

12K einachsige Stb-Durchlaufstütze

Leistungsumfang

- Zug- oder Druckstab mit beliebig abgestuftem Rechteckquerschnitt (auch Wand)
- Mehrere horizontale Stützungen mit und ohne Feder (Dreh- und Wegfeder)
- Automatische Ermittlung der Zwischenschnitte unter Berücksichtigung der Unstetigkeitsstellen
- Möglichkeit der Lastfallbeschreibung
- max. 9 Lastfälle wahlweise in Gebrauchs- oder Bruchzustand
- Knotenbelastung (M, H, N) und gleichmäßige Streckenlast in beliebiger Höhe
- Schnittkraftermittlung nach Theorie I. und II. Ordnung (Zug und Druck)
- Bemessung (mittiger Zug bis mittiger Druck) für Theorie I. und II. Ordnung
- Zusammenfassung der Extremalwerte der Bemessung nach Theorie I. und II. Ordnung
- Randdehnung und -stauchung an allen Schnitten und für alle Lastfälle
- Krümmung und Steifigkeit aller Teilstäbe für alle Lastfälle
- Abstufung der Bewehrung in max. acht Abschnitte mit konstantem Verlauf
- Wiederholung der Schnittkraftermittlung unter Berücksichtigung der Steifigkeit aus der vorhandenen Bewehrung
- Ausgabe aller Zwischenwerte oder nur Teile davon über Drucker oder Bildschirm

System

Um elastischen Verformungen von Rahmentragwerken und Fundamentverdrehungen gerecht zu werden, sind überall Dreh- und Wegfedern vorgesehen. Es stehen im Textformular insgesamt 18 Zeilen für die Systemeingabe zur Verfügung. Diese Zeilen können beliebig für Querschnittsabmessung und Systemstützungen verwendet werden. Es stehen acht End- und Mittelauflagerarten zur Auswahl (siehe Seite 3). Hier können auch durch Querschnittseingabewiederholungen Schnitte definiert werden, um die Schnittkräfte mit Bemessung an den entsprechenden Stellen sicherzustellen.

Für die Schnittstellen sind max. 44 Zeilen vorhanden. Diese Zeilen stehen Unstetigkeitsstellen vorrangig zur Verfügung. Automatische Schnittführung beschränkt sich auf die restlichen Zeilen, wobei der minimale Schnittabstand gleich der statischen Höhe, aber nicht kleiner als 20 cm ist.

Belastung

Es sind max. 9 Lastfälle vorgesehen. Jede Last kann verschiedenen Lastfällen zugeordnet werden.

Im Block Lastfallbeschreibung wird die Lastfallfolge und deren Anzahl festgelegt. Mit einer Textzeile wird jeder Lastfall beschrieben.

Es gibt 2 Lastblöcke. Der erste Block hat 24 Zeilen und ist Einzellasten (M, N, H) vorbehalten. Die Normalkraft N ist als Druckkraft positiv und als Zugkraft (abhebende Auflagerkraft) negativ bei der Eingabe definiert, die aber für die spätere Berechnung intern das normale in der Statik übliche Vorzeichen erhält und dementsprechend ausgegeben wird. Bei der Eingabe der Normalkraft wird auch die Exzentrizität (zur Mittelachse der Unterkante-Stütze) abgefragt.

Hier ist es möglich die Imperfektion (die ungewollte Ausmitte und die Schiefstellung) sowie die eventuelle spätere Lotabweichung zu berücksichtigen. Die Imperfektion kann auch durch Momente oder Horizontalkraft ersetzt werden. Das Moment aus der Exzentrizität ermittelt das Programm intern.

Der 2. Block der Belastung hat 10 Lastzeilen. Hier können die Streckenlasten verschiedener Lastfälle zugeordnet werden. Die Eigenlast wird abschnittsweise automatisch ermittelt.

Schnittkräfte

Die Schnittkraftermittlung erfolgt für jeden Lastfall nach Theorie I. und II. Ordnung für alle Schnitte und Unstetigkeiten. Sie werden meistens wie folgt mindestens in zwei, besser aber in drei Durchläufen bestimmt (1. und 2. Durchlauf geschieht automatisch):

1. Durchlauf der Schnittkraftermittlung erfolgt mit der Steifigkeit aus dem vollen Querschnitt (vorschätzen).

2. Durchlauf erfolgt mit der Steifigkeit aus der maximalen statisch erforderlichen Bewehrung, aber nicht kleiner als Mindestbewehrung nach DIN 1045 Tabelle 32, für jeden Teilabschnitt.
3. Durchlauf der Schnittkraftermittlung wird nach der Wahl der Bewehrung mit der tatsächlich vorhandenen Bewehrung ermittelt. Bei den meisten Stützen ist das Ende der Berechnung nach dem 2. bzw. 3. Iterationsschritt erreicht. Falls die Differenz zwischen der Bewehrung aus der Bemessung und der M-K-Beziehung größer als 3.14 cm^2 je Seite ist, wird die Berechnung automatisch wiederholt. Weitere Durchläufe sind noch manuell möglich.

Durch die feine Unterteilung der Stütze, den Einsatz der vorhandenen Bewehrung zur Stabauslenkung und die Berücksichtigung der elastischen Federsteifigkeit der anschließenden Bauteile ist es möglich, sehr genau den Schnittkraftverlauf für die Theorie I. und II. Ordnung zu ermitteln.

Ein weiterer Punkt, der zur Genauigkeit der Schnittkräfte beiträgt, ist die exakte Erfassung der Momenten-Krümmungs-Beziehung in jedem Schnitt, sowohl für den Druck- als auch für den Zugstab (keine Linearisierung).

Das Biegemoment aus der Kriechverformung wird nach Heft 240 ermittelt und vorzeichengleich dem Moment nach Theorie I. und II. Ordnung zugezählt.

Bemessung

Die Bemessung kann für alle handelsüblichen Beton- und Stahlgüten wahlweise für Stahlbetonrechteckstützen oder -wand erfolgen.

Grundlage der Bemessung für symmetrische Bewehrung ist DIN 1045 Abschn. 17.2.

Die Bemessung erfolgt für Theorie I. und II. Ordnung getrennt und über alle Lastfälle in jedem Schnitt.

Der maßgebende Lastfall für die Bemessung mit zugehöriger LF-Nr. des jeweiligen Schnittes werden getrennt nach Theorie I. und II. Ordnung ausgegeben.

Bewehrung

Die Stahlbetonstütze kann mit zwei verschiedenen Stabstählen (durchgehend und Zusatzbewehrung) bewehrt werden. Bei Stahlbetonwänden ist Baustahlgewebe und Stabstahlkombination möglich.

Die Bewehrung kann bis zu 8-mal gestaffelt werden. Diese Staffelung wird bei der Momenten-Krümmungs-Beziehung berücksichtigt.

Verformung

Die Verformungen werden vollständigshalber durch M/K-Beziehung für alle Lastfälle ermittelt und können als Zwischenausdruck ausgegeben werden. Für Kragstützen werden die Verschiebungen am Kragarmende für jeden Lastfall im Formular ausgegeben.

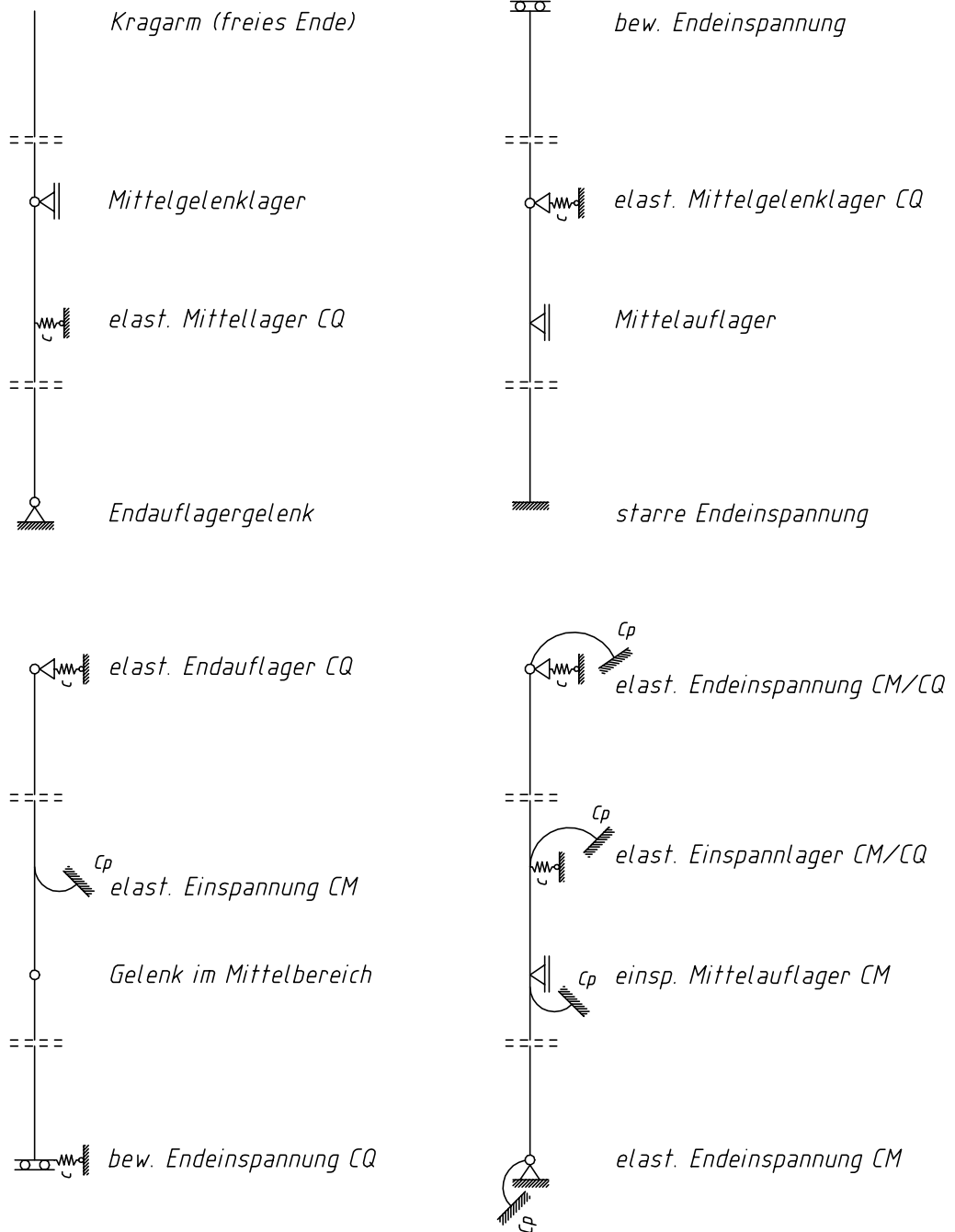
Die DIN 1045 macht (im Gegensatz zu EC2) keine Aussagen über den Sicherheitsbeiwert für die Ermittlung der Verformung. Es ist im Programm jedoch möglich, die ständigen Lasten zusätzlich im Bruchzustand mit der Bewehrung des Gebrauchszustands zu rechnen, um kleinere Verformungswerte zu erzielen. Die tatsächliche Verformung liegt zwischen den Werten des Gebrauchs- und des Bruchzustands.

Berechnungsgrundlagen

Die Ermittlung der Schnittkräfte erfolgt nach dem Übertragungsverfahren. Die Bemessung und Momenten-Krümmungs-Beziehung sind auf der Grundlage der DIN 1045 programmiert.

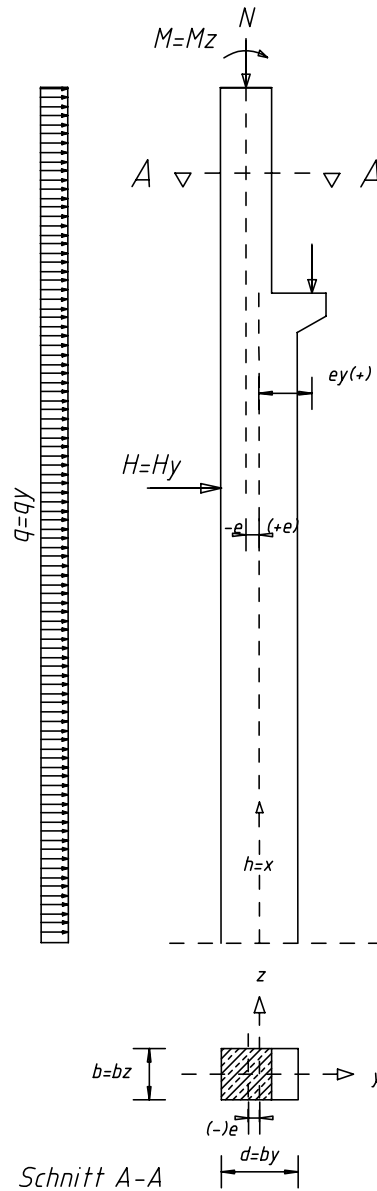
Die Entwicklung der schnellen Iteration für die Ermittlung der Momenten-Krümmungs-Beziehung und Bemessung ist unter Anwendung der Methode von Tschebyscheff im eigenen Hause erfolgt.

Auflagerarten und deren Bezeichnung



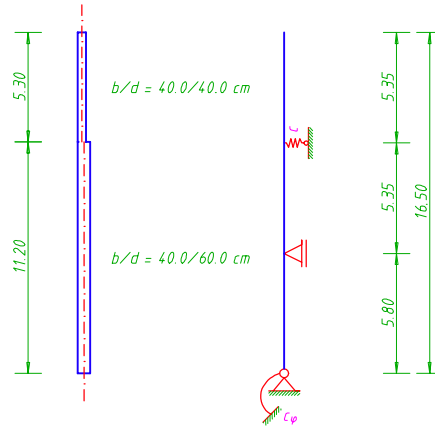
Erläuterung der Eingabewerte und Systembezeichnungen
für das Programm '12K'

(auf das Achsensystem bezogen)

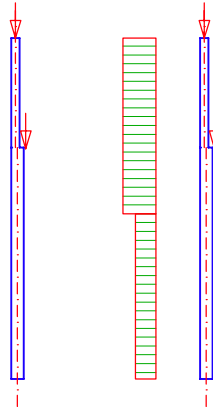


POS. 10 STAHLBETONSTÜTZE '12K'

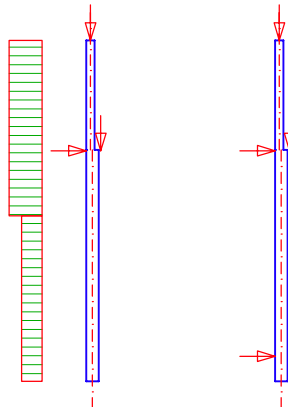
Kranstütze in Achse A



LF 1 Gebrauchszustand LF 2 Gebrauchszustand



LF 3 Gebrauchszustand LF 4 Bruchzustand



STRECKENBELASTUNG
 q_l, q_r (kN/m)

.H(m) - H(m) aus	max q_l	max q_r	LF	min q_l	min q_r	LF
16.50- 8.00 Wd	4.8	4.8	2-3	0.0	0.0	
8.00- 0.00 Wd	3.0	3.0	2-3	0.0	0.0	

B E M E S S U N G des **D R U C K G L I E D E S** als Stütze

Baustoffe Beton: B 25, Betonstahl: BSt 500 S

 Betondeckung $c = 3.0$ cm, $h' = 5.0$ cm, zul. Mü = 6.00%

 mit Kriechanteil LF 1-3 ohne Kriechanteil LF 4
 $\Phi = 2.7$, und $ev = sk/300$ (ev nur für Kriechverformung).

Gebrauchszustand für LF 1-3 Bruchzustand für LF 4

 Ungewollte Ausmitte der N-Lasten: $ev = 6.0$ cm

S C H N I T T K R Ä F T E und **B E M E S S U N G**

Diese Schnittkräfte sind in den Abschnitten mit konstantem Bewehrungsverlauf maßgebend für die Bewehrung.

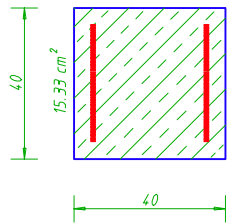
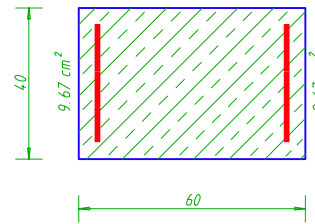
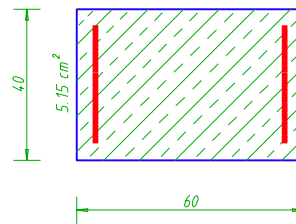
H (m)	LF (-)	N (kN)	M (kNm)	Th. (-)	b (cm)	d (cm)	h (cm)	Mü (%)	As (cm ²)
11.20	3	450.20	-189.29	II	40.0	40.0	35.0	1.86	29.76
11.10	3	925.80	-283.65	II	40.0	60.0	55.0	0.80	17.62
0.00	3	992.40	-10.76	I	40.0	60.0	55.0	0.80	8.14

B E W E H R U N G
 D_s (mm) = Stabdurchmesser, a (cm) = Bügelabstand

 $M/K-As$ = Bewehrung der Momente - Krümmungs - Beziehung bei der Stabverformung (Auslenkung) angesetzt

 Durchgehende Längsbewehrung je Seite $2 D_s 16 = 4.02$ cm²

H1 bis H2 (m)	erf. Längsbew. M/K As je Seite (cm ²)	vorh. ges.As (cm ²)	Haupt Bügel Ds / a	Zwischen Bügel Ds / a
16.50-11.20	30.66	10 Ds 12 = 30.66	8.0/14.0	8.0/28.0
11.20- 5.80	19.34	5 Ds 12 = 19.34	8.0/14.0	- / -
5.80- 0.00	10.30	1 Ds 12 = 10.30	8.0/14.0	- / -

M=1:20
11.20-16.50m

5.80-11.20m

0.00-5.80m


Schnittkräfte am Stützenfuß + Kopfverschiebung

LF (-)	maxN (kN)	H (kN)	MI (kNm)	MII (kNm)	Phi fuß Rad*1E2	w Kopf (cm) .
1	271.4	-0.8	-1.5	-1.6	-0.0001	-0.6704
2	271.4	7.2	5.4	7.0	0.0002	5.0258
3	992.4	10.0	10.8	24.6	0.0005	9.0886
4	992.4	86.3	69.0	70.2	0.0030	3.0681

LASTFALL 1, S C H N I T T K R Ä F T E nach Th. I. O.

x (m)	M li. (kNm)	M re. (kNm)	H li. (kN)	H re. (kN)	Phi li. Rad E2	Phi re. Rad E2	w (cm)
16.50	9.8	0.0	0.0	0.0	-0.196	0.000	-0.670
16.00	9.8	9.8	0.0	0.0	-0.181	-0.181	-0.576
15.60	9.8	9.8	0.0	0.0	-0.169	-0.169	-0.505
15.20	9.8	9.8	0.0	0.0	-0.157	-0.157	-0.440
14.80	9.8	9.8	0.0	0.0	-0.146	-0.146	-0.379
14.40	9.8	9.8	0.0	0.0	-0.134	-0.134	-0.323
14.00	9.8	9.8	0.0	0.0	-0.122	-0.122	-0.272
13.60	9.8	9.8	0.0	0.0	-0.110	-0.110	-0.225
13.20	9.8	9.8	0.0	0.0	-0.098	-0.098	-0.184
12.80	9.8	9.8	0.0	0.0	-0.086	-0.086	-0.147
12.40	9.8	9.8	0.0	0.0	-0.074	-0.074	-0.115
12.00	9.8	9.8	0.0	0.0	-0.062	-0.062	-0.087
11.60	9.8	9.8	0.0	0.0	-0.050	-0.050	-0.065
11.20	28.0	9.8	0.0	0.0	-0.046	-0.046	-0.046
11.15	20.0	28.0	4.3	0.0	-0.044	-0.044	-0.043
11.10	19.8	19.8	4.3	4.3	-0.043	-0.043	-0.041
10.80	18.5	18.5	4.3	4.3	-0.036	-0.036	-0.029
10.40	16.8	16.8	4.3	4.3	-0.029	-0.029	-0.016
10.00	15.1	15.1	4.3	4.3	-0.022	-0.022	-0.006
9.60	13.3	13.3	4.3	4.3	-0.015	-0.015	0.002
9.20	11.6	11.6	4.3	4.3	-0.010	-0.010	0.007
8.80	9.9	9.9	4.3	4.3	-0.005	-0.005	0.010
8.40	8.1	8.1	4.3	4.3	-0.001	-0.001	0.012
8.00	6.4	6.4	4.3	4.3	0.001	0.001	0.012
7.60	4.7	4.7	4.3	4.3	0.003	0.003	0.011
7.20	3.0	3.0	4.3	4.3	0.005	0.005	0.009
6.80	1.2	1.2	4.3	4.3	0.006	0.006	0.006
6.40	-0.5	-0.5	4.3	4.3	0.006	0.006	0.004
6.00	-2.2	-2.2	4.3	4.3	0.006	0.006	0.001
5.80	-3.1	-3.1	-0.8	4.3	0.005	0.005	0.000
5.20	-2.6	-2.6	-0.8	-0.8	0.003	0.003	-0.003
4.80	-2.3	-2.3	-0.8	-0.8	0.002	0.002	-0.004
4.40	-2.0	-2.0	-0.8	-0.8	0.001	0.001	-0.004
4.00	-1.7	-1.7	-0.8	-0.8	0.000	0.000	-0.005
3.60	-1.4	-1.4	-0.8	-0.8	-0.000	-0.000	-0.005
3.20	-1.0	-1.0	-0.8	-0.8	-0.001	-0.001	-0.004
2.80	-0.7	-0.7	-0.8	-0.8	-0.001	-0.001	-0.004
2.40	-0.4	-0.4	-0.8	-0.8	-0.001	-0.001	-0.003
2.00	-0.1	-0.1	-0.8	-0.8	-0.001	-0.001	-0.002
1.60	0.2	0.2	-0.8	-0.8	-0.001	-0.001	-0.002
1.20	0.6	0.6	-0.8	-0.8	-0.001	-0.001	-0.001
0.80	0.9	0.9	-0.8	-0.8	-0.001	-0.001	-0.001
0.40	1.2	1.2	-0.8	-0.8	-0.000	-0.000	0.000
0.00	0.0	1.5	0.0	-0.8	0.000	-0.000	0.000

LASTFALL 1, S C H N I T T K R Ä F T E nach Th. II. O.

x (m)	M li. (kNm)	M re. (kNm)	H li. (kN)	H re. (kN)	Phi li. Rad E2	Phi re. Rad E2	w (cm)
16.50	9.8	0.0	0.0	0.0	-0.209	0.000	-0.722
16.00	9.9	9.9	0.0	0.0	-0.194	-0.194	-0.621
15.60	10.1	10.1	0.0	0.0	-0.182	-0.182	-0.545
15.20	10.2	10.2	0.0	0.0	-0.170	-0.170	-0.474
14.80	10.3	10.3	0.0	0.0	-0.157	-0.157	-0.409
14.40	10.4	10.4	0.0	0.0	-0.145	-0.145	-0.348
14.00	10.5	10.5	0.0	0.0	-0.132	-0.132	-0.293
13.60	10.6	10.6	0.0	0.0	-0.119	-0.119	-0.242
13.20	10.7	10.7	0.0	0.0	-0.106	-0.106	-0.197
12.80	10.7	10.7	0.0	0.0	-0.093	-0.093	-0.157
12.40	10.8	10.8	0.0	0.0	-0.080	-0.080	-0.122
12.00	10.9	10.9	0.0	0.0	-0.066	-0.066	-0.093
11.60	10.9	10.9	0.0	0.0	-0.053	-0.053	-0.069
11.20	29.2	10.9	0.0	0.0	-0.048	-0.048	-0.048
11.15	21.2	29.2	4.6	0.0	-0.047	-0.047	-0.046
11.10	21.0	21.0	4.6	4.6	-0.045	-0.045	-0.044
10.80	19.6	19.6	4.6	4.6	-0.039	-0.039	-0.031
10.40	17.8	17.8	4.6	4.6	-0.030	-0.030	-0.017
10.00	16.0	16.0	4.6	4.6	-0.023	-0.023	-0.006
9.60	14.2	14.2	4.6	4.6	-0.016	-0.016	0.002
9.20	12.4	12.4	4.6	4.6	-0.011	-0.011	0.008
8.80	10.5	10.5	4.6	4.6	-0.006	-0.006	0.011
8.40	8.7	8.7	4.6	4.6	-0.001	-0.001	0.013
8.00	6.8	6.8	4.6	4.6	0.001	0.001	0.013
7.60	5.0	5.0	4.6	4.6	0.004	0.004	0.011
7.20	3.2	3.2	4.6	4.6	0.005	0.005	0.009
6.80	1.3	1.3	4.6	4.6	0.006	0.006	0.007
6.40	-0.5	-0.5	4.6	4.6	0.007	0.007	0.004
6.00	-2.4	-2.4	4.6	4.6	0.006	0.006	0.001
5.80	-3.3	-3.3	-0.8	4.6	0.005	0.005	0.000
5.20	-2.8	-2.8	-0.8	-0.8	0.003	0.003	-0.003
4.80	-2.5	-2.5	-0.8	-0.8	0.002	0.002	-0.004
4.40	-2.1	-2.1	-0.8	-0.8	0.001	0.001	-0.005
4.00	-1.8	-1.8	-0.8	-0.8	0.000	0.000	-0.005
3.60	-1.4	-1.4	-0.8	-0.8	-0.000	-0.000	-0.005
3.20	-1.1	-1.1	-0.8	-0.8	-0.001	-0.001	-0.005
2.80	-0.8	-0.8	-0.8	-0.8	-0.001	-0.001	-0.004
2.40	-0.4	-0.4	-0.8	-0.8	-0.001	-0.001	-0.003
2.00	-0.1	-0.1	-0.8	-0.8	-0.001	-0.001	-0.003
1.60	0.3	0.3	-0.8	-0.8	-0.001	-0.001	-0.002
1.20	0.6	0.6	-0.8	-0.8	-0.001	-0.001	-0.001
0.80	0.9	0.9	-0.8	-0.8	-0.001	-0.001	-0.001
0.40	1.3	1.3	-0.8	-0.8	-0.000	-0.000	0.000
0.00	0.0	1.6	0.0	-0.8	0.000	-0.000	0.000

LASTFALL 2, S C H N I T T K R Ä F T E nach Th. I. O.							
x (m)	M li. (kNm)	M re. (kNm)	H li. (kN)	H re. (kN)	Phi li. Rad E2	Phi re. Rad E2	w (cm)
16.50	-9.8	0.0	0.0	0.0	1.106	0.000	5.026
16.00	-10.4	-10.4	2.4	2.4	1.091	1.091	4.476
15.60	-11.7	-11.7	4.3	4.3	1.078	1.078	4.042
15.20	-13.8	-13.8	6.2	6.2	1.062	1.062	3.614
14.80	-16.7	-16.7	8.2	8.2	1.040	1.040	3.193
14.40	-20.4	-20.4	10.1	10.1	1.011	1.011	2.782
14.00	-24.8	-24.8	12.0	12.0	0.973	0.973	2.385
13.60	-30.0	-30.0	13.9	13.9	0.921	0.921	2.006
13.20	-35.9	-35.9	15.8	15.8	0.854	0.854	1.650
12.80	-42.6	-42.6	17.8	17.8	0.768	0.768	1.325
12.40	-50.1	-50.1	19.7	19.7	0.659	0.659	1.039
12.00	-58.4	-58.4	21.6	21.6	0.525	0.525	0.802
11.60	-67.4	-67.4	23.5	23.5	0.364	0.364	0.623
11.20	-58.9	-77.2	25.4	25.4	0.287	0.287	0.492
11.15	-68.2	-60.2	-22.1	25.7	0.280	0.280	0.478
11.10	-67.1	-67.1	-21.9	-21.9	0.272	0.272	0.464
10.80	-60.8	-60.8	-20.4	-20.4	0.228	0.228	0.389
10.40	-53.0	-53.0	-18.5	-18.5	0.180	0.180	0.307
10.00	-46.0	-46.0	-16.6	-16.6	0.143	0.143	0.243
9.60	-39.7	-39.7	-14.7	-14.7	0.114	0.114	0.191
9.20	-34.2	-34.2	-12.7	-12.7	0.093	0.093	0.150
8.80	-29.5	-29.5	-10.8	-10.8	0.076	0.076	0.116
8.40	-25.6	-25.6	-8.9	-8.9	0.062	0.062	0.088
8.00	-22.4	-22.4	-7.0	-7.0	0.052	0.052	0.065
7.60	-19.9	-19.9	-5.8	-5.8	0.042	0.042	0.046
7.20	-17.8	-17.8	-4.6	-4.6	0.034	0.034	0.031
6.80	-16.2	-16.2	-3.4	-3.4	0.027	0.027	0.019
6.40	-15.1	-15.1	-2.2	-2.2	0.020	0.020	0.009
6.00	-14.5	-14.5	-1.0	-1.0	0.013	0.013	0.002
5.80	-14.3	-14.3	-10.2	-0.4	0.010	0.010	0.000
5.20	-8.7	-8.7	-8.4	-8.4	0.001	0.001	-0.003
4.80	-5.6	-5.6	-7.2	-7.2	-0.001	-0.001	-0.003
4.40	-2.9	-2.9	-6.0	-6.0	-0.003	-0.003	-0.002
4.00	-0.7	-0.7	-4.8	-4.8	-0.004	-0.004	-0.001
3.60	1.0	1.0	-3.6	-3.6	-0.004	-0.004	0.001
3.20	2.2	2.2	-2.4	-2.4	-0.003	-0.003	0.003
2.80	2.9	2.9	-1.2	-1.2	-0.002	-0.002	0.004
2.40	3.2	3.2	0.0	0.0	-0.000	-0.000	0.004
2.00	3.0	3.0	1.2	1.2	0.000	0.000	0.004
1.60	2.3	2.3	2.4	2.4	0.002	0.002	0.004
1.20	1.1	1.1	3.6	3.6	0.002	0.002	0.003
0.80	-0.6	-0.6	4.8	4.8	0.002	0.002	0.002
0.40	-2.7	-2.7	6.0	6.0	0.002	0.002	0.001
0.00	0.0	-5.4	0.0	7.2	0.000	0.000	0.000

LASTFALL 2, S C H N I T T K R Ä F T E nach Th. II. O.

x (m)	M li. (kNm)	M re. (kNm)	H li. (kN)	H re. (kN)	Phi li. Rad E2	Phi re. Rad E2	w (cm)
16.50	-9.8	0.0	0.0	0.0	1.385	0.000	6.132
16.00	-11.5	-11.5	2.4	2.4	1.368	1.368	5.443
15.60	-13.8	-13.8	4.3	4.3	1.353	1.353	4.899
15.20	-16.8	-16.8	6.2	6.2	1.331	1.331	4.362
14.80	-20.6	-20.6	8.2	8.2	1.300	1.300	3.835
14.40	-25.1	-25.1	10.1	10.1	1.260	1.260	3.323
14.00	-30.4	-30.4	12.0	12.0	1.206	1.206	2.829
13.60	-36.4	-36.4	13.9	13.9	1.135	1.135	2.360
13.20	-43.1	-43.1	15.8	15.8	1.045	1.045	1.924
12.80	-50.5	-50.5	17.8	17.8	0.933	0.933	1.527
12.40	-58.6	-58.6	19.7	19.7	0.796	0.796	1.181
12.00	-67.4	-67.4	21.6	21.6	0.633	0.633	0.894
11.60	-76.8	-76.8	23.5	23.5	0.439	0.439	0.678
11.20	-68.6	-86.9	25.4	25.4	0.343	0.343	0.521
11.15	-77.9	-69.9	-24.7	25.7	0.335	0.335	0.504
11.10	-76.7	-76.7	-24.5	-24.5	0.325	0.325	0.488
10.80	-69.8	-69.8	-23.1	-23.1	0.269	0.269	0.399
10.40	-61.1	-61.1	-21.1	-21.1	0.208	0.208	0.303
10.00	-53.2	-53.2	-19.2	-19.2	0.160	0.160	0.230
9.60	-46.0	-46.0	-17.3	-17.3	0.123	0.123	0.173
9.20	-39.6	-39.6	-15.4	-15.4	0.095	0.095	0.129
8.80	-33.9	-33.9	-13.5	-13.5	0.074	0.074	0.095
8.40	-29.0	-29.0	-11.5	-11.5	0.058	0.058	0.069
8.00	-24.8	-24.8	-9.6	-9.6	0.044	0.044	0.048
7.60	-21.2	-21.2	-8.4	-8.4	0.034	0.034	0.032
7.20	-18.1	-18.1	-7.2	-7.2	0.026	0.026	0.020
6.80	-15.5	-15.5	-6.0	-6.0	0.018	0.018	0.011
6.40	-13.3	-13.3	-4.8	-4.8	0.012	0.012	0.005
6.00	-11.6	-11.6	-3.6	-3.6	0.007	0.007	0.001
5.80	-11.0	-11.0	-9.4	-3.0	0.004	0.004	0.000
5.20	-5.9	-5.9	-7.6	-7.6	-0.001	-0.001	-0.001
4.80	-3.1	-3.1	-6.4	-6.4	-0.003	-0.003	0.001
4.40	-0.8	-0.8	-5.2	-5.2	-0.004	-0.004	0.002
4.00	1.1	1.1	-4.0	-4.0	-0.004	-0.004	0.004
3.60	2.4	2.4	-2.8	-2.8	-0.003	-0.003	0.006
3.20	3.3	3.3	-1.6	-1.6	-0.002	-0.002	0.007
2.80	3.7	3.7	-0.4	-0.4	-0.000	-0.000	0.008
2.40	3.6	3.6	0.8	0.8	0.001	0.001	0.008
2.00	3.0	3.0	2.0	2.0	0.002	0.002	0.007
1.60	2.0	2.0	3.2	3.2	0.003	0.003	0.006
1.20	0.5	0.5	4.4	4.4	0.004	0.004	0.004
0.80	-1.5	-1.5	5.6	5.6	0.004	0.004	0.002
0.40	-4.0	-4.0	6.8	6.8	0.002	0.002	0.001
0.00	0.0	-7.0	0.0	8.0	0.000	0.000	0.000

LASTFALL 3, S C H N I T T K R Ä F T E nach Th. I. O.							
x (m)	M li. (kNm)	M re. (kNm)	H li. (kN)	H re. (kN)	Phi li. Rad E2	Phi re. Rad E2	w (cm)
16.50	-25.7	0.0	0.0	0.0	1.835	0.000	9.089
16.00	-26.3	-26.3	2.4	2.4	1.793	1.793	8.181
15.60	-27.7	-27.7	4.3	4.3	1.758	1.758	7.471
15.20	-29.8	-29.8	6.2	6.2	1.721	1.721	6.775
14.80	-32.7	-32.7	8.2	8.2	1.681	1.681	6.095
14.40	-36.3	-36.3	10.1	10.1	1.636	1.636	5.431
14.00	-40.7	-40.7	12.0	12.0	1.584	1.584	4.787
13.60	-45.9	-45.9	13.9	13.9	1.516	1.516	4.166
13.20	-51.9	-51.9	15.8	15.8	1.436	1.436	3.575
12.80	-58.6	-58.6	17.8	17.8	1.339	1.339	3.019
12.40	-66.1	-66.1	19.7	19.7	1.222	1.222	2.507
12.00	-74.3	-74.3	21.6	21.6	1.082	1.082	2.045
11.60	-83.4	-83.4	23.5	23.5	0.915	0.915	1.645
11.20	-48.3	-93.2	25.4	25.4	0.855	0.855	1.290
11.15	-212.3	-49.6	-51.1	25.7	0.852	0.852	1.248
11.10	-209.7	-209.7	-50.8	-50.8	0.830	0.830	1.206
10.80	-194.7	-194.7	-49.4	-49.4	0.700	0.700	0.976
10.40	-175.3	-175.3	-47.5	-47.5	0.553	0.553	0.726
10.00	-156.7	-156.7	-45.6	-45.6	0.432	0.432	0.529
9.60	-138.9	-138.9	-43.6	-43.6	0.335	0.335	0.376
9.20	-121.8	-121.8	-41.7	-41.7	0.255	0.255	0.258
8.80	-105.5	-105.5	-39.8	-39.8	0.189	0.189	0.170
8.40	-90.0	-90.0	-37.9	-37.9	0.139	0.139	0.105
8.00	-75.2	-75.2	-36.0	-36.0	0.096	0.096	0.058
7.60	-61.0	-61.0	-34.8	-34.8	0.061	0.061	0.026
7.20	-47.4	-47.4	-33.6	-33.6	0.034	0.034	0.007
6.80	-34.2	-34.2	-32.4	-32.4	0.013	0.013	-0.002
6.40	-21.5	-21.5	-31.2	-31.2	-0.001	-0.001	-0.004
6.00	-9.3	-9.3	-30.0	-30.0	-0.008	-0.008	-0.002
5.80	-3.3	-3.3	-7.4	-29.4	-0.010	-0.010	0.000
5.20	0.6	0.6	-5.6	-5.6	-0.011	-0.011	0.007
4.80	2.6	2.6	-4.4	-4.4	-0.010	-0.010	0.012
4.40	4.1	4.1	-3.2	-3.2	-0.009	-0.009	0.016
4.00	5.2	5.2	-2.0	-2.0	-0.006	-0.006	0.019
3.60	5.7	5.7	-0.8	-0.8	-0.003	-0.003	0.021
3.20	5.8	5.8	0.4	0.4	0.000	0.000	0.021
2.80	5.4	5.4	1.6	1.6	0.003	0.003	0.021
2.40	4.6	4.6	2.8	2.8	0.006	0.006	0.019
2.00	3.2	3.2	4.0	4.0	0.008	0.008	0.016
1.60	1.4	1.4	5.2	5.2	0.009	0.009	0.012
1.20	-0.9	-0.9	6.4	6.4	0.009	0.009	0.008
0.80	-3.7	-3.7	7.6	7.6	0.008	0.008	0.004
0.40	-7.0	-7.0	8.8	8.8	0.005	0.005	0.001
0.00	0.0	-10.8	0.0	10.0	0.000	0.000	0.000

LASTFALL 3, S C H N I T T K R Ä F T E nach Th. II. O.

x (m)	M li. (kNm)	M re. (kNm)	H li. (kN)	H re. (kN)	Phi li. Rad E2	Phi re. Rad E2	w (cm)
16.50	-25.7	0.0	0.0	0.0	3.981	0.000	17.647
16.00	-34.9	-34.9	2.4	2.4	3.923	3.923	15.670
15.60	-42.9	-42.9	4.3	4.3	3.860	3.860	14.112
15.20	-51.7	-51.7	6.2	6.2	3.777	3.777	12.584
14.80	-61.1	-61.1	8.2	8.2	3.668	3.668	11.094
14.40	-71.0	-71.0	10.1	10.1	3.532	3.532	9.654
14.00	-81.5	-81.5	12.0	12.0	3.364	3.364	8.273
13.60	-92.4	-92.4	13.9	13.9	3.161	3.161	6.967
13.20	-103.8	-103.8	15.8	15.8	2.920	2.920	5.750
12.80	-115.4	-115.4	17.8	17.8	2.638	2.638	4.637
12.40	-127.3	-127.3	19.7	19.7	2.313	2.313	3.646
12.00	-139.4	-139.4	21.6	21.6	1.942	1.942	2.793
11.60	-151.5	-151.5	23.5	23.5	1.524	1.524	2.099
11.20	-119.0	-163.9	25.4	25.4	1.346	1.346	1.524
11.15	-283.6	-120.9	-72.0	25.7	1.334	1.334	1.457
11.10	-280.7	-280.7	-71.8	-71.8	1.294	1.294	1.391
10.80	-262.6	-262.6	-70.3	-70.3	1.063	1.063	1.038
10.40	-238.3	-238.3	-68.4	-68.4	0.799	0.799	0.667
10.00	-213.9	-213.9	-66.5	-66.5	0.583	0.583	0.391
9.60	-189.5	-189.5	-64.6	-64.6	0.410	0.410	0.193
9.20	-165.4	-165.4	-62.7	-62.7	0.274	0.274	0.056
8.80	-141.5	-141.5	-60.7	-60.7	0.169	0.169	-0.032
8.40	-118.1	-118.1	-58.8	-58.8	0.089	0.089	-0.083
8.00	-95.2	-95.2	-56.9	-56.9	0.028	0.028	-0.107
7.60	-72.7	-72.7	-55.7	-55.7	-0.014	-0.014	-0.109
7.20	-50.5	-50.5	-54.5	-54.5	-0.046	-0.046	-0.096
6.80	-28.7	-28.7	-53.3	-53.3	-0.066	-0.066	-0.073
6.40	-7.4	-7.4	-52.1	-52.1	-0.075	-0.075	-0.045
6.00	13.5	13.5	-50.9	-50.9	-0.074	-0.074	-0.014
5.80	23.8	23.8	-0.4	-50.3	-0.068	-0.068	0.000
5.20	23.8	23.8	1.4	1.4	-0.048	-0.048	0.035
4.80	23.2	23.2	2.6	2.6	-0.034	-0.034	0.052
4.40	22.0	22.0	3.8	3.8	-0.021	-0.021	0.063
4.00	20.3	20.3	5.0	5.0	-0.009	-0.009	0.069
3.60	18.0	18.0	6.2	6.2	0.001	0.001	0.071
3.20	15.3	15.3	7.4	7.4	0.010	0.010	0.068
2.80	12.0	12.0	8.6	8.6	0.018	0.018	0.062
2.40	8.2	8.2	9.8	9.8	0.024	0.024	0.054
2.00	3.9	3.9	11.0	11.0	0.028	0.028	0.043
1.60	-0.8	-0.8	12.2	12.2	0.029	0.029	0.031
1.20	-6.1	-6.1	13.4	13.4	0.027	0.027	0.020
0.80	-11.8	-11.8	14.6	14.6	0.021	0.021	0.010
0.40	-18.0	-18.0	15.8	15.8	0.013	0.013	0.003
0.00	0.0	-24.6	0.0	17.0	0.000	0.001	0.000

LASTFALL 4, S C H N I T T K R Ä F T E nach Th. I. O.

x (m)	M li. (kNm)	M re. (kNm)	H li. (kN)	H re. (kN)	Phi li. Rad E2	Phi re. Rad E2	w (cm)
16.50	-25.7	0.0	0.0	0.0	0.565	0.000	3.068
16.00	-25.7	-25.7	0.0	0.0	0.542	0.542	2.791
15.60	-25.7	-25.7	0.0	0.0	0.524	0.524	2.578
15.20	-25.7	-25.7	0.0	0.0	0.505	0.505	2.372
14.80	-25.7	-25.7	0.0	0.0	0.487	0.487	2.173
14.40	-25.7	-25.7	0.0	0.0	0.469	0.469	1.982
14.00	-25.7	-25.7	0.0	0.0	0.450	0.450	1.798
13.60	-25.7	-25.7	0.0	0.0	0.432	0.432	1.621
13.20	-25.7	-25.7	0.0	0.0	0.414	0.414	1.452
12.80	-25.7	-25.7	0.0	0.0	0.396	0.396	1.290
12.40	-25.7	-25.7	0.0	0.0	0.377	0.377	1.135
12.00	-25.7	-25.7	0.0	0.0	0.359	0.359	0.987
11.60	-25.7	-25.7	0.0	0.0	0.341	0.341	0.847
11.20	19.1	-25.7	0.0	0.0	0.334	0.334	0.712
11.15	-143.6	19.1	-21.5	0.0	0.335	0.335	0.695
11.10	-142.5	-142.5	-21.5	-21.5	0.329	0.329	0.679
10.80	-136.0	-136.0	-21.5	-21.5	0.296	0.296	0.585
10.40	-127.4	-127.4	-21.5	-21.5	0.255	0.255	0.474
10.00	-118.8	-118.8	-21.5	-21.5	0.218	0.218	0.380
9.60	-110.2	-110.2	-21.5	-21.5	0.184	0.184	0.300
9.20	-101.6	-101.6	-21.5	-21.5	0.155	0.155	0.232
8.80	-93.0	-93.0	-21.5	-21.5	0.129	0.129	0.175
8.40	-84.4	-84.4	-21.5	-21.5	0.106	0.106	0.128
8.00	-75.8	-75.8	-21.5	-21.5	0.084	0.084	0.089
7.60	-67.2	-67.2	-21.5	-21.5	0.065	0.065	0.059
7.20	-58.5	-58.5	-21.5	-21.5	0.048	0.048	0.037
6.80	-49.9	-49.9	-21.5	-21.5	0.034	0.034	0.020
6.40	-41.3	-41.3	-21.5	-21.5	0.022	0.022	0.009
6.00	-32.7	-32.7	-21.5	-21.5	0.012	0.012	0.002
5.80	-28.4	-28.4	-13.7	-21.5	0.007	0.007	0.000
5.20	-20.2	-20.2	-13.7	-13.7	-0.002	-0.002	-0.001
4.80	-14.7	-14.7	-13.7	-13.7	-0.008	-0.008	0.001
4.40	-9.2	-9.2	-13.7	-13.7	-0.011	-0.011	0.005
4.00	-3.8	-3.8	-13.7	-13.7	-0.013	-0.013	0.010
3.60	1.7	1.7	-13.7	-13.7	-0.013	-0.013	0.016
3.20	7.2	7.2	-13.7	-13.7	-0.012	-0.012	0.021
2.80	12.7	12.7	-13.7	-13.7	-0.009	-0.009	0.026
2.40	18.2	18.2	-13.7	-13.7	-0.005	-0.005	0.028
2.00	23.6	23.6	-13.7	-13.7	0.001	0.001	0.029
1.60	29.1	29.1	-13.7	-13.7	0.008	0.008	0.027
1.20	34.6	34.6	86.3	-13.7	0.018	0.018	0.022
0.80	0.1	0.1	86.3	86.3	0.023	0.023	0.013
0.40	-34.4	-34.4	86.3	86.3	0.018	0.018	0.005
0.00	0.0	-69.0	0.0	86.3	0.000	0.003	0.000

LASTFALL 4, S C H N I T T K R Ä F T E nach Th. II. O.

x (m)	M li. (kNm)	M re. (kNm)	H li. (kN)	H re. (kN)	Phi li. Rad E2	Phi re. Rad E2	w (cm)
16.50	-25.7	0.0	0.0	0.0	0.653	0.000	3.468
16.00	-27.1	-27.1	0.0	0.0	0.630	0.630	3.147
15.60	-28.2	-28.2	0.0	0.0	0.610	0.610	2.899
15.20	-29.2	-29.2	0.0	0.0	0.590	0.590	2.659
14.80	-30.3	-30.3	0.0	0.0	0.569	0.569	2.427
14.40	-31.2	-31.2	0.0	0.0	0.547	0.547	2.203
14.00	-32.2	-32.2	0.0	0.0	0.525	0.525	1.989
13.60	-33.1	-33.1	0.0	0.0	0.501	0.501	1.783
13.20	-33.9	-33.9	0.0	0.0	0.478	0.478	1.587
12.80	-34.8	-34.8	0.0	0.0	0.453	0.453	1.401
12.40	-35.6	-35.6	0.0	0.0	0.428	0.428	1.224
12.00	-36.3	-36.3	0.0	0.0	0.403	0.403	1.058
11.60	-37.0	-37.0	0.0	0.0	0.377	0.377	0.902
11.20	7.2	-37.7	0.0	0.0	0.367	0.367	0.753
11.15	-155.7	7.0	-25.4	0.0	0.367	0.367	0.734
11.10	-154.6	-154.6	-25.4	-25.4	0.361	0.361	0.716
10.80	-147.9	-147.9	-25.4	-25.4	0.323	0.323	0.613
10.40	-138.8	-138.8	-25.4	-25.4	0.277	0.277	0.493
10.00	-129.6	-129.6	-25.4	-25.4	0.235	0.235	0.391
9.60	-120.3	-120.3	-25.4	-25.4	0.197	0.197	0.304
9.20	-110.8	-110.8	-25.4	-25.4	0.162	0.162	0.233
8.80	-101.1	-101.1	-25.4	-25.4	0.134	0.134	0.173
8.40	-91.4	-91.4	-25.4	-25.4	0.108	0.108	0.125
8.00	-81.6	-81.6	-25.4	-25.4	0.085	0.085	0.086
7.60	-71.7	-71.7	-25.4	-25.4	0.065	0.065	0.056
7.20	-61.8	-61.8	-25.4	-25.4	0.047	0.047	0.033
6.80	-51.7	-51.7	-25.4	-25.4	0.032	0.032	0.018
6.40	-41.7	-41.7	-25.4	-25.4	0.019	0.019	0.007
6.00	-31.5	-31.5	-25.4	-25.4	0.009	0.009	0.002
5.80	-26.5	-26.5	-13.2	-25.4	0.005	0.005	0.000
5.20	-18.6	-18.6	-13.2	-13.2	-0.004	-0.004	0.000
4.80	-13.3	-13.3	-13.2	-13.2	-0.009	-0.009	0.003
4.40	-8.0	-8.0	-13.2	-13.2	-0.012	-0.012	0.007
4.00	-2.7	-2.7	-13.2	-13.2	-0.013	-0.013	0.012
3.60	2.6	2.6	-13.2	-13.2	-0.013	-0.013	0.018
3.20	8.0	8.0	-13.2	-13.2	-0.012	-0.012	0.023
2.80	13.3	13.3	-13.2	-13.2	-0.009	-0.009	0.027
2.40	18.6	18.6	-13.2	-13.2	-0.004	-0.004	0.030
2.00	23.8	23.8	-13.2	-13.2	0.001	0.001	0.031
1.60	29.1	29.1	-13.2	-13.2	0.009	0.009	0.028
1.20	34.3	34.3	86.8	-13.2	0.019	0.019	0.023
0.80	-0.5	-0.5	86.8	86.8	0.024	0.024	0.014
0.40	-35.4	-35.4	86.8	86.8	0.018	0.018	0.005
0.00	0.0	-70.2	0.0	86.8	0.000	0.003	0.000

LASTFALL 1, B E M E S S U N G für Schnittkräfte nach Th. I. O.

x (m)	Nx (kN)	M (kNm)	b (cm)	d (cm)	d1 (cm)	kx (-)	kz (-)	Mü (%)	As (cm ²)
16.50	-163.0	9.8	40.0	40.0	5.0	1.04	0.57	0.80	1.82
16.00	-165.0	9.8	40.0	40.0	5.0	1.05	0.56	0.80	1.83
15.60	-166.6	9.8	40.0	40.0	5.0	1.05	0.56	0.80	1.85
15.20	-168.2	9.8	40.0	40.0	5.0	1.05	0.56	0.80	1.86
14.80	-169.8	9.8	40.0	40.0	5.0	1.06	0.56	0.80	1.87
14.40	-171.4	9.8	40.0	40.0	5.0	1.06	0.56	0.80	1.88
14.00	-173.0	9.8	40.0	40.0	5.0	1.06	0.56	0.80	1.89
13.60	-174.6	9.8	40.0	40.0	5.0	1.07	0.56	0.80	1.90
13.20	-176.2	9.8	40.0	40.0	5.0	1.07	0.55	0.80	1.92
12.80	-177.8	9.8	40.0	40.0	5.0	1.07	0.55	0.80	1.93
12.40	-179.4	9.8	40.0	40.0	5.0	1.08	0.55	0.80	1.94
12.00	-181.0	9.8	40.0	40.0	5.0	1.08	0.55	0.80	1.95
11.60	-182.6	9.8	40.0	40.0	5.0	1.08	0.55	0.80	1.96
11.20	-184.2	9.8	40.0	40.0	5.0	1.08	0.55	0.80	1.98
11.15	-204.5	28.0	40.0	60.0	5.0	0.87	0.64	0.80	2.60
11.10	-204.8	20.0	40.0	60.0	5.0	0.99	0.59	0.80	2.32
10.80	-206.6	19.8	40.0	60.0	5.0	1.00	0.59	0.80	2.32
10.40	-209.0	18.5	40.0	60.0	5.0	1.02	0.57	0.80	2.29
10.00	-211.4	16.8	40.0	60.0	5.0	1.06	0.56	0.80	2.24
9.60	-213.8	15.1	40.0	60.0	5.0	1.09	0.55	0.80	2.19
9.20	-216.2	13.3	40.0	60.0	5.0	1.09	0.53	0.80	2.15
8.80	-218.6	11.6	40.0	60.0	5.0	1.09	0.52	0.80	2.11
8.40	-221.0	9.9	40.0	60.0	5.0	1.09	0.51	0.80	2.06
8.00	-223.4	8.1	40.0	60.0	5.0	1.09	0.49	0.80	2.02
7.60	-225.8	6.4	40.0	60.0	5.0	1.09	0.48	0.80	1.98
7.20	-228.2	4.7	40.0	60.0	5.0	1.09	0.47	0.80	1.94
6.80	-230.6	3.0	40.0	60.0	5.0	1.09	0.46	0.80	1.90
6.40	-233.0	1.2	40.0	60.0	5.0	1.09	0.46	0.80	1.89
6.00	-235.4	-2.2	40.0	60.0	5.0	1.09	0.46	0.80	1.93
5.80	-236.6	-3.1	40.0	60.0	5.0	1.09	0.46	0.80	1.95
5.20	-240.2	-3.1	40.0	60.0	5.0	1.09	0.46	0.80	1.98
4.80	-242.6	-2.6	40.0	60.0	5.0	1.09	0.46	0.80	1.99
4.40	-245.0	-2.3	40.0	60.0	5.0	1.09	0.46	0.80	2.00
4.00	-247.4	-2.0	40.0	60.0	5.0	1.09	0.46	0.80	2.02
3.60	-249.8	-1.7	40.0	60.0	5.0	1.09	0.46	0.80	2.03
3.20	-252.2	-1.4	40.0	60.0	5.0	1.09	0.46	0.80	2.05
2.80	-254.6	-1.0	40.0	60.0	5.0	1.09	0.46	0.80	2.06
2.40	-257.0	-0.7	40.0	60.0	5.0	1.09	0.46	0.80	2.08
2.00	-259.4	-0.4	40.0	60.0	5.0	1.09	0.45	0.80	2.09
1.60	-261.8	-0.1	40.0	60.0	5.0	1.09	0.45	0.80	2.11
1.20	-264.2	0.2	40.0	60.0	5.0	1.09	0.45	0.80	2.13
0.80	-266.6	0.9	40.0	60.0	5.0	1.09	0.46	0.80	2.16
0.40	-269.0	1.2	40.0	60.0	5.0	1.09	0.46	0.80	2.18
0.00	-271.4	1.5	40.0	60.0	5.0	1.09	0.46	0.80	2.20

LASTFALL 1, B E M E S S U N G für Schnittkräfte nach Th. II. O.

x (m)	Nx (kN)	M (kNm)	b (cm)	d (cm)	d1 (cm)	kx (-)	kz (-)	Mü (%)	As (cm ²)
16.50	-163.0	10.7	40.0	40.0	5.0	1.01	0.58	0.80	1.57
16.00	-165.0	10.9	40.0	40.0	5.0	1.01	0.58	0.80	1.59
15.60	-166.6	11.0	40.0	40.0	5.0	1.01	0.58	0.80	1.61
15.20	-168.2	11.2	40.0	40.0	5.0	1.01	0.58	0.80	1.62
14.80	-169.8	11.3	40.0	40.0	5.0	1.01	0.58	0.80	1.64
14.40	-171.4	11.4	40.0	40.0	5.0	1.01	0.58	0.80	1.66
14.00	-173.0	11.5	40.0	40.0	5.0	1.01	0.58	0.80	1.67
13.60	-174.6	11.6	40.0	40.0	5.0	1.01	0.58	0.80	1.69
13.20	-176.2	11.7	40.0	40.0	5.0	1.01	0.58	0.80	1.70
12.80	-177.8	11.8	40.0	40.0	5.0	1.01	0.58	0.80	1.72
12.40	-179.4	11.9	40.0	40.0	5.0	1.01	0.58	0.80	1.73
12.00	-181.0	11.9	40.0	40.0	5.0	1.01	0.58	0.80	1.74
11.60	-182.6	12.0	40.0	40.0	5.0	1.01	0.58	0.80	1.76
11.20	-184.2	12.2	40.0	40.0	5.0	1.01	0.58	0.80	1.78
11.15	-204.5	29.2	40.0	60.0	5.0	0.85	0.65	0.80	2.28
11.10	-204.8	21.2	40.0	60.0	5.0	0.97	0.60	0.80	1.98
10.80	-206.6	21.0	40.0	60.0	5.0	0.98	0.59	0.80	1.98
10.40	-209.0	19.6	40.0	60.0	5.0	1.00	0.58	0.80	1.95
10.00	-211.4	17.8	40.0	60.0	5.0	1.04	0.57	0.80	1.90
9.60	-213.8	16.0	40.0	60.0	5.0	1.07	0.55	0.80	1.85
9.20	-216.2	14.2	40.0	60.0	5.0	1.09	0.54	0.80	1.82
8.80	-218.6	12.4	40.0	60.0	5.0	1.09	0.52	0.80	1.78
8.40	-221.0	10.5	40.0	60.0	5.0	1.09	0.51	0.80	1.74
8.00	-223.4	8.7	40.0	60.0	5.0	1.09	0.50	0.80	1.70
7.60	-225.8	6.8	40.0	60.0	5.0	1.09	0.49	0.80	1.66
7.20	-228.2	5.0	40.0	60.0	5.0	1.09	0.47	0.80	1.63
6.80	-230.6	3.2	40.0	60.0	5.0	1.09	0.46	0.80	1.59
6.40	-233.0	1.3	40.0	60.0	5.0	1.09	0.46	0.80	1.58
6.00	-235.4	-2.4	40.0	60.0	5.0	1.09	0.46	0.80	1.61
5.80	-236.6	-3.3	40.0	60.0	5.0	1.09	0.46	0.80	1.63
5.20	-240.2	-3.3	40.0	60.0	5.0	1.09	0.46	0.80	1.66
4.80	-242.6	-2.8	40.0	60.0	5.0	1.09	0.46	0.80	1.66
4.40	-245.0	-2.5	40.0	60.0	5.0	1.09	0.46	0.80	1.67
4.00	-247.4	-2.1	40.0	60.0	5.0	1.09	0.46	0.80	1.68
3.60	-249.8	-1.8	40.0	60.0	5.0	1.09	0.46	0.80	1.70
3.20	-252.2	-1.4	40.0	60.0	5.0	1.09	0.46	0.80	1.71
2.80	-254.6	-1.1	40.0	60.0	5.0	1.09	0.46	0.80	1.72
2.40	-257.0	-0.8	40.0	60.0	5.0	1.09	0.46	0.80	1.73
2.00	-259.4	-0.4	40.0	60.0	5.0	1.09	0.45	0.80	1.75
1.60	-261.8	-0.1	40.0	60.0	5.0	1.09	0.45	0.80	1.76
1.20	-264.2	0.3	40.0	60.0	5.0	1.09	0.45	0.80	1.78
0.80	-266.6	0.9	40.0	60.0	5.0	1.09	0.46	0.80	1.80
0.40	-269.0	1.3	40.0	60.0	5.0	1.09	0.46	0.80	1.82
0.00	-271.4	1.6	40.0	60.0	5.0	1.09	0.46	0.80	1.84

LASTFALL 2, B E M E S S U N G für Schnittkräfte nach Th. I. O.

x (m)	Nx (kN)	M (kNm)	b (cm)	d (cm)	d1 (cm)	kx (-)	kz (-)	Mü (%)	As (cm ²)
16.50	-163.0	-9.8	40.0	40.0	5.0	1.04	0.57	0.80	1.82
16.00	-165.0	-10.4	40.0	40.0	5.0	1.03	0.57	0.80	1.87
15.60	-166.6	-11.7	40.0	40.0	5.0	0.99	0.59	0.80	1.97
15.20	-168.2	-13.8	40.0	40.0	5.0	0.92	0.62	0.80	2.11
14.80	-169.8	-16.7	40.0	40.0	5.0	0.85	0.65	0.80	2.30
14.40	-171.4	-20.4	40.0	40.0	5.0	0.77	0.68	0.80	2.54
14.00	-173.0	-24.8	40.0	40.0	5.0	0.70	0.71	0.80	2.84
13.60	-174.6	-30.0	40.0	40.0	5.0	0.63	0.74	0.80	3.19
13.20	-176.2	-35.9	40.0	40.0	5.0	0.56	0.77	0.80	3.60
12.80	-177.8	-42.6	40.0	40.0	5.0	0.46	0.81	0.80	4.41
12.40	-179.4	-50.1	40.0	40.0	5.0	0.39	0.84	0.80	5.68
12.00	-181.0	-58.4	40.0	40.0	5.0	0.35	0.86	0.80	7.26
11.60	-182.6	-67.4	40.0	40.0	5.0	0.33	0.87	0.80	9.05
11.20	-184.2	-77.2	40.0	40.0	5.0	0.31	0.88	0.80	11.04
11.15	-204.5	-60.2	40.0	60.0	5.0	0.59	0.75	0.80	3.87
11.10	-204.8	-68.2	40.0	60.0	5.0	0.51	0.79	0.80	4.31
10.80	-206.6	-67.1	40.0	60.0	5.0	0.53	0.78	0.80	4.22
10.40	-209.0	-60.8	40.0	60.0	5.0	0.60	0.75	0.80	3.92
10.00	-211.4	-53.0	40.0	60.0	5.0	0.64	0.73	0.80	3.63
9.60	-213.8	-46.0	40.0	60.0	5.0	0.70	0.71	0.80	3.37
9.20	-216.2	-39.7	40.0	60.0	5.0	0.75	0.69	0.80	3.14
8.80	-218.6	-34.2	40.0	60.0	5.0	0.82	0.66	0.80	2.95
8.40	-221.0	-29.5	40.0	60.0	5.0	0.88	0.64	0.80	2.78
8.00	-223.4	-25.6	40.0	60.0	5.0	0.94	0.61	0.80	2.66
7.60	-225.8	-22.4	40.0	60.0	5.0	0.99	0.59	0.80	2.57
7.20	-228.2	-19.9	40.0	60.0	5.0	1.03	0.57	0.80	2.48
6.80	-230.6	-17.8	40.0	60.0	5.0	1.06	0.56	0.80	2.42
6.40	-233.0	-16.2	40.0	60.0	5.0	1.09	0.55	0.80	2.38
6.00	-235.4	-15.1	40.0	60.0	5.0	1.09	0.54	0.80	2.36
5.80	-236.6	-14.5	40.0	60.0	5.0	1.09	0.53	0.80	2.35
5.20	-240.2	-14.3	40.0	60.0	5.0	1.09	0.53	0.80	2.37
4.80	-242.6	-8.7	40.0	60.0	5.0	1.09	0.49	0.80	2.19
4.40	-245.0	-5.6	40.0	60.0	5.0	1.09	0.47	0.80	2.10
4.00	-247.4	-2.9	40.0	60.0	5.0	1.09	0.46	0.80	2.03
3.60	-249.8	1.0	40.0	60.0	5.0	1.09	0.46	0.80	2.02
3.20	-252.2	2.2	40.0	60.0	5.0	1.09	0.46	0.80	2.06
2.80	-254.6	2.9	40.0	60.0	5.0	1.09	0.46	0.80	2.09
2.40	-257.0	3.2	40.0	60.0	5.0	1.09	0.46	0.80	2.12
2.00	-259.4	3.2	40.0	60.0	5.0	1.09	0.46	0.80	2.14
1.60	-261.8	3.0	40.0	60.0	5.0	1.09	0.46	0.80	2.15
1.20	-264.2	2.3	40.0	60.0	5.0	1.09	0.46	0.80	2.16
0.80	-266.6	1.1	40.0	60.0	5.0	1.09	0.46	0.80	2.16
0.40	-269.0	-2.7	40.0	60.0	5.0	1.09	0.46	0.80	2.20
0.00	-271.4	-5.4	40.0	60.0	5.0	1.09	0.47	0.80	2.30

LASTFALL 2, B E M E S S U N G für Schnittkräfte nach Th. II. O.

x (m)	Nx (kN)	M (kNm)	b (cm)	d (cm)	d1 (cm)	kx (-)	kz (-)	Mü (%)	As (cm ²)
16.50	-163.0	-10.7	40.0	40.0	5.0	1.01	0.58	0.80	1.57
16.00	-165.0	-12.5	40.0	40.0	5.0	0.96	0.60	0.80	1.68
15.60	-166.6	-14.9	40.0	40.0	5.0	0.89	0.63	0.80	1.84
15.20	-168.2	-18.0	40.0	40.0	5.0	0.81	0.66	0.80	2.06
14.80	-169.8	-22.0	40.0	40.0	5.0	0.74	0.69	0.80	2.36
14.40	-171.4	-26.8	40.0	40.0	5.0	0.67	0.72	0.80	2.74
14.00	-173.0	-32.5	40.0	40.0	5.0	0.61	0.75	0.80	3.19
13.60	-174.6	-38.9	40.0	40.0	5.0	0.50	0.79	0.80	3.91
13.20	-176.2	-46.0	40.0	40.0	5.0	0.41	0.83	0.80	4.98
12.80	-177.8	-54.0	40.0	40.0	5.0	0.37	0.85	0.80	6.47
12.40	-179.4	-62.7	40.0	40.0	5.0	0.34	0.87	0.80	8.17
12.00	-181.0	-72.1	40.0	40.0	5.0	0.32	0.88	0.80	10.08
11.60	-182.6	-82.3	40.0	40.0	5.0	0.30	0.89	0.80	12.16
11.20	-184.2	-94.3	40.0	40.0	5.0	0.30	0.88	0.94	15.04
11.15	-204.5	-69.9	40.0	60.0	5.0	0.50	0.79	0.80	4.45
11.10	-204.8	-77.9	40.0	60.0	5.0	0.43	0.82	0.80	5.13
10.80	-206.6	-76.7	40.0	60.0	5.0	0.44	0.82	0.80	5.01
10.40	-209.0	-69.8	40.0	60.0	5.0	0.51	0.79	0.80	4.41
10.00	-211.4	-61.1	40.0	60.0	5.0	0.60	0.75	0.80	3.79
9.60	-213.8	-53.2	40.0	60.0	5.0	0.65	0.73	0.80	3.42
9.20	-216.2	-46.0	40.0	60.0	5.0	0.70	0.71	0.80	3.09
8.80	-218.6	-39.6	40.0	60.0	5.0	0.76	0.68	0.80	2.80
8.40	-221.0	-33.9	40.0	60.0	5.0	0.82	0.66	0.80	2.57
8.00	-223.4	-29.0	40.0	60.0	5.0	0.89	0.63	0.80	2.38
7.60	-225.8	-24.8	40.0	60.0	5.0	0.95	0.60	0.80	2.23
7.20	-228.2	-21.2	40.0	60.0	5.0	1.01	0.58	0.80	2.12
6.80	-230.6	-18.1	40.0	60.0	5.0	1.06	0.56	0.80	2.03
6.40	-233.0	-15.5	40.0	60.0	5.0	1.09	0.54	0.80	1.96
6.00	-235.4	-13.3	40.0	60.0	5.0	1.09	0.52	0.80	1.91
5.80	-236.6	-11.6	40.0	60.0	5.0	1.09	0.51	0.80	1.87
5.20	-240.2	-11.0	40.0	60.0	5.0	1.09	0.51	0.80	1.88
4.80	-242.6	-5.9	40.0	60.0	5.0	1.09	0.48	0.80	1.75
4.40	-245.0	-3.1	40.0	60.0	5.0	1.09	0.46	0.80	1.68
4.00	-247.4	1.1	40.0	60.0	5.0	1.09	0.46	0.80	1.67
3.60	-249.8	2.4	40.0	60.0	5.0	1.09	0.46	0.80	1.70
3.20	-252.2	3.3	40.0	60.0	5.0	1.09	0.46	0.80	1.73
2.80	-254.6	3.7	40.0	60.0	5.0	1.09	0.46	0.80	1.76
2.40	-257.0	3.7	40.0	60.0	5.0	1.09	0.46	0.80	1.78
2.00	-259.4	3.6	40.0	60.0	5.0	1.09	0.46	0.80	1.79
1.60	-261.8	3.0	40.0	60.0	5.0	1.09	0.46	0.80	1.79
1.20	-264.2	2.0	40.0	60.0	5.0	1.09	0.46	0.80	1.79
0.80	-266.6	-1.5	40.0	60.0	5.0	1.09	0.46	0.80	1.80
0.40	-269.0	-4.0	40.0	60.0	5.0	1.09	0.46	0.80	1.86
0.00	-271.4	-7.0	40.0	60.0	5.0	1.09	0.48	0.80	1.96

LASTFALL 3, B E M E S S U N G für Schnittkräfte nach Th. I. O.

x (m)	Nx (kN)	M (kNm)	b (cm)	d (cm)	d1 (cm)	kx (-)	kz (-)	Mü (%)	As (cm ²)
16.50	-429.0	-25.7	40.0	40.0	5.0	1.04	0.57	0.80	4.79
16.00	-431.0	-26.3	40.0	40.0	5.0	1.04	0.57	0.80	4.84
15.60	-432.6	-27.7	40.0	40.0	5.0	1.02	0.58	0.80	4.94
15.20	-434.2	-29.8	40.0	40.0	5.0	0.99	0.59	0.80	5.09
14.80	-435.8	-32.7	40.0	40.0	5.0	0.96	0.60	0.80	5.27
14.40	-437.4	-36.3	40.0	40.0	5.0	0.92	0.62	0.80	5.50
14.00	-439.0	-40.7	40.0	40.0	5.0	0.87	0.64	0.80	5.78
13.60	-440.6	-45.9	40.0	40.0	5.0	0.83	0.66	0.80	6.11
13.20	-442.2	-51.9	40.0	40.0	5.0	0.78	0.68	0.80	6.51
12.80	-443.8	-58.6	40.0	40.0	5.0	0.73	0.70	0.80	6.96
12.40	-445.4	-66.1	40.0	40.0	5.0	0.68	0.72	0.80	7.46
12.00	-447.0	-74.3	40.0	40.0	5.0	0.64	0.73	0.80	8.01
11.60	-448.6	-83.4	40.0	40.0	5.0	0.61	0.75	0.80	8.61
11.20	-450.2	-93.2	40.0	40.0	5.0	0.55	0.77	0.80	9.30
11.15	-470.5	-49.6	40.0	60.0	5.0	0.96	0.60	0.80	5.44
11.10	-925.8	-212.3	40.0	60.0	5.0	0.67	0.72	0.80	15.13
10.80	-927.6	-209.7	40.0	60.0	5.0	0.68	0.72	0.80	15.05
10.40	-930.0	-194.7	40.0	60.0	5.0	0.70	0.71	0.80	14.46
10.00	-932.4	-175.3	40.0	60.0	5.0	0.74	0.69	0.80	13.71
9.60	-934.8	-156.7	40.0	60.0	5.0	0.79	0.67	0.80	12.99
9.20	-937.2	-138.9	40.0	60.0	5.0	0.84	0.65	0.80	12.32
8.80	-939.6	-121.8	40.0	60.0	5.0	0.89	0.63	0.80	11.69
8.40	-942.0	-105.5	40.0	60.0	5.0	0.94	0.61	0.80	11.12
8.00	-944.4	-90.0	40.0	60.0	5.0	1.00	0.58	0.80	10.59
7.60	-946.8	-75.2	40.0	60.0	5.0	1.06	0.56	0.80	10.02
7.20	-949.2	-61.0	40.0	60.0	5.0	1.09	0.54	0.80	9.52
6.80	-951.6	-47.4	40.0	60.0	5.0	1.09	0.51	0.80	9.06
6.40	-954.0	-34.2	40.0	60.0	5.0	1.09	0.49	0.80	8.62
6.00	-956.4	-21.5	40.0	60.0	5.0	1.09	0.47	0.80	8.19
5.80	-957.6	-9.3	40.0	60.0	5.0	1.09	0.46	0.80	7.83
5.20	-961.2	-3.3	40.0	60.0	5.0	1.09	0.46	0.80	7.77
4.80	-963.6	2.6	40.0	60.0	5.0	1.09	0.46	0.80	7.78
4.40	-966.0	4.1	40.0	60.0	5.0	1.09	0.46	0.80	7.82
4.00	-968.4	5.2	40.0	60.0	5.0	1.09	0.46	0.80	7.85
3.60	-970.8	5.7	40.0	60.0	5.0	1.09	0.46	0.80	7.88
3.20	-973.2	5.7	40.0	60.0	5.0	1.09	0.46	0.80	7.90
2.80	-975.6	5.8	40.0	60.0	5.0	1.09	0.46	0.80	7.92
2.40	-978.0	5.4	40.0	60.0	5.0	1.09	0.46	0.80	7.94
2.00	-980.4	4.6	40.0	60.0	5.0	1.09	0.46	0.80	7.94
1.60	-982.8	3.2	40.0	60.0	5.0	1.09	0.46	0.80	7.95
1.20	-985.2	1.4	40.0	60.0	5.0	1.09	0.45	0.80	7.95
0.80	-987.6	-3.7	40.0	60.0	5.0	1.09	0.46	0.80	7.99
0.40	-990.0	-7.0	40.0	60.0	5.0	1.09	0.46	0.80	8.05
0.00	-992.4	-10.8	40.0	60.0	5.0	1.09	0.46	0.80	8.14

LASTFALL 3, B E M E S S U N G für Schnittkräfte nach Th. II. O.

x (m)	Nx (kN)	M (kNm)	b (cm)	d (cm)	d1 (cm)	kx (-)	kz (-)	Mü (%)	As (cm ²)
16.50	-429.0	-32.8	40.0	40.0	5.0	0.95	0.60	0.80	4.39
16.00	-431.0	-42.0	40.0	40.0	5.0	0.85	0.65	0.80	5.00
15.60	-432.6	-50.4	40.0	40.0	5.0	0.78	0.68	0.80	5.60
15.20	-434.2	-59.6	40.0	40.0	5.0	0.71	0.70	0.80	6.29
14.80	-435.8	-69.6	40.0	40.0	5.0	0.66	0.73	0.80	7.07
14.40	-437.4	-80.3	40.0	40.0	5.0	0.61	0.75	0.80	7.92
14.00	-439.0	-91.7	40.0	40.0	5.0	0.55	0.77	0.80	9.07
13.60	-440.6	-103.7	40.0	40.0	5.0	0.47	0.81	0.80	10.64
13.20	-442.2	-116.3	40.0	40.0	5.0	0.41	0.83	0.80	12.63
12.80	-443.8	-129.4	40.0	40.0	5.0	0.41	0.83	0.98	15.68
12.40	-445.4	-142.8	40.0	40.0	5.0	0.41	0.83	1.18	18.88
12.00	-447.0	-156.6	40.0	40.0	5.0	0.41	0.83	1.38	22.08
11.60	-448.6	-170.7	40.0	40.0	5.0	0.41	0.83	1.58	25.28
11.20	-450.2	-189.3	40.0	40.0	5.0	0.41	0.83	1.86	29.76
11.15	-470.5	-120.9	40.0	60.0	5.0	0.63	0.74	0.80	7.70
11.10	-925.8	-283.6	40.0	60.0	5.0	0.57	0.76	0.80	17.62
10.80	-927.6	-280.7	40.0	60.0	5.0	0.57	0.76	0.80	17.40
10.40	-930.0	-262.6	40.0	60.0	5.0	0.61	0.75	0.80	16.36
10.00	-932.4	-238.3	40.0	60.0	5.0	0.64	0.74	0.80	15.20
9.60	-934.8	-213.9	40.0	60.0	5.0	0.67	0.72	0.80	14.04
9.20	-937.2	-189.5	40.0	60.0	5.0	0.72	0.70	0.80	12.91
8.80	-939.6	-165.4	40.0	60.0	5.0	0.77	0.68	0.80	11.83
8.40	-942.0	-141.5	40.0	60.0	5.0	0.83	0.65	0.80	10.81
8.00	-944.4	-118.1	40.0	60.0	5.0	0.90	0.62	0.80	9.87
7.60	-946.8	-95.2	40.0	60.0	5.0	0.98	0.59	0.80	9.03
7.20	-949.2	-72.7	40.0	60.0	5.0	1.07	0.56	0.80	8.28
6.80	-951.6	-50.5	40.0	60.0	5.0	1.09	0.52	0.80	7.64
6.40	-954.0	-28.7	40.0	60.0	5.0	1.09	0.49	0.80	7.02
6.00	-956.4	13.5	40.0	60.0	5.0	1.09	0.46	0.80	6.60
5.80	-957.6	23.8	40.0	60.0	5.0	1.09	0.48	0.80	6.90
5.20	-961.2	23.8	40.0	60.0	5.0	1.09	0.48	0.80	6.93
4.80	-963.6	23.8	40.0	60.0	5.0	1.09	0.48	0.80	6.94
4.40	-966.0	23.2	40.0	60.0	5.0	1.09	0.48	0.80	6.94
4.00	-968.4	22.0	40.0	60.0	5.0	1.09	0.47	0.80	6.92
3.60	-970.8	20.3	40.0	60.0	5.0	1.09	0.47	0.80	6.89
3.20	-973.2	18.0	40.0	60.0	5.0	1.09	0.47	0.80	6.84
2.80	-975.6	15.3	40.0	60.0	5.0	1.09	0.47	0.80	6.77
2.40	-978.0	12.0	40.0	60.0	5.0	1.09	0.46	0.80	6.70
2.00	-980.4	8.2	40.0	60.0	5.0	1.09	0.46	0.80	6.66
1.60	-982.8	3.9	40.0	60.0	5.0	1.09	0.46	0.80	6.63
1.20	-985.2	-6.1	40.0	60.0	5.0	1.09	0.46	0.80	6.67
0.80	-987.6	-11.8	40.0	60.0	5.0	1.09	0.46	0.80	6.76
0.40	-990.0	-18.0	40.0	60.0	5.0	1.09	0.47	0.80	6.94
0.00	-992.4	-24.6	40.0	60.0	5.0	1.09	0.48	0.80	7.15

LASTFALL 4, B E M E S S U N G für Schnittkräfte nach Th. I. O.

x (m)	Nx (kN)	M (kNm)	b (cm)	d (cm)	d1 (cm)	kx (-)	kz (-)	Mü (%)	As (cm ²)
16.50	-429.0	-25.7	40.0	40.0	5.0	1.04	0.57	0.80	2.28
16.00	-431.0	-25.7	40.0	40.0	5.0	1.05	0.57	0.80	2.29
15.60	-432.6	-25.7	40.0	40.0	5.0	1.05	0.56	0.80	2.29
15.20	-434.2	-25.7	40.0	40.0	5.0	1.05	0.56	0.80	2.30
14.80	-435.8	-25.7	40.0	40.0	5.0	1.05	0.56	0.80	2.30
14.40	-437.4	-25.7	40.0	40.0	5.0	1.05	0.56	0.80	2.31
14.00	-439.0	-25.7	40.0	40.0	5.0	1.05	0.56	0.80	2.31
13.60	-440.6	-25.7	40.0	40.0	5.0	1.05	0.56	0.80	2.32
13.20	-442.2	-25.7	40.0	40.0	5.0	1.05	0.56	0.80	2.33
12.80	-443.8	-25.7	40.0	40.0	5.0	1.06	0.56	0.80	2.33
12.40	-445.4	-25.7	40.0	40.0	5.0	1.06	0.56	0.80	2.34
12.00	-447.0	-25.7	40.0	40.0	5.0	1.06	0.56	0.80	2.34
11.60	-448.6	-25.7	40.0	40.0	5.0	1.06	0.56	0.80	2.35
11.20	-450.2	-25.7	40.0	40.0	5.0	1.06	0.56	0.80	2.35
11.15	-470.5	19.1	40.0	60.0	5.0	1.09	0.50	0.80	2.06
11.10	-925.8	-143.6	40.0	60.0	5.0	0.82	0.66	0.80	6.18
10.80	-927.6	-142.5	40.0	60.0	5.0	0.82	0.66	0.80	6.16
10.40	-930.0	-136.0	40.0	60.0	5.0	0.84	0.65	0.80	6.01
10.00	-932.4	-127.4	40.0	60.0	5.0	0.87	0.64	0.80	5.81
9.60	-934.8	-118.8	40.0	60.0	5.0	0.90	0.63	0.80	5.62
9.20	-937.2	-110.2	40.0	60.0	5.0	0.93	0.62	0.80	5.44
8.80	-939.6	-101.6	40.0	60.0	5.0	0.96	0.60	0.80	5.27
8.40	-942.0	-93.0	40.0	60.0	5.0	0.99	0.59	0.80	5.10
8.00	-944.4	-84.4	40.0	60.0	5.0	1.02	0.58	0.80	4.94
7.60	-946.8	-75.8	40.0	60.0	5.0	1.05	0.56	0.80	4.78
7.20	-949.2	-67.2	40.0	60.0	5.0	1.09	0.55	0.80	4.64
6.80	-951.6	-58.5	40.0	60.0	5.0	1.09	0.53	0.80	4.50
6.40	-954.0	-49.9	40.0	60.0	5.0	1.09	0.52	0.80	4.37
6.00	-956.4	-41.3	40.0	60.0	5.0	1.09	0.50	0.80	4.23
5.80	-957.6	-32.7	40.0	60.0	5.0	1.09	0.49	0.80	4.09
5.20	-961.2	-28.4	40.0	60.0	5.0	1.09	0.48	0.80	4.03
4.80	-963.6	-20.2	40.0	60.0	5.0	1.09	0.47	0.80	3.91
4.40	-966.0	-14.7	40.0	60.0	5.0	1.09	0.46	0.80	3.83
4.00	-968.4	-9.2	40.0	60.0	5.0	1.09	0.46	0.80	3.77
3.60	-970.8	-3.8	40.0	60.0	5.0	1.09	0.46	0.80	3.74
3.20	-973.2	7.2	40.0	60.0	5.0	1.09	0.46	0.80	3.77
2.80	-975.6	12.7	40.0	60.0	5.0	1.09	0.46	0.80	3.83
2.40	-978.0	18.2	40.0	60.0	5.0	1.09	0.47	0.80	3.93
2.00	-980.4	23.6	40.0	60.0	5.0	1.09	0.48	0.80	4.03
1.60	-982.8	29.1	40.0	60.0	5.0	1.09	0.48	0.80	4.13
1.20	-985.2	34.6	40.0	60.0	5.0	1.09	0.49	0.80	4.23
0.80	-987.6	34.6	40.0	60.0	5.0	1.09	0.49	0.80	4.23
0.40	-990.0	-34.4	40.0	60.0	5.0	1.09	0.49	0.80	4.24
0.00	-992.4	-69.0	40.0	60.0	5.0	1.09	0.55	0.80	4.83

LASTFALL 4, B E M E S S U N G für Schnittkräfte nach Th. II. O.

x (m)	Nx (kN)	M (kNm)	b (cm)	d (cm)	d1 (cm)	kx (-)	kz (-)	Mü (%)	As (cm ²)
16.50	-429.0	-25.7	40.0	40.0	5.0	1.04	0.57	0.80	2.28
16.00	-431.0	-27.1	40.0	40.0	5.0	1.03	0.57	0.80	2.33
15.60	-432.6	-28.2	40.0	40.0	5.0	1.01	0.58	0.80	2.37
15.20	-434.2	-29.2	40.0	40.0	5.0	1.00	0.58	0.80	2.41
14.80	-435.8	-30.3	40.0	40.0	5.0	0.99	0.59	0.80	2.45
14.40	-437.4	-31.2	40.0	40.0	5.0	0.98	0.59	0.80	2.48
14.00	-439.0	-32.2	40.0	40.0	5.0	0.97	0.60	0.80	2.52
13.60	-440.6	-33.1	40.0	40.0	5.0	0.96	0.60	0.80	2.56
13.20	-442.2	-33.9	40.0	40.0	5.0	0.95	0.60	0.80	2.59
12.80	-443.8	-34.8	40.0	40.0	5.0	0.94	0.61	0.80	2.63
12.40	-445.4	-35.6	40.0	40.0	5.0	0.94	0.61	0.80	2.66
12.00	-447.0	-36.3	40.0	40.0	5.0	0.93	0.61	0.80	2.69
11.60	-448.6	-37.0	40.0	40.0	5.0	0.92	0.62	0.80	2.72
11.20	-450.2	-37.7	40.0	40.0	5.0	0.92	0.62	0.80	2.75
11.15	-470.5	7.2	40.0	60.0	5.0	1.09	0.46	0.80	1.86
11.10	-925.8	-155.7	40.0	60.0	5.0	0.79	0.67	0.80	6.48
10.80	-927.6	-154.6	40.0	60.0	5.0	0.79	0.67	0.80	6.45
10.40	-930.0	-147.9	40.0	60.0	5.0	0.81	0.66	0.80	6.30
10.00	-932.4	-138.8	40.0	60.0	5.0	0.84	0.65	0.80	6.08
9.60	-934.8	-129.6	40.0	60.0	5.0	0.86	0.64	0.80	5.87
9.20	-937.2	-120.3	40.0	60.0	5.0	0.89	0.63	0.80	5.66
8.80	-939.6	-110.8	40.0	60.0	5.0	0.92	0.62	0.80	5.46
8.40	-942.0	-101.1	40.0	60.0	5.0	0.96	0.60	0.80	5.26
8.00	-944.4	-91.4	40.0	60.0	5.0	0.99	0.59	0.80	5.07
7.60	-946.8	-81.6	40.0	60.0	5.0	1.03	0.57	0.80	4.89
7.20	-949.2	-71.7	40.0	60.0	5.0	1.07	0.55	0.80	4.72
6.80	-951.6	-61.8	40.0	60.0	5.0	1.09	0.54	0.80	4.55
6.40	-954.0	-51.7	40.0	60.0	5.0	1.09	0.52	0.80	4.40
6.00	-956.4	-41.7	40.0	60.0	5.0	1.09	0.50	0.80	4.24
5.80	-957.6	-31.5	40.0	60.0	5.0	1.09	0.49	0.80	4.07
5.20	-961.2	-26.5	40.0	60.0	5.0	1.09	0.48	0.80	4.00
4.80	-963.6	-18.6	40.0	60.0	5.0	1.09	0.47	0.80	3.88
4.40	-966.0	-13.3	40.0	60.0	5.0	1.09	0.46	0.80	3.80
4.00	-968.4	-8.0	40.0	60.0	5.0	1.09	0.46	0.80	3.76
3.60	-970.8	-2.7	40.0	60.0	5.0	1.09	0.46	0.80	3.73
3.20	-973.2	8.0	40.0	60.0	5.0	1.09	0.46	0.80	3.78
2.80	-975.6	13.3	40.0	60.0	5.0	1.09	0.46	0.80	3.84
2.40	-978.0	18.6	40.0	60.0	5.0	1.09	0.47	0.80	3.93
2.00	-980.4	23.8	40.0	60.0	5.0	1.09	0.48	0.80	4.03
1.60	-982.8	29.1	40.0	60.0	5.0	1.09	0.48	0.80	4.12
1.20	-985.2	34.3	40.0	60.0	5.0	1.09	0.49	0.80	4.22
0.80	-987.6	34.3	40.0	60.0	5.0	1.09	0.49	0.80	4.23
0.40	-990.0	-35.4	40.0	60.0	5.0	1.09	0.49	0.80	4.26
0.00	-992.4	-70.2	40.0	60.0	5.0	1.09	0.55	0.80	4.85

LASTFALL 1, M-K-BEZIEHUNG für Schnittkräfte nach Th. I. O.

x (m)	Nx (kN)	MI (kNm)	As (cm ²)	Ebo (o/oo)	Es (o/oo)	k (1/m)	BI (kNm ²)
16.50	-163.0	9.8	30.66	-0.154	-0.035	0.000298	32783.4
16.00	-165.0	9.8	30.66	-0.154	-0.035	0.000298	32783.4
15.60	-166.6	9.8	30.66	-0.155	-0.035	0.000298	32769.7
15.20	-168.2	9.8	30.66	-0.156	-0.036	0.000299	32761.0
14.80	-169.8	9.8	30.66	-0.157	-0.037	0.000299	32747.1
14.40	-171.4	9.8	30.66	-0.157	-0.038	0.000299	32738.4
14.00	-173.0	9.8	30.66	-0.158	-0.039	0.000299	32724.4
13.60	-174.6	9.8	30.66	-0.159	-0.040	0.000299	32716.2
13.20	-176.2	9.8	30.66	-0.160	-0.040	0.000299	32702.3
12.80	-177.8	9.8	30.66	-0.161	-0.041	0.000299	32694.3
12.40	-179.4	9.8	30.66	-0.162	-0.042	0.000299	32680.4
12.00	-181.0	9.8	30.66	-0.163	-0.043	0.000299	32666.6
11.60	-182.6	9.8	30.66	-0.163	-0.044	0.000299	32658.7
11.20	-184.2	9.8	19.34	-0.106	-0.042	0.000107	91531.6
11.15	-204.5	28.0	19.34	-0.183	0.009	0.000351	79993.6
11.10	-204.8	20.0	19.34	-0.152	-0.020	0.000220	91271.5
10.80	-206.6	19.8	19.34	-0.151	-0.021	0.000217	91234.0
10.40	-209.0	18.5	19.34	-0.148	-0.026	0.000203	91169.3
10.00	-211.4	16.8	19.34	-0.143	-0.032	0.000185	91105.9
9.60	-213.8	15.1	19.34	-0.137	-0.038	0.000166	91050.4
9.20	-216.2	13.3	19.34	-0.132	-0.044	0.000147	91004.6
8.80	-218.6	11.6	19.34	-0.127	-0.050	0.000128	90966.9
8.40	-221.0	9.9	19.34	-0.122	-0.056	0.000110	90937.2
8.00	-223.4	8.1	19.34	-0.116	-0.062	0.000091	90917.3
7.60	-225.8	6.4	19.34	-0.111	-0.068	0.000072	90903.4
7.20	-228.2	4.7	19.34	-0.106	-0.074	0.000053	90849.6
6.80	-230.6	3.0	19.34	-0.101	-0.080	0.000034	90847.7
6.40	-233.0	1.2	19.34	-0.095	-0.086	0.000015	90850.1
6.00	-235.4	-2.2	19.34	-0.099	-0.085	0.000022	90811.5
5.80	-236.6	-3.1	10.30	-0.107	-0.087	0.000035	83148.5
5.20	-240.2	-3.1	10.30	-0.109	-0.088	0.000035	83078.7
4.80	-242.6	-2.6	10.30	-0.108	-0.091	0.000029	83037.7
4.40	-245.0	-2.3	10.30	-0.108	-0.092	0.000026	83043.4
4.00	-247.4	-2.0	10.30	-0.108	-0.094	0.000022	83001.0
3.60	-249.8	-1.7	10.30	-0.108	-0.096	0.000019	82962.9
3.20	-252.2	-1.4	10.30	-0.107	-0.098	0.000015	82920.8
2.80	-254.6	-1.0	10.30	-0.107	-0.100	0.000012	82875.9
2.40	-257.0	-0.7	10.30	-0.107	-0.102	0.000008	82832.2
2.00	-259.4	-0.4	10.30	-0.105	-0.105	0.000000	216000.0
1.60	-261.8	0.2	10.30	-0.106	-0.106	0.000000	216000.0
1.20	-264.2	0.6	10.30	-0.109	-0.106	0.000006	82762.5
0.80	-266.6	0.9	10.30	-0.112	-0.106	0.000010	82711.2
0.40	-269.0	1.2	10.30	-0.114	-0.106	0.000013	82648.4
0.00	-271.4	1.5	10.30	-0.116	-0.106	0.000017	82602.6

LASTFALL 1, M-K-BEZIEHUNG für Schnittkräfte nach Th. II. O.

x (m)	Nx (kN)	MII (kNm)	As (cm ²)	Ebo (o/oo)	Es (o/oo)	k (1/m)	BII (kNm ²)
16.50	-163.0	10.7	30.66	-0.162	-0.029	0.000332	32794.8
16.00	-165.0	10.9	30.66	-0.162	-0.029	0.000332	32794.8
15.60	-166.6	11.0	30.66	-0.163	-0.029	0.000336	32783.5
15.20	-168.2	11.2	30.66	-0.165	-0.029	0.000340	32774.4
14.80	-169.8	11.3	30.66	-0.167	-0.029	0.000344	32762.9
14.40	-171.4	11.4	30.66	-0.169	-0.030	0.000348	32753.9
14.00	-173.0	11.5	30.66	-0.170	-0.030	0.000351	32742.0
13.60	-174.6	11.6	30.66	-0.172	-0.030	0.000354	32733.0
13.20	-176.2	11.7	30.66	-0.173	-0.031	0.000357	32721.1
12.80	-177.8	11.8	30.66	-0.175	-0.031	0.000360	32711.5
12.40	-179.4	11.9	30.66	-0.176	-0.031	0.000362	32699.5
12.00	-181.0	11.9	30.66	-0.178	-0.032	0.000364	32687.4
11.60	-182.6	12.0	30.66	-0.179	-0.032	0.000366	32677.5
11.20	-184.2	12.2	19.34	-0.115	-0.035	0.000132	91533.1
11.15	-204.5	29.2	19.34	-0.188	0.014	0.000367	79505.2
11.10	-204.8	21.2	19.34	-0.156	-0.016	0.000232	91295.5
10.80	-206.6	21.0	19.34	-0.156	-0.018	0.000230	91257.5
10.40	-209.0	19.6	19.34	-0.152	-0.023	0.000215	91187.9
10.00	-211.4	17.8	19.34	-0.146	-0.029	0.000196	91117.7
9.60	-213.8	16.0	19.34	-0.141	-0.035	0.000176	91058.1
9.20	-216.2	14.2	19.34	-0.135	-0.041	0.000156	91007.6
8.80	-218.6	12.4	19.34	-0.130	-0.048	0.000136	90966.8
8.40	-221.0	10.5	19.34	-0.124	-0.054	0.000117	90934.8
8.00	-223.4	8.7	19.34	-0.118	-0.060	0.000097	90912.6
7.60	-225.8	6.8	19.34	-0.113	-0.067	0.000077	90898.4
7.20	-228.2	5.0	19.34	-0.107	-0.073	0.000057	90844.4
6.80	-230.6	3.2	19.34	-0.101	-0.080	0.000037	90841.3
6.40	-233.0	1.3	19.34	-0.096	-0.086	0.000016	90856.7
6.00	-235.4	-2.4	19.34	-0.099	-0.085	0.000024	90807.6
5.80	-236.6	-3.3	10.30	-0.108	-0.086	0.000037	83147.3
5.20	-240.2	-3.3	10.30	-0.110	-0.087	0.000037	83073.6
4.80	-242.6	-2.8	10.30	-0.109	-0.090	0.000031	83030.6
4.40	-245.0	-2.5	10.30	-0.108	-0.092	0.000028	83037.4
4.00	-247.4	-2.1	10.30	-0.108	-0.094	0.000024	83002.2
3.60	-249.8	-1.8	10.30	-0.108	-0.096	0.000020	82955.5
3.20	-252.2	-1.4	10.30	-0.108	-0.098	0.000016	82914.8
2.80	-254.6	-1.1	10.30	-0.108	-0.100	0.000012	82884.9
2.40	-257.0	-0.8	10.30	-0.107	-0.102	0.000009	82853.1
2.00	-259.4	-0.4	10.30	-0.105	-0.105	0.000000	216000.0
1.60	-261.8	0.3	10.30	-0.106	-0.106	0.000000	216000.0
1.20	-264.2	0.6	10.30	-0.110	-0.106	0.000007	82772.4
0.80	-266.6	0.9	10.30	-0.112	-0.106	0.000010	82700.3
0.40	-269.0	1.3	10.30	-0.114	-0.106	0.000014	82655.1
0.00	-271.4	1.6	10.30	-0.116	-0.106	0.000018	82605.1

LASTFALL 2, M-K-BEZIEHUNG für Schnittkräfte nach Th. I. O.

x (m)	Nx (kN)	MI (kNm)	As (cm ²)	Ebo (o/oo)	Es (o/oo)	k (1/m)	BI (kNm ²)
16.50	-163.0	-9.8	30.66	-0.158	-0.031	0.000317	32789.4
16.00	-165.0	-10.4	30.66	-0.158	-0.031	0.000317	32789.4
15.60	-166.6	-11.7	30.66	-0.168	-0.025	0.000358	32792.8
15.20	-168.2	-13.8	30.66	-0.184	-0.015	0.000424	32643.3
14.80	-169.8	-16.7	30.66	-0.209	0.005	0.000609	27442.7
14.40	-171.4	-20.4	30.66	-0.242	0.037	0.000798	25516.5
14.00	-173.0	-24.8	30.66	-0.283	0.084	0.001049	23629.9
13.60	-174.6	-30.0	30.66	-0.341	0.158	0.001427	20999.6
13.20	-176.2	-35.9	30.66	-0.402	0.242	0.001838	19538.6
12.80	-177.8	-42.6	30.66	-0.471	0.344	0.002330	18296.1
12.40	-179.4	-50.1	30.66	-0.557	0.474	0.002948	17002.7
12.00	-181.0	-58.4	30.66	-0.648	0.614	0.003606	16189.8
11.60	-182.6	-67.4	30.66	-0.745	0.763	0.004307	15650.5
11.20	-184.2	-77.2	19.34	-0.493	0.651	0.002081	37100.2
11.15	-204.5	-60.2	19.34	-0.376	0.330	0.001284	46880.7
11.10	-204.8	-68.2	19.34	-0.431	0.446	0.001595	42773.4
10.80	-206.6	-67.1	19.34	-0.424	0.428	0.001550	43322.3
10.40	-209.0	-60.8	19.34	-0.379	0.326	0.001281	47505.5
10.00	-211.4	-53.0	19.34	-0.330	0.223	0.001006	52857.2
9.60	-213.8	-46.0	19.34	-0.286	0.140	0.000773	59832.9
9.20	-216.2	-39.7	19.34	-0.246	0.074	0.000583	68818.6
8.80	-218.6	-34.2	19.34	-0.219	0.035	0.000461	75401.3
8.40	-221.0	-29.5	19.34	-0.198	0.009	0.000377	79977.6
8.00	-223.4	-25.6	19.34	-0.182	-0.008	0.000290	90621.9
7.60	-225.8	-22.4	19.34	-0.172	-0.018	0.000255	90962.9
7.20	-228.2	-19.9	19.34	-0.164	-0.027	0.000229	90867.3
6.80	-230.6	-17.8	19.34	-0.158	-0.033	0.000207	90796.8
6.40	-233.0	-16.2	19.34	-0.153	-0.039	0.000191	90741.8
6.00	-235.4	-15.1	19.34	-0.151	-0.043	0.000180	90696.8
5.80	-236.6	-14.5	10.30	-0.159	-0.045	0.000190	83051.4
5.20	-240.2	-14.3	10.30	-0.160	-0.046	0.000189	82981.8
4.80	-242.6	-8.7	10.30	-0.138	-0.066	0.000119	82934.0
4.40	-245.0	-5.6	10.30	-0.126	-0.078	0.000080	82956.8
4.00	-247.4	-2.9	10.30	-0.116	-0.088	0.000046	82959.2
3.60	-249.8	1.0	10.30	-0.107	-0.097	0.000018	82962.3
3.20	-252.2	2.2	10.30	-0.109	-0.097	0.000021	82913.8
2.80	-254.6	2.9	10.30	-0.114	-0.095	0.000031	82844.3
2.40	-257.0	3.2	10.30	-0.116	-0.095	0.000036	82785.9
2.00	-259.4	3.2	10.30	-0.117	-0.096	0.000036	82783.7
1.60	-261.8	3.0	10.30	-0.118	-0.097	0.000035	82741.9
1.20	-264.2	2.3	10.30	-0.117	-0.100	0.000029	82707.6
0.80	-266.6	1.1	10.30	-0.114	-0.104	0.000016	82694.4
0.40	-269.0	-2.7	10.30	-0.118	-0.102	0.000027	82629.6
0.00	-271.4	-5.4	10.30	-0.129	-0.095	0.000057	82530.5

LASTFALL 2, M-K-BEZIEHUNG für Schnittkräfte nach Th. II. O.

x (m)	Nx (kN)	MII (kNm)	As (cm ²)	Ebo (o/oo)	Es (o/oo)	k (1/m)	BII (kNm ²)
16.50	-163.0	-10.7	30.66	-0.172	-0.021	0.000379	32855.5
16.00	-165.0	-12.5	30.66	-0.172	-0.021	0.000379	32855.5
15.60	-166.6	-14.9	30.66	-0.191	-0.008	0.000457	32308.7
15.20	-168.2	-18.0	30.66	-0.216	0.014	0.000657	27195.1
14.80	-169.8	-22.0	30.66	-0.256	0.056	0.000892	24458.3
14.40	-171.4	-26.8	30.66	-0.303	0.112	0.001184	22439.7
14.00	-173.0	-32.5	30.66	-0.359	0.186	0.001557	20636.5
13.60	-174.6	-38.9	30.66	-0.430	0.288	0.002053	18742.2
13.20	-176.2	-46.0	30.66	-0.505	0.400	0.002585	17640.7
12.80	-177.8	-54.0	30.66	-0.590	0.530	0.003201	16716.3
12.40	-179.4	-62.7	30.66	-0.687	0.679	0.003901	15934.0
12.00	-181.0	-72.1	30.66	-0.789	0.837	0.004645	15403.2
11.60	-182.6	-82.3	30.66	-0.904	1.014	0.005479	14904.1
11.20	-184.2	-94.3	19.34	-0.601	0.911	0.002750	33839.9
11.15	-204.5	-69.9	19.34	-0.439	0.465	0.001643	42193.2
11.10	-204.8	-77.9	19.34	-0.493	0.586	0.001961	39437.4
10.80	-206.6	-76.7	19.34	-0.487	0.567	0.001917	39737.7
10.40	-209.0	-69.8	19.34	-0.440	0.456	0.001629	42578.0
10.00	-211.4	-61.1	19.34	-0.382	0.326	0.001286	47345.1
9.60	-213.8	-53.2	19.34	-0.328	0.214	0.000985	53988.7
9.20	-216.2	-46.0	19.34	-0.283	0.130	0.000751	61541.4
8.80	-218.6	-39.6	19.34	-0.245	0.070	0.000573	69758.4
8.40	-221.0	-33.9	19.34	-0.219	0.033	0.000457	75402.4
8.00	-223.4	-29.0	19.34	-0.196	0.005	0.000364	81688.3
7.60	-225.8	-24.8	19.34	-0.181	-0.011	0.000284	90829.3
7.20	-228.2	-21.2	19.34	-0.170	-0.022	0.000246	90897.9
6.80	-230.6	-18.1	19.34	-0.160	-0.031	0.000215	90805.8
6.40	-233.0	-15.5	19.34	-0.152	-0.039	0.000188	90739.4
6.00	-235.4	-13.3	19.34	-0.146	-0.046	0.000167	90690.8
5.80	-236.6	-11.6	10.30	-0.150	-0.051	0.000165	83042.2
5.20	-240.2	-11.0	10.30	-0.150	-0.055	0.000158	82971.6
4.80	-242.6	-5.9	10.30	-0.129	-0.073	0.000093	82952.4
4.40	-245.0	-3.1	10.30	-0.118	-0.084	0.000056	82987.1
4.00	-247.4	1.1	10.30	-0.109	-0.093	0.000026	82997.0
3.60	-249.8	2.4	10.30	-0.107	-0.097	0.000018	82961.4
3.20	-252.2	3.3	10.30	-0.113	-0.094	0.000031	82889.1
2.80	-254.6	3.7	10.30	-0.116	-0.093	0.000039	82829.4
2.40	-257.0	3.7	10.30	-0.118	-0.094	0.000040	82778.8
2.00	-259.4	3.6	10.30	-0.119	-0.095	0.000040	82780.3
1.60	-261.8	3.0	10.30	-0.118	-0.097	0.000036	82742.0
1.20	-264.2	2.0	10.30	-0.116	-0.100	0.000026	82718.6
0.80	-266.6	-1.5	10.30	-0.112	-0.105	0.000011	82693.1
0.40	-269.0	-4.0	10.30	-0.122	-0.099	0.000039	82600.6
0.00	-271.4	-7.0	10.30	-0.134	-0.091	0.000072	82507.5

LASTFALL 3, M-K-BEZIEHUNG für Schnittkräfte nach Th. I. O.

x (m)	Nx (kN)	MI (kNm)	As (cm ²)	Ebo (o/oo)	Es (o/oo)	k (1/m)	BI (kNm ²)
16.50	-429.0	-25.7	30.66	-0.428	-0.087	0.000851	30946.5
16.00	-431.0	-26.3	30.66	-0.428	-0.087	0.000851	30946.5
15.60	-432.6	-27.7	30.66	-0.439	-0.081	0.000895	30946.8
15.20	-434.2	-29.8	30.66	-0.455	-0.070	0.000962	30958.5
14.80	-435.8	-32.7	30.66	-0.478	-0.056	0.001055	30970.1
14.40	-437.4	-36.3	30.66	-0.508	-0.035	0.001183	30707.4
14.00	-439.0	-40.7	30.66	-0.547	-0.005	0.001356	30039.6
13.60	-440.6	-45.9	30.66	-0.597	0.037	0.001812	25351.2
13.20	-442.2	-51.9	30.66	-0.656	0.093	0.002140	24243.5
12.80	-443.8	-58.6	30.66	-0.728	0.167	0.002558	22904.1
12.40	-445.4	-66.1	30.66	-0.820	0.270	0.003112	21232.0
12.00	-447.0	-74.3	30.66	-0.914	0.381	0.003702	20080.8
11.60	-448.6	-83.4	30.66	-1.028	0.521	0.004426	18835.9
11.20	-450.2	-93.2	19.34	-0.606	0.260	0.001575	59140.6
11.15	-470.5	-49.6	19.34	-0.376	-0.034	0.000570	86985.8
11.10	-925.8	-212.3	19.34	-1.653	0.874	0.004595	46192.9
10.80	-927.6	-209.7	19.34	-1.627	0.837	0.004481	46812.6
10.40	-930.0	-194.7	19.34	-1.486	0.651	0.003886	50175.6
10.00	-932.4	-175.3	19.34	-1.316	0.437	0.003188	55187.8
9.60	-934.8	-156.7	19.34	-1.170	0.265	0.002609	60434.1
9.20	-937.2	-138.9	19.34	-1.048	0.135	0.002151	65147.6
8.80	-939.6	-121.8	19.34	-0.947	0.037	0.001789	68979.6
8.40	-942.0	-105.5	19.34	-0.862	-0.034	0.001380	77846.7
8.00	-944.4	-90.0	19.34	-0.794	-0.087	0.001179	78246.9
7.60	-946.8	-75.2	19.34	-0.734	-0.136	0.000997	77988.2
7.20	-949.2	-61.0	19.34	-0.675	-0.182	0.000822	77851.5
6.80	-951.6	-47.4	19.34	-0.619	-0.228	0.000651	77825.0
6.40	-954.0	-34.2	19.34	-0.563	-0.272	0.000485	77897.9
6.00	-956.4	-21.5	19.34	-0.510	-0.315	0.000326	78059.7
5.80	-957.6	-9.3	10.30	-0.488	-0.372	0.000193	69966.4
5.20	-961.2	-3.3	10.30	-0.461	-0.395	0.000111	70075.5
4.80	-963.6	2.6	10.30	-0.440	-0.413	0.000045	70192.1
4.40	-966.0	4.1	10.30	-0.432	-0.421	0.000018	70216.4
4.00	-968.4	5.2	10.30	-0.441	-0.417	0.000040	70114.6
3.60	-970.8	5.7	10.30	-0.447	-0.414	0.000054	70022.5
3.20	-973.2	5.8	10.30	-0.451	-0.413	0.000062	69960.9
2.80	-975.6	5.8	10.30	-0.452	-0.414	0.000063	69911.5
2.40	-978.0	5.4	10.30	-0.453	-0.416	0.000063	69867.4
2.00	-980.4	4.6	10.30	-0.453	-0.418	0.000057	69829.0
1.60	-982.8	3.2	10.30	-0.449	-0.423	0.000044	69816.5
1.20	-985.2	1.4	10.30	-0.444	-0.429	0.000025	69824.5
0.80	-987.6	-3.7	10.30	-0.449	-0.428	0.000035	69746.0
0.40	-990.0	-7.0	10.30	-0.464	-0.418	0.000076	69596.0
0.00	-992.4	-10.8	10.30	-0.481	-0.407	0.000124	69438.2

LASTFALL 3, M-K-BEZIEHUNG für Schnittkräfte nach Th. II. O.

x (m)	Nx (kN)	MII (kNm)	As (cm ²)	Ebo (o/oo)	Es (o/oo)	k (1/m)	BII (kNm ²)
16.50	-429.0	-32.8	30.66	-0.548	0.005	0.001578	26280.8
16.00	-431.0	-42.0	30.66	-0.548	0.005	0.001578	26280.8
15.60	-432.6	-50.4	30.66	-0.629	0.079	0.002022	24462.0
15.20	-434.2	-59.6	30.66	-0.722	0.177	0.002569	22687.2
14.80	-435.8	-69.6	30.66	-0.836	0.307	0.003265	20778.5
14.40	-437.4	-80.3	30.66	-0.958	0.456	0.004040	19346.9
14.00	-439.0	-91.7	30.66	-1.091	0.623	0.004899	18201.5
13.60	-440.6	-103.7	30.66	-1.244	0.818	0.005893	17099.8
13.20	-442.2	-116.3	30.66	-1.405	1.023	0.006937	16284.6
12.80	-443.8	-129.4	30.66	-1.583	1.246	0.008083	15543.3
12.40	-445.4	-142.8	30.66	-1.773	1.479	0.009291	14930.5
12.00	-447.0	-156.6	30.66	-1.979	1.721	0.010572	14392.5
11.60	-448.6	-170.7	30.66	-2.205	1.972	0.011933	13897.3
11.20	-450.2	-189.3	19.34	-1.290	1.535	0.005135	35440.8
11.15	-470.5	-120.9	19.34	-0.766	0.484	0.002273	51039.9
11.10	-925.8	-283.6	19.34	-2.478	1.916	0.007989	34886.7
10.80	-927.6	-280.7	19.34	-2.436	1.860	0.007811	35306.2
10.40	-930.0	-262.6	19.34	-2.190	1.553	0.006806	37931.3
10.00	-932.4	-238.3	19.34	-1.901	1.181	0.005604	41865.5
9.60	-934.8	-213.9	19.34	-1.643	0.842	0.004517	46727.7
9.20	-937.2	-189.5	19.34	-1.419	0.553	0.003586	52346.8
8.80	-939.6	-165.4	19.34	-1.226	0.321	0.002812	58513.9
8.40	-942.0	-141.5	19.34	-1.063	0.144	0.002196	64583.8
8.00	-944.4	-118.1	19.34	-0.928	0.016	0.001717	69599.5
7.60	-946.8	-95.2	19.34	-0.819	-0.070	0.001248	78303.6
7.20	-949.2	-72.7	19.34	-0.729	-0.141	0.000980	77924.1
6.80	-951.6	-50.5	19.34	-0.639	-0.212	0.000711	77805.5
6.40	-954.0	-28.7	19.34	-0.550	-0.283	0.000445	77940.6
6.00	-956.4	13.5	19.34	-0.463	-0.351	0.000185	78315.7
5.80	-957.6	23.8	10.30	-0.495	-0.366	0.000214	69924.8
5.20	-961.2	23.8	10.30	-0.503	-0.363	0.000233	69814.3
4.80	-963.6	23.8	10.30	-0.505	-0.364	0.000236	69762.0
4.40	-966.0	23.2	10.30	-0.507	-0.365	0.000237	69715.7
4.00	-968.4	22.0	10.30	-0.507	-0.367	0.000232	69678.2
3.60	-970.8	20.3	10.30	-0.504	-0.371	0.000221	69646.6
3.20	-973.2	18.0	10.30	-0.499	-0.377	0.000202	69639.9
2.80	-975.6	15.3	10.30	-0.491	-0.385	0.000176	69649.9
2.40	-978.0	12.0	10.30	-0.480	-0.395	0.000142	69680.6
2.00	-980.4	8.2	10.30	-0.468	-0.407	0.000101	69721.1
1.60	-982.8	3.9	10.30	-0.452	-0.421	0.000053	69796.9
1.20	-985.2	-6.1	10.30	-0.457	-0.419	0.000064	69726.4
0.80	-987.6	-11.8	10.30	-0.482	-0.402	0.000133	69505.6
0.40	-990.0	-18.0	10.30	-0.509	-0.384	0.000209	69294.7
0.00	-992.4	-24.6	10.30	-0.539	-0.364	0.000292	69088.6

LASTFALL 4, M-K-BEZIEHUNG für Schnittkräfte nach Th. I. O.

x (m)	Nx (kN)	MI (kNm)	As (cm ²)	Ebo (o/oo)	Es (o/oo)	k (1/m)	BI (kNm ²)
16.50	-429.0	-25.7	30.66	-0.234	-0.051	0.000456	56414.3
16.00	-431.0	-25.7	30.66	-0.234	-0.051	0.000456	56414.3
15.60	-432.6	-25.7	30.66	-0.234	-0.052	0.000456	56403.6
15.20	-434.2	-25.7	30.66	-0.235	-0.052	0.000456	56387.6
14.80	-435.8	-25.7	30.66	-0.235	-0.053	0.000457	56376.7
14.40	-437.4	-25.7	30.66	-0.236	-0.053	0.000457	56366.2
14.00	-439.0	-25.7	30.66	-0.236	-0.054	0.000457	56355.3
13.60	-440.6	-25.7	30.66	-0.237	-0.054	0.000457	56344.6
13.20	-442.2	-25.7	30.66	-0.237	-0.055	0.000457	56328.7
12.80	-443.8	-25.7	30.66	-0.238	-0.055	0.000457	56317.8
12.40	-445.4	-25.7	30.66	-0.238	-0.056	0.000457	56307.0
12.00	-447.0	-25.7	30.66	-0.239	-0.056	0.000457	56296.5
11.60	-448.6	-25.7	30.66	-0.239	-0.056	0.000457	56286.2
11.20	-450.2	-25.7	19.34	-0.154	-0.056	0.000163	158075.1
11.15	-470.5	19.1	19.34	-0.145	-0.072	0.000121	157768.2
11.10	-925.8	-143.6	19.34	-0.550	0.079	0.001144	125478.4
10.80	-927.6	-142.5	19.34	-0.548	0.076	0.001134	125674.4
10.40	-930.0	-136.0	19.34	-0.529	0.053	0.001060	128577.1
10.00	-932.4	-127.4	19.34	-0.506	0.028	0.000970	131763.2
9.60	-934.8	-118.8	19.34	-0.483	0.005	0.000886	134786.0
9.20	-937.2	-110.2	19.34	-0.462	-0.015	0.000744	149167.4
8.80	-939.6	-101.6	19.34	-0.442	-0.032	0.000683	150227.9
8.40	-942.0	-93.0	19.34	-0.424	-0.048	0.000628	150100.0
8.00	-944.4	-84.4	19.34	-0.406	-0.063	0.000573	149901.4
7.60	-946.8	-75.8	19.34	-0.388	-0.078	0.000517	149742.4
7.20	-949.2	-67.2	19.34	-0.370	-0.094	0.000461	149622.9
6.80	-951.6	-58.5	19.34	-0.352	-0.109	0.000405	149541.6
6.40	-954.0	-49.9	19.34	-0.334	-0.125	0.000349	149500.5
6.00	-956.4	-41.3	19.34	-0.316	-0.140	0.000293	149499.6
5.80	-957.6	-32.7	10.30	-0.317	-0.160	0.000261	135722.9
5.20	-961.2	-28.4	10.30	-0.307	-0.169	0.000230	135707.7
4.80	-963.6	-20.2	10.30	-0.286	-0.187	0.000166	135791.7
4.40	-966.0	-14.7	10.30	-0.273	-0.199	0.000124	135884.9
4.00	-968.4	-9.2	10.30	-0.259	-0.210	0.000081	135964.6
3.60	-970.8	-3.8	10.30	-0.246	-0.222	0.000039	136070.4
3.20	-973.2	7.2	10.30	-0.249	-0.221	0.000046	136014.6
2.80	-975.6	12.7	10.30	-0.263	-0.210	0.000088	135808.8
2.40	-978.0	18.2	10.30	-0.278	-0.200	0.000131	135651.6
2.00	-980.4	23.6	10.30	-0.293	-0.189	0.000174	135482.2
1.60	-982.8	29.1	10.30	-0.308	-0.178	0.000216	135334.0
1.20	-985.2	34.6	10.30	-0.323	-0.167	0.000259	135228.4
0.80	-987.6	34.6	10.30	-0.324	-0.168	0.000259	135176.7
0.40	-990.0	-34.4	10.30	-0.320	-0.172	0.000247	135145.1
0.00	-992.4	-69.0	10.30	-0.406	-0.105	0.000501	134995.8

LASTFALL 4, M-K-BEZIEHUNG für Schnittkräfte nach Th. II. O.

x (m)	Nx (kN)	MII (kNm)	As (cm ²)	Ebo (o/oo)	Es (o/oo)	k (1/m)	BII (kNm ²)
16.50	-429.0	-25.7	30.66	-0.239	-0.047	0.000480	56427.1
16.00	-431.0	-27.1	30.66	-0.239	-0.047	0.000480	56427.1
15.60	-432.6	-28.2	30.66	-0.244	-0.045	0.000498	56426.8
15.20	-434.2	-29.2	30.66	-0.248	-0.042	0.000516	56423.6
14.80	-435.8	-30.3	30.66	-0.253	-0.040	0.000533	56424.7
14.40	-437.4	-31.2	30.66	-0.257	-0.037	0.000550	56425.0
14.00	-439.0	-32.2	30.66	-0.261	-0.035	0.000566	56425.9
13.60	-440.6	-33.1	30.66	-0.265	-0.033	0.000581	56441.0
13.20	-442.2	-33.9	30.66	-0.269	-0.031	0.000596	56433.5
12.80	-443.8	-34.8	30.66	-0.273	-0.029	0.000611	56375.0
12.40	-445.4	-35.6	30.66	-0.277	-0.027	0.000625	56265.8
12.00	-447.0	-36.3	30.66	-0.281	-0.025	0.000639	56190.1
11.60	-448.6	-37.0	30.66	-0.284	-0.024	0.000651	56141.0
11.20	-450.2	-37.7	19.34	-0.178	-0.036	0.000235	158149.4
11.15	-470.5	7.2	19.34	-0.121	-0.091	0.000049	157919.5
11.10	-925.8	-155.7	19.34	-0.590	0.126	0.001301	119288.3
10.80	-927.6	-154.6	19.34	-0.585	0.119	0.001280	120426.9
10.40	-930.0	-147.9	19.34	-0.565	0.093	0.001196	123383.8
10.00	-932.4	-138.8	19.34	-0.537	0.060	0.001087	127733.5
9.60	-934.8	-129.6	19.34	-0.512	0.033	0.000990	131195.9
9.20	-937.2	-120.3	19.34	-0.487	0.007	0.000897	134535.7
8.80	-939.6	-110.8	19.34	-0.463	-0.015	0.000748	149119.9
8.40	-942.0	-101.1	19.34	-0.442	-0.034	0.000680	150212.1
8.00	-944.4	-91.4	19.34	-0.422	-0.051	0.000618	150024.6
7.60	-946.8	-81.6	19.34	-0.401	-0.068	0.000556	149817.8
7.20	-949.2	-71.7	19.34	-0.381	-0.085	0.000492	149660.5
6.80	-951.6	-61.8	19.34	-0.360	-0.103	0.000428	149553.2
6.40	-954.0	-51.7	19.34	-0.339	-0.121	0.000363	149497.4
6.00	-956.4	-41.7	19.34	-0.318	-0.139	0.000298	149494.7
5.80	-957.6	-31.5	10.30	-0.315	-0.161	0.000256	135731.7
5.20	-961.2	-26.5	10.30	-0.304	-0.172	0.000219	135727.6
4.80	-963.6	-18.6	10.30	-0.283	-0.189	0.000157	135815.6
4.40	-966.0	-13.3	10.30	-0.270	-0.201	0.000116	135907.4
4.00	-968.4	-8.0	10.30	-0.257	-0.212	0.000075	135990.9
3.60	-970.8	-2.7	10.30	-0.244	-0.224	0.000033	136083.1
3.20	-973.2	8.0	10.30	-0.250	-0.220	0.000050	136001.0
2.80	-975.6	13.3	10.30	-0.265	-0.210	0.000092	135797.6
2.40	-978.0	18.6	10.30	-0.279	-0.199	0.000133	135646.4
2.00	-980.4	23.8	10.30	-0.294	-0.189	0.000175	135478.9
1.60	-982.8	29.1	10.30	-0.308	-0.178	0.000216	135334.8
1.20	-985.2	34.3	10.30	-0.322	-0.168	0.000258	135231.1
0.80	-987.6	34.3	10.30	-0.323	-0.169	0.000258	135178.0
0.40	-990.0	-35.4	10.30	-0.322	-0.170	0.000253	135134.5
0.00	-992.4	-70.2	10.30	-0.408	-0.103	0.000508	135002.2