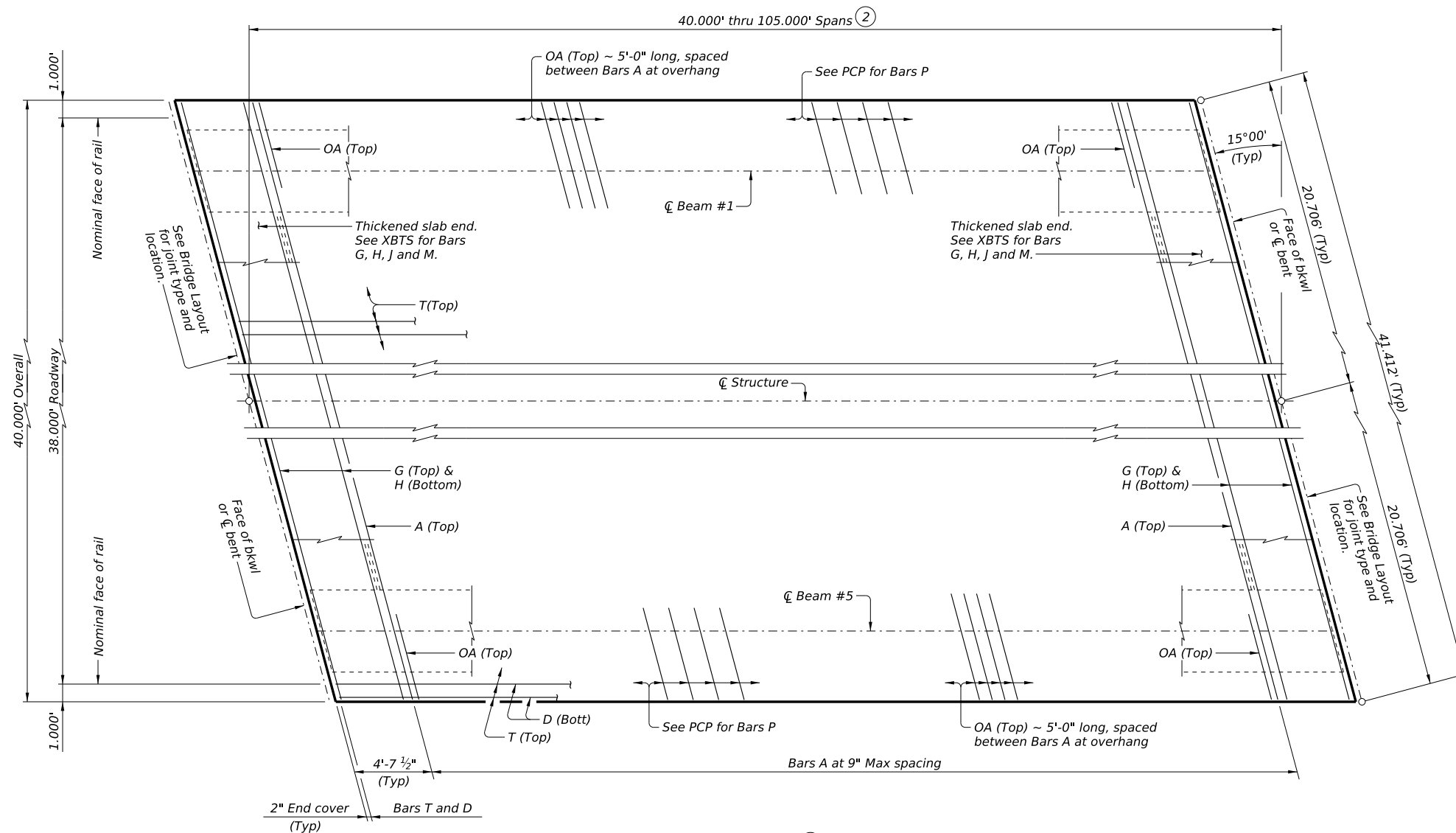
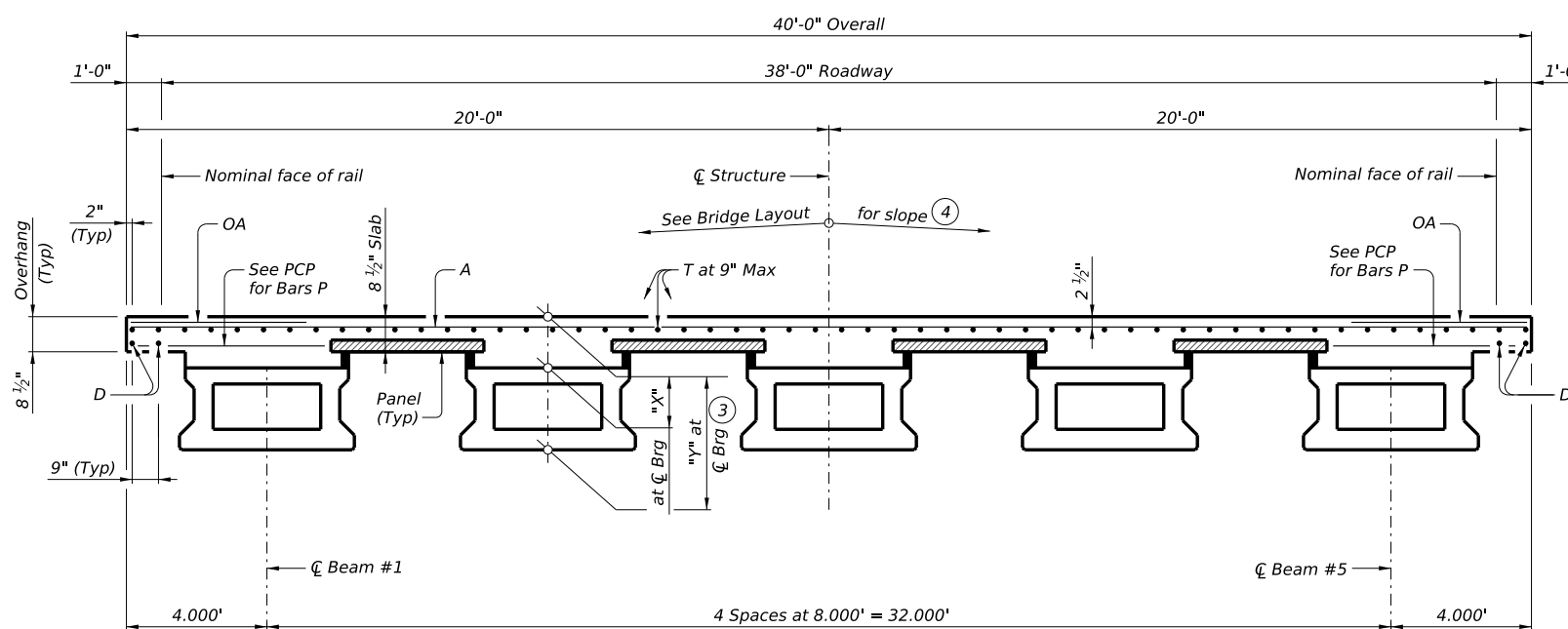


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PLAN (1)



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 85.000'.
 Type 5XB34 for spans lengths 40.000' through 100.000'.
 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	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"

HL93 LOADING

SHEET 1 OF 2



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

38' ROADWAY 15° SKEW

SXB-38-15

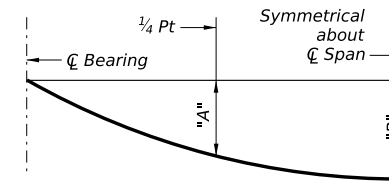
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© TxDOT August 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS				
11-24: Flipped top mat.	DIST	COUNTY	SHEET NO.	

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	0.013	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
		(5) LF	(6) Lb
Ft	SF	LF	Lb
40	1,600	197.41	3,680
45	1,800	222.41	4,140
50	2,000	247.41	4,600
55	2,200	272.41	5,060
60	2,400	297.41	5,520
65	2,600	322.41	5,980
70	2,800	347.41	6,440
75	3,000	372.41	6,900
80	3,200	397.41	7,360
85	3,400	422.41	7,820
90	3,600	447.41	8,280
95	3,800	472.41	8,740
100	4,000	497.41	9,200
105	4,200	522.41	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 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 (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 15° SKEW

SXB-38-15

FILE: XB-SXB3815-24.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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