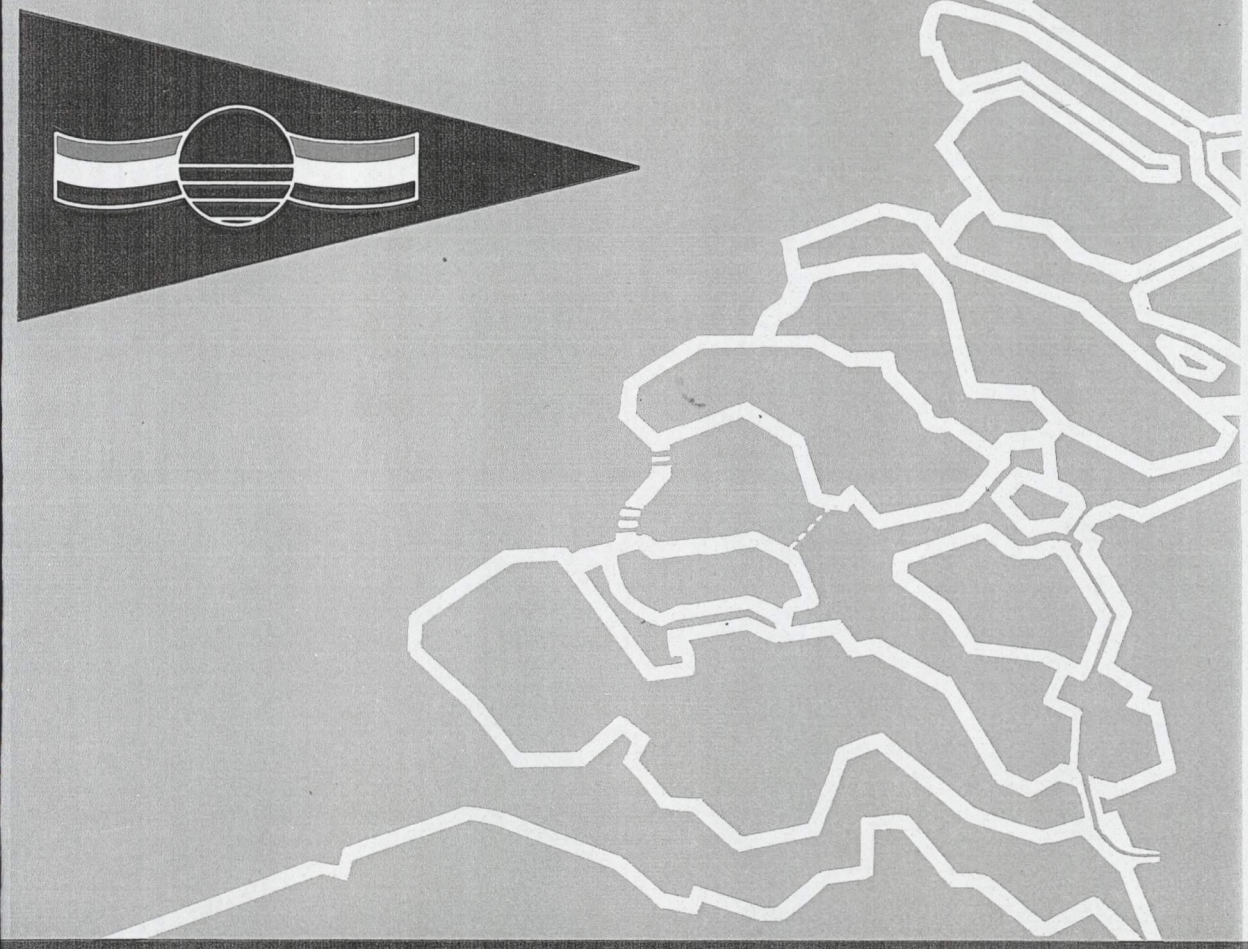
Ministerie van Verkeer en Waterstaat
Directoraat-Generaal Rijkswaterstaat
Directie Zeeland
Nummer: K1000 89113
Bibliotheek, Koestr. 30, tel: 0118-686362,
postbus 5014, 4330 KA Middelburg

DI: 41222



directie zeeland
meetdienst zeeland

ministerie van verkeer en waterstaat **rijkswaterstaat**

directie zeeland
meetdienst zeeland

notitie

nummer: **ZLMD-89.N.113**

onderwerp: **Meetresultaten**
Gat v. Ossenisse

datum: 15 en 17 november 1989

Kode: 0320 S 8901
datum: december 1989
auteur: Verwerking Hydrografie
Bijlagen: 8

RIJKSWATERSTAAT
* DIRECTIE ZEELAND *
bibliotheek



1. ALGEMEEN

In verband met de besteksvoorbereiding van de aanleg van een oeververdediging langs de platen van Hulst werden enkele stroommetingen uitgevoerd.
De metingen dienen een indruk te geven van het verloop van de stroomsnelheden gedurende een gehele getijcyclus d.w.z. 13 uur.
De metingen werden uitgevoerd op 15 november bij springtij en op 17 november bij gemiddeld getij.

2. PLAATSBEPALING

De plaatsbepaling van de meetschepen werd aan boord van het schip zelf gedaan met behulp van het Trident-plaatsbepalingssysteem. De gegevens betreffende het meetpunt staan vermeld in bijlage 2.

3. UITVOERING

De stroomsnelheden werden gemeten met behulp van de Ott-molen. De vertikaal werd, volgens het diepteschema van bijlage 3, minstens twee maal per half uur opgaand gemeten. De stroomrichting werd bepaald met de Elmar-stroomrichtingsmeter. Deze gegevens zijn aan boord van het schip ingetikt op de HP85 en opgeslagen op cassettebandjes.
Bijlage 4 toont een overzicht van de meetperioden.

4. VERWERKING

Elmar meting

De ruwe meetgegevens zijn met behulp van een HP85 vanaf de cassettebandjes ingevoerd in het HP1000-systeem. Na kontrole zijn deze gegevens als 10-minuutstanden in het databestand van laatstgenoemd systeem opgeslagen van waaruit de volgende standaardbewerkingen zijn uitgevoerd :
Per meetlokatie :
- de stroomvertikalen (bijlage 5);
- de stroomsnelheid en stroomrichting grafieken als funktie van de tijd (bijlage 6).

5. VERTIKAAL GETIJ

Het vertikaal getij werd bepaald aan de registrerende peilschrijver van Hansweert (x = 58390.00; y = 384990.00) welke grafisch is uitgezet in bijlage 7. De gemiddelde getijgegevens over de periode 1971-1980 van station Hansweert zijn:

WATERSTANDEN IN M ten opzichte van N.A.P.

getij	H.W.	L.W.	tijverschil in M
gemiddeld springtij	2.68	-2.35	5.03
gemiddeld getij	2.35	-2.12	4.47
gemiddeld doodtij	1.88	-1.78	3.66

OPGETREDEN GETIJ station HANSWEERT

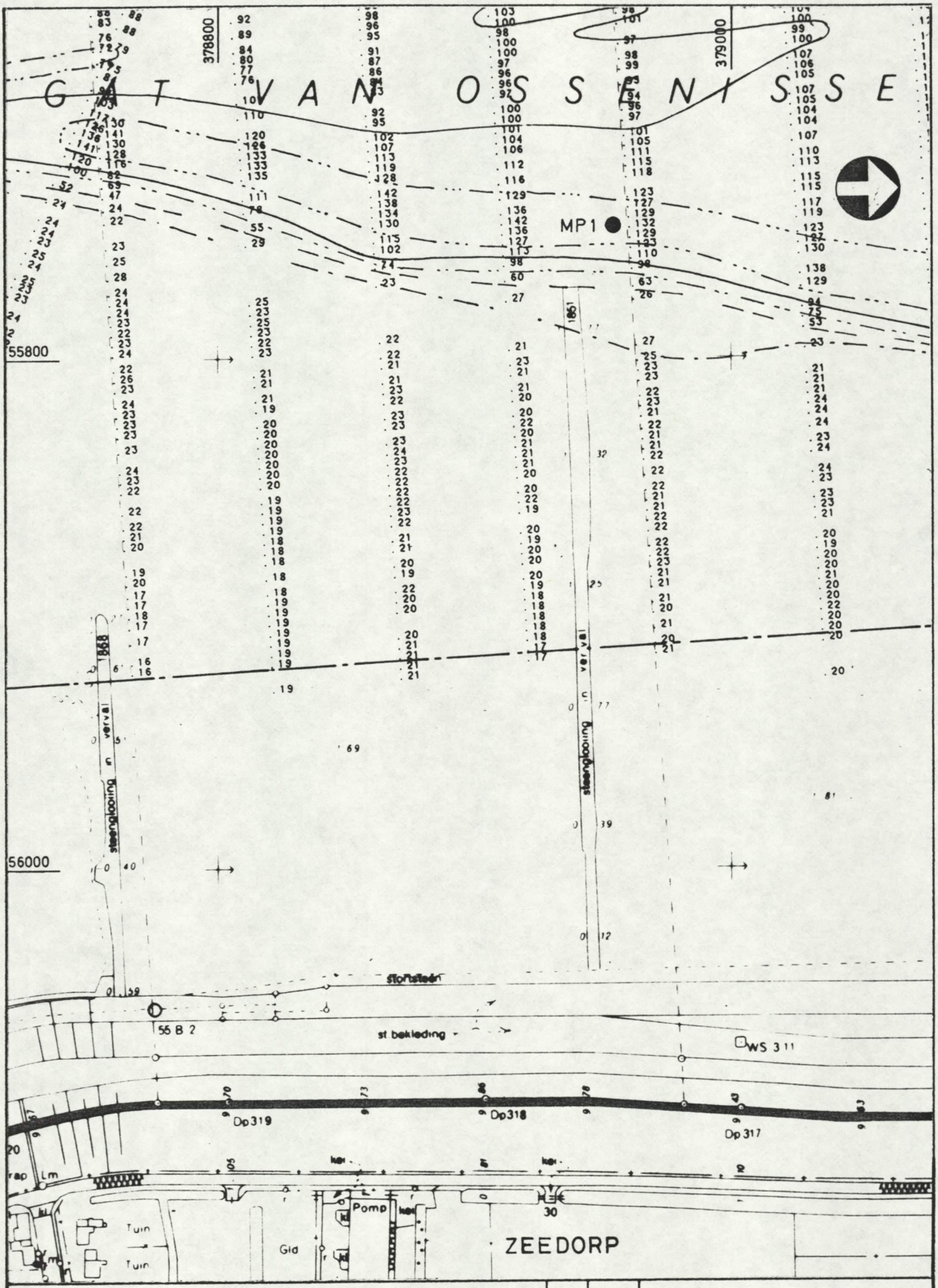
Datum	M.E.T.	H in M	tijverschil in M	getijcoëfficient ten opzichte van gemiddeld getij
15-11-1989	03.40	2.95		
15-11-1989	10.15	-2.33	eb 5.28	1.18121
15-11-1989	16.00	2.73	vloed 5.06	1.13199
15-11-1989	22.40	-2.60	eb 5.33	1.19239
17-11-1989	05.20	2.07		
17-11-1989	12.00	-2.69	eb 4.76	1.06488
17-11-1989	17.45	2.17	vloed 4.86	1.08725
17-11-1989	00.15	-2.45	eb 4.62	1.03356

6. WEERSOMSTANDIGHEDEN

De weersgesteldheid op 15 november 1989 : droog, en een zwakke wind van 2 beaufort, uit oost-noordoostelijk richting.
De weersgesteldheid op 17 november : bewolkt en een matige wind van 4 beaufort , uit zuid-oostelijke richting.
De windsnelheid en -richting werd gemeten aan de meetopstelling Hansweert.
Deze gegevens staan uitgezet in de bijlage 8.

7. LIJST VAN BIJLAGEN

1. Situatie meetgebied
2. Gegevens positie meetschip
3. Diepteschema vertikaalmeting
4. Overzicht uitgevoerde metingen
5. Stroomvertikalen
6. Stroomsnelheids- en stroomrichtingsgrafieken
7. Opgetreden getij Hansweert
8. Getij- en windgegevens Hansweert



rijkswaterstaat **directie zeeland – meetdienst zeeland**	get.		bijl. 1
	gec.		code 0320 S 8901
SITUATIE MEETPUNT	gez.		schaal 1:2000
	akk.		nr.

METING: STROOMMETING GAT VAN OSSENISSE d.d: 15/17-11-1989

MEETRAAI: _____ NULPUNT: X= Y=
ARGUMENT: cent. gr.

MEETRAAI: _____ NULPUNT: X= Y=
ARGUMENT: cent. gr.

M.P. nr.	MEETVAARTUIG	Gemiddelde positie X	Gemiddelde positie Y	Afstand nulpunt	opmerkingen
1	LOD'JCKE	55749	378947		15-11-1989
1	LOD'JCKE	55749	378963		17-11-1989

rijkswaterstaat
directie zeeland – meetdienst

GEGEVENS MEETRAAIEN en
POSITIES MEETSCHEPEN

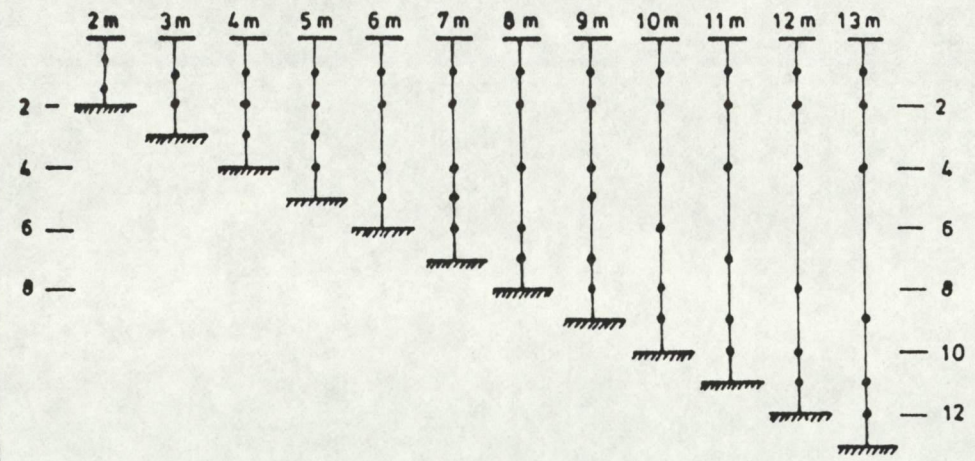
get. gec. gez. akk.

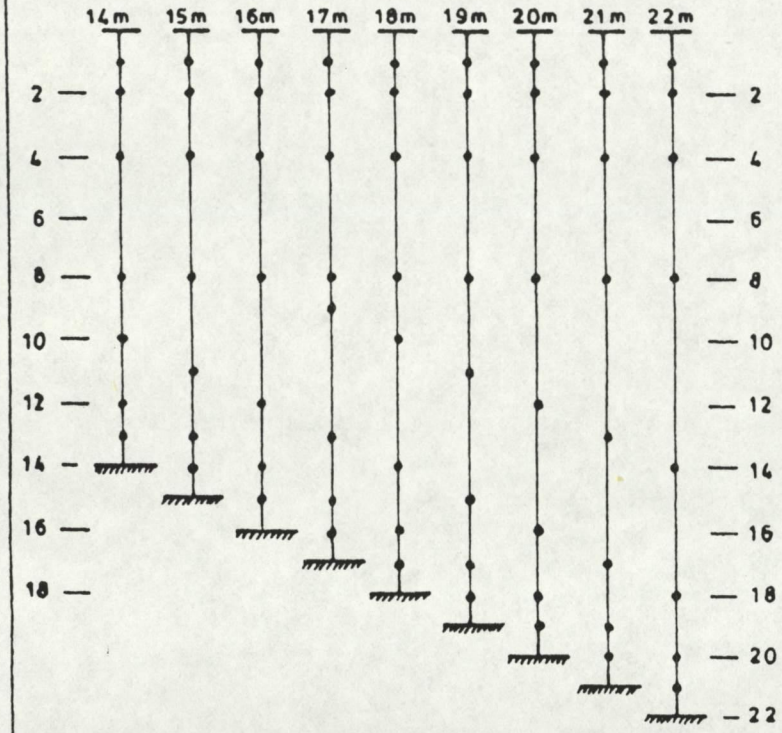
bijl. 2

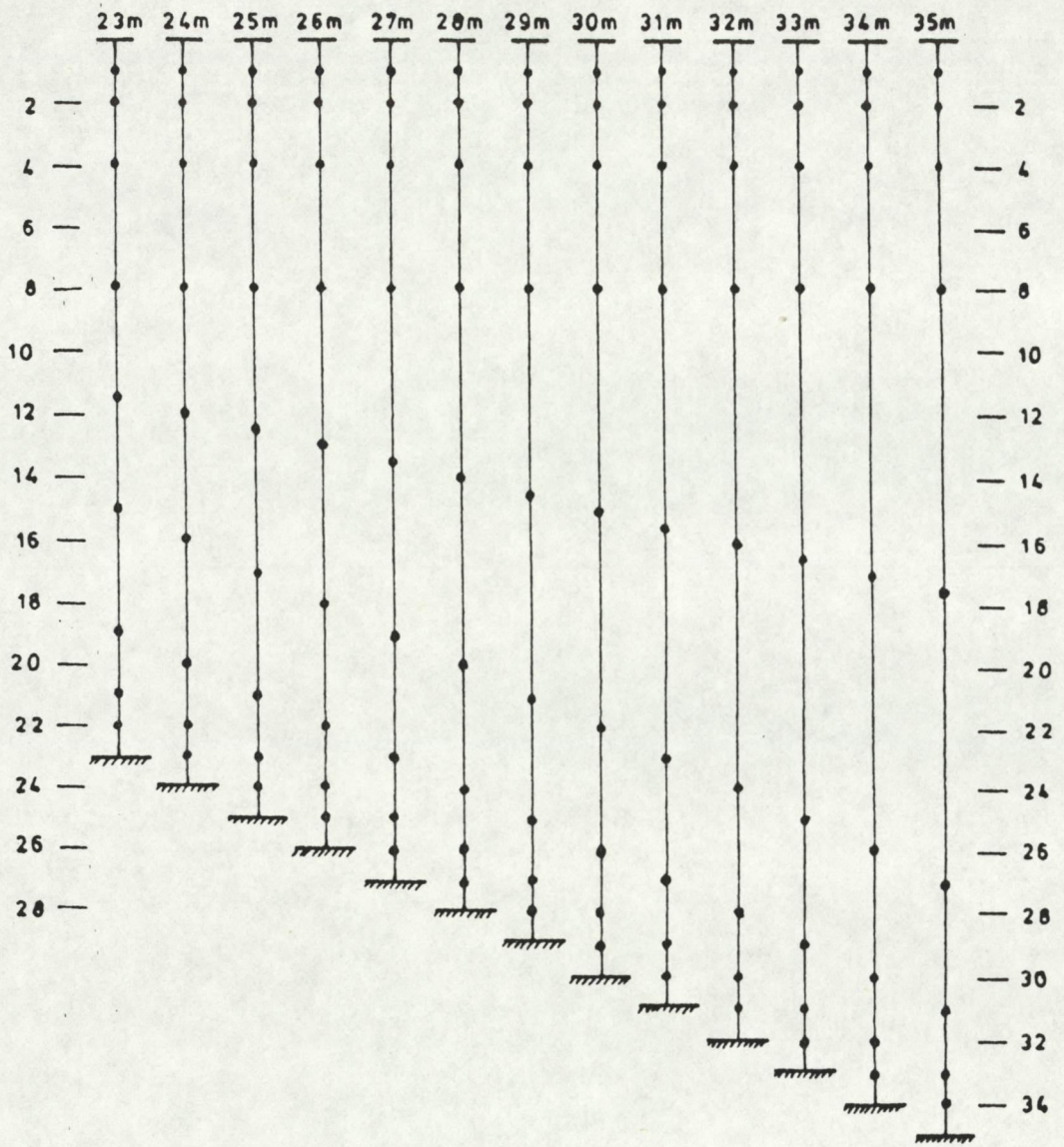
code 0320 S 8901/2

schaal

nr.

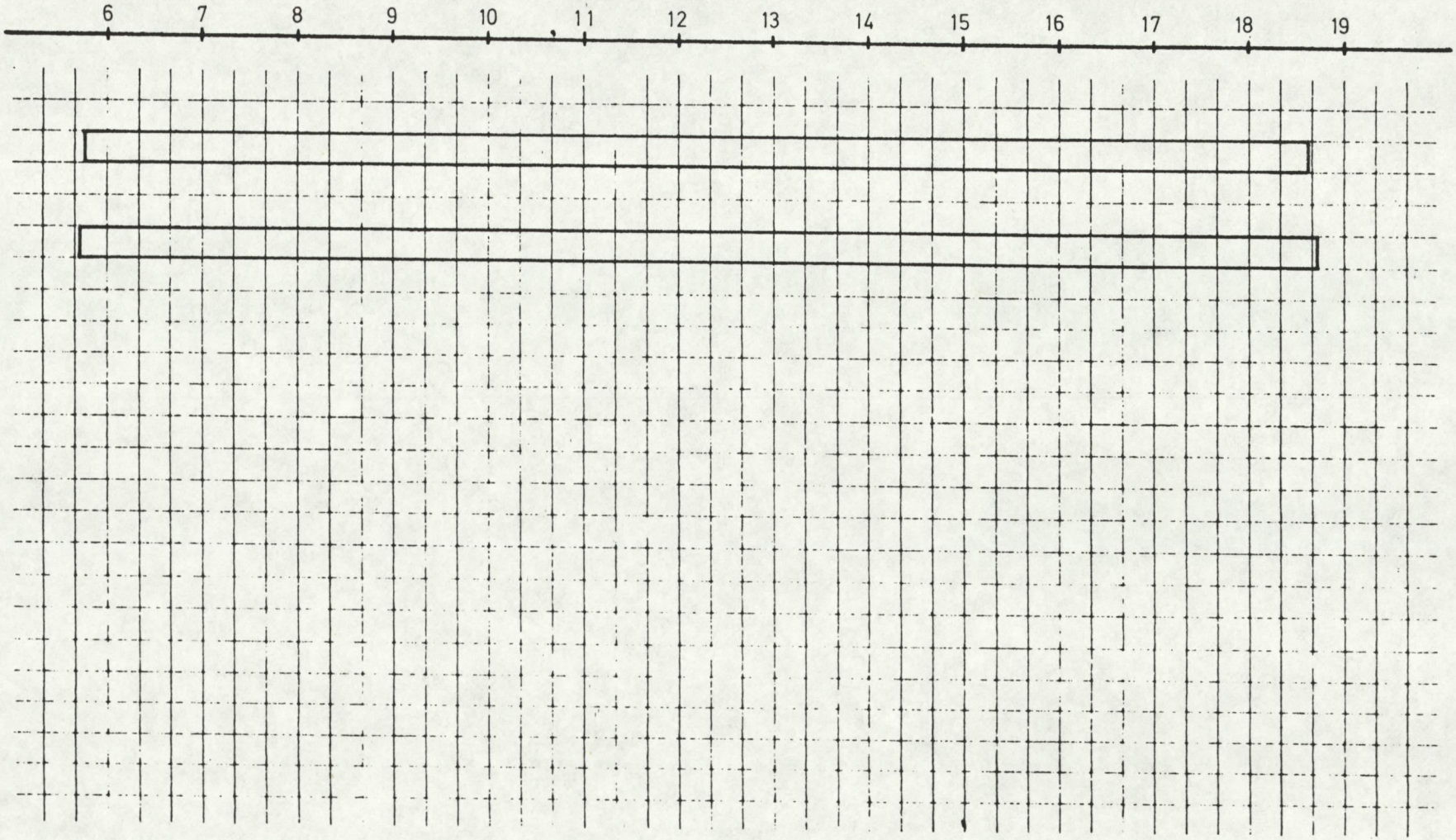






rijkswaterstaat directie zeeland – meetdienst	get.		bijl. 3
	gec.		code 0320 S 8901/2
diepteschema meetpunten in de vertikaal	gez.		schaal
	akk.		nr.

MEETRAAI:

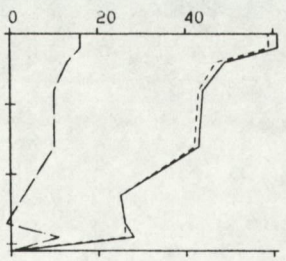


1. LOD'JCKE
   15-11-1989

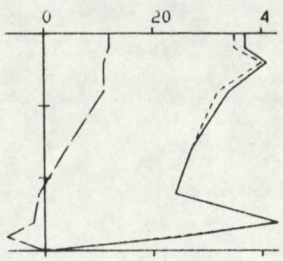
1. LOD'JCKE
   17-11-1989

rijkswaterstaat **directie zeeland – meetdienst**	**get.**	**bijl.** 4
	gec.	**code** 0320 S 8901/2
OVERZICHT METINGEN d.d: 15/17-11-1989 GAT VAN OSSENISSE	**gez.**	**schaal**
	akk.	**nr.**

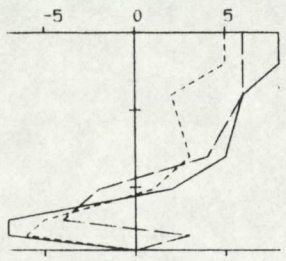
Bijlage 5 : Stroomvertikalen



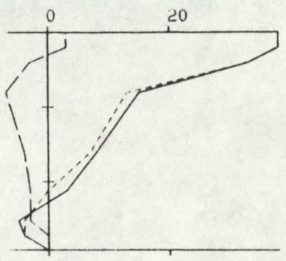
5.47 5.57 155
38 37 8 180



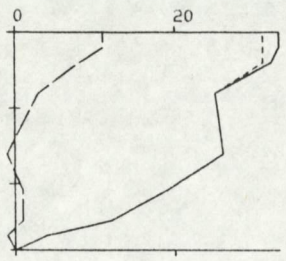
6.00 6.09 151
30 30 5 184



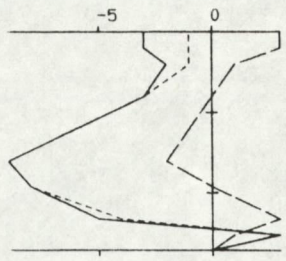
6.11 6.20 141
3 1 3 127



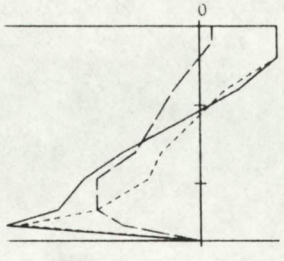
6.23 6.32 146
11 11 -3 209



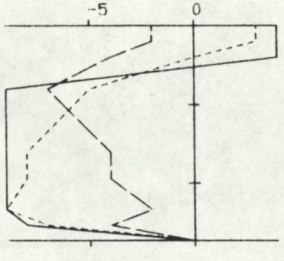
6.34 6.45 144
22 22 3 186



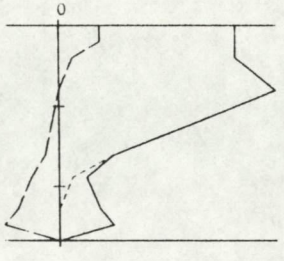
6.48 6.57 136
-4 -4 0 19



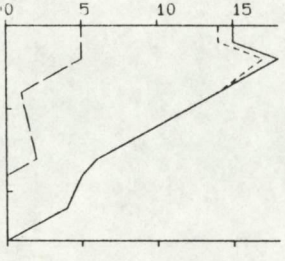
6.59 7.09 137
-4 -1 -4 302



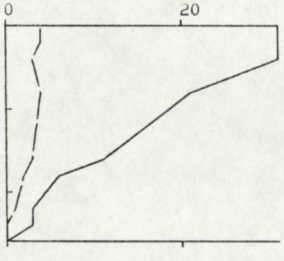
7.11 7.20 137
-6 -5 -4 334



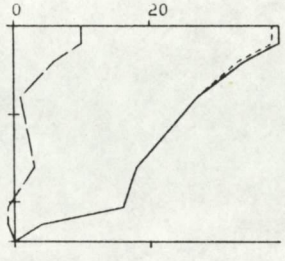
7.22 7.33 134
7 7 -1 198



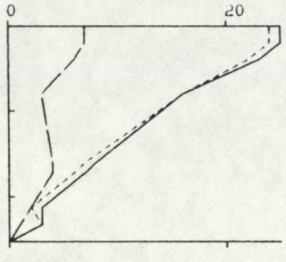
7.35 7.45 130
9 9 2 182



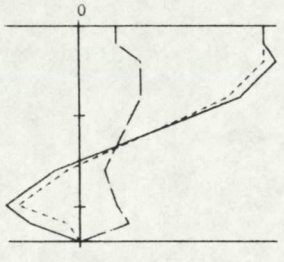
7.48 7.58 130
16 15 3 183



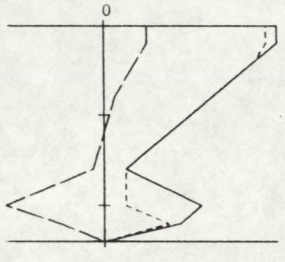
8.00 8.08 123
22 22 3 186



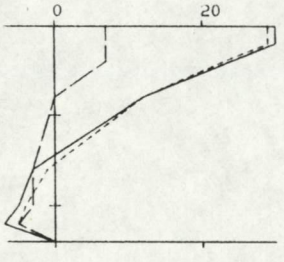
8.11 8.21 126
12 12 4 175



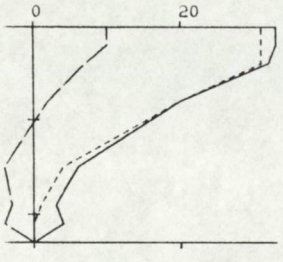
8.23 8.31 119
7 6 3 162



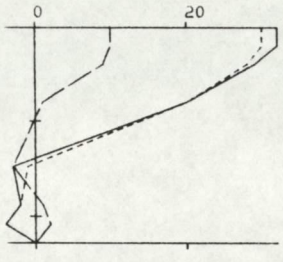
8.33 8.41 120
7 7 -1 198



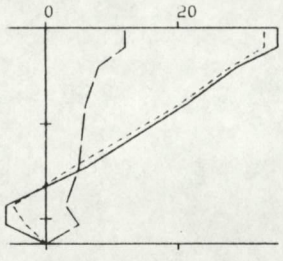
8.44 8.52 120
8 8 0 192



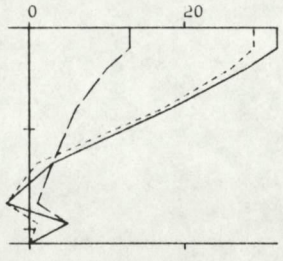
8.54 9.03 115
14 14 1 189



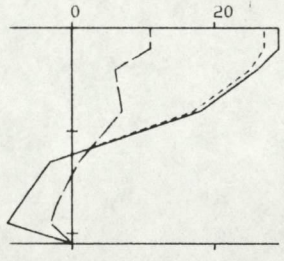
9.05 9.14 114
12 12 2 182



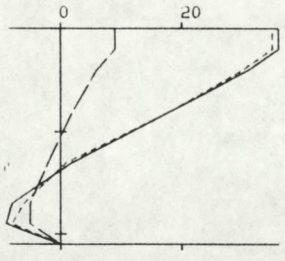
9.16 9.24 113
14 13 6 168



9.26 9.34 107
13 11 6 166



9.36 9.45 105
9 9 4 170



9.48 9.57 105
12 12 1 188

TOELICHTING OP DE VERTIKALEN

———— V - - - - - - - - VSIN ——— — — VCOS

14.01 14.15 295 : BEGINTYD EINDTYD BODEMDIEPTE

100 10 92 265 : V VSIN VCOS R (GEM)

VERTIKALE SCHAAL . DIEPTE IN DM TOV WATEROPP.

HORIZONTALE SCHAAL: SNELHEDEN IN CM/S.

RIJKSWATERSTAAT
DIRECTIE ZEELAND
MEETDIENST

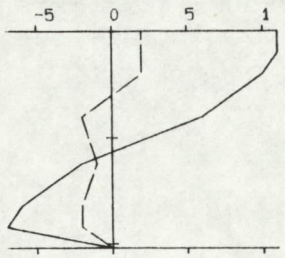
STROOMMETING . GAT VAN OSSENISSE

RAAI : NVT DEELRAAI . NVT PUNT . 1 LOKATIE . LOD1(-104)

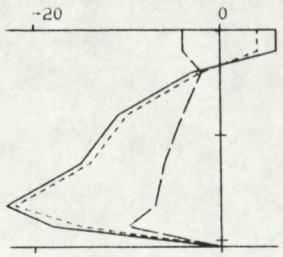
X : 55749.00 Y . 378947.00

DATUM : 891115 CODE. S0320

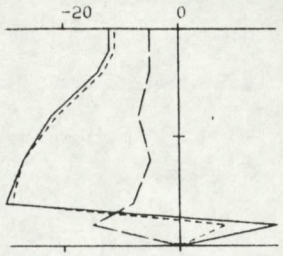
A3. 0001



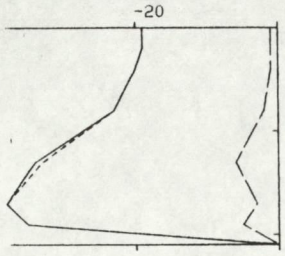
10.16 10.18 102
2 2 -1 206



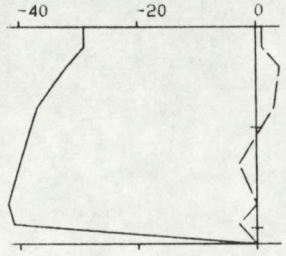
10.19 10.28 103
-11 -9 -5 345



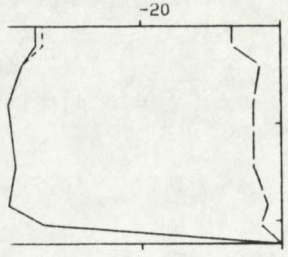
10.30 10.39 101
-18 -17 -7 352



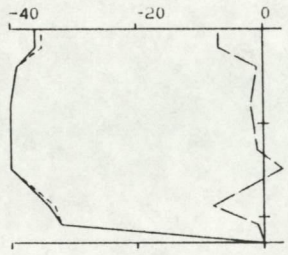
10.41 10.50 105
-26 -26 -3 7



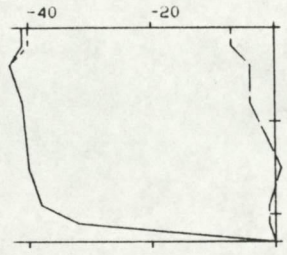
11.08 11.17 108
-35 -35 0 14



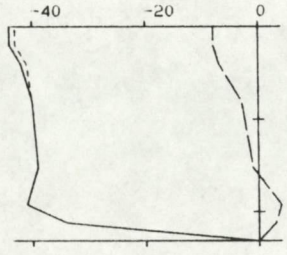
11.19 11.28 112
-36 -36 -4 7



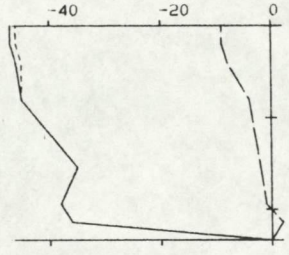
11.30 11.40 114
-36 -36 -2 9



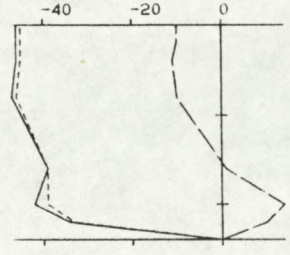
11.42 11.50 115
-38 -38 -2 9



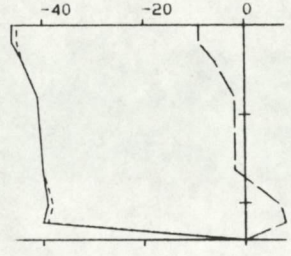
11.52 12.01 116
-38 -38 -2 10



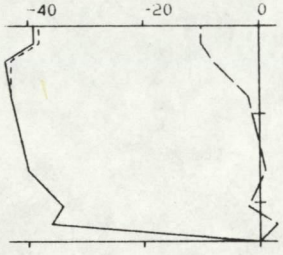
12.04 12.12 117
-39 -39 -4 8



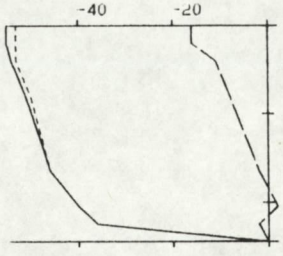
12.14 12.23 120
-40 -40 -2 10



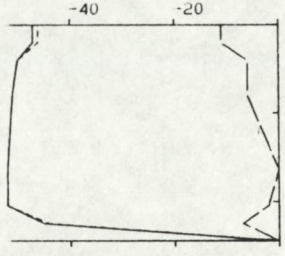
12.25 12.33 121
-39 -39 -1 11



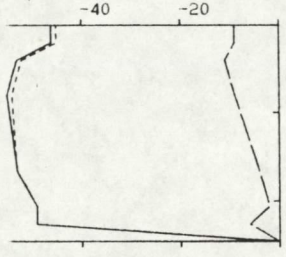
12.36 12.45 122
-38 -38 -2 9



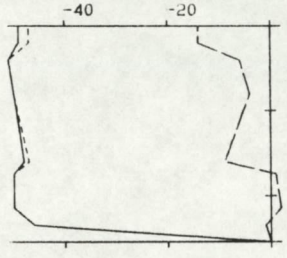
12.47 12.55 122
-46 -45 -6 6



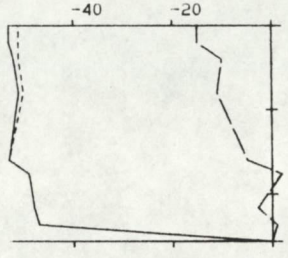
12.58 13.06 122
-48 -48 -4 8



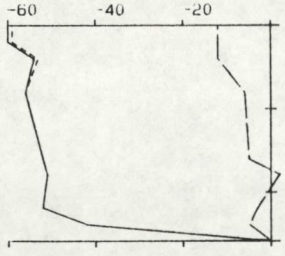
13.11 13.20 123
-50 -49 -7 5



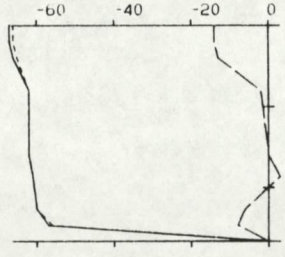
13.24 13.33 127
-47 -47 -5 7



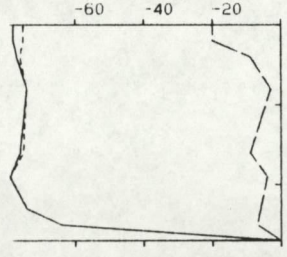
13.35 13.45 128
-49 -48 -7 5



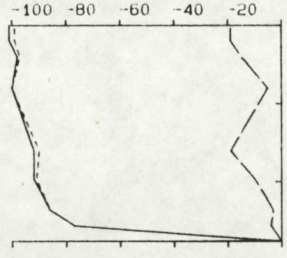
13 47 13 57 129
-51 -51 -6 7



14.00 14.09 133
-60 -60 -4 9



14.11 14.21 135
-72 -72 -7 7



14.23 14.33 138
-90 -89 -11 6

TOELICHTING OP DE VERTIKALEN

———— V - - - - - - - - VSIN — — — — VCOS

14.01 14.15 295 . BEGINTYD EINDTYD BODEMDIEPTE

100 10 92 265 . V VSIN VCOS R (GEM)

VERTIKALE SCHAAL . DIEPTE IN DM TOV WATEROPP.

HORIZONTALE SCHAAL. SNELHEDEN IN CM/S.

RIJKSWATERSTAAT
DIRECTIE ZEELAND
MEETDIENST

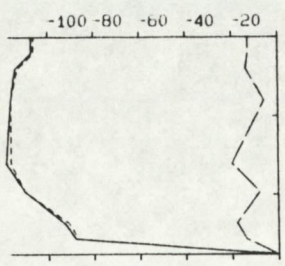
STROOMMETING . GAT VAN OSSENISSE

RAAI : NVT DEELRAAI : NVT PUNT : 1 LOKATIE . LOD1(-104)

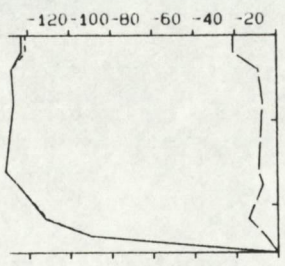
X : 55749.00 Y . 378947.00

DATUM : 891115 CODE: S0320

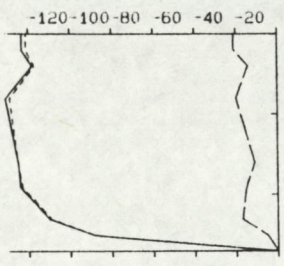
A3. 0002



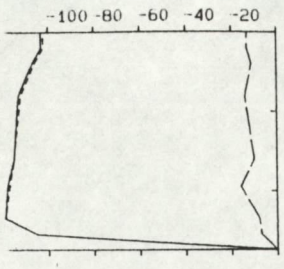
14.35 14.45 138
-105-105 -13 6



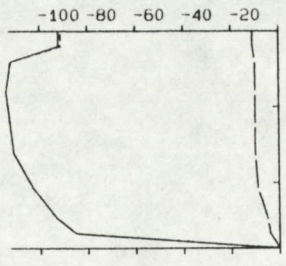
14.47 14.57 128
-118-117 -10 8



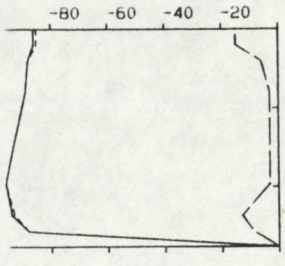
15.08 15.13 135
-116-115 -15 6



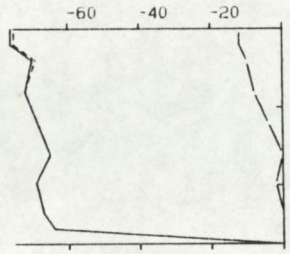
15.15 15.25 137
-108-108 -11 7



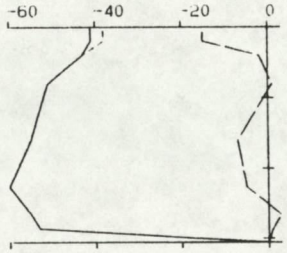
15.27 15.37 143
-101-101 -9 8



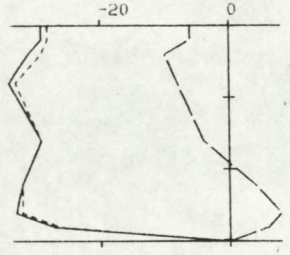
15.39 15.49 138
-88 -88 -6 9



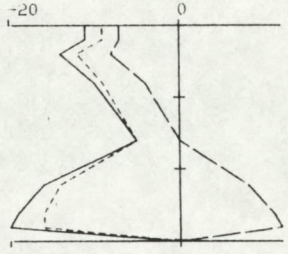
15.52 16.02 138
-67 -66 -4 9



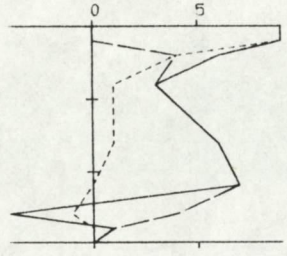
16.04 16.14 153
-50 -50 -4 9



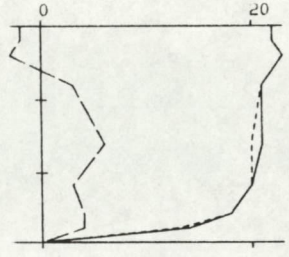
16.15 16.25 151
-29 -29 -2 9



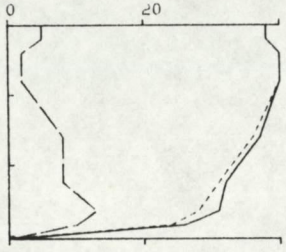
16.28 16.38 151
-10 -10 1 18



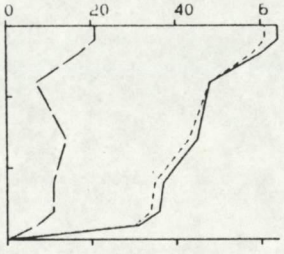
16.40 16.49 149
4 2 4 125



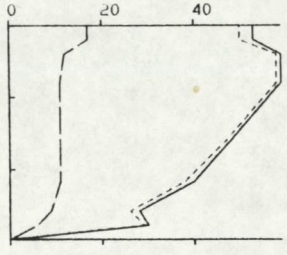
16.51 17.01 148
20 19 3 185



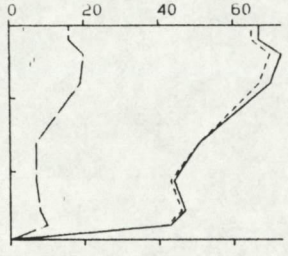
17.03 17.13 152
34 34 6 182



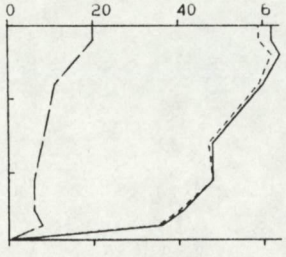
17.15 17.25 150
44 43 12 177



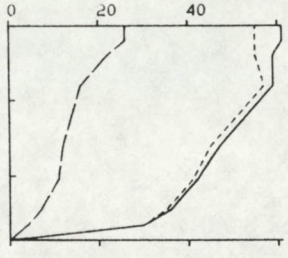
17.28 17.39 148
46 44 11 179



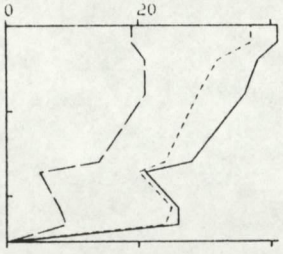
17.41 17.51 146
55 54 12 181



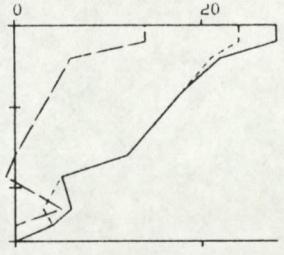
17.53 18.02 145
50 49 10 182



18.04 18.14 142
47 45 14 176



18.16 18.25 127
30 26 14 164



18 28 18 38 133
13 13 4 177

TOELICHTING OP DE VERTIKALEN

_____ V - - - - - - - - VSIN _ _ _ _ _ VCOS

14.01 14.15 295 : BEGINTYD EINDTYD BODEMDIEPTE

100 10 92 265 : V VSIN VCOS R (GEM)

VERTIKALE SCHAAL : DIEPTE IN DM TOV WATEROPP.

HORIZONTALE SCHAAL: SNELHEDEN IN CM/S

RIJKSWATERSTAAT
DIRECTIE ZEELAND
MEETDIENST

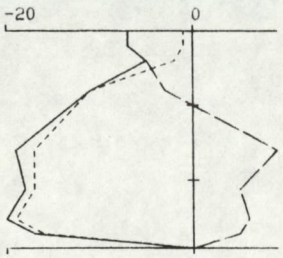
STROOMMETING : GAT VAN OSSENISSE

RAAI : NVT DEELRAAI : NVT PUNT : 1 LOKATIE : LOD1(-104)

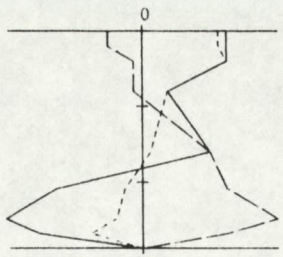
X : 55749.00 Y : 378947.00

DATUM : 891115 CODE: S0320

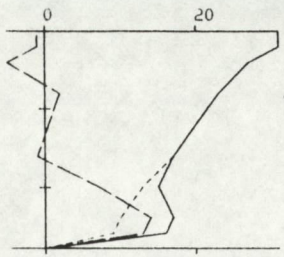
A3. 0003



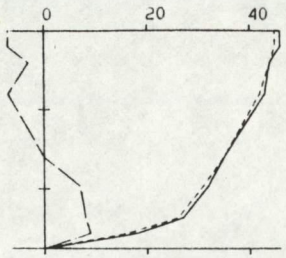
5.43 5.52 146
-12 -12 2 22



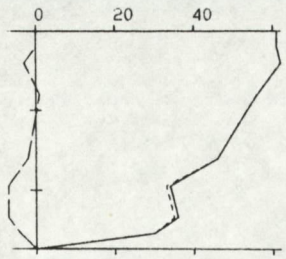
5.55 6.05 144
5 2 5 123



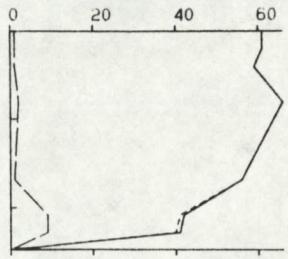
6.07 6.17 139
19 18 3 184



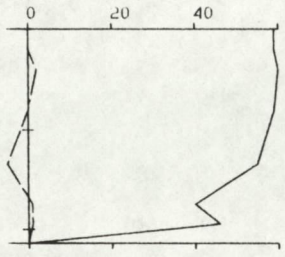
6.19 6.28 138
34 34 0 193



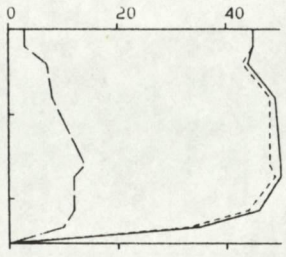
6.32 6.42 137
46 46 -3 196



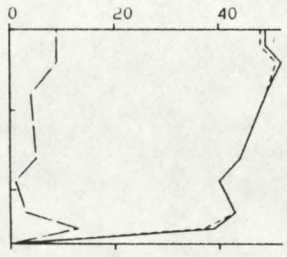
6.44 6.52 124
54 54 3 190



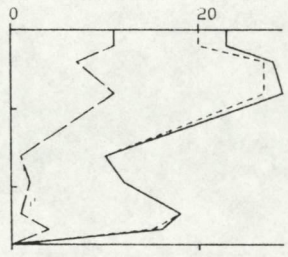
6.54 7.05 107
52 52 -1 194



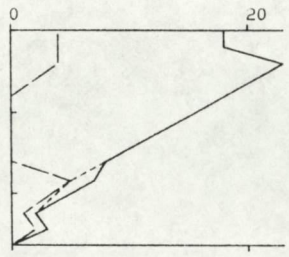
7.11 7.21 127
45 44 9 181



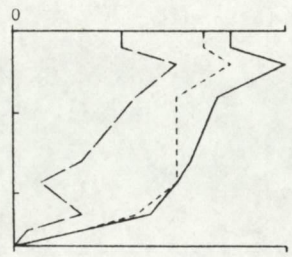
7.23 7.33 134
44 44 5 186



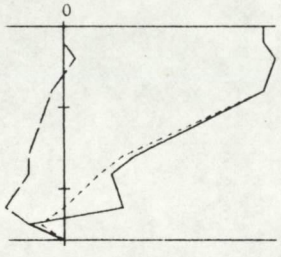
7.36 7.51 137
19 18 5 177



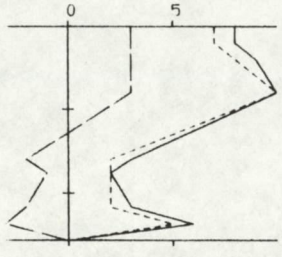
7.54 8.03 132
12 11 2 184



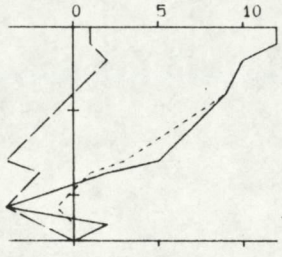
8.06 8.16 133
13 11 6 164



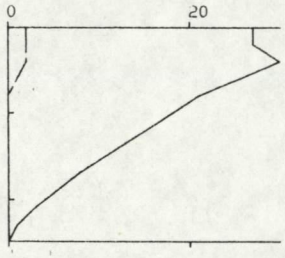
8.18 8.28 131
9 9 -2 205



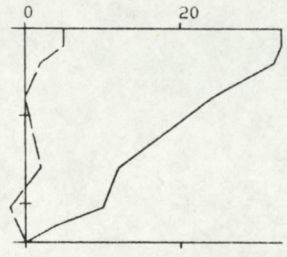
8.32 8.43 128
5 5 0 188



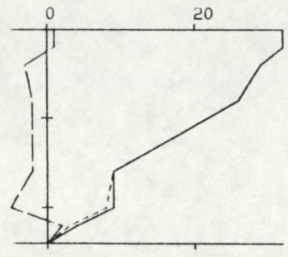
8.46 8.57 127
5 5 -1 206



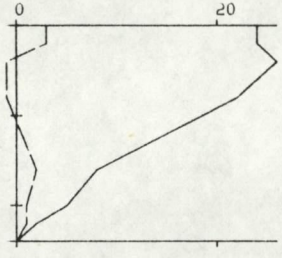
8.59 9.10 124
15 15 0 191



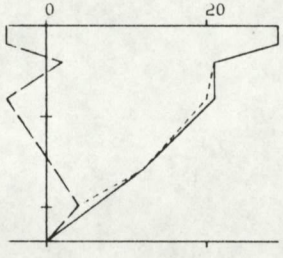
9.12 9.21 122
19 19 1 190



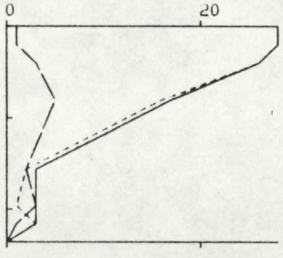
9.23 9.32 120
18 18 -2 199



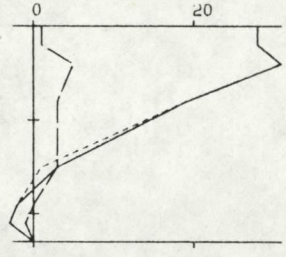
9.35 9.43 120
15 15 1 190



9.45 9.54 119
15 15 -1 196



9.56 10.04 118
12 12 3 180



10.06 10.16 115
12 12 2 183

TOELICHTING OP DE VERTIKALEN

——— V - - - - - - - - VSIN — — — — VCOS

14.01 14.15 295 . BEGINTYD EINDTYD BODEMDIEPTE

100 10 92 265 . V VSIN VCOS R (GEM)

VERTIKALE SCHAAL : DIEPTE IN DM TOV WATEROPP.

HORIZONTALE SCHAAL: SNELHEDEN IN CM/S.

RIJKSWATERSTAAT
DIRECTIE ZEELAND
MEETDIENST

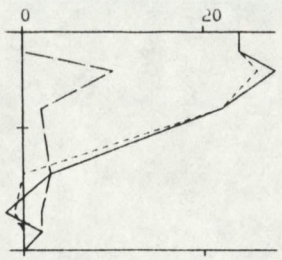
STROOMMETING . GAT VAN OSSENISSE

RAAI : NVT DEELRAAI . NVT PUNT : 1 LOKATIE . LOD1(-104)

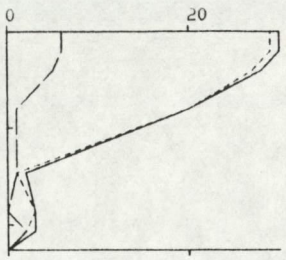
X : 55749.00 Y . 378963.00

DATUM . 891117 CODE: S0320

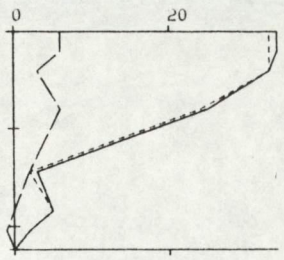
A3. 0001



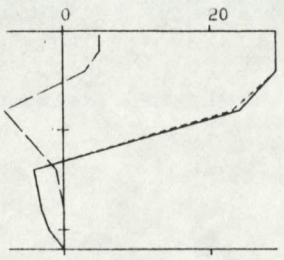
10.19 10.27 114
12 12 3 179



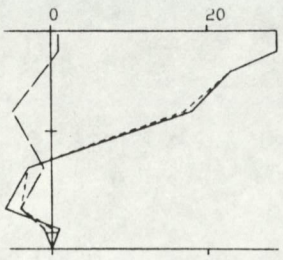
10.30 10.40 113
13 13 2 184



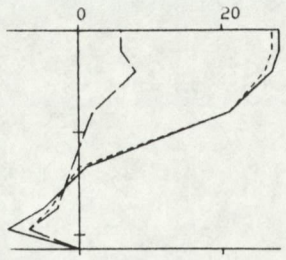
10.43 10.52 112
16 16 3 182



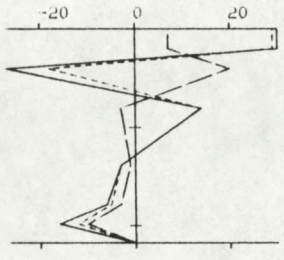
10.54 11.02 110
12 12 -1 198



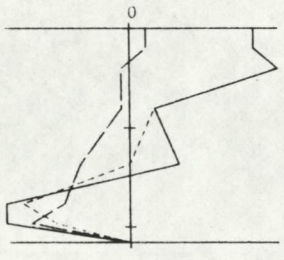
11.05 11.16 108
10 10 -2 204



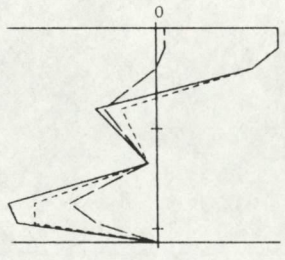
11.20 11.30 107
11 11 1 187



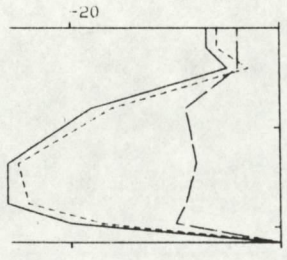
11.32 11.42 109
3 2 1 159



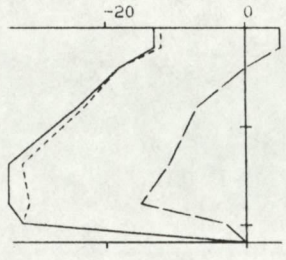
11.45 11.55 108
4 3 -4 247



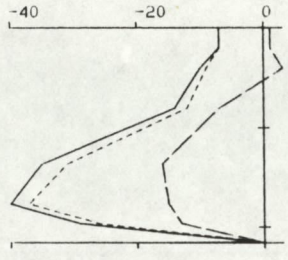
11.58 12.08 107
-4 -1 -3 297



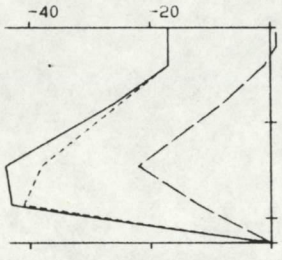
12.11 12.24 108
-17 -15 -7 348



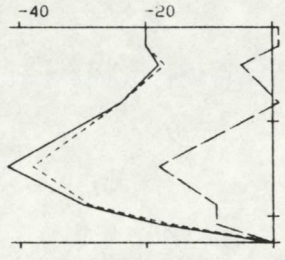
12.26 12.35 109
-24 -24 -6 359



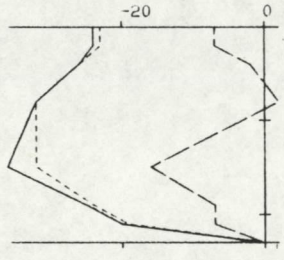
12.38 12.46 108
-21 -19 -8 351



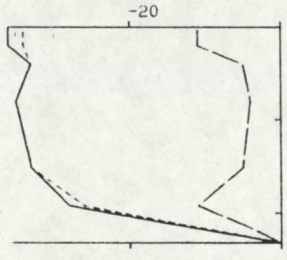
12.48 12.56 113
-28 -27 -9 354



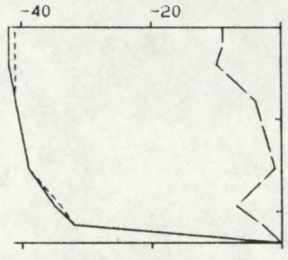
12.59 13.06 114
-26 -25 -7 358



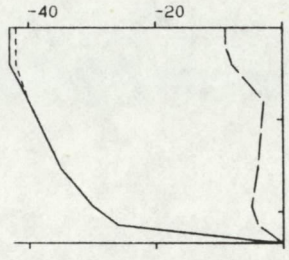
13.09 13.18 115
-27 -26 -6 0



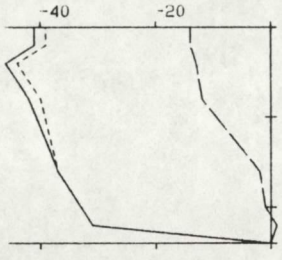
13.20 13.30 116
-30 -30 -6 1



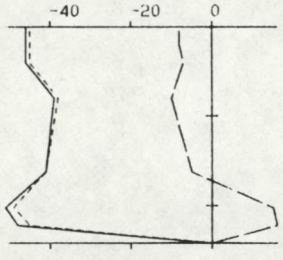
13.32 13.42 117
-37 -37 -5 6



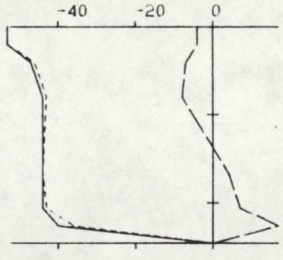
13.44 13.53 117
-35 -35 -5 5



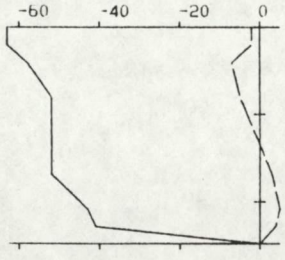
13.58 14.07 120
-37 -36 -7 2



14.10 14.19 121
-41 -41 -2 10



14.21 14.30 123
-43 -43 0 13



14.33 14.42 124
-50 -50 -1 12

TOELICHTING OP DE VERTIKALEN

———— V - - - - - - - - VSIN — — — — VCOS

14.01 14.15 295 . BEGINTYD EINDTYD BODEMDIEPTE

100 10 92 265 . V VSIN VCOS R (GEM)

VERTIKALE SCHAAL . DIEPTE IN DM TOV WATEROPP.

HORIZONTALE SCHAAL. SNELHEDEN IN CM/S

RIJKSWATERSTAAT
DIRECTIE ZEELAND
MEETDIENST

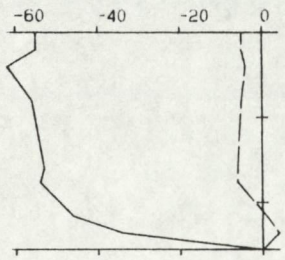
STROOMMETING . GAT VAN OSSENISSE

RAAI : NVT DEELRAAI . NVT PUNT . 1 LOKATIE . LOD1(-104)

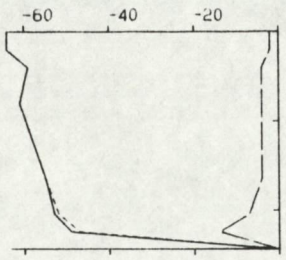
X : 55749.00 Y : 378963.00

DATUM : 891117 CODE. S0320

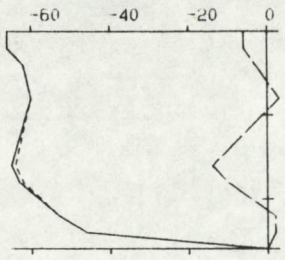
A3. 0002



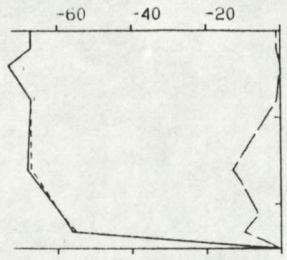
14.44 14.54 128
-51 -51 -4 9



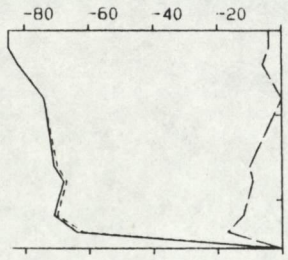
14.57 15.06 122
-55 -55 -5 8



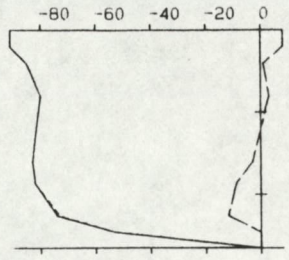
15.09 15.18 130
-58 -58 -4 9



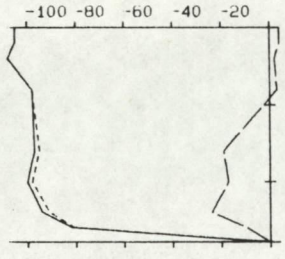
15.20 15.29 126
-63 -63 -5 8



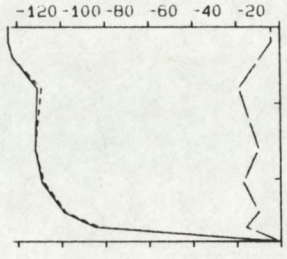
15.32 15.41 129
-71 -70 -7 7



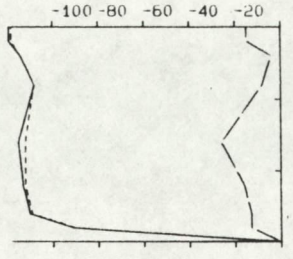
15.43 15.53 133
-77 -77 -1 12



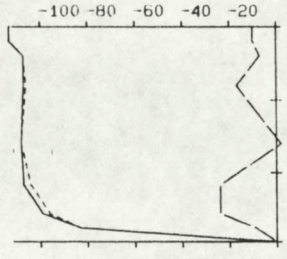
15.55 16.05 140
-94 -94 -9 8



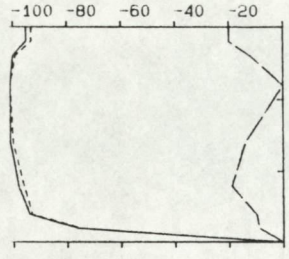
16.08 16.18 142
-106 -106 -12 6



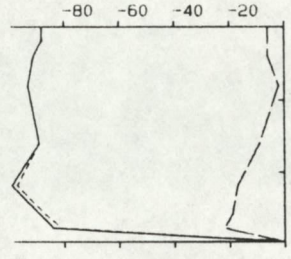
16.19 16.29 150
-107 -107 -14 5



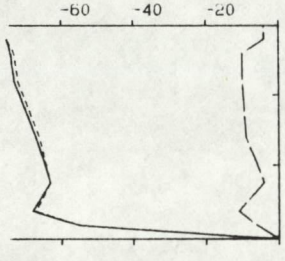
16.31 16.40 148
-101 -101 -12 6



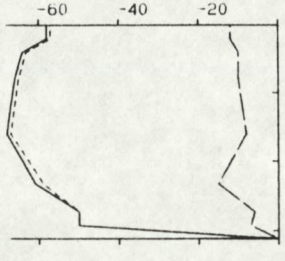
16.42 16.52 150
-94 -93 -11 6



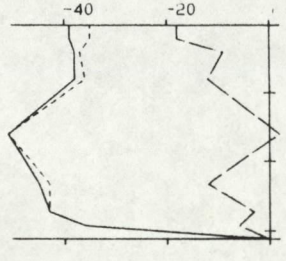
16.54 17.03 149
-88 -87 -10 7



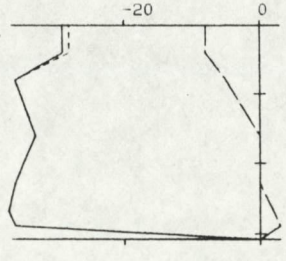
17.06 17.15 152
-66 -65 -8 6



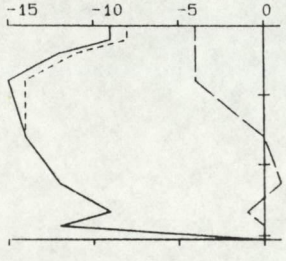
17.18 17.28 156
-60 -59 -10 4



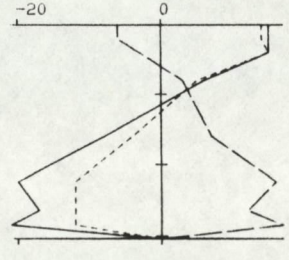
17.30 17.40 156
-41 -40 -7 3



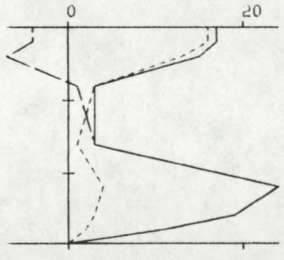
17.43 17.54 154
-33 -33 -2 9



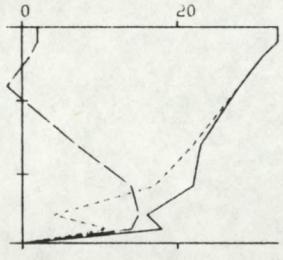
18.00 18.09 153
-12 -12 -1 6



18.12 18.21 152
-6 -1 6 93



18.22 18.31 149
8 5 6 140



18.34 18.43 148
22 21 6 177

TOELICHTING OP DE VERTIKALEN

——— V - - - - - - - - VSIN ——— — — VCOS

14.01 14.15 295 . BEGINTYD EINDTYD BODEMDIEPTE

100 10 92 265 . V VSIN VCOS R (GEM)

VERTIKALE SCHAAL . DIEPTE IN DM TOV WATEROPP.

HORIZONTALE SCHAAL: SNELHEDEN IN CM/S.

RIJKSWATERSTAAT
DIRECTIE ZEELAND
MEETDIENST

STROOMMETING . GAT VAN OSSENISSE

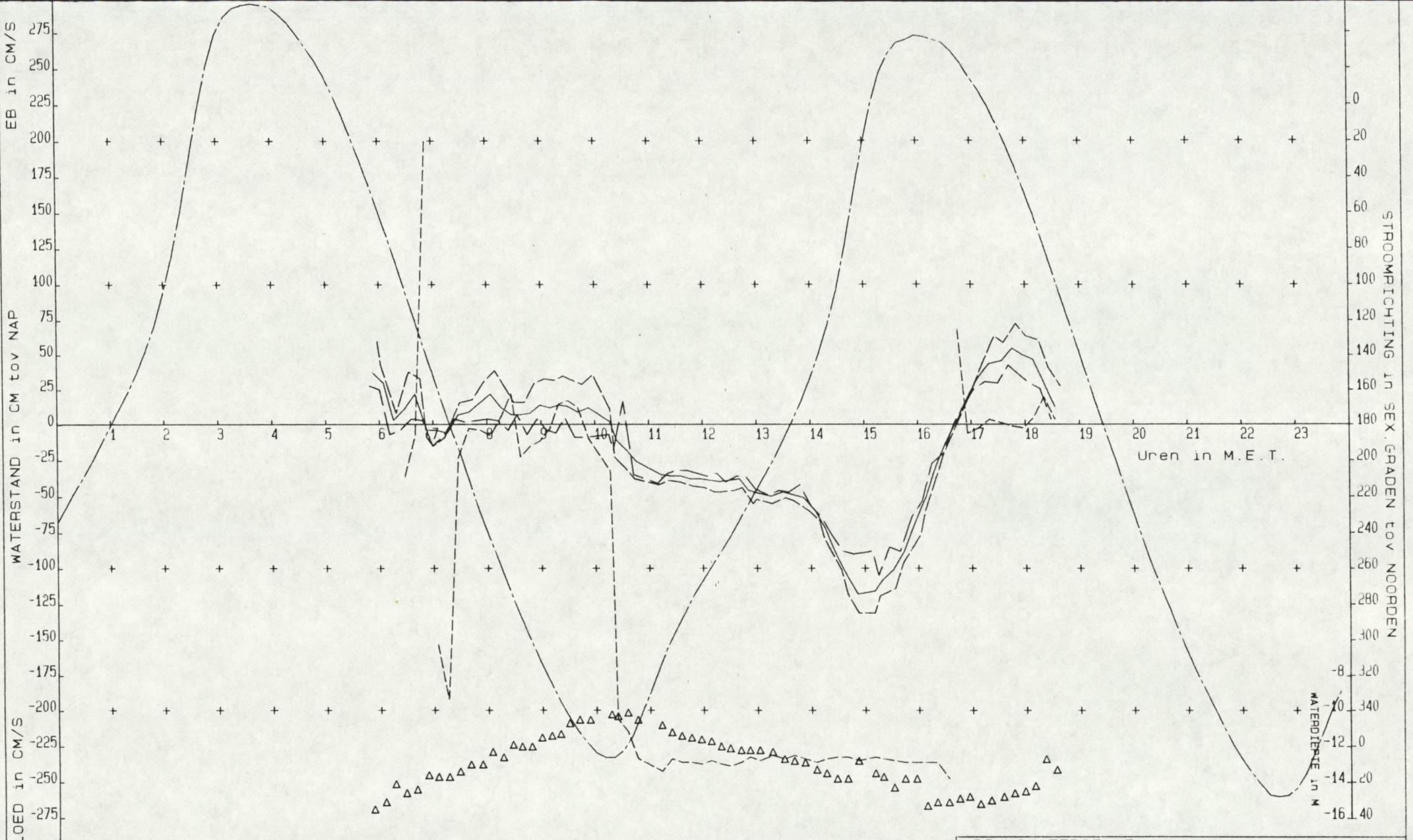
RAAI : NVT DEELRAAI : NVT PUNT . 1 LOKATIE : LOD1 (-104)

X : 55749.00 Y . 378963.00

DATUM : 891117 CODE. S0320

A3. 0003

Bijlage 6 : Stroomsnelheids- en stroomrichtingsgrafieken



WATERSTAND LOKATIE: HANS

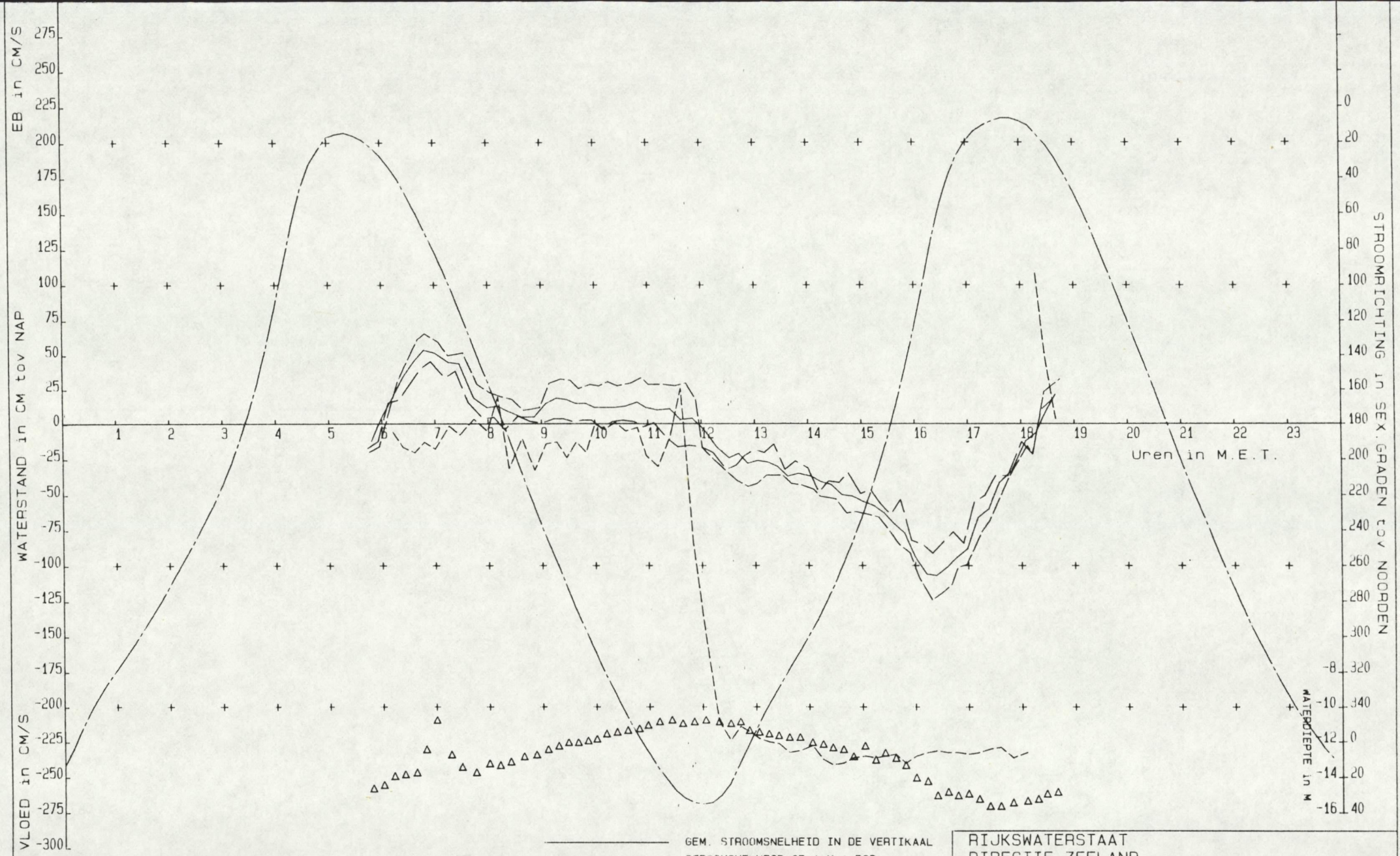
GEM. STROOMSNELHEID IN DE VERTIKAAL
STROOMSNELHEID OP 1 M + BOD
MAX. STROOMSNELHEID
GEM. STROOMRICHTING IN DE VERTIKAAL
WATERDIEPTE IN M

VOOR SITUATIE MEETPUNT ZIE TEK: A3

RIJKSWATERSTAAT
DIRECTIE ZEELAND
MEETDIENST

STROOMMETING . GAT VAN OSSENISSE
RAAI : NVT DEELRAAI . NVT PUNT : 1 LOKATIE . LOD1(-104)
X : 55749.00 Y . 378947.00
DATUM : 891115 CODE: S0320

A3 0001



VOOR SITUATIE MEETPUNT ZIE TEK. A3

RIJKSWATERSTAAT
DIRECTIE ZEELAND
MEETDIENST

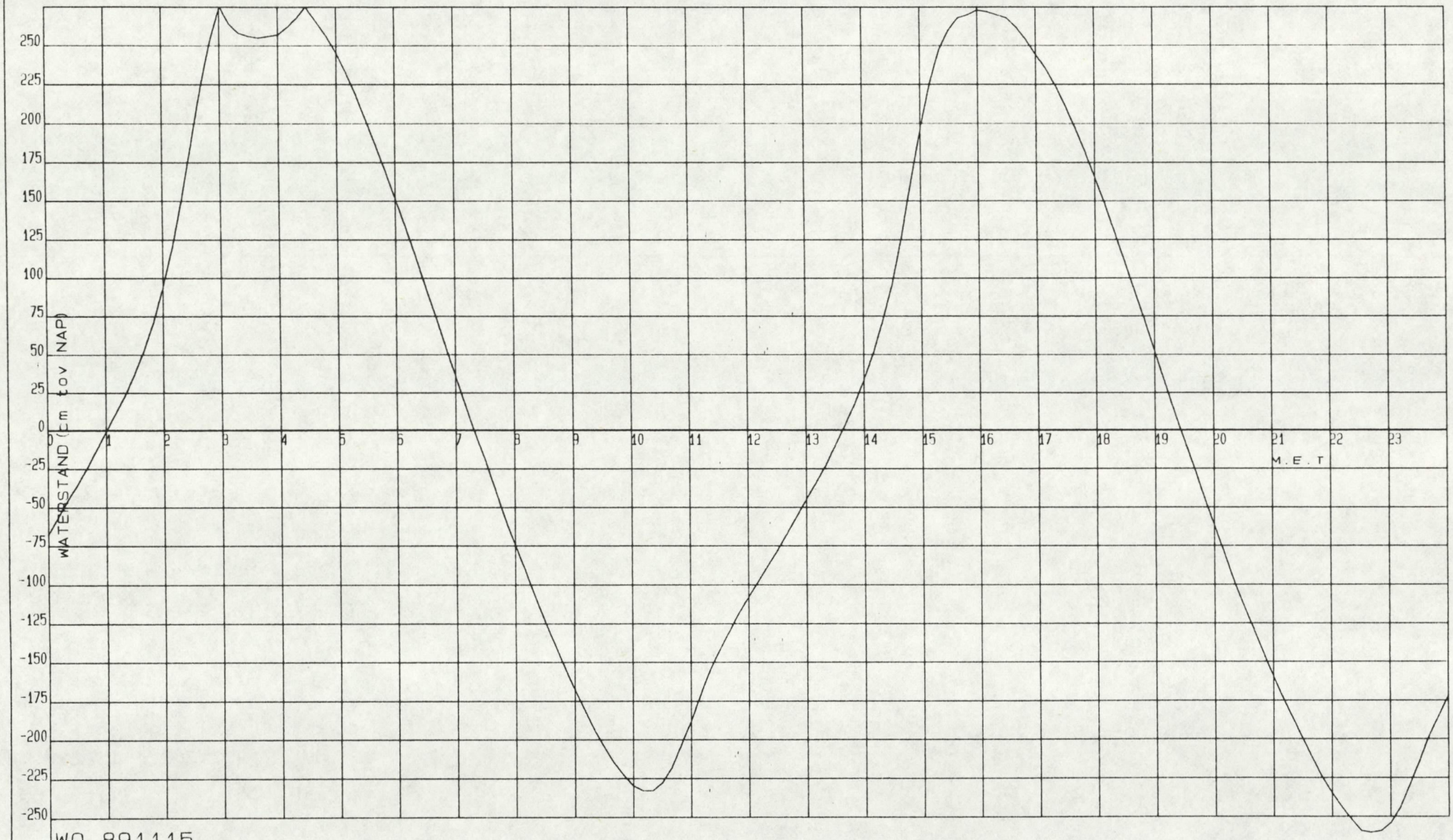
STROOMMETING : GAT VAN OSSENISSE
RAAI : NVT DEELRAAI . NVT PUNT : 1 LOKATIE : LOD1 (-104)
X : 55749.00 Y . 378963.00
DATUM : 891117 CODE: S0320

A3 0001

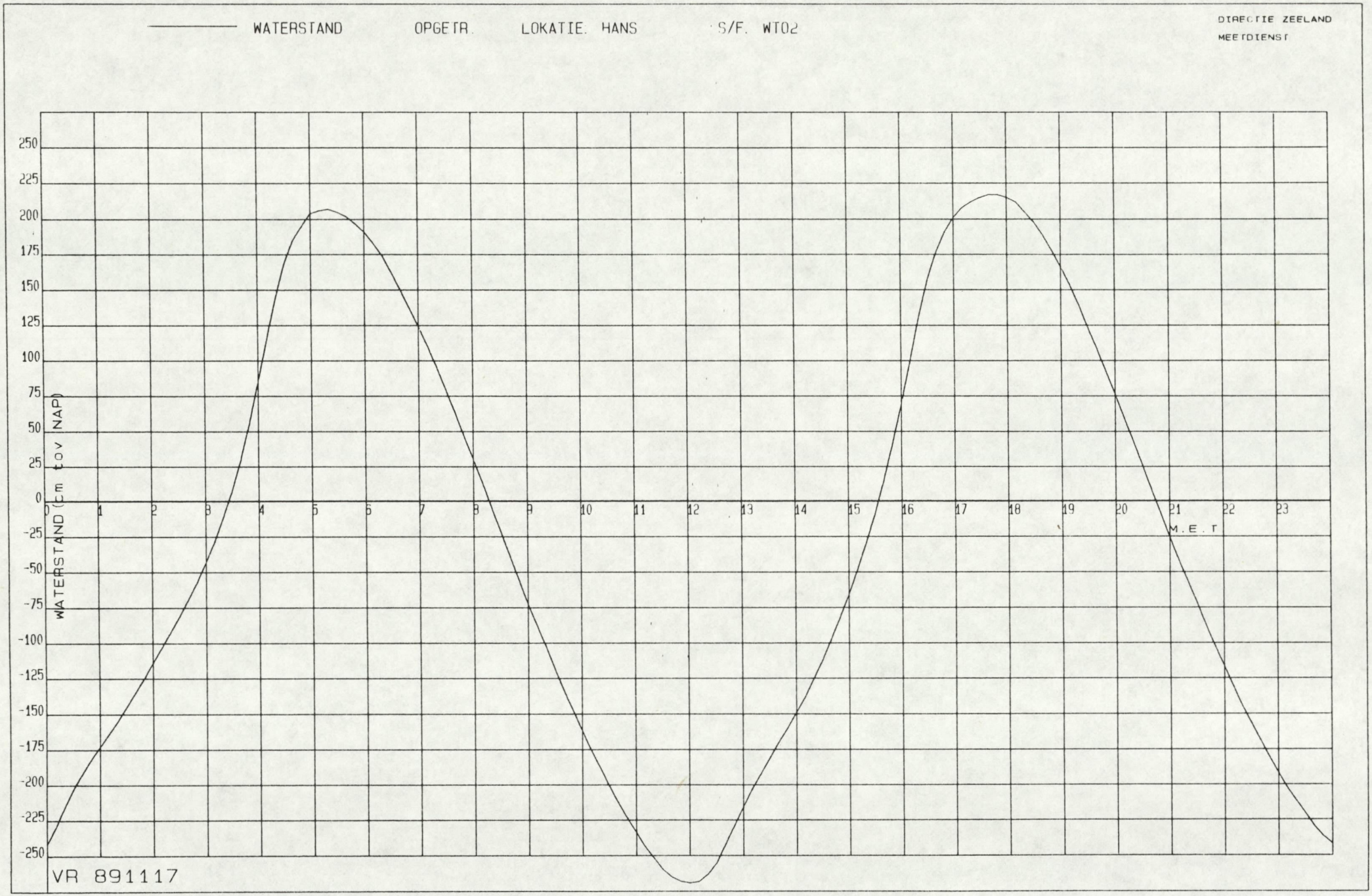
Bijlage 7 : Opgetreden getij Hansweert

WATERSTAND OPGETR. LOKATIE. HANS S/F. WT02

DIRECTIE ZEELAND
MEETDIENST



WO 891115


WATERSTAND OPGETR. LOKATIE. HANS S/F. WT02
DIRECTIE ZEELAND
MEETDIENST
250
225
200
175
150
125
100
75
50
25
0
-25
-50
-75
-100
-125
-150
-175
-200
-225
-250
WATERSTAND (cm tov NAP)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
M.E.T
VR 891117

/OV/VERTIKAAL /UIT

A L G P R - L I J S T -pag. 01- datum/tijd: 891212.1215

locatie: 120 oms: HANS (HANSWEERT)
soortf.: WT02 oms: WATERSTANDEN
kanalen: 1

891115

	00	10	20	30	40	50
00:	-68	-57	-46	-36	-25	-13
01:	-1	11	23	37	53	71
02:	94	120	151	187	222	252
03:	274	286	292	294	295	294
04:	293	288	282	274	265	256
05:	245	232	218	202	186	169
06:	151	133	114	94	75	55
07:	36	16	-3	-20	-39	-58
08:	-75	-91	-108	-124	-139	-154
09:	-168	-181	-194	-205	-215	-223
10:	-230	-233	-233	-228	-218	-203
11:	-188	-171	-155	-142	-130	-118
12:	-108	-98	-88	-78	-67	-56
13:	-45	-34	-23	-10	3	17
14:	33	51	72	96	127	162
15:	196	225	247	260	268	270
16:	273	272	270	268	262	254
17:	244	235	224	211	197	182
18:	165	148	129	110	91	72
19:	52	32	12	-7	-25	-44
20:	-62	-80	-98	-114	-129	-145
21:	-160	-174	-187	-200	-213	-225
22:	-235	-244	-252	-259	-260	-259
23:	-254	-244	-229	-214	-198	-185

/OV/VERTIKAAL./UIT1

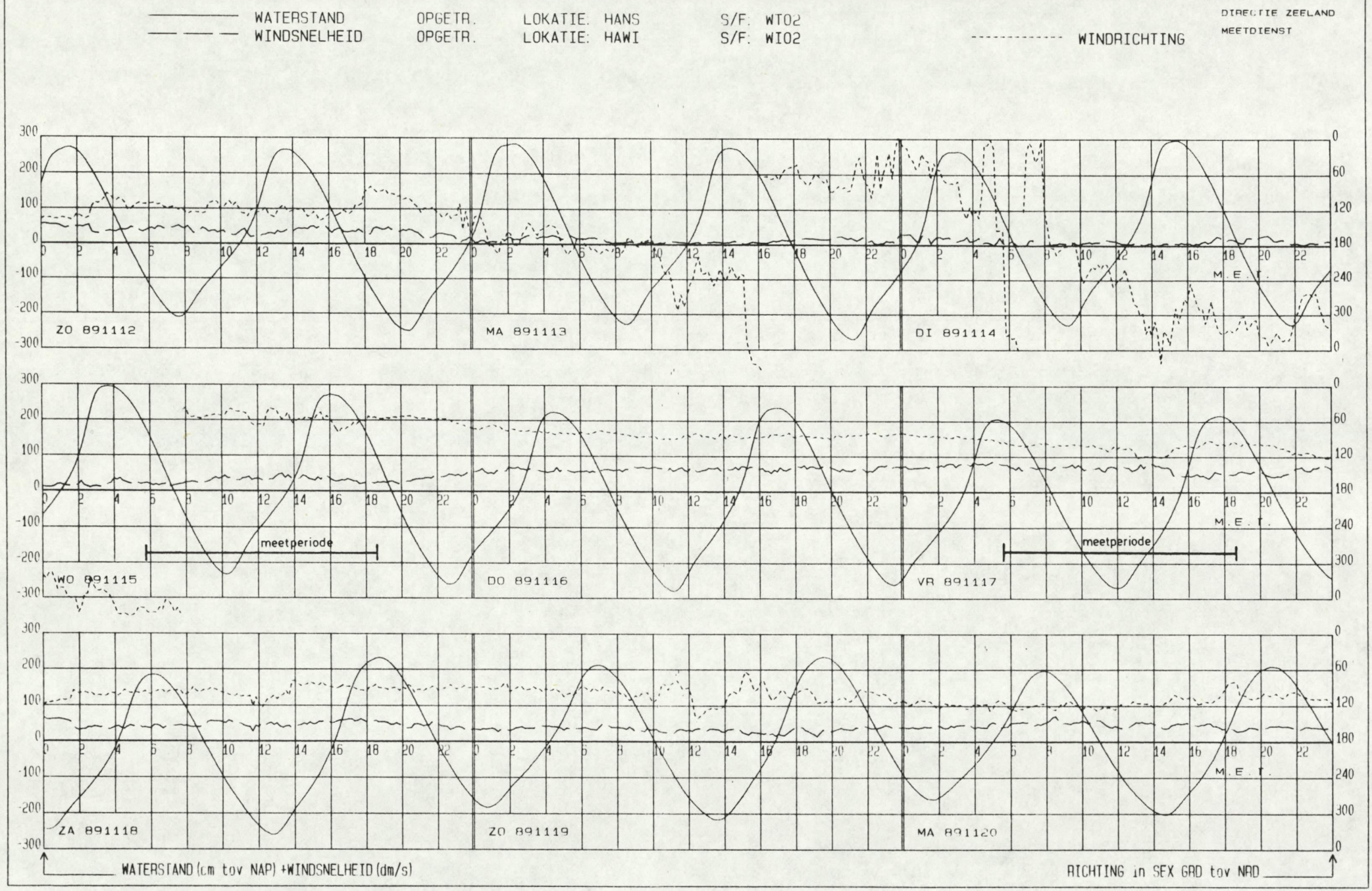
A L G P R - L I J S T -pag. 01- datum/tijd: 891212.1215

locatie: 120 oms: HANS (HANSWEERT)
soortf.: WT02 oms: WATERSTANDEN
kanalen: 1

891117

	00	10	20	30	40	50
00:	-242	-230	-216	-203	-192	-182
01:	-173	-164	-155	-145	-135	-125
02:	-114	-103	-92	-81	-69	-57
03:	-43	-28	-11	8	30	56
04:	85	115	144	168	185	195
05:	204	206	207	205	202	197
06:	191	183	174	162	150	137
07:	124	110	95	79	63	46
08:	30	13	-5	-22	-39	-56
09:	-73	-88	-103	-119	-134	-148
10:	-162	-176	-188	-201	-213	-224
11:	-234	-244	-252	-260	-265	-268
12:	-269	-268	-263	-255	-242	-229
13:	-216	-203	-192	-181	-170	-160
14:	-149	-138	-125	-112	-97	-82
15:	-66	-48	-29	-9	15	41
16:	69	99	130	156	176	191
17:	201	208	212	215	217	217
18:	215	212	205	198	189	178
19:	166	153	139	123	108	92
20:	76	59	43	26	8	-9
21:	-26	-42	-57	-72	-88	-103
22:	-117	-131	-145	-157	-169	-181
23:	-192	-203	-212	-221	-230	-237

Bijlage 8 : Getij- en windgegevens Hansweert


WATERSTAND OPGETR. LOKATIE: HANS S/F: WT02
WINDSNELHEID OPGETR. LOKATIE: HAWI S/F: WI02
WINDRICHTING
DIRECTIE ZEELAND
MEETDIENST
ZO 891112
MA 891113
DI 891114
WO 891115
DO 891116
VR 891117
ZA 891118
ZO 891119
MA 891120
meetperiode
meetperiode
M.E.T.
WATERSTAND (cm tov NAP) +WINDSNELHEID (dm/s)
RICHTING in SEX GRD tov NRD