

F U N D A M E N T E

Alle Gründungen in Form von Einzel-, Streifenfundamenten und Bodenplatten

- Rissbeschränkung für Bodenplatten
siehe bei den einzelnen Positionen
- Einzelfundamente
- Streifenfundamente
- Aufzugsunterfahrten
- Bodenplatten

S T A H L B E T O N D E C K E **h = 80 cm**

Bodenplatte

für $w_k = 0,10 \text{ mm}$

Berechnung der Rissbreite unter zentrischem Zwang nach DIN EN 1992-1-1:2011, Abs 7.3.4

Betongüte C 30 / 37

$f_{ctm} = 2,90 \text{ N/mm}^2$

$E_{cm} = 33000 \text{ N/mm}^2$

frühe Rissbildung - infolge abfließender Hydratationswärme

wirksame Zugfestigkeit des Betons
zum betrachteten Zeitpunkt.

$f_{ct,eff} = 0,65 \cdot f_{ctm} = 1,89 \text{ N/mm}^2$

Betonstahl BSt 500 S (A)

$f_{yk} = 500,0 \text{ N/mm}^2$

$E_s = 200000 \text{ N/mm}^2$

Bauteildicke

h = 800 mm

| | obere Bewehrung | | untere Bewehrung | |
|---|---|---|---|---|
| Betondeckung | 55 mm | | 35 mm | |
| | 1. Lage | 2. Lage | 1. Lage | 2. Lage |
| Matten | Ø - 0,00 cm ² /m | Ø - 0,00 cm ² /m | Ø - 0,00 cm ² /m | Ø - 0,00 cm ² /m |
| Rundstahl | Ø 25 - 10,0 49,09 cm ² /m | Ø 25 - 10,0 49,09 cm ² /m | Ø 25 - 10,0 49,09 cm ² /m | Ø 25 - 10,0 49,09 cm ² /m |
| $e_{s,lim}$ | 337,5 mm | 462,5 mm | 237,5 mm | 362,5 mm |
| A_{ct} | 400000 mm ² | 400000 mm ² | 400000 mm ² | 400000 mm ² |
| $\sigma_s = \sigma_{sr}$ | 80,6 N/mm ² | 80,6 N/mm ² | 80,6 N/mm ² | 80,6 N/mm ² |
| d_i | 67,5 mm | 92,5 mm | 47,5 mm | 72,5 mm |
| h/d_i | 11,85 | 8,65 | 16,84 | 11,03 |
| $h_{c,ef}$ | 215 mm | 265 mm | 175 mm | 225 mm |
| $A_{c,eff}$ | 215000 mm ² | 265000 mm ² | 175000 mm ² | 225000 mm ² |
| $\rho_{p,eff}$ | 0,0228 | 0,0185 | 0,0280 | 0,0218 |
| $(\epsilon_{sm} - \epsilon_{cm})_1$ | 0,00021 | 0,00018 | 0,00025 | 0,00021 |
| $(\epsilon_{sm} - \epsilon_{cm})_2$ | 0,00024 | 0,00024 | 0,00024 | 0,00024 |
| $(\epsilon_{sm} - \epsilon_{cm})_{\max(1,2)}$ | 0,00024 | 0,00024 | 0,00025 | 0,00024 |
| $s_{r,max,1}$ | 304,2 mm | 374,9 mm | 247,6 mm | 318,3 mm |
| $s_{r,max,2}$ | 296,8 mm | 296,8 mm | 296,8 mm | 296,8 mm |
| $s_{r,max,3}$ | mm | mm | mm | mm |
| $s_{r,max} (\min 1,2,3)$ | 296,8 mm | 296,8 mm | 247,6 mm | 296,8 mm |
| w_k | 0,072 mm | 0,072 mm | 0,061 mm | 0,072 mm |
| $w_{k,zul}$ | 0,10 mm | | 0,10 mm | |

Faktoren und Beiwerte

Verhältniss der Elastizitätsmoduln $\alpha_e = E_s / E_{cm} = 6,06$

Faktor (Lasteinwirkungsdauer) bei langfristiger Lasteinwirkung $k_t = 0,4$

Faktor für Berücksichtigung der Spannungsverteilung innerhalb der Zugzone
- für zentrischen Zug $k_c = 1,00$
(Platte bleibt unterstützt)

Beiwert zur Berücksichtigung von nichtlinear verteilten Betonzugspannungen und weiteren risskraftreduzierenden Einflüssen

Fall a) Zugspannungen infolge im Bauteil selbst hervorgerufenen Zwangs (z.B. Eigenspannungen infolge Abfließens der Hydratationswärme) die k Werte im Bereich $30\text{cm} \leq h \leq 100\text{cm}$ werden parabolisch interpoliert nach G. Meyer, R. Meyer "Rissbreitenbeschränkung nach DIN 1045" 3. Auflage 2007, Bild 1.4
 $h = 800\text{ mm} \rightarrow k = 0,5 + 0,3 (1 - h/100)^2 / 0,7^2 = 0,52$

Beispielberechnung für obere Bewehrung - 1.Lage

Fläche der Betonzugzone je Bauteilseite $A_{ct} = 0,5 \cdot h \cdot b = 400000\text{ mm}^2$

Betonstahlspannung im Riss (für inneren Zwang nach DIN EN 1992-1-1, GL(7.1))
 $\sigma_s = \sigma_{sr} = k_c \cdot k \cdot f_{ct,eff} \cdot A_{ct} / A_s = 80,6\text{ N/mm}^2$

Achsabstand der Bewehrung $d_1 = c_{nom} + d_{s1} / 2 = 67,5\text{ mm}$
effektive Dicke nach DIN EN 1992-1-1, Bild 7.1 d) $h/d_1 = 11,9 \rightarrow h_{c,ef} = 215\text{ mm}$

Wirkungsbereich der Bewehrung $A_{c,eff} = h_{c,ef} \cdot b = 215000\text{ mm}^2$

effektiver Bewehrungsgrad (nur Betonstahl) GL(7.10) $\rho_{p,eff} = A_s / A_{c,eff} = 0,0228$

Differenz der mittleren Dehnungen von Beton und Betonstahl GL(7.9)

$$\epsilon_{sm} - \epsilon_{cm} = \max \left[\begin{array}{l} [\sigma_s - k_t \cdot (f_{ct,eff} / \rho_{p,eff}) \cdot (1 + \alpha_e \cdot \rho_{p,eff})] / E_s = 0,00021 \\ 0,6 \cdot \sigma_s / E_s = 0,00024 \end{array} \right] = 0,00024$$

Grenzabstand der Stäbe $e_{s,lim} = 5 \cdot (c + d_s / 2) = 337,5\text{ mm}$

$$\text{maximaler Rissabstand } s_{r,max} = \min \left[\begin{array}{l} d_s / (3,6 \cdot \rho_{p,eff}) = 304,2\text{ mm} \\ \sigma_s \cdot d_s / (3,6 \cdot f_{ct,eff}) = 296,8\text{ mm} \\ 2 \cdot \text{Maschenweite} = \text{mm} \end{array} \right] = 296,8\text{ mm}$$

Charakteristische Rissbreite GL(7.8) $w_k = s_{r,max} \cdot (\epsilon_{sm} - \epsilon_{cm}) = 0,07\text{ mm}$

S T A H L B E T O N D E C K E $h = 80 \text{ cm}$

Bodenplatte

$f_{ct,eff} = 0,15 \text{ N/mm}^2$

Berechnung der Rissbreite unter zentrischem Zwang nach DIN EN 1992-1-1:2011, Abs 7.3.4

Betongüte C 30 / 37

$f_{ctm} = 2,90 \text{ N/mm}^2$

$E_{cm} = 33000 \text{ N/mm}^2$

frühe Rissbildung - infolge abfließender Hydratationswärme

wirksame Zugfestigkeit des Betons
zum betrachteten Zeitpunkt.

$f_{ct,eff} = 0,65 \cdot f_{ctm} = 1,89 \text{ N/mm}^2$

Betonstahl BSt 500 S (A)

$f_{yk} = 500,0 \text{ N/mm}^2$

$E_s = 200000 \text{ N/mm}^2$

Bauteildicke

$h = 800 \text{ mm}$

| | obere Bewehrung | | untere Bewehrung | |
|---|--------------------------|--------------------------|--------------------------|--------------------------|
| Betondeckung | 55 mm | | 35 mm | |
| | 1.Lage | 2.Lage | 1.Lage | 2.Lage |
| Matten | $\emptyset -$ | $\emptyset -$ | $\emptyset -$ | $\emptyset -$ |
| | 0,00 cm ² /m | 0,00 cm ² /m | 0,00 cm ² /m | 0,00 cm ² /m |
| Rundstahl | $\emptyset 20 - 10,0$ | $\emptyset 20 - 10,0$ | $\emptyset 20 - 10,0$ | $\emptyset 20 - 10,0$ |
| | 31,42 cm ² /m | 31,42 cm ² /m | 31,42 cm ² /m | 31,42 cm ² /m |
| $e_{s,lim}$ | 325,0 mm | 425,0 mm | 225,0 mm | 325,0 mm |
| A_{ct} | 400000 mm ² | 400000 mm ² | 400000 mm ² | 400000 mm ² |
| $\sigma_s = \sigma_{sr}$ | 125,9 N/mm ² | 125,9 N/mm ² | 125,9 N/mm ² | 125,9 N/mm ² |
| d_i | 65 mm | 85 mm | 45 mm | 65 mm |
| h/d_i | 12,31 | 9,41 | 17,78 | 12,31 |
| $h_{c,ef}$ | 210 mm | 250 mm | 170 mm | 210 mm |
| $A_{c,eff}$ | 210000 mm ² | 250000 mm ² | 170000 mm ² | 210000 mm ² |
| $\rho_{p,eff}$ | 0,0150 | 0,0126 | 0,0185 | 0,0150 |
| $(\epsilon_{sm} - \epsilon_{cm})_1$ | 0,00035 | 0,00031 | 0,00040 | 0,00035 |
| $(\epsilon_{sm} - \epsilon_{cm})_2$ | 0,00038 | 0,00038 | 0,00038 | 0,00038 |
| $(\epsilon_{sm} - \epsilon_{cm})_{\max(1,2)}$ | 0,00038 | 0,00038 | 0,00040 | 0,00038 |
| $s_{r,max,1}$ | 371,4 mm | 442,1 mm | 300,6 mm | 371,4 mm |
| $s_{r,max,2}$ | 371,0 mm | 371,0 mm | 371,0 mm | 371,0 mm |
| $s_{r,max,3}$ | mm | mm | mm | mm |
| $s_{r,max} (\min 1,2,3)$ | 371,0 mm | 371,0 mm | 300,6 mm | 371,0 mm |
| w_k | 0,140 mm | 0,140 mm | 0,121 mm | 0,140 mm |
| $w_{k,zul}$ | 0,15 mm | | 0,15 mm | |

Faktoren und Beiwerte

Verhältniss der Elastizitätsmoduln $\alpha_e = E_s / E_{cm} = 6,06$

Faktor (Lasteinwirkungsdauer) bei langfristiger Lasteinwirkung $k_t = 0,4$

Faktor für Berücksichtigung der Spannungsverteilung innerhalb der Zugzone
- für zentrischen Zug $k_c = 1,00$
(Platte bleibt unterstützt)

Beiwert zur Berücksichtigung von nichtlinear verteilten Betonzugspannungen und weiteren risskraftreduzierenden Einflüssen

Fall a) Zugspannungen infolge im Bauteil selbst hervorgerufenen Zwangs (z.B. Eigenspannungen infolge Abfließens der Hydratationswärme) die k Werte im Bereich $30\text{cm} \leq h \leq 100\text{cm}$ werden parabolisch interpoliert nach G. Meyer, R. Meyer "Rissbreitenbeschränkung nach DIN 1045" 3. Auflage 2007, Bild 1.4
 $h = 800\text{ mm} \rightarrow k = 0,5 + 0,3 (1 - h) / 0,7^2 = 0,52$

Beispielberechnung für obere Bewehrung - 1.Lage

Fläche der Betonzugzone je Bauteilseite $A_{ct} = 0,5 \cdot h \cdot b = 400000\text{ mm}^2$

Betonstahlspannung im Riss (für inneren Zwang nach DIN EN 1992-1-1, GL(7.1))
 $\sigma_s = \sigma_{sr} = k_c \cdot k_t \cdot f_{ct,eff} \cdot A_{ct} / A_s = 125,9\text{ N/mm}^2$

Achsabstand der Bewehrung $d_1 = c_{nom} + d_{st} / 2 = 65\text{ mm}$
effektive Dicke nach DIN EN 1992-1-1, Bild 7.1 d) $h/d_1 = 12,3 \rightarrow h_{c,ef} = 210\text{ mm}$

Wirkungsbereich der Bewehrung $A_{c,eff} = h_{c,ef} \cdot b = 210000\text{ mm}^2$

effektiver Bewehrungsgrad (nur Betonstahl) GL(7.10) $\rho_{p,eff} = A_s / A_{c,eff} = 0,0150$

Differenz der mittleren Dehnungen von Beton und Betonstahl GL(7.9)

$$\varepsilon_{sm} - \varepsilon_{cm} = \max \left[\begin{array}{l} [\sigma_s - k_t \cdot (f_{ct,eff} / \rho_{p,eff}) \cdot (1 + \alpha_e \cdot \rho_{p,eff})] / E_s = 0,00035 \\ 0,6 \cdot \sigma_s / E_s = 0,00038 \end{array} \right] = 0,00038$$

Grenzabstand der Stäbe $e_{s,lim} = 5 \cdot (c + d_s / 2) = 325,0\text{ mm}$

$$\text{maximaler Rissabstand } s_{r,max} = \min \left[\begin{array}{l} d_s / (3,6 \cdot \rho_{p,eff}) = 371,4\text{ mm} \\ \sigma_s \cdot d_s / (3,6 \cdot f_{ct,eff}) = 371,0\text{ mm} \\ 2 \cdot \text{Maschenweite} = \text{mm} \end{array} \right] = 371,0\text{ mm}$$

Charakteristische Rissbreite GL(7.8) $w_k = s_{r,max} \cdot (\varepsilon_{sm} - \varepsilon_{cm}) = 0,14\text{ mm}$

S T A H L B E T O N D E C K E $h = 80 \text{ cm}$

Bodenplatte (wk, zul. = 0,20mm)

$\rho_{st} h_k = 0,20 \text{ mm}$

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| | 0,00 cm ² /m | 0,00 cm ² /m | 0,00 cm ² /m | 0,00 cm ² /m |
| Rundstahl | $\emptyset 20 - 10,0$ | $\emptyset 20 - 10,0$ | $\emptyset 20 - 10,0$ | $\emptyset 20 - 10,0$ |
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| $w_{k,zul}$ | 0,20 mm | | 0,20 mm | |

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Betonstahlspannung im Riss (für inneren Zwang nach DIN EN 1992-1-1, GL(7.1))
 $\sigma_s = \sigma_{sr} = k_c \cdot k_t \cdot f_{ct,eff} \cdot A_{ct} / A_s = 125,9\text{ N/mm}^2$

Achsabstand der Bewehrung $d_1 = c_{nom} + d_{s1} / 2 = 65\text{ mm}$
effektive Dicke nach DIN EN 1992-1-1, Bild 7.1 d) $h/d_1 = 12,3 \rightarrow h_{c,ef} = 210\text{ mm}$

Wirkungsbereich der Bewehrung $A_{c,eff} = h_{c,ef} \cdot b = 210000\text{ mm}^2$

effektiver Bewehrungsgrad (nur Betonstahl) GL(7.10) $\rho_{p,eff} = A_s / A_{c,eff} = 0,0150$

Differenz der mittleren Dehnungen von Beton und Betonstahl GL(7.9)

$$\epsilon_{sm} - \epsilon_{cm} = \max \left[\begin{array}{l} [\sigma_s - k_t \cdot (f_{ct,eff} / \rho_{p,eff}) \cdot (1 + \alpha_e \cdot \rho_{p,eff})] / E_s = 0,00035 \\ 0,6 \cdot \sigma_s / E_s = 0,00038 \end{array} \right] = 0,00038$$

Grenzabstand der Stäbe $e_{s,lim} = 5 \cdot (c + d_s / 2) = 325,0\text{ mm}$

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Charakteristische Rissbreite GL(7.8) $w_k = s_{r,max} \cdot (\epsilon_{sm} - \epsilon_{cm}) = 0,14\text{ mm}$

Bodenplatte

Deckenposition

Die Teilsicherheitsbeiwerte nach EUROCODE 2 werden in FEM TRIPLA berücksichtigt.

gamma_g = 1.35 Teilsicherheitsbeiwert für Eigenlast
gamma_p = 1.50 Teilsicherheitsbeiwert für Verkehrslast

Die weitergeleiteten Lasten sind ohne Teilsicherheitsbeiwerte.

In der FEM Berechnung wird eine allgemeine Eigen- und Nutzlast definiert.
Alle weiteren Flächenlasten werden als Differenzlasten eingegeben.

GLIEDERUNG DER FEM - BERECHNUNG

1. Eingabeprotokoll
2. STB-Wandbemessung im 4.UG
3. Systemgrafiken
4. Bodenpressung
5. Grafik der Hauptmomente
6. Biegebewehrung, untere und obere Lage
7. Querkräfte und Querkraftbewehrung falls erforderlich

Erläuterungen zu den Lastfallkombinationen im Programm TRIPLA

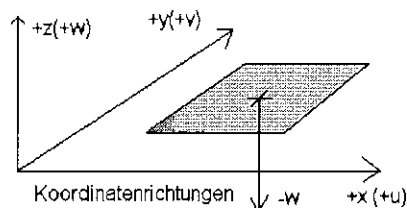
Im Programm werden 4 Lastfallkombinationen gerechnet.

>>> LK 1 = Eigenlast und Verkehrslast
>>> LK 2 = Eigenlast und Verkehrslast geradzahlige Felder
>>> LK 3 = Eigenlast und Verkehrslast ungeradzahlige Felder
>>> LK 4 = Eigenlast

>>> LK 0 = Maximalwerte aus LK 1 bis LK 4

Position : BP
Bodenplatte-Lastfall HHW und Vollast aus Gebäude

Programm FEM-TRIPLA 24,17, Seriennr.:0007, Dr. Volker Tornow, Win32



Momente, die an der Plattenunterseite Druck erzeugen, sind positiv einzugeben.

Lasten in negativer z-Richtung sind positiv einzugeben.

Ein Moment M_x erfordert eine Bewehrung in x-Richtung, dreht also um die y-Achse

Positive
z-Last
Richtung

| | | |
|--|---|----------|
| Bearbeitetes Projekt | : | 1527 |
| Eingabedaten gespeichert in Datei | : | BP |
| Elementmaß (m) | : | 1,00 |
| Verfeinerungsfaktor | : | 0,30 |
| Einfangradius (cm) | : | 10,00 |
| Generierungsart | : | exakt |
| Elastizitätsmodul (MN/m ²) | : | 33000,00 |
| Poisson-Zahl (Querdehnzahl) | : | 0,20 |
| drillsteif (=0), drillweich (=1) | : | 0,00 |
| Schubelastisch (=0), schubstarr (=1) | : | 0 |
| überwiegende Plattendicke (cm) | : | 80,00 |
| Faktor wirksame Steifigk. (Zust.I = 1) | : | 1,00 |

Berechnung erfolgt nach dem Bettungsziffer-Verfahren !

| | | |
|--|---|-------------|
| Bettungsziffer (MN/m ³) | : | 40,00 |
| Zugfedern werden wegiteriert. | | |
| überwiegende Gleichlast (kN/m ²) | | |
| LFG+0 | : | -97,00 |
| LFG+1 | : | 0,00 |
| LFG+2 | : | 0,00 |
| zugeordnete Lastgruppennummer | : | 0 |
| überwiegende Dichte für LFG (kN/m ³) | : | 25,00 |
| d.h. Eigengewicht wird berücksichtigt. | | |
| Feuerwiderstand | | R 090 |
| Höhenkote / Stockwerkshöhe (m) | : | 0,00 / 0,00 |
| Höhenkote bis zur Einspannstelle (m) | : | 0,00 |

Angaben zur Verformungsberechnung nach Zustand II

| | | |
|--|---|-----------|
| Elastizitätsmodul Stahl (MN/m ²) | : | 200000,00 |
| Mittelwert der Betonzugfestigkeit [MN/m ²] | : | 2,90 |
| Kriechbeiwert | : | 2,50 |
| Endschwindzahl | : | -0,0005 |
| Erhöhungsfaktor obere Bewehrung | : | 1,70 |
| Erhöhungsfaktor untere Bewehrung | : | 1,20 |

Position : BP
Bodenplatte-Lastfall HHW und Vollast aus Gebäude

Berandung : äußerer Rand

| Pkt. Nr. | Koordinaten (m) - X - | - Y - | Pkt. lag. | Einsp. grad(%) | Lin. lag. | Einsp. grad(%) | Breite (cm) | Abst. f.Qkr. | Gewicht (kN,kN/m) | Pos. Bez. |
|----------|--------------------------|-------|-----------|----------------|-----------|----------------|-------------|--------------|-------------------|-----------|
| 1 | 1,80 | 2,34 | | | | | 0,00 | 0,00 | 0,00 | |
| 2 | 1,80 | 41,13 | | | | | 0,00 | 0,00 | 0,00 | |
| 3 | 45,89 | 41,13 | | | | | 0,00 | 0,00 | 0,00 | |
| 4 | 45,89 | 25,89 | | | | | 0,00 | 0,00 | 0,00 | |
| 5 | 47,53 | 25,89 | | | | | 0,00 | 0,00 | 0,00 | |
| 6 | 47,53 | 20,25 | | | | | 0,00 | 0,00 | 0,00 | |
| 7 | 28,31 | 20,25 | | | | | 0,00 | 0,00 | 0,00 | |
| 8 | 28,31 | 9,02 | | | | | 0,00 | 0,00 | 0,00 | |
| 9 | 28,27 | 8,27 | | | | | 0,00 | 0,00 | 0,00 | |
| 10 | 28,15 | 7,53 | | | | | 0,00 | 0,00 | 0,00 | |
| 11 | 27,96 | 6,81 | | | | | 0,00 | 0,00 | 0,00 | |
| 12 | 27,69 | 6,11 | | | | | 0,00 | 0,00 | 0,00 | |
| 13 | 27,35 | 5,45 | | | | | 0,00 | 0,00 | 0,00 | |
| 14 | 26,94 | 4,82 | | | | | 0,00 | 0,00 | 0,00 | |
| 15 | 26,47 | 4,24 | | | | | 0,00 | 0,00 | 0,00 | |
| 16 | 25,94 | 3,71 | | | | | 0,00 | 0,00 | 0,00 | |
| 17 | 25,36 | 3,24 | | | | | 0,00 | 0,00 | 0,00 | |
| 18 | 24,73 | 2,83 | | | | | 0,00 | 0,00 | 0,00 | |
| 19 | 24,07 | 2,49 | | | | | 0,00 | 0,00 | 0,00 | |
| 20 | 23,37 | 2,22 | | | | | 0,00 | 0,00 | 0,00 | |
| 21 | 22,65 | 2,03 | | | | | 0,00 | 0,00 | 0,00 | |
| 22 | 21,91 | 1,91 | | | | | 0,00 | 0,00 | 0,00 | |
| 23 | 21,16 | 1,87 | | | | | 0,00 | 0,00 | 0,00 | |
| 24 | 15,90 | 1,87 | | | | | 0,00 | 0,00 | 0,00 | |
| 25 | 15,90 | 2,34 | | | | | 0,00 | 0,00 | 0,00 | |
| 26 | 1,80 | 2,34 | | | | | 0,00 | 0,00 | 0,00 | |

Unterz./Überz. (Uz=Unterz., Üz=Überz., wT=wandartiger Träger, Mw=Mauerwerkssturz)

| UZ. Pos. Nr. | Koordinaten (m) - X - | - Y - | E-Modul (MN/m²) | Trägghm. (dm^4) | Torsm. (dm^4) | LiLast (kN/m) | Drehf. (MNm/r) | Art Gelenk |
|--------------|--------------------------|-------|-----------------|-----------------|---------------|---------------|----------------|------------|
| 1 | 1,80 | 2,34 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 1,80 | 41,13 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 2 | 1,80 | 41,13 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 45,89 | 41,13 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 3 | 45,89 | 41,13 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 45,89 | 25,89 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 4 | 45,89 | 25,89 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 47,53 | 25,89 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 5 | 47,53 | 25,89 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 47,53 | 20,25 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 6 | 28,31 | 20,25 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 47,53 | 20,25 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 7 | 28,31 | 20,25 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 28,31 | 9,02 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 8 | 28,31 | 9,02 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 28,27 | 8,27 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 9 | 28,27 | 8,27 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 28,15 | 7,53 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 10 | 28,15 | 7,53 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 27,96 | 6,81 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 11 | 27,96 | 6,81 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| | | | | | | | | |
|----|-------|-------|---------|---------|------|------|------|-------|
| | 27,69 | 6,11 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 12 | 27,69 | 6,11 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 27,35 | 5,45 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 13 | 27,35 | 5,45 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 26,94 | 4,82 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 14 | 26,94 | 4,82 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 26,47 | 4,24 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 15 | 26,47 | 4,24 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 25,94 | 3,71 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 16 | 25,94 | 3,71 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 25,36 | 3,24 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 17 | 25,36 | 3,24 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 24,73 | 2,83 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 18 | 24,73 | 2,83 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 24,07 | 2,49 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 19 | 24,07 | 2,49 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 23,37 | 2,22 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 20 | 23,37 | 2,22 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 22,65 | 2,03 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 21 | 22,65 | 2,03 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 21,91 | 1,91 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 22 | 21,91 | 1,91 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 21,16 | 1,87 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 23 | 21,16 | 1,87 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 15,90 | 1,87 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 24 | 15,90 | 1,87 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 15,90 | 2,34 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 25 | 15,90 | 2,34 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 1,80 | 2,34 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 26 | 15,90 | 2,34 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 1,80 | 2,34 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 27 | 8,89 | 2,34 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 8,89 | 7,80 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 28 | 8,89 | 7,80 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 23,37 | 7,80 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 29 | 23,37 | 2,22 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 23,37 | 7,80 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 30 | 1,80 | 14,25 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 21,93 | 14,25 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 31 | 6,79 | 14,25 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 6,79 | 24,77 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 32 | 8,39 | 14,25 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 8,39 | 19,55 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 33 | 21,93 | 13,80 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 21,93 | 25,03 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 34 | 1,80 | 19,55 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 15,07 | 19,55 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 35 | 15,07 | 19,55 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 28,31 | 19,55 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 36 | 1,80 | 24,77 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 15,07 | 24,77 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 37 | 9,39 | 19,55 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 9,39 | 24,77 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 38 | 9,39 | 23,25 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 12,19 | 23,25 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 39 | 9,39 | 21,05 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 12,19 | 21,05 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 40 | 11,59 | 19,55 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 11,59 | 21,05 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| | | | | | | | | |
|----|-------|-------|---------|---------|------|------|------|-------|
| 41 | 12,19 | 21,05 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 12,19 | 24,77 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 42 | 15,07 | 19,55 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 15,07 | 25,03 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 43 | 15,07 | 25,03 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 28,31 | 25,03 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 44 | 28,31 | 20,25 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 28,31 | 26,15 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 45 | 44,46 | 24,48 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 47,53 | 24,48 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 46 | 35,82 | 24,55 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 35,82 | 26,15 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 47 | 28,31 | 26,15 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 41,62 | 26,15 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 48 | 41,70 | 20,25 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 41,70 | 26,15 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 49 | 44,53 | 25,84 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 44,54 | 32,04 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 50 | 44,54 | 32,04 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 45,89 | 32,04 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 51 | 1,80 | 32,01 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 41,70 | 32,01 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 52 | 41,70 | 32,01 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 41,70 | 37,94 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 53 | 2,93 | 32,01 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 2,93 | 37,94 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 54 | 2,93 | 37,94 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 45,89 | 37,94 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |
| 55 | 35,82 | 20,25 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | Üz WT |
| | 35,82 | 21,54 | 33000,0 | 5000,00 | 0,00 | 0,00 | 0,00 | WT |

Punktlasten übernommen aus 'D-U4;'

| Last Nr. | Koordinaten (m) | | Lastamplitude (kN) aus Lastf. | | | LFG Nr. | Abm. (cm) | | Stanz Ø (cm) | Pos. Bez. |
|----------|-----------------|-------|-------------------------------|--------|-------|---------|-----------|----|--------------|-----------|
| | - X - | - Y - | LFG | LFG+1 | LFG+2 | | dx | dy | | |
| 1 | 14,15 | 17,26 | 197,33 | 155,76 | 0,00 | 0 | 0 | 0 | 120 | D-U4 |
| 2 | 24,55 | 7,80 | 527,11 | 290,91 | 0,00 | 0 | 0 | 0 | 120 | D-U4 |

Linienlasten

| Last Nr. | Koordinaten (m) | | Lastamplitude (kN/m) aus Lastf. | | | LFG Nr. | Abst. f.Qkr. | Pos. Bez. |
|----------|-----------------|-------|---------------------------------|-------|-------|---------|--------------|-----------|
| | - X - | - Y - | LFG | LFG+1 | LFG+2 | | | |
| 1 | 12,19 | 24,77 | 6,00 | 4,00 | 0,00 | 0 | 0,00 | T02 |
| | 14,89 | 24,77 | 6,00 | 4,00 | 0,00 | | | |
| 2 | 12,19 | 24,75 | 14,50 | 8,50 | 0,00 | 0 | 0,00 | T02 |
| | 12,19 | 23,25 | 14,50 | 8,50 | 0,00 | | | |
| 3 | 14,89 | 24,77 | 14,50 | 8,50 | 0,00 | 0 | 0,00 | T02 |
| | 14,89 | 23,25 | 14,50 | 8,50 | 0,00 | | | |
| 4 | 13,54 | 21,05 | 11,50 | 6,50 | 0,00 | 0 | 0,00 | T01 |
| | 14,89 | 21,05 | 11,50 | 6,50 | 0,00 | | | |
| 5 | 44,54 | 26,80 | 0,00 | 0,00 | 0,00 | 0 | 0,00 | T10 |
| | 45,89 | 26,80 | 0,00 | 0,00 | 0,00 | | | |
| 6 | 6,79 | 15,87 | 0,00 | 0,00 | 0,00 | 0 | 0,00 | T11 |
| | 8,39 | 15,87 | 0,00 | 0,00 | 0,00 | | | |

Position : BP
Bodenplatte-Lastfall HHW und Vollast aus Gebäude

Linienlasten übernommen aus 'D-U4;'

| Last Nr. | Koordinaten (m) | | Lastamplitude (kN/m) aus Lastf. | | | LFG Nr. | Abst. f.Qkr. | Pos. Bez. |
|-------------|-----------------|-------|---------------------------------|---------|-------|------------|-----------------|--------------|
| | - X - | - Y - | LFG | LFG+1 | LFG+2 | | | |
| 1 | 1,80 | 2,34 | 543,39 | 213,95 | 0,00 | 0 | 0,00 | D-U4 |
| | 1,80 | 41,13 | 393,18 | 175,15 | 0,00 | | | |
| 2 | 1,80 | 41,13 | 461,75 | 158,47 | 0,00 | 0 | 0,00 | D-U4 |
| | 45,89 | 41,13 | 129,47 | 58,95 | 0,00 | | | |
| 3 | 45,89 | 41,13 | 83,62 | 14,07 | 0,00 | 0 | 0,00 | D-U4 |
| | 45,89 | 25,89 | 89,06 | 26,21 | 0,00 | | | |
| 4 | 45,89 | 25,89 | 153,32 | 70,15 | 0,00 | 0 | 0,00 | D-U4 |
| | 47,53 | 25,89 | 105,99 | 14,61 | 0,00 | | | |
| 5 | 47,53 | 25,89 | 133,34 | 31,46 | 0,00 | 0 | 0,00 | D-U4 |
| | 47,53 | 20,25 | 91,81 | 23,08 | 0,00 | | | |
| 6 | 28,31 | 20,25 | 305,81 | 123,94 | 0,00 | 0 | 0,00 | D-U4 |
| | 47,53 | 20,25 | 43,47 | 3,14 | 0,00 | | | |
| 7 | 28,31 | 20,25 | 388,53 | 177,56 | 0,00 | 0 | 0,00 | D-U4 |
| | 28,31 | 9,02 | 259,42 | 92,17 | 0,00 | | | |
| 8 | 28,31 | 9,02 | 422,18 | 173,94 | 0,00 | 0 | 0,00 | D-U4 |
| | 28,27 | 8,27 | 177,07 | 84,00 | 0,00 | | | |
| 9 | 28,27 | 8,27 | 176,06 | 72,80 | 0,00 | 0 | 0,00 | D-U4 |
| | 28,15 | 7,53 | 301,84 | 116,45 | 0,00 | | | |
| 10 | 28,15 | 7,53 | 184,89 | 69,36 | 0,00 | 0 | 0,00 | D-U4 |
| | 27,96 | 6,81 | 619,76 | 261,14 | 0,00 | | | |
| 11 | 27,96 | 6,81 | 706,47 | 303,42 | 0,00 | 0 | 0,00 | D-U4 |
| | 27,69 | 6,11 | 479,23 | 134,58 | 0,00 | | | |
| 12 | 27,69 | 6,11 | 428,28 | 112,71 | 0,00 | 0 | 0,00 | D-U4 |
| | 27,35 | 5,45 | 128,49 | 92,47 | 0,00 | | | |
| 13 | 27,35 | 5,45 | 261,84 | 133,39 | 0,00 | 0 | 0,00 | D-U4 |
| | 26,94 | 4,82 | 155,44 | 96,24 | 0,00 | | | |
| 14 | 26,94 | 4,82 | 142,88 | 85,42 | 0,00 | 0 | 0,00 | D-U4 |
| | 26,47 | 4,24 | 184,10 | 81,35 | 0,00 | | | |
| 15 | 26,47 | 4,24 | 200,17 | 85,51 | 0,00 | 0 | 0,00 | D-U4 |
| | 25,94 | 3,71 | 112,15 | 78,40 | 0,00 | | | |
| 16 | 25,94 | 3,71 | 99,58 | 23,32 | 0,00 | 0 | 0,00 | D-U4 |
| | 25,36 | 3,24 | 159,39 | 312,84 | 0,00 | | | |
| 17 | 25,36 | 3,24 | 179,12 | 343,52 | 0,00 | 0 | 0,00 | D-U4 |
| | 24,73 | 2,83 | 210,79 | 48,99 | 0,00 | | | |
| 18 | 24,73 | 2,83 | 168,55 | 59,84 | 0,00 | 0 | 0,00 | D-U4 |
| | 24,07 | 2,49 | 144,20 | 80,22 | 0,00 | | | |
| 19 | 24,07 | 2,49 | 208,08 | 116,74 | 0,00 | 0 | 0,00 | D-U4 |
| | 23,37 | 2,22 | 115,88 | 60,99 | 0,00 | | | |
| 20 | 23,37 | 2,22 | 92,36 | 45,82 | 0,00 | 0 | 0,00 | D-U4 |
| | 22,65 | 2,03 | 188,84 | 85,95 | 0,00 | | | |
| 21 | 22,65 | 2,03 | 164,14 | 66,05 | 0,00 | 0 | 0,00 | D-U4 |
| | 21,91 | 1,91 | 73,81 | 81,40 | 0,00 | | | |
| 22 | 21,91 | 1,91 | -0,48 | 69,35 | 0,00 | 0 | 0,00 | D-U4 |
| | 21,16 | 1,87 | 991,69 | 296,23 | 0,00 | | | |
| 23 | 21,16 | 1,87 | 395,49 | 124,72 | 0,00 | 0 | 0,00 | D-U4 |
| | 15,90 | 1,87 | 367,76 | 124,40 | 0,00 | | | |
| 24 | 15,90 | 1,87 | 790,37 | 279,70 | 0,00 | 0 | 0,00 | D-U4 |
| | 15,90 | 2,34 | 508,23 | 240,33 | 0,00 | | | |
| 25 | 15,90 | 2,34 | 225,34 | 83,10 | 0,00 | 0 | 0,00 | D-U4 |
| | 1,80 | 2,34 | 132,07 | 33,52 | 0,00 | | | |
| 26 | 15,90 | 2,34 | 220,34 | 83,10 | 0,00 | 0 | 0,00 | D-U4 |
| | 1,80 | 2,34 | 127,07 | 33,52 | 0,00 | | | |
| 27 | 8,89 | 2,34 | -556,58 | -318,44 | 0,00 | 0 | 0,00 | D-U4 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| | | | | | | | | |
|----|-------|-------|---------|---------|------|---|------|------|
| | 8,89 | 7,80 | 1268,46 | 690,77 | 0,00 | | | |
| 28 | 8,89 | 7,80 | 692,52 | 356,36 | 0,00 | 0 | 0,00 | D-U4 |
| | 23,37 | 7,80 | 386,46 | 214,73 | 0,00 | | | |
| 29 | 23,37 | 2,22 | 50,68 | -2,20 | 0,00 | 0 | 0,00 | D-U4 |
| | 23,37 | 7,80 | -24,32 | 30,08 | 0,00 | | | |
| 30 | 1,80 | 14,25 | 293,84 | 120,02 | 0,00 | 0 | 0,00 | D-U4 |
| | 21,93 | 14,25 | 528,45 | 291,33 | 0,00 | | | |
| 31 | 6,79 | 14,25 | -113,11 | -43,58 | 0,00 | 0 | 0,00 | D-U4 |
| | 6,79 | 24,77 | 465,46 | 199,58 | 0,00 | | | |
| 32 | 8,39 | 14,25 | 885,04 | 413,64 | 0,00 | 0 | 0,00 | D-U4 |
| | 8,39 | 19,55 | -353,17 | -156,90 | 0,00 | | | |
| 33 | 21,93 | 13,80 | 965,39 | 660,31 | 0,00 | 0 | 0,00 | D-U4 |
| | 21,93 | 25,03 | 507,20 | 258,74 | 0,00 | | | |
| 34 | 1,80 | 19,55 | -7,49 | 5,36 | 0,00 | 0 | 0,00 | D-U4 |
| | 15,07 | 19,55 | 655,47 | 218,12 | 0,00 | | | |
| 35 | 15,07 | 19,55 | 652,51 | 260,38 | 0,00 | 0 | 0,00 | D-U4 |
| | 28,31 | 19,55 | 33,45 | 14,23 | 0,00 | | | |
| 36 | 1,80 | 24,77 | 101,81 | 35,97 | 0,00 | 0 | 0,00 | D-U4 |
| | 15,07 | 24,77 | 588,46 | 305,92 | 0,00 | | | |
| 37 | 9,39 | 19,55 | 342,56 | 95,88 | 0,00 | 0 | 0,00 | D-U4 |
| | 9,39 | 24,77 | 585,93 | 184,14 | 0,00 | | | |
| 38 | 9,39 | 23,25 | 662,34 | 165,59 | 0,00 | 0 | 0,00 | D-U4 |
| | 12,19 | 23,25 | 33,04 | 2,59 | 0,00 | | | |
| 39 | 9,39 | 21,05 | 630,86 | 178,49 | 0,00 | 0 | 0,00 | D-U4 |
| | 12,19 | 21,05 | 202,18 | 41,20 | 0,00 | | | |
| 40 | 11,59 | 19,55 | 554,94 | 188,58 | 0,00 | 0 | 0,00 | D-U4 |
| | 11,59 | 21,05 | 107,54 | -3,59 | 0,00 | | | |
| 41 | 12,19 | 21,05 | 258,51 | 47,35 | 0,00 | 0 | 0,00 | D-U4 |
| | 12,19 | 24,77 | 178,31 | 113,24 | 0,00 | | | |
| 42 | 15,07 | 19,55 | 402,68 | 31,03 | 0,00 | 0 | 0,00 | D-U4 |
| | 15,07 | 25,03 | 208,70 | 252,78 | 0,00 | | | |
| 43 | 15,07 | 25,03 | 137,63 | 70,82 | 0,00 | 0 | 0,00 | D-U4 |
| | 28,31 | 25,03 | 12,33 | 5,53 | 0,00 | | | |
| 44 | 28,31 | 20,25 | -153,80 | -120,46 | 0,00 | 0 | 0,00 | D-U4 |
| | 28,31 | 26,15 | 920,06 | 555,05 | 0,00 | | | |
| 45 | 44,46 | 24,48 | 526,38 | 262,69 | 0,00 | 0 | 0,00 | D-U4 |
| | 47,53 | 24,48 | -140,85 | -81,95 | 0,00 | | | |
| 46 | 35,82 | 24,55 | 1116,76 | 756,65 | 0,00 | 0 | 0,00 | D-U4 |
| | 35,82 | 26,15 | 800,51 | 472,30 | 0,00 | | | |
| 47 | 28,31 | 26,15 | 91,29 | 50,31 | 0,00 | 0 | 0,00 | D-U4 |
| | 41,62 | 26,15 | 22,08 | 2,04 | 0,00 | | | |
| 48 | 41,70 | 20,25 | 22,15 | 2,88 | 0,00 | 0 | 0,00 | D-U4 |
| | 41,70 | 26,15 | 327,96 | 217,61 | 0,00 | | | |
| 49 | 44,53 | 25,84 | 114,61 | 50,02 | 0,00 | 0 | 0,00 | D-U4 |
| | 44,54 | 32,04 | 70,91 | 30,42 | 0,00 | | | |
| 50 | 44,54 | 32,04 | 36,59 | 38,57 | 0,00 | 0 | 0,00 | D-U4 |
| | 45,89 | 32,04 | 90,96 | 7,81 | 0,00 | | | |
| 51 | 1,80 | 32,01 | 414,22 | 210,54 | 0,00 | 0 | 0,00 | D-U4 |
| | 41,70 | 32,01 | 597,31 | 294,79 | 0,00 | | | |
| 52 | 41,70 | 32,01 | 28,74 | 12,52 | 0,00 | 0 | 0,00 | D-U4 |
| | 41,70 | 37,94 | 53,18 | 23,27 | 0,00 | | | |
| 53 | 2,93 | 32,01 | -23,14 | -11,20 | 0,00 | 0 | 0,00 | D-U4 |
| | 2,93 | 37,94 | 110,63 | 40,02 | 0,00 | | | |
| 54 | 2,93 | 37,94 | 271,16 | 111,55 | 0,00 | 0 | 0,00 | D-U4 |
| | 45,89 | 37,94 | 286,95 | 123,31 | 0,00 | | | |
| 55 | 35,82 | 20,25 | 264,88 | 66,56 | 0,00 | 0 | 0,00 | D-U4 |
| | 35,82 | 21,54 | 202,27 | 251,45 | 0,00 | | | |

Position : BP
Bodenplatte-Lastfall HHW und Vollast aus Gebäude

Angaben zu den Lastfallkombinationen

| Lastgk. Nr. | Lastfallkombinationstext |
|----------------|--|
| 1 | Bodenplatte, Iteration der klaffenden Fuge |

ungünstigste Werte werden gedruckt

Lastgruppenkombination Nr. 1 (Gewichtsfaktor / Sicherheitsbeiwert / quasi ständig)

| LF | Faktor | LF | Faktor | LF | Faktor | LF | Faktor | LF | Faktor |
|----|----------------|----|--------|----|--------|----|--------|----|--------|
| 1 | 1,00/1,00/1,00 | | | | | | | | |

Angaben zur Bemessung

Bemessung für : EC2-DE (2011)

Achsabstand h' [cm] oben X-Richtung : 4,00
Achsabstand h' [cm] oben Y-Richtung : 5,00
Achsabstand h' [cm] unten X-Richtung : 4,00
Achsabstand h' [cm] unten Y-Richtung : 5,00

Betonfestigkeitsklasse : C 30/37
Teilsicherheitsbeiwert γ_c : 1,50
für außergew. Bemessungssituation : 1,35
charakteristische Streckgrenze : 500,00
Teilsicherheitsbeiwert γ_s : 1,15
für außergew. Bemessungssituation : 1,00
Normalkraft bei Bemessung berücksichtigen zu : 0,00%
Verlegemass c_{nom} [cm] für die untere Bewehrungslage : 3,50
Verlegemass c_{nom} [cm] für die obere Bewehrungslage : 3,50
Zeitpunkt der Erstbelastung [Tage] : 28,00
Spannungsschwingbreite Stahl [N/mm²] : 70,00

Angaben zur Unterzugs-/Überzugsbemessung

| UZ. Nr. | Breite (cm) | | Höhe (cm) | Nutzhöhe (cm) | Tors.Wid. Mom.(dm ³) | Beton | Stahl | $c_{nom,u}/c_{nom,o}$ (cm) | theta (°) | Rau. Cj | Reib. Mue |
|------------|-------------|-------|--------------|------------------|-------------------------------------|---------|-------|-------------------------------|--------------|------------|--------------|
| | oben | unten | | | | | | | | | |
| 1 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 2 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 3 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 4 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 5 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 6 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 7 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 8 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 9 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 10 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 11 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 12 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 13 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 14 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 15 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 16 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 17 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 18 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |

Position : BP

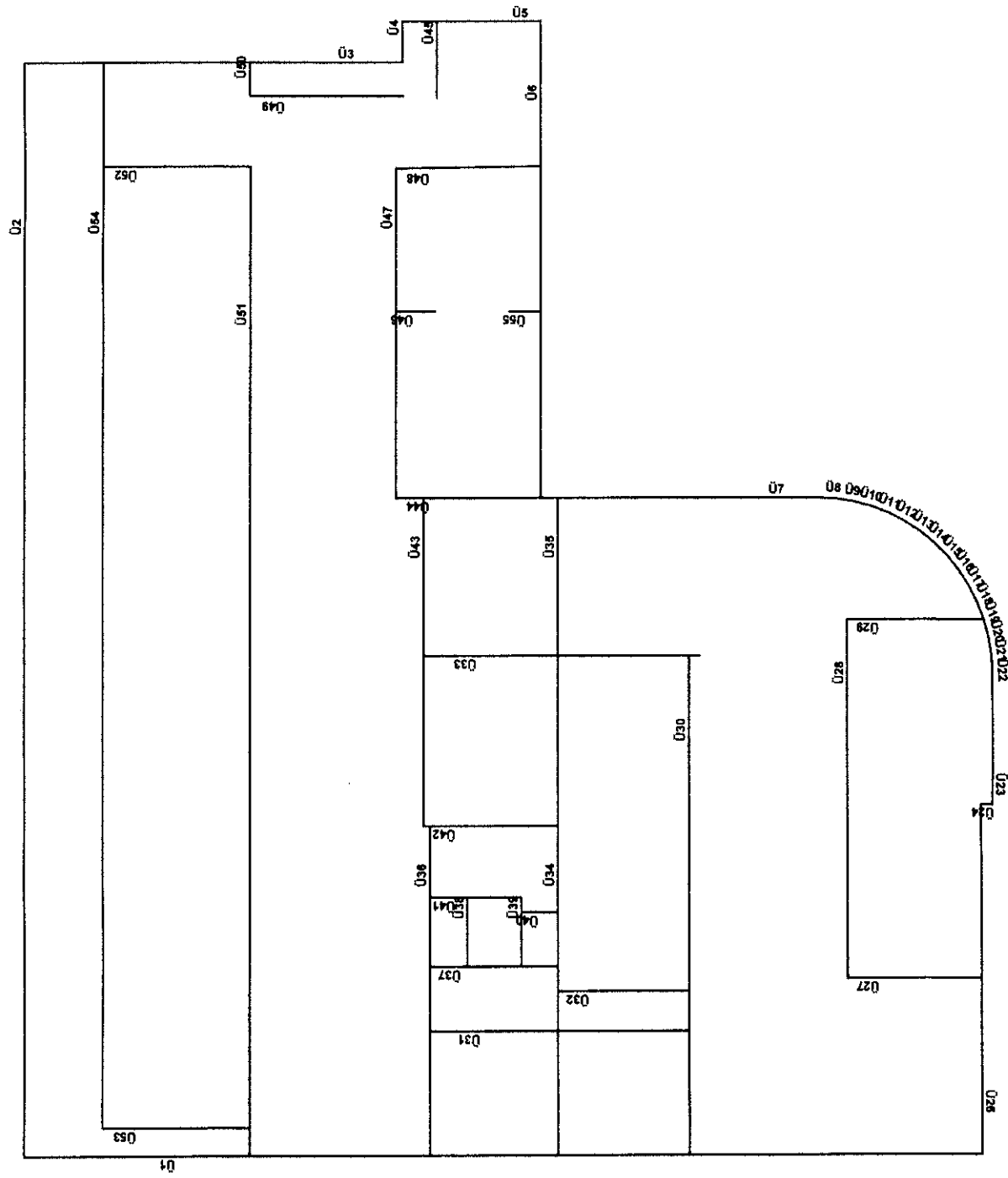
Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| | | | | | | | | | | | |
|----|------|------|-------|-------|-----|---------|-----|-----------|-----|-----|-----|
| 19 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 20 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 21 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 22 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 23 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 24 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 25 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 26 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 27 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 28 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 29 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 30 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 31 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 32 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 33 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 34 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 35 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 36 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 37 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 38 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 39 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 40 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 41 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 42 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 43 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 44 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 45 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 46 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 47 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 48 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 49 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 50 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 51 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 52 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 53 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 54 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |
| 55 | 25,0 | 25,0 | 250,0 | 240,0 | 0,0 | C 30/37 | 500 | 3,5 / 3,5 | 0,0 | 0,0 | 0,0 |

Anmerkung (Cj/μ) : (0,5/0,9)=>verzahnt, (0,4/0,7)=>rauh (0,2/0,6)=>glatt, (0,0/0,5)=>sehr glatt

Übersicht "U7 = Wände im 4. UG"

Y [m]



X [m]

Plot#1.1, M 1:180.0, Bereich=(1.00, 1.07, 66.57, 44.50)
1527BP, Lagerungsdarstellung: L=Linienlager, S=Punktlager, U,U,W,m,T=unterzugartig, I=Isokorb, G=Gelenk

Position : BP
Bodenplatte-Lastfall HHW und Vollast aus Gebäude

Biege- und Schubbemessung Unter-/Überzüge, Lastfallkombination ungünstigst
Subskripte sind Designschnittgrößen resp. Torsionslängsbewehrung
Vrd = Vrdct bei min, Vrdmax sonst

Überzug Nr.: 1, bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei seittl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) unten | oben | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|-------|---------------------------------------|------|--------------------|
| 1 | 0.00 | 1.80 | 2.34 | -67.00 | -67. | 0.00 | 0.65 | 238.7 |
| 2 | 0.46 | 1.80 | 2.80 | -28.59 | -29. | 0.00 | 0.26 | 239.2 |
| 3 | 0.92 | 1.80 | 3.26 | -111.01 | -111. | 0.00 | 1.10 | 238.3 |
| 4 | 1.37 | 1.80 | 3.71 | -212.00 | -212. | 0.00 | 2.00 | 237.7 |
| 5 | 1.83 | 1.80 | 4.17 | -312.19 | -312. | 0.00 | 2.96 | 237.1 |
| 6 | 2.29 | 1.80 | 4.63 | -399.11 | -399. | 0.00 | 3.72 | 236.7 |
| 7 | 2.75 | 1.80 | 5.09 | -475.70 | -476. | 0.00 | 4.55 | 236.3 |
| 8 | 3.21 | 1.80 | 5.55 | -536.57 | -537. | 0.00 | 5.06 | 236.0 |
| 9 | 3.66 | 1.80 | 6.00 | -582.27 | -582. | 0.00 | 5.42 | 235.9 |
| 10 | 4.12 | 1.80 | 6.46 | -610.28 | -610. | 0.00 | 5.78 | 235.7 |
| 11 | 4.58 | 1.80 | 6.92 | -625.42 | -625. | 0.00 | 5.96 | 235.6 |
| 12 | 5.04 | 1.80 | 7.38 | -625.92 | -626. | 0.00 | 5.96 | 235.6 |
| 13 | 5.50 | 1.80 | 7.84 | -612.90 | -613. | 0.00 | 5.78 | 235.7 |
| 14 | 5.95 | 1.80 | 8.30 | -590.78 | -591. | 0.00 | 5.60 | 235.8 |
| 15 | 6.41 | 1.80 | 8.75 | -559.51 | -560. | 0.00 | 5.24 | 235.9 |
| 16 | 6.87 | 1.80 | 9.21 | -516.81 | -517. | 0.00 | 4.89 | 236.1 |
| 17 | 7.33 | 1.80 | 9.67 | -466.78 | -467. | 0.00 | 4.38 | 236.4 |
| 18 | 7.79 | 1.80 | 10.13 | -406.47 | -406. | 0.00 | 3.88 | 236.6 |
| 19 | 8.25 | 1.80 | 10.59 | -341.87 | -342. | 0.00 | 3.26 | 236.9 |
| 20 | 8.70 | 1.80 | 11.04 | -274.32 | -274. | 0.00 | 2.53 | 237.3 |
| 21 | 9.16 | 1.80 | 11.50 | -202.35 | -202. | 0.00 | 1.87 | 237.7 |
| 22 | 9.62 | 1.80 | 11.96 | -141.04 | -141. | 0.00 | 1.30 | 238.2 |
| 23 | 10.08 | 1.80 | 12.42 | -90.70 | -91. | 0.00 | 0.91 | 238.5 |
| 24 | 10.54 | 1.80 | 12.88 | -64.42 | -64. | 0.00 | 0.65 | 238.7 |
| 25 | 10.99 | 1.80 | 13.33 | -73.05 | -73. | 0.00 | 0.73 | 238.6 |
| 26 | 11.45 | 1.80 | 13.79 | -149.06 | -149. | 0.00 | 1.41 | 238.1 |
| 27 | 11.91 | 1.80 | 14.25 | -330.39 | -330. | 0.00 | 3.10 | 237.0 |
| 28 | 12.35 | 1.80 | 14.69 | -102.12 | -102. | 0.00 | 1.00 | 238.4 |
| 29 | 12.79 | 1.80 | 15.13 | 27.56 | 28. | 6.99 | 0.00 | 239.2 |
| 30 | 13.23 | 1.80 | 15.57 | 91.37 | 91. | 6.99 | 0.00 | 238.5 |
| 31 | 13.68 | 1.80 | 16.02 | 112.10 | 112. | 6.99 | 0.00 | 238.3 |
| 32 | 14.12 | 1.80 | 16.46 | 107.51 | 108. | 6.99 | 0.00 | 238.4 |
| 33 | 14.56 | 1.80 | 16.90 | 77.73 | 78. | 6.99 | 0.00 | 238.6 |
| 34 | 15.00 | 1.80 | 17.34 | 30.92 | 31. | 6.99 | 0.00 | 239.1 |
| 35 | 15.44 | 1.80 | 17.78 | -30.84 | -31. | 0.00 | 0.32 | 239.1 |
| 36 | 15.88 | 1.80 | 18.22 | -121.67 | -122. | 0.00 | 1.20 | 238.2 |
| 37 | 16.33 | 1.80 | 18.67 | -248.63 | -249. | 0.00 | 2.39 | 237.4 |
| 38 | 16.77 | 1.80 | 19.11 | -424.67 | -425. | 0.00 | 4.05 | 236.5 |
| 39 | 17.21 | 1.80 | 19.55 | -691.10 | -691. | 0.00 | 6.52 | 235.3 |
| 40 | 17.65 | 1.80 | 19.99 | -435.68 | -436. | 0.00 | 4.05 | 236.5 |
| 41 | 18.08 | 1.80 | 20.42 | -266.02 | -266. | 0.00 | 2.53 | 237.3 |
| 42 | 18.51 | 1.80 | 20.85 | -149.43 | -149. | 0.00 | 1.41 | 238.1 |
| 43 | 18.95 | 1.80 | 21.29 | -68.82 | -69. | 0.00 | 0.65 | 238.7 |
| 44 | 19.38 | 1.80 | 21.72 | -13.97 | -14. | 0.00 | 0.13 | 239.4 |
| 45 | 19.82 | 1.80 | 22.16 | 20.30 | 20. | 6.99 | 0.00 | 239.3 |
| 46 | 20.26 | 1.80 | 22.60 | 34.65 | 35. | 6.99 | 0.00 | 239.1 |
| 47 | 20.69 | 1.80 | 23.03 | 26.23 | 26. | 6.99 | 0.00 | 239.2 |
| 48 | 21.12 | 1.80 | 23.47 | -9.56 | -10. | 0.00 | 0.10 | 239.5 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) | | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|--------|------------------------------|-------|--------------------|
| | | | | | | unten | oben | |
| 49 | 21.56 | 1.80 | 23.90 | -86.80 | -87. | 0.00 | 0.82 | 238.6 |
| 50 | 21.99 | 1.80 | 24.33 | -223.32 | -223. | 0.00 | 2.13 | 237.6 |
| 51 | 22.43 | 1.80 | 24.77 | -454.24 | -454. | 0.00 | 4.21 | 236.4 |
| 52 | 22.88 | 1.80 | 25.22 | -252.19 | -252. | 0.00 | 2.39 | 237.4 |
| 53 | 23.33 | 1.80 | 25.67 | -147.69 | -148. | 0.00 | 1.41 | 238.1 |
| 54 | 23.79 | 1.80 | 26.13 | -102.28 | -102. | 0.00 | 1.00 | 238.4 |
| 55 | 24.24 | 1.80 | 26.58 | -94.58 | -95. | 0.00 | 0.91 | 238.5 |
| 56 | 24.69 | 1.80 | 27.03 | -108.52 | -109. | 0.00 | 1.00 | 238.4 |
| 57 | 25.15 | 1.80 | 27.49 | -135.07 | -135. | 0.00 | 1.30 | 238.2 |
| 58 | 25.60 | 1.80 | 27.94 | -166.03 | -166. | 0.00 | 1.63 | 237.9 |
| 59 | 26.05 | 1.80 | 28.39 | -197.23 | -197. | 0.00 | 1.87 | 237.7 |
| 60 | 26.50 | 1.80 | 28.84 | -226.92 | -227. | 0.00 | 2.13 | 237.6 |
| 61 | 26.95 | 1.80 | 29.29 | -255.02 | -255. | 0.00 | 2.39 | 237.4 |
| 62 | 27.41 | 1.80 | 29.75 | -282.64 | -283. | 0.00 | 2.67 | 237.3 |
| 63 | 27.86 | 1.80 | 30.20 | -314.63 | -315. | 0.00 | 2.96 | 237.1 |
| 64 | 28.31 | 1.80 | 30.65 | -357.39 | -357. | 0.00 | 3.41 | 236.9 |
| 65 | 28.76 | 1.80 | 31.10 | -423.27 | -423. | 0.00 | 4.05 | 236.5 |
| 66 | 29.22 | 1.80 | 31.56 | -530.89 | -531. | 0.00 | 5.06 | 236.0 |
| 67 | 29.67 | 1.80 | 32.01 | -712.04 | -712. | 0.00 | 6.70 | 235.3 |
| 68 | 30.13 | 1.80 | 32.47 | -551.81 | -552. | 0.00 | 5.24 | 235.9 |
| 69 | 30.58 | 1.80 | 32.92 | -468.34 | -468. | 0.00 | 4.38 | 236.4 |
| 70 | 31.04 | 1.80 | 33.38 | -433.04 | -433. | 0.00 | 4.05 | 236.5 |
| 71 | 31.49 | 1.80 | 33.83 | -436.64 | -437. | 0.00 | 4.05 | 236.5 |
| 72 | 31.95 | 1.80 | 34.29 | -471.73 | -472. | 0.00 | 4.38 | 236.4 |
| 73 | 32.41 | 1.80 | 34.75 | -534.20 | -534. | 0.00 | 5.06 | 236.0 |
| 74 | 32.86 | 1.80 | 35.20 | -621.94 | -622. | 0.00 | 5.78 | 235.7 |
| 75 | 33.32 | 1.80 | 35.66 | -733.54 | -734. | 0.00 | 6.89 | 235.2 |
| 76 | 33.77 | 1.80 | 36.11 | -866.56 | -867. | 0.00 | 8.24 | 234.6 |
| 77 | 34.23 | 1.80 | 36.57 | -1019.38 | -1019. | 0.00 | 9.61 | 234.0 |
| 78 | 34.69 | 1.80 | 37.03 | -1181.16 | -1181. | 0.00 | 11.18 | 233.2 |
| 79 | 35.14 | 1.80 | 37.48 | -1327.15 | -1327. | 0.00 | 12.54 | 232.6 |
| 80 | 35.60 | 1.80 | 37.94 | -1412.44 | -1412. | 0.00 | 13.31 | 232.2 |
| 81 | 36.05 | 1.80 | 38.39 | -1397.39 | -1397. | 0.00 | 13.31 | 232.2 |
| 82 | 36.51 | 1.80 | 38.85 | -1279.39 | -1279. | 0.00 | 12.15 | 232.8 |
| 83 | 36.97 | 1.80 | 39.31 | -1089.31 | -1089. | 0.00 | 10.20 | 233.7 |
| 84 | 37.42 | 1.80 | 39.76 | -847.69 | -848. | 0.00 | 8.04 | 234.7 |
| 85 | 37.88 | 1.80 | 40.22 | -570.43 | -570. | 0.00 | 5.42 | 235.9 |
| 86 | 38.33 | 1.80 | 40.67 | -276.47 | -276. | 0.00 | 2.67 | 237.3 |
| 87 | 38.79 | 1.80 | 41.13 | -78.04 | -78. | 0.00 | 0.73 | 238.6 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 279.73

untere Bewehrung : 77.44

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | | Tm (kNm) | | Bewehrung (cm ² /m) | | | | |
|----------------|----------|----------|----------|-----------|-------|-------------|----|--------------------------------|---------|-----|------|-----|
| | | | | | | | | Bereich | Vrd(MN) | as | | |
| 1 | 0.00 | 1.80 | 2.34 | 151.72 | 152. | 0.00 | 0. | min. 0.2 | 0.71 | 22% | 2.32 | 0.0 |
| 2 | 0.46 | 1.80 | 2.80 | -51.86 | -52. | 0.00 | 0. | min. 0.1 | 0.71 | 7% | 2.32 | 0.0 |
| 3 | 0.92 | 1.80 | 3.26 | -232.44 | -232. | 0.00 | 0. | min. 0.2 | 0.71 | 33% | 2.32 | 0.0 |
| 4 | 1.37 | 1.80 | 3.71 | -219.55 | -220. | 0.00 | 0. | min. 0.2 | 0.71 | 31% | 2.32 | 0.0 |
| 5 | 1.83 | 1.80 | 4.17 | -206.92 | -207. | 0.00 | 0. | min. 0.2 | 0.71 | 29% | 2.32 | 0.0 |
| 6 | 2.29 | 1.80 | 4.63 | -178.13 | -178. | 0.00 | 0. | min. 0.2 | 0.71 | 25% | 2.32 | 0.0 |
| 7 | 2.75 | 1.80 | 5.09 | -151.37 | -151. | 0.00 | 0. | min. 0.2 | 0.71 | 21% | 2.32 | 0.0 |
| 8 | 3.21 | 1.80 | 5.55 | -116.66 | -117. | 0.00 | 0. | min. 0.1 | 0.71 | 17% | 2.32 | 0.0 |
| 9 | 3.66 | 1.80 | 6.00 | -79.96 | -80. | 0.00 | 0. | min. 0.1 | 0.71 | 11% | 2.32 | 0.0 |

Position : BP
Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | Tm (kNm) | Bewehrung (cm²/m) | | | | | | |
|----------------|----------|----------|----------|-----------|-------------|-------------------|---------|----------|------|-----|------|-----|
| | | | | | | Bereich | Vrd(MN) | as | | | | |
| 10 | 4.12 | 1.80 | 6.46 | -46.19 | -46. | 0.00 | 0. | min. 0.1 | 0.71 | 7% | 2.32 | 0.0 |
| 11 | 4.58 | 1.80 | 6.92 | -17.83 | -18. | 0.00 | 0. | min. 0.1 | 0.71 | 3% | 2.32 | 0.0 |
| 12 | 5.04 | 1.80 | 7.38 | 15.08 | 15. | 0.00 | 0. | min. 0.1 | 0.71 | 2% | 2.32 | 0.0 |
| 13 | 5.50 | 1.80 | 7.84 | 39.47 | 39. | 0.00 | 0. | min. 0.1 | 0.71 | 6% | 2.32 | 0.0 |
| 14 | 5.95 | 1.80 | 8.30 | 57.18 | 57. | 0.00 | 0. | min. 0.1 | 0.71 | 8% | 2.32 | 0.0 |
| 15 | 6.41 | 1.80 | 8.75 | 81.50 | 81. | 0.00 | 0. | min. 0.1 | 0.71 | 12% | 2.32 | 0.0 |
| 16 | 6.87 | 1.80 | 9.21 | 101.28 | 101. | 0.00 | 0. | min. 0.1 | 0.71 | 14% | 2.32 | 0.0 |
| 17 | 7.33 | 1.80 | 9.67 | 120.66 | 121. | 0.00 | 0. | min. 0.1 | 0.71 | 17% | 2.32 | 0.0 |
| 18 | 7.79 | 1.80 | 10.13 | 138.64 | 139. | 0.00 | 0. | min. 0.2 | 0.71 | 20% | 2.32 | 0.0 |
| 19 | 8.25 | 1.80 | 10.59 | 142.80 | 143. | 0.00 | 0. | min. 0.2 | 0.71 | 20% | 2.32 | 0.0 |
| 20 | 8.70 | 1.80 | 11.04 | 155.63 | 156. | 0.00 | 0. | min. 0.2 | 0.71 | 22% | 2.32 | 0.0 |
| 21 | 9.16 | 1.80 | 11.50 | 148.40 | 148. | 0.00 | 0. | min. 0.2 | 0.71 | 21% | 2.32 | 0.0 |
| 22 | 9.62 | 1.80 | 11.96 | 123.62 | 124. | 0.00 | 0. | min. 0.1 | 0.71 | 18% | 2.32 | 0.0 |
| 23 | 10.08 | 1.80 | 12.42 | 88.36 | 88. | 0.00 | 0. | min. 0.1 | 0.71 | 13% | 2.32 | 0.0 |
| 24 | 10.54 | 1.80 | 12.88 | 24.80 | 25. | 0.00 | 0. | min. 0.1 | 0.71 | 4% | 2.32 | 0.0 |
| 25 | 10.99 | 1.80 | 13.33 | -71.95 | -72. | 0.00 | 0. | min. 0.1 | 0.71 | 10% | 2.32 | 0.0 |
| 26 | 11.45 | 1.80 | 13.79 | -291.32 | -291. | 0.00 | 0. | min. 0.2 | 0.71 | 41% | 2.32 | 0.0 |
| 27 | 11.91 | 1.80 | 14.25 | -448.11 | -448. | 0.00 | 0. | min. 0.3 | 0.71 | 63% | 2.32 | 0.0 |
| 28 | 11.91 | 1.80 | 14.25 | 567.59 | 568. | 0.00 | 0. | min. 0.3 | 0.71 | 80% | 2.32 | 0.0 |
| 29 | 12.35 | 1.80 | 14.69 | 415.33 | 415. | 0.00 | 0. | min. 0.3 | 0.71 | 59% | 2.32 | 0.0 |
| 30 | 12.79 | 1.80 | 15.13 | 202.43 | 202. | 0.00 | 0. | min. 0.2 | 0.71 | 29% | 2.32 | 0.0 |
| 31 | 13.23 | 1.80 | 15.57 | 89.20 | 89. | 0.00 | 0. | min. 0.1 | 0.71 | 13% | 2.32 | 0.0 |
| 32 | 13.68 | 1.80 | 16.02 | 15.00 | 15. | 0.00 | 0. | min. 0.1 | 0.71 | 2% | 2.32 | 0.0 |
| 33 | 14.12 | 1.80 | 16.46 | -39.57 | -40. | 0.00 | 0. | min. 0.1 | 0.71 | 6% | 2.32 | 0.0 |
| 34 | 14.56 | 1.80 | 16.90 | -90.18 | -90. | 0.00 | 0. | min. 0.1 | 0.71 | 13% | 2.32 | 0.0 |
| 35 | 15.00 | 1.80 | 17.34 | -119.94 | -120. | 0.00 | 0. | min. 0.1 | 0.71 | 17% | 2.32 | 0.0 |
| 36 | 15.44 | 1.80 | 17.78 | -167.53 | -168. | 0.00 | 0. | min. 0.2 | 0.71 | 24% | 2.32 | 0.0 |
| 37 | 15.88 | 1.80 | 18.22 | -246.39 | -246. | 0.00 | 0. | min. 0.2 | 0.71 | 35% | 2.32 | 0.0 |
| 38 | 16.33 | 1.80 | 18.67 | -326.19 | -326. | 0.00 | 0. | min. 0.2 | 0.71 | 46% | 2.32 | 0.0 |
| 39 | 16.77 | 1.80 | 19.11 | -506.98 | -507. | 0.00 | 0. | min. 0.3 | 0.71 | 72% | 2.32 | 0.0 |
| 40 | 17.21 | 1.80 | 19.55 | -651.36 | -651. | 0.00 | 0. | min. 0.4 | 0.71 | 92% | 2.32 | 0.0 |
| 41 | 17.21 | 1.80 | 19.55 | 632.58 | 633. | 0.00 | 0. | min. 0.4 | 0.71 | 89% | 2.32 | 0.0 |
| 42 | 17.65 | 1.80 | 19.99 | 496.35 | 496. | 0.00 | 0. | min. 0.3 | 0.71 | 70% | 2.32 | 0.0 |
| 43 | 18.08 | 1.80 | 20.42 | 313.57 | 314. | 0.00 | 0. | min. 0.2 | 0.71 | 44% | 2.32 | 0.0 |
| 44 | 18.51 | 1.80 | 20.85 | 223.52 | 224. | 0.00 | 0. | min. 0.2 | 0.71 | 32% | 2.32 | 0.0 |
| 45 | 18.95 | 1.80 | 21.29 | 152.31 | 152. | 0.00 | 0. | min. 0.2 | 0.71 | 22% | 2.32 | 0.0 |
| 46 | 19.38 | 1.80 | 21.72 | 101.46 | 101. | 0.00 | 0. | min. 0.1 | 0.71 | 14% | 2.32 | 0.0 |
| 47 | 19.82 | 1.80 | 22.16 | 56.51 | 57. | 0.00 | 0. | min. 0.1 | 0.71 | 8% | 2.32 | 0.0 |
| 48 | 20.26 | 1.80 | 22.60 | 7.76 | 8. | 0.00 | 0. | min. 0.1 | 0.71 | 1% | 2.32 | 0.0 |
| 49 | 20.69 | 1.80 | 23.03 | -46.69 | -47. | 0.00 | 0. | min. 0.1 | 0.71 | 7% | 2.32 | 0.0 |
| 50 | 21.12 | 1.80 | 23.47 | -125.87 | -126. | 0.00 | 0. | min. 0.1 | 0.71 | 18% | 2.32 | 0.0 |
| 51 | 21.56 | 1.80 | 23.90 | -229.34 | -229. | 0.00 | 0. | min. 0.2 | 0.71 | 33% | 2.32 | 0.0 |
| 52 | 21.99 | 1.80 | 24.33 | -430.98 | -431. | 0.00 | 0. | min. 0.3 | 0.71 | 61% | 2.32 | 0.0 |
| 53 | 22.43 | 1.80 | 24.77 | -580.80 | -581. | 0.00 | 0. | min. 0.4 | 0.71 | 82% | 2.32 | 0.0 |
| 54 | 22.43 | 1.80 | 24.77 | 496.32 | 496. | 0.00 | 0. | min. 0.3 | 0.71 | 70% | 2.32 | 0.0 |
| 55 | 22.88 | 1.80 | 25.22 | 346.96 | 347. | 0.00 | 0. | min. 0.2 | 0.71 | 49% | 2.32 | 0.0 |
| 56 | 23.33 | 1.80 | 25.67 | 148.24 | 148. | 0.00 | 0. | min. 0.2 | 0.71 | 21% | 2.32 | 0.0 |
| 57 | 23.79 | 1.80 | 26.13 | 53.94 | 54. | 0.00 | 0. | min. 0.1 | 0.71 | 8% | 2.32 | 0.0 |
| 58 | 24.24 | 1.80 | 26.58 | -11.91 | -12. | 0.00 | 0. | min. 0.1 | 0.71 | 2% | 2.32 | 0.0 |
| 59 | 24.69 | 1.80 | 27.03 | -47.62 | -48. | 0.00 | 0. | min. 0.1 | 0.71 | 7% | 2.32 | 0.0 |
| 60 | 25.15 | 1.80 | 27.49 | -66.01 | -66. | 0.00 | 0. | min. 0.1 | 0.71 | 9% | 2.32 | 0.0 |
| 61 | 25.60 | 1.80 | 27.94 | -69.63 | -70. | 0.00 | 0. | min. 0.1 | 0.71 | 10% | 2.32 | 0.0 |
| 62 | 26.05 | 1.80 | 28.39 | -67.57 | -68. | 0.00 | 0. | min. 0.1 | 0.71 | 10% | 2.32 | 0.0 |
| 63 | 26.50 | 1.80 | 28.84 | -63.78 | -64. | 0.00 | 0. | min. 0.1 | 0.71 | 9% | 2.32 | 0.0 |
| 64 | 26.95 | 1.80 | 29.29 | -60.41 | -60. | 0.00 | 0. | min. 0.1 | 0.71 | 9% | 2.32 | 0.0 |
| 65 | 27.41 | 1.80 | 29.75 | -63.98 | -64. | 0.00 | 0. | min. 0.1 | 0.71 | 9% | 2.32 | 0.0 |
| 66 | 27.86 | 1.80 | 30.20 | -78.90 | -79. | 0.00 | 0. | min. 0.1 | 0.71 | 11% | 2.32 | 0.0 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | | Tm (kNm) | | Bewehrung (cm²/m) | | | | | | |
|----------------|----------|----------|----------|-----------|-------|-------------|----|-------------------|-----|---------|-----|------|-----|--|
| | | | | | | | | Bereich | | Vrd(MN) | | as | | |
| 67 | 28.31 | 1.80 | 30.65 | -116.00 | -116. | 0.00 | 0. | min. | 0.1 | 0.71 | 16% | 2.32 | 0.0 | |
| 68 | 28.76 | 1.80 | 31.10 | -177.39 | -177. | 0.00 | 0. | min. | 0.2 | 0.71 | 25% | 2.32 | 0.0 | |
| 69 | 29.22 | 1.80 | 31.56 | -324.74 | -325. | 0.00 | 0. | min. | 0.2 | 0.71 | 46% | 2.32 | 0.0 | |
| 70 | 29.67 | 1.80 | 32.01 | -438.13 | -438. | 0.00 | 0. | min. | 0.3 | 0.71 | 62% | 2.32 | 0.0 | |
| 71 | 29.67 | 1.80 | 32.01 | 390.26 | 390. | 0.00 | 0. | min. | 0.3 | 0.71 | 55% | 2.32 | 0.0 | |
| 72 | 30.13 | 1.80 | 32.47 | 273.64 | 274. | 0.00 | 0. | min. | 0.2 | 0.71 | 39% | 2.32 | 0.0 | |
| 73 | 30.58 | 1.80 | 32.92 | 118.50 | 118. | 0.00 | 0. | min. | 0.1 | 0.71 | 17% | 2.32 | 0.0 | |
| 74 | 31.04 | 1.80 | 33.38 | 33.80 | 34. | 0.00 | 0. | min. | 0.1 | 0.71 | 5% | 2.32 | 0.0 | |
| 75 | 31.49 | 1.80 | 33.83 | -45.12 | -45. | 0.00 | 0. | min. | 0.1 | 0.71 | 6% | 2.32 | 0.0 | |
| 76 | 31.95 | 1.80 | 34.29 | -107.87 | -108. | 0.00 | 0. | min. | 0.1 | 0.71 | 15% | 2.32 | 0.0 | |
| 77 | 32.41 | 1.80 | 34.75 | -165.25 | -165. | 0.00 | 0. | min. | 0.2 | 0.71 | 23% | 2.32 | 0.0 | |
| 78 | 32.86 | 1.80 | 35.20 | -219.39 | -219. | 0.00 | 0. | min. | 0.2 | 0.71 | 31% | 2.32 | 0.0 | |
| 79 | 33.32 | 1.80 | 35.66 | -268.67 | -269. | 0.00 | 0. | min. | 0.2 | 0.71 | 38% | 2.32 | 0.0 | |
| 80 | 33.77 | 1.80 | 36.11 | -315.22 | -315. | 0.00 | 0. | min. | 0.2 | 0.71 | 45% | 2.32 | 0.0 | |
| 81 | 34.23 | 1.80 | 36.57 | -350.97 | -351. | 0.00 | 0. | min. | 0.2 | 0.71 | 50% | 2.32 | 0.0 | |
| 82 | 34.69 | 1.80 | 37.03 | -350.65 | -351. | 0.00 | 0. | min. | 0.2 | 0.71 | 50% | 2.32 | 0.0 | |
| 83 | 35.14 | 1.80 | 37.48 | -271.22 | -271. | 0.00 | 0. | min. | 0.2 | 0.70 | 39% | 2.32 | 0.0 | |
| 84 | 35.60 | 1.80 | 37.94 | -86.05 | -86. | 0.00 | 0. | min. | 0.1 | 0.70 | 12% | 2.32 | 0.0 | |
| 85 | 36.05 | 1.80 | 38.39 | 153.31 | 153. | 0.00 | 0. | min. | 0.2 | 0.70 | 22% | 2.32 | 0.0 | |
| 86 | 36.51 | 1.80 | 38.85 | 348.15 | 348. | 0.00 | 0. | min. | 0.2 | 0.70 | 49% | 2.32 | 0.0 | |
| 87 | 36.97 | 1.80 | 39.31 | 480.95 | 481. | 0.00 | 0. | min. | 0.3 | 0.71 | 68% | 2.32 | 0.0 | |
| 88 | 37.42 | 1.80 | 39.76 | 568.22 | 568. | 0.00 | 0. | min. | 0.3 | 0.71 | 80% | 2.32 | 0.0 | |
| 89 | 37.88 | 1.80 | 40.22 | 659.81 | 660. | 0.00 | 0. | min. | 0.4 | 0.71 | 93% | 2.32 | 0.0 | |
| 90 | 38.33 | 1.80 | 40.67 | 550.54 | 551. | 0.00 | 0. | min. | 0.3 | 0.71 | 78% | 2.32 | 0.0 | |
| 91 | 38.79 | 1.80 | 41.13 | 377.47 | 377. | 0.00 | 0. | min. | 0.3 | 0.71 | 54% | 2.32 | 0.0 | |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm ²] | As Feld [cm ²] |
|--------|------------------------------|-----------------|------------------|--------------------------|-------------------------------|
| UZ-Anf | 18.43 | 2.23 | 227.57 | 5.23 | 0.00 |
| UZ-End | 18.43 | 2.23 | 566.21 | 13.02 | 6.99 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|--------|
| 0 | 0.00 | 1.80 | 2.34 | 382.04 | 420.41 |
| 1 | 0.23 | 1.80 | 2.57 | 440.15 | 444.42 |
| 2 | 0.69 | 1.80 | 3.03 | 428.11 | 394.21 |
| 3 | 1.15 | 1.80 | 3.49 | -66.41 | -28.13 |
| 4 | 1.60 | 1.80 | 3.94 | -14.09 | -27.58 |
| 5 | 2.06 | 1.80 | 4.40 | -69.56 | -62.85 |
| 6 | 2.52 | 1.80 | 4.86 | -54.96 | -58.42 |
| 7 | 2.98 | 1.80 | 5.32 | -77.45 | -75.78 |
| 8 | 3.44 | 1.80 | 5.78 | -80.14 | -80.11 |
| 9 | 3.89 | 1.80 | 6.23 | -74.60 | -73.72 |
| 10 | 4.35 | 1.80 | 6.69 | -59.75 | -61.92 |
| 11 | 4.81 | 1.80 | 7.15 | -74.24 | -71.84 |
| 12 | 5.27 | 1.80 | 7.61 | -52.96 | -53.23 |
| 13 | 5.73 | 1.80 | 8.07 | -36.32 | -38.66 |
| 14 | 6.18 | 1.80 | 8.52 | -55.47 | -53.10 |
| 15 | 6.64 | 1.80 | 8.98 | -42.13 | -43.19 |
| 16 | 7.10 | 1.80 | 9.44 | -41.94 | -42.31 |
| 17 | 7.56 | 1.80 | 9.90 | -42.33 | -39.24 |
| 18 | 8.02 | 1.80 | 10.36 | -3.86 | -9.09 |
| 19 | 8.47 | 1.80 | 10.81 | -33.56 | -28.01 |
| 20 | 8.93 | 1.80 | 11.27 | 17.09 | 15.79 |
| 21 | 9.39 | 1.80 | 11.73 | 55.83 | 54.10 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|---------|
| 22 | 9.85 | 1.80 | 12.19 | 72.62 | 76.98 |
| 23 | 10.31 | 1.80 | 12.65 | 144.74 | 138.75 |
| 24 | 10.76 | 1.80 | 13.10 | 188.96 | 211.22 |
| 25 | 11.22 | 1.80 | 13.56 | 513.14 | 478.89 |
| 26 | 11.68 | 1.80 | 14.02 | 328.60 | 342.28 |
| 27 | 12.13 | 1.80 | 14.47 | 331.86 | 344.74 |
| 28 | 12.57 | 1.80 | 14.91 | 512.12 | 482.04 |
| 29 | 13.01 | 1.80 | 15.35 | 239.68 | 256.39 |
| 30 | 13.46 | 1.80 | 15.80 | 170.44 | 167.99 |
| 31 | 13.90 | 1.80 | 16.24 | 119.49 | 123.54 |
| 32 | 14.34 | 1.80 | 16.68 | 119.48 | 114.60 |
| 33 | 14.78 | 1.80 | 17.12 | 61.49 | 67.38 |
| 34 | 15.22 | 1.80 | 17.56 | 104.55 | 107.75 |
| 35 | 15.66 | 1.80 | 18.00 | 189.63 | 178.56 |
| 36 | 16.11 | 1.80 | 18.45 | 156.78 | 180.66 |
| 37 | 16.55 | 1.80 | 18.89 | 437.18 | 409.34 |
| 38 | 16.99 | 1.80 | 19.33 | 317.22 | 326.90 |
| 39 | 17.43 | 1.80 | 19.77 | 302.31 | 313.16 |
| 40 | 17.86 | 1.80 | 20.20 | 447.66 | 420.20 |
| 41 | 18.30 | 1.80 | 20.64 | 188.06 | 206.99 |
| 42 | 18.73 | 1.80 | 21.07 | 169.49 | 163.71 |
| 43 | 19.17 | 1.80 | 21.51 | 113.58 | 116.90 |
| 44 | 19.60 | 1.80 | 21.94 | 102.51 | 103.34 |
| 45 | 20.04 | 1.80 | 22.38 | 113.12 | 112.06 |
| 46 | 20.47 | 1.80 | 22.81 | 120.66 | 125.18 |
| 47 | 20.91 | 1.80 | 23.25 | 188.09 | 182.03 |
| 48 | 21.34 | 1.80 | 23.68 | 218.38 | 237.86 |
| 49 | 21.78 | 1.80 | 24.12 | 492.94 | 463.56 |
| 50 | 22.21 | 1.80 | 24.55 | 332.56 | 344.39 |
| 51 | 22.66 | 1.80 | 25.00 | 318.86 | 330.09 |
| 52 | 23.11 | 1.80 | 25.45 | 468.01 | 439.17 |
| 53 | 23.56 | 1.80 | 25.90 | 189.20 | 208.39 |
| 54 | 24.01 | 1.80 | 26.35 | 151.44 | 145.54 |
| 55 | 24.47 | 1.80 | 26.81 | 75.45 | 78.92 |
| 56 | 24.92 | 1.80 | 27.26 | 41.50 | 40.63 |
| 57 | 25.37 | 1.80 | 27.71 | 6.59 | 8.01 |
| 58 | 25.82 | 1.80 | 28.16 | -4.76 | -4.57 |
| 59 | 26.28 | 1.80 | 28.62 | -8.37 | -8.37 |
| 60 | 26.73 | 1.80 | 29.07 | -8.42 | -7.45 |
| 61 | 27.18 | 1.80 | 29.52 | 8.16 | 7.87 |
| 62 | 27.63 | 1.80 | 29.97 | 30.39 | 32.99 |
| 63 | 28.09 | 1.80 | 30.43 | 86.14 | 81.99 |
| 64 | 28.54 | 1.80 | 30.88 | 120.49 | 135.66 |
| 65 | 28.99 | 1.80 | 31.33 | 348.07 | 325.65 |
| 66 | 29.44 | 1.80 | 31.78 | 242.34 | 250.57 |
| 67 | 29.90 | 1.80 | 32.24 | 247.34 | 255.76 |
| 68 | 30.35 | 1.80 | 32.69 | 361.15 | 340.21 |
| 69 | 30.81 | 1.80 | 33.15 | 170.11 | 185.74 |
| 70 | 31.27 | 1.80 | 33.61 | 179.19 | 173.08 |
| 71 | 31.72 | 1.80 | 34.06 | 134.48 | 137.60 |
| 72 | 32.18 | 1.80 | 34.52 | 126.28 | 125.85 |
| 73 | 32.63 | 1.80 | 34.97 | 118.96 | 118.72 |
| 74 | 33.09 | 1.80 | 35.43 | 107.56 | 108.08 |
| 75 | 33.55 | 1.80 | 35.89 | 102.75 | 102.07 |
| 76 | 34.00 | 1.80 | 36.34 | 80.61 | 78.41 |
| 77 | 34.46 | 1.80 | 36.80 | 3.69 | -0.72 |
| 78 | 34.91 | 1.80 | 37.25 | -170.42 | -174.18 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|---------|
| 79 | 35.37 | 1.80 | 37.71 | -410.93 | -406.08 |
| 80 | 35.83 | 1.80 | 38.17 | -537.56 | -524.90 |
| 81 | 36.28 | 1.80 | 38.62 | -425.91 | -427.28 |
| 82 | 36.74 | 1.80 | 39.08 | -293.63 | -291.23 |
| 83 | 37.19 | 1.80 | 39.53 | -174.08 | -191.39 |
| 84 | 37.65 | 1.80 | 39.99 | -240.38 | -200.85 |
| 85 | 38.11 | 1.80 | 40.45 | 267.95 | 239.61 |
| 86 | 38.56 | 1.80 | 40.90 | 380.87 | 379.54 |
| 87 | 38.79 | 1.80 | 41.13 | 380.80 | 406.47 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|--------|
| 1 | 0.00 | 11.91 | 49.82 | 50.19 |
| 2 | 11.91 | 17.21 | 229.80 | 230.36 |
| 3 | 17.21 | 22.43 | 232.46 | 232.89 |
| 4 | 22.43 | 29.67 | 129.22 | 129.57 |
| 5 | 29.67 | 38.79 | 1.37 | 1.60 |
| total | 0.00 | 38.79 | 102.42 | 126.65 |

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 1 | 0.00 | 35.82 | 20.25 | 420.41 | 9.67 |
| 2 | 0.46 | 35.82 | 20.57 | 468.44 | 10.77 |
| 3 | 0.92 | 35.82 | 20.90 | 175.21 | 4.03 |
| 4 | 1.37 | 35.82 | 21.22 | 64.70 | 1.49 |
| 5 | 1.83 | 35.82 | 21.54 | 35.15 | 0.81 |
| 6 | 2.29 | 5.35 | 37.94 | 65.50 | 1.51 |
| 7 | 2.75 | 5.84 | 37.94 | 64.42 | 1.48 |
| 8 | 3.21 | 6.32 | 37.94 | 80.50 | 1.85 |
| 9 | 3.66 | 6.81 | 37.94 | 78.28 | 1.80 |
| 10 | 4.12 | 7.29 | 37.94 | 65.87 | 1.52 |
| 11 | 4.58 | 7.78 | 37.94 | 67.21 | 1.55 |
| 12 | 5.04 | 8.26 | 37.94 | 65.73 | 1.51 |
| 13 | 5.50 | 8.75 | 37.94 | 42.04 | 0.97 |
| 14 | 5.95 | 9.23 | 37.94 | 45.93 | 1.06 |
| 15 | 6.41 | 9.71 | 37.94 | 50.11 | 1.15 |
| 16 | 6.87 | 10.20 | 37.94 | 40.60 | 0.93 |
| 17 | 7.33 | 10.68 | 37.94 | 44.86 | 1.03 |
| 18 | 7.79 | 11.17 | 37.94 | 20.96 | 0.48 |
| 19 | 8.25 | 11.65 | 37.94 | 19.04 | 0.44 |
| 20 | 8.70 | 12.14 | 37.94 | 12.49 | 0.29 |
| 21 | 9.16 | 12.62 | 37.94 | 39.49 | 0.91 |
| 22 | 9.62 | 13.11 | 37.94 | 61.59 | 1.42 |
| 23 | 10.08 | 13.59 | 37.94 | 110.31 | 2.54 |
| 24 | 10.54 | 14.08 | 37.94 | 150.54 | 3.46 |
| 25 | 10.99 | 14.56 | 37.94 | 363.17 | 8.35 |
| 26 | 11.45 | 15.05 | 37.94 | 440.95 | 10.14 |
| 27 | 11.91 | 15.53 | 37.94 | 303.72 | 6.99 |
| 28 | 12.35 | 16.01 | 37.94 | 439.65 | 10.11 |
| 29 | 12.79 | 16.50 | 37.94 | 389.15 | 8.95 |
| 30 | 13.23 | 16.98 | 37.94 | 190.82 | 4.39 |
| 31 | 13.68 | 17.47 | 37.94 | 143.35 | 3.30 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 32 | 14.12 | 17.95 | 37.94 | 120.31 | 2.77 |
| 33 | 14.56 | 18.44 | 37.94 | 89.46 | 2.06 |
| 34 | 15.00 | 18.92 | 37.94 | 73.94 | 1.70 |
| 35 | 15.44 | 19.41 | 37.94 | 154.92 | 3.56 |
| 36 | 15.88 | 19.89 | 37.94 | 160.52 | 3.69 |
| 37 | 16.33 | 20.38 | 37.94 | 300.42 | 6.91 |
| 38 | 16.77 | 20.86 | 37.94 | 397.25 | 9.14 |
| 39 | 17.21 | 21.35 | 37.94 | 289.13 | 6.65 |
| 40 | 17.65 | 21.83 | 37.94 | 389.75 | 8.96 |
| 41 | 18.08 | 22.32 | 37.94 | 326.88 | 7.52 |
| 42 | 18.51 | 22.80 | 37.94 | 165.50 | 3.81 |
| 43 | 18.95 | 23.28 | 37.94 | 144.04 | 3.31 |
| 44 | 19.38 | 23.77 | 37.94 | 103.89 | 2.39 |
| 45 | 19.82 | 24.25 | 37.94 | 108.05 | 2.49 |
| 46 | 20.26 | 24.74 | 37.94 | 113.44 | 2.61 |
| 47 | 20.69 | 25.22 | 37.94 | 155.90 | 3.59 |
| 48 | 21.12 | 25.71 | 37.94 | 189.90 | 4.37 |
| 49 | 21.56 | 26.19 | 37.94 | 365.28 | 8.40 |
| 50 | 21.99 | 26.68 | 37.94 | 431.37 | 9.92 |
| 51 | 22.43 | 27.16 | 37.94 | 302.79 | 6.96 |
| 52 | 22.88 | 27.65 | 37.94 | 409.93 | 9.43 |
| 53 | 23.33 | 28.13 | 37.94 | 338.57 | 7.79 |
| 54 | 23.79 | 28.62 | 37.94 | 156.96 | 3.61 |
| 55 | 24.24 | 29.10 | 37.94 | 115.90 | 2.67 |
| 56 | 24.69 | 29.58 | 37.94 | 55.88 | 1.29 |
| 57 | 25.15 | 30.07 | 37.94 | 23.49 | 0.54 |
| 58 | 25.60 | 30.55 | 37.94 | 0.70 | 0.02 |
| 59 | 26.05 | 31.04 | 37.94 | 6.76 | 0.16 |
| 60 | 26.50 | 31.52 | 37.94 | 9.37 | 0.22 |
| 61 | 26.95 | 32.01 | 37.94 | 0.82 | 0.02 |
| 62 | 27.41 | 32.49 | 37.94 | 16.95 | 0.39 |
| 63 | 27.86 | 32.98 | 37.94 | 59.82 | 1.38 |
| 64 | 28.31 | 33.46 | 37.94 | 92.27 | 2.12 |
| 65 | 28.76 | 33.95 | 37.94 | 241.66 | 5.56 |
| 66 | 29.22 | 34.43 | 37.94 | 308.92 | 7.11 |
| 67 | 29.67 | 34.92 | 37.94 | 228.18 | 5.25 |
| 68 | 30.13 | 35.40 | 37.94 | 317.25 | 7.30 |
| 69 | 30.58 | 35.88 | 37.94 | 270.82 | 6.23 |
| 70 | 31.04 | 36.37 | 37.94 | 165.17 | 3.80 |
| 71 | 31.49 | 36.85 | 37.94 | 159.82 | 3.68 |
| 72 | 31.95 | 37.34 | 37.94 | 127.69 | 2.94 |
| 73 | 32.41 | 37.82 | 37.94 | 123.29 | 2.84 |
| 74 | 32.86 | 38.31 | 37.94 | 112.98 | 2.60 |
| 75 | 33.32 | 38.79 | 37.94 | 105.32 | 2.42 |
| 76 | 33.77 | 39.28 | 37.94 | 94.56 | 2.17 |
| 77 | 34.23 | 39.76 | 37.94 | 48.75 | 1.12 |
| 78 | 34.69 | 40.25 | 37.94 | 75.20 | 1.73 |
| 79 | 35.14 | 40.73 | 37.94 | 291.75 | 6.71 |
| 80 | 35.60 | 41.22 | 37.94 | 491.75 | 11.31 |
| 81 | 36.05 | 41.70 | 37.94 | 493.03 | 11.34 |
| 82 | 36.51 | 42.12 | 37.94 | 360.82 | 8.30 |
| 83 | 36.97 | 42.54 | 37.94 | 218.92 | 5.04 |
| 84 | 37.42 | 42.96 | 37.94 | 229.55 | 5.28 |
| 85 | 37.88 | 43.38 | 37.94 | 2.98 | 0.07 |
| 86 | 38.33 | 43.79 | 37.94 | 352.61 | 8.11 |
| 87 | 38.79 | 44.21 | 37.94 | 406.47 | 9.35 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

Überzug Nr.: 2 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
 Brandschutz bei seittl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm²) | | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|-------|-----------------|------|--------------------|
| | | | | | | unten | oben | |
| 1 | 0.00 | 1.80 | 41.13 | -81.61 | -82. | 0.00 | 0.82 | 238.6 |
| 2 | 0.49 | 2.29 | 41.13 | -156.23 | -156. | 0.00 | 1.52 | 238.0 |
| 3 | 0.98 | 2.78 | 41.13 | -340.56 | -341. | 0.00 | 3.26 | 236.9 |
| 4 | 1.47 | 3.27 | 41.13 | -511.38 | -511. | 0.00 | 4.89 | 236.1 |
| 5 | 1.96 | 3.76 | 41.13 | -653.74 | -654. | 0.00 | 6.15 | 235.5 |
| 6 | 2.45 | 4.25 | 41.13 | -754.68 | -755. | 0.00 | 7.08 | 235.1 |
| 7 | 2.94 | 4.74 | 41.13 | -827.67 | -828. | 0.00 | 7.85 | 234.8 |
| 8 | 3.43 | 5.23 | 41.13 | -875.44 | -875. | 0.00 | 8.24 | 234.6 |
| 9 | 3.92 | 5.72 | 41.13 | -905.15 | -905. | 0.00 | 8.43 | 234.5 |
| 10 | 4.41 | 6.21 | 41.13 | -915.38 | -915. | 0.00 | 8.63 | 234.4 |
| 11 | 4.90 | 6.70 | 41.13 | -913.84 | -914. | 0.00 | 8.63 | 234.4 |
| 12 | 5.39 | 7.19 | 41.13 | -898.05 | -898. | 0.00 | 8.43 | 234.5 |
| 13 | 5.88 | 7.68 | 41.13 | -875.41 | -875. | 0.00 | 8.24 | 234.6 |
| 14 | 6.37 | 8.17 | 41.13 | -841.37 | -841. | 0.00 | 7.85 | 234.8 |
| 15 | 6.86 | 8.66 | 41.13 | -800.43 | -800. | 0.00 | 7.46 | 234.9 |
| 16 | 7.35 | 9.15 | 41.13 | -756.88 | -757. | 0.00 | 7.08 | 235.1 |
| 17 | 7.84 | 9.64 | 41.13 | -710.06 | -710. | 0.00 | 6.70 | 235.3 |
| 18 | 8.33 | 10.13 | 41.13 | -660.28 | -660. | 0.00 | 6.15 | 235.5 |
| 19 | 8.82 | 10.62 | 41.13 | -611.73 | -612. | 0.00 | 5.78 | 235.7 |
| 20 | 9.31 | 11.11 | 41.13 | -561.16 | -561. | 0.00 | 5.24 | 235.9 |
| 21 | 9.80 | 11.60 | 41.13 | -509.67 | -510. | 0.00 | 4.72 | 236.2 |
| 22 | 10.29 | 12.09 | 41.13 | -460.21 | -460. | 0.00 | 4.38 | 236.4 |
| 23 | 10.78 | 12.58 | 41.13 | -414.84 | -415. | 0.00 | 3.88 | 236.6 |
| 24 | 11.27 | 13.07 | 41.13 | -363.44 | -363. | 0.00 | 3.41 | 236.9 |
| 25 | 11.76 | 13.56 | 41.13 | -318.47 | -318. | 0.00 | 2.96 | 237.1 |
| 26 | 12.25 | 14.05 | 41.13 | -274.72 | -275. | 0.00 | 2.53 | 237.3 |
| 27 | 12.74 | 14.54 | 41.13 | -233.58 | -234. | 0.00 | 2.26 | 237.5 |
| 28 | 13.23 | 15.03 | 41.13 | -195.33 | -195. | 0.00 | 1.87 | 237.7 |
| 29 | 13.72 | 15.52 | 41.13 | -159.75 | -160. | 0.00 | 1.52 | 238.0 |
| 30 | 14.21 | 16.01 | 41.13 | -126.49 | -126. | 0.00 | 1.20 | 238.2 |
| 31 | 14.70 | 16.50 | 41.13 | -95.84 | -96. | 0.00 | 0.91 | 238.5 |
| 32 | 15.19 | 16.99 | 41.13 | -68.66 | -69. | 0.00 | 0.65 | 238.7 |
| 33 | 15.68 | 17.48 | 41.13 | -44.46 | -44. | 0.00 | 0.44 | 239.0 |
| 34 | 16.17 | 17.97 | 41.13 | -19.08 | -19. | 0.00 | 0.21 | 239.3 |
| 35 | 16.66 | 18.46 | 41.13 | 4.14 | 4. | 6.99 | 0.00 | 239.7 |
| 36 | 17.15 | 18.95 | 41.13 | 23.94 | 24. | 6.99 | 0.00 | 239.2 |
| 37 | 17.64 | 19.44 | 41.13 | 40.18 | 40. | 6.99 | 0.00 | 239.0 |
| 38 | 18.13 | 19.93 | 41.13 | 59.34 | 59. | 6.99 | 0.00 | 238.8 |
| 39 | 18.62 | 20.42 | 41.13 | 75.63 | 76. | 6.99 | 0.00 | 238.6 |
| 40 | 19.11 | 20.91 | 41.13 | 89.64 | 90. | 6.99 | 0.00 | 238.5 |
| 41 | 19.60 | 21.40 | 41.13 | 101.59 | 102. | 6.99 | 0.00 | 238.4 |
| 42 | 20.09 | 21.89 | 41.13 | 113.68 | 114. | 6.99 | 0.00 | 238.3 |
| 43 | 20.58 | 22.38 | 41.13 | 123.44 | 123. | 6.99 | 0.00 | 238.2 |
| 44 | 21.07 | 22.87 | 41.13 | 132.59 | 133. | 6.99 | 0.00 | 238.2 |
| 45 | 21.56 | 23.36 | 41.13 | 140.74 | 141. | 6.99 | 0.00 | 238.2 |
| 46 | 22.05 | 23.84 | 41.13 | 152.21 | 152. | 6.99 | 0.00 | 238.1 |
| 47 | 22.53 | 24.33 | 41.13 | 162.71 | 163. | 6.99 | 0.00 | 238.0 |
| 48 | 23.02 | 24.82 | 41.13 | 172.02 | 172. | 6.99 | 0.00 | 237.9 |
| 49 | 23.51 | 25.31 | 41.13 | 180.16 | 180. | 6.99 | 0.00 | 237.8 |
| 50 | 24.00 | 25.80 | 41.13 | 190.22 | 190. | 6.99 | 0.00 | 237.8 |
| 51 | 24.49 | 26.29 | 41.13 | 202.78 | 203. | 6.99 | 0.00 | 237.7 |
| 52 | 24.98 | 26.78 | 41.13 | 210.44 | 210. | 6.99 | 0.00 | 237.7 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) | | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|------|------------------------------|------|--------------------|
| | | | | | | unten | oben | |
| 53 | 25.47 | 27.27 | 41.13 | 218.73 | 219. | 6.99 | 0.00 | 237.6 |
| 54 | 25.96 | 27.76 | 41.13 | 231.10 | 231. | 6.99 | 0.00 | 237.6 |
| 55 | 26.45 | 28.25 | 41.13 | 243.04 | 243. | 6.99 | 0.00 | 237.5 |
| 56 | 26.94 | 28.74 | 41.13 | 253.29 | 253. | 6.99 | 0.00 | 237.4 |
| 57 | 27.43 | 29.23 | 41.13 | 263.12 | 263. | 6.99 | 0.00 | 237.3 |
| 58 | 27.92 | 29.72 | 41.13 | 276.91 | 277. | 6.99 | 0.00 | 237.3 |
| 59 | 28.41 | 30.21 | 41.13 | 284.82 | 285. | 6.99 | 0.00 | 237.3 |
| 60 | 28.90 | 30.70 | 41.13 | 299.84 | 300. | 6.99 | 0.00 | 237.2 |
| 61 | 29.39 | 31.19 | 41.13 | 307.19 | 307. | 6.99 | 0.00 | 237.1 |
| 62 | 29.88 | 31.68 | 41.13 | 316.21 | 316. | 6.99 | 0.00 | 237.1 |
| 63 | 30.37 | 32.17 | 41.13 | 324.16 | 324. | 6.99 | 0.00 | 237.0 |
| 64 | 30.86 | 32.66 | 41.13 | 334.21 | 334. | 6.99 | 0.00 | 237.0 |
| 65 | 31.35 | 33.15 | 41.13 | 342.20 | 342. | 6.99 | 0.00 | 236.9 |
| 66 | 31.84 | 33.64 | 41.13 | 351.14 | 351. | 6.99 | 0.00 | 236.9 |
| 67 | 32.33 | 34.13 | 41.13 | 357.29 | 357. | 6.99 | 0.00 | 236.9 |
| 68 | 32.82 | 34.62 | 41.13 | 359.87 | 360. | 6.99 | 0.00 | 236.9 |
| 69 | 33.31 | 35.11 | 41.13 | 372.44 | 372. | 6.99 | 0.00 | 236.8 |
| 70 | 33.80 | 35.60 | 41.13 | 371.47 | 371. | 6.99 | 0.00 | 236.8 |
| 71 | 34.29 | 36.09 | 41.13 | 371.29 | 371. | 6.99 | 0.00 | 236.8 |
| 72 | 34.78 | 36.58 | 41.13 | 367.57 | 368. | 6.99 | 0.00 | 236.9 |
| 73 | 35.27 | 37.07 | 41.13 | 361.15 | 361. | 6.99 | 0.00 | 236.9 |
| 74 | 35.76 | 37.56 | 41.13 | 354.59 | 355. | 6.99 | 0.00 | 236.9 |
| 75 | 36.25 | 38.05 | 41.13 | 344.21 | 344. | 6.99 | 0.00 | 236.9 |
| 76 | 36.74 | 38.54 | 41.13 | 330.26 | 330. | 6.99 | 0.00 | 237.0 |
| 77 | 37.23 | 39.03 | 41.13 | 307.27 | 307. | 6.99 | 0.00 | 237.1 |
| 78 | 37.72 | 39.52 | 41.13 | 303.75 | 304. | 6.99 | 0.00 | 237.2 |
| 79 | 38.21 | 40.01 | 41.13 | 278.94 | 279. | 6.99 | 0.00 | 237.3 |
| 80 | 38.70 | 40.50 | 41.13 | 259.27 | 259. | 6.99 | 0.00 | 237.4 |
| 81 | 39.19 | 40.99 | 41.13 | 239.99 | 240. | 6.99 | 0.00 | 237.5 |
| 82 | 39.68 | 41.48 | 41.13 | 221.50 | 222. | 6.99 | 0.00 | 237.6 |
| 83 | 40.17 | 41.97 | 41.13 | 204.04 | 204. | 6.99 | 0.00 | 237.7 |
| 84 | 40.66 | 42.46 | 41.13 | 188.04 | 188. | 6.99 | 0.00 | 237.8 |
| 85 | 41.15 | 42.95 | 41.13 | 172.38 | 172. | 6.99 | 0.00 | 237.9 |
| 86 | 41.64 | 43.44 | 41.13 | 148.15 | 148. | 6.99 | 0.00 | 238.1 |
| 87 | 42.13 | 43.93 | 41.13 | 145.33 | 145. | 6.99 | 0.00 | 238.1 |
| 88 | 42.62 | 44.42 | 41.13 | 116.26 | 116. | 6.99 | 0.00 | 238.3 |
| 89 | 43.11 | 44.91 | 41.13 | 89.20 | 89. | 6.99 | 0.00 | 238.6 |
| 90 | 43.60 | 45.40 | 41.13 | 53.59 | 54. | 6.99 | 0.00 | 238.9 |
| 91 | 44.09 | 45.89 | 41.13 | -0.24 | 0. | 0.00 | 0.01 | 239.8 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 155.74

untere Bewehrung : 537.14

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | Tm (kNm) | Bewehrung (cm ² /m) | | | | | as |
|----------------|----------|----------|----------|-----------|-------------|--------------------------------|----------|------|-----|------|-----|
| | | | | | | Bereich | Vrd(MN) | | | | |
| 1 | 0.00 | 1.80 | 41.13 | -91.09 | -91. | 0. | min. 0.1 | 0.71 | 13% | 2.32 | 0.0 |
| 2 | 0.49 | 2.29 | 41.13 | -274.81 | -275. | 0. | min. 0.2 | 0.71 | 39% | 2.32 | 0.0 |
| 3 | 0.98 | 2.78 | 41.13 | -395.47 | -395. | 0. | min. 0.3 | 0.71 | 56% | 2.32 | 0.0 |
| 4 | 1.47 | 3.27 | 41.13 | -318.20 | -318. | 0. | min. 0.2 | 0.71 | 45% | 2.32 | 0.0 |
| 5 | 1.96 | 3.76 | 41.13 | -249.58 | -250. | 0. | min. 0.2 | 0.71 | 35% | 2.32 | 0.0 |
| 6 | 2.45 | 4.25 | 41.13 | -173.39 | -173. | 0. | min. 0.2 | 0.71 | 25% | 2.32 | 0.0 |
| 7 | 2.94 | 4.74 | 41.13 | -121.97 | -122. | 0. | min. 0.1 | 0.71 | 17% | 2.32 | 0.0 |
| 8 | 3.43 | 5.23 | 41.13 | -78.23 | -78. | 0. | min. 0.1 | 0.71 | 11% | 2.32 | 0.0 |
| 9 | 3.92 | 5.72 | 41.13 | -39.59 | -40. | 0. | min. 0.1 | 0.71 | 6% | 2.32 | 0.0 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | Tm (kNm) | Bewehrung (cm²/m) | | | | | | |
|----------------|----------|----------|----------|-----------|-------------|-------------------|---------|------|-----|------|-----|----------|
| | | | | | | Bereich | Vrd(MN) | as | | | | |
| 10 | 4.41 | 6.21 | 41.13 | -8.06 | -8. | 0.00 | 0. | min. | 0.1 | 0.71 | 1% | 2.32 0.0 |
| 11 | 4.90 | 6.70 | 41.13 | 18.58 | 19. | 0.00 | 0. | min. | 0.1 | 0.71 | 3% | 2.32 0.0 |
| 12 | 5.39 | 7.19 | 41.13 | 39.92 | 40. | 0.00 | 0. | min. | 0.1 | 0.71 | 6% | 2.32 0.0 |
| 13 | 5.88 | 7.68 | 41.13 | 57.08 | 57. | 0.00 | 0. | min. | 0.1 | 0.71 | 8% | 2.32 0.0 |
| 14 | 6.37 | 8.17 | 41.13 | 78.84 | 79. | 0.00 | 0. | min. | 0.1 | 0.71 | 11% | 2.32 0.0 |
| 15 | 6.86 | 8.66 | 41.13 | 86.72 | 87. | 0.00 | 0. | min. | 0.1 | 0.71 | 12% | 2.32 0.0 |
| 16 | 7.35 | 9.15 | 41.13 | 91.72 | 92. | 0.00 | 0. | min. | 0.1 | 0.71 | 13% | 2.32 0.0 |
| 17 | 7.84 | 9.64 | 41.13 | 99.83 | 100. | 0.00 | 0. | min. | 0.1 | 0.71 | 14% | 2.32 0.0 |
| 18 | 8.33 | 10.13 | 41.13 | 100.48 | 100. | 0.00 | 0. | min. | 0.1 | 0.71 | 14% | 2.32 0.0 |
| 19 | 8.82 | 10.62 | 41.13 | 100.39 | 100. | 0.00 | 0. | min. | 0.1 | 0.71 | 14% | 2.32 0.0 |
| 20 | 9.31 | 11.11 | 41.13 | 104.95 | 105. | 0.00 | 0. | min. | 0.1 | 0.71 | 15% | 2.32 0.0 |
| 21 | 9.80 | 11.60 | 41.13 | 104.79 | 105. | 0.00 | 0. | min. | 0.1 | 0.71 | 15% | 2.32 0.0 |
| 22 | 10.29 | 12.09 | 41.13 | 94.12 | 94. | 0.00 | 0. | min. | 0.1 | 0.71 | 13% | 2.32 0.0 |
| 23 | 10.78 | 12.58 | 41.13 | 99.51 | 100. | 0.00 | 0. | min. | 0.1 | 0.71 | 14% | 2.32 0.0 |
| 24 | 11.27 | 13.07 | 41.13 | 100.45 | 100. | 0.00 | 0. | min. | 0.1 | 0.71 | 14% | 2.32 0.0 |
| 25 | 11.76 | 13.56 | 41.13 | 88.84 | 89. | 0.00 | 0. | min. | 0.1 | 0.71 | 13% | 2.32 0.0 |
| 26 | 12.25 | 14.05 | 41.13 | 87.54 | 88. | 0.00 | 0. | min. | 0.1 | 0.71 | 12% | 2.32 0.0 |
| 27 | 12.74 | 14.54 | 41.13 | 80.84 | 81. | 0.00 | 0. | min. | 0.1 | 0.71 | 11% | 2.32 0.0 |
| 28 | 13.23 | 15.03 | 41.13 | 75.27 | 75. | 0.00 | 0. | min. | 0.1 | 0.71 | 11% | 2.32 0.0 |
| 29 | 13.72 | 15.52 | 41.13 | 70.22 | 70. | 0.00 | 0. | min. | 0.1 | 0.71 | 10% | 2.32 0.0 |
| 30 | 14.21 | 16.01 | 41.13 | 65.44 | 65. | 0.00 | 0. | min. | 0.1 | 0.71 | 9% | 2.32 0.0 |
| 31 | 14.70 | 16.50 | 41.13 | 59.37 | 59. | 0.00 | 0. | min. | 0.1 | 0.71 | 8% | 2.32 0.0 |
| 32 | 15.19 | 16.99 | 41.13 | 51.22 | 51. | 0.00 | 0. | min. | 0.1 | 0.71 | 7% | 2.32 0.0 |
| 33 | 15.68 | 17.48 | 41.13 | 50.42 | 50. | 0.00 | 0. | min. | 0.1 | 0.71 | 7% | 2.32 0.0 |
| 34 | 16.17 | 17.97 | 41.13 | 50.69 | 51. | 0.00 | 0. | min. | 0.1 | 0.71 | 7% | 2.32 0.0 |
| 35 | 16.66 | 18.46 | 41.13 | 44.43 | 44. | 0.00 | 0. | min. | 0.1 | 0.71 | 6% | 2.32 0.0 |
| 36 | 17.15 | 18.95 | 41.13 | 35.08 | 35. | 0.00 | 0. | min. | 0.1 | 0.71 | 5% | 2.32 0.0 |
| 37 | 17.64 | 19.44 | 41.13 | 36.02 | 36. | 0.00 | 0. | min. | 0.1 | 0.71 | 5% | 2.32 0.0 |
| 38 | 18.13 | 19.93 | 41.13 | 37.65 | 38. | 0.00 | 0. | min. | 0.1 | 0.71 | 5% | 2.32 0.0 |
| 39 | 18.62 | 20.42 | 41.13 | 30.50 | 30. | 0.00 | 0. | min. | 0.1 | 0.71 | 4% | 2.32 0.0 |
| 40 | 19.11 | 20.91 | 41.13 | 25.95 | 26. | 0.00 | 0. | min. | 0.1 | 0.71 | 4% | 2.32 0.0 |
| 41 | 19.60 | 21.40 | 41.13 | 24.69 | 25. | 0.00 | 0. | min. | 0.1 | 0.71 | 4% | 2.32 0.0 |
| 42 | 20.09 | 21.89 | 41.13 | 22.49 | 22. | 0.00 | 0. | min. | 0.1 | 0.71 | 3% | 2.32 0.0 |
| 43 | 20.58 | 22.38 | 41.13 | 19.15 | 19. | 0.00 | 0. | min. | 0.1 | 0.71 | 3% | 2.32 0.0 |
| 44 | 21.07 | 22.87 | 41.13 | 16.69 | 17. | 0.00 | 0. | min. | 0.1 | 0.71 | 2% | 2.32 0.0 |
| 45 | 21.56 | 23.36 | 41.13 | 19.96 | 20. | 0.00 | 0. | min. | 0.1 | 0.71 | 3% | 2.32 0.0 |
| 46 | 22.05 | 23.84 | 41.13 | 23.63 | 24. | 0.00 | 0. | min. | 0.1 | 0.71 | 3% | 2.32 0.0 |
| 47 | 22.53 | 24.33 | 41.13 | 20.08 | 20. | 0.00 | 0. | min. | 0.1 | 0.71 | 3% | 2.32 0.0 |
| 48 | 23.02 | 24.82 | 41.13 | 17.37 | 17. | 0.00 | 0. | min. | 0.1 | 0.71 | 2% | 2.32 0.0 |
| 49 | 23.51 | 25.31 | 41.13 | 17.27 | 17. | 0.00 | 0. | min. | 0.1 | 0.71 | 2% | 2.32 0.0 |
| 50 | 24.00 | 25.80 | 41.13 | 25.00 | 25. | 0.00 | 0. | min. | 0.1 | 0.71 | 4% | 2.32 0.0 |
| 51 | 24.49 | 26.29 | 41.13 | 21.27 | 21. | 0.00 | 0. | min. | 0.1 | 0.71 | 3% | 2.32 0.0 |
| 52 | 24.98 | 26.78 | 41.13 | 13.68 | 14. | 0.00 | 0. | min. | 0.1 | 0.71 | 2% | 2.32 0.0 |
| 53 | 25.47 | 27.27 | 41.13 | 21.70 | 22. | 0.00 | 0. | min. | 0.1 | 0.71 | 3% | 2.32 0.0 |
| 54 | 25.96 | 27.76 | 41.13 | 26.08 | 26. | 0.00 | 0. | min. | 0.1 | 0.71 | 4% | 2.32 0.0 |
| 55 | 26.45 | 28.25 | 41.13 | 22.84 | 23. | 0.00 | 0. | min. | 0.1 | 0.71 | 3% | 2.32 0.0 |
| 56 | 26.94 | 28.74 | 41.13 | 18.43 | 18. | 0.00 | 0. | min. | 0.1 | 0.71 | 3% | 2.32 0.0 |
| 57 | 27.43 | 29.23 | 41.13 | 26.37 | 26. | 0.00 | 0. | min. | 0.1 | 0.71 | 4% | 2.32 0.0 |
| 58 | 27.92 | 29.72 | 41.13 | 20.69 | 21. | 0.00 | 0. | min. | 0.1 | 0.71 | 3% | 2.32 0.0 |
| 59 | 28.41 | 30.21 | 41.13 | 23.77 | 24. | 0.00 | 0. | min. | 0.1 | 0.71 | 3% | 2.32 0.0 |
| 60 | 28.90 | 30.70 | 41.13 | 24.70 | 25. | 0.00 | 0. | min. | 0.1 | 0.71 | 4% | 2.32 0.0 |
| 61 | 29.39 | 31.19 | 41.13 | 14.45 | 14. | 0.00 | 0. | min. | 0.1 | 0.71 | 2% | 2.32 0.0 |
| 62 | 29.88 | 31.68 | 41.13 | 17.77 | 18. | 0.00 | 0. | min. | 0.1 | 0.71 | 3% | 2.32 0.0 |
| 63 | 30.37 | 32.17 | 41.13 | 18.41 | 18. | 0.00 | 0. | min. | 0.1 | 0.71 | 3% | 2.32 0.0 |
| 64 | 30.86 | 32.66 | 41.13 | 18.82 | 19. | 0.00 | 0. | min. | 0.1 | 0.71 | 3% | 2.32 0.0 |
| 65 | 31.35 | 33.15 | 41.13 | 16.75 | 17. | 0.00 | 0. | min. | 0.1 | 0.71 | 2% | 2.32 0.0 |
| 66 | 31.84 | 33.64 | 41.13 | 17.84 | 18. | 0.00 | 0. | min. | 0.1 | 0.71 | 3% | 2.32 0.0 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | Tm (kNm) | Bewehrung (cm ² /m) | | | | | | |
|----------------|----------|----------|----------|-----------|-------------|--------------------------------|---------|----------|------|-----|------|-----|
| | | | | | | Bereich | Vrd(MN) | as | | | | |
| 67 | 32.33 | 34.13 | 41.13 | 4.27 | 4. | 0.00 | 0. | min. 0.1 | 0.71 | 1% | 2.32 | 0.0 |
| 68 | 32.82 | 34.62 | 41.13 | 18.54 | 19. | 0.00 | 0. | min. 0.1 | 0.71 | 3% | 2.32 | 0.0 |
| 69 | 33.31 | 35.11 | 41.13 | 14.34 | 14. | 0.00 | 0. | min. 0.1 | 0.71 | 2% | 2.32 | 0.0 |
| 70 | 33.80 | 35.60 | 41.13 | -4.91 | -5. | 0.00 | 0. | min. 0.1 | 0.71 | 1% | 2.32 | 0.0 |
| 71 | 34.29 | 36.09 | 41.13 | -1.76 | -2. | 0.00 | 0. | min. 0.1 | 0.71 | 0% | 2.32 | 0.0 |
| 72 | 34.78 | 36.58 | 41.13 | -11.96 | -12. | 0.00 | 0. | min. 0.1 | 0.71 | 2% | 2.32 | 0.0 |
| 73 | 35.27 | 37.07 | 41.13 | -12.53 | -13. | 0.00 | 0. | min. 0.1 | 0.71 | 2% | 2.32 | 0.0 |
| 74 | 35.76 | 37.56 | 41.13 | -17.42 | -17. | 0.00 | 0. | min. 0.1 | 0.71 | 2% | 2.32 | 0.0 |
| 75 | 36.25 | 38.05 | 41.13 | -21.56 | -22. | 0.00 | 0. | min. 0.1 | 0.71 | 3% | 2.32 | 0.0 |
| 76 | 36.74 | 38.54 | 41.13 | -45.37 | -45. | 0.00 | 0. | min. 0.1 | 0.71 | 6% | 2.32 | 0.0 |
| 77 | 37.23 | 39.03 | 41.13 | -23.14 | -23. | 0.00 | 0. | min. 0.1 | 0.71 | 3% | 2.32 | 0.0 |
| 78 | 37.72 | 39.52 | 41.13 | -24.37 | -24. | 0.00 | 0. | min. 0.1 | 0.71 | 3% | 2.32 | 0.0 |
| 79 | 38.21 | 40.01 | 41.13 | -52.88 | -53. | 0.00 | 0. | min. 0.1 | 0.71 | 7% | 2.32 | 0.0 |
| 80 | 38.70 | 40.50 | 41.13 | -36.51 | -37. | 0.00 | 0. | min. 0.1 | 0.71 | 5% | 2.32 | 0.0 |
| 81 | 39.19 | 40.99 | 41.13 | -39.61 | -40. | 0.00 | 0. | min. 0.1 | 0.71 | 6% | 2.32 | 0.0 |
| 82 | 39.68 | 41.48 | 41.13 | -36.33 | -36. | 0.00 | 0. | min. 0.1 | 0.71 | 5% | 2.32 | 0.0 |
| 83 | 40.17 | 41.97 | 41.13 | -35.27 | -35. | 0.00 | 0. | min. 0.1 | 0.71 | 5% | 2.32 | 0.0 |
| 84 | 40.66 | 42.46 | 41.13 | -27.51 | -28. | 0.00 | 0. | min. 0.1 | 0.71 | 4% | 2.32 | 0.0 |
| 85 | 41.15 | 42.95 | 41.13 | -48.55 | -49. | 0.00 | 0. | min. 0.1 | 0.71 | 7% | 2.32 | 0.0 |
| 86 | 41.64 | 43.44 | 41.13 | -22.54 | -23. | 0.00 | 0. | min. 0.1 | 0.71 | 3% | 2.32 | 0.0 |
| 87 | 42.13 | 43.93 | 41.13 | -26.91 | -27. | 0.00 | 0. | min. 0.1 | 0.71 | 4% | 2.32 | 0.0 |
| 88 | 42.62 | 44.42 | 41.13 | -65.12 | -65. | 0.00 | 0. | min. 0.1 | 0.71 | 9% | 2.32 | 0.0 |
| 89 | 43.11 | 44.91 | 41.13 | -56.35 | -56. | 0.00 | 0. | min. 0.1 | 0.71 | 8% | 2.32 | 0.0 |
| 90 | 43.60 | 45.40 | 41.13 | -93.31 | -93. | 0.00 | 0. | min. 0.1 | 0.71 | 13% | 2.32 | 0.0 |
| 91 | 44.09 | 45.89 | 41.13 | -118.16 | -118. | 0.00 | 0. | min. 0.1 | 0.71 | 17% | 2.32 | 0.0 |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm ²] | As Feld [cm ²] |
|--------|------------------------------|-----------------|------------------|--------------------------|-------------------------------|
| UZ-Anf | 18.43 | 2.23 | 136.63 | 3.14 | 6.99 |
| UZ-End | 18.43 | 2.23 | 177.24 | 4.08 | 6.99 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|---------|
| 0 | 0.00 | 1.80 | 41.13 | 376.59 | 400.00 |
| 1 | 0.24 | 2.04 | 41.13 | 376.28 | 375.03 |
| 2 | 0.73 | 2.53 | 41.13 | 272.23 | 246.30 |
| 3 | 1.22 | 3.02 | 41.13 | -193.89 | -157.73 |
| 4 | 1.71 | 3.51 | 41.13 | -126.82 | -140.07 |
| 5 | 2.20 | 4.00 | 41.13 | -164.09 | -155.52 |
| 6 | 2.69 | 4.49 | 41.13 | -100.46 | -104.97 |
| 7 | 3.18 | 4.98 | 41.13 | -90.03 | -89.28 |
| 8 | 3.67 | 5.47 | 41.13 | -79.03 | -78.88 |
| 9 | 4.16 | 5.96 | 41.13 | -64.04 | -64.37 |
| 10 | 4.65 | 6.45 | 41.13 | -54.41 | -54.37 |
| 11 | 5.14 | 6.94 | 41.13 | -43.94 | -43.57 |
| 12 | 5.63 | 7.43 | 41.13 | -32.96 | -35.02 |
| 13 | 6.12 | 7.92 | 41.13 | -47.82 | -44.42 |
| 14 | 6.61 | 8.41 | 41.13 | -13.99 | -16.07 |
| 15 | 7.10 | 8.90 | 41.13 | -9.53 | -10.22 |
| 16 | 7.59 | 9.39 | 41.13 | -18.36 | -16.55 |
| 17 | 8.08 | 9.88 | 41.13 | -0.18 | -1.33 |
| 18 | 8.57 | 10.37 | 41.13 | 0.82 | 0.19 |
| 19 | 9.06 | 10.86 | 41.13 | -10.25 | -9.31 |
| 20 | 9.55 | 11.35 | 41.13 | -1.34 | 0.33 |
| 21 | 10.04 | 11.84 | 41.13 | 26.46 | 21.78 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|--------|
| 22 | 10.53 | 12.33 | 41.13 | -14.51 | -11.02 |
| 23 | 11.02 | 12.82 | 41.13 | -3.08 | -1.90 |
| 24 | 11.51 | 13.31 | 41.13 | 27.78 | 23.70 |
| 25 | 12.00 | 13.80 | 41.13 | -0.86 | 2.64 |
| 26 | 12.49 | 14.29 | 41.13 | 15.55 | 13.69 |
| 27 | 12.98 | 14.78 | 41.13 | 10.78 | 11.36 |
| 28 | 13.47 | 15.27 | 41.13 | 10.46 | 10.32 |
| 29 | 13.96 | 15.76 | 41.13 | 9.63 | 9.75 |
| 30 | 14.45 | 16.25 | 41.13 | 11.93 | 12.39 |
| 31 | 14.94 | 16.74 | 41.13 | 18.20 | 16.63 |
| 32 | 15.43 | 17.23 | 41.13 | 0.64 | 1.65 |
| 33 | 15.92 | 17.72 | 41.13 | -1.30 | -0.55 |
| 34 | 16.41 | 18.21 | 41.13 | 12.90 | 12.78 |
| 35 | 16.90 | 18.70 | 41.13 | 21.12 | 19.09 |
| 36 | 17.39 | 19.19 | 41.13 | -3.33 | -1.92 |
| 37 | 17.88 | 19.68 | 41.13 | -4.64 | -3.32 |
| 38 | 18.37 | 20.17 | 41.13 | 16.44 | 14.60 |
| 39 | 18.86 | 20.66 | 41.13 | 9.03 | 9.28 |
| 40 | 19.35 | 21.15 | 41.13 | 2.07 | 2.57 |
| 41 | 19.84 | 21.64 | 41.13 | 4.58 | 4.49 |
| 42 | 20.33 | 22.13 | 41.13 | 6.86 | 6.81 |
| 43 | 20.82 | 22.62 | 41.13 | 5.77 | 5.02 |
| 44 | 21.31 | 23.11 | 41.13 | -7.22 | -6.66 |
| 45 | 21.80 | 23.60 | 41.13 | -8.70 | -7.50 |
| 46 | 22.29 | 24.09 | 41.13 | 8.72 | 7.25 |
| 47 | 22.78 | 24.58 | 41.13 | 4.99 | 5.52 |
| 48 | 23.27 | 25.07 | 41.13 | 1.79 | 0.21 |
| 49 | 23.76 | 25.56 | 41.13 | -18.87 | -15.78 |
| 50 | 24.25 | 26.05 | 41.13 | 8.58 | 7.60 |
| 51 | 24.74 | 26.54 | 41.13 | 18.58 | 15.51 |
| 52 | 25.23 | 27.03 | 41.13 | -19.68 | -16.38 |
| 53 | 25.72 | 27.52 | 41.13 | -8.62 | -8.94 |
| 54 | 26.21 | 28.01 | 41.13 | 6.59 | 6.61 |
| 55 | 26.70 | 28.50 | 41.13 | 12.05 | 9.01 |
| 56 | 27.19 | 28.99 | 41.13 | -21.46 | -16.21 |
| 57 | 27.68 | 29.48 | 41.13 | 16.29 | 11.59 |
| 58 | 28.17 | 29.97 | 41.13 | -8.40 | -6.27 |
| 59 | 28.66 | 30.46 | 41.13 | -3.65 | -1.90 |
| 60 | 29.15 | 30.95 | 41.13 | 25.41 | 20.92 |
| 61 | 29.64 | 31.44 | 41.13 | -10.35 | -6.78 |
| 62 | 30.13 | 31.93 | 41.13 | 0.21 | -1.31 |
| 63 | 30.62 | 32.42 | 41.13 | -2.09 | -0.85 |
| 64 | 31.11 | 32.91 | 41.13 | 6.51 | 4.22 |
| 65 | 31.60 | 33.40 | 41.13 | -7.26 | -2.22 |
| 66 | 32.09 | 33.89 | 41.13 | 36.48 | 27.71 |
| 67 | 32.58 | 34.38 | 41.13 | -37.47 | -29.14 |
| 68 | 33.07 | 34.87 | 41.13 | 9.48 | 8.58 |
| 69 | 33.56 | 35.36 | 41.13 | 45.76 | 39.30 |
| 70 | 34.05 | 35.85 | 41.13 | -14.08 | -6.44 |
| 71 | 34.54 | 36.34 | 41.13 | 26.69 | 20.82 |
| 72 | 35.03 | 36.83 | 41.13 | -2.91 | 1.17 |
| 73 | 35.52 | 37.32 | 41.13 | 13.32 | 9.98 |
| 74 | 36.01 | 37.81 | 41.13 | 1.75 | 8.45 |
| 75 | 36.50 | 38.30 | 41.13 | 61.64 | 48.60 |
| 76 | 36.99 | 38.79 | 41.13 | -57.32 | -45.36 |
| 77 | 37.48 | 39.28 | 41.13 | 1.82 | 2.50 |
| 78 | 37.97 | 39.77 | 41.13 | 70.90 | 58.20 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|--------|
| 79 | 38.46 | 40.26 | 41.13 | -46.73 | -33.42 |
| 80 | 38.95 | 40.75 | 41.13 | 14.00 | 6.34 |
| 81 | 39.44 | 41.24 | 41.13 | -10.85 | -6.69 |
| 82 | 39.93 | 41.73 | 41.13 | 2.40 | -2.16 |
| 83 | 40.42 | 42.22 | 41.13 | -25.38 | -15.85 |
| 84 | 40.91 | 42.71 | 41.13 | 58.40 | 42.96 |
| 85 | 41.40 | 43.20 | 41.13 | -66.62 | -53.10 |
| 86 | 41.89 | 43.69 | 41.13 | 8.04 | 8.91 |
| 87 | 42.38 | 44.18 | 41.13 | 93.26 | 78.00 |
| 88 | 42.87 | 44.67 | 41.13 | -36.82 | -17.91 |
| 89 | 43.36 | 45.16 | 41.13 | 88.52 | 75.45 |
| 90 | 43.85 | 45.65 | 41.13 | 46.88 | 50.73 |
| 91 | 44.09 | 45.89 | 41.13 | 0.97 | 20.31 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|------|
| 1 | 0.00 | 44.09 | 0.49 | 0.54 |
| total | 0.00 | 44.09 | 0.49 | 0.54 |

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 1 | 0.00 | 35.82 | 20.25 | 400.00 | 9.20 |
| 2 | 0.49 | 35.82 | 20.57 | 350.06 | 8.05 |
| 3 | 0.98 | 35.82 | 20.90 | 29.32 | 0.67 |
| 4 | 1.47 | 35.82 | 21.22 | 183.35 | 4.22 |
| 5 | 1.96 | 35.82 | 21.54 | 140.74 | 3.24 |
| 6 | 2.45 | 5.35 | 37.94 | 136.34 | 3.14 |
| 7 | 2.94 | 5.84 | 37.94 | 91.49 | 2.10 |
| 8 | 3.43 | 6.32 | 37.94 | 85.44 | 1.97 |
| 9 | 3.92 | 6.81 | 37.94 | 71.35 | 1.64 |
| 10 | 4.41 | 7.29 | 37.94 | 58.93 | 1.36 |
| 11 | 4.90 | 7.78 | 37.94 | 49.58 | 1.14 |
| 12 | 5.39 | 8.26 | 37.94 | 36.75 | 0.85 |
| 13 | 5.88 | 8.75 | 37.94 | 41.72 | 0.96 |
| 14 | 6.37 | 9.23 | 37.94 | 32.22 | 0.74 |
| 15 | 6.86 | 9.71 | 37.94 | 8.99 | 0.21 |
| 16 | 7.35 | 10.20 | 37.94 | 15.06 | 0.35 |
| 17 | 7.84 | 10.68 | 37.94 | 9.93 | 0.23 |
| 18 | 8.33 | 11.17 | 37.94 | 2.11 | 0.05 |
| 19 | 8.82 | 11.65 | 37.94 | 5.01 | 0.12 |
| 20 | 9.31 | 12.14 | 37.94 | 8.40 | 0.19 |
| 21 | 9.80 | 12.62 | 37.94 | 15.57 | 0.36 |
| 22 | 10.29 | 13.11 | 37.94 | 7.16 | 0.16 |
| 23 | 10.78 | 13.59 | 37.94 | 13.47 | 0.31 |
| 24 | 11.27 | 14.08 | 37.94 | 15.26 | 0.35 |
| 25 | 11.76 | 14.56 | 37.94 | 14.06 | 0.32 |
| 26 | 12.25 | 15.05 | 37.94 | 5.71 | 0.13 |
| 27 | 12.74 | 15.53 | 37.94 | 14.44 | 0.33 |
| 28 | 13.23 | 16.01 | 37.94 | 10.19 | 0.23 |
| 29 | 13.72 | 16.50 | 37.94 | 10.07 | 0.23 |
| 30 | 14.21 | 16.98 | 37.94 | 10.20 | 0.23 |
| 31 | 14.70 | 17.47 | 37.94 | 16.17 | 0.37 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 32 | 15.19 | 17.95 | 37.94 | 9.98 | 0.23 |
| 33 | 15.68 | 18.44 | 37.94 | 2.08 | 0.05 |
| 34 | 16.17 | 18.92 | 37.94 | 5.17 | 0.12 |
| 35 | 16.66 | 19.41 | 37.94 | 19.15 | 0.44 |
| 36 | 17.15 | 19.89 | 37.94 | 9.52 | 0.22 |
| 37 | 17.64 | 20.38 | 37.94 | 6.70 | 0.15 |
| 38 | 18.13 | 20.86 | 37.94 | 6.43 | 0.15 |
| 39 | 18.62 | 21.35 | 37.94 | 14.33 | 0.33 |
| 40 | 19.11 | 21.83 | 37.94 | 4.81 | 0.11 |
| 41 | 19.60 | 22.32 | 37.94 | 2.91 | 0.07 |
| 42 | 20.09 | 22.80 | 37.94 | 5.85 | 0.13 |
| 43 | 20.58 | 23.28 | 37.94 | 7.11 | 0.16 |
| 44 | 21.07 | 23.77 | 37.94 | 0.54 | 0.01 |
| 45 | 21.56 | 24.25 | 37.94 | 9.73 | 0.22 |
| 46 | 22.05 | 24.74 | 37.94 | 0.27 | 0.01 |
| 47 | 22.53 | 25.22 | 37.94 | 7.78 | 0.18 |
| 48 | 23.02 | 25.71 | 37.94 | 4.43 | 0.10 |
| 49 | 23.51 | 26.19 | 37.94 | 10.07 | 0.23 |
| 50 | 24.00 | 26.68 | 37.94 | 7.27 | 0.17 |
| 51 | 24.49 | 27.16 | 37.94 | 17.62 | 0.41 |
| 52 | 24.98 | 27.65 | 37.94 | 0.79 | 0.02 |
| 53 | 25.47 | 28.13 | 37.94 | 17.13 | 0.39 |
| 54 | 25.96 | 28.62 | 37.94 | 0.71 | 0.02 |
| 55 | 26.45 | 29.10 | 37.94 | 12.35 | 0.28 |
| 56 | 26.94 | 29.58 | 37.94 | 6.91 | 0.16 |
| 57 | 27.43 | 30.07 | 37.94 | 3.13 | 0.07 |
| 58 | 27.92 | 30.55 | 37.94 | 6.51 | 0.15 |
| 59 | 28.41 | 31.04 | 37.94 | 9.90 | 0.23 |
| 60 | 28.90 | 31.52 | 37.94 | 13.63 | 0.31 |
| 61 | 29.39 | 32.01 | 37.94 | 8.44 | 0.19 |
| 62 | 29.88 | 32.49 | 37.94 | 7.13 | 0.16 |
| 63 | 30.37 | 32.98 | 37.94 | 0.66 | 0.02 |
| 64 | 30.86 | 33.46 | 37.94 | 3.26 | 0.07 |
| 65 | 31.35 | 33.95 | 37.94 | 3.12 | 0.07 |
| 66 | 31.84 | 34.43 | 37.94 | 18.33 | 0.42 |
| 67 | 32.33 | 34.92 | 37.94 | 0.06 | 0.00 |
| 68 | 32.82 | 35.40 | 37.94 | 21.42 | 0.49 |
| 69 | 33.31 | 35.88 | 37.94 | 34.99 | 0.80 |
| 70 | 33.80 | 36.37 | 37.94 | 14.66 | 0.34 |
| 71 | 34.29 | 36.85 | 37.94 | 4.52 | 0.10 |
| 72 | 34.78 | 37.34 | 37.94 | 13.67 | 0.31 |
| 73 | 35.27 | 37.82 | 37.94 | 4.46 | 0.10 |
| 74 | 35.76 | 38.31 | 37.94 | 4.18 | 0.10 |
| 75 | 36.25 | 38.79 | 37.94 | 38.04 | 0.88 |
| 76 | 36.74 | 39.28 | 37.94 | 3.25 | 0.07 |
| 77 | 37.23 | 39.76 | 37.94 | 40.38 | 0.93 |
| 78 | 37.72 | 40.25 | 37.94 | 48.39 | 1.11 |
| 79 | 38.21 | 40.73 | 37.94 | 11.49 | 0.26 |
| 80 | 38.70 | 41.22 | 37.94 | 22.00 | 0.51 |
| 81 | 39.19 | 41.70 | 37.94 | 5.09 | 0.12 |
| 82 | 39.68 | 42.12 | 37.94 | 3.82 | 0.09 |
| 83 | 40.17 | 42.54 | 37.94 | 16.46 | 0.38 |
| 84 | 40.66 | 42.96 | 37.94 | 22.42 | 0.52 |
| 85 | 41.15 | 43.38 | 37.94 | 2.19 | 0.05 |
| 86 | 41.64 | 43.79 | 37.94 | 43.67 | 1.00 |
| 87 | 42.13 | 44.21 | 37.94 | 64.95 | 1.49 |
| 88 | 42.62 | 44.63 | 37.94 | 24.87 | 0.57 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 89 | 43.11 | 45.05 | 37.94 | 18.88 | 0.43 |
| 90 | 43.60 | 45.47 | 37.94 | 81.15 | 1.87 |
| 91 | 44.09 | 45.89 | 37.94 | 20.31 | 0.47 |

Überzug Nr.: 3 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
 Brandschutz bei seidl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) unten | oben | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|--------|---------------------------------------|-------|--------------------|
| 1 | 0.00 | 45.89 | 41.13 | -114.54 | -115. | 0.00 | 1.10 | 238.3 |
| 2 | 0.40 | 45.89 | 40.73 | 52.60 | 53. | 6.99 | 0.00 | 238.9 |
| 3 | 0.80 | 45.89 | 40.33 | -242.38 | -242. | 0.00 | 2.26 | 237.5 |
| 4 | 1.20 | 45.89 | 39.93 | -79.80 | -80. | 0.00 | 0.73 | 238.6 |
| 5 | 1.60 | 45.89 | 39.53 | -256.37 | -256. | 0.00 | 2.39 | 237.4 |
| 6 | 1.99 | 45.89 | 39.14 | -428.89 | -429. | 0.00 | 4.05 | 236.5 |
| 7 | 2.39 | 45.89 | 38.74 | -259.18 | -259. | 0.00 | 2.39 | 237.4 |
| 8 | 2.79 | 45.89 | 38.34 | -545.54 | -546. | 0.00 | 5.06 | 236.0 |
| 9 | 3.19 | 45.89 | 37.94 | -474.35 | -474. | 0.00 | 4.38 | 236.4 |
| 10 | 3.61 | 45.89 | 37.52 | -540.78 | -541. | 0.00 | 5.06 | 236.0 |
| 11 | 4.03 | 45.89 | 37.10 | -892.30 | -892. | 0.00 | 8.43 | 234.5 |
| 12 | 4.45 | 45.89 | 36.68 | -946.02 | -946. | 0.00 | 8.82 | 234.3 |
| 13 | 4.88 | 45.89 | 36.25 | -1098.82 | -1099. | 0.00 | 10.40 | 233.6 |
| 14 | 5.30 | 45.89 | 35.83 | -1150.03 | -1150. | 0.00 | 10.79 | 233.4 |
| 15 | 5.72 | 45.89 | 35.41 | -1486.67 | -1487. | 0.00 | 14.07 | 231.8 |
| 16 | 6.14 | 45.89 | 34.99 | -1519.29 | -1519. | 0.00 | 14.45 | 231.7 |
| 17 | 6.56 | 45.89 | 34.57 | -1557.27 | -1557. | 0.00 | 14.83 | 231.5 |
| 18 | 6.98 | 45.89 | 34.15 | -1854.72 | -1855. | 0.00 | 17.62 | 230.1 |
| 19 | 7.40 | 45.89 | 33.73 | -1857.30 | -1857. | 0.00 | 17.62 | 230.1 |
| 20 | 7.83 | 45.89 | 33.30 | -1933.68 | -1934. | 0.00 | 18.54 | 229.6 |
| 21 | 8.25 | 45.89 | 32.88 | -1894.14 | -1894. | 0.00 | 17.99 | 229.9 |
| 22 | 8.67 | 45.89 | 32.46 | -2088.20 | -2088. | 0.00 | 19.98 | 228.8 |
| 23 | 9.09 | 45.89 | 32.04 | -1932.35 | -1932. | 0.00 | 18.35 | 229.7 |
| 24 | 9.53 | 45.89 | 31.60 | -1957.46 | -1957. | 0.00 | 18.72 | 229.5 |
| 25 | 9.96 | 45.89 | 31.17 | -1687.11 | -1687. | 0.00 | 15.96 | 230.9 |
| 26 | 10.40 | 45.89 | 30.73 | -1651.52 | -1652. | 0.00 | 15.77 | 231.0 |
| 27 | 10.84 | 45.89 | 30.29 | -1623.76 | -1624. | 0.00 | 15.39 | 231.2 |
| 28 | 11.27 | 45.89 | 29.86 | -1377.36 | -1377. | 0.00 | 12.92 | 232.4 |
| 29 | 11.71 | 45.89 | 29.42 | -1364.91 | -1365. | 0.00 | 12.92 | 232.4 |
| 30 | 12.15 | 45.89 | 28.98 | -1356.11 | -1356. | 0.00 | 12.73 | 232.5 |
| 31 | 12.58 | 45.89 | 28.55 | -1135.69 | -1136. | 0.00 | 10.79 | 233.4 |
| 32 | 13.02 | 45.89 | 28.11 | -1139.42 | -1139. | 0.00 | 10.79 | 233.4 |
| 33 | 13.46 | 45.89 | 27.67 | -1140.68 | -1141. | 0.00 | 10.79 | 233.4 |
| 34 | 13.89 | 45.89 | 27.24 | -937.08 | -937. | 0.00 | 8.82 | 234.3 |
| 35 | 14.33 | 45.89 | 26.80 | -971.15 | -971. | 0.00 | 9.22 | 234.1 |
| 36 | 14.56 | 45.89 | 26.57 | -876.63 | -877. | 0.00 | 8.24 | 234.6 |
| 37 | 14.79 | 45.89 | 26.34 | -810.26 | -810. | 0.00 | 7.66 | 234.8 |
| 38 | 15.01 | 45.89 | 26.12 | -707.25 | -707. | 0.00 | 6.70 | 235.3 |
| 39 | 15.24 | 45.89 | 25.89 | -625.24 | -625. | 0.00 | 5.96 | 235.6 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 328.71

untere Bewehrung : 7.81

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Position : BP
Bodenplatte-Lastfall HHW und Vollast aus Gebäude

Schubbemessung

| UZ.Pkt. | Z | X | Y | Q | | Tm | Bewehrung (cm²/m) | | | | | | |
|---------|-------|-------|-------|---------|-------|-------|-------------------|---------|-----|------|------|------|-----|
| Nr. | (m) | (m) | (m) | (kN) | | (kNm) | Bereich | Vrd(MN) | as | | | | |
| 1 | 0.00 | 45.89 | 41.13 | 826.81 | 827. | 0.00 | 0. | norm | 0.4 | 0.83 | 100% | 3.23 | 0.0 |
| 2 | 0.40 | 45.89 | 40.73 | -396.13 | -396. | 0.00 | 0. | min. | 0.3 | 0.71 | 56% | 2.32 | 0.0 |
| 3 | 0.80 | 45.89 | 40.33 | -204.11 | -204. | 0.00 | 0. | min. | 0.2 | 0.71 | 29% | 2.32 | 0.0 |
| 4 | 1.20 | 45.89 | 39.93 | 216.42 | 216. | 0.00 | 0. | min. | 0.2 | 0.71 | 31% | 2.32 | 0.0 |
| 5 | 1.60 | 45.89 | 39.53 | -766.77 | -767. | 0.00 | 0. | norm | 0.4 | 0.77 | 100% | 2.73 | 0.0 |
| 6 | 1.99 | 45.89 | 39.14 | 224.28 | 224. | 0.00 | 0. | min. | 0.2 | 0.71 | 32% | 2.32 | 0.0 |
| 7 | 2.39 | 45.89 | 38.74 | -151.54 | -152. | 0.00 | 0. | min. | 0.2 | 0.71 | 21% | 2.32 | 0.0 |
| 8 | 2.79 | 45.89 | 38.34 | -495.74 | -496. | 0.00 | 0. | min. | 0.3 | 0.71 | 70% | 2.32 | 0.0 |
| 9 | 3.19 | 45.89 | 37.94 | 515.67 | 516. | 0.00 | 0. | min. | 0.3 | 0.71 | 73% | 2.32 | 0.0 |
| 10 | 3.19 | 45.89 | 37.94 | 81.31 | 81. | 0.00 | 0. | min. | 0.1 | 0.71 | 12% | 2.32 | 0.0 |
| 11 | 3.61 | 45.89 | 37.52 | -635.51 | -636. | 0.00 | 0. | min. | 0.4 | 0.71 | 90% | 2.32 | 0.0 |
| 12 | 4.03 | 45.89 | 37.10 | -514.47 | -514. | 0.00 | 0. | min. | 0.3 | 0.71 | 73% | 2.32 | 0.0 |
| 13 | 4.45 | 45.89 | 36.68 | -191.38 | -191. | 0.00 | 0. | min. | 0.2 | 0.71 | 27% | 2.32 | 0.0 |
| 14 | 4.88 | 45.89 | 36.25 | -190.16 | -190. | 0.00 | 0. | min. | 0.2 | 0.71 | 27% | 2.32 | 0.0 |
| 15 | 5.30 | 45.89 | 35.83 | -500.23 | -500. | 0.00 | 0. | min. | 0.3 | 0.71 | 71% | 2.32 | 0.0 |
| 16 | 5.72 | 45.89 | 35.41 | -569.91 | -570. | 0.00 | 0. | min. | 0.3 | 0.70 | 81% | 2.32 | 0.0 |
| 17 | 6.14 | 45.89 | 34.99 | 151.24 | 151. | 0.00 | 0. | min. | 0.2 | 0.70 | 22% | 2.32 | 0.0 |
| 18 | 6.56 | 45.89 | 34.57 | -537.66 | -538. | 0.00 | 0. | min. | 0.3 | 0.70 | 77% | 2.32 | 0.0 |
| 19 | 6.98 | 45.89 | 34.15 | -388.44 | -388. | 0.00 | 0. | min. | 0.3 | 0.70 | 56% | 2.32 | 0.0 |
| 20 | 7.40 | 45.89 | 33.73 | -44.40 | -44. | 0.00 | 0. | min. | 0.1 | 0.70 | 6% | 2.32 | 0.0 |
| 21 | 7.83 | 45.89 | 33.30 | 3.95 | 4. | 0.00 | 0. | min. | 0.1 | 0.69 | 1% | 2.32 | 0.0 |
| 22 | 8.25 | 45.89 | 32.88 | -233.61 | -234. | 0.00 | 0. | min. | 0.2 | 0.70 | 34% | 2.32 | 0.0 |
| 23 | 8.67 | 45.89 | 32.46 | -169.45 | -169. | 0.00 | 0. | min. | 0.2 | 0.69 | 24% | 2.32 | 0.0 |
| 24 | 9.09 | 45.89 | 32.04 | 639.46 | 639. | 0.00 | 0. | min. | 0.4 | 0.70 | 92% | 2.32 | 0.0 |
| 25 | 9.09 | 45.89 | 32.04 | -273.83 | -274. | 0.00 | 0. | min. | 0.2 | 0.70 | 39% | 2.32 | 0.0 |
| 26 | 9.53 | 45.89 | 31.60 | 375.09 | 375. | 0.00 | 0. | min. | 0.3 | 0.69 | 54% | 2.32 | 0.0 |
| 27 | 9.96 | 45.89 | 31.17 | 458.29 | 458. | 0.00 | 0. | min. | 0.3 | 0.70 | 65% | 2.32 | 0.0 |
| 28 | 10.40 | 45.89 | 30.73 | -106.36 | -106. | 0.00 | 0. | min. | 0.1 | 0.70 | 15% | 2.32 | 0.0 |
| 29 | 10.84 | 45.89 | 30.29 | 402.38 | 402. | 0.00 | 0. | min. | 0.3 | 0.70 | 58% | 2.32 | 0.0 |
| 30 | 11.27 | 45.89 | 29.86 | 380.37 | 380. | 0.00 | 0. | min. | 0.3 | 0.70 | 54% | 2.32 | 0.0 |
| 31 | 11.71 | 45.89 | 29.42 | -145.46 | -145. | 0.00 | 0. | min. | 0.2 | 0.70 | 21% | 2.32 | 0.0 |
| 32 | 12.15 | 45.89 | 28.98 | 347.48 | 347. | 0.00 | 0. | min. | 0.2 | 0.70 | 49% | 2.32 | 0.0 |
| 33 | 12.58 | 45.89 | 28.55 | 330.31 | 330. | 0.00 | 0. | min. | 0.2 | 0.71 | 47% | 2.32 | 0.0 |
| 34 | 13.02 | 45.89 | 28.11 | -180.02 | -180. | 0.00 | 0. | min. | 0.2 | 0.71 | 26% | 2.32 | 0.0 |
| 35 | 13.46 | 45.89 | 27.67 | 355.49 | 355. | 0.00 | 0. | min. | 0.2 | 0.71 | 50% | 2.32 | 0.0 |
| 36 | 13.89 | 45.89 | 27.24 | 148.18 | 148. | 0.00 | 0. | min. | 0.2 | 0.71 | 21% | 2.32 | 0.0 |
| 37 | 14.33 | 45.89 | 26.80 | 216.50 | 216. | 0.00 | 0. | min. | 0.2 | 0.71 | 31% | 2.32 | 0.0 |
| 38 | 14.56 | 45.89 | 26.57 | 388.58 | 389. | 0.00 | 0. | min. | 0.3 | 0.71 | 55% | 2.32 | 0.0 |
| 39 | 14.79 | 45.89 | 26.34 | 350.66 | 351. | 0.00 | 0. | min. | 0.2 | 0.71 | 50% | 2.32 | 0.0 |
| 40 | 15.01 | 45.89 | 26.12 | 442.45 | 442. | 0.00 | 0. | min. | 0.3 | 0.71 | 63% | 2.32 | 0.0 |
| 41 | 15.24 | 45.89 | 25.89 | 319.50 | 320. | 0.00 | 0. | min. | 0.2 | 0.71 | 45% | 2.32 | 0.0 |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm²] | As Feld [cm²] |
|--------|------------------------------|-----------------|------------------|-------------|------------------|
| UZ-Anf | 21.57 | 2.54 | 1045.91 | 24.06 | 6.99 |
| UZ-End | 18.43 | 2.23 | 479.25 | 11.02 | 6.99 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|----------|
| 0 | 0.00 | 45.89 | 41.13 | 5251.92 | 4951.62 |
| 1 | 0.20 | 45.89 | 40.93 | 3269.93 | 3066.93 |
| 2 | 0.60 | 45.89 | 40.53 | -609.41 | -481.56 |
| 3 | 1.00 | 45.89 | 40.13 | -1490.06 | -1054.61 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|----------|
| 4 | 1.40 | 45.89 | 39.73 | 3311.98 | 2465.67 |
| 5 | 1.79 | 45.89 | 39.34 | -3317.36 | -2485.38 |
| 6 | 2.19 | 45.89 | 38.94 | 1329.33 | 942.49 |
| 7 | 2.59 | 45.89 | 38.54 | 1024.58 | 863.20 |
| 8 | 2.99 | 45.89 | 38.14 | -2738.72 | -2536.46 |
| 9 | 3.40 | 45.89 | 37.73 | 1822.71 | 1700.93 |
| 10 | 3.82 | 45.89 | 37.31 | -399.11 | -287.23 |
| 11 | 4.24 | 45.89 | 36.89 | -818.10 | -766.64 |
| 12 | 4.67 | 45.89 | 36.46 | 4.03 | -2.91 |
| 13 | 5.09 | 45.89 | 36.04 | 765.74 | 735.77 |
| 14 | 5.51 | 45.89 | 35.62 | 365.80 | 165.35 |
| 15 | 5.93 | 45.89 | 35.20 | -2216.44 | -1711.21 |
| 16 | 6.35 | 45.89 | 34.78 | 2149.53 | 1634.68 |
| 17 | 6.77 | 45.89 | 34.36 | -574.61 | -354.08 |
| 18 | 7.19 | 45.89 | 33.94 | -830.72 | -816.35 |
| 19 | 7.62 | 45.89 | 33.51 | -127.69 | -114.73 |
| 20 | 8.04 | 45.89 | 33.09 | 635.73 | 563.70 |
| 21 | 8.46 | 45.89 | 32.67 | -78.79 | -152.25 |
| 22 | 8.88 | 45.89 | 32.25 | -2022.50 | -1919.46 |
| 23 | 9.31 | 45.89 | 31.82 | -1533.46 | -1486.06 |
| 24 | 9.74 | 45.89 | 31.39 | -277.45 | -190.55 |
| 25 | 10.18 | 45.89 | 30.95 | 1641.08 | 1293.09 |
| 26 | 10.62 | 45.89 | 30.51 | -1484.62 | -1165.05 |
| 27 | 11.06 | 45.89 | 30.08 | 62.34 | 50.40 |
| 28 | 11.49 | 45.89 | 29.64 | 1491.44 | 1204.18 |
| 29 | 11.93 | 45.89 | 29.20 | -1418.11 | -1128.87 |
| 30 | 12.37 | 45.89 | 28.76 | 33.71 | 39.32 |
| 31 | 12.80 | 45.89 | 28.33 | 1490.09 | 1168.71 |
| 32 | 13.24 | 45.89 | 27.89 | -1625.18 | -1226.37 |
| 33 | 13.68 | 45.89 | 27.45 | 724.55 | 474.76 |
| 34 | 14.11 | 45.89 | 27.02 | -173.72 | -156.45 |
| 35 | 14.44 | 45.89 | 26.69 | -867.98 | -756.41 |
| 36 | 14.67 | 45.89 | 26.46 | 326.40 | 166.67 |
| 37 | 14.90 | 45.89 | 26.23 | -557.49 | -403.43 |
| 38 | 15.13 | 45.89 | 26.00 | 618.42 | 540.41 |
| 39 | 15.24 | 45.89 | 25.89 | 1477.06 | 1211.11 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|---------|
| 1 | 0.00 | 3.19 | 228.77 | 214.47 |
| 2 | 3.19 | 9.09 | -132.16 | -134.03 |
| 3 | 9.09 | 15.24 | -96.09 | -94.71 |
| total | 0.00 | 15.24 | -42.05 | -93.39 |

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 1 | 0.00 | 35.82 | 20.25 | 4951.62 | 113.89 |
| 2 | 0.40 | 35.82 | 20.57 | 1182.25 | 27.19 |
| 3 | 0.80 | 35.82 | 20.90 | 1552.56 | 35.71 |
| 4 | 1.20 | 35.82 | 21.22 | 1303.10 | 29.97 |
| 5 | 1.60 | 35.82 | 21.54 | 26.11 | 0.60 |
| 6 | 1.99 | 5.35 | 37.94 | 1478.23 | 34.00 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 7 | 2.39 | 5.84 | 37.94 | 1867.09 | 42.94 |
| 8 | 2.79 | 6.32 | 37.94 | 1426.52 | 32.81 |
| 9 | 3.19 | 6.81 | 37.94 | 649.39 | 14.94 |
| 10 | 3.61 | 7.29 | 37.94 | 1306.82 | 30.06 |
| 11 | 4.03 | 7.78 | 37.94 | 928.72 | 21.36 |
| 12 | 4.45 | 8.26 | 37.94 | 409.55 | 9.42 |
| 13 | 4.88 | 8.75 | 37.94 | 410.54 | 9.44 |
| 14 | 5.30 | 9.23 | 37.94 | 799.21 | 18.38 |
| 15 | 5.72 | 9.71 | 37.94 | 1230.90 | 28.31 |
| 16 | 6.14 | 10.20 | 37.94 | 23.61 | 0.54 |
| 17 | 6.56 | 10.68 | 37.94 | 1081.83 | 24.88 |
| 18 | 6.98 | 11.17 | 37.94 | 937.87 | 21.57 |
| 19 | 7.40 | 11.65 | 37.94 | 505.31 | 11.62 |
| 20 | 7.83 | 12.14 | 37.94 | 308.47 | 7.09 |
| 21 | 8.25 | 12.62 | 37.94 | 441.16 | 10.15 |
| 22 | 8.67 | 13.11 | 37.94 | 1144.41 | 26.32 |
| 23 | 9.09 | 13.59 | 37.94 | 1937.16 | 44.55 |
| 24 | 9.53 | 14.08 | 37.94 | 970.97 | 22.33 |
| 25 | 9.96 | 14.56 | 37.94 | 924.46 | 21.26 |
| 26 | 10.40 | 15.05 | 37.94 | 111.57 | 2.57 |
| 27 | 10.84 | 15.53 | 37.94 | 1020.11 | 23.46 |
| 28 | 11.27 | 16.01 | 37.94 | 1076.45 | 24.76 |
| 29 | 11.71 | 16.50 | 37.94 | 34.52 | 0.79 |
| 30 | 12.15 | 16.98 | 37.94 | 986.80 | 22.70 |
| 31 | 12.58 | 17.47 | 37.94 | 1076.80 | 24.77 |
| 32 | 13.02 | 17.95 | 37.94 | 141.76 | 3.26 |
| 33 | 13.46 | 18.44 | 37.94 | 611.27 | 14.06 |
| 34 | 13.89 | 18.92 | 37.94 | 552.48 | 12.71 |
| 35 | 14.33 | 19.41 | 37.94 | 854.29 | 19.65 |
| 36 | 14.56 | 19.89 | 37.94 | 218.24 | 5.02 |
| 37 | 14.79 | 20.38 | 37.94 | 89.79 | 2.07 |
| 38 | 15.01 | 20.86 | 37.94 | 130.29 | 3.00 |
| 39 | 15.24 | 21.35 | 37.94 | 1211.11 | 27.86 |

Überzug Nr.: 4 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei seittl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) unten | oben | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|------|---------------------------------------|------|--------------------|
| 1 | 0.00 | 45.89 | 25.89 | 319.48 | 319. | 6.99 | 0.00 | 237.1 |
| 2 | 0.41 | 46.30 | 25.89 | 248.22 | 248. | 6.99 | 0.00 | 237.4 |
| 3 | 0.82 | 46.71 | 25.89 | 172.23 | 172. | 6.99 | 0.00 | 237.9 |
| 4 | 1.23 | 47.12 | 25.89 | 88.33 | 88. | 6.99 | 0.00 | 238.6 |
| 5 | 1.64 | 47.53 | 25.89 | -6.06 | -6. | 0.00 | 0.07 | 239.6 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 0.03

untere Bewehrung : 28.10

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | Tm (kNm) | Bewehrung (cm ² /m) Bereich | Vrd(MN) | as |
|----------------|----------|----------|----------|-----------|-------------|---|---------|----------------------------|
| 1 | 0.00 | 45.89 | 25.89 | -171.63 | -172. | 0.00 | 0. | min. 0.2 0.71 24% 2.32 0.0 |

Position : BP
Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | Tm (kNm) | Bewehrung (cm ² /m) | | | | | | |
|----------------|----------|------------------------------|-----------------|------------------|--------------------------|--------------------------------|---------|----------|------|-----|------|-----|
| | | | | | | Bereich | Vrd(MN) | as | | | | |
| 2 | 0.41 | 46.30 | 25.89 | -178.14 | -178. | 0.00 | 0. | min. 0.2 | 0.71 | 25% | 2.32 | 0.0 |
| 3 | 0.82 | 46.71 | 25.89 | -193.24 | -193. | 0.00 | 0. | min. 0.2 | 0.71 | 27% | 2.32 | 0.0 |
| 4 | 1.23 | 47.12 | 25.89 | -218.87 | -219. | 0.00 | 0. | min. 0.2 | 0.71 | 31% | 2.32 | 0.0 |
| 5 | 1.64 | 47.53 | 25.89 | -235.91 | -236. | 0.00 | 0. | min. 0.2 | 0.71 | 33% | 2.32 | 0.0 |
| | | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm ²] | As Feld [cm ²] | | | | | | |
| UZ-Anf | | 18.43 | 2.23 | 257.44 | 5.92 | 6.99 | | | | | | |
| UZ-End | | 18.43 | 2.23 | 353.86 | 8.14 | 6.99 | | | | | | |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|-------|
| 0 | 0.00 | 45.89 | 25.89 | 6.98 | 7.05 |
| 1 | 0.21 | 46.10 | 25.89 | 15.03 | 15.88 |
| 2 | 0.61 | 46.50 | 25.89 | 35.84 | 36.83 |
| 3 | 1.03 | 46.92 | 25.89 | 66.11 | 62.51 |
| 4 | 1.43 | 47.32 | 25.89 | 39.80 | 41.56 |
| 5 | 1.64 | 47.53 | 25.89 | 20.74 | 26.30 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|-------|
| 1 | 0.00 | 1.64 | 37.50 | 37.40 |
| total | 0.00 | 1.64 | 37.50 | 37.40 |

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 1 | 0.00 | 35.82 | 20.25 | 7.05 | 0.16 |
| 2 | 0.41 | 35.82 | 20.57 | 24.72 | 0.57 |
| 3 | 0.82 | 35.82 | 20.90 | 52.81 | 1.21 |
| 4 | 1.23 | 35.82 | 21.22 | 56.82 | 1.31 |
| 5 | 1.64 | 35.82 | 21.54 | 26.30 | 0.60 |

Überzug Nr.: 5, bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei seidl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm²) | | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|-------|-----------------|------|--------------------|
| | | | | | | unten | oben | |
| 1 | 0.00 | 47.53 | 25.89 | -6.69 | -7. | 0.00 | 0.07 | 239.6 |
| 2 | 0.35 | 47.53 | 25.54 | -111.38 | -111. | 0.00 | 1.10 | 238.3 |
| 3 | 0.70 | 47.53 | 25.18 | -223.85 | -224. | 0.00 | 2.13 | 237.6 |
| 4 | 1.06 | 47.53 | 24.83 | -325.37 | -325. | 0.00 | 3.10 | 237.0 |
| 5 | 1.41 | 47.53 | 24.48 | -409.36 | -409. | 0.00 | 3.88 | 236.6 |
| 6 | 1.83 | 47.53 | 24.06 | -436.81 | -437. | 0.00 | 4.05 | 236.5 |
| 7 | 2.26 | 47.53 | 23.63 | -451.18 | -451. | 0.00 | 4.21 | 236.4 |
| 8 | 2.68 | 47.53 | 23.21 | -446.88 | -447. | 0.00 | 4.21 | 236.4 |
| 9 | 3.10 | 47.53 | 22.79 | -426.74 | -427. | 0.00 | 4.05 | 236.5 |
| 10 | 3.52 | 47.53 | 22.36 | -384.81 | -385. | 0.00 | 3.56 | 236.8 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) | | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|-------|------------------------------|------|--------------------|
| | | | | | | unten | oben | |
| 11 | 3.95 | 47.53 | 21.94 | -326.26 | -326. | 0.00 | 3.10 | 237.0 |
| 12 | 4.37 | 47.53 | 21.52 | -256.72 | -257. | 0.00 | 2.39 | 237.4 |
| 13 | 4.79 | 47.53 | 21.10 | -172.92 | -173. | 0.00 | 1.63 | 237.9 |
| 14 | 5.22 | 47.53 | 20.67 | -84.29 | -84. | 0.00 | 0.82 | 238.6 |
| 15 | 5.64 | 47.53 | 20.25 | -54.06 | -54. | 0.00 | 0.51 | 238.9 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 31.42

untere Bewehrung : 0.00

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | | Tm (kNm) | | Bewehrung (cm²/m) | | | | | |
|----------------|----------|----------|----------|-----------|-------|-------------|----|-------------------|-----|---------|-----|------|-----|
| | | | | | | | | Bereich | | Vrd(MN) | | as | |
| 1 | 0.00 | 47.53 | 25.89 | -289.77 | -290. | 0.00 | 0. | min. | 0.2 | 0.71 | 41% | 2.32 | 0.0 |
| 2 | 0.35 | 47.53 | 25.54 | -311.49 | -311. | 0.00 | 0. | min. | 0.2 | 0.71 | 44% | 2.32 | 0.0 |
| 3 | 0.70 | 47.53 | 25.18 | -312.51 | -313. | 0.00 | 0. | min. | 0.2 | 0.71 | 44% | 2.32 | 0.0 |
| 4 | 1.06 | 47.53 | 24.83 | -259.67 | -260. | 0.00 | 0. | min. | 0.2 | 0.71 | 37% | 2.32 | 0.0 |
| 5 | 1.41 | 47.53 | 24.48 | -227.54 | -228. | 0.00 | 0. | min. | 0.2 | 0.71 | 32% | 2.32 | 0.0 |
| 6 | 1.41 | 47.53 | 24.48 | -70.53 | -71. | 0.00 | 0. | min. | 0.1 | 0.71 | 10% | 2.32 | 0.0 |
| 7 | 1.83 | 47.53 | 24.06 | -53.66 | -54. | 0.00 | 0. | min. | 0.1 | 0.71 | 8% | 2.32 | 0.0 |
| 8 | 2.26 | 47.53 | 23.63 | -11.46 | -11. | 0.00 | 0. | min. | 0.1 | 0.71 | 2% | 2.32 | 0.0 |
| 9 | 2.68 | 47.53 | 23.21 | 28.07 | 28. | 0.00 | 0. | min. | 0.1 | 0.71 | 4% | 2.32 | 0.0 |
| 10 | 3.10 | 47.53 | 22.79 | 72.55 | 73. | 0.00 | 0. | min. | 0.1 | 0.71 | 10% | 2.32 | 0.0 |
| 11 | 3.52 | 47.53 | 22.36 | 121.96 | 122. | 0.00 | 0. | min. | 0.1 | 0.71 | 17% | 2.32 | 0.0 |
| 12 | 3.95 | 47.53 | 21.94 | 152.22 | 152. | 0.00 | 0. | min. | 0.2 | 0.71 | 22% | 2.32 | 0.0 |
| 13 | 4.37 | 47.53 | 21.52 | 177.60 | 178. | 0.00 | 0. | min. | 0.2 | 0.71 | 25% | 2.32 | 0.0 |
| 14 | 4.79 | 47.53 | 21.10 | 224.83 | 225. | 0.00 | 0. | min. | 0.2 | 0.71 | 32% | 2.32 | 0.0 |
| 15 | 5.22 | 47.53 | 20.67 | 146.00 | 146. | 0.00 | 0. | min. | 0.2 | 0.71 | 21% | 2.32 | 0.0 |
| 16 | 5.64 | 47.53 | 20.25 | 34.20 | 34. | 0.00 | 0. | min. | 0.1 | 0.71 | 5% | 2.32 | 0.0 |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm ²] | As Feld [cm ²] |
|--------|------------------------------|-----------------|------------------|--------------------------|-------------------------------|
| UZ-Anf | 18.43 | 2.23 | 434.66 | 10.00 | 0.00 |
| UZ-End | 18.43 | 2.23 | 51.30 | 1.18 | 0.00 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|---------|
| 0 | 0.00 | 47.53 | 25.89 | 67.22 | 75.96 |
| 1 | 0.18 | 47.53 | 25.71 | 62.55 | 61.61 |
| 2 | 0.53 | 47.53 | 25.36 | 12.86 | 2.89 |
| 3 | 0.88 | 47.53 | 25.01 | -167.18 | -149.87 |
| 4 | 1.23 | 47.53 | 24.66 | -84.76 | -91.16 |
| 5 | 1.62 | 47.53 | 24.27 | -35.73 | -39.88 |
| 6 | 2.04 | 47.53 | 23.85 | -105.58 | -99.77 |
| 7 | 2.47 | 47.53 | 23.42 | -90.94 | -93.45 |
| 8 | 2.89 | 47.53 | 23.00 | -104.85 | -105.14 |
| 9 | 3.31 | 47.53 | 22.58 | -120.50 | -116.82 |
| 10 | 3.74 | 47.53 | 22.15 | -71.37 | -71.54 |
| 11 | 4.16 | 47.53 | 21.73 | -48.58 | -60.00 |
| 12 | 4.58 | 47.53 | 21.31 | -141.69 | -111.64 |
| 13 | 5.01 | 47.53 | 20.88 | 207.71 | 186.36 |
| 14 | 5.43 | 47.53 | 20.46 | 263.93 | 264.30 |
| 15 | 5.64 | 47.53 | 20.25 | 249.91 | 271.38 |

Position : BP
Bodenplatte-Lastfall HHW und Vollast aus Gebäude

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|--------|
| 1 | 0.00 | 1.41 | -42.45 | -41.84 |
| 2 | 1.41 | 5.64 | -25.78 | -26.03 |
| total | 0.00 | 5.64 | -29.95 | -40.59 |

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm²/m) |
|----------------|----------|----------|----------|-------------------------|----------------------|
| 1 | 0.00 | 35.82 | 20.25 | 75.96 | 1.75 |
| 2 | 0.35 | 35.82 | 20.57 | 47.25 | 1.09 |
| 3 | 0.70 | 35.82 | 20.90 | 83.24 | 1.91 |
| 4 | 1.06 | 35.82 | 21.22 | 140.55 | 3.23 |
| 5 | 1.41 | 35.82 | 21.54 | 51.99 | 1.20 |
| 6 | 1.83 | 5.35 | 37.94 | 67.78 | 1.56 |
| 7 | 2.26 | 5.84 | 37.94 | 102.77 | 2.36 |
| 8 | 2.68 | 6.32 | 37.94 | 94.77 | 2.18 |
| 9 | 3.10 | 6.81 | 37.94 | 116.15 | 2.67 |
| 10 | 3.52 | 7.29 | 37.94 | 99.41 | 2.29 |
| 11 | 3.95 | 7.78 | 37.94 | 48.40 | 1.11 |
| 12 | 4.37 | 8.26 | 37.94 | 113.73 | 2.62 |
| 13 | 4.79 | 8.75 | 37.94 | 24.21 | 0.56 |
| 14 | 5.22 | 9.23 | 37.94 | 257.22 | 5.92 |
| 15 | 5.64 | 9.71 | 37.94 | 271.38 | 6.24 |

Überzug Nr.: 6 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei seittl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm²) | | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|-------|-----------------|------|--------------------|
| | | | | | | unten | oben | |
| 1 | 0.00 | 28.31 | 20.25 | 1564.84 | 1565. | 14.83 | 0.00 | 231.5 |
| 2 | 0.47 | 28.78 | 20.25 | 1992.66 | 1993. | 19.08 | 0.00 | 229.3 |
| 3 | 0.94 | 29.25 | 20.25 | 2404.99 | 2405. | 23.14 | 0.00 | 227.2 |
| 4 | 1.41 | 29.72 | 20.25 | 2442.25 | 2442. | 23.55 | 0.00 | 227.0 |
| 5 | 1.88 | 30.19 | 20.25 | 2416.67 | 2417. | 23.28 | 0.00 | 227.1 |
| 6 | 2.35 | 30.66 | 20.25 | 2264.23 | 2264. | 21.76 | 0.00 | 227.9 |
| 7 | 2.82 | 31.13 | 20.25 | 2261.26 | 2261. | 21.76 | 0.00 | 227.9 |
| 8 | 3.29 | 31.60 | 20.25 | 2048.57 | 2049. | 19.62 | 0.00 | 229.0 |
| 9 | 3.75 | 32.06 | 20.25 | 1889.65 | 1890. | 17.99 | 0.00 | 229.9 |
| 10 | 4.22 | 32.53 | 20.25 | 1658.90 | 1659. | 15.77 | 0.00 | 231.0 |
| 11 | 4.69 | 33.00 | 20.25 | 1633.21 | 1633. | 15.58 | 0.00 | 231.1 |
| 12 | 5.16 | 33.47 | 20.25 | 1407.81 | 1408. | 13.31 | 0.00 | 232.2 |
| 13 | 5.63 | 33.94 | 20.25 | 1257.98 | 1258. | 11.96 | 0.00 | 232.9 |
| 14 | 6.10 | 34.41 | 20.25 | 1034.47 | 1034. | 9.81 | 0.00 | 233.9 |
| 15 | 6.57 | 34.88 | 20.25 | 1036.20 | 1036. | 9.81 | 0.00 | 233.9 |
| 16 | 7.04 | 35.35 | 20.25 | 817.78 | 818. | 7.66 | 0.00 | 234.8 |
| 17 | 7.51 | 35.82 | 20.25 | 627.36 | 627. | 6.99 | 0.00 | 235.6 |
| 18 | 7.93 | 36.24 | 20.25 | 496.44 | 496. | 6.99 | 0.00 | 236.2 |
| 19 | 8.35 | 36.66 | 20.25 | 332.99 | 333. | 6.99 | 0.00 | 237.0 |
| 20 | 8.77 | 37.08 | 20.25 | 167.02 | 167. | 6.99 | 0.00 | 237.9 |
| 21 | 9.19 | 37.50 | 20.25 | -1.42 | -1. | 0.00 | 0.02 | 239.8 |
| 22 | 9.61 | 37.92 | 20.25 | -162.31 | -162. | 0.00 | 1.52 | 238.0 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) | | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|--------|------------------------------|-------|--------------------|
| | | | | | | unten | oben | |
| 23 | 10.03 | 38.34 | 20.25 | -307.94 | -308. | 0.00 | 2.96 | 237.1 |
| 24 | 10.45 | 38.76 | 20.25 | -444.74 | -445. | 0.00 | 4.21 | 236.4 |
| 25 | 10.87 | 39.18 | 20.25 | -580.52 | -581. | 0.00 | 5.42 | 235.9 |
| 26 | 11.29 | 39.60 | 20.25 | -710.11 | -710. | 0.00 | 6.70 | 235.3 |
| 27 | 11.71 | 40.02 | 20.25 | -828.67 | -829. | 0.00 | 7.85 | 234.8 |
| 28 | 12.13 | 40.44 | 20.25 | -946.17 | -946. | 0.00 | 8.82 | 234.3 |
| 29 | 12.55 | 40.86 | 20.25 | -1076.45 | -1076. | 0.00 | 10.20 | 233.7 |
| 30 | 12.97 | 41.28 | 20.25 | -1219.86 | -1220. | 0.00 | 11.57 | 233.1 |
| 31 | 13.39 | 41.70 | 20.25 | -1403.37 | -1403. | 0.00 | 13.31 | 232.2 |
| 32 | 13.81 | 42.12 | 20.25 | -1211.44 | -1211. | 0.00 | 11.38 | 233.2 |
| 33 | 14.22 | 42.53 | 20.25 | -1328.55 | -1329. | 0.00 | 12.54 | 232.6 |
| 34 | 14.64 | 42.95 | 20.25 | -1184.67 | -1185. | 0.00 | 11.18 | 233.2 |
| 35 | 15.06 | 43.37 | 20.25 | -1138.01 | -1138. | 0.00 | 10.79 | 233.4 |
| 36 | 15.47 | 43.78 | 20.25 | -999.14 | -999. | 0.00 | 9.41 | 234.1 |
| 37 | 15.89 | 44.20 | 20.25 | -1100.25 | -1100. | 0.00 | 10.40 | 233.6 |
| 38 | 16.30 | 44.61 | 20.25 | -941.68 | -942. | 0.00 | 8.82 | 234.3 |
| 39 | 16.72 | 45.03 | 20.25 | -761.45 | -761. | 0.00 | 7.08 | 235.1 |
| 40 | 17.14 | 45.45 | 20.25 | -819.00 | -819. | 0.00 | 7.66 | 234.8 |
| 41 | 17.55 | 45.86 | 20.25 | -617.01 | -617. | 0.00 | 5.78 | 235.7 |
| 42 | 17.97 | 46.28 | 20.25 | -472.58 | -473. | 0.00 | 4.38 | 236.4 |
| 43 | 18.39 | 46.70 | 20.25 | -245.12 | -245. | 0.00 | 2.26 | 237.5 |
| 44 | 18.80 | 47.11 | 20.25 | -243.39 | -243. | 0.00 | 2.26 | 237.5 |
| 45 | 19.22 | 47.53 | 20.25 | -9.91 | -10. | 0.00 | 0.10 | 239.5 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 147.52

untere Bewehrung : 377.05

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | | Tm (kNm) | Bewehrung (cm ² /m) | | | | |
|----------------|----------|----------|----------|-----------|-------|-------------|--------------------------------|----------|------|------|----------|
| | | | | | | | Bereich | Vrd(MN) | as | | |
| 1 | 0.00 | 28.31 | 20.25 | 863.50 | 863. | 0.00 | 0. | norm 0.4 | 0.86 | 100% | 3.58 0.0 |
| 2 | 0.47 | 28.78 | 20.25 | 1007.40 | 1007. | 0.00 | 0. | norm 0.4 | 1.01 | 100% | 4.83 0.0 |
| 3 | 0.94 | 29.25 | 20.25 | 476.67 | 477. | 0.00 | 0. | min. 0.3 | 0.69 | 69% | 2.32 0.0 |
| 4 | 1.41 | 29.72 | 20.25 | -40.52 | -41. | 0.00 | 0. | min. 0.1 | 0.69 | 6% | 2.32 0.0 |
| 5 | 1.88 | 30.19 | 20.25 | -239.93 | -240. | 0.00 | 0. | min. 0.2 | 0.69 | 35% | 2.32 0.0 |
| 6 | 2.35 | 30.66 | 20.25 | -137.59 | -138. | 0.00 | 0. | min. 0.2 | 0.69 | 20% | 2.32 0.0 |
| 7 | 2.82 | 31.13 | 20.25 | -202.93 | -203. | 0.00 | 0. | min. 0.2 | 0.69 | 29% | 2.32 0.0 |
| 8 | 3.29 | 31.60 | 20.25 | -429.04 | -429. | 0.00 | 0. | min. 0.3 | 0.70 | 62% | 2.32 0.0 |
| 9 | 3.75 | 32.06 | 20.25 | -456.07 | -456. | 0.00 | 0. | min. 0.3 | 0.70 | 65% | 2.32 0.0 |
| 10 | 4.22 | 32.53 | 20.25 | -237.26 | -237. | 0.00 | 0. | min. 0.2 | 0.70 | 34% | 2.32 0.0 |
| 11 | 4.69 | 33.00 | 20.25 | -233.98 | -234. | 0.00 | 0. | min. 0.2 | 0.70 | 33% | 2.32 0.0 |
| 12 | 5.16 | 33.47 | 20.25 | -431.65 | -432. | 0.00 | 0. | min. 0.3 | 0.70 | 61% | 2.32 0.0 |
| 13 | 5.63 | 33.94 | 20.25 | -437.62 | -438. | 0.00 | 0. | min. 0.3 | 0.71 | 62% | 2.32 0.0 |
| 14 | 6.10 | 34.41 | 20.25 | -204.05 | -204. | 0.00 | 0. | min. 0.2 | 0.71 | 29% | 2.32 0.0 |
| 15 | 6.57 | 34.88 | 20.25 | -163.74 | -164. | 0.00 | 0. | min. 0.2 | 0.71 | 23% | 2.32 0.0 |
| 16 | 7.04 | 35.35 | 20.25 | -525.94 | -526. | 0.00 | 0. | min. 0.3 | 0.71 | 74% | 2.32 0.0 |
| 17 | 7.51 | 35.82 | 20.25 | -345.58 | -346. | 0.00 | 0. | min. 0.2 | 0.71 | 49% | 2.32 0.0 |
| 18 | 7.51 | 35.82 | 20.25 | -291.21 | -291. | 0.00 | 0. | min. 0.2 | 0.71 | 41% | 2.32 0.0 |
| 19 | 7.93 | 36.24 | 20.25 | -352.68 | -353. | 0.00 | 0. | min. 0.2 | 0.71 | 50% | 2.32 0.0 |
| 20 | 8.35 | 36.66 | 20.25 | -400.67 | -401. | 0.00 | 0. | min. 0.3 | 0.71 | 57% | 2.32 0.0 |
| 21 | 8.77 | 37.08 | 20.25 | -397.63 | -398. | 0.00 | 0. | min. 0.3 | 0.71 | 56% | 2.32 0.0 |
| 22 | 9.19 | 37.50 | 20.25 | -397.43 | -397. | 0.00 | 0. | min. 0.3 | 0.71 | 56% | 2.32 0.0 |
| 23 | 9.61 | 37.92 | 20.25 | -364.97 | -365. | 0.00 | 0. | min. 0.3 | 0.71 | 52% | 2.32 0.0 |
| 24 | 10.03 | 38.34 | 20.25 | -332.13 | -332. | 0.00 | 0. | min. 0.2 | 0.71 | 47% | 2.32 0.0 |
| 25 | 10.45 | 38.76 | 20.25 | -323.91 | -324. | 0.00 | 0. | min. 0.2 | 0.71 | 46% | 2.32 0.0 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | Tm (kNm) | Bewehrung (cm²/m) | | | | | | as | |
|----------------|----------|----------|----------|-----------|-------------|-------------------|---------|------|-----|------|------|------|-----|
| | | | | | | Bereich | Vrd(MN) | | | | | | |
| 26 | 10.87 | 39.18 | 20.25 | -319.20 | -319. | 0.00 | 0. | min. | 0.2 | 0.71 | 45% | 2.32 | 0.0 |
| 27 | 11.29 | 39.60 | 20.25 | -294.76 | -295. | 0.00 | 0. | min. | 0.2 | 0.71 | 42% | 2.32 | 0.0 |
| 28 | 11.71 | 40.02 | 20.25 | -274.23 | -274. | 0.00 | 0. | min. | 0.2 | 0.71 | 39% | 2.32 | 0.0 |
| 29 | 12.13 | 40.44 | 20.25 | -294.45 | -294. | 0.00 | 0. | min. | 0.2 | 0.71 | 42% | 2.32 | 0.0 |
| 30 | 12.55 | 40.86 | 20.25 | -317.85 | -318. | 0.00 | 0. | min. | 0.2 | 0.71 | 45% | 2.32 | 0.0 |
| 31 | 12.97 | 41.28 | 20.25 | -389.11 | -389. | 0.00 | 0. | min. | 0.3 | 0.71 | 55% | 2.32 | 0.0 |
| 32 | 13.39 | 41.70 | 20.25 | -460.83 | -461. | 0.00 | 0. | min. | 0.3 | 0.71 | 65% | 2.32 | 0.0 |
| 33 | 13.39 | 41.70 | 20.25 | 711.37 | 711. | 0.00 | 0. | norm | 0.4 | 0.71 | 100% | 2.34 | 0.0 |
| 34 | 13.81 | 42.12 | 20.25 | -40.07 | -40. | 0.00 | 0. | min. | 0.1 | 0.71 | 6% | 2.32 | 0.0 |
| 35 | 14.22 | 42.53 | 20.25 | -12.08 | -12. | 0.00 | 0. | min. | 0.1 | 0.70 | 2% | 2.32 | 0.0 |
| 36 | 14.64 | 42.95 | 20.25 | 281.28 | 281. | 0.00 | 0. | min. | 0.2 | 0.71 | 40% | 2.32 | 0.0 |
| 37 | 15.06 | 43.37 | 20.25 | 259.63 | 260. | 0.00 | 0. | min. | 0.2 | 0.71 | 37% | 2.32 | 0.0 |
| 38 | 15.47 | 43.78 | 20.25 | 16.75 | 17. | 0.00 | 0. | min. | 0.1 | 0.71 | 2% | 2.32 | 0.0 |
| 39 | 15.89 | 44.20 | 20.25 | -54.57 | -55. | 0.00 | 0. | min. | 0.1 | 0.71 | 8% | 2.32 | 0.0 |
| 40 | 16.30 | 44.61 | 20.25 | 615.48 | 615. | 0.00 | 0. | min. | 0.4 | 0.71 | 87% | 2.32 | 0.0 |
| 41 | 16.72 | 45.03 | 20.25 | 33.33 | 33. | 0.00 | 0. | min. | 0.1 | 0.71 | 5% | 2.32 | 0.0 |
| 42 | 17.14 | 45.45 | 20.25 | 134.98 | 135. | 0.00 | 0. | min. | 0.2 | 0.71 | 19% | 2.32 | 0.0 |
| 43 | 17.55 | 45.86 | 20.25 | 467.35 | 467. | 0.00 | 0. | min. | 0.3 | 0.71 | 66% | 2.32 | 0.0 |
| 44 | 17.97 | 46.28 | 20.25 | 491.29 | 491. | 0.00 | 0. | min. | 0.3 | 0.71 | 69% | 2.32 | 0.0 |
| 45 | 18.39 | 46.70 | 20.25 | 246.59 | 247. | 0.00 | 0. | min. | 0.2 | 0.71 | 35% | 2.32 | 0.0 |
| 46 | 18.80 | 47.11 | 20.25 | 173.40 | 173. | 0.00 | 0. | min. | 0.2 | 0.71 | 25% | 2.32 | 0.0 |
| 47 | 19.22 | 47.53 | 20.25 | 754.34 | 754. | 0.00 | 0. | norm | 0.4 | 0.75 | 100% | 2.63 | 0.0 |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm²] | As Feld [cm²] |
|--------|------------------------------|-----------------|------------------|-------------|------------------|
| UZ-Anf | 22.62 | 2.62 | 1036.20 | 23.83 | 23.55 |
| UZ-End | 19.46 | 2.33 | 1067.39 | 24.55 | 6.99 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|----------|
| 0 | 0.00 | 28.31 | 20.25 | -1389.93 | -1166.70 |
| 1 | 0.23 | 28.54 | 20.25 | -401.05 | -306.58 |
| 2 | 0.70 | 29.01 | 20.25 | 1243.68 | 1130.72 |
| 3 | 1.17 | 29.48 | 20.25 | 1111.04 | 1101.87 |
| 4 | 1.64 | 29.95 | 20.25 | 437.24 | 424.84 |
| 5 | 2.11 | 30.42 | 20.25 | -285.38 | -218.03 |
| 6 | 2.58 | 30.89 | 20.25 | 146.16 | 139.21 |
| 7 | 3.05 | 31.36 | 20.25 | 524.91 | 481.71 |
| 8 | 3.52 | 31.83 | 20.25 | 69.50 | 67.59 |
| 9 | 3.99 | 32.30 | 20.25 | -532.10 | -466.18 |
| 10 | 4.46 | 32.77 | 20.25 | -0.92 | -6.98 |
| 11 | 4.93 | 33.24 | 20.25 | 470.63 | 421.14 |
| 12 | 5.40 | 33.71 | 20.25 | 17.86 | 12.72 |
| 13 | 5.87 | 34.18 | 20.25 | -542.19 | -497.63 |
| 14 | 6.34 | 34.65 | 20.25 | -143.29 | -85.87 |
| 15 | 6.81 | 35.12 | 20.25 | 934.44 | 771.66 |
| 16 | 7.28 | 35.59 | 20.25 | -474.62 | -384.27 |
| 17 | 7.72 | 36.03 | 20.25 | 146.19 | 146.35 |
| 18 | 8.14 | 36.45 | 20.25 | 123.08 | 114.27 |
| 19 | 8.56 | 36.87 | 20.25 | -19.96 | -7.23 |
| 20 | 8.98 | 37.29 | 20.25 | 9.55 | -0.49 |
| 21 | 9.40 | 37.71 | 20.25 | -83.82 | -77.28 |
| 22 | 9.82 | 38.13 | 20.25 | -81.04 | -78.20 |
| 23 | 10.24 | 38.55 | 20.25 | -16.53 | -19.56 |
| 24 | 10.66 | 38.97 | 20.25 | -7.92 | -11.23 |

Position : BP
Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|----------|
| 25 | 11.08 | 39.39 | 20.25 | -60.65 | -58.17 |
| 26 | 11.50 | 39.81 | 20.25 | -56.36 | -48.88 |
| 27 | 11.92 | 40.23 | 20.25 | 58.58 | 48.14 |
| 28 | 12.34 | 40.65 | 20.25 | 43.81 | 55.70 |
| 29 | 12.76 | 41.07 | 20.25 | 180.23 | 169.68 |
| 30 | 13.18 | 41.49 | 20.25 | 168.70 | 170.76 |
| 31 | 13.60 | 41.91 | 20.25 | 1915.38 | 1804.50 |
| 32 | 14.01 | 42.32 | 20.25 | -153.72 | -67.23 |
| 33 | 14.43 | 42.74 | 20.25 | -778.02 | -704.46 |
| 34 | 14.85 | 43.16 | 20.25 | 84.30 | 52.00 |
| 35 | 15.26 | 43.57 | 20.25 | 583.93 | 583.24 |
| 36 | 15.68 | 43.99 | 20.25 | 371.99 | 171.27 |
| 37 | 16.10 | 44.41 | 20.25 | -2070.55 | -1609.04 |
| 38 | 16.51 | 44.82 | 20.25 | 1846.45 | 1397.95 |
| 39 | 16.93 | 45.24 | 20.25 | -414.33 | -244.11 |
| 40 | 17.35 | 45.66 | 20.25 | -837.75 | -798.13 |
| 41 | 17.76 | 46.07 | 20.25 | -52.47 | -57.49 |
| 42 | 18.18 | 46.49 | 20.25 | 631.04 | 587.60 |
| 43 | 18.60 | 46.91 | 20.25 | 261.26 | 175.77 |
| 44 | 19.01 | 47.32 | 20.25 | -1490.70 | -1395.06 |
| 45 | 19.22 | 47.53 | 20.25 | -2478.21 | -2270.28 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|--------|
| 1 | 0.00 | 7.51 | 150.66 | 153.56 |
| 2 | 7.51 | 13.39 | 39.27 | 39.03 |
| 3 | 13.39 | 19.22 | -40.53 | -45.20 |
| total | 0.00 | 19.22 | 58.59 | 69.12 |

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm²/m) |
|----------------|----------|----------|----------|-------------------------|----------------------|
| 1 | 0.00 | 35.82 | 20.25 | 1156.70 | 26.60 |
| 2 | 0.47 | 35.82 | 20.57 | 543.54 | 12.50 |
| 3 | 0.94 | 35.82 | 20.90 | 1271.70 | 29.25 |
| 4 | 1.41 | 35.82 | 21.22 | 803.17 | 18.47 |
| 5 | 1.88 | 35.82 | 21.54 | 19.00 | 0.44 |
| 6 | 2.35 | 5.35 | 37.94 | 129.46 | 2.98 |
| 7 | 2.82 | 5.84 | 37.94 | 385.55 | 8.87 |
| 8 | 3.29 | 6.32 | 37.94 | 352.35 | 8.10 |
| 9 | 3.75 | 6.81 | 37.94 | 285.32 | 6.56 |
| 10 | 4.22 | 7.29 | 37.94 | 326.42 | 7.51 |
| 11 | 4.69 | 7.78 | 37.94 | 290.53 | 6.68 |
| 12 | 5.16 | 8.26 | 37.94 | 298.36 | 6.86 |
| 13 | 5.63 | 8.75 | 37.94 | 299.70 | 6.89 |
| 14 | 6.10 | 9.23 | 37.94 | 451.79 | 10.39 |
| 15 | 6.57 | 9.71 | 37.94 | 527.32 | 12.13 |
| 16 | 7.04 | 10.20 | 37.94 | 203.93 | 4.69 |
| 17 | 7.51 | 10.68 | 37.94 | 218.42 | 5.02 |
| 18 | 7.93 | 11.17 | 37.94 | 222.51 | 5.12 |
| 19 | 8.35 | 11.65 | 37.94 | 26.41 | 0.61 |
| 20 | 8.77 | 12.14 | 37.94 | 2.21 | 0.05 |
| 21 | 9.19 | 12.62 | 37.94 | 35.16 | 0.81 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 22 | 9.61 | 13.11 | 37.94 | 91.41 | 2.10 |
| 23 | 10.03 | 13.59 | 37.94 | 48.69 | 1.12 |
| 24 | 10.45 | 14.08 | 37.94 | 5.93 | 0.14 |
| 25 | 10.87 | 14.56 | 37.94 | 33.16 | 0.76 |
| 26 | 11.29 | 15.05 | 37.94 | 69.54 | 1.60 |
| 27 | 11.71 | 15.53 | 37.94 | 8.14 | 0.19 |
| 28 | 12.13 | 16.01 | 37.94 | 34.56 | 0.79 |
| 29 | 12.55 | 16.50 | 37.94 | 167.28 | 3.85 |
| 30 | 12.97 | 16.98 | 37.94 | 28.32 | 0.65 |
| 31 | 13.39 | 17.47 | 37.94 | 1157.32 | 26.62 |
| 32 | 13.81 | 17.95 | 37.94 | 1113.25 | 25.60 |
| 33 | 14.22 | 18.44 | 37.94 | 681.65 | 15.68 |
| 34 | 14.64 | 18.92 | 37.94 | 373.19 | 8.58 |
| 35 | 15.06 | 19.41 | 37.94 | 363.10 | 8.35 |
| 36 | 15.47 | 19.89 | 37.94 | 680.46 | 15.65 |
| 37 | 15.89 | 20.38 | 37.94 | 1110.36 | 25.54 |
| 38 | 16.30 | 20.86 | 37.94 | 124.95 | 2.87 |
| 39 | 16.72 | 21.35 | 37.94 | 994.16 | 22.87 |
| 40 | 17.14 | 21.83 | 37.94 | 835.33 | 19.21 |
| 41 | 17.55 | 22.32 | 37.94 | 481.73 | 11.08 |
| 42 | 17.97 | 22.80 | 37.94 | 345.27 | 7.94 |
| 43 | 18.39 | 23.28 | 37.94 | 546.93 | 12.58 |
| 44 | 18.80 | 23.77 | 37.94 | 519.85 | 11.96 |
| 45 | 19.22 | 24.25 | 37.94 | 2270.28 | 52.22 |

Überzug Nr.: 7 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei sertl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) unten | oben | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|-------|---------------------------------------|------|--------------------|
| 1 | 0.00 | 28.31 | 20.25 | 270.63 | 271. | 6.99 | 0.00 | 237.3 |
| 2 | 0.35 | 28.31 | 19.90 | 1029.10 | 1029. | 9.61 | 0.00 | 234.0 |
| 3 | 0.70 | 28.31 | 19.55 | 1712.72 | 1713. | 16.33 | 0.00 | 230.7 |
| 4 | 1.18 | 28.31 | 19.07 | 1986.58 | 1987. | 18.90 | 0.00 | 229.4 |
| 5 | 1.66 | 28.31 | 18.59 | 2303.67 | 2304. | 22.11 | 0.00 | 227.7 |
| 6 | 2.14 | 28.31 | 18.11 | 2463.08 | 2463. | 23.79 | 0.00 | 226.9 |
| 7 | 2.61 | 28.31 | 17.64 | 2569.31 | 2569. | 24.92 | 0.00 | 226.3 |
| 8 | 3.09 | 28.31 | 17.16 | 2702.65 | 2703. | 26.39 | 0.00 | 225.5 |
| 9 | 3.57 | 28.31 | 16.68 | 2686.03 | 2686. | 26.22 | 0.00 | 225.6 |
| 10 | 4.05 | 28.31 | 16.20 | 2724.01 | 2724. | 26.62 | 0.00 | 225.4 |
| 11 | 4.53 | 28.31 | 15.72 | 2654.56 | 2655. | 25.86 | 0.00 | 225.8 |
| 12 | 5.01 | 28.31 | 15.24 | 2558.01 | 2558. | 24.82 | 0.00 | 226.3 |
| 13 | 5.49 | 28.31 | 14.76 | 2484.52 | 2485. | 24.00 | 0.00 | 226.8 |
| 14 | 5.97 | 28.31 | 14.28 | 2329.54 | 2330. | 22.34 | 0.00 | 227.6 |
| 15 | 6.44 | 28.31 | 13.81 | 2155.76 | 2156. | 20.70 | 0.00 | 228.5 |
| 16 | 6.92 | 28.31 | 13.33 | 2004.95 | 2005. | 19.08 | 0.00 | 229.3 |
| 17 | 7.40 | 28.31 | 12.85 | 1798.57 | 1799. | 17.07 | 0.00 | 230.3 |
| 18 | 7.88 | 28.31 | 12.37 | 1588.13 | 1588. | 15.02 | 0.00 | 231.4 |
| 19 | 8.36 | 28.31 | 11.89 | 1405.23 | 1405. | 13.31 | 0.00 | 232.2 |
| 20 | 8.84 | 28.31 | 11.41 | 1185.71 | 1186. | 11.18 | 0.00 | 233.2 |
| 21 | 9.32 | 28.31 | 10.93 | 1009.51 | 1010. | 9.41 | 0.00 | 234.1 |
| 22 | 9.79 | 28.31 | 10.46 | 816.76 | 817. | 7.66 | 0.00 | 234.8 |
| 23 | 10.27 | 28.31 | 9.98 | 652.99 | 653. | 6.99 | 0.00 | 235.5 |
| 24 | 10.75 | 28.31 | 9.50 | 505.13 | 505. | 6.99 | 0.00 | 236.2 |
| 25 | 11.23 | 28.31 | 9.02 | 384.64 | 385. | 6.99 | 0.00 | 236.8 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|---------|
| 15 | 6.68 | 28.31 | 13.57 | 89.22 | 82.44 |
| 16 | 7.16 | 28.31 | 13.09 | 254.12 | 211.46 |
| 17 | 7.64 | 28.31 | 12.61 | -202.97 | -147.53 |
| 18 | 8.12 | 28.31 | 12.13 | 105.82 | 71.15 |
| 19 | 8.60 | 28.31 | 11.65 | -24.40 | -18.12 |
| 20 | 9.08 | 28.31 | 11.17 | -101.15 | -86.35 |
| 21 | 9.55 | 28.31 | 10.70 | 36.62 | 13.02 |
| 22 | 10.03 | 28.31 | 10.22 | -147.88 | -128.51 |
| 23 | 10.51 | 28.31 | 9.74 | -78.82 | -86.93 |
| 24 | 10.99 | 28.31 | 9.26 | -92.27 | -90.47 |
| 25 | 11.23 | 28.31 | 9.02 | -116.73 | -103.69 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|--------|
| 1 | 0.00 | 0.70 | 407.63 | 409.19 |
| 2 | 0.70 | 11.23 | 77.36 | 77.75 |
| total | 0.00 | 11.23 | 97.94 | 123.82 |

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 1 | 0.00 | 35.82 | 20.25 | 378.12 | 8.70 |
| 2 | 0.35 | 35.82 | 20.57 | 538.42 | 12.38 |
| 3 | 0.70 | 35.82 | 20.90 | 134.32 | 3.09 |
| 4 | 1.18 | 35.82 | 21.22 | 162.49 | 3.74 |
| 5 | 1.66 | 35.82 | 21.54 | 654.74 | 15.06 |
| 6 | 2.14 | 5.35 | 37.94 | 200.36 | 4.61 |
| 7 | 2.61 | 5.84 | 37.94 | 25.30 | 0.58 |
| 8 | 3.09 | 6.32 | 37.94 | 424.25 | 9.76 |
| 9 | 3.57 | 6.81 | 37.94 | 1.23 | 0.03 |
| 10 | 4.05 | 7.29 | 37.94 | 295.29 | 6.79 |
| 11 | 4.53 | 7.78 | 37.94 | 196.36 | 4.52 |
| 12 | 5.01 | 8.26 | 37.94 | 103.59 | 2.38 |
| 13 | 5.49 | 8.75 | 37.94 | 330.07 | 7.59 |
| 14 | 5.97 | 9.23 | 37.94 | 93.90 | 2.16 |
| 15 | 6.44 | 9.71 | 37.94 | 85.03 | 1.96 |
| 16 | 6.92 | 10.20 | 37.94 | 221.11 | 5.09 |
| 17 | 7.40 | 10.68 | 37.94 | 12.80 | 0.29 |
| 18 | 7.88 | 11.17 | 37.94 | 69.34 | 1.59 |
| 19 | 8.36 | 11.65 | 37.94 | 69.10 | 1.59 |
| 20 | 8.84 | 12.14 | 37.94 | 83.85 | 1.93 |
| 21 | 9.32 | 12.62 | 37.94 | 23.51 | 0.54 |
| 22 | 9.79 | 13.11 | 37.94 | 51.26 | 1.18 |
| 23 | 10.27 | 13.59 | 37.94 | 125.14 | 2.88 |
| 24 | 10.75 | 14.08 | 37.94 | 77.26 | 1.78 |
| 25 | 11.23 | 14.56 | 37.94 | 103.69 | 2.38 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

Überzug Nr.: 8 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei sertl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm²) | | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|------|-----------------|------|--------------------|
| | | | | | | unten | oben | |
| 1 | 0.00 | 28.31 | 9.02 | 372.80 | 373. | 6.99 | 0.00 | 236.8 |
| 2 | 0.19 | 28.30 | 8.83 | 326.58 | 327. | 6.99 | 0.00 | 237.0 |
| 3 | 0.38 | 28.29 | 8.65 | 277.59 | 278. | 6.99 | 0.00 | 237.3 |
| 4 | 0.56 | 28.28 | 8.46 | 227.40 | 227. | 6.99 | 0.00 | 237.6 |
| 5 | 0.75 | 28.27 | 8.27 | 179.30 | 179. | 6.99 | 0.00 | 237.8 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 0.00

untere Bewehrung : 14.71

Achtung: obere Mindestbewehrung gem. DIN von 6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | Tm (kNm) | Bewehrung (cm²/m) | | | | |
|----------------|----------|----------|----------|-----------|-------------|-------------------|---------|----------|------|-----|
| | | | | | | Bereich | Vrd(MN) | as | | |
| 1 | 0.00 | 28.31 | 9.02 | -242.81 | -243. | 0.00 | 0. | min. 0.2 | 0.71 | 34% |
| 2 | 0.19 | 28.30 | 8.83 | -252.76 | -253. | 0.00 | 0. | min. 0.2 | 0.71 | 36% |
| 3 | 0.38 | 28.29 | 8.65 | -267.37 | -267. | 0.00 | 0. | min. 0.2 | 0.71 | 38% |
| 4 | 0.56 | 28.28 | 8.46 | -262.50 | -263. | 0.00 | 0. | min. 0.2 | 0.71 | 37% |
| 5 | 0.75 | 28.27 | 8.27 | -252.97 | -253. | 0.00 | 0. | min. 0.2 | 0.71 | 36% |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm²] | As Feld [cm²] |
|--------|------------------------------|-----------------|------------------|-------------|------------------|
| UZ-Anf | 18.43 | 2.23 | 364.22 | 8.38 | 6.99 |
| UZ-End | 18.43 | 2.23 | 379.45 | 8.73 | 0.00 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|--------|
| 0 | 0.00 | 28.31 | 9.02 | 11.27 | 25.73 |
| 1 | 0.09 | 28.31 | 8.93 | 49.58 | 52.99 |
| 2 | 0.28 | 28.30 | 8.74 | 88.66 | 77.84 |
| 3 | 0.47 | 28.28 | 8.55 | -33.66 | -25.94 |
| 4 | 0.66 | 28.28 | 8.36 | -50.50 | -50.80 |
| 5 | 0.75 | 28.27 | 8.27 | -44.33 | -52.12 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|-------|
| 1 | 0.00 | 0.75 | 11.51 | 12.43 |
| total | 0.00 | 0.75 | 11.51 | 12.43 |

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm²/m) |
|----------------|----------|----------|----------|-------------------------|----------------------|
| 1 | 0.00 | 35.82 | 20.25 | 25.73 | 0.59 |
| 2 | 0.19 | 35.82 | 20.57 | 80.25 | 1.85 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 3 | 0.38 | 35.82 | 20.90 | 29.67 | 0.68 |
| 4 | 0.56 | 35.82 | 21.22 | 49.48 | 1.14 |
| 5 | 0.75 | 35.82 | 21.54 | 52.12 | 1.20 |

Überzug Nr.: 9 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei seiti. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) unten | oben | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|------|---------------------------------------|------|--------------------|
| 1 | 0.00 | 28.27 | 8.27 | 183.23 | 183. | 6.99 | 0.00 | 237.8 |
| 2 | 0.37 | 28.21 | 7.90 | 100.29 | 100. | 6.99 | 0.00 | 238.4 |
| 3 | 0.75 | 28.15 | 7.53 | 23.68 | 24. | 6.99 | 0.00 | 239.2 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 0.00

untere Bewehrung : 14.68

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | | Tm (kNm) | | Bewehrung (cm ² /m) | | | | |
|----------------|----------|----------|----------|-----------|-------|-------------|----|--------------------------------|---------|-----|------|-----|
| | | | | | | | | Bereich | Vrd(MN) | as | | |
| 1 | 0.00 | 28.27 | 8.27 | -225.49 | -225. | 0.00 | 0. | min. 0.2 | 0.71 | 32% | 2.32 | 0.0 |
| 2 | 0.37 | 28.21 | 7.90 | -212.83 | -213. | 0.00 | 0. | min. 0.2 | 0.71 | 30% | 2.32 | 0.0 |
| 3 | 0.75 | 28.15 | 7.53 | -200.16 | -200. | 0.00 | 0. | min. 0.2 | 0.71 | 28% | 2.32 | 0.0 |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm ²] | As Feld [cm ²] |
|--------|------------------------------|-----------------|------------------|--------------------------|-------------------------------|
| UZ-Anf | 18.43 | 2.23 | 338.24 | 7.78 | 6.99 |
| UZ-End | 18.43 | 2.23 | 300.24 | 6.91 | 6.99 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|--------|
| 0 | 0.00 | 28.27 | 8.27 | -33.79 | -33.78 |
| 1 | 0.19 | 28.24 | 8.09 | -33.79 | -33.78 |
| 2 | 0.56 | 28.18 | 7.72 | -33.79 | -33.79 |
| 3 | 0.75 | 28.15 | 7.53 | -33.79 | -33.80 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|--------|
| 1 | 0.00 | 0.75 | -33.79 | -33.79 |
| total | 0.00 | 0.75 | -33.79 | -33.79 |

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 1 | 0.00 | 35.82 | 20.25 | 33.78 | 0.78 |
| 2 | 0.37 | 35.82 | 20.57 | 33.79 | 0.78 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 3 | 0.75 | 35.82 | 20.90 | 33.80 | 0.78 |

Überzug Nr.: 10 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT

Brandschutz bei seitr. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) unten | oben | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|-------|---------------------------------------|------|--------------------|
| 1 | 0.00 | 28.15 | 7.53 | 35.21 | 35. | 6.99 | 0.00 | 239.0 |
| 2 | 0.37 | 28.06 | 7.17 | -37.12 | -37. | 0.00 | 0.38 | 239.0 |
| 3 | 0.74 | 27.96 | 6.81 | -126.05 | -126. | 0.00 | 1.20 | 238.2 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 0.73

untere Bewehrung : 3.64

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | | Tm (kNm) | | Bewehrung (cm ² /m) | | | | |
|----------------|----------|----------|----------|-----------|-------|-------------|----|--------------------------------|---------|-----|------|-----|
| | | | | | | | | Bereich | Vrd(MN) | as | | |
| 1 | 0.00 | 28.15 | 7.53 | -183.11 | -183. | 0.00 | 0. | min. 0.2 | 0.71 | 26% | 2.32 | 0.0 |
| 2 | 0.37 | 28.06 | 7.17 | -216.56 | -217. | 0.00 | 0. | min. 0.2 | 0.71 | 31% | 2.32 | 0.0 |
| 3 | 0.74 | 27.96 | 6.81 | -250.01 | -250. | 0.00 | 0. | min. 0.2 | 0.71 | 35% | 2.32 | 0.0 |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm ²] | As Feld [cm ²] |
|--------|------------------------------|-----------------|------------------|--------------------------|-------------------------------|
| UZ-Anf | 18.43 | 2.23 | 274.66 | 6.32 | 6.99 |
| UZ-End | 18.43 | 2.23 | 375.02 | 8.63 | 0.00 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|-------|
| 0 | 0.00 | 28.15 | 7.53 | 89.84 | 89.85 |
| 1 | 0.19 | 28.10 | 7.35 | 89.84 | 89.85 |
| 2 | 0.56 | 28.01 | 6.99 | 89.84 | 89.84 |
| 3 | 0.74 | 27.96 | 6.81 | 89.84 | 89.84 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|-------|
| 1 | 0.00 | 0.74 | 89.84 | 89.85 |
| total | 0.00 | 0.74 | 89.84 | 89.85 |

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 1 | 0.00 | 35.82 | 20.25 | 89.85 | 2.07 |
| 2 | 0.37 | 35.82 | 20.57 | 89.84 | 2.07 |
| 3 | 0.74 | 35.82 | 20.90 | 89.84 | 2.07 |

Position : BP
Bodenplatte-Lastfall HHW und Vollast aus Gebäude

Überzug Nr.: 11 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei seittl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) | | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|-------|------------------------------|------|--------------------|
| | | | | | | unten | oben | |
| 1 | 0.00 | 27.96 | 6.81 | -110.29 | -110. | 0.00 | 1.10 | 238.3 |
| 2 | 0.19 | 27.89 | 6.64 | -171.55 | -172. | 0.00 | 1.63 | 237.9 |
| 3 | 0.38 | 27.83 | 6.46 | -237.96 | -238. | 0.00 | 2.26 | 237.5 |
| 4 | 0.56 | 27.76 | 6.28 | -311.63 | -312. | 0.00 | 2.96 | 237.1 |
| 5 | 0.75 | 27.69 | 6.11 | -402.26 | -402. | 0.00 | 3.72 | 236.7 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 3.47

untere Bewehrung : 0.00

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | Tm (kNm) | Bewehrung (cm ² /m) | | | | | |
|----------------|----------|----------|----------|-----------|-------------|--------------------------------|---------|----------|------|-----|----------|
| | | | | | | Bereich | Vrd(MN) | as | | | |
| 1 | 0.00 | 27.96 | 6.81 | -320.42 | -320. | 0.00 | 0. | min. 0.2 | 0.71 | 45% | 2.32 0.0 |
| 2 | 0.19 | 27.89 | 6.64 | -339.00 | -339. | 0.00 | 0. | min. 0.2 | 0.71 | 48% | 2.32 0.0 |
| 3 | 0.38 | 27.83 | 6.46 | -365.55 | -366. | 0.00 | 0. | min. 0.3 | 0.71 | 52% | 2.32 0.0 |
| 4 | 0.56 | 27.76 | 6.28 | -439.29 | -439. | 0.00 | 0. | min. 0.3 | 0.71 | 62% | 2.32 0.0 |
| 5 | 0.75 | 27.69 | 6.11 | -505.07 | -505. | 0.00 | 0. | min. 0.3 | 0.71 | 71% | 2.32 0.0 |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm ²] | As Feld [cm ²] |
|--------|------------------------------|-----------------|------------------|--------------------------|-------------------------------|
| UZ-Anf | 18.43 | 2.23 | 480.63 | 11.05 | 0.00 |
| UZ-End | 18.38 | 2.22 | 760.13 | 17.48 | 0.00 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|--------|
| 0 | 0.00 | 27.96 | 6.81 | 127.41 | 106.15 |
| 1 | 0.09 | 27.93 | 6.72 | 100.93 | 99.09 |
| 2 | 0.28 | 27.86 | 6.55 | 121.71 | 141.52 |
| 3 | 0.47 | 27.79 | 6.37 | 418.26 | 393.14 |
| 4 | 0.66 | 27.72 | 6.20 | 343.57 | 350.71 |
| 5 | 0.75 | 27.69 | 6.11 | 262.20 | 294.86 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|--------|
| 1 | 0.00 | 0.75 | 242.68 | 240.91 |
| total | 0.00 | 0.75 | 242.68 | 240.91 |

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 1 | 0.00 | 35.82 | 20.25 | 106.15 | 2.44 |
| 2 | 0.19 | 35.82 | 20.57 | 92.04 | 2.12 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 3 | 0.38 | 35.82 | 20.90 | 273.69 | 6.29 |
| 4 | 0.56 | 35.82 | 21.22 | 406.56 | 9.35 |
| 5 | 0.75 | 35.82 | 21.54 | 294.86 | 6.78 |

Überzug Nr.: 12 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei seidl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) unten | oben | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|-------|---------------------------------------|------|--------------------|
| 1 | 0.00 | 27.69 | 6.11 | -380.06 | -380. | 0.00 | 3.56 | 236.8 |
| 2 | 0.37 | 27.52 | 5.78 | -569.29 | -569. | 0.00 | 5.42 | 235.9 |
| 3 | 0.74 | 27.35 | 5.45 | -759.59 | -760. | 0.00 | 7.08 | 235.1 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 7.98

untere Bewehrung : 0.00

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | | Tm (kNm) | Bewehrung (cm ² /m) | | | | |
|----------------|----------|----------|----------|-----------|-------|-------------|--------------------------------|----------|------|-----|----------|
| | | | | | | | Bereich | Vrd(MN) | as | | |
| 1 | 0.00 | 27.69 | 6.11 | -509.05 | -509. | 0.00 | 0. | min. 0.3 | 0.71 | 72% | 2.32 0.0 |
| 2 | 0.37 | 27.52 | 5.78 | -511.21 | -511. | 0.00 | 0. | min. 0.3 | 0.71 | 72% | 2.32 0.0 |
| 3 | 0.74 | 27.35 | 5.45 | -513.37 | -513. | 0.00 | 0. | min. 0.3 | 0.71 | 73% | 2.32 0.0 |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm ²] | As Feld [cm ²] |
|--------|------------------------------|-----------------|------------------|--------------------------|-------------------------------|
| UZ-Anf | 18.38 | 2.22 | 766.13 | 17.62 | 0.00 |
| UZ-End | 18.38 | 2.22 | 772.61 | 17.77 | 0.00 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|------|
| 0 | 0.00 | 27.69 | 6.11 | 5.81 | 5.81 |
| 1 | 0.19 | 27.60 | 5.94 | 5.81 | 5.81 |
| 2 | 0.56 | 27.44 | 5.61 | 5.81 | 5.80 |
| 3 | 0.74 | 27.35 | 5.45 | 5.81 | 5.80 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|------|
| 1 | 0.00 | 0.74 | 5.81 | 5.81 |
| total | 0.00 | 0.74 | 5.81 | 5.81 |

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 1 | 0.00 | 35.82 | 20.25 | 5.81 | 0.13 |
| 2 | 0.37 | 35.82 | 20.57 | 5.81 | 0.13 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 3 | 0.74 | 35.82 | 20.90 | 5.80 | 0.13 |

Überzug Nr.: 13 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei seiti. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) unten | oben | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|--------|---------------------------------------|-------|--------------------|
| 1 | 0.00 | 27.35 | 5.45 | -727.22 | -727. | 0.00 | 6.89 | 235.2 |
| 2 | 0.19 | 27.25 | 5.29 | -822.73 | -823. | 0.00 | 7.66 | 234.8 |
| 3 | 0.38 | 27.15 | 5.14 | -906.52 | -907. | 0.00 | 8.43 | 234.5 |
| 4 | 0.56 | 27.04 | 4.98 | -977.02 | -977. | 0.00 | 9.22 | 234.1 |
| 5 | 0.75 | 26.94 | 4.82 | -1056.12 | -1056. | 0.00 | 10.00 | 233.8 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 12.69

untere Bewehrung : 0.00

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | | Tm (kNm) | | Bewehrung (cm ² /m) | | | | |
|----------------|----------|----------|----------|-----------|-------|-------------|----|--------------------------------|---------|-----|------|-----|
| | | | | | | | | Bereich | Vrd(MN) | as | | |
| 1 | 0.00 | 27.35 | 5.45 | -519.12 | -519. | 0.00 | 0. | min. 0.3 | 0.71 | 73% | 2.32 | 0.0 |
| 2 | 0.19 | 27.25 | 5.29 | -486.60 | -487. | 0.00 | 0. | min. 0.3 | 0.71 | 69% | 2.32 | 0.0 |
| 3 | 0.38 | 27.15 | 5.14 | -396.99 | -397. | 0.00 | 0. | min. 0.3 | 0.71 | 56% | 2.32 | 0.0 |
| 4 | 0.56 | 27.04 | 4.98 | -388.52 | -389. | 0.00 | 0. | min. 0.3 | 0.71 | 55% | 2.32 | 0.0 |
| 5 | 0.75 | 26.94 | 4.82 | -437.14 | -437. | 0.00 | 0. | min. 0.3 | 0.71 | 62% | 2.32 | 0.0 |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm ²] | As Feld [cm ²] |
|--------|------------------------------|-----------------|------------------|--------------------------|-------------------------------|
| UZ-Anf | 18.38 | 2.22 | 781.27 | 17.97 | 0.00 |
| UZ-End | 18.38 | 2.22 | 657.90 | 15.13 | 0.00 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|---------|
| 0 | 0.00 | 27.35 | 5.45 | 142.71 | 55.63 |
| 1 | 0.09 | 27.30 | 5.37 | -146.33 | -173.03 |
| 2 | 0.28 | 27.20 | 5.21 | -534.38 | -476.85 |
| 3 | 0.47 | 27.09 | 5.06 | -25.52 | -45.09 |
| 4 | 0.66 | 26.99 | 4.90 | 270.01 | 258.73 |
| 5 | 0.75 | 26.94 | 4.82 | 374.02 | 379.45 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|--------|
| 1 | 0.00 | 0.75 | -84.49 | -89.23 |
| total | 0.00 | 0.75 | -84.49 | -89.23 |

Position : BP
Bodenplatte-Lastfall HHW und Vollast aus Gebäude

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm²/m) |
|----------------|----------|----------|----------|-------------------------|----------------------|
| 1 | 0.00 | 35.82 | 20.25 | 55.63 | 1.28 |
| 2 | 0.19 | 35.82 | 20.57 | 401.69 | 9.24 |
| 3 | 0.38 | 35.82 | 20.90 | 306.54 | 7.05 |
| 4 | 0.56 | 35.82 | 21.22 | 138.00 | 3.17 |
| 5 | 0.75 | 35.82 | 21.54 | 379.45 | 8.73 |

Überzug Nr.: 14 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei seittl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm²) unten | oben | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|--------|--------------------------|-------|--------------------|
| 1 | 0.00 | 26.94 | 4.82 | -1045.09 | -1045. | 0.00 | 9.81 | 233.9 |
| 2 | 0.37 | 26.70 | 4.53 | -1192.98 | -1193. | 0.00 | 11.18 | 233.2 |
| 3 | 0.75 | 26.47 | 4.24 | -1330.44 | -1330. | 0.00 | 12.54 | 232.6 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 16.69

untere Bewehrung : 0.00

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | | Tm (kNm) | | Bewehrung (cm²/m) | | | | |
|----------------|----------|----------|----------|-----------|-------|-------------|----|-------------------|---------|-----|------|-----|
| | | | | | | | | Bereich | Vrd(MN) | as | | |
| 1 | 0.00 | 26.94 | 4.82 | -403.22 | -403. | 0.00 | 0. | min. 0.3 | 0.71 | 57% | 2.32 | 0.0 |
| 2 | 0.37 | 26.70 | 4.53 | -382.23 | -382. | 0.00 | 0. | min. 0.3 | 0.71 | 54% | 2.32 | 0.0 |
| 3 | 0.75 | 26.47 | 4.24 | -361.25 | -361. | 0.00 | 0. | min. 0.3 | 0.70 | 51% | 2.32 | 0.0 |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm²] | As Feld [cm²] |
|--------|------------------------------|-----------------|------------------|-------------|------------------|
| UZ-Anf | 18.43 | 2.23 | 604.82 | 13.91 | 0.00 |
| UZ-End | 18.43 | 2.22 | 541.87 | 12.46 | 0.00 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|--------|
| 0 | 0.00 | 26.94 | 4.82 | -56.22 | -56.21 |
| 1 | 0.19 | 26.82 | 4.68 | -56.22 | -56.22 |
| 2 | 0.56 | 26.59 | 4.38 | -56.22 | -56.22 |
| 3 | 0.75 | 26.47 | 4.24 | -56.22 | -56.23 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|--------|
| 1 | 0.00 | 0.75 | -56.22 | -56.22 |
| total | 0.00 | 0.75 | -56.22 | -56.22 |

Position : BP
Bodenplatte-Lastfall HHW und Vollast aus Gebäude

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 1 | 0.00 | 35.82 | 20.25 | 56.21 | 1.29 |
| 2 | 0.37 | 35.82 | 20.57 | 56.22 | 1.29 |
| 3 | 0.75 | 35.82 | 20.90 | 56.23 | 1.29 |

Überzug Nr.: 15 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei seidl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) unten oben | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|--------|--|--------------------|
| 1 | 0.00 | 26.47 | 4.24 | -1303.73 | -1304. | 0.00 12.35 | 232.7 |
| 2 | 0.37 | 26.20 | 3.97 | -1419.11 | -1419. | 0.00 13.50 | 232.1 |
| 3 | 0.75 | 25.94 | 3.71 | -1527.77 | -1528. | 0.00 14.45 | 231.7 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 20.16

untere Bewehrung : 0.00

Achtung: obere Mindestbewehrung gem. DIN von 6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | Tm (kNm) | Bewehrung (cm ² /m) | | | | | | |
|----------------|----------|----------|----------|-----------|-------------|--------------------------------|---------------|-----|------|-----|--|--|
| | | | | | | Bereich | Vrd(MN) | as | | | | |
| 1 | 0.00 | 26.47 | 4.24 | -312.33 | -312. | 0.00 0. | min. 0.2 0.70 | 44% | 2.32 | 0.0 | | |
| 2 | 0.37 | 26.20 | 3.97 | -298.90 | -299. | 0.00 0. | min. 0.2 0.70 | 43% | 2.32 | 0.0 | | |
| 3 | 0.75 | 25.94 | 3.71 | -285.48 | -285. | 0.00 0. | min. 0.2 0.70 | 41% | 2.32 | 0.0 | | |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm ²] | As Feld [cm ²] |
|--------|------------------------------|-----------------|------------------|--------------------------|-------------------------------|
| UZ-Anf | 18.43 | 2.23 | 468.50 | 10.78 | 0.00 |
| UZ-End | 18.43 | 2.22 | 428.21 | 9.85 | 0.00 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|--------|
| 0 | 0.00 | 26.47 | 4.24 | -35.83 | -35.82 |
| 1 | 0.19 | 26.34 | 4.11 | -35.83 | -35.83 |
| 2 | 0.56 | 26.07 | 3.84 | -35.83 | -35.84 |
| 3 | 0.75 | 25.94 | 3.71 | -35.83 | -35.84 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|--------|
| 1 | 0.00 | 0.75 | -35.83 | -35.83 |
| total | 0.00 | 0.75 | -35.83 | -35.83 |

Position : BP
Bodenplatte-Lastfall HHW und Vollast aus Gebäude

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 1 | 0.00 | 35.82 | 20.25 | 35.82 | 0.82 |
| 2 | 0.37 | 35.82 | 20.57 | 35.83 | 0.82 |
| 3 | 0.75 | 35.82 | 20.90 | 35.84 | 0.82 |

Überzug Nr.: 16 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei seidl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) unten oben | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|--------|--|--------------------|
| 1 | 0.00 | 25.94 | 3.71 | -1511.34 | -1511. | 0.00 14.26 | 231.8 |
| 2 | 0.37 | 25.65 | 3.47 | -1591.27 | -1591. | 0.00 15.02 | 231.4 |
| 3 | 0.75 | 25.36 | 3.24 | -1664.09 | -1664. | 0.00 15.77 | 231.0 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 22.42

untere Bewehrung : 0.00

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | | Tm (kNm) | | Bewehrung (cm ² /m) | | | | |
|----------------|----------|----------|----------|-----------|-------|-------------|----|--------------------------------|---------|-----|------|-----|
| | | | | | | | | Bereich | Vrd(MN) | as | | |
| 1 | 0.00 | 25.94 | 3.71 | -218.91 | -219. | 0.00 | 0. | min. 0.2 | 0.70 | 31% | 2.32 | 0.0 |
| 2 | 0.37 | 25.65 | 3.47 | -204.62 | -205. | 0.00 | 0. | min. 0.2 | 0.70 | 29% | 2.32 | 0.0 |
| 3 | 0.75 | 25.36 | 3.24 | -190.32 | -190. | 0.00 | 0. | min. 0.2 | 0.70 | 27% | 2.32 | 0.0 |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm ²] | As Feld [cm ²] |
|--------|------------------------------|-----------------|------------------|--------------------------|-------------------------------|
| UZ-Anf | 18.43 | 2.22 | 328.36 | 7.55 | 0.00 |
| UZ-End | 18.43 | 2.21 | 285.48 | 6.57 | 0.00 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|--------|
| 0 | 0.00 | 25.94 | 3.71 | -38.29 | -38.29 |
| 1 | 0.19 | 25.80 | 3.59 | -38.29 | -38.29 |
| 2 | 0.56 | 25.51 | 3.36 | -38.29 | -38.30 |
| 3 | 0.75 | 25.36 | 3.24 | -38.29 | -38.30 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|--------|
| 1 | 0.00 | 0.75 | -38.29 | -38.29 |
| total | 0.00 | 0.75 | -38.29 | -38.29 |

Position : BP
Bodenplatte-Lastfall HHW und Vollast aus Gebäude

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 1 | 0.00 | 35.82 | 20.25 | 38.29 | 0.88 |
| 2 | 0.37 | 35.82 | 20.57 | 38.29 | 0.88 |
| 3 | 0.75 | 35.82 | 20.90 | 38.30 | 0.88 |

Überzug Nr.: 17 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei seittl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) unten | oben | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|--------|---------------------------------------|-------|--------------------|
| 1 | 0.00 | 25.36 | 3.24 | -1636.48 | -1636. | 0.00 | 15.58 | 231.1 |
| 2 | 0.19 | 25.20 | 3.14 | -1673.61 | -1674. | 0.00 | 15.96 | 230.9 |
| 3 | 0.38 | 25.05 | 3.03 | -1708.44 | -1708. | 0.00 | 16.14 | 230.8 |
| 4 | 0.56 | 24.89 | 2.93 | -1722.96 | -1723. | 0.00 | 16.33 | 230.7 |
| 5 | 0.75 | 24.73 | 2.83 | -1741.00 | -1741. | 0.00 | 16.51 | 230.6 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 24.23

untere Bewehrung : 0.00

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | | Tm (kNm) | | Bewehrung (cm ² /m) | | | | |
|----------------|----------|----------|----------|-----------|-------|-------------|----|--------------------------------|---------|-----|------|-----|
| | | | | | | | | Bereich | Vrd(MN) | as | | |
| 1 | 0.00 | 25.36 | 3.24 | -192.77 | -193. | 0.00 | 0. | min. 0.2 | 0.70 | 28% | 2.32 | 0.0 |
| 2 | 0.19 | 25.20 | 3.14 | -207.15 | -207. | 0.00 | 0. | min. 0.2 | 0.70 | 30% | 2.32 | 0.0 |
| 3 | 0.38 | 25.05 | 3.03 | -127.47 | -127. | 0.00 | 0. | min. 0.1 | 0.70 | 18% | 2.32 | 0.0 |
| 4 | 0.56 | 24.89 | 2.93 | -70.94 | -71. | 0.00 | 0. | min. 0.1 | 0.70 | 10% | 2.32 | 0.0 |
| 5 | 0.75 | 24.73 | 2.83 | -108.48 | -108. | 0.00 | 0. | min. 0.1 | 0.70 | 16% | 2.32 | 0.0 |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm ²] | As Feld [cm ²] |
|--------|------------------------------|-----------------|------------------|--------------------------|-------------------------------|
| UZ-Anf | 18.43 | 2.21 | 289.15 | 6.65 | 0.00 |
| UZ-End | 18.43 | 2.21 | 162.72 | 3.74 | 0.00 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|---------|
| 0 | 0.00 | 25.36 | 3.24 | 460.29 | 379.82 |
| 1 | 0.09 | 25.28 | 3.19 | 110.05 | 76.56 |
| 2 | 0.28 | 25.12 | 3.09 | -466.34 | -424.05 |
| 3 | 0.47 | 24.97 | 2.98 | -321.11 | -300.82 |
| 4 | 0.66 | 24.81 | 2.88 | 228.88 | 199.79 |
| 5 | 0.75 | 24.73 | 2.83 | 526.30 | 472.23 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|--------|
| 1 | 0.00 | 0.75 | -71.65 | -74.86 |
| total | 0.00 | 0.75 | -71.65 | -74.86 |

Position : BP
Bodenplatte-Lastfall HHW und Vollast aus Gebäude

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 1 | 0.00 | 35.82 | 20.25 | 379.82 | 8.74 |
| 2 | 0.19 | 35.82 | 20.57 | 226.70 | 5.21 |
| 3 | 0.38 | 35.82 | 20.90 | 437.53 | 10.06 |
| 4 | 0.56 | 35.82 | 21.22 | 72.66 | 1.67 |
| 5 | 0.75 | 35.82 | 21.54 | 472.23 | 10.86 |

Überzug Nr.: 18 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei seidl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) unten | oben | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|--------|---------------------------------------|-------|--------------------|
| 1 | 0.00 | 24.73 | 2.83 | -1759.33 | -1759. | 0.00 | 16.70 | 230.5 |
| 2 | 0.37 | 24.40 | 2.66 | -1800.89 | -1801. | 0.00 | 17.07 | 230.3 |
| 3 | 0.74 | 24.07 | 2.49 | -1836.98 | -1837. | 0.00 | 17.44 | 230.2 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 25.35

untere Bewehrung : 0.00

Achtung: obere Mindestbewehrung gem. DIN von 6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | | Tm (kNm) | | Bewehrung (cm ² /m) | | | | |
|----------------|----------|----------|----------|-----------|-------|-------------|----|--------------------------------|---------|-----|------|-----|
| | | | | | | | | Bereich | Vrd(MN) | as | | |
| 1 | 0.00 | 24.73 | 2.83 | -115.64 | -116. | 0.00 | 0. | min. 0.1 | 0.70 | 17% | 2.32 | 0.0 |
| 2 | 0.37 | 24.40 | 2.66 | -104.60 | -105. | 0.00 | 0. | min. 0.1 | 0.70 | 15% | 2.32 | 0.0 |
| 3 | 0.74 | 24.07 | 2.49 | -93.55 | -94. | 0.00 | 0. | min. 0.1 | 0.70 | 13% | 2.32 | 0.0 |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm ²] | As Feld [cm ²] |
|--------|------------------------------|-----------------|------------------|--------------------------|-------------------------------|
| UZ-Anf | 18.43 | 2.20 | 173.46 | 3.99 | 0.00 |
| UZ-End | 18.43 | 2.20 | 140.33 | 3.23 | 0.00 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|--------|
| 0 | 0.00 | 24.73 | 2.83 | -29.75 | -29.74 |
| 1 | 0.19 | 24.56 | 2.74 | -29.75 | -29.74 |
| 2 | 0.56 | 24.24 | 2.57 | -29.75 | -29.75 |
| 3 | 0.74 | 24.07 | 2.49 | -29.75 | -29.75 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|--------|
| 1 | 0.00 | 0.74 | -29.75 | -29.74 |
| total | 0.00 | 0.74 | -29.75 | -29.74 |

Position : BP
Bodenplatte-Lastfall HHW und Vollast aus Gebäude

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 1 | 0.00 | 35.82 | 20.25 | 29.74 | 0.68 |
| 2 | 0.37 | 35.82 | 20.57 | 29.75 | 0.68 |
| 3 | 0.74 | 35.82 | 20.90 | 29.75 | 0.68 |

Überzug Nr.: 19 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei seittl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) unten | oben | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|--------|---------------------------------------|-------|--------------------|
| 1 | 0.00 | 24.07 | 2.49 | -1834.78 | -1835. | 0.00 | 17.44 | 230.2 |
| 2 | 0.19 | 23.90 | 2.42 | -1854.30 | -1854. | 0.00 | 17.62 | 230.1 |
| 3 | 0.38 | 23.72 | 2.36 | -1881.69 | -1882. | 0.00 | 17.99 | 229.9 |
| 4 | 0.56 | 23.55 | 2.29 | -1902.84 | -1903. | 0.00 | 18.17 | 229.8 |
| 5 | 0.75 | 23.37 | 2.22 | -1922.47 | -1922. | 0.00 | 18.35 | 229.7 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 26.89

untere Bewehrung : 0.00

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | | Tm (kNm) | | Bewehrung (cm ² /m) | | | | |
|----------------|----------|----------|----------|-----------|-------|-------------|----|--------------------------------|---------|-----|------|-----|
| | | | | | | | | Bereich | Vrd(MN) | as | | |
| 1 | 0.00 | 24.07 | 2.49 | -90.54 | -91. | 0.00 | 0. | min. 0.1 | 0.70 | 13% | 2.32 | 0.0 |
| 2 | 0.19 | 23.90 | 2.42 | -131.00 | -131. | 0.00 | 0. | min. 0.1 | 0.70 | 19% | 2.32 | 0.0 |
| 3 | 0.38 | 23.72 | 2.36 | -135.68 | -136. | 0.00 | 0. | min. 0.2 | 0.70 | 20% | 2.32 | 0.0 |
| 4 | 0.56 | 23.55 | 2.29 | -102.76 | -103. | 0.00 | 0. | min. 0.1 | 0.70 | 15% | 2.32 | 0.0 |
| 5 | 0.75 | 23.37 | 2.22 | -105.61 | -106. | 0.00 | 0. | min. 0.1 | 0.70 | 15% | 2.32 | 0.0 |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm ²] | As Feld [cm ²] |
|--------|------------------------------|-----------------|------------------|--------------------------|-------------------------------|
| UZ-Anf | 18.43 | 2.20 | 135.81 | 3.12 | 0.00 |
| UZ-End | 18.43 | 2.20 | 158.41 | 3.64 | 0.00 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|---------|
| 0 | 0.00 | 24.07 | 2.49 | 304.46 | 300.31 |
| 1 | 0.09 | 23.98 | 2.46 | 224.03 | 215.69 |
| 2 | 0.28 | 23.81 | 2.39 | 30.93 | 24.95 |
| 3 | 0.47 | 23.63 | 2.32 | -205.36 | -175.54 |
| 4 | 0.66 | 23.46 | 2.25 | 30.71 | 15.20 |
| 5 | 0.75 | 23.37 | 2.22 | 197.05 | 149.94 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|-------|
| 1 | 0.00 | 0.75 | 35.50 | 36.21 |
| total | 0.00 | 0.75 | 35.50 | 36.21 |

Position : BP
Bodenplatte-Lastfall HHW und Vollast aus Gebäude

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 1 | 0.00 | 35.82 | 20.25 | 300.31 | 6.91 |
| 2 | 0.19 | 35.82 | 20.57 | 131.08 | 3.01 |
| 3 | 0.38 | 35.82 | 20.90 | 103.90 | 2.39 |
| 4 | 0.56 | 35.82 | 21.22 | 119.53 | 2.75 |
| 5 | 0.75 | 35.82 | 21.54 | 149.94 | 3.45 |

Überzug Nr.: 20 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei sertl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) unten | oben | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|--------|---------------------------------------|-------|--------------------|
| 1 | 0.00 | 23.37 | 2.22 | -1883.87 | -1884. | 0.00 | 17.99 | 229.9 |
| 2 | 0.37 | 23.01 | 2.12 | -1731.46 | -1731. | 0.00 | 16.51 | 230.6 |
| 3 | 0.74 | 22.65 | 2.03 | -1581.58 | -1582. | 0.00 | 15.02 | 231.4 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 24.59 untere Bewehrung : 0.00

Achtung: obere Mindestbewehrung gem. DIN von 6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | Tm (kNm) | Bewehrung (cm ² /m) | | | | | | |
|----------------|----------|----------|----------|-----------|-------------|--------------------------------|---------|----------|------|-----|------|-----|
| | | | | | | Bereich | Vrd(MN) | as | | | | |
| 1 | 0.00 | 23.37 | 2.22 | 411.07 | 411. | 0.00 | 0. | min. 0.3 | 0.70 | 59% | 2.32 | 0.0 |
| 2 | 0.37 | 23.01 | 2.12 | 405.95 | 406. | 0.00 | 0. | min. 0.3 | 0.70 | 58% | 2.32 | 0.0 |
| 3 | 0.74 | 22.65 | 2.03 | 400.83 | 401. | 0.00 | 0. | min. 0.3 | 0.70 | 57% | 2.32 | 0.0 |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm ²] | As Feld [cm ²] |
|--------|------------------------------|-----------------|------------------|--------------------------|-------------------------------|
| UZ-Anf | 18.43 | 2.20 | 616.60 | 14.18 | 0.00 |
| UZ-End | 18.43 | 2.21 | 601.25 | 13.83 | 0.00 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|-------|
| 0 | 0.00 | 23.37 | 2.22 | 13.75 | 13.76 |
| 1 | 0.19 | 23.19 | 2.17 | 13.75 | 13.75 |
| 2 | 0.56 | 22.83 | 2.08 | 13.75 | 13.75 |
| 3 | 0.74 | 22.65 | 2.03 | 13.75 | 13.74 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-Uz-m (kN/m) | |
|-------------|---------------|---------------|---|-------|
| 1 | 0.00 | 0.74 | 13.75 | 13.75 |
| total | 0.00 | 0.74 | 13.75 | 13.75 |

Position : BP
Bodenplatte-Lastfall HHW und Vollast aus Gebäude

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 1 | 0.00 | 35.82 | 20.25 | 13.76 | 0.32 |
| 2 | 0.37 | 35.82 | 20.57 | 13.75 | 0.32 |
| 3 | 0.74 | 35.82 | 20.90 | 13.74 | 0.32 |

Überzug Nr.: 21 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei seidl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) unten | oben | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|--------|---------------------------------------|-------|--------------------|
| 1 | 0.00 | 22.65 | 2.03 | -1612.52 | -1613. | 0.00 | 15.21 | 231.3 |
| 2 | 0.37 | 22.28 | 1.97 | -1438.11 | -1438. | 0.00 | 13.69 | 232.0 |
| 3 | 0.75 | 21.91 | 1.91 | -1243.10 | -1243. | 0.00 | 11.77 | 233.0 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 20.37

untere Bewehrung : 0.00

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | Tm (kNm) | Bewehrung (cm ² /m) | | | | |
|----------------|----------|----------|----------|-----------|-------------|--------------------------------|---------|----------|------|-----|
| | | | | | | Bereich | Vrd(MN) | as | | |
| 1 | 0.00 | 22.65 | 2.03 | 451.58 | 452. | 0.00 | 0. | min. 0.3 | 0.70 | 64% |
| 2 | 0.37 | 22.28 | 1.97 | 492.77 | 493. | 0.00 | 0. | min. 0.3 | 0.70 | 70% |
| 3 | 0.75 | 21.91 | 1.91 | 533.97 | 534. | 0.00 | 0. | min. 0.3 | 0.71 | 75% |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm ²] | As Feld [cm ²] |
|--------|------------------------------|-----------------|------------------|--------------------------|-------------------------------|
| UZ-Anf | 18.38 | 2.21 | 679.62 | 15.63 | 0.00 |
| UZ-End | 18.38 | 2.22 | 803.62 | 18.48 | 0.00 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|---------|
| 0 | 0.00 | 22.65 | 2.03 | -109.90 | -109.89 |
| 1 | 0.19 | 22.47 | 2.00 | -109.90 | -109.89 |
| 2 | 0.56 | 22.09 | 1.94 | -109.90 | -109.90 |
| 3 | 0.75 | 21.91 | 1.91 | -109.90 | -109.91 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|---------|
| 1 | 0.00 | 0.75 | -109.90 | -109.90 |
| total | 0.00 | 0.75 | -109.90 | -109.90 |

Position : BP
Bodenplatte-Lastfall HHW und Vollast aus Gebäude

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 1 | 0.00 | 35.82 | 20.25 | 109.89 | 2.53 |
| 2 | 0.37 | 35.82 | 20.57 | 109.90 | 2.53 |
| 3 | 0.75 | 35.82 | 20.90 | 109.91 | 2.53 |

Überzug Nr.: 22 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei seittl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) unten | oben | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|--------|---------------------------------------|-------|--------------------|
| 1 | 0.00 | 21.91 | 1.91 | -1271.10 | -1271. | 0.00 | 11.96 | 232.9 |
| 2 | 0.19 | 21.72 | 1.90 | -1165.30 | -1165. | 0.00 | 10.98 | 233.3 |
| 3 | 0.38 | 21.53 | 1.89 | -1070.69 | -1071. | 0.00 | 10.00 | 233.8 |
| 4 | 0.56 | 21.35 | 1.88 | -975.61 | -976. | 0.00 | 9.22 | 234.1 |
| 5 | 0.75 | 21.16 | 1.87 | -885.00 | -885. | 0.00 | 8.24 | 234.6 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 15.13

untere Bewehrung : 0.00

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | Tm (kNm) | Bewehrung (cm ² /m) | | | | | | |
|----------------|----------|----------|----------|-----------|-------------|--------------------------------|---------|----------|------|-----|------|-----|
| | | | | | | Bereich | Vrd(MN) | as | | | | |
| 1 | 0.00 | 21.91 | 1.91 | 579.98 | 580. | 0.00 | 0. | min. 0.4 | 0.71 | 82% | 2.32 | 0.0 |
| 2 | 0.19 | 21.72 | 1.90 | 530.33 | 530. | 0.00 | 0. | min. 0.3 | 0.71 | 75% | 2.32 | 0.0 |
| 3 | 0.38 | 21.53 | 1.89 | 500.68 | 501. | 0.00 | 0. | min. 0.3 | 0.71 | 71% | 2.32 | 0.0 |
| 4 | 0.56 | 21.35 | 1.88 | 497.80 | 498. | 0.00 | 0. | min. 0.3 | 0.71 | 70% | 2.32 | 0.0 |
| 5 | 0.75 | 21.16 | 1.87 | 474.93 | 475. | 0.00 | 0. | min. 0.3 | 0.71 | 67% | 2.32 | 0.0 |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm ²] | As Feld [cm ²] |
|--------|------------------------------|-----------------|------------------|--------------------------|-------------------------------|
| UZ-Anf | 18.38 | 2.22 | 872.88 | 20.08 | 0.00 |
| UZ-End | 18.38 | 2.22 | 714.77 | 16.44 | 0.00 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|--------|
| 0 | 0.00 | 21.91 | 1.91 | 306.85 | 307.82 |
| 1 | 0.09 | 21.82 | 1.90 | 268.53 | 264.42 |
| 2 | 0.28 | 21.63 | 1.89 | 164.02 | 157.94 |
| 3 | 0.47 | 21.44 | 1.88 | -4.07 | 15.32 |
| 4 | 0.66 | 21.25 | 1.88 | 131.00 | 121.80 |
| 5 | 0.75 | 21.16 | 1.87 | 230.44 | 200.85 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|--------|
| 1 | 0.00 | 0.75 | 148.48 | 149.12 |
| total | 0.00 | 0.75 | 148.48 | 149.12 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 1 | 0.00 | 35.82 | 20.25 | 307.82 | 7.08 |
| 2 | 0.19 | 35.82 | 20.57 | 221.03 | 5.08 |
| 3 | 0.38 | 35.82 | 20.90 | 70.66 | 1.63 |
| 4 | 0.56 | 35.82 | 21.22 | 42.75 | 0.98 |
| 5 | 0.75 | 35.82 | 21.54 | 200.85 | 4.62 |

Überzug Nr.: 23 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei seith. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) unten | oben | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|-------|---------------------------------------|------|--------------------|
| 1 | 0.00 | 21.16 | 1.87 | -924.72 | -925. | 0.00 | 8.63 | 234.4 |
| 2 | 0.44 | 20.72 | 1.87 | -757.76 | -758. | 0.00 | 7.08 | 235.1 |
| 3 | 0.88 | 20.28 | 1.87 | -625.68 | -626. | 0.00 | 5.96 | 235.6 |
| 4 | 1.32 | 19.84 | 1.87 | -514.24 | -514. | 0.00 | 4.89 | 236.1 |
| 5 | 1.75 | 19.41 | 1.87 | -416.61 | -417. | 0.00 | 3.88 | 236.6 |
| 6 | 2.19 | 18.97 | 1.87 | -314.61 | -315. | 0.00 | 2.96 | 237.1 |
| 7 | 2.63 | 18.53 | 1.87 | -230.92 | -231. | 0.00 | 2.13 | 237.6 |
| 8 | 3.07 | 18.09 | 1.87 | -151.45 | -151. | 0.00 | 1.41 | 238.1 |
| 9 | 3.51 | 17.65 | 1.87 | -65.15 | -65. | 0.00 | 0.65 | 238.7 |
| 10 | 3.94 | 17.22 | 1.87 | 0.74 | 1. | 6.99 | 0.00 | 239.8 |
| 11 | 4.38 | 16.78 | 1.87 | 47.28 | 47. | 6.99 | 0.00 | 239.0 |
| 12 | 4.82 | 16.34 | 1.87 | 67.80 | 68. | 6.99 | 0.00 | 238.7 |
| 13 | 5.26 | 15.90 | 1.87 | 18.46 | 18. | 6.99 | 0.00 | 239.4 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 29.17

untere Bewehrung : 30.04

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | | Tm (kNm) | | Bewehrung (cm ² /m) | | | | |
|----------------|----------|----------|----------|-----------|-------|-------------|----|--------------------------------|---------|-----|------|-----|
| | | | | | | | | Bereich | Vrd(MN) | as | | |
| 1 | 0.00 | 21.16 | 1.87 | 399.54 | 400. | 0.00 | 0. | min. 0.3 | 0.71 | 57% | 2.32 | 0.0 |
| 2 | 0.44 | 20.72 | 1.87 | 343.60 | 344. | 0.00 | 0. | min. 0.2 | 0.71 | 49% | 2.32 | 0.0 |
| 3 | 0.88 | 20.28 | 1.87 | 272.74 | 273. | 0.00 | 0. | min. 0.2 | 0.71 | 39% | 2.32 | 0.0 |
| 4 | 1.32 | 19.84 | 1.87 | 232.17 | 232. | 0.00 | 0. | min. 0.2 | 0.71 | 33% | 2.32 | 0.0 |
| 5 | 1.75 | 19.41 | 1.87 | 229.46 | 229. | 0.00 | 0. | min. 0.2 | 0.71 | 33% | 2.32 | 0.0 |
| 6 | 2.19 | 18.97 | 1.87 | 216.22 | 216. | 0.00 | 0. | min. 0.2 | 0.71 | 31% | 2.32 | 0.0 |
| 7 | 2.63 | 18.53 | 1.87 | 176.54 | 177. | 0.00 | 0. | min. 0.2 | 0.71 | 25% | 2.32 | 0.0 |
| 8 | 3.07 | 18.09 | 1.87 | 194.30 | 194. | 0.00 | 0. | min. 0.2 | 0.71 | 28% | 2.32 | 0.0 |
| 9 | 3.51 | 17.65 | 1.87 | 180.81 | 181. | 0.00 | 0. | min. 0.2 | 0.71 | 26% | 2.32 | 0.0 |
| 10 | 3.94 | 17.22 | 1.87 | 124.09 | 124. | 0.00 | 0. | min. 0.1 | 0.71 | 18% | 2.32 | 0.0 |
| 11 | 4.38 | 16.78 | 1.87 | 92.35 | 92. | 0.00 | 0. | min. 0.1 | 0.71 | 13% | 2.32 | 0.0 |
| 12 | 4.82 | 16.34 | 1.87 | -34.50 | -35. | 0.00 | 0. | min. 0.1 | 0.71 | 5% | 2.32 | 0.0 |
| 13 | 5.26 | 15.90 | 1.87 | -151.58 | -152. | 0.00 | 0. | min. 0.2 | 0.71 | 21% | 2.32 | 0.0 |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm ²] | As Feld [cm ²] |
|--------|------------------------------|-----------------|------------------|--------------------------|-------------------------------|
| UZ-Anf | 18.43 | 2.23 | 599.30 | 13.78 | 6.99 |
| UZ-End | 18.43 | 2.23 | 227.37 | 5.23 | 6.99 |

Position : BP
Bodenplatte-Lastfall HHW und Vollast aus Gebäude

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|--------|
| 0 | 0.00 | 21.16 | 1.87 | 91.47 | 101.32 |
| 1 | 0.22 | 20.94 | 1.87 | 124.51 | 127.62 |
| 2 | 0.66 | 20.50 | 1.87 | 168.68 | 161.65 |
| 3 | 1.10 | 20.06 | 1.87 | 93.33 | 92.56 |
| 4 | 1.53 | 19.63 | 1.87 | 0.38 | 6.18 |
| 5 | 1.97 | 19.19 | 1.87 | 25.05 | 30.21 |
| 6 | 2.41 | 18.75 | 1.87 | 107.90 | 90.52 |
| 7 | 2.85 | 18.31 | 1.87 | -57.07 | -40.53 |
| 8 | 3.29 | 17.87 | 1.87 | 28.98 | 30.79 |
| 9 | 3.73 | 17.43 | 1.87 | 146.36 | 129.39 |
| 10 | 4.16 | 17.00 | 1.87 | 45.26 | 72.42 |
| 11 | 4.60 | 16.56 | 1.87 | 312.58 | 289.40 |
| 12 | 5.04 | 16.12 | 1.87 | 261.34 | 267.09 |
| 13 | 5.26 | 15.90 | 1.87 | 192.33 | 223.48 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|--------|
| 1 | 0.00 | 5.26 | 102.65 | 102.73 |
| total | 0.00 | 5.26 | 102.65 | 102.73 |

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 1 | 0.00 | 35.82 | 20.25 | 101.32 | 2.33 |
| 2 | 0.44 | 35.82 | 20.57 | 153.93 | 3.54 |
| 3 | 0.88 | 35.82 | 20.90 | 137.89 | 3.17 |
| 4 | 1.32 | 35.82 | 21.22 | 42.07 | 0.97 |
| 5 | 1.75 | 35.82 | 21.54 | 1.68 | 0.04 |
| 6 | 2.19 | 5.35 | 37.94 | 78.72 | 1.81 |
| 7 | 2.63 | 5.84 | 37.94 | 26.25 | 0.60 |
| 8 | 3.07 | 6.32 | 37.94 | 32.36 | 0.74 |
| 9 | 3.51 | 6.81 | 37.94 | 102.70 | 2.36 |
| 10 | 3.94 | 7.29 | 37.94 | 86.07 | 1.98 |
| 11 | 4.38 | 7.78 | 37.94 | 173.25 | 3.98 |
| 12 | 4.82 | 8.26 | 37.94 | 310.71 | 7.15 |
| 13 | 5.26 | 8.75 | 37.94 | 223.48 | 5.14 |

Überzug Nr.: 24 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei seidl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) unten | oben | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|------|---------------------------------------|------|--------------------|
| 1 | 0.00 | 15.90 | 1.87 | 10.95 | 11. | 6.99 | 0.00 | 239.4 |
| 2 | 0.24 | 15.90 | 2.11 | -28.59 | -29. | 0.00 | 0.26 | 239.2 |
| 3 | 0.47 | 15.90 | 2.34 | -87.07 | -87. | 0.00 | 0.82 | 238.6 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 0.32

untere Bewehrung : 2.30

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | Tm (kNm) | Bewehrung (cm ² /m) | | | | | | |
|----------------|----------|----------|----------|-----------|-------------|--------------------------------|---------|----------|------|-----|------|-----|
| | | | | | | Bereich | Vrd(MN) | as | | | | |
| 1 | 0.00 | 15.90 | 1.87 | -148.12 | -148. | 0.00 | 0. | min. 0.2 | 0.71 | 21% | 2.32 | 0.0 |
| 2 | 0.24 | 15.90 | 2.11 | -208.56 | -209. | 0.00 | 0. | min. 0.2 | 0.71 | 30% | 2.32 | 0.0 |
| 3 | 0.47 | 15.90 | 2.34 | -268.99 | -269. | 0.00 | 0. | min. 0.2 | 0.71 | 38% | 2.32 | 0.0 |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm ²] | As Feld [cm ²] |
|--------|------------------------------|-----------------|------------------|--------------------------|-------------------------------|
| UZ-Anf | 18.43 | 2.23 | 222.19 | 5.11 | 6.99 |
| UZ-End | 18.43 | 2.23 | 403.49 | 9.28 | 0.00 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|--------|
| 0 | 0.00 | 15.90 | 1.87 | 257.17 | 257.18 |
| 1 | 0.12 | 15.90 | 1.99 | 257.17 | 257.17 |
| 2 | 0.35 | 15.90 | 2.22 | 257.17 | 257.17 |
| 3 | 0.47 | 15.90 | 2.34 | 257.17 | 257.17 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|--------|
| 1 | 0.00 | 0.47 | 257.17 | 257.17 |
| total | 0.00 | 0.47 | 257.17 | 257.17 |

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 1 | 0.00 | 35.82 | 20.25 | 257.18 | 5.92 |
| 2 | 0.24 | 35.82 | 20.57 | 257.17 | 5.91 |
| 3 | 0.47 | 35.82 | 20.90 | 257.17 | 5.91 |

Überzug Nr.: 25 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT

Brandschutz bei seidl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm²) | | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|------|-----------------|------|--------------------|
| | | | | | | unten | oben | |
| 1 | 0.00 | 15.90 | 2.34 | 219.79 | 220. | 6.99 | 0.00 | 237.6 |
| 2 | 0.44 | 15.46 | 2.34 | 233.51 | 234. | 6.99 | 0.00 | 237.5 |
| 3 | 0.88 | 15.02 | 2.34 | 248.77 | 249. | 6.99 | 0.00 | 237.4 |
| 4 | 1.31 | 14.59 | 2.34 | 239.54 | 240. | 6.99 | 0.00 | 237.5 |
| 5 | 1.75 | 14.15 | 2.34 | 206.59 | 207. | 6.99 | 0.00 | 237.7 |
| 6 | 2.19 | 13.71 | 2.34 | 156.34 | 156. | 6.99 | 0.00 | 238.0 |
| 7 | 2.63 | 13.27 | 2.34 | 89.43 | 89. | 6.99 | 0.00 | 238.6 |
| 8 | 3.07 | 12.83 | 2.34 | 10.31 | 10. | 6.99 | 0.00 | 239.5 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) unten | oben | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|--------|---------------------------------------|-------|--------------------|
| 9 | 3.50 | 12.40 | 2.34 | -83.10 | -83. | 0.00 | 0.82 | 238.6 |
| 10 | 3.94 | 11.96 | 2.34 | -188.74 | -189. | 0.00 | 1.75 | 237.8 |
| 11 | 4.38 | 11.52 | 2.34 | -314.70 | -315. | 0.00 | 2.96 | 237.1 |
| 12 | 4.82 | 11.08 | 2.34 | -461.25 | -461. | 0.00 | 4.38 | 236.4 |
| 13 | 5.26 | 10.64 | 2.34 | -630.22 | -630. | 0.00 | 5.96 | 235.6 |
| 14 | 5.70 | 10.20 | 2.34 | -828.51 | -829. | 0.00 | 7.85 | 234.8 |
| 15 | 6.13 | 9.77 | 2.34 | -1067.07 | -1067. | 0.00 | 10.00 | 233.8 |
| 16 | 6.57 | 9.33 | 2.34 | -1360.70 | -1361. | 0.00 | 12.92 | 232.4 |
| 17 | 7.01 | 8.89 | 2.34 | -1733.16 | -1733. | 0.00 | 16.51 | 230.6 |
| 18 | 7.45 | 8.45 | 2.34 | -1649.14 | -1649. | 0.00 | 15.58 | 231.1 |
| 19 | 7.90 | 8.00 | 2.34 | -1639.75 | -1640. | 0.00 | 15.58 | 231.1 |
| 20 | 8.34 | 7.56 | 2.34 | -1668.53 | -1669. | 0.00 | 15.77 | 231.0 |
| 21 | 8.78 | 7.12 | 2.34 | -1713.64 | -1714. | 0.00 | 16.33 | 230.7 |
| 22 | 9.23 | 6.67 | 2.34 | -1762.98 | -1763. | 0.00 | 16.70 | 230.5 |
| 23 | 9.67 | 6.23 | 2.34 | -1796.64 | -1797. | 0.00 | 17.07 | 230.3 |
| 24 | 10.11 | 5.79 | 2.34 | -1811.02 | -1811. | 0.00 | 17.25 | 230.2 |
| 25 | 10.55 | 5.35 | 2.34 | -1787.67 | -1788. | 0.00 | 17.07 | 230.3 |
| 26 | 11.00 | 4.90 | 2.34 | -1725.03 | -1725. | 0.00 | 16.33 | 230.7 |
| 27 | 11.44 | 4.46 | 2.34 | -1612.80 | -1613. | 0.00 | 15.39 | 231.2 |
| 28 | 11.88 | 4.02 | 2.34 | -1450.83 | -1451. | 0.00 | 13.69 | 232.0 |
| 29 | 12.33 | 3.57 | 2.34 | -1243.15 | -1243. | 0.00 | 11.77 | 233.0 |
| 30 | 12.77 | 3.13 | 2.34 | -975.78 | -976. | 0.00 | 9.22 | 234.1 |
| 31 | 13.21 | 2.69 | 2.34 | -672.62 | -673. | 0.00 | 6.33 | 235.4 |
| 32 | 13.66 | 2.24 | 2.34 | -334.89 | -335. | 0.00 | 3.10 | 237.0 |
| 33 | 14.10 | 1.80 | 2.34 | -69.47 | -69. | 0.00 | 0.65 | 238.7 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 239.33

untere Bewehrung : 64.34

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | | Tm (kNm) | | Bewehrung (cm²/m) | | | | | |
|----------------|----------|----------|----------|-----------|-------|-------------|----|-------------------|-----|---------|------|------|-----|
| | | | | | | | | Bereich | | Vrd(MN) | | as | |
| 1 | 0.00 | 15.90 | 2.34 | 27.24 | 27. | 0.00 | 0. | min. | 0.1 | 0.71 | 4% | 2.32 | 0.0 |
| 2 | 0.44 | 15.46 | 2.34 | 39.46 | 39. | 0.00 | 0. | min. | 0.1 | 0.71 | 6% | 2.32 | 0.0 |
| 3 | 0.88 | 15.02 | 2.34 | 13.36 | 13. | 0.00 | 0. | min. | 0.1 | 0.71 | 2% | 2.32 | 0.0 |
| 4 | 1.31 | 14.59 | 2.34 | -51.60 | -52. | 0.00 | 0. | min. | 0.1 | 0.71 | 7% | 2.32 | 0.0 |
| 5 | 1.75 | 14.15 | 2.34 | -95.81 | -96. | 0.00 | 0. | min. | 0.1 | 0.71 | 14% | 2.32 | 0.0 |
| 6 | 2.19 | 13.71 | 2.34 | -134.86 | -135. | 0.00 | 0. | min. | 0.2 | 0.71 | 19% | 2.32 | 0.0 |
| 7 | 2.63 | 13.27 | 2.34 | -167.00 | -167. | 0.00 | 0. | min. | 0.2 | 0.71 | 24% | 2.32 | 0.0 |
| 8 | 3.07 | 12.83 | 2.34 | -197.11 | -197. | 0.00 | 0. | min. | 0.2 | 0.71 | 28% | 2.32 | 0.0 |
| 9 | 3.50 | 12.40 | 2.34 | -225.93 | -226. | 0.00 | 0. | min. | 0.2 | 0.71 | 32% | 2.32 | 0.0 |
| 10 | 3.94 | 11.96 | 2.34 | -262.14 | -262. | 0.00 | 0. | min. | 0.2 | 0.71 | 37% | 2.32 | 0.0 |
| 11 | 4.38 | 11.52 | 2.34 | -311.34 | -311. | 0.00 | 0. | min. | 0.2 | 0.71 | 44% | 2.32 | 0.0 |
| 12 | 4.82 | 11.08 | 2.34 | -358.48 | -358. | 0.00 | 0. | min. | 0.3 | 0.71 | 51% | 2.32 | 0.0 |
| 13 | 5.26 | 10.64 | 2.34 | -415.25 | -415. | 0.00 | 0. | min. | 0.3 | 0.71 | 59% | 2.32 | 0.0 |
| 14 | 5.70 | 10.20 | 2.34 | -495.25 | -495. | 0.00 | 0. | min. | 0.3 | 0.71 | 70% | 2.32 | 0.0 |
| 15 | 6.13 | 9.77 | 2.34 | -595.03 | -595. | 0.00 | 0. | min. | 0.4 | 0.71 | 84% | 2.32 | 0.0 |
| 16 | 6.57 | 9.33 | 2.34 | -768.78 | -769. | 0.00 | 0. | norm | 0.4 | 0.77 | 100% | 2.77 | 0.0 |
| 17 | 7.01 | 8.89 | 2.34 | -890.77 | -891. | 0.00 | 0. | norm | 0.4 | 0.89 | 100% | 3.83 | 0.0 |
| 18 | 7.01 | 8.89 | 2.34 | 229.15 | 229. | 0.00 | 0. | min. | 0.2 | 0.70 | 33% | 2.32 | 0.0 |
| 19 | 7.45 | 8.45 | 2.34 | 110.48 | 110. | 0.00 | 0. | min. | 0.1 | 0.70 | 16% | 2.32 | 0.0 |
| 20 | 7.90 | 8.00 | 2.34 | -38.70 | -39. | 0.00 | 0. | min. | 0.1 | 0.70 | 6% | 2.32 | 0.0 |
| 21 | 8.34 | 7.56 | 2.34 | -86.95 | -87. | 0.00 | 0. | min. | 0.1 | 0.70 | 12% | 2.32 | 0.0 |
| 22 | 8.78 | 7.12 | 2.34 | -113.76 | -114. | 0.00 | 0. | min. | 0.1 | 0.70 | 16% | 2.32 | 0.0 |
| 23 | 9.23 | 6.67 | 2.34 | -97.44 | -97. | 0.00 | 0. | min. | 0.1 | 0.70 | 14% | 2.32 | 0.0 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | Tm (kNm) | Bewehrung (cm²/m) | | | | | | as | |
|----------------|----------|------------------------------|-----------------|------------------|-------------|-------------------|---------|------|-----|------|------|------|-----|
| | | | | | | Bereich | Vrd(MN) | | | | | | |
| 24 | 9.67 | 6.23 | 2.34 | -58.43 | -58. | 0.00 | 0. | min. | 0.1 | 0.70 | 8% | 2.32 | 0.0 |
| 25 | 10.11 | 5.79 | 2.34 | 5.90 | 6. | 0.00 | 0. | min. | 0.1 | 0.70 | 1% | 2.32 | 0.0 |
| 26 | 10.55 | 5.35 | 2.34 | 95.58 | 96. | 0.00 | 0. | min. | 0.1 | 0.70 | 14% | 2.32 | 0.0 |
| 27 | 11.00 | 4.90 | 2.34 | 193.95 | 194. | 0.00 | 0. | min. | 0.2 | 0.70 | 28% | 2.32 | 0.0 |
| 28 | 11.44 | 4.46 | 2.34 | 312.49 | 312. | 0.00 | 0. | min. | 0.2 | 0.70 | 45% | 2.32 | 0.0 |
| 29 | 11.88 | 4.02 | 2.34 | 412.50 | 412. | 0.00 | 0. | min. | 0.3 | 0.70 | 59% | 2.32 | 0.0 |
| 30 | 12.33 | 3.57 | 2.34 | 540.13 | 540. | 0.00 | 0. | min. | 0.3 | 0.71 | 76% | 2.32 | 0.0 |
| 31 | 12.77 | 3.13 | 2.34 | 643.08 | 643. | 0.00 | 0. | min. | 0.4 | 0.71 | 91% | 2.32 | 0.0 |
| 32 | 13.21 | 2.69 | 2.34 | 750.04 | 750. | 0.00 | 0. | norm | 0.4 | 0.75 | 100% | 2.59 | 0.0 |
| 33 | 13.66 | 2.24 | 2.34 | 695.69 | 696. | 0.00 | 0. | min. | 0.4 | 0.71 | 98% | 2.32 | 0.0 |
| 34 | 14.10 | 1.80 | 2.34 | 550.61 | 551. | 0.00 | 0. | min. | 0.3 | 0.71 | 78% | 2.32 | 0.0 |
| | | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm²] | As Feld [cm²] | | | | | | | |
| UZ-Anf | | 18.43 | 2.23 | 40.86 | 1.75 | 6.99 | | | | | | | |
| UZ-End | | 18.38 | 2.22 | 828.67 | 19.06 | 6.99 | | | | | | | |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|---------|
| 0 | 0.00 | 15.90 | 2.34 | -70.95 | -67.55 |
| 1 | 0.22 | 15.68 | 2.34 | -31.94 | -27.89 |
| 2 | 0.66 | 15.24 | 2.34 | 57.95 | 59.57 |
| 3 | 1.10 | 14.80 | 2.34 | 158.50 | 148.28 |
| 4 | 1.53 | 14.37 | 2.34 | 95.66 | 100.91 |
| 5 | 1.97 | 13.93 | 2.34 | 91.00 | 89.12 |
| 6 | 2.41 | 13.49 | 2.34 | 72.07 | 73.35 |
| 7 | 2.85 | 13.05 | 2.34 | 69.20 | 68.73 |
| 8 | 3.29 | 12.61 | 2.34 | 64.75 | 65.79 |
| 9 | 3.72 | 12.18 | 2.34 | 81.39 | 82.65 |
| 10 | 4.16 | 11.74 | 2.34 | 115.17 | 112.29 |
| 11 | 4.60 | 11.30 | 2.34 | 105.90 | 107.60 |
| 12 | 5.04 | 10.86 | 2.34 | 126.84 | 129.59 |
| 13 | 5.48 | 10.42 | 2.34 | 187.53 | 182.59 |
| 14 | 5.91 | 9.99 | 2.34 | 212.67 | 227.74 |
| 15 | 6.35 | 9.55 | 2.34 | 420.99 | 396.59 |
| 16 | 6.79 | 9.11 | 2.34 | 267.64 | 278.42 |
| 17 | 7.23 | 8.67 | 2.34 | 259.21 | 267.79 |
| 18 | 7.67 | 8.23 | 2.34 | 362.35 | 336.66 |
| 19 | 8.12 | 7.78 | 2.34 | 88.87 | 108.87 |
| 20 | 8.56 | 7.34 | 2.34 | 69.99 | 60.51 |
| 21 | 9.00 | 6.90 | 2.34 | -42.50 | -36.83 |
| 22 | 9.45 | 6.45 | 2.34 | -86.37 | -88.03 |
| 23 | 9.89 | 6.01 | 2.34 | -144.66 | -145.18 |
| 24 | 10.33 | 5.57 | 2.34 | -206.09 | -202.36 |
| 25 | 10.78 | 5.12 | 2.34 | -216.98 | -222.00 |
| 26 | 11.22 | 4.68 | 2.34 | -277.36 | -267.51 |
| 27 | 11.66 | 4.24 | 2.34 | -213.12 | -225.69 |
| 28 | 12.11 | 3.79 | 2.34 | -302.41 | -288.03 |
| 29 | 12.55 | 3.35 | 2.34 | -216.90 | -232.33 |
| 30 | 12.99 | 2.91 | 2.34 | -272.53 | -241.36 |
| 31 | 13.44 | 2.46 | 2.34 | 138.64 | 122.65 |
| 32 | 13.88 | 2.02 | 2.34 | 334.43 | 327.39 |
| 33 | 14.10 | 1.80 | 2.34 | 396.67 | 402.95 |

Position : BP
Bodenplatte-Lastfall HHW und Vollast aus Gebäude

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|--------|
| 1 | 0.00 | 7.01 | 130.28 | 130.32 |
| 2 | 7.01 | 14.10 | -44.30 | -43.91 |
| total | 0.00 | 14.10 | 42.49 | 107.48 |

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 1 | 0.00 | 35.82 | 20.25 | 67.55 | 1.55 |
| 2 | 0.44 | 35.82 | 20.57 | 11.78 | 0.27 |
| 3 | 0.88 | 35.82 | 20.90 | 115.64 | 2.66 |
| 4 | 1.31 | 35.82 | 21.22 | 132.37 | 3.04 |
| 5 | 1.75 | 35.82 | 21.54 | 89.88 | 2.07 |
| 6 | 2.19 | 5.35 | 37.94 | 82.15 | 1.89 |
| 7 | 2.63 | 5.84 | 37.94 | 69.82 | 1.61 |
| 8 | 3.07 | 6.32 | 37.94 | 66.41 | 1.53 |
| 9 | 3.50 | 6.81 | 37.94 | 70.77 | 1.63 |
| 10 | 3.94 | 7.29 | 37.94 | 99.91 | 2.30 |
| 11 | 4.38 | 7.78 | 37.94 | 111.72 | 2.57 |
| 12 | 4.82 | 8.26 | 37.94 | 111.92 | 2.57 |
| 13 | 5.26 | 8.75 | 37.94 | 159.38 | 3.67 |
| 14 | 5.70 | 9.23 | 37.94 | 189.99 | 4.37 |
| 15 | 6.13 | 9.71 | 37.94 | 326.12 | 7.50 |
| 16 | 6.57 | 10.20 | 37.94 | 358.09 | 8.24 |
| 17 | 7.01 | 10.68 | 37.94 | 244.05 | 5.61 |
| 18 | 7.45 | 11.17 | 37.94 | 327.73 | 7.54 |
| 19 | 7.90 | 11.65 | 37.94 | 231.33 | 5.32 |
| 20 | 8.34 | 12.14 | 37.94 | 68.89 | 1.58 |
| 21 | 8.78 | 12.62 | 37.94 | 17.56 | 0.40 |
| 22 | 9.23 | 13.11 | 37.94 | 68.44 | 1.57 |
| 23 | 9.67 | 13.59 | 37.94 | 113.34 | 2.61 |
| 24 | 10.11 | 14.08 | 37.94 | 178.59 | 4.11 |
| 25 | 10.55 | 14.56 | 37.94 | 210.25 | 4.84 |
| 26 | 11.00 | 15.05 | 37.94 | 252.01 | 5.80 |
| 27 | 11.44 | 15.53 | 37.94 | 242.52 | 5.58 |
| 28 | 11.88 | 16.01 | 37.94 | 259.62 | 5.97 |
| 29 | 12.33 | 16.50 | 37.94 | 258.45 | 5.94 |
| 30 | 12.77 | 16.98 | 37.94 | 261.01 | 6.00 |
| 31 | 13.21 | 17.47 | 37.94 | 80.06 | 1.84 |
| 32 | 13.66 | 17.95 | 37.94 | 251.83 | 5.79 |
| 33 | 14.10 | 18.44 | 37.94 | 402.95 | 9.27 |

Überzug Nr.: 26 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei seütl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm²) | | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|------|-----------------|------|--------------------|
| | | | | | | unten | oben | |
| 1 | 0.00 | 15.90 | 2.34 | 219.79 | 220. | 6.99 | 0.00 | 237.6 |
| 2 | 0.44 | 15.46 | 2.34 | 233.51 | 234. | 6.99 | 0.00 | 237.5 |
| 3 | 0.88 | 15.02 | 2.34 | 248.77 | 249. | 6.99 | 0.00 | 237.4 |
| 4 | 1.31 | 14.59 | 2.34 | 239.54 | 240. | 6.99 | 0.00 | 237.5 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) | | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|--------|------------------------------|-------|--------------------|
| | | | | | | unten | oben | |
| 5 | 1.75 | 14.15 | 2.34 | 206.59 | 207. | 6.99 | 0.00 | 237.7 |
| 6 | 2.19 | 13.71 | 2.34 | 156.34 | 156. | 6.99 | 0.00 | 238.0 |
| 7 | 2.63 | 13.27 | 2.34 | 89.43 | 89. | 6.99 | 0.00 | 238.6 |
| 8 | 3.07 | 12.83 | 2.34 | 10.31 | 10. | 6.99 | 0.00 | 239.5 |
| 9 | 3.50 | 12.40 | 2.34 | -83.10 | -83. | 0.00 | 0.82 | 238.6 |
| 10 | 3.94 | 11.96 | 2.34 | -188.74 | -189. | 0.00 | 1.75 | 237.8 |
| 11 | 4.38 | 11.52 | 2.34 | -314.70 | -315. | 0.00 | 2.96 | 237.1 |
| 12 | 4.82 | 11.08 | 2.34 | -461.25 | -461. | 0.00 | 4.38 | 236.4 |
| 13 | 5.26 | 10.64 | 2.34 | -630.22 | -630. | 0.00 | 5.96 | 235.6 |
| 14 | 5.70 | 10.20 | 2.34 | -828.51 | -829. | 0.00 | 7.85 | 234.8 |
| 15 | 6.13 | 9.77 | 2.34 | -1067.07 | -1067. | 0.00 | 10.00 | 233.8 |
| 16 | 6.57 | 9.33 | 2.34 | -1360.70 | -1361. | 0.00 | 12.92 | 232.4 |
| 17 | 7.01 | 8.89 | 2.34 | -1733.16 | -1733. | 0.00 | 16.51 | 230.6 |
| 18 | 7.45 | 8.45 | 2.34 | -1649.14 | -1649. | 0.00 | 15.58 | 231.1 |
| 19 | 7.90 | 8.00 | 2.34 | -1639.75 | -1640. | 0.00 | 15.58 | 231.1 |
| 20 | 8.34 | 7.56 | 2.34 | -1668.53 | -1669. | 0.00 | 15.77 | 231.0 |
| 21 | 8.78 | 7.12 | 2.34 | -1713.64 | -1714. | 0.00 | 16.33 | 230.7 |
| 22 | 9.23 | 6.67 | 2.34 | -1762.98 | -1763. | 0.00 | 16.70 | 230.5 |
| 23 | 9.67 | 6.23 | 2.34 | -1796.64 | -1797. | 0.00 | 17.07 | 230.3 |
| 24 | 10.11 | 5.79 | 2.34 | -1811.02 | -1811. | 0.00 | 17.25 | 230.2 |
| 25 | 10.55 | 5.35 | 2.34 | -1787.67 | -1788. | 0.00 | 17.07 | 230.3 |
| 26 | 11.00 | 4.90 | 2.34 | -1725.03 | -1725. | 0.00 | 16.33 | 230.7 |
| 27 | 11.44 | 4.46 | 2.34 | -1612.80 | -1613. | 0.00 | 15.39 | 231.2 |
| 28 | 11.88 | 4.02 | 2.34 | -1450.83 | -1451. | 0.00 | 13.69 | 232.0 |
| 29 | 12.33 | 3.57 | 2.34 | -1243.15 | -1243. | 0.00 | 11.77 | 233.0 |
| 30 | 12.77 | 3.13 | 2.34 | -975.78 | -976. | 0.00 | 9.22 | 234.1 |
| 31 | 13.21 | 2.69 | 2.34 | -672.62 | -673. | 0.00 | 6.33 | 235.4 |
| 32 | 13.66 | 2.24 | 2.34 | -334.89 | -335. | 0.00 | 3.10 | 237.0 |
| 33 | 14.10 | 1.80 | 2.34 | -69.47 | -69. | 0.00 | 0.65 | 238.7 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 239.33

untere Bewehrung : 64.34

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | | Tm (kNm) | Bewehrung (cm ² /m) | | | | | |
|----------------|----------|----------|----------|-----------|-------|-------------|--------------------------------|----------|------|------|------|-----|
| | | | | | | | Bereich | Vrd(MN) | as | | | |
| 1 | 0.00 | 15.90 | 2.34 | 27.24 | 27. | 0.00 | 0. | min. 0.1 | 0.71 | 4% | 2.32 | 0.0 |
| 2 | 0.44 | 15.46 | 2.34 | 39.46 | 39. | 0.00 | 0. | min. 0.1 | 0.71 | 6% | 2.32 | 0.0 |
| 3 | 0.88 | 15.02 | 2.34 | 13.36 | 13. | 0.00 | 0. | min. 0.1 | 0.71 | 2% | 2.32 | 0.0 |
| 4 | 1.31 | 14.59 | 2.34 | -51.60 | -52. | 0.00 | 0. | min. 0.1 | 0.71 | 7% | 2.32 | 0.0 |
| 5 | 1.75 | 14.15 | 2.34 | -95.81 | -96. | 0.00 | 0. | min. 0.1 | 0.71 | 14% | 2.32 | 0.0 |
| 6 | 2.19 | 13.71 | 2.34 | -134.86 | -135. | 0.00 | 0. | min. 0.2 | 0.71 | 19% | 2.32 | 0.0 |
| 7 | 2.63 | 13.27 | 2.34 | -167.00 | -167. | 0.00 | 0. | min. 0.2 | 0.71 | 24% | 2.32 | 0.0 |
| 8 | 3.07 | 12.83 | 2.34 | -197.11 | -197. | 0.00 | 0. | min. 0.2 | 0.71 | 28% | 2.32 | 0.0 |
| 9 | 3.50 | 12.40 | 2.34 | -225.93 | -226. | 0.00 | 0. | min. 0.2 | 0.71 | 32% | 2.32 | 0.0 |
| 10 | 3.94 | 11.96 | 2.34 | -262.14 | -262. | 0.00 | 0. | min. 0.2 | 0.71 | 37% | 2.32 | 0.0 |
| 11 | 4.38 | 11.52 | 2.34 | -311.34 | -311. | 0.00 | 0. | min. 0.2 | 0.71 | 44% | 2.32 | 0.0 |
| 12 | 4.82 | 11.08 | 2.34 | -358.48 | -358. | 0.00 | 0. | min. 0.3 | 0.71 | 51% | 2.32 | 0.0 |
| 13 | 5.26 | 10.64 | 2.34 | -415.25 | -415. | 0.00 | 0. | min. 0.3 | 0.71 | 59% | 2.32 | 0.0 |
| 14 | 5.70 | 10.20 | 2.34 | -495.25 | -495. | 0.00 | 0. | min. 0.3 | 0.71 | 70% | 2.32 | 0.0 |
| 15 | 6.13 | 9.77 | 2.34 | -595.03 | -595. | 0.00 | 0. | min. 0.4 | 0.71 | 84% | 2.32 | 0.0 |
| 16 | 6.57 | 9.33 | 2.34 | -768.78 | -769. | 0.00 | 0. | norm 0.4 | 0.77 | 100% | 2.77 | 0.0 |
| 17 | 7.01 | 8.89 | 2.34 | -890.77 | -891. | 0.00 | 0. | norm 0.4 | 0.89 | 100% | 3.83 | 0.0 |
| 18 | 7.01 | 8.89 | 2.34 | 229.15 | 229. | 0.00 | 0. | min. 0.2 | 0.70 | 33% | 2.32 | 0.0 |
| 19 | 7.45 | 8.45 | 2.34 | 110.48 | 110. | 0.00 | 0. | min. 0.1 | 0.70 | 16% | 2.32 | 0.0 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | Tm (kNm) | Bewehrung (cm²/m) | | | | | | |
|----------------|----------|----------|----------|-----------|-------------|-------------------|---------|----------|------|------|------|-----|
| | | | | | | Bereich | Vrd(MN) | as | | | | |
| 20 | 7.90 | 8.00 | 2.34 | -38.70 | -39. | 0.00 | 0. | min. 0.1 | 0.70 | 6% | 2.32 | 0.0 |
| 21 | 8.34 | 7.56 | 2.34 | -86.95 | -87. | 0.00 | 0. | min. 0.1 | 0.70 | 12% | 2.32 | 0.0 |
| 22 | 8.78 | 7.12 | 2.34 | -113.76 | -114. | 0.00 | 0. | min. 0.1 | 0.70 | 16% | 2.32 | 0.0 |
| 23 | 9.23 | 6.67 | 2.34 | -97.44 | -97. | 0.00 | 0. | min. 0.1 | 0.70 | 14% | 2.32 | 0.0 |
| 24 | 9.67 | 6.23 | 2.34 | -58.43 | -58. | 0.00 | 0. | min. 0.1 | 0.70 | 8% | 2.32 | 0.0 |
| 25 | 10.11 | 5.79 | 2.34 | 5.90 | 6. | 0.00 | 0. | min. 0.1 | 0.70 | 1% | 2.32 | 0.0 |
| 26 | 10.55 | 5.35 | 2.34 | 95.58 | 96. | 0.00 | 0. | min. 0.1 | 0.70 | 14% | 2.32 | 0.0 |
| 27 | 11.00 | 4.90 | 2.34 | 193.95 | 194. | 0.00 | 0. | min. 0.2 | 0.70 | 28% | 2.32 | 0.0 |
| 28 | 11.44 | 4.46 | 2.34 | 312.49 | 312. | 0.00 | 0. | min. 0.2 | 0.70 | 45% | 2.32 | 0.0 |
| 29 | 11.88 | 4.02 | 2.34 | 412.50 | 412. | 0.00 | 0. | min. 0.3 | 0.70 | 59% | 2.32 | 0.0 |
| 30 | 12.33 | 3.57 | 2.34 | 540.13 | 540. | 0.00 | 0. | min. 0.3 | 0.71 | 76% | 2.32 | 0.0 |
| 31 | 12.77 | 3.13 | 2.34 | 643.08 | 643. | 0.00 | 0. | min. 0.4 | 0.71 | 91% | 2.32 | 0.0 |
| 32 | 13.21 | 2.69 | 2.34 | 750.04 | 750. | 0.00 | 0. | norm 0.4 | 0.75 | 100% | 2.59 | 0.0 |
| 33 | 13.66 | 2.24 | 2.34 | 695.69 | 696. | 0.00 | 0. | min. 0.4 | 0.71 | 98% | 2.32 | 0.0 |
| 34 | 14.10 | 1.80 | 2.34 | 550.61 | 551. | 0.00 | 0. | min. 0.3 | 0.71 | 78% | 2.32 | 0.0 |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm²] | As Feld [cm²] |
|--------|------------------------------|-----------------|------------------|-------------|------------------|
| UZ-Anf | 18.43 | 2.23 | 40.86 | 1.75 | 6.99 |
| UZ-End | 18.38 | 2.22 | 828.67 | 19.06 | 0.00 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|---------|
| 0 | 0.00 | 15.90 | 2.34 | -70.95 | -67.55 |
| 1 | 0.22 | 15.68 | 2.34 | -31.94 | -27.89 |
| 2 | 0.66 | 15.24 | 2.34 | 57.95 | 59.57 |
| 3 | 1.10 | 14.80 | 2.34 | 158.50 | 148.28 |
| 4 | 1.53 | 14.37 | 2.34 | 95.66 | 100.91 |
| 5 | 1.97 | 13.93 | 2.34 | 91.00 | 89.12 |
| 6 | 2.41 | 13.49 | 2.34 | 72.07 | 73.35 |
| 7 | 2.85 | 13.05 | 2.34 | 69.20 | 68.73 |
| 8 | 3.29 | 12.61 | 2.34 | 64.75 | 65.79 |
| 9 | 3.72 | 12.18 | 2.34 | 81.39 | 82.65 |
| 10 | 4.16 | 11.74 | 2.34 | 115.17 | 112.29 |
| 11 | 4.60 | 11.30 | 2.34 | 105.90 | 107.60 |
| 12 | 5.04 | 10.86 | 2.34 | 126.84 | 129.59 |
| 13 | 5.48 | 10.42 | 2.34 | 187.53 | 182.59 |
| 14 | 5.91 | 9.99 | 2.34 | 212.67 | 227.74 |
| 15 | 6.35 | 9.55 | 2.34 | 420.99 | 396.59 |
| 16 | 6.79 | 9.11 | 2.34 | 267.64 | 278.42 |
| 17 | 7.23 | 8.67 | 2.34 | 259.21 | 267.79 |
| 18 | 7.67 | 8.23 | 2.34 | 362.35 | 336.66 |
| 19 | 8.12 | 7.78 | 2.34 | 88.87 | 108.87 |
| 20 | 8.56 | 7.34 | 2.34 | 69.99 | 60.51 |
| 21 | 9.00 | 6.90 | 2.34 | -42.50 | -36.83 |
| 22 | 9.45 | 6.45 | 2.34 | -86.37 | -88.03 |
| 23 | 9.89 | 6.01 | 2.34 | -144.66 | -145.18 |
| 24 | 10.33 | 5.57 | 2.34 | -206.09 | -202.36 |
| 25 | 10.78 | 5.12 | 2.34 | -216.98 | -222.00 |
| 26 | 11.22 | 4.68 | 2.34 | -277.36 | -267.51 |
| 27 | 11.66 | 4.24 | 2.34 | -213.12 | -225.69 |
| 28 | 12.11 | 3.79 | 2.34 | -302.41 | -288.03 |
| 29 | 12.55 | 3.35 | 2.34 | -216.90 | -232.33 |
| 30 | 12.99 | 2.91 | 2.34 | -272.53 | -241.36 |
| 31 | 13.44 | 2.46 | 2.34 | 138.64 | 122.65 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|--------|
| 32 | 13.88 | 2.02 | 2.34 | 334.43 | 327.39 |
| 33 | 14.10 | 1.80 | 2.34 | 396.67 | 402.95 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|--------|
| 1 | 0.00 | 7.01 | 130.28 | 130.32 |
| 2 | 7.01 | 14.10 | -44.30 | -43.91 |
| total | 0.00 | 14.10 | 42.49 | 107.48 |

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 1 | 0.00 | 35.82 | 20.25 | 67.55 | 1.55 |
| 2 | 0.44 | 35.82 | 20.57 | 11.78 | 0.27 |
| 3 | 0.88 | 35.82 | 20.90 | 115.64 | 2.66 |
| 4 | 1.31 | 35.82 | 21.22 | 132.37 | 3.04 |
| 5 | 1.75 | 35.82 | 21.54 | 89.88 | 2.07 |
| 6 | 2.19 | 5.35 | 37.94 | 82.15 | 1.89 |
| 7 | 2.63 | 5.84 | 37.94 | 69.82 | 1.61 |
| 8 | 3.07 | 6.32 | 37.94 | 66.41 | 1.53 |
| 9 | 3.50 | 6.81 | 37.94 | 70.77 | 1.63 |
| 10 | 3.94 | 7.29 | 37.94 | 99.91 | 2.30 |
| 11 | 4.38 | 7.78 | 37.94 | 111.72 | 2.57 |
| 12 | 4.82 | 8.26 | 37.94 | 111.92 | 2.57 |
| 13 | 5.26 | 8.75 | 37.94 | 159.38 | 3.67 |
| 14 | 5.70 | 9.23 | 37.94 | 189.99 | 4.37 |
| 15 | 6.13 | 9.71 | 37.94 | 326.12 | 7.50 |
| 16 | 6.57 | 10.20 | 37.94 | 358.09 | 8.24 |
| 17 | 7.01 | 10.68 | 37.94 | 244.05 | 5.61 |
| 18 | 7.45 | 11.17 | 37.94 | 327.73 | 7.54 |
| 19 | 7.90 | 11.65 | 37.94 | 231.33 | 5.32 |
| 20 | 8.34 | 12.14 | 37.94 | 68.89 | 1.58 |
| 21 | 8.78 | 12.62 | 37.94 | 17.56 | 0.40 |
| 22 | 9.23 | 13.11 | 37.94 | 68.44 | 1.57 |
| 23 | 9.67 | 13.59 | 37.94 | 113.34 | 2.61 |
| 24 | 10.11 | 14.08 | 37.94 | 178.59 | 4.11 |
| 25 | 10.55 | 14.56 | 37.94 | 210.25 | 4.84 |
| 26 | 11.00 | 15.05 | 37.94 | 252.01 | 5.80 |
| 27 | 11.44 | 15.53 | 37.94 | 242.52 | 5.58 |
| 28 | 11.88 | 16.01 | 37.94 | 259.62 | 5.97 |
| 29 | 12.33 | 16.50 | 37.94 | 258.45 | 5.94 |
| 30 | 12.77 | 16.98 | 37.94 | 261.01 | 6.00 |
| 31 | 13.21 | 17.47 | 37.94 | 80.06 | 1.84 |
| 32 | 13.66 | 17.95 | 37.94 | 251.83 | 5.79 |
| 33 | 14.10 | 18.44 | 37.94 | 402.95 | 9.27 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

Überzug Nr.: 27 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei seittl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) | | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|--------|------------------------------|-------|--------------------|
| | | | | | | unten | oben | |
| 1 | 0.00 | 8.89 | 2.34 | -11.42 | -11. | 0.00 | 0.13 | 239.4 |
| 2 | 0.46 | 8.89 | 2.80 | -539.72 | -540. | 0.00 | 5.06 | 236.0 |
| 3 | 0.91 | 8.89 | 3.25 | -943.26 | -943. | 0.00 | 8.82 | 234.3 |
| 4 | 1.37 | 8.89 | 3.70 | -1200.85 | -1201. | 0.00 | 11.38 | 233.2 |
| 5 | 1.82 | 8.89 | 4.16 | -1318.58 | -1319. | 0.00 | 12.54 | 232.6 |
| 6 | 2.27 | 8.89 | 4.61 | -1310.56 | -1311. | 0.00 | 12.35 | 232.7 |
| 7 | 2.73 | 8.89 | 5.07 | -1197.92 | -1198. | 0.00 | 11.38 | 233.2 |
| 8 | 3.18 | 8.89 | 5.52 | -1002.18 | -1002. | 0.00 | 9.41 | 234.1 |
| 9 | 3.64 | 8.89 | 5.98 | -755.55 | -756. | 0.00 | 7.08 | 235.1 |
| 10 | 4.10 | 8.89 | 6.43 | -488.16 | -488. | 0.00 | 4.55 | 236.3 |
| 11 | 4.55 | 8.89 | 6.89 | -238.60 | -239. | 0.00 | 2.26 | 237.5 |
| 12 | 5.01 | 8.89 | 7.35 | -46.72 | -47. | 0.00 | 0.44 | 239.0 |
| 13 | 5.46 | 8.89 | 7.80 | 48.34 | 48. | 6.99 | 0.00 | 238.9 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 77.65

untere Bewehrung : 4.45

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | | Tm (kNm) | Bewehrung (cm ² /m) | | | | | |
|----------------|----------|----------|----------|-----------|--------|-------------|--------------------------------|-----------|------|-----|--|--|
| | | | | | | | Bereich | Vrd(MN) | as | | | |
| 1 | 0.00 | 8.89 | 2.34 | -1216.29 | -1216. | 0.00 | 0. norm 0.5 | 1.22 100% | 6.42 | 0.0 | | |
| 2 | 0.46 | 8.89 | 2.80 | -1050.71 | -1051. | 0.00 | 0. norm 0.4 | 1.05 100% | 5.06 | 0.0 | | |
| 3 | 0.91 | 8.89 | 3.25 | -724.84 | -725. | 0.00 | 0. norm 0.4 | 0.72 100% | 2.39 | 0.0 | | |
| 4 | 1.37 | 8.89 | 3.70 | -409.05 | -409. | 0.00 | 0. min. 0.3 | 0.71 58% | 2.32 | 0.0 | | |
| 5 | 1.82 | 8.89 | 4.16 | -113.59 | -114. | 0.00 | 0. min. 0.1 | 0.70 16% | 2.32 | 0.0 | | |
| 6 | 2.27 | 8.89 | 4.61 | 140.06 | 140. | 0.00 | 0. min. 0.2 | 0.70 20% | 2.32 | 0.0 | | |
| 7 | 2.73 | 8.89 | 5.07 | 348.92 | 349. | 0.00 | 0. min. 0.2 | 0.71 49% | 2.32 | 0.0 | | |
| 8 | 3.18 | 8.89 | 5.52 | 497.55 | 498. | 0.00 | 0. min. 0.3 | 0.71 70% | 2.32 | 0.0 | | |
| 9 | 3.64 | 8.89 | 5.98 | 577.57 | 578. | 0.00 | 0. min. 0.3 | 0.71 82% | 2.32 | 0.0 | | |
| 10 | 4.10 | 8.89 | 6.43 | 581.30 | 581. | 0.00 | 0. min. 0.4 | 0.71 82% | 2.32 | 0.0 | | |
| 11 | 4.55 | 8.89 | 6.89 | 505.70 | 506. | 0.00 | 0. min. 0.3 | 0.71 71% | 2.32 | 0.0 | | |
| 12 | 5.01 | 8.89 | 7.35 | 306.53 | 307. | 0.00 | 0. min. 0.2 | 0.71 43% | 2.32 | 0.0 | | |
| 13 | 5.46 | 8.89 | 7.80 | 160.10 | 160. | 0.00 | 0. min. 0.2 | 0.71 23% | 2.32 | 0.0 | | |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm ²] | As Feld [cm ²] |
|--------|------------------------------|-----------------|------------------|--------------------------|-------------------------------|
| UZ-Anf | 28.14 | 3.09 | 1137.23 | 26.16 | 0.00 |
| UZ-End | 18.43 | 2.23 | 240.15 | 5.52 | 0.00 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|---------|
| 0 | 0.00 | 8.89 | 2.34 | -87.88 | -150.38 |
| 1 | 0.23 | 8.89 | 2.57 | -340.03 | -363.90 |
| 2 | 0.68 | 8.89 | 3.02 | -747.52 | -716.21 |
| 3 | 1.14 | 8.89 | 3.48 | -686.32 | -694.05 |
| 4 | 1.59 | 8.89 | 3.93 | -654.63 | -649.36 |
| 5 | 2.05 | 8.89 | 4.39 | -555.92 | -557.46 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|---------|
| 6 | 2.50 | 8.89 | 4.84 | -461.55 | -459.05 |
| 7 | 2.96 | 8.89 | 5.30 | -326.67 | -326.64 |
| 8 | 3.41 | 8.89 | 5.75 | -177.86 | -175.87 |
| 9 | 3.87 | 8.89 | 6.21 | -4.43 | -8.20 |
| 10 | 4.32 | 8.89 | 6.66 | 151.40 | 166.15 |
| 11 | 4.78 | 8.89 | 7.12 | 468.64 | 437.74 |
| 12 | 5.23 | 8.89 | 7.57 | 309.84 | 321.81 |
| 13 | 5.46 | 8.89 | 7.80 | 178.09 | 222.31 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|---------|
| 1 | 0.00 | 5.46 | -249.58 | -251.13 |
| total | 0.00 | 5.46 | -249.58 | -251.13 |

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 1 | 0.00 | 35.82 | 20.25 | 150.38 | 3.46 |
| 2 | 0.46 | 35.82 | 20.57 | 577.42 | 13.28 |
| 3 | 0.91 | 35.82 | 20.90 | 733.46 | 16.87 |
| 4 | 1.37 | 35.82 | 21.22 | 669.89 | 15.41 |
| 5 | 1.82 | 35.82 | 21.54 | 608.50 | 14.00 |
| 6 | 2.27 | 5.35 | 37.94 | 509.83 | 11.73 |
| 7 | 2.73 | 5.84 | 37.94 | 396.62 | 9.12 |
| 8 | 3.18 | 6.32 | 37.94 | 254.22 | 5.85 |
| 9 | 3.64 | 6.81 | 37.94 | 89.62 | 2.06 |
| 10 | 4.10 | 7.29 | 37.94 | 63.45 | 1.46 |
| 11 | 4.55 | 7.78 | 37.94 | 322.65 | 7.42 |
| 12 | 5.01 | 8.26 | 37.94 | 421.32 | 9.69 |
| 13 | 5.46 | 8.75 | 37.94 | 222.31 | 5.11 |

Überzug Nr.: 28 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei seittl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm²) | | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|------|-----------------|------|--------------------|
| | | | | | | unten | oben | |
| 1 | 0.00 | 8.89 | 7.80 | 132.23 | 132. | 6.99 | 0.00 | 238.2 |
| 2 | 0.48 | 9.37 | 7.80 | 300.91 | 301. | 6.99 | 0.00 | 237.2 |
| 3 | 0.97 | 9.86 | 7.80 | 386.67 | 387. | 6.99 | 0.00 | 236.8 |
| 4 | 1.45 | 10.34 | 7.80 | 409.27 | 409. | 6.99 | 0.00 | 236.6 |
| 5 | 1.93 | 10.82 | 7.80 | 395.56 | 396. | 6.99 | 0.00 | 236.7 |
| 6 | 2.41 | 11.30 | 7.80 | 361.73 | 362. | 6.99 | 0.00 | 236.9 |
| 7 | 2.90 | 11.79 | 7.80 | 319.27 | 319. | 6.99 | 0.00 | 237.1 |
| 8 | 3.38 | 12.27 | 7.80 | 275.55 | 276. | 6.99 | 0.00 | 237.3 |
| 9 | 3.86 | 12.75 | 7.80 | 231.29 | 231. | 6.99 | 0.00 | 237.6 |
| 10 | 4.34 | 13.23 | 7.80 | 189.69 | 190. | 6.99 | 0.00 | 237.8 |
| 11 | 4.83 | 13.72 | 7.80 | 151.05 | 151. | 6.99 | 0.00 | 238.1 |
| 12 | 5.31 | 14.20 | 7.80 | 115.45 | 115. | 6.99 | 0.00 | 238.3 |
| 13 | 5.79 | 14.68 | 7.80 | 77.93 | 78. | 6.99 | 0.00 | 238.6 |
| 14 | 6.27 | 15.16 | 7.80 | 41.77 | 42. | 6.99 | 0.00 | 239.0 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) unten | oben | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|-------|---------------------------------------|------|--------------------|
| 15 | 6.76 | 15.65 | 7.80 | 7.50 | 8. | 6.99 | 0.00 | 239.5 |
| 16 | 7.24 | 16.13 | 7.80 | -25.08 | -25. | 0.00 | 0.26 | 239.2 |
| 17 | 7.72 | 16.61 | 7.80 | -61.31 | -61. | 0.00 | 0.58 | 238.8 |
| 18 | 8.21 | 17.10 | 7.80 | -93.19 | -93. | 0.00 | 0.91 | 238.5 |
| 19 | 8.69 | 17.58 | 7.80 | -126.97 | -127. | 0.00 | 1.20 | 238.2 |
| 20 | 9.17 | 18.06 | 7.80 | -158.85 | -159. | 0.00 | 1.52 | 238.0 |
| 21 | 9.65 | 18.54 | 7.80 | -188.44 | -188. | 0.00 | 1.75 | 237.8 |
| 22 | 10.14 | 19.03 | 7.80 | -220.05 | -220. | 0.00 | 2.13 | 237.6 |
| 23 | 10.62 | 19.51 | 7.80 | -250.62 | -251. | 0.00 | 2.39 | 237.4 |
| 24 | 11.10 | 19.99 | 7.80 | -276.52 | -277. | 0.00 | 2.67 | 237.3 |
| 25 | 11.58 | 20.47 | 7.80 | -300.49 | -300. | 0.00 | 2.81 | 237.2 |
| 26 | 12.07 | 20.96 | 7.80 | -320.14 | -320. | 0.00 | 2.96 | 237.1 |
| 27 | 12.55 | 21.44 | 7.80 | -335.01 | -335. | 0.00 | 3.10 | 237.0 |
| 28 | 13.03 | 21.92 | 7.80 | -336.48 | -336. | 0.00 | 3.10 | 237.0 |
| 29 | 13.51 | 22.40 | 7.80 | -318.77 | -319. | 0.00 | 2.96 | 237.1 |
| 30 | 14.00 | 22.89 | 7.80 | -271.38 | -271. | 0.00 | 2.53 | 237.3 |
| 31 | 14.48 | 23.37 | 7.80 | -253.81 | -254. | 0.00 | 2.39 | 237.4 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 30.95

untere Bewehrung : 137.03

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | | Tm (kNm) | | Bewehrung (cm ² /m) | | | | |
|----------------|----------|----------|----------|-----------|------|-------------|----|--------------------------------|---------|-----|------|-----|
| | | | | | | | | Bereich | Vrd(MN) | as | | |
| 1 | 0.00 | 8.89 | 7.80 | 387.37 | 387. | 0.00 | 0. | min. 0.3 | 0.71 | 55% | 2.32 | 0.0 |
| 2 | 0.48 | 9.37 | 7.80 | 273.69 | 274. | 0.00 | 0. | min. 0.2 | 0.71 | 39% | 2.32 | 0.0 |
| 3 | 0.97 | 9.86 | 7.80 | 99.34 | 99. | 0.00 | 0. | min. 0.1 | 0.71 | 14% | 2.32 | 0.0 |
| 4 | 1.45 | 10.34 | 7.80 | 2.44 | 2. | 0.00 | 0. | min. 0.1 | 0.71 | 0% | 2.32 | 0.0 |
| 5 | 1.93 | 10.82 | 7.80 | -53.85 | -54. | 0.00 | 0. | min. 0.1 | 0.71 | 8% | 2.32 | 0.0 |
| 6 | 2.41 | 11.30 | 7.80 | -82.49 | -82. | 0.00 | 0. | min. 0.1 | 0.71 | 12% | 2.32 | 0.0 |
| 7 | 2.90 | 11.79 | 7.80 | -90.37 | -90. | 0.00 | 0. | min. 0.1 | 0.71 | 13% | 2.32 | 0.0 |
| 8 | 3.38 | 12.27 | 7.80 | -91.71 | -92. | 0.00 | 0. | min. 0.1 | 0.71 | 13% | 2.32 | 0.0 |
| 9 | 3.86 | 12.75 | 7.80 | -89.66 | -90. | 0.00 | 0. | min. 0.1 | 0.71 | 13% | 2.32 | 0.0 |
| 10 | 4.34 | 13.23 | 7.80 | -83.35 | -83. | 0.00 | 0. | min. 0.1 | 0.71 | 12% | 2.32 | 0.0 |
| 11 | 4.83 | 13.72 | 7.80 | -75.68 | -76. | 0.00 | 0. | min. 0.1 | 0.71 | 11% | 2.32 | 0.0 |
| 12 | 5.31 | 14.20 | 7.80 | -75.36 | -75. | 0.00 | 0. | min. 0.1 | 0.71 | 11% | 2.32 | 0.0 |
| 13 | 5.79 | 14.68 | 7.80 | -77.34 | -77. | 0.00 | 0. | min. 0.1 | 0.71 | 11% | 2.32 | 0.0 |
| 14 | 6.27 | 15.16 | 7.80 | -73.22 | -73. | 0.00 | 0. | min. 0.1 | 0.71 | 10% | 2.32 | 0.0 |
| 15 | 6.76 | 15.65 | 7.80 | -67.50 | -67. | 0.00 | 0. | min. 0.1 | 0.71 | 10% | 2.32 | 0.0 |
| 16 | 7.24 | 16.13 | 7.80 | -72.28 | -72. | 0.00 | 0. | min. 0.1 | 0.71 | 10% | 2.32 | 0.0 |
| 17 | 7.72 | 16.61 | 7.80 | -71.06 | -71. | 0.00 | 0. | min. 0.1 | 0.71 | 10% | 2.32 | 0.0 |
| 18 | 8.21 | 17.10 | 7.80 | -66.83 | -67. | 0.00 | 0. | min. 0.1 | 0.71 | 9% | 2.32 | 0.0 |
| 19 | 8.69 | 17.58 | 7.80 | -69.74 | -70. | 0.00 | 0. | min. 0.1 | 0.71 | 10% | 2.32 | 0.0 |
| 20 | 9.17 | 18.06 | 7.80 | -62.35 | -62. | 0.00 | 0. | min. 0.1 | 0.71 | 9% | 2.32 | 0.0 |
| 21 | 9.65 | 18.54 | 7.80 | -62.92 | -63. | 0.00 | 0. | min. 0.1 | 0.71 | 9% | 2.32 | 0.0 |
| 22 | 10.14 | 19.03 | 7.80 | -66.33 | -66. | 0.00 | 0. | min. 0.1 | 0.71 | 9% | 2.32 | 0.0 |
| 23 | 10.62 | 19.51 | 7.80 | -58.28 | -58. | 0.00 | 0. | min. 0.1 | 0.71 | 8% | 2.32 | 0.0 |
| 24 | 11.10 | 19.99 | 7.80 | -51.54 | -52. | 0.00 | 0. | min. 0.1 | 0.71 | 7% | 2.32 | 0.0 |
| 25 | 11.58 | 20.47 | 7.80 | -45.47 | -45. | 0.00 | 0. | min. 0.1 | 0.71 | 6% | 2.32 | 0.0 |
| 26 | 12.07 | 20.96 | 7.80 | -37.66 | -38. | 0.00 | 0. | min. 0.1 | 0.71 | 5% | 2.32 | 0.0 |
| 27 | 12.55 | 21.44 | 7.80 | -18.49 | -18. | 0.00 | 0. | min. 0.1 | 0.71 | 3% | 2.32 | 0.0 |
| 28 | 13.03 | 21.92 | 7.80 | 10.02 | 10. | 0.00 | 0. | min. 0.1 | 0.71 | 1% | 2.32 | 0.0 |
| 29 | 13.51 | 22.40 | 7.80 | 79.38 | 79. | 0.00 | 0. | min. 0.1 | 0.71 | 11% | 2.32 | 0.0 |
| 30 | 14.00 | 22.89 | 7.80 | 77.08 | 77. | 0.00 | 0. | min. 0.1 | 0.71 | 11% | 2.32 | 0.0 |
| 31 | 14.48 | 23.37 | 7.80 | 16.08 | 16. | 0.00 | 0. | min. 0.1 | 0.71 | 2% | 2.32 | 0.0 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm²] | As Feld [cm²] |
|--------|------------------------------|-----------------|------------------|-------------|------------------|
| UZ-Anf | 18.43 | 2.23 | 581.06 | 13.36 | 6.99 |
| UZ-End | 18.43 | 2.23 | 24.12 | 1.75 | 6.99 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|---------|
| 0 | 0.00 | 8.89 | 7.80 | 105.73 | 142.09 |
| 1 | 0.24 | 9.13 | 7.80 | 224.59 | 235.55 |
| 2 | 0.72 | 9.61 | 7.80 | 384.56 | 361.21 |
| 3 | 1.21 | 10.10 | 7.80 | 189.85 | 200.77 |
| 4 | 1.69 | 10.58 | 7.80 | 117.87 | 116.62 |
| 5 | 2.17 | 11.06 | 7.80 | 58.52 | 59.32 |
| 6 | 2.65 | 11.54 | 7.80 | 14.70 | 16.33 |
| 7 | 3.14 | 12.03 | 7.80 | 2.74 | 2.77 |
| 8 | 3.62 | 12.51 | 7.80 | -4.10 | -4.25 |
| 9 | 4.10 | 12.99 | 7.80 | -13.15 | -13.06 |
| 10 | 4.59 | 13.48 | 7.80 | -17.19 | -15.90 |
| 11 | 5.07 | 13.96 | 7.80 | 0.07 | -0.67 |
| 12 | 5.55 | 14.44 | 7.80 | 5.08 | 4.11 |
| 13 | 6.03 | 14.92 | 7.80 | -8.80 | -8.53 |
| 14 | 6.52 | 15.41 | 7.80 | -14.08 | -11.87 |
| 15 | 7.00 | 15.89 | 7.80 | 12.75 | 9.92 |
| 16 | 7.48 | 16.37 | 7.80 | -3.11 | -2.53 |
| 17 | 7.96 | 16.85 | 7.80 | -10.85 | -8.77 |
| 18 | 8.45 | 17.34 | 7.80 | 9.69 | 6.03 |
| 19 | 8.93 | 17.82 | 7.80 | -18.83 | -15.30 |
| 20 | 9.41 | 18.30 | 7.80 | 2.17 | 1.18 |
| 21 | 9.89 | 18.78 | 7.80 | 9.27 | 7.07 |
| 22 | 10.38 | 19.27 | 7.80 | -19.09 | -16.69 |
| 23 | 10.86 | 19.75 | 7.80 | -13.16 | -13.95 |
| 24 | 11.34 | 20.23 | 7.80 | -12.99 | -12.58 |
| 25 | 11.83 | 20.72 | 7.80 | -14.06 | -16.19 |
| 26 | 12.31 | 21.20 | 7.80 | -42.86 | -39.72 |
| 27 | 12.79 | 21.68 | 7.80 | -49.66 | -59.07 |
| 28 | 13.27 | 22.16 | 7.80 | -161.86 | -143.70 |
| 29 | 13.76 | 22.65 | 7.80 | 9.72 | 4.78 |
| 30 | 14.24 | 23.13 | 7.80 | 131.47 | 126.37 |
| 31 | 14.48 | 23.37 | 7.80 | 178.87 | 177.70 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|-------|
| 1 | 0.00 | 14.48 | 25.05 | 25.39 |
| total | 0.00 | 14.48 | 25.05 | 25.39 |

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm²/m) |
|----------------|----------|----------|----------|-------------------------|----------------------|
| 1 | 0.00 | 35.82 | 20.25 | 142.09 | 3.27 |
| 2 | 0.48 | 35.82 | 20.57 | 329.00 | 7.57 |
| 3 | 0.97 | 35.82 | 20.90 | 296.41 | 6.82 |
| 4 | 1.45 | 35.82 | 21.22 | 145.06 | 3.34 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 5 | 1.93 | 35.82 | 21.54 | 88.42 | 2.03 |
| 6 | 2.41 | 5.35 | 37.94 | 34.24 | 0.79 |
| 7 | 2.90 | 5.84 | 37.94 | 7.03 | 0.16 |
| 8 | 3.38 | 6.32 | 37.94 | 0.57 | 0.01 |
| 9 | 3.86 | 6.81 | 37.94 | 8.57 | 0.20 |
| 10 | 4.34 | 7.29 | 37.94 | 16.55 | 0.38 |
| 11 | 4.83 | 7.78 | 37.94 | 9.12 | 0.21 |
| 12 | 5.31 | 8.26 | 37.94 | 4.28 | 0.10 |
| 13 | 5.79 | 8.75 | 37.94 | 1.16 | 0.03 |
| 14 | 6.27 | 9.23 | 37.94 | 13.92 | 0.32 |
| 15 | 6.76 | 9.71 | 37.94 | 0.04 | 0.00 |
| 16 | 7.24 | 10.20 | 37.94 | 7.08 | 0.16 |
| 17 | 7.72 | 10.68 | 37.94 | 9.64 | 0.22 |
| 18 | 8.21 | 11.17 | 37.94 | 0.99 | 0.02 |
| 19 | 8.69 | 11.65 | 37.94 | 4.44 | 0.10 |
| 20 | 9.17 | 12.14 | 37.94 | 10.86 | 0.25 |
| 21 | 9.65 | 12.62 | 37.94 | 8.92 | 0.21 |
| 22 | 10.14 | 13.11 | 37.94 | 5.11 | 0.12 |
| 23 | 10.62 | 13.59 | 37.94 | 17.74 | 0.41 |
| 24 | 11.10 | 14.08 | 37.94 | 12.71 | 0.29 |
| 25 | 11.58 | 14.56 | 37.94 | 11.80 | 0.27 |
| 26 | 12.07 | 15.05 | 37.94 | 29.50 | 0.68 |
| 27 | 12.55 | 15.53 | 37.94 | 39.90 | 0.92 |
| 28 | 13.03 | 16.01 | 37.94 | 114.91 | 2.64 |
| 29 | 13.51 | 16.50 | 37.94 | 87.78 | 2.02 |
| 30 | 14.00 | 16.98 | 37.94 | 75.04 | 1.73 |
| 31 | 14.48 | 17.47 | 37.94 | 177.70 | 4.09 |

Überzug Nr.: 29 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei seith. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) | | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|-------|------------------------------|------|--------------------|
| | | | | | | unten | oben | |
| 1 | 0.00 | 23.37 | 2.22 | 197.99 | 198. | 6.99 | 0.00 | 237.7 |
| 2 | 0.46 | 23.37 | 2.68 | -55.19 | -55. | 0.00 | 0.51 | 238.9 |
| 3 | 0.93 | 23.37 | 3.15 | -302.32 | -302. | 0.00 | 2.81 | 237.2 |
| 4 | 1.39 | 23.37 | 3.62 | -539.29 | -539. | 0.00 | 5.06 | 236.0 |
| 5 | 1.86 | 23.37 | 4.08 | -743.68 | -744. | 0.00 | 7.08 | 235.1 |
| 6 | 2.33 | 23.37 | 4.55 | -893.49 | -893. | 0.00 | 8.43 | 234.5 |
| 7 | 2.79 | 23.37 | 5.01 | -978.59 | -979. | 0.00 | 9.22 | 234.1 |
| 8 | 3.26 | 23.37 | 5.48 | -992.71 | -993. | 0.00 | 9.41 | 234.1 |
| 9 | 3.72 | 23.37 | 5.94 | -934.84 | -935. | 0.00 | 8.82 | 234.3 |
| 10 | 4.18 | 23.37 | 6.40 | -806.48 | -806. | 0.00 | 7.66 | 234.8 |
| 11 | 4.65 | 23.37 | 6.87 | -614.78 | -615. | 0.00 | 5.78 | 235.7 |
| 12 | 5.11 | 23.37 | 7.34 | -371.10 | -371. | 0.00 | 3.56 | 236.8 |
| 13 | 5.58 | 23.37 | 7.80 | -144.51 | -145. | 0.00 | 1.41 | 238.1 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 64.22

untere Bewehrung : 4.55

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Position : BP
Bodenplatte-Lastfall HHW und Vollast aus Gebäude

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | Tm (kNm) | Bewehrung (cm ² /m) | | | | |
|----------------|----------|----------|----------|-----------|-------------|--------------------------------|---------|----------|------|-----|
| | | | | | | Bereich | Vrd(MN) | as | | |
| 1 | 0.00 | 23.37 | 2.22 | -547.28 | -547. | 0.00 | 0. | min. 0.3 | 0.71 | 77% |
| 2 | 0.46 | 23.37 | 2.68 | -538.86 | -539. | 0.00 | 0. | min. 0.3 | 0.71 | 76% |
| 3 | 0.93 | 23.37 | 3.15 | -525.09 | -525. | 0.00 | 0. | min. 0.3 | 0.71 | 74% |
| 4 | 1.39 | 23.37 | 3.62 | -483.98 | -484. | 0.00 | 0. | min. 0.3 | 0.71 | 68% |
| 5 | 1.86 | 23.37 | 4.08 | -386.49 | -386. | 0.00 | 0. | min. 0.3 | 0.71 | 55% |
| 6 | 2.33 | 23.37 | 4.55 | -255.27 | -255. | 0.00 | 0. | min. 0.2 | 0.71 | 36% |
| 7 | 2.79 | 23.37 | 5.01 | -107.94 | -108. | 0.00 | 0. | min. 0.1 | 0.71 | 15% |
| 8 | 3.26 | 23.37 | 5.48 | 46.88 | 47. | 0.00 | 0. | min. 0.1 | 0.71 | 7% |
| 9 | 3.72 | 23.37 | 5.94 | 202.68 | 203. | 0.00 | 0. | min. 0.2 | 0.71 | 29% |
| 10 | 4.18 | 23.37 | 6.40 | 343.92 | 344. | 0.00 | 0. | min. 0.2 | 0.71 | 49% |
| 11 | 4.65 | 23.37 | 6.87 | 486.47 | 486. | 0.00 | 0. | min. 0.3 | 0.71 | 69% |
| 12 | 5.11 | 23.37 | 7.34 | 519.03 | 519. | 0.00 | 0. | min. 0.3 | 0.71 | 73% |
| 13 | 5.58 | 23.37 | 7.80 | 471.44 | 471. | 0.00 | 0. | min. 0.3 | 0.71 | 67% |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm ²] | As Feld [cm ²] |
|--------|------------------------------|-----------------|------------------|--------------------------|-------------------------------|
| UZ-Anf | 18.38 | 2.22 | 823.65 | 18.94 | 6.99 |
| UZ-End | 18.38 | 2.22 | 709.52 | 16.32 | 0.00 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|---------|
| 0 | 0.00 | 23.37 | 2.22 | -15.18 | -15.09 |
| 1 | 0.23 | 23.37 | 2.45 | -17.87 | -18.08 |
| 2 | 0.70 | 23.37 | 2.92 | -27.83 | -29.62 |
| 3 | 1.16 | 23.37 | 3.38 | -83.99 | -88.41 |
| 4 | 1.63 | 23.37 | 3.85 | -213.52 | -209.66 |
| 5 | 2.09 | 23.37 | 4.31 | -283.34 | -282.18 |
| 6 | 2.56 | 23.37 | 4.78 | -317.82 | -316.85 |
| 7 | 3.02 | 23.37 | 5.24 | -332.55 | -332.95 |
| 8 | 3.49 | 23.37 | 5.71 | -339.20 | -335.05 |
| 9 | 3.95 | 23.37 | 6.17 | -295.91 | -303.74 |
| 10 | 4.42 | 23.37 | 6.64 | -325.19 | -306.56 |
| 11 | 4.88 | 23.37 | 7.10 | -63.17 | -70.02 |
| 12 | 5.35 | 23.37 | 7.57 | 109.59 | 102.34 |
| 13 | 5.58 | 23.37 | 7.80 | 178.54 | 175.33 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|---------|
| 1 | 0.00 | 5.58 | -181.07 | -180.92 |
| total | 0.00 | 5.58 | -181.07 | -180.92 |

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 1 | 0.00 | 35.82 | 20.25 | 15.09 | 0.35 |
| 2 | 0.46 | 35.82 | 20.57 | 21.08 | 0.48 |
| 3 | 0.93 | 35.82 | 20.90 | 49.63 | 1.14 |
| 4 | 1.39 | 35.82 | 21.22 | 148.21 | 3.41 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 5 | 1.86 | 35.82 | 21.54 | 253.44 | 5.83 |
| 6 | 2.33 | 5.35 | 37.94 | 302.72 | 6.96 |
| 7 | 2.79 | 5.84 | 37.94 | 325.74 | 7.49 |
| 8 | 3.26 | 6.32 | 37.94 | 339.66 | 7.81 |
| 9 | 3.72 | 6.81 | 37.94 | 313.72 | 7.22 |
| 10 | 4.18 | 7.29 | 37.94 | 321.92 | 7.40 |
| 11 | 4.65 | 7.78 | 37.94 | 203.82 | 4.69 |
| 12 | 5.11 | 8.26 | 37.94 | 29.36 | 0.68 |
| 13 | 5.58 | 8.75 | 37.94 | 175.33 | 4.03 |

Überzug Nr.: 30 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei seith. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) unten | oben | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|--------|---------------------------------------|-------|--------------------|
| 1 | 0.00 | 1.80 | 14.25 | -11.28 | -11. | 0.00 | 0.13 | 239.4 |
| 2 | 0.42 | 2.22 | 14.25 | -543.98 | -544. | 0.00 | 5.06 | 236.0 |
| 3 | 0.83 | 2.63 | 14.25 | -1076.77 | -1077. | 0.00 | 10.20 | 233.7 |
| 4 | 1.25 | 3.05 | 14.25 | -1538.34 | -1538. | 0.00 | 14.64 | 231.6 |
| 5 | 1.66 | 3.46 | 14.25 | -1920.97 | -1921. | 0.00 | 18.35 | 229.7 |
| 6 | 2.08 | 3.88 | 14.25 | -2219.51 | -2220. | 0.00 | 21.23 | 228.2 |
| 7 | 2.50 | 4.30 | 14.25 | -2424.16 | -2424. | 0.00 | 23.37 | 227.1 |
| 8 | 2.91 | 4.71 | 14.25 | -2545.91 | -2546. | 0.00 | 24.67 | 226.4 |
| 9 | 3.33 | 5.13 | 14.25 | -2594.50 | -2595. | 0.00 | 25.21 | 226.1 |
| 10 | 3.74 | 5.54 | 14.25 | -2567.68 | -2568. | 0.00 | 24.92 | 226.3 |
| 11 | 4.16 | 5.96 | 14.25 | -2480.37 | -2480. | 0.00 | 23.98 | 226.8 |
| 12 | 4.57 | 6.37 | 14.25 | -2342.67 | -2343. | 0.00 | 22.49 | 227.5 |
| 13 | 4.99 | 6.79 | 14.25 | -2147.53 | -2148. | 0.00 | 20.52 | 228.6 |
| 14 | 5.39 | 7.19 | 14.25 | -1907.33 | -1907. | 0.00 | 18.17 | 229.8 |
| 15 | 5.79 | 7.59 | 14.25 | -1635.21 | -1635. | 0.00 | 15.58 | 231.1 |
| 16 | 6.19 | 7.99 | 14.25 | -1342.13 | -1342. | 0.00 | 12.73 | 232.5 |
| 17 | 6.59 | 8.39 | 14.25 | -1030.59 | -1031. | 0.00 | 9.61 | 234.0 |
| 18 | 7.07 | 8.87 | 14.25 | -1014.62 | -1015. | 0.00 | 9.61 | 234.0 |
| 19 | 7.56 | 9.36 | 14.25 | -983.11 | -983. | 0.00 | 9.22 | 234.1 |
| 20 | 8.04 | 9.84 | 14.25 | -940.34 | -940. | 0.00 | 8.82 | 234.3 |
| 21 | 8.52 | 10.32 | 14.25 | -887.20 | -887. | 0.00 | 8.43 | 234.5 |
| 22 | 9.01 | 10.81 | 14.25 | -822.25 | -822. | 0.00 | 7.66 | 234.8 |
| 23 | 9.49 | 11.29 | 14.25 | -751.79 | -752. | 0.00 | 7.08 | 235.1 |
| 24 | 9.97 | 11.77 | 14.25 | -676.00 | -676. | 0.00 | 6.33 | 235.4 |
| 25 | 10.46 | 12.26 | 14.25 | -595.73 | -596. | 0.00 | 5.60 | 235.8 |
| 26 | 10.94 | 12.74 | 14.25 | -518.07 | -518. | 0.00 | 4.89 | 236.1 |
| 27 | 11.43 | 13.23 | 14.25 | -441.01 | -441. | 0.00 | 4.21 | 236.4 |
| 28 | 11.91 | 13.71 | 14.25 | -369.76 | -370. | 0.00 | 3.41 | 236.9 |
| 29 | 12.39 | 14.19 | 14.25 | -301.64 | -302. | 0.00 | 2.81 | 237.2 |
| 30 | 12.88 | 14.68 | 14.25 | -243.79 | -244. | 0.00 | 2.26 | 237.5 |
| 31 | 13.36 | 15.16 | 14.25 | -183.50 | -183. | 0.00 | 1.75 | 237.8 |
| 32 | 13.84 | 15.64 | 14.25 | -125.36 | -125. | 0.00 | 1.20 | 238.2 |
| 33 | 14.33 | 16.13 | 14.25 | -74.40 | -74. | 0.00 | 0.73 | 238.6 |
| 34 | 14.81 | 16.61 | 14.25 | -10.51 | -11. | 0.00 | 0.10 | 239.5 |
| 35 | 15.29 | 17.09 | 14.25 | 54.64 | 55. | 6.99 | 0.00 | 238.9 |
| 36 | 15.78 | 17.58 | 14.25 | 134.18 | 134. | 6.99 | 0.00 | 238.2 |
| 37 | 16.26 | 18.06 | 14.25 | 222.23 | 222. | 6.99 | 0.00 | 237.6 |
| 38 | 16.75 | 18.55 | 14.25 | 329.83 | 330. | 6.99 | 0.00 | 237.0 |
| 39 | 17.23 | 19.03 | 14.25 | 449.37 | 449. | 6.99 | 0.00 | 236.4 |
| 40 | 17.71 | 19.51 | 14.25 | 573.39 | 573. | 6.99 | 0.00 | 235.9 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) | | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|------|------------------------------|------|--------------------|
| | | | | | | unten | oben | |
| 41 | 18.20 | 20.00 | 14.25 | 700.54 | 701. | 6.99 | 0.00 | 235.3 |
| 42 | 18.68 | 20.48 | 14.25 | 807.99 | 808. | 7.66 | 0.00 | 234.8 |
| 43 | 19.16 | 20.96 | 14.25 | 856.34 | 856. | 8.04 | 0.00 | 234.7 |
| 44 | 19.65 | 21.45 | 14.25 | 765.05 | 765. | 7.27 | 0.00 | 235.0 |
| 45 | 20.13 | 21.93 | 14.25 | 462.24 | 462. | 6.99 | 0.00 | 236.4 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 321.90

untere Bewehrung : 102.12

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | Tm (kNm) | Bewehrung (cm ² /m) | | | |
|----------------|----------|----------|----------|-----------|-------------|--------------------------------|-------------|-----------|----------|
| | | | | | | Bereich | Vrd(MN) | as | |
| 1 | 0.00 | 1.80 | 14.25 | -1271.55 | -1272. | 0.00 | 0. norm 0.5 | 1.27 100% | 6.86 0.0 |
| 2 | 0.42 | 2.22 | 14.25 | -1300.02 | -1300. | 0.00 | 0. norm 0.5 | 1.30 100% | 7.09 0.0 |
| 3 | 0.83 | 2.63 | 14.25 | -1215.25 | -1215. | 0.00 | 0. norm 0.5 | 1.22 100% | 6.41 0.0 |
| 4 | 1.25 | 3.05 | 14.25 | -1012.76 | -1013. | 0.00 | 0. norm 0.4 | 1.01 100% | 4.79 0.0 |
| 5 | 1.66 | 3.46 | 14.25 | -824.14 | -824. | 0.00 | 0. norm 0.4 | 0.82 100% | 3.30 0.0 |
| 6 | 2.08 | 3.88 | 14.25 | -604.95 | -605. | 0.00 | 0. min. 0.4 | 0.69 87% | 2.32 0.0 |
| 7 | 2.50 | 4.30 | 14.25 | -386.32 | -386. | 0.00 | 0. min. 0.3 | 0.69 56% | 2.32 0.0 |
| 8 | 2.91 | 4.71 | 14.25 | -204.56 | -205. | 0.00 | 0. min. 0.2 | 0.69 30% | 2.32 0.0 |
| 9 | 3.33 | 5.13 | 14.25 | -24.40 | -24. | 0.00 | 0. min. 0.1 | 0.68 4% | 2.32 0.0 |
| 10 | 3.74 | 5.54 | 14.25 | 145.09 | 145. | 0.00 | 0. min. 0.2 | 0.68 21% | 2.32 0.0 |
| 11 | 4.16 | 5.96 | 14.25 | 267.42 | 267. | 0.00 | 0. min. 0.2 | 0.69 39% | 2.32 0.0 |
| 12 | 4.57 | 6.37 | 14.25 | 408.56 | 409. | 0.00 | 0. min. 0.3 | 0.69 59% | 2.32 0.0 |
| 13 | 4.99 | 6.79 | 14.25 | 499.65 | 500. | 0.00 | 0. min. 0.3 | 0.69 72% | 2.32 0.0 |
| 14 | 4.99 | 6.79 | 14.25 | 582.02 | 582. | 0.00 | 0. min. 0.4 | 0.69 84% | 2.32 0.0 |
| 15 | 5.39 | 7.19 | 14.25 | 637.41 | 637. | 0.00 | 0. min. 0.4 | 0.70 91% | 2.32 0.0 |
| 16 | 5.79 | 7.59 | 14.25 | 710.71 | 711. | 0.00 | 0. norm 0.4 | 0.71 100% | 2.35 0.0 |
| 17 | 6.19 | 7.99 | 14.25 | 758.76 | 759. | 0.00 | 0. norm 0.4 | 0.76 100% | 2.68 0.0 |
| 18 | 6.59 | 8.39 | 14.25 | 788.89 | 789. | 0.00 | 0. norm 0.4 | 0.79 100% | 2.91 0.0 |
| 19 | 6.59 | 8.39 | 14.25 | 25.80 | 26. | 0.00 | 0. min. 0.1 | 0.71 4% | 2.32 0.0 |
| 20 | 7.07 | 8.87 | 14.25 | 47.50 | 48. | 0.00 | 0. min. 0.1 | 0.71 7% | 2.32 0.0 |
| 21 | 7.56 | 9.36 | 14.25 | 78.75 | 79. | 0.00 | 0. min. 0.1 | 0.71 11% | 2.32 0.0 |
| 22 | 8.04 | 9.84 | 14.25 | 98.26 | 98. | 0.00 | 0. min. 0.1 | 0.71 14% | 2.32 0.0 |
| 23 | 8.52 | 10.32 | 14.25 | 123.20 | 123. | 0.00 | 0. min. 0.1 | 0.71 17% | 2.32 0.0 |
| 24 | 9.01 | 10.81 | 14.25 | 141.57 | 142. | 0.00 | 0. min. 0.2 | 0.71 20% | 2.32 0.0 |
| 25 | 9.49 | 11.29 | 14.25 | 150.59 | 151. | 0.00 | 0. min. 0.2 | 0.71 21% | 2.32 0.0 |
| 26 | 9.97 | 11.77 | 14.25 | 163.42 | 163. | 0.00 | 0. min. 0.2 | 0.71 23% | 2.32 0.0 |
| 27 | 10.46 | 12.26 | 14.25 | 163.93 | 164. | 0.00 | 0. min. 0.2 | 0.71 23% | 2.32 0.0 |
| 28 | 10.94 | 12.74 | 14.25 | 160.61 | 161. | 0.00 | 0. min. 0.2 | 0.71 23% | 2.32 0.0 |
| 29 | 11.43 | 13.23 | 14.25 | 153.50 | 154. | 0.00 | 0. min. 0.2 | 0.71 22% | 2.32 0.0 |
| 30 | 11.91 | 13.71 | 14.25 | 145.49 | 145. | 0.00 | 0. min. 0.2 | 0.71 21% | 2.32 0.0 |
| 31 | 12.39 | 14.19 | 14.25 | 129.20 | 129. | 0.00 | 0. min. 0.1 | 0.71 18% | 2.32 0.0 |
| 32 | 12.88 | 14.68 | 14.25 | 119.22 | 119. | 0.00 | 0. min. 0.1 | 0.71 17% | 2.32 0.0 |
| 33 | 13.36 | 15.16 | 14.25 | 126.85 | 127. | 0.00 | 0. min. 0.1 | 0.71 18% | 2.32 0.0 |
| 34 | 13.84 | 15.64 | 14.25 | 108.07 | 108. | 0.00 | 0. min. 0.1 | 0.71 15% | 2.32 0.0 |
| 35 | 14.33 | 16.13 | 14.25 | 117.67 | 118. | 0.00 | 0. min. 0.1 | 0.71 17% | 2.32 0.0 |
| 36 | 14.81 | 16.61 | 14.25 | 133.78 | 134. | 0.00 | 0. min. 0.2 | 0.71 19% | 2.32 0.0 |
| 37 | 15.29 | 17.09 | 14.25 | 147.74 | 148. | 0.00 | 0. min. 0.2 | 0.71 21% | 2.32 0.0 |
| 38 | 15.78 | 17.58 | 14.25 | 172.89 | 173. | 0.00 | 0. min. 0.2 | 0.71 25% | 2.32 0.0 |
| 39 | 16.26 | 18.06 | 14.25 | 200.44 | 200. | 0.00 | 0. min. 0.2 | 0.71 28% | 2.32 0.0 |
| 40 | 16.75 | 18.55 | 14.25 | 239.13 | 239. | 0.00 | 0. min. 0.2 | 0.71 34% | 2.32 0.0 |
| 41 | 17.23 | 19.03 | 14.25 | 252.18 | 252. | 0.00 | 0. min. 0.2 | 0.71 36% | 2.32 0.0 |
| 42 | 17.71 | 19.51 | 14.25 | 263.20 | 263. | 0.00 | 0. min. 0.2 | 0.71 37% | 2.32 0.0 |
| 43 | 18.20 | 20.00 | 14.25 | 253.20 | 253. | 0.00 | 0. min. 0.2 | 0.71 36% | 2.32 0.0 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | Tm (kNm) | Bewehrung (cm²/m) | | | | | | |
|----------------|----------|------------------------------|----------|-----------------|-------------|-------------------|---------|-------------|------|------------------|------|-----|
| | | | | | | Bereich | Vrd(MN) | as | | | | |
| 44 | 18.68 | 20.48 | 14.25 | 179.39 | 179. | 0.00 | 0. | min. 0.2 | 0.71 | 25% | 2.32 | 0.0 |
| 45 | 19.16 | 20.96 | 14.25 | -4.19 | -4. | 0.00 | 0. | min. 0.1 | 0.71 | 1% | 2.32 | 0.0 |
| 46 | 19.65 | 21.45 | 14.25 | -428.98 | -429. | 0.00 | 0. | min. 0.3 | 0.71 | 61% | 2.32 | 0.0 |
| 47 | 20.13 | 21.93 | 14.25 | -724.81 | -725. | 0.00 | 0. | norm 0.4 | 0.72 | 100% | 2.38 | 0.0 |
| | | | | | | | | | | | | |
| | | Druckstreben- neigung [°] | | Vrd,max [MN] | | Zugkraft [kN] | | As [cm²] | | As Feld [cm²] | | |
| UZ-Anf | | 28.65 | | 3.13 | | 1163.46 | | 26.76 | | 0.00 | | |
| UZ-End | | 18.43 | | 2.23 | | 1087.22 | | 25.01 | | 8.04 | | |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|---------|
| 0 | 0.00 | 1.80 | 14.25 | 207.68 | 194.18 |
| 1 | 0.21 | 2.01 | 14.25 | 81.38 | 68.47 |
| 2 | 0.62 | 2.42 | 14.25 | -200.35 | -203.86 |
| 3 | 1.04 | 2.84 | 14.25 | -511.22 | -486.94 |
| 4 | 1.46 | 3.26 | 14.25 | -439.12 | -453.60 |
| 5 | 1.87 | 3.67 | 14.25 | -534.04 | -527.10 |
| 6 | 2.29 | 4.09 | 14.25 | -531.19 | -525.76 |
| 7 | 2.70 | 4.50 | 14.25 | -430.28 | -437.11 |
| 8 | 3.12 | 4.92 | 14.25 | -433.95 | -433.24 |
| 9 | 3.53 | 5.33 | 14.25 | -417.02 | -407.60 |
| 10 | 3.95 | 5.75 | 14.25 | -277.69 | -294.17 |
| 11 | 4.37 | 6.17 | 14.25 | -356.23 | -339.41 |
| 12 | 4.78 | 6.58 | 14.25 | -209.69 | -219.08 |
| 13 | 5.19 | 6.99 | 14.25 | -134.53 | -138.46 |
| 14 | 5.59 | 7.39 | 14.25 | -191.71 | -183.27 |
| 15 | 5.99 | 7.79 | 14.25 | -117.29 | -120.12 |
| 16 | 6.39 | 8.19 | 14.25 | -73.64 | -75.32 |
| 17 | 6.83 | 8.63 | 14.25 | -43.06 | -44.88 |
| 18 | 7.32 | 9.12 | 14.25 | -68.81 | -64.63 |
| 19 | 7.80 | 9.60 | 14.25 | -36.47 | -40.33 |
| 20 | 8.28 | 10.08 | 14.25 | -53.98 | -51.57 |
| 21 | 8.77 | 10.57 | 14.25 | -38.41 | -38.00 |
| 22 | 9.25 | 11.05 | 14.25 | -16.02 | -18.65 |
| 23 | 9.73 | 11.53 | 14.25 | -29.80 | -26.53 |
| 24 | 10.22 | 12.02 | 14.25 | 1.05 | -1.05 |
| 25 | 10.70 | 12.50 | 14.25 | 6.10 | 6.86 |
| 26 | 11.18 | 12.98 | 14.25 | 15.65 | 14.70 |
| 27 | 11.67 | 13.47 | 14.25 | 15.03 | 16.57 |
| 28 | 12.15 | 13.95 | 14.25 | 35.10 | 33.68 |
| 29 | 12.63 | 14.43 | 14.25 | 24.06 | 20.64 |
| 30 | 13.12 | 14.92 | 14.25 | -25.03 | -15.79 |
| 31 | 13.60 | 15.40 | 14.25 | 49.58 | 38.84 |
| 32 | 14.09 | 15.89 | 14.25 | -25.26 | -19.85 |
| 33 | 14.57 | 16.37 | 14.25 | -33.71 | -33.32 |
| 34 | 15.05 | 16.85 | 14.25 | -26.37 | -28.85 |
| 35 | 15.54 | 17.34 | 14.25 | -54.65 | -52.01 |
| 36 | 16.02 | 17.82 | 14.25 | -53.43 | -56.97 |
| 37 | 16.50 | 18.30 | 14.25 | -87.00 | -80.02 |
| 38 | 16.99 | 18.79 | 14.25 | -21.60 | -26.98 |
| 39 | 17.47 | 19.27 | 14.25 | -25.10 | -22.79 |
| 40 | 17.95 | 19.75 | 14.25 | 14.72 | 20.66 |
| 41 | 18.44 | 20.24 | 14.25 | 156.61 | 152.65 |
| 42 | 18.92 | 20.72 | 14.25 | 345.98 | 379.64 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|--------|
| 43 | 19.40 | 21.20 | 14.25 | 941.16 | 878.43 |
| 44 | 19.89 | 21.69 | 14.25 | 585.89 | 611.76 |
| 45 | 20.13 | 21.93 | 14.25 | 302.01 | 394.74 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-Uz-m (kN/m) | |
|-------------|---------------|---------------|---|---------|
| 1 | 0.00 | 4.99 | -351.52 | -351.74 |
| 2 | 4.99 | 6.59 | -130.73 | -131.39 |
| 3 | 6.59 | 20.13 | 52.75 | 52.49 |
| total | 0.00 | 20.13 | -62.05 | -72.67 |

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 1 | 0.00 | 35.82 | 20.25 | 194.18 | 4.47 |
| 2 | 0.42 | 35.82 | 20.57 | 57.24 | 1.32 |
| 3 | 0.83 | 35.82 | 20.90 | 372.74 | 8.57 |
| 4 | 1.25 | 35.82 | 21.22 | 485.98 | 11.18 |
| 5 | 1.66 | 35.82 | 21.54 | 478.77 | 11.01 |
| 6 | 2.08 | 5.35 | 37.94 | 545.06 | 12.54 |
| 7 | 2.50 | 5.84 | 37.94 | 479.30 | 11.02 |
| 8 | 2.91 | 6.32 | 37.94 | 426.03 | 9.80 |
| 9 | 3.33 | 6.81 | 37.94 | 435.51 | 10.02 |
| 10 | 3.74 | 7.29 | 37.94 | 340.75 | 7.84 |
| 11 | 4.16 | 7.78 | 37.94 | 315.65 | 7.26 |
| 12 | 4.57 | 8.26 | 37.94 | 296.53 | 6.82 |
| 13 | 4.99 | 8.75 | 37.94 | 158.01 | 3.63 |
| 14 | 5.39 | 9.23 | 37.94 | 162.01 | 3.73 |
| 15 | 5.79 | 9.71 | 37.94 | 160.96 | 3.70 |
| 16 | 6.19 | 10.20 | 37.94 | 93.14 | 2.14 |
| 17 | 6.59 | 10.68 | 37.94 | 56.95 | 1.31 |
| 18 | 7.07 | 11.17 | 37.94 | 54.72 | 1.26 |
| 19 | 7.56 | 11.65 | 37.94 | 53.90 | 1.24 |
| 20 | 8.04 | 12.14 | 37.94 | 43.51 | 1.00 |
| 21 | 8.52 | 12.62 | 37.94 | 49.09 | 1.13 |
| 22 | 9.01 | 13.11 | 37.94 | 24.99 | 0.57 |
| 23 | 9.49 | 13.59 | 37.94 | 23.56 | 0.54 |
| 24 | 9.97 | 14.08 | 37.94 | 15.54 | 0.36 |
| 25 | 10.46 | 14.56 | 37.94 | 4.92 | 0.11 |
| 26 | 10.94 | 15.05 | 37.94 | 11.07 | 0.25 |
| 27 | 11.43 | 15.53 | 37.94 | 14.74 | 0.34 |
| 28 | 11.91 | 16.01 | 37.94 | 24.94 | 0.57 |
| 29 | 12.39 | 16.50 | 37.94 | 34.41 | 0.79 |
| 30 | 12.88 | 16.98 | 37.94 | 6.30 | 0.14 |
| 31 | 13.36 | 17.47 | 37.94 | 13.79 | 0.32 |
| 32 | 13.84 | 17.95 | 37.94 | 17.49 | 0.40 |
| 33 | 14.33 | 18.44 | 37.94 | 35.29 | 0.81 |
| 34 | 14.81 | 18.92 | 37.94 | 27.94 | 0.64 |
| 35 | 15.29 | 19.41 | 37.94 | 40.67 | 0.94 |
| 36 | 15.78 | 19.89 | 37.94 | 53.15 | 1.22 |
| 37 | 16.26 | 20.38 | 37.94 | 73.67 | 1.69 |
| 38 | 16.75 | 20.86 | 37.94 | 55.90 | 1.29 |
| 39 | 17.23 | 21.35 | 37.94 | 20.32 | 0.47 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 40 | 17.71 | 21.83 | 37.94 | 13.30 | 0.31 |
| 41 | 18.20 | 22.32 | 37.94 | 83.13 | 1.91 |
| 42 | 18.68 | 22.80 | 37.94 | 223.64 | 5.14 |
| 43 | 19.16 | 23.28 | 37.94 | 665.02 | 15.30 |
| 44 | 19.65 | 23.77 | 37.94 | 828.78 | 19.06 |
| 45 | 20.13 | 24.25 | 37.94 | 394.74 | 9.08 |

Überzug Nr.: 31 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei seittl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) unten | oben | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|-------|---------------------------------------|------|--------------------|
| 1 | 0.00 | 6.79 | 14.25 | 231.60 | 232. | 6.99 | 0.00 | 237.6 |
| 2 | 0.40 | 6.79 | 14.65 | 247.15 | 247. | 6.99 | 0.00 | 237.4 |
| 3 | 0.81 | 6.79 | 15.06 | 232.97 | 233. | 6.99 | 0.00 | 237.5 |
| 4 | 1.22 | 6.79 | 15.47 | 190.04 | 190. | 6.99 | 0.00 | 237.8 |
| 5 | 1.62 | 6.79 | 15.87 | 148.63 | 149. | 6.99 | 0.00 | 238.1 |
| 6 | 2.08 | 6.79 | 16.33 | 129.92 | 130. | 6.99 | 0.00 | 238.2 |
| 7 | 2.54 | 6.79 | 16.79 | 154.38 | 154. | 6.99 | 0.00 | 238.0 |
| 8 | 3.00 | 6.79 | 17.25 | 232.21 | 232. | 6.99 | 0.00 | 237.5 |
| 9 | 3.46 | 6.79 | 17.71 | 369.03 | 369. | 6.99 | 0.00 | 236.9 |
| 10 | 3.92 | 6.79 | 18.17 | 566.59 | 567. | 6.99 | 0.00 | 235.9 |
| 11 | 4.38 | 6.79 | 18.63 | 816.66 | 817. | 7.66 | 0.00 | 234.8 |
| 12 | 4.84 | 6.79 | 19.09 | 1102.79 | 1103. | 10.40 | 0.00 | 233.6 |
| 13 | 5.30 | 6.79 | 19.55 | 1387.18 | 1387. | 13.12 | 0.00 | 232.3 |
| 14 | 5.74 | 6.79 | 19.99 | 1325.30 | 1325. | 12.54 | 0.00 | 232.6 |
| 15 | 6.17 | 6.79 | 20.42 | 1245.01 | 1245. | 11.77 | 0.00 | 233.0 |
| 16 | 6.60 | 6.79 | 20.85 | 1167.05 | 1167. | 10.98 | 0.00 | 233.3 |
| 17 | 7.04 | 6.79 | 21.29 | 1105.26 | 1105. | 10.40 | 0.00 | 233.6 |
| 18 | 7.47 | 6.79 | 21.72 | 1070.05 | 1070. | 10.00 | 0.00 | 233.8 |
| 19 | 7.91 | 6.79 | 22.16 | 1061.62 | 1062. | 10.00 | 0.00 | 233.8 |
| 20 | 8.35 | 6.79 | 22.60 | 1071.96 | 1072. | 10.00 | 0.00 | 233.8 |
| 21 | 8.78 | 6.79 | 23.03 | 1085.45 | 1085. | 10.20 | 0.00 | 233.7 |
| 22 | 9.22 | 6.79 | 23.47 | 1074.58 | 1075. | 10.20 | 0.00 | 233.7 |
| 23 | 9.65 | 6.79 | 23.90 | 994.35 | 994. | 9.41 | 0.00 | 234.1 |
| 24 | 10.08 | 6.79 | 24.33 | 775.34 | 775. | 7.27 | 0.00 | 235.0 |
| 25 | 10.52 | 6.79 | 24.77 | 387.97 | 388. | 6.99 | 0.00 | 236.7 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 0.00

untere Bewehrung : 262.56

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | | Tm (kNm) | | Bewehrung (cm ² /m) | | | | |
|----------------|----------|----------|----------|-----------|-------|-------------|----|--------------------------------|---------|-----|------|-----|
| | | | | | | | | Bereich | Vrd(MN) | as | | |
| 1 | 0.00 | 6.79 | 14.25 | 53.13 | 53. | 0.00 | 0. | min. 0.1 | 0.71 | 8% | 2.32 | 0.0 |
| 2 | 0.40 | 6.79 | 14.65 | 8.99 | 9. | 0.00 | 0. | min. 0.1 | 0.71 | 1% | 2.32 | 0.0 |
| 3 | 0.81 | 6.79 | 15.06 | -78.87 | -79. | 0.00 | 0. | min. 0.1 | 0.71 | 11% | 2.32 | 0.0 |
| 4 | 1.22 | 6.79 | 15.47 | -116.56 | -117. | 0.00 | 0. | min. 0.1 | 0.71 | 17% | 2.32 | 0.0 |
| 5 | 1.62 | 6.79 | 15.87 | -79.65 | -80. | 0.00 | 0. | min. 0.1 | 0.71 | 11% | 2.32 | 0.0 |
| 6 | 2.08 | 6.79 | 16.33 | 2.22 | 2. | 0.00 | 0. | min. 0.1 | 0.71 | 0% | 2.32 | 0.0 |
| 7 | 2.54 | 6.79 | 16.79 | 108.30 | 108. | 0.00 | 0. | min. 0.1 | 0.71 | 15% | 2.32 | 0.0 |
| 8 | 3.00 | 6.79 | 17.25 | 231.72 | 232. | 0.00 | 0. | min. 0.2 | 0.71 | 33% | 2.32 | 0.0 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | | Tm (kNm) | | Bewehrung (cm²/m) | | | | | |
|----------------|-----------|-----------|-----------|-----------|-------|-------------|----|-------------------|-----|---------|------|------|-----|
| | | | | | | | | Bereich | | Vrd(MN) | | as | |
| 9 | 3.46 | 6.79 | 17.71 | 364.76 | 365. | 0.00 | 0. | min. | 0.3 | 0.71 | 52% | 2.32 | 0.0 |
| 10 | 3.92 | 6.79 | 18.17 | 489.96 | 490. | 0.00 | 0. | min. | 0.3 | 0.71 | 69% | 2.32 | 0.0 |
| 11 | 4.38 | 6.79 | 18.63 | 594.69 | 595. | 0.00 | 0. | min. | 0.4 | 0.71 | 84% | 2.32 | 0.0 |
| 12 | 4.84 | 6.79 | 19.09 | 628.20 | 628. | 0.00 | 0. | min. | 0.4 | 0.71 | 89% | 2.32 | 0.0 |
| 13 | 5.30 | 6.79 | 19.55 | 613.27 | 613. | 0.00 | 0. | min. | 0.4 | 0.71 | 87% | 2.32 | 0.0 |
| 14 | 5.30 | 6.79 | 19.55 | -131.00 | -131. | 0.00 | 0. | min. | 0.1 | 0.70 | 19% | 2.32 | 0.0 |
| 15 | 5.74 | 6.79 | 19.99 | -164.75 | -165. | 0.00 | 0. | min. | 0.2 | 0.70 | 23% | 2.32 | 0.0 |
| 16 | 6.17 | 6.79 | 20.42 | -190.44 | -190. | 0.00 | 0. | min. | 0.2 | 0.70 | 27% | 2.32 | 0.0 |
| 17 | 6.60 | 6.79 | 20.85 | -164.87 | -165. | 0.00 | 0. | min. | 0.2 | 0.71 | 23% | 2.32 | 0.0 |
| 18 | 7.04 | 6.79 | 21.29 | -113.92 | -114. | 0.00 | 0. | min. | 0.1 | 0.71 | 16% | 2.32 | 0.0 |
| 19 | 7.47 | 6.79 | 21.72 | -48.39 | -48. | 0.00 | 0. | min. | 0.1 | 0.71 | 7% | 2.32 | 0.0 |
| 20 | 7.91 | 6.79 | 22.16 | 6.55 | 7. | 0.00 | 0. | min. | 0.1 | 0.71 | 1% | 2.32 | 0.0 |
| 21 | 8.35 | 6.79 | 22.60 | 35.37 | 35. | 0.00 | 0. | min. | 0.1 | 0.71 | 5% | 2.32 | 0.0 |
| 22 | 8.78 | 6.79 | 23.03 | 16.31 | 16. | 0.00 | 0. | min. | 0.1 | 0.71 | 2% | 2.32 | 0.0 |
| 23 | 9.22 | 6.79 | 23.47 | -82.52 | -83. | 0.00 | 0. | min. | 0.1 | 0.71 | 12% | 2.32 | 0.0 |
| 24 | 9.65 | 6.79 | 23.90 | -314.47 | -314. | 0.00 | 0. | min. | 0.2 | 0.71 | 45% | 2.32 | 0.0 |
| 25 | 10.08 | 6.79 | 24.33 | -723.34 | -723. | 0.00 | 0. | norm | 0.4 | 0.72 | 100% | 2.37 | 0.0 |
| 26 | 10.52 | 6.79 | 24.77 | -974.09 | -974. | 0.00 | 0. | norm | 0.4 | 0.97 | 100% | 4.43 | 0.0 |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm²] | As Feld [cm²] |
|--------|------------------------------|-----------------|------------------|-------------|------------------|
| UZ-Anf | 18.43 | 2.23 | 79.69 | 2.60 | 10.40 |
| UZ-End | 24.74 | 2.82 | 1056.88 | 24.31 | 0.00 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|---------|
| 0 | 0.00 | 6.79 | 14.25 | 8.76 | 34.02 |
| 1 | 0.20 | 6.79 | 14.45 | 100.33 | 108.99 |
| 2 | 0.61 | 6.79 | 14.86 | 233.24 | 216.92 |
| 3 | 1.01 | 6.79 | 15.26 | 94.41 | 93.08 |
| 4 | 1.42 | 6.79 | 15.67 | -97.66 | -91.13 |
| 5 | 1.85 | 6.79 | 16.10 | -178.55 | -177.98 |
| 6 | 2.31 | 6.79 | 16.56 | -231.34 | -230.61 |
| 7 | 2.77 | 6.79 | 17.02 | -268.53 | -268.30 |
| 8 | 3.23 | 6.79 | 17.48 | -291.79 | -289.23 |
| 9 | 3.69 | 6.79 | 17.94 | -271.22 | -272.18 |
| 10 | 4.15 | 6.79 | 18.40 | -235.79 | -227.66 |
| 11 | 4.61 | 6.79 | 18.86 | -68.85 | -72.86 |
| 12 | 5.07 | 6.79 | 19.32 | 36.93 | 32.46 |
| 13 | 5.52 | 6.79 | 19.77 | 76.96 | 77.61 |
| 14 | 5.95 | 6.79 | 20.20 | 66.90 | 59.06 |
| 15 | 6.39 | 6.79 | 20.64 | -64.69 | -58.80 |
| 16 | 6.82 | 6.79 | 21.07 | -116.28 | -117.11 |
| 17 | 7.26 | 6.79 | 21.51 | -154.26 | -150.64 |
| 18 | 7.69 | 6.79 | 21.94 | -127.14 | -126.31 |
| 19 | 8.13 | 6.79 | 22.38 | -68.22 | -66.24 |
| 20 | 8.56 | 6.79 | 22.81 | 40.07 | 43.80 |
| 21 | 9.00 | 6.79 | 23.25 | 225.77 | 227.20 |
| 22 | 9.43 | 6.79 | 23.68 | 512.01 | 533.21 |
| 23 | 9.87 | 6.79 | 24.12 | 1000.98 | 939.95 |
| 24 | 10.30 | 6.79 | 24.55 | 546.04 | 576.42 |
| 25 | 10.52 | 6.79 | 24.77 | 218.86 | 315.31 |

Position : BP
 Bodenplatte-Lastfall HHW und Vollast aus Gebäude

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|----------|------------|------------|--------------------------------------|---------|
| 1 | 0.00 | 5.30 | -106.83 | -106.25 |
| 2 | 5.30 | 10.52 | 154.29 | 153.63 |
| total | 0.00 | 10.52 | 22.73 | -31.12 |

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|-------------|-------|-------|-------|----------------------|--------------------------------|
| 1 | 0.00 | 35.82 | 20.25 | 34.02 | 0.78 |
| 2 | 0.40 | 35.82 | 20.57 | 183.96 | 4.23 |
| 3 | 0.81 | 35.82 | 20.90 | 178.90 | 4.11 |
| 4 | 1.22 | 35.82 | 21.22 | 6.08 | 0.14 |
| 5 | 1.62 | 35.82 | 21.54 | 143.69 | 3.30 |
| 6 | 2.08 | 5.35 | 37.94 | 205.93 | 4.74 |
| 7 | 2.54 | 5.84 | 37.94 | 250.98 | 5.77 |
| 8 | 3.00 | 6.32 | 37.94 | 282.93 | 6.51 |
| 9 | 3.46 | 6.81 | 37.94 | 283.06 | 6.51 |
| 10 | 3.92 | 7.29 | 37.94 | 260.87 | 6.00 |
| 11 | 4.38 | 7.78 | 37.94 | 155.75 | 3.58 |
| 12 | 4.84 | 8.26 | 37.94 | 10.06 | 0.23 |
| 13 | 5.30 | 8.75 | 37.94 | 61.18 | 1.41 |
| 14 | 5.74 | 9.23 | 37.94 | 81.57 | 1.88 |
| 15 | 6.17 | 9.71 | 37.94 | 2.40 | 0.06 |
| 16 | 6.60 | 10.20 | 37.94 | 95.37 | 2.19 |
| 17 | 7.04 | 10.68 | 37.94 | 138.11 | 3.18 |
| 18 | 7.47 | 11.17 | 37.94 | 145.13 | 3.34 |
| 19 | 7.91 | 11.65 | 37.94 | 100.55 | 2.31 |
| 20 | 8.35 | 12.14 | 37.94 | 19.61 | 0.45 |
| 21 | 8.78 | 12.62 | 37.94 | 127.12 | 2.92 |
| 22 | 9.22 | 13.11 | 37.94 | 348.66 | 8.02 |
| 23 | 9.65 | 13.59 | 37.94 | 787.40 | 18.11 |
| 24 | 10.08 | 14.08 | 37.94 | 837.53 | 19.26 |
| 25 | 10.52 | 14.56 | 37.94 | 315.31 | 7.25 |

Überzug Nr.: 32 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
 Brandschutz bei seittl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) | | Hebel-arm (cm) |
|-------------|-------|-------|-------|---------|------|------------------------------|------|----------------|
| | | | | | | unten | oben | |
| 1 | 0.00 | 8.39 | 14.25 | 144.02 | 144. | 6.99 | 0.00 | 238.1 |
| 2 | 0.40 | 8.39 | 14.65 | 393.77 | 394. | 6.99 | 0.00 | 236.7 |
| 3 | 0.81 | 8.39 | 15.06 | 501.40 | 501. | 6.99 | 0.00 | 236.2 |
| 4 | 1.22 | 8.39 | 15.47 | 512.85 | 513. | 6.99 | 0.00 | 236.1 |
| 5 | 1.62 | 8.39 | 15.87 | 473.75 | 474. | 6.99 | 0.00 | 236.4 |
| 6 | 2.08 | 8.39 | 16.33 | 408.99 | 409. | 6.99 | 0.00 | 236.6 |
| 7 | 2.54 | 8.39 | 16.79 | 344.35 | 344. | 6.99 | 0.00 | 236.9 |
| 8 | 3.00 | 8.39 | 17.25 | 296.16 | 296. | 6.99 | 0.00 | 237.2 |
| 9 | 3.46 | 8.39 | 17.71 | 271.56 | 272. | 6.99 | 0.00 | 237.3 |
| 10 | 3.92 | 8.39 | 18.17 | 269.78 | 270. | 6.99 | 0.00 | 237.3 |
| 11 | 4.38 | 8.39 | 18.63 | 276.26 | 276. | 6.99 | 0.00 | 237.3 |
| 12 | 4.84 | 8.39 | 19.09 | 258.53 | 259. | 6.99 | 0.00 | 237.4 |

Position : BP
Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | Bewehrung (cm ²) unten | oben | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|---------------------------------------|------|--------------------|
| 13 | 5.30 | 8.39 | 19.55 | 226.51 | 6.99 | 0.00 | 237.6 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 0.00

untere Bewehrung : 103.77

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | Tm (kNm) | Bewehrung (cm ² /m) Bereich | Vrd(MN) | as |
|----------------|----------|----------|----------|-----------|-------------|---|----------|----------|
| 1 | 0.00 | 8.39 | 14.25 | 695.84 | 0.00 | min. 0.4 | 0.71 98% | 2.32 0.0 |
| 2 | 0.40 | 8.39 | 14.65 | 458.34 | 0.00 | min. 0.3 | 0.71 65% | 2.32 0.0 |
| 3 | 0.81 | 8.39 | 15.06 | 118.08 | 0.00 | min. 0.1 | 0.71 17% | 2.32 0.0 |
| 4 | 1.22 | 8.39 | 15.47 | -48.59 | 0.00 | min. 0.1 | 0.71 7% | 2.32 0.0 |
| 5 | 1.62 | 8.39 | 15.87 | -128.54 | 0.00 | min. 0.1 | 0.71 18% | 2.32 0.0 |
| 6 | 2.08 | 8.39 | 16.33 | -147.05 | 0.00 | min. 0.2 | 0.71 21% | 2.32 0.0 |
| 7 | 2.54 | 8.39 | 16.79 | -127.16 | 0.00 | min. 0.1 | 0.71 18% | 2.32 0.0 |
| 8 | 3.00 | 8.39 | 17.25 | -80.14 | 0.00 | min. 0.1 | 0.71 11% | 2.32 0.0 |
| 9 | 3.46 | 8.39 | 17.71 | -27.03 | 0.00 | min. 0.1 | 0.71 4% | 2.32 0.0 |
| 10 | 3.92 | 8.39 | 18.17 | 16.22 | 0.00 | min. 0.1 | 0.71 2% | 2.32 0.0 |
| 11 | 4.38 | 8.39 | 18.63 | -7.19 | 0.00 | min. 0.1 | 0.71 1% | 2.32 0.0 |
| 12 | 4.84 | 8.39 | 19.09 | -60.81 | 0.00 | min. 0.1 | 0.71 9% | 2.32 0.0 |
| 13 | 5.30 | 8.39 | 19.55 | -74.03 | 0.00 | min. 0.1 | 0.71 10% | 2.32 0.0 |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm ²] | As Feld [cm ²] |
|--------|------------------------------|-----------------|------------------|--------------------------|-------------------------------|
| UZ-Anf | 18.38 | 2.22 | 1047.24 | 24.09 | 6.99 |
| UZ-End | 18.43 | 2.23 | 111.04 | 2.55 | 0.00 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) |
|----------------|----------|----------|----------|----------------------------|
| 0 | 0.00 | 8.39 | 14.25 | 302.03 |
| 1 | 0.20 | 8.39 | 14.45 | 562.58 |
| 2 | 0.61 | 8.39 | 14.86 | 895.87 |
| 3 | 1.01 | 8.39 | 15.26 | 383.07 |
| 4 | 1.42 | 8.39 | 15.67 | 201.86 |
| 5 | 1.85 | 8.39 | 16.10 | 33.46 |
| 6 | 2.31 | 8.39 | 16.56 | -42.25 |
| 7 | 2.77 | 8.39 | 17.02 | -105.55 |
| 8 | 3.23 | 8.39 | 17.48 | -114.50 |
| 9 | 3.69 | 8.39 | 17.94 | -103.17 |
| 10 | 4.15 | 8.39 | 18.40 | 55.63 |
| 11 | 4.61 | 8.39 | 18.86 | 126.58 |
| 12 | 5.07 | 8.39 | 19.32 | 22.33 |
| 13 | 5.30 | 8.39 | 19.55 | -43.97 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) |
|-------------|---------------|---------------|---|
| 1 | 0.00 | 5.30 | 139.10 |
| total | 0.00 | 5.30 | 139.10 |

Position : BP
Bodenplatte-Lastfall HHW und Vollast aus Gebäude

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 1 | 0.00 | 35.82 | 20.25 | 385.57 | 8.87 |
| 2 | 0.40 | 35.82 | 20.57 | 787.26 | 18.11 |
| 3 | 0.81 | 35.82 | 20.90 | 659.79 | 15.18 |
| 4 | 1.22 | 35.82 | 21.22 | 270.11 | 6.21 |
| 5 | 1.62 | 35.82 | 21.54 | 121.56 | 2.80 |
| 6 | 2.08 | 5.35 | 37.94 | 10.24 | 0.24 |
| 7 | 2.54 | 5.84 | 37.94 | 76.24 | 1.75 |
| 8 | 3.00 | 6.32 | 37.94 | 112.38 | 2.58 |
| 9 | 3.46 | 6.81 | 37.94 | 117.15 | 2.69 |
| 10 | 3.92 | 7.29 | 37.94 | 27.67 | 0.64 |
| 11 | 4.38 | 7.78 | 37.94 | 103.97 | 2.39 |
| 12 | 4.84 | 8.26 | 37.94 | 85.09 | 1.96 |
| 13 | 5.30 | 8.75 | 37.94 | 27.65 | 0.64 |

Überzug Nr.: 33 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei seittl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | Bewehrung (cm ²) | | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|------------------------------|------|--------------------|
| | | | | | unten | oben | |
| 1 | 0.00 | 21.93 | 13.80 | 376.97 | 377. 6.99 | 0.00 | 236.8 |
| 2 | 0.22 | 21.93 | 14.02 | 708.10 | 708. 6.99 | 0.00 | 235.3 |
| 3 | 0.45 | 21.93 | 14.25 | 1106.50 | 1107. 10.40 | 0.00 | 233.6 |
| 4 | 0.89 | 21.93 | 14.69 | 1530.02 | 1530. 14.45 | 0.00 | 231.7 |
| 5 | 1.33 | 21.93 | 15.13 | 1881.14 | 1881. 17.99 | 0.00 | 229.9 |
| 6 | 1.77 | 21.93 | 15.57 | 2173.04 | 2173. 20.88 | 0.00 | 228.4 |
| 7 | 2.22 | 21.93 | 16.02 | 2414.68 | 2415. 23.26 | 0.00 | 227.1 |
| 8 | 2.66 | 21.93 | 16.46 | 2637.52 | 2638. 25.66 | 0.00 | 225.9 |
| 9 | 3.10 | 21.93 | 16.90 | 2837.23 | 2837. 27.88 | 0.00 | 224.7 |
| 10 | 3.54 | 21.93 | 17.34 | 3017.41 | 3017. 29.89 | 0.00 | 223.7 |
| 11 | 3.98 | 21.93 | 17.78 | 3202.34 | 3202. 31.95 | 0.00 | 222.6 |
| 12 | 4.42 | 21.93 | 18.22 | 3333.96 | 3334. 33.43 | 0.00 | 221.8 |
| 13 | 4.87 | 21.93 | 18.67 | 3406.58 | 3407. 34.26 | 0.00 | 221.4 |
| 14 | 5.31 | 21.93 | 19.11 | 3443.18 | 3443. 34.69 | 0.00 | 221.2 |
| 15 | 5.75 | 21.93 | 19.55 | 3312.76 | 3313. 33.20 | 0.00 | 221.9 |
| 16 | 6.21 | 21.93 | 20.01 | 3339.29 | 3339. 33.52 | 0.00 | 221.8 |
| 17 | 6.66 | 21.93 | 20.46 | 3290.40 | 3290. 32.93 | 0.00 | 222.1 |
| 18 | 7.12 | 21.93 | 20.92 | 3085.60 | 3086. 30.64 | 0.00 | 223.3 |
| 19 | 7.58 | 21.93 | 21.38 | 2807.78 | 2808. 27.56 | 0.00 | 224.9 |
| 20 | 8.03 | 21.93 | 21.83 | 2564.68 | 2565. 24.87 | 0.00 | 226.3 |
| 21 | 8.49 | 21.93 | 22.29 | 2211.10 | 2211. 21.23 | 0.00 | 228.2 |
| 22 | 8.95 | 21.93 | 22.75 | 1831.58 | 1832. 17.44 | 0.00 | 230.2 |
| 23 | 9.40 | 21.93 | 23.20 | 1530.36 | 1530. 14.45 | 0.00 | 231.7 |
| 24 | 9.86 | 21.93 | 23.66 | 1124.76 | 1125. 10.59 | 0.00 | 233.5 |
| 25 | 10.32 | 21.93 | 24.12 | 705.12 | 705. 6.99 | 0.00 | 235.3 |
| 26 | 10.77 | 21.93 | 24.57 | 369.58 | 370. 6.99 | 0.00 | 236.9 |
| 27 | 11.23 | 21.93 | 25.03 | -149.19 | -149. 0.00 | 1.41 | 238.1 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 0.64

untere Bewehrung : 712.60

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Position : BP
Bodenplatte-Lastfall HHW und Vollast aus Gebäude

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | Tm (kNm) | Bewehrung (cm²/m) | | | | |
|----------------|----------|----------|----------|-----------|-------------|-------------------|---------|------|-----|---------------------|
| | | | | | | Bereich | Vrd(MN) | as | | |
| 1 | 0.00 | 21.93 | 13.80 | 1396.92 | 1397. | 0.00 | 0. | norm | 0.5 | 1.40 100% 7.88 0.0 |
| 2 | 0.22 | 21.93 | 14.02 | 1621.19 | 1621. | 0.00 | 0. | norm | 0.6 | 1.62 100% 9.76 0.0 |
| 3 | 0.45 | 21.93 | 14.25 | 1845.46 | 1845. | 0.00 | 0. | norm | 0.6 | 1.85 100% 11.60 0.0 |
| 4 | 0.45 | 21.93 | 14.25 | 995.23 | 995. | 0.00 | 0. | norm | 0.4 | 1.00 100% 4.61 0.0 |
| 5 | 0.89 | 21.93 | 14.69 | 886.26 | 886. | 0.00 | 0. | norm | 0.4 | 0.89 100% 3.74 0.0 |
| 6 | 1.33 | 21.93 | 15.13 | 721.37 | 721. | 0.00 | 0. | norm | 0.4 | 0.72 100% 2.44 0.0 |
| 7 | 1.77 | 21.93 | 15.57 | 595.93 | 596. | 0.00 | 0. | min. | 0.4 | 0.69 86% 2.32 0.0 |
| 8 | 2.22 | 21.93 | 16.02 | 519.02 | 519. | 0.00 | 0. | min. | 0.3 | 0.69 75% 2.32 0.0 |
| 9 | 2.66 | 21.93 | 16.46 | 482.97 | 483. | 0.00 | 0. | min. | 0.3 | 0.69 70% 2.32 0.0 |
| 10 | 3.10 | 21.93 | 16.90 | 419.27 | 419. | 0.00 | 0. | min. | 0.3 | 0.68 61% 2.32 0.0 |
| 11 | 3.54 | 21.93 | 17.34 | 420.36 | 420. | 0.00 | 0. | min. | 0.3 | 0.68 62% 2.32 0.0 |
| 12 | 3.98 | 21.93 | 17.78 | 379.28 | 379. | 0.00 | 0. | min. | 0.3 | 0.67 56% 2.32 0.0 |
| 13 | 4.42 | 21.93 | 18.22 | 212.65 | 213. | 0.00 | 0. | min. | 0.2 | 0.67 32% 2.32 0.0 |
| 14 | 4.87 | 21.93 | 18.67 | 157.43 | 157. | 0.00 | 0. | min. | 0.2 | 0.67 23% 2.32 0.0 |
| 15 | 5.31 | 21.93 | 19.11 | -100.51 | -101. | 0.00 | 0. | min. | 0.1 | 0.67 15% 2.32 0.0 |
| 16 | 5.75 | 21.93 | 19.55 | -392.67 | -393. | 0.00 | 0. | min. | 0.3 | 0.67 58% 2.32 0.0 |
| 17 | 5.75 | 21.93 | 19.55 | 81.61 | 82. | 0.00 | 0. | min. | 0.1 | 0.67 12% 2.32 0.0 |
| 18 | 6.21 | 21.93 | 20.01 | 11.10 | 11. | 0.00 | 0. | min. | 0.1 | 0.67 2% 2.32 0.0 |
| 19 | 6.66 | 21.93 | 20.46 | -272.87 | -273. | 0.00 | 0. | min. | 0.2 | 0.67 41% 2.32 0.0 |
| 20 | 7.12 | 21.93 | 20.92 | -586.21 | -586. | 0.00 | 0. | min. | 0.4 | 0.68 86% 2.32 0.0 |
| 21 | 7.58 | 21.93 | 21.38 | -552.83 | -553. | 0.00 | 0. | min. | 0.3 | 0.68 81% 2.32 0.0 |
| 22 | 8.03 | 21.93 | 21.83 | -624.55 | -625. | 0.00 | 0. | min. | 0.4 | 0.69 91% 2.32 0.0 |
| 23 | 8.49 | 21.93 | 22.29 | -868.74 | -869. | 0.00 | 0. | norm | 0.4 | 0.87 100% 3.71 0.0 |
| 24 | 8.95 | 21.93 | 22.75 | -716.52 | -717. | 0.00 | 0. | norm | 0.4 | 0.72 100% 2.39 0.0 |
| 25 | 9.40 | 21.93 | 23.20 | -737.17 | -737. | 0.00 | 0. | norm | 0.4 | 0.74 100% 2.52 0.0 |
| 26 | 9.86 | 21.93 | 23.66 | -978.12 | -978. | 0.00 | 0. | norm | 0.4 | 0.98 100% 4.47 0.0 |
| 27 | 10.32 | 21.93 | 24.12 | -771.68 | -772. | 0.00 | 0. | norm | 0.4 | 0.77 100% 2.77 0.0 |
| 28 | 10.77 | 21.93 | 24.57 | -896.17 | -896. | 0.00 | 0. | norm | 0.4 | 0.90 100% 3.80 0.0 |
| 29 | 11.23 | 21.93 | 25.03 | -1255.91 | -1256. | 0.00 | 0. | norm | 0.5 | 1.26 100% 6.74 0.0 |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm²] | As Feld [cm²] |
|--------|------------------------------|-----------------|------------------|-------------|------------------|
| UZ-Anf | 29.74 | 3.20 | 1222.30 | 28.11 | 6.99 |
| UZ-End | 28.52 | 3.12 | 1155.44 | 26.58 | 34.69 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|---------|
| 0 | 0.00 | 21.93 | 13.80 | -915.56 | -914.49 |
| 1 | 0.11 | 21.93 | 13.91 | -996.75 | -996.75 |
| 2 | 0.34 | 21.93 | 14.14 | -996.75 | -996.75 |
| 3 | 0.67 | 21.93 | 14.47 | 237.00 | 246.71 |
| 4 | 1.11 | 21.93 | 14.91 | 390.24 | 373.34 |
| 5 | 1.55 | 21.93 | 15.35 | 280.13 | 284.03 |
| 6 | 2.00 | 21.93 | 15.80 | 177.98 | 174.13 |
| 7 | 2.44 | 21.93 | 16.24 | 65.79 | 81.63 |
| 8 | 2.88 | 21.93 | 16.68 | 164.94 | 144.21 |
| 9 | 3.32 | 21.93 | 17.12 | -17.22 | -2.46 |
| 10 | 3.76 | 21.93 | 17.56 | 70.81 | 93.01 |
| 11 | 4.20 | 21.93 | 18.00 | 433.64 | 377.28 |
| 12 | 4.65 | 21.93 | 18.45 | 55.90 | 125.02 |
| 13 | 5.09 | 21.93 | 18.89 | 626.28 | 584.02 |
| 14 | 5.53 | 21.93 | 19.33 | 656.92 | 661.50 |
| 15 | 5.98 | 21.93 | 19.78 | 127.98 | 154.41 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastenteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|---------|
| 16 | 6.44 | 21.93 | 20.24 | 637.11 | 621.84 |
| 17 | 6.89 | 21.93 | 20.69 | 752.27 | 686.13 |
| 18 | 7.35 | 21.93 | 21.15 | -147.05 | -73.08 |
| 19 | 7.80 | 21.93 | 21.60 | 139.43 | 157.05 |
| 20 | 8.26 | 21.93 | 22.06 | 642.29 | 534.72 |
| 21 | 8.72 | 21.93 | 22.52 | -434.55 | -333.34 |
| 22 | 9.17 | 21.93 | 22.97 | 30.84 | 45.24 |
| 23 | 9.63 | 21.93 | 23.43 | 660.44 | 527.61 |
| 24 | 10.09 | 21.93 | 23.89 | -603.48 | -452.04 |
| 25 | 10.55 | 21.93 | 24.35 | 319.44 | 272.59 |
| 26 | 11.00 | 21.93 | 24.80 | 804.15 | 787.76 |
| 27 | 11.23 | 21.93 | 25.03 | 930.63 | 968.48 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|---------|
| 1 | 0.00 | 0.45 | -934.55 | -934.01 |
| 2 | 0.45 | 5.75 | 239.42 | 239.92 |
| 3 | 5.75 | 11.23 | 252.31 | 253.52 |
| total | 0.00 | 11.23 | 198.67 | 312.49 |

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm²/m) |
|----------------|----------|----------|----------|-------------------------|----------------------|
| 1 | 0.00 | 35.82 | 20.25 | 914.49 | 21.03 |
| 2 | 0.22 | 35.82 | 20.57 | 1079.01 | 24.82 |
| 3 | 0.45 | 35.82 | 20.90 | 645.60 | 14.85 |
| 4 | 0.89 | 35.82 | 21.22 | 509.46 | 11.72 |
| 5 | 1.33 | 35.82 | 21.54 | 297.63 | 6.85 |
| 6 | 1.77 | 5.35 | 37.94 | 242.55 | 5.58 |
| 7 | 2.22 | 5.84 | 37.94 | 106.26 | 2.44 |
| 8 | 2.66 | 6.32 | 37.94 | 121.25 | 2.79 |
| 9 | 3.10 | 6.81 | 37.94 | 79.48 | 1.83 |
| 10 | 3.54 | 7.29 | 37.94 | 9.80 | 0.23 |
| 11 | 3.98 | 7.78 | 37.94 | 285.25 | 6.56 |
| 12 | 4.42 | 8.26 | 37.94 | 236.18 | 5.43 |
| 13 | 4.87 | 8.75 | 37.94 | 298.74 | 6.87 |
| 14 | 5.31 | 9.23 | 37.94 | 737.18 | 16.96 |
| 15 | 5.75 | 9.71 | 37.94 | 368.50 | 8.48 |
| 16 | 6.21 | 10.20 | 37.94 | 310.00 | 7.13 |
| 17 | 6.66 | 10.68 | 37.94 | 792.55 | 18.23 |
| 18 | 7.12 | 11.17 | 37.94 | 290.38 | 6.68 |
| 19 | 7.58 | 11.65 | 37.94 | 94.21 | 2.17 |
| 20 | 8.03 | 12.14 | 37.94 | 480.48 | 11.05 |
| 21 | 8.49 | 12.62 | 37.94 | 110.33 | 2.54 |
| 22 | 8.95 | 13.11 | 37.94 | 317.57 | 7.30 |
| 23 | 9.40 | 13.59 | 37.94 | 464.44 | 10.68 |
| 24 | 9.86 | 14.08 | 37.94 | 8.58 | 0.20 |
| 25 | 10.32 | 14.56 | 37.94 | 241.78 | 5.56 |
| 26 | 10.77 | 15.05 | 37.94 | 607.04 | 13.96 |
| 27 | 11.23 | 15.53 | 37.94 | 968.48 | 22.27 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

Überzug Nr.: 34 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei seütl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm²) | | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|--------|-----------------|-------|--------------------|
| | | | | | | unten | oben | |
| 1 | 0.00 | 1.80 | 19.55 | -6.87 | -7. | 0.00 | 0.07 | 239.6 |
| 2 | 0.42 | 2.22 | 19.55 | -605.91 | -606. | 0.00 | 5.78 | 235.7 |
| 3 | 0.83 | 2.63 | 19.55 | -1161.49 | -1161. | 0.00 | 10.98 | 233.3 |
| 4 | 1.25 | 3.05 | 19.55 | -1624.02 | -1624. | 0.00 | 15.39 | 231.2 |
| 5 | 1.66 | 3.46 | 19.55 | -1987.48 | -1987. | 0.00 | 18.90 | 229.4 |
| 6 | 2.08 | 3.88 | 19.55 | -2253.51 | -2254. | 0.00 | 21.59 | 228.0 |
| 7 | 2.50 | 4.30 | 19.55 | -2416.85 | -2417. | 0.00 | 23.28 | 227.1 |
| 8 | 2.91 | 4.71 | 19.55 | -2488.15 | -2488. | 0.00 | 24.05 | 226.7 |
| 9 | 3.33 | 5.13 | 19.55 | -2484.09 | -2484. | 0.00 | 24.00 | 226.8 |
| 10 | 3.74 | 5.54 | 19.55 | -2410.39 | -2410. | 0.00 | 23.21 | 227.2 |
| 11 | 4.16 | 5.96 | 19.55 | -2293.45 | -2293. | 0.00 | 22.11 | 227.7 |
| 12 | 4.57 | 6.37 | 19.55 | -2157.64 | -2158. | 0.00 | 20.70 | 228.5 |
| 13 | 4.99 | 6.79 | 19.55 | -2039.95 | -2040. | 0.00 | 19.44 | 229.1 |
| 14 | 5.39 | 7.19 | 19.55 | -1705.66 | -1706. | 0.00 | 16.14 | 230.8 |
| 15 | 5.79 | 7.59 | 19.55 | -1399.55 | -1400. | 0.00 | 13.31 | 232.2 |
| 16 | 6.19 | 7.99 | 19.55 | -1096.19 | -1096. | 0.00 | 10.40 | 233.6 |
| 17 | 6.59 | 8.39 | 19.55 | -771.29 | -771. | 0.00 | 7.27 | 235.0 |
| 18 | 6.84 | 8.64 | 19.55 | -541.65 | -542. | 0.00 | 5.06 | 236.0 |
| 19 | 7.09 | 8.89 | 19.55 | -285.29 | -285. | 0.00 | 2.67 | 237.3 |
| 20 | 7.34 | 9.14 | 19.55 | -17.01 | -17. | 0.00 | 0.17 | 239.4 |
| 21 | 7.59 | 9.39 | 19.55 | 281.86 | 282. | 6.99 | 0.00 | 237.3 |
| 22 | 7.96 | 9.76 | 19.55 | 235.21 | 235. | 6.99 | 0.00 | 237.5 |
| 23 | 8.32 | 10.12 | 19.55 | 233.67 | 234. | 6.99 | 0.00 | 237.5 |
| 24 | 8.69 | 10.49 | 19.55 | 269.24 | 269. | 6.99 | 0.00 | 237.3 |
| 25 | 9.06 | 10.86 | 19.55 | 334.04 | 334. | 6.99 | 0.00 | 237.0 |
| 26 | 9.42 | 11.22 | 19.55 | 432.75 | 433. | 6.99 | 0.00 | 236.5 |
| 27 | 9.79 | 11.59 | 19.55 | 579.33 | 579. | 6.99 | 0.00 | 235.9 |
| 28 | 10.22 | 12.02 | 19.55 | 554.64 | 555. | 6.99 | 0.00 | 235.9 |
| 29 | 10.66 | 12.46 | 19.55 | 575.37 | 575. | 6.99 | 0.00 | 235.9 |
| 30 | 11.10 | 12.90 | 19.55 | 591.55 | 592. | 6.99 | 0.00 | 235.8 |
| 31 | 11.53 | 13.33 | 19.55 | 609.49 | 609. | 6.99 | 0.00 | 235.7 |
| 32 | 11.96 | 13.76 | 19.55 | 642.12 | 642. | 6.99 | 0.00 | 235.6 |
| 33 | 12.40 | 14.20 | 19.55 | 707.43 | 707. | 6.99 | 0.00 | 235.3 |
| 34 | 12.84 | 14.64 | 19.55 | 826.74 | 827. | 7.85 | 0.00 | 234.8 |
| 35 | 13.27 | 15.07 | 19.55 | 1043.84 | 1044. | 9.81 | 0.00 | 233.9 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 231.09

untere Bewehrung : 116.42

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. | Z | X | Y | Q | | Tm | Bewehrung (cm²/m) | | | | | |
|---------|------|------|-------|----------|--------|-------|-------------------|----------|-----------|------|-----|--|
| Nr. | (m) | (m) | (m) | (kN) | | (kNm) | | Bereich | Vrd(MN) | as | | |
| 1 | 0.00 | 1.80 | 19.55 | -1456.14 | -1456. | 0.00 | 0. | norm 0.5 | 1.46 100% | 8.36 | 0.0 | |
| 2 | 0.42 | 2.22 | 19.55 | -1409.40 | -1409. | 0.00 | 0. | norm 0.5 | 1.41 100% | 8.00 | 0.0 | |
| 3 | 0.83 | 2.63 | 19.55 | -1236.16 | -1236. | 0.00 | 0. | norm 0.5 | 1.24 100% | 6.56 | 0.0 | |
| 4 | 1.25 | 3.05 | 19.55 | -991.08 | -991. | 0.00 | 0. | norm 0.4 | 0.99 100% | 4.63 | 0.0 | |
| 5 | 1.66 | 3.46 | 19.55 | -758.56 | -759. | 0.00 | 0. | norm 0.4 | 0.76 100% | 2.76 | 0.0 | |
| 6 | 2.08 | 3.88 | 19.55 | -516.07 | -516. | 0.00 | 0. | min. 0.3 | 0.69 75% | 2.32 | 0.0 | |
| 7 | 2.50 | 4.30 | 19.55 | -274.80 | -275. | 0.00 | 0. | min. 0.2 | 0.69 40% | 2.32 | 0.0 | |
| 8 | 2.91 | 4.71 | 19.55 | -77.53 | -78. | 0.00 | 0. | min. 0.1 | 0.69 11% | 2.32 | 0.0 | |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | Tm (kNm) | Bewehrung (cm ² /m) | | | | | | |
|----------------|----------|----------|----------|-----------|-------------|--------------------------------|---------|----------|------|------|------|-----|
| | | | | | | Bereich | Vrd(MN) | as | | | | |
| 9 | 3.33 | 5.13 | 19.55 | 99.81 | 100. | 0.00 | 0. | min. 0.1 | 0.69 | 15% | 2.32 | 0.0 |
| 10 | 3.74 | 5.54 | 19.55 | 239.27 | 239. | 0.00 | 0. | min. 0.2 | 0.69 | 35% | 2.32 | 0.0 |
| 11 | 4.16 | 5.96 | 19.55 | 318.48 | 318. | 0.00 | 0. | min. 0.2 | 0.69 | 46% | 2.32 | 0.0 |
| 12 | 4.57 | 6.37 | 19.55 | 310.23 | 310. | 0.00 | 0. | min. 0.2 | 0.69 | 45% | 2.32 | 0.0 |
| 13 | 4.99 | 6.79 | 19.55 | 269.45 | 269. | 0.00 | 0. | min. 0.2 | 0.69 | 39% | 2.32 | 0.0 |
| 14 | 4.99 | 6.79 | 19.55 | 853.12 | 853. | 0.00 | 0. | norm 0.4 | 0.85 | 100% | 3.55 | 0.0 |
| 15 | 5.39 | 7.19 | 19.55 | 800.88 | 801. | 0.00 | 0. | norm 0.4 | 0.80 | 100% | 3.07 | 0.0 |
| 16 | 5.79 | 7.59 | 19.55 | 746.30 | 746. | 0.00 | 0. | norm 0.4 | 0.75 | 100% | 2.58 | 0.0 |
| 17 | 6.19 | 7.99 | 19.55 | 784.94 | 785. | 0.00 | 0. | norm 0.4 | 0.78 | 100% | 2.88 | 0.0 |
| 18 | 6.59 | 8.39 | 19.55 | 825.92 | 826. | 0.00 | 0. | norm 0.4 | 0.83 | 100% | 3.21 | 0.0 |
| 19 | 6.59 | 8.39 | 19.55 | 891.12 | 891. | 0.00 | 0. | norm 0.4 | 0.89 | 100% | 3.74 | 0.0 |
| 20 | 6.84 | 8.64 | 19.55 | 973.39 | 973. | 0.00 | 0. | norm 0.4 | 0.97 | 100% | 4.43 | 0.0 |
| 21 | 7.09 | 8.89 | 19.55 | 1047.34 | 1047. | 0.00 | 0. | norm 0.4 | 1.05 | 100% | 5.02 | 0.0 |
| 22 | 7.34 | 9.14 | 19.55 | 1132.91 | 1133. | 0.00 | 0. | norm 0.5 | 1.13 | 100% | 5.73 | 0.0 |
| 23 | 7.59 | 9.39 | 19.55 | 1226.80 | 1227. | 0.00 | 0. | norm 0.5 | 1.23 | 100% | 6.51 | 0.0 |
| 24 | 7.59 | 9.39 | 19.55 | -154.17 | -154. | 0.00 | 0. | min. 0.2 | 0.71 | 22% | 2.32 | 0.0 |
| 25 | 7.96 | 9.76 | 19.55 | -73.37 | -73. | 0.00 | 0. | min. 0.1 | 0.71 | 10% | 2.32 | 0.0 |
| 26 | 8.32 | 10.12 | 19.55 | 53.38 | 53. | 0.00 | 0. | min. 0.1 | 0.71 | 8% | 2.32 | 0.0 |
| 27 | 8.69 | 10.49 | 19.55 | 138.28 | 138. | 0.00 | 0. | min. 0.2 | 0.71 | 20% | 2.32 | 0.0 |
| 28 | 9.06 | 10.86 | 19.55 | 214.69 | 215. | 0.00 | 0. | min. 0.2 | 0.71 | 30% | 2.32 | 0.0 |
| 29 | 9.42 | 11.22 | 19.55 | 340.73 | 341. | 0.00 | 0. | min. 0.2 | 0.71 | 48% | 2.32 | 0.0 |
| 30 | 9.79 | 11.59 | 19.55 | 429.31 | 429. | 0.00 | 0. | min. 0.3 | 0.71 | 61% | 2.32 | 0.0 |
| 31 | 9.79 | 11.59 | 19.55 | -85.50 | -85. | 0.00 | 0. | min. 0.1 | 0.71 | 12% | 2.32 | 0.0 |
| 32 | 10.22 | 12.02 | 19.55 | 0.66 | 1. | 0.00 | 0. | min. 0.1 | 0.71 | 0% | 2.32 | 0.0 |
| 33 | 10.66 | 12.46 | 19.55 | 55.51 | 56. | 0.00 | 0. | min. 0.1 | 0.71 | 8% | 2.32 | 0.0 |
| 34 | 11.10 | 12.90 | 19.55 | 31.87 | 32. | 0.00 | 0. | min. 0.1 | 0.71 | 5% | 2.32 | 0.0 |
| 35 | 11.53 | 13.33 | 19.55 | 52.34 | 52. | 0.00 | 0. | min. 0.1 | 0.71 | 7% | 2.32 | 0.0 |
| 36 | 11.96 | 13.76 | 19.55 | 107.54 | 108. | 0.00 | 0. | min. 0.1 | 0.71 | 15% | 2.32 | 0.0 |
| 37 | 12.40 | 14.20 | 19.55 | 192.96 | 193. | 0.00 | 0. | min. 0.2 | 0.71 | 27% | 2.32 | 0.0 |
| 38 | 12.84 | 14.64 | 19.55 | 393.85 | 394. | 0.00 | 0. | min. 0.3 | 0.71 | 56% | 2.32 | 0.0 |
| 39 | 13.27 | 15.07 | 19.55 | 551.70 | 552. | 0.00 | 0. | min. 0.3 | 0.71 | 78% | 2.32 | 0.0 |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm ²] | As Feld [cm ²] |
|--------|------------------------------|-----------------|------------------|--------------------------|-------------------------------|
| UZ-Anf | 30.17 | 3.23 | 1252.28 | 28.80 | 0.00 |
| UZ-End | 18.38 | 2.22 | 830.30 | 19.10 | 9.81 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|---------|
| 0 | 0.00 | 1.80 | 19.55 | 79.13 | 47.06 |
| 1 | 0.21 | 2.01 | 19.55 | -95.29 | -112.40 |
| 2 | 0.62 | 2.42 | 19.55 | -426.09 | -416.60 |
| 3 | 1.04 | 2.84 | 19.55 | -601.37 | -589.37 |
| 4 | 1.46 | 3.26 | 19.55 | -552.42 | -559.16 |
| 5 | 1.87 | 3.67 | 19.55 | -584.61 | -583.16 |
| 6 | 2.29 | 4.09 | 19.55 | -587.92 | -580.21 |
| 7 | 2.70 | 4.50 | 19.55 | -467.81 | -474.40 |
| 8 | 3.12 | 4.92 | 19.55 | -430.62 | -426.46 |
| 9 | 3.53 | 5.33 | 19.55 | -336.12 | -335.36 |
| 10 | 3.95 | 5.75 | 19.55 | -196.72 | -190.49 |
| 11 | 4.37 | 6.17 | 19.55 | 29.14 | 19.84 |
| 12 | 4.78 | 6.58 | 19.55 | 100.13 | 98.07 |
| 13 | 5.19 | 6.99 | 19.55 | 126.08 | 130.61 |
| 14 | 5.59 | 7.39 | 19.55 | 157.62 | 136.45 |
| 15 | 5.99 | 7.79 | 19.55 | -117.04 | -96.60 |

Position : BP
 Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|---------|
| 16 | 6.39 | 8.19 | 19.55 | -98.65 | -102.45 |
| 17 | 6.72 | 8.52 | 19.55 | -332.01 | -329.10 |
| 18 | 6.97 | 8.77 | 19.55 | -289.58 | -295.80 |
| 19 | 7.22 | 9.02 | 19.55 | -344.33 | -342.26 |
| 20 | 7.47 | 9.27 | 19.55 | -376.81 | -375.56 |
| 21 | 7.77 | 9.57 | 19.55 | -210.25 | -220.37 |
| 22 | 8.14 | 9.94 | 19.55 | -364.98 | -345.68 |
| 23 | 8.51 | 10.31 | 19.55 | -224.33 | -231.54 |
| 24 | 8.87 | 10.67 | 19.55 | -195.19 | -208.40 |
| 25 | 9.24 | 11.04 | 19.55 | -364.19 | -343.74 |
| 26 | 9.61 | 11.41 | 19.55 | -232.38 | -241.58 |
| 27 | 10.01 | 11.81 | 19.55 | -199.26 | -198.05 |
| 28 | 10.44 | 12.24 | 19.55 | -138.08 | -126.09 |
| 29 | 10.88 | 12.68 | 19.55 | 76.39 | 54.35 |
| 30 | 11.31 | 13.11 | 19.55 | -52.82 | -47.08 |
| 31 | 11.75 | 13.55 | 19.55 | -131.36 | -126.88 |
| 32 | 12.18 | 13.98 | 19.55 | -175.30 | -196.37 |
| 33 | 12.62 | 14.42 | 19.55 | -492.63 | -461.81 |
| 34 | 13.05 | 14.85 | 19.55 | -351.76 | -362.87 |
| 35 | 13.27 | 15.07 | 19.55 | -227.97 | -271.64 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|---------|
| 1 | 0.00 | 4.99 | -341.90 | -342.50 |
| 2 | 4.99 | 6.59 | 7.23 | 7.86 |
| 3 | 6.59 | 7.59 | -325.85 | -325.94 |
| 4 | 7.59 | 9.79 | -268.71 | -269.08 |
| 5 | 9.79 | 13.27 | -179.79 | -179.55 |
| total | 0.00 | 13.27 | -243.95 | -288.49 |

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm²/m) |
|----------------|----------|----------|----------|-------------------------|----------------------|
| 1 | 0.00 | 35.82 | 20.25 | 47.06 | 1.08 |
| 2 | 0.42 | 35.82 | 20.57 | 271.86 | 6.25 |
| 3 | 0.83 | 35.82 | 20.90 | 530.19 | 12.19 |
| 4 | 1.25 | 35.82 | 21.22 | 583.49 | 13.42 |
| 5 | 1.66 | 35.82 | 21.54 | 562.85 | 12.95 |
| 6 | 2.08 | 5.35 | 37.94 | 595.52 | 13.70 |
| 7 | 2.50 | 5.84 | 37.94 | 528.97 | 12.17 |
| 8 | 2.91 | 6.32 | 37.94 | 446.79 | 10.28 |
| 9 | 3.33 | 6.81 | 37.94 | 388.28 | 8.93 |
| 10 | 3.74 | 7.29 | 37.94 | 273.44 | 6.29 |
| 11 | 4.16 | 7.78 | 37.94 | 80.61 | 1.85 |
| 12 | 4.57 | 8.26 | 37.94 | 75.59 | 1.74 |
| 13 | 4.99 | 8.75 | 37.94 | 109.91 | 2.53 |
| 14 | 5.39 | 9.23 | 37.94 | 161.76 | 3.72 |
| 15 | 5.79 | 9.71 | 37.94 | 11.11 | 0.26 |
| 16 | 6.19 | 10.20 | 37.94 | 88.11 | 2.03 |
| 17 | 6.59 | 10.68 | 37.94 | 254.91 | 5.86 |
| 18 | 6.84 | 11.17 | 37.94 | 324.60 | 7.47 |
| 19 | 7.09 | 11.65 | 37.94 | 304.81 | 7.01 |
| 20 | 7.34 | 12.14 | 37.94 | 378.70 | 8.71 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm²/m) |
|----------------|----------|----------|----------|-------------------------|----------------------|
| 21 | 7.59 | 12.62 | 37.94 | 310.78 | 7.15 |
| 22 | 7.96 | 13.11 | 37.94 | 269.86 | 6.21 |
| 23 | 8.32 | 13.59 | 37.94 | 313.95 | 7.22 |
| 24 | 8.69 | 14.08 | 37.94 | 187.43 | 4.31 |
| 25 | 9.06 | 14.56 | 37.94 | 287.34 | 6.61 |
| 26 | 9.42 | 15.05 | 37.94 | 309.76 | 7.12 |
| 27 | 9.79 | 15.53 | 37.94 | 207.33 | 4.77 |
| 28 | 10.22 | 16.01 | 37.94 | 182.18 | 4.19 |
| 29 | 10.66 | 16.50 | 37.94 | 20.68 | 0.48 |
| 30 | 11.10 | 16.98 | 37.94 | 28.01 | 0.64 |
| 31 | 11.53 | 17.47 | 37.94 | 102.07 | 2.35 |
| 32 | 11.96 | 17.95 | 37.94 | 137.62 | 3.17 |
| 33 | 12.40 | 18.44 | 37.94 | 340.44 | 7.83 |
| 34 | 12.84 | 18.92 | 37.94 | 454.10 | 10.44 |
| 35 | 13.27 | 19.41 | 37.94 | 271.64 | 6.25 |

Überzug Nr.: 35 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei seittl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm²) unten | oben | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|-------|--------------------------|------|--------------------|
| 1 | 0.00 | 15.07 | 19.55 | 1014.32 | 1014. | 9.61 | 0.00 | 234.0 |
| 2 | 0.43 | 15.50 | 19.55 | 796.78 | 797. | 7.46 | 0.00 | 234.9 |
| 3 | 0.86 | 15.93 | 19.55 | 659.09 | 659. | 6.99 | 0.00 | 235.5 |
| 4 | 1.29 | 16.36 | 19.55 | 570.15 | 570. | 6.99 | 0.00 | 235.9 |
| 5 | 1.72 | 16.78 | 19.55 | 539.26 | 539. | 6.99 | 0.00 | 236.0 |
| 6 | 2.14 | 17.21 | 19.55 | 553.28 | 553. | 6.99 | 0.00 | 235.9 |
| 7 | 2.57 | 17.64 | 19.55 | 594.69 | 595. | 6.99 | 0.00 | 235.8 |
| 8 | 3.00 | 18.07 | 19.55 | 673.41 | 673. | 6.99 | 0.00 | 235.4 |
| 9 | 3.43 | 18.50 | 19.55 | 803.79 | 804. | 7.46 | 0.00 | 234.9 |
| 10 | 3.86 | 18.93 | 19.55 | 978.62 | 979. | 9.22 | 0.00 | 234.1 |
| 11 | 4.29 | 19.36 | 19.55 | 1173.52 | 1174. | 10.98 | 0.00 | 233.3 |
| 12 | 4.72 | 19.79 | 19.55 | 1400.62 | 1401. | 13.31 | 0.00 | 232.2 |
| 13 | 5.15 | 20.22 | 19.55 | 1668.16 | 1668. | 15.77 | 0.00 | 231.0 |
| 14 | 5.57 | 20.64 | 19.55 | 1953.47 | 1953. | 18.72 | 0.00 | 229.5 |
| 15 | 6.00 | 21.07 | 19.55 | 2216.49 | 2216. | 21.23 | 0.00 | 228.2 |
| 16 | 6.43 | 21.50 | 19.55 | 2452.46 | 2452. | 23.67 | 0.00 | 226.9 |
| 17 | 6.86 | 21.93 | 19.55 | 2675.90 | 2676. | 26.11 | 0.00 | 225.7 |
| 18 | 7.32 | 22.39 | 19.55 | 2491.50 | 2491. | 24.10 | 0.00 | 226.7 |
| 19 | 7.77 | 22.84 | 19.55 | 2263.30 | 2263. | 21.76 | 0.00 | 227.9 |
| 20 | 8.23 | 23.30 | 19.55 | 2034.68 | 2035. | 19.44 | 0.00 | 229.1 |
| 21 | 8.68 | 23.75 | 19.55 | 1753.10 | 1753. | 16.70 | 0.00 | 230.5 |
| 22 | 9.14 | 24.21 | 19.55 | 1563.37 | 1563. | 14.83 | 0.00 | 231.5 |
| 23 | 9.59 | 24.66 | 19.55 | 1395.08 | 1395. | 13.12 | 0.00 | 232.3 |
| 24 | 10.05 | 25.12 | 19.55 | 1276.43 | 1276. | 11.96 | 0.00 | 232.9 |
| 25 | 10.51 | 25.58 | 19.55 | 1209.62 | 1210. | 11.38 | 0.00 | 233.2 |
| 26 | 10.96 | 26.03 | 19.55 | 1184.28 | 1184. | 11.18 | 0.00 | 233.2 |
| 27 | 11.42 | 26.49 | 19.55 | 1204.92 | 1205. | 11.38 | 0.00 | 233.2 |
| 28 | 11.87 | 26.94 | 19.55 | 1121.60 | 1122. | 10.59 | 0.00 | 233.5 |
| 29 | 12.33 | 27.40 | 19.55 | 1003.20 | 1003. | 9.41 | 0.00 | 234.1 |
| 30 | 12.78 | 27.85 | 19.55 | 619.04 | 619. | 6.99 | 0.00 | 235.7 |
| 31 | 13.24 | 28.31 | 19.55 | 25.65 | 26. | 6.99 | 0.00 | 239.2 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 0.00

untere Bewehrung : 479.68

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | Tm (kNm) | Bewehrung (cm ² /m) | | | | | | |
|----------------|----------|----------|----------|-----------|-------------|--------------------------------|---------|----------|------|------|------|-----|
| | | | | | | Bereich | Vrd(MN) | as | | | | |
| 1 | 0.00 | 15.07 | 19.55 | -551.25 | -551. | 0.00 | 0. | min. 0.3 | 0.71 | 78% | 2.32 | 0.0 |
| 2 | 0.43 | 15.50 | 19.55 | -419.64 | -420. | 0.00 | 0. | min. 0.3 | 0.71 | 60% | 2.32 | 0.0 |
| 3 | 0.86 | 15.93 | 19.55 | -255.75 | -256. | 0.00 | 0. | min. 0.2 | 0.71 | 36% | 2.32 | 0.0 |
| 4 | 1.29 | 16.36 | 19.55 | -143.11 | -143. | 0.00 | 0. | min. 0.2 | 0.71 | 20% | 2.32 | 0.0 |
| 5 | 1.72 | 16.78 | 19.55 | -10.28 | -10. | 0.00 | 0. | min. 0.1 | 0.71 | 1% | 2.32 | 0.0 |
| 6 | 2.14 | 17.21 | 19.55 | 66.21 | 66. | 0.00 | 0. | min. 0.1 | 0.71 | 9% | 2.32 | 0.0 |
| 7 | 2.57 | 17.64 | 19.55 | 133.28 | 133. | 0.00 | 0. | min. 0.1 | 0.71 | 19% | 2.32 | 0.0 |
| 8 | 3.00 | 18.07 | 19.55 | 241.21 | 241. | 0.00 | 0. | min. 0.2 | 0.71 | 34% | 2.32 | 0.0 |
| 9 | 3.43 | 18.50 | 19.55 | 365.02 | 365. | 0.00 | 0. | min. 0.3 | 0.71 | 52% | 2.32 | 0.0 |
| 10 | 3.86 | 18.93 | 19.55 | 434.29 | 434. | 0.00 | 0. | min. 0.3 | 0.71 | 62% | 2.32 | 0.0 |
| 11 | 4.29 | 19.36 | 19.55 | 484.86 | 485. | 0.00 | 0. | min. 0.3 | 0.71 | 69% | 2.32 | 0.0 |
| 12 | 4.72 | 19.79 | 19.55 | 579.07 | 579. | 0.00 | 0. | min. 0.4 | 0.71 | 82% | 2.32 | 0.0 |
| 13 | 5.15 | 20.22 | 19.55 | 659.88 | 660. | 0.00 | 0. | min. 0.4 | 0.70 | 94% | 2.32 | 0.0 |
| 14 | 5.57 | 20.64 | 19.55 | 649.71 | 650. | 0.00 | 0. | min. 0.4 | 0.70 | 93% | 2.32 | 0.0 |
| 15 | 6.00 | 21.07 | 19.55 | 577.95 | 578. | 0.00 | 0. | min. 0.4 | 0.69 | 83% | 2.32 | 0.0 |
| 16 | 6.43 | 21.50 | 19.55 | 529.97 | 530. | 0.00 | 0. | min. 0.3 | 0.69 | 77% | 2.32 | 0.0 |
| 17 | 6.86 | 21.93 | 19.55 | 516.75 | 517. | 0.00 | 0. | min. 0.3 | 0.69 | 75% | 2.32 | 0.0 |
| 18 | 6.86 | 21.93 | 19.55 | -375.73 | -376. | 0.00 | 0. | min. 0.3 | 0.68 | 55% | 2.32 | 0.0 |
| 19 | 7.32 | 22.39 | 19.55 | -462.49 | -462. | 0.00 | 0. | min. 0.3 | 0.69 | 67% | 2.32 | 0.0 |
| 20 | 7.77 | 22.84 | 19.55 | -490.49 | -490. | 0.00 | 0. | min. 0.3 | 0.69 | 71% | 2.32 | 0.0 |
| 21 | 8.23 | 23.30 | 19.55 | -582.84 | -583. | 0.00 | 0. | min. 0.4 | 0.70 | 84% | 2.32 | 0.0 |
| 22 | 8.68 | 23.75 | 19.55 | -536.85 | -537. | 0.00 | 0. | min. 0.3 | 0.70 | 77% | 2.32 | 0.0 |
| 23 | 9.14 | 24.21 | 19.55 | -372.38 | -372. | 0.00 | 0. | min. 0.3 | 0.70 | 53% | 2.32 | 0.0 |
| 24 | 9.59 | 24.66 | 19.55 | -330.51 | -331. | 0.00 | 0. | min. 0.2 | 0.70 | 47% | 2.32 | 0.0 |
| 25 | 10.05 | 25.12 | 19.55 | -194.57 | -195. | 0.00 | 0. | min. 0.2 | 0.70 | 28% | 2.32 | 0.0 |
| 26 | 10.51 | 25.58 | 19.55 | -112.10 | -112. | 0.00 | 0. | min. 0.1 | 0.71 | 16% | 2.32 | 0.0 |
| 27 | 10.96 | 26.03 | 19.55 | 36.33 | 36. | 0.00 | 0. | min. 0.1 | 0.71 | 5% | 2.32 | 0.0 |
| 28 | 11.42 | 26.49 | 19.55 | -64.14 | -64. | 0.00 | 0. | min. 0.1 | 0.71 | 9% | 2.32 | 0.0 |
| 29 | 11.87 | 26.94 | 19.55 | -192.42 | -192. | 0.00 | 0. | min. 0.2 | 0.71 | 27% | 2.32 | 0.0 |
| 30 | 12.33 | 27.40 | 19.55 | -494.13 | -494. | 0.00 | 0. | min. 0.3 | 0.71 | 70% | 2.32 | 0.0 |
| 31 | 12.78 | 27.85 | 19.55 | -1139.43 | -1139. | 0.00 | 0. | norm 0.5 | 1.14 | 100% | 5.80 | 0.0 |
| 32 | 13.24 | 28.31 | 19.55 | -1383.44 | -1383. | 0.00 | 0. | norm 0.5 | 1.38 | 100% | 7.80 | 0.0 |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm ²] | As Feld [cm ²] |
|--------|------------------------------|-----------------|------------------|--------------------------|-------------------------------|
| UZ-Anf | 18.38 | 2.22 | 829.64 | 19.08 | 23.67 |
| UZ-End | 29.74 | 3.20 | 1210.51 | 27.84 | 26.11 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|---------|
| 0 | 0.00 | 15.07 | 19.55 | -213.76 | -243.83 |
| 1 | 0.21 | 15.28 | 19.55 | -299.40 | -306.96 |
| 2 | 0.64 | 15.71 | 19.55 | -401.27 | -382.24 |
| 3 | 1.07 | 16.14 | 19.55 | -242.89 | -262.73 |
| 4 | 1.50 | 16.57 | 19.55 | -328.46 | -309.80 |
| 5 | 1.93 | 17.00 | 19.55 | -168.24 | -178.40 |
| 6 | 2.36 | 17.43 | 19.55 | -151.09 | -156.43 |
| 7 | 2.79 | 17.86 | 19.55 | -253.94 | -251.74 |
| 8 | 3.22 | 18.29 | 19.55 | -299.87 | -288.77 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|---------|
| 9 | 3.64 | 18.71 | 19.55 | -155.99 | -161.56 |
| 10 | 4.07 | 19.14 | 19.55 | -108.22 | -117.96 |
| 11 | 4.50 | 19.57 | 19.55 | -227.90 | -219.72 |
| 12 | 4.93 | 20.00 | 19.55 | -198.76 | -188.50 |
| 13 | 5.36 | 20.43 | 19.55 | 27.69 | 23.73 |
| 14 | 5.79 | 20.86 | 19.55 | 178.91 | 167.38 |
| 15 | 6.22 | 21.29 | 19.55 | 111.62 | 111.91 |
| 16 | 6.65 | 21.72 | 19.55 | 26.83 | 30.82 |
| 17 | 7.09 | 22.16 | 19.55 | 202.56 | 190.38 |
| 18 | 7.54 | 22.61 | 19.55 | 32.77 | 61.44 |
| 19 | 8.00 | 23.07 | 19.55 | 237.61 | 202.66 |
| 20 | 8.45 | 23.52 | 19.55 | -100.86 | -100.93 |
| 21 | 8.91 | 23.98 | 19.55 | -407.06 | -360.89 |
| 22 | 9.37 | 24.44 | 19.55 | -39.54 | -91.90 |
| 23 | 9.82 | 24.89 | 19.55 | -342.70 | -298.30 |
| 24 | 10.28 | 25.35 | 19.55 | -136.64 | -180.95 |
| 25 | 10.73 | 25.80 | 19.55 | -393.04 | -325.73 |
| 26 | 11.19 | 26.26 | 19.55 | 272.65 | 220.47 |
| 27 | 11.65 | 26.72 | 19.55 | 261.35 | 281.50 |
| 28 | 12.10 | 27.17 | 19.55 | 610.60 | 662.06 |
| 29 | 12.56 | 27.63 | 19.55 | 1548.67 | 1416.01 |
| 30 | 13.01 | 28.08 | 19.55 | 464.89 | 535.44 |
| 31 | 13.24 | 28.31 | 19.55 | -291.54 | -75.48 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|---------|
| 1 | 0.00 | 6.86 | -153.02 | -153.61 |
| 2 | 6.86 | 13.24 | 142.82 | 141.28 |
| total | 0.00 | 13.24 | -10.46 | -90.79 |

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 1 | 0.00 | 35.82 | 20.25 | 243.83 | 5.61 |
| 2 | 0.43 | 35.82 | 20.57 | 370.10 | 8.51 |
| 3 | 0.86 | 35.82 | 20.90 | 319.05 | 7.34 |
| 4 | 1.29 | 35.82 | 21.22 | 285.09 | 6.56 |
| 5 | 1.72 | 35.82 | 21.54 | 256.67 | 5.90 |
| 6 | 2.14 | 5.35 | 37.94 | 144.20 | 3.32 |
| 7 | 2.57 | 5.84 | 37.94 | 199.37 | 4.59 |
| 8 | 3.00 | 6.32 | 37.94 | 290.22 | 6.68 |
| 9 | 3.43 | 6.81 | 37.94 | 233.47 | 5.37 |
| 10 | 3.86 | 7.29 | 37.94 | 116.81 | 2.69 |
| 11 | 4.29 | 7.78 | 37.94 | 166.47 | 3.83 |
| 12 | 4.72 | 8.26 | 37.94 | 231.88 | 5.33 |
| 13 | 5.15 | 8.75 | 37.94 | 91.41 | 2.10 |
| 14 | 5.57 | 9.23 | 37.94 | 117.27 | 2.70 |
| 15 | 6.00 | 9.71 | 37.94 | 162.19 | 3.73 |
| 16 | 6.43 | 10.20 | 37.94 | 43.73 | 1.01 |
| 17 | 6.86 | 10.68 | 37.94 | 117.90 | 2.71 |
| 18 | 7.32 | 11.17 | 37.94 | 124.97 | 2.87 |
| 19 | 7.77 | 11.65 | 37.94 | 135.10 | 3.11 |
| 20 | 8.23 | 12.14 | 37.94 | 105.11 | 2.42 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm²/m) |
|----------------|----------|----------|----------|-------------------------|----------------------|
| 21 | 8.68 | 12.62 | 37.94 | 300.50 | 6.91 |
| 22 | 9.14 | 13.11 | 37.94 | 216.99 | 4.99 |
| 23 | 9.59 | 13.59 | 37.94 | 183.21 | 4.21 |
| 24 | 10.05 | 14.08 | 37.94 | 239.72 | 5.51 |
| 25 | 10.51 | 14.56 | 37.94 | 287.95 | 6.62 |
| 26 | 10.96 | 15.05 | 37.94 | 74.91 | 1.72 |
| 27 | 11.42 | 15.53 | 37.94 | 297.55 | 6.84 |
| 28 | 11.87 | 16.01 | 37.94 | 369.92 | 8.51 |
| 29 | 12.33 | 16.50 | 37.94 | 1140.07 | 26.22 |
| 30 | 12.78 | 16.98 | 37.94 | 1146.36 | 26.37 |
| 31 | 13.24 | 17.47 | 37.94 | 75.48 | 1.74 |

Überzug Nr.: 36 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei seith. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm²) unten | oben | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|--------|--------------------------|-------|--------------------|
| 1 | 0.00 | 1.80 | 24.77 | -16.25 | -16. | 0.00 | 0.17 | 239.4 |
| 2 | 0.42 | 2.22 | 24.77 | -550.94 | -551. | 0.00 | 5.24 | 235.9 |
| 3 | 0.83 | 2.63 | 24.77 | -1059.78 | -1060. | 0.00 | 10.00 | 233.8 |
| 4 | 1.25 | 3.05 | 24.77 | -1483.24 | -1483. | 0.00 | 14.07 | 231.8 |
| 5 | 1.66 | 3.46 | 24.77 | -1812.15 | -1812. | 0.00 | 17.25 | 230.2 |
| 6 | 2.08 | 3.88 | 24.77 | -2044.53 | -2045. | 0.00 | 19.62 | 229.0 |
| 7 | 2.50 | 4.30 | 24.77 | -2168.65 | -2169. | 0.00 | 20.88 | 228.4 |
| 8 | 2.91 | 4.71 | 24.77 | -2191.70 | -2192. | 0.00 | 21.05 | 228.3 |
| 9 | 3.33 | 5.13 | 24.77 | -2128.82 | -2129. | 0.00 | 20.34 | 228.7 |
| 10 | 3.74 | 5.54 | 24.77 | -1975.38 | -1975. | 0.00 | 18.90 | 229.4 |
| 11 | 4.16 | 5.96 | 24.77 | -1740.10 | -1740. | 0.00 | 16.51 | 230.6 |
| 12 | 4.57 | 6.37 | 24.77 | -1429.15 | -1429. | 0.00 | 13.50 | 232.1 |
| 13 | 4.99 | 6.79 | 24.77 | -1015.12 | -1015. | 0.00 | 9.61 | 234.0 |
| 14 | 5.42 | 7.22 | 24.77 | -878.99 | -879. | 0.00 | 8.24 | 234.6 |
| 15 | 5.86 | 7.66 | 24.77 | -657.14 | -657. | 0.00 | 6.15 | 235.5 |
| 16 | 6.29 | 8.09 | 24.77 | -363.65 | -364. | 0.00 | 3.41 | 236.9 |
| 17 | 6.72 | 8.52 | 24.77 | -13.99 | -14. | 0.00 | 0.13 | 239.4 |
| 18 | 7.16 | 8.96 | 24.77 | 394.01 | 394. | 6.99 | 0.00 | 236.7 |
| 19 | 7.59 | 9.39 | 24.77 | 884.03 | 884. | 8.24 | 0.00 | 234.6 |
| 20 | 7.94 | 9.74 | 24.77 | 773.65 | 774. | 7.27 | 0.00 | 235.0 |
| 21 | 8.29 | 10.09 | 24.77 | 722.18 | 722. | 6.99 | 0.00 | 235.3 |
| 22 | 8.64 | 10.44 | 24.77 | 708.93 | 709. | 6.99 | 0.00 | 235.3 |
| 23 | 8.99 | 10.79 | 24.77 | 729.25 | 729. | 6.99 | 0.00 | 235.2 |
| 24 | 9.34 | 11.14 | 24.77 | 781.99 | 782. | 7.27 | 0.00 | 235.0 |
| 25 | 9.69 | 11.49 | 24.77 | 867.43 | 867. | 8.24 | 0.00 | 234.6 |
| 26 | 10.04 | 11.84 | 24.77 | 983.10 | 983. | 9.22 | 0.00 | 234.1 |
| 27 | 10.39 | 12.19 | 24.77 | 1152.61 | 1153. | 10.79 | 0.00 | 233.4 |
| 28 | 10.84 | 12.64 | 24.77 | 1031.53 | 1032. | 9.81 | 0.00 | 233.9 |
| 29 | 11.29 | 13.09 | 24.77 | 950.87 | 951. | 9.02 | 0.00 | 234.2 |
| 30 | 11.74 | 13.54 | 24.77 | 880.04 | 880. | 8.24 | 0.00 | 234.6 |
| 31 | 12.19 | 13.99 | 24.77 | 789.75 | 790. | 7.46 | 0.00 | 234.9 |
| 32 | 12.64 | 14.44 | 24.77 | 644.13 | 644. | 6.99 | 0.00 | 235.5 |
| 33 | 13.09 | 14.89 | 24.77 | 374.55 | 375. | 6.99 | 0.00 | 236.8 |
| 34 | 13.18 | 14.98 | 24.77 | 277.93 | 278. | 6.99 | 0.00 | 237.3 |
| 35 | 13.27 | 15.07 | 24.77 | 198.70 | 199. | 6.99 | 0.00 | 237.7 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 171.28

untere Bewehrung : 141.76

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | Tm (kNm) | Bewehrung (cm ² /m) | | | | |
|----------------|----------|----------|----------|-----------|-------------|--------------------------------|---------|----------|-----------|----------|
| | | | | | | Bereich | Vrd(MN) | as | | |
| 1 | 0.00 | 1.80 | 24.77 | -1291.20 | -1291. | 0.00 | 0. | norm 0.5 | 1.29 100% | 7.04 0.0 |
| 2 | 0.42 | 2.22 | 24.77 | -1275.07 | -1275. | 0.00 | 0. | norm 0.5 | 1.28 100% | 6.88 0.0 |
| 3 | 0.83 | 2.63 | 24.77 | -1136.99 | -1137. | 0.00 | 0. | norm 0.5 | 1.14 100% | 5.76 0.0 |
| 4 | 1.25 | 3.05 | 24.77 | -902.99 | -903. | 0.00 | 0. | norm 0.4 | 0.90 100% | 3.88 0.0 |
| 5 | 1.66 | 3.46 | 24.77 | -678.92 | -679. | 0.00 | 0. | min. 0.4 | 0.70 97% | 2.32 0.0 |
| 6 | 2.08 | 3.88 | 24.77 | -430.72 | -431. | 0.00 | 0. | min. 0.3 | 0.70 62% | 2.32 0.0 |
| 7 | 2.50 | 4.30 | 24.77 | -170.14 | -170. | 0.00 | 0. | min. 0.2 | 0.69 25% | 2.32 0.0 |
| 8 | 2.91 | 4.71 | 24.77 | 49.61 | 50. | 0.00 | 0. | min. 0.1 | 0.69 7% | 2.32 0.0 |
| 9 | 3.33 | 5.13 | 24.77 | 259.02 | 259. | 0.00 | 0. | min. 0.2 | 0.69 37% | 2.32 0.0 |
| 10 | 3.74 | 5.54 | 24.77 | 474.94 | 475. | 0.00 | 0. | min. 0.3 | 0.70 68% | 2.32 0.0 |
| 11 | 4.16 | 5.96 | 24.77 | 645.65 | 646. | 0.00 | 0. | min. 0.4 | 0.70 92% | 2.32 0.0 |
| 12 | 4.57 | 6.37 | 24.77 | 883.20 | 883. | 0.00 | 0. | norm 0.4 | 0.88 100% | 3.71 0.0 |
| 13 | 4.99 | 6.79 | 24.77 | 1051.89 | 1052. | 0.00 | 0. | norm 0.4 | 1.05 100% | 5.07 0.0 |
| 14 | 4.99 | 6.79 | 24.77 | 270.96 | 271. | 0.00 | 0. | min. 0.2 | 0.71 38% | 2.32 0.0 |
| 15 | 5.42 | 7.22 | 24.77 | 400.50 | 400. | 0.00 | 0. | min. 0.3 | 0.71 57% | 2.32 0.0 |
| 16 | 5.86 | 7.66 | 24.77 | 605.34 | 605. | 0.00 | 0. | min. 0.4 | 0.71 86% | 2.32 0.0 |
| 17 | 6.29 | 8.09 | 24.77 | 745.90 | 746. | 0.00 | 0. | norm 0.4 | 0.75 100% | 2.56 0.0 |
| 18 | 6.72 | 8.52 | 24.77 | 863.63 | 864. | 0.00 | 0. | norm 0.4 | 0.86 100% | 3.52 0.0 |
| 19 | 7.16 | 8.96 | 24.77 | 1044.93 | 1045. | 0.00 | 0. | norm 0.4 | 1.04 100% | 5.01 0.0 |
| 20 | 7.59 | 9.39 | 24.77 | 1173.75 | 1174. | 0.00 | 0. | norm 0.5 | 1.17 100% | 6.07 0.0 |
| 21 | 7.59 | 9.39 | 24.77 | -354.12 | -354. | 0.00 | 0. | min. 0.2 | 0.71 50% | 2.32 0.0 |
| 22 | 7.94 | 9.74 | 24.77 | -237.90 | -238. | 0.00 | 0. | min. 0.2 | 0.71 34% | 2.32 0.0 |
| 23 | 8.29 | 10.09 | 24.77 | -81.59 | -82. | 0.00 | 0. | min. 0.1 | 0.71 12% | 2.32 0.0 |
| 24 | 8.64 | 10.44 | 24.77 | 9.54 | 10. | 0.00 | 0. | min. 0.1 | 0.71 1% | 2.32 0.0 |
| 25 | 8.99 | 10.79 | 24.77 | 104.02 | 104. | 0.00 | 0. | min. 0.1 | 0.71 15% | 2.32 0.0 |
| 26 | 9.34 | 11.14 | 24.77 | 200.61 | 201. | 0.00 | 0. | min. 0.2 | 0.71 28% | 2.32 0.0 |
| 27 | 9.69 | 11.49 | 24.77 | 277.93 | 278. | 0.00 | 0. | min. 0.2 | 0.71 39% | 2.32 0.0 |
| 28 | 10.04 | 11.84 | 24.77 | 411.43 | 411. | 0.00 | 0. | min. 0.3 | 0.71 58% | 2.32 0.0 |
| 29 | 10.39 | 12.19 | 24.77 | 520.74 | 521. | 0.00 | 0. | min. 0.3 | 0.71 74% | 2.32 0.0 |
| 30 | 10.39 | 12.19 | 24.77 | -291.31 | -291. | 0.00 | 0. | min. 0.2 | 0.71 41% | 2.32 0.0 |
| 31 | 10.84 | 12.64 | 24.77 | -224.61 | -225. | 0.00 | 0. | min. 0.2 | 0.71 32% | 2.32 0.0 |
| 32 | 11.29 | 13.09 | 24.77 | -155.18 | -155. | 0.00 | 0. | min. 0.2 | 0.71 22% | 2.32 0.0 |
| 33 | 11.74 | 13.54 | 24.77 | -164.58 | -165. | 0.00 | 0. | min. 0.2 | 0.71 23% | 2.32 0.0 |
| 34 | 12.19 | 13.99 | 24.77 | -260.64 | -261. | 0.00 | 0. | min. 0.2 | 0.71 37% | 2.32 0.0 |
| 35 | 12.64 | 14.44 | 24.77 | -365.58 | -366. | 0.00 | 0. | min. 0.3 | 0.71 52% | 2.32 0.0 |
| 36 | 13.09 | 14.89 | 24.77 | -1045.01 | -1045. | 0.00 | 0. | norm 0.4 | 1.05 100% | 5.01 0.0 |
| 37 | 13.18 | 14.98 | 24.77 | -998.93 | -999. | 0.00 | 0. | norm 0.4 | 1.00 100% | 4.63 0.0 |
| 38 | 13.27 | 15.07 | 24.77 | -821.18 | -821. | 0.00 | 0. | norm 0.4 | 0.82 100% | 3.18 0.0 |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm ²] | As Feld [cm ²] |
|--------|------------------------------|-----------------|------------------|--------------------------|-------------------------------|
| UZ-Anf | 28.92 | 3.14 | 1168.54 | 26.88 | 0.00 |
| UZ-End | 21.41 | 2.52 | 1047.00 | 24.08 | 10.79 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|---------|
| 0 | 0.00 | 1.80 | 24.77 | 130.39 | 106.69 |
| 1 | 0.21 | 2.01 | 24.77 | -23.47 | -38.80 |
| 2 | 0.62 | 2.42 | 24.77 | -335.40 | -332.05 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|----------|
| 3 | 1.04 | 2.84 | 24.77 | -580.29 | -562.71 |
| 4 | 1.46 | 3.26 | 24.77 | -528.82 | -538.85 |
| 5 | 1.87 | 3.67 | 24.77 | -598.93 | -596.87 |
| 6 | 2.29 | 4.09 | 24.77 | -635.51 | -626.65 |
| 7 | 2.70 | 4.50 | 24.77 | -522.96 | -528.45 |
| 8 | 3.12 | 4.92 | 24.77 | -498.37 | -503.59 |
| 9 | 3.53 | 5.33 | 24.77 | -535.50 | -519.25 |
| 10 | 3.95 | 5.75 | 24.77 | -381.84 | -410.54 |
| 11 | 4.37 | 6.17 | 24.77 | -602.47 | -571.26 |
| 12 | 4.78 | 6.58 | 24.77 | -391.15 | -405.67 |
| 13 | 5.21 | 7.01 | 24.77 | -285.12 | -298.93 |
| 14 | 5.64 | 7.44 | 24.77 | -498.38 | -472.71 |
| 15 | 6.07 | 7.87 | 24.77 | -316.03 | -324.37 |
| 16 | 6.51 | 8.31 | 24.77 | -255.45 | -271.70 |
| 17 | 6.94 | 8.74 | 24.77 | -441.87 | -418.38 |
| 18 | 7.37 | 9.17 | 24.77 | -286.52 | -297.28 |
| 19 | 7.77 | 9.57 | 24.77 | -321.02 | -332.04 |
| 20 | 8.11 | 9.91 | 24.77 | -473.07 | -446.62 |
| 21 | 8.47 | 10.27 | 24.77 | -240.76 | -260.37 |
| 22 | 8.81 | 10.61 | 24.77 | -272.98 | -269.93 |
| 23 | 9.16 | 10.97 | 24.77 | -284.26 | -275.97 |
| 24 | 9.51 | 11.31 | 24.77 | -200.01 | -220.93 |
| 25 | 9.86 | 11.66 | 24.77 | -402.93 | -381.41 |
| 26 | 10.21 | 12.01 | 24.77 | -304.57 | -312.33 |
| 27 | 10.61 | 12.41 | 24.77 | -146.29 | -148.22 |
| 28 | 11.06 | 12.86 | 24.77 | -162.43 | -154.28 |
| 29 | 11.52 | 13.32 | 24.77 | 6.25 | 20.90 |
| 30 | 11.96 | 13.76 | 24.77 | 275.84 | 213.45 |
| 31 | 12.41 | 14.22 | 24.77 | 41.50 | 233.22 |
| 32 | 12.87 | 14.67 | 24.77 | 1900.11 | 1509.83 |
| 33 | 13.13 | 14.93 | 24.77 | -480.53 | -511.95 |
| 34 | 13.22 | 15.02 | 24.77 | -2054.51 | -1975.07 |
| 35 | 13.27 | 15.07 | 24.77 | -2867.77 | -2736.31 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|---------|
| 1 | 0.00 | 4.99 | -465.27 | -465.76 |
| 2 | 4.99 | 7.59 | -350.28 | -351.45 |
| 3 | 7.59 | 10.39 | -309.80 | -310.41 |
| 4 | 10.39 | 13.27 | 135.77 | 129.06 |
| total | 0.00 | 13.27 | -279.49 | -346.45 |

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm²/m) |
|----------------|----------|----------|----------|-------------------------|----------------------|
| 1 | 0.00 | 35.82 | 20.25 | 106.69 | 2.45 |
| 2 | 0.42 | 35.82 | 20.57 | 184.29 | 4.24 |
| 3 | 0.83 | 35.82 | 20.90 | 474.26 | 10.91 |
| 4 | 1.25 | 35.82 | 21.22 | 563.31 | 12.96 |
| 5 | 1.66 | 35.82 | 21.54 | 555.58 | 12.78 |
| 6 | 2.08 | 5.35 | 37.94 | 628.22 | 14.45 |
| 7 | 2.50 | 5.84 | 37.94 | 582.56 | 13.40 |
| 8 | 2.91 | 6.32 | 37.94 | 500.01 | 11.50 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 9 | 3.33 | 6.81 | 37.94 | 527.77 | 12.14 |
| 10 | 3.74 | 7.29 | 37.94 | 446.94 | 10.28 |
| 11 | 4.16 | 7.78 | 37.94 | 491.97 | 11.32 |
| 12 | 4.57 | 8.26 | 37.94 | 523.48 | 12.04 |
| 13 | 4.99 | 8.75 | 37.94 | 311.24 | 7.16 |
| 14 | 5.42 | 9.23 | 37.94 | 392.92 | 9.04 |
| 15 | 5.86 | 9.71 | 37.94 | 427.47 | 9.83 |
| 16 | 6.29 | 10.20 | 37.94 | 260.16 | 5.98 |
| 17 | 6.72 | 10.68 | 37.94 | 356.97 | 8.21 |
| 18 | 7.16 | 11.17 | 37.94 | 373.64 | 8.59 |
| 19 | 7.59 | 11.65 | 37.94 | 283.86 | 6.53 |
| 20 | 7.94 | 12.14 | 37.94 | 415.08 | 9.55 |
| 21 | 8.29 | 12.62 | 37.94 | 363.05 | 8.35 |
| 22 | 8.64 | 13.11 | 37.94 | 240.55 | 5.53 |
| 23 | 8.99 | 13.59 | 37.94 | 289.69 | 6.66 |
| 24 | 9.34 | 14.08 | 37.94 | 230.34 | 5.30 |
| 25 | 9.69 | 14.56 | 37.94 | 298.98 | 6.88 |
| 26 | 10.04 | 15.05 | 37.94 | 379.01 | 8.72 |
| 27 | 10.39 | 15.53 | 37.94 | 227.01 | 5.22 |
| 28 | 10.84 | 16.01 | 37.94 | 144.52 | 3.32 |
| 29 | 11.29 | 16.50 | 37.94 | 103.90 | 2.39 |
| 30 | 11.74 | 16.98 | 37.94 | 184.79 | 4.25 |
| 31 | 12.19 | 17.47 | 37.94 | 48.34 | 1.11 |
| 32 | 12.64 | 17.95 | 37.94 | 1097.35 | 25.24 |
| 33 | 13.09 | 18.44 | 37.94 | 82.18 | 1.89 |
| 34 | 13.18 | 18.92 | 37.94 | 1213.82 | 27.92 |
| 35 | 13.27 | 19.41 | 37.94 | 2736.31 | 62.94 |

Überzug Nr.: 37 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei seütl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | Bewehrung (cm ²) | | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|------------------------------|------|--------------------|
| | | | | | unten | oben | |
| 1 | 0.00 | 9.39 | 19.55 | 248.27 | 6.99 | 0.00 | 237.4 |
| 2 | 0.38 | 9.39 | 19.92 | 799.88 | 7.46 | 0.00 | 234.9 |
| 3 | 0.75 | 9.39 | 20.30 | 1246.86 | 11.77 | 0.00 | 233.0 |
| 4 | 1.12 | 9.39 | 20.67 | 1594.97 | 15.21 | 0.00 | 231.3 |
| 5 | 1.50 | 9.39 | 21.05 | 1888.06 | 17.99 | 0.00 | 229.9 |
| 6 | 1.87 | 9.39 | 21.42 | 1912.60 | 18.17 | 0.00 | 229.8 |
| 7 | 2.23 | 9.39 | 21.78 | 1940.63 | 18.54 | 0.00 | 229.6 |
| 8 | 2.60 | 9.39 | 22.15 | 1949.10 | 18.54 | 0.00 | 229.6 |
| 9 | 2.97 | 9.39 | 22.52 | 1955.08 | 18.72 | 0.00 | 229.5 |
| 10 | 3.33 | 9.39 | 22.88 | 1996.85 | 19.08 | 0.00 | 229.3 |
| 11 | 3.70 | 9.39 | 23.25 | 2006.50 | 19.26 | 0.00 | 229.2 |
| 12 | 4.08 | 9.39 | 23.63 | 1740.83 | 16.51 | 0.00 | 230.6 |
| 13 | 4.46 | 9.39 | 24.01 | 1416.02 | 13.31 | 0.00 | 232.2 |
| 14 | 4.84 | 9.39 | 24.39 | 962.86 | 9.02 | 0.00 | 234.2 |
| 15 | 5.22 | 9.39 | 24.77 | 360.70 | 6.99 | 0.00 | 236.9 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 0.00

untere Bewehrung : 219.22

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Position : BP
Bodenplatte-Lastfall HHW und Vollast aus Gebäude

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | Tm (kNm) | Bewehrung (cm ² /m) | | | |
|----------------|----------|----------|----------|-----------|-------------|--------------------------------|-----------|-------|-----|
| | | | | | | Bereich | Vrd(MN) | as | |
| 1 | 0.00 | 9.39 | 19.55 | 1529.48 | 1529. | 0. norm 0.6 | 1.53 100% | 8.99 | 0.0 |
| 2 | 0.38 | 9.39 | 19.92 | 1353.91 | 1354. | 0. norm 0.5 | 1.35 100% | 7.55 | 0.0 |
| 3 | 0.75 | 9.39 | 20.30 | 1043.58 | 1044. | 0. norm 0.4 | 1.04 100% | 5.00 | 0.0 |
| 4 | 1.12 | 9.39 | 20.67 | 832.47 | 832. | 0. norm 0.4 | 0.83 100% | 3.32 | 0.0 |
| 5 | 1.50 | 9.39 | 21.05 | 756.13 | 756. | 0. norm 0.4 | 0.76 100% | 2.73 | 0.0 |
| 6 | 1.50 | 9.39 | 21.05 | 61.30 | 61. | 0. min. 0.1 | 0.70 9% | 2.32 | 0.0 |
| 7 | 1.87 | 9.39 | 21.42 | 78.22 | 78. | 0. min. 0.1 | 0.70 11% | 2.32 | 0.0 |
| 8 | 2.23 | 9.39 | 21.78 | 56.02 | 56. | 0. min. 0.1 | 0.69 8% | 2.32 | 0.0 |
| 9 | 2.60 | 9.39 | 22.15 | -3.66 | -4. | 0. min. 0.1 | 0.69 1% | 2.32 | 0.0 |
| 10 | 2.97 | 9.39 | 22.52 | 76.85 | 77. | 0. min. 0.1 | 0.69 11% | 2.32 | 0.0 |
| 11 | 3.33 | 9.39 | 22.88 | 86.96 | 87. | 0. min. 0.1 | 0.69 13% | 2.32 | 0.0 |
| 12 | 3.70 | 9.39 | 23.25 | -4.02 | -4. | 0. min. 0.1 | 0.69 1% | 2.32 | 0.0 |
| 13 | 3.70 | 9.39 | 23.25 | -674.56 | -675. | 0. min. 0.4 | 0.70 97% | 2.32 | 0.0 |
| 14 | 4.08 | 9.39 | 23.63 | -748.25 | -748. | 0. norm 0.4 | 0.75 100% | 2.64 | 0.0 |
| 15 | 4.46 | 9.39 | 24.01 | -994.08 | -994. | 0. norm 0.4 | 0.99 100% | 4.62 | 0.0 |
| 16 | 4.84 | 9.39 | 24.39 | -1417.27 | -1417. | 0. norm 0.5 | 1.42 100% | 8.04 | 0.0 |
| 17 | 5.22 | 9.39 | 24.77 | -1668.32 | -1668. | 0. norm 0.6 | 1.67 100% | 10.10 | 0.0 |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm ²] | As Feld [cm ²] |
|--------|------------------------------|-----------------|------------------|--------------------------|-------------------------------|
| UZ-Anf | 30.76 | 3.26 | 1284.76 | 29.55 | 15.21 |
| UZ-End | 31.53 | 3.31 | 1359.68 | 31.27 | 0.00 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|---------|
| 0 | 0.00 | 9.39 | 19.55 | 152.05 | 228.49 |
| 1 | 0.19 | 9.39 | 19.74 | 440.98 | 468.17 |
| 2 | 0.56 | 9.39 | 20.11 | 873.65 | 827.56 |
| 3 | 0.94 | 9.39 | 20.49 | 561.79 | 562.95 |
| 4 | 1.31 | 9.39 | 20.86 | 185.83 | 203.56 |
| 5 | 1.68 | 9.39 | 21.23 | -49.44 | -46.12 |
| 6 | 2.05 | 9.39 | 21.60 | 50.45 | 60.54 |
| 7 | 2.42 | 9.39 | 21.97 | 207.56 | 162.75 |
| 8 | 2.78 | 9.39 | 22.33 | -267.56 | -219.59 |
| 9 | 3.15 | 9.39 | 22.70 | -24.06 | -27.55 |
| 10 | 3.52 | 9.39 | 23.07 | 261.20 | 248.11 |
| 11 | 3.89 | 9.39 | 23.44 | 173.95 | 193.93 |
| 12 | 4.27 | 9.39 | 23.82 | 633.56 | 646.92 |
| 13 | 4.65 | 9.39 | 24.20 | 1183.63 | 1113.65 |
| 14 | 5.03 | 9.39 | 24.58 | 624.01 | 660.66 |
| 15 | 5.22 | 9.39 | 24.77 | 234.90 | 345.68 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|--------|
| 1 | 0.00 | 1.50 | 490.07 | 494.39 |
| 2 | 1.50 | 3.70 | 32.75 | 34.00 |
| 3 | 3.70 | 5.22 | 632.24 | 631.40 |
| total | 0.00 | 5.22 | 338.73 | 352.81 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 1 | 0.00 | 35.82 | 20.25 | 228.49 | 5.26 |
| 2 | 0.38 | 35.82 | 20.57 | 707.86 | 16.28 |
| 3 | 0.75 | 35.82 | 20.90 | 749.28 | 17.23 |
| 4 | 1.12 | 35.82 | 21.22 | 376.72 | 8.66 |
| 5 | 1.50 | 35.82 | 21.54 | 45.14 | 1.04 |
| 6 | 1.87 | 5.35 | 37.94 | 31.70 | 0.73 |
| 7 | 2.23 | 5.84 | 37.94 | 168.42 | 3.87 |
| 8 | 2.60 | 6.32 | 37.94 | 33.23 | 0.76 |
| 9 | 2.97 | 6.81 | 37.94 | 194.79 | 4.48 |
| 10 | 3.33 | 7.29 | 37.94 | 153.21 | 3.52 |
| 11 | 3.70 | 7.78 | 37.94 | 212.60 | 4.89 |
| 12 | 4.08 | 8.26 | 37.94 | 353.80 | 8.14 |
| 13 | 4.46 | 8.75 | 37.94 | 959.76 | 22.07 |
| 14 | 4.84 | 9.23 | 37.94 | 975.63 | 22.44 |
| 15 | 5.22 | 9.71 | 37.94 | 345.68 | 7.95 |

Überzug Nr.: 38 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei seittl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) | | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|------|------------------------------|------|--------------------|
| | | | | | | unten | oben | |
| 1 | 0.00 | 9.39 | 23.25 | 99.85 | 100. | 6.99 | 0.00 | 238.4 |
| 2 | 0.35 | 9.74 | 23.25 | 331.90 | 332. | 6.99 | 0.00 | 237.0 |
| 3 | 0.70 | 10.09 | 23.25 | 484.95 | 485. | 6.99 | 0.00 | 236.3 |
| 4 | 1.05 | 10.44 | 23.25 | 560.11 | 560. | 6.99 | 0.00 | 235.9 |
| 5 | 1.40 | 10.79 | 23.25 | 568.46 | 568. | 6.99 | 0.00 | 235.9 |
| 6 | 1.75 | 11.14 | 23.25 | 516.76 | 517. | 6.99 | 0.00 | 236.1 |
| 7 | 2.10 | 11.49 | 23.25 | 410.73 | 411. | 6.99 | 0.00 | 236.6 |
| 8 | 2.45 | 11.84 | 23.25 | 255.80 | 256. | 6.99 | 0.00 | 237.4 |
| 9 | 2.80 | 12.19 | 23.25 | 70.71 | 71. | 6.99 | 0.00 | 238.7 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 0.00

untere Bewehrung : 54.82

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | Tm (kNm) | Bewehrung (cm ² /m) | | | | |
|----------------|----------|----------|----------|-----------|-------------|--------------------------------|----------|------|------|-----|
| | | | | | | Bereich | Vrd(MN) | as | | |
| 1 | 0.00 | 9.39 | 23.25 | 710.48 | 710. | 0. norm | 0.4 0.71 | 100% | 2.33 | 0.0 |
| 2 | 0.35 | 9.74 | 23.25 | 568.08 | 568. | 0. min. | 0.3 0.71 | 80% | 2.32 | 0.0 |
| 3 | 0.70 | 10.09 | 23.25 | 318.07 | 318. | 0. min. | 0.2 0.71 | 45% | 2.32 | 0.0 |
| 4 | 1.05 | 10.44 | 23.25 | 115.69 | 116. | 0. min. | 0.1 0.71 | 16% | 2.32 | 0.0 |
| 5 | 1.40 | 10.79 | 23.25 | -64.97 | -65. | 0. min. | 0.1 0.71 | 9% | 2.32 | 0.0 |
| 6 | 1.75 | 11.14 | 23.25 | -227.30 | -227. | 0. min. | 0.2 0.71 | 32% | 2.32 | 0.0 |
| 7 | 2.10 | 11.49 | 23.25 | -377.87 | -378. | 0. min. | 0.3 0.71 | 54% | 2.32 | 0.0 |
| 8 | 2.45 | 11.84 | 23.25 | -498.09 | -498. | 0. min. | 0.3 0.71 | 70% | 2.32 | 0.0 |
| 9 | 2.80 | 12.19 | 23.25 | -544.17 | -544. | 0. min. | 0.3 0.71 | 77% | 2.32 | 0.0 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm²] | As Feld [cm²] |
|--------|------------------------------|-----------------|------------------|-------------|------------------|
| UZ-Anf | 18.38 | 2.22 | 1069.28 | 24.59 | 6.99 |
| UZ-End | 18.38 | 2.22 | 818.97 | 18.84 | 6.99 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|--------|
| 0 | 0.00 | 9.39 | 23.25 | 140.49 | 206.59 |
| 1 | 0.18 | 9.57 | 23.25 | 384.06 | 406.87 |
| 2 | 0.52 | 9.91 | 23.25 | 751.47 | 714.33 |
| 3 | 0.88 | 10.27 | 23.25 | 563.38 | 578.22 |
| 4 | 1.22 | 10.61 | 23.25 | 519.88 | 516.17 |
| 5 | 1.57 | 10.97 | 23.25 | 461.38 | 463.80 |
| 6 | 1.92 | 11.31 | 23.25 | 431.45 | 430.20 |
| 7 | 2.27 | 11.66 | 23.25 | 354.17 | 343.48 |
| 8 | 2.62 | 12.01 | 23.25 | 118.93 | 131.65 |
| 9 | 2.80 | 12.19 | 23.25 | -12.91 | 14.81 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|--------|
| 1 | 0.00 | 2.80 | 436.36 | 438.03 |
| total | 0.00 | 2.80 | 436.36 | 438.03 |

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm²/m) |
|----------------|----------|----------|----------|-------------------------|----------------------|
| 1 | 0.00 | 35.82 | 20.25 | 206.59 | 4.75 |
| 2 | 0.35 | 35.82 | 20.57 | 607.14 | 13.96 |
| 3 | 0.70 | 35.82 | 20.90 | 672.99 | 15.48 |
| 4 | 1.05 | 35.82 | 21.22 | 532.37 | 12.24 |
| 5 | 1.40 | 35.82 | 21.54 | 491.18 | 11.30 |
| 6 | 1.75 | 5.35 | 37.94 | 446.38 | 10.27 |
| 7 | 2.10 | 5.84 | 37.94 | 400.97 | 9.22 |
| 8 | 2.45 | 6.32 | 37.94 | 248.50 | 5.72 |
| 9 | 2.80 | 6.81 | 37.94 | 14.81 | 0.34 |

Überzug Nr.: 39 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
 Brandschutz bei seiti. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm²) unten | oben | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|------|--------------------------|------|--------------------|
| 1 | 0.00 | 9.39 | 21.05 | 7.12 | 7. | 6.99 | 0.00 | 239.6 |
| 2 | 0.37 | 9.76 | 21.05 | 183.71 | 184. | 6.99 | 0.00 | 237.8 |
| 3 | 0.73 | 10.12 | 21.05 | 284.87 | 285. | 6.99 | 0.00 | 237.3 |
| 4 | 1.10 | 10.49 | 21.05 | 335.81 | 336. | 6.99 | 0.00 | 237.0 |
| 5 | 1.47 | 10.86 | 21.05 | 351.12 | 351. | 6.99 | 0.00 | 236.9 |
| 6 | 1.83 | 11.22 | 21.05 | 355.98 | 356. | 6.99 | 0.00 | 236.9 |
| 7 | 2.20 | 11.59 | 21.05 | 383.40 | 383. | 6.99 | 0.00 | 236.8 |
| 8 | 2.50 | 11.89 | 21.05 | 245.65 | 246. | 6.99 | 0.00 | 237.5 |
| 9 | 2.80 | 12.19 | 21.05 | 193.39 | 193. | 6.99 | 0.00 | 237.7 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 0.00

untere Bewehrung : 54.82

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | Tm (kNm) | Bewehrung (cm ² /m) | | | | |
|----------------|----------|----------|----------|-----------|-------------|--------------------------------|---------|----------|------|-----|
| | | | | | | Bereich | Vrd(MN) | as | | |
| 1 | 0.00 | 9.39 | 21.05 | 528.54 | 529. | 0.00 | 0. | min. 0.3 | 0.71 | 75% |
| 2 | 0.37 | 9.76 | 21.05 | 387.76 | 388. | 0.00 | 0. | min. 0.3 | 0.71 | 55% |
| 3 | 0.73 | 10.12 | 21.05 | 192.99 | 193. | 0.00 | 0. | min. 0.2 | 0.71 | 27% |
| 4 | 1.10 | 10.49 | 21.05 | 84.77 | 85. | 0.00 | 0. | min. 0.1 | 0.71 | 12% |
| 5 | 1.47 | 10.86 | 21.05 | 9.91 | 10. | 0.00 | 0. | min. 0.1 | 0.71 | 1% |
| 6 | 1.83 | 11.22 | 21.05 | 40.58 | 41. | 0.00 | 0. | min. 0.1 | 0.71 | 6% |
| 7 | 2.20 | 11.59 | 21.05 | 91.88 | 92. | 0.00 | 0. | min. 0.1 | 0.71 | 13% |
| 8 | 2.20 | 11.59 | 21.05 | -530.39 | -530. | 0.00 | 0. | min. 0.3 | 0.71 | 75% |
| 9 | 2.50 | 11.89 | 21.05 | -316.67 | -317. | 0.00 | 0. | min. 0.2 | 0.71 | 45% |
| 10 | 2.80 | 12.19 | 21.05 | -102.96 | -103. | 0.00 | 0. | min. 0.1 | 0.71 | 15% |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm ²] | As Feld [cm ²] |
|--------|------------------------------|-----------------|------------------|--------------------------|-------------------------------|
| UZ-Anf | 18.38 | 2.22 | 795.45 | 18.30 | 6.99 |
| UZ-End | 18.43 | 2.23 | 154.43 | 3.55 | 6.99 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|---------|
| 0 | 0.00 | 9.39 | 21.05 | 213.96 | 265.61 |
| 1 | 0.18 | 9.57 | 21.05 | 369.92 | 383.94 |
| 2 | 0.55 | 9.94 | 21.05 | 564.47 | 531.20 |
| 3 | 0.92 | 10.31 | 21.05 | 271.93 | 295.13 |
| 4 | 1.28 | 10.67 | 21.05 | 227.41 | 204.16 |
| 5 | 1.65 | 11.04 | 21.05 | -104.24 | -83.63 |
| 6 | 2.02 | 11.41 | 21.05 | -138.62 | -139.93 |
| 7 | 2.35 | 11.74 | 21.05 | -712.39 | -712.39 |
| 8 | 2.65 | 12.04 | 21.05 | -712.39 | -712.39 |
| 9 | 2.80 | 12.19 | 21.05 | -649.16 | -650.28 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|---------|
| 1 | 0.00 | 2.20 | 178.83 | 181.01 |
| 2 | 2.20 | 2.80 | -672.21 | -672.28 |
| total | 0.00 | 2.80 | -3.53 | 138.68 |

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 1 | 0.00 | 35.82 | 20.25 | 265.61 | 6.11 |
| 2 | 0.37 | 35.82 | 20.57 | 502.27 | 11.55 |
| 3 | 0.73 | 35.82 | 20.90 | 422.84 | 9.73 |
| 4 | 1.10 | 35.82 | 21.22 | 255.62 | 5.88 |
| 5 | 1.47 | 35.82 | 21.54 | 46.10 | 1.06 |
| 6 | 1.83 | 5.35 | 37.94 | 74.09 | 1.70 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 7 | 2.20 | 5.84 | 37.94 | 459.79 | 10.58 |
| 8 | 2.50 | 6.32 | 37.94 | 774.51 | 17.81 |
| 9 | 2.80 | 6.81 | 37.94 | 650.28 | 14.96 |

Überzug Nr.: 40 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei seidl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | Bewehrung (cm ²) unten oben | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|--|--------------------|
| 1 | 0.00 | 11.59 | 19.55 | 403.28 | 6.99 0.00 | 236.7 |
| 2 | 0.38 | 11.59 | 19.92 | 640.62 | 6.99 0.00 | 235.6 |
| 3 | 0.75 | 11.59 | 20.30 | 714.80 | 6.99 0.00 | 235.3 |
| 4 | 1.12 | 11.59 | 20.67 | 584.09 | 6.99 0.00 | 235.9 |
| 5 | 1.50 | 11.59 | 21.05 | 323.84 | 6.99 0.00 | 237.0 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 0.00

untere Bewehrung : 29.37

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | Tm (kNm) | Bewehrung (cm ² /m) Bereich Vrd(MN) as |
|----------------|----------|----------|----------|-----------|-------------|--|
| 1 | 0.00 | 11.59 | 19.55 | 716.57 | 0.00 | 0. norm 0.4 0.72 100% 2.35 0.0 |
| 2 | 0.38 | 11.59 | 19.92 | 465.54 | 0.00 | 0. min. 0.3 0.71 66% 2.32 0.0 |
| 3 | 0.75 | 11.59 | 20.30 | -86.57 | 0.00 | 0. min. 0.1 0.71 12% 2.32 0.0 |
| 4 | 1.12 | 11.59 | 20.67 | -571.46 | 0.00 | 0. min. 0.3 0.71 81% 2.32 0.0 |
| 5 | 1.50 | 11.59 | 21.05 | -755.27 | 0.00 | 0. norm 0.4 0.76 100% 2.63 0.0 |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm ²] | As Feld [cm ²] |
|--------|------------------------------|-----------------|------------------|--------------------------|-------------------------------|
| UZ-Anf | 18.38 | 2.22 | 1078.44 | 24.80 | 6.99 |
| UZ-End | 19.46 | 2.33 | 1068.71 | 24.58 | 0.00 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) |
|----------------|----------|----------|----------|----------------------------|
| 0 | 0.00 | 11.59 | 19.55 | 58.29 |
| 1 | 0.19 | 11.59 | 19.74 | 616.06 |
| 2 | 0.56 | 11.59 | 20.11 | 1538.48 |
| 3 | 0.94 | 11.59 | 20.49 | 1327.20 |
| 4 | 1.31 | 11.59 | 20.86 | 443.19 |
| 5 | 1.50 | 11.59 | 21.05 | -37.74 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) |
|-------------|---------------|---------------|---|
| 1 | 0.00 | 1.50 | 916.31 |
| total | 0.00 | 1.50 | 916.31 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 1 | 0.00 | 35.82 | 20.25 | 185.39 | 4.26 |
| 2 | 0.38 | 35.82 | 20.57 | 1153.49 | 26.53 |
| 3 | 0.75 | 35.82 | 20.90 | 1503.09 | 34.57 |
| 4 | 1.12 | 35.82 | 21.22 | 929.40 | 21.38 |
| 5 | 1.50 | 35.82 | 21.54 | 50.93 | 1.17 |

Überzug Nr.: 41 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei seiti. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) unten | oben | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|-------|---------------------------------------|------|--------------------|
| 1 | 0.00 | 12.19 | 21.05 | 359.84 | 360. | 6.99 | 0.00 | 236.9 |
| 2 | 0.37 | 12.19 | 21.42 | 576.33 | 576. | 6.99 | 0.00 | 235.9 |
| 3 | 0.73 | 12.19 | 21.78 | 843.37 | 843. | 7.85 | 0.00 | 234.8 |
| 4 | 1.10 | 12.19 | 22.15 | 984.57 | 985. | 9.22 | 0.00 | 234.1 |
| 5 | 1.47 | 12.19 | 22.52 | 1081.89 | 1082. | 10.20 | 0.00 | 233.7 |
| 6 | 1.83 | 12.19 | 22.88 | 1215.79 | 1216. | 11.38 | 0.00 | 233.2 |
| 7 | 2.20 | 12.19 | 23.25 | 1285.24 | 1285. | 12.15 | 0.00 | 232.8 |
| 8 | 2.58 | 12.19 | 23.63 | 1177.65 | 1178. | 11.18 | 0.00 | 233.2 |
| 9 | 2.96 | 12.19 | 24.01 | 1014.77 | 1015. | 9.61 | 0.00 | 234.0 |
| 10 | 3.34 | 12.19 | 24.39 | 749.84 | 750. | 7.08 | 0.00 | 235.1 |
| 11 | 3.72 | 12.19 | 24.77 | 383.89 | 384. | 6.99 | 0.00 | 236.8 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 0.00

untere Bewehrung : 96.52

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. | Z | X | Y | Q | | Tm | | Bewehrung (cm²/m) | | | | | |
|---------|------|-------|-------|----------|--------|-------|----|-------------------|-----|---------|------|------|-----|
| Nr. | (m) | (m) | (m) | (kN) | | (kNm) | | Bereich | | Vrd(MN) | | as | |
| 1 | 0.00 | 12.19 | 21.05 | 531.86 | 532. | 0.00 | 0. | min. | 0.3 | 0.71 | 75% | 2.32 | 0.0 |
| 2 | 0.37 | 12.19 | 21.42 | 707.50 | 708. | 0.00 | 0. | norm | 0.4 | 0.71 | 100% | 2.32 | 0.0 |
| 3 | 0.73 | 12.19 | 21.78 | 594.23 | 594. | 0.00 | 0. | min. | 0.4 | 0.71 | 84% | 2.32 | 0.0 |
| 4 | 1.10 | 12.19 | 22.15 | 255.74 | 256. | 0.00 | 0. | min. | 0.2 | 0.71 | 36% | 2.32 | 0.0 |
| 5 | 1.47 | 12.19 | 22.52 | 334.34 | 334. | 0.00 | 0. | min. | 0.2 | 0.71 | 47% | 2.32 | 0.0 |
| 6 | 1.83 | 12.19 | 22.88 | 298.67 | 299. | 0.00 | 0. | min. | 0.2 | 0.71 | 42% | 2.32 | 0.0 |
| 7 | 2.20 | 12.19 | 23.25 | 134.81 | 135. | 0.00 | 0. | min. | 0.2 | 0.70 | 19% | 2.32 | 0.0 |
| 8 | 2.20 | 12.19 | 23.25 | -258.63 | -259. | 0.00 | 0. | min. | 0.2 | 0.70 | 37% | 2.32 | 0.0 |
| 9 | 2.58 | 12.19 | 23.63 | -332.20 | -332. | 0.00 | 0. | min. | 0.2 | 0.71 | 47% | 2.32 | 0.0 |
| 10 | 2.96 | 12.19 | 24.01 | -547.86 | -548. | 0.00 | 0. | min. | 0.3 | 0.71 | 77% | 2.32 | 0.0 |
| 11 | 3.34 | 12.19 | 24.39 | -853.78 | -854. | 0.00 | 0. | norm | 0.4 | 0.85 | 100% | 3.44 | 0.0 |
| 12 | 3.72 | 12.19 | 24.77 | -1017.63 | -1018. | 0.00 | 0. | norm | 0.4 | 1.02 | 100% | 4.78 | 0.0 |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm ²] | As Feld [cm ²] |
|--------|------------------------------|-----------------|------------------|--------------------------|-------------------------------|
| UZ-Anf | 18.38 | 2.22 | 800.45 | 18.41 | 11.38 |
| UZ-End | 25.46 | 2.88 | 1068.51 | 24.58 | 12.15 |

Position : BP
Bodenplatte-Lastfall HHW und Vollast aus Gebäude

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|---------|
| 0 | 0.00 | 12.19 | 21.05 | -848.62 | -833.26 |
| 1 | 0.18 | 12.19 | 21.23 | -515.01 | -479.01 |
| 2 | 0.55 | 12.19 | 21.60 | 291.92 | 308.91 |
| 3 | 0.92 | 12.19 | 21.97 | 1070.53 | 923.18 |
| 4 | 1.28 | 12.19 | 22.33 | -348.84 | -214.36 |
| 5 | 1.65 | 12.19 | 22.70 | 125.56 | 97.27 |
| 6 | 2.02 | 12.19 | 23.07 | 458.71 | 446.88 |
| 7 | 2.39 | 12.19 | 23.44 | 174.49 | 193.62 |
| 8 | 2.77 | 12.19 | 23.82 | 569.68 | 567.52 |
| 9 | 3.15 | 12.19 | 24.20 | 849.64 | 805.06 |
| 10 | 3.53 | 12.19 | 24.58 | 403.55 | 431.16 |
| 11 | 3.72 | 12.19 | 24.77 | 116.45 | 192.00 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|--------|
| 1 | 0.00 | 2.20 | 160.76 | 162.03 |
| 2 | 2.20 | 3.72 | 490.44 | 490.12 |
| total | 0.00 | 3.72 | 295.47 | 391.16 |

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 1 | 0.00 | 35.82 | 20.25 | 833.26 | 19.17 |
| 2 | 0.37 | 35.82 | 20.57 | 124.76 | 2.87 |
| 3 | 0.73 | 35.82 | 20.90 | 800.28 | 18.41 |
| 4 | 1.10 | 35.82 | 21.22 | 379.19 | 8.72 |
| 5 | 1.47 | 35.82 | 21.54 | 228.44 | 5.25 |
| 6 | 1.83 | 5.35 | 37.94 | 369.17 | 8.49 |
| 7 | 2.20 | 5.84 | 37.94 | 313.65 | 7.21 |
| 8 | 2.58 | 6.32 | 37.94 | 318.08 | 7.32 |
| 9 | 2.96 | 6.81 | 37.94 | 758.97 | 17.46 |
| 10 | 3.34 | 7.29 | 37.94 | 670.32 | 15.42 |
| 11 | 3.72 | 7.78 | 37.94 | 192.00 | 4.42 |

Überzug Nr.: 42 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei seidl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) | | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|-------|------------------------------|------|--------------------|
| | | | | | | unten | oben | |
| 1 | 0.00 | 15.07 | 19.55 | 636.81 | 637. | 6.99 | 0.00 | 235.6 |
| 2 | 0.44 | 15.07 | 19.99 | 1216.27 | 1216. | 11.57 | 0.00 | 233.1 |
| 3 | 0.87 | 15.07 | 20.42 | 1575.83 | 1576. | 15.02 | 0.00 | 231.4 |
| 4 | 1.31 | 15.07 | 20.85 | 1733.07 | 1733. | 16.51 | 0.00 | 230.6 |
| 5 | 1.74 | 15.07 | 21.29 | 1765.58 | 1766. | 16.88 | 0.00 | 230.4 |
| 6 | 2.17 | 15.07 | 21.72 | 1729.17 | 1729. | 16.51 | 0.00 | 230.6 |
| 7 | 2.61 | 15.07 | 22.16 | 1658.54 | 1659. | 15.77 | 0.00 | 231.0 |
| 8 | 3.05 | 15.07 | 22.60 | 1570.77 | 1571. | 14.83 | 0.00 | 231.5 |
| 9 | 3.48 | 15.07 | 23.03 | 1471.41 | 1471. | 13.88 | 0.00 | 231.9 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) | | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|-------|------------------------------|------|--------------------|
| | | | | | | unten | oben | |
| 10 | 3.92 | 15.07 | 23.47 | 1357.68 | 1358. | 12.92 | 0.00 | 232.4 |
| 11 | 4.35 | 15.07 | 23.90 | 1212.40 | 1212. | 11.38 | 0.00 | 233.2 |
| 12 | 4.78 | 15.07 | 24.33 | 1010.36 | 1010. | 9.61 | 0.00 | 234.0 |
| 13 | 5.22 | 15.07 | 24.77 | 740.48 | 740. | 6.99 | 0.00 | 235.2 |
| 14 | 5.35 | 15.07 | 24.90 | 519.88 | 520. | 6.99 | 0.00 | 236.1 |
| 15 | 5.48 | 15.07 | 25.03 | 331.82 | 332. | 6.99 | 0.00 | 237.0 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 0.00

untere Bewehrung : 202.26

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | Tm (kNm) | Bewehrung (cm ² /m) | | | | | as | |
|----------------|----------|----------|----------|-----------|-------------|--------------------------------|---------|-----|------|------|-------|-----|
| | | | | | | Bereich | Vrd(MN) | | | | | |
| 1 | 0.00 | 15.07 | 19.55 | 1438.95 | 1439. | 0. | norm | 0.5 | 1.44 | 100% | 8.26 | 0.0 |
| 2 | 0.44 | 15.07 | 19.99 | 1118.39 | 1118. | 0. | norm | 0.5 | 1.12 | 100% | 5.60 | 0.0 |
| 3 | 0.87 | 15.07 | 20.42 | 563.53 | 564. | 0. | min. | 0.3 | 0.70 | 80% | 2.32 | 0.0 |
| 4 | 1.31 | 15.07 | 20.85 | 191.63 | 192. | 0. | min. | 0.2 | 0.70 | 27% | 2.32 | 0.0 |
| 5 | 1.74 | 15.07 | 21.29 | -21.46 | -21. | 0. | min. | 0.1 | 0.70 | 3% | 2.32 | 0.0 |
| 6 | 2.17 | 15.07 | 21.72 | -132.69 | -133. | 0. | min. | 0.2 | 0.70 | 19% | 2.32 | 0.0 |
| 7 | 2.61 | 15.07 | 22.16 | -185.97 | -186. | 0. | min. | 0.2 | 0.70 | 27% | 2.32 | 0.0 |
| 8 | 3.05 | 15.07 | 22.60 | -215.86 | -216. | 0. | min. | 0.2 | 0.70 | 31% | 2.32 | 0.0 |
| 9 | 3.48 | 15.07 | 23.03 | -241.11 | -241. | 0. | min. | 0.2 | 0.70 | 34% | 2.32 | 0.0 |
| 10 | 3.92 | 15.07 | 23.47 | -289.23 | -289. | 0. | min. | 0.2 | 0.70 | 41% | 2.32 | 0.0 |
| 11 | 4.35 | 15.07 | 23.90 | -388.27 | -388. | 0. | min. | 0.3 | 0.71 | 55% | 2.32 | 0.0 |
| 12 | 4.78 | 15.07 | 24.33 | -553.07 | -553. | 0. | min. | 0.3 | 0.71 | 78% | 2.32 | 0.0 |
| 13 | 5.22 | 15.07 | 24.77 | -654.07 | -654. | 0. | min. | 0.4 | 0.71 | 92% | 2.32 | 0.0 |
| 14 | 5.22 | 15.07 | 24.77 | -1759.51 | -1760. | 0. | norm | 0.6 | 1.76 | 100% | 10.86 | 0.0 |
| 15 | 5.35 | 15.07 | 24.90 | -1571.77 | -1572. | 0. | norm | 0.6 | 1.57 | 100% | 9.35 | 0.0 |
| 16 | 5.48 | 15.07 | 25.03 | -1384.03 | -1384. | 0. | norm | 0.5 | 1.38 | 100% | 7.81 | 0.0 |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm ²] | As Feld [cm ²] |
|--------|------------------------------|-----------------|------------------|--------------------------|-------------------------------|
| UZ-Anf | 30.17 | 3.23 | 1237.49 | 28.46 | 16.88 |
| UZ-End | 29.74 | 3.20 | 1211.02 | 27.85 | 6.99 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|----------|
| 0 | 0.00 | 15.07 | 19.55 | 244.18 | 370.52 |
| 1 | 0.22 | 15.07 | 19.77 | 694.78 | 736.92 |
| 2 | 0.65 | 15.07 | 20.20 | 1351.55 | 1275.53 |
| 3 | 1.09 | 15.07 | 20.64 | 832.82 | 854.95 |
| 4 | 1.52 | 15.07 | 21.07 | 488.48 | 489.86 |
| 5 | 1.96 | 15.07 | 21.51 | 250.60 | 255.70 |
| 6 | 2.39 | 15.07 | 21.94 | 119.03 | 122.47 |
| 7 | 2.83 | 15.07 | 22.38 | 67.74 | 68.72 |
| 8 | 3.26 | 15.07 | 22.81 | 54.65 | 58.04 |
| 9 | 3.70 | 15.07 | 23.25 | 109.37 | 110.63 |
| 10 | 4.13 | 15.07 | 23.68 | 219.96 | 227.67 |
| 11 | 4.57 | 15.07 | 24.12 | 402.41 | 378.85 |
| 12 | 5.00 | 15.07 | 24.55 | 220.14 | 232.18 |
| 13 | 5.29 | 15.07 | 24.84 | -1444.18 | -1444.18 |
| 14 | 5.42 | 15.07 | 24.97 | -1444.18 | -1444.18 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|----------|
| 15 | 5.48 | 15.07 | 25.03 | -1386.03 | -1385.38 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|----------|
| 1 | 0.00 | 5.22 | 364.88 | 367.32 |
| 2 | 5.22 | 5.48 | -1389.04 | -1388.69 |
| total | 0.00 | 5.48 | 281.66 | 631.57 |

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 1 | 0.00 | 35.82 | 20.25 | 370.52 | 8.52 |
| 2 | 0.44 | 35.82 | 20.57 | 1103.32 | 25.38 |
| 3 | 0.87 | 35.82 | 20.90 | 1133.67 | 26.07 |
| 4 | 1.31 | 35.82 | 21.22 | 640.48 | 14.73 |
| 5 | 1.74 | 35.82 | 21.54 | 362.14 | 8.33 |
| 6 | 2.17 | 5.35 | 37.94 | 176.63 | 4.06 |
| 7 | 2.61 | 5.84 | 37.94 | 88.43 | 2.03 |
| 8 | 3.05 | 6.32 | 37.94 | 58.53 | 1.35 |
| 9 | 3.48 | 6.81 | 37.94 | 71.02 | 1.63 |
| 10 | 3.92 | 7.29 | 37.94 | 179.37 | 4.13 |
| 11 | 4.35 | 7.78 | 37.94 | 238.70 | 5.49 |
| 12 | 4.78 | 8.26 | 37.94 | 652.42 | 15.01 |
| 13 | 5.22 | 8.75 | 37.94 | 1184.70 | 27.25 |
| 14 | 5.35 | 9.23 | 37.94 | 1502.98 | 34.57 |
| 15 | 5.48 | 9.71 | 37.94 | 1385.38 | 31.86 |

Überzug Nr.: 43 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei seiti. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm²) | | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|-------|-----------------|------|--------------------|
| | | | | | | unten | oben | |
| 1 | 0.00 | 15.07 | 25.03 | 297.94 | 298. | 6.99 | 0.00 | 237.2 |
| 2 | 0.43 | 15.50 | 25.03 | 207.53 | 208. | 6.99 | 0.00 | 237.7 |
| 3 | 0.86 | 15.93 | 25.03 | 140.92 | 141. | 6.99 | 0.00 | 238.2 |
| 4 | 1.29 | 16.36 | 25.03 | 68.45 | 68. | 6.99 | 0.00 | 238.7 |
| 5 | 1.72 | 16.78 | 25.03 | 46.44 | 46. | 6.99 | 0.00 | 239.0 |
| 6 | 2.14 | 17.21 | 25.03 | 50.33 | 50. | 6.99 | 0.00 | 238.9 |
| 7 | 2.57 | 17.64 | 25.03 | 47.33 | 47. | 6.99 | 0.00 | 239.0 |
| 8 | 3.00 | 18.07 | 25.03 | 78.98 | 79. | 6.99 | 0.00 | 238.6 |
| 9 | 3.43 | 18.50 | 25.03 | 181.31 | 181. | 6.99 | 0.00 | 237.8 |
| 10 | 3.86 | 18.93 | 25.03 | 318.96 | 319. | 6.99 | 0.00 | 237.1 |
| 11 | 4.29 | 19.36 | 25.03 | 454.69 | 455. | 6.99 | 0.00 | 236.4 |
| 12 | 4.72 | 19.79 | 25.03 | 623.57 | 624. | 6.99 | 0.00 | 235.7 |
| 13 | 5.15 | 20.22 | 25.03 | 863.46 | 863. | 8.04 | 0.00 | 234.7 |
| 14 | 5.57 | 20.64 | 25.03 | 1137.57 | 1138. | 10.79 | 0.00 | 233.4 |
| 15 | 6.00 | 21.07 | 25.03 | 1398.95 | 1399. | 13.31 | 0.00 | 232.2 |
| 16 | 6.43 | 21.50 | 25.03 | 1678.53 | 1679. | 15.96 | 0.00 | 230.9 |
| 17 | 6.86 | 21.93 | 25.03 | 2027.60 | 2028. | 19.44 | 0.00 | 229.1 |
| 18 | 7.32 | 22.39 | 25.03 | 1828.77 | 1829. | 17.44 | 0.00 | 230.2 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) | | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|-------|------------------------------|------|--------------------|
| | | | | | | unten | oben | |
| 19 | 7.77 | 22.84 | 25.03 | 1655.70 | 1656. | 15.77 | 0.00 | 231.0 |
| 20 | 8.23 | 23.30 | 25.03 | 1536.41 | 1536. | 14.64 | 0.00 | 231.6 |
| 21 | 8.68 | 23.75 | 25.03 | 1376.70 | 1377. | 12.92 | 0.00 | 232.4 |
| 22 | 9.14 | 24.21 | 25.03 | 1331.24 | 1331. | 12.54 | 0.00 | 232.6 |
| 23 | 9.59 | 24.66 | 25.03 | 1298.13 | 1298. | 12.35 | 0.00 | 232.7 |
| 24 | 10.05 | 25.12 | 25.03 | 1304.63 | 1305. | 12.35 | 0.00 | 232.7 |
| 25 | 10.51 | 25.58 | 25.03 | 1343.30 | 1343. | 12.73 | 0.00 | 232.5 |
| 26 | 10.96 | 26.03 | 25.03 | 1403.02 | 1403. | 13.31 | 0.00 | 232.2 |
| 27 | 11.42 | 26.49 | 25.03 | 1493.91 | 1494. | 14.07 | 0.00 | 231.8 |
| 28 | 11.87 | 26.94 | 25.03 | 1456.34 | 1456. | 13.69 | 0.00 | 232.0 |
| 29 | 12.33 | 27.40 | 25.03 | 1419.48 | 1419. | 13.50 | 0.00 | 232.1 |
| 30 | 12.78 | 27.85 | 25.03 | 1149.44 | 1149. | 10.79 | 0.00 | 233.4 |
| 31 | 13.24 | 28.31 | 25.03 | 681.63 | 682. | 6.99 | 0.00 | 235.4 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 0.00

untere Bewehrung : 407.51

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | | Tm (kNm) | | Bewehrung (cm²/m) | | | | | |
|----------------|----------|----------|----------|-----------|--------|-------------|----|-------------------|-----|---------|------|------|-----|
| | | | | | | | | Bereich | | Vrd(MN) | | as | |
| 1 | 0.00 | 15.07 | 25.03 | -228.63 | -229. | 0.00 | 0. | min. | 0.2 | 0.71 | 32% | 2.32 | 0.0 |
| 2 | 0.43 | 15.50 | 25.03 | -175.32 | -175. | 0.00 | 0. | min. | 0.2 | 0.71 | 25% | 2.32 | 0.0 |
| 3 | 0.86 | 15.93 | 25.03 | -168.74 | -169. | 0.00 | 0. | min. | 0.2 | 0.71 | 24% | 2.32 | 0.0 |
| 4 | 1.29 | 16.36 | 25.03 | -122.91 | -123. | 0.00 | 0. | min. | 0.1 | 0.71 | 17% | 2.32 | 0.0 |
| 5 | 1.72 | 16.78 | 25.03 | -0.69 | -1. | 0.00 | 0. | min. | 0.1 | 0.71 | 0% | 2.32 | 0.0 |
| 6 | 2.14 | 17.21 | 25.03 | -1.10 | -1. | 0.00 | 0. | min. | 0.1 | 0.71 | 0% | 2.32 | 0.0 |
| 7 | 2.57 | 17.64 | 25.03 | 11.29 | 11. | 0.00 | 0. | min. | 0.1 | 0.71 | 2% | 2.32 | 0.0 |
| 8 | 3.00 | 18.07 | 25.03 | 156.33 | 156. | 0.00 | 0. | min. | 0.2 | 0.71 | 22% | 2.32 | 0.0 |
| 9 | 3.43 | 18.50 | 25.03 | 300.85 | 301. | 0.00 | 0. | min. | 0.2 | 0.71 | 43% | 2.32 | 0.0 |
| 10 | 3.86 | 18.93 | 25.03 | 319.50 | 319. | 0.00 | 0. | min. | 0.2 | 0.71 | 45% | 2.32 | 0.0 |
| 11 | 4.29 | 19.36 | 25.03 | 334.00 | 334. | 0.00 | 0. | min. | 0.2 | 0.71 | 47% | 2.32 | 0.0 |
| 12 | 4.72 | 19.79 | 25.03 | 475.88 | 476. | 0.00 | 0. | min. | 0.3 | 0.71 | 67% | 2.32 | 0.0 |
| 13 | 5.15 | 20.22 | 25.03 | 622.71 | 623. | 0.00 | 0. | min. | 0.4 | 0.71 | 88% | 2.32 | 0.0 |
| 14 | 5.57 | 20.64 | 25.03 | 629.76 | 630. | 0.00 | 0. | min. | 0.4 | 0.71 | 89% | 2.32 | 0.0 |
| 15 | 6.00 | 21.07 | 25.03 | 605.10 | 605. | 0.00 | 0. | min. | 0.4 | 0.71 | 86% | 2.32 | 0.0 |
| 16 | 6.43 | 21.50 | 25.03 | 734.96 | 735. | 0.00 | 0. | norm | 0.4 | 0.73 | 100% | 2.52 | 0.0 |
| 17 | 6.86 | 21.93 | 25.03 | 853.77 | 854. | 0.00 | 0. | norm | 0.4 | 0.85 | 100% | 3.56 | 0.0 |
| 18 | 6.86 | 21.93 | 25.03 | -439.98 | -440. | 0.00 | 0. | min. | 0.3 | 0.70 | 63% | 2.32 | 0.0 |
| 19 | 7.32 | 22.39 | 25.03 | -428.93 | -429. | 0.00 | 0. | min. | 0.3 | 0.70 | 62% | 2.32 | 0.0 |
| 20 | 7.77 | 22.84 | 25.03 | -292.54 | -293. | 0.00 | 0. | min. | 0.2 | 0.70 | 42% | 2.32 | 0.0 |
| 21 | 8.23 | 23.30 | 25.03 | -325.56 | -326. | 0.00 | 0. | min. | 0.2 | 0.70 | 46% | 2.32 | 0.0 |
| 22 | 8.68 | 23.75 | 25.03 | -241.86 | -242. | 0.00 | 0. | min. | 0.2 | 0.70 | 34% | 2.32 | 0.0 |
| 23 | 9.14 | 24.21 | 25.03 | -57.61 | -58. | 0.00 | 0. | min. | 0.1 | 0.70 | 8% | 2.32 | 0.0 |
| 24 | 9.59 | 24.66 | 25.03 | -44.95 | -45. | 0.00 | 0. | min. | 0.1 | 0.70 | 6% | 2.32 | 0.0 |
| 25 | 10.05 | 25.12 | 25.03 | 62.21 | 62. | 0.00 | 0. | min. | 0.1 | 0.70 | 9% | 2.32 | 0.0 |
| 26 | 10.51 | 25.58 | 25.03 | 93.50 | 93. | 0.00 | 0. | min. | 0.1 | 0.70 | 13% | 2.32 | 0.0 |
| 27 | 10.96 | 26.03 | 25.03 | 211.54 | 212. | 0.00 | 0. | min. | 0.2 | 0.70 | 30% | 2.32 | 0.0 |
| 28 | 11.42 | 26.49 | 25.03 | 51.82 | 52. | 0.00 | 0. | min. | 0.1 | 0.70 | 7% | 2.32 | 0.0 |
| 29 | 11.87 | 26.94 | 25.03 | -67.84 | -68. | 0.00 | 0. | min. | 0.1 | 0.70 | 10% | 2.32 | 0.0 |
| 30 | 12.33 | 27.40 | 25.03 | -270.48 | -270. | 0.00 | 0. | min. | 0.2 | 0.70 | 39% | 2.32 | 0.0 |
| 31 | 12.78 | 27.85 | 25.03 | -870.59 | -871. | 0.00 | 0. | norm | 0.4 | 0.87 | 100% | 3.58 | 0.0 |
| 32 | 13.24 | 28.31 | 25.03 | -1104.53 | -1105. | 0.00 | 0. | norm | 0.5 | 1.10 | 100% | 5.51 | 0.0 |

Position : BP
 Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm²] | As Feld [cm²] |
|--------|------------------------------|-----------------|------------------|-------------|------------------|
| UZ-Anf | 18.43 | 2.23 | 342.95 | 7.89 | 15.96 |
| UZ-End | 26.80 | 2.99 | 1093.48 | 25.15 | 17.44 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|---------|
| 0 | 0.00 | 15.07 | 25.03 | -209.69 | -192.85 |
| 1 | 0.21 | 15.28 | 25.03 | -132.07 | -124.33 |
| 2 | 0.64 | 15.71 | 25.03 | -3.92 | -15.35 |
| 3 | 1.07 | 16.14 | 25.03 | -94.72 | -106.88 |
| 4 | 1.50 | 16.57 | 25.03 | -323.48 | -285.08 |
| 5 | 1.93 | 17.00 | 25.03 | 26.34 | 0.96 |
| 6 | 2.36 | 17.43 | 25.03 | -13.05 | -28.90 |
| 7 | 2.79 | 17.86 | 25.03 | -357.18 | -338.28 |
| 8 | 3.22 | 18.29 | 25.03 | -354.96 | -337.06 |
| 9 | 3.64 | 18.71 | 25.03 | -26.10 | -43.50 |
| 10 | 4.07 | 19.14 | 25.03 | -14.58 | -33.83 |
| 11 | 4.50 | 19.57 | 25.03 | -348.63 | -330.92 |
| 12 | 4.93 | 20.00 | 25.03 | -362.25 | -342.45 |
| 13 | 5.36 | 20.43 | 25.03 | -3.89 | -16.45 |
| 14 | 5.79 | 20.86 | 25.03 | 90.09 | 57.50 |
| 15 | 6.22 | 21.29 | 25.03 | -337.18 | -302.87 |
| 16 | 6.65 | 21.72 | 25.03 | -268.96 | -277.12 |
| 17 | 7.09 | 22.16 | 25.03 | 1.65 | -24.23 |
| 18 | 7.54 | 22.61 | 25.03 | -359.97 | -299.29 |
| 19 | 8.00 | 23.07 | 25.03 | 127.60 | 72.45 |
| 20 | 8.45 | 23.52 | 25.03 | -186.59 | -183.67 |
| 21 | 8.91 | 23.98 | 25.03 | -456.61 | -404.31 |
| 22 | 9.37 | 24.44 | 25.03 | 35.04 | -27.78 |
| 23 | 9.82 | 24.89 | 25.03 | -288.18 | -235.16 |
| 24 | 10.28 | 25.35 | 25.03 | -12.88 | -68.65 |
| 25 | 10.73 | 25.80 | 25.03 | -339.86 | -259.02 |
| 26 | 11.19 | 26.26 | 25.03 | 418.08 | 350.49 |
| 27 | 11.65 | 26.72 | 25.03 | 247.40 | 262.56 |
| 28 | 12.10 | 27.17 | 25.03 | 370.22 | 444.66 |
| 29 | 12.56 | 27.63 | 25.03 | 1457.26 | 1316.85 |
| 30 | 13.01 | 28.08 | 25.03 | 445.10 | 513.35 |
| 31 | 13.24 | 28.31 | 25.03 | -293.29 | -71.58 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|---------|
| 1 | 0.00 | 6.86 | -156.95 | -156.82 |
| 2 | 6.86 | 13.24 | 88.49 | 86.51 |
| total | 0.00 | 13.24 | -38.68 | -120.89 |

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm²/m) |
|----------------|----------|----------|----------|-------------------------|----------------------|
| 1 | 0.00 | 35.82 | 20.25 | 192.85 | 4.44 |
| 2 | 0.43 | 35.82 | 20.57 | 55.81 | 1.28 |
| 3 | 0.86 | 35.82 | 20.90 | 28.01 | 0.64 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm²/m) |
|----------------|----------|----------|----------|-------------------------|----------------------|
| 4 | 1.29 | 35.82 | 21.22 | 234.73 | 5.40 |
| 5 | 1.72 | 35.82 | 21.54 | 161.75 | 3.72 |
| 6 | 2.14 | 5.35 | 37.94 | 47.92 | 1.10 |
| 7 | 2.57 | 5.84 | 37.94 | 188.18 | 4.33 |
| 8 | 3.00 | 6.32 | 37.94 | 392.86 | 9.04 |
| 9 | 3.43 | 6.81 | 37.94 | 191.02 | 4.39 |
| 10 | 3.86 | 7.29 | 37.94 | 16.31 | 0.38 |
| 11 | 4.29 | 7.78 | 37.94 | 180.02 | 4.14 |
| 12 | 4.72 | 8.26 | 37.94 | 393.12 | 9.04 |
| 13 | 5.15 | 8.75 | 37.94 | 189.73 | 4.36 |
| 14 | 5.57 | 9.23 | 37.94 | 86.05 | 1.98 |
| 15 | 6.00 | 9.71 | 37.94 | 117.09 | 2.69 |
| 16 | 6.43 | 10.20 | 37.94 | 359.82 | 8.28 |
| 17 | 6.86 | 10.68 | 37.94 | 106.67 | 2.45 |
| 18 | 7.32 | 11.17 | 37.94 | 179.82 | 4.14 |
| 19 | 7.77 | 11.65 | 37.94 | 130.87 | 3.01 |
| 20 | 8.23 | 12.14 | 37.94 | 25.17 | 0.58 |
| 21 | 8.68 | 12.62 | 37.94 | 377.48 | 8.68 |
| 22 | 9.14 | 13.11 | 37.94 | 200.08 | 4.60 |
| 23 | 9.59 | 13.59 | 37.94 | 116.82 | 2.69 |
| 24 | 10.05 | 14.08 | 37.94 | 147.74 | 3.40 |
| 25 | 10.51 | 14.56 | 37.94 | 201.54 | 4.64 |
| 26 | 10.96 | 15.05 | 37.94 | 26.26 | 0.60 |
| 27 | 11.42 | 15.53 | 37.94 | 383.72 | 8.83 |
| 28 | 11.87 | 16.01 | 37.94 | 224.59 | 5.17 |
| 29 | 12.33 | 16.50 | 37.94 | 959.62 | 22.07 |
| 30 | 12.78 | 16.98 | 37.94 | 1098.27 | 25.26 |
| 31 | 13.24 | 17.47 | 37.94 | 71.58 | 1.65 |

Überzug Nr.: 44 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei sertl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm²) unten | oben | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|--------|--------------------------|-------|--------------------|
| 1 | 0.00 | 28.31 | 20.25 | 487.96 | 488. | 6.99 | 0.00 | 236.3 |
| 2 | 0.40 | 28.31 | 20.65 | -316.79 | -317. | 0.00 | 2.96 | 237.1 |
| 3 | 0.80 | 28.31 | 21.05 | -847.11 | -847. | 0.00 | 8.04 | 234.7 |
| 4 | 1.19 | 28.31 | 21.44 | -1080.26 | -1080. | 0.00 | 10.20 | 233.7 |
| 5 | 1.59 | 28.31 | 21.84 | -1209.37 | -1209. | 0.00 | 11.38 | 233.2 |
| 6 | 1.99 | 28.31 | 22.24 | -1417.48 | -1417. | 0.00 | 13.50 | 232.1 |
| 7 | 2.39 | 28.31 | 22.64 | -1447.08 | -1447. | 0.00 | 13.69 | 232.0 |
| 8 | 2.79 | 28.31 | 23.04 | -1446.73 | -1447. | 0.00 | 13.69 | 232.0 |
| 9 | 3.19 | 28.31 | 23.44 | -1548.78 | -1549. | 0.00 | 14.64 | 231.6 |
| 10 | 3.58 | 28.31 | 23.83 | -1489.95 | -1490. | 0.00 | 14.07 | 231.8 |
| 11 | 3.98 | 28.31 | 24.23 | -1388.15 | -1388. | 0.00 | 13.12 | 232.3 |
| 12 | 4.38 | 28.31 | 24.63 | -1344.47 | -1344. | 0.00 | 12.73 | 232.5 |
| 13 | 4.78 | 28.31 | 25.03 | -1048.99 | -1049. | 0.00 | 9.81 | 233.9 |
| 14 | 5.06 | 28.31 | 25.31 | -1029.88 | -1030. | 0.00 | 9.61 | 234.0 |
| 15 | 5.34 | 28.31 | 25.59 | -895.80 | -896. | 0.00 | 8.43 | 234.5 |
| 16 | 5.62 | 28.31 | 25.87 | -685.15 | -685. | 0.00 | 6.52 | 235.3 |
| 17 | 5.90 | 28.31 | 26.15 | -428.77 | -429. | 0.00 | 4.05 | 236.5 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 123.52

untere Bewehrung :

3.90

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

Achtung: obere Mindestbewehrung gem. DIN von 6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | Tm (kNm) | Bewehrung (cm ² /m) | | | | |
|----------------|----------|----------|----------|-----------|-------------|--------------------------------|---------|------|-----|-----------|
| | | | | | | Bereich | Vrd(MN) | as | | |
| 1 | 0.00 | 28.31 | 20.25 | -2157.91 | -2158. | 0.00 | 0. | norm | 0.7 | 2.16 100% |
| 2 | 0.40 | 28.31 | 20.65 | -1745.01 | -1745. | 0.00 | 0. | norm | 0.6 | 1.75 100% |
| 3 | 0.80 | 28.31 | 21.05 | -916.96 | -917. | 0.00 | 0. | norm | 0.4 | 0.92 100% |
| 4 | 1.19 | 28.31 | 21.44 | -337.13 | -337. | 0.00 | 0. | min. | 0.2 | 0.71 48% |
| 5 | 1.59 | 28.31 | 21.84 | -462.78 | -463. | 0.00 | 0. | min. | 0.3 | 0.71 65% |
| 6 | 1.99 | 28.31 | 22.24 | -351.54 | -352. | 0.00 | 0. | min. | 0.2 | 0.70 50% |
| 7 | 2.39 | 28.31 | 22.64 | 78.62 | 79. | 0.00 | 0. | min. | 0.1 | 0.70 11% |
| 8 | 2.79 | 28.31 | 23.04 | -183.20 | -183. | 0.00 | 0. | min. | 0.2 | 0.70 26% |
| 9 | 3.19 | 28.31 | 23.44 | -111.81 | -112. | 0.00 | 0. | min. | 0.1 | 0.70 16% |
| 10 | 3.58 | 28.31 | 23.83 | 304.91 | 305. | 0.00 | 0. | min. | 0.2 | 0.70 43% |
| 11 | 3.98 | 28.31 | 24.23 | 102.00 | 102. | 0.00 | 0. | min. | 0.1 | 0.70 15% |
| 12 | 4.38 | 28.31 | 24.63 | 382.75 | 383. | 0.00 | 0. | min. | 0.3 | 0.70 54% |
| 13 | 4.78 | 28.31 | 25.03 | 921.31 | 921. | 0.00 | 0. | norm | 0.4 | 0.92 100% |
| 14 | 4.78 | 28.31 | 25.03 | -25.07 | -25. | 0.00 | 0. | min. | 0.1 | 0.71 4% |
| 15 | 5.06 | 28.31 | 25.31 | 254.98 | 255. | 0.00 | 0. | min. | 0.2 | 0.71 36% |
| 16 | 5.34 | 28.31 | 25.59 | 646.49 | 646. | 0.00 | 0. | min. | 0.4 | 0.71 91% |
| 17 | 5.62 | 28.31 | 25.87 | 852.57 | 853. | 0.00 | 0. | norm | 0.4 | 0.85 100% |
| 18 | 5.90 | 28.31 | 26.15 | 947.19 | 947. | 0.00 | 0. | norm | 0.4 | 0.95 100% |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm ²] | As Feld [cm ²] |
|--------|------------------------------|-----------------|------------------|--------------------------|-------------------------------|
| UZ-Anf | 33.51 | 3.42 | 1629.22 | 37.47 | 6.99 |
| UZ-End | 24.25 | 2.78 | 1051.38 | 24.18 | 0.00 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|----------|
| 0 | 0.00 | 28.31 | 20.25 | -225.59 | -394.05 |
| 1 | 0.20 | 28.31 | 20.45 | -964.40 | -1036.56 |
| 2 | 0.60 | 28.31 | 20.85 | -2179.06 | -2078.79 |
| 3 | 1.00 | 28.31 | 21.25 | -1543.06 | -1455.64 |
| 4 | 1.39 | 28.31 | 21.64 | 478.41 | 315.42 |
| 5 | 1.79 | 28.31 | 22.04 | -252.35 | -279.26 |
| 6 | 2.19 | 28.31 | 22.44 | -1299.04 | -1079.89 |
| 7 | 2.59 | 28.31 | 22.84 | 872.49 | 657.28 |
| 8 | 2.99 | 28.31 | 23.24 | -177.52 | -179.23 |
| 9 | 3.39 | 28.31 | 23.64 | -1260.57 | -1046.14 |
| 10 | 3.78 | 28.31 | 24.03 | 759.78 | 509.40 |
| 11 | 4.18 | 28.31 | 24.43 | -799.48 | -704.81 |
| 12 | 4.58 | 28.31 | 24.83 | -1365.48 | -1352.06 |
| 13 | 4.92 | 28.31 | 25.17 | -963.49 | -1000.19 |
| 14 | 5.20 | 28.31 | 25.45 | -1482.25 | -1398.24 |
| 15 | 5.48 | 28.31 | 25.73 | -701.73 | -735.98 |
| 16 | 5.76 | 28.31 | 26.01 | -324.88 | -337.94 |
| 17 | 5.90 | 28.31 | 26.15 | -217.76 | -199.01 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|---------|
| 1 | 0.00 | 4.78 | -623.88 | -628.00 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|----------|
| 2 | 4.78 | 5.90 | -871.77 | -874.24 |
| total | 0.00 | 5.90 | -670.94 | -1180.20 |

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 1 | 0.00 | 35.82 | 20.25 | 394.05 | 9.06 |
| 2 | 0.40 | 35.82 | 20.57 | 1679.08 | 38.62 |
| 3 | 0.80 | 35.82 | 20.90 | 2027.52 | 46.63 |
| 4 | 1.19 | 35.82 | 21.22 | 462.46 | 10.64 |
| 5 | 1.59 | 35.82 | 21.54 | 304.46 | 7.00 |
| 6 | 1.99 | 5.35 | 37.94 | 968.37 | 22.27 |
| 7 | 2.39 | 5.84 | 37.94 | 216.99 | 4.99 |
| 8 | 2.79 | 6.32 | 37.94 | 563.97 | 12.97 |
| 9 | 3.19 | 6.81 | 37.94 | 930.26 | 21.40 |
| 10 | 3.58 | 7.29 | 37.94 | 220.05 | 5.06 |
| 11 | 3.98 | 7.78 | 37.94 | 156.78 | 3.61 |
| 12 | 4.38 | 8.26 | 37.94 | 1268.65 | 29.18 |
| 13 | 4.78 | 8.75 | 37.94 | 1067.56 | 24.55 |
| 14 | 5.06 | 9.23 | 37.94 | 1233.03 | 28.36 |
| 15 | 5.34 | 9.71 | 37.94 | 1148.32 | 26.41 |
| 16 | 5.62 | 10.20 | 37.94 | 476.87 | 10.97 |
| 17 | 5.90 | 10.68 | 37.94 | 199.01 | 4.58 |

Überzug Nr.: 45 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei seith. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) | | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|-------|------------------------------|------|--------------------|
| | | | | | | unten | oben | |
| 1 | 0.00 | 44.46 | 24.48 | -12.14 | -12. | 0.00 | 0.13 | 239.4 |
| 2 | 0.38 | 44.84 | 24.48 | -149.74 | -150. | 0.00 | 1.41 | 238.1 |
| 3 | 0.77 | 45.23 | 24.48 | -23.75 | -24. | 0.00 | 0.26 | 239.2 |
| 4 | 1.15 | 45.61 | 24.48 | -153.12 | -153. | 0.00 | 1.41 | 238.1 |
| 5 | 1.53 | 45.99 | 24.48 | -83.95 | -84. | 0.00 | 0.82 | 238.6 |
| 6 | 1.92 | 46.38 | 24.48 | -11.52 | -12. | 0.00 | 0.13 | 239.4 |
| 7 | 2.30 | 46.76 | 24.48 | -127.74 | -128. | 0.00 | 1.20 | 238.2 |
| 8 | 2.69 | 47.15 | 24.48 | 29.77 | 30. | 6.99 | 0.00 | 239.1 |
| 9 | 3.07 | 47.53 | 24.48 | -52.53 | -53. | 0.00 | 0.51 | 238.9 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 4.25

untere Bewehrung : 7.51

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | Tm (kNm) | Bewehrung (cm ² /m) | | | | |
|----------------|----------|----------|----------|-----------|-------------|--------------------------------|------|---------|------|--------------|
| | | | | | | Bereich | | Vrd(MN) | | as |
| 1 | 0.00 | 44.46 | 24.48 | -599.29 | -599. | 0. | min. | 0.4 | 0.71 | 85% 2.32 0.0 |
| 2 | 0.38 | 44.84 | 24.48 | 122.90 | 123. | 0. | min. | 0.1 | 0.71 | 17% 2.32 0.0 |
| 3 | 0.77 | 45.23 | 24.48 | 16.92 | 17. | 0. | min. | 0.1 | 0.71 | 2% 2.32 0.0 |
| 4 | 1.15 | 45.61 | 24.48 | -217.01 | -217. | 0. | min. | 0.2 | 0.71 | 31% 2.32 0.0 |
| 5 | 1.53 | 45.99 | 24.48 | 380.56 | 381. | 0. | min. | 0.3 | 0.71 | 54% 2.32 0.0 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | Tm (kNm) | Bewehrung (cm ² /m) | | | | | |
|----------------|----------|----------|----------|-----------|-------------|--------------------------------|---------|----------|------|-----|------|
| | | | | | | Bereich | Vrd(MN) | as | | | |
| 6 | 1.92 | 46.38 | 24.48 | -198.31 | -198. | 0.00 | 0. | min. 0.2 | 0.71 | 28% | 2.32 |
| 7 | 2.30 | 46.76 | 24.48 | 70.33 | 70. | 0.00 | 0. | min. 0.1 | 0.71 | 10% | 2.32 |
| 8 | 2.69 | 47.15 | 24.48 | 239.81 | 240. | 0.00 | 0. | min. 0.2 | 0.71 | 34% | 2.32 |
| 9 | 3.07 | 47.53 | 24.48 | -441.58 | -442. | 0.00 | 0. | min. 0.3 | 0.71 | 62% | 2.32 |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm ²] | As Feld [cm ²] |
|--------|------------------------------|-----------------|------------------|--------------------------|-------------------------------|
| UZ-Anf | 18.38 | 2.22 | 901.93 | 20.74 | 6.99 |
| UZ-End | 18.38 | 2.22 | 664.58 | 15.29 | 0.00 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|----------|
| 0 | 0.00 | 44.46 | 24.48 | -3209.34 | -3028.01 |
| 1 | 0.19 | 44.65 | 24.48 | -2005.39 | -1881.91 |
| 2 | 0.58 | 45.04 | 24.48 | 353.99 | 276.15 |
| 3 | 0.96 | 45.42 | 24.48 | 877.88 | 609.60 |
| 4 | 1.34 | 45.80 | 24.48 | -2083.08 | -1557.22 |
| 5 | 1.73 | 46.19 | 24.48 | 2035.53 | 1508.48 |
| 6 | 2.11 | 46.57 | 24.48 | -963.82 | -700.03 |
| 7 | 2.49 | 46.95 | 24.48 | -530.28 | -441.65 |
| 8 | 2.88 | 47.34 | 24.48 | 1904.20 | 1775.61 |
| 9 | 3.07 | 47.53 | 24.48 | 3163.49 | 2965.44 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|--------|
| 1 | 0.00 | 3.07 | -49.64 | -39.95 |
| total | 0.00 | 3.07 | -49.64 | -39.95 |

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 1 | 0.00 | 35.82 | 20.25 | 3028.01 | 69.64 |
| 2 | 0.38 | 35.82 | 20.57 | 735.82 | 16.92 |
| 3 | 0.77 | 35.82 | 20.90 | 925.92 | 21.30 |
| 4 | 1.15 | 35.82 | 21.22 | 851.20 | 19.58 |
| 5 | 1.53 | 35.82 | 21.54 | 22.48 | 0.52 |
| 6 | 1.92 | 5.35 | 37.94 | 789.70 | 18.16 |
| 7 | 2.30 | 5.84 | 37.94 | 1061.82 | 24.42 |
| 8 | 2.69 | 6.32 | 37.94 | 585.78 | 13.47 |
| 9 | 3.07 | 6.81 | 37.94 | 2965.44 | 68.21 |

Überzug Nr.: 46 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei seidl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | Bewehrung (cm ²) | | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|------------------------------|------|--------------------|
| | | | | | unten | oben | |
| 1 | 0.00 | 35.82 | 24.55 | -230.82 | 0.00 | 2.13 | 237.6 |
| 2 | 0.40 | 35.82 | 24.95 | -311.21 | 0.00 | 2.96 | 237.1 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) | | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|-------|------------------------------|------|--------------------|
| | | | | | | unten | oben | |
| 3 | 0.80 | 35.82 | 25.35 | -396.19 | -396. | 0.00 | 3.72 | 236.7 |
| 4 | 1.20 | 35.82 | 25.75 | -413.55 | -414. | 0.00 | 3.88 | 236.6 |
| 5 | 1.60 | 35.82 | 26.15 | -432.42 | -432. | 0.00 | 4.05 | 236.5 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 10.92

untere Bewehrung : 0.00

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | | Tm (kNm) | | Bewehrung (cm ² /m) | | | | |
|----------------|----------|----------|----------|-----------|-------|-------------|----|--------------------------------|---------|-----|------|-----|
| | | | | | | | | Bereich | Vrd(MN) | as | | |
| 1 | 0.00 | 35.82 | 24.55 | -185.75 | -186. | 0.00 | 0. | min. 0.2 | 0.71 | 26% | 2.32 | 0.0 |
| 2 | 0.40 | 35.82 | 24.95 | -231.40 | -231. | 0.00 | 0. | min. 0.2 | 0.71 | 33% | 2.32 | 0.0 |
| 3 | 0.80 | 35.82 | 25.35 | -128.90 | -129. | 0.00 | 0. | min. 0.1 | 0.71 | 18% | 2.32 | 0.0 |
| 4 | 1.20 | 35.82 | 25.75 | -20.60 | -21. | 0.00 | 0. | min. 0.1 | 0.71 | 3% | 2.32 | 0.0 |
| 5 | 1.60 | 35.82 | 26.15 | -60.44 | -60. | 0.00 | 0. | min. 0.1 | 0.71 | 9% | 2.32 | 0.0 |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm ²] | As Feld [cm ²] |
|--------|------------------------------|-----------------|------------------|--------------------------|-------------------------------|
| UZ-Anf | 18.43 | 2.23 | 278.62 | 6.41 | 0.00 |
| UZ-End | 18.43 | 2.23 | 90.67 | 2.09 | 0.00 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|---------|
| 0 | 0.00 | 35.82 | 24.55 | 373.48 | 325.27 |
| 1 | 0.20 | 35.82 | 24.75 | 137.01 | 114.13 |
| 2 | 0.60 | 35.82 | 25.15 | -278.09 | -256.24 |
| 3 | 1.00 | 35.82 | 25.55 | -295.19 | -270.75 |
| 4 | 1.40 | 35.82 | 25.95 | 123.02 | 99.61 |
| 5 | 1.60 | 35.82 | 26.15 | 365.70 | 314.38 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|--------|
| 1 | 0.00 | 1.60 | -48.37 | -49.92 |
| total | 0.00 | 1.60 | -48.37 | -49.92 |

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 1 | 0.00 | 35.82 | 20.25 | 325.27 | 7.48 |
| 2 | 0.40 | 35.82 | 20.57 | 97.02 | 2.23 |
| 3 | 0.80 | 35.82 | 20.90 | 319.05 | 7.34 |
| 4 | 1.20 | 35.82 | 21.22 | 115.16 | 2.65 |
| 5 | 1.60 | 35.82 | 21.54 | 314.38 | 7.23 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

Überzug Nr.: 47 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT

Brandschutz bei seütl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) | | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|-------|------------------------------|------|--------------------|
| | | | | | | unten | oben | |
| 1 | 0.00 | 28.31 | 26.15 | 484.57 | 485. | 6.99 | 0.00 | 236.3 |
| 2 | 0.47 | 28.78 | 26.15 | 876.03 | 876. | 8.24 | 0.00 | 234.6 |
| 3 | 0.94 | 29.25 | 26.15 | 1194.95 | 1195. | 11.18 | 0.00 | 233.2 |
| 4 | 1.41 | 29.72 | 26.15 | 1176.98 | 1177. | 11.18 | 0.00 | 233.2 |
| 5 | 1.88 | 30.19 | 26.15 | 1087.71 | 1088. | 10.20 | 0.00 | 233.7 |
| 6 | 2.35 | 30.66 | 26.15 | 904.05 | 904. | 8.43 | 0.00 | 234.5 |
| 7 | 2.82 | 31.13 | 26.15 | 834.42 | 834. | 7.85 | 0.00 | 234.8 |
| 8 | 3.29 | 31.60 | 26.15 | 639.13 | 639. | 6.99 | 0.00 | 235.6 |
| 9 | 3.75 | 32.06 | 26.15 | 505.66 | 506. | 6.99 | 0.00 | 236.2 |
| 10 | 4.22 | 32.53 | 26.15 | 351.88 | 352. | 6.99 | 0.00 | 236.9 |
| 11 | 4.69 | 33.00 | 26.15 | 364.80 | 365. | 6.99 | 0.00 | 236.9 |
| 12 | 5.16 | 33.47 | 26.15 | 276.66 | 277. | 6.99 | 0.00 | 237.3 |
| 13 | 5.63 | 33.94 | 26.15 | 270.32 | 270. | 6.99 | 0.00 | 237.3 |
| 14 | 6.10 | 34.41 | 26.15 | 249.87 | 250. | 6.99 | 0.00 | 237.4 |
| 15 | 6.57 | 34.88 | 26.15 | 402.22 | 402. | 6.99 | 0.00 | 236.7 |
| 16 | 7.04 | 35.35 | 26.15 | 435.31 | 435. | 6.99 | 0.00 | 236.5 |
| 17 | 7.51 | 35.82 | 26.15 | 465.60 | 466. | 6.99 | 0.00 | 236.4 |
| 18 | 7.92 | 36.23 | 26.15 | 283.77 | 284. | 6.99 | 0.00 | 237.3 |
| 19 | 8.34 | 36.65 | 26.15 | 72.02 | 72. | 6.99 | 0.00 | 238.6 |
| 20 | 8.75 | 37.06 | 26.15 | -192.75 | -193. | 0.00 | 1.87 | 237.7 |
| 21 | 9.17 | 37.48 | 26.15 | -257.00 | -257. | 0.00 | 2.39 | 237.4 |
| 22 | 9.58 | 37.89 | 26.15 | -469.89 | -470. | 0.00 | 4.38 | 236.4 |
| 23 | 10.00 | 38.31 | 26.15 | -582.93 | -583. | 0.00 | 5.42 | 235.9 |
| 24 | 10.41 | 38.72 | 26.15 | -657.72 | -658. | 0.00 | 6.15 | 235.5 |
| 25 | 10.82 | 39.13 | 26.15 | -699.17 | -699. | 0.00 | 6.52 | 235.3 |
| 26 | 11.24 | 39.55 | 26.15 | -702.02 | -702. | 0.00 | 6.52 | 235.3 |
| 27 | 11.65 | 39.96 | 26.15 | -717.14 | -717. | 0.00 | 6.70 | 235.3 |
| 28 | 12.07 | 40.38 | 26.15 | -522.38 | -522. | 0.00 | 4.89 | 236.1 |
| 29 | 12.48 | 40.79 | 26.15 | -467.76 | -468. | 0.00 | 4.38 | 236.4 |
| 30 | 12.90 | 41.21 | 26.15 | -325.68 | -326. | 0.00 | 3.10 | 237.0 |
| 31 | 13.31 | 41.62 | 26.15 | -268.08 | -268. | 0.00 | 2.53 | 237.3 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 44.40

untere Bewehrung : 187.20

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. | Z | X | Y | Q | | Tm | Bewehrung (cm²/m) | | | | | | |
|---------|------|-------|-------|---------|-------|-------|-------------------|---------|-----|-----------|------|-----|--|
| Nr. | (m) | (m) | (m) | (kN) | | (kNm) | | Bereich | | Vrd(MN) | as | | |
| 1 | 0.00 | 28.31 | 26.15 | 825.31 | 825. | 0.00 | 0. | norm | 0.4 | 0.83 100% | 3.21 | 0.0 | |
| 2 | 0.47 | 28.78 | 26.15 | 851.37 | 851. | 0.00 | 0. | norm | 0.4 | 0.85 100% | 3.42 | 0.0 | |
| 3 | 0.94 | 29.25 | 26.15 | 309.56 | 310. | 0.00 | 0. | min. | 0.2 | 0.71 44% | 2.32 | 0.0 | |
| 4 | 1.41 | 29.72 | 26.15 | -166.07 | -166. | 0.00 | 0. | min. | 0.2 | 0.71 24% | 2.32 | 0.0 | |
| 5 | 1.88 | 30.19 | 26.15 | -330.66 | -331. | 0.00 | 0. | min. | 0.2 | 0.71 47% | 2.32 | 0.0 | |
| 6 | 2.35 | 30.66 | 26.15 | -255.69 | -256. | 0.00 | 0. | min. | 0.2 | 0.71 36% | 2.32 | 0.0 | |
| 7 | 2.82 | 31.13 | 26.15 | -265.48 | -265. | 0.00 | 0. | min. | 0.2 | 0.71 38% | 2.32 | 0.0 | |
| 8 | 3.29 | 31.60 | 26.15 | -375.64 | -376. | 0.00 | 0. | min. | 0.3 | 0.71 53% | 2.32 | 0.0 | |
| 9 | 3.75 | 32.06 | 26.15 | -333.23 | -333. | 0.00 | 0. | min. | 0.2 | 0.71 47% | 2.32 | 0.0 | |
| 10 | 4.22 | 32.53 | 26.15 | -127.42 | -127. | 0.00 | 0. | min. | 0.1 | 0.71 18% | 2.32 | 0.0 | |
| 11 | 4.69 | 33.00 | 26.15 | -57.44 | -57. | 0.00 | 0. | min. | 0.1 | 0.71 8% | 2.32 | 0.0 | |
| 12 | 5.16 | 33.47 | 26.15 | -123.58 | -124. | 0.00 | 0. | min. | 0.1 | 0.71 18% | 2.32 | 0.0 | |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | Tm (kNm) | Bewehrung (cm²/m) | | | | | | |
|----------------|----------|----------|----------|-----------|-------------|-------------------|---------|----------|------|-----|------|-----|
| | | | | | | Bereich | Vrd(MN) | as | | | | |
| 13 | 5.63 | 33.94 | 26.15 | -52.11 | -52. | 0.00 | 0. | min. 0.1 | 0.71 | 7% | 2.32 | 0.0 |
| 14 | 6.10 | 34.41 | 26.15 | 160.76 | 161. | 0.00 | 0. | min. 0.2 | 0.71 | 23% | 2.32 | 0.0 |
| 15 | 6.57 | 34.88 | 26.15 | 252.10 | 252. | 0.00 | 0. | min. 0.2 | 0.71 | 36% | 2.32 | 0.0 |
| 16 | 7.04 | 35.35 | 26.15 | 16.05 | 16. | 0.00 | 0. | min. 0.1 | 0.71 | 2% | 2.32 | 0.0 |
| 17 | 7.51 | 35.82 | 26.15 | 88.78 | 89. | 0.00 | 0. | min. 0.1 | 0.71 | 13% | 2.32 | 0.0 |
| 18 | 7.51 | 35.82 | 26.15 | -440.21 | -440. | 0.00 | 0. | min. 0.3 | 0.71 | 62% | 2.32 | 0.0 |
| 19 | 7.92 | 36.23 | 26.15 | -436.29 | -436. | 0.00 | 0. | min. 0.3 | 0.71 | 62% | 2.32 | 0.0 |
| 20 | 8.34 | 36.65 | 26.15 | -664.67 | -665. | 0.00 | 0. | min. 0.4 | 0.71 | 94% | 2.32 | 0.0 |
| 21 | 8.75 | 37.06 | 26.15 | -355.70 | -356. | 0.00 | 0. | min. 0.2 | 0.71 | 50% | 2.32 | 0.0 |
| 22 | 9.17 | 37.48 | 26.15 | -295.10 | -295. | 0.00 | 0. | min. 0.2 | 0.71 | 42% | 2.32 | 0.0 |
| 23 | 9.58 | 37.89 | 26.15 | -470.74 | -471. | 0.00 | 0. | min. 0.3 | 0.71 | 67% | 2.32 | 0.0 |
| 24 | 10.00 | 38.31 | 26.15 | -182.15 | -182. | 0.00 | 0. | min. 0.2 | 0.71 | 26% | 2.32 | 0.0 |
| 25 | 10.41 | 38.72 | 26.15 | -160.82 | -161. | 0.00 | 0. | min. 0.2 | 0.71 | 23% | 2.32 | 0.0 |
| 26 | 10.82 | 39.13 | 26.15 | -16.33 | -16. | 0.00 | 0. | min. 0.1 | 0.71 | 2% | 2.32 | 0.0 |
| 27 | 11.24 | 39.55 | 26.15 | -94.69 | -95. | 0.00 | 0. | min. 0.1 | 0.71 | 13% | 2.32 | 0.0 |
| 28 | 11.65 | 39.96 | 26.15 | 264.95 | 265. | 0.00 | 0. | min. 0.2 | 0.71 | 38% | 2.32 | 0.0 |
| 29 | 12.07 | 40.38 | 26.15 | 335.75 | 336. | 0.00 | 0. | min. 0.2 | 0.71 | 48% | 2.32 | 0.0 |
| 30 | 12.48 | 40.79 | 26.15 | 197.91 | 198. | 0.00 | 0. | min. 0.2 | 0.71 | 28% | 2.32 | 0.0 |
| 31 | 12.90 | 41.21 | 26.15 | 297.00 | 297. | 0.00 | 0. | min. 0.2 | 0.71 | 42% | 2.32 | 0.0 |
| 32 | 13.31 | 41.62 | 26.15 | 60.03 | 60. | 0.00 | 0. | min. 0.1 | 0.71 | 9% | 2.32 | 0.0 |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm²] | As Feld [cm²] |
|--------|------------------------------|-----------------|------------------|-------------|------------------|
| UZ-Anf | 21.49 | 2.53 | 1048.14 | 24.11 | 11.18 |
| UZ-End | 18.43 | 2.23 | 90.05 | 2.80 | 11.18 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|---------|
| 0 | 0.00 | 28.31 | 26.15 | -986.32 | -782.27 |
| 1 | 0.23 | 28.54 | 26.15 | -136.60 | -55.52 |
| 2 | 0.70 | 29.01 | 26.15 | 1257.28 | 1154.33 |
| 3 | 1.17 | 29.48 | 26.15 | 1020.31 | 1013.33 |
| 4 | 1.64 | 29.95 | 26.15 | 350.19 | 350.65 |
| 5 | 2.11 | 30.42 | 26.15 | -202.93 | -159.72 |
| 6 | 2.58 | 30.89 | 26.15 | 21.42 | 20.86 |
| 7 | 3.05 | 31.36 | 26.15 | 267.34 | 234.68 |
| 8 | 3.52 | 31.83 | 26.15 | -86.83 | -90.35 |
| 9 | 3.99 | 32.30 | 26.15 | -479.45 | -438.49 |
| 10 | 4.46 | 32.77 | 26.15 | -148.14 | -149.09 |
| 11 | 4.93 | 33.24 | 26.15 | 177.95 | 140.91 |
| 12 | 5.40 | 33.71 | 26.15 | -155.59 | -152.27 |
| 13 | 5.87 | 34.18 | 26.15 | -475.26 | -453.51 |
| 14 | 6.34 | 34.65 | 26.15 | -244.31 | -194.61 |
| 15 | 6.81 | 35.12 | 26.15 | 613.80 | 502.90 |
| 16 | 7.28 | 35.59 | 26.15 | -210.01 | -154.94 |
| 17 | 7.72 | 36.03 | 26.15 | -71.99 | -9.45 |
| 18 | 8.13 | 36.44 | 26.15 | 723.73 | 551.26 |
| 19 | 8.55 | 36.86 | 26.15 | -908.71 | -745.79 |
| 20 | 8.96 | 37.27 | 26.15 | -141.17 | -146.26 |
| 21 | 9.37 | 37.68 | 26.15 | 573.84 | 423.94 |
| 22 | 9.79 | 38.10 | 26.15 | -878.61 | -696.59 |
| 23 | 10.20 | 38.51 | 26.15 | 85.26 | -51.49 |
| 24 | 10.62 | 38.93 | 26.15 | -478.16 | -348.76 |
| 25 | 11.03 | 39.34 | 26.15 | 361.18 | 189.14 |
| 26 | 11.45 | 39.76 | 26.15 | -1028.06 | -868.08 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|---------|
| 27 | 11.86 | 40.17 | 26.15 | -141.64 | -170.90 |
| 28 | 12.27 | 40.58 | 26.15 | 424.06 | 332.73 |
| 29 | 12.69 | 41.00 | 26.15 | -364.89 | -239.19 |
| 30 | 13.10 | 41.41 | 26.15 | 637.68 | 571.98 |
| 31 | 13.31 | 41.62 | 26.15 | 1347.29 | 1139.70 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|--------|
| 1 | 0.00 | 7.51 | 85.94 | 89.19 |
| 2 | 7.51 | 13.31 | -74.73 | -71.39 |
| total | 0.00 | 13.31 | 15.93 | 67.71 |

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 1 | 0.00 | 35.82 | 20.25 | 782.27 | 17.99 |
| 2 | 0.47 | 35.82 | 20.57 | 671.24 | 15.44 |
| 3 | 0.94 | 35.82 | 20.90 | 1224.87 | 28.17 |
| 4 | 1.41 | 35.82 | 21.22 | 698.16 | 16.06 |
| 5 | 1.88 | 35.82 | 21.54 | 28.24 | 0.65 |
| 6 | 2.35 | 5.35 | 37.94 | 132.94 | 3.06 |
| 7 | 2.82 | 5.84 | 37.94 | 177.48 | 4.08 |
| 8 | 3.29 | 6.32 | 37.94 | 126.47 | 2.91 |
| 9 | 3.75 | 6.81 | 37.94 | 320.59 | 7.37 |
| 10 | 4.22 | 7.29 | 37.94 | 353.82 | 8.14 |
| 11 | 4.69 | 7.78 | 37.94 | 52.90 | 1.22 |
| 12 | 5.16 | 8.26 | 37.94 | 44.85 | 1.03 |
| 13 | 5.63 | 8.75 | 37.94 | 340.29 | 7.83 |
| 14 | 6.10 | 9.23 | 37.94 | 432.01 | 9.94 |
| 15 | 6.57 | 9.71 | 37.94 | 248.81 | 5.72 |
| 16 | 7.04 | 10.20 | 37.94 | 247.04 | 5.68 |
| 17 | 7.51 | 10.68 | 37.94 | 255.01 | 5.87 |
| 18 | 7.92 | 11.17 | 37.94 | 445.40 | 10.24 |
| 19 | 8.34 | 11.65 | 37.94 | 85.51 | 1.97 |
| 20 | 8.75 | 12.14 | 37.94 | 682.09 | 15.69 |
| 21 | 9.17 | 12.62 | 37.94 | 371.14 | 8.54 |
| 22 | 9.58 | 13.11 | 37.94 | 184.44 | 4.24 |
| 23 | 10.00 | 13.59 | 37.94 | 441.94 | 10.16 |
| 24 | 10.41 | 14.08 | 37.94 | 189.12 | 4.35 |
| 25 | 10.82 | 14.56 | 37.94 | 15.75 | 0.36 |
| 26 | 11.24 | 15.05 | 37.94 | 321.74 | 7.40 |
| 27 | 11.65 | 15.53 | 37.94 | 714.17 | 16.43 |
| 28 | 12.07 | 16.01 | 37.94 | 256.62 | 5.90 |
| 29 | 12.48 | 16.50 | 37.94 | 14.55 | 0.33 |
| 30 | 12.90 | 16.98 | 37.94 | 4.25 | 0.10 |
| 31 | 13.31 | 17.47 | 37.94 | 1139.70 | 26.21 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

Überzug Nr.: 48 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT

Brandschutz bei seittl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm²) unten | oben | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|--------|--------------------------|-------|--------------------|
| 1 | 0.00 | 41.70 | 20.25 | 46.43 | 46. | 6.99 | 0.00 | 239.0 |
| 2 | 0.42 | 41.69 | 20.67 | -302.13 | -302. | 0.00 | 2.81 | 237.2 |
| 3 | 0.84 | 41.69 | 21.09 | -541.09 | -541. | 0.00 | 5.06 | 236.0 |
| 4 | 1.26 | 41.68 | 21.51 | -905.84 | -906. | 0.00 | 8.43 | 234.5 |
| 5 | 1.69 | 41.68 | 21.94 | -987.53 | -988. | 0.00 | 9.22 | 234.1 |
| 6 | 2.11 | 41.67 | 22.36 | -1289.14 | -1289. | 0.00 | 12.15 | 232.8 |
| 7 | 2.53 | 41.67 | 22.78 | -1396.10 | -1396. | 0.00 | 13.12 | 232.3 |
| 8 | 2.95 | 41.66 | 23.20 | -1535.66 | -1536. | 0.00 | 14.64 | 231.6 |
| 9 | 3.37 | 41.65 | 23.62 | -1629.37 | -1629. | 0.00 | 15.39 | 231.2 |
| 10 | 3.79 | 41.65 | 24.04 | -1583.06 | -1583. | 0.00 | 15.02 | 231.4 |
| 11 | 4.21 | 41.64 | 24.46 | -1620.36 | -1620. | 0.00 | 15.39 | 231.2 |
| 12 | 4.64 | 41.64 | 24.89 | -1373.72 | -1374. | 0.00 | 12.92 | 232.4 |
| 13 | 5.06 | 41.63 | 25.31 | -1245.69 | -1246. | 0.00 | 11.77 | 233.0 |
| 14 | 5.48 | 41.63 | 25.73 | -830.87 | -831. | 0.00 | 7.85 | 234.8 |
| 15 | 5.90 | 41.62 | 26.15 | -547.73 | -548. | 0.00 | 5.06 | 236.0 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 123.33

untere Bewehrung : 4.13

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | Tm (kNm) | Bewehrung (cm²/m) | | | | |
|----------------|----------|----------|----------|-----------|-------------|-------------------|---------|------|-----|-----------|
| | | | | | | Bereich | Vrd(MN) | as | | |
| 1 | 0.00 | 41.70 | 20.25 | -934.39 | -934. | 0.00 | 0. | norm | 0.4 | 0.93 100% |
| 2 | 0.42 | 41.69 | 20.67 | -612.25 | -612. | 0.00 | 0. | min. | 0.4 | 0.71 87% |
| 3 | 0.84 | 41.69 | 21.09 | -798.56 | -799. | 0.00 | 0. | norm | 0.4 | 0.80 100% |
| 4 | 1.26 | 41.68 | 21.51 | -490.70 | -491. | 0.00 | 0. | min. | 0.3 | 0.71 69% |
| 5 | 1.69 | 41.68 | 21.94 | -416.37 | -416. | 0.00 | 0. | min. | 0.3 | 0.71 59% |
| 6 | 2.11 | 41.67 | 22.36 | -572.18 | -572. | 0.00 | 0. | min. | 0.3 | 0.71 81% |
| 7 | 2.53 | 41.67 | 22.78 | -203.13 | -203. | 0.00 | 0. | min. | 0.2 | 0.70 29% |
| 8 | 2.95 | 41.66 | 23.20 | -370.03 | -370. | 0.00 | 0. | min. | 0.3 | 0.70 53% |
| 9 | 3.37 | 41.65 | 23.62 | 22.85 | 23. | 0.00 | 0. | min. | 0.1 | 0.70 3% |
| 10 | 3.79 | 41.65 | 24.04 | -58.77 | -59. | 0.00 | 0. | min. | 0.1 | 0.70 8% |
| 11 | 4.21 | 41.64 | 24.46 | 276.32 | 276. | 0.00 | 0. | min. | 0.2 | 0.70 39% |
| 12 | 4.64 | 41.64 | 24.89 | 443.59 | 444. | 0.00 | 0. | min. | 0.3 | 0.71 63% |
| 13 | 5.06 | 41.63 | 25.31 | 616.23 | 616. | 0.00 | 0. | min. | 0.4 | 0.71 87% |
| 14 | 5.48 | 41.63 | 25.73 | 955.46 | 955. | 0.00 | 0. | norm | 0.4 | 0.96 100% |
| 15 | 5.90 | 41.62 | 26.15 | 529.97 | 530. | 0.00 | 0. | min. | 0.3 | 0.71 75% |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm²] | As Feld [cm²] |
|--------|------------------------------|-----------------|------------------|-------------|------------------|
| UZ-Anf | 23.96 | 2.76 | 1051.19 | 24.18 | 6.99 |
| UZ-End | 18.38 | 2.22 | 797.60 | 18.34 | 0.00 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|----------|
| 0 | 0.00 | 41.70 | 20.25 | -1991.57 | -1647.84 |
| 1 | 0.21 | 41.70 | 20.46 | -867.55 | -764.32 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|---------|
| 2 | 0.63 | 41.69 | 20.88 | 656.61 | 442.06 |
| 3 | 1.05 | 41.69 | 21.30 | -890.69 | -730.45 |
| 4 | 1.48 | 41.68 | 21.73 | -181.59 | -176.38 |
| 5 | 1.90 | 41.67 | 22.15 | 552.79 | 369.69 |
| 6 | 2.32 | 41.67 | 22.57 | -1154.96 | -875.62 |
| 7 | 2.74 | 41.66 | 22.99 | 701.04 | 395.99 |
| 8 | 3.16 | 41.66 | 23.41 | -1223.07 | -932.17 |
| 9 | 3.58 | 41.65 | 23.83 | 438.74 | 193.64 |
| 10 | 4.00 | 41.65 | 24.25 | -955.92 | -795.06 |
| 11 | 4.43 | 41.64 | 24.67 | -345.24 | -396.88 |
| 12 | 4.85 | 41.63 | 25.10 | -352.54 | -409.61 |
| 13 | 5.27 | 41.63 | 25.52 | -989.15 | -804.88 |
| 14 | 5.69 | 41.62 | 25.94 | 1137.14 | 1009.56 |
| 15 | 5.90 | 41.62 | 26.15 | 2484.24 | 2141.90 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|---------|
| 1 | 0.00 | 5.90 | -244.19 | -235.77 |
| total | 0.00 | 5.90 | -244.19 | -235.77 |

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm²/m) |
|----------------|----------|----------|----------|-------------------------|----------------------|
| 1 | 0.00 | 35.82 | 20.25 | 1647.84 | 37.90 |
| 2 | 0.42 | 35.82 | 20.57 | 119.20 | 2.74 |
| 3 | 0.84 | 35.82 | 20.90 | 93.11 | 2.14 |
| 4 | 1.26 | 35.82 | 21.22 | 693.46 | 15.95 |
| 5 | 1.69 | 35.82 | 21.54 | 361.31 | 8.31 |
| 6 | 2.11 | 5.35 | 37.94 | 396.75 | 9.13 |
| 7 | 2.53 | 5.84 | 37.94 | 201.40 | 4.63 |
| 8 | 2.95 | 6.32 | 37.94 | 246.89 | 5.68 |
| 9 | 3.37 | 6.81 | 37.94 | 437.80 | 10.07 |
| 10 | 3.79 | 7.29 | 37.94 | 175.07 | 4.03 |
| 11 | 4.21 | 7.78 | 37.94 | 757.12 | 17.41 |
| 12 | 4.64 | 8.26 | 37.94 | 250.25 | 5.76 |
| 13 | 5.06 | 8.75 | 37.94 | 760.51 | 17.49 |
| 14 | 5.48 | 9.23 | 37.94 | 122.79 | 2.82 |
| 15 | 5.90 | 9.71 | 37.94 | 2141.90 | 49.26 |

Überzug Nr.: 49 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei seidl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm²) | | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|--------|-----------------|-------|--------------------|
| 1 | 0.00 | 44.53 | 25.84 | -406.65 | -407. | 0.00 | 3.88 | 236.6 |
| 2 | 0.24 | 44.53 | 26.08 | -697.00 | -697. | 0.00 | 6.52 | 235.3 |
| 3 | 0.48 | 44.53 | 26.32 | -998.93 | -999. | 0.00 | 9.41 | 234.1 |
| 4 | 0.72 | 44.53 | 26.56 | -1376.70 | -1377. | 0.00 | 12.92 | 232.4 |
| 5 | 0.96 | 44.53 | 26.80 | -1350.25 | -1350. | 0.00 | 12.73 | 232.5 |
| 6 | 1.40 | 44.53 | 27.24 | -1593.52 | -1594. | 0.00 | 15.21 | 231.3 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) unten | oben | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|--------|---------------------------------------|-------|--------------------|
| 7 | 1.83 | 44.53 | 27.67 | -1954.53 | -1955. | 0.00 | 18.72 | 229.5 |
| 8 | 2.27 | 44.53 | 28.11 | -1949.67 | -1950. | 0.00 | 18.54 | 229.6 |
| 9 | 2.71 | 44.53 | 28.55 | -1917.69 | -1918. | 0.00 | 18.35 | 229.7 |
| 10 | 3.14 | 44.54 | 28.98 | -2036.08 | -2036. | 0.00 | 19.44 | 229.1 |
| 11 | 3.58 | 44.54 | 29.42 | -1902.11 | -1902. | 0.00 | 18.17 | 229.8 |
| 12 | 4.02 | 44.54 | 29.86 | -1716.03 | -1716. | 0.00 | 16.33 | 230.7 |
| 13 | 4.45 | 44.54 | 30.29 | -1695.00 | -1695. | 0.00 | 16.14 | 230.8 |
| 14 | 4.89 | 44.54 | 30.73 | -1401.88 | -1402. | 0.00 | 13.31 | 232.2 |
| 15 | 5.33 | 44.54 | 31.17 | -1034.10 | -1034. | 0.00 | 9.81 | 233.9 |
| 16 | 5.76 | 44.54 | 31.60 | -793.77 | -794. | 0.00 | 7.46 | 234.9 |
| 17 | 6.20 | 44.54 | 32.04 | -252.71 | -253. | 0.00 | 2.39 | 237.4 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 174.20

untere Bewehrung : 0.00

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | | Tm (kNm) | Bewehrung (cm ² /m) | | | | |
|----------------|----------|----------|----------|-----------|--------|-------------|--------------------------------|-----------|-------|-----|--|
| | | | | | | | Bereich | Vrd(MN) | as | | |
| 1 | 0.00 | 44.53 | 25.84 | -1253.25 | -1253. | 0.00 | 0. norm 0.5 | 1.25 100% | 6.72 | 0.0 | |
| 2 | 0.24 | 44.53 | 26.08 | -1122.91 | -1123. | 0.00 | 0. norm 0.5 | 1.12 100% | 5.66 | 0.0 | |
| 3 | 0.48 | 44.53 | 26.32 | -1658.47 | -1658. | 0.00 | 0. norm 0.6 | 1.66 100% | 10.04 | 0.0 | |
| 4 | 0.72 | 44.53 | 26.56 | -739.33 | -739. | 0.00 | 0. norm 0.4 | 0.74 100% | 2.52 | 0.0 | |
| 5 | 0.96 | 44.53 | 26.80 | 224.33 | 224. | 0.00 | 0. min. 0.2 | 0.70 32% | 2.32 | 0.0 | |
| 6 | 1.40 | 44.53 | 27.24 | -989.46 | -989. | 0.00 | 0. norm 0.4 | 0.99 100% | 4.62 | 0.0 | |
| 7 | 1.83 | 44.53 | 27.67 | -418.02 | -418. | 0.00 | 0. min. 0.3 | 0.69 60% | 2.32 | 0.0 | |
| 8 | 2.27 | 44.53 | 28.11 | 214.71 | 215. | 0.00 | 0. min. 0.2 | 0.69 31% | 2.32 | 0.0 | |
| 9 | 2.71 | 44.53 | 28.55 | -187.71 | -188. | 0.00 | 0. min. 0.2 | 0.70 27% | 2.32 | 0.0 | |
| 10 | 3.14 | 44.54 | 28.98 | -57.56 | -58. | 0.00 | 0. min. 0.1 | 0.69 8% | 2.32 | 0.0 | |
| 11 | 3.58 | 44.54 | 29.42 | 524.95 | 525. | 0.00 | 0. min. 0.3 | 0.70 75% | 2.32 | 0.0 | |
| 12 | 4.02 | 44.54 | 29.86 | 156.58 | 157. | 0.00 | 0. min. 0.2 | 0.70 22% | 2.32 | 0.0 | |
| 13 | 4.45 | 44.54 | 30.29 | 271.65 | 272. | 0.00 | 0. min. 0.2 | 0.70 39% | 2.32 | 0.0 | |
| 14 | 4.89 | 44.54 | 30.73 | 915.11 | 915. | 0.00 | 0. norm 0.4 | 0.92 100% | 3.98 | 0.0 | |
| 15 | 5.33 | 44.54 | 31.17 | 608.45 | 608. | 0.00 | 0. min. 0.4 | 0.71 86% | 2.32 | 0.0 | |
| 16 | 5.76 | 44.54 | 31.60 | 828.94 | 829. | 0.00 | 0. norm 0.4 | 0.83 100% | 3.23 | 0.0 | |
| 17 | 6.20 | 44.54 | 32.04 | 1444.17 | 1444. | 0.00 | 0. norm 0.5 | 1.44 100% | 8.29 | 0.0 | |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm ²] | As Feld [cm ²] |
|--------|------------------------------|-----------------|------------------|--------------------------|-------------------------------|
| UZ-Anf | 28.52 | 3.12 | 1152.99 | 26.52 | 0.00 |
| UZ-End | 30.17 | 3.23 | 1241.99 | 28.57 | 0.00 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|----------|
| 0 | 0.00 | 44.53 | 25.84 | -3980.56 | -2933.36 |
| 1 | 0.12 | 44.53 | 25.96 | -829.49 | -543.06 |
| 2 | 0.36 | 44.53 | 26.20 | 2970.00 | 2231.44 |
| 3 | 0.60 | 44.53 | 26.44 | -4288.54 | -3829.67 |
| 4 | 0.84 | 44.53 | 26.68 | -4387.19 | -4015.22 |
| 5 | 1.18 | 44.53 | 27.02 | 3912.32 | 2779.69 |
| 6 | 1.62 | 44.53 | 27.46 | -1815.41 | -1308.65 |
| 7 | 2.05 | 44.53 | 27.89 | -1541.58 | -1449.00 |
| 8 | 2.49 | 44.53 | 28.33 | 1170.90 | 921.56 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|----------|
| 9 | 2.93 | 44.53 | 28.77 | -305.29 | -298.04 |
| 10 | 3.36 | 44.54 | 29.20 | -1600.24 | -1333.99 |
| 11 | 3.80 | 44.54 | 29.64 | 1112.45 | 843.60 |
| 12 | 4.24 | 44.54 | 30.08 | -251.49 | -263.52 |
| 13 | 4.67 | 44.54 | 30.51 | -1764.82 | -1473.58 |
| 14 | 5.11 | 44.54 | 30.95 | 1008.71 | 702.28 |
| 15 | 5.55 | 44.54 | 31.39 | -593.64 | -504.94 |
| 16 | 5.98 | 44.54 | 31.82 | -1436.39 | -1408.93 |
| 17 | 6.20 | 44.54 | 32.04 | -1635.02 | -1716.84 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|---------|
| 1 | 0.00 | 6.20 | -501.00 | -505.34 |
| total | 0.00 | 6.20 | -501.00 | -505.34 |

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm²/m) |
|----------------|----------|----------|----------|-------------------------|----------------------|
| 1 | 0.00 | 35.82 | 20.25 | 2933.36 | 67.47 |
| 2 | 0.24 | 35.82 | 20.57 | 1847.25 | 42.49 |
| 3 | 0.48 | 35.82 | 20.90 | 494.93 | 11.38 |
| 4 | 0.72 | 35.82 | 21.22 | 5032.22 | 115.74 |
| 5 | 0.96 | 35.82 | 21.54 | 1490.34 | 34.28 |
| 6 | 1.40 | 5.35 | 37.94 | 1809.34 | 41.61 |
| 7 | 1.83 | 5.84 | 37.94 | 2314.00 | 53.22 |
| 8 | 2.27 | 6.32 | 37.94 | 18.88 | 0.43 |
| 9 | 2.71 | 6.81 | 37.94 | 672.29 | 15.46 |
| 10 | 3.14 | 7.29 | 37.94 | 1225.56 | 28.19 |
| 11 | 3.58 | 7.78 | 37.94 | 241.52 | 5.56 |
| 12 | 4.02 | 8.26 | 37.94 | 711.57 | 16.37 |
| 13 | 4.45 | 8.75 | 37.94 | 1287.94 | 29.62 |
| 14 | 4.89 | 9.23 | 37.94 | 360.70 | 8.30 |
| 15 | 5.33 | 9.71 | 37.94 | 417.18 | 9.60 |
| 16 | 5.76 | 10.20 | 37.94 | 1101.02 | 25.32 |
| 17 | 6.20 | 10.68 | 37.94 | 1716.84 | 39.49 |

Überzug Nr.: 50 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
 Brandschutz bei seidl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm²) | | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|-------|-----------------|------|--------------------|
| 1 | 0.00 | 44.54 | 32.04 | -203.46 | -203. | 0.00 | 1.87 | 237.7 |
| 2 | 0.34 | 44.88 | 32.04 | -104.81 | -105. | 0.00 | 1.00 | 238.4 |
| 3 | 0.67 | 45.22 | 32.04 | -66.26 | -66. | 0.00 | 0.65 | 238.7 |
| 4 | 1.01 | 45.55 | 32.04 | -24.93 | -25. | 0.00 | 0.26 | 239.2 |
| 5 | 1.35 | 45.89 | 32.04 | 28.31 | 28. | 6.99 | 0.00 | 239.2 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 1.93

untere Bewehrung : 3.30

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | Tm (kNm) | Bewehrung (cm ² /m) | | | | |
|----------------|----------|----------|----------|-----------|-------------|--------------------------------|---------|----------|------|-----|
| | | | | | | Bereich | Vrd(MN) | as | | |
| 1 | 0.00 | 44.54 | 32.04 | 339.96 | 340. | 0.00 | 0. | min. 0.2 | 0.71 | 48% |
| 2 | 0.34 | 44.88 | 32.04 | 196.97 | 197. | 0.00 | 0. | min. 0.2 | 0.71 | 28% |
| 3 | 0.67 | 45.22 | 32.04 | 91.67 | 92. | 0.00 | 0. | min. 0.1 | 0.71 | 13% |
| 4 | 1.01 | 45.55 | 32.04 | 146.39 | 146. | 0.00 | 0. | min. 0.2 | 0.71 | 21% |
| 5 | 1.35 | 45.89 | 32.04 | 163.43 | 163. | 0.00 | 0. | min. 0.2 | 0.71 | 23% |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm ²] | As Feld [cm ²] |
|--------|------------------------------|-----------------|------------------|--------------------------|-------------------------------|
| UZ-Anf | 18.43 | 2.23 | 509.94 | 11.73 | 0.00 |
| UZ-End | 18.43 | 2.23 | 245.15 | 5.64 | 6.99 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|---------|
| 0 | 0.00 | 44.54 | 32.04 | 392.79 | 428.60 |
| 1 | 0.17 | 44.71 | 32.04 | 422.18 | 423.67 |
| 2 | 0.51 | 45.05 | 32.04 | 347.38 | 312.02 |
| 3 | 0.84 | 45.38 | 32.04 | -211.45 | -162.14 |
| 4 | 1.18 | 45.72 | 32.04 | -35.05 | -50.50 |
| 5 | 1.35 | 45.89 | 32.04 | 138.77 | 72.96 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-Uz-m (kN/m) | |
|-------------|---------------|---------------|---|--------|
| 1 | 0.00 | 1.35 | 139.79 | 142.99 |
| total | 0.00 | 1.35 | 139.79 | 142.99 |

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 1 | 0.00 | 35.82 | 20.25 | 428.60 | 9.86 |
| 2 | 0.34 | 35.82 | 20.57 | 418.74 | 9.63 |
| 3 | 0.67 | 35.82 | 20.90 | 58.20 | 1.34 |
| 4 | 1.01 | 35.82 | 21.22 | 173.96 | 4.00 |
| 5 | 1.35 | 35.82 | 21.54 | 72.96 | 1.68 |

Überzug Nr.: 51 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei sertl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | Bewehrung (cm ²) | | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|------------------------------|-------|--------------------|
| | | | | | unten | oben | |
| 1 | 0.00 | 1.80 | 32.01 | 3.25 | 6.99 | 0.00 | 239.7 |
| 2 | 0.28 | 2.08 | 32.01 | -291.57 | 0.00 | 2.81 | 237.2 |
| 3 | 0.57 | 2.37 | 32.01 | -602.38 | 0.00 | 5.60 | 235.8 |
| 4 | 0.85 | 2.65 | 32.01 | -916.25 | 0.00 | 8.63 | 234.4 |
| 5 | 1.13 | 2.93 | 32.01 | -1229.88 | 0.00 | 11.57 | 233.1 |
| 6 | 1.61 | 3.41 | 32.01 | -1424.80 | 0.00 | 13.50 | 232.1 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) | | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|--------|------------------------------|-------|--------------------|
| | | | | | | unten | oben | |
| 7 | 2.10 | 3.90 | 32.01 | -1586.86 | -1587. | 0.00 | 15.02 | 231.4 |
| 8 | 2.58 | 4.38 | 32.01 | -1698.05 | -1698. | 0.00 | 16.14 | 230.8 |
| 9 | 3.07 | 4.87 | 32.01 | -1760.29 | -1760. | 0.00 | 16.70 | 230.5 |
| 10 | 3.55 | 5.35 | 32.01 | -1776.89 | -1777. | 0.00 | 16.88 | 230.4 |
| 11 | 4.04 | 5.84 | 32.01 | -1753.34 | -1753. | 0.00 | 16.70 | 230.5 |
| 12 | 4.52 | 6.32 | 32.01 | -1710.20 | -1710. | 0.00 | 16.33 | 230.7 |
| 13 | 5.01 | 6.81 | 32.01 | -1641.24 | -1641. | 0.00 | 15.58 | 231.1 |
| 14 | 5.49 | 7.29 | 32.01 | -1560.20 | -1560. | 0.00 | 14.83 | 231.5 |
| 15 | 5.98 | 7.78 | 32.01 | -1460.83 | -1461. | 0.00 | 13.88 | 231.9 |
| 16 | 6.46 | 8.26 | 32.01 | -1359.08 | -1359. | 0.00 | 12.92 | 232.4 |
| 17 | 6.95 | 8.75 | 32.01 | -1248.37 | -1248. | 0.00 | 11.77 | 233.0 |
| 18 | 7.43 | 9.23 | 32.01 | -1137.05 | -1137. | 0.00 | 10.79 | 233.4 |
| 19 | 7.91 | 9.71 | 32.01 | -1016.86 | -1017. | 0.00 | 9.61 | 234.0 |
| 20 | 8.40 | 10.20 | 32.01 | -912.25 | -912. | 0.00 | 8.63 | 234.4 |
| 21 | 8.88 | 10.68 | 32.01 | -793.90 | -794. | 0.00 | 7.46 | 234.9 |
| 22 | 9.37 | 11.17 | 32.01 | -685.95 | -686. | 0.00 | 6.52 | 235.3 |
| 23 | 9.85 | 11.65 | 32.01 | -571.91 | -572. | 0.00 | 5.42 | 235.9 |
| 24 | 10.34 | 12.14 | 32.01 | -494.45 | -494. | 0.00 | 4.72 | 236.2 |
| 25 | 10.82 | 12.62 | 32.01 | -389.18 | -389. | 0.00 | 3.72 | 236.7 |
| 26 | 11.31 | 13.11 | 32.01 | -291.67 | -292. | 0.00 | 2.81 | 237.2 |
| 27 | 11.79 | 13.59 | 32.01 | -230.77 | -231. | 0.00 | 2.13 | 237.6 |
| 28 | 12.28 | 14.08 | 32.01 | -143.39 | -143. | 0.00 | 1.41 | 238.1 |
| 29 | 12.76 | 14.56 | 32.01 | -73.76 | -74. | 0.00 | 0.73 | 238.6 |
| 30 | 13.25 | 15.05 | 32.01 | -0.81 | -1. | 0.00 | 0.01 | 239.8 |
| 31 | 13.73 | 15.53 | 32.01 | 34.87 | 35. | 6.99 | 0.00 | 239.0 |
| 32 | 14.21 | 16.01 | 32.01 | 97.99 | 98. | 6.99 | 0.00 | 238.5 |
| 33 | 14.70 | 16.50 | 32.01 | 145.10 | 145. | 6.99 | 0.00 | 238.1 |
| 34 | 15.18 | 16.98 | 32.01 | 197.82 | 198. | 6.99 | 0.00 | 237.7 |
| 35 | 15.67 | 17.47 | 32.01 | 216.59 | 217. | 6.99 | 0.00 | 237.7 |
| 36 | 16.15 | 17.95 | 32.01 | 265.83 | 266. | 6.99 | 0.00 | 237.3 |
| 37 | 16.64 | 18.44 | 32.01 | 300.82 | 301. | 6.99 | 0.00 | 237.2 |
| 38 | 17.12 | 18.92 | 32.01 | 338.07 | 338. | 6.99 | 0.00 | 236.9 |
| 39 | 17.61 | 19.41 | 32.01 | 383.95 | 384. | 6.99 | 0.00 | 236.8 |
| 40 | 18.09 | 19.89 | 32.01 | 395.64 | 396. | 6.99 | 0.00 | 236.7 |
| 41 | 18.58 | 20.38 | 32.01 | 439.73 | 440. | 6.99 | 0.00 | 236.4 |
| 42 | 19.06 | 20.86 | 32.01 | 485.96 | 486. | 6.99 | 0.00 | 236.3 |
| 43 | 19.55 | 21.35 | 32.01 | 493.64 | 494. | 6.99 | 0.00 | 236.2 |
| 44 | 20.03 | 21.83 | 32.01 | 538.35 | 538. | 6.99 | 0.00 | 236.0 |
| 45 | 20.52 | 22.32 | 32.01 | 569.17 | 569. | 6.99 | 0.00 | 235.9 |
| 46 | 21.00 | 22.80 | 32.01 | 614.70 | 615. | 6.99 | 0.00 | 235.7 |
| 47 | 21.48 | 23.28 | 32.01 | 615.56 | 616. | 6.99 | 0.00 | 235.7 |
| 48 | 21.97 | 23.77 | 32.01 | 655.77 | 656. | 6.99 | 0.00 | 235.5 |
| 49 | 22.45 | 24.25 | 32.01 | 681.14 | 681. | 6.99 | 0.00 | 235.4 |
| 50 | 22.94 | 24.74 | 32.01 | 705.39 | 705. | 6.99 | 0.00 | 235.3 |
| 51 | 23.42 | 25.22 | 32.01 | 739.84 | 740. | 6.99 | 0.00 | 235.2 |
| 52 | 23.91 | 25.71 | 32.01 | 723.95 | 724. | 6.99 | 0.00 | 235.2 |
| 53 | 24.39 | 26.19 | 32.01 | 750.07 | 750. | 7.08 | 0.00 | 235.1 |
| 54 | 24.88 | 26.68 | 32.01 | 773.69 | 774. | 7.27 | 0.00 | 235.0 |
| 55 | 25.36 | 27.16 | 32.01 | 742.63 | 743. | 6.99 | 0.00 | 235.2 |
| 56 | 25.85 | 27.65 | 32.01 | 759.36 | 759. | 7.08 | 0.00 | 235.1 |
| 57 | 26.33 | 28.13 | 32.01 | 753.30 | 753. | 7.08 | 0.00 | 235.1 |
| 58 | 26.82 | 28.62 | 32.01 | 761.16 | 761. | 7.08 | 0.00 | 235.1 |
| 59 | 27.30 | 29.10 | 32.01 | 705.92 | 706. | 6.99 | 0.00 | 235.3 |
| 60 | 27.78 | 29.58 | 32.01 | 705.43 | 705. | 6.99 | 0.00 | 235.3 |
| 61 | 28.27 | 30.07 | 32.01 | 683.31 | 683. | 6.99 | 0.00 | 235.4 |
| 62 | 28.75 | 30.55 | 32.01 | 660.67 | 661. | 6.99 | 0.00 | 235.5 |
| 63 | 29.24 | 31.04 | 32.01 | 656.99 | 657. | 6.99 | 0.00 | 235.5 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) | | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|-------|------------------------------|------|--------------------|
| | | | | | | unten | oben | |
| 64 | 29.72 | 31.52 | 32.01 | 587.59 | 588. | 6.99 | 0.00 | 235.8 |
| 65 | 30.21 | 32.01 | 32.01 | 580.49 | 580. | 6.99 | 0.00 | 235.9 |
| 66 | 30.69 | 32.49 | 32.01 | 554.89 | 555. | 6.99 | 0.00 | 235.9 |
| 67 | 31.18 | 32.98 | 32.01 | 544.64 | 545. | 6.99 | 0.00 | 236.0 |
| 68 | 31.66 | 33.46 | 32.01 | 466.99 | 467. | 6.99 | 0.00 | 236.4 |
| 69 | 32.15 | 33.95 | 32.01 | 459.80 | 460. | 6.99 | 0.00 | 236.4 |
| 70 | 32.63 | 34.43 | 32.01 | 431.58 | 432. | 6.99 | 0.00 | 236.5 |
| 71 | 33.12 | 34.92 | 32.01 | 422.62 | 423. | 6.99 | 0.00 | 236.5 |
| 72 | 33.60 | 35.40 | 32.01 | 341.16 | 341. | 6.99 | 0.00 | 236.9 |
| 73 | 34.08 | 35.88 | 32.01 | 331.18 | 331. | 6.99 | 0.00 | 237.0 |
| 74 | 34.57 | 36.37 | 32.01 | 324.14 | 324. | 6.99 | 0.00 | 237.0 |
| 75 | 35.05 | 36.85 | 32.01 | 245.23 | 245. | 6.99 | 0.00 | 237.5 |
| 76 | 35.54 | 37.34 | 32.01 | 240.08 | 240. | 6.99 | 0.00 | 237.5 |
| 77 | 36.02 | 37.82 | 32.01 | 205.81 | 206. | 6.99 | 0.00 | 237.7 |
| 78 | 36.51 | 38.31 | 32.01 | 198.73 | 199. | 6.99 | 0.00 | 237.7 |
| 79 | 36.99 | 38.79 | 32.01 | 119.73 | 120. | 6.99 | 0.00 | 238.3 |
| 80 | 37.48 | 39.28 | 32.01 | 115.55 | 116. | 6.99 | 0.00 | 238.3 |
| 81 | 37.96 | 39.76 | 32.01 | 81.89 | 82. | 6.99 | 0.00 | 238.6 |
| 82 | 38.45 | 40.25 | 32.01 | 73.51 | 74. | 6.99 | 0.00 | 238.6 |
| 83 | 38.93 | 40.73 | 32.01 | -15.33 | -15. | 0.00 | 0.17 | 239.4 |
| 84 | 39.42 | 41.22 | 32.01 | -38.95 | -39. | 0.00 | 0.38 | 239.0 |
| 85 | 39.90 | 41.70 | 32.01 | -172.81 | -173. | 0.00 | 1.63 | 237.9 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 256.52

untere Bewehrung : 497.05

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | Tm (kNm) | Bewehrung (cm ² /m) | | | | |
|----------------|----------|----------|----------|-----------|-------------|--------------------------------|-----------|------|-----|--|
| | | | | | | Bereich | Vrd(MN) | as | | |
| 1 | 0.00 | 1.80 | 32.01 | -1029.25 | -1029. | 0. norm 0.4 | 1.03 100% | 4.88 | 0.0 | |
| 2 | 0.28 | 2.08 | 32.01 | -1072.36 | -1072. | 0. norm 0.5 | 1.07 100% | 5.24 | 0.0 | |
| 3 | 0.57 | 2.37 | 32.01 | -1112.81 | -1113. | 0. norm 0.5 | 1.11 100% | 5.58 | 0.0 | |
| 4 | 0.85 | 2.65 | 32.01 | -1110.17 | -1110. | 0. norm 0.5 | 1.11 100% | 5.53 | 0.0 | |
| 5 | 1.13 | 2.93 | 32.01 | -1110.19 | -1110. | 0. norm 0.5 | 1.11 100% | 5.53 | 0.0 | |
| 6 | 1.13 | 2.93 | 32.01 | -414.43 | -414. | 0. min. 0.3 | 0.71 59% | 2.32 | 0.0 | |
| 7 | 1.61 | 3.41 | 32.01 | -377.82 | -378. | 0. min. 0.3 | 0.70 54% | 2.32 | 0.0 | |
| 8 | 2.10 | 3.90 | 32.01 | -284.14 | -284. | 0. min. 0.2 | 0.70 41% | 2.32 | 0.0 | |
| 9 | 2.58 | 4.38 | 32.01 | -177.10 | -177. | 0. min. 0.2 | 0.70 25% | 2.32 | 0.0 | |
| 10 | 3.07 | 4.87 | 32.01 | -81.09 | -81. | 0. min. 0.1 | 0.70 12% | 2.32 | 0.0 | |
| 11 | 3.55 | 5.35 | 32.01 | 13.36 | 13. | 0. min. 0.1 | 0.70 2% | 2.32 | 0.0 | |
| 12 | 4.04 | 5.84 | 32.01 | 70.66 | 71. | 0. min. 0.1 | 0.70 10% | 2.32 | 0.0 | |
| 13 | 4.52 | 6.32 | 32.01 | 116.83 | 117. | 0. min. 0.1 | 0.70 17% | 2.32 | 0.0 | |
| 14 | 5.01 | 6.81 | 32.01 | 155.97 | 156. | 0. min. 0.2 | 0.70 22% | 2.32 | 0.0 | |
| 15 | 5.49 | 7.29 | 32.01 | 187.86 | 188. | 0. min. 0.2 | 0.70 27% | 2.32 | 0.0 | |
| 16 | 5.98 | 7.78 | 32.01 | 209.41 | 209. | 0. min. 0.2 | 0.70 30% | 2.32 | 0.0 | |
| 17 | 6.46 | 8.26 | 32.01 | 219.50 | 220. | 0. min. 0.2 | 0.70 31% | 2.32 | 0.0 | |
| 18 | 6.95 | 8.75 | 32.01 | 227.75 | 228. | 0. min. 0.2 | 0.70 32% | 2.32 | 0.0 | |
| 19 | 7.43 | 9.23 | 32.01 | 243.94 | 244. | 0. min. 0.2 | 0.71 35% | 2.32 | 0.0 | |
| 20 | 7.91 | 9.71 | 32.01 | 229.59 | 230. | 0. min. 0.2 | 0.71 33% | 2.32 | 0.0 | |
| 21 | 8.40 | 10.20 | 32.01 | 229.24 | 229. | 0. min. 0.2 | 0.71 33% | 2.32 | 0.0 | |
| 22 | 8.88 | 10.68 | 32.01 | 233.69 | 234. | 0. min. 0.2 | 0.71 33% | 2.32 | 0.0 | |
| 23 | 9.37 | 11.17 | 32.01 | 236.86 | 237. | 0. min. 0.2 | 0.71 34% | 2.32 | 0.0 | |
| 24 | 9.85 | 11.65 | 32.01 | 193.04 | 193. | 0. min. 0.2 | 0.71 27% | 2.32 | 0.0 | |
| 25 | 10.34 | 12.14 | 32.01 | 176.44 | 176. | 0. min. 0.2 | 0.71 25% | 2.32 | 0.0 | |
| 26 | 10.82 | 12.62 | 32.01 | 232.34 | 232. | 0. min. 0.2 | 0.71 33% | 2.32 | 0.0 | |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | Tm (kNm) | Bewehrung (cm ² /m) | | | | | | | as |
|----------------|----------|----------|----------|-----------|-------------|--------------------------------|---------|------|-----|------|-----|------|-----|
| | | | | | | Bereich | Vrd(MN) | | | | | | |
| 27 | 11.31 | 13.11 | 32.01 | 149.51 | 150. | 0.00 | 0. | min. | 0.2 | 0.71 | 21% | 2.32 | 0.0 |
| 28 | 11.79 | 13.59 | 32.01 | 150.26 | 150. | 0.00 | 0. | min. | 0.2 | 0.71 | 21% | 2.32 | 0.0 |
| 29 | 12.28 | 14.08 | 32.01 | 167.33 | 167. | 0.00 | 0. | min. | 0.2 | 0.71 | 24% | 2.32 | 0.0 |
| 30 | 12.76 | 14.56 | 32.01 | 152.35 | 152. | 0.00 | 0. | min. | 0.2 | 0.71 | 22% | 2.32 | 0.0 |
| 31 | 13.25 | 15.05 | 32.01 | 105.89 | 106. | 0.00 | 0. | min. | 0.1 | 0.71 | 15% | 2.32 | 0.0 |
| 32 | 13.73 | 15.53 | 32.01 | 96.55 | 97. | 0.00 | 0. | min. | 0.1 | 0.71 | 14% | 2.32 | 0.0 |
| 33 | 14.21 | 16.01 | 32.01 | 119.53 | 120. | 0.00 | 0. | min. | 0.1 | 0.71 | 17% | 2.32 | 0.0 |
| 34 | 14.70 | 16.50 | 32.01 | 107.66 | 108. | 0.00 | 0. | min. | 0.1 | 0.71 | 15% | 2.32 | 0.0 |
| 35 | 15.18 | 16.98 | 32.01 | 67.84 | 68. | 0.00 | 0. | min. | 0.1 | 0.71 | 10% | 2.32 | 0.0 |
| 36 | 15.67 | 17.47 | 32.01 | 63.55 | 64. | 0.00 | 0. | min. | 0.1 | 0.71 | 9% | 2.32 | 0.0 |
| 37 | 16.15 | 17.95 | 32.01 | 98.93 | 99. | 0.00 | 0. | min. | 0.1 | 0.71 | 14% | 2.32 | 0.0 |
| 38 | 16.64 | 18.44 | 32.01 | 62.12 | 62. | 0.00 | 0. | min. | 0.1 | 0.71 | 9% | 2.32 | 0.0 |
| 39 | 17.12 | 18.92 | 32.01 | 99.79 | 100. | 0.00 | 0. | min. | 0.1 | 0.71 | 14% | 2.32 | 0.0 |
| 40 | 17.61 | 19.41 | 32.01 | 53.31 | 53. | 0.00 | 0. | min. | 0.1 | 0.71 | 8% | 2.32 | 0.0 |
| 41 | 18.09 | 19.89 | 32.01 | 43.35 | 43. | 0.00 | 0. | min. | 0.1 | 0.71 | 6% | 2.32 | 0.0 |
| 42 | 18.58 | 20.38 | 32.01 | 118.63 | 119. | 0.00 | 0. | min. | 0.1 | 0.71 | 17% | 2.32 | 0.0 |
| 43 | 19.06 | 20.86 | 32.01 | 41.24 | 41. | 0.00 | 0. | min. | 0.1 | 0.71 | 6% | 2.32 | 0.0 |
| 44 | 19.55 | 21.35 | 32.01 | 50.12 | 50. | 0.00 | 0. | min. | 0.1 | 0.71 | 7% | 2.32 | 0.0 |
| 45 | 20.03 | 21.83 | 32.01 | 82.60 | 83. | 0.00 | 0. | min. | 0.1 | 0.71 | 12% | 2.32 | 0.0 |
| 46 | 20.52 | 22.32 | 32.01 | 86.99 | 87. | 0.00 | 0. | min. | 0.1 | 0.71 | 12% | 2.32 | 0.0 |
| 47 | 21.00 | 22.80 | 32.01 | 42.07 | 42. | 0.00 | 0. | min. | 0.1 | 0.71 | 6% | 2.32 | 0.0 |
| 48 | 21.48 | 23.28 | 32.01 | 31.90 | 32. | 0.00 | 0. | min. | 0.1 | 0.71 | 5% | 2.32 | 0.0 |
| 49 | 21.97 | 23.77 | 32.01 | 84.54 | 85. | 0.00 | 0. | min. | 0.1 | 0.71 | 12% | 2.32 | 0.0 |
| 50 | 22.45 | 24.25 | 32.01 | 35.88 | 36. | 0.00 | 0. | min. | 0.1 | 0.71 | 5% | 2.32 | 0.0 |
| 51 | 22.94 | 24.74 | 32.01 | 79.11 | 79. | 0.00 | 0. | min. | 0.1 | 0.71 | 11% | 2.32 | 0.0 |
| 52 | 23.42 | 25.22 | 32.01 | 11.06 | 11. | 0.00 | 0. | min. | 0.1 | 0.71 | 2% | 2.32 | 0.0 |
| 53 | 23.91 | 25.71 | 32.01 | -8.46 | -8. | 0.00 | 0. | min. | 0.1 | 0.71 | 1% | 2.32 | 0.0 |
| 54 | 24.39 | 26.19 | 32.01 | 86.12 | 86. | 0.00 | 0. | min. | 0.1 | 0.71 | 12% | 2.32 | 0.0 |
| 55 | 24.88 | 26.68 | 32.01 | -28.11 | -28. | 0.00 | 0. | min. | 0.1 | 0.71 | 4% | 2.32 | 0.0 |
| 56 | 25.36 | 27.16 | 32.01 | -19.71 | -20. | 0.00 | 0. | min. | 0.1 | 0.71 | 3% | 2.32 | 0.0 |
| 57 | 25.85 | 27.65 | 32.01 | 18.21 | 18. | 0.00 | 0. | min. | 0.1 | 0.71 | 3% | 2.32 | 0.0 |
| 58 | 26.33 | 28.13 | 32.01 | 12.90 | 13. | 0.00 | 0. | min. | 0.1 | 0.71 | 2% | 2.32 | 0.0 |
| 59 | 26.82 | 28.62 | 32.01 | -58.64 | -59. | 0.00 | 0. | min. | 0.1 | 0.71 | 8% | 2.32 | 0.0 |
| 60 | 27.30 | 29.10 | 32.01 | -71.63 | -72. | 0.00 | 0. | min. | 0.1 | 0.71 | 10% | 2.32 | 0.0 |
| 61 | 27.78 | 29.58 | 32.01 | 0.18 | 0. | 0.00 | 0. | min. | 0.1 | 0.71 | 0% | 2.32 | 0.0 |
| 62 | 28.27 | 30.07 | 32.01 | -69.09 | -69. | 0.00 | 0. | min. | 0.1 | 0.71 | 10% | 2.32 | 0.0 |
| 63 | 28.75 | 30.55 | 32.01 | -0.88 | -1. | 0.00 | 0. | min. | 0.1 | 0.71 | 0% | 2.32 | 0.0 |
| 64 | 29.24 | 31.04 | 32.01 | -90.31 | -90. | 0.00 | 0. | min. | 0.1 | 0.71 | 13% | 2.32 | 0.0 |
| 65 | 29.72 | 31.52 | 32.01 | -90.28 | -90. | 0.00 | 0. | min. | 0.1 | 0.71 | 13% | 2.32 | 0.0 |
| 66 | 30.21 | 32.01 | 32.01 | -22.13 | -22. | 0.00 | 0. | min. | 0.1 | 0.71 | 3% | 2.32 | 0.0 |
| 67 | 30.69 | 32.49 | 32.01 | -23.61 | -24. | 0.00 | 0. | min. | 0.1 | 0.71 | 3% | 2.32 | 0.0 |
| 68 | 31.18 | 32.98 | 32.01 | -105.37 | -105. | 0.00 | 0. | min. | 0.1 | 0.71 | 15% | 2.32 | 0.0 |
| 69 | 31.66 | 33.46 | 32.01 | -99.07 | -99. | 0.00 | 0. | min. | 0.1 | 0.71 | 14% | 2.32 | 0.0 |
| 70 | 32.15 | 33.95 | 32.01 | -23.51 | -24. | 0.00 | 0. | min. | 0.1 | 0.71 | 3% | 2.32 | 0.0 |
| 71 | 32.63 | 34.43 | 32.01 | -26.09 | -26. | 0.00 | 0. | min. | 0.1 | 0.71 | 4% | 2.32 | 0.0 |
| 72 | 33.12 | 34.92 | 32.01 | -102.28 | -102. | 0.00 | 0. | min. | 0.1 | 0.71 | 15% | 2.32 | 0.0 |
| 73 | 33.60 | 35.40 | 32.01 | -124.55 | -125. | 0.00 | 0. | min. | 0.1 | 0.71 | 18% | 2.32 | 0.0 |
| 74 | 34.08 | 35.88 | 32.01 | 34.39 | 34. | 0.00 | 0. | min. | 0.1 | 0.71 | 5% | 2.32 | 0.0 |
| 75 | 34.57 | 36.37 | 32.01 | -118.36 | -118. | 0.00 | 0. | min. | 0.1 | 0.71 | 17% | 2.32 | 0.0 |
| 76 | 35.05 | 36.85 | 32.01 | -93.01 | -93. | 0.00 | 0. | min. | 0.1 | 0.71 | 13% | 2.32 | 0.0 |
| 77 | 35.54 | 37.34 | 32.01 | -29.95 | -30. | 0.00 | 0. | min. | 0.1 | 0.71 | 4% | 2.32 | 0.0 |
| 78 | 36.02 | 37.82 | 32.01 | -31.19 | -31. | 0.00 | 0. | min. | 0.1 | 0.71 | 4% | 2.32 | 0.0 |
| 79 | 36.51 | 38.31 | 32.01 | -101.26 | -101. | 0.00 | 0. | min. | 0.1 | 0.71 | 14% | 2.32 | 0.0 |
| 80 | 36.99 | 38.79 | 32.01 | -96.66 | -97. | 0.00 | 0. | min. | 0.1 | 0.71 | 14% | 2.32 | 0.0 |
| 81 | 37.48 | 39.28 | 32.01 | -26.98 | -27. | 0.00 | 0. | min. | 0.1 | 0.71 | 4% | 2.32 | 0.0 |
| 82 | 37.96 | 39.76 | 32.01 | -29.65 | -30. | 0.00 | 0. | min. | 0.1 | 0.71 | 4% | 2.32 | 0.0 |
| 83 | 38.45 | 40.25 | 32.01 | -114.68 | -115. | 0.00 | 0. | min. | 0.1 | 0.71 | 16% | 2.32 | 0.0 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | Tm (kNm) | Bewehrung (cm ² /m) | | | | | |
|----------------|----------|----------|----------|-----------|-------------|--------------------------------|---------|----------|------|-----|----------|
| | | | | | | Bereich | Vrd(MN) | as | | | |
| 84 | 38.93 | 40.73 | 32.01 | -113.45 | -113. | 0.00 | 0. | min. 0,1 | 0.71 | 16% | 2.32 0,0 |
| 85 | 39.42 | 41.22 | 32.01 | -127.74 | -128. | 0.00 | 0. | min. 0,1 | 0.71 | 18% | 2.32 0,0 |
| 86 | 39.90 | 41.70 | 32.01 | -350.42 | -350. | 0.00 | 0. | min. 0,2 | 0.71 | 50% | 2.32 0,0 |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm ²] | As Feld [cm ²] |
|--------|------------------------------|-----------------|------------------|--------------------------|-------------------------------|
| UZ-Anf | 25.68 | 2.90 | 1070.42 | 24.62 | 6.99 |
| UZ-End | 18.43 | 2.23 | 525.63 | 12.09 | 7.27 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|---------|
| 0 | 0.00 | 1.80 | 32.01 | 123.01 | 138.25 |
| 1 | 0.14 | 1.94 | 32.01 | 150.46 | 152.60 |
| 2 | 0.42 | 2.22 | 32.01 | 156.23 | 143.20 |
| 3 | 0.71 | 2.51 | 32.01 | -23.54 | -9.33 |
| 4 | 0.99 | 2.79 | 32.01 | 3.37 | 0.06 |
| 5 | 1.37 | 3.17 | 32.01 | -68.27 | -75.53 |
| 6 | 1.86 | 3.66 | 32.01 | -200.19 | -193.31 |
| 7 | 2.34 | 4.14 | 32.01 | -223.16 | -220.86 |
| 8 | 2.83 | 4.63 | 32.01 | -194.64 | -198.12 |
| 9 | 3.31 | 5.11 | 32.01 | -201.67 | -194.89 |
| 10 | 3.80 | 5.60 | 32.01 | -112.96 | -118.23 |
| 11 | 4.28 | 6.08 | 32.01 | -96.15 | -95.28 |
| 12 | 4.76 | 6.56 | 32.01 | -80.47 | -80.76 |
| 13 | 5.25 | 7.05 | 32.01 | -66.22 | -65.79 |
| 14 | 5.73 | 7.53 | 32.01 | -44.63 | -44.47 |
| 15 | 6.22 | 8.02 | 32.01 | -20.33 | -20.83 |
| 16 | 6.70 | 8.50 | 32.01 | -13.91 | -17.02 |
| 17 | 7.19 | 8.99 | 32.01 | -41.32 | -33.40 |
| 18 | 7.67 | 9.47 | 32.01 | 38.32 | 29.61 |
| 19 | 8.16 | 9.96 | 32.01 | -3.22 | 0.72 |
| 20 | 8.64 | 10.44 | 32.01 | -6.87 | -9.19 |
| 21 | 9.13 | 10.93 | 32.01 | -15.04 | -6.53 |
| 22 | 9.61 | 11.41 | 32.01 | 98.57 | 90.43 |
| 23 | 10.10 | 11.90 | 32.01 | 48.49 | 34.24 |
| 24 | 10.58 | 12.38 | 32.01 | -157.14 | -115.34 |
| 25 | 11.06 | 12.86 | 32.01 | 214.90 | 170.91 |
| 26 | 11.55 | 13.35 | 32.01 | -21.01 | -1.55 |
| 27 | 12.03 | 13.83 | 32.01 | -36.07 | -35.23 |
| 28 | 12.52 | 14.32 | 32.01 | 28.81 | 30.92 |
| 29 | 13.00 | 14.80 | 32.01 | 105.45 | 95.87 |
| 30 | 13.49 | 15.29 | 32.01 | 18.47 | 19.27 |
| 31 | 13.97 | 15.77 | 32.01 | -56.26 | -47.43 |
| 32 | 14.46 | 16.26 | 32.01 | 25.96 | 24.51 |
| 33 | 14.94 | 16.74 | 32.01 | 88.75 | 82.15 |
| 34 | 15.43 | 17.23 | 32.01 | 13.74 | 8.86 |
| 35 | 15.91 | 17.71 | 32.01 | -97.00 | -72.99 |
| 36 | 16.40 | 18.20 | 32.01 | 109.38 | 75.95 |
| 37 | 16.88 | 18.68 | 32.01 | -111.79 | -77.74 |
| 38 | 17.36 | 19.16 | 32.01 | 116.88 | 95.91 |
| 39 | 17.85 | 19.65 | 32.01 | 32.99 | 20.55 |
| 40 | 18.33 | 20.13 | 32.01 | -200.93 | -155.35 |
| 41 | 18.82 | 20.62 | 32.01 | 206.84 | 159.69 |
| 42 | 19.30 | 21.10 | 32.01 | -38.07 | -18.32 |
| 43 | 19.79 | 21.59 | 32.01 | -67.51 | -67.03 |

Position : BP
 Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|---------|
| 44 | 20.27 | 22.07 | 32.01 | -14.06 | -9.05 |
| 45 | 20.76 | 22.56 | 32.01 | 102.29 | 92.68 |
| 46 | 21.24 | 23.04 | 32.01 | 30.93 | 21.00 |
| 47 | 21.73 | 23.53 | 32.01 | -143.46 | -108.64 |
| 48 | 22.21 | 24.01 | 32.01 | 145.10 | 100.42 |
| 49 | 22.70 | 24.50 | 32.01 | -133.41 | -89.20 |
| 50 | 23.18 | 24.98 | 32.01 | 167.77 | 140.40 |
| 51 | 23.67 | 25.47 | 32.01 | 57.48 | 40.29 |
| 52 | 24.15 | 25.95 | 32.01 | -257.46 | -195.17 |
| 53 | 24.63 | 26.43 | 32.01 | 301.08 | 235.72 |
| 54 | 25.12 | 26.92 | 32.01 | -45.51 | -17.34 |
| 55 | 25.60 | 27.40 | 32.01 | -78.97 | -78.25 |
| 56 | 26.09 | 27.89 | 32.01 | 4.49 | 10.97 |
| 57 | 26.57 | 28.37 | 32.01 | 162.38 | 147.61 |
| 58 | 27.06 | 28.86 | 32.01 | 38.57 | 26.81 |
| 59 | 27.54 | 29.34 | 32.01 | -196.44 | -148.17 |
| 60 | 28.03 | 29.83 | 32.01 | 207.73 | 142.94 |
| 61 | 28.51 | 30.31 | 32.01 | -207.95 | -140.76 |
| 62 | 29.00 | 30.80 | 32.01 | 236.27 | 184.54 |
| 63 | 29.48 | 31.28 | 32.01 | -12.32 | -0.07 |
| 64 | 29.97 | 31.77 | 32.01 | -154.36 | -140.61 |
| 65 | 30.45 | 32.25 | 32.01 | -0.78 | 3.05 |
| 66 | 30.93 | 32.73 | 32.01 | 192.25 | 168.70 |
| 67 | 31.42 | 33.22 | 32.01 | -16.52 | -12.99 |
| 68 | 31.90 | 33.70 | 32.01 | -175.04 | -155.92 |
| 69 | 32.39 | 34.19 | 32.01 | 9.29 | 5.32 |
| 70 | 32.87 | 34.67 | 32.01 | 162.81 | 157.23 |
| 71 | 33.36 | 35.16 | 32.01 | 85.46 | 45.94 |
| 72 | 33.84 | 35.64 | 32.01 | -425.97 | -327.96 |
| 73 | 34.33 | 36.13 | 32.01 | 413.46 | 315.20 |
| 74 | 34.81 | 36.61 | 32.01 | -94.68 | -52.31 |
| 75 | 35.30 | 37.10 | 32.01 | -131.33 | -130.11 |
| 76 | 35.78 | 37.58 | 32.01 | -2.84 | 2.55 |
| 77 | 36.27 | 38.07 | 32.01 | 165.02 | 144.59 |
| 78 | 36.75 | 38.55 | 32.01 | -11.77 | -9.49 |
| 79 | 37.23 | 39.03 | 32.01 | -160.01 | -143.78 |
| 80 | 37.72 | 39.52 | 32.01 | 1.81 | 5.49 |
| 81 | 38.20 | 40.00 | 32.01 | 201.23 | 175.46 |
| 82 | 38.69 | 40.49 | 32.01 | -14.96 | -2.53 |
| 83 | 39.17 | 40.97 | 32.01 | 0.92 | 29.49 |
| 84 | 39.66 | 41.46 | 32.01 | 486.72 | 459.50 |
| 85 | 39.90 | 41.70 | 32.01 | 767.66 | 706.42 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|-------|
| 1 | 0.00 | 1.13 | 68.27 | 69.13 |
| 2 | 1.13 | 39.90 | -0.63 | -0.58 |
| total | 0.00 | 39.90 | 1.32 | 3.32 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 1 | 0.00 | 35.82 | 20.25 | 138.25 | 3.18 |
| 2 | 0.28 | 35.82 | 20.57 | 166.94 | 3.84 |
| 3 | 0.57 | 35.82 | 20.90 | 63.49 | 1.46 |
| 4 | 0.85 | 35.82 | 21.22 | 16.94 | 0.39 |
| 5 | 1.13 | 35.82 | 21.54 | 10.06 | 0.23 |
| 6 | 1.61 | 5.35 | 37.94 | 143.58 | 3.30 |
| 7 | 2.10 | 5.84 | 37.94 | 218.24 | 5.02 |
| 8 | 2.58 | 6.32 | 37.94 | 208.40 | 4.79 |
| 9 | 3.07 | 6.81 | 37.94 | 201.26 | 4.63 |
| 10 | 3.55 | 7.29 | 37.94 | 158.87 | 3.65 |
| 11 | 4.04 | 7.78 | 37.94 | 100.14 | 2.30 |
| 12 | 4.52 | 8.26 | 37.94 | 88.88 | 2.04 |
| 13 | 5.01 | 8.75 | 37.94 | 73.48 | 1.69 |
| 14 | 5.49 | 9.23 | 37.94 | 56.02 | 1.29 |
| 15 | 5.98 | 9.71 | 37.94 | 32.14 | 0.74 |
| 16 | 6.46 | 10.20 | 37.94 | 13.50 | 0.31 |
| 17 | 6.95 | 10.68 | 37.94 | 32.41 | 0.75 |
| 18 | 7.43 | 11.17 | 37.94 | 0.71 | 0.02 |
| 19 | 7.91 | 11.65 | 37.94 | 22.31 | 0.51 |
| 20 | 8.40 | 12.14 | 37.94 | 6.66 | 0.15 |
| 21 | 8.88 | 12.62 | 37.94 | 17.14 | 0.39 |
| 22 | 9.37 | 13.11 | 37.94 | 41.39 | 0.95 |
| 23 | 9.85 | 13.59 | 37.94 | 95.92 | 2.21 |
| 24 | 10.34 | 14.08 | 37.94 | 81.87 | 1.88 |
| 25 | 10.82 | 14.56 | 37.94 | 31.07 | 0.71 |
| 26 | 11.31 | 15.05 | 37.94 | 121.47 | 2.79 |
| 27 | 11.79 | 15.53 | 37.94 | 48.85 | 1.12 |
| 28 | 12.28 | 16.01 | 37.94 | 6.59 | 0.15 |
| 29 | 12.76 | 16.50 | 37.94 | 74.60 | 1.72 |
| 30 | 13.25 | 16.98 | 37.94 | 70.73 | 1.63 |
| 31 | 13.73 | 17.47 | 37.94 | 28.53 | 0.66 |
| 32 | 14.21 | 17.95 | 37.94 | 22.53 | 0.52 |
| 33 | 14.70 | 18.44 | 37.94 | 65.41 | 1.50 |
| 34 | 15.18 | 18.92 | 37.94 | 62.73 | 1.44 |
| 35 | 15.67 | 19.41 | 37.94 | 60.75 | 1.40 |
| 36 | 16.15 | 19.89 | 37.94 | 15.62 | 0.36 |
| 37 | 16.64 | 20.38 | 37.94 | 1.83 | 0.04 |
| 38 | 17.12 | 20.86 | 37.94 | 10.54 | 0.24 |
| 39 | 17.61 | 21.35 | 37.94 | 108.34 | 2.49 |
| 40 | 18.09 | 21.83 | 37.94 | 117.11 | 2.69 |
| 41 | 18.58 | 22.32 | 37.94 | 4.52 | 0.10 |
| 42 | 19.06 | 22.80 | 37.94 | 111.78 | 2.57 |
| 43 | 19.55 | 23.28 | 37.94 | 73.01 | 1.68 |
| 44 | 20.03 | 23.77 | 37.94 | 46.28 | 1.06 |
| 45 | 20.52 | 24.25 | 37.94 | 48.71 | 1.12 |
| 46 | 21.00 | 24.74 | 37.94 | 86.14 | 1.98 |
| 47 | 21.48 | 25.22 | 37.94 | 81.16 | 1.87 |
| 48 | 21.97 | 25.71 | 37.94 | 10.68 | 0.25 |
| 49 | 22.45 | 26.19 | 37.94 | 6.31 | 0.15 |
| 50 | 22.94 | 26.68 | 37.94 | 0.33 | 0.01 |
| 51 | 23.42 | 27.16 | 37.94 | 157.17 | 3.62 |
| 52 | 23.91 | 27.65 | 37.94 | 145.09 | 3.34 |
| 53 | 24.39 | 28.13 | 37.94 | 24.89 | 0.57 |
| 54 | 24.88 | 28.62 | 37.94 | 164.98 | 3.79 |
| 55 | 25.36 | 29.10 | 37.94 | 91.13 | 2.10 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 56 | 25.85 | 29.58 | 37.94 | 44.44 | 1.02 |
| 57 | 26.33 | 30.07 | 37.94 | 91.73 | 2.11 |
| 58 | 26.82 | 30.55 | 37.94 | 127.00 | 2.92 |
| 59 | 27.30 | 31.04 | 37.94 | 115.44 | 2.66 |
| 60 | 27.78 | 31.52 | 37.94 | 22.17 | 0.51 |
| 61 | 28.27 | 32.01 | 37.94 | 2.51 | 0.06 |
| 62 | 28.75 | 32.49 | 37.94 | 1.31 | 0.03 |
| 63 | 29.24 | 32.98 | 37.94 | 151.45 | 3.48 |
| 64 | 29.72 | 33.46 | 37.94 | 109.33 | 2.51 |
| 65 | 30.21 | 33.95 | 37.94 | 95.14 | 2.19 |
| 66 | 30.69 | 34.43 | 37.94 | 115.46 | 2.66 |
| 67 | 31.18 | 34.92 | 37.94 | 107.89 | 2.48 |
| 68 | 31.66 | 35.40 | 37.94 | 118.43 | 2.72 |
| 69 | 32.15 | 35.88 | 37.94 | 98.03 | 2.25 |
| 70 | 32.63 | 36.37 | 37.94 | 95.60 | 2.20 |
| 71 | 33.12 | 36.85 | 37.94 | 169.23 | 3.89 |
| 72 | 33.60 | 37.34 | 37.94 | 228.74 | 5.26 |
| 73 | 34.08 | 37.82 | 37.94 | 6.01 | 0.14 |
| 74 | 34.57 | 38.31 | 37.94 | 215.28 | 4.95 |
| 75 | 35.05 | 38.79 | 37.94 | 156.59 | 3.60 |
| 76 | 35.54 | 39.28 | 37.94 | 73.68 | 1.69 |
| 77 | 36.02 | 39.76 | 37.94 | 96.13 | 2.21 |
| 78 | 36.51 | 40.25 | 37.94 | 94.75 | 2.18 |
| 79 | 36.99 | 40.73 | 37.94 | 104.37 | 2.40 |
| 80 | 37.48 | 41.22 | 37.94 | 99.16 | 2.28 |
| 81 | 37.96 | 41.70 | 37.94 | 124.19 | 2.86 |
| 82 | 38.45 | 42.12 | 37.94 | 104.34 | 2.40 |
| 83 | 38.93 | 42.54 | 37.94 | 40.01 | 0.92 |
| 84 | 39.42 | 42.96 | 37.94 | 212.58 | 4.89 |
| 85 | 39.90 | 43.38 | 37.94 | 706.42 | 16.25 |

Überzug Nr.: 52 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei seütl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) unten | oben | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|--------|---------------------------------------|-------|--------------------|
| 1 | 0.00 | 41.70 | 32.01 | -294.02 | -294. | 0.00 | 2.81 | 237.2 |
| 2 | 0.42 | 41.70 | 32.43 | -526.89 | -527. | 0.00 | 4.89 | 236.1 |
| 3 | 0.85 | 41.70 | 32.86 | -1019.68 | -1020. | 0.00 | 9.61 | 234.0 |
| 4 | 1.27 | 41.70 | 33.28 | -1200.63 | -1201. | 0.00 | 11.38 | 233.2 |
| 5 | 1.69 | 41.70 | 33.70 | -1392.92 | -1393. | 0.00 | 13.12 | 232.3 |
| 6 | 2.12 | 41.70 | 34.13 | -1425.88 | -1426. | 0.00 | 13.50 | 232.1 |
| 7 | 2.54 | 41.70 | 34.55 | -1664.12 | -1664. | 0.00 | 15.77 | 231.0 |
| 8 | 2.97 | 41.70 | 34.97 | -1585.94 | -1586. | 0.00 | 15.02 | 231.4 |
| 9 | 3.39 | 41.70 | 35.40 | -1447.14 | -1447. | 0.00 | 13.69 | 232.0 |
| 10 | 3.81 | 41.70 | 35.82 | -1521.91 | -1522. | 0.00 | 14.45 | 231.7 |
| 11 | 4.24 | 41.70 | 36.25 | -1268.23 | -1268. | 0.00 | 11.96 | 232.9 |
| 12 | 4.66 | 41.70 | 36.67 | -1059.56 | -1060. | 0.00 | 10.00 | 233.8 |
| 13 | 5.08 | 41.70 | 37.09 | -705.64 | -706. | 0.00 | 6.70 | 235.3 |
| 14 | 5.51 | 41.70 | 37.52 | -561.70 | -562. | 0.00 | 5.24 | 235.9 |
| 15 | 5.93 | 41.70 | 37.94 | -67.64 | -68. | 0.00 | 0.65 | 238.7 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 124.58

untere Bewehrung : 0.00

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

Achtung: obere Mindestbewehrung gem. DIN von 6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | | Tm (kNm) | | Bewehrung (cm²/m) | | | | | |
|----------------|----------|----------|----------|-----------|-------|-------------|----|-------------------|-----|---------|------|------|-----|
| | | | | | | | | Bereich | | Vrd(MN) | | as | |
| 1 | 0.00 | 41.70 | 32.01 | -329.10 | -329. | 0.00 | 0. | min. | 0.2 | 0.71 | 47% | 2.32 | 0.0 |
| 2 | 0.42 | 41.70 | 32.43 | -991.08 | -991. | 0.00 | 0. | norm | 0.4 | 0.99 | 100% | 4.57 | 0.0 |
| 3 | 0.85 | 41.70 | 32.86 | -846.18 | -846. | 0.00 | 0. | norm | 0.4 | 0.85 | 100% | 3.38 | 0.0 |
| 4 | 1.27 | 41.70 | 33.28 | -396.13 | -396. | 0.00 | 0. | min. | 0.3 | 0.71 | 56% | 2.32 | 0.0 |
| 5 | 1.69 | 41.70 | 33.70 | -212.75 | -213. | 0.00 | 0. | min. | 0.2 | 0.70 | 30% | 2.32 | 0.0 |
| 6 | 2.12 | 41.70 | 34.13 | -348.20 | -348. | 0.00 | 0. | min. | 0.2 | 0.70 | 50% | 2.32 | 0.0 |
| 7 | 2.54 | 41.70 | 34.55 | -315.27 | -315. | 0.00 | 0. | min. | 0.2 | 0.70 | 45% | 2.32 | 0.0 |
| 8 | 2.97 | 41.70 | 34.97 | 475.68 | 476. | 0.00 | 0. | min. | 0.3 | 0.70 | 68% | 2.32 | 0.0 |
| 9 | 3.39 | 41.70 | 35.40 | -50.69 | -51. | 0.00 | 0. | min. | 0.1 | 0.70 | 7% | 2.32 | 0.0 |
| 10 | 3.81 | 41.70 | 35.82 | 180.53 | 181. | 0.00 | 0. | min. | 0.2 | 0.70 | 26% | 2.32 | 0.0 |
| 11 | 4.24 | 41.70 | 36.25 | 595.80 | 596. | 0.00 | 0. | min. | 0.4 | 0.71 | 84% | 2.32 | 0.0 |
| 12 | 4.66 | 41.70 | 36.67 | 710.96 | 711. | 0.00 | 0. | norm | 0.4 | 0.71 | 100% | 2.33 | 0.0 |
| 13 | 5.08 | 41.70 | 37.09 | 544.92 | 545. | 0.00 | 0. | min. | 0.3 | 0.71 | 77% | 2.32 | 0.0 |
| 14 | 5.51 | 41.70 | 37.52 | 635.49 | 635. | 0.00 | 0. | min. | 0.4 | 0.71 | 90% | 2.32 | 0.0 |
| 15 | 5.93 | 41.70 | 37.94 | 1431.90 | 1432. | 0.00 | 0. | norm | 0.5 | 1.43 | 100% | 8.17 | 0.0 |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm ²] | As Feld [cm ²] |
|--------|------------------------------|-----------------|------------------|--------------------------|-------------------------------|
| UZ-Anf | 18.43 | 2.23 | 493.65 | 11.35 | 0.00 |
| UZ-End | 30.03 | 3.22 | 1238.60 | 28.49 | 0.00 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|----------|
| 0 | 0.00 | 41.70 | 32.01 | 2831.14 | 2599.57 |
| 1 | 0.21 | 41.70 | 32.22 | 1675.37 | 1562.87 |
| 2 | 0.64 | 41.70 | 32.65 | -428.38 | -342.10 |
| 3 | 1.06 | 41.70 | 33.07 | -1126.04 | -1062.50 |
| 4 | 1.48 | 41.70 | 33.49 | -430.03 | -432.95 |
| 5 | 1.91 | 41.70 | 33.92 | 340.83 | 319.79 |
| 6 | 2.33 | 41.70 | 34.34 | 122.75 | -77.73 |
| 7 | 2.75 | 41.70 | 34.76 | -2342.30 | -1867.33 |
| 8 | 3.18 | 41.70 | 35.19 | 1717.15 | 1242.68 |
| 9 | 3.60 | 41.70 | 35.61 | -744.13 | -545.87 |
| 10 | 4.02 | 41.70 | 36.03 | -1000.33 | -980.42 |
| 11 | 4.45 | 41.70 | 36.46 | -279.73 | -271.88 |
| 12 | 4.87 | 41.70 | 36.88 | 454.52 | 392.01 |
| 13 | 5.29 | 41.70 | 37.30 | -138.58 | -213.83 |
| 14 | 5.72 | 41.70 | 37.73 | -1978.60 | -1880.24 |
| 15 | 5.93 | 41.70 | 37.94 | -2987.67 | -2786.80 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|---------|
| 1 | 0.00 | 5.93 | -294.34 | -300.24 |
| total | 0.00 | 5.93 | -294.34 | -300.24 |

Position : BP
Bodenplatte-Lastfall HHW und Vollast aus Gebäude

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 1 | 0.00 | 35.82 | 20.25 | 2599.57 | 59.79 |
| 2 | 0.42 | 35.82 | 20.57 | 526.18 | 12.10 |
| 3 | 0.85 | 35.82 | 20.90 | 893.92 | 20.56 |
| 4 | 1.27 | 35.82 | 21.22 | 847.51 | 19.49 |
| 5 | 1.69 | 35.82 | 21.54 | 18.26 | 0.42 |
| 6 | 2.12 | 5.35 | 37.94 | 452.68 | 10.41 |
| 7 | 2.54 | 5.84 | 37.94 | 1384.10 | 31.83 |
| 8 | 2.97 | 6.32 | 37.94 | 313.08 | 7.20 |
| 9 | 3.39 | 6.81 | 37.94 | 762.58 | 17.54 |
| 10 | 3.81 | 7.29 | 37.94 | 1089.85 | 25.07 |
| 11 | 4.24 | 7.78 | 37.94 | 669.88 | 15.41 |
| 12 | 4.66 | 8.26 | 37.94 | 149.80 | 3.45 |
| 13 | 5.08 | 8.75 | 37.94 | 266.79 | 6.14 |
| 14 | 5.51 | 9.23 | 37.94 | 973.69 | 22.39 |
| 15 | 5.93 | 9.71 | 37.94 | 2786.80 | 64.10 |

Überzug Nr.: 53 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
Brandschutz bei seittl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) | | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|--------|------------------------------|-------|--------------------|
| | | | | | | unten | oben | |
| 1 | 0.00 | 2.93 | 32.01 | 81.60 | 82. | 6.99 | 0.00 | 238.6 |
| 2 | 0.42 | 2.93 | 32.43 | -203.62 | -204. | 0.00 | 1.87 | 237.7 |
| 3 | 0.85 | 2.93 | 32.86 | -479.86 | -480. | 0.00 | 4.55 | 236.3 |
| 4 | 1.27 | 2.93 | 33.28 | -723.40 | -723. | 0.00 | 6.89 | 235.2 |
| 5 | 1.69 | 2.93 | 33.70 | -931.36 | -931. | 0.00 | 8.82 | 234.3 |
| 6 | 2.12 | 2.93 | 34.13 | -1089.56 | -1090. | 0.00 | 10.20 | 233.7 |
| 7 | 2.54 | 2.93 | 34.55 | -1216.22 | -1216. | 0.00 | 11.57 | 233.1 |
| 8 | 2.97 | 2.93 | 34.97 | -1277.16 | -1277. | 0.00 | 12.15 | 232.8 |
| 9 | 3.39 | 2.93 | 35.40 | -1282.19 | -1282. | 0.00 | 12.15 | 232.8 |
| 10 | 3.81 | 2.93 | 35.82 | -1255.56 | -1256. | 0.00 | 11.77 | 233.0 |
| 11 | 4.24 | 2.93 | 36.25 | -1149.72 | -1150. | 0.00 | 10.79 | 233.4 |
| 12 | 4.66 | 2.93 | 36.67 | -996.50 | -996. | 0.00 | 9.41 | 234.1 |
| 13 | 5.08 | 2.93 | 37.09 | -778.20 | -778. | 0.00 | 7.27 | 235.0 |
| 14 | 5.51 | 2.93 | 37.52 | -548.80 | -549. | 0.00 | 5.24 | 235.9 |
| 15 | 5.93 | 2.93 | 37.94 | -367.00 | -367. | 0.00 | 3.41 | 236.9 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 96.91

untere Bewehrung : 4.15

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | Tm (kNm) | Bewehrung (cm ² /m) | | | | | | as |
|----------------|----------|----------|----------|-----------|-------------|--------------------------------|---------|------|-----|------|-----|----------|
| | | | | | | Bereich | Vrd(MN) | | | | | |
| 1 | 0.00 | 2.93 | 32.01 | -674.57 | -675. | 0.00 | 0. | min. | 0.4 | 0.71 | 95% | 2.32 0.0 |
| 2 | 0.42 | 2.93 | 32.43 | -670.96 | -671. | 0.00 | 0. | min. | 0.4 | 0.71 | 95% | 2.32 0.0 |
| 3 | 0.85 | 2.93 | 32.86 | -618.23 | -618. | 0.00 | 0. | min. | 0.4 | 0.71 | 87% | 2.32 0.0 |
| 4 | 1.27 | 2.93 | 33.28 | -537.62 | -538. | 0.00 | 0. | min. | 0.3 | 0.71 | 76% | 2.32 0.0 |
| 5 | 1.69 | 2.93 | 33.70 | -429.13 | -429. | 0.00 | 0. | min. | 0.3 | 0.71 | 61% | 2.32 0.0 |
| 6 | 2.12 | 2.93 | 34.13 | -339.18 | -339. | 0.00 | 0. | min. | 0.2 | 0.71 | 48% | 2.32 0.0 |
| 7 | 2.54 | 2.93 | 34.55 | -231.68 | -232. | 0.00 | 0. | min. | 0.2 | 0.71 | 33% | 2.32 0.0 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | Tm (kNm) | Bewehrung (cm ² /m) | | | | | |
|----------------|----------|----------|----------|-----------|-------------|--------------------------------|---------|----------|------|-----|----------|
| | | | | | | Bereich | Vrd(MN) | as | | | |
| 8 | 2.97 | 2.93 | 34.97 | -62.82 | -63. | 0.00 | 0. | min. 0.1 | 0.70 | 9% | 2.32 0.0 |
| 9 | 3.39 | 2.93 | 35.40 | 15.69 | 16. | 0.00 | 0. | min. 0.1 | 0.70 | 2% | 2.32 0.0 |
| 10 | 3.81 | 2.93 | 35.82 | 153.02 | 153. | 0.00 | 0. | min. 0.2 | 0.70 | 22% | 2.32 0.0 |
| 11 | 4.24 | 2.93 | 36.25 | 310.45 | 310. | 0.00 | 0. | min. 0.2 | 0.71 | 44% | 2.32 0.0 |
| 12 | 4.66 | 2.93 | 36.67 | 440.05 | 440. | 0.00 | 0. | min. 0.3 | 0.71 | 62% | 2.32 0.0 |
| 13 | 5.08 | 2.93 | 37.09 | 560.71 | 561. | 0.00 | 0. | min. 0.3 | 0.71 | 79% | 2.32 0.0 |
| 14 | 5.51 | 2.93 | 37.52 | 487.96 | 488. | 0.00 | 0. | min. 0.3 | 0.71 | 69% | 2.32 0.0 |
| 15 | 5.93 | 2.93 | 37.94 | 399.85 | 400. | 0.00 | 0. | min. 0.3 | 0.71 | 57% | 2.32 0.0 |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm ²] | As Feld [cm ²] |
|--------|------------------------------|-----------------|------------------|--------------------------|-------------------------------|
| UZ-Anf | 18.38 | 2.22 | 1015.23 | 23.35 | 6.99 |
| UZ-End | 18.43 | 2.23 | 599.78 | 13.79 | 0.00 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|---------|
| 0 | 0.00 | 2.93 | 32.01 | 71.60 | 55.34 |
| 1 | 0.21 | 2.93 | 32.22 | -1.58 | -8.53 |
| 2 | 0.64 | 2.93 | 32.65 | -130.28 | -124.50 |
| 3 | 1.06 | 2.93 | 33.07 | -186.67 | -190.31 |
| 4 | 1.48 | 2.93 | 33.49 | -264.88 | -256.12 |
| 5 | 1.91 | 2.93 | 33.92 | -208.35 | -212.36 |
| 6 | 2.33 | 2.93 | 34.34 | -239.76 | -253.80 |
| 7 | 2.75 | 2.93 | 34.76 | -432.97 | -398.67 |
| 8 | 3.18 | 2.93 | 35.19 | -151.71 | -185.34 |
| 9 | 3.60 | 2.93 | 35.61 | -336.41 | -324.22 |
| 10 | 4.02 | 2.93 | 36.03 | -379.40 | -371.67 |
| 11 | 4.45 | 2.93 | 36.46 | -291.16 | -305.97 |
| 12 | 4.87 | 2.93 | 36.88 | -325.24 | -284.87 |
| 13 | 5.29 | 2.93 | 37.30 | 209.57 | 171.76 |
| 14 | 5.72 | 2.93 | 37.73 | 202.26 | 208.00 |
| 15 | 5.93 | 2.93 | 37.94 | 127.83 | 171.72 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|---------|
| 1 | 0.00 | 5.93 | -181.21 | -181.60 |
| total | 0.00 | 5.93 | -181.21 | -181.60 |

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 1 | 0.00 | 35.82 | 20.25 | 55.34 | 1.27 |
| 2 | 0.42 | 35.82 | 20.57 | 72.39 | 1.67 |
| 3 | 0.85 | 35.82 | 20.90 | 158.58 | 3.65 |
| 4 | 1.27 | 35.82 | 21.22 | 231.45 | 5.32 |
| 5 | 1.69 | 35.82 | 21.54 | 241.22 | 5.55 |
| 6 | 2.12 | 5.35 | 37.94 | 206.05 | 4.74 |
| 7 | 2.54 | 5.84 | 37.94 | 356.62 | 8.20 |
| 8 | 2.97 | 6.32 | 37.94 | 293.01 | 6.74 |
| 9 | 3.39 | 6.81 | 37.94 | 222.62 | 5.12 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm²/m) |
|----------------|----------|----------|----------|-------------------------|----------------------|
| 10 | 3.81 | 7.29 | 37.94 | 377.79 | 8.69 |
| 11 | 4.24 | 7.78 | 37.94 | 328.32 | 7.55 |
| 12 | 4.66 | 8.26 | 37.94 | 333.31 | 7.67 |
| 13 | 5.08 | 8.75 | 37.94 | 62.10 | 1.43 |
| 14 | 5.51 | 9.23 | 37.94 | 244.28 | 5.62 |
| 15 | 5.93 | 9.71 | 37.94 | 171.72 | 3.95 |

Überzug Nr.: 54 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
 Brandschutz bei seittl. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm²) unten | oben | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|--------|--------------------------|-------|--------------------|
| 1 | 0.00 | 2.93 | 37.94 | -454.61 | -455. | 0.00 | 4.21 | 236.4 |
| 2 | 0.48 | 3.41 | 37.94 | -852.30 | -852. | 0.00 | 8.04 | 234.7 |
| 3 | 0.97 | 3.90 | 37.94 | -1241.00 | -1241. | 0.00 | 11.77 | 233.0 |
| 4 | 1.45 | 4.38 | 37.94 | -1502.32 | -1502. | 0.00 | 14.26 | 231.8 |
| 5 | 1.94 | 4.87 | 37.94 | -1667.51 | -1668. | 0.00 | 15.77 | 231.0 |
| 6 | 2.42 | 5.35 | 37.94 | -1753.64 | -1754. | 0.00 | 16.70 | 230.5 |
| 7 | 2.91 | 5.84 | 37.94 | -1776.08 | -1776. | 0.00 | 16.88 | 230.4 |
| 8 | 3.39 | 6.32 | 37.94 | -1756.56 | -1757. | 0.00 | 16.70 | 230.5 |
| 9 | 3.88 | 6.81 | 37.94 | -1700.17 | -1700. | 0.00 | 16.14 | 230.8 |
| 10 | 4.36 | 7.29 | 37.94 | -1628.90 | -1629. | 0.00 | 15.39 | 231.2 |
| 11 | 4.85 | 7.78 | 37.94 | -1540.79 | -1541. | 0.00 | 14.64 | 231.6 |
| 12 | 5.33 | 8.26 | 37.94 | -1447.54 | -1448. | 0.00 | 13.69 | 232.0 |
| 13 | 5.82 | 8.75 | 37.94 | -1346.36 | -1346. | 0.00 | 12.73 | 232.5 |
| 14 | 6.30 | 9.23 | 37.94 | -1246.64 | -1247. | 0.00 | 11.77 | 233.0 |
| 15 | 6.78 | 9.71 | 37.94 | -1143.15 | -1143. | 0.00 | 10.79 | 233.4 |
| 16 | 7.27 | 10.20 | 37.94 | -1052.28 | -1052. | 0.00 | 10.00 | 233.8 |
| 17 | 7.75 | 10.68 | 37.94 | -954.60 | -955. | 0.00 | 9.02 | 234.2 |
| 18 | 8.24 | 11.17 | 37.94 | -862.32 | -862. | 0.00 | 8.04 | 234.7 |
| 19 | 8.72 | 11.65 | 37.94 | -767.88 | -768. | 0.00 | 7.27 | 235.0 |
| 20 | 9.21 | 12.14 | 37.94 | -695.55 | -696. | 0.00 | 6.52 | 235.3 |
| 21 | 9.69 | 12.62 | 37.94 | -609.72 | -610. | 0.00 | 5.78 | 235.7 |
| 22 | 10.18 | 13.11 | 37.94 | -529.82 | -530. | 0.00 | 5.06 | 236.0 |
| 23 | 10.66 | 13.59 | 37.94 | -469.36 | -469. | 0.00 | 4.38 | 236.4 |
| 24 | 11.15 | 14.08 | 37.94 | -398.42 | -398. | 0.00 | 3.72 | 236.7 |
| 25 | 11.63 | 14.56 | 37.94 | -336.83 | -337. | 0.00 | 3.10 | 237.0 |
| 26 | 12.12 | 15.05 | 37.94 | -274.05 | -274. | 0.00 | 2.53 | 237.3 |
| 27 | 12.60 | 15.53 | 37.94 | -226.28 | -226. | 0.00 | 2.13 | 237.6 |
| 28 | 13.08 | 16.01 | 37.94 | -170.10 | -170. | 0.00 | 1.63 | 237.9 |
| 29 | 13.57 | 16.50 | 37.94 | -122.04 | -122. | 0.00 | 1.20 | 238.2 |
| 30 | 14.05 | 16.98 | 37.94 | -73.10 | -73. | 0.00 | 0.73 | 238.6 |
| 31 | 14.54 | 17.47 | 37.94 | -38.71 | -39. | 0.00 | 0.38 | 239.0 |
| 32 | 15.02 | 17.95 | 37.94 | 4.21 | 4. | 6.99 | 0.00 | 239.7 |
| 33 | 15.51 | 18.44 | 37.94 | 41.08 | 41. | 6.99 | 0.00 | 239.0 |
| 34 | 15.99 | 18.92 | 37.94 | 74.39 | 74. | 6.99 | 0.00 | 238.6 |
| 35 | 16.48 | 19.41 | 37.94 | 107.62 | 108. | 6.99 | 0.00 | 238.4 |
| 36 | 16.96 | 19.89 | 37.94 | 129.68 | 130. | 6.99 | 0.00 | 238.2 |
| 37 | 17.45 | 20.38 | 37.94 | 158.55 | 159. | 6.99 | 0.00 | 238.0 |
| 38 | 17.93 | 20.86 | 37.94 | 185.49 | 185. | 6.99 | 0.00 | 237.8 |
| 39 | 18.42 | 21.35 | 37.94 | 199.07 | 199. | 6.99 | 0.00 | 237.7 |
| 40 | 18.90 | 21.83 | 37.94 | 222.30 | 222. | 6.99 | 0.00 | 237.6 |
| 41 | 19.39 | 22.32 | 37.94 | 239.20 | 239. | 6.99 | 0.00 | 237.5 |
| 42 | 19.87 | 22.80 | 37.94 | 259.79 | 260. | 6.99 | 0.00 | 237.4 |
| 43 | 20.35 | 23.28 | 37.94 | 264.94 | 265. | 6.99 | 0.00 | 237.3 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) | | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|-------|------------------------------|------|--------------------|
| | | | | | | unten | oben | |
| 44 | 20.84 | 23.77 | 37.94 | 282.90 | 283. | 6.99 | 0.00 | 237.3 |
| 45 | 21.32 | 24.25 | 37.94 | 294.95 | 295. | 6.99 | 0.00 | 237.2 |
| 46 | 21.81 | 24.74 | 37.94 | 306.54 | 307. | 6.99 | 0.00 | 237.1 |
| 47 | 22.29 | 25.22 | 37.94 | 320.32 | 320. | 6.99 | 0.00 | 237.1 |
| 48 | 22.78 | 25.71 | 37.94 | 319.23 | 319. | 6.99 | 0.00 | 237.1 |
| 49 | 23.26 | 26.19 | 37.94 | 331.84 | 332. | 6.99 | 0.00 | 237.0 |
| 50 | 23.75 | 26.68 | 37.94 | 344.48 | 344. | 6.99 | 0.00 | 236.9 |
| 51 | 24.23 | 27.16 | 37.94 | 337.79 | 338. | 6.99 | 0.00 | 236.9 |
| 52 | 24.72 | 27.65 | 37.94 | 348.72 | 349. | 6.99 | 0.00 | 236.9 |
| 53 | 25.20 | 28.13 | 37.94 | 352.60 | 353. | 6.99 | 0.00 | 236.9 |
| 54 | 25.69 | 28.62 | 37.94 | 362.59 | 363. | 6.99 | 0.00 | 236.9 |
| 55 | 26.17 | 29.10 | 37.94 | 350.01 | 350. | 6.99 | 0.00 | 236.9 |
| 56 | 26.65 | 29.58 | 37.94 | 357.86 | 358. | 6.99 | 0.00 | 236.9 |
| 57 | 27.14 | 30.07 | 37.94 | 357.18 | 357. | 6.99 | 0.00 | 236.9 |
| 58 | 27.62 | 30.55 | 37.94 | 355.25 | 355. | 6.99 | 0.00 | 236.9 |
| 59 | 28.11 | 31.04 | 37.94 | 359.70 | 360. | 6.99 | 0.00 | 236.9 |
| 60 | 28.59 | 31.52 | 37.94 | 339.63 | 340. | 6.99 | 0.00 | 236.9 |
| 61 | 29.08 | 32.01 | 37.94 | 340.33 | 340. | 6.99 | 0.00 | 236.9 |
| 62 | 29.56 | 32.49 | 37.94 | 333.19 | 333. | 6.99 | 0.00 | 237.0 |
| 63 | 30.05 | 32.98 | 37.94 | 331.79 | 332. | 6.99 | 0.00 | 237.0 |
| 64 | 30.53 | 33.46 | 37.94 | 303.60 | 304. | 6.99 | 0.00 | 237.2 |
| 65 | 31.02 | 33.95 | 37.94 | 300.67 | 301. | 6.99 | 0.00 | 237.2 |
| 66 | 31.50 | 34.43 | 37.94 | 288.80 | 289. | 6.99 | 0.00 | 237.3 |
| 67 | 31.99 | 34.92 | 37.94 | 282.83 | 283. | 6.99 | 0.00 | 237.3 |
| 68 | 32.47 | 35.40 | 37.94 | 247.85 | 248. | 6.99 | 0.00 | 237.4 |
| 69 | 32.95 | 35.88 | 37.94 | 240.27 | 240. | 6.99 | 0.00 | 237.5 |
| 70 | 33.44 | 36.37 | 37.94 | 231.32 | 231. | 6.99 | 0.00 | 237.6 |
| 71 | 33.92 | 36.85 | 37.94 | 191.88 | 192. | 6.99 | 0.00 | 237.7 |
| 72 | 34.41 | 37.34 | 37.94 | 183.74 | 184. | 6.99 | 0.00 | 237.8 |
| 73 | 34.89 | 37.82 | 37.94 | 164.43 | 164. | 6.99 | 0.00 | 238.0 |
| 74 | 35.38 | 38.31 | 37.94 | 154.45 | 154. | 6.99 | 0.00 | 238.0 |
| 75 | 35.86 | 38.79 | 37.94 | 113.52 | 114. | 6.99 | 0.00 | 238.3 |
| 76 | 36.35 | 39.28 | 37.94 | 101.71 | 102. | 6.99 | 0.00 | 238.4 |
| 77 | 36.83 | 39.76 | 37.94 | 72.27 | 72. | 6.99 | 0.00 | 238.6 |
| 78 | 37.32 | 40.25 | 37.94 | 43.19 | 43. | 6.99 | 0.00 | 239.0 |
| 79 | 37.80 | 40.73 | 37.94 | -38.21 | -38. | 0.00 | 0.38 | 239.0 |
| 80 | 38.29 | 41.22 | 37.94 | -123.86 | -124. | 0.00 | 1.20 | 238.2 |
| 81 | 38.77 | 41.70 | 37.94 | -292.22 | -292. | 0.00 | 2.81 | 237.2 |
| 82 | 39.19 | 42.12 | 37.94 | -183.36 | -183. | 0.00 | 1.75 | 237.8 |
| 83 | 39.61 | 42.54 | 37.94 | -125.44 | -125. | 0.00 | 1.20 | 238.2 |
| 84 | 40.03 | 42.96 | 37.94 | -93.79 | -94. | 0.00 | 0.91 | 238.5 |
| 85 | 40.45 | 43.38 | 37.94 | -75.20 | -75. | 0.00 | 0.73 | 238.6 |
| 86 | 40.86 | 43.79 | 37.94 | -59.26 | -59. | 0.00 | 0.58 | 238.8 |
| 87 | 41.28 | 44.21 | 37.94 | -39.70 | -40. | 0.00 | 0.38 | 239.0 |
| 88 | 41.70 | 44.63 | 37.94 | -18.10 | -18. | 0.00 | 0.17 | 239.4 |
| 89 | 42.12 | 45.05 | 37.94 | 3.83 | 4. | 6.99 | 0.00 | 239.7 |
| 90 | 42.54 | 45.47 | 37.94 | 18.36 | 18. | 6.99 | 0.00 | 239.4 |
| 91 | 42.96 | 45.89 | 37.94 | 1.17 | 1. | 6.99 | 0.00 | 239.8 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 269.46

untere Bewehrung : 466.48

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | Tm (kNm) | Bewehrung (cm²/m) | | | | | as |
|----------------|----------|----------|----------|-----------|-------------|-------------------|---------|------|-----|-----------|----------|
| | | | | | | Bereich | Vrd(MN) | | | | |
| 1 | 0.00 | 2.93 | 37.94 | -809.85 | -810. | 0.00 | 0. | norm | 0.4 | 0.81 100% | 3.09 0.0 |
| 2 | 0.48 | 3.41 | 37.94 | -842.15 | -842. | 0.00 | 0. | norm | 0.4 | 0.84 100% | 3.35 0.0 |
| 3 | 0.97 | 3.90 | 37.94 | -689.58 | -690. | 0.00 | 0. | min. | 0.4 | 0.71 97% | 2.32 0.0 |
| 4 | 1.45 | 4.38 | 37.94 | -423.39 | -423. | 0.00 | 0. | min. | 0.3 | 0.70 60% | 2.32 0.0 |
| 5 | 1.94 | 4.87 | 37.94 | -257.13 | -257. | 0.00 | 0. | min. | 0.2 | 0.70 37% | 2.32 0.0 |
| 6 | 2.42 | 5.35 | 37.94 | -103.88 | -104. | 0.00 | 0. | min. | 0.1 | 0.70 15% | 2.32 0.0 |
| 7 | 2.91 | 5.84 | 37.94 | 0.58 | 1. | 0.00 | 0. | min. | 0.1 | 0.70 0% | 2.32 0.0 |
| 8 | 3.39 | 6.32 | 37.94 | 83.51 | 84. | 0.00 | 0. | min. | 0.1 | 0.70 12% | 2.32 0.0 |
| 9 | 3.88 | 6.81 | 37.94 | 135.27 | 135. | 0.00 | 0. | min. | 0.2 | 0.70 19% | 2.32 0.0 |
| 10 | 4.36 | 7.29 | 37.94 | 165.63 | 166. | 0.00 | 0. | min. | 0.2 | 0.70 24% | 2.32 0.0 |
| 11 | 4.85 | 7.78 | 37.94 | 188.80 | 189. | 0.00 | 0. | min. | 0.2 | 0.70 27% | 2.32 0.0 |
| 12 | 5.33 | 8.26 | 37.94 | 201.90 | 202. | 0.00 | 0. | min. | 0.2 | 0.70 29% | 2.32 0.0 |
| 13 | 5.82 | 8.75 | 37.94 | 207.21 | 207. | 0.00 | 0. | min. | 0.2 | 0.70 29% | 2.32 0.0 |
| 14 | 6.30 | 9.23 | 37.94 | 212.84 | 213. | 0.00 | 0. | min. | 0.2 | 0.70 30% | 2.32 0.0 |
| 15 | 6.78 | 9.71 | 37.94 | 199.37 | 199. | 0.00 | 0. | min. | 0.2 | 0.71 28% | 2.32 0.0 |
| 16 | 7.27 | 10.20 | 37.94 | 192.85 | 193. | 0.00 | 0. | min. | 0.2 | 0.71 27% | 2.32 0.0 |
| 17 | 7.75 | 10.68 | 37.94 | 196.39 | 196. | 0.00 | 0. | min. | 0.2 | 0.71 28% | 2.32 0.0 |
| 18 | 8.24 | 11.17 | 37.94 | 197.49 | 197. | 0.00 | 0. | min. | 0.2 | 0.71 28% | 2.32 0.0 |
| 19 | 8.72 | 11.65 | 37.94 | 169.56 | 170. | 0.00 | 0. | min. | 0.2 | 0.71 24% | 2.32 0.0 |
| 20 | 9.21 | 12.14 | 37.94 | 156.68 | 157. | 0.00 | 0. | min. | 0.2 | 0.71 22% | 2.32 0.0 |
| 21 | 9.69 | 12.62 | 37.94 | 182.80 | 183. | 0.00 | 0. | min. | 0.2 | 0.71 26% | 2.32 0.0 |
| 22 | 10.18 | 13.11 | 37.94 | 138.00 | 138. | 0.00 | 0. | min. | 0.2 | 0.71 20% | 2.32 0.0 |
| 23 | 10.66 | 13.59 | 37.94 | 134.06 | 134. | 0.00 | 0. | min. | 0.2 | 0.71 19% | 2.32 0.0 |
| 24 | 11.15 | 14.08 | 37.94 | 139.19 | 139. | 0.00 | 0. | min. | 0.2 | 0.71 20% | 2.32 0.0 |
| 25 | 11.63 | 14.56 | 37.94 | 129.60 | 130. | 0.00 | 0. | min. | 0.1 | 0.71 18% | 2.32 0.0 |
| 26 | 12.12 | 15.05 | 37.94 | 112.32 | 112. | 0.00 | 0. | min. | 0.1 | 0.71 16% | 2.32 0.0 |
| 27 | 12.60 | 15.53 | 37.94 | 105.40 | 105. | 0.00 | 0. | min. | 0.1 | 0.71 15% | 2.32 0.0 |
| 28 | 13.08 | 16.01 | 37.94 | 109.56 | 110. | 0.00 | 0. | min. | 0.1 | 0.71 16% | 2.32 0.0 |
| 29 | 13.57 | 16.50 | 37.94 | 101.63 | 102. | 0.00 | 0. | min. | 0.1 | 0.71 14% | 2.32 0.0 |
| 30 | 14.05 | 16.98 | 37.94 | 84.36 | 84. | 0.00 | 0. | min. | 0.1 | 0.71 12% | 2.32 0.0 |
| 31 | 14.54 | 17.47 | 37.94 | 76.78 | 77. | 0.00 | 0. | min. | 0.1 | 0.71 11% | 2.32 0.0 |
| 32 | 15.02 | 17.95 | 37.94 | 87.08 | 87. | 0.00 | 0. | min. | 0.1 | 0.71 12% | 2.32 0.0 |
| 33 | 15.51 | 18.44 | 37.94 | 68.86 | 69. | 0.00 | 0. | min. | 0.1 | 0.71 10% | 2.32 0.0 |
| 34 | 15.99 | 18.92 | 37.94 | 71.90 | 72. | 0.00 | 0. | min. | 0.1 | 0.71 10% | 2.32 0.0 |
| 35 | 16.48 | 19.41 | 37.94 | 55.41 | 55. | 0.00 | 0. | min. | 0.1 | 0.71 8% | 2.32 0.0 |
| 36 | 16.96 | 19.89 | 37.94 | 48.75 | 49. | 0.00 | 0. | min. | 0.1 | 0.71 7% | 2.32 0.0 |
| 37 | 17.45 | 20.38 | 37.94 | 64.87 | 65. | 0.00 | 0. | min. | 0.1 | 0.71 9% | 2.32 0.0 |
| 38 | 17.93 | 20.86 | 37.94 | 37.24 | 37. | 0.00 | 0. | min. | 0.1 | 0.71 5% | 2.32 0.0 |
| 39 | 18.42 | 21.35 | 37.94 | 37.01 | 37. | 0.00 | 0. | min. | 0.1 | 0.71 5% | 2.32 0.0 |
| 40 | 18.90 | 21.83 | 37.94 | 42.51 | 43. | 0.00 | 0. | min. | 0.1 | 0.71 6% | 2.32 0.0 |
| 41 | 19.39 | 22.32 | 37.94 | 41.31 | 41. | 0.00 | 0. | min. | 0.1 | 0.71 6% | 2.32 0.0 |
| 42 | 19.87 | 22.80 | 37.94 | 24.36 | 24. | 0.00 | 0. | min. | 0.1 | 0.71 3% | 2.32 0.0 |
| 43 | 20.35 | 23.28 | 37.94 | 20.55 | 21. | 0.00 | 0. | min. | 0.1 | 0.71 3% | 2.32 0.0 |
| 44 | 20.84 | 23.77 | 37.94 | 36.43 | 36. | 0.00 | 0. | min. | 0.1 | 0.71 5% | 2.32 0.0 |
| 45 | 21.32 | 24.25 | 37.94 | 19.53 | 20. | 0.00 | 0. | min. | 0.1 | 0.71 3% | 2.32 0.0 |
| 46 | 21.81 | 24.74 | 37.94 | 31.81 | 32. | 0.00 | 0. | min. | 0.1 | 0.71 5% | 2.32 0.0 |
| 47 | 22.29 | 25.22 | 37.94 | 10.24 | 10. | 0.00 | 0. | min. | 0.1 | 0.71 1% | 2.32 0.0 |
| 48 | 22.78 | 25.71 | 37.94 | 5.83 | 6. | 0.00 | 0. | min. | 0.1 | 0.71 1% | 2.32 0.0 |
| 49 | 23.26 | 26.19 | 37.94 | 37.82 | 38. | 0.00 | 0. | min. | 0.1 | 0.71 5% | 2.32 0.0 |
| 50 | 23.75 | 26.68 | 37.94 | -0.84 | -1. | 0.00 | 0. | min. | 0.1 | 0.71 0% | 2.32 0.0 |
| 51 | 24.23 | 27.16 | 37.94 | 2.36 | 2. | 0.00 | 0. | min. | 0.1 | 0.71 0% | 2.32 0.0 |
| 52 | 24.72 | 27.65 | 37.94 | 17.68 | 18. | 0.00 | 0. | min. | 0.1 | 0.71 3% | 2.32 0.0 |
| 53 | 25.20 | 28.13 | 37.94 | 18.59 | 19. | 0.00 | 0. | min. | 0.1 | 0.71 3% | 2.32 0.0 |
| 54 | 25.69 | 28.62 | 37.94 | -6.19 | -6. | 0.00 | 0. | min. | 0.1 | 0.71 1% | 2.32 0.0 |
| 55 | 26.17 | 29.10 | 37.94 | -9.86 | -10. | 0.00 | 0. | min. | 0.1 | 0.71 1% | 2.32 0.0 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | Tm (kNm) | Bewehrung (cm²/m) | | | | | | as | |
|----------------|----------|----------|----------|-----------|-------------|-------------------|---------|------|-----|------|-----|------|-----|
| | | | | | | Bereich | Vrd(MN) | | | | | | |
| 56 | 26.65 | 29.58 | 37.94 | 16.34 | 16. | 0.00 | 0. | min. | 0.1 | 0.71 | 2% | 2.32 | 0.0 |
| 57 | 27.14 | 30.07 | 37.94 | -11.12 | -11. | 0.00 | 0. | min. | 0.1 | 0.71 | 2% | 2.32 | 0.0 |
| 58 | 27.62 | 30.55 | 37.94 | 11.98 | 12. | 0.00 | 0. | min. | 0.1 | 0.71 | 2% | 2.32 | 0.0 |
| 59 | 28.11 | 31.04 | 37.94 | -21.19 | -21. | 0.00 | 0. | min. | 0.1 | 0.71 | 3% | 2.32 | 0.0 |
| 60 | 28.59 | 31.52 | 37.94 | -23.91 | -24. | 0.00 | 0. | min. | 0.1 | 0.71 | 3% | 2.32 | 0.0 |
| 61 | 29.08 | 32.01 | 37.94 | -3.10 | -3. | 0.00 | 0. | min. | 0.1 | 0.71 | 0% | 2.32 | 0.0 |
| 62 | 29.56 | 32.49 | 37.94 | -3.50 | -4. | 0.00 | 0. | min. | 0.1 | 0.71 | 0% | 2.32 | 0.0 |
| 63 | 30.05 | 32.98 | 37.94 | -35.77 | -36. | 0.00 | 0. | min. | 0.1 | 0.71 | 5% | 2.32 | 0.0 |
| 64 | 30.53 | 33.46 | 37.94 | -36.61 | -37. | 0.00 | 0. | min. | 0.1 | 0.71 | 5% | 2.32 | 0.0 |
| 65 | 31.02 | 33.95 | 37.94 | -10.38 | -10. | 0.00 | 0. | min. | 0.1 | 0.71 | 1% | 2.32 | 0.0 |
| 66 | 31.50 | 34.43 | 37.94 | -13.46 | -13. | 0.00 | 0. | min. | 0.1 | 0.71 | 2% | 2.32 | 0.0 |
| 67 | 31.99 | 34.92 | 37.94 | -46.19 | -46. | 0.00 | 0. | min. | 0.1 | 0.71 | 7% | 2.32 | 0.0 |
| 68 | 32.47 | 35.40 | 37.94 | -55.32 | -55. | 0.00 | 0. | min. | 0.1 | 0.71 | 8% | 2.32 | 0.0 |
| 69 | 32.95 | 35.88 | 37.94 | 3.96 | 4. | 0.00 | 0. | min. | 0.1 | 0.71 | 1% | 2.32 | 0.0 |
| 70 | 33.44 | 36.37 | 37.94 | -62.84 | -63. | 0.00 | 0. | min. | 0.1 | 0.71 | 9% | 2.32 | 0.0 |
| 71 | 33.92 | 36.85 | 37.94 | -52.14 | -52. | 0.00 | 0. | min. | 0.1 | 0.71 | 7% | 2.32 | 0.0 |
| 72 | 34.41 | 37.34 | 37.94 | -23.19 | -23. | 0.00 | 0. | min. | 0.1 | 0.71 | 3% | 2.32 | 0.0 |
| 73 | 34.89 | 37.82 | 37.94 | -25.02 | -25. | 0.00 | 0. | min. | 0.1 | 0.71 | 4% | 2.32 | 0.0 |
| 74 | 35.38 | 38.31 | 37.94 | -58.02 | -58. | 0.00 | 0. | min. | 0.1 | 0.71 | 8% | 2.32 | 0.0 |
| 75 | 35.86 | 38.79 | 37.94 | -58.07 | -58. | 0.00 | 0. | min. | 0.1 | 0.71 | 8% | 2.32 | 0.0 |
| 76 | 36.35 | 39.28 | 37.94 | -36.22 | -36. | 0.00 | 0. | min. | 0.1 | 0.71 | 5% | 2.32 | 0.0 |
| 77 | 36.83 | 39.76 | 37.94 | -52.43 | -52. | 0.00 | 0. | min. | 0.1 | 0.71 | 7% | 2.32 | 0.0 |
| 78 | 37.32 | 40.25 | 37.94 | -116.31 | -116. | 0.00 | 0. | min. | 0.1 | 0.71 | 16% | 2.32 | 0.0 |
| 79 | 37.80 | 40.73 | 37.94 | -166.23 | -166. | 0.00 | 0. | min. | 0.2 | 0.71 | 24% | 2.32 | 0.0 |
| 80 | 38.29 | 41.22 | 37.94 | -252.88 | -253. | 0.00 | 0. | min. | 0.2 | 0.71 | 36% | 2.32 | 0.0 |
| 81 | 38.77 | 41.70 | 37.94 | -394.65 | -395. | 0.00 | 0. | min. | 0.3 | 0.71 | 56% | 2.32 | 0.0 |
| 82 | 38.77 | 41.70 | 37.94 | 288.44 | 288. | 0.00 | 0. | min. | 0.2 | 0.71 | 41% | 2.32 | 0.0 |
| 83 | 39.19 | 42.12 | 37.94 | 202.54 | 203. | 0.00 | 0. | min. | 0.2 | 0.71 | 29% | 2.32 | 0.0 |
| 84 | 39.61 | 42.54 | 37.94 | 95.49 | 95. | 0.00 | 0. | min. | 0.1 | 0.71 | 14% | 2.32 | 0.0 |
| 85 | 40.03 | 42.96 | 37.94 | 56.75 | 57. | 0.00 | 0. | min. | 0.1 | 0.71 | 8% | 2.32 | 0.0 |
| 86 | 40.45 | 43.38 | 37.94 | 37.19 | 37. | 0.00 | 0. | min. | 0.1 | 0.71 | 5% | 2.32 | 0.0 |
| 87 | 40.86 | 43.79 | 37.94 | 41.69 | 42. | 0.00 | 0. | min. | 0.1 | 0.71 | 6% | 2.32 | 0.0 |
| 88 | 41.28 | 44.21 | 37.94 | 50.24 | 50. | 0.00 | 0. | min. | 0.1 | 0.71 | 7% | 2.32 | 0.0 |
| 89 | 41.70 | 44.63 | 37.94 | 52.10 | 52. | 0.00 | 0. | min. | 0.1 | 0.71 | 7% | 2.32 | 0.0 |
| 90 | 42.12 | 45.05 | 37.94 | 52.99 | 53. | 0.00 | 0. | min. | 0.1 | 0.71 | 8% | 2.32 | 0.0 |
| 91 | 42.54 | 45.47 | 37.94 | -2.99 | -3. | 0.00 | 0. | min. | 0.1 | 0.71 | 0% | 2.32 | 0.0 |
| 92 | 42.96 | 45.89 | 37.94 | -60.08 | -60. | 0.00 | 0. | min. | 0.1 | 0.71 | 9% | 2.32 | 0.0 |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm²] | As Feld [cm²] |
|--------|------------------------------|-----------------|------------------|-------------|------------------|
| UZ-Anf | 21.11 | 2.50 | 1048.75 | 24.12 | 6.99 |
| UZ-End | 18.43 | 2.23 | 90.11 | 2.07 | 6.99 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|---------|
| 0 | 0.00 | 2.93 | 37.94 | 289.87 | 258.83 |
| 1 | 0.24 | 3.17 | 37.94 | 87.00 | 66.65 |
| 2 | 0.73 | 3.66 | 37.94 | -321.24 | -314.82 |
| 3 | 1.21 | 4.14 | 37.94 | -580.71 | -549.26 |
| 4 | 1.70 | 4.63 | 37.94 | -321.00 | -343.07 |
| 5 | 2.18 | 5.11 | 37.94 | -328.20 | -316.22 |
| 6 | 2.67 | 5.60 | 37.94 | -208.16 | -215.55 |
| 7 | 3.15 | 6.08 | 37.94 | -174.65 | -171.13 |
| 8 | 3.63 | 6.56 | 37.94 | -105.06 | -106.81 |
| 9 | 4.12 | 7.05 | 37.94 | -61.06 | -62.64 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|--------|
| 10 | 4.60 | 7.53 | 37.94 | -48.57 | -47.81 |
| 11 | 5.09 | 8.02 | 37.94 | -27.06 | -27.02 |
| 12 | 5.57 | 8.50 | 37.94 | -8.88 | -10.97 |
| 13 | 6.06 | 8.99 | 37.94 | -15.77 | -11.61 |
| 14 | 6.54 | 9.47 | 37.94 | 32.36 | 27.79 |
| 15 | 7.03 | 9.96 | 37.94 | 12.78 | 13.45 |
| 16 | 7.51 | 10.44 | 37.94 | -7.60 | -7.31 |
| 17 | 8.00 | 10.93 | 37.94 | -6.88 | -2.26 |
| 18 | 8.48 | 11.41 | 37.94 | 62.68 | 57.64 |
| 19 | 8.97 | 11.90 | 37.94 | 33.78 | 26.57 |
| 20 | 9.45 | 12.38 | 37.94 | -75.42 | -53.90 |
| 21 | 9.93 | 12.86 | 37.94 | 114.59 | 92.45 |
| 22 | 10.42 | 13.35 | 37.94 | -1.28 | 8.14 |
| 23 | 10.90 | 13.83 | 37.94 | -11.47 | -10.60 |
| 24 | 11.39 | 14.32 | 37.94 | 20.40 | 19.79 |
| 25 | 11.87 | 14.80 | 37.94 | 37.73 | 35.65 |
| 26 | 12.36 | 15.29 | 37.94 | 14.67 | 14.28 |
| 27 | 12.84 | 15.77 | 37.94 | -11.86 | -8.58 |
| 28 | 13.33 | 16.26 | 37.94 | 17.15 | 16.35 |
| 29 | 13.81 | 16.74 | 37.94 | 37.14 | 35.65 |
| 30 | 14.30 | 17.23 | 37.94 | 18.71 | 15.64 |
| 31 | 14.78 | 17.71 | 37.94 | -30.79 | -21.26 |
| 32 | 15.27 | 18.20 | 37.94 | 48.73 | 37.59 |
| 33 | 15.75 | 18.68 | 37.94 | -15.61 | -6.26 |
| 34 | 16.23 | 19.16 | 37.94 | 39.24 | 34.02 |
| 35 | 16.72 | 19.65 | 37.94 | 17.35 | 13.74 |
| 36 | 17.20 | 20.13 | 37.94 | -46.25 | -33.26 |
| 37 | 17.69 | 20.62 | 37.94 | 71.05 | 57.01 |
| 38 | 18.17 | 21.10 | 37.94 | -5.97 | 0.47 |
| 39 | 18.66 | 21.59 | 37.94 | -10.79 | -11.35 |
| 40 | 19.14 | 22.07 | 37.94 | 0.27 | 2.48 |
| 41 | 19.63 | 22.56 | 37.94 | 38.58 | 34.98 |
| 42 | 20.11 | 23.04 | 37.94 | 10.55 | 7.86 |
| 43 | 20.60 | 23.53 | 37.94 | -43.76 | -32.76 |
| 44 | 21.08 | 24.01 | 37.94 | 49.09 | 34.89 |
| 45 | 21.57 | 24.50 | 37.94 | -39.20 | -25.35 |
| 46 | 22.05 | 24.98 | 37.94 | 53.19 | 44.52 |
| 47 | 22.54 | 25.47 | 37.94 | 14.58 | 9.10 |
| 48 | 23.02 | 25.95 | 37.94 | -86.69 | -66.02 |
| 49 | 23.50 | 26.43 | 37.94 | 101.76 | 79.77 |
| 50 | 23.99 | 26.92 | 37.94 | -15.83 | -6.60 |
| 51 | 24.47 | 27.40 | 37.94 | -32.03 | -31.61 |
| 52 | 24.96 | 27.89 | 37.94 | -4.65 | -1.88 |
| 53 | 25.44 | 28.37 | 37.94 | 56.82 | 51.13 |
| 54 | 25.93 | 28.86 | 37.94 | 11.73 | 7.57 |
| 55 | 26.41 | 29.34 | 37.94 | -71.87 | -54.06 |
| 56 | 26.90 | 29.83 | 37.94 | 80.67 | 56.68 |
| 57 | 27.38 | 30.31 | 37.94 | -72.05 | -47.67 |
| 58 | 27.87 | 30.80 | 37.94 | 86.85 | 68.45 |
| 59 | 28.35 | 31.28 | 37.94 | 1.11 | 5.61 |
| 60 | 28.84 | 31.77 | 37.94 | -46.92 | -42.93 |
| 61 | 29.32 | 32.25 | 37.94 | -1.83 | 0.82 |
| 62 | 29.80 | 32.73 | 37.94 | 75.66 | 66.58 |
| 63 | 30.29 | 33.22 | 37.94 | 0.74 | 1.75 |
| 64 | 30.77 | 33.70 | 37.94 | -61.42 | -54.13 |
| 65 | 31.26 | 34.19 | 37.94 | 7.41 | 6.36 |
| 66 | 31.74 | 34.67 | 37.94 | 70.43 | 67.52 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|---------|
| 67 | 32.23 | 35.16 | 37.94 | 33.61 | 18.84 |
| 68 | 32.71 | 35.64 | 37.94 | -161.17 | -122.32 |
| 69 | 33.20 | 36.13 | 37.94 | 178.16 | 137.86 |
| 70 | 33.68 | 36.61 | 37.94 | -39.45 | -22.10 |
| 71 | 34.17 | 37.10 | 37.94 | -61.22 | -59.73 |
| 72 | 34.65 | 37.58 | 37.94 | 1.78 | 3.78 |
| 73 | 35.14 | 38.07 | 37.94 | 77.39 | 68.10 |
| 74 | 35.62 | 38.55 | 37.94 | -1.99 | 0.10 |
| 75 | 36.10 | 39.03 | 37.94 | -51.73 | -45.08 |
| 76 | 36.59 | 39.52 | 37.94 | 31.19 | 33.45 |
| 77 | 37.07 | 40.00 | 37.94 | 142.52 | 131.81 |
| 78 | 37.56 | 40.49 | 37.94 | 94.22 | 103.01 |
| 79 | 38.04 | 40.97 | 37.94 | 177.12 | 178.80 |
| 80 | 38.53 | 41.46 | 37.94 | 298.56 | 292.53 |
| 81 | 38.98 | 41.91 | 37.94 | 198.87 | 205.02 |
| 82 | 39.40 | 42.33 | 37.94 | 273.64 | 255.48 |
| 83 | 39.82 | 42.75 | 37.94 | 79.35 | 92.46 |
| 84 | 40.24 | 43.17 | 37.94 | 51.63 | 46.68 |
| 85 | 40.66 | 43.59 | 37.94 | -14.52 | -10.74 |
| 86 | 41.07 | 44.00 | 37.94 | -22.15 | -20.39 |
| 87 | 41.49 | 44.42 | 37.94 | -0.04 | -4.44 |
| 88 | 41.91 | 44.84 | 37.94 | -14.56 | -2.12 |
| 89 | 42.33 | 45.26 | 37.94 | 145.59 | 133.59 |
| 90 | 42.75 | 45.68 | 37.94 | 133.98 | 136.24 |
| 91 | 42.96 | 45.89 | 37.94 | 105.94 | 120.49 |

Mittlere Feldbelastung

| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|--------|
| 1 | 0.00 | 38.77 | -10.24 | -10.32 |
| 2 | 38.77 | 42.96 | 83.63 | 83.74 |
| total | 0.00 | 42.96 | -1.09 | -10.39 |

Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm²/m) |
|----------------|----------|----------|----------|-------------------------|----------------------|
| 1 | 0.00 | 35.82 | 20.25 | 258.83 | 5.95 |
| 2 | 0.48 | 35.82 | 20.57 | 125.53 | 2.89 |
| 3 | 0.97 | 35.82 | 20.90 | 482.85 | 11.11 |
| 4 | 1.45 | 35.82 | 21.22 | 461.85 | 10.62 |
| 5 | 1.94 | 35.82 | 21.54 | 314.08 | 7.22 |
| 6 | 2.42 | 5.35 | 37.94 | 272.88 | 6.28 |
| 7 | 2.91 | 5.84 | 37.94 | 187.51 | 4.31 |
| 8 | 3.39 | 6.32 | 37.94 | 141.65 | 3.26 |
| 9 | 3.88 | 6.81 | 37.94 | 79.73 | 1.83 |
| 10 | 4.36 | 7.29 | 37.94 | 53.98 | 1.24 |
| 11 | 4.85 | 7.78 | 37.94 | 38.61 | 0.89 |
| 12 | 5.33 | 8.26 | 37.94 | 15.91 | 0.37 |
| 13 | 5.82 | 8.75 | 37.94 | 14.40 | 0.33 |
| 14 | 6.30 | 9.23 | 37.94 | 8.69 | 0.20 |
| 15 | 6.78 | 9.71 | 37.94 | 26.47 | 0.61 |
| 16 | 7.27 | 10.20 | 37.94 | 1.63 | 0.04 |
| 17 | 7.75 | 10.68 | 37.94 | 12.15 | 0.28 |
| 18 | 8.24 | 11.17 | 37.94 | 28.32 | 0.65 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 19 | 8.72 | 11.65 | 37.94 | 60.48 | 1.39 |
| 20 | 9.21 | 12.14 | 37.94 | 35.13 | 0.81 |
| 21 | 9.69 | 12.62 | 37.94 | 20.22 | 0.47 |
| 22 | 10.18 | 13.11 | 37.94 | 69.39 | 1.60 |
| 23 | 10.66 | 13.59 | 37.94 | 16.66 | 0.38 |
| 24 | 11.15 | 14.08 | 37.94 | 4.20 | 0.10 |
| 25 | 11.63 | 14.56 | 37.94 | 31.74 | 0.73 |
| 26 | 12.12 | 15.05 | 37.94 | 28.67 | 0.66 |
| 27 | 12.60 | 15.53 | 37.94 | 1.48 | 0.03 |
| 28 | 13.08 | 16.01 | 37.94 | 0.16 | 0.00 |
| 29 | 13.57 | 16.50 | 37.94 | 29.44 | 0.68 |
| 30 | 14.05 | 16.98 | 37.94 | 32.48 | 0.75 |
| 31 | 14.54 | 17.47 | 37.94 | 12.51 | 0.29 |
| 32 | 15.02 | 17.95 | 37.94 | 10.57 | 0.24 |
| 33 | 15.51 | 18.44 | 37.94 | 18.35 | 0.42 |
| 34 | 15.99 | 18.92 | 37.94 | 7.69 | 0.18 |
| 35 | 16.48 | 19.41 | 37.94 | 37.13 | 0.85 |
| 36 | 16.96 | 19.89 | 37.94 | 23.83 | 0.55 |
| 37 | 17.45 | 20.38 | 37.94 | 13.44 | 0.31 |
| 38 | 17.93 | 20.86 | 37.94 | 40.13 | 0.92 |
| 39 | 18.42 | 21.35 | 37.94 | 14.26 | 0.33 |
| 40 | 18.90 | 21.83 | 37.94 | 6.91 | 0.16 |
| 41 | 19.39 | 22.32 | 37.94 | 20.82 | 0.48 |
| 42 | 19.87 | 22.80 | 37.94 | 30.86 | 0.71 |
| 43 | 20.35 | 23.28 | 37.94 | 24.90 | 0.57 |
| 44 | 20.84 | 23.77 | 37.94 | 5.88 | 0.14 |
| 45 | 21.32 | 24.25 | 37.94 | 5.30 | 0.12 |
| 46 | 21.81 | 24.74 | 37.94 | 1.82 | 0.04 |
| 47 | 22.29 | 25.22 | 37.94 | 48.04 | 1.10 |
| 48 | 22.78 | 25.71 | 37.94 | 51.25 | 1.18 |
| 49 | 23.26 | 26.19 | 37.94 | 8.84 | 0.20 |
| 50 | 23.75 | 26.68 | 37.94 | 55.72 | 1.28 |
| 51 | 24.23 | 27.16 | 37.94 | 33.58 | 0.77 |
| 52 | 24.72 | 27.65 | 37.94 | 21.53 | 0.50 |
| 53 | 25.20 | 28.13 | 37.94 | 29.00 | 0.67 |
| 54 | 25.69 | 28.62 | 37.94 | 44.12 | 1.01 |
| 55 | 26.17 | 29.10 | 37.94 | 43.72 | 1.01 |
| 56 | 26.65 | 29.58 | 37.94 | 10.58 | 0.24 |
| 57 | 27.14 | 30.07 | 37.94 | 3.92 | 0.09 |
| 58 | 27.62 | 30.55 | 37.94 | 1.43 | 0.03 |
| 59 | 28.11 | 31.04 | 37.94 | 57.89 | 1.33 |
| 60 | 28.59 | 31.52 | 37.94 | 31.38 | 0.72 |
| 61 | 29.08 | 32.01 | 37.94 | 31.01 | 0.71 |
| 62 | 29.56 | 32.49 | 37.94 | 43.34 | 1.00 |
| 63 | 30.05 | 32.98 | 37.94 | 46.27 | 1.06 |
| 64 | 30.53 | 33.46 | 37.94 | 38.63 | 0.89 |
| 65 | 31.02 | 33.95 | 37.94 | 33.23 | 0.76 |
| 66 | 31.50 | 34.43 | 37.94 | 42.88 | 0.99 |
| 67 | 31.99 | 34.92 | 37.94 | 69.70 | 1.60 |
| 68 | 32.47 | 35.40 | 37.94 | 87.87 | 2.02 |
| 69 | 32.95 | 35.88 | 37.94 | 9.95 | 0.23 |
| 70 | 33.44 | 36.37 | 37.94 | 92.32 | 2.12 |
| 71 | 33.92 | 36.85 | 37.94 | 69.17 | 1.59 |
| 72 | 34.41 | 37.34 | 37.94 | 33.21 | 0.76 |
| 73 | 34.89 | 37.82 | 37.94 | 46.87 | 1.08 |
| 74 | 35.38 | 38.31 | 37.94 | 44.91 | 1.03 |
| 75 | 35.86 | 38.79 | 37.94 | 35.62 | 0.82 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 76 | 36.35 | 39.28 | 37.94 | 19.09 | 0.44 |
| 77 | 36.83 | 39.76 | 37.94 | 95.01 | 2.19 |
| 78 | 37.32 | 40.25 | 37.94 | 121.41 | 2.79 |
| 79 | 37.80 | 40.73 | 37.94 | 120.99 | 2.78 |
| 80 | 38.29 | 41.22 | 37.94 | 257.88 | 5.93 |
| 81 | 38.77 | 41.70 | 37.94 | 241.25 | 5.55 |
| 82 | 39.19 | 42.12 | 37.94 | 236.44 | 5.44 |
| 83 | 39.61 | 42.54 | 37.94 | 184.71 | 4.25 |
| 84 | 40.03 | 42.96 | 37.94 | 56.49 | 1.30 |
| 85 | 40.45 | 43.38 | 37.94 | 19.94 | 0.46 |
| 86 | 40.86 | 43.79 | 37.94 | 23.92 | 0.55 |
| 87 | 41.28 | 44.21 | 37.94 | 8.48 | 0.20 |
| 88 | 41.70 | 44.63 | 37.94 | 15.16 | 0.35 |
| 89 | 42.12 | 45.05 | 37.94 | 64.41 | 1.48 |
| 90 | 42.54 | 45.47 | 37.94 | 152.00 | 3.50 |
| 91 | 42.96 | 45.89 | 37.94 | 120.49 | 2.77 |

Überzug Nr.: 55 , bm/b0/d0/h (cm) 25.0 / 25.0 / 250.0 / 240.0 Pos.Bez.: WT
 Brandschutz bei seiti. Achsabstand von 35.0 mm erfüllt

Biegebemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | M (kNm) | | Bewehrung (cm ²) unten | oben | Hebel- arm (cm) |
|----------------|----------|----------|----------|------------|-------|---------------------------------------|------|--------------------|
| 1 | 0.00 | 35.82 | 20.25 | -6.90 | -7. | 0.00 | 0.07 | 239.6 |
| 2 | 0.32 | 35.82 | 20.57 | -58.30 | -58. | 0.00 | 0.58 | 238.8 |
| 3 | 0.65 | 35.82 | 20.90 | -109.42 | -109. | 0.00 | 1.10 | 238.3 |
| 4 | 0.97 | 35.82 | 21.22 | -130.24 | -130. | 0.00 | 1.20 | 238.2 |
| 5 | 1.29 | 35.82 | 21.54 | -129.52 | -130. | 0.00 | 1.20 | 238.2 |

Summe der Bewehrung in kg (theoretisches Stahlgewicht)

obere Bewehrung : 2.26

untere Bewehrung : 0.00

Achtung: obere Mindestbewehrung gem. DIN von

6.99 cm² gegebenenfalls einzulegen !

Schubbemessung

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Q (kN) | | Tm (kNm) | | Bewehrung (cm ² /m) | | | | |
|----------------|----------|----------|----------|-----------|-------|-------------|----|--------------------------------|---------|-----|------|-----|
| | | | | | | | | Bereich | Vrd(MN) | as | | |
| 1 | 0.00 | 35.82 | 20.25 | -154.13 | -154. | 0.00 | 0. | min. 0.2 | 0.71 | 22% | 2.32 | 0.0 |
| 2 | 0.32 | 35.82 | 20.57 | -169.95 | -170. | 0.00 | 0. | min. 0.2 | 0.71 | 24% | 2.32 | 0.0 |
| 3 | 0.65 | 35.82 | 20.90 | -119.77 | -120. | 0.00 | 0. | min. 0.1 | 0.71 | 17% | 2.32 | 0.0 |
| 4 | 0.97 | 35.82 | 21.22 | -20.16 | -20. | 0.00 | 0. | min. 0.1 | 0.71 | 3% | 2.32 | 0.0 |
| 5 | 1.29 | 35.82 | 21.54 | 13.44 | 13. | 0.00 | 0. | min. 0.1 | 0.71 | 2% | 2.32 | 0.0 |

| | Druckstreben- neigung [°] | Vrd,max [MN] | Zugkraft [kN] | As [cm ²] | As Feld [cm ²] |
|--------|------------------------------|-----------------|------------------|--------------------------|-------------------------------|
| UZ-Anf | 18.43 | 2.23 | 231.19 | 5.32 | 0.00 |
| UZ-End | 18.43 | 2.23 | 20.16 | 0.46 | 0.00 |

geschätzter Lastanteil auf Unter-/Überzug

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|---------|
| 0 | 0.00 | 35.82 | 20.25 | 158.68 | 147.60 |
| 1 | 0.16 | 35.82 | 20.41 | 59.12 | 49.07 |
| 2 | 0.48 | 35.82 | 20.73 | -154.71 | -155.61 |

Position : BP

Bodenplatte-Lastfall HHW und Vollast aus Gebäude

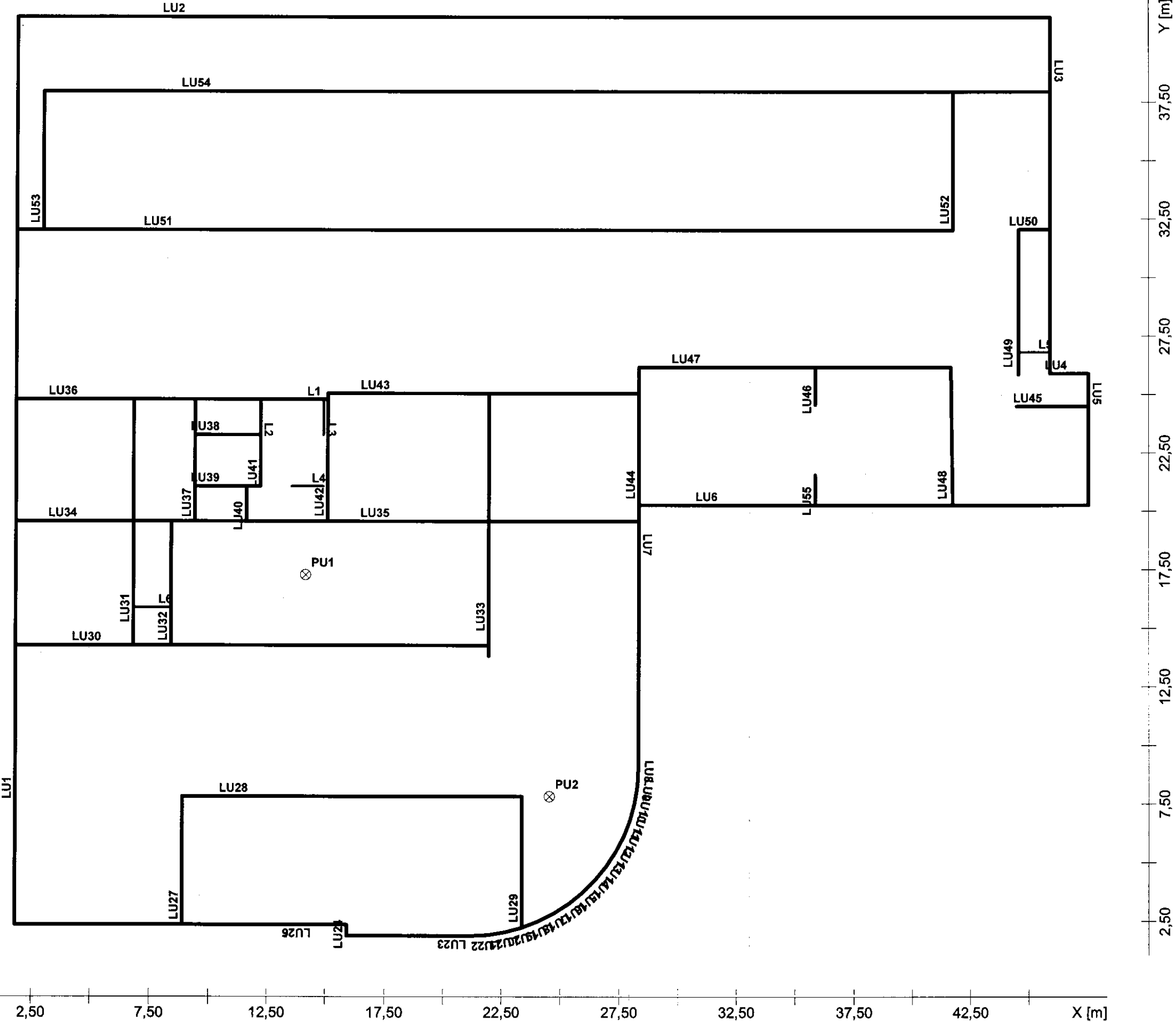
| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Lastanteil A-Uz. (kN/m) | |
|----------------|----------|----------|----------|----------------------------|---------|
| 3 | 0.81 | 35.82 | 21.06 | -335.33 | -308.86 |
| 4 | 1.13 | 35.82 | 21.38 | -88.66 | -104.19 |
| 5 | 1.29 | 35.82 | 21.54 | 76.58 | 32.65 |

Mittlere Feldbelastung

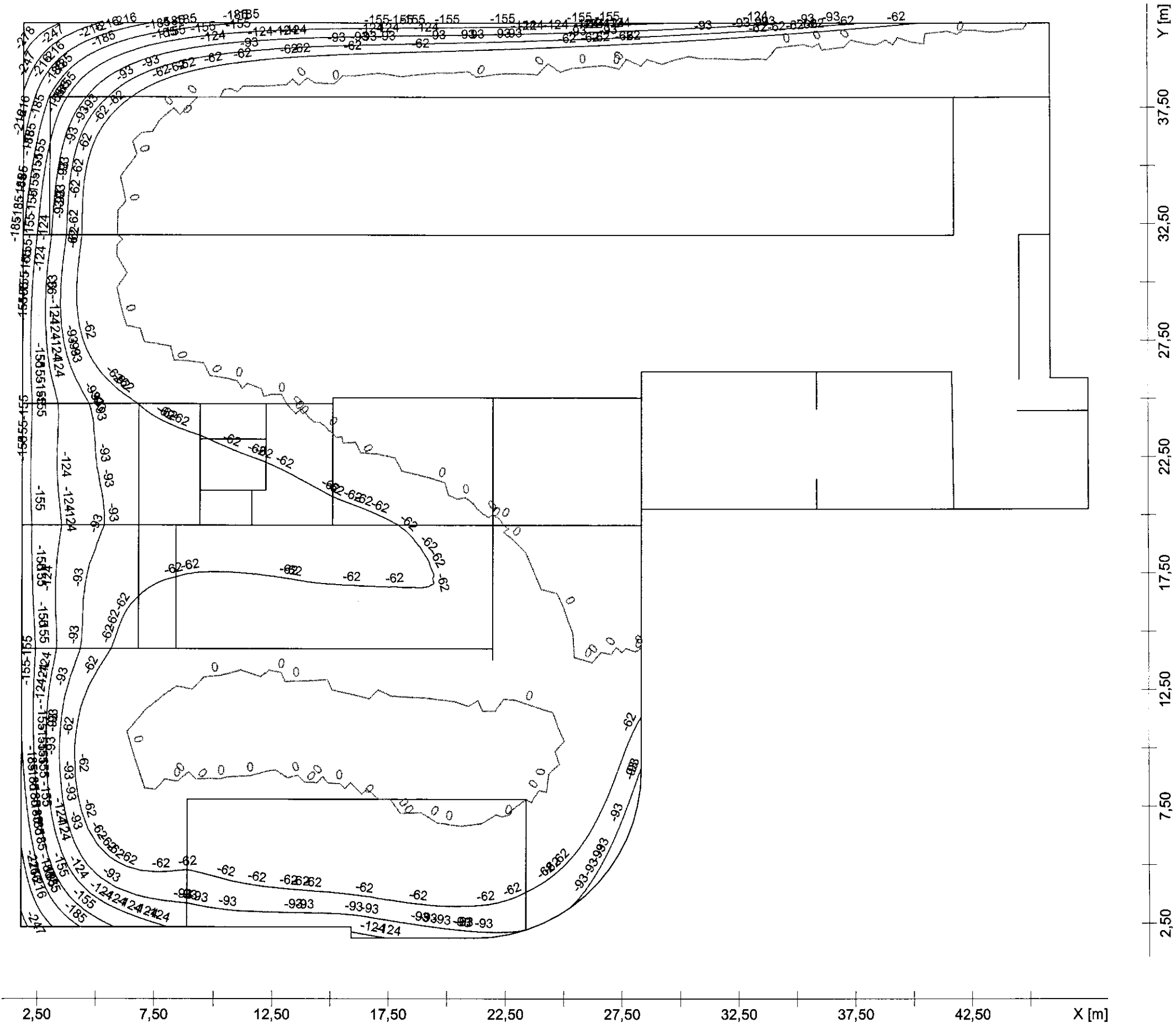
| Feld Nr. | von Za (m) | bis Ze (m) | mittlere Feldbelastung A-UZ-m (kN/m) | |
|-------------|---------------|---------------|---|---------|
| 1 | 0.00 | 1.29 | -113.35 | -113.07 |
| total | 0.00 | 1.29 | -113.35 | -113.07 |

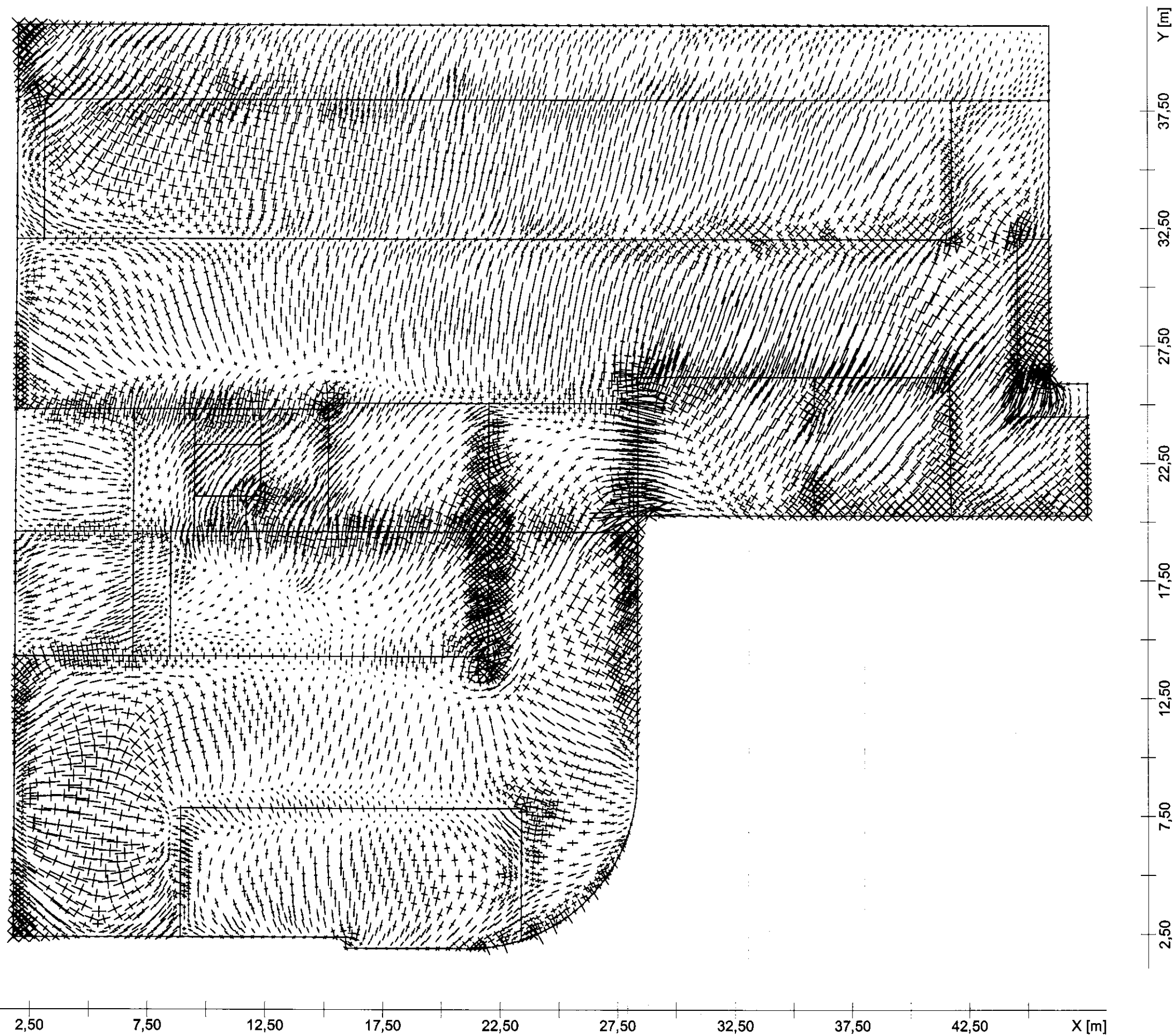
Ermittlung der Aufhängebewehrung für Überzüge

| UZ.Pkt. Nr. | Z (m) | X (m) | Y (m) | Last (Design) (kN/m) | Bewehrung (cm ² /m) |
|----------------|----------|----------|----------|-------------------------|-----------------------------------|
| 1 | 0.00 | 35.82 | 20.25 | 147.60 | 3.39 |
| 2 | 0.32 | 35.82 | 20.57 | 49.46 | 1.14 |
| 3 | 0.65 | 35.82 | 20.90 | 262.93 | 6.05 |
| 4 | 0.97 | 35.82 | 21.22 | 241.03 | 5.54 |
| 5 | 1.29 | 35.82 | 21.54 | 32.65 | 0.75 |



Plot#2.1, M 1:180,0, Bereich=(1,00, 1,07, 66,57, 44,50)
1527\BP, Belastungsdarst.: LPL=Lin.last, R=Randmom., P=Pkt.last, F,PF=Flaechenlast, U=Last aus Uz, PU,LU=übern.Last

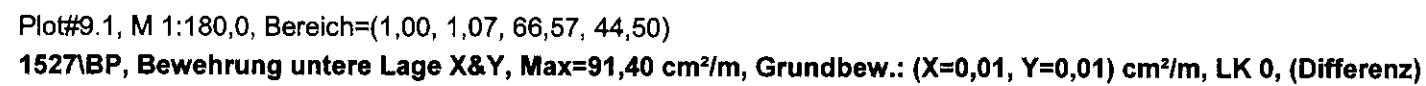




Plot#3.1, M 1:180,0, Bereich=(1,00, 1,07, 66,57, 44,50)

1527BP, Hauptmomente, 1cm := 1000,00 kNm/m, charakteristisch

POSITION BP

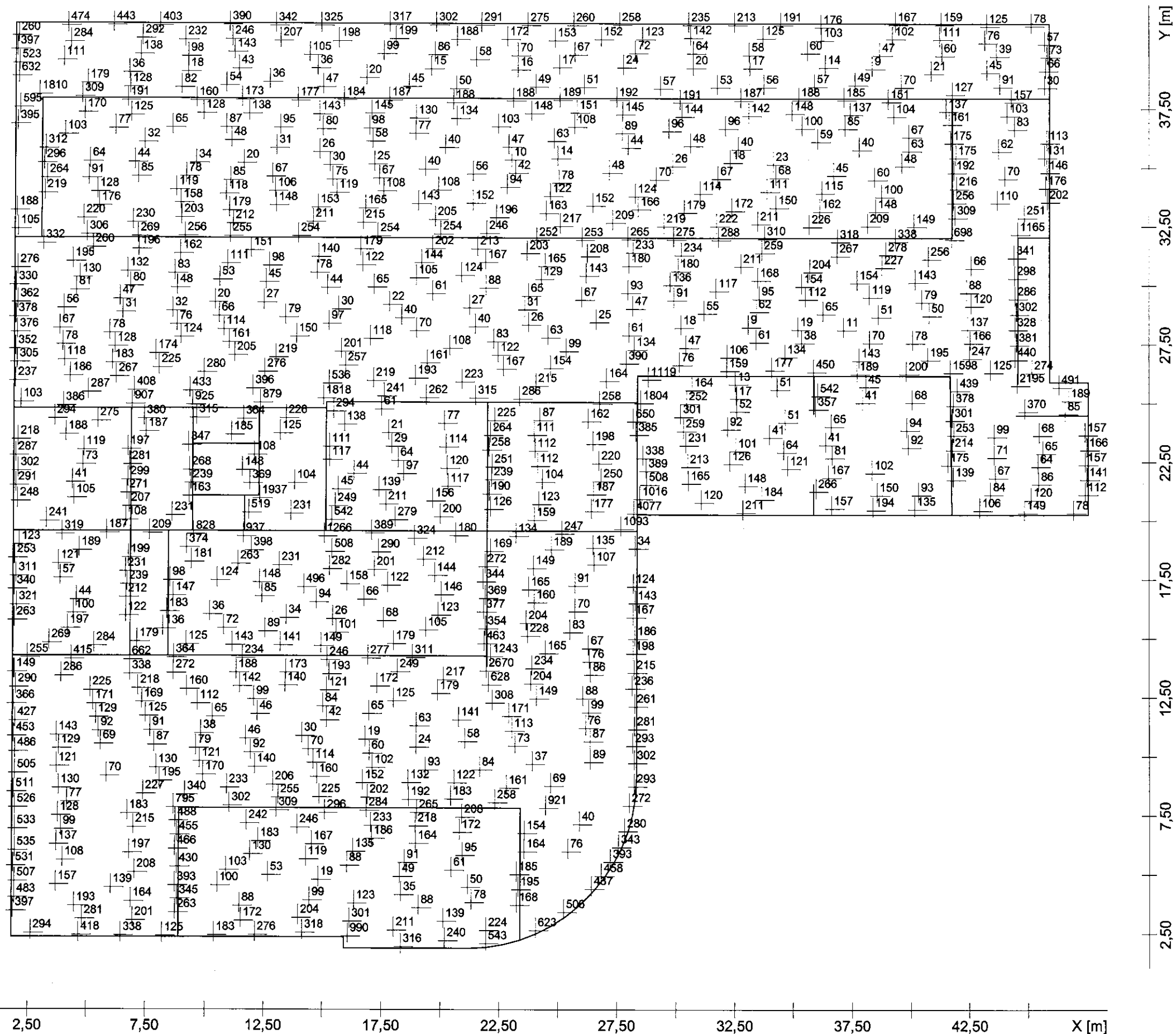




Plot#8.1, M 1:180,0, Bereich=(1,00, 1,07, 66,57, 44,50)

1527\BP, Bewehrung obere Lage X&Y, Max=38,20 cm²/m, Grundbew.: (X=0,01, Y=0,01) cm²/m, LK 0, (Differenz)

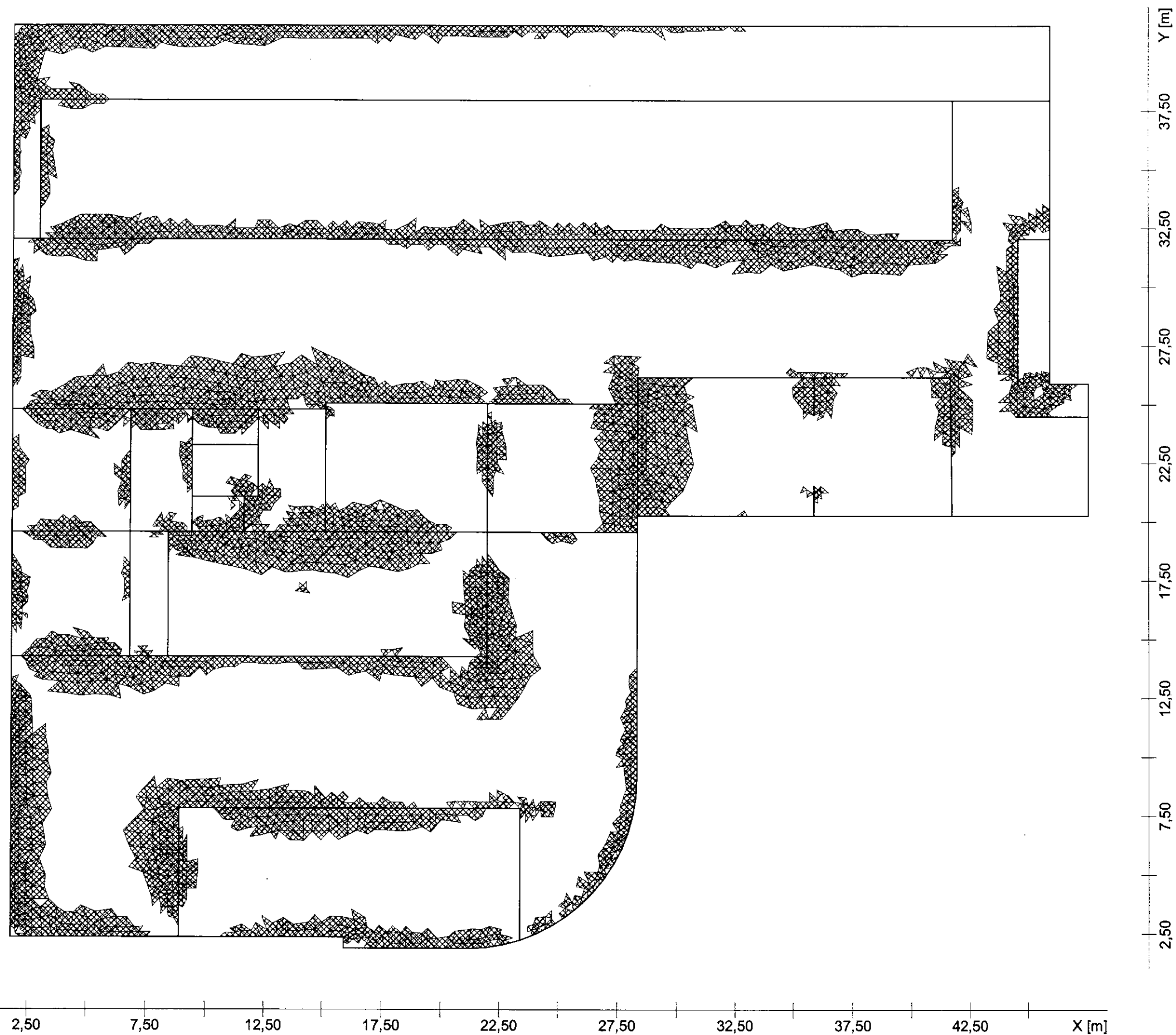
POSITION BP



Plot#5.1, M 1:180,0, Bereich=(1,00, 1,07, 66,57, 44,50)

1527BP, Querkraft Qres Design, Max=4077,43 kN/m, Werte größer: 0,00 kN/m, LK 0

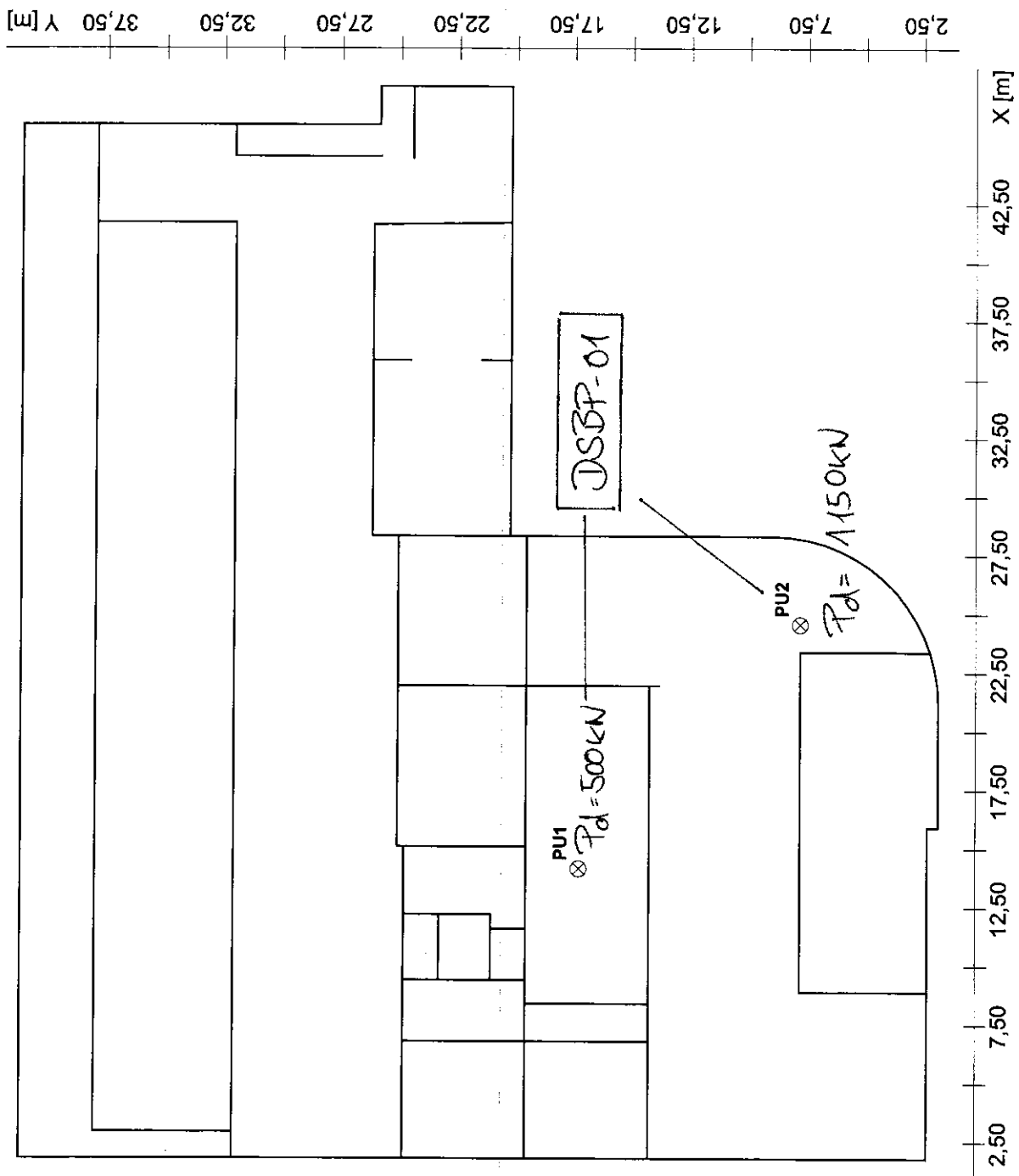
POSITION BP



Plot#6.1, M 1:180,0, Bereich=(1,00, 1,07, 66,57, 44,50)

1527\BP, Schubbewehrung As, Max=69,27 cm²/m², Werte größer: 0,00 cm²/m², LK 0

POSITION BP



Plot#7.1, M 1:275,0, Bereich=(1,00, 1,07, 69,28, 45,43)
1527\BP, Belastungsdarst.: LPL=Lin.last, P=Pkt.last, F,PF=Flaechenlast, U=Last aus Uz, PU,U=übern.Last

POSITION BP

HALFEN - Durchstanzbewehrung, ETA-12/0454 (für die Anwendung mit DIN EN 1992-1-1/NA:2013-04 + A1:2015-12)
HALFEN Bemessungsprogramm HDB, Version 13.02

Die Bemessung - einschließlich der statischen Werte - gilt ausschließlich für das ausgewiesene HALFEN-Produkt. Tragfähigkeiten von scheinbar baugleichen Fremdprodukten können abweichen. Für alternative Produkte kann der Anbieter der Software keine Gewährleistung übernehmen.

Durchstanznachweis für Rechteckstütze im Innenbereich (Bodenplatte)

Eingabewerte

| | | | |
|-------------------------------|-------------------------|---|-----------------------|
| Bemessungswert Durchstanzlast | V_{Ed} | = | 1500,0 kN |
| Erdbebenzone | | = | 0,1,2 |
| Lasterhöhungsfaktor | β | = | 1,10 |
| Bodenpressung | σ_{gd} | = | 0,0 kN/m ² |
| Plattendicke | h | = | 80 cm |
| statische Nutzhöhe | d | = | 75 cm |
| Stützenbreite | b | = | 40 cm |
| Stützenbreite | a | = | 40 cm |
| Betondeckung oben / unten | $c_{nom,o} / c_{nom,u}$ | = | 2,5 cm / 3,5 cm |

Material

| | | | |
|--|----------|---|--|
| Beton / Stahlsorte Biegezugbewehrung / HDB | | = | C30/37 / B500 / B500 |
| Flächenbewehrung | a_{sx} | = | 31,0 cm ² /m ($\rho_x = 0,41 \%$) |
| Flächenbewehrung | a_{sy} | = | 31,0 cm ² /m ($\rho_y = 0,41 \%$) |
| Längsbewehrungsgrad | ρ_l | = | 0,41 % < 1,95 % |

Ergebnisse am kritischen Rundschnitt

| | | | |
|-------------------------------------|----------------------|---|-----------|
| Länge des Rundschnittes | u | = | 631,2 cm |
| Bemessungswert der Einwirkung | $\beta \cdot V_{Ed}$ | = | 1650,0 kN |
| Widerstand ohne Durchstanzbewehrung | $V_{Rd,c}$ | = | 3322,4 kN |
| Maximaltragfähigkeit | $V_{Rd,max}$ | = | 5980,4 kN |

Keine Durchstanzbewehrung erforderlich

