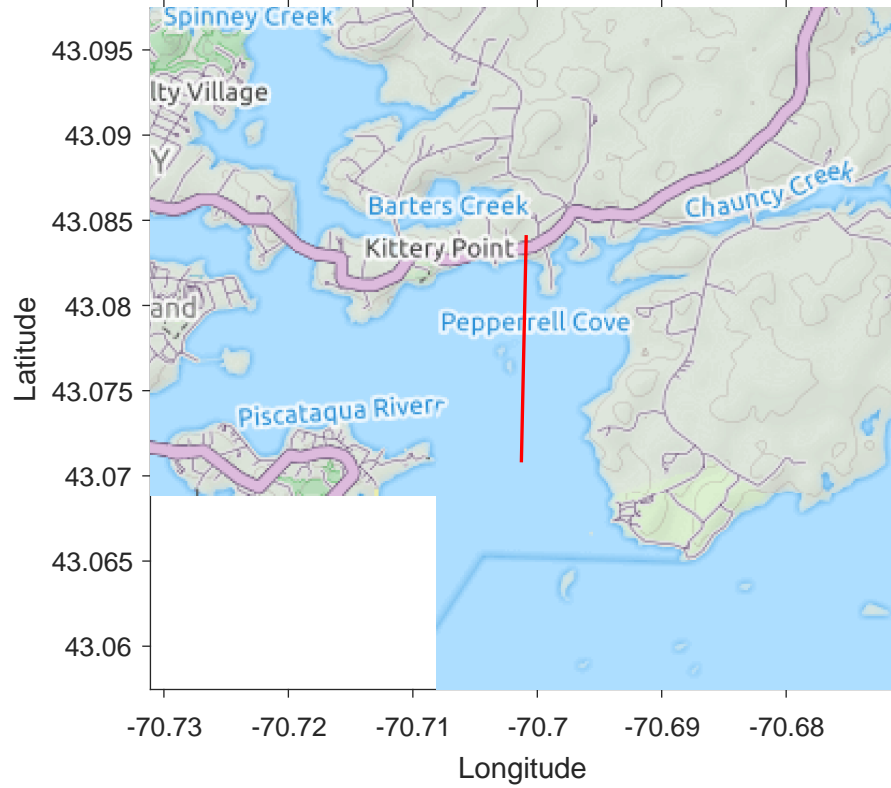
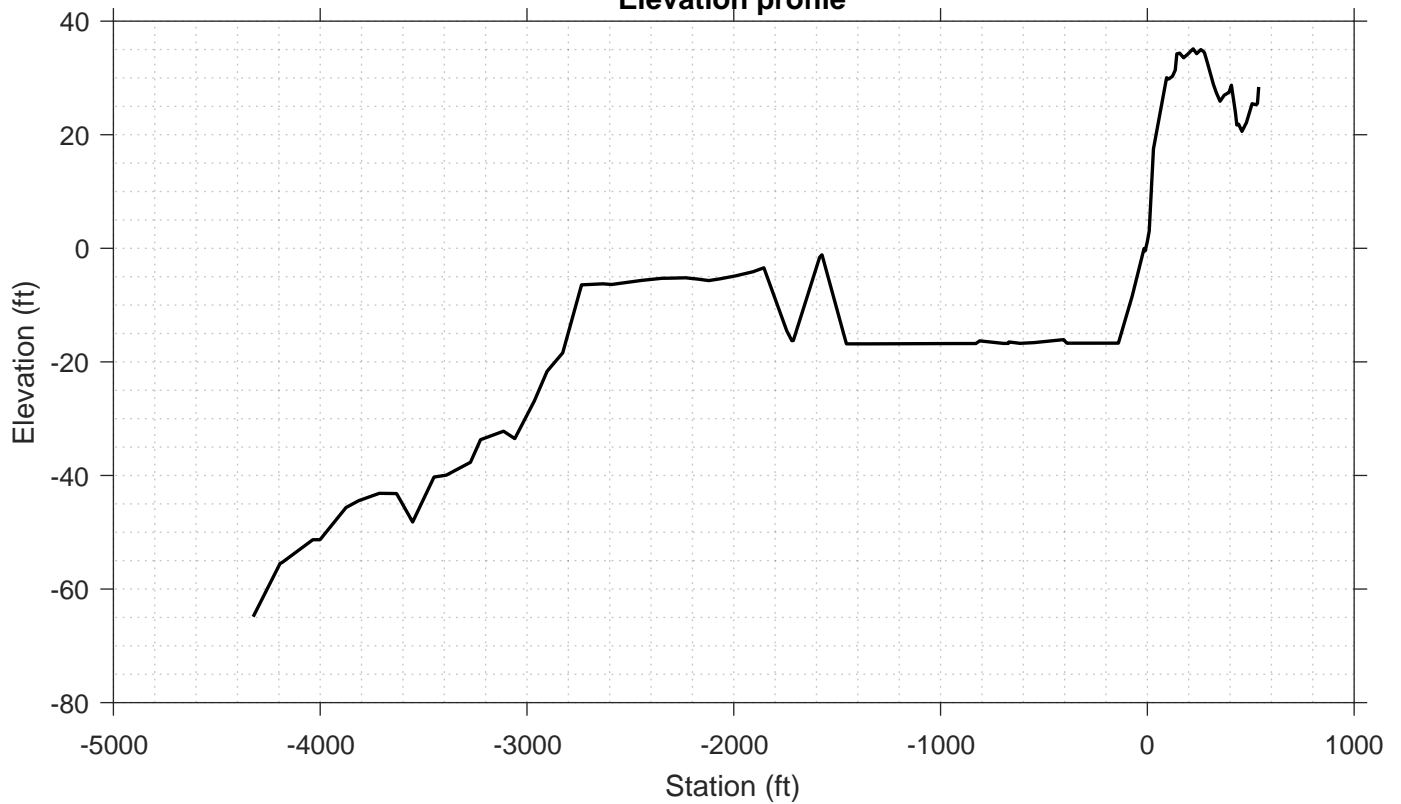


Transect Number: YK-07



Elevation profile



DATA LOG FOR TRANSECT ID: YK-07

PART 1: USER INPUT

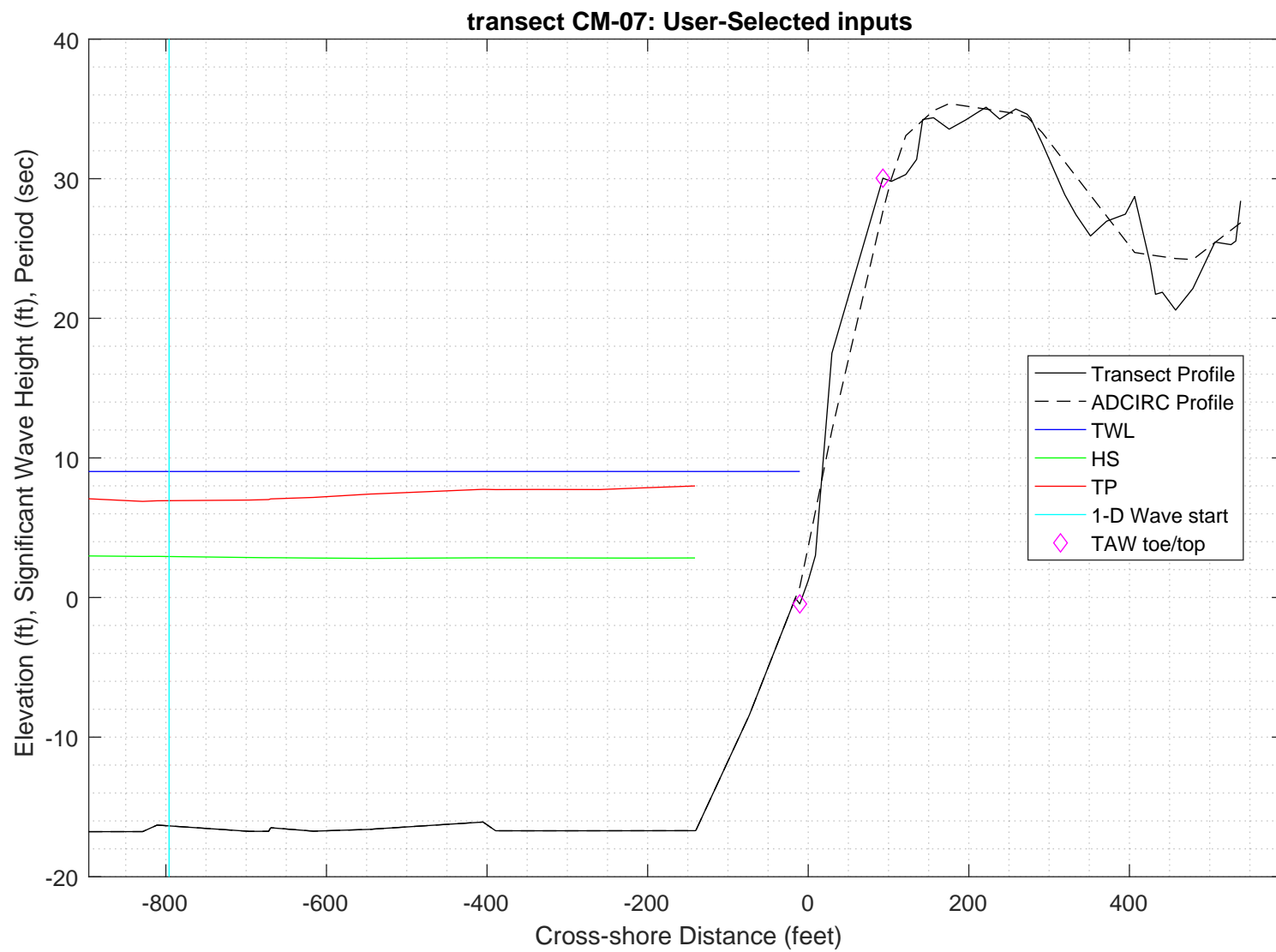
SWAN 1-D / WHAFIS input

station: -796 ft
LON: -70.701 deg E
LAT: 43.0805 deg N
Bottom ELEV: -16.3564 ft-NAVD88
TWL: 9.0273 ft-NAVD88
HS: 2.9371 ft
TP: 6.937 sec
Wave Direction bin: 90 deg CCW from East (90 deg sector)
Transect Direction: 88.3456 deg CCW from East

TAW/RUNUP input

toe sta: -10.5 ft
toe elev: -0.45932 ft-NAVD88
top sta: 93 ft
top elev: 30.0361 ft-NAVD88
Wave and water level conditions at toe to be calculated in SWAN 1-D

PART 1 COMPLETE



PART 2: SWAN 1-D

swan input grid name: 2_swan/gridfiles/YK-07zmeters_xmeters.grd
swan file name: 2_swan/swanfiles/YK-07.swn
swan output name: 2_swan/swanfiles/YK-07.dat

Boundary Conditions:

TWL- 2.7515 meters
HS- 0.89523 meters
PER- 6.937 seconds

Batch File: 2_swan/swanfiles/runswan.dat

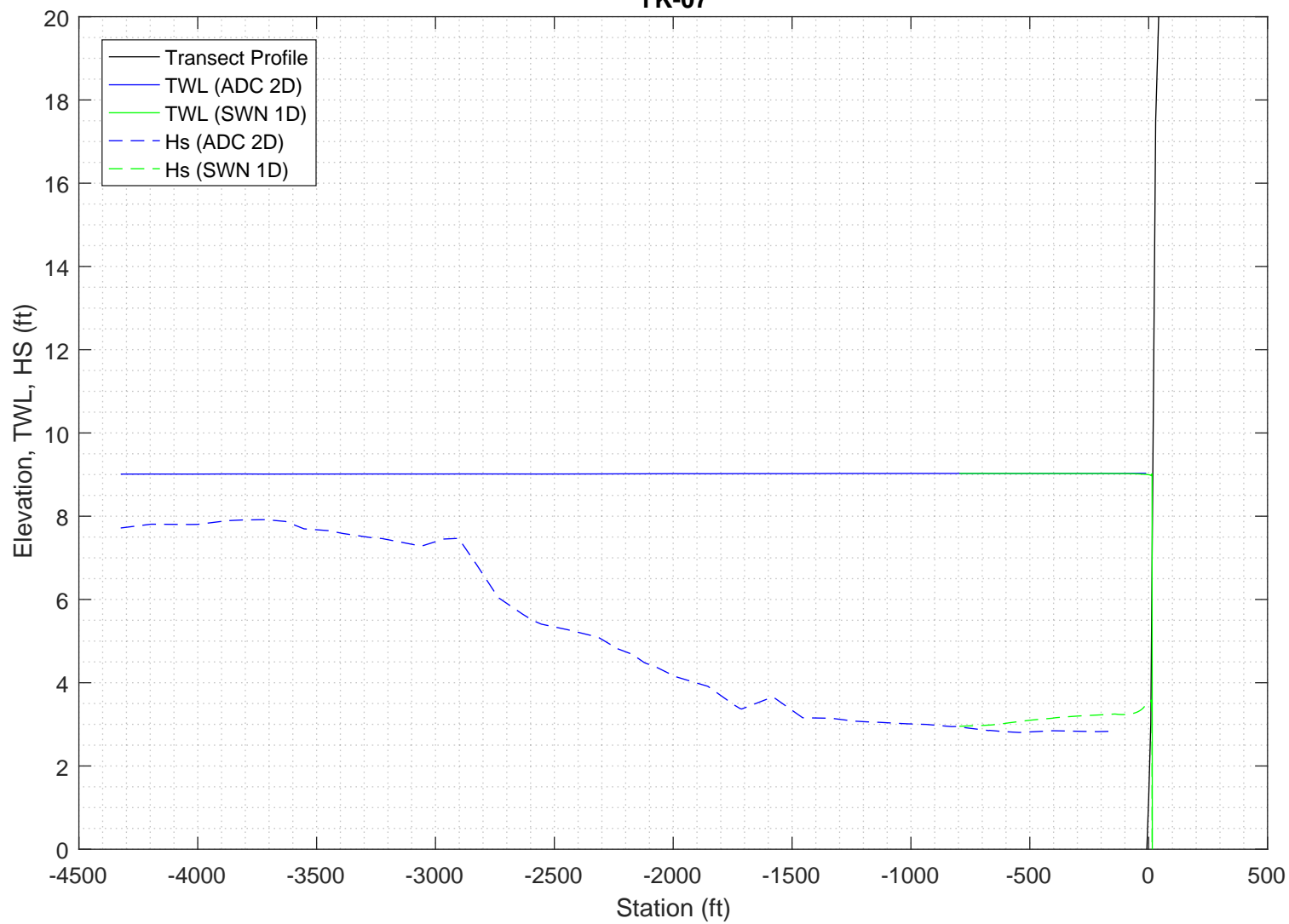
SWAN maximum additional wave setup: 0 feet

SWAN output at toe:

SETUP- -0.02211 feet
HS- 3.4318 feet
PER- 6.9867 seconds

PART 2 COMPLETE

2-D ADCIRC+SWAN and SWAN 1-D results, Transect:
YK-07



Execution started at 20200206.151503

```

-----
                        SWAN
SIMULATION OF WAVES IN NEAR SHORE AREAS
VERSION NUMBER 41.20A
-----

```

PROJECT '2018FemaAppeal' '1'

'100-year Wind and Wave conditions'

! -- SET commands -----

SET DEPMIN=0.01 MAXMES=999 MAXERR=3 PWTAIL=4

SET LEVEL 0

SET CARTESIAN

! -- MODE commands -----

MODE STATIONARY ONED

!-- COORDINATES commands-----

COORDINATES CART

!

! -- computational (CGRID) grid commands -----

! xlenc=length of grid in meters

! mxc = number of mesh cells (one less than number of grid points)

!CGRID REGular [xpc] [ypc] [alpc] [xlenc] [ylenc] [mxc] [myc] &

! [CIRCle|SECTOR[dir1] [dir2]] [mdc] [flow] [fhigh] [msc]

CGRID REGULAR 0 0 0 251 0. 251 0 &
CIRCLE 36 0.03 0.8 30

Resolution in sigma-space: df/f = 0.1157

! -- READgrid ---- not used in 1-D mode -----

! -- INPgrid commands -----

!INPgrid BOTtom REGular [xpinp] [ypinp] [alpinp] [mxinp] [myinp] [dxinp] [dyinp]

!

INPGRID BOTTOM REGULAR 0 0 0 251 0 1 1

!READinp BOTtom [fac] 'fname1' [idla] [nhedf] [FREE|FOrmat[form]|UNFormatted]

READ BOTTOM -1. '../gridfiles/YK-07zmmeters_xmmeters.grd' 1 0 FREE

!-----

! -- WIND [vel] [dir]

WIND 25.1 0

! -- BOUnd SHAPespec

BOUND SHAPE JONSWAP 3.3 PEAK DSPR POWER

! -- BOUNdspec

! BOU SIDE W CCW CON FILE 'swanspec.txt' 1

BOUN SIDE W CCW CONSTANT PAR 0.89523 6.937 0 2

!-- BOUNdnest1 - optional for boundary from parent run

!-- BOUNdnest2

!-- BOUNdnest3

!-- INITial -- usest to specify initial values

!

!----- P H Y S I C S -----

!-- GEN1 [cf10] [cf20] [cf30] [cf40] [edmlpm] [cdrag] [umin] [cfpm]

!-- GEN2 [cf10] [cf20] [cf30] [cf40] [cf50] [cf60] [edmlpm] [cdrag] [umin] [cfpm]

```

GEN3 KOMEN
!   whitecapping ( on by default)
!-- WCAPPING KOMen [cds2] [stpm] [powst] [delta] [powk]
    WCAP KOM
!   quadruplet wave interactions
!-- QUADrupl [iquad] [lambda] [Cn14] [Csh1] [Csh2]
! -- BREaking CONstant [alpha] [gamma]
    BREAK    CON      1.      0.73
!-- FRIction JONswap CONstant [cfjon]
    FRIC      JONSWAP CON      0.038
!-- TRIad [itriad] [trfac] [cutfr]   [a]  [b]  [urcrit] [urslim]
! TRIAD      1      0.65    2.5    0.95 -0.75  0.2      0.01
    TRIAD
!-- VEGEtation [height] [diamtr] [nstems] [drag]
!-- MUD [layer] [rhom] [viscm]
!- LIMiter [ursell] [qb] deactivates quadruplets with Ursell number exceeds ursell
!-- OBSTacle -- not in 1-D
!-- SETUP [supcor]
    SETUP     0
!
! ----- N U M E R I C S -----
!
!-- PROP can use BBST or GSE instead of default
! -- NUMeric -- lots of options
!     NUM ACCUR npnts=100. stat 30
!     NUMeric STOPC
!
! -----O U T P U T -----
!
!OUTPut OPTions "comment" (TABLE [field]) (BLOck [ndec] [len]) (SPEC [ndec])
OUTPUT OPTIONS '%' TABLE 16
$BLOCK 9 1000 SPEC 8
!CURve 'sname' [xp1] [yp1] <[int]   [xp]   [yp] >
CURVE 'curve' 0      0      251 251    0
!TABLE 'sname' < HEADER|NOHEADER|INDEXed > 'fname' <output parameters> (output time)
Table 'curve'   HEADER 'YK-07.dat' XP YP HSIGN TPS RTP TMM10 DIR &
DSPR DEPTH SETUP
!QUANTITY XP hexp=99999
!
!-----
COMPUTE STATIONARY
-----
COMPUTATIONAL PART OF SWAN
-----
One-dimensional mode of SWAN is activated
Gridresolution      : MXC      252 MYC      1
                   : MCGRD     253
                   : MSC       31 MDC      36
                   : MTC       1
                   : NSTATC    0 ITERMX   50
Propagation flags   : ITFRE    1 IREFR    1
Source term flags   : IBOT     1 ISURF    1
                   : IWCAP     1 IWIND    3
                   : ITRIAD    1 IQUAD    2
                   : IVEG      0 ITURBV   0

```

```

      : IMUD      0
Spatial step      : DX      0.1000E+01 DY      0.1000E+01
Spectral bin      : df/f    0.1157E+00 DDIR    0.1000E+02
Physical constants : GRAV    0.9810E+01 RHO     0.1025E+04
Wind input        : WSPEED  0.2510E+02 DIR     0.0000E+00
Tail parameters   : E(f)    0.4000E+01 E(k)    0.2500E+01
                  : A(f)    0.5000E+01 A(k)    0.3000E+01
Accuracy parameters : DREL    0.1000E-01 NPNTS   0.9950E+02
                  : DHABS   0.0000E+00 CURVAT  0.5000E-02
                  : GRWMX   0.1000E+00
Drying/flooding   : LEVEL    0.0000E+00 DEPMIN  0.1000E-01
The Cartesian convention for wind and wave directions is used
Scheme for geographic propagation is SORDUP
Scheme geogr. space : PROPSC      2 ICMAX      7
Scheme spectral space: CSS      0.5000E+00 CDD      0.5000E+00
Current is off
Quadruplets       : IQUAD      2
                  : LAMBDA   0.2500E+00 CNL4     0.3000E+08
                  : CSH1     0.5500E+01 CSH2     0.8330E+00
                  : CSH3     -0.1250E+01
Maximum Ursell nr for Snl4 : 0.1000E+02
Triads             : ITRIAD    1 TRFAC     0.8000E+00
                  : CUTFR     0.2500E+01 URCRI    0.2000E+00
Minimum Ursell nr for Snl3 : 0.1000E-01
JONSWAP ('73)      : GAMMA    0.3800E-01
Vegetation is off
Turbulence is off
Fluid mud is off
W-cap Komen ('84)  : EMPCOF (CDS2): 0.2360E-04
W-cap Komen ('84)  : APM (STPM) : 0.3020E-02
W-cap Komen ('84)  : POWST      : 0.2000E+01
W-cap Komen ('84)  : DELTA      : 0.1000E+01
W-cap Komen ('84)  : POWK       : 0.1000E+01
Wind drag is fit
Snyder/Komen wind input
Battjes&Janssen ('78): ALPHA    0.1000E+01 GAMMA    0.7300E+00
Set-up            : SUPCOR     0.0000E+00
Diffraction is off
Janssen ('89,'90) : ALPHA    0.1000E-01 KAPPA    0.4100E+00
Janssen ('89,'90) : RHOA     0.1280E+01 RHOW     0.1025E+04

1st and 2nd gen. wind: CF10     0.1880E+03 CF20     0.5900E+00
                    : CF30     0.1200E+00 CF40     0.2500E+03
                    : CF50     0.2300E-02 CF60     -0.2230E+00
                    : CF70     0.0000E+00 CF80     -0.5600E+00
                    : RHOAW    0.1249E-02 EDMMLPM  0.3600E-02
                    : CDRAG    0.1230E-02 UMIN      0.1000E+01
                    : LIM_PM    0.1300E+00

```

First guess by 2nd generation model flags for first iteration:

```

ITER      1 GRWMX      0.1000E+23 ALFA      0.0000E+00
IWIND      2 IWCAP      0 IQUAD      0
ITRIAD     1 IBOT      1 ISURF      1
IVEG       0 ITURBV     0 IMUD      0

```

```

iteration    1; sweep 1
iteration    1; sweep 2
iteration    1; sweep 3
iteration    1; sweep 4
not possible to compute, first iteration

```

Options given by user are activated for proceeding calculation:

```

ITER      2 GRWMX      0.1000E+00 ALFA      0.0000E+00
IWIND      3 IWCAP      1 IQUAD      2
ITRIAD     1 IBOT      1 ISURF      1
IVEG       0 ITURBV     0 IMUD      0

```

```

iteration    2; sweep 1
iteration    2; sweep 2
iteration    2; sweep 3
iteration    2; sweep 4
accuracy OK in 18.15 % of wet grid points ( 99.50 % required)

```

```

iteration    3; sweep 1
iteration    3; sweep 2
iteration    3; sweep 3
iteration    3; sweep 4
accuracy OK in 0.41 % of wet grid points ( 99.50 % required)

```

```

iteration    4; sweep 1
iteration    4; sweep 2
iteration    4; sweep 3
iteration    4; sweep 4
accuracy OK in 18.55 % of wet grid points ( 99.50 % required)

```

```

iteration    5; sweep 1
iteration    5; sweep 2
iteration    5; sweep 3
iteration    5; sweep 4
accuracy OK in 99.20 % of wet grid points ( 99.50 % required)

```

```

iteration    6; sweep 1
iteration    6; sweep 2
iteration    6; sweep 3

```


iteration 6; sweep 4
accuracy OK in 100.00 % of wet grid points (99.50 % required)

STOP

Run:1	Table:curve	SWAN version:41.20A								
Xp	Yp	Hsig	TPsmoo	RTpeak	Tm_10	Dir	Dspr	Depth	Setup	
[m]	[m]	[m]	[sec]	[sec]	[sec]	[degr]	[degr]	[m]	[m]	
0.	0.	0.90046	6.9617	7.2016	6.2284	0.111	32.5508	7.7400	-0.000007	
1.	0.	0.90060	6.9617	7.2016	6.2275	0.111	32.5521	7.7400	-0.000008	
2.	0.	0.90080	6.9617	7.2016	6.2267	0.111	32.5664	7.7400	-0.000009	
3.	0.	0.90098	6.9617	7.2016	6.2256	0.112	32.5845	7.7500	-0.000006	
4.	0.	0.90121	6.9616	7.2016	6.2248	0.112	32.6038	7.7500	-0.000007	
5.	0.	0.90140	6.9616	7.2016	6.2238	0.112	32.6235	7.7600	-0.000005	
6.	0.	0.90157	6.9616	7.2016	6.2229	0.112	32.6302	7.7600	-0.000006	
7.	0.	0.90179	6.9616	7.2016	6.2221	0.112	32.6464	7.7600	-0.000007	
8.	0.	0.90197	6.9615	7.2016	6.2210	0.112	32.6644	7.7700	-0.000005	
9.	0.	0.90220	6.9615	7.2016	6.2202	0.112	32.6832	7.7700	-0.000006	
10.	0.	0.90239	6.9614	7.2016	6.2191	0.113	32.7024	7.7800	-0.000004	
11.	0.	0.90256	6.9614	7.2016	6.2182	0.113	32.7086	7.7800	-0.000005	
12.	0.	0.90278	6.9614	7.2016	6.2173	0.113	32.7245	7.7800	-0.000006	
13.	0.	0.90296	6.9614	7.2016	6.2162	0.113	32.7419	7.7900	-0.000004	
14.	0.	0.90320	6.9614	7.2016	6.2153	0.113	32.7600	7.7900	-0.000005	
15.	0.	0.90339	6.9613	7.2016	6.2141	0.113	32.7784	7.8000	-0.000002	
16.	0.	0.90356	6.9613	7.2016	6.2132	0.114	32.7842	7.8000	-0.000003	
17.	0.	0.90378	6.9613	7.2016	6.2122	0.114	32.7998	7.8000	-0.000005	
18.	0.	0.90396	6.9612	7.2016	6.2111	0.114	32.8164	7.8100	-0.000002	
19.	0.	0.90420	6.9612	7.2016	6.2101	0.114	32.8338	7.8100	-0.000003	
20.	0.	0.90439	6.9611	7.2016	6.2090	0.114	32.8516	7.8200	-0.000001	
21.	0.	0.90456	6.9611	7.2016	6.2080	0.114	32.8570	7.8200	-0.000002	
22.	0.	0.90479	6.9611	7.2016	6.2070	0.114	32.8724	7.8200	-0.000003	
23.	0.	0.90497	6.9611	7.2016	6.2058	0.115	32.8886	7.8300	-0.000001	
24.	0.	0.90515	6.9610	7.2016	6.2047	0.115	32.8933	7.8300	-0.000002	
25.	0.	0.90538	6.9610	7.2016	6.2037	0.115	32.9083	7.8300	-0.000003	
26.	0.	0.90556	6.9610	7.2016	6.2024	0.115	32.9238	7.8400	-0.000001	
27.	0.	0.90580	6.9610	7.2016	6.2014	0.115	32.9401	7.8400	-0.000002	
28.	0.	0.90600	6.9609	7.2016	6.2001	0.115	32.9569	7.8500	0.000000	
29.	0.	0.90623	6.9609	7.2016	6.1984	0.116	32.9599	7.8500	-0.000001	
30.	0.	0.90654	6.9609	7.2016	6.1963	0.116	32.9723	7.8500	-0.000002	
31.	0.	0.90684	6.9608	7.2016	6.1938	0.116	32.9845	7.8600	0.000000	
32.	0.	0.90712	6.9608	7.2016	6.1914	0.116	32.9857	7.8600	-0.000001	
33.	0.	0.90744	6.9608	7.2016	6.1885	0.116	32.9852	7.8600	-0.000002	
34.	0.	0.90777	6.9608	7.2016	6.1854	0.116	32.9832	7.8600	-0.000004	
35.	0.	0.90811	6.9608	7.2016	6.1822	0.116	32.9809	7.8600	-0.000005	
36.	0.	0.90847	6.9607	7.2016	6.1789	0.116	32.9788	7.8600	-0.000007	
37.	0.	0.90869	6.9607	7.2016	6.1753	0.117	32.9503	7.8600	-0.000008	
38.	0.	0.90883	6.9608	7.2016	6.1715	0.117	32.8724	7.8300	-0.000019	
39.	0.	0.90916	6.9610	7.2016	6.1682	0.117	32.8089	7.7800	-0.000037	
40.	0.	0.90956	6.9610	7.2016	6.1638	0.117	32.7997	7.7800	-0.000038	
41.	0.	0.91000	6.9609	7.2016	6.1591	0.117	32.8015	7.7900	-0.000037	
42.	0.	0.91053	6.9609	7.2016	6.1546	0.117	32.8098	7.7900	-0.000038	
43.	0.	0.91104	6.9608	7.2016	6.1496	0.117	32.8200	7.8000	-0.000037	
44.	0.	0.91162	6.9608	7.2016	6.1446	0.117	32.8305	7.8000	-0.000038	
45.	0.	0.91221	6.9608	7.2016	6.1389	0.117	32.8409	7.8100	-0.000037	
46.	0.	0.91287	6.9608	7.2016	6.1330	0.117	32.8515	7.8100	-0.000039	
47.	0.	0.91353	6.9607	7.2016	6.1265	0.117	32.8615	7.8200	-0.000038	
48.	0.	0.91423	6.9607	7.2016	6.1203	0.118	32.8718	7.8200	-0.000040	
49.	0.	0.91488	6.9606	7.2016	6.1138	0.119	32.8829	7.8300	-0.000039	
50.	0.	0.91553	6.9606	7.2016	6.1074	0.120	32.8822	7.8300	-0.000041	
51.	0.	0.91624	6.9606	7.2016	6.1009	0.121	32.8922	7.8300	-0.000043	
52.	0.	0.91689	6.9605	7.2016	6.0944	0.123	32.9029	7.8400	-0.000042	
53.	0.	0.91761	6.9605	7.2016	6.0880	0.124	32.9147	7.8400	-0.000044	
54.	0.	0.91830	6.9605	7.2016	6.0812	0.126	32.9272	7.8500	-0.000043	
55.	0.	0.91899	6.9605	7.2016	6.0744	0.126	32.9289	7.8500	-0.000045	
56.	0.	0.91968	6.9604	7.2016	6.0676	0.127	32.9301	7.8500	-0.000047	
57.	0.	0.92039	6.9604	7.2016	6.0605	0.128	32.9303	7.8500	-0.000049	

58.	0.	0.92109	6.9604	7.2016	6.0529	0.130	32.9225	7.8499	-0.000052
59.	0.	0.92185	6.9604	7.2016	6.0453	0.130	32.9129	7.8399	-0.000057
60.	0.	0.92262	6.9604	7.2016	6.0372	0.131	32.9117	7.8399	-0.000060
61.	0.	0.92344	6.9604	7.2016	6.0289	0.131	32.9122	7.8399	-0.000063
62.	0.	0.92428	6.9604	7.2016	6.0204	0.132	32.9141	7.8399	-0.000065
63.	0.	0.92515	6.9604	7.2016	6.0116	0.133	32.9167	7.8399	-0.000068
64.	0.	0.92597	6.9603	7.2016	6.0029	0.136	32.9123	7.8399	-0.000071
65.	0.	0.92676	6.9604	7.2016	5.9950	0.140	32.9092	7.8299	-0.000076
66.	0.	0.92750	6.9603	7.2016	5.9877	0.144	32.9169	7.8299	-0.000079
67.	0.	0.92821	6.9603	7.2016	5.9808	0.152	32.9279	7.8299	-0.000081
68.	0.	0.92889	6.9603	7.2016	5.9742	0.158	32.9425	7.8299	-0.000084
69.	0.	0.92954	6.9603	7.2016	5.9674	0.164	32.9498	7.8299	-0.000086
70.	0.	0.93025	6.9603	7.2016	5.9607	0.171	32.9566	7.8199	-0.000092
71.	0.	0.93096	6.9603	7.2016	5.9538	0.177	32.9727	7.8199	-0.000094
72.	0.	0.93166	6.9603	7.2016	5.9471	0.183	32.9914	7.8199	-0.000097
73.	0.	0.93236	6.9603	7.2016	5.9405	0.191	33.0121	7.8199	-0.000100
74.	0.	0.93301	6.9602	7.2016	5.9339	0.202	33.0258	7.8199	-0.000102
75.	0.	0.93367	6.9603	7.2016	5.9279	0.210	33.0388	7.8099	-0.000108
76.	0.	0.93433	6.9602	7.2016	5.9215	0.217	33.0610	7.8099	-0.000110
77.	0.	0.93498	6.9602	7.2016	5.9150	0.226	33.0775	7.8099	-0.000113
78.	0.	0.93569	6.9603	7.2016	5.9084	0.235	33.0948	7.7999	-0.000119
79.	0.	0.93642	6.9602	7.2016	5.9016	0.244	33.1214	7.7999	-0.000122
80.	0.	0.93713	6.9602	7.2016	5.8944	0.253	33.1424	7.7999	-0.000124
81.	0.	0.93785	6.9602	7.2016	5.8878	0.258	33.1629	7.7899	-0.000130
82.	0.	0.93858	6.9602	7.2016	5.8810	0.263	33.1924	7.7899	-0.000133
83.	0.	0.93930	6.9602	7.2016	5.8739	0.269	33.2163	7.7899	-0.000136
84.	0.	0.94002	6.9602	7.2016	5.8674	0.275	33.2370	7.7799	-0.000142
85.	0.	0.94073	6.9602	7.2016	5.8609	0.278	33.2621	7.7799	-0.000145
86.	0.	0.94141	6.9602	7.2016	5.8542	0.281	33.2812	7.7799	-0.000148
87.	0.	0.94212	6.9602	7.2016	5.8480	0.285	33.3000	7.7698	-0.000154
88.	0.	0.94276	6.9602	7.2016	5.8417	0.293	33.3145	7.7698	-0.000157
89.	0.	0.94343	6.9602	7.2016	5.8359	0.300	33.3281	7.7598	-0.000163
90.	0.	0.94408	6.9602	7.2016	5.8301	0.305	33.3479	7.7598	-0.000166
91.	0.	0.94468	6.9602	7.2016	5.8244	0.309	33.3610	7.7598	-0.000169
92.	0.	0.94531	6.9602	7.2016	5.8191	0.312	33.3725	7.7498	-0.000175
93.	0.	0.94594	6.9602	7.2016	5.8135	0.314	33.3917	7.7498	-0.000177
94.	0.	0.94651	6.9602	7.2016	5.8082	0.315	33.4043	7.7498	-0.000180
95.	0.	0.94710	6.9602	7.2016	5.8033	0.315	33.4156	7.7398	-0.000186
96.	0.	0.94764	6.9602	7.2016	5.7983	0.316	33.4253	7.7398	-0.000188
97.	0.	0.94822	6.9602	7.2016	5.7935	0.318	33.4341	7.7298	-0.000194
98.	0.	0.94881	6.9602	7.2016	5.7884	0.319	33.4505	7.7298	-0.000197
99.	0.	0.94933	6.9602	7.2016	5.7837	0.323	33.4583	7.7298	-0.000200
100.	0.	0.94988	6.9602	7.2016	5.7793	0.325	33.4640	7.7198	-0.000206
101.	0.	0.95043	6.9602	7.2016	5.7747	0.328	33.4766	7.7198	-0.000208
102.	0.	0.95094	6.9602	7.2016	5.7701	0.330	33.4819	7.7198	-0.000211
103.	0.	0.95147	6.9602	7.2016	5.7660	0.332	33.4841	7.7098	-0.000217
104.	0.	0.95199	6.9602	7.2016	5.7617	0.333	33.4924	7.7098	-0.000220
105.	0.	0.95246	6.9601	7.2016	5.7576	0.335	33.4937	7.7098	-0.000222
106.	0.	0.95296	6.9602	7.2016	5.7539	0.336	33.4953	7.6998	-0.000229
107.	0.	0.95342	6.9601	7.2016	5.7499	0.338	33.4966	7.6998	-0.000231
108.	0.	0.95391	6.9601	7.2016	5.7461	0.338	33.4956	7.6898	-0.000237
109.	0.	0.95441	6.9601	7.2016	5.7422	0.339	33.5015	7.6898	-0.000240
110.	0.	0.95487	6.9601	7.2016	5.7382	0.340	33.5013	7.6898	-0.000243
111.	0.	0.95537	6.9601	7.2016	5.7345	0.343	33.4983	7.6798	-0.000249
112.	0.	0.95585	6.9601	7.2016	5.7307	0.346	33.5022	7.6797	-0.000252
113.	0.	0.95630	6.9601	7.2016	5.7269	0.348	33.5000	7.6797	-0.000255
114.	0.	0.95679	6.9601	7.2016	5.7234	0.351	33.4966	7.6697	-0.000261
115.	0.	0.95722	6.9601	7.2016	5.7196	0.353	33.4925	7.6697	-0.000264
116.	0.	0.95771	6.9601	7.2016	5.7161	0.354	33.4878	7.6597	-0.000270
117.	0.	0.95818	6.9601	7.2016	5.7124	0.356	33.4900	7.6597	-0.000273
118.	0.	0.95862	6.9601	7.2016	5.7086	0.358	33.4853	7.6597	-0.000275
119.	0.	0.95932	6.9601	7.2016	5.7055	0.361	33.5169	7.6497	-0.000282
120.	0.	0.96011	6.9600	7.2016	5.7019	0.364	33.6065	7.6897	-0.000271
121.	0.	0.96096	6.9598	7.2016	5.6984	0.367	33.7049	7.7297	-0.000261
122.	0.	0.96183	6.9596	7.2016	5.6949	0.371	33.8036	7.7697	-0.000250

123.	0.	0.96262	6.9595	7.2016	5.6912	0.374	33.8898	7.8098	-0.000240
124.	0.	0.96323	6.9593	7.2016	5.6874	0.377	33.9352	7.8398	-0.000233
125.	0.	0.96378	6.9593	7.2016	5.6840	0.379	33.9497	7.8398	-0.000236
126.	0.	0.96430	6.9593	7.2016	5.6806	0.380	33.9597	7.8398	-0.000238
127.	0.	0.96479	6.9593	7.2016	5.6772	0.381	33.9645	7.8398	-0.000241
128.	0.	0.96527	6.9592	7.2016	5.6738	0.381	33.9668	7.8398	-0.000244
129.	0.	0.96575	6.9592	7.2016	5.6704	0.381	33.9685	7.8398	-0.000247
130.	0.	0.96621	6.9592	7.2016	5.6671	0.382	33.9705	7.8398	-0.000250
131.	0.	0.96667	6.9592	7.2016	5.6639	0.382	33.9722	7.8397	-0.000252
132.	0.	0.96712	6.9592	7.2016	5.6608	0.383	33.9738	7.8397	-0.000255
133.	0.	0.96755	6.9592	7.2016	5.6577	0.384	33.9758	7.8397	-0.000258
134.	0.	0.96798	6.9591	7.2016	5.6547	0.385	33.9778	7.8397	-0.000261
135.	0.	0.96842	6.9591	7.2016	5.6517	0.385	33.9800	7.8397	-0.000263
136.	0.	0.96885	6.9591	7.2016	5.6488	0.386	33.9823	7.8397	-0.000266
137.	0.	0.96927	6.9591	7.2016	5.6459	0.386	33.9849	7.8397	-0.000268
138.	0.	0.96970	6.9591	7.2016	5.6429	0.386	33.9873	7.8397	-0.000271
139.	0.	0.97013	6.9591	7.2016	5.6400	0.387	33.9898	7.8397	-0.000274
140.	0.	0.97054	6.9590	7.2016	5.6372	0.388	33.9925	7.8397	-0.000276
141.	0.	0.97093	6.9590	7.2016	5.6346	0.388	33.9953	7.8397	-0.000278
142.	0.	0.97133	6.9590	7.2016	5.6320	0.388	33.9981	7.8397	-0.000281
143.	0.	0.97173	6.9590	7.2016	5.6293	0.387	34.0006	7.8397	-0.000283
144.	0.	0.97212	6.9590	7.2016	5.6268	0.386	34.0030	7.8397	-0.000286
145.	0.	0.97251	6.9589	7.2016	5.6242	0.384	34.0053	7.8397	-0.000288
146.	0.	0.97290	6.9589	7.2016	5.6217	0.383	34.0076	7.8397	-0.000291
147.	0.	0.97329	6.9589	7.2016	5.6192	0.381	34.0099	7.8397	-0.000294
148.	0.	0.97367	6.9589	7.2016	5.6168	0.379	34.0126	7.8397	-0.000296
149.	0.	0.97406	6.9589	7.2016	5.6143	0.377	34.0154	7.8397	-0.000299
150.	0.	0.97444	6.9589	7.2016	5.6119	0.375	34.0184	7.8397	-0.000301
151.	0.	0.97483	6.9588	7.2016	5.6094	0.373	34.0214	7.8397	-0.000304
152.	0.	0.97520	6.9588	7.2016	5.6070	0.372	34.0240	7.8397	-0.000306
153.	0.	0.97557	6.9588	7.2016	5.6047	0.371	34.0267	7.8397	-0.000309
154.	0.	0.97594	6.9588	7.2016	5.6025	0.371	34.0290	7.8397	-0.000311
155.	0.	0.97630	6.9588	7.2016	5.6003	0.371	34.0309	7.8397	-0.000314
156.	0.	0.97665	6.9588	7.2016	5.5982	0.371	34.0325	7.8397	-0.000316
157.	0.	0.97699	6.9587	7.2016	5.5962	0.371	34.0331	7.8397	-0.000319
158.	0.	0.97731	6.9587	7.2016	5.5944	0.371	34.0326	7.8397	-0.000321
159.	0.	0.97762	6.9587	7.2016	5.5927	0.370	34.0314	7.8397	-0.000323
160.	0.	0.97792	6.9587	7.2016	5.5911	0.369	34.0292	7.8397	-0.000326
161.	0.	0.97821	6.9587	7.2016	5.5896	0.367	34.0264	7.8397	-0.000328
162.	0.	0.97849	6.9587	7.2016	5.5882	0.365	34.0233	7.8397	-0.000331
163.	0.	0.97876	6.9586	7.2016	5.5868	0.362	34.0188	7.8397	-0.000333
164.	0.	0.97903	6.9586	7.2016	5.5854	0.359	34.0141	7.8397	-0.000335
165.	0.	0.97930	6.9586	7.2016	5.5841	0.356	34.0093	7.8397	-0.000338
166.	0.	0.97957	6.9586	7.2016	5.5828	0.353	34.0045	7.8397	-0.000340
167.	0.	0.97984	6.9586	7.2016	5.5814	0.351	33.9999	7.8397	-0.000342
168.	0.	0.98011	6.9585	7.2016	5.5801	0.348	33.9955	7.8397	-0.000345
169.	0.	0.98038	6.9585	7.2016	5.5788	0.345	33.9914	7.8397	-0.000347
170.	0.	0.98066	6.9585	7.2016	5.5774	0.343	33.9872	7.8397	-0.000349
171.	0.	0.98093	6.9585	7.2016	5.5760	0.341	33.9833	7.8396	-0.000352
172.	0.	0.98122	6.9585	7.2016	5.5745	0.341	33.9805	7.8396	-0.000354
173.	0.	0.98150	6.9585	7.2016	5.5731	0.341	33.9779	7.8396	-0.000356
174.	0.	0.98179	6.9584	7.2016	5.5716	0.342	33.9756	7.8396	-0.000358
175.	0.	0.98208	6.9584	7.2016	5.5701	0.343	33.9738	7.8396	-0.000361
176.	0.	0.98237	6.9584	7.2016	5.5686	0.345	33.9723	7.8396	-0.000363
177.	0.	0.98266	6.9584	7.2016	5.5671	0.347	33.9712	7.8396	-0.000365
178.	0.	0.98296	6.9584	7.2016	5.5655	0.349	33.9701	7.8396	-0.000368
179.	0.	0.98325	6.9584	7.2016	5.5640	0.349	33.9686	7.8396	-0.000370
180.	0.	0.98354	6.9583	7.2016	5.5624	0.349	33.9677	7.8396	-0.000372
181.	0.	0.98384	6.9583	7.2016	5.5609	0.349	33.9670	7.8396	-0.000374
182.	0.	0.98414	6.9583	7.2016	5.5593	0.350	33.9663	7.8396	-0.000377
183.	0.	0.98444	6.9583	7.2016	5.5577	0.350	33.9650	7.8396	-0.000379
184.	0.	0.98474	6.9583	7.2016	5.5561	0.351	33.9637	7.8396	-0.000381
185.	0.	0.98507	6.9583	7.2016	5.5543	0.351	33.9619	7.8396	-0.000384
186.	0.	0.98541	6.9582	7.2016	5.5523	0.353	33.9601	7.8396	-0.000386
187.	0.	0.98575	6.9582	7.2016	5.5503	0.354	33.9583	7.8396	-0.000388

188.	0.	0.98609	6.9582	7.2016	5.5484	0.355	33.9566	7.8396	-0.000391
189.	0.	0.98644	6.9582	7.2016	5.5464	0.357	33.9551	7.8396	-0.000393
190.	0.	0.98679	6.9582	7.2016	5.5444	0.359	33.9536	7.8396	-0.000395
191.	0.	0.98714	6.9581	7.2016	5.5423	0.360	33.9524	7.8396	-0.000398
192.	0.	0.98750	6.9581	7.2016	5.5402	0.362	33.9514	7.8396	-0.000400
193.	0.	0.98786	6.9581	7.2016	5.5381	0.363	33.9502	7.8396	-0.000403
194.	0.	0.98822	6.9581	7.2016	5.5360	0.363	33.9490	7.8396	-0.000405
195.	0.	0.98858	6.9581	7.2016	5.5339	0.364	33.9475	7.8396	-0.000407
196.	0.	0.98894	6.9581	7.2016	5.5317	0.365	33.9462	7.8396	-0.000410
197.	0.	0.98931	6.9580	7.2016	5.5295	0.366	33.9448	7.8396	-0.000412
198.	0.	0.98969	6.9580	7.2016	5.5273	0.366	33.9435	7.8396	-0.000415
199.	0.	0.99001	6.9580	7.2016	5.5249	0.366	33.9337	7.8396	-0.000417
200.	0.	0.98975	6.9579	7.2016	5.5213	0.366	33.8207	7.8296	-0.000422
201.	0.	0.98920	6.9583	7.2016	5.5188	0.366	33.5801	7.7095	-0.000463
202.	0.	0.98853	6.9588	7.2016	5.5164	0.366	33.3052	7.5795	-0.000510
203.	0.	0.98790	6.9592	7.2016	5.5140	0.365	33.0347	7.4594	-0.000555
204.	0.	0.98733	6.9597	7.2016	5.5119	0.365	32.7763	7.3394	-0.000601
205.	0.	0.98691	6.9602	7.2016	5.5105	0.365	32.5605	7.2093	-0.000652
206.	0.	0.98654	6.9607	7.2016	5.5090	0.365	32.3471	7.0893	-0.000701
207.	0.	0.98632	6.9612	7.2016	5.5083	0.364	32.1328	6.9592	-0.000758
208.	0.	0.98612	6.9617	7.2016	5.5076	0.364	31.9181	6.8392	-0.000813
209.	0.	0.98607	6.9623	7.2016	5.5076	0.363	31.7015	6.7091	-0.000876
210.	0.	0.98608	6.9629	7.2016	5.5078	0.362	31.4898	6.5891	-0.000937
211.	0.	0.98616	6.9634	7.2016	5.5082	0.361	31.2738	6.4690	-0.001003
212.	0.	0.98642	6.9640	7.2016	5.5093	0.359	31.0573	6.3389	-0.001077
213.	0.	0.98667	6.9646	7.2016	5.5105	0.357	30.8554	6.2189	-0.001148
214.	0.	0.98709	6.9652	7.2016	5.5123	0.355	30.6569	6.0888	-0.001229
215.	0.	0.98752	6.9658	7.2016	5.5142	0.352	30.4622	5.9687	-0.001307
216.	0.	0.98801	6.9664	7.2016	5.5161	0.349	30.2622	5.8486	-0.001390
217.	0.	0.98872	6.9670	7.2016	5.5186	0.347	30.0575	5.7185	-0.001485
218.	0.	0.98939	6.9676	7.2016	5.5209	0.346	29.8505	5.5984	-0.001577
219.	0.	0.99028	6.9682	7.2016	5.5240	0.345	29.6381	5.4683	-0.001683
220.	0.	0.99110	6.9688	7.2016	5.5270	0.344	29.4176	5.3482	-0.001788
221.	0.	0.99222	6.9695	7.2016	5.5313	0.342	29.1723	5.2081	-0.001917
222.	0.	0.99359	6.9703	7.2016	5.5367	0.339	28.9134	5.0579	-0.002065
223.	0.	0.99493	6.9710	7.2016	5.5421	0.336	28.6475	4.9178	-0.002214
224.	0.	0.99660	6.9717	7.2016	5.5488	0.331	28.3778	4.7676	-0.002386
225.	0.	0.99824	6.9725	7.2016	5.5556	0.326	28.1149	4.6274	-0.002557
226.	0.	1.00021	6.9732	7.2016	5.5638	0.320	27.8426	4.4772	-0.002755
227.	0.	1.00243	6.9740	7.2016	5.5724	0.316	27.5713	4.3270	-0.002970
228.	0.	1.00465	6.9747	7.2016	5.5807	0.310	27.2947	4.1868	-0.003189
229.	0.	1.00739	6.9755	7.2016	5.5897	0.304	26.9986	4.0366	-0.003445
230.	0.	1.01046	6.9763	7.2016	5.5989	0.297	26.6951	3.8863	-0.003726
231.	0.	1.01354	6.9771	7.2016	5.6075	0.290	26.3815	3.7460	-0.004016
232.	0.	1.01727	6.9780	7.2016	5.6169	0.284	26.0486	3.5956	-0.004359
233.	0.	1.02106	6.9789	7.2016	5.6247	0.282	25.6977	3.4553	-0.004714
234.	0.	1.02568	6.9800	7.2016	5.6318	0.282	25.3209	3.3049	-0.005137
235.	0.	1.03094	6.9812	7.2016	5.6361	0.285	24.9349	3.1544	-0.005610
236.	0.	1.03643	6.9826	7.2016	5.6353	0.287	24.5438	3.0139	-0.006104
237.	0.	1.04327	6.9843	7.2016	5.6297	0.285	24.1615	2.8633	-0.006698
238.	0.	1.04861	6.9860	7.2016	5.6116	0.290	23.9631	2.7729	-0.007089
239.	0.	1.04601	6.9867	7.2016	5.5745	0.304	23.9394	2.8533	-0.006739
240.	0.	1.04940	6.9881	7.2016	5.5551	0.309	23.6738	2.7930	-0.007003
241.	0.	1.05743	6.9904	7.2016	5.5427	0.305	23.1902	2.6322	-0.007765
242.	0.	1.06507	6.9933	7.2016	5.5245	0.292	22.5864	2.4714	-0.008597
243.	0.	1.07257	6.9970	7.2016	5.4991	0.259	21.8217	2.3004	-0.009556
244.	0.	1.07837	7.0021	7.2016	5.4728	0.230	20.8948	2.0993	-0.010650
245.	0.	1.08105	7.0087	7.2016	5.4307	0.180	19.4312	1.8882	-0.011835
246.	0.	1.09394	7.0188	7.2016	5.3802	0.130	16.6764	1.3636	-0.016369
247.	0.	0.96993	7.0564	7.2016	5.2869	359.218	16.5245	0.6780	-0.001962
248.	0.	-9.00000	-9.0000	-9.0000	-9.0000	-999.000	-9.0000	-99.0000	-9.000000
249.	0.	-9.00000	-9.0000	-9.0000	-9.0000	-999.000	-9.0000	-99.0000	-9.000000
250.	0.	-9.00000	-9.0000	-9.0000	-9.0000	-999.000	-9.0000	-99.0000	-9.000000
251.	0.	-9.00000	-9.0000	-9.0000	-9.0000	-999.000	-9.0000	-99.0000	-9.000000

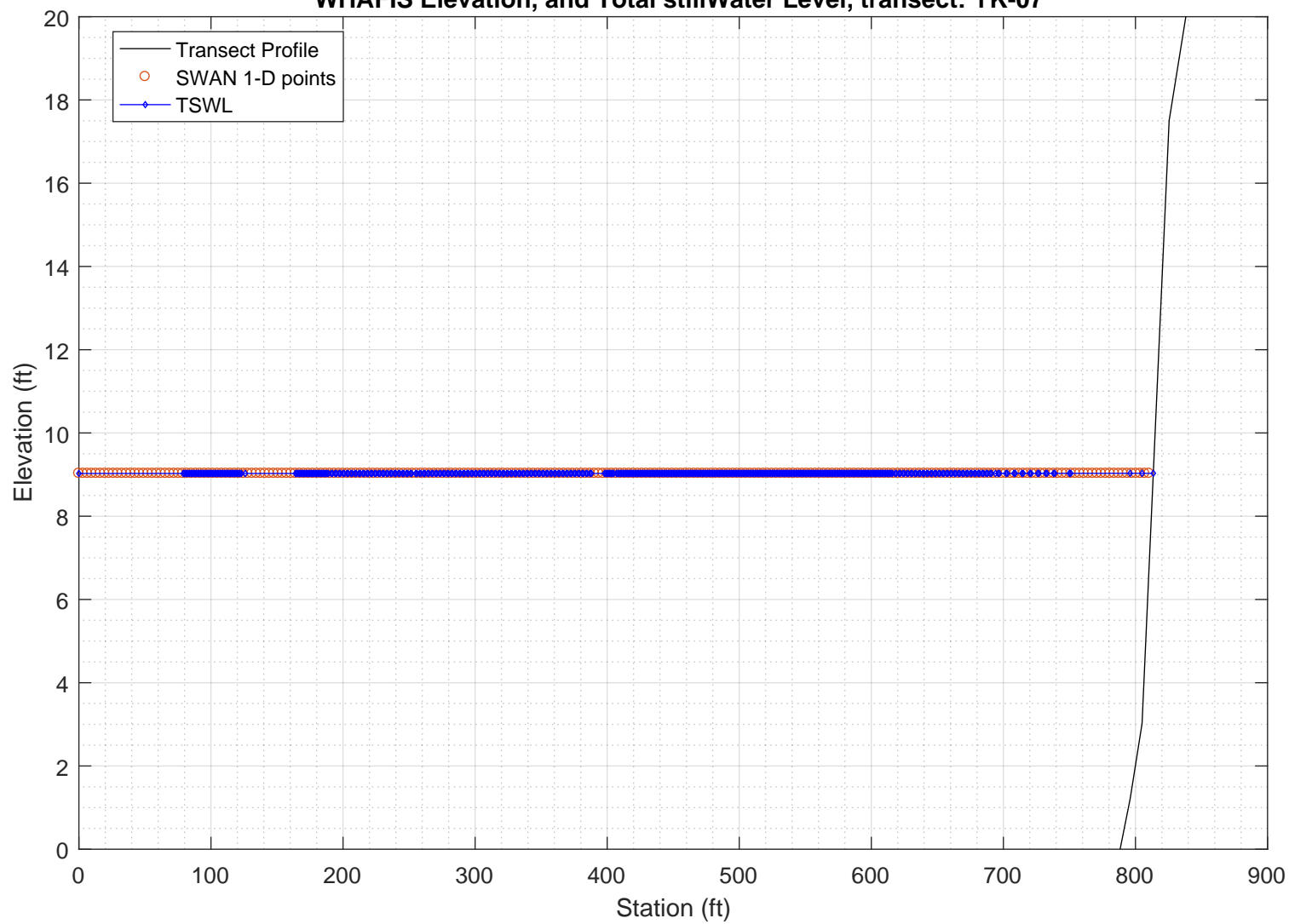
PART 3: WHAFIS

WHAFIS input: YK-07.dat

WHAFIS output: YK-07.out

PART 3 COMPLETE

WHAFIS Elevation, and Total stillWater Level, transect: YK-07



WAVE HEIGHT COMPUTATIONS FOR FLOOD INSURANCE STUDIES (WHAFIS VERSION 4.0G, 08_2007)

Executed on: Thu Feb 6 16:14:34 2020

Input file: C:\Users\shayward\Desktop\Kittery\T2\3_whafis\whafis4\YK-07.dat

Output file: C:\Users\shayward\Desktop\Kittery\T2\3_whafis\whafis4\YK-07.out

header

THIS IS A 100-YEAR CASE

THE FOLLOWING NON-DEFAULT WIND SPEEDS ARE BEING USED

WINDIF 56.14 WINDOF 56.14 WINDVH 60.00

PART1 INPUT

IE	0.000	-16.356	1.000	1.000	9.027	4.699	6.937	56.140	-0.004	0.000
OF	79.000	-16.665	0.000	9.027	0.000	0.000	0.000	0.000	-0.004	0.000
OF	80.000	-16.669	0.000	9.027	0.000	0.000	0.000	0.000	-0.004	0.000
OF	81.000	-16.672	0.000	9.027	0.000	0.000	0.000	0.000	-0.004	0.000
OF	82.000	-16.676	0.000	9.027	0.000	0.000	0.000	0.000	-0.004	0.000
OF	83.000	-16.680	0.000	9.027	0.000	0.000	0.000	0.000	-0.004	0.000
OF	84.000	-16.684	0.000	9.027	0.000	0.000	0.000	0.000	-0.004	0.000
OF	85.000	-16.688	0.000	9.027	0.000	0.000	0.000	0.000	-0.004	0.000
OF	86.000	-16.692	0.000	9.027	0.000	0.000	0.000	0.000	-0.004	0.000
OF	87.000	-16.696	0.000	9.027	0.000	0.000	0.000	0.000	-0.004	0.000
OF	88.000	-16.700	0.000	9.027	0.000	0.000	0.000	0.000	-0.004	0.000
OF	89.000	-16.704	0.000	9.027	0.000	0.000	0.000	0.000	-0.004	0.000
OF	90.000	-16.708	0.000	9.027	0.000	0.000	0.000	0.000	-0.004	0.000
OF	91.000	-16.712	0.000	9.027	0.000	0.000	0.000	0.000	-0.004	0.000
OF	92.000	-16.716	0.000	9.027	0.000	0.000	0.000	0.000	-0.004	0.000
OF	93.000	-16.719	0.000	9.027	0.000	0.000	0.000	0.000	-0.004	0.000
OF	94.000	-16.723	0.000	9.027	0.000	0.000	0.000	0.000	-0.004	0.000
OF	95.000	-16.727	0.000	9.027	0.000	0.000	0.000	0.000	-0.004	0.000
OF	96.000	-16.731	0.000	9.027	0.000	0.000	0.000	0.000	-0.004	0.000
OF	97.000	-16.735	0.000	9.027	0.000	0.000	0.000	0.000	-0.004	0.000
OF	98.000	-16.739	0.000	9.027	0.000	0.000	0.000	0.000	-0.004	0.000
OF	99.000	-16.743	0.000	9.027	0.000	0.000	0.000	0.000	-0.004	0.000
OF	100.000	-16.747	0.000	9.027	0.000	0.000	0.000	0.000	-0.002	0.000
OF	101.000	-16.747	0.000	9.027	0.000	0.000	0.000	0.000	0.000	0.000
OF	102.000	-16.747	0.000	9.027	0.000	0.000	0.000	0.000	0.001	0.000
OF	103.000	-16.746	0.000	9.027	0.000	0.000	0.000	0.000	0.001	0.000
OF	104.000	-16.746	0.000	9.027	0.000	0.000	0.000	0.000	0.000	0.000
OF	105.000	-16.746	0.000	9.027	0.000	0.000	0.000	0.000	0.000	0.000
OF	106.000	-16.746	0.000	9.027	0.000	0.000	0.000	0.000	0.000	0.000
OF	107.000	-16.746	0.000	9.027	0.000	0.000	0.000	0.000	0.000	0.000
OF	108.000	-16.746	0.000	9.027	0.000	0.000	0.000	0.000	0.001	0.000
OF	109.000	-16.745	0.000	9.027	0.000	0.000	0.000	0.000	0.001	0.000
OF	110.000	-16.745	0.000	9.027	0.000	0.000	0.000	0.000	0.000	0.000
OF	111.000	-16.745	0.000	9.027	0.000	0.000	0.000	0.000	0.000	0.000
OF	112.000	-16.745	0.000	9.027	0.000	0.000	0.000	0.000	0.000	0.000
OF	113.000	-16.745	0.000	9.027	0.000	0.000	0.000	0.000	0.000	0.000
OF	114.000	-16.745	0.000	9.027	0.000	0.000	0.000	0.000	0.000	0.000
OF	115.000	-16.745	0.000	9.027	0.000	0.000	0.000	0.000	0.001	0.000
OF	116.000	-16.744	0.000	9.027	0.000	0.000	0.000	0.000	0.001	0.000
OF	117.000	-16.744	0.000	9.027	0.000	0.000	0.000	0.000	0.000	0.000
OF	118.000	-16.744	0.000	9.027	0.000	0.000	0.000	0.000	0.000	0.000
OF	119.000	-16.744	0.000	9.027	0.000	0.000	0.000	0.000	0.000	0.000
OF	120.000	-16.744	0.000	9.027	0.000	0.000	0.000	0.000	0.000	0.000
OF	121.000	-16.744	0.000	9.027	0.000	0.000	0.000	0.000	0.000	0.000
OF	122.000	-16.744	0.000	9.027	0.000	0.000	0.000	0.000	0.001	0.000
OF	123.000	-16.743	0.000	9.027	0.000	0.000	0.000	0.000	0.051	0.000
OF	126.000	-16.541	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	164.000	-16.662	0.000	9.027	0.000	0.000	0.000	0.000	-0.003	0.000
OF	165.000	-16.666	0.000	9.027	0.000	0.000	0.000	0.000	-0.004	0.000
OF	166.000	-16.671	0.000	9.027	0.000	0.000	0.000	0.000	-0.004	0.000
OF	167.000	-16.675	0.000	9.027	0.000	0.000	0.000	0.000	-0.004	0.000
OF	168.000	-16.680	0.000	9.027	0.000	0.000	0.000	0.000	-0.005	0.000
OF	169.000	-16.685	0.000	9.027	0.000	0.000	0.000	0.000	-0.004	0.000
OF	170.000	-16.689	0.000	9.027	0.000	0.000	0.000	0.000	-0.004	0.000
OF	171.000	-16.694	0.000	9.027	0.000	0.000	0.000	0.000	-0.004	0.000
OF	172.000	-16.698	0.000	9.027	0.000	0.000	0.000	0.000	-0.004	0.000
OF	173.000	-16.703	0.000	9.027	0.000	0.000	0.000	0.000	-0.005	0.000
OF	174.000	-16.708	0.000	9.027	0.000	0.000	0.000	0.000	-0.004	0.000
OF	175.000	-16.712	0.000	9.027	0.000	0.000	0.000	0.000	-0.004	0.000
OF	176.000	-16.717	0.000	9.027	0.000	0.000	0.000	0.000	-0.005	0.000
OF	177.000	-16.722	0.000	9.027	0.000	0.000	0.000	0.000	-0.004	0.000
OF	178.000	-16.726	0.000	9.027	0.000	0.000	0.000	0.000	-0.004	0.000
OF	179.000	-16.731	0.000	9.027	0.000	0.000	0.000	0.000	-0.004	0.000
OF	180.000	-16.735	0.000	9.027	0.000	0.000	0.000	0.000	-0.001	0.000
OF	181.000	-16.733	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	182.000	-16.731	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	183.000	-16.729	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	184.000	-16.727	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	185.000	-16.725	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	186.000	-16.724	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	187.000	-16.722	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	188.000	-16.720	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	189.000	-16.718	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	191.000	-16.714	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	192.000	-16.712	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	194.000	-16.709	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	195.000	-16.707	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	197.000	-16.703	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	198.000	-16.701	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	200.000	-16.698	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	201.000	-16.696	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	203.000	-16.692	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	204.000	-16.690	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	206.000	-16.686	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	207.000	-16.685	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	209.000	-16.681	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	210.000	-16.679	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	212.000	-16.675	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	213.000	-16.673	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	215.000	-16.670	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	216.000	-16.668	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	218.000	-16.664	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	219.000	-16.662	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	221.000	-16.659	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	222.000	-16.657	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	224.000	-16.653	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	225.000	-16.651	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	227.000	-16.647	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	228.000	-16.645	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	230.000	-16.642	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	231.000	-16.640	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000

OF	233.000	-16.636	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	234.000	-16.634	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	236.000	-16.631	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	237.000	-16.629	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	239.000	-16.625	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	240.000	-16.623	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	242.000	-16.619	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	243.000	-16.618	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	245.000	-16.614	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	246.000	-16.612	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	248.000	-16.608	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	249.000	-16.606	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	251.000	-16.603	0.000	9.027	0.000	0.000	0.000	0.000	0.002	0.000
OF	252.000	-16.599	0.000	9.027	0.000	0.000	0.000	0.000	0.005	0.000
OF	255.000	-16.581	0.000	9.027	0.000	0.000	0.000	0.000	0.005	0.000
OF	256.000	-16.578	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	258.000	-16.570	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	259.000	-16.567	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	261.000	-16.559	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	262.000	-16.556	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	264.000	-16.548	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	265.000	-16.545	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	267.000	-16.537	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	268.000	-16.533	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	270.000	-16.526	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	271.000	-16.522	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	273.000	-16.515	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	274.000	-16.511	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	276.000	-16.504	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	277.000	-16.500	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	279.000	-16.493	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	280.000	-16.489	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	282.000	-16.482	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	283.000	-16.478	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	285.000	-16.471	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	286.000	-16.467	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	288.000	-16.460	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	289.000	-16.456	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	291.000	-16.449	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	292.000	-16.445	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	294.000	-16.438	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	295.000	-16.434	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	297.000	-16.427	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	298.000	-16.423	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	300.000	-16.416	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	301.000	-16.412	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	303.000	-16.405	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	304.000	-16.401	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	306.000	-16.394	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	307.000	-16.390	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	309.000	-16.382	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	310.000	-16.379	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	312.000	-16.371	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	313.000	-16.368	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	315.000	-16.360	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	316.000	-16.357	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	318.000	-16.349	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	319.000	-16.346	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	321.000	-16.338	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	322.000	-16.335	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	324.000	-16.327	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	325.000	-16.323	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	327.000	-16.316	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	328.000	-16.312	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	330.000	-16.305	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	331.000	-16.301	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	333.000	-16.294	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	334.000	-16.290	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	336.000	-16.283	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	337.000	-16.279	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	339.000	-16.272	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	340.000	-16.268	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	342.000	-16.261	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	343.000	-16.257	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
OF	345.000	-16.250	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
OF	346.000	-16.246	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
OF	348.000	-16.239	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
OF	349.000	-16.235	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
OF	351.000	-16.228	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
OF	352.000	-16.224	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
OF	354.000	-16.217	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
OF	355.000	-16.213	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
OF	357.000	-16.206	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
OF	358.000	-16.202	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
OF	360.000	-16.195	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
OF	361.000	-16.191	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
OF	363.000	-16.184	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
OF	364.000	-16.180	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
OF	366.000	-16.172	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
OF	367.000	-16.169	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
OF	369.000	-16.161	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
OF	370.000	-16.158	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
OF	372.000	-16.150	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
OF	373.000	-16.147	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
OF	375.000	-16.139	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
OF	376.000	-16.136	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
OF	378.000	-16.128	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
OF	379.000	-16.125	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
OF	381.000	-16.117	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
OF	382.000	-16.114	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
OF	384.000	-16.106	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
OF	385.000	-16.103	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
OF	387.000	-16.095	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
OF	388.000	-16.091	0.000	9.028	0.000	0.000	0.000	0.000	-0.024	0.000
OF	398.000	-16.359	0.000	9.028	0.000	0.000	0.000	0.000	-0.028	0.000
OF	399.000	-16.399	0.000	9.028	0.000	0.000	0.000	0.000	-0.040	0.000
OF	400.000	-16.439	0.000	9.028	0.000	0.000	0.000	0.000	-0.040	0.000
OF	401.000	-16.479	0.000	9.028	0.000	0.000	0.000	0.000	-0.040	0.000
OF	402.000	-16.519	0.000	9.028	0.000	0.000	0.000	0.000	-0.040	0.000
OF	403.000	-16.559	0.000	9.028	0.000	0.				

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	STATION	ELEVATION	10-YEAR	100-YEAR					SLOPE	A-ZONES
OF	324.000	-16.327	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
OF	325.000	-16.323	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
OF	327.000	-16.316	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
OF	328.000	-16.312	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
OF	330.000	-16.305	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
OF	331.000	-16.301	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
OF	333.000	-16.294	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
OF	334.000	-16.290	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
OF	336.000	-16.283	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
OF	337.000	-16.279	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
OF	339.000	-16.272	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
OF	340.000	-16.268	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
OF	342.000	-16.261	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
OF	343.000	-16.257	0.000	9.027	0.000	0.000	0.000	0.000	0.004	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
OF	345.000	-16.250	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
OF	346.000	-16.246	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
OF	348.000	-16.239	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
OF	349.000	-16.235	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
OF	351.000	-16.228	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
OF	352.000	-16.224	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
OF	354.000	-16.217	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
OF	355.000	-16.213	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
OF	357.000	-16.206	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
OF	358.000	-16.202	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
OF	360.000	-16.195	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
OF	361.000	-16.191	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
OF	363.000	-16.184	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
OF	364.000	-16.180	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
OF	366.000	-16.172	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
OF	367.000	-16.169	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
OF	369.000	-16.161	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
OF	370.000	-16.158	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
OF	372.000	-16.150	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
OF	373.000	-16.147	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
OF	375.000	-16.139	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
OF	376.000	-16.136	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
OF	378.000	-16.128	0.000	9.028	0.000	0.000	0.000	0.000	0.004	0.000

	END	END	NEW SURGE	NEW SURGE						BOTTOM	AVERAGE
OF	STATION	ELEVATION	10-YEAR	100-YEAR						SLOPE	A-ZONES
	379.000	-16.125	0.000	9.028	0.000	0.000	0.000	0.000		0.004	0.000
	END	END	NEW SURGE	NEW SURGE						BOTTOM	AVERAGE
OF	STATION	ELEVATION	10-YEAR	100-YEAR						SLOPE	A-ZONES
	381.000	-16.117	0.000	9.028	0.000	0.000	0.000	0.000		0.004	0.000
	END	END	NEW SURGE	NEW SURGE						BOTTOM	AVERAGE
OF	STATION	ELEVATION	10-YEAR	100-YEAR						SLOPE	A-ZONES
	382.000	-16.114	0.000	9.028	0.000	0.000	0.000	0.000		0.004	0.000
	END	END	NEW SURGE	NEW SURGE						BOTTOM	AVERAGE
OF	STATION	ELEVATION	10-YEAR	100-YEAR						SLOPE	A-ZONES
	384.000	-16.106	0.000	9.028	0.000	0.000	0.000	0.000		0.004	0.000
	END	END	NEW SURGE	NEW SURGE						BOTTOM	AVERAGE
OF	STATION	ELEVATION	10-YEAR	100-YEAR						SLOPE	A-ZONES
	385.000	-16.103	0.000	9.028	0.000	0.000	0.000	0.000		0.004	0.000
	END	END	NEW SURGE	NEW SURGE						BOTTOM	AVERAGE
OF	STATION	ELEVATION	10-YEAR	100-YEAR						SLOPE	A-ZONES
	387.000	-16.095	0.000	9.028	0.000	0.000	0.000	0.000		0.004	0.000
	END	END	NEW SURGE	NEW SURGE						BOTTOM	AVERAGE
OF	STATION	ELEVATION	10-YEAR	100-YEAR						SLOPE	A-ZONES
	388.000	-16.091	0.000	9.028	0.000	0.000	0.000	0.000		-0.024	0.000
	END	END	NEW SURGE	NEW SURGE						BOTTOM	AVERAGE
OF	STATION	ELEVATION	10-YEAR	100-YEAR						SLOPE	A-ZONES
	398.000	-16.359	0.000	9.028	0.000	0.000	0.000	0.000		-0.028	0.000
	END	END	NEW SURGE	NEW SURGE						BOTTOM	AVERAGE
OF	STATION	ELEVATION	10-YEAR	100-YEAR						SLOPE	A-ZONES
	399.000	-16.399	0.000	9.028	0.000	0.000	0.000	0.000		-0.040	0.000
	END	END	NEW SURGE	NEW SURGE						BOTTOM	AVERAGE
OF	STATION	ELEVATION	10-YEAR	100-YEAR						SLOPE	A-ZONES
	400.000	-16.439	0.000	9.028	0.000	0.000	0.000	0.000		-0.040	0.000
	END	END	NEW SURGE	NEW SURGE						BOTTOM	AVERAGE
OF	STATION	ELEVATION	10-YEAR	100-YEAR						SLOPE	A-ZONES
	401.000	-16.479	0.000	9.028	0.000	0.000	0.000	0.000		-0.040	0.000
	END	END	NEW SURGE	NEW SURGE						BOTTOM	AVERAGE
OF	STATION	ELEVATION	10-YEAR	100-YEAR						SLOPE	A-ZONES
	402.000	-16.519	0.000	9.028	0.000	0.000	0.000	0.000		-0.040	0.000
	END	END	NEW SURGE	NEW SURGE						BOTTOM	AVERAGE
OF	STATION	ELEVATION	10-YEAR	100-YEAR						SLOPE	A-ZONES
	403.000	-16.559	0.000	9.028	0.000	0.000	0.000	0.000		-0.040	0.000
	END	END	NEW SURGE	NEW SURGE						BOTTOM	AVERAGE
OF	STATION	ELEVATION	10-YEAR	100-YEAR						SLOPE	A-ZONES
	404.000	-16.598	0.000	9.028	0.000	0.000	0.000	0.000		-0.040	0.000
	END	END	NEW SURGE	NEW SURGE						BOTTOM	AVERAGE
OF	STATION	ELEVATION	10-YEAR	100-YEAR						SLOPE	A-ZONES
	405.000	-16.638	0.000	9.028	0.000	0.000	0.000	0.000		-0.036	0.000
	END	END	NEW SURGE	NEW SURGE						BOTTOM	AVERAGE
OF	STATION	ELEVATION	10-YEAR	100-YEAR						SLOPE	A-ZONES
	407.000	-16.705	0.000	9.028	0.000	0.000	0.000	0.000		-0.022	0.000
	END	END	NEW SURGE	NEW SURGE						BOTTOM	AVERAGE
OF	STATION	ELEVATION	10-YEAR	100-YEAR						SLOPE	A-ZONES
	408.000	-16.705	0.000	9.028	0.000	0.000	0.000	0.000		0.000	0.000
	END	END	NEW SURGE	NEW SURGE						BOTTOM	AVERAGE
OF	STATION	ELEVATION	10-YEAR	100-YEAR						SLOPE	A-ZONES
	409.000	-16.705	0.000	9.028	0.000	0.000	0.000	0.000		0.000	0.000
	END	END	NEW SURGE	NEW SURGE						BOTTOM	AVERAGE
OF	STATION	ELEVATION	10-YEAR	100-YEAR						SLOPE	A-ZONES
	410.000	-16.705	0.000	9.028	0.000	0.000	0.000	0.000		0.000	0.000
	END	END	NEW SURGE	NEW SURGE						BOTTOM	AVERAGE
OF	STATION	ELEVATION	10-YEAR	100-YEAR						SLOPE	A-ZONES
	411.000	-16.705	0.000	9.028	0.000	0.000	0.000	0.000		0.000	0.000
	END	END	NEW SURGE	NEW SURGE						BOTTOM	AVERAGE
OF	STATION	ELEVATION	10-YEAR	100-YEAR						SLOPE	A-ZONES
	412.000	-16.705	0.000	9.028	0.000	0.000	0.000	0.000		0.000	0.000
	END	END	NEW SURGE	NEW SURGE						BOTTOM	AVERAGE
OF	STATION	ELEVATION	10-YEAR	100-YEAR						SLOPE	A-ZONES
	413.000	-16.705	0.000	9.028	0.000	0.000	0.000	0.000		0.000	0.000
	END	END	NEW SURGE	NEW SURGE						BOTTOM	AVERAGE
OF	STATION	ELEVATION	10-YEAR	100-YEAR						SLOPE	A-ZONES
	414.000	-16.705	0.000	9.028	0.000	0.000	0.000	0.000		0.000	0.000
	END	END	NEW SURGE	NEW SURGE						BOTTOM	AVERAGE
OF	STATION	ELEVATION	10-YEAR	100-YEAR						SLOPE	A-ZONES
	415.000	-16.705	0.000	9.028	0.000	0.000	0.000	0.000		0.000	0.000
	END	END	NEW SURGE	NEW SURGE						BOTTOM	AVERAGE
OF	STATION	ELEVATION	10-YEAR	100-YEAR						SLOPE	A-ZONES
	416.000	-16.705	0.000	9.028	0.000	0.000	0.000	0.000		0.000	0.000
	END	END	NEW SURGE	NEW SURGE						BOTTOM	AVERAGE
OF	STATION	ELEVATION	10-YEAR	100-YEAR						SLOPE	A-ZONES
	417.000	-16.705	0.000	9.028	0.000	0.000	0.000	0.000		0.000	0.000
	END	END	NEW SURGE	NEW SURGE						BOTTOM	AVERAGE
OF	STATION	ELEVATION	10-YEAR	100-YEAR						SLOPE	A-ZONES
	418.000	-16.705	0.000	9.028	0.000	0.000	0.000	0.000		0.000	0.000
	END	END	NEW SURGE	NEW SURGE						BOTTOM	AVERAGE
OF	STATION	ELEVATION	10-YEAR	100-YEAR						SLOPE	A-ZONES
	419.000	-16.705	0.000	9.028	0.000	0.000	0.000	0.000		0.000	0.000
	END	END	NEW SURGE	NEW SURGE						BOTTOM	AVERAGE
OF	STATION	ELEVATION	10-YEAR	100-YEAR						SLOPE	A-ZONES
	420.000	-16.705	0.000	9.028	0.000	0.000	0.000	0.000		0.000	0.000
	END	END	NEW SURGE	NEW SURGE						BOTTOM	AVERAGE
OF	STATION	ELEVATION	10-YEAR	100-YEAR						SLOPE	A-ZONES
	421.000	-16.705	0.000	9.028	0.000	0.000	0.000	0.000		0.000	0.000
	END	END	NEW SURGE	NEW SURGE						BOTTOM	AVERAGE
OF	STATION	ELEVATION	10-YEAR	100-YEAR						SLOPE	A-ZONES
	422.000	-16.705	0.000	9.028	0.000	0.000	0.000	0.000		0.000	0.000
	END	END	NEW SURGE	NEW SURGE						BOTTOM	AVERAGE
OF	STATION	ELEVATION	10-YEAR	100-YEAR						SLOPE	A-ZONES
	423.000	-16.705	0.000	9.028	0.000	0.000	0.000	0.000		0.000	0.000
	END	END	NEW SURGE	NEW SURGE						BOTTOM	AVERAGE
OF	STATION	ELEVATION	10-YEAR	100-YEAR						SLOPE	A-ZONES
	424.000	-16.705	0.000	9.028	0.000	0.000	0.000	0.000		0.000	0.000
	END	END	NEW SURGE	NEW SURGE						BOTTOM	AVERAGE
OF	STATION	ELEVATION	10-YEAR	100-YEAR						SLOPE	A-ZONES
	425.000	-16.705	0.000	9.028	0.000	0.000	0.000	0.000		0.000	0.000
	END	END	NEW SURGE	NEW SURGE						BOTTOM	AVERAGE
OF	STATION	ELEVATION	10-YEAR	100-YEAR						SLOPE	A-ZONES
	426.000	-16.705	0.000	9.028	0.000	0.000	0.000	0.000		0.000	0.000
	END	END	NEW SURGE	NEW SURGE						BOTTOM	AVERAGE
OF	STATION	ELEVATION	10-YEAR	100-YEAR						SLOPE	A-ZONES
	427.000	-16.705	0.000	9.028	0.000	0.000	0.000	0.000		0.000	0.000
	END	END	NEW SURGE	NEW SURGE						BOTTOM	AVERAGE
	STATION	ELEVATION	10-YEAR	100-YEAR						SLOPE	A-ZONES

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OF	664.000	-15.694	0.000	9.028	0.000	0.000	0.000	0.000	0.124	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
	STATION	ELEVATION	10-YEAR	100-YEAR					SLOPE	A-ZONES
OF	666.000	-15.446	0.000	9.028	0.000	0.000	0.000	0.000	0.124	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
	STATION	ELEVATION	10-YEAR	100-YEAR					SLOPE	A-ZONES
OF	667.000	-15.322	0.000	9.028	0.000	0.000	0.000	0.000	0.124	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
	STATION	ELEVATION	10-YEAR	100-YEAR					SLOPE	A-ZONES
OF	669.000	-15.074	0.000	9.028	0.000	0.000	0.000	0.000	0.124	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
	STATION	ELEVATION	10-YEAR	100-YEAR					SLOPE	A-ZONES
OF	670.000	-14.950	0.000	9.028	0.000	0.000	0.000	0.000	0.124	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
	STATION	ELEVATION	10-YEAR	100-YEAR					SLOPE	A-ZONES
OF	672.000	-14.702	0.000	9.028	0.000	0.000	0.000	0.000	0.124	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
	STATION	ELEVATION	10-YEAR	100-YEAR					SLOPE	A-ZONES
OF	673.000	-14.578	0.000	9.028	0.000	0.000	0.000	0.000	0.124	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
	STATION	ELEVATION	10-YEAR	100-YEAR					SLOPE	A-ZONES
OF	675.000	-14.329	0.000	9.028	0.000	0.000	0.000	0.000	0.124	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
	STATION	ELEVATION	10-YEAR	100-YEAR					SLOPE	A-ZONES
OF	676.000	-14.206	0.000	9.028	0.000	0.000	0.000	0.000	0.124	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
	STATION	ELEVATION	10-YEAR	100-YEAR					SLOPE	A-ZONES
OF	678.000	-13.957	0.000	9.028	0.000	0.000	0.000	0.000	0.124	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
	STATION	ELEVATION	10-YEAR	100-YEAR					SLOPE	A-ZONES
OF	679.000	-13.833	0.000	9.028	0.000	0.000	0.000	0.000	0.124	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
	STATION	ELEVATION	10-YEAR	100-YEAR					SLOPE	A-ZONES
OF	681.000	-13.585	0.000	9.028	0.000	0.000	0.000	0.000	0.124	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
	STATION	ELEVATION	10-YEAR	100-YEAR					SLOPE	A-ZONES
OF	682.000	-13.461	0.000	9.028	0.000	0.000	0.000	0.000	0.124	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
	STATION	ELEVATION	10-YEAR	100-YEAR					SLOPE	A-ZONES
OF	684.000	-13.213	0.000	9.028	0.000	0.000	0.000	0.000	0.124	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
	STATION	ELEVATION	10-YEAR	100-YEAR					SLOPE	A-ZONES
OF	685.000	-13.089	0.000	9.028	0.000	0.000	0.000	0.000	0.124	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
	STATION	ELEVATION	10-YEAR	100-YEAR					SLOPE	A-ZONES
OF	687.000	-12.841	0.000	9.028	0.000	0.000	0.000	0.000	0.124	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
	STATION	ELEVATION	10-YEAR	100-YEAR					SLOPE	A-ZONES
OF	688.000	-12.717	0.000	9.028	0.000	0.000	0.000	0.000	0.124	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
	STATION	ELEVATION	10-YEAR	100-YEAR					SLOPE	A-ZONES
OF	690.000	-12.469	0.000	9.028	0.000	0.000	0.000	0.000	0.124	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
	STATION	ELEVATION	10-YEAR	100-YEAR					SLOPE	A-ZONES
OF	691.000	-12.345	0.000	9.028	0.000	0.000	0.000	0.000	0.124	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
	STATION	ELEVATION	10-YEAR	100-YEAR					SLOPE	A-ZONES
OF	694.000	-11.972	0.000	9.028	0.000	0.000	0.000	0.000	0.124	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
	STATION	ELEVATION	10-YEAR	100-YEAR					SLOPE	A-ZONES
OF	696.000	-11.725	0.000	9.029	0.000	0.000	0.000	0.000	0.124	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
	STATION	ELEVATION	10-YEAR	100-YEAR					SLOPE	A-ZONES
OF	697.000	-11.600	0.000	9.029	0.000	0.000	0.000	0.000	0.124	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
	STATION	ELEVATION	10-YEAR	100-YEAR					SLOPE	A-ZONES
OF	702.000	-10.980	0.000	9.029	0.000	0.000	0.000	0.000	0.124	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
	STATION	ELEVATION	10-YEAR	100-YEAR					SLOPE	A-ZONES
OF	703.000	-10.856	0.000	9.029	0.000	0.000	0.000	0.000	0.124	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
	STATION	ELEVATION	10-YEAR	100-YEAR					SLOPE	A-ZONES
OF	708.000	-10.236	0.000	9.029	0.000	0.000	0.000	0.000	0.124	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
	STATION	ELEVATION	10-YEAR	100-YEAR					SLOPE	A-ZONES
OF	709.000	-10.112	0.000	9.029	0.000	0.000	0.000	0.000	0.124	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
	STATION	ELEVATION	10-YEAR	100-YEAR					SLOPE	A-ZONES
OF	714.000	-9.492	0.000	9.029	0.000	0.000	0.000	0.000	0.124	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
	STATION	ELEVATION	10-YEAR	100-YEAR					SLOPE	A-ZONES
OF	715.000	-9.368	0.000	9.029	0.000	0.000	0.000	0.000	0.124	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
	STATION	ELEVATION	10-YEAR	100-YEAR					SLOPE	A-ZONES
OF	720.000	-8.748	0.000	9.029	0.000	0.000	0.000	0.000	0.124	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
	STATION	ELEVATION	10-YEAR	100-YEAR					SLOPE	A-ZONES
OF	721.000	-8.624	0.000	9.029	0.000	0.000	0.000	0.000	0.137	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
	STATION	ELEVATION	10-YEAR	100-YEAR					SLOPE	A-ZONES
OF	726.000	-7.928	0.000	9.029	0.000	0.000	0.000	0.000	0.140	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
	STATION	ELEVATION	10-YEAR	100-YEAR					SLOPE	A-ZONES
OF	727.000	-7.782	0.000	9.029	0.000	0.000	0.000	0.000	0.146	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
	STATION	ELEVATION	10-YEAR	100-YEAR					SLOPE	A-ZONES
OF	732.000	-7.051	0.000	9.029	0.000	0.000	0.000	0.000	0.146	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
	STATION	ELEVATION	10-YEAR	100-YEAR					SLOPE	A-ZONES
OF	733.000	-6.905	0.000	9.029	0.000	0.000	0.000	0.000	0.146	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
	STATION	ELEVATION	10-YEAR	100-YEAR					SLOPE	A-ZONES
OF	738.000	-6.175	0.000	9.030	0.000	0.000	0.000	0.000	0.146	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
	STATION	ELEVATION	10-YEAR	100-YEAR					SLOPE	A-ZONES
OF	739.000	-6.029	0.000	9.030	0.000	0.000	0.000	0.000	0.146	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
	STATION	ELEVATION	10-YEAR	100-YEAR					SLOPE	A-ZONES
OF	750.000	-4.422	0.000	9.030	0.000	0.000	0.000	0.000	0.146	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE

OF	STATION	ELEVATION	10-YEAR	100-YEAR					SLOPE	A-ZONES
	751.000	-4.276	0.000	9.030	0.000	0.000	0.000	0.000	0.123	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
IF	STATION	ELEVATION	10-YEAR	100-YEAR					SLOPE	A-ZONES
	796.000	1.214	0.000	9.031	0.000	0.000	0.000	0.000	0.135	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
IF	STATION	ELEVATION	10-YEAR	100-YEAR					SLOPE	A-ZONES
	805.000	3.018	0.000	9.031	0.000	0.000	0.000	0.000	0.447	0.000
	END	END	NEW SURGE	NEW SURGE					BOTTOM	AVERAGE
IF	STATION	ELEVATION	10-YEAR	100-YEAR					SLOPE	A-ZONES
	813.500	9.031	0.000	9.031	0.000	0.000	0.000	0.000	0.707	0.000

-----END OF TRANSECT-----

NOTE:

SURGE ELEVATION INCLUDES CONTRIBUTIONS FROM ASTRONOMICAL AND STORM TIDES.

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PART2: CONTROLLING WAVE HEIGHTS, SPECTRAL			
PEAK WAVE PERIOD, AND WAVE CREST ELEVATIONS			
LOCATION	CONTROLLING	SPECTRAL PEAK	WAVE CREST
	WAVE HEIGHT	WAVE PERIOD	ELEVATION
IE	0.00	4.70	6.94
OF	79.00	4.72	6.94
OF	80.00	4.72	6.94
OF	81.00	4.72	6.94
OF	82.00	4.72	6.94
OF	83.00	4.72	6.94
OF	84.00	4.72	6.94
OF	85.00	4.72	6.94
OF	86.00	4.72	6.94
OF	87.00	4.72	6.94
OF	88.00	4.72	6.94
OF	89.00	4.72	6.94
OF	90.00	4.72	6.94
OF	91.00	4.72	6.94
OF	92.00	4.72	6.94
OF	93.00	4.72	6.94
OF	94.00	4.72	6.94
OF	95.00	4.72	6.94
OF	96.00	4.72	6.94
OF	97.00	4.72	6.94
OF	98.00	4.72	6.94
OF	99.00	4.72	6.94
OF	100.00	4.72	6.94
OF	101.00	4.72	6.94
OF	102.00	4.72	6.94
OF	103.00	4.72	6.94
OF	104.00	4.72	6.94
OF	105.00	4.72	6.94
OF	106.00	4.72	6.94
OF	107.00	4.72	6.94
OF	108.00	4.72	6.94
OF	109.00	4.72	6.94
OF	110.00	4.72	6.94
OF	111.00	4.72	6.94
OF	112.00	4.72	6.94
OF	113.00	4.73	6.94
OF	114.00	4.73	6.94
OF	115.00	4.73	6.94
OF	116.00	4.73	6.94
OF	117.00	4.73	6.94
OF	118.00	4.73	6.94
OF	119.00	4.73	6.94
OF	120.00	4.73	6.94
OF	121.00	4.73	6.94
OF	122.00	4.73	6.94
OF	123.00	4.73	6.94
OF	126.00	4.73	6.94
OF	164.00	4.74	6.94
OF	165.00	4.74	6.94
OF	166.00	4.74	6.94
OF	167.00	4.74	6.94
OF	168.00	4.74	6.94
OF	169.00	4.74	6.94
OF	170.00	4.74	6.94
OF	171.00	4.74	6.94
OF	172.00	4.74	6.94
OF	173.00	4.75	6.94
OF	174.00	4.75	6.94
OF	175.00	4.75	6.94
OF	176.00	4.75	6.94
OF	177.00	4.75	6.94
OF	178.00	4.75	6.94
OF	179.00	4.75	6.94
OF	180.00	4.75	6.94
OF	181.00	4.75	6.94
OF	182.00	4.75	6.94
OF	183.00	4.75	6.94
OF	184.00	4.75	6.94
OF	185.00	4.75	6.94
OF	186.00	4.75	6.94
OF	187.00	4.75	6.94
OF	188.00	4.75	6.94
OF	189.00	4.75	6.94
OF	191.00	4.75	6.94
OF	192.00	4.75	6.94
OF	194.00	4.75	6.94
OF	195.00	4.75	6.94
OF	197.00	4.75	6.94
OF	198.00	4.75	6.94
OF	200.00	4.75	6.94
OF	201.00	4.75	6.94
OF	203.00	4.75	6.94
OF	204.00	4.76	6.94
OF	206.00	4.76	6.94
OF	207.00	4.76	6.94
OF	209.00	4.76	6.94
OF	210.00	4.76	6.94
OF	212.00	4.76	6.94
OF	213.00	4.76	6.94
OF	215.00	4.76	6.94
OF	216.00	4.76	6.94

OF	218.00	4.76	6.94	12.36
OF	219.00	4.76	6.94	12.36
OF	221.00	4.76	6.94	12.36
OF	222.00	4.76	6.94	12.36
OF	224.00	4.76	6.94	12.36
OF	225.00	4.76	6.94	12.36
OF	227.00	4.76	6.94	12.36
OF	228.00	4.76	6.94	12.36
OF	230.00	4.76	6.94	12.36
OF	231.00	4.76	6.94	12.36
OF	233.00	4.77	6.94	12.36
OF	234.00	4.77	6.94	12.36
OF	236.00	4.77	6.94	12.36
OF	237.00	4.77	6.94	12.36
OF	239.00	4.77	6.94	12.36
OF	240.00	4.77	6.94	12.36
OF	242.00	4.77	6.94	12.37
OF	243.00	4.77	6.94	12.37
OF	245.00	4.77	6.94	12.37
OF	246.00	4.77	6.94	12.37
OF	248.00	4.77	6.94	12.37
OF	249.00	4.77	6.94	12.37
OF	251.00	4.77	6.94	12.37
OF	252.00	4.77	6.94	12.37
OF	255.00	4.77	6.94	12.37
OF	256.00	4.77	6.94	12.37
OF	258.00	4.78	6.94	12.37
OF	259.00	4.78	6.94	12.37
OF	261.00	4.78	6.94	12.37
OF	262.00	4.78	6.94	12.37
OF	264.00	4.78	6.94	12.37
OF	265.00	4.78	6.94	12.37
OF	267.00	4.78	6.94	12.37
OF	268.00	4.78	6.94	12.37
OF	270.00	4.78	6.94	12.37
OF	271.00	4.78	6.94	12.37
OF	273.00	4.78	6.94	12.37
OF	274.00	4.78	6.94	12.37
OF	276.00	4.78	6.94	12.37
OF	277.00	4.78	6.94	12.37
OF	279.00	4.78	6.94	12.38
OF	280.00	4.78	6.94	12.38
OF	282.00	4.78	6.94	12.38
OF	283.00	4.79	6.94	12.38
OF	285.00	4.79	6.94	12.38
OF	286.00	4.79	6.94	12.38
OF	288.00	4.79	6.94	12.38
OF	289.00	4.79	6.94	12.38
OF	291.00	4.79	6.94	12.38
OF	292.00	4.79	6.94	12.38
OF	294.00	4.79	6.94	12.38
OF	295.00	4.79	6.94	12.38
OF	297.00	4.79	6.94	12.38
OF	298.00	4.79	6.94	12.38
OF	300.00	4.79	6.94	12.38
OF	301.00	4.79	6.94	12.38
OF	303.00	4.79	6.94	12.38
OF	304.00	4.79	6.94	12.38
OF	306.00	4.79	6.94	12.38
OF	307.00	4.79	6.94	12.38
OF	309.00	4.80	6.94	12.38
OF	310.00	4.80	6.94	12.38
OF	312.00	4.80	6.94	12.38
OF	313.00	4.80	6.94	12.39
OF	315.00	4.80	6.94	12.39
OF	316.00	4.80	6.94	12.39
OF	318.00	4.80	6.94	12.39
OF	319.00	4.80	6.94	12.39
OF	321.00	4.80	6.94	12.39
OF	322.00	4.80	6.94	12.39
OF	324.00	4.80	6.94	12.39
OF	325.00	4.80	6.94	12.39
OF	327.00	4.80	6.94	12.39
OF	328.00	4.80	6.94	12.39
OF	330.00	4.80	6.94	12.39
OF	331.00	4.80	6.94	12.39
OF	333.00	4.81	6.94	12.39
OF	334.00	4.81	6.94	12.39
OF	336.00	4.81	6.94	12.39
OF	337.00	4.81	6.94	12.39
OF	339.00	4.81	6.94	12.39
OF	340.00	4.81	6.94	12.39
OF	342.00	4.81	6.94	12.39
OF	343.00	4.81	6.94	12.39
OF	345.00	4.81	6.94	12.40
OF	346.00	4.81	6.94	12.40
OF	348.00	4.81	6.94	12.40
OF	349.00	4.81	6.94	12.40
OF	351.00	4.81	6.94	12.40
OF	352.00	4.81	6.94	12.40
OF	354.00	4.81	6.94	12.40
OF	355.00	4.81	6.94	12.40
OF	357.00	4.82	6.94	12.40
OF	358.00	4.82	6.94	12.40
OF	360.00	4.82	6.94	12.40
OF	361.00	4.82	6.94	12.40
OF	363.00	4.82	6.94	12.40
OF	364.00	4.82	6.94	12.40
OF	366.00	4.82	6.94	12.40
OF	367.00	4.82	6.94	12.40
OF	369.00	4.82	6.94	12.40
OF	370.00	4.82	6.94	12.40
OF	372.00	4.82	6.94	12.40
OF	373.00	4.82	6.94	12.40
OF	375.00	4.82	6.94	12.40
OF	376.00	4.82	6.94	12.40
OF	378.00	4.82	6.94	12.40
OF	379.00	4.82	6.94	12.40
OF	381.00	4.83	6.94	12.41
OF	382.00	4.83	6.94	12.41

	384.00	4.83	6.94	12.41
OF	385.00	4.83	6.94	12.41
OF	387.00	4.83	6.94	12.41
OF	388.00	4.83	6.94	12.41
OF	398.00	4.82	6.94	12.40
OF	399.00	4.82	6.94	12.40
OF	400.00	4.82	6.94	12.40
OF	401.00	4.82	6.94	12.40
OF	402.00	4.82	6.94	12.40
OF	403.00	4.82	6.94	12.40
OF	404.00	4.82	6.94	12.40
OF	405.00	4.82	6.94	12.40
OF	407.00	4.82	6.94	12.40
OF	408.00	4.82	6.94	12.40
OF	409.00	4.82	6.94	12.40
OF	410.00	4.82	6.94	12.40
OF	411.00	4.82	6.94	12.40
OF	412.00	4.82	6.94	12.40
OF	413.00	4.82	6.94	12.40
OF	414.00	4.82	6.94	12.40
OF	415.00	4.82	6.94	12.40
OF	416.00	4.82	6.94	12.40
OF	417.00	4.82	6.94	12.40
OF	418.00	4.82	6.94	12.40
OF	419.00	4.82	6.95	12.40
OF	420.00	4.82	6.95	12.40
OF	421.00	4.82	6.95	12.40
OF	422.00	4.82	6.95	12.40
OF	423.00	4.82	6.95	12.40
OF	424.00	4.82	6.95	12.40
OF	425.00	4.82	6.95	12.40
OF	426.00	4.82	6.95	12.40
OF	427.00	4.82	6.95	12.40
OF	428.00	4.82	6.95	12.40
OF	429.00	4.82	6.95	12.41
OF	430.00	4.82	6.95	12.41
OF	431.00	4.83	6.95	12.41
OF	432.00	4.83	6.95	12.41
OF	433.00	4.83	6.95	12.41
OF	434.00	4.83	6.95	12.41
OF	435.00	4.83	6.95	12.41
OF	436.00	4.83	6.95	12.41
OF	437.00	4.83	6.95	12.41
OF	438.00	4.83	6.95	12.41
OF	439.00	4.83	6.95	12.41
OF	440.00	4.83	6.95	12.41
OF	441.00	4.83	6.95	12.41
OF	442.00	4.83	6.95	12.41
OF	443.00	4.83	6.95	12.41
OF	444.00	4.83	6.95	12.41
OF	445.00	4.83	6.95	12.41
OF	446.00	4.83	6.95	12.41
OF	447.00	4.83	6.95	12.41
OF	448.00	4.83	6.95	12.41
OF	449.00	4.83	6.95	12.41
OF	450.00	4.83	6.95	12.41
OF	451.00	4.83	6.95	12.41
OF	452.00	4.83	6.95	12.41
OF	453.00	4.83	6.95	12.41
OF	454.00	4.83	6.95	12.41
OF	455.00	4.83	6.95	12.41
OF	456.00	4.83	6.95	12.41
OF	457.00	4.83	6.95	12.41
OF	458.00	4.83	6.95	12.41
OF	459.00	4.83	6.95	12.41
OF	460.00	4.83	6.95	12.41
OF	461.00	4.83	6.95	12.41
OF	462.00	4.83	6.95	12.41
OF	463.00	4.83	6.95	12.41
OF	464.00	4.84	6.95	12.41
OF	465.00	4.84	6.95	12.41
OF	466.00	4.84	6.95	12.41
OF	467.00	4.84	6.95	12.41
OF	468.00	4.84	6.95	12.41
OF	469.00	4.84	6.95	12.41
OF	470.00	4.84	6.95	12.41
OF	471.00	4.84	6.95	12.41
OF	472.00	4.84	6.95	12.41
OF	473.00	4.84	6.95	12.41
OF	474.00	4.84	6.95	12.41
OF	475.00	4.84	6.95	12.41
OF	476.00	4.84	6.95	12.42
OF	477.00	4.84	6.95	12.42
OF	478.00	4.84	6.95	12.42
OF	479.00	4.84	6.95	12.42
OF	480.00	4.84	6.95	12.42
OF	481.00	4.84	6.95	12.42
OF	482.00	4.84	6.95	12.42
OF	483.00	4.84	6.95	12.42
OF	484.00	4.84	6.95	12.42
OF	485.00	4.84	6.95	12.42
OF	486.00	4.84	6.95	12.42
OF	487.00	4.84	6.95	12.42
OF	488.00	4.84	6.95	12.42
OF	489.00	4.84	6.95	12.42
OF	490.00	4.84	6.95	12.42
OF	491.00	4.84	6.95	12.42
OF	492.00	4.84	6.95	12.42
OF	493.00	4.84	6.95	12.42
OF	494.00	4.84	6.95	12.42
OF	495.00	4.84	6.95	12.42
OF	496.00	4.85	6.95	12.42
OF	497.00	4.85	6.95	12.42
OF	498.00	4.85	6.95	12.42
OF	499.00	4.85	6.95	12.42
OF	500.00	4.85	6.95	12.42
OF	501.00	4.85	6.95	12.42
OF	502.00	4.85	6.95	12.42
OF	503.00	4.85	6.95	12.42
OF	504.00	4.85	6.95	12.42

OF	505.00	4.85	6.95	12.42
OF	506.00	4.85	6.95	12.42
OF	507.00	4.85	6.95	12.42
OF	508.00	4.85	6.95	12.42
OF	509.00	4.85	6.95	12.42
OF	510.00	4.85	6.95	12.42
OF	511.00	4.85	6.95	12.42
OF	512.00	4.85	6.95	12.42
OF	513.00	4.85	6.95	12.42
OF	514.00	4.85	6.95	12.42
OF	515.00	4.85	6.95	12.42
OF	516.00	4.85	6.95	12.42
OF	517.00	4.85	6.95	12.42
OF	518.00	4.85	6.95	12.43
OF	519.00	4.85	6.95	12.43
OF	520.00	4.85	6.95	12.43
OF	521.00	4.85	6.95	12.43
OF	522.00	4.85	6.95	12.43
OF	523.00	4.85	6.95	12.43
OF	524.00	4.85	6.95	12.43
OF	525.00	4.85	6.95	12.43
OF	526.00	4.85	6.95	12.43
OF	527.00	4.85	6.95	12.43
OF	528.00	4.85	6.95	12.43
OF	529.00	4.86	6.95	12.43
OF	530.00	4.86	6.95	12.43
OF	531.00	4.86	6.95	12.43
OF	532.00	4.86	6.95	12.43
OF	533.00	4.86	6.95	12.43
OF	534.00	4.86	6.95	12.43
OF	535.00	4.86	6.95	12.43
OF	536.00	4.86	6.95	12.43
OF	537.00	4.86	6.95	12.43
OF	538.00	4.86	6.95	12.43
OF	539.00	4.86	6.95	12.43
OF	540.00	4.86	6.95	12.43
OF	541.00	4.86	6.95	12.43
OF	542.00	4.86	6.95	12.43
OF	543.00	4.86	6.95	12.43
OF	544.00	4.86	6.95	12.43
OF	545.00	4.86	6.95	12.43
OF	546.00	4.86	6.95	12.43
OF	547.00	4.86	6.95	12.43
OF	548.00	4.86	6.95	12.43
OF	549.00	4.86	6.95	12.43
OF	550.00	4.86	6.95	12.43
OF	551.00	4.86	6.95	12.43
OF	552.00	4.86	6.95	12.43
OF	553.00	4.86	6.95	12.43
OF	554.00	4.86	6.95	12.43
OF	555.00	4.86	6.95	12.43
OF	556.00	4.86	6.95	12.43
OF	557.00	4.86	6.95	12.43
OF	558.00	4.86	6.95	12.43
OF	559.00	4.86	6.95	12.43
OF	560.00	4.86	6.95	12.43
OF	561.00	4.86	6.95	12.43
OF	562.00	4.87	6.95	12.43
OF	563.00	4.87	6.95	12.43
OF	564.00	4.87	6.95	12.44
OF	565.00	4.87	6.95	12.44
OF	566.00	4.87	6.95	12.44
OF	567.00	4.87	6.95	12.44
OF	568.00	4.87	6.95	12.44
OF	569.00	4.87	6.95	12.44
OF	570.00	4.87	6.95	12.44
OF	571.00	4.87	6.95	12.44
OF	572.00	4.87	6.95	12.44
OF	573.00	4.87	6.95	12.44
OF	574.00	4.87	6.95	12.44
OF	575.00	4.87	6.95	12.44
OF	576.00	4.87	6.95	12.44
OF	577.00	4.87	6.95	12.44
OF	578.00	4.87	6.95	12.44
OF	579.00	4.87	6.95	12.44
OF	580.00	4.87	6.95	12.44
OF	581.00	4.87	6.95	12.44
OF	582.00	4.87	6.95	12.44
OF	583.00	4.87	6.95	12.44
OF	584.00	4.87	6.95	12.44
OF	585.00	4.87	6.95	12.44
OF	586.00	4.87	6.95	12.44
OF	587.00	4.87	6.95	12.44
OF	588.00	4.87	6.95	12.44
OF	589.00	4.87	6.95	12.44
OF	590.00	4.87	6.95	12.44
OF	591.00	4.87	6.95	12.44
OF	592.00	4.87	6.95	12.44
OF	593.00	4.87	6.95	12.44
OF	594.00	4.88	6.95	12.44
OF	595.00	4.88	6.95	12.44
OF	596.00	4.88	6.95	12.44
OF	597.00	4.88	6.95	12.44
OF	598.00	4.88	6.95	12.44
OF	599.00	4.88	6.95	12.44
OF	600.00	4.88	6.95	12.44
OF	601.00	4.88	6.95	12.44
OF	602.00	4.88	6.95	12.44
OF	603.00	4.88	6.95	12.44
OF	604.00	4.88	6.95	12.44
OF	605.00	4.88	6.95	12.44
OF	606.00	4.88	6.95	12.44
OF	607.00	4.88	6.95	12.44
OF	608.00	4.88	6.95	12.44
OF	609.00	4.88	6.95	12.44
OF	610.00	4.88	6.95	12.44
OF	611.00	4.88	6.95	12.44
OF	612.00	4.88	6.95	12.44
OF	613.00	4.88	6.95	12.44
OF	614.00	4.88	6.95	12.44

OF	615.00	4.88	6.95	12.44
OF	616.00	4.88	6.95	12.45
OF	618.00	4.88	6.95	12.45
OF	619.00	4.88	6.95	12.45
OF	621.00	4.88	6.95	12.45
OF	622.00	4.88	6.95	12.45
OF	624.00	4.88	6.95	12.45
OF	625.00	4.88	6.95	12.45
OF	627.00	4.89	6.95	12.45
OF	628.00	4.89	6.95	12.45
OF	630.00	4.89	6.95	12.45
OF	631.00	4.89	6.95	12.45
OF	633.00	4.89	6.95	12.45
OF	634.00	4.89	6.95	12.45
OF	636.00	4.89	6.95	12.45
OF	637.00	4.89	6.95	12.45
OF	639.00	4.89	6.95	12.45
OF	640.00	4.89	6.95	12.45
OF	642.00	4.89	6.95	12.45
OF	643.00	4.89	6.95	12.45
OF	645.00	4.89	6.95	12.45
OF	646.00	4.89	6.95	12.45
OF	648.00	4.89	6.95	12.45
OF	649.00	4.89	6.95	12.45
OF	651.00	4.89	6.95	12.45
OF	652.00	4.89	6.95	12.45
OF	654.00	4.89	6.95	12.45
OF	655.00	4.89	6.95	12.45
OF	657.00	4.90	6.95	12.46
OF	658.00	4.90	6.95	12.46
OF	660.00	4.91	6.95	12.46
OF	661.00	4.91	6.95	12.47
OF	663.00	4.92	6.95	12.47
OF	664.00	4.92	6.95	12.47
OF	666.00	4.93	6.95	12.48
OF	667.00	4.94	6.95	12.48
OF	669.00	4.94	6.95	12.49
OF	670.00	4.95	6.95	12.49
OF	672.00	4.96	6.95	12.50
OF	673.00	4.96	6.95	12.50
OF	675.00	4.97	6.95	12.51
OF	676.00	4.97	6.95	12.51
OF	678.00	4.98	6.95	12.52
OF	679.00	4.99	6.95	12.52
OF	681.00	5.00	6.95	12.53
OF	682.00	5.00	6.95	12.53
OF	684.00	5.01	6.95	12.54
OF	685.00	5.02	6.95	12.54
OF	687.00	5.03	6.95	12.55
OF	688.00	5.03	6.95	12.55
OF	690.00	5.04	6.95	12.56
OF	691.00	5.05	6.95	12.56
OF	694.00	5.07	6.95	12.57
OF	696.00	5.08	6.95	12.58
OF	697.00	5.08	6.95	12.59
OF	702.00	5.11	6.95	12.61
OF	703.00	5.12	6.95	12.61
OF	708.00	5.15	6.95	12.64
OF	709.00	5.16	6.95	12.64
OF	714.00	5.20	6.95	12.67
OF	715.00	5.20	6.95	12.67
OF	720.00	5.24	6.95	12.70
OF	721.00	5.25	6.95	12.70
OF	726.00	5.30	6.95	12.74
OF	727.00	5.31	6.95	12.74
OF	732.00	5.36	6.95	12.78
OF	733.00	5.37	6.95	12.79
OF	738.00	5.43	6.95	12.83
OF	739.00	5.45	6.95	12.84
OF	750.00	5.60	6.95	12.95
OF	751.00	5.62	6.95	12.96
IF	796.00	5.69	6.95	13.01
IF	805.00	4.52	6.95	12.19
IF	813.50	0.01	6.95	9.04

PART3 LOCATION OF AREAS ABOVE 100-YEAR SURGE
NO AREAS ABOVE 100-YEAR SURGE IN THIS TRANSECT

PART4 LOCATION OF SURGE CHANGES

STATION	10-YEAR SURGE	100-YEAR SURGE
345.00	1.00	9.03
497.00	1.00	9.03
577.00	1.00	9.03
696.00	1.00	9.03
738.00	1.00	9.03
796.00	1.00	9.03

PART5 LOCATION OF V ZONES

STATION OF GUTTER	LOCATION OF ZONE
807.86	WINDWARD

PART6 NUMBERED A ZONES AND V ZONES

STATION OF GUTTER	ELEVATION	ZONE DESIGNATION	FHF
0.00	12.32		
343.00	12.39	V22 EL=12	120
345.00	12.40	V22 EL=12	120
496.00	12.42	V22 EL=12	120
497.00	12.42	V22 EL=12	120
576.00	12.44	V22 EL=12	120
577.00	12.44	V22 EL=12	120
672.80	12.50	V22 EL=13	120
694.00	12.57	V22 EL=13	120
696.00	12.58	V22 EL=13	120
733.00	12.79	V22 EL=13	120

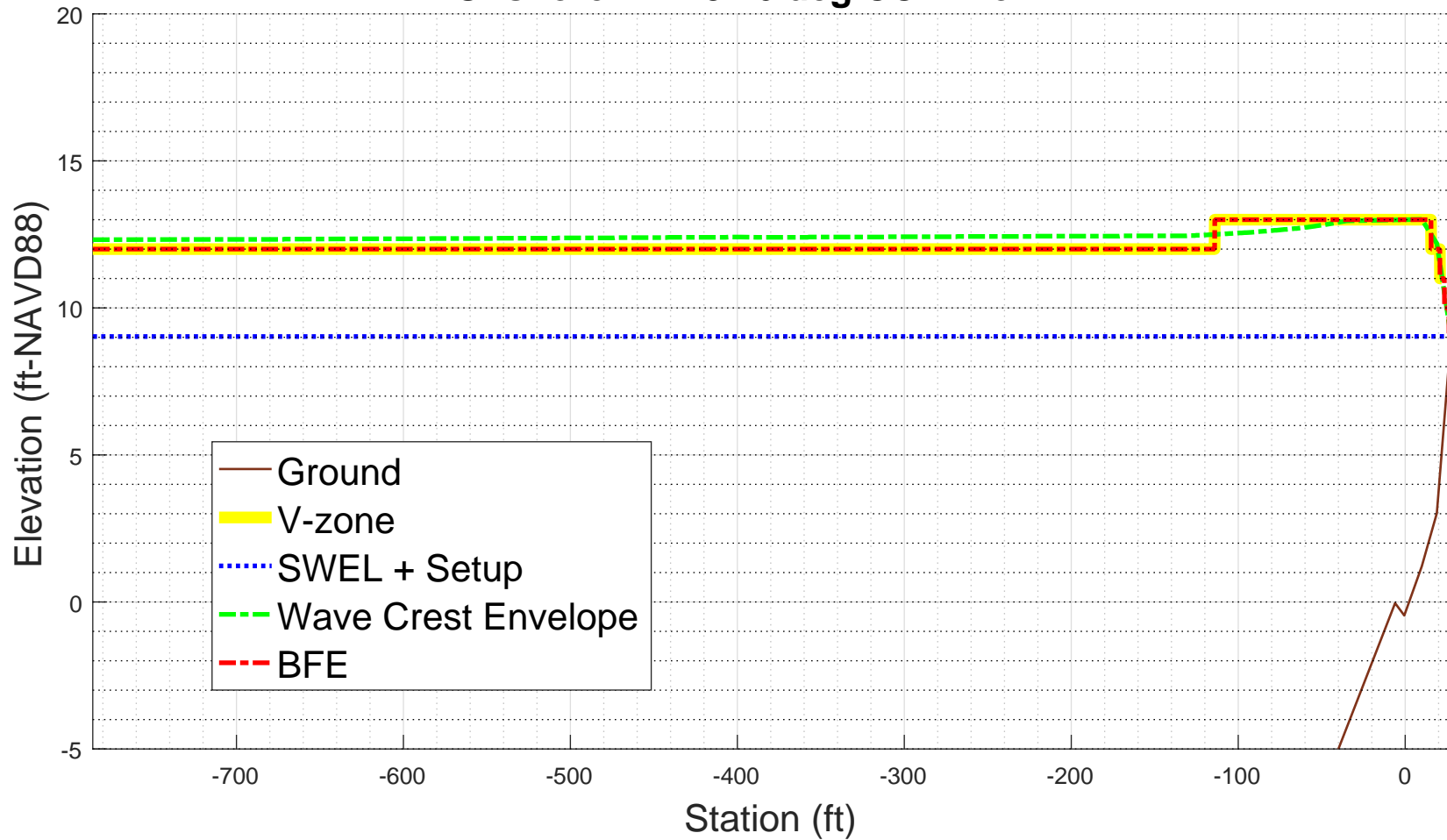
738.00	12.83	V22	EL=13	120
751.00	12.96	V22	EL=13	120
796.00	13.01	V22	EL=13	120
801.63	12.50	V22	EL=13	120
806.87	11.50	V22	EL=12	120
807.86	11.13	V22	EL=11	120
809.56	10.50	A18	EL=11	90
812.25	9.50	A18	EL=10	90
813.50	9.04	A18	EL= 9	90

ZONE TERMINATED AT END OF TRANSECT
PART 7 POSTSCRIPT NOTES

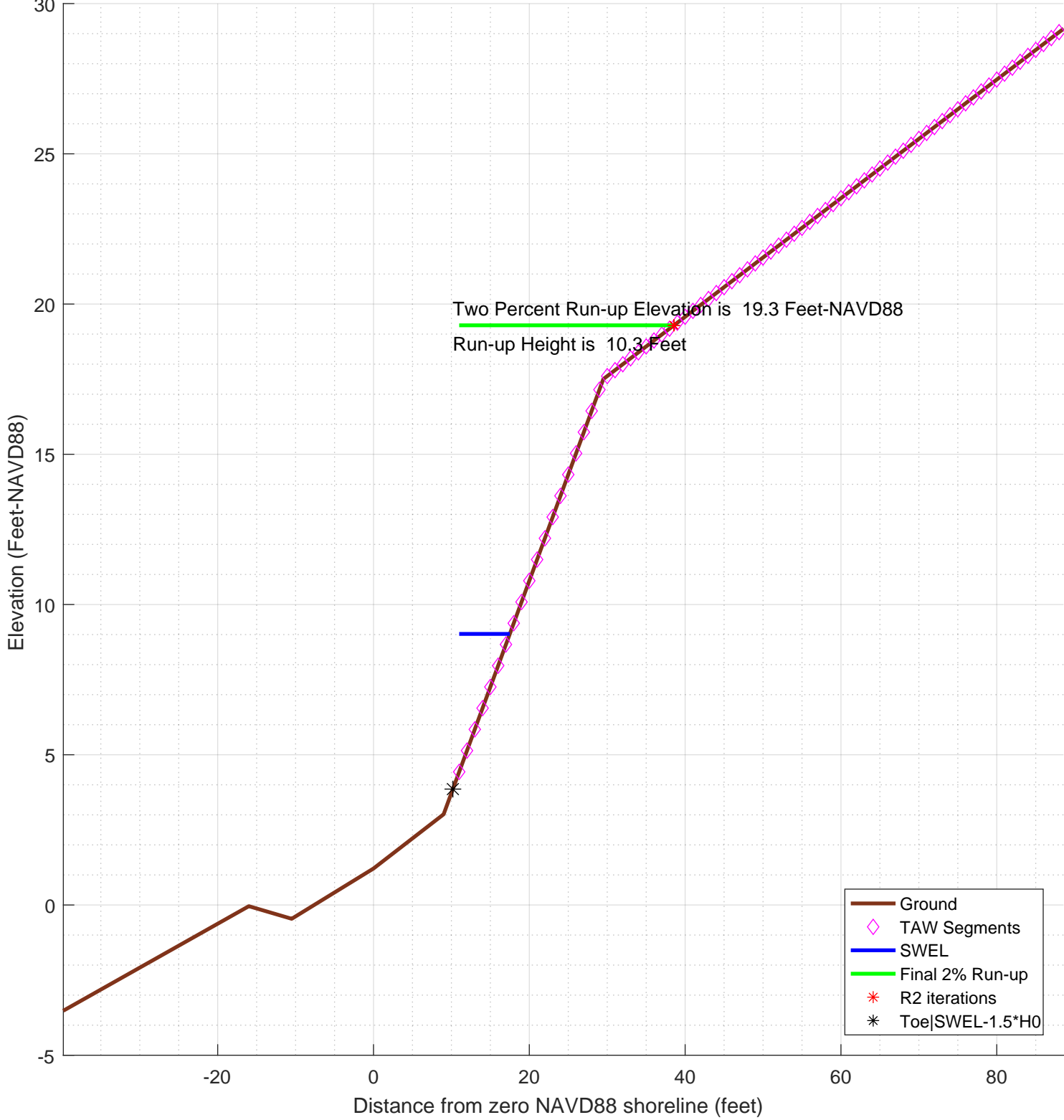
PS# 1 START(361534.0939,4771155.0782)
PS# 2 END(361550.198,4771543.3657)

-1.000000e+00

YK-07
100-year WHAFIS Output
Zero Station: -70.70093611, 43.08262722
Onshore Dir: 87.6 deg CCW from E



Iterative TAW for YK-07



```

diary on          % begin recording

% FEMA appeal for The Town of Harpswell, Cumberland county, Maine
% TRANSECT ID: YK-07
% calculation by SJH, Ransom Consulting, Inc. 06-Feb-2020
% 100-year wave runup using TAW methodology
% including berm and weighted average with foreshore if necessary
%
% chk nld 20181015
%
% 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='infiles/YK-07sta_ele_include.csv'; % file with station, elevation, include
% third column is 0 for excluded points
imgname='logfiles/YK-07-runup';
SWEL=9.0273; % 100-yr still water level including wave setup.
H0=3.4318; % significant wave height at toe of structure
Tp=6.9867; % peak period, 1/fma,
T0=Tp/1.1;

gamma_berm=1; % this may get changed automatically below
gamma_rough=0.85;
gamma_beta=1;
gamma_perm=1;

setupAtToe=-0.02211;
maxSetup=0; % only used in case of berm/shallow foreshore weighted average

plotTitle='Iterative TAW for YK-07'

plotTitle =

Iterative TAW for YK-07

% END CONFIG
%-----

SWEL=SWEL+setupAtToe

SWEL =

          9.00519

SWEL_fore=SWEL+maxSetup

SWEL_fore =

          9.00519

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

L0 =

          206.423876616238

% 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 consistent with TAW guidance should be performed
% prior to the input of the significant wave height given above.
Ztoe=SWEL-1.5*H0

Ztoe =

```

3.85749

```
% 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 =
```

14.15289

```
% 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 =
```

10.1875736822813

```
top_sta =
```

24.7583051341601

```
% 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 =
```

24.7583051341601

```
toe_sta
```

```
toe_sta =
```

10.1875736822813

```
% 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',de
    sprintf('-!!- This may be reasonable for some cases. However the user may want to consider:\\n')
    sprintf('-!!- 1) Selecting a starting point that is at or below %4.2f feet elevation, or\\n', Ztoe)
    sprintf('-!!- 2) Reducing the incident wave height to a depth limited condition.\\n')
```

```

end

ans =

-!!- Location of SWEL-1.5*H0 is 28.5 ft landward of toe of slope

ans =

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

ans =

-!!-      setup is adjusted to -0.01 feet

ans =

-!!-      SWEL is adjusted to 9.02 feet

k =

```

```

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22

```

```

% now iterate converge on a runup elevation
tol=0.001; % 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
end

```

```

% 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('!!! - - Iribarren number: %6.2f is outside the valid range (0.5-10), TAW NOT VALID - - !!!\n', Irb)
    TAW_VALID=0;
else
    sprintf('!!! - - Iribarren number: %6.2f is in the valid range (0.5-10), TAW RECOMMENDED - - !!!\n', Irb*gamma_berm)
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')
    % 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
    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 =

        3.85749

toe_sta =

        10.1875736822813

top_sta =

        24.7583051341601

Z2 =

        14.15289

H0 =

        3.4318

Tp =

        6.9867

T0 =

        6.35154545454545

R2 =

        10.2954

Z2 =

        19.3170427184004

```

```

top_sta =
    38.6897861781059

Lslope =
    28.5022124958246

ans =
!----- End Berm Factor Calculation, Iter: 1 -----!

berm_width =
    0

rB =
    0

rdh_mean =
    1

gamma_berm =
    1

slope =
    0.542398339099645

Irb =
    4.20665921551532

gamma_berm =
    1

gamma_perm =
    1

gamma_beta =
    1

gamma_rough =
    0.85

gamma =
    0.85

ans =
!!! - - Iribaren number: 4.21 is in the valid range (0.5-10), TAW RECOMMENDED - - !!!

ans =
!!! - - slope: 1:1.8 V:H is in the valid range (1:8 - 1:1), TAW RECOMMENDED - - !!!

R2_new =
    10.2676484514331

R2del =
    0.0277515485668882

Z2 =
    19.2892911698335

```

```
top_sta =
    38.5491780320696

ans =
!----- STARTING ITERATION 2 -----!

Ztoe =
    3.85749

toe_sta =
    10.1875736822813

top_sta =
    38.5491780320696

Z2 =
    19.2892911698335

H0 =
    3.4318

Tp =
    6.9867

T0 =
    6.35154545454545

R2 =
    10.2676484514331

Z2 =
    19.2892911698335

top_sta =
    38.5491780320696

Lslope =
    28.3616043497883

ans =
!----- End Berm Factor Calculation, Iter: 2 -----!

berm_width =
    0

rB =
    0

rdh_mean =
    1

gamma_berm =
    1

slope =
    0.544108893823867
```



```

Irb =
    4.2199257030312

gamma_berm =
    1

gamma_perm =
    1

gamma_beta =
    1

gamma_rough =
    0.85

gamma =
    0.85

ans =
!!! - - Iribaren number: 4.22 is in the valid range (0.5-10), TAW RECOMMENDED - - !!!

ans =
!!! - - slope: 1:1.8 V:H is in the valid range (1:8 - 1:1), TAW RECOMMENDED - - !!!

R2_new =
    10.2712282212256

R2del =
    0.00357976979249308

Z2 =
    19.292870939626

top_sta =
    38.567315571045

ans =
!----- STARTING ITERATION 3 -----!

Ztoe =
    3.85749

toe_sta =
    10.1875736822813

top_sta =
    38.567315571045

Z2 =
    19.292870939626

H0 =
    3.4318

Tp =
    6.9867

```

```

T0 =
    6.35154545454545

R2 =
    10.2712282212256

Z2 =
    19.292870939626

top_sta =
    38.567315571045

Lslope =
    28.3797418887637

ans =
!----- End Berm Factor Calculation, Iter: 3 -----!

berm_width =
    0

rB =
    0

rdh_mean =
    1

gamma_berm =
    1

slope =
    0.543887291157404

Irb =
    4.21820702723177

gamma_berm =
    1

gamma_perm =
    1

gamma_beta =
    1

gamma_rough =
    0.85

gamma =
    0.85

ans =
!!! - - Iribaren number: 4.22 is in the valid range (0.5-10), TAW RECOMMENDED - - !!!

ans =
!!! - - slope: 1:1.8 V:H is in the valid range (1:8 - 1:1), TAW RECOMMENDED - - !!!

```

```
R2_new =  
10.2707654137979
```

```
R2del =  
0.000462807427668466
```

```
Z2 =  
19.2924081321983
```

```
top_sta =  
38.5649706750757
```

```
% final 2% runup elevation  
Z2=R2_new+SWEL
```

```
Z2 =  
19.2924081321983
```

```
diary off
```

PART 5: RUNUP2

for transect: YK-07

Station locations shifted by: -7.62 feet from their
original location to set the shoreline to
elevation 0 for RUNUP2 input

RUNUP2 INPUT CONVERSIONS

for transect: YK-07

Incident significant wave height: 2.94 feet

Peak wave period: 6.94 seconds

Mean wave height: 1.84 feet

Local Depth below SWEL: 25.38 feet

Mean wave height deshoaled using Hunt approximation for
celerity assuming constant wave energy flux.

References: R.G. Dean and R.A. Dalrymple. 2000. Water

Wave Mechanics for Engineers and Scientists. World
Scientific Publishing Company, River Edge New Jersey

USACE (1985), Direct Methods for Calculating Wavelength, CETN-1-17
US Army Engineer Waterways Experiment Station Coastal Engineering
Research Center, Vicksburg, MS

also see Coastal Engineering Manual Part II-3
for discussion of shoaling coefficient

Deep water wavelength, L_0 (m)

$$L_0 = gT^2/\pi$$

$$L_0 = 32.17 \times 5.90^2 / 6.28 = 178.04$$

Deep water wave celerity, C_0 (ft/s)

$$C_0 = L_0/T$$

$$C_0 = 178.04 / 5.90 = 30.19$$

Angular frequency, σ (rad/s)

$$\sigma = \pi/T$$

$$\sigma = 6.28 / 5.90 = 1.07$$

Hunts (1979) approximation for Celerity C_{1H} (ft/s) at Depth D (ft)

$$y = \sigma \cdot \sigma \cdot D / g$$

$$y = 1.07 \times 1.07 \times 25.38 / 32.17 = 0.90$$

$$C_{1H} = \sqrt{g \cdot D / (y + 1 / (1 + 0.6522 \cdot y + 0.4622 \cdot y^2 + 0.0864 \cdot y^4 + 0.0675 \cdot y^5))}$$

$$C_{1H} = 24.29$$

Shoaling Coefficient K_sH

$$K_sH = \sqrt{C_0/C_{1H}}$$

$$K_sH = \sqrt{30.19/24.29} = 1.11$$

Deepwater Wave Height H_{0H} (ft)

$$H_{0H} = H/K_sH$$

$$H_{0H} = 1.84 / 1.11 = 1.65$$

Deepwater mean wave height: 1.65 feet

END RUNUP2 CONVERSIONS

RUNUP2 RESULTS

for transect: YK-07

RUNUP2 SWEL:

9.00
9.00
9.00
9.00
9.00
9.00
9.00
9.00
9.00

RUNUP2 deepwater mean wave heights:
1.57

1.57
1.57
1.65
1.65
1.65
1.73
1.73
1.73

RUNUP2 mean wave periods:

5.60
5.90
6.19
5.60
5.90
6.19
5.60
5.90
6.19

RUNUP2 runup above SWEL:

4.18
4.27
4.36
4.41
4.50
4.58
4.61
4.74
4.82

RUNUP2 Mean runup height above SWEL: 4.50 feet

RUNUP2 2-percent runup height above SWEL: 9.89 feet

RUNUP2 2-percent runup elevation: 18.89 feet-NAVD88

RUNUP2 Messages:

No Messages

_____END RUNUP2 RESULTS_____

_____ACES BEACH RUNUP_____

Incident significant wave height: 2.94 feet

Significant wave height deshoaled using Hunt equation

Deepwater significant wave height: 2.31 feet

Peak wave period: 6.94 seconds

Average beach Slope: 1:19.16 (H:V)

ACES RUNUP CALCULATED USING 'Aces_Beach_Runup.m'

ACES Beach 2-percent runup height above SWEL: 2.77 feet

ACES Beach 2-percent runup elevation: 11.77 feet-NAVD88

ACES BEACH RUNUP is valid

_____END ACES BEACH RESULTS_____

PART 5 COMPLETE_____

FEMA
RUNUP2 transect: YK-07
5.00
-16.36 -788.4 1.0
-16.36 -472.4 1.0
-16.35 -471.4 1.0
-16.08 -397.4 1.0
-16.08 -128.4 1.0
-16.07 -127.4 1.0
-13.46 -106.4 1.0
-10.24 -80.4 1.0
-8.50 -66.4 1.0
-8.37 -65.4 1.0
-6.76 -54.4 1.0
-6.32 -51.4 1.0
-2.96 -28.4 1.0
-2.52 -25.4 1.0
-0.04 -8.4 1.0
-0.04 -2.9 1.0
1.21 7.6 1.0
3.02 16.6 1.0
17.50 37.1 1.0
1 30.04 100.6 1.0
9.0 1.57 5.60
9.0 1.57 5.90
9.0 1.57 6.19
9.0 1.65 5.60
9.0 1.65 5.90
9.0 1.65 6.19
9.0 1.73 5.60
9.0 1.73 5.90
9.0 1.73 6.19

sjh

job 2
1

CLIENT- FEMA
PROJECT-RUNUP2 transect: YK-07

** WAVE RUNUP-VERSION 2.0 **

ENGINEERED BY sjh

JOB job 2
RUN 1 PAGE 1

CROSS SECTION PROFILE

	LENGTH	ELEV.	SLOPE	ROUGHNESS
1	-788.0	-16.3		
2	-472.0	-16.3	.00	1.00
3	-471.0	-16.3	FLAT	1.00
4	-397.0	-16.0	246.67	1.00
5	-128.0	-16.0	FLAT	1.00
6	-127.0	-16.0	FLAT	1.00
7	-106.0	-13.4	8.08	1.00
8	-80.4	-10.2	8.00	1.00
9	-66.4	-8.5	8.24	1.00
10	-65.4	-8.4	7.69	1.00
11	-54.4	-6.8	6.83	1.00
12	-51.4	-6.3	6.82	1.00
13	-28.4	-3.0	6.85	1.00
14	-25.4	-2.5	6.82	1.00
15	-8.4	.0	6.85	1.00
16	-2.9	.0	FLAT	1.00
17	7.6	1.2	8.40	1.00
18	16.6	3.0	4.97	1.00
19	37.1	17.5	1.42	1.00
20	100.6	30.0	5.06	1.00
	LAST SLOPE		5.00	LAST ROUGHNESS 1.00

OUTPUT TABLE

INPUT PARAMETERS			RUNUP RESULTS			
-----			-----			
WATER LEVEL ABOVE DATUM (FT.)	DEEP WATER WAVE HEIGHT (FT.)	WAVE PERIOD (SEC.)	BREAKING SLOPE NUMBER	RUNUP SLOPE NUMBER	RUNUP ABOVE WATER LEVEL (FT.)	BREAKER DEPTH (FT.)
9.00	1.57	5.60	11	18	4.18	2.27
9.00	1.57	5.90	11	18	4.27	2.31
9.00	1.57	6.19	11	18	4.36	2.35
9.00	1.65	5.60	11	18	4.41	2.37
9.00	1.65	5.90	11	18	4.50	2.41
9.00	1.65	6.19	11	18	4.58	2.45
9.00	1.73	5.60	11	18	4.61	2.46
9.00	1.73	5.90	11	18	4.74	2.50
9.00	1.73	6.19	11	18	4.82	2.55

Runup2 2% runup elevation for Transect: YK-07

