.3097670997621
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 100
dh =
                    -1.499803
rdh_sum =
          41.7181254554175
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 101
dh =
                    -1.5138635
rdh_sum =
          42.1328802923016
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 102
dh =
                    -1.5279245
rdh_sum =
          42.5540462404842
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 103
dh =
                    -1.5419855
rdh_sum =
          42.9816366196307
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 104
dh =
                    -1.553117
rdh_sum =
          43.4143216794193
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 105
dh =
                    -1.561319
rdh_sum =
          43.8507652334742
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 106
dh =
                    -1.569521
rdh_sum =
          44.2909709356412
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 107
dh =
                    -1.577723
rdh_sum =
          44.7349422234812
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 108
dh =
                    -1.585925
rdh_sum =
          45.1826823180724
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 109
dh =
                    -1.594127
rdh_sum =
           45.634194223825
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 110
dh =
                    -1.602329
rdh_sum =
          46.0894807283087
ans =
Berm Factor Calculation: Iteration 14, Profile Segment: 111
dh =
                    -1.610531
rdh_sum =
          46.5485444020924
ans =
!------- End Berm Factor Calculation, Iter: 14 ---------!
berm_width =
    82
rB =
          0.688918524509208
rdh_mean =
          0.567665175635273
gamma_berm =
          0.702156530704705
slope =
          0.191591576879432
Irb =
           3.1430786974583
gamma_berm =
          0.702156530704705
```

```
gamma_perm =
     1
gamma_beta =
     1
gamma_rough =
                         0.6
gamma =
        0.421293918422823
ans =
!!! - - Iribaren number:   2.21 is in the valid range (0.5-10), TAW RECOMMENDED - - !!!
ans =
!!! - - slope: 1:5.2 V:H is in the valid range (1:8 - 1:1), TAW RECOMMENDED - - !!!
R2_new =
        3.52656096456957
R2del =
        0.128173287776214
Z2 =
        12.9749209645696
top_sta =
        331.965849214166
ans =
!---------------- STARTING ITERATION 15 -----------------!
Ztoe =
                    5.75266
toe_sta =
        212.427117384844
top_sta =
        331.965849214166
Z2 =
        12.9749209645696
H0 =
                    2.4638
Tp =
                    12.522
T0 =
        11.3836363636364
R2 =
        3.52656096456957
Z2 =
        12.9749209645696
top_sta =
        331.965849214166
Lslope =
        119.538731829322
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 1
dh =
                    3.700486
rdh_sum =
     1
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 2
dh =
                    3.692757
rdh_sum =
     2
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 3
dh =
                    3.6523775
rdh_sum =
     3
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 4
dh =
                    3.611998
rdh_sum =
     4
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 5
dh =
                    3.5716185
rdh_sum =
     5
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 6
dh =
                    3.531239
rdh_sum =
     6
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 7
dh =
                    3.4908595
rdh_sum =
        6.80450037811965
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 8
dh =
                    3.467545
```

```
rdh_sum =
           7.6030724378835
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 9
dh =
                3.4612955
rdh_sum =
        8.40004413389283
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 10
dh =
                3.4550465
rdh_sum =
        9.19541088027912
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 11
dh =
                3.4487975
rdh_sum =
        9.98916798879852
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 12
dh =
                 3.442548
rdh_sum =
        10.7813106674058
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 13
dh =
                3.4362985
rdh_sum =
        11.5718342782893
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 14
dh =
                3.4300495
rdh_sum =
        12.3607343394292
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 15
dh =
                3.4238005
rdh_sum =
        13.1480062652248
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 16
dh =
                3.4175515
rdh_sum =
        13.9336454959183
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 17
dh =
                 3.411302
rdh_sum =
        14.7176473664869
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 18
dh =
                3.4003055
rdh_sum =
        15.4987572395367
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 19
dh =
                3.3798155
rdh_sum =
        16.2744416463729
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 20
dh =
                3.3545785
rdh_sum =
        17.0433790897028
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 21
dh =
                 3.329341
rdh_sum =
        17.8054998119604
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 22
dh =
                3.3041035
rdh_sum =
        18.5607359533153
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 23
dh =
                3.2788665
```

```
rdh_sum =
          19.3090215746183
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 24
dh =
                   3.2536295
rdh_sum =
          20.0502924003234
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 28
dh =
                   2.7927855
rdh_sum =
          20.6543968099907
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 29
dh =
                   2.7838805
rdh_sum =
          21.2557230782756
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 30
dh =
                    2.818876
rdh_sum =
          21.8679474343538
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 31
dh =
                   2.8538715
rdh_sum =
          22.4910140155625
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 32
dh =
                    2.888867
rdh_sum =
          23.1248615622332
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 33
dh =
                    2.923863
rdh_sum =
          23.7694236007645
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 34
dh =
                   2.9588585
rdh_sum =
          24.4246280179808
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 35
dh =
                    2.993854
rdh_sum =
          25.0903975567493
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 36
dh =
                   2.9785435
rdh_sum =
          25.7515547084719
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 37
dh =
                   2.9129265
rdh_sum =
          26.3927758721279
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 38
dh =
                     2.84731
rdh_sum =
          27.0138140883892
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 39
dh =
                   2.7816935
rdh_sum =
           27.61445756337
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 40
dh =
                   2.7160765
rdh_sum =
          28.1945300327773
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 41
dh =
                   2.6504595
```

```
rdh_sum =
        28.7538913828656
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 42
dh =
                2.5848425
rdh_sum =
        29.2924377409659
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 43
dh =
                2.519226
rdh_sum =
        29.8101018165339
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 44
dh =
                2.4536095
rdh_sum =
        30.3068527007931
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 53
dh =
                1.726356
rdh_sum =
        30.5803388852305
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 54
dh =
                 1.71542
rdh_sum =
        30.8507227351328
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 55
dh =
                1.704484
rdh_sum =
         31.118015412597
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 56
dh =
                1.693548
rdh_sum =
        31.3822282299881
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 57
dh =
                1.682612
rdh_sum =
        31.6433726493892
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 58
dh =
                1.671676
rdh_sum =
        31.9014602820446
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 77
dh =
        -0.850196999999998
rdh_sum =
        32.0381433381649
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 78
dh =
                -0.8961285
rdh_sum =
        32.1891822287673
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 79
dh =
        -0.942059999999998
rdh_sum =
        32.3551611166718
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 80
dh =
        -0.987991999999998
rdh_sum =
        32.5366393267311
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 81
dh =
                -1.033924
rdh_sum =
        32.7341500777839
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 82
dh =
                -1.0798555
```

```
rdh_sum =
          32.9481995668292
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 83
dh =
                    -1.125787
rdh_sum =
          33.1792664765981
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 84
dh =
                    -1.171719
rdh_sum =
           33.427801195059
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 85
dh =
                    -1.217651
rdh_sum =
          33.6942246856425
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 86
dh =
                    -1.2635825
rdh_sum =
          33.9789277642188
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 87
dh =
                    -1.2947505
rdh_sum =
          34.2762420793373
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 88
dh =
                    -1.311155
rdh_sum =
          34.5802573856015
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 89
dh =
                    -1.327559
rdh_sum =
          34.8910153308385
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 90
dh =
                    -1.343963
rdh_sum =
          35.2085563266128
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 91
dh =
                    -1.360367
rdh_sum =
          35.5329193360076
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 92
dh =
                    -1.3767715
rdh_sum =
          35.8641420749409
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 93
dh =
                    -1.393176
rdh_sum =
          36.2022605870344
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 94
dh =
                    -1.40958
rdh_sum =
          36.5473092315218
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 95
dh =
                    -1.425984
rdh_sum =
           36.899321097384
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 96
dh =
                    -1.442388
rdh_sum =
          37.2583277866457
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 97
dh =
                    -1.4576205
```

```
rdh_sum =
          37.6238567521757
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 98
dh =
               -1.4716815
rdh_sum =
          37.9954283840029
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 99
dh =
               -1.4857425
rdh_sum =
          38.3730628325389
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 100
dh =
               -1.499803
rdh_sum =
          38.7567790803367
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 101
dh =
               -1.5138635
rdh_sum =
          39.1465953710202
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 102
dh =
               -1.5279245
rdh_sum =
          39.5425292090164
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 103
dh =
               -1.5419855
rdh_sum =
          39.9445969223068
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 104
dh =
               -1.553117
rdh_sum =
          40.3515315102714
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 105
dh =
               -1.561319
rdh_sum =
          40.7620580300136
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 106
dh =
               -1.569521
rdh_sum =
          41.1761812582354
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 107
dh =
               -1.577723
rdh_sum =
          41.5939057796221
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 108
dh =
               -1.585925
rdh_sum =
          42.0152359865975
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 109
dh =
               -1.594127
rdh_sum =
          42.4401760790894
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 110
dh =
               -1.602329
rdh_sum =
          42.8687300643054
ans =
Berm Factor Calculation: Iteration 15, Profile Segment: 111
dh =
               -1.610531
rdh_sum =
          43.300901756519
ans =
!------- End Berm Factor Calculation, Iter: 15 ---------!
berm_width =
    82
```

```
rB =
        0.685970134910581
rdh_mean =
        0.528059777518524
gamma_berm =
        0.676263101914652
slope =
        0.192394910872511
Irb =
         3.15625747077243
gamma_berm =
        0.676263101914652
gamma_perm =
     1
gamma_beta =
     1
gamma_rough =
                      0.6
gamma =
        0.405757861148791
ans =
!!! - - Iribaren number:   2.13 is in the valid range (0.5-10), TAW RECOMMENDED - - !!!
ans =
!!! - - slope: 1:5.2 V:H is in the valid range (1:8 - 1:1), TAW RECOMMENDED - - !!!
R2_new =
         3.39839752819641
R2del =
        0.12816343637316
Z2 =
        12.8467575281964
top_sta =
        331.454294288654
ans =
!---------------- STARTING ITERATION 16 ----------------!
Ztoe =
                  5.75266
toe_sta =
        212.427117384844
top_sta =
        331.454294288654
Z2 =
        12.8467575281964
H0 =
                   2.4638
Tp =
                   12.522
T0 =
        11.3836363636364
R2 =
         3.39839752819641
Z2 =
        12.8467575281964
top_sta =
        331.454294288654
Lslope =
         119.02717690381
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 1
dh =
                 3.700486
rdh_sum =
     1
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 2
dh =
                 3.692757
rdh_sum =
     2
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 3
dh =
                3.6523775
rdh_sum =
     3
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 4
dh =
                 3.611998
rdh_sum =
     4
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 5
dh =
                3.5716185
rdh_sum =
     5
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 6
dh =
                 3.531239
```

```
rdh_sum =
      6
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 7
dh =
                 3.4908595
rdh_sum =
      7
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 8
dh =
                 3.467545
rdh_sum =
      8
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 9
dh =
                 3.4612955
rdh_sum =
      9
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 10
dh =
                 3.4550465
rdh_sum =
     10
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 11
dh =
                 3.4487975
rdh_sum =
     11
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 12
dh =
                 3.442548
rdh_sum =
     12
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 13
dh =
                 3.4362985
rdh_sum =
     13
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 14
dh =
                 3.4300495
rdh_sum =
     14
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 15
dh =
                 3.4238005
rdh_sum =
     15
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 16
dh =
                 3.4175515
rdh_sum =
     16
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 17
dh =
                 3.411302
rdh_sum =
     17
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 18
dh =
                 3.4003055
rdh_sum =
     18
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 19
dh =
                 3.3798155
rdh_sum =
        18.7756844068362
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 20
dh =
                 3.3545785
rdh_sum =
        19.5446218501661
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 21
dh =
                 3.329341
```

```
rdh_sum =
          20.3067425724237
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 22
dh =
                 3.3041035
rdh_sum =
          21.0619787137786
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 23
dh =
                 3.2788665
rdh_sum =
          21.8102643350816
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 24
dh =
                 3.2536295
rdh_sum =
          22.5515351607866
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 28
dh =
                 2.7927855
rdh_sum =
          23.1556395704539
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 29
dh =
                 2.7838805
rdh_sum =
          23.7569658387389
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 30
dh =
                  2.818876
rdh_sum =
           24.369190194817
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 31
dh =
                 2.8538715
rdh_sum =
          24.9922567760258
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 32
dh =
                  2.888867
rdh_sum =
          25.6261043226965
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 33
dh =
                  2.923863
rdh_sum =
          26.2706663612278
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 34
dh =
                 2.9588585
rdh_sum =
          26.9258707784441
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 35
dh =
                  2.993854
rdh_sum =
          27.5916403172126
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 36
dh =
                 2.9785435
rdh_sum =
          28.2527974689352
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 37
dh =
                 2.9129265
rdh_sum =
          28.8940186325912
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 38
dh =
                   2.84731
rdh_sum =
          29.5150568488525
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 39
dh =
                 2.7816935
```

```
rdh_sum =
          30.1157003238332
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 40
dh =
                  2.7160765
rdh_sum =
          30.6957727932406
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 41
dh =
                  2.6504595
rdh_sum =
          31.2551341433289
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 42
dh =
                  2.5848425
rdh_sum =
          31.7936805014291
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 43
dh =
                   2.519226
rdh_sum =
          32.3113445769972
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 44
dh =
                  2.4536095
rdh_sum =
          32.8080954612564
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 53
dh =
                   1.726356
rdh_sum =
          33.0815816456938
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 54
dh =
                    1.71542
rdh_sum =
          33.3519654955961
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 55
dh =
                   1.704484
rdh_sum =
          33.6192581730603
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 56
dh =
                   1.693548
rdh_sum =
          33.8834709904514
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 57
dh =
                   1.682612
rdh_sum =
          34.1446154098525
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 58
dh =
                   1.671676
rdh_sum =
          34.4027030425079
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 77
dh =
         -0.850196999999998
rdh_sum =
          34.5493447944442
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 78
dh =
                  -0.8961285
rdh_sum =
          34.7113208850142
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 79
dh =
         -0.942059999999998
rdh_sum =
          34.8892406463501
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 80
dh =
         -0.987991999999998
```

```
rdh_sum =
          35.0836848529731
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 81
dh =
                -1.033924
rdh_sum =
          35.2952043209965
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 82
dh =
                -1.0798555
rdh_sum =
          35.5243188912281
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 83
dh =
                -1.125787
rdh_sum =
          35.7715168699441
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 84
dh =
                -1.171719
rdh_sum =
          36.0372541698937
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 85
dh =
                -1.217651
rdh_sum =
          36.3219530893046
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 86
dh =
                -1.2635825
rdh_sum =
          36.6260015322498
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 87
dh =
                -1.2947505
rdh_sum =
          36.9433834174806
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 88
dh =
                -1.311155
rdh_sum =
          37.2678446259036
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 89
dh =
                -1.327559
rdh_sum =
          37.5994253083059
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 90
dh =
                -1.343963
rdh_sum =
          37.9381641934623
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 91
dh =
                -1.360367
rdh_sum =
          38.2840983640865
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 92
dh =
                -1.3767715
rdh_sum =
          38.6372634692222
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 93
dh =
                -1.393176
rdh_sum =
           38.997693276268
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 94
dh =
                -1.40958
rdh_sum =
          39.3654196590953
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 95
dh =
                -1.425984
```

```
rdh_sum =
          39.7404730346135
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 96
dh =
                 -1.442388
rdh_sum =
          40.1228821348569
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 97
dh =
                 -1.4576205
rdh_sum =
          40.5121458959946
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 98
dh =
                 -1.4716815
rdh_sum =
          40.9077566603188
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 99
dh =
                 -1.4857425
rdh_sum =
          41.3097320651524
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 100
dh =
                 -1.499803
rdh_sum =
          41.7180884452733
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 101
dh =
                 -1.5138635
rdh_sum =
          42.1328412834386
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 102
dh =
                 -1.5279245
rdh_sum =
          42.5540052099714
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 103
dh =
                 -1.5419855
rdh_sum =
          42.9815935448017
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 104
dh =
                 -1.553117
rdh_sum =
          43.4142765425241
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 105
dh =
                 -1.561319
rdh_sum =
          43.8507180215471
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 106
dh =
                 -1.569521
rdh_sum =
          44.2909216358146
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 107
dh =
                 -1.577723
rdh_sum =
          44.7348908229877
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 108
dh =
                 -1.585925
rdh_sum =
          45.1826288042466
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 109
dh =
                 -1.594127
rdh_sum =
          45.6341385841056
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 110
dh =
                 -1.602329
```

```
rdh_sum =
          46.0894229502404
ans =
Berm Factor Calculation: Iteration 16, Profile Segment: 111
dh =
                    -1.610531
rdh_sum =
          46.548484473328
ans =
!------- End Berm Factor Calculation, Iter: 16 ---------!
berm_width =
    82
rB =
          0.688918296921949
rdh_mean =
          0.567664444796683
gamma_berm =
          0.702156125610526
slope =
          0.191591639476746
Irb =
           3.14307972437341
gamma_berm =
          0.702156125610526
gamma_perm =
     1
gamma_beta =
     1
gamma_rough =
                         0.6
gamma =
          0.421293675366316
ans =
!!! - - Iribaren number:   2.21 is in the valid range (0.5-10), TAW RECOMMENDED - - !!!
ans =
!!! - - slope: 1:5.2 V:H is in the valid range (1:8 - 1:1), TAW RECOMMENDED - - !!!
R2_new =
           3.5265590830276
R2del =
          0.128161554831192
Z2 =
          12.9749190830276
top_sta =
           331.96584170413
ans =
!---------------- STARTING ITERATION 17 ----------------!
Ztoe =
                     5.75266
toe_sta =
          212.427117384844
top_sta =
           331.96584170413
Z2 =
          12.9749190830276
H0 =
                      2.4638
Tp =
                      12.522
T0 =
          11.3836363636364
R2 =
           3.5265590830276
Z2 =
          12.9749190830276
top_sta =
           331.96584170413
Lslope =
          119.538724319286
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 1
dh =
                    3.700486
rdh_sum =
     1
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 2
dh =
                    3.692757
rdh_sum =
     2
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 3
dh =
                   3.6523775
rdh_sum =
     3
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 4
dh =
                    3.611998
```

```
rdh_sum =
     4
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 5
dh =
                3.5716185
rdh_sum =
     5
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 6
dh =
                3.531239
rdh_sum =
     6
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 7
dh =
                3.4908595
rdh_sum =
         6.80450037811965
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 8
dh =
                3.467545
rdh_sum =
          7.6030724378835
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 9
dh =
                3.4612955
rdh_sum =
         8.40004413389283
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 10
dh =
                3.4550465
rdh_sum =
         9.19541088027912
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 11
dh =
                3.4487975
rdh_sum =
         9.98916798879852
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 12
dh =
                3.442548
rdh_sum =
         10.7813106674058
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 13
dh =
                3.4362985
rdh_sum =
         11.5718342782893
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 14
dh =
                3.4300495
rdh_sum =
         12.3607343394292
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 15
dh =
                3.4238005
rdh_sum =
         13.1480062652248
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 16
dh =
                3.4175515
rdh_sum =
         13.9336454959183
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 17
dh =
                3.411302
rdh_sum =
         14.7176473664869
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 18
dh =
                3.4003055
rdh_sum =
         15.4987572395367
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 19
dh =
                3.3798155
```

```
rdh_sum =
          16.2744416463729
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 20
dh =
                3.3545785
rdh_sum =
          17.0433790897028
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 21
dh =
                 3.329341
rdh_sum =
          17.8054998119604
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 22
dh =
                3.3041035
rdh_sum =
          18.5607359533153
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 23
dh =
                3.2788665
rdh_sum =
          19.3090215746183
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 24
dh =
                3.2536295
rdh_sum =
          20.0502924003234
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 28
dh =
                2.7927855
rdh_sum =
          20.6543968099907
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 29
dh =
                2.7838805
rdh_sum =
          21.2557230782756
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 30
dh =
                 2.818876
rdh_sum =
          21.8679474343538
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 31
dh =
                2.8538715
rdh_sum =
          22.4910140155625
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 32
dh =
                 2.888867
rdh_sum =
          23.1248615622332
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 33
dh =
                 2.923863
rdh_sum =
          23.7694236007645
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 34
dh =
                2.9588585
rdh_sum =
          24.4246280179808
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 35
dh =
                 2.993854
rdh_sum =
          25.0903975567493
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 36
dh =
                2.9785435
rdh_sum =
          25.7515547084719
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 37
dh =
                2.9129265
```

```
rdh_sum =
        26.3927758721279
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 38
dh =
                2.84731
rdh_sum =
        27.0138140883892
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 39
dh =
                2.7816935
rdh_sum =
        27.61445756337
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 40
dh =
                2.7160765
rdh_sum =
        28.1945300327773
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 41
dh =
                2.6504595
rdh_sum =
        28.7538913828656
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 42
dh =
                2.5848425
rdh_sum =
        29.2924377409659
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 43
dh =
                2.519226
rdh_sum =
        29.8101018165339
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 44
dh =
                2.4536095
rdh_sum =
        30.3068527007931
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 53
dh =
                1.726356
rdh_sum =
        30.5803388852305
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 54
dh =
                1.71542
rdh_sum =
        30.8507227351328
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 55
dh =
                1.704484
rdh_sum =
        31.118015412597
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 56
dh =
                1.693548
rdh_sum =
        31.3822282299881
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 57
dh =
                1.682612
rdh_sum =
        31.6433726493892
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 58
dh =
                1.671676
rdh_sum =
        31.9014602820446
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 77
dh =
        -0.850196999999998
rdh_sum =
        32.0381434769756
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 78
dh =
                -0.8961285
```

```
rdh_sum =
          32.1891825200955
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 79
dh =
        -0.942059999999998
rdh_sum =
          32.3551615745921
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 80
dh =
        -0.987991999999998
rdh_sum =
          32.5366399656361
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 81
dh =
                -1.033924
rdh_sum =
          32.7341509123319
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 82
dh =
                -1.0798555
rdh_sum =
          32.9482006118914
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 83
dh =
                -1.125787
rdh_sum =
          33.1792677472038
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 84
dh =
                -1.171719
rdh_sum =
          33.4278027063405
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 85
dh =
                -1.217651
rdh_sum =
          33.6942264527782
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 86
dh =
                -1.2635825
rdh_sum =
          33.9789298023761
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 87
dh =
                -1.2947505
rdh_sum =
          34.2762443987724
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 88
dh =
                -1.311155
rdh_sum =
          34.5802599916936
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 89
dh =
                -1.327559
rdh_sum =
          34.8910182289499
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 90
dh =
                -1.343963
rdh_sum =
           35.208559522087
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 91
dh =
                -1.360367
rdh_sum =
          35.5329228341657
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 92
dh =
                -1.3767715
rdh_sum =
          35.8641458810798
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 93
dh =
                -1.393176
```

```
rdh_sum =
         36.2022647064235
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 94
dh =
                  -1.40958
rdh_sum =
         36.5473136694005
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 95
dh =
                  -1.425984
rdh_sum =
         36.8993258589591
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 96
dh =
                  -1.442388
rdh_sum =
         37.2583328770883
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 97
dh =
                  -1.4576205
rdh_sum =
         37.6238621762538
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 98
dh =
                  -1.4716815
rdh_sum =
         37.9954341460865
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 99
dh =
                  -1.4857425
rdh_sum =
         38.3730689369667
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 100
dh =
                  -1.499803
rdh_sum =
          38.756785531414
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 101
dh =
                  -1.5138635
rdh_sum =
         39.1466021730173
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 102
dh =
                  -1.5279245
rdh_sum =
         39.5425363661673
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 103
dh =
                  -1.5419855
rdh_sum =
         39.9446044388069
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 104
dh =
                  -1.553117
rdh_sum =
          40.351539389414
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 105
dh =
                  -1.561319
rdh_sum =
         40.7620662742087
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 106
dh =
                  -1.569521
rdh_sum =
         41.1761898698785
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 107
dh =
                  -1.577723
rdh_sum =
         41.5939147610942
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 108
dh =
                  -1.585925
```

```
rdh_sum =
          42.0152453402643
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 109
dh =
                 -1.594127
rdh_sum =
          42.4401858073014
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 110
dh =
                 -1.602329
rdh_sum =
          42.8687401693972
ans =
Berm Factor Calculation: Iteration 17, Profile Segment: 111
dh =
                 -1.610531
rdh_sum =
          43.3009122408093
ans =
!------- End Berm Factor Calculation, Iter: 17 ---------!
berm_width =
    82
rB =
          0.685970178006747
rdh_mean =
          0.528059905375723
gamma_berm =
          0.676263169282064
slope =
          0.192394899240544
Irb =
           3.15625727994887
gamma_berm =
          0.676263169282064
gamma_perm =
     1
gamma_beta =
     1
gamma_rough =
                      0.6
gamma =
          0.405757901569238
ans =
!!! - - Iribaren number:   2.13 is in the valid range (0.5-10), TAW RECOMMENDED - - !!!
ans =
!!! - - slope: 1:5.2 V:H is in the valid range (1:8 - 1:1), TAW RECOMMENDED - - !!!
R2_new =
           3.39839783951841
R2del =
          0.128161243509191
Z2 =
          12.8467578395184
top_sta =
          331.454295531272
ans =
!---------------- STARTING ITERATION 18 -----------------!
Ztoe =
                  5.75266
toe_sta =
          212.427117384844
top_sta =
          331.454295531272
Z2 =
          12.8467578395184
H0 =
                   2.4638
Tp =
                   12.522
T0 =
          11.3836363636364
R2 =
           3.39839783951841
Z2 =
          12.8467578395184
top_sta =
          331.454295531272
Lslope =
          119.027178146428
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 1
dh =
                   3.700486
rdh_sum =
     1
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 2
dh =
                   3.692757
```

```
rdh_sum =
     2
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 3
dh =
                   3.6523775
rdh_sum =
     3
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 4
dh =
                   3.611998
rdh_sum =
     4
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 5
dh =
                   3.5716185
rdh_sum =
     5
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 6
dh =
                   3.531239
rdh_sum =
     6
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 7
dh =
                   3.4908595
rdh_sum =
     7
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 8
dh =
                   3.467545
rdh_sum =
     8
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 9
dh =
                   3.4612955
rdh_sum =
     9
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 10
dh =
                   3.4550465
rdh_sum =
    10
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 11
dh =
                   3.4487975
rdh_sum =
    11
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 12
dh =
                   3.442548
rdh_sum =
    12
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 13
dh =
                   3.4362985
rdh_sum =
    13
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 14
dh =
                   3.4300495
rdh_sum =
    14
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 15
dh =
                   3.4238005
rdh_sum =
    15
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 16
dh =
                   3.4175515
rdh_sum =
    16
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 17
dh =
                   3.411302
```

```
rdh_sum =
    17
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 18
dh =
                    3.4003055
rdh_sum =
    18
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 19
dh =
                    3.3798155
rdh_sum =
        18.7756844068362
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 20
dh =
                    3.3545785
rdh_sum =
        19.5446218501661
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 21
dh =
                    3.329341
rdh_sum =
        20.3067425724237
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 22
dh =
                    3.3041035
rdh_sum =
        21.0619787137786
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 23
dh =
                    3.2788665
rdh_sum =
        21.8102643350816
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 24
dh =
                    3.2536295
rdh_sum =
        22.5515351607866
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 28
dh =
                    2.7927855
rdh_sum =
        23.1556395704539
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 29
dh =
                    2.7838805
rdh_sum =
        23.7569658387389
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 30
dh =
                    2.818876
rdh_sum =
        24.369190194817
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 31
dh =
                    2.8538715
rdh_sum =
        24.9922567760258
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 32
dh =
                    2.888867
rdh_sum =
        25.6261043226965
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 33
dh =
                    2.923863
rdh_sum =
        26.2706663612278
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 34
dh =
                    2.9588585
rdh_sum =
        26.9258707784441
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 35
dh =
                    2.993854
```

```
rdh_sum =
          27.5916403172126
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 36
dh =
                 2.9785435
rdh_sum =
          28.2527974689352
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 37
dh =
                 2.9129265
rdh_sum =
          28.8940186325912
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 38
dh =
                   2.84731
rdh_sum =
          29.5150568488525
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 39
dh =
                 2.7816935
rdh_sum =
          30.1157003238332
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 40
dh =
                 2.7160765
rdh_sum =
          30.6957727932406
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 41
dh =
                 2.6504595
rdh_sum =
          31.2551341433289
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 42
dh =
                 2.5848425
rdh_sum =
          31.7936805014291
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 43
dh =
                  2.519226
rdh_sum =
          32.3113445769972
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 44
dh =
                 2.4536095
rdh_sum =
          32.8080954612564
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 53
dh =
                  1.726356
rdh_sum =
          33.0815816456938
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 54
dh =
                   1.71542
rdh_sum =
          33.3519654955961
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 55
dh =
                  1.704484
rdh_sum =
          33.6192581730603
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 56
dh =
                  1.693548
rdh_sum =
          33.8834709904514
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 57
dh =
                  1.682612
rdh_sum =
          34.1446154098525
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 58
dh =
                  1.671676
```

```
rdh_sum =
        34.4027030425079
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 77
dh =
      -0.850196999999998
rdh_sum =
        34.5493447689744
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 78
dh =
             -0.8961285
rdh_sum =
        34.7113208315845
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 79
dh =
      -0.942059999999998
rdh_sum =
        34.8892405624094
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 80
dh =
      -0.987991999999998
rdh_sum =
        35.0836847359185
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 81
dh =
               -1.033924
rdh_sum =
        35.2952041681841
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 82
dh =
              -1.0798555
rdh_sum =
        35.5243186999833
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 83
dh =
               -1.125787
rdh_sum =
         35.771516637572
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 84
dh =
               -1.171719
rdh_sum =
        36.0372538936901
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 85
dh =
               -1.217651
rdh_sum =
        36.3219527665669
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 86
dh =
              -1.2635825
rdh_sum =
        36.6260011602883
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 87
dh =
              -1.2947505
rdh_sum =
        36.9433829944831
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 88
dh =
               -1.311155
rdh_sum =
        37.2678441509218
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 89
dh =
               -1.327559
rdh_sum =
        37.5994247803964
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 90
dh =
               -1.343963
rdh_sum =
        37.9381636116864
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 91
dh =
               -1.360367
```

```
rdh_sum =
          38.2840977275114
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 92
dh =
                    -1.3767715
rdh_sum =
          38.6372627769211
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 93
dh =
                    -1.393176
rdh_sum =
          38.9976925273206
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 94
dh =
                    -1.40958
rdh_sum =
          39.3654188525886
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 95
dh =
                    -1.425984
rdh_sum =
           39.740472169642
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 96
dh =
                    -1.442388
rdh_sum =
          40.1228812105236
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 97
dh =
                    -1.4576205
rdh_sum =
          40.5121449114741
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 98
dh =
                    -1.4716815
rdh_sum =
          40.9077556148562
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 99
dh =
                    -1.4857425
rdh_sum =
            41.309730958
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 100
dh =
                    -1.499803
rdh_sum =
          41.7180872756907
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 101
dh =
                    -1.5138635
rdh_sum =
           42.132840050693
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 102
dh =
                    -1.5279245
rdh_sum =
          42.5540039133383
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 103
dh =
                    -1.5419855
rdh_sum =
          42.9815921835648
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 104
dh =
                    -1.553117
rdh_sum =
          43.4142751161224
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 105
dh =
                    -1.561319
rdh_sum =
          43.8507165295708
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 106
dh =
                    -1.569521
```

```
rdh_sum =
          44.2909200778573
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 107
dh =
                 -1.577723
rdh_sum =
          44.7348891986457
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 108
dh =
                 -1.585925
rdh_sum =
          45.1826271131197
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 109
dh =
                 -1.594127
rdh_sum =
          45.6341368257969
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 110
dh =
                 -1.602329
rdh_sum =
          46.0894211243563
ans =
Berm Factor Calculation: Iteration 18, Profile Segment: 111
dh =
                 -1.610531
rdh_sum =
          46.5484825794782
ans =
!------- End Berm Factor Calculation, Iter: 18 ---------!
berm_width =
    82
rB =
          0.688918289729786
rdh_mean =
          0.567664421700954
gamma_berm =
          0.702156112808884
slope =
          0.191591641454932
Irb =
           3.14307975682573
gamma_berm =
          0.702156112808884
gamma_perm =
    1
gamma_beta =
    1
gamma_rough =
                      0.6
gamma =
          0.42129366768533
ans =
!!! - - Iribaren number:   2.21 is in the valid range (0.5-10), TAW RECOMMENDED - - !!!
ans =
!!! - - slope: 1:5.2 V:H is in the valid range (1:8 - 1:1), TAW RECOMMENDED - - !!!
R2_new =
          3.52655902356779
R2del =
          0.128161184049384
Z2 =
          12.9749190235678
top_sta =
           331.9658414668
ans =
!---------------- STARTING ITERATION 19 -----------------!
Ztoe =
                   5.75266
toe_sta =
          212.427117384844
top_sta =
           331.9658414668
Z2 =
          12.9749190235678
H0 =
                    2.4638
Tp =
                    12.522
T0 =
          11.3836363636364
R2 =
          3.52655902356779
Z2 =
          12.9749190235678
top_sta =
           331.9658414668
```

```
Lslope =
          119.538724081956
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 1
dh =
                     3.700486
rdh_sum =
      1
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 2
dh =
                     3.692757
rdh_sum =
      2
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 3
dh =
                     3.6523775
rdh_sum =
      3
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 4
dh =
                     3.611998
rdh_sum =
      4
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 5
dh =
                     3.5716185
rdh_sum =
      5
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 6
dh =
                     3.531239
rdh_sum =
      6
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 7
dh =
                     3.4908595
rdh_sum =
          6.80450037811965
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 8
dh =
                     3.467545
rdh_sum =
          7.6030724378835
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 9
dh =
                     3.4612955
rdh_sum =
          8.40004413389283
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 10
dh =
                     3.4550465
rdh_sum =
          9.19541088027912
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 11
dh =
                     3.4487975
rdh_sum =
          9.98916798879852
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 12
dh =
                     3.442548
rdh_sum =
          10.7813106674058
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 13
dh =
                     3.4362985
rdh_sum =
          11.5718342782893
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 14
dh =
                     3.4300495
rdh_sum =
          12.3607343394292
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 15
dh =
                     3.4238005
```

```
rdh_sum =
            13.1480062652248
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 16
dh =
                  3.4175515
rdh_sum =
            13.9336454959183
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 17
dh =
                   3.411302
rdh_sum =
            14.7176473664869
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 18
dh =
                  3.4003055
rdh_sum =
            15.4987572395367
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 19
dh =
                  3.3798155
rdh_sum =
            16.2744416463729
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 20
dh =
                  3.3545785
rdh_sum =
            17.0433790897028
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 21
dh =
                   3.329341
rdh_sum =
            17.8054998119604
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 22
dh =
                  3.3041035
rdh_sum =
            18.5607359533153
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 23
dh =
                  3.2788665
rdh_sum =
            19.3090215746183
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 24
dh =
                  3.2536295
rdh_sum =
            20.0502924003234
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 28
dh =
                  2.7927855
rdh_sum =
            20.6543968099907
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 29
dh =
                  2.7838805
rdh_sum =
            21.2557230782756
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 30
dh =
                   2.818876
rdh_sum =
            21.8679474343538
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 31
dh =
                  2.8538715
rdh_sum =
            22.4910140155625
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 32
dh =
                   2.888867
rdh_sum =
            23.1248615622332
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 33
dh =
                   2.923863
```

```
rdh_sum =
         23.7694236007645
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 34
dh =
               2.9588585
rdh_sum =
         24.4246280179808
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 35
dh =
                2.993854
rdh_sum =
         25.0903975567493
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 36
dh =
               2.9785435
rdh_sum =
         25.7515547084719
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 37
dh =
               2.9129265
rdh_sum =
         26.3927758721279
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 38
dh =
                 2.84731
rdh_sum =
         27.0138140883892
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 39
dh =
               2.7816935
rdh_sum =
          27.61445756337
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 40
dh =
               2.7160765
rdh_sum =
         28.1945300327773
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 41
dh =
               2.6504595
rdh_sum =
         28.7538913828656
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 42
dh =
               2.5848425
rdh_sum =
         29.2924377409659
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 43
dh =
                2.519226
rdh_sum =
         29.8101018165339
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 44
dh =
               2.4536095
rdh_sum =
         30.3068527007931
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 53
dh =
                1.726356
rdh_sum =
         30.5803388852305
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 54
dh =
                 1.71542
rdh_sum =
         30.8507227351328
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 55
dh =
                1.704484
rdh_sum =
          31.118015412597
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 56
dh =
                1.693548
```

```
rdh_sum =
          31.3822282299881
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 57
dh =
                    1.682612
rdh_sum =
          31.6433726493892
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 58
dh =
                    1.671676
rdh_sum =
          31.9014602820446
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 77
dh =
          -0.850196999999998
rdh_sum =
          32.0381434813623
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 78
dh =
                   -0.8961285
rdh_sum =
          32.1891825293019
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 79
dh =
          -0.942059999999998
rdh_sum =
          32.3551615890632
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 80
dh =
          -0.987991999999998
rdh_sum =
          32.5366399858265
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 81
dh =
                    -1.033924
rdh_sum =
          32.734150938705
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 82
dh =
                    -1.0798555
rdh_sum =
          32.9482006449171
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 83
dh =
                    -1.125787
rdh_sum =
          33.179267787357
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 84
dh =
                    -1.171719
rdh_sum =
          33.4278027540995
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 85
dh =
                    -1.217651
rdh_sum =
          33.6942265086227
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 86
dh =
                    -1.2635825
rdh_sum =
          33.9789298667852
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 87
dh =
                    -1.2947505
rdh_sum =
          34.2762444720704
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 88
dh =
                    -1.311155
rdh_sum =
          34.5802600740504
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 89
dh =
                    -1.327559
```

```
rdh_sum =
          34.8910183205351
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 90
dh =
                -1.343963
rdh_sum =
          35.2085596230692
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 91
dh =
                -1.360367
rdh_sum =
          35.5329229447133
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 92
dh =
                -1.3767715
rdh_sum =
          35.8641460013601
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 93
dh =
                -1.393176
rdh_sum =
           36.202264836603
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 94
dh =
                -1.40958
rdh_sum =
          36.5473138096449
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 95
dh =
                -1.425984
rdh_sum =
          36.8993260094327
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 96
dh =
                -1.442388
rdh_sum =
          37.2583330379548
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 97
dh =
                -1.4576205
rdh_sum =
          37.6238623476636
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 98
dh =
                -1.4716815
rdh_sum =
          37.9954343281779
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 99
dh =
                -1.4857425
rdh_sum =
          38.3730691298768
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 100
dh =
                -1.499803
rdh_sum =
          38.7567857352788
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 101
dh =
                -1.5138635
rdh_sum =
          39.1466023879717
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 102
dh =
                -1.5279245
rdh_sum =
          39.5425365923452
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 103
dh =
                -1.5419855
rdh_sum =
          39.9446046763408
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 104
dh =
                -1.553117
```

```
rdh_sum =
          40.351539638408
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 105
dh =
                -1.561319
rdh_sum =
          40.7620665347389
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 106
dh =
                -1.569521
rdh_sum =
          41.1761901420208
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 107
dh =
                -1.577723
rdh_sum =
          41.5939150449236
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 108
dh =
                -1.585925
rdh_sum =
          42.0152456358557
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 109
dh =
                -1.594127
rdh_sum =
           42.440186114729
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 110
dh =
                -1.602329
rdh_sum =
          42.8687404887349
ans =
Berm Factor Calculation: Iteration 19, Profile Segment: 111
dh =
                -1.610531
rdh_sum =
          43.3009125721303
ans =
!------- End Berm Factor Calculation, Iter: 19 ---------!
berm_width =
    82
rB =
          0.685970179368656
rdh_mean =
          0.528059909416223
gamma_berm =
          0.676263171410987
slope =
          0.192394898872956
Irb =
           3.15625727391853
gamma_berm =
          0.676263171410987
gamma_perm =
    1
gamma_beta =
    1
gamma_rough =
                      0.6
gamma =
          0.405757902846592
ans =
!!! - - Iribaren number:   2.13 is in the valid range (0.5-10), TAW RECOMMENDED - - !!!
ans =
!!! - - slope: 1:5.2 V:H is in the valid range (1:8 - 1:1), TAW RECOMMENDED - - !!!
R2_new =
           3.3983978493567
R2del =
          0.128161174211089
Z2 =
           12.8467578493567
top_sta =
          331.454295570541
ans =
!---------------- STARTING ITERATION 20 ----------------!
Ztoe =
                  5.75266
toe_sta =
          212.427117384844
top_sta =
          331.454295570541
Z2 =
           12.8467578493567
```

```
H0 =
                  2.4638
Tp =
                  12.522
T0 =
          11.3836363636364
R2 =
            3.3983978493567
Z2 =
          12.8467578493567
top_sta =
          331.454295570541
Lslope =
          119.027178185697
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 1
dh =
                  3.700486
rdh_sum =
      1
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 2
dh =
                  3.692757
rdh_sum =
      2
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 3
dh =
                  3.6523775
rdh_sum =
      3
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 4
dh =
                  3.611998
rdh_sum =
      4
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 5
dh =
                  3.5716185
rdh_sum =
      5
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 6
dh =
                  3.531239
rdh_sum =
      6
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 7
dh =
                  3.4908595
rdh_sum =
      7
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 8
dh =
                  3.467545
rdh_sum =
      8
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 9
dh =
                  3.4612955
rdh_sum =
      9
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 10
dh =
                  3.4550465
rdh_sum =
     10
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 11
dh =
                  3.4487975
rdh_sum =
     11
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 12
dh =
                  3.442548
rdh_sum =
     12
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 13
dh =
                  3.4362985
```

```
rdh_sum =
    13
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 14
dh =
                3.4300495
rdh_sum =
    14
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 15
dh =
                3.4238005
rdh_sum =
    15
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 16
dh =
                3.4175515
rdh_sum =
    16
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 17
dh =
                 3.411302
rdh_sum =
    17
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 18
dh =
                3.4003055
rdh_sum =
    18
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 19
dh =
                3.3798155
rdh_sum =
        18.7756844068362
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 20
dh =
                3.3545785
rdh_sum =
        19.5446218501661
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 21
dh =
                 3.329341
rdh_sum =
        20.3067425724237
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 22
dh =
                3.3041035
rdh_sum =
        21.0619787137786
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 23
dh =
                3.2788665
rdh_sum =
        21.8102643350816
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 24
dh =
                3.2536295
rdh_sum =
        22.5515351607866
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 28
dh =
                2.7927855
rdh_sum =
        23.1556395704539
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 29
dh =
                2.7838805
rdh_sum =
        23.7569658387389
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 30
dh =
                 2.818876
rdh_sum =
        24.369190194817
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 31
dh =
                2.8538715
```

```
rdh_sum =
          24.9922567760258
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 32
dh =
                2.888867
rdh_sum =
          25.6261043226965
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 33
dh =
                2.923863
rdh_sum =
          26.2706663612278
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 34
dh =
                2.9588585
rdh_sum =
          26.9258707784441
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 35
dh =
                2.993854
rdh_sum =
          27.5916403172126
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 36
dh =
                2.9785435
rdh_sum =
          28.2527974689352
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 37
dh =
                2.9129265
rdh_sum =
          28.8940186325912
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 38
dh =
                 2.84731
rdh_sum =
          29.5150568488525
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 39
dh =
                2.7816935
rdh_sum =
          30.1157003238332
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 40
dh =
                2.7160765
rdh_sum =
          30.6957727932406
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 41
dh =
                2.6504595
rdh_sum =
          31.2551341433289
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 42
dh =
                2.5848425
rdh_sum =
          31.7936805014291
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 43
dh =
                2.519226
rdh_sum =
          32.3113445769972
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 44
dh =
                2.4536095
rdh_sum =
          32.8080954612564
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 53
dh =
                1.726356
rdh_sum =
          33.0815816456938
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 54
dh =
                 1.71542
```

```
rdh_sum =
          33.3519654955961
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 55
dh =
                    1.704484
rdh_sum =
          33.6192581730603
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 56
dh =
                    1.693548
rdh_sum =
          33.8834709904514
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 57
dh =
                    1.682612
rdh_sum =
          34.1446154098525
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 58
dh =
                    1.671676
rdh_sum =
          34.4027030425079
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 77
dh =
        -0.850196999999998
rdh_sum =
          34.5493447681695
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 78
dh =
                  -0.8961285
rdh_sum =
          34.7113208298961
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 79
dh =
        -0.942059999999998
rdh_sum =
          34.8892405597567
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 80
dh =
        -0.987991999999998
rdh_sum =
          35.0836847322194
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 81
dh =
                    -1.033924
rdh_sum =
           35.295204163355
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 82
dh =
                   -1.0798555
rdh_sum =
          35.5243186939396
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 83
dh =
                    -1.125787
rdh_sum =
          35.7715166302287
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 84
dh =
                    -1.171719
rdh_sum =
          36.0372538849616
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 85
dh =
                    -1.217651
rdh_sum =
          36.3219527563679
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 86
dh =
                   -1.2635825
rdh_sum =
          36.6260011485337
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 87
dh =
                   -1.2947505
```

```
rdh_sum =
         36.9433829811157
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 88
dh =
                  -1.311155
rdh_sum =
         37.2678441359116
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 89
dh =
                  -1.327559
rdh_sum =
         37.5994247637136
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 90
dh =
                  -1.343963
rdh_sum =
         37.9381635933013
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 91
dh =
                  -1.360367
rdh_sum =
         38.2840977073946
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 92
dh =
                  -1.3767715
rdh_sum =
         38.6372627550432
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 93
dh =
                  -1.393176
rdh_sum =
         38.9976925036526
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 94
dh =
                  -1.40958
rdh_sum =
         39.3654188271016
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 95
dh =
                  -1.425984
rdh_sum =
         39.7404721423075
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 96
dh =
                  -1.442388
rdh_sum =
         40.1228811813132
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 97
dh =
                  -1.4576205
rdh_sum =
         40.5121448803617
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 98
dh =
                  -1.4716815
rdh_sum =
         40.9077555818178
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 99
dh =
                  -1.4857425
rdh_sum =
         41.3097309230122
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 100
dh =
                  -1.499803
rdh_sum =
         41.7180872387299
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 101
dh =
                  -1.5138635
rdh_sum =
         42.1328400117362
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 102
dh =
                  -1.5279245
```

```
rdh_sum =
        42.5540038723626
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 103
dh =
              -1.5419855
rdh_sum =
        42.9815921405475
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 104
dh =
              -1.553117
rdh_sum =
        43.4142750710457
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 105
dh =
              -1.561319
rdh_sum =
        43.8507164824219
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 106
dh =
              -1.569521
rdh_sum =
        44.2909200286232
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 107
dh =
              -1.577723
rdh_sum =
        44.7348891473138
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 108
dh =
              -1.585925
rdh_sum =
        45.1826270596773
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 109
dh =
              -1.594127
rdh_sum =
        45.6341367702314
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 110
dh =
              -1.602329
rdh_sum =
        46.0894210666553
ans =
Berm Factor Calculation: Iteration 20, Profile Segment: 111
dh =
              -1.610531
rdh_sum =
        46.5484825196294
ans =
!------- End Berm Factor Calculation, Iter: 20 ---------!
berm_width =
    82
rB =
        0.688918289502501
rdh_mean =
        0.567664420971091
gamma_berm =
        0.70215611240433
slope =
        0.191591641517446
Irb =
        3.14307975785128
gamma_berm =
        0.70215611240433
gamma_perm =
    1
gamma_beta =
    1
gamma_rough =
                    0.6
gamma =
        0.421293667442598
ans =
!!! - - Iribaren number:   2.21 is in the valid range (0.5-10), TAW RECOMMENDED - - !!!
ans =
!!! - - slope: 1:5.2 V:H is in the valid range (1:8 - 1:1), TAW RECOMMENDED - - !!!
R2_new =
        3.52655902168876
R2del =
        0.12816117233206
Z2 =
        12.9749190216888
```

```
top_sta =
            331.9658414593
ans =
!---------------- STARTING ITERATION 21 ----------------!
Ztoe =
                 5.75266
toe_sta =
            212.427117384844
top_sta =
            331.9658414593
Z2 =
            12.9749190216888
H0 =
                 2.4638
Tp =
                 12.522
T0 =
            11.3836363636364
R2 =
            3.52655902168876
Z2 =
            12.9749190216888
top_sta =
            331.9658414593
Lslope =
            119.538724074456
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 1
dh =
                 3.700486
rdh_sum =
      1
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 2
dh =
                 3.692757
rdh_sum =
      2
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 3
dh =
                 3.6523775
rdh_sum =
      3
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 4
dh =
                 3.611998
rdh_sum =
      4
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 5
dh =
                 3.5716185
rdh_sum =
      5
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 6
dh =
                 3.531239
rdh_sum =
      6
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 7
dh =
                 3.4908595
rdh_sum =
            6.80450037811965
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 8
dh =
                 3.467545
rdh_sum =
             7.6030724378835
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 9
dh =
                 3.4612955
rdh_sum =
            8.40004413389283
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 10
dh =
                 3.4550465
rdh_sum =
            9.19541088027912
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 11
dh =
                 3.4487975
```

```
rdh_sum =
          9.98916798879852
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 12
dh =
                3.442548
rdh_sum =
          10.7813106674058
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 13
dh =
                3.4362985
rdh_sum =
          11.5718342782893
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 14
dh =
                3.4300495
rdh_sum =
          12.3607343394292
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 15
dh =
                3.4238005
rdh_sum =
          13.1480062652248
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 16
dh =
                3.4175515
rdh_sum =
          13.9336454959183
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 17
dh =
                3.411302
rdh_sum =
          14.7176473664869
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 18
dh =
                3.4003055
rdh_sum =
          15.4987572395367
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 19
dh =
                3.3798155
rdh_sum =
          16.2744416463729
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 20
dh =
                3.3545785
rdh_sum =
          17.0433790897028
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 21
dh =
                3.329341
rdh_sum =
          17.8054998119604
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 22
dh =
                3.3041035
rdh_sum =
          18.5607359533153
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 23
dh =
                3.2788665
rdh_sum =
          19.3090215746183
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 24
dh =
                3.2536295
rdh_sum =
          20.0502924003234
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 28
dh =
                2.7927855
rdh_sum =
          20.6543968099907
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 29
dh =
                2.7838805
```

```
rdh_sum =
        21.2557230782756
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 30
dh =
                  2.818876
rdh_sum =
        21.8679474343538
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 31
dh =
                  2.8538715
rdh_sum =
        22.4910140155625
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 32
dh =
                  2.888867
rdh_sum =
        23.1248615622332
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 33
dh =
                  2.923863
rdh_sum =
        23.7694236007645
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 34
dh =
                  2.9588585
rdh_sum =
        24.4246280179808
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 35
dh =
                  2.993854
rdh_sum =
        25.0903975567493
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 36
dh =
                  2.9785435
rdh_sum =
        25.7515547084719
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 37
dh =
                  2.9129265
rdh_sum =
        26.3927758721279
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 38
dh =
                   2.84731
rdh_sum =
        27.0138140883892
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 39
dh =
                  2.7816935
rdh_sum =
          27.61445756337
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 40
dh =
                  2.7160765
rdh_sum =
        28.1945300327773
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 41
dh =
                  2.6504595
rdh_sum =
        28.7538913828656
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 42
dh =
                  2.5848425
rdh_sum =
        29.2924377409659
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 43
dh =
                  2.519226
rdh_sum =
        29.8101018165339
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 44
dh =
                  2.4536095
```

```
rdh_sum =
          30.3068527007931
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 53
dh =
                    1.726356
rdh_sum =
          30.5803388852305
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 54
dh =
                     1.71542
rdh_sum =
          30.8507227351328
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 55
dh =
                    1.704484
rdh_sum =
           31.118015412597
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 56
dh =
                    1.693548
rdh_sum =
          31.3822282299881
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 57
dh =
                    1.682612
rdh_sum =
          31.6433726493892
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 58
dh =
                    1.671676
rdh_sum =
          31.9014602820446
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 77
dh =
         -0.850196999999998
rdh_sum =
          32.0381434815009
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 78
dh =
                   -0.8961285
rdh_sum =
          32.1891825295928
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 79
dh =
         -0.942059999999998
rdh_sum =
          32.3551615895205
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 80
dh =
         -0.987991999999998
rdh_sum =
          32.5366399864646
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 81
dh =
                    -1.033924
rdh_sum =
          32.7341509395385
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 82
dh =
                   -1.0798555
rdh_sum =
          32.9482006459608
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 83
dh =
                    -1.125787
rdh_sum =
          33.1792677886259
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 84
dh =
                    -1.171719
rdh_sum =
          33.4278027556087
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 85
dh =
                    -1.217651
```

```
rdh_sum =
            33.6942265103874
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 86
dh =
                 -1.2635825
rdh_sum =
            33.9789298688207
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 87
dh =
                 -1.2947505
rdh_sum =
            34.2762444743867
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 88
dh =
                  -1.311155
rdh_sum =
             34.580260076653
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 89
dh =
                  -1.327559
rdh_sum =
            34.8910183234293
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 90
dh =
                  -1.343963
rdh_sum =
            35.2085596262605
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 91
dh =
                  -1.360367
rdh_sum =
            35.5329229482068
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 92
dh =
                 -1.3767715
rdh_sum =
            35.8641460051611
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 93
dh =
                  -1.393176
rdh_sum =
            36.2022648407169
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 94
dh =
                   -1.40958
rdh_sum =
            36.5473138140768
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 95
dh =
                  -1.425984
rdh_sum =
            36.8993260141879
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 96
dh =
                  -1.442388
rdh_sum =
            37.2583330430384
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 97
dh =
                 -1.4576205
rdh_sum =
            37.6238623530805
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 98
dh =
                 -1.4716815
rdh_sum =
            37.9954343339323
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 99
dh =
                 -1.4857425
rdh_sum =
             38.373069135973
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 100
dh =
                  -1.499803
```

```
rdh_sum =
         38.7567857417212
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 101
dh =
               -1.5138635
rdh_sum =
         39.1466023947647
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 102
dh =
               -1.5279245
rdh_sum =
         39.5425365994927
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 103
dh =
               -1.5419855
rdh_sum =
         39.9446046838473
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 104
dh =
               -1.553117
rdh_sum =
         40.3515396462766
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 105
dh =
               -1.561319
rdh_sum =
         40.7620665429721
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 106
dh =
               -1.569521
rdh_sum =
         41.1761901506209
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 107
dh =
               -1.577723
rdh_sum =
         41.5939150538931
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 108
dh =
               -1.585925
rdh_sum =
         42.0152456451969
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 109
dh =
               -1.594127
rdh_sum =
         42.4401861244442
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 110
dh =
               -1.602329
rdh_sum =
         42.8687404988265
ans =
Berm Factor Calculation: Iteration 21, Profile Segment: 111
dh =
               -1.610531
rdh_sum =
         43.3009125826006
ans =
!------- End Berm Factor Calculation, Iter: 21 ---------!
berm_width =
    82
rB =
         0.685970179411695
rdh_mean =
         0.528059909543909
gamma_berm =
         0.676263171478264
slope =
         0.192394898861339
Irb =
         3.15625727372796
gamma_berm =
         0.676263171478264
gamma_perm =
     1
gamma_beta =
     1
gamma_rough =
                       0.6
```

```
gamma =
         0.405757902886958
ans =
!!! - - Iribaren number:   2.13 is in the valid range (0.5-10), TAW RECOMMENDED - - !!!
ans =
!!! - - slope: 1:5.2 V:H is in the valid range (1:8 - 1:1), TAW RECOMMENDED - - !!!
R2_new =
         3.39839784966761
R2del =
         0.128161172021153
Z2 =
         12.8467578496676
top_sta =
         331.454295571782
ans =
!---------------- STARTING ITERATION 22 ----------------!
Ztoe =
                  5.75266
toe_sta =
         212.427117384844
top_sta =
         331.454295571782
Z2 =
         12.8467578496676
H0 =
                   2.4638
Tp =
                   12.522
T0 =
         11.3836363636364
R2 =
         3.39839784966761
Z2 =
         12.8467578496676
top_sta =
         331.454295571782
Lslope =
         119.027178186938
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 1
dh =
                  3.700486
rdh_sum =
     1
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 2
dh =
                  3.692757
rdh_sum =
     2
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 3
dh =
                  3.6523775
rdh_sum =
     3
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 4
dh =
                  3.611998
rdh_sum =
     4
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 5
dh =
                  3.5716185
rdh_sum =
     5
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 6
dh =
                  3.531239
rdh_sum =
     6
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 7
dh =
                  3.4908595
rdh_sum =
     7
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 8
dh =
                  3.467545
rdh_sum =
     8
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 9
dh =
                  3.4612955
```

```
rdh_sum =
      9
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 10
dh =
                3.4550465
rdh_sum =
     10
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 11
dh =
                3.4487975
rdh_sum =
     11
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 12
dh =
                3.442548
rdh_sum =
     12
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 13
dh =
                3.4362985
rdh_sum =
     13
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 14
dh =
                3.4300495
rdh_sum =
     14
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 15
dh =
                3.4238005
rdh_sum =
     15
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 16
dh =
                3.4175515
rdh_sum =
     16
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 17
dh =
                3.411302
rdh_sum =
     17
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 18
dh =
                3.4003055
rdh_sum =
     18
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 19
dh =
                3.3798155
rdh_sum =
        18.7756844068362
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 20
dh =
                3.3545785
rdh_sum =
        19.5446218501661
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 21
dh =
                3.329341
rdh_sum =
        20.3067425724237
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 22
dh =
                3.3041035
rdh_sum =
        21.0619787137786
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 23
dh =
                3.2788665
rdh_sum =
        21.8102643350816
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 24
dh =
                3.2536295
```

```
rdh_sum =
        22.5515351607866
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 28
dh =
              2.7927855
rdh_sum =
        23.1556395704539
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 29
dh =
              2.7838805
rdh_sum =
        23.7569658387389
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 30
dh =
               2.818876
rdh_sum =
         24.369190194817
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 31
dh =
              2.8538715
rdh_sum =
        24.9922567760258
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 32
dh =
               2.888867
rdh_sum =
        25.6261043226965
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 33
dh =
               2.923863
rdh_sum =
        26.2706663612278
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 34
dh =
              2.9588585
rdh_sum =
        26.9258707784441
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 35
dh =
               2.993854
rdh_sum =
        27.5916403172126
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 36
dh =
              2.9785435
rdh_sum =
        28.2527974689352
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 37
dh =
              2.9129265
rdh_sum =
        28.8940186325912
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 38
dh =
                2.84731
rdh_sum =
        29.5150568488525
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 39
dh =
              2.7816935
rdh_sum =
        30.1157003238332
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 40
dh =
              2.7160765
rdh_sum =
        30.6957727932406
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 41
dh =
              2.6504595
rdh_sum =
        31.2551341433289
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 42
dh =
              2.5848425
```

```
rdh_sum =
         31.7936805014291
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 43
dh =
                  2.519226
rdh_sum =
         32.3113445769972
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 44
dh =
                  2.4536095
rdh_sum =
         32.8080954612564
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 53
dh =
                  1.726356
rdh_sum =
         33.0815816456938
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 54
dh =
                   1.71542
rdh_sum =
         33.3519654955961
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 55
dh =
                  1.704484
rdh_sum =
         33.6192581730603
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 56
dh =
                  1.693548
rdh_sum =
         33.8834709904514
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 57
dh =
                  1.682612
rdh_sum =
         34.1446154098525
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 58
dh =
                  1.671676
rdh_sum =
         34.4027030425079
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 77
dh =
         -0.850196999999998
rdh_sum =
         34.5493447681441
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 78
dh =
                  -0.8961285
rdh_sum =
         34.7113208298427
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 79
dh =
         -0.942059999999998
rdh_sum =
         34.8892405596729
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 80
dh =
         -0.987991999999998
rdh_sum =
         35.0836847321025
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 81
dh =
                  -1.033924
rdh_sum =
         35.2952041632024
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 82
dh =
                  -1.0798555
rdh_sum =
         35.5243186937486
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 83
dh =
                  -1.125787
```

```
rdh_sum =
        35.7715166299966
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 84
dh =
                -1.171719
rdh_sum =
        36.0372538846858
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 85
dh =
                -1.217651
rdh_sum =
        36.3219527560456
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 86
dh =
                -1.2635825
rdh_sum =
        36.6260011481622
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 87
dh =
                -1.2947505
rdh_sum =
        36.9433829806932
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 88
dh =
                -1.311155
rdh_sum =
        37.2678441354373
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 89
dh =
                -1.327559
rdh_sum =
        37.5994247631863
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 90
dh =
                -1.343963
rdh_sum =
        37.9381635927203
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 91
dh =
                -1.360367
rdh_sum =
        38.2840977067588
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 92
dh =
                -1.3767715
rdh_sum =
        38.6372627543518
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 93
dh =
                -1.393176
rdh_sum =
        38.9976925029046
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 94
dh =
                -1.40958
rdh_sum =
        39.3654188262962
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 95
dh =
                -1.425984
rdh_sum =
        39.7404721414437
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 96
dh =
                -1.442388
rdh_sum =
        40.1228811803901
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 97
dh =
                -1.4576205
rdh_sum =
        40.5121448793785
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 98
dh =
                -1.4716815
```

```
rdh_sum =
          40.9077555807738
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 99
dh =
                   -1.4857425
rdh_sum =
          41.3097309219065
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 100
dh =
                   -1.499803
rdh_sum =
          41.7180872375619
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 101
dh =
                   -1.5138635
rdh_sum =
          42.1328400105051
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 102
dh =
                   -1.5279245
rdh_sum =
          42.5540038710676
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 103
dh =
                   -1.5419855
rdh_sum =
           42.981592139188
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 104
dh =
                   -1.553117
rdh_sum =
          43.4142750696212
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 105
dh =
                   -1.561319
rdh_sum =
          43.8507164809319
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 106
dh =
                   -1.569521
rdh_sum =
          44.2909200270673
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 107
dh =
                   -1.577723
rdh_sum =
          44.7348891456916
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 108
dh =
                   -1.585925
rdh_sum =
          45.1826270579884
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 109
dh =
                   -1.594127
rdh_sum =
          45.6341367684754
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 110
dh =
                   -1.602329
rdh_sum =
          46.0894210648318
ans =
Berm Factor Calculation: Iteration 22, Profile Segment: 111
dh =
                   -1.610531
rdh_sum =
          46.5484825177381
ans =
!------- End Berm Factor Calculation, Iter: 22 ---------!
berm_width =
    82
rB =
          0.688918289495319
rdh_mean =
          0.567664420948026
gamma_berm =
          0.702156112391546
```

```
slope =
        0.191591641519421
Irb =
        3.14307975788369
gamma_berm =
        0.702156112391546
gamma_perm =
      1
gamma_beta =
      1
gamma_rough =
                      0.6
gamma =
        0.421293667434928
ans =
!!! - - Iribaren number:   2.21 is in the valid range (0.5-10), TAW RECOMMENDED - - !!!
ans =
!!! - - slope: 1:5.2 V:H is in the valid range (1:8 - 1:1), TAW RECOMMENDED - - !!!
R2_new =
        3.52655902162938
R2del =
        0.128161171961773
Z2 =
        12.9749190216294
top_sta =
        331.965841459063
ans =
!---------------- STARTING ITERATION 23 -----------------!
Ztoe =
                  5.75266
toe_sta =
        212.427117384844
top_sta =
        331.965841459063
Z2 =
        12.9749190216294
H0 =
                  2.4638
Tp =
                  12.522
T0 =
        11.3836363636364
R2 =
        3.52655902162938
Z2 =
        12.9749190216294
top_sta =
        331.965841459063
Lslope =
        119.538724074219
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 1
dh =
                  3.700486
rdh_sum =
      1
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 2
dh =
                  3.692757
rdh_sum =
      2
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 3
dh =
                  3.6523775
rdh_sum =
      3
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 4
dh =
                  3.611998
rdh_sum =
      4
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 5
dh =
                  3.5716185
rdh_sum =
      5
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 6
dh =
                  3.531239
rdh_sum =
      6
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 7
dh =
                  3.4908595
```

```
rdh_sum =
        6.80450037811965
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 8
dh =
                3.467545
rdh_sum =
        7.6030724378835
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 9
dh =
                3.4612955
rdh_sum =
        8.40004413389283
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 10
dh =
                3.4550465
rdh_sum =
        9.19541088027912
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 11
dh =
                3.4487975
rdh_sum =
        9.98916798879852
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 12
dh =
                3.442548
rdh_sum =
        10.7813106674058
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 13
dh =
                3.4362985
rdh_sum =
        11.5718342782893
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 14
dh =
                3.4300495
rdh_sum =
        12.3607343394292
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 15
dh =
                3.4238005
rdh_sum =
        13.1480062652248
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 16
dh =
                3.4175515
rdh_sum =
        13.9336454959183
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 17
dh =
                3.411302
rdh_sum =
        14.7176473664869
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 18
dh =
                3.4003055
rdh_sum =
        15.4987572395367
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 19
dh =
                3.3798155
rdh_sum =
        16.2744416463729
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 20
dh =
                3.3545785
rdh_sum =
        17.0433790897028
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 21
dh =
                3.329341
rdh_sum =
        17.8054998119604
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 22
dh =
                3.3041035
```

```
rdh_sum =
          18.5607359533153
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 23
dh =
                 3.2788665
rdh_sum =
          19.3090215746183
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 24
dh =
                 3.2536295
rdh_sum =
          20.0502924003234
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 28
dh =
                 2.7927855
rdh_sum =
          20.6543968099907
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 29
dh =
                 2.7838805
rdh_sum =
          21.2557230782756
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 30
dh =
                 2.818876
rdh_sum =
          21.8679474343538
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 31
dh =
                 2.8538715
rdh_sum =
          22.4910140155625
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 32
dh =
                 2.888867
rdh_sum =
          23.1248615622332
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 33
dh =
                 2.923863
rdh_sum =
          23.7694236007645
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 34
dh =
                 2.9588585
rdh_sum =
          24.4246280179808
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 35
dh =
                 2.993854
rdh_sum =
          25.0903975567493
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 36
dh =
                 2.9785435
rdh_sum =
          25.7515547084719
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 37
dh =
                 2.9129265
rdh_sum =
          26.3927758721279
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 38
dh =
                 2.84731
rdh_sum =
          27.0138140883892
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 39
dh =
                 2.7816935
rdh_sum =
           27.61445756337
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 40
dh =
                 2.7160765
```

```
rdh_sum =
          28.1945300327773
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 41
dh =
                 2.6504595
rdh_sum =
          28.7538913828656
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 42
dh =
                 2.5848425
rdh_sum =
          29.2924377409659
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 43
dh =
                  2.519226
rdh_sum =
          29.8101018165339
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 44
dh =
                 2.4536095
rdh_sum =
          30.3068527007931
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 53
dh =
                  1.726356
rdh_sum =
          30.5803388852305
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 54
dh =
                   1.71542
rdh_sum =
          30.8507227351328
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 55
dh =
                  1.704484
rdh_sum =
           31.118015412597
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 56
dh =
                  1.693548
rdh_sum =
          31.3822282299881
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 57
dh =
                  1.682612
rdh_sum =
          31.6433726493892
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 58
dh =
                  1.671676
rdh_sum =
          31.9014602820446
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 77
dh =
         -0.850196999999998
rdh_sum =
          32.0381434815053
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 78
dh =
                -0.8961285
rdh_sum =
           32.189182529602
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 79
dh =
         -0.942059999999998
rdh_sum =
          32.3551615895349
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 80
dh =
         -0.987991999999998
rdh_sum =
          32.5366399864847
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 81
dh =
                 -1.033924
```

```
rdh_sum =
         32.7341509395648
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 82
dh =
              -1.0798555
rdh_sum =
         32.9482006459938
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 83
dh =
              -1.125787
rdh_sum =
         33.179267788666
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 84
dh =
              -1.171719
rdh_sum =
         33.4278027556564
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 85
dh =
              -1.217651
rdh_sum =
         33.6942265104432
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 86
dh =
              -1.2635825
rdh_sum =
         33.978929868885
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 87
dh =
              -1.2947505
rdh_sum =
         34.2762444744599
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 88
dh =
              -1.311155
rdh_sum =
         34.5802600767353
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 89
dh =
              -1.327559
rdh_sum =
         34.8910183235208
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 90
dh =
              -1.343963
rdh_sum =
         35.2085596263613
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 91
dh =
              -1.360367
rdh_sum =
         35.5329229483172
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 92
dh =
              -1.3767715
rdh_sum =
         35.8641460052812
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 93
dh =
              -1.393176
rdh_sum =
         36.2022648408469
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 94
dh =
              -1.40958
rdh_sum =
         36.5473138142169
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 95
dh =
              -1.425984
rdh_sum =
         36.8993260143382
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 96
dh =
              -1.442388
```

```
rdh_sum =
            37.2583330431991
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 97
dh =
                -1.4576205
rdh_sum =
            37.6238623532517
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 98
dh =
                -1.4716815
rdh_sum =
            37.9954343341142
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 99
dh =
                -1.4857425
rdh_sum =
            38.3730691361657
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 100
dh =
                -1.499803
rdh_sum =
            38.7567857419248
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 101
dh =
                -1.5138635
rdh_sum =
            39.1466023949793
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 102
dh =
                -1.5279245
rdh_sum =
            39.5425365997186
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 103
dh =
                -1.5419855
rdh_sum =
            39.9446046840845
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 104
dh =
                -1.553117
rdh_sum =
            40.3515396465253
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 105
dh =
                -1.561319
rdh_sum =
            40.7620665432323
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 106
dh =
                -1.569521
rdh_sum =
            41.1761901508927
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 107
dh =
                -1.577723
rdh_sum =
            41.5939150541765
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 108
dh =
                -1.585925
rdh_sum =
            42.0152456454921
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 109
dh =
                -1.594127
rdh_sum =
            42.4401861247513
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 110
dh =
                -1.602329
rdh_sum =
            42.8687404991455
ans =
Berm Factor Calculation: Iteration 23, Profile Segment: 111
dh =
                -1.610531
```

```
rdh_sum =
          43.3009125829315
ans =
!------- End Berm Factor Calculation, Iter: 23 ---------!
berm_width =
    82
rB =
          0.685970179413055
rdh_mean =
          0.528059909547945
gamma_berm =
          0.67626317148039
slope =
          0.192394898860972
Irb =
          3.15625727372194
gamma_berm =
          0.67626317148039
gamma_perm =
    1
gamma_beta =
    1
gamma_rough =
                    0.6
gamma =
          0.405757902888234
ans =
!!! - - Iribaren number:   2.13 is in the valid range (0.5-10), TAW RECOMMENDED - - !!!
ans =
!!! - - slope: 1:5.2 V:H is in the valid range (1:8 - 1:1), TAW RECOMMENDED - - !!!
R2_new =
          3.39839784967743
R2del =
          0.128161171951948
Z2 =
          12.8467578496774
top_sta =
          331.454295571821
ans =
!---------------- STARTING ITERATION 24 -----------------!
Ztoe =
                    5.75266
toe_sta =
          212.427117384844
top_sta =
          331.454295571821
Z2 =
          12.8467578496774
H0 =
                    2.4638
Tp =
                    12.522
T0 =
          11.3836363636364
R2 =
          3.39839784967743
Z2 =
          12.8467578496774
top_sta =
          331.454295571821
Lslope =
          119.027178186977
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 1
dh =
                    3.700486
rdh_sum =
    1
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 2
dh =
                    3.692757
rdh_sum =
    2
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 3
dh =
                    3.6523775
rdh_sum =
    3
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 4
dh =
                    3.611998
rdh_sum =
    4
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 5
dh =
                    3.5716185
```

```
rdh_sum =
    5
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 6
dh =
                3.531239
rdh_sum =
    6
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 7
dh =
                3.4908595
rdh_sum =
    7
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 8
dh =
                3.467545
rdh_sum =
    8
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 9
dh =
                3.4612955
rdh_sum =
    9
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 10
dh =
                3.4550465
rdh_sum =
    10
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 11
dh =
                3.4487975
rdh_sum =
    11
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 12
dh =
                3.442548
rdh_sum =
    12
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 13
dh =
                3.4362985
rdh_sum =
    13
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 14
dh =
                3.4300495
rdh_sum =
    14
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 15
dh =
                3.4238005
rdh_sum =
    15
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 16
dh =
                3.4175515
rdh_sum =
    16
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 17
dh =
                3.411302
rdh_sum =
    17
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 18
dh =
                3.4003055
rdh_sum =
    18
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 19
dh =
                3.3798155
rdh_sum =
        18.7756844068362
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 20
dh =
                3.3545785
```

```
rdh_sum =
          19.5446218501661
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 21
dh =
                3.329341
rdh_sum =
          20.3067425724237
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 22
dh =
                3.3041035
rdh_sum =
          21.0619787137786
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 23
dh =
                3.2788665
rdh_sum =
          21.8102643350816
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 24
dh =
                3.2536295
rdh_sum =
          22.5515351607866
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 28
dh =
                2.7927855
rdh_sum =
          23.1556395704539
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 29
dh =
                2.7838805
rdh_sum =
          23.7569658387389
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 30
dh =
                2.818876
rdh_sum =
           24.369190194817
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 31
dh =
                2.8538715
rdh_sum =
          24.9922567760258
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 32
dh =
                2.888867
rdh_sum =
          25.6261043226965
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 33
dh =
                2.923863
rdh_sum =
          26.2706663612278
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 34
dh =
                2.9588585
rdh_sum =
          26.9258707784441
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 35
dh =
                2.993854
rdh_sum =
          27.5916403172126
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 36
dh =
                2.9785435
rdh_sum =
          28.2527974689352
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 37
dh =
                2.9129265
rdh_sum =
          28.8940186325912
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 38
dh =
                 2.84731
```

```
rdh_sum =
          29.5150568488525
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 39
dh =
                  2.7816935
rdh_sum =
          30.1157003238332
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 40
dh =
                  2.7160765
rdh_sum =
          30.6957727932406
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 41
dh =
                  2.6504595
rdh_sum =
          31.2551341433289
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 42
dh =
                  2.5848425
rdh_sum =
          31.7936805014291
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 43
dh =
                  2.519226
rdh_sum =
          32.3113445769972
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 44
dh =
                  2.4536095
rdh_sum =
          32.8080954612564
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 53
dh =
                  1.726356
rdh_sum =
          33.0815816456938
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 54
dh =
                   1.71542
rdh_sum =
          33.3519654955961
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 55
dh =
                  1.704484
rdh_sum =
          33.6192581730603
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 56
dh =
                  1.693548
rdh_sum =
          33.8834709904514
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 57
dh =
                  1.682612
rdh_sum =
          34.1446154098525
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 58
dh =
                  1.671676
rdh_sum =
          34.4027030425079
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 77
dh =
        -0.850196999999998
rdh_sum =
          34.5493447681433
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 78
dh =
                 -0.8961285
rdh_sum =
           34.711320829841
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 79
dh =
        -0.942059999999998
```

```
rdh_sum =
          34.8892405596702
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 80
dh =
        -0.987991999999998
rdh_sum =
          35.0836847320988
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 81
dh =
                -1.033924
rdh_sum =
          35.2952041631976
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 82
dh =
                -1.0798555
rdh_sum =
          35.5243186937426
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 83
dh =
                -1.125787
rdh_sum =
          35.7715166299893
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 84
dh =
                -1.171719
rdh_sum =
          36.0372538846771
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 85
dh =
                -1.217651
rdh_sum =
          36.3219527560354
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 86
dh =
                -1.2635825
rdh_sum =
          36.6260011481505
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 87
dh =
                -1.2947505
rdh_sum =
          36.9433829806799
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 88
dh =
                -1.311155
rdh_sum =
          37.2678441354223
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 89
dh =
                -1.327559
rdh_sum =
          37.5994247631697
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 90
dh =
                -1.343963
rdh_sum =
           37.938163592702
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 91
dh =
                -1.360367
rdh_sum =
          38.2840977067387
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 92
dh =
                -1.3767715
rdh_sum =
           38.63726275433
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 93
dh =
                -1.393176
rdh_sum =
          38.997692502881
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 94
dh =
                -1.40958
```

```
rdh_sum =
         39.3654188262708
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 95
dh =
                   -1.425984
rdh_sum =
         39.7404721414164
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 96
dh =
                   -1.442388
rdh_sum =
         40.1228811803609
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 97
dh =
                   -1.4576205
rdh_sum =
         40.5121448793474
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 98
dh =
                   -1.4716815
rdh_sum =
         40.9077555807408
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 99
dh =
                   -1.4857425
rdh_sum =
         41.3097309218715
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 100
dh =
                   -1.499803
rdh_sum =
          41.718087237525
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 101
dh =
                   -1.5138635
rdh_sum =
         42.1328400104662
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 102
dh =
                   -1.5279245
rdh_sum =
         42.5540038710267
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 103
dh =
                   -1.5419855
rdh_sum =
         42.9815921391451
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 104
dh =
                   -1.553117
rdh_sum =
         43.4142750695762
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 105
dh =
                   -1.561319
rdh_sum =
         43.8507164808848
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 106
dh =
                   -1.569521
rdh_sum =
         44.2909200270182
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 107
dh =
                   -1.577723
rdh_sum =
         44.7348891456404
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 108
dh =
                   -1.585925
rdh_sum =
         45.1826270579351
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 109
dh =
                   -1.594127
```

```
rdh_sum =
         45.6341367684199
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 110
dh =
                 -1.602329
rdh_sum =
         46.0894210647742
ans =
Berm Factor Calculation: Iteration 24, Profile Segment: 111
dh =
                 -1.610531
rdh_sum =
         46.5484825176783
ans =
!------- End Berm Factor Calculation, Iter: 24 ---------!
berm_width =
    82
rB =
         0.688918289495091
rdh_mean =
         0.567664420947297
gamma_berm =
         0.702156112391142
slope =
         0.191591641519484
Irb =
          3.14307975788471
gamma_berm =
         0.702156112391142
gamma_perm =
    1
gamma_beta =
    1
gamma_rough =
                      0.6
gamma =
         0.421293667434685
ans =
!!! - - Iribaren number:   2.21 is in the valid range (0.5-10), TAW RECOMMENDED - - !!!
ans =
!!! - - slope: 1:5.2 V:H is in the valid range (1:8 - 1:1), TAW RECOMMENDED - - !!!
R2_new =
          3.5265590216275
R2del =
         0.128161171950071
Z2 =
         12.9749190216275
top_sta =
         331.965841459056
ans =
!---------------- STARTING ITERATION 25 -----------------!
Ztoe =
                   5.75266
toe_sta =
         212.427117384844
top_sta =
         331.965841459056
Z2 =
         12.9749190216275
H0 =
                    2.4638
Tp =
                    12.522
T0 =
         11.3836363636364
R2 =
          3.5265590216275
Z2 =
         12.9749190216275
top_sta =
         331.965841459056
Lslope =
         119.538724074212
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 1
dh =
                  3.700486
rdh_sum =
    1
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 2
dh =
                  3.692757
rdh_sum =
    2
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 3
dh =
                 3.6523775
```

```
rdh_sum =
     3
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 4
dh =
                3.611998
rdh_sum =
     4
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 5
dh =
                3.5716185
rdh_sum =
     5
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 6
dh =
                3.531239
rdh_sum =
     6
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 7
dh =
                3.4908595
rdh_sum =
        6.80450037811965
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 8
dh =
                3.467545
rdh_sum =
         7.6030724378835
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 9
dh =
                3.4612955
rdh_sum =
        8.40004413389283
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 10
dh =
                3.4550465
rdh_sum =
        9.19541088027912
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 11
dh =
                3.4487975
rdh_sum =
        9.98916798879852
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 12
dh =
                3.442548
rdh_sum =
        10.7813106674058
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 13
dh =
                3.4362985
rdh_sum =
        11.5718342782893
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 14
dh =
                3.4300495
rdh_sum =
        12.3607343394292
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 15
dh =
                3.4238005
rdh_sum =
        13.1480062652248
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 16
dh =
                3.4175515
rdh_sum =
        13.9336454959183
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 17
dh =
                3.411302
rdh_sum =
        14.7176473664869
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 18
dh =
                3.4003055
```

```
rdh_sum =
        15.4987572395367
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 19
dh =
                3.3798155
rdh_sum =
        16.2744416463729
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 20
dh =
                3.3545785
rdh_sum =
        17.0433790897028
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 21
dh =
                 3.329341
rdh_sum =
        17.8054998119604
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 22
dh =
                3.3041035
rdh_sum =
        18.5607359533153
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 23
dh =
                3.2788665
rdh_sum =
        19.3090215746183
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 24
dh =
                3.2536295
rdh_sum =
        20.0502924003234
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 28
dh =
                2.7927855
rdh_sum =
        20.6543968099907
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 29
dh =
                2.7838805
rdh_sum =
        21.2557230782756
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 30
dh =
                 2.818876
rdh_sum =
        21.8679474343538
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 31
dh =
                2.8538715
rdh_sum =
        22.4910140155625
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 32
dh =
                 2.888867
rdh_sum =
        23.1248615622332
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 33
dh =
                 2.923863
rdh_sum =
        23.7694236007645
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 34
dh =
                2.9588585
rdh_sum =
        24.4246280179808
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 35
dh =
                 2.993854
rdh_sum =
        25.0903975567493
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 36
dh =
                2.9785435
```

```
rdh_sum =
        25.7515547084719
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 37
dh =
            2.9129265
rdh_sum =
        26.3927758721279
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 38
dh =
              2.84731
rdh_sum =
        27.0138140883892
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 39
dh =
            2.7816935
rdh_sum =
         27.61445756337
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 40
dh =
            2.7160765
rdh_sum =
        28.1945300327773
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 41
dh =
            2.6504595
rdh_sum =
        28.7538913828656
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 42
dh =
            2.5848425
rdh_sum =
        29.2924377409659
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 43
dh =
             2.519226
rdh_sum =
        29.8101018165339
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 44
dh =
            2.4536095
rdh_sum =
        30.3068527007931
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 53
dh =
             1.726356
rdh_sum =
        30.5803388852305
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 54
dh =
              1.71542
rdh_sum =
        30.8507227351328
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 55
dh =
             1.704484
rdh_sum =
         31.118015412597
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 56
dh =
             1.693548
rdh_sum =
        31.3822282299881
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 57
dh =
             1.682612
rdh_sum =
        31.6433726493892
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 58
dh =
             1.671676
rdh_sum =
        31.9014602820446
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 77
dh =
        -0.850196999999998
```

```
rdh_sum =
            32.0381434815054
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 78
dh =
                -0.8961285
rdh_sum =
            32.1891825296023
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 79
dh =
        -0.942059999999998
rdh_sum =
            32.3551615895354
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 80
dh =
        -0.987991999999998
rdh_sum =
            32.5366399864854
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 81
dh =
                -1.033924
rdh_sum =
            32.7341509395656
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 82
dh =
                -1.0798555
rdh_sum =
            32.9482006459948
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 83
dh =
                -1.125787
rdh_sum =
            33.1792677886673
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 84
dh =
                -1.171719
rdh_sum =
            33.4278027556579
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 85
dh =
                -1.217651
rdh_sum =
            33.694226510445
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 86
dh =
                -1.2635825
rdh_sum =
            33.978929868887
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 87
dh =
                -1.2947505
rdh_sum =
            34.2762444744622
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 88
dh =
                -1.311155
rdh_sum =
            34.5802600767379
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 89
dh =
                -1.327559
rdh_sum =
            34.8910183235237
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 90
dh =
                -1.343963
rdh_sum =
            35.2085596263645
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 91
dh =
                -1.360367
rdh_sum =
            35.5329229483207
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 92
dh =
                -1.3767715
```

```
rdh_sum =
          35.8641460052851
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 93
dh =
                 -1.393176
rdh_sum =
          36.202264840851
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 94
dh =
                 -1.40958
rdh_sum =
          36.5473138142213
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 95
dh =
                 -1.425984
rdh_sum =
          36.899326014343
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 96
dh =
                 -1.442388
rdh_sum =
          37.2583330432041
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 97
dh =
                 -1.4576205
rdh_sum =
          37.6238623532571
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 98
dh =
                 -1.4716815
rdh_sum =
          37.9954343341199
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 99
dh =
                 -1.4857425
rdh_sum =
          38.3730691361718
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 100
dh =
                 -1.499803
rdh_sum =
          38.7567857419313
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 101
dh =
                 -1.5138635
rdh_sum =
          39.1466023949861
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 102
dh =
                 -1.5279245
rdh_sum =
          39.5425365997258
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 103
dh =
                 -1.5419855
rdh_sum =
          39.944604684092
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 104
dh =
                 -1.553117
rdh_sum =
          40.3515396465331
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 105
dh =
                 -1.561319
rdh_sum =
          40.7620665432405
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 106
dh =
                 -1.569521
rdh_sum =
          41.1761901509013
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 107
dh =
                 -1.577723
```

```
rdh_sum =
        41.5939150541855
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 108
dh =
              -1.585925
rdh_sum =
        42.0152456455014
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 109
dh =
              -1.594127
rdh_sum =
         42.440186124761
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 110
dh =
              -1.602329
rdh_sum =
        42.8687404991555
ans =
Berm Factor Calculation: Iteration 25, Profile Segment: 111
dh =
              -1.610531
rdh_sum =
        43.3009125829419
ans =
!------- End Berm Factor Calculation, Iter: 25 ---------!
berm_width =
    82
rB =
        0.685970179413098
rdh_mean =
        0.528059909548072
gamma_berm =
        0.676263171480457
slope =
        0.19239489886096
Irb =
        3.15625727372175
gamma_berm =
        0.676263171480457
gamma_perm =
     1
gamma_beta =
     1
gamma_rough =
                    0.6
gamma =
        0.405757902888274
ans =
!!! - - Iribaren number:   2.13 is in the valid range (0.5-10), TAW RECOMMENDED - - !!!
ans =
!!! - - slope: 1:5.2 V:H is in the valid range (1:8 - 1:1), TAW RECOMMENDED - - !!!
R2_new =
        3.39839784967774
R2del =
        0.128161171949761
Z2 =
        12.8467578496777
top_sta =
        331.454295571823
ans =
!--------------- STARTING ITERATION 26 ----------------!
Ztoe =
                5.75266
toe_sta =
        212.427117384844
top_sta =
        331.454295571823
Z2 =
        12.8467578496777
H0 =
                 2.4638
Tp =
                 12.522
T0 =
        11.3836363636364
R2 =
        3.39839784967774
Z2 =
        12.8467578496777
top_sta =
        331.454295571823
Lslope =
        119.027178186979
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 1
dh =
               3.700486
```

```
rdh_sum =
     1
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 2
dh =
                   3.692757
rdh_sum =
     2
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 3
dh =
                   3.6523775
rdh_sum =
     3
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 4
dh =
                   3.611998
rdh_sum =
     4
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 5
dh =
                   3.5716185
rdh_sum =
     5
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 6
dh =
                   3.531239
rdh_sum =
     6
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 7
dh =
                   3.4908595
rdh_sum =
     7
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 8
dh =
                   3.467545
rdh_sum =
     8
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 9
dh =
                   3.4612955
rdh_sum =
     9
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 10
dh =
                   3.4550465
rdh_sum =
    10
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 11
dh =
                   3.4487975
rdh_sum =
    11
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 12
dh =
                   3.442548
rdh_sum =
    12
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 13
dh =
                   3.4362985
rdh_sum =
    13
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 14
dh =
                   3.4300495
rdh_sum =
    14
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 15
dh =
                   3.4238005
rdh_sum =
    15
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 16
dh =
                   3.4175515
```

```
rdh_sum =
    16
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 17
dh =
                 3.411302
rdh_sum =
    17
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 18
dh =
                 3.4003055
rdh_sum =
    18
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 19
dh =
                 3.3798155
rdh_sum =
        18.7756844068362
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 20
dh =
                 3.3545785
rdh_sum =
        19.5446218501661
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 21
dh =
                 3.329341
rdh_sum =
        20.3067425724237
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 22
dh =
                 3.3041035
rdh_sum =
        21.0619787137786
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 23
dh =
                 3.2788665
rdh_sum =
        21.8102643350816
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 24
dh =
                 3.2536295
rdh_sum =
        22.5515351607866
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 28
dh =
                 2.7927855
rdh_sum =
        23.1556395704539
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 29
dh =
                 2.7838805
rdh_sum =
        23.7569658387389
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 30
dh =
                 2.818876
rdh_sum =
         24.369190194817
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 31
dh =
                 2.8538715
rdh_sum =
        24.9922567760258
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 32
dh =
                 2.888867
rdh_sum =
        25.6261043226965
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 33
dh =
                 2.923863
rdh_sum =
        26.2706663612278
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 34
dh =
                 2.9588585
```

```
rdh_sum =
          26.9258707784441
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 35
dh =
                    2.993854
rdh_sum =
          27.5916403172126
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 36
dh =
                    2.9785435
rdh_sum =
          28.2527974689352
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 37
dh =
                    2.9129265
rdh_sum =
          28.8940186325912
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 38
dh =
                     2.84731
rdh_sum =
          29.5150568488525
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 39
dh =
                    2.7816935
rdh_sum =
          30.1157003238332
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 40
dh =
                    2.7160765
rdh_sum =
          30.6957727932406
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 41
dh =
                    2.6504595
rdh_sum =
          31.2551341433289
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 42
dh =
                    2.5848425
rdh_sum =
          31.7936805014291
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 43
dh =
                     2.519226
rdh_sum =
          32.3113445769972
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 44
dh =
                    2.4536095
rdh_sum =
          32.8080954612564
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 53
dh =
                    1.726356
rdh_sum =
          33.0815816456938
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 54
dh =
                     1.71542
rdh_sum =
          33.3519654955961
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 55
dh =
                    1.704484
rdh_sum =
          33.6192581730603
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 56
dh =
                    1.693548
rdh_sum =
          33.8834709904514
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 57
dh =
                    1.682612
```

```
rdh_sum =
        34.1446154098525
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 58
dh =
                1.671676
rdh_sum =
        34.4027030425079
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 77
dh =
      -0.850196999999998
rdh_sum =
        34.5493447681432
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 78
dh =
              -0.8961285
rdh_sum =
         34.711320829841
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 79
dh =
      -0.942059999999998
rdh_sum =
        34.8892405596701
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 80
dh =
      -0.987991999999998
rdh_sum =
        35.0836847320987
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 81
dh =
               -1.033924
rdh_sum =
        35.2952041631974
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 82
dh =
              -1.0798555
rdh_sum =
        35.5243186937424
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 83
dh =
               -1.125787
rdh_sum =
         35.771516629989
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 84
dh =
               -1.171719
rdh_sum =
        36.0372538846768
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 85
dh =
               -1.217651
rdh_sum =
         36.321952756035
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 86
dh =
               -1.2635825
rdh_sum =
        36.6260011481501
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 87
dh =
               -1.2947505
rdh_sum =
        36.9433829806795
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 88
dh =
               -1.311155
rdh_sum =
        37.2678441354218
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 89
dh =
               -1.327559
rdh_sum =
        37.5994247631692
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 90
dh =
               -1.343963
```

```
rdh_sum =
          37.9381635927014
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 91
dh =
                 -1.360367
rdh_sum =
          38.2840977067381
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 92
dh =
                 -1.3767715
rdh_sum =
          38.6372627543293
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 93
dh =
                 -1.393176
rdh_sum =
          38.9976925028803
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 94
dh =
                 -1.40958
rdh_sum =
          39.3654188262699
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 95
dh =
                 -1.425984
rdh_sum =
          39.7404721414155
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 96
dh =
                 -1.442388
rdh_sum =
           40.12288118036
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 97
dh =
                 -1.4576205
rdh_sum =
          40.5121448793464
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 98
dh =
                 -1.4716815
rdh_sum =
          40.9077555807397
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 99
dh =
                 -1.4857425
rdh_sum =
          41.3097309218704
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 100
dh =
                 -1.499803
rdh_sum =
          41.7180872375238
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 101
dh =
                 -1.5138635
rdh_sum =
           42.132840010465
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 102
dh =
                 -1.5279245
rdh_sum =
          42.5540038710254
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 103
dh =
                 -1.5419855
rdh_sum =
          42.9815921391437
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 104
dh =
                 -1.553117
rdh_sum =
          43.4142750695748
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 105
dh =
                 -1.561319
```

```
rdh_sum =
          43.8507164808834
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 106
dh =
                  -1.569521
rdh_sum =
          44.2909200270166
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 107
dh =
                  -1.577723
rdh_sum =
          44.7348891456388
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 108
dh =
                  -1.585925
rdh_sum =
          45.1826270579334
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 109
dh =
                  -1.594127
rdh_sum =
          45.6341367684182
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 110
dh =
                  -1.602329
rdh_sum =
          46.0894210647724
ans =
Berm Factor Calculation: Iteration 26, Profile Segment: 111
dh =
                  -1.610531
rdh_sum =
          46.5484825176765
ans =
!------- End Berm Factor Calculation, Iter: 26 ---------!
berm_width =
    82
rB =
          0.688918289495085
rdh_mean =
          0.567664420947274
gamma_berm =
          0.702156112391129
slope =
          0.191591641519486
Irb =
          3.14307975788475
gamma_berm =
          0.702156112391129
gamma_perm =
    1
gamma_beta =
    1
gamma_rough =
                        0.6
gamma =
          0.421293667434677
ans =
!!! - - Iribaren number:   2.21 is in the valid range (0.5-10), TAW RECOMMENDED - - !!!
ans =
!!! - - slope: 1:5.2 V:H is in the valid range (1:8 - 1:1), TAW RECOMMENDED - - !!!
R2_new =
          3.52655902162744
R2del =
          0.128161171949702
Z2 =
          12.9749190216274
top_sta =
          331.965841459056
% final 2% runup elevation
Z2=R2_new+SWEL
Z2 =
          12.9749190216274
diary off
-1.000000e+00
```