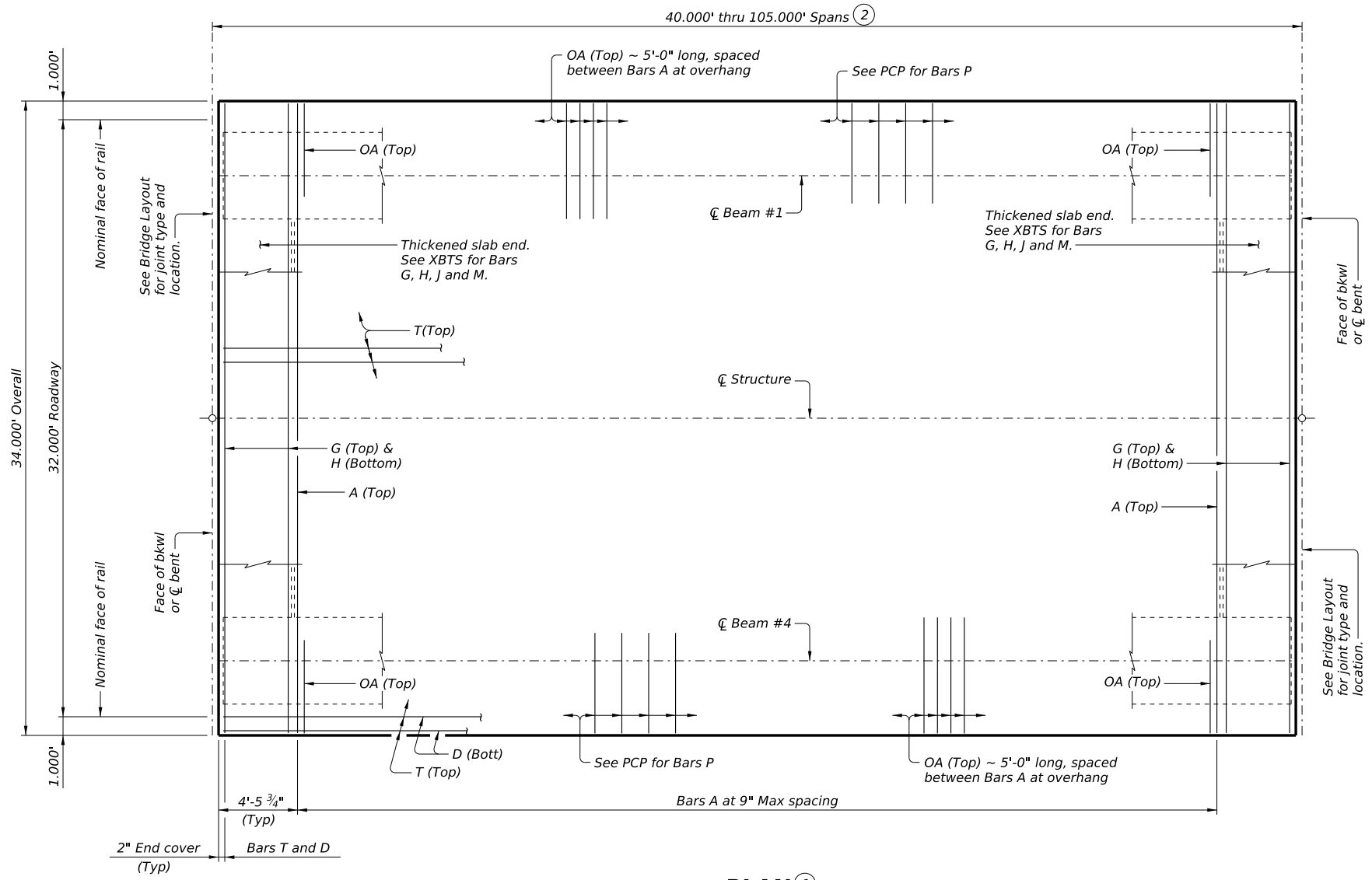


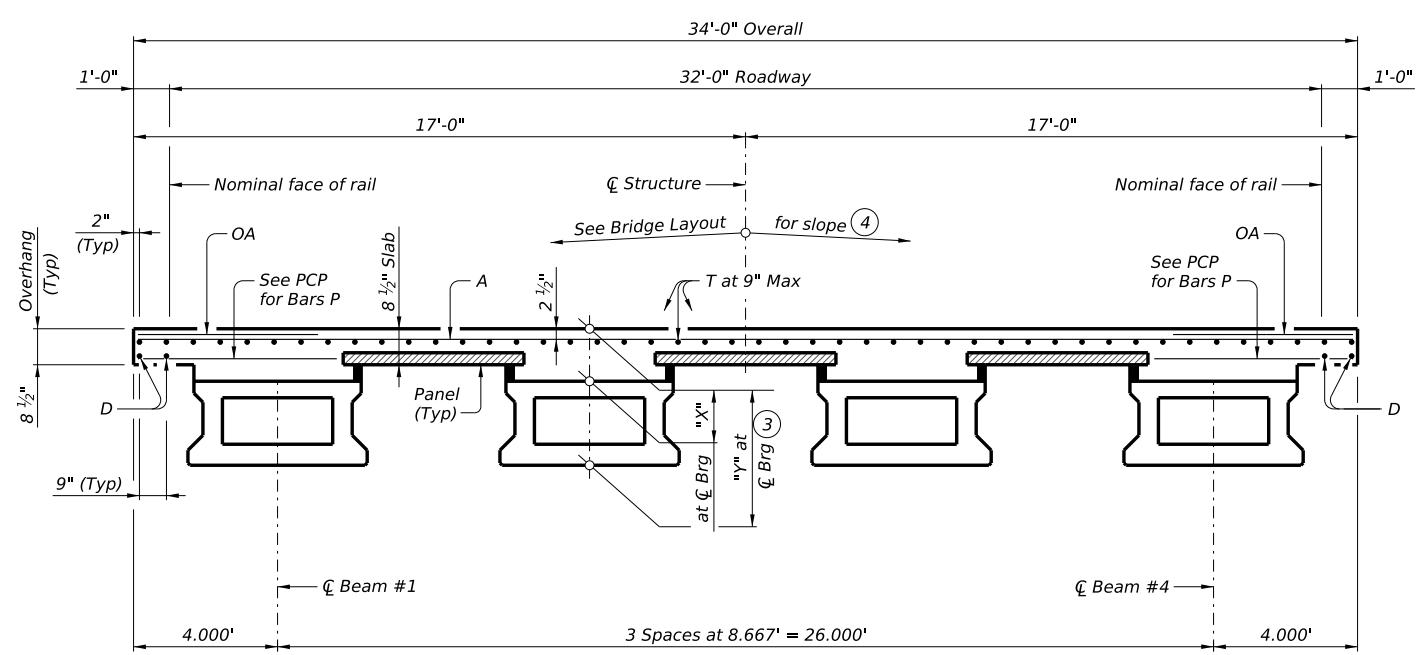
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BAR TABLE	
BAR	SIZE
A	#4
D	#4
G	#4
H	#4
J	#4
M	#4
OA	#5
P	#4
T	#4



- 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 80.000'.
Type 5XB34 for spans lengths 40.000' through 95.000'.
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.

Span Length	TABLE OF SECTION DEPTHS							
	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 3/4"	3'-8 3/4"	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 3/4"	4'-2 3/4"
95	---	---	---	---	11 3/4"	3'-9 3/4"	11 1/2"	4'-3 1/2"
100	---	---	---	---	---	---	11 1/2"	4'-3 1/2"
105	---	---	---	---	---	---	11 1/2"	4'-3 1/2"



HL93 LOADING SHEET 1 OF 2

Texas Department of Transportation Bridge Division Standard

PRESTRESSED CONCRETE X-BEAM SPANS (TYPE 5XB20 THRU 5XB40) 32' ROADWAY

SXB-32

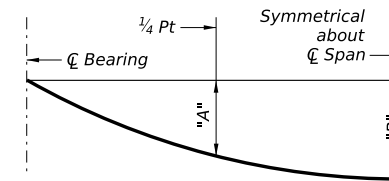
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©TxDOT August 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS				
11-24: Flipped top mat.	DIST	COUNTY	SHEET NO.	

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	0.020	40	0.006	0.008	40	0.004	0.005	40	0.003	0.004
45	0.023	0.032	45	0.009	0.013	45	0.005	0.008	45	0.004	0.005
50	0.035	0.050	50	0.014	0.020	50	0.008	0.012	50	0.006	0.008
55	0.052	0.074	55	0.021	0.030	55	0.013	0.018	55	0.008	0.012
60	0.075	0.107	60	0.030	0.043	60	0.018	0.026	60	0.012	0.017
65	0.105	0.149	65	0.042	0.060	65	0.025	0.036	65	0.016	0.023
			70	0.057	0.081	70	0.034	0.048	70	0.022	0.032
			75	0.076	0.108	75	0.045	0.064	75	0.030	0.042
			80	0.099	0.141	80	0.059	0.084	80	0.039	0.055
						85	0.075	0.107	85	0.049	0.070
						90	0.095	0.136	90	0.062	0.089
						95	0.119	0.169	95	0.078	0.111
									100	0.096	0.136
									105	0.117	0.166



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)	(6)
Ft	SF	LF	Lb
40	1,360	158.00	3,128
45	1,530	178.00	3,519
50	1,700	198.00	3,910
55	1,870	218.00	4,301
60	2,040	238.00	4,692
65	2,210	258.00	5,083
70	2,380	278.00	5,474
75	2,550	298.00	5,865
80	2,720	318.00	6,256
85	2,890	338.00	6,647
90	3,060	358.00	7,038
95	3,230	378.00	7,429
100	3,400	398.00	7,820
105	3,570	418.00	8,211

- (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 (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) 32' ROADWAY

SXB-32

FILE: XB-SXB3200-24.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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