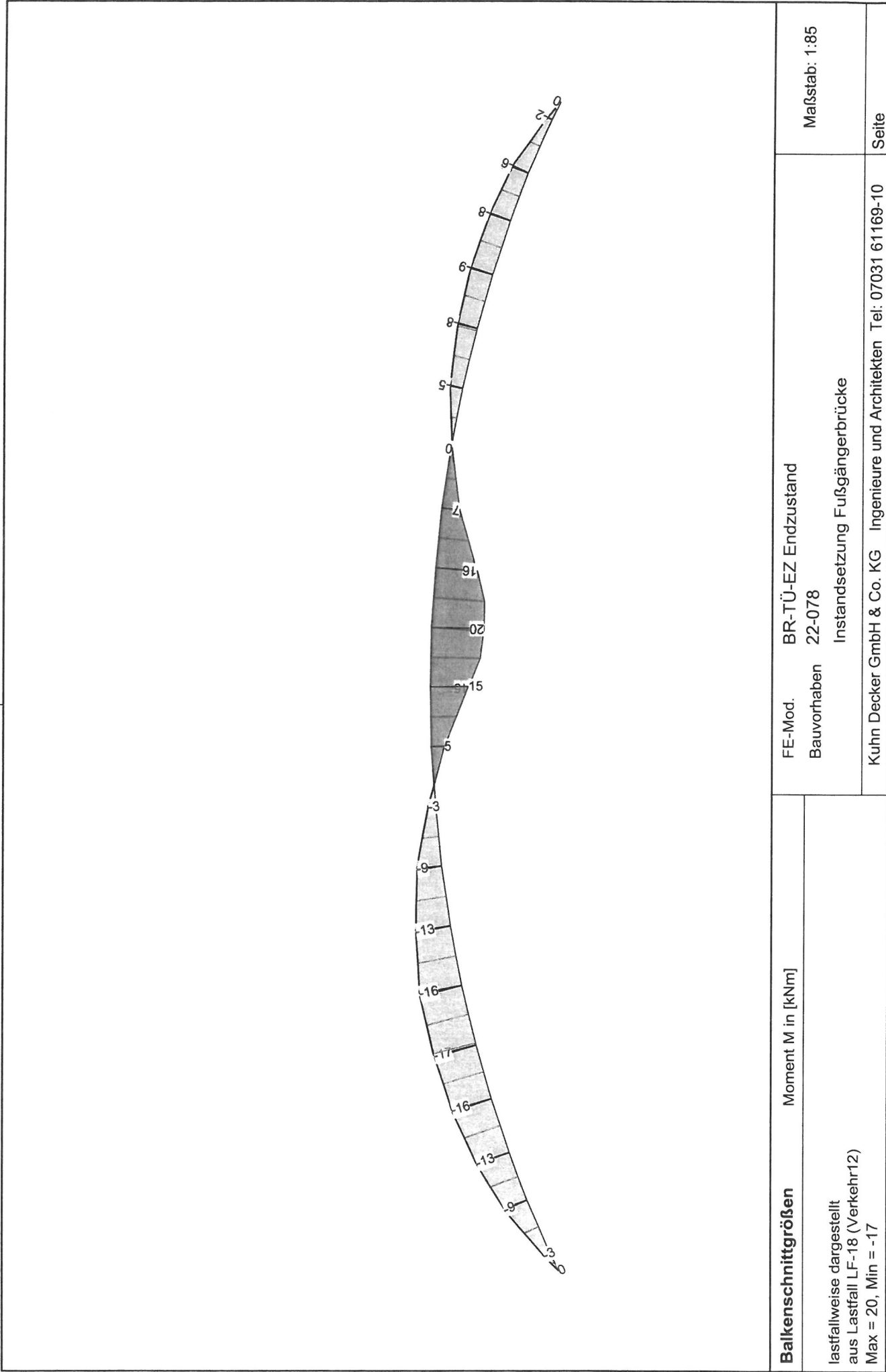


| Balkenschnittgrößen | | Querkraft V in [kN] | FE-Mod. BR-TÜ-EZ Endzustand 22-078 Instandsetzung Fußgängerbrücke Bauvorhaben | Maßstab: 1:85 |
|--|--|---------------------|---|---------------|
| lastfallweise dargestellt aus Lastfall LF-18 (Verkehr12) Max = 11, Min = -10 | | | | |
| | | | Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10 | Seite |

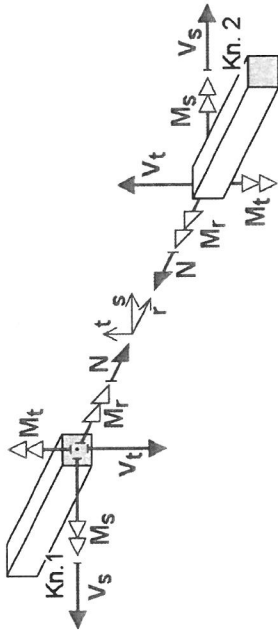


Balkenschnittgr-Stb

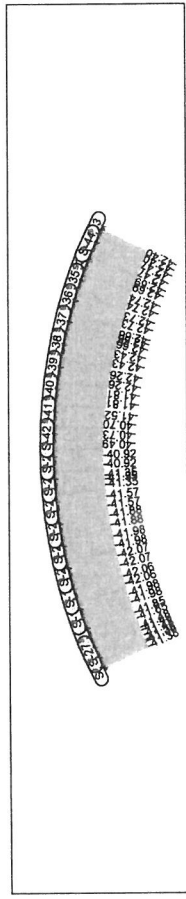
Schnittgrößen Stb-Stützen und 3D-Stäbe

Schnittgrößen

Schnittgrößen der Stützen und 3D-Stäbe



Normalkraft Nr [kN]



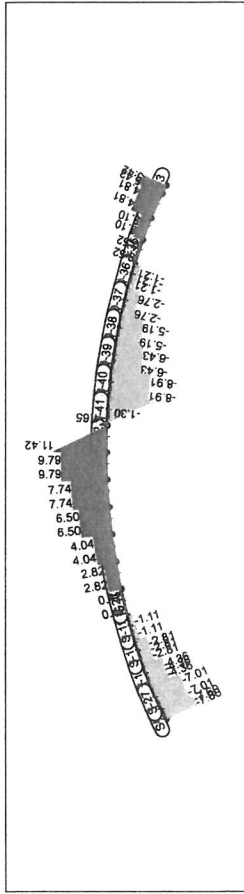
aus Lastkombination LF-18

| Position | min Nr max Nr [kN] | Vs [kN] | Mt [kNm] |
|----------|--------------------------|----------------|------------------|
| S-16 | -41.38 -41.38 | -7.60 -7.60 | 0.00 -1.26 |
| S-17 | -41.85 -41.85 | -4.36 -4.36 | -11.23 -9.36 |
| S-18 | -41.98 -41.98 | -2.81 -2.81 | -13.09 -14.42 |
| S-19 | -42.06 -42.06 | -1.11 -1.11 | -15.76 -15.76 |
| S-20 | -42.07 -42.07 | 0.42 0.42 | -16.57 -16.79 |
| S-21 | -41.98 -41.98 | 2.82 2.82 | -14.93 -16.36 |
| S-22 | -41.88 -41.88 | 4.04 4.04 | -13.49 -11.45 |
| S-23 | -41.57 -41.57 | 6.50 6.50 | -9.40 -6.13 |
| S-24 | -41.35 -41.35 | 7.74 7.74 | -2.86 1.02 |
| S-25 | -40.92 -40.92 | 9.79 9.79 | 4.90 -2.52 |
| S-27 | -41.48 -41.48 | -7.01 -7.01 | -5.94 -0.90 |
| S-33 | -42.40 -42.40 | 5.42 5.42 | |

Position

| Position | min Nr max Nr [kN] | Vs [kN] | Mt [kNm] |
|----------|--------------------------|-----------------|----------------|
| S-34 | -42.40 -42.69 | 5.42 2.10 | -1.79 -8.28 |
| S-35 | -42.69 -42.74 | 2.10 0.52 | -8.28 -8.53 |
| S-36 | -42.74 -42.73 | 0.52 -1.21 | -8.78 -7.64 |
| S-37 | -42.73 -42.66 | -1.21 -2.76 | -8.21 -4.80 |
| S-38 | -42.66 -42.43 | -2.76 -5.19 | -7.54 -2.15 |
| S-39 | -42.43 -42.26 | -5.19 -6.43 | 0.49 7.00 |
| S-40 | -42.26 -41.81 | -6.43 -8.91 | 7.00 11.48 |
| S-41 | -41.81 -41.52 | -8.91 -10.15 | 11.48 15.95 |
| S-42 | -40.70 -40.73 | 1.65 -0.38 | 20.21 20.21 |
| S-44 | -42.47 -42.47 | 11.42 4.81 | 14.69 -4.14 |
| | | 4.81 | -6.49 |

Querkraft Vs [kN]

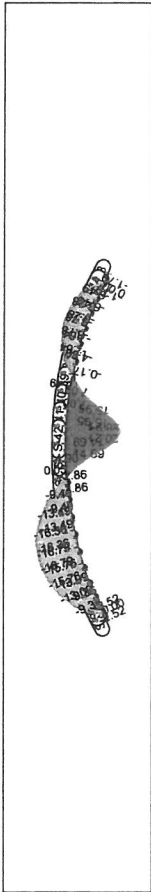


aus Lastkombination LF-18

| Position | Nr [kN] | min Vs max Vs [kN] | Mt Mt [kNm] |
|----------|------------|--------------------------|-------------------|
| S-16 | -41.38 | -7.60 | -1.26 |
| S-17 | -41.38 | -7.60 | 0.00 |
| S-18 | -41.85 | -4.36 | -9.36 |
| S-19 | -41.85 | -4.36 | -11.23 |
| S-20 | -41.98 | -2.81 | -13.09 |
| S-21 | -41.98 | -2.81 | -14.42 |
| S-22 | -42.06 | -1.11 | -16.28 |
| S-23 | -42.07 | -1.11 | -15.76 |
| S-24 | -42.07 | 0.42 | -16.78 |
| S-25 | -41.98 | 0.42 | -16.79 |
| S-26 | -41.98 | 2.82 | -16.36 |
| S-27 | -41.98 | 2.82 | -14.93 |
| S-28 | -41.88 | 4.04 | -11.45 |
| S-29 | -41.88 | 4.04 | -13.49 |
| S-30 | -41.57 | 6.50 | -6.13 |
| S-31 | -41.57 | 6.50 | -9.40 |
| S-32 | -41.35 | 7.74 | -2.86 |
| S-33 | -41.35 | 7.74 | 1.02 |
| S-34 | -40.92 | 9.79 | 9.79 |
| S-35 | -40.92 | 9.79 | 4.90 |
| S-36 | -41.48 | -7.01 | -5.94 |
| S-37 | -41.48 | -7.01 | -2.52 |
| S-38 | -42.40 | 5.42 | -1.79 |
| S-39 | -42.40 | 5.42 | -0.90 |
| S-40 | -42.69 | 2.10 | -7.39 |
| S-41 | -42.69 | 2.10 | -8.28 |
| S-42 | -42.74 | 0.52 | -8.53 |
| S-43 | -42.74 | 0.52 | -8.78 |
| S-44 | -42.73 | -1.21 | -7.64 |
| S-45 | -42.73 | -1.21 | -8.21 |
| S-46 | -42.66 | -2.76 | -7.54 |
| S-47 | -42.66 | -2.76 | -6.17 |
| S-48 | -42.43 | -5.19 | -2.15 |
| S-49 | -42.43 | -5.19 | 0.49 |
| S-50 | -42.26 | -6.43 | 3.75 |
| S-51 | -42.26 | -6.43 | 7.00 |
| S-52 | -41.81 | -8.91 | 15.95 |
| S-53 | -41.81 | -8.91 | 11.48 |

| Position | Nr [kN] | min Vs max Vs [kN] | Mt Mt [kNm] |
|----------|------------|--------------------------|-------------------|
| S-41 | -41.52 | -10.15 | 15.95 |
| S-42 | -40.70 | 1.65 | 20.21 |
| S-43 | -40.73 | -0.38 | 20.21 |
| S-44 | -40.49 | 11.42 | 14.69 |
| S-45 | -42.47 | 4.81 | -6.49 |
| S-46 | -42.47 | 4.81 | -4.14 |

Moment Mt [kNm]



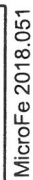
aus Lastkombination LF-18

| Position | Nr | | Vs | | min Mt | |
|----------|--------|--------|--------|--------|--------|--------|
| | Nr | [kN] | Nr | [kN] | max Mt | [kNm] |
| S-16 | -41.38 | -41.38 | -7.60 | -7.60 | -2.52 | -2.52 |
| S-17 | -41.85 | -41.85 | -4.36 | -4.36 | -13.09 | -13.09 |
| S-18 | -41.85 | -41.85 | -4.36 | -4.36 | -9.36 | -9.36 |
| S-19 | -41.98 | -41.98 | -2.81 | -2.81 | -15.76 | -15.76 |
| S-20 | -42.06 | -42.06 | -1.11 | -1.11 | -13.09 | -13.09 |
| S-21 | -42.07 | -42.07 | -1.11 | -1.11 | -15.76 | -15.76 |
| S-22 | -42.07 | -42.07 | 0.42 | 0.42 | -16.79 | -16.79 |
| S-23 | -41.98 | -41.98 | 2.82 | 2.82 | -16.36 | -16.36 |
| S-24 | -41.88 | -41.88 | 4.04 | 4.04 | -13.49 | -13.49 |
| S-25 | -41.57 | -41.57 | 6.50 | 6.50 | -9.40 | -9.40 |
| S-26 | -41.35 | -41.35 | 7.74 | 7.74 | -2.86 | -2.86 |
| S-27 | -40.92 | -40.92 | 9.79 | 9.79 | 4.90 | 4.90 |
| S-28 | -41.48 | -41.48 | 7.01 | 7.01 | 14.69 | 14.69 |
| S-29 | -42.40 | -42.40 | -7.01 | -7.01 | -9.36 | -9.36 |
| S-30 | -42.40 | -42.40 | 5.42 | 5.42 | -2.52 | -2.52 |
| S-31 | -42.40 | -42.40 | 5.42 | 5.42 | -1.79 | -1.79 |
| S-32 | -42.69 | -42.69 | 2.10 | 2.10 | 0.00 | 0.00 |
| S-33 | -42.74 | -42.74 | 2.10 | 2.10 | -8.28 | -8.28 |
| S-34 | -42.74 | -42.74 | 0.52 | 0.52 | -6.49 | -6.49 |
| S-35 | -42.73 | -42.73 | 0.52 | 0.52 | -8.78 | -8.78 |
| S-36 | -42.73 | -42.73 | -1.21 | -1.21 | -8.28 | -8.28 |
| S-37 | -42.66 | -42.66 | -1.21 | -1.21 | -7.64 | -7.64 |
| S-38 | -42.66 | -42.66 | -2.76 | -2.76 | -7.64 | -7.64 |
| S-39 | -42.43 | -42.43 | -2.76 | -2.76 | -4.80 | -4.80 |
| S-40 | -42.43 | -42.43 | -5.19 | -5.19 | -0.49 | -0.49 |
| S-41 | -42.26 | -42.26 | -6.43 | -6.43 | 0.49 | 0.49 |
| S-42 | -42.26 | -42.26 | -6.43 | -6.43 | 7.00 | 7.00 |
| S-43 | -41.81 | -41.81 | -8.91 | -8.91 | 7.00 | 7.00 |
| S-44 | -41.52 | -41.52 | -10.15 | -10.15 | 15.95 | 15.95 |
| S-45 | -40.80 | -40.80 | 0.18 | 0.18 | 15.95 | 15.95 |
| S-46 | -40.49 | -40.49 | 11.42 | 11.42 | 20.33 | 20.33 |
| S-47 | -40.73 | -40.73 | -0.38 | -0.38 | 14.69 | 14.69 |
| S-48 | | | | | 20.21 | 20.21 |

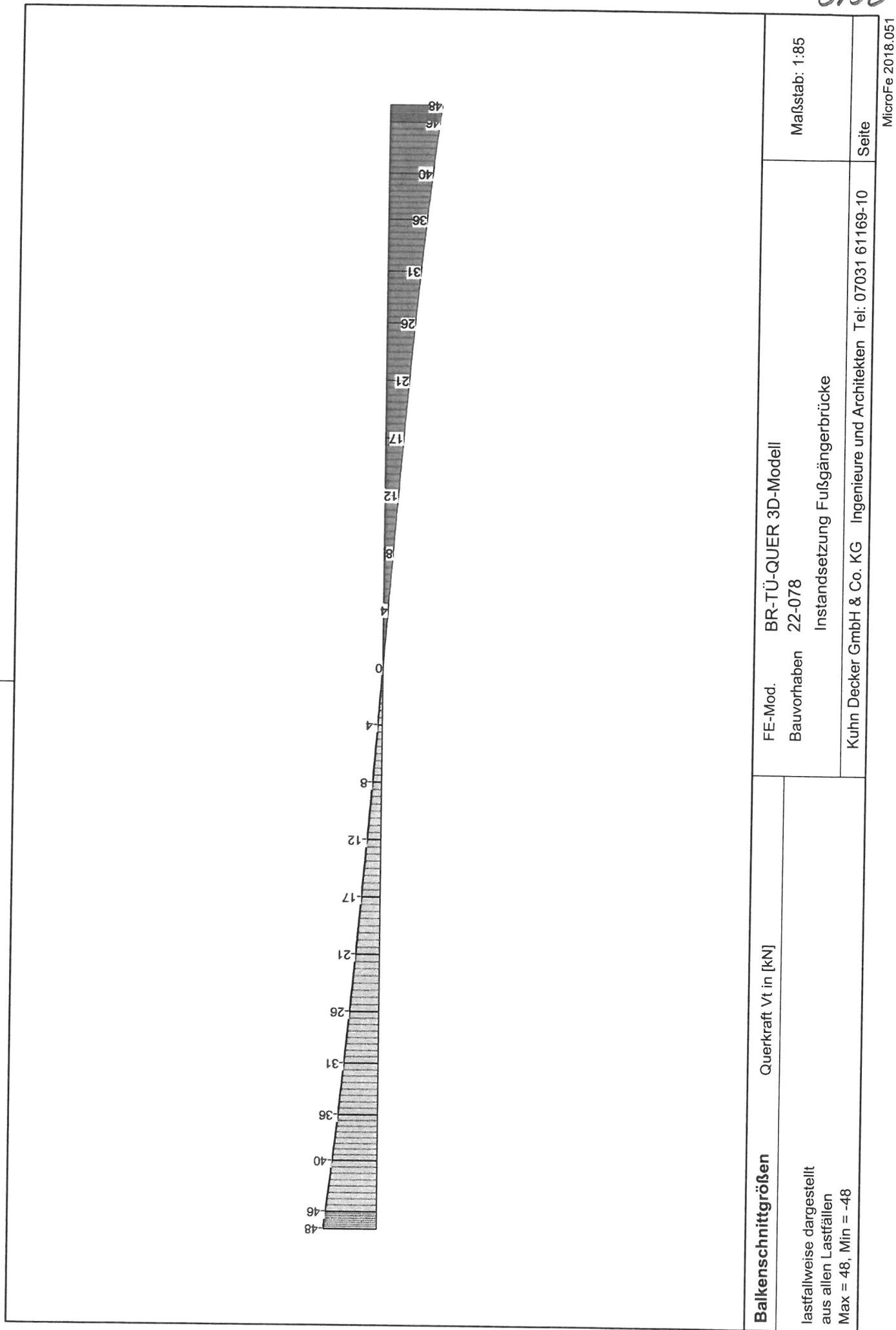
Position

S-44

| Nr | | Vs | | min Mt | |
|--------|--------|------|------|--------|-------|
| Nr | [kN] | Nr | [kN] | max Mt | [kNm] |
| -42.47 | -42.47 | 4.81 | 4.81 | -6.49 | -6.49 |
| -42.47 | -42.47 | 4.81 | 4.81 | -1.79 | -1.79 |



| | | | |
|----------------------------|---|--|---------------|
| Balkenschnittgrößen | Moment Ms in [kNm] | FE-Mod. BR-TÜ-QUER 3D-Modell Bauvorhaben 22-078 Instandsetzung Fußgängerbrücke | Maßstab: 1:85 |
| | lastfallweise dargestellt aus allen Lastfällen Max = 156, Min = -72 | Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10 | |
| | | | |



Balkenschnittgrößen

Querkraft Vt in [kN]

lastfallweise dargestellt
aus allen Lastfällen
Max = 48, Min = -48

FE-Mod. BR-TÜ-QUER 3D-Modell

Bauvorhaben 22-078

Instandsetzung Fußgängerbrücke

Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10

Maßstab: 1:85

Seite

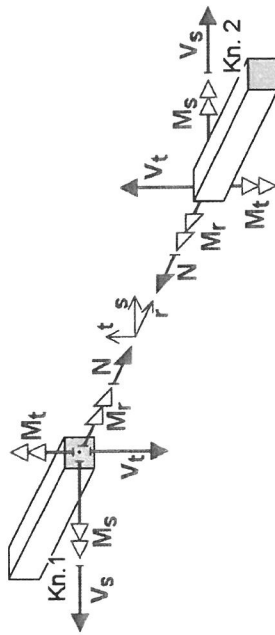
MicroFe 2018.051

Balkenschnittgr-Stb

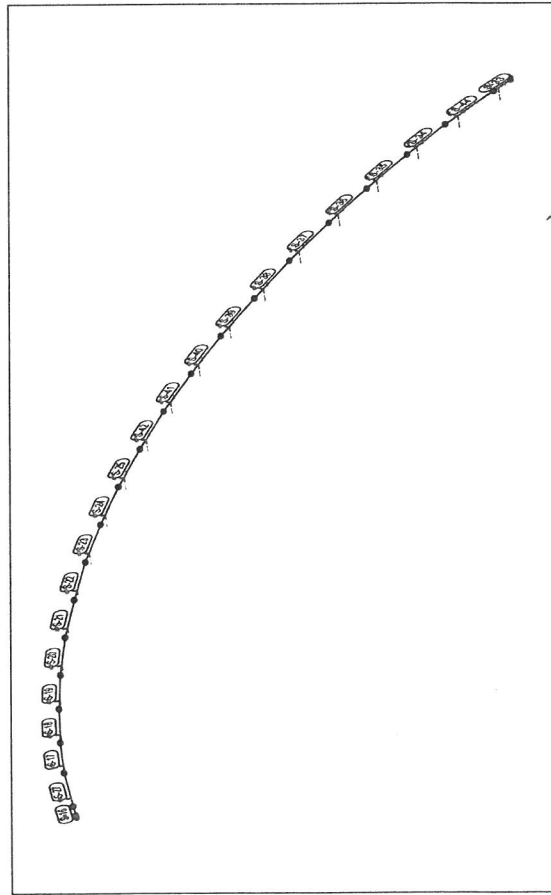
Schnittgrößen Stb-Stützen und 3D-Stäbe

Schnittgrößen

Schnittgrößen der Stützen und 3D-Stäbe



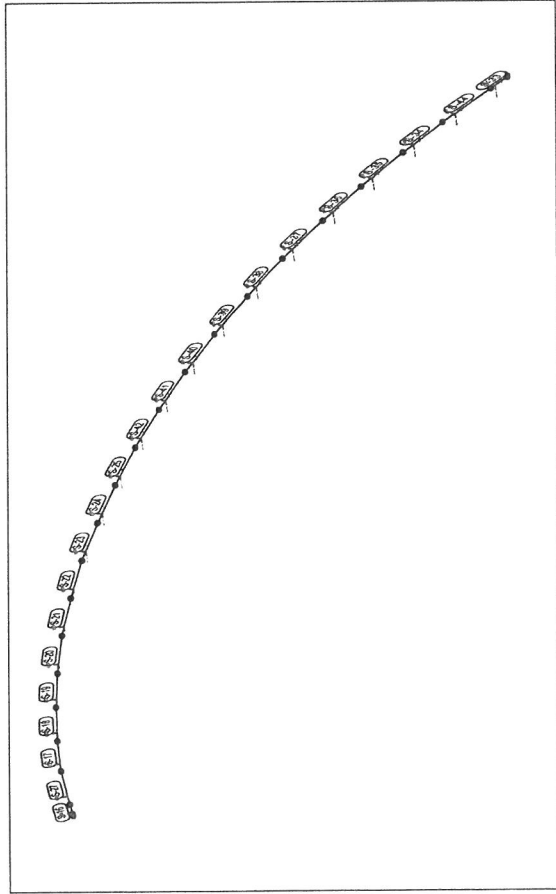
Normalkraft Nr [kN]



| Position | aus Lastkombination LF2 (Wind) | | | | | |
|----------|--------------------------------|--------|------|--------|-------|--------|
| | min Nr | max Nr | Vs | Vt | Mr | Mt |
| | [kN] | [kN] | [kN] | [kN] | [kNm] | [kNm] |
| S-16 | 0.00 | 0.00 | 0.00 | -48.30 | 0.01 | 155.47 |
| S-17 | 0.00 | 0.00 | 0.00 | -48.30 | 0.01 | 155.47 |
| S-18 | 0.00 | 0.00 | 0.00 | -40.27 | 8.21 | 97.38 |
| S-19 | 0.00 | 0.00 | 0.00 | -35.53 | 10.61 | 64.66 |
| | 0.00 | 0.00 | 0.00 | -30.60 | 11.95 | 32.87 |

| Position | min Nr | | Vs | | Vt | | Mr | | Ms | | Mt | |
|----------|--------|------|------|------|--------|--------|--------|--------|--------|-------|-------|-------|
| | max | Nr | [kN] | [kN] | [kN] | [kN] | [kNm] | [kNm] | [kNm] | [kNm] | [kNm] | [kNm] |
| S-20 | 0.00 | 0.00 | 0.00 | 0.00 | -30.60 | 11.95 | 12.17 | 32.87 | 5.93 | 0.00 | 0.00 | 0.00 |
| S-21 | 0.00 | 0.00 | 0.00 | 0.00 | -26.01 | 12.17 | 11.10 | 5.93 | -19.03 | 0.00 | 0.00 | 0.00 |
| S-22 | 0.00 | 0.00 | 0.00 | 0.00 | -21.16 | 11.10 | 9.98 | -19.03 | -38.53 | 0.00 | 0.00 | 0.00 |
| S-23 | 0.00 | 0.00 | 0.00 | 0.00 | -16.58 | 9.98 | 6.84 | -38.53 | -63.60 | 0.00 | 0.00 | 0.00 |
| S-24 | 0.00 | 0.00 | 0.00 | 0.00 | -12.23 | 6.84 | 4.93 | -63.60 | -53.60 | 0.00 | 0.00 | 0.00 |
| S-25 | 0.00 | 0.00 | 0.00 | 0.00 | -8.06 | 4.93 | 1.44 | -53.60 | -63.96 | 0.00 | 0.00 | 0.00 |
| S-27 | 0.00 | 0.00 | 0.00 | 0.00 | -4.00 | 1.44 | 2.00 | -63.96 | -70.16 | 0.00 | 0.00 | 0.00 |
| S-33 | 0.00 | 0.00 | 0.00 | 0.00 | -46.18 | 2.00 | 2.00 | -70.16 | 139.82 | 0.00 | 0.00 | 0.00 |
| S-34 | 0.00 | 0.00 | 0.00 | 0.00 | -46.18 | 2.00 | -0.01 | 139.82 | 139.82 | 0.00 | 0.00 | 0.00 |
| S-35 | 0.00 | 0.00 | 0.00 | 0.00 | 46.18 | -0.01 | -0.01 | 139.89 | 139.89 | 0.00 | 0.00 | 0.00 |
| S-36 | 0.00 | 0.00 | 0.00 | 0.00 | 46.18 | -0.01 | -0.01 | 139.89 | 139.89 | 0.00 | 0.00 | 0.00 |
| S-37 | 0.00 | 0.00 | 0.00 | 0.00 | 35.54 | -8.21 | -8.21 | 65.06 | 65.06 | 0.00 | 0.00 | 0.00 |
| S-38 | 0.00 | 0.00 | 0.00 | 0.00 | 35.54 | -8.21 | -8.21 | 65.06 | 65.06 | 0.00 | 0.00 | 0.00 |
| S-39 | 0.00 | 0.00 | 0.00 | 0.00 | 30.60 | -10.61 | -10.61 | 33.36 | 33.36 | 0.00 | 0.00 | 0.00 |
| S-40 | 0.00 | 0.00 | 0.00 | 0.00 | 26.01 | -11.96 | -11.96 | 6.40 | 6.40 | 0.00 | 0.00 | 0.00 |
| S-41 | 0.00 | 0.00 | 0.00 | 0.00 | 26.01 | -11.96 | -11.96 | 6.40 | 6.40 | 0.00 | 0.00 | 0.00 |
| S-42 | 0.00 | 0.00 | 0.00 | 0.00 | 21.17 | -12.18 | -12.18 | -18.34 | -18.34 | 0.00 | 0.00 | 0.00 |
| S-44 | 0.00 | 0.00 | 0.00 | 0.00 | 16.59 | -11.11 | -11.11 | -38.20 | -38.20 | 0.00 | 0.00 | 0.00 |
| | 0.00 | 0.00 | 0.00 | 0.00 | 16.59 | -11.11 | -11.11 | -38.20 | -38.20 | 0.00 | 0.00 | 0.00 |
| | 0.00 | 0.00 | 0.00 | 0.00 | 12.23 | -10.00 | -10.00 | -53.09 | -53.09 | 0.00 | 0.00 | 0.00 |
| | 0.00 | 0.00 | 0.00 | 0.00 | 12.23 | -10.00 | -10.00 | -53.09 | -53.09 | 0.00 | 0.00 | 0.00 |
| | 0.00 | 0.00 | 0.00 | 0.00 | 8.06 | -6.85 | -6.85 | -63.77 | -63.77 | 0.00 | 0.00 | 0.00 |
| | 0.00 | 0.00 | 0.00 | 0.00 | 8.06 | -6.85 | -6.85 | -63.77 | -63.77 | 0.00 | 0.00 | 0.00 |
| | 0.00 | 0.00 | 0.00 | 0.00 | 4.00 | -4.95 | -4.95 | -69.99 | -69.99 | 0.00 | 0.00 | 0.00 |
| | 0.00 | 0.00 | 0.00 | 0.00 | 4.00 | -4.95 | -4.95 | -69.99 | -69.99 | 0.00 | 0.00 | 0.00 |
| | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -1.45 | -1.45 | -72.15 | -72.15 | 0.00 | 0.00 | 0.00 |
| | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -2.00 | -2.00 | 97.75 | 97.75 | 0.00 | 0.00 | 0.00 |
| | 0.00 | 0.00 | 0.00 | 0.00 | 40.28 | -2.00 | -2.00 | 97.75 | 97.75 | 0.00 | 0.00 | 0.00 |

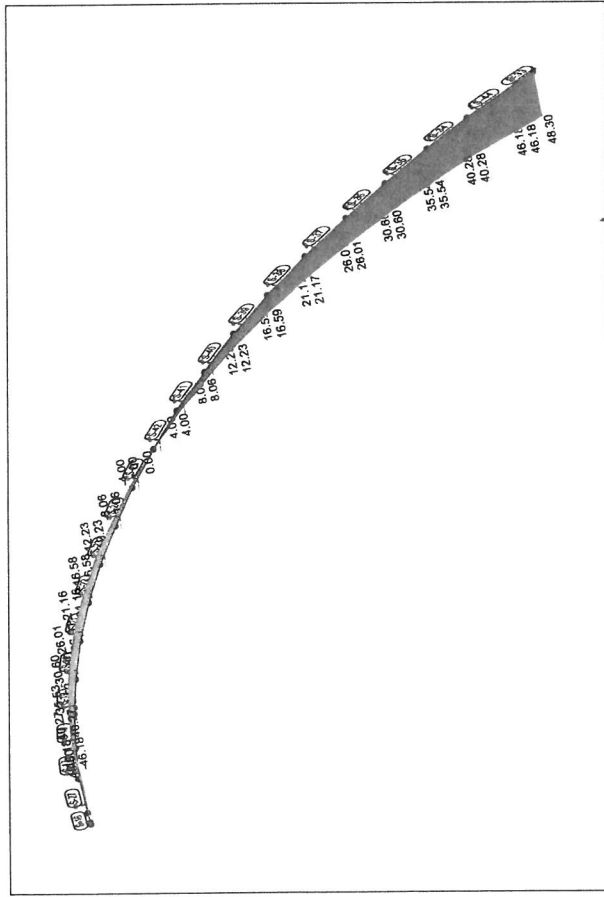
Querkraft Vs [kN]



| Position | aus Lastkombination LF2 | | | | (Wind) | | | |
|----------|-------------------------|------|------|--|--------|--------|------|------|
| | Nr | min | Vs | | Nr | min | Vt | Mt |
| | Nr | max | Vs | | Nr | max | Vt | Mt |
| S-16 | 0.00 | 0.00 | 0.00 | | 0.01 | 155.47 | 0.00 | 0.00 |
| S-17 | 0.00 | 0.00 | 0.00 | | 0.01 | 155.47 | 0.00 | 0.00 |
| S-18 | 0.00 | 0.00 | 0.00 | | 8.21 | 97.38 | 0.00 | 0.00 |
| S-19 | 0.00 | 0.00 | 0.00 | | 10.61 | 64.66 | 0.00 | 0.00 |
| S-20 | 0.00 | 0.00 | 0.00 | | 10.61 | 64.66 | 0.00 | 0.00 |
| S-21 | 0.00 | 0.00 | 0.00 | | 11.95 | 32.87 | 0.00 | 0.00 |
| S-22 | 0.00 | 0.00 | 0.00 | | 11.95 | 32.87 | 0.00 | 0.00 |
| S-23 | 0.00 | 0.00 | 0.00 | | 12.17 | 5.93 | 0.00 | 0.00 |
| S-24 | 0.00 | 0.00 | 0.00 | | 12.17 | 5.93 | 0.00 | 0.00 |
| S-25 | 0.00 | 0.00 | 0.00 | | 11.10 | -19.03 | 0.00 | 0.00 |
| S-27 | 0.00 | 0.00 | 0.00 | | 11.10 | -19.03 | 0.00 | 0.00 |
| S-33 | 0.00 | 0.00 | 0.00 | | 9.98 | -38.53 | 0.00 | 0.00 |
| | 0.00 | 0.00 | 0.00 | | 6.84 | -53.60 | 0.00 | 0.00 |
| | 0.00 | 0.00 | 0.00 | | 6.84 | -53.60 | 0.00 | 0.00 |
| | 0.00 | 0.00 | 0.00 | | 4.93 | -63.96 | 0.00 | 0.00 |
| | 0.00 | 0.00 | 0.00 | | 1.44 | -70.16 | 0.00 | 0.00 |
| | 0.00 | 0.00 | 0.00 | | 1.44 | -70.16 | 0.00 | 0.00 |
| | 0.00 | 0.00 | 0.00 | | 2.00 | 139.82 | 0.00 | 0.00 |
| | 0.00 | 0.00 | 0.00 | | 2.00 | 139.82 | 0.00 | 0.00 |
| | 0.00 | 0.00 | 0.00 | | -0.01 | 139.89 | 0.00 | 0.00 |
| | 0.00 | 0.00 | 0.00 | | -0.01 | 139.89 | 0.00 | 0.00 |

| Position | Nr | | min | | Vs | | Vt | | Mr | | Ms | | Mt | |
|----------|------|------|------|------|------|------|-------|------|--------|--------|--------|--------|------|------|
| | Nr | | max | | Vs | | Vt | | Mr | | Ms | | Mt | |
| S-34 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 35.54 | 0.00 | -8.21 | -8.21 | 65.06 | 65.06 | 0.00 | 0.00 |
| S-35 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 35.54 | 0.00 | -10.61 | -10.61 | 33.36 | 33.36 | 0.00 | 0.00 |
| S-36 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 30.60 | 0.00 | -11.96 | -11.96 | 6.40 | 6.40 | 0.00 | 0.00 |
| S-37 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 26.01 | 0.00 | -11.96 | -11.96 | -18.34 | -18.34 | 0.00 | 0.00 |
| S-38 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 21.17 | 0.00 | -12.18 | -12.18 | -18.34 | -18.34 | 0.00 | 0.00 |
| S-39 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 16.59 | 0.00 | -11.11 | -11.11 | -38.20 | -38.20 | 0.00 | 0.00 |
| S-40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 16.59 | 0.00 | -10.00 | -10.00 | -53.09 | -53.09 | 0.00 | 0.00 |
| S-41 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 12.23 | 0.00 | -6.85 | -6.85 | -63.77 | -63.77 | 0.00 | 0.00 |
| S-42 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 8.06 | 0.00 | -4.95 | -4.95 | -69.99 | -69.99 | 0.00 | 0.00 |
| S-44 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.00 | 0.00 | -1.45 | -1.45 | -72.15 | -72.15 | 0.00 | 0.00 |
| | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -2.00 | -2.00 | 97.75 | 97.75 | 0.00 | 0.00 |
| | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 40.28 | 0.00 | -2.00 | -2.00 | 97.75 | 97.75 | 0.00 | 0.00 |

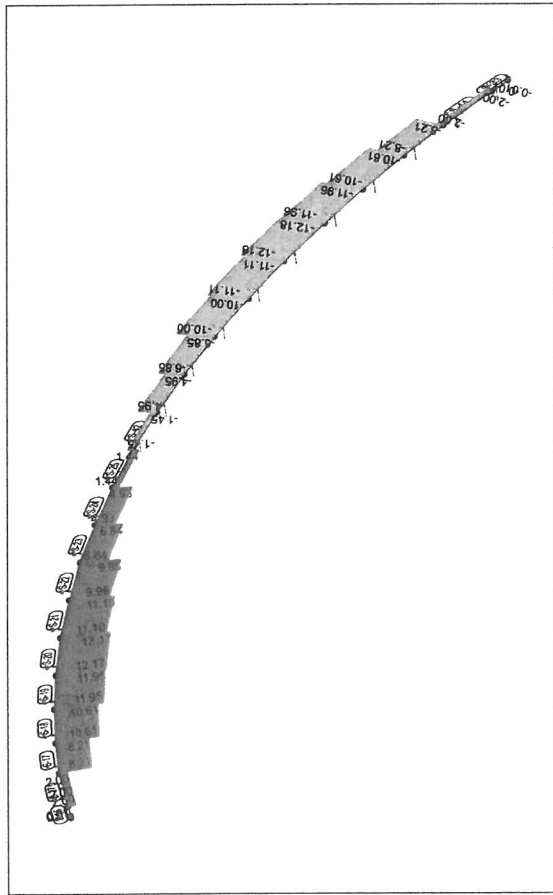
Querkraft Vt [kN]



| Position | aus Lastkombination LF2 | | | | | (Wind) | | | | |
|----------|-------------------------|------|--------|--------|--------|--------|------|--------|--------|--------|
| | Nr | Vs | min Vt | max Vt | Mr | Nr | Vs | min Vt | max Vt | Mr |
| S-16 | 0.00 | 0.00 | -48.30 | 0.01 | 155.47 | 0.00 | 0.00 | -48.30 | 0.00 | 155.47 |
| S-17 | 0.00 | 0.00 | -40.27 | 8.21 | 97.38 | 0.00 | 0.00 | -40.27 | 0.00 | 97.38 |
| S-18 | 0.00 | 0.00 | -35.53 | 8.21 | 65.01 | 0.00 | 0.00 | -35.53 | 0.00 | 65.01 |
| S-19 | 0.00 | 0.00 | -30.60 | 10.61 | 64.66 | 0.00 | 0.00 | -30.60 | 0.00 | 64.66 |
| S-20 | 0.00 | 0.00 | -26.01 | 11.95 | 32.87 | 0.00 | 0.00 | -26.01 | 0.00 | 32.87 |
| S-21 | 0.00 | 0.00 | -21.16 | 12.17 | 5.93 | 0.00 | 0.00 | -21.16 | 0.00 | 5.93 |
| S-22 | 0.00 | 0.00 | -16.58 | 11.10 | -19.03 | 0.00 | 0.00 | -16.58 | 0.00 | -19.03 |
| S-23 | 0.00 | 0.00 | -12.23 | 9.98 | -38.23 | 0.00 | 0.00 | -12.23 | 0.00 | -38.23 |
| S-24 | 0.00 | 0.00 | -8.06 | 6.84 | -53.11 | 0.00 | 0.00 | -8.06 | 0.00 | -53.11 |
| S-25 | 0.00 | 0.00 | -4.00 | 4.93 | -63.96 | 0.00 | 0.00 | -4.00 | 0.00 | -63.96 |
| S-27 | 0.00 | 0.00 | -46.18 | 2.00 | 139.82 | 0.00 | 0.00 | -46.18 | 0.00 | 139.82 |

| Position | Nr | | Vs | | min Vt | | Mr | | Ms | | Mt | |
|----------|------|------|------|------|--------|------|--------|--------|------|--------|------|-------|
| | Nr | [kN] | Nr | [kN] | max Vt | [kN] | Mr | [kNm] | Ms | [kNm] | Mt | [kNm] |
| S-33 | 0.00 | 0.00 | 0.00 | 0.00 | 46.18 | 0.00 | -0.01 | 139.89 | 0.00 | 139.89 | 0.00 | 0.00 |
| S-34 | 0.00 | 0.00 | 0.00 | 0.00 | 48.30 | 0.00 | -0.01 | 155.53 | 0.00 | 155.53 | 0.00 | 0.00 |
| S-35 | 0.00 | 0.00 | 0.00 | 0.00 | 35.54 | 0.00 | -8.21 | 65.06 | 0.00 | 65.06 | 0.00 | 0.00 |
| S-36 | 0.00 | 0.00 | 0.00 | 0.00 | 30.60 | 0.00 | -10.61 | 33.36 | 0.00 | 33.36 | 0.00 | 0.00 |
| S-37 | 0.00 | 0.00 | 0.00 | 0.00 | 26.01 | 0.00 | -11.96 | 64.71 | 0.00 | 64.71 | 0.00 | 0.00 |
| S-38 | 0.00 | 0.00 | 0.00 | 0.00 | 21.17 | 0.00 | -12.18 | 5.96 | 0.00 | 5.96 | 0.00 | 0.00 |
| S-39 | 0.00 | 0.00 | 0.00 | 0.00 | 16.59 | 0.00 | -11.11 | -38.20 | 0.00 | -38.20 | 0.00 | 0.00 |
| S-40 | 0.00 | 0.00 | 0.00 | 0.00 | 12.23 | 0.00 | -10.00 | -53.09 | 0.00 | -53.09 | 0.00 | 0.00 |
| S-41 | 0.00 | 0.00 | 0.00 | 0.00 | 8.06 | 0.00 | -6.85 | -63.77 | 0.00 | -63.77 | 0.00 | 0.00 |
| S-42 | 0.00 | 0.00 | 0.00 | 0.00 | 4.00 | 0.00 | -4.95 | -69.99 | 0.00 | -69.99 | 0.00 | 0.00 |
| S-44 | 0.00 | 0.00 | 0.00 | 0.00 | 40.28 | 0.00 | -2.00 | 97.75 | 0.00 | 97.75 | 0.00 | 0.00 |

Moment Mr [kNm]

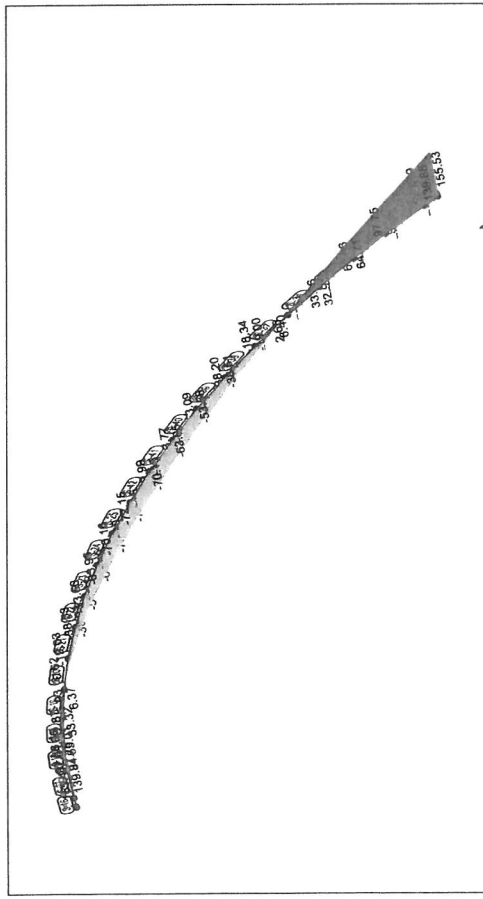


| Position | aus Lastkombination LF2 | | | | | | (Wind) | |
|----------|-------------------------|------|------|--------|--------|--------|--------|-------|
| | Nr | Nr | Vs | Vt | min Mr | Ms | Mt | Mt |
| | [kN] | [kN] | [kN] | [kN] | max Mr | [kNm] | [kNm] | [kNm] |
| S-16 | 0.00 | 0.00 | 0.00 | -48.30 | 0.01 | 155.47 | 0.00 | 0.00 |
| S-17 | 0.00 | 0.00 | 0.00 | -48.30 | 0.01 | 155.47 | 0.00 | 0.00 |
| S-18 | 0.00 | 0.00 | 0.00 | -37.87 | 8.21 | 80.69 | 0.00 | 0.00 |
| S-19 | 0.00 | 0.00 | 0.00 | -40.27 | 8.21 | 97.38 | 0.00 | 0.00 |
| S-20 | 0.00 | 0.00 | 0.00 | -35.53 | 10.61 | 64.66 | 0.00 | 0.00 |
| S-21 | 0.00 | 0.00 | 0.00 | -33.02 | 10.61 | 48.41 | 0.00 | 0.00 |
| S-22 | 0.00 | 0.00 | 0.00 | -30.60 | 11.95 | 32.87 | 0.00 | 0.00 |
| S-23 | 0.00 | 0.00 | 0.00 | -28.28 | 11.95 | 19.08 | 0.00 | 0.00 |
| S-24 | 0.00 | 0.00 | 0.00 | -26.01 | 12.17 | 5.93 | 0.00 | 0.00 |
| S-25 | 0.00 | 0.00 | 0.00 | -23.56 | 12.17 | -6.84 | 0.00 | 0.00 |
| S-26 | 0.00 | 0.00 | 0.00 | -18.85 | 11.10 | -29.21 | 0.00 | 0.00 |
| S-27 | 0.00 | 0.00 | 0.00 | -21.16 | 11.10 | -19.03 | 0.00 | 0.00 |
| S-28 | 0.00 | 0.00 | 0.00 | -16.58 | 9.98 | -38.53 | 0.00 | 0.00 |
| S-29 | 0.00 | 0.00 | 0.00 | -16.58 | 9.98 | -38.53 | 0.00 | 0.00 |
| S-30 | 0.00 | 0.00 | 0.00 | -10.13 | 6.84 | -59.22 | 0.00 | 0.00 |
| S-31 | 0.00 | 0.00 | 0.00 | -12.23 | 6.84 | -53.60 | 0.00 | 0.00 |
| S-32 | 0.00 | 0.00 | 0.00 | -8.06 | 4.93 | -63.96 | 0.00 | 0.00 |
| S-33 | 0.00 | 0.00 | 0.00 | -6.02 | 4.93 | -67.49 | 0.00 | 0.00 |
| S-34 | 0.00 | 0.00 | 0.00 | -4.00 | 1.44 | -70.16 | 0.00 | 0.00 |
| S-35 | 0.00 | 0.00 | 0.00 | -2.00 | 1.44 | -71.65 | 0.00 | 0.00 |
| S-36 | 0.00 | 0.00 | 0.00 | -43.14 | 2.00 | 118.04 | 0.00 | 0.00 |
| S-37 | 0.00 | 0.00 | 0.00 | -46.18 | 2.00 | 139.82 | 0.00 | 0.00 |
| S-38 | 0.00 | 0.00 | 0.00 | 47.24 | -0.01 | 147.63 | 0.00 | 0.00 |
| S-39 | 0.00 | 0.00 | 0.00 | 46.18 | -0.01 | 139.89 | 0.00 | 0.00 |

Position

| Position | Nr | | Vs | | Vt | | min Mr | | Ms | | Mt | |
|----------|------|------|------|------|-------|-------|--------|--------|--------|--------|-------|------|
| | [kN] | | [kN] | | [kN] | | [kNm] | | [kNm] | | [kNm] | |
| S-34 | 0.00 | 0.00 | 0.00 | 0.00 | 37.88 | 37.88 | -8.21 | -8.21 | 80.74 | 80.74 | 0.00 | 0.00 |
| S-35 | 0.00 | 0.00 | 0.00 | 0.00 | 35.54 | 35.54 | -8.21 | -8.21 | 65.06 | 65.06 | 0.00 | 0.00 |
| S-36 | 0.00 | 0.00 | 0.00 | 0.00 | 30.60 | 30.60 | -10.61 | -10.61 | 33.36 | 33.36 | 0.00 | 0.00 |
| S-37 | 0.00 | 0.00 | 0.00 | 0.00 | 26.01 | 26.01 | -11.96 | -11.96 | 6.40 | 6.40 | 0.00 | 0.00 |
| S-38 | 0.00 | 0.00 | 0.00 | 0.00 | 28.29 | 28.29 | -11.96 | -11.96 | 19.12 | 19.12 | 0.00 | 0.00 |
| S-39 | 0.00 | 0.00 | 0.00 | 0.00 | 21.17 | 21.17 | -12.18 | -12.18 | -18.34 | -18.34 | 0.00 | 0.00 |
| S-40 | 0.00 | 0.00 | 0.00 | 0.00 | 23.57 | 23.57 | -12.18 | -12.18 | -6.81 | -6.81 | 0.00 | 0.00 |
| S-41 | 0.00 | 0.00 | 0.00 | 0.00 | 18.85 | 18.85 | -11.11 | -11.11 | -29.18 | -29.18 | 0.00 | 0.00 |
| S-42 | 0.00 | 0.00 | 0.00 | 0.00 | 16.59 | 16.59 | -11.11 | -11.11 | -38.20 | -38.20 | 0.00 | 0.00 |
| S-43 | 0.00 | 0.00 | 0.00 | 0.00 | 12.23 | 12.23 | -10.00 | -10.00 | -53.09 | -53.09 | 0.00 | 0.00 |
| S-44 | 0.00 | 0.00 | 0.00 | 0.00 | 8.06 | 8.06 | -6.85 | -6.85 | -63.77 | -63.77 | 0.00 | 0.00 |
| S-45 | 0.00 | 0.00 | 0.00 | 0.00 | 10.14 | 10.14 | -6.85 | -6.85 | -59.20 | -59.20 | 0.00 | 0.00 |
| S-46 | 0.00 | 0.00 | 0.00 | 0.00 | 4.00 | 4.00 | -4.95 | -4.95 | -69.99 | -69.99 | 0.00 | 0.00 |
| S-47 | 0.00 | 0.00 | 0.00 | 0.00 | 6.02 | 6.02 | -4.95 | -4.95 | -67.48 | -67.48 | 0.00 | 0.00 |
| S-48 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -1.45 | -1.45 | -72.15 | -72.15 | 0.00 | 0.00 |
| S-49 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 2.00 | -1.45 | -1.45 | -71.65 | -71.65 | 0.00 | 0.00 |
| S-50 | 0.00 | 0.00 | 0.00 | 0.00 | 43.15 | 43.15 | -2.00 | -2.00 | 118.10 | 118.10 | 0.00 | 0.00 |
| S-51 | 0.00 | 0.00 | 0.00 | 0.00 | 40.28 | 40.28 | -2.00 | -2.00 | 97.75 | 97.75 | 0.00 | 0.00 |

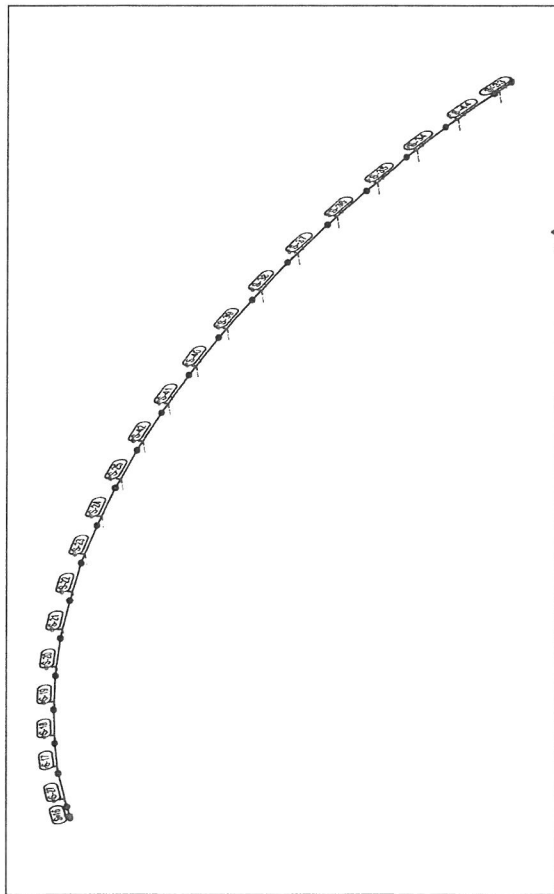
Moment Ms [kNm]



| Position | aus Lastkombination LF2 | | | | (Wind) | | | |
|----------|-------------------------|------------|------------|-------------|------------|------------|------------|-------------|
| | Nr [kN] | Vs [kN] | Vt [kN] | Mr [kNm] | Nr [kN] | Vs [kN] | Vt [kN] | Mr [kNm] |
| S-16 | 0.00 | 0.00 | -46.18 | 0.01 | 0.00 | 0.00 | -46.18 | 0.00 |
| S-17 | 0.00 | 0.00 | -48.30 | 0.01 | 0.00 | 0.00 | -48.30 | 0.00 |
| S-18 | 0.00 | 0.00 | -35.53 | 8.21 | 0.00 | 0.00 | -35.53 | 0.00 |
| S-19 | 0.00 | 0.00 | -40.27 | 8.21 | 0.00 | 0.00 | -40.27 | 0.00 |
| S-20 | 0.00 | 0.00 | -30.60 | 10.61 | 0.00 | 0.00 | -30.60 | 0.00 |
| S-21 | 0.00 | 0.00 | -35.53 | 10.61 | 0.00 | 0.00 | -35.53 | 0.00 |
| S-22 | 0.00 | 0.00 | -26.01 | 11.95 | 0.00 | 0.00 | -26.01 | 0.00 |
| S-23 | 0.00 | 0.00 | -30.60 | 11.95 | 0.00 | 0.00 | -30.60 | 0.00 |
| S-24 | 0.00 | 0.00 | -21.16 | 12.17 | 0.00 | 0.00 | -21.16 | 0.00 |
| S-25 | 0.00 | 0.00 | -26.01 | 12.17 | 0.00 | 0.00 | -26.01 | 0.00 |
| S-26 | 0.00 | 0.00 | -16.58 | 11.10 | 0.00 | 0.00 | -16.58 | 0.00 |
| S-27 | 0.00 | 0.00 | -21.16 | 11.10 | 0.00 | 0.00 | -21.16 | 0.00 |
| S-28 | 0.00 | 0.00 | -12.23 | 9.98 | 0.00 | 0.00 | -12.23 | 0.00 |
| S-29 | 0.00 | 0.00 | -16.58 | 9.98 | 0.00 | 0.00 | -16.58 | 0.00 |
| S-30 | 0.00 | 0.00 | -8.06 | 6.84 | 0.00 | 0.00 | -8.06 | 0.00 |
| S-31 | 0.00 | 0.00 | -12.23 | 6.84 | 0.00 | 0.00 | -12.23 | 0.00 |
| S-32 | 0.00 | 0.00 | -4.00 | 4.93 | 0.00 | 0.00 | -4.00 | 0.00 |
| S-33 | 0.00 | 0.00 | -8.06 | 4.93 | 0.00 | 0.00 | -8.06 | 0.00 |
| S-34 | 0.00 | 0.00 | 0.00 | 1.44 | 0.00 | 0.00 | 0.00 | 0.00 |
| S-35 | 0.00 | 0.00 | -4.00 | 1.44 | 0.00 | 0.00 | -4.00 | 0.00 |
| S-36 | 0.00 | 0.00 | -40.27 | 2.00 | 0.00 | 0.00 | -40.27 | 0.00 |
| S-37 | 0.00 | 0.00 | -46.18 | 2.00 | 0.00 | 0.00 | -46.18 | 0.00 |
| S-38 | 0.00 | 0.00 | 46.18 | -0.01 | 0.00 | 0.00 | 46.18 | 0.00 |
| S-39 | 0.00 | 0.00 | 48.30 | -0.01 | 0.00 | 0.00 | 48.30 | 0.00 |
| S-40 | 0.00 | 0.00 | 35.54 | -8.21 | 0.00 | 0.00 | 35.54 | 0.00 |
| S-41 | 0.00 | 0.00 | 40.28 | -8.21 | 0.00 | 0.00 | 40.28 | 0.00 |
| S-42 | 0.00 | 0.00 | 30.60 | -10.61 | 0.00 | 0.00 | 30.60 | 0.00 |

| Position | Nr | | Vs | | Vt | | Mr | | min Ms | | Mt | |
|----------|------------|------------|------------|------------|------------|------------|-------------|-------------|-----------------|-----------------|-------------|-------------|
| | Nr [kN] | Nr [kN] | Vs [kN] | Vs [kN] | Vt [kN] | Vt [kN] | Mr [kNm] | Mr [kNm] | max Ms [kNm] | max Ms [kNm] | Mt [kNm] | Mt [kNm] |
| S-36 | 0.00 | 0.00 | 0.00 | 0.00 | 35.54 | 35.54 | -10.61 | -10.61 | 64.71 | 64.71 | 0.00 | 0.00 |
| S-37 | 0.00 | 0.00 | 0.00 | 0.00 | 26.01 | 26.01 | -11.96 | -11.96 | 6.40 | 6.40 | 0.00 | 0.00 |
| S-38 | 0.00 | 0.00 | 0.00 | 0.00 | 30.60 | 30.60 | -11.96 | -11.96 | 32.91 | 32.91 | 0.00 | 0.00 |
| S-39 | 0.00 | 0.00 | 0.00 | 0.00 | 21.17 | 21.17 | -12.18 | -12.18 | -18.34 | -18.34 | 0.00 | 0.00 |
| S-40 | 0.00 | 0.00 | 0.00 | 0.00 | 26.01 | 26.01 | -12.18 | -12.18 | 5.96 | 5.96 | 0.00 | 0.00 |
| S-41 | 0.00 | 0.00 | 0.00 | 0.00 | 16.59 | 16.59 | -11.11 | -11.11 | -38.20 | -38.20 | 0.00 | 0.00 |
| S-42 | 0.00 | 0.00 | 0.00 | 0.00 | 21.17 | 21.17 | -11.11 | -11.11 | -19.00 | -19.00 | 0.00 | 0.00 |
| S-44 | 0.00 | 0.00 | 0.00 | 0.00 | 12.23 | 12.23 | -10.00 | -10.00 | -53.09 | -53.09 | 0.00 | 0.00 |
| S-45 | 0.00 | 0.00 | 0.00 | 0.00 | 16.59 | 16.59 | -10.00 | -10.00 | -38.51 | -38.51 | 0.00 | 0.00 |
| S-46 | 0.00 | 0.00 | 0.00 | 0.00 | 8.06 | 8.06 | -6.85 | -6.85 | -63.77 | -63.77 | 0.00 | 0.00 |
| S-47 | 0.00 | 0.00 | 0.00 | 0.00 | 12.23 | 12.23 | -6.85 | -6.85 | -53.58 | -53.58 | 0.00 | 0.00 |
| S-48 | 0.00 | 0.00 | 0.00 | 0.00 | 4.00 | 4.00 | -4.95 | -4.95 | -69.99 | -69.99 | 0.00 | 0.00 |
| S-49 | 0.00 | 0.00 | 0.00 | 0.00 | 8.06 | 8.06 | -4.95 | -4.95 | -63.95 | -63.95 | 0.00 | 0.00 |
| S-50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -1.45 | -1.45 | -72.15 | -72.15 | 0.00 | 0.00 |
| S-51 | 0.00 | 0.00 | 0.00 | 0.00 | 4.00 | 4.00 | -1.45 | -1.45 | -70.15 | -70.15 | 0.00 | 0.00 |
| S-52 | 0.00 | 0.00 | 0.00 | 0.00 | 40.28 | 40.28 | -2.00 | -2.00 | 97.75 | 97.75 | 0.00 | 0.00 |
| S-53 | 0.00 | 0.00 | 0.00 | 0.00 | 46.18 | 46.18 | -2.00 | -2.00 | 139.88 | 139.88 | 0.00 | 0.00 |

Moment Mt [kNm]



aus Lastkombination LF2

(Wind)

| Position | Nr | | Vs | | Vt | | Mr | | Ms | | min Mt | | max Mt | |
|----------|------|------|------|------|------|--------|-------|--------|------|-------|--------|-------|--------|-------|
| | Nr | [kN] | Nr | [kN] | Nr | [kN] | Nr | [kNm] | Nr | [kNm] | Nr | [kNm] | Nr | [kNm] |
| S-16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -48.30 | 0.01 | 155.47 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| S-17 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -48.30 | 0.01 | 155.47 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| S-18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -40.27 | 8.21 | 97.38 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| S-19 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -35.53 | 10.61 | 64.66 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| S-20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -30.60 | 11.95 | 32.87 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| S-21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -26.01 | 12.17 | 5.93 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| S-22 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -21.16 | 11.10 | -19.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| S-23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -16.58 | 9.98 | -38.53 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| S-24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -12.23 | 6.84 | -53.60 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| S-25 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -8.06 | 4.93 | -63.96 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| S-27 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -4.00 | 1.44 | -70.16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| S-33 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -46.18 | 2.00 | 139.82 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Position

| Position | Nr | | Vs | | Vt | | Mr | | Ms | | min Mt | | max Mt | |
|----------|------|------|------|------|------|-------|--------|--------|------|-------|--------|-------|--------|-------|
| | Nr | [kN] | Nr | [kN] | Nr | [kN] | Nr | [kNm] | Nr | [kNm] | Nr | [kNm] | Nr | [kNm] |
| S-34 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 35.54 | -8.21 | 65.06 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| S-35 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 35.54 | -10.61 | 33.36 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| S-36 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 30.60 | -11.96 | 33.36 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| S-37 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 26.01 | -11.96 | 6.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| S-38 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 21.17 | -12.18 | -18.34 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| S-39 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 16.59 | -11.11 | -38.20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| S-40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 12.23 | -10.00 | -53.09 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| S-41 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 8.06 | -6.85 | -63.77 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| S-42 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.00 | -4.95 | -69.99 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| S-44 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -1.45 | -72.15 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Lastkombinationen

Lastkombinationen für lineare Berechnung

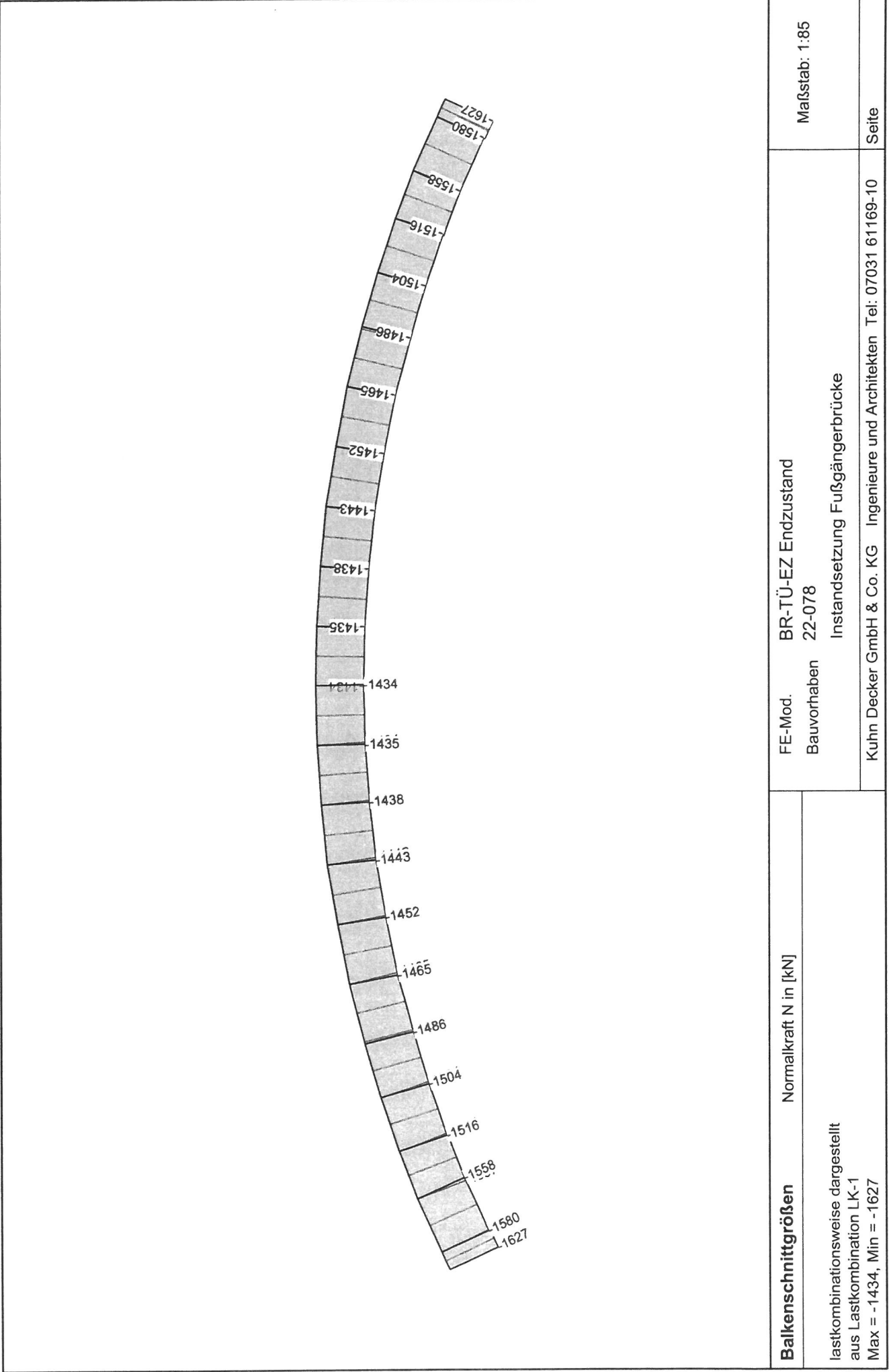
Kombinationen

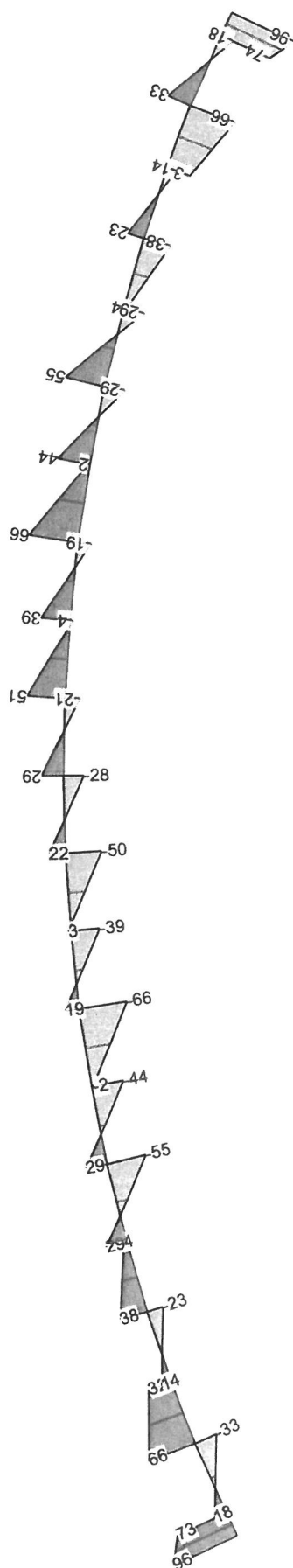
Manuell vorgegebene Lastkombinationen

| | Ew Lg Lf | Einwirkungsname Lastgruppenname Lastfallname | | | | |
|-------|----------------|--|--------------|--------------|--------------|--------------|
| | Ew | Gk | Gk | Gk | Gk | Qk.N |
| | Lg | . | . | . | . | . |
| | Lf | LF-1 | LF-4 | LF-5 | LF-6 | LF-7 |
| LK-1 | | 1.35 | 1.35 | 1.35 | 1.35 | . |
| LK-2 | | 1.35 | 1.35 | 1.35 | 1.35 | 1.50 |
| LK-3 | | 1.35 | 1.35 | 1.35 | 1.35 | . |
| LK-4 | | 1.35 | 1.35 | 1.35 | 1.35 | . |
| LK-5 | | 1.35 | 1.35 | 1.35 | 1.35 | . |
| LK-6 | | 1.35 | 1.35 | 1.35 | 1.35 | 1.50 |
| LK-7 | | 1.35 | 1.35 | 1.35 | 1.35 | . |
| LK-8 | | 1.35 | 1.35 | 1.35 | 1.35 | 1.50 |
| LK-9 | | 1.00 | 1.00 | 1.00 | 1.00 | . |
| LK-10 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.50 |
| LK-11 | | 1.00 | 1.00 | 1.00 | 1.00 | . |
| LK-12 | | 1.00 | 1.00 | 1.00 | 1.00 | . |
| LK-13 | | 1.00 | 1.00 | 1.00 | 1.00 | . |
| LK-14 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.50 |
| LK-15 | | 1.00 | 1.00 | 1.00 | 1.00 | . |
| LK-16 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.50 |
| | Ew | Qk.N | Qk.N | Qk.N | Qk.N | Qk.N |
| | Lg | . | . | . | . | . |
| | Lf | LF-8 | LF-9 | LF-10 | LF-11 | LF-12 |
| LK-1 | | . | . | . | . | . |
| LK-2 | | 1.50 | 1.50 | . | . | . |
| LK-3 | | . | . | . | . | . |
| LK-4 | | . | . | 1.50 | 1.50 | 1.50 |
| LK-5 | | . | . | . | . | . |
| LK-6 | | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 |
| LK-7 | | . | . | . | . | . |
| LK-8 | | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 |
| LK-9 | | . | . | . | . | . |
| LK-10 | | 1.50 | 1.50 | . | . | . |
| LK-11 | | . | . | . | . | . |
| LK-12 | | . | . | 1.50 | 1.50 | 1.50 |
| LK-13 | | . | . | . | . | . |
| LK-14 | | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 |
| LK-15 | | . | . | . | . | . |
| LK-16 | | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 |
| | Ew | Qk.N | Qk.N | Qk.N | Qk.N | Qk.N |
| | Lg | . | . | . | . | . |
| | Lf | LF-13 | LF-14 | LF-15 | LF-16 | LF-17 |
| LK-1 | | . | . | . | . | . |
| LK-2 | | . | . | . | . | . |
| LK-3 | | 1.50 | 1.50 | 1.50 | . | . |
| LK-4 | | . | . | . | . | . |

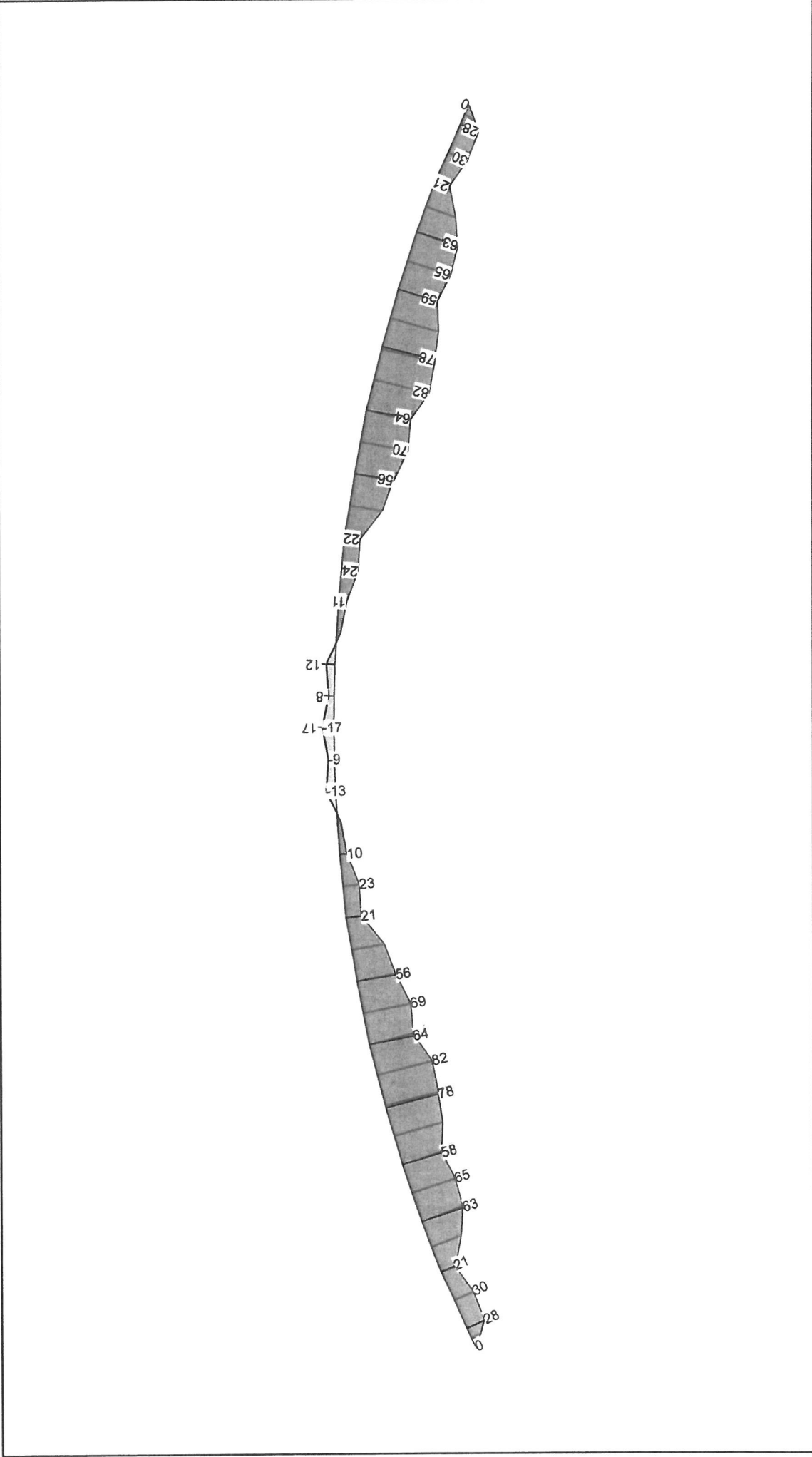
| | Ew Lg Lf | Qk.N LF-13 | Qk.N LF-14 | Qk.N LF-15 | Qk.N LF-16 | Qk.N LF-17 |
|-------|----------------|---------------|---------------|---------------|---------------|---------------|
| LK-5 | | . | . | . | 1.50 | 1.50 |
| LK-6 | | . | . | . | . | . |
| LK-7 | | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 |
| LK-8 | | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 |
| LK-9 | | . | . | . | . | . |
| LK-10 | | . | . | . | . | . |
| LK-11 | | 1.50 | 1.50 | 1.50 | . | . |
| LK-12 | | . | . | . | . | . |
| LK-13 | | . | . | . | 1.50 | 1.50 |
| LK-14 | | . | . | . | . | . |
| LK-15 | | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 |
| LK-16 | | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 |

| | Ew Lg Lf | Qk.N LF-18 |
|-------|----------------|---------------|
| LK-1 | | . |
| LK-2 | | . |
| LK-3 | | . |
| LK-4 | | . |
| LK-5 | | 1.50 |
| LK-6 | | . |
| LK-7 | | 1.50 |
| LK-8 | | 1.50 |
| LK-9 | | . |
| LK-10 | | . |
| LK-11 | | . |
| LK-12 | | . |
| LK-13 | | 1.50 |
| LK-14 | | . |
| LK-15 | | 1.50 |
| LK-16 | | 1.50 |





| | | |
|--|---|---------------------|
| Balkenschnittgrößen | Querkraft V in [kN] | |
| lastkombinationsweise dargestellt aus Lastkombination LK-1 Max = 96, Min = -96 | | |
| FE-Mod. Bauvorhaben | BR-TÜ-EZ Endzustand 22-078 Instandsetzung Fußgängerbrücke | Maßstab: 1:85 |
| Kuhn Decker GmbH & Co. KG Ingenieure und Architekten | | Seite |
| | | Tel: 07031 61169-10 |



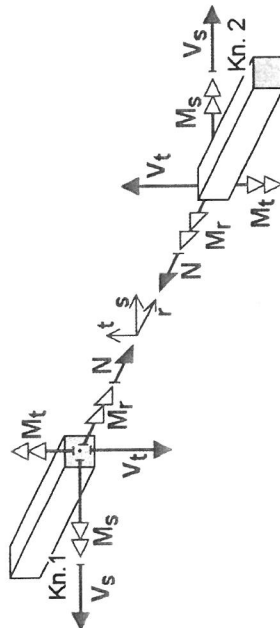
| | | | | |
|----------------------------|--|---|---------------|--|
| Balkenschnittgrößen | Moment M in [kNm] | FE-Mod. BR-TÜ-EZ Endzustand Bauvorhaben 22-078 Instandsetzung Fußgängerbrücke | Maßstab: 1:85 | |
| | lastkombinationsweise dargestellt aus Lastkombination LK-1 Max = 82, Min = -17 | | | |
| | Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10 | | | |
| | | | Seite | |

Balkenschnittgr-Stb

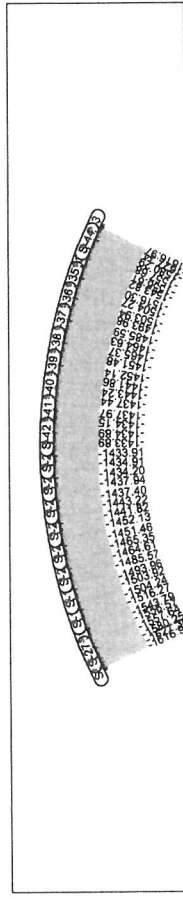
Schnittgrößen Stb-Stützen und 3D-Stäbe

Schnittgrößen

Schnittgrößen der Stützen und 3D-Stäbe



Normalkraft Nr [kN]

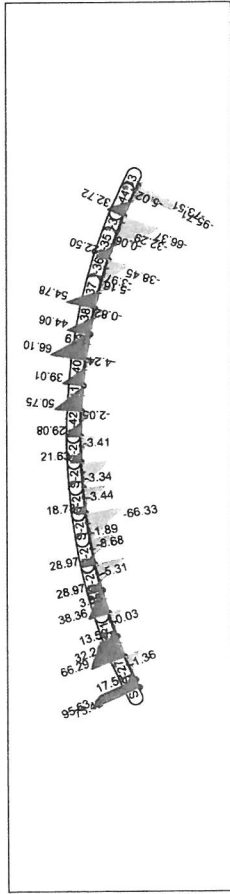


aus Lastkombination LK-1

| Position | min Nr max Nr [kN] | Vs [kN] | Mt [kNm] |
|----------|--------------------------|------------------|-----------------|
| S-16 | -1627.30 -1616.93 | 95.63 73.42 | 0.00 27.98 |
| S-17 | -1556.57 -1543.79 | 66.29 32.21 | 20.52 62.60 |
| S-18 | -1516.27 -1504.24 | 13.50 -22.59 | 62.60 58.29 |
| S-19 | -1503.92 -1493.96 | 38.36 3.88 | 58.29 78.08 |
| S-20 | -1485.57 -1464.61 | 28.97 -54.87 | 78.08 64.05 |
| S-21 | -1465.35 -1451.46 | 28.97 -44.15 | 64.05 55.77 |
| S-22 | -1452.13 -1441.82 | -1.89 -66.33 | 55.77 20.85 |
| S-23 | -1443.22 -1437.40 | 18.78 -39.40 | 20.85 10.22 |
| S-24 | -1437.94 -1434.20 | 3.42 -49.95 | 10.22 -13.28 |
| S-25 | -1433.91 -1580.25 | 21.63 17.51 | -13.28 27.98 |
| S-27 | -1557.64 -1627.34 | -32.80 -95.71 | 20.52 0.00 |

| Position | min Nr max Nr [kN] | Vs [kN] | Mt [kNm] |
|----------|--------------------------|------------------|------------------|
| S-34 | -1616.97 -1556.61 | -73.51 -66.37 | 28.01 20.63 |
| S-35 | -1543.82 -1516.30 | -32.29 -13.59 | 62.78 62.78 |
| S-36 | -1504.27 -1503.94 | 22.50 -38.45 | 58.56 58.56 |
| S-37 | -1493.98 -1485.59 | -3.97 -29.06 | 78.42 78.42 |
| S-38 | -1464.63 -1465.37 | 54.78 -29.06 | 64.48 64.48 |
| S-39 | -1451.48 -1452.14 | 44.06 1.79 | 56.30 56.30 |
| S-40 | -1441.86 -1443.24 | 66.10 -19.02 | 21.55 21.55 |
| S-41 | -1437.44 -1434.15 | 39.01 -3.81 | 11.23 11.23 |
| S-42 | -1434.89 -1433.89 | 50.75 -20.83 | -12.48 -12.48 |
| S-44 | -1580.29 -1557.68 | 29.08 -17.59 | -16.65 28.01 |

Querkraft Vs [kN]



aus Lastkombination LK-1

| Position | Nr | Nr [kN] | min Vs max Vs [kN] | Mt Mt [kNm] |
|----------|----|------------|--------------------------|-------------------|
| S-16 | | -1616.93 | 73.42 | 27.98 |
| S-17 | | -1627.30 | 95.63 | 0.00 |
| S-18 | | -1543.79 | 32.21 | 62.60 |
| S-19 | | -1556.57 | 66.29 | 20.52 |
| S-20 | | -1504.24 | -22.59 | 58.29 |
| S-21 | | -1516.27 | 13.50 | 62.60 |
| S-22 | | -1493.96 | 3.88 | 78.08 |
| S-23 | | -1503.92 | 38.36 | 58.29 |
| S-24 | | -1464.61 | -54.87 | 64.05 |
| S-25 | | -1485.57 | 28.97 | 78.08 |
| S-26 | | -1451.46 | -44.15 | 55.77 |
| S-27 | | -1465.35 | 28.97 | 64.05 |
| S-28 | | -1441.82 | -66.33 | 20.85 |
| S-29 | | -1452.13 | -1.89 | 55.77 |
| S-30 | | -1437.40 | -39.40 | 10.22 |
| S-31 | | -1443.22 | 18.78 | 20.85 |
| S-32 | | -1434.20 | -49.95 | -13.28 |
| S-33 | | -1437.94 | 3.42 | 10.22 |
| S-34 | | -1433.91 | -28.28 | -16.65 |
| S-35 | | -1434.91 | 21.63 | -13.28 |
| S-36 | | -1557.64 | -32.80 | 20.52 |
| S-37 | | -1580.25 | 17.51 | 27.98 |
| S-38 | | -1627.34 | -95.71 | 0.00 |
| S-39 | | -1616.97 | -73.51 | 28.01 |
| S-40 | | -1556.61 | -66.37 | 20.63 |
| S-41 | | -1543.82 | -32.29 | 62.78 |
| S-42 | | -1516.30 | -13.59 | 62.78 |
| S-43 | | -1504.27 | 22.50 | 58.56 |
| S-44 | | -1503.94 | -38.45 | 58.56 |
| S-45 | | -1493.98 | -3.97 | 78.42 |
| S-46 | | -1485.59 | -29.06 | 78.42 |
| S-47 | | -1464.63 | 54.78 | 64.48 |
| S-48 | | -1465.37 | -29.06 | 64.48 |
| S-49 | | -1451.48 | 44.06 | 56.30 |
| S-50 | | -1452.14 | 1.79 | 56.30 |
| S-51 | | -1441.86 | 66.10 | 21.55 |
| S-52 | | -1443.24 | -19.02 | 21.55 |
| S-53 | | -1437.44 | 39.01 | 11.23 |
| S-54 | | -1437.97 | -3.81 | 11.23 |

| Position | Nr | Nr [kN] | min Vs max Vs [kN] | Mt Mt [kNm] |
|----------|----|------------|--------------------------|-------------------|
| S-42 | | -1434.15 | 50.75 | -12.48 |
| S-44 | | -1434.89 | -20.83 | -12.48 |
| S-46 | | -1433.89 | 29.08 | -16.65 |
| S-48 | | -1580.29 | -17.59 | 28.01 |
| S-50 | | -1557.68 | 32.72 | 20.63 |

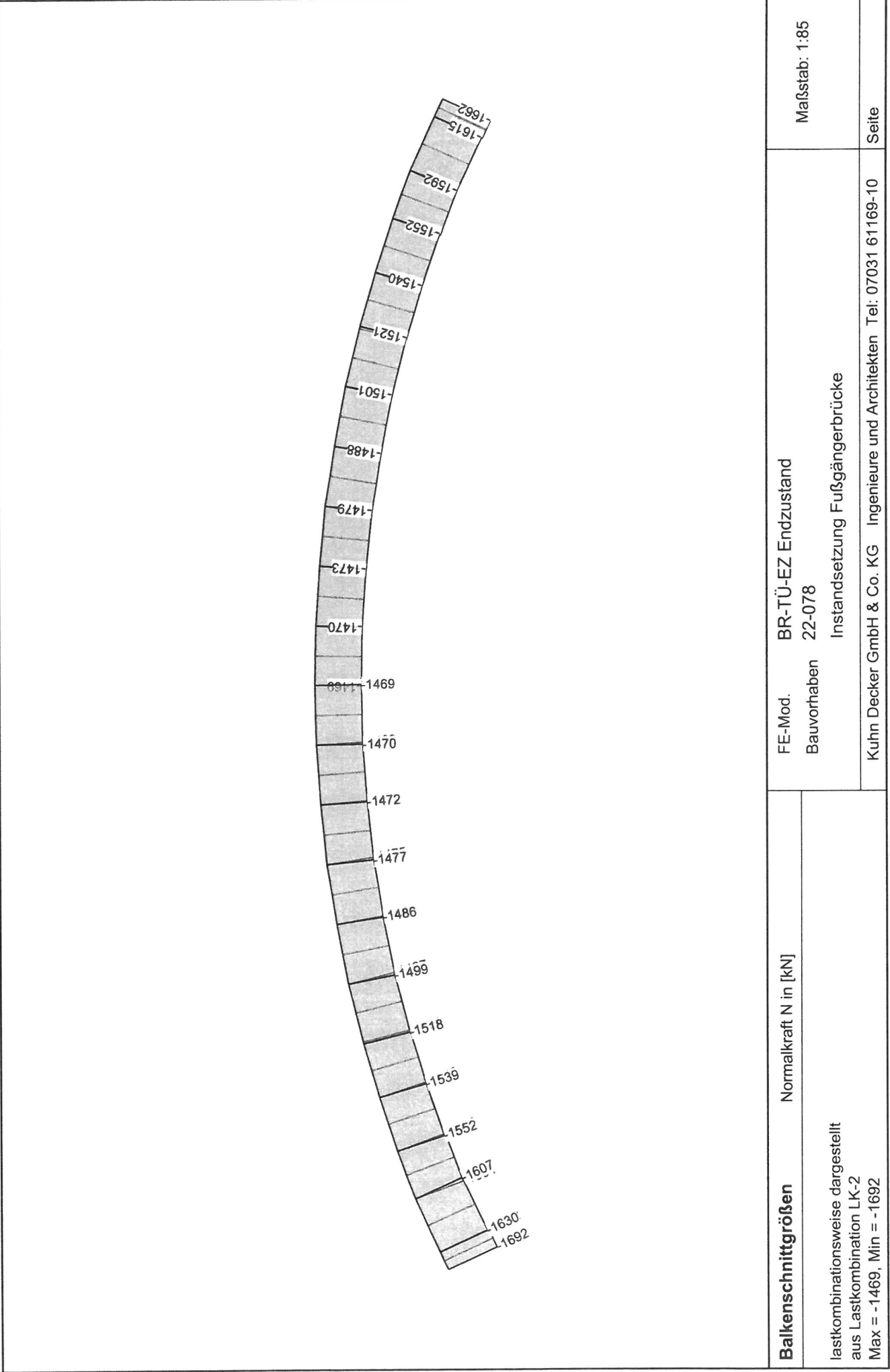
Moment Mt [kNm]

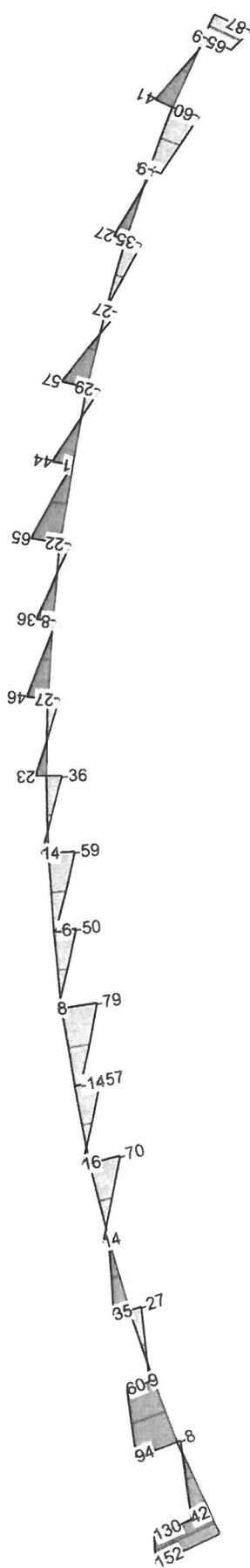


aus Lastkombination LK-1

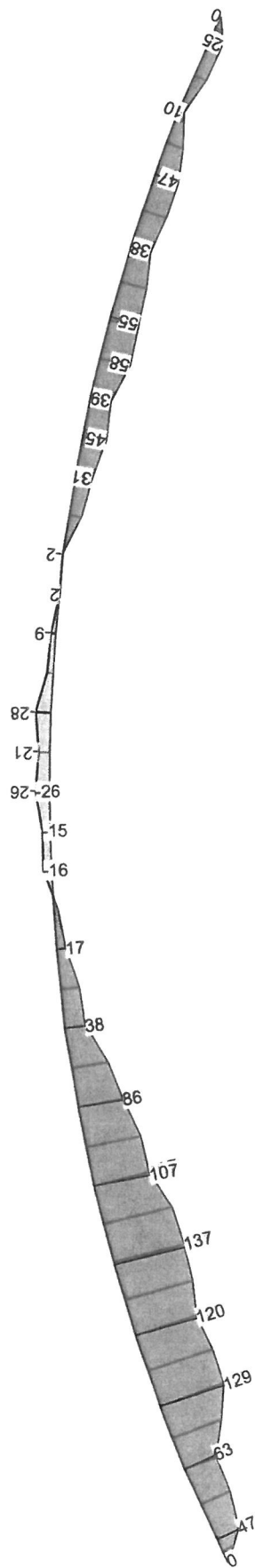
| Position | Nr [kN] | Vs [kN] | min Mt max Mt [kNm] |
|----------|------------|------------|---------------------------|
| S-16 | -1627.30 | 95.63 | 0.00 |
| S-17 | -1616.93 | 73.42 | 27.98 |
| S-17 | -1556.57 | 66.29 | 20.52 |
| S-18 | -1543.79 | 32.21 | 62.60 |
| S-18 | -1504.24 | -22.59 | 58.29 |
| S-19 | -1511.76 | -0.03 | 65.00 |
| S-19 | -1503.92 | 38.36 | 58.29 |
| S-20 | -1493.96 | 3.88 | 78.08 |
| S-20 | -1464.61 | -54.87 | 64.05 |
| S-21 | -1479.60 | 5.07 | 82.91 |
| S-21 | -1451.46 | -44.15 | 55.77 |
| S-22 | -1459.99 | 0.73 | 69.71 |
| S-22 | -1441.82 | -66.33 | 20.85 |
| S-23 | -1452.13 | -1.89 | 55.77 |
| S-23 | -1437.40 | -39.40 | 10.22 |
| S-24 | -1441.00 | -3.44 | 23.75 |
| S-24 | -1434.20 | -49.95 | -13.28 |
| S-25 | -1437.47 | -3.34 | 10.23 |
| S-25 | -1433.91 | -28.28 | -16.65 |
| S-27 | -1434.53 | 2.85 | -8.69 |
| S-27 | -1557.64 | -32.80 | 20.52 |
| S-33 | -1571.77 | -1.36 | 30.94 |
| S-33 | -1627.34 | -95.71 | 0.00 |
| S-34 | -1616.97 | -73.51 | 28.01 |
| S-34 | -1556.61 | -66.37 | 20.63 |
| S-35 | -1543.82 | -32.29 | 62.78 |
| S-35 | -1504.27 | 22.50 | 58.56 |
| S-36 | -1511.79 | -0.06 | 65.21 |
| S-36 | -1503.94 | -38.45 | 58.56 |
| S-37 | -1493.98 | -3.97 | 78.42 |
| S-37 | -1464.63 | 54.78 | 64.48 |
| S-38 | -1479.62 | -5.16 | 83.28 |
| S-38 | -1451.48 | 44.06 | 56.30 |
| S-39 | -1460.00 | -0.82 | 70.19 |
| S-39 | -1441.86 | 66.10 | 21.55 |
| S-40 | -1452.14 | 1.79 | 56.30 |
| S-40 | -1437.44 | 39.01 | 11.23 |
| S-41 | -1441.03 | 3.15 | 24.54 |
| S-41 | -1434.15 | 50.75 | -12.48 |
| S-42 | -1437.48 | 3.10 | 11.28 |
| S-42 | -1433.89 | 29.08 | -16.65 |
| S-42 | -1434.52 | -2.05 | -8.19 |

| Position | Nr [kN] | Vs [kN] | min Mt max Mt [kNm] |
|----------|------------|------------|---------------------------|
| S-44 | -1557.68 | 32.72 | 20.63 |
| S-44 | -1571.81 | 1.27 | 31.00 |





| Balkenschnittgrößen | Querkraft V in [kN] | FE-Mod. BR-TÜ-EZ Endzustand Bauvorhaben 22-078 Instandsetzung Fußgängerbrücke | Maßstab: 1:85 |
|---|---------------------|---|---------------|
| lastkombinationsweise dargestellt aus Lastkombination LK-2 Max = 152, Min = -87 | | Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10 | Seite |



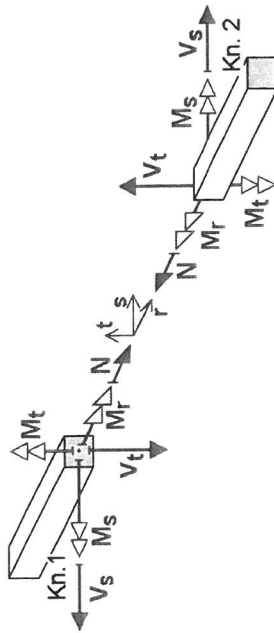
| | | | |
|--|-------------------|---|---------------|
| <div><div><div>Balkenschnittgrößen</div><div>lastkombinationsweise dargestellt aus Lastkombination LK-2 Max = 137, Min = -28</div></div></div> | Moment M in [kNm] | FE-Mod. BR-TÜ-EZ Endzustand Bauvorhaben 22-078 Instandsetzung Fußgängerbrücke | Maßstab: 1:85 |
| | | Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10 | |
| | | | Seite |

Balkenschnittgr-Stb

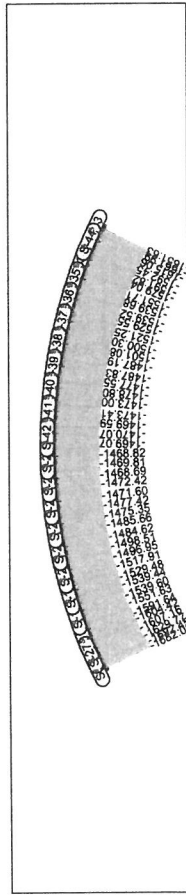
Schnittgrößen

Schnittgrößen Stb-Stützen und 3D-Stäbe

Schnittgrößen der Stützen und 3D-Stäbe



Normalkraft Nr [kN]

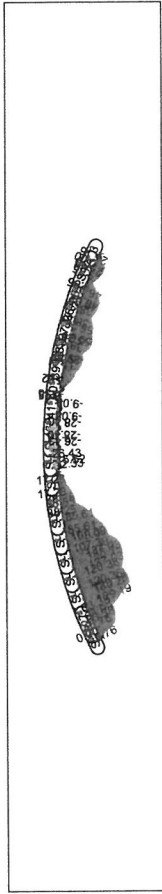


aus Lastkombination LK-2

| Position | min Nr [kN] | max Nr [kN] | Vs [kN] | Mt [kNm] |
|----------|----------------|----------------|------------|-------------|
| S-16 | -1692.45 | 152.36 | 130.15 | 0.00 |
| S-17 | -1682.09 | 94.06 | 59.98 | 46.76 |
| S-18 | -1591.64 | 8.74 | 129.19 | 63.38 |
| S-19 | -1539.60 | -27.35 | 120.36 | 129.19 |
| S-20 | -1529.48 | 35.03 | 120.36 | 120.36 |
| S-21 | -1496.95 | 0.55 | 137.03 | 137.03 |
| S-22 | -1498.51 | 15.71 | 107.39 | 107.39 |
| S-23 | -1484.62 | -57.41 | 85.61 | 85.61 |
| S-24 | -1485.66 | -14.18 | 38.25 | 38.25 |
| S-25 | -1475.35 | -78.63 | 38.25 | 38.25 |
| S-26 | -1477.42 | 8.49 | 17.28 | 17.28 |
| S-27 | -1471.60 | -49.69 | 17.28 | 17.28 |
| S-28 | -1472.42 | -5.85 | 15.52 | 15.52 |
| S-29 | -1468.69 | -59.22 | 14.09 | 14.09 |
| S-30 | -1469.81 | 14.09 | 35.82 | 35.82 |
| S-31 | -1468.82 | 42.19 | 46.76 | 46.76 |
| S-32 | -1607.16 | -8.12 | 63.38 | 63.38 |
| S-33 | -1661.99 | -87.09 | 0.00 | 0.00 |

| Position | min Nr [kN] | max Nr [kN] | Vs [kN] | Mt [kNm] |
|----------|----------------|----------------|------------|-------------|
| S-34 | -1651.63 | -64.88 | -60.47 | 25.16 |
| S-35 | -1591.82 | -60.47 | -26.39 | 9.85 |
| S-36 | -1551.71 | -9.00 | 27.09 | 46.95 |
| S-37 | -1539.68 | -35.30 | -38.37 | 38.37 |
| S-38 | -1529.55 | -0.81 | -27.20 | 55.28 |
| S-39 | -1521.25 | 56.65 | 29.24 | 39.42 |
| S-40 | -1501.08 | 43.88 | 0.58 | 31.41 |
| S-41 | -1487.19 | 64.88 | -22.34 | -2.10 |
| S-42 | -1478.80 | -2.10 | 35.69 | -9.08 |
| S-43 | -1473.41 | -8.19 | 46.37 | -28.40 |
| S-44 | -1469.59 | -26.97 | 22.94 | -26.43 |
| S-45 | -1470.07 | -9.47 | 40.85 | 25.16 |
| S-46 | -1469.07 | -9.47 | 40.85 | 9.85 |

Moment Mt [kNm]



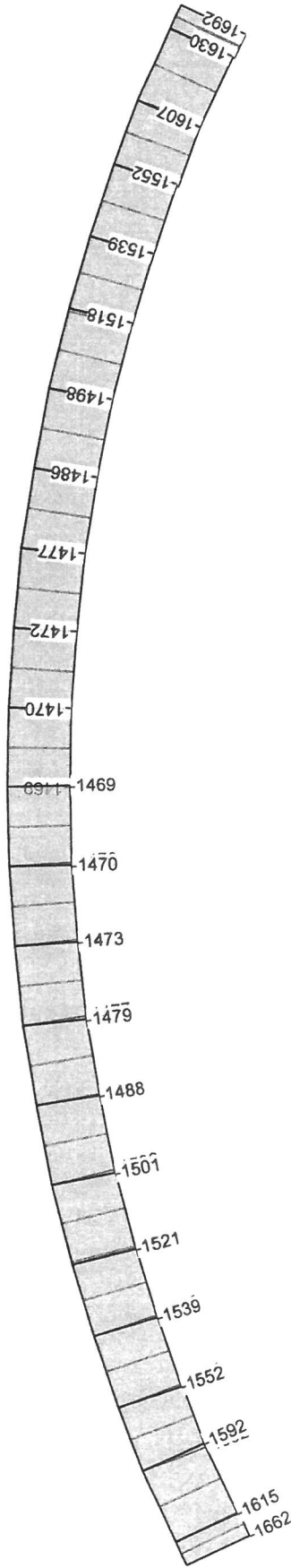
aus Lastkombination LK-2

| Position | Nr [kN] | Vs [kN] | min Mt max Mt [kNm] |
|----------|------------|------------|---------------------------|
| S-16 | -1692.45 | 152.36 | 0.00 |
| S-17 | -1682.09 | 130.15 | 46.76 |
| S-18 | -1604.42 | 94.06 | 63.38 |
| S-19 | -1591.64 | 59.98 | 129.19 |
| S-20 | -1539.60 | -27.35 | 120.36 |
| S-21 | -1548.62 | -0.28 | 130.20 |
| S-22 | -1539.44 | 35.03 | 120.36 |
| S-23 | -1529.48 | 0.55 | 137.03 |
| S-24 | -1496.95 | -70.01 | 107.39 |
| S-25 | -1514.54 | 0.31 | 138.16 |
| S-26 | -1484.62 | -57.41 | 85.61 |
| S-27 | -1494.93 | -3.12 | 109.00 |
| S-28 | -1475.35 | -78.63 | 38.25 |
| S-29 | -1485.66 | -14.18 | 85.61 |
| S-30 | -1471.60 | -49.69 | 17.28 |
| S-31 | -1476.67 | 1.08 | 38.85 |
| S-32 | -1468.69 | -59.22 | -15.52 |
| S-33 | -1472.42 | -5.85 | 17.28 |
| S-34 | -1468.82 | -35.82 | -26.43 |
| S-35 | -1469.56 | 1.57 | -13.56 |
| S-36 | -1629.77 | 42.19 | 46.76 |
| S-37 | -1609.98 | -1.83 | 63.99 |
| S-38 | -1661.99 | -87.09 | 0.00 |
| S-39 | -1651.63 | -64.88 | 25.16 |
| S-40 | -1591.82 | -60.47 | 9.85 |
| S-41 | -1579.04 | -26.39 | 46.95 |
| S-42 | -1539.68 | 27.09 | 38.37 |
| S-43 | -1548.71 | 0.03 | 48.02 |
| S-44 | -1539.52 | -35.30 | 38.37 |
| S-45 | -1529.55 | -0.81 | 55.28 |
| S-46 | -1500.30 | 56.65 | 39.42 |
| S-47 | -1515.28 | -3.29 | 59.61 |
| S-48 | -1487.19 | 43.88 | 31.41 |
| S-49 | -1495.71 | -1.00 | 45.19 |
| S-50 | -1477.55 | 64.88 | -2.10 |
| S-51 | -1487.83 | 0.58 | 31.41 |
| S-52 | -1473.00 | 35.69 | -9.08 |
| S-53 | -1476.58 | -0.17 | 2.15 |
| S-54 | -1469.59 | 46.37 | -28.40 |
| S-55 | -1472.92 | -1.27 | -8.48 |
| S-56 | -1470.07 | -26.97 | -28.40 |
| S-57 | -1469.57 | -1.92 | -21.18 |

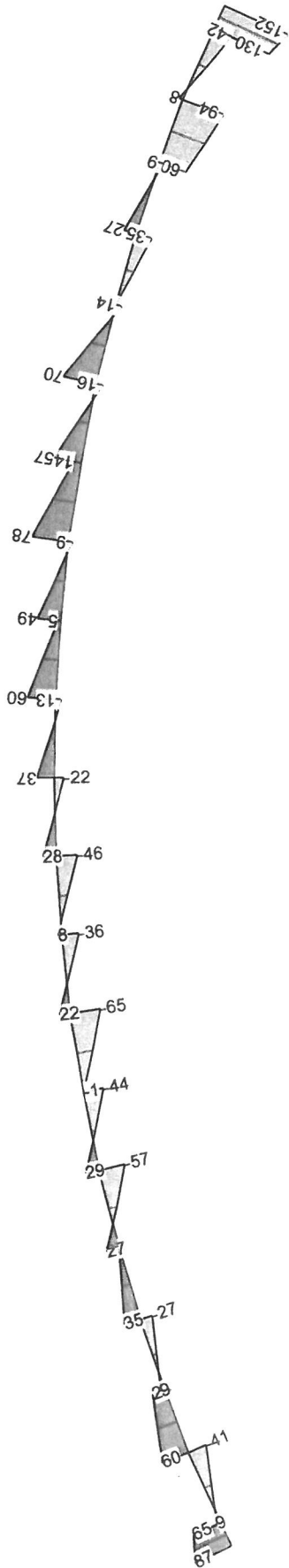
Position

S-44

| Nr | Vs | min Mt |
|----------|-------|--------|
| Nr | Vs | max Mt |
| [kN] | [kN] | [kNm] |
| -1592.45 | 40.85 | 9.85 |
| -1609.41 | 3.11 | 25.93 |



| Balkenschnittgrößen | Normalkraft N in [kN] | FE-Mod. | BR-TÜ-EZ Endzustand | Maßstab: 1:85 |
|---|-----------------------|--|---------------------|---------------|
| | | Bauvorhaben | 22-078 | |
| | | Instandsetzung Fußgängerbrücke | | |
| lastkombinationsweise dargestellt aus Lastkombination LK-3 Max = -1469, Min = -1692 | | Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10 | | Seite |



Balkenschnittgrößen

Querkraft V in [kN]

lastkombinationsweise dargestellt
aus Lastkombination LK-3
Max = 87, Min = -152

FE-Mod. BR-TÜ-EZ Endzustand

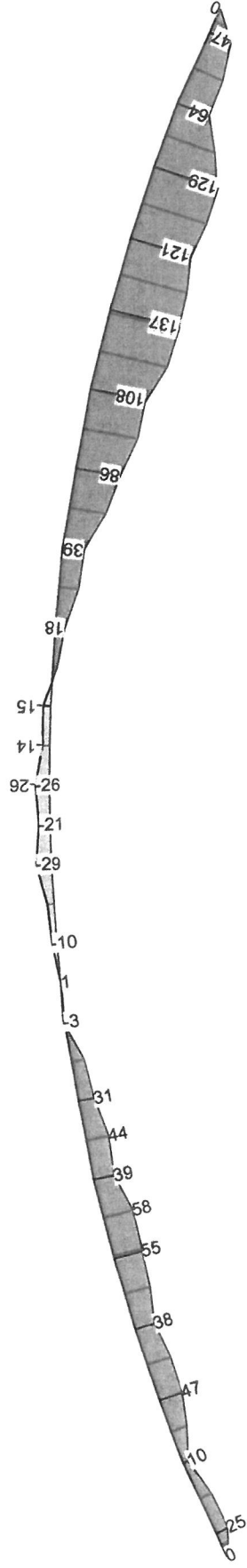
Bauvorhaben 22-078

Instandsetzung Fußgängerbrücke

Maßstab: 1:85

Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10

Seite



Balkenschnittgrößen

Moment M in [kNm]

lastkombinationsweise dargestellt
aus Lastkombination LK-3
Max = 138, Min = -29

FE-Mod. BR-TÜ-EZ Endzustand

Bauvorhaben 22-078

Instandsetzung Fußgängerbrücke

Maßstab: 1:85

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MicroFe 2018.051

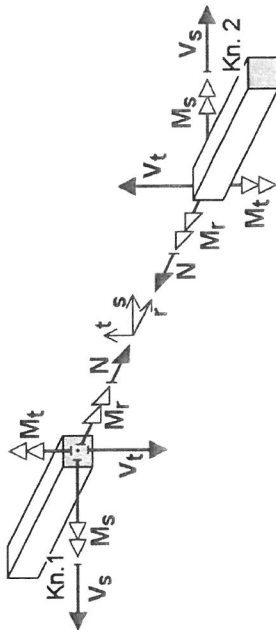
4.17

Balkenschnittgr-Stb

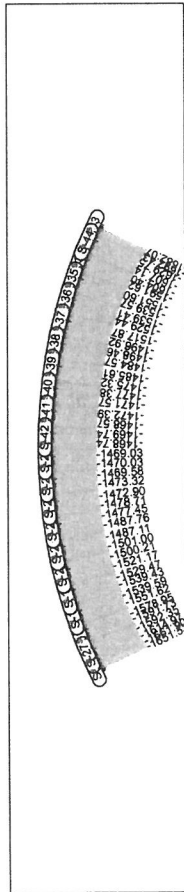
Schnittgrößen Stb-Stützen und 3D-Stäbe

Schnittgrößen

Schnittgrößen der Stützen und 3D-Stäbe



Normalkraft Nr [kN]



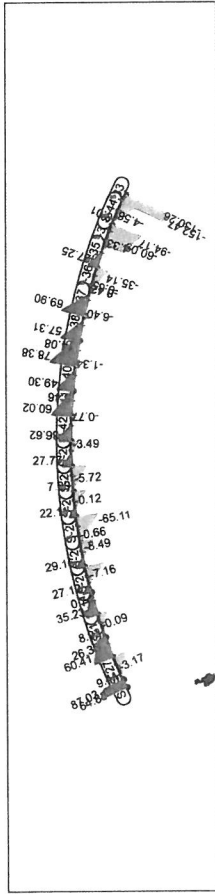
aus Lastkombination LK-3

| Position | min Nr [kN] | max Nr [kN] | Vs [kN] | Mt [kNm] |
|----------|----------------|----------------|------------|-------------|
| S-16 | -1661.90 | 87.03 | 0.00 | 0.00 |
| S-17 | -1651.53 | 64.83 | 25.14 | 0.00 |
| S-18 | -1591.73 | 60.41 | 9.77 | 25.14 |
| S-19 | -1578.95 | 26.33 | 46.83 | 46.83 |
| S-20 | -1551.62 | 8.93 | 46.83 | 46.83 |
| S-21 | -1539.59 | -27.16 | 38.18 | 38.18 |
| S-22 | -1539.43 | 35.23 | 38.18 | 38.18 |
| S-23 | -1529.47 | 0.74 | 55.02 | 55.02 |
| S-24 | -1521.17 | 27.12 | 55.02 | 55.02 |
| S-25 | -1500.21 | -56.72 | 39.09 | 39.09 |
| S-26 | -1501.00 | 29.16 | 39.09 | 39.09 |
| S-27 | -1487.11 | -43.95 | 31.00 | 31.00 |
| S-28 | -1487.76 | -0.66 | 31.00 | 31.00 |
| S-29 | -1477.45 | -65.11 | -2.67 | -2.67 |
| S-30 | -1478.71 | 22.11 | -2.67 | -2.67 |
| S-31 | -1472.90 | -36.07 | -9.96 | -9.96 |
| S-32 | -1473.32 | 7.80 | -9.96 | -9.96 |
| S-33 | -1469.58 | -45.57 | -29.07 | -29.07 |
| S-34 | -1470.03 | 27.77 | -29.07 | -29.07 |
| S-35 | -1469.03 | -22.14 | -26.30 | -26.30 |
| S-36 | -1614.97 | 9.41 | 25.14 | 25.14 |
| S-37 | -1592.35 | -40.90 | 9.77 | 9.77 |
| S-38 | -1692.43 | -152.47 | 0.00 | 0.00 |

Position

| Position | min Nr [kN] | max Nr [kN] | Vs [kN] | Mt [kNm] |
|----------|----------------|----------------|------------|-------------|
| S-34 | -1682.07 | -130.26 | 46.80 | 46.80 |
| S-35 | -1604.40 | -94.17 | 63.53 | 63.53 |
| S-36 | -1591.62 | -60.09 | 129.43 | 129.43 |
| S-37 | -1551.60 | -8.85 | 129.43 | 129.43 |
| S-38 | -1539.57 | 27.25 | 120.70 | 120.70 |
| S-39 | -1539.41 | -35.14 | 137.46 | 137.46 |
| S-40 | -1529.44 | -0.65 | 137.46 | 137.46 |
| S-41 | -1517.87 | -13.94 | 107.94 | 107.94 |
| S-42 | -1496.92 | 69.90 | 86.26 | 86.26 |
| S-43 | -1498.46 | -15.81 | 86.26 | 86.26 |
| S-44 | -1484.57 | 57.31 | 39.08 | 39.08 |
| S-45 | -1485.61 | 14.08 | 39.08 | 39.08 |
| S-46 | -1475.32 | 78.38 | 18.42 | 18.42 |
| S-47 | -1477.38 | -8.73 | 18.42 | 18.42 |
| S-48 | -1471.57 | 49.30 | 5.46 | 5.46 |
| S-49 | -1472.39 | 5.46 | 60.02 | 60.02 |
| S-50 | -1468.57 | -13.29 | -14.58 | -14.58 |
| S-51 | -1469.74 | 36.62 | -26.30 | -26.30 |
| S-52 | -1468.74 | -42.30 | 46.80 | 46.80 |
| S-53 | -1629.75 | -1607.14 | 8.01 | 8.01 |

Querkraft Vs [kN]

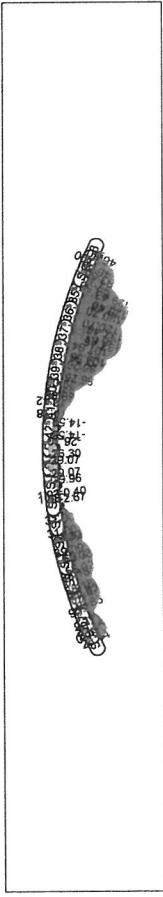


aus Lastkombination LK-3
Position

| Position | Nr | Nr [kN] | min Vs max Vs [kN] | Mt Mt [kNm] |
|----------|----------|------------|--------------------------|-------------------|
| S-16 | -1651.53 | 64.83 | 25.14 | 25.14 |
| S-17 | -1661.90 | 87.03 | 0.00 | 0.00 |
| S-18 | -1578.95 | 26.33 | 46.83 | 46.83 |
| S-19 | -1591.73 | 60.41 | 9.77 | 9.77 |
| S-20 | -1539.59 | -27.16 | 38.18 | 38.18 |
| S-21 | -1551.62 | 8.93 | 46.83 | 46.83 |
| S-22 | -1529.47 | 0.74 | 55.02 | 55.02 |
| S-23 | -1539.43 | 35.23 | 38.18 | 38.18 |
| S-24 | -1500.21 | -56.72 | 39.09 | 39.09 |
| S-25 | -1521.17 | 27.12 | 55.02 | 55.02 |
| S-26 | -1487.11 | -43.95 | 31.00 | 31.00 |
| S-27 | -1501.00 | 29.16 | 39.09 | 39.09 |
| S-28 | -1477.45 | -65.11 | -2.67 | -2.67 |
| S-29 | -1487.76 | -0.66 | 31.00 | 31.00 |
| S-30 | -1472.90 | -36.07 | -9.96 | -9.96 |
| S-31 | -1478.71 | 22.11 | -2.67 | -2.67 |
| S-32 | -1469.58 | -45.57 | -29.07 | -29.07 |
| S-33 | -1473.32 | 7.80 | -9.96 | -9.96 |
| S-34 | -1469.03 | -22.14 | -26.30 | -26.30 |
| S-35 | -1470.03 | 27.77 | -29.07 | -29.07 |
| S-36 | -1592.35 | -40.90 | 9.77 | 9.77 |
| S-37 | -1614.97 | 9.41 | 25.14 | 25.14 |
| S-38 | -1692.43 | -152.47 | 0.00 | 0.00 |
| S-39 | -1682.07 | -130.26 | 46.80 | 46.80 |
| S-40 | -1604.40 | -94.17 | 63.53 | 63.53 |
| S-41 | -1591.62 | -60.09 | 129.43 | 129.43 |
| S-42 | -1551.60 | -8.85 | 129.43 | 129.43 |
| S-43 | -1539.57 | 27.25 | 120.70 | 120.70 |
| S-44 | -1539.41 | -35.14 | 120.70 | 120.70 |
| S-45 | -1529.44 | -0.65 | 137.46 | 137.46 |
| S-46 | -1517.87 | -13.94 | 137.46 | 137.46 |
| S-47 | -1496.92 | 69.90 | 107.94 | 107.94 |
| S-48 | -1498.46 | -15.81 | 107.94 | 107.94 |
| S-49 | -1484.57 | 57.31 | 86.26 | 86.26 |
| S-50 | -1485.61 | 14.08 | 86.26 | 86.26 |
| S-51 | -1475.32 | 78.38 | 39.08 | 39.08 |
| S-52 | -1477.38 | -8.73 | 39.08 | 39.08 |
| S-53 | -1471.57 | 49.30 | 18.42 | 18.42 |
| S-54 | -1472.39 | 5.46 | 18.42 | 18.42 |

4.19

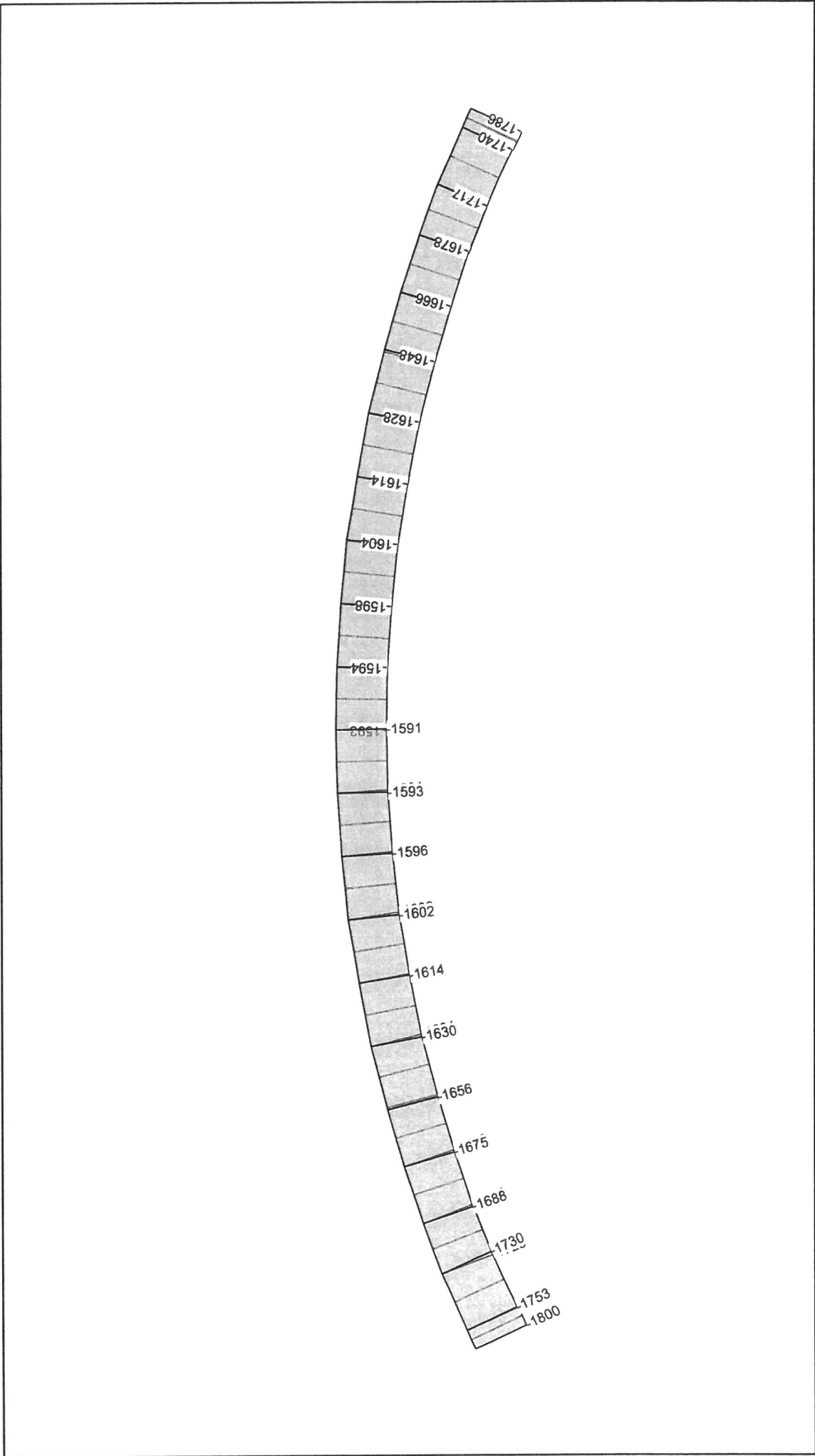
Moment Mt [kNm]



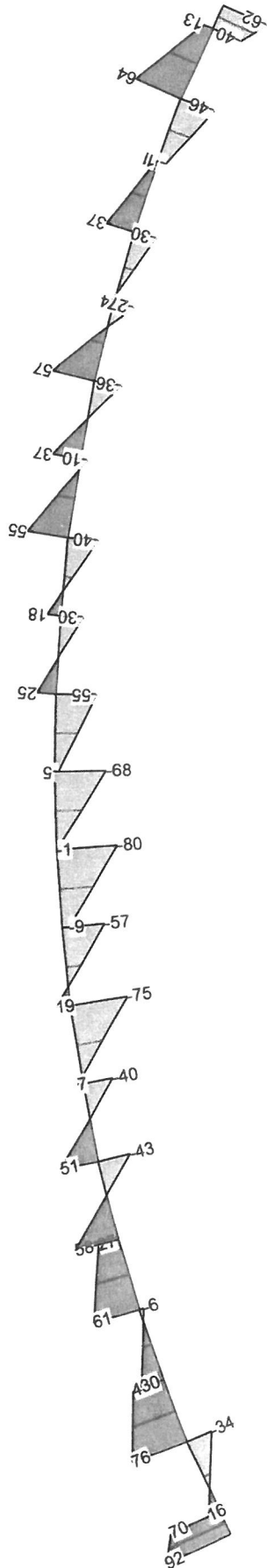
aus Lastkombination LK-3

| Position | Nr | Nr [kN] | Vs Vs [kN] | min Mt max Mt [kNm] |
|----------|----------|------------|------------------|---------------------------|
| S-16 | -1661.90 | 87.03 | 0.00 | 25.14 |
| S-17 | -1651.53 | 64.83 | 25.14 | 9.77 |
| S-18 | -1591.73 | 60.41 | 9.77 | 46.83 |
| S-19 | -1578.95 | 26.33 | 46.83 | 38.18 |
| S-20 | -1539.59 | -27.16 | 38.18 | 47.87 |
| S-21 | -1548.62 | -0.09 | 47.87 | 38.18 |
| S-22 | -1539.43 | 35.23 | 38.18 | 55.02 |
| S-23 | -1529.47 | 0.74 | 55.02 | 39.09 |
| S-24 | -1500.21 | -56.72 | 39.09 | 59.33 |
| S-25 | -1515.20 | 3.22 | 59.33 | 31.00 |
| S-26 | -1487.11 | -43.95 | 31.00 | 44.83 |
| S-27 | -1495.63 | 0.92 | 44.83 | -2.67 |
| S-28 | -1477.45 | -65.11 | -2.67 | 31.00 |
| S-29 | -1487.76 | -0.66 | 31.00 | -9.96 |
| S-30 | -1472.90 | -36.07 | -9.96 | 1.48 |
| S-31 | -1476.49 | -0.12 | 1.48 | -29.07 |
| S-32 | -1469.58 | -45.57 | -29.07 | -9.40 |
| S-33 | -1472.84 | 1.04 | -9.40 | -29.07 |
| S-34 | -1470.03 | 27.77 | -29.07 | -21.44 |
| S-35 | -1469.52 | 2.73 | -21.44 | 9.77 |
| S-36 | -1592.35 | -40.90 | 9.77 | 25.90 |
| S-37 | -1612.14 | 3.12 | 25.90 | 0.00 |
| S-38 | -1692.43 | -152.47 | 0.00 | 63.53 |
| S-39 | -1682.07 | -130.26 | 63.53 | 129.43 |
| S-40 | -1604.40 | -94.17 | 129.43 | 120.70 |
| S-41 | -1591.62 | -60.09 | 120.70 | 130.46 |
| S-42 | -1539.57 | 27.25 | 130.46 | 120.70 |
| S-43 | -1548.59 | 0.18 | 120.70 | 137.46 |
| S-44 | -1539.41 | -35.14 | 137.46 | 107.94 |
| S-45 | -1529.44 | -0.65 | 107.94 | 138.61 |
| S-46 | -1496.92 | 69.90 | 138.61 | 86.26 |
| S-47 | -1514.50 | -0.42 | 86.26 | 39.08 |
| S-48 | -1484.57 | 57.31 | 39.08 | 18.42 |
| S-49 | -1494.89 | 3.02 | 18.42 | -1.34 |
| S-50 | -1475.32 | 78.38 | -1.34 | 60.02 |
| S-51 | -1485.61 | 14.08 | 60.02 | 5.46 |
| S-52 | -1471.57 | 49.30 | 5.46 | -26.30 |
| S-53 | -1476.64 | -1.34 | -26.30 | -12.83 |
| S-54 | -1468.57 | 60.02 | -12.83 | |
| S-55 | -1472.39 | 5.46 | | |
| S-56 | -1468.74 | 36.62 | | |
| S-57 | -1469.49 | -0.77 | | |

| Position | Nr | Nr [kN] | Vs Vs [kN] | min Mt max Mt [kNm] |
|----------|----------|------------|------------------|---------------------------|
| S-44 | -1629.75 | -42.30 | 1.73 | 64.12 |
| | -1609.96 | | | |



| | | | | |
|----------------------------|-----------------------|---|--|---------------|
| Balkenschnittgrößen | Normalkraft N in [kN] | lastkombinationsweise dargestellt aus Lastkombination LK-4 Max = -1591, Min = -1800 | FE-Mod. BR-TÜ-EZ Endzustand | Maßstab: 1:85 |
| | | | Bauvorhaben 22-078 | |
| | | | Instandsetzung Fußgängerbrücke | |
| | | | Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10 | Seite |



Balkenschnittgrößen

Querkraft V in [kN]

lastkombinationsweise dargestellt
aus Lastkombination LK-4
Max = 92, Min = -80

FE-Mod. BR-TÜ-EZ Endzustand

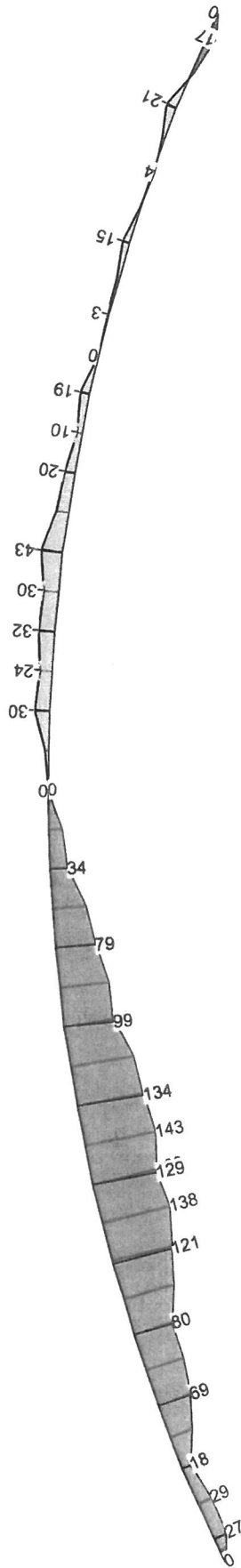
Bauvorhaben 22-078

Instandsetzung Fußgängerbrücke

Maßstab: 1:85

Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10

Seite



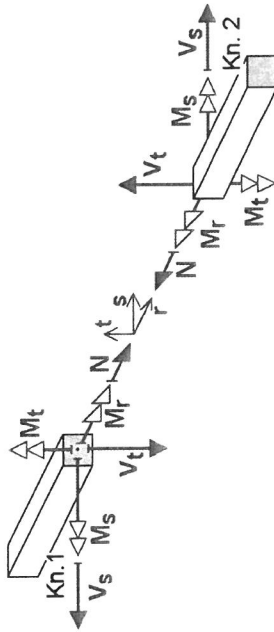
| Balkenschnittgrößen | | Moment M in [kNm] | FE-Mod. BR-TÜ-EZ Endzustand Bauvorhaben 22-078 Instandsetzung Fußgängerbrücke Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10 | Maßstab: 1:85 |
|---|--|-------------------|--|---------------|
| lastkombinationsweise dargestellt aus Lastkombination LK-4 Max = 143, Min = -43 | | | | |
| | | | | |

Balkenschnittgr-Stb

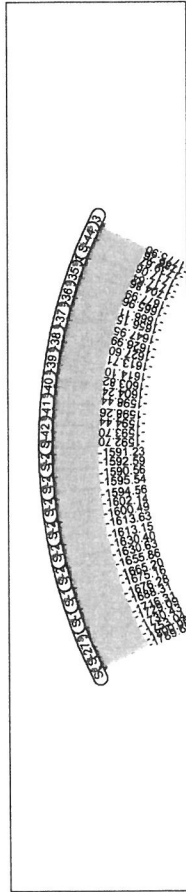
Schnittgrößen

Schnittgrößen Stb-Stützen und 3D-Stäbe

Schnittgrößen der Stützen und 3D-Stäbe



Normalkraft Nr [kN]

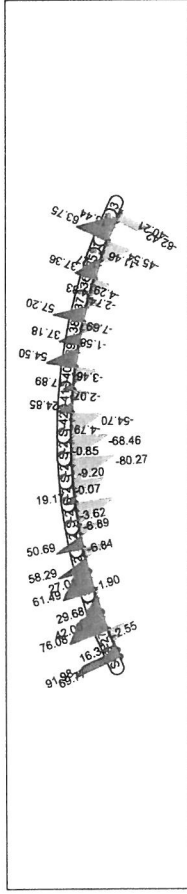


aus Lastkombination LK-4

| Position | min Nr [kN] | max Nr [kN] | Vs [kN] | Mt [kNm] |
|----------|----------------|----------------|------------|-------------|
| S-16 | -1800.06 | 91.98 | 0.00 | 0.00 |
| S-17 | -1789.69 | 69.77 | 26.77 | 18.15 |
| S-18 | -1716.31 | 42.00 | 68.60 | 68.60 |
| S-19 | -1688.31 | 29.68 | 68.60 | 79.63 |
| S-20 | -1675.16 | 61.49 | 79.63 | 121.09 |
| S-21 | -1665.20 | 27.01 | 121.09 | 121.09 |
| S-22 | -1655.86 | 58.29 | 121.09 | 128.78 |
| S-23 | -1630.63 | -42.63 | 128.78 | 128.78 |
| S-24 | -1630.40 | 50.69 | 133.60 | 133.60 |
| S-25 | -1613.15 | -40.13 | 133.60 | 133.60 |
| S-26 | -1613.63 | 6.84 | 98.56 | 98.56 |
| S-27 | -1600.49 | -75.31 | 98.56 | 98.56 |
| S-28 | -1602.14 | 19.17 | 79.42 | 79.42 |
| S-29 | -1594.56 | -56.71 | 79.42 | 79.42 |
| S-30 | -1595.54 | -9.20 | 34.39 | 34.39 |
| S-31 | -1590.56 | -80.27 | 34.39 | 34.39 |
| S-32 | -1592.59 | -0.85 | 34.39 | 34.39 |
| S-33 | -1591.23 | -68.46 | 34.39 | 34.39 |
| S-34 | -1753.04 | 16.32 | 26.77 | 26.77 |
| S-35 | -1730.43 | -33.99 | 18.15 | 18.15 |
| S-36 | -1786.26 | -62.42 | 0.00 | 0.00 |

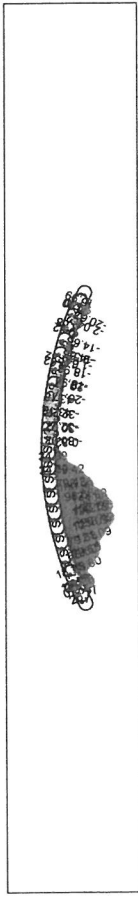
| Position | min Nr [kN] | max Nr [kN] | Vs [kN] | Mt [kNm] |
|----------|----------------|----------------|------------|-------------|
| S-34 | -1775.90 | -40.21 | -45.54 | -20.67 |
| S-35 | -1717.64 | -11.46 | 3.68 | 3.68 |
| S-36 | -1704.86 | 1.27 | 37.36 | -14.65 |
| S-37 | -1665.96 | -30.15 | -14.65 | -14.65 |
| S-38 | -1666.11 | 4.33 | -26.65 | -2.55 |
| S-39 | -1647.95 | 57.20 | -18.98 | -18.98 |
| S-40 | -1626.99 | -35.94 | -18.98 | -18.98 |
| S-41 | -1627.60 | 37.18 | -9.80 | -20.17 |
| S-42 | -1613.71 | -1614.10 | 54.50 | -43.18 |
| S-43 | -1603.82 | -1604.24 | 40.14 | -43.18 |
| S-44 | -1598.44 | 17.89 | -29.71 | -32.27 |
| S-45 | -1598.26 | -29.71 | 24.85 | -30.02 |
| S-46 | -1594.44 | -1593.70 | -4.79 | -30.02 |
| S-47 | -1593.70 | -1592.70 | 13.44 | 16.99 |
| S-48 | -1739.67 | -1717.06 | 63.75 | -20.67 |

Querkraft V_s [kN]



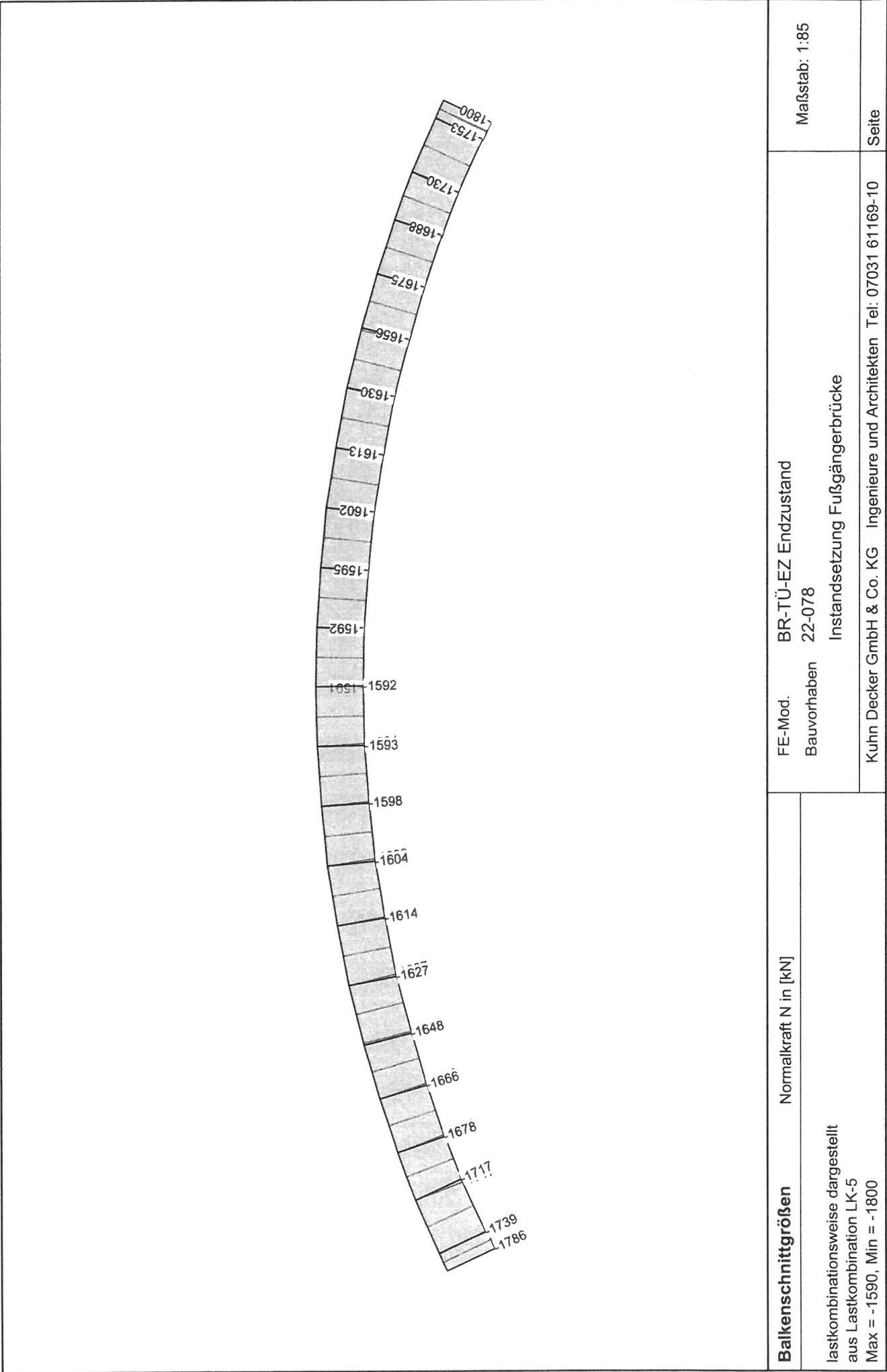
| aus Lastkombination LK-4 | Position | Nr | min Vs | max Vs | Mt | Mt |
|--------------------------|----------|----------|--------|--------|--------|----|
| | | [kN] | [kN] | | [kNm] | |
| S-16 | | -1789.69 | 69.77 | 26.77 | 26.77 | |
| | | -1800.06 | 91.98 | 0.00 | 0.00 | |
| S-17 | | -1716.31 | 42.00 | 68.60 | 68.60 | |
| | | -1729.09 | 76.08 | 18.15 | 18.15 | |
| S-18 | | -1676.28 | -6.41 | 79.63 | 79.63 | |
| | | -1688.31 | 29.68 | 68.60 | 68.60 | |
| S-19 | | -1665.20 | 27.01 | 121.09 | 121.09 | |
| | | -1675.16 | 61.49 | 79.63 | 79.63 | |
| S-20 | | -1630.63 | -42.63 | 128.78 | 128.78 | |
| | | -1655.86 | 58.29 | 121.09 | 121.09 | |
| S-21 | | -1613.15 | -40.13 | 133.60 | 133.60 | |
| | | -1630.40 | 50.69 | 128.78 | 128.78 | |
| S-22 | | -1600.49 | -75.31 | 98.56 | 98.56 | |
| | | -1613.63 | 6.84 | 133.60 | 133.60 | |
| S-23 | | -1594.56 | -56.71 | 79.42 | 79.42 | |
| | | -1602.14 | 19.17 | 98.56 | 98.56 | |
| S-24 | | -1590.56 | -80.27 | 34.39 | 34.39 | |
| | | -1595.54 | -9.20 | 79.42 | 79.42 | |
| S-25 | | -1591.23 | -68.46 | -0.32 | -0.32 | |
| | | -1592.59 | -0.85 | 34.39 | 34.39 | |
| S-27 | | -1730.43 | -33.99 | 18.15 | 18.15 | |
| | | -1753.04 | 16.32 | 26.77 | 26.77 | |
| S-33 | | -1786.26 | -62.42 | 0.00 | 0.00 | |
| | | -1775.90 | -40.21 | 16.99 | 16.99 | |
| S-34 | | -1717.64 | -45.54 | -20.67 | -20.67 | |
| | | -1704.86 | -11.46 | 3.68 | 3.68 | |
| S-35 | | -1677.99 | 1.27 | 3.68 | 3.68 | |
| | | -1665.96 | 37.36 | -14.65 | -14.65 | |
| S-36 | | -1666.11 | -30.15 | -14.65 | -14.65 | |
| | | -1656.15 | 4.33 | -2.55 | -2.55 | |
| S-37 | | -1647.95 | -26.65 | -2.55 | -2.55 | |
| | | -1626.99 | 57.20 | -18.98 | -18.98 | |
| S-38 | | -1627.60 | -35.94 | -18.98 | -18.98 | |
| | | -1613.71 | 37.18 | -20.17 | -20.17 | |
| S-39 | | -1614.10 | -9.80 | -20.17 | -20.17 | |
| | | -1603.82 | 54.50 | -43.18 | -43.18 | |
| S-40 | | -1604.24 | -40.14 | -43.18 | -43.18 | |
| | | -1598.44 | 17.89 | -32.27 | -32.27 | |
| S-41 | | -1598.26 | -29.71 | -32.27 | -32.27 | |
| | | -1594.44 | 24.85 | -30.02 | -30.02 | |

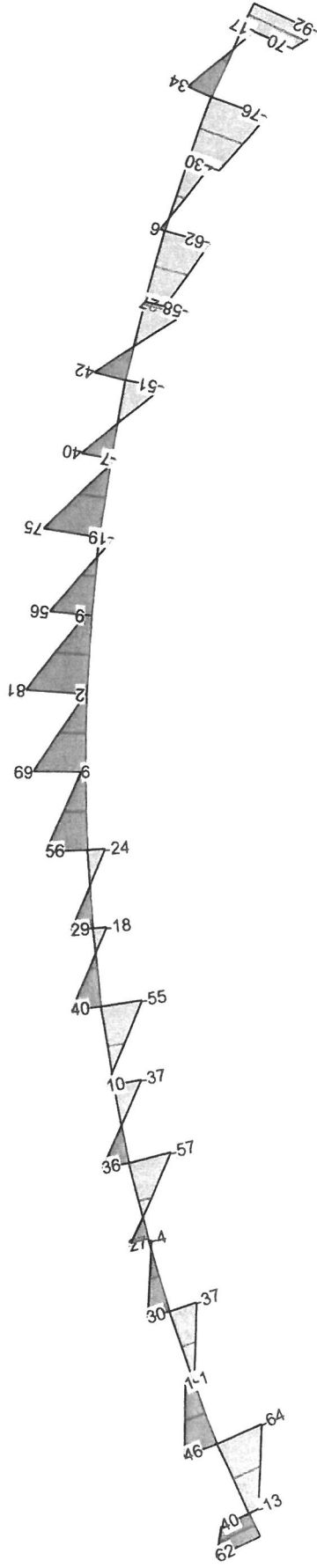
Moment Mt [kNm]



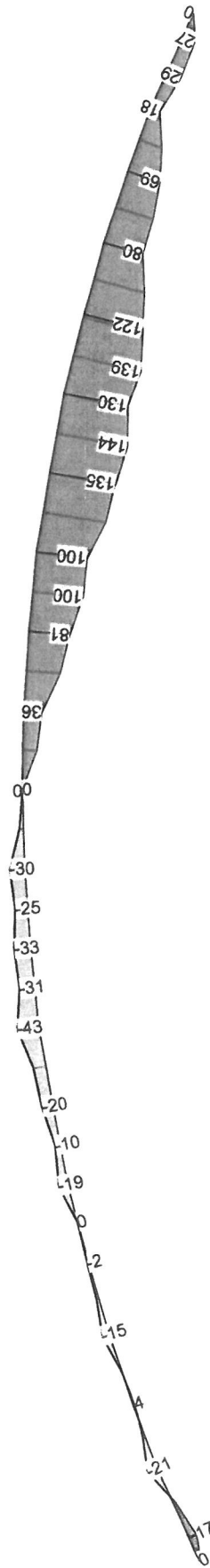
aus Lastkombination LK-4

| Position | Nr Nr | Nr [kN] | Vs Vs [kN] | min Mt max Mt [kNm] |
|----------|----------|------------|------------------|---------------------------|
| S-16 | -1800.06 | 91.98 | 0.00 | 0.00 |
| S-17 | -1789.69 | 69.77 | 26.77 | 18.15 |
| S-18 | -1729.09 | 76.08 | 18.15 | 68.60 |
| S-19 | -1716.31 | 42.00 | 68.60 | 80.12 |
| S-20 | -1688.31 | 29.68 | 80.12 | 79.63 |
| S-21 | -1677.78 | 1.90 | 121.09 | 138.12 |
| S-22 | -1675.16 | 61.49 | 121.09 | 128.78 |
| S-23 | -1665.20 | 27.01 | 142.75 | 98.56 |
| S-24 | -1655.86 | 58.29 | 98.56 | 133.80 |
| S-25 | -1642.56 | 5.09 | 79.42 | 79.42 |
| S-26 | -1630.40 | 50.69 | 100.96 | 34.39 |
| S-27 | -1621.57 | 4.18 | 79.42 | 79.42 |
| S-28 | -1600.49 | -75.31 | 0.00 | -0.32 |
| S-29 | -1611.96 | -3.62 | 34.39 | 34.39 |
| S-30 | -1594.56 | -56.71 | 18.15 | 18.15 |
| S-31 | -1600.22 | -0.07 | 29.29 | 29.29 |
| S-32 | -1590.56 | -80.27 | -62.42 | -62.42 |
| S-33 | -1595.54 | -9.20 | -40.21 | -40.21 |
| S-34 | -1591.23 | -68.46 | 16.99 | 16.99 |
| S-35 | -1592.59 | -0.85 | -20.67 | -20.67 |
| S-36 | -1730.43 | -33.99 | 3.68 | 3.68 |
| S-37 | -1744.56 | -2.55 | -14.65 | -14.65 |
| S-38 | -1786.26 | -62.42 | 1.27 | 1.27 |
| S-39 | -1775.90 | -40.21 | -30.15 | -30.15 |
| S-40 | -1717.64 | -45.54 | 0.02 | -2.30 |
| S-41 | -1704.86 | -11.46 | 57.20 | -18.98 |
| S-42 | -1665.96 | 37.36 | 1.62 | 1.62 |
| S-43 | -1677.99 | 1.27 | -2.74 | -2.74 |
| S-44 | -1666.11 | -30.15 | 37.18 | -20.17 |
| S-45 | -1657.39 | 0.02 | 1.72 | 1.72 |
| S-46 | -1626.99 | 57.20 | -10.27 | -10.27 |
| S-47 | -1641.98 | -2.74 | 43.50 | -43.18 |
| S-48 | -1613.71 | 37.18 | -1.58 | -1.58 |
| S-49 | -1620.44 | 1.72 | -43.18 | -43.18 |
| S-50 | -1603.82 | 54.50 | -29.55 | -29.55 |
| S-51 | -1612.79 | -1.58 | -32.27 | -32.27 |
| S-52 | -1604.24 | -40.14 | -24.31 | -24.31 |
| S-53 | -1600.57 | -3.46 | -30.02 | -30.02 |
| S-54 | -1598.26 | -29.71 | -4.79 | -4.79 |
| S-55 | -1596.33 | -2.07 | 63.75 | -20.67 |
| S-56 | -1593.70 | -54.70 | | |
| S-57 | -1592.70 | -4.79 | | |
| S-58 | -1717.06 | 63.75 | | |





| Balkenschnittgrößen | | Querkraft V in [kN] | FE-Mod. | BR-TÜ-EZ Endzustand | Maßstab: 1:85 |
|--|--|---------------------|--|---------------------|------------------|
| lastkombinationsweise dargestellt aus Lastkombination LK-5 Max = 81, Min = -92 | | | Bauvorhaben | 22-078 | |
| | | | Instandsetzung Fußgängerbrücke | | |
| | | | Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10 | | Seite |
| | | | | | MicroFe 2018.051 |



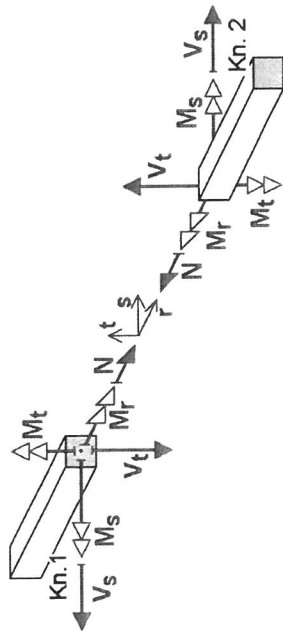
| Balkenschnittgrößen | | FE-Mod. | | Maßstab: 1:85 | |
|---|--|--|--|---------------|--|
| Moment M in [kNm] | | BR-TÜ-EZ Endzustand | | | |
| lastkombinationsweise dargestellt aus Lastkombination LK-5 Max = 144, Min = -43 | | Bauvorhaben | | | |
| | | Instandsetzung Fußgängerbrücke | | | |
| | | Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10 | | Seite | |

Balkenschnittgr-Stb

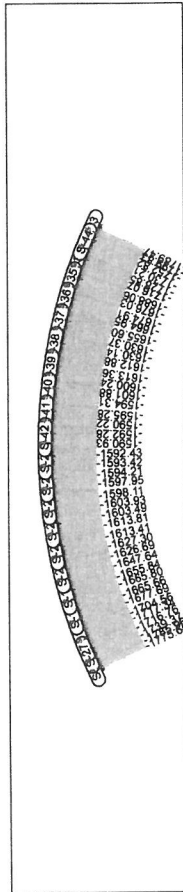
Schnittgrößen

Schnittgrößen Stb-Stützen und 3D-Stäbe

Schnittgrößen der Stützen und 3D-Stäbe



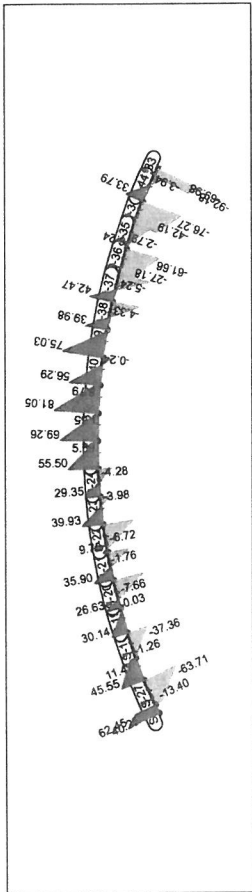
Normalkraft Nr [kN]



| Position | aus Lastkombination LK-5 | | min Nr max Nr | Vs [kN] | Mt [kNm] | |
|----------|--------------------------|--------|------------------|------------|-------------|--------|
| | | | | | | |
| S-16 | -1785.96 | 0.00 | -1785.96 | 62.45 | 0.00 | 0.00 |
| S-17 | -1775.60 | 17.00 | -1775.60 | 40.25 | 17.00 | 17.00 |
| S-18 | -1704.56 | -20.62 | -1717.34 | 45.55 | -20.62 | -20.62 |
| S-19 | -1677.69 | 3.74 | -1704.56 | 11.47 | 3.74 | 3.74 |
| S-20 | -1665.66 | -14.58 | -1677.69 | -1.26 | -14.58 | -14.58 |
| S-21 | -1665.80 | -14.58 | -1665.66 | -37.36 | -14.58 | -14.58 |
| S-22 | -1655.84 | -2.49 | -1665.80 | 30.14 | -2.49 | -2.49 |
| S-23 | -1647.64 | -2.49 | -1655.84 | -4.34 | -2.49 | -2.49 |
| S-24 | -1626.69 | -18.94 | -1647.64 | 26.63 | -18.94 | -18.94 |
| S-25 | -1627.30 | -18.94 | -1626.69 | -57.22 | -18.94 | -18.94 |
| S-26 | -1613.41 | -20.17 | -1627.30 | 35.90 | -20.17 | -20.17 |
| S-27 | -1613.81 | -20.17 | -1613.41 | -37.22 | -20.17 | -20.17 |
| S-28 | -1603.49 | -43.30 | -1613.81 | 9.75 | -43.30 | -43.30 |
| S-29 | -1603.93 | -43.30 | -1603.49 | -54.70 | -43.30 | -43.30 |
| S-30 | -1598.11 | -32.68 | -1603.93 | 39.93 | -32.68 | -32.68 |
| S-31 | -1597.95 | -32.68 | -1598.11 | -18.25 | -32.68 | -32.68 |
| S-32 | -1594.21 | -30.19 | -1597.95 | 29.35 | -30.19 | -30.19 |
| S-33 | -1593.42 | -30.19 | -1594.21 | -24.03 | -30.19 | -30.19 |
| S-34 | -1592.43 | 0.32 | -1593.42 | 55.50 | 0.32 | 0.32 |
| S-35 | -1739.37 | -13.40 | -1592.43 | -13.40 | -13.40 | -13.40 |
| S-36 | -1716.76 | -63.71 | -1739.37 | -63.71 | -63.71 | -63.71 |
| S-37 | -1799.83 | -92.18 | -1716.76 | -92.18 | -92.18 | -92.18 |
| S-38 | | | -1799.83 | | | |

| Position | min Nr max Nr | | Vs [kN] | Mt [kNm] | |
|----------|------------------|--------|------------|-------------|--------|
| | | | | | |
| S-34 | -1789.47 | 26.84 | -69.98 | -1789.47 | 26.84 |
| S-35 | -1728.85 | 18.42 | -76.27 | -1728.85 | 18.42 |
| S-36 | -1716.07 | 69.02 | -42.19 | -1716.07 | 69.02 |
| S-37 | -1688.06 | 69.02 | -29.86 | -1688.06 | 69.02 |
| S-38 | -1676.03 | 80.23 | 6.24 | -1676.03 | 80.23 |
| S-39 | -1674.91 | 80.23 | -61.66 | -1674.91 | 80.23 |
| S-40 | -1664.95 | 121.84 | -27.18 | -1664.95 | 121.84 |
| S-41 | -1655.60 | 121.84 | -58.45 | -1655.60 | 121.84 |
| S-42 | -1630.37 | 129.70 | 42.47 | -1630.37 | 129.70 |
| S-43 | -1630.14 | 129.70 | -50.83 | -1630.14 | 129.70 |
| S-44 | -1612.88 | 134.66 | 39.98 | -1612.88 | 134.66 |
| S-45 | -1613.36 | 134.66 | -6.97 | -1613.36 | 134.66 |
| S-46 | -1600.24 | 99.83 | 75.03 | -1600.24 | 99.83 |
| S-47 | -1601.88 | 99.83 | -19.44 | -1601.88 | 99.83 |
| S-48 | -1594.31 | 81.04 | 56.29 | -1594.31 | 81.04 |
| S-49 | -1595.28 | 81.04 | -8.79 | -1595.28 | 81.04 |
| S-50 | -1590.22 | 35.83 | 81.05 | -1590.22 | 35.83 |
| S-51 | -1592.28 | 35.83 | -1.65 | -1592.28 | 35.83 |
| S-52 | -1590.93 | 0.32 | 69.26 | -1590.93 | 0.32 |
| S-53 | -1752.82 | 26.84 | -16.52 | -1752.82 | 26.84 |
| S-54 | -1730.21 | 18.42 | 33.79 | -1730.21 | 18.42 |

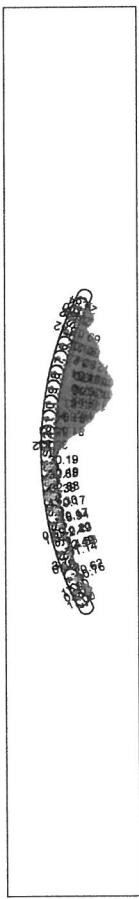
Querkraft Vs [kN]



aus Lastkombination LK-5

| Position | Nr [kN] | min Vs max Vs [kN] | Mt [kNm] |
|----------|------------|--------------------------|-------------|
| S-16 | -1775.60 | 40.25 | 17.00 |
| S-17 | -1785.96 | 62.45 | 0.00 |
| S-18 | -1704.56 | 11.47 | 3.74 |
| S-19 | -1717.34 | 45.55 | -20.62 |
| S-20 | -1665.66 | -37.36 | -14.58 |
| S-21 | -1677.69 | -1.26 | 3.74 |
| S-22 | -1655.84 | -4.34 | -2.49 |
| S-23 | -1665.80 | 30.14 | -14.58 |
| S-24 | -1626.69 | -57.22 | -18.94 |
| S-25 | -1647.64 | 26.63 | -2.49 |
| S-26 | -1613.41 | -37.22 | -20.17 |
| S-27 | -1627.30 | 35.90 | -18.94 |
| S-28 | -1603.49 | -54.70 | -43.30 |
| S-29 | -1613.81 | 9.75 | -20.17 |
| S-30 | -1598.11 | -18.25 | -32.68 |
| S-31 | -1603.93 | 39.93 | -43.30 |
| S-32 | -1594.21 | -24.03 | -30.19 |
| S-33 | -1597.95 | 29.35 | -32.68 |
| S-34 | -1592.43 | 5.59 | 0.32 |
| S-35 | -1593.42 | 55.50 | -30.19 |
| S-36 | -1716.76 | -63.71 | -20.62 |
| S-37 | -1739.37 | -13.40 | 17.00 |
| S-38 | -1799.83 | -92.18 | 0.00 |
| S-39 | -1789.47 | -69.98 | 26.84 |
| S-40 | -1728.85 | -76.27 | 18.42 |
| S-41 | -1716.07 | -42.19 | 69.02 |
| S-42 | -1688.06 | -29.86 | 69.02 |
| S-43 | -1676.03 | 6.24 | 80.23 |
| S-44 | -1674.91 | -61.66 | 80.23 |
| S-45 | -1664.95 | -27.18 | 121.84 |
| S-46 | -1655.60 | -58.45 | 121.84 |
| S-47 | -1630.37 | 42.47 | 129.70 |
| S-48 | -1630.14 | -50.83 | 129.70 |
| S-49 | -1612.88 | 39.98 | 134.66 |
| S-50 | -1613.36 | -6.97 | 134.66 |
| S-51 | -1600.24 | 75.03 | 99.83 |
| S-52 | -1601.88 | -19.44 | 99.83 |

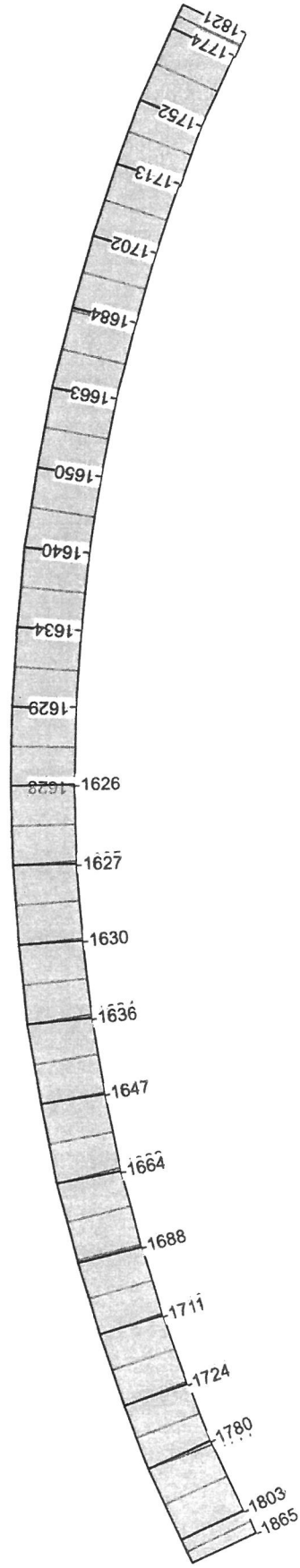
Moment Mt [kNm]



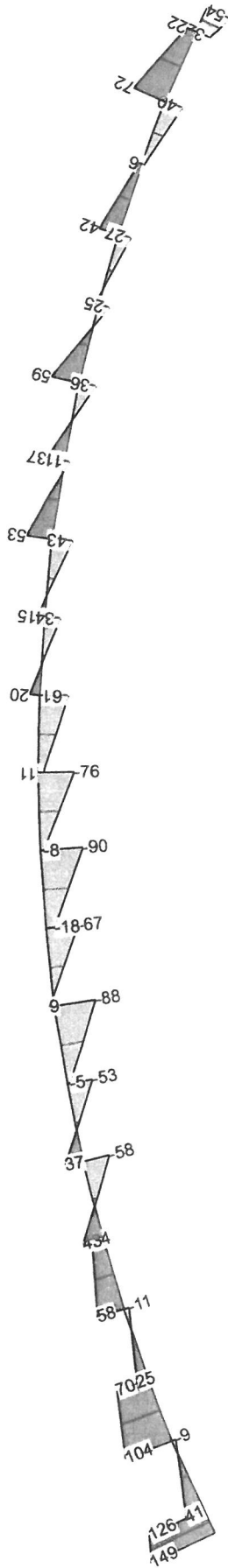
aus Lastkombination LK-5

| Position | Nr Nr [kN] | Vs Vs [kN] | min Mt max Mt [kNm] |
|----------|------------------|------------------|---------------------------|
| S-16 | -1785.96 | 62.45 | 0.00 |
| S-17 | -1775.60 | 40.25 | 17.00 |
| S-18 | -1717.34 | 45.55 | -20.62 |
| S-19 | -1704.56 | 11.47 | 3.74 |
| S-20 | -1665.66 | -37.36 | -14.58 |
| S-21 | -1677.69 | -1.26 | 3.74 |
| S-22 | -1665.80 | 30.14 | -14.58 |
| S-23 | -1657.09 | -0.03 | -2.24 |
| S-24 | -1626.69 | -57.22 | -18.94 |
| S-25 | -1641.67 | 2.72 | 1.67 |
| S-27 | -1613.41 | -37.22 | -20.17 |
| S-33 | -1620.14 | -1.76 | -10.25 |
| S-34 | -1603.49 | -54.70 | -43.30 |
| S-35 | -1612.49 | 1.51 | -19.46 |
| S-36 | -1603.93 | 39.93 | -43.30 |
| S-37 | -1600.25 | 3.16 | -29.83 |
| S-38 | -1597.95 | 29.35 | -32.68 |
| S-39 | -1596.05 | 2.30 | -24.75 |
| S-40 | -1593.42 | 55.50 | -30.19 |
| S-41 | -1592.43 | 5.59 | 0.32 |
| S-42 | -1716.76 | -63.71 | -20.62 |
| S-43 | -1739.37 | -13.40 | 17.00 |
| S-44 | -1799.83 | -92.18 | 0.00 |
| S-45 | -1789.47 | -69.98 | 26.84 |
| S-46 | -1728.85 | -76.27 | 18.42 |
| S-47 | -1716.07 | -42.19 | 69.02 |
| S-48 | -1688.06 | -29.86 | 69.02 |
| S-49 | -1677.54 | 1.72 | 80.70 |
| S-50 | -1674.91 | -61.66 | 80.23 |
| S-51 | -1664.95 | -27.18 | 121.84 |
| S-52 | -1655.60 | -58.45 | 121.84 |
| S-53 | -1642.30 | -5.24 | 138.95 |
| S-54 | -1630.14 | -50.83 | 129.70 |
| S-55 | -1621.30 | -4.33 | 143.74 |
| S-56 | -1600.24 | 75.03 | 99.83 |
| S-57 | -1611.69 | 3.46 | 134.88 |
| S-58 | -1594.31 | 56.29 | 81.04 |
| S-59 | -1599.96 | -0.24 | 102.30 |
| S-60 | -1590.22 | 81.05 | 35.83 |
| S-61 | -1595.28 | 8.79 | 81.04 |
| S-62 | -1590.93 | 69.26 | 0.32 |
| S-63 | -1592.28 | 1.65 | 35.83 |
| S-64 | -1730.21 | 33.79 | 18.42 |

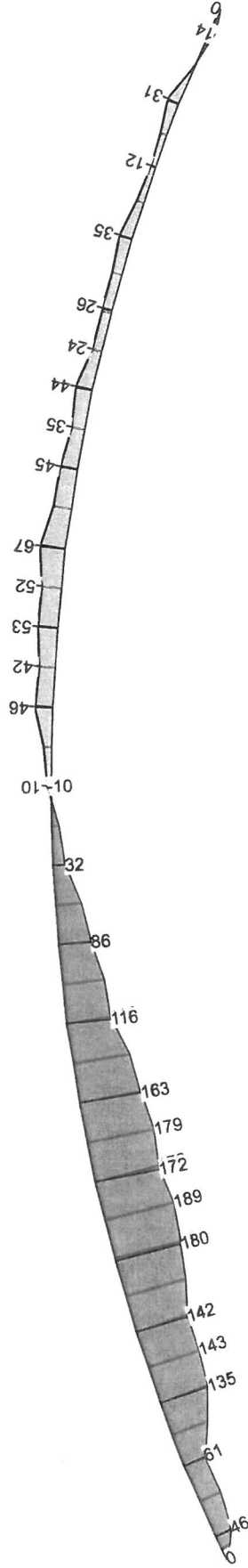
| Position | Nr Nr [kN] | Vs Vs [kN] | min Mt max Mt [kNm] |
|----------|------------------|------------------|---------------------------|
| | -1744.34 | 2.35 | 29.43 |



| Balkenschnittgrößen | | Normalkraft N in [kN] | FE-Mod. BR-TÜ-EZ Endzustand Bauvorhaben 22-078 Instandsetzung Fußgängerbrücke | | Maßstab: 1:85 |
|---|--|-----------------------|---|--|---------------|
| lastkombinationsweise dargestellt aus Lastkombination LK-6 Max = -1625, Min = -1865 | | | Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10 | | Seite |
| | | | MicroFe 2018.051 | | |



| Balkenschnittgrößen | | Querkraft V in [kN] | FE-Mod. BR-TÜ-EZ Endzustand Bauvorhaben 22-078 Instandsetzung Fußgängerbrücke | | Maßstab: 1:85 |
|---|--|---------------------|---|--|---------------|
| lastkombinationsweise dargestellt aus Lastkombination LK-6 Max = 149, Min = -90 | | | Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10 | | |
| | | | Seite | | |



Balkenschnittgrößen

lastkombinationsweise dargestellt
aus Lastkombination LK-6
Max = 189, Min = -67

Moment M in [kNm]

FE-Mod. BR-TÜ-EZ Endzustand

Bauvorhaben 22-078

Instandsetzung Fußgängerbrücke

Maßstab: 1:85

Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10

Seite

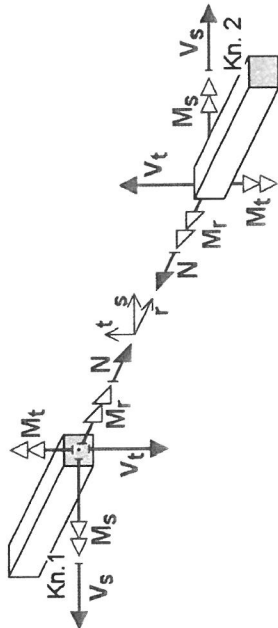
MicroFe 2018.051

Balkenschnittgr-Stb

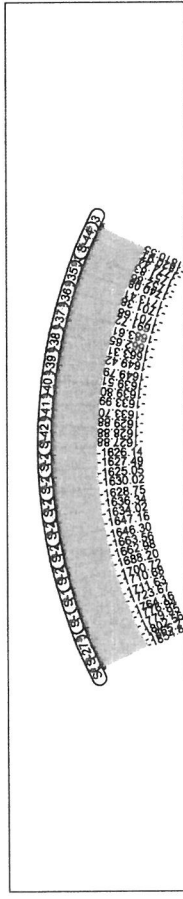
Schnittgrößen

Schnittgrößen Stb-Stützen und 3D-Stäbe

Schnittgrößen der Stützen und 3D-Stäbe



Normalkraft Nr [kN]



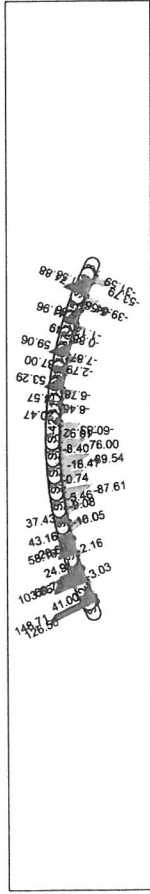
aus Lastkombination LK-6

| Position | min Nr max Nr [kN] | Vs [kN] | Mt [kNm] |
|----------|--------------------------|----------------------|------------------|
| S-16 | -1865.21 0.00 | 148.71 0.00 | 0.00 45.55 |
| S-17 | -1854.84 103.86 | 126.50 61.01 | 61.01 135.19 |
| S-18 | -1764.16 24.91 | 69.78 135.19 | 135.19 141.70 |
| S-19 | -1723.67 -11.18 | 24.91 -11.18 | 141.70 141.70 |
| S-20 | -1710.68 23.68 | 58.16 23.68 | 141.70 180.04 |
| S-21 | -1688.20 -57.77 | 43.16 -57.77 | 180.04 172.13 |
| S-22 | -1662.98 37.43 | -57.77 37.43 | 172.13 163.45 |
| S-23 | -1663.56 -53.39 | 37.43 -53.39 | 163.45 115.96 |
| S-24 | -1646.30 -1647.16 | -53.39 -1647.16 | 115.96 8.87 |
| S-25 | -1634.02 -87.61 | -87.61 -87.61 | 8.87 86.48 |
| S-26 | -1636.34 -1628.75 | 8.87 -1628.75 | 86.48 32.15 |
| S-27 | -1628.02 -1625.05 | -1628.75 -1625.05 | 32.15 -10.10 |
| S-28 | -1625.05 -1627.49 | -1625.05 -1627.49 | -10.10 45.55 |
| S-29 | -1626.14 -1802.56 | -1627.49 -1802.56 | 45.55 61.01 |
| S-30 | -1627.95 -1779.95 | -1802.56 -1779.95 | 61.01 0.00 |
| S-31 | -1820.91 -53.79 | -1779.95 -53.79 | 0.00 0.00 |

Position

| Position | min Nr max Nr [kN] | Vs [kN] | Mt [kNm] |
|----------|--------------------------|------------------|------------------|
| S-34 | -1810.55 -1752.86 | -31.59 -39.64 | 14.13 -31.46 |
| S-35 | -1740.08 -1713.41 | -5.56 5.86 | -12.15 -34.83 |
| S-36 | -1701.38 -1701.68 | 41.96 -27.00 | -34.83 -34.83 |
| S-37 | -1691.72 -1683.61 | 7.49 -24.78 | -25.69 -25.69 |
| S-38 | -1662.65 -1663.31 | 59.06 -36.12 | -44.04 -44.04 |
| S-39 | -1649.42 -1649.79 | 37.00 -11.01 | -45.06 -45.06 |
| S-40 | -1639.51 -1639.80 | 53.29 -43.46 | -66.83 -66.83 |
| S-41 | -1633.99 -1633.70 | 14.57 -34.09 | -52.58 -52.58 |
| S-42 | -1629.88 -1628.88 | 20.47 -60.83 | -45.94 -45.94 |
| S-43 | -1627.88 -1774.44 | -10.92 21.56 | -10.10 14.13 |
| S-44 | -1751.83 -1751.83 | 71.88 71.88 | 14.13 -31.46 |

Querkraft Vs [kN]



aus Lastkombination LK-6

| Position | Nr Nr | Nr [kN] | min Vs max Vs | Mt Mt | Mt [kNm] |
|----------|----------|------------|------------------|----------|-------------|
| S-16 | | -1854.84 | 126.50 | 45.55 | |
| S-17 | | -1865.21 | 148.71 | 0.00 | |
| S-18 | | -1764.16 | 69.78 | 135.19 | |
| S-19 | | -1776.94 | 103.86 | 61.01 | |
| S-20 | | -1711.63 | 24.91 | 135.19 | |
| S-21 | | -1723.67 | 23.68 | 180.04 | |
| S-22 | | -1700.72 | 58.16 | 141.70 | |
| S-23 | | -1710.68 | 57.77 | 172.13 | |
| S-24 | | -1662.98 | 43.16 | 180.04 | |
| S-25 | | -1688.20 | 53.39 | 163.45 | |
| S-26 | | -1663.56 | 37.43 | 172.13 | |
| S-27 | | -1634.02 | -87.61 | 115.96 | |
| S-28 | | -1647.16 | -5.46 | 163.45 | |
| S-29 | | -1628.75 | -67.00 | 86.48 | |
| S-30 | | -1636.34 | 8.87 | 115.96 | |
| S-31 | | -1625.05 | -89.54 | 32.15 | |
| S-32 | | -1630.02 | -18.47 | 86.48 | |
| S-33 | | -1626.14 | -76.00 | -10.10 | |
| S-34 | | -1627.49 | -8.40 | 32.15 | |
| S-35 | | -1779.95 | -9.32 | 61.01 | |
| S-36 | | -1802.56 | 41.00 | 45.55 | |
| S-37 | | -1820.91 | -53.79 | 0.00 | |
| S-38 | | -1810.55 | -31.59 | 14.13 | |
| S-39 | | -1752.86 | -39.64 | -31.46 | |
| S-40 | | -1740.08 | -5.56 | -12.15 | |
| S-41 | | -1713.41 | 5.86 | -12.15 | |
| S-42 | | -1701.38 | 41.96 | -34.83 | |
| S-43 | | -1701.68 | -27.00 | -34.83 | |
| S-44 | | -1691.72 | 7.49 | -25.69 | |
| S-45 | | -1683.61 | -24.78 | -25.69 | |
| S-46 | | -1662.65 | 59.06 | -44.04 | |
| S-47 | | -1663.31 | -36.12 | -44.04 | |
| S-48 | | -1649.42 | 37.00 | -45.06 | |
| S-49 | | -1649.79 | -11.01 | -45.06 | |
| S-50 | | -1639.51 | 53.29 | -66.83 | |
| S-51 | | -1639.80 | -43.46 | -66.83 | |
| S-52 | | -1633.99 | 14.57 | -52.58 | |
| S-53 | | -1633.70 | -34.09 | -52.58 | |
| S-54 | | -1629.88 | 20.47 | -45.94 | |
| S-55 | | -1628.88 | -60.83 | -45.94 | |
| S-56 | | -1627.88 | -10.92 | -10.10 | |

4.37

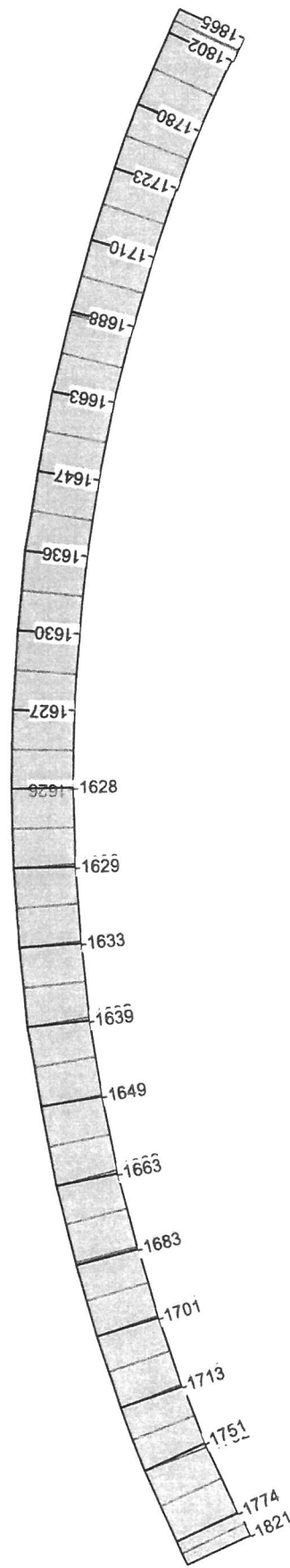
Moment Mt [kNm]



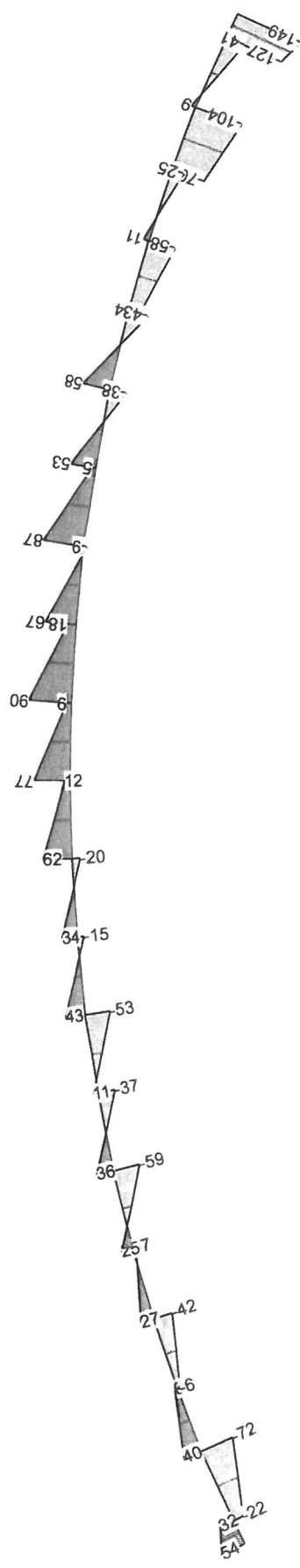
aus Lastkombination LK-6

| Position | Nr Nr [kN] | Vs Vs [kN] | min Mt max Mt [kNm] |
|----------|------------------|------------------|---------------------------|
| S-16 | -1865.21 | 148.71 | 0.00 |
| S-17 | -1854.84 | 126.50 | 45.55 |
| S-18 | -1776.94 | 103.86 | 61.01 |
| S-19 | -1723.67 | 24.91 | 135.19 |
| S-20 | -1714.64 | -2.16 | 143.28 |
| S-21 | -1710.68 | 58.16 | 141.70 |
| S-22 | -1700.72 | 23.68 | 180.04 |
| S-23 | -1662.98 | -57.77 | 172.13 |
| S-24 | -1678.03 | 2.47 | 189.47 |
| S-25 | -1646.30 | -53.39 | 163.45 |
| S-26 | -1656.93 | 2.55 | 179.76 |
| S-27 | -1634.02 | -87.61 | 115.96 |
| S-28 | -1647.16 | -5.46 | 163.45 |
| S-29 | -1628.75 | -67.00 | 86.48 |
| S-30 | -1635.38 | -0.74 | 116.47 |
| S-31 | -1625.05 | -89.54 | 32.15 |
| S-32 | -1630.02 | -18.47 | 86.48 |
| S-33 | -1626.14 | -76.00 | -10.10 |
| S-34 | -1627.49 | -8.40 | 32.15 |
| S-35 | -1802.56 | 41.00 | 45.55 |
| S-36 | -1782.78 | -3.03 | 61.76 |
| S-37 | -1820.91 | -53.79 | 0.00 |
| S-38 | -1810.55 | -31.59 | 14.13 |
| S-39 | -1752.86 | -39.64 | -31.46 |
| S-40 | -1740.08 | -5.56 | -12.15 |
| S-41 | -1701.38 | 41.96 | -34.83 |
| S-42 | -1713.41 | 5.86 | -12.15 |
| S-43 | -1701.68 | -27.00 | -34.83 |
| S-44 | -1694.21 | -1.13 | -24.95 |
| S-45 | -1662.65 | 59.06 | -44.04 |
| S-46 | -1677.64 | -0.88 | -22.05 |
| S-47 | -1649.42 | 37.00 | -45.06 |
| S-48 | -1656.15 | 1.54 | -35.25 |
| S-49 | -1639.51 | 53.29 | -66.83 |
| S-50 | -1648.48 | -2.79 | -44.18 |
| S-51 | -1639.80 | -43.46 | -66.83 |
| S-52 | -1635.42 | 0.34 | -50.71 |
| S-53 | -1633.70 | -34.09 | -52.58 |
| S-54 | -1631.30 | 0.28 | -42.04 |
| S-55 | -1628.88 | -60.83 | -45.94 |
| S-56 | -1627.88 | -10.92 | -10.10 |

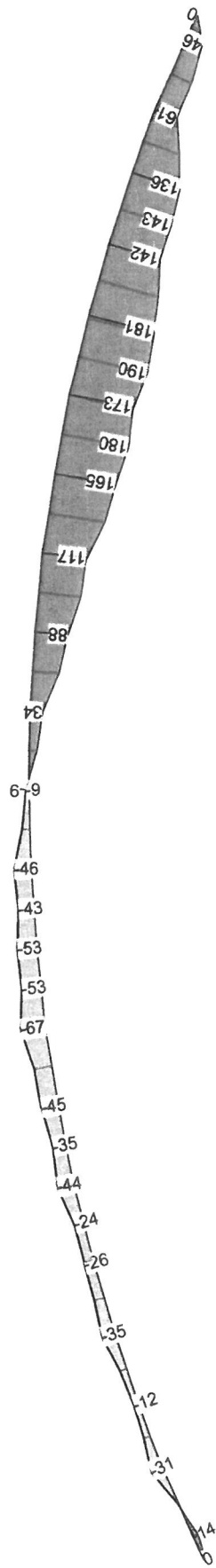
| Position | Nr Nr [kN] | Vs Vs [kN] | min Mt max Mt [kNm] |
|----------|------------------|------------------|---------------------------|
| S-44 | -1751.83 | 71.88 | -31.46 |
| | -1774.44 | 21.56 | 14.13 |



| | | |
|---|---|---------------|
| Balkenschnittgrößen lastkombinationsweise dargestellt aus Lastkombination LK-7 Max = -1625, Min = -1865 | FE-Mod. BR-TÜ-EZ Endzustand Bauvorhaben 22-078 Instandsetzung Fußgängerbrücke | Maßstab: 1:85 |
| | Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10 | Seite |



| | | | |
|----------------------------|---|---|---------------|
| Balkenschnittgrößen | Querkraft V in [kN] | FE-Mod. BR-TÜ-EZ Endzustand Bauvorhaben 22-078 Instandsetzung Fußgängerbrücke | Maßstab: 1:85 |
| | | | |
| | lastkombinationsweise dargestellt aus Lastkombination LK-7 Max = 90, Min = -149 | | |
| | | Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10 | Seite |



Balkenschnittgrößen

Moment M in [kNm]

lastkombinationsweise dargestellt
aus Lastkombination LK-7
Max = 190, Min = -67

FE-Mod. BR-TÜ-EZ Endzustand
Bauvorhaben 22-078
Instandsetzung Fußgängerbrücke

Maßstab: 1:85

Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10

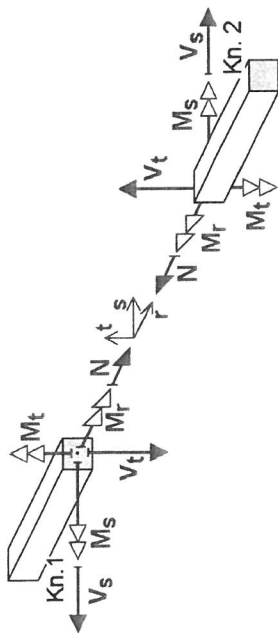
Seite

Balkenschnittgr-Stb

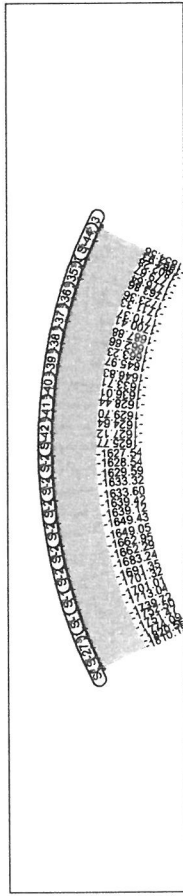
Schnittgrößen

Schnittgrößen Stb-Stützen und 3D-Stäbe

Schnittgrößen der Stützen und 3D-Stäbe



Normalkraft Nr [kN]



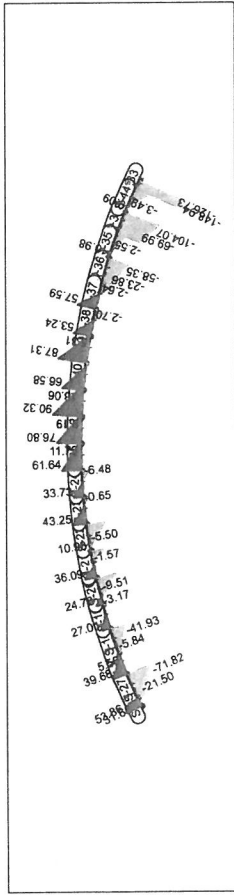
aus Lastkombination LK-7

| Position | min Nr [kN] | max Nr [kN] | Vs [kN] | Mt [kNm] |
|----------|----------------|----------------|------------|-------------|
| S-16 | -1820.56 | 53.86 | 31.65 | 0.00 |
| S-17 | -1810.19 | 14.15 | 39.68 | 14.15 |
| S-18 | -1752.50 | -31.37 | 5.59 | -12.04 |
| S-19 | -1739.72 | 5.59 | -12.04 | -12.04 |
| S-20 | -1713.04 | -5.84 | -12.04 | -12.04 |
| S-21 | -1701.01 | -41.93 | -34.69 | -34.69 |
| S-22 | -1701.32 | 27.01 | -25.55 | -25.55 |
| S-23 | -1691.35 | -7.48 | -25.55 | -25.55 |
| S-24 | -1683.24 | 24.78 | -43.90 | -43.90 |
| S-25 | -1662.29 | -59.07 | -36.09 | -36.09 |
| S-26 | -1662.95 | 36.09 | -37.03 | -37.03 |
| S-27 | -1649.05 | -44.94 | 10.98 | -44.94 |
| S-28 | -1649.43 | 10.98 | -53.47 | -53.47 |
| S-29 | -1639.12 | -53.47 | 43.25 | -66.82 |
| S-30 | -1633.60 | -14.93 | -52.86 | -52.86 |
| S-31 | -1633.32 | 33.73 | -52.86 | -52.86 |
| S-32 | -1629.59 | -19.64 | -45.98 | -45.98 |
| S-33 | -1628.54 | 61.64 | -45.98 | -45.98 |
| S-34 | -1627.54 | 11.73 | -9.33 | -9.33 |
| S-35 | -1774.09 | -21.50 | 14.15 | 14.15 |
| S-36 | -1751.47 | -71.82 | -31.37 | -31.37 |
| S-37 | -1864.93 | -148.94 | 0.00 | 0.00 |

Position

| Position | min Nr [kN] | max Nr [kN] | Vs [kN] | Mt [kNm] |
|----------|----------------|----------------|------------|-------------|
| S-34 | -1854.56 | 45.63 | -126.73 | 45.63 |
| S-35 | -1776.64 | 61.31 | -104.07 | 61.31 |
| S-36 | -1763.86 | 135.67 | -69.99 | 135.67 |
| S-37 | -1723.36 | 135.67 | -25.11 | 135.67 |
| S-38 | -1711.33 | 10.98 | 10.98 | 142.37 |
| S-39 | -1710.37 | -58.35 | -58.35 | 142.37 |
| S-40 | -1700.41 | -23.86 | -23.86 | 180.88 |
| S-41 | -1687.88 | -43.33 | -43.33 | 180.88 |
| S-42 | -1662.66 | 57.59 | 57.59 | 173.15 |
| S-43 | -1663.23 | -37.58 | -37.58 | 173.15 |
| S-44 | -1645.97 | 53.24 | 53.24 | 164.62 |
| S-45 | -1646.83 | 5.31 | 5.31 | 164.62 |
| S-46 | -1633.71 | 87.31 | 87.31 | 117.36 |
| S-47 | -1636.01 | -9.15 | -9.15 | 117.36 |
| S-48 | -1628.44 | 66.58 | 66.58 | 88.23 |
| S-49 | -1629.70 | 18.06 | 18.06 | 88.23 |
| S-50 | -1624.64 | 90.32 | 90.32 | 33.72 |
| S-51 | -1627.12 | 9.19 | 9.19 | 33.72 |
| S-52 | -1625.77 | 76.80 | 76.80 | -9.33 |
| S-53 | -1802.28 | -41.22 | -41.22 | 45.63 |
| S-54 | -1779.67 | 9.09 | 9.09 | 61.31 |

Querkraft Vs [kN]

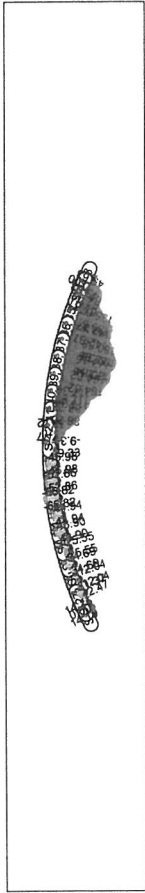


aus Lastkombination LK-7

| Position | Nr | Nr [kN] | min Vs max Vs [kN] | Mt Mt [kNm] |
|----------|----------|------------|--------------------------|-------------------|
| S-16 | -1810.19 | 31.65 | 14.15 | 14.15 |
| S-17 | -1820.56 | 53.86 | 0.00 | 0.00 |
| S-18 | -1739.72 | 5.59 | -12.04 | -12.04 |
| S-19 | -1752.50 | 39.68 | -31.37 | -31.37 |
| S-20 | -1701.01 | -41.93 | -34.69 | -34.69 |
| S-21 | -1713.04 | -5.84 | -12.04 | -12.04 |
| S-22 | -1691.35 | -7.48 | -25.55 | -25.55 |
| S-23 | -1701.32 | 27.01 | -34.69 | -34.69 |
| S-24 | -1662.29 | -59.07 | -43.90 | -43.90 |
| S-25 | -1683.24 | 24.78 | -25.55 | -25.55 |
| S-26 | -1649.05 | -37.03 | -44.94 | -44.94 |
| S-27 | -1662.95 | 36.09 | -43.90 | -43.90 |
| S-28 | -1639.12 | -53.47 | -66.82 | -66.82 |
| S-29 | -1649.43 | 10.98 | -44.94 | -44.94 |
| S-30 | -1633.60 | -14.93 | -52.86 | -52.86 |
| S-31 | -1639.42 | 43.25 | -66.82 | -66.82 |
| S-32 | -1629.59 | -19.64 | -45.98 | -45.98 |
| S-33 | -1633.32 | 33.73 | -52.86 | -52.86 |
| S-34 | -1627.54 | 11.73 | -9.33 | -9.33 |
| S-35 | -1628.54 | 61.64 | -45.98 | -45.98 |
| S-36 | -1751.47 | -71.82 | -31.37 | -31.37 |
| S-37 | -1774.09 | -21.50 | 14.15 | 14.15 |
| S-38 | -1864.93 | -148.94 | 0.00 | 0.00 |
| S-39 | -1854.56 | -126.73 | 45.63 | 45.63 |
| S-40 | -1776.64 | -104.07 | 61.31 | 61.31 |
| S-41 | -1763.86 | -69.99 | 135.67 | 135.67 |
| S-42 | -1723.36 | -25.11 | 135.67 | 135.67 |
| S-43 | -1711.33 | 10.98 | 142.37 | 142.37 |
| S-44 | -1710.37 | -58.35 | 142.37 | 142.37 |
| S-45 | -1700.41 | -23.86 | 180.88 | 180.88 |
| S-46 | -1687.88 | -43.33 | 180.88 | 180.88 |
| S-47 | -1662.66 | 57.59 | 173.15 | 173.15 |
| S-48 | -1663.23 | -37.58 | 173.15 | 173.15 |
| S-49 | -1645.97 | 53.24 | 164.62 | 164.62 |
| S-50 | -1646.83 | 5.31 | 164.62 | 164.62 |
| S-51 | -1633.71 | 87.31 | 117.36 | 117.36 |
| S-52 | -1636.01 | -9.15 | 117.36 | 117.36 |
| S-53 | -1628.44 | 66.58 | 88.23 | 88.23 |

4.43

Moment Mt [kNm]



aus Lastkombination LK-7

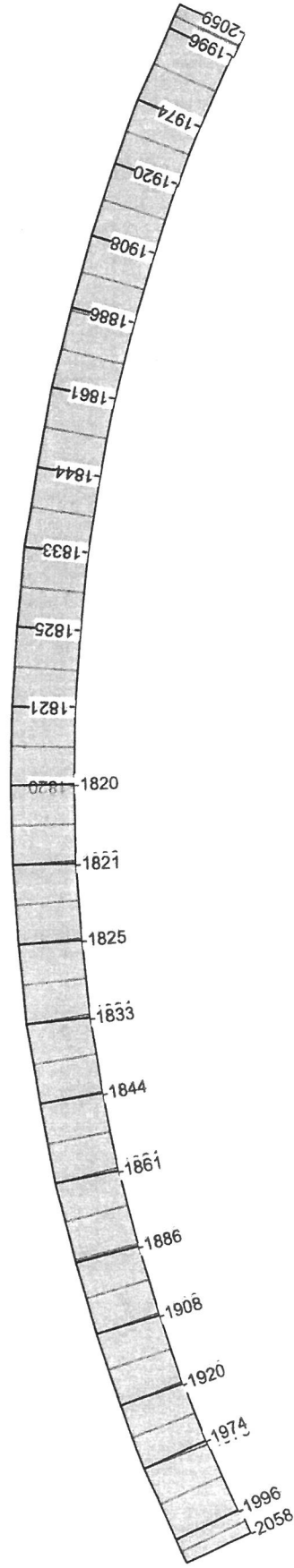
| Position | Nr Nr [kN] | Vs Vs [kN] | min Mt max Mt [kNm] |
|----------|------------------|------------------|---------------------------|
| S-16 | -1820.56 | 53.86 | 0.00 |
| S-17 | -1810.19 | 31.65 | 14.15 |
| S-17 | -1752.50 | 39.68 | -31.37 |
| S-18 | -1739.72 | 5.59 | -12.04 |
| S-18 | -1701.01 | -41.93 | -34.69 |
| S-19 | -1713.04 | -5.84 | -12.04 |
| S-19 | -1701.32 | 27.01 | -34.69 |
| S-20 | -1693.84 | 1.14 | -24.81 |
| S-20 | -1662.29 | -59.07 | -43.90 |
| S-21 | -1677.27 | 0.88 | -21.91 |
| S-21 | -1649.05 | -37.03 | -44.94 |
| S-22 | -1655.79 | -1.57 | -35.12 |
| S-22 | -1639.12 | -53.47 | -66.82 |
| S-23 | -1648.12 | 2.74 | -44.07 |
| S-23 | -1639.42 | 43.25 | -66.82 |
| S-24 | -1635.03 | -0.65 | -50.90 |
| S-24 | -1633.32 | 33.73 | -52.86 |
| S-25 | -1630.97 | 0.10 | -42.31 |
| S-25 | -1628.54 | 61.64 | -45.98 |
| S-27 | -1627.54 | 11.73 | -9.33 |
| S-27 | -1751.47 | -71.82 | -31.37 |
| S-33 | -1774.09 | -21.50 | 14.15 |
| S-33 | -1864.93 | -148.94 | 0.00 |
| S-34 | -1854.56 | -126.73 | 45.63 |
| S-34 | -1776.64 | -104.07 | 61.31 |
| S-35 | -1763.86 | -69.99 | 135.67 |
| S-35 | -1723.36 | -25.11 | 135.67 |
| S-36 | -1714.34 | 1.96 | 143.90 |
| S-36 | -1710.37 | -58.35 | 142.37 |
| S-37 | -1700.41 | -23.86 | 180.88 |
| S-37 | -1662.66 | 57.59 | 173.15 |
| S-38 | -1677.72 | -2.64 | 190.38 |
| S-38 | -1645.97 | 53.24 | 164.62 |
| S-39 | -1656.60 | -2.70 | 180.84 |
| S-39 | -1633.71 | 87.31 | 117.36 |
| S-40 | -1646.83 | 5.31 | 164.62 |
| S-40 | -1628.44 | 66.58 | 88.23 |
| S-41 | -1635.05 | 0.45 | 117.90 |
| S-41 | -1624.64 | 90.32 | 33.72 |
| S-42 | -1629.70 | 18.06 | 88.23 |
| S-42 | -1625.77 | 76.80 | -9.33 |
| S-42 | -1627.12 | 9.19 | 33.72 |

Position

S-44

| Nr | Vs | min Mt |
|----------|--------|--------|
| Nr | Vs | max Mt |
| [kN] | [kN] | [kNm] |
| -1802.28 | -41.22 | 45.63 |
| -1782.49 | 2.80 | 62.03 |

4.44

**Balkenschnittgrößen**

Normalkraft N in [kN]

lastkombinationsweise dargestellt
aus Lastkombination LK-8
Max = -1820, Min = -2059

FE-Mod. BR-TÜ-EZ Endzustand

Bauvorhaben 22-078

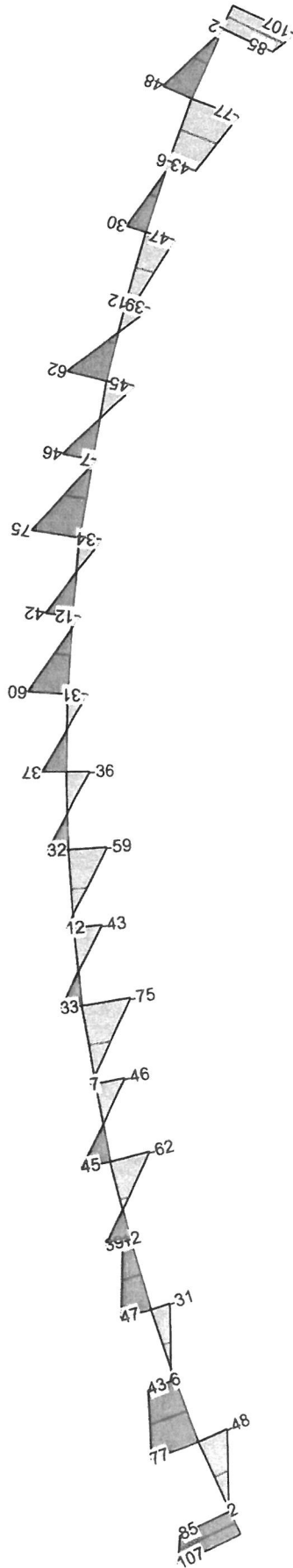
Instandsetzung Fußgängerbrücke

Maßstab: 1:85

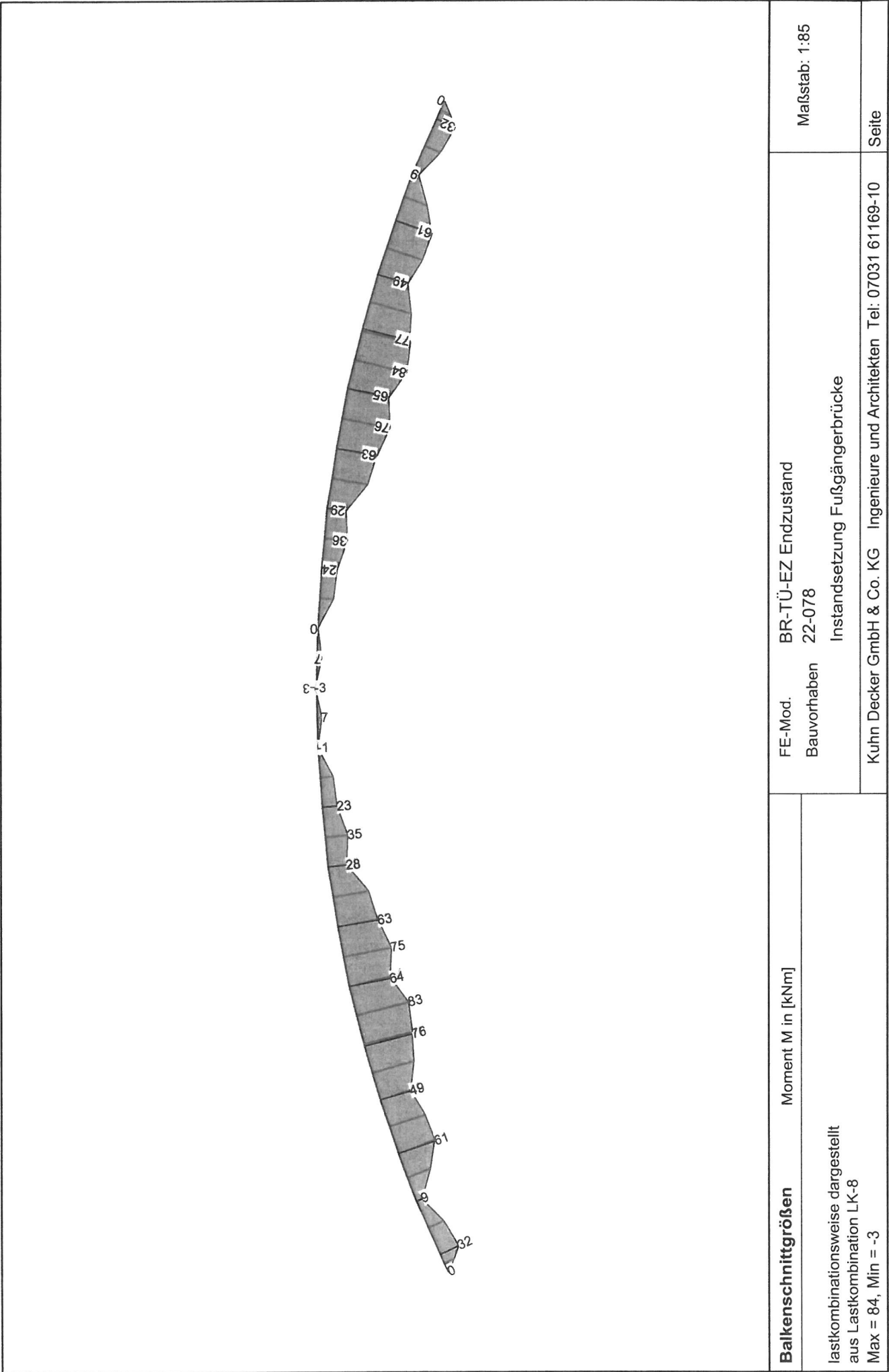
Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10

Seite

MicroFe 2018.051



| | | | |
|---|--|---------------------|--|
| Balkenschnittgrößen | | Querkraft V in [kN] | lastkombinationsweise dargestellt aus Lastkombination LK-8 Max = 107, Min = -107 |
| FE-Mod. BR-TÜ-EZ Endzustand Bauvorhaben 22-078 Instandsetzung Fußgängerbrücke | | Maßstab: 1:85 | |
| Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10 | | Seite | MicroFe 2018.051 |

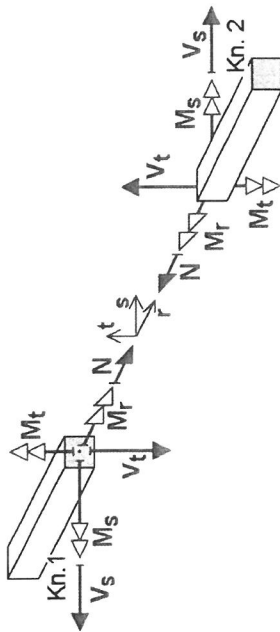


Balkenschnittgr-Stb

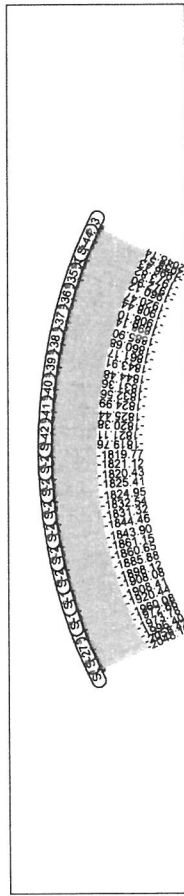
Schnittgrößen

Schnittgrößen Stb-Säulen und 3D-Stäbe

Schnittgrößen der Säulen und 3D-Stäbe



Normalkraft Nr. [kN]



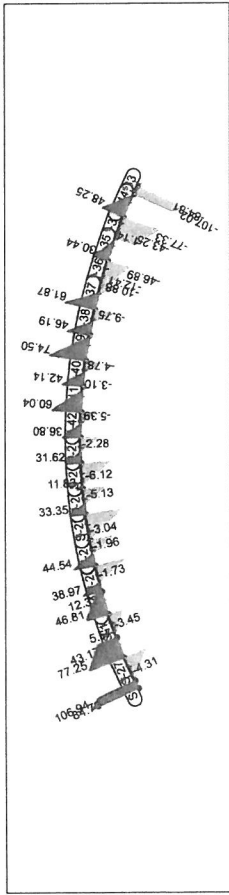
aus Lastkombination LK-8

| Position | min Nr [kN] | max Nr [kN] | Vs [kN] | Mt [kNm] |
|----------|----------------|----------------|------------|-------------|
| S-16 | -2058.47 | 106.94 | 106.94 | 0.00 |
| S-17 | -2048.10 | 84.73 | 84.73 | 31.73 |
| S-18 | -1972.86 | 77.25 | 77.25 | 9.11 |
| S-19 | -1960.08 | 43.17 | 43.17 | 60.55 |
| S-20 | -1920.44 | 5.57 | 5.57 | 60.55 |
| S-21 | -1908.41 | -30.52 | -30.52 | 48.72 |
| S-22 | -1908.08 | 46.81 | 46.81 | 48.72 |
| S-23 | -1898.12 | 12.32 | 12.32 | 76.41 |
| S-24 | -1885.88 | 38.97 | 38.97 | 76.41 |
| S-25 | -1860.65 | -61.96 | -61.96 | 64.18 |
| S-26 | -1861.15 | 44.54 | 44.54 | 64.18 |
| S-27 | -1843.90 | -46.28 | -46.28 | 62.74 |
| S-28 | -1844.46 | 7.41 | 7.41 | 62.74 |
| S-29 | -1831.32 | -74.74 | -74.74 | 28.28 |
| S-30 | -1832.54 | 33.35 | 33.35 | 28.28 |
| S-31 | -1824.95 | -42.53 | -42.53 | 23.40 |
| S-32 | -1825.41 | 11.83 | 11.83 | 23.40 |
| S-33 | -1820.43 | -59.24 | -59.24 | -0.55 |
| S-34 | -1821.12 | 31.62 | 31.62 | -0.55 |
| S-35 | -1819.77 | -35.99 | -35.99 | -2.78 |
| S-36 | -1996.40 | 1.98 | 1.98 | 31.73 |
| S-37 | -1973.78 | -48.33 | -48.33 | 9.11 |
| S-38 | -2058.51 | -107.02 | -107.02 | 0.00 |

Position

| Position | min Nr [kN] | max Nr [kN] | Vs [kN] | Mt [kNm] |
|----------|----------------|----------------|------------|-------------|
| S-34 | -2048.14 | -84.81 | -84.81 | 31.75 |
| S-35 | -1972.90 | -77.33 | -77.33 | 9.22 |
| S-36 | -1960.12 | -43.25 | -43.25 | 60.74 |
| S-37 | -1920.47 | -5.66 | -5.66 | 60.74 |
| S-38 | -1908.44 | 30.44 | 30.44 | 48.98 |
| S-39 | -1908.10 | -46.89 | -46.89 | 48.98 |
| S-40 | -1898.14 | -12.41 | -12.41 | 76.76 |
| S-41 | -1885.90 | -39.05 | -39.05 | 76.76 |
| S-42 | -1860.68 | 61.87 | 61.87 | 64.62 |
| S-43 | -1861.17 | -44.63 | -44.63 | 64.62 |
| S-44 | -1843.91 | 46.19 | 46.19 | 63.27 |
| S-45 | -1844.48 | -7.50 | -7.50 | 63.27 |
| S-46 | -1831.36 | 74.50 | 74.50 | 28.98 |
| S-47 | -1832.56 | -33.59 | -33.59 | 28.98 |
| S-48 | -1824.99 | 42.14 | 42.14 | 24.41 |
| S-49 | -1825.44 | -12.22 | -12.22 | 24.41 |
| S-50 | -1820.38 | 60.04 | 60.04 | 0.26 |
| S-51 | -1821.11 | -30.81 | -30.81 | 0.26 |
| S-52 | -1819.76 | 36.80 | 36.80 | -2.78 |
| S-53 | -1996.43 | -2.07 | -2.07 | 31.75 |
| S-54 | -1973.82 | 48.25 | 48.25 | 9.22 |

Querkraft Vs [kN]



aus Lastkombination LK-8
Position

| | Nr | min Vs max Vs | Nr | min Vs max Vs | Mt [kNm] |
|------|----------|------------------|---------|------------------|-------------|
| S-16 | -2048.10 | 84.73 | 31.73 | | 0.00 |
| S-17 | -2058.47 | 106.94 | 0.00 | | 60.55 |
| S-18 | -1960.08 | 43.17 | 60.55 | | 9.11 |
| S-18 | -1972.86 | 77.25 | 77.25 | | 48.72 |
| S-18 | -1908.41 | -30.52 | -30.52 | | 60.55 |
| S-19 | -1920.44 | 5.57 | 5.57 | | 76.41 |
| S-19 | -1898.12 | 12.32 | 12.32 | | 64.18 |
| S-20 | -1908.08 | 46.81 | 46.81 | | 76.41 |
| S-20 | -1860.65 | -61.96 | -61.96 | | 62.74 |
| S-21 | -1885.88 | 38.97 | 38.97 | | 64.18 |
| S-21 | -1843.90 | -46.28 | -46.28 | | 28.28 |
| S-22 | -1861.15 | 44.54 | 44.54 | | 62.74 |
| S-22 | -1831.32 | -74.74 | -74.74 | | 23.40 |
| S-23 | -1844.46 | 7.41 | 7.41 | | 11.83 |
| S-23 | -1824.95 | -42.53 | -42.53 | | -2.78 |
| S-24 | -1832.54 | 33.35 | 33.35 | | 9.11 |
| S-24 | -1820.43 | -59.24 | -59.24 | | 31.73 |
| S-25 | -1825.41 | 11.83 | 11.83 | | 0.00 |
| S-25 | -1819.77 | -35.99 | -35.99 | | 31.75 |
| S-27 | -1821.12 | 31.62 | 31.62 | | 9.22 |
| S-27 | -1973.78 | -48.33 | -48.33 | | 60.74 |
| S-33 | -1996.40 | 1.98 | 1.98 | | 60.74 |
| S-33 | -2058.51 | -107.02 | -107.02 | | 48.98 |
| S-34 | -2048.14 | -84.81 | -84.81 | | 48.98 |
| S-34 | -1972.90 | -77.33 | -77.33 | | 76.76 |
| S-35 | -1960.12 | -43.25 | -43.25 | | 76.76 |
| S-36 | -1920.47 | -5.66 | -5.66 | | 64.62 |
| S-36 | -1908.44 | 30.44 | 30.44 | | 64.62 |
| S-37 | -1908.10 | -46.89 | -46.89 | | 61.87 |
| S-37 | -1898.14 | -12.41 | -12.41 | | 61.87 |
| S-38 | -1885.90 | -39.05 | -39.05 | | 46.19 |
| S-38 | -1860.68 | 61.87 | 61.87 | | -7.50 |
| S-39 | -1861.17 | -44.63 | -44.63 | | 74.50 |
| S-39 | -1843.91 | 46.19 | 46.19 | | -33.59 |
| S-40 | -1844.48 | -7.50 | -7.50 | | 42.14 |
| S-40 | -1831.36 | 74.50 | 74.50 | | -12.22 |
| S-41 | -1832.56 | -33.59 | -33.59 | | |
| S-41 | -1824.99 | 42.14 | 42.14 | | |
| S-41 | -1825.44 | -12.22 | -12.22 | | |

4.49

Moment Mt [kNm]



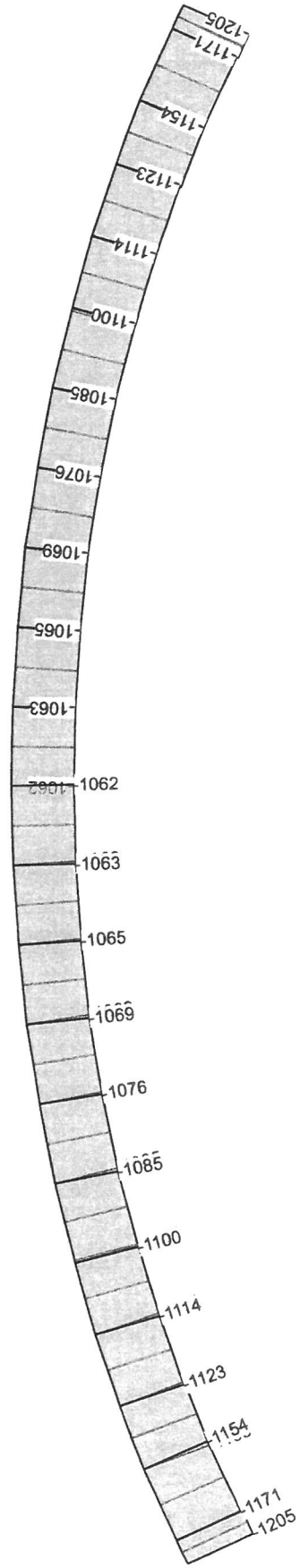
aus Lastkombination LK-8

| Position | Nr | Vs [kN] | min Mt [kNm] | max Mt [kNm] |
|----------|----------|------------|-----------------|-----------------|
| | | | | |
| S-16 | -2058.47 | 106.94 | 0.00 | 31.73 |
| S-17 | -2048.10 | 84.73 | 9.11 | 31.73 |
| S-18 | -1972.86 | 77.25 | 9.11 | 60.55 |
| S-19 | -1960.08 | 43.17 | 60.55 | 48.72 |
| S-20 | -1908.41 | -30.52 | 48.72 | 60.95 |
| S-21 | -1918.94 | 1.06 | 60.95 | 48.72 |
| S-22 | -1908.08 | 46.81 | 48.72 | 76.41 |
| S-23 | -1898.12 | 12.32 | 76.41 | 64.18 |
| S-24 | -1860.65 | -61.96 | 64.18 | 84.13 |
| S-25 | -1875.71 | -1.73 | 84.13 | 62.74 |
| S-26 | -1843.90 | -46.28 | 62.74 | 75.02 |
| S-27 | -1852.32 | -1.96 | 75.02 | 28.28 |
| S-28 | -1831.32 | -74.74 | 28.28 | 63.02 |
| S-29 | -1842.79 | -3.04 | 63.02 | 23.40 |
| S-30 | -1824.95 | -42.53 | 23.40 | 35.41 |
| S-31 | -1829.65 | 4.49 | 35.41 | -0.55 |
| S-32 | -1820.43 | -59.24 | -0.55 | 24.32 |
| S-33 | -1824.78 | 2.86 | 24.32 | -2.78 |
| S-34 | -1819.77 | -35.99 | -2.78 | 9.11 |
| S-35 | -1820.45 | -2.28 | 9.11 | 31.73 |
| S-36 | -1973.78 | -48.33 | 31.73 | 0.00 |
| S-37 | -1996.40 | 1.98 | 0.00 | 31.75 |
| S-38 | -2058.51 | -107.02 | 31.75 | 9.22 |
| S-39 | -2048.14 | -84.81 | 9.22 | 60.74 |
| S-40 | -1972.90 | -77.33 | 60.74 | 48.98 |
| S-41 | -1960.12 | -43.25 | 48.98 | 61.14 |
| S-42 | -1908.44 | 30.44 | 61.14 | 48.98 |
| S-43 | -1918.96 | -1.14 | 48.98 | 76.76 |
| S-44 | -1908.10 | -46.89 | 76.76 | 64.62 |
| S-45 | -1898.14 | -12.41 | 64.62 | 84.51 |
| S-46 | -1860.68 | 61.87 | 84.51 | 63.27 |
| S-47 | -1875.73 | 1.64 | 63.27 | 75.50 |
| S-48 | -1843.91 | 46.19 | 75.50 | 28.98 |
| S-49 | -1852.33 | 1.87 | 28.98 | 63.56 |
| S-50 | -1831.36 | 74.50 | 63.56 | 24.41 |
| S-51 | -1842.81 | 2.93 | 24.41 | 36.21 |
| S-52 | -1824.99 | 42.14 | 36.21 | 0.26 |
| S-53 | -1829.68 | -4.78 | 0.26 | 25.37 |
| S-54 | -1820.38 | 60.04 | 25.37 | -2.78 |
| S-55 | -1824.80 | -3.10 | -2.78 | 7.19 |
| S-56 | -1819.76 | 36.80 | 7.19 | 9.22 |
| S-57 | -1820.43 | 3.08 | 9.22 | |
| S-58 | -1973.82 | 48.25 | | |

Position

| Nr | Vs [kN] | min Mt [kNm] | max Mt [kNm] |
|----------|------------|-----------------|-----------------|
| | | | |
| -1996.43 | -2.07 | | 31.75 |

4.50



Balkenschnittgrößen

lastkombinationsweise dargestellt
aus Lastkombination LK-9
Max = -1062, Min = -1205

Normalkraft N in [kN]

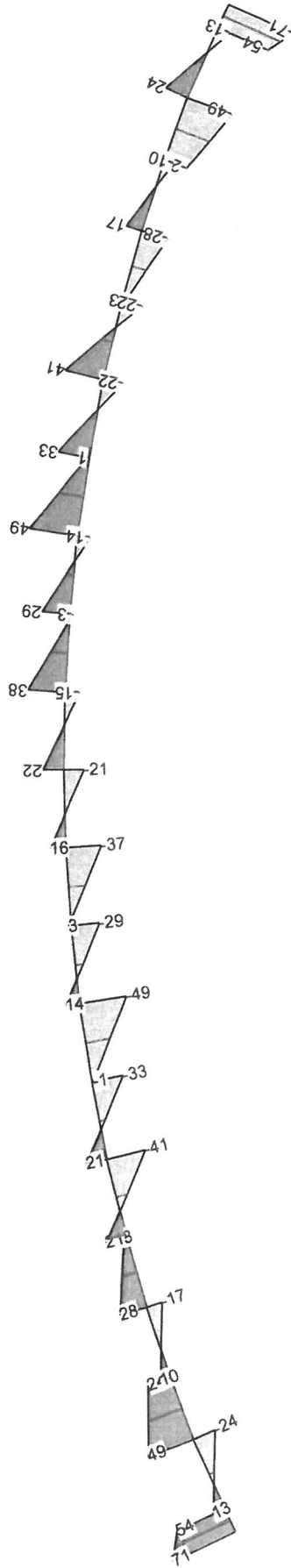
FE-Mod. BR-TÜ-EZ Endzustand
Bauvorhaben 22-078

Instandsetzung Fußgängerbrücke

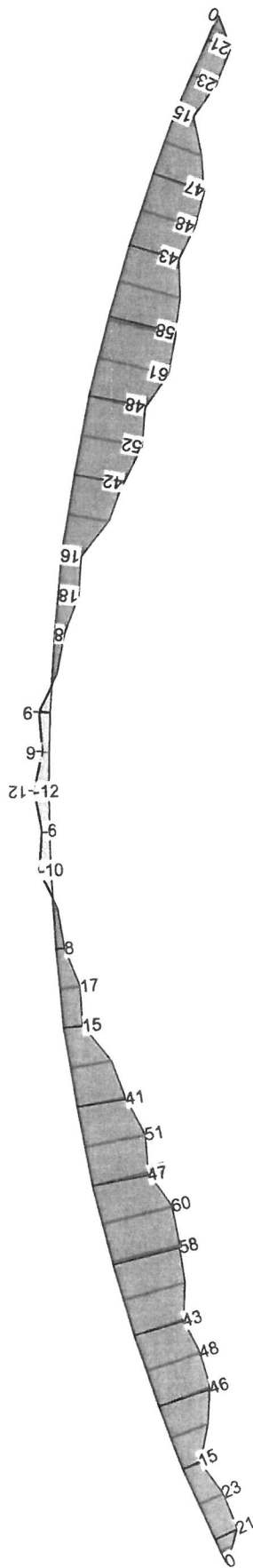
Maßstab: 1:85

Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10

Seite



| | | | | |
|----------------------------|---------------------|--|---|---------------|
| Balkenschnittgrößen | Querkraft V in [kN] | lastkombinationsweise dargestellt aus Lastkombination LK-9 Max = 71, Min = -71 | FE-Mod. BR-TÜ-EZ Endzustand Bauvorhaben 22-078 Instandsetzung Fußgängerbrücke | Maßstab: 1:85 |
| | | | | Seite |



| Balkenschnittgrößen | FE-Mod. | Maßstab: 1:85 |
|--|---|------------------|
| lastkombinationsweise dargestellt aus Lastkombination LK-9 Max = 61, Min = -12 | BR-TÜ-EZ Endzustand Bauvorhaben 22-078 Instandsetzung Fußgängerbrücke | Seite |
| | Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10 | MicroFe 2018.051 |

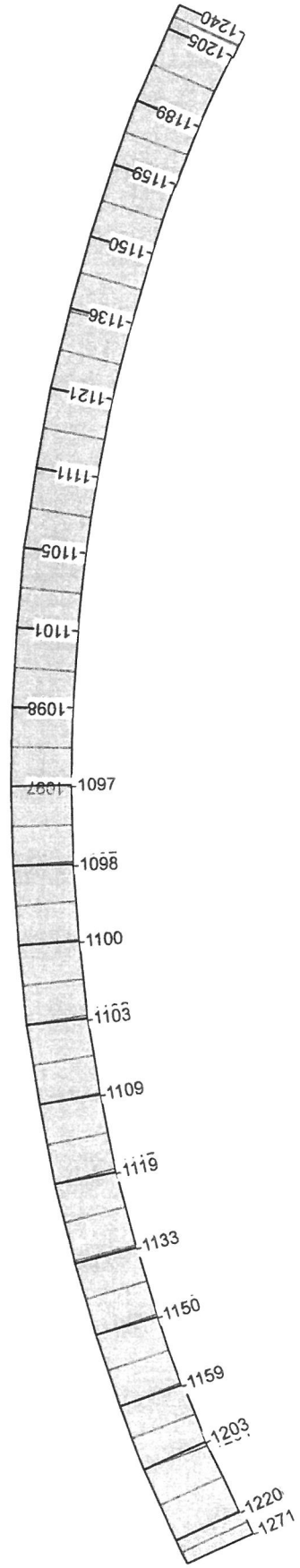
Moment Mt [kNm]



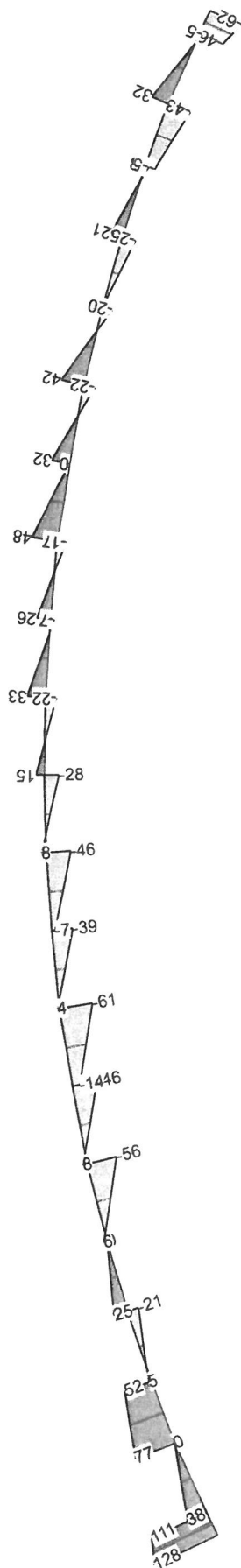
aus Lastkombination LK-9

| Position | Nr | | Vs | | min Mt | |
|----------|----------|--|--------|--|--------|--|
| | [kN] | | [kN] | | max Mt | |
| S-16 | -1205.41 | | 70.84 | | 0.00 | |
| | -1197.73 | | 54.39 | | 20.73 | |
| S-17 | -1153.02 | | 49.10 | | 15.20 | |
| | -1143.55 | | 23.86 | | 46.37 | |
| S-18 | -1114.25 | | -16.73 | | 43.18 | |
| | -1119.82 | | -0.02 | | 48.15 | |
| S-19 | -1114.01 | | 28.42 | | 43.18 | |
| | -1106.64 | | 2.87 | | 57.84 | |
| S-20 | -1084.90 | | -40.65 | | 47.44 | |
| | -1096.00 | | 3.76 | | 61.42 | |
| S-21 | -1075.16 | | -32.70 | | 41.31 | |
| | -1081.47 | | 0.54 | | 51.64 | |
| S-22 | -1068.01 | | -49.14 | | 15.45 | |
| | -1075.65 | | -1.40 | | 41.31 | |
| S-23 | -1064.74 | | -29.18 | | 7.57 | |
| | -1067.41 | | -2.55 | | 17.59 | |
| S-24 | -1062.37 | | -37.00 | | -9.84 | |
| | -1064.79 | | -2.47 | | 7.58 | |
| S-25 | -1062.16 | | -20.95 | | -12.33 | |
| | -1062.62 | | 2.11 | | -6.44 | |
| S-27 | -1153.81 | | -24.30 | | 15.20 | |
| | -1164.28 | | -1.00 | | 22.92 | |
| S-33 | -1205.43 | | -70.90 | | 0.00 | |
| | -1197.76 | | -54.45 | | 20.75 | |
| S-34 | -1153.04 | | -49.17 | | 15.28 | |
| | -1143.57 | | -23.92 | | 46.51 | |
| S-35 | -1114.27 | | 16.67 | | 43.37 | |
| | -1119.84 | | -0.04 | | 48.30 | |
| S-36 | -1114.03 | | -28.48 | | 43.37 | |
| | -1106.65 | | -2.94 | | 58.09 | |
| S-37 | -1084.91 | | 40.58 | | 47.77 | |
| | -1096.01 | | -3.82 | | 61.69 | |
| S-38 | -1075.17 | | 32.63 | | 41.70 | |
| | -1081.48 | | -0.61 | | 51.99 | |
| S-39 | -1068.04 | | 48.96 | | 15.96 | |
| | -1075.66 | | 1.33 | | 41.70 | |
| S-40 | -1064.77 | | 28.90 | | 8.32 | |
| | -1067.43 | | 2.33 | | 18.18 | |
| S-41 | -1062.33 | | 37.59 | | -9.24 | |
| | -1064.80 | | 2.30 | | 8.35 | |
| S-42 | -1062.14 | | 21.54 | | -12.33 | |
| | -1062.61 | | -1.52 | | -6.06 | |

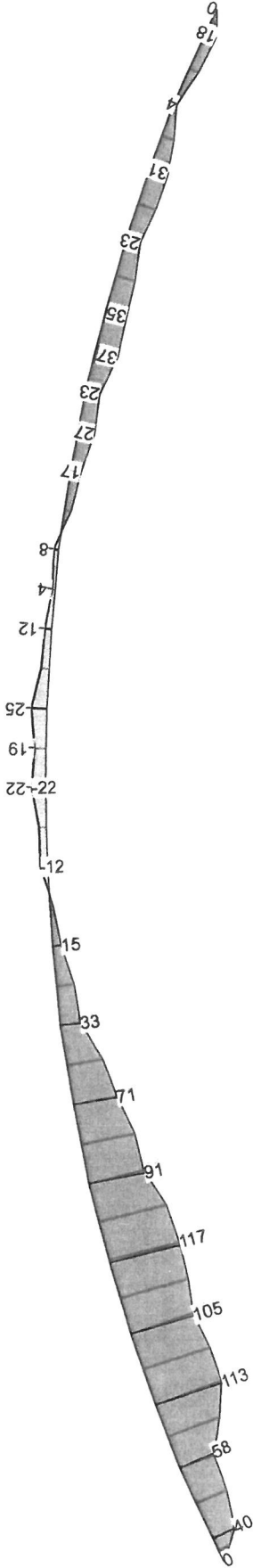
4.56



| | | | |
|----------------------------|--|--|---------------|
| Balkenschnittgrößen | Normalkraft N in [kN] | FE-Mod. BR-TÜ-EZ Endzustand | Maßstab: 1:85 |
| | lastkombinationsweise dargestellt aus Lastkombination LK-10 Max = -1097, Min = -1271 | Bauvorhaben 22-078 Instandsetzung Fußgängerbrücke | |
| | | | |



| Balkenschnittgrößen | FE-Mod. | BR-TÜ-EZ Endzustand Bauvorhaben 22-078 Instandsetzung Fußgängerbrücke | Maßstab: 1:85 |
|--|--|---|------------------|
| lastkombinationsweise dargestellt aus Lastkombination LK-10 Max = 128, Min = -62 | Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10 | | |
| | Seite | | MicroFe 2018.051 |



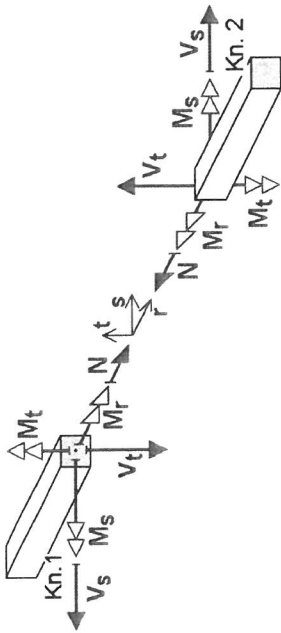
| Balkenschnittgrößen | | Moment M in [kNm] | FE-Mod. | BR-TÜ-EZ Endzustand | Maßstab: 1:85 |
|--|--|-------------------|--|---------------------|---------------|
| lastkombinationsweise dargestellt aus Lastkombination LK-10 Max = 117, Min = -25 | | | Bauvorhaben | 22-078 | |
| | | | Instandsetzung Fußgängerbrücke | | |
| | | | Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10 | | Seite |

Balkenschnittgr-Stb

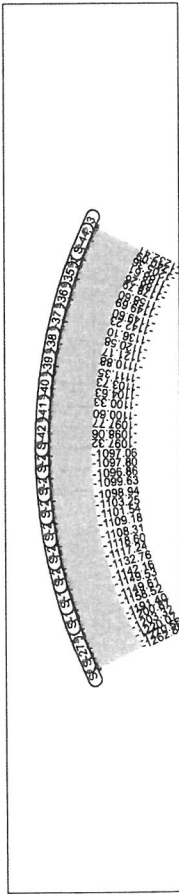
Schnittgrößen Stb-Stützen und 3D-Stäbe

Schnittgrößen

Schnittgrößen der Stützen und 3D-Stäbe



Normalkraft Nr [kN]



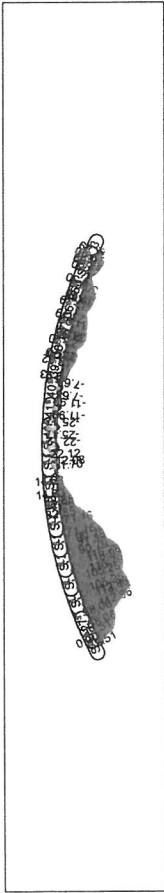
aus Lastkombination LK-10

| Position | min Nr [kN] | max Nr [kN] | Vs [kN] | Mt [kNm] |
|----------|----------------|----------------|------------|-------------|
| S-16 | -1270.56 | 127.57 | 0.00 | 0.00 |
| S-17 | -1262.88 | 111.12 | 39.51 | 39.51 |
| S-18 | -1200.87 | 76.88 | 58.06 | 58.06 |
| S-19 | -1191.40 | 51.63 | 112.96 | 112.96 |
| S-20 | -1158.52 | 5.24 | 105.25 | 105.25 |
| S-21 | -1149.61 | -21.50 | 105.25 | 105.25 |
| S-22 | -1142.16 | -0.46 | 116.79 | 116.79 |
| S-23 | -1132.76 | 6.32 | 116.79 | 116.79 |
| S-24 | -1117.24 | -55.78 | 90.79 | 90.79 |
| S-25 | -1118.60 | 8.20 | 90.79 | 90.79 |
| S-26 | -1108.31 | -45.96 | 71.16 | 71.16 |
| S-27 | -1109.18 | -13.69 | 32.85 | 32.85 |
| S-28 | -1101.54 | -61.43 | 32.85 | 32.85 |
| S-29 | -1103.25 | 3.62 | 14.63 | 14.63 |
| S-30 | -1098.94 | -39.48 | 14.63 | 14.63 |
| S-31 | -1099.63 | -6.74 | 14.63 | 14.63 |
| S-32 | -1096.86 | -46.27 | 12.08 | 12.08 |
| S-33 | -1097.80 | 8.48 | 12.08 | 12.08 |
| S-34 | -1097.06 | -28.49 | 22.12 | 22.12 |
| S-35 | -1220.07 | 37.65 | 39.51 | 39.51 |
| S-36 | -1203.32 | 0.38 | 58.06 | 58.06 |
| S-37 | -1240.09 | -62.28 | 0.00 | 0.00 |

Position

| Position | min Nr [kN] | max Nr [kN] | Vs [kN] | Mt [kNm] |
|----------|----------------|----------------|------------|-------------|
| S-34 | -1232.41 | -45.83 | 17.89 | 17.89 |
| S-35 | -1188.26 | -43.26 | 4.50 | 4.50 |
| S-36 | -1178.79 | -18.02 | 30.68 | 30.68 |
| S-37 | -1158.60 | -5.47 | 30.68 | 30.68 |
| S-38 | -1149.69 | 21.26 | 23.19 | 23.19 |
| S-39 | -1149.60 | -25.33 | 23.19 | 23.19 |
| S-40 | -1142.23 | 0.22 | 34.95 | 34.95 |
| S-41 | -1136.10 | -19.66 | 34.95 | 34.95 |
| S-42 | -1120.58 | 42.44 | 22.70 | 22.70 |
| S-43 | -1121.17 | -21.71 | 22.70 | 22.70 |
| S-44 | -1110.88 | 16.82 | 16.82 | 16.82 |
| S-45 | -1111.35 | 0.11 | 16.82 | 16.82 |
| S-46 | -1103.73 | 47.74 | -7.68 | -7.68 |
| S-47 | -1104.63 | -17.41 | -7.68 | -7.68 |
| S-48 | -1100.33 | 25.58 | -11.99 | -11.99 |
| S-49 | -1100.60 | -7.20 | -11.99 | -11.99 |
| S-50 | -1097.77 | 33.22 | -25.17 | -25.17 |
| S-51 | -1098.06 | -21.57 | -25.17 | -25.17 |
| S-52 | -1097.32 | 15.40 | -22.12 | -22.12 |
| S-53 | -1205.36 | -4.90 | 17.89 | 17.89 |
| S-54 | -1188.61 | 32.36 | 4.50 | 4.50 |

Moment Mt [kNm]



aus Lastkombination LK-10

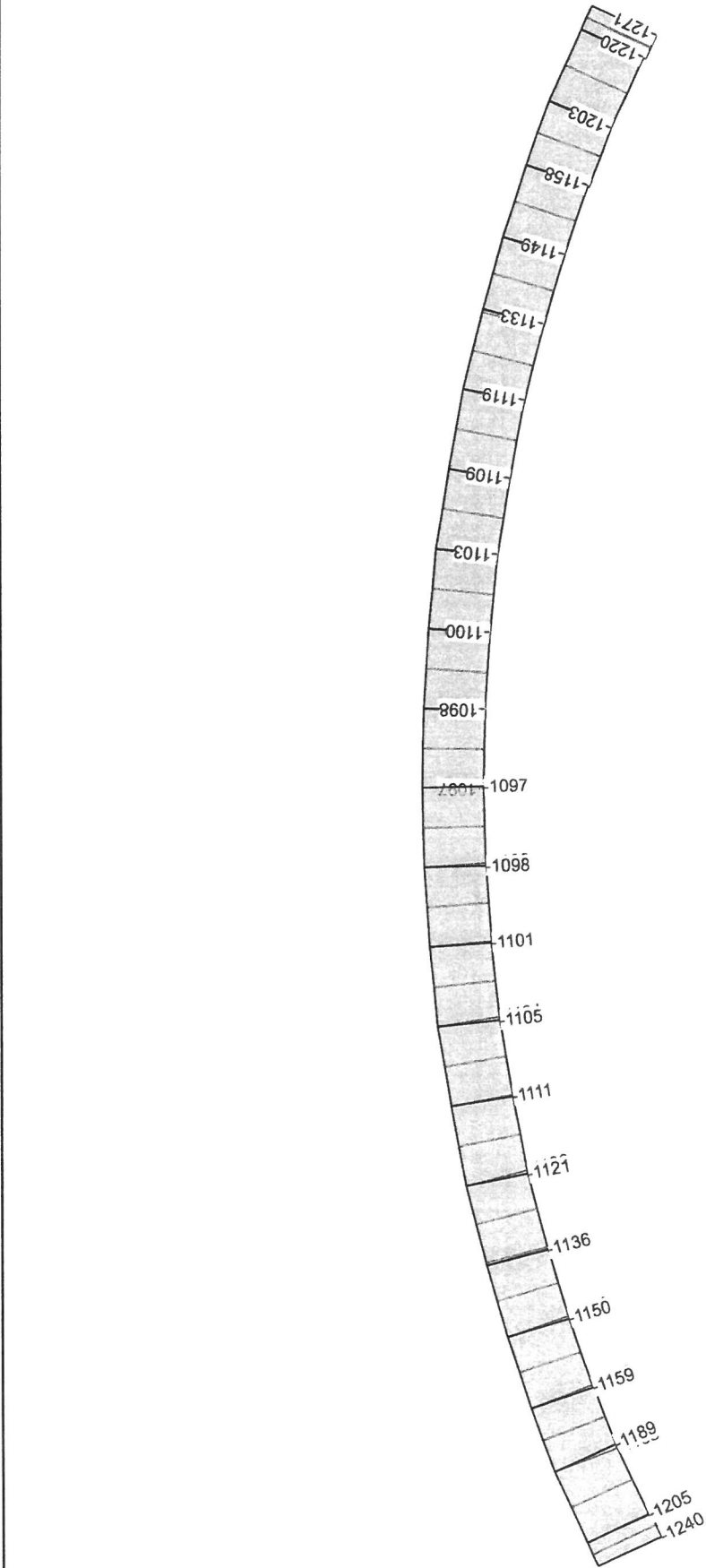
| Position | Nr | Nr [kN] | Vs Vs [kN] | min Mt max Mt [kNm] |
|----------|----------|------------|------------------|---------------------------|
| S-16 | -1270.56 | 127.57 | 0.00 | |
| S-17 | -1262.88 | 111.12 | 39.51 | |
| S-18 | -1200.87 | 76.88 | 58.06 | |
| S-19 | -1191.40 | 51.63 | 112.96 | |
| S-20 | -1149.61 | -21.50 | 105.25 | |
| S-21 | -1156.29 | -1.45 | 113.41 | |
| S-22 | -1149.53 | 25.09 | 105.25 | |
| S-23 | -1142.16 | -0.46 | 116.79 | |
| S-24 | -1117.24 | -55.78 | 90.79 | |
| S-25 | -1130.26 | -3.69 | 116.99 | |
| S-26 | -1108.31 | -45.96 | 71.16 | |
| S-27 | -1117.28 | 1.23 | 91.39 | |
| S-28 | -1101.54 | -61.43 | 32.85 | |
| S-29 | -1109.18 | -13.69 | 71.16 | |
| S-30 | -1098.94 | -39.48 | 14.63 | |
| S-31 | -1102.70 | -1.87 | 32.96 | |
| S-32 | -1096.86 | -46.27 | -12.08 | |
| S-33 | -1099.63 | -6.74 | 14.63 | |
| S-34 | -1097.06 | -28.49 | -22.12 | |
| S-35 | -1097.62 | -0.79 | -11.12 | |
| S-36 | -1220.07 | 37.65 | 39.51 | |
| S-37 | -1203.32 | 0.38 | 58.06 | |
| S-38 | -1240.09 | -62.28 | 0.00 | |
| S-39 | -1232.41 | -45.83 | 17.89 | |
| S-40 | -1188.26 | -43.26 | 4.50 | |
| S-41 | -1178.79 | -18.02 | 30.68 | |
| S-42 | -1149.69 | 21.26 | 23.19 | |
| S-43 | -1156.37 | 1.21 | 31.18 | |
| S-44 | -1149.60 | -25.33 | 23.19 | |
| S-45 | -1142.23 | 0.22 | 34.95 | |
| S-46 | -1120.58 | 42.44 | 22.70 | |
| S-47 | -1131.68 | -1.96 | 38.02 | |
| S-48 | -1110.88 | 32.46 | 16.82 | |
| S-49 | -1117.19 | -0.79 | 27.00 | |
| S-50 | -1103.73 | 47.74 | -7.68 | |
| S-51 | -1111.35 | 0.11 | 16.82 | |
| S-52 | -1100.33 | 25.58 | -11.99 | |
| S-53 | -1102.98 | -0.99 | -4.22 | |
| S-54 | -1097.77 | 33.22 | -25.17 | |
| S-55 | -1100.24 | -2.08 | -11.41 | |
| S-56 | -1098.06 | -21.57 | -25.17 | |

Position

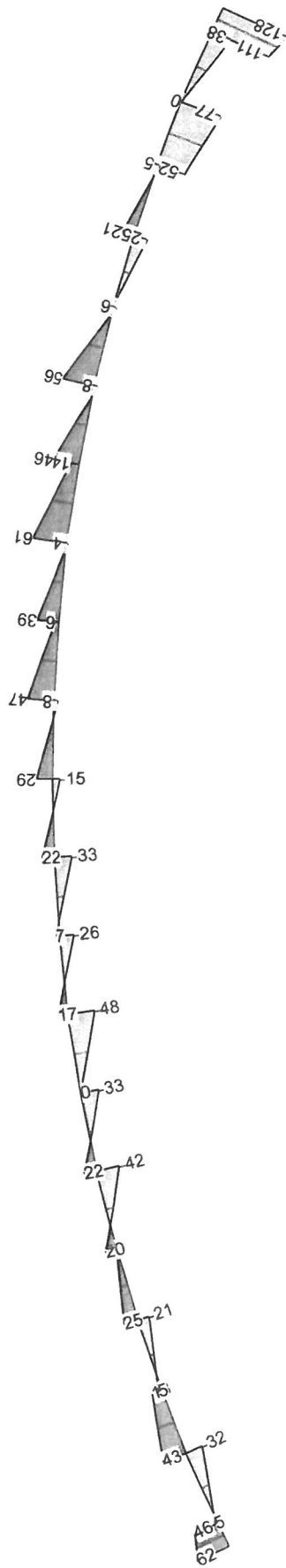
S-44

| Nr | Nr [kN] | Vs | min Mt max Mt [kNm] |
|----------|------------|-------|---------------------------|
| -1097.60 | 1.59 | 32.36 | -18.93 |
| -1188.61 | -0.25 | 4.50 | 18.21 |
| -1203.26 | | | |

4.62



| | | | |
|----------------------------|--|--|---------------|
| Balkenschnittgrößen | Normalkraft N in [kN] | FE-Mod. BR-TÜ-EZ Endzustand | Maßstab: 1:85 |
| | lastkombinationsweise dargestellt aus Lastkombination LK-11 Max = -1097, Min = -1271 | Bauvorhaben 22-078 | |
| | | Instandsetzung Fußgängerbrücke | |
| | | Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10 | Seite |



Balkenschnittgrößen

Querkraft V in [kN]

lastkombinationsweise dargestellt
aus Lastkombination LK-11
Max = 62, Min = -128

FE-Mod. BR-TÜ-EZ Endzustand

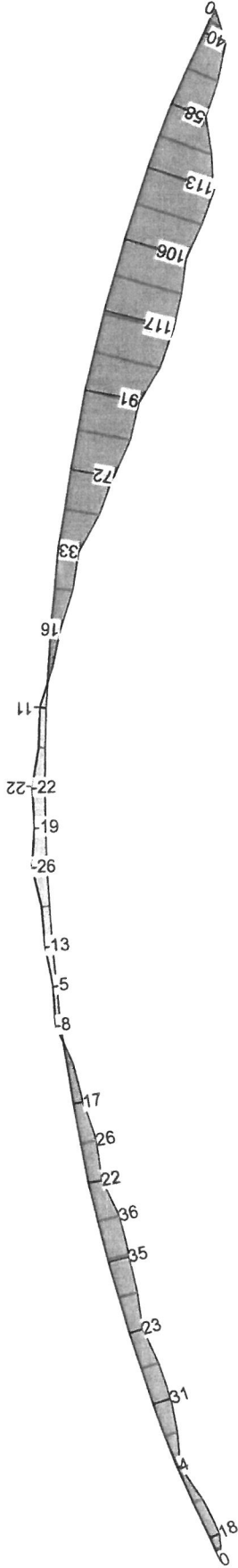
Bauvorhaben 22-078

Instandsetzung Fußgängerbrücke

Maßstab: 1:85

Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10

Seite



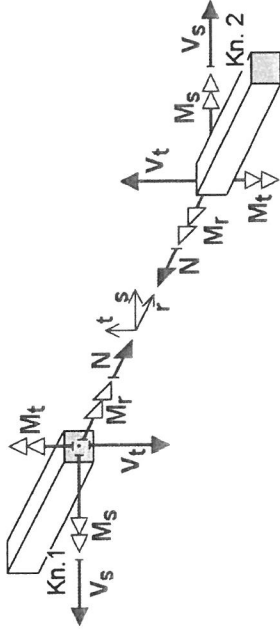
| Balkenschnittgrößen | | FE-Mod. | | Maßstab: 1:85 | |
|--|--|--|--|--------------------------------|--|
| Moment M in [kNm] | | BR-TÜ-EZ Endzustand | | Instandsetzung Fußgängerbrücke | |
| lastkombinationsweise dargestellt aus Lastkombination LK-11 Max = 117, Min = -26 | | Bauvorhaben | | Seite | |
| | | Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10 | | MicroFe 2018.051 | |

Balkenschnittgr-Stb

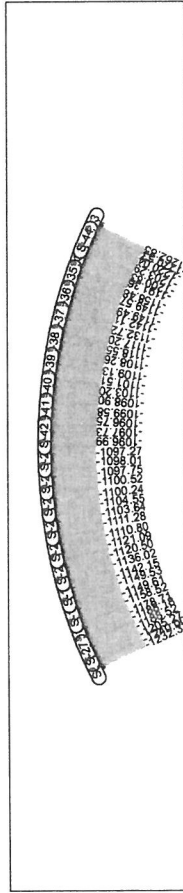
Schnittgrößen Stb-Stützen und 3D-Stäbe

Schnittgrößen

Schnittgrößen der Stützen und 3D-Stäbe



Normalkraft Nr [kN]



aus Lastkombination LK-11

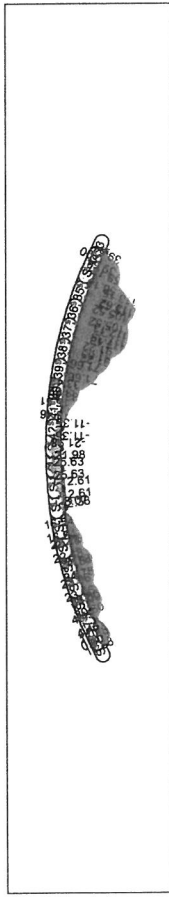
| Position | min Nr [kN] | max Nr [kN] | Vs [kN] | Mt [kNm] |
|----------|----------------|----------------|------------|-------------|
| S-16 | -1240.00 | 62.24 | 0.00 | 0.00 |
| S-17 | -1232.33 | 45.79 | 17.88 | 17.88 |
| S-18 | -1188.18 | 43.22 | 4.45 | 4.45 |
| S-19 | -1178.71 | 17.98 | 30.60 | 30.60 |
| S-20 | -1158.52 | 5.43 | 30.60 | 30.60 |
| S-21 | -1149.61 | -21.31 | 23.06 | 23.06 |
| S-22 | -1149.53 | 25.28 | 23.06 | 23.06 |
| S-23 | -1142.15 | -0.26 | 34.78 | 34.78 |
| S-24 | -1136.02 | 19.61 | 34.78 | 34.78 |
| S-25 | -1120.50 | -42.49 | 22.48 | 22.48 |
| S-26 | -1121.09 | 21.65 | 22.48 | 22.48 |
| S-27 | -1110.80 | -32.51 | 16.54 | 16.54 |
| S-28 | -1111.28 | -0.17 | 16.54 | 16.54 |
| S-29 | -1103.64 | -47.91 | -8.07 | -8.07 |
| S-30 | -1104.55 | 17.24 | -8.07 | -8.07 |
| S-31 | -1100.24 | -25.86 | -12.61 | -12.61 |
| S-32 | -1100.52 | 6.92 | -12.61 | -12.61 |
| S-33 | -1097.75 | -32.62 | -25.63 | -25.63 |
| S-34 | -1098.01 | 22.16 | -25.63 | -25.63 |
| S-35 | -1097.27 | -14.81 | -21.98 | -21.98 |
| S-36 | -1205.27 | 4.87 | 17.88 | 17.88 |
| S-37 | -1188.52 | -32.40 | 4.45 | 4.45 |
| S-38 | -1270.53 | -127.65 | 0.00 | 0.00 |

Position

| Position | min Nr [kN] | max Nr [kN] | Vs [kN] | Mt [kNm] |
|----------|----------------|----------------|------------|-------------|
| S-34 | -1262.85 | -111.20 | -11.20 | 39.54 |
| S-35 | -1200.83 | -76.96 | -51.72 | 58.18 |
| S-36 | -1191.36 | -53.2 | 113.15 | 113.15 |
| S-37 | -1158.48 | 21.41 | 105.52 | 105.52 |
| S-38 | -1149.57 | -25.17 | 0.37 | 117.13 |
| S-39 | -1142.11 | -6.40 | 55.70 | 91.22 |
| S-40 | -1132.72 | -8.28 | 45.89 | 71.66 |
| S-41 | -1117.20 | 13.61 | 33.49 | 33.49 |
| S-42 | -1108.26 | -3.80 | 39.19 | 15.51 |
| S-43 | -1109.13 | 6.45 | 46.86 | -11.35 |
| S-44 | -1101.51 | -7.89 | 29.08 | -21.98 |
| S-45 | -1103.20 | -37.74 | 39.54 | 58.18 |
| S-46 | -1098.90 | -1203.29 | -0.47 | 58.18 |

| Position | Nr | min Vs max Vs | Mt [kNm] |
|----------|----------------------|--------------------|------------------|
| S-16 | -1232.33 -1240.00 | 45.79 62.24 | 17.88 0.00 |
| S-17 | -1178.71 -1188.18 | 17.98 43.22 | 30.60 4.45 |
| S-18 | -1149.61 -1158.52 | -21.31 5.43 | 23.06 30.60 |
| S-19 | -1142.15 -1149.53 | -0.26 25.28 | 34.78 23.06 |
| S-20 | -1120.50 -1136.02 | -42.49 19.61 | 22.48 34.78 |
| S-21 | -1110.80 -1121.09 | -32.51 21.65 | 16.54 22.48 |
| S-22 | -1103.64 -1111.28 | -47.91 -0.17 | -8.07 16.54 |
| S-23 | -1100.24 -1104.55 | -25.86 17.24 | -12.61 -8.07 |
| S-24 | -1097.75 -1100.52 | -32.62 6.92 | -25.63 -12.61 |
| S-25 | -1097.27 -1098.01 | -14.81 22.16 | -21.98 -25.63 |
| S-27 | -1188.52 -1205.27 | -32.40 4.87 | 4.45 17.88 |
| S-33 | -1270.53 -1262.85 | -127.65 -111.20 | 0.00 39.54 |
| S-34 | -1200.83 -1191.36 | -76.98 -51.72 | 58.18 113.15 |
| S-35 | -1158.48 -1149.57 | -5.32 21.41 | 113.15 105.52 |
| S-36 | -1149.49 -1142.11 | -25.17 0.37 | 105.52 117.13 |
| S-37 | -1132.72 -1117.20 | -6.40 55.70 | 117.13 91.22 |
| S-38 | -1118.55 -1108.26 | -8.28 45.89 | 91.22 71.66 |
| S-39 | -1109.13 -1101.51 | 13.61 61.24 | 71.66 33.49 |
| S-40 | -1103.20 -1098.90 | -3.80 39.19 | 33.49 15.51 |
| S-41 | -1099.58 | 6.45 | 15.51 |

Moment Mt [kNm]

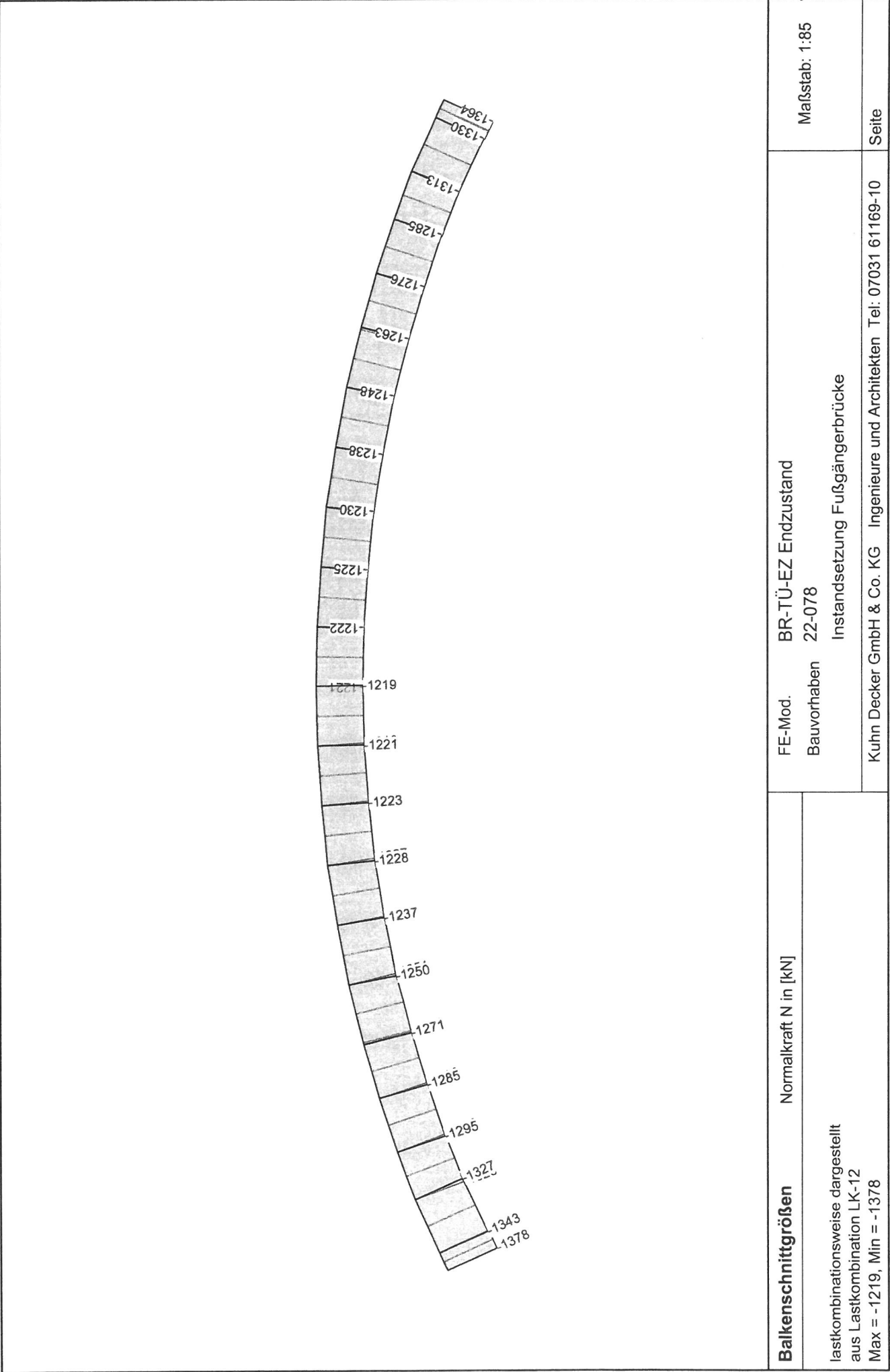


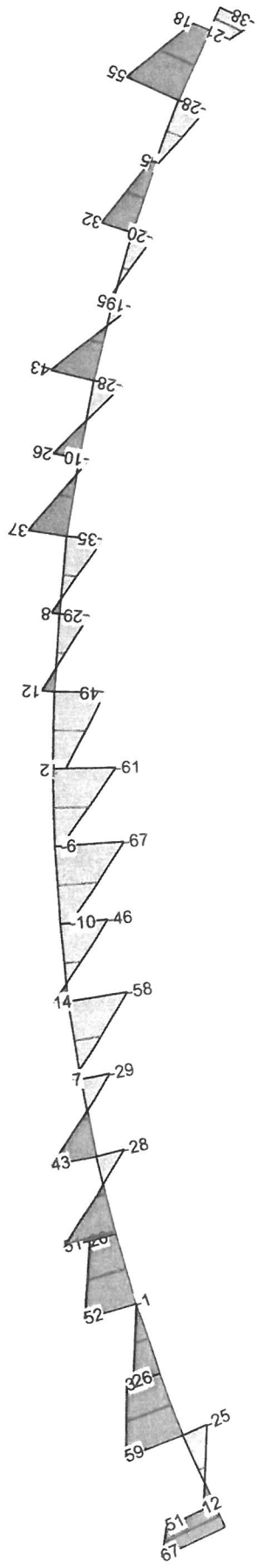
aus Lastkombination LK-11
Position

| | Nr Nr [kN] | Vs Vs [kN] | min Mt max Mt [kNm] |
|------|------------------|------------------|---------------------------|
| S-16 | -1240.00 | 62.24 | 0.00 |
| S-17 | -1232.33 | 45.79 | 17.88 |
| S-18 | -1188.18 | 43.22 | 4.45 |
| S-19 | -1178.71 | 17.98 | 30.60 |
| S-20 | -1149.61 | -21.31 | 23.06 |
| S-21 | -1156.29 | -1.25 | 31.09 |
| S-22 | -1149.53 | 25.28 | 23.06 |
| S-23 | -1142.15 | -0.26 | 34.78 |
| S-24 | -1120.50 | -42.49 | 22.48 |
| S-25 | -1131.60 | 1.91 | 37.84 |
| S-26 | -1110.80 | -32.51 | 16.54 |
| S-27 | -1117.12 | 0.73 | 26.75 |
| S-28 | -1103.64 | -47.91 | -8.07 |
| S-29 | -1111.28 | -0.17 | 16.54 |
| S-30 | -1100.24 | -25.86 | -12.61 |
| S-31 | -1102.90 | 0.78 | -4.68 |
| S-32 | -1097.75 | -32.62 | -25.63 |
| S-33 | -1100.17 | 1.91 | -12.05 |
| S-34 | -1098.01 | 22.16 | -25.63 |
| S-35 | -1097.55 | -0.99 | -19.02 |
| S-36 | -1188.52 | -32.40 | 4.45 |
| S-37 | -1203.18 | 0.21 | 18.19 |
| S-38 | -1270.53 | -127.65 | 0.00 |
| S-39 | -1262.85 | -111.20 | 39.54 |
| S-40 | -1200.83 | -76.96 | 58.18 |
| S-41 | -1191.36 | -51.72 | 113.15 |
| S-42 | -1149.57 | 21.41 | 105.52 |
| S-43 | -1156.25 | 1.36 | 113.62 |
| S-44 | -1149.49 | -25.17 | 105.52 |
| S-45 | -1142.11 | 0.37 | 117.13 |
| S-46 | -1117.20 | 55.70 | 91.22 |
| S-47 | -1130.22 | 3.61 | 117.35 |
| S-48 | -1108.26 | 45.89 | 71.66 |
| S-49 | -1117.23 | -1.30 | 91.83 |
| S-50 | -1101.51 | 61.24 | 33.49 |
| S-51 | -1109.13 | 13.61 | 71.66 |
| S-52 | -1098.90 | 39.19 | 15.51 |
| S-53 | -1102.66 | 1.67 | 33.62 |
| S-54 | -1096.75 | 46.86 | -11.35 |
| S-55 | -1099.58 | 6.45 | 15.51 |
| S-56 | -1096.99 | 29.08 | -21.98 |

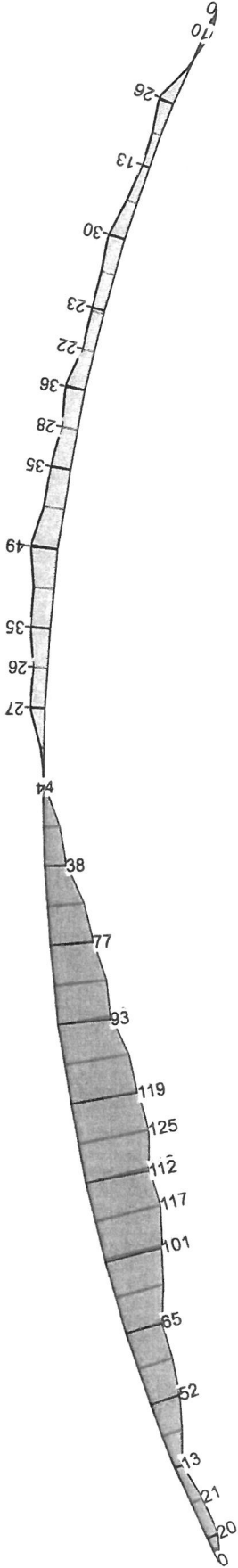
| Position | Nr Nr [kN] | Vs Vs [kN] | min Mt max Mt [kNm] |
|----------|------------------|------------------|---------------------------|
| S-44 | -1097.54 | 1.39 | -10.54 |
| | -1220.04 | -37.74 | 39.54 |
| | -1203.29 | -0.47 | 58.18 |

4.68





| | | | |
|---|--|---------------------|---|
| Balkenschnittgrößen | | Querkraft V in [kN] | lastkombinationsweise dargestellt aus Lastkombination LK-12 Max = 67, Min = -67 |
| FE-Mod. BR-TÜ-EZ Endzustand Bauvorhaben 22-078 Instandsetzung Fußgängerbrücke | | Maßstab: 1:85 | |
| Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10 | | Seite | MicroFe 2018.051 |



Balkenschnittgrößen

Moment M in [kNm]

lastkombinationsweise dargestellt
aus Lastkombination LK-12
Max = 125, Min = -49

FE-Mod. BR-TÜ-EZ Endzustand

Bauvorhaben 22-078

Instandsetzung Fußgängerbrücke

Maßstab: 1:85

Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10

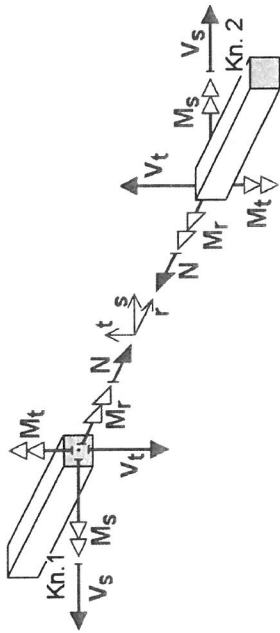
Seite

Balkenschnittgr-Stb

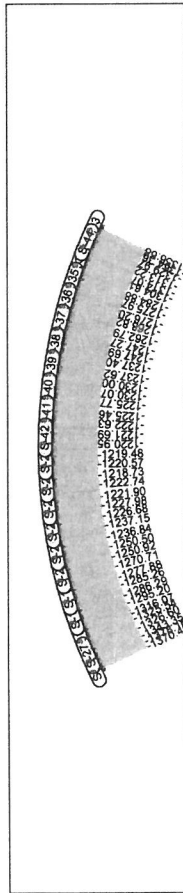
Schnittgrößen Stb-Stützen und 3D-Stäbe

Schnittgrößen

Schnittgrößen der Stützen und 3D-Stäbe



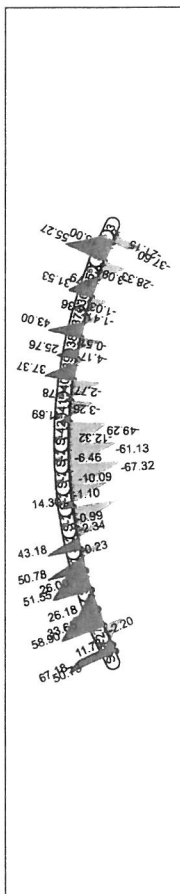
Normalkraft Nr [kN]



aus Lastkombination LK-12

| Position | min Nr [kN] | max Nr [kN] | Vs [kN] | Mt [kNm] |
|----------|----------------|----------------|------------|-------------|
| S-16 | -1378.16 | 67.18 | 0.00 | 0.00 |
| S-17 | -1370.49 | 50.73 | 19.52 | 19.52 |
| S-18 | -1325.54 | 58.90 | 12.83 | 12.83 |
| S-19 | -1316.07 | 33.65 | 52.37 | 52.37 |
| S-20 | -1295.20 | 26.18 | 52.37 | 52.37 |
| S-21 | -1286.29 | -0.56 | 64.52 | 64.52 |
| S-22 | -1285.26 | 51.55 | 64.52 | 64.52 |
| S-23 | -1277.88 | 26.00 | 100.84 | 100.84 |
| S-24 | -1270.71 | 50.78 | 100.84 | 100.84 |
| S-25 | -1250.92 | -28.40 | 112.18 | 112.18 |
| S-26 | -1236.84 | -28.68 | 119.14 | 119.14 |
| S-27 | -1237.15 | 7.32 | 119.14 | 119.14 |
| S-28 | -1226.68 | -58.12 | 93.15 | 93.15 |
| S-29 | -1227.98 | 14.30 | 93.15 | 93.15 |
| S-30 | -1221.90 | -46.49 | 76.77 | 76.77 |
| S-31 | -1222.74 | -10.09 | 76.77 | 76.77 |
| S-32 | -1218.73 | -67.32 | 37.84 | 37.84 |
| S-33 | -1220.57 | -6.46 | 37.84 | 37.84 |
| S-34 | -1219.48 | -61.13 | 4.00 | 4.00 |
| S-35 | -1343.35 | 11.78 | 19.52 | 19.52 |
| S-36 | -1326.60 | -25.49 | 12.83 | 12.83 |
| S-37 | -1364.36 | -37.60 | 0.00 | 0.00 |

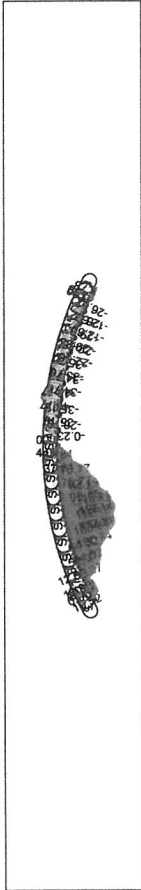
Querkraft V_s [kN]



aus Lastkombination LK-12

| Position | N _r | | min Vs | | M _t | |
|----------|----------------|----------|--------|--------|----------------|-------|
| | N _r | [kN] | max Vs | [kN] | M _t | [kNm] |
| S-16 | -1370.49 | -1370.49 | 50.73 | 67.18 | 19.52 | 0.00 |
| S-17 | -1378.16 | -1378.16 | 33.65 | 52.37 | 19.52 | 12.83 |
| S-18 | -1325.54 | -1325.54 | 58.90 | 64.52 | 19.52 | 12.83 |
| S-19 | -1286.29 | -1286.29 | 26.18 | 26.18 | 19.52 | 12.83 |
| S-20 | -1295.20 | -1295.20 | 26.00 | 26.00 | 19.52 | 12.83 |
| S-21 | -1277.88 | -1277.88 | 51.55 | 51.55 | 19.52 | 12.83 |
| S-22 | -1285.26 | -1285.26 | 28.40 | 28.40 | 19.52 | 12.83 |
| S-23 | -1250.92 | -1250.92 | 50.78 | 50.78 | 19.52 | 12.83 |
| S-24 | -1270.71 | -1270.71 | 28.68 | 28.68 | 19.52 | 12.83 |
| S-25 | -1236.84 | -1236.84 | 43.18 | 43.18 | 19.52 | 12.83 |
| S-26 | -1250.50 | -1250.50 | 58.12 | 58.12 | 19.52 | 12.83 |
| S-27 | -1226.68 | -1226.68 | 7.32 | 7.32 | 19.52 | 12.83 |
| S-28 | -1237.15 | -1237.15 | 46.49 | 46.49 | 19.52 | 12.83 |
| S-29 | -1221.90 | -1221.90 | 14.30 | 14.30 | 19.52 | 12.83 |
| S-30 | -1227.98 | -1227.98 | 37.84 | 37.84 | 19.52 | 12.83 |
| S-31 | -1218.73 | -1218.73 | 10.09 | 10.09 | 19.52 | 12.83 |
| S-32 | -1222.74 | -1222.74 | -61.13 | -61.13 | 19.52 | 12.83 |
| S-33 | -1219.48 | -1219.48 | -6.46 | -6.46 | 19.52 | 12.83 |
| S-34 | -1220.57 | -1220.57 | -25.49 | -25.49 | 19.52 | 12.83 |
| S-35 | -1326.60 | -1326.60 | 11.78 | 11.78 | 19.52 | 12.83 |
| S-36 | -1343.35 | -1343.35 | 37.60 | 37.60 | 19.52 | 12.83 |
| S-37 | -1364.36 | -1364.36 | -21.15 | -21.15 | 19.52 | 12.83 |
| S-38 | -1356.68 | -1356.68 | -28.33 | -28.33 | 19.52 | 12.83 |
| S-39 | -1314.07 | -1314.07 | -3.09 | -3.09 | 19.52 | 12.83 |
| S-40 | -1304.61 | -1304.61 | 4.79 | 4.79 | 19.52 | 12.83 |
| S-41 | -1284.88 | -1284.88 | 31.53 | 31.53 | 19.52 | 12.83 |
| S-42 | -1275.97 | -1275.97 | -20.18 | -20.18 | 19.52 | 12.83 |
| S-43 | -1276.20 | -1276.20 | 5.36 | 5.36 | 19.52 | 12.83 |
| S-44 | -1268.82 | -1268.82 | -19.11 | -19.11 | 19.52 | 12.83 |
| S-45 | -1262.79 | -1262.79 | 43.00 | 43.00 | 19.52 | 12.83 |
| S-46 | -1247.27 | -1247.27 | -28.40 | -28.40 | 19.52 | 12.83 |
| S-47 | -1247.69 | -1247.69 | 25.76 | 25.76 | 19.52 | 12.83 |
| S-48 | -1237.40 | -1237.40 | -10.26 | -10.26 | 19.52 | 12.83 |
| S-49 | -1237.62 | -1237.62 | 37.37 | 37.37 | 19.52 | 12.83 |
| S-50 | -1230.00 | -1230.00 | -35.21 | -35.21 | 19.52 | 12.83 |
| S-51 | -1225.77 | -1225.77 | 7.78 | 7.78 | 19.52 | 12.83 |
| S-52 | -1225.46 | -1225.46 | -28.73 | -28.73 | 19.52 | 12.83 |
| S-53 | -1222.63 | -1222.63 | 11.69 | 11.69 | 19.52 | 12.83 |
| S-54 | -1221.69 | -1221.69 | -49.29 | -49.29 | 19.52 | 12.83 |

Moment Mt [kNm]

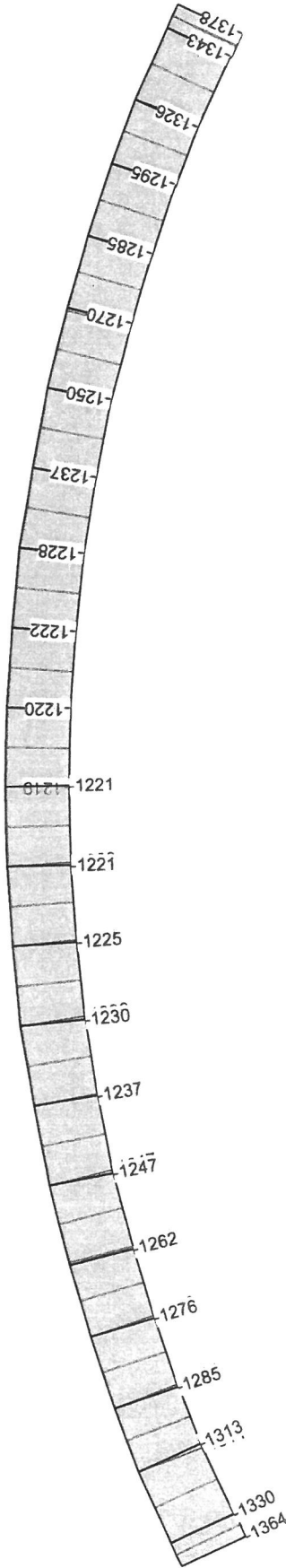


aus Lastkombination LK-12

| Position | Nr | Nr | Vs | min Mt |
|----------|----------|--------|--------|--------|
| | | | | |
| S-16 | -1378.16 | 67.18 | 0.00 | |
| S-17 | -1370.49 | 50.73 | 19.52 | |
| S-18 | -1325.54 | 58.90 | 12.83 | |
| S-19 | -1316.07 | 33.65 | 52.37 | |
| S-20 | -1295.20 | 26.18 | 52.37 | |
| S-21 | -1286.29 | -0.56 | 64.52 | |
| S-22 | -1285.26 | 51.55 | 64.52 | |
| S-23 | -1277.88 | 26.00 | 100.84 | |
| S-24 | -1270.71 | 50.78 | 100.84 | |
| S-25 | -1257.96 | -0.23 | 117.52 | |
| S-26 | -1250.50 | 43.18 | 112.18 | |
| S-27 | -1241.85 | -2.34 | 125.06 | |
| S-28 | -1226.68 | -58.12 | 93.15 | |
| S-29 | -1235.82 | -0.99 | 119.54 | |
| S-30 | -1221.90 | -46.49 | 76.77 | |
| S-31 | -1226.44 | -1.10 | 94.81 | |
| S-32 | -1218.73 | -67.32 | 37.84 | |
| S-33 | -1222.74 | -10.09 | 76.77 | |
| S-34 | -1219.48 | -61.13 | 4.00 | |
| S-35 | -1220.57 | -6.46 | 37.84 | |
| S-36 | -1326.60 | -25.49 | 12.83 | |
| S-37 | -1337.07 | -2.20 | 21.27 | |
| S-38 | -1364.36 | -37.60 | 0.00 | |
| S-39 | -1356.68 | -21.15 | 9.73 | |
| S-40 | -1314.07 | -28.33 | -26.02 | |
| S-41 | -1304.61 | -3.09 | -12.60 | |
| S-42 | -1275.97 | 31.53 | -29.83 | |
| S-43 | -1284.88 | 4.79 | -12.60 | |
| S-44 | -1276.20 | -20.18 | -29.83 | |
| S-45 | -1270.66 | -1.03 | -22.38 | |
| S-46 | -1247.27 | 43.00 | -35.70 | |
| S-47 | -1258.37 | -1.41 | -19.97 | |
| S-48 | -1247.69 | -28.40 | -35.70 | |
| S-49 | -1242.39 | -0.51 | -28.34 | |
| S-50 | -1230.00 | 37.37 | -48.77 | |
| S-51 | -1235.67 | 1.91 | -33.71 | |
| S-52 | -1230.07 | -35.21 | -48.77 | |
| S-53 | -1226.29 | 2.51 | -34.54 | |
| S-54 | -1225.46 | -28.73 | -35.19 | |
| S-55 | -1223.32 | 1.72 | -25.10 | |
| S-56 | -1221.69 | -49.29 | -26.78 | |
| S-57 | -1220.95 | -12.32 | 4.00 | |

| Position | Nr | Vs | min Mt |
|----------|----------|-------|--------|
| | | | |
| S-44 | -1313.22 | 55.27 | -26.02 |
| | -1329.97 | 18.00 | 9.73 |

4.74

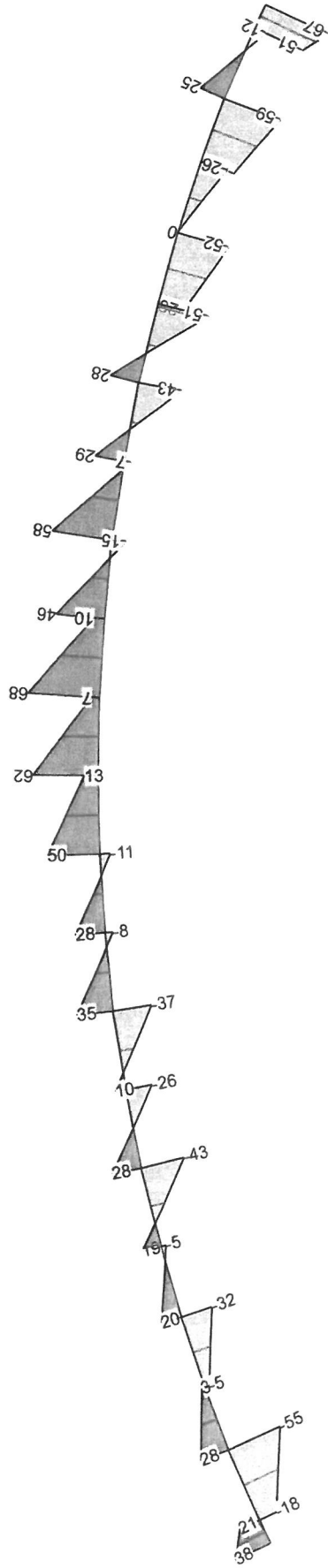


| Balkenschnittgrößen | Normalkraft N in [kN] |
|--|-----------------------|
| lastkombinationsweise dargestellt aus Lastkombination LK-13 Max = -1218, Min = -1378 | |

| | |
|--|--|
| FE-Mod. | BR-TÜ-EZ Endzustand |
| Bauvorhaben | 22-078 Instandsetzung Fußgängerbrücke |
| Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10 | |

| | |
|---------------|-------|
| Maßstab: 1:85 | Seite |
|---------------|-------|

4.175



Balkenschnittgrößen

Querkraft V in [kN]

lastkombinationsweise dargestellt
aus Lastkombination LK-13
Max = 68, Min = -67

FE-Mod. BR-TÜ-EZ Endzustand

Bauvorhaben 22-078

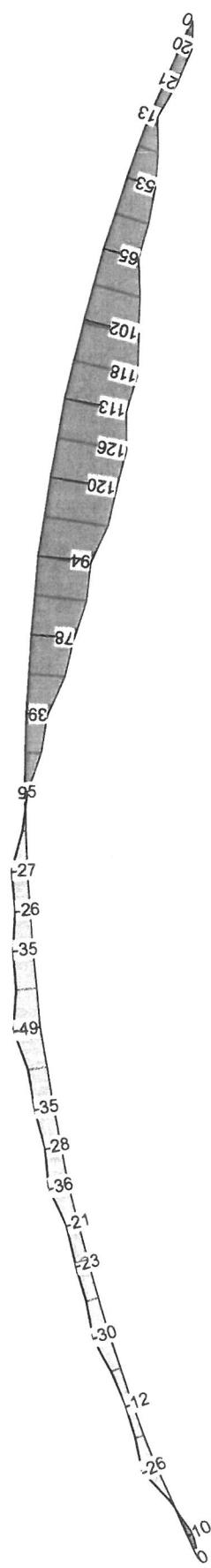
Instandsetzung Fußgängerbrücke

Maßstab: 1:85

Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10

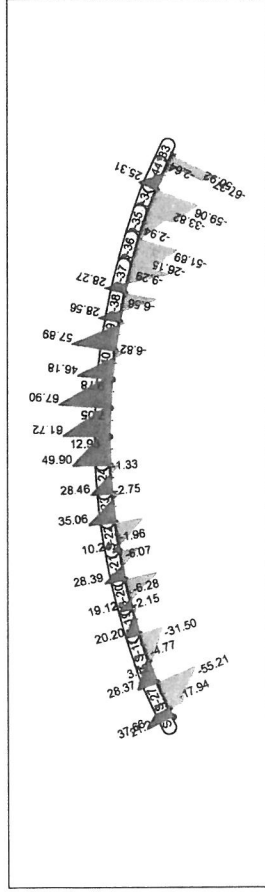
Seite

4.77



| Balkenschnittgrößen | | Moment M in [kNm] | FE-Mod. BR-TÜ-EZ Endzustand | | Maßstab: 1:85 |
|--|--|-------------------|--|--|---------------|
| lastkombinationsweise dargestellt aus Lastkombination LK-13 Max = 126, Min = -49 | | | Bauvorhaben | 22-078 Instandsetzung Fußgängerbrücke | |
| | | | Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10 | | Seite |

Querkraft Vs [kN]



aus Lastkombination LK-13

| Position | Nr | min Vs max Vs | Mt [kNm] |
|----------|----------|------------------|-------------|
| S-16 | -1356.39 | 21.21 | 9.75 |
| | -1364.07 | 37.66 | 0.00 |
| S-17 | -1304.31 | 3.12 | -12.49 |
| | -1313.78 | 28.37 | -25.94 |
| S-18 | -1275.67 | -31.50 | -29.69 |
| | -1284.58 | -4.77 | -12.49 |
| S-19 | -1268.52 | -5.34 | -22.74 |
| | -1275.90 | 20.20 | -29.69 |
| S-20 | -1246.97 | -42.99 | -35.55 |
| | -1262.50 | 19.12 | -22.74 |
| S-21 | -1237.10 | -25.77 | -34.63 |
| | -1247.39 | 28.39 | -35.55 |
| S-22 | -1229.69 | -37.50 | -48.71 |
| | -1237.33 | 10.24 | -34.63 |
| S-23 | -1225.45 | -8.04 | -35.33 |
| | -1229.76 | 35.06 | -48.71 |
| S-24 | -1222.38 | -11.08 | -26.75 |
| | -1225.15 | 28.46 | -35.33 |
| S-25 | -1220.67 | 12.93 | 4.63 |
| | -1221.41 | 49.90 | -26.75 |
| S-27 | -1312.93 | -55.21 | -25.94 |
| | -1329.68 | -17.94 | 9.75 |
| S-33 | -1377.93 | -67.37 | 0.00 |
| | -1370.25 | -50.92 | 19.58 |
| S-34 | -1325.29 | -59.06 | 13.07 |
| | -1315.82 | -33.84 | 52.74 |
| S-35 | -1294.95 | -26.33 | 52.74 |
| | -1286.04 | 0.40 | 65.04 |
| S-36 | -1285.00 | -51.69 | 65.04 |
| | -1277.62 | -26.15 | 101.50 |
| S-37 | -1270.45 | -50.92 | 101.50 |
| | -1250.66 | 28.27 | 112.98 |
| S-38 | -1250.22 | -43.30 | 112.98 |
| | -1236.57 | 28.56 | 120.07 |
| S-39 | -1236.88 | -7.44 | 120.07 |
| | -1226.43 | 57.89 | 94.24 |
| S-40 | -1227.71 | -14.51 | 94.24 |

4.79

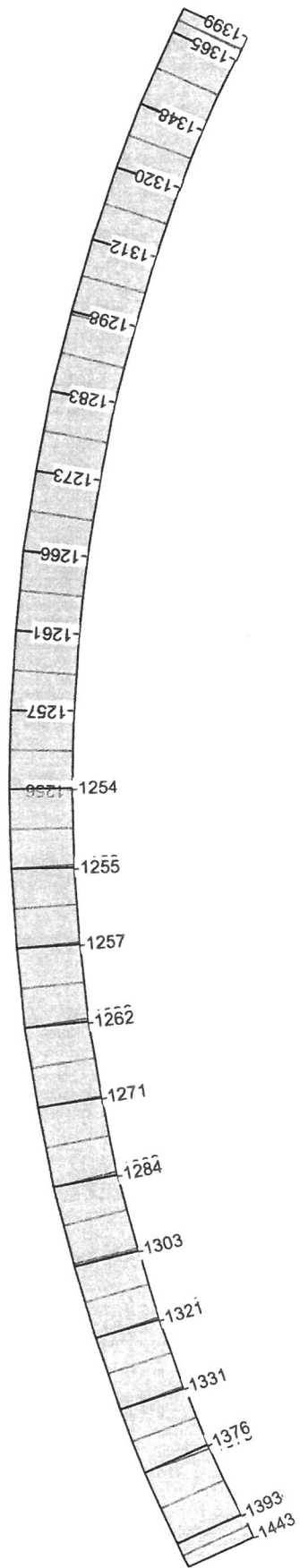
Moment Mt [kNm]



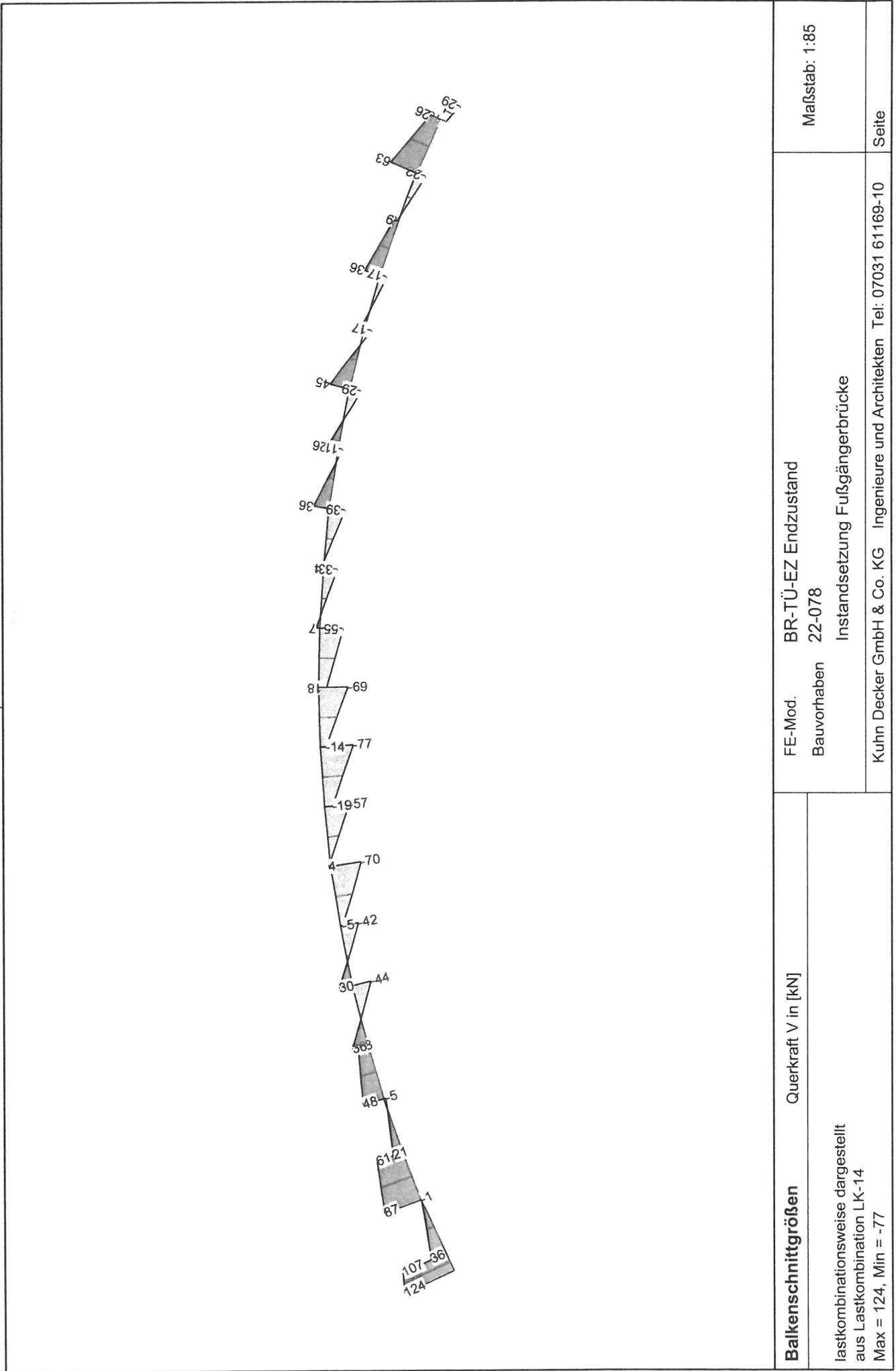
aus Lastkombination LK-13

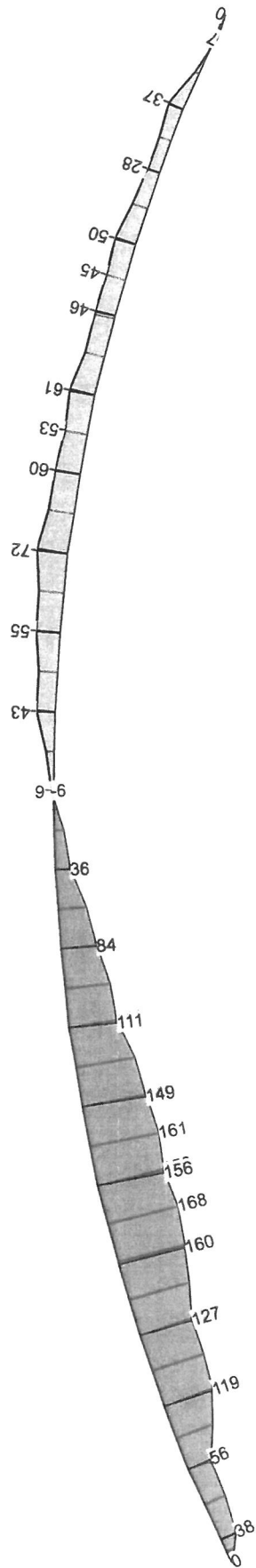
| Position | Nr [kN] | Nr [kN] | Vs [kN] | Vs [kN] | min Mt max Mt [kNm] |
|----------|------------|------------|------------|------------|---------------------------|
| S-16 | -1364.07 | 37.66 | 21.21 | 9.75 | 0.00 |
| S-17 | -1356.39 | 28.37 | 3.12 | -25.94 | 9.75 |
| S-18 | -1304.31 | -1275.67 | -31.50 | -29.69 | -12.49 |
| S-19 | -1284.58 | -1275.90 | 20.20 | -12.49 | -29.69 |
| S-20 | -1270.37 | -1246.97 | -42.99 | -35.55 | -22.23 |
| S-21 | -1258.07 | -1247.39 | 28.39 | -19.82 | -35.55 |
| S-22 | -1242.09 | -1229.69 | -37.50 | -28.20 | -48.71 |
| S-23 | -1235.37 | -1229.76 | 35.06 | -33.58 | -48.71 |
| S-24 | -1226.51 | -1225.15 | 2.54 | -34.64 | -35.33 |
| S-25 | -1223.06 | -1221.41 | 49.90 | -25.20 | -26.75 |
| S-27 | -1312.93 | -1329.68 | -17.94 | 4.63 | -25.94 |
| S-33 | -1377.93 | -1370.25 | -50.92 | 0.00 | 19.58 |
| S-34 | -1325.29 | -1315.82 | -33.82 | 13.07 | 52.74 |
| S-35 | -1294.95 | -1286.04 | 0.40 | 52.74 | 65.04 |
| S-36 | -1285.00 | -1277.62 | -26.15 | 65.04 | 101.50 |
| S-37 | -1270.45 | -1257.70 | 0.10 | 101.50 | 118.27 |
| S-38 | -1250.22 | -1241.58 | 2.22 | 118.27 | 125.94 |
| S-39 | -1226.43 | -1226.43 | 57.89 | 125.94 | 129.48 |
| S-40 | -1221.64 | -1221.64 | 46.18 | 129.48 | 129.48 |
| S-41 | -1218.40 | -1218.40 | 67.90 | 129.48 | 129.48 |
| S-42 | -1222.47 | -1219.18 | 9.78 | 129.48 | 129.48 |
| | -1219.18 | -1219.18 | 61.72 | 129.48 | 129.48 |
| | -1220.27 | -1220.27 | 7.05 | 129.48 | 129.48 |

| Position | Nr [kN] | Nr [kN] | Vs [kN] | Vs [kN] | min Mt max Mt [kNm] |
|----------|------------|------------|------------|------------|---------------------------|
| S-44 | -1326.36 | -1336.83 | 25.31 | 2.02 | 13.07 |
| | | | | | 21.40 |



| Balkenschnittgrößen | | Normalkraft N in [kN] | FE-Mod. BR-TÜ-EZ Endzustand Bauvorhaben 22-078 Instandsetzung Fußgängerbrücke | Maßstab: 1:85 |
|--|--|-----------------------|---|---------------|
| lastkombinationsweise dargestellt aus Lastkombination LK-14 Max = -1253, Min = -1443 | | | Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10 | Seite |



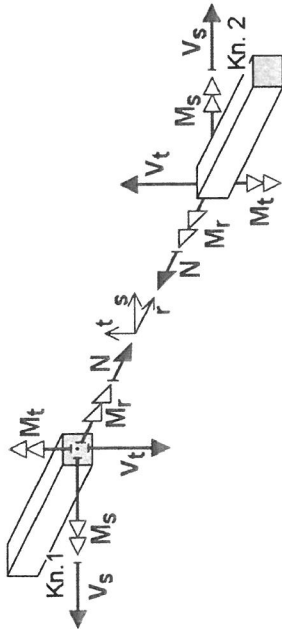


| Balkenschnittgrößen | | Moment M in [kNm] | FE-Mod. BR-TÜ-EZ Endzustand Bauvorhaben 22-078 Instandsetzung Fußgängerbrücke | Maßstab: 1:85 |
|--|--|-------------------|---|---------------|
| lastkombinationsweise dargestellt aus Lastkombination LK-14 Max = 168, Min = -72 | | | | |
| Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10 | | | | |
| MicroFe 2018.051 | | | | |

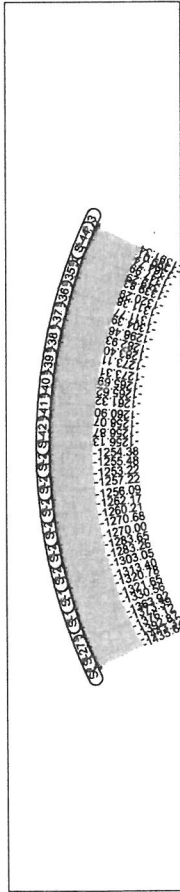
Balkenschnittgr-Stb

Schnittgrößen

Schnittgrößen der Stützen und 3D-Stäbe



Normalkraft Nr [kN]



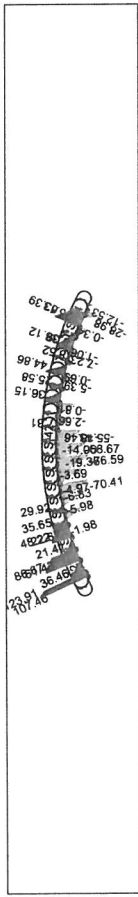
aus Lastkombination LK-14

| Position | min Nr [kN] | max Nr [kN] | Vs [kN] | Mt [kNm] |
|----------|----------------|----------------|------------|-------------|
| S-16 | -1443.32 | 123.91 | 123.91 | 0.00 |
| S-17 | -1435.64 | 107.46 | 107.46 | 38.30 |
| S-18 | -1373.39 | 86.67 | 86.67 | 55.69 |
| S-19 | -1363.92 | 61.43 | 61.43 | 118.96 |
| S-20 | -1330.56 | 21.41 | 21.41 | 118.96 |
| S-21 | -1321.65 | -5.32 | -5.32 | 126.59 |
| S-22 | -1320.78 | 48.22 | 48.22 | 126.59 |
| S-23 | -1313.40 | 22.67 | 22.67 | 159.80 |
| S-24 | -1303.05 | 35.65 | 35.65 | 159.80 |
| S-25 | -1283.26 | -43.54 | -43.54 | 155.53 |
| S-26 | -1283.65 | 29.92 | 29.92 | 155.53 |
| S-27 | -1270.00 | -41.95 | -41.95 | 148.99 |
| S-28 | -1270.68 | -4.97 | -4.97 | 148.99 |
| S-29 | -1260.21 | -70.41 | -70.41 | 110.55 |
| S-30 | -1262.17 | 4.01 | 4.01 | 110.55 |
| S-31 | -1256.09 | -56.79 | -56.79 | 83.83 |
| S-32 | -1257.22 | -19.36 | -19.36 | 83.83 |
| S-33 | -1253.22 | -76.59 | -76.59 | 35.60 |
| S-34 | -1255.48 | -14.00 | -14.00 | 35.60 |
| S-35 | -1254.38 | -68.67 | -68.67 | -5.78 |
| S-36 | -1392.87 | 36.46 | 36.46 | 38.30 |
| S-37 | -1376.12 | -0.81 | -0.81 | 55.69 |
| S-38 | -1399.01 | -28.98 | -28.98 | 0.00 |

Position

| Position | min Nr [kN] | max Nr [kN] | Vs [kN] | Mt [kNm] |
|----------|----------------|----------------|------------|-------------|
| S-34 | -1391.34 | -12.53 | -12.53 | 6.87 |
| S-35 | -1349.29 | -22.43 | -22.43 | -36.80 |
| S-36 | -1339.83 | 2.82 | 2.82 | -28.43 |
| S-37 | -1320.29 | 9.39 | 9.39 | -28.43 |
| S-38 | -1311.38 | 36.12 | 36.12 | -50.01 |
| S-39 | -1311.77 | -17.03 | -17.03 | -50.01 |
| S-40 | -1304.39 | 8.52 | 8.52 | -46.02 |
| S-41 | -1298.46 | -17.25 | -17.25 | -46.02 |
| S-42 | -1282.93 | 44.86 | 44.86 | -60.76 |
| S-43 | -1283.40 | -28.58 | -28.58 | -60.76 |
| S-44 | -1273.11 | 25.58 | 25.58 | -59.65 |
| S-45 | -1273.31 | -11.48 | -11.48 | -59.65 |
| S-46 | -1265.69 | 36.15 | 36.15 | -72.42 |
| S-47 | -1265.62 | -38.53 | -38.53 | -72.42 |
| S-48 | -1261.32 | 4.46 | 4.46 | -55.50 |
| S-49 | -1260.90 | -33.10 | -33.10 | -55.50 |
| S-50 | -1258.07 | 7.31 | 7.31 | -42.71 |
| S-51 | -1256.87 | -55.43 | -55.43 | -42.71 |
| S-52 | -1256.13 | -18.46 | -18.46 | -5.78 |
| S-53 | -1364.74 | 26.13 | 26.13 | 6.87 |
| S-54 | -1347.99 | 63.39 | 63.39 | -36.80 |

Querkraft Vs [kN]



aus Lastkombination LK-14

| Position | Nr [kN] | min Vs max Vs [kN] | Mt [kNm] |
|----------|------------|--------------------------|-------------|
| S-16 | -1435.64 | 107.46 | 38.30 |
| S-17 | -1443.32 | 123.91 | 0.00 |
| S-18 | -1363.92 | 61.43 | 118.96 |
| S-19 | -1373.39 | 86.67 | 55.69 |
| S-20 | -1321.65 | -5.32 | 126.59 |
| S-21 | -1330.56 | 21.41 | 118.96 |
| S-22 | -1313.40 | 22.67 | 159.80 |
| S-23 | -1320.78 | 48.22 | 126.59 |
| S-24 | -1283.26 | -43.54 | 155.53 |
| S-25 | -1303.05 | 35.65 | 159.80 |
| S-26 | -1270.00 | -41.95 | 148.99 |
| S-27 | -1283.65 | 29.92 | 155.53 |
| S-28 | -1260.21 | -70.41 | 110.55 |
| S-29 | -1270.68 | -4.97 | 148.99 |
| S-30 | -1256.09 | -56.79 | 83.83 |
| S-31 | -1262.17 | 4.01 | 110.55 |
| S-32 | -1253.22 | -76.59 | 35.60 |
| S-33 | -1257.22 | -19.36 | 83.83 |
| S-34 | -1254.38 | -68.67 | -5.78 |
| S-35 | -1255.48 | -14.00 | 35.60 |
| S-36 | -1376.12 | -0.81 | 55.69 |
| S-37 | -1392.87 | 36.46 | 38.30 |
| S-38 | -1399.01 | -28.98 | 0.00 |
| S-39 | -1391.34 | -12.53 | 6.87 |
| S-40 | -1349.29 | -22.43 | -36.80 |
| S-41 | -1339.83 | 2.82 | -28.43 |
| S-42 | -1320.29 | 9.39 | -28.43 |
| S-43 | -1311.38 | 36.12 | -50.01 |
| S-44 | -1311.77 | -17.03 | -50.01 |
| S-45 | -1304.39 | 8.52 | -46.02 |
| S-46 | -1298.46 | -17.25 | -46.02 |
| S-47 | -1282.93 | 44.86 | -60.76 |
| S-48 | -1283.40 | -28.58 | -60.76 |
| S-49 | -1273.11 | 25.58 | -59.65 |
| S-50 | -1273.31 | -11.48 | -59.65 |
| S-51 | -1265.69 | 36.15 | -72.42 |
| S-52 | -1265.62 | -38.53 | -72.42 |
| S-53 | -1261.32 | 4.46 | -55.50 |
| S-54 | -1260.90 | -33.10 | -55.50 |
| S-55 | -1258.07 | 7.31 | -42.71 |
| S-56 | -1256.87 | -55.43 | -42.71 |
| S-57 | -1256.13 | -18.46 | -5.78 |
| S-58 | -1364.74 | 26.13 | 6.87 |

4,85

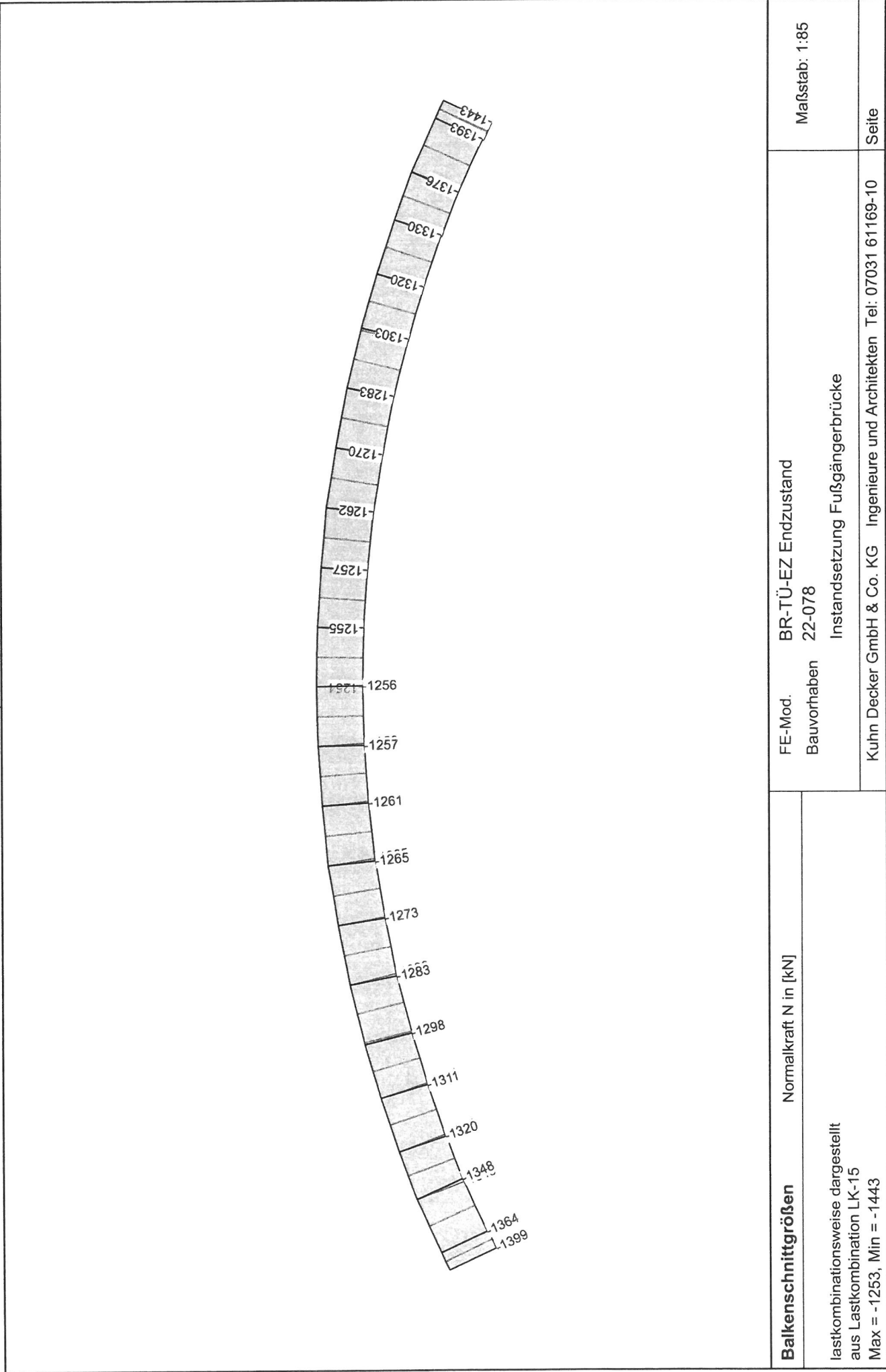
Moment Mt [kNm]



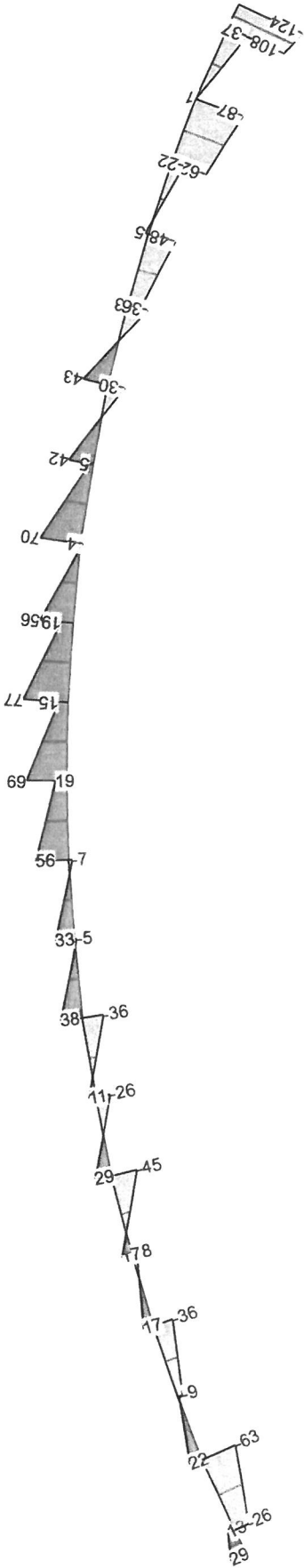
aus Lastkombination LK-14

| Position | Nr [kN] | Vs [kN] | min Mt max Mt [kNm] |
|----------|------------|------------|---------------------------|
| S-16 | -1443.32 | 123.91 | 0.00 |
| S-17 | -1435.64 | 107.46 | 38.30 |
| S-18 | -1373.39 | 86.67 | 55.69 |
| S-19 | -1363.92 | 61.43 | 118.96 |
| S-20 | -1330.56 | 21.41 | 118.96 |
| S-21 | -1323.87 | 1.36 | 127.06 |
| S-22 | -1320.78 | 48.22 | 126.59 |
| S-23 | -1313.40 | 22.67 | 159.80 |
| S-24 | -1283.26 | -43.54 | 155.53 |
| S-25 | -1295.11 | 3.84 | 167.97 |
| S-26 | -1270.00 | -41.95 | 148.99 |
| S-27 | -1278.42 | 2.36 | 161.69 |
| S-28 | -1260.21 | -70.41 | 110.55 |
| S-29 | -1270.68 | -4.97 | 148.99 |
| S-30 | -1256.09 | -56.79 | 83.83 |
| S-31 | -1261.40 | -3.69 | 110.57 |
| S-32 | -1253.22 | -76.59 | 35.60 |
| S-33 | -1257.22 | -19.36 | 83.83 |
| S-34 | -1254.38 | -68.67 | -5.78 |
| S-35 | -1255.48 | -14.00 | 35.60 |
| S-36 | -1392.87 | 36.46 | 38.30 |
| S-37 | -1376.12 | -0.81 | 55.69 |
| S-38 | -1399.01 | -28.98 | 0.00 |
| S-39 | -1391.34 | -12.53 | 6.87 |
| S-40 | -1349.29 | -22.43 | -36.80 |
| S-41 | -1341.01 | -0.34 | -28.29 |
| S-42 | -1311.38 | 36.12 | -50.01 |
| S-43 | -1320.29 | 9.39 | -28.43 |
| S-44 | -1311.77 | -17.03 | -50.01 |
| S-45 | -1307.16 | -1.06 | -44.72 |
| S-46 | -1282.93 | 44.86 | -60.76 |
| S-47 | -1294.03 | 0.46 | -43.64 |
| S-48 | -1283.40 | -28.58 | -60.76 |
| S-49 | -1278.10 | -0.69 | -53.32 |
| S-50 | -1265.69 | 36.15 | -72.42 |
| S-51 | -1271.36 | 0.70 | -58.29 |
| S-52 | -1265.62 | -38.53 | -72.42 |
| S-53 | -1261.85 | -0.81 | -55.27 |
| S-54 | -1260.90 | -33.10 | -55.50 |
| S-55 | -1258.42 | 2.33 | -42.10 |
| S-56 | -1256.87 | -55.43 | -42.71 |
| S-57 | -1256.13 | -18.46 | -5.78 |

| Position | Nr [kN] | Vs [kN] | min Mt max Mt [kNm] |
|----------|------------|------------|---------------------------|
| S-44 | -1347.99 | 63.39 | -36.80 |
| | -1364.74 | 26.13 | 6.87 |



| Balkenschnittgrößen | Normalkraft N in [kN] | |
|---------------------|--|---------------|
| | lastkombinationsweise dargestellt aus Lastkombination LK-15 Max = -1253, Min = -1443 | |
| FE-Mod. | BR-TÜ-EZ Endzustand | Maßstab: 1:85 |
| Bauvorhaben | 22-078 | |
| | Instandsetzung Fußgängerbrücke | |
| | Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10 | Seite |



Balkenschnittgrößen

Querkraft V in [kN]

lastkombinationsweise dargestellt
aus Lastkombination LK-15
Max = 77, Min = -124

FE-Mod. BR-TÜ-EZ Endzustand

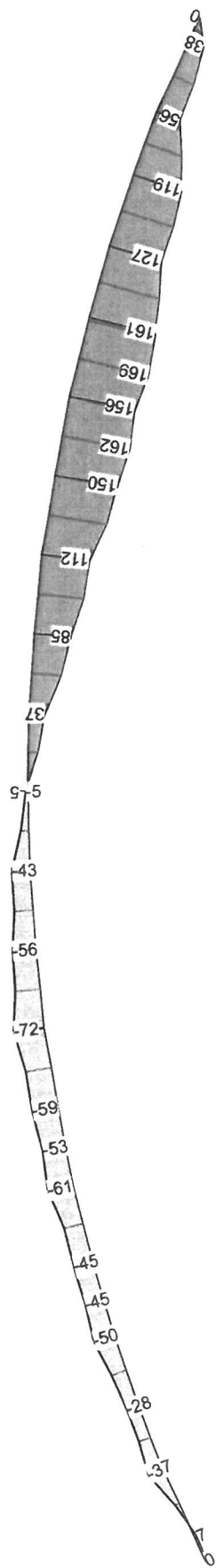
Bauvorhaben 22-078

Instandsetzung Fußgängerbrücke

Maßstab: 1:85

Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10

Seite



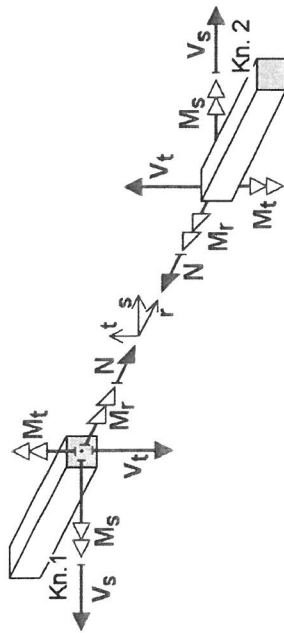
| Balkenschnittgrößen | | Moment M in [kNm] | FE-Mod. BR-TÜ-EZ Endzustand Bauvorhaben 22-078 Instandsetzung Fußgängerbrücke | Maßstab: 1:85 |
|--|--|-------------------|---|---------------|
| lastkombinationsweise dargestellt aus Lastkombination LK-15 Max = 169, Min = -72 | | | Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10 | Seite |

Balkenschnittgr-Stb

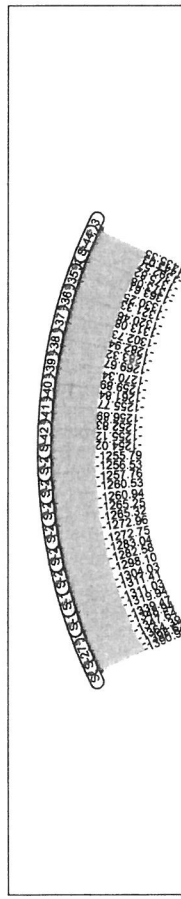
Schnittgrößen Stb-Stützen und 3D-Stäbe

Schnittgrößen

Schnittgrößen der Stützen und 3D-Stäbe



Normalkraft Nr [kN]



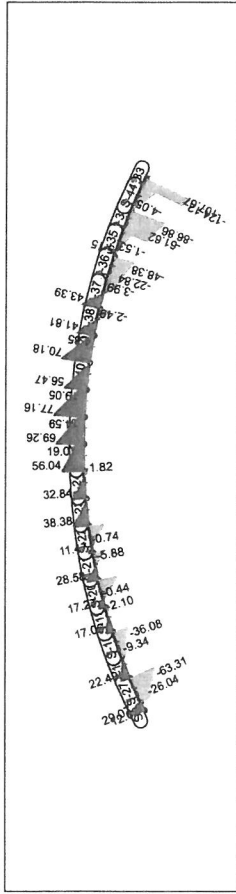
aus Lastkombination LK-15

| Position | min Nr [kN] | max Nr [kN] | Vs [kN] | Mt [kNm] |
|----------|----------------|----------------|------------|-------------|
| S-16 | -1398.67 | 29.07 | 29.07 | 0.00 |
| S-17 | -1348.94 | 12.62 | 12.62 | 6.90 |
| S-18 | -1339.47 | 22.49 | 22.49 | -36.70 |
| S-19 | -1319.94 | -2.76 | -2.76 | -28.26 |
| S-20 | -1311.03 | -9.34 | -9.34 | -49.81 |
| S-21 | -1311.41 | -36.08 | -36.08 | -49.81 |
| S-22 | -1304.03 | -49.81 | -49.81 | -45.79 |
| S-23 | -1298.10 | -8.48 | -8.48 | -45.79 |
| S-24 | -1282.58 | 17.27 | 17.27 | -60.51 |
| S-25 | -1283.04 | -44.84 | -44.84 | -60.51 |
| S-26 | -1272.75 | 28.58 | 28.58 | -59.40 |
| S-27 | -1272.96 | -25.58 | -25.58 | -59.40 |
| S-28 | -1265.32 | 11.47 | 11.47 | -72.23 |
| S-29 | -1265.25 | -36.27 | -36.27 | -72.23 |
| S-30 | -1260.94 | 38.38 | 38.38 | -55.51 |
| S-31 | -1260.53 | -4.71 | -4.71 | -55.51 |
| S-32 | -1257.76 | 32.84 | 32.84 | -42.54 |
| S-33 | -1256.53 | -6.69 | -6.69 | -42.54 |
| S-34 | -1255.79 | 56.04 | 56.04 | -5.01 |
| S-35 | -1364.39 | 19.07 | 19.07 | 6.90 |
| S-36 | -1347.64 | -26.04 | -26.04 | -36.70 |
| S-37 | -1443.03 | -63.31 | -63.31 | 0.00 |

Position

| Position | min Nr [kN] | max Nr [kN] | Vs [kN] | Mt [kNm] |
|----------|----------------|----------------|------------|-------------|
| S-34 | -1435.35 | -107.67 | -107.67 | 38.37 |
| S-35 | -1373.08 | -86.86 | -86.86 | 55.96 |
| S-36 | -1363.61 | -61.62 | -61.62 | 119.39 |
| S-37 | -1330.25 | -21.59 | -21.59 | 119.39 |
| S-38 | -1321.33 | 5.15 | 5.15 | 127.19 |
| S-39 | -1320.46 | -48.38 | -48.38 | 127.19 |
| S-40 | -1313.08 | -22.84 | -22.84 | 160.54 |
| S-41 | -1302.73 | -35.80 | -35.80 | 160.54 |
| S-42 | -1282.94 | 43.39 | 43.39 | 156.43 |
| S-43 | -1283.32 | -30.05 | -30.05 | 156.43 |
| S-44 | -1269.67 | 41.81 | 41.81 | 150.03 |
| S-45 | -1270.34 | 4.85 | 4.85 | 150.03 |
| S-46 | -1259.89 | 70.18 | 70.18 | 111.77 |
| S-47 | -1261.84 | -4.22 | -4.22 | 111.77 |
| S-48 | -1255.77 | 56.47 | 56.47 | 85.31 |
| S-49 | -1256.89 | 19.05 | 19.05 | 85.31 |
| S-50 | -1252.83 | 77.16 | 77.16 | 36.95 |
| S-51 | -1255.12 | 14.59 | 14.59 | 36.95 |
| S-52 | -1254.02 | 69.26 | 69.26 | -5.01 |
| S-53 | -1392.57 | -36.66 | -36.66 | 38.37 |
| S-54 | -1375.82 | 0.61 | 0.61 | 55.96 |

Querkraft Vs [kN]



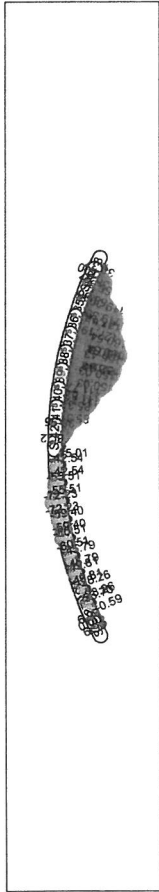
aus Lastkombination LK-15

| Position | Nr | min Vs | Mt |
|----------|----------|---------|--------|
| | | max Vs | |
| | | [kN] | [kNm] |
| S-16 | -1390.99 | 12.62 | 6.90 |
| | -1398.67 | 29.07 | 0.00 |
| S-17 | -1339.47 | -2.76 | -28.26 |
| | -1348.94 | 22.49 | -36.70 |
| S-18 | -1311.03 | -36.08 | -49.81 |
| | -1319.94 | -9.34 | -28.26 |
| S-19 | -1304.03 | -8.48 | -45.79 |
| | -1311.41 | 17.06 | -49.81 |
| S-20 | -1282.58 | -44.84 | -60.51 |
| | -1298.10 | 17.27 | -45.79 |
| S-21 | -1272.75 | -25.58 | -59.40 |
| | -1283.04 | 28.58 | -60.51 |
| S-22 | -1265.32 | -36.27 | -72.23 |
| | -1272.96 | 11.47 | -59.40 |
| S-23 | -1260.94 | -4.71 | -55.51 |
| | -1265.25 | 38.38 | -72.23 |
| S-24 | -1257.76 | -6.69 | -42.54 |
| | -1260.53 | 32.84 | -55.51 |
| S-25 | -1255.79 | 19.07 | -5.01 |
| | -1256.53 | 56.04 | -42.54 |
| S-27 | -1347.64 | -63.31 | -36.70 |
| | -1364.39 | -26.04 | 6.90 |
| S-33 | -1443.03 | -124.12 | 0.00 |
| | -1435.35 | -107.67 | 38.37 |
| S-34 | -1373.08 | -86.86 | 55.96 |
| | -1363.61 | -61.62 | 119.39 |
| S-35 | -1330.25 | -21.59 | 119.39 |
| | -1321.33 | 5.15 | 127.19 |
| S-36 | -1320.46 | -48.38 | 127.19 |
| | -1313.08 | -22.84 | 160.54 |
| S-37 | -1302.73 | -35.80 | 160.54 |
| | -1282.94 | 43.39 | 156.43 |
| S-38 | -1283.32 | -30.05 | 156.43 |
| | -1269.67 | 41.81 | 150.03 |
| S-39 | -1270.34 | 4.85 | 150.03 |
| | -1259.89 | 70.18 | 111.77 |
| S-40 | -1261.84 | -4.22 | 111.77 |
| | -1255.77 | 56.47 | 85.31 |

Position

| Position | Nr | min Vs | Mt |
|----------|----------|--------|-------|
| | | max Vs | |
| | | [kN] | [kNm] |
| S-41 | -1256.89 | 19.05 | 85.31 |
| | -1252.83 | 77.16 | 36.95 |
| S-42 | -1255.12 | 14.59 | 36.95 |
| | -1254.02 | 69.26 | -5.01 |
| S-44 | -1392.57 | -36.66 | 38.37 |
| | -1375.82 | 0.61 | 55.96 |

Moment Mt [kNm]



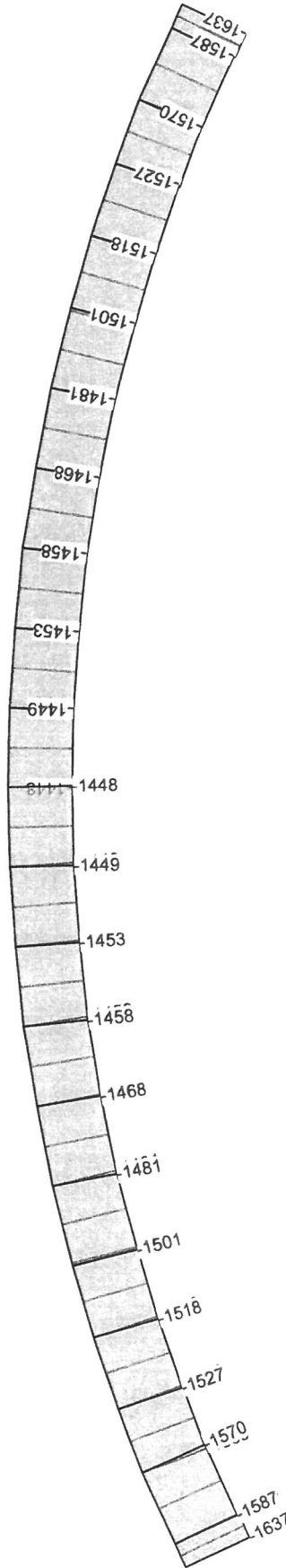
aus Lastkombination LK-15

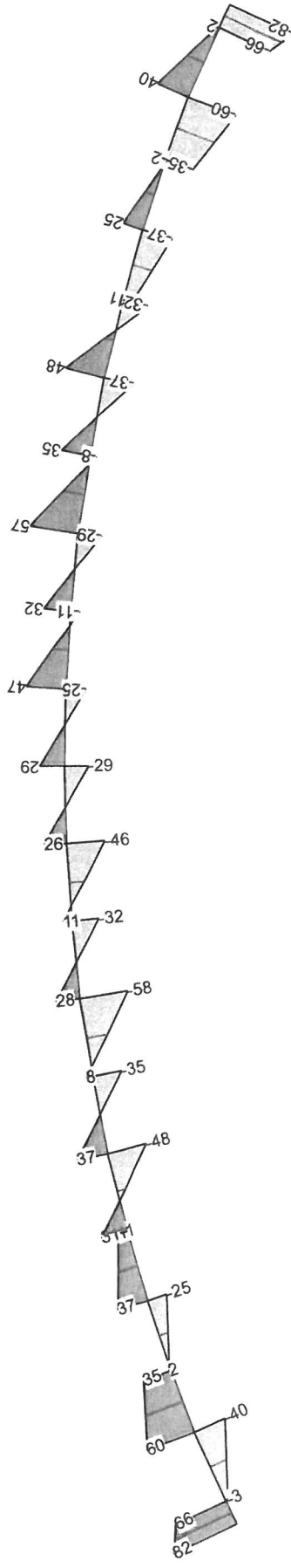
| Position | Nr Nr | Nr [kN] | Vs Vs [kN] | min Mt max Mt [kNm] |
|----------|----------|------------|------------------|---------------------------|
| S-16 | -1398.67 | 29.07 | 12.62 | 0.00 |
| S-17 | -1390.99 | 12.62 | 22.49 | 6.90 |
| S-18 | -1348.94 | 22.49 | 0.40 | -36.70 |
| S-19 | -1340.66 | 0.40 | -36.08 | -28.14 |
| S-20 | -1311.03 | -36.08 | -9.34 | -49.81 |
| S-21 | -1319.94 | -9.34 | 17.06 | -28.26 |
| S-22 | -1311.41 | 17.06 | 1.10 | -49.81 |
| S-23 | -1306.80 | 1.10 | -44.84 | -44.49 |
| S-24 | -1282.58 | -44.84 | -0.44 | -60.51 |
| S-25 | -1293.68 | -0.44 | 28.58 | -43.40 |
| S-26 | -1283.04 | 28.58 | 0.69 | -60.51 |
| S-27 | -1277.74 | 0.69 | -36.27 | -53.06 |
| S-28 | -1265.32 | -36.27 | -0.74 | -72.23 |
| S-29 | -1271.00 | -0.74 | 38.38 | -58.04 |
| S-30 | -1265.25 | 38.38 | 0.58 | -72.23 |
| S-31 | -1261.47 | 0.58 | 32.84 | -55.25 |
| S-32 | -1260.53 | 32.84 | -1.82 | -55.51 |
| S-33 | -1258.10 | -1.82 | 56.04 | -42.01 |
| S-34 | -1256.53 | 56.04 | 19.07 | -42.54 |
| S-35 | -1255.79 | 19.07 | -63.31 | -5.01 |
| S-36 | -1347.64 | -63.31 | -26.04 | -36.70 |
| S-37 | -1364.39 | -26.04 | -124.12 | 6.90 |
| S-38 | -1443.03 | -124.12 | -107.67 | 0.00 |
| S-39 | -1435.35 | -107.67 | -86.86 | 38.37 |
| S-40 | -1373.08 | -86.86 | -61.62 | 55.96 |
| S-41 | -1363.61 | -61.62 | -21.59 | 119.39 |
| S-42 | -1330.25 | -21.59 | -1.53 | 119.39 |
| S-43 | -1323.56 | -1.53 | -48.38 | 127.62 |
| S-44 | -1320.46 | -48.38 | -22.84 | 127.19 |
| S-45 | -1313.08 | -22.84 | 43.39 | 160.54 |
| S-46 | -1282.94 | 43.39 | -3.99 | 156.43 |
| S-47 | -1294.78 | -3.99 | 41.81 | 168.78 |
| S-48 | -1269.67 | 41.81 | -2.49 | 150.03 |
| S-49 | -1278.08 | -2.49 | 70.18 | 162.64 |
| S-50 | -1259.89 | 70.18 | 4.85 | 111.77 |
| S-51 | -1270.34 | 4.85 | 56.47 | 150.03 |
| S-52 | -1255.77 | 56.47 | 3.47 | 85.31 |
| S-53 | -1261.07 | 3.47 | 77.16 | 111.82 |
| S-54 | -1252.83 | 77.16 | 19.05 | 36.95 |
| S-55 | -1256.89 | 19.05 | 69.26 | 85.31 |
| S-56 | -1254.02 | 69.26 | 14.59 | -5.01 |
| S-57 | -1255.12 | 14.59 | | 36.95 |

Position

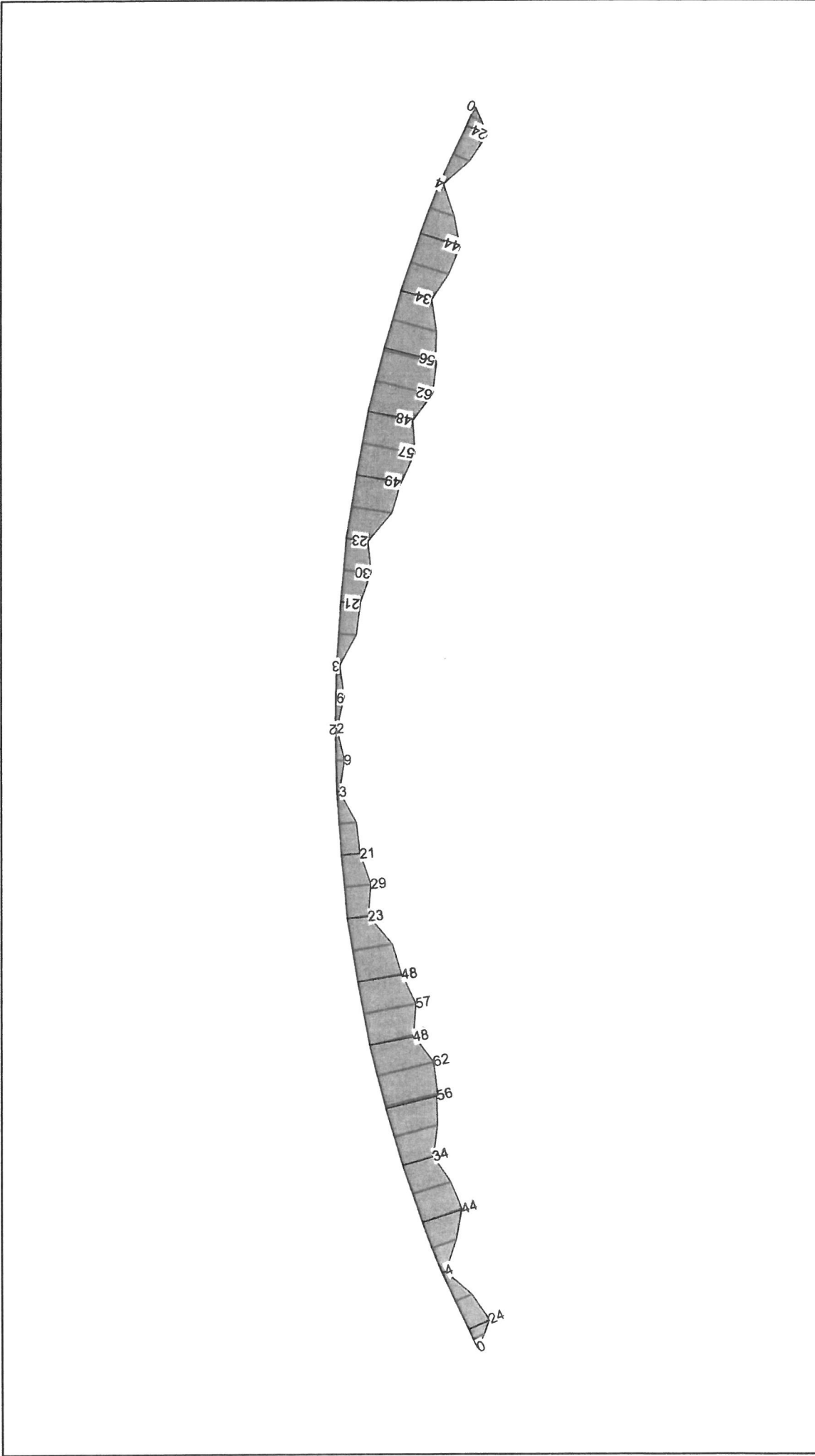
S-44

| Nr | Nr | Vs | min Mt |
|----------|----------|--------|--------|
| [kN] | [kN] | [kN] | max Mt |
| -1392.57 | -1375.82 | -36.66 | 38.37 |
| | | 0.61 | 55.96 |

| | | | | | | |
|---|--|----------------------------|--|-----------------------|--|--|
|  | | Balkenschnittgrößen | | Normalkraft N in [kN] | lastkombinationsweise dargestellt aus Lastkombination LK-16 Max = -1448, Min = -1637 | |
| FE-Mod. BR-TÜ-EZ Endzustand Bauvorhaben 22-078 Instandsetzung Fußgängerbrücke | | Maßstab: 1:85 | | | | |
| Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10 | | Seite | | MicroFe 2018.051 | | |



| | | | |
|---|--|---|--|
| Balkenschnittgrößen | Querkraft V in [kN] | FE-Mod. BR-TÜ-EZ Endzustand Bauvorhaben 22-078 Instandsetzung Fußgängerbrücke | |
| lastkombinationsweise dargestellt aus Lastkombination LK-16 Max = 82, Min = -82 | | Maßstab: 1:85 | |
| | Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10 | Seite | |



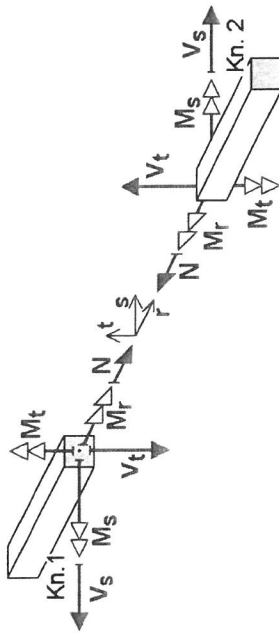
| | | | |
|----------------------------|---|--|---------------|
| Balkenschnittgrößen | Moment M in [kNm] | FE-Mod. BR-TÜ-EZ Endzustand | Maßstab: 1:85 |
| | lastkombinationsweise dargestellt aus Lastkombination LK-16 Max = 62, Min = 0 | Bauvorhaben 22-078 | |
| | | Instandsetzung Fußgängerbrücke | |
| | | Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10 | Seite |

Balkenschnittgr-Stb

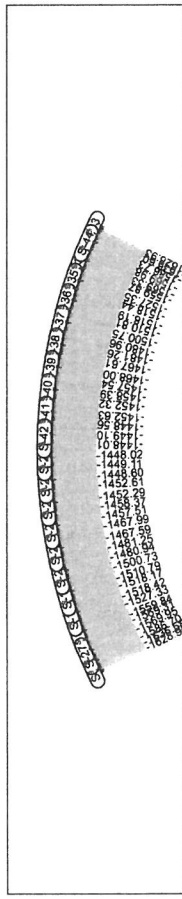
Schnittgrößen

Schnittgrößen Stb-Stützen und 3D-Stäbe

Schnittgrößen der Stützen und 3D-Stäbe



Normalkraft Nr [kN]



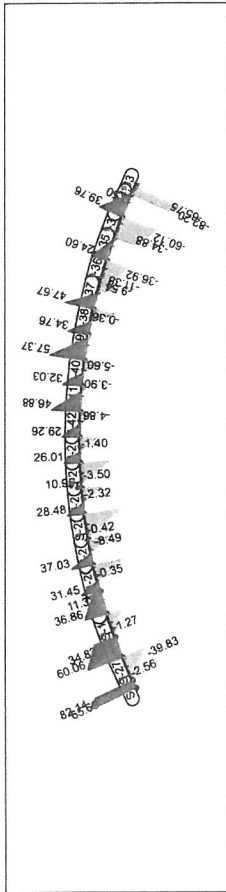
aus Lastkombination LK-16

| Position | min Nr [kN] | max Nr [kN] | Vs [kN] | Mt [kNm] |
|----------|----------------|----------------|------------|-------------|
| S-16 | -1636.58 | 82.14 | 82.14 | 0.00 |
| S-17 | -1628.90 | 65.69 | 65.69 | 24.47 |
| S-18 | -1569.31 | 60.06 | 60.06 | 3.79 |
| S-19 | -1559.84 | 34.82 | 34.82 | 44.32 |
| S-20 | -1527.33 | 2.07 | 2.07 | 44.32 |
| S-21 | -1518.42 | -24.67 | -24.67 | 33.60 |
| S-22 | -1518.17 | 36.86 | 36.86 | 33.60 |
| S-23 | -1510.79 | 11.32 | 11.32 | 56.17 |
| S-24 | -1500.73 | 31.45 | 31.45 | 56.17 |
| S-25 | -1480.94 | -47.73 | -47.73 | 47.58 |
| S-26 | -1481.25 | 37.03 | 37.03 | 47.58 |
| S-27 | -1467.59 | -34.83 | -34.83 | 48.29 |
| S-28 | -1467.99 | 7.90 | 7.90 | 48.29 |
| S-29 | -1457.51 | -57.54 | -57.54 | 22.87 |
| S-30 | -1458.37 | 28.48 | 28.48 | 22.87 |
| S-31 | -1452.29 | -32.32 | -32.32 | 20.75 |
| S-32 | -1452.61 | 10.95 | 10.95 | 20.75 |
| S-33 | -1448.60 | -46.29 | -46.29 | 2.90 |
| S-34 | -1449.11 | 26.01 | 26.01 | 2.90 |
| S-35 | -1448.02 | -28.66 | -28.66 | 1.53 |
| S-36 | -1586.70 | -2.56 | -2.56 | 24.47 |
| S-37 | -1569.95 | -39.83 | -39.83 | 3.79 |
| S-38 | -1636.60 | -82.20 | -82.20 | 0.00 |

Position

| Position | min Nr [kN] | max Nr [kN] | Vs [kN] | Mt [kNm] |
|----------|----------------|----------------|------------|-------------|
| S-34 | -1628.93 | -1569.33 | -65.75 | 24.49 |
| S-35 | -1559.87 | -1527.35 | -34.88 | 3.87 |
| S-36 | -1518.44 | -1518.19 | -2.13 | 44.46 |
| S-37 | -1510.81 | -1510.75 | -11.38 | 44.46 |
| S-38 | -1500.75 | -1480.96 | -31.52 | 33.80 |
| S-39 | -1481.26 | -1467.61 | -37.10 | 56.43 |
| S-40 | -1467.61 | -1468.00 | -34.76 | 47.90 |
| S-41 | -1457.54 | -1458.39 | -7.96 | 48.68 |
| S-42 | -1452.32 | -1452.63 | -28.66 | 23.39 |
| S-43 | -1448.56 | -1448.10 | -46.88 | 21.49 |
| S-44 | -1448.01 | -1586.73 | -25.41 | 3.49 |
| S-45 | -1586.73 | -1569.98 | 29.26 | 1.53 |
| S-46 | -1569.98 | -1569.98 | 2.50 | 24.49 |
| S-47 | -1569.98 | -1569.98 | 39.76 | 3.87 |

Querkraft Vs [kN]



aus Lastkombination LK-16

| Position | Nr [kN] | min Vs max Vs [kN] | Mt [kNm] |
|----------|------------|--------------------------|-------------|
| S-16 | -1628.90 | 65.69 | 24.47 |
| S-17 | -1636.58 | 82.14 | 0.00 |
| S-18 | -1559.84 | 34.82 | 44.32 |
| S-19 | -1569.31 | 60.06 | 3.79 |
| S-20 | -1518.42 | -24.67 | 33.60 |
| S-21 | -1527.33 | 2.07 | 44.32 |
| S-22 | -1510.79 | 11.32 | 56.17 |
| S-23 | -1518.17 | 36.86 | 33.60 |
| S-24 | -1480.94 | -47.73 | 47.58 |
| S-25 | -1500.73 | 31.45 | 56.17 |
| S-26 | -1467.59 | -34.83 | 48.29 |
| S-27 | -1481.25 | 37.03 | 47.58 |
| S-28 | -1457.51 | -57.54 | 22.87 |
| S-29 | -1467.99 | 7.90 | 48.29 |
| S-30 | -1452.29 | -32.32 | 20.75 |
| S-31 | -1458.37 | 28.48 | 22.87 |
| S-32 | -1448.60 | -46.29 | 2.90 |
| S-33 | -1452.61 | 10.95 | 20.75 |
| S-34 | -1448.02 | -28.66 | 1.53 |
| S-35 | -1449.11 | 26.01 | 2.90 |
| S-36 | -1569.95 | -39.83 | 3.79 |
| S-37 | -1586.70 | -2.56 | 24.47 |
| S-38 | -1636.60 | -82.20 | 0.00 |
| S-39 | -1628.93 | -65.75 | 24.49 |
| S-40 | -1569.33 | -60.12 | 3.87 |
| S-41 | -1559.87 | -34.88 | 44.46 |
| S-42 | -1527.35 | -2.13 | 44.46 |
| S-43 | -1518.44 | 24.60 | 33.80 |
| S-44 | -1518.19 | -36.92 | 33.80 |
| S-45 | -1510.81 | -11.38 | 56.43 |
| S-46 | -1500.75 | -31.52 | 56.43 |
| S-47 | -1480.96 | 47.67 | 47.90 |
| S-48 | -1481.26 | -37.10 | 47.90 |
| S-49 | -1467.61 | 34.76 | 48.68 |
| S-50 | -1468.00 | -7.96 | 48.68 |
| S-51 | -1457.54 | 57.37 | 23.39 |
| S-52 | -1458.39 | -28.66 | 23.39 |
| S-53 | -1452.32 | 32.03 | 21.49 |
| S-54 | -1452.63 | -11.23 | 21.49 |

Position

| Position | Nr [kN] | min Vs max Vs [kN] | Mt [kNm] |
|----------|------------|--------------------------|-------------|
| S-42 | -1448.56 | 46.88 | 3.49 |
| S-44 | -1449.10 | -25.41 | 3.49 |
| S-45 | -1448.01 | 29.26 | 1.53 |
| S-46 | -1586.73 | 2.50 | 24.49 |
| S-47 | -1569.98 | 39.76 | 3.87 |

Moment M_t [kNm]

aus Lastkombination LK-16

| Position | Nr | Vs | min Mt |
|----------|----------|--------|--------|
| | Nr | Vs | max Mt |
| | [kN] | [kN] | [kNm] |
| S-16 | -1636.58 | 82.14 | 0.00 |
| | -1628.90 | 65.69 | 24.47 |
| S-17 | -1569.31 | 60.06 | 3.79 |
| | -1559.84 | 34.82 | 44.32 |
| S-18 | -1518.42 | -24.67 | 33.60 |
| | -1526.22 | -1.27 | 44.37 |
| S-19 | -1518.17 | 36.86 | 33.60 |
| | -1510.79 | 11.32 | 56.17 |
| S-20 | -1480.94 | -47.73 | 47.58 |
| | -1492.79 | -0.35 | 62.63 |
| S-21 | -1481.25 | 37.03 | 47.58 |
| | -1474.27 | 0.29 | 57.08 |
| S-22 | -1457.51 | -57.54 | 22.87 |
| | -1466.65 | -0.42 | 48.76 |
| S-23 | -1452.29 | -32.32 | 20.75 |
| | -1455.29 | -2.32 | 29.45 |
| S-24 | -1448.60 | -46.29 | 2.90 |
| | -1451.60 | -3.50 | 21.68 |
| S-25 | -1448.02 | -28.66 | 1.53 |
| | -1448.56 | -1.40 | 9.05 |
| S-27 | -1569.95 | -39.83 | 3.79 |
| | -1586.70 | -2.56 | 24.47 |
| S-33 | -1636.60 | -82.20 | 0.00 |
| | -1628.93 | -65.75 | 24.49 |
| S-34 | -1569.33 | -60.12 | 3.87 |
| | -1559.87 | -34.88 | 44.46 |
| S-35 | -1518.44 | 24.60 | 33.80 |
| | -1526.24 | 1.21 | 44.51 |
| S-36 | -1518.19 | -36.92 | 33.80 |
| | -1510.81 | -11.38 | 56.43 |
| S-37 | -1480.96 | 47.67 | 47.90 |
| | -1492.80 | 0.29 | 62.92 |
| S-38 | -1481.26 | -37.10 | 47.90 |
| | -1474.28 | -0.36 | 57.43 |
| S-39 | -1457.54 | 57.37 | 23.39 |
| | -1466.67 | 0.34 | 49.16 |
| S-40 | -1452.32 | 32.03 | 21.49 |
| | -1455.32 | 2.09 | 30.07 |
| S-41 | -1448.56 | 46.88 | 3.49 |
| | -1451.60 | 3.43 | 22.47 |
| S-42 | -1448.01 | 29.26 | 1.53 |
| | -1448.55 | 1.99 | 9.35 |
| S-44 | -1569.98 | 39.76 | 3.87 |

Horizontallasten

Horizontallasten in der Platte infolge
Verkehr.

$$H_k = 0,1 \times 5,0 \text{ kN/m}^2 \times 2,36 \text{ m} \times 11,4 \text{ m} \times 2 \text{ (li+re)} \\ = 27 \text{ kN}$$

Die auftretenden Horizontallasten werden
als Druck in die Auflager
eingeleitet.

Am Scheitelpunkt auftretende Horizontalk-
Kräfte sind gering und können für die
Bemessung vernachlässigt werden.

$$\text{Maximal } 2 \times 13,5 \times \sin 10^\circ = 4,7 \text{ kN}$$

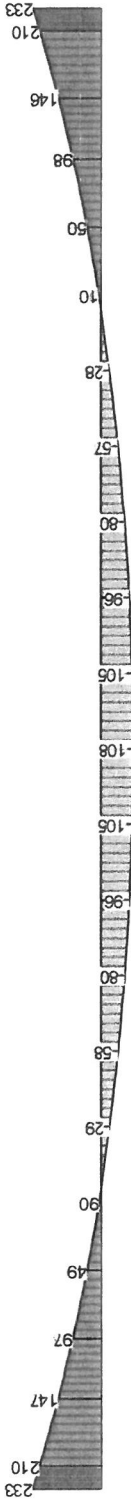
Lastkombinationen

Lastkombinationen für lineare Berechnung

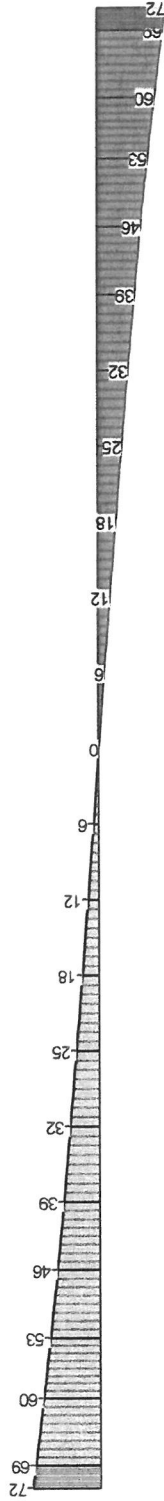
Kombinationen

Manuell vorgegebene Lastkombinationen

| | Ew | Gk | Qk.N | |
|------|----|------|------|--------|
| | Lg | | | |
| | Lf | LF-1 | LF-2 | |
| LK-1 | | | 1.50 | (wind) |



| Balkenschnittgrößen | | Moment Ms in [kNm] | FE-Mod. BR-TÜ-QUER 3D-Modell Bauvorhaben 22-078 Instandsetzung Fußgängerbrücke | Maßstab: 1:100 |
|--|--|--------------------|--|----------------|
| lastkombinationsweise dargestellt aus Lastkombination LK-1 Max = 233, Min = -108 | | (wind) | | |
| | | | Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10 | Seite |

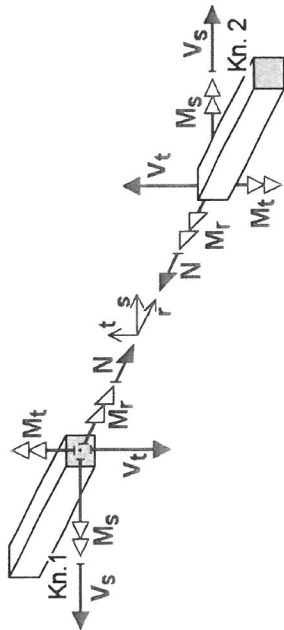


| Balkenschnittgrößen | | Querkraft Vt in [kN] | FE-Mod. BR-TÜ-QUER 3D-Modell Bauvorhaben 22-078 Instandsetzung Fußgängerbrücke | Maßstab: 1:100 |
|--|--|----------------------|--|----------------|
| lastkombinationsweise dargestellt aus Lastkombination LK-1 Max = 72, Min = -72 | | | | |
| | | | Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10 | Seite |

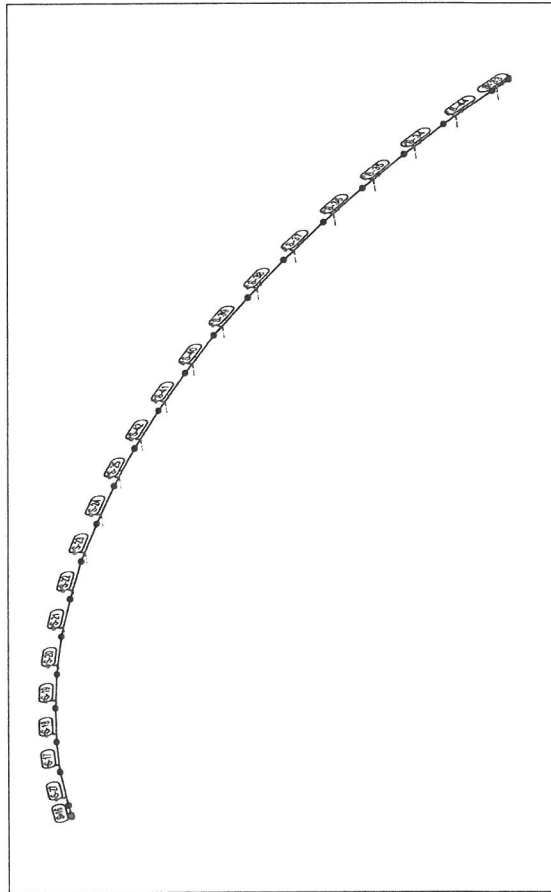
(wind)

Balkenschnittgr-Stb

Schnittgrößen der Stützen und 3D-Stäbe



Normalkraft Nr [kN]



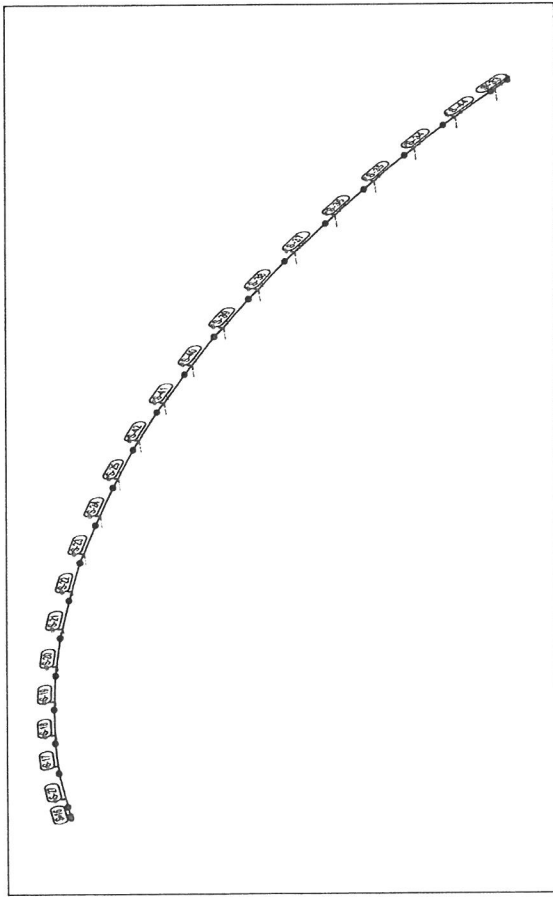
aus Lastkombination LK-1

| Position | min Nr [kN] | max Nr [kN] | Vs [kN] | Vt [kN] | Mr [kNm] | Ms [kNm] | Mt [kNm] |
|----------|----------------|----------------|------------|------------|-------------|-------------|-------------|
| S-16 | 0.00 | 0.00 | 0.00 | -72.44 | 0.01 | 233.21 | 0.00 |
| S-17 | 0.00 | 0.00 | 0.00 | -60.41 | 12.31 | 146.06 | 0.00 |
| S-18 | 0.00 | 0.00 | 0.00 | -53.30 | 15.91 | 96.99 | 0.00 |
| S-19 | 0.00 | 0.00 | 0.00 | -45.90 | 17.92 | 49.30 | 0.00 |

Position

| Position | min Nr [kN] | max Nr [kN] | Vs [kN] | Vt [kN] | Mr [kNm] | Ms [kNm] | Mt [kNm] |
|----------|----------------|----------------|------------|------------|-------------|-------------|-------------|
| S-20 | 0.00 | 0.00 | 0.00 | -39.01 | 18.26 | 8.89 | 0.00 |
| S-21 | 0.00 | 0.00 | 0.00 | -31.75 | 16.65 | -28.55 | 0.00 |
| S-22 | 0.00 | 0.00 | 0.00 | -24.87 | 14.98 | -57.80 | 0.00 |
| S-23 | 0.00 | 0.00 | 0.00 | -18.34 | 10.25 | -80.40 | 0.00 |
| S-24 | 0.00 | 0.00 | 0.00 | -12.09 | 7.40 | -95.94 | 0.00 |
| S-25 | 0.00 | 0.00 | 0.00 | -6.00 | 2.15 | -105.23 | 0.00 |
| S-27 | 0.00 | 0.00 | 0.00 | -69.27 | 3.00 | 209.73 | 0.00 |
| S-33 | 0.00 | 0.00 | 0.00 | 69.27 | -0.01 | 209.84 | 0.00 |
| S-34 | 0.00 | 0.00 | 0.00 | 53.31 | -12.32 | 97.59 | 0.00 |
| S-35 | 0.00 | 0.00 | 0.00 | 45.91 | -15.92 | 50.05 | 0.00 |
| S-36 | 0.00 | 0.00 | 0.00 | 39.02 | -17.93 | 9.60 | 0.00 |
| S-37 | 0.00 | 0.00 | 0.00 | 31.75 | -18.27 | -27.50 | 0.00 |
| S-38 | 0.00 | 0.00 | 0.00 | 24.88 | -16.67 | -57.30 | 0.00 |
| S-39 | 0.00 | 0.00 | 0.00 | 18.35 | -14.99 | -79.63 | 0.00 |
| S-40 | 0.00 | 0.00 | 0.00 | 12.10 | -10.27 | -95.66 | 0.00 |
| S-41 | 0.00 | 0.00 | 0.00 | 6.01 | -7.42 | -104.99 | 0.00 |
| S-42 | 0.00 | 0.00 | 0.00 | 0.00 | -2.17 | -108.23 | 0.00 |
| S-44 | 0.00 | 0.00 | 0.00 | 60.42 | -3.00 | 146.63 | 0.00 |

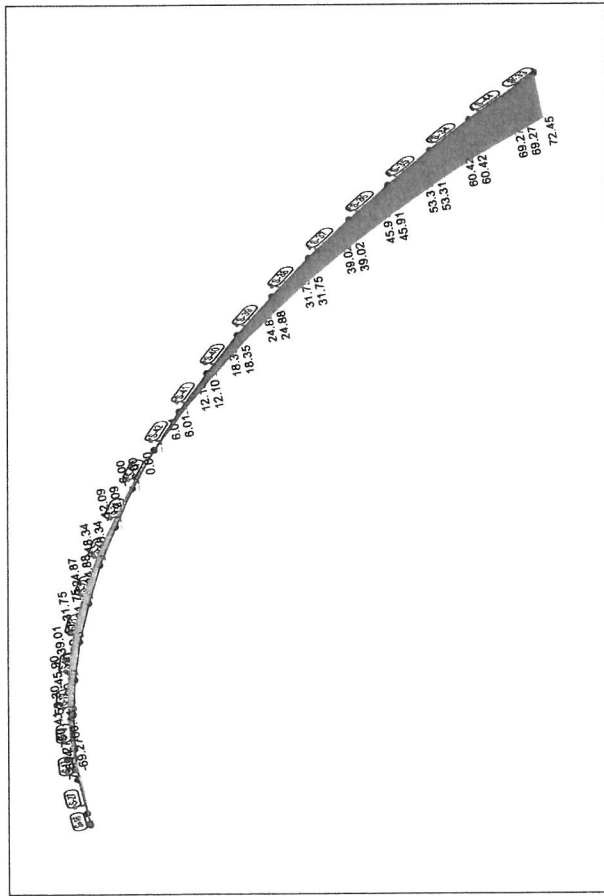
Querkraft Vs [kN]



| Position | aus Lastkombination LK-1 | | | | Mr | | Ms | | Mt | |
|----------|--------------------------|------|------|--------|-------|---------|-------|---------|-------|-------|
| | Nr | min | Vs | Vt | [kNm] | [kNm] | [kNm] | [kNm] | [kNm] | [kNm] |
| S-16 | 0.00 | 0.00 | 0.00 | -72.44 | 0.01 | 233.21 | 0.00 | 233.21 | 0.00 | 0.00 |
| S-17 | 0.00 | 0.00 | 0.00 | -60.41 | 12.31 | 146.06 | 0.00 | 146.06 | 0.00 | 0.00 |
| S-18 | 0.00 | 0.00 | 0.00 | -60.41 | 12.31 | 146.06 | 0.00 | 146.06 | 0.00 | 0.00 |
| S-19 | 0.00 | 0.00 | 0.00 | -53.30 | 15.91 | 96.99 | 0.00 | 96.99 | 0.00 | 0.00 |
| S-20 | 0.00 | 0.00 | 0.00 | -45.90 | 17.92 | 49.30 | 0.00 | 49.30 | 0.00 | 0.00 |
| S-21 | 0.00 | 0.00 | 0.00 | -39.01 | 18.26 | 8.89 | 0.00 | 8.89 | 0.00 | 0.00 |
| S-22 | 0.00 | 0.00 | 0.00 | -31.75 | 16.65 | -28.55 | 0.00 | -28.55 | 0.00 | 0.00 |
| S-23 | 0.00 | 0.00 | 0.00 | -24.87 | 14.98 | -57.80 | 0.00 | -57.80 | 0.00 | 0.00 |
| S-24 | 0.00 | 0.00 | 0.00 | -18.34 | 10.25 | -80.40 | 0.00 | -80.40 | 0.00 | 0.00 |
| S-25 | 0.00 | 0.00 | 0.00 | -12.09 | 7.40 | -95.94 | 0.00 | -95.94 | 0.00 | 0.00 |
| S-27 | 0.00 | 0.00 | 0.00 | -6.00 | 2.15 | -105.23 | 0.00 | -105.23 | 0.00 | 0.00 |
| S-33 | 0.00 | 0.00 | 0.00 | -69.27 | 3.00 | 209.73 | 0.00 | 209.73 | 0.00 | 0.00 |
| | 0.00 | 0.00 | 0.00 | 69.27 | -0.01 | 209.84 | 0.00 | 209.84 | 0.00 | 0.00 |

| Position | Nr | | min Vs | | Vt | Mr | | Ms | | Mt | |
|----------|------|------|--------|-------|--------|--------|---------|------|-------|----|-------|
| | Nr | [kN] | max | Vs | [kN] | Mr | [kNm] | Ms | [kNm] | Mt | [kNm] |
| S-34 | 0.00 | 0.00 | 0.00 | 53.31 | -12.32 | -12.32 | 97.59 | 0.00 | 0.00 | | |
| | 0.00 | 0.00 | 0.00 | 53.31 | -12.32 | -12.32 | 97.59 | 0.00 | 0.00 | | |
| S-35 | 0.00 | 0.00 | 0.00 | 45.91 | -15.92 | -15.92 | 50.05 | 0.00 | 0.00 | | |
| | 0.00 | 0.00 | 0.00 | 45.91 | -15.92 | -15.92 | 50.05 | 0.00 | 0.00 | | |
| S-36 | 0.00 | 0.00 | 0.00 | 39.02 | -17.93 | -17.93 | 9.60 | 0.00 | 0.00 | | |
| | 0.00 | 0.00 | 0.00 | 39.02 | -17.93 | -17.93 | 9.60 | 0.00 | 0.00 | | |
| S-37 | 0.00 | 0.00 | 0.00 | 31.75 | -18.27 | -18.27 | -27.50 | 0.00 | 0.00 | | |
| | 0.00 | 0.00 | 0.00 | 31.75 | -18.27 | -18.27 | -27.50 | 0.00 | 0.00 | | |
| S-38 | 0.00 | 0.00 | 0.00 | 24.88 | -16.67 | -16.67 | -57.30 | 0.00 | 0.00 | | |
| | 0.00 | 0.00 | 0.00 | 24.88 | -16.67 | -16.67 | -57.30 | 0.00 | 0.00 | | |
| S-39 | 0.00 | 0.00 | 0.00 | 18.35 | -14.99 | -14.99 | -79.63 | 0.00 | 0.00 | | |
| | 0.00 | 0.00 | 0.00 | 18.35 | -14.99 | -14.99 | -79.63 | 0.00 | 0.00 | | |
| S-40 | 0.00 | 0.00 | 0.00 | 12.10 | -10.27 | -10.27 | -95.66 | 0.00 | 0.00 | | |
| | 0.00 | 0.00 | 0.00 | 12.10 | -10.27 | -10.27 | -95.66 | 0.00 | 0.00 | | |
| S-41 | 0.00 | 0.00 | 0.00 | 6.01 | -7.42 | -7.42 | -104.99 | 0.00 | 0.00 | | |
| | 0.00 | 0.00 | 0.00 | 6.01 | -7.42 | -7.42 | -104.99 | 0.00 | 0.00 | | |
| S-42 | 0.00 | 0.00 | 0.00 | 0.00 | -2.17 | -2.17 | -108.23 | 0.00 | 0.00 | | |
| | 0.00 | 0.00 | 0.00 | 0.00 | -2.17 | -2.17 | -108.23 | 0.00 | 0.00 | | |
| S-44 | 0.00 | 0.00 | 0.00 | 60.42 | -3.00 | -3.00 | 146.63 | 0.00 | 0.00 | | |
| | 0.00 | 0.00 | 0.00 | 60.42 | -3.00 | -3.00 | 146.63 | 0.00 | 0.00 | | |

Querkraft Vt [kN]

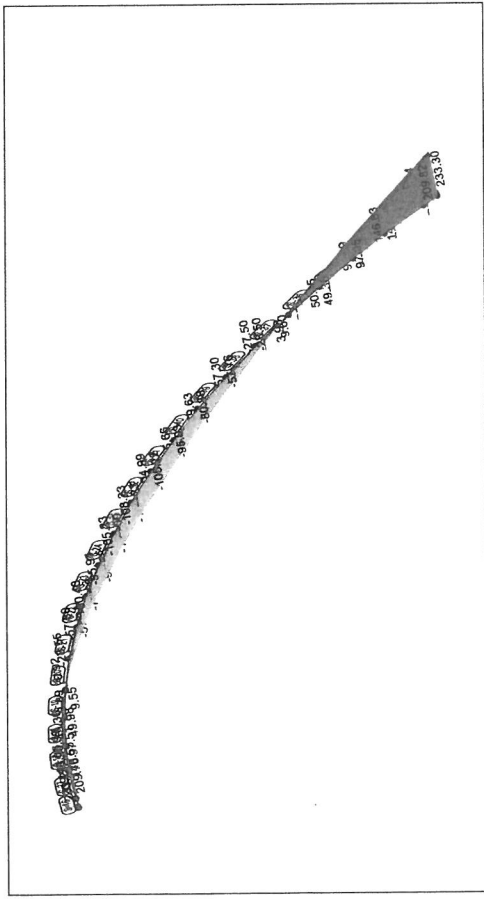


aus Lastkombination LK-1

| Position | Nr | Nr [kN] | Vs [kN] | min Vt [kN] | max Vt [kN] | Mr [kNm] | Ms [kNm] | Mt [kNm] |
|----------|------|------------|------------|----------------|----------------|-------------|-------------|-------------|
| S-16 | 0.00 | 0.00 | 0.00 | -72.44 | 0.01 | 0.01 | 233.21 | 0.00 |
| S-17 | 0.00 | 0.00 | 0.00 | -69.27 | 0.01 | 0.01 | 209.76 | 0.00 |
| S-18 | 0.00 | 0.00 | 0.00 | -60.41 | 12.31 | 12.31 | 146.06 | 0.00 |
| S-19 | 0.00 | 0.00 | 0.00 | -53.30 | 12.31 | 12.31 | 97.51 | 0.00 |
| S-20 | 0.00 | 0.00 | 0.00 | -53.30 | 15.91 | 15.91 | 96.99 | 0.00 |
| S-21 | 0.00 | 0.00 | 0.00 | -45.90 | 15.91 | 15.91 | 49.98 | 0.00 |
| S-22 | 0.00 | 0.00 | 0.00 | -39.01 | 17.92 | 17.92 | 49.30 | 0.00 |
| S-23 | 0.00 | 0.00 | 0.00 | -39.01 | 17.92 | 17.92 | 9.55 | 0.00 |
| S-24 | 0.00 | 0.00 | 0.00 | -31.75 | 18.26 | 18.26 | 8.89 | 0.00 |
| S-25 | 0.00 | 0.00 | 0.00 | -31.75 | 18.26 | 18.26 | -27.55 | 0.00 |
| S-26 | 0.00 | 0.00 | 0.00 | -24.88 | 16.65 | 16.65 | -28.55 | 0.00 |
| S-27 | 0.00 | 0.00 | 0.00 | -24.87 | 16.65 | 16.65 | -57.34 | 0.00 |
| S-28 | 0.00 | 0.00 | 0.00 | -18.34 | 14.98 | 14.98 | -57.80 | 0.00 |
| S-29 | 0.00 | 0.00 | 0.00 | -12.09 | 10.25 | 10.25 | -79.66 | 0.00 |
| S-30 | 0.00 | 0.00 | 0.00 | -12.09 | 10.25 | 10.25 | -80.40 | 0.00 |
| S-31 | 0.00 | 0.00 | 0.00 | -6.00 | 7.40 | 7.40 | -95.68 | 0.00 |
| S-32 | 0.00 | 0.00 | 0.00 | -6.00 | 7.40 | 7.40 | -95.94 | 0.00 |
| S-33 | 0.00 | 0.00 | 0.00 | -6.00 | 7.40 | 7.40 | -105.00 | 0.00 |
| S-34 | 0.00 | 0.00 | 0.00 | -6.00 | 2.15 | 2.15 | -105.23 | 0.00 |
| S-35 | 0.00 | 0.00 | 0.00 | -69.27 | 3.00 | 3.00 | -108.23 | 0.00 |
| S-36 | 0.00 | 0.00 | 0.00 | -60.41 | 3.00 | 3.00 | 209.73 | 0.00 |
| S-37 | 0.00 | 0.00 | 0.00 | -60.41 | 3.00 | 3.00 | 146.55 | 0.00 |

| Position | Nr | Nr [kN] | Vs [kN] | min Vt [kN] | max Vt [kN] | Mr [kNm] | Ms [kNm] | Mt [kNm] |
|----------|------|------------|------------|----------------|----------------|-------------|-------------|-------------|
| S-33 | 0.00 | 0.00 | 0.00 | 72.45 | 0.01 | -0.01 | 209.84 | 0.00 |
| S-34 | 0.00 | 0.00 | 0.00 | 53.31 | 0.00 | -12.32 | 233.30 | 0.00 |
| S-35 | 0.00 | 0.00 | 0.00 | 60.42 | 0.00 | -12.32 | 97.59 | 0.00 |
| S-36 | 0.00 | 0.00 | 0.00 | 45.91 | 0.00 | -15.92 | 146.14 | 0.00 |
| S-37 | 0.00 | 0.00 | 0.00 | 39.02 | 0.00 | -17.93 | 50.05 | 0.00 |
| S-38 | 0.00 | 0.00 | 0.00 | 39.02 | 0.00 | -17.93 | 97.06 | 0.00 |
| S-39 | 0.00 | 0.00 | 0.00 | 31.75 | 0.00 | -18.27 | 9.60 | 0.00 |
| S-40 | 0.00 | 0.00 | 0.00 | 24.88 | 0.00 | -17.93 | -27.50 | 0.00 |
| S-41 | 0.00 | 0.00 | 0.00 | 18.35 | 0.00 | -16.67 | 8.95 | 0.00 |
| S-42 | 0.00 | 0.00 | 0.00 | 12.10 | 0.00 | -14.99 | -57.30 | 0.00 |
| S-43 | 0.00 | 0.00 | 0.00 | 12.10 | 0.00 | -14.99 | -28.50 | 0.00 |
| S-44 | 0.00 | 0.00 | 0.00 | 60.42 | 0.00 | -3.00 | -79.63 | 0.00 |
| S-45 | 0.00 | 0.00 | 0.00 | 69.27 | 0.00 | -3.00 | -57.76 | 0.00 |
| S-46 | 0.00 | 0.00 | 0.00 | 69.27 | 0.00 | -3.00 | -104.99 | 0.00 |
| S-47 | 0.00 | 0.00 | 0.00 | 69.27 | 0.00 | -3.00 | -80.38 | 0.00 |
| S-48 | 0.00 | 0.00 | 0.00 | 69.27 | 0.00 | -3.00 | -95.66 | 0.00 |
| S-49 | 0.00 | 0.00 | 0.00 | 69.27 | 0.00 | -3.00 | -95.93 | 0.00 |
| S-50 | 0.00 | 0.00 | 0.00 | 69.27 | 0.00 | -3.00 | -108.23 | 0.00 |
| S-51 | 0.00 | 0.00 | 0.00 | 69.27 | 0.00 | -3.00 | -105.22 | 0.00 |
| S-52 | 0.00 | 0.00 | 0.00 | 69.27 | 0.00 | -3.00 | 146.63 | 0.00 |
| S-53 | 0.00 | 0.00 | 0.00 | 69.27 | 0.00 | -3.00 | 209.82 | 0.00 |

Moment Ms [kNm]



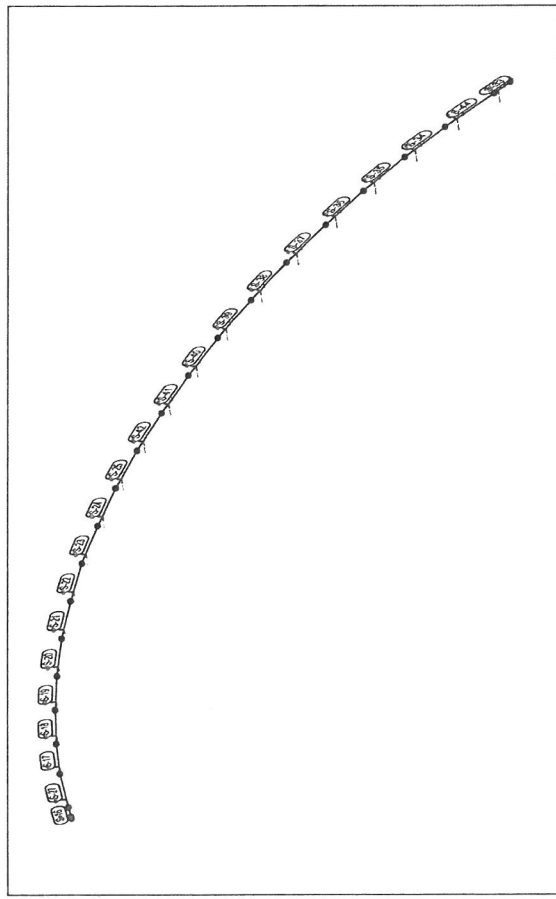
aus Lastkombination LK-1

| Position | Nr Nr [kN] | Vs Vs [kN] | Vt Vt [kN] | Mr Mr [kNm] | min Ms max Ms [kNm] | Mt Mt [kNm] |
|----------|------------------|------------------|------------------|-------------------|---------------------------|-------------------|
| S-16 | 0.00 | 0.00 | -69.27 | 0.01 | 209.76 | 0.00 |
| S-17 | 0.00 | 0.00 | -72.44 | 0.01 | 233.21 | 0.00 |
| S-18 | 0.00 | 0.00 | -53.30 | 12.31 | 97.51 | 0.00 |
| S-19 | 0.00 | 0.00 | -60.41 | 12.31 | 146.06 | 0.00 |
| S-20 | 0.00 | 0.00 | -45.90 | 15.91 | 49.98 | 0.00 |
| S-21 | 0.00 | 0.00 | -53.30 | 15.91 | 96.99 | 0.00 |
| S-22 | 0.00 | 0.00 | -39.01 | 17.92 | 9.55 | 0.00 |
| S-23 | 0.00 | 0.00 | -45.90 | 17.92 | 49.30 | 0.00 |
| S-24 | 0.00 | 0.00 | -31.75 | 18.26 | -27.55 | 0.00 |
| S-25 | 0.00 | 0.00 | -39.01 | 18.26 | 8.89 | 0.00 |
| S-27 | 0.00 | 0.00 | -24.88 | 16.65 | -57.34 | 0.00 |
| S-33 | 0.00 | 0.00 | -31.75 | 16.65 | -28.55 | 0.00 |
| S-34 | 0.00 | 0.00 | -18.34 | 14.98 | -79.66 | 0.00 |
| S-35 | 0.00 | 0.00 | -12.09 | 10.25 | -57.80 | 0.00 |
| S-36 | 0.00 | 0.00 | -18.34 | 10.25 | -95.68 | 0.00 |
| S-37 | 0.00 | 0.00 | -6.00 | 7.40 | -80.40 | 0.00 |
| S-38 | 0.00 | 0.00 | -12.09 | 7.40 | -105.00 | 0.00 |
| S-39 | 0.00 | 0.00 | 0.00 | 2.15 | -95.94 | 0.00 |
| S-40 | 0.00 | 0.00 | -6.00 | 2.15 | -108.23 | 0.00 |
| S-41 | 0.00 | 0.00 | -60.41 | 3.00 | -105.23 | 0.00 |
| S-42 | 0.00 | 0.00 | -69.27 | 3.00 | 146.55 | 0.00 |
| S-43 | 0.00 | 0.00 | 72.45 | -0.01 | 209.73 | 0.00 |
| S-44 | 0.00 | 0.00 | 53.31 | -12.32 | 233.30 | 0.00 |
| S-45 | 0.00 | 0.00 | 60.42 | -12.32 | 97.59 | 0.00 |
| S-46 | 0.00 | 0.00 | 45.91 | -15.92 | 146.14 | 0.00 |
| S-47 | 0.00 | 0.00 | 0.00 | 0.00 | 50.05 | 0.00 |

Position

| Position | Nr Nr [kN] | Vs Vs [kN] | Vt Vt [kN] | Mr Mr [kNm] | min Ms max Ms [kNm] | Mt Mt [kNm] |
|----------|------------------|------------------|------------------|-------------------|---------------------------|-------------------|
| S-36 | 0.00 | 0.00 | 53.31 | -15.92 | 97.06 | 0.00 |
| S-37 | 0.00 | 0.00 | 39.02 | -17.93 | 9.60 | 0.00 |
| S-38 | 0.00 | 0.00 | 45.91 | -17.93 | 49.36 | 0.00 |
| S-39 | 0.00 | 0.00 | 31.75 | -18.27 | -27.50 | 0.00 |
| S-40 | 0.00 | 0.00 | 39.02 | -18.27 | 8.95 | 0.00 |
| S-41 | 0.00 | 0.00 | 24.88 | -16.67 | -57.30 | 0.00 |
| S-42 | 0.00 | 0.00 | 31.75 | -16.67 | -28.50 | 0.00 |
| S-43 | 0.00 | 0.00 | 18.35 | -14.99 | -79.63 | 0.00 |
| S-44 | 0.00 | 0.00 | 24.88 | -14.99 | -57.76 | 0.00 |
| S-45 | 0.00 | 0.00 | 12.10 | -10.27 | -95.66 | 0.00 |
| S-46 | 0.00 | 0.00 | 18.35 | -10.27 | -80.38 | 0.00 |
| S-47 | 0.00 | 0.00 | 6.01 | -7.42 | -104.99 | 0.00 |
| S-48 | 0.00 | 0.00 | 12.10 | -7.42 | -95.93 | 0.00 |
| S-49 | 0.00 | 0.00 | 0.00 | -2.17 | -108.23 | 0.00 |
| S-50 | 0.00 | 0.00 | 6.01 | -2.17 | -105.22 | 0.00 |
| S-51 | 0.00 | 0.00 | 60.42 | -3.00 | 146.63 | 0.00 |
| S-52 | 0.00 | 0.00 | 69.27 | -3.00 | 209.82 | 0.00 |

Moment Mt [kNm]



| Position | aus Lastkombination LK-1 | | | | | | min Mt | |
|----------|--------------------------|------|--------|-------|---------|--------|--------|----|
| | Nr | Vs | Vt | Mr | Ms | max Mt | [kNm] | |
| S-16 | 0.00 | 0.00 | -72.44 | 0.01 | 233.21 | 0.00 | min | Mt |
| S-17 | 0.00 | 0.00 | -72.44 | 0.01 | 233.21 | 0.00 | max | Mt |
| S-18 | 0.00 | 0.00 | -60.41 | 12.31 | 146.06 | 0.00 | [kNm] | |
| S-19 | 0.00 | 0.00 | -53.30 | 15.91 | 96.99 | 0.00 | Ms | Ms |
| S-20 | 0.00 | 0.00 | -45.90 | 17.92 | 49.30 | 0.00 | Mr | Mr |
| S-21 | 0.00 | 0.00 | -39.01 | 18.26 | 8.89 | 0.00 | Vt | Vt |
| S-22 | 0.00 | 0.00 | -31.75 | 16.65 | -28.55 | 0.00 | Vs | Vs |
| S-23 | 0.00 | 0.00 | -24.87 | 14.98 | -57.80 | 0.00 | [kN] | |
| S-24 | 0.00 | 0.00 | -18.34 | 10.25 | -80.40 | 0.00 | [kNm] | |
| S-25 | 0.00 | 0.00 | -12.09 | 7.40 | -95.94 | 0.00 | Ms | Ms |
| S-27 | 0.00 | 0.00 | -6.00 | 2.15 | -105.23 | 0.00 | Mr | Mr |
| S-33 | 0.00 | 0.00 | -69.27 | 3.00 | 209.73 | 0.00 | Vt | Vt |
| | 0.00 | 0.00 | 69.27 | -0.01 | 209.84 | 0.00 | Vs | Vs |
| | 0.00 | 0.00 | 69.27 | -0.01 | 209.84 | 0.00 | [kN] | |
| | | | | | | | [kNm] | |

Position

| Position | Nr | | Vs | | Vt | | Mr | | Ms | | min Mt | |
|----------|------|------|------|-------|-------|--------|--------|---------|---------|-------|--------|-------|
| | Nr | [kN] | Vs | [kN] | Vt | [kN] | Mr | [kNm] | Ms | [kNm] | max Mt | [kNm] |
| S-34 | 0.00 | 0.00 | 0.00 | 53.31 | 53.31 | -12.32 | -12.32 | 97.59 | 97.59 | 0.00 | min | Mt |
| S-35 | 0.00 | 0.00 | 0.00 | 45.91 | 45.91 | -15.92 | -15.92 | 50.05 | 50.05 | 0.00 | max | Mt |
| S-36 | 0.00 | 0.00 | 0.00 | 39.02 | 39.02 | -17.93 | -17.93 | 9.60 | 9.60 | 0.00 | [kNm] | |
| S-37 | 0.00 | 0.00 | 0.00 | 31.75 | 31.75 | -18.27 | -18.27 | -27.50 | -27.50 | 0.00 | Ms | Ms |
| S-38 | 0.00 | 0.00 | 0.00 | 24.88 | 24.88 | -16.67 | -16.67 | -57.30 | -57.30 | 0.00 | Mr | Mr |
| S-39 | 0.00 | 0.00 | 0.00 | 18.35 | 18.35 | -14.99 | -14.99 | -79.63 | -79.63 | 0.00 | Vt | Vt |
| S-40 | 0.00 | 0.00 | 0.00 | 12.10 | 12.10 | -10.27 | -10.27 | -95.66 | -95.66 | 0.00 | Vs | Vs |
| S-41 | 0.00 | 0.00 | 0.00 | 6.01 | 6.01 | -7.42 | -7.42 | -104.99 | -104.99 | 0.00 | [kN] | |
| S-42 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -2.17 | -2.17 | -108.23 | -108.23 | 0.00 | [kNm] | |
| S-44 | 0.00 | 0.00 | 0.00 | 60.42 | 60.42 | -3.00 | -3.00 | 146.63 | 146.63 | 0.00 | Ms | Ms |
| | | | | | | | | | | | Mr | Mr |
| | | | | | | | | | | | Vt | Vt |
| | | | | | | | | | | | Vs | Vs |

BemessungAufgeständerte Platte

Untersucht werden End- und Mittelfeld der Platte.

Baustoffe: B300 $\hat{=}$ C 20/25

$\gamma_{\text{Last, aktuell}} = 1,4$

$\gamma_{\text{act, alt}} = 1,0$

$G_{\text{Stahl, aktuell}} = 43,5 \text{ kN/m}^2$

$G_{\text{Stahl, alt}} = 16 \text{ kN/m}^2$

$$n_{\text{Faktor}} = \frac{[43,5 / 1,4]}{[16 / 1,0]} = 1,95$$

d.h. die mit B500B ermittelte Bewehrung muss mit dem Faktor 1,95 multipliziert werden.

Ergebnis: Die in der aufgeständerten Fahrbahn vorhandene Bewehrung ist ausreichend (siehe folgende Seiten)

Pos. Platte-Ende

Aufgeständerte Platte - Endfeld

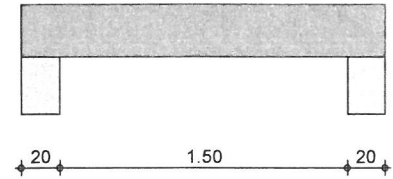
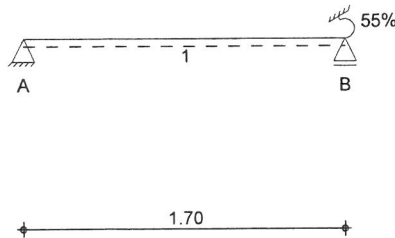
System

Einfeldträger (215.0/27.5/170.0)

System

Ansicht

M 1:40



Abmessungen
Mat./Querschnitt

| Feld | l [m] | Material | b/h [cm] |
|------|----------|----------|-------------|
| 1 | 1.70 | C 20/25 | 215.0/27.5 |

Auflager

| Lager | x [m] | b [cm] | Art | $K_{T,z}$ [kN/m] |
|-------|----------|-----------|-------|---------------------|
| A | 0.00 | 20.0 | Beton | fest |
| B | 1.70 | 20.0 | Beton | fest |

Endeinspannungen

Einspannung rechts
Ersatzlänge

| | | | |
|----------|---|-------|---|
| E_{re} | = | 55.00 | % |
| l_e | = | 1.39 | m |

Belastungen

Belastungen auf das System

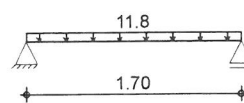
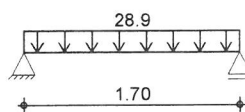
Grafik

Belastungsgrafiken (einwirkungsbezogen)

Einwirkungen

Gk

Qk.N



Streckenlasten
in z-Richtung

Gleichlasten

Feld Komm.

Einw. Gk

Einw. Qk.N

| Feld | Komm. | a [m] | s [m] | q_{li} [kN/m] | q_{re} [kN/m] |
|------|-------|----------|----------|--------------------|--------------------|
| 1 | | 0.00 | 1.70 | | 28.90 |
| 1 | | 0.00 | 1.70 | | 11.80 |

Bem.-schnittgrößen

Bemessungsschnittgrößen

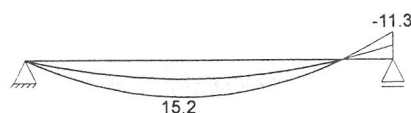
Grafik

Schnittgrößen (Umhüllende)

Kombinationen

Moment $M_{y,d}$ [kNm]

Querkraft $V_{z,d}$ [kN]



Tabelle

Schnittgrößen (Umhüllende)

| | x [m] | $M_{y,d,min}$ [kNm] | Ek | $M_{y,d,max}$ [kNm] | Ek | $V_{z,d,min}$ [kN] | Ek | $V_{z,d,max}$ [kN] | Ek |
|--------|----------|------------------------|----|------------------------|----|-----------------------|----|-----------------------|----|
| Feld 1 | 0.00 | 0.00 | 1 | 0.00 | 2 | 21.19 | 1 | 41.58 | 2 |
| | 0.10 | 1.97 | 1 | 3.87 | 2 | 18.30 | 1 | 35.91 | 2 |
| | 0.15 | 2.93 | 1 | 5.75 | 2 | 16.72 | 1 | 32.81 | 2 |
| | 0.31 | 5.17 | 1 | 10.14 | 2 | 12.25 | 1 | 24.05 | 2 |
| | 0.35 | 5.61 | 1 | 11.01 | 2 | 11.16 | 1 | 21.90 | 2 |
| | 0.46 | 6.72 | 1 | 13.18 | 2 | 7.79 | 1 | 15.28 | 2 |
| | 0.62 | 7.58 | 1 | 14.87 | 2 | 3.32 | 1 | 6.52 | 2 |
| | 0.70 | 7.75 | 1 | 15.21 | 2 | 0.96 | 1 | 1.88 | 2 |
| | 0.77 | 7.74 | 1 | 15.20 | 2 | -2.25 | 2 | -1.14 | 1 |
| | 0.93 | 7.22 | 1 | 14.17 | 2 | -11.01 | 2 | -5.61 | 1 |
| | 1.08 | 6.01 | 1 | 11.79 | 2 | -19.78 | 2 | -10.08 | 1 |
| | 1.24 | 4.11 | 1 | 8.06 | 2 | -28.54 | 2 | -14.54 | 1 |
| | 1.35 | 2.21 | 1 | 4.35 | 2 | -35.16 | 2 | -17.91 | 1 |
| | 1.39 | 1.51 | 1 | 2.97 | 2 | -37.31 | 2 | -19.01 | 1 |
| | 1.55 | -3.47 | 2 | -1.77 | 1 | -46.07 | 2 | -23.48 | 1 |
| | 1.60 | -6.07 | 2 | -3.09 | 1 | -49.16 | 2 | -25.05 | 1 |
| | 1.70 | -11.27 | 2 | -5.74 | 1 | -54.84 | 2 | -27.94 | 1 |

Bemessung (GZT)

für den Grenzzustand der Tragfähigkeit nach DIN EN 1992-1-1:2011-01

Biegung
 Abs. 6.1

Bemessung für Biegebeanspruchung

| | x [m] | $M_{y,d,o}$ $M_{y,d,u}$ [kNm] | x/d_o x/d_u | z_o z_u [cm] | $A_{s,o}$ $A_{s,u}$ [cm ²] | $A_{s,o,erf}$ $A_{s,u,erf}$ [cm ²] |
|------------------------|-------------------|-------------------------------------|--------------------|------------------------|--|--|
| Feld 1 (L = 1.70 m) | 0.00 | - | - | - | - | - |
| | | - | 0.001 | 24.7 | - | 1.01 _q |
| | 0.10 _a | 1.97 | - | - | - | - |
| | | 3.87 | 0.015 | 24.6 | 0.35 ✓ | 1.01 _q |
| | 0.15 | 2.93 | - | - | - | - |
| | | 5.75 | 0.018 | 24.5 | 0.51 ✓ | 1.01 _q |
| | 0.31 | 5.17 | - | - | - | - |
| | | 10.14 | 0.024 | 24.5 | 0.91 ✓ | 0.91 |
| | 0.46 | 6.72 | - | - | - | - |
| | | 13.18 | 0.028 | 24.5 | 1.18 | 1.18 |
| | 0.62 | 7.58 | - | - | - | - |
| | | 14.87 | 0.030 | 24.4 | 1.33 | 1.33 |
| | 0.73 | 7.77 | - | - | - | - |
| | | 15.24 | 0.030 | 24.4 | 1.37 | 1.37 |
| | 0.77 | 7.74 | - | - | - | - |
| | | 15.20 | 0.030 | 24.4 | 1.36 ✓ | 1.36 |
| | 0.93 | 7.22 | - | - | - | - |
| | | 14.17 | 0.029 | 24.5 | 1.27 | 1.27 |
| | 1.08 | 6.01 | - | - | - | - |
| | | 11.79 | 0.027 | 24.5 | 1.06 ✓ | 1.06 |
| | 1.24 | 4.11 | - | - | - | - |
| | | 8.06 | 0.022 | 24.5 | 0.72 ✓ | 0.72 |
| | 1.39 | 1.51 | - | - | - | - |
| | | 2.97 | 0.013 | 24.6 | 0.26 ✓ | 0.34 _f |
| | 1.55 | -3.47 | 0.014 | 24.6 | 0.31 | 0.31 |
| | | -1.77 | - | - | - | 1.33 _q |
| | 1.60 _a | -6.07 | 0.019 | 24.5 | 0.54 ✓ | 0.54 |

| x | M _{yd,o} M _{yd,u} | x/d _o x/d _u | z _o z _u | A _{s,o} A _{s,u} | A _{s,o,erf} A _{s,u,erf} |
|------|--|--------------------------------------|----------------------------------|--------------------------------------|--|
| [m] | [kNm] | | [cm] | [cm ²] | [cm ²] |
| | -3.09 | - | - | - | 1.33 _q |
| 1.70 | -6.07 | 0.019 | 24.5 | 0.54 ✓ | 0.54 |
| | -5.74 | - | - | - | 1.33 _q |

Querkraft
 Abs. 6.2

Bemessung für Querkraftbeanspruchung

| x | V _{Ed} | θ | V _{Rd,max} | V _{Rd,c} | a _{sw,erf} |
|------------------------|--------------------|------|---------------------|-------------------|----------------------|
| [m] | [kN] | [°] | [kN] | [kN] | [cm ² /m] |
| Feld 1 (L = 1.70 m) | | | | | |
| 0.00 | 21.90 _R | 18.4 | 1134.88 | - | - |
| 0.10 _a | 21.90 _R | 18.4 | 1134.88 | - | - |
| 0.15 | 21.90 _R | 18.4 | 1134.88 | - | - |
| 0.31 | 21.90 _R | 18.4 | 1134.88 | - | - |
| 0.35 _v | 21.90 | 18.4 | 1134.88 | 217.67 | - |
| 0.46 | 15.28 | 18.4 | 1134.88 | 217.67 | - |
| 0.62 | 6.52 | 18.4 | 1134.88 | 217.67 | - |
| 0.73 | 0.06 _R | 18.4 | 1134.88 | 217.67 | - |
| 0.77 | 2.25 | 18.4 | 1134.88 | 217.67 | - |
| 0.93 | 11.01 | 18.4 | 1134.88 | 217.67 | - |
| 1.08 | 19.78 | 18.4 | 1134.88 | 217.67 | - |
| 1.24 | 28.54 | 18.4 | 1134.88 | 217.67 | - |
| 1.35 _v | 35.16 | 18.4 | 1134.88 | 217.67 | - |
| 1.39 | 35.16 _R | 18.4 | 1134.88 | - | - |
| 1.55 | 35.16 _R | 18.4 | 1134.88 | - | - |
| 1.60 _a | 35.16 _R | 18.4 | 1134.88 | - | - |
| 1.70 | 35.16 _R | 18.4 | 1134.88 | - | - |

Auflagerkräfte

Auflagerkräfte Träger

Char. Auflagerkr.

charakteristische Auflagerkräfte (je Einwirkung)

| | Aufl. | F _{z,k,min} [kN] | F _{z,k,max} [kN] | M _{y,k,min} [kNm] | M _{y,k,max} [kNm] |
|------------|-------|------------------------------|------------------------------|-------------------------------|-------------------------------|
| Einw. Gk | A | 21.19 | 21.19 | 0.00 | 0.00 |
| | B | 27.94 | 27.94 | 5.74 | 5.74 |
| Einw. Qk.N | A | 8.65 | 8.65 | 0.00 | 0.00 |
| | B | 11.41 | 11.41 | 2.34 | 2.34 |

*keine Querkraftbewehrung erforderlich.
 Schrägaufbiegungen sind vorhanden.*

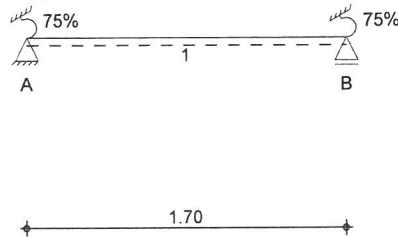
Pos. Platte-Mitte

Aufgeständerte Platte - Mittelfeld

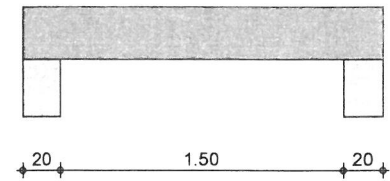
System

Einfeldträger (215.0/27.5/170.0)

System



Ansicht



Abmessungen
 Mat./Querschnitt

| Feld | l [m] | Material | b/h [cm] |
|------|----------|----------|-------------|
| 1 | 1.70 | C 20/25 | 215.0/27.5 |

Auflager

| Lager | x [m] | b [cm] | Art | $K_{T,z}$ [kN/m] |
|-------|----------|-----------|-------|---------------------|
| A | 0.00 | 20.0 | Beton | fest |
| B | 1.70 | 20.0 | Beton | fest |

Endeinspannungen

| | | | |
|--------------------|------------|-------|---|
| Einspannung links | $E_{li} =$ | 75.00 | % |
| Ersatzlänge | $l_e =$ | 0.57 | m |
| Einspannung rechts | $E_{re} =$ | 75.00 | % |
| Ersatzlänge | $l_e =$ | 0.57 | m |

Belastungen

Belastungen auf das System

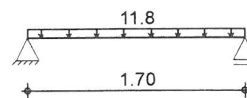
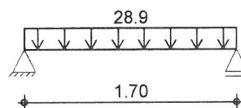
Grafik

Belastungsgrafiken (einwirkungsbezogen)

Einwirkungen

Gk

Qk.N



Streckenlasten
 in z-Richtung

Gleichlasten

| Feld | Komm. | a [m] | s [m] | q_{li} [kN/m] | q_{re} [kN/m] |
|------|-------|----------|----------|--------------------|--------------------|
| 1 | | 0.00 | 1.70 | | 28.90 |
| 1 | | 0.00 | 1.70 | | 11.80 |

Einw. Gk

Einw. Qk.N

Bem.-schnittgrößen

Bemessungsschnittgrößen

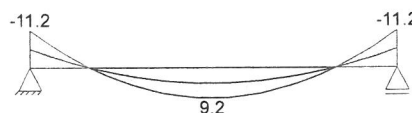
Grafik

Schnittgrößen (Umhüllende)

Kombinationen

Moment $M_{y,d}$ [kNm]

Querkraft $V_{z,d}$ [kN]



Tabelle

Schnittgrößen (Umhüllende)

| | x [m] | $M_{y,d,min}$ [kNm] | E_k | $M_{y,d,max}$ [kNm] | E_k | $V_{z,d,min}$ [kN] | E_k | $V_{z,d,max}$ [kN] | E_k |
|--------|----------|------------------------|-------|------------------------|-------|-----------------------|-------|-----------------------|-------|
| Feld 1 | 0.00 | -11.18 | 2 | -5.69 | 1 | 24.56 | 1 | 48.21 | 2 |
| | 0.10 | -6.64 | 2 | -3.38 | 1 | 21.67 | 1 | 42.54 | 2 |
| | 0.15 | -4.40 | 2 | -2.24 | 1 | 20.10 | 1 | 39.44 | 2 |
| | 0.31 | 0.52 | 1 | 1.02 | 2 | 15.63 | 1 | 30.68 | 2 |
| | 0.35 | 1.09 | 1 | 2.14 | 2 | 14.54 | 1 | 28.53 | 2 |
| | 0.46 | 2.59 | 1 | 5.08 | 2 | 11.17 | 1 | 21.91 | 2 |
| | 0.62 | 3.97 | 1 | 7.79 | 2 | 6.70 | 1 | 13.15 | 2 |
| | 0.77 | 4.66 | 1 | 9.14 | 2 | 2.23 | 1 | 4.38 | 2 |
| | 0.90 | 4.71 | 1 | 9.24 | 2 | -2.84 | 2 | -1.44 | 1 |
| | 0.93 | 4.66 | 1 | 9.14 | 2 | -4.38 | 2 | -2.23 | 1 |
| | 1.08 | 3.97 | 1 | 7.79 | 2 | -13.15 | 2 | -6.70 | 1 |
| | 1.24 | 2.59 | 1 | 5.08 | 2 | -21.91 | 2 | -11.17 | 1 |
| | 1.35 | 1.09 | 1 | 2.14 | 2 | -28.53 | 2 | -14.54 | 1 |
| | 1.39 | 0.52 | 1 | 1.02 | 2 | -30.68 | 2 | -15.63 | 1 |
| | 1.55 | -4.40 | 2 | -2.24 | 1 | -39.44 | 2 | -20.10 | 1 |
| | 1.60 | -6.64 | 2 | -3.38 | 1 | -42.54 | 2 | -21.67 | 1 |
| | 1.70 | -11.18 | 2 | -5.69 | 1 | -48.21 | 2 | -24.56 | 1 |

Endfeld so ausrechen
 zusätzlich Reserven
 bei der Feldberechnung

Bemessung (GZT)

für den Grenzzustand der Tragfähigkeit nach DIN EN 1992-1-1:2011-01

Biegung
 Abs. 6.1

Bemessung für Biegebeanspruchung

| | x [m] | $M_{y,d,o}$ $M_{y,d,u}$ [kNm] | x/d_o x/d_u | z_o z_u [cm] | $A_{s,o}$ $A_{s,u}$ [cm ²] | $A_{s,o,erf}$ $A_{s,u,erf}$ [cm ²] |
|--------|-------------------|-------------------------------------|--------------------|------------------------|--|--|
| Feld 1 | (L = 1.70 m) | | | | | |
| | 0.00 | -6.64 | 0.020 | 24.5 | 0.59 | 0.59 |
| | | -5.69 | - | - | - | 0.83 _q |
| | 0.10 _a | -6.64 | 0.020 | 24.5 | 0.59 | 0.59 |
| | | -3.38 | - | - | - | 0.83 _q |
| | 0.15 | -4.40 | 0.016 | 24.6 | 0.39 | 0.39 |
| | | -2.24 | - | - | - | 0.83 _q |
| | 0.31 | 0.52 | - | - | - | - |
| | | 1.02 | 0.007 | 24.6 | 0.09 | 0.21 _f |
| | 0.46 | 2.59 | - | - | - | - |
| | | 5.08 | 0.017 | 24.6 | 0.45 | 0.45 |
| | 0.62 | 3.97 | - | - | - | - |
| | | 7.79 | 0.021 | 24.5 | 0.70 | 0.70 |
| | 0.77 | 4.66 | - | - | - | - |
| | | 9.14 | 0.023 | 24.5 | 0.82 | 0.82 |
| | 0.85 | 4.75 | - | - | - | - |
| | | 9.31 | 0.023 | 24.5 | 0.83 | 0.83 |
| | 0.93 | 4.66 | - | - | - | - |
| | | 9.14 | 0.023 | 24.5 | 0.82 | 0.82 |
| | 1.08 | 3.97 | - | - | - | - |
| | | 7.79 | 0.021 | 24.5 | 0.70 | 0.70 |
| | 1.24 | 2.59 | - | - | - | - |
| | | 5.08 | 0.017 | 24.6 | 0.45 | 0.45 |
| | 1.39 | 0.52 | - | - | - | - |
| | | 1.02 | 0.007 | 24.6 | 0.09 | 0.21 _f |
| | 1.55 | -4.40 | 0.016 | 24.6 | 0.39 | 0.39 |
| | | -2.24 | - | - | - | 0.83 _q |
| | 1.60 _a | -6.64 | 0.020 | 24.5 | 0.59 | 0.59 |

Pos 13: 6 φ 6 = 1,7 cm²
 Pos 13 alleine ausrechen
 Pos 7/10 zusätzlich vorhanden



| x | M _{yd,o} M _{yd,u} | x/d _o x/d _u | z _o z _u | A _{s,o} A _{s,u} | A _{s,o,erf} A _{s,u,erf} |
|------|--|--------------------------------------|----------------------------------|--------------------------------------|--|
| [m] | [kNm] | | [cm] | [cm ²] | [cm ²] |
| | -3.38 | - | - | - | 0.83 _q |
| 1.70 | -6.64 | 0.020 | 24.5 | 0.59 | 0.59 |
| | -5.69 | - | - | - | 0.83 _q |

Querkraft
 Abs. 6.2

Bemessung für Querkraftbeanspruchung

| x | V _{Ed} | θ | V _{Rd,max} | V _{Rd,c} | a _{sw,erf} |
|------------------------|--------------------|------|---------------------|-------------------|----------------------|
| [m] | [kN] | [°] | [kN] | [kN] | [cm ² /m] |
| Feld 1 (L = 1.70 m) | | | | | |
| 0.00 | 28.53 _R | 18.4 | 1134.88 | - | - |
| 0.10 _a | 28.53 _R | 18.4 | 1134.88 | - | - |
| 0.15 | 28.53 _R | 18.4 | 1134.88 | - | - |
| 0.31 | 28.53 _R | 18.4 | 1134.88 | - | - |
| 0.35 _v | 28.53 | 18.4 | 1134.88 | 217.67 | - |
| 0.46 | 21.91 | 18.4 | 1134.88 | 217.67 | - |
| 0.62 | 13.15 | 18.4 | 1134.88 | 217.67 | - |
| 0.77 | 4.38 | 18.4 | 1134.88 | 217.67 | - |
| 0.85 | - | 18.4 | 1134.88 | 217.67 | - |
| 0.93 | 4.38 | 18.4 | 1134.88 | 217.67 | - |
| 1.08 | 13.15 | 18.4 | 1134.88 | 217.67 | - |
| 1.24 | 21.91 | 18.4 | 1134.88 | 217.67 | - |
| 1.35 _v | 28.53 | 18.4 | 1134.88 | 217.67 | - |
| 1.39 | 28.53 _R | 18.4 | 1134.88 | - | - |
| 1.55 | 28.53 _R | 18.4 | 1134.88 | - | - |
| 1.60 _a | 28.53 _R | 18.4 | 1134.88 | - | - |
| 1.70 | 28.53 _R | 18.4 | 1134.88 | - | - |

Auflagerkräfte

Auflagerkräfte Träger

Char. Auflagerkr.

charakteristische Auflagerkräfte (je Einwirkung)

| Aufl. | F _{z,k,min} | F _{z,k,max} | M _{y,k,min} | M _{y,k,max} |
|------------------------|----------------------|----------------------|----------------------|----------------------|
| | [kN] | [kN] | [kNm] | [kNm] |
| Einw. G _k | | | | |
| A | 24.57 | 24.57 | -5.69 | -5.69 |
| B | 24.57 | 24.57 | 5.69 | 5.69 |
| Einw. Q _{k,N} | | | | |
| A | 10.03 | 10.03 | -2.33 | -2.33 |
| B | 10.03 | 10.03 | 2.33 | 2.33 |

Stützpfiler der aufgeständerten Platte

Nachweis als unbewehrtes Druckglied
(Überprüfung über Druckkontakt mit dem
Widerlager) $l_0/h_w = 1/0,2 = 5, c_{tot}/h_w \leq 0,1$

$$\begin{aligned} N_{R,d} &= 0,2 \text{ m} \times 2,75 \text{ m} \times 9,3 \text{ MN/m}^2 \times 0,8 \\ &= 3,2 \text{ MN} \hat{=} 3200 \text{ kN} \gg \text{vorh. } N_{E,d} \end{aligned}$$

Bemessung für die Horizontallast
aus Wind (äußere Pfeiler): [m]

$$\begin{aligned} H_{w,d} &= 1,5 \times 1,95 \text{ kN/m}^2 \times (2,0 + 0,275 + 1,1/2) \\ &\quad \times 1,7 (1,0 + 0,625) = 22,8 \text{ kN}^d \\ &\quad \text{[m]} \end{aligned}$$

$$M_{w,d} = 22,8 \text{ kN} \times 1,5 \text{ m} = 34 \text{ kNm}^d$$

$$\text{Zug } N \text{ (s.S. 2.4)} \hat{=} 54 \text{ kN}$$

$$\leadsto z^d = 34 \text{ kNm} / 1,9 \text{ m} - 54 \text{ kN} / 2 = -9 \text{ kN}$$

\leadsto Keine Zugbewehrung erforderlich
(überdruckt)

Die Zusatzbelastung infolge des Windmoments
auf dem Bogen kann vernachlässigt
werden, da bei einer Überlagerung

von Eigengewicht, Verkehrslast und
Wind infolge der Kombinationsbei-
werte die Zusatzbelastung infolge
Windlast vom Bogen aufgenommen
werden kann ($\psi_0 - \text{Wind} = 0,3$).

Bemessungsoptione

Ausgabeoption

Option für den Bemessungsverlauf

- erforderliche Bewehrung, samt allen Einzelergebnissen

Liefert zusätzliche Informationen über die erforderlichen Bewehrungsmengen aus den einzelnen Nachweisschritten.

Ausgabeoption

Option für die Ausgabe der zugrunde liegenden Kombinationen

- tabellarische Ausgabe auf Einwirkungsniveau

Je Lastfallkombination werden alle Einwirkungen mit ihrem Einwirkungsfaktor und ihrer Einwirkungstypnummer tabellarisch aufgelistet. Welche Lastfälle innerhalb einer Einwirkung beteiligt sind, wird nicht dokumentiert.

Manuelle-Komb. Einwirkungsmuster

Manuell definierte Kombinationen für die Bemessung Einwirkungsmuster dienen zur Definition, welche Einwirkungen miteinander zu kombinieren bzw. nicht zu kombinieren sind. Die Ermittlung der Kombinationen erfolgt unter Berücksichtigung der Einwirkungstypisierung und Lastgruppendefinition weiterhin automatisch.

| Einwirkung | Gk | Qk.N | Qk.S | Qk.W |
|------------|-------|------|------|-------|
| EM-1 | X | X | . | X |
| Einwirkung | AEd | Pk | Qk.T | Gk.E |
| EM-1 | . | . | . | . |
| Einwirkung | Gk.H | Qk.K | Qk.M | Qk.KL |
| EM-1 | . | . | . | . |
| Einwirkung | Qk.HL | | | |
| EM-1 | . | | | |

Lastfallkombinationen

Alle Faktoren innerhalb der Lastfallkombinationen wurden manuell definiert. Die Definition von Einwirkungen und Lastgruppen hat hier keine Bedeutung.

| | |
|----|--|
| G | Grundkombination |
| A | Außergewöhnliche Kombination |
| E | Kombination für Erdbebennachweis |
| fi | Kombination für Brandnachweis |
| S | Seltene Kombination |
| H | Häufige Kombination |
| Q | Quasi-ständige Kombination |
| N | Nicht-häufige Kombination |
| si | Seltene Kombination für Nachweis der elastischen Anfangsdurchbiegung |
| sf | Seltene Kombination für Nachweis der Enddurchbiegung |
| qf | Quasi-ständige Kombination für Nachweis des Durchhangs |

| Lastfall | | LF-1 | LF-4 | LF-5 |
|----------|---|------|------|------|
| LK-1 | G | 1.35 | 1.35 | 1.35 |

| Lastfall | | LF-1 | LF-4 | LF-5 |
|----------|---|------|------|------|
| LK-2 | G | 1.35 | 1.35 | 1.35 |
| LK-3 | G | 1.35 | 1.35 | 1.35 |
| LK-4 | G | 1.35 | 1.35 | 1.35 |
| LK-5 | G | 1.35 | 1.35 | 1.35 |
| LK-6 | G | 1.35 | 1.35 | 1.35 |
| LK-7 | G | 1.35 | 1.35 | 1.35 |
| LK-8 | G | 1.35 | 1.35 | 1.35 |
| LK-9 | G | 1.00 | 1.00 | 1.00 |
| LK-10 | G | 1.00 | 1.00 | 1.00 |
| LK-11 | G | 1.00 | 1.00 | 1.00 |
| LK-12 | G | 1.00 | 1.00 | 1.00 |
| LK-13 | G | 1.00 | 1.00 | 1.00 |
| LK-14 | G | 1.00 | 1.00 | 1.00 |
| LK-15 | G | 1.00 | 1.00 | 1.00 |
| LK-16 | G | 1.00 | 1.00 | 1.00 |

| Lastfall | | LF-6 | LF-7 | LF-8 |
|----------|---|------|------|------|
| LK-1 | G | 1.35 | . | . |
| LK-2 | G | 1.35 | 1.50 | 1.50 |
| LK-3 | G | 1.35 | . | . |
| LK-4 | G | 1.35 | . | . |
| LK-5 | G | 1.35 | . | . |
| LK-6 | G | 1.35 | 1.50 | 1.50 |
| LK-7 | G | 1.35 | . | . |
| LK-8 | G | 1.35 | 1.50 | 1.50 |
| LK-9 | G | 1.00 | . | . |
| LK-10 | G | 1.00 | 1.50 | 1.50 |
| LK-11 | G | 1.00 | . | . |
| LK-12 | G | 1.00 | . | . |
| LK-13 | G | 1.00 | . | . |
| LK-14 | G | 1.00 | 1.50 | 1.50 |
| LK-15 | G | 1.00 | . | . |
| LK-16 | G | 1.00 | 1.50 | 1.50 |

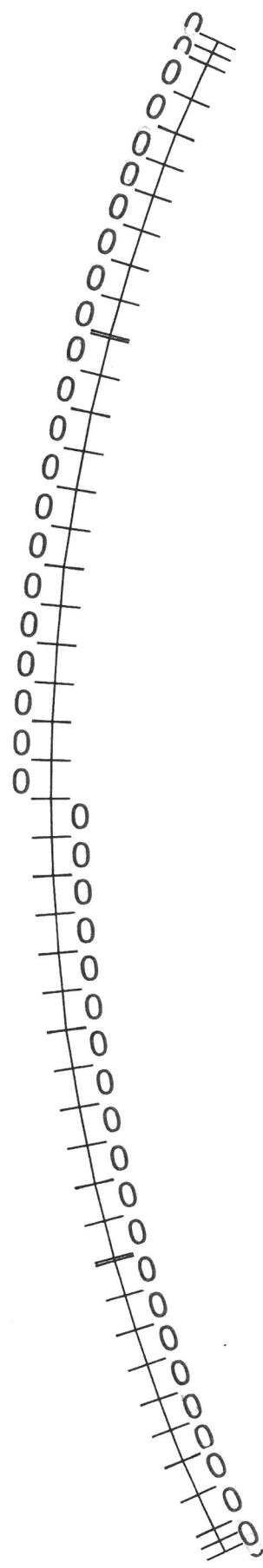
| Lastfall | | LF-9 | LF-10 | LF-11 |
|----------|---|------|-------|-------|
| LK-1 | G | . | . | . |
| LK-2 | G | 1.50 | . | . |
| LK-3 | G | . | . | . |
| LK-4 | G | . | 1.50 | 1.50 |
| LK-5 | G | . | . | . |
| LK-6 | G | 1.50 | 1.50 | 1.50 |
| LK-7 | G | . | . | . |
| LK-8 | G | 1.50 | 1.50 | 1.50 |
| LK-9 | G | . | . | . |
| LK-10 | G | 1.50 | . | . |
| LK-11 | G | . | . | . |
| LK-12 | G | . | 1.50 | 1.50 |
| LK-13 | G | . | . | . |
| LK-14 | G | 1.50 | 1.50 | 1.50 |
| LK-15 | G | . | . | . |
| LK-16 | G | 1.50 | 1.50 | 1.50 |

| Lastfall | | LF-12 | LF-13 | LF-14 |
|----------|---|-------|-------|-------|
| LK-1 | G | . | . | . |
| LK-2 | G | . | . | . |

| Lastfall | | LF-12 | LF-13 | LF-14 |
|----------|---|-------|-------|-------|
| LK-3 | G | . | 1.50 | 1.50 |
| LK-4 | G | 1.50 | . | . |
| LK-5 | G | . | . | . |
| LK-6 | G | 1.50 | . | . |
| LK-7 | G | . | 1.50 | 1.50 |
| LK-8 | G | 1.50 | 1.50 | 1.50 |
| LK-9 | G | . | . | . |
| LK-10 | G | . | . | . |
| LK-11 | G | . | 1.50 | 1.50 |
| LK-12 | G | 1.50 | . | . |
| LK-13 | G | . | . | . |
| LK-14 | G | 1.50 | . | . |
| LK-15 | G | . | 1.50 | 1.50 |
| LK-16 | G | 1.50 | 1.50 | 1.50 |

| Lastfall | | LF-15 | LF-16 | LF-17 |
|----------|---|-------|-------|-------|
| LK-1 | G | . | . | . |
| LK-2 | G | . | . | . |
| LK-3 | G | 1.50 | . | . |
| LK-4 | G | . | . | . |
| LK-5 | G | . | 1.50 | 1.50 |
| LK-6 | G | . | . | . |
| LK-7 | G | 1.50 | 1.50 | 1.50 |
| LK-8 | G | 1.50 | 1.50 | 1.50 |
| LK-9 | G | . | . | . |
| LK-10 | G | . | . | . |
| LK-11 | G | 1.50 | . | . |
| LK-12 | G | . | . | . |
| LK-13 | G | . | 1.50 | 1.50 |
| LK-14 | G | . | . | . |
| LK-15 | G | 1.50 | 1.50 | 1.50 |
| LK-16 | G | 1.50 | 1.50 | 1.50 |

| Lastfall | | LF-18 | TEMP-1 | VOR-1 |
|----------|---|-------|--------|-------|
| LK-1 | G | . | . | . |
| LK-2 | G | . | . | . |
| LK-3 | G | . | . | . |
| LK-4 | G | . | . | . |
| LK-5 | G | 1.50 | . | . |
| LK-6 | G | . | . | . |
| LK-7 | G | 1.50 | . | . |
| LK-8 | G | 1.50 | . | . |
| LK-9 | G | . | . | . |
| LK-10 | G | . | . | . |
| LK-11 | G | . | . | . |
| LK-12 | G | . | . | . |
| LK-13 | G | 1.50 | . | . |
| LK-14 | G | . | . | . |
| LK-15 | G | 1.50 | . | . |
| LK-16 | G | 1.50 | . | . |



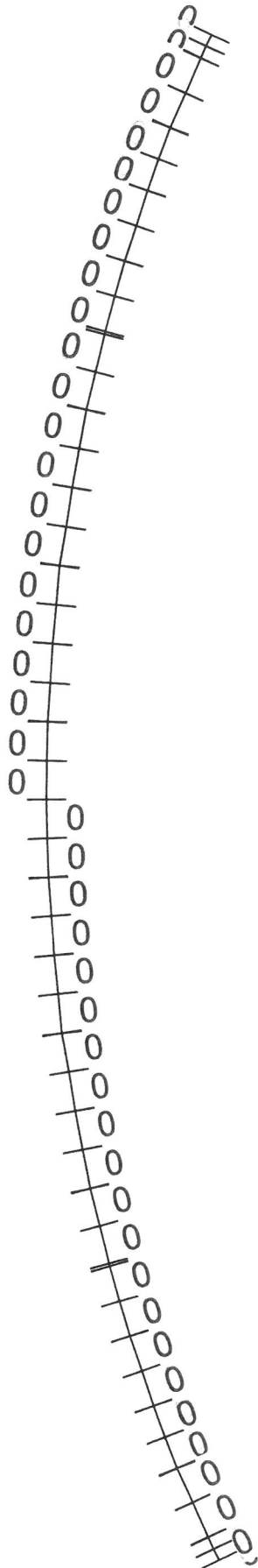
Def.:

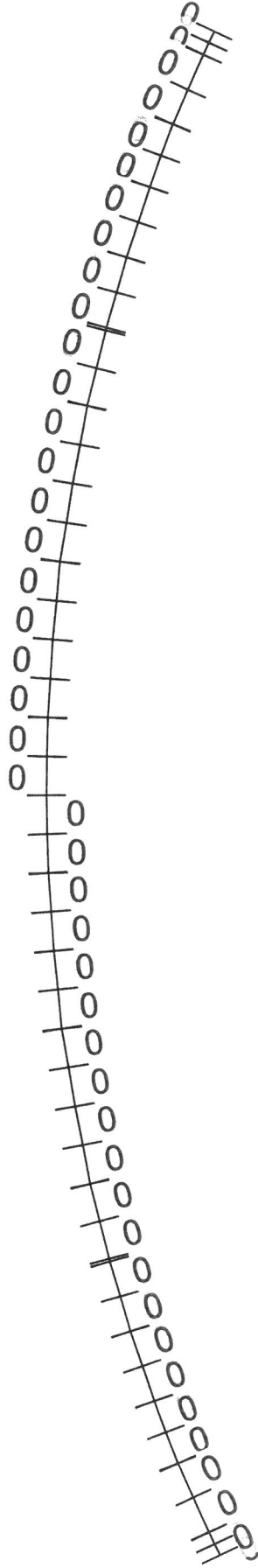
$\textcircled{B} \hat{=} A_{s,0}$

$\textcircled{D} \hat{=} A_{s,14}$

| | | | |
|--------------------|------------------------|---|---------------|
| Bemessung Stb-Stab | Erf. Längsbewehrung As | FE-Mod. BR-TÜ-EZ Endzustand Bauvorhaben 22-078 Instandsetzung Fußgängerbrücke | Maßstab: 1:85 |
| | | Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10 | Seite |

aus allen Nachweisen
in Seite B in [cm²]
Max = 0, Min = 0

| | | | | |
|--|------------------------|---|--|---------------|
|  | | FE-Mod. BR-TÜ-EZ Endzustand Bauvorhaben 22-078 Instandsetzung Fußgängerbrücke | | Maßstab: 1:85 |
| | | Kuhn Decker GmbH & Co. KG Ingenieure und Architekten Tel: 07031 61169-10 | | Seite |
| | | MicroFe 2018.051 | | |
| Bemessung Stb-Stab | Erf. Längsbewehrung As | | | |
| aus allen Nachweisen in Seite D in [cm²] Max = 0, Min = 0 | | | | |



| | | | |
|---|----------------------------|---|---------------|
| Bemessung Stb-Stab aus allen Nachweisen in [cm ² /m] Max = 0, Min = 0 | Erf. Bügelbewehrung Asw/sw | FE-Mod. Bauvorhaben BR-TÜ-EZ Endzustand 22-078 Instandsetzung Fußgängerbrücke | Maßstab: 1:85 |
| | | | Seite |

Übergang Bogen - Widerlager

$$\text{Max } N_{E,d} = -2060 \text{ kN (LKB)}$$

$$\rightarrow \sigma_{E,d} = \frac{-2060 \text{ MN}}{0,5 \times 2,83} = 1,46 \frac{\text{MN}}{\text{m}^2}$$

$$< 9,2 \text{ MN/m}^2$$

$$\text{Max } V_{E,d} = 152 \text{ kN (LKB u. 3)}$$

$$\text{Zug } N_{E,d} = 1692 \text{ kN}$$

$$\text{Rüßbeiwert (Beton/Beton)} \geq 0,5$$

$$\rightarrow \text{Zul } V_{E,d} = 0,5 \times 1692 = 846 \text{ kN} > 152 \text{ kN}$$

Die vorhandene Querkraft kann über Reibung in das Widerlager eingeleitet werden.

Plausibilitätskontrollen

$$\underline{\text{Max } V_{E,d} = 152 \text{ kN (LK 2 u. 3)}}$$

$$\begin{aligned} V_{R,d} (b/d = 2,15/0,4 \text{ m}) = \\ \left(\frac{0,0525}{1,5} \times \left[1 + \sqrt{\frac{200}{350}} \right]^{3/2} \cdot 20 \frac{\text{MN}}{\text{m}^2}^{1/2} \right) \times \\ \times 2,15 \times 0,35 = 0,274 \text{ MN} \hat{=} 274 \text{ kN} \\ > 152 \text{ kN} \end{aligned}$$

Anmerkung: Ohne Berücksichtigung
der vorhandenen Normalkräfte
(sichere Seite) nachgewiesen.

Max $M_{E,d}$ zug $N_{E,d}$:

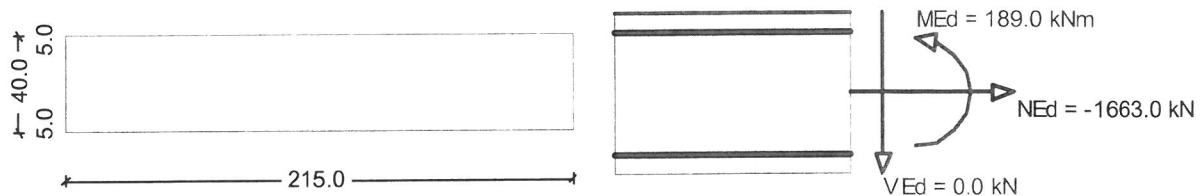
Untersucht werden die Ergebnisse
von LK 6 bzw. 7 ($M_{E,d} = 189 \text{ kNm}$ -
zug $N_{E,d} = -1663 \text{ kN}$) und LK 14 bzw. 15
($M_{E,d} = 168 \text{ kNm}$ - zug $N_{E,d} = -1283 \text{ kN}$)

Ergebnis siehe folgende Seiten.

Hier kann Ihr eigener Briefkopf stehen!

Geben Sie Ihren Text ein und wählen Sie Ihre Bitmap (Logo) aus, anschließend speichern Sie das Layout unter "Optionen-Layout speichern" und wählen das neue Layout als Standardlayout unter "Optionen-Standardlayout" aus.

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**Stahlbetonbemessung nach DIN_EN 1992-1-1**

Beton : C20/25
Bewehrung : B500S

Querschnitt: Rechteck $b = 2.150 \text{ m}$ $h = 0.400 \text{ m}$
 Achsdeckung $d_{lo} = 0.050 \text{ m}$ $d_{lu} = 0.050 \text{ m}$
 Verlegemaß $cv.l = 0.050 \text{ m}$
 Bemessung für symmetrische Bewehrung

Belastung : Biegemoment $M_{Ed} = 189.00 \text{ kNm}$
 Normalkraft $N_{Ed} = -1663.00 \text{ kN}$

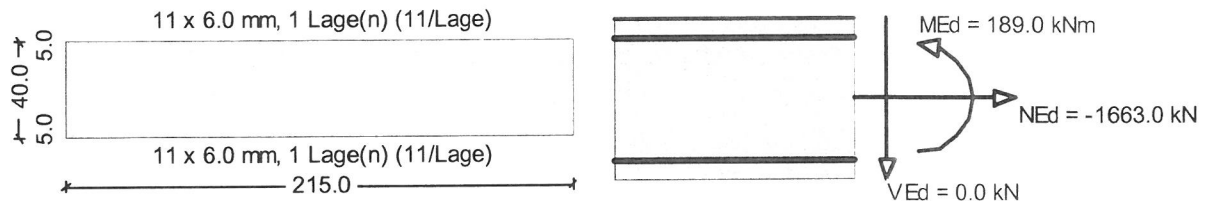
Ergebnis

Biegebemessung: erf. A_s , oben = 0.00 cm^2
 erf. A_s , unten = 0.00 cm^2
 eps-B / eps-S = $-3.50 / 2.40 \text{ o/oo}$
 Höhe Druckzone = 20.8 cm $k_x = 0.593$

Hier kann Ihr eigener Briefkopf stehen!

Geben Sie Ihren Text ein und wählen Sie Ihre Bitmap (Logo) aus, anschließend speichern Sie das Layout unter "Optionen-Layout speichern" und wählen das neue Layout als Standardlayout unter "Optionen-Standardlayout" aus.

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**Stahlbetonbemessung nach DIN_EN 1992-1-1**

Beton : C20/25
Bewehrung : B500S

Querschnitt: Rechteck $b = 2.150 \text{ m}$ $h = 0.400 \text{ m}$
 Achsdeckung $d_{lo} = 0.050 \text{ m}$ $d_{lu} = 0.050 \text{ m}$
 Verlegemaß $cv.l = 0.050 \text{ m}$
 Berechnung als gedrückter Querschnitt

Belastung : Biegemoment $M_{Ed} = 189.00 \text{ kNm}$
 Normalkraft $N_{Ed} = -1663.00 \text{ kN}$

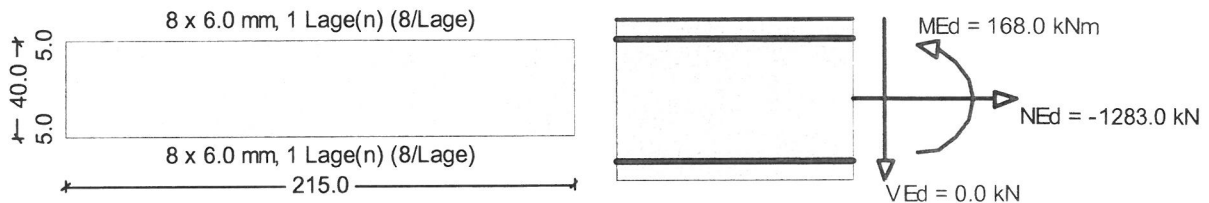
Ergebnis

Biegebemessung: erf. As, oben = 2.87 cm²
 erf. As, unten = 2.87 cm²
 eps-B / eps-S = -3.50 / 1.93 o/o
 inn. Hebelarm = 25.7 cm $k_z = 0.735$
 Höhe Druckzone = 22.6 cm $k_x = 0.645$

Hier kann Ihr eigener Briefkopf stehen!

Geben Sie Ihren Text ein und wählen Sie Ihre Bitmap (Logo) aus, anschließend speichern Sie das Layout unter "Optionen-Layout speichern" und wählen das neue Layout als Standardlayout unter "Optionen-Standardlayout" aus.

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**Stahlbetonbemessung nach DIN_EN 1992-1-1**

Beton : C20/25
Bewehrung : B500S

Querschnitt: Rechteck $b = 2.150 \text{ m}$ $h = 0.400 \text{ m}$
 Achsdeckung $d_{lo} = 0.050 \text{ m}$ $d_{lu} = 0.050 \text{ m}$
 Verlegemaß $cv.l = 0.050 \text{ m}$
 Berechnung als gedrückter Querschnitt

Belastung : Biegemoment $M_{Ed} = 168.00 \text{ kNm}$
 Normalkraft $N_{Ed} = -1283.00 \text{ kN}$

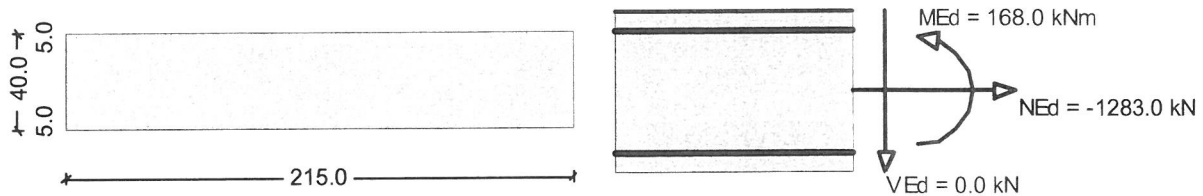
Ergebnis

Biegebemessung: erf. As, oben = 2.21 cm²
 erf. As, unten = 2.21 cm²
 eps-B / eps-S = -3.50 / 3.12 o/o
 inn. Hebelarm = 27.4 cm $k_z = 0.782$
 Höhe Druckzone = 18.5 cm $k_x = 0.529$

Hier kann Ihr eigener Briefkopf stehen!

Geben Sie Ihren Text ein und wählen Sie Ihre Bitmap (Logo) aus, anschließend speichern Sie das Layout unter "Optionen-Layout speichern" und wählen das neue Layout als Standardlayout unter "Optionen-Standardlayout" aus.

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**Stahlbetonbemessung nach DIN_EN 1992-1-1**

Beton : C20/25
Bewehrung : B500S

Querschnitt: Rechteck $b = 2.150 \text{ m}$ $h = 0.400 \text{ m}$
 Achsdeckung $d_{lo} = 0.050 \text{ m}$ $d_{lu} = 0.050 \text{ m}$
 Verlegemaß $cv.l = 0.050 \text{ m}$
 Bemessung für symmetrische Bewehrung

Belastung : Biegemoment $M_{Ed} = 168.00 \text{ kNm}$
 Normalkraft $N_{Ed} = -1283.00 \text{ kN}$

Ergebnis

Biegebemessung: erf. A_s , oben = 0.00 cm^2
 erf. A_s , unten = 0.00 cm^2
 eps-B / eps-S = $-3.50 / 3.88 \text{ o/o}$
 Höhe Druckzone = 16.6 cm $k_x = 0.474$

Bemessung unter Berücksichtigung
des Windlast

Am Übergang zum Widerlager:

$$M_{E,W,d} = 223 \text{ kNm} \quad (\gamma = 1,5)$$

$$N_{E,d} (\text{LK-9}) = -1205 \text{ kN} \quad (\gamma = 1,0)$$

Bemessungsquerschnitt $b/d = 50/250$
(sichere Seite)

Querschnitt überdruckt!

$$e = \frac{223}{1205} = 0,185 \text{ m} < \frac{2,5}{6} = 0,42 \text{ m}$$

$$\text{Feldmitte: } M_{E,W,d} = 408 \text{ kNm} \quad (\gamma = 1,5)$$

Nachweis ungünstig für Max M / Min N
nur 2 D-Bewehrung und $M_{E,W,d} = 704 \text{ kNm}$

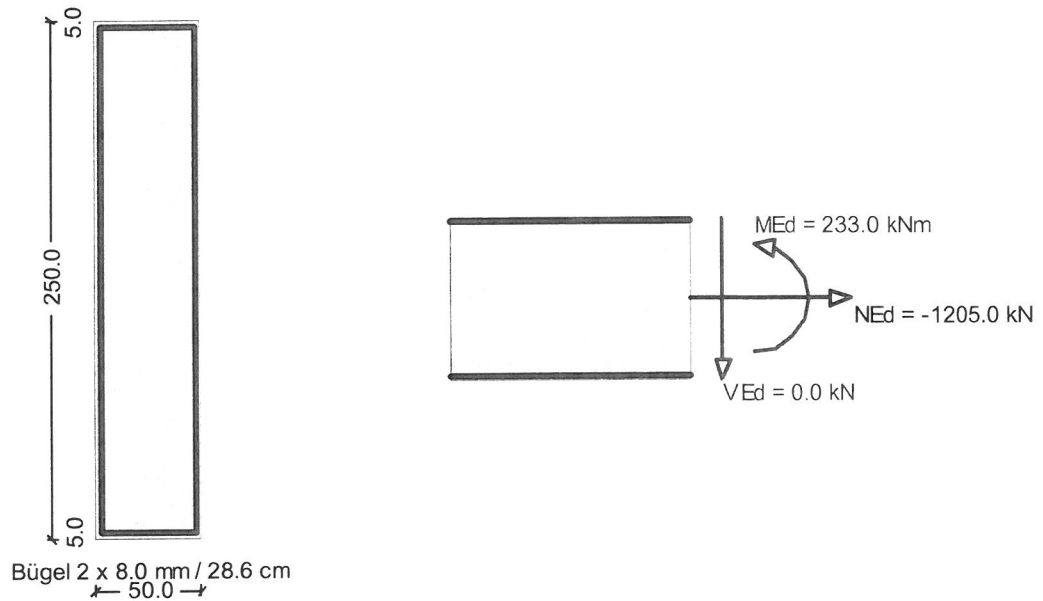
$$N_{E,d} (\text{LK-9}) = -1063 \text{ kN} \quad (\gamma = 1,0)$$

$$M_{E,d} (\text{LK-7}) = 190 \text{ kNm} \quad (\gamma = 1,5)$$

Hier kann Ihr eigener Briefkopf stehen!

Geben Sie Ihren Text ein und wählen Sie Ihre Bitmap (Logo) aus, anschließend speichern Sie das Layout unter "Optionen-Layout speichern" und wählen das neue Layout als Standardlayout unter "Optionen-Standardlayout" aus.

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AUFL G+W**Stahlbetonbemessung nach DIN_EN 1992-1-1**

Beton : C20/25
Bewehrung : B500S

Querschnitt: Rechteck $b = 0.500 \text{ m}$ $h = 2.500 \text{ m}$
 Achsdeckung $d_{lo} = 0.050 \text{ m}$ $d_{lu} = 0.050 \text{ m}$
 Verlegemaß $c_{v.l} = 0.050 \text{ m}$
 Bemessung für symmetrische Bewehrung

Belastung : Biegemoment $M_{Ed} = 233.00 \text{ kNm}$
 Normalkraft $N_{Ed} = -1205.00 \text{ kN}$

Ergebnis

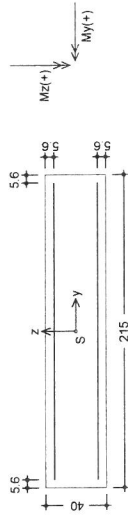
Biegebemessung: erf. A_s , oben = 0.00 cm^2
 erf. A_s , unten = 0.00 cm^2
 eps-B / eps-S = $-3.45 / -0.13 \text{ ‰}$
 Höhe Druckzone = 250.0 cm $k_x = 1.000$

Pos. BEM-1

System
 M 1:35

Bemessung im Feld mit Windlast

Rechteckquerschnitt



Breite $b = 215.0$ cm
 Höhe $h = 40.0$ cm
 Bewehrungsanordnung unten und oben je $A_{s,u}$

gemäß DIN EN 1990

Normalkraft
 Biegemoment

$N_{x,k} = 1063.0$ kN
 $M_{y,k} = 0.00$ kNm
 $M_{z,k} = 0.00$ kNm

Normalkraft
 Biegemoment

$N_{x,k} = 0.00$ kN
 $M_{y,k} = 190.00$ kNm
 $M_{z,k} = 108.00$ kNm

Kombinationen

Grundkombination E_d
 Gl.(6.10)

Manuelle Kombinationsbildung (1 Kombinationen)

E_k $\Sigma (y^* \psi^* EW)$
 1 $1.00 \cdot G_k + 1.00 \cdot Q_{k,N}$

Manuelle Komb.

Manuell vorgegebene Kombinationen

Vorgabe $\Sigma (y^* \psi^* EW)$
 1 $1.00 \cdot G_k + 1.00 \cdot Q_{k,N}$

$N_{x,d}$ [kN] $M_{y,d}$ [kNm] $M_{z,d}$ [kNm]

Bem.-schnittgrößen

1 1063.000 190.000 108.000

gemäß DIN EN 1992-1-1, 3.1.5, 3.1.6, 3.1.7, 3.2.7, 6.1

Bemessung (GZT)

Normalbeton
 Betonstahl
 Diagramm für Beton
 Bewehrungsgrad

C 20/25
 B 500SA
 Parabel-Rechteck
 $p_{min} = 0.00$ %
 $p_{max} = 8.00$ %

Expositionsklasse(n): XC1

Mindestbetondeckung
 Vorhaltemaß der Betondeckung
 Durchmesser Querbewehrung

$c_{min} = 25$ mm
 $\Delta c = 15$ mm
 $ds = 10$ mm

Bewehrungsabstand

$d' = 5.60$ cm

erf. Bewehrung Stahlfläche
 gesamte Stahlfläche
 Bewehrungsgrad

$A_{s,u} = 0.17$ cm²
 $A_s = 0.34$ cm²
 $\rho = 0.00$ %

Bewehrungswahl

minimaler Durchmesser
 maximaler Durchmesser
 maximale Stabanzahl

$d_{min} = 12$ mm
 $d_{max} = 28$ mm
 $n_{max} = 10$ -

Bewehrungsstäbe

Lage je Ecke
 Anzahl

d_s [mm] A_s [cm²]
 12 1.13

gesamte Stabanzahl

$n = 4$ -

Betondeckung Bügel

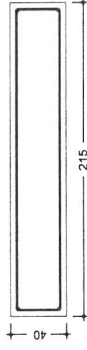
$c_{nom} = 40$ mm

gew.Bewehrung

gesamte Stahlfläche
 Bewehrungsgrad

$A_s = 4.52$ cm²
 $\rho = 0.05$ %

M 1:35



Langstäbe 4
 Bügel
 Betondeckung
 $c_{nom} = 40$ mm

$\phi 12$
 $\phi 10$

Nachweis

N_u [kN]
 1718.2

$M_{y,u}$ [kNm]
 307.1

$M_{z,u}$ [kNm]
 174.6

η [-]
 1.00

η [-]
 0.619

Stabilitätsnachweis Bogen

Der Knicklängenbeiwert in Bogenebene wird mit Tabelle D.4 (DIN EN 1993-2) ermittelt.

$$f/L = \frac{2,2}{20,0} = 0,11 \leadsto \beta = 1,0$$

$$s_K \text{ (Halbe Bogenlänge)} \sim 10,5 \text{ m}$$

Belastung:

$$\max N_{E,d} = -2060 \text{ kN (LK 8)}$$

$$\max M_{E,d} = 190 \text{ kNm (LK 7)}$$

$$\sim \bar{q} = \frac{190 \text{ kNm} \times 8}{10,2^2 \text{ m}^2} = 14,6 \frac{\text{kN}}{\text{m}}$$

$$M_{E, \text{wind}} = \begin{array}{c} \text{Diagramm: ein Dreieck, das von links nach rechts über den Bogen verläuft. Die linke Spitze ist nach unten gerichtet, die rechte Spitze nach oben.} \\ \begin{array}{l} -255 \text{ kNm d} \\ (-170 \text{ kNm k}) \end{array} \quad \begin{array}{l} 108 \text{ kNm d} \\ (72 \text{ kNm k}) \end{array} \end{array}$$

$$N_{E,d} = 1627 \text{ kN (G)} + 433 \text{ (Q)} \\ \text{(LK 1)}$$

$$N_K : \frac{1627}{1,35} = 1205 \text{ kN (G)} \quad \bigg/ \quad \frac{433}{1,5} = 289 \text{ kN (Q)}$$

$$q_{E,K} = \frac{14,6}{1,5} = 9,7 \text{ kN/m}$$

Tabelle D.4 — Knicklängenbeiwert β für Bögen mit $f/l > 0,1$

| | |
|---|--|
| | |
| <p style="text-align: center;">antisymmetrisches Knicken</p> | |
| | |
| <p style="text-align: center;">1 symmetrisches Knicken 2 antisymmetrisches Knicken</p> | |
| | |
| <p style="text-align: center;">symmetrisches Knicken</p> | <p style="text-align: center;">symmetrisches Knicken</p> |
| <p>Pa: Parabelbogen Ke: Kettenlinienbogen Kr: Kreisbogen</p> <p>Für Pa und Ke ist die Belastung vertikal.</p> <p>AC Für Kr wird Radiallast (z. B. hydrostatischer Druck) angenommen. AC</p> | |

22-078

Projekt Nr.

5.27

Position

Seite

**KUHN | DECKER**
INGENIEURE UND ARCHITEKTENKuhn Decker GmbH & Co. KG
Ingenieure und ArchitektenQuerschnitt:

$$D = \frac{0,4 + 0,5}{2} = 0,45 \text{ m}$$

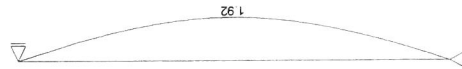
$$B = \frac{2,22 + 2,55}{2} = 2,385 \text{ m}$$

→ Keine Bewehrung erforderlich

Vorhanden: $11 \phi 12 = 12,43 \text{ cm}^2$
(jeweils untere und obere
Lage) ✓

| Punktlasten in x-Richtung | Einzellasten | | | |
|---------------------------------|--------------|-------|-----|-------|
| | Ges. | Komm. | Ort | a |
| Einw. Gk | EG | | 1 | 10.20 |
| Einw. Qk.N | EG | | | |
| Einzellasten und -momente | | | | |
| Punktlasten in y-Richtung | Einzellasten | | | |
| | Ges. | Komm. | Ort | a |
| Einw. Qk.W | EG | | | 10.20 |
| | EG | | | 0.00 |
| Streckenlasten in z-Richtung | Gleichlasten | | | |
| | Ges. | Komm. | Ort | s |
| Einw. Qk.N | EG | | 2 | 10.20 |
| Imperfektionen | | | | |

Figur 11 w_z[cm]



| Tabelle Figur 11 | Ungewollte Ausmitte affin zur Knickfigur aufgebracht. | | | | |
|---------------------|---|-----------------|-----------------|-----------------|------------------|
| | x | w _{yy} | w _{zu} | w _{yk} | w _{zk} |
| EG | 10.20 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 5.10 | 0.00 | 1.60 * | 0.00 | 0.33 * |
| | 0.00 | 0.00 * | 0.00 * | 0.00 * | 0.00 * |
| Figur | Richtung | | | | l _{eff} |
| | [-] | z | β | x | [cm] |
| 11 | | | 1.00 | 5.12 | 1.60 |

Kombinationen

Kombinationsbildung nach DIN EN 1990
Darstellung der maßgebenden Kombinationen
- Die Lasten der Einwirkung Qk.N werden in ungünstiger Laststellung angesetzt

| Ek | Imp. | Σ (γ*ψ*EW) | |
|----|------|------------|----------------------|
| 11 | 11 | 1.35*Gk | +1.50*Qk.N (2)* |
| 23 | 7 | 1.35*Gk | +1.50*Qk.N (1,2)* |
| | | | +0.90*Qk.W |

*: entspricht dem Ort des Lastangriffs. Siehe Kapitel 'Belastungen'.

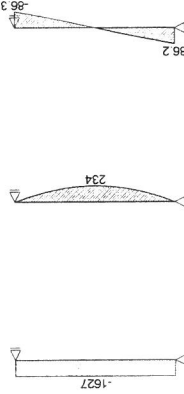
Bem.-schnittgrößen

nach Th. II. Ordnung
nichtlineare Berechnung nach Th. II. Ordnung

Grafik
Schnittgrößen (je Kombination)

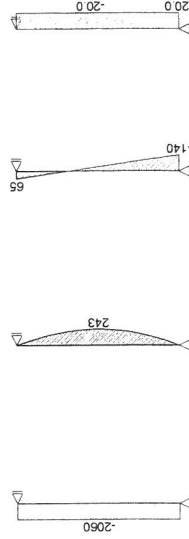
Komb. 11

N_{k,d}[kN] M_{y,d}[kNm] V_{z,d}[kN]



Komb. 23

N_{k,d}[kN] M_{y,d}[kNm] V_{y,d}[kN]



V_{z,d}[kN]



Tabelle

Schnittgrößen (je Kombination)

| Gesch. | x | N _{x,d} | M _{y,d} | V _{z,d} | M _{z,d} | V _{y,d} |
|----------|-------|------------------|------------------|------------------|------------------|------------------|
| EG | 10.20 | -1627 | 0.00 | -86.34 * | 0.00 | 0.00 |
| | 5.10 | -1627 | 234.50 * | 0.00 | 0.00 | 0.00 |
| | 0.00 | -1627 * | 0.00 | 86.20 * | 0.00 | 0.00 |
| Komb. 23 | 10.20 | -2060 | 0.00 | -88.77 * | 64.80 * | -20.03 |
| | 5.10 | -2060 | 243.26 * | -0.01 | -37.35 | -20.03 |
| | 1.10 | -2060 | 90.68 | 71.78 | -117.5 | -20.03 * |
| | 0.00 | -2060 * | 0.00 | 88.59 * | -139.5 * | -20.01 * |

Bem.-verformungen

nach Th. II. Ordnung

Nicht-Linear

nichtlineare Berechnung nach Th. II. Ordnung

Tabelle

Verformungen (je Kombination)

| Gesch. | x | w _{z,d} | g _{y,d} | w _{y,d} | g _{z,d} |
|----------|-------|------------------|------------------|------------------|------------------|
| EG | 10.20 | 0.00 | -7.46 * | 0.00 | 0.00 |
| | 5.10 | 2.46 * | 0.00 | 0.00 | 0.00 |
| | 0.00 | 0.00 | 7.37 * | 0.00 | 0.00 |
| Komb. 23 | 10.20 | 0.00 | -7.07 * | 0.00 | 0.00 |
| | 5.10 | 2.29 * | 0.00 | 0.00 | 0.00 |
| | 1.10 | 0.75 | 6.59 | 0.00 | 0.00 |
| | 0.00 | 0.00 | 6.98 * | 0.00 | 0.01 * |

Mat./Querschnitt

Material- und Querschnittswerte

| Q | Typ | Bewehr.-anordnung | b/D | h/D ₁ | d' |
|---------|---------|-------------------|-------|------------------|-----|
| 1 | Recht | Asu=Aso | 230.0 | 45.0 | 5.0 |
| Q Beton | Beton | | | | |
| 1 | C 20/25 | B 500SB | | | |

Bemessung (GZT)

gemäß DIN EN 1992-1-1, 3.1, 3.2, 5.4, 5.7, 5.8

nach linearer Theorie

| x | Nu | M _{yu} | M _{zu} | ε _s | ε _c | η |
|----------|---------|-----------------|-----------------|----------------|----------------|------|
| 10.20 | 11730.0 | 0.0 | 0.0 | -2.00 | -2.00 | 0.14 |
| 5.10 | 4295.0 | 602.7 | 0.0 | 3.38 | -3.50 | 0.38 |
| 0.00 | 11730.0 | 0.0 | 0.0 | -2.00 | -2.00 | 0.14 |
| Komb. 23 | 10.20 | 11297.4 | 0.0 | -1.15 | -2.66 | 0.18 |
| | 5.00 | 5506.9 | 639.1 | -105.4 | -3.50 | 0.37 |
| | 0.00 | 10836.7 | 0.0 | -0.78 | -2.95 | 0.19 |

Bruchschnittgrößen
Komb. 11

nach nichtlinearer Theorie

| x | Nu | M _{yu} | M _{zu} | ε _s | ε _c | η |
|----------|---------|-----------------|-----------------|----------------|----------------|------|
| 10.20 | 11730.0 | 0.0 | 0.0 | -2.00 | -2.00 | 0.14 |
| 5.10 | 4101.5 | 591.2 | 0.0 | 3.70 | -3.50 | 0.40 |
| 0.00 | 11730.0 | 0.0 | 0.0 | -2.00 | -2.00 | 0.14 |
| Komb. 23 | 10.20 | 11297.4 | 0.0 | -1.15 | -2.66 | 0.18 |
| | 4.90 | 5413.6 | 638.2 | -108.7 | -3.50 | 0.38 |
| | 0.00 | 10836.7 | 0.0 | -0.78 | -2.95 | 0.19 |

Knicklastfaktoren und Schlankheiten

| Komb. | V _y | V _z | A _y | A _z |
|-------|----------------|----------------|----------------|----------------|
| 11 | 30.56 | 798.21 | 15.36 | 78.52 |
| 23 | 24.13 | 630.25 | 15.36 | 78.52 |

Erforderliche
Bewehrung

Nachweise (GZT)
Querkraftbemessung

| von x | bis x | Q | Typ | Bew.Ar | d' | A _{s,ges} | ρ |
|-------|--------|--------|--------|----------------------------------|------|--------------------|------|
| 0.00 | 10.20 | 1 | R | A _{su} =A _{so} | 5.0 | 0.00 | 0.00 |
| 10.2 | 20.03 | 1072.2 | 2323.7 | 2060.3 | 18.4 | 203 | 0.00 |
| 88.77 | 1072.2 | 2111.4 | 2060.3 | 18.4 | 36.0 | 0.00 | 0.00 |
| 0.00 | 20.01 | 1072.2 | 2323.7 | 2060.3 | 18.4 | 203 | 0.00 |
| 88.59 | 1072.2 | 2111.4 | 2060.3 | 18.4 | 36.0 | 0.00 | 0.00 |

Auflagerkräfte

Auflagergrößen
A, x = 0.00 m

| K | Ad | M _{yd} | M _{zd} | H _{yd} | H _{zd} |
|----|--------|-----------------|-----------------|-----------------|-----------------|
| 1 | 2060.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2 | 2060.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3 | 2060.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4 | 2060.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5 | 2060.3 | 0.0 | 0.0 | 0.0 | 74.2 |
| 6 | 2060.3 | 0.0 | 0.0 | 0.0 | 74.2 |
| 7 | 2060.3 | 0.0 | 0.0 | 0.0 | 74.2 |
| 8 | 2060.3 | 0.0 | 0.0 | 0.0 | 74.2 |
| 9 | 1626.8 | 0.0 | 0.0 | 0.0 | 74.2 |
| 10 | 1626.8 | 0.0 | 0.0 | 0.0 | 74.2 |
| 11 | 1626.8 | 0.0 | 0.0 | 0.0 | 74.2 |
| 12 | 1626.8 | 0.0 | 0.0 | 0.0 | 74.2 |
| 13 | 1626.8 | 0.0 | 0.0 | 0.0 | 0.0 |
| 14 | 1626.8 | 0.0 | 0.0 | 0.0 | 0.0 |
| 15 | 1626.8 | 0.0 | 0.0 | 0.0 | 0.0 |
| 16 | 1626.8 | 0.0 | 0.0 | 0.0 | 0.0 |
| 17 | 2060.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 18 | 2060.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 19 | 2060.3 | 0.0 | 0.0 | 0.0 | 0.0 |
| 20 | 2060.3 | 0.0 | 0.0 | 0.0 | 0.0 |

