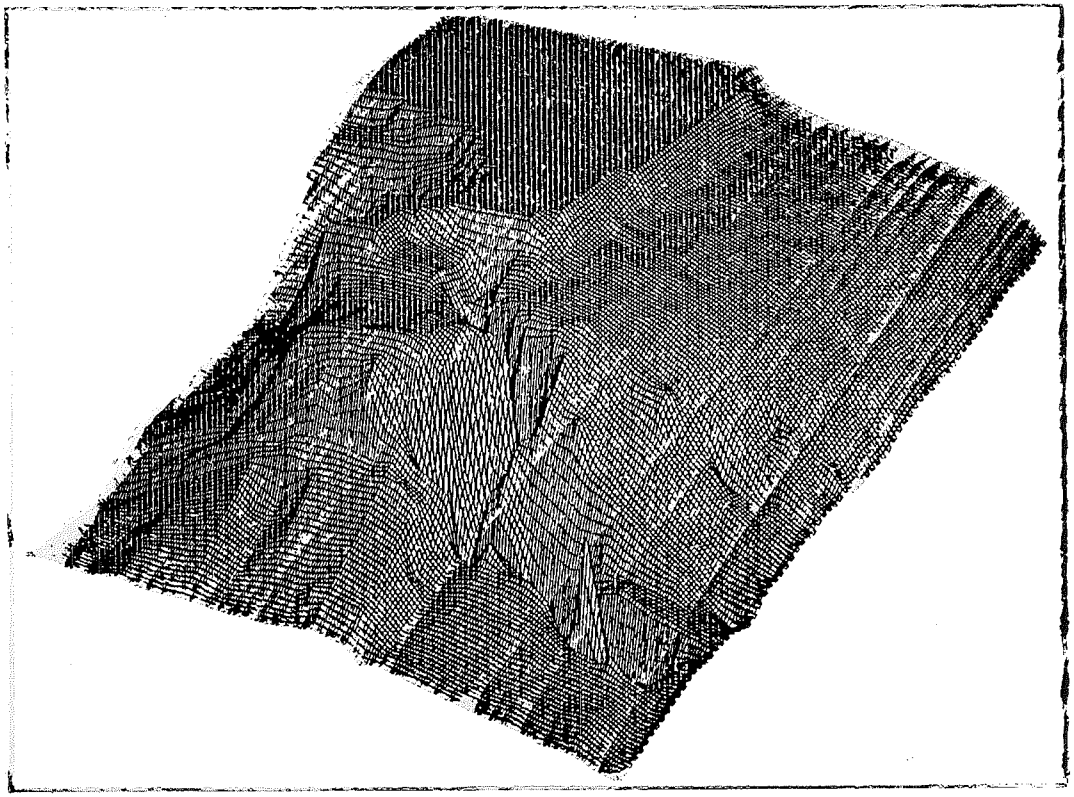
Verhagen

ELF - GABON

Erosion côtière au Cap Lopez, Gabon, due à un canyon sous-marin

Analyse et mesures à prendre

Rapport intérim



Janvier 1993 / P693

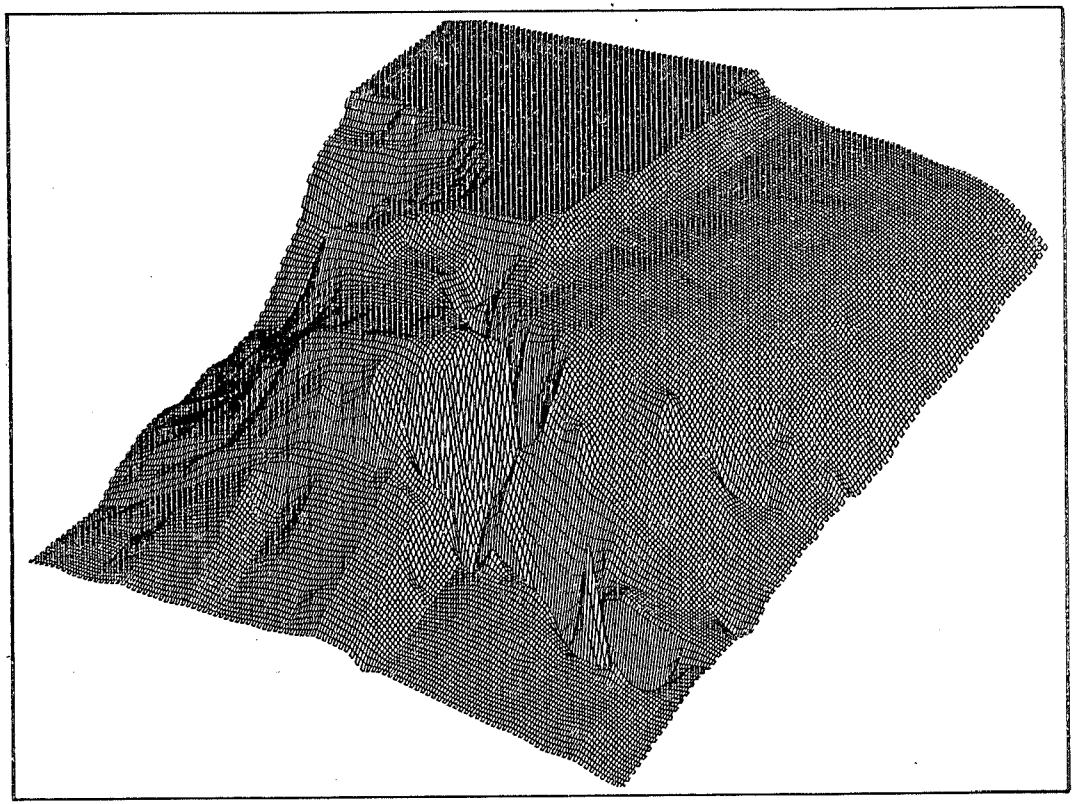
PORT AND WATERWAY ENGINEERS

hydronamic bv
sliedrecht holland

ELF - GABON

Erosion côtière au Cap Lopez, Gabon, due à un canyon sous-marin

Analyse et mesures à prendre



Rapport intérim

Janvier 1983 / P693

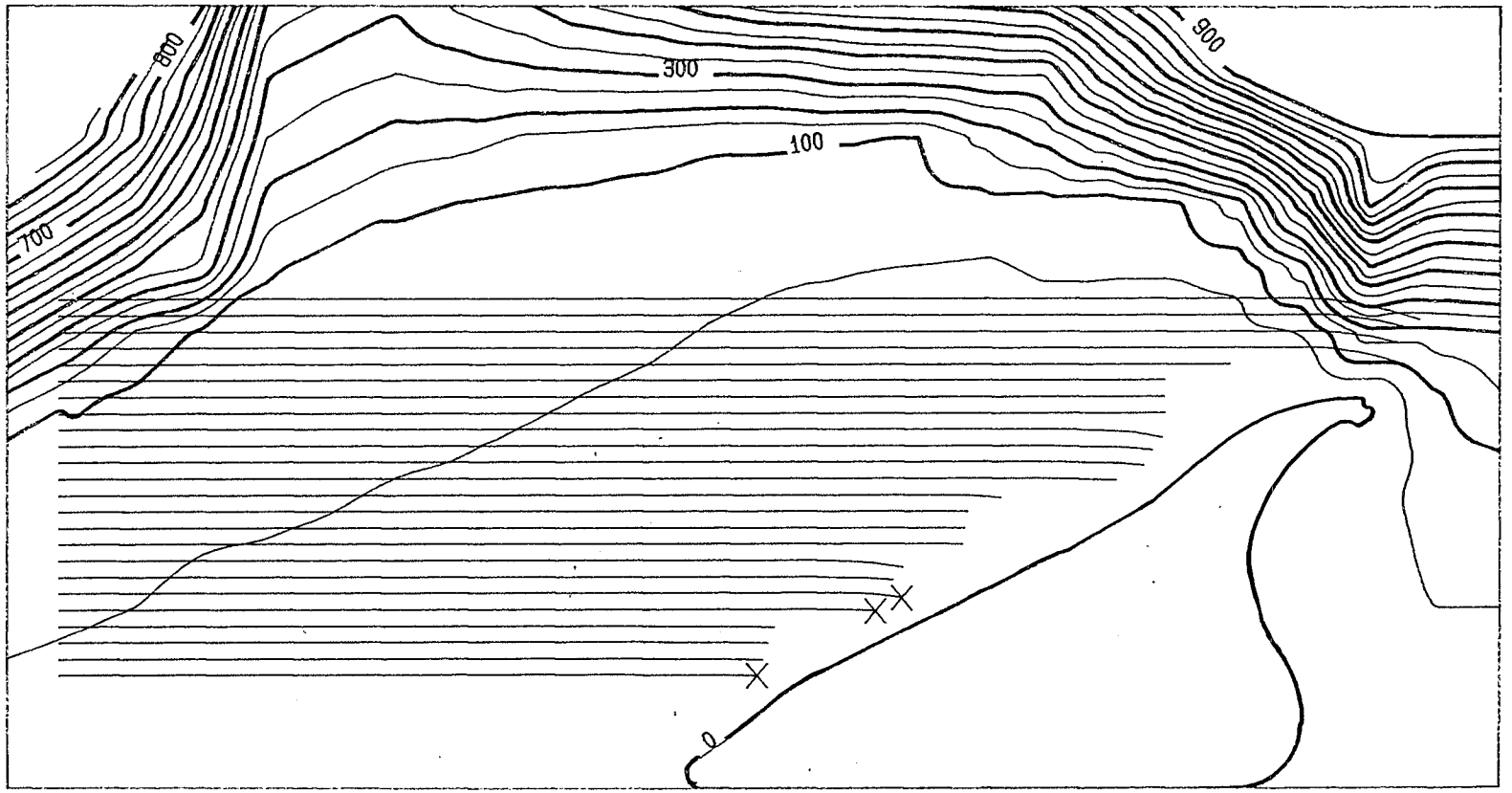
PORT AND WATERWAY ENGINEERS

hydronamic bv
sliedrecht holland

CALCULS DE REFRACTION

(série A)

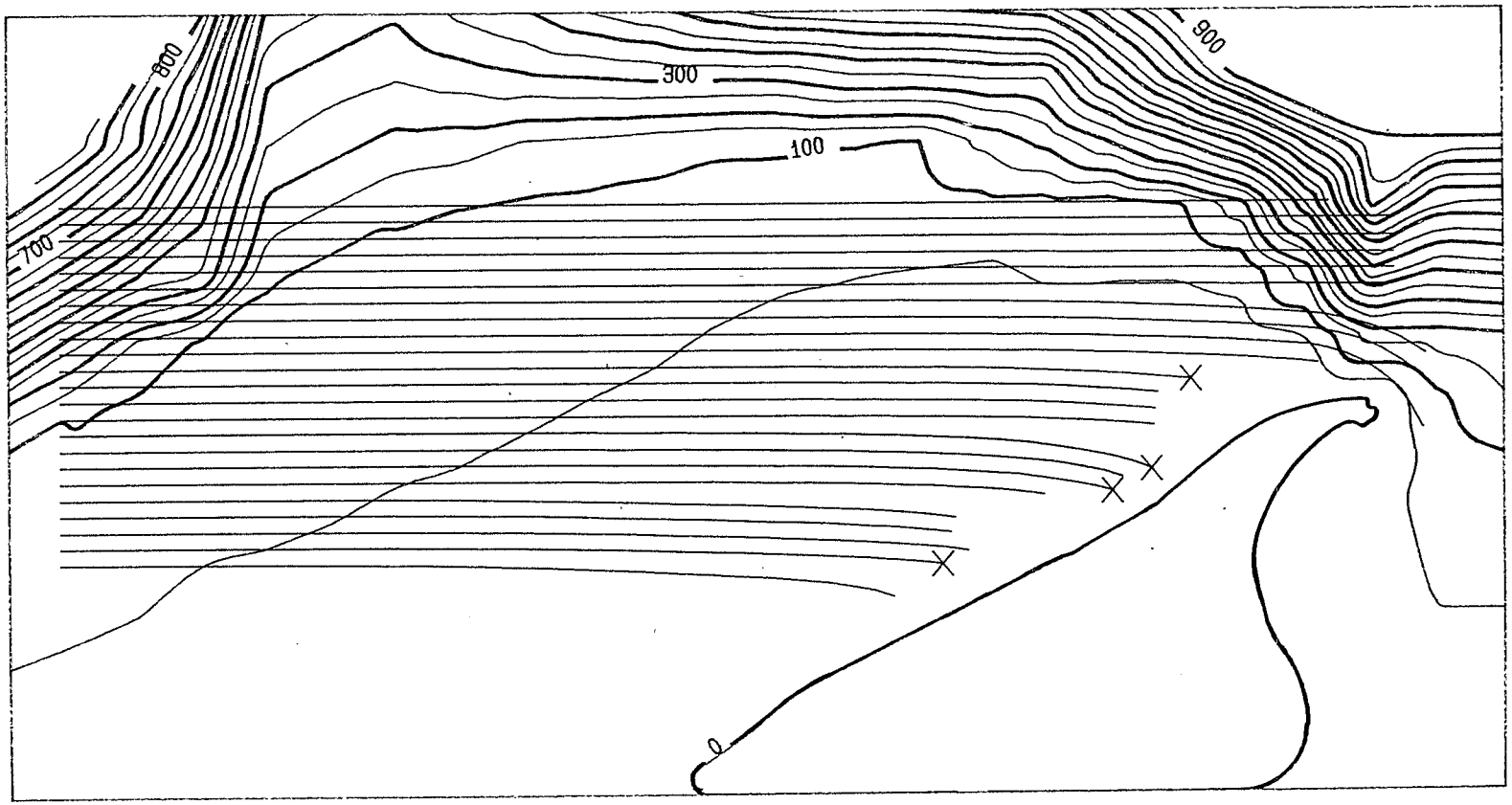
CAP LOPEZ * GLOBAL MODEL



T= 4.00200 HO= 1.25000 RISE= 1.20000
ANGLE OF INCIDENCE .000000E+00 DEGREES

0 10 20 30 40 km.

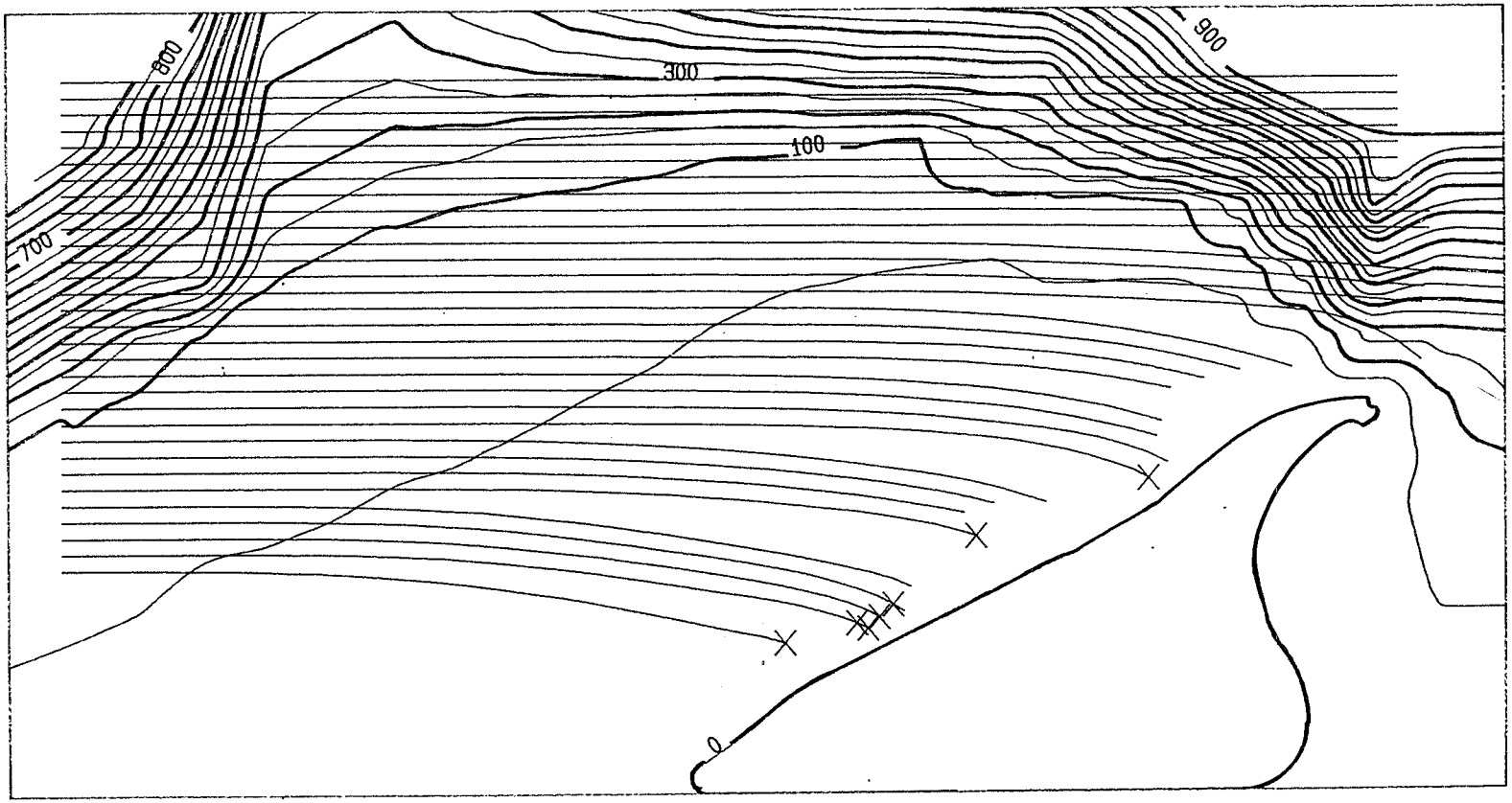
CAP LOPEZ * GLOBAL MODEL



T= 8.50123 HO= 1.25000 RISE= 1.20000
ANGLE OF INCIDENCE .000000E+00 DEGREES

0 10 20 30 40km.

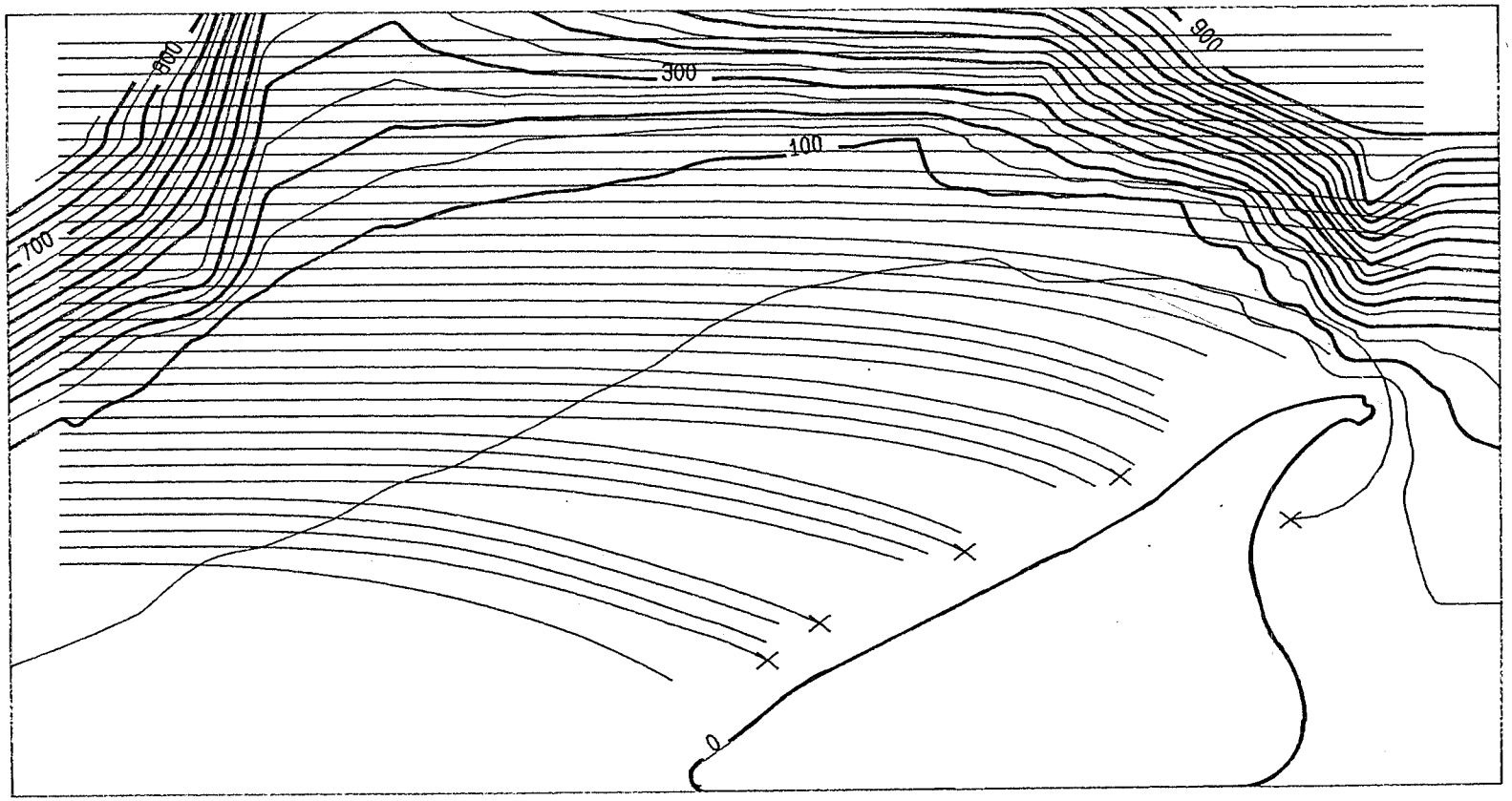
CAP LOPEZ * GLOBAL MODEL



T= 6.50000 HO= 1.25000 RISE= 1.20000
ANGLE OF INCIDENCE .000000E+00 DEGREES

0 10 20 30 40 km.

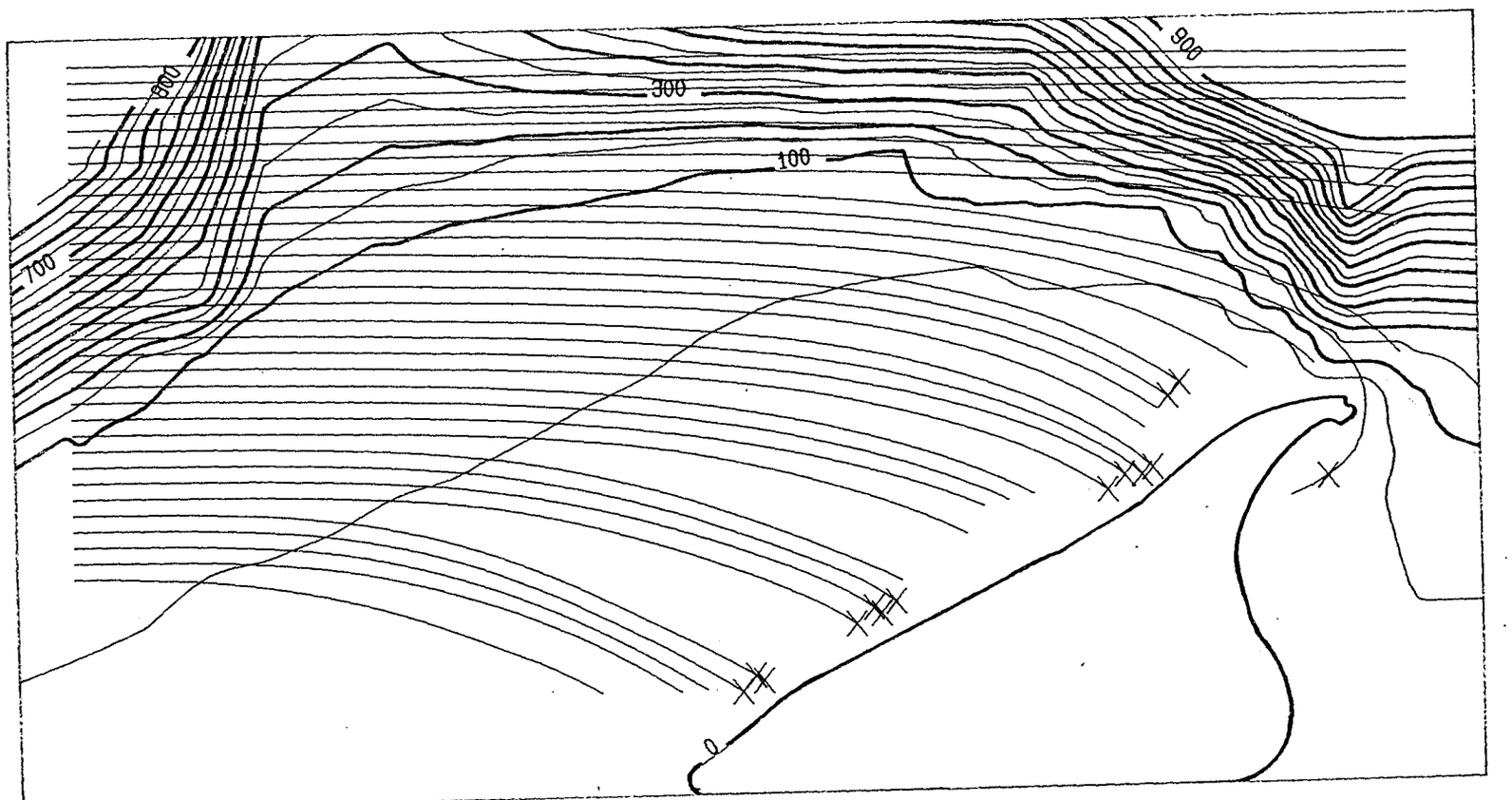
CAP LOPEZ * GLOBAL MODEL



T= 18.5000 H0= 1.25000 RISE= 1.20000
ANGLE OF INCIDENCE .000000E+00 DEGREES

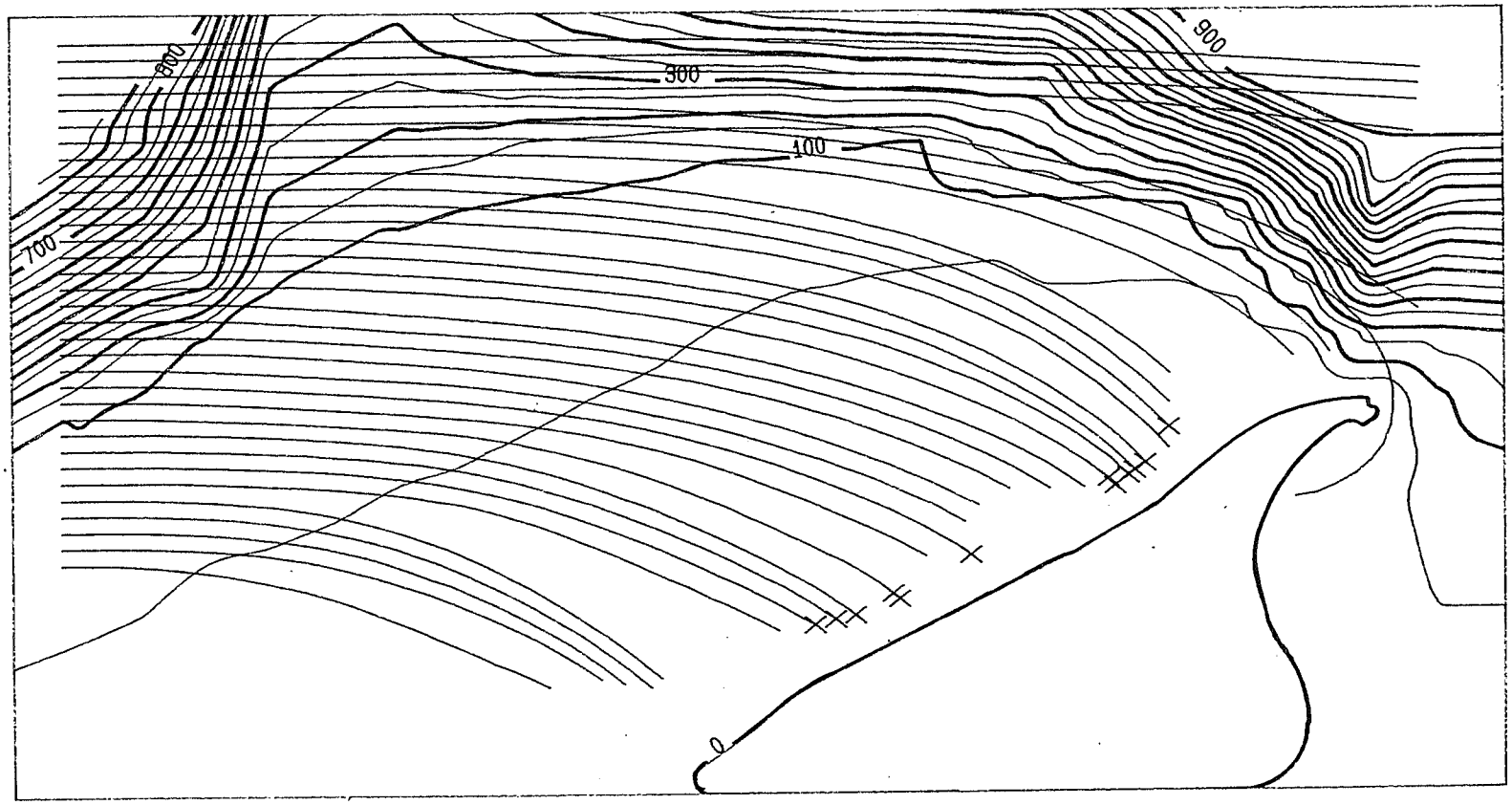
0 10 20 30 40 km.

CAP LOPEZ * GLOBAL MODEL



T= 12.5000 RO= 1.25000 RISE= 1.20000
ANGLE OF INCIDENCE .0000000E+00 DEGREES

CAP LOPEZ * GLOBAL MODEL

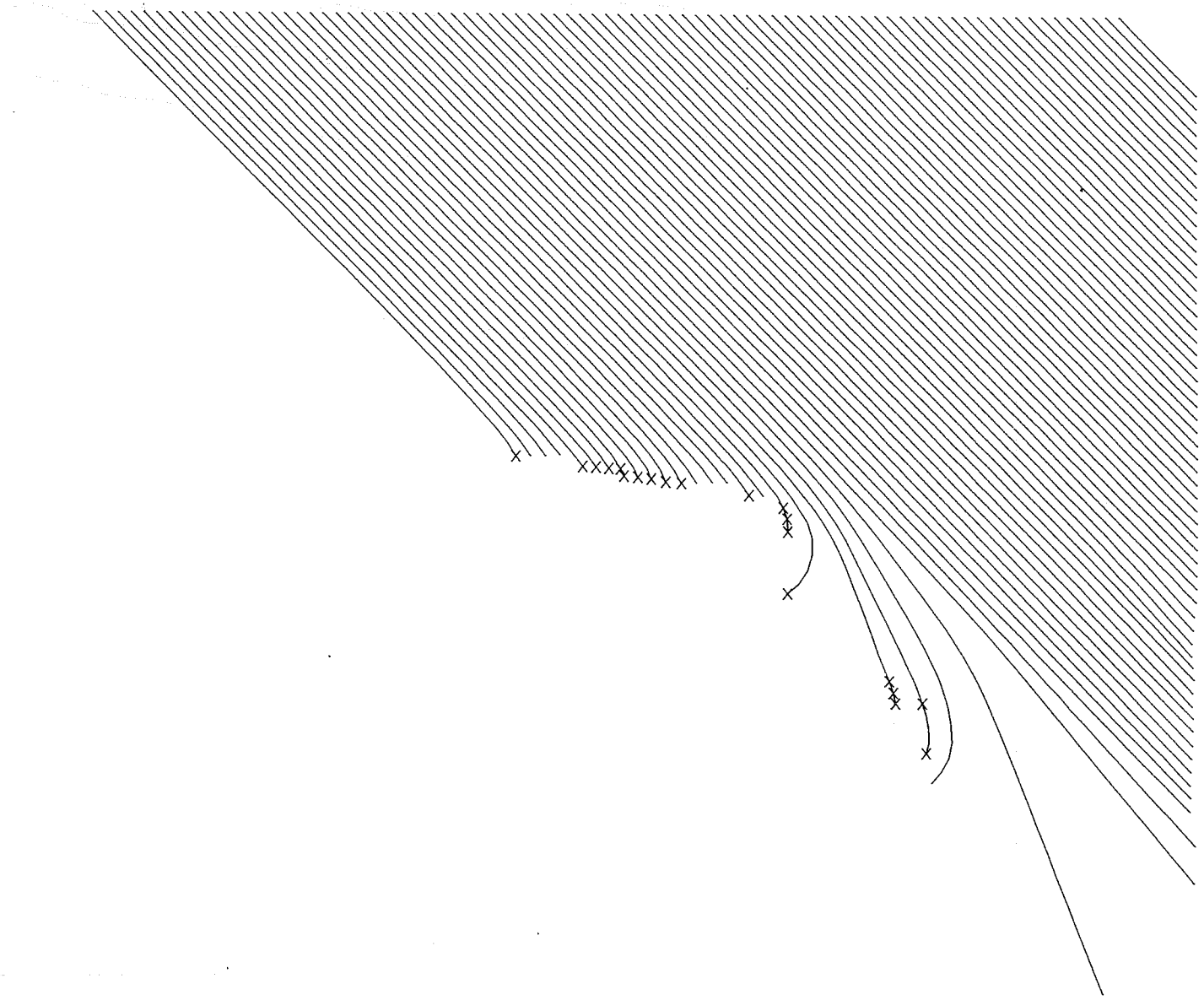


T= 15.0000 H0= 1.25000 RISE= 1.20000
ANGLE OF INCIDENCE .0000000E+00 DEGREES

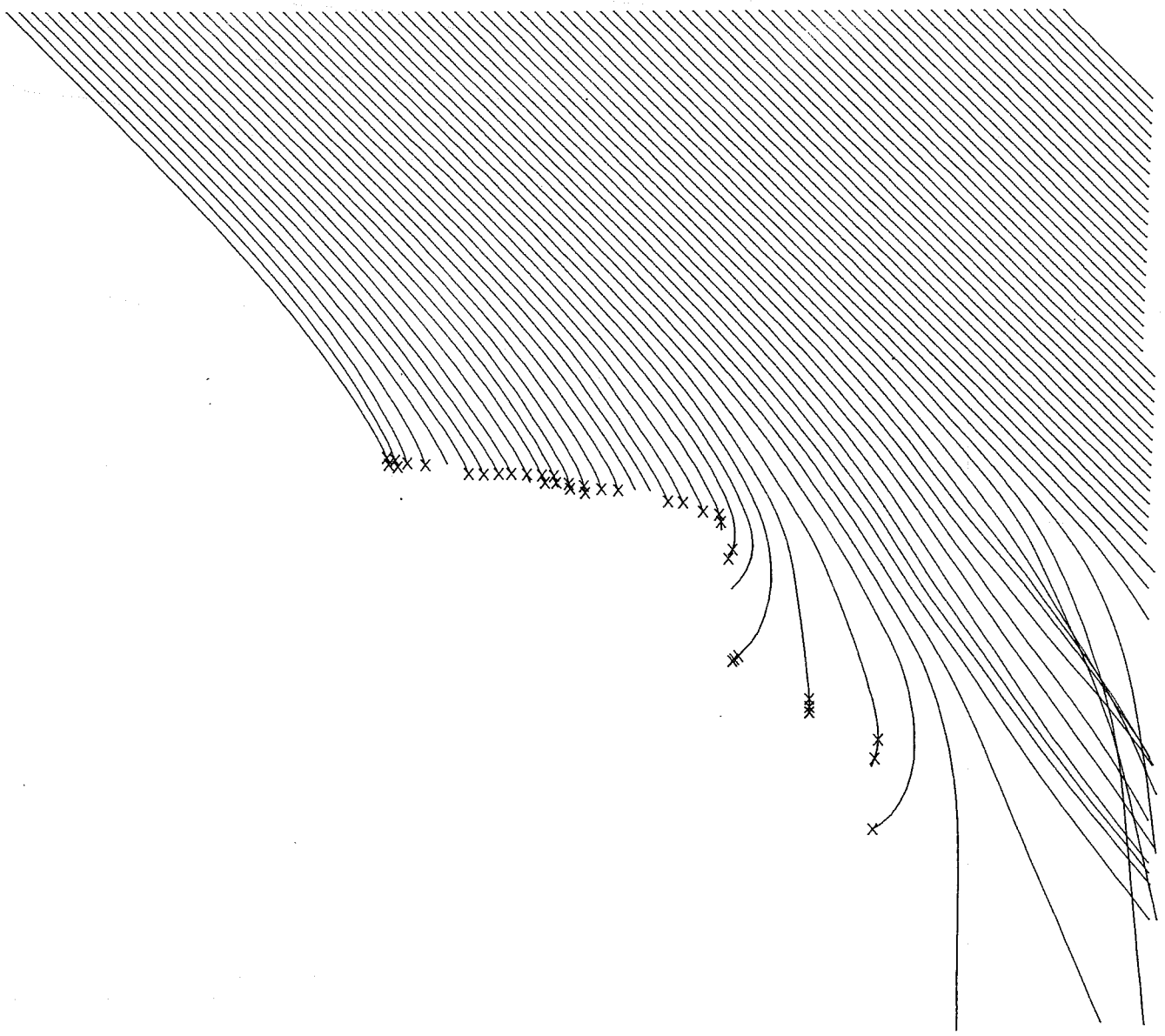
0 10 20 30 40 km.

CALCULS DE REFRACTION

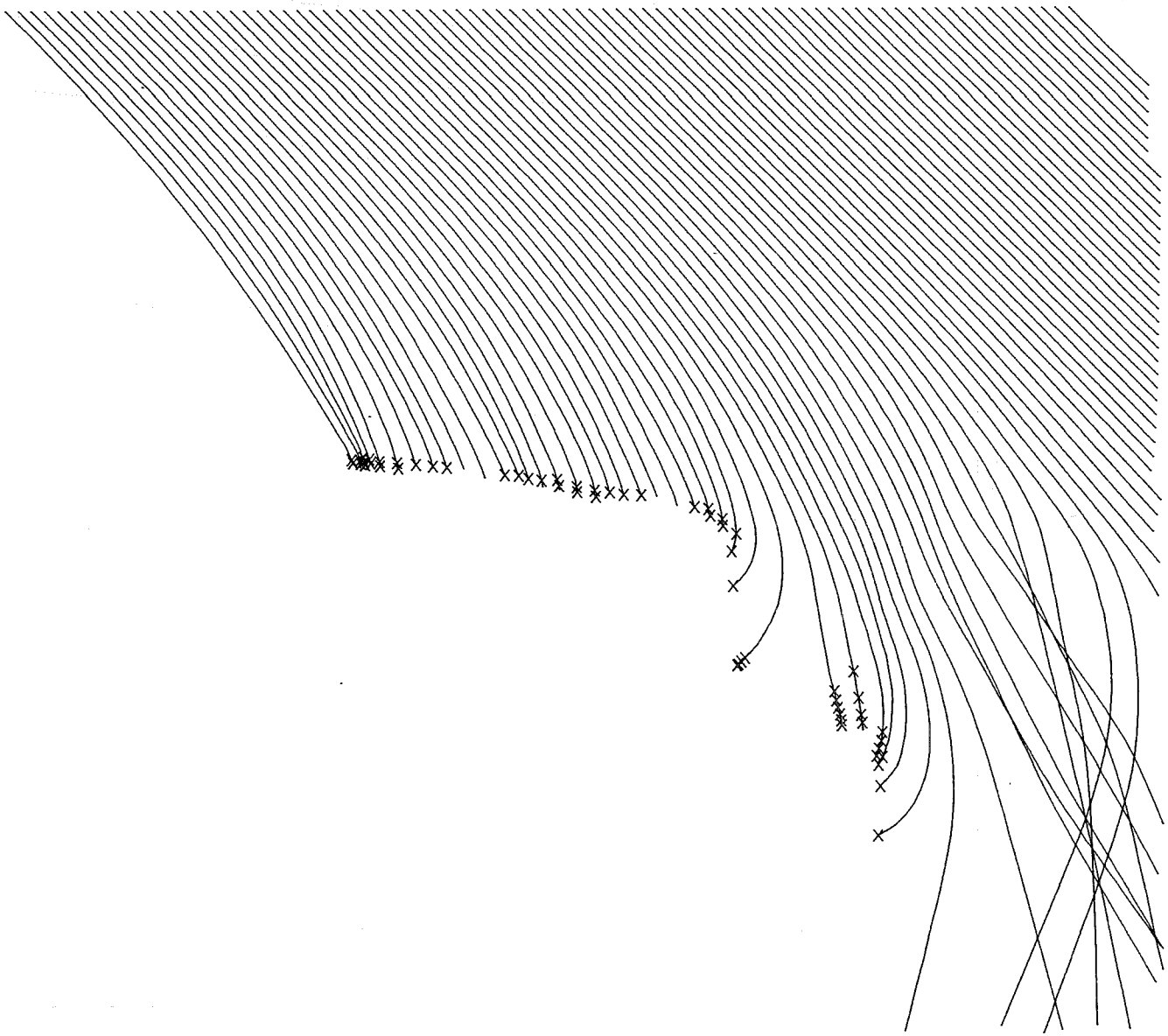
(série B)



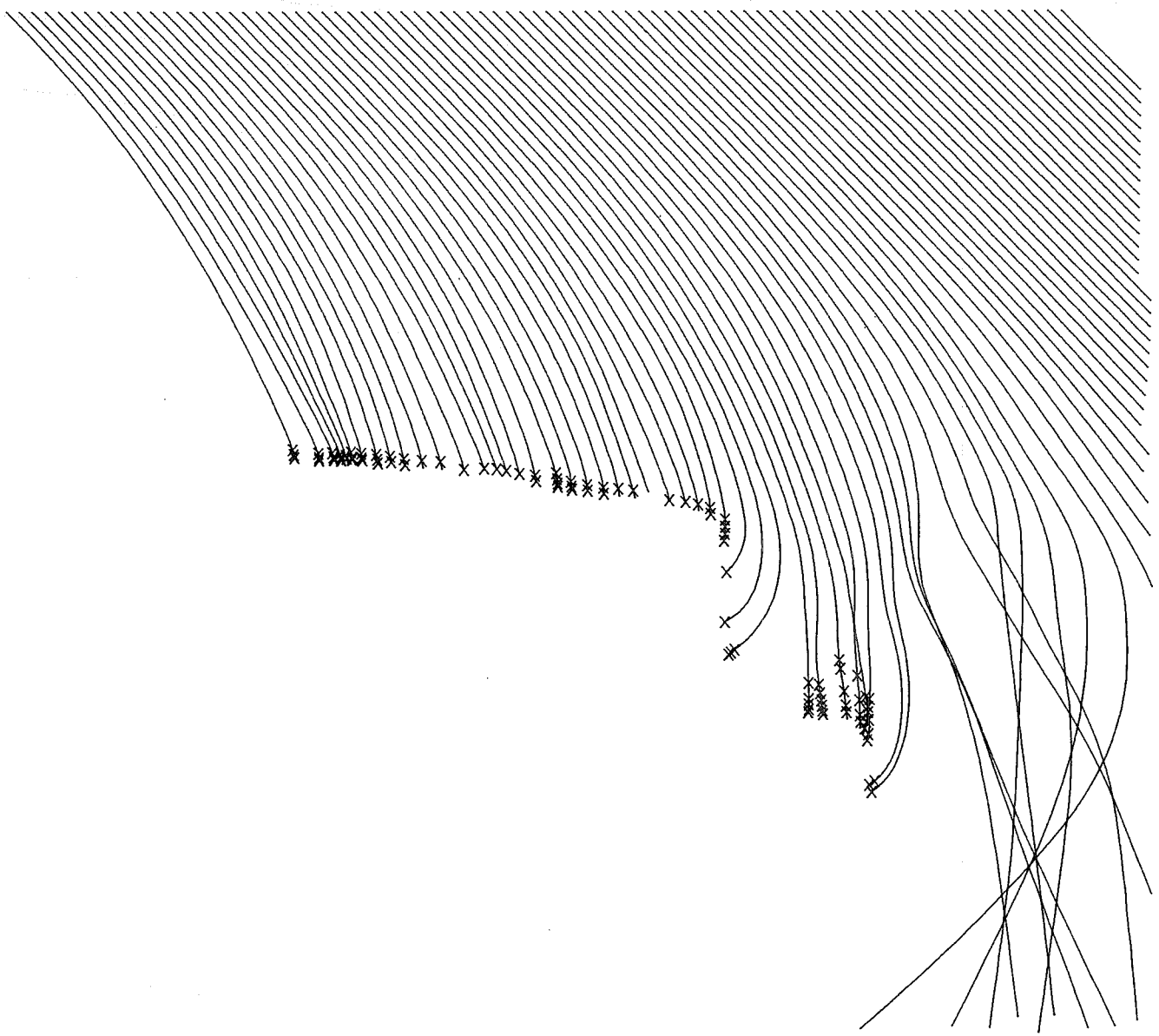
T= 4.00000 HO= 1.25000 RISE= 1.20000
ANGLE OF INCIDENCE 45.0000 DEGREES



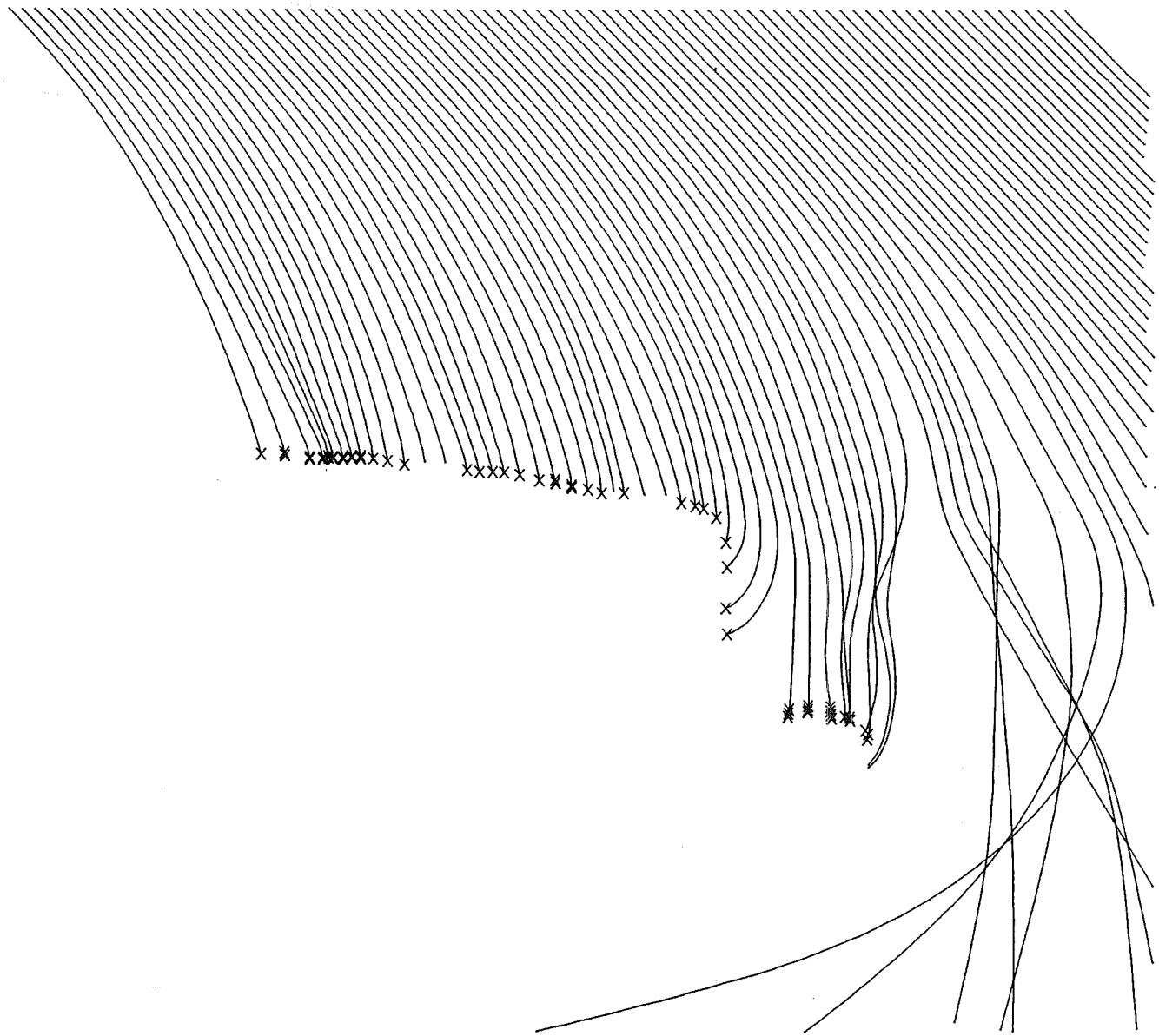
T= 8.50000 HO= 1.25000 RISE= 1.20000
ANGLE OF INCIDENCE 45.0000 DEGREES



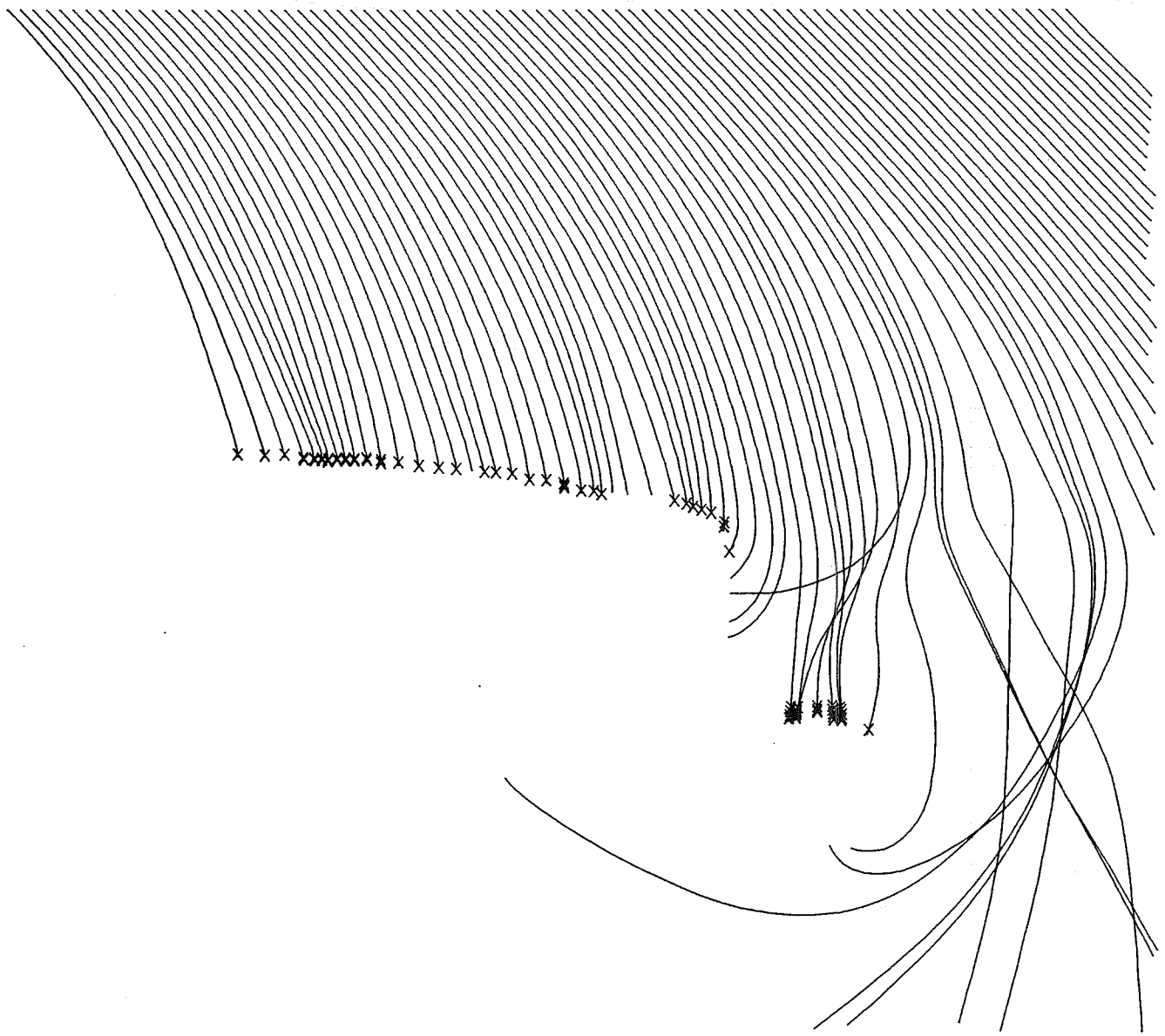
T= 8.50000 HO= 1.25000 RISE= 1.20000
ANGLE OF INCIDENCE 45.0000 DEGREES



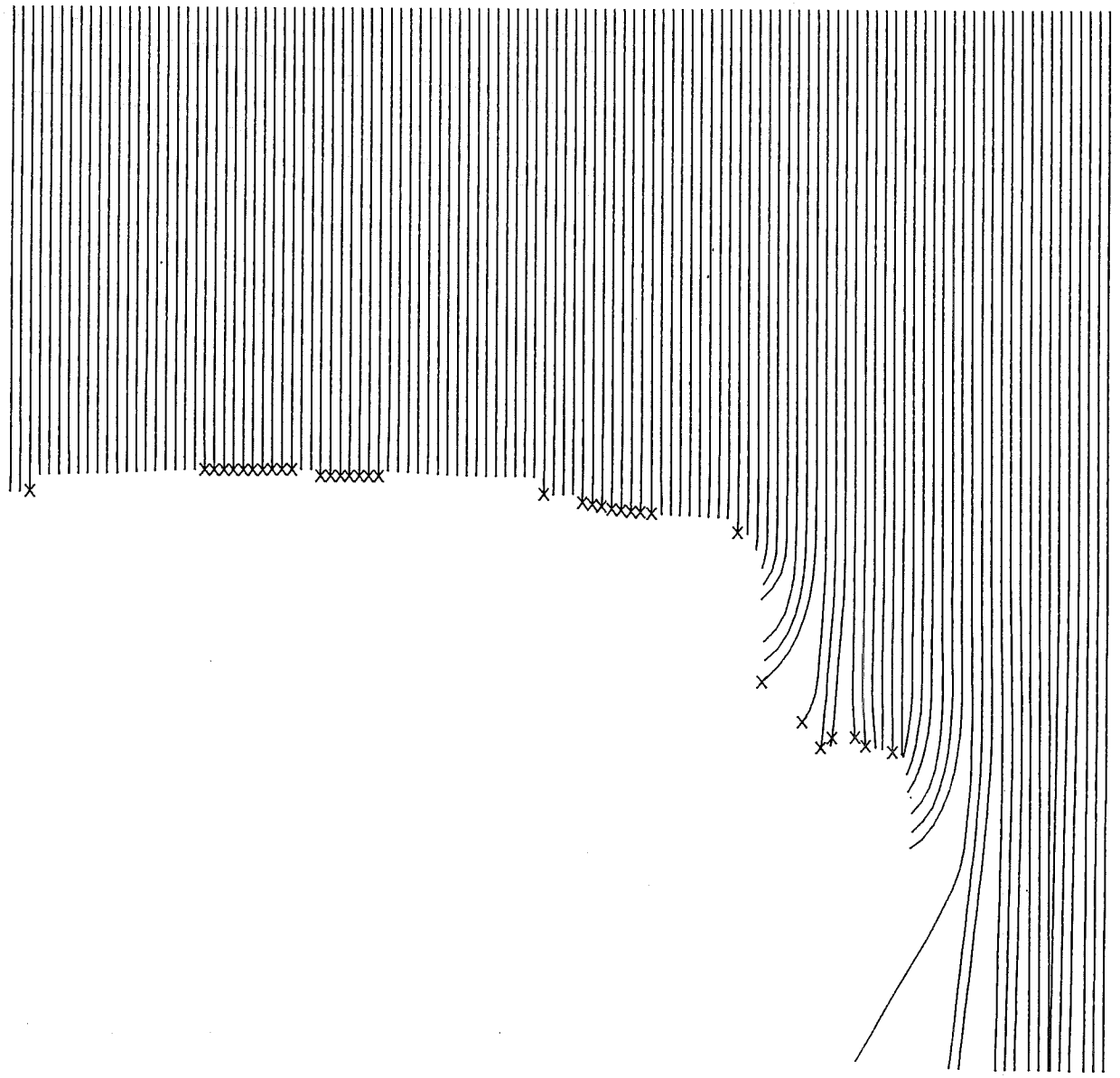
T= 10.5000 HO= 1.25000 RISE= 1.20000
ANGLE OF INCIDENCE 45.0000 DEGREES



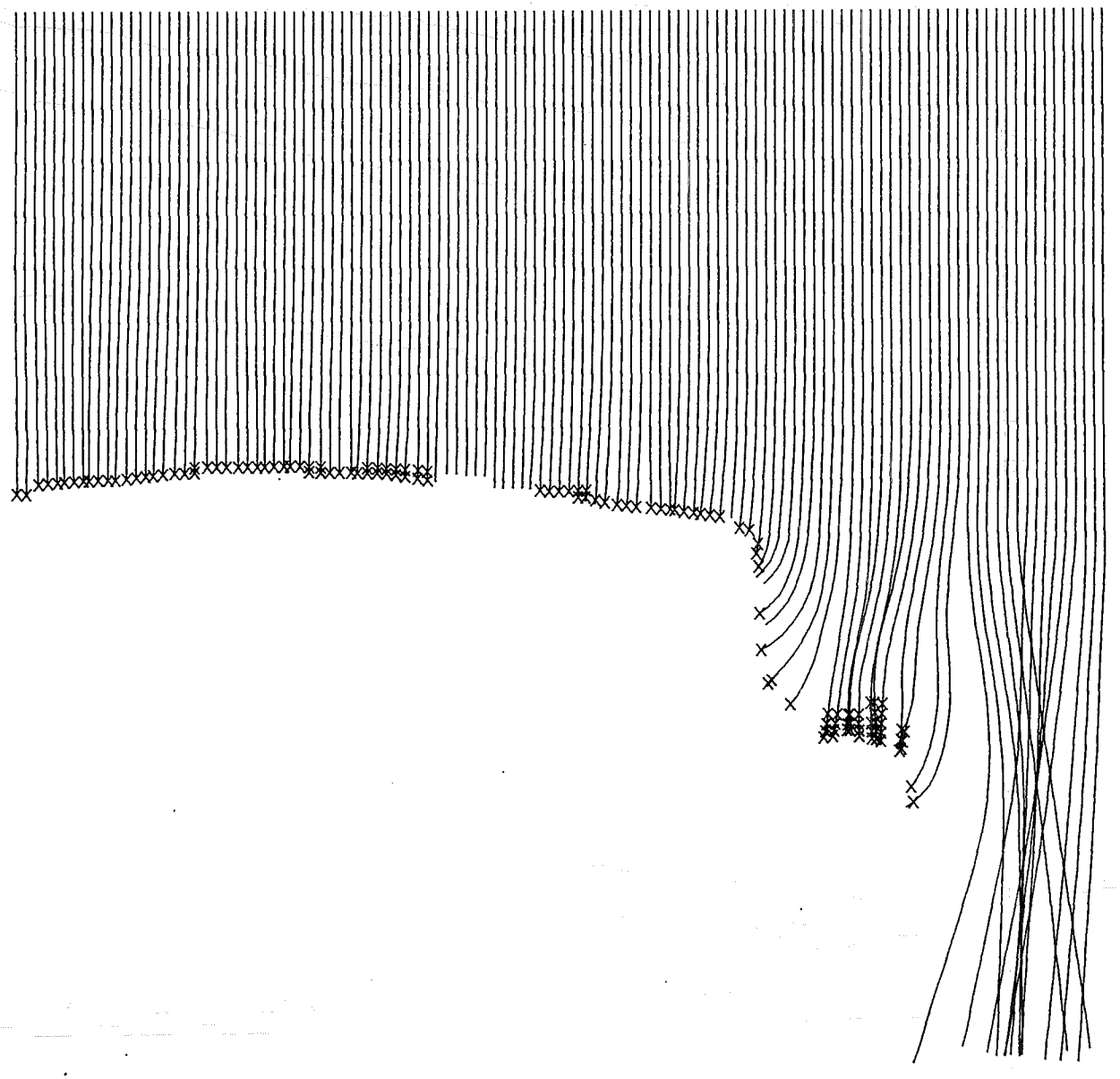
T= 12.5000 HO= .400000 RISE= 1.20000
ANGLE OF INCIDENCE 45.0000 DEGREES



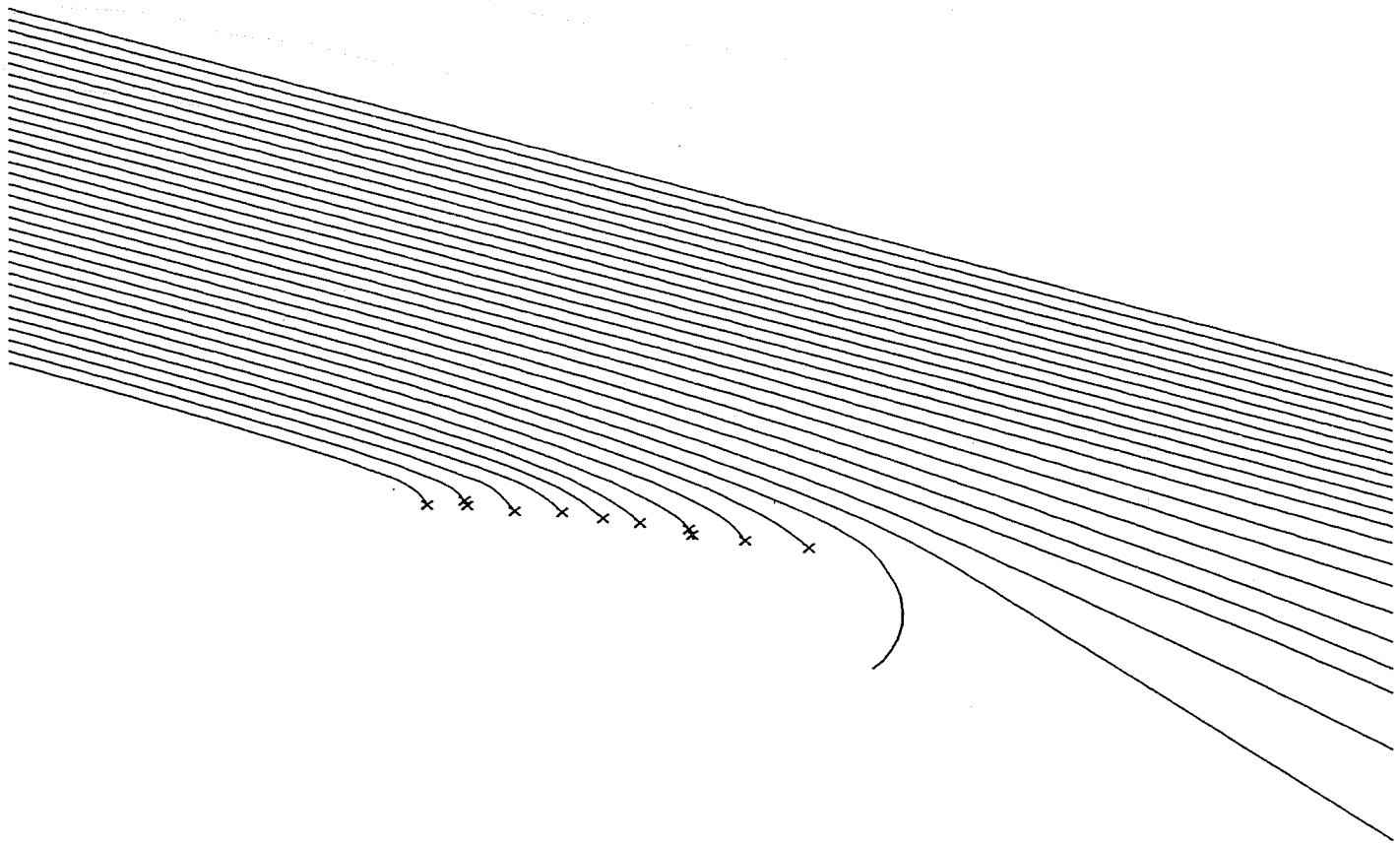
T= 15.0000 HO= .400000 RISE= 1.20000
ANGLE OF INCIDENCE 45.0000 DEGREES



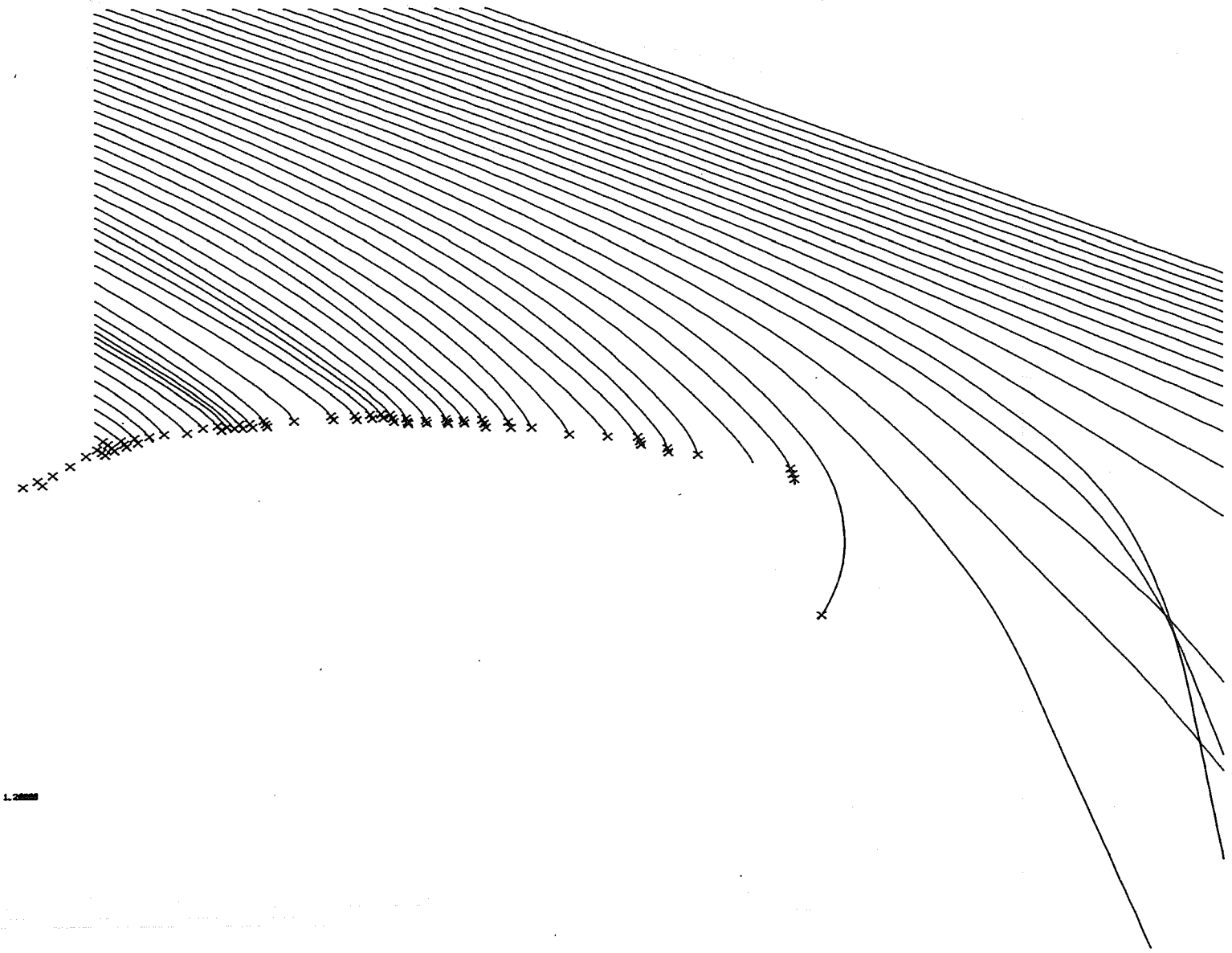
T= 4.00000 HO= .400000 RISE= 1.20000
ANGLE OF INCIDENCE 90.0000 DEGREES

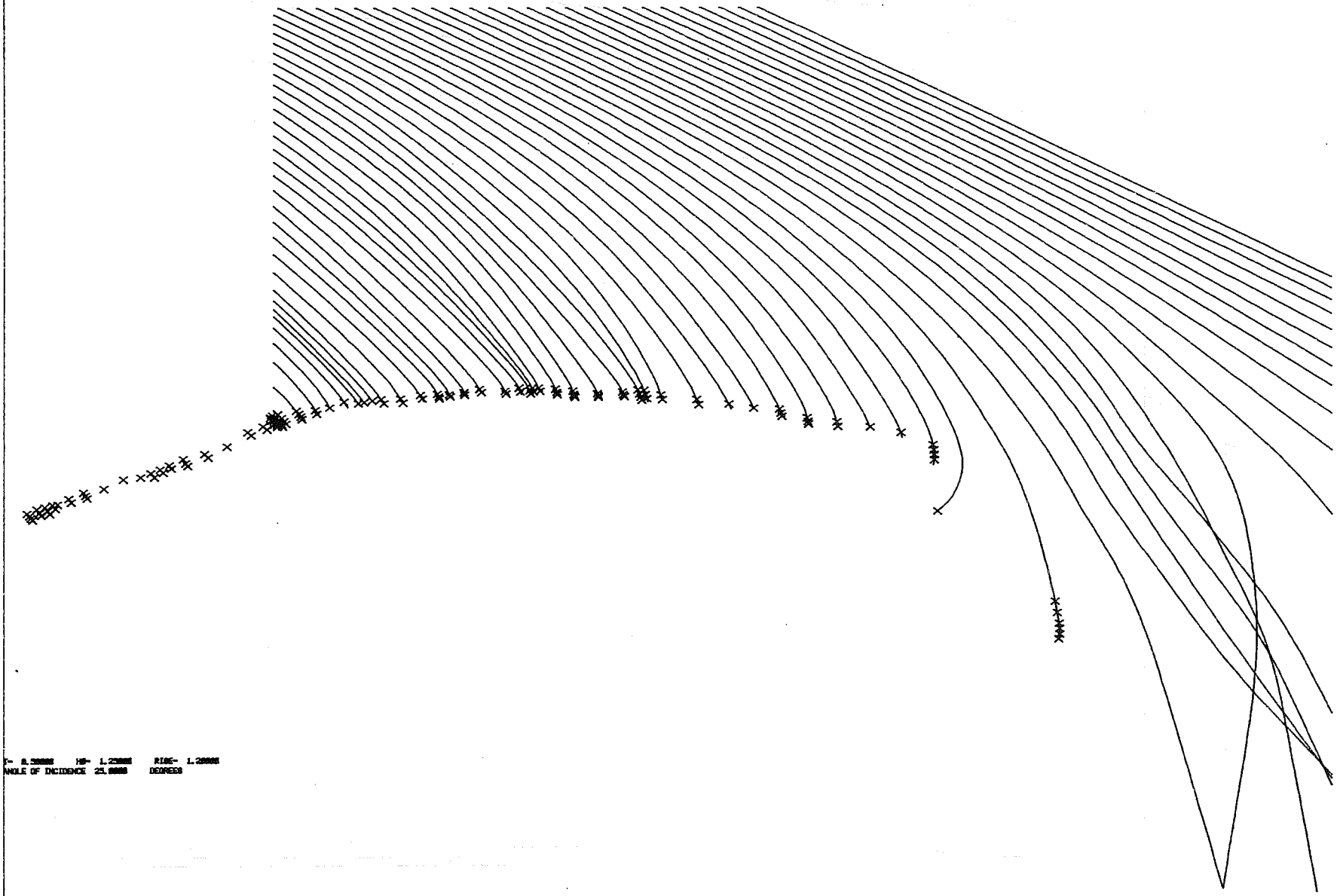


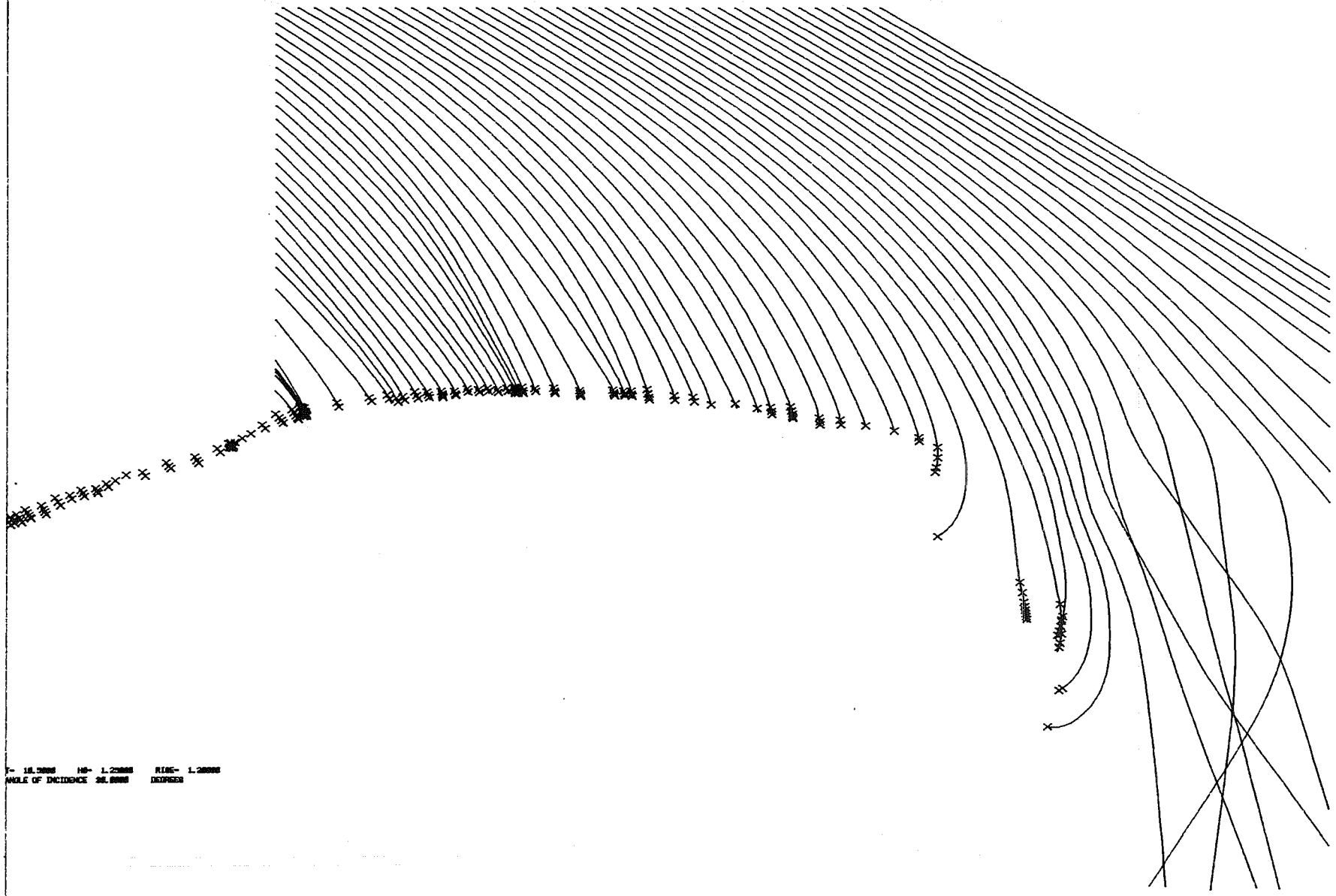
T= 8.50000 HO= 1.25000 RISE= 1.20000
ANGLE OF INCIDENCE 90.0000 DEGREES

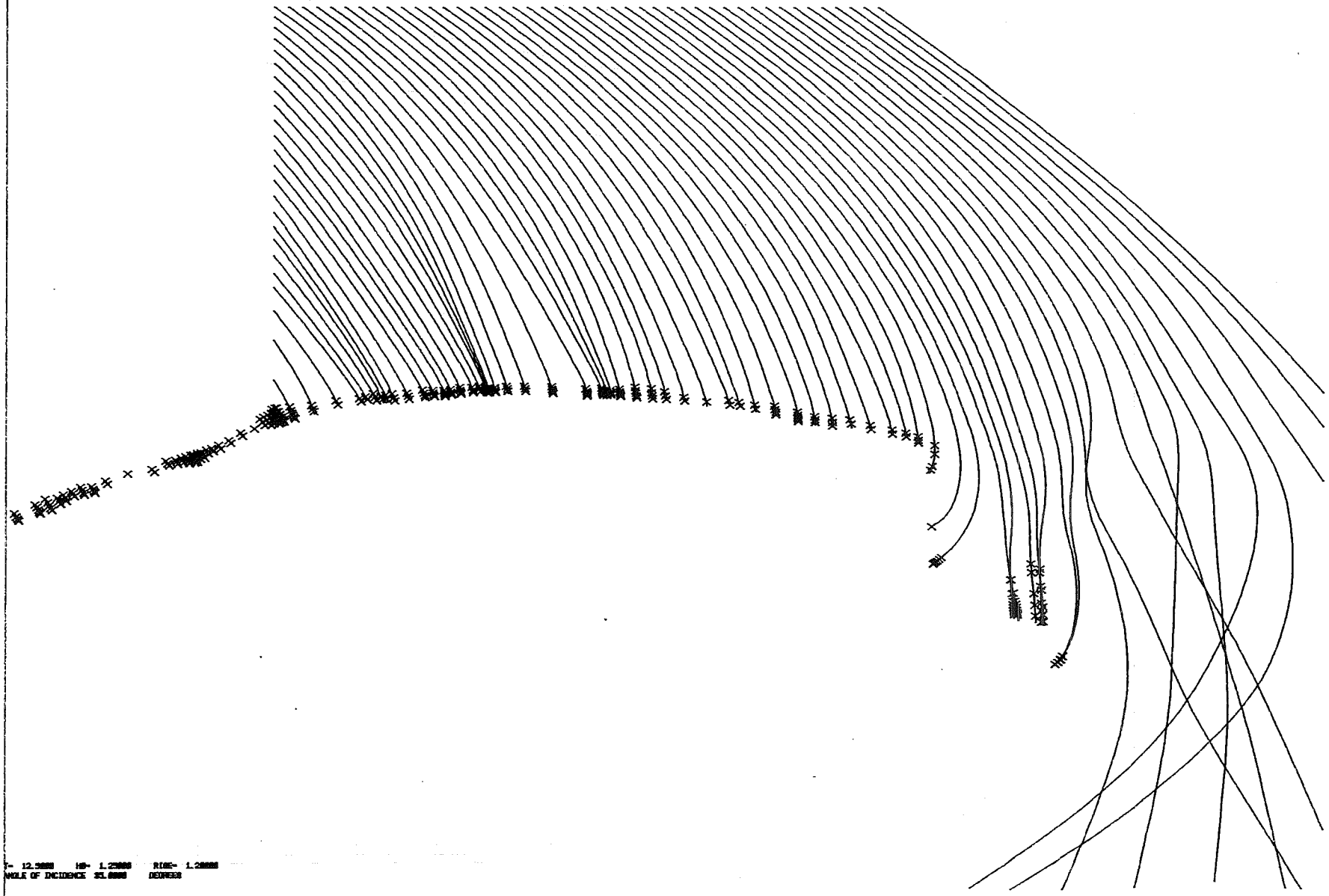


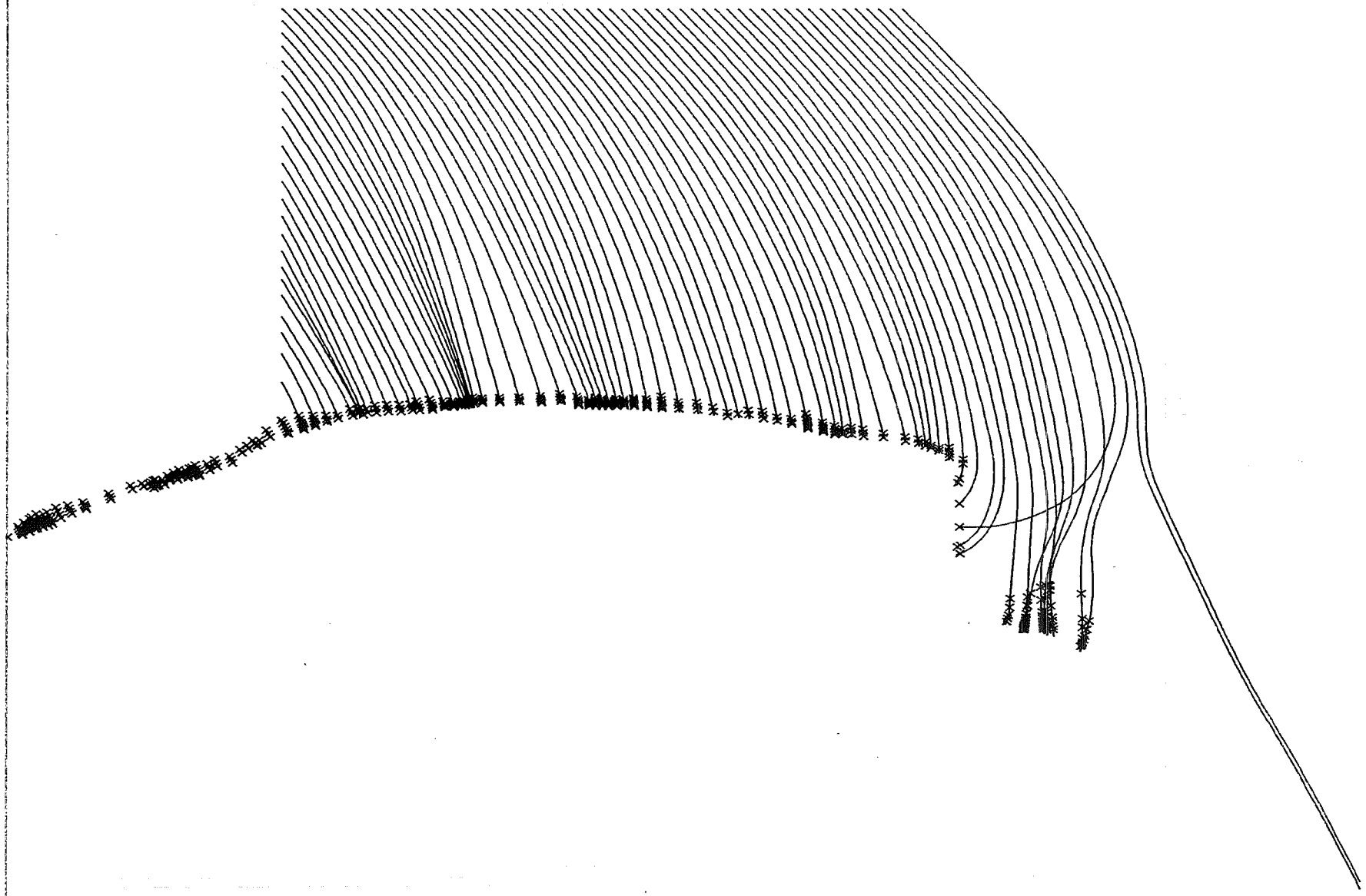
T= 4.00000 HB= 1.25000 RISE= 1.25000
ANGLE OF INCIDENCE 15.0000 DEGREES


T= 0.10000 HB= 1.25000 RISE= 1.26000
WAVE OF INCIDENCE 26.0000 DEGREES


ANGLE OF INCIDENCE 25.0000 DEGREES


T= 18.2000 H0= 1.23000 RIGS= 1.20000
ANGLE OF INCIDENCE 26.0000 DEGREES

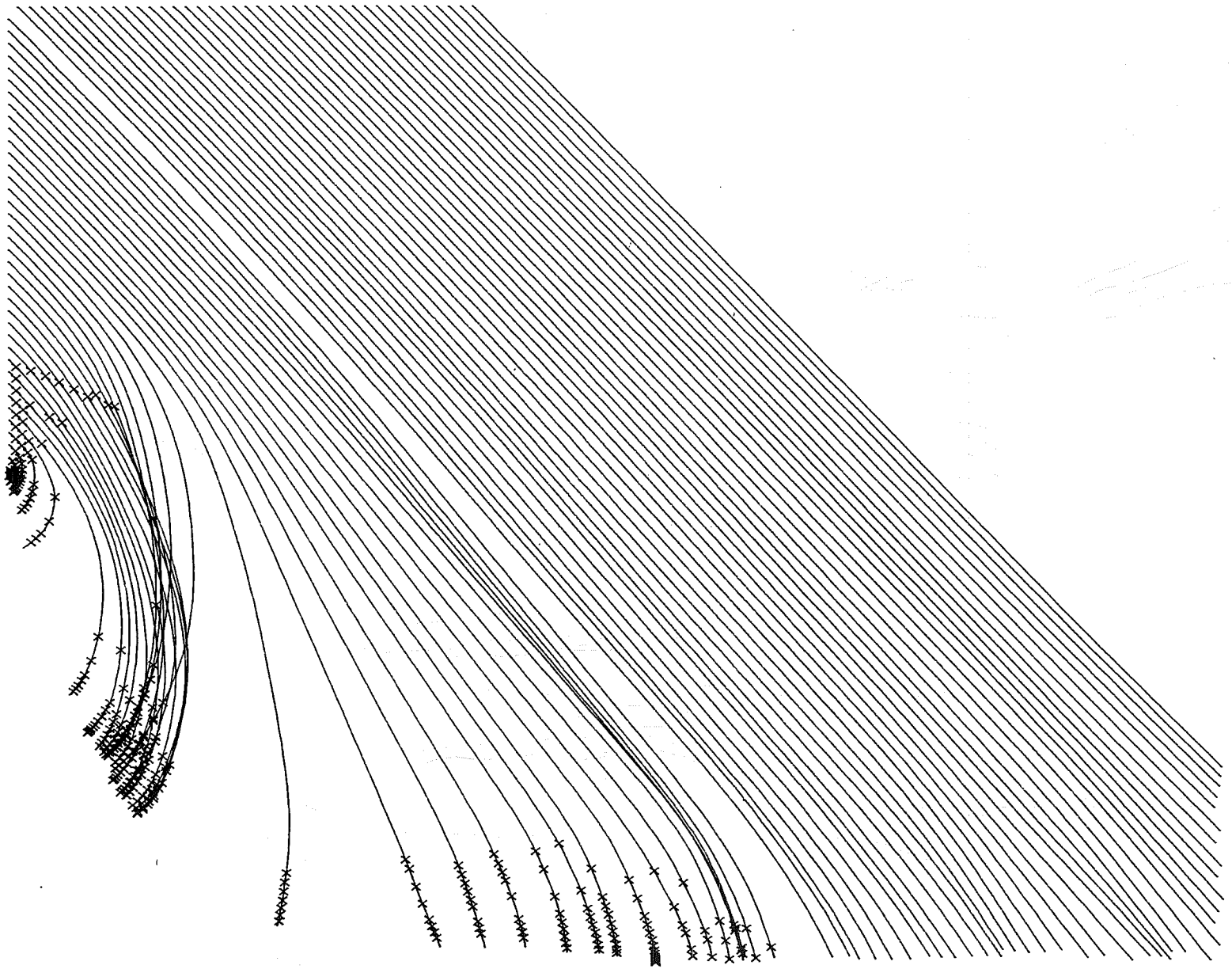

T= 12.5000 HB= 1.25000 RIHC= 1.20000
ANGLE OF INCIDENCE 35.0000 DEGREES

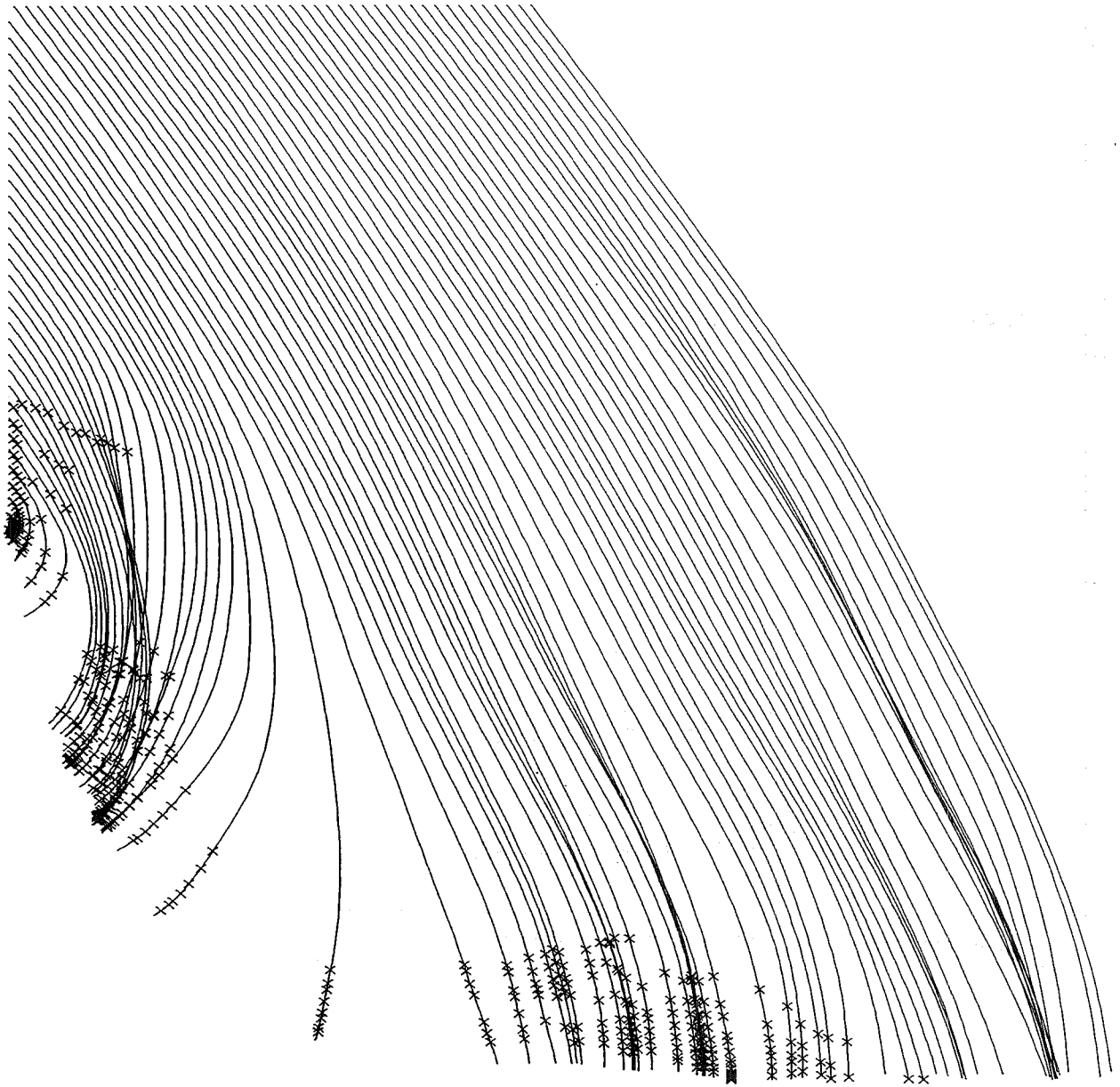


Y- 15.0000 HB- 1.20000 RIGE- 1.20000
ANGLE OF INCIDENCE 45.0000 DEGREES

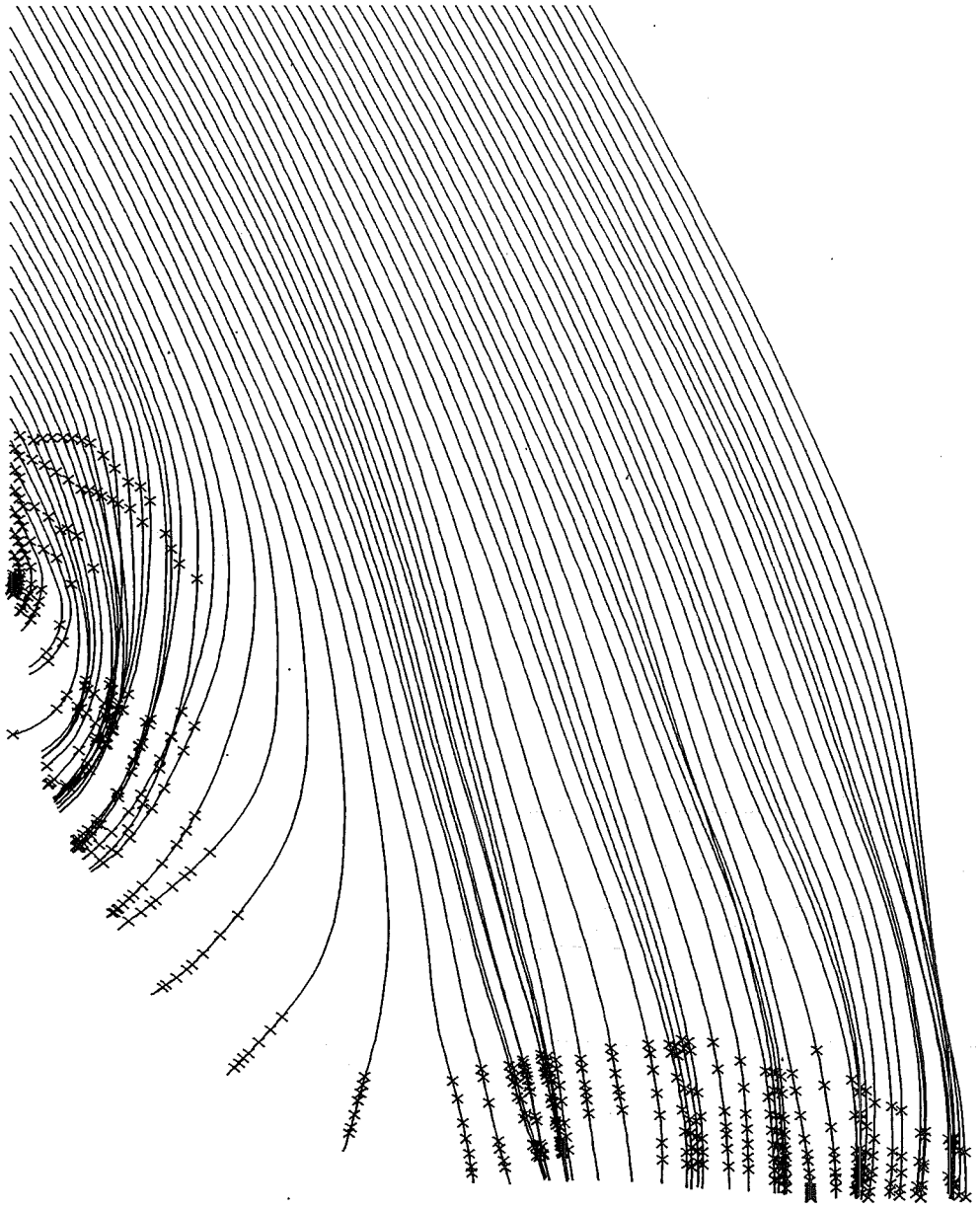
CALCULS DE REFRACTION

(série C)

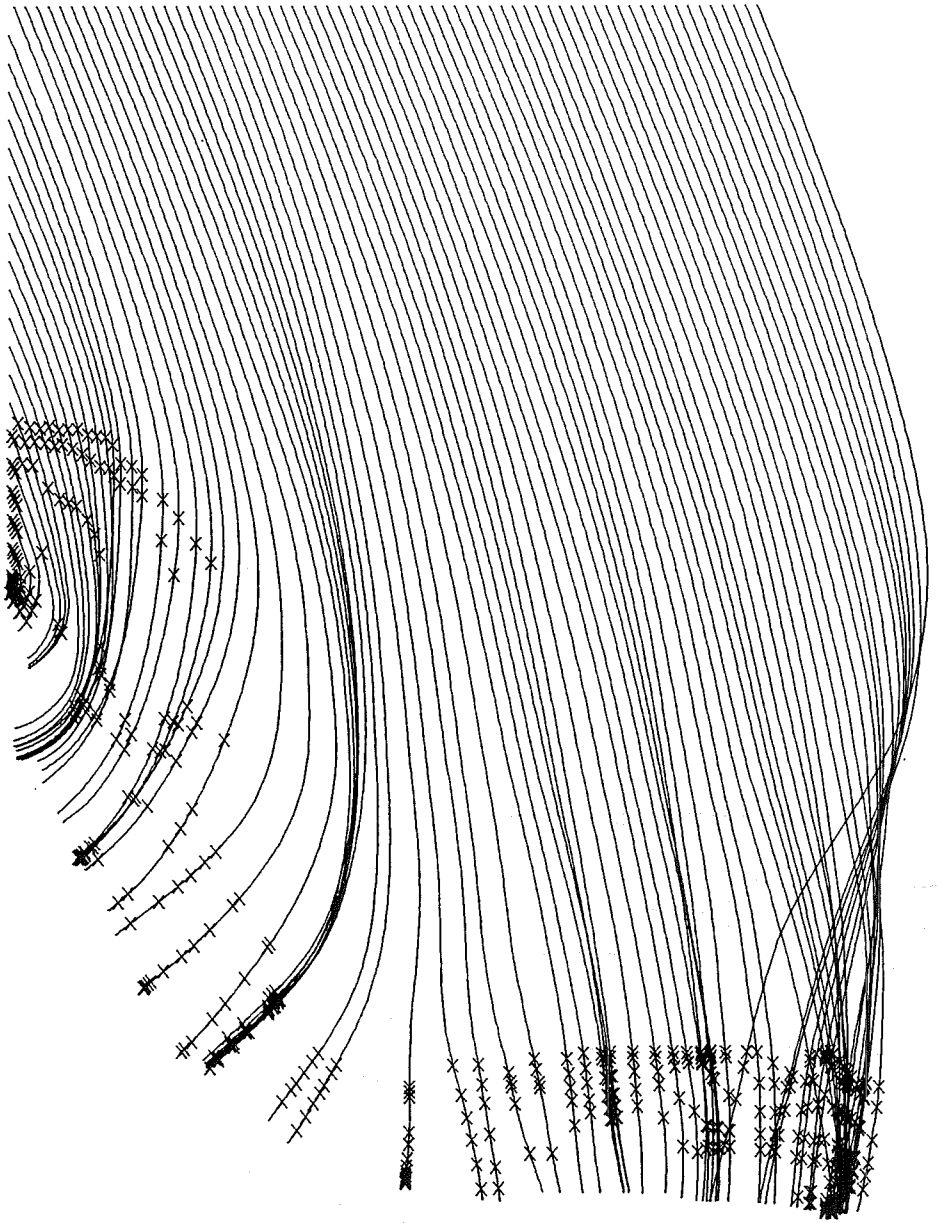

T= 4.00000 HB= 1.22000 RISE= .000000E+00
ANGLE OF INCIDENCE 45.0000 DEGREES



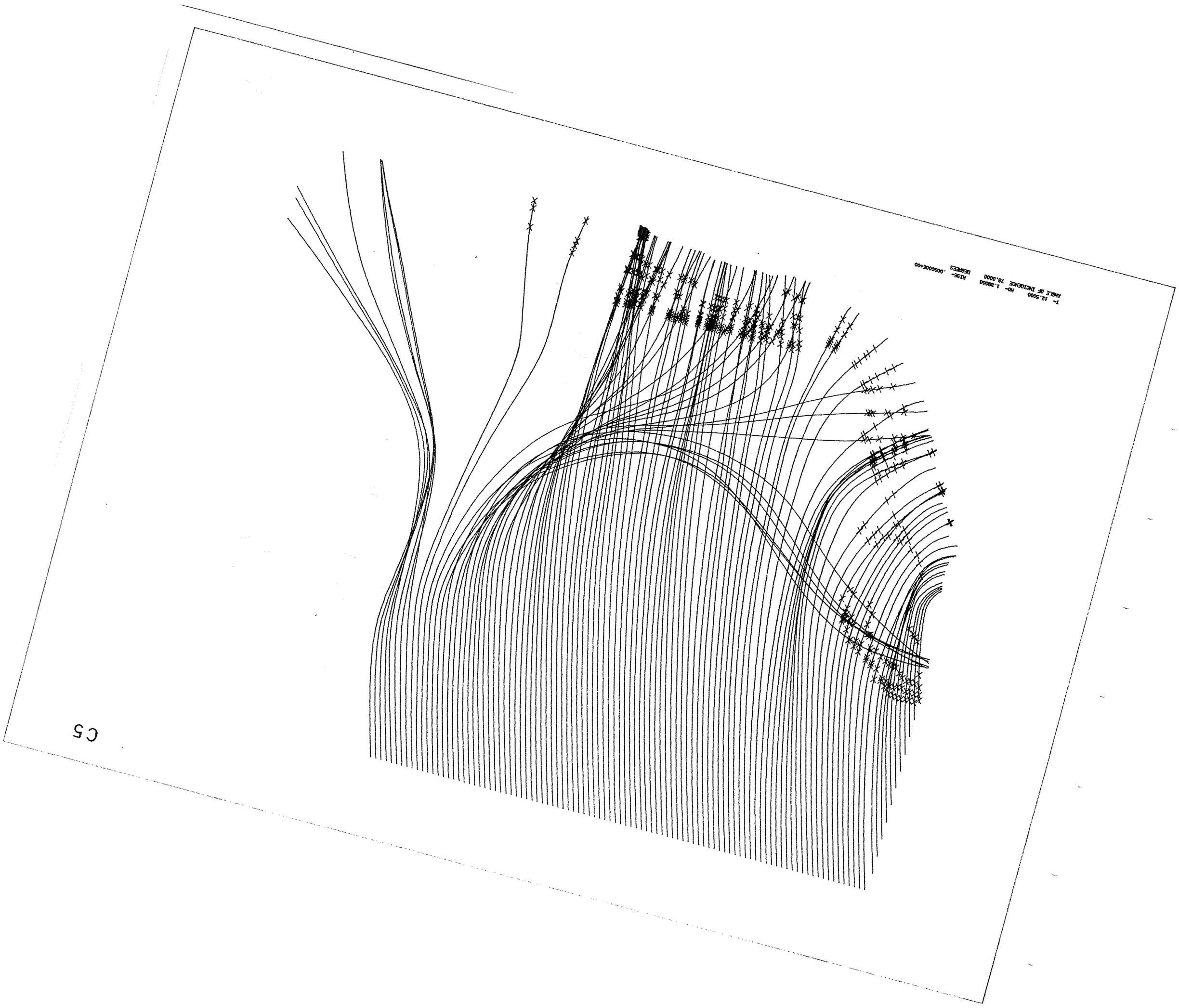
T= 0.50000 HB= 1.00000 RISE= .000000E+00
ANGLE OF INCIDENCE 52.7000 DEGREES

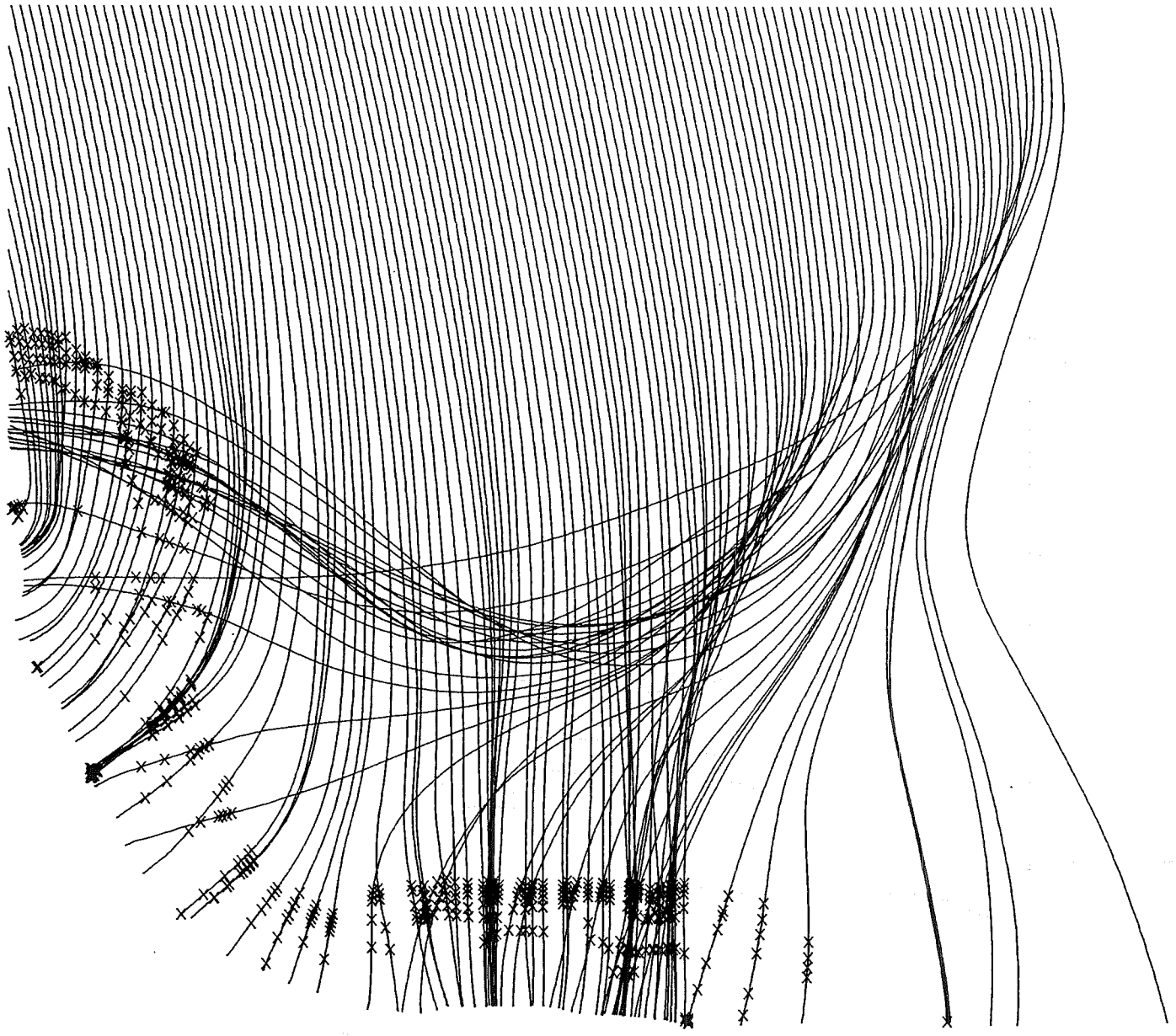


T= 0.50000 H0= 1.15000 RISE= .000000E+00
ANGLE OF INCIDENCE 00.0000 DEGREES

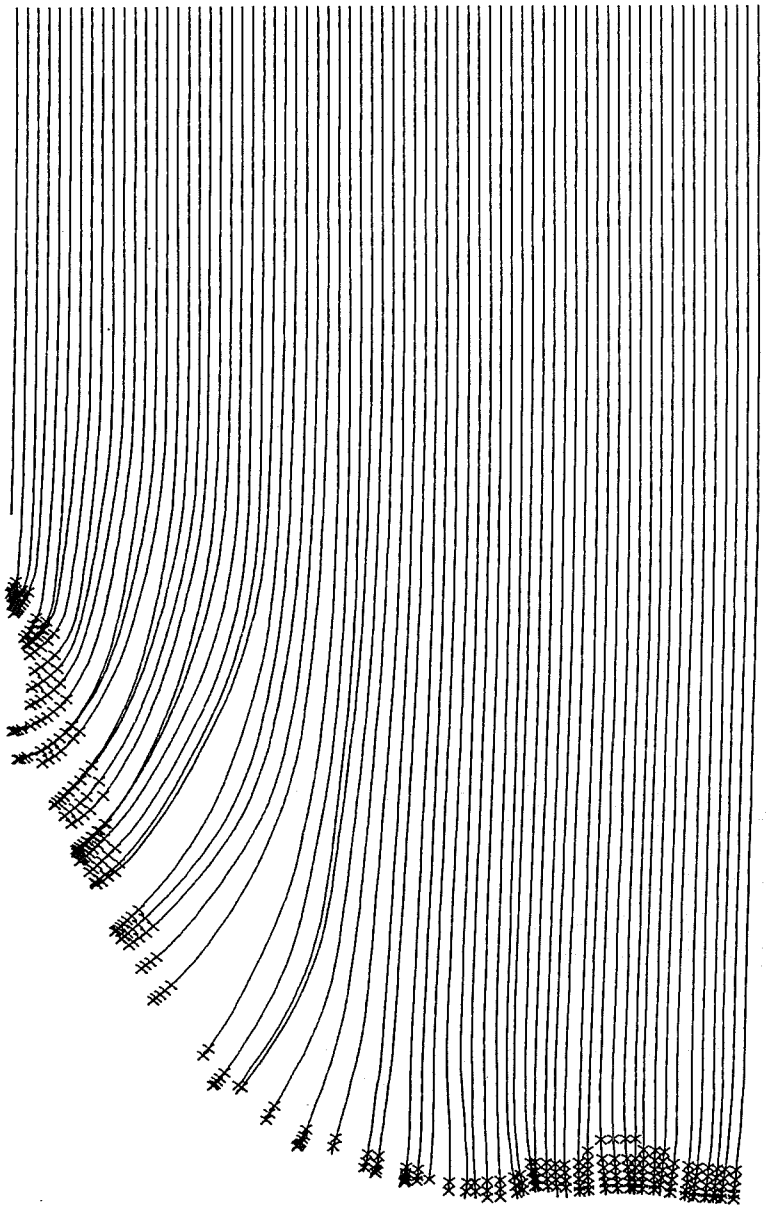


T= 10.5808 HO= 1.28000 RISE= .000000E+00
ANGLE OF INCIDENCE 87.8000 DEGREES

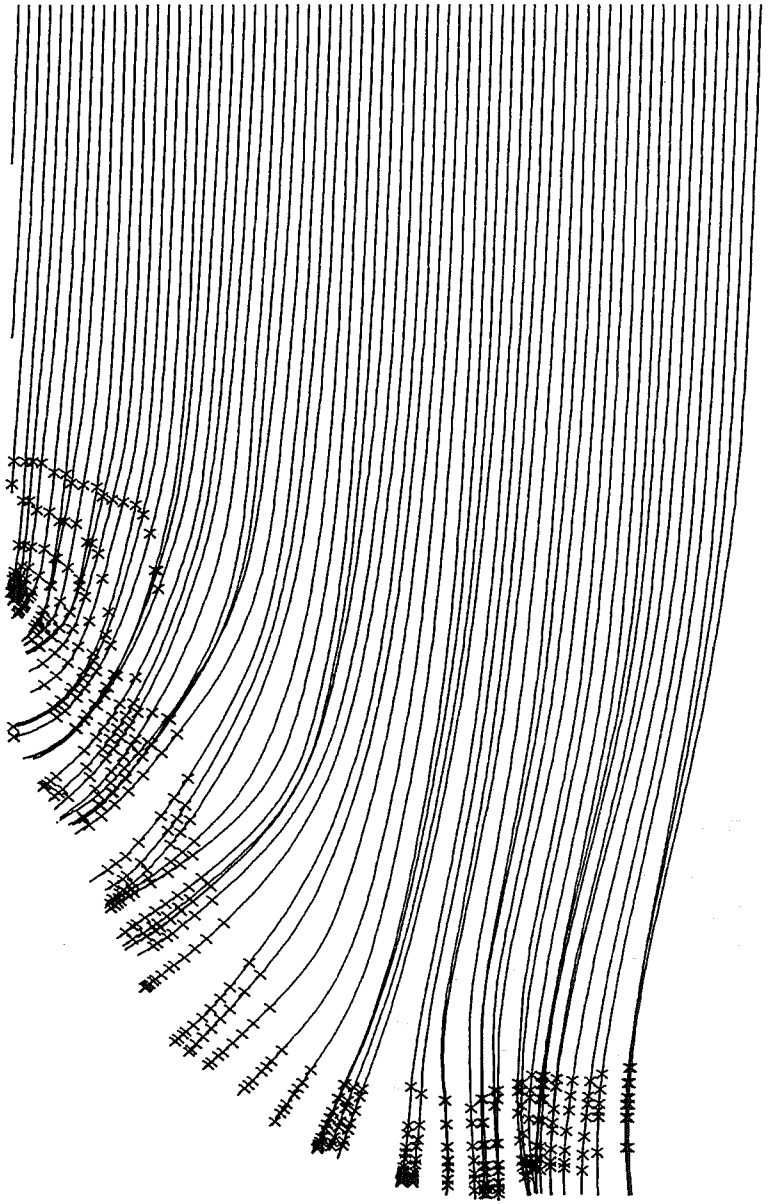

T= 12.5000 HO= 1.8000 RISE= .000000E+00
ANGLE OF INCIDENCE 78.0000 DEGREES



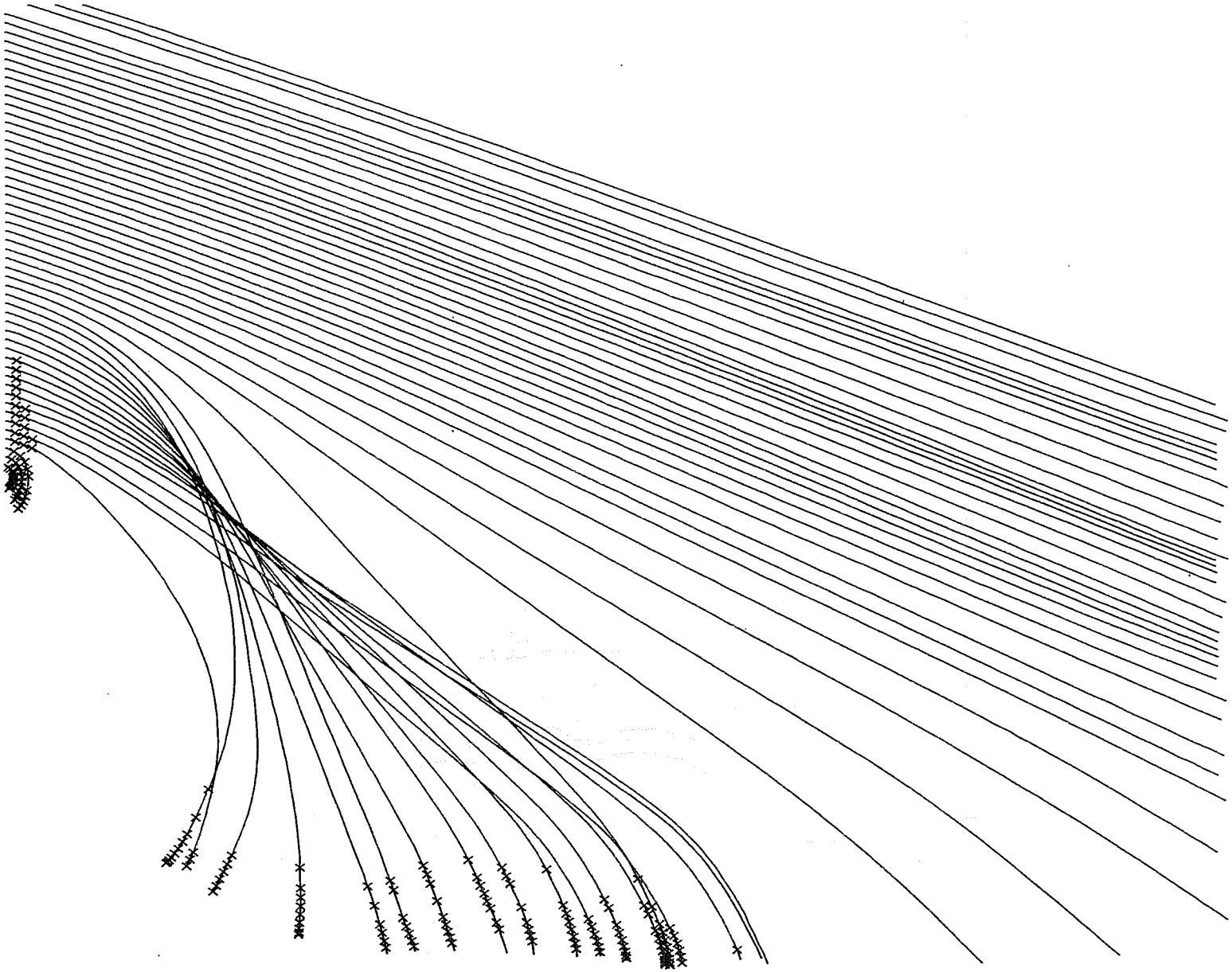
T= 15.0000 HO= 1.00000 RISE= .000000E+00
ANGLE OF INCIDENCE 77.1000 DEGREES



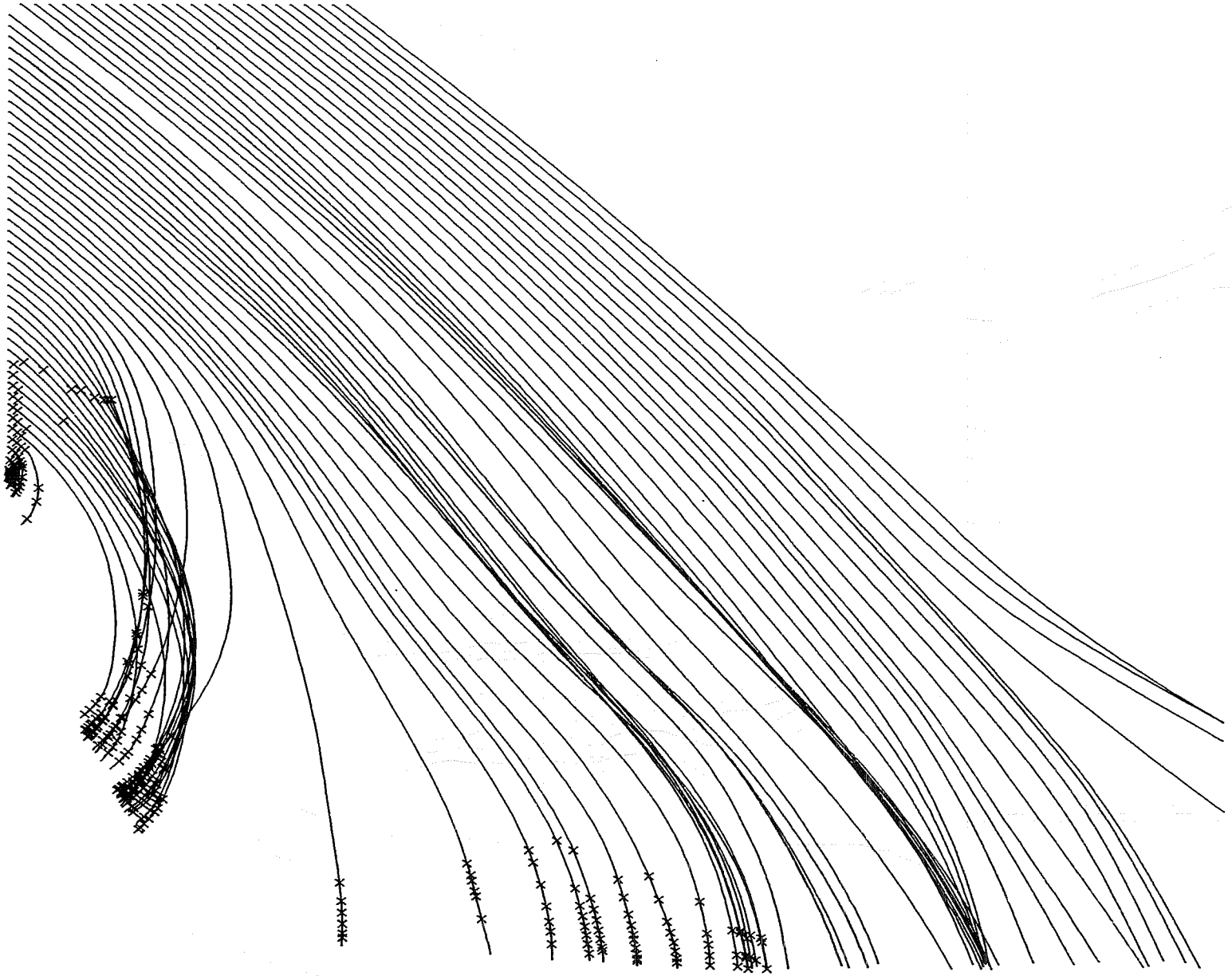
T= 4.00000 HB= .500000 RIBE= .000000E+00
ANGLE OF INCIDENCE 60.0000 DEGREES



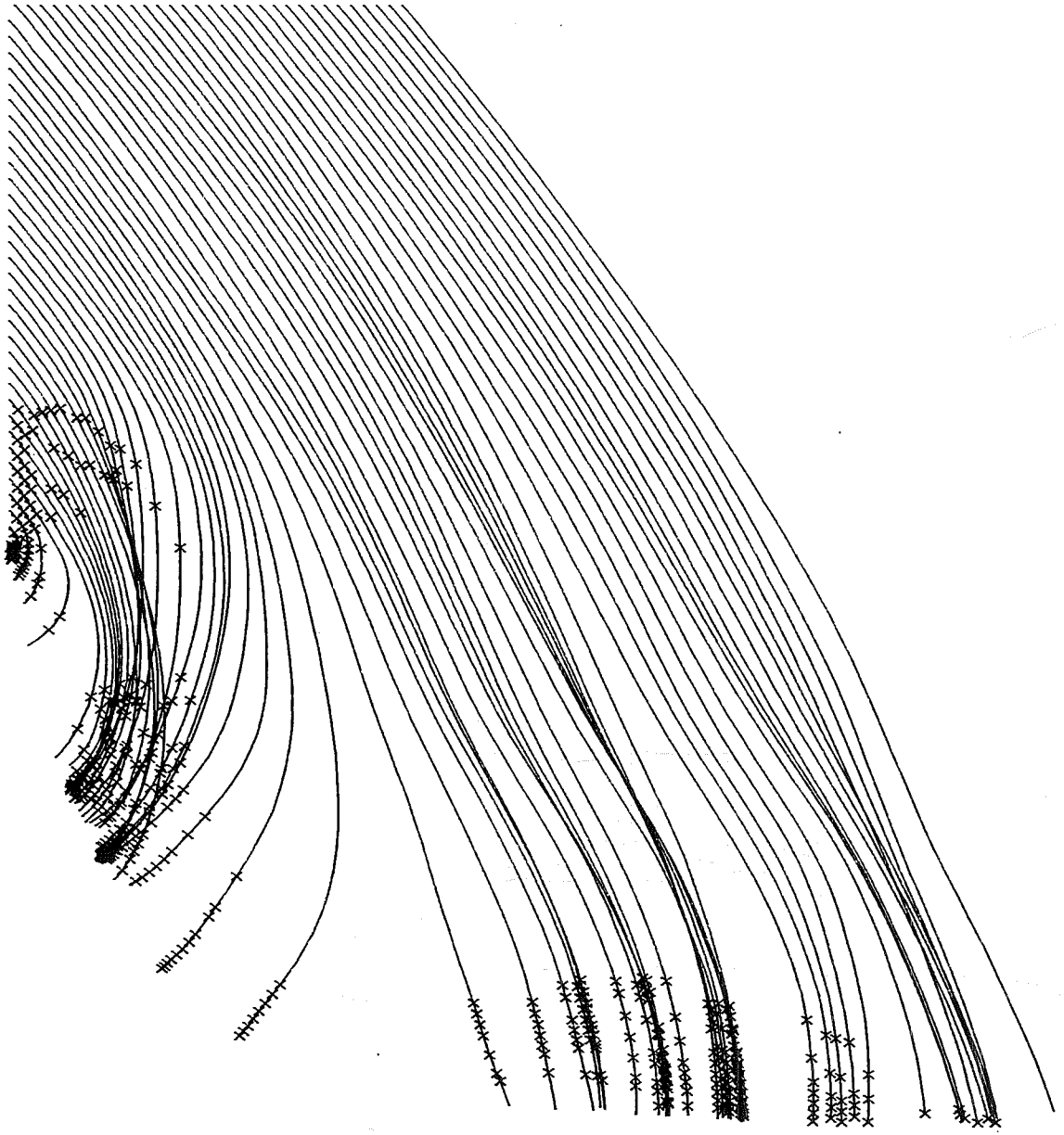
T= 0.50000 HB= 1.00000 RISE= .000000E+00
ANGLE OF INCIDENCE 91.7000 DEGREES



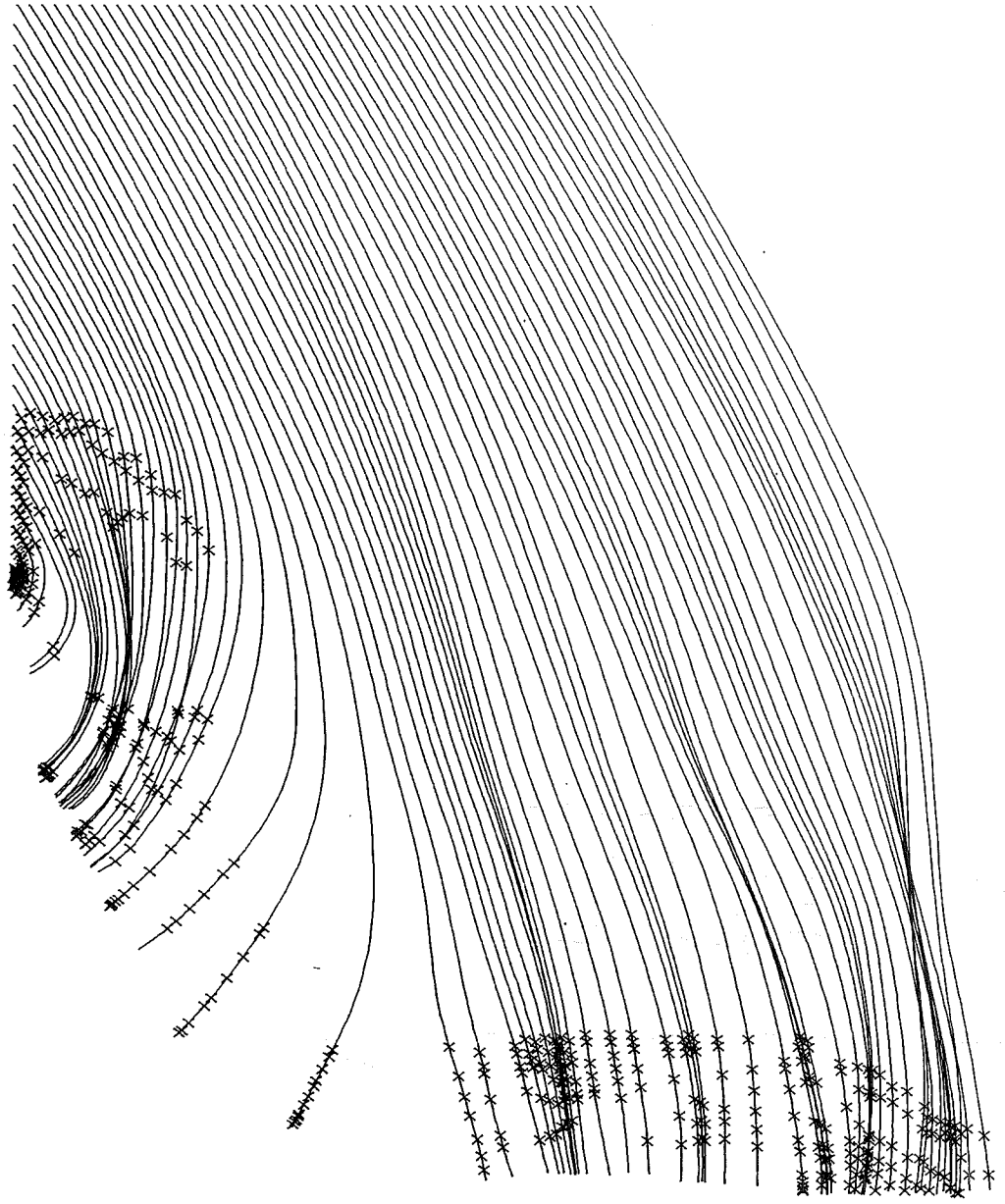
T= 4.00000 H0= 1.21000 RISE= .000000E+00
ANGLE OF INCIDENCE 10.2000 DEGREES



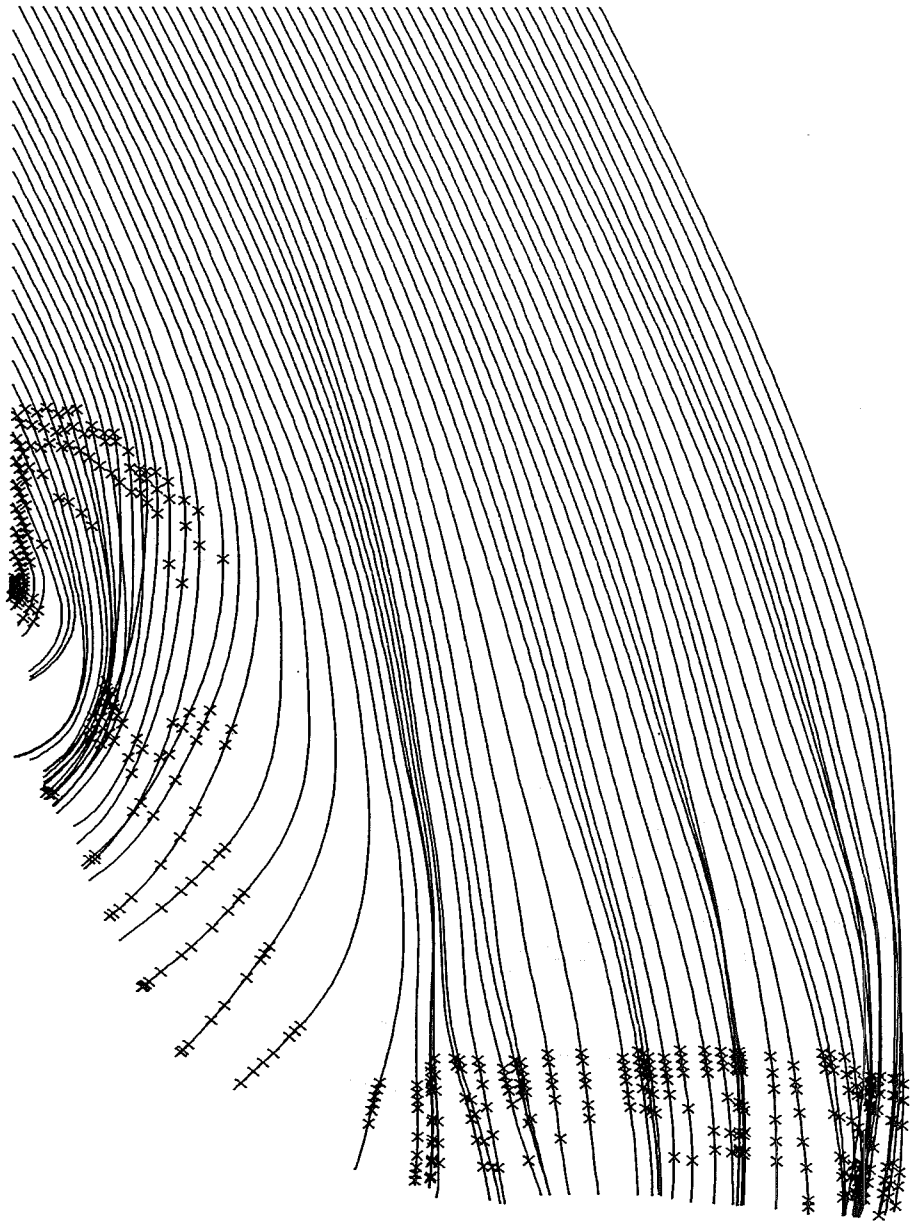
T= 6.5000 MD= 1.0700 RISE= .0000E+00
ANGLE OF INCIDENCE 37.2000 DEGREES



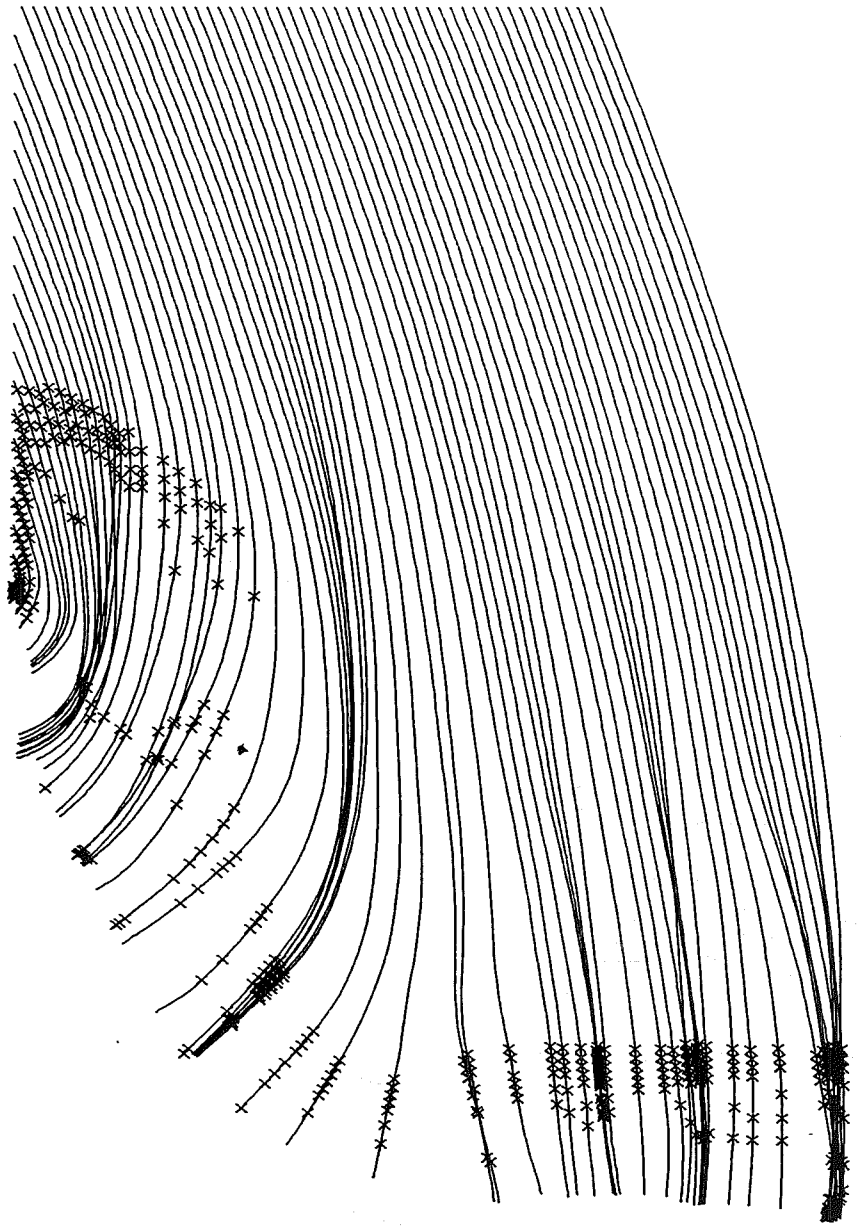
7= 0.50000 H0= 1.11000 RIDE= -.000000E+00
ANGLE OF INCIDENCE 50.0000 DEGREES



T= 18.5000 H0= 1.20000 RISE= .000000E+00
ANGLE OF INCIDENCE 50.0000 DEGREES



T= 12.5000 H0= 1.42900 RISE= .000000E+00
ANGLE OF INCIDENCE 62.0000 DEGREES

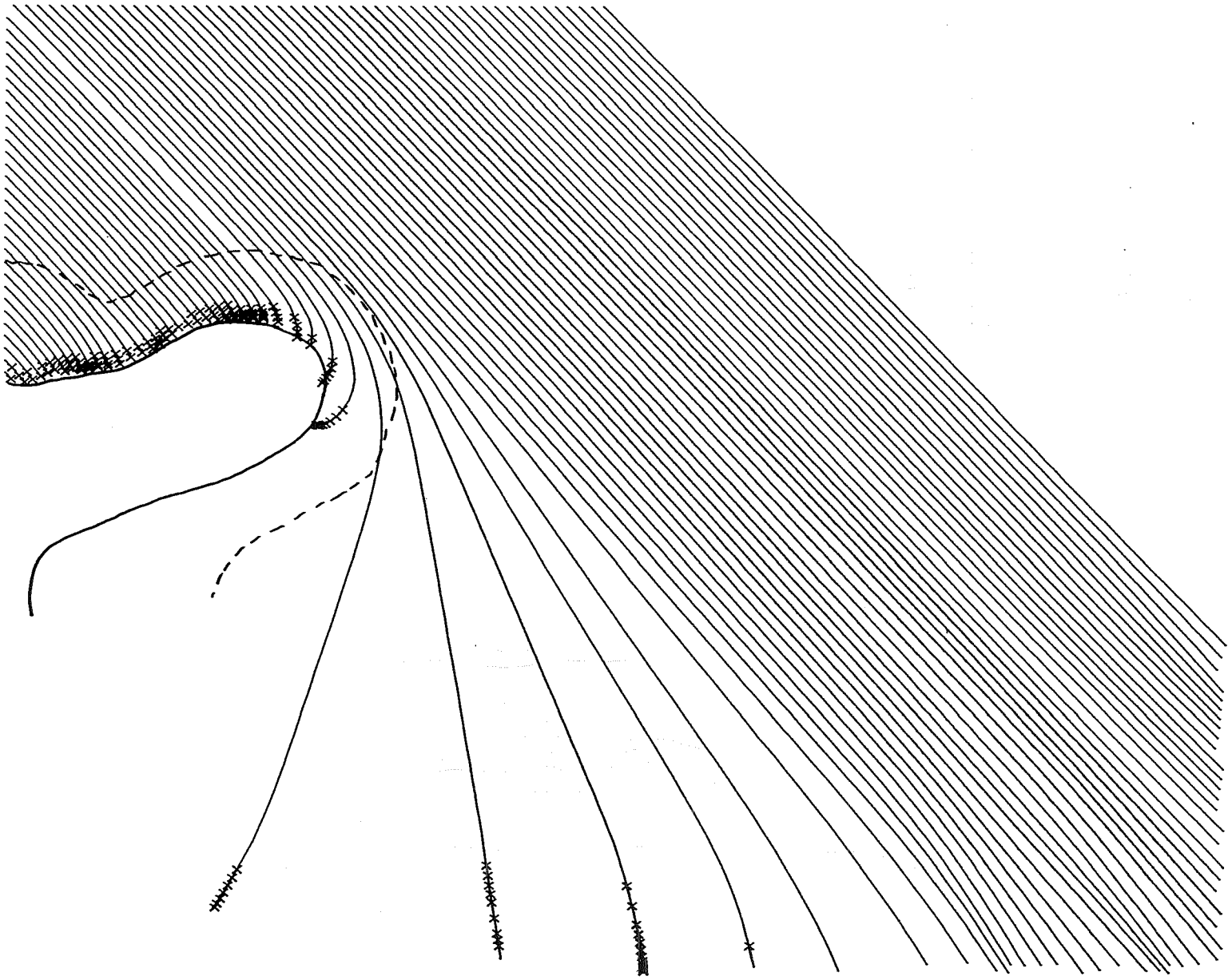


T= 15.0000 MU= 1.00000 RISE= .000000E+00
ANGLE OF INCIDENCE 60.0000 DEGREES

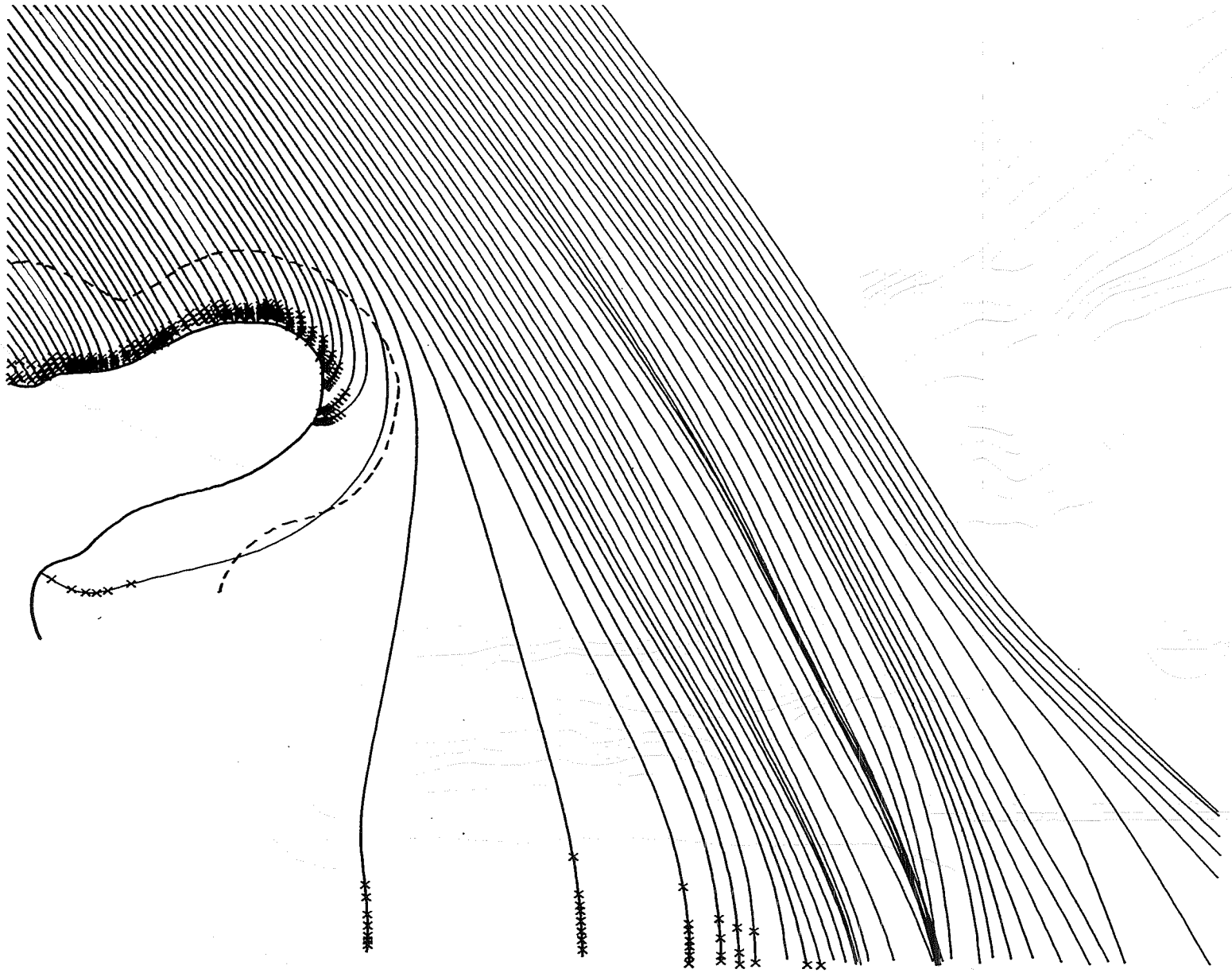
CALCULS DE REFRACTION

(série D)

(DIGUE DE PROTECTION EN SABLE)

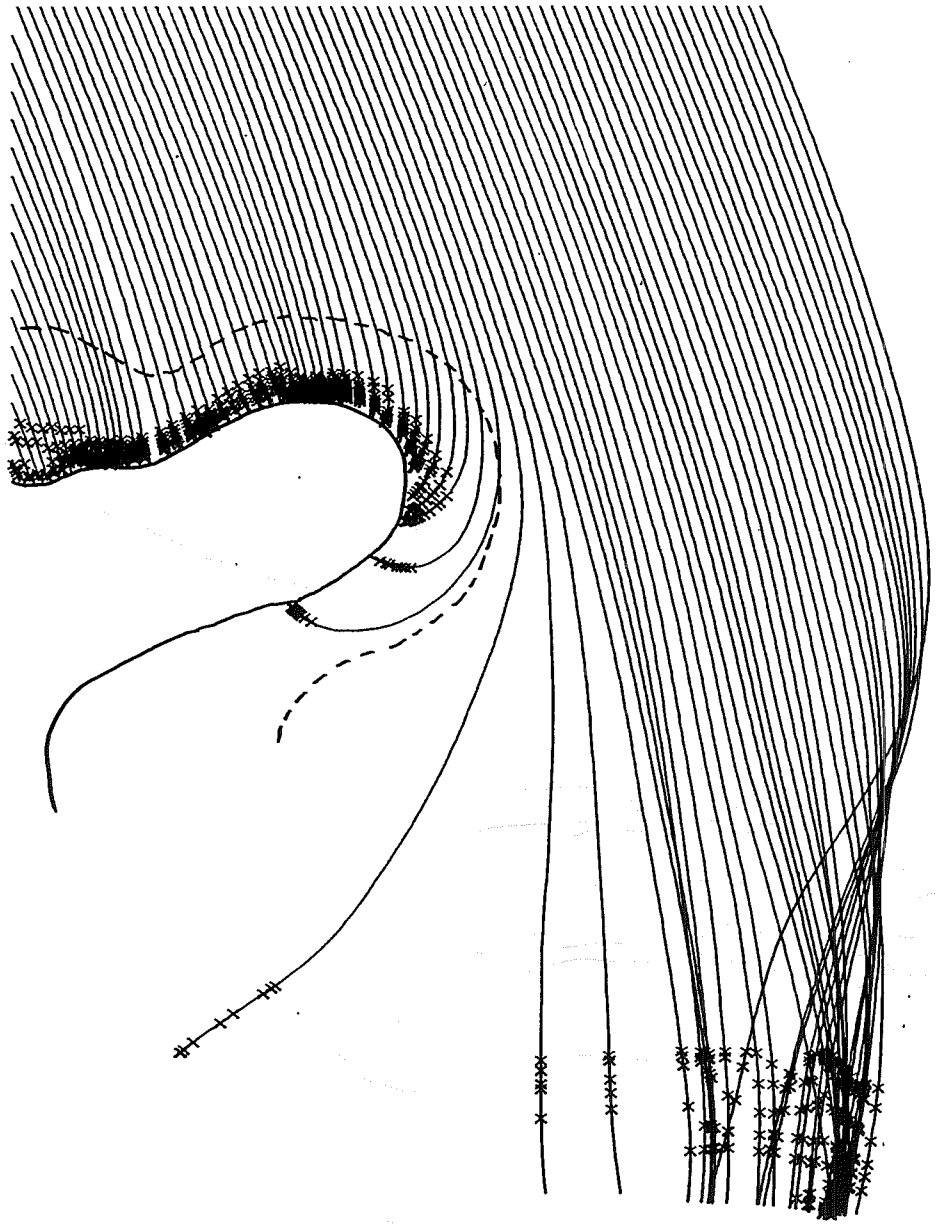


T= 4.0000 HB= 1.22000 RISE= .000000E+00
ANGLE OF INCIDENCE 45.0000 DEGREES

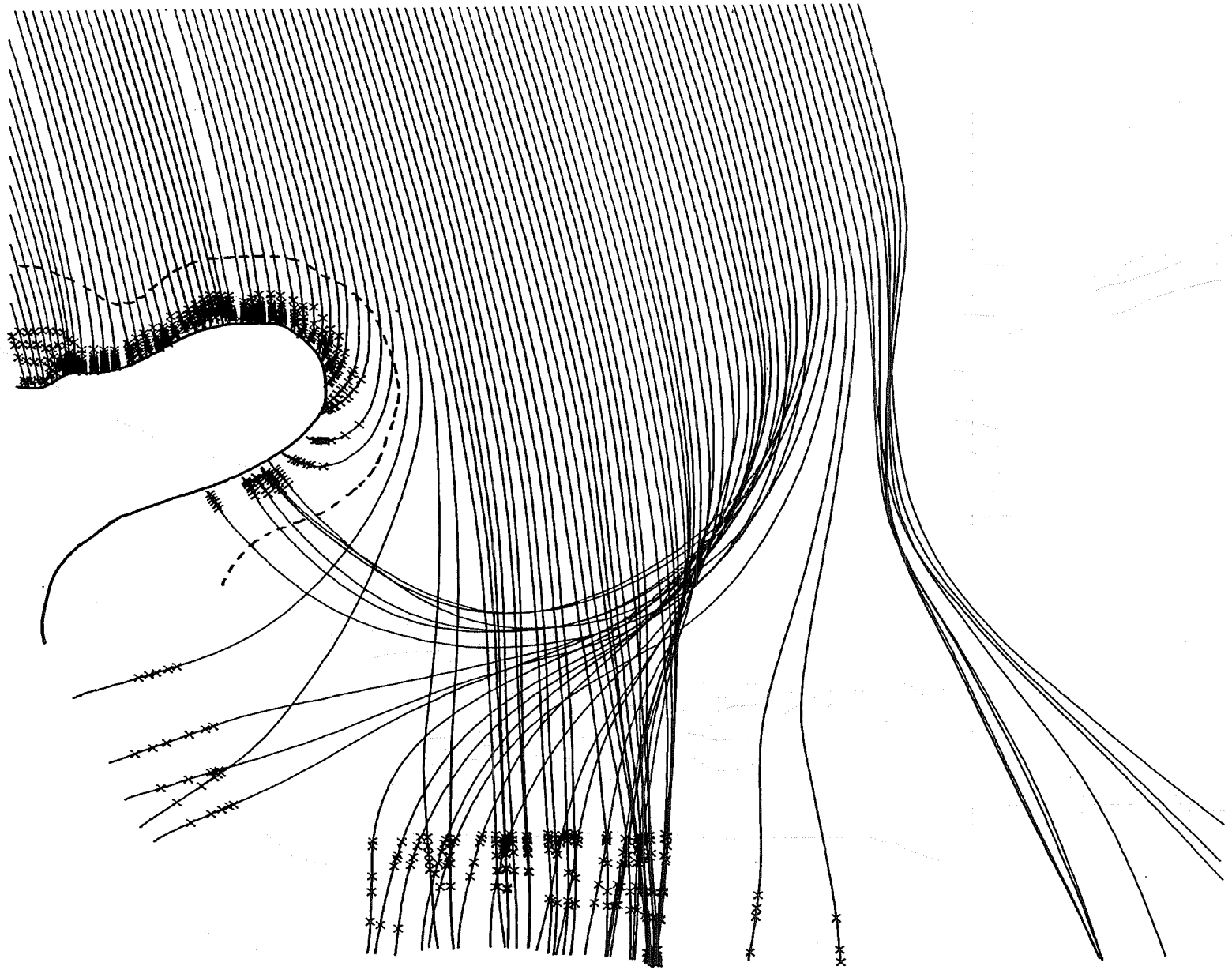


T= 0.00000 mb= 1.00000 RLNO= .0000000-01
ANGLE OF INCIDENCE 82.7000 DEGREES

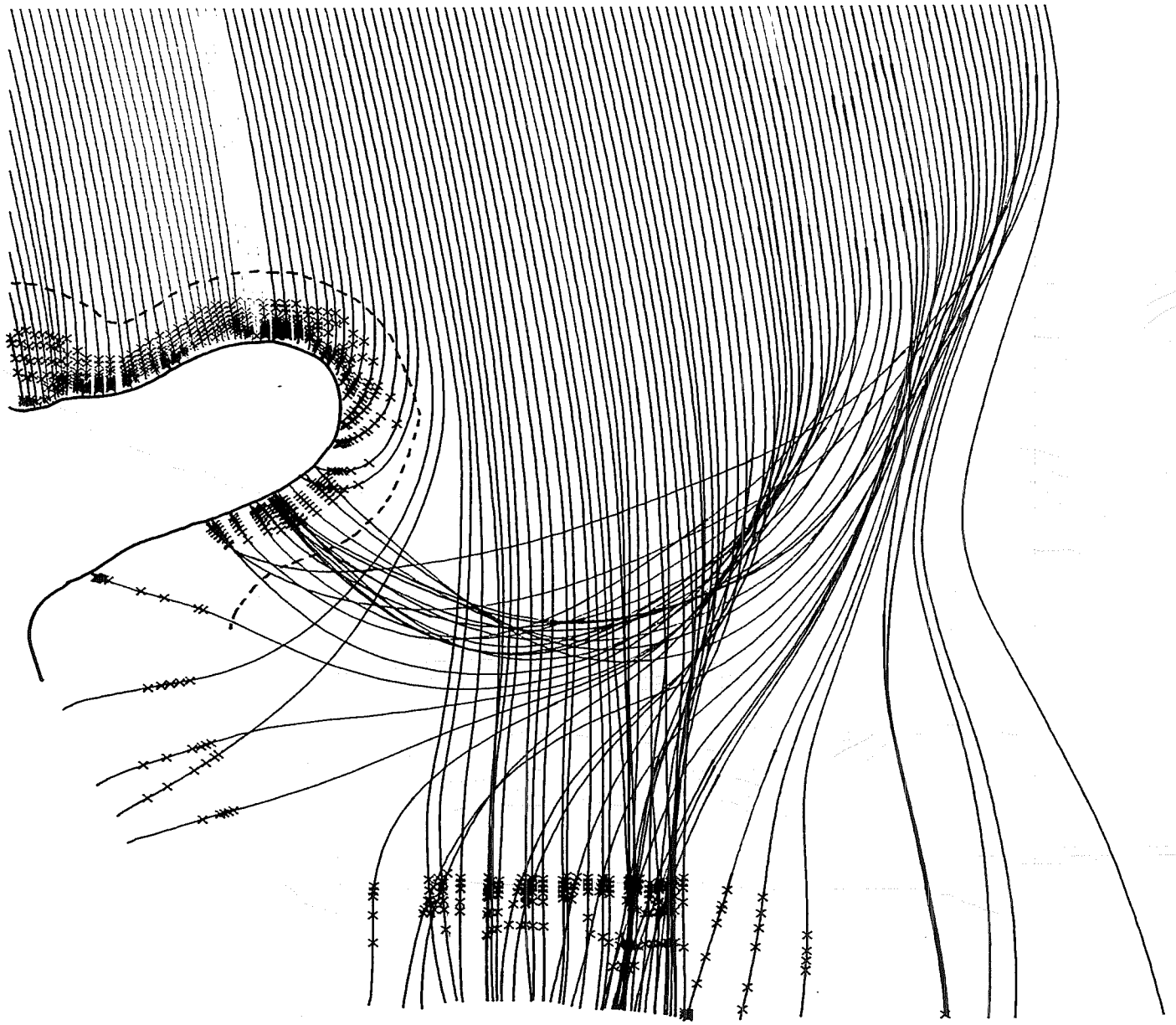
T= 8.30000 MO= 1.13000 RE= .000000E+00
ANGLE OF INCIDENCE 60.0000 DEGREES



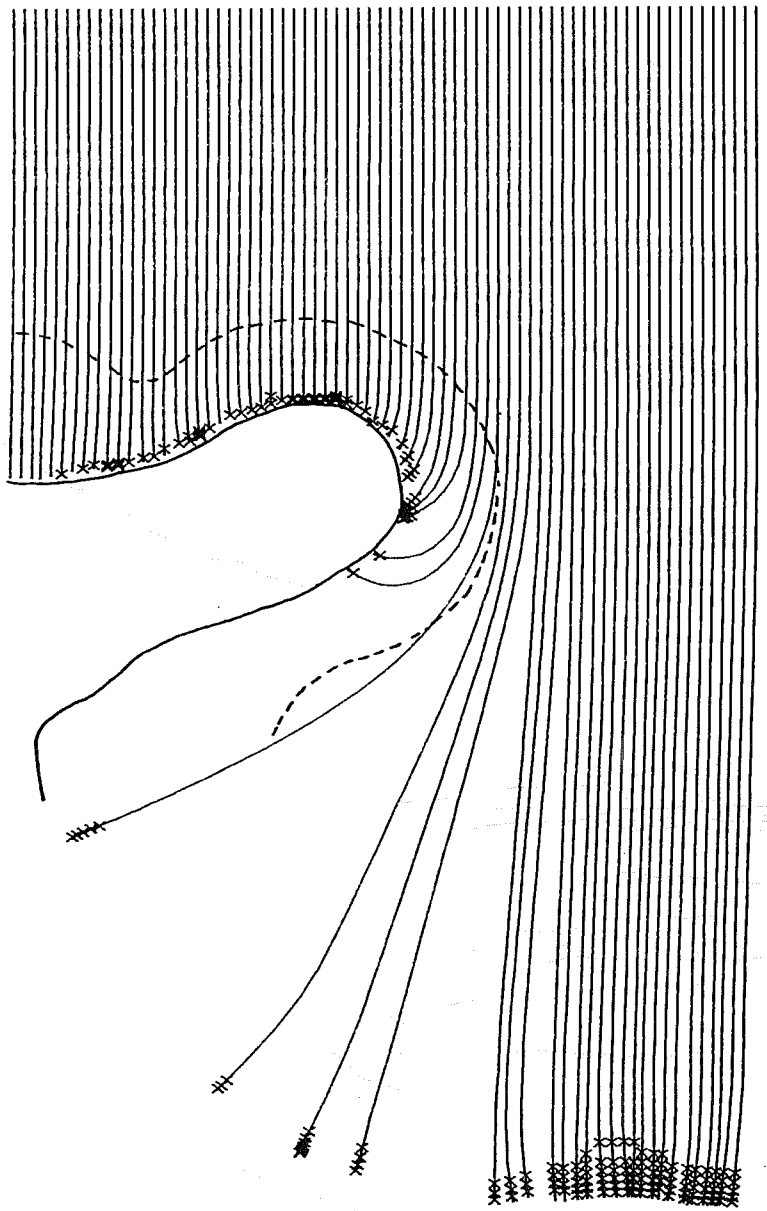
T= 18.1988 M0= 1.20000 RUN= .000000E+00
ANGLE OF INCIDENCE 67.0000 DEGREES



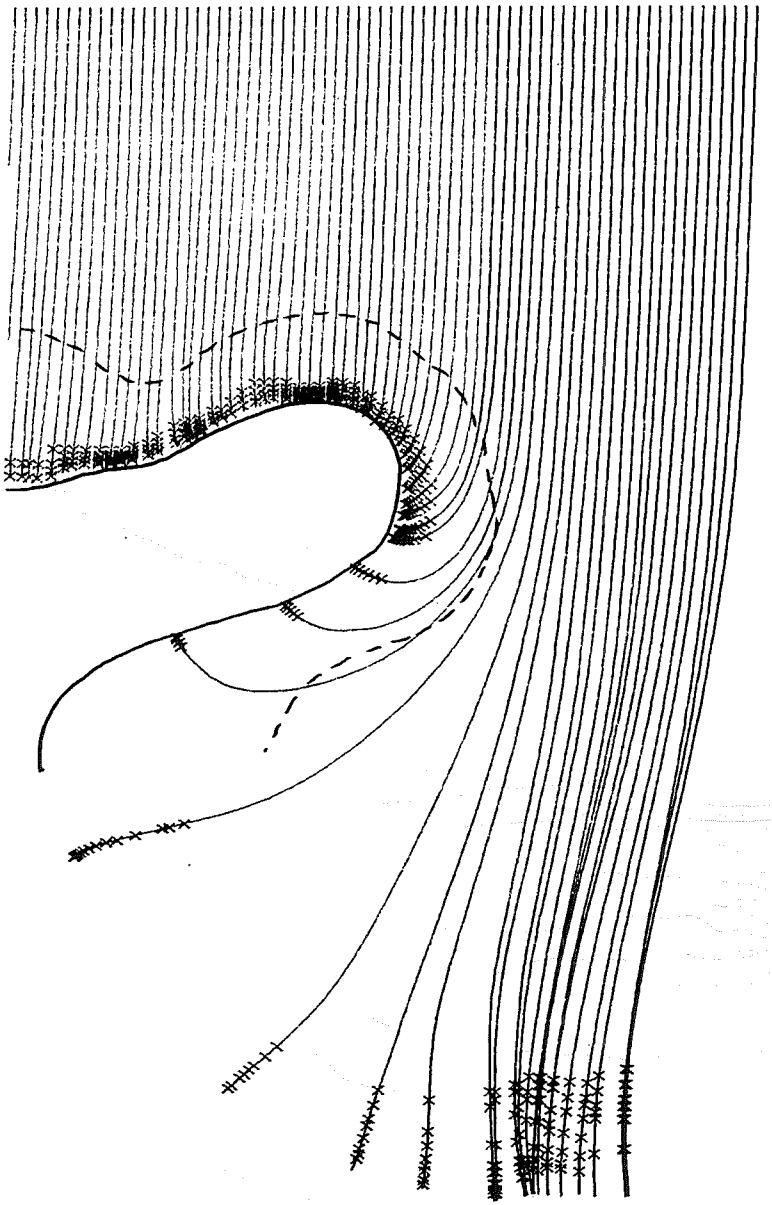
T= 12.0000 MP= 1.20000 RIGR= .000000E+00
ANGLE OF INCIDENCE 72.0000 DEGREES



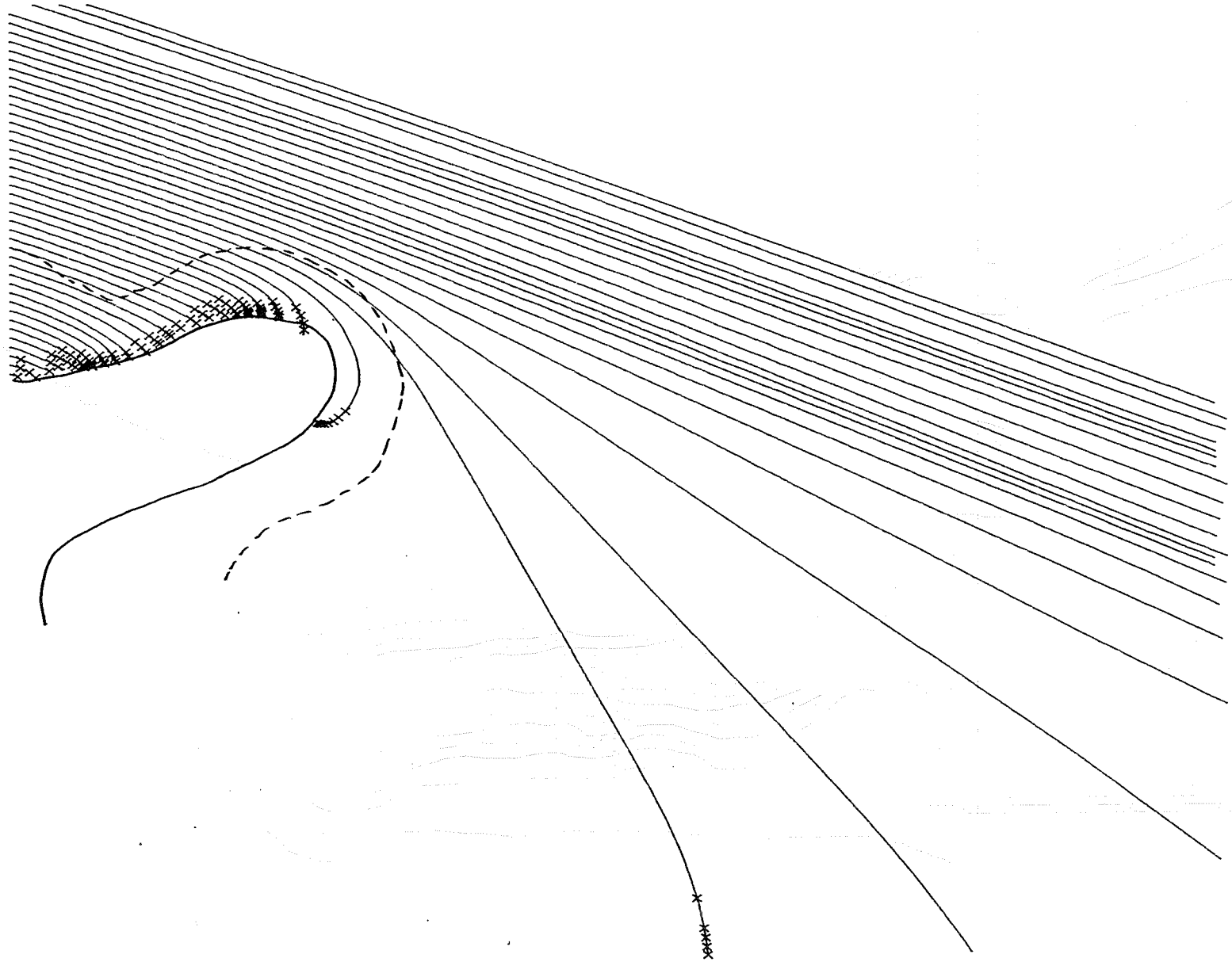
T= 15.0000 MD= 1.00000 RISK= .0000000E+00
ANGLE OF INCIDENCE 77.1000 DEGREES



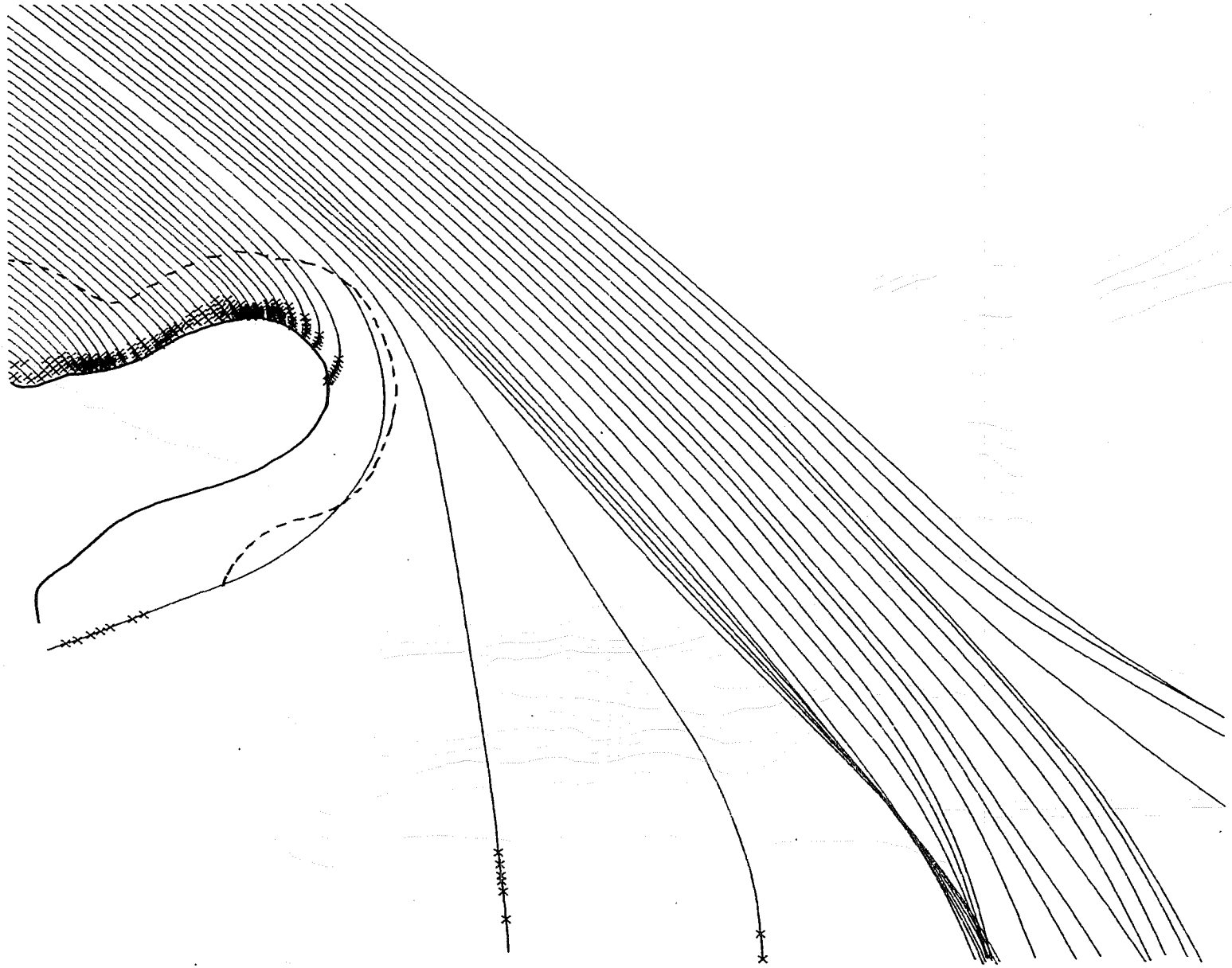
T= 4.00000 HB= .300000 RIDE= .000000E+00
ANGLE OF INCIDENCE 60.0000 DEGREES



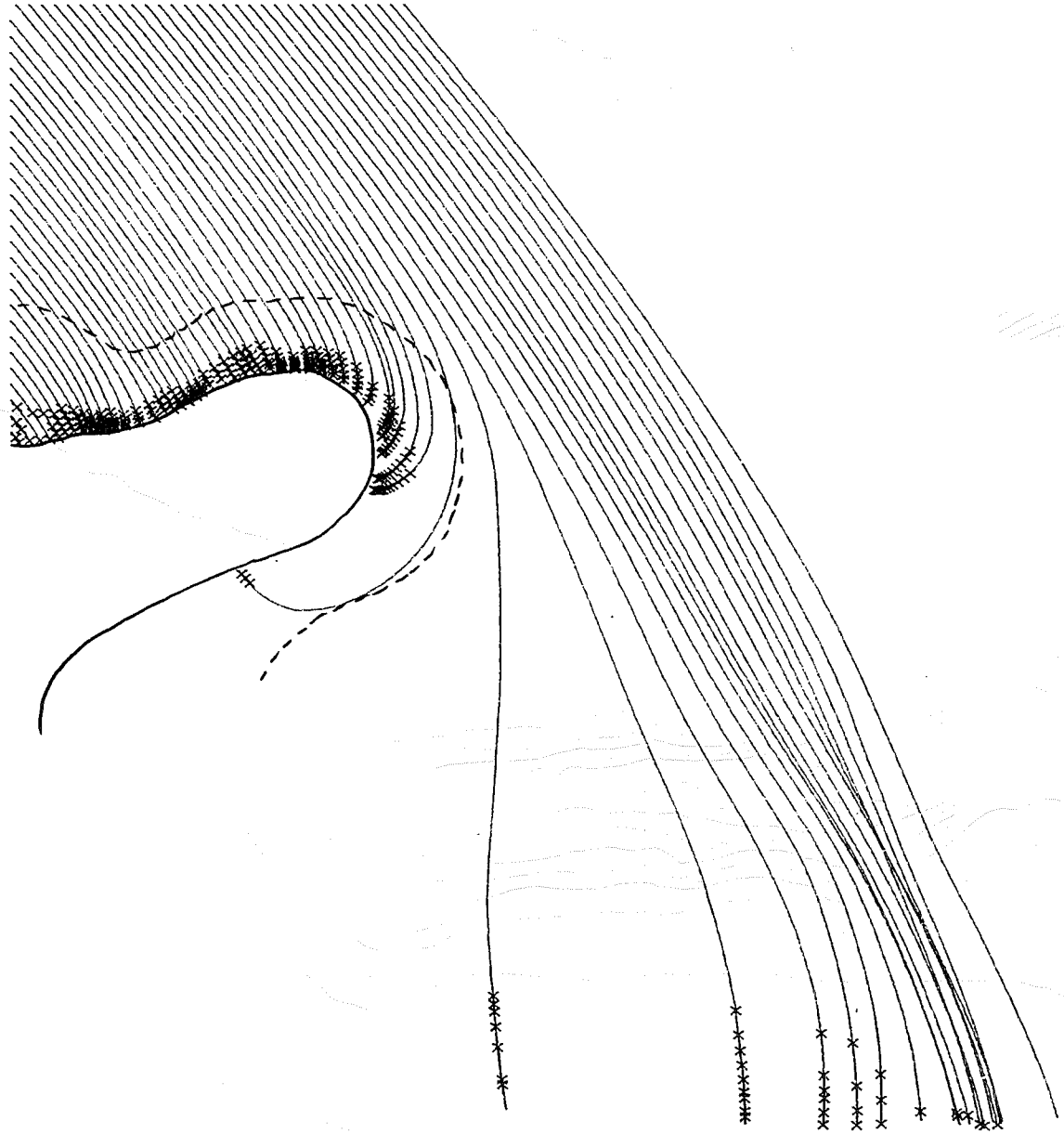
T= 0.0000 HB= 1.0000 RISK= .000000E-00
ANGLE OF INCIDENCE 61.7500 DEGREES



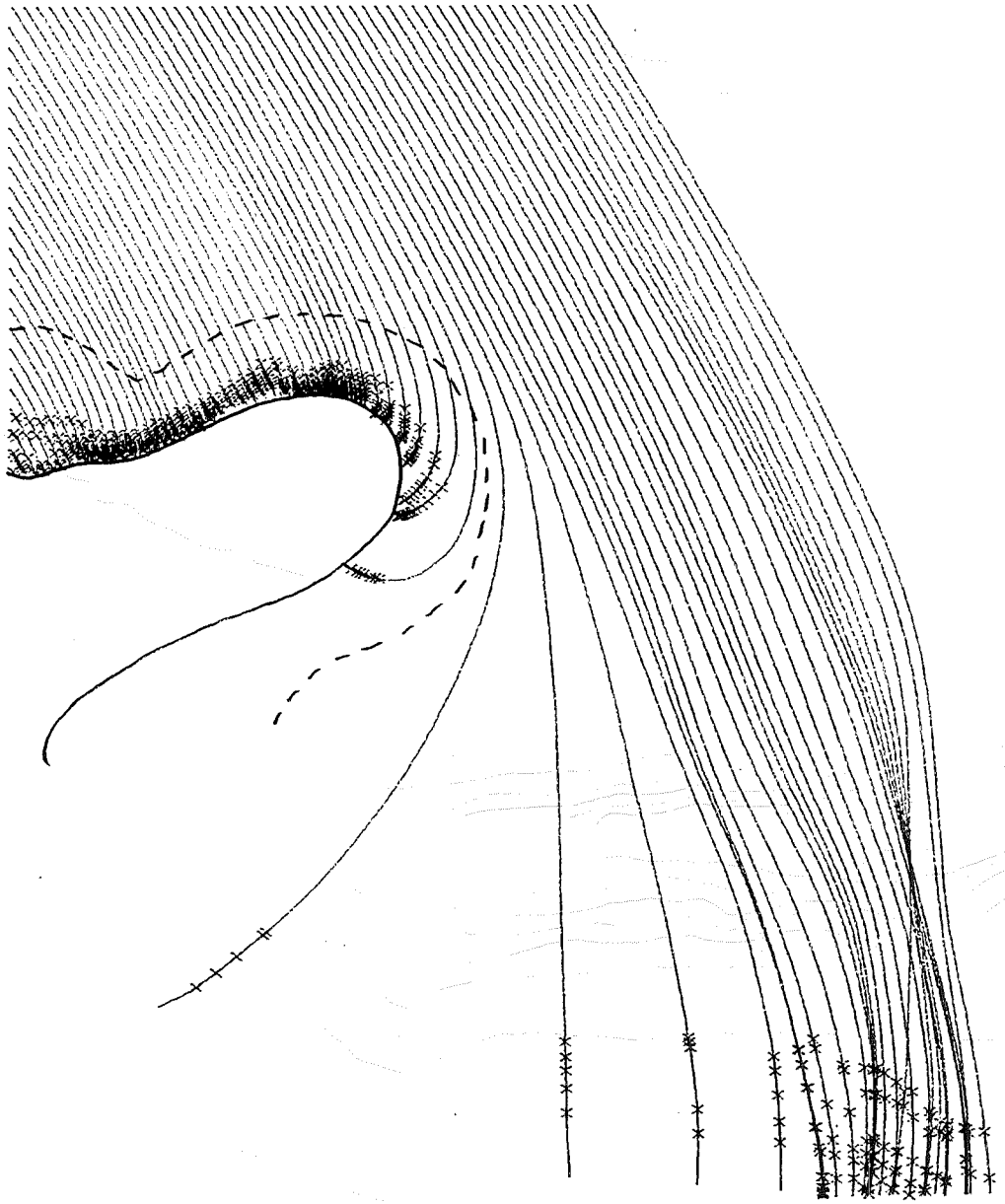
T= 4.00000 HB= 1.21000 RIGE= .000000E+00
ANGLE OF INCIDENCE 10.2000 DEGREES



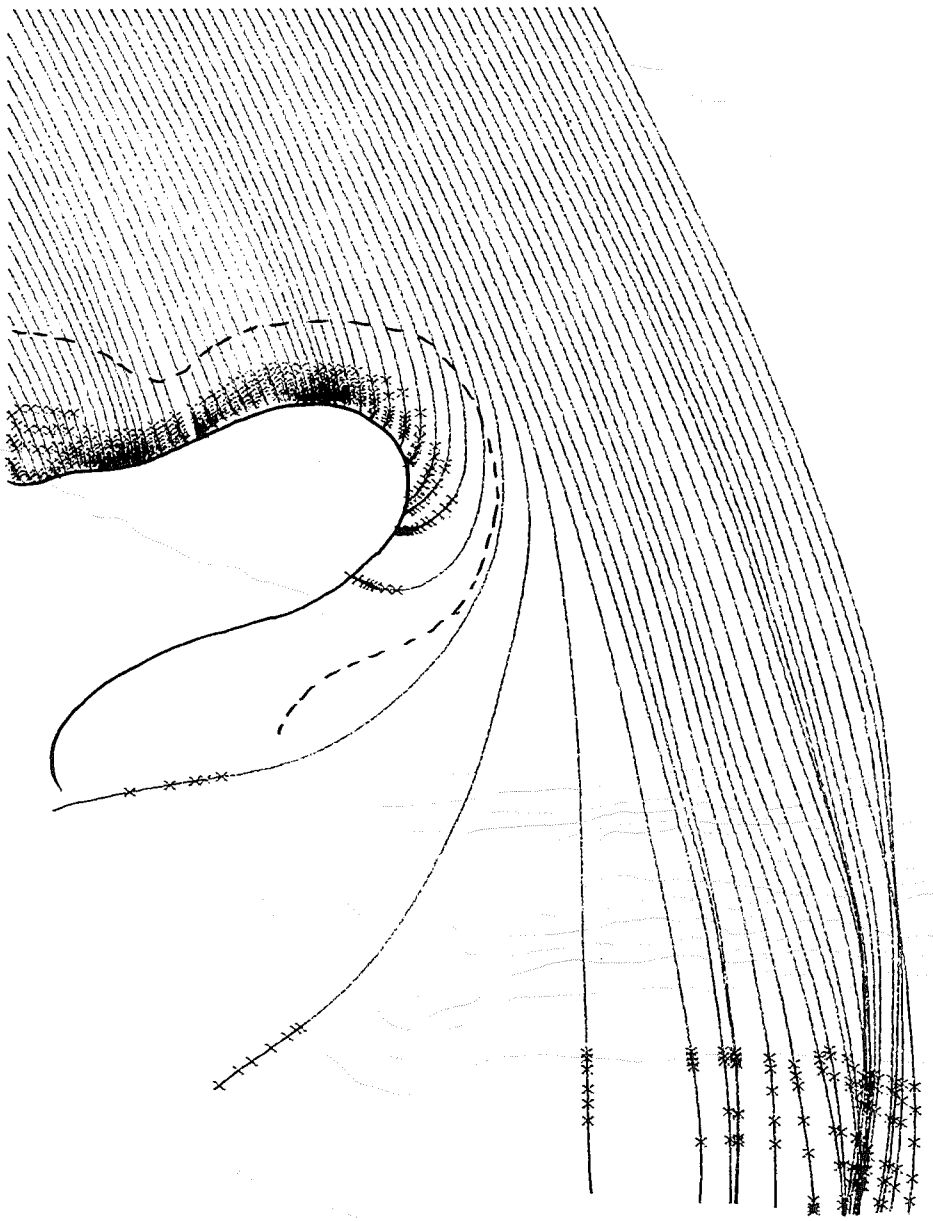
T= 8.50000 HO= 1.87000 RIDE= .000000E+00
ANGLE OF INCIDENCE 37.2000 DEGREES



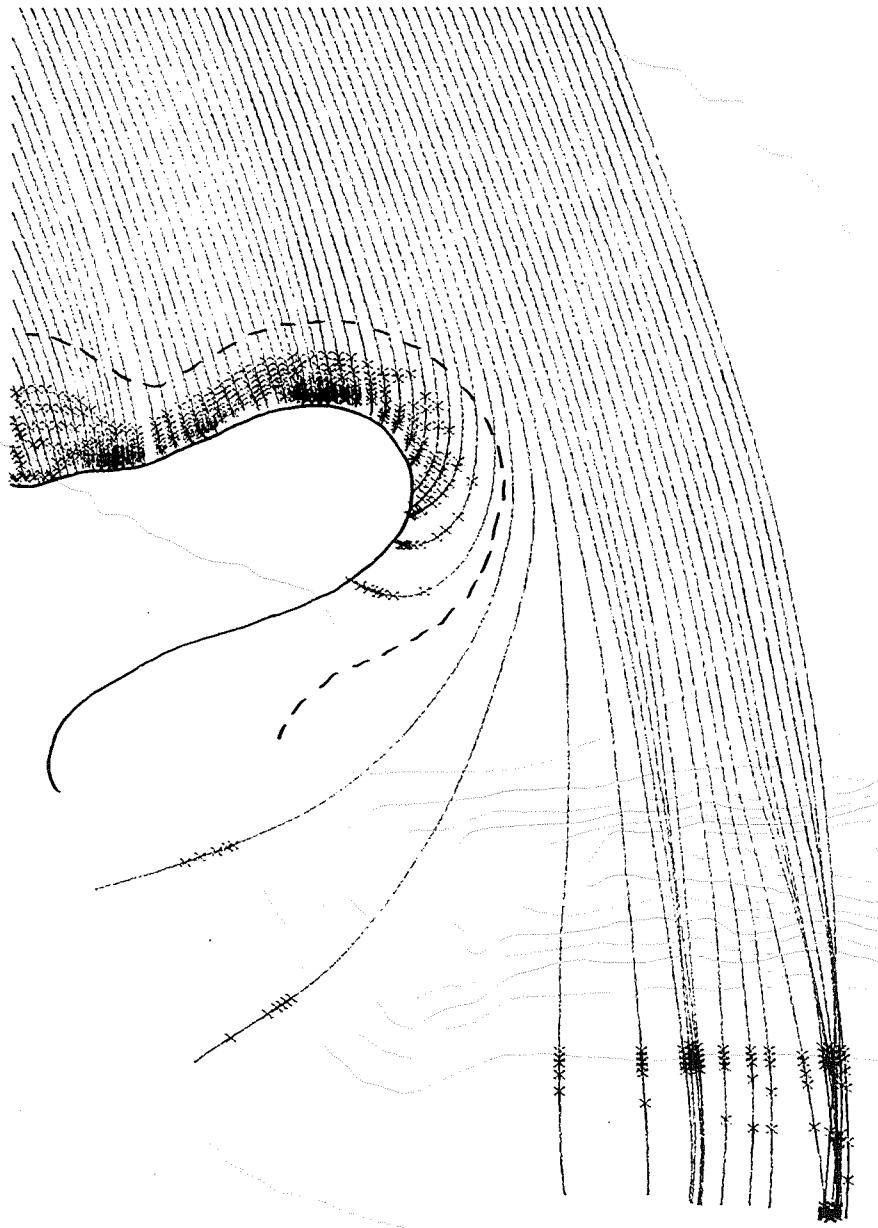
T= 0.50000 HO= 1.11800 RISE= .0000000E+00
ANGLE OF INCIDENCE 30.0000 DEGREES



T= 18.3000 MD= 1.20000 RISK= .000000E-02
ANGLE OF INCIDENCE 58.0000 DEGREES



T= 12.5000 HE= 1.42000 RIBE= .000000E+00
ANGLE OF INCIDENCE 62.0000 DEGREES



T= 10.0000 HS= 1.00000 RISE= .000000E+00
ANGLE OF INCIDENCE 60.2000 DEGREES

CALCULS DU TRANSPORT LITTORAL

(profil 1)

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HYDRONAMIC BV
PORT & WATERWAY ENGINEERS
SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
=============================================================================================

PHYSICAL CONSTANTS  G=    9.81      COASTAL CONSTANTS D50= .000150
                  RHO=1027.00                          D90= .000300
                KAPPA=     .38                       DELTA=1.650000
          TEMPERATURE=  18.00                 BREAKERINDEX= .800000
***************************************************************

SEASON NR  1
 WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
 PERIOD       4.00 SEC
 DIRECTION  37.00 DEGREES (AT   9.M DEPTH)
 REFR COEF     .97 (AT   9.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING    7.00% OF THE YEAR
***************************************************************


REFRACTED WAVEHEIGHT   .90 M
BREAKERANGLE 23. DEGREES

  D    ALFA   H    SETUP   U1    C     KSI    R    L      V      S
 7.00 .0035  .77   .00    .00   .00   .00   .00   .00   .00         0. IV
                                                                       IS
 6.42 .0035  .76   .00    .00   .00   .00   .00   .00   .00         0. IV
                                                                       IS
 5.83 .0284  .76   .00    .00   .00   .00   .00   .00   .00         0. IV
                                                                       IS
 5.25 .0284  .75   .00    .00   .00   .00   .00   .00   .00         0. IV
                                                                       IS
 4.67 .0284  .75   .00    .00   .00   .00   .00   .00   .00         0. IV
                                                                       IS
 4.08 .0284  .75   .00    .00   .00   .00   .00   .00   .00         0. IV
                                                                       IS
 3.50 .0284  .75   .01    .00   .00   .00   .00   .00   .00         0. IV
                                                                       IS
 2.92 .0284  .76   .01    .00   .00   .00   .00   .00   .00         0. IV
                                                                       IS
 2.33 .0284  .79   .01    .00   .00   .00   .00   .00   .00         0. IV
                                                                       IS
 1.75 .0284  .81   .02    .99 36.42  .78   .20 18.36   .04         5. IVVV
                                                                       IS
 1.17 .0284  .76   .02   1.26 33.29  .65   .20 16.32   .62       237. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                       ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
  .58 .0284  .49   .11   1.20 29.07  .58   .20 13.78   .77       288. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                       ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
TOTAL TRANSPORT IS     86092. M3/SEASON (ACC TO CERC)
TOTAL TRANSPORT IS     10886. M3/SEASON (ACC TO BIJKER)
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           HYDRONAMIC BV
           PORT & WATERWAY ENGINEERS
           SLIEDRECHT-HOLLAND

     CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
     ==============================================================================================================

     PHYSICAL CONSTANTS   G=    9.81      COASTAL CONSTANTS D50= .000150
                        RHO=1027.00                         D90= .000300
                      KAPPA=     .38                      DELTA=1.650000
               TEMPERATURE=  18.00                 BREAKERINDEX= .800000
     ************************************************************

     SEASON NR  1
      WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
      PERIOD       4.00 SEC
      DIRECTION  37.00 DEGREES (AT  9.M DEPTH)
      REFR COEF      .97  (AT  9.M DEPTH)

     THIS WAVE CLIMATE OCCURS DURING    7.00% OF THE YEAR
     ************************************************************


     REFRACTED WAVEHEIGHT   .90 M
     BREAKERANGLE 23. DEGREES

         D     ALFA   H     SETUP    U1    C       KSI      R     L        V         S
      7.00 .0035    .77    .00    .00    .00    .00    .00    .00    .00          0. IV
                                                                                     IS
      6.42 .0035    .76    .00    .00    .00    .00    .00    .00    .00          0. IV
                                                                                     IS
      5.83 .0284    .76    .00    .00    .00    .00    .00    .00    .00          0. IV
                                                                                     IS
      5.25 .0284    .75    .00    .00    .00    .00    .00    .00    .00          0. IV
                                                                                     IS
      4.67 .0284    .75    .00    .00    .00    .00    .00    .00    .00          0. IV
                                                                                     IS
      4.08 .0284    .75    .00    .00    .00    .00    .00    .00    .00          0. IV
                                                                                     IS
      3.50 .0284    .75    .01    .00    .00    .00    .00    .00    .00          0. IV
                                                                                     IS
      2.92 .0284    .76    .01    .00    .00    .00    .00    .00    .00          0. IV
                                                                                     IS
      2.33 .0284    .79    .01    .00    .00    .00    .00    .00    .00          0. IV
                                                                                     IS
      1.75 .0284    .81    .02    .99 36.42    .78    .20 18.36    .04          5. IVVV
                                                                                     IS
      1.17 .0284    .76    .02   1.26 33.29    .65    .20 16.32    .62        237. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                                     ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
       .58 .0284    .49    .11   1.20 29.07    .58    .20 13.78    .77        288. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                                     ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
     XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
     TOTAL TRANSPORT IS     86092. M3/SEASON (ACC TO CERC)
     TOTAL TRANSPORT IS     10886. M3/SEASON (ACC TO BIJKER)
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      HYDRONAMIC BV
      PORT & WATERWAY ENGINEERS
      SLIEDRECHT-HOLLAND

  CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
  ====================================================================================================================

  PHYSICAL CONSTANTS  G=    9.81     COASTAL CONSTANTS D50= .000150
                    RHO=1027.00                        D90= .000300
                  KAPPA=     .38                     DELTA=1.650000
            TEMPERATURE=   18.00               BREAKERINDEX= .800000
  *************************************************************


  SEASON NR  2
   WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
   PERIOD       6.50 SEC
   DIRECTION   29.00 DEGREES (AT  9.M DEPTH)
   REFR COEF     .93 (AT  9.M DEPTH)

  THIS WAVE CLIMATE OCCURS DURING   3.50% OF THE YEAR
  *************************************************************


  REFRACTED WAVEHEIGHT 1.11 M
  BREAKERANGLE 14. DEGREES

    D    ALFA   H    SETUP   U1     C     KSI     R     L      V       S
   7.00 .0035   .79   .00   .00   .00   .00   .00   .00   .00        0. IV
                                                                          IS
   6.42 .0035   .80   .00   .00   .00   .00   .00   .00   .00        0. IV
                                                                          IS
   5.83 .0284   .81   .01   .00   .00   .00   .00   .00   .00        0. IV
                                                                          IS
   5.25 .0284   .83   .01   .00   .00   .00   .00   .00   .00        0. IV
                                                                          IS
   4.67 .0284   .85   .01   .00   .00   .00   .00   .00   .00        0. IV
                                                                          IS
   4.08 .0284   .88   .01   .00   .00   .00   .00   .00   .00        0. IV
                                                                          IS
   3.50 .0284   .91   .01   .00   .00   .00   .00   .00   .00        0. IV
                                                                          IS
   2.92 .0284   .95   .02   .00   .00   .00   .00   .00   .00        0. IV
                                                                          IS
   2.33 .0284  1.00   .02   .00   .00   .00   .00   .00   .00        0. IV
                                                                          IS
   1.75 .0284  1.01   .03  1.56 36.49   .55   .20 36.14   .34       43. IVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                          ISSSSSSSSSSSS
   1.17 .0284   .88   .04  1.76 33.47   .48   .20 31.91   .80      201. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                          ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
    .58 .0284   .51   .15  1.44 29.57   .46   .20 27.10   .77      147. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                          ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
  XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
  TOTAL TRANSPORT IS     45362. M3/SEASON (ACC TO CERC)
  TOTAL TRANSPORT IS      8002. M3/SEASON (ACC TO BIJKER)
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HYDRONAMIC BV
PORT & WATERWAY ENGINEERS
SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
==========================================================================================

PHYSICAL CONSTANTS  G=    9.81     COASTAL CONSTANTS D50=  .000150
                  RHO=1027.00                        D90=  .000300
                KAPPA=     .38                       DELTA=1.650000
          TEMPERATURE=   18.00               BREAKERINDEX=  .800000
**************************************************************

SEASON NR   3
 WAVEHEIGHT     .88 M (HRMS IN DEEP WATER)
 PERIOD        8.50 SEC
 DIRECTION  23.00 DEGREES (AT   9.M DEPTH)
 REFR COEF    1.00 (AT   9.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING    1.60% OF THE YEAR
**************************************************************

REFRACTED WAVEHEIGHT 1.34 M
BREAKERANGLE 11. DEGREES

   D    ALFA   H    SETUP   U1    C      KSI     R     L        V        S
  7.00 .0035   .89   .01   .00   .00    .00    .00   .00     .00        0. IV
                                                                          IS
  6.42 .0035   .91   .01   .00   .00    .00    .00   .00     .00        0. IV
                                                                          IS
  5.83 .0284   .93   .01   .00   .00    .00    .00   .00     .00        0. IV
                                                                          IS
  5.25 .0284   .96   .01   .00   .00    .00    .00   .00     .00        0. IV
                                                                          IS
  4.67 .0284   .99   .01   .00   .00    .00    .00   .00     .00        0. IV
                                                                          IS
  4.08 .0284  1.03   .01   .00   .00    .00    .00   .00     .00        0. IV
                                                                          IS
  3.50 .0284  1.07   .02   .00   .00    .00    .00   .00     .00        0. IV
                                                                          IS
  2.92 .0284  1.13   .03   .00   .00    .00    .00   .00     .00        0. IV
                                                                          IS
  2.33 .0284  1.17   .03  1.64 38.71    .53    .20 57.00     .14        5. IVVVVVVVVV
                                                                          ISS
  1.75 .0284  1.14   .04  1.93 36.53    .47    .20 52.05     .69       79. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                          ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
  1.17 .0284   .93   .07  2.02 33.64    .43    .20 46.11     .90      116. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                          ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
   .58 .0284   .52   .21  1.52 30.12    .42    .20 39.74     .77       68. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                          ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
 TOTAL TRANSPORT IS    25462. M3/SEASON (ACC TO CERC)
 TOTAL TRANSPORT IS     5488. M3/SEASON (ACC TO BIJKER)
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        HYDRONAMIC BV
        PORT & WATERWAY ENGINEERS
        SLIEDRECHT-HOLLAND

 CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
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 PHYSICAL CONSTANTS  G=    9.81    COASTAL CONSTANTS D50= .000150
                      RHO=1027.00                     D90= .000300
                    KAPPA=     .38                   DELTA=1.650000
              TEMPERATURE=   18.00             BREAKERINDEX=  .800000
 ***********************************************************************


 SEASON NR   4
  WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
  PERIOD      10.50 SEC
  DIRECTION  18.00 DEGREES (AT  9.M DEPTH)
  REFR COEF    1.11 (AT  9.M DEPTH)

 THIS WAVE CLIMATE OCCURS DURING     .80% OF THE YEAR
 ***********************************************************************


 REFRACTED WAVEHEIGHT 1.67 M
 BREAKERANGLE   9. DEGREES

   D    ALFA   H    SETUP   U1    C     KSI    R     L       V       S
  7.00 .0035  1.01   .01   .00   .00   .00   .00   .00    .00       0.  IV
                                                                          IS
  6.42 .0035  1.03   .01   .00   .00   .00   .00   .00    .00       0.  IV
                                                                          IS
  5.83 .0284  1.06   .01   .00   .00   .00   .00   .00    .00       0.  IV
                                                                          IS
  5.25 .0284  1.09   .01   .00   .00   .00   .00   .00    .00       0.  IV
                                                                          IS
  4.67 .0284  1.13   .02   .00   .00   .00   .00   .00    .00       0.  IV
                                                                          IS
  4.08 .0284  1.18   .02   .00   .00   .00   .00   .00    .00       0.  IV
                                                                          IS
  3.50 .0284  1.23   .03   .00   .00   .00   .00   .00    .00       0.  IV
                                                                          IS
  2.92 .0284  1.29   .03  1.68 40.43   .51   .20 81.44   .05       1.  IVVV
                                                                          IS
  2.33 .0284  1.31   .04  1.99 38.74   .46   .20 75.89   .58      29.  IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                          ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
  1.75 .0284  1.23   .06  2.24 36.59   .42   .20 69.32   .91      68.  IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                          ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
  1.17 .0284   .96   .11  2.21 33.86   .39   .20 61.75   .93      62.  IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                          ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
   .58 .0284   .52   .28  1.55 30.83   .40   .20 54.31   .77      34.  IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                          ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
  XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
  TOTAL TRANSPORT IS     15545. M3/SEASON (ACC TO CERC)
  TOTAL TRANSPORT IS      3968. M3/SEASON (ACC TO BIJKER)
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HYDRONAMIC BV
PORT & WATERWAY ENGINEERS
SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
=============================================================================================================

PHYSICAL CONSTANTS  G=    9.81      COASTAL CONSTANTS D50= .000150
                  RHO=1027.00                          D90= .000300
                KAPPA=     .38                        DELTA=1.650000
          TEMPERATURE=   18.00                 BREAKERINDEX= .800000
*********************************************************

SEASON NR  5
 WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
 PERIOD      12.50 SEC
 DIRECTION   15.00 DEGREES (AT  9.M DEPTH)
 REFR COEF    1.23 (AT  9.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING     .80% OF THE YEAR
*********************************************************

REFRACTED WAVEHEIGHT 1.95 M
BREAKERANGLE  7. DEGREES

  D   ALFA   H   SETUP   U1    C    KSI    R      L      V       S
 7.00 .0035 1.12   .01   .00   .00   .00   .00    .00    .00       0. IV
                                                                     IS
 6.42 .0035 1.15   .01   .00   .00   .00   .00    .00    .00       0. IV
                                                                     IS
 5.83 .0284 1.18   .01   .00   .00   .00   .00    .00    .00       0. IV
                                                                     IS
 5.25 .0284 1.22   .02   .00   .00   .00   .00    .00    .00       0. IV
                                                                     IS
 4.67 .0284 1.26   .02   .00   .00   .00   .00    .00    .00       0. IV
                                                                     IS
 4.08 .0284 1.32   .03   .00   .00   .00   .00    .00    .00       0. IV
                                                                     IS
 3.50 .0284 1.38   .03  1.69 41.83   .50   .20109.23     .00       0. IV
                                                                     IS
 2.92 .0284 1.43   .04  1.98 40.45   .46   .20103.07     .52      22. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                     ISSSSSSSSSSSSSS
 2.33 .0284 1.43   .05  2.29 38.77   .42   .20 96.02     .87      69. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                     ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
 1.75 .0284 1.29   .07  2.48 36.64   .39   .20 87.75    1.01      86. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                     ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
 1.17 .0284  .98   .13  2.36 34.03   .37   .20 78.54     .93      62. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                     ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
  .58 .0284  .52   .34  1.57 31.38   .38   .20 70.17     .76      34. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                     ISSSSSSSSSSSSSSSSSSSSSS
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
TOTAL TRANSPORT IS     20171. M3/SEASON (ACC TO CERC)
TOTAL TRANSPORT IS      5604. M3/SEASON (ACC TO BIJKER)
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HYDRONAMIC BV
 PORT & WATERWAY ENGINEERS
 SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
==========================================================================================================================

PHYSICAL CONSTANTS  G=   9.81     COASTAL CONSTANTS D50= .000150
                 RHO=1027.00                        D90= .000300
               KAPPA=    .38                      DELTA=1.650000
         TEMPERATURE=  18.00                BREAKERINDEX= .800000
*************************************************************

SEASON NR  6
 WAVEHEIGHT   .88 M (HRMS IN DEEP WATER)
 PERIOD      15.00 SEC
 DIRECTION  13.00 DEGREES (AT  9.M DEPTH)
 REFR COEF   1.35 (AT  9.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING     .15% OF THE YEAR
*************************************************************


REFRACTED WAVEHEIGHT 2.33 M
BREAKERANGLE  7. DEGREES

  D    ALFA  H    SETUP  U1    C     KSI    R     L     V       S
 7.00 .0035 1.25   .01   .00   .00   .00   .00   .00   .00      0. IV
                                                                    IS
 6.42 .0035 1.29   .02   .00   .00   .00   .00   .00   .00      0. IV
                                                                    IS
 5.83 .0284 1.33   .02   .00   .00   .00   .00   .00   .00      0. IV
                                                                    IS
 5.25 .0284 1.37   .02   .00   .00   .00   .00   .00   .00      0. IV
                                                                    IS
 4.67 .0284 1.42   .03   .00   .00   .00   .00   .00   .00      0. IV
                                                                    IS
 4.08 .0284 1.48   .03  1.75 43.03   .48  .20146.73   .03      0. IV
                                                                    IS
 3.50 .0284 1.54   .04  2.02 41.85   .45  .20139.65   .52      4. IVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                    ISSSSSSSSSSSS
 2.92 .0284 1.58   .05  2.33 40.48   .42  .20131.75   .88     14. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                    ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
 2.33 .0284 1.53   .06  2.61 38.80   .39  .20122.74  1.07     20. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                    ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
 1.75 .0284 1.34   .08  2.74 36.70   .36  .20112.27  1.08     18. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                    ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
 1.17 .0284   .99   .17  2.50 34.26   .35  .20101.19   .93     12. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                    ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
  .58 .0284   .52   .43  1.58 32.08   .37  .20 92.24   .79      7. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                    ISSSSSSSSSSSSSSSSSSSS
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
 TOTAL TRANSPORT IS      4877. M3/SEASON (ACC TO CERC)
 TOTAL TRANSPORT IS      1532. M3/SEASON (ACC TO BIJKER)
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       HYDRONAMIC BV
       PORT & WATERWAY ENGINEERS
       SLIEDRECHT-HOLLAND

 CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
 ==============================================================================================================

 PHYSICAL CONSTANTS  G=    9.81       COASTAL CONSTANTS D50=  .000150
                    RHO=1027.00                          D90=  .000300
                  KAPPA=     .38                       DELTA=1.650000
           TEMPERATURE=  18.00               BREAKERINDEX=  .800000
 ***********************************************************

 SEASON NR  7
  WAVEHEIGHT   .28 M (HRMS IN DEEP WATER)
  PERIOD      4.00 SEC
  DIRECTION  -7.00 DEGREES (AT  9.M DEPTH)
  REFR COEF     .95 (AT  9.M DEPTH)

 THIS WAVE CLIMATE OCCURS DURING   1.00% OF THE YEAR
 ***********************************************************

 REFRACTED WAVEHEIGHT  .39 M
 BREAKERANGLE -3. DEGREES

   D    ALFA   H     SETUP   U1     C      KSI     R      L       V      S
  7.00 .0035   .26    .00    .00    .00    .00    .00    .00    .00          0.  IV
                                                                                 IS
  6.42 .0035   .26    .00    .00    .00    .00    .00    .00    .00          0.  IV
                                                                                 IS
  5.83 .0284   .26    .00    .00    .00    .00    .00    .00    .00          0.  IV
                                                                                 IS
  5.25 .0284   .26    .00    .00    .00    .00    .00    .00    .00          0.  IV
                                                                                 IS
  4.67 .0284   .26    .00    .00    .00    .00    .00    .00    .00          0.  IV
                                                                                 IS
  4.08 .0284   .26    .00    .00    .00    .00    .00    .00    .00          0.  IV
                                                                                 IS
  3.50 .0284   .26    .00    .00    .00    .00    .00    .00    .00          0.  IV
                                                                                 IS
  2.92 .0284   .26    .00    .00    .00    .00    .00    .00    .00          0.  IV
                                                                                 IS
  2.33 .0284   .27    .00    .00    .00    .00    .00    .00    .00          0.  IV
                                                                                 IS
  1.75 .0284   .28    .00    .00    .00    .00    .00    .00    .00          0.  IV
                                                                                 IS
  1.17 .0284   .31    .00    .00    .00    .00    .00    .00    .00          0.  IV
                                                                                 IS
   .58 .0284   .35    .01    .95  27.92    .61    .20  13.14   -.04         -0.  IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                                 ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
 TOTAL TRANSPORT IS      -231. M3/SEASON (ACC TO CERC)
 TOTAL TRANSPORT IS        -9. M3/SEASON (ACC TO BIJKER)
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    HYDRONAMIC BV
    PORT & WATERWAY ENGINEERS
    SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
=====================================================================================================================

PHYSICAL CONSTANTS  G=   9.81      COASTAL CONSTANTS D50= .000150
                 RHO=1027.00                        D90= .000300
               KAPPA=    .38                      DELTA=1.650000
         TEMPERATURE=  18.00                BREAKERINDEX= .800000
*************************************************************

SEASON NR  8
 WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
 PERIOD      6.50 SEC
 DIRECTION  -7.80 DEGREES (AT  9.M DEPTH)
 REFR COEF     .93 (AT  9.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING     .40% OF THE YEAR
*************************************************************

REFRACTED WAVEHEIGHT 1.16 M
BREAKERANGLE -4. DEGREES

   D    ALFA   H   SETUP   U1    C     KSI    R     L      V      S
 7.00 .0035   .83   .00   .00   .00   .00   .00   .00   .00      0. IV
                                                                   IS
 6.42 .0035   .84   .00   .00   .00   .00   .00   .00   .00      0. IV
                                                                   IS
 5.83 .0284   .85   .01   .00   .00   .00   .00   .00   .00      0. IV
                                                                   IS
 5.25 .0284   .87   .01   .00   .00   .00   .00   .00   .00      0. IV
                                                                   IS
 4.67 .0284   .89   .01   .00   .00   .00   .00   .00   .00      0. IV
                                                                   IS
 4.08 .0284   .92   .01   .00   .00   .00   .00   .00   .00      0. IV
                                                                   IS
 3.50 .0284   .95   .01   .00   .00   .00   .00   .00   .00      0. IV
                                                                   IS
 2.92 .0284  1.00   .02   .00   .00   .00   .00   .00   .00      0. IV
                                                                   IS
 2.33 .0284  1.04   .03   .00   .00   .00   .00   .00   .00      0. IV
                                                                   IS
 1.75 .0284  1.05   .03  1.61 36.50   .55   .20 36.15  -.15     -2. IVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                   ISSSSSSSSSSSSSSSSS
 1.17 .0284   .89   .05  1.78 33.51   .48   .20 31.96  -.37     -6. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                   ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
  .58 .0284   .51   .16  1.42 29.70   .46   .20 27.25  -.37     -4. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                   ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
 TOTAL TRANSPORT IS     -1644. M3/SEASON (ACC TO CERC)
 TOTAL TRANSPORT IS      -239. M3/SEASON (ACC TO BIJKER)
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HYDRONAMIC BV
PORT & WATERWAY ENGINEERS
SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
===========================================================================================================

PHYSICAL CONSTANTS  C=    9.81     COASTAL CONSTANTS D50=  .000150
                  RHO=1027.00                        D90=  .000300
                KAPPA=     .38                     DELTA=1.650000
          TEMPERATURE=  18.00                BREAKERINDEX=  .800000
***********************************************************

SEASON NR   9
 WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
 PERIOD      4.00 SEC
 DIRECTION  67.00 DEGREES (AT  9.M DEPTH)
 REFR COEF     .96 (AT  9.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING  29.30% OF THE YEAR
***********************************************************


REFRACTED WAVEHEIGHT   .70 M
BREAKERANGLE 33. DEGREES

   D    ALFA   H    SETUP   U1     C     KSI     R     L     V       S
 7.00 .0035   .57   .00    .00   .00    .00   .00   .00   .00       0.  IV
                                                                          IS
 6.42 .0035   .56   .00    .00   .00    .00   .00   .00   .00       0.  IV
                                                                          IS
 5.83 .0284   .56   .00    .00   .00    .00   .00   .00   .00       0.  IV
                                                                          IS
 5.25 .0284   .55   .00    .00   .00    .00   .00   .00   .00       0.  IV
                                                                          IS
 4.67 .0284   .55   .00    .00   .00    .00   .00   .00   .00       0.  IV
                                                                          IS
 4.08 .0284   .55   .00    .00   .00    .00   .00   .00   .00       0.  IV
                                                                          IS
 3.50 .0284   .55   .00    .00   .00    .00   .00   .00   .00       0.  IV
                                                                          IS
 2.92 .0284   .56   .00    .00   .00    .00   .00   .00   .00       0.  IV
                                                                          IS
 2.33 .0284   .58   .01    .00   .00    .00   .00   .00   .00       0.  IV
                                                                          IS
 1.75 .0284   .61   .01    .00   .00    .00   .00   .00   .00       0.  IV
                                                                          IS
 1.17 .0284   .63   .01   1.06 33.26    .70   .20 16.30   .24     167.  IVVVVVVVVVVVVVVVVVVVV
                                                                          ISSSSSSSSS
  .58 .0284   .47   .06   1.21 28.51    .57   .20 13.47   .74    1085.  IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                          ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
 TOTAL TRANSPORT IS   247431. M3/SEASON (ACC TO CERC)
 TOTAL TRANSPORT IS    25671. M3/SEASON (ACC TO BIJKER)
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         HYDRONAMIC BV
         PORT & WATERWAY ENGINEERS
         SLIEDRECHT-HOLLAND

   CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
   ==========================================================================================================

   PHYSICAL CONSTANTS  G=    9.81     COASTAL CONSTANTS D50=  .000150
                     RHO=1027.00                        D90=  .000300
                   KAPPA=     .38                     DELTA=1.650000
              TEMPERATURE=  18.00              BREAKERINDEX=  .800000
   **********************************************************

   SEASON NR 10
    WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
    PERIOD       6.50 SEC
    DIRECTION  51.60 DEGREES (AT  9.M DEPTH)
    REFR COEF     .93 (AT  9.M DEPTH)

   THIS WAVE CLIMATE OCCURS DURING  15.70% OF THE YEAR
   **********************************************************


   REFRACTED WAVEHEIGHT  .99 M
   BREAKERANGLE 23. DEGREES

      D    ALFA   H    SETUP   U1    C      KSI     R     L        V       S
    7.00 .0035   .68   .00   .00   .00    .00    .00    .00    .00         0. IV
                                                                              IS
    6.42 .0035   .69   .00   .00   .00    .00    .00    .00    .00         0. IV
                                                                              IS
    5.83 .0284   .70   .00   .00   .00    .00    .00    .00    .00         0. IV
                                                                              IS
    5.25 .0284   .72   .00   .00   .00    .00    .00    .00    .00         0. IV
                                                                              IS
    4.67 .0284   .73   .01   .00   .00    .00    .00    .00    .00         0. IV
                                                                              IS
    4.08 .0284   .76   .01   .00   .00    .00    .00    .00    .00         0. IV
                                                                              IS
    3.50 .0284   .78   .01   .00   .00    .00    .00    .00    .00         0. IV
                                                                              IS
    2.92 .0284   .82   .01   .00   .00    .00    .00    .00    .00         0. IV
                                                                              IS
    2.33 .0284   .87   .02   .00   .00    .00    .00    .00    .00         0. IV
                                                                              IS
    1.75 .0284   .91   .03  1.40 36.46    .57    .20  36.10    .13        45. IVVVVVVVV
                                                                              ISS
    1.17 .0284   .83   .03  1.69 33.37    .49    .20  31.78    .84       974. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                              ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
     .58 .0284   .50   .12  1.46 29.28    .45    .20  26.77    .91       871. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                              ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
   XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
   TOTAL TRANSPORT IS    225754. M3/SEASON (ACC TO CERC)
   TOTAL TRANSPORT IS     38773. M3/SEASON (ACC TO BIJKER)
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HYDRONAMIC BV
PORT & WATERWAY ENGINEERS
SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
=====================================================================================================================

PHYSICAL CONSTANTS  G=    9.81      COASTAL CONSTANTS D50= .000150
                  RHO=1027.00                          D90= .000300
                KAPPA=     .38                       DELTA=1.650000
          TEMPERATURE=   18.00                BREAKERINDEX= .800000
*************************************************************

SEASON NR 11
 WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
 PERIOD       8.50 SEC
 DIRECTION  39.50 DEGREES (AT  9.M DEPTH)
 REFR COEF   1.00 (AT  9.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING   7.80% OF THE YEAR
*************************************************************


REFRACTED WAVEHEIGHT 1.29 M
BREAKERANGLE 18. DEGREES

   D   ALFA   H   SETUP  U1     C     KSI    R     L      V       S
 7.00 .0035   .83   .01   .00   .00   .00   .00   .00   .00      0. IV
                                                                   IS
 6.42 .0035   .85   .01   .00   .00   .00   .00   .00   .00      0. IV
                                                                   IS
 5.83 .0284   .87   .01   .00   .00   .00   .00   .00   .00      0. IV
                                                                   IS
 5.25 .0284   .89   .01   .00   .00   .00   .00   .00   .00      0. IV
                                                                   IS
 4.67 .0284   .92   .01   .00   .00   .00   .00   .00   .00      0. IV
                                                                   IS
 4.08 .0284   .95   .01   .00   .00   .00   .00   .00   .00      0. IV
                                                                   IS
 3.50 .0284  1.00   .02   .00   .00   .00   .00   .00   .00      0. IV
                                                                   IS
 2.92 .0284  1.05   .02   .00   .00   .00   .00   .00   .00      0. IV
                                                                   IS
 2.33 .0284  1.10   .03  1.54 38.70   .54   .20 56.96   .02      3. IV
                                                                   IS
 1.75 .0284  1.09   .04  1.86 36.51   .48   .20 52.02   .78    469. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                   ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
 1.17 .0284   .91   .06  1.99 33.60   .43   .20 46.03  1.10    805. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                   ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
  .58 .0284   .51   .19  1.53 30.00   .42   .20 39.53   .96    496. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                   ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
 TOTAL TRANSPORT IS   163640.  M3/SEASON (ACC TO CERC)
 TOTAL TRANSPORT IS    36382.  M3/SEASON (ACC TO BIJKER)
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      HYDRONAMIC BV
      PORT & WATERWAY ENGINEERS
      SLIEDRECHT-HOLLAND

   CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
   ==================================================================================================

   PHYSICAL CONSTANTS  G=   9.81     COASTAL CONSTANTS D50= .000150
                     RHO=1027.00                       D90= .000300
                   KAPPA=    .38                    DELTA=1.650000
             TEMPERATURE=  18.00              BREAKERINDEX= .800000
   ************************************************************

   SEASON NR 12
   WAVEHEIGHT   .88 M (HRMS IN DEEP WATER)
   PERIOD      10.50 SEC
   DIRECTION  32.50 DEGREES (AT  9.M DEPTH)
   REFR COEF   1.10 (AT  9.M DEPTH)

   THIS WAVE CLIMATE OCCURS DURING   3.60% OF THE YEAR
   ************************************************************

   REFRACTED WAVEHEIGHT 1.58 M
   BREAKERANGLE 15. DEGREES

     D    ALFA   H    SETUP   U1    C     KSI    R     L      V      S
   7.00 .0035  .96    .01   .00   .00    .00   .00   .00    .00      0. |V
                                                                       |S
   6.42 .0035  .98    .01   .00   .00    .00   .00   .00    .00      0. |V
                                                                       |S
   5.83 .0284 1.01    .01   .00   .00    .00   .00   .00    .00      0. |V
                                                                       |S
   5.25 .0284 1.04    .01   .00   .00    .00   .00   .00    .00      0. |V
                                                                       |S
   4.67 .0284 1.08    .01   .00   .00    .00   .00   .00    .00      0. |V
                                                                       |S
   4.08 .0284 1.12    .02   .00   .00    .00   .00   .00    .00      0. |V
                                                                       |S
   3.50 .0284 1.17    .02   .00   .00    .00   .00   .00    .00      0. |V
                                                                       |S
   2.92 .0284 1.23    .03   .00   .00    .00   .00   .00    .00      0. |V
                                                                       |S
   2.33 .0284 1.27    .04  1.92 38.73    .47   .20 75.86    .69    177. |VVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                       |SSSSSSSSSSSSSSSSSSSS
   1.75 .0284 1.20    .05  2.19 36.57    .43   .20 69.27   1.14    475. |VVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                       |SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
   1.17 .0284  .95    .10  2.20 33.80    .39   .20 61.59   1.21    444. |VVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                       |SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
    .58 .0284  .52    .26  1.57 30.63    .39   .20 53.86    .99    249. |VVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                       |SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
   XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
   TOTAL TRANSPORT IS   105925. M3/SEASON (ACC TO CERC)
   TOTAL TRANSPORT IS    27577. M3/SEASON (ACC TO BIJKER)
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HYDRONAMIC BV
PORT & WATERWAY ENGINEERS
SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT * CAP LOPEZ

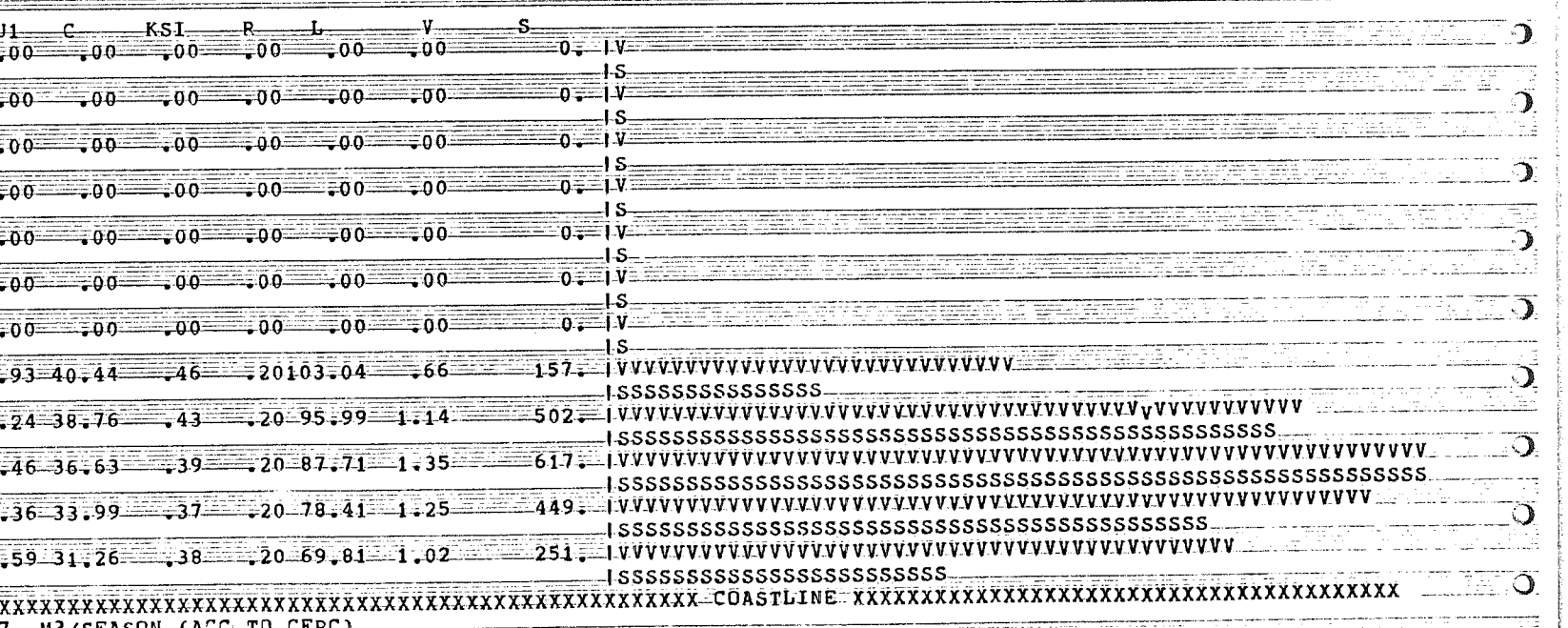
PHYSICAL CONSTANTS G= 9.81 COASTAL CONSTANTS D50= .000150
RHO=1027.00 D90= .000300
KAPPA= .38 DELTA=1.650000
TEMPERATURE= 18.00 BREAKERINDEX= .800000
****

SEASON NR 13
WAVEHEIGHT .88 M (HRMS IN DEEP WATER)
PERIOD 12.50 SEC
DIRECTION 27.30 DEGREES (AT 9.M DEPTH)
REFR COEF 1.23 (AT 9.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING 3.40% OF THE YEAR
****

REFRACTED WAVEHEIGHT 1.89 M
BREAKERANGLE 13. DEGREES

D	ALFA	H	SETUP	U1	C	KSI	R	L	V	S	
7.00	.0035	1.08	.01	.00	.00	.00	.00	.00	.00	0.	
6.42	.0035	1.11	.01	.00	.00	.00	.00	.00	.00	0.	
5.83	.0284	1.14	.01	.00	.00	.00	.00	.00	.00	0.	
5.25	.0284	1.18	.02	.00	.00	.00	.00	.00	.00	0.	
4.67	.0284	1.22	.02	.00	.00	.00	.00	.00	.00	0.	
4.08	.0284	1.28	.02	.00	.00	.00	.00	.00	.00	0.	
3.50	.0284	1.34	.03	.00	.00	.00	.00	.00	.00	0.	
2.92	.0284	1.39	.04	1.93	40.44	.46	.20	103.04	.66	157.	
2.33	.0284	1.40	.05	2.24	38.76	.43	.20	95.99	1.14	502.	
1.75	.0284	1.27	.06	2.46	36.63	.39	.20	87.71	1.35	617.	
1.17	.0284	.97	.13	2.36	33.99	.37	.20	78.41	1.25	449.	
.58	.0284	.52	.33	1.59	31.26	.38	.20	69.81	1.02	251.	



TOTAL TRANSPORT IS 139757. M3/SEASON (ACC TO CERC)
TOTAL TRANSPORT IS 40539. M3/SEASON (ACC TO BIJKER)

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HYDRONAMIC BV
PORT & WATERWAY ENGINEERS
SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
==========================================================================================================

PHYSICAL CONSTANTS  G=    9.81      COASTAL CONSTANTS D50= .000150
                  RHO=1027.00                         D90= .000300
                KAPPA=     .38                      DELTA=1.650000
          TEMPERATURE=   18.00               BREAKERINDEX= .800000
*************************************************************

SEASON NR 14
 WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
 PERIOD      15.00 SEC
 DIRECTION  20.10 DEGREES (AT  9.M DEPTH)
 REFR COEF    1.35 (AT  9.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING     .70% OF THE YEAR
*************************************************************

REFRACTED WAVEHEIGHT 2.30 M
BREAKERANGLE 10. DEGREES

   D    ALFA   H    SETUP   U1    C     KSI    R     L       V       S
 7.00 .0035  1.24   .01   .00   .00   .00   .00   .00    .00       0. IV
                                                                      IS
 6.42 .0035  1.27   .02   .00   .00   .00   .00   .00    .00       0. IV
                                                                      IS
 5.83 .0284  1.31   .02   .00   .00   .00   .00   .00    .00       0. IV
                                                                      IS
 5.25 .0284  1.35   .02   .00   .00   .00   .00   .00    .00       0. IV
                                                                      IS
 4.67 .0284  1.40   .03   .00   .00   .00   .00   .00    .00       0. IV
                                                                      IS
 4.08 .0284  1.46   .03   .00   .00   .00   .00   .00    .00       0. IV
                                                                      IS
 3.50 .0284  1.52   .04  2.00 41.85   .45   .20139.63    .65      32. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                      ISSSSSSSSSSSSS
 2.92 .0284  1.56   .05  2.30 40.47   .42   .20131.74   1.09     101. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                      ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
 2.33 .0284  1.52   .06  2.59 38.80   .39   .20122.72   1.34     143. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                      ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
 1.75 .0284  1.34   .08  2.73 36.70   .36   .20112.25   1.35     128. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                      ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
 1.17 .0284   .99   .17  2.50 34.24   .35   .20101.11   1.17      84. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                      ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
  .58 .0284   .52   .42  1.59 32.03   .37   .20 92.01    .98      50. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                      ISSSSSSSSSSSSSSSSSSSS
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
TOTAL TRANSPORT IS     33510. M3/SEASON (ACC TO CERC)
TOTAL TRANSPORT IS     11007. M3/SEASON (ACC TO BIJKER)
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 TOTAL TRANSPORT    215182.M3/YEAR
 NEGAT TRANSPORT      -248.M3/YEAR
 POSIT TRANSPORT    215429.M3/YEAR
 DOMINANT NEGAT WAVE DIRECTION   -4.
 DOMINANT POSIT WAVE DIRECTION   17.
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CALCULS DU TRANSPORT LITTORAL

(profil 2)

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        HYDRONAMIC BV
        PORT & WATERWAY ENGINEERS
        SLIEDRECHT-HOLLAND

  CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
  ================================================================================================================

  PHYSICAL CONSTANTS   G=     9.81      COASTAL CONSTANTS D50=  .000150
                     RHO=1027.00                          D90=  .000300
                   KAPPA=      .38                      DELTA=1.650000
             TEMPERATURE=   18.00                BREAKERINDEX=  .800000
  **************************************************************

  SEASON NR  1
   WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
   PERIOD       4.00 SEC
   DIRECTION  44.00 DEGREES (AT   9.M DEPTH)
   REFR COEF     .97 (AT   9.M DEPTH)

  THIS WAVE CLIMATE OCCURS DURING    7.00% OF THE YEAR
  **************************************************************

  REFRACTED WAVEHEIGHT   .87 M
  BREAKERANGLE 26. DEGREES

     D    ALFA   H    SETUP   U1     C     KSI     R     L        V        S
   7.00 .0035   .74   .00   .00   .00   .00   .00   .00   .00         0. IV
                                                                           IS
   6.42 .0035   .73   .00   .00   .00   .00   .00   .00   .00         0. IV
                                                                           IS
   5.83 .0284   .73   .00   .00   .00   .00   .00   .00   .00         0. IV
                                                                           IS
   5.25 .0284   .72   .00   .00   .00   .00   .00   .00   .00         0. IV
                                                                           IS
   4.67 .0284   .72   .00   .00   .00   .00   .00   .00   .00         0. IV
                                                                           IS
   4.08 .0284   .72   .00   .00   .00   .00   .00   .00   .00         0. IV
                                                                           IS
   3.50 .0284   .72   .01   .00   .00   .00   .00   .00   .00         0. IV
                                                                           IS
   2.92 .0284   .74   .01   .00   .00   .00   .00   .00   .00         0. IV
                                                                           IS
   2.33 .0284   .76   .01   .00   .00   .00   .00   .00   .00         0. IV
                                                                           IS
   1.75 .0284   .78   .02   .00   .00   .00   .00   .00   .00         0. IV
                                                                           IS
   1.17 .0284   .75   .02  1.24 33.29   .65   .20 16.32   .61       227. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                           ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
    .58 .0284   .49   .10  1.21 28.98   .58   .20 13.73   .80       308. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                           ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
  XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
  TOTAL TRANSPORT IS     89507. M3/SEASON (ACC TO CERC)
  TOTAL TRANSPORT IS     10971. M3/SEASON (ACC TO BIJKER)
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         HYDRONAMIC BV
         PORT & WATERWAY ENGINEERS
         SLIEDRECHT-HOLLAND

   CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
   ==================================================================================================================

   PHYSICAL CONSTANTS  G=    9.81      COASTAL CONSTANTS D50= .000150
                     RHO=1027.00                         D90= .000300
                    KAPPA=    .38                      DELTA=1.650000
              TEMPERATURE=  18.00               BREAKERINDEX= .800000
   **********************************************************

   SEASON NR  2
    WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
    PERIOD       6.50 SEC
    DIRECTION  36.40 DEGREES (AT  9.M DEPTH)
    REFR COEF     .93 (AT  9.M DEPTH)

   THIS WAVE CLIMATE OCCURS DURING   3.50% OF THE YEAR
   **********************************************************

   REFRACTED WAVEHEIGHT 1.10 M
   BREAKERANGLE 17. DEGREES

     D    ALFA  H    SETUP   U1    C     KSI    R    L       V      S
    7.00 .0035  .76   .00   .00   .00   .00   .00   .00   .00          0. IV
                                                                          IS
    6.42 .0035  .77   .00   .00   .00   .00   .00   .00   .00          0. IV
                                                                          IS
    5.83 .0284  .79   .00   .00   .00   .00   .00   .00   .00          0. IV
                                                                          IS
    5.25 .0284  .80   .01   .00   .00   .00   .00   .00   .00          0. IV
                                                                          IS
    4.67 .0284  .82   .01   .00   .00   .00   .00   .00   .00          0. IV
                                                                          IS
    4.08 .0284  .85   .01   .00   .00   .00   .00   .00   .00          0. IV
                                                                          IS
    3.50 .0284  .88   .01   .00   .00   .00   .00   .00   .00          0. IV
                                                                          IS
    2.92 .0284  .92   .02   .00   .00   .00   .00   .00   .00          0. IV
                                                                          IS
    2.33 .0284  .97   .02   .00   .00   .00   .00   .00   .00          0. IV
                                                                          IS
    1.75 .0284  .99   .03  1.52 36.48   .56   .20 36.13   .32         38. IVVVVVVVVVVVVVVVVVVVVVV
                                                                          ISSSSSSSSSS
    1.17 .0284  .87   .04  1.74 33.46   .49   .20 31.90   .86        227. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                          ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
     .58 .0284  .51   .15  1.43 29.57   .46   .20 27.10   .85        174. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                          ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
   XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
   TOTAL TRANSPORT IS    49381. M3/SEASON (ACC TO CERC)
   TOTAL TRANSPORT IS     8995. M3/SEASON (ACC TO BIJKER)
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HYDRONAMIC BV
          PORT & WATERWAY ENGINEERS
          SLIEDRECHT-HOLLAND

    CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
    ==============================================================================================================

    PHYSICAL CONSTANTS   G=    9.81      COASTAL CONSTANTS D50= .000150
                       RHO=1027.00                         D90= .000300
                     KAPPA=     .38                       DELTA=1.650000
               TEMPERATURE=   18.00               BREAKERINDEX= .800000
    ************************************************************

    SEASON NR  3
     WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
     PERIOD       8.50 SEC
     DIRECTION  30.00 DEGREES (AT  9.M DEPTH)
     REFR COEF    1.00 (AT  9.M DEPTH)

    THIS WAVE CLIMATE OCCURS DURING   1.60% OF THE YEAR
    ************************************************************

    REFRACTED WAVEHEIGHT 1.35 M
    BREAKERANGLE 14. DEGREES

       D    ALFA    H    SETUP   U1    C     KSI    P     L      V       S
     7.00 .0035   .87   .01   .00   .00   .00   .00   .00   .00       0. IV
                                                                        IS
     6.42 .0035   .89   .01   .00   .00   .00   .00   .00   .00       0. IV
                                                                        IS
     5.83 .0284   .91   .01   .00   .00   .00   .00   .00   .00       0. IV
                                                                        IS
     5.25 .0284   .93   .01   .00   .00   .00   .00   .00   .00       0. IV
                                                                        IS
     4.67 .0284   .96   .01   .00   .00   .00   .00   .00   .00       0. IV
                                                                        IS
     4.08 .0284  1.00   .01   .00   .00   .00   .00   .00   .00       0. IV
                                                                        IS
     3.50 .0284  1.04   .02   .00   .00   .00   .00   .00   .00       0. IV
                                                                        IS
     2.92 .0284  1.10   .02   .00   .00   .00   .00   .00   .00       0. IV
                                                                        IS
     2.33 .0284  1.15   .03  1.61 38.70   .53   .20 56.98   .11       4. IVVVVVV
                                                                        IS
     1.75 .0284  1.12   .04  1.91 36.52   .47   .20 52.04   .76      94. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                        ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
     1.17 .0284   .92   .07  2.01 33.65   .43   .20 46.12  1.01     143. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                        ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
      .58 .0284   .51   .21  1.52 30.15   .42   .20 39.78   .88      86. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                        ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
     TOTAL TRANSPORT IS     29614. M3/SEASON (ACC TO CERC)
     TOTAL TRANSPORT IS      6704. M3/SEASON (ACC TO BIJKER)
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HYDRONAMIC BV
PORT & WATERWAY ENGINEERS
SLIEDRECHT=HOLLAND

CALCULATION OF LONGSHORE TRANSPORT * CAP LOPEZ

PHYSICAL CONSTANTS G= 9.81 COASTAL CONSTANTS D50= .000150
RHO=1027.00 D90= .000300
KAPPA= .38 DELTA=1.650000
TEMPERATURE= 18.00 BREAKERINDEX= .800000
****

SEASON NR 4
WAVEHEIGHT .88 M (HRMS IN DEEP WATER)
PERIOD 10.50 SEC
DIRECTION 25.00 DEGREES (AT 9.M DEPTH)
REFR COEF 1.11 (AT 9.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING .80% OF THE YEAR
****

REFRACTED WAVEHEIGHT 1.64 M
BREAKERANGLE 12. DEGREES

D	ALFA	H	SETUP	U1	C	KSI	R	L	V	S	
7.00	.0035	.99	.01	.00	.00	.00	.00	.00	.00	0.	IV
											IS
6.42	.0035	1.01	.01	.00	.00	.00	.00	.00	.00	0.	IV
											IS
5.83	.0284	1.04	.01	.00	.00	.00	.00	.00	.00	0.	IV
											IS
5.25	.0284	1.07	.01	.00	.00	.00	.00	.00	.00	0.	IV
											IS
4.67	.0284	1.11	.02	.00	.00	.00	.00	.00	.00	0.	IV
											IS
4.08	.0284	1.15	.02	.00	.00	.00	.00	.00	.00	0.	IV
											IS
3.50	.0284	1.21	.02	.00	.00	.00	.00	.00	.00	0.	IV
											IS
2.92	.0284	1.27	.03	1.65	40.43	.51	.20	81.43	.02	0.	IV
											IS
2.33	.0284	1.30	.04	1.96	38.74	.47	.20	75.88	.67	38.	IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
											ISSSSSSSSSSSSSSSSSSSSSS
1.75	.0284	1.22	.05	2.22	36.58	.42	.20	69.30	1.06	91.	IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
											ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
1.17	.0284	.95	.10	2.21	33.83	.39	.20	61.70	1.09	82.	IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
											ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
.58	.0284	.52	.27	1.56	30.76	.40	.20	54.16	.90	46.	IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
											ISSSSSSSSSSSSSSSSSSSSSSSSSSSSS

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

TOTAL TRANSPORT IS 20259. M3/SEASON (ACC TO CERC)
TOTAL TRANSPORT IS 5297. M3/SEASON (ACC TO BIJKER)

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           HYDRONAMIC BV
           PORT & WATERWAY ENGINEERS
           SLIEDRECHT-HOLLAND

     CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
     ======================================================================================================================================

     PHYSICAL CONSTANTS   G=    9.81      COASTAL CONSTANTS D50=  .000150
                        RHO=1027.00                         D90=  .000300
                      KAPPA=     .38                      DELTA=1.650000
              TEMPERATURE=  18.00              BREAKERINDEX=  .800000
     ***********************************************************************

     SEASON NR  5
      WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
      PERIOD      12.50 SEC
      DIRECTION  21.80 DEGREES (AT  9.M DEPTH)
      REFR COEF   1.23 (AT  9.M DEPTH)

     THIS WAVE CLIMATE OCCURS DURING      .80% OF THE YEAR
     ***********************************************************************

     REFRACTED WAVEHEIGHT 1.92 M
     BREAKERANGLE 11.  DEGREES

       D    ALFA   H    SETUP   U1    C      KSI     R     L        V        S
      7.00 .0035  1.10    .01    .00    .00    .00    .00    .00     .00        0. IV
                                                                                   IS
      6.42 .0035  1.13    .01    .00    .00    .00    .00    .00     .00        0. IV
                                                                                   IS
      5.83 .0284  1.16    .01    .00    .00    .00    .00    .00     .00        0. IV
                                                                                   IS
      5.25 .0284  1.20    .02    .00    .00    .00    .00    .00     .00        0. IV
                                                                                   IS
      4.67 .0284  1.25    .02    .00    .00    .00    .00    .00     .00        0. IV
                                                                                   IS
      4.08 .0284  1.30    .02    .00    .00    .00    .00    .00     .00        0. IV
                                                                                   IS
      3.50 .0284  1.36    .03    .00    .00    .00    .00    .00     .00        0. IV
                                                                                   IS
      2.92 .0284  1.41    .04   1.96  40.45    .46    .20103.05     .62       32. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                                   ISSSSSSSSSSSSSS
      2.33 .0284  1.41    .05   2.26  38.77    .42    .20 96.00    1.05      100. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                                   ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
      1.75 .0284  1.28    .07   2.47  36.64    .39    .20 87.73    1.22      122. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                                   ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
      1.17 .0284   .98    .13   2.36  34.01    .37    .20 78.48    1.12       88. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                                   ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
       .58 .0284   .52    .34   1.58  31.32    .38    .20 70.00     .92       49. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                                   ISSSSSSSSSSSSSSSSSSSSSSS
     XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
     TOTAL TRANSPORT IS     27821. M3/SEASON (ACC TO CERC)
     TOTAL TRANSPORT IS      8025. M3/SEASON (ACC TO BIJKER)
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HYDRONAMIC BV
      PORT & WATERWAY ENGINEERS
      SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
==============================================================================================================

PHYSICAL CONSTANTS  G=    9.81      COASTAL CONSTANTS D50= .000150
                  RHO=1027.00                          D90= .000300
                KAPPA=     .38                       DELTA=1.650000
          TEMPERATURE=  18.00                  BREAKERINDEX= .800000
**********************************************************

SEASON NR  6
 WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
 PERIOD      15.00 SEC
 DIRECTION  19.20 DEGREES (AT  9.M DEPTH)
 REFR COEF   1.35 (AT  9.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING     .15% OF THE YEAR
**********************************************************


REFRACTED WAVEHEIGHT 2.31 M
BREAKERANGLE 10. DEGREES

   D    ALFA   H    SETUP    U1    C     KSI     R     L       V       S
 7.00 .0035  1.24    .01    .00   .00    .00    .00    .00    .00         0. IV
                                                                              IS
 6.42 .0035  1.27    .02    .00   .00    .00    .00    .00    .00         0. IV
                                                                              IS
 5.83 .0284  1.31    .02    .00   .00    .00    .00    .00    .00         0. IV
                                                                              IS
 5.25 .0284  1.36    .02    .00   .00    .00    .00    .00    .00         0. IV
                                                                              IS
 4.67 .0284  1.41    .03    .00   .00    .00    .00    .00    .00         0. IV
                                                                              IS
 4.08 .0284  1.47    .03   1.73 43.03    .48   .20146.72    .01         0. IV
                                                                              IS
 3.50 .0284  1.53    .04   2.00 41.85    .45   .20139.64    .64         6. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                              ISSSSSSSSSSSS
 2.92 .0284  1.57    .05   2.31 40.47    .42   .20131.74   1.07        21. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                              ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
 2.33 .0284  1.52    .06   2.59 38.80    .39   .20122.72   1.31        29. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                              ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
 1.75 .0284  1.34    .08   2.73 36.70    .36   .20112.25   1.32        26. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                              ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
 1.17 .0284   .99    .17   2.50 34.24    .35   .20101.12   1.14        17. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                              ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
  .58 .0284   .52    .42   1.59 32.03    .37   .20 92.05    .96        10. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                              ISSSSSSSSSSSSSSSSSSSS
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
TOTAL TRANSPORT IS      6910. M3/SEASON (ACC TO CERC)
TOTAL TRANSPORT IS      2264. M3/SEASON (ACC TO BIJKER)
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HYDRONAMIC BV
PORT & WATERWAY ENGINEERS
SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
=================================================================================================

PHYSICAL CONSTANTS  G=   9.81     COASTAL CONSTANTS D50= .000150
                 RHO=1027.00                        D90= .000300
                 KAPPA=    .38                    DELTA=1.650000
           TEMPERATURE=  18.00              BREAKERINDEX= .800000
************************************************************************

SEASON NR  7
 WAVEHEIGHT    .28 M (HRMS IN DEEP WATER)
 PERIOD       4.00 SEC
 DIRECTION    1.00 DEGREES (AT  9.M DEPTH)
 REFR COEF     .95 (AT  9.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING   1.00% OF THE YEAR
************************************************************************

REFRACTED WAVEHEIGHT  .39 M
BREAKERANGLE   0. DEGREES

  D    ALFA   H    SETUP   U1    C     KSI    R     L     V      S
 7.00 .0035  .26   .00   .00   .00   .00   .00   .00   .00      0. IV
                                                                    IS
 6.42 .0035  .26   .00   .00   .00   .00   .00   .00   .00      0. IV
                                                                    IS
 5.83 .0284  .26   .00   .00   .00   .00   .00   .00   .00      0. IV
                                                                    IS
 5.25 .0284  .26   .00   .00   .00   .00   .00   .00   .00      0. IV
                                                                    IS
 4.67 .0284  .26   .00   .00   .00   .00   .00   .00   .00      0. IV
                                                                    IS
 4.08 .0284  .26   .00   .00   .00   .00   .00   .00   .00      0. IV
                                                                    IS
 3.50 .0284  .26   .00   .00   .00   .00   .00   .00   .00      0. IV
                                                                    IS
 2.92 .0284  .26   .00   .00   .00   .00   .00   .00   .00      0. IV
                                                                    IS
 2.33 .0284  .27   .00   .00   .00   .00   .00   .00   .00      0. IV
                                                                    IS
 1.75 .0284  .29   .00   .00   .00   .00   .00   .00   .00      0. IV
                                                                    IS
 1.17 .0284  .31   .00   .00   .00   .00   .00   .00   .00      0. IV
                                                                    IS
  .58 .0284  .35   .01   .95 27.92   .61   .20 13.15   .01      0. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                    ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
TOTAL TRANSPORT IS        33. M3/SEASON (ACC TO CERC)
TOTAL TRANSPORT IS         1. M3/SEASON (ACC TO BIJKER)
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HYDRONAMIC BV
PORT & WATERWAY ENGINEERS
SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
=====================================================================================================================

PHYSICAL CONSTANTS  G=    9.81     COASTAL CONSTANTS D50= .000150
                  RHO=1027.00                        D90= .000300
                KAPPA=     .38                     DELTA=1.650000
          TEMPERATURE=   18.00              BREAKERINDEX= .800000
*************************************************************


SEASON NR  8
 WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
 PERIOD       6.50 SEC
 DIRECTION  -1.50 DEGREES (AT  9.M DEPTH)
 REFR COEF      .93 (AT  9.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING    .40% OF THE YEAR
*************************************************************


REFRACTED WAVEHEIGHT 1.16 M
BREAKERANGLE -1. DEGREES

   D    ALFA   H   SETUP   U1    C      KSI    R     L       V      S
  7.00 .0035   .83   .00   .00   .00    .00   .00    .00    .00         0. IV
                                                                           IS
  6.42 .0035   .84   .00   .00   .00    .00   .00    .00    .00         0. IV
                                                                           IS
  5.83 .0284   .86   .01   .00   .00    .00   .00    .00    .00         0. IV
                                                                           IS
  5.25 .0284   .87   .01   .00   .00    .00   .00    .00    .00         0. IV
                                                                           IS
  4.67 .0284   .89   .01   .00   .00    .00   .00    .00    .00         0. IV
                                                                           IS
  4.08 .0284   .92   .01   .00   .00    .00   .00    .00    .00         0. IV
                                                                           IS
  3.50 .0284   .96   .01   .00   .00    .00   .00    .00    .00         0. IV
                                                                           IS
  2.92 .0284  1.00   .02   .00   .00    .00   .00    .00    .00         0. IV
                                                                           IS
  2.33 .0284  1.05   .03   .00   .00    .00   .00    .00    .00         0. IV
                                                                           IS
  1.75 .0284  1.05   .03  1.61 36.50    .54   .20  36.15   -.03        -0. IVVVVVVVVVVVVVVVVVVVV
                                                                           ISSSSSSSSSSSSSSSSSSSS
  1.17 .0284   .89   .05  1.78 33.51    .48   .20  31.96   -.09        -1. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                           ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
   .58 .0284   .51   .17  1.42 29.71    .46   .20  27.26   -.09        -1. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                           ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
TOTAL TRANSPORT IS      -320. M3/SEASON (ACC TO CERC)
TOTAL TRANSPORT IS       -39. M3/SEASON (ACC TO BIJKER)
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HYDRONAMIC BV
PORT & WATERWAY ENGINEERS
SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
==========================================================================================================

PHYSICAL CONSTANTS  G=    9.81      COASTAL CONSTANTS D50= .000150
                  RHO=1027.00                         D90= .000300
                KAPPA=     .38                      DELTA=1.650000
          TEMPERATURE=   18.00              BREAKERINDEX= .800000
************************************************************

SEASON NR  9
 WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
 PERIOD       4.00 SEC
 DIRECTION  73.00 DEGREES (AT  9.M DEPTH)
 REFR COEF      .96 (AT  9.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING  29.30% OF THE YEAR
************************************************************


REFRACTED WAVEHEIGHT   .64 M
BREAKERANGLE 32. DEGREES

   D    ALFA   H    SETUP   U1    C      KSI    R     L      V       S
 7.00 .0035   .49   .00    .00   .00    .00   .00   .00    .00        0. IV
                                                                         IS
 6.42 .0035   .48   .00    .00   .00    .00   .00   .00    .00        0. IV
                                                                         IS
 5.83 .0284   .48   .00    .00   .00    .00   .00   .00    .00        0. IV
                                                                         IS
 5.25 .0284   .48   .00    .00   .00    .00   .00   .00    .00        0. IV
                                                                         IS
 4.67 .0284   .47   .00    .00   .00    .00   .00   .00    .00        0. IV
                                                                         IS
 4.08 .0284   .47   .00    .00   .00    .00   .00   .00    .00        0. IV
                                                                         IS
 3.50 .0284   .48   .00    .00   .00    .00   .00   .00    .00        0. IV
                                                                         IS
 2.92 .0284   .48   .00    .00   .00    .00   .00   .00    .00        0. IV
                                                                         IS
 2.33 .0284   .50   .00    .00   .00    .00   .00   .00    .00        0. IV
                                                                         IS
 1.75 .0284   .53   .01    .00   .00    .00   .00   .00    .00        0. IV
                                                                         IS
 1.17 .0284   .56   .01    .94 33.24    .73   .20 16.29    .05       21. IVVVV
                                                                         IS
  .58 .0284   .45   .04   1.19 28.34    .57   .20 13.37    .66      891. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                         ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
TOTAL TRANSPORT IS   179965. M3/SEASON (ACC TO CERC)
TOTAL TRANSPORT IS    18705. M3/SEASON (ACC TO BIJKER)
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      HYDRONAMIC BV
      PORT & WATERWAY ENGINEERS
      SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
=================================================================================================================

PHYSICAL CONSTANTS  G=    9.81    COASTAL CONSTANTS D50= .000150
                  RHO=1027.00                       D90= .000300
                KAPPA=     .38                    DELTA=1.650000
          TEMPERATURE=   18.00              BREAKERINDEX= .800000
***********************************************************

SEASON NR 10
 WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
 PERIOD       6.50 SEC
 DIRECTION  52.20 DEGREES (AT  9.M DEPTH)
 REFR COEF     .93 (AT  9.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING  15.70% OF THE YEAR
***********************************************************

REFRACTED WAVEHEIGHT   .98 M
BREAKERANGLE 23. DEGREES

  D    ALFA    H   SETUP   U1    C     KSI    R     L     V      S
 7.00 .0035   .68   .00   .00   .00   .00   .00   .00   .00       0. IV
                                                                       IS
 6.42 .0035   .69   .00   .00   .00   .00   .00   .00   .00       0. IV
                                                                       IS
 5.83 .0284   .70   .00   .00   .00   .00   .00   .00   .00       0. IV
                                                                       IS
 5.25 .0284   .71   .00   .00   .00   .00   .00   .00   .00       0. IV
                                                                       IS
 4.67 .0284   .73   .01   .00   .00   .00   .00   .00   .00       0. IV
                                                                       IS
 4.08 .0284   .75   .01   .00   .00   .00   .00   .00   .00       0. IV
                                                                       IS
 3.50 .0284   .78   .01   .00   .00   .00   .00   .00   .00       0. IV
                                                                       IS
 2.92 .0284   .82   .01   .00   .00   .00   .00   .00   .00       0. IV
                                                                       IS
 2.33 .0284   .87   .02   .00   .00   .00   .00   .00   .00       0. IV
                                                                       IS
 1.75 .0284   .91   .03  1.40 36.46   .57   .20 36.10   .12      40. IVVVVVVV
                                                                       ISS
 1.17 .0284   .83   .03  1.68 33.37   .49   .20 31.77   .84     964. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                       ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
  .58 .0284   .50   .12  1.46 29.27   .45   .20 26.75   .91     871. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                       ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
 TOTAL TRANSPORT IS    224595. M3/SEASON (ACC TO CERC)
 TOTAL TRANSPORT IS     38461. M3/SEASON (ACC TO BIJKER)
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        HYDRONAMIC BV
        PORT & WATERWAY ENGINEERS
        SLIEDRECHT-HOLLAND

   CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
   ==================================================================================================

   PHYSICAL CONSTANTS  G=    9.81      COASTAL CONSTANTS D50= .000150
                     RHO=1027.00                         D90= .000300
                   KAPPA=     .38                      DELTA=1.650000
              TEMPERATURE=  18.00               BREAKERINDEX= .800000
   ************************************************************

   SEASON NR 11
    WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
    PERIOD       8.50 SEC
    DIRECTION  40.10 DEGREES (AT  9.M DEPTH)
    REFR COEF   1.00 (AT  9.M DEPTH)

   THIS WAVE CLIMATE OCCURS DURING   7.80% OF THE YEAR
   ************************************************************

   REFRACTED WAVEHEIGHT 1.28 M
   BREAKERANGLE 18. DEGREES

      D    ALFA   H    SETUP   U1    C     KSI    R     L     V          S
    7.00 .0035   .83   .01   .00   .00   .00   .00   .00   .00         0. IV
                                                                          IS
    6.42 .0035   .84   .01   .00   .00   .00   .00   .00   .00         0. IV
                                                                          IS
    5.83 .0284   .86   .01   .00   .00   .00   .00   .00   .00         0. IV
                                                                          IS
    5.25 .0284   .89   .01   .00   .00   .00   .00   .00   .00         0. IV
                                                                          IS
    4.67 .0284   .91   .01   .00   .00   .00   .00   .00   .00         0. IV
                                                                          IS
    4.08 .0284   .95   .01   .00   .00   .00   .00   .00   .00         0. IV
                                                                          IS
    3.50 .0284   .99   .02   .00   .00   .00   .00   .00   .00         0. IV
                                                                          IS
    2.92 .0284  1.04   .02   .00   .00   .00   .00   .00   .00         0. IV
                                                                          IS
    2.33 .0284  1.10   .03  1.54 38.70   .54   .20 56.96   .01         2. IV
                                                                          IS
    1.75 .0284  1.09   .04  1.85 36.51   .48   .20 52.02   .77       467. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                          ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
    1.17 .0284   .91   .06  1.99 33.60   .43   .20 46.02  1.10       809. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                          ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
     .58 .0284   .51   .19  1.53 29.99   .42   .20 39.52   .97       499. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                          ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    TOTAL TRANSPORT IS   164270. M3/SEASON (ACC TO CERC)
    TOTAL TRANSPORT IS    36444. M3/SEASON (ACC TO BIJKER)
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HYDRONAMIC BV
PORT & WATERWAY ENGINEERS
SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
============================================================================================================================

PHYSICAL CONSTANTS  G=     9.81      COASTAL CONSTANTS D50= .000150
                  RHO=1027.00                          D90= .000300
                  KAPPA=     .38                     DELTA=1.650000
             TEMPERATURE=   18.00              BREAKERINDEX= .800000
*************************************************************

SEASON NR 12
 WAVEHEIGHT   .88 M (HRMS IN DEEP WATER)
 PERIOD      10.50 SEC
 DIRECTION   32.00 DEGREES (AT  9.M DEPTH)
 REFR COEF    1.10 (AT  9.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING   3.60% OF THE YEAR
*************************************************************

REFRACTED WAVEHEIGHT 1.58 M
BREAKERANGLE 15. DEGREES

  D     ALFA   H    SETUP   U1    C     KSI    R     L      V       S
 7.00 .0035   .96   .01   .00   .00   .00   .00   .00   .00       0. IV
                                                                      IS
 6.42 .0035   .98   .01   .00   .00   .00   .00   .00   .00       0. IV
                                                                      IS
 5.83 .0284  1.01   .01   .00   .00   .00   .00   .00   .00       0. IV
                                                                      IS
 5.25 .0284  1.04   .01   .00   .00   .00   .00   .00   .00       0. IV
                                                                      IS
 4.67 .0284  1.08   .01   .00   .00   .00   .00   .00   .00       0. IV
                                                                      IS
 4.08 .0284  1.12   .02   .00   .00   .00   .00   .00   .00       0. IV
                                                                      IS
 3.50 .0284  1.18   .02   .00   .00   .00   .00   .00   .00       0. IV
                                                                      IS
 2.92 .0284  1.24   .03   .00   .00   .00   .00   .00   .00       0. IV
                                                                      IS
 2.33 .0284  1.27   .04  1.92 38.73   .47   .20 75.86   .69     177. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                      ISSSSSSSSSSSSSSSSSSSSSS
 1.75 .0284  1.20   .05  2.19 36.57   .43   .20 69.27  1.14     471. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                      ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
 1.17 .0284   .95   .10  2.20 33.80   .39   .20 61.60  1.20     439. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                      ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
  .58 .0284   .52   .26  1.57 30.64   .39   .20 53.88   .99     246. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                      ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
 TOTAL TRANSPORT IS   105047. M3/SEASON (ACC TO CERC)
 TOTAL TRANSPORT IS    27365. M3/SEASON (ACC TO BIJKER)
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HYDRONAMIC BV
PORT & WATERWAY ENGINEERS
SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT * CAP LOPEZ

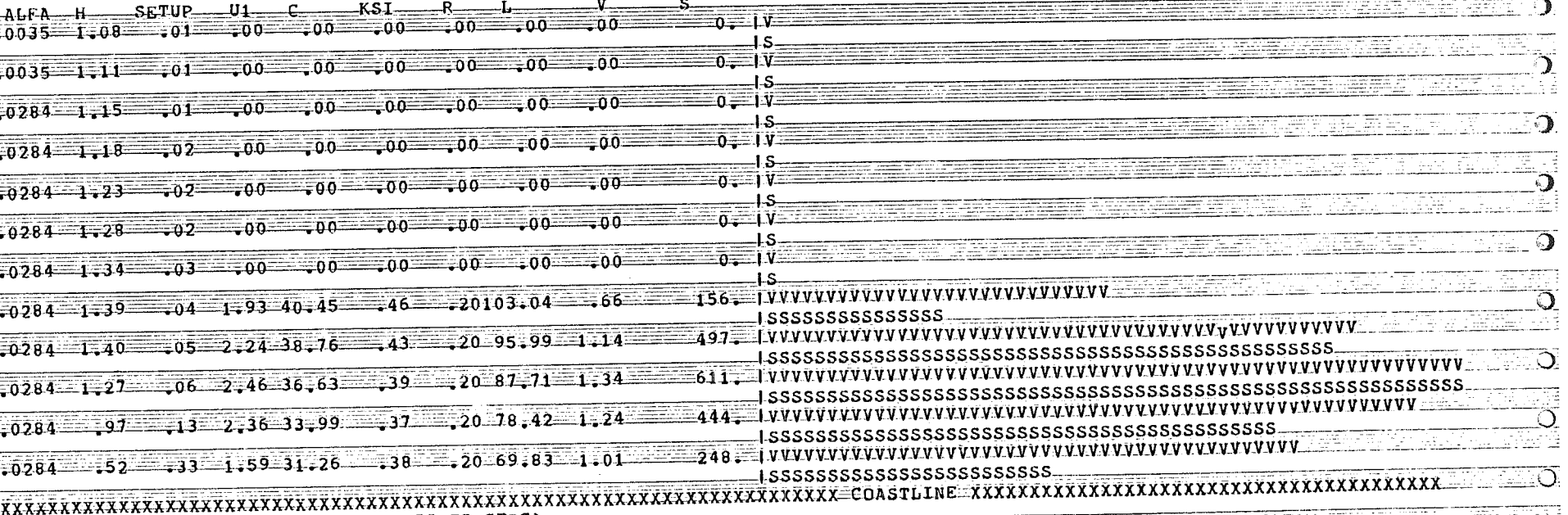
PHYSICAL CONSTANTS G= 9.81 COASTAL CONSTANTS D50= .000150
RHO=1027.00 D90= .000300
KAPPA= .38 DELTA=1.650000
TEMPERATURE= 18.00 BREAKERINDEX= .800000
****

SEASON NR 13
WAVEHEIGHT .88 M (HRMS IN DEEP WATER)
PERIOD 12.50 SEC
DIRECTION -26.90 DEGREES (AT 9.M DEPTH)
REFR COEF 1.23 (AT 9.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING 3.40% OF THE YEAR
****

REFRACTED WAVEHEIGHT 1.89 M
BREAKERANGLE 13. DEGREES

D	ALFA	H	SETUP	U1	C	KSI	R	L	V	S	
7.00	.0035	1.08	.01	.00	.00	.00	.00	.00	.00	0.	
6.42	.0035	1.11	.01	.00	.00	.00	.00	.00	.00	0.	
5.83	.0284	1.15	.01	.00	.00	.00	.00	.00	.00	0.	
5.25	.0284	1.18	.02	.00	.00	.00	.00	.00	.00	0.	
4.67	.0284	1.23	.02	.00	.00	.00	.00	.00	.00	0.	
4.08	.0284	1.28	.02	.00	.00	.00	.00	.00	.00	0.	
3.50	.0284	1.34	.03	.00	.00	.00	.00	.00	.00	0.	
2.92	.0284	1.39	.04	1.93	40.45	.46	.20	103.04	.66	156.	
2.33	.0284	1.40	.05	2.24	38.76	.43	.20	95.99	1.14	497.	
1.75	.0284	1.27	.06	2.46	36.63	.39	.20	87.71	1.34	611.	
1.17	.0284	.97	.13	2.36	33.99	.37	.20	78.42	1.24	444.	
.58	.0284	.52	.33	1.59	31.26	.38	.20	69.83	1.01	248.	



TOTAL TRANSPORT IS 138357. M3/SEASON (ACC TO CERC)
TOTAL TRANSPORT IS -40134. M3/SEASON (ACC TO BIJKER)

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HYDRONAMIC BV
PORT & WATERWAY ENGINEERS
SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
================================================================================================================

PHYSICAL CONSTANTS  G=    9.81     COASTAL CONSTANTS D50= .000150
                  RHO=1027.00                         D90= .000300
                KAPPA=     .38                      DELTA=1.650000
          TEMPERATURE=   18.00               BREAKERINDEX= .800000
***********************************************************

SEASON NR 14
 WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
 PERIOD      15.00 SEC
 DIRECTION  19.10 DEGREES (AT  9.M DEPTH)
 REFR COEF    1.35 (AT  9.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING     .70% OF THE YEAR
***********************************************************

REFRACTED WAVEHEIGHT 2.31 M
BREAKERANGLE 10. DEGREES

   D    ALFA   H    SETUP   U1    C     KSI    R     L      V       S
 7.00 .0035 1.24   .01   .00   .00   .00   .00   .00   .00        0. IV
                                                                       IS
 6.42 .0035 1.27   .02   .00   .00   .00   .00   .00   .00        0. IV
                                                                       IS
 5.83 .0284 1.31   .02   .00   .00   .00   .00   .00   .00        0. IV
                                                                       IS
 5.25 .0284 1.36   .02   .00   .00   .00   .00   .00   .00        0. IV
                                                                       IS
 4.67 .0284 1.41   .03   .00   .00   .00   .00   .00   .00        0. IV
                                                                       IS
 4.08 .0284 1.47   .03  1.73 43.03   .48  .20146.72   .01        0. IV
                                                                       IS
 3.50 .0284 1.53   .04  2.00 41.85   .45  .20139.64   .64       30. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                       ISSSSSSSSSSSSS
 2.92 .0284 1.57   .05  2.31 40.47   .42  .20131.74  1.06       96. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                       ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
 2.33 .0284 1.52   .06  2.60 38.80   .39  .20122.72  1.30      136. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                       ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
 1.75 .0284 1.34   .08  2.73 36.70   .36  .20112.25  1.31      123. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                       ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
 1.17 .0284   .99   .17  2.50 34.24   .35  .20101.12  1.14       80. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                       ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
  .58 .0284   .52   .42  1.58 32.04   .37  .20 92.05   .96       47. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                       ISSSSSSSSSSSSSSSSSSSS
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
TOTAL TRANSPORT IS     32106. M3/SEASON (ACC TO CERC)
TOTAL TRANSPORT IS     10515. M3/SEASON (ACC TO BIJKER)
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 TOTAL TRANSPORT   213841.M3/YEAR
 NEGAT TRANSPORT      -39.M3/YEAR
 POSIT TRANSPORT   213880.M3/YEAR
 DOMINANT NEGAT WAVE DIRECTION  -1.
 DOMINANT POSIT WAVE DIRECTION  17.
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CALCULS DU TRANSPORT LITTORAL

(profil 3)

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HYDRONAMIC BV
PORT & WATERWAY ENGINEERS
SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
==========================================================================================?=

PHYSICAL CONSTANTS  G=   9.81      COASTAL CONSTANTS D50=  .000150
                  RHO=1027.00                        D90=  .000300
                KAPPA=    .38                      DELTA=1.650000
          TEMPERATURE=  18.00                BREAKERINDEX=  .800000
************************************************************

SEASON NR  1
 WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
 PERIOD       4.00 SEC
 DIRECTION   52.00 DEGREES (AT 10.M DEPTH)
 REFR COEF     .98 (AT 10.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING    7.00% OF THE YEAR
************************************************************

REFRACTED WAVEHEIGHT   .85 M
BREAKERANGLE 29. DEGREES

  D    ALFA   H    SETUP   U1    C     KSI     R     L        V        S
 6.00 .0200   .68   .00   .00   .00    .00    .00   .00     .00         0. IV
                                                                           IS
 5.50 .0200   .68   .00   .00   .00    .00    .00   .00     .00         0. IV
                                                                           IS
 5.00 .0200   .68   .00   .00   .00    .00    .00   .00     .00         0. IV
                                                                           IS
 4.50 .0200   .67   .00   .00   .00    .00    .00   .00     .00         0. IV
                                                                           IS
 4.00 .0280   .68   .00   .00   .00    .00    .00   .00     .00         0. IV
                                                                           IS
 3.50 .0280   .68   .00   .00   .00    .00    .00   .00     .00         0. IV
                                                                           IS
 3.00 .0280   .69   .01   .00   .00    .00    .00   .00     .00         0. IV
                                                                           IS
 2.50 .0280   .70   .01   .00   .00    .00    .00   .00     .00         0. IV
                                                                           IS
 2.00 .0280   .73   .01   .00   .00    .00    .00   .00     .00         0. IV
                                                                           IS
 1.50 .0280   .75   .02  1.03 35.22    .75    .20 17.57     .17        26. IVVVVVVVVVVVVV
                                                                           ISSSSS
 1.00 .0280   .68   .02  1.27 32.14    .63    .20 15.59     .70       286. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                           ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
  .50 .0280   .42   .11  1.13 28.17    .57    .20 13.28     .79       286. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                           ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
TOTAL TRANSPORT IS     85874. M3/SEASON (ACC TO CERC)
TOTAL TRANSPORT IS     10668. M3/SEASON (ACC TO BIJKER)
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         HYDRONAMIC BV
         PORT & WATERWAY ENGINEERS
         SLIEDRECHT-HOLLAND

   CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
   ===================================================================================================

   PHYSICAL CONSTANTS  G=    9.81     COASTAL CONSTANTS D50= .000150
                     RHO=1027.00                        D90= .000300
                     KAPPA=    .38                    DELTA=1.650000
                TEMPERATURE=  18.00              BREAKERINDEX= .800000
   ***********************************************************

   SEASON NR  2
    WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
    PERIOD       6.50 SEC
    DIRECTION  46.40 DEGREES (AT 10 M DEPTH)
    REFR COEF     .91 (AT 10 M DEPTH)

   THIS WAVE CLIMATE OCCURS DURING   3.50% OF THE YEAR
   ***********************************************************

   REFRACTED WAVEHEIGHT 1.01 M
   BREAKERANGLE 21. DEGREES

     D    ALFA   H   SETUP  U1    C     KSI    R    L      V       S
    6.00 .0200   .73  .00   .00   .00   .00   .00   .00   .00        0. IV
                                                                        IS
    5.50 .0200   .74  .00   .00   .00   .00   .00   .00   .00        0. IV
                                                                        IS
    5.00 .0200   .76  .01   .00   .00   .00   .00   .00   .00        0. IV
                                                                        IS
    4.50 .0200   .78  .01   .00   .00   .00   .00   .00   .00        0. IV
                                                                        IS
    4.00 .0280   .80  .01   .00   .00   .00   .00   .00   .00        0. IV
                                                                        IS
    3.50 .0280   .82  .01   .00   .00   .00   .00   .00   .00        0. IV
                                                                        IS
    3.00 .0280   .86  .01   .00   .00   .00   .00   .00   .00        0. IV
                                                                        IS
    2.50 .0280   .90  .02   .00   .00   .00   .00   .00   .00        0. IV
                                                                        IS
    2.00 .0280   .94  .02   .00   .00   .00   .00   .00   .00        0. IV
                                                                        IS
    1.50 .0280   .93  .03  1.59 35.29   .53   .20 34.41   .50       84. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                        ISSSSSSSSSSSSSSSSSSSSS
    1.00 .0280   .78  .05  1.72 32.35   .47   .20 30.45   .90      234. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                        ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
     .50 .0280   .44  .15  1.34 28.66   .46   .20 26.08   .84      161. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                        ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
    XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    TOTAL TRANSPORT IS     50041. M3/SEASON (ACC TO CERC)
    TOTAL TRANSPORT IS      8551. M3/SEASON (ACC TO BIJKER)
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HYDRONAMIC BV
PORT & WATERWAY ENGINEERS
SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
==========================================================================================================

PHYSICAL CONSTANTS  G=    9.81     COASTAL CONSTANTS D50= .000150
                  RHO=1027.00                        D90= .000300
                KAPPA=     .38                      DELTA=1.650000
          TEMPERATURE=   18.00               BREAKERINDEX= .800000
*************************************************************

SEASON NR  3
 WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
 PERIOD       8.50 SEC
 DIRECTION   39.50 DEGREES (AT 10.M DEPTH)
 REFR COEF     .94 (AT 10.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING   1.60% OF THE YEAR
*************************************************************


REFRACTED WAVEHEIGHT 1.21 M
BREAKERANGLE 18. DEGREES

  D   ALFA   H   SETUP   U1    C    KSI    R    L     V      S
 6.00 .0200   .86  .01   .00   .00   .00   .00   .00   .00     0. IV
                                                                   IS
 5.50 .0200   .88  .01   .00   .00   .00   .00   .00   .00     0. IV
                                                                   IS
 5.00 .0200   .90  .01   .00   .00   .00   .00   .00   .00     0. IV
                                                                   IS
 4.50 .0200   .93  .01   .00   .00   .00   .00   .00   .00     0. IV
                                                                   IS
 4.00 .0280   .96  .01   .00   .00   .00   .00   .00   .00     0. IV
                                                                   IS
 3.50 .0280  1.00  .02   .00   .00   .00   .00   .00   .00     0. IV
                                                                   IS
 3.00 .0280  1.04  .02   .00   .00   .00   .00   .00   .00     0. IV
                                                                   IS
 2.50 .0280  1.09  .03   .00   .00   .00   .00   .00   .00     0. IV
                                                                   IS
 2.00 .0280  1.11  .04  1.73 37.53   .50   .20 54.27   .32    18. IVVVVVVVVVVVVVVVVVV
                                                                   ISSSSSSS
 1.50 .0280  1.04  .04  1.96 35.34   .45   .20 49.52   .87   116. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                   ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
 1.00 .0280   .82  .08  1.96 32.56   .42   .20 44.05  1.03   138. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                   ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
  .50 .0280   .44  .20  1.42 29.23   .42   .20 38.25   .88    81. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                   ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
TOTAL TRANSPORT IS     30503. M3/SEASON (ACC TO CERC)
TOTAL TRANSPORT IS      6295. M3/SEASON (ACC TO BIJKER)
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HYDRONAMIC BV
PORT & WATERWAY ENGINEERS
SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
==========================================================================================================

PHYSICAL CONSTANTS  G=    9.81     COASTAL CONSTANTS D50= .000150
                   RHO=1027.00                       D90= .000300
                 KAPPA=     .38                    DELTA=1.650000
           TEMPERATURE=  18.00              BREAKERINDEX= .800000
*************************************************************

SEASON NR  4
 WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
 PERIOD      10.50 SEC
 DIRECTION  34.20 DEGREES (AT 10.M DEPTH)
 REFR COEF    1.03 (AT 10.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING     .80% OF THE YEAR
*************************************************************


REFRACTED WAVEHEIGHT 1.52 M
BREAKERANGLE 16. DEGREES

   D   ALFA   H   SETUP   U1    C     KSI    R     L      V       S
 6.00 .0200  .99  .01   .00   .00    .00   .00   .00   .00      0. IV
                                                                    IS
 5.50 .0200 1.02  .01   .00   .00    .00   .00   .00   .00      0. IV
                                                                    IS
 5.00 .0200 1.05  .01   .00   .00    .00   .00   .00   .00      0. IV
                                                                    IS
 4.50 .0200 1.08  .02   .00   .00    .00   .00   .00   .00      0. IV
                                                                    IS
 4.00 .0280 1.12  .02   .00   .00    .00   .00   .00   .00      0. IV
                                                                    IS
 3.50 .0280 1.16  .02   .00   .00    .00   .00   .00   .00      0. IV
                                                                    IS
 3.00 .0280 1.22  .03   .00   .00    .00   .00   .00   .00      0. IV
                                                                    IS
 2.50 .0280 1.26  .04  1.81 39.25    .48   .20 77.53   .28      7. IVVVVVVVVVVVVVV
                                                                    ISSSS
 2.00 .0280 1.24  .05  2.08 37.57    .44   .20 72.23   .84     60. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                    ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
 1.50 .0280 1.12  .06  2.24 35.44    .41   .20 66.04  1.14     98. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                    ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
 1.00 .0280  .84  .12  2.11 32.86    .39   .20 59.19  1.12     82. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                    ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
  .50 .0280  .45  .28  1.43 30.01    .40   .20 52.44   .93     47. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                    ISSSSSSSSSSSSSSSSSSSSSSSSSSSSS
 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
 TOTAL TRANSPORT IS    21229. M3/SEASON (ACC TO CERC)
 TOTAL TRANSPORT IS     5242. M3/SEASON (ACC TO BIJKER)
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HYDRONAMIC BV
PORT & WATERWAY ENGINEERS
SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT * CAP LOPEZ

PHYSICAL CONSTANTS G= 9.81 COASTAL CONSTANTS D50= .000150
RHO=1027.00 D90= .000300
KAPPA= .38 DELTA=1.650000
TEMPERATURE= 18.00 BREAKERINDEX= .800000
****

SEASON NR 5
WAVEHEIGHT .88 M (HRMS IN DEEP WATER)
PERIOD 12.50 SEC
DIRECTION 30.90 DEGREES (AT 10.M DEPTH)
REFR COEF 1.13 (AT 10.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING .80% OF THE YEAR
****

REFRACTED WAVEHEIGHT 1.77 M
BREAKERANGLE 15. DEGREES

D	ALFA	H	SETUP	U1	C	KSI	R	L	V	S	
6.00	.0200	1.12	.01	.00	.00	.00	.00	.00	.00	0.	IV
											IS
5.50	.0200	1.15	.01	.00	.00	.00	.00	.00	.00	0.	IV
											IS
5.00	.0200	1.18	.02	.00	.00	.00	.00	.00	.00	0.	IV
											IS
4.50	.0200	1.22	.02	.00	.00	.00	.00	.00	.00	0.	IV
											IS
4.00	.0280	1.27	.02	.00	.00	.00	.00	.00	.00	0.	IV
											IS
3.50	.0280	1.32	.03	.00	.00	.00	.00	.00	.00	0.	IV
											IS
3.00	.0280	1.37	.04	1.86	40.66	.47	.20	103.96	.26	6.	IVVVVVVVVVVVV
											ISSS
2.50	.0280	1.39	.05	2.13	39.28	.44	.20	98.10	.83	61.	IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
											ISSSSSSSSSSSSSSSSSSSSSSSSS
2.00	.0280	1.34	.06	2.37	37.60	.41	.20	91.39	1.19	121.	IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
											ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
1.50	.0280	1.16	.07	2.47	35.52	.38	.20	83.67	1.30	127.	IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
											ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
1.00	.0280	.86	.15	2.24	33.09	.36	.20	75.47	1.18	90.	IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
											ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
.50	.0280	.45	.34	1.44	30.60	.38	.20	67.90	.98	53.	IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
											ISSSSSSSSSSSSSSSSSSSSS

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

TOTAL TRANSPORT IS 30238. M3/SEASON (ACC TO CERC)
TOTAL TRANSPORT IS 8187. M3/SEASON (ACC TO BIJKER)

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         HYDRONAMIC BV
         PORT & WATERWAY ENGINEERS
         SLIEDRECHT-HOLLAND

   CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
   ===============================================================================================================

   PHYSICAL CONSTANTS  G=    9.81     COASTAL CONSTANTS D50= .000150
                     RHO=1027.00                      D90= .000300
                   KAPPA=     .38                   DELTA=1.650000
               TEMPERATURE=  18.00              BREAKERINDEX= .800000
   ***********************************************************

   SEASON NR  6
    WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
    PERIOD      15.00 SEC
    DIRECTION  28.40 DEGREES (AT 10.M DEPTH)
    REFR COEF    1.22 (AT 10.M DEPTH)

   THIS WAVE CLIMATE OCCURS DURING     .15% OF THE YEAR
   ***********************************************************

   REFRACTED WAVEHEIGHT 2.10 M
   BREAKERANGLE 14. DEGREES

     D    ALFA  H    SETUP   U1    C      KSI     R     L       V       S
    6.00 .0200  1.27   .02   .00   .00    .00    .00    .00    .00        0. IV
                                                                            IS
    5.50 .0200  1.30   .02   .00   .00    .00    .00    .00    .00        0. IV
                                                                            IS
    5.00 .0200  1.34   .02   .00   .00    .00    .00    .00    .00        0. IV
                                                                            IS
    4.50 .0200  1.39   .03   .00   .00    .00    .00    .00    .00        0. IV
                                                                            IS
    4.00 .0280  1.44   .03   .00   .00    .00    .00    .00    .00        0. IV
                                                                            IS
    3.50 .0280  1.49   .04  1.95 41.85    .45   .20139.61    .31        2. IVVVVVVVVVVVVV
                                                                            ISS
    3.00 .0280  1.53   .05  2.21 40.68    .43   .20132.90    .86       13. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                            ISSSSSSSSSSSSSSSSSSSSSSS
    2.50 .0280  1.52   .06  2.48 39.31    .40   .20125.40   1.24       27. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                            ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
    2.00 .0280  1.42   .07  2.68 37.64    .38   .20116.85   1.43       33. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                            ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
    1.50 .0280  1.20   .09  2.69 35.61    .35   .20107.19   1.41       28. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                            ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
    1.00 .0280   .87   .20  2.35 33.38    .34   .20 97.49   1.23       18. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                            ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
     .50 .0280   .45   .42  1.45 31.32    .37   .20 89.30   1.04       11. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                            ISSSSSSSSSSSSSSSSSSSSS
   XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
   TOTAL TRANSPORT IS      7686. M3/SEASON (ACC TO CERC)
   TOTAL TRANSPORT IS      2349. M3/SEASON (ACC TO BIJKER)
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HYDRONAMIC BV
PORT & WATERWAY ENGINEERS
SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
=====================================================================================================

PHYSICAL CONSTANTS  G=    9.81      COASTAL CONSTANTS D50= .000150
                 RHO=1027.00                          D90= .000300
               KAPPA=     .38                       DELTA=1.650000
         TEMPERATURE=   18.00                BREAKERINDEX= .800000
*****************************************************************

SEASON NR  7
 WAVEHEIGHT    .28 M (HRMS IN DEEP WATER)
 PERIOD       4.00 SEC
 DIRECTION    7.00 DEGREES (AT 10.M DEPTH)
 REFR COEF    1.00 (AT 10.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING   1.00% OF THE YEAR
*****************************************************************


REFRACTED WAVEHEIGHT   .41 M
BREAKERANGLE  3. DEGREES

  D    ALFA   H    SETUP   U1    C     KSI    R     L     V     S
 6.00 .0200  .26   .00   .00   .00   .00   .00   .00   .00        0. IV
                                                                      IS
 5.50 .0200  .26   .00   .00   .00   .00   .00   .00   .00        0. IV
                                                                      IS
 5.00 .0200  .26   .00   .00   .00   .00   .00   .00   .00        0. IV
                                                                      IS
 4.50 .0200  .25   .00   .00   .00   .00   .00   .00   .00        0. IV
                                                                      IS
 4.00 .0280  .26   .00   .00   .00   .00   .00   .00   .00        0. IV
                                                                      IS
 3.50 .0280  .26   .00   .00   .00   .00   .00   .00   .00        0. IV
                                                                      IS
 3.00 .0280  .26   .00   .00   .00   .00   .00   .00   .00        0. IV
                                                                      IS
 2.50 .0280  .27   .00   .00   .00   .00   .00   .00   .00        0. IV
                                                                      IS
 2.00 .0280  .28   .00   .00   .00   .00   .00   .00   .00        0. IV
                                                                      IS
 1.50 .0280  .29   .00   .00   .00   .00   .00   .00   .00        0. IV
                                                                      IS
 1.00 .0280  .33   .01   .00   .00   .00   .00   .00   .00        0. IV
                                                                      IS
  .50 .0280  .33   .01  1.01 26.75   .57   .20 12.52   .08        1. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                      ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
TOTAL TRANSPORT IS       256. M3/SEASON (ACC TO CERC)
TOTAL TRANSPORT IS        17. M3/SEASON (ACC TO BIJKER)
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HYDRONAMIC BV
PORT & WATERWAY ENGINEERS
SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT * CAP LOPEZ

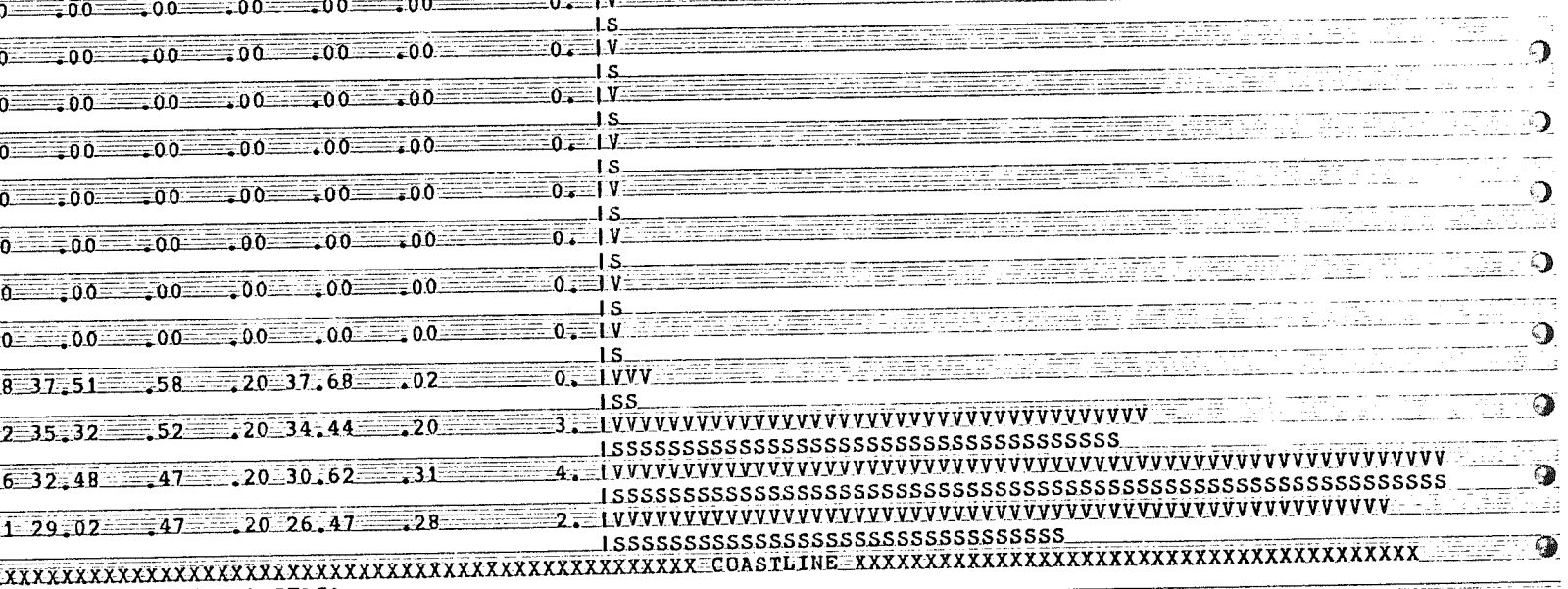
PHYSICAL CONSTANTS G= 9.81 COASTAL CONSTANTS D50= .000150
RHO=1027.00 D90= .000300
KAPPA= .38 DELTA=1.650000
TEMPERATURE= 18.00 BREAKERINDEX= .800000
****

SEASON NR 8
WAVEHEIGHT .88 M (HRMS IN DEEP WATER)
PERIOD 6.50 SEC
DIRECTION 6.00 DEGREES (AT 10.M DEPTH)
REFR COEF .91 (AT 10.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING .40% OF THE YEAR
****

REFRACTED WAVEHEIGHT 1.14 M
BREAKERANGLE 3. DEGREES

D	ALFA	H	SETUP	U1	C	KSI	R	L	V	S	
5.00	.0200	.85	.01	.00	.00	.00	.00	.00	.00	0.	
5.50	.0200	.86	.01	.00	.00	.00	.00	.00	.00	0.	
5.00	.0200	.88	.01	.00	.00	.00	.00	.00	.00	0.	
4.50	.0200	.90	.01	.00	.00	.00	.00	.00	.00	0.	
4.00	.0280	.92	.01	.00	.00	.00	.00	.00	.00	0.	
3.50	.0280	.95	.01	.00	.00	.00	.00	.00	.00	0.	
3.00	.0280	.99	.02	.00	.00	.00	.00	.00	.00	0.	
2.50	.0280	1.03	.02	.00	.00	.00	.00	.00	.00	0.	
2.00	.0280	1.06	.03	1.48	37.51	.58	.20	37.68	.02	0.	
1.50	.0280	1.01	.03	1.72	35.32	.52	.20	34.44	.20	3.	
1.00	.0280	.80	.07	1.76	32.48	.47	.20	30.62	.31	4.	
.50	.0280	.44	.18	1.31	29.02	.47	.20	26.47	.28	2.	



TOTAL TRANSPORT IS 1232. M3/SEASON (ACC TO CERC)
TOTAL TRANSPORT IS 162. M3/SEASON (ACC TO BIJKER)

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HYDRONAMIC BV
PORT & WATERWAY ENGINEERS
SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
==========================================================================================================================

PHYSICAL CONSTANTS  G=    9.81      COASTAL CONSTANTS D50= .000150
                  RHO=1027.00                         D90= .000300
                KAPPA=     .38                       DELTA=1.650000
          TEMPERATURE=   18.00                 BREAKERINDEX= .800000
****************************************************************

SEASON NR  9
 WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
 PERIOD       4.00 SEC
 DIRECTION   81.00 DEGREES (AT 10.M DEPTH)
 REFR COEF     .98 (AT 10.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING  29.30% OF THE YEAR
****************************************************************

REFRACTED WAVEHEIGHT   .50 M
BREAKERANGLE 31. DEGREES

  D     ALFA   H    SETUP   U1    C     KSI    R     L     V      S
 6.00 .0200   .35   .00   .00   .00   .00   .00   .00   .00       0. IV
                                                                       IS
 5.50 .0200   .35   .00   .00   .00   .00   .00   .00   .00       0. IV
                                                                       IS
 5.00 .0200   .34   .00   .00   .00   .00   .00   .00   .00       0. IV
                                                                       IS
 4.50 .0200   .34   .00   .00   .00   .00   .00   .00   .00       0. IV
                                                                       IS
 4.00 .0280   .34   .00   .00   .00   .00   .00   .00   .00       0. IV
                                                                       IS
 3.50 .0280   .35   .00   .00   .00   .00   .00   .00   .00       0. IV
                                                                       IS
 3.00 .0280   .35   .00   .00   .00   .00   .00   .00   .00       0. IV
                                                                       IS
 2.50 .0280   .36   .00   .00   .00   .00   .00   .00   .00       0. IV
                                                                       IS
 2.00 .0280   .37   .00   .00   .00   .00   .00   .00   .00       0. IV
                                                                       IS
 1.50 .0280   .40   .00   .00   .00   .00   .00   .00   .00       0. IV
                                                                       IS
 1.00 .0280   .43   .01   .00   .00   .00   .00   .00   .00       0. IV
                                                                       IS
  .50 .0280   .38   .03  1.11 27.00   .55   .20 12.65   .53     535. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                       ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
TOTAL TRANSPORT IS    96888. M3/SEASON (ACC TO CERC)
TOTAL TRANSPORT IS     9550. M3/SEASON (ACC TO BIJKER)
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    HYDRONAMIC BV
    PORT & WATERWAY ENGINEERS
    SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
==========================================================================================================

PHYSICAL CONSTANTS  G=     9.81     COASTAL CONSTANTS D50= .000150
                  RHO=1027.00                         D90= .000300
                KAPPA=      .38                      DELTA=1.650000
          TEMPERATURE=   18.00                 BREAKERINDEX= .800000
*************************************************************

SEASON NR 10
 WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
 PERIOD       6.50 SEC
 DIRECTION   62.60 DEGREES (AT 10.M DEPTH)
 REFR COEF     .90 (AT 10.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING  15.70% OF THE YEAR
*************************************************************


REFRACTED WAVEHEIGHT   .88 M
BREAKERANGLE 25. DEGREES

   D    ALFA   H    SETUP  U1    C     KSI    R     L     V       S
 6.00 .0200   .61   .00   .00   .00   .00   .00   .00   .00       0. IV
                                                                     IS
 5.50 .0200   .62   .00   .00   .00   .00   .00   .00   .00       0. IV
                                                                     IS
 5.00 .0200   .63   .00   .00   .00   .00   .00   .00   .00       0. IV
                                                                     IS
 4.50 .0200   .64   .00   .00   .00   .00   .00   .00   .00       0. IV
                                                                     IS
 4.00 .0280   .66   .01   .00   .00   .00   .00   .00   .00       0. IV
                                                                     IS
 3.50 .0280   .68   .01   .00   .00   .00   .00   .00   .00       0. IV
                                                                     IS
 3.00 .0280   .71   .01   .00   .00   .00   .00   .00   .00       0. IV
                                                                     IS
 2.50 .0280   .74   .01   .00   .00   .00   .00   .00   .00       0. IV
                                                                     IS
 2.00 .0280   .79   .02   .00   .00   .00   .00   .00   .00       0. IV
                                                                     IS
 1.50 .0280   .82   .02  1.40 35.26   .55   .20 34.36   .16      54. IVVVVVVVVVVV
                                                                     ISSSS
 1.00 .0280   .73   .03  1.64 32.20   .48   .20 30.26   .78     793. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                     ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
  .50 .0280   .43   .12  1.37 28.28   .45   .20 25.66   .84     703. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                     ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
TOTAL TRANSPORT IS    167706. M3/SEASON (ACC TO CERC)
TOTAL TRANSPORT IS     27675. M3/SEASON (ACC TO BIJKER)
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HYDRONAMIC BV
PORT & WATERWAY ENGINEERS
SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
=====================================================================================================================================================

PHYSICAL CONSTANTS  G=    9.81      COASTAL CONSTANTS D50= .000150
                  RHO=1027.00                          D90= .000300
                KAPPA=     .38                       DELTA=1.650000
          TEMPERATURE=  18.00                  BREAKERINDEX= .800000
*************************************************************************

SEASON NR 11
 WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
 PERIOD       8.50 SEC
 DIRECTION  49.40 DEGREES (AT 10.M DEPTH)
 REFR COEF     .95 (AT 10.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING   7.80% OF THE YEAR
*************************************************************************


REFRACTED WAVEHEIGHT 1.18 M
BREAKERANGLE 21. DEGREES

  D    ALFA   H    SETUP   U1    C     KSI    R     L     V      S
 6.00 .0200   .80   .01   .00   .00   .00   .00   .00   .00       0. IV
                                                                     IS
 5.50 .0200   .82   .01   .00   .00   .00   .00   .00   .00       0. IV
                                                                     IS
 5.00 .0200   .84   .01   .00   .00   .00   .00   .00   .00       0. IV
                                                                     IS
 4.50 .0200   .86   .01   .00   .00   .00   .00   .00   .00       0. IV
                                                                     IS
 4.00 .0280   .89   .01   .00   .00   .00   .00   .00   .00       0. IV
                                                                     IS
 3.50 .0280   .92   .01   .00   .00   .00   .00   .00   .00       0. IV
                                                                     IS
 3.00 .0280   .97   .02   .00   .00   .00   .00   .00   .00       0. IV
                                                                     IS
 2.50 .0280  1.01   .02   .00   .00   .00   .00   .00   .00       0. IV
                                                                     IS
 2.00 .0280  1.05   .03  1.63 37.51   .51   .20 54.23   .20      41. IVVVVVVVVVVV
                                                                     ISSS
 1.50 .0280  1.01   .03  1.90 35.32   .46   .20 49.48   .84     524. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                     ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
 1.00 .0280   .81   .07  1.94 32.52   .42   .20 43.98  1.07     717. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                     ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
  .50 .0280   .44   .19  1.43 29.12   .41   .20 38.09   .93     439. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                     ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
TOTAL TRANSPORT IS   147709. M3/SEASON (ACC TO CERC)
TOTAL TRANSPORT IS    30720. M3/SEASON (ACC TO BIJKER)
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HYDRONAMIC BV
PORT & WATERWAY ENGINEERS
SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT * CAP LOPEZ

PHYSICAL CONSTANTS G= 9.81 COASTAL CONSTANTS D50= .000150
RHO=1027.00 D90= .000300
KAPPA= .38 DELTA=1.650000
TEMPERATURE= 18.00 BREAKERINDEX= .800000
****

SEASON NR 12
WAVEHEIGHT .88 M (HRMS IN DEEP WATER)
PERIOD 10.50 SEC
DIRECTION 40.70 DEGREES (AT 10.M DEPTH)
REFR COEF 1.02 (AT 10.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING 3.60% OF THE YEAR
****

REFRACTED WAVEHEIGHT 1.45 M
BREAKERANGLE 18. DEGREES

D	ALFA	H	SETUP	U1	C	KSI	R	L	V	S	
6.00	.0200	.96	.01	.00	.00	.00	.00	.00	.00	0.	IV
											IS
5.50	.0200	.98	.01	.00	.00	.00	.00	.00	.00	0.	IV
											IS
5.00	.0200	1.01	.01	.00	.00	.00	.00	.00	.00	0.	IV
											IS
4.50	.0200	1.04	.01	.00	.00	.00	.00	.00	.00	0.	IV
											IS
4.00	.0280	1.08	.02	.00	.00	.00	.00	.00	.00	0.	IV
											IS
3.50	.0280	1.12	.02	.00	.00	.00	.00	.00	.00	0.	IV
											IS
3.00	.0280	1.17	.03	.00	.00	.00	.00	.00	.00	0.	IV
											IS
2.50	.0280	1.22	.04	1.76	39.24	.49	.20	77.50	.17	16.	IVVVVVVV
											ISS
2.00	.0280	1.22	.04	2.03	37.56	.45	.20	72.21	.81	245.	IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
											ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
1.50	.0280	1.10	.05	2.22	35.42	.41	.20	65.97	1.16	461.	IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
											ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
1.00	.0280	.84	.11	2.11	32.79	.39	.20	59.03	1.18	397.	IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
											ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
.50	.0280	.45	.26	1.45	29.84	.39	.20	52.07	.98	228.	IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
											ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSS

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

TOTAL TRANSPORT IS 99629. M3/SEASON (ACC TO CERC)
TOTAL TRANSPORT IS 24068. M3/SEASON (ACC TO BIJKER)

HYDRONAMIC BV
PORT & WATERWAY ENGINEERS
SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT * CAP LOPEZ

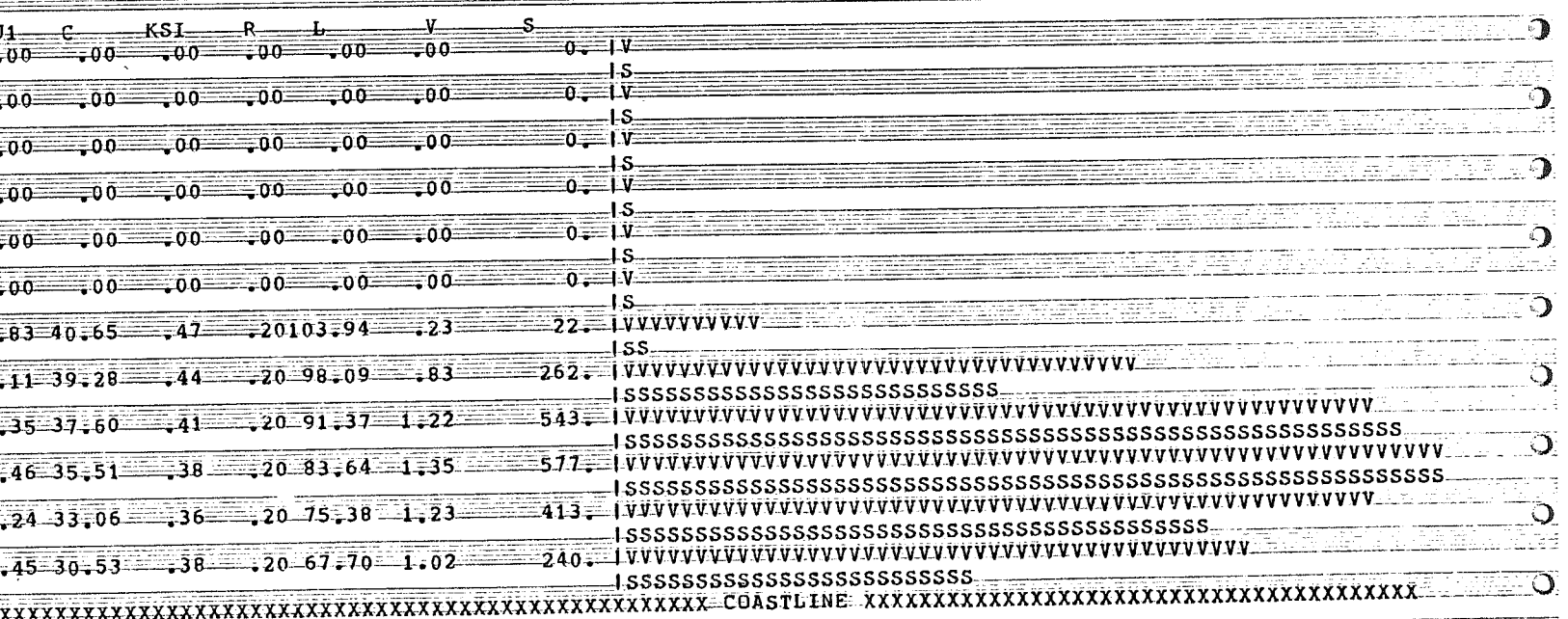
PHYSICAL CONSTANTS G= 9.81 COASTAL CONSTANTS D50= .000150
RHO=1027.00 D90= .000300
KAPPA= .38 DELTA=1.650000
TEMPERATURE= 18.00 BREAKERINDEX= .800000
****

SEASON NR 13
WAVEHEIGHT .88 M (HRMS IN DEEP WATER)
PERIOD 12.50 SEC
DIRECTION 34.70 DEGREES (AT 10.M DEPTH)
REFR COEF 1.13 (AT 10.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING 3.40% OF THE YEAR
****

REFRACTED WAVEHEIGHT 1.74 M
BREAKERANGLE 17. DEGREES

D	ALFA	H	SETUP	U1	C	KSI	R	L	V	S	
6.00	.0200	1.10	.01	.00	.00	.00	.00	.00	.00	0.	
5.50	.0200	1.13	.01	.00	.00	.00	.00	.00	.00	0.	
5.00	.0200	1.16	.02	.00	.00	.00	.00	.00	.00	0.	
4.50	.0200	1.20	.02	.00	.00	.00	.00	.00	.00	0.	
4.00	.0280	1.25	.02	.00	.00	.00	.00	.00	.00	0.	
3.50	.0280	1.30	.03	.00	.00	.00	.00	.00	.00	0.	
3.00	.0280	1.35	.04	1.83	40.65	.47	.20	103.94	.23	22.	
2.50	.0280	1.37	.05	2.11	39.28	.44	.20	98.09	.83	262.	
2.00	.0280	1.33	.05	2.35	37.60	.41	.20	91.37	1.22	543.	
1.50	.0280	1.16	.07	2.46	35.51	.38	.20	83.64	1.35	577.	
1.00	.0280	.85	.15	2.24	33.06	.36	.20	75.38	1.23	413.	
.50	.0280	.45	.33	1.45	30.53	.38	.20	67.70	1.02	240.	



TOTAL TRANSPORT IS 136497. M3/SEASON (ACC TO CERC)
TOTAL TRANSPORT IS 36713. M3/SEASON (ACC TO BIJKER)

HYDRONAMIC BV
PORT & WATERWAY ENGINEERS
SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT * CAP LOPEZ

PHYSICAL CONSTANTS G= 9.81 COASTAL CONSTANTS D50= .000150
RHO=1027.00 D90= .000300
KAPPA= .38 DELTA=1.650000
TEMPERATURE= 18.00 BREAKERINDEX= .800000
****

SEASON NR 14
WAVEHEIGHT .88 M (HRMS IN DEEP WATER)
PERIOD 15.00 SEC
DIRECTION 78.20 DEGREES (AT 10.M DEPTH)
REFR COEF 1.25 (AT 10.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING .70% OF THE YEAR
****

REFRACTED WAVEHEIGHT 2.08 M
BREAKERANGLE 15. DEGREES

D	ALFA	H	SETUP	U1	C	KSI	R	L	V	S	
6.00	.0200	1.27	.02	.00	.00	.00	.00	.00	.00	0.	V
											S
5.50	.0200	1.30	.02	.00	.00	.00	.00	.00	.00	0.	V
											S
5.00	.0200	1.34	.02	.00	.00	.00	.00	.00	.00	0.	V
											S
4.50	.0200	1.39	.03	.00	.00	.00	.00	.00	.00	0.	V
											S
4.00	.0280	1.44	.03	.00	.00	.00	.00	.00	.00	0.	V
											S
3.50	.0280	1.49	.04	1.95	41.85	.45	.20	139.61	.41	12.	V
											SSSS
3.00	.0280	1.53	.05	2.22	40.68	.43	.20	132.90	.93	71.	V
											SSSSSSSSSSSSSSSSSSSSSSSSSS
2.50	.0280	1.52	.06	2.48	39.31	.40	.20	125.40	1.29	136.	V
											SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
2.00	.0280	1.42	.07	2.68	37.64	.38	.20	116.85	1.46	157.	V
											SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
1.50	.0280	1.20	.09	2.70	35.61	.35	.20	107.17	1.42	130.	V
											SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
1.00	.0280	.87	.20	2.35	33.37	.34	.20	97.43	1.23	86.	V
											SSSSSSSSSSSSSSSSSSSSSSSSSSSS
.50	.0280	.45	.42	1.45	31.29	.37	.20	89.16	1.04	53.	V
											SSSSSSSSSSSSSSSSSSS

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

TOTAL TRANSPORT IS 38813. M3/SEASON (ACC TO CERC)
TOTAL TRANSPORT IS 11521. M3/SEASON (ACC TO BIJKER)

TOTAL TRANSPORT 181718.M3/YEAR
NEGAT TRANSPORT 0.M3/YEAR
POSIT TRANSPORT 181718.M3/YEAR
DOMINANT NEGAT WAVE DIRECTION 0.
DOMINANT POSIT WAVE DIRECTION 19.

CALCULS DU TRANSPORT LITTORAL

(profil 4)

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        HYDRONAMIC BV
        PORT & WATERWAY ENGINEERS
        SLIEDRECHT-HOLLAND

   CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
   ==================================================================================================================

   PHYSICAL CONSTANTS  G=    9.81      COASTAL CONSTANTS D50= .000150
                     RHO=1027.00                         D90= .000300
                     KAPPA=    .38                      DELTA=1.650000
            TEMPERATURE=  18.00                  BREAKERINDEX= .800000
   ***************************************************************

   SEASON NR  1
    WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
    PERIOD       4.00 SEC
    DIRECTION   56.00 DEGREES (AT 11.M DEPTH)
    REFR COEF     .98 (AT 11.M DEPTH)

   THIS WAVE CLIMATE OCCURS DURING   7.00% OF THE YEAR
   ***************************************************************

   REFRACTED WAVEHEIGHT   .82 M
   BREAKERANGLE 31. DEGREES

      D    ALFA   H   SETUP   U1    C     KSI    R     L     V       S
    7.00 .0104   .67   .00   .00   .00   .00   .00   .00   .00       0. IV
                                                                        IS
    6.42 .0104   .66   .00   .00   .00   .00   .00   .00   .00       0. IV
                                                                        IS
    5.83 .0282   .66   .00   .00   .00   .00   .00   .00   .00       0. IV
                                                                        IS
    5.25 .0282   .65   .00   .00   .00   .00   .00   .00   .00       0. IV
                                                                        IS
    4.67 .0282   .65   .00   .00   .00   .00   .00   .00   .00       0. IV
                                                                        IS
    4.08 .0282   .65   .00   .00   .00   .00   .00   .00   .00       0. IV
                                                                        IS
    3.50 .0282   .65   .00   .00   .00   .00   .00   .00   .00       0. IV
                                                                        IS
    2.92 .0282   .66   .01   .00   .00   .00   .00   .00   .00       0. IV
                                                                        IS
    2.33 .0282   .68   .01   .00   .00   .00   .00   .00   .00       0. IV
                                                                        IS
    1.75 .0282   .71   .01   .00   .00   .00   .00   .00   .00       0. IV
                                                                        IS
    1.17 .0282   .70   .01  1.17 33.28   .67   .20 16.31   .51     157. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                        ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
     .58 .0282   .48   .09  1.21 28.84   .57   .20 13.65   .80     307. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                        ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
   XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
   TOTAL TRANSPORT IS    82051. M3/SEASON (ACC TO CERC)
   TOTAL TRANSPORT IS     9604. M3/SEASON (ACC TO BIJKER)
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HYDRONAMIC BV
PORT & WATERWAY ENGINEERS
SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT * CAP LOPEZ
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PHYSICAL CONSTANTS G= 9.81 COASTAL CONSTANTS D50= .000150
RHO=1027.00 D90= .000300
KAPPA= .38 DELTA=1.650000
TEMPERATURE= 18.00 BREAKERINDEX= .800000
****

SEASON NR 2
WAVEHEIGHT .88 M (HRMS IN DEEP WATER)
PERIOD 6.50 SEC
DIRECTION 50.10 DEGREES (AT 11.M DEPTH)
REFR COEF .91 (AT 11.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING 3.50% OF THE YEAR
****

REFRACTED WAVEHEIGHT .98 M
BREAKERANGLE 22. DEGREES

D	ALFA	H	SETUP	U1	C	KSI	R	L	V	S	
7.00	.0104	.69	.00	.00	.00	.00	.00	.00	.00	0.	IV IS
5.42	.0104	.70	.00	.00	.00	.00	.00	.00	.00	0.	IV IS
5.83	.0282	.71	.00	.00	.00	.00	.00	.00	.00	0.	IV IS
5.25	.0282	.73	.00	.00	.00	.00	.00	.00	.00	0.	IV IS
4.67	.0282	.74	.01	.00	.00	.00	.00	.00	.00	0.	IV IS
4.08	.0282	.77	.01	.00	.00	.00	.00	.00	.00	0.	IV IS
3.50	.0282	.80	.01	.00	.00	.00	.00	.00	.00	0.	IV IS
2.92	.0282	.83	.01	.00	.00	.00	.00	.00	.00	0.	IV IS
2.33	.0282	.88	.02	.00	.00	.00	.00	.00	.00	0.	IV IS
1.75	.0282	.92	.03	1.42	36.46	.57	.20	36.11	.10	7.	IVVVVVV ISS
1.17	.0282	.84	.03	1.70	33.37	.49	.20	31.78	.80	198.	IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
.58	.0282	.50	.12	1.46	29.26	.45	.20	26.75	.87	181.	IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
TOTAL TRANSPORT IS 48711. M3/SEASON (ACC TO CERC)
TOTAL TRANSPORT IS 7992. M3/SEASON (ACC TO BIJKER)

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HYDRONAMIC BV
PORT & WATERWAY ENGINEERS
SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
====================================================================================================================

PHYSICAL CONSTANTS  G=   9.81      COASTAL CONSTANTS D50= .000150
                  RHO=1027.00                        D90= .000300
                KAPPA=    .38                      DELTA=1.650000
          TEMPERATURE=  18.00               BREAKERINDEX= .800000
*************************************************************


SEASON NR  3
 WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
 PERIOD       8.50 SEC
 DIRECTION  42.50 DEGREES (AT 11.M DEPTH)
 REFR COEF     .95 (AT 11.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING   1.60% OF THE YEAR
*************************************************************


REFRACTED WAVEHEIGHT 1.20 M
BREAKERANGLE 19. DEGREES

   D    ALFA   H    SETUP   U1    C     KSI    R     L      V        S
 7.00 .0104   .81   .00   .00   .00   .00   .00   .00   .00       0. IV
                                                                       IS
 6.42 .0104   .83   .01   .00   .00   .00   .00   .00   .00       0. IV
                                                                       IS
 5.83 .0282   .85   .01   .00   .00   .00   .00   .00   .00       0. IV
                                                                       IS
 5.25 .0282   .87   .01   .00   .00   .00   .00   .00   .00       0. IV
                                                                       IS
 4.67 .0282   .90   .01   .00   .00   .00   .00   .00   .00       0. IV
                                                                       IS
 4.08 .0282   .93   .01   .00   .00   .00   .00   .00   .00       0. IV
                                                                       IS
 3.50 .0282   .98   .02   .00   .00   .00   .00   .00   .00       0. IV
                                                                       IS
 2.92 .0282  1.03   .02   .00   .00   .00   .00   .00   .00       0. IV
                                                                       IS
 2.33 .0282  1.08   .03   .00   .00   .00   .00   .00   .00       0. IV
                                                                       IS
 1.75 .0282  1.08   .04  1.84 36.51   .48   .20 52.01   .62      62. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                       ISSSSSSSSSSSSSSSSSSSSSSSSSSSS
 1.17 .0282   .91   .06  1.99 33.54   .43   .20 45.92  1.03     146. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                       ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
  .58 .0282   .51   .17  1.56 29.80   .41   .20 39.19   .93      94. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                       ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
TOTAL TRANSPORT IS    30744. M3/SEASON (ACC TO CERC)
TOTAL TRANSPORT IS     6249. M3/SEASON (ACC TO BIJKER)
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      HYDRONAMIC BV
      PORT & WATERWAY ENGINEERS
      SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
==========================================================================================================================

PHYSICAL CONSTANTS  G=   9.81     COASTAL CONSTANTS D50=  .000150
                  RHO=1027.00                       D90=  .000300
                KAPPA=    .38                     DELTA=1.650000
          TEMPERATURE=  18.00               BREAKERINDEX=  .800000
***********************************************************

SEASON NR  4
 WAVEHEIGHT   .88 M (HRMS IN DEEP WATER)
 PERIOD     10.50 SEC
 DIRECTION  37.70 DEGREES (AT 11.M DEPTH)
 REFR COEF   1.03 (AT 11.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING    .80% OF THE YEAR
***********************************************************

REFRACTED WAVEHEIGHT 1.49 M
BREAKERANGLE 16. DEGREES

   D    ALFA  H    SETUP   U1    C     KSI    R     L       V       S
 7.00 .0104   .93   .01   .00   .00   .00   .00   .00   .00         0. IV
                                                                       IS
 6.42 .0104   .95   .01   .00   .00   .00   .00   .00   .00         0. IV
                                                                       IS
 5.83 .0282   .98   .01   .00   .00   .00   .00   .00   .00         0. IV
                                                                       IS
 5.25 .0282  1.01   .01   .00   .00   .00   .00   .00   .00         0. IV
                                                                       IS
 4.67 .0282  1.05   .01   .00   .00   .00   .00   .00   .00         0. IV
                                                                       IS
 4.08 .0282  1.09   .02   .00   .00   .00   .00   .00   .00         0. IV
                                                                       IS
 3.50 .0282  1.14   .02   .00   .00   .00   .00   .00   .00         0. IV
                                                                       IS
 2.92 .0282  1.20   .03   .00   .00   .00   .00   .00   .00         0. IV
                                                                       IS
 2.33 .0282  1.24   .04  1.88 38.73   .47   .20 75.84   .46        17. IVVVVVVVVVVVVVVVVVVVVVVV
                                                                       ISSSSSSSSSS
 1.75 .0282  1.19   .05  2.16 36.56   .43   .20 69.22  1.03        86. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                       ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
 1.17 .0282   .94   .09  2.20 33.74   .39   .20 61.44  1.18        94. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                       ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
  .58 .0282   .52   .24  1.60 30.44   .39   .20 53.42   .99        54. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                       ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
TOTAL TRANSPORT IS    21285. M3/SEASON (ACC TO CERC)
TOTAL TRANSPORT IS     5197. M3/SEASON (ACC TO BIJKER)
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HYDRONAMIC BV
PORT & WATERWAY ENGINEERS
SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
====================================================================================================

PHYSICAL CONSTANTS  G=    9.81     COASTAL CONSTANTS D50= .000150
                  RHO=1027.00                        D90= .000300
                KAPPA=     .38                     DELTA=1.650000
          TEMPERATURE=   18.00               BREAKERINDEX= .800000
***********************************************************

SEASON NR  5
 WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
 PERIOD      12.50 SEC
 DIRECTION  34.20 DEGREES (AT 11.M DEPTH)
 REFR COEF   1.13 (AT 11.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING    .80% OF THE YEAR
***********************************************************

REFRACTED WAVEHEIGHT 1.74 M
BREAKERANGLE 16. DEGREES

  D    ALFA   H   SETUP  U1    C     KSI    R     L      V       S
 7.00 .0104 1.05  .01   .00   .00   .00   .00   .00   .00       0. IV
                                                                    IS
 6.42 .0104 1.08  .01   .00   .00   .00   .00   .00   .00       0. IV
                                                                    IS
 5.83 .0282 1.11  .01   .00   .00   .00   .00   .00   .00       0. IV
                                                                    IS
 5.25 .0282 1.15  .01   .00   .00   .00   .00   .00   .00       0. IV
                                                                    IS
 4.67 .0282 1.19  .02   .00   .00   .00   .00   .00   .00       0. IV
                                                                    IS
 4.08 .0282 1.24  .02   .00   .00   .00   .00   .00   .00       0. IV
                                                                    IS
 3.50 .0282 1.30  .03   .00   .00   .00   .00   .00   .00       0. IV
                                                                    IS
 2.92 .0282 1.35  .04  1.88 40.44   .47   .20103.02   .34      10. IVVVVVVVVVVVVVVVV
                                                                    ISSSS
 2.33 .0282 1.37  .05  2.20 38.76   .43   .20 95.96   .97      84. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                    ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
 1.75 .0282 1.26  .06  2.43 36.61   .39   .20 87.63  1.30     136. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                    ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
 1.17 .0282  .97  .11  2.36 33.90   .37   .20 78.12  1.27     108. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                    ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
  .58 .0282  .52  .30  1.63 30.97   .37   .20 68.96  1.04      60. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                    ISSSSSSSSSSSSSSSSSSSSSSSSSSSS
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
TOTAL TRANSPORT IS    30576. M3/SEASON (ACC TO CERC)
TOTAL TRANSPORT IS     8239. M3/SEASON (ACC TO BIJKER)
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        HYDRONAMIC BV
        PORT & WATERWAY ENGINEERS
        SLIEDRECHT-HOLLAND

  CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
  ============================================================================================================

  PHYSICAL CONSTANTS  G=   9.81     COASTAL CONSTANTS D50= .000150
                    RHO=1027.00                        D90= .000300
                  KAPPA=    .38                      DELTA=1.650000
           TEMPERATURE=  18.00              BREAKERINDEX= .800000
  ***********************************************************


  SEASON NR  6
   WAVEHEIGHT   .88 M (HRMS IN DEEP WATER)
   PERIOD     15.00 SEC
   DIRECTION  31.30 DEGREES (AT 11.M DEPTH)
   REFR COEF   1.25 (AT 11.M DEPTH)

  THIS WAVE CLIMATE OCCURS DURING     .15% OF THE YEAR
  ***********************************************************



  REFRACTED WAVEHEIGHT 2.05 M
  BREAKERANGLE 15. DEGREES

     D    ALFA  H    SETUP   U1    C     KSI    R     L       V      S
   7.00 .0104 1.19   .01   .00   .00    .00   .00    .00    .00        0. IV
                                                                          IS
   6.42 .0104 1.22   .01   .00   .00    .00   .00    .00    .00        0. IV
                                                                          IS
   5.83 .0282 1.26   .02   .00   .00    .00   .00    .00    .00        0. IV
                                                                          IS
   5.25 .0282 1.30   .02   .00   .00    .00   .00    .00    .00        0. IV
                                                                          IS
   4.67 .0282 1.35   .02   .00   .00    .00   .00    .00    .00        0. IV
                                                                          IS
   4.08 .0282 1.41   .03   .00   .00    .00   .00    .00    .00        0. IV
                                                                          IS
   3.50 .0282 1.47   .04  1.93 41.85    .46   .20139.60    .38        2. IVVVVVVVVVVVVVVV
                                                                          ISSS
   2.92 .0282 1.52   .05  2.24 40.47    .42   .20131.70   1.00       18. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                          ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
   2.33 .0282 1.49   .06  2.54 38.79    .39   .20122.67   1.39       33. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                          ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
   1.75 .0282 1.32   .07  2.71 36.67    .36   .20112.10   1.50       33. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                          ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
   1.17 .0282  .99   .14  2.52 34.09    .35   .20100.49   1.33       22. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                          ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
    .58 .0282  .52   .37  1.65 31.58    .36   .20 90.28   1.09       13. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                          ISSSSSSSSSSSSSSSSSSSSSSS
  XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
  TOTAL TRANSPORT IS      8468. M3/SEASON (ACC TO CERC)
  TOTAL TRANSPORT IS      2514. M3/SEASON (ACC TO BIJKER)
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      HYDRONAMIC BV
      PORT & WATERWAY ENGINEERS
      SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
==========================================================================================================

PHYSICAL CONSTANTS  G=    9.81     COASTAL CONSTANTS D50= .000150
                    RHO=1027.00                      D90= .000300
                  KAPPA=     .38                   DELTA=1.650000
            TEMPERATURE=  18.00             BREAKERINDEX= .800000
*****************************************************************

SEASON NR  7
 WAVEHEIGHT    .28 M (HRMS IN DEEP WATER)
 PERIOD       4.00 SEC
 DIRECTION   11.00 DEGREES (AT 11.M DEPTH)
 REFR COEF     .98 (AT 11.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING   1.00% OF THE YEAR
*****************************************************************

REFRACTED WAVEHEIGHT  .40 M
BREAKERANGLE  5. DEGREES

   D    ALFA   H    SETUP   U1    C     KSI    R     L      V       S
 7.00 .0104   .26   .00   .00   .00   .00   .00   .00   .00        0. IV
                                                                      IS
 6.42 .0104   .26   .00   .00   .00   .00   .00   .00   .00        0. IV
                                                                      IS
 5.83 .0282   .26   .00   .00   .00   .00   .00   .00   .00        0. IV
                                                                      IS
 5.25 .0282   .26   .00   .00   .00   .00   .00   .00   .00        0. IV
                                                                      IS
 4.67 .0282   .25   .00   .00   .00   .00   .00   .00   .00        0. IV
                                                                      IS
 4.08 .0282   .25   .00   .00   .00   .00   .00   .00   .00        0. IV
                                                                      IS
 3.50 .0282   .26   .00   .00   .00   .00   .00   .00   .00        0. IV
                                                                      IS
 2.92 .0282   .26   .00   .00   .00   .00   .00   .00   .00        0. IV
                                                                      IS
 2.33 .0282   .27   .00   .00   .00   .00   .00   .00   .00        0. IV
                                                                      IS
 1.75 .0282   .28   .00   .00   .00   .00   .00   .00   .00        0. IV
                                                                      IS
 1.17 .0282   .31   .00   .00   .00   .00   .00   .00   .00        0. IV
                                                                      IS
  .58 .0282   .35   .01   .95 27.92   .61   .20 13.14   .07        1. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                      ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
TOTAL TRANSPORT IS      381. M3/SEASON (ACC TO CERC)
TOTAL TRANSPORT IS       15. M3/SEASON (ACC TO BIJKER)
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HYDRONAMIC BV
PORT & WATERWAY ENGINEERS
SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
===========================================================================================================================

PHYSICAL CONSTANTS  G=    9.81      COASTAL CONSTANTS D50=  .000150
                  RHO=1027.00                          D90=  .000300
                KAPPA=     .38                       DELTA=1.650000
          TEMPERATURE=  18.00               BREAKERINDEX=  .800000
*************************************************************

SEASON NR  8
 WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
 PERIOD       6.50 SEC
 DIRECTION   9.80 DEGREES (AT 11.M DEPTH)
 REFR COEF     .91 (AT 11.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING     .40% OF THE YEAR
*************************************************************


REFRACTED WAVEHEIGHT 1.13 M
BREAKERANGLE  5. DEGREES

  D     ALFA   H     SETUP    U1     C      KSI     R      L       V      S
 7.00  .0104   .83    .00    .00    .00    .00    .00    .00    .00       0. IV
                                                                              IS
 6.42  .0104   .84    .00    .00    .00    .00    .00    .00    .00       0. IV
                                                                              IS
 5.83  .0282   .85    .01    .00    .00    .00    .00    .00    .00       0. IV
                                                                              IS
 5.25  .0282   .87    .01    .00    .00    .00    .00    .00    .00       0. IV
                                                                              IS
 4.67  .0282   .89    .01    .00    .00    .00    .00    .00    .00       0. IV
                                                                              IS
 4.08  .0282   .92    .01    .00    .00    .00    .00    .00    .00       0. IV
                                                                              IS
 3.50  .0282   .95    .01    .00    .00    .00    .00    .00    .00       0. IV
                                                                              IS
 2.92  .0282   .99    .02    .00    .00    .00    .00    .00    .00       0. IV
                                                                              IS
 2.33  .0282  1.04    .03    .00    .00    .00    .00    .00    .00       0. IV
                                                                              IS
 1.75  .0282  1.05    .03   1.60  36.49    .55    .20  36.15    .16       2. IVVVVVVVVVVVVVVVVVVVVVV
                                                                              ISSSSSSSSSSSSSSS
 1.17  .0282   .89    .05   1.78  33.49    .48    .20  31.94    .41       7. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                              ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
  .58  .0282   .51    .16   1.43  29.64    .46    .20  27.18    .41       5. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                              ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
TOTAL TRANSPORT IS      1963. M3/SEASON (ACC TO CERC)
TOTAL TRANSPORT IS       282. M3/SEASON (ACC TO BIJKER)
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HYDRONAMIC BV
PORT & WATERWAY ENGINEERS
SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT * CAP LOPEZ
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PHYSICAL CONSTANTS G= 9.81 COASTAL CONSTANTS D50= .000150
RHO=1027.00 D90= .000300
KAPPA= .38 DELTA=1.650000
TEMPERATURE= 18.00 BREAKERINDEX= .800000
****

SEASON NR 9
WAVEHEIGHT .88 M (HRMS IN DEEP WATER)
PERIOD 4.00 SEC
DIRECTION 84.60 DEGREES (AT 11.M DEPTH)
REFR COEF .98 (AT 11.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING 29.30% OF THE YEAR
****

REFRACTED WAVEHEIGHT .41 M
BREAKERANGLE 29. DEGREES

D	ALFA	H	SETUP	U1	C	KSI	R	L	V	S	
7.00	.0104	.27	.00	.00	.00	.00	.00	.00	.00	0.	IV IS
6.42	.0104	.27	.00	.00	.00	.00	.00	.00	.00	0.	IV IS
5.83	.0282	.27	.00	.00	.00	.00	.00	.00	.00	0.	IV IS
5.25	.0282	.27	.00	.00	.00	.00	.00	.00	.00	0.	IV IS
4.67	.0282	.26	.00	.00	.00	.00	.00	.00	.00	0.	IV IS
4.08	.0282	.26	.00	.00	.00	.00	.00	.00	.00	0.	IV IS
3.50	.0282	.27	.00	.00	.00	.00	.00	.00	.00	0.	IV IS
2.92	.0282	.27	.00	.00	.00	.00	.00	.00	.00	0.	IV IS
2.33	.0282	.28	.00	.00	.00	.00	.00	.00	.00	0.	IV IS
1.75	.0282	.29	.00	.00	.00	.00	.00	.00	.00	0.	IV IS
1.17	.0282	.32	.00	.00	.00	.00	.00	.00	.00	0.	IV IS
.58	.0282	.36	.00	.98	27.81	.60	.20	13.08	.27	148.	IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
TOTAL TRANSPORT IS 54877. M3/SEASON (ACC TO CERC)
TOTAL TRANSPORT IS 3055. M3/SEASON (ACC TO BIJKER)

HYDRONAMIC BV
PORT & WATERWAY ENGINEERS
SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT * CAP LOPEZ

PHYSICAL CONSTANTS G= 9.81 COASTAL CONSTANTS D50= .000150
RHO=1027.00 D90= .000300
KAPPA= .38 DELTA=1.650000
TEMPERATURE= 18.00 BREAKERINDEX= .800000
****

SEASON NR 10
WAVEHEIGHT .88 M (HRMS IN DEEP WATER)
PERIOD 6.50 SEC
DIRECTION 65.60 DEGREES (AT 11.M DEPTH)
REFR COEF .90 (AT 11.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING 15.70% OF THE YEAR
****

REFRACTED WAVEHEIGHT .84 M
BREAKERANGLE 25. DEGREES

D	ALFA	H	SETUP	U1	C	KSI	R	L	V	S	
7.00	.0104	.56	.00	.00	.00	.00	.00	.00	.00	0.	V
											S
6.42	.0104	.57	.00	.00	.00	.00	.00	.00	.00	0.	V
											S
5.83	.0282	.58	.00	.00	.00	.00	.00	.00	.00	0.	V
											S
5.25	.0282	.59	.00	.00	.00	.00	.00	.00	.00	0.	V
											S
4.67	.0282	.60	.00	.00	.00	.00	.00	.00	.00	0.	V
											S
4.08	.0282	.62	.00	.00	.00	.00	.00	.00	.00	0.	V
											S
3.50	.0282	.65	.01	.00	.00	.00	.00	.00	.00	0.	V
											S
2.92	.0282	.68	.01	.00	.00	.00	.00	.00	.00	0.	V
											S
2.33	.0282	.72	.01	.00	.00	.00	.00	.00	.00	0.	V
											S
1.75	.0282	.77	.02	.00	.00	.00	.00	.00	.00	0.	V
											S
1.17	.0282	.76	.02	1.55	33.31	.50	.20	31.70	.55	415.	V
											S
.58	.0282	.49	.09	1.48	28.90	.44	.20	26.34	.84	739.	V
											S

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

TOTAL TRANSPORT IS 152549. M3/SEASON (ACC TO CERC)
TOTAL TRANSPORT IS 23890. M3/SEASON (ACC TO BIJKER)

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        HYDRONAMIC BV
        PORT & WATERWAY ENGINEERS
        SLIEDRECHT-HOLLAND

  CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
  ==========================================================================================================

  PHYSICAL CONSTANTS  G=   9.81      COASTAL CONSTANTS D50= .000150
                    RHO=1027.00                        D90= .000300
                  KAPPA=    .38                      DELTA=1.650000
            TEMPERATURE=  18.00               BREAKERINDEX= .800000
  ************************************************************

  SEASON NR 11
   WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
   PERIOD       8.50 SEC
   DIRECTION  52.60 DEGREES (AT 11.M DEPTH)
   REFR COEF     .94 (AT 11.M DEPTH)

  THIS WAVE CLIMATE OCCURS DURING   7.80% OF THE YEAR
  ************************************************************


  REFRACTED WAVEHEIGHT 1.13 M
  BREAKERANGLE 21. DEGREES

    D    ALFA   H    SETUP   U1    C     KSI     R     L      V       S
   7.00 .0104   .74   .00   .00   .00   .00   .00   .00   .00       0. |V
                                                                         |S
   6.42 .0104   .76   .00   .00   .00   .00   .00   .00   .00       0. |V
                                                                         |S
   5.83 .0282   .78   .01   .00   .00   .00   .00   .00   .00       0. |V
                                                                         |S
   5.25 .0282   .80   .01   .00   .00   .00   .00   .00   .00       0. |V
                                                                         |S
   4.67 .0282   .82   .01   .00   .00   .00   .00   .00   .00       0. |V
                                                                         |S
   4.08 .0282   .86   .01   .00   .00   .00   .00   .00   .00       0. |V
                                                                         |S
   3.50 .0282   .89   .01   .00   .00   .00   .00   .00   .00       0. |V
                                                                         |S
   2.92 .0282   .94   .02   .00   .00   .00   .00   .00   .00       0. |V
                                                                         |S
   2.33 .0282  1.00   .03   .00   .00   .00   .00   .00   .00       0. |V
                                                                         |S
   1.75 .0282  1.02   .03  1.74 36.49   .49   .20 51.97   .47     164. |VVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                         |SSSSSSSSSSSSSS
   1.17 .0282   .88   .05  1.95 33.49   .43   .20 45.81  1.01     683. |VVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                         |SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
    .58 .0282   .51   .16  1.58 29.62   .41   .20 38.90   .96     481. |VVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                         |SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
  XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
  TOTAL TRANSPORT IS   137314. M3/SEASON (ACC TO CERC)
  TOTAL TRANSPORT IS    27493. M3/SEASON (ACC TO BIJKER)
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HYDRONAMIC BV
   PORT & WATERWAY ENGINEERS
   SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
===================================================================================================================

PHYSICAL CONSTANTS  G=    9.81     COASTAL CONSTANTS D50= .000150
                  RHO=1027.00                        D90= .000300
                KAPPA=     .38                     DELTA=1.650000
          TEMPERATURE=  18.00               BREAKERINDEX=  .800000
*************************************************************

SEASON NR 12
 WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
 PERIOD      10.50 SEC
 DIRECTION  43.90 DEGREES (AT 11.M DEPTH)
 REFR COEF    1.02 (AT 11.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING    3.60% OF THE YEAR
*************************************************************

REFRACTED WAVEHEIGHT 1.41 M
BREAKERANGLE 19. DEGREES

  D    ALFA   H    SETUP   U1    C     KSI    R     L       V      S
 7.00 .0104   .89   .01   .00   .00   .00   .00   .00    .00       0. IV
                                                                      IS
 6.42 .0104   .92   .01   .00   .00   .00   .00   .00    .00       0. IV
                                                                      IS
 5.83 .0282   .94   .01   .00   .00   .00   .00   .00    .00       0. IV
                                                                      IS
 5.25 .0282   .97   .01   .00   .00   .00   .00   .00    .00       0. IV
                                                                      IS
 4.67 .0282  1.01   .01   .00   .00   .00   .00   .00    .00       0. IV
                                                                      IS
 4.08 .0282  1.05   .02   .00   .00   .00   .00   .00    .00       0. IV
                                                                      IS
 3.50 .0282  1.10   .02   .00   .00   .00   .00   .00    .00       0. IV
                                                                      IS
 2.92 .0282  1.16   .03   .00   .00   .00   .00   .00    .00       0. IV
                                                                      IS
 2.33 .0282  1.20   .04  1.82 38.72   .48   .20 75.81    .36      47. IVVVVVVVVVVVVVVVVVV
                                                                      ISSSSSS
 1.75 .0282  1.16   .04  2.12 36.54   .43   .20 69.18   1.01     368. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                      ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
 1.17 .0282   .94   .08  2.19 33.69   .39   .20 61.32   1.21     443. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                      ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
  .58 .0282   .52   .22  1.62 30.28   .39   .20 53.06   1.02     257. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                      ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
TOTAL TRANSPORT IS     96993. M3/SEASON (ACC TO CERC)
TOTAL TRANSPORT IS     23078. M3/SEASON (ACC TO BIJKER)
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        HYDRONAMIC BV
        PORT & WATERWAY ENGINEERS
        SLIEDRECHT-HOLLAND

  CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
  ===============================================================================================================

  PHYSICAL CONSTANTS  G=    9.81     COASTAL CONSTANTS D50=  .000150
                    RHO=1027.00                        D90=  .000300
                  KAPPA=     .38                     DELTA=1.650000
            TEMPERATURE=  18.00              BREAKERINDEX=  .800000
  ***********************************************************

  SEASON NR 13
   WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
   PERIOD      12.50 SEC
   DIRECTION  38.20 DEGREES (AT 11.M DEPTH)
   REFR COEF   1.10 (AT 11.M DEPTH)

  THIS WAVE CLIMATE OCCURS DURING   3.40% OF THE YEAR
  ***********************************************************


  REFRACTED WAVEHEIGHT 1.66 M
  BREAKERANGLE 17. DEGREES

    D    ALFA   H     SETUP   U1     C      KSI     R      L        V       S
   7.00 .0104  1.03    .01    .00    .00    .00    .00    .00     .00           0. |V
                                                                                 |S
   6.42 .0104  1.06    .01    .00    .00    .00    .00    .00     .00           0. |V
                                                                                 |S
   5.83 .0282  1.09    .01    .00    .00    .00    .00    .00     .00           0. |V
                                                                                 |S
   5.25 .0282  1.12    .01    .00    .00    .00    .00    .00     .00           0. |V
                                                                                 |S
   4.67 .0282  1.16    .02    .00    .00    .00    .00    .00     .00           0. |V
                                                                                 |S
   4.08 .0282  1.21    .02    .00    .00    .00    .00    .00     .00           0. |V
                                                                                 |S
   3.50 .0282  1.27    .03    .00    .00    .00    .00    .00     .00           0. |V
                                                                                 |S
   2.92 .0282  1.33    .04   1.84  40.44    .47    .20103.00     .19          17. |VVVVVVVV
                                                                                 |S
   2.33 .0282  1.35    .05   2.17  38.75    .43    .20 95.94     .90         306. |VVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                                 |SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
   1.75 .0282  1.25    .06   2.41  36.60    .39    .20 87.59    1.30         571. |VVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                                 |SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
   1.17 .0282   .97    .10   2.36  33.85    .37    .20 77.95    1.30         478. |VVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                                 |SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
    .58 .0282   .52    .28   1.65  30.80    .37    .20 68.47    1.06         265. |VVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                                 |SSSSSSSSSSSSSSSSSSSSSSSSSSS
  XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
  TOTAL TRANSPORT IS    128726. M3/SEASON (ACC TO CERC)
  TOTAL TRANSPORT IS     33897. M3/SEASON (ACC TO BIJKER)
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      HYDRONAMIC BV
      PORT & WATERWAY ENGINEERS
      SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
================================================================================================================

PHYSICAL CONSTANTS  G=    9.81      COASTAL CONSTANTS D50= .000150
                  RHO=1027.00                         D90= .000300
                KAPPA=     .38                      DELTA=1.650000
          TEMPERATURE=   18.00                BREAKERINDEX= .800000
*************************************************************


SEASON NR 14
 WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
 PERIOD      15.00 SEC
 DIRECTION   31.00 DEGREES (AT 11.M DEPTH)
 REFR COEF    1.25 (AT 11.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING     .70% OF THE YEAR
*************************************************************


REFRACTED WAVEHEIGHT 2.06 M
BREAKERANGLE 15. DEGREES

  D    ALFA  H     SETUP   U1    C      KSI    R     L       V      S
 7.00 .0104 1.19    .01   .00   .00    .00   .00    .00    .00         0.  IV
                                                                            IS
 6.42 .0104 1.23    .01   .00   .00    .00   .00    .00    .00         0.  IV
                                                                            IS
 5.83 .0282 1.26    .02   .00   .00    .00   .00    .00    .00         0.  IV
                                                                            IS
 5.25 .0282 1.31    .02   .00   .00    .00   .00    .00    .00         0.  IV
                                                                            IS
 4.67 .0282 1.36    .02   .00   .00    .00   .00    .00    .00         0.  IV
                                                                            IS
 4.08 .0282 1.41    .03   .00   .00    .00   .00    .00    .00         0.  IV
                                                                            IS
 3.50 .0282 1.47    .04  1.93 41.85    .46   .20139.60    .38         10.  IVVVVVVVVVVVVVVV
                                                                            ISSS
 2.92 .0282 1.52    .05  2.24 40.47    .42   .20131.70   1.00         83.  IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                            ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
 2.33 .0282 1.49    .06  2.54 38.79    .39   .20122.67   1.39        153.  IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                            ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
 1.75 .0282 1.32    .07  2.71 36.67    .36   .20112.10   1.49        154.  IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                            ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
 1.17 .0282  .99    .15  2.52 34.10    .35   .20100.49   1.33        104.  IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                            ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
  .58 .0282  .52    .37  1.65 31.58    .36   .20 90.29   1.09         60.  IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                            ISSSSSSSSSSSSSSSSSSSSSSSS
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
TOTAL TRANSPORT IS     39301. M3/SEASON (ACC TO CERC)
TOTAL TRANSPORT IS     11674. M3/SEASON (ACC TO BIJKER)
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TOTAL TRANSPORT 163180.M3/YEAR
NEGAT TRANSPORT 0.M3/YEAR
POSIT TRANSPORT 163180.M3/YEAR
DOMINANT NEGAT WAVE DIRECTION 0.
DOMINANT POSIT WAVE DIRECTION 19.

CALCULS DU TRANSPORT LITTORAL

(profil 5)

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    HYDRONAMIC BV
    PORT & WATERWAY ENGINEERS
    SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
===========================================================================================================

PHYSICAL CONSTANTS  G=    9.81     COASTAL CONSTANTS D50= .000150
                  RHO=1027.00                        D90= .000300
                KAPPA=     .38                     DELTA=1.650000
          TEMPERATURE=   18.00              BREAKERINDEX= .800000
**********************************************************

SEASON NR  1
 WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
 PERIOD       4.00 SEC
 DIRECTION  63.30 DEGREES (AT 10.M DEPTH)
 REFR COEF     .98 (AT 10.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING   7.00% OF THE YEAR
**********************************************************


REFRACTED WAVEHEIGHT  .76 M
BREAKERANGLE 32. DEGREES

  D    ALFA   H   SETUP   U1    C    KSI    R    L      V       S
 7.00 .0167  .60   .00   .00   .00   .00   .00   .00   .00       0. IV
                                                                    IS
 6.42 .0167  .60   .00   .00   .00   .00   .00   .00   .00       0. IV
                                                                    IS
 5.83 .0233  .59   .00   .00   .00   .00   .00   .00   .00       0. IV
                                                                    IS
 5.25 .0244  .59   .00   .00   .00   .00   .00   .00   .00       0. IV
                                                                    IS
 4.67 .0244  .59   .00   .00   .00   .00   .00   .00   .00       0. IV
                                                                    IS
 4.08 .0244  .59   .00   .00   .00   .00   .00   .00   .00       0. IV
                                                                    IS
 3.50 .0244  .59   .00   .00   .00   .00   .00   .00   .00       0. IV
                                                                    IS
 2.92 .0244  .60   .00   .00   .00   .00   .00   .00   .00       0. IV
                                                                    IS
 2.33 .0244  .62   .01   .00   .00   .00   .00   .00   .00       0. IV
                                                                    IS
 1.75 .0244  .65   .01   .00   .00   .00   .00   .00   .00       0. IV
                                                                    IS
 1.17 .0244  .66   .01  1.10 33.27   .68   .20 16.30   .33      69. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                    ISSSSSSSSSSSSSSSSSS
  .58 .0244  .47   .07  1.20 28.68   .57   .20 13.56   .71     243. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                    ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
TOTAL TRANSPORT IS    68751. M3/SEASON (ACC TO CERC)
TOTAL TRANSPORT IS     7446. M3/SEASON (ACC TO BIJKER)
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        HYDRONAMIC BV
        PORT & WATERWAY ENGINEERS
        SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
====================================================================================================================

PHYSICAL CONSTANTS  G=    9.81      COASTAL CONSTANTS D50=  .000150
                  RHO=1027.00                         D90=  .000300
                KAPPA=     .38                      DELTA=1.650000
          TEMPERATURE=   18.00               BREAKERINDEX=  .800000
*****************************************************************


SEASON NR  2
 WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
 PERIOD        6.50 SEC
 DIRECTION  53.90 DEGREES (AT 10.M DEPTH)
 REFR COEF      .91 (AT 10.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING    3.50% OF THE YEAR
*****************************************************************


REFRACTED WAVEHEIGHT   .97 M
BREAKERANGLE 23. DEGREES

  D     ALFA   H     SETUP   U1    C     KSI    R     L       V      S
 7.00 .0167   .67    .00    .00   .00    .00   .00   .00    .00          0. IV
                                                                              IS
 6.42 .0167   .67    .00    .00   .00    .00   .00   .00    .00          0. IV
                                                                              IS
 5.83 .0233   .68    .00    .00   .00    .00   .00   .00    .00          0. IV
                                                                              IS
 5.25 .0244   .70    .00    .00   .00    .00   .00   .00    .00          0. IV
                                                                              IS
 4.67 .0244   .71    .01    .00   .00    .00   .00   .00    .00          0. IV
                                                                              IS
 4.08 .0244   .74    .01    .00   .00    .00   .00   .00    .00          0. IV
                                                                              IS
 3.50 .0244   .76    .01    .00   .00    .00   .00   .00    .00          0. IV
                                                                              IS
 2.92 .0244   .80    .01    .00   .00    .00   .00   .00    .00          0. IV
                                                                              IS
 2.33 .0244   .85    .02    .00   .00    .00   .00   .00    .00          0. IV
                                                                              IS
 1.75 .0244   .89    .02   1.37 36.46    .57   .20 36.09    .03          2. IV
                                                                              IS
 1.17 .0244   .82    .03   1.67 33.36    .49   .20 31.76    .72        157. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                              ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
  .58 .0244   .50    .12   1.46 29.24    .45   .20 26.73    .82        161. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                              ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
TOTAL TRANSPORT IS     45536. M3/SEASON (ACC TO CERC)
TOTAL TRANSPORT IS      7632. M3/SEASON (ACC TO BIJKER)
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     HYDRONAMIC BV
     PORT & WATERWAY ENGINEERS
     SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
=================================================================================================================

PHYSICAL CONSTANTS  G=    9.81      COASTAL CONSTANTS D50= .000150
                  RHO=1027.00                         D90= .000300
                KAPPA=     .38                      DELTA=1.650000
          TEMPERATURE=   18.00               BREAKERINDEX= .800000
*********************************************************************

SEASON NR  3
 WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
 PERIOD       8.50 SEC
 DIRECTION   47.00 DEGREES (AT 10.M DEPTH)
 REFR COEF     .96 (AT 10.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING    1.60% OF THE YEAR
*********************************************************************

REFRACTED WAVEHEIGHT 1.21 M
BREAKERANGLE 20. DEGREES

  D    ALFA   H    SETUP   U1    C     KSI    R     L      V      S
 7.00 .0167  .78   .00   .00   .00   .00   .00   .00   .00        0. IV
                                                                       IS
 5.42 .0167  .80   .01   .00   .00   .00   .00   .00   .00        0. IV
                                                                       IS
 5.83 .0233  .82   .01   .00   .00   .00   .00   .00   .00        0. IV
                                                                       IS
 5.25 .0244  .84   .01   .00   .00   .00   .00   .00   .00        0. IV
                                                                       IS
 4.67 .0244  .87   .01   .00   .00   .00   .00   .00   .00        0. IV
                                                                       IS
 4.08 .0244  .90   .01   .00   .00   .00   .00   .00   .00        0. IV
                                                                       IS
 3.50 .0244  .94   .01   .00   .00   .00   .00   .00   .00        0. IV
                                                                       IS
 2.92 .0244  .99   .02   .00   .00   .00   .00   .00   .00        0. IV
                                                                       IS
 2.33 .0244 1.05   .03   .00   .00   .00   .00   .00   .00        0. IV
                                                                       IS
 1.75 .0244 1.06   .04  1.80 36.50   .48   .20 52.00   .56       49. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                       ISSSSSSSSSSSSSSSSSSSSSS
 1.17 .0244  .90   .06  1.97 33.55   .43   .20 45.92   .98      132. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                       ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
  .58 .0244  .51   .18  1.55 29.82   .41   .20 39.23   .90       88. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                       ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
 TOTAL TRANSPORT IS    30369. M3/SEASON (ACC TO CERC)
 TOTAL TRANSPORT IS     6435. M3/SEASON (ACC TO BIJKER)
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         HYDRONAMIC BV
         PORT & WATERWAY ENGINEERS
         SLIEDRECHT-HOLLAND

   CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
   ============================================================================================================

   PHYSICAL CONSTANTS  G=    9.81      COASTAL CONSTANTS D50= .000150
                     RHO=1027.00                         D90= .000300
                   KAPPA=     .38                      DELTA=1.650000
             TEMPERATURE=  18.00               BREAKERINDEX= .800000
   ***************************************************************

   SEASON NR  4
    WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
    PERIOD      10.50 SEC
    DIRECTION  41.10 DEGREES (AT 10.M DEPTH)
    REFR COEF    1.05 (AT 10.M DEPTH)

   THIS WAVE CLIMATE OCCURS DURING      .80% OF THE YEAR
   ***************************************************************

   REFRACTED WAVEHEIGHT 1.48 M
   BREAKERANGLE 18. DEGREES

     D    ALFA   H     SETUP   U1     C      KSI     R      L       V       S
    7.00 .0167   .91    .01    .00    .00    .00    .00    .00    .00         0. IV
                                                                                  IS
    6.42 .0167   .93    .01    .00    .00    .00    .00    .00    .00         0. IV
                                                                                  IS
    5.83 .0233   .96    .01    .00    .00    .00    .00    .00    .00         0. IV
                                                                                  IS
    5.25 .0244   .99    .01    .00    .00    .00    .00    .00    .00         0. IV
                                                                                  IS
    4.67 .0244  1.02    .01    .00    .00    .00    .00    .00    .00         0. IV
                                                                                  IS
    4.08 .0244  1.07    .02    .00    .00    .00    .00    .00    .00         0. IV
                                                                                  IS
    3.50 .0244  1.12    .02    .00    .00    .00    .00    .00    .00         0. IV
                                                                                  IS
    2.92 .0244  1.18    .03    .00    .00    .00    .00    .00    .00         0. IV
                                                                                  IS
    2.33 .0244  1.22    .04   1.85  38.72    .47    .20  75.83    .45        16. IVVVVVVVVVVVVVVVVVVVVVVVV
                                                                                  ISSSSSSSSSS
    1.75 .0244  1.17    .05   2.14  36.55    .43    .20  69.21    .99        80. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                                  ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
    1.17 .0244   .94    .09   2.19  33.73    .39    .20  61.43   1.14        89. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                                  ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
     .58 .0244   .52    .24   1.60  30.43    .39    .20  53.40    .96        51. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                                  ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
   XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
   TOTAL TRANSPORT IS     22646. M3/SEASON (ACC TO CERC)
   TOTAL TRANSPORT IS      5631. M3/SEASON (ACC TO BIJKER)
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HYDRONAMIC BV
     PORT & WATERWAY ENGINEERS
     SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
============================================================================================================

PHYSICAL CONSTANTS  G=    9.81     COASTAL CONSTANTS D50= .000150
                  RHO=1027.00                        D90= .000300
                KAPPA=     .38                      DELTA=1.650000
          TEMPERATURE=   18.00               BREAKERINDEX= .800000
*******************************************************************


SEASON NR  5
 WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
 PERIOD      12.50 SEC
 DIRECTION  36.30 DEGREES (AT 10.M DEPTH)
 REFR COEF   1.15 (AT 10.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING      .80% OF THE YEAR
*******************************************************************


REFRACTED WAVEHEIGHT 1.75 M
BREAKERANGLE 17. DEGREES

   D    ALFA   H    SETUP   U1    C      KSI     R      L      V          S
  7.00 .0167  1.04   .01   .00   .00    .00    .00    .00    .00         0. IV
                                                                             IS
  6.42 .0167  1.07   .01   .00   .00    .00    .00    .00    .00         0. IV
                                                                             IS
  5.83 .0233  1.10   .01   .00   .00    .00    .00    .00    .00         0. IV
                                                                             IS
  5.25 .0244  1.13   .01   .00   .00    .00    .00    .00    .00         0. IV
                                                                             IS
  4.67 .0244  1.18   .02   .00   .00    .00    .00    .00    .00         0. IV
                                                                             IS
  4.08 .0244  1.23   .02   .00   .00    .00    .00    .00    .00         0. IV
                                                                             IS
  3.50 .0244  1.28   .03   .00   .00    .00    .00    .00    .00         0. IV
                                                                             IS
  2.92 .0244  1.34   .04  1.86 40.44    .47    .20103.01    .36        10. IVVVVVVVVVVVVVVVVVV
                                                                             ISSSS
  2.33 .0244  1.36   .05  2.18 38.75    .43    .20 95.95    .95        80. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                             ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
  1.75 .0244  1.25   .06  2.42 36.61    .39    .20 87.63   1.26       127. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                             ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
  1.17 .0244   .97   .11  2.36 33.91    .37    .20 78.14   1.22       102. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                             ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
   .58 .0244   .52   .30  1.62 30.99    .37    .20 69.03   1.00        57. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                             ISSSSSSSSSSSSSSSSSSSSSSSSSSSS
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
 TOTAL TRANSPORT IS     32501. M3/SEASON (ACC TO CERC)
 TOTAL TRANSPORT IS      8979. M3/SEASON (ACC TO BIJKER)
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HYDRONAMIC BV
PORT & WATERWAY ENGINEERS
SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT * CAP LOPEZ

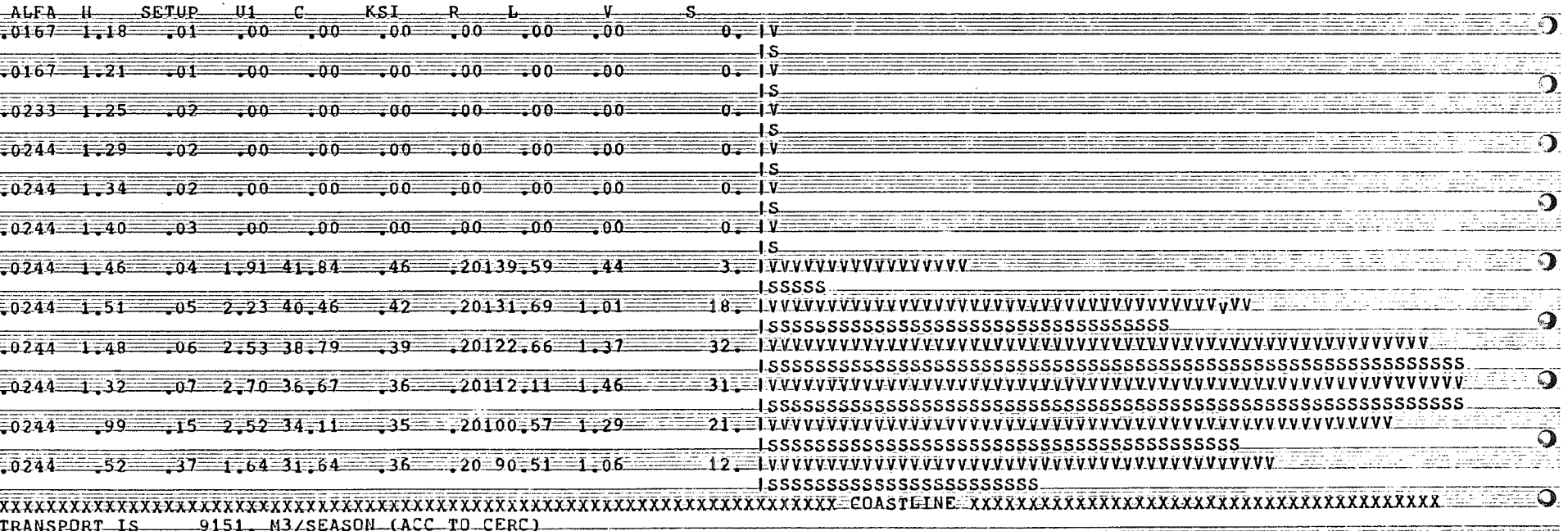
PHYSICAL CONSTANTS G= 9.81 COASTAL CONSTANTS D50= .000150
RHO=1027.00 D90= .000300
KAPPA= .38 DELTA=1.650000
TEMPERATURE= 18.00 BREAKERINDEX= .800000
****

SEASON NR 6
WAVEHEIGHT .88 M (HRMS IN DEEP WATER)
PERIOD 15.00 SEC
DIRECTION 33.10 DEGREES (AT 10.M DEPTH)
REFR COEF 1.28 (AT 10.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING .15% OF THE YEAR
****

REFRACTED WAVEHEIGHT 2.09 M
BREAKERANGLE 16. DEGREES

D	ALFA	H	SETUP	U1	C	KSI	R	L	V	S	
7.00	.0167	1.18	.01	.00	.00	.00	.00	.00	.00	0.	
6.42	.0167	1.21	.01	.00	.00	.00	.00	.00	.00	0.	
5.83	.0233	1.25	.02	.00	.00	.00	.00	.00	.00	0.	
5.25	.0244	1.29	.02	.00	.00	.00	.00	.00	.00	0.	
4.67	.0244	1.34	.02	.00	.00	.00	.00	.00	.00	0.	
4.08	.0244	1.40	.03	.00	.00	.00	.00	.00	.00	0.	
3.50	.0244	1.46	.04	1.91	41.84	.46	.20	139.59	.44	3.	
2.92	.0244	1.51	.05	2.23	40.46	.42	.20	131.69	1.01	18.	
2.33	.0244	1.48	.06	2.53	38.79	.39	.20	122.66	1.37	32.	
1.75	.0244	1.32	.07	2.70	36.67	.36	.20	112.11	1.46	31.	
1.17	.0244	.99	.15	2.52	34.11	.35	.20	100.57	1.29	21.	
.58	.0244	.52	.37	1.64	31.64	.36	.20	90.51	1.06	12.	



TOTAL TRANSPORT IS 9151. M3/SEASON (ACC TO CERC)
TOTAL TRANSPORT IS 2805. M3/SEASON (ACC TO BIJKER)

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HYDRONAMIC BV
PORT & WATERWAY ENGINEERS
SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
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PHYSICAL CONSTANTS  G=    9.81     COASTAL CONSTANTS D50= .000150
                  RHO=1027.00                        D90= .000300
                KAPPA=     .38                      DELTA=1.650000
          TEMPERATURE=  18.00                 BREAKERINDEX= .800000
****************************************************************

SEASON NR  7
WAVEHEIGHT    .28 M (HRMS IN DEEP WATER)
 PERIOD      4.00 SEC
 DIRECTION  19.00 DEGREES (AT 10.M DEPTH)
 REFR COEF    .98 (AT 10.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING   1.00% OF THE YEAR
****************************************************************

REFRACTED WAVEHEIGHT  .39 M
BREAKERANGLE  9. DEGREES

  D    ALFA   H    SETUP   U1     C      KSI    R      L      V        S
 7.00 .0167  .26   .00    .00    .00    .00    .00    .00    .00      0. IV
                                                                         IS
 6.42 .0167  .26   .00    .00    .00    .00    .00    .00    .00      0. IV
                                                                         IS
 5.83 .0233  .25   .00    .00    .00    .00    .00    .00    .00      0. IV
                                                                         IS
 5.25 .0244  .25   .00    .00    .00    .00    .00    .00    .00      0. IV
                                                                         IS
 4.67 .0244  .25   .00    .00    .00    .00    .00    .00    .00      0. IV
                                                                         IS
 4.08 .0244  .25   .00    .00    .00    .00    .00    .00    .00      0. IV
                                                                         IS
 3.50 .0244  .25   .00    .00    .00    .00    .00    .00    .00      0. IV
                                                                         IS
 2.92 .0244  .26   .00    .00    .00    .00    .00    .00    .00      0. IV
                                                                         IS
 2.33 .0244  .26   .00    .00    .00    .00    .00    .00    .00      0. IV
                                                                         IS
 1.75 .0244  .28   .00    .00    .00    .00    .00    .00    .00      0. IV
                                                                         IS
 1.17 .0244  .31   .00    .00    .00    .00    .00    .00    .00      0. IV
                                                                         IS
  .58 .0244  .34   .01    .94  27.92    .61    .20  13.14    .09      1. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                         ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
TOTAL TRANSPORT IS       626. M3/SEASON (ACC TO CERC)
TOTAL TRANSPORT IS        24. M3/SEASON (ACC TO BIJKER)
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      HYDRONAMIC BV
      PORT & WATERWAY ENGINEERS
      SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
=========================================================================================================

PHYSICAL CONSTANTS  G=    9.81     COASTAL CONSTANTS D50= .000150
                  RHO=1027.00                        D90= .000300
                KAPPA=     .38                      DELTA=1.650000
         TEMPERATURE=  18.00                 BREAKERINDEX= .800000
***********************************************************


SEASON NR  8
 WAVEHEIGHT   .88 M (HRMS IN DEEP WATER)
 PERIOD       6.50 SEC
 DIRECTION  16.80 DEGREES (AT 10.M DEPTH)
 REFR COEF     .91 (AT 10.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING     .40% OF THE YEAR
***********************************************************


REFRACTED WAVEHEIGHT 1.12 M
BREAKERANGLE  9. DEGREES

   D    ALFA  H    SETUP   U1    C      KSI    R     L     V       S
  7.00 .0167  .82   .00   .00   .00    .00   .00   .00   .00      0. IV
                                                                       IS
  6.42 .0167  .83   .00   .00   .00    .00   .00   .00   .00      0. IV
                                                                       IS
  5.83 .0233  .84   .01   .00   .00    .00   .00   .00   .00      0. IV
                                                                       IS
  5.25 .0244  .86   .01   .00   .00    .00   .00   .00   .00      0. IV
                                                                       IS
  4.67 .0244  .88   .01   .00   .00    .00   .00   .00   .00      0. IV
                                                                       IS
  4.08 .0244  .91   .01   .00   .00    .00   .00   .00   .00      0. IV
                                                                       IS
  3.50 .0244  .94   .01   .00   .00    .00   .00   .00   .00      0. IV
                                                                       IS
  2.92 .0244  .98   .02   .00   .00    .00   .00   .00   .00      0. IV
                                                                       IS
  2.33 .0244 1.03   .03   .00   .00    .00   .00   .00   .00      0. IV
                                                                       IS
  1.75 .0244 1.04   .03  1.59 36.49    .55   .20 36.15   .21      3. IVVVVVVVVVVVVVVVVVVVVVVV
                                                                       ISSSSSSSSSSSSS
  1.17 .0244  .89   .05  1.78 33.48    .48   .20 31.92   .54     11. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                       ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
   .58 .0244  .51   .16  1.43 29.61    .46   .20 27.14   .52      8. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                       ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
 TOTAL TRANSPORT IS      3239. M3/SEASON (ACC TO CERC)
 TOTAL TRANSPORT IS       509. M3/SEASON (ACC TO BIJKER)
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      HYDRONAMIC BV
      PORT & WATERWAY ENGINEERS
      SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
=========================================================================================================

PHYSICAL CONSTANTS  G=    9.81     COASTAL CONSTANTS D50= .000150
                  RHO=1027.00                         D90= .000300
                KAPPA=     .38                      DELTA=1.650000
     TEMPERATURE=  18.00                     BREAKERINDEX= .800000
***********************************************************

SEASON NR  9
 WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
 PERIOD       4.00 SEC
 DIRECTION  85.00 DEGREES (AT 10.M DEPTH)
 REFR COEF     .98 (AT 10.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING  29.30% OF THE YEAR
***********************************************************

REFRACTED WAVEHEIGHT   .40 M
BREAKERANGLE 29. DEGREES

  D    ALFA   H    SETUP   U1    C     KSI    R     L      V      S
 7.00 .0167  .26   .00   .00   .00   .00   .00   .00   .00         0. IV
                                                                       IS
 6.42 .0167  .26   .00   .00   .00   .00   .00   .00   .00         0. IV
                                                                       IS
 5.83 .0233  .26   .00   .00   .00   .00   .00   .00   .00         0. IV
                                                                       IS
 5.25 .0244  .26   .00   .00   .00   .00   .00   .00   .00         0. IV
                                                                       IS
 4.67 .0244  .25   .00   .00   .00   .00   .00   .00   .00         0. IV
                                                                       IS
 4.08 .0244  .25   .00   .00   .00   .00   .00   .00   .00         0. IV
                                                                       IS
 3.50 .0244  .26   .00   .00   .00   .00   .00   .00   .00         0. IV
                                                                       IS
 2.92 .0244  .26   .00   .00   .00   .00   .00   .00   .00         0. IV
                                                                       IS
 2.33 .0244  .27   .00   .00   .00   .00   .00   .00   .00         0. IV
                                                                       IS
 1.75 .0244  .28   .00   .00   .00   .00   .00   .00   .00         0. IV
                                                                       IS
 1.17 .0244  .31   .00   .00   .00   .00   .00   .00   .00         0. IV
                                                                       IS
  .58 .0244  .35   .00   .95 27.81   .61   .20 13.08   .21        93. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                       ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
TOTAL TRANSPORT IS    50855. M3/SEASON (ACC TO CERC)
TOTAL TRANSPORT IS     2209. M3/SEASON (ACC TO BIJKER)
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HYDRONAMIC BV
PORT & WATERWAY ENGINEERS
SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT * CAP LOPEZ

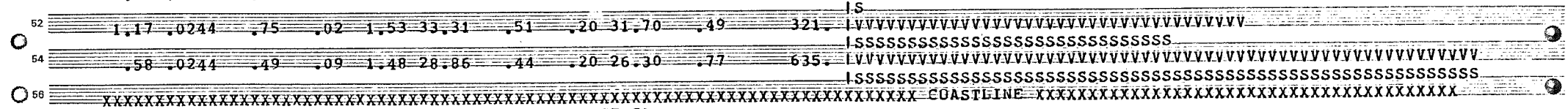
PHYSICAL CONSTANTS G= 9.81 COASTAL CONSTANTS D50= .000150
RHO=1027.00 D90= .000300
KAPPA= .38 DELTA=1.650000
TEMPERATURE= 18.00 BREAKERINDEX= .800000

SEASON NR 10
WAVEHEIGHT .88 M (HRMS IN DEEP WATER)
PERIOD 6.50 SEC
DIRECTION 66.50 DEGREES (AT 10.M DEPTH)
REFR COEF .90 (AT 10.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING 15.70% OF THE YEAR

REFRACTED WAVEHEIGHT .82 M
BREAKERANGLE 25. DEGREES

D	ALFA	H	SETUP	U1	C	KSI	R	L	V	S	
7.00	.0167	.55	.00	.00	.00	.00	.00	.00	.00	0.	
6.42	.0167	.56	.00	.00	.00	.00	.00	.00	.00	0.	
5.83	.0233	.57	.00	.00	.00	.00	.00	.00	.00	0.	
5.25	.0244	.58	.00	.00	.00	.00	.00	.00	.00	0.	
4.67	.0244	.59	.00	.00	.00	.00	.00	.00	.00	0.	
4.08	.0244	.61	.00	.00	.00	.00	.00	.00	.00	0.	
3.50	.0244	.63	.01	.00	.00	.00	.00	.00	.00	0.	
2.92	.0244	.66	.01	.00	.00	.00	.00	.00	.00	0.	
2.33	.0244	.71	.01	.00	.00	.00	.00	.00	.00	0.	
1.75	.0244	.76	.02	.00	.00	.00	.00	.00	.00	0.	
1.17	.0244	.75	.02	1.53	33.31	.51	.20	31.70	.49	321.	
.58	.0244	.49	.09	1.48	28.86	.44	.20	26.30	.77	635.	



TOTAL TRANSPORT IS 148279. M3/SEASON (ACC TO CERC)
TOTAL TRANSPORT IS 22808. M3/SEASON (ACC TO BIJKER)

HYDRONAMIC BV
PORT & WATERWAY ENGINEERS
SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT * CAP LOPEZ

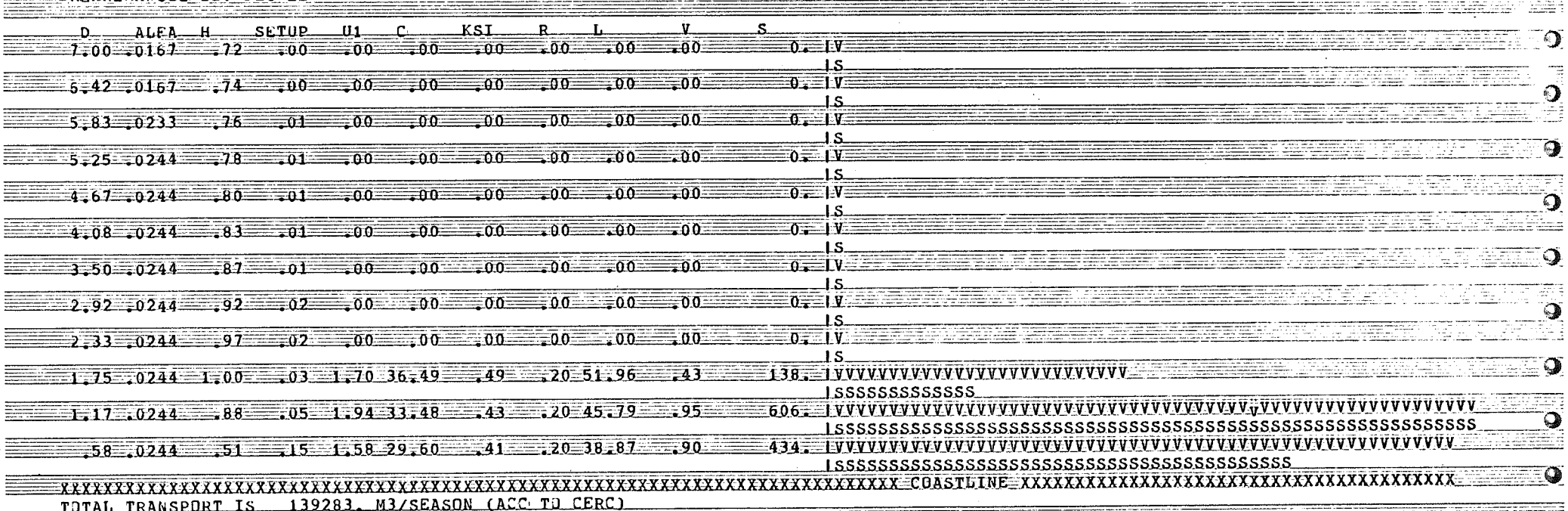
PHYSICAL CONSTANTS G= 9.81 COASTAL CONSTANTS D50= .000150
RHO=1027.00 D90= .000300
KAPPA= .38 DELTA=1.650000
TEMPERATURE= 18.00 BREAKERINDEX= .800000
****

SEASON NR 11
WAVEHEIGHT .88 M (HRMS IN DEEP WATER)
PERIOD 8.50 SEC
DIRECTION 55.10 DEGREES (AT 10.M DEPTH)
REFR COEF .96 (AT 10.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING 7.80% OF THE YEAR
****

REFRACTED WAVEHEIGHT 1.12 M
BREAKERANGLE 22. DEGREES

D	ALFA	H	SETUP	U1	C	KSI	R	L	V	S	
7.00	.0167	.72	.00	.00	.00	.00	.00	.00	.00	0.	
6.42	.0167	.74	.00	.00	.00	.00	.00	.00	.00	0.	
5.83	.0233	.76	.01	.00	.00	.00	.00	.00	.00	0.	
5.25	.0244	.78	.01	.00	.00	.00	.00	.00	.00	0.	
4.67	.0244	.80	.01	.00	.00	.00	.00	.00	.00	0.	
4.08	.0244	.83	.01	.00	.00	.00	.00	.00	.00	0.	
3.50	.0244	.87	.01	.00	.00	.00	.00	.00	.00	0.	
2.92	.0244	.92	.02	.00	.00	.00	.00	.00	.00	0.	
2.33	.0244	.97	.02	.00	.00	.00	.00	.00	.00	0.	
1.75	.0244	1.00	.03	1.70	36.49	.49	.20	51.96	.43	138.	
1.17	.0244	.88	.05	1.94	33.48	.43	.20	45.79	.95	606.	
.58	.0244	.51	.15	1.58	29.60	.41	.20	38.87	.90	434.	



TOTAL TRANSPORT IS 139283. M3/SEASON (ACC TO CERC)
TOTAL TRANSPORT IS 28122. M3/SEASON (ACC TO BIJKER)

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      HYDRONAMIC BV
      PORT & WATERWAY ENGINEERS
      SLIEDRECHT-HOLLAND

  CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
  ====================================================================================================

  PHYSICAL CONSTANTS  G=    9.81      COASTAL CONSTANTS D50= .000150
                    RHO=1027.00                         D90= .000300
                  KAPPA=     .38                      DELTA=1.650000
            TEMPERATURE=  18.00              BREAKERINDEX= .800000
  ************************************************************

  SEASON NR 12
   WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
   PERIOD      10.50 SEC
   DIRECTION  47.50 DEGREES (AT 10.M DEPTH)
   REFR COEF    1.05 (AT 10.M DEPTH)

  THIS WAVE CLIMATE OCCURS DURING   3.60% OF THE YEAR
  ************************************************************

  REFRACTED WAVEHEIGHT 1.41 M
  BREAKERANGLE 20. DEGREES

     D    ALFA   H    SETUP   U1    C     KSI    R     L     V       S
   7.00 .0167   .87   .01   .00   .00   .00   .00   .00   .00        0. IV
                                                                        IS
   6.42 .0167   .89   .01   .00   .00   .00   .00   .00   .00        0. IV
                                                                        IS
   5.83 .0233   .92   .01   .00   .00   .00   .00   .00   .00        0. IV
                                                                        IS
   5.25 .0244   .94   .01   .00   .00   .00   .00   .00   .00        0. IV
                                                                        IS
   4.67 .0244   .98   .01   .00   .00   .00   .00   .00   .00        0. IV
                                                                        IS
   4.08 .0244  1.02   .02   .00   .00   .00   .00   .00   .00        0. IV
                                                                        IS
   3.50 .0244  1.07   .02   .00   .00   .00   .00   .00   .00        0. IV
                                                                        IS
   2.92 .0244  1.12   .03   .00   .00   .00   .00   .00   .00        0. IV
                                                                        IS
   2.33 .0244  1.17   .04  1.78 38.71   .48   .20 75.80   .36       45. IVVVVVVVVVVVVVVVVVV
                                                                        ISSSSSS
   1.75 .0244  1.14   .04  2.09 36.53   .43   .20 69.16   .97      342. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                        ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
   1.17 .0244   .93   .08  2.18 33.69   .39   .20 61.31  1.16      413. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                        ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
    .58 .0244   .52   .22  1.62 30.28   .39   .20 53.06   .99      241. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                        ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
  XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
  TOTAL TRANSPORT IS   102467. M3/SEASON (ACC TO CERC)
  TOTAL TRANSPORT IS    24854. M3/SEASON (ACC TO BIJKER)
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HYDRONAMIC BV
PORT & WATERWAY ENGINEERS
SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT * CAP LOPEZ

PHYSICAL CONSTANTS G= 9.81 COASTAL CONSTANTS D50= .000150
RHO=1027.00 D90= .000300
KAPPA= .38 DELTA=1.650000
TEMPERATURE= 18.00 BREAKERINDEX= .800000
****

SEASON NR 13
WAVEHEIGHT .88 M (HRMS IN DEEP WATER)
PERIOD 12.50 SEC
DIRECTION 41.10 DEGREES (AT 10.M DEPTH)
REFR COEF 1.14 (AT 10.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING 3.40% OF THE YEAR
****

REFRACTED WAVEHEIGHT 1.69 M
BREAKERANGLE 19. DEGREES

D	ALFA	H	SETUP	U1	C	KSI	R	L	V	S	
7.00	.0167	1.01	.01	.00	.00	.00	.00	.00	.00	0.	V
											S
6.42	.0167	1.04	.01	.00	.00	.00	.00	.00	.00	0.	V
											S
5.83	.0233	1.07	.01	.00	.00	.00	.00	.00	.00	0.	V
											S
5.25	.0244	1.10	.01	.00	.00	.00	.00	.00	.00	0.	V
											S
4.67	.0244	1.14	.02	.00	.00	.00	.00	.00	.00	0.	V
											S
4.08	.0244	1.19	.02	.00	.00	.00	.00	.00	.00	0.	V
											S
3.50	.0244	1.25	.03	.00	.00	.00	.00	.00	.00	0.	V
											S
2.92	.0244	1.31	.04	1.82	40.43	.47	.20	102.99	.27	26.	VVVVVVVVVVVV
											SS
2.33	.0244	1.33	.05	2.14	38.75	.43	.20	95.93	.92	316.	VVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
											SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
1.75	.0244	1.24	.06	2.40	36.60	.39	.20	87.59	1.27	553.	VVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
											SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
1.17	.0244	.96	.11	2.35	33.87	.37	.20	78.01	1.26	456.	VVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
											SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
.58	.0244	.52	.28	1.64	30.86	.37	.20	68.65	1.03	254.	VVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
											SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

TOTAL TRANSPORT IS 140930. M3/SEASON (ACC TO CERC)
TOTAL TRANSPORT IS 38273. M3/SEASON (ACC TO BIJKER)

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      HYDRONAMIC BV
      PORT & WATERWAY ENGINEERS
      SLIEDRECHT-HOLLAND

CALCULATION OF LONGSHORE TRANSPORT  *  CAP LOPEZ
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PHYSICAL CONSTANTS  G=    9.81     COASTAL CONSTANTS D50= .000150
                  RHO=1027.00                        D90= .000300
                KAPPA=     .38                     DELTA=1.650000
          TEMPERATURE=  18.00              BREAKERINDEX= .800000
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SEASON NR 14
 WAVEHEIGHT    .88 M (HRMS IN DEEP WATER)
 PERIOD      15.00 SEC
 DIRECTION  32.90 DEGREES (AT 10.M DEPTH)
 REFR COEF   1.28 (AT 10.M DEPTH)

THIS WAVE CLIMATE OCCURS DURING     .70% OF THE YEAR
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REFRACTED WAVEHEIGHT 2.09 M
BREAKERANGLE 16. DEGREES

  D    ALFA  H    SETUP  U1   C     KSI    R    L      V      S
 7.00 .0167 1.18  .01   .00  .00   .00   .00   .00   .00       0. IV
                                                                   IS
 6.42 .0167 1.22  .01   .00  .00   .00   .00   .00   .00       0. IV
                                                                   IS
 5.83 .0233 1.25  .02   .00  .00   .00   .00   .00   .00       0. IV
                                                                   IS
 5.25 .0244 1.29  .02   .00  .00   .00   .00   .00   .00       0. IV
                                                                   IS
 4.67 .0244 1.34  .02   .00  .00   .00   .00   .00   .00       0. IV
                                                                   IS
 4.08 .0244 1.40  .03   .00  .00   .00   .00   .00   .00       0. IV
                                                                   IS
 3.50 .0244 1.46  .04  1.92 41.84  .46   .20139.59   .44      13. IVVVVVVVVVVVVVVVVVV
                                                                   ISSSSS
 2.92 .0244 1.51  .05  2.23 40.46  .42   .20131.69  1.01      84. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                   ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
 2.33 .0244 1.48  .06  2.53 38.79  .39   .20122.66  1.36     148. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                   ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
 1.75 .0244 1.32  .07  2.70 36.67  .36   .20112.11  1.45     146. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                   ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
 1.17 .0244  .99  .15  2.52 34.11  .35   .20100.57  1.29      99. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                   ISSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS
  .58 .0244  .52  .37  1.64 31.64  .36   .20 90.52  1.06      57. IVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVVV
                                                                   ISSSSSSSSSSSSSSSSSSSSSSS
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX COASTLINE XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
TOTAL TRANSPORT IS     42571. M3/SEASON (ACC TO CERC)
TOTAL TRANSPORT IS     13050. M3/SEASON (ACC TO BIJKER)
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 TOTAL TRANSPORT    168775.M3/YEAR
 NEGAT TRANSPORT         0.M3/YEAR
 POSIT TRANSPORT    168775.M3/YEAR
 DOMINANT NEGAT WAVE DIRECTION    0.
 DOMINANT POSIT WAVE DIRECTION   19.
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