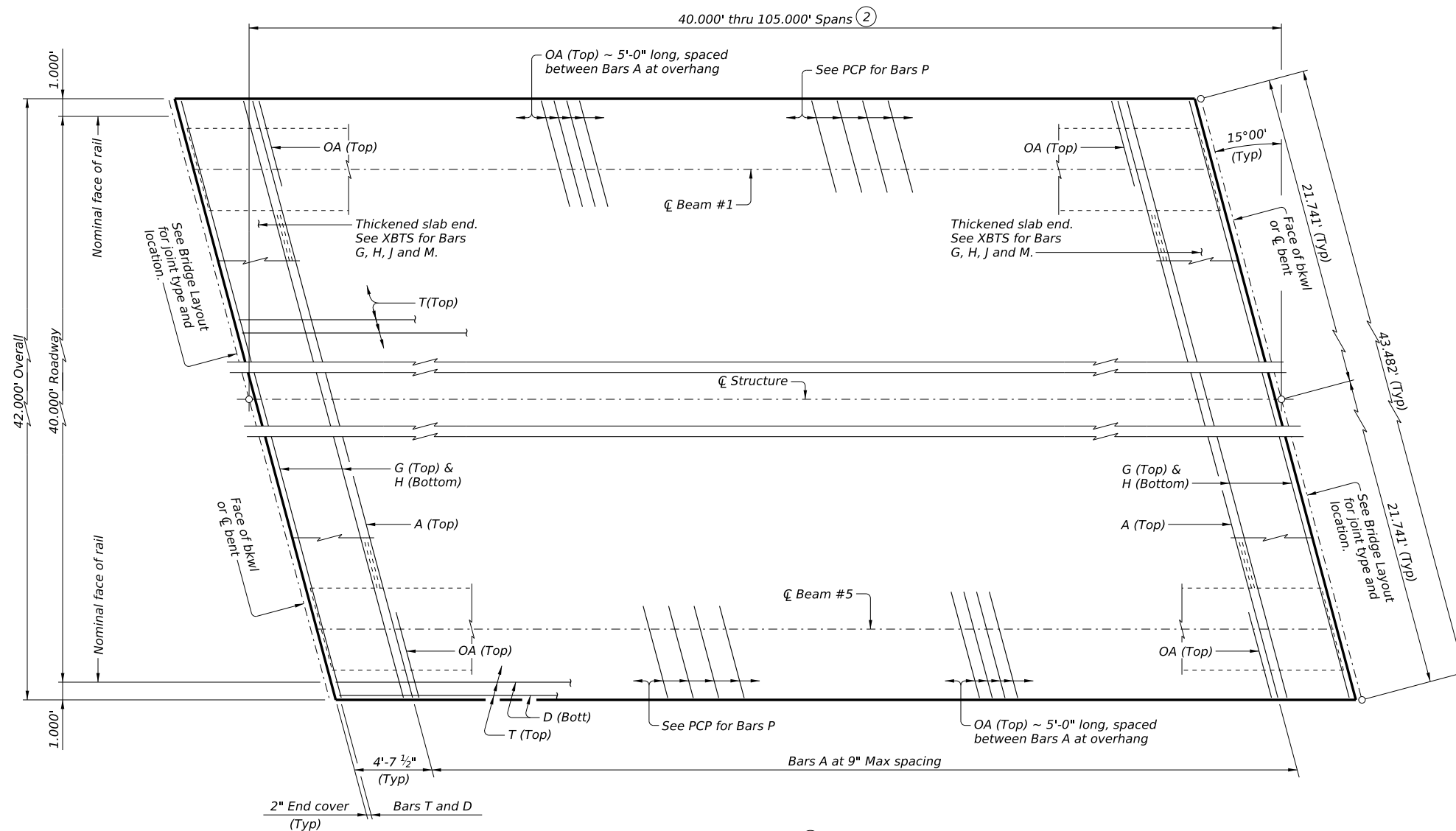
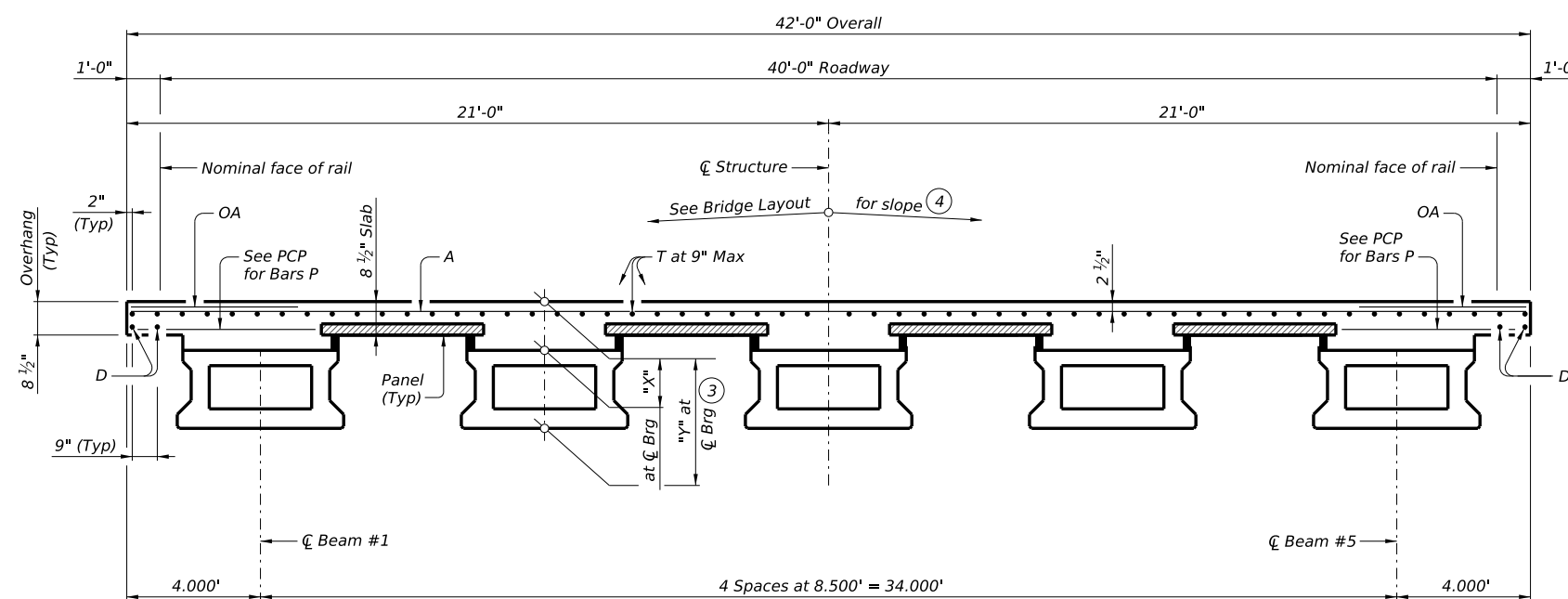


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PLAN (1)



TYPICAL TRANSVERSE SECTION
(Showing beam Type 5XB28)

BAR TABLE

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

- 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.
- 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 80.000'.
Type 5XB34 for spans lengths 40.000' through 95.000'.
Type 5XB40 for spans lengths 40.000' through 105.000'.
- "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).
- 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	11"	2'-7"	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 3/4"	3'-2 3/4"	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 3/4"	3'-3 3/4"	10 1/2"	3'-8 1/2"	10 1/2"	4'-2 1/2"
85	---	---	---	---	11"	3'-9"	10 1/2"	4'-2 1/2"
90	---	---	---	---	11 1/2"	3'-9 1/2"	10 1/2"	4'-2 1/2"
95	---	---	---	---	11 1/2"	3'-9 1/2"	11"	4'-3"
100	---	---	---	---	---	---	11 1/4"	4'-3 1/4"
105	---	---	---	---	---	---	11 1/2"	4'-3 1/2"

HL93 LOADING

SHEET 1 OF 2



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

40' ROADWAY 15° SKEW

SXB-40-15

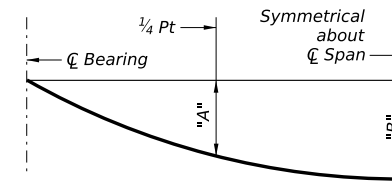
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© TxDOT August 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS				
11-24: Flipped top mat.	DIST	COUNTY		SHEET NO.

DATE: FILE:

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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	0.014	0.019	40	0.005	0.008	40	0.004	0.005	40	0.002	0.004
45	0.022	0.032	45	0.009	0.013	45	0.005	0.008	45	0.003	0.005
50	0.035	0.049	50	0.014	0.020	50	0.008	0.012	50	0.005	0.008
55	0.051	0.073	55	0.021	0.029	55	0.012	0.017	55	0.008	0.011
60	0.074	0.105	60	0.030	0.042	60	0.018	0.025	60	0.012	0.016
65	0.102	0.146	65	0.041	0.059	65	0.025	0.035	65	0.016	0.023
			70	0.056	0.080	70	0.033	0.047	70	0.022	0.031
			75	0.075	0.106	75	0.044	0.063	75	0.029	0.041
			80	0.097	0.138	80	0.058	0.082	80	0.038	0.054
						85	0.074	0.105	85	0.048	0.069
						90	0.094	0.133	90	0.061	0.087
						95	0.117	0.166	95	0.076	0.109
									100	0.094	0.134
									105	0.115	0.163



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	1,680	197.41	3,864
45	1,890	222.41	4,347
50	2,100	247.41	4,830
55	2,310	272.41	5,313
60	2,520	297.41	5,796
65	2,730	322.41	6,279
70	2,940	347.41	6,762
75	3,150	372.41	7,245
80	3,360	397.41	7,728
85	3,570	422.41	8,211
90	3,780	447.41	8,694
95	3,990	472.41	9,177
100	4,200	497.41	9,660
105	4,410	522.41	10,143

- 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 S concrete ($f_c = 4,000$ psi).
 Provide Class S (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.
 This standard does not provide for vertical curves in roadway grade within the structure.
 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.
 This standard is drawn showing right forward skew. See Bridge Layout for actual skew dimensions.
 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 (XBBR-MS) standard for miscellaneous details.
 See applicable rail details for rail anchorage in slab.
 See Permanent Metal Deck Forms (PMD) 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)

40' ROADWAY 15° SKEW

SXB-40-15

FILE: XB-SXB4015-24.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.

DATE:
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