

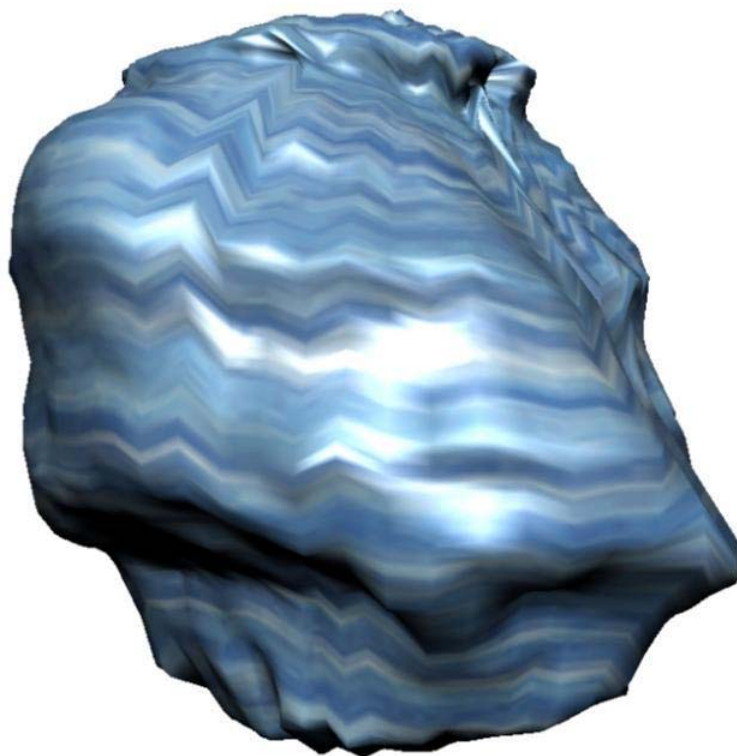
ECHO - LOG

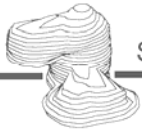
Harlingen Bas 3

2. Messung

06.08.2008

081 596





**Bericht über die Ergebnisse der
echometrischen Hohlraumvermessung
in der Kaverne**

Harlingen Bas 3

Datum: 06.08.2008

Berichtsnummer: 081 596

Auftraggeber: Frisia Zout B.V.

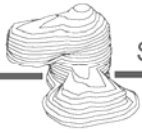
Verantwortlich für die Vermessung:

Messtechniker :

Truppleiter :

Auswertung :

Kontrolle:



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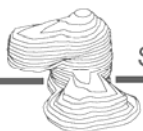
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Maxplot (schnitttrisslich)

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Zusammenfassung der Ergebnisse

Angaben zur Bohrung

Alle Teufenangaben sind:

MD-Angaben

Bezugsebene der Teufenangaben:

Erdoberfläche

Rohrstand der 11 3/4"-Verrohrung

3961.0 m

Rohrstand der 7"-Verrohrung
während der Messung:

3924.2 m

Bezugsteufe der Sonarvermessung:

3961.0 m

Angebrachte Teufenkorrektur:

6.5 m

Druck am Kavernenkopf:

150.0 bar

Angaben zum Messequipment

Eingesetztes Messfahrzeug:

L 103

Eingesetzte Messsonden:

Echosonde BSE 15, BSE 15
Dummysonde 1

Allgemeine Angaben zur Durchführung der Messung

Anzahl der Einfahrten:

2

Horizontal gemessene Echogramme:

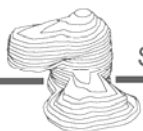
1

Gekippt gemessene Echogramme:

47

Tiefste Messposition:

3965.0 m

**Ausdehnungen bezogen auf die Messachse****Richtungsbezug:****Magnetisch Nord**

Ermittlung aus 36 Vertikalschnitten, abgeleitet aus Horizontal- und Kippdaten in 5°-Schritten:

minimaler Radius:	0.0 m
Teufe:	4057.3 m
Richtung:	0°

maximaler Radius:	62.0 m
Teufe:	4028.3 m
Richtung:	145°

höchster Punkt:	3951.6 m
Entfernung:	10.1 m
Richtung:	190°

tiefster Punkt:	4059.7 m
Entfernung:	18.5 m
Richtung:	220°

tiefster Punkt in der Messachse:	4057.3 m
----------------------------------	----------

Ermittlung aus 25 Horizontalschnitten zwischen 3955.0 m und 4055.0 m in 5°-Schritten:

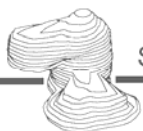
maximaler Radius:	61.7 m
Teufe:	4025.0 m
Richtung:	150°

maximaler Durchmesser:	114.5 m
Teufe:	4020.0 m
Richtung:	155 - 335°

Volumen

Volumen:	535 275.9 m³
----------	--------------

Teufenbereich:	3954.0 m <--> 4059.7 m
----------------	------------------------



Interpretation

Unter Voraussetzung eines geradlinigen Strahlenweges wurden die gemessenen Laufzeitdaten in Entfernungen mit der nachfolgend angegebenen Schallgeschwindigkeit umgerechnet:

1840.0 m/ in Sole (angenommen).

Wurden in einer Echospur mehrere Echos registriert, erfolgte die Auswahl des repräsentativen Echos entsprechend der Amplitudenhöhe, Laufzeit, Messpunktdichte und Kavernenform.

Horizontalschnitte

25 Horizontalschnitte in folgenden Teufen sind dem Bericht als grafische Ausgaben beigelegt:

3955.0 m	3957.5 m	3960.0 m	3962.5 m	3965.0 m	3967.5 m	3970.0 m
3975.0 m	3980.0 m	3985.0 m	3990.0 m	3995.0 m	4000.0 m	4005.0 m
4010.0 m	4015.0 m	4020.0 m	4025.0 m	4030.0 m	4035.0 m	4040.0 m
4045.0 m	4050.0 m	4052.5 m	4055.0 m			

Kippschnitte

47 Kippschnitte in folgenden Messteufen sind in den Vertikalschnitten dargestellt:

18 Schnitte mit aufwärts gerichtetem Ultraschallwandler:

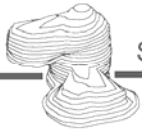
Teufe / Kippwinkel

3965.0 / 2	3965.0 / 6	3965.0 / 9	3965.0 / 11	3965.0 / 15	3965.0 / 18
3965.0 / 21	3965.0 / 24	3965.0 / 29	3965.0 / 36	3965.0 / 41	3965.0 / 48
3965.0 / 53	3965.0 / 59	3965.0 / 66	3965.0 / 71	3965.0 / 78	3965.0 / 84

29 Schnitte mit abwärts gerichtetem Ultraschallwandler:

Teufe / Kippwinkel

3965.0 / 3	3965.0 / 6	3965.0 / 8	3965.0 / 11	3965.0 / 15	3965.0 / 17
3965.0 / 22	3965.0 / 24	3965.0 / 27	3965.0 / 29	3965.0 / 32	3965.0 / 36
3965.0 / 39	3965.0 / 42	3965.0 / 45	3965.0 / 48	3965.0 / 51	3965.0 / 54
3965.0 / 57	3965.0 / 60	3965.0 / 63	3965.0 / 66	3965.0 / 69	3965.0 / 72
3965.0 / 75	3965.0 / 78	3965.0 / 81	3965.0 / 84	3965.0 / 87	



Vertikalschnitte

Durch gemeinsame Interpretation aller richtungsbezogenen Daten wurde der Verlauf der Kavernenwand ermittelt und in 36 Vertikalschnitten dargestellt.

Maxplots (grundrisslich)

Die erste Abbildung im Abschnitt Horizontalschnitte zeigt die Flächen aller Horizontalschnitte und die durch die Vertikalschnitte gebildete Fläche (schraffiert). Die resultierende Gesamtfläche ist in der zweiten Abbildung dargestellt (Kreuzschraffur), wobei zur Übersicht die größte Einzelfläche miteingeblendet wird.

Der aus der Umhüllenden (Verbindungsline der größten horizontalen Kavernenausdehnung in jeder Messrichtung) ermittelte Gesamtschwerpunkt der Kaverne ist in beiden Abbildungen mit Entfernungs- und Richtungsangabe bezüglich der Messachse eingezeichnet.

Perspektivansichten

Zur besseren Übersicht enthält dieser Bericht diverse Perspektivansichten.

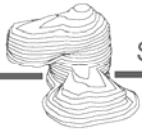
Einblendung von Daten aus älteren Messungen

Liegen für einzelne Messteufen Daten älterer Messungen vor, sind diese zur Hervorhebung von Veränderungen mit einer anderen Signatur in den entsprechenden Anlagen dargestellt.

Hintersolungen

Mit geneigtem Messkopf festgestellte Hintersolungen wurden anhand der Vertikalschnitte in die entsprechenden Horizontalschnitte übertragen.

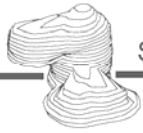
Die ermittelten Zusatzflächen sind zu den bereits erfassten Flächen addiert worden.



LOG - Daten

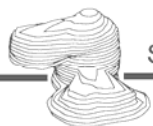
Am Ende des Berichtes sind die grafischen Ausgaben folgender KOMBI - LOG - Daten zusammengefasst:

Parameter	von	bis
Temperatur:	3860.9 m	3967.2 m
Gamma:	3860.5 m	3966.8 m
CCL:	3860.6 m	3966.9 m



LEGENDE

-  Messwert, ermittelt mit horizontal ausgerichtetem Ultraschallwandler
-  Messwert, ermittelt mit ausgekipptem Ultraschallwandler
-  konstruierter Wert, aus Vertikalschnitten abgeleitet
-  Verbindungslinie zwischen zwei Messwerten zur Berechnung des Volumens
-  angenommener Verlauf (in Bereichen, die nicht ausreichend durch Messwerte belegt sind)
- N** Magnetisch Nord mit Sondenkompass ermittelt
(Magnetkompass im unverrohrten Bereich)
(Faserkreiselkompass im verrohrten Bereich)
- (N)** Angenommene Nordrichtung (Messung im magnetisch gestörten Umfeld ohne Faserkreiselkompass)
- a** größte Ausdehnung im Schnitt
(ohne Berücksichtigung von Hintersolungsflächen)
- b** größte zu a senkrechte Ausdehnung
(ohne Berücksichtigung von Hintersolungsflächen)
- a/b** Verhältnis der größten zueinander senkrechten Ausdehnungen im Schnitt
- (+ xx m²)** Hintersolungsfläche im aktuellen Horizontalschnitt
- r~** mittlerer Radius



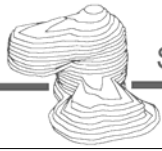
Volumenliste

Kaverne: Harlingen Bas 3

081596

06.08.2008

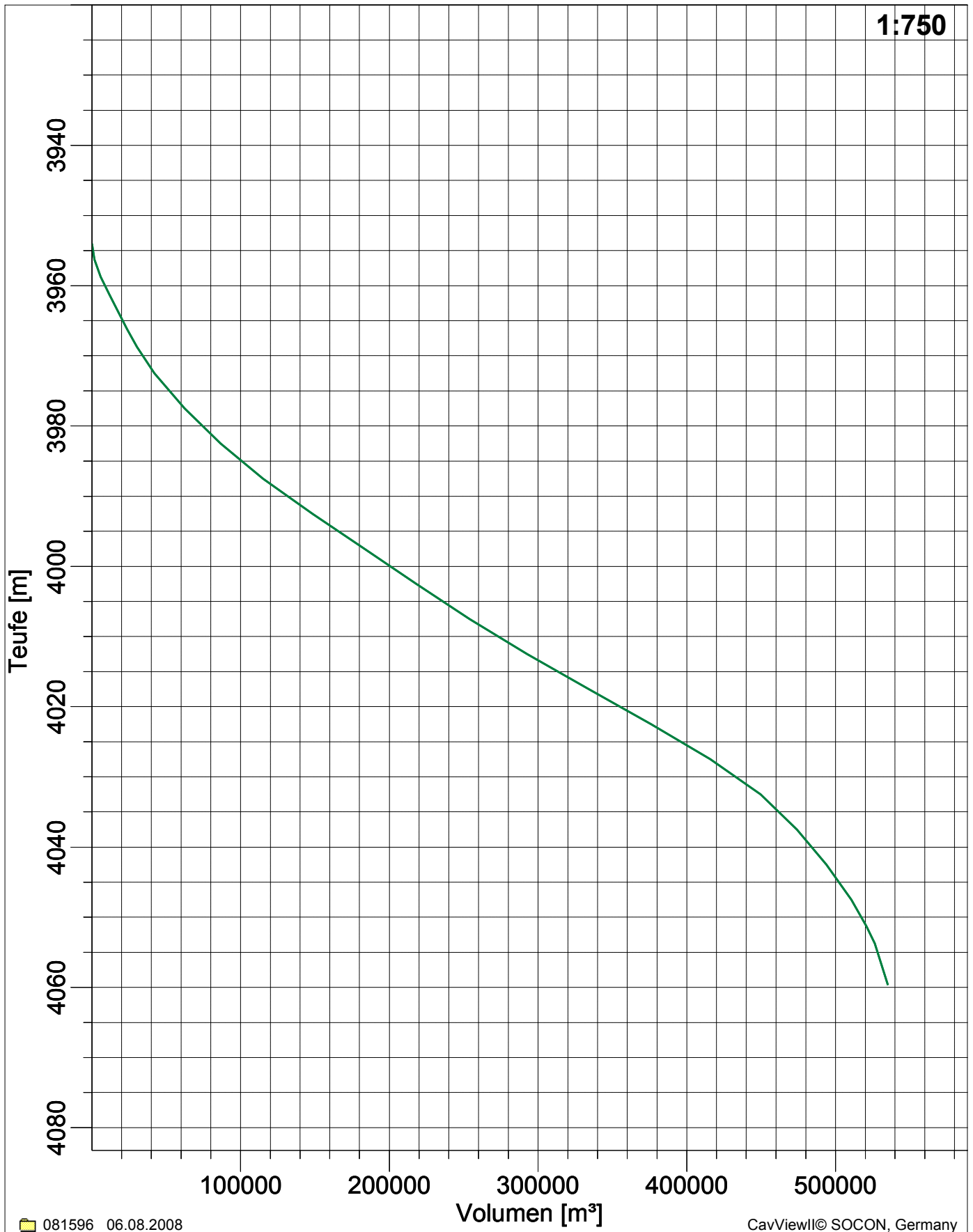
Tiefe [m]	Radius [m]	Fläche [m²]	Tiefenbereich [m]		Volumen [m³]	
			von	bis	partial	gesamt
3955,0	15,7	773,9	3954,00	3956,25	1741,2	1741,2
3957,5	23,1	1674,4	3956,25	3958,75	4186,0	5927,3
3960,0	27,4	2355,2	3958,75	3961,25	5888,1	11815,3
3962,5	27,4	2360,1	3961,25	3963,75	5900,4	17715,7
3965,0	27,7	2407,9	3963,75	3966,25	6019,8	23735,5
3967,5	28,9	2616,8	3966,25	3968,75	6541,9	30277,4
3970,0	31,5	3119,3	3968,75	3972,50	11697,5	41974,9
3975,0	36,0	4064,1	3972,50	3977,50	20320,5	62295,4
3980,0	39,3	4856,2	3977,50	3982,50	24281,0	86576,4
3985,0	42,6	5707,2	3982,50	3987,50	28536,2	115112,6
3990,0	46,0	6653,9	3987,50	3992,50	33269,6	148382,2
3995,0	47,2	6988,4	3992,50	3997,50	34942,1	183324,3
4000,0	47,0	6930,7	3997,50	4002,50	34653,6	217977,9
4005,0	47,9	7207,5	4002,50	4007,50	36037,3	254015,2
4010,0	49,6	7733,1	4007,50	4012,50	38665,5	292680,7
4015,0	51,3	8254,3	4012,50	4017,50	41271,6	333952,4
4020,0	51,7	8397,6	4017,50	4022,50	41987,8	375940,2
4025,0	50,4	7983,4	4022,50	4027,50	39916,9	415857,1
4030,0	46,4	6750,5	4027,50	4032,50	33752,4	449609,4
4035,0	39,4	4879,2	4032,50	4037,50	24396,2	474005,6
4040,0	35,6	3977,1	4037,50	4042,50	19885,6	493891,2
4045,0	32,6	3331,6	4042,50	4047,50	16658,0	510549,2
4050,0	29,4	2709,7	4047,50	4051,25	10161,3	520710,5
4052,5	26,8	2264,7	4051,25	4053,75	5661,7	526372,1
4055,0	21,8	1496,4	4053,75	4059,70	8903,8	535275,9



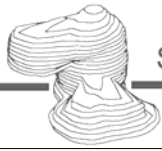
Harlingen Bas 3

GESAMTVOLUMEN

06.08.2008



Gesamtvolumen = 535275.9 m³

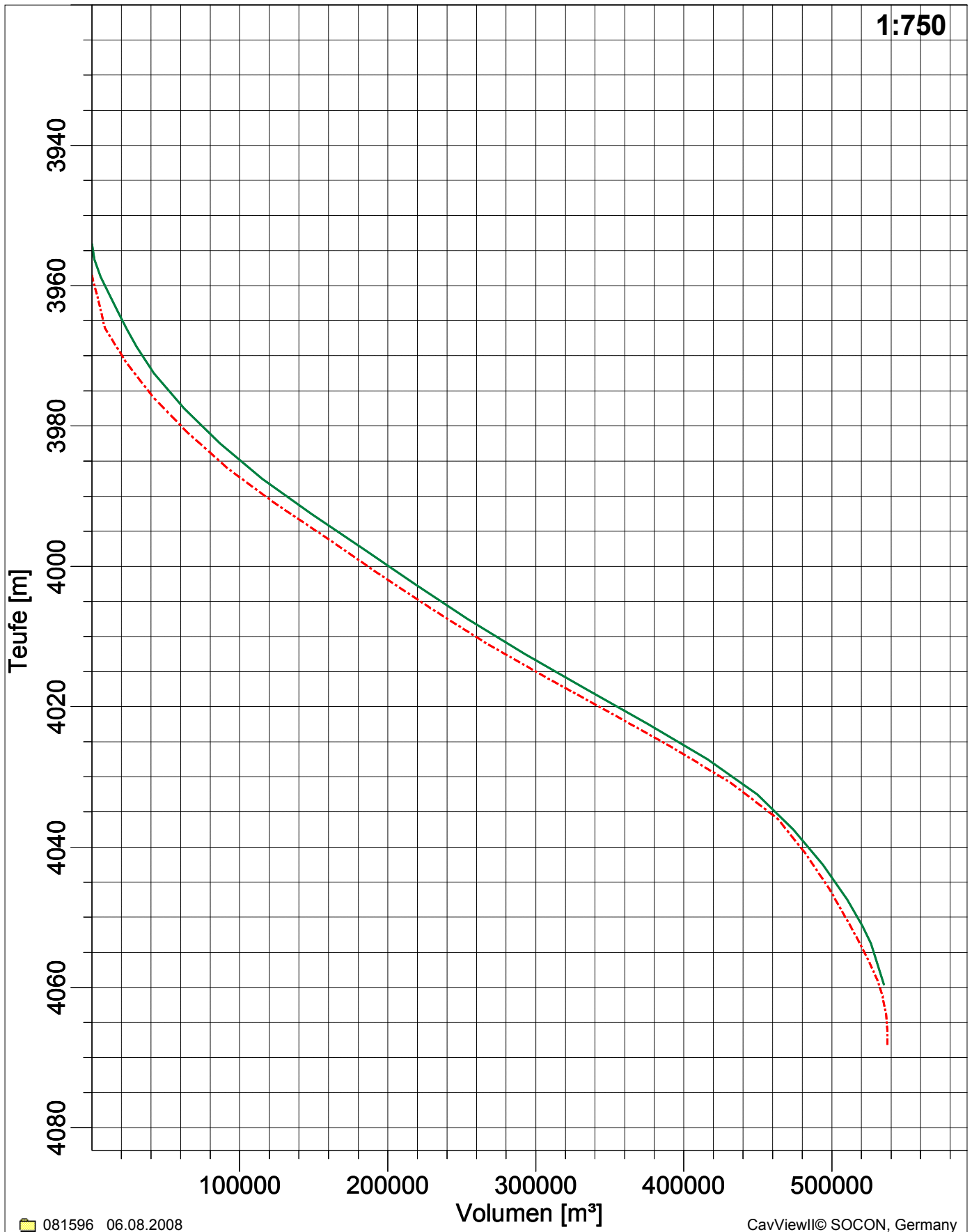


Harlingen Bas 3

GESAMTVOLUMEN

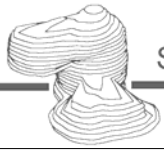
06.08.2008

1:750



— Gesamtvolumen = 535275.9 m³

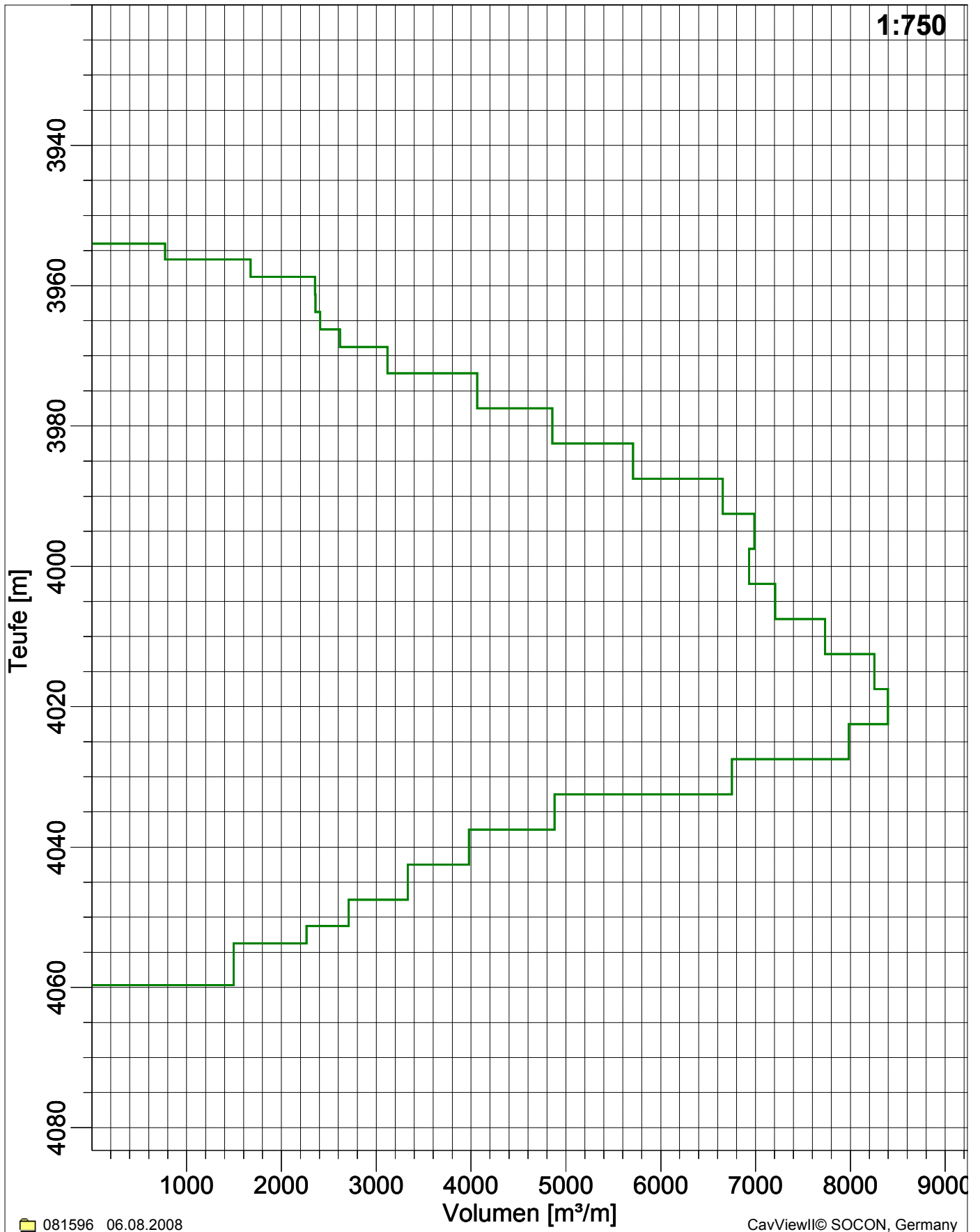
- - - Gesamtvolumen = 537761.0 m³ (22.02.2008)



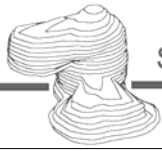
Harlingen Bas 3

PARTIALVOLUMEN

06.08.2008



Partialvolumen

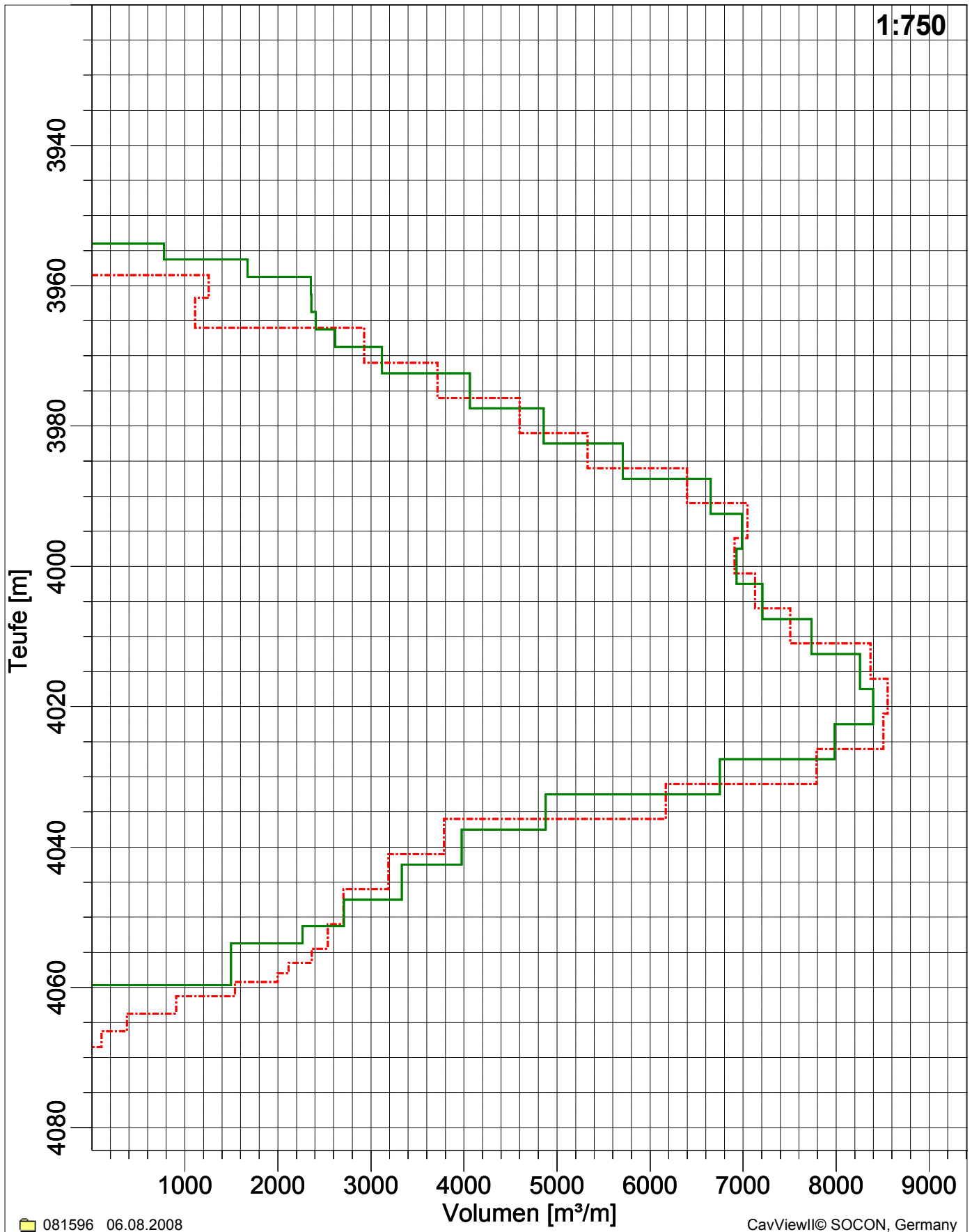


Harlingen Bas 3

PARTIALVOLUMEN

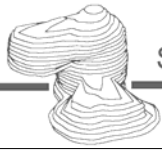
06.08.2008

1:750



Partialvolumen

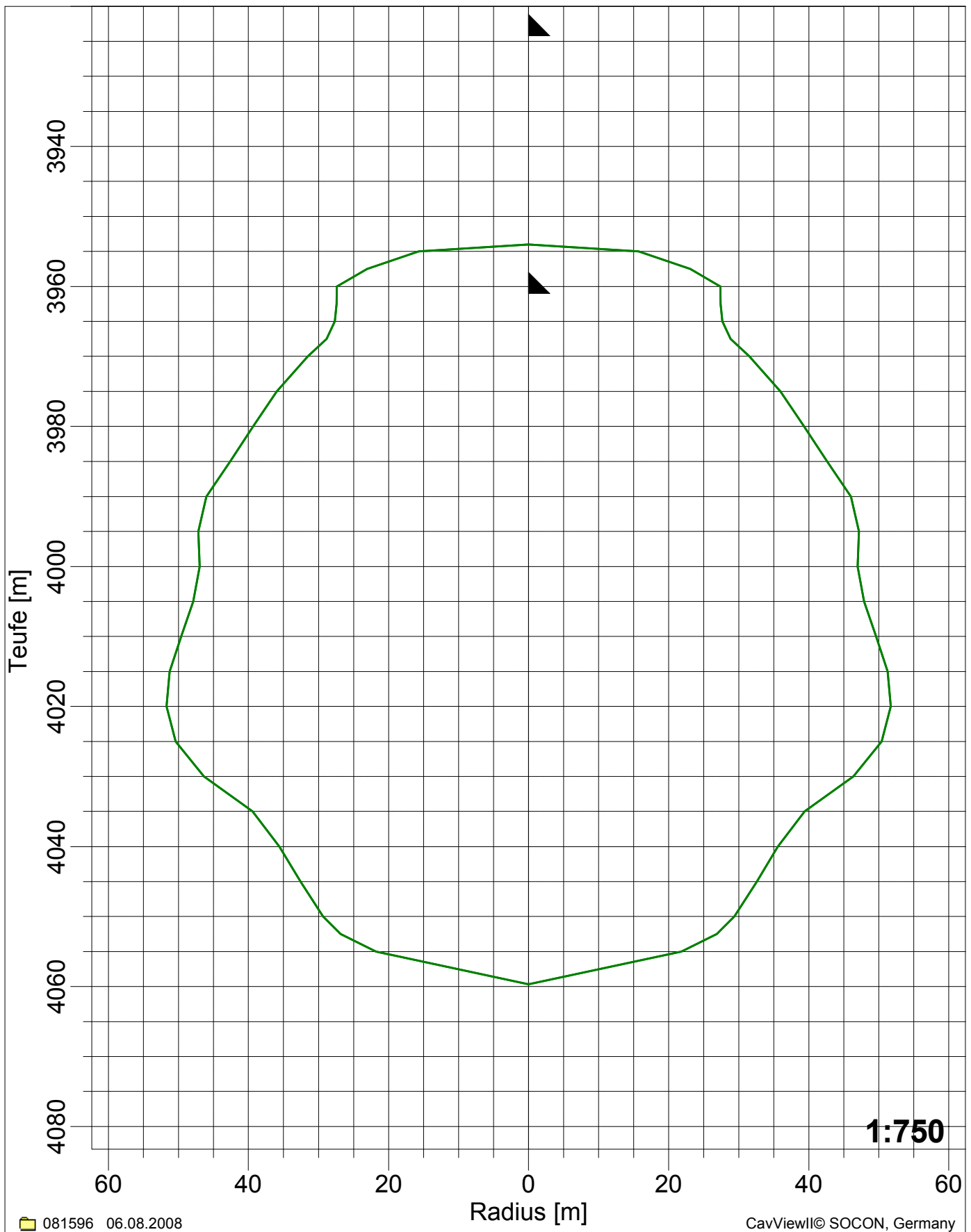
Partialvolumen (22.02.2008)



Harlingen Bas 3

MITTLERER RADIUS

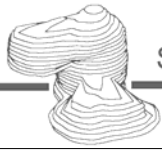
06.08.2008



— Mittlerer Radius (06.08.2008)

▲ 11 3/4" : 3961.0 m

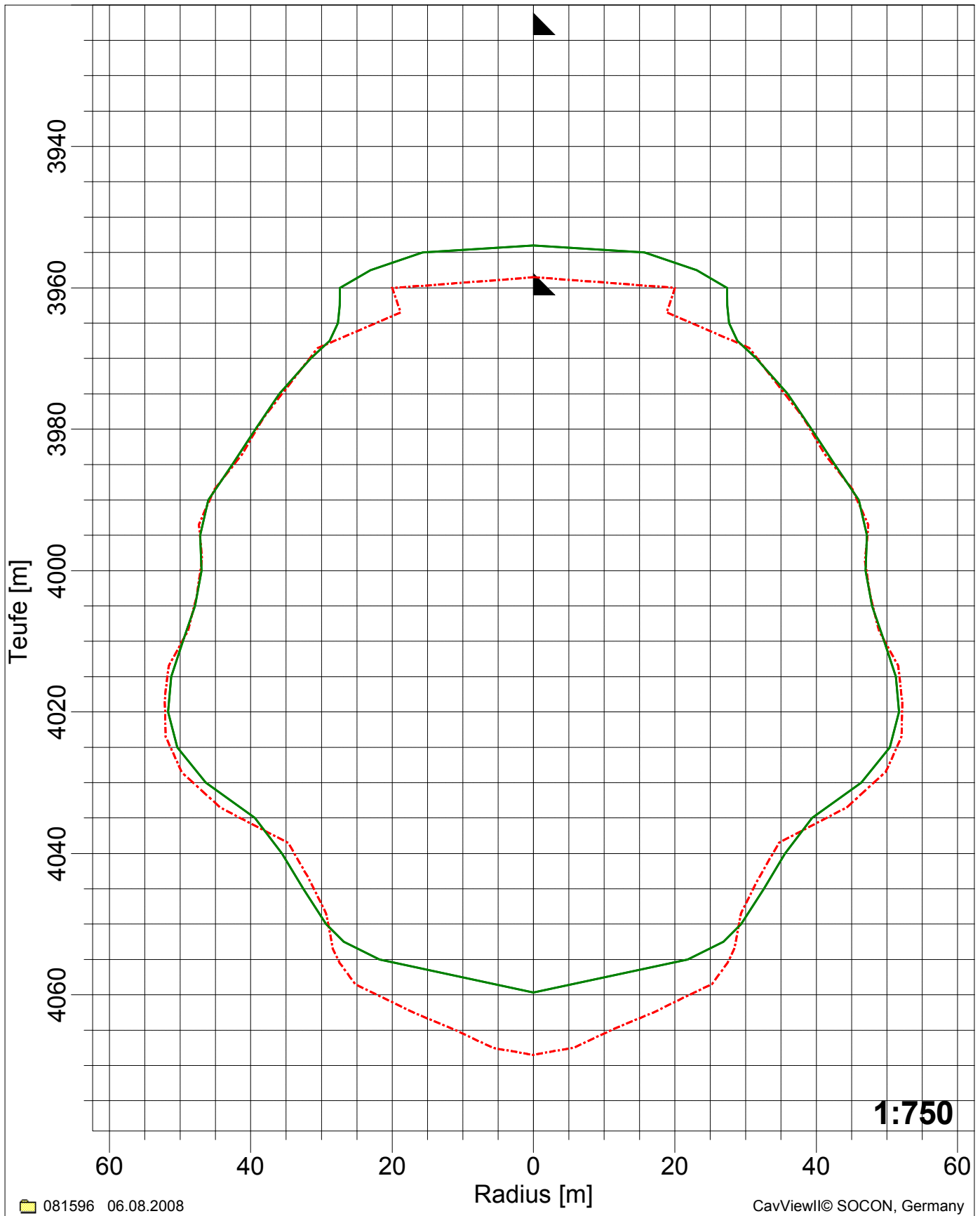
▲ 7" : 3924.2 m



Harlingen Bas 3

MITTLERER RADIUS

06.08.2008



081596 06.08.2008

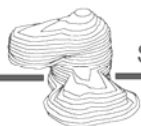
CavViewII© SOCON, Germany

— Mittlerer Radius (06.08.2008)

- - - Mittlerer Radius (22.02.2008)

▲ 11 3/4" : 3961.0 m

▲ 7" : 3924.2 m



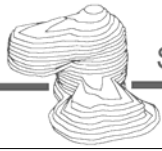
Radien- und Durchmesserertabelle

Kaverne: Harlingen Bas 3

081596

06.08.2008

Tiefe [m]	Radius [MIN]		Radius [MAX]		Durchmesser [MIN]		[MAX]	
	[m]	[°]	[m]	[°]	[m]	[°]	[m]	[°]
3955,0	7,2	130	28,9	275	17,3	76 <-> 256	39,8	100 <-> 280
3957,5	13,2	75	37,4	280	32,6	170 <-> 350	51,6	100 <-> 280
3960,0	14,2	125	43,0	265	44,7	0 <-> 180	59,4	100 <-> 280
3962,5	11,6	130	43,0	250	42,7	130 <-> 310	59,4	80 <-> 260
3965,0	14,2	135	44,6	255	42,4	7 <-> 187	63,5	75 <-> 255
3967,5	15,8	115	46,1	250	43,5	5 <-> 185	67,7	70 <-> 250
3970,0	17,4	145	51,8	245	47,3	170 <-> 350	75,3	65 <-> 245
3975,0	21,1	130	57,6	230	57,6	155 <-> 335	82,9	65 <-> 245
3980,0	24,5	130	59,6	235	65,4	165 <-> 345	88,9	60 <-> 240
3985,0	27,1	135	61,0	230	72,9	155 <-> 335	92,8	50 <-> 230
3990,0	32,1	120	61,6	225	81,1	140 <-> 320	98,6	40 <-> 220
3995,0	34,8	98	59,7	225	86,1	140 <-> 320	98,5	40 <-> 220
4000,0	33,9	100	58,7	220	88,0	140 <-> 320	95,8	165 <-> 345
4005,0	34,2	105	59,4	290	89,8	140 <-> 320	99,9	175 <-> 355
4010,0	35,3	102	61,4	300	92,9	65 <-> 245	105,8	160 <-> 340
4015,0	37,3	100	61,6	295	94,2	62 <-> 242	112,6	160 <-> 340
4020,0	38,9	110	60,8	155	95,4	60 <-> 240	114,5	155 <-> 335
4025,0	38,9	105	61,7	150	90,6	30 <-> 210	113,0	150 <-> 330
4030,0	35,1	40	60,0	145	77,9	49 <-> 229	109,2	145 <-> 325
4035,0	29,1	40	53,7	145	64,5	49 <-> 229	95,5	150 <-> 330
4040,0	24,3	40	48,7	145	58,5	50 <-> 230	87,3	145 <-> 325
4045,0	19,8	45	45,6	145	52,3	45 <-> 225	81,7	145 <-> 325
4050,0	14,8	36	40,5	150	45,5	40 <-> 220	73,8	140 <-> 320
4052,5	10,3	35	38,0	275	40,1	40 <-> 220	65,1	140 <-> 320
4055,0	3,7	30	35,5	195	32,7	115 <-> 295	54,4	140 <-> 320

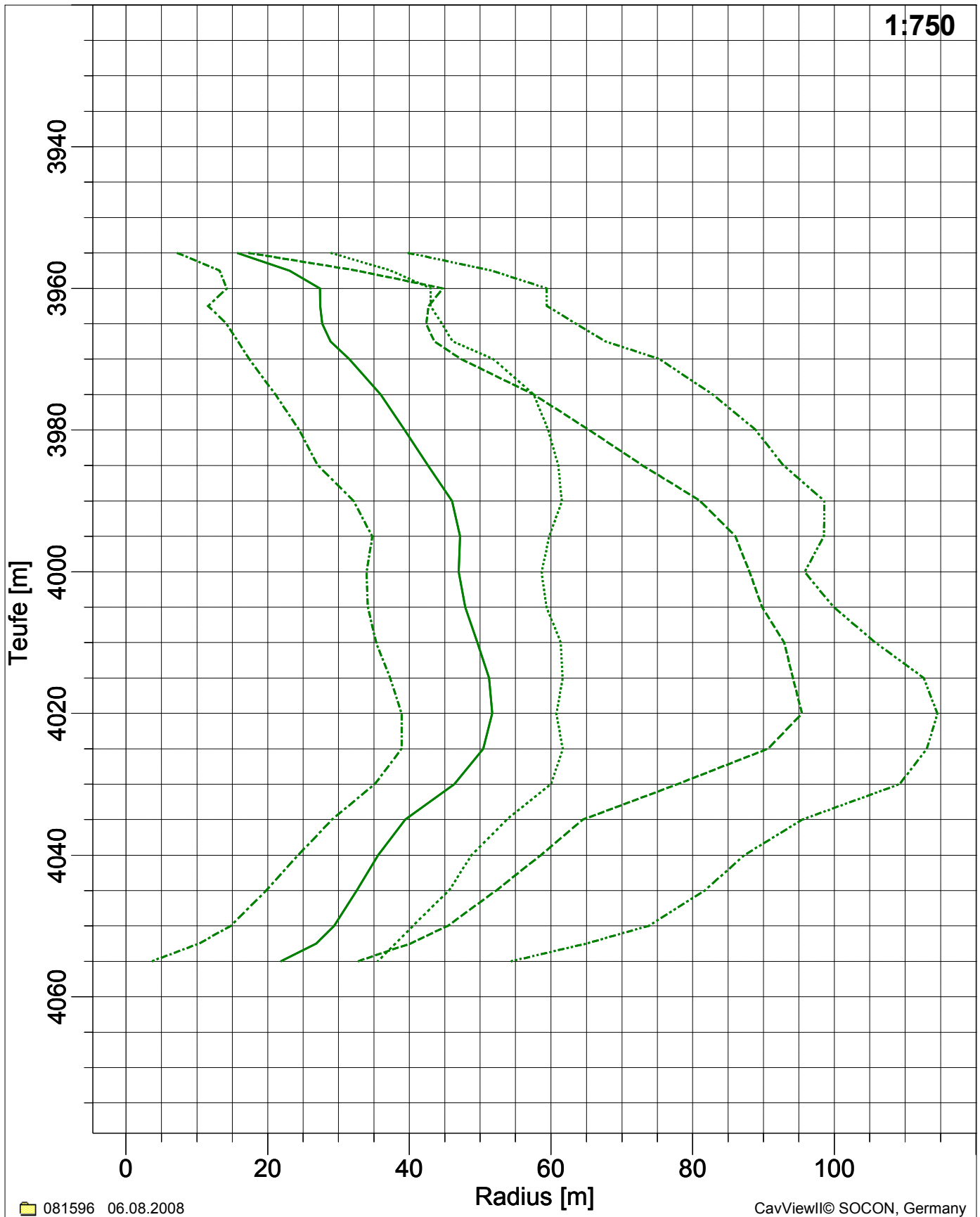


Harlingen Bas 3

RADIEN / DURCHMESSER

06.08.2008

1:750



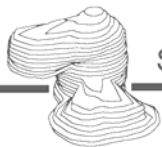
— Mittlerer Radius

- - - Minimaler Radius

... Maximaler Radius

- - - Minimaler Durchmesser

... Maximaler Durchmesser

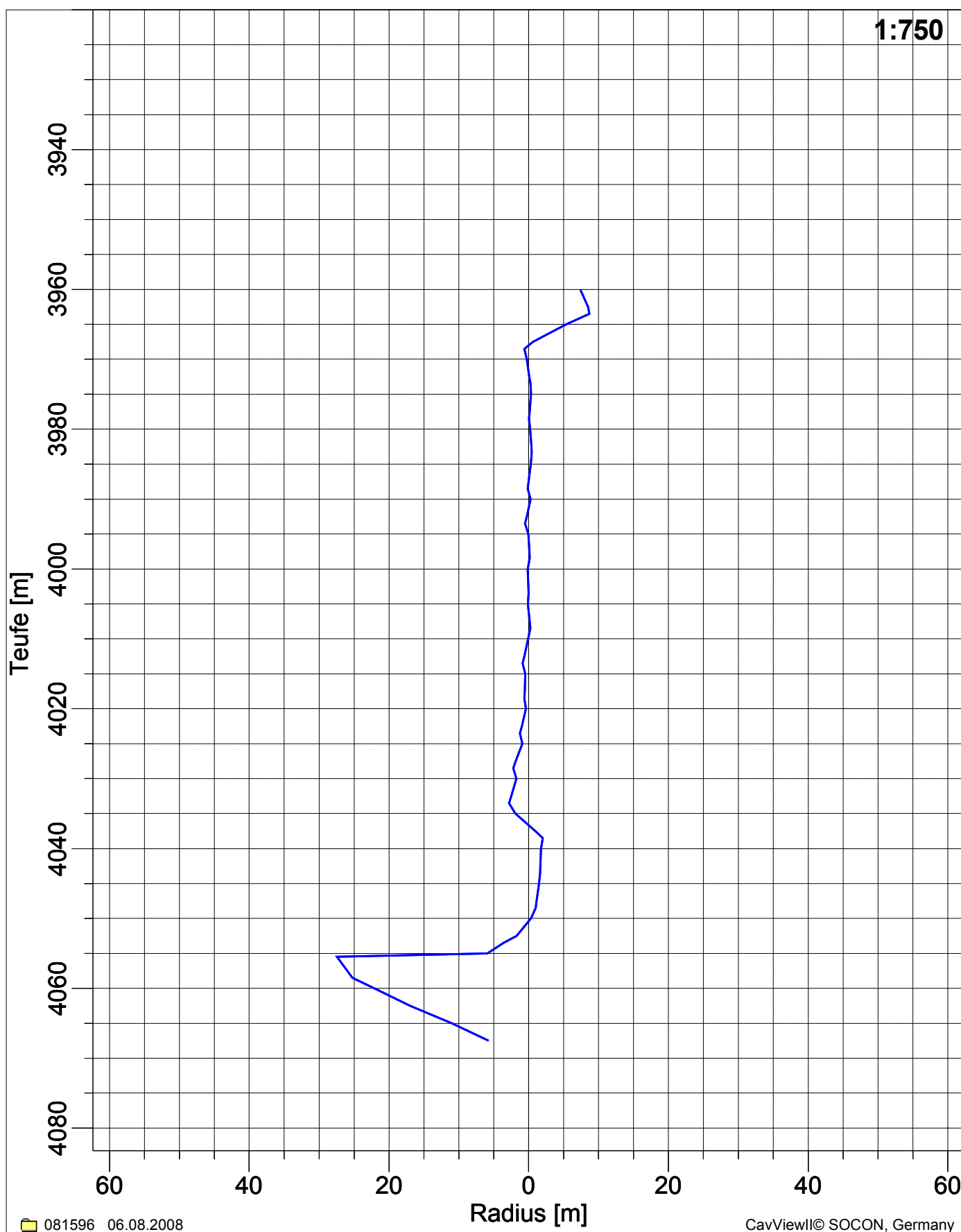


Harlingen Bas 3

Radiendifferenzen

06.08.2008

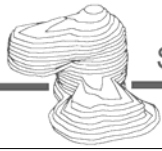
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081596 06.08.2008

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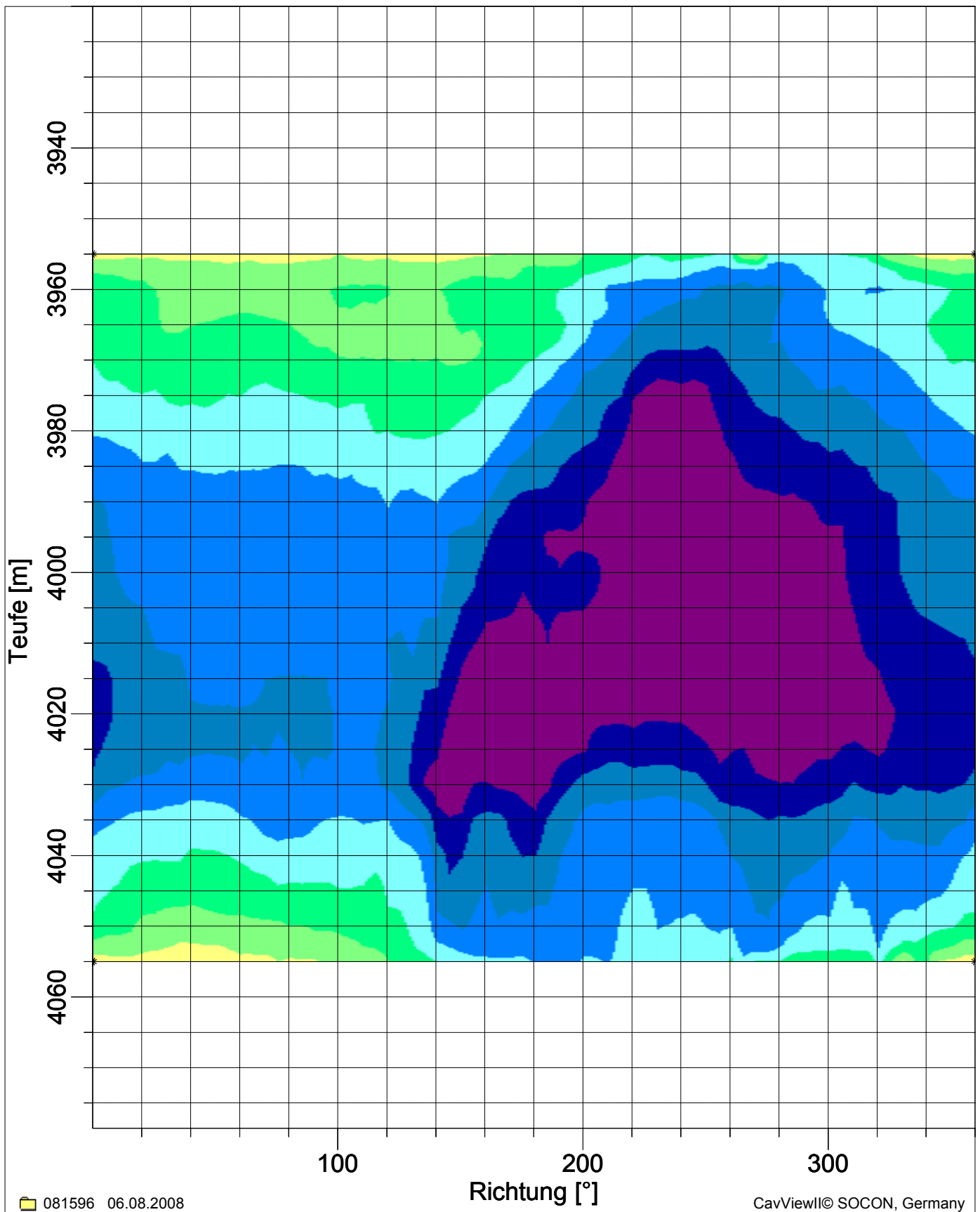
— Differenz - Mittlerer Radius (06.08.2008/22.02.2008)



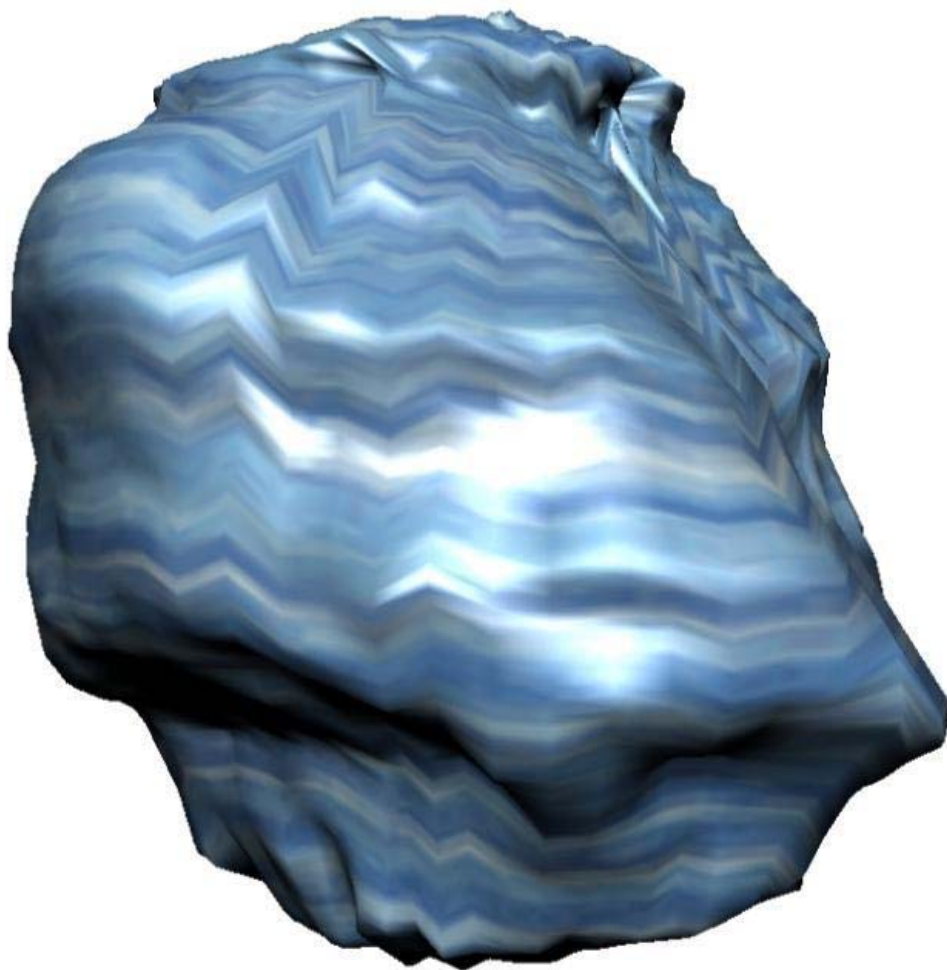
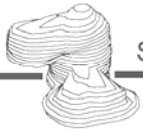
Harlingen Bas 3

RADIENABWICKLUNG

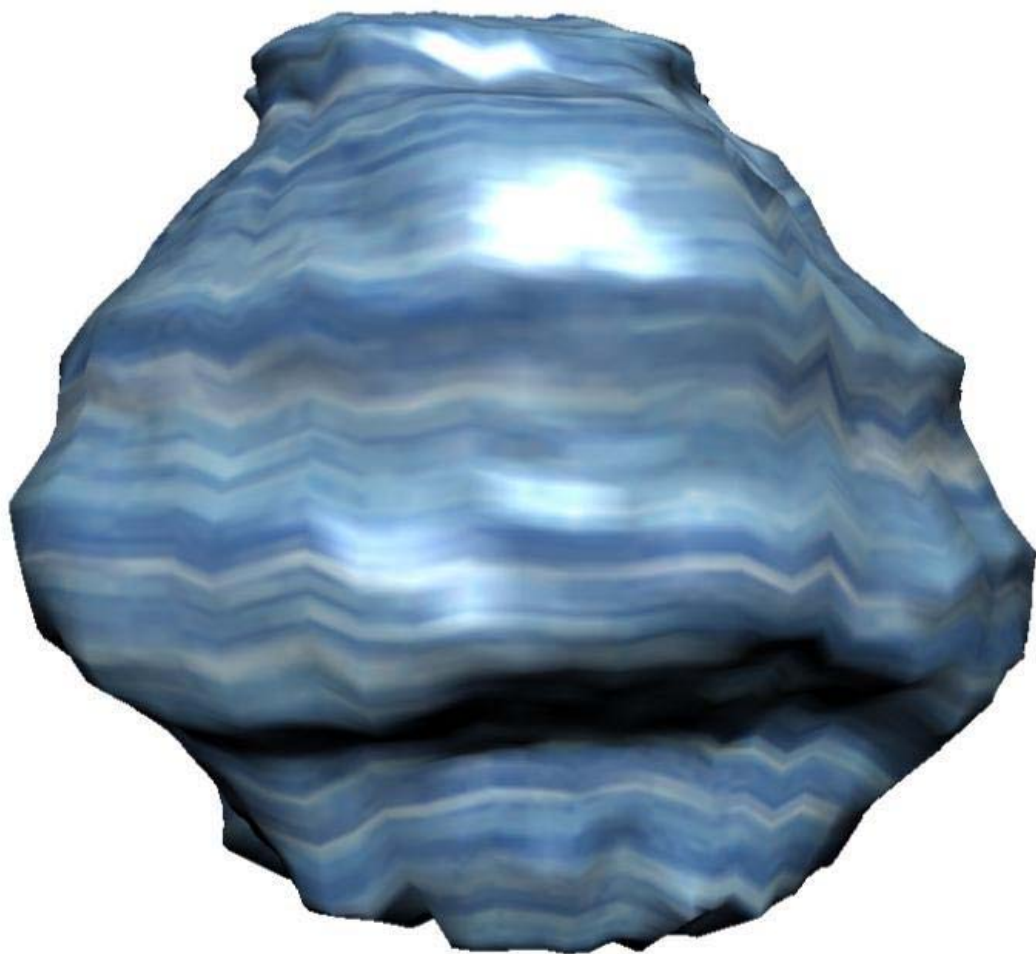
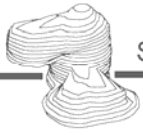
06.08.2008



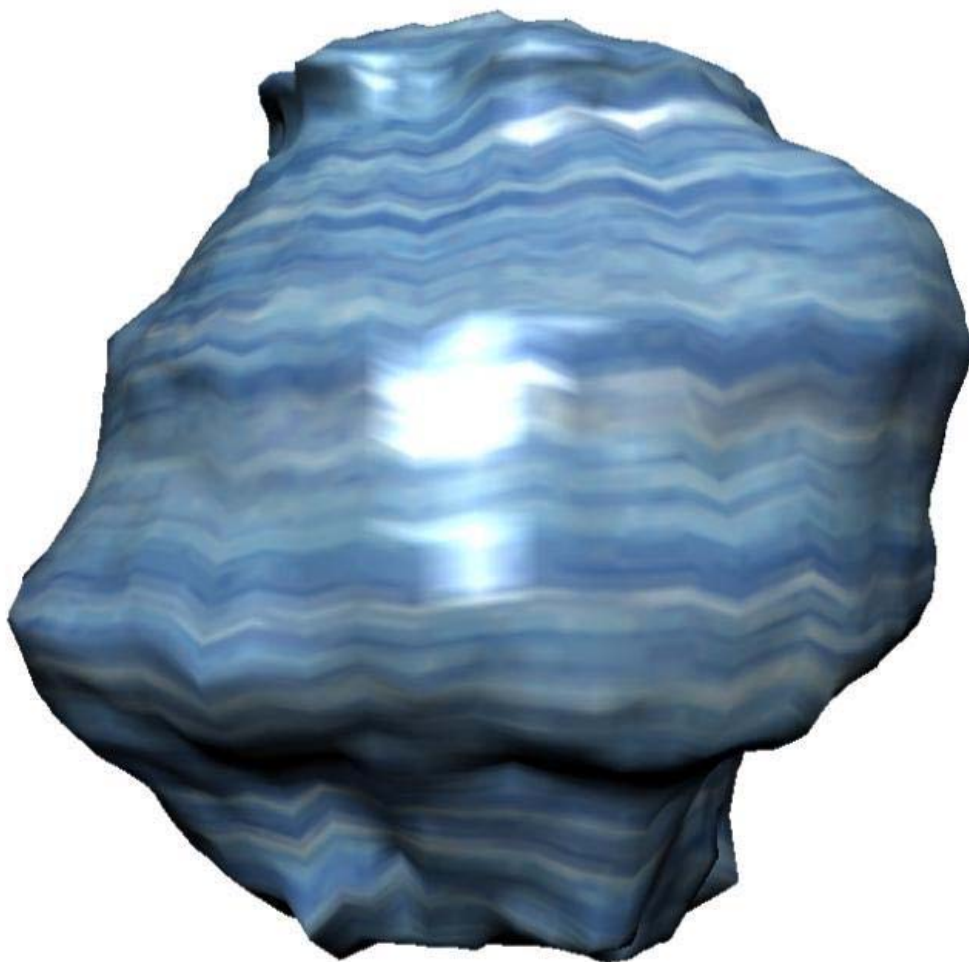
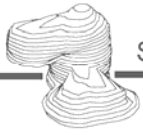
3.67 - 10.91 m	10.91 - 18.16 m	18.16 - 25.41 m	25.41 - 32.66 m	32.66 - 39.91 m
39.91 - 47.16 m	47.16 - 54.41 m	54.41 - 61.66 m		



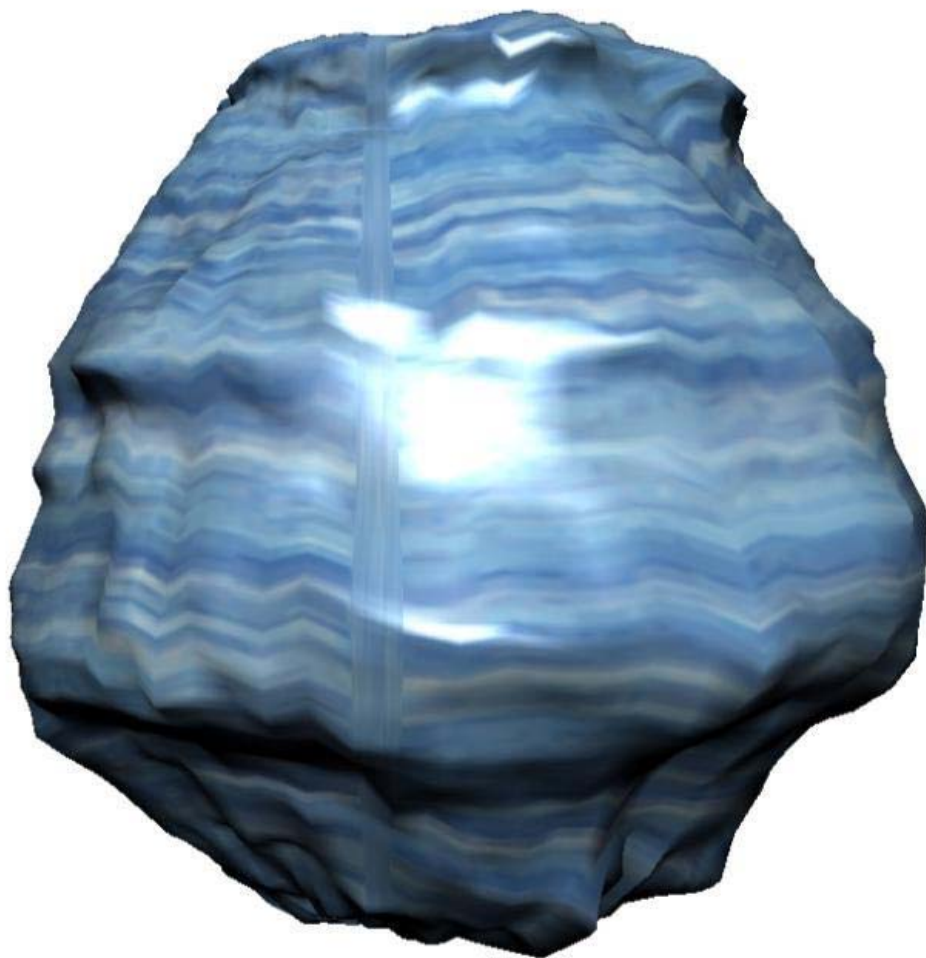
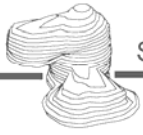
Harlingen Bas 3 --> 0° <--



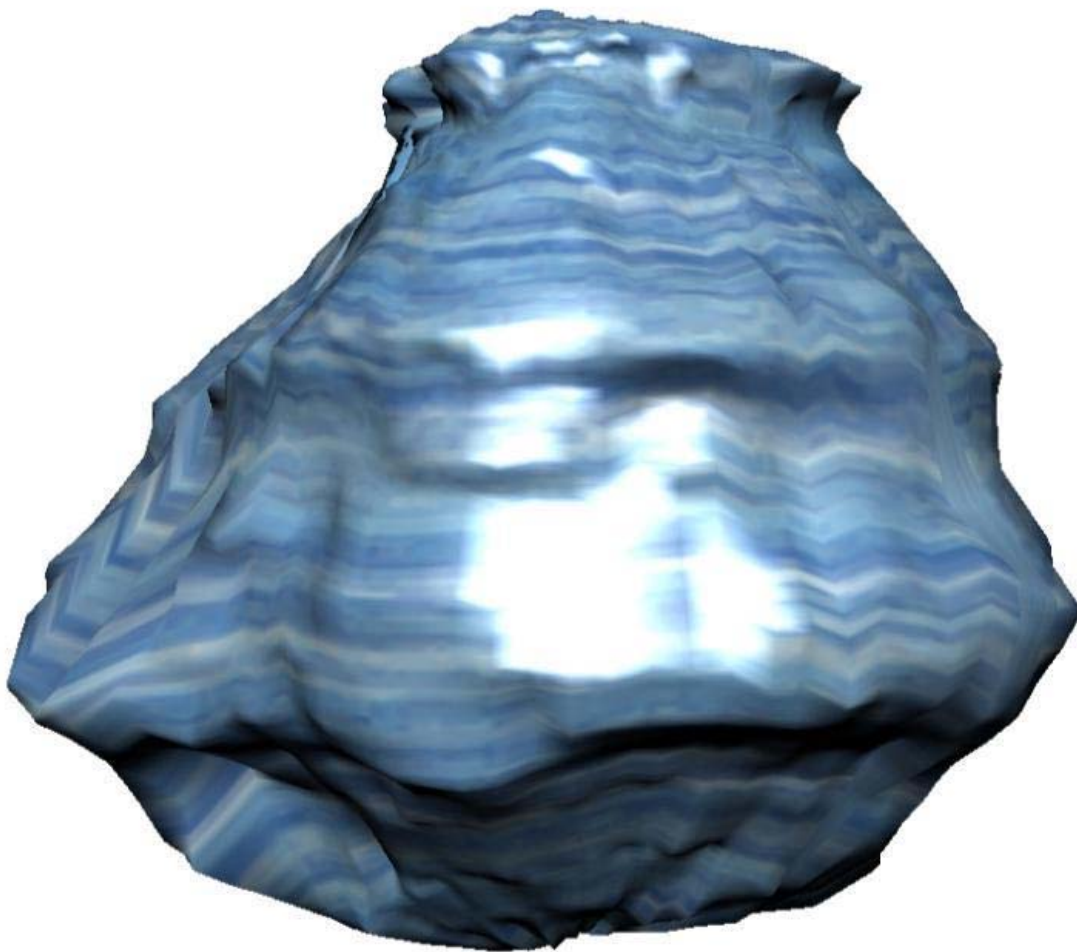
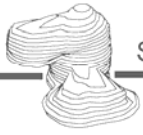
Harlingen Bas 3 --> 60° <--



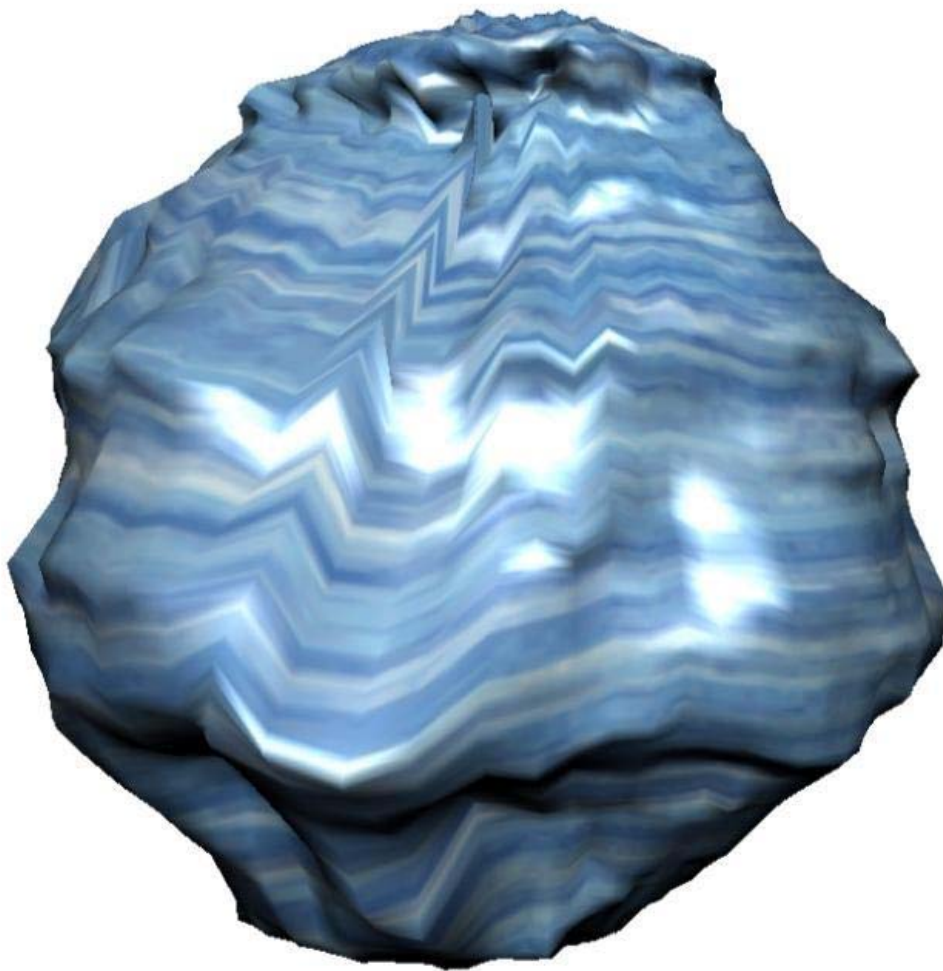
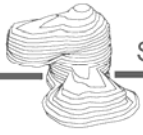
Harlingen Bas 3 --> 120° <--



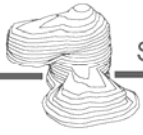
Harlingen Bas 3 --> 180° <--



Harlingen Bas 3 --> 240° <--



Harlingen Bas 3 --> 300° <--



HORIZONTALSCHNITTE

Kaverne: Harlingen Bas 3

Berichts-Nr.: 081 596

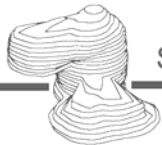
Rechengeschw.: 1840.0 m/s

Messdatum : 06.08.2008

Maßstab: 1 : 750

Horizontalschnitte in folgenden Teufen:

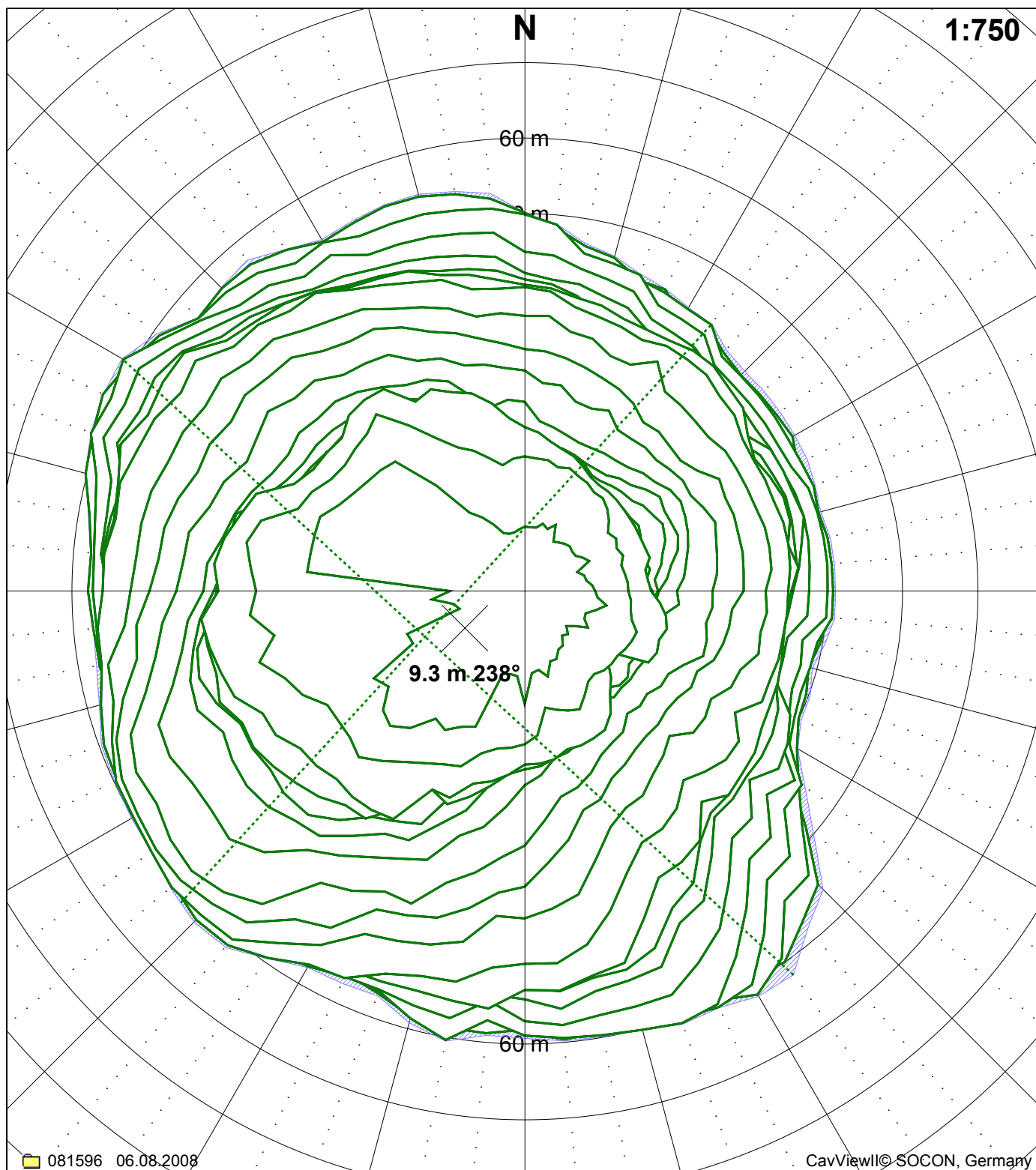
3955.0 m	3957.5 m	3960.0 m	3962.5 m	3965.0 m	3967.5 m	3970.0 m
3975.0 m	3980.0 m	3985.0 m	3990.0 m	3995.0 m	4000.0 m	4005.0 m
4010.0 m	4015.0 m	4020.0 m	4025.0 m	4030.0 m	4035.0 m	4040.0 m
4045.0 m	4050.0 m	4052.5 m	4055.0 m			



Harlingen Bas 3

MAXPLOT

06.08.2008



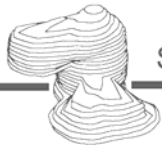
Vertikal-Maxplot

Horizontalschnitte

a/b

Schwerpunkt

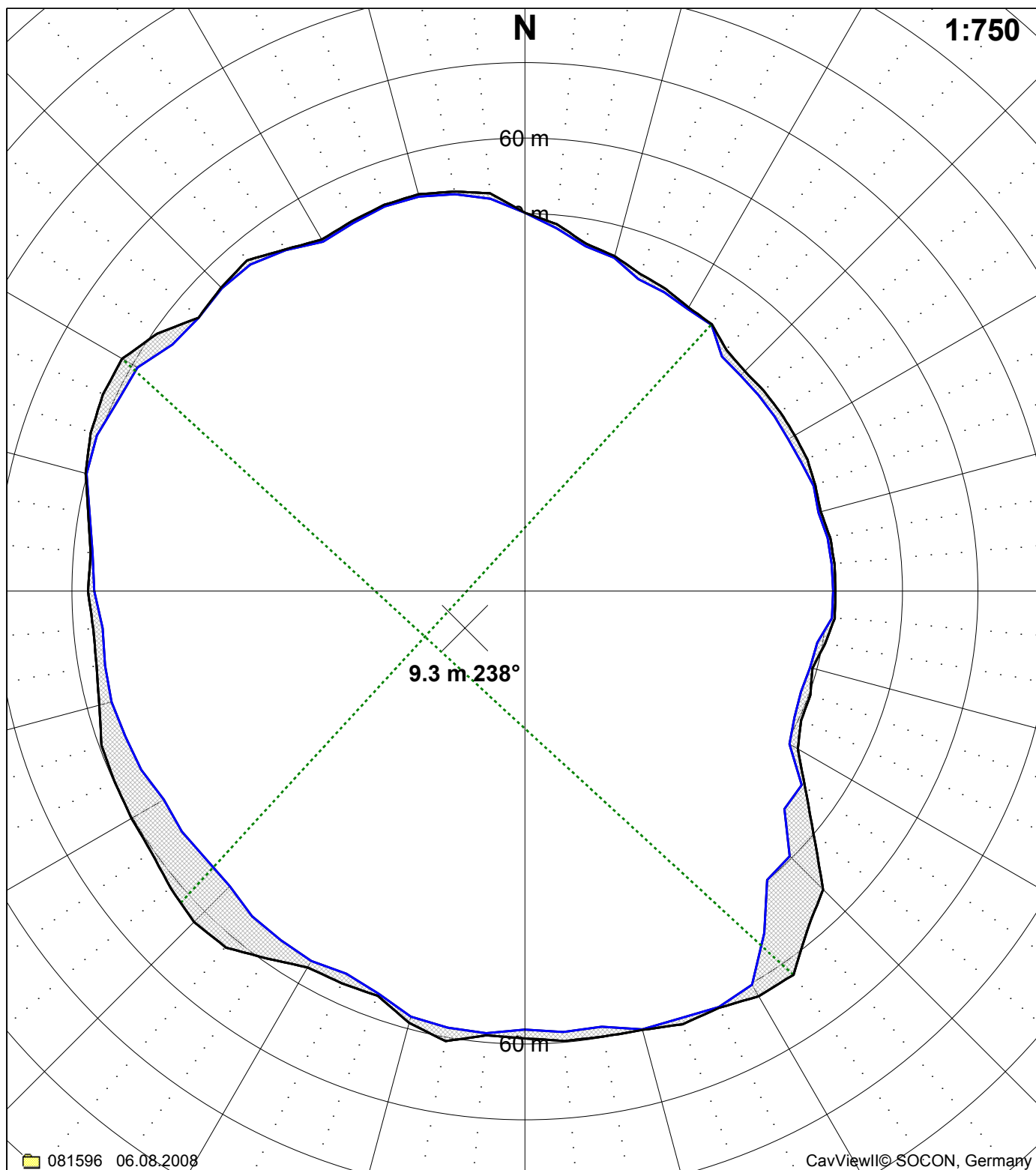
 $d_{\max}: 117.3 \text{ m } 145^\circ \leftrightarrow 325^\circ$ $r_{\min}: 39.4 \text{ m } \rightarrow 105^\circ$ $r_{\sim}: 53.2 \text{ m}$ $r_{\max}: 62.0 \text{ m } \rightarrow 145^\circ$ $a/b = 1.160$ $a = 120.6 \text{ m } (144^\circ - 300^\circ)$ $b = 104.0 \text{ m } (34^\circ - 227^\circ)$ Fläche aus Vertikalschnitten: 8904.7 m², Fläche aus Horizontal- u. Vertikalschnitten: 8904.7 m²



Harlingen Bas 3

MAXPLOT

06.08.2008



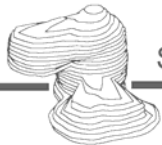
..... a/b

X Schwerpunkt

Horizontal/Vertikal-Maxplot

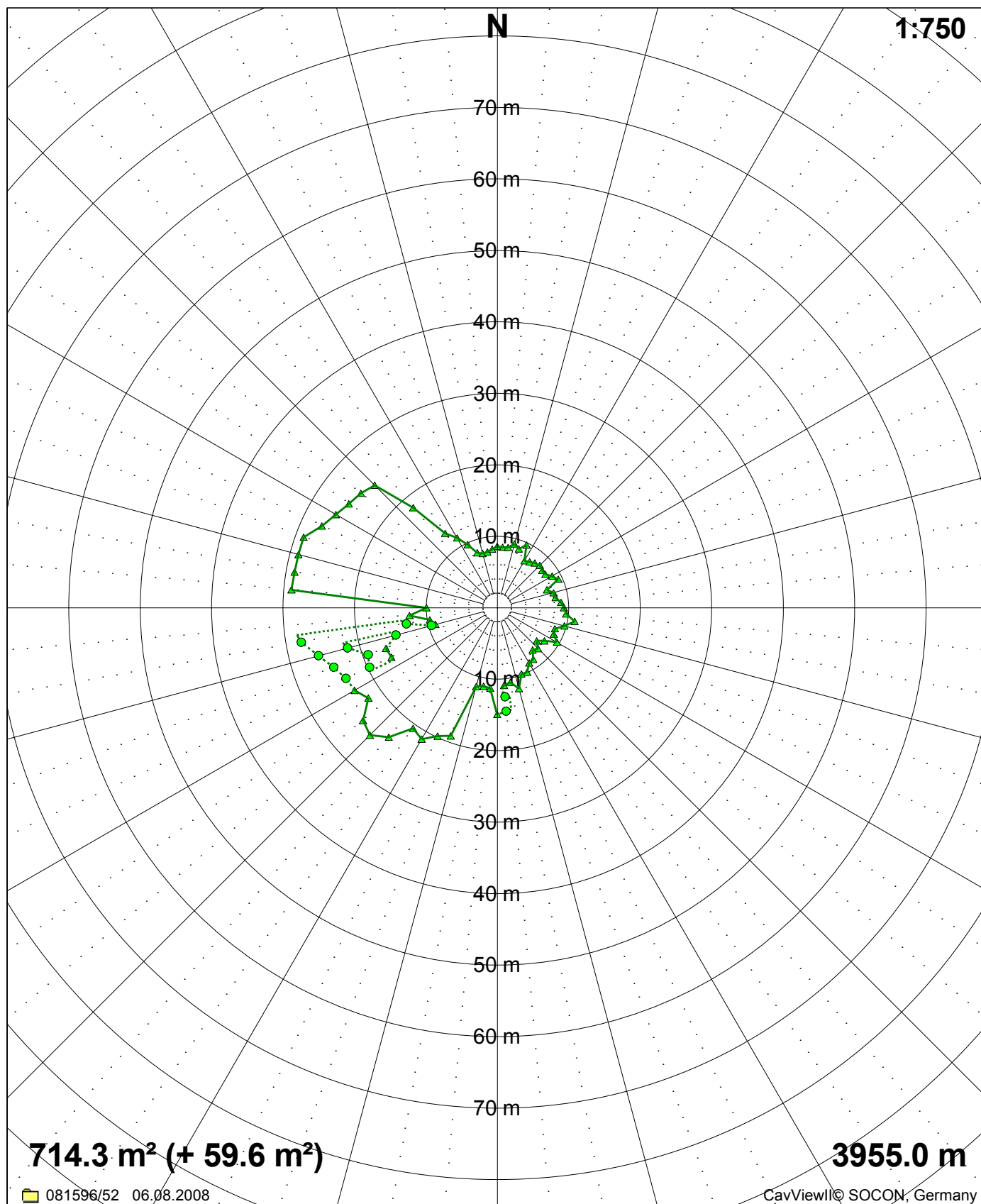
□ Größte Einzelfläche

 $d_{\max}: 117.3 \text{ m } 145^\circ \leftrightarrow 325^\circ$ $r_{\min}: 39.4 \text{ m } \rightarrow 105^\circ$ $r_{\sim}: 53.2 \text{ m}$ $r_{\max}: 62.0 \text{ m } \rightarrow 145^\circ$ $a/b = 1.160$ $a = 120.6 \text{ m } (144^\circ\text{-}300^\circ)$ $b = 104.0 \text{ m } (34^\circ\text{-}227^\circ)$ Größte Einzelfläche: 8397.6 m² in Teufe: 4020.0 m, Fläche aus Horizontal- u. Vertikalschnitten: 8904.7 m²



Harlingen Bas 3

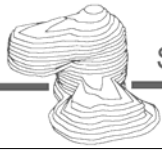
06.08.2008



—■— (06.08.2008)

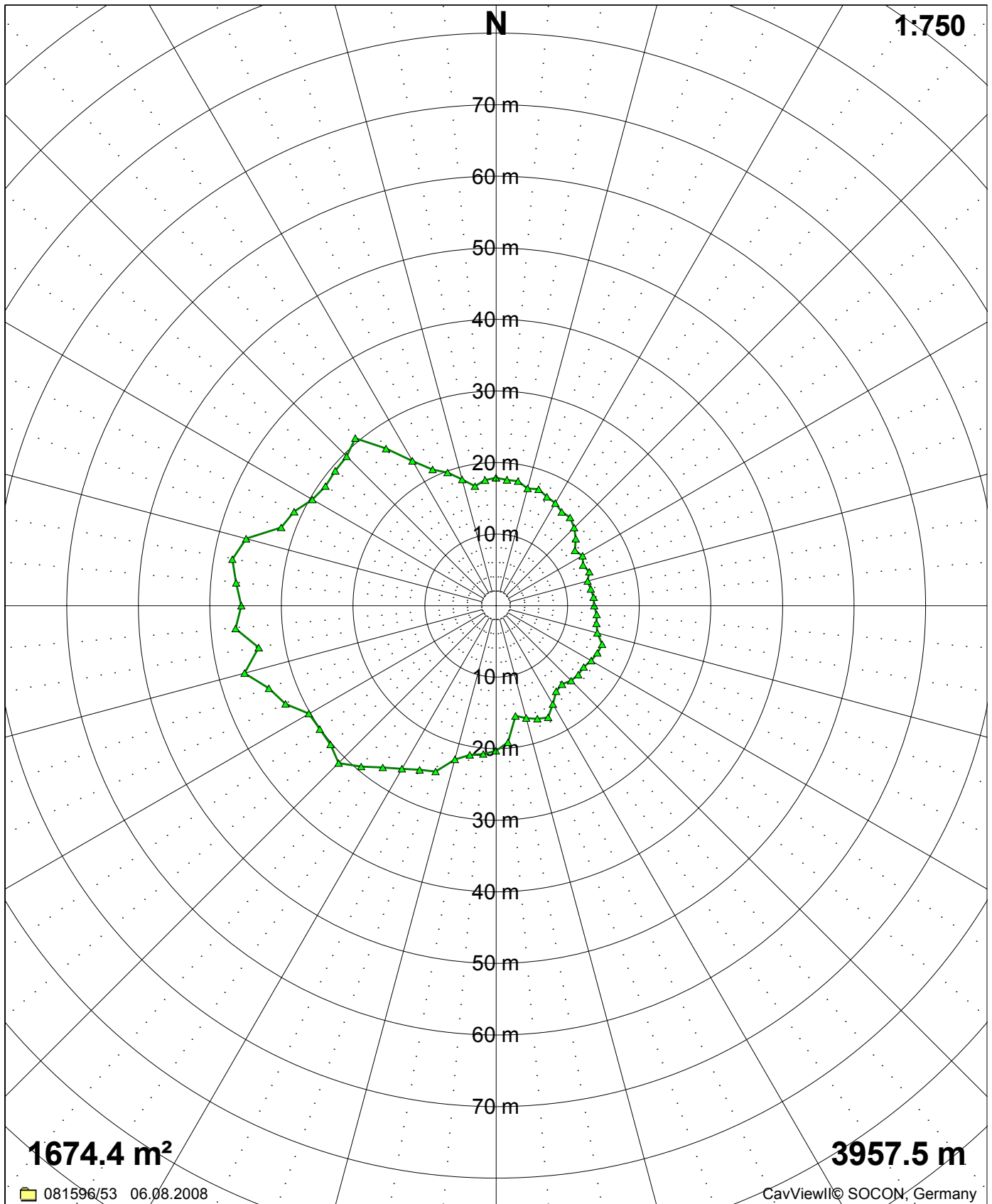
—●— Hintersolung (06.08.2008)

$d_{\max}$: 39.8 m 100° <--> 280° $r_{\min}$: 7.2 m -> 130° $r_{\sim}$: 15.7 m $r_{\max}$: 28.9 m -> 275°



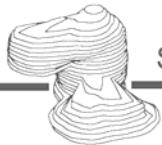
Harlingen Bas 3

06.08.2008



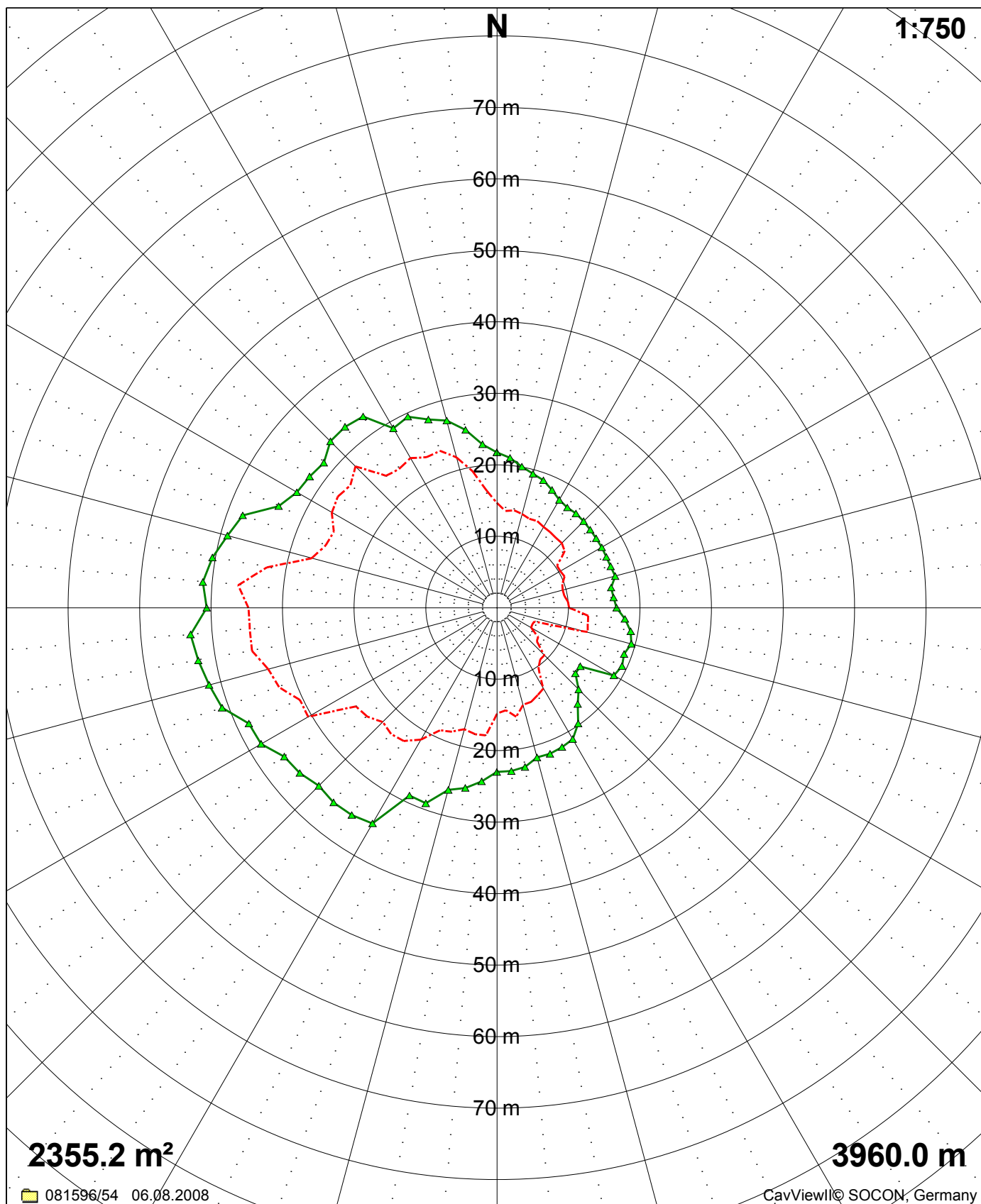
(06.08.2008)

d_{max}: 51.6 m 100° <--> 280° r_{min}: 13.2 m -> 75° r~: 23.1 m r_{max}: 37.4 m -> 280°



Harlingen Bas 3

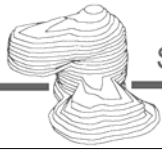
06.08.2008



----- (22.02.2008)

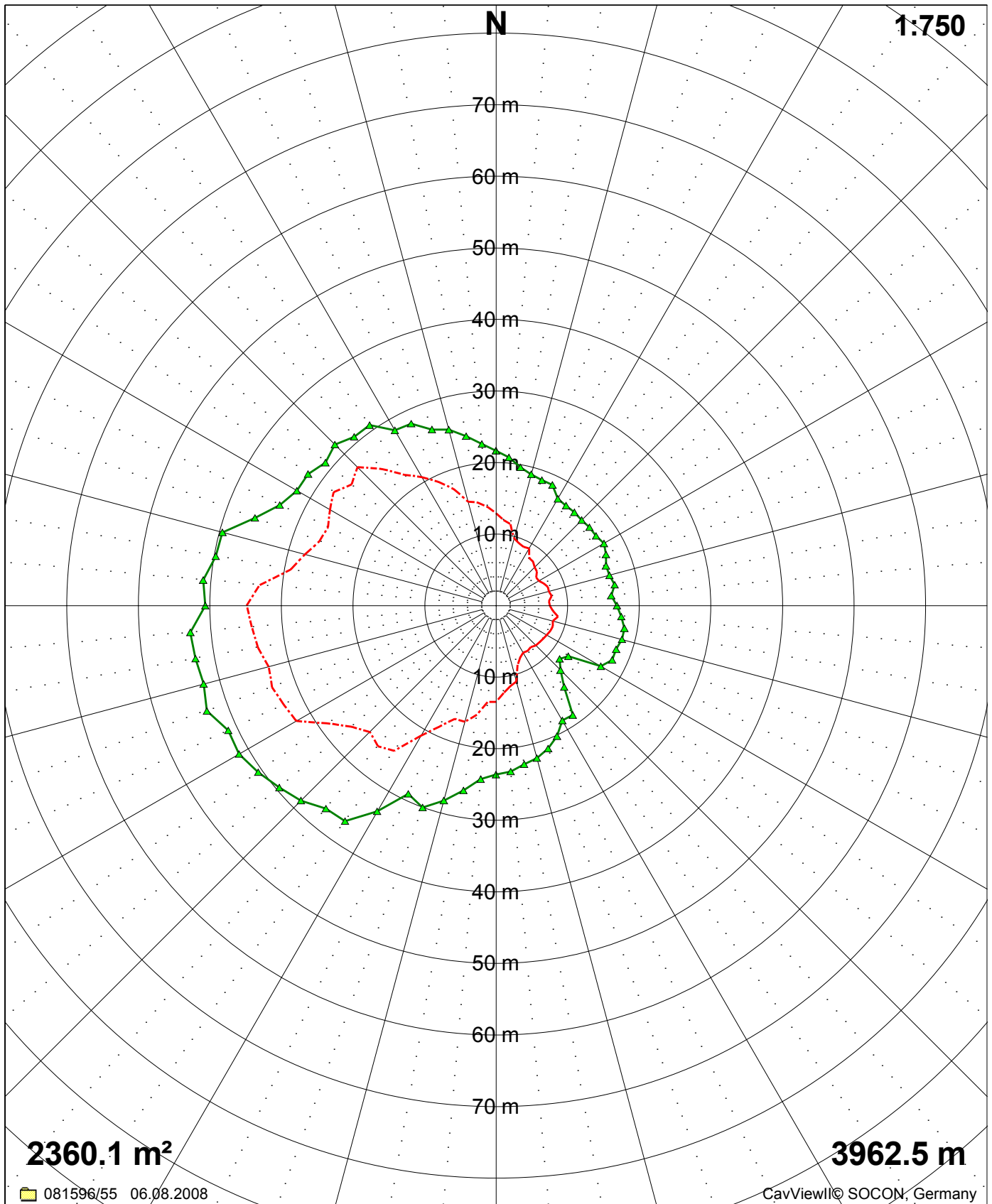
-■- (06.08.2008)

 $d_{\max}$: 59.4 m 100° <--> 280° $r_{\min}$: 14.2 m -> 125° $r_{\sim}$: 27.4 m $r_{\max}$: 43.0 m -> 265°



Harlingen Bas 3

06.08.2008



2360.1 m²

3962.5 m

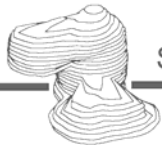
081596/55 06.08.2008

CavViewII© SOCON, Germany

----- (22.02.2008)

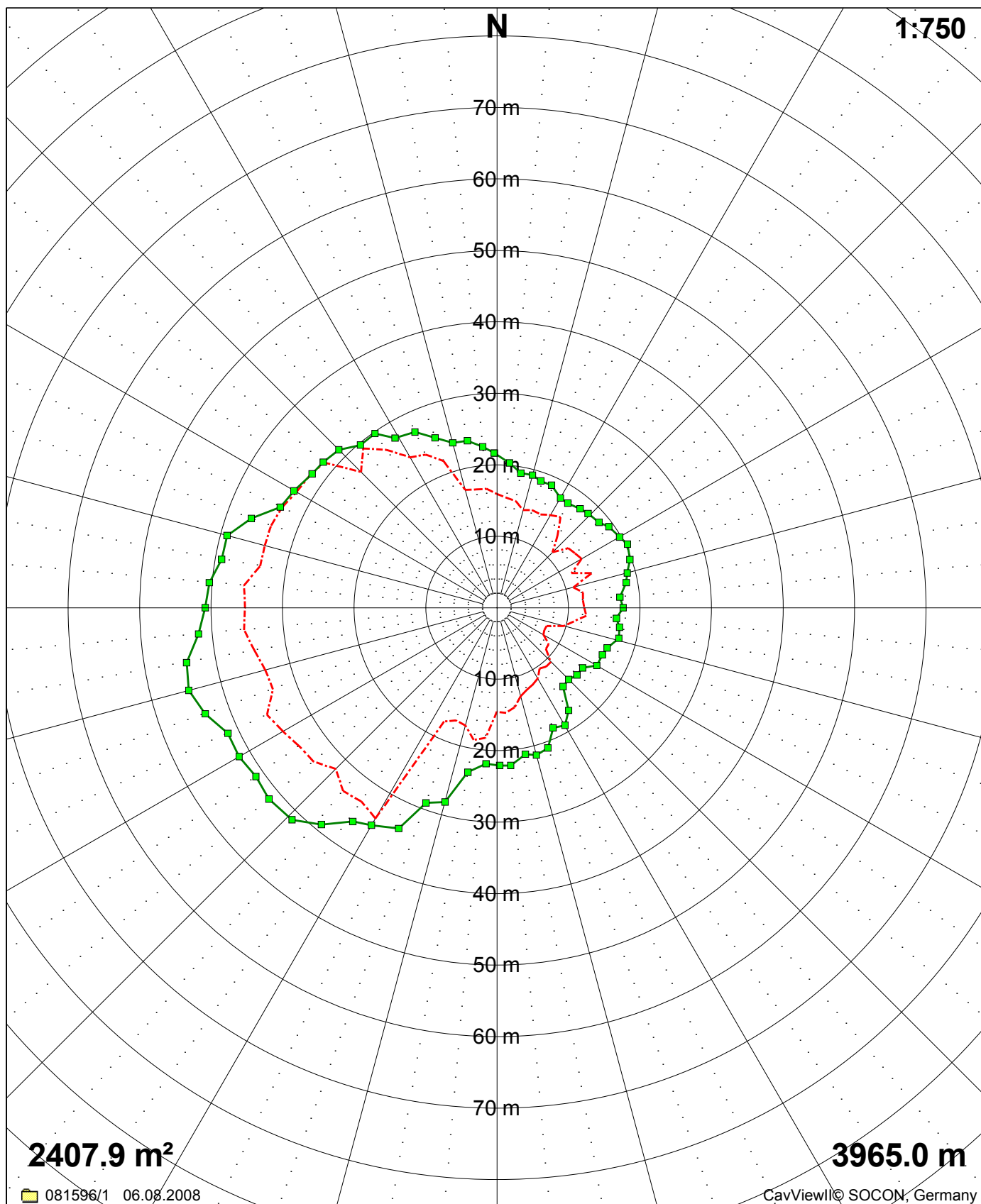
---■--- (06.08.2008)

d_{max}: 59.4 m 80° <--> 260° r_{min}: 11.6 m -> 130° r~: 27.4 m r_{max}: 43.0 m -> 250°



Harlingen Bas 3

06.08.2008



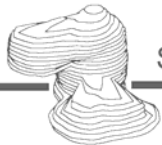
081596/1 06.08.2008

CavViewII© SOCON, Germany

--- (22.02.2008)

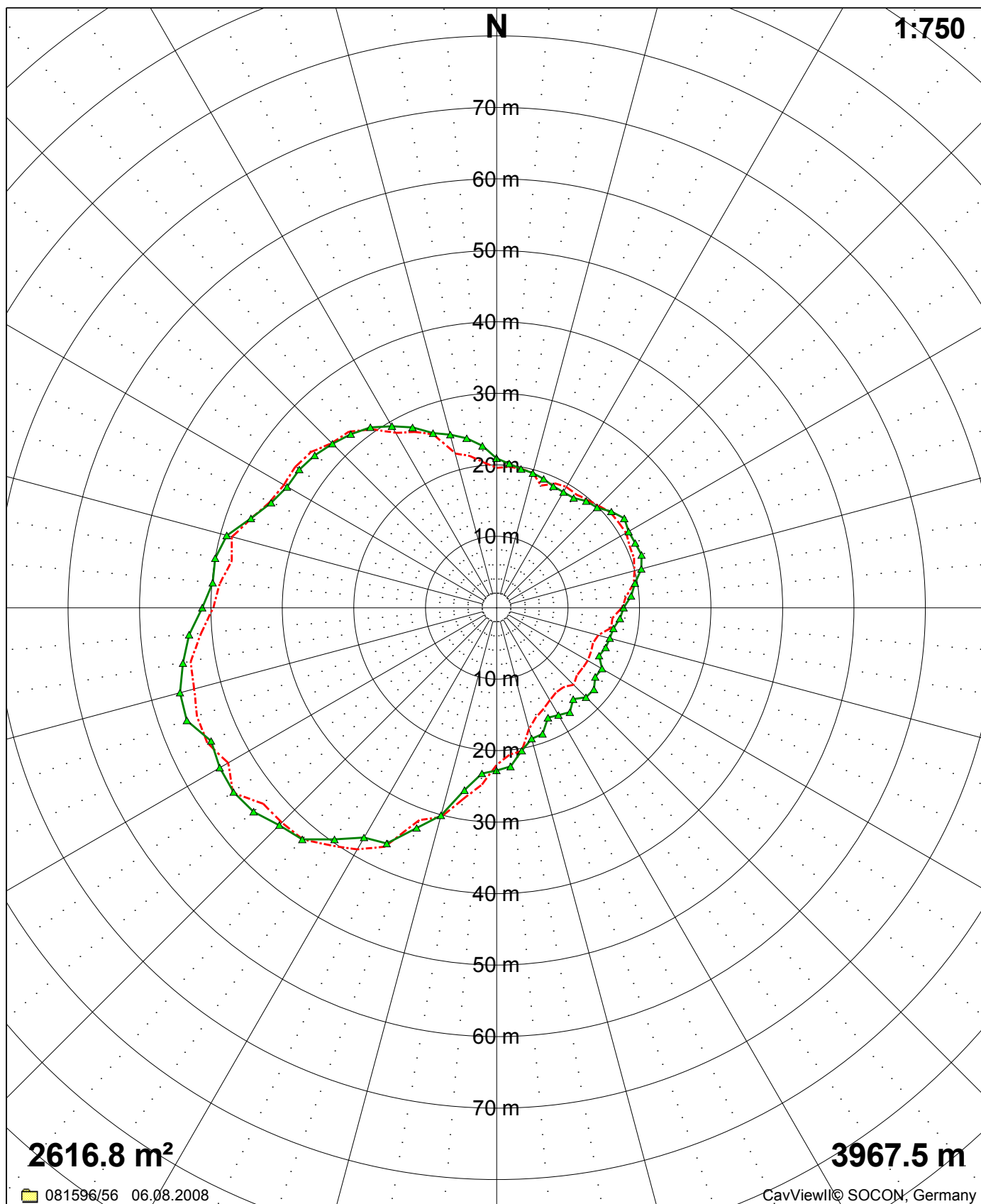
—■ (06.08.2008)

 $d_{\max}$: 63.5 m $75^\circ \leftrightarrow 255^\circ$ $r_{\min}$: 14.2 m $\rightarrow 135^\circ$ $r_{\sim}$: 27.7 m $r_{\max}$: 44.6 m $\rightarrow 255^\circ$



Harlingen Bas 3

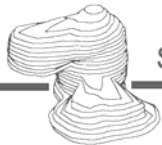
06.08.2008



----- (22.02.2008)

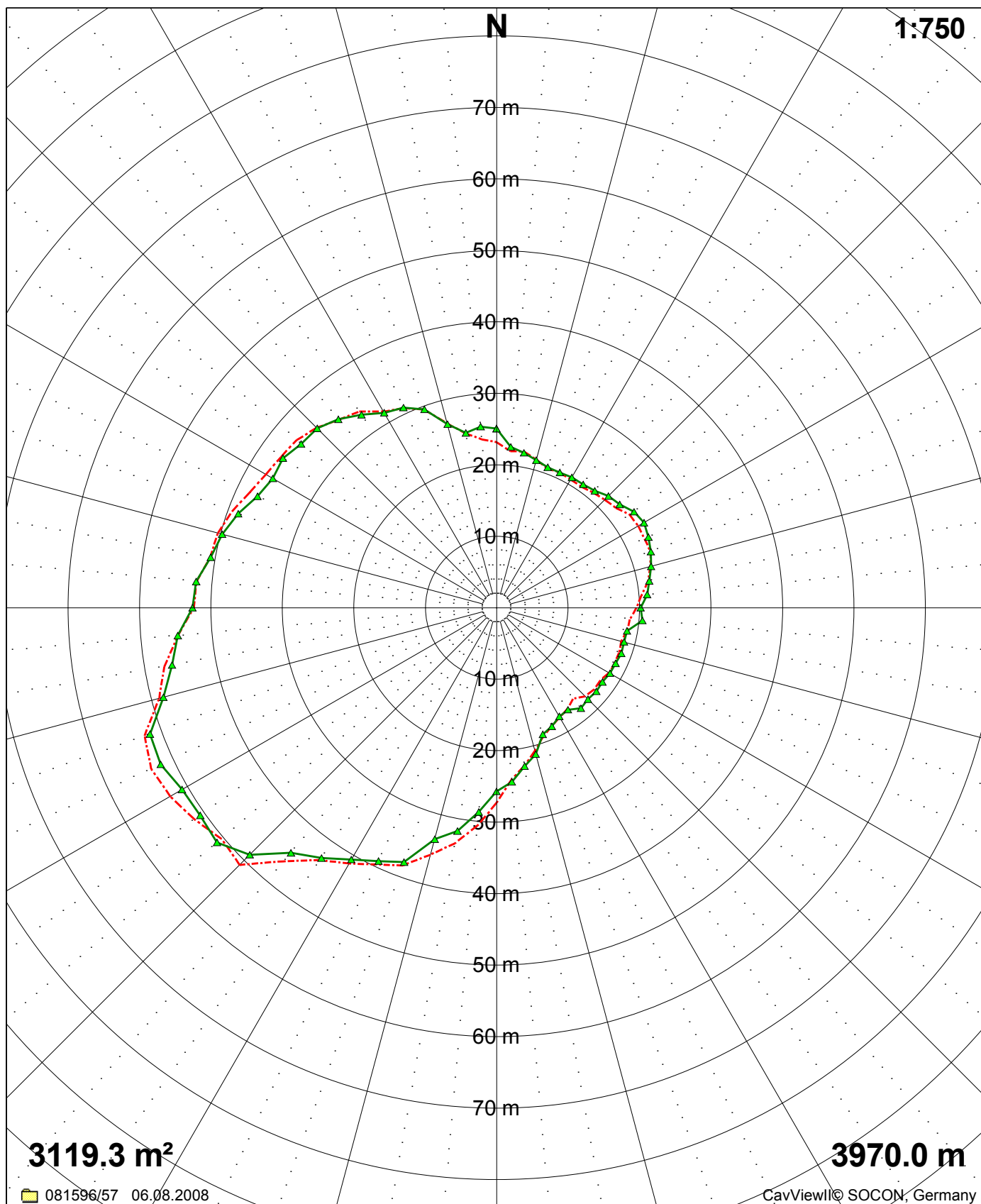
—▲— (06.08.2008)

d_{max}: 67.7 m 70° <--> 250° r_{min}: 15.8 m -> 115° r~: 28.9 m r_{max}: 46.1 m -> 250°



Harlingen Bas 3

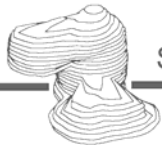
06.08.2008



--- (22.02.2008)

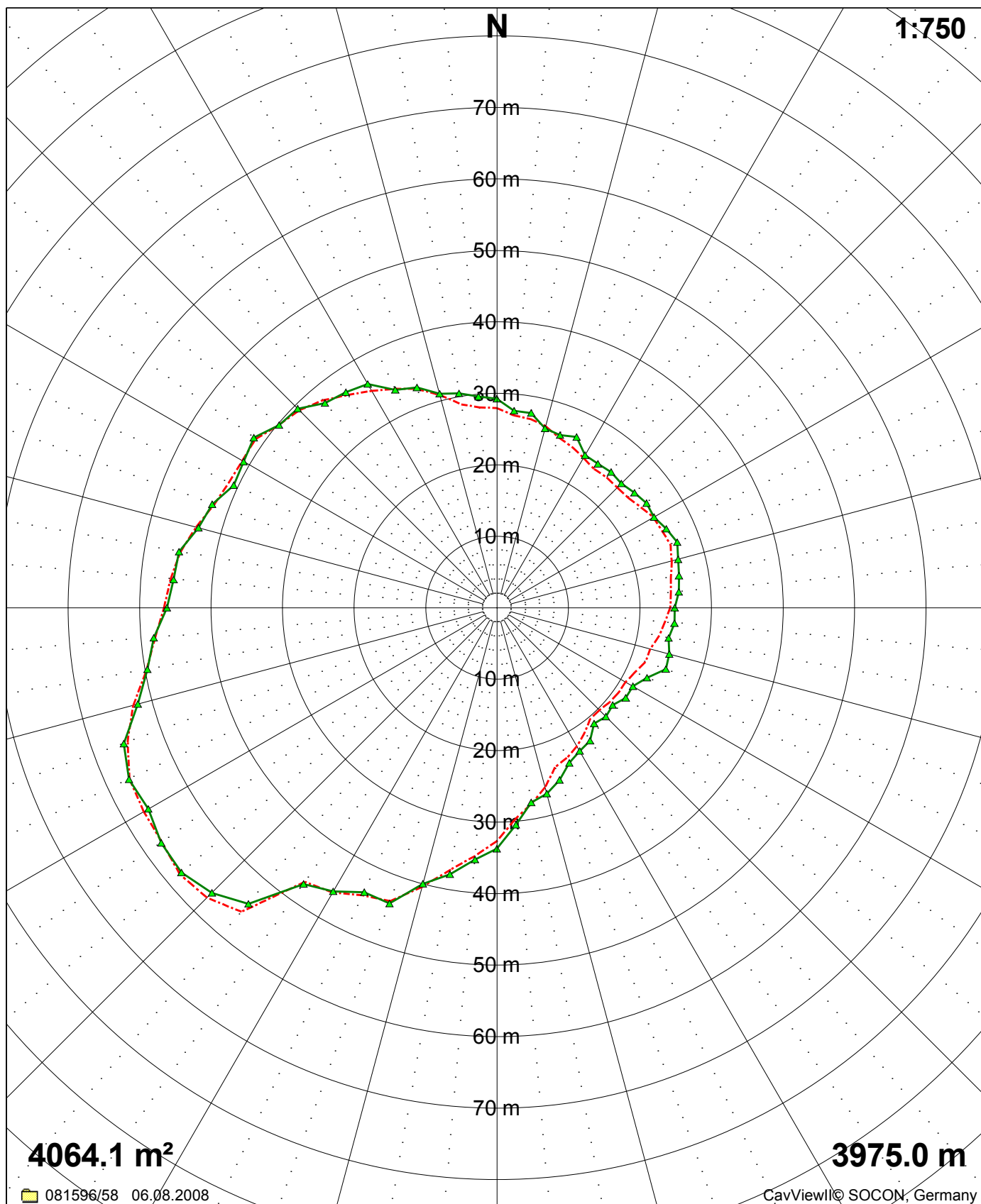
—■ (06.08.2008)

$d_{\max}$: 75.3 m 65° <--> 245° $r_{\min}$: 17.4 m -> 145° $r_{\sim}$: 31.5 m $r_{\max}$: 51.8 m -> 245°



Harlingen Bas 3

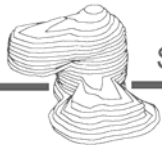
06.08.2008



--- (22.02.2008)

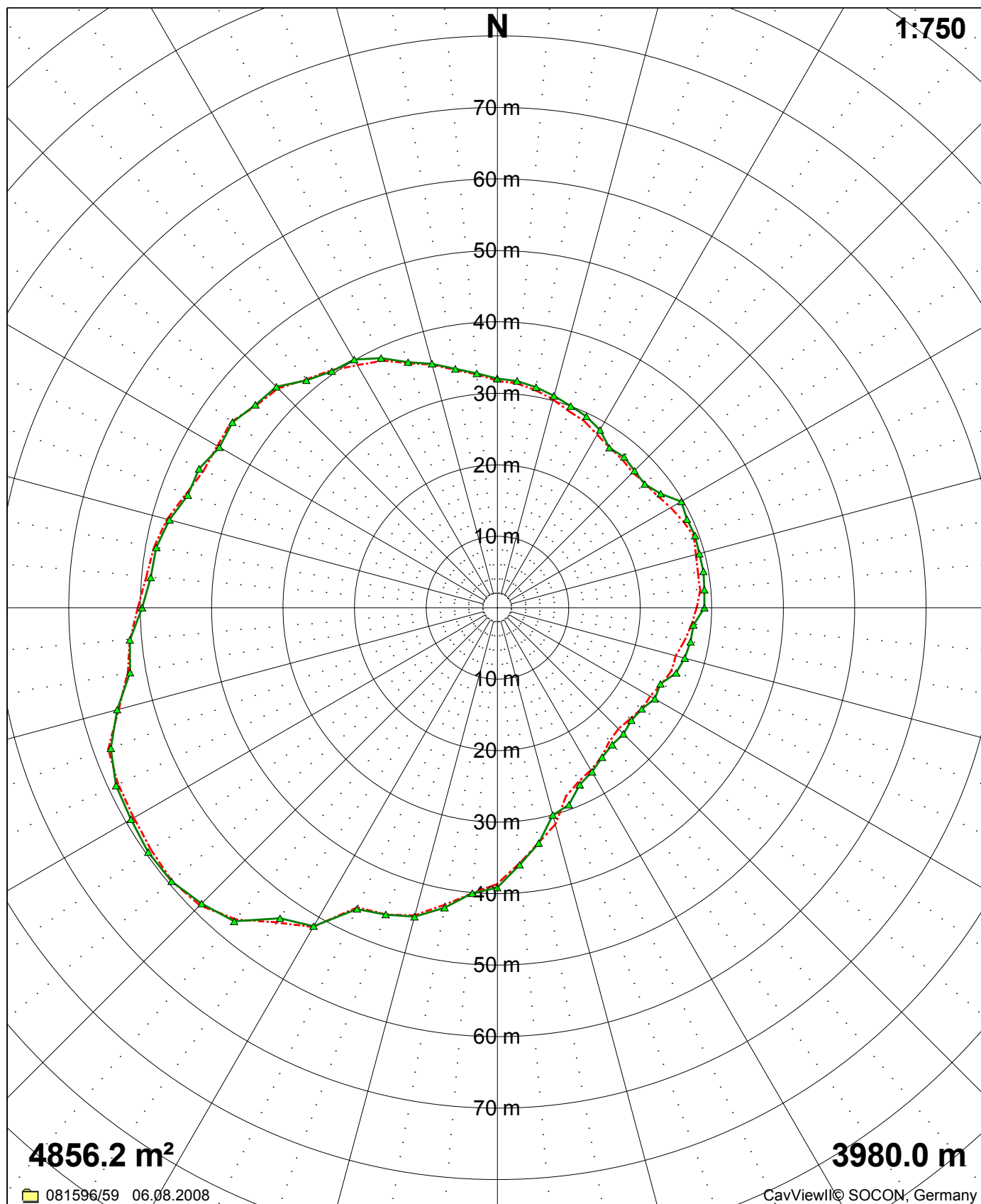
—■ (06.08.2008)

$d_{\max}$: 82.9 m 65° <--> 245° $r_{\min}$: 21.1 m -> 130° $r_{\sim}$: 36.0 m $r_{\max}$: 57.6 m -> 230°



Harlingen Bas 3

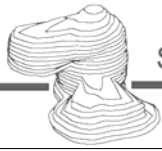
06.08.2008



--- (22.02.2008)

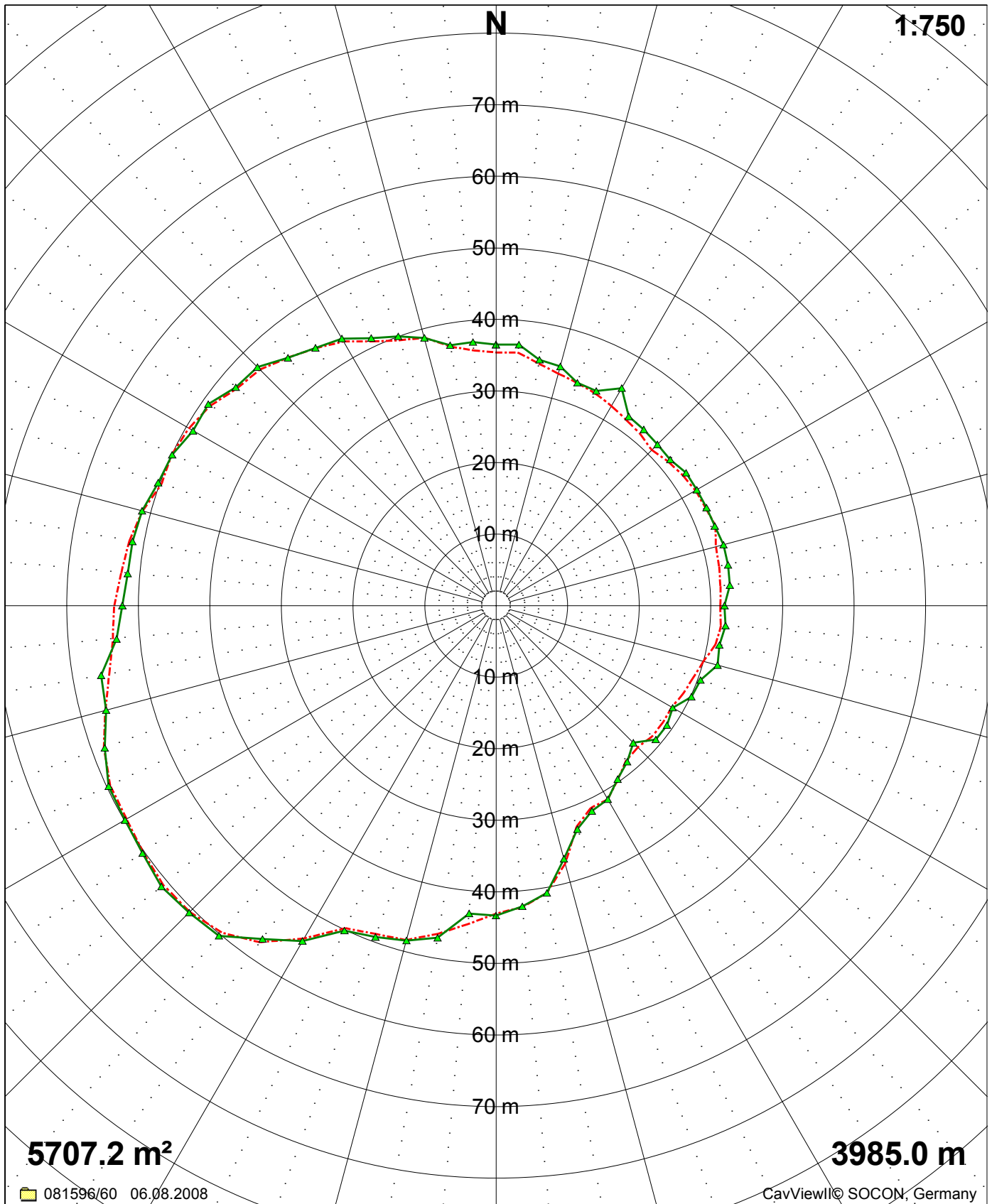
—■ (06.08.2008)

$d_{\max}$: 88.9 m 60° <--> 240° $r_{\min}$: 24.5 m -> 130° $r_{\sim}$: 39.3 m $r_{\max}$: 59.6 m -> 235°



Harlingen Bas 3

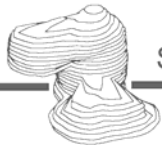
06.08.2008



--- (22.02.2008)

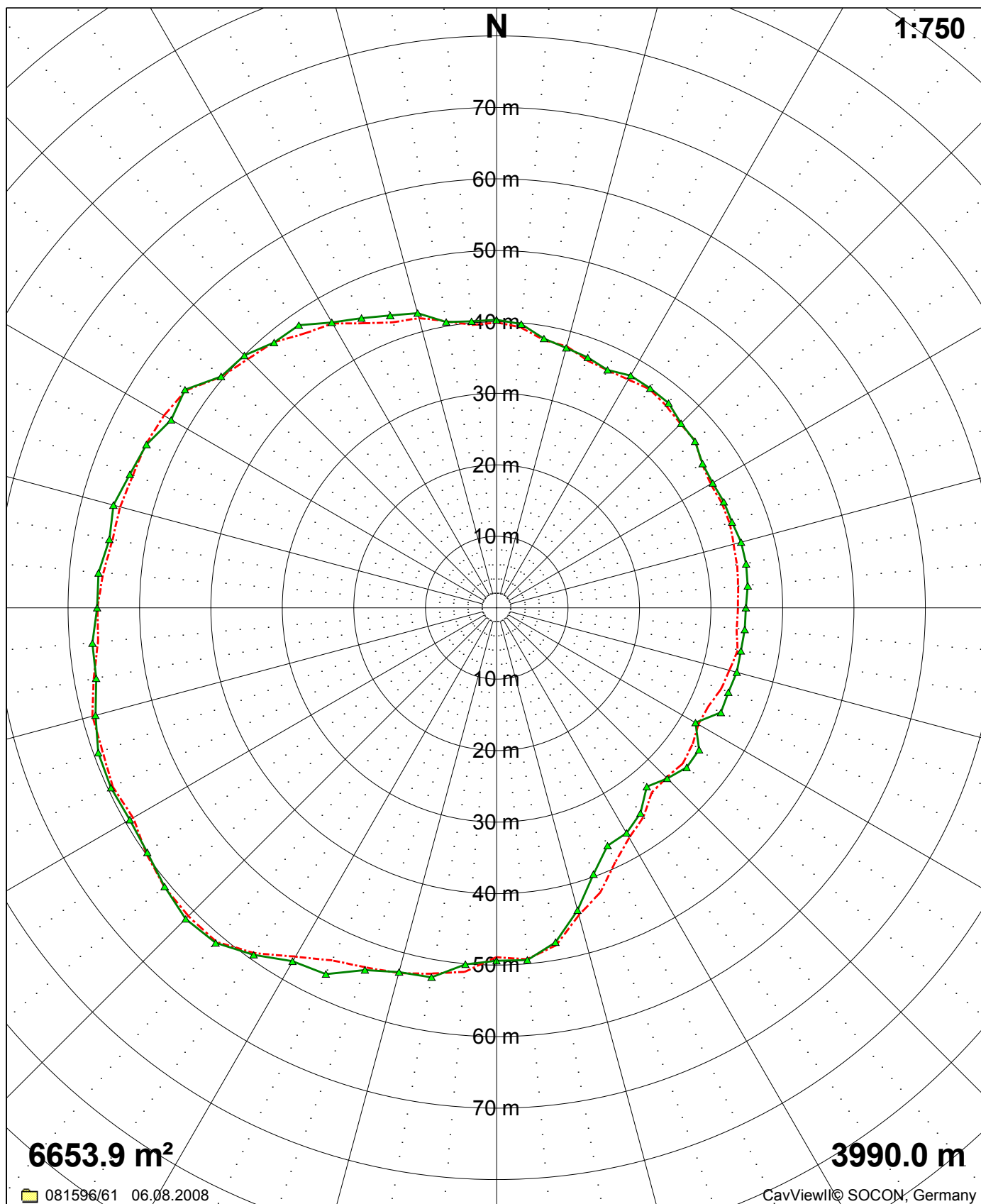
—■ (06.08.2008)

$d_{\max}$: 92.8 m 50° <--> 230° $r_{\min}$: 27.1 m -> 135° $r_{\sim}$: 42.6 m $r_{\max}$: 61.0 m -> 230°



Harlingen Bas 3

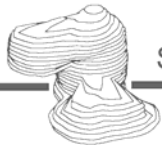
06.08.2008



--- (22.02.2008)

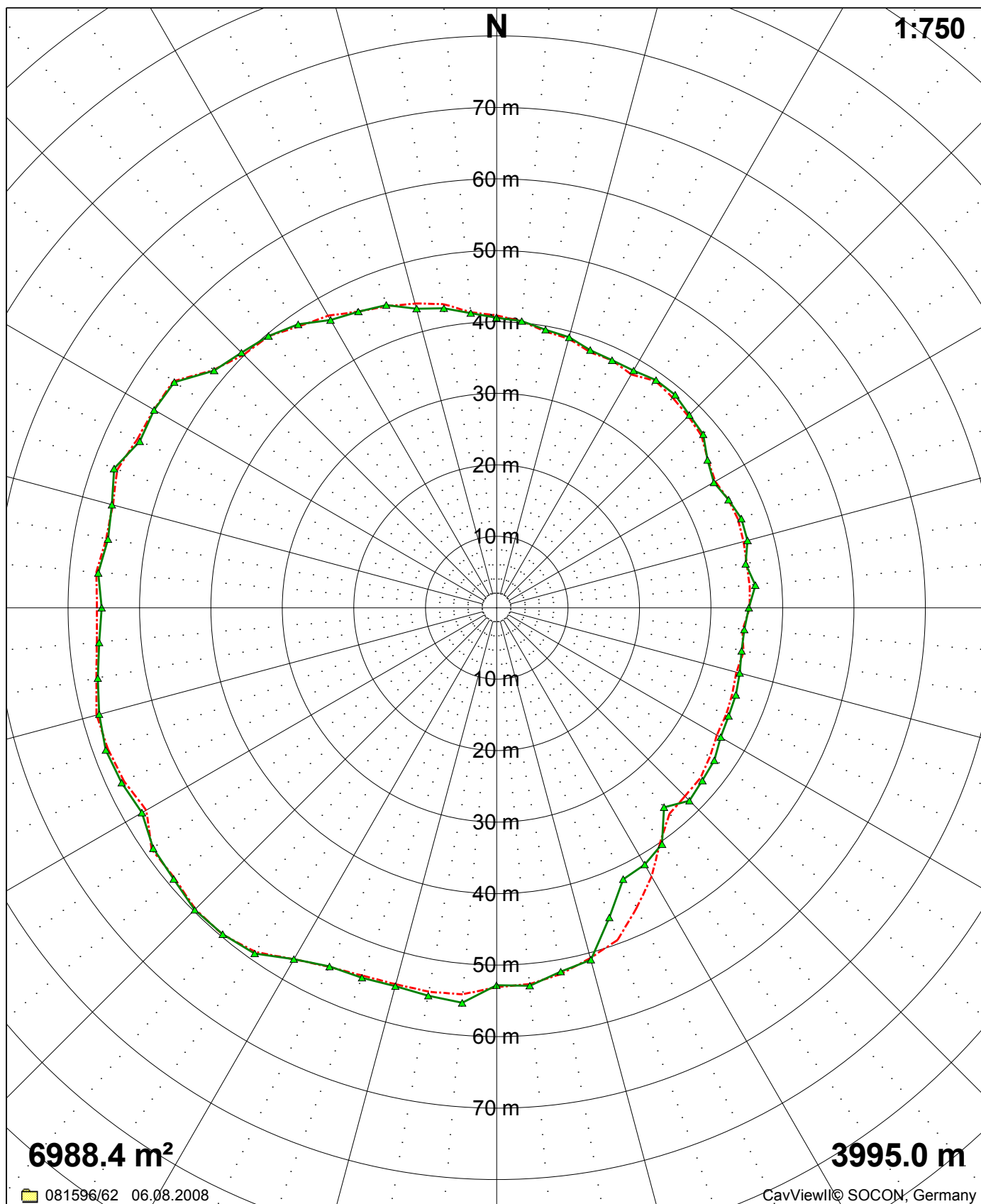
—■ (06.08.2008)

d_{max}: 98.6 m 40° <--> 220° r_{min}: 32.1 m -> 120° r~: 46.0 m r_{max}: 61.6 m -> 225°



Harlingen Bas 3

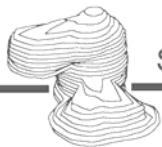
06.08.2008



--- (22.02.2008)

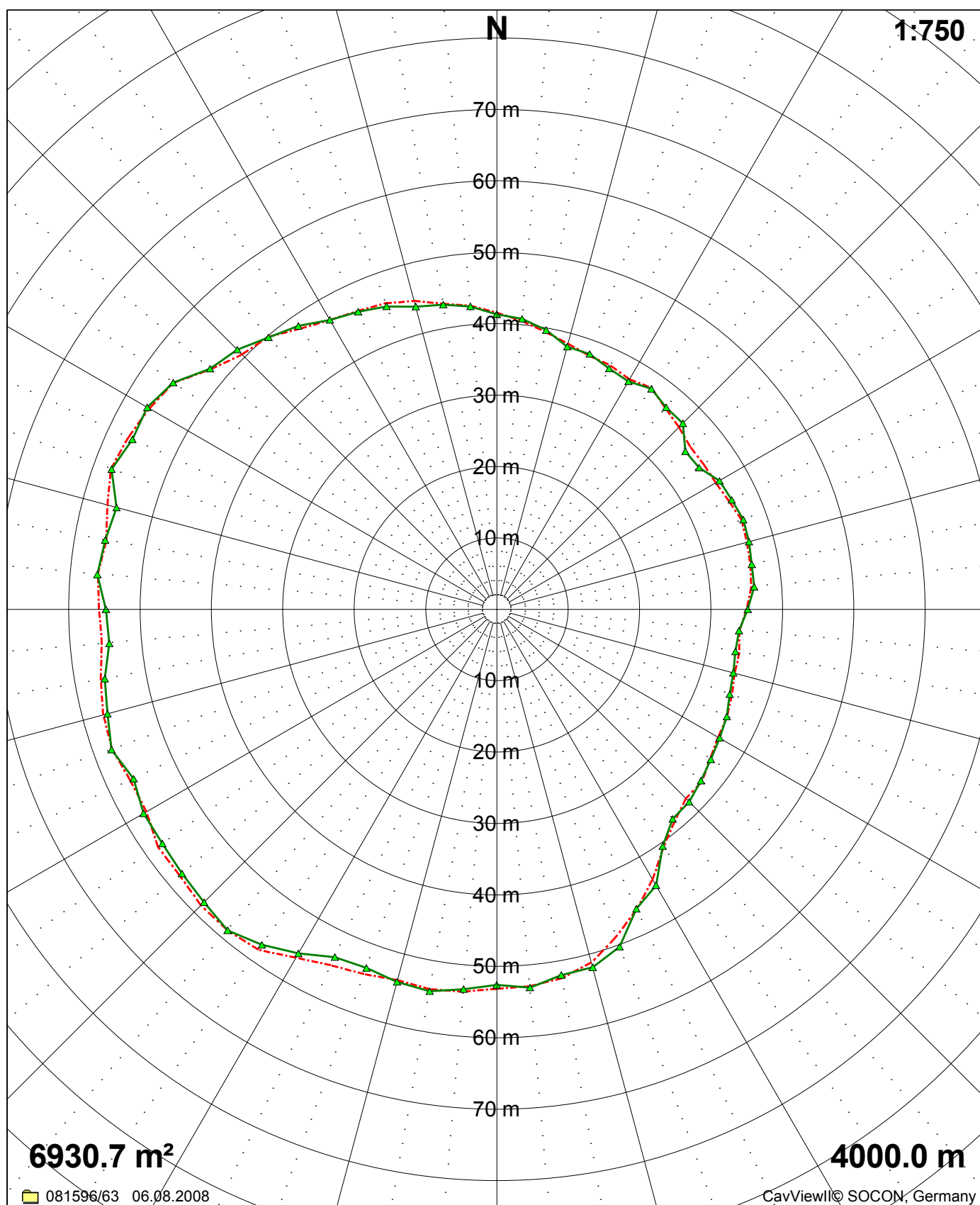
— (06.08.2008)

$d_{\max}$: 98.5 m 40° <--> 220° $r_{\min}$: 34.8 m -> 98° $r_{\sim}$: 47.2 m $r_{\max}$: 59.7 m -> 225°



Harlingen Bas 3

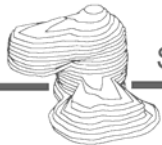
06.08.2008



--- (22.02.2008)

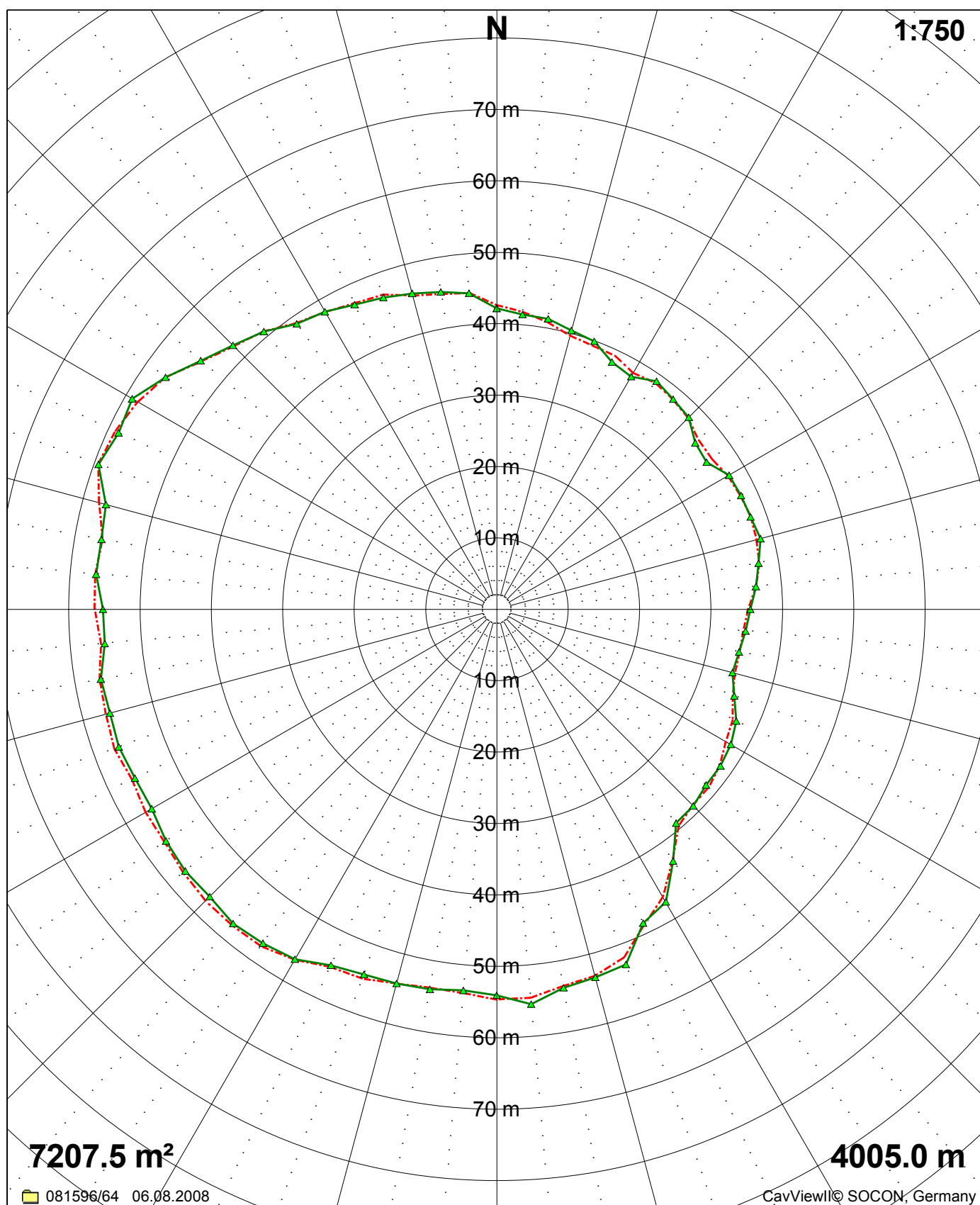
—■ (06.08.2008)

$d_{\max}$: 95.8 m 165° <--> 345° $r_{\min}$: 33.9 m -> 100° $r_{\sim}$: 47.0 m $r_{\max}$: 58.7 m -> 220°



Harlingen Bas 3

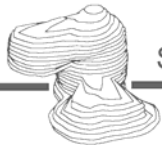
06.08.2008



--- (22.02.2008)

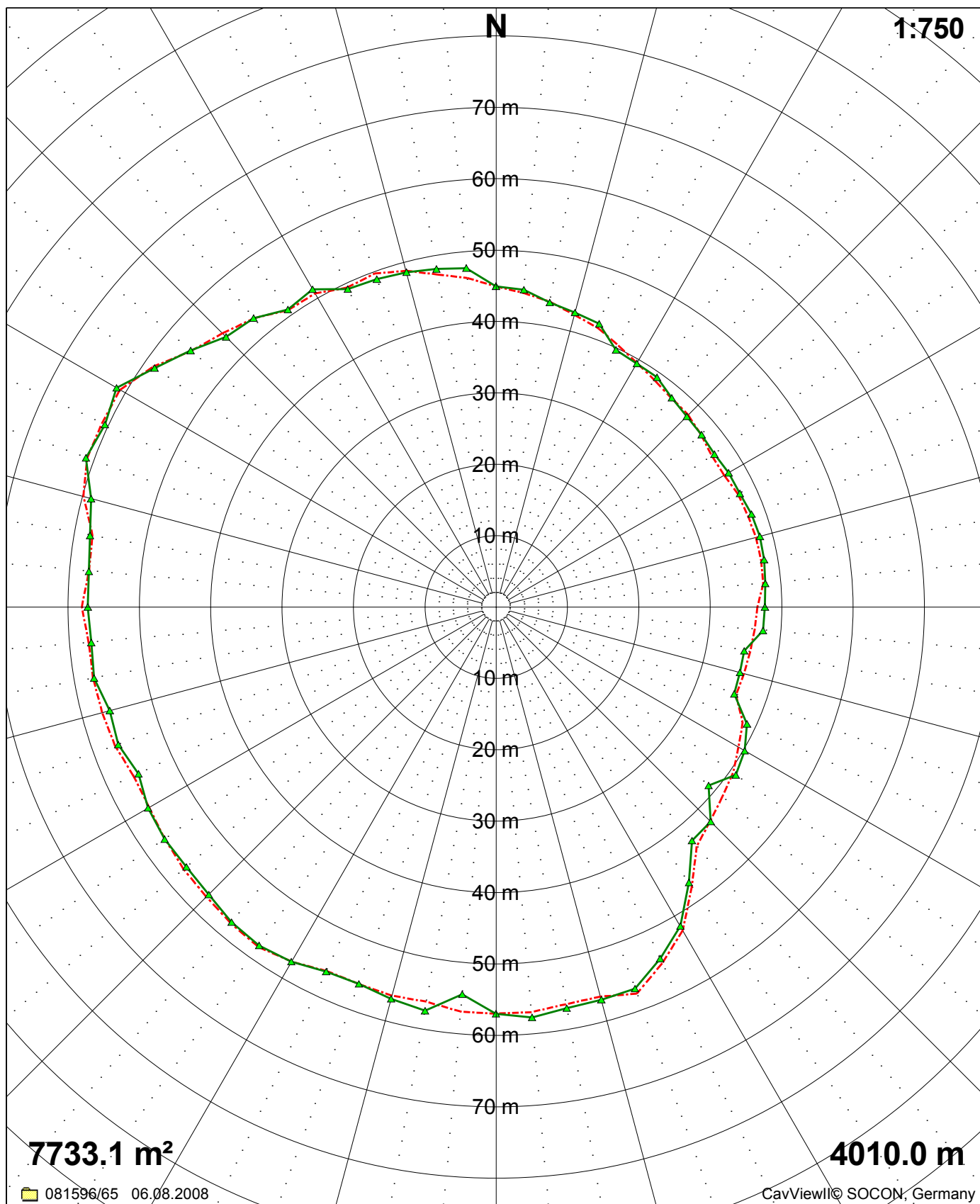
—■ (06.08.2008)

$d_{\max}$: 99.9 m 175° <--> 355° $r_{\min}$: 34.2 m -> 105° $r_{\sim}$: 47.9 m $r_{\max}$: 59.4 m -> 290°



Harlingen Bas 3

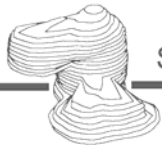
06.08.2008



--- (22.02.2008)

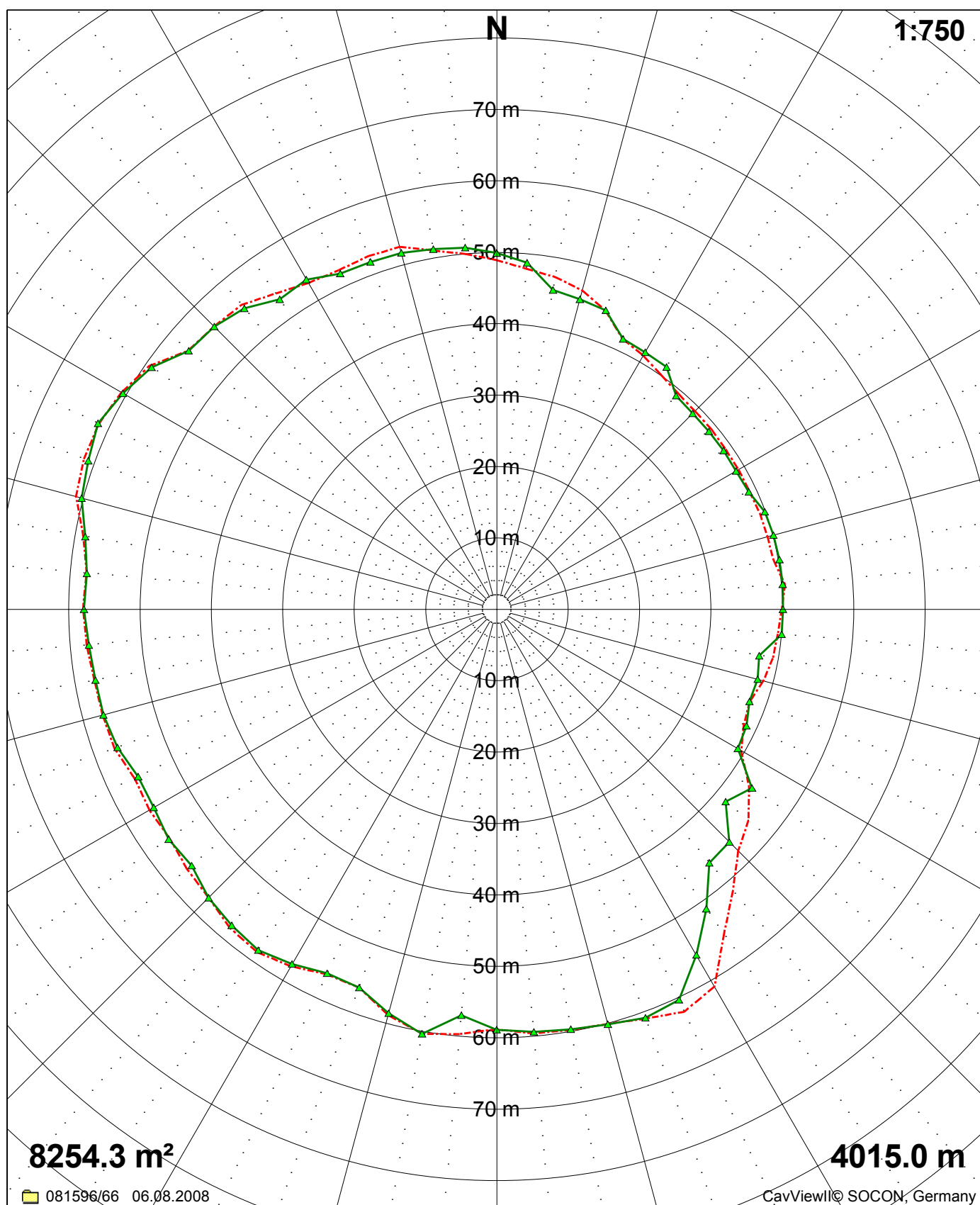
—■ (06.08.2008)

$d_{\max}$: 105.8 m 160° <--> 340° $r_{\min}$: 35.3 m -> 101° $r_{\sim}$: 49.6 m $r_{\max}$: 61.4 m -> 300°



Harlingen Bas 3

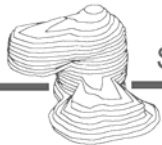
06.08.2008



--- (22.02.2008)

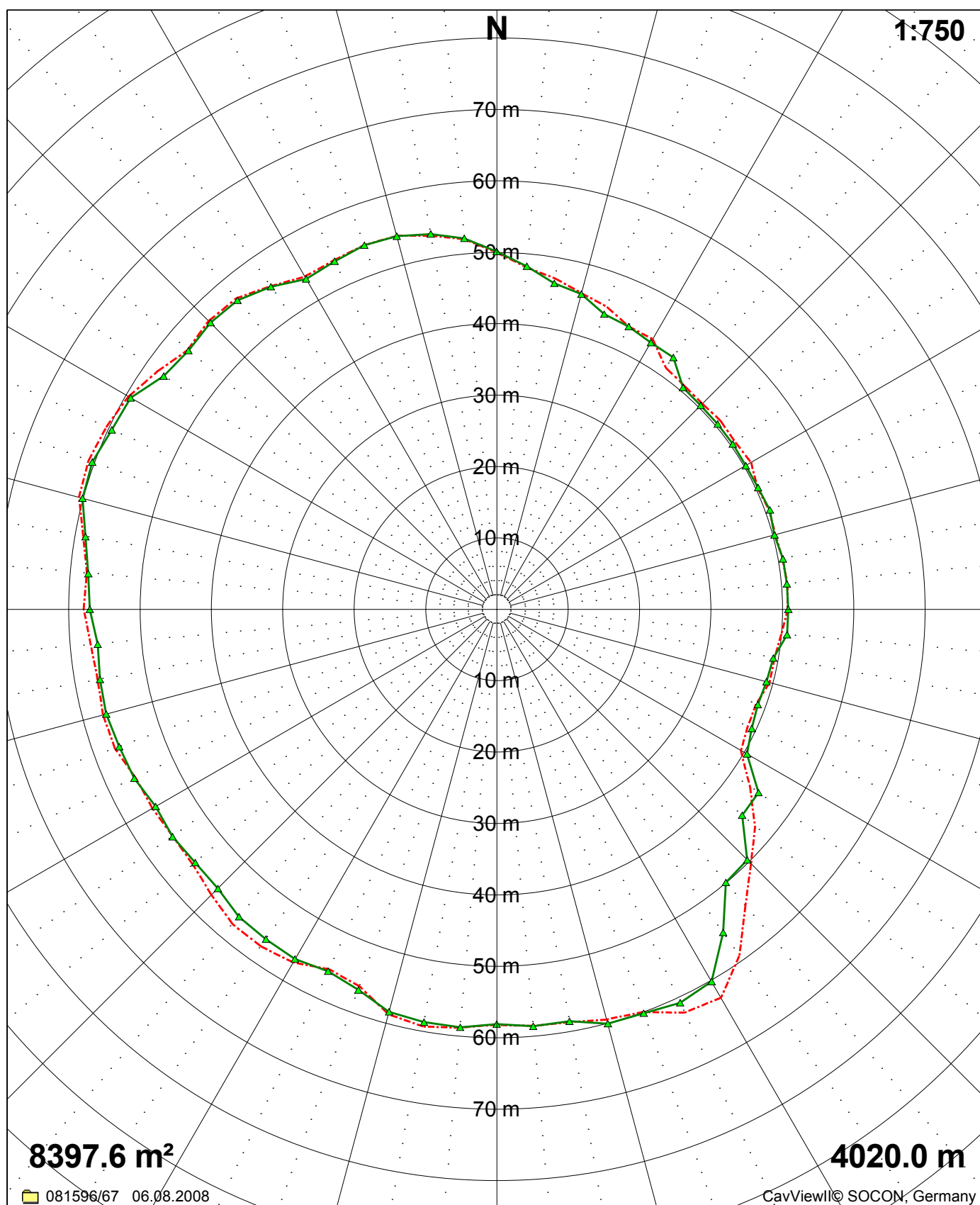
—■— (06.08.2008)

$d_{\max}$: 112.6 m 160° <--> 340° $r_{\min}$: 37.3 m -> 100° $r_{\sim}$: 51.3 m $r_{\max}$: 61.6 m -> 295°



Harlingen Bas 3

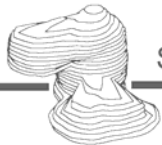
06.08.2008



--- (22.02.2008)

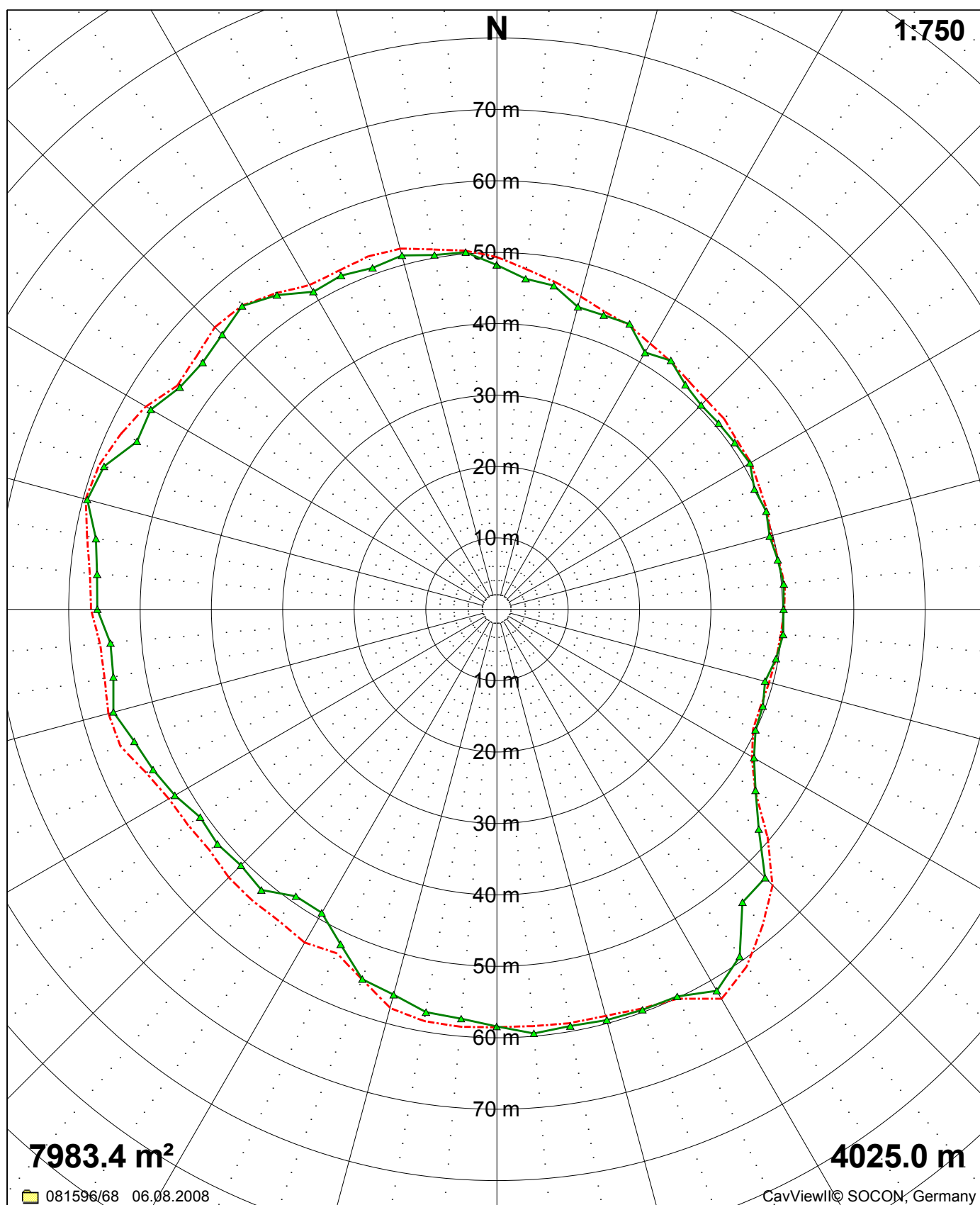
—■ (06.08.2008)

$d_{\max}$: 114.5 m 155° <--> 335° $r_{\min}$: 38.9 m -> 110° $r_{\sim}$: 51.7 m $r_{\max}$: 60.8 m -> 155°



Harlingen Bas 3

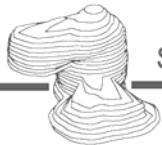
06.08.2008



--- (22.02.2008)

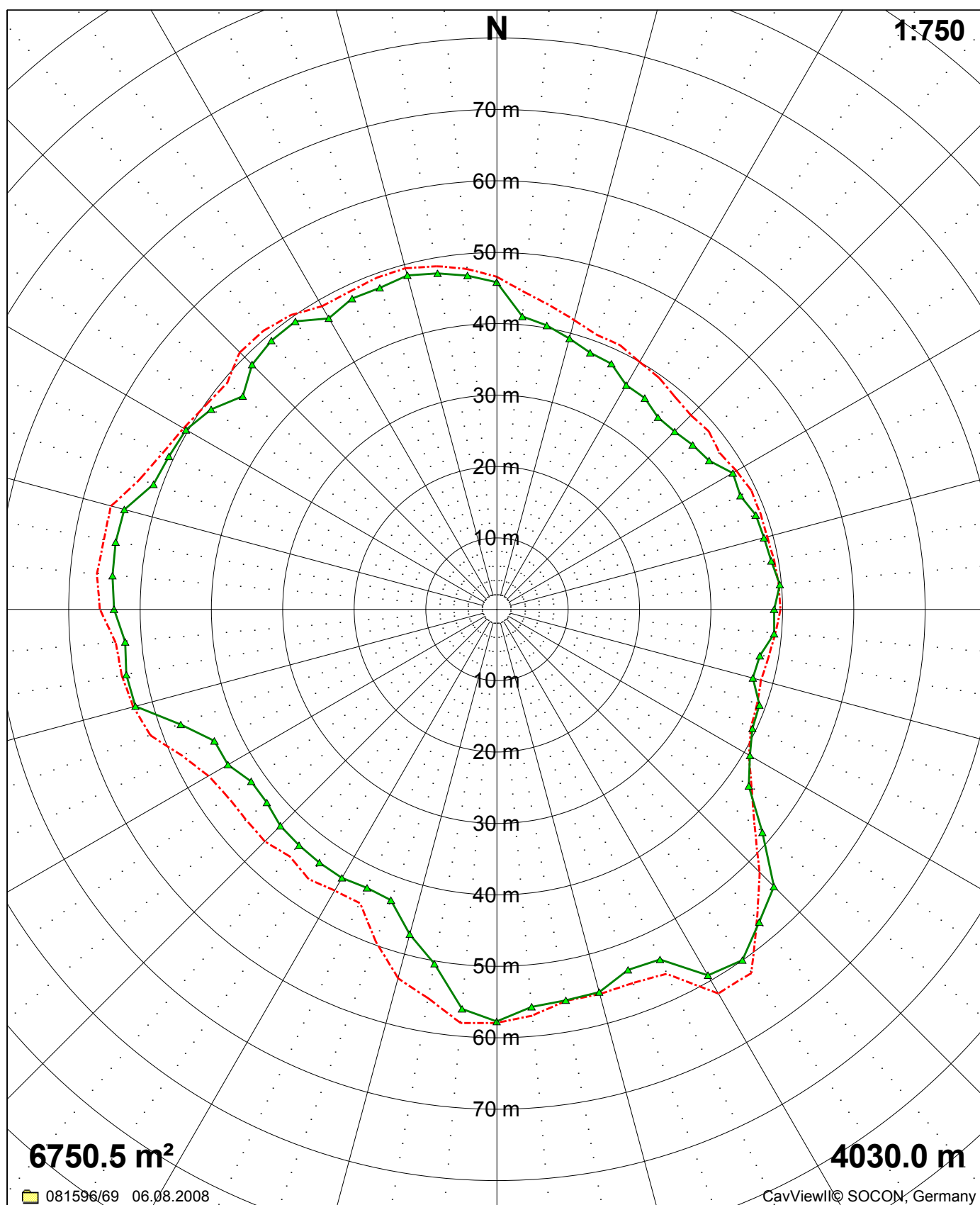
—■— (06.08.2008)

 $d_{\max}$: 113.0 m 150° <--> 330° $r_{\min}$: 38.9 m -> 105° $r_{\sim}$: 50.4 m $r_{\max}$: 61.7 m -> 150°



Harlingen Bas 3

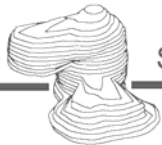
06.08.2008



--- (22.02.2008)

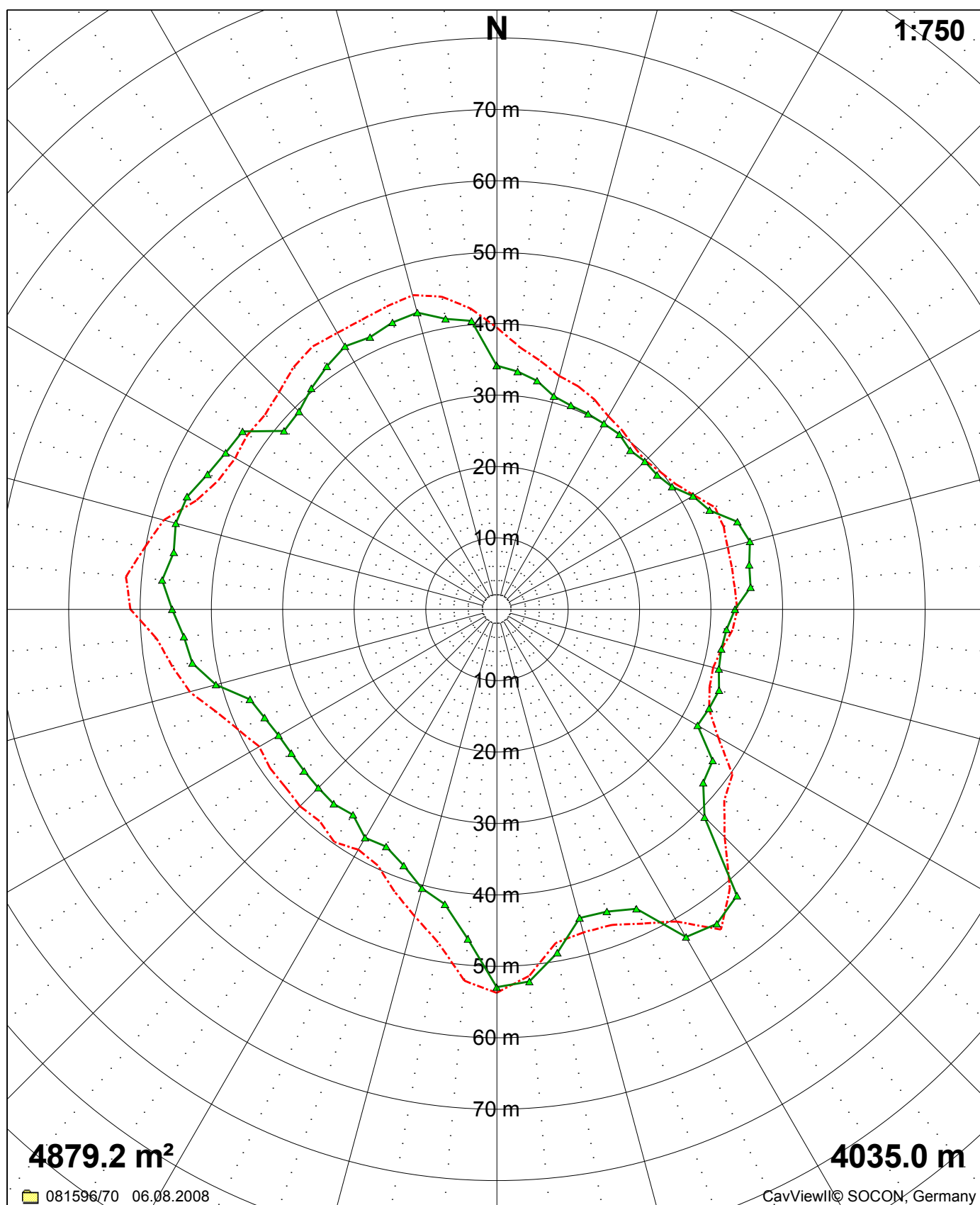
— (06.08.2008)

 $d_{\max}$: 109.2 m 145° <--> 325° $r_{\min}$: 35.1 m -> 40° $r_{\sim}$: 46.4 m $r_{\max}$: 60.0 m -> 145°



Harlingen Bas 3

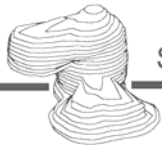
06.08.2008



--- (22.02.2008)

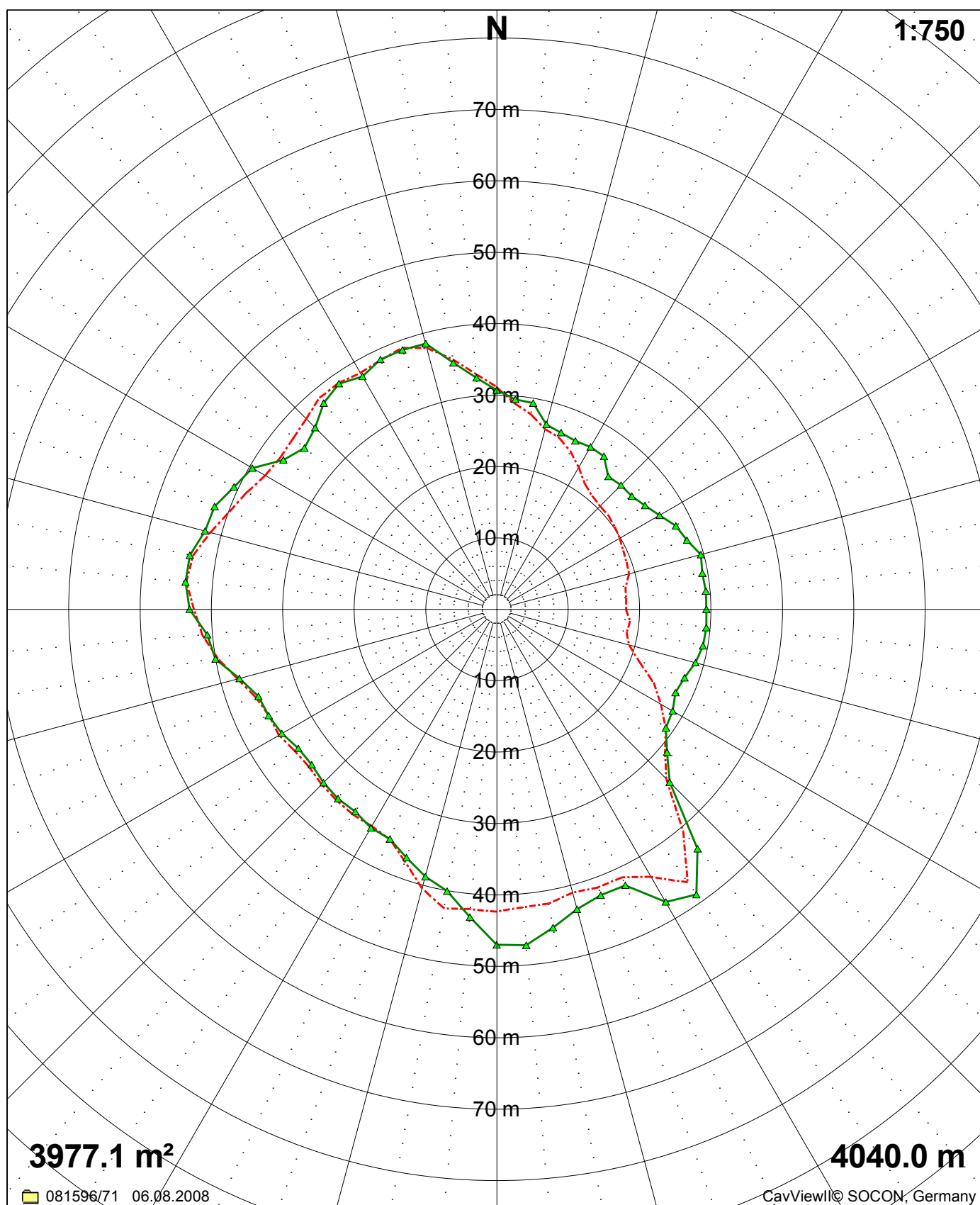
—■ (06.08.2008)

$d_{\max}$: 95.5 m 150° <--> 330° $r_{\min}$: 29.1 m -> 40° $r_{\sim}$: 39.4 m $r_{\max}$: 53.7 m -> 145°



Harlingen Bas 3

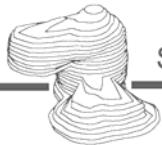
06.08.2008



--- (22.02.2008)

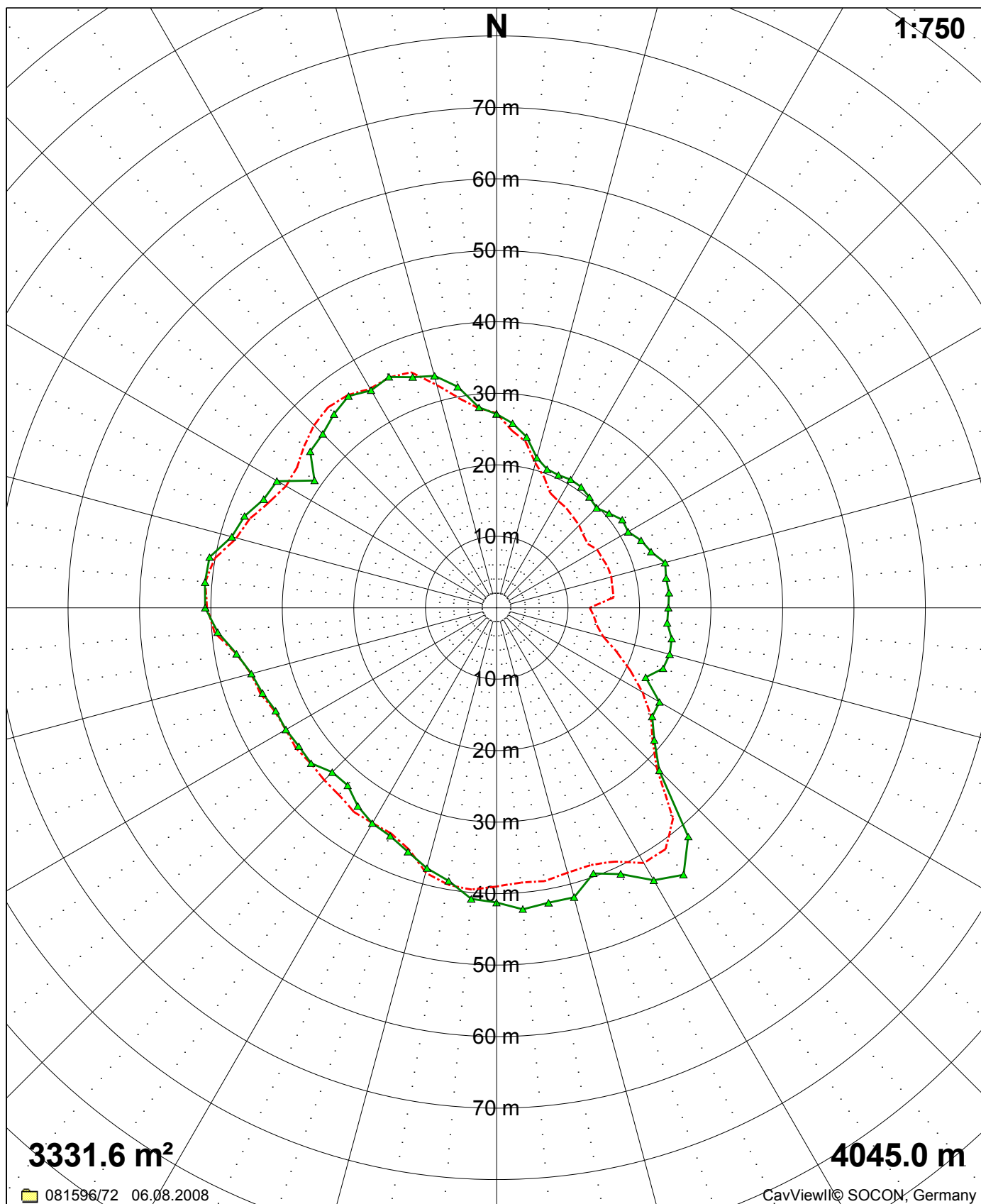
—■ (06.08.2008)

 $d_{\max}$: 87.3 m 145° <--> 325° $r_{\min}$: 24.3 m -> 40° $r_{\sim}$: 35.6 m $r_{\max}$: 48.7 m -> 145°



Harlingen Bas 3

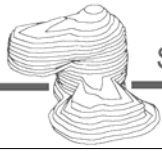
06.08.2008



----- (22.02.2008)

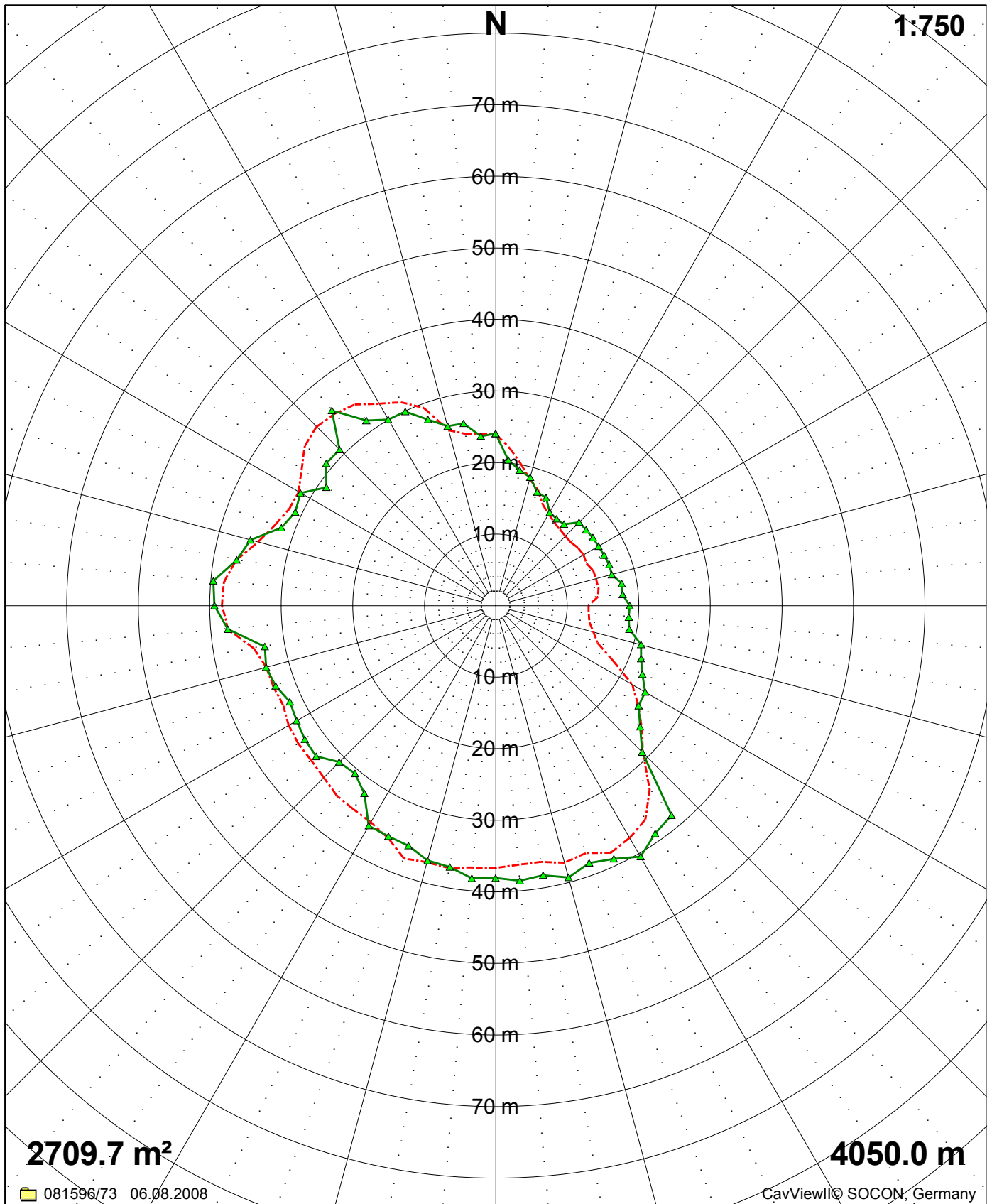
—■— (06.08.2008)

d_{max}: 81.7 m 145° <--> 325° r_{min}: 19.8 m -> 45° r~: 32.6 m r_{max}: 45.6 m -> 145°



Harlingen Bas 3

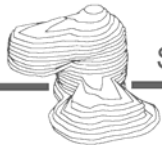
06.08.2008



--- (22.02.2008)

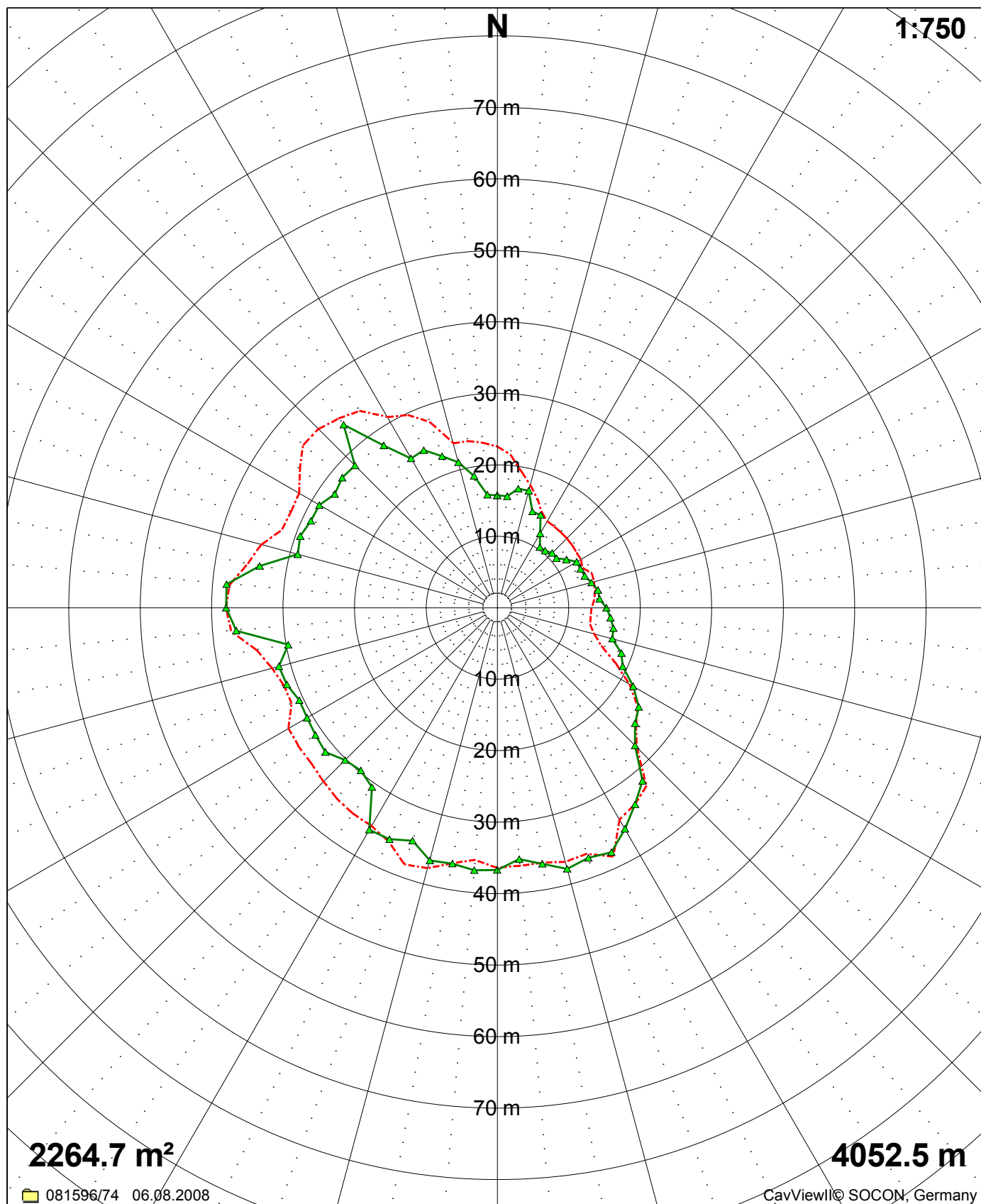
—■ (06.08.2008)

$d_{\max}$: 73.8 m 140° <--> 320° $r_{\min}$: 14.8 m -> 36° $r_{\sim}$: 29.4 m $r_{\max}$: 40.5 m -> 150°



Harlingen Bas 3

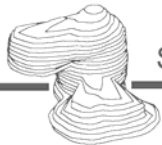
06.08.2008



----- (22.02.2008)

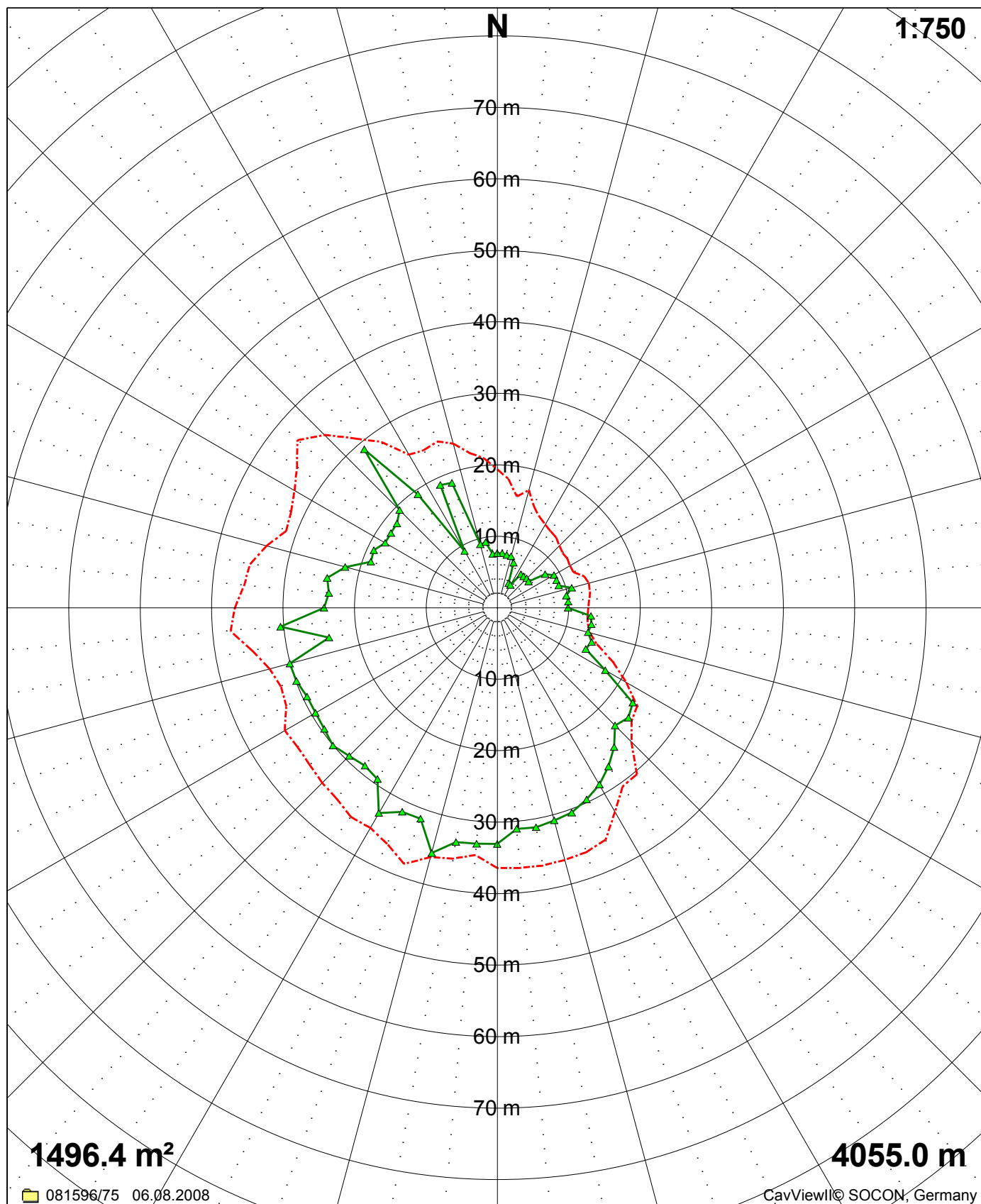
—▲— (06.08.2008)

$d_{\max}$: 65.1 m 140° <--> 320° $r_{\min}$: 10.3 m -> 35° $r_{\sim}$: 26.8 m $r_{\max}$: 38.0 m -> 275°



Harlingen Bas 3

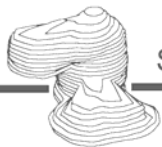
06.08.2008



--- (22.02.2008)

—■— (06.08.2008)

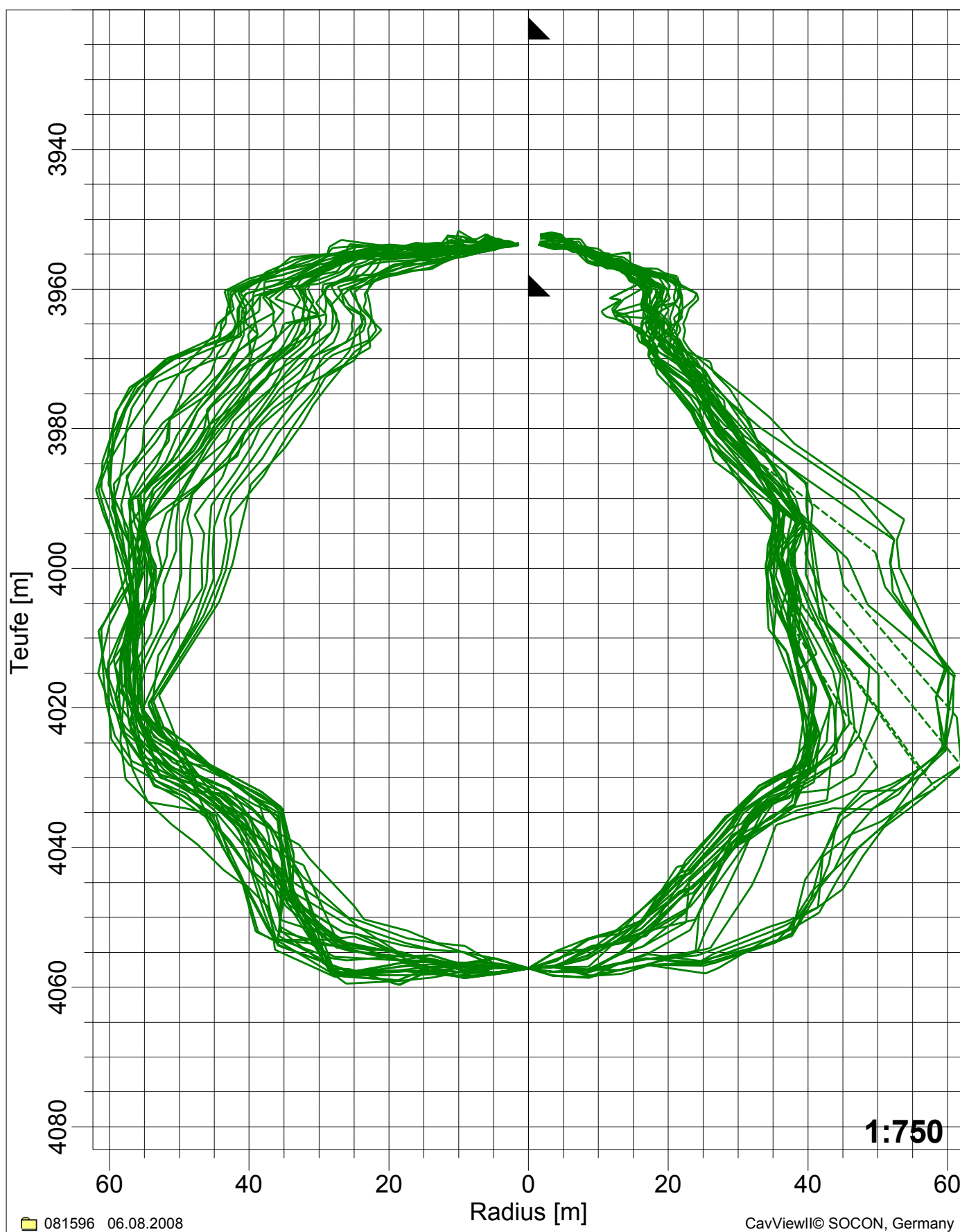
 $d_{\max}$: 54.4 m 140° <--> 320° $r_{\min}$: 3.7 m -> 30° $r_{\sim}$: 21.8 m $r_{\max}$: 35.5 m -> 195°



Harlingen Bas 3

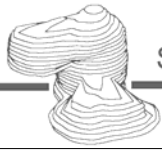
MAXPLOT

06.08.2008



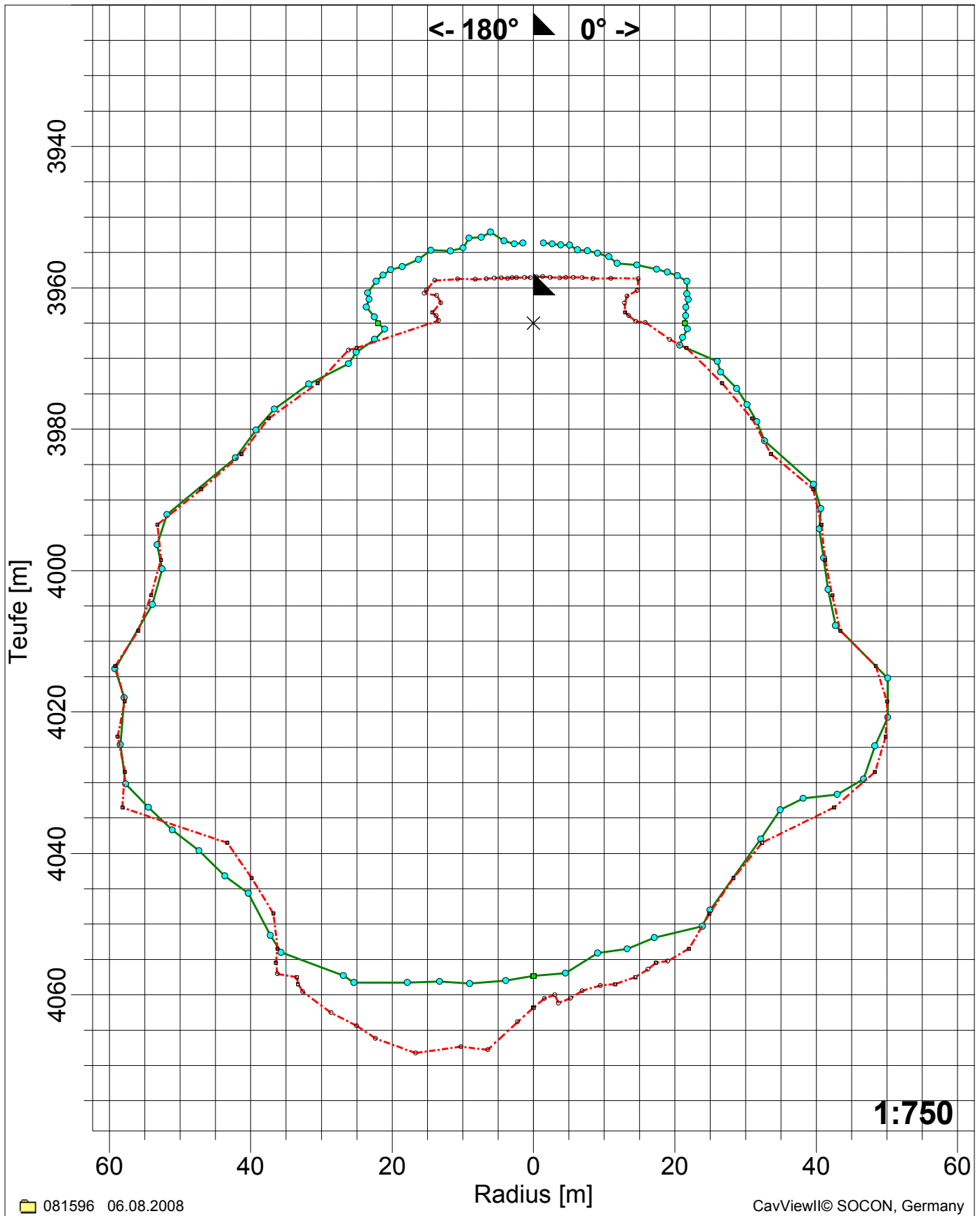
11 3/4" : 3961.0 m

7" : 3924.2 m



Harlingen Bas 3

06.08.2008



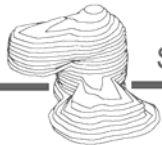
—●— (06.08.2008)

- - -●- - (22.02.2008)

▲ 11 3/4" : 3961.0 m

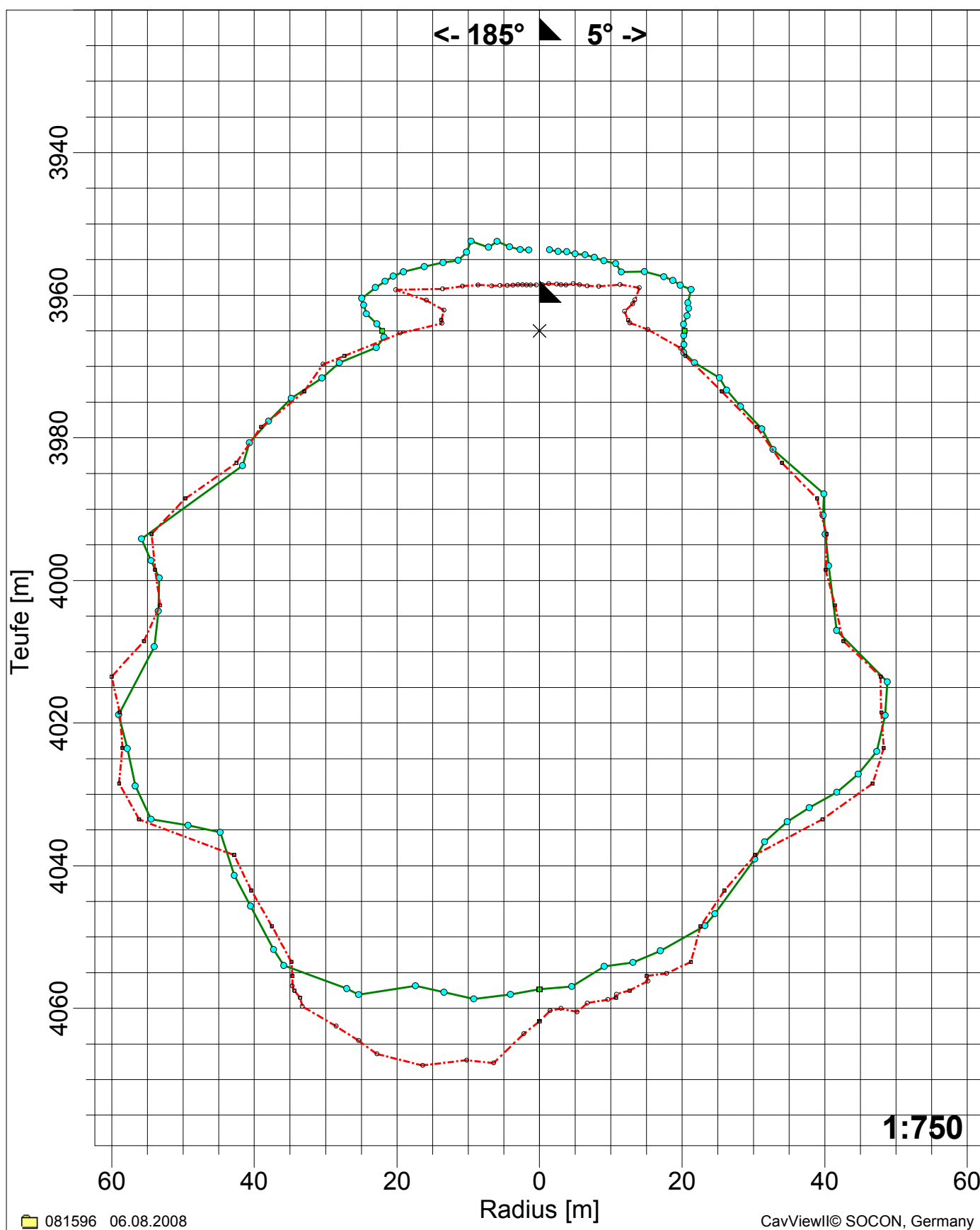
▲ 7" : 3924.2 m

∨ ^ Kipp-Position



Harlingen Bas 3

06.08.2008



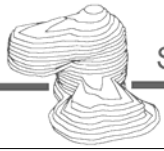
—●— (06.08.2008)

- - -●- - (22.02.2008)

▲ 11 3/4" : 3961.0 m

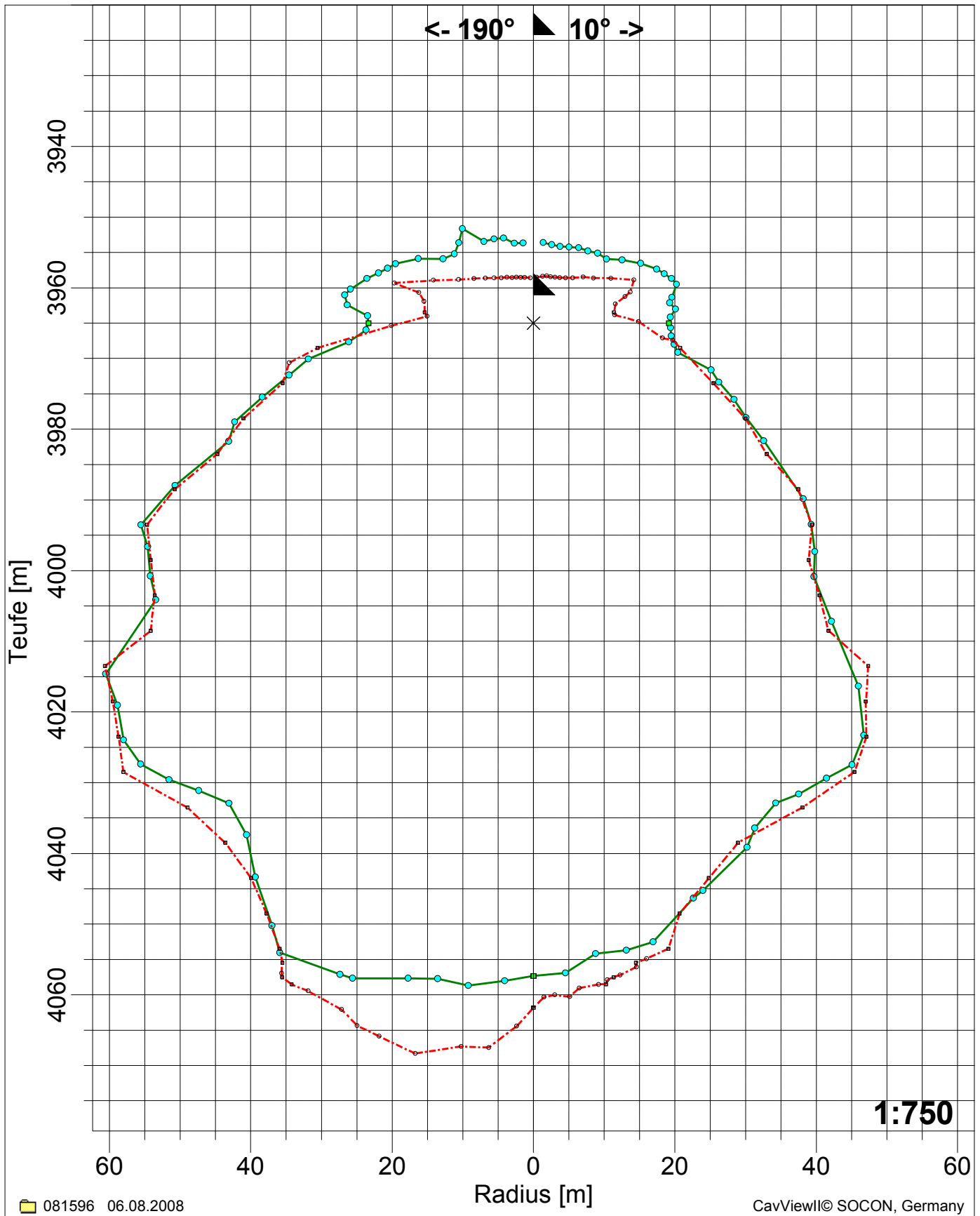
▲ 7" : 3924.2 m

∨ ^ Kipp-Position



Harlingen Bas 3

06.08.2008



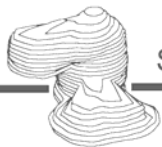
—●— (06.08.2008)

- - -●- - (22.02.2008)

▲ 11 3/4" : 3961.0 m

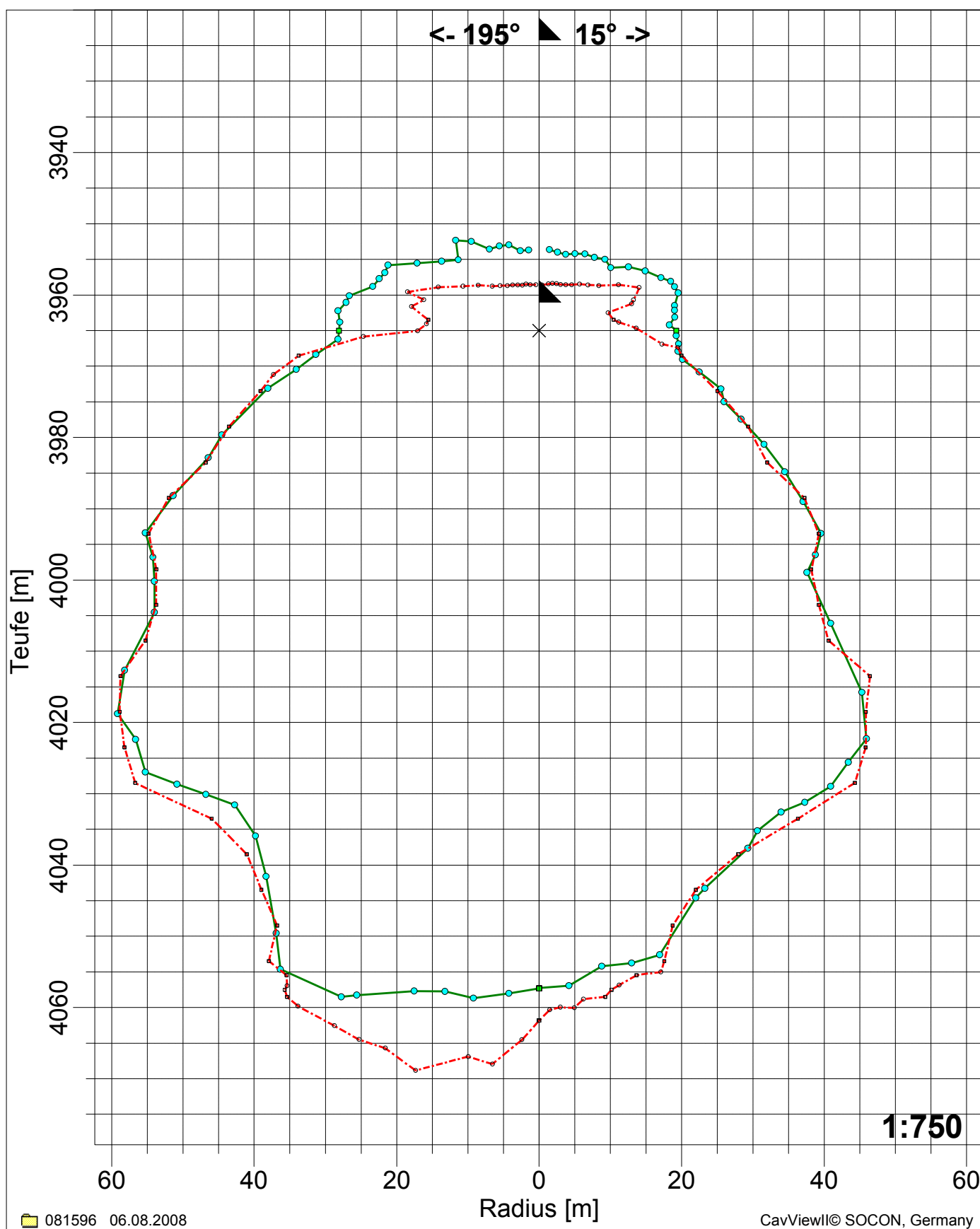
▲ 7" : 3924.2 m

∨ ∧ Kipp-Position



Harlingen Bas 3

06.08.2008



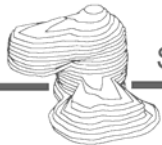
—●— (06.08.2008)

- - -●- - (22.02.2008)

▲ 11 3/4" : 3961.0 m

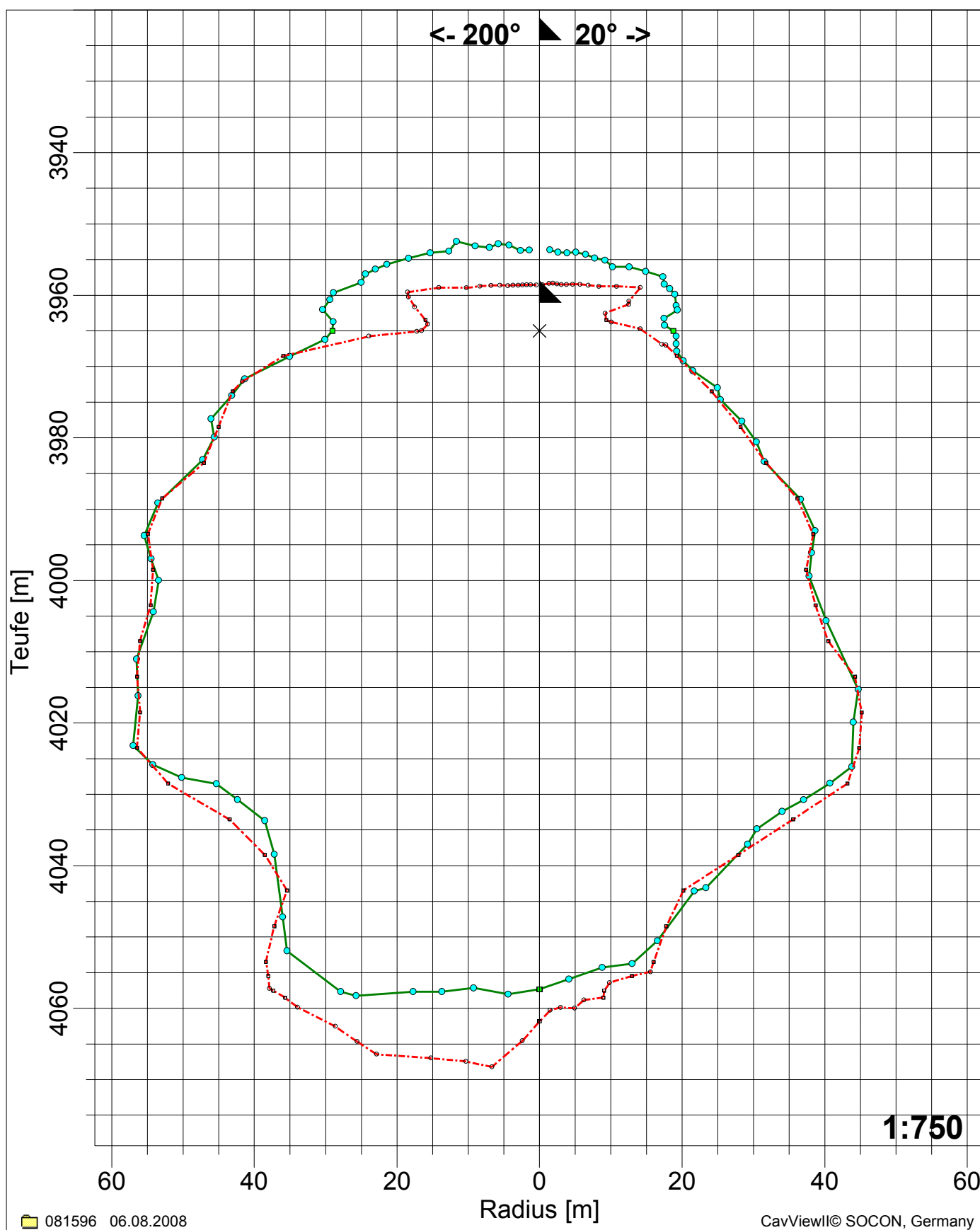
▲ 7" : 3924.2 m

∨ ∧ Kipp-Position



Harlingen Bas 3

06.08.2008



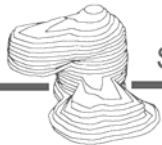
—●— (06.08.2008)

- - -●- - (22.02.2008)

▲ 11 3/4" : 3961.0 m

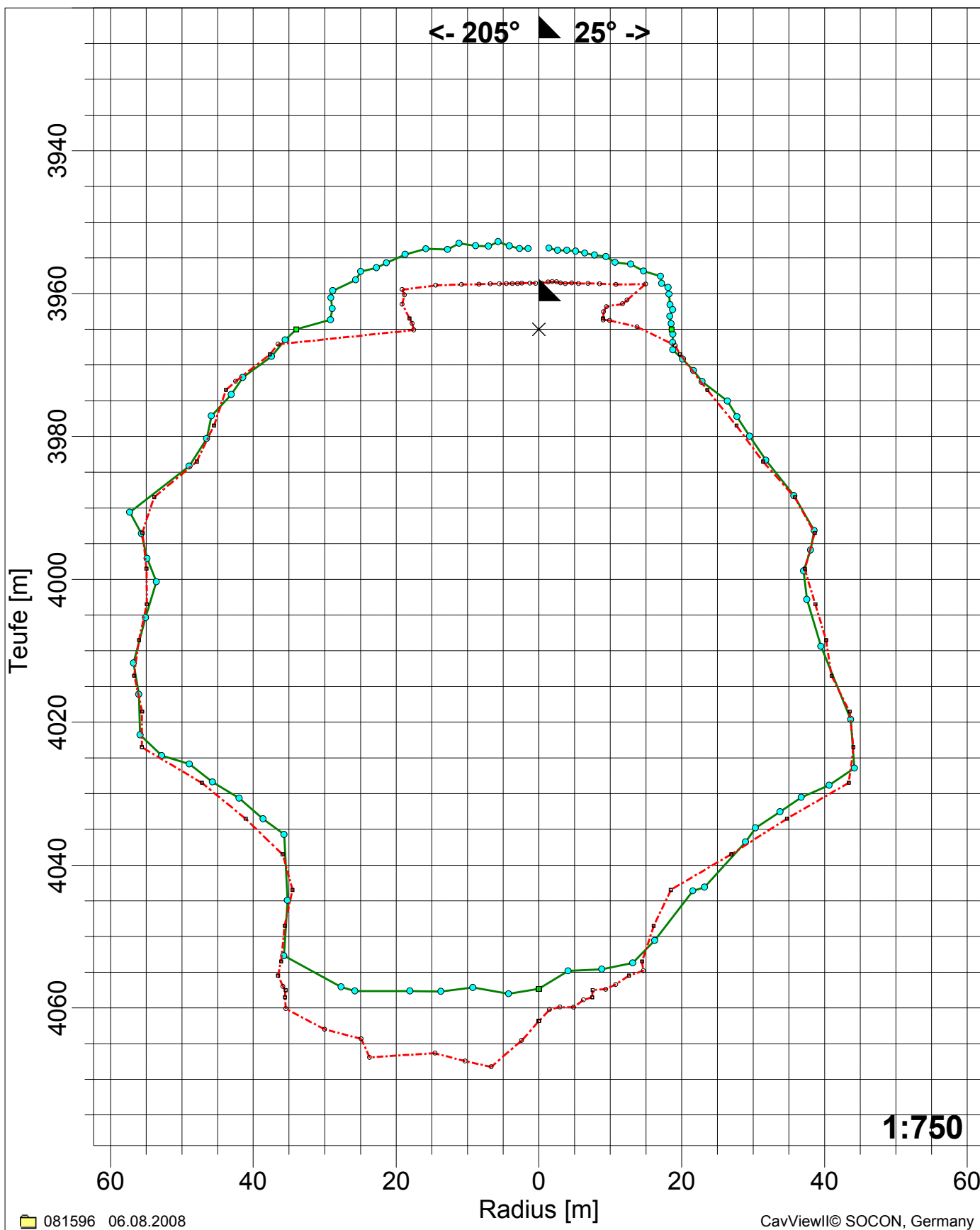
▲ 7" : 3924.2 m

∨ ∧ Kipp-Position



Harlingen Bas 3

06.08.2008



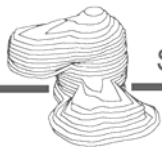
—●— (06.08.2008)

- - - (22.02.2008)

▲ 11 3/4" : 3961.0 m

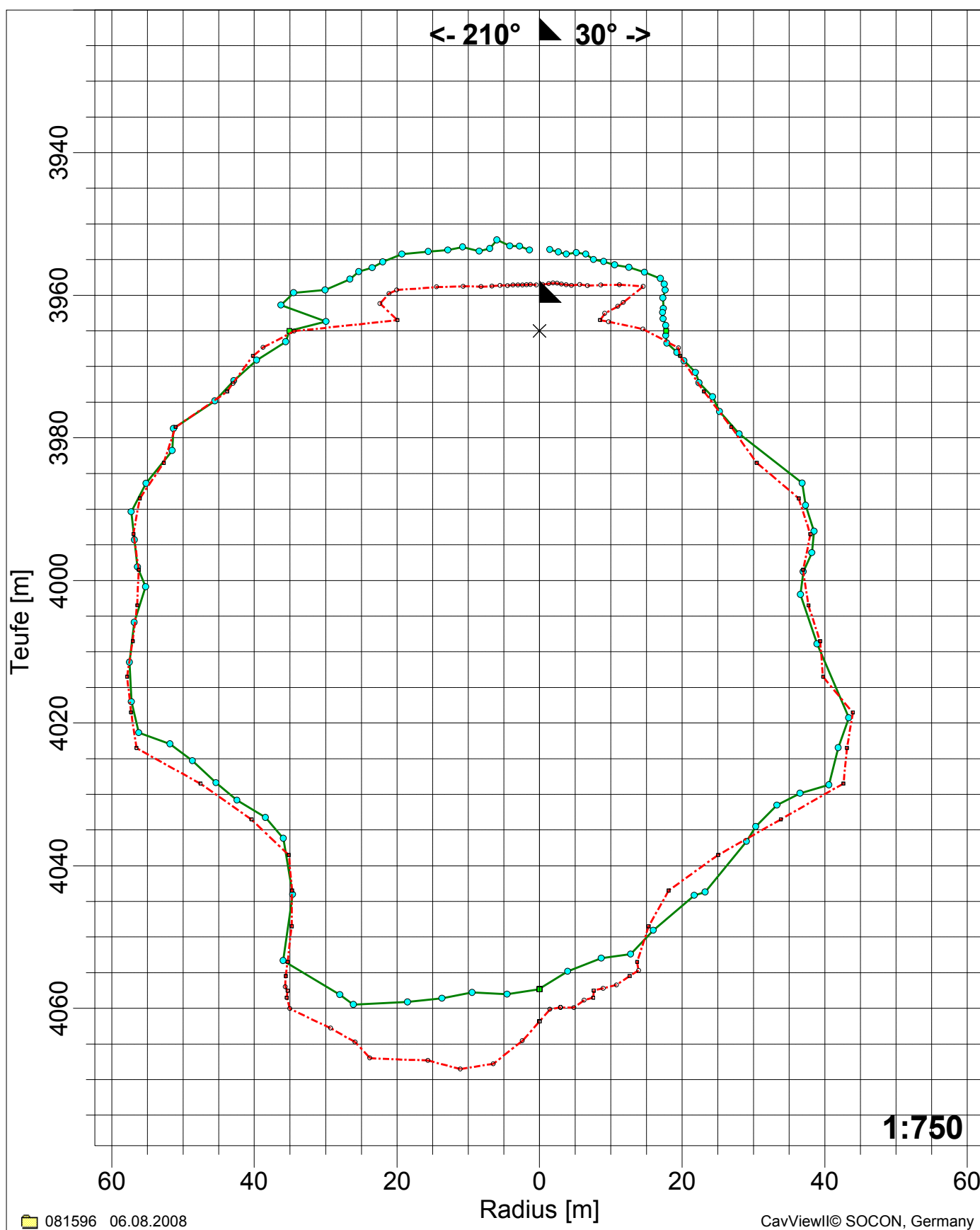
▲ 7" : 3924.2 m

∨ ∧ Kipp-Position



Harlingen Bas 3

06.08.2008



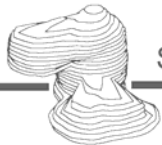
—●— (06.08.2008)

- - -●- - (22.02.2008)

▲ 11 3/4" : 3961.0 m

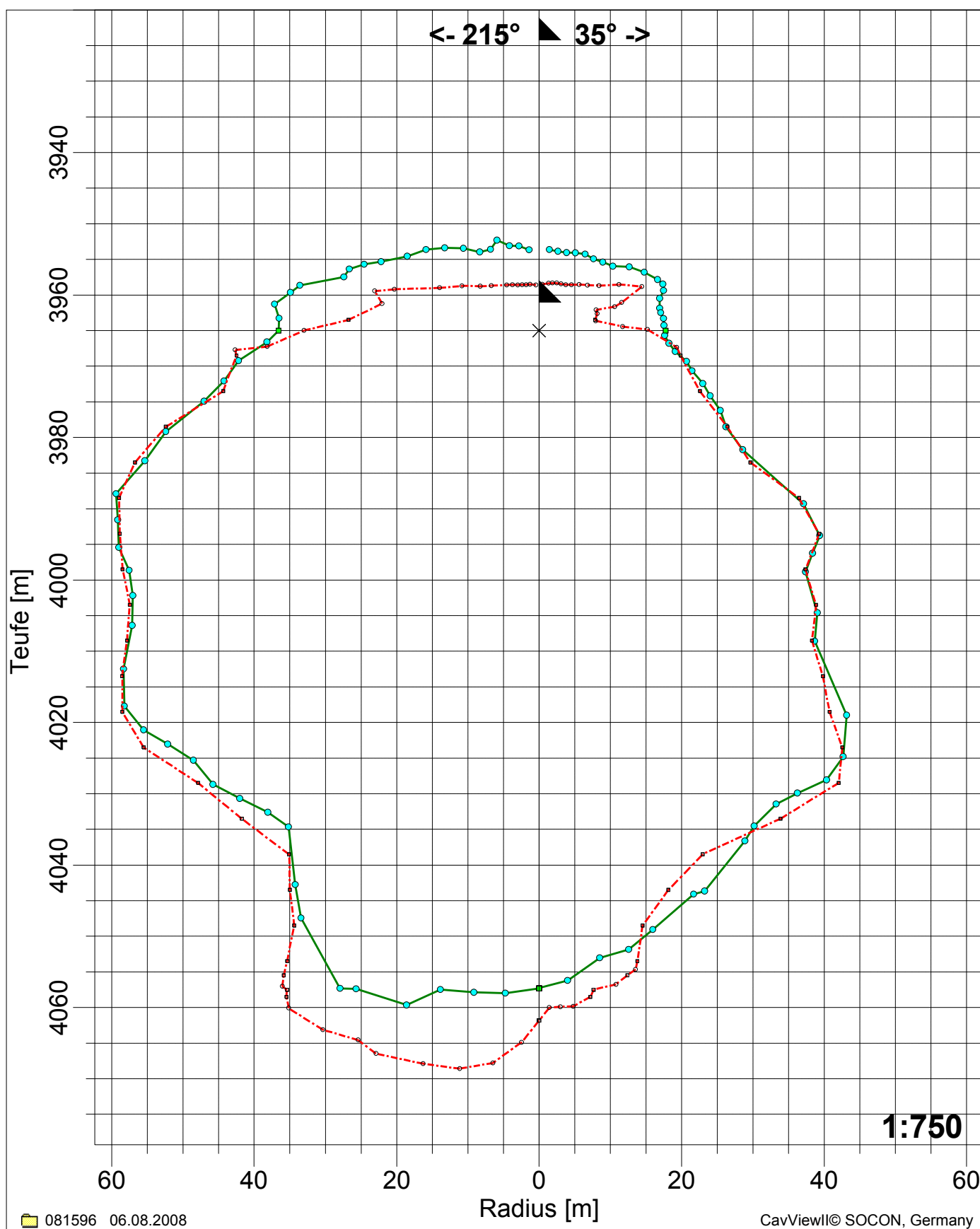
▲ 7" : 3924.2 m

∨ ∧ Kipp-Position



Harlingen Bas 3

06.08.2008



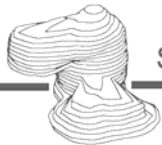
—●— (06.08.2008)

- - -●- - (22.02.2008)

▲ 11 3/4" : 3961.0 m

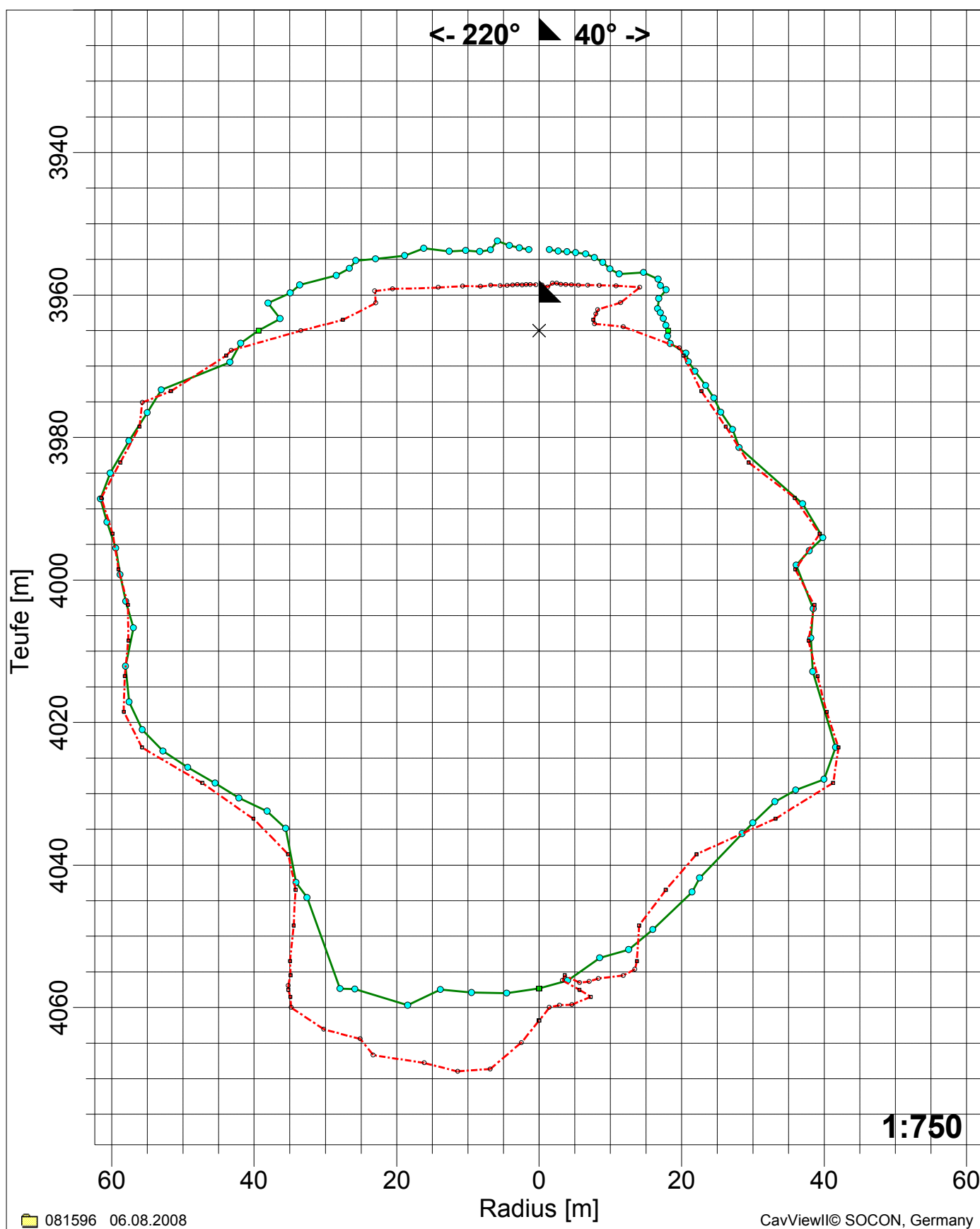
▲ 7" : 3924.2 m

∨ ∧ Kipp-Position



Harlingen Bas 3

06.08.2008



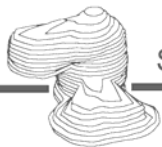
—●— (06.08.2008)

- - -●- - (22.02.2008)

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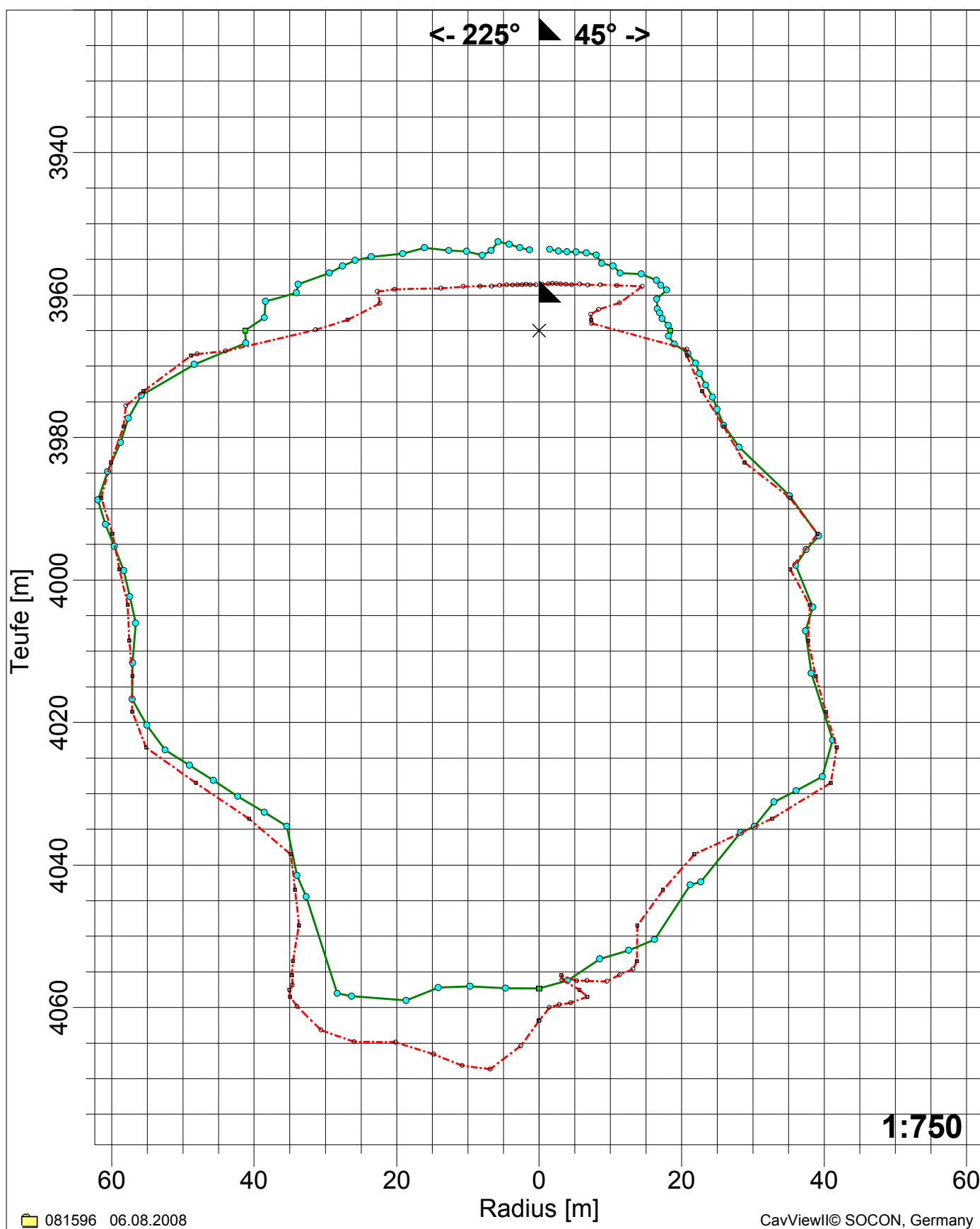
▲ 7" : 3924.2 m

∨ ∧ Kipp-Position



Harlingen Bas 3

06.08.2008



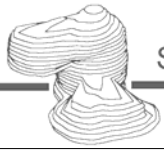
—●— (06.08.2008)

- - - (22.02.2008)

▲ 11 3/4" : 3961.0 m

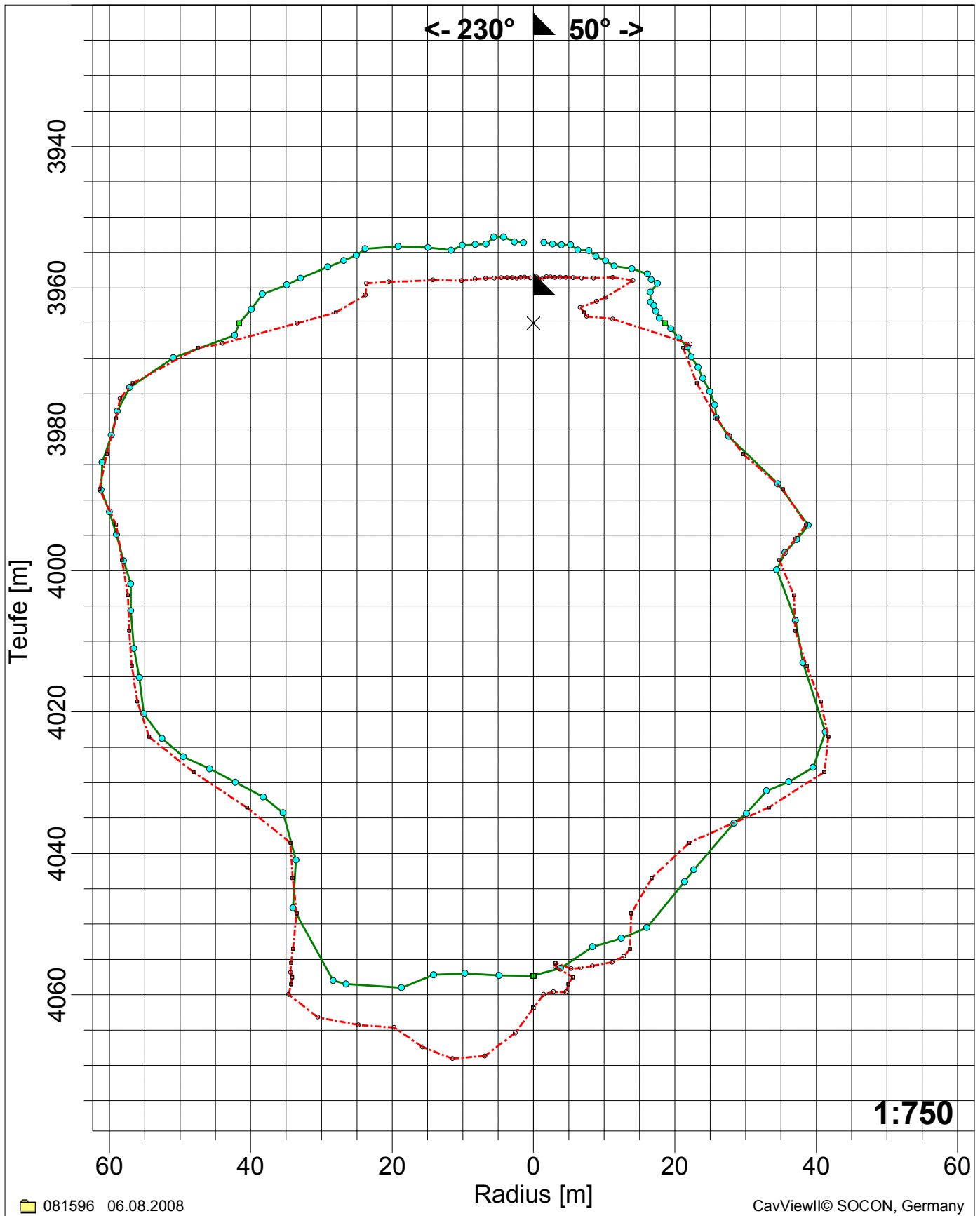
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∨ ∧ Kipp-Position



Harlingen Bas 3

06.08.2008



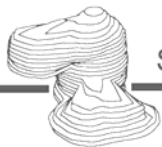
—●— (06.08.2008)

- - -●- - (22.02.2008)

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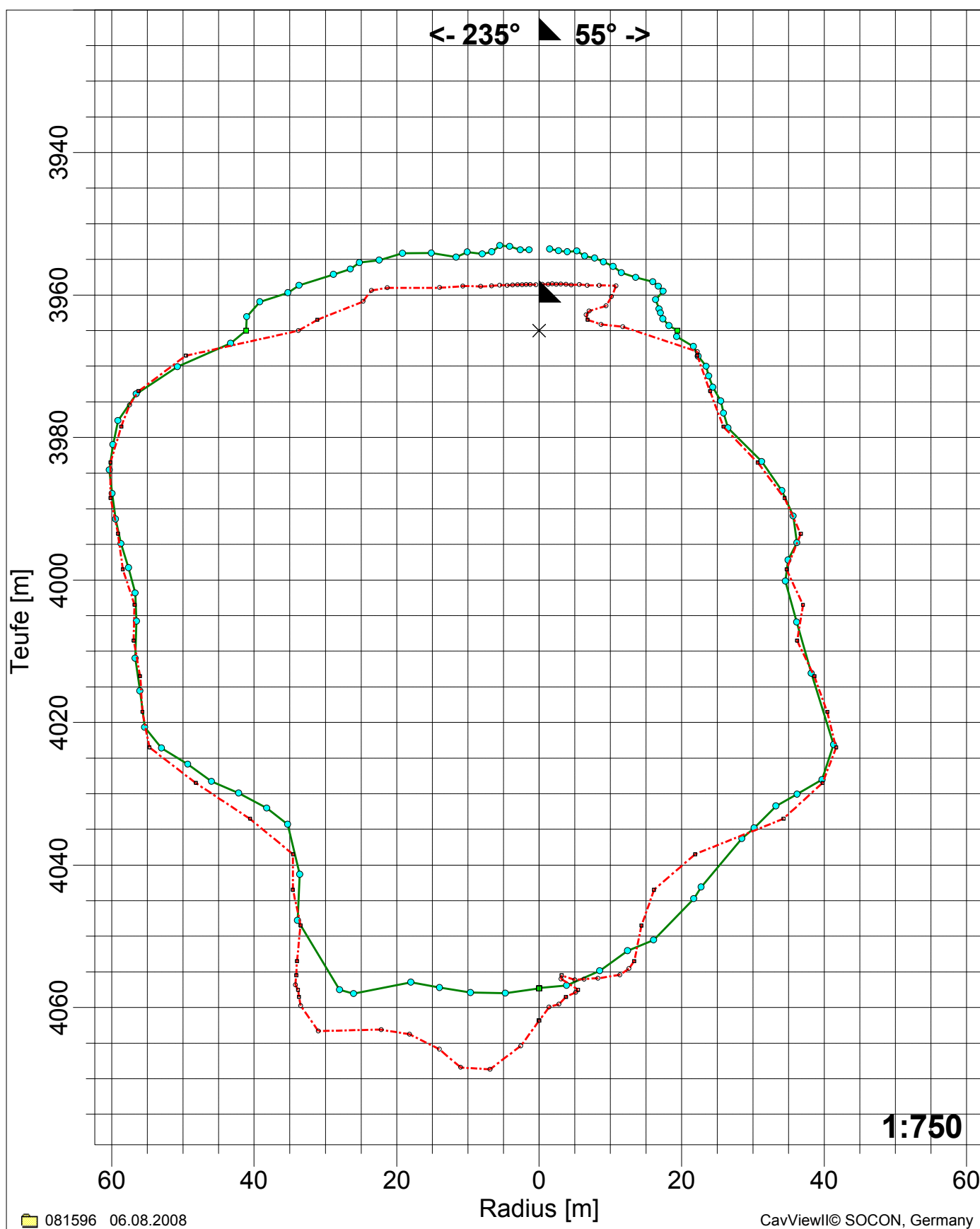
▲ 7" : 3924.2 m

∨ ∧ Kipp-Position



Harlingen Bas 3

06.08.2008



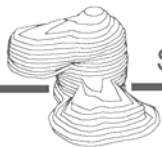
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- - -●- - (22.02.2008)

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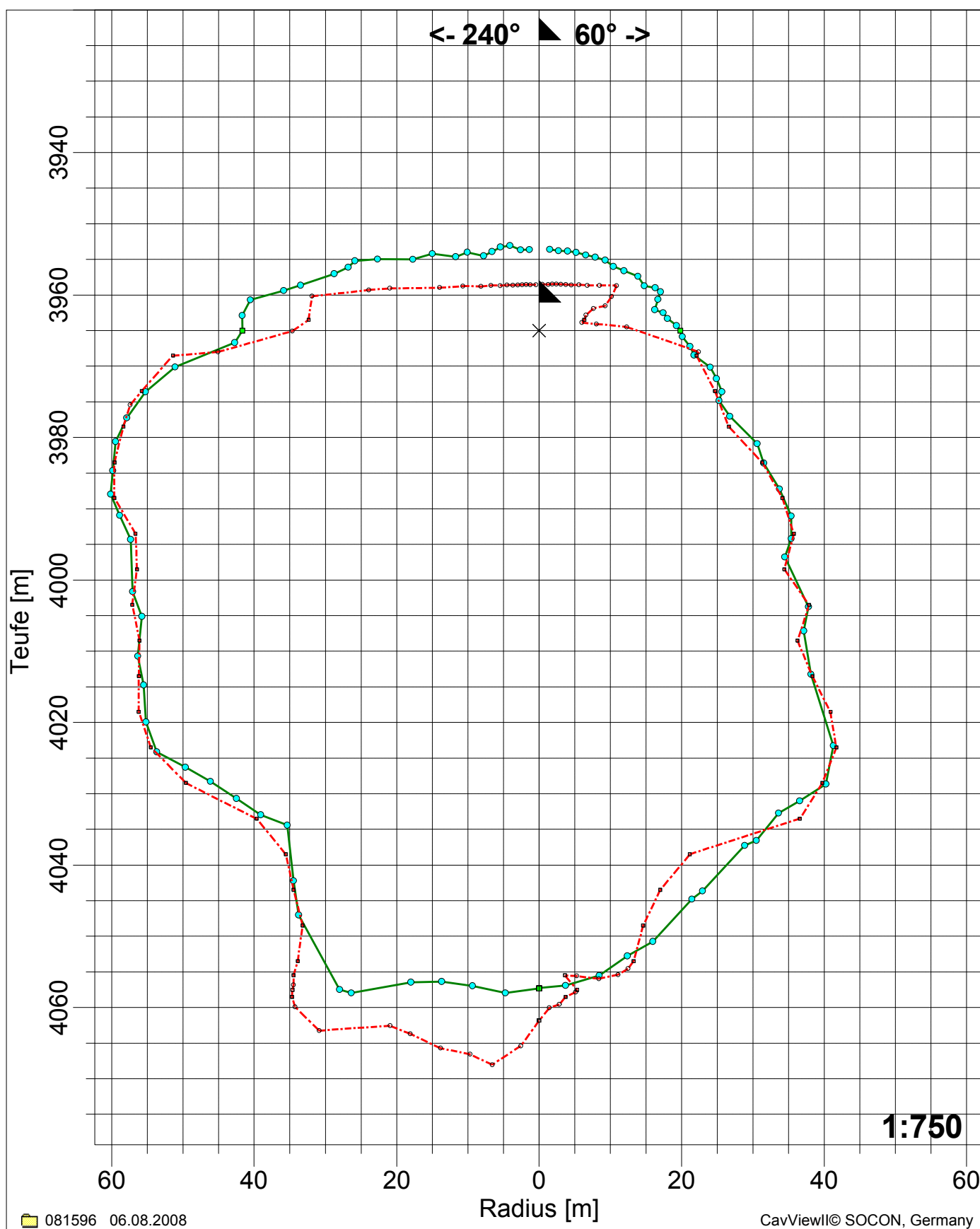
▲ 7" : 3924.2 m

∨ ∧ Kipp-Position



Harlingen Bas 3

06.08.2008



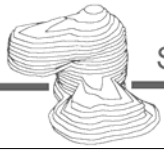
—●— (06.08.2008)

- - - (22.02.2008)

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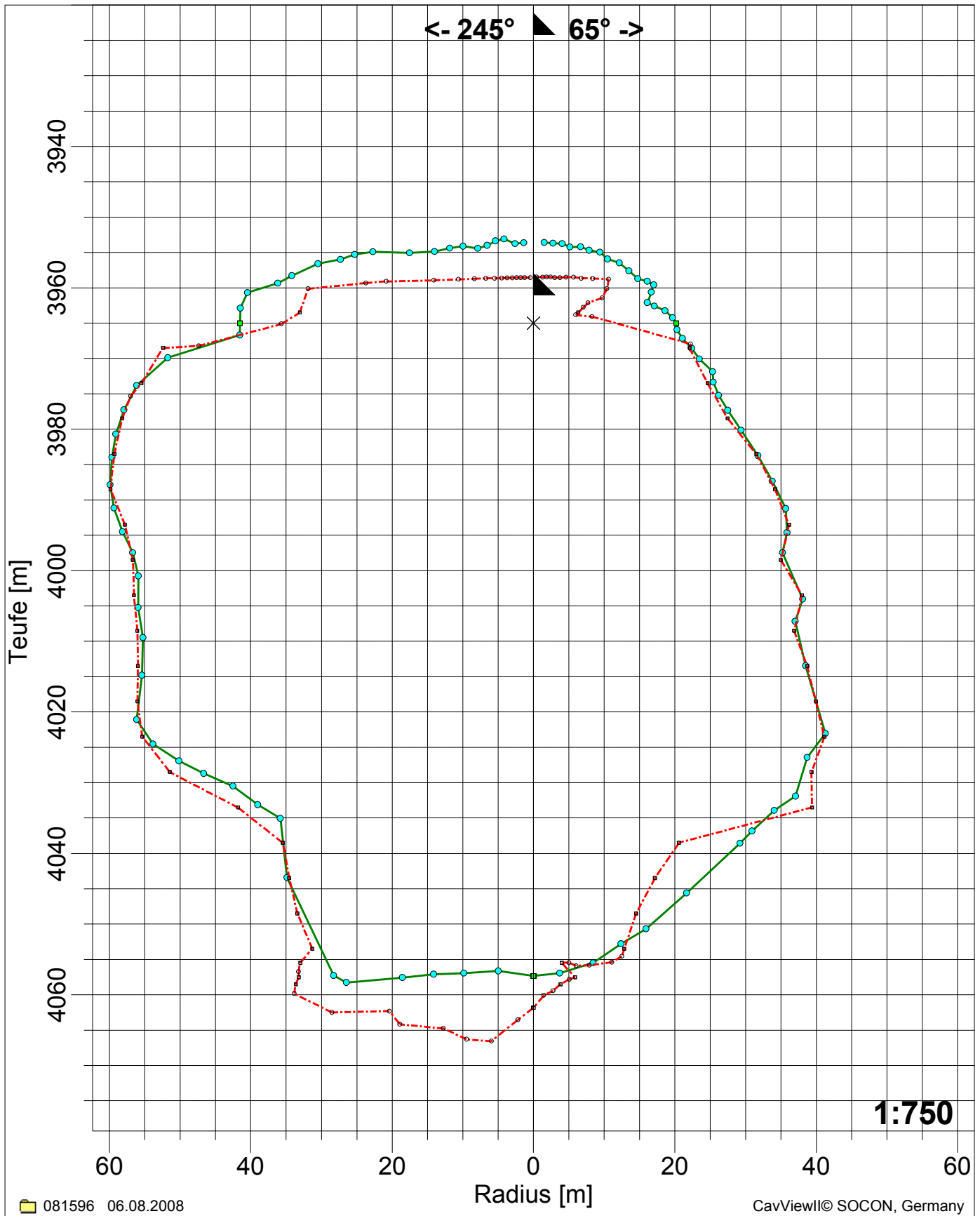
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Harlingen Bas 3

06.08.2008



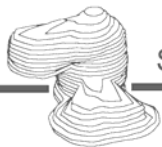
—●— (06.08.2008)

- - -●- - (22.02.2008)

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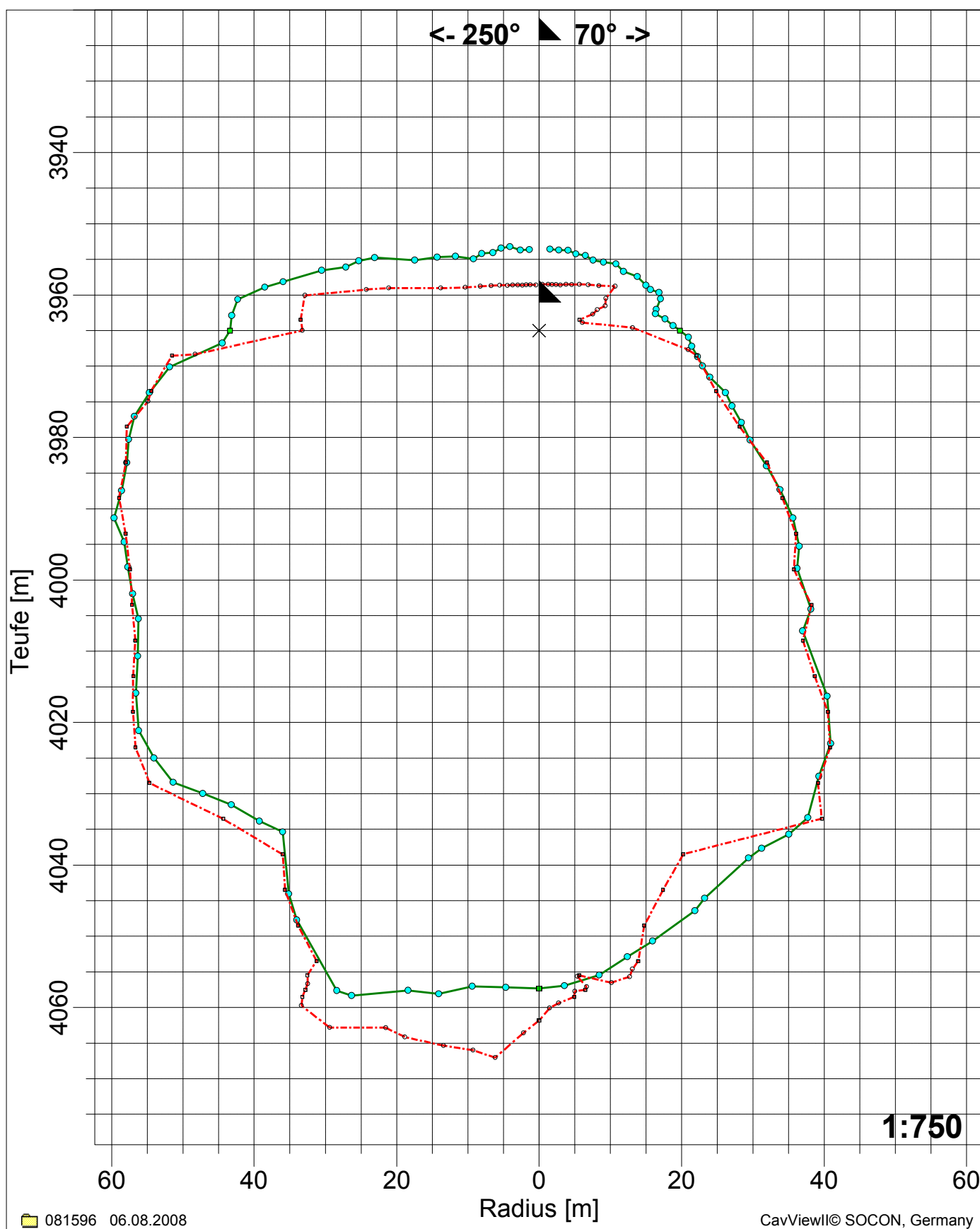
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06.08.2008



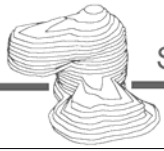
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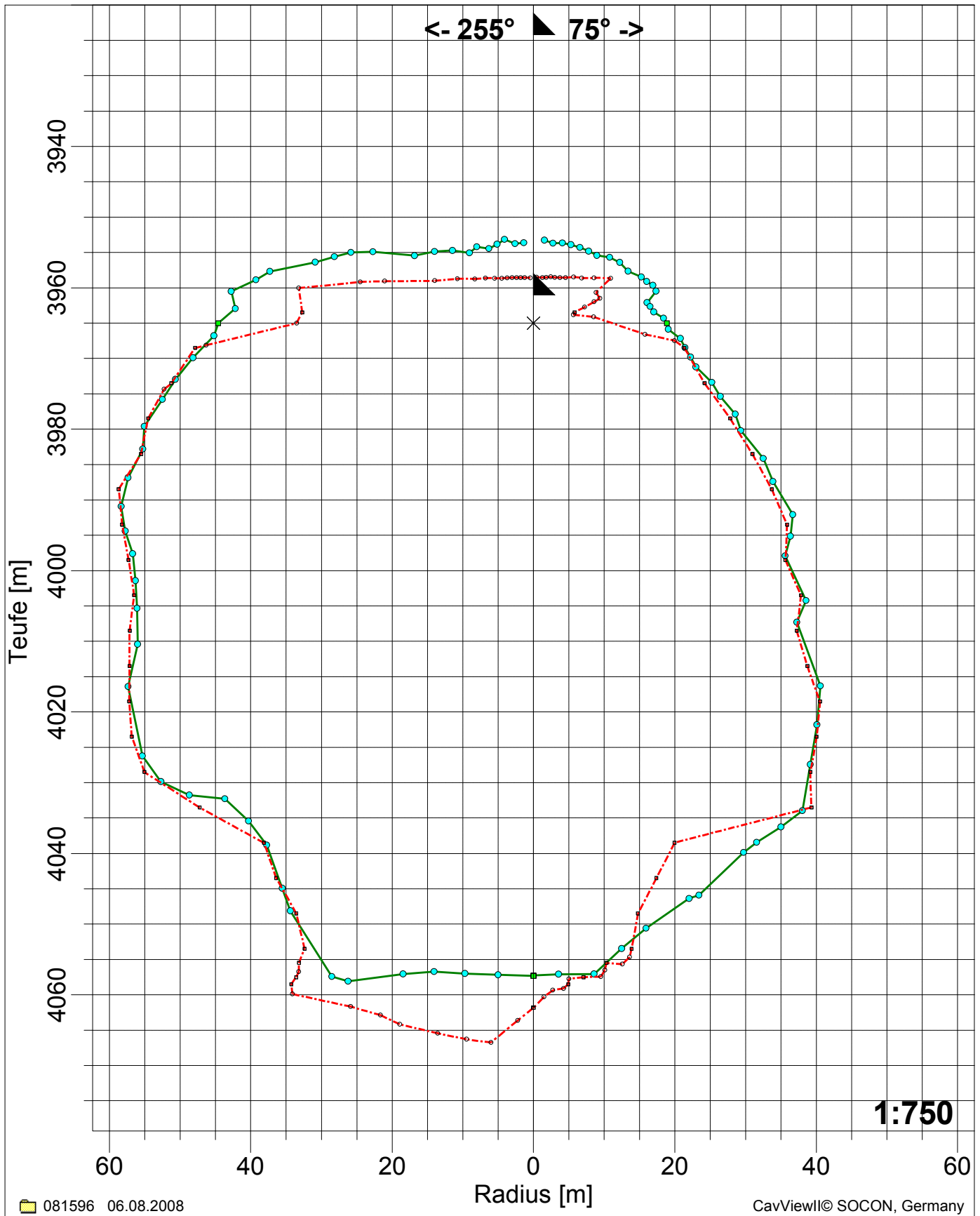
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Harlingen Bas 3

06.08.2008



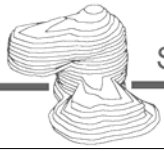
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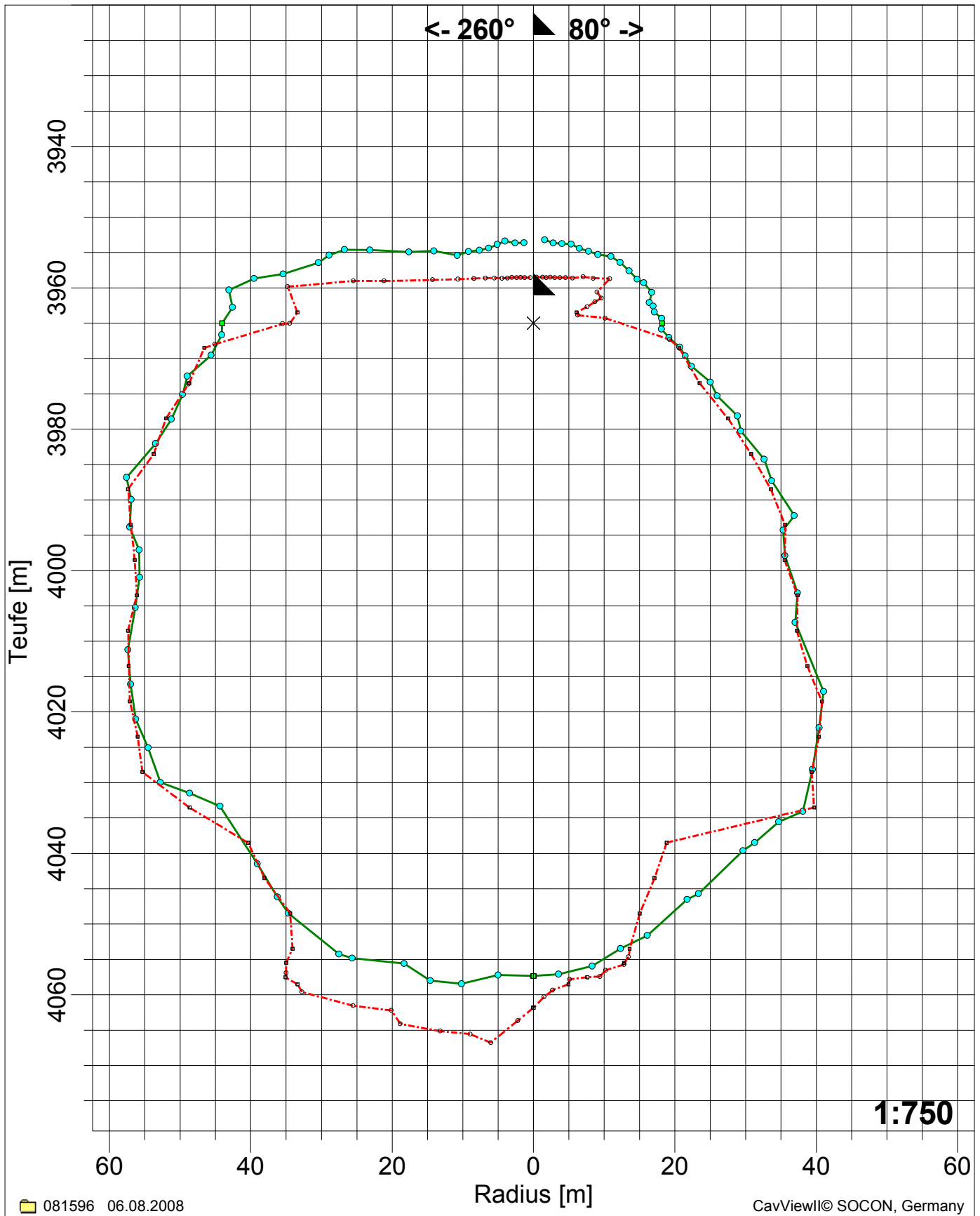
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∨ ∧ Kipp-Position



Harlingen Bas 3

06.08.2008



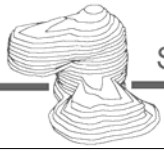
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- - -●- - (22.02.2008)

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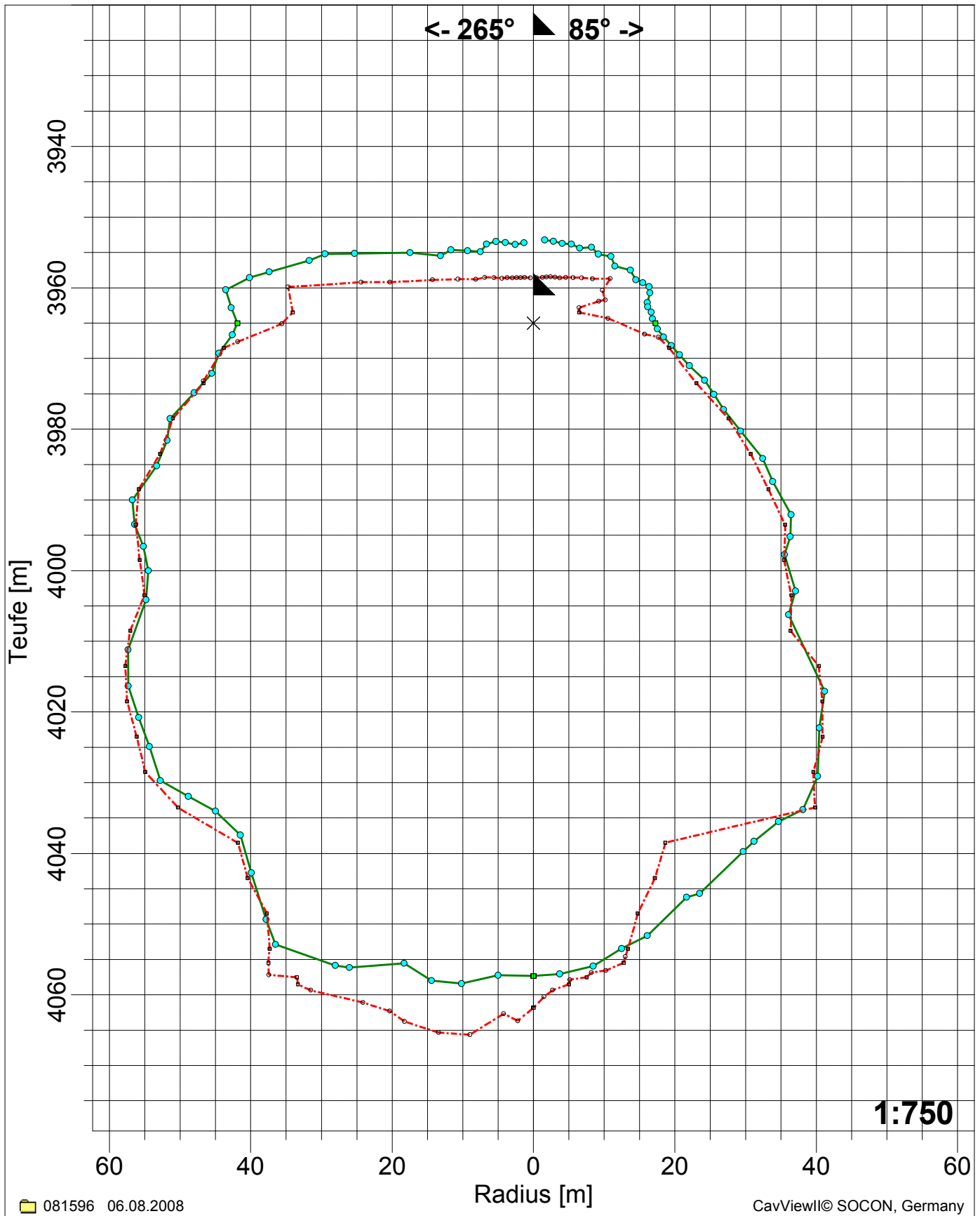
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∨ ^ Kipp-Position



Harlingen Bas 3

06.08.2008



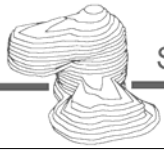
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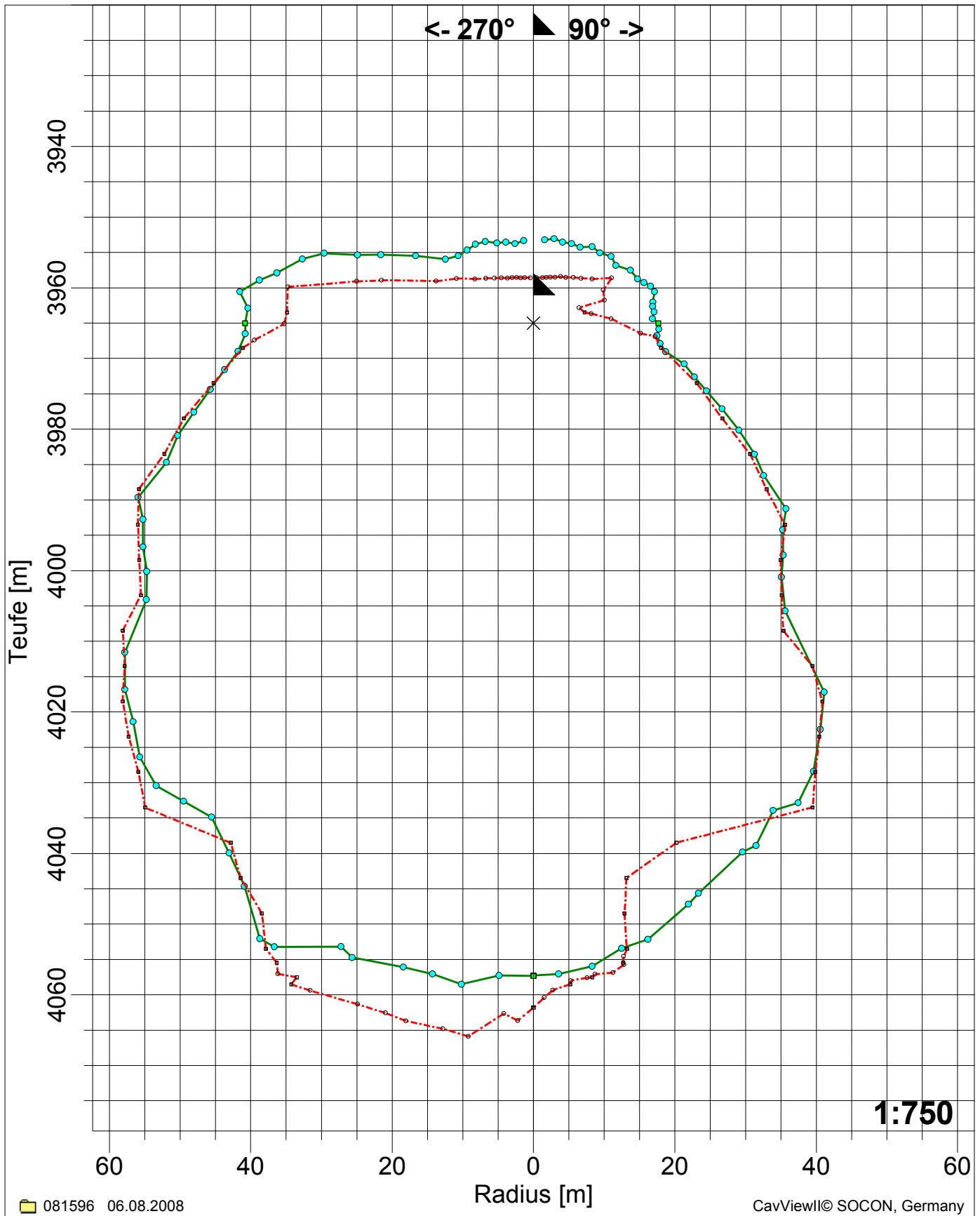
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Harlingen Bas 3

06.08.2008



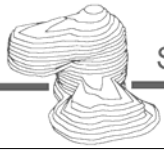
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- - -●- - (22.02.2008)

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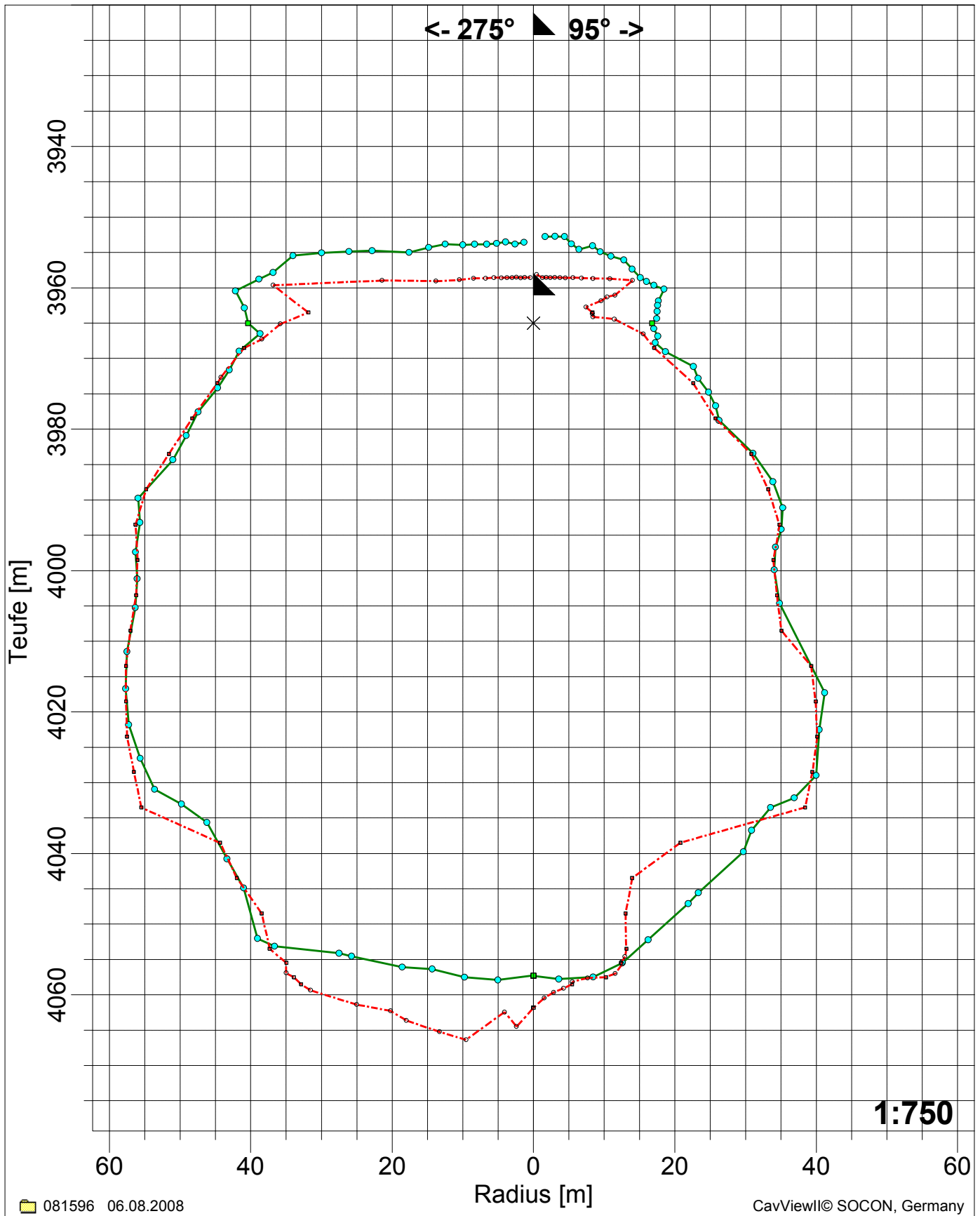
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∨ ∧ Kipp-Position



Harlingen Bas 3

06.08.2008



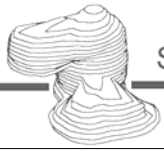
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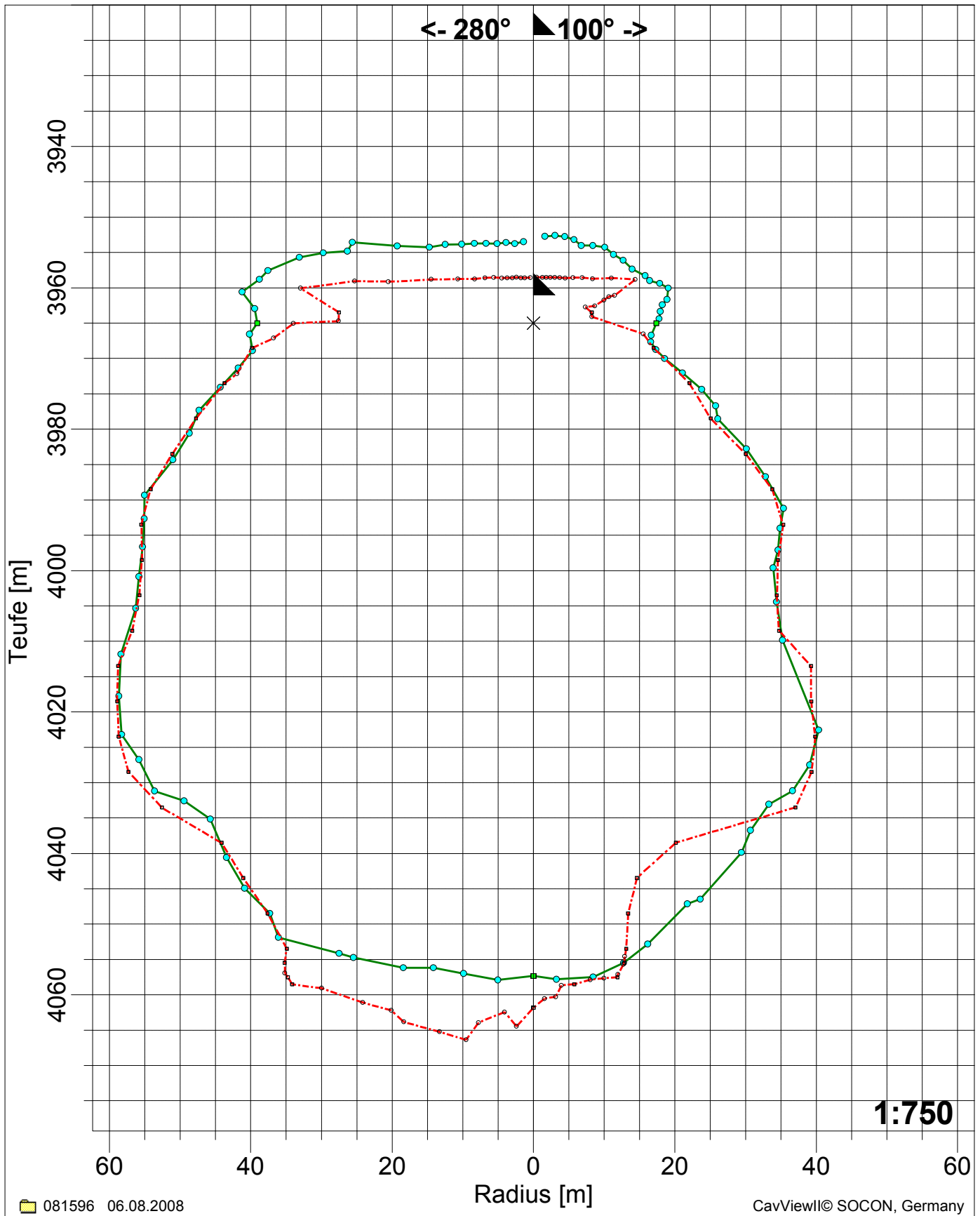
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Harlingen Bas 3

06.08.2008



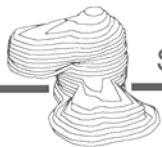
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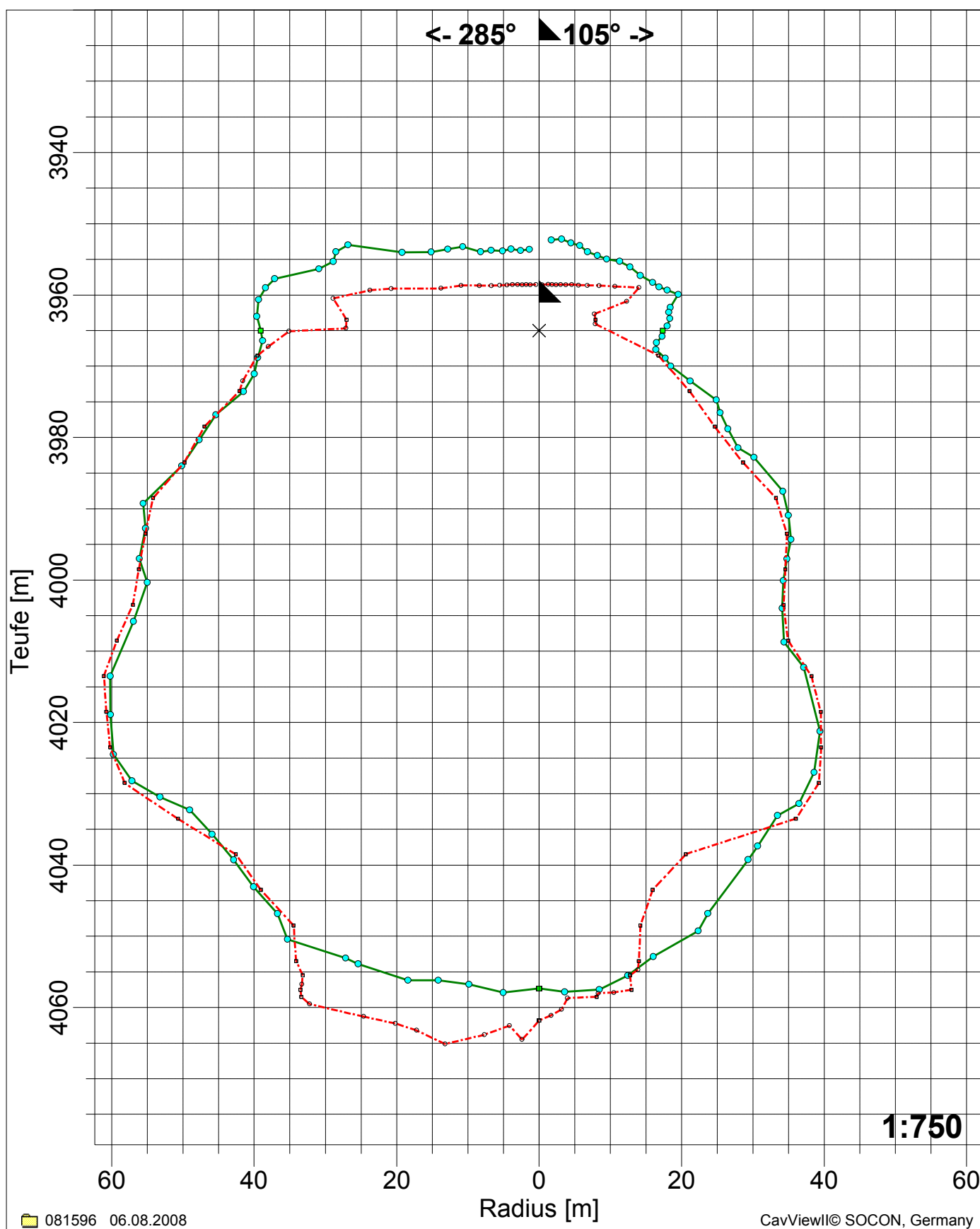
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Harlingen Bas 3

06.08.2008



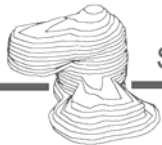
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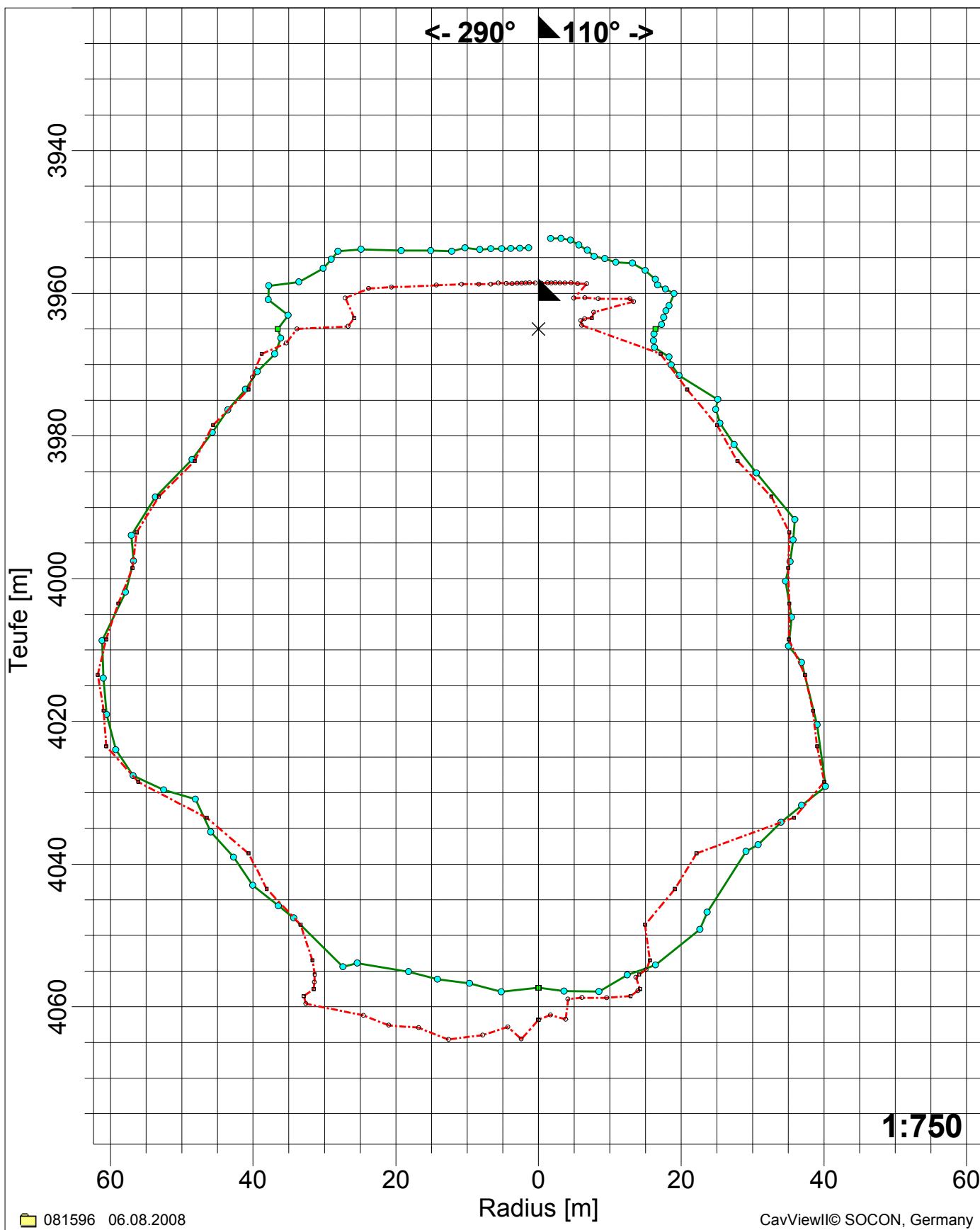
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∨ ^ Kipp-Position



Harlingen Bas 3

06.08.2008



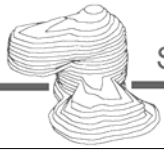
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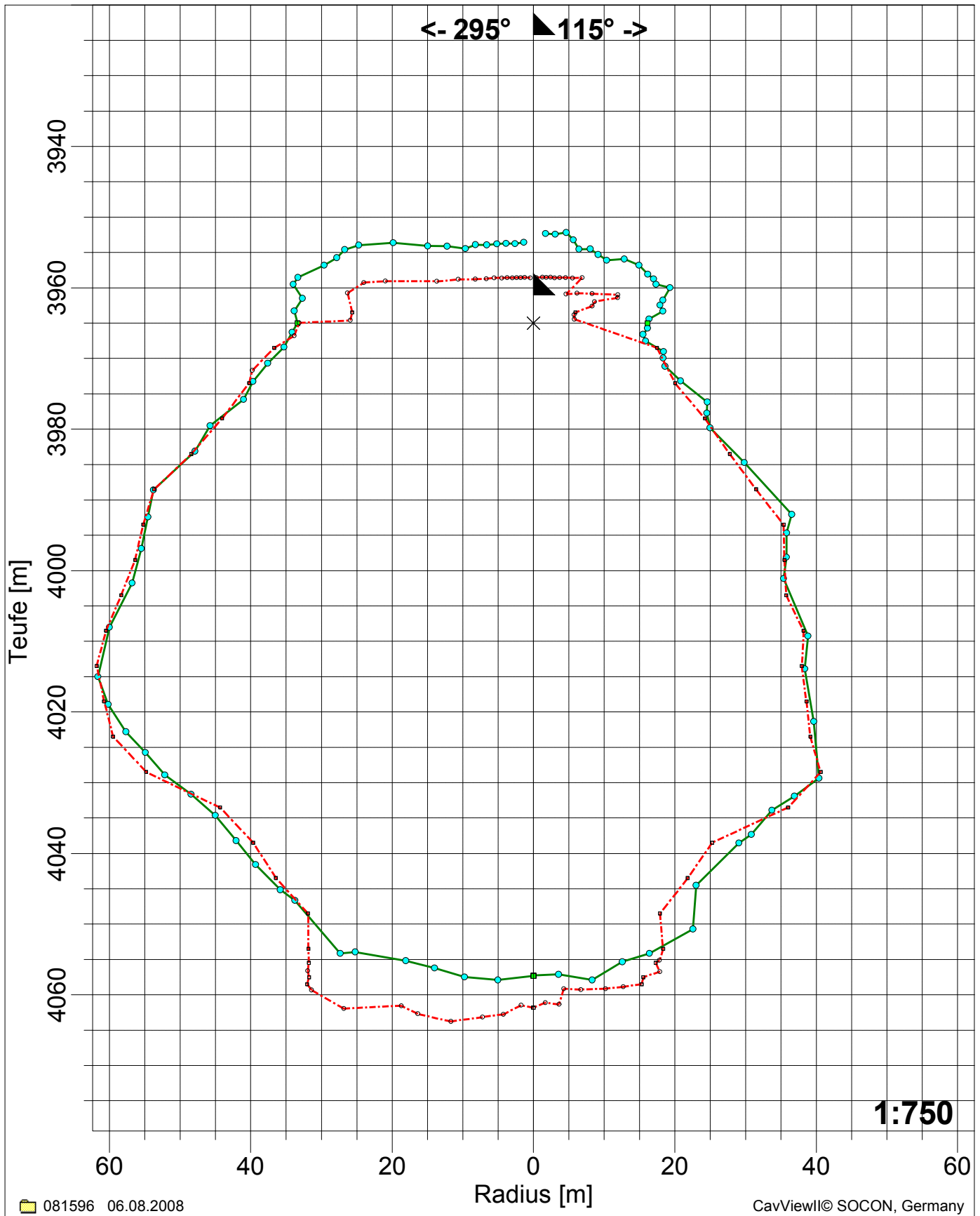
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Harlingen Bas 3

06.08.2008



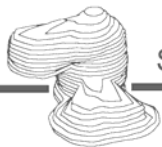
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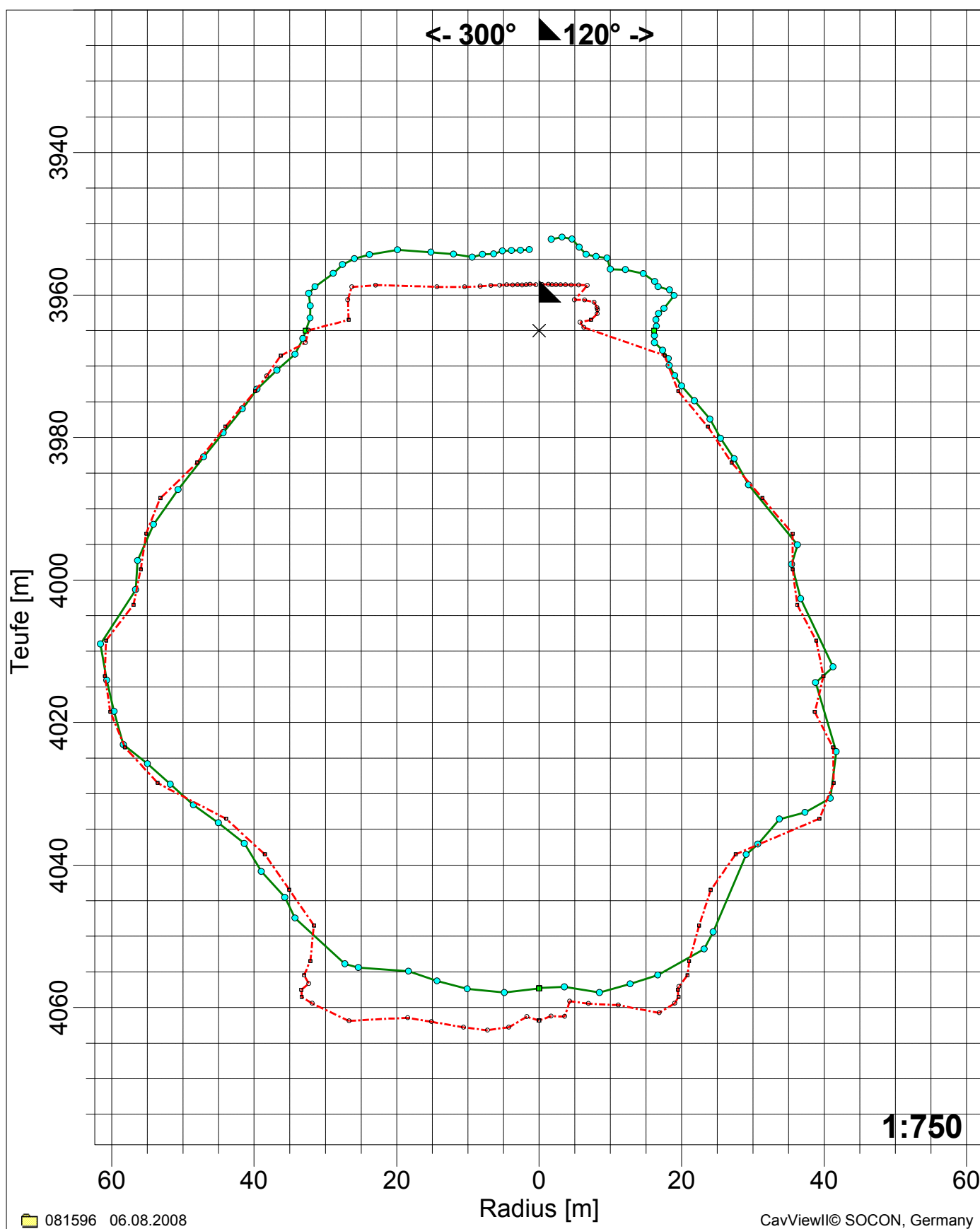
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Harlingen Bas 3

06.08.2008



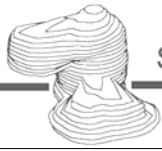
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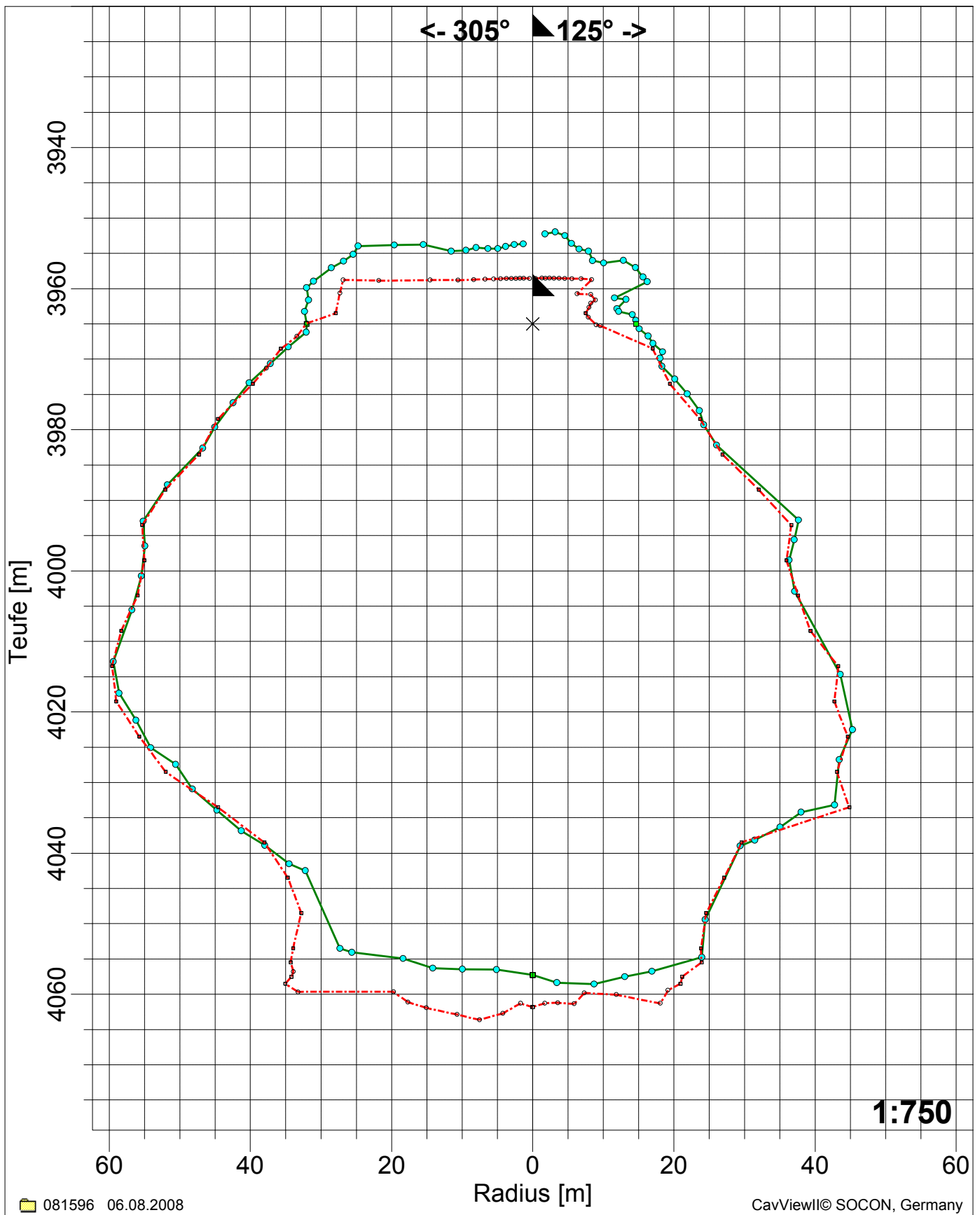
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Harlingen Bas 3

06.08.2008



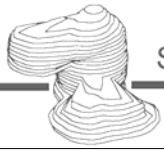
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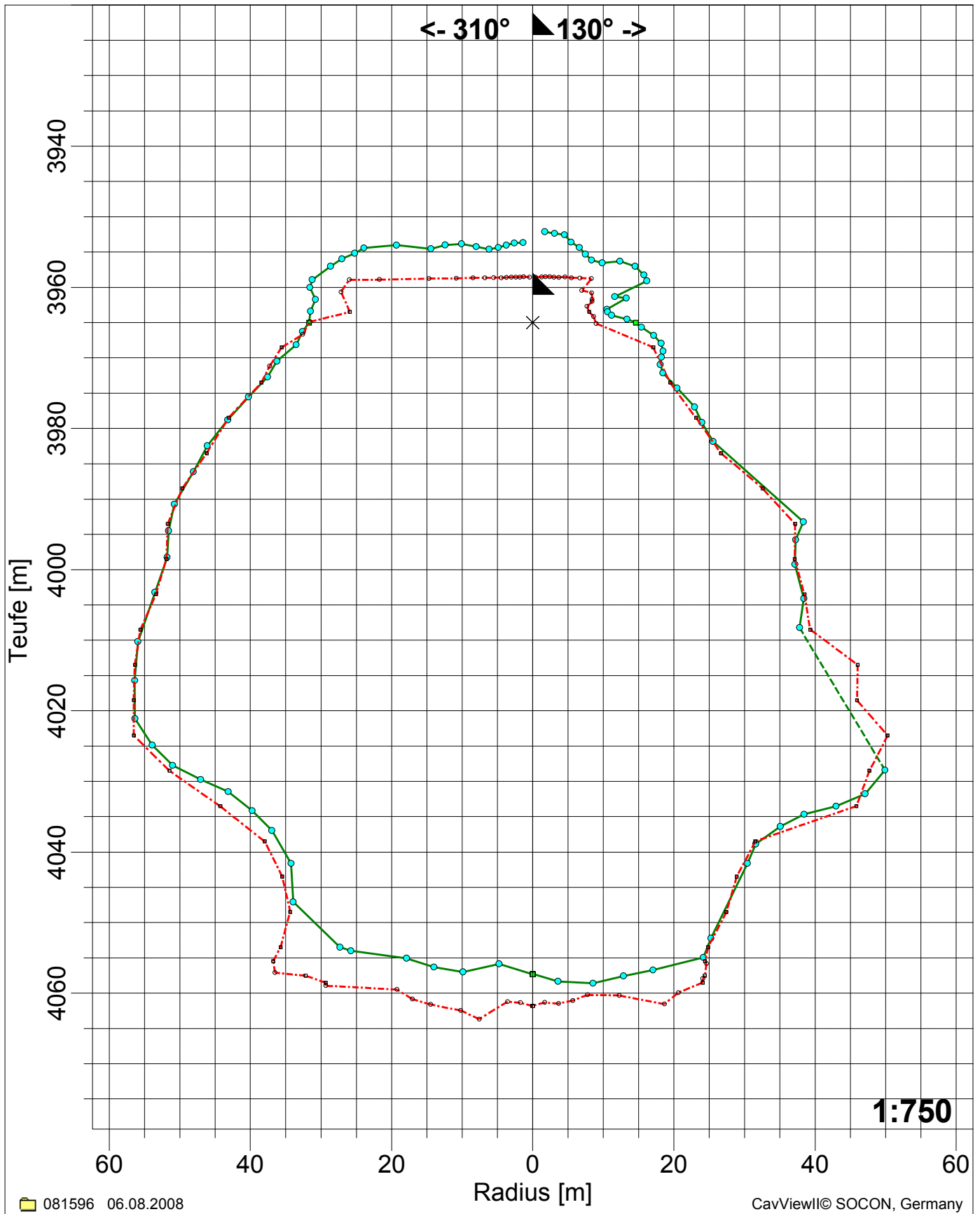
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Harlingen Bas 3

06.08.2008



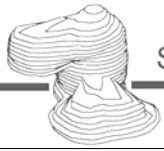
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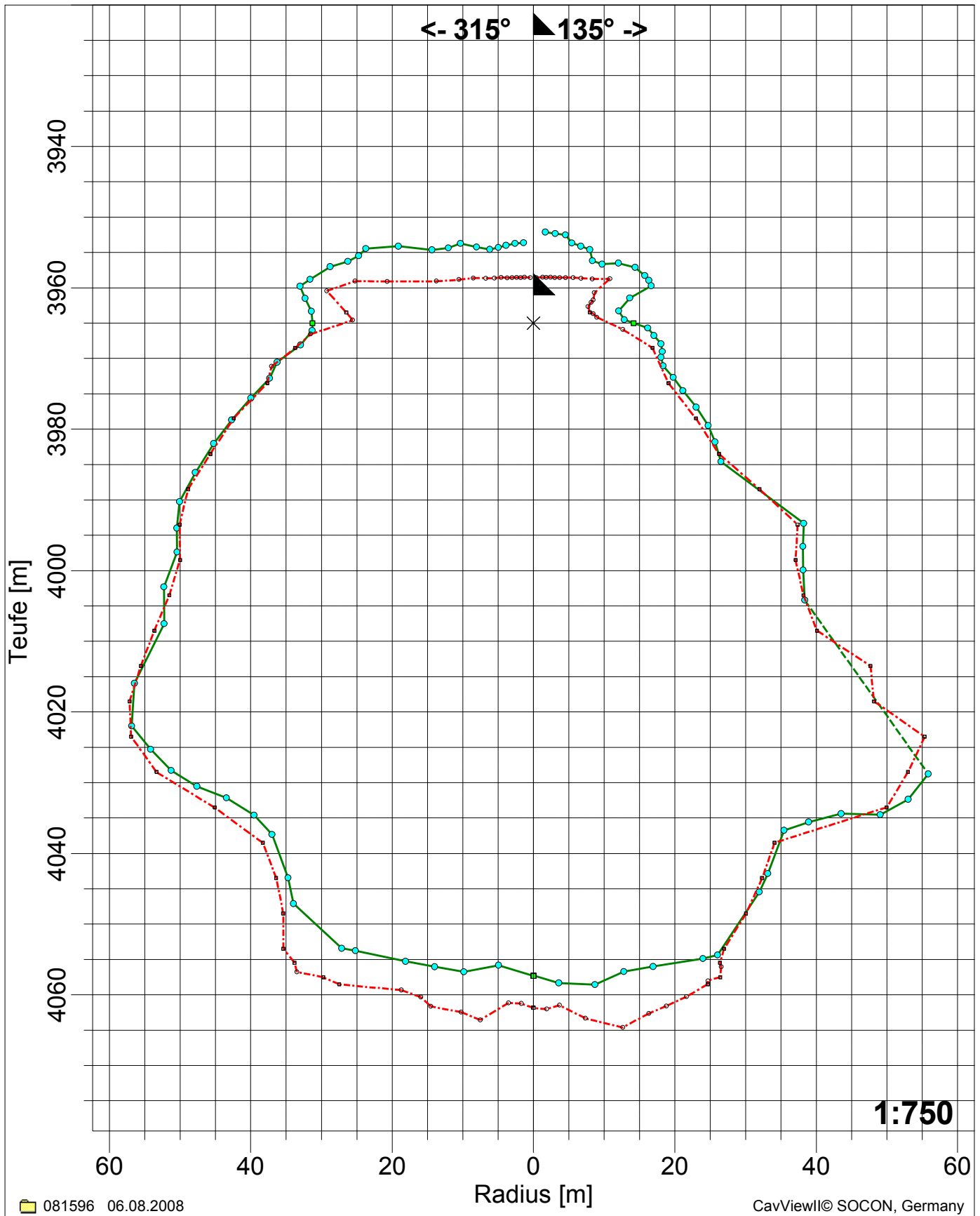
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Harlingen Bas 3

06.08.2008



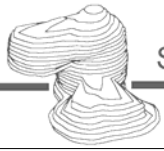
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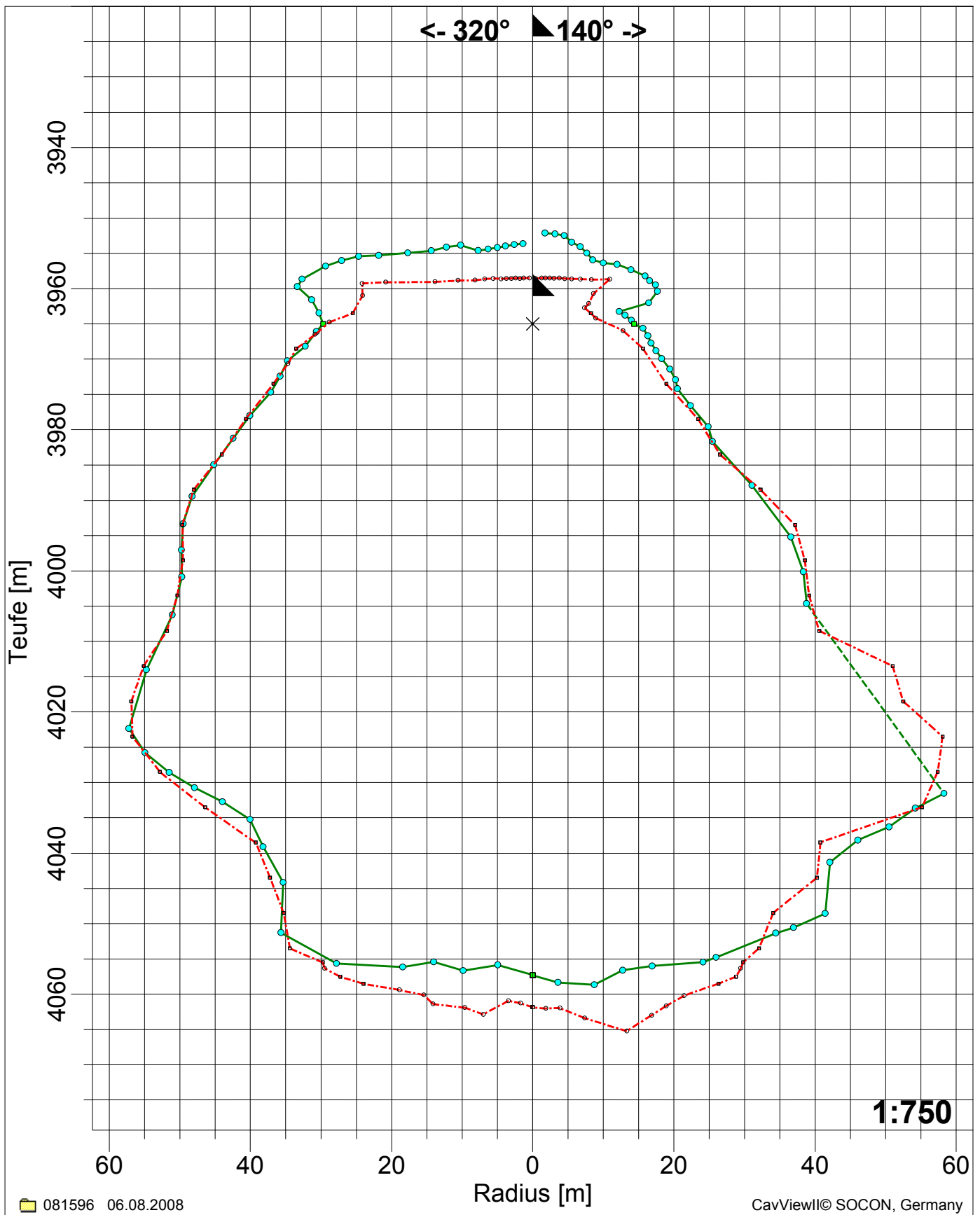
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06.08.2008



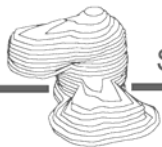
—●— (06.08.2008)

- - - (22.02.2008)

▲ 11 3/4" : 3961.0 m

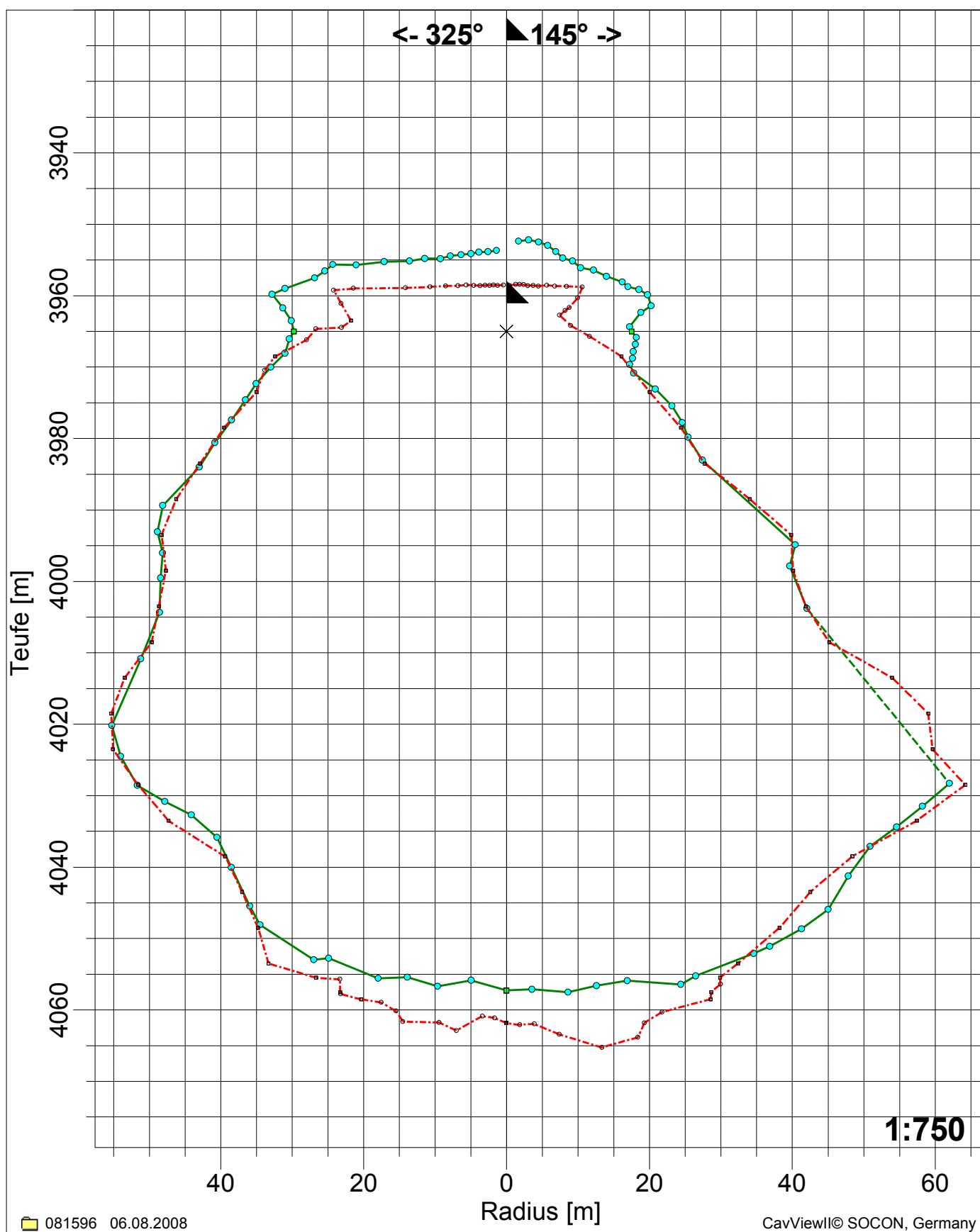
▲ 7" : 3924.2 m

∨ ∧ Kipp-Position



Harlingen Bas 3

06.08.2008



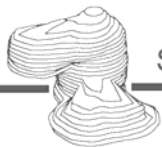
—●— (06.08.2008)

- - -●- - (22.02.2008)

▲ 11 3/4" : 3961.0 m

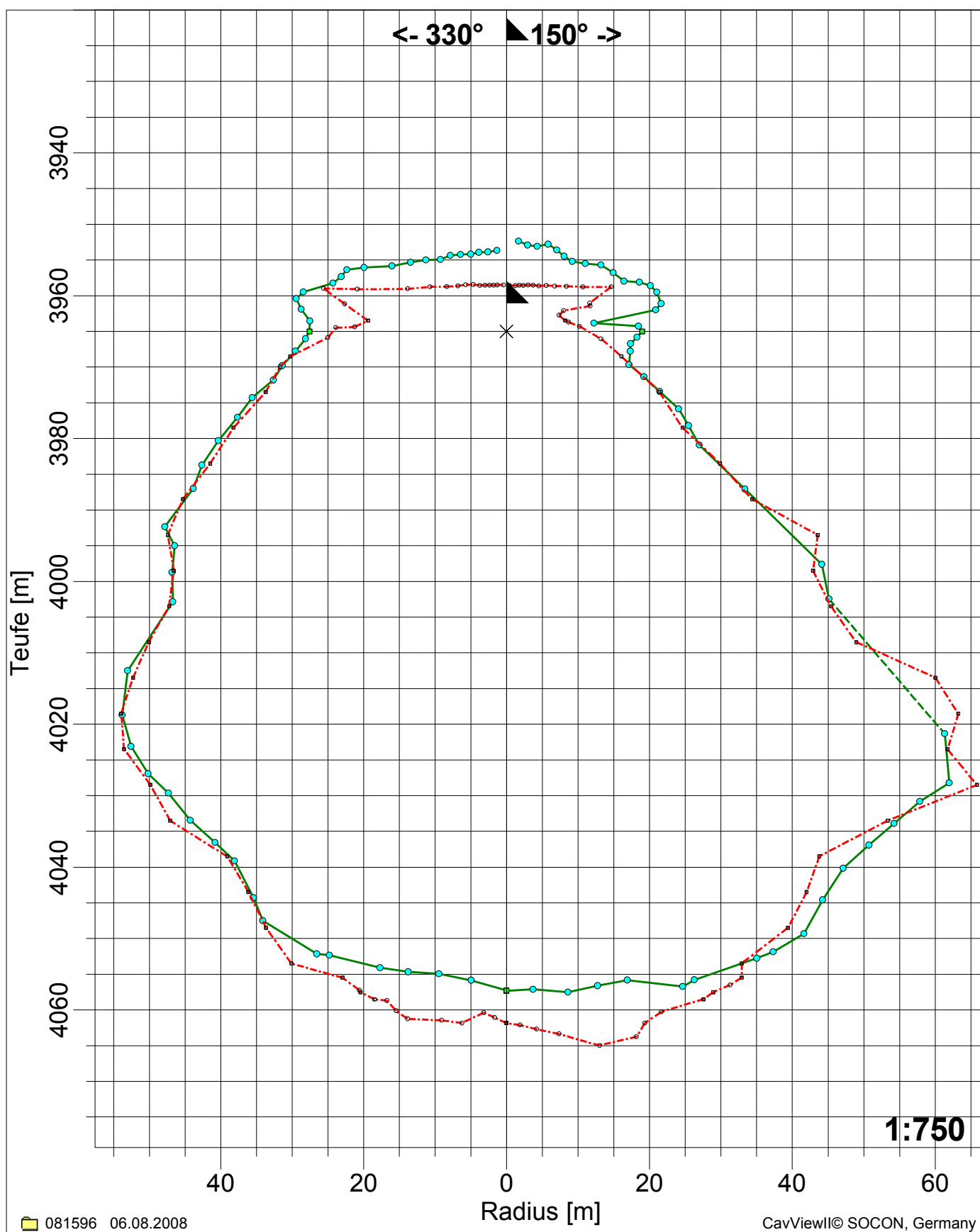
▲ 7" : 3924.2 m

∨ ∧ Kipp-Position



Harlingen Bas 3

06.08.2008



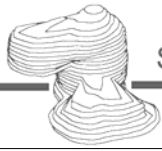
—●— (06.08.2008)

- - -●- - (22.02.2008)

▲ 11 3/4" : 3961.0 m

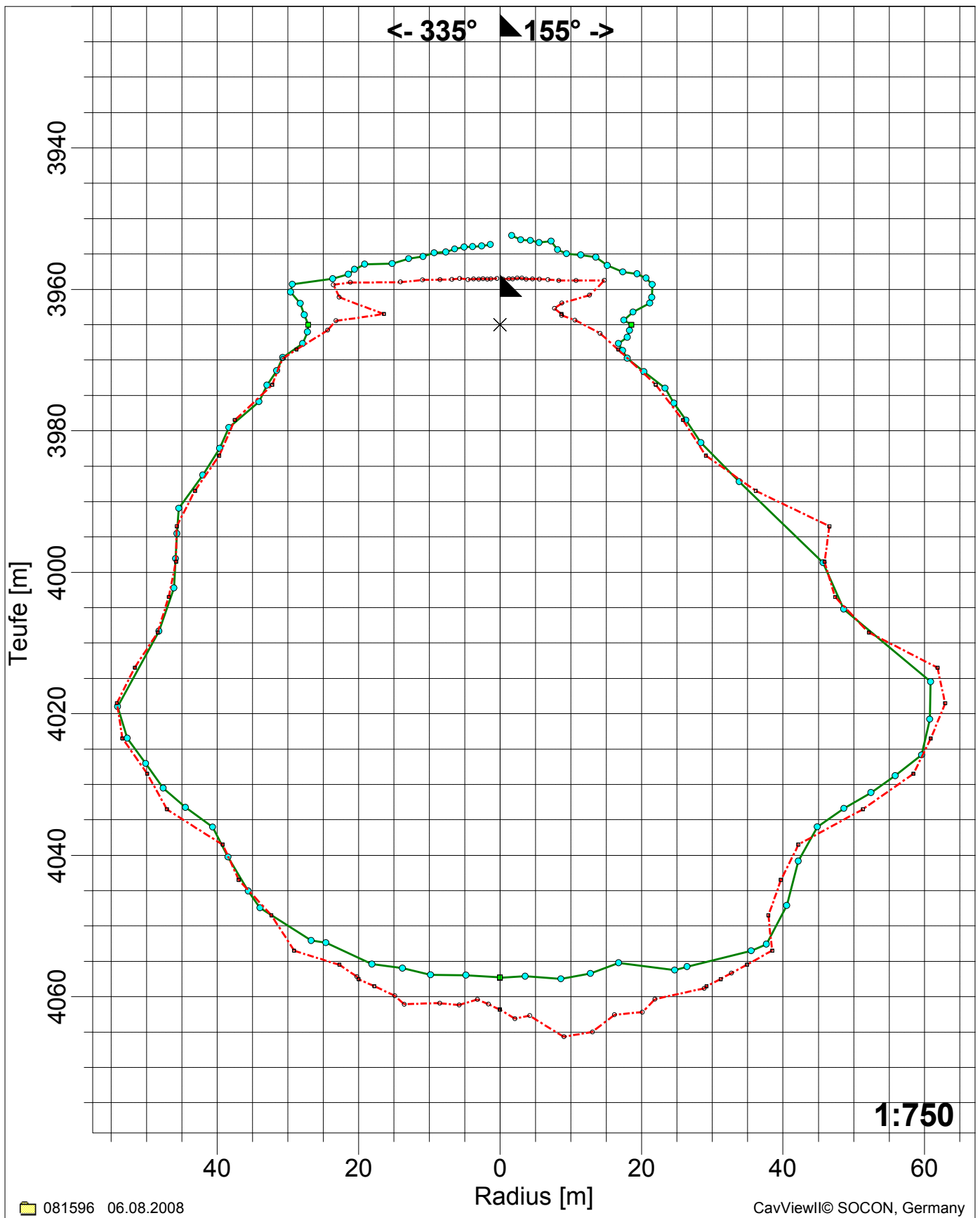
▲ 7" : 3924.2 m

∨ ∧ Kipp-Position



Harlingen Bas 3

06.08.2008



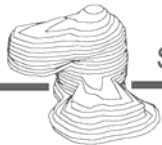
—●— (06.08.2008)

- - -●- - (22.02.2008)

▲ 11 3/4" : 3961.0 m

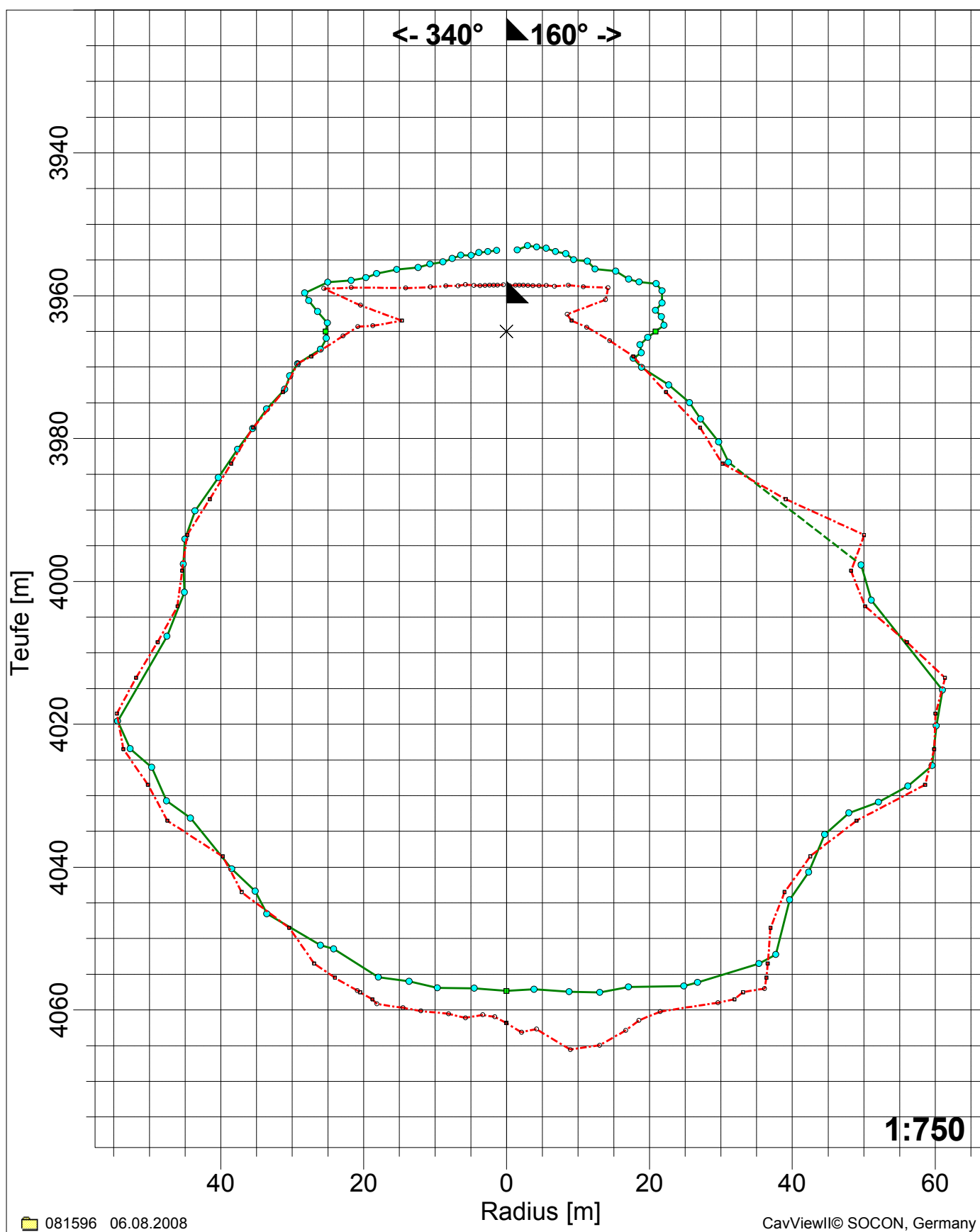
▲ 7" : 3924.2 m

∨ ^ Kipp-Position



Harlingen Bas 3

06.08.2008



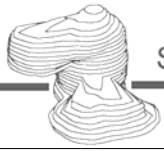
—●— (06.08.2008)

- - -●- - (22.02.2008)

▲ 11 3/4" : 3961.0 m

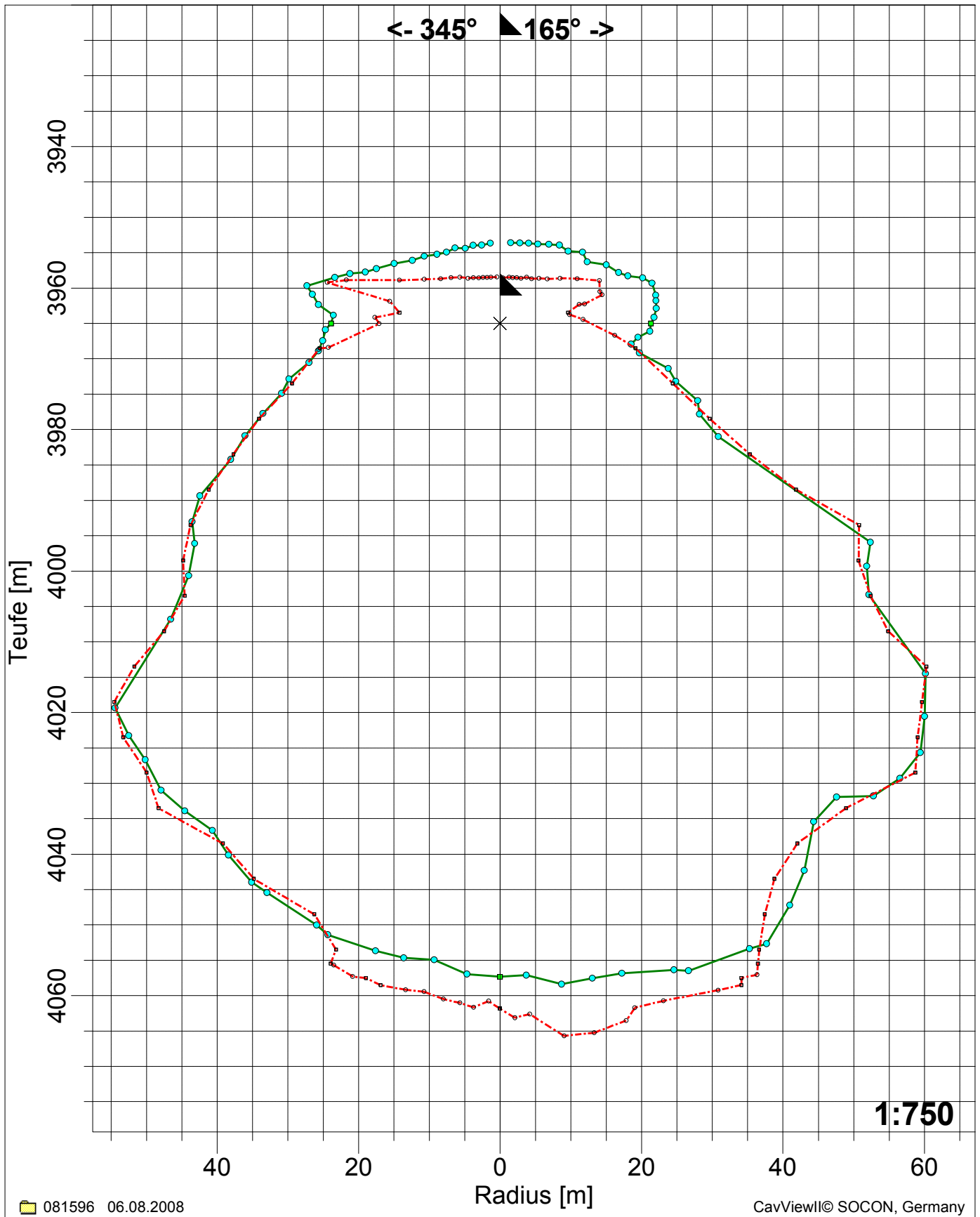
▲ 7" : 3924.2 m

∨ ^ Kipp-Position



Harlingen Bas 3

06.08.2008



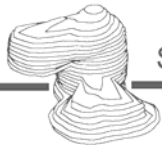
—●— (06.08.2008)

- - -●- - (22.02.2008)

▲ 11 3/4" : 3961.0 m

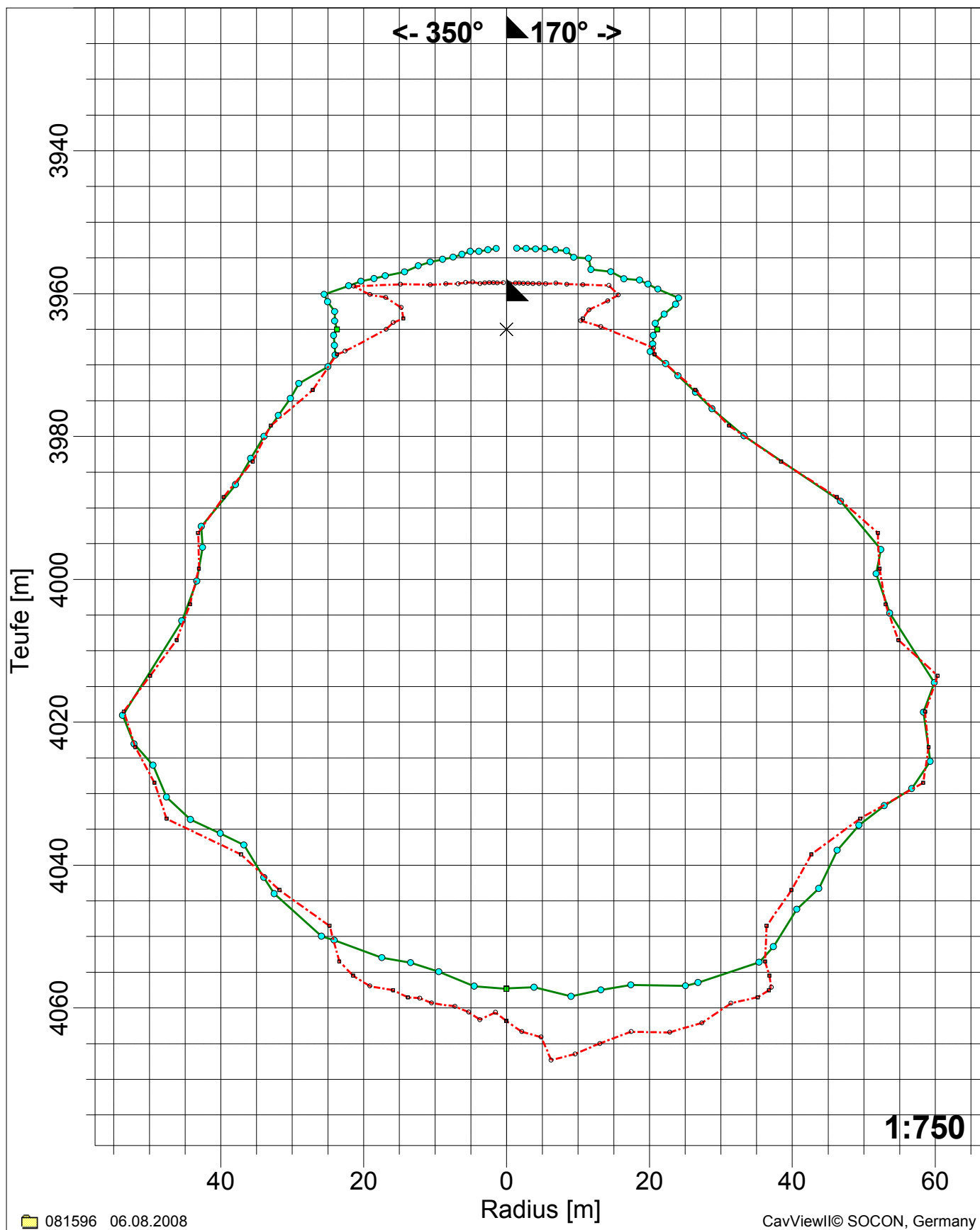
▲ 7" : 3924.2 m

∨ ∧ Kipp-Position



Harlingen Bas 3

06.08.2008



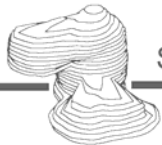
—●— (06.08.2008)

- - -●- - (22.02.2008)

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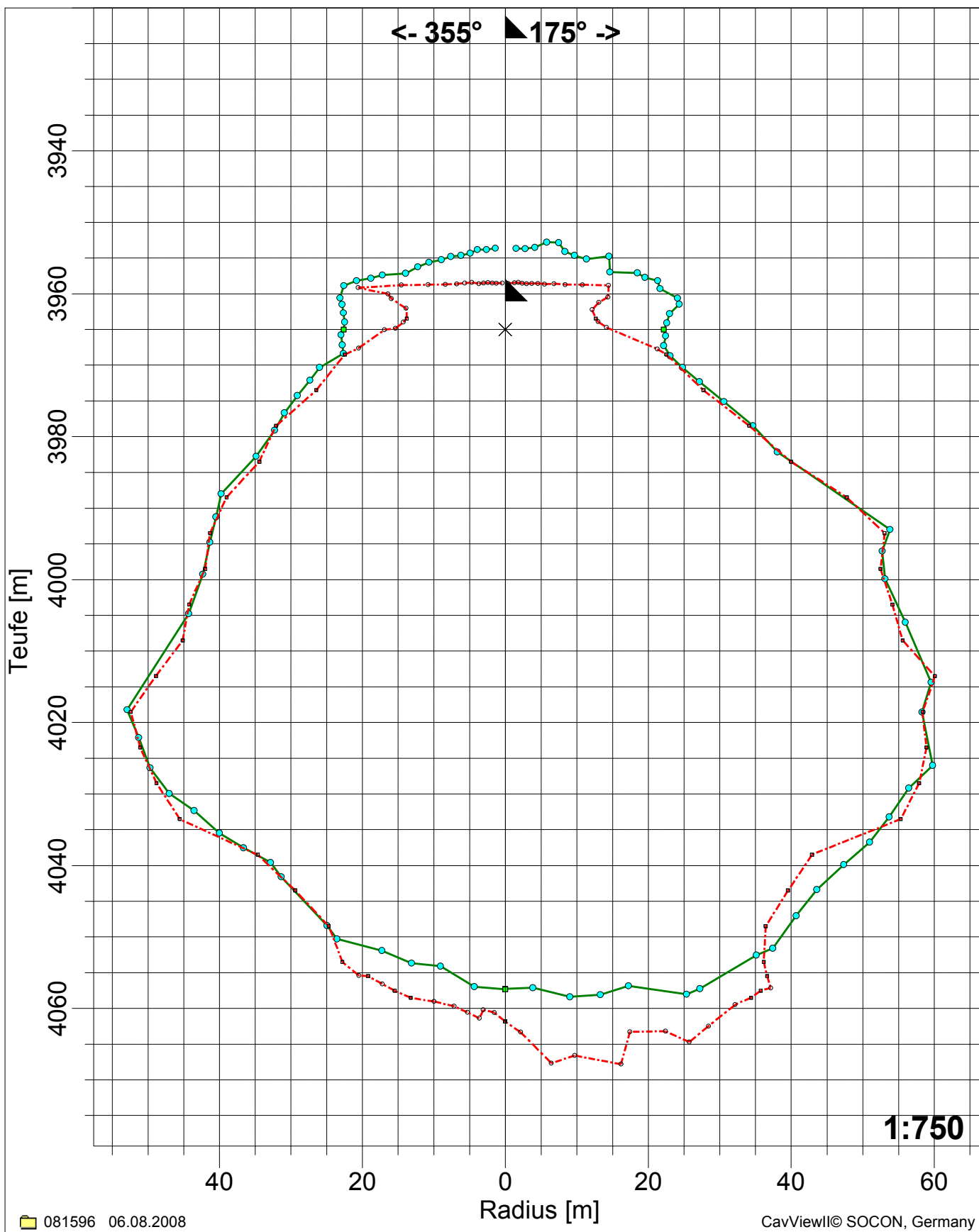
▲ 7" : 3924.2 m

∨ ∧ Kipp-Position



Harlingen Bas 3

06.08.2008



—●— (06.08.2008)

- - - (22.02.2008)

▲ 11 3/4" : 3961.0 m

▲ 7" : 3924.2 m

∨ ^ Kipp-Position

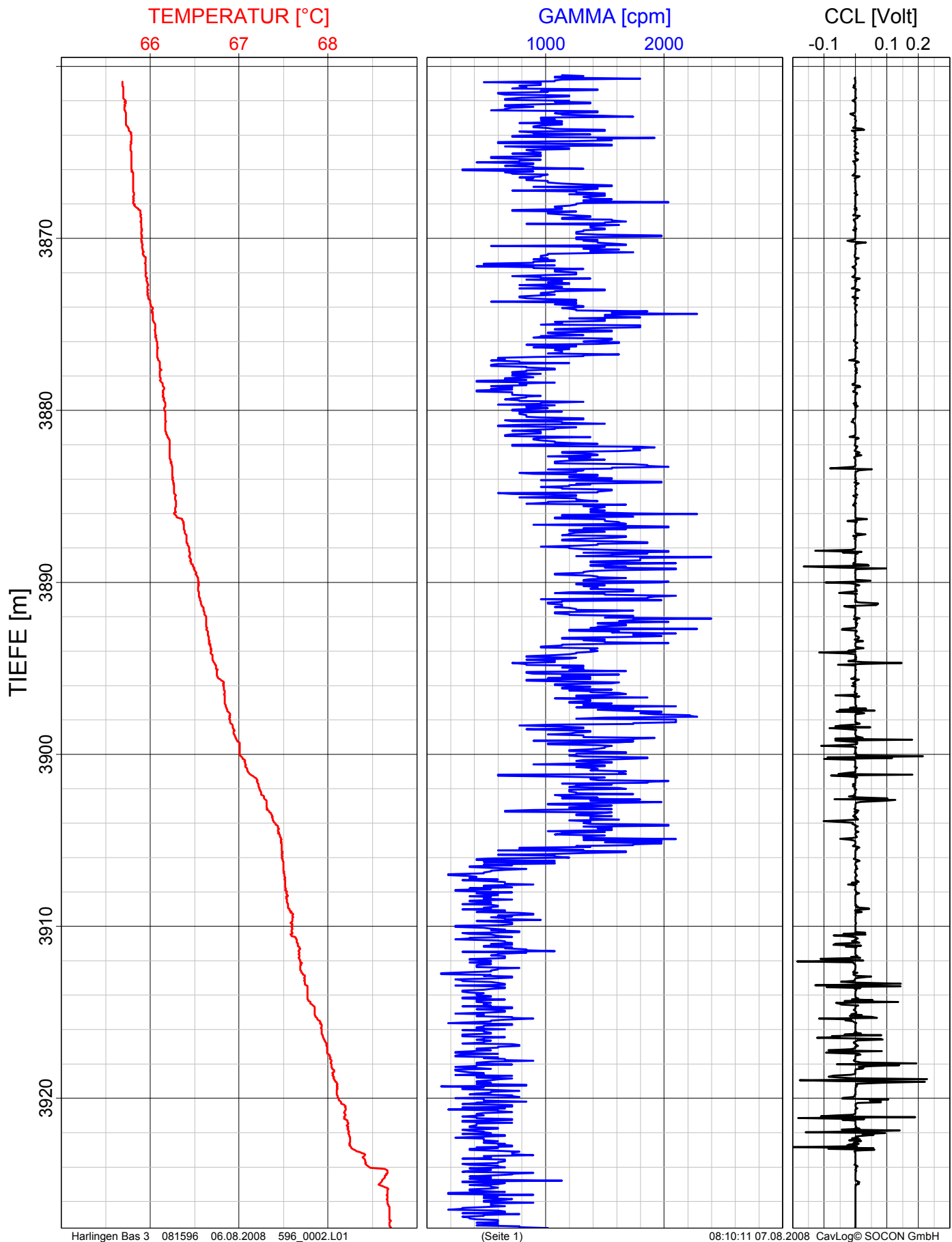


Harlingen Bas 3

1:300

06.08.2008

Carnallit bei 3906.0 m



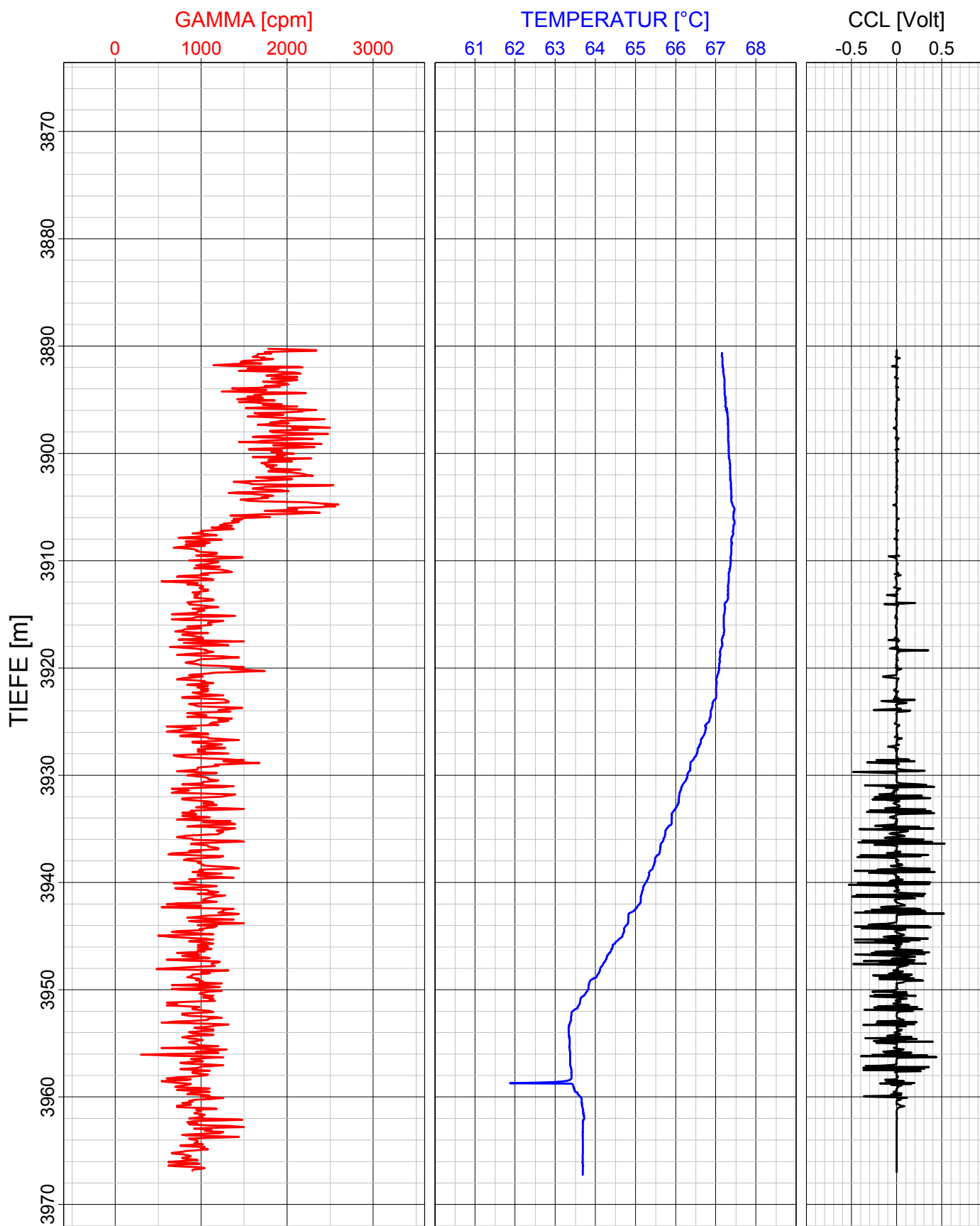


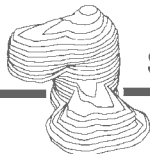
Harlingen Bas 3

1:500

06.08.2008

Carnallit bei 3906.0 m





Harlingen Bas 3

1:200

06.08.2008

RS 11 3/4" bei 3961.0 m ----- RS 7" bei 3924.2 m

