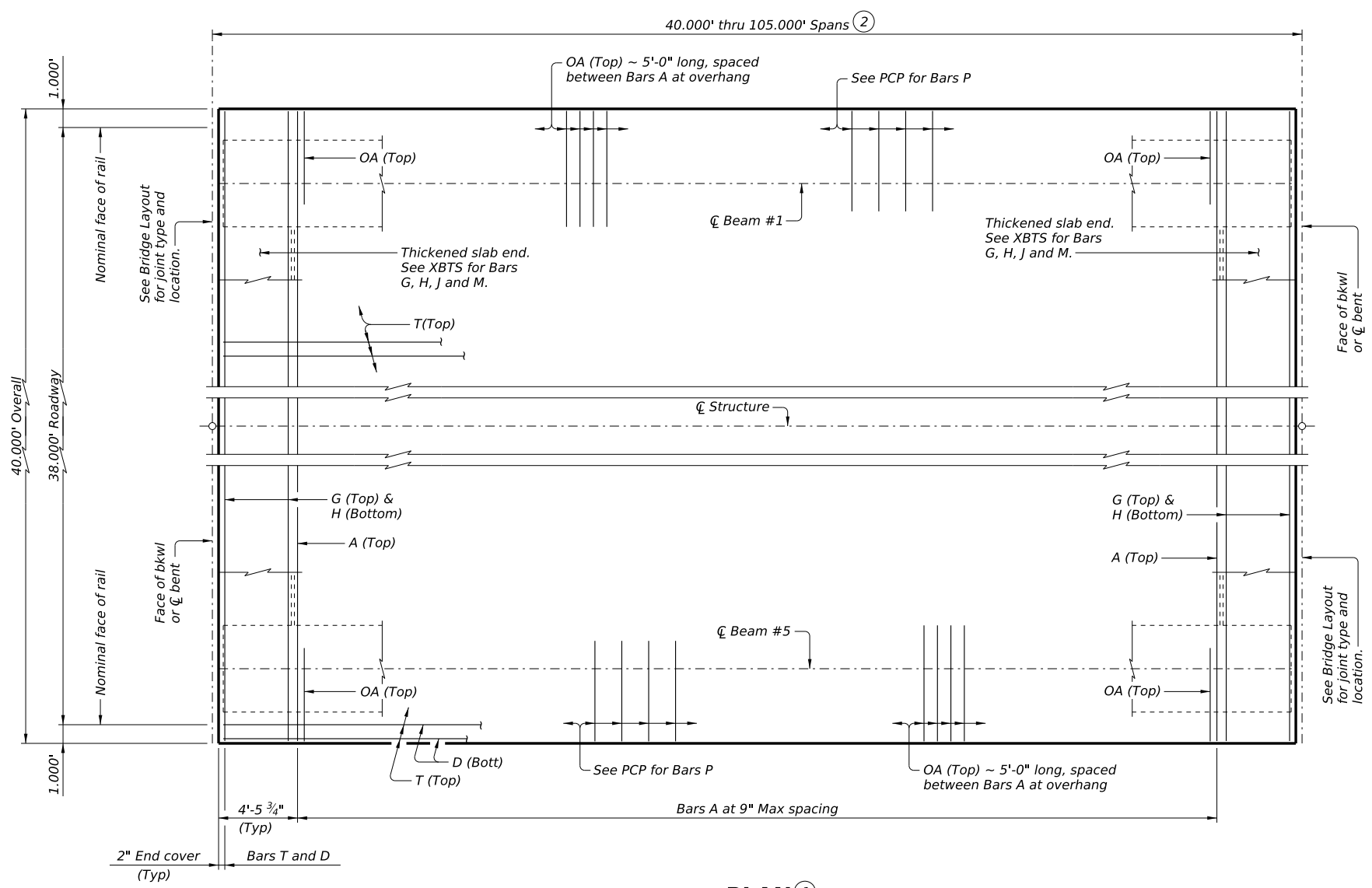
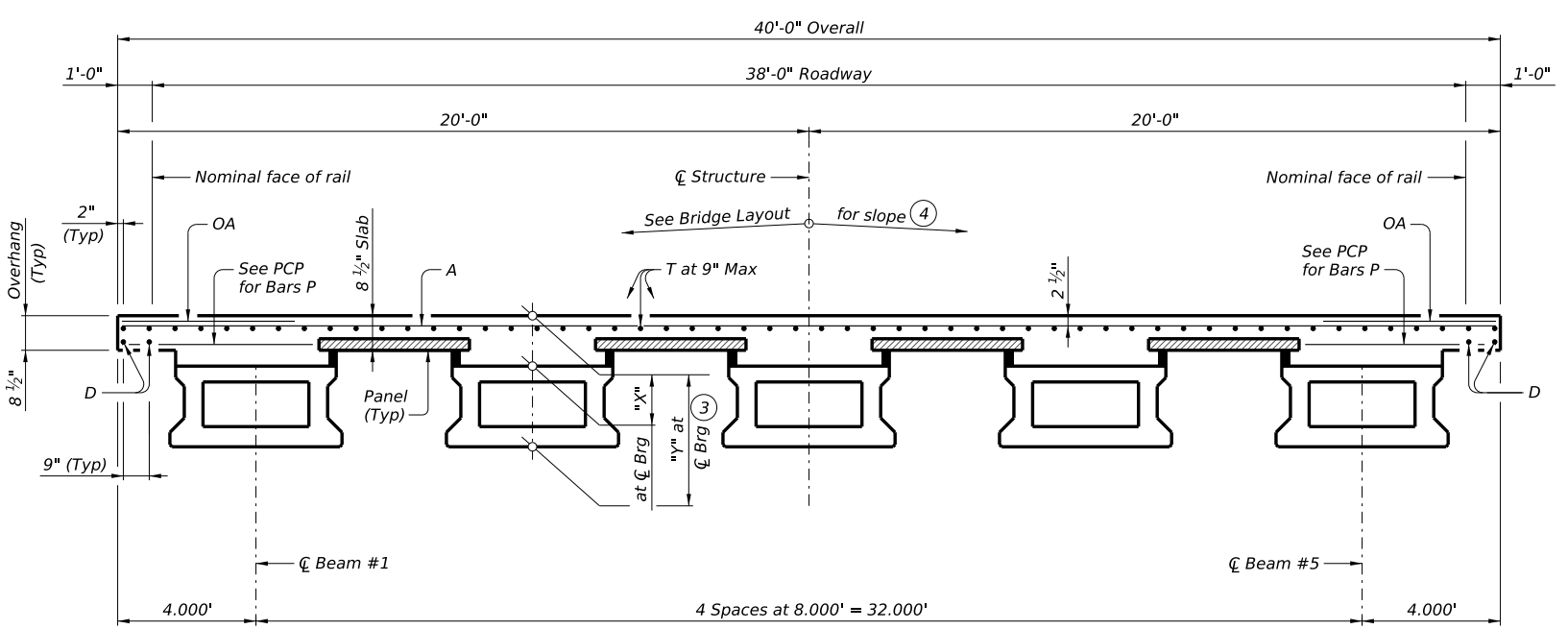


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| BAR TABLE | |
|-----------|------|
| BAR | SIZE |
| A | #4 |
| D | #4 |
| G | #4 |
| H | #4 |
| J | #4 |
| M | #4 |
| OA | #5 |
| P | #4 |
| T | #4 |



PLAN (1)



TYPICAL TRANSVERSE SECTION
(Showing beam type 5XB28)

- (1) If multi-span units (with slab continuous over interior bents) are indicated on the Bridge Layout, see X-Beam Continuous Slab Details (XBCS) standard for adjustment to slab reinforcement and quantities.
- (2) Span lengths for Prestressed Concrete X-Beam type:
Type 5XB20 for spans lengths 40.000' through 65.000'.
Type 5XB28 for spans lengths 40.000' through 85.000'.
Type 5XB34 for spans lengths 40.000' through 100.000'.
Type 5XB40 for spans lengths 40.000' through 105.000'.
- (3) "Y" value shown is based on theoretical beam camber, dead load deflection from an 8 1/2" concrete slab, a constant roadway grade, and using precast concrete panels (PCP). The Contractor will adjust this value as necessary for any roadway vertical curve.
- (4) This standard does not provide for changes in roadway cross-slopes within the structure.

TABLE OF SECTION DEPTHS

| Span Length | Beam Type 5XB20 | | Beam Type 5XB28 | | Beam Type 5XB34 | | Beam Type 5XB40 | |
|-------------|-----------------|-----------|-----------------|-----------|-----------------|-----------|-----------------|-----------|
| | "X" | "Y" (3) | "X" | "Y" (3) | "X" | "Y" (3) | "X" | "Y" (3) |
| Ft | In | Ft/In | In | Ft/In | In | Ft/In | In | Ft/In |
| 40 | 10 1/2" | 2'-6 1/2" | 10 1/2" | 3'-2 1/2" | 10 1/2" | 3'-8 1/2" | 10 1/2" | 4'-2 1/2" |
| 45 | 10 1/2" | 2'-6 1/2" | 10 1/2" | 3'-2 1/2" | 10 1/2" | 3'-8 1/2" | 10 1/2" | 4'-2 1/2" |
| 50 | 10 1/2" | 2'-6 1/2" | 10 1/2" | 3'-2 1/2" | 10 1/2" | 3'-8 1/2" | 10 1/2" | 4'-2 1/2" |
| 55 | 10 3/4" | 2'-6 3/4" | 10 1/2" | 3'-2 1/2" | 10 1/2" | 3'-8 1/2" | 10 1/2" | 4'-2 1/2" |
| 60 | 11 1/4" | 2'-7 1/4" | 10 1/2" | 3'-2 1/2" | 10 1/2" | 3'-8 1/2" | 10 1/2" | 4'-2 1/2" |
| 65 | 11 1/2" | 2'-7 1/2" | 10 1/2" | 3'-2 1/2" | 10 1/2" | 3'-8 1/2" | 10 1/2" | 4'-2 1/2" |
| 70 | --- | --- | 10 1/2" | 3'-2 1/2" | 10 1/2" | 3'-8 1/2" | 10 1/2" | 4'-2 1/2" |
| 75 | --- | --- | 11 1/4" | 3'-3 1/4" | 10 1/2" | 3'-8 1/2" | 10 1/2" | 4'-2 1/2" |
| 80 | --- | --- | 11 1/2" | 3'-3 1/2" | 10 1/2" | 3'-8 1/2" | 10 1/2" | 4'-2 1/2" |
| 85 | --- | --- | 11 3/4" | 3'-3 3/4" | 10 3/4" | 3'-8 3/4" | 10 1/2" | 4'-2 1/2" |
| 90 | --- | --- | --- | --- | 11 1/2" | 3'-9 1/4" | 10 1/2" | 4'-2 1/2" |
| 95 | --- | --- | --- | --- | 11 3/4" | 3'-9 3/4" | 10 3/4" | 4'-2 3/4" |
| 100 | --- | --- | --- | --- | 11 3/4" | 3'-9 3/4" | 11 1/4" | 4'-3 1/4" |
| 105 | --- | --- | --- | --- | --- | --- | 11 1/4" | 4'-3 1/4" |

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HL93 LOADING SHEET 1 OF 2



PRESTRESSED CONCRETE X-BEAM SPANS (TYPE 5XB20 THRU 5XB40) 38' ROADWAY

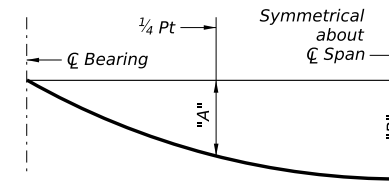
SXB-38

| | | | | |
|-------------------------|---------|---------|-----------|---------|
| FILE: XB-SXB3800-24.dgn | DN: BMP | CK: EFC | DW: JER | CK: TAR |
| ©TxDOT August 2022 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | | | | |
| 11-24: Flipped top mat. | DIST | COUNTY | SHEET NO. | |

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TABLE OF DEAD LOAD DEFLECTIONS

| TYPE 5XB20 BEAMS | | | TYPE 5XB28 BEAMS | | | TYPE 5XB34 BEAMS | | | TYPE 5XB40 BEAMS | | |
|------------------|-------|-------|------------------|-------|-------|------------------|-------|-------|------------------|-------|-------|
| Span Length | "A" | "B" | Span Length | "A" | "B" | Span Length | "A" | "B" | Span Length | "A" | "B" |
| Ft | Ft | Ft | Ft | Ft | Ft | Ft | Ft | Ft | Ft | Ft | Ft |
| 40 | 0.013 | 0.018 | 40 | 0.005 | 0.007 | 40 | 0.004 | 0.005 | 40 | 0.002 | 0.003 |
| 45 | 0.021 | 0.030 | 45 | 0.008 | 0.012 | 45 | 0.005 | 0.007 | 45 | 0.003 | 0.005 |
| 50 | 0.033 | 0.046 | 50 | 0.013 | 0.019 | 50 | 0.008 | 0.011 | 50 | 0.005 | 0.007 |
| 55 | 0.048 | 0.069 | 55 | 0.019 | 0.028 | 55 | 0.012 | 0.016 | 55 | 0.008 | 0.011 |
| 60 | 0.069 | 0.098 | 60 | 0.028 | 0.040 | 60 | 0.017 | 0.024 | 60 | 0.011 | 0.015 |
| 65 | 0.096 | 0.137 | 65 | 0.039 | 0.055 | 65 | 0.023 | 0.033 | 65 | 0.015 | 0.022 |
| | | | 70 | 0.053 | 0.075 | 70 | 0.031 | 0.045 | 70 | 0.021 | 0.029 |
| | | | 75 | 0.070 | 0.100 | 75 | 0.042 | 0.059 | 75 | 0.027 | 0.039 |
| | | | 80 | 0.091 | 0.130 | 80 | 0.054 | 0.077 | 80 | 0.036 | 0.051 |
| | | | 85 | 0.117 | 0.167 | 85 | 0.070 | 0.099 | 85 | 0.046 | 0.065 |
| | | | | | | 90 | 0.088 | 0.125 | 90 | 0.058 | 0.082 |
| | | | | | | 95 | 0.110 | 0.156 | 95 | 0.072 | 0.102 |
| | | | | | | 100 | 0.135 | 0.193 | 100 | 0.089 | 0.126 |
| | | | | | | | | | 105 | 0.108 | 0.154 |



DEAD LOAD DEFLECTION DIAGRAM

Calculated deflections shown are due to the concrete slab on interior beams only ($E_c = 5,000$ ksi). Adjust values as required for exterior beams and if optional slab forming is used. These values may require field verification.

TABLE OF ESTIMATED QUANTITIES

| SPAN LENGTH | REINF CONCRETE SLAB | PRESTR CONCRETE X-BEAMS | TOTAL REINF STEEL |
|-------------|---------------------|-------------------------|-------------------|
| Ft | SF | LF | Lb |
| 40 | 1,600 | 197.50 | 3,680 |
| 45 | 1,800 | 222.50 | 4,140 |
| 50 | 2,000 | 247.50 | 4,600 |
| 55 | 2,200 | 272.50 | 5,060 |
| 60 | 2,400 | 297.50 | 5,520 |
| 65 | 2,600 | 322.50 | 5,980 |
| 70 | 2,800 | 347.50 | 6,440 |
| 75 | 3,000 | 372.50 | 6,900 |
| 80 | 3,200 | 397.50 | 7,360 |
| 85 | 3,400 | 422.50 | 7,820 |
| 90 | 3,600 | 447.50 | 8,280 |
| 95 | 3,800 | 472.50 | 8,740 |
| 100 | 4,000 | 497.50 | 9,200 |
| 105 | 4,200 | 522.50 | 9,660 |

- ⑤ Fabricator will adjust lengths for beam slopes as required.
- ⑥ Reinforcing steel weight is calculated using an approximate factor of 2.3 lbs/SF.

MATERIAL NOTES:

Provide Class 5 concrete ($f'_c = 4,000$ psi.)
 Provide Class 5 (HPC) concrete if shown elsewhere in the plans.
 Provide Grade 60 reinforcing steel.
 Provide bar laps, where required, as follows:
 Uncoated ~ #4 = 1'-7"
 Epoxy coated ~ #4 = 2'-5"
 Deformed welded wire reinforcement (WWR) (ASTM A1064) of equal size and spacing may be substituted for Bars A, D, OA, P, or T unless noted elsewhere.

GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications.
 Multi-span units, with slab continuous over interior bents, may be formed with the details shown on this sheet and the X-Beam Continuous Slab Details (XBCS) standard.
 See X-Beam Thickened Slab End Details (XBTS) standard for details and quantity adjustments.
 See Prestressed Concrete Panels (PCP) standard and Prestressed Concrete Panel Fabrication Details (PCP-FAB) standard for panel details not shown.
 See X-Beam Minimum Erection and Bracing Requirements with Miscellaneous Slab Details (XBMR-MS) standard for miscellaneous details.
 See applicable rail details for rail anchorage in slab.
 See Permanent Metal Deck Forms (PMDF) standard for details and quantity adjustments if this option is used.
 This standard does not support the use of transition bents.

Cover dimensions are clear dimensions, unless noted otherwise.

HL93 LOADING

SHEET 2 OF 2



PRESTRESSED CONCRETE X-BEAM SPANS (TYPE 5XB20 THRU 5XB40) 38' ROADWAY

SXB-38

| | | | | |
|-------------------------|---------|---------|---------|-----------|
| FILE: XB-SXB3800-24.dgn | DN: BMP | CK: EFC | DW: JER | CK: TAR |
| ©TxDOT August 2022 | CONT | SECT | JOB | HIGHWAY |
| REVISIONS | | | | |
| 11-24: Flipped top mat. | DIST | COUNTY | | SHEET NO. |

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